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INTERVENTO

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

PROGETTO DI MANUTENZIONE STRAORDINARIA PER IL RESTAURO E RISANAMENTO CONSERVATIVO DI DUE CASAMENTI A CORTE SITI IN COMUNE DI BOLOGNA LOCALITA' CIRENAICA. VIA BENTIVOGLI CIV. 31÷59 PER COMPLESSIVI 56 ALLOGGI DI ERP CON RELATIVE PERTINENZE E PARTI COMUNI

LOTTO **3053/PN_1**

PROGETTO ESECUTIVO

TAV.	OGGETTO	DATA
TAB_04	TABULATI DI CALCOLO CIVICO 31 STATO DI PROGETTO	Settembre 2022
SCALA		N. DISEGNO

VERSIONE	DESCRIZIONE	DATA	REDATTO	VERIFICATO		APPROVATO
00	PRIMA EMISSIONE	Settembre 2022	F. DALMONTE	N. LEONE		N. LEONE
01						
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TABULATI DI CALCOLO
CIVICO 31
STATO DI PROGETTO

Sommario

1 Risultati numerici

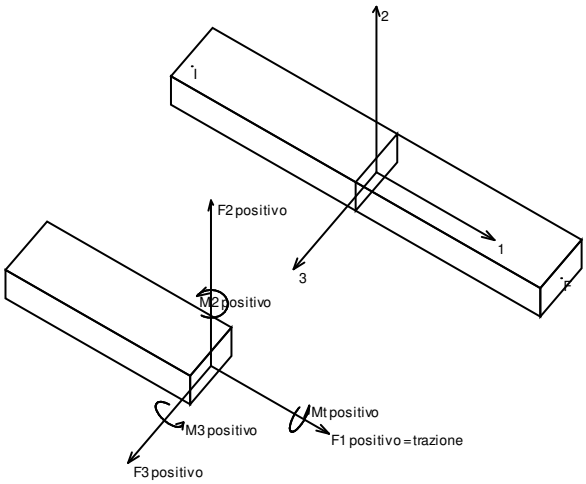
1.1 Sollecitazioni

1.1.1 Sollecitazioni aste

1.1.1.1 Convenzioni di segno aste

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

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



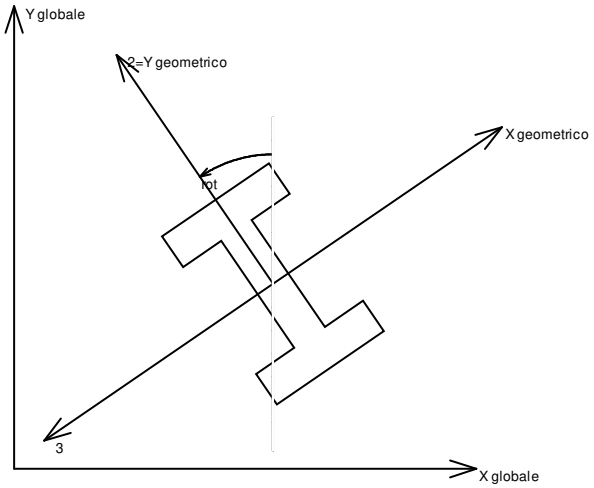
La convenzione sui segni per i parametri di sollecitazione delle aste è la seguente:
presa un'asta con nodo iniziale i e nodo finale f, asse 1 che va da i a f, assi 2 e 3 presi secondo quanto indicato nei paragrafi successivi relativi al sistema locale delle aste sezionando l'asta in un punto e considerando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

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

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

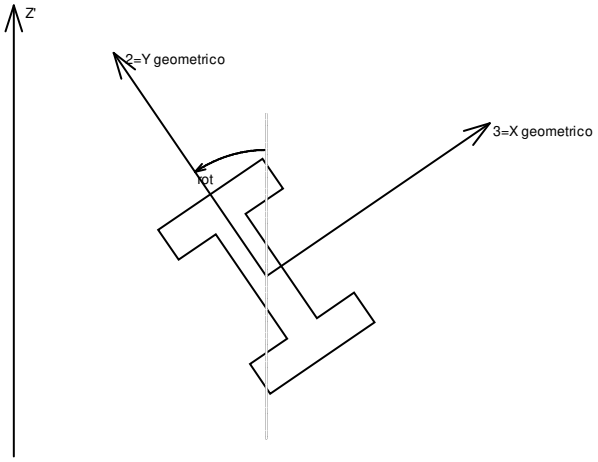
Nel seguito si indica con 1, 2 e 3 il sistema locale dell'asta che non sempre coincide con gli assi principali della sezione. Si ricorda che per assi principali si intendono gli assi rispetto a cui si ha il raggio di inerzia minimo e massimo. Gli assi 1, 2 e 3 rispettano la regola della mano destra.

Sistema locale aste verticali



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

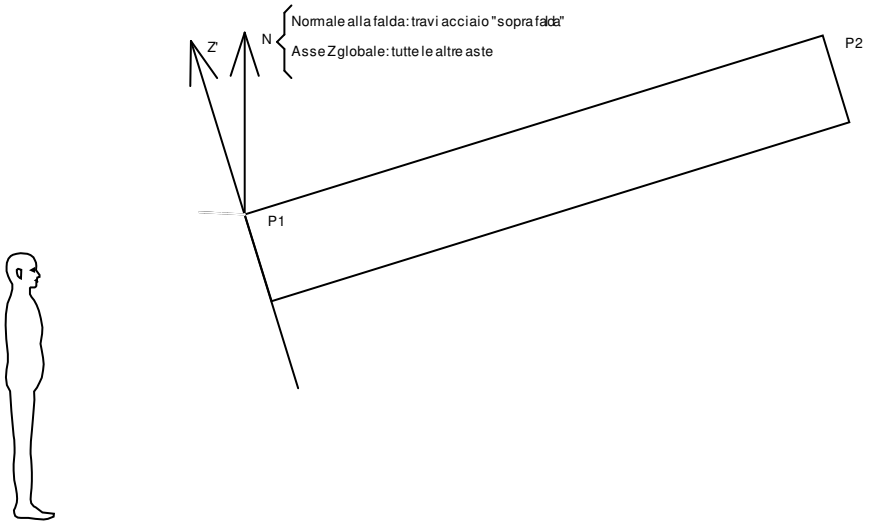
Sistema locale aste non verticali



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

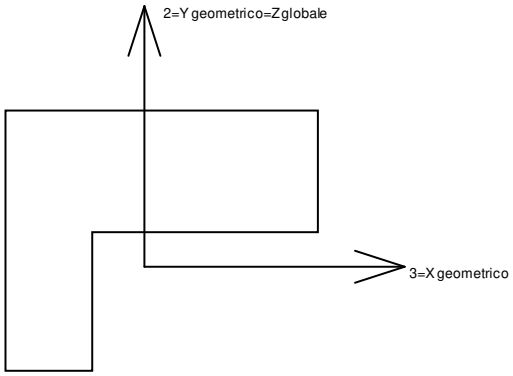
L'asse Z' è illustrato nella figura seguente dove:

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



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

Sistema locale aste derivanti da travi in c.a.



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

1.1.1.2 Sollecitazioni estreme aste

Asta: *elemento asta a cui si riferiscono le sollecitazioni.*
Ind.: *indice dell'asta.*
Cont.: *contesto a cui si riferisce la sollecitazione*
N.br.: *nome breve della condizione o combinazione di carico.*
Pos.: *numero della sezione all'interno dell'asta (tra 1 e 31, dove 1 corrisponde alla sezione al nodo iniziale, 16 è la sezione in mezzeria, 31 corrisponde alla sezione al nodo finale).*
Posizione: *posizione a cui si riferisce la sollecitazione dell'asta.*
X: *componente X della posizione a cui si riferisce la sollecitazione dell'asta. [m]*
Y: *componente Y della posizione a cui si riferisce la sollecitazione dell'asta. [m]*
Z: *componente Z della posizione a cui si riferisce la sollecitazione dell'asta. [m]*
Soll.traslazionale: *componente traslazionale della sollecitazione dell'asta.*
F1: *componente F1 della sollecitazione dell'asta. [daN]*
F2: *componente F2 della sollecitazione dell'asta. [daN]*
F3: *componente F3 della sollecitazione dell'asta. [daN]*
Soll.rotazionale: *componente rotazionale della sollecitazione dell'asta.*
M1: *componente M1 della sollecitazione dell'asta. [daN*m]*
M2: *componente M2 della sollecitazione dell'asta. [daN*m]*
M3: *componente M3 della sollecitazione dell'asta. [daN*m]*

Sollecitazioni con sforzo normale (N) minimo

Vengono mostrate le sole 5 aste più sollecitate.

Asta	Cont.	Pos.	Posizione			Soll.traslazionale			Soll.rotazionale		
Ind.	N.br.		X	Y	Z	F1	F2	F3	M1	M2	M3
578	SLV 12	1	-10.08	6.23	-1.3	-58553	-23050	-7478	1052.07	-1275.09	10963.3
579	SLV 7	31	-9.31	6.23	-1.3	-58182	22447	8677	-998.28	-2221.74	8470.15
577	SLV 12	1	-10.44	6.23	-1.3	-51834	-18607	-6612	664.65	-1224.15	4242.97
580	SLV 7	31	-8.9	6.23	-1.3	-51038	17262	7563	-706.34	-1566.05	877.96
576	SLV 12	1	-10.79	6.23	-1.3	-48467	-13492	-5727	725.51	-392.58	-820.28

Sollecitazioni con sforzo normale (N) massimo

Vengono mostrate le sole 5 aste più sollecitate.

Asta	Cont.	Pos.	Posizione			Soll.traslazionale			Soll.rotazionale		
Ind.	N.br.		X	Y	Z	F1	F2	F3	M1	M2	M3
578	SLV 5	1	-10.08	6.23	-1.3	25420	3587	7578	-108.89	4899.25	-2358.44
433	SLV 4	1	-6.52	-2.89	-1.3	25368	-4380	5937	-8.98	659.61	-1749.17
579	SLV 10	31	-9.31	6.23	-1.3	24696	-1238	-8401	143.83	5262.55	455.72
577	SLV 5	1	-10.44	6.23	-1.3	24686	2833	6745	-84.96	2693.43	-1105.63
576	SLV 5	1	-10.79	6.23	-1.3	23953	2035	5781	-97.2	907.78	-125.52

Sollecitazioni con momento M2 minimo

Vengono mostrate le sole 5 aste più sollecitate.

Asta	Cont.	Pos.	Posizione			Soll.traslazionale			Soll.rotazionale		
Ind.	N.br.		X	Y	Z	F1	F2	F3	M1	M2	M3
399	SLV 6	31	-17.05	-2.93	-1.3	-6171	-3374	-22955	99.96	-18709.98	7466.81
370	SLV 12	1	-5.41	6.58	-1.3	-3371	-8238	33012	-226.82	-15594.04	-10180.62
400	SLV 6	1	-17.05	-2.93	-1.3	7247	7198	7475	-256.29	-13613.5	5406.9
731	SLV 13	1	-6.52	-2.93	-1.3	-23697	15583	29535	-193.23	-13071.91	13558.52
684	SLV 9	31	-11.36	-4.78	-1.3	-14135	-3196	-26693	-26.68	-11572.25	-2352.71

Sollecitazioni con momento M2 massimo

Vengono mostrate le sole 5 aste più sollecitate.

Asta	Cont.	Pos.	Posizione			Soll.traslazionale			Soll.rotazionale		
Ind.	N.br.		X	Y	Z	F1	F2	F3	M1	M2	M3
372	SLV 11	31	-5.41	5.53	-1.3	494	-29634	33183	481.48	18054	8747.94
744	SLV 13	1	-13.11	-0.71	-1.3	-10595	-1756	-6407	-22.66	17020.55	-262.37
734	SLV 13	31	-7.72	-2.93	-1.3	-9275	-1996	29111	-73.01	15952.15	5033.36
396	SLV 2	1	-18.45	-2.93	-1.3	-13967	15596	-27500	179.44	14324.87	14116.1
524	SLV 13	31	-13.11	-0.71	-1.3	-5148	-14122	9797	-87.82	13162.35	1817.27

Sollecitazioni con momento M3 minimo

Vengono mostrate le sole 5 aste più sollecitate.

Asta	Cont.	Pos.	Posizione			Soll.traslazionale			Soll.rotazionale		
Ind.	N.br.		X	Y	Z	F1	F2	F3	M1	M2	M3
751	SLU 84	1	-11.81	-3.6	0.12	0	-9014	0	0	0	-17616.35
750	SLU 83	31	-11.81	-3.6	0.12	597	13503	-2946	-25.77	-3172.78	-17125.39
336	SLV 11	1	-15.31	6.58	-1.3	-6807	-19467	241	-13.16	-71.93	-17078.44
410	SLV 5	27	-14.11	-1.65	-1.3	7475	-155	-2164	-15.7	-2936.26	-17072.81
591	SLV 11	26	-0.47	4.79	-1.3	5209	31	2661	-910.02	-2757.38	-16871.17

Sollecitazioni con momento M3 massimo

Vengono mostrate le sole 5 aste più sollecitate.

Asta	Cont.	Pos.	Posizione			Soll.traslazionale			Soll.rotazionale		
Ind.	N.br.		X	Y	Z	F1	F2	F3	M1	M2	M3
522	SLV 8	31	-15.06	6.23	-1.3	-39624	-37774	-6682	568.47	-2775.36	27054.65
611	SLV 15	1	-0.47	1.05	-1.3	-8373	33402	5622	-350.55	-244.2	26499.51
267	SLV 5	31	-18.45	-2.93	-1.3	-12223	-36606	8671	-599.97	8431.71	25775.83
600	SLV 14	31	-0.47	1.05	-1.3	-9620	-32506	-5478	372.69	-744.31	25717.18
434	SLV 10	1	-6.02	-2.93	-1.3	-20951	32926	-9029	1275.16	8559.39	21885.8

1.1.2 Sollecitazioni gusci

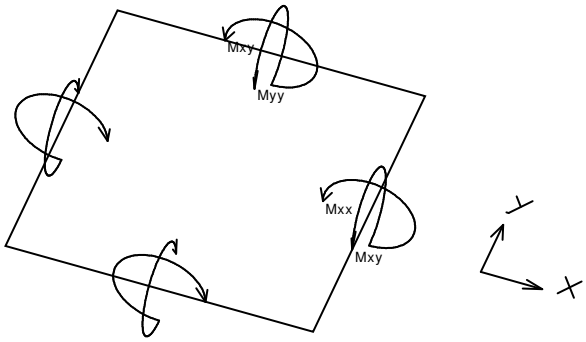
1.1.2.1 Convenzioni di segno gusci

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

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

Convenzione di segno per gusci non verticali

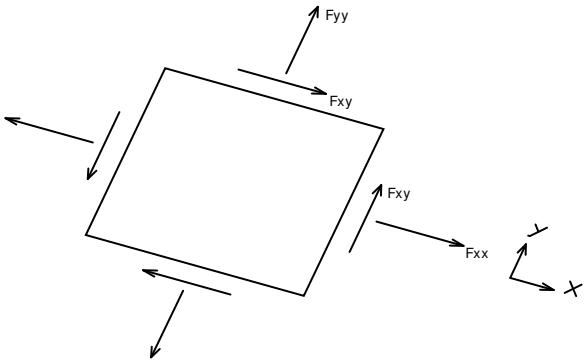
Il sistema di riferimento nel quale sono espressi i parametri di sollecitazione è così definito: origine appartenente al piano dell'elemento, asse x e y contenuti nel piano dell'elemento e terzo asse (z) ortogonale al piano dell'elemento a formare una terna destrogira. In particolare l'asse x ha proiezione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



Si definiscono:

- Mxx: momento flettente [Forza*Lunghezza/Lunghezza] agente sul bordo di normale x (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- Myy: momento flettente [Forza*Lunghezza/Lunghezza] agente sul bordo di normale y (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- Mxy: momento torcente [Forza*Lunghezza/Lunghezza] agente sui bordi (verso positivo indicato dalla freccia in figura).

Per quanto riguarda le sollecitazioni estensionali si faccia riferimento alla figura seguente dove per lo stesso elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione Fxx, Fyy, Fxy.



Si definiscono:

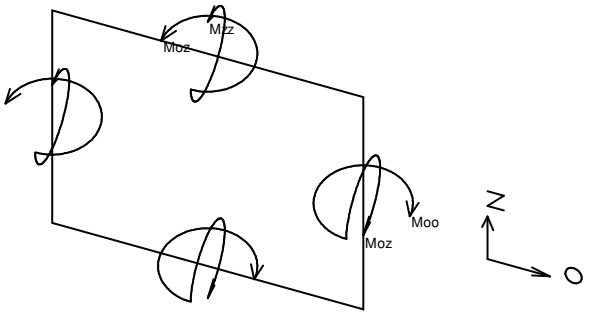
- Fxx: sforzo estensionale [Forza/Lunghezza] agente sul bordo di normale x (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- Fyy: sforzo estensionale [Forza/Lunghezza] agente sul bordo di normale all'asse y (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- Fxy: sforzo di taglio [Forza/Lunghezza] agente sui bordi (verso positivo indicato dalla freccia in figura).

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

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

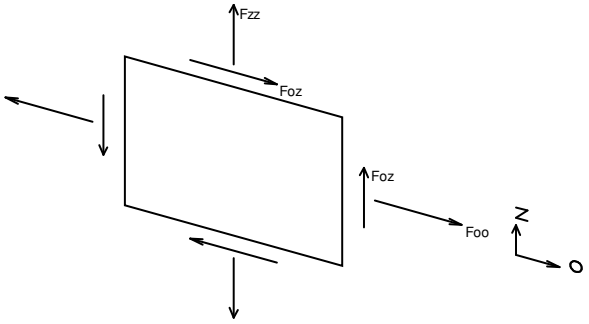
Convenzione di segno per gusci verticali

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



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

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



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

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

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

1.1.2.2 Sollecitazioni estreme gusci

Shell: elemento guscio a cui si riferiscono le sollecitazioni.
Ind: indice del guscio.
Cont.: contesto a cui si riferiscono le sollecitazioni.
N.br.: nome breve della condizione o combinazione di carico.
Nodo: nodo su cui si basa il guscio a cui si riferisce la sollecitazione.
Ind: indice del nodo.
Sollecitazione: valori della sollecitazione.
*M11: componente M11 della sollecitazione del guscio nel nodo indicato. [daN*m/m]*
*M12: componente M12 della sollecitazione del guscio nel nodo indicato. [daN*m/m]*
*M22: componente M22 della sollecitazione del guscio nel nodo indicato. [daN*m/m]*
F11: componente F11 della sollecitazione del guscio nel nodo indicato. [daN/m]
F12: componente F12 della sollecitazione del guscio nel nodo indicato. [daN/m]
F22: componente F22 della sollecitazione del guscio nel nodo indicato. [daN/m]
V13: componente V13 della sollecitazione del guscio nel nodo indicato. [daN/m]
V23: componente V23 della sollecitazione del guscio nel nodo indicato. [daN/m]

Sollecitazioni con momento M11 minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	M11	M12	M22	F11	F12	F22	V13	V23
14773	SLV 9	179	-35296	13347	46322	969	-4567	-10322	71961	-118620
13320	SLV 7	624	-22247	-4648	1811	-130422	-30641	25077	70185	3002
14153	SLV 6	246	-16297	-4783	4950	-5352	6366	-12440	-71379	3611
14162	SLV 6	225	-15626	-4228	3790	14731	-389	-23885	-69632	2711
14135	SLV 10	341	-15051	-3366	-9862	-18174	-2161	3187	-82411	-76774

Sollecitazioni con momento M11 massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	M11	M12	M22	F11	F12	F22	V13	V23
14738	SLV 9	300	25666	1289	16994	-105052	-30146	-63652	48465	91106
14746	SLU 84	312	21549	1124	4327	-14526	3465	-5887	18255	-67069
14773	SLV Y	179	20140	-6058	-22648	-2194	9266	32836	-41871	57507
14143	SLV 6	316	19177	-1957	17420	-74447	24465	-53615	37950	-107112
14135	SLV 10	268	18596	-2908	10193	-18531	-842	-5139	-86974	24879

Sollecitazioni con momento M22 minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	M11	M12	M22	F11	F12	F22	V13	V23
14742	SLV 9	304	-2743	-5788	-26042	6722	-745	-4849	-9385	-51254
14743	SLV 9	305	-2592	-3854	-24183	1250	2805	-5388	-7605	-34529
14773	SLV Y	179	20140	-6058	-22648	-2194	9266	32836	-41871	57507
14741	SLV 9	303	-960	-6539	-21942	12000	-1899	-9079	-9149	-50923
14138	SLV 10	343	-2042	-2293	-21889	1929	3161	-8729	-1703	-51341

Sollecitazioni con momento M22 massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	M11	M12	M22	F11	F12	F22	V13	V23
14773	SLV 9	179	-35296	13347	46322	969	-4567	-10322	71961	-118620
14135	SLV 10	313	10967	-5152	23404	-8816	-1831	2583	47468	-67533
14738	SLU 84	300	21702	3166	21368	-89327	-16004	-40355	37722	121567
14143	SLU 84	316	16261	-3615	21061	-73428	12987	-34937	29630	-130451
14746	SLV 12	312	9815	-2691	12847	-25655	-3922	-13255	17860	-67579

Sollecitazioni con sforzo F11 minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	M11	M12	M22	F11	F12	F22	V13	V23
14738	SLV 2	256	8875	-356	-4165	-188610	-42690	-8801	27393	-18048
14143	SLV 13	266	6461	-422	-4143	-182356	41556	-8218	20801	17712
13233	SLV 7	2919	0	-19	-1	-141006	38713	-8790	-97	12
13234	SLV 7	4106	-415	4	-242	-135930	121780	42246	-1157	1219
13320	SLV 7	624	-22247	-4648	1811	-130422	-30641	25077	70185	3002

Sollecitazioni con sforzo F11 massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	M11	M12	M22	F11	F12	F22	V13	V23
11436	SLV 7	169	-1499	-272	-368	261746	82672	78755	15450	1569
14738	SLV X	256	-291	-237	506	91743	17477	3818	1449	1111
15477	SLV 7	18529	5	-20	20	88991	53781	54272	-73	175
14143	SLV 4	266	4791	-618	-2616	80544	-18484	2978	13010	16727
13304	SLV 7	168	255	-195	-1369	80337	9889	-7291	-6452	3216

Sollecitazioni con sforzo F22 minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	M11	M12	M22	F11	F12	F22	V13	V23
332	SLV 10	337	-84	-126	-324	-63841	55904	-215523	-285	-610
928	SLV 7	1218	15	-8	213	27591	-7815	-154885	-218	-578
1243	SLV 5	312	11	2	-9	-93557	-46553	-149496	26	-1
6454	SLV 12	1285	-52	35	-364	31372	-7008	-147604	-138	1641
1029	SLV 7	3562	-49	15	-248	-1026	-25133	-141370	-480	-2280

Sollecitazioni con sforzo F22 massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	M11	M12	M22	F11	F12	F22	V13	V23
13230	SLV 7	1282	2	0	-15	18070	35482	121167	7	-57
1354	SLV Y	1281	2	1	9	7656	25513	110260	-19	-71
332	SLV Y	337	39	58	148	29917	-24950	104621	151	228
15440	SLV 10	7521	27	0	34	1891	-13	101873	-129	71
15431	SLV 7	5906	76	0	2	1222	15	96364	-222	151

1.1.2.3 Sollecitazioni estreme gusci non verticali

***Shell**: elemento guscio a cui si riferiscono le sollecitazioni.*
***Ind**: indice del guscio.*
***Cont.**: contesto a cui si riferiscono le sollecitazioni.*
***N.br.**: nome breve della condizione o combinazione di carico.*
***Nodo**: nodo su cui si basa il guscio a cui si riferisce la sollecitazione.*
***Ind**: indice del nodo.*

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

Sollecitazioni con momento Mxx minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy
14742	SLV 9	304	-26913	3527	-1871	-4887	-341	6759	-51905	4571
14743	SLV 9	305	-24610	2336	-2165	-4972	-3234	834	-34971	5212
14741	SLV 9	303	-23259	3659	358	-9215	-841	12137	-51675	2550
14773	SLV Y	179	-22761	5646	20252	33011	-8928	-2369	57102	42422
14138	SLV 10	343	-21249	4188	-2682	-9244	-2058	2444	-50926	6737

Sollecitazioni con momento Mxx massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy
14773	SLV 9	179	46571	-12560	-35545	-10408	4458	1055	-117923	-73097
14135	SLV 10	313	23968	4383	10403	2759	1146	-8992	-70218	-43397
14738	SLU 84	300	21675	-3167	21394	-42020	18300	-87661	123253	-31783
14143	SLU 84	316	21402	3364	15920	-36294	-14802	-72070	-131741	-23228
14742	SLV Y	304	12809	-1378	1545	3159	-1127	-5343	17523	-1880

Sollecitazioni con momento Myy minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy
14773	SLV 9	179	46571	-12560	-35545	-10408	4458	1055	-117923	-73097
14153	SLV 6	246	5134	4353	-16480	-12693	-6218	-5099	5043	71292
14162	SLV 6	225	3932	3886	-15768	-23860	1064	14705	3929	69574
14135	SLV 10	341	-9483	3036	-15430	3368	887	-18355	-71773	86801
14738	SLV Y	300	-3488	-265	-11063	51304	-25174	74579	-17759	22010

Sollecitazioni con momento Myy massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy
14738	SLV 9	300	17140	-1703	25521	-66669	32009	-102035	93349	-43990
14746	SLU 84	312	4351	-1289	21526	-5822	-3381	-14592	-66891	-18896
14773	SLV Y	179	-22761	5646	20252	33011	-8928	-2369	57102	42422
14739	SLV 10	301	5622	646	19148	-57795	16934	-5799	26695	-36501
14143	SLV 6	316	17615	2034	18982	-56050	-25364	-72012	-108836	-32677

Sollecitazioni con sforzo Fxx minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy
14738	SLV 6	300	18911	-2021	25209	-94198	43622	-167438	107447	-42367
14143	SLV 9	316	19178	2297	18641	-86883	-38220	-143737	-121345	-31455
14739	SLV 6	301	6334	502	18890	-74781	21146	-15437	36036	-35564
14142	SLV 9	315	9575	296	14138	-72332	-20392	-12409	-72113	-24022
14773	SLV 2	179	16704	-8059	-6659	-63563	21595	1023	-51902	-7903

Sollecitazioni con sforzo Fxx massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy
14773	SLV 15	179	24005	-5443	-16743	71633	-18961	-3383	-56684	-36192
14738	SLV Y	300	-3488	-265	-11063	51304	-25174	74579	-17759	22010
14143	SLV Y	316	-4018	97	-8125	46352	21592	58433	26700	16517
14772	SLV 15	177	777	-1394	-928	44895	-15468	10809	-897	-5486
14739	SLV Y	301	1571	-703	-7600	40824	-12607	2909	5855	16857

Sollecitazioni con sforzo Fyy minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy
14738	SLV 2	256	-4169	-277	8879	-13359	51197	-184053	-16698	-28236
14143	SLV 13	266	-4077	937	6395	-12684	-49847	-177890	16676	-21641
263	SLV 6	1175	-22	21	52	2747	-891	-115885	-217	130
260	SLV 9	1131	-138	-81	-757	7986	5323	-96011	-39	-4643
14747	SLV 2	256	-4365	3525	6871	3066	10058	-52729	-20372	-10668

Sollecitazioni con sforzo Fyy massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Mxx	Mxy	Myy	Fxx	Fxy	Fyy	Vx	Vy
14738	SLV X	256	481	274	-266	5718	-21653	89843	1180	-1393
14143	SLV 4	266	-2538	977	4713	4965	22177	78557	16072	-13811
263	SLV Y	1175	14	-14	-35	-2967	2555	55893	121	-128
260	SLV Y	1131	73	43	388	-4233	-2914	48683	16	2383
14747	SLV X	256	587	73	873	-1354	-3496	31924	1840	-3583

1.1.2.4 Sollecitazioni estreme gusci verticali

Shell: elemento guscio a cui si riferiscono le sollecitazioni.
Ind: indice del guscio.
Cont.: contesto a cui si riferiscono le sollecitazioni.
N.br.: nome breve della condizione o combinazione di carico.
Nodo: nodo su cui si basa il guscio a cui si riferisce la sollecitazione.
Ind: indice del nodo.
Sollecitazione: valori della sollecitazione.
*Moo: componente Moo della sollecitazione del guscio nel nodo indicato. [daN*m/m]*
*Moz: componente Moz della sollecitazione del guscio nel nodo indicato. [daN*m/m]*
*Mzz: componente Mzz della sollecitazione del guscio nel nodo indicato. [daN*m/m]*
Foo: componente Foo della sollecitazione del guscio nel nodo indicato. [daN/m]
Foz: componente Foz della sollecitazione del guscio nel nodo indicato. [daN/m]
Fzz: componente Fzz della sollecitazione del guscio nel nodo indicato. [daN/m]
Vo: componente Vo della sollecitazione del guscio nel nodo indicato. [daN/m]
Vz: componente Vz della sollecitazione del guscio nel nodo indicato. [daN/m]

Sollecitazioni con momento Moo minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
4976	SLV 11	18858	-6579	253	-3609	4455	2033	4274	-16485	10968
4922	SLV 7	18868	-6014	-277	-1848	7597	1991	-3744	15005	6157
4979	SLV 12	18858	-4957	980	-2816	18937	7584	833	27916	8455
4977	SLV 8	18193	-3229	457	-572	1684	327	6508	-8476	-3223
6864	SLV Y	19065	-3121	-176	-758	-5605	1859	-1961	9116	-4217

Sollecitazioni con momento Moo massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
4976	SLV 6	18858	6574	-236	3516	-5855	-3452	-5592	16314	-10771
4922	SLV 10	18868	6015	277	1841	-8356	-945	-2364	-15005	-6118
4979	SLV 5	18858	4873	-994	2689	-16742	-7536	-409	-28807	-8418
4977	SLV 9	18193	3200	-458	566	-3129	-867	-10602	8459	3191
6864	SLV 10	19065	3160	177	765	5475	-836	-2137	-9242	4291

Sollecitazioni con momento Mzz minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
13320	SLV 10	624	-2122	-1205	-9174	1528	21065	61462	10822	29296
13319	SLV 7	623	-705	956	-4933	-13660	4914	10011	4806	20123
14918	SLV 4	662	63	703	-4735	-19732	7812	-5492	1537	-14846
11436	SLV 7	673	680	-539	-4490	-77467	47452	144142	845	15448
13317	SLV 7	621	731	-1760	-4355	16502	-36822	-14527	-5177	13497

Sollecitazioni con momento Mzz massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
13320	SLV 7	624	-1811	4648	22247	25077	-30641	-130422	-3002	-70185
13298	SLV 2	494	818	-343	7992	34718	57359	-3781	7619	-18230
13299	SLV 2	499	326	-199	5647	27394	8480	25875	2935	-12817
14918	SLV 13	662	-434	-579	4776	10534	6209	-47713	-869	13748
13300	SLV 6	517	288	-181	3524	5108	15226	-12763	1412	-5416

Sollecitazioni con sforzo Foo minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
13233	SLV 7	2919	0	-19	-1	-141006	38713	-8790	-97	12
13234	SLV 7	4106	-415	4	-242	-135930	121780	42246	-1157	1219
10841	SLV 4	3546	-11	-16	-11	-122662	52195	-127511	-15	-1
11436	SLV 7	567	188	-741	935	-118198	-69318	-126650	857	-3645
1243	SLV 9	410	-8	1	11	-116353	-69695	-23092	-92	19

Sollecitazioni con sforzo Foo massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
15477	SLV 7	18529	5	-20	20	88991	53781	54272	-73	175
11436	SLV 7	169	365	265	1503	77766	81564	262735	1476	15459
17303	SLV 11	14308	48	0	0	76597	-44	-35095	84	-90

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
13233	SLV 10	2919	0	19	1	74558	-17958	5310	96	-9
13234	SLV 10	4106	410	-3	233	70390	-61960	-22276	1138	-1166

Sollecitazioni con sforzo Fzz minimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
332	SLV 10	337	-84	-126	-324	-63841	55904	-215523	-285	-610
928	SLV 7	1218	15	-8	213	27591	-7815	-154885	-218	-578
1243	SLV 5	312	11	2	-9	-93557	-46553	-149496	26	-1
6454	SLV 12	1285	52	35	364	31372	7008	-147604	-138	-1641
1029	SLV 7	3562	-49	15	-248	-1026	-25133	-141370	-480	-2280

Sollecitazioni con sforzo Fzz massimo

Vengono mostrati i soli 5 gusci più sollecitati.

Shell	Cont.	Nodo	Sollecitazione							
Ind	N.br.	Ind	Moo	Moz	Mzz	Foo	Foz	Fzz	Vo	Vz
11436	SLV 7	169	365	265	1503	77766	81564	262735	1476	15459
13230	SLV 7	1282	2	0	-15	18070	35482	121167	7	-57
1354	SLV Y	1281	2	1	9	7656	25513	110260	-19	-71
332	SLV Y	337	39	58	148	29917	-24950	104621	151	228
15440	SLV 10	7521	27	0	34	1891	-13	101873	-129	71

1.1.3 Sollecitazioni gusci armati

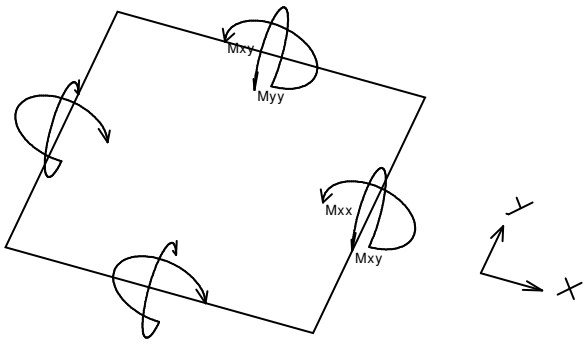
1.1.3.1 Convenzioni di segno gusci

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

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

Convenzione di segno per gusci non verticali

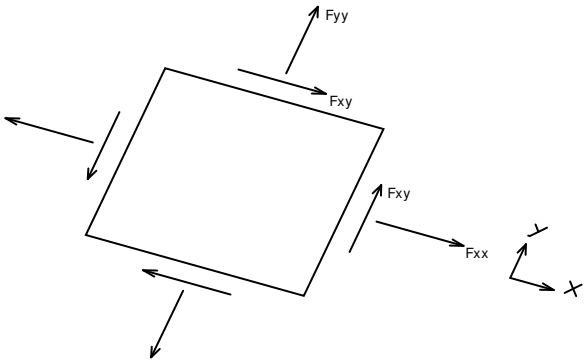
Il sistema di riferimento nel quale sono espressi i parametri di sollecitazione è così definito: origine appartenente al piano dell'elemento, asse x e y contenuti nel piano dell'elemento e terzo asse (z) ortogonale al piano dell'elemento a formare una terna destrogira. In particolare l'asse x ha proiezione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



Si definiscono:

- Mxx: momento flettente [Forza*Lunghezza/Lunghezza] agente sul bordo di normale x (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- Myy: momento flettente [Forza*Lunghezza/Lunghezza] agente sul bordo di normale y (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- Mxy: momento torcente [Forza*Lunghezza/Lunghezza] agente sui bordi (verso positivo indicato dalla freccia in figura).

Per quanto riguarda le sollecitazioni estensionali si faccia riferimento alla figura seguente dove per lo stesso elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione Fxx, Fyy, Fxy.



Si definiscono:

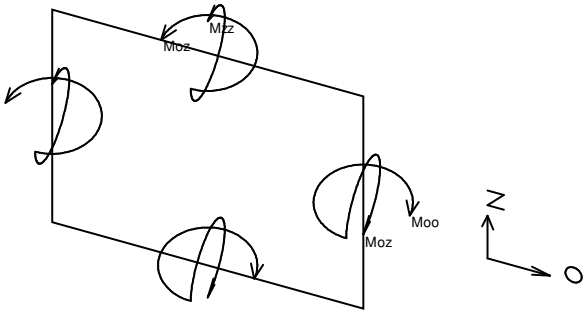
- Fxx: sforzo estensionale [Forza/Lunghezza] agente sul bordo di normale x (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- Fyy: sforzo estensionale [Forza/Lunghezza] agente sul bordo di normale all'asse y (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- Fxy: sforzo di taglio [Forza/Lunghezza] agente sui bordi (verso positivo indicato dalla freccia in figura).

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

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

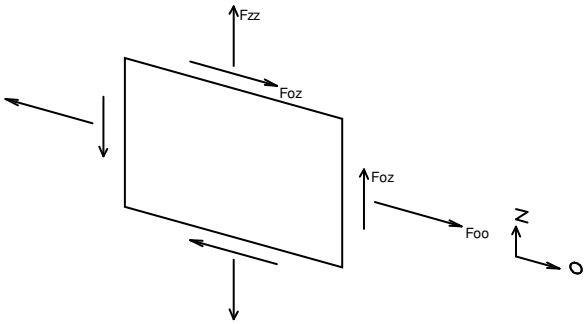
Convenzione di segno per gusci verticali

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



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

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



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

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

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

1.1.4 Sollecitazioni gusci muratura

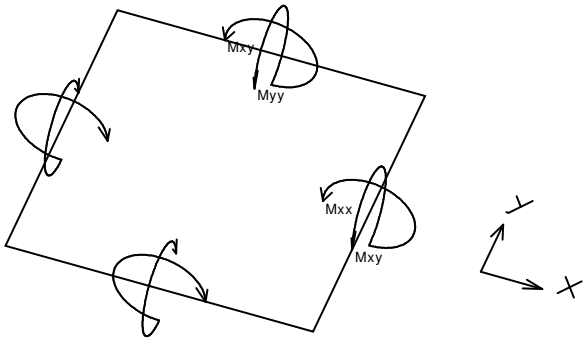
1.1.4.1 Convenzioni di segno gusci muratura

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

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

Convenzione di segno per gusci non verticali

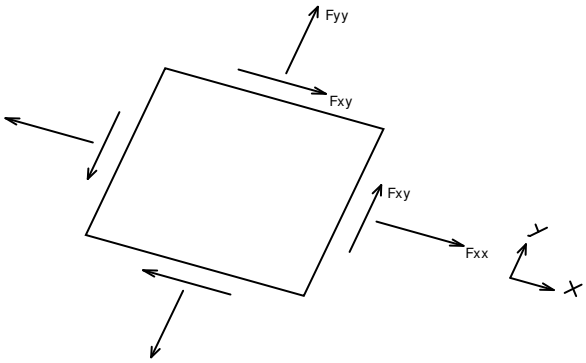
Il sistema di riferimento nel quale sono espressi i parametri di sollecitazione è così definito: origine appartenente al piano dell'elemento, asse x e y contenuti nel piano dell'elemento e terzo asse (z) ortogonale al piano dell'elemento a formare una terna destrogira. In particolare l'asse x ha proiezione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



Si definiscono:

- Mxx: momento flettente [Forza*Lunghezza/Lunghezza] agente sul bordo di normale x (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- Myy: momento flettente [Forza*Lunghezza/Lunghezza] agente sul bordo di normale y (verso positivo indicato dalla freccia in figura che tende le fibre inferiori);
- Mxy: momento torcente [Forza*Lunghezza/Lunghezza] agente sui bordi (verso positivo indicato dalla freccia in figura).

Per quanto riguarda le sollecitazioni estensionali si faccia riferimento alla figura seguente dove per lo stesso elemento infinitesimo di shell orizzontale con indicato il sistema di riferimento e i parametri di sollecitazione Fxx, Fyy, Fxy.

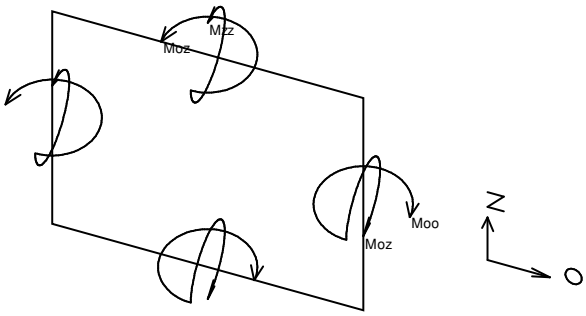


Si definiscono:

- Fxx: sforzo tensionale [Forza/Lunghezza] agente sul bordo di normale x (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- Fyy: sforzo tensionale [Forza/Lunghezza] agente sul bordo di normale all'asse y (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- Fxy: sforzo tagliante [Forza/Lunghezza] agente sui bordi (verso positivo indicato dalla freccia in figura).

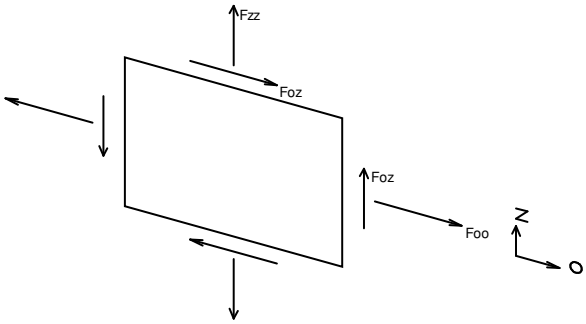
Convenzione di segno per gusci verticali

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



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

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



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

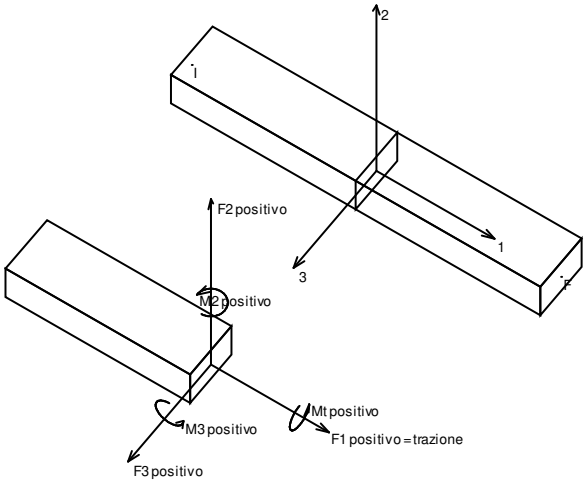
- Foo: sforzo tensionale distribuito [Forza/Lunghezza] applicato al bordo di normale parallela all'asse O (verso positivo indicato dalla freccia in figura che mette in trazione l'elemento);
- Foz: sforzo tagliante distribuito [Forza/Lunghezza] applicato sui bordi (verso positivo indicato dalla freccia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

1.1.5 Sollecitazioni aste in muratura

1.1.5.1 Convenzioni di segno aste

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

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



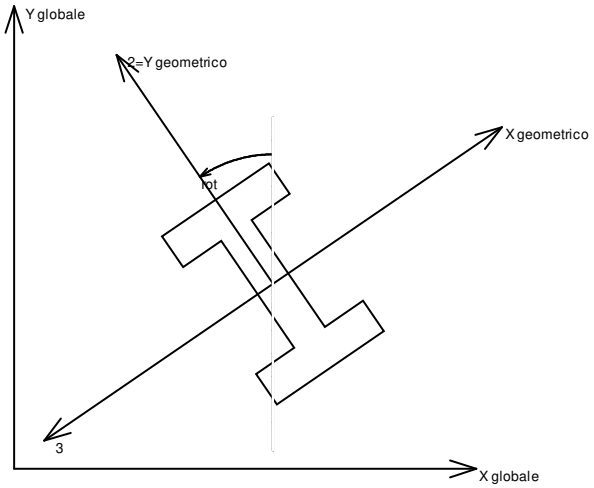
La convenzione sui segni per i parametri di sollecitazione delle aste è la seguente:
presa un'asta con nodo iniziale i e nodo finale f, asse 1 che va da i a f, assi 2 e 3 presi secondo quanto indicato nei paragrafi successivi relativi al sistema locale delle aste sezionando l'asta in un punto e considerando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

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

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

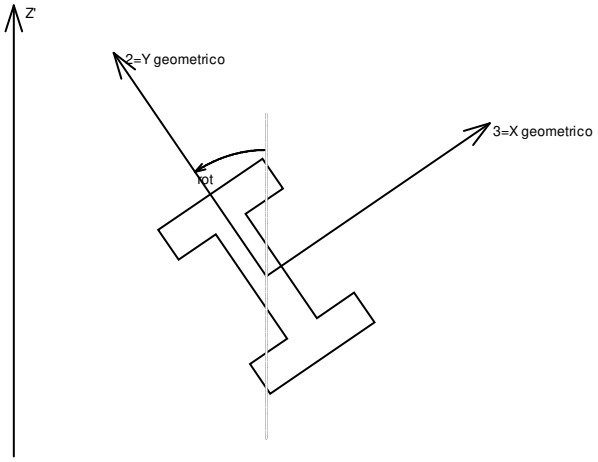
Nel seguito si indica con 1, 2 e 3 il sistema locale dell'asta che non sempre coincide con gli assi principali della sezione. Si ricorda che per assi principali si intendono gli assi rispetto a cui si ha il raggio di inerzia minimo e massimo. Gli assi 1, 2 e 3 rispettano la regola della mano destra.

Sistema locale aste verticali



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

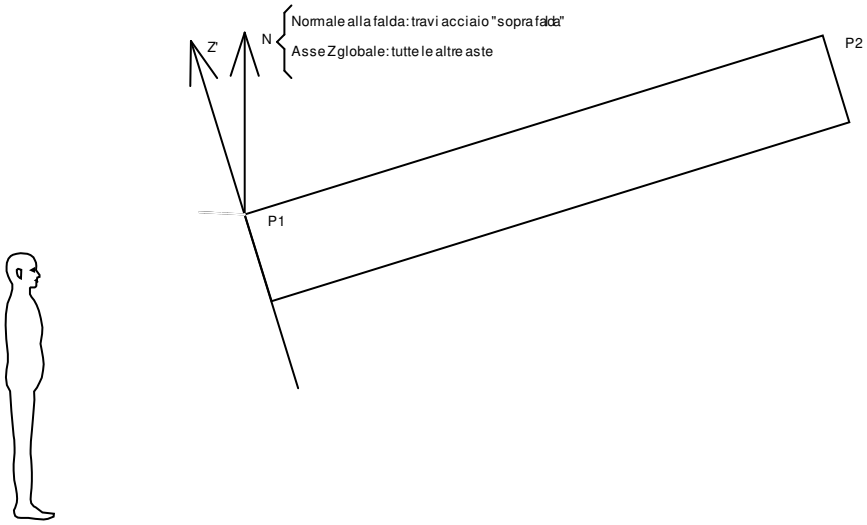
Sistema locale aste non verticali



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

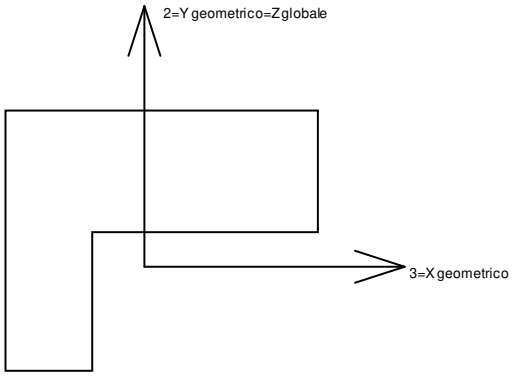
L'asse Z' è illustrato nella figura seguente dove:

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



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

Sistema locale aste derivanti da travi in c.a.



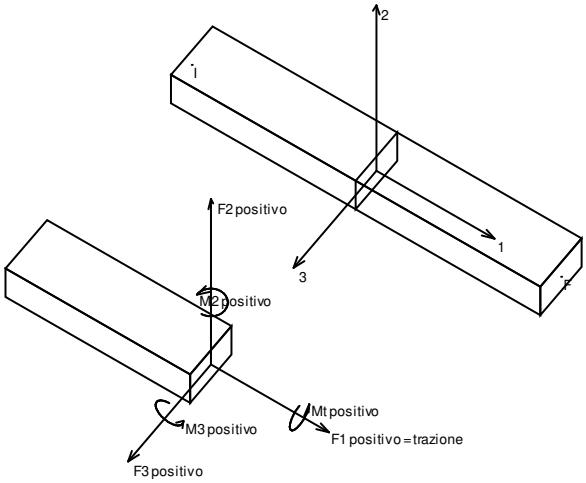
Nella figura si considera l'asse 1 entrante nel foglio (l'osservatore guarda in direzione coincidente a quella dell'asse 1). L'asse 2 è sempre verticale e quindi coincidente con l'asse Z globale nonché con l'asse y geometrico. L'asse 3 coincide con l'asse x geometrico. . Si sottolinea il fatto che gli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

1.1.6 Sollecitazioni aste in muratura FRCM

1.1.6.1 Convenzioni di segno aste

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

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



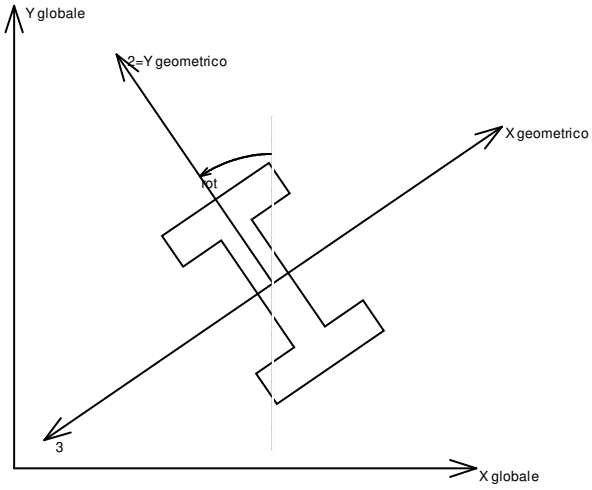
La convenzione sui segni per i parametri di sollecitazione delle aste è la seguente:
presa un'asta con nodo iniziale i e nodo finale f, asse 1 che va da i a f, assi 2 e 3 presi secondo quanto indicato nei paragrafi successivi relativi al sistema locale delle aste sezionando l'asta in un punto e considerando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

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

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

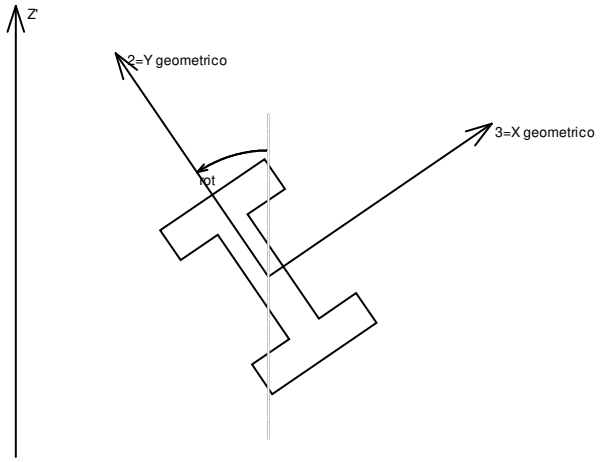
Nel seguito si indica con 1, 2 e 3 il sistema locale dell'asta che non sempre coincide con gli assi principali della sezione. Si ricorda che per assi principali si intendono gli assi rispetto a cui si ha il raggio di inerzia minimo e massimo. Gli assi 1, 2 e 3 rispettano la regola della mano destra.

Sistema locale aste verticali



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

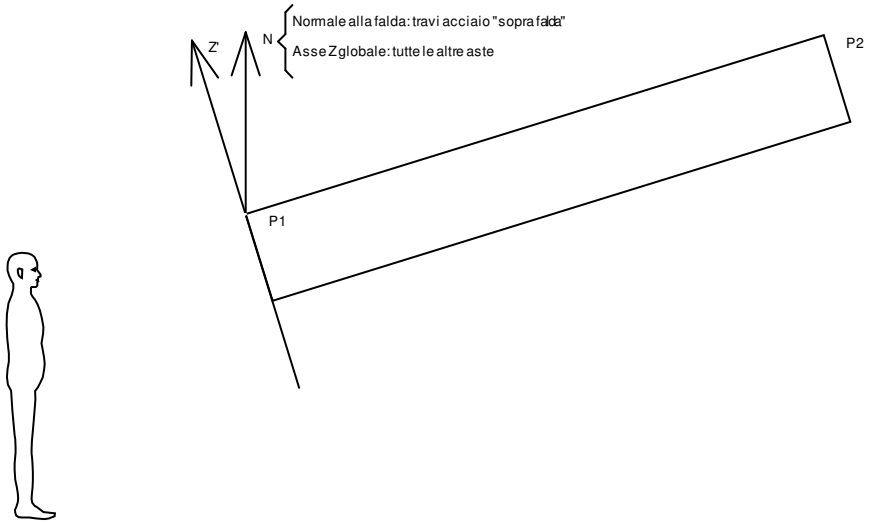
Sistema locale aste non verticali



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

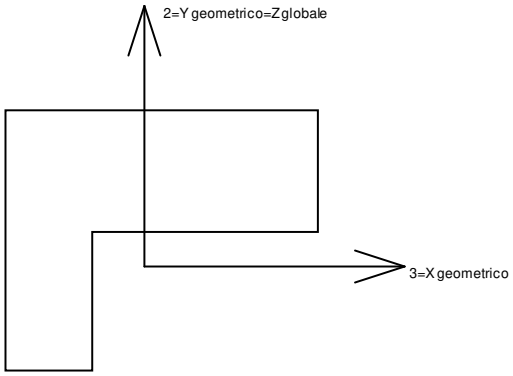
L'asse Z' è illustrato nella figura seguente dove:

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



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

Sistema locale aste derivanti da travi in c.a.



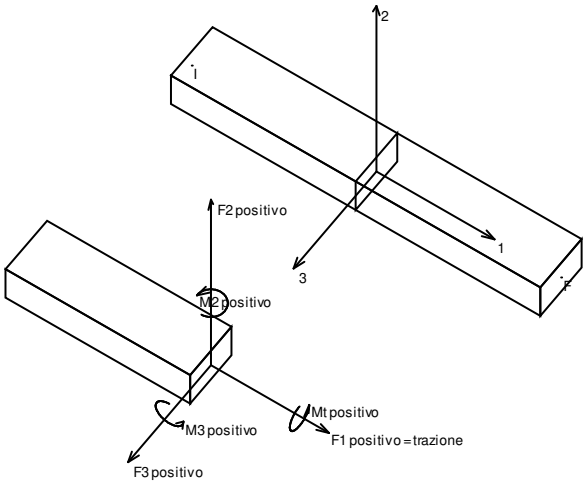
Nella figura si considera l'asse 1 entrante nel foglio (l'osservatore guarda in direzione coincidente a quella dell'asse 1). L'asse 2 è sempre verticale e quindi coincidente con l'asse Z globale nonché con l'asse y geometrico. L'asse 3 coincide con l'asse x geometrico. . Si sottolinea il fatto che gli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

1.1.7 Sollecitazioni aste in muratura armata

1.1.7.1 Convenzioni di segno aste

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

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



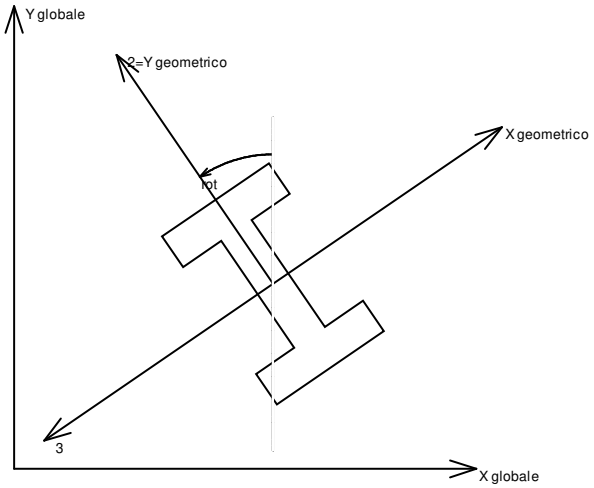
La convenzione sui segni per i parametri di sollecitazione delle aste è la seguente:
presa un'asta con nodo iniziale i e nodo finale f, asse 1 che va da i a f, assi 2 e 3 presi secondo quanto indicato nei paragrafi successivi relativi al sistema locale delle aste sezionando l'asta in un punto e considerando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

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

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

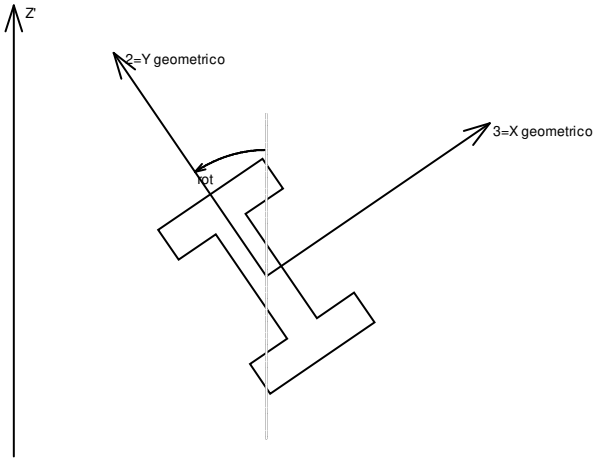
Nel seguito si indica con 1, 2 e 3 il sistema locale dell'asta che non sempre coincide con gli assi principali della sezione. Si ricorda che per assi principali si intendono gli assi rispetto a cui si ha il raggio di inerzia minimo e massimo. Gli assi 1, 2 e 3 rispettano la regola della mano destra.

Sistema locale aste verticali



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

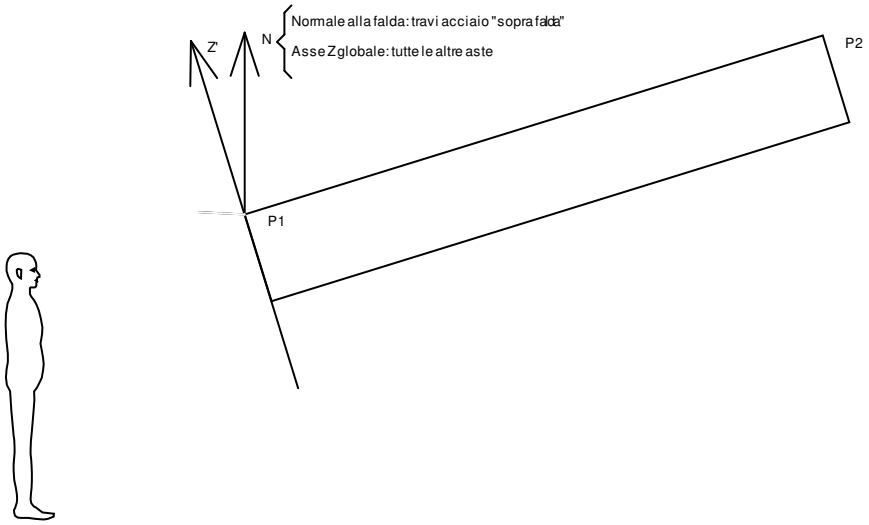
Sistema locale aste non verticali



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

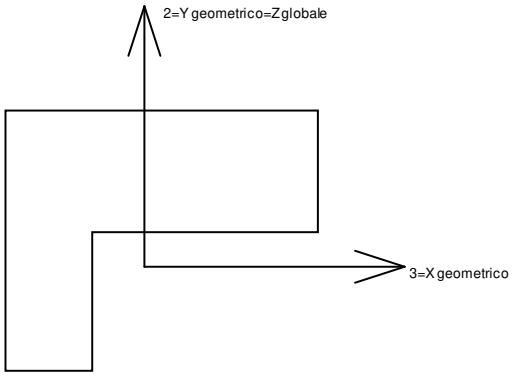
L'asse Z' è illustrato nella figura seguente dove:

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



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

Sistema locale aste derivanti da travi in c.a.



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

1.2 Reazioni nodali

1.2.1 Reazioni nodali estreme

Nodo: *Nodo sollecitato dalla reazione vincolare.*
Ind.: *indice del nodo.*
Cont.: *Contesto a cui si riferisce la reazione vincolare.*
N.br.: *nome breve della condizione o combinazione di carico.*
Reazione a traslazione: *reazione vincolare traslazionale del nodo.*
x: *componente X della reazione vincolare del nodo. [daN]*
y: *componente Y della reazione vincolare del nodo. [daN]*
z: *componente Z della reazione vincolare del nodo. [daN]*
Reazione a rotazione: *reazione vincolare rotazionale del nodo.*
x: *componente X della reazione a rotazione del nodo. [daN*m]*
y: *componente Y della reazione a rotazione del nodo. [daN*m]*
z: *componente Z della reazione a rotazione del nodo. [daN*m]*

Reazioni Fx minime

Vengono mostrati i soli 5 nodi più sollecitati.

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
655	SLV 14	-4357	1157	19072	2492.21	303.38	555.79
640	SLV 14	-4167	1059	13744	1581.27	-1504.55	640.81
685	SLV X	-4109	153	5043	853.79	848.79	682.82
996	SLV 16	-4038	-1030	15456	-3537.8	-420.3	-949.08
452	SLV 13	-3895	972	13611	-541.81	-53.48	-56.73

Reazioni Fx massime

Vengono mostrati i soli 5 nodi più sollecitati.

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
685	SLV 1	4357	967	14913	2245.64	2645.13	-933.44
655	SLV 3	3984	-1165	20277	2882.76	560.37	-547.47
673	SLV 1	3873	1269	16159	4125	5203.48	-1432.88
640	SLV 3	3658	-1310	26267	3497.36	-2673.33	-614.26
996	SLV 1	3639	860	14470	-3304.37	-316.39	846.15

Reazioni Fy minime

Vengono mostrati i soli 5 nodi più sollecitati.

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
685	SLV 7	1373	-4833	20654	3660.4	3858.34	612.3
655	SLV 12	-1363	-4812	21042	2922.66	316.43	244.57
640	SLV 8	980	-4459	22489	3310.21	-2405.22	-592
657	SLV 12	-1331	-4404	18657	-3259.11	475.55	-140.15
673	SLV Y	-135	-4353	2429	554.8	900.89	1387.01

Reazioni Fy massime

Vengono mostrati i soli 5 nodi più sollecitati.

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
685	SLV 10	-939	5005	20250	2904.63	3410.78	-717.89
655	SLV 5	990	4805	18308	2452.31	547.32	-236.25
673	SLV 10	-929	4636	15733	4159.44	4647.37	-1163.06
640	SLV 9	-1489	4208	17521	1768.42	-1772.66	618.55
657	SLV 5	929	4115	14431	-2610.91	531.18	29.74

Reazioni Fz minime

Vengono mostrati i soli 5 nodi più sollecitati.

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
295	SLV Y	285	-1937	-10789	-2228.92	-51.88	-56.8
187	SLV Y	-111	-1283	-9635	-1901.89	-2172.42	305.29
312	SLV Y	290	-2509	-9464	-2871.21	-2548.25	616.97
341	SLV Y	-279	-1976	-9090	-702.96	-1699.35	371.66
339	SLV Y	-284	-1446	-7562	-1532.07	-1660.41	404.4

Reazioni Fz massime

Vengono mostrati i soli 5 nodi più sollecitati.

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
996	SLV 8	188	-3370	34342	-7660.59	-916.37	-19.7
685	SLU 83	300	130	30267	4858.88	5379.93	-75.49
640	SLU 83	-354	-181	29631	3763.66	-3096.13	17.54
655	SLU 83	-265	-15	29221	3992.25	640.45	5.27
673	SLU 83	89	249	26452	6833.02	8193.01	-74.78

1.2.2 Reazioni nodali in combinazioni di carico

***Nodo**: Nodo sollecitato dalla reazione vincolare.*
***Ind.**: indice del nodo.*
***Cont.**: Contesto a cui si riferisce la reazione vincolare.*
***N.br.**: nome breve della condizione o combinazione di carico.*
***Reazione a traslazione**: reazione vincolare traslazionale del nodo.*
***x**: componente X della reazione vincolare del nodo. [daN]*
***y**: componente Y della reazione vincolare del nodo. [daN]*
***z**: componente Z della reazione vincolare del nodo. [daN]*
***Reazione a rotazione**: reazione vincolare rotazionale del nodo.*
***x**: componente X della reazione a rotazione del nodo. [daN*m]*
***y**: componente Y della reazione a rotazione del nodo. [daN*m]*
***z**: componente Z della reazione a rotazione del nodo. [daN*m]*

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
10	SLU 1	12	-9	328	0	0	0
10	SLU 2	12	-8	331	0	0	0
10	SLU 3	12	-9	334	0	0	0
10	SLU 4	12	-8	336	0	0	0
10	SLU 5	12	-8	335	0	0	0
10	SLU 6	12	-8	338	0	0	0
10	SLU 7	12	-8	340	0	0	0
10	SLU 8	12	-8	336	0	0	0
10	SLU 9	12	-8	337	0	0	0
10	SLU 10	13	-9	373	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
10	SLU 11	13	-9	377	0	0	0
10	SLU 12	13	-9	379	0	0	0
10	SLU 13	13	-9	377	0	0	0
10	SLU 14	13	-9	381	0	0	0
10	SLU 15	13	-9	382	0	0	0
10	SLU 16	13	-9	379	0	0	0
10	SLU 17	13	-9	380	0	0	0
10	SLU 18	13	-10	389	0	0	0
10	SLU 19	13	-10	391	0	0	0
10	SLU 20	13	-10	393	0	0	0
10	SLU 21	13	-9	395	0	0	0
10	SLU 22	13	-8	373	0	0	0
10	SLU 23	13	-8	376	0	0	0
10	SLU 24	13	-8	380	0	0	0
10	SLU 25	13	-8	381	0	0	0
10	SLU 26	13	-8	380	0	0	0
10	SLU 27	13	-8	384	0	0	0
10	SLU 28	13	-8	385	0	0	0
10	SLU 29	13	-8	381	0	0	0
10	SLU 30	13	-8	383	0	0	0
10	SLU 31	14	-9	419	0	0	0
10	SLU 32	14	-9	422	0	0	0
10	SLU 33	14	-9	424	0	0	0
10	SLU 34	14	-9	423	0	0	0
10	SLU 35	14	-9	426	0	0	0
10	SLU 36	14	-8	428	0	0	0
10	SLU 37	14	-9	424	0	0	0
10	SLU 38	14	-8	425	0	0	0
10	SLU 39	14	-9	435	0	0	0
10	SLU 40	14	-9	436	0	0	0
10	SLU 41	14	-9	438	0	0	0
10	SLU 42	14	-9	440	0	0	0
10	SLU 43	15	-12	411	0	0	0
10	SLU 44	15	-11	414	0	0	0
10	SLU 45	15	-11	417	0	0	0
10	SLU 46	15	-11	419	0	0	0
10	SLU 47	15	-11	417	0	0	0
10	SLU 48	15	-11	421	0	0	0
10	SLU 49	15	-11	423	0	0	0
10	SLU 50	15	-11	419	0	0	0
10	SLU 51	15	-11	420	0	0	0
10	SLU 52	16	-12	456	0	0	0
10	SLU 53	16	-12	460	0	0	0
10	SLU 54	16	-12	462	0	0	0
10	SLU 55	16	-12	460	0	0	0
10	SLU 56	16	-12	464	0	0	0
10	SLU 57	16	-12	465	0	0	0
10	SLU 58	16	-12	461	0	0	0
10	SLU 59	16	-12	463	0	0	0
10	SLU 60	16	-13	472	0	0	0
10	SLU 61	16	-12	474	0	0	0
10	SLU 62	16	-12	476	0	0	0
10	SLU 63	16	-12	477	0	0	0
10	SLU 64	16	-11	456	0	0	0
10	SLU 65	16	-11	459	0	0	0
10	SLU 66	17	-11	463	0	0	0
10	SLU 67	17	-11	464	0	0	0
10	SLU 68	16	-11	463	0	0	0
10	SLU 69	17	-11	466	0	0	0
10	SLU 70	17	-11	468	0	0	0
10	SLU 71	16	-11	464	0	0	0
10	SLU 72	16	-11	466	0	0	0
10	SLU 73	17	-11	502	0	0	0
10	SLU 74	17	-12	505	0	0	0
10	SLU 75	17	-11	507	0	0	0
10	SLU 76	17	-11	506	0	0	0
10	SLU 77	17	-12	509	0	0	0
10	SLU 78	17	-11	511	0	0	0
10	SLU 79	17	-12	507	0	0	0
10	SLU 80	17	-11	508	0	0	0
10	SLU 81	17	-12	517	0	0	0
10	SLU 82	17	-12	519	0	0	0
10	SLU 83	17	-12	521	0	0	0
10	SLU 84	17	-12	523	0	0	0
10	SLE RA 1	12	-9	341	0	0	0
10	SLE RA 2	12	-8	343	0	0	0
10	SLE RA 3	12	-9	345	0	0	0
10	SLE RA 4	12	-8	346	0	0	0
10	SLE RA 5	12	-8	345	0	0	0
10	SLE RA 6	12	-8	348	0	0	0
10	SLE RA 7	12	-8	349	0	0	0
10	SLE RA 8	12	-8	346	0	0	0
10	SLE RA 9	12	-8	347	0	0	0
10	SLE RA 10	13	-9	371	0	0	0
10	SLE RA 11	13	-9	374	0	0	0
10	SLE RA 12	13	-9	375	0	0	0
10	SLE RA 13	13	-9	374	0	0	0
10	SLE RA 14	13	-9	376	0	0	0
10	SLE RA 15	13	-9	377	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
10	SLE RA 16	13	-9	375	0	0	0
10	SLE RA 17	13	-9	376	0	0	0
10	SLE RA 18	13	-9	382	0	0	0
10	SLE RA 19	13	-9	383	0	0	0
10	SLE RA 20	13	-9	384	0	0	0
10	SLE RA 21	13	-9	385	0	0	0
10	SLE FR 1	12	-9	341	0	0	0
10	SLE FR 2	12	-9	341	0	0	0
10	SLE FR 3	12	-9	342	0	0	0
10	SLE FR 4	12	-9	354	0	0	0
10	SLE FR 5	12	-9	354	0	0	0
10	SLE FR 6	13	-9	361	0	0	0
10	SLE QP 1	12	-9	341	0	0	0
10	SLE QP 2	12	-9	353	0	0	0
10	SLD 1	31	-5	382	0	0	0
10	SLD 2	33	-5	383	0	0	0
10	SLD 3	30	-10	347	0	0	0
10	SLD 4	32	-10	349	0	0	0
10	SLD 5	19	0	413	0	0	0
10	SLD 6	21	0	414	0	0	0
10	SLD 7	16	-17	299	0	0	0
10	SLD 8	17	-17	300	0	0	0
10	SLD 9	8	-1	406	0	0	0
10	SLD 10	9	-1	407	0	0	0
10	SLD 11	4	-18	292	0	0	0
10	SLD 12	6	-18	293	0	0	0
10	SLD 13	-7	-8	358	0	0	0
10	SLD 14	-5	-8	359	0	0	0
10	SLD 15	-8	-13	324	0	0	0
10	SLD 16	-6	-13	325	0	0	0
10	SLV 1	55	1	422	0	0	0
10	SLV 2	61	1	425	0	0	0
10	SLV 3	53	-11	336	0	0	0
10	SLV 4	59	-12	340	0	0	0
10	SLV 5	28	13	504	0	0	0
10	SLV 6	32	13	506	0	0	0
10	SLV 7	20	-29	217	0	0	0
10	SLV 8	24	-29	220	0	0	0
10	SLV 9	1	11	487	0	0	0
10	SLV 10	5	11	489	0	0	0
10	SLV 11	-7	-31	201	0	0	0
10	SLV 12	-3	-31	203	0	0	0
10	SLV 13	-34	-6	367	0	0	0
10	SLV 14	-28	-7	370	0	0	0
10	SLV 15	-36	-19	281	0	0	0
10	SLV 16	-30	-19	284	0	0	0
11	SLU 1	21	-14	593	0	0	0
11	SLU 2	21	-13	597	0	0	0
11	SLU 3	22	-13	604	0	0	0
11	SLU 4	22	-13	607	0	0	0
11	SLU 5	21	-12	604	0	0	0
11	SLU 6	22	-13	611	0	0	0
11	SLU 7	22	-12	613	0	0	0
11	SLU 8	21	-13	606	0	0	0
11	SLU 9	21	-12	609	0	0	0
11	SLU 10	22	-14	674	0	0	0
11	SLU 11	23	-14	680	0	0	0
11	SLU 12	23	-14	683	0	0	0
11	SLU 13	22	-13	680	0	0	0
11	SLU 14	23	-14	687	0	0	0
11	SLU 15	23	-13	690	0	0	0
11	SLU 16	22	-14	683	0	0	0
11	SLU 17	23	-13	685	0	0	0
11	SLU 18	23	-15	702	0	0	0
11	SLU 19	23	-14	705	0	0	0
11	SLU 20	23	-15	709	0	0	0
11	SLU 21	23	-14	711	0	0	0
11	SLU 22	23	-13	674	0	0	0
11	SLU 23	24	-12	679	0	0	0
11	SLU 24	24	-12	685	0	0	0
11	SLU 25	24	-12	688	0	0	0
11	SLU 26	24	-11	686	0	0	0
11	SLU 27	24	-12	692	0	0	0
11	SLU 28	24	-11	695	0	0	0
11	SLU 29	24	-12	688	0	0	0
11	SLU 30	24	-11	691	0	0	0
11	SLU 31	25	-13	755	0	0	0
11	SLU 32	25	-13	762	0	0	0
11	SLU 33	25	-13	765	0	0	0
11	SLU 34	25	-12	762	0	0	0
11	SLU 35	25	-13	769	0	0	0
11	SLU 36	25	-12	771	0	0	0
11	SLU 37	25	-13	764	0	0	0
11	SLU 38	25	-12	767	0	0	0
11	SLU 39	25	-14	783	0	0	0
11	SLU 40	25	-14	786	0	0	0
11	SLU 41	25	-14	790	0	0	0
11	SLU 42	25	-13	793	0	0	0
11	SLU 43	27	-18	743	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
11	SLU 44	27	-17	747	0	0	0
11	SLU 45	27	-18	754	0	0	0
11	SLU 46	27	-17	757	0	0	0
11	SLU 47	27	-17	754	0	0	0
11	SLU 48	27	-17	761	0	0	0
11	SLU 49	27	-17	763	0	0	0
11	SLU 50	27	-17	756	0	0	0
11	SLU 51	27	-17	759	0	0	0
11	SLU 52	28	-18	824	0	0	0
11	SLU 53	28	-19	830	0	0	0
11	SLU 54	28	-18	833	0	0	0
11	SLU 55	28	-18	830	0	0	0
11	SLU 56	28	-18	837	0	0	0
11	SLU 57	28	-18	840	0	0	0
11	SLU 58	28	-18	833	0	0	0
11	SLU 59	28	-18	835	0	0	0
11	SLU 60	28	-19	852	0	0	0
11	SLU 61	28	-19	854	0	0	0
11	SLU 62	28	-19	858	0	0	0
11	SLU 63	29	-19	861	0	0	0
11	SLU 64	29	-17	824	0	0	0
11	SLU 65	29	-16	829	0	0	0
11	SLU 66	29	-17	835	0	0	0
11	SLU 67	29	-16	838	0	0	0
11	SLU 68	29	-16	836	0	0	0
11	SLU 69	29	-16	842	0	0	0
11	SLU 70	29	-16	845	0	0	0
11	SLU 71	29	-16	838	0	0	0
11	SLU 72	29	-16	841	0	0	0
11	SLU 73	30	-17	905	0	0	0
11	SLU 74	30	-18	912	0	0	0
11	SLU 75	30	-17	914	0	0	0
11	SLU 76	30	-17	912	0	0	0
11	SLU 77	31	-17	919	0	0	0
11	SLU 78	31	-17	921	0	0	0
11	SLU 79	30	-17	914	0	0	0
11	SLU 80	30	-17	917	0	0	0
11	SLU 81	31	-18	933	0	0	0
11	SLU 82	31	-18	936	0	0	0
11	SLU 83	31	-18	940	0	0	0
11	SLU 84	31	-18	943	0	0	0
11	SLE RA 1	22	-13	616	0	0	0
11	SLE RA 2	22	-13	619	0	0	0
11	SLE RA 3	22	-13	623	0	0	0
11	SLE RA 4	22	-13	625	0	0	0
11	SLE RA 5	22	-13	624	0	0	0
11	SLE RA 6	22	-13	628	0	0	0
11	SLE RA 7	22	-12	630	0	0	0
11	SLE RA 8	22	-13	625	0	0	0
11	SLE RA 9	22	-12	627	0	0	0
11	SLE RA 10	23	-13	670	0	0	0
11	SLE RA 11	23	-14	674	0	0	0
11	SLE RA 12	23	-13	676	0	0	0
11	SLE RA 13	23	-13	675	0	0	0
11	SLE RA 14	23	-13	679	0	0	0
11	SLE RA 15	23	-13	681	0	0	0
11	SLE RA 16	23	-13	676	0	0	0
11	SLE RA 17	23	-13	678	0	0	0
11	SLE RA 18	23	-14	689	0	0	0
11	SLE RA 19	23	-14	691	0	0	0
11	SLE RA 20	23	-14	693	0	0	0
11	SLE RA 21	23	-14	695	0	0	0
11	SLE FR 1	22	-13	616	0	0	0
11	SLE FR 2	22	-13	617	0	0	0
11	SLE FR 3	22	-13	618	0	0	0
11	SLE FR 4	22	-13	638	0	0	0
11	SLE FR 5	22	-13	640	0	0	0
11	SLE FR 6	22	-14	652	0	0	0
11	SLE QP 1	22	-13	616	0	0	0
11	SLE QP 2	22	-14	638	0	0	0
11	SLD 1	54	-7	678	0	0	0
11	SLD 2	59	-6	680	0	0	0
11	SLD 3	53	-16	618	0	0	0
11	SLD 4	57	-16	620	0	0	0
11	SLD 5	34	3	741	0	0	0
11	SLD 6	37	3	742	0	0	0
11	SLD 7	28	-29	540	0	0	0
11	SLD 8	31	-28	542	0	0	0
11	SLD 9	13	1	734	0	0	0
11	SLD 10	16	2	735	0	0	0
11	SLD 11	8	-30	534	0	0	0
11	SLD 12	11	-30	535	0	0	0
11	SLD 13	-13	-11	656	0	0	0
11	SLD 14	-8	-11	658	0	0	0
11	SLD 15	-15	-21	596	0	0	0
11	SLD 16	-10	-20	598	0	0	0
11	SLV 1	98	2	737	0	0	0
11	SLV 2	109	4	741	0	0	0
11	SLV 3	94	-21	586	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
11	SLV 4	104	-19	591	0	0	0
11	SLV 5	50	25	895	0	0	0
11	SLV 6	57	26	898	0	0	0
11	SLV 7	35	-50	393	0	0	0
11	SLV 8	42	-49	396	0	0	0
11	SLV 9	2	22	880	0	0	0
11	SLV 10	9	23	883	0	0	0
11	SLV 11	-12	-53	377	0	0	0
11	SLV 12	-5	-52	380	0	0	0
11	SLV 13	-60	-8	685	0	0	0
11	SLV 14	-49	-7	690	0	0	0
11	SLV 15	-64	-31	534	0	0	0
11	SLV 16	-54	-29	539	0	0	0
12	SLU 1	19	-10	524	0	0	0
12	SLU 2	19	-10	528	0	0	0
12	SLU 3	19	-10	534	0	0	0
12	SLU 4	19	-10	537	0	0	0
12	SLU 5	19	-9	534	0	0	0
12	SLU 6	19	-10	540	0	0	0
12	SLU 7	19	-9	543	0	0	0
12	SLU 8	19	-10	536	0	0	0
12	SLU 9	19	-9	539	0	0	0
12	SLU 10	20	-10	595	0	0	0
12	SLU 11	20	-11	601	0	0	0
12	SLU 12	20	-10	604	0	0	0
12	SLU 13	20	-10	601	0	0	0
12	SLU 14	20	-10	607	0	0	0
12	SLU 15	20	-10	610	0	0	0
12	SLU 16	20	-10	603	0	0	0
12	SLU 17	20	-10	606	0	0	0
12	SLU 18	20	-11	620	0	0	0
12	SLU 19	20	-11	622	0	0	0
12	SLU 20	20	-11	626	0	0	0
12	SLU 21	20	-11	628	0	0	0
12	SLU 22	21	-9	596	0	0	0
12	SLU 23	21	-9	600	0	0	0
12	SLU 24	21	-9	606	0	0	0
12	SLU 25	21	-9	609	0	0	0
12	SLU 26	21	-8	606	0	0	0
12	SLU 27	21	-9	612	0	0	0
12	SLU 28	21	-8	614	0	0	0
12	SLU 29	21	-9	608	0	0	0
12	SLU 30	21	-8	611	0	0	0
12	SLU 31	22	-9	667	0	0	0
12	SLU 32	22	-10	673	0	0	0
12	SLU 33	22	-9	675	0	0	0
12	SLU 34	22	-9	673	0	0	0
12	SLU 35	22	-9	679	0	0	0
12	SLU 36	22	-9	681	0	0	0
12	SLU 37	22	-9	675	0	0	0
12	SLU 38	22	-9	678	0	0	0
12	SLU 39	22	-10	692	0	0	0
12	SLU 40	22	-10	694	0	0	0
12	SLU 41	22	-10	698	0	0	0
12	SLU 42	22	-10	700	0	0	0
12	SLU 43	23	-14	657	0	0	0
12	SLU 44	24	-13	661	0	0	0
12	SLU 45	24	-13	667	0	0	0
12	SLU 46	24	-13	669	0	0	0
12	SLU 47	24	-13	667	0	0	0
12	SLU 48	24	-13	673	0	0	0
12	SLU 49	24	-13	675	0	0	0
12	SLU 50	24	-13	669	0	0	0
12	SLU 51	24	-13	671	0	0	0
12	SLU 52	24	-14	728	0	0	0
12	SLU 53	25	-14	734	0	0	0
12	SLU 54	25	-14	736	0	0	0
12	SLU 55	25	-14	734	0	0	0
12	SLU 56	25	-14	740	0	0	0
12	SLU 57	25	-13	742	0	0	0
12	SLU 58	25	-14	736	0	0	0
12	SLU 59	25	-13	738	0	0	0
12	SLU 60	25	-15	753	0	0	0
12	SLU 61	25	-14	755	0	0	0
12	SLU 62	25	-15	759	0	0	0
12	SLU 63	25	-14	761	0	0	0
12	SLU 64	25	-13	729	0	0	0
12	SLU 65	25	-12	733	0	0	0
12	SLU 66	26	-12	739	0	0	0
12	SLU 67	26	-12	741	0	0	0
12	SLU 68	26	-12	739	0	0	0
12	SLU 69	26	-12	745	0	0	0
12	SLU 70	26	-12	747	0	0	0
12	SLU 71	26	-12	741	0	0	0
12	SLU 72	26	-12	743	0	0	0
12	SLU 73	26	-13	800	0	0	0
12	SLU 74	27	-13	806	0	0	0
12	SLU 75	27	-13	808	0	0	0
12	SLU 76	27	-13	806	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
12	SLU 77	27	-13	812	0	0	0
12	SLU 78	27	-12	814	0	0	0
12	SLU 79	27	-13	808	0	0	0
12	SLU 80	27	-12	810	0	0	0
12	SLU 81	27	-14	825	0	0	0
12	SLU 82	27	-13	827	0	0	0
12	SLU 83	27	-14	831	0	0	0
12	SLU 84	27	-13	833	0	0	0
12	SLE RA 1	19	-10	545	0	0	0
12	SLE RA 2	19	-10	548	0	0	0
12	SLE RA 3	19	-10	551	0	0	0
12	SLE RA 4	19	-10	553	0	0	0
12	SLE RA 5	19	-9	552	0	0	0
12	SLE RA 6	19	-10	555	0	0	0
12	SLE RA 7	19	-9	557	0	0	0
12	SLE RA 8	19	-10	553	0	0	0
12	SLE RA 9	19	-9	554	0	0	0
12	SLE RA 10	20	-10	592	0	0	0
12	SLE RA 11	20	-10	596	0	0	0
12	SLE RA 12	20	-10	598	0	0	0
12	SLE RA 13	20	-10	596	0	0	0
12	SLE RA 14	20	-10	600	0	0	0
12	SLE RA 15	20	-10	602	0	0	0
12	SLE RA 16	20	-10	597	0	0	0
12	SLE RA 17	20	-10	599	0	0	0
12	SLE RA 18	20	-11	609	0	0	0
12	SLE RA 19	20	-10	610	0	0	0
12	SLE RA 20	20	-11	613	0	0	0
12	SLE RA 21	20	-10	614	0	0	0
12	SLE FR 1	19	-10	545	0	0	0
12	SLE FR 2	19	-10	545	0	0	0
12	SLE FR 3	19	-10	547	0	0	0
12	SLE FR 4	19	-10	565	0	0	0
12	SLE FR 5	19	-10	566	0	0	0
12	SLE FR 6	20	-10	577	0	0	0
12	SLE QP 1	19	-10	545	0	0	0
12	SLE QP 2	19	-10	564	0	0	0
12	SLD 1	48	-5	593	0	0	0
12	SLD 2	52	-4	594	0	0	0
12	SLD 3	46	-14	541	0	0	0
12	SLD 4	50	-12	542	0	0	0
12	SLD 5	29	3	651	0	0	0
12	SLD 6	32	4	652	0	0	0
12	SLD 7	24	-24	478	0	0	0
12	SLD 8	27	-23	479	0	0	0
12	SLD 9	12	3	649	0	0	0
12	SLD 10	14	3	650	0	0	0
12	SLD 11	7	-25	476	0	0	0
12	SLD 12	9	-24	477	0	0	0
12	SLD 13	-11	-8	586	0	0	0
12	SLD 14	-7	-7	588	0	0	0
12	SLD 15	-13	-16	534	0	0	0
12	SLD 16	-9	-15	536	0	0	0
12	SLV 1	86	2	635	0	0	0
12	SLV 2	95	4	638	0	0	0
12	SLV 3	82	-18	505	0	0	0
12	SLV 4	91	-15	508	0	0	0
12	SLV 5	43	23	782	0	0	0
12	SLV 6	50	25	785	0	0	0
12	SLV 7	31	-43	348	0	0	0
12	SLV 8	37	-42	350	0	0	0
12	SLV 9	2	21	778	0	0	0
12	SLV 10	8	23	780	0	0	0
12	SLV 11	-11	-46	343	0	0	0
12	SLV 12	-5	-44	346	0	0	0
12	SLV 13	-53	-5	620	0	0	0
12	SLV 14	-43	-2	623	0	0	0
12	SLV 15	-56	-25	490	0	0	0
12	SLV 16	-47	-22	493	0	0	0
13	SLU 1	19	-9	530	0	0	0
13	SLU 2	19	-8	534	0	0	0
13	SLU 3	19	-9	540	0	0	0
13	SLU 4	19	-8	542	0	0	0
13	SLU 5	19	-8	540	0	0	0
13	SLU 6	19	-8	546	0	0	0
13	SLU 7	19	-8	548	0	0	0
13	SLU 8	19	-8	542	0	0	0
13	SLU 9	19	-8	544	0	0	0
13	SLU 10	20	-9	600	0	0	0
13	SLU 11	20	-9	606	0	0	0
13	SLU 12	20	-9	609	0	0	0
13	SLU 13	20	-8	606	0	0	0
13	SLU 14	20	-9	612	0	0	0
13	SLU 15	20	-8	615	0	0	0
13	SLU 16	20	-9	608	0	0	0
13	SLU 17	20	-8	611	0	0	0
13	SLU 18	20	-10	625	0	0	0
13	SLU 19	20	-9	628	0	0	0
13	SLU 20	20	-9	631	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
13	SLU 21	20	-9	634	0	0	0
13	SLU 22	21	-8	602	0	0	0
13	SLU 23	21	-7	606	0	0	0
13	SLU 24	21	-7	612	0	0	0
13	SLU 25	21	-7	614	0	0	0
13	SLU 26	21	-7	612	0	0	0
13	SLU 27	21	-7	618	0	0	0
13	SLU 28	21	-7	620	0	0	0
13	SLU 29	21	-7	614	0	0	0
13	SLU 30	21	-7	616	0	0	0
13	SLU 31	22	-8	673	0	0	0
13	SLU 32	22	-8	679	0	0	0
13	SLU 33	22	-7	681	0	0	0
13	SLU 34	22	-7	679	0	0	0
13	SLU 35	22	-8	685	0	0	0
13	SLU 36	22	-7	687	0	0	0
13	SLU 37	22	-8	681	0	0	0
13	SLU 38	22	-7	683	0	0	0
13	SLU 39	22	-8	698	0	0	0
13	SLU 40	22	-8	700	0	0	0
13	SLU 41	22	-8	703	0	0	0
13	SLU 42	22	-8	706	0	0	0
13	SLU 43	23	-12	664	0	0	0
13	SLU 44	24	-11	668	0	0	0
13	SLU 45	24	-12	674	0	0	0
13	SLU 46	24	-11	676	0	0	0
13	SLU 47	24	-11	674	0	0	0
13	SLU 48	24	-11	680	0	0	0
13	SLU 49	24	-11	682	0	0	0
13	SLU 50	24	-11	676	0	0	0
13	SLU 51	24	-11	678	0	0	0
13	SLU 52	24	-12	735	0	0	0
13	SLU 53	25	-12	741	0	0	0
13	SLU 54	25	-12	743	0	0	0
13	SLU 55	25	-11	741	0	0	0
13	SLU 56	25	-12	747	0	0	0
13	SLU 57	25	-11	749	0	0	0
13	SLU 58	25	-12	743	0	0	0
13	SLU 59	25	-11	745	0	0	0
13	SLU 60	25	-13	759	0	0	0
13	SLU 61	25	-12	762	0	0	0
13	SLU 62	25	-12	765	0	0	0
13	SLU 63	25	-12	768	0	0	0
13	SLU 64	25	-11	736	0	0	0
13	SLU 65	25	-10	740	0	0	0
13	SLU 66	26	-10	746	0	0	0
13	SLU 67	26	-10	748	0	0	0
13	SLU 68	26	-10	746	0	0	0
13	SLU 69	26	-10	752	0	0	0
13	SLU 70	26	-10	754	0	0	0
13	SLU 71	26	-10	748	0	0	0
13	SLU 72	26	-10	750	0	0	0
13	SLU 73	26	-11	807	0	0	0
13	SLU 74	27	-11	813	0	0	0
13	SLU 75	27	-11	815	0	0	0
13	SLU 76	27	-10	813	0	0	0
13	SLU 77	27	-11	819	0	0	0
13	SLU 78	27	-10	821	0	0	0
13	SLU 79	27	-11	815	0	0	0
13	SLU 80	27	-10	817	0	0	0
13	SLU 81	27	-12	832	0	0	0
13	SLU 82	27	-11	834	0	0	0
13	SLU 83	27	-11	838	0	0	0
13	SLU 84	27	-11	840	0	0	0
13	SLE RA 1	19	-9	550	0	0	0
13	SLE RA 2	19	-8	553	0	0	0
13	SLE RA 3	19	-8	557	0	0	0
13	SLE RA 4	19	-8	558	0	0	0
13	SLE RA 5	19	-8	557	0	0	0
13	SLE RA 6	19	-8	561	0	0	0
13	SLE RA 7	19	-8	562	0	0	0
13	SLE RA 8	19	-8	558	0	0	0
13	SLE RA 9	19	-8	560	0	0	0
13	SLE RA 10	20	-8	598	0	0	0
13	SLE RA 11	20	-9	602	0	0	0
13	SLE RA 12	20	-8	603	0	0	0
13	SLE RA 13	20	-8	602	0	0	0
13	SLE RA 14	20	-8	605	0	0	0
13	SLE RA 15	20	-8	607	0	0	0
13	SLE RA 16	20	-8	603	0	0	0
13	SLE RA 17	20	-8	604	0	0	0
13	SLE RA 18	20	-9	614	0	0	0
13	SLE RA 19	20	-9	616	0	0	0
13	SLE RA 20	20	-9	618	0	0	0
13	SLE RA 21	20	-9	620	0	0	0
13	SLE FR 1	19	-9	550	0	0	0
13	SLE FR 2	19	-8	551	0	0	0
13	SLE FR 3	19	-8	552	0	0	0
13	SLE FR 4	19	-9	570	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
13	SLE FR 5	19	-9	571	0	0	0
13	SLE FR 6	20	-9	582	0	0	0
13	SLE QP 1	19	-9	550	0	0	0
13	SLE QP 2	19	-9	569	0	0	0
13	SLD 1	48	-4	589	0	0	0
13	SLD 2	52	-3	591	0	0	0
13	SLD 3	46	-13	538	0	0	0
13	SLD 4	50	-11	539	0	0	0
13	SLD 5	29	5	653	0	0	0
13	SLD 6	32	6	654	0	0	0
13	SLD 7	24	-23	482	0	0	0
13	SLD 8	27	-22	483	0	0	0
13	SLD 9	12	4	656	0	0	0
13	SLD 10	14	5	657	0	0	0
13	SLD 11	7	-23	485	0	0	0
13	SLD 12	9	-22	486	0	0	0
13	SLD 13	-11	-6	599	0	0	0
13	SLD 14	-7	-5	601	0	0	0
13	SLD 15	-13	-15	548	0	0	0
13	SLD 16	-9	-13	549	0	0	0
13	SLV 1	86	2	621	0	0	0
13	SLV 2	95	6	623	0	0	0
13	SLV 3	82	-19	492	0	0	0
13	SLV 4	91	-14	495	0	0	0
13	SLV 5	43	24	779	0	0	0
13	SLV 6	50	27	781	0	0	0
13	SLV 7	31	-43	351	0	0	0
13	SLV 8	37	-40	353	0	0	0
13	SLV 9	2	23	786	0	0	0
13	SLV 10	8	26	788	0	0	0
13	SLV 11	-11	-44	358	0	0	0
13	SLV 12	-5	-41	360	0	0	0
13	SLV 13	-53	-3	644	0	0	0
13	SLV 14	-43	1	646	0	0	0
13	SLV 15	-56	-23	515	0	0	0
13	SLV 16	-47	-19	518	0	0	0
14	SLU 1	19	-7	534	0	0	0
14	SLU 2	19	-7	538	0	0	0
14	SLU 3	19	-7	544	0	0	0
14	SLU 4	19	-7	547	0	0	0
14	SLU 5	19	-6	544	0	0	0
14	SLU 6	19	-7	550	0	0	0
14	SLU 7	19	-6	553	0	0	0
14	SLU 8	19	-7	546	0	0	0
14	SLU 9	19	-6	549	0	0	0
14	SLU 10	20	-7	605	0	0	0
14	SLU 11	20	-7	611	0	0	0
14	SLU 12	20	-7	614	0	0	0
14	SLU 13	20	-7	611	0	0	0
14	SLU 14	20	-7	617	0	0	0
14	SLU 15	20	-7	619	0	0	0
14	SLU 16	20	-7	613	0	0	0
14	SLU 17	20	-7	615	0	0	0
14	SLU 18	20	-8	630	0	0	0
14	SLU 19	20	-7	632	0	0	0
14	SLU 20	20	-8	636	0	0	0
14	SLU 21	20	-7	638	0	0	0
14	SLU 22	20	-6	607	0	0	0
14	SLU 23	21	-5	611	0	0	0
14	SLU 24	21	-6	617	0	0	0
14	SLU 25	21	-5	619	0	0	0
14	SLU 26	21	-5	617	0	0	0
14	SLU 27	21	-5	623	0	0	0
14	SLU 28	21	-5	625	0	0	0
14	SLU 29	21	-5	619	0	0	0
14	SLU 30	21	-5	621	0	0	0
14	SLU 31	22	-6	678	0	0	0
14	SLU 32	22	-6	684	0	0	0
14	SLU 33	22	-6	686	0	0	0
14	SLU 34	22	-5	684	0	0	0
14	SLU 35	22	-6	690	0	0	0
14	SLU 36	22	-5	692	0	0	0
14	SLU 37	22	-6	686	0	0	0
14	SLU 38	22	-5	688	0	0	0
14	SLU 39	22	-7	702	0	0	0
14	SLU 40	22	-6	705	0	0	0
14	SLU 41	22	-6	708	0	0	0
14	SLU 42	22	-6	711	0	0	0
14	SLU 43	23	-10	670	0	0	0
14	SLU 44	23	-9	674	0	0	0
14	SLU 45	24	-10	680	0	0	0
14	SLU 46	24	-9	682	0	0	0
14	SLU 47	24	-9	680	0	0	0
14	SLU 48	24	-9	686	0	0	0
14	SLU 49	24	-9	688	0	0	0
14	SLU 50	24	-9	682	0	0	0
14	SLU 51	24	-9	684	0	0	0
14	SLU 52	24	-10	741	0	0	0
14	SLU 53	25	-10	747	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
14	SLU 54	25	-10	749	0	0	0
14	SLU 55	25	-9	746	0	0	0
14	SLU 56	25	-10	753	0	0	0
14	SLU 57	25	-9	755	0	0	0
14	SLU 58	25	-10	749	0	0	0
14	SLU 59	25	-9	751	0	0	0
14	SLU 60	25	-11	765	0	0	0
14	SLU 61	25	-10	768	0	0	0
14	SLU 62	25	-10	771	0	0	0
14	SLU 63	25	-10	774	0	0	0
14	SLU 64	25	-9	742	0	0	0
14	SLU 65	25	-8	746	0	0	0
14	SLU 66	26	-8	752	0	0	0
14	SLU 67	26	-8	755	0	0	0
14	SLU 68	26	-8	752	0	0	0
14	SLU 69	26	-8	758	0	0	0
14	SLU 70	26	-8	761	0	0	0
14	SLU 71	26	-8	754	0	0	0
14	SLU 72	26	-8	757	0	0	0
14	SLU 73	26	-8	813	0	0	0
14	SLU 74	27	-9	819	0	0	0
14	SLU 75	27	-8	822	0	0	0
14	SLU 76	26	-8	819	0	0	0
14	SLU 77	27	-8	825	0	0	0
14	SLU 78	27	-8	828	0	0	0
14	SLU 79	26	-8	821	0	0	0
14	SLU 80	27	-8	824	0	0	0
14	SLU 81	27	-9	838	0	0	0
14	SLU 82	27	-9	840	0	0	0
14	SLU 83	27	-9	844	0	0	0
14	SLU 84	27	-8	846	0	0	0
14	SLE RA 1	19	-7	555	0	0	0
14	SLE RA 2	19	-7	558	0	0	0
14	SLE RA 3	19	-7	562	0	0	0
14	SLE RA 4	19	-6	563	0	0	0
14	SLE RA 5	19	-6	562	0	0	0
14	SLE RA 6	19	-7	566	0	0	0
14	SLE RA 7	19	-6	567	0	0	0
14	SLE RA 8	19	-7	563	0	0	0
14	SLE RA 9	19	-6	565	0	0	0
14	SLE RA 10	20	-7	602	0	0	0
14	SLE RA 11	20	-7	606	0	0	0
14	SLE RA 12	20	-7	608	0	0	0
14	SLE RA 13	20	-7	606	0	0	0
14	SLE RA 14	20	-7	610	0	0	0
14	SLE RA 15	20	-6	612	0	0	0
14	SLE RA 16	20	-7	608	0	0	0
14	SLE RA 17	20	-7	609	0	0	0
14	SLE RA 18	20	-7	619	0	0	0
14	SLE RA 19	20	-7	620	0	0	0
14	SLE RA 20	20	-7	623	0	0	0
14	SLE RA 21	20	-7	624	0	0	0
14	SLE FR 1	19	-7	555	0	0	0
14	SLE FR 2	19	-7	556	0	0	0
14	SLE FR 3	19	-7	557	0	0	0
14	SLE FR 4	19	-7	575	0	0	0
14	SLE FR 5	19	-7	576	0	0	0
14	SLE FR 6	20	-7	587	0	0	0
14	SLE QP 1	19	-7	555	0	0	0
14	SLE QP 2	19	-7	574	0	0	0
14	SLD 1	48	-5	587	0	0	0
14	SLD 2	52	-2	588	0	0	0
14	SLD 3	46	-13	537	0	0	0
14	SLD 4	50	-11	538	0	0	0
14	SLD 5	29	6	654	0	0	0
14	SLD 6	32	7	655	0	0	0
14	SLD 7	24	-22	487	0	0	0
14	SLD 8	27	-20	487	0	0	0
14	SLD 9	12	6	661	0	0	0
14	SLD 10	14	8	662	0	0	0
14	SLD 11	7	-22	494	0	0	0
14	SLD 12	9	-20	494	0	0	0
14	SLD 13	-11	-3	611	0	0	0
14	SLD 14	-7	-1	611	0	0	0
14	SLD 15	-13	-12	560	0	0	0
14	SLD 16	-9	-9	561	0	0	0
14	SLV 1	86	-1	609	0	0	0
14	SLV 2	95	4	611	0	0	0
14	SLV 3	82	-22	483	0	0	0
14	SLV 4	91	-16	485	0	0	0
14	SLV 5	43	24	776	0	0	0
14	SLV 6	50	28	777	0	0	0
14	SLV 7	31	-43	355	0	0	0
14	SLV 8	37	-39	356	0	0	0
14	SLV 9	2	25	792	0	0	0
14	SLV 10	8	29	793	0	0	0
14	SLV 11	-11	-42	371	0	0	0
14	SLV 12	-5	-38	373	0	0	0
14	SLV 13	-53	2	664	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
14	SLV 14	-43	7	666	0	0	0
14	SLV 15	-56	-19	537	0	0	0
14	SLV 16	-47	-13	539	0	0	0
15	SLU 1	21	-7	615	0	0	0
15	SLU 2	21	-6	619	0	0	0
15	SLU 3	21	-6	626	0	0	0
15	SLU 4	21	-6	629	0	0	0
15	SLU 5	21	-6	626	0	0	0
15	SLU 6	22	-6	633	0	0	0
15	SLU 7	22	-5	636	0	0	0
15	SLU 8	21	-6	628	0	0	0
15	SLU 9	21	-5	631	0	0	0
15	SLU 10	22	-6	695	0	0	0
15	SLU 11	23	-6	702	0	0	0
15	SLU 12	23	-6	705	0	0	0
15	SLU 13	22	-6	702	0	0	0
15	SLU 14	23	-6	709	0	0	0
15	SLU 15	23	-6	712	0	0	0
15	SLU 16	22	-6	705	0	0	0
15	SLU 17	22	-6	707	0	0	0
15	SLU 18	23	-7	724	0	0	0
15	SLU 19	23	-7	726	0	0	0
15	SLU 20	23	-7	731	0	0	0
15	SLU 21	23	-6	733	0	0	0
15	SLU 22	23	-5	698	0	0	0
15	SLU 23	23	-4	702	0	0	0
15	SLU 24	24	-5	709	0	0	0
15	SLU 25	24	-4	712	0	0	0
15	SLU 26	24	-4	709	0	0	0
15	SLU 27	24	-4	716	0	0	0
15	SLU 28	24	-4	719	0	0	0
15	SLU 29	24	-4	712	0	0	0
15	SLU 30	24	-4	714	0	0	0
15	SLU 31	25	-4	779	0	0	0
15	SLU 32	25	-5	786	0	0	0
15	SLU 33	25	-4	788	0	0	0
15	SLU 34	25	-4	785	0	0	0
15	SLU 35	25	-4	792	0	0	0
15	SLU 36	25	-4	795	0	0	0
15	SLU 37	25	-4	788	0	0	0
15	SLU 38	25	-4	790	0	0	0
15	SLU 39	25	-5	807	0	0	0
15	SLU 40	25	-5	810	0	0	0
15	SLU 41	25	-5	814	0	0	0
15	SLU 42	25	-4	816	0	0	0
15	SLU 43	27	-9	771	0	0	0
15	SLU 44	27	-9	775	0	0	0
15	SLU 45	27	-9	782	0	0	0
15	SLU 46	27	-8	785	0	0	0
15	SLU 47	27	-8	782	0	0	0
15	SLU 48	27	-8	789	0	0	0
15	SLU 49	27	-8	792	0	0	0
15	SLU 50	27	-9	784	0	0	0
15	SLU 51	27	-8	787	0	0	0
15	SLU 52	28	-9	851	0	0	0
15	SLU 53	28	-9	858	0	0	0
15	SLU 54	28	-9	861	0	0	0
15	SLU 55	28	-8	858	0	0	0
15	SLU 56	28	-9	865	0	0	0
15	SLU 57	28	-8	868	0	0	0
15	SLU 58	28	-9	861	0	0	0
15	SLU 59	28	-8	863	0	0	0
15	SLU 60	28	-10	880	0	0	0
15	SLU 61	28	-9	882	0	0	0
15	SLU 62	28	-9	886	0	0	0
15	SLU 63	28	-9	889	0	0	0
15	SLU 64	29	-8	854	0	0	0
15	SLU 65	29	-7	858	0	0	0
15	SLU 66	29	-7	865	0	0	0
15	SLU 67	29	-7	868	0	0	0
15	SLU 68	29	-6	865	0	0	0
15	SLU 69	29	-7	872	0	0	0
15	SLU 70	29	-6	875	0	0	0
15	SLU 71	29	-7	868	0	0	0
15	SLU 72	29	-6	870	0	0	0
15	SLU 73	30	-7	935	0	0	0
15	SLU 74	30	-7	942	0	0	0
15	SLU 75	30	-7	944	0	0	0
15	SLU 76	30	-7	941	0	0	0
15	SLU 77	30	-7	948	0	0	0
15	SLU 78	30	-6	951	0	0	0
15	SLU 79	30	-7	944	0	0	0
15	SLU 80	30	-7	946	0	0	0
15	SLU 81	31	-8	963	0	0	0
15	SLU 82	31	-7	965	0	0	0
15	SLU 83	31	-8	970	0	0	0
15	SLU 84	31	-7	972	0	0	0
15	SLE RA 1	22	-6	639	0	0	0
15	SLE RA 2	22	-6	642	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
15	SLE RA 3	22	-6	646	0	0	0
15	SLE RA 4	22	-6	648	0	0	0
15	SLE RA 5	22	-5	646	0	0	0
15	SLE RA 6	22	-6	651	0	0	0
15	SLE RA 7	22	-5	653	0	0	0
15	SLE RA 8	22	-6	648	0	0	0
15	SLE RA 9	22	-5	649	0	0	0
15	SLE RA 10	23	-6	692	0	0	0
15	SLE RA 11	23	-6	697	0	0	0
15	SLE RA 12	23	-6	699	0	0	0
15	SLE RA 13	23	-6	697	0	0	0
15	SLE RA 14	23	-6	702	0	0	0
15	SLE RA 15	23	-5	703	0	0	0
15	SLE RA 16	23	-6	698	0	0	0
15	SLE RA 17	23	-6	700	0	0	0
15	SLE RA 18	23	-6	711	0	0	0
15	SLE RA 19	23	-6	713	0	0	0
15	SLE RA 20	23	-6	716	0	0	0
15	SLE RA 21	23	-6	717	0	0	0
15	SLE FR 1	22	-6	639	0	0	0
15	SLE FR 2	22	-6	639	0	0	0
15	SLE FR 3	22	-6	640	0	0	0
15	SLE FR 4	22	-6	661	0	0	0
15	SLE FR 5	22	-6	662	0	0	0
15	SLE FR 6	22	-6	675	0	0	0
15	SLE QP 1	22	-6	639	0	0	0
15	SLE QP 2	22	-6	660	0	0	0
15	SLD 1	54	-4	667	0	0	0
15	SLD 2	59	0	668	0	0	0
15	SLD 3	53	-14	611	0	0	0
15	SLD 4	57	-10	611	0	0	0
15	SLD 5	34	8	748	0	0	0
15	SLD 6	37	11	749	0	0	0
15	SLD 7	28	-24	560	0	0	0
15	SLD 8	31	-21	560	0	0	0
15	SLD 9	13	9	761	0	0	0
15	SLD 10	16	11	761	0	0	0
15	SLD 11	8	-23	572	0	0	0
15	SLD 12	11	-21	573	0	0	0
15	SLD 13	-13	-2	709	0	0	0
15	SLD 14	-9	1	710	0	0	0
15	SLD 15	-15	-12	653	0	0	0
15	SLD 16	-10	-9	654	0	0	0
15	SLV 1	98	0	681	0	0	0
15	SLV 2	109	8	683	0	0	0
15	SLV 3	93	-24	539	0	0	0
15	SLV 4	104	-16	541	0	0	0
15	SLV 5	49	29	881	0	0	0
15	SLV 6	57	35	882	0	0	0
15	SLV 7	35	-48	409	0	0	0
15	SLV 8	42	-43	410	0	0	0
15	SLV 9	2	30	911	0	0	0
15	SLV 10	9	36	912	0	0	0
15	SLV 11	-12	-47	439	0	0	0
15	SLV 12	-5	-42	440	0	0	0
15	SLV 13	-60	3	780	0	0	0
15	SLV 14	-49	11	781	0	0	0
15	SLV 15	-64	-20	638	0	0	0
15	SLV 16	-54	-12	640	0	0	0
16	SLU 1	12	-3	348	0	0	0
16	SLU 2	12	-2	350	0	0	0
16	SLU 3	12	-2	354	0	0	0
16	SLU 4	12	-2	356	0	0	0
16	SLU 5	12	-2	354	0	0	0
16	SLU 6	12	-2	358	0	0	0
16	SLU 7	12	-2	359	0	0	0
16	SLU 8	12	-2	355	0	0	0
16	SLU 9	12	-2	357	0	0	0
16	SLU 10	13	-2	393	0	0	0
16	SLU 11	13	-2	397	0	0	0
16	SLU 12	13	-2	398	0	0	0
16	SLU 13	13	-2	396	0	0	0
16	SLU 14	13	-2	400	0	0	0
16	SLU 15	13	-2	402	0	0	0
16	SLU 16	13	-2	398	0	0	0
16	SLU 17	13	-2	399	0	0	0
16	SLU 18	13	-3	408	0	0	0
16	SLU 19	13	-2	410	0	0	0
16	SLU 20	13	-2	412	0	0	0
16	SLU 21	13	-2	414	0	0	0
16	SLU 22	13	-1	395	0	0	0
16	SLU 23	13	-1	397	0	0	0
16	SLU 24	13	-1	401	0	0	0
16	SLU 25	13	-1	402	0	0	0
16	SLU 26	13	-1	401	0	0	0
16	SLU 27	13	-1	405	0	0	0
16	SLU 28	13	-1	406	0	0	0
16	SLU 29	13	-1	402	0	0	0
16	SLU 30	13	-1	404	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
16	SLU 31	14	-1	439	0	0	0
16	SLU 32	14	-1	443	0	0	0
16	SLU 33	14	-1	445	0	0	0
16	SLU 34	14	-1	443	0	0	0
16	SLU 35	14	-1	447	0	0	0
16	SLU 36	14	-1	449	0	0	0
16	SLU 37	14	-1	445	0	0	0
16	SLU 38	14	-1	446	0	0	0
16	SLU 39	14	-1	455	0	0	0
16	SLU 40	14	-1	457	0	0	0
16	SLU 41	14	-1	459	0	0	0
16	SLU 42	14	-1	461	0	0	0
16	SLU 43	15	-4	436	0	0	0
16	SLU 44	15	-3	438	0	0	0
16	SLU 45	15	-3	442	0	0	0
16	SLU 46	15	-3	444	0	0	0
16	SLU 47	15	-3	442	0	0	0
16	SLU 48	15	-3	446	0	0	0
16	SLU 49	15	-3	448	0	0	0
16	SLU 50	15	-3	444	0	0	0
16	SLU 51	15	-3	445	0	0	0
16	SLU 52	16	-3	481	0	0	0
16	SLU 53	16	-3	485	0	0	0
16	SLU 54	16	-3	486	0	0	0
16	SLU 55	16	-3	485	0	0	0
16	SLU 56	16	-3	489	0	0	0
16	SLU 57	16	-3	490	0	0	0
16	SLU 58	16	-3	486	0	0	0
16	SLU 59	16	-3	488	0	0	0
16	SLU 60	16	-4	497	0	0	0
16	SLU 61	16	-3	498	0	0	0
16	SLU 62	16	-3	501	0	0	0
16	SLU 63	16	-3	502	0	0	0
16	SLU 64	16	-3	483	0	0	0
16	SLU 65	16	-2	485	0	0	0
16	SLU 66	16	-2	489	0	0	0
16	SLU 67	16	-2	491	0	0	0
16	SLU 68	16	-2	489	0	0	0
16	SLU 69	16	-2	493	0	0	0
16	SLU 70	16	-2	494	0	0	0
16	SLU 71	16	-2	490	0	0	0
16	SLU 72	16	-2	492	0	0	0
16	SLU 73	17	-2	528	0	0	0
16	SLU 74	17	-2	532	0	0	0
16	SLU 75	17	-2	533	0	0	0
16	SLU 76	17	-2	532	0	0	0
16	SLU 77	17	-2	536	0	0	0
16	SLU 78	17	-2	537	0	0	0
16	SLU 79	17	-2	533	0	0	0
16	SLU 80	17	-2	534	0	0	0
16	SLU 81	17	-3	544	0	0	0
16	SLU 82	17	-2	545	0	0	0
16	SLU 83	17	-2	547	0	0	0
16	SLU 84	17	-2	549	0	0	0
16	SLE RA 1	12	-2	361	0	0	0
16	SLE RA 2	12	-2	363	0	0	0
16	SLE RA 3	12	-2	365	0	0	0
16	SLE RA 4	12	-2	366	0	0	0
16	SLE RA 5	12	-2	365	0	0	0
16	SLE RA 6	12	-2	368	0	0	0
16	SLE RA 7	12	-2	369	0	0	0
16	SLE RA 8	12	-2	366	0	0	0
16	SLE RA 9	12	-2	367	0	0	0
16	SLE RA 10	13	-2	391	0	0	0
16	SLE RA 11	13	-2	394	0	0	0
16	SLE RA 12	13	-2	395	0	0	0
16	SLE RA 13	13	-2	394	0	0	0
16	SLE RA 14	13	-2	396	0	0	0
16	SLE RA 15	13	-2	397	0	0	0
16	SLE RA 16	13	-2	395	0	0	0
16	SLE RA 17	13	-2	395	0	0	0
16	SLE RA 18	13	-2	402	0	0	0
16	SLE RA 19	13	-2	403	0	0	0
16	SLE RA 20	13	-2	404	0	0	0
16	SLE RA 21	13	-2	405	0	0	0
16	SLE FR 1	12	-2	361	0	0	0
16	SLE FR 2	12	-2	361	0	0	0
16	SLE FR 3	12	-2	362	0	0	0
16	SLE FR 4	12	-2	374	0	0	0
16	SLE FR 5	12	-2	374	0	0	0
16	SLE FR 6	13	-2	381	0	0	0
16	SLE QP 1	12	-2	361	0	0	0
16	SLE QP 2	12	-2	373	0	0	0
16	SLD 1	31	-1	371	0	0	0
16	SLD 2	33	1	371	0	0	0
16	SLD 3	30	-7	340	0	0	0
16	SLD 4	32	-4	340	0	0	0
16	SLD 5	19	6	420	0	0	0
16	SLD 6	21	7	420	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
16	SLD 7	16	-12	316	0	0	0
16	SLD 8	17	-11	316	0	0	0
16	SLD 9	7	6	430	0	0	0
16	SLD 10	9	8	430	0	0	0
16	SLD 11	4	-12	327	0	0	0
16	SLD 12	6	-10	327	0	0	0
16	SLD 13	-7	0	406	0	0	0
16	SLD 14	-5	2	406	0	0	0
16	SLD 15	-8	-5	375	0	0	0
16	SLD 16	-6	-3	375	0	0	0
16	SLV 1	55	0	371	0	0	0
16	SLV 2	61	6	372	0	0	0
16	SLV 3	53	-13	293	0	0	0
16	SLV 4	59	-8	294	0	0	0
16	SLV 5	28	18	491	0	0	0
16	SLV 6	32	21	491	0	0	0
16	SLV 7	20	-27	231	0	0	0
16	SLV 8	24	-23	231	0	0	0
16	SLV 9	1	18	515	0	0	0
16	SLV 10	5	22	516	0	0	0
16	SLV 11	-7	-26	255	0	0	0
16	SLV 12	-3	-22	256	0	0	0
16	SLV 13	-34	3	453	0	0	0
16	SLV 14	-28	9	453	0	0	0
16	SLV 15	-36	-10	375	0	0	0
16	SLV 16	-30	-4	375	0	0	0
17	SLU 1	20	-16	591	0	0	0
17	SLU 2	20	-15	594	0	0	0
17	SLU 3	20	-16	602	0	0	0
17	SLU 4	20	-15	604	0	0	0
17	SLU 5	20	-15	602	0	0	0
17	SLU 6	20	-15	609	0	0	0
17	SLU 7	20	-15	612	0	0	0
17	SLU 8	20	-15	605	0	0	0
17	SLU 9	20	-15	607	0	0	0
17	SLU 10	21	-16	672	0	0	0
17	SLU 11	21	-17	680	0	0	0
17	SLU 12	21	-16	682	0	0	0
17	SLU 13	21	-16	679	0	0	0
17	SLU 14	21	-17	687	0	0	0
17	SLU 15	21	-16	689	0	0	0
17	SLU 16	21	-17	683	0	0	0
17	SLU 17	21	-16	685	0	0	0
17	SLU 18	21	-18	701	0	0	0
17	SLU 19	21	-17	704	0	0	0
17	SLU 20	21	-17	709	0	0	0
17	SLU 21	21	-17	711	0	0	0
17	SLU 22	22	-15	674	0	0	0
17	SLU 23	22	-14	677	0	0	0
17	SLU 24	22	-15	685	0	0	0
17	SLU 25	22	-14	688	0	0	0
17	SLU 26	22	-14	685	0	0	0
17	SLU 27	22	-15	693	0	0	0
17	SLU 28	22	-14	695	0	0	0
17	SLU 29	22	-15	688	0	0	0
17	SLU 30	22	-14	690	0	0	0
17	SLU 31	23	-16	755	0	0	0
17	SLU 32	23	-16	763	0	0	0
17	SLU 33	23	-16	765	0	0	0
17	SLU 34	23	-15	762	0	0	0
17	SLU 35	23	-16	770	0	0	0
17	SLU 36	23	-15	772	0	0	0
17	SLU 37	23	-16	766	0	0	0
17	SLU 38	23	-15	768	0	0	0
17	SLU 39	23	-17	784	0	0	0
17	SLU 40	23	-17	787	0	0	0
17	SLU 41	23	-17	792	0	0	0
17	SLU 42	23	-16	794	0	0	0
17	SLU 43	25	-21	740	0	0	0
17	SLU 44	25	-20	743	0	0	0
17	SLU 45	25	-21	751	0	0	0
17	SLU 46	25	-20	753	0	0	0
17	SLU 47	25	-20	750	0	0	0
17	SLU 48	25	-20	758	0	0	0
17	SLU 49	25	-20	760	0	0	0
17	SLU 50	25	-20	754	0	0	0
17	SLU 51	25	-20	756	0	0	0
17	SLU 52	26	-21	821	0	0	0
17	SLU 53	26	-22	828	0	0	0
17	SLU 54	26	-21	831	0	0	0
17	SLU 55	26	-21	828	0	0	0
17	SLU 56	26	-22	836	0	0	0
17	SLU 57	26	-21	838	0	0	0
17	SLU 58	26	-22	831	0	0	0
17	SLU 59	26	-21	833	0	0	0
17	SLU 60	26	-23	850	0	0	0
17	SLU 61	26	-22	852	0	0	0
17	SLU 62	26	-22	857	0	0	0
17	SLU 63	26	-22	859	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
17	SLU 64	27	-20	823	0	0	0
17	SLU 65	27	-20	826	0	0	0
17	SLU 66	27	-20	834	0	0	0
17	SLU 67	27	-19	836	0	0	0
17	SLU 68	27	-19	833	0	0	0
17	SLU 69	27	-20	841	0	0	0
17	SLU 70	27	-19	843	0	0	0
17	SLU 71	27	-20	837	0	0	0
17	SLU 72	27	-19	839	0	0	0
17	SLU 73	28	-21	904	0	0	0
17	SLU 74	28	-21	912	0	0	0
17	SLU 75	28	-21	914	0	0	0
17	SLU 76	28	-20	911	0	0	0
17	SLU 77	28	-21	919	0	0	0
17	SLU 78	28	-20	921	0	0	0
17	SLU 79	28	-21	914	0	0	0
17	SLU 80	28	-20	917	0	0	0
17	SLU 81	28	-22	933	0	0	0
17	SLU 82	28	-22	935	0	0	0
17	SLU 83	28	-22	940	0	0	0
17	SLU 84	28	-21	943	0	0	0
17	SLE RA 1	20	-16	615	0	0	0
17	SLE RA 2	20	-15	617	0	0	0
17	SLE RA 3	20	-16	622	0	0	0
17	SLE RA 4	21	-15	624	0	0	0
17	SLE RA 5	20	-15	622	0	0	0
17	SLE RA 6	21	-15	627	0	0	0
17	SLE RA 7	21	-15	628	0	0	0
17	SLE RA 8	20	-15	624	0	0	0
17	SLE RA 9	20	-15	626	0	0	0
17	SLE RA 10	21	-16	669	0	0	0
17	SLE RA 11	21	-16	674	0	0	0
17	SLE RA 12	21	-16	675	0	0	0
17	SLE RA 13	21	-16	673	0	0	0
17	SLE RA 14	21	-16	679	0	0	0
17	SLE RA 15	21	-16	680	0	0	0
17	SLE RA 16	21	-16	676	0	0	0
17	SLE RA 17	21	-16	677	0	0	0
17	SLE RA 18	21	-17	688	0	0	0
17	SLE RA 19	21	-17	690	0	0	0
17	SLE RA 20	21	-17	693	0	0	0
17	SLE RA 21	21	-16	694	0	0	0
17	SLE FR 1	20	-16	615	0	0	0
17	SLE FR 2	20	-16	615	0	0	0
17	SLE FR 3	20	-16	616	0	0	0
17	SLE FR 4	21	-16	637	0	0	0
17	SLE FR 5	21	-16	639	0	0	0
17	SLE FR 6	21	-16	651	0	0	0
17	SLE QP 1	20	-16	615	0	0	0
17	SLE QP 2	21	-16	637	0	0	0
17	SLD 1	54	-8	681	0	0	0
17	SLD 2	58	-9	683	0	0	0
17	SLD 3	53	-18	633	0	0	0
17	SLD 4	57	-18	635	0	0	0
17	SLD 5	32	1	722	0	0	0
17	SLD 6	35	1	723	0	0	0
17	SLD 7	27	-31	563	0	0	0
17	SLD 8	30	-31	565	0	0	0
17	SLD 9	11	-1	709	0	0	0
17	SLD 10	14	-1	710	0	0	0
17	SLD 11	6	-33	550	0	0	0
17	SLD 12	9	-33	552	0	0	0
17	SLD 13	-16	-14	638	0	0	0
17	SLD 14	-12	-14	640	0	0	0
17	SLD 15	-17	-24	590	0	0	0
17	SLD 16	-13	-24	592	0	0	0
17	SLV 1	100	2	744	0	0	0
17	SLV 2	109	2	749	0	0	0
17	SLV 3	96	-20	625	0	0	0
17	SLV 4	105	-21	630	0	0	0
17	SLV 5	48	24	849	0	0	0
17	SLV 6	55	24	852	0	0	0
17	SLV 7	35	-52	451	0	0	0
17	SLV 8	42	-52	455	0	0	0
17	SLV 9	-1	20	819	0	0	0
17	SLV 10	6	20	822	0	0	0
17	SLV 11	-14	-56	421	0	0	0
17	SLV 12	-7	-56	424	0	0	0
17	SLV 13	-64	-12	643	0	0	0
17	SLV 14	-55	-12	648	0	0	0
17	SLV 15	-68	-34	524	0	0	0
17	SLV 16	-58	-35	529	0	0	0
18	SLU 1	37	-26	1129	0	0	0
18	SLU 2	37	-24	1136	0	0	0
18	SLU 3	38	-25	1151	0	0	0
18	SLU 4	38	-24	1155	0	0	0
18	SLU 5	37	-24	1149	0	0	0
18	SLU 6	38	-24	1164	0	0	0
18	SLU 7	38	-24	1168	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
18	SLU 8	37	-25	1156	0	0	0
18	SLU 9	38	-24	1160	0	0	0
18	SLU 10	39	-26	1282	0	0	0
18	SLU 11	39	-27	1297	0	0	0
18	SLU 12	39	-26	1301	0	0	0
18	SLU 13	39	-26	1296	0	0	0
18	SLU 14	39	-26	1311	0	0	0
18	SLU 15	40	-25	1315	0	0	0
18	SLU 16	39	-26	1302	0	0	0
18	SLU 17	39	-25	1306	0	0	0
18	SLU 18	40	-29	1338	0	0	0
18	SLU 19	40	-28	1342	0	0	0
18	SLU 20	40	-28	1351	0	0	0
18	SLU 21	40	-27	1356	0	0	0
18	SLU 22	41	-24	1287	0	0	0
18	SLU 23	41	-23	1294	0	0	0
18	SLU 24	42	-23	1309	0	0	0
18	SLU 25	42	-22	1313	0	0	0
18	SLU 26	41	-22	1307	0	0	0
18	SLU 27	42	-23	1322	0	0	0
18	SLU 28	42	-22	1327	0	0	0
18	SLU 29	41	-23	1314	0	0	0
18	SLU 30	41	-22	1318	0	0	0
18	SLU 31	43	-24	1440	0	0	0
18	SLU 32	43	-25	1455	0	0	0
18	SLU 33	43	-24	1459	0	0	0
18	SLU 34	43	-24	1454	0	0	0
18	SLU 35	43	-25	1469	0	0	0
18	SLU 36	43	-24	1473	0	0	0
18	SLU 37	43	-25	1460	0	0	0
18	SLU 38	43	-24	1464	0	0	0
18	SLU 39	43	-27	1496	0	0	0
18	SLU 40	44	-26	1500	0	0	0
18	SLU 41	44	-26	1510	0	0	0
18	SLU 42	44	-25	1514	0	0	0
18	SLU 43	47	-34	1414	0	0	0
18	SLU 44	47	-33	1420	0	0	0
18	SLU 45	47	-34	1435	0	0	0
18	SLU 46	48	-33	1439	0	0	0
18	SLU 47	47	-32	1434	0	0	0
18	SLU 48	48	-33	1449	0	0	0
18	SLU 49	48	-32	1453	0	0	0
18	SLU 50	47	-33	1441	0	0	0
18	SLU 51	47	-32	1445	0	0	0
18	SLU 52	49	-35	1567	0	0	0
18	SLU 53	49	-35	1582	0	0	0
18	SLU 54	49	-35	1586	0	0	0
18	SLU 55	49	-34	1580	0	0	0
18	SLU 56	49	-35	1595	0	0	0
18	SLU 57	49	-34	1599	0	0	0
18	SLU 58	49	-35	1587	0	0	0
18	SLU 59	49	-34	1591	0	0	0
18	SLU 60	49	-37	1622	0	0	0
18	SLU 61	49	-36	1627	0	0	0
18	SLU 62	50	-36	1636	0	0	0
18	SLU 63	50	-35	1640	0	0	0
18	SLU 64	51	-32	1572	0	0	0
18	SLU 65	51	-31	1578	0	0	0
18	SLU 66	51	-32	1593	0	0	0
18	SLU 67	51	-31	1598	0	0	0
18	SLU 68	51	-30	1592	0	0	0
18	SLU 69	51	-31	1607	0	0	0
18	SLU 70	52	-30	1611	0	0	0
18	SLU 71	51	-31	1599	0	0	0
18	SLU 72	51	-30	1603	0	0	0
18	SLU 73	53	-33	1725	0	0	0
18	SLU 74	53	-34	1740	0	0	0
18	SLU 75	53	-33	1744	0	0	0
18	SLU 76	53	-32	1738	0	0	0
18	SLU 77	53	-33	1753	0	0	0
18	SLU 78	53	-32	1757	0	0	0
18	SLU 79	53	-33	1745	0	0	0
18	SLU 80	53	-32	1749	0	0	0
18	SLU 81	53	-35	1781	0	0	0
18	SLU 82	53	-34	1785	0	0	0
18	SLU 83	53	-35	1794	0	0	0
18	SLU 84	53	-34	1798	0	0	0
18	SLE RA 1	38	-25	1174	0	0	0
18	SLE RA 2	38	-24	1179	0	0	0
18	SLE RA 3	39	-25	1189	0	0	0
18	SLE RA 4	39	-24	1191	0	0	0
18	SLE RA 5	38	-24	1188	0	0	0
18	SLE RA 6	39	-24	1198	0	0	0
18	SLE RA 7	39	-24	1200	0	0	0
18	SLE RA 8	38	-24	1192	0	0	0
18	SLE RA 9	38	-24	1195	0	0	0
18	SLE RA 10	39	-26	1276	0	0	0
18	SLE RA 11	40	-26	1286	0	0	0
18	SLE RA 12	40	-26	1289	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
18	SLE RA 13	40	-25	1285	0	0	0
18	SLE RA 14	40	-26	1295	0	0	0
18	SLE RA 15	40	-25	1298	0	0	0
18	SLE RA 16	40	-26	1290	0	0	0
18	SLE RA 17	40	-25	1292	0	0	0
18	SLE RA 18	40	-27	1313	0	0	0
18	SLE RA 19	40	-27	1316	0	0	0
18	SLE RA 20	40	-27	1322	0	0	0
18	SLE RA 21	40	-26	1325	0	0	0
18	SLE FR 1	38	-25	1174	0	0	0
18	SLE FR 2	38	-25	1175	0	0	0
18	SLE FR 3	38	-25	1178	0	0	0
18	SLE FR 4	39	-26	1217	0	0	0
18	SLE FR 5	39	-26	1220	0	0	0
18	SLE FR 6	39	-26	1244	0	0	0
18	SLE QP 1	38	-25	1174	0	0	0
18	SLE QP 2	39	-26	1216	0	0	0
18	SLD 1	102	-13	1280	0	0	0
18	SLD 2	110	-12	1283	0	0	0
18	SLD 3	99	-31	1192	0	0	0
18	SLD 4	107	-30	1195	0	0	0
18	SLD 5	61	5	1368	0	0	0
18	SLD 6	66	6	1370	0	0	0
18	SLD 7	51	-55	1074	0	0	0
18	SLD 8	56	-54	1077	0	0	0
18	SLD 9	21	2	1355	0	0	0
18	SLD 10	26	3	1357	0	0	0
18	SLD 11	12	-58	1061	0	0	0
18	SLD 12	17	-57	1064	0	0	0
18	SLD 13	-29	-22	1237	0	0	0
18	SLD 14	-22	-20	1240	0	0	0
18	SLD 15	-32	-40	1149	0	0	0
18	SLD 16	-25	-38	1152	0	0	0
18	SLV 1	187	4	1373	0	0	0
18	SLV 2	205	7	1381	0	0	0
18	SLV 3	180	-39	1152	0	0	0
18	SLV 4	197	-36	1160	0	0	0
18	SLV 5	91	48	1597	0	0	0
18	SLV 6	103	50	1602	0	0	0
18	SLV 7	67	-96	860	0	0	0
18	SLV 8	78	-94	865	0	0	0
18	SLV 9	-1	42	1567	0	0	0
18	SLV 10	11	44	1572	0	0	0
18	SLV 11	-25	-102	830	0	0	0
18	SLV 12	-14	-100	835	0	0	0
18	SLV 13	-120	-16	1272	0	0	0
18	SLV 14	-103	-12	1280	0	0	0
18	SLV 15	-127	-59	1051	0	0	0
18	SLV 16	-110	-56	1059	0	0	0
18	CRTFP Uy+	0	0	0	0	0	0
18	CRTFP Uy-	0	0	0	0	0	0
19	SLU 1	29	-18	900	0	0	0
19	SLU 2	29	-17	905	0	0	0
19	SLU 3	30	-17	917	0	0	0
19	SLU 4	30	-17	920	0	0	0
19	SLU 5	30	-16	916	0	0	0
19	SLU 6	30	-17	928	0	0	0
19	SLU 7	30	-16	931	0	0	0
19	SLU 8	30	-17	921	0	0	0
19	SLU 9	30	-16	924	0	0	0
19	SLU 10	31	-18	1020	0	0	0
19	SLU 11	31	-19	1032	0	0	0
19	SLU 12	31	-18	1036	0	0	0
19	SLU 13	31	-17	1031	0	0	0
19	SLU 14	31	-18	1043	0	0	0
19	SLU 15	31	-17	1046	0	0	0
19	SLU 16	31	-18	1036	0	0	0
19	SLU 17	31	-17	1040	0	0	0
19	SLU 18	31	-20	1065	0	0	0
19	SLU 19	31	-19	1068	0	0	0
19	SLU 20	31	-19	1075	0	0	0
19	SLU 21	31	-18	1078	0	0	0
19	SLU 22	32	-16	1025	0	0	0
19	SLU 23	32	-15	1030	0	0	0
19	SLU 24	33	-16	1042	0	0	0
19	SLU 25	33	-15	1046	0	0	0
19	SLU 26	33	-14	1041	0	0	0
19	SLU 27	33	-15	1053	0	0	0
19	SLU 28	33	-14	1056	0	0	0
19	SLU 29	33	-15	1046	0	0	0
19	SLU 30	33	-14	1050	0	0	0
19	SLU 31	34	-16	1146	0	0	0
19	SLU 32	34	-17	1158	0	0	0
19	SLU 33	34	-16	1161	0	0	0
19	SLU 34	34	-16	1156	0	0	0
19	SLU 35	34	-16	1169	0	0	0
19	SLU 36	34	-16	1172	0	0	0
19	SLU 37	34	-16	1162	0	0	0
19	SLU 38	34	-16	1165	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
19	SLU 39	34	-18	1190	0	0	0
19	SLU 40	34	-17	1193	0	0	0
19	SLU 41	34	-17	1201	0	0	0
19	SLU 42	34	-17	1204	0	0	0
19	SLU 43	37	-24	1126	0	0	0
19	SLU 44	37	-23	1132	0	0	0
19	SLU 45	37	-23	1144	0	0	0
19	SLU 46	37	-23	1147	0	0	0
19	SLU 47	37	-22	1142	0	0	0
19	SLU 48	38	-23	1155	0	0	0
19	SLU 49	38	-22	1158	0	0	0
19	SLU 50	37	-23	1148	0	0	0
19	SLU 51	37	-22	1151	0	0	0
19	SLU 52	38	-24	1247	0	0	0
19	SLU 53	39	-24	1259	0	0	0
19	SLU 54	39	-24	1263	0	0	0
19	SLU 55	39	-23	1258	0	0	0
19	SLU 56	39	-24	1270	0	0	0
19	SLU 57	39	-23	1273	0	0	0
19	SLU 58	39	-24	1263	0	0	0
19	SLU 59	39	-23	1266	0	0	0
19	SLU 60	39	-26	1291	0	0	0
19	SLU 61	39	-25	1295	0	0	0
19	SLU 62	39	-25	1302	0	0	0
19	SLU 63	39	-24	1305	0	0	0
19	SLU 64	40	-22	1252	0	0	0
19	SLU 65	40	-21	1257	0	0	0
19	SLU 66	40	-22	1269	0	0	0
19	SLU 67	41	-21	1272	0	0	0
19	SLU 68	40	-20	1268	0	0	0
19	SLU 69	41	-21	1280	0	0	0
19	SLU 70	41	-20	1283	0	0	0
19	SLU 71	40	-21	1273	0	0	0
19	SLU 72	40	-20	1276	0	0	0
19	SLU 73	42	-22	1373	0	0	0
19	SLU 74	42	-23	1385	0	0	0
19	SLU 75	42	-22	1388	0	0	0
19	SLU 76	42	-22	1383	0	0	0
19	SLU 77	42	-22	1395	0	0	0
19	SLU 78	42	-21	1399	0	0	0
19	SLU 79	42	-22	1389	0	0	0
19	SLU 80	42	-22	1392	0	0	0
19	SLU 81	42	-24	1417	0	0	0
19	SLU 82	42	-23	1420	0	0	0
19	SLU 83	42	-23	1428	0	0	0
19	SLU 84	42	-23	1431	0	0	0
19	SLE RA 1	30	-17	935	0	0	0
19	SLE RA 2	30	-17	939	0	0	0
19	SLE RA 3	30	-17	947	0	0	0
19	SLE RA 4	30	-17	949	0	0	0
19	SLE RA 5	30	-16	946	0	0	0
19	SLE RA 6	31	-17	954	0	0	0
19	SLE RA 7	31	-16	956	0	0	0
19	SLE RA 8	30	-17	950	0	0	0
19	SLE RA 9	30	-16	952	0	0	0
19	SLE RA 10	31	-17	1016	0	0	0
19	SLE RA 11	31	-18	1024	0	0	0
19	SLE RA 12	31	-17	1026	0	0	0
19	SLE RA 13	31	-17	1023	0	0	0
19	SLE RA 14	31	-17	1031	0	0	0
19	SLE RA 15	31	-17	1033	0	0	0
19	SLE RA 16	31	-17	1027	0	0	0
19	SLE RA 17	31	-17	1029	0	0	0
19	SLE RA 18	31	-19	1045	0	0	0
19	SLE RA 19	31	-18	1048	0	0	0
19	SLE RA 20	32	-18	1053	0	0	0
19	SLE RA 21	32	-18	1055	0	0	0
19	SLE FR 1	30	-17	935	0	0	0
19	SLE FR 2	30	-17	936	0	0	0
19	SLE FR 3	30	-17	938	0	0	0
19	SLE FR 4	31	-18	969	0	0	0
19	SLE FR 5	31	-18	971	0	0	0
19	SLE FR 6	31	-18	990	0	0	0
19	SLE QP 1	30	-17	935	0	0	0
19	SLE QP 2	31	-18	968	0	0	0
19	SLD 1	81	-9	1008	0	0	0
19	SLD 2	86	-7	1010	0	0	0
19	SLD 3	78	-23	939	0	0	0
19	SLD 4	84	-21	941	0	0	0
19	SLD 5	48	6	1084	0	0	0
19	SLD 6	52	7	1085	0	0	0
19	SLD 7	40	-41	855	0	0	0
19	SLD 8	44	-40	857	0	0	0
19	SLD 9	17	5	1080	0	0	0
19	SLD 10	21	6	1082	0	0	0
19	SLD 11	9	-43	852	0	0	0
19	SLD 12	13	-41	853	0	0	0
19	SLD 13	-23	-14	996	0	0	0
19	SLD 14	-17	-12	998	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
19	SLD 15	-25	-28	927	0	0	0
19	SLD 16	-20	-26	929	0	0	0
19	SLV 1	148	3	1066	0	0	0
19	SLV 2	162	8	1070	0	0	0
19	SLV 3	142	-32	894	0	0	0
19	SLV 4	156	-27	899	0	0	0
19	SLV 5	72	40	1257	0	0	0
19	SLV 6	81	43	1261	0	0	0
19	SLV 7	53	-75	685	0	0	0
19	SLV 8	62	-72	688	0	0	0
19	SLV 9	-1	36	1249	0	0	0
19	SLV 10	8	39	1252	0	0	0
19	SLV 11	-20	-78	676	0	0	0
19	SLV 12	-11	-75	680	0	0	0
19	SLV 13	-95	-9	1038	0	0	0
19	SLV 14	-81	-4	1043	0	0	0
19	SLV 15	-100	-43	866	0	0	0
19	SLV 16	-87	-38	871	0	0	0
20	SLU 1	29	-15	909	0	0	0
20	SLU 2	29	-14	915	0	0	0
20	SLU 3	30	-15	927	0	0	0
20	SLU 4	30	-14	930	0	0	0
20	SLU 5	29	-14	925	0	0	0
20	SLU 6	30	-14	938	0	0	0
20	SLU 7	30	-13	941	0	0	0
20	SLU 8	30	-14	931	0	0	0
20	SLU 9	30	-13	934	0	0	0
20	SLU 10	31	-15	1030	0	0	0
20	SLU 11	31	-16	1042	0	0	0
20	SLU 12	31	-15	1046	0	0	0
20	SLU 13	31	-14	1041	0	0	0
20	SLU 14	31	-15	1053	0	0	0
20	SLU 15	31	-14	1056	0	0	0
20	SLU 16	31	-15	1046	0	0	0
20	SLU 17	31	-14	1049	0	0	0
20	SLU 18	31	-17	1075	0	0	0
20	SLU 19	31	-16	1078	0	0	0
20	SLU 20	31	-16	1085	0	0	0
20	SLU 21	31	-15	1088	0	0	0
20	SLU 22	32	-13	1036	0	0	0
20	SLU 23	32	-12	1041	0	0	0
20	SLU 24	33	-13	1053	0	0	0
20	SLU 25	33	-12	1056	0	0	0
20	SLU 26	33	-12	1051	0	0	0
20	SLU 27	33	-12	1064	0	0	0
20	SLU 28	33	-11	1067	0	0	0
20	SLU 29	33	-12	1057	0	0	0
20	SLU 30	33	-11	1060	0	0	0
20	SLU 31	34	-13	1156	0	0	0
20	SLU 32	34	-14	1169	0	0	0
20	SLU 33	34	-13	1172	0	0	0
20	SLU 34	34	-12	1167	0	0	0
20	SLU 35	34	-13	1179	0	0	0
20	SLU 36	34	-12	1183	0	0	0
20	SLU 37	34	-13	1173	0	0	0
20	SLU 38	34	-12	1176	0	0	0
20	SLU 39	34	-15	1201	0	0	0
20	SLU 40	34	-14	1204	0	0	0
20	SLU 41	34	-14	1211	0	0	0
20	SLU 42	34	-13	1215	0	0	0
20	SLU 43	37	-21	1139	0	0	0
20	SLU 44	37	-19	1144	0	0	0
20	SLU 45	37	-20	1156	0	0	0
20	SLU 46	37	-19	1160	0	0	0
20	SLU 47	37	-19	1155	0	0	0
20	SLU 48	38	-19	1167	0	0	0
20	SLU 49	38	-19	1170	0	0	0
20	SLU 50	37	-20	1160	0	0	0
20	SLU 51	37	-19	1163	0	0	0
20	SLU 52	38	-20	1260	0	0	0
20	SLU 53	39	-21	1272	0	0	0
20	SLU 54	39	-20	1275	0	0	0
20	SLU 55	39	-20	1270	0	0	0
20	SLU 56	39	-20	1283	0	0	0
20	SLU 57	39	-20	1286	0	0	0
20	SLU 58	39	-20	1276	0	0	0
20	SLU 59	39	-20	1279	0	0	0
20	SLU 60	39	-22	1304	0	0	0
20	SLU 61	39	-21	1307	0	0	0
20	SLU 62	39	-21	1315	0	0	0
20	SLU 63	39	-21	1318	0	0	0
20	SLU 64	40	-19	1265	0	0	0
20	SLU 65	40	-17	1270	0	0	0
20	SLU 66	40	-18	1283	0	0	0
20	SLU 67	41	-17	1286	0	0	0
20	SLU 68	40	-17	1281	0	0	0
20	SLU 69	41	-17	1293	0	0	0
20	SLU 70	41	-17	1296	0	0	0
20	SLU 71	40	-18	1286	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
20	SLU 72	40	-17	1290	0	0	0
20	SLU 73	42	-18	1386	0	0	0
20	SLU 74	42	-19	1398	0	0	0
20	SLU 75	42	-18	1401	0	0	0
20	SLU 76	42	-18	1397	0	0	0
20	SLU 77	42	-18	1409	0	0	0
20	SLU 78	42	-18	1412	0	0	0
20	SLU 79	42	-18	1402	0	0	0
20	SLU 80	42	-18	1405	0	0	0
20	SLU 81	42	-20	1430	0	0	0
20	SLU 82	42	-19	1433	0	0	0
20	SLU 83	42	-19	1441	0	0	0
20	SLU 84	42	-19	1444	0	0	0
20	SLE RA 1	30	-15	945	0	0	0
20	SLE RA 2	30	-14	949	0	0	0
20	SLE RA 3	30	-14	957	0	0	0
20	SLE RA 4	30	-14	959	0	0	0
20	SLE RA 5	30	-14	956	0	0	0
20	SLE RA 6	30	-14	964	0	0	0
20	SLE RA 7	31	-13	966	0	0	0
20	SLE RA 8	30	-14	960	0	0	0
20	SLE RA 9	30	-14	962	0	0	0
20	SLE RA 10	31	-15	1026	0	0	0
20	SLE RA 11	31	-15	1034	0	0	0
20	SLE RA 12	31	-14	1036	0	0	0
20	SLE RA 13	31	-14	1033	0	0	0
20	SLE RA 14	31	-15	1041	0	0	0
20	SLE RA 15	31	-14	1043	0	0	0
20	SLE RA 16	31	-15	1037	0	0	0
20	SLE RA 17	31	-14	1039	0	0	0
20	SLE RA 18	31	-16	1056	0	0	0
20	SLE RA 19	31	-15	1058	0	0	0
20	SLE RA 20	31	-15	1063	0	0	0
20	SLE RA 21	32	-15	1065	0	0	0
20	SLE FR 1	30	-15	945	0	0	0
20	SLE FR 2	30	-15	946	0	0	0
20	SLE FR 3	30	-15	948	0	0	0
20	SLE FR 4	31	-15	979	0	0	0
20	SLE FR 5	31	-15	981	0	0	0
20	SLE FR 6	31	-15	1000	0	0	0
20	SLE QP 1	30	-15	945	0	0	0
20	SLE QP 2	31	-15	978	0	0	0
20	SLD 1	81	-8	1004	0	0	0
20	SLD 2	87	-5	1005	0	0	0
20	SLD 3	78	-22	936	0	0	0
20	SLD 4	84	-19	938	0	0	0
20	SLD 5	48	8	1088	0	0	0
20	SLD 6	52	10	1089	0	0	0
20	SLD 7	40	-39	863	0	0	0
20	SLD 8	44	-37	864	0	0	0
20	SLD 9	17	7	1093	0	0	0
20	SLD 10	21	9	1094	0	0	0
20	SLD 11	9	-40	868	0	0	0
20	SLD 12	13	-38	869	0	0	0
20	SLD 13	-23	-11	1019	0	0	0
20	SLD 14	-17	-8	1021	0	0	0
20	SLD 15	-25	-25	952	0	0	0
20	SLD 16	-20	-22	953	0	0	0
20	SLV 1	148	3	1043	0	0	0
20	SLV 2	162	10	1047	0	0	0
20	SLV 3	142	-32	874	0	0	0
20	SLV 4	156	-25	878	0	0	0
20	SLV 5	72	41	1253	0	0	0
20	SLV 6	81	46	1256	0	0	0
20	SLV 7	53	-74	690	0	0	0
20	SLV 8	62	-69	693	0	0	0
20	SLV 9	-1	39	1264	0	0	0
20	SLV 10	8	44	1267	0	0	0
20	SLV 11	-20	-77	701	0	0	0
20	SLV 12	-11	-72	703	0	0	0
20	SLV 13	-95	-5	1079	0	0	0
20	SLV 14	-81	2	1083	0	0	0
20	SLV 15	-101	-40	910	0	0	0
20	SLV 16	-87	-33	914	0	0	0
21	SLU 1	30	-13	933	0	0	0
21	SLU 2	30	-12	938	0	0	0
21	SLU 3	30	-12	951	0	0	0
21	SLU 4	30	-12	954	0	0	0
21	SLU 5	30	-11	949	0	0	0
21	SLU 6	30	-12	962	0	0	0
21	SLU 7	30	-11	965	0	0	0
21	SLU 8	30	-12	955	0	0	0
21	SLU 9	30	-11	958	0	0	0
21	SLU 10	31	-12	1056	0	0	0
21	SLU 11	31	-13	1068	0	0	0
21	SLU 12	32	-12	1071	0	0	0
21	SLU 13	31	-12	1066	0	0	0
21	SLU 14	32	-12	1079	0	0	0
21	SLU 15	32	-12	1082	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
21	SLU 16	31	-12	1072	0	0	0
21	SLU 17	31	-12	1075	0	0	0
21	SLU 18	32	-14	1101	0	0	0
21	SLU 19	32	-13	1104	0	0	0
21	SLU 20	32	-13	1112	0	0	0
21	SLU 21	32	-13	1115	0	0	0
21	SLU 22	33	-11	1062	0	0	0
21	SLU 23	33	-9	1067	0	0	0
21	SLU 24	33	-10	1080	0	0	0
21	SLU 25	33	-9	1083	0	0	0
21	SLU 26	33	-9	1078	0	0	0
21	SLU 27	33	-9	1091	0	0	0
21	SLU 28	33	-9	1094	0	0	0
21	SLU 29	33	-9	1084	0	0	0
21	SLU 30	33	-9	1087	0	0	0
21	SLU 31	34	-10	1185	0	0	0
21	SLU 32	35	-11	1197	0	0	0
21	SLU 33	35	-10	1200	0	0	0
21	SLU 34	34	-9	1195	0	0	0
21	SLU 35	35	-10	1208	0	0	0
21	SLU 36	35	-9	1211	0	0	0
21	SLU 37	34	-10	1201	0	0	0
21	SLU 38	34	-9	1204	0	0	0
21	SLU 39	35	-11	1230	0	0	0
21	SLU 40	35	-11	1233	0	0	0
21	SLU 41	35	-11	1240	0	0	0
21	SLU 42	35	-10	1244	0	0	0
21	SLU 43	38	-18	1169	0	0	0
21	SLU 44	38	-16	1174	0	0	0
21	SLU 45	38	-17	1186	0	0	0
21	SLU 46	38	-16	1190	0	0	0
21	SLU 47	38	-16	1185	0	0	0
21	SLU 48	38	-16	1197	0	0	0
21	SLU 49	38	-16	1200	0	0	0
21	SLU 50	38	-16	1190	0	0	0
21	SLU 51	38	-16	1193	0	0	0
21	SLU 52	39	-17	1291	0	0	0
21	SLU 53	39	-18	1304	0	0	0
21	SLU 54	39	-17	1307	0	0	0
21	SLU 55	39	-16	1302	0	0	0
21	SLU 56	39	-17	1315	0	0	0
21	SLU 57	39	-16	1318	0	0	0
21	SLU 58	39	-17	1308	0	0	0
21	SLU 59	39	-16	1311	0	0	0
21	SLU 60	39	-19	1336	0	0	0
21	SLU 61	40	-18	1339	0	0	0
21	SLU 62	40	-18	1347	0	0	0
21	SLU 63	40	-17	1350	0	0	0
21	SLU 64	41	-15	1298	0	0	0
21	SLU 65	41	-14	1303	0	0	0
21	SLU 66	41	-15	1315	0	0	0
21	SLU 67	41	-14	1319	0	0	0
21	SLU 68	41	-13	1314	0	0	0
21	SLU 69	41	-14	1326	0	0	0
21	SLU 70	41	-13	1329	0	0	0
21	SLU 71	41	-14	1319	0	0	0
21	SLU 72	41	-13	1322	0	0	0
21	SLU 73	42	-15	1420	0	0	0
21	SLU 74	42	-15	1433	0	0	0
21	SLU 75	42	-14	1436	0	0	0
21	SLU 76	42	-14	1431	0	0	0
21	SLU 77	43	-15	1444	0	0	0
21	SLU 78	43	-14	1447	0	0	0
21	SLU 79	42	-15	1437	0	0	0
21	SLU 80	42	-14	1440	0	0	0
21	SLU 81	43	-16	1465	0	0	0
21	SLU 82	43	-15	1468	0	0	0
21	SLU 83	43	-16	1476	0	0	0
21	SLU 84	43	-15	1479	0	0	0
21	SLE RA 1	31	-12	970	0	0	0
21	SLE RA 2	31	-11	973	0	0	0
21	SLE RA 3	31	-12	982	0	0	0
21	SLE RA 4	31	-11	984	0	0	0
21	SLE RA 5	31	-11	980	0	0	0
21	SLE RA 6	31	-11	989	0	0	0
21	SLE RA 7	31	-11	991	0	0	0
21	SLE RA 8	31	-12	984	0	0	0
21	SLE RA 9	31	-11	986	0	0	0
21	SLE RA 10	32	-12	1052	0	0	0
21	SLE RA 11	32	-12	1060	0	0	0
21	SLE RA 12	32	-12	1062	0	0	0
21	SLE RA 13	32	-11	1059	0	0	0
21	SLE RA 14	32	-12	1067	0	0	0
21	SLE RA 15	32	-11	1069	0	0	0
21	SLE RA 16	32	-12	1063	0	0	0
21	SLE RA 17	32	-11	1065	0	0	0
21	SLE RA 18	32	-13	1082	0	0	0
21	SLE RA 19	32	-12	1084	0	0	0
21	SLE RA 20	32	-12	1089	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
21	SLE RA 21	32	-12	1091	0	0	0
21	SLE FR 1	31	-12	970	0	0	0
21	SLE FR 2	31	-12	970	0	0	0
21	SLE FR 3	31	-12	973	0	0	0
21	SLE FR 4	31	-12	1004	0	0	0
21	SLE FR 5	31	-12	1006	0	0	0
21	SLE FR 6	31	-13	1026	0	0	0
21	SLE QP 1	31	-12	970	0	0	0
21	SLE QP 2	31	-12	1003	0	0	0
21	SLD 1	82	-8	1017	0	0	0
21	SLD 2	88	-4	1018	0	0	0
21	SLD 3	80	-23	950	0	0	0
21	SLD 4	86	-19	951	0	0	0
21	SLD 5	49	10	1109	0	0	0
21	SLD 6	53	13	1110	0	0	0
21	SLD 7	41	-39	885	0	0	0
21	SLD 8	45	-36	886	0	0	0
21	SLD 9	17	11	1121	0	0	0
21	SLD 10	21	14	1122	0	0	0
21	SLD 11	9	-38	897	0	0	0
21	SLD 12	13	-35	898	0	0	0
21	SLD 13	-24	-6	1056	0	0	0
21	SLD 14	-18	-2	1057	0	0	0
21	SLD 15	-26	-21	989	0	0	0
21	SLD 16	-20	-17	990	0	0	0
21	SLV 1	150	-2	1040	0	0	0
21	SLV 2	164	8	1043	0	0	0
21	SLV 3	145	-38	872	0	0	0
21	SLV 4	159	-28	875	0	0	0
21	SLV 5	73	43	1270	0	0	0
21	SLV 6	82	49	1271	0	0	0
21	SLV 7	54	-76	708	0	0	0
21	SLV 8	63	-69	710	0	0	0
21	SLV 9	-1	44	1297	0	0	0
21	SLV 10	8	51	1299	0	0	0
21	SLV 11	-20	-74	735	0	0	0
21	SLV 12	-11	-68	737	0	0	0
21	SLV 13	-97	3	1132	0	0	0
21	SLV 14	-83	13	1135	0	0	0
21	SLV 15	-102	-33	963	0	0	0
21	SLV 16	-89	-23	966	0	0	0
22	SLU 1	33	-11	1038	0	0	0
22	SLU 2	33	-10	1043	0	0	0
22	SLU 3	33	-11	1057	0	0	0
22	SLU 4	33	-10	1061	0	0	0
22	SLU 5	33	-9	1055	0	0	0
22	SLU 6	33	-10	1069	0	0	0
22	SLU 7	33	-9	1073	0	0	0
22	SLU 8	33	-10	1061	0	0	0
22	SLU 9	33	-9	1065	0	0	0
22	SLU 10	34	-10	1173	0	0	0
22	SLU 11	35	-11	1187	0	0	0
22	SLU 12	35	-10	1190	0	0	0
22	SLU 13	34	-10	1185	0	0	0
22	SLU 14	35	-10	1199	0	0	0
22	SLU 15	35	-9	1202	0	0	0
22	SLU 16	34	-10	1191	0	0	0
22	SLU 17	35	-10	1194	0	0	0
22	SLU 18	35	-12	1222	0	0	0
22	SLU 19	35	-11	1226	0	0	0
22	SLU 20	35	-11	1234	0	0	0
22	SLU 21	35	-10	1238	0	0	0
22	SLU 22	36	-8	1180	0	0	0
22	SLU 23	36	-7	1186	0	0	0
22	SLU 24	37	-8	1200	0	0	0
22	SLU 25	37	-7	1204	0	0	0
22	SLU 26	36	-6	1198	0	0	0
22	SLU 27	37	-7	1212	0	0	0
22	SLU 28	37	-6	1216	0	0	0
22	SLU 29	36	-7	1204	0	0	0
22	SLU 30	36	-6	1208	0	0	0
22	SLU 31	38	-7	1315	0	0	0
22	SLU 32	38	-8	1330	0	0	0
22	SLU 33	38	-7	1333	0	0	0
22	SLU 34	38	-7	1327	0	0	0
22	SLU 35	38	-7	1342	0	0	0
22	SLU 36	38	-7	1345	0	0	0
22	SLU 37	38	-7	1334	0	0	0
22	SLU 38	38	-7	1337	0	0	0
22	SLU 39	38	-9	1365	0	0	0
22	SLU 40	38	-8	1369	0	0	0
22	SLU 41	38	-8	1377	0	0	0
22	SLU 42	38	-7	1381	0	0	0
22	SLU 43	41	-16	1300	0	0	0
22	SLU 44	41	-14	1306	0	0	0
22	SLU 45	42	-15	1320	0	0	0
22	SLU 46	42	-14	1323	0	0	0
22	SLU 47	42	-14	1317	0	0	0
22	SLU 48	42	-14	1332	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
22	SLU 49	42	-14	1335	0	0	0
22	SLU 50	42	-14	1324	0	0	0
22	SLU 51	42	-14	1327	0	0	0
22	SLU 52	43	-15	1435	0	0	0
22	SLU 53	43	-15	1449	0	0	0
22	SLU 54	43	-15	1452	0	0	0
22	SLU 55	43	-14	1447	0	0	0
22	SLU 56	43	-15	1461	0	0	0
22	SLU 57	43	-14	1464	0	0	0
22	SLU 58	43	-15	1453	0	0	0
22	SLU 59	43	-14	1457	0	0	0
22	SLU 60	43	-16	1485	0	0	0
22	SLU 61	44	-15	1488	0	0	0
22	SLU 62	44	-16	1497	0	0	0
22	SLU 63	44	-15	1500	0	0	0
22	SLU 64	45	-13	1443	0	0	0
22	SLU 65	45	-11	1448	0	0	0
22	SLU 66	45	-12	1463	0	0	0
22	SLU 67	45	-11	1466	0	0	0
22	SLU 68	45	-11	1460	0	0	0
22	SLU 69	45	-11	1474	0	0	0
22	SLU 70	45	-11	1478	0	0	0
22	SLU 71	45	-12	1467	0	0	0
22	SLU 72	45	-11	1470	0	0	0
22	SLU 73	46	-12	1578	0	0	0
22	SLU 74	47	-12	1592	0	0	0
22	SLU 75	47	-12	1595	0	0	0
22	SLU 76	47	-11	1590	0	0	0
22	SLU 77	47	-12	1604	0	0	0
22	SLU 78	47	-11	1607	0	0	0
22	SLU 79	47	-12	1596	0	0	0
22	SLU 80	47	-11	1599	0	0	0
22	SLU 81	47	-13	1628	0	0	0
22	SLU 82	47	-12	1631	0	0	0
22	SLU 83	47	-13	1639	0	0	0
22	SLU 84	47	-12	1643	0	0	0
22	SLE RA 1	34	-11	1078	0	0	0
22	SLE RA 2	34	-10	1082	0	0	0
22	SLE RA 3	34	-10	1092	0	0	0
22	SLE RA 4	34	-9	1094	0	0	0
22	SLE RA 5	34	-9	1090	0	0	0
22	SLE RA 6	34	-10	1100	0	0	0
22	SLE RA 7	34	-9	1102	0	0	0
22	SLE RA 8	34	-10	1094	0	0	0
22	SLE RA 9	34	-9	1097	0	0	0
22	SLE RA 10	35	-10	1168	0	0	0
22	SLE RA 11	35	-10	1178	0	0	0
22	SLE RA 12	35	-10	1180	0	0	0
22	SLE RA 13	35	-9	1176	0	0	0
22	SLE RA 14	35	-10	1186	0	0	0
22	SLE RA 15	35	-9	1188	0	0	0
22	SLE RA 16	35	-10	1181	0	0	0
22	SLE RA 17	35	-9	1183	0	0	0
22	SLE RA 18	35	-11	1202	0	0	0
22	SLE RA 19	35	-10	1204	0	0	0
22	SLE RA 20	35	-10	1210	0	0	0
22	SLE RA 21	35	-10	1212	0	0	0
22	SLE FR 1	34	-11	1078	0	0	0
22	SLE FR 2	34	-10	1079	0	0	0
22	SLE FR 3	34	-10	1082	0	0	0
22	SLE FR 4	34	-10	1116	0	0	0
22	SLE FR 5	34	-10	1119	0	0	0
22	SLE FR 6	34	-11	1140	0	0	0
22	SLE QP 1	34	-11	1078	0	0	0
22	SLE QP 2	34	-11	1115	0	0	0
22	SLD 1	90	-7	1117	0	0	0
22	SLD 2	97	-1	1117	0	0	0
22	SLD 3	88	-23	1044	0	0	0
22	SLD 4	94	-17	1045	0	0	0
22	SLD 5	54	14	1226	0	0	0
22	SLD 6	58	18	1226	0	0	0
22	SLD 7	45	-40	983	0	0	0
22	SLD 8	50	-36	984	0	0	0
22	SLD 9	19	15	1247	0	0	0
22	SLD 10	23	19	1247	0	0	0
22	SLD 11	10	-39	1004	0	0	0
22	SLD 12	15	-35	1005	0	0	0
22	SLD 13	-26	-4	1186	0	0	0
22	SLD 14	-20	2	1187	0	0	0
22	SLD 15	-29	-20	1113	0	0	0
22	SLD 16	-22	-15	1114	0	0	0
22	SLV 1	166	-1	1124	0	0	0
22	SLV 2	181	13	1126	0	0	0
22	SLV 3	160	-40	942	0	0	0
22	SLV 4	175	-26	944	0	0	0
22	SLV 5	81	50	1394	0	0	0
22	SLV 6	91	59	1395	0	0	0
22	SLV 7	59	-82	786	0	0	0
22	SLV 8	70	-73	788	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
22	SLV 9	-1	52	1443	0	0	0
22	SLV 10	9	61	1444	0	0	0
22	SLV 11	-23	-80	835	0	0	0
22	SLV 12	-12	-71	836	0	0	0
22	SLV 13	-107	5	1287	0	0	0
22	SLV 14	-91	19	1289	0	0	0
22	SLV 15	-113	-34	1105	0	0	0
22	SLV 16	-98	-21	1106	0	0	0
23	SLU 1	22	-5	705	0	0	0
23	SLU 2	22	-4	709	0	0	0
23	SLU 3	22	-5	718	0	0	0
23	SLU 4	22	-4	721	0	0	0
23	SLU 5	22	-4	717	0	0	0
23	SLU 6	23	-4	726	0	0	0
23	SLU 7	23	-4	729	0	0	0
23	SLU 8	22	-4	721	0	0	0
23	SLU 9	22	-4	723	0	0	0
23	SLU 10	23	-4	796	0	0	0
23	SLU 11	23	-5	805	0	0	0
23	SLU 12	24	-4	807	0	0	0
23	SLU 13	23	-4	804	0	0	0
23	SLU 14	24	-4	813	0	0	0
23	SLU 15	24	-4	815	0	0	0
23	SLU 16	23	-4	808	0	0	0
23	SLU 17	23	-4	810	0	0	0
23	SLU 18	24	-5	829	0	0	0
23	SLU 19	24	-5	831	0	0	0
23	SLU 20	24	-5	837	0	0	0
23	SLU 21	24	-4	839	0	0	0
23	SLU 22	24	-3	801	0	0	0
23	SLU 23	25	-2	805	0	0	0
23	SLU 24	25	-2	815	0	0	0
23	SLU 25	25	-2	817	0	0	0
23	SLU 26	25	-2	813	0	0	0
23	SLU 27	25	-2	823	0	0	0
23	SLU 28	25	-1	825	0	0	0
23	SLU 29	25	-2	818	0	0	0
23	SLU 30	25	-1	820	0	0	0
23	SLU 31	26	-2	892	0	0	0
23	SLU 32	26	-2	902	0	0	0
23	SLU 33	26	-2	904	0	0	0
23	SLU 34	26	-2	900	0	0	0
23	SLU 35	26	-2	910	0	0	0
23	SLU 36	26	-1	912	0	0	0
23	SLU 37	26	-2	904	0	0	0
23	SLU 38	26	-1	907	0	0	0
23	SLU 39	26	-3	926	0	0	0
23	SLU 40	26	-2	928	0	0	0
23	SLU 41	26	-2	934	0	0	0
23	SLU 42	26	-2	936	0	0	0
23	SLU 43	28	-8	883	0	0	0
23	SLU 44	28	-7	887	0	0	0
23	SLU 45	28	-7	897	0	0	0
23	SLU 46	28	-6	899	0	0	0
23	SLU 47	28	-6	895	0	0	0
23	SLU 48	28	-7	905	0	0	0
23	SLU 49	28	-6	907	0	0	0
23	SLU 50	28	-7	899	0	0	0
23	SLU 51	28	-6	902	0	0	0
23	SLU 52	29	-7	974	0	0	0
23	SLU 53	29	-7	984	0	0	0
23	SLU 54	29	-6	986	0	0	0
23	SLU 55	29	-6	982	0	0	0
23	SLU 56	29	-7	992	0	0	0
23	SLU 57	29	-6	994	0	0	0
23	SLU 58	29	-7	986	0	0	0
23	SLU 59	29	-6	988	0	0	0
23	SLU 60	29	-8	1007	0	0	0
23	SLU 61	29	-7	1010	0	0	0
23	SLU 62	30	-7	1015	0	0	0
23	SLU 63	30	-6	1018	0	0	0
23	SLU 64	30	-5	980	0	0	0
23	SLU 65	30	-4	984	0	0	0
23	SLU 66	31	-5	993	0	0	0
23	SLU 67	31	-4	996	0	0	0
23	SLU 68	30	-4	992	0	0	0
23	SLU 69	31	-4	1001	0	0	0
23	SLU 70	31	-4	1004	0	0	0
23	SLU 71	30	-4	996	0	0	0
23	SLU 72	31	-4	998	0	0	0
23	SLU 73	31	-4	1070	0	0	0
23	SLU 74	32	-5	1080	0	0	0
23	SLU 75	32	-4	1082	0	0	0
23	SLU 76	31	-4	1078	0	0	0
23	SLU 77	32	-4	1088	0	0	0
23	SLU 78	32	-4	1090	0	0	0
23	SLU 79	31	-4	1083	0	0	0
23	SLU 80	32	-4	1085	0	0	0
23	SLU 81	32	-5	1104	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
23	SLU 82	32	-5	1106	0	0	0
23	SLU 83	32	-5	1112	0	0	0
23	SLU 84	32	-4	1114	0	0	0
23	SLE RA 1	23	-5	733	0	0	0
23	SLE RA 2	23	-4	735	0	0	0
23	SLE RA 3	23	-4	741	0	0	0
23	SLE RA 4	23	-4	743	0	0	0
23	SLE RA 5	23	-4	740	0	0	0
23	SLE RA 6	23	-4	747	0	0	0
23	SLE RA 7	23	-4	748	0	0	0
23	SLE RA 8	23	-4	743	0	0	0
23	SLE RA 9	23	-4	745	0	0	0
23	SLE RA 10	24	-4	793	0	0	0
23	SLE RA 11	24	-4	799	0	0	0
23	SLE RA 12	24	-4	801	0	0	0
23	SLE RA 13	24	-4	798	0	0	0
23	SLE RA 14	24	-4	805	0	0	0
23	SLE RA 15	24	-4	806	0	0	0
23	SLE RA 16	24	-4	801	0	0	0
23	SLE RA 17	24	-4	803	0	0	0
23	SLE RA 18	24	-5	815	0	0	0
23	SLE RA 19	24	-4	817	0	0	0
23	SLE RA 20	24	-4	821	0	0	0
23	SLE RA 21	24	-4	822	0	0	0
23	SLE FR 1	23	-5	733	0	0	0
23	SLE FR 2	23	-4	733	0	0	0
23	SLE FR 3	23	-4	735	0	0	0
23	SLE FR 4	23	-4	758	0	0	0
23	SLE FR 5	23	-4	759	0	0	0
23	SLE FR 6	23	-5	774	0	0	0
23	SLE QP 1	23	-5	733	0	0	0
23	SLE QP 2	23	-5	757	0	0	0
23	SLD 1	61	-3	746	0	0	0
23	SLD 2	66	2	746	0	0	0
23	SLD 3	59	-14	699	0	0	0
23	SLD 4	64	-9	699	0	0	0
23	SLD 5	36	12	827	0	0	0
23	SLD 6	39	15	827	0	0	0
23	SLD 7	31	-25	667	0	0	0
23	SLD 8	34	-22	667	0	0	0
23	SLD 9	13	13	847	0	0	0
23	SLD 10	16	16	847	0	0	0
23	SLD 11	7	-24	688	0	0	0
23	SLD 12	10	-21	688	0	0	0
23	SLD 13	-18	0	816	0	0	0
23	SLD 14	-13	5	816	0	0	0
23	SLD 15	-19	-11	768	0	0	0
23	SLD 16	-15	-6	768	0	0	0
23	SLV 1	112	0	736	0	0	0
23	SLV 2	123	12	736	0	0	0
23	SLV 3	108	-27	616	0	0	0
23	SLV 4	118	-16	616	0	0	0
23	SLV 5	54	36	933	0	0	0
23	SLV 6	61	44	933	0	0	0
23	SLV 7	40	-55	533	0	0	0
23	SLV 8	47	-47	533	0	0	0
23	SLV 9	-1	38	981	0	0	0
23	SLV 10	6	46	982	0	0	0
23	SLV 11	-15	-53	582	0	0	0
23	SLV 12	-8	-45	582	0	0	0
23	SLV 13	-72	6	899	0	0	0
23	SLV 14	-62	18	899	0	0	0
23	SLV 15	-76	-21	779	0	0	0
23	SLV 16	-66	-9	779	0	0	0
24	SLU 1	13	-4	443	0	0	0
24	SLU 2	13	-4	445	0	0	0
24	SLU 3	13	-4	452	0	0	0
24	SLU 4	13	-3	453	0	0	0
24	SLU 5	13	-3	450	0	0	0
24	SLU 6	13	-3	457	0	0	0
24	SLU 7	13	-3	458	0	0	0
24	SLU 8	13	-4	454	0	0	0
24	SLU 9	13	-3	455	0	0	0
24	SLU 10	14	-4	500	0	0	0
24	SLU 11	14	-4	507	0	0	0
24	SLU 12	14	-3	508	0	0	0
24	SLU 13	14	-3	506	0	0	0
24	SLU 14	14	-4	512	0	0	0
24	SLU 15	14	-3	514	0	0	0
24	SLU 16	14	-4	509	0	0	0
24	SLU 17	14	-3	510	0	0	0
24	SLU 18	14	-4	522	0	0	0
24	SLU 19	14	-4	523	0	0	0
24	SLU 20	14	-4	527	0	0	0
24	SLU 21	14	-4	529	0	0	0
24	SLU 22	14	-3	505	0	0	0
24	SLU 23	15	-2	507	0	0	0
24	SLU 24	15	-2	514	0	0	0
24	SLU 25	15	-2	515	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
24	SLU 26	15	-2	512	0	0	0
24	SLU 27	15	-2	519	0	0	0
24	SLU 28	15	-2	520	0	0	0
24	SLU 29	15	-2	515	0	0	0
24	SLU 30	15	-2	517	0	0	0
24	SLU 31	15	-2	562	0	0	0
24	SLU 32	15	-2	569	0	0	0
24	SLU 33	15	-2	570	0	0	0
24	SLU 34	15	-2	567	0	0	0
24	SLU 35	15	-2	574	0	0	0
24	SLU 36	15	-2	575	0	0	0
24	SLU 37	15	-2	571	0	0	0
24	SLU 38	15	-2	572	0	0	0
24	SLU 39	15	-3	584	0	0	0
24	SLU 40	15	-2	585	0	0	0
24	SLU 41	15	-3	589	0	0	0
24	SLU 42	15	-2	590	0	0	0
24	SLU 43	17	-6	555	0	0	0
24	SLU 44	17	-5	557	0	0	0
24	SLU 45	17	-5	564	0	0	0
24	SLU 46	17	-5	565	0	0	0
24	SLU 47	17	-5	562	0	0	0
24	SLU 48	17	-5	569	0	0	0
24	SLU 49	17	-5	570	0	0	0
24	SLU 50	17	-5	566	0	0	0
24	SLU 51	17	-5	567	0	0	0
24	SLU 52	17	-5	612	0	0	0
24	SLU 53	17	-6	619	0	0	0
24	SLU 54	17	-5	620	0	0	0
24	SLU 55	17	-5	618	0	0	0
24	SLU 56	17	-5	624	0	0	0
24	SLU 57	17	-5	625	0	0	0
24	SLU 58	17	-5	621	0	0	0
24	SLU 59	17	-5	622	0	0	0
24	SLU 60	17	-6	634	0	0	0
24	SLU 61	17	-6	635	0	0	0
24	SLU 62	17	-6	639	0	0	0
24	SLU 63	17	-5	640	0	0	0
24	SLU 64	18	-4	617	0	0	0
24	SLU 65	18	-4	619	0	0	0
24	SLU 66	18	-4	625	0	0	0
24	SLU 67	18	-4	627	0	0	0
24	SLU 68	18	-4	624	0	0	0
24	SLU 69	18	-4	631	0	0	0
24	SLU 70	18	-3	632	0	0	0
24	SLU 71	18	-4	627	0	0	0
24	SLU 72	18	-4	628	0	0	0
24	SLU 73	19	-4	674	0	0	0
24	SLU 74	19	-4	681	0	0	0
24	SLU 75	19	-4	682	0	0	0
24	SLU 76	19	-4	679	0	0	0
24	SLU 77	19	-4	686	0	0	0
24	SLU 78	19	-4	687	0	0	0
24	SLU 79	19	-4	682	0	0	0
24	SLU 80	19	-4	684	0	0	0
24	SLU 81	19	-5	696	0	0	0
24	SLU 82	19	-4	697	0	0	0
24	SLU 83	19	-4	701	0	0	0
24	SLU 84	19	-4	702	0	0	0
24	SLE RA 1	14	-4	461	0	0	0
24	SLE RA 2	14	-3	462	0	0	0
24	SLE RA 3	14	-3	467	0	0	0
24	SLE RA 4	14	-3	467	0	0	0
24	SLE RA 5	14	-3	466	0	0	0
24	SLE RA 6	14	-3	470	0	0	0
24	SLE RA 7	14	-3	471	0	0	0
24	SLE RA 8	14	-3	468	0	0	0
24	SLE RA 9	14	-3	469	0	0	0
24	SLE RA 10	14	-3	499	0	0	0
24	SLE RA 11	14	-4	504	0	0	0
24	SLE RA 12	14	-3	504	0	0	0
24	SLE RA 13	14	-3	502	0	0	0
24	SLE RA 14	14	-3	507	0	0	0
24	SLE RA 15	14	-3	508	0	0	0
24	SLE RA 16	14	-3	505	0	0	0
24	SLE RA 17	14	-3	505	0	0	0
24	SLE RA 18	14	-4	514	0	0	0
24	SLE RA 19	14	-4	514	0	0	0
24	SLE RA 20	14	-4	517	0	0	0
24	SLE RA 21	14	-3	518	0	0	0
24	SLE FR 1	14	-4	461	0	0	0
24	SLE FR 2	14	-4	461	0	0	0
24	SLE FR 3	14	-4	462	0	0	0
24	SLE FR 4	14	-4	477	0	0	0
24	SLE FR 5	14	-4	478	0	0	0
24	SLE FR 6	14	-4	487	0	0	0
24	SLE QP 1	14	-4	461	0	0	0
24	SLE QP 2	14	-4	477	0	0	0
24	SLD 1	38	-2	471	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
24	SLD 2	41	1	471	0	0	0
24	SLD 3	37	-9	447	0	0	0
24	SLD 4	40	-6	447	0	0	0
24	SLD 5	22	7	511	0	0	0
24	SLD 6	24	9	511	0	0	0
24	SLD 7	19	-17	431	0	0	0
24	SLD 8	20	-15	431	0	0	0
24	SLD 9	7	7	522	0	0	0
24	SLD 10	9	9	522	0	0	0
24	SLD 11	4	-16	442	0	0	0
24	SLD 12	5	-14	442	0	0	0
24	SLD 13	-12	-1	507	0	0	0
24	SLD 14	-10	2	507	0	0	0
24	SLD 15	-13	-8	483	0	0	0
24	SLD 16	-11	-5	483	0	0	0
24	SLV 1	71	0	464	0	0	0
24	SLV 2	77	7	465	0	0	0
24	SLV 3	69	-17	404	0	0	0
24	SLV 4	74	-11	404	0	0	0
24	SLV 5	34	22	564	0	0	0
24	SLV 6	37	26	564	0	0	0
24	SLV 7	25	-35	364	0	0	0
24	SLV 8	29	-30	364	0	0	0
24	SLV 9	-2	23	590	0	0	0
24	SLV 10	2	27	590	0	0	0
24	SLV 11	-10	-34	389	0	0	0
24	SLV 12	-6	-29	389	0	0	0
24	SLV 13	-47	3	549	0	0	0
24	SLV 14	-41	10	549	0	0	0
24	SLV 15	-50	-14	489	0	0	0
24	SLV 16	-44	-7	489	0	0	0
25	SLU 1	14	-11	471	0	0	0
25	SLU 2	15	-10	473	0	0	0
25	SLU 3	15	-11	481	0	0	0
25	SLU 4	15	-10	482	0	0	0
25	SLU 5	15	-10	479	0	0	0
25	SLU 6	15	-10	486	0	0	0
25	SLU 7	15	-10	488	0	0	0
25	SLU 8	15	-10	483	0	0	0
25	SLU 9	15	-10	484	0	0	0
25	SLU 10	15	-11	535	0	0	0
25	SLU 11	15	-11	542	0	0	0
25	SLU 12	15	-11	543	0	0	0
25	SLU 13	15	-11	541	0	0	0
25	SLU 14	15	-11	548	0	0	0
25	SLU 15	15	-11	549	0	0	0
25	SLU 16	15	-11	544	0	0	0
25	SLU 17	15	-11	545	0	0	0
25	SLU 18	15	-12	559	0	0	0
25	SLU 19	15	-12	560	0	0	0
25	SLU 20	15	-12	565	0	0	0
25	SLU 21	15	-11	566	0	0	0
25	SLU 22	16	-10	538	0	0	0
25	SLU 23	16	-9	540	0	0	0
25	SLU 24	16	-10	547	0	0	0
25	SLU 25	16	-9	549	0	0	0
25	SLU 26	16	-9	546	0	0	0
25	SLU 27	16	-10	553	0	0	0
25	SLU 28	16	-9	554	0	0	0
25	SLU 29	16	-10	550	0	0	0
25	SLU 30	16	-9	551	0	0	0
25	SLU 31	17	-10	602	0	0	0
25	SLU 32	17	-11	609	0	0	0
25	SLU 33	17	-10	610	0	0	0
25	SLU 34	17	-10	607	0	0	0
25	SLU 35	17	-10	614	0	0	0
25	SLU 36	17	-10	616	0	0	0
25	SLU 37	17	-10	611	0	0	0
25	SLU 38	17	-10	612	0	0	0
25	SLU 39	17	-11	626	0	0	0
25	SLU 40	17	-11	627	0	0	0
25	SLU 41	17	-11	631	0	0	0
25	SLU 42	17	-11	633	0	0	0
25	SLU 43	18	-14	590	0	0	0
25	SLU 44	18	-14	592	0	0	0
25	SLU 45	19	-14	599	0	0	0
25	SLU 46	19	-14	600	0	0	0
25	SLU 47	18	-13	598	0	0	0
25	SLU 48	19	-14	605	0	0	0
25	SLU 49	19	-13	606	0	0	0
25	SLU 50	18	-14	601	0	0	0
25	SLU 51	18	-13	603	0	0	0
25	SLU 52	19	-15	653	0	0	0
25	SLU 53	19	-15	660	0	0	0
25	SLU 54	19	-14	662	0	0	0
25	SLU 55	19	-14	659	0	0	0
25	SLU 56	19	-15	666	0	0	0
25	SLU 57	19	-14	668	0	0	0
25	SLU 58	19	-15	663	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
25	SLU 59	19	-14	664	0	0	0
25	SLU 60	19	-16	677	0	0	0
25	SLU 61	19	-15	679	0	0	0
25	SLU 62	19	-15	683	0	0	0
25	SLU 63	19	-15	684	0	0	0
25	SLU 64	20	-14	657	0	0	0
25	SLU 65	20	-13	659	0	0	0
25	SLU 66	20	-13	666	0	0	0
25	SLU 67	20	-13	667	0	0	0
25	SLU 68	20	-13	665	0	0	0
25	SLU 69	20	-13	672	0	0	0
25	SLU 70	20	-13	673	0	0	0
25	SLU 71	20	-13	668	0	0	0
25	SLU 72	20	-13	669	0	0	0
25	SLU 73	21	-14	720	0	0	0
25	SLU 74	21	-14	727	0	0	0
25	SLU 75	21	-14	728	0	0	0
25	SLU 76	21	-13	726	0	0	0
25	SLU 77	21	-14	733	0	0	0
25	SLU 78	21	-13	734	0	0	0
25	SLU 79	21	-14	729	0	0	0
25	SLU 80	21	-13	731	0	0	0
25	SLU 81	21	-15	744	0	0	0
25	SLU 82	21	-14	745	0	0	0
25	SLU 83	21	-14	750	0	0	0
25	SLU 84	21	-14	751	0	0	0
25	SLE RA 1	15	-11	490	0	0	0
25	SLE RA 2	15	-10	492	0	0	0
25	SLE RA 3	15	-10	497	0	0	0
25	SLE RA 4	15	-10	497	0	0	0
25	SLE RA 5	15	-10	496	0	0	0
25	SLE RA 6	15	-10	500	0	0	0
25	SLE RA 7	15	-10	501	0	0	0
25	SLE RA 8	15	-10	498	0	0	0
25	SLE RA 9	15	-10	499	0	0	0
25	SLE RA 10	15	-11	533	0	0	0
25	SLE RA 11	15	-11	537	0	0	0
25	SLE RA 12	15	-11	538	0	0	0
25	SLE RA 13	15	-11	537	0	0	0
25	SLE RA 14	16	-11	541	0	0	0
25	SLE RA 15	16	-11	542	0	0	0
25	SLE RA 16	15	-11	539	0	0	0
25	SLE RA 17	15	-11	540	0	0	0
25	SLE RA 18	16	-11	549	0	0	0
25	SLE RA 19	16	-11	550	0	0	0
25	SLE RA 20	16	-11	553	0	0	0
25	SLE RA 21	16	-11	553	0	0	0
25	SLE FR 1	15	-11	490	0	0	0
25	SLE FR 2	15	-11	491	0	0	0
25	SLE FR 3	15	-11	492	0	0	0
25	SLE FR 4	15	-11	508	0	0	0
25	SLE FR 5	15	-11	509	0	0	0
25	SLE FR 6	15	-11	520	0	0	0
25	SLE QP 1	15	-11	490	0	0	0
25	SLE QP 2	15	-11	508	0	0	0
25	SLD 1	42	-6	531	0	0	0
25	SLD 2	45	-5	532	0	0	0
25	SLD 3	41	-13	502	0	0	0
25	SLD 4	44	-13	503	0	0	0
25	SLD 5	24	2	558	0	0	0
25	SLD 6	26	2	559	0	0	0
25	SLD 7	21	-23	462	0	0	0
25	SLD 8	23	-23	463	0	0	0
25	SLD 9	8	1	553	0	0	0
25	SLD 10	9	1	553	0	0	0
25	SLD 11	4	-24	457	0	0	0
25	SLD 12	6	-24	458	0	0	0
25	SLD 13	-14	-9	512	0	0	0
25	SLD 14	-11	-9	514	0	0	0
25	SLD 15	-15	-17	484	0	0	0
25	SLD 16	-12	-16	485	0	0	0
25	SLV 1	79	2	564	0	0	0
25	SLV 2	85	3	567	0	0	0
25	SLV 3	76	-17	492	0	0	0
25	SLV 4	82	-15	495	0	0	0
25	SLV 5	37	20	634	0	0	0
25	SLV 6	41	21	635	0	0	0
25	SLV 7	28	-40	393	0	0	0
25	SLV 8	32	-39	395	0	0	0
25	SLV 9	-2	18	621	0	0	0
25	SLV 10	2	19	623	0	0	0
25	SLV 11	-11	-43	380	0	0	0
25	SLV 12	-7	-42	382	0	0	0
25	SLV 13	-52	-7	521	0	0	0
25	SLV 14	-46	-5	524	0	0	0
25	SLV 15	-55	-25	449	0	0	0
25	SLV 16	-48	-23	452	0	0	0
26	SLU 1	23	-15	751	0	0	0
26	SLU 2	23	-14	754	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
26	SLU 3	23	-15	766	0	0	0
26	SLU 4	23	-14	768	0	0	0
26	SLU 5	23	-14	764	0	0	0
26	SLU 6	23	-14	775	0	0	0
26	SLU 7	23	-13	777	0	0	0
26	SLU 8	23	-14	769	0	0	0
26	SLU 9	23	-13	771	0	0	0
26	SLU 10	24	-15	851	0	0	0
26	SLU 11	24	-16	863	0	0	0
26	SLU 12	24	-15	865	0	0	0
26	SLU 13	24	-15	860	0	0	0
26	SLU 14	24	-15	872	0	0	0
26	SLU 15	24	-14	874	0	0	0
26	SLU 16	24	-15	866	0	0	0
26	SLU 17	24	-14	868	0	0	0
26	SLU 18	24	-16	889	0	0	0
26	SLU 19	24	-16	891	0	0	0
26	SLU 20	24	-16	898	0	0	0
26	SLU 21	24	-15	900	0	0	0
26	SLU 22	25	-14	857	0	0	0
26	SLU 23	25	-13	860	0	0	0
26	SLU 24	26	-13	872	0	0	0
26	SLU 25	26	-12	874	0	0	0
26	SLU 26	25	-12	869	0	0	0
26	SLU 27	26	-13	881	0	0	0
26	SLU 28	26	-12	883	0	0	0
26	SLU 29	25	-13	875	0	0	0
26	SLU 30	26	-12	877	0	0	0
26	SLU 31	26	-14	957	0	0	0
26	SLU 32	27	-14	968	0	0	0
26	SLU 33	27	-13	971	0	0	0
26	SLU 34	26	-13	966	0	0	0
26	SLU 35	27	-14	978	0	0	0
26	SLU 36	27	-13	980	0	0	0
26	SLU 37	26	-14	972	0	0	0
26	SLU 38	26	-13	974	0	0	0
26	SLU 39	27	-15	995	0	0	0
26	SLU 40	27	-14	997	0	0	0
26	SLU 41	27	-15	1004	0	0	0
26	SLU 42	27	-14	1006	0	0	0
26	SLU 43	29	-20	940	0	0	0
26	SLU 44	29	-19	943	0	0	0
26	SLU 45	29	-20	955	0	0	0
26	SLU 46	29	-19	957	0	0	0
26	SLU 47	29	-19	952	0	0	0
26	SLU 48	29	-19	964	0	0	0
26	SLU 49	29	-18	966	0	0	0
26	SLU 50	29	-19	958	0	0	0
26	SLU 51	29	-18	960	0	0	0
26	SLU 52	30	-20	1040	0	0	0
26	SLU 53	30	-21	1051	0	0	0
26	SLU 54	30	-20	1054	0	0	0
26	SLU 55	30	-20	1049	0	0	0
26	SLU 56	30	-20	1061	0	0	0
26	SLU 57	30	-19	1063	0	0	0
26	SLU 58	30	-20	1055	0	0	0
26	SLU 59	30	-19	1057	0	0	0
26	SLU 60	30	-21	1078	0	0	0
26	SLU 61	30	-21	1080	0	0	0
26	SLU 62	30	-21	1087	0	0	0
26	SLU 63	30	-20	1089	0	0	0
26	SLU 64	31	-19	1046	0	0	0
26	SLU 65	31	-18	1049	0	0	0
26	SLU 66	32	-18	1061	0	0	0
26	SLU 67	32	-17	1063	0	0	0
26	SLU 68	32	-17	1058	0	0	0
26	SLU 69	32	-18	1070	0	0	0
26	SLU 70	32	-17	1072	0	0	0
26	SLU 71	32	-18	1064	0	0	0
26	SLU 72	32	-17	1066	0	0	0
26	SLU 73	32	-19	1146	0	0	0
26	SLU 74	33	-19	1157	0	0	0
26	SLU 75	33	-18	1159	0	0	0
26	SLU 76	32	-18	1155	0	0	0
26	SLU 77	33	-19	1167	0	0	0
26	SLU 78	33	-18	1169	0	0	0
26	SLU 79	32	-19	1161	0	0	0
26	SLU 80	33	-18	1163	0	0	0
26	SLU 81	33	-20	1184	0	0	0
26	SLU 82	33	-19	1186	0	0	0
26	SLU 83	33	-20	1193	0	0	0
26	SLU 84	33	-19	1195	0	0	0
26	SLE RA 1	24	-15	781	0	0	0
26	SLE RA 2	24	-14	783	0	0	0
26	SLE RA 3	24	-14	791	0	0	0
26	SLE RA 4	24	-14	792	0	0	0
26	SLE RA 5	24	-14	790	0	0	0
26	SLE RA 6	24	-14	797	0	0	0
26	SLE RA 7	24	-14	799	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
26	SLE RA 8	24	-14	793	0	0	0
26	SLE RA 9	24	-14	795	0	0	0
26	SLE RA 10	24	-15	848	0	0	0
26	SLE RA 11	24	-15	856	0	0	0
26	SLE RA 12	24	-15	857	0	0	0
26	SLE RA 13	24	-14	854	0	0	0
26	SLE RA 14	24	-15	862	0	0	0
26	SLE RA 15	25	-14	863	0	0	0
26	SLE RA 16	24	-15	858	0	0	0
26	SLE RA 17	24	-14	859	0	0	0
26	SLE RA 18	24	-16	873	0	0	0
26	SLE RA 19	25	-15	875	0	0	0
26	SLE RA 20	25	-15	879	0	0	0
26	SLE RA 21	25	-15	881	0	0	0
26	SLE FR 1	24	-15	781	0	0	0
26	SLE FR 2	24	-14	782	0	0	0
26	SLE FR 3	24	-14	784	0	0	0
26	SLE FR 4	24	-15	809	0	0	0
26	SLE FR 5	24	-15	811	0	0	0
26	SLE FR 6	24	-15	827	0	0	0
26	SLE QP 1	24	-15	781	0	0	0
26	SLE QP 2	24	-15	809	0	0	0
26	SLD 1	67	-8	835	0	0	0
26	SLD 2	71	-6	837	0	0	0
26	SLD 3	65	-20	791	0	0	0
26	SLD 4	69	-18	792	0	0	0
26	SLD 5	39	5	884	0	0	0
26	SLD 6	41	6	885	0	0	0
26	SLD 7	33	-35	736	0	0	0
26	SLD 8	36	-34	737	0	0	0
26	SLD 9	12	4	881	0	0	0
26	SLD 10	15	5	882	0	0	0
26	SLD 11	6	-36	733	0	0	0
26	SLD 12	9	-35	734	0	0	0
26	SLD 13	-21	-12	825	0	0	0
26	SLD 14	-17	-10	827	0	0	0
26	SLD 15	-23	-24	781	0	0	0
26	SLD 16	-19	-22	782	0	0	0
26	SLV 1	124	2	875	0	0	0
26	SLV 2	134	6	878	0	0	0
26	SLV 3	120	-27	763	0	0	0
26	SLV 4	130	-22	767	0	0	0
26	SLV 5	59	33	997	0	0	0
26	SLV 6	65	36	1000	0	0	0
26	SLV 7	44	-63	625	0	0	0
26	SLV 8	51	-60	627	0	0	0
26	SLV 9	-3	30	990	0	0	0
26	SLV 10	4	33	993	0	0	0
26	SLV 11	-18	-66	618	0	0	0
26	SLV 12	-11	-63	620	0	0	0
26	SLV 13	-82	-7	851	0	0	0
26	SLV 14	-72	-3	854	0	0	0
26	SLV 15	-86	-36	739	0	0	0
26	SLV 16	-76	-32	743	0	0	0
27	SLU 1	23	-13	760	0	0	0
27	SLU 2	23	-12	764	0	0	0
27	SLU 3	23	-12	775	0	0	0
27	SLU 4	23	-12	777	0	0	0
27	SLU 5	23	-11	773	0	0	0
27	SLU 6	23	-12	784	0	0	0
27	SLU 7	23	-11	786	0	0	0
27	SLU 8	23	-12	778	0	0	0
27	SLU 9	23	-11	781	0	0	0
27	SLU 10	24	-13	861	0	0	0
27	SLU 11	24	-13	872	0	0	0
27	SLU 12	24	-13	874	0	0	0
27	SLU 13	24	-12	870	0	0	0
27	SLU 14	24	-13	881	0	0	0
27	SLU 15	24	-12	883	0	0	0
27	SLU 16	24	-13	876	0	0	0
27	SLU 17	24	-12	878	0	0	0
27	SLU 18	24	-14	899	0	0	0
27	SLU 19	24	-13	901	0	0	0
27	SLU 20	24	-14	908	0	0	0
27	SLU 21	24	-13	910	0	0	0
27	SLU 22	25	-11	867	0	0	0
27	SLU 23	25	-10	870	0	0	0
27	SLU 24	26	-11	882	0	0	0
27	SLU 25	26	-10	884	0	0	0
27	SLU 26	26	-10	880	0	0	0
27	SLU 27	26	-10	891	0	0	0
27	SLU 28	26	-10	893	0	0	0
27	SLU 29	26	-10	885	0	0	0
27	SLU 30	26	-10	887	0	0	0
27	SLU 31	26	-11	967	0	0	0
27	SLU 32	27	-11	979	0	0	0
27	SLU 33	27	-11	981	0	0	0
27	SLU 34	26	-10	977	0	0	0
27	SLU 35	27	-11	988	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
27	SLU 36	27	-10	990	0	0	0
27	SLU 37	26	-11	982	0	0	0
27	SLU 38	27	-10	984	0	0	0
27	SLU 39	27	-12	1006	0	0	0
27	SLU 40	27	-12	1008	0	0	0
27	SLU 41	27	-12	1015	0	0	0
27	SLU 42	27	-11	1017	0	0	0
27	SLU 43	29	-17	952	0	0	0
27	SLU 44	29	-16	955	0	0	0
27	SLU 45	29	-17	967	0	0	0
27	SLU 46	29	-16	969	0	0	0
27	SLU 47	29	-16	964	0	0	0
27	SLU 48	29	-16	976	0	0	0
27	SLU 49	29	-16	978	0	0	0
27	SLU 50	29	-16	970	0	0	0
27	SLU 51	29	-16	972	0	0	0
27	SLU 52	30	-17	1052	0	0	0
27	SLU 53	30	-18	1064	0	0	0
27	SLU 54	30	-17	1066	0	0	0
27	SLU 55	30	-17	1061	0	0	0
27	SLU 56	30	-17	1073	0	0	0
27	SLU 57	30	-17	1075	0	0	0
27	SLU 58	30	-17	1067	0	0	0
27	SLU 59	30	-17	1069	0	0	0
27	SLU 60	30	-18	1090	0	0	0
27	SLU 61	30	-18	1092	0	0	0
27	SLU 62	30	-18	1099	0	0	0
27	SLU 63	30	-17	1101	0	0	0
27	SLU 64	31	-16	1058	0	0	0
27	SLU 65	31	-15	1062	0	0	0
27	SLU 66	32	-15	1073	0	0	0
27	SLU 67	32	-15	1075	0	0	0
27	SLU 68	32	-14	1071	0	0	0
27	SLU 69	32	-15	1082	0	0	0
27	SLU 70	32	-14	1085	0	0	0
27	SLU 71	32	-15	1077	0	0	0
27	SLU 72	32	-14	1079	0	0	0
27	SLU 73	32	-15	1159	0	0	0
27	SLU 74	33	-16	1170	0	0	0
27	SLU 75	33	-15	1172	0	0	0
27	SLU 76	33	-15	1168	0	0	0
27	SLU 77	33	-15	1180	0	0	0
27	SLU 78	33	-15	1182	0	0	0
27	SLU 79	33	-15	1174	0	0	0
27	SLU 80	33	-15	1176	0	0	0
27	SLU 81	33	-17	1197	0	0	0
27	SLU 82	33	-16	1199	0	0	0
27	SLU 83	33	-16	1206	0	0	0
27	SLU 84	33	-16	1208	0	0	0
27	SLE RA 1	24	-12	791	0	0	0
27	SLE RA 2	24	-12	793	0	0	0
27	SLE RA 3	24	-12	801	0	0	0
27	SLE RA 4	24	-12	802	0	0	0
27	SLE RA 5	24	-11	799	0	0	0
27	SLE RA 6	24	-12	807	0	0	0
27	SLE RA 7	24	-11	808	0	0	0
27	SLE RA 8	24	-12	803	0	0	0
27	SLE RA 9	24	-11	804	0	0	0
27	SLE RA 10	24	-12	858	0	0	0
27	SLE RA 11	24	-13	865	0	0	0
27	SLE RA 12	24	-12	867	0	0	0
27	SLE RA 13	24	-12	864	0	0	0
27	SLE RA 14	25	-12	871	0	0	0
27	SLE RA 15	25	-12	873	0	0	0
27	SLE RA 16	24	-12	868	0	0	0
27	SLE RA 17	24	-12	869	0	0	0
27	SLE RA 18	25	-13	883	0	0	0
27	SLE RA 19	25	-13	884	0	0	0
27	SLE RA 20	25	-13	889	0	0	0
27	SLE RA 21	25	-12	891	0	0	0
27	SLE FR 1	24	-12	791	0	0	0
27	SLE FR 2	24	-12	791	0	0	0
27	SLE FR 3	24	-12	793	0	0	0
27	SLE FR 4	24	-12	819	0	0	0
27	SLE FR 5	24	-13	821	0	0	0
27	SLE FR 6	24	-13	837	0	0	0
27	SLE QP 1	24	-12	791	0	0	0
27	SLE QP 2	24	-13	818	0	0	0
27	SLD 1	67	-6	834	0	0	0
27	SLD 2	71	-4	835	0	0	0
27	SLD 3	65	-19	790	0	0	0
27	SLD 4	69	-16	791	0	0	0
27	SLD 5	39	7	889	0	0	0
27	SLD 6	41	9	890	0	0	0
27	SLD 7	33	-33	743	0	0	0
27	SLD 8	36	-31	744	0	0	0
27	SLD 9	12	6	893	0	0	0
27	SLD 10	15	8	893	0	0	0
27	SLD 11	6	-34	747	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
27	SLD 12	9	-32	748	0	0	0
27	SLD 13	-22	-9	846	0	0	0
27	SLD 14	-17	-7	847	0	0	0
27	SLD 15	-23	-21	802	0	0	0
27	SLD 16	-19	-19	803	0	0	0
27	SLV 1	125	2	858	0	0	0
27	SLV 2	135	8	860	0	0	0
27	SLV 3	120	-27	748	0	0	0
27	SLV 4	130	-21	751	0	0	0
27	SLV 5	59	35	996	0	0	0
27	SLV 6	66	39	998	0	0	0
27	SLV 7	44	-62	630	0	0	0
27	SLV 8	51	-58	632	0	0	0
27	SLV 9	-3	33	1005	0	0	0
27	SLV 10	3	37	1006	0	0	0
27	SLV 11	-18	-64	639	0	0	0
27	SLV 12	-11	-60	641	0	0	0
27	SLV 13	-82	-5	886	0	0	0
27	SLV 14	-72	2	889	0	0	0
27	SLV 15	-87	-34	776	0	0	0
27	SLV 16	-77	-27	779	0	0	0
28	SLU 1	23	-11	787	0	0	0
28	SLU 2	24	-10	791	0	0	0
28	SLU 3	24	-10	803	0	0	0
28	SLU 4	24	-10	805	0	0	0
28	SLU 5	24	-9	800	0	0	0
28	SLU 6	24	-10	812	0	0	0
28	SLU 7	24	-9	814	0	0	0
28	SLU 8	24	-10	806	0	0	0
28	SLU 9	24	-9	808	0	0	0
28	SLU 10	25	-10	890	0	0	0
28	SLU 11	25	-11	902	0	0	0
28	SLU 12	25	-10	904	0	0	0
28	SLU 13	25	-10	900	0	0	0
28	SLU 14	25	-10	912	0	0	0
28	SLU 15	25	-10	914	0	0	0
28	SLU 16	25	-11	906	0	0	0
28	SLU 17	25	-10	908	0	0	0
28	SLU 18	25	-12	930	0	0	0
28	SLU 19	25	-11	932	0	0	0
28	SLU 20	25	-11	939	0	0	0
28	SLU 21	25	-11	941	0	0	0
28	SLU 22	26	-9	898	0	0	0
28	SLU 23	26	-8	901	0	0	0
28	SLU 24	26	-8	913	0	0	0
28	SLU 25	26	-8	915	0	0	0
28	SLU 26	26	-7	910	0	0	0
28	SLU 27	26	-8	922	0	0	0
28	SLU 28	26	-7	925	0	0	0
28	SLU 29	26	-8	916	0	0	0
28	SLU 30	26	-7	918	0	0	0
28	SLU 31	27	-8	1001	0	0	0
28	SLU 32	27	-9	1013	0	0	0
28	SLU 33	27	-8	1015	0	0	0
28	SLU 34	27	-8	1010	0	0	0
28	SLU 35	27	-8	1022	0	0	0
28	SLU 36	27	-8	1024	0	0	0
28	SLU 37	27	-9	1016	0	0	0
28	SLU 38	27	-8	1018	0	0	0
28	SLU 39	27	-10	1040	0	0	0
28	SLU 40	27	-9	1042	0	0	0
28	SLU 41	27	-9	1049	0	0	0
28	SLU 42	27	-9	1051	0	0	0
28	SLU 43	30	-15	986	0	0	0
28	SLU 44	30	-14	989	0	0	0
28	SLU 45	30	-14	1001	0	0	0
28	SLU 46	30	-14	1003	0	0	0
28	SLU 47	30	-13	999	0	0	0
28	SLU 48	30	-14	1011	0	0	0
28	SLU 49	30	-13	1013	0	0	0
28	SLU 50	30	-14	1005	0	0	0
28	SLU 51	30	-13	1007	0	0	0
28	SLU 52	31	-14	1089	0	0	0
28	SLU 53	31	-15	1101	0	0	0
28	SLU 54	31	-14	1103	0	0	0
28	SLU 55	31	-14	1098	0	0	0
28	SLU 56	31	-14	1110	0	0	0
28	SLU 57	31	-14	1112	0	0	0
28	SLU 58	31	-15	1104	0	0	0
28	SLU 59	31	-14	1106	0	0	0
28	SLU 60	31	-16	1128	0	0	0
28	SLU 61	31	-15	1130	0	0	0
28	SLU 62	31	-15	1137	0	0	0
28	SLU 63	31	-15	1140	0	0	0
28	SLU 64	32	-13	1096	0	0	0
28	SLU 65	32	-12	1099	0	0	0
28	SLU 66	32	-12	1111	0	0	0
28	SLU 67	33	-12	1114	0	0	0
28	SLU 68	32	-11	1109	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
28	SLU 69	33	-12	1121	0	0	0
28	SLU 70	33	-11	1123	0	0	0
28	SLU 71	32	-12	1115	0	0	0
28	SLU 72	32	-11	1117	0	0	0
28	SLU 73	33	-12	1199	0	0	0
28	SLU 74	33	-13	1211	0	0	0
28	SLU 75	34	-12	1213	0	0	0
28	SLU 76	33	-12	1208	0	0	0
28	SLU 77	34	-12	1220	0	0	0
28	SLU 78	34	-12	1223	0	0	0
28	SLU 79	33	-13	1214	0	0	0
28	SLU 80	33	-12	1217	0	0	0
28	SLU 81	34	-14	1238	0	0	0
28	SLU 82	34	-13	1240	0	0	0
28	SLU 83	34	-13	1248	0	0	0
28	SLU 84	34	-13	1250	0	0	0
28	SLE RA 1	24	-10	819	0	0	0
28	SLE RA 2	24	-10	821	0	0	0
28	SLE RA 3	24	-10	829	0	0	0
28	SLE RA 4	24	-10	831	0	0	0
28	SLE RA 5	24	-9	827	0	0	0
28	SLE RA 6	24	-10	835	0	0	0
28	SLE RA 7	25	-9	837	0	0	0
28	SLE RA 8	24	-10	831	0	0	0
28	SLE RA 9	24	-9	833	0	0	0
28	SLE RA 10	25	-10	888	0	0	0
28	SLE RA 11	25	-10	896	0	0	0
28	SLE RA 12	25	-10	897	0	0	0
28	SLE RA 13	25	-10	894	0	0	0
28	SLE RA 14	25	-10	902	0	0	0
28	SLE RA 15	25	-10	903	0	0	0
28	SLE RA 16	25	-10	898	0	0	0
28	SLE RA 17	25	-10	899	0	0	0
28	SLE RA 18	25	-11	914	0	0	0
28	SLE RA 19	25	-11	915	0	0	0
28	SLE RA 20	25	-11	920	0	0	0
28	SLE RA 21	25	-10	921	0	0	0
28	SLE FR 1	24	-10	819	0	0	0
28	SLE FR 2	24	-10	819	0	0	0
28	SLE FR 3	24	-10	821	0	0	0
28	SLE FR 4	24	-10	848	0	0	0
28	SLE FR 5	24	-10	850	0	0	0
28	SLE FR 6	25	-11	866	0	0	0
28	SLE QP 1	24	-10	819	0	0	0
28	SLE QP 2	24	-11	847	0	0	0
28	SLD 1	69	-7	853	0	0	0
28	SLD 2	73	-4	854	0	0	0
28	SLD 3	67	-20	809	0	0	0
28	SLD 4	71	-16	810	0	0	0
28	SLD 5	40	9	915	0	0	0
28	SLD 6	42	11	916	0	0	0
28	SLD 7	34	-33	769	0	0	0
28	SLD 8	37	-30	770	0	0	0
28	SLD 9	12	9	925	0	0	0
28	SLD 10	15	12	925	0	0	0
28	SLD 11	6	-32	779	0	0	0
28	SLD 12	9	-30	779	0	0	0
28	SLD 13	-22	-5	885	0	0	0
28	SLD 14	-18	-2	886	0	0	0
28	SLD 15	-24	-18	841	0	0	0
28	SLD 16	-20	-14	842	0	0	0
28	SLV 1	128	-2	864	0	0	0
28	SLV 2	138	7	866	0	0	0
28	SLV 3	123	-32	754	0	0	0
28	SLV 4	134	-24	756	0	0	0
28	SLV 5	60	36	1019	0	0	0
28	SLV 6	67	42	1020	0	0	0
28	SLV 7	45	-64	652	0	0	0
28	SLV 8	52	-59	653	0	0	0
28	SLV 9	-3	38	1041	0	0	0
28	SLV 10	3	43	1043	0	0	0
28	SLV 11	-18	-63	675	0	0	0
28	SLV 12	-11	-57	676	0	0	0
28	SLV 13	-85	3	939	0	0	0
28	SLV 14	-74	11	941	0	0	0
28	SLV 15	-89	-28	829	0	0	0
28	SLV 16	-79	-19	831	0	0	0
29	SLU 1	20	-7	669	0	0	0
29	SLU 2	20	-7	672	0	0	0
29	SLU 3	20	-7	682	0	0	0
29	SLU 4	20	-6	684	0	0	0
29	SLU 5	20	-6	680	0	0	0
29	SLU 6	20	-6	690	0	0	0
29	SLU 7	20	-6	692	0	0	0
29	SLU 8	20	-7	685	0	0	0
29	SLU 9	20	-6	687	0	0	0
29	SLU 10	21	-7	756	0	0	0
29	SLU 11	21	-7	766	0	0	0
29	SLU 12	21	-7	768	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
29	SLU 13	21	-6	764	0	0	0
29	SLU 14	21	-7	774	0	0	0
29	SLU 15	21	-6	776	0	0	0
29	SLU 16	21	-7	769	0	0	0
29	SLU 17	21	-6	771	0	0	0
29	SLU 18	21	-8	789	0	0	0
29	SLU 19	21	-7	791	0	0	0
29	SLU 20	21	-7	797	0	0	0
29	SLU 21	21	-7	799	0	0	0
29	SLU 22	22	-5	763	0	0	0
29	SLU 23	22	-5	765	0	0	0
29	SLU 24	22	-5	776	0	0	0
29	SLU 25	22	-4	777	0	0	0
29	SLU 26	22	-4	773	0	0	0
29	SLU 27	22	-5	784	0	0	0
29	SLU 28	22	-4	785	0	0	0
29	SLU 29	22	-5	778	0	0	0
29	SLU 30	22	-4	780	0	0	0
29	SLU 31	23	-5	849	0	0	0
29	SLU 32	23	-5	860	0	0	0
29	SLU 33	23	-5	861	0	0	0
29	SLU 34	23	-4	857	0	0	0
29	SLU 35	23	-5	867	0	0	0
29	SLU 36	23	-4	869	0	0	0
29	SLU 37	23	-5	862	0	0	0
29	SLU 38	23	-4	864	0	0	0
29	SLU 39	23	-6	882	0	0	0
29	SLU 40	23	-5	884	0	0	0
29	SLU 41	23	-5	890	0	0	0
29	SLU 42	23	-5	892	0	0	0
29	SLU 43	25	-10	838	0	0	0
29	SLU 44	25	-9	841	0	0	0
29	SLU 45	25	-10	851	0	0	0
29	SLU 46	25	-9	853	0	0	0
29	SLU 47	25	-9	849	0	0	0
29	SLU 48	25	-9	859	0	0	0
29	SLU 49	25	-9	861	0	0	0
29	SLU 50	25	-9	854	0	0	0
29	SLU 51	25	-9	855	0	0	0
29	SLU 52	26	-10	925	0	0	0
29	SLU 53	26	-10	935	0	0	0
29	SLU 54	26	-9	937	0	0	0
29	SLU 55	26	-9	933	0	0	0
29	SLU 56	26	-10	943	0	0	0
29	SLU 57	26	-9	945	0	0	0
29	SLU 58	26	-10	938	0	0	0
29	SLU 59	26	-9	939	0	0	0
29	SLU 60	26	-11	958	0	0	0
29	SLU 61	26	-10	959	0	0	0
29	SLU 62	26	-10	966	0	0	0
29	SLU 63	26	-10	967	0	0	0
29	SLU 64	27	-8	931	0	0	0
29	SLU 65	27	-7	934	0	0	0
29	SLU 66	27	-8	944	0	0	0
29	SLU 67	27	-7	946	0	0	0
29	SLU 68	27	-7	942	0	0	0
29	SLU 69	27	-7	952	0	0	0
29	SLU 70	27	-7	954	0	0	0
29	SLU 71	27	-8	947	0	0	0
29	SLU 72	27	-7	949	0	0	0
29	SLU 73	28	-8	1018	0	0	0
29	SLU 74	28	-8	1028	0	0	0
29	SLU 75	28	-8	1030	0	0	0
29	SLU 76	28	-7	1026	0	0	0
29	SLU 77	28	-8	1036	0	0	0
29	SLU 78	28	-7	1038	0	0	0
29	SLU 79	28	-8	1031	0	0	0
29	SLU 80	28	-7	1033	0	0	0
29	SLU 81	28	-9	1051	0	0	0
29	SLU 82	28	-8	1053	0	0	0
29	SLU 83	28	-8	1059	0	0	0
29	SLU 84	28	-8	1061	0	0	0
29	SLE RA 1	20	-7	696	0	0	0
29	SLE RA 2	20	-6	698	0	0	0
29	SLE RA 3	20	-7	705	0	0	0
29	SLE RA 4	20	-6	706	0	0	0
29	SLE RA 5	20	-6	703	0	0	0
29	SLE RA 6	21	-6	710	0	0	0
29	SLE RA 7	21	-6	711	0	0	0
29	SLE RA 8	20	-6	706	0	0	0
29	SLE RA 9	20	-6	708	0	0	0
29	SLE RA 10	21	-6	754	0	0	0
29	SLE RA 11	21	-7	760	0	0	0
29	SLE RA 12	21	-6	762	0	0	0
29	SLE RA 13	21	-6	759	0	0	0
29	SLE RA 14	21	-6	766	0	0	0
29	SLE RA 15	21	-6	767	0	0	0
29	SLE RA 16	21	-6	762	0	0	0
29	SLE RA 17	21	-6	763	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
29	SLE RA 18	21	-7	776	0	0	0
29	SLE RA 19	21	-7	777	0	0	0
29	SLE RA 20	21	-7	781	0	0	0
29	SLE RA 21	21	-6	782	0	0	0
29	SLE FR 1	20	-7	696	0	0	0
29	SLE FR 2	20	-7	696	0	0	0
29	SLE FR 3	20	-7	698	0	0	0
29	SLE FR 4	21	-7	720	0	0	0
29	SLE FR 5	21	-7	722	0	0	0
29	SLE FR 6	21	-7	736	0	0	0
29	SLE QP 1	20	-7	696	0	0	0
29	SLE QP 2	20	-7	720	0	0	0
29	SLD 1	58	-4	715	0	0	0
29	SLD 2	61	-1	716	0	0	0
29	SLD 3	56	-15	680	0	0	0
29	SLD 4	60	-11	680	0	0	0
29	SLD 5	33	9	772	0	0	0
29	SLD 6	36	12	772	0	0	0
29	SLD 7	28	-26	654	0	0	0
29	SLD 8	31	-24	654	0	0	0
29	SLD 9	10	10	785	0	0	0
29	SLD 10	13	12	785	0	0	0
29	SLD 11	5	-26	667	0	0	0
29	SLD 12	8	-23	668	0	0	0
29	SLD 13	-19	-3	759	0	0	0
29	SLD 14	-15	1	760	0	0	0
29	SLD 15	-20	-13	724	0	0	0
29	SLD 16	-17	-10	724	0	0	0
29	SLV 1	108	0	712	0	0	0
29	SLV 2	116	9	713	0	0	0
29	SLV 3	104	-26	624	0	0	0
29	SLV 4	113	-17	625	0	0	0
29	SLV 5	51	32	852	0	0	0
29	SLV 6	56	38	852	0	0	0
29	SLV 7	38	-53	556	0	0	0
29	SLV 8	44	-47	557	0	0	0
29	SLV 9	-3	34	883	0	0	0
29	SLV 10	3	40	883	0	0	0
29	SLV 11	-15	-52	587	0	0	0
29	SLV 12	-10	-46	588	0	0	0
29	SLV 13	-72	3	815	0	0	0
29	SLV 14	-63	12	816	0	0	0
29	SLV 15	-75	-22	726	0	0	0
29	SLV 16	-67	-13	727	0	0	0
30	SLU 1	12	-10	377	0	0	0
30	SLU 2	12	-10	379	0	0	0
30	SLU 3	12	-10	385	0	0	0
30	SLU 4	12	-10	386	0	0	0
30	SLU 5	12	-9	384	0	0	0
30	SLU 6	12	-10	389	0	0	0
30	SLU 7	12	-9	390	0	0	0
30	SLU 8	12	-10	387	0	0	0
30	SLU 9	12	-9	388	0	0	0
30	SLU 10	12	-11	428	0	0	0
30	SLU 11	12	-11	434	0	0	0
30	SLU 12	12	-11	435	0	0	0
30	SLU 13	12	-10	433	0	0	0
30	SLU 14	12	-11	439	0	0	0
30	SLU 15	12	-10	440	0	0	0
30	SLU 16	12	-11	436	0	0	0
30	SLU 17	12	-10	437	0	0	0
30	SLU 18	12	-11	448	0	0	0
30	SLU 19	12	-11	449	0	0	0
30	SLU 20	12	-11	453	0	0	0
30	SLU 21	12	-11	454	0	0	0
30	SLU 22	13	-10	431	0	0	0
30	SLU 23	13	-9	433	0	0	0
30	SLU 24	13	-10	438	0	0	0
30	SLU 25	13	-9	439	0	0	0
30	SLU 26	13	-9	437	0	0	0
30	SLU 27	13	-9	443	0	0	0
30	SLU 28	13	-9	444	0	0	0
30	SLU 29	13	-9	440	0	0	0
30	SLU 30	13	-9	441	0	0	0
30	SLU 31	13	-10	482	0	0	0
30	SLU 32	13	-10	488	0	0	0
30	SLU 33	13	-10	489	0	0	0
30	SLU 34	13	-10	487	0	0	0
30	SLU 35	13	-10	493	0	0	0
30	SLU 36	13	-10	494	0	0	0
30	SLU 37	13	-10	490	0	0	0
30	SLU 38	13	-10	491	0	0	0
30	SLU 39	13	-11	502	0	0	0
30	SLU 40	13	-11	503	0	0	0
30	SLU 41	13	-11	507	0	0	0
30	SLU 42	14	-10	508	0	0	0
30	SLU 43	15	-13	472	0	0	0
30	SLU 44	15	-13	473	0	0	0
30	SLU 45	15	-13	479	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
30	SLU 46	15	-13	480	0	0	0
30	SLU 47	15	-13	478	0	0	0
30	SLU 48	15	-13	484	0	0	0
30	SLU 49	15	-13	485	0	0	0
30	SLU 50	15	-13	481	0	0	0
30	SLU 51	15	-13	482	0	0	0
30	SLU 52	15	-14	523	0	0	0
30	SLU 53	15	-14	529	0	0	0
30	SLU 54	15	-14	530	0	0	0
30	SLU 55	15	-14	528	0	0	0
30	SLU 56	15	-14	534	0	0	0
30	SLU 57	15	-14	535	0	0	0
30	SLU 58	15	-14	531	0	0	0
30	SLU 59	15	-14	532	0	0	0
30	SLU 60	15	-15	543	0	0	0
30	SLU 61	15	-14	544	0	0	0
30	SLU 62	15	-14	547	0	0	0
30	SLU 63	15	-14	548	0	0	0
30	SLU 64	16	-13	526	0	0	0
30	SLU 65	16	-13	527	0	0	0
30	SLU 66	16	-13	533	0	0	0
30	SLU 67	16	-12	534	0	0	0
30	SLU 68	16	-12	532	0	0	0
30	SLU 69	16	-13	538	0	0	0
30	SLU 70	16	-12	539	0	0	0
30	SLU 71	16	-13	535	0	0	0
30	SLU 72	16	-12	536	0	0	0
30	SLU 73	16	-13	577	0	0	0
30	SLU 74	16	-14	583	0	0	0
30	SLU 75	16	-13	584	0	0	0
30	SLU 76	16	-13	582	0	0	0
30	SLU 77	17	-13	588	0	0	0
30	SLU 78	17	-13	589	0	0	0
30	SLU 79	16	-13	585	0	0	0
30	SLU 80	16	-13	586	0	0	0
30	SLU 81	17	-14	597	0	0	0
30	SLU 82	17	-14	598	0	0	0
30	SLU 83	17	-14	601	0	0	0
30	SLU 84	17	-14	602	0	0	0
30	SLE RA 1	12	-10	392	0	0	0
30	SLE RA 2	12	-10	394	0	0	0
30	SLE RA 3	12	-10	398	0	0	0
30	SLE RA 4	12	-10	398	0	0	0
30	SLE RA 5	12	-10	397	0	0	0
30	SLE RA 6	12	-10	401	0	0	0
30	SLE RA 7	12	-10	401	0	0	0
30	SLE RA 8	12	-10	399	0	0	0
30	SLE RA 9	12	-10	399	0	0	0
30	SLE RA 10	12	-10	427	0	0	0
30	SLE RA 11	12	-11	431	0	0	0
30	SLE RA 12	12	-10	431	0	0	0
30	SLE RA 13	12	-10	430	0	0	0
30	SLE RA 14	12	-10	434	0	0	0
30	SLE RA 15	12	-10	434	0	0	0
30	SLE RA 16	12	-10	432	0	0	0
30	SLE RA 17	12	-10	433	0	0	0
30	SLE RA 18	12	-11	440	0	0	0
30	SLE RA 19	12	-11	440	0	0	0
30	SLE RA 20	12	-11	443	0	0	0
30	SLE RA 21	12	-11	444	0	0	0
30	SLE FR 1	12	-10	392	0	0	0
30	SLE FR 2	12	-10	393	0	0	0
30	SLE FR 3	12	-10	394	0	0	0
30	SLE FR 4	12	-10	407	0	0	0
30	SLE FR 5	12	-10	408	0	0	0
30	SLE FR 6	12	-11	416	0	0	0
30	SLE QP 1	12	-10	392	0	0	0
30	SLE QP 2	12	-10	407	0	0	0
30	SLD 1	34	-5	431	0	0	0
30	SLD 2	36	-5	432	0	0	0
30	SLD 3	33	-11	409	0	0	0
30	SLD 4	35	-12	410	0	0	0
30	SLD 5	20	0	448	0	0	0
30	SLD 6	21	0	448	0	0	0
30	SLD 7	17	-20	373	0	0	0
30	SLD 8	18	-20	374	0	0	0
30	SLD 9	6	-1	439	0	0	0
30	SLD 10	7	-1	440	0	0	0
30	SLD 11	3	-21	365	0	0	0
30	SLD 12	4	-21	366	0	0	0
30	SLD 13	-11	-9	403	0	0	0
30	SLD 14	-9	-9	404	0	0	0
30	SLD 15	-12	-15	381	0	0	0
30	SLD 16	-10	-15	382	0	0	0
30	SLV 1	64	2	466	0	0	0
30	SLV 2	69	1	468	0	0	0
30	SLV 3	62	-13	410	0	0	0
30	SLV 4	67	-13	413	0	0	0
30	SLV 5	30	15	509	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
30	SLV 6	33	15	510	0	0	0
30	SLV 7	23	-33	323	0	0	0
30	SLV 8	26	-33	324	0	0	0
30	SLV 9	-2	13	489	0	0	0
30	SLV 10	1	13	491	0	0	0
30	SLV 11	-9	-36	303	0	0	0
30	SLV 12	-6	-36	305	0	0	0
30	SLV 13	-42	-7	401	0	0	0
30	SLV 14	-38	-8	403	0	0	0
30	SLV 15	-45	-22	345	0	0	0
30	SLV 16	-40	-22	347	0	0	0
31	SLU 1	14	-12	471	0	0	0
31	SLU 2	14	-11	473	0	0	0
31	SLU 3	14	-11	480	0	0	0
31	SLU 4	15	-11	482	0	0	0
31	SLU 5	14	-11	479	0	0	0
31	SLU 6	15	-11	486	0	0	0
31	SLU 7	15	-11	487	0	0	0
31	SLU 8	14	-11	483	0	0	0
31	SLU 9	14	-11	484	0	0	0
31	SLU 10	15	-12	535	0	0	0
31	SLU 11	15	-12	542	0	0	0
31	SLU 12	15	-12	543	0	0	0
31	SLU 13	15	-12	540	0	0	0
31	SLU 14	15	-12	548	0	0	0
31	SLU 15	15	-12	549	0	0	0
31	SLU 16	15	-12	544	0	0	0
31	SLU 17	15	-12	545	0	0	0
31	SLU 18	15	-13	559	0	0	0
31	SLU 19	15	-13	560	0	0	0
31	SLU 20	15	-13	565	0	0	0
31	SLU 21	15	-12	566	0	0	0
31	SLU 22	16	-11	538	0	0	0
31	SLU 23	16	-10	540	0	0	0
31	SLU 24	16	-11	547	0	0	0
31	SLU 25	16	-10	549	0	0	0
31	SLU 26	16	-10	546	0	0	0
31	SLU 27	16	-10	553	0	0	0
31	SLU 28	16	-10	554	0	0	0
31	SLU 29	16	-10	550	0	0	0
31	SLU 30	16	-10	551	0	0	0
31	SLU 31	16	-11	602	0	0	0
31	SLU 32	17	-12	609	0	0	0
31	SLU 33	17	-11	610	0	0	0
31	SLU 34	16	-11	607	0	0	0
31	SLU 35	17	-11	615	0	0	0
31	SLU 36	17	-11	616	0	0	0
31	SLU 37	16	-11	611	0	0	0
31	SLU 38	17	-11	613	0	0	0
31	SLU 39	17	-12	626	0	0	0
31	SLU 40	17	-12	627	0	0	0
31	SLU 41	17	-12	632	0	0	0
31	SLU 42	17	-12	633	0	0	0
31	SLU 43	18	-15	589	0	0	0
31	SLU 44	18	-15	591	0	0	0
31	SLU 45	18	-15	599	0	0	0
31	SLU 46	18	-15	600	0	0	0
31	SLU 47	18	-14	597	0	0	0
31	SLU 48	18	-15	604	0	0	0
31	SLU 49	18	-14	606	0	0	0
31	SLU 50	18	-15	601	0	0	0
31	SLU 51	18	-14	602	0	0	0
31	SLU 52	19	-16	653	0	0	0
31	SLU 53	19	-16	660	0	0	0
31	SLU 54	19	-16	661	0	0	0
31	SLU 55	19	-15	659	0	0	0
31	SLU 56	19	-16	666	0	0	0
31	SLU 57	19	-15	667	0	0	0
31	SLU 58	19	-16	663	0	0	0
31	SLU 59	19	-15	664	0	0	0
31	SLU 60	19	-17	677	0	0	0
31	SLU 61	19	-16	678	0	0	0
31	SLU 62	19	-16	683	0	0	0
31	SLU 63	19	-16	684	0	0	0
31	SLU 64	20	-15	656	0	0	0
31	SLU 65	20	-14	658	0	0	0
31	SLU 66	20	-14	666	0	0	0
31	SLU 67	20	-14	667	0	0	0
31	SLU 68	20	-14	664	0	0	0
31	SLU 69	20	-14	671	0	0	0
31	SLU 70	20	-14	673	0	0	0
31	SLU 71	20	-14	668	0	0	0
31	SLU 72	20	-14	669	0	0	0
31	SLU 73	20	-15	720	0	0	0
31	SLU 74	20	-15	727	0	0	0
31	SLU 75	20	-15	728	0	0	0
31	SLU 76	20	-15	726	0	0	0
31	SLU 77	20	-15	733	0	0	0
31	SLU 78	20	-15	734	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
31	SLU 79	20	-15	730	0	0	0
31	SLU 80	20	-15	731	0	0	0
31	SLU 81	20	-16	744	0	0	0
31	SLU 82	20	-16	745	0	0	0
31	SLU 83	20	-16	750	0	0	0
31	SLU 84	20	-15	751	0	0	0
31	SLE RA 1	15	-11	490	0	0	0
31	SLE RA 2	15	-11	491	0	0	0
31	SLE RA 3	15	-11	496	0	0	0
31	SLE RA 4	15	-11	497	0	0	0
31	SLE RA 5	15	-11	495	0	0	0
31	SLE RA 6	15	-11	500	0	0	0
31	SLE RA 7	15	-11	501	0	0	0
31	SLE RA 8	15	-11	498	0	0	0
31	SLE RA 9	15	-11	499	0	0	0
31	SLE RA 10	15	-12	533	0	0	0
31	SLE RA 11	15	-12	537	0	0	0
31	SLE RA 12	15	-12	538	0	0	0
31	SLE RA 13	15	-11	536	0	0	0
31	SLE RA 14	15	-12	541	0	0	0
31	SLE RA 15	15	-11	542	0	0	0
31	SLE RA 16	15	-12	539	0	0	0
31	SLE RA 17	15	-11	540	0	0	0
31	SLE RA 18	15	-12	549	0	0	0
31	SLE RA 19	15	-12	550	0	0	0
31	SLE RA 20	15	-12	553	0	0	0
31	SLE RA 21	15	-12	553	0	0	0
31	SLE FR 1	15	-11	490	0	0	0
31	SLE FR 2	15	-11	490	0	0	0
31	SLE FR 3	15	-11	492	0	0	0
31	SLE FR 4	15	-12	508	0	0	0
31	SLE FR 5	15	-12	509	0	0	0
31	SLE FR 6	15	-12	519	0	0	0
31	SLE QP 1	15	-11	490	0	0	0
31	SLE QP 2	15	-12	508	0	0	0
31	SLD 1	42	-6	533	0	0	0
31	SLD 2	45	-6	534	0	0	0
31	SLD 3	41	-14	506	0	0	0
31	SLD 4	44	-13	507	0	0	0
31	SLD 5	24	1	556	0	0	0
31	SLD 6	26	2	557	0	0	0
31	SLD 7	21	-24	466	0	0	0
31	SLD 8	22	-24	467	0	0	0
31	SLD 9	7	0	548	0	0	0
31	SLD 10	9	0	549	0	0	0
31	SLD 11	4	-25	459	0	0	0
31	SLD 12	6	-25	459	0	0	0
31	SLD 13	-14	-10	508	0	0	0
31	SLD 14	-11	-10	509	0	0	0
31	SLD 15	-15	-18	481	0	0	0
31	SLD 16	-12	-17	482	0	0	0
31	SLV 1	79	2	569	0	0	0
31	SLV 2	85	2	572	0	0	0
31	SLV 3	76	-16	502	0	0	0
31	SLV 4	82	-16	505	0	0	0
31	SLV 5	37	20	628	0	0	0
31	SLV 6	41	20	630	0	0	0
31	SLV 7	28	-41	403	0	0	0
31	SLV 8	32	-40	405	0	0	0
31	SLV 9	-2	17	611	0	0	0
31	SLV 10	2	17	613	0	0	0
31	SLV 11	-11	-44	385	0	0	0
31	SLV 12	-7	-43	387	0	0	0
31	SLV 13	-53	-8	511	0	0	0
31	SLV 14	-47	-7	514	0	0	0
31	SLV 15	-55	-26	443	0	0	0
31	SLV 16	-49	-25	446	0	0	0
32	SLU 1	9	-2	308	0	0	0
32	SLU 2	9	-2	309	0	0	0
32	SLU 3	9	-2	314	0	0	0
32	SLU 4	9	-2	315	0	0	0
32	SLU 5	9	-2	313	0	0	0
32	SLU 6	9	-2	318	0	0	0
32	SLU 7	9	-2	318	0	0	0
32	SLU 8	9	-2	315	0	0	0
32	SLU 9	9	-2	316	0	0	0
32	SLU 10	9	-2	347	0	0	0
32	SLU 11	9	-2	352	0	0	0
32	SLU 12	9	-2	353	0	0	0
32	SLU 13	9	-2	351	0	0	0
32	SLU 14	9	-2	356	0	0	0
32	SLU 15	9	-2	357	0	0	0
32	SLU 16	9	-2	354	0	0	0
32	SLU 17	9	-2	354	0	0	0
32	SLU 18	9	-2	363	0	0	0
32	SLU 19	9	-2	363	0	0	0
32	SLU 20	9	-2	366	0	0	0
32	SLU 21	9	-2	367	0	0	0
32	SLU 22	10	-1	351	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
32	SLU 23	10	-1	352	0	0	0
32	SLU 24	10	-1	357	0	0	0
32	SLU 25	10	-1	358	0	0	0
32	SLU 26	10	-1	356	0	0	0
32	SLU 27	10	-1	361	0	0	0
32	SLU 28	10	-1	361	0	0	0
32	SLU 29	10	-1	358	0	0	0
32	SLU 30	10	-1	359	0	0	0
32	SLU 31	10	-1	390	0	0	0
32	SLU 32	10	-1	395	0	0	0
32	SLU 33	10	-1	396	0	0	0
32	SLU 34	10	-1	394	0	0	0
32	SLU 35	10	-1	399	0	0	0
32	SLU 36	10	-1	400	0	0	0
32	SLU 37	10	-1	396	0	0	0
32	SLU 38	10	-1	397	0	0	0
32	SLU 39	10	-1	406	0	0	0
32	SLU 40	10	-1	406	0	0	0
32	SLU 41	10	-1	409	0	0	0
32	SLU 42	10	-1	410	0	0	0
32	SLU 43	11	-3	386	0	0	0
32	SLU 44	11	-3	387	0	0	0
32	SLU 45	11	-3	392	0	0	0
32	SLU 46	11	-3	393	0	0	0
32	SLU 47	11	-3	391	0	0	0
32	SLU 48	11	-3	395	0	0	0
32	SLU 49	11	-3	396	0	0	0
32	SLU 50	11	-3	393	0	0	0
32	SLU 51	11	-3	394	0	0	0
32	SLU 52	12	-3	425	0	0	0
32	SLU 53	12	-3	430	0	0	0
32	SLU 54	12	-3	431	0	0	0
32	SLU 55	12	-3	429	0	0	0
32	SLU 56	12	-3	434	0	0	0
32	SLU 57	12	-3	434	0	0	0
32	SLU 58	12	-3	431	0	0	0
32	SLU 59	12	-3	432	0	0	0
32	SLU 60	12	-3	440	0	0	0
32	SLU 61	12	-3	441	0	0	0
32	SLU 62	12	-3	444	0	0	0
32	SLU 63	12	-3	445	0	0	0
32	SLU 64	12	-2	429	0	0	0
32	SLU 65	12	-2	430	0	0	0
32	SLU 66	12	-2	435	0	0	0
32	SLU 67	12	-2	435	0	0	0
32	SLU 68	12	-2	434	0	0	0
32	SLU 69	12	-2	438	0	0	0
32	SLU 70	12	-2	439	0	0	0
32	SLU 71	12	-2	436	0	0	0
32	SLU 72	12	-2	437	0	0	0
32	SLU 73	13	-2	468	0	0	0
32	SLU 74	13	-2	473	0	0	0
32	SLU 75	13	-2	474	0	0	0
32	SLU 76	13	-2	472	0	0	0
32	SLU 77	13	-2	477	0	0	0
32	SLU 78	13	-2	477	0	0	0
32	SLU 79	13	-2	474	0	0	0
32	SLU 80	13	-2	475	0	0	0
32	SLU 81	13	-2	483	0	0	0
32	SLU 82	13	-2	484	0	0	0
32	SLU 83	13	-2	487	0	0	0
32	SLU 84	13	-2	488	0	0	0
32	SLE RA 1	9	-2	320	0	0	0
32	SLE RA 2	9	-2	321	0	0	0
32	SLE RA 3	9	-2	324	0	0	0
32	SLE RA 4	9	-2	325	0	0	0
32	SLE RA 5	9	-2	324	0	0	0
32	SLE RA 6	9	-2	327	0	0	0
32	SLE RA 7	9	-2	327	0	0	0
32	SLE RA 8	9	-2	325	0	0	0
32	SLE RA 9	9	-2	326	0	0	0
32	SLE RA 10	9	-2	347	0	0	0
32	SLE RA 11	9	-2	350	0	0	0
32	SLE RA 12	9	-2	350	0	0	0
32	SLE RA 13	9	-2	349	0	0	0
32	SLE RA 14	9	-2	352	0	0	0
32	SLE RA 15	10	-2	353	0	0	0
32	SLE RA 16	9	-2	351	0	0	0
32	SLE RA 17	9	-2	351	0	0	0
32	SLE RA 18	9	-2	357	0	0	0
32	SLE RA 19	9	-2	357	0	0	0
32	SLE RA 20	10	-2	359	0	0	0
32	SLE RA 21	10	-2	360	0	0	0
32	SLE FR 1	9	-2	320	0	0	0
32	SLE FR 2	9	-2	320	0	0	0
32	SLE FR 3	9	-2	321	0	0	0
32	SLE FR 4	9	-2	331	0	0	0
32	SLE FR 5	9	-2	332	0	0	0
32	SLE FR 6	9	-2	339	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
32	SLE QP 1	9	-2	320	0	0	0
32	SLE QP 2	9	-2	331	0	0	0
32	SLD 1	26	-1	324	0	0	0
32	SLD 2	28	1	324	0	0	0
32	SLD 3	26	-6	309	0	0	0
32	SLD 4	27	-4	309	0	0	0
32	SLD 5	15	5	351	0	0	0
32	SLD 6	16	7	351	0	0	0
32	SLD 7	13	-11	302	0	0	0
32	SLD 8	14	-10	302	0	0	0
32	SLD 9	5	6	360	0	0	0
32	SLD 10	6	7	360	0	0	0
32	SLD 11	2	-11	311	0	0	0
32	SLD 12	3	-9	311	0	0	0
32	SLD 13	-9	0	354	0	0	0
32	SLD 14	-7	2	353	0	0	0
32	SLD 15	-10	-5	339	0	0	0
32	SLD 16	-8	-3	339	0	0	0
32	SLV 1	49	0	315	0	0	0
32	SLV 2	53	5	315	0	0	0
32	SLV 3	48	-12	278	0	0	0
32	SLV 4	52	-7	278	0	0	0
32	SLV 5	23	16	382	0	0	0
32	SLV 6	26	19	382	0	0	0
32	SLV 7	18	-24	260	0	0	0
32	SLV 8	20	-21	260	0	0	0
32	SLV 9	-2	17	403	0	0	0
32	SLV 10	1	20	403	0	0	0
32	SLV 11	-7	-23	281	0	0	0
32	SLV 12	-5	-20	281	0	0	0
32	SLV 13	-33	3	385	0	0	0
32	SLV 14	-29	8	385	0	0	0
32	SLV 15	-35	-9	348	0	0	0
32	SLV 16	-31	-4	348	0	0	0
33	SLU 1	5	-4	169	0	0	0
33	SLU 2	5	-4	169	0	0	0
33	SLU 3	5	-4	172	0	0	0
33	SLU 4	5	-4	172	0	0	0
33	SLU 5	5	-4	171	0	0	0
33	SLU 6	5	-4	174	0	0	0
33	SLU 7	5	-4	175	0	0	0
33	SLU 8	5	-4	173	0	0	0
33	SLU 9	5	-4	173	0	0	0
33	SLU 10	5	-4	191	0	0	0
33	SLU 11	5	-4	194	0	0	0
33	SLU 12	5	-4	194	0	0	0
33	SLU 13	5	-4	193	0	0	0
33	SLU 14	5	-4	196	0	0	0
33	SLU 15	5	-4	197	0	0	0
33	SLU 16	5	-4	195	0	0	0
33	SLU 17	5	-4	195	0	0	0
33	SLU 18	5	-4	200	0	0	0
33	SLU 19	5	-4	201	0	0	0
33	SLU 20	5	-4	202	0	0	0
33	SLU 21	5	-4	203	0	0	0
33	SLU 22	6	-4	193	0	0	0
33	SLU 23	6	-4	193	0	0	0
33	SLU 24	6	-4	196	0	0	0
33	SLU 25	6	-4	196	0	0	0
33	SLU 26	6	-3	195	0	0	0
33	SLU 27	6	-4	198	0	0	0
33	SLU 28	6	-3	199	0	0	0
33	SLU 29	6	-4	197	0	0	0
33	SLU 30	6	-3	197	0	0	0
33	SLU 31	6	-4	215	0	0	0
33	SLU 32	6	-4	218	0	0	0
33	SLU 33	6	-4	219	0	0	0
33	SLU 34	6	-4	218	0	0	0
33	SLU 35	6	-4	220	0	0	0
33	SLU 36	6	-4	221	0	0	0
33	SLU 37	6	-4	219	0	0	0
33	SLU 38	6	-4	219	0	0	0
33	SLU 39	6	-4	224	0	0	0
33	SLU 40	6	-4	225	0	0	0
33	SLU 41	6	-4	226	0	0	0
33	SLU 42	6	-4	227	0	0	0
33	SLU 43	6	-5	211	0	0	0
33	SLU 44	6	-5	212	0	0	0
33	SLU 45	6	-5	214	0	0	0
33	SLU 46	6	-5	215	0	0	0
33	SLU 47	6	-5	214	0	0	0
33	SLU 48	6	-5	216	0	0	0
33	SLU 49	7	-5	217	0	0	0
33	SLU 50	6	-5	215	0	0	0
33	SLU 51	6	-5	216	0	0	0
33	SLU 52	7	-5	234	0	0	0
33	SLU 53	7	-6	236	0	0	0
33	SLU 54	7	-5	237	0	0	0
33	SLU 55	7	-5	236	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
33	SLU 56	7	-5	239	0	0	0
33	SLU 57	7	-5	239	0	0	0
33	SLU 58	7	-5	237	0	0	0
33	SLU 59	7	-5	238	0	0	0
33	SLU 60	7	-6	242	0	0	0
33	SLU 61	7	-6	243	0	0	0
33	SLU 62	7	-6	245	0	0	0
33	SLU 63	7	-6	245	0	0	0
33	SLU 64	7	-5	235	0	0	0
33	SLU 65	7	-5	236	0	0	0
33	SLU 66	7	-5	238	0	0	0
33	SLU 67	7	-5	239	0	0	0
33	SLU 68	7	-5	238	0	0	0
33	SLU 69	7	-5	241	0	0	0
33	SLU 70	7	-5	241	0	0	0
33	SLU 71	7	-5	239	0	0	0
33	SLU 72	7	-5	240	0	0	0
33	SLU 73	7	-5	258	0	0	0
33	SLU 74	7	-5	260	0	0	0
33	SLU 75	7	-5	261	0	0	0
33	SLU 76	7	-5	260	0	0	0
33	SLU 77	7	-5	263	0	0	0
33	SLU 78	7	-5	263	0	0	0
33	SLU 79	7	-5	261	0	0	0
33	SLU 80	7	-5	262	0	0	0
33	SLU 81	7	-6	267	0	0	0
33	SLU 82	7	-5	267	0	0	0
33	SLU 83	7	-5	269	0	0	0
33	SLU 84	7	-5	269	0	0	0
33	SLE RA 1	5	-4	176	0	0	0
33	SLE RA 2	5	-4	176	0	0	0
33	SLE RA 3	5	-4	178	0	0	0
33	SLE RA 4	5	-4	178	0	0	0
33	SLE RA 5	5	-4	177	0	0	0
33	SLE RA 6	5	-4	179	0	0	0
33	SLE RA 7	5	-4	179	0	0	0
33	SLE RA 8	5	-4	178	0	0	0
33	SLE RA 9	5	-4	179	0	0	0
33	SLE RA 10	5	-4	191	0	0	0
33	SLE RA 11	5	-4	192	0	0	0
33	SLE RA 12	5	-4	193	0	0	0
33	SLE RA 13	5	-4	192	0	0	0
33	SLE RA 14	5	-4	194	0	0	0
33	SLE RA 15	5	-4	194	0	0	0
33	SLE RA 16	5	-4	193	0	0	0
33	SLE RA 17	5	-4	193	0	0	0
33	SLE RA 18	5	-4	197	0	0	0
33	SLE RA 19	5	-4	197	0	0	0
33	SLE RA 20	5	-4	198	0	0	0
33	SLE RA 21	5	-4	198	0	0	0
33	SLE FR 1	5	-4	176	0	0	0
33	SLE FR 2	5	-4	176	0	0	0
33	SLE FR 3	5	-4	176	0	0	0
33	SLE FR 4	5	-4	182	0	0	0
33	SLE FR 5	5	-4	182	0	0	0
33	SLE FR 6	5	-4	186	0	0	0
33	SLE QP 1	5	-4	176	0	0	0
33	SLE QP 2	5	-4	182	0	0	0
33	SLD 1	15	-2	190	0	0	0
33	SLD 2	16	-2	191	0	0	0
33	SLD 3	15	-5	181	0	0	0
33	SLD 4	16	-5	181	0	0	0
33	SLD 5	9	1	198	0	0	0
33	SLD 6	9	1	198	0	0	0
33	SLD 7	7	-8	168	0	0	0
33	SLD 8	8	-8	168	0	0	0
33	SLD 9	3	0	196	0	0	0
33	SLD 10	3	0	196	0	0	0
33	SLD 11	1	-9	165	0	0	0
33	SLD 12	2	-9	165	0	0	0
33	SLD 13	-5	-3	182	0	0	0
33	SLD 14	-4	-3	183	0	0	0
33	SLD 15	-5	-6	173	0	0	0
33	SLD 16	-5	-6	174	0	0	0
33	SLV 1	28	1	202	0	0	0
33	SLV 2	30	1	203	0	0	0
33	SLV 3	27	-6	179	0	0	0
33	SLV 4	29	-6	180	0	0	0
33	SLV 5	13	7	223	0	0	0
33	SLV 6	15	7	223	0	0	0
33	SLV 7	10	-15	146	0	0	0
33	SLV 8	11	-14	146	0	0	0
33	SLV 9	-1	6	217	0	0	0
33	SLV 10	1	6	218	0	0	0
33	SLV 11	-4	-15	140	0	0	0
33	SLV 12	-3	-15	141	0	0	0
33	SLV 13	-19	-3	184	0	0	0
33	SLV 14	-17	-2	185	0	0	0
33	SLV 15	-20	-9	161	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
33	SLV 16	-18	-9	162	0	0	0
34	SLU 1	14	-5	516	0	0	0
34	SLU 2	14	-4	518	0	0	0
34	SLU 3	15	-4	527	0	0	0
34	SLU 4	15	-4	528	0	0	0
34	SLU 5	15	-4	524	0	0	0
34	SLU 6	15	-4	533	0	0	0
34	SLU 7	15	-4	534	0	0	0
34	SLU 8	15	-4	529	0	0	0
34	SLU 9	15	-4	530	0	0	0
34	SLU 10	15	-4	583	0	0	0
34	SLU 11	15	-4	591	0	0	0
34	SLU 12	15	-4	592	0	0	0
34	SLU 13	15	-4	589	0	0	0
34	SLU 14	15	-4	597	0	0	0
34	SLU 15	15	-4	598	0	0	0
34	SLU 16	15	-4	593	0	0	0
34	SLU 17	15	-4	594	0	0	0
34	SLU 18	15	-5	609	0	0	0
34	SLU 19	15	-5	610	0	0	0
34	SLU 20	15	-5	615	0	0	0
34	SLU 21	15	-4	616	0	0	0
34	SLU 22	16	-3	589	0	0	0
34	SLU 23	16	-3	591	0	0	0
34	SLU 24	16	-3	599	0	0	0
34	SLU 25	16	-2	600	0	0	0
34	SLU 26	16	-2	597	0	0	0
34	SLU 27	16	-3	605	0	0	0
34	SLU 28	16	-2	606	0	0	0
34	SLU 29	16	-3	601	0	0	0
34	SLU 30	16	-2	602	0	0	0
34	SLU 31	17	-3	655	0	0	0
34	SLU 32	17	-3	664	0	0	0
34	SLU 33	17	-2	665	0	0	0
34	SLU 34	17	-2	661	0	0	0
34	SLU 35	17	-3	670	0	0	0
34	SLU 36	17	-2	671	0	0	0
34	SLU 37	17	-3	666	0	0	0
34	SLU 38	17	-2	667	0	0	0
34	SLU 39	17	-3	681	0	0	0
34	SLU 40	17	-3	682	0	0	0
34	SLU 41	17	-3	687	0	0	0
34	SLU 42	17	-3	688	0	0	0
34	SLU 43	18	-7	646	0	0	0
34	SLU 44	18	-6	648	0	0	0
34	SLU 45	18	-6	657	0	0	0
34	SLU 46	18	-6	658	0	0	0
34	SLU 47	18	-6	654	0	0	0
34	SLU 48	19	-6	663	0	0	0
34	SLU 49	19	-6	664	0	0	0
34	SLU 50	18	-6	659	0	0	0
34	SLU 51	18	-6	660	0	0	0
34	SLU 52	19	-6	713	0	0	0
34	SLU 53	19	-6	721	0	0	0
34	SLU 54	19	-6	722	0	0	0
34	SLU 55	19	-6	719	0	0	0
34	SLU 56	19	-6	727	0	0	0
34	SLU 57	19	-6	728	0	0	0
34	SLU 58	19	-6	723	0	0	0
34	SLU 59	19	-6	724	0	0	0
34	SLU 60	19	-7	739	0	0	0
34	SLU 61	19	-6	740	0	0	0
34	SLU 62	19	-7	745	0	0	0
34	SLU 63	19	-6	746	0	0	0
34	SLU 64	20	-5	719	0	0	0
34	SLU 65	20	-5	721	0	0	0
34	SLU 66	20	-5	729	0	0	0
34	SLU 67	20	-4	730	0	0	0
34	SLU 68	20	-4	727	0	0	0
34	SLU 69	20	-4	735	0	0	0
34	SLU 70	20	-4	736	0	0	0
34	SLU 71	20	-5	731	0	0	0
34	SLU 72	20	-4	732	0	0	0
34	SLU 73	20	-5	785	0	0	0
34	SLU 74	20	-5	794	0	0	0
34	SLU 75	20	-4	795	0	0	0
34	SLU 76	20	-4	791	0	0	0
34	SLU 77	21	-5	800	0	0	0
34	SLU 78	21	-4	801	0	0	0
34	SLU 79	20	-5	796	0	0	0
34	SLU 80	20	-4	797	0	0	0
34	SLU 81	20	-5	811	0	0	0
34	SLU 82	21	-5	812	0	0	0
34	SLU 83	21	-5	817	0	0	0
34	SLU 84	21	-5	818	0	0	0
34	SLE RA 1	15	-4	537	0	0	0
34	SLE RA 2	15	-4	538	0	0	0
34	SLE RA 3	15	-4	544	0	0	0
34	SLE RA 4	15	-4	545	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
34	SLE RA 5	15	-4	542	0	0	0
34	SLE RA 6	15	-4	548	0	0	0
34	SLE RA 7	15	-4	549	0	0	0
34	SLE RA 8	15	-4	545	0	0	0
34	SLE RA 9	15	-4	546	0	0	0
34	SLE RA 10	15	-4	581	0	0	0
34	SLE RA 11	15	-4	587	0	0	0
34	SLE RA 12	15	-4	588	0	0	0
34	SLE RA 13	15	-4	585	0	0	0
34	SLE RA 14	15	-4	591	0	0	0
34	SLE RA 15	15	-4	592	0	0	0
34	SLE RA 16	15	-4	588	0	0	0
34	SLE RA 17	15	-4	589	0	0	0
34	SLE RA 18	15	-4	599	0	0	0
34	SLE RA 19	15	-4	599	0	0	0
34	SLE RA 20	15	-4	603	0	0	0
34	SLE RA 21	15	-4	603	0	0	0
34	SLE FR 1	15	-4	537	0	0	0
34	SLE FR 2	15	-4	537	0	0	0
34	SLE FR 3	15	-4	539	0	0	0
34	SLE FR 4	15	-4	556	0	0	0
34	SLE FR 5	15	-4	557	0	0	0
34	SLE FR 6	15	-4	568	0	0	0
34	SLE QP 1	15	-4	537	0	0	0
34	SLE QP 2	15	-4	556	0	0	0
34	SLD 1	44	-3	545	0	0	0
34	SLD 2	47	1	545	0	0	0
34	SLD 3	43	-11	524	0	0	0
34	SLD 4	46	-8	524	0	0	0
34	SLD 5	25	8	584	0	0	0
34	SLD 6	27	10	584	0	0	0
34	SLD 7	21	-19	515	0	0	0
34	SLD 8	23	-17	515	0	0	0
34	SLD 9	7	8	596	0	0	0
34	SLD 10	9	11	596	0	0	0
34	SLD 11	3	-19	527	0	0	0
34	SLD 12	5	-17	527	0	0	0
34	SLD 13	-16	-1	587	0	0	0
34	SLD 14	-13	2	587	0	0	0
34	SLD 15	-17	-9	566	0	0	0
34	SLD 16	-14	-6	566	0	0	0
34	SLV 1	83	0	533	0	0	0
34	SLV 2	89	8	533	0	0	0
34	SLV 3	81	-20	481	0	0	0
34	SLV 4	86	-12	481	0	0	0
34	SLV 5	38	26	628	0	0	0
34	SLV 6	42	31	628	0	0	0
34	SLV 7	30	-41	454	0	0	0
34	SLV 8	33	-36	454	0	0	0
34	SLV 9	-3	27	657	0	0	0
34	SLV 10	0	32	657	0	0	0
34	SLV 11	-12	-40	483	0	0	0
34	SLV 12	-8	-35	483	0	0	0
34	SLV 13	-56	4	630	0	0	0
34	SLV 14	-51	11	630	0	0	0
34	SLV 15	-59	-16	578	0	0	0
34	SLV 16	-53	-9	578	0	0	0
35	SLU 1	4	-3	145	0	0	0
35	SLU 2	4	-3	145	0	0	0
35	SLU 3	4	-3	148	0	0	0
35	SLU 4	4	-3	148	0	0	0
35	SLU 5	4	-3	147	0	0	0
35	SLU 6	4	-3	149	0	0	0
35	SLU 7	4	-3	150	0	0	0
35	SLU 8	4	-3	148	0	0	0
35	SLU 9	4	-3	149	0	0	0
35	SLU 10	4	-4	164	0	0	0
35	SLU 11	4	-4	167	0	0	0
35	SLU 12	4	-4	167	0	0	0
35	SLU 13	4	-3	166	0	0	0
35	SLU 14	4	-4	168	0	0	0
35	SLU 15	4	-3	169	0	0	0
35	SLU 16	4	-4	167	0	0	0
35	SLU 17	4	-3	168	0	0	0
35	SLU 18	4	-4	172	0	0	0
35	SLU 19	4	-4	172	0	0	0
35	SLU 20	4	-4	174	0	0	0
35	SLU 21	4	-4	174	0	0	0
35	SLU 22	5	-3	165	0	0	0
35	SLU 23	5	-3	166	0	0	0
35	SLU 24	5	-3	168	0	0	0
35	SLU 25	5	-3	169	0	0	0
35	SLU 26	5	-3	168	0	0	0
35	SLU 27	5	-3	170	0	0	0
35	SLU 28	5	-3	171	0	0	0
35	SLU 29	5	-3	169	0	0	0
35	SLU 30	5	-3	169	0	0	0
35	SLU 31	5	-3	185	0	0	0
35	SLU 32	5	-3	187	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
35	SLU 33	5	-3	188	0	0	0
35	SLU 34	5	-3	187	0	0	0
35	SLU 35	5	-3	189	0	0	0
35	SLU 36	5	-3	189	0	0	0
35	SLU 37	5	-3	188	0	0	0
35	SLU 38	5	-3	188	0	0	0
35	SLU 39	5	-4	193	0	0	0
35	SLU 40	5	-4	193	0	0	0
35	SLU 41	5	-4	194	0	0	0
35	SLU 42	5	-3	195	0	0	0
35	SLU 43	5	-5	181	0	0	0
35	SLU 44	5	-4	182	0	0	0
35	SLU 45	5	-5	184	0	0	0
35	SLU 46	5	-4	184	0	0	0
35	SLU 47	5	-4	183	0	0	0
35	SLU 48	5	-4	186	0	0	0
35	SLU 49	5	-4	186	0	0	0
35	SLU 50	5	-4	185	0	0	0
35	SLU 51	5	-4	185	0	0	0
35	SLU 52	5	-5	200	0	0	0
35	SLU 53	5	-5	203	0	0	0
35	SLU 54	5	-5	203	0	0	0
35	SLU 55	5	-5	202	0	0	0
35	SLU 56	6	-5	205	0	0	0
35	SLU 57	6	-5	205	0	0	0
35	SLU 58	5	-5	204	0	0	0
35	SLU 59	5	-5	204	0	0	0
35	SLU 60	5	-5	208	0	0	0
35	SLU 61	5	-5	208	0	0	0
35	SLU 62	6	-5	210	0	0	0
35	SLU 63	6	-5	210	0	0	0
35	SLU 64	6	-4	202	0	0	0
35	SLU 65	6	-4	202	0	0	0
35	SLU 66	6	-4	205	0	0	0
35	SLU 67	6	-4	205	0	0	0
35	SLU 68	6	-4	204	0	0	0
35	SLU 69	6	-4	207	0	0	0
35	SLU 70	6	-4	207	0	0	0
35	SLU 71	6	-4	205	0	0	0
35	SLU 72	6	-4	206	0	0	0
35	SLU 73	6	-4	221	0	0	0
35	SLU 74	6	-5	224	0	0	0
35	SLU 75	6	-4	224	0	0	0
35	SLU 76	6	-4	223	0	0	0
35	SLU 77	6	-4	225	0	0	0
35	SLU 78	6	-4	226	0	0	0
35	SLU 79	6	-4	224	0	0	0
35	SLU 80	6	-4	225	0	0	0
35	SLU 81	6	-5	229	0	0	0
35	SLU 82	6	-5	229	0	0	0
35	SLU 83	6	-5	231	0	0	0
35	SLU 84	6	-5	231	0	0	0
35	SLE RA 1	4	-3	151	0	0	0
35	SLE RA 2	4	-3	151	0	0	0
35	SLE RA 3	4	-3	153	0	0	0
35	SLE RA 4	4	-3	153	0	0	0
35	SLE RA 5	4	-3	152	0	0	0
35	SLE RA 6	4	-3	154	0	0	0
35	SLE RA 7	4	-3	154	0	0	0
35	SLE RA 8	4	-3	153	0	0	0
35	SLE RA 9	4	-3	153	0	0	0
35	SLE RA 10	4	-3	164	0	0	0
35	SLE RA 11	4	-4	165	0	0	0
35	SLE RA 12	4	-3	165	0	0	0
35	SLE RA 13	4	-3	165	0	0	0
35	SLE RA 14	4	-3	166	0	0	0
35	SLE RA 15	4	-3	167	0	0	0
35	SLE RA 16	4	-3	166	0	0	0
35	SLE RA 17	4	-3	166	0	0	0
35	SLE RA 18	4	-4	169	0	0	0
35	SLE RA 19	4	-4	169	0	0	0
35	SLE RA 20	4	-4	170	0	0	0
35	SLE RA 21	4	-4	170	0	0	0
35	SLE FR 1	4	-3	151	0	0	0
35	SLE FR 2	4	-3	151	0	0	0
35	SLE FR 3	4	-3	151	0	0	0
35	SLE FR 4	4	-3	156	0	0	0
35	SLE FR 5	4	-3	157	0	0	0
35	SLE FR 6	4	-4	160	0	0	0
35	SLE QP 1	4	-3	151	0	0	0
35	SLE QP 2	4	-3	156	0	0	0
35	SLD 1	13	-2	163	0	0	0
35	SLD 2	14	-2	163	0	0	0
35	SLD 3	13	-4	156	0	0	0
35	SLD 4	13	-4	156	0	0	0
35	SLD 5	7	1	168	0	0	0
35	SLD 6	8	1	168	0	0	0
35	SLD 7	6	-7	146	0	0	0
35	SLD 8	7	-7	146	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
35	SLD 9	2	0	166	0	0	0
35	SLD 10	2	0	166	0	0	0
35	SLD 11	1	-8	144	0	0	0
35	SLD 12	1	-7	144	0	0	0
35	SLD 13	-5	-3	156	0	0	0
35	SLD 14	-4	-3	156	0	0	0
35	SLD 15	-5	-5	149	0	0	0
35	SLD 16	-4	-5	150	0	0	0
35	SLV 1	24	1	172	0	0	0
35	SLV 2	26	1	173	0	0	0
35	SLV 3	24	-5	155	0	0	0
35	SLV 4	25	-5	156	0	0	0
35	SLV 5	11	6	185	0	0	0
35	SLV 6	12	6	186	0	0	0
35	SLV 7	9	-13	131	0	0	0
35	SLV 8	10	-12	132	0	0	0
35	SLV 9	-1	5	181	0	0	0
35	SLV 10	0	6	181	0	0	0
35	SLV 11	-4	-13	126	0	0	0
35	SLV 12	-3	-13	127	0	0	0
35	SLV 13	-16	-2	156	0	0	0
35	SLV 14	-15	-2	157	0	0	0
35	SLV 15	-17	-8	140	0	0	0
35	SLV 16	-16	-7	140	0	0	0
36	SLU 1	13	-11	471	0	0	0
36	SLU 2	14	-10	472	0	0	0
36	SLU 3	14	-11	480	0	0	0
36	SLU 4	14	-10	481	0	0	0
36	SLU 5	14	-10	478	0	0	0
36	SLU 6	14	-10	486	0	0	0
36	SLU 7	14	-10	487	0	0	0
36	SLU 8	14	-10	483	0	0	0
36	SLU 9	14	-10	484	0	0	0
36	SLU 10	14	-11	534	0	0	0
36	SLU 11	14	-11	542	0	0	0
36	SLU 12	14	-11	543	0	0	0
36	SLU 13	14	-11	540	0	0	0
36	SLU 14	14	-11	548	0	0	0
36	SLU 15	14	-11	549	0	0	0
36	SLU 16	14	-11	544	0	0	0
36	SLU 17	14	-11	545	0	0	0
36	SLU 18	14	-12	559	0	0	0
36	SLU 19	14	-12	560	0	0	0
36	SLU 20	14	-12	565	0	0	0
36	SLU 21	14	-11	566	0	0	0
36	SLU 22	15	-10	538	0	0	0
36	SLU 23	15	-10	540	0	0	0
36	SLU 24	15	-10	548	0	0	0
36	SLU 25	15	-9	549	0	0	0
36	SLU 26	15	-9	546	0	0	0
36	SLU 27	15	-10	554	0	0	0
36	SLU 28	15	-9	555	0	0	0
36	SLU 29	15	-10	550	0	0	0
36	SLU 30	15	-9	551	0	0	0
36	SLU 31	15	-10	601	0	0	0
36	SLU 32	16	-11	609	0	0	0
36	SLU 33	16	-10	610	0	0	0
36	SLU 34	16	-10	607	0	0	0
36	SLU 35	16	-10	615	0	0	0
36	SLU 36	16	-10	616	0	0	0
36	SLU 37	16	-10	612	0	0	0
36	SLU 38	16	-10	613	0	0	0
36	SLU 39	16	-11	626	0	0	0
36	SLU 40	16	-11	627	0	0	0
36	SLU 41	16	-11	632	0	0	0
36	SLU 42	16	-11	633	0	0	0
36	SLU 43	17	-14	589	0	0	0
36	SLU 44	17	-14	591	0	0	0
36	SLU 45	17	-14	598	0	0	0
36	SLU 46	17	-14	599	0	0	0
36	SLU 47	17	-14	596	0	0	0
36	SLU 48	17	-14	604	0	0	0
36	SLU 49	17	-13	605	0	0	0
36	SLU 50	17	-14	601	0	0	0
36	SLU 51	17	-13	602	0	0	0
36	SLU 52	18	-15	652	0	0	0
36	SLU 53	18	-15	660	0	0	0
36	SLU 54	18	-15	661	0	0	0
36	SLU 55	18	-14	658	0	0	0
36	SLU 56	18	-15	666	0	0	0
36	SLU 57	18	-14	667	0	0	0
36	SLU 58	18	-15	662	0	0	0
36	SLU 59	18	-14	663	0	0	0
36	SLU 60	18	-16	677	0	0	0
36	SLU 61	18	-15	678	0	0	0
36	SLU 62	18	-15	683	0	0	0
36	SLU 63	18	-15	684	0	0	0
36	SLU 64	18	-14	656	0	0	0
36	SLU 65	19	-13	658	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
36	SLU 66	19	-13	666	0	0	0
36	SLU 67	19	-13	667	0	0	0
36	SLU 68	19	-13	664	0	0	0
36	SLU 69	19	-13	672	0	0	0
36	SLU 70	19	-13	673	0	0	0
36	SLU 71	19	-13	668	0	0	0
36	SLU 72	19	-13	669	0	0	0
36	SLU 73	19	-14	719	0	0	0
36	SLU 74	19	-14	727	0	0	0
36	SLU 75	19	-14	728	0	0	0
36	SLU 76	19	-14	725	0	0	0
36	SLU 77	19	-14	733	0	0	0
36	SLU 78	19	-14	734	0	0	0
36	SLU 79	19	-14	730	0	0	0
36	SLU 80	19	-14	731	0	0	0
36	SLU 81	19	-15	744	0	0	0
36	SLU 82	19	-14	745	0	0	0
36	SLU 83	19	-15	750	0	0	0
36	SLU 84	19	-14	751	0	0	0
36	SLE RA 1	14	-11	490	0	0	0
36	SLE RA 2	14	-10	491	0	0	0
36	SLE RA 3	14	-11	496	0	0	0
36	SLE RA 4	14	-10	497	0	0	0
36	SLE RA 5	14	-10	495	0	0	0
36	SLE RA 6	14	-10	500	0	0	0
36	SLE RA 7	14	-10	501	0	0	0
36	SLE RA 8	14	-10	498	0	0	0
36	SLE RA 9	14	-10	499	0	0	0
36	SLE RA 10	14	-11	532	0	0	0
36	SLE RA 11	14	-11	537	0	0	0
36	SLE RA 12	14	-11	538	0	0	0
36	SLE RA 13	14	-11	536	0	0	0
36	SLE RA 14	14	-11	541	0	0	0
36	SLE RA 15	14	-11	542	0	0	0
36	SLE RA 16	14	-11	539	0	0	0
36	SLE RA 17	14	-11	540	0	0	0
36	SLE RA 18	14	-11	549	0	0	0
36	SLE RA 19	14	-11	549	0	0	0
36	SLE RA 20	14	-11	553	0	0	0
36	SLE RA 21	14	-11	553	0	0	0
36	SLE FR 1	14	-11	490	0	0	0
36	SLE FR 2	14	-11	490	0	0	0
36	SLE FR 3	14	-11	492	0	0	0
36	SLE FR 4	14	-11	508	0	0	0
36	SLE FR 5	14	-11	509	0	0	0
36	SLE FR 6	14	-11	519	0	0	0
36	SLE QP 1	14	-11	490	0	0	0
36	SLE QP 2	14	-11	508	0	0	0
36	SLD 1	42	-6	527	0	0	0
36	SLD 2	44	-5	528	0	0	0
36	SLD 3	41	-13	506	0	0	0
36	SLD 4	43	-13	507	0	0	0
36	SLD 5	23	2	544	0	0	0
36	SLD 6	25	2	545	0	0	0
36	SLD 7	20	-23	476	0	0	0
36	SLD 8	22	-23	476	0	0	0
36	SLD 9	6	1	539	0	0	0
36	SLD 10	8	1	539	0	0	0
36	SLD 11	3	-24	470	0	0	0
36	SLD 12	5	-24	471	0	0	0
36	SLD 13	-15	-9	508	0	0	0
36	SLD 14	-13	-9	509	0	0	0
36	SLD 15	-16	-17	488	0	0	0
36	SLD 16	-14	-16	489	0	0	0
36	SLV 1	79	2	554	0	0	0
36	SLV 2	84	3	556	0	0	0
36	SLV 3	76	-17	503	0	0	0
36	SLV 4	82	-15	505	0	0	0
36	SLV 5	36	20	600	0	0	0
36	SLV 6	40	21	601	0	0	0
36	SLV 7	28	-40	427	0	0	0
36	SLV 8	32	-40	429	0	0	0
36	SLV 9	-3	18	587	0	0	0
36	SLV 10	0	19	588	0	0	0
36	SLV 11	-12	-43	414	0	0	0
36	SLV 12	-8	-42	416	0	0	0
36	SLV 13	-54	-7	511	0	0	0
36	SLV 14	-48	-5	513	0	0	0
36	SLV 15	-56	-25	459	0	0	0
36	SLV 16	-51	-23	461	0	0	0
37	SLU 1	21	-15	746	0	0	0
37	SLU 2	21	-14	748	0	0	0
37	SLU 3	21	-15	761	0	0	0
37	SLU 4	22	-14	762	0	0	0
37	SLU 5	21	-14	757	0	0	0
37	SLU 6	22	-14	770	0	0	0
37	SLU 7	22	-13	771	0	0	0
37	SLU 8	21	-14	764	0	0	0
37	SLU 9	21	-13	766	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
37	SLU 10	22	-15	845	0	0	0
37	SLU 11	22	-16	857	0	0	0
37	SLU 12	22	-15	859	0	0	0
37	SLU 13	22	-15	854	0	0	0
37	SLU 14	22	-15	866	0	0	0
37	SLU 15	22	-14	868	0	0	0
37	SLU 16	22	-15	861	0	0	0
37	SLU 17	22	-14	862	0	0	0
37	SLU 18	22	-16	883	0	0	0
37	SLU 19	22	-16	885	0	0	0
37	SLU 20	22	-16	893	0	0	0
37	SLU 21	22	-15	894	0	0	0
37	SLU 22	23	-14	852	0	0	0
37	SLU 23	23	-13	855	0	0	0
37	SLU 24	24	-13	867	0	0	0
37	SLU 25	24	-12	869	0	0	0
37	SLU 26	24	-12	864	0	0	0
37	SLU 27	24	-13	876	0	0	0
37	SLU 28	24	-12	878	0	0	0
37	SLU 29	24	-13	871	0	0	0
37	SLU 30	24	-12	872	0	0	0
37	SLU 31	24	-14	951	0	0	0
37	SLU 32	24	-14	964	0	0	0
37	SLU 33	25	-13	965	0	0	0
37	SLU 34	24	-13	960	0	0	0
37	SLU 35	25	-14	973	0	0	0
37	SLU 36	25	-13	974	0	0	0
37	SLU 37	24	-14	967	0	0	0
37	SLU 38	24	-13	969	0	0	0
37	SLU 39	24	-15	990	0	0	0
37	SLU 40	25	-14	991	0	0	0
37	SLU 41	25	-15	999	0	0	0
37	SLU 42	25	-14	1001	0	0	0
37	SLU 43	27	-20	933	0	0	0
37	SLU 44	27	-19	935	0	0	0
37	SLU 45	27	-19	948	0	0	0
37	SLU 46	27	-19	949	0	0	0
37	SLU 47	27	-19	945	0	0	0
37	SLU 48	27	-19	957	0	0	0
37	SLU 49	27	-18	959	0	0	0
37	SLU 50	27	-19	951	0	0	0
37	SLU 51	27	-18	953	0	0	0
37	SLU 52	28	-20	1032	0	0	0
37	SLU 53	28	-21	1044	0	0	0
37	SLU 54	28	-20	1046	0	0	0
37	SLU 55	28	-20	1041	0	0	0
37	SLU 56	28	-20	1054	0	0	0
37	SLU 57	28	-19	1055	0	0	0
37	SLU 58	28	-20	1048	0	0	0
37	SLU 59	28	-19	1049	0	0	0
37	SLU 60	28	-21	1071	0	0	0
37	SLU 61	28	-21	1072	0	0	0
37	SLU 62	28	-21	1080	0	0	0
37	SLU 63	28	-20	1081	0	0	0
37	SLU 64	29	-19	1039	0	0	0
37	SLU 65	29	-18	1042	0	0	0
37	SLU 66	29	-18	1054	0	0	0
37	SLU 67	29	-17	1056	0	0	0
37	SLU 68	29	-17	1051	0	0	0
37	SLU 69	29	-18	1064	0	0	0
37	SLU 70	29	-17	1065	0	0	0
37	SLU 71	29	-18	1058	0	0	0
37	SLU 72	29	-17	1059	0	0	0
37	SLU 73	30	-19	1138	0	0	0
37	SLU 74	30	-19	1151	0	0	0
37	SLU 75	30	-18	1152	0	0	0
37	SLU 76	30	-18	1148	0	0	0
37	SLU 77	30	-19	1160	0	0	0
37	SLU 78	30	-18	1162	0	0	0
37	SLU 79	30	-19	1154	0	0	0
37	SLU 80	30	-18	1156	0	0	0
37	SLU 81	30	-20	1177	0	0	0
37	SLU 82	30	-19	1179	0	0	0
37	SLU 83	30	-20	1186	0	0	0
37	SLU 84	30	-19	1188	0	0	0
37	SLE RA 1	22	-15	776	0	0	0
37	SLE RA 2	22	-14	778	0	0	0
37	SLE RA 3	22	-14	786	0	0	0
37	SLE RA 4	22	-14	787	0	0	0
37	SLE RA 5	22	-14	784	0	0	0
37	SLE RA 6	22	-14	792	0	0	0
37	SLE RA 7	22	-14	793	0	0	0
37	SLE RA 8	22	-14	788	0	0	0
37	SLE RA 9	22	-14	789	0	0	0
37	SLE RA 10	22	-15	842	0	0	0
37	SLE RA 11	23	-15	850	0	0	0
37	SLE RA 12	23	-15	851	0	0	0
37	SLE RA 13	22	-14	848	0	0	0
37	SLE RA 14	23	-15	857	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
37	SLE RA 15	23	-14	858	0	0	0
37	SLE RA 16	22	-15	853	0	0	0
37	SLE RA 17	22	-14	854	0	0	0
37	SLE RA 18	23	-16	868	0	0	0
37	SLE RA 19	23	-15	869	0	0	0
37	SLE RA 20	23	-15	874	0	0	0
37	SLE RA 21	23	-15	875	0	0	0
37	SLE FR 1	22	-15	776	0	0	0
37	SLE FR 2	22	-14	776	0	0	0
37	SLE FR 3	22	-14	779	0	0	0
37	SLE FR 4	22	-15	804	0	0	0
37	SLE FR 5	22	-15	806	0	0	0
37	SLE FR 6	22	-15	822	0	0	0
37	SLE QP 1	22	-15	776	0	0	0
37	SLE QP 2	22	-15	804	0	0	0
37	SLD 1	66	-8	824	0	0	0
37	SLD 2	69	-6	825	0	0	0
37	SLD 3	64	-20	793	0	0	0
37	SLD 4	68	-18	794	0	0	0
37	SLD 5	37	5	857	0	0	0
37	SLD 6	39	6	858	0	0	0
37	SLD 7	32	-35	752	0	0	0
37	SLD 8	34	-34	753	0	0	0
37	SLD 9	10	4	854	0	0	0
37	SLD 10	12	5	855	0	0	0
37	SLD 11	5	-36	749	0	0	0
37	SLD 12	7	-35	750	0	0	0
37	SLD 13	-23	-12	813	0	0	0
37	SLD 14	-20	-10	815	0	0	0
37	SLD 15	-25	-24	782	0	0	0
37	SLD 16	-21	-22	783	0	0	0
37	SLV 1	124	2	854	0	0	0
37	SLV 2	132	6	857	0	0	0
37	SLV 3	120	-26	775	0	0	0
37	SLV 4	128	-22	778	0	0	0
37	SLV 5	57	33	938	0	0	0
37	SLV 6	63	36	940	0	0	0
37	SLV 7	44	-63	675	0	0	0
37	SLV 8	50	-60	677	0	0	0
37	SLV 9	-5	30	931	0	0	0
37	SLV 10	0	33	932	0	0	0
37	SLV 11	-19	-66	667	0	0	0
37	SLV 12	-13	-63	669	0	0	0
37	SLV 13	-84	-7	829	0	0	0
37	SLV 14	-76	-3	832	0	0	0
37	SLV 15	-88	-36	750	0	0	0
37	SLV 16	-80	-32	753	0	0	0
38	SLU 1	21	-13	754	0	0	0
38	SLU 2	21	-12	756	0	0	0
38	SLU 3	22	-12	769	0	0	0
38	SLU 4	22	-12	770	0	0	0
38	SLU 5	21	-11	765	0	0	0
38	SLU 6	22	-12	778	0	0	0
38	SLU 7	22	-11	780	0	0	0
38	SLU 8	21	-12	772	0	0	0
38	SLU 9	21	-11	774	0	0	0
38	SLU 10	22	-13	853	0	0	0
38	SLU 11	22	-13	865	0	0	0
38	SLU 12	22	-12	867	0	0	0
38	SLU 13	22	-12	862	0	0	0
38	SLU 14	22	-13	875	0	0	0
38	SLU 15	22	-12	876	0	0	0
38	SLU 16	22	-13	869	0	0	0
38	SLU 17	22	-12	870	0	0	0
38	SLU 18	22	-14	892	0	0	0
38	SLU 19	22	-13	893	0	0	0
38	SLU 20	22	-13	901	0	0	0
38	SLU 21	22	-13	902	0	0	0
38	SLU 22	23	-11	861	0	0	0
38	SLU 23	24	-10	863	0	0	0
38	SLU 24	24	-11	876	0	0	0
38	SLU 25	24	-10	877	0	0	0
38	SLU 26	24	-10	873	0	0	0
38	SLU 27	24	-10	885	0	0	0
38	SLU 28	24	-10	887	0	0	0
38	SLU 29	24	-10	880	0	0	0
38	SLU 30	24	-10	881	0	0	0
38	SLU 31	24	-11	960	0	0	0
38	SLU 32	25	-11	973	0	0	0
38	SLU 33	25	-11	974	0	0	0
38	SLU 34	24	-10	969	0	0	0
38	SLU 35	25	-11	982	0	0	0
38	SLU 36	25	-10	983	0	0	0
38	SLU 37	24	-11	976	0	0	0
38	SLU 38	24	-10	978	0	0	0
38	SLU 39	25	-12	999	0	0	0
38	SLU 40	25	-12	1000	0	0	0
38	SLU 41	25	-12	1008	0	0	0
38	SLU 42	25	-11	1010	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
38	SLU 43	27	-17	943	0	0	0
38	SLU 44	27	-16	945	0	0	0
38	SLU 45	27	-17	958	0	0	0
38	SLU 46	27	-16	960	0	0	0
38	SLU 47	27	-16	955	0	0	0
38	SLU 48	27	-16	967	0	0	0
38	SLU 49	27	-16	969	0	0	0
38	SLU 50	27	-16	962	0	0	0
38	SLU 51	27	-16	963	0	0	0
38	SLU 52	28	-17	1042	0	0	0
38	SLU 53	28	-18	1055	0	0	0
38	SLU 54	28	-17	1056	0	0	0
38	SLU 55	28	-17	1051	0	0	0
38	SLU 56	28	-17	1064	0	0	0
38	SLU 57	28	-16	1065	0	0	0
38	SLU 58	28	-17	1058	0	0	0
38	SLU 59	28	-17	1060	0	0	0
38	SLU 60	28	-18	1081	0	0	0
38	SLU 61	28	-18	1082	0	0	0
38	SLU 62	28	-18	1090	0	0	0
38	SLU 63	28	-17	1092	0	0	0
38	SLU 64	29	-16	1050	0	0	0
38	SLU 65	29	-15	1053	0	0	0
38	SLU 66	29	-15	1065	0	0	0
38	SLU 67	29	-14	1067	0	0	0
38	SLU 68	29	-14	1062	0	0	0
38	SLU 69	29	-15	1075	0	0	0
38	SLU 70	29	-14	1076	0	0	0
38	SLU 71	29	-15	1069	0	0	0
38	SLU 72	29	-14	1070	0	0	0
38	SLU 73	30	-15	1149	0	0	0
38	SLU 74	30	-16	1162	0	0	0
38	SLU 75	30	-15	1163	0	0	0
38	SLU 76	30	-15	1159	0	0	0
38	SLU 77	30	-15	1171	0	0	0
38	SLU 78	30	-15	1173	0	0	0
38	SLU 79	30	-15	1165	0	0	0
38	SLU 80	30	-15	1167	0	0	0
38	SLU 81	30	-17	1188	0	0	0
38	SLU 82	30	-16	1190	0	0	0
38	SLU 83	30	-16	1198	0	0	0
38	SLU 84	30	-16	1199	0	0	0
38	SLE RA 1	22	-12	784	0	0	0
38	SLE RA 2	22	-12	786	0	0	0
38	SLE RA 3	22	-12	794	0	0	0
38	SLE RA 4	22	-12	795	0	0	0
38	SLE RA 5	22	-11	792	0	0	0
38	SLE RA 6	22	-12	801	0	0	0
38	SLE RA 7	22	-11	802	0	0	0
38	SLE RA 8	22	-12	797	0	0	0
38	SLE RA 9	22	-11	798	0	0	0
38	SLE RA 10	22	-12	850	0	0	0
38	SLE RA 11	23	-13	859	0	0	0
38	SLE RA 12	23	-12	860	0	0	0
38	SLE RA 13	22	-12	857	0	0	0
38	SLE RA 14	23	-12	865	0	0	0
38	SLE RA 15	23	-12	866	0	0	0
38	SLE RA 16	22	-12	861	0	0	0
38	SLE RA 17	23	-12	862	0	0	0
38	SLE RA 18	23	-13	876	0	0	0
38	SLE RA 19	23	-13	877	0	0	0
38	SLE RA 20	23	-13	882	0	0	0
38	SLE RA 21	23	-12	883	0	0	0
38	SLE FR 1	22	-12	784	0	0	0
38	SLE FR 2	22	-12	785	0	0	0
38	SLE FR 3	22	-12	787	0	0	0
38	SLE FR 4	22	-12	812	0	0	0
38	SLE FR 5	22	-12	814	0	0	0
38	SLE FR 6	22	-13	830	0	0	0
38	SLE QP 1	22	-12	784	0	0	0
38	SLE QP 2	22	-13	812	0	0	0
38	SLD 1	66	-6	821	0	0	0
38	SLD 2	69	-4	822	0	0	0
38	SLD 3	64	-19	790	0	0	0
38	SLD 4	68	-16	791	0	0	0
38	SLD 5	37	7	861	0	0	0
38	SLD 6	39	9	862	0	0	0
38	SLD 7	32	-33	759	0	0	0
38	SLD 8	34	-31	759	0	0	0
38	SLD 9	10	6	864	0	0	0
38	SLD 10	12	8	865	0	0	0
38	SLD 11	5	-34	762	0	0	0
38	SLD 12	7	-32	763	0	0	0
38	SLD 13	-24	-9	832	0	0	0
38	SLD 14	-20	-7	833	0	0	0
38	SLD 15	-25	-21	802	0	0	0
38	SLD 16	-22	-19	803	0	0	0
38	SLV 1	124	2	836	0	0	0
38	SLV 2	133	8	838	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
38	SLV 3	120	-27	759	0	0	0
38	SLV 4	129	-21	761	0	0	0
38	SLV 5	57	35	936	0	0	0
38	SLV 6	63	39	937	0	0	0
38	SLV 7	44	-62	679	0	0	0
38	SLV 8	50	-58	680	0	0	0
38	SLV 9	-6	33	943	0	0	0
38	SLV 10	0	37	945	0	0	0
38	SLV 11	-19	-64	687	0	0	0
38	SLV 12	-13	-60	688	0	0	0
38	SLV 13	-85	-5	862	0	0	0
38	SLV 14	-76	2	864	0	0	0
38	SLV 15	-89	-34	785	0	0	0
38	SLV 16	-80	-27	787	0	0	0
39	SLU 1	21	-10	740	0	0	0
39	SLU 2	21	-9	743	0	0	0
39	SLU 3	21	-10	755	0	0	0
39	SLU 4	21	-9	756	0	0	0
39	SLU 5	21	-9	752	0	0	0
39	SLU 6	21	-9	764	0	0	0
39	SLU 7	21	-9	766	0	0	0
39	SLU 8	21	-9	758	0	0	0
39	SLU 9	21	-9	760	0	0	0
39	SLU 10	21	-10	837	0	0	0
39	SLU 11	22	-10	849	0	0	0
39	SLU 12	22	-10	850	0	0	0
39	SLU 13	22	-9	846	0	0	0
39	SLU 14	22	-10	858	0	0	0
39	SLU 15	22	-9	860	0	0	0
39	SLU 16	22	-10	852	0	0	0
39	SLU 17	22	-9	854	0	0	0
39	SLU 18	22	-11	875	0	0	0
39	SLU 19	22	-11	876	0	0	0
39	SLU 20	22	-11	884	0	0	0
39	SLU 21	22	-10	885	0	0	0
39	SLU 22	23	-9	845	0	0	0
39	SLU 23	23	-8	847	0	0	0
39	SLU 24	23	-8	860	0	0	0
39	SLU 25	23	-7	861	0	0	0
39	SLU 26	23	-7	857	0	0	0
39	SLU 27	23	-8	869	0	0	0
39	SLU 28	23	-7	870	0	0	0
39	SLU 29	23	-8	863	0	0	0
39	SLU 30	23	-7	865	0	0	0
39	SLU 31	24	-8	941	0	0	0
39	SLU 32	24	-8	954	0	0	0
39	SLU 33	24	-8	955	0	0	0
39	SLU 34	24	-8	951	0	0	0
39	SLU 35	24	-8	963	0	0	0
39	SLU 36	24	-7	964	0	0	0
39	SLU 37	24	-8	957	0	0	0
39	SLU 38	24	-7	959	0	0	0
39	SLU 39	24	-9	979	0	0	0
39	SLU 40	24	-9	981	0	0	0
39	SLU 41	24	-9	989	0	0	0
39	SLU 42	24	-8	990	0	0	0
39	SLU 43	26	-14	926	0	0	0
39	SLU 44	26	-13	929	0	0	0
39	SLU 45	26	-14	941	0	0	0
39	SLU 46	26	-13	942	0	0	0
39	SLU 47	26	-13	938	0	0	0
39	SLU 48	26	-13	950	0	0	0
39	SLU 49	27	-13	952	0	0	0
39	SLU 50	26	-13	945	0	0	0
39	SLU 51	26	-13	946	0	0	0
39	SLU 52	27	-14	1023	0	0	0
39	SLU 53	27	-14	1035	0	0	0
39	SLU 54	27	-14	1037	0	0	0
39	SLU 55	27	-13	1032	0	0	0
39	SLU 56	27	-14	1044	0	0	0
39	SLU 57	27	-13	1046	0	0	0
39	SLU 58	27	-14	1039	0	0	0
39	SLU 59	27	-13	1040	0	0	0
39	SLU 60	27	-15	1061	0	0	0
39	SLU 61	27	-14	1062	0	0	0
39	SLU 62	27	-14	1070	0	0	0
39	SLU 63	27	-14	1071	0	0	0
39	SLU 64	28	-12	1031	0	0	0
39	SLU 65	28	-11	1034	0	0	0
39	SLU 66	29	-12	1046	0	0	0
39	SLU 67	29	-11	1047	0	0	0
39	SLU 68	28	-11	1043	0	0	0
39	SLU 69	29	-11	1055	0	0	0
39	SLU 70	29	-11	1057	0	0	0
39	SLU 71	28	-11	1049	0	0	0
39	SLU 72	28	-11	1051	0	0	0
39	SLU 73	29	-12	1128	0	0	0
39	SLU 74	29	-12	1140	0	0	0
39	SLU 75	29	-12	1141	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
39	SLU 76	29	-11	1137	0	0	0
39	SLU 77	29	-12	1149	0	0	0
39	SLU 78	29	-11	1151	0	0	0
39	SLU 79	29	-12	1143	0	0	0
39	SLU 80	29	-11	1145	0	0	0
39	SLU 81	29	-13	1166	0	0	0
39	SLU 82	29	-12	1167	0	0	0
39	SLU 83	29	-13	1175	0	0	0
39	SLU 84	29	-12	1176	0	0	0
39	SLE RA 1	21	-10	770	0	0	0
39	SLE RA 2	21	-9	772	0	0	0
39	SLE RA 3	21	-10	780	0	0	0
39	SLE RA 4	21	-9	781	0	0	0
39	SLE RA 5	21	-9	778	0	0	0
39	SLE RA 6	21	-9	786	0	0	0
39	SLE RA 7	22	-9	787	0	0	0
39	SLE RA 8	21	-9	782	0	0	0
39	SLE RA 9	21	-9	783	0	0	0
39	SLE RA 10	22	-10	834	0	0	0
39	SLE RA 11	22	-10	843	0	0	0
39	SLE RA 12	22	-9	844	0	0	0
39	SLE RA 13	22	-9	840	0	0	0
39	SLE RA 14	22	-10	849	0	0	0
39	SLE RA 15	22	-9	850	0	0	0
39	SLE RA 16	22	-10	845	0	0	0
39	SLE RA 17	22	-9	846	0	0	0
39	SLE RA 18	22	-10	860	0	0	0
39	SLE RA 19	22	-10	861	0	0	0
39	SLE RA 20	22	-10	866	0	0	0
39	SLE RA 21	22	-10	867	0	0	0
39	SLE FR 1	21	-10	770	0	0	0
39	SLE FR 2	21	-10	770	0	0	0
39	SLE FR 3	21	-10	773	0	0	0
39	SLE FR 4	21	-10	797	0	0	0
39	SLE FR 5	21	-10	799	0	0	0
39	SLE FR 6	22	-10	815	0	0	0
39	SLE QP 1	21	-10	770	0	0	0
39	SLE QP 2	21	-10	797	0	0	0
39	SLD 1	64	-7	797	0	0	0
39	SLD 2	67	-3	797	0	0	0
39	SLD 3	62	-19	768	0	0	0
39	SLD 4	66	-15	768	0	0	0
39	SLD 5	36	8	841	0	0	0
39	SLD 6	38	10	841	0	0	0
39	SLD 7	31	-31	744	0	0	0
39	SLD 8	33	-29	745	0	0	0
39	SLD 9	10	9	850	0	0	0
39	SLD 10	12	11	850	0	0	0
39	SLD 11	5	-31	753	0	0	0
39	SLD 12	7	-28	753	0	0	0
39	SLD 13	-23	-5	826	0	0	0
39	SLD 14	-20	-1	826	0	0	0
39	SLD 15	-25	-17	797	0	0	0
39	SLD 16	-21	-13	797	0	0	0
39	SLV 1	121	-2	799	0	0	0
39	SLV 2	129	6	800	0	0	0
39	SLV 3	117	-30	726	0	0	0
39	SLV 4	125	-22	727	0	0	0
39	SLV 5	56	34	908	0	0	0
39	SLV 6	61	40	909	0	0	0
39	SLV 7	43	-61	665	0	0	0
39	SLV 8	48	-56	666	0	0	0
39	SLV 9	-5	36	928	0	0	0
39	SLV 10	0	41	929	0	0	0
39	SLV 11	-18	-60	686	0	0	0
39	SLV 12	-13	-54	686	0	0	0
39	SLV 13	-83	2	867	0	0	0
39	SLV 14	-74	10	868	0	0	0
39	SLV 15	-86	-26	794	0	0	0
39	SLV 16	-78	-18	795	0	0	0
40	SLU 1	17	-7	628	0	0	0
40	SLU 2	17	-6	629	0	0	0
40	SLU 3	17	-7	640	0	0	0
40	SLU 4	17	-6	641	0	0	0
40	SLU 5	17	-6	637	0	0	0
40	SLU 6	17	-6	648	0	0	0
40	SLU 7	18	-6	649	0	0	0
40	SLU 8	17	-6	643	0	0	0
40	SLU 9	17	-6	644	0	0	0
40	SLU 10	18	-6	708	0	0	0
40	SLU 11	18	-7	719	0	0	0
40	SLU 12	18	-6	720	0	0	0
40	SLU 13	18	-6	716	0	0	0
40	SLU 14	18	-6	727	0	0	0
40	SLU 15	18	-6	728	0	0	0
40	SLU 16	18	-6	722	0	0	0
40	SLU 17	18	-6	723	0	0	0
40	SLU 18	18	-7	741	0	0	0
40	SLU 19	18	-7	742	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
40	SLU 20	18	-7	748	0	0	0
40	SLU 21	18	-6	749	0	0	0
40	SLU 22	19	-5	716	0	0	0
40	SLU 23	19	-4	718	0	0	0
40	SLU 24	19	-5	729	0	0	0
40	SLU 25	19	-4	730	0	0	0
40	SLU 26	19	-4	726	0	0	0
40	SLU 27	19	-4	737	0	0	0
40	SLU 28	19	-4	738	0	0	0
40	SLU 29	19	-4	732	0	0	0
40	SLU 30	19	-4	733	0	0	0
40	SLU 31	20	-5	797	0	0	0
40	SLU 32	20	-5	808	0	0	0
40	SLU 33	20	-4	809	0	0	0
40	SLU 34	20	-4	805	0	0	0
40	SLU 35	20	-5	816	0	0	0
40	SLU 36	20	-4	817	0	0	0
40	SLU 37	20	-5	811	0	0	0
40	SLU 38	20	-4	812	0	0	0
40	SLU 39	20	-6	829	0	0	0
40	SLU 40	20	-5	830	0	0	0
40	SLU 41	20	-5	837	0	0	0
40	SLU 42	20	-5	838	0	0	0
40	SLU 43	22	-10	785	0	0	0
40	SLU 44	22	-9	787	0	0	0
40	SLU 45	22	-9	798	0	0	0
40	SLU 46	22	-9	799	0	0	0
40	SLU 47	22	-8	795	0	0	0
40	SLU 48	22	-9	806	0	0	0
40	SLU 49	22	-8	807	0	0	0
40	SLU 50	22	-9	801	0	0	0
40	SLU 51	22	-8	802	0	0	0
40	SLU 52	22	-9	866	0	0	0
40	SLU 53	23	-9	877	0	0	0
40	SLU 54	23	-9	878	0	0	0
40	SLU 55	22	-9	874	0	0	0
40	SLU 56	23	-9	885	0	0	0
40	SLU 57	23	-9	886	0	0	0
40	SLU 58	22	-9	880	0	0	0
40	SLU 59	22	-9	881	0	0	0
40	SLU 60	23	-10	898	0	0	0
40	SLU 61	23	-10	899	0	0	0
40	SLU 62	23	-10	906	0	0	0
40	SLU 63	23	-9	907	0	0	0
40	SLU 64	23	-8	874	0	0	0
40	SLU 65	24	-7	876	0	0	0
40	SLU 66	24	-7	887	0	0	0
40	SLU 67	24	-7	888	0	0	0
40	SLU 68	24	-7	884	0	0	0
40	SLU 69	24	-7	894	0	0	0
40	SLU 70	24	-7	895	0	0	0
40	SLU 71	24	-7	890	0	0	0
40	SLU 72	24	-7	891	0	0	0
40	SLU 73	24	-7	955	0	0	0
40	SLU 74	24	-8	966	0	0	0
40	SLU 75	24	-7	967	0	0	0
40	SLU 76	24	-7	963	0	0	0
40	SLU 77	24	-7	974	0	0	0
40	SLU 78	24	-7	975	0	0	0
40	SLU 79	24	-7	969	0	0	0
40	SLU 80	24	-7	970	0	0	0
40	SLU 81	24	-8	987	0	0	0
40	SLU 82	24	-8	988	0	0	0
40	SLU 83	24	-8	995	0	0	0
40	SLU 84	24	-7	996	0	0	0
40	SLE RA 1	18	-6	653	0	0	0
40	SLE RA 2	18	-6	654	0	0	0
40	SLE RA 3	18	-6	661	0	0	0
40	SLE RA 4	18	-6	662	0	0	0
40	SLE RA 5	18	-6	659	0	0	0
40	SLE RA 6	18	-6	666	0	0	0
40	SLE RA 7	18	-6	667	0	0	0
40	SLE RA 8	18	-6	663	0	0	0
40	SLE RA 9	18	-6	664	0	0	0
40	SLE RA 10	18	-6	707	0	0	0
40	SLE RA 11	18	-6	714	0	0	0
40	SLE RA 12	18	-6	715	0	0	0
40	SLE RA 13	18	-6	712	0	0	0
40	SLE RA 14	18	-6	719	0	0	0
40	SLE RA 15	18	-6	720	0	0	0
40	SLE RA 16	18	-6	716	0	0	0
40	SLE RA 17	18	-6	717	0	0	0
40	SLE RA 18	18	-7	728	0	0	0
40	SLE RA 19	18	-6	729	0	0	0
40	SLE RA 20	18	-6	733	0	0	0
40	SLE RA 21	18	-6	734	0	0	0
40	SLE FR 1	18	-6	653	0	0	0
40	SLE FR 2	18	-6	653	0	0	0
40	SLE FR 3	18	-6	655	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
40	SLE FR 4	18	-6	676	0	0	0
40	SLE FR 5	18	-6	678	0	0	0
40	SLE FR 6	18	-7	691	0	0	0
40	SLE QP 1	18	-6	653	0	0	0
40	SLE QP 2	18	-7	676	0	0	0
40	SLD 1	54	-4	666	0	0	0
40	SLD 2	57	-1	667	0	0	0
40	SLD 3	52	-14	644	0	0	0
40	SLD 4	55	-11	644	0	0	0
40	SLD 5	30	9	706	0	0	0
40	SLD 6	32	11	706	0	0	0
40	SLD 7	26	-25	633	0	0	0
40	SLD 8	28	-22	633	0	0	0
40	SLD 9	8	9	718	0	0	0
40	SLD 10	10	12	719	0	0	0
40	SLD 11	4	-24	645	0	0	0
40	SLD 12	6	-22	645	0	0	0
40	SLD 13	-20	-3	707	0	0	0
40	SLD 14	-17	1	707	0	0	0
40	SLD 15	-21	-13	684	0	0	0
40	SLD 16	-18	-9	685	0	0	0
40	SLV 1	102	0	656	0	0	0
40	SLV 2	109	8	657	0	0	0
40	SLV 3	99	-25	601	0	0	0
40	SLV 4	105	-16	601	0	0	0
40	SLV 5	47	31	754	0	0	0
40	SLV 6	51	36	754	0	0	0
40	SLV 7	36	-50	569	0	0	0
40	SLV 8	41	-45	569	0	0	0
40	SLV 9	-5	32	782	0	0	0
40	SLV 10	0	37	782	0	0	0
40	SLV 11	-15	-49	597	0	0	0
40	SLV 12	-11	-44	597	0	0	0
40	SLV 13	-70	3	750	0	0	0
40	SLV 14	-63	12	750	0	0	0
40	SLV 15	-73	-21	694	0	0	0
40	SLV 16	-66	-13	695	0	0	0
41	SLU 1	15	-14	552	0	0	0
41	SLU 2	15	-13	553	0	0	0
41	SLU 3	16	-13	563	0	0	0
41	SLU 4	16	-13	564	0	0	0
41	SLU 5	15	-13	560	0	0	0
41	SLU 6	16	-13	570	0	0	0
41	SLU 7	16	-13	571	0	0	0
41	SLU 8	15	-13	566	0	0	0
41	SLU 9	16	-13	567	0	0	0
41	SLU 10	16	-14	626	0	0	0
41	SLU 11	16	-14	635	0	0	0
41	SLU 12	16	-14	636	0	0	0
41	SLU 13	16	-14	633	0	0	0
41	SLU 14	16	-14	643	0	0	0
41	SLU 15	16	-14	643	0	0	0
41	SLU 16	16	-14	638	0	0	0
41	SLU 17	16	-14	639	0	0	0
41	SLU 18	16	-15	655	0	0	0
41	SLU 19	16	-15	656	0	0	0
41	SLU 20	16	-15	662	0	0	0
41	SLU 21	16	-14	663	0	0	0
41	SLU 22	17	-13	631	0	0	0
41	SLU 23	17	-12	633	0	0	0
41	SLU 24	17	-13	643	0	0	0
41	SLU 25	17	-12	644	0	0	0
41	SLU 26	17	-12	640	0	0	0
41	SLU 27	17	-12	650	0	0	0
41	SLU 28	17	-12	651	0	0	0
41	SLU 29	17	-12	646	0	0	0
41	SLU 30	17	-12	646	0	0	0
41	SLU 31	18	-13	705	0	0	0
41	SLU 32	18	-14	715	0	0	0
41	SLU 33	18	-13	716	0	0	0
41	SLU 34	18	-13	712	0	0	0
41	SLU 35	18	-13	722	0	0	0
41	SLU 36	18	-13	723	0	0	0
41	SLU 37	18	-13	718	0	0	0
41	SLU 38	18	-13	719	0	0	0
41	SLU 39	18	-14	735	0	0	0
41	SLU 40	18	-14	736	0	0	0
41	SLU 41	18	-14	742	0	0	0
41	SLU 42	18	-14	743	0	0	0
41	SLU 43	19	-18	690	0	0	0
41	SLU 44	19	-17	691	0	0	0
41	SLU 45	20	-18	701	0	0	0
41	SLU 46	20	-17	702	0	0	0
41	SLU 47	20	-17	699	0	0	0
41	SLU 48	20	-17	708	0	0	0
41	SLU 49	20	-17	709	0	0	0
41	SLU 50	20	-17	704	0	0	0
41	SLU 51	20	-17	705	0	0	0
41	SLU 52	20	-18	764	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
41	SLU 53	20	-19	774	0	0	0
41	SLU 54	20	-18	775	0	0	0
41	SLU 55	20	-18	771	0	0	0
41	SLU 56	20	-19	781	0	0	0
41	SLU 57	20	-18	782	0	0	0
41	SLU 58	20	-19	777	0	0	0
41	SLU 59	20	-18	777	0	0	0
41	SLU 60	20	-20	793	0	0	0
41	SLU 61	20	-19	794	0	0	0
41	SLU 62	20	-19	801	0	0	0
41	SLU 63	20	-19	801	0	0	0
41	SLU 64	21	-17	770	0	0	0
41	SLU 65	21	-17	771	0	0	0
41	SLU 66	21	-17	781	0	0	0
41	SLU 67	21	-17	782	0	0	0
41	SLU 68	21	-16	778	0	0	0
41	SLU 69	21	-17	788	0	0	0
41	SLU 70	21	-16	789	0	0	0
41	SLU 71	21	-17	784	0	0	0
41	SLU 72	21	-16	785	0	0	0
41	SLU 73	22	-18	844	0	0	0
41	SLU 74	22	-18	853	0	0	0
41	SLU 75	22	-18	854	0	0	0
41	SLU 76	22	-17	851	0	0	0
41	SLU 77	22	-18	860	0	0	0
41	SLU 78	22	-17	861	0	0	0
41	SLU 79	22	-18	856	0	0	0
41	SLU 80	22	-17	857	0	0	0
41	SLU 81	22	-19	873	0	0	0
41	SLU 82	22	-18	874	0	0	0
41	SLU 83	22	-19	880	0	0	0
41	SLU 84	22	-18	881	0	0	0
41	SLE RA 1	16	-14	574	0	0	0
41	SLE RA 2	16	-13	576	0	0	0
41	SLE RA 3	16	-13	582	0	0	0
41	SLE RA 4	16	-13	583	0	0	0
41	SLE RA 5	16	-13	580	0	0	0
41	SLE RA 6	16	-13	587	0	0	0
41	SLE RA 7	16	-13	587	0	0	0
41	SLE RA 8	16	-13	584	0	0	0
41	SLE RA 9	16	-13	585	0	0	0
41	SLE RA 10	16	-14	624	0	0	0
41	SLE RA 11	16	-14	630	0	0	0
41	SLE RA 12	16	-14	631	0	0	0
41	SLE RA 13	16	-14	629	0	0	0
41	SLE RA 14	16	-14	635	0	0	0
41	SLE RA 15	16	-13	636	0	0	0
41	SLE RA 16	16	-14	632	0	0	0
41	SLE RA 17	16	-13	633	0	0	0
41	SLE RA 18	16	-15	644	0	0	0
41	SLE RA 19	16	-14	644	0	0	0
41	SLE RA 20	16	-14	648	0	0	0
41	SLE RA 21	16	-14	649	0	0	0
41	SLE FR 1	16	-14	574	0	0	0
41	SLE FR 2	16	-13	575	0	0	0
41	SLE FR 3	16	-13	576	0	0	0
41	SLE FR 4	16	-14	595	0	0	0
41	SLE FR 5	16	-14	597	0	0	0
41	SLE FR 6	16	-14	609	0	0	0
41	SLE QP 1	16	-14	574	0	0	0
41	SLE QP 2	16	-14	595	0	0	0
41	SLD 1	49	-7	620	0	0	0
41	SLD 2	51	-7	621	0	0	0
41	SLD 3	48	-16	600	0	0	0
41	SLD 4	50	-16	601	0	0	0
41	SLD 5	27	2	633	0	0	0
41	SLD 6	29	2	633	0	0	0
41	SLD 7	23	-28	566	0	0	0
41	SLD 8	25	-28	567	0	0	0
41	SLD 9	7	0	624	0	0	0
41	SLD 10	9	0	624	0	0	0
41	SLD 11	3	-29	557	0	0	0
41	SLD 12	5	-29	558	0	0	0
41	SLD 13	-18	-12	590	0	0	0
41	SLD 14	-16	-12	591	0	0	0
41	SLD 15	-19	-21	570	0	0	0
41	SLD 16	-17	-21	571	0	0	0
41	SLV 1	93	2	654	0	0	0
41	SLV 2	99	3	657	0	0	0
41	SLV 3	90	-19	604	0	0	0
41	SLV 4	96	-19	607	0	0	0
41	SLV 5	42	23	688	0	0	0
41	SLV 6	46	24	690	0	0	0
41	SLV 7	33	-48	521	0	0	0
41	SLV 8	37	-48	523	0	0	0
41	SLV 9	-5	20	667	0	0	0
41	SLV 10	-1	20	669	0	0	0
41	SLV 11	-14	-51	500	0	0	0
41	SLV 12	-10	-51	502	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
41	SLV 13	-64	-9	584	0	0	0
41	SLV 14	-58	-8	586	0	0	0
41	SLV 15	-67	-31	534	0	0	0
41	SLV 16	-61	-30	536	0	0	0
42	SLU 1	9	-9	333	0	0	0
42	SLU 2	9	-9	334	0	0	0
42	SLU 3	9	-9	340	0	0	0
42	SLU 4	9	-9	340	0	0	0
42	SLU 5	9	-8	338	0	0	0
42	SLU 6	9	-9	344	0	0	0
42	SLU 7	10	-8	344	0	0	0
42	SLU 8	9	-9	341	0	0	0
42	SLU 9	9	-8	342	0	0	0
42	SLU 10	10	-9	378	0	0	0
42	SLU 11	10	-10	384	0	0	0
42	SLU 12	10	-9	384	0	0	0
42	SLU 13	10	-9	382	0	0	0
42	SLU 14	10	-9	388	0	0	0
42	SLU 15	10	-9	388	0	0	0
42	SLU 16	10	-9	385	0	0	0
42	SLU 17	10	-9	386	0	0	0
42	SLU 18	10	-10	396	0	0	0
42	SLU 19	10	-10	396	0	0	0
42	SLU 20	10	-10	400	0	0	0
42	SLU 21	10	-10	400	0	0	0
42	SLU 22	10	-9	381	0	0	0
42	SLU 23	10	-8	382	0	0	0
42	SLU 24	10	-8	388	0	0	0
42	SLU 25	10	-8	388	0	0	0
42	SLU 26	10	-8	386	0	0	0
42	SLU 27	10	-8	392	0	0	0
42	SLU 28	10	-8	393	0	0	0
42	SLU 29	10	-8	389	0	0	0
42	SLU 30	10	-8	390	0	0	0
42	SLU 31	11	-9	426	0	0	0
42	SLU 32	11	-9	432	0	0	0
42	SLU 33	11	-9	432	0	0	0
42	SLU 34	11	-9	430	0	0	0
42	SLU 35	11	-9	436	0	0	0
42	SLU 36	11	-9	437	0	0	0
42	SLU 37	11	-9	433	0	0	0
42	SLU 38	11	-9	434	0	0	0
42	SLU 39	11	-10	444	0	0	0
42	SLU 40	11	-9	444	0	0	0
42	SLU 41	11	-10	448	0	0	0
42	SLU 42	11	-9	449	0	0	0
42	SLU 43	12	-12	416	0	0	0
42	SLU 44	12	-11	417	0	0	0
42	SLU 45	12	-12	423	0	0	0
42	SLU 46	12	-11	423	0	0	0
42	SLU 47	12	-11	421	0	0	0
42	SLU 48	12	-12	427	0	0	0
42	SLU 49	12	-11	428	0	0	0
42	SLU 50	12	-12	425	0	0	0
42	SLU 51	12	-11	425	0	0	0
42	SLU 52	12	-12	461	0	0	0
42	SLU 53	12	-12	467	0	0	0
42	SLU 54	12	-12	467	0	0	0
42	SLU 55	12	-12	465	0	0	0
42	SLU 56	12	-12	471	0	0	0
42	SLU 57	12	-12	472	0	0	0
42	SLU 58	12	-12	469	0	0	0
42	SLU 59	12	-12	469	0	0	0
42	SLU 60	12	-13	479	0	0	0
42	SLU 61	12	-13	479	0	0	0
42	SLU 62	12	-13	483	0	0	0
42	SLU 63	12	-12	484	0	0	0
42	SLU 64	13	-12	464	0	0	0
42	SLU 65	13	-11	465	0	0	0
42	SLU 66	13	-11	471	0	0	0
42	SLU 67	13	-11	472	0	0	0
42	SLU 68	13	-11	469	0	0	0
42	SLU 69	13	-11	475	0	0	0
42	SLU 70	13	-11	476	0	0	0
42	SLU 71	13	-11	473	0	0	0
42	SLU 72	13	-11	473	0	0	0
42	SLU 73	13	-12	509	0	0	0
42	SLU 74	13	-12	515	0	0	0
42	SLU 75	13	-12	516	0	0	0
42	SLU 76	13	-12	513	0	0	0
42	SLU 77	13	-12	519	0	0	0
42	SLU 78	13	-12	520	0	0	0
42	SLU 79	13	-12	517	0	0	0
42	SLU 80	13	-12	517	0	0	0
42	SLU 81	13	-13	527	0	0	0
42	SLU 82	13	-12	528	0	0	0
42	SLU 83	13	-12	531	0	0	0
42	SLU 84	13	-12	532	0	0	0
42	SLE RA 1	10	-9	346	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
42	SLE RA 2	10	-9	347	0	0	0
42	SLE RA 3	10	-9	351	0	0	0
42	SLE RA 4	10	-9	351	0	0	0
42	SLE RA 5	10	-9	350	0	0	0
42	SLE RA 6	10	-9	354	0	0	0
42	SLE RA 7	10	-9	354	0	0	0
42	SLE RA 8	10	-9	352	0	0	0
42	SLE RA 9	10	-9	353	0	0	0
42	SLE RA 10	10	-9	376	0	0	0
42	SLE RA 11	10	-9	380	0	0	0
42	SLE RA 12	10	-9	381	0	0	0
42	SLE RA 13	10	-9	379	0	0	0
42	SLE RA 14	10	-9	383	0	0	0
42	SLE RA 15	10	-9	384	0	0	0
42	SLE RA 16	10	-9	382	0	0	0
42	SLE RA 17	10	-9	382	0	0	0
42	SLE RA 18	10	-10	388	0	0	0
42	SLE RA 19	10	-9	389	0	0	0
42	SLE RA 20	10	-10	391	0	0	0
42	SLE RA 21	10	-9	392	0	0	0
42	SLE FR 1	10	-9	346	0	0	0
42	SLE FR 2	10	-9	347	0	0	0
42	SLE FR 3	10	-9	348	0	0	0
42	SLE FR 4	10	-9	359	0	0	0
42	SLE FR 5	10	-9	360	0	0	0
42	SLE FR 6	10	-9	367	0	0	0
42	SLE QP 1	10	-9	346	0	0	0
42	SLE QP 2	10	-9	359	0	0	0
42	SLD 1	30	-5	377	0	0	0
42	SLD 2	31	-5	378	0	0	0
42	SLD 3	29	-10	365	0	0	0
42	SLD 4	31	-10	366	0	0	0
42	SLD 5	16	0	383	0	0	0
42	SLD 6	17	0	384	0	0	0
42	SLD 7	14	-18	342	0	0	0
42	SLD 8	15	-18	342	0	0	0
42	SLD 9	4	-1	376	0	0	0
42	SLD 10	5	-1	376	0	0	0
42	SLD 11	2	-19	334	0	0	0
42	SLD 12	3	-19	335	0	0	0
42	SLD 13	-11	-8	352	0	0	0
42	SLD 14	-10	-8	353	0	0	0
42	SLD 15	-12	-14	340	0	0	0
42	SLD 16	-10	-14	341	0	0	0
42	SLV 1	57	1	403	0	0	0
42	SLV 2	60	1	405	0	0	0
42	SLV 3	55	-12	372	0	0	0
42	SLV 4	58	-12	374	0	0	0
42	SLV 5	26	14	419	0	0	0
42	SLV 6	28	14	420	0	0	0
42	SLV 7	20	-29	315	0	0	0
42	SLV 8	22	-30	317	0	0	0
42	SLV 9	-3	11	401	0	0	0
42	SLV 10	-1	11	403	0	0	0
42	SLV 11	-9	-32	298	0	0	0
42	SLV 12	-6	-32	299	0	0	0
42	SLV 13	-39	-7	345	0	0	0
42	SLV 14	-36	-7	346	0	0	0
42	SLV 15	-41	-20	314	0	0	0
42	SLV 16	-37	-20	315	0	0	0
43	SLU 1	9	-2	330	0	0	0
43	SLU 2	9	-2	331	0	0	0
43	SLU 3	9	-2	336	0	0	0
43	SLU 4	9	-2	337	0	0	0
43	SLU 5	9	-2	335	0	0	0
43	SLU 6	9	-2	341	0	0	0
43	SLU 7	9	-2	341	0	0	0
43	SLU 8	9	-2	338	0	0	0
43	SLU 9	9	-2	338	0	0	0
43	SLU 10	9	-2	372	0	0	0
43	SLU 11	9	-2	378	0	0	0
43	SLU 12	9	-2	378	0	0	0
43	SLU 13	9	-2	376	0	0	0
43	SLU 14	9	-2	382	0	0	0
43	SLU 15	9	-2	382	0	0	0
43	SLU 16	9	-2	379	0	0	0
43	SLU 17	9	-2	380	0	0	0
43	SLU 18	9	-2	389	0	0	0
43	SLU 19	9	-2	389	0	0	0
43	SLU 20	9	-2	393	0	0	0
43	SLU 21	9	-2	393	0	0	0
43	SLU 22	10	-1	377	0	0	0
43	SLU 23	10	-1	377	0	0	0
43	SLU 24	10	-1	383	0	0	0
43	SLU 25	10	-1	384	0	0	0
43	SLU 26	10	-1	381	0	0	0
43	SLU 27	10	-1	387	0	0	0
43	SLU 28	10	-1	388	0	0	0
43	SLU 29	10	-1	385	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
43	SLU 30	10	-1	385	0	0	0
43	SLU 31	10	-1	418	0	0	0
43	SLU 32	10	-1	424	0	0	0
43	SLU 33	10	-1	425	0	0	0
43	SLU 34	10	-1	423	0	0	0
43	SLU 35	10	-1	428	0	0	0
43	SLU 36	10	-1	429	0	0	0
43	SLU 37	10	-1	426	0	0	0
43	SLU 38	10	-1	426	0	0	0
43	SLU 39	10	-1	435	0	0	0
43	SLU 40	10	-1	436	0	0	0
43	SLU 41	10	-1	439	0	0	0
43	SLU 42	10	-1	440	0	0	0
43	SLU 43	11	-4	413	0	0	0
43	SLU 44	11	-3	414	0	0	0
43	SLU 45	11	-3	419	0	0	0
43	SLU 46	11	-3	420	0	0	0
43	SLU 47	11	-3	418	0	0	0
43	SLU 48	11	-3	423	0	0	0
43	SLU 49	11	-3	424	0	0	0
43	SLU 50	11	-3	421	0	0	0
43	SLU 51	11	-3	421	0	0	0
43	SLU 52	11	-3	455	0	0	0
43	SLU 53	11	-3	461	0	0	0
43	SLU 54	11	-3	461	0	0	0
43	SLU 55	11	-3	459	0	0	0
43	SLU 56	11	-3	465	0	0	0
43	SLU 57	11	-3	465	0	0	0
43	SLU 58	11	-3	462	0	0	0
43	SLU 59	11	-3	463	0	0	0
43	SLU 60	11	-4	472	0	0	0
43	SLU 61	11	-3	472	0	0	0
43	SLU 62	11	-3	476	0	0	0
43	SLU 63	11	-3	476	0	0	0
43	SLU 64	12	-3	459	0	0	0
43	SLU 65	12	-2	460	0	0	0
43	SLU 66	12	-2	466	0	0	0
43	SLU 67	12	-2	467	0	0	0
43	SLU 68	12	-2	464	0	0	0
43	SLU 69	12	-2	470	0	0	0
43	SLU 70	12	-2	471	0	0	0
43	SLU 71	12	-2	468	0	0	0
43	SLU 72	12	-2	468	0	0	0
43	SLU 73	12	-2	501	0	0	0
43	SLU 74	12	-2	507	0	0	0
43	SLU 75	12	-2	508	0	0	0
43	SLU 76	12	-2	505	0	0	0
43	SLU 77	12	-2	511	0	0	0
43	SLU 78	12	-2	512	0	0	0
43	SLU 79	12	-2	509	0	0	0
43	SLU 80	12	-2	509	0	0	0
43	SLU 81	12	-3	518	0	0	0
43	SLU 82	12	-2	519	0	0	0
43	SLU 83	12	-2	522	0	0	0
43	SLU 84	12	-2	523	0	0	0
43	SLE RA 1	9	-2	343	0	0	0
43	SLE RA 2	9	-2	344	0	0	0
43	SLE RA 3	9	-2	348	0	0	0
43	SLE RA 4	9	-2	348	0	0	0
43	SLE RA 5	9	-2	346	0	0	0
43	SLE RA 6	9	-2	350	0	0	0
43	SLE RA 7	9	-2	351	0	0	0
43	SLE RA 8	9	-2	349	0	0	0
43	SLE RA 9	9	-2	349	0	0	0
43	SLE RA 10	9	-2	371	0	0	0
43	SLE RA 11	9	-2	375	0	0	0
43	SLE RA 12	9	-2	375	0	0	0
43	SLE RA 13	9	-2	374	0	0	0
43	SLE RA 14	9	-2	378	0	0	0
43	SLE RA 15	9	-2	378	0	0	0
43	SLE RA 16	9	-2	376	0	0	0
43	SLE RA 17	9	-2	376	0	0	0
43	SLE RA 18	9	-2	382	0	0	0
43	SLE RA 19	9	-2	383	0	0	0
43	SLE RA 20	9	-2	385	0	0	0
43	SLE RA 21	9	-2	385	0	0	0
43	SLE FR 1	9	-2	343	0	0	0
43	SLE FR 2	9	-2	343	0	0	0
43	SLE FR 3	9	-2	344	0	0	0
43	SLE FR 4	9	-2	355	0	0	0
43	SLE FR 5	9	-2	356	0	0	0
43	SLE FR 6	9	-2	363	0	0	0
43	SLE QP 1	9	-2	343	0	0	0
43	SLE QP 2	9	-2	355	0	0	0
43	SLD 1	28	-1	344	0	0	0
43	SLD 2	29	1	344	0	0	0
43	SLD 3	27	-7	335	0	0	0
43	SLD 4	29	-4	335	0	0	0
43	SLD 5	15	6	365	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
43	SLD 6	16	7	365	0	0	0
43	SLD 7	13	-12	336	0	0	0
43	SLD 8	14	-10	335	0	0	0
43	SLD 9	4	6	374	0	0	0
43	SLD 10	5	8	374	0	0	0
43	SLD 11	2	-12	345	0	0	0
43	SLD 12	3	-10	345	0	0	0
43	SLD 13	-11	0	375	0	0	0
43	SLD 14	-9	2	375	0	0	0
43	SLD 15	-11	-5	366	0	0	0
43	SLD 16	-10	-3	366	0	0	0
43	SLV 1	53	0	329	0	0	0
43	SLV 2	57	5	329	0	0	0
43	SLV 3	52	-13	307	0	0	0
43	SLV 4	55	-7	307	0	0	0
43	SLV 5	24	17	381	0	0	0
43	SLV 6	26	21	381	0	0	0
43	SLV 7	19	-26	307	0	0	0
43	SLV 8	21	-22	307	0	0	0
43	SLV 9	-3	18	403	0	0	0
43	SLV 10	-1	22	403	0	0	0
43	SLV 11	-8	-25	329	0	0	0
43	SLV 12	-6	-21	329	0	0	0
43	SLV 13	-37	3	403	0	0	0
43	SLV 14	-34	9	403	0	0	0
43	SLV 15	-39	-10	381	0	0	0
43	SLV 16	-35	-4	381	0	0	0
44	SLU 1	15	-5	582	0	0	0
44	SLU 2	15	-5	583	0	0	0
44	SLU 3	15	-5	593	0	0	0
44	SLU 4	15	-5	594	0	0	0
44	SLU 5	15	-4	590	0	0	0
44	SLU 6	15	-5	601	0	0	0
44	SLU 7	15	-4	601	0	0	0
44	SLU 8	15	-5	596	0	0	0
44	SLU 9	15	-4	597	0	0	0
44	SLU 10	15	-5	656	0	0	0
44	SLU 11	16	-5	667	0	0	0
44	SLU 12	16	-5	667	0	0	0
44	SLU 13	16	-4	663	0	0	0
44	SLU 14	16	-5	674	0	0	0
44	SLU 15	16	-4	675	0	0	0
44	SLU 16	16	-5	669	0	0	0
44	SLU 17	16	-4	670	0	0	0
44	SLU 18	16	-6	686	0	0	0
44	SLU 19	16	-5	687	0	0	0
44	SLU 20	16	-5	693	0	0	0
44	SLU 21	16	-5	694	0	0	0
44	SLU 22	16	-4	665	0	0	0
44	SLU 23	17	-3	666	0	0	0
44	SLU 24	17	-3	676	0	0	0
44	SLU 25	17	-3	677	0	0	0
44	SLU 26	17	-3	673	0	0	0
44	SLU 27	17	-3	684	0	0	0
44	SLU 28	17	-2	684	0	0	0
44	SLU 29	17	-3	679	0	0	0
44	SLU 30	17	-2	680	0	0	0
44	SLU 31	17	-3	739	0	0	0
44	SLU 32	17	-3	750	0	0	0
44	SLU 33	17	-3	750	0	0	0
44	SLU 34	17	-3	746	0	0	0
44	SLU 35	17	-3	757	0	0	0
44	SLU 36	17	-2	757	0	0	0
44	SLU 37	17	-3	752	0	0	0
44	SLU 38	17	-3	753	0	0	0
44	SLU 39	17	-4	769	0	0	0
44	SLU 40	17	-3	770	0	0	0
44	SLU 41	17	-3	776	0	0	0
44	SLU 42	17	-3	777	0	0	0
44	SLU 43	19	-8	728	0	0	0
44	SLU 44	19	-7	729	0	0	0
44	SLU 45	19	-7	739	0	0	0
44	SLU 46	19	-7	740	0	0	0
44	SLU 47	19	-7	736	0	0	0
44	SLU 48	19	-7	747	0	0	0
44	SLU 49	19	-6	747	0	0	0
44	SLU 50	19	-7	742	0	0	0
44	SLU 51	19	-7	743	0	0	0
44	SLU 52	19	-7	802	0	0	0
44	SLU 53	20	-7	813	0	0	0
44	SLU 54	20	-7	813	0	0	0
44	SLU 55	19	-7	809	0	0	0
44	SLU 56	20	-7	820	0	0	0
44	SLU 57	20	-7	821	0	0	0
44	SLU 58	19	-7	815	0	0	0
44	SLU 59	20	-7	816	0	0	0
44	SLU 60	20	-8	832	0	0	0
44	SLU 61	20	-7	833	0	0	0
44	SLU 62	20	-8	839	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
44	SLU 63	20	-7	840	0	0	0
44	SLU 64	20	-6	811	0	0	0
44	SLU 65	20	-5	812	0	0	0
44	SLU 66	21	-6	822	0	0	0
44	SLU 67	21	-5	823	0	0	0
44	SLU 68	21	-5	819	0	0	0
44	SLU 69	21	-5	830	0	0	0
44	SLU 70	21	-5	830	0	0	0
44	SLU 71	21	-5	825	0	0	0
44	SLU 72	21	-5	826	0	0	0
44	SLU 73	21	-5	885	0	0	0
44	SLU 74	21	-6	896	0	0	0
44	SLU 75	21	-5	896	0	0	0
44	SLU 76	21	-5	892	0	0	0
44	SLU 77	21	-5	903	0	0	0
44	SLU 78	21	-5	904	0	0	0
44	SLU 79	21	-5	898	0	0	0
44	SLU 80	21	-5	899	0	0	0
44	SLU 81	21	-6	915	0	0	0
44	SLU 82	21	-6	916	0	0	0
44	SLU 83	21	-6	922	0	0	0
44	SLU 84	21	-5	923	0	0	0
44	SLE RA 1	15	-5	605	0	0	0
44	SLE RA 2	15	-4	606	0	0	0
44	SLE RA 3	16	-5	613	0	0	0
44	SLE RA 4	16	-4	614	0	0	0
44	SLE RA 5	15	-4	611	0	0	0
44	SLE RA 6	16	-4	618	0	0	0
44	SLE RA 7	16	-4	618	0	0	0
44	SLE RA 8	15	-4	615	0	0	0
44	SLE RA 9	15	-4	615	0	0	0
44	SLE RA 10	16	-5	655	0	0	0
44	SLE RA 11	16	-5	662	0	0	0
44	SLE RA 12	16	-4	662	0	0	0
44	SLE RA 13	16	-4	660	0	0	0
44	SLE RA 14	16	-4	667	0	0	0
44	SLE RA 15	16	-4	667	0	0	0
44	SLE RA 16	16	-5	664	0	0	0
44	SLE RA 17	16	-4	664	0	0	0
44	SLE RA 18	16	-5	675	0	0	0
44	SLE RA 19	16	-5	675	0	0	0
44	SLE RA 20	16	-5	680	0	0	0
44	SLE RA 21	16	-5	680	0	0	0
44	SLE FR 1	15	-5	605	0	0	0
44	SLE FR 2	15	-5	605	0	0	0
44	SLE FR 3	15	-5	607	0	0	0
44	SLE FR 4	16	-5	626	0	0	0
44	SLE FR 5	16	-5	628	0	0	0
44	SLE FR 6	16	-5	640	0	0	0
44	SLE QP 1	15	-5	605	0	0	0
44	SLE QP 2	15	-5	626	0	0	0
44	SLD 1	49	-3	610	0	0	0
44	SLD 2	52	1	610	0	0	0
44	SLD 3	48	-12	597	0	0	0
44	SLD 4	50	-9	597	0	0	0
44	SLD 5	27	9	641	0	0	0
44	SLD 6	28	11	641	0	0	0
44	SLD 7	23	-22	598	0	0	0
44	SLD 8	25	-20	598	0	0	0
44	SLD 9	6	10	654	0	0	0
44	SLD 10	8	12	654	0	0	0
44	SLD 11	3	-21	612	0	0	0
44	SLD 12	4	-19	612	0	0	0
44	SLD 13	-19	-1	655	0	0	0
44	SLD 14	-17	2	655	0	0	0
44	SLD 15	-21	-11	643	0	0	0
44	SLD 16	-18	-7	643	0	0	0
44	SLV 1	95	0	589	0	0	0
44	SLV 2	100	9	589	0	0	0
44	SLV 3	92	-23	557	0	0	0
44	SLV 4	97	-14	557	0	0	0
44	SLV 5	42	29	664	0	0	0
44	SLV 6	46	35	664	0	0	0
44	SLV 7	33	-46	557	0	0	0
44	SLV 8	37	-41	557	0	0	0
44	SLV 9	-6	30	696	0	0	0
44	SLV 10	-2	36	696	0	0	0
44	SLV 11	-15	-45	589	0	0	0
44	SLV 12	-11	-39	589	0	0	0
44	SLV 13	-66	4	696	0	0	0
44	SLV 14	-61	13	696	0	0	0
44	SLV 15	-69	-19	663	0	0	0
44	SLV 16	-64	-10	663	0	0	0
45	SLU 1	15	-13	561	0	0	0
45	SLU 2	15	-12	562	0	0	0
45	SLU 3	15	-13	573	0	0	0
45	SLU 4	15	-12	573	0	0	0
45	SLU 5	15	-12	570	0	0	0
45	SLU 6	15	-12	580	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
45	SLU 7	15	-12	581	0	0	0
45	SLU 8	15	-12	576	0	0	0
45	SLU 9	15	-12	576	0	0	0
45	SLU 10	15	-13	636	0	0	0
45	SLU 11	16	-14	646	0	0	0
45	SLU 12	16	-13	647	0	0	0
45	SLU 13	15	-13	643	0	0	0
45	SLU 14	16	-13	653	0	0	0
45	SLU 15	16	-13	654	0	0	0
45	SLU 16	15	-13	649	0	0	0
45	SLU 17	16	-13	650	0	0	0
45	SLU 18	16	-14	666	0	0	0
45	SLU 19	16	-14	667	0	0	0
45	SLU 20	16	-14	673	0	0	0
45	SLU 21	16	-14	674	0	0	0
45	SLU 22	16	-12	642	0	0	0
45	SLU 23	17	-11	644	0	0	0
45	SLU 24	17	-12	654	0	0	0
45	SLU 25	17	-11	655	0	0	0
45	SLU 26	17	-11	651	0	0	0
45	SLU 27	17	-11	661	0	0	0
45	SLU 28	17	-11	662	0	0	0
45	SLU 29	17	-12	657	0	0	0
45	SLU 30	17	-11	658	0	0	0
45	SLU 31	17	-12	717	0	0	0
45	SLU 32	17	-13	728	0	0	0
45	SLU 33	17	-12	728	0	0	0
45	SLU 34	17	-12	724	0	0	0
45	SLU 35	17	-12	735	0	0	0
45	SLU 36	17	-12	736	0	0	0
45	SLU 37	17	-12	731	0	0	0
45	SLU 38	17	-12	731	0	0	0
45	SLU 39	17	-14	748	0	0	0
45	SLU 40	17	-13	748	0	0	0
45	SLU 41	17	-13	755	0	0	0
45	SLU 42	17	-13	755	0	0	0
45	SLU 43	19	-17	702	0	0	0
45	SLU 44	19	-17	703	0	0	0
45	SLU 45	19	-17	713	0	0	0
45	SLU 46	19	-17	714	0	0	0
45	SLU 47	19	-16	710	0	0	0
45	SLU 48	19	-17	720	0	0	0
45	SLU 49	19	-16	721	0	0	0
45	SLU 50	19	-17	716	0	0	0
45	SLU 51	19	-16	717	0	0	0
45	SLU 52	19	-18	776	0	0	0
45	SLU 53	20	-18	787	0	0	0
45	SLU 54	20	-17	787	0	0	0
45	SLU 55	19	-17	783	0	0	0
45	SLU 56	20	-18	794	0	0	0
45	SLU 57	20	-17	795	0	0	0
45	SLU 58	19	-18	790	0	0	0
45	SLU 59	19	-17	790	0	0	0
45	SLU 60	19	-19	807	0	0	0
45	SLU 61	20	-18	807	0	0	0
45	SLU 62	20	-18	814	0	0	0
45	SLU 63	20	-18	815	0	0	0
45	SLU 64	20	-16	783	0	0	0
45	SLU 65	20	-16	784	0	0	0
45	SLU 66	21	-16	794	0	0	0
45	SLU 67	21	-16	795	0	0	0
45	SLU 68	21	-15	791	0	0	0
45	SLU 69	21	-16	802	0	0	0
45	SLU 70	21	-15	802	0	0	0
45	SLU 71	21	-16	797	0	0	0
45	SLU 72	21	-15	798	0	0	0
45	SLU 73	21	-17	858	0	0	0
45	SLU 74	21	-17	868	0	0	0
45	SLU 75	21	-17	869	0	0	0
45	SLU 76	21	-16	865	0	0	0
45	SLU 77	21	-17	875	0	0	0
45	SLU 78	21	-16	876	0	0	0
45	SLU 79	21	-17	871	0	0	0
45	SLU 80	21	-16	872	0	0	0
45	SLU 81	21	-18	888	0	0	0
45	SLU 82	21	-17	889	0	0	0
45	SLU 83	21	-17	895	0	0	0
45	SLU 84	21	-17	896	0	0	0
45	SLE RA 1	15	-13	584	0	0	0
45	SLE RA 2	15	-12	585	0	0	0
45	SLE RA 3	15	-13	592	0	0	0
45	SLE RA 4	16	-12	593	0	0	0
45	SLE RA 5	15	-12	590	0	0	0
45	SLE RA 6	16	-12	597	0	0	0
45	SLE RA 7	16	-12	597	0	0	0
45	SLE RA 8	15	-12	594	0	0	0
45	SLE RA 9	15	-12	594	0	0	0
45	SLE RA 10	16	-13	634	0	0	0
45	SLE RA 11	16	-13	641	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
45	SLE RA 12	16	-13	642	0	0	0
45	SLE RA 13	16	-13	639	0	0	0
45	SLE RA 14	16	-13	646	0	0	0
45	SLE RA 15	16	-13	646	0	0	0
45	SLE RA 16	16	-13	643	0	0	0
45	SLE RA 17	16	-13	644	0	0	0
45	SLE RA 18	16	-14	654	0	0	0
45	SLE RA 19	16	-13	655	0	0	0
45	SLE RA 20	16	-14	659	0	0	0
45	SLE RA 21	16	-13	660	0	0	0
45	SLE FR 1	15	-13	584	0	0	0
45	SLE FR 2	15	-13	584	0	0	0
45	SLE FR 3	15	-13	586	0	0	0
45	SLE FR 4	15	-13	606	0	0	0
45	SLE FR 5	15	-13	607	0	0	0
45	SLE FR 6	16	-13	619	0	0	0
45	SLE QP 1	15	-13	584	0	0	0
45	SLE QP 2	15	-13	605	0	0	0
45	SLD 1	49	-7	624	0	0	0
45	SLD 2	51	-6	624	0	0	0
45	SLD 3	48	-16	609	0	0	0
45	SLD 4	50	-15	610	0	0	0
45	SLD 5	27	2	633	0	0	0
45	SLD 6	28	3	634	0	0	0
45	SLD 7	23	-28	584	0	0	0
45	SLD 8	25	-27	584	0	0	0
45	SLD 9	6	1	626	0	0	0
45	SLD 10	8	2	627	0	0	0
45	SLD 11	3	-29	577	0	0	0
45	SLD 12	4	-29	578	0	0	0
45	SLD 13	-19	-11	601	0	0	0
45	SLD 14	-17	-10	602	0	0	0
45	SLD 15	-20	-20	586	0	0	0
45	SLD 16	-18	-19	587	0	0	0
45	SLV 1	95	2	649	0	0	0
45	SLV 2	100	4	651	0	0	0
45	SLV 3	92	-20	612	0	0	0
45	SLV 4	97	-18	614	0	0	0
45	SLV 5	42	24	674	0	0	0
45	SLV 6	46	25	676	0	0	0
45	SLV 7	33	-48	551	0	0	0
45	SLV 8	37	-47	552	0	0	0
45	SLV 9	-6	21	658	0	0	0
45	SLV 10	-2	22	660	0	0	0
45	SLV 11	-15	-51	535	0	0	0
45	SLV 12	-11	-50	536	0	0	0
45	SLV 13	-66	-8	596	0	0	0
45	SLV 14	-61	-6	598	0	0	0
45	SLV 15	-69	-30	559	0	0	0
45	SLV 16	-64	-28	561	0	0	0
46	SLU 1	19	-15	739	0	0	0
46	SLU 2	20	-14	740	0	0	0
46	SLU 3	20	-14	754	0	0	0
46	SLU 4	20	-14	755	0	0	0
46	SLU 5	20	-13	749	0	0	0
46	SLU 6	20	-14	763	0	0	0
46	SLU 7	20	-13	764	0	0	0
46	SLU 8	20	-14	757	0	0	0
46	SLU 9	20	-13	758	0	0	0
46	SLU 10	20	-15	836	0	0	0
46	SLU 11	20	-15	850	0	0	0
46	SLU 12	20	-15	851	0	0	0
46	SLU 13	20	-14	845	0	0	0
46	SLU 14	20	-15	859	0	0	0
46	SLU 15	20	-14	860	0	0	0
46	SLU 16	20	-15	853	0	0	0
46	SLU 17	20	-14	854	0	0	0
46	SLU 18	20	-16	876	0	0	0
46	SLU 19	20	-16	876	0	0	0
46	SLU 20	20	-16	885	0	0	0
46	SLU 21	20	-15	886	0	0	0
46	SLU 22	21	-14	845	0	0	0
46	SLU 23	22	-13	847	0	0	0
46	SLU 24	22	-13	860	0	0	0
46	SLU 25	22	-12	861	0	0	0
46	SLU 26	22	-12	856	0	0	0
46	SLU 27	22	-13	870	0	0	0
46	SLU 28	22	-12	871	0	0	0
46	SLU 29	22	-13	864	0	0	0
46	SLU 30	22	-12	865	0	0	0
46	SLU 31	22	-14	943	0	0	0
46	SLU 32	22	-14	956	0	0	0
46	SLU 33	22	-13	957	0	0	0
46	SLU 34	22	-13	952	0	0	0
46	SLU 35	22	-14	966	0	0	0
46	SLU 36	22	-13	967	0	0	0
46	SLU 37	22	-14	960	0	0	0
46	SLU 38	22	-13	961	0	0	0
46	SLU 39	22	-15	982	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
46	SLU 40	22	-14	983	0	0	0
46	SLU 41	22	-15	992	0	0	0
46	SLU 42	22	-14	993	0	0	0
46	SLU 43	25	-20	923	0	0	0
46	SLU 44	25	-19	925	0	0	0
46	SLU 45	25	-19	939	0	0	0
46	SLU 46	25	-19	940	0	0	0
46	SLU 47	25	-18	934	0	0	0
46	SLU 48	25	-19	948	0	0	0
46	SLU 49	25	-18	949	0	0	0
46	SLU 50	25	-19	942	0	0	0
46	SLU 51	25	-18	943	0	0	0
46	SLU 52	25	-20	1021	0	0	0
46	SLU 53	25	-20	1035	0	0	0
46	SLU 54	26	-20	1035	0	0	0
46	SLU 55	25	-19	1030	0	0	0
46	SLU 56	26	-20	1044	0	0	0
46	SLU 57	26	-19	1045	0	0	0
46	SLU 58	25	-20	1038	0	0	0
46	SLU 59	25	-19	1039	0	0	0
46	SLU 60	25	-21	1061	0	0	0
46	SLU 61	25	-21	1061	0	0	0
46	SLU 62	26	-21	1070	0	0	0
46	SLU 63	26	-20	1071	0	0	0
46	SLU 64	27	-18	1030	0	0	0
46	SLU 65	27	-17	1032	0	0	0
46	SLU 66	27	-18	1045	0	0	0
46	SLU 67	27	-17	1046	0	0	0
46	SLU 68	27	-17	1041	0	0	0
46	SLU 69	27	-18	1055	0	0	0
46	SLU 70	27	-17	1056	0	0	0
46	SLU 71	27	-18	1049	0	0	0
46	SLU 72	27	-17	1050	0	0	0
46	SLU 73	27	-18	1128	0	0	0
46	SLU 74	27	-19	1141	0	0	0
46	SLU 75	28	-18	1142	0	0	0
46	SLU 76	27	-18	1137	0	0	0
46	SLU 77	28	-19	1151	0	0	0
46	SLU 78	28	-18	1152	0	0	0
46	SLU 79	27	-19	1145	0	0	0
46	SLU 80	27	-18	1146	0	0	0
46	SLU 81	27	-20	1167	0	0	0
46	SLU 82	28	-19	1168	0	0	0
46	SLU 83	28	-19	1177	0	0	0
46	SLU 84	28	-19	1178	0	0	0
46	SLE RA 1	20	-15	769	0	0	0
46	SLE RA 2	20	-14	770	0	0	0
46	SLE RA 3	20	-14	779	0	0	0
46	SLE RA 4	20	-14	780	0	0	0
46	SLE RA 5	20	-14	776	0	0	0
46	SLE RA 6	20	-14	785	0	0	0
46	SLE RA 7	20	-13	786	0	0	0
46	SLE RA 8	20	-14	782	0	0	0
46	SLE RA 9	20	-14	782	0	0	0
46	SLE RA 10	20	-15	834	0	0	0
46	SLE RA 11	21	-15	843	0	0	0
46	SLE RA 12	21	-14	844	0	0	0
46	SLE RA 13	21	-14	840	0	0	0
46	SLE RA 14	21	-15	849	0	0	0
46	SLE RA 15	21	-14	850	0	0	0
46	SLE RA 16	21	-15	846	0	0	0
46	SLE RA 17	21	-14	846	0	0	0
46	SLE RA 18	21	-16	860	0	0	0
46	SLE RA 19	21	-15	861	0	0	0
46	SLE RA 20	21	-15	867	0	0	0
46	SLE RA 21	21	-15	867	0	0	0
46	SLE FR 1	20	-15	769	0	0	0
46	SLE FR 2	20	-14	769	0	0	0
46	SLE FR 3	20	-14	772	0	0	0
46	SLE FR 4	20	-15	797	0	0	0
46	SLE FR 5	20	-15	799	0	0	0
46	SLE FR 6	20	-15	815	0	0	0
46	SLE QP 1	20	-15	769	0	0	0
46	SLE QP 2	20	-15	796	0	0	0
46	SLD 1	64	-8	811	0	0	0
46	SLD 2	67	-6	812	0	0	0
46	SLD 3	63	-20	792	0	0	0
46	SLD 4	66	-18	793	0	0	0
46	SLD 5	35	5	829	0	0	0
46	SLD 6	37	6	829	0	0	0
46	SLD 7	30	-35	767	0	0	0
46	SLD 8	32	-33	768	0	0	0
46	SLD 9	8	4	825	0	0	0
46	SLD 10	10	5	826	0	0	0
46	SLD 11	3	-36	764	0	0	0
46	SLD 12	5	-35	764	0	0	0
46	SLD 13	-25	-12	800	0	0	0
46	SLD 14	-23	-10	801	0	0	0
46	SLD 15	-27	-24	781	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
46	SLD 16	-24	-22	782	0	0	0
46	SLV 1	124	2	832	0	0	0
46	SLV 2	130	6	834	0	0	0
46	SLV 3	120	-26	785	0	0	0
46	SLV 4	127	-22	787	0	0	0
46	SLV 5	55	33	877	0	0	0
46	SLV 6	60	36	878	0	0	0
46	SLV 7	44	-63	722	0	0	0
46	SLV 8	48	-60	724	0	0	0
46	SLV 9	-8	30	869	0	0	0
46	SLV 10	-3	33	870	0	0	0
46	SLV 11	-19	-66	715	0	0	0
46	SLV 12	-15	-63	716	0	0	0
46	SLV 13	-86	-7	806	0	0	0
46	SLV 14	-80	-3	808	0	0	0
46	SLV 15	-90	-36	759	0	0	0
46	SLV 16	-83	-32	761	0	0	0
47	SLU 1	19	-13	745	0	0	0
47	SLU 2	20	-12	746	0	0	0
47	SLU 3	20	-12	760	0	0	0
47	SLU 4	20	-12	761	0	0	0
47	SLU 5	20	-11	755	0	0	0
47	SLU 6	20	-12	769	0	0	0
47	SLU 7	20	-11	770	0	0	0
47	SLU 8	20	-12	764	0	0	0
47	SLU 9	20	-11	764	0	0	0
47	SLU 10	20	-13	842	0	0	0
47	SLU 11	20	-13	856	0	0	0
47	SLU 12	20	-12	857	0	0	0
47	SLU 13	20	-12	851	0	0	0
47	SLU 14	20	-13	865	0	0	0
47	SLU 15	20	-12	866	0	0	0
47	SLU 16	20	-13	859	0	0	0
47	SLU 17	20	-12	860	0	0	0
47	SLU 18	20	-14	882	0	0	0
47	SLU 19	20	-13	882	0	0	0
47	SLU 20	20	-13	891	0	0	0
47	SLU 21	20	-13	892	0	0	0
47	SLU 22	21	-11	852	0	0	0
47	SLU 23	22	-10	853	0	0	0
47	SLU 24	22	-11	867	0	0	0
47	SLU 25	22	-10	868	0	0	0
47	SLU 26	22	-10	863	0	0	0
47	SLU 27	22	-10	877	0	0	0
47	SLU 28	22	-10	877	0	0	0
47	SLU 29	22	-10	871	0	0	0
47	SLU 30	22	-10	872	0	0	0
47	SLU 31	22	-11	949	0	0	0
47	SLU 32	22	-11	963	0	0	0
47	SLU 33	22	-11	964	0	0	0
47	SLU 34	22	-10	959	0	0	0
47	SLU 35	22	-11	972	0	0	0
47	SLU 36	22	-10	973	0	0	0
47	SLU 37	22	-11	967	0	0	0
47	SLU 38	22	-10	967	0	0	0
47	SLU 39	22	-12	989	0	0	0
47	SLU 40	22	-12	990	0	0	0
47	SLU 41	22	-12	998	0	0	0
47	SLU 42	22	-11	999	0	0	0
47	SLU 43	25	-17	931	0	0	0
47	SLU 44	25	-16	933	0	0	0
47	SLU 45	25	-17	946	0	0	0
47	SLU 46	25	-16	947	0	0	0
47	SLU 47	25	-16	942	0	0	0
47	SLU 48	25	-16	956	0	0	0
47	SLU 49	25	-16	957	0	0	0
47	SLU 50	25	-16	950	0	0	0
47	SLU 51	25	-16	951	0	0	0
47	SLU 52	25	-17	1028	0	0	0
47	SLU 53	25	-17	1042	0	0	0
47	SLU 54	26	-17	1043	0	0	0
47	SLU 55	25	-16	1038	0	0	0
47	SLU 56	26	-17	1052	0	0	0
47	SLU 57	26	-16	1053	0	0	0
47	SLU 58	25	-17	1046	0	0	0
47	SLU 59	25	-16	1047	0	0	0
47	SLU 60	25	-18	1068	0	0	0
47	SLU 61	25	-18	1069	0	0	0
47	SLU 62	26	-18	1078	0	0	0
47	SLU 63	26	-17	1078	0	0	0
47	SLU 64	27	-16	1038	0	0	0
47	SLU 65	27	-15	1040	0	0	0
47	SLU 66	27	-15	1054	0	0	0
47	SLU 67	27	-14	1054	0	0	0
47	SLU 68	27	-14	1049	0	0	0
47	SLU 69	27	-15	1063	0	0	0
47	SLU 70	27	-14	1064	0	0	0
47	SLU 71	27	-15	1057	0	0	0
47	SLU 72	27	-14	1058	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
47	SLU 73	27	-15	1136	0	0	0
47	SLU 74	27	-16	1149	0	0	0
47	SLU 75	28	-15	1150	0	0	0
47	SLU 76	27	-15	1145	0	0	0
47	SLU 77	28	-15	1159	0	0	0
47	SLU 78	28	-15	1160	0	0	0
47	SLU 79	27	-15	1153	0	0	0
47	SLU 80	27	-15	1154	0	0	0
47	SLU 81	27	-17	1175	0	0	0
47	SLU 82	27	-16	1176	0	0	0
47	SLU 83	28	-16	1185	0	0	0
47	SLU 84	28	-16	1186	0	0	0
47	SLE RA 1	20	-12	775	0	0	0
47	SLE RA 2	20	-12	776	0	0	0
47	SLE RA 3	20	-12	785	0	0	0
47	SLE RA 4	20	-12	786	0	0	0
47	SLE RA 5	20	-11	782	0	0	0
47	SLE RA 6	20	-12	792	0	0	0
47	SLE RA 7	20	-11	792	0	0	0
47	SLE RA 8	20	-12	788	0	0	0
47	SLE RA 9	20	-11	788	0	0	0
47	SLE RA 10	20	-12	840	0	0	0
47	SLE RA 11	21	-12	849	0	0	0
47	SLE RA 12	21	-12	850	0	0	0
47	SLE RA 13	21	-12	846	0	0	0
47	SLE RA 14	21	-12	856	0	0	0
47	SLE RA 15	21	-12	856	0	0	0
47	SLE RA 16	21	-12	852	0	0	0
47	SLE RA 17	21	-12	852	0	0	0
47	SLE RA 18	21	-13	866	0	0	0
47	SLE RA 19	21	-13	867	0	0	0
47	SLE RA 20	21	-13	873	0	0	0
47	SLE RA 21	21	-12	873	0	0	0
47	SLE FR 1	20	-12	775	0	0	0
47	SLE FR 2	20	-12	775	0	0	0
47	SLE FR 3	20	-12	778	0	0	0
47	SLE FR 4	20	-12	803	0	0	0
47	SLE FR 5	20	-12	805	0	0	0
47	SLE FR 6	20	-13	821	0	0	0
47	SLE QP 1	20	-12	775	0	0	0
47	SLE QP 2	20	-13	803	0	0	0
47	SLD 1	64	-6	806	0	0	0
47	SLD 2	67	-4	807	0	0	0
47	SLD 3	63	-18	788	0	0	0
47	SLD 4	66	-16	789	0	0	0
47	SLD 5	35	7	830	0	0	0
47	SLD 6	37	9	831	0	0	0
47	SLD 7	30	-33	771	0	0	0
47	SLD 8	32	-31	772	0	0	0
47	SLD 9	8	6	833	0	0	0
47	SLD 10	10	8	834	0	0	0
47	SLD 11	3	-34	774	0	0	0
47	SLD 12	5	-32	775	0	0	0
47	SLD 13	-26	-9	816	0	0	0
47	SLD 14	-23	-7	817	0	0	0
47	SLD 15	-27	-21	798	0	0	0
47	SLD 16	-24	-19	799	0	0	0
47	SLV 1	124	2	812	0	0	0
47	SLV 2	131	8	814	0	0	0
47	SLV 3	120	-27	768	0	0	0
47	SLV 4	127	-21	769	0	0	0
47	SLV 5	55	35	873	0	0	0
47	SLV 6	60	39	874	0	0	0
47	SLV 7	44	-62	724	0	0	0
47	SLV 8	48	-58	725	0	0	0
47	SLV 9	-8	33	880	0	0	0
47	SLV 10	-3	37	881	0	0	0
47	SLV 11	-19	-64	732	0	0	0
47	SLV 12	-15	-60	732	0	0	0
47	SLV 13	-87	-4	836	0	0	0
47	SLV 14	-80	2	837	0	0	0
47	SLV 15	-90	-33	791	0	0	0
47	SLV 16	-83	-27	793	0	0	0
48	SLU 1	19	-11	749	0	0	0
48	SLU 2	19	-10	751	0	0	0
48	SLU 3	20	-10	765	0	0	0
48	SLU 4	20	-9	765	0	0	0
48	SLU 5	20	-9	760	0	0	0
48	SLU 6	20	-10	774	0	0	0
48	SLU 7	20	-9	775	0	0	0
48	SLU 8	20	-10	768	0	0	0
48	SLU 9	20	-9	769	0	0	0
48	SLU 10	20	-10	846	0	0	0
48	SLU 11	20	-11	860	0	0	0
48	SLU 12	20	-10	861	0	0	0
48	SLU 13	20	-10	856	0	0	0
48	SLU 14	20	-10	870	0	0	0
48	SLU 15	20	-9	871	0	0	0
48	SLU 16	20	-10	864	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
48	SLU 17	20	-10	865	0	0	0
48	SLU 18	20	-11	886	0	0	0
48	SLU 19	20	-11	887	0	0	0
48	SLU 20	20	-11	895	0	0	0
48	SLU 21	20	-10	896	0	0	0
48	SLU 22	21	-9	857	0	0	0
48	SLU 23	21	-8	858	0	0	0
48	SLU 24	22	-8	872	0	0	0
48	SLU 25	22	-8	873	0	0	0
48	SLU 26	22	-7	868	0	0	0
48	SLU 27	22	-8	882	0	0	0
48	SLU 28	22	-7	882	0	0	0
48	SLU 29	22	-8	876	0	0	0
48	SLU 30	22	-7	877	0	0	0
48	SLU 31	22	-8	954	0	0	0
48	SLU 32	22	-9	968	0	0	0
48	SLU 33	22	-8	969	0	0	0
48	SLU 34	22	-8	963	0	0	0
48	SLU 35	22	-8	977	0	0	0
48	SLU 36	22	-8	978	0	0	0
48	SLU 37	22	-8	971	0	0	0
48	SLU 38	22	-8	972	0	0	0
48	SLU 39	22	-9	993	0	0	0
48	SLU 40	22	-9	994	0	0	0
48	SLU 41	22	-9	1003	0	0	0
48	SLU 42	22	-8	1004	0	0	0
48	SLU 43	24	-14	937	0	0	0
48	SLU 44	25	-13	939	0	0	0
48	SLU 45	25	-14	952	0	0	0
48	SLU 46	25	-13	953	0	0	0
48	SLU 47	25	-13	948	0	0	0
48	SLU 48	25	-13	962	0	0	0
48	SLU 49	25	-13	963	0	0	0
48	SLU 50	25	-14	956	0	0	0
48	SLU 51	25	-13	957	0	0	0
48	SLU 52	25	-14	1034	0	0	0
48	SLU 53	25	-14	1048	0	0	0
48	SLU 54	25	-14	1049	0	0	0
48	SLU 55	25	-13	1044	0	0	0
48	SLU 56	25	-14	1058	0	0	0
48	SLU 57	25	-13	1058	0	0	0
48	SLU 58	25	-14	1052	0	0	0
48	SLU 59	25	-13	1053	0	0	0
48	SLU 60	25	-15	1074	0	0	0
48	SLU 61	25	-15	1075	0	0	0
48	SLU 62	25	-15	1083	0	0	0
48	SLU 63	25	-14	1084	0	0	0
48	SLU 64	26	-13	1045	0	0	0
48	SLU 65	27	-12	1046	0	0	0
48	SLU 66	27	-12	1060	0	0	0
48	SLU 67	27	-11	1061	0	0	0
48	SLU 68	27	-11	1056	0	0	0
48	SLU 69	27	-12	1070	0	0	0
48	SLU 70	27	-11	1070	0	0	0
48	SLU 71	27	-12	1064	0	0	0
48	SLU 72	27	-11	1065	0	0	0
48	SLU 73	27	-12	1142	0	0	0
48	SLU 74	27	-12	1156	0	0	0
48	SLU 75	27	-12	1157	0	0	0
48	SLU 76	27	-12	1151	0	0	0
48	SLU 77	27	-12	1165	0	0	0
48	SLU 78	28	-11	1166	0	0	0
48	SLU 79	27	-12	1159	0	0	0
48	SLU 80	27	-11	1160	0	0	0
48	SLU 81	27	-13	1181	0	0	0
48	SLU 82	27	-13	1182	0	0	0
48	SLU 83	27	-13	1191	0	0	0
48	SLU 84	27	-12	1192	0	0	0
48	SLE RA 1	20	-10	780	0	0	0
48	SLE RA 2	20	-9	781	0	0	0
48	SLE RA 3	20	-10	790	0	0	0
48	SLE RA 4	20	-9	791	0	0	0
48	SLE RA 5	20	-9	787	0	0	0
48	SLE RA 6	20	-9	797	0	0	0
48	SLE RA 7	20	-9	797	0	0	0
48	SLE RA 8	20	-9	793	0	0	0
48	SLE RA 9	20	-9	793	0	0	0
48	SLE RA 10	20	-10	845	0	0	0
48	SLE RA 11	21	-10	854	0	0	0
48	SLE RA 12	21	-10	855	0	0	0
48	SLE RA 13	20	-9	851	0	0	0
48	SLE RA 14	21	-10	860	0	0	0
48	SLE RA 15	21	-9	861	0	0	0
48	SLE RA 16	20	-10	856	0	0	0
48	SLE RA 17	20	-9	857	0	0	0
48	SLE RA 18	20	-11	871	0	0	0
48	SLE RA 19	21	-10	872	0	0	0
48	SLE RA 20	21	-10	877	0	0	0
48	SLE RA 21	21	-10	878	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
48	SLE FR 1	20	-10	780	0	0	0
48	SLE FR 2	20	-10	780	0	0	0
48	SLE FR 3	20	-10	783	0	0	0
48	SLE FR 4	20	-10	808	0	0	0
48	SLE FR 5	20	-10	810	0	0	0
48	SLE FR 6	20	-10	826	0	0	0
48	SLE QP 1	20	-10	780	0	0	0
48	SLE QP 2	20	-10	807	0	0	0
48	SLD 1	64	-7	801	0	0	0
48	SLD 2	67	-3	802	0	0	0
48	SLD 3	63	-19	785	0	0	0
48	SLD 4	66	-15	785	0	0	0
48	SLD 5	35	8	831	0	0	0
48	SLD 6	37	11	831	0	0	0
48	SLD 7	30	-32	775	0	0	0
48	SLD 8	32	-29	775	0	0	0
48	SLD 9	8	9	840	0	0	0
48	SLD 10	10	11	840	0	0	0
48	SLD 11	3	-31	783	0	0	0
48	SLD 12	5	-29	784	0	0	0
48	SLD 13	-26	-5	830	0	0	0
48	SLD 14	-23	-2	830	0	0	0
48	SLD 15	-27	-17	813	0	0	0
48	SLD 16	-24	-14	813	0	0	0
48	SLV 1	124	-2	795	0	0	0
48	SLV 2	130	6	796	0	0	0
48	SLV 3	120	-31	753	0	0	0
48	SLV 4	127	-23	753	0	0	0
48	SLV 5	55	35	868	0	0	0
48	SLV 6	60	41	868	0	0	0
48	SLV 7	44	-62	726	0	0	0
48	SLV 8	48	-57	727	0	0	0
48	SLV 9	-8	36	888	0	0	0
48	SLV 10	-3	42	888	0	0	0
48	SLV 11	-19	-61	746	0	0	0
48	SLV 12	-15	-55	747	0	0	0
48	SLV 13	-87	2	861	0	0	0
48	SLV 14	-80	11	862	0	0	0
48	SLV 15	-90	-27	819	0	0	0
48	SLV 16	-83	-19	820	0	0	0
50	SLU 1	15	-7	598	-34.88	0	0.89
50	SLU 2	15	-6	599	-34.94	0	0.9
50	SLU 3	16	-6	610	-35.59	0	0.91
50	SLU 4	16	-6	610	-35.62	0	0.91
50	SLU 5	15	-6	606	-35.38	0	0.9
50	SLU 6	16	-6	617	-36.03	0	0.91
50	SLU 7	16	-5	618	-36.06	0	0.91
50	SLU 8	15	-6	613	-35.75	0	0.9
50	SLU 9	15	-5	613	-35.79	0	0.9
50	SLU 10	16	-6	674	-39.35	0	0.92
50	SLU 11	16	-6	685	-40	0	0.93
50	SLU 12	16	-6	686	-40.04	0	0.93
50	SLU 13	16	-6	682	-39.79	0	0.93
50	SLU 14	16	-6	693	-40.44	0	0.94
50	SLU 15	16	-6	694	-40.48	0	0.94
50	SLU 16	16	-6	688	-40.17	0	0.93
50	SLU 17	16	-6	689	-40.21	0	0.93
50	SLU 18	16	-7	706	-41.18	0	0.93
50	SLU 19	16	-7	706	-41.22	0	0.93
50	SLU 20	16	-7	713	-41.62	0	0.93
50	SLU 21	16	-6	714	-41.66	0	0.94
50	SLU 22	17	-5	683	-39.87	0	0.98
50	SLU 23	17	-4	684	-39.93	0	0.99
50	SLU 24	17	-5	695	-40.58	0	1
50	SLU 25	17	-4	696	-40.62	0	1
50	SLU 26	17	-4	692	-40.37	0	0.99
50	SLU 27	17	-4	703	-41.02	0	1
50	SLU 28	17	-4	703	-41.05	0	1
50	SLU 29	17	-4	698	-40.75	0	0.99
50	SLU 30	17	-4	699	-40.78	0	1
50	SLU 31	17	-4	760	-44.34	0	1.01
50	SLU 32	18	-5	771	-44.99	0	1.02
50	SLU 33	18	-4	772	-45.03	0	1.03
50	SLU 34	17	-4	767	-44.78	0	1.02
50	SLU 35	18	-4	778	-45.43	0	1.03
50	SLU 36	18	-4	779	-45.47	0	1.03
50	SLU 37	17	-4	774	-45.16	0	1.02
50	SLU 38	17	-4	774	-45.2	0	1.02
50	SLU 39	18	-5	791	-46.17	0	1.02
50	SLU 40	18	-5	792	-46.21	0	1.02
50	SLU 41	18	-5	799	-46.61	0	1.03
50	SLU 42	18	-4	799	-46.65	0	1.03
50	SLU 43	19	-9	747	-43.63	0	1.13
50	SLU 44	19	-9	749	-43.69	0	1.13
50	SLU 45	20	-9	760	-44.34	0	1.14
50	SLU 46	20	-8	760	-44.38	0	1.14
50	SLU 47	19	-8	756	-44.13	0	1.14
50	SLU 48	20	-8	767	-44.78	0	1.15
50	SLU 49	20	-8	768	-44.82	0	1.15

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
50	SLU 50	19	-9	763	-44.51	0	1.14
50	SLU 51	20	-8	763	-44.54	0	1.14
50	SLU 52	20	-9	824	-48.11	0	1.16
50	SLU 53	20	-9	835	-48.75	0	1.17
50	SLU 54	20	-9	836	-48.79	0	1.17
50	SLU 55	20	-8	832	-48.54	0	1.16
50	SLU 56	20	-9	843	-49.19	0	1.17
50	SLU 57	20	-8	843	-49.23	0	1.17
50	SLU 58	20	-9	838	-48.92	0	1.16
50	SLU 59	20	-8	839	-48.96	0	1.16
50	SLU 60	20	-10	856	-49.94	0	1.17
50	SLU 61	20	-9	856	-49.97	0	1.17
50	SLU 62	20	-9	863	-50.37	0	1.17
50	SLU 63	20	-9	864	-50.41	0	1.17
50	SLU 64	21	-8	833	-48.62	0	1.22
50	SLU 65	21	-7	834	-48.68	0	1.22
50	SLU 66	21	-7	845	-49.33	0	1.23
50	SLU 67	21	-7	846	-49.37	0	1.24
50	SLU 68	21	-6	842	-49.12	0	1.23
50	SLU 69	21	-7	853	-49.77	0	1.24
50	SLU 70	21	-6	853	-49.81	0	1.24
50	SLU 71	21	-7	848	-49.5	0	1.23
50	SLU 72	21	-6	849	-49.53	0	1.23
50	SLU 73	21	-7	910	-53.1	0	1.25
50	SLU 74	22	-7	921	-53.75	0	1.26
50	SLU 75	22	-7	921	-53.78	0	1.26
50	SLU 76	21	-7	917	-53.54	0	1.25
50	SLU 77	22	-7	928	-54.18	0	1.26
50	SLU 78	22	-6	929	-54.22	0	1.27
50	SLU 79	21	-7	924	-53.91	0	1.25
50	SLU 80	22	-7	924	-53.95	0	1.26
50	SLU 81	22	-8	941	-54.93	0	1.26
50	SLU 82	22	-7	942	-54.96	0	1.26
50	SLU 83	22	-8	949	-55.37	0	1.26
50	SLU 84	22	-7	949	-55.4	0	1.26
50	SLE RA 1	16	-6	622	-36.3	0	0.92
50	SLE RA 2	16	-6	623	-36.34	0	0.92
50	SLE RA 3	16	-6	630	-36.78	0	0.93
50	SLE RA 4	16	-6	631	-36.8	0	0.93
50	SLE RA 5	16	-5	628	-36.64	0	0.92
50	SLE RA 6	16	-6	635	-37.07	0	0.93
50	SLE RA 7	16	-5	636	-37.09	0	0.93
50	SLE RA 8	16	-6	632	-36.89	0	0.92
50	SLE RA 9	16	-5	632	-36.91	0	0.93
50	SLE RA 10	16	-6	673	-39.29	0	0.94
50	SLE RA 11	16	-6	681	-39.72	0	0.94
50	SLE RA 12	16	-6	681	-39.74	0	0.95
50	SLE RA 13	16	-6	678	-39.58	0	0.94
50	SLE RA 14	16	-6	686	-40.01	0	0.95
50	SLE RA 15	16	-5	686	-40.04	0	0.95
50	SLE RA 16	16	-6	682	-39.83	0	0.94
50	SLE RA 17	16	-6	683	-39.86	0	0.94
50	SLE RA 18	16	-6	694	-40.51	0	0.94
50	SLE RA 19	16	-6	694	-40.53	0	0.94
50	SLE RA 20	16	-6	699	-40.8	0	0.95
50	SLE RA 21	16	-6	699	-40.82	0	0.95
50	SLE FR 1	16	-6	622	-36.3	0	0.92
50	SLE FR 2	16	-6	622	-36.31	0	0.92
50	SLE FR 3	16	-6	624	-36.42	0	0.92
50	SLE FR 4	16	-6	644	-37.57	0	0.93
50	SLE FR 5	16	-6	646	-37.68	0	0.93
50	SLE FR 6	16	-6	658	-38.4	0	0.93
50	SLE QP 1	16	-6	622	-36.3	0	0.92
50	SLE QP 2	16	-6	644	-37.56	0	0.93
50	SLD 1	51	-4	631	-36.84	0	2.97
50	SLD 2	53	0	631	-36.84	0	3.1
50	SLD 3	50	-14	618	-36.1	0	2.9
50	SLD 4	52	-10	619	-36.1	0	3.03
50	SLD 5	28	8	659	-38.46	0	1.61
50	SLD 6	29	11	659	-38.47	0	1.7
50	SLD 7	24	-24	617	-36	0	1.4
50	SLD 8	25	-21	617	-36.01	0	1.49
50	SLD 9	6	9	670	-39.12	0	0.37
50	SLD 10	8	11	670	-39.12	0	0.45
50	SLD 11	3	-23	628	-36.66	0	0.15
50	SLD 12	4	-21	628	-36.66	0	0.24
50	SLD 13	-20	-2	669	-39.02	0	-1.18
50	SLD 14	-18	1	669	-39.03	0	-1.05
50	SLD 15	-21	-12	656	-38.29	0	-1.25
50	SLD 16	-19	-9	656	-38.29	0	-1.11
50	SLV 1	98	0	616	-35.92	0	5.7
50	SLV 2	103	8	616	-35.94	0	6.01
50	SLV 3	95	-24	584	-34.07	0	5.54
50	SLV 4	100	-16	584	-34.09	0	5.85
50	SLV 5	44	29	683	-39.88	0	2.54
50	SLV 6	47	35	683	-39.89	0	2.75
50	SLV 7	34	-48	577	-33.71	0	2.01
50	SLV 8	38	-43	578	-33.71	0	2.22
50	SLV 9	-6	30	710	-41.41	0	-0.37

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
50	SLV 10	-3	36	710	-41.42	0	-0.16
50	SLV 11	-15	-47	604	-35.24	0	-0.9
50	SLV 12	-12	-42	604	-35.25	0	-0.69
50	SLV 13	-69	3	703	-41.04	0	-4
50	SLV 14	-63	11	703	-41.05	0	-3.69
50	SLV 15	-71	-20	671	-39.19	0	-4.16
50	SLV 16	-66	-12	672	-39.2	0	-3.85
50	CRTFP Ux+	0	0	0	0	0	0
50	CRTFP Ux-	0	0	0	0	0	0
50	CRTFP Uy+	0	0	0	0	0	0
50	CRTFP Uy-	0	0	0	0	0	0
51	SLU 1	8	-8	303	0	0	0
51	SLU 2	8	-8	303	0	0	0
51	SLU 3	8	-8	309	0	0	0
51	SLU 4	8	-8	309	0	0	0
51	SLU 5	8	-8	307	0	0	0
51	SLU 6	8	-8	313	0	0	0
51	SLU 7	8	-8	313	0	0	0
51	SLU 8	8	-8	311	0	0	0
51	SLU 9	8	-8	311	0	0	0
51	SLU 10	8	-9	343	0	0	0
51	SLU 11	8	-9	349	0	0	0
51	SLU 12	8	-9	350	0	0	0
51	SLU 13	8	-8	347	0	0	0
51	SLU 14	8	-9	353	0	0	0
51	SLU 15	8	-8	354	0	0	0
51	SLU 16	8	-9	351	0	0	0
51	SLU 17	8	-8	351	0	0	0
51	SLU 18	8	-9	360	0	0	0
51	SLU 19	8	-9	360	0	0	0
51	SLU 20	8	-9	364	0	0	0
51	SLU 21	8	-9	364	0	0	0
51	SLU 22	8	-8	347	0	0	0
51	SLU 23	8	-8	348	0	0	0
51	SLU 24	9	-8	354	0	0	0
51	SLU 25	9	-8	354	0	0	0
51	SLU 26	9	-7	352	0	0	0
51	SLU 27	9	-8	358	0	0	0
51	SLU 28	9	-7	358	0	0	0
51	SLU 29	9	-8	355	0	0	0
51	SLU 30	9	-7	355	0	0	0
51	SLU 31	9	-8	388	0	0	0
51	SLU 32	9	-8	394	0	0	0
51	SLU 33	9	-8	394	0	0	0
51	SLU 34	9	-8	392	0	0	0
51	SLU 35	9	-8	398	0	0	0
51	SLU 36	9	-8	398	0	0	0
51	SLU 37	9	-8	395	0	0	0
51	SLU 38	9	-8	396	0	0	0
51	SLU 39	9	-9	405	0	0	0
51	SLU 40	9	-9	405	0	0	0
51	SLU 41	9	-9	409	0	0	0
51	SLU 42	9	-8	409	0	0	0
51	SLU 43	10	-11	378	0	0	0
51	SLU 44	10	-11	379	0	0	0
51	SLU 45	10	-11	385	0	0	0
51	SLU 46	10	-10	385	0	0	0
51	SLU 47	10	-10	383	0	0	0
51	SLU 48	10	-11	389	0	0	0
51	SLU 49	10	-10	389	0	0	0
51	SLU 50	10	-11	386	0	0	0
51	SLU 51	10	-10	387	0	0	0
51	SLU 52	10	-11	419	0	0	0
51	SLU 53	10	-11	425	0	0	0
51	SLU 54	10	-11	425	0	0	0
51	SLU 55	10	-11	423	0	0	0
51	SLU 56	10	-11	429	0	0	0
51	SLU 57	10	-11	429	0	0	0
51	SLU 58	10	-11	427	0	0	0
51	SLU 59	10	-11	427	0	0	0
51	SLU 60	10	-12	436	0	0	0
51	SLU 61	10	-12	436	0	0	0
51	SLU 62	10	-12	440	0	0	0
51	SLU 63	10	-11	440	0	0	0
51	SLU 64	10	-11	423	0	0	0
51	SLU 65	11	-10	423	0	0	0
51	SLU 66	11	-10	429	0	0	0
51	SLU 67	11	-10	429	0	0	0
51	SLU 68	11	-10	427	0	0	0
51	SLU 69	11	-10	433	0	0	0
51	SLU 70	11	-10	433	0	0	0
51	SLU 71	11	-10	431	0	0	0
51	SLU 72	11	-10	431	0	0	0
51	SLU 73	11	-11	463	0	0	0
51	SLU 74	11	-11	469	0	0	0
51	SLU 75	11	-11	470	0	0	0
51	SLU 76	11	-11	467	0	0	0
51	SLU 77	11	-11	473	0	0	0
51	SLU 78	11	-11	474	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
51	SLU 79	11	-11	471	0	0	0
51	SLU 80	11	-11	471	0	0	0
51	SLU 81	11	-12	480	0	0	0
51	SLU 82	11	-11	480	0	0	0
51	SLU 83	11	-11	484	0	0	0
51	SLU 84	11	-11	485	0	0	0
51	SLE RA 1	8	-8	315	0	0	0
51	SLE RA 2	8	-8	316	0	0	0
51	SLE RA 3	8	-8	320	0	0	0
51	SLE RA 4	8	-8	320	0	0	0
51	SLE RA 5	8	-8	318	0	0	0
51	SLE RA 6	8	-8	322	0	0	0
51	SLE RA 7	8	-8	323	0	0	0
51	SLE RA 8	8	-8	321	0	0	0
51	SLE RA 9	8	-8	321	0	0	0
51	SLE RA 10	8	-8	343	0	0	0
51	SLE RA 11	8	-9	347	0	0	0
51	SLE RA 12	8	-8	347	0	0	0
51	SLE RA 13	8	-8	345	0	0	0
51	SLE RA 14	8	-8	349	0	0	0
51	SLE RA 15	8	-8	349	0	0	0
51	SLE RA 16	8	-8	348	0	0	0
51	SLE RA 17	8	-8	348	0	0	0
51	SLE RA 18	8	-9	354	0	0	0
51	SLE RA 19	8	-9	354	0	0	0
51	SLE RA 20	8	-9	356	0	0	0
51	SLE RA 21	8	-9	357	0	0	0
51	SLE FR 1	8	-8	315	0	0	0
51	SLE FR 2	8	-8	316	0	0	0
51	SLE FR 3	8	-8	317	0	0	0
51	SLE FR 4	8	-8	327	0	0	0
51	SLE FR 5	8	-8	328	0	0	0
51	SLE FR 6	8	-9	335	0	0	0
51	SLE QP 1	8	-8	315	0	0	0
51	SLE QP 2	8	-8	327	0	0	0
51	SLD 1	27	-4	341	0	0	0
51	SLD 2	28	-4	341	0	0	0
51	SLD 3	26	-9	336	0	0	0
51	SLD 4	27	-9	336	0	0	0
51	SLD 5	14	0	338	0	0	0
51	SLD 6	15	0	338	0	0	0
51	SLD 7	12	-16	323	0	0	0
51	SLD 8	13	-16	323	0	0	0
51	SLD 9	3	-1	331	0	0	0
51	SLD 10	3	-1	331	0	0	0
51	SLD 11	1	-17	316	0	0	0
51	SLD 12	2	-17	316	0	0	0
51	SLD 13	-11	-7	318	0	0	0
51	SLD 14	-10	-8	318	0	0	0
51	SLD 15	-12	-12	313	0	0	0
51	SLD 16	-11	-12	313	0	0	0
51	SLV 1	52	1	359	0	0	0
51	SLV 2	54	1	360	0	0	0
51	SLV 3	50	-11	347	0	0	0
51	SLV 4	53	-11	349	0	0	0
51	SLV 5	23	12	354	0	0	0
51	SLV 6	24	12	355	0	0	0
51	SLV 7	18	-27	315	0	0	0
51	SLV 8	20	-27	316	0	0	0
51	SLV 9	-4	10	338	0	0	0
51	SLV 10	-2	10	339	0	0	0
51	SLV 11	-8	-29	299	0	0	0
51	SLV 12	-7	-29	300	0	0	0
51	SLV 13	-37	-6	305	0	0	0
51	SLV 14	-35	-6	306	0	0	0
51	SLV 15	-38	-18	294	0	0	0
51	SLV 16	-36	-18	295	0	0	0
52	SLU 1	14	-14	557	0	0	0
52	SLU 2	14	-13	558	0	0	0
52	SLU 3	14	-14	569	0	0	0
52	SLU 4	14	-13	569	0	0	0
52	SLU 5	14	-13	565	0	0	0
52	SLU 6	14	-13	576	0	0	0
52	SLU 7	14	-13	576	0	0	0
52	SLU 8	14	-13	572	0	0	0
52	SLU 9	14	-13	572	0	0	0
52	SLU 10	14	-14	631	0	0	0
52	SLU 11	14	-15	642	0	0	0
52	SLU 12	15	-14	643	0	0	0
52	SLU 13	14	-14	638	0	0	0
52	SLU 14	15	-15	650	0	0	0
52	SLU 15	15	-14	650	0	0	0
52	SLU 16	14	-15	645	0	0	0
52	SLU 17	14	-14	646	0	0	0
52	SLU 18	14	-16	662	0	0	0
52	SLU 19	14	-15	662	0	0	0
52	SLU 20	14	-15	669	0	0	0
52	SLU 21	15	-15	670	0	0	0
52	SLU 22	15	-13	639	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
52	SLU 23	15	-13	639	0	0	0
52	SLU 24	16	-13	650	0	0	0
52	SLU 25	16	-13	651	0	0	0
52	SLU 26	16	-12	647	0	0	0
52	SLU 27	16	-13	658	0	0	0
52	SLU 28	16	-12	658	0	0	0
52	SLU 29	16	-13	653	0	0	0
52	SLU 30	16	-12	654	0	0	0
52	SLU 31	16	-14	713	0	0	0
52	SLU 32	16	-14	724	0	0	0
52	SLU 33	16	-14	724	0	0	0
52	SLU 34	16	-13	720	0	0	0
52	SLU 35	16	-14	731	0	0	0
52	SLU 36	16	-13	732	0	0	0
52	SLU 37	16	-14	727	0	0	0
52	SLU 38	16	-13	727	0	0	0
52	SLU 39	16	-15	744	0	0	0
52	SLU 40	16	-14	744	0	0	0
52	SLU 41	16	-15	751	0	0	0
52	SLU 42	16	-14	751	0	0	0
52	SLU 43	18	-19	696	0	0	0
52	SLU 44	18	-18	697	0	0	0
52	SLU 45	18	-18	708	0	0	0
52	SLU 46	18	-18	708	0	0	0
52	SLU 47	18	-18	704	0	0	0
52	SLU 48	18	-18	715	0	0	0
52	SLU 49	18	-17	715	0	0	0
52	SLU 50	18	-18	711	0	0	0
52	SLU 51	18	-17	711	0	0	0
52	SLU 52	18	-19	770	0	0	0
52	SLU 53	18	-19	781	0	0	0
52	SLU 54	18	-19	782	0	0	0
52	SLU 55	18	-19	778	0	0	0
52	SLU 56	18	-19	789	0	0	0
52	SLU 57	18	-19	789	0	0	0
52	SLU 58	18	-19	784	0	0	0
52	SLU 59	18	-19	785	0	0	0
52	SLU 60	18	-20	801	0	0	0
52	SLU 61	18	-20	802	0	0	0
52	SLU 62	18	-20	809	0	0	0
52	SLU 63	18	-19	809	0	0	0
52	SLU 64	19	-18	778	0	0	0
52	SLU 65	19	-17	778	0	0	0
52	SLU 66	19	-17	789	0	0	0
52	SLU 67	19	-17	790	0	0	0
52	SLU 68	19	-17	786	0	0	0
52	SLU 69	19	-17	797	0	0	0
52	SLU 70	19	-17	797	0	0	0
52	SLU 71	19	-17	792	0	0	0
52	SLU 72	19	-17	793	0	0	0
52	SLU 73	19	-18	852	0	0	0
52	SLU 74	20	-19	863	0	0	0
52	SLU 75	20	-18	863	0	0	0
52	SLU 76	20	-18	859	0	0	0
52	SLU 77	20	-18	870	0	0	0
52	SLU 78	20	-18	871	0	0	0
52	SLU 79	20	-18	866	0	0	0
52	SLU 80	20	-18	866	0	0	0
52	SLU 81	20	-19	883	0	0	0
52	SLU 82	20	-19	883	0	0	0
52	SLU 83	20	-19	890	0	0	0
52	SLU 84	20	-19	891	0	0	0
52	SLE RA 1	14	-14	580	0	0	0
52	SLE RA 2	14	-13	581	0	0	0
52	SLE RA 3	14	-14	588	0	0	0
52	SLE RA 4	15	-13	588	0	0	0
52	SLE RA 5	14	-13	586	0	0	0
52	SLE RA 6	15	-13	593	0	0	0
52	SLE RA 7	15	-13	593	0	0	0
52	SLE RA 8	14	-13	590	0	0	0
52	SLE RA 9	14	-13	590	0	0	0
52	SLE RA 10	15	-14	630	0	0	0
52	SLE RA 11	15	-14	637	0	0	0
52	SLE RA 12	15	-14	637	0	0	0
52	SLE RA 13	15	-14	635	0	0	0
52	SLE RA 14	15	-14	642	0	0	0
52	SLE RA 15	15	-14	642	0	0	0
52	SLE RA 16	15	-14	639	0	0	0
52	SLE RA 17	15	-14	639	0	0	0
52	SLE RA 18	15	-15	650	0	0	0
52	SLE RA 19	15	-15	651	0	0	0
52	SLE RA 20	15	-15	655	0	0	0
52	SLE RA 21	15	-14	656	0	0	0
52	SLE FR 1	14	-14	580	0	0	0
52	SLE FR 2	14	-14	580	0	0	0
52	SLE FR 3	14	-14	582	0	0	0
52	SLE FR 4	14	-14	601	0	0	0
52	SLE FR 5	14	-14	603	0	0	0
52	SLE FR 6	15	-14	615	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
52	SLE QP 1	14	-14	580	0	0	0
52	SLE QP 2	14	-14	601	0	0	0
52	SLD 1	49	-7	621	0	0	0
52	SLD 2	51	-7	622	0	0	0
52	SLD 3	48	-16	613	0	0	0
52	SLD 4	50	-16	614	0	0	0
52	SLD 5	26	1	618	0	0	0
52	SLD 6	27	2	619	0	0	0
52	SLD 7	23	-29	593	0	0	0
52	SLD 8	24	-28	594	0	0	0
52	SLD 9	5	0	609	0	0	0
52	SLD 10	6	0	609	0	0	0
52	SLD 11	2	-30	584	0	0	0
52	SLD 12	3	-30	584	0	0	0
52	SLD 13	-21	-12	589	0	0	0
52	SLD 14	-19	-12	589	0	0	0
52	SLD 15	-22	-21	581	0	0	0
52	SLD 16	-20	-21	582	0	0	0
52	SLV 1	95	2	647	0	0	0
52	SLV 2	99	3	649	0	0	0
52	SLV 3	92	-20	629	0	0	0
52	SLV 4	97	-19	631	0	0	0
52	SLV 5	41	24	643	0	0	0
52	SLV 6	44	24	644	0	0	0
52	SLV 7	33	-49	581	0	0	0
52	SLV 8	36	-48	582	0	0	0
52	SLV 9	-7	20	621	0	0	0
52	SLV 10	-4	20	622	0	0	0
52	SLV 11	-15	-52	558	0	0	0
52	SLV 12	-13	-52	560	0	0	0
52	SLV 13	-68	-10	572	0	0	0
52	SLV 14	-63	-9	574	0	0	0
52	SLV 15	-70	-31	553	0	0	0
52	SLV 16	-66	-31	555	0	0	0
53	SLU 1	8	-3	354	0	0	0
53	SLU 2	8	-2	355	0	0	0
53	SLU 3	9	-2	362	0	0	0
53	SLU 4	9	-2	362	0	0	0
53	SLU 5	8	-2	359	0	0	0
53	SLU 6	9	-2	366	0	0	0
53	SLU 7	9	-2	366	0	0	0
53	SLU 8	8	-2	363	0	0	0
53	SLU 9	9	-2	364	0	0	0
53	SLU 10	9	-2	399	0	0	0
53	SLU 11	9	-2	406	0	0	0
53	SLU 12	9	-2	406	0	0	0
53	SLU 13	9	-2	404	0	0	0
53	SLU 14	9	-2	411	0	0	0
53	SLU 15	9	-2	411	0	0	0
53	SLU 16	9	-2	408	0	0	0
53	SLU 17	9	-2	408	0	0	0
53	SLU 18	9	-3	418	0	0	0
53	SLU 19	9	-2	418	0	0	0
53	SLU 20	9	-2	423	0	0	0
53	SLU 21	9	-2	423	0	0	0
53	SLU 22	9	-2	405	0	0	0
53	SLU 23	9	-1	406	0	0	0
53	SLU 24	9	-1	413	0	0	0
53	SLU 25	9	-1	413	0	0	0
53	SLU 26	9	-1	410	0	0	0
53	SLU 27	9	-1	417	0	0	0
53	SLU 28	9	-1	417	0	0	0
53	SLU 29	9	-1	414	0	0	0
53	SLU 30	9	-1	415	0	0	0
53	SLU 31	9	-1	450	0	0	0
53	SLU 32	10	-1	457	0	0	0
53	SLU 33	10	-1	457	0	0	0
53	SLU 34	10	-1	455	0	0	0
53	SLU 35	10	-1	462	0	0	0
53	SLU 36	10	-1	462	0	0	0
53	SLU 37	10	-1	459	0	0	0
53	SLU 38	10	-1	459	0	0	0
53	SLU 39	10	-1	469	0	0	0
53	SLU 40	10	-1	469	0	0	0
53	SLU 41	10	-1	474	0	0	0
53	SLU 42	10	-1	474	0	0	0
53	SLU 43	11	-4	443	0	0	0
53	SLU 44	11	-3	443	0	0	0
53	SLU 45	11	-4	450	0	0	0
53	SLU 46	11	-3	451	0	0	0
53	SLU 47	11	-3	448	0	0	0
53	SLU 48	11	-3	455	0	0	0
53	SLU 49	11	-3	455	0	0	0
53	SLU 50	11	-3	452	0	0	0
53	SLU 51	11	-3	452	0	0	0
53	SLU 52	11	-3	488	0	0	0
53	SLU 53	11	-4	495	0	0	0
53	SLU 54	11	-3	495	0	0	0
53	SLU 55	11	-3	492	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
53	SLU 56	11	-3	500	0	0	0
53	SLU 57	11	-3	500	0	0	0
53	SLU 58	11	-3	497	0	0	0
53	SLU 59	11	-3	497	0	0	0
53	SLU 60	11	-4	507	0	0	0
53	SLU 61	11	-4	507	0	0	0
53	SLU 62	11	-4	511	0	0	0
53	SLU 63	11	-3	511	0	0	0
53	SLU 64	11	-3	494	0	0	0
53	SLU 65	12	-2	494	0	0	0
53	SLU 66	12	-2	501	0	0	0
53	SLU 67	12	-2	502	0	0	0
53	SLU 68	12	-2	499	0	0	0
53	SLU 69	12	-2	506	0	0	0
53	SLU 70	12	-2	506	0	0	0
53	SLU 71	12	-2	503	0	0	0
53	SLU 72	12	-2	503	0	0	0
53	SLU 73	12	-2	539	0	0	0
53	SLU 74	12	-2	546	0	0	0
53	SLU 75	12	-2	546	0	0	0
53	SLU 76	12	-2	543	0	0	0
53	SLU 77	12	-2	551	0	0	0
53	SLU 78	12	-2	551	0	0	0
53	SLU 79	12	-2	548	0	0	0
53	SLU 80	12	-2	548	0	0	0
53	SLU 81	12	-3	558	0	0	0
53	SLU 82	12	-2	558	0	0	0
53	SLU 83	12	-2	562	0	0	0
53	SLU 84	12	-2	562	0	0	0
53	SLE RA 1	9	-2	369	0	0	0
53	SLE RA 2	9	-2	369	0	0	0
53	SLE RA 3	9	-2	374	0	0	0
53	SLE RA 4	9	-2	374	0	0	0
53	SLE RA 5	9	-2	372	0	0	0
53	SLE RA 6	9	-2	377	0	0	0
53	SLE RA 7	9	-2	377	0	0	0
53	SLE RA 8	9	-2	375	0	0	0
53	SLE RA 9	9	-2	375	0	0	0
53	SLE RA 10	9	-2	399	0	0	0
53	SLE RA 11	9	-2	403	0	0	0
53	SLE RA 12	9	-2	404	0	0	0
53	SLE RA 13	9	-2	402	0	0	0
53	SLE RA 14	9	-2	407	0	0	0
53	SLE RA 15	9	-2	407	0	0	0
53	SLE RA 16	9	-2	405	0	0	0
53	SLE RA 17	9	-2	405	0	0	0
53	SLE RA 18	9	-2	411	0	0	0
53	SLE RA 19	9	-2	411	0	0	0
53	SLE RA 20	9	-2	414	0	0	0
53	SLE RA 21	9	-2	414	0	0	0
53	SLE FR 1	9	-2	369	0	0	0
53	SLE FR 2	9	-2	369	0	0	0
53	SLE FR 3	9	-2	370	0	0	0
53	SLE FR 4	9	-2	382	0	0	0
53	SLE FR 5	9	-2	383	0	0	0
53	SLE FR 6	9	-2	390	0	0	0
53	SLE QP 1	9	-2	369	0	0	0
53	SLE QP 2	9	-2	382	0	0	0
53	SLD 1	30	-2	366	0	0	0
53	SLD 2	31	1	366	0	0	0
53	SLD 3	29	-7	364	0	0	0
53	SLD 4	30	-5	364	0	0	0
53	SLD 5	16	6	380	0	0	0
53	SLD 6	16	8	380	0	0	0
53	SLD 7	14	-13	373	0	0	0
53	SLD 8	14	-11	373	0	0	0
53	SLD 9	3	7	390	0	0	0
53	SLD 10	4	8	390	0	0	0
53	SLD 11	1	-13	383	0	0	0
53	SLD 12	2	-11	383	0	0	0
53	SLD 13	-13	0	399	0	0	0
53	SLD 14	-12	3	399	0	0	0
53	SLD 15	-13	-6	397	0	0	0
53	SLD 16	-12	-3	397	0	0	0
53	SLV 1	58	0	346	0	0	0
53	SLV 2	61	6	345	0	0	0
53	SLV 3	57	-14	340	0	0	0
53	SLV 4	59	-8	340	0	0	0
53	SLV 5	25	18	379	0	0	0
53	SLV 6	27	22	379	0	0	0
53	SLV 7	20	-28	361	0	0	0
53	SLV 8	22	-24	361	0	0	0
53	SLV 9	-5	19	402	0	0	0
53	SLV 10	-3	23	402	0	0	0
53	SLV 11	-10	-27	385	0	0	0
53	SLV 12	-8	-23	384	0	0	0
53	SLV 13	-42	3	423	0	0	0
53	SLV 14	-39	9	423	0	0	0
53	SLV 15	-43	-11	418	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
53	SLV 16	-41	-5	418	0	0	0
54	SLU 1	15	-14	600	0	0	0
54	SLU 2	15	-13	600	0	0	0
54	SLU 3	15	-14	612	0	0	0
54	SLU 4	15	-13	612	0	0	0
54	SLU 5	15	-13	608	0	0	0
54	SLU 6	15	-13	620	0	0	0
54	SLU 7	15	-13	620	0	0	0
54	SLU 8	15	-13	615	0	0	0
54	SLU 9	15	-13	616	0	0	0
54	SLU 10	15	-14	679	0	0	0
54	SLU 11	15	-15	691	0	0	0
54	SLU 12	15	-14	691	0	0	0
54	SLU 13	15	-14	687	0	0	0
54	SLU 14	15	-14	699	0	0	0
54	SLU 15	15	-14	699	0	0	0
54	SLU 16	15	-14	694	0	0	0
54	SLU 17	15	-14	695	0	0	0
54	SLU 18	15	-16	712	0	0	0
54	SLU 19	15	-15	712	0	0	0
54	SLU 20	15	-15	720	0	0	0
54	SLU 21	15	-15	720	0	0	0
54	SLU 22	16	-13	687	0	0	0
54	SLU 23	16	-12	688	0	0	0
54	SLU 24	16	-13	700	0	0	0
54	SLU 25	16	-12	700	0	0	0
54	SLU 26	16	-12	696	0	0	0
54	SLU 27	16	-12	708	0	0	0
54	SLU 28	17	-12	708	0	0	0
54	SLU 29	16	-12	703	0	0	0
54	SLU 30	16	-12	704	0	0	0
54	SLU 31	17	-13	767	0	0	0
54	SLU 32	17	-14	779	0	0	0
54	SLU 33	17	-13	779	0	0	0
54	SLU 34	17	-13	775	0	0	0
54	SLU 35	17	-13	787	0	0	0
54	SLU 36	17	-13	787	0	0	0
54	SLU 37	17	-13	782	0	0	0
54	SLU 38	17	-13	782	0	0	0
54	SLU 39	17	-15	800	0	0	0
54	SLU 40	17	-14	800	0	0	0
54	SLU 41	17	-14	808	0	0	0
54	SLU 42	17	-14	808	0	0	0
54	SLU 43	19	-19	749	0	0	0
54	SLU 44	19	-18	750	0	0	0
54	SLU 45	19	-18	762	0	0	0
54	SLU 46	19	-18	762	0	0	0
54	SLU 47	19	-17	758	0	0	0
54	SLU 48	19	-18	770	0	0	0
54	SLU 49	19	-17	770	0	0	0
54	SLU 50	19	-18	765	0	0	0
54	SLU 51	19	-17	765	0	0	0
54	SLU 52	19	-19	828	0	0	0
54	SLU 53	19	-19	841	0	0	0
54	SLU 54	19	-19	841	0	0	0
54	SLU 55	19	-18	836	0	0	0
54	SLU 56	19	-19	849	0	0	0
54	SLU 57	19	-18	849	0	0	0
54	SLU 58	19	-19	844	0	0	0
54	SLU 59	19	-18	844	0	0	0
54	SLU 60	19	-20	862	0	0	0
54	SLU 61	19	-20	862	0	0	0
54	SLU 62	19	-20	870	0	0	0
54	SLU 63	19	-19	870	0	0	0
54	SLU 64	20	-18	837	0	0	0
54	SLU 65	20	-17	838	0	0	0
54	SLU 66	20	-17	850	0	0	0
54	SLU 67	20	-17	850	0	0	0
54	SLU 68	20	-16	846	0	0	0
54	SLU 69	20	-17	858	0	0	0
54	SLU 70	20	-16	858	0	0	0
54	SLU 71	20	-17	853	0	0	0
54	SLU 72	20	-16	853	0	0	0
54	SLU 73	20	-18	916	0	0	0
54	SLU 74	21	-18	929	0	0	0
54	SLU 75	21	-18	929	0	0	0
54	SLU 76	21	-18	924	0	0	0
54	SLU 77	21	-18	937	0	0	0
54	SLU 78	21	-17	937	0	0	0
54	SLU 79	21	-18	932	0	0	0
54	SLU 80	21	-17	932	0	0	0
54	SLU 81	21	-19	950	0	0	0
54	SLU 82	21	-19	950	0	0	0
54	SLU 83	21	-19	958	0	0	0
54	SLU 84	21	-18	958	0	0	0
54	SLE RA 1	15	-14	625	0	0	0
54	SLE RA 2	15	-13	625	0	0	0
54	SLE RA 3	15	-14	633	0	0	0
54	SLE RA 4	15	-13	633	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
54	SLE RA 5	15	-13	630	0	0	0
54	SLE RA 6	15	-13	638	0	0	0
54	SLE RA 7	15	-13	639	0	0	0
54	SLE RA 8	15	-13	635	0	0	0
54	SLE RA 9	15	-13	635	0	0	0
54	SLE RA 10	15	-14	677	0	0	0
54	SLE RA 11	15	-14	686	0	0	0
54	SLE RA 12	15	-14	686	0	0	0
54	SLE RA 13	15	-14	683	0	0	0
54	SLE RA 14	16	-14	691	0	0	0
54	SLE RA 15	16	-14	691	0	0	0
54	SLE RA 16	15	-14	688	0	0	0
54	SLE RA 17	15	-14	688	0	0	0
54	SLE RA 18	15	-15	700	0	0	0
54	SLE RA 19	15	-14	700	0	0	0
54	SLE RA 20	15	-15	705	0	0	0
54	SLE RA 21	15	-14	705	0	0	0
54	SLE FR 1	15	-14	625	0	0	0
54	SLE FR 2	15	-14	625	0	0	0
54	SLE FR 3	15	-14	627	0	0	0
54	SLE FR 4	15	-14	647	0	0	0
54	SLE FR 5	15	-14	649	0	0	0
54	SLE FR 6	15	-14	662	0	0	0
54	SLE QP 1	15	-14	625	0	0	0
54	SLE QP 2	15	-14	647	0	0	0
54	SLD 1	52	-7	662	0	0	0
54	SLD 2	54	-7	663	0	0	0
54	SLD 3	51	-17	657	0	0	0
54	SLD 4	53	-16	657	0	0	0
54	SLD 5	27	3	660	0	0	0
54	SLD 6	29	3	660	0	0	0
54	SLD 7	24	-30	642	0	0	0
54	SLD 8	25	-29	642	0	0	0
54	SLD 9	5	1	652	0	0	0
54	SLD 10	6	2	653	0	0	0
54	SLD 11	2	-31	634	0	0	0
54	SLD 12	3	-31	635	0	0	0
54	SLD 13	-23	-12	637	0	0	0
54	SLD 14	-21	-11	638	0	0	0
54	SLD 15	-24	-22	632	0	0	0
54	SLD 16	-22	-21	632	0	0	0
54	SLV 1	102	2	682	0	0	0
54	SLV 2	106	4	684	0	0	0
54	SLV 3	99	-21	669	0	0	0
54	SLV 4	103	-19	670	0	0	0
54	SLV 5	44	26	678	0	0	0
54	SLV 6	47	27	679	0	0	0
54	SLV 7	36	-52	633	0	0	0
54	SLV 8	38	-51	634	0	0	0
54	SLV 9	-8	23	660	0	0	0
54	SLV 10	-5	24	661	0	0	0
54	SLV 11	-17	-55	616	0	0	0
54	SLV 12	-14	-54	617	0	0	0
54	SLV 13	-73	-9	624	0	0	0
54	SLV 14	-69	-7	625	0	0	0
54	SLV 15	-75	-32	611	0	0	0
54	SLV 16	-71	-30	612	0	0	0
55	SLU 1	18	-15	728	0	0	0
55	SLU 2	18	-14	728	0	0	0
55	SLU 3	18	-14	743	0	0	0
55	SLU 4	18	-14	743	0	0	0
55	SLU 5	18	-13	738	0	0	0
55	SLU 6	18	-14	753	0	0	0
55	SLU 7	18	-13	753	0	0	0
55	SLU 8	18	-14	747	0	0	0
55	SLU 9	18	-13	747	0	0	0
55	SLU 10	18	-15	823	0	0	0
55	SLU 11	18	-15	838	0	0	0
55	SLU 12	18	-15	838	0	0	0
55	SLU 13	18	-14	833	0	0	0
55	SLU 14	18	-15	848	0	0	0
55	SLU 15	18	-14	848	0	0	0
55	SLU 16	18	-15	842	0	0	0
55	SLU 17	18	-14	842	0	0	0
55	SLU 18	18	-16	863	0	0	0
55	SLU 19	18	-16	864	0	0	0
55	SLU 20	18	-16	873	0	0	0
55	SLU 21	18	-15	873	0	0	0
55	SLU 22	19	-13	834	0	0	0
55	SLU 23	20	-12	835	0	0	0
55	SLU 24	20	-13	849	0	0	0
55	SLU 25	20	-12	850	0	0	0
55	SLU 26	20	-12	844	0	0	0
55	SLU 27	20	-12	859	0	0	0
55	SLU 28	20	-12	859	0	0	0
55	SLU 29	20	-12	853	0	0	0
55	SLU 30	20	-12	854	0	0	0
55	SLU 31	20	-13	930	0	0	0
55	SLU 32	20	-14	944	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
55	SLU 33	20	-13	945	0	0	0
55	SLU 34	20	-13	939	0	0	0
55	SLU 35	20	-13	954	0	0	0
55	SLU 36	20	-13	954	0	0	0
55	SLU 37	20	-13	948	0	0	0
55	SLU 38	20	-13	949	0	0	0
55	SLU 39	20	-15	970	0	0	0
55	SLU 40	20	-14	970	0	0	0
55	SLU 41	20	-14	979	0	0	0
55	SLU 42	20	-14	980	0	0	0
55	SLU 43	22	-20	910	0	0	0
55	SLU 44	22	-19	910	0	0	0
55	SLU 45	23	-19	925	0	0	0
55	SLU 46	23	-19	925	0	0	0
55	SLU 47	23	-18	920	0	0	0
55	SLU 48	23	-19	934	0	0	0
55	SLU 49	23	-18	935	0	0	0
55	SLU 50	23	-19	929	0	0	0
55	SLU 51	23	-18	929	0	0	0
55	SLU 52	23	-20	1005	0	0	0
55	SLU 53	23	-20	1020	0	0	0
55	SLU 54	23	-20	1020	0	0	0
55	SLU 55	23	-19	1015	0	0	0
55	SLU 56	23	-20	1029	0	0	0
55	SLU 57	23	-19	1030	0	0	0
55	SLU 58	23	-20	1024	0	0	0
55	SLU 59	23	-19	1024	0	0	0
55	SLU 60	23	-21	1045	0	0	0
55	SLU 61	23	-21	1046	0	0	0
55	SLU 62	23	-21	1055	0	0	0
55	SLU 63	23	-20	1055	0	0	0
55	SLU 64	24	-18	1016	0	0	0
55	SLU 65	24	-17	1017	0	0	0
55	SLU 66	24	-18	1031	0	0	0
55	SLU 67	24	-17	1032	0	0	0
55	SLU 68	24	-17	1026	0	0	0
55	SLU 69	25	-17	1041	0	0	0
55	SLU 70	25	-17	1041	0	0	0
55	SLU 71	24	-17	1035	0	0	0
55	SLU 72	24	-17	1036	0	0	0
55	SLU 73	25	-18	1111	0	0	0
55	SLU 74	25	-19	1126	0	0	0
55	SLU 75	25	-18	1127	0	0	0
55	SLU 76	25	-18	1121	0	0	0
55	SLU 77	25	-18	1136	0	0	0
55	SLU 78	25	-18	1136	0	0	0
55	SLU 79	25	-18	1130	0	0	0
55	SLU 80	25	-18	1130	0	0	0
55	SLU 81	25	-20	1152	0	0	0
55	SLU 82	25	-19	1152	0	0	0
55	SLU 83	25	-19	1161	0	0	0
55	SLU 84	25	-19	1162	0	0	0
55	SLE RA 1	18	-14	758	0	0	0
55	SLE RA 2	18	-14	759	0	0	0
55	SLE RA 3	18	-14	768	0	0	0
55	SLE RA 4	18	-14	769	0	0	0
55	SLE RA 5	18	-13	765	0	0	0
55	SLE RA 6	18	-14	775	0	0	0
55	SLE RA 7	18	-13	775	0	0	0
55	SLE RA 8	18	-14	771	0	0	0
55	SLE RA 9	18	-13	771	0	0	0
55	SLE RA 10	18	-14	822	0	0	0
55	SLE RA 11	19	-15	832	0	0	0
55	SLE RA 12	19	-14	832	0	0	0
55	SLE RA 13	19	-14	828	0	0	0
55	SLE RA 14	19	-14	838	0	0	0
55	SLE RA 15	19	-14	838	0	0	0
55	SLE RA 16	19	-14	834	0	0	0
55	SLE RA 17	19	-14	834	0	0	0
55	SLE RA 18	19	-15	849	0	0	0
55	SLE RA 19	19	-15	849	0	0	0
55	SLE RA 20	19	-15	855	0	0	0
55	SLE RA 21	19	-15	855	0	0	0
55	SLE FR 1	18	-14	758	0	0	0
55	SLE FR 2	18	-14	758	0	0	0
55	SLE FR 3	18	-14	761	0	0	0
55	SLE FR 4	18	-15	785	0	0	0
55	SLE FR 5	18	-15	788	0	0	0
55	SLE FR 6	18	-15	803	0	0	0
55	SLE QP 1	18	-14	758	0	0	0
55	SLE QP 2	18	-15	785	0	0	0
55	SLD 1	63	-8	794	0	0	0
55	SLD 2	65	-6	794	0	0	0
55	SLD 3	62	-19	788	0	0	0
55	SLD 4	64	-18	789	0	0	0
55	SLD 5	33	5	796	0	0	0
55	SLD 6	35	6	797	0	0	0
55	SLD 7	29	-34	777	0	0	0
55	SLD 8	30	-33	778	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
55	SLD 9	6	4	793	0	0	0
55	SLD 10	8	5	793	0	0	0
55	SLD 11	2	-35	774	0	0	0
55	SLD 12	3	-34	774	0	0	0
55	SLD 13	-27	-12	782	0	0	0
55	SLD 14	-25	-10	783	0	0	0
55	SLD 15	-28	-24	776	0	0	0
55	SLD 16	-26	-22	777	0	0	0
55	SLV 1	123	2	806	0	0	0
55	SLV 2	128	6	807	0	0	0
55	SLV 3	119	-26	791	0	0	0
55	SLV 4	125	-22	792	0	0	0
55	SLV 5	53	33	813	0	0	0
55	SLV 6	57	36	814	0	0	0
55	SLV 7	43	-62	765	0	0	0
55	SLV 8	46	-59	766	0	0	0
55	SLV 9	-10	30	805	0	0	0
55	SLV 10	-6	33	806	0	0	0
55	SLV 11	-20	-65	757	0	0	0
55	SLV 12	-17	-62	757	0	0	0
55	SLV 13	-88	-7	778	0	0	0
55	SLV 14	-83	-3	779	0	0	0
55	SLV 15	-91	-36	764	0	0	0
55	SLV 16	-86	-32	765	0	0	0
56	SLU 1	18	-13	729	0	0	0
56	SLU 2	18	-12	730	0	0	0
56	SLU 3	18	-12	745	0	0	0
56	SLU 4	18	-11	745	0	0	0
56	SLU 5	18	-11	739	0	0	0
56	SLU 6	18	-12	754	0	0	0
56	SLU 7	18	-11	755	0	0	0
56	SLU 8	18	-12	749	0	0	0
56	SLU 9	18	-11	749	0	0	0
56	SLU 10	18	-12	824	0	0	0
56	SLU 11	18	-13	839	0	0	0
56	SLU 12	18	-12	839	0	0	0
56	SLU 13	18	-12	834	0	0	0
56	SLU 14	18	-12	849	0	0	0
56	SLU 15	18	-12	849	0	0	0
56	SLU 16	18	-12	843	0	0	0
56	SLU 17	18	-12	843	0	0	0
56	SLU 18	18	-14	864	0	0	0
56	SLU 19	18	-13	865	0	0	0
56	SLU 20	18	-13	874	0	0	0
56	SLU 21	18	-13	874	0	0	0
56	SLU 22	19	-11	836	0	0	0
56	SLU 23	19	-10	836	0	0	0
56	SLU 24	20	-10	851	0	0	0
56	SLU 25	20	-10	851	0	0	0
56	SLU 26	20	-9	846	0	0	0
56	SLU 27	20	-10	861	0	0	0
56	SLU 28	20	-9	861	0	0	0
56	SLU 29	20	-10	855	0	0	0
56	SLU 30	20	-9	855	0	0	0
56	SLU 31	20	-11	931	0	0	0
56	SLU 32	20	-11	945	0	0	0
56	SLU 33	20	-11	946	0	0	0
56	SLU 34	20	-10	940	0	0	0
56	SLU 35	20	-11	955	0	0	0
56	SLU 36	20	-10	955	0	0	0
56	SLU 37	20	-11	949	0	0	0
56	SLU 38	20	-10	950	0	0	0
56	SLU 39	20	-12	971	0	0	0
56	SLU 40	20	-11	971	0	0	0
56	SLU 41	20	-12	980	0	0	0
56	SLU 42	20	-11	980	0	0	0
56	SLU 43	22	-17	912	0	0	0
56	SLU 44	22	-16	912	0	0	0
56	SLU 45	22	-16	927	0	0	0
56	SLU 46	23	-16	927	0	0	0
56	SLU 47	22	-16	922	0	0	0
56	SLU 48	23	-16	937	0	0	0
56	SLU 49	23	-15	937	0	0	0
56	SLU 50	22	-16	931	0	0	0
56	SLU 51	22	-15	931	0	0	0
56	SLU 52	23	-17	1007	0	0	0
56	SLU 53	23	-17	1021	0	0	0
56	SLU 54	23	-17	1022	0	0	0
56	SLU 55	23	-16	1016	0	0	0
56	SLU 56	23	-17	1031	0	0	0
56	SLU 57	23	-16	1031	0	0	0
56	SLU 58	23	-17	1025	0	0	0
56	SLU 59	23	-16	1026	0	0	0
56	SLU 60	23	-18	1047	0	0	0
56	SLU 61	23	-17	1047	0	0	0
56	SLU 62	23	-18	1056	0	0	0
56	SLU 63	23	-17	1056	0	0	0
56	SLU 64	24	-15	1018	0	0	0
56	SLU 65	24	-14	1019	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
56	SLU 66	24	-15	1033	0	0	0
56	SLU 67	24	-14	1034	0	0	0
56	SLU 68	24	-14	1028	0	0	0
56	SLU 69	24	-14	1043	0	0	0
56	SLU 70	24	-14	1043	0	0	0
56	SLU 71	24	-14	1037	0	0	0
56	SLU 72	24	-14	1038	0	0	0
56	SLU 73	24	-15	1113	0	0	0
56	SLU 74	25	-16	1128	0	0	0
56	SLU 75	25	-15	1128	0	0	0
56	SLU 76	25	-15	1123	0	0	0
56	SLU 77	25	-15	1137	0	0	0
56	SLU 78	25	-14	1138	0	0	0
56	SLU 79	25	-15	1132	0	0	0
56	SLU 80	25	-15	1132	0	0	0
56	SLU 81	25	-16	1153	0	0	0
56	SLU 82	25	-16	1153	0	0	0
56	SLU 83	25	-16	1163	0	0	0
56	SLU 84	25	-15	1163	0	0	0
56	SLE RA 1	18	-12	760	0	0	0
56	SLE RA 2	18	-11	760	0	0	0
56	SLE RA 3	18	-12	770	0	0	0
56	SLE RA 4	18	-11	770	0	0	0
56	SLE RA 5	18	-11	767	0	0	0
56	SLE RA 6	18	-11	776	0	0	0
56	SLE RA 7	18	-11	777	0	0	0
56	SLE RA 8	18	-12	773	0	0	0
56	SLE RA 9	18	-11	773	0	0	0
56	SLE RA 10	18	-12	823	0	0	0
56	SLE RA 11	19	-12	833	0	0	0
56	SLE RA 12	19	-12	833	0	0	0
56	SLE RA 13	18	-12	829	0	0	0
56	SLE RA 14	19	-12	839	0	0	0
56	SLE RA 15	19	-12	839	0	0	0
56	SLE RA 16	18	-12	836	0	0	0
56	SLE RA 17	18	-12	836	0	0	0
56	SLE RA 18	18	-13	850	0	0	0
56	SLE RA 19	18	-12	850	0	0	0
56	SLE RA 20	19	-13	856	0	0	0
56	SLE RA 21	19	-12	856	0	0	0
56	SLE FR 1	18	-12	760	0	0	0
56	SLE FR 2	18	-12	760	0	0	0
56	SLE FR 3	18	-12	762	0	0	0
56	SLE FR 4	18	-12	787	0	0	0
56	SLE FR 5	18	-12	789	0	0	0
56	SLE FR 6	18	-12	805	0	0	0
56	SLE QP 1	18	-12	760	0	0	0
56	SLE QP 2	18	-12	787	0	0	0
56	SLD 1	63	-6	785	0	0	0
56	SLD 2	65	-4	785	0	0	0
56	SLD 3	61	-18	780	0	0	0
56	SLD 4	64	-16	780	0	0	0
56	SLD 5	33	7	794	0	0	0
56	SLD 6	34	9	794	0	0	0
56	SLD 7	29	-32	777	0	0	0
56	SLD 8	30	-31	777	0	0	0
56	SLD 9	6	6	797	0	0	0
56	SLD 10	7	8	797	0	0	0
56	SLD 11	2	-33	780	0	0	0
56	SLD 12	3	-32	780	0	0	0
56	SLD 13	-27	-9	794	0	0	0
56	SLD 14	-25	-7	794	0	0	0
56	SLD 15	-28	-21	789	0	0	0
56	SLD 16	-26	-18	789	0	0	0
56	SLV 1	122	2	782	0	0	0
56	SLV 2	127	8	783	0	0	0
56	SLV 3	119	-26	769	0	0	0
56	SLV 4	124	-20	770	0	0	0
56	SLV 5	53	34	805	0	0	0
56	SLV 6	57	38	805	0	0	0
56	SLV 7	43	-61	762	0	0	0
56	SLV 8	46	-57	763	0	0	0
56	SLV 9	-10	32	811	0	0	0
56	SLV 10	-6	36	812	0	0	0
56	SLV 11	-20	-63	768	0	0	0
56	SLV 12	-17	-59	769	0	0	0
56	SLV 13	-88	-4	803	0	0	0
56	SLV 14	-83	2	804	0	0	0
56	SLV 15	-91	-33	791	0	0	0
56	SLV 16	-86	-27	791	0	0	0
57	SLU 1	18	-11	744	0	0	0
57	SLU 2	18	-10	744	0	0	0
57	SLU 3	18	-10	760	0	0	0
57	SLU 4	18	-9	760	0	0	0
57	SLU 5	18	-9	754	0	0	0
57	SLU 6	18	-10	769	0	0	0
57	SLU 7	18	-9	769	0	0	0
57	SLU 8	18	-10	763	0	0	0
57	SLU 9	18	-9	764	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
57	SLU 10	18	-10	840	0	0	0
57	SLU 11	18	-11	855	0	0	0
57	SLU 12	18	-10	855	0	0	0
57	SLU 13	18	-10	850	0	0	0
57	SLU 14	18	-10	865	0	0	0
57	SLU 15	19	-9	865	0	0	0
57	SLU 16	18	-10	859	0	0	0
57	SLU 17	18	-10	859	0	0	0
57	SLU 18	18	-11	880	0	0	0
57	SLU 19	18	-11	881	0	0	0
57	SLU 20	18	-11	890	0	0	0
57	SLU 21	18	-10	890	0	0	0
57	SLU 22	20	-9	852	0	0	0
57	SLU 23	20	-8	853	0	0	0
57	SLU 24	20	-8	868	0	0	0
57	SLU 25	20	-8	868	0	0	0
57	SLU 26	20	-7	862	0	0	0
57	SLU 27	20	-8	877	0	0	0
57	SLU 28	20	-7	878	0	0	0
57	SLU 29	20	-8	872	0	0	0
57	SLU 30	20	-7	872	0	0	0
57	SLU 31	20	-8	948	0	0	0
57	SLU 32	20	-9	963	0	0	0
57	SLU 33	20	-8	963	0	0	0
57	SLU 34	20	-8	958	0	0	0
57	SLU 35	20	-8	973	0	0	0
57	SLU 36	20	-8	973	0	0	0
57	SLU 37	20	-8	967	0	0	0
57	SLU 38	20	-8	967	0	0	0
57	SLU 39	20	-9	989	0	0	0
57	SLU 40	20	-9	989	0	0	0
57	SLU 41	20	-9	998	0	0	0
57	SLU 42	20	-8	999	0	0	0
57	SLU 43	22	-14	930	0	0	0
57	SLU 44	22	-13	931	0	0	0
57	SLU 45	23	-14	946	0	0	0
57	SLU 46	23	-13	946	0	0	0
57	SLU 47	23	-13	940	0	0	0
57	SLU 48	23	-13	955	0	0	0
57	SLU 49	23	-13	956	0	0	0
57	SLU 50	23	-14	950	0	0	0
57	SLU 51	23	-13	950	0	0	0
57	SLU 52	23	-14	1026	0	0	0
57	SLU 53	23	-14	1041	0	0	0
57	SLU 54	23	-14	1041	0	0	0
57	SLU 55	23	-13	1036	0	0	0
57	SLU 56	23	-14	1051	0	0	0
57	SLU 57	23	-13	1051	0	0	0
57	SLU 58	23	-14	1045	0	0	0
57	SLU 59	23	-13	1045	0	0	0
57	SLU 60	23	-15	1066	0	0	0
57	SLU 61	23	-15	1067	0	0	0
57	SLU 62	23	-15	1076	0	0	0
57	SLU 63	23	-14	1076	0	0	0
57	SLU 64	24	-13	1038	0	0	0
57	SLU 65	24	-11	1039	0	0	0
57	SLU 66	25	-12	1054	0	0	0
57	SLU 67	25	-11	1054	0	0	0
57	SLU 68	24	-11	1048	0	0	0
57	SLU 69	25	-12	1064	0	0	0
57	SLU 70	25	-11	1064	0	0	0
57	SLU 71	24	-12	1058	0	0	0
57	SLU 72	24	-11	1058	0	0	0
57	SLU 73	25	-12	1134	0	0	0
57	SLU 74	25	-12	1149	0	0	0
57	SLU 75	25	-12	1150	0	0	0
57	SLU 76	25	-12	1144	0	0	0
57	SLU 77	25	-12	1159	0	0	0
57	SLU 78	25	-11	1159	0	0	0
57	SLU 79	25	-12	1153	0	0	0
57	SLU 80	25	-11	1153	0	0	0
57	SLU 81	25	-13	1175	0	0	0
57	SLU 82	25	-13	1175	0	0	0
57	SLU 83	25	-13	1184	0	0	0
57	SLU 84	25	-12	1185	0	0	0
57	SLE RA 1	18	-10	775	0	0	0
57	SLE RA 2	18	-9	775	0	0	0
57	SLE RA 3	18	-10	785	0	0	0
57	SLE RA 4	18	-9	785	0	0	0
57	SLE RA 5	18	-9	782	0	0	0
57	SLE RA 6	18	-9	792	0	0	0
57	SLE RA 7	19	-9	792	0	0	0
57	SLE RA 8	18	-9	788	0	0	0
57	SLE RA 9	18	-9	788	0	0	0
57	SLE RA 10	19	-10	839	0	0	0
57	SLE RA 11	19	-10	849	0	0	0
57	SLE RA 12	19	-10	849	0	0	0
57	SLE RA 13	19	-9	845	0	0	0
57	SLE RA 14	19	-10	855	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
57	SLE RA 15	19	-9	856	0	0	0
57	SLE RA 16	19	-10	851	0	0	0
57	SLE RA 17	19	-9	852	0	0	0
57	SLE RA 18	19	-11	866	0	0	0
57	SLE RA 19	19	-10	866	0	0	0
57	SLE RA 20	19	-10	872	0	0	0
57	SLE RA 21	19	-10	872	0	0	0
57	SLE FR 1	18	-10	775	0	0	0
57	SLE FR 2	18	-10	775	0	0	0
57	SLE FR 3	18	-10	777	0	0	0
57	SLE FR 4	18	-10	802	0	0	0
57	SLE FR 5	18	-10	805	0	0	0
57	SLE FR 6	18	-10	820	0	0	0
57	SLE QP 1	18	-10	775	0	0	0
57	SLE QP 2	18	-10	802	0	0	0
57	SLD 1	63	-7	791	0	0	0
57	SLD 2	65	-3	791	0	0	0
57	SLD 3	62	-19	786	0	0	0
57	SLD 4	64	-15	786	0	0	0
57	SLD 5	33	8	805	0	0	0
57	SLD 6	35	11	806	0	0	0
57	SLD 7	29	-32	791	0	0	0
57	SLD 8	31	-29	791	0	0	0
57	SLD 9	6	9	814	0	0	0
57	SLD 10	8	11	814	0	0	0
57	SLD 11	2	-31	799	0	0	0
57	SLD 12	3	-29	799	0	0	0
57	SLD 13	-28	-5	818	0	0	0
57	SLD 14	-25	-2	818	0	0	0
57	SLD 15	-29	-17	813	0	0	0
57	SLD 16	-27	-14	814	0	0	0
57	SLV 1	124	-2	776	0	0	0
57	SLV 2	129	6	776	0	0	0
57	SLV 3	120	-31	765	0	0	0
57	SLV 4	126	-23	765	0	0	0
57	SLV 5	54	35	811	0	0	0
57	SLV 6	57	40	811	0	0	0
57	SLV 7	43	-62	774	0	0	0
57	SLV 8	47	-57	774	0	0	0
57	SLV 9	-10	36	830	0	0	0
57	SLV 10	-7	42	830	0	0	0
57	SLV 11	-20	-61	793	0	0	0
57	SLV 12	-17	-55	793	0	0	0
57	SLV 13	-89	2	839	0	0	0
57	SLV 14	-84	11	840	0	0	0
57	SLV 15	-92	-27	828	0	0	0
57	SLV 16	-87	-19	829	0	0	0
59	SLU 1	13	-5	557	0	0	0
59	SLU 2	13	-5	557	0	0	0
59	SLU 3	13	-5	568	0	0	0
59	SLU 4	13	-5	568	0	0	0
59	SLU 5	13	-4	564	0	0	0
59	SLU 6	13	-5	576	0	0	0
59	SLU 7	13	-4	576	0	0	0
59	SLU 8	13	-5	571	0	0	0
59	SLU 9	13	-4	571	0	0	0
59	SLU 10	13	-5	627	0	0	0
59	SLU 11	13	-5	639	0	0	0
59	SLU 12	13	-5	639	0	0	0
59	SLU 13	13	-4	635	0	0	0
59	SLU 14	13	-5	646	0	0	0
59	SLU 15	13	-4	646	0	0	0
59	SLU 16	13	-5	642	0	0	0
59	SLU 17	13	-4	642	0	0	0
59	SLU 18	13	-6	658	0	0	0
59	SLU 19	13	-5	658	0	0	0
59	SLU 20	13	-5	665	0	0	0
59	SLU 21	13	-5	665	0	0	0
59	SLU 22	14	-4	637	0	0	0
59	SLU 23	14	-3	638	0	0	0
59	SLU 24	14	-3	649	0	0	0
59	SLU 25	14	-3	649	0	0	0
59	SLU 26	14	-3	645	0	0	0
59	SLU 27	14	-3	656	0	0	0
59	SLU 28	14	-2	656	0	0	0
59	SLU 29	14	-3	652	0	0	0
59	SLU 30	14	-3	652	0	0	0
59	SLU 31	14	-3	708	0	0	0
59	SLU 32	15	-3	720	0	0	0
59	SLU 33	15	-3	720	0	0	0
59	SLU 34	14	-3	715	0	0	0
59	SLU 35	15	-3	727	0	0	0
59	SLU 36	15	-3	727	0	0	0
59	SLU 37	14	-3	723	0	0	0
59	SLU 38	15	-3	723	0	0	0
59	SLU 39	14	-4	738	0	0	0
59	SLU 40	15	-3	738	0	0	0
59	SLU 41	15	-3	746	0	0	0
59	SLU 42	15	-3	746	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
59	SLU 43	16	-8	696	0	0	0
59	SLU 44	16	-7	696	0	0	0
59	SLU 45	16	-7	708	0	0	0
59	SLU 46	16	-7	708	0	0	0
59	SLU 47	16	-7	703	0	0	0
59	SLU 48	16	-7	715	0	0	0
59	SLU 49	16	-6	715	0	0	0
59	SLU 50	16	-7	710	0	0	0
59	SLU 51	16	-6	710	0	0	0
59	SLU 52	17	-7	767	0	0	0
59	SLU 53	17	-7	778	0	0	0
59	SLU 54	17	-7	778	0	0	0
59	SLU 55	17	-7	774	0	0	0
59	SLU 56	17	-7	785	0	0	0
59	SLU 57	17	-6	786	0	0	0
59	SLU 58	17	-7	781	0	0	0
59	SLU 59	17	-7	781	0	0	0
59	SLU 60	17	-8	797	0	0	0
59	SLU 61	17	-7	797	0	0	0
59	SLU 62	17	-7	804	0	0	0
59	SLU 63	17	-7	804	0	0	0
59	SLU 64	18	-6	777	0	0	0
59	SLU 65	18	-5	777	0	0	0
59	SLU 66	18	-5	788	0	0	0
59	SLU 67	18	-5	788	0	0	0
59	SLU 68	18	-5	784	0	0	0
59	SLU 69	18	-5	796	0	0	0
59	SLU 70	18	-5	796	0	0	0
59	SLU 71	18	-5	791	0	0	0
59	SLU 72	18	-5	791	0	0	0
59	SLU 73	18	-5	847	0	0	0
59	SLU 74	18	-6	859	0	0	0
59	SLU 75	18	-5	859	0	0	0
59	SLU 76	18	-5	855	0	0	0
59	SLU 77	18	-5	866	0	0	0
59	SLU 78	18	-5	866	0	0	0
59	SLU 79	18	-5	862	0	0	0
59	SLU 80	18	-5	862	0	0	0
59	SLU 81	18	-6	878	0	0	0
59	SLU 82	18	-6	878	0	0	0
59	SLU 83	18	-6	885	0	0	0
59	SLU 84	18	-5	885	0	0	0
59	SLE RA 1	13	-5	580	0	0	0
59	SLE RA 2	13	-4	580	0	0	0
59	SLE RA 3	13	-5	587	0	0	0
59	SLE RA 4	13	-4	588	0	0	0
59	SLE RA 5	13	-4	585	0	0	0
59	SLE RA 6	13	-4	592	0	0	0
59	SLE RA 7	13	-4	592	0	0	0
59	SLE RA 8	13	-4	589	0	0	0
59	SLE RA 9	13	-4	589	0	0	0
59	SLE RA 10	13	-4	627	0	0	0
59	SLE RA 11	13	-5	635	0	0	0
59	SLE RA 12	14	-4	635	0	0	0
59	SLE RA 13	13	-4	632	0	0	0
59	SLE RA 14	14	-4	639	0	0	0
59	SLE RA 15	14	-4	639	0	0	0
59	SLE RA 16	13	-5	636	0	0	0
59	SLE RA 17	13	-4	637	0	0	0
59	SLE RA 18	13	-5	647	0	0	0
59	SLE RA 19	13	-5	647	0	0	0
59	SLE RA 20	13	-5	652	0	0	0
59	SLE RA 21	13	-4	652	0	0	0
59	SLE FR 1	13	-5	580	0	0	0
59	SLE FR 2	13	-5	580	0	0	0
59	SLE FR 3	13	-5	582	0	0	0
59	SLE FR 4	13	-5	600	0	0	0
59	SLE FR 5	13	-5	602	0	0	0
59	SLE FR 6	13	-5	613	0	0	0
59	SLE QP 1	13	-5	580	0	0	0
59	SLE QP 2	13	-5	600	0	0	0
59	SLD 1	47	-3	580	0	0	0
59	SLD 2	48	0	579	0	0	0
59	SLD 3	46	-12	579	0	0	0
59	SLD 4	47	-9	579	0	0	0
59	SLD 5	24	9	595	0	0	0
59	SLD 6	25	11	595	0	0	0
59	SLD 7	21	-21	593	0	0	0
59	SLD 8	22	-19	593	0	0	0
59	SLD 9	4	9	607	0	0	0
59	SLD 10	5	11	607	0	0	0
59	SLD 11	1	-21	605	0	0	0
59	SLD 12	2	-19	605	0	0	0
59	SLD 13	-21	-1	621	0	0	0
59	SLD 14	-19	2	621	0	0	0
59	SLD 15	-22	-10	620	0	0	0
59	SLD 16	-20	-7	620	0	0	0
59	SLV 1	92	0	552	0	0	0
59	SLV 2	95	8	552	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
59	SLV 3	89	-22	551	0	0	0
59	SLV 4	93	-14	550	0	0	0
59	SLV 5	40	28	588	0	0	0
59	SLV 6	42	34	588	0	0	0
59	SLV 7	32	-45	583	0	0	0
59	SLV 8	34	-39	583	0	0	0
59	SLV 9	-8	29	617	0	0	0
59	SLV 10	-6	35	617	0	0	0
59	SLV 11	-15	-44	612	0	0	0
59	SLV 12	-13	-38	612	0	0	0
59	SLV 13	-66	4	649	0	0	0
59	SLV 14	-63	12	649	0	0	0
59	SLV 15	-69	-18	648	0	0	0
59	SLV 16	-65	-10	648	0	0	0
60	SLU 1	14	-7	578	-44.98	0	1.06
60	SLU 2	14	-6	578	-45	0	1.06
60	SLU 3	14	-6	590	-45.92	0	1.07
60	SLU 4	14	-6	590	-45.93	0	1.08
60	SLU 5	14	-5	586	-45.59	0	1.07
60	SLU 6	14	-6	598	-46.5	0	1.08
60	SLU 7	14	-5	598	-46.51	0	1.08
60	SLU 8	14	-6	593	-46.15	0	1.07
60	SLU 9	14	-5	593	-46.16	0	1.07
60	SLU 10	14	-6	652	-50.73	0	1.09
60	SLU 11	14	-6	664	-51.64	0	1.1
60	SLU 12	14	-6	664	-51.66	0	1.1
60	SLU 13	14	-6	659	-51.31	0	1.09
60	SLU 14	14	-6	671	-52.23	0	1.1
60	SLU 15	14	-5	671	-52.24	0	1.11
60	SLU 16	14	-6	667	-51.87	0	1.09
60	SLU 17	14	-6	667	-51.89	0	1.1
60	SLU 18	14	-7	683	-53.16	0	1.09
60	SLU 19	14	-6	683	-53.17	0	1.09
60	SLU 20	14	-6	691	-53.74	0	1.1
60	SLU 21	14	-6	691	-53.76	0	1.1
60	SLU 22	15	-5	662	-51.5	0	1.17
60	SLU 23	15	-4	662	-51.52	0	1.17
60	SLU 24	15	-4	674	-52.44	0	1.18
60	SLU 25	15	-4	674	-52.45	0	1.19
60	SLU 26	15	-4	670	-52.11	0	1.18
60	SLU 27	15	-4	681	-53.02	0	1.19
60	SLU 28	15	-4	682	-53.04	0	1.19
60	SLU 29	15	-4	677	-52.67	0	1.18
60	SLU 30	15	-4	677	-52.68	0	1.18
60	SLU 31	15	-4	736	-57.25	0	1.2
60	SLU 32	16	-5	747	-58.16	0	1.21
60	SLU 33	16	-4	748	-58.18	0	1.21
60	SLU 34	15	-4	743	-57.83	0	1.2
60	SLU 35	16	-4	755	-58.75	0	1.21
60	SLU 36	16	-4	755	-58.76	0	1.21
60	SLU 37	15	-4	750	-58.39	0	1.2
60	SLU 38	15	-4	751	-58.41	0	1.2
60	SLU 39	15	-5	767	-59.68	0	1.2
60	SLU 40	15	-5	767	-59.69	0	1.2
60	SLU 41	15	-5	774	-60.26	0	1.21
60	SLU 42	16	-4	775	-60.28	0	1.21
60	SLU 43	17	-9	723	-56.24	0	1.34
60	SLU 44	17	-8	723	-56.26	0	1.34
60	SLU 45	17	-9	735	-57.17	0	1.36
60	SLU 46	17	-8	735	-57.19	0	1.36
60	SLU 47	17	-8	730	-56.84	0	1.35
60	SLU 48	17	-8	742	-57.76	0	1.36
60	SLU 49	18	-8	742	-57.77	0	1.36
60	SLU 50	17	-8	738	-57.4	0	1.35
60	SLU 51	17	-8	738	-57.42	0	1.35
60	SLU 52	18	-8	796	-61.98	0	1.37
60	SLU 53	18	-9	808	-62.9	0	1.38
60	SLU 54	18	-8	808	-62.91	0	1.38
60	SLU 55	18	-8	804	-62.57	0	1.37
60	SLU 56	18	-8	816	-63.48	0	1.38
60	SLU 57	18	-8	816	-63.5	0	1.39
60	SLU 58	18	-9	811	-63.13	0	1.37
60	SLU 59	18	-8	811	-63.14	0	1.38
60	SLU 60	18	-9	828	-64.42	0	1.37
60	SLU 61	18	-9	828	-64.43	0	1.37
60	SLU 62	18	-9	835	-65	0	1.38
60	SLU 63	18	-9	835	-65.01	0	1.38
60	SLU 64	19	-7	806	-62.76	0	1.45
60	SLU 65	19	-7	807	-62.78	0	1.45
60	SLU 66	19	-7	818	-63.7	0	1.46
60	SLU 67	19	-6	819	-63.71	0	1.47
60	SLU 68	19	-6	814	-63.37	0	1.46
60	SLU 69	19	-7	826	-64.28	0	1.47
60	SLU 70	19	-6	826	-64.29	0	1.47
60	SLU 71	19	-7	821	-63.93	0	1.46
60	SLU 72	19	-6	822	-63.94	0	1.46
60	SLU 73	19	-7	880	-68.51	0	1.48
60	SLU 74	19	-7	892	-69.42	0	1.49
60	SLU 75	19	-7	892	-69.44	0	1.49

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
60	SLU 76	19	-6	888	-69.09	0	1.48
60	SLU 77	19	-7	900	-70	0	1.49
60	SLU 78	19	-6	900	-70.02	0	1.5
60	SLU 79	19	-7	895	-69.65	0	1.48
60	SLU 80	19	-6	895	-69.67	0	1.48
60	SLU 81	19	-8	912	-70.94	0	1.48
60	SLU 82	19	-7	912	-70.95	0	1.48
60	SLU 83	19	-7	919	-71.52	0	1.49
60	SLU 84	19	-7	919	-71.54	0	1.49
60	SLE RA 1	14	-6	602	-46.84	0	1.09
60	SLE RA 2	14	-6	602	-46.86	0	1.09
60	SLE RA 3	14	-6	610	-47.47	0	1.1
60	SLE RA 4	14	-5	610	-47.48	0	1.1
60	SLE RA 5	14	-5	607	-47.25	0	1.1
60	SLE RA 6	14	-6	615	-47.86	0	1.1
60	SLE RA 7	14	-5	615	-47.87	0	1.11
60	SLE RA 8	14	-6	612	-47.62	0	1.1
60	SLE RA 9	14	-5	612	-47.63	0	1.1
60	SLE RA 10	14	-6	651	-50.67	0	1.11
60	SLE RA 11	14	-6	659	-51.28	0	1.12
60	SLE RA 12	14	-6	659	-51.29	0	1.12
60	SLE RA 13	14	-5	656	-51.06	0	1.11
60	SLE RA 14	14	-6	664	-51.67	0	1.12
60	SLE RA 15	14	-5	664	-51.68	0	1.12
60	SLE RA 16	14	-6	661	-51.44	0	1.11
60	SLE RA 17	14	-5	661	-51.45	0	1.11
60	SLE RA 18	14	-6	672	-52.3	0	1.11
60	SLE RA 19	14	-6	672	-52.3	0	1.11
60	SLE RA 20	14	-6	677	-52.68	0	1.11
60	SLE RA 21	14	-6	677	-52.69	0	1.12
60	SLE FR 1	14	-6	602	-46.84	0	1.09
60	SLE FR 2	14	-6	602	-46.85	0	1.09
60	SLE FR 3	14	-6	604	-47	0	1.09
60	SLE FR 4	14	-6	623	-48.48	0	1.1
60	SLE FR 5	14	-6	625	-48.63	0	1.1
60	SLE FR 6	14	-6	637	-49.57	0	1.1
60	SLE QP 1	14	-6	602	-46.84	0	1.09
60	SLE QP 2	14	-6	623	-48.48	0	1.1
60	SLD 1	49	-4	607	-47.2	0	3.8
60	SLD 2	50	0	607	-47.2	0	3.93
60	SLD 3	48	-13	604	-47	0	3.72
60	SLD 4	49	-10	604	-47	0	3.85
60	SLD 5	26	8	622	-48.41	0	1.99
60	SLD 6	27	10	622	-48.41	0	2.08
60	SLD 7	22	-23	613	-47.72	0	1.75
60	SLD 8	24	-21	613	-47.72	0	1.83
60	SLD 9	5	9	633	-49.24	0	0.36
60	SLD 10	6	11	633	-49.24	0	0.44
60	SLD 11	1	-23	624	-48.55	0	0.11
60	SLD 12	3	-20	624	-48.55	0	0.2
60	SLD 13	-21	-2	642	-49.96	0	-1.66
60	SLD 14	-20	1	642	-49.96	0	-1.53
60	SLD 15	-22	-12	639	-49.75	0	-1.73
60	SLD 16	-21	-8	639	-49.75	0	-1.6
60	SLV 1	95	0	585	-45.51	0	7.42
60	SLV 2	99	8	585	-45.51	0	7.72
60	SLV 3	93	-23	578	-44.99	0	7.23
60	SLV 4	97	-15	578	-44.99	0	7.54
60	SLV 5	41	29	622	-48.38	0	3.22
60	SLV 6	44	34	622	-48.37	0	3.42
60	SLV 7	33	-47	599	-46.65	0	2.6
60	SLV 8	36	-42	599	-46.65	0	2.8
60	SLV 9	-8	30	646	-50.31	0	-0.61
60	SLV 10	-5	35	646	-50.31	0	-0.41
60	SLV 11	-16	-46	624	-48.58	0	-1.23
60	SLV 12	-13	-41	624	-48.58	0	-1.02
60	SLV 13	-69	3	668	-51.96	0	-5.34
60	SLV 14	-65	11	668	-51.96	0	-5.04
60	SLV 15	-71	-20	661	-51.45	0	-5.53
60	SLV 16	-67	-12	661	-51.44	0	-5.22
60	CRTFP Ux+	0	0	0	0	0	0
60	CRTFP Ux-	0	0	0	0	0	0
61	SLU 1	12	-13	518	0	0	0
61	SLU 2	12	-13	517	0	0	0
61	SLU 3	12	-13	529	0	0	0
61	SLU 4	12	-12	529	0	0	0
61	SLU 5	12	-12	525	0	0	0
61	SLU 6	12	-13	536	0	0	0
61	SLU 7	12	-12	536	0	0	0
61	SLU 8	12	-13	532	0	0	0
61	SLU 9	12	-12	532	0	0	0
61	SLU 10	12	-14	586	0	0	0
61	SLU 11	12	-14	597	0	0	0
61	SLU 12	12	-13	597	0	0	0
61	SLU 13	12	-13	593	0	0	0
61	SLU 14	12	-14	605	0	0	0
61	SLU 15	12	-13	604	0	0	0
61	SLU 16	12	-14	601	0	0	0
61	SLU 17	12	-13	600	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
61	SLU 18	12	-15	616	0	0	0
61	SLU 19	12	-14	616	0	0	0
61	SLU 20	12	-14	623	0	0	0
61	SLU 21	12	-14	623	0	0	0
61	SLU 22	13	-13	595	0	0	0
61	SLU 23	13	-12	594	0	0	0
61	SLU 24	13	-12	606	0	0	0
61	SLU 25	13	-12	606	0	0	0
61	SLU 26	13	-11	601	0	0	0
61	SLU 27	13	-12	613	0	0	0
61	SLU 28	13	-11	613	0	0	0
61	SLU 29	13	-12	609	0	0	0
61	SLU 30	13	-11	609	0	0	0
61	SLU 31	13	-13	663	0	0	0
61	SLU 32	13	-13	674	0	0	0
61	SLU 33	13	-13	674	0	0	0
61	SLU 34	13	-12	670	0	0	0
61	SLU 35	13	-13	681	0	0	0
61	SLU 36	13	-12	681	0	0	0
61	SLU 37	13	-13	677	0	0	0
61	SLU 38	13	-12	677	0	0	0
61	SLU 39	13	-14	693	0	0	0
61	SLU 40	13	-14	693	0	0	0
61	SLU 41	13	-14	700	0	0	0
61	SLU 42	13	-13	700	0	0	0
61	SLU 43	15	-17	647	0	0	0
61	SLU 44	15	-17	646	0	0	0
61	SLU 45	15	-17	658	0	0	0
61	SLU 46	15	-17	658	0	0	0
61	SLU 47	15	-16	653	0	0	0
61	SLU 48	15	-17	665	0	0	0
61	SLU 49	15	-16	665	0	0	0
61	SLU 50	15	-17	661	0	0	0
61	SLU 51	15	-16	661	0	0	0
61	SLU 52	15	-18	715	0	0	0
61	SLU 53	15	-18	726	0	0	0
61	SLU 54	15	-18	726	0	0	0
61	SLU 55	15	-17	722	0	0	0
61	SLU 56	15	-18	733	0	0	0
61	SLU 57	15	-17	733	0	0	0
61	SLU 58	15	-18	729	0	0	0
61	SLU 59	15	-17	729	0	0	0
61	SLU 60	15	-19	745	0	0	0
61	SLU 61	15	-18	745	0	0	0
61	SLU 62	15	-19	752	0	0	0
61	SLU 63	15	-18	752	0	0	0
61	SLU 64	16	-17	724	0	0	0
61	SLU 65	16	-16	723	0	0	0
61	SLU 66	16	-16	735	0	0	0
61	SLU 67	16	-16	735	0	0	0
61	SLU 68	16	-16	730	0	0	0
61	SLU 69	16	-16	742	0	0	0
61	SLU 70	16	-16	742	0	0	0
61	SLU 71	16	-16	738	0	0	0
61	SLU 72	16	-16	738	0	0	0
61	SLU 73	16	-17	792	0	0	0
61	SLU 74	16	-17	803	0	0	0
61	SLU 75	16	-17	803	0	0	0
61	SLU 76	16	-17	799	0	0	0
61	SLU 77	16	-17	810	0	0	0
61	SLU 78	16	-17	810	0	0	0
61	SLU 79	16	-17	806	0	0	0
61	SLU 80	16	-17	806	0	0	0
61	SLU 81	16	-18	822	0	0	0
61	SLU 82	16	-18	822	0	0	0
61	SLU 83	16	-18	829	0	0	0
61	SLU 84	16	-17	829	0	0	0
61	SLE RA 1	12	-13	540	0	0	0
61	SLE RA 2	12	-13	540	0	0	0
61	SLE RA 3	12	-13	547	0	0	0
61	SLE RA 4	12	-13	547	0	0	0
61	SLE RA 5	12	-12	544	0	0	0
61	SLE RA 6	12	-13	552	0	0	0
61	SLE RA 7	12	-12	552	0	0	0
61	SLE RA 8	12	-13	549	0	0	0
61	SLE RA 9	12	-12	549	0	0	0
61	SLE RA 10	12	-13	585	0	0	0
61	SLE RA 11	12	-13	593	0	0	0
61	SLE RA 12	12	-13	593	0	0	0
61	SLE RA 13	12	-13	590	0	0	0
61	SLE RA 14	12	-13	598	0	0	0
61	SLE RA 15	12	-13	597	0	0	0
61	SLE RA 16	12	-13	595	0	0	0
61	SLE RA 17	12	-13	595	0	0	0
61	SLE RA 18	12	-14	605	0	0	0
61	SLE RA 19	12	-14	605	0	0	0
61	SLE RA 20	12	-14	610	0	0	0
61	SLE RA 21	12	-13	610	0	0	0
61	SLE FR 1	12	-13	540	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
61	SLE FR 2	12	-13	540	0	0	0
61	SLE FR 3	12	-13	542	0	0	0
61	SLE FR 4	12	-13	559	0	0	0
61	SLE FR 5	12	-13	561	0	0	0
61	SLE FR 6	12	-14	572	0	0	0
61	SLE QP 1	12	-13	540	0	0	0
61	SLE QP 2	12	-13	559	0	0	0
61	SLD 1	45	-7	573	0	0	0
61	SLD 2	46	-7	573	0	0	0
61	SLD 3	44	-15	577	0	0	0
61	SLD 4	45	-15	577	0	0	0
61	SLD 5	23	1	557	0	0	0
61	SLD 6	24	2	557	0	0	0
61	SLD 7	20	-27	571	0	0	0
61	SLD 8	21	-27	571	0	0	0
61	SLD 9	3	0	548	0	0	0
61	SLD 10	4	0	548	0	0	0
61	SLD 11	0	-28	561	0	0	0
61	SLD 12	1	-28	562	0	0	0
61	SLD 13	-21	-12	542	0	0	0
61	SLD 14	-20	-11	542	0	0	0
61	SLD 15	-22	-20	546	0	0	0
61	SLD 16	-21	-20	546	0	0	0
61	SLV 1	89	2	590	0	0	0
61	SLV 2	91	3	591	0	0	0
61	SLV 3	87	-18	600	0	0	0
61	SLV 4	89	-18	601	0	0	0
61	SLV 5	38	22	553	0	0	0
61	SLV 6	39	22	554	0	0	0
61	SLV 7	31	-46	587	0	0	0
61	SLV 8	33	-45	588	0	0	0
61	SLV 9	-9	19	531	0	0	0
61	SLV 10	-7	19	532	0	0	0
61	SLV 11	-15	-49	565	0	0	0
61	SLV 12	-13	-49	566	0	0	0
61	SLV 13	-65	-9	517	0	0	0
61	SLV 14	-62	-8	518	0	0	0
61	SLV 15	-67	-29	528	0	0	0
61	SLV 16	-65	-29	529	0	0	0
62	SLU 1	6	-8	283	0	0	0
62	SLU 2	6	-7	283	0	0	0
62	SLU 3	7	-8	289	0	0	0
62	SLU 4	7	-7	289	0	0	0
62	SLU 5	6	-7	286	0	0	0
62	SLU 6	7	-7	293	0	0	0
62	SLU 7	7	-7	293	0	0	0
62	SLU 8	6	-7	290	0	0	0
62	SLU 9	6	-7	290	0	0	0
62	SLU 10	7	-8	320	0	0	0
62	SLU 11	7	-8	326	0	0	0
62	SLU 12	7	-8	326	0	0	0
62	SLU 13	7	-8	324	0	0	0
62	SLU 14	7	-8	330	0	0	0
62	SLU 15	7	-8	330	0	0	0
62	SLU 16	7	-8	328	0	0	0
62	SLU 17	7	-8	328	0	0	0
62	SLU 18	7	-9	337	0	0	0
62	SLU 19	7	-8	336	0	0	0
62	SLU 20	7	-9	340	0	0	0
62	SLU 21	7	-8	340	0	0	0
62	SLU 22	7	-7	325	0	0	0
62	SLU 23	7	-7	325	0	0	0
62	SLU 24	7	-7	331	0	0	0
62	SLU 25	7	-7	331	0	0	0
62	SLU 26	7	-7	329	0	0	0
62	SLU 27	7	-7	335	0	0	0
62	SLU 28	7	-7	335	0	0	0
62	SLU 29	7	-7	333	0	0	0
62	SLU 30	7	-7	332	0	0	0
62	SLU 31	7	-8	362	0	0	0
62	SLU 32	7	-8	369	0	0	0
62	SLU 33	7	-8	368	0	0	0
62	SLU 34	7	-8	366	0	0	0
62	SLU 35	7	-8	372	0	0	0
62	SLU 36	7	-8	372	0	0	0
62	SLU 37	7	-8	370	0	0	0
62	SLU 38	7	-8	370	0	0	0
62	SLU 39	7	-8	379	0	0	0
62	SLU 40	7	-8	379	0	0	0
62	SLU 41	7	-8	383	0	0	0
62	SLU 42	7	-8	382	0	0	0
62	SLU 43	8	-10	353	0	0	0
62	SLU 44	8	-10	353	0	0	0
62	SLU 45	8	-10	359	0	0	0
62	SLU 46	8	-10	359	0	0	0
62	SLU 47	8	-10	357	0	0	0
62	SLU 48	8	-10	363	0	0	0
62	SLU 49	8	-10	363	0	0	0
62	SLU 50	8	-10	361	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
62	SLU 51	8	-10	361	0	0	0
62	SLU 52	8	-10	391	0	0	0
62	SLU 53	8	-11	397	0	0	0
62	SLU 54	8	-10	397	0	0	0
62	SLU 55	8	-10	395	0	0	0
62	SLU 56	8	-11	401	0	0	0
62	SLU 57	8	-10	401	0	0	0
62	SLU 58	8	-11	399	0	0	0
62	SLU 59	8	-10	398	0	0	0
62	SLU 60	8	-11	407	0	0	0
62	SLU 61	8	-11	407	0	0	0
62	SLU 62	8	-11	411	0	0	0
62	SLU 63	8	-11	411	0	0	0
62	SLU 64	9	-10	395	0	0	0
62	SLU 65	9	-10	395	0	0	0
62	SLU 66	9	-10	401	0	0	0
62	SLU 67	9	-10	401	0	0	0
62	SLU 68	9	-9	399	0	0	0
62	SLU 69	9	-10	405	0	0	0
62	SLU 70	9	-9	405	0	0	0
62	SLU 71	9	-10	403	0	0	0
62	SLU 72	9	-9	403	0	0	0
62	SLU 73	9	-10	433	0	0	0
62	SLU 74	9	-10	439	0	0	0
62	SLU 75	9	-10	439	0	0	0
62	SLU 76	9	-10	437	0	0	0
62	SLU 77	9	-10	443	0	0	0
62	SLU 78	9	-10	443	0	0	0
62	SLU 79	9	-10	441	0	0	0
62	SLU 80	9	-10	441	0	0	0
62	SLU 81	9	-11	449	0	0	0
62	SLU 82	9	-11	449	0	0	0
62	SLU 83	9	-11	453	0	0	0
62	SLU 84	9	-10	453	0	0	0
62	SLE RA 1	7	-8	295	0	0	0
62	SLE RA 2	7	-7	295	0	0	0
62	SLE RA 3	7	-8	299	0	0	0
62	SLE RA 4	7	-7	299	0	0	0
62	SLE RA 5	7	-7	297	0	0	0
62	SLE RA 6	7	-7	301	0	0	0
62	SLE RA 7	7	-7	301	0	0	0
62	SLE RA 8	7	-7	300	0	0	0
62	SLE RA 9	7	-7	300	0	0	0
62	SLE RA 10	7	-8	320	0	0	0
62	SLE RA 11	7	-8	324	0	0	0
62	SLE RA 12	7	-8	324	0	0	0
62	SLE RA 13	7	-8	322	0	0	0
62	SLE RA 14	7	-8	327	0	0	0
62	SLE RA 15	7	-8	326	0	0	0
62	SLE RA 16	7	-8	325	0	0	0
62	SLE RA 17	7	-8	325	0	0	0
62	SLE RA 18	7	-8	331	0	0	0
62	SLE RA 19	7	-8	331	0	0	0
62	SLE RA 20	7	-8	333	0	0	0
62	SLE RA 21	7	-8	333	0	0	0
62	SLE FR 1	7	-8	295	0	0	0
62	SLE FR 2	7	-8	295	0	0	0
62	SLE FR 3	7	-8	296	0	0	0
62	SLE FR 4	7	-8	306	0	0	0
62	SLE FR 5	7	-8	307	0	0	0
62	SLE FR 6	7	-8	313	0	0	0
62	SLE QP 1	7	-8	295	0	0	0
62	SLE QP 2	7	-8	306	0	0	0
62	SLD 1	25	-4	315	0	0	0
62	SLD 2	25	-4	315	0	0	0
62	SLD 3	24	-9	317	0	0	0
62	SLD 4	25	-9	318	0	0	0
62	SLD 5	13	0	305	0	0	0
62	SLD 6	13	0	305	0	0	0
62	SLD 7	11	-15	313	0	0	0
62	SLD 8	11	-15	313	0	0	0
62	SLD 9	2	-1	298	0	0	0
62	SLD 10	2	-1	298	0	0	0
62	SLD 11	0	-16	306	0	0	0
62	SLD 12	1	-16	306	0	0	0
62	SLD 13	-12	-7	293	0	0	0
62	SLD 14	-11	-7	294	0	0	0
62	SLD 15	-12	-12	296	0	0	0
62	SLD 16	-11	-12	296	0	0	0
62	SLV 1	49	1	328	0	0	0
62	SLV 2	50	1	329	0	0	0
62	SLV 3	48	-10	334	0	0	0
62	SLV 4	49	-10	334	0	0	0
62	SLV 5	21	12	304	0	0	0
62	SLV 6	22	12	304	0	0	0
62	SLV 7	17	-25	322	0	0	0
62	SLV 8	18	-25	323	0	0	0
62	SLV 9	-5	10	288	0	0	0
62	SLV 10	-4	10	289	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
62	SLV 11	-8	-27	307	0	0	0
62	SLV 12	-7	-27	307	0	0	0
62	SLV 13	-36	-6	277	0	0	0
62	SLV 14	-34	-6	277	0	0	0
62	SLV 15	-37	-17	282	0	0	0
62	SLV 16	-35	-17	283	0	0	0
63	SLU 1	3	-2	145	0	0	0
63	SLU 2	3	-1	145	0	0	0
63	SLU 3	3	-1	148	0	0	0
63	SLU 4	3	-1	148	0	0	0
63	SLU 5	3	-1	147	0	0	0
63	SLU 6	3	-1	150	0	0	0
63	SLU 7	3	-1	150	0	0	0
63	SLU 8	3	-1	149	0	0	0
63	SLU 9	3	-1	149	0	0	0
63	SLU 10	3	-1	164	0	0	0
63	SLU 11	3	-1	167	0	0	0
63	SLU 12	3	-1	167	0	0	0
63	SLU 13	3	-1	166	0	0	0
63	SLU 14	3	-1	169	0	0	0
63	SLU 15	3	-1	169	0	0	0
63	SLU 16	3	-1	168	0	0	0
63	SLU 17	3	-1	168	0	0	0
63	SLU 18	3	-2	172	0	0	0
63	SLU 19	3	-1	172	0	0	0
63	SLU 20	3	-1	174	0	0	0
63	SLU 21	3	-1	174	0	0	0
63	SLU 22	3	-1	167	0	0	0
63	SLU 23	3	-1	166	0	0	0
63	SLU 24	4	-1	170	0	0	0
63	SLU 25	4	-1	170	0	0	0
63	SLU 26	4	-1	168	0	0	0
63	SLU 27	4	-1	172	0	0	0
63	SLU 28	4	-1	171	0	0	0
63	SLU 29	4	-1	170	0	0	0
63	SLU 30	4	-1	170	0	0	0
63	SLU 31	4	-1	185	0	0	0
63	SLU 32	4	-1	188	0	0	0
63	SLU 33	4	-1	188	0	0	0
63	SLU 34	4	-1	187	0	0	0
63	SLU 35	4	-1	190	0	0	0
63	SLU 36	4	-1	190	0	0	0
63	SLU 37	4	-1	189	0	0	0
63	SLU 38	4	-1	189	0	0	0
63	SLU 39	4	-1	193	0	0	0
63	SLU 40	4	-1	193	0	0	0
63	SLU 41	4	-1	195	0	0	0
63	SLU 42	4	-1	195	0	0	0
63	SLU 43	4	-2	182	0	0	0
63	SLU 44	4	-2	181	0	0	0
63	SLU 45	4	-2	185	0	0	0
63	SLU 46	4	-2	185	0	0	0
63	SLU 47	4	-2	183	0	0	0
63	SLU 48	4	-2	187	0	0	0
63	SLU 49	4	-2	186	0	0	0
63	SLU 50	4	-2	185	0	0	0
63	SLU 51	4	-2	185	0	0	0
63	SLU 52	4	-2	200	0	0	0
63	SLU 53	4	-2	203	0	0	0
63	SLU 54	4	-2	203	0	0	0
63	SLU 55	4	-2	202	0	0	0
63	SLU 56	4	-2	205	0	0	0
63	SLU 57	4	-2	205	0	0	0
63	SLU 58	4	-2	204	0	0	0
63	SLU 59	4	-2	204	0	0	0
63	SLU 60	4	-2	208	0	0	0
63	SLU 61	4	-2	208	0	0	0
63	SLU 62	4	-2	210	0	0	0
63	SLU 63	4	-2	210	0	0	0
63	SLU 64	4	-2	203	0	0	0
63	SLU 65	4	-2	203	0	0	0
63	SLU 66	4	-2	206	0	0	0
63	SLU 67	4	-1	206	0	0	0
63	SLU 68	4	-1	205	0	0	0
63	SLU 69	4	-2	208	0	0	0
63	SLU 70	4	-1	208	0	0	0
63	SLU 71	4	-2	207	0	0	0
63	SLU 72	4	-1	207	0	0	0
63	SLU 73	4	-2	221	0	0	0
63	SLU 74	4	-2	224	0	0	0
63	SLU 75	4	-2	224	0	0	0
63	SLU 76	4	-1	223	0	0	0
63	SLU 77	4	-2	226	0	0	0
63	SLU 78	4	-1	226	0	0	0
63	SLU 79	4	-2	225	0	0	0
63	SLU 80	4	-1	225	0	0	0
63	SLU 81	4	-2	229	0	0	0
63	SLU 82	4	-2	229	0	0	0
63	SLU 83	4	-2	231	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
63	SLU 84	4	-2	231	0	0	0
63	SLE RA 1	3	-1	151	0	0	0
63	SLE RA 2	3	-1	151	0	0	0
63	SLE RA 3	3	-1	153	0	0	0
63	SLE RA 4	3	-1	153	0	0	0
63	SLE RA 5	3	-1	153	0	0	0
63	SLE RA 6	3	-1	155	0	0	0
63	SLE RA 7	3	-1	155	0	0	0
63	SLE RA 8	3	-1	154	0	0	0
63	SLE RA 9	3	-1	154	0	0	0
63	SLE RA 10	3	-1	164	0	0	0
63	SLE RA 11	3	-1	166	0	0	0
63	SLE RA 12	3	-1	166	0	0	0
63	SLE RA 13	3	-1	165	0	0	0
63	SLE RA 14	3	-1	167	0	0	0
63	SLE RA 15	3	-1	167	0	0	0
63	SLE RA 16	3	-1	166	0	0	0
63	SLE RA 17	3	-1	166	0	0	0
63	SLE RA 18	3	-1	169	0	0	0
63	SLE RA 19	3	-1	169	0	0	0
63	SLE RA 20	3	-1	170	0	0	0
63	SLE RA 21	3	-1	170	0	0	0
63	SLE FR 1	3	-1	151	0	0	0
63	SLE FR 2	3	-1	151	0	0	0
63	SLE FR 3	3	-1	152	0	0	0
63	SLE FR 4	3	-1	157	0	0	0
63	SLE FR 5	3	-1	157	0	0	0
63	SLE FR 6	3	-1	160	0	0	0
63	SLE QP 1	3	-1	151	0	0	0
63	SLE QP 2	3	-1	157	0	0	0
63	SLD 1	12	-1	151	0	0	0
63	SLD 2	12	0	151	0	0	0
63	SLD 3	12	-3	153	0	0	0
63	SLD 4	12	-2	153	0	0	0
63	SLD 5	6	2	153	0	0	0
63	SLD 6	6	3	153	0	0	0
63	SLD 7	5	-6	158	0	0	0
63	SLD 8	6	-5	158	0	0	0
63	SLD 9	1	2	156	0	0	0
63	SLD 10	1	3	155	0	0	0
63	SLD 11	0	-6	161	0	0	0
63	SLD 12	0	-5	161	0	0	0
63	SLD 13	-6	0	161	0	0	0
63	SLD 14	-5	0	161	0	0	0
63	SLD 15	-6	-3	162	0	0	0
63	SLD 16	-6	-2	162	0	0	0
63	SLV 1	24	0	143	0	0	0
63	SLV 2	25	2	143	0	0	0
63	SLV 3	24	-6	147	0	0	0
63	SLV 4	24	-4	147	0	0	0
63	SLV 5	10	7	147	0	0	0
63	SLV 6	11	9	147	0	0	0
63	SLV 7	8	-12	160	0	0	0
63	SLV 8	9	-10	160	0	0	0
63	SLV 9	-2	8	154	0	0	0
63	SLV 10	-2	9	154	0	0	0
63	SLV 11	-4	-12	167	0	0	0
63	SLV 12	-4	-10	166	0	0	0
63	SLV 13	-18	1	166	0	0	0
63	SLV 14	-17	3	166	0	0	0
63	SLV 15	-18	-5	170	0	0	0
63	SLV 16	-18	-3	170	0	0	0
64	SLU 1	15	-12	701	0	0	0
64	SLU 2	16	-11	701	0	0	0
64	SLU 3	16	-12	716	0	0	0
64	SLU 4	16	-11	716	0	0	0
64	SLU 5	16	-11	710	0	0	0
64	SLU 6	16	-11	726	0	0	0
64	SLU 7	16	-11	725	0	0	0
64	SLU 8	16	-11	720	0	0	0
64	SLU 9	16	-11	720	0	0	0
64	SLU 10	16	-12	792	0	0	0
64	SLU 11	16	-12	807	0	0	0
64	SLU 12	16	-12	807	0	0	0
64	SLU 13	16	-11	802	0	0	0
64	SLU 14	16	-12	817	0	0	0
64	SLU 15	16	-11	817	0	0	0
64	SLU 16	16	-12	811	0	0	0
64	SLU 17	16	-11	811	0	0	0
64	SLU 18	16	-13	832	0	0	0
64	SLU 19	16	-13	831	0	0	0
64	SLU 20	16	-13	841	0	0	0
64	SLU 21	16	-12	841	0	0	0
64	SLU 22	17	-11	805	0	0	0
64	SLU 23	17	-10	804	0	0	0
64	SLU 24	17	-10	820	0	0	0
64	SLU 25	17	-9	820	0	0	0
64	SLU 26	17	-9	814	0	0	0
64	SLU 27	17	-10	829	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
64	SLU 28	17	-9	829	0	0	0
64	SLU 29	17	-10	824	0	0	0
64	SLU 30	17	-9	823	0	0	0
64	SLU 31	17	-10	896	0	0	0
64	SLU 32	17	-11	911	0	0	0
64	SLU 33	18	-10	911	0	0	0
64	SLU 34	17	-10	905	0	0	0
64	SLU 35	18	-10	920	0	0	0
64	SLU 36	18	-10	920	0	0	0
64	SLU 37	17	-10	915	0	0	0
64	SLU 38	17	-10	915	0	0	0
64	SLU 39	17	-12	935	0	0	0
64	SLU 40	17	-11	935	0	0	0
64	SLU 41	17	-11	945	0	0	0
64	SLU 42	17	-11	944	0	0	0
64	SLU 43	20	-16	876	0	0	0
64	SLU 44	20	-15	876	0	0	0
64	SLU 45	20	-16	891	0	0	0
64	SLU 46	20	-15	891	0	0	0
64	SLU 47	20	-15	885	0	0	0
64	SLU 48	20	-15	901	0	0	0
64	SLU 49	20	-15	900	0	0	0
64	SLU 50	20	-15	895	0	0	0
64	SLU 51	20	-15	895	0	0	0
64	SLU 52	20	-16	967	0	0	0
64	SLU 53	20	-17	982	0	0	0
64	SLU 54	20	-16	982	0	0	0
64	SLU 55	20	-16	976	0	0	0
64	SLU 56	20	-16	992	0	0	0
64	SLU 57	20	-16	992	0	0	0
64	SLU 58	20	-16	986	0	0	0
64	SLU 59	20	-16	986	0	0	0
64	SLU 60	20	-17	1006	0	0	0
64	SLU 61	20	-17	1006	0	0	0
64	SLU 62	20	-17	1016	0	0	0
64	SLU 63	20	-16	1016	0	0	0
64	SLU 64	21	-15	980	0	0	0
64	SLU 65	21	-14	979	0	0	0
64	SLU 66	21	-14	995	0	0	0
64	SLU 67	21	-14	994	0	0	0
64	SLU 68	21	-13	989	0	0	0
64	SLU 69	21	-14	1004	0	0	0
64	SLU 70	21	-13	1004	0	0	0
64	SLU 71	21	-14	999	0	0	0
64	SLU 72	21	-13	998	0	0	0
64	SLU 73	21	-15	1071	0	0	0
64	SLU 74	22	-15	1086	0	0	0
64	SLU 75	22	-14	1086	0	0	0
64	SLU 76	21	-14	1080	0	0	0
64	SLU 77	22	-15	1095	0	0	0
64	SLU 78	22	-14	1095	0	0	0
64	SLU 79	21	-15	1090	0	0	0
64	SLU 80	22	-14	1090	0	0	0
64	SLU 81	21	-16	1110	0	0	0
64	SLU 82	21	-15	1110	0	0	0
64	SLU 83	21	-15	1119	0	0	0
64	SLU 84	22	-15	1119	0	0	0
64	SLE RA 1	16	-12	731	0	0	0
64	SLE RA 2	16	-11	731	0	0	0
64	SLE RA 3	16	-11	741	0	0	0
64	SLE RA 4	16	-11	741	0	0	0
64	SLE RA 5	16	-11	737	0	0	0
64	SLE RA 6	16	-11	747	0	0	0
64	SLE RA 7	16	-11	747	0	0	0
64	SLE RA 8	16	-11	744	0	0	0
64	SLE RA 9	16	-11	743	0	0	0
64	SLE RA 10	16	-12	791	0	0	0
64	SLE RA 11	16	-12	802	0	0	0
64	SLE RA 12	16	-11	801	0	0	0
64	SLE RA 13	16	-11	798	0	0	0
64	SLE RA 14	16	-12	808	0	0	0
64	SLE RA 15	16	-11	808	0	0	0
64	SLE RA 16	16	-12	804	0	0	0
64	SLE RA 17	16	-11	804	0	0	0
64	SLE RA 18	16	-12	818	0	0	0
64	SLE RA 19	16	-12	818	0	0	0
64	SLE RA 20	16	-12	824	0	0	0
64	SLE RA 21	16	-12	824	0	0	0
64	SLE FR 1	16	-12	731	0	0	0
64	SLE FR 2	16	-12	731	0	0	0
64	SLE FR 3	16	-12	733	0	0	0
64	SLE FR 4	16	-12	757	0	0	0
64	SLE FR 5	16	-12	759	0	0	0
64	SLE FR 6	16	-12	774	0	0	0
64	SLE QP 1	16	-12	731	0	0	0
64	SLE QP 2	16	-12	757	0	0	0
64	SLD 1	60	-6	749	0	0	0
64	SLD 2	61	-4	750	0	0	0
64	SLD 3	59	-17	756	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
64	SLD 4	60	-15	757	0	0	0
64	SLD 5	30	7	744	0	0	0
64	SLD 6	31	8	744	0	0	0
64	SLD 7	27	-31	768	0	0	0
64	SLD 8	28	-30	768	0	0	0
64	SLD 9	4	6	746	0	0	0
64	SLD 10	5	7	746	0	0	0
64	SLD 11	0	-32	770	0	0	0
64	SLD 12	1	-30	770	0	0	0
64	SLD 13	-28	-9	757	0	0	0
64	SLD 14	-27	-6	757	0	0	0
64	SLD 15	-29	-20	764	0	0	0
64	SLD 16	-28	-18	765	0	0	0
64	SLV 1	118	2	739	0	0	0
64	SLV 2	122	8	739	0	0	0
64	SLV 3	115	-25	756	0	0	0
64	SLV 4	119	-20	757	0	0	0
64	SLV 5	50	33	725	0	0	0
64	SLV 6	52	37	725	0	0	0
64	SLV 7	41	-59	783	0	0	0
64	SLV 8	43	-55	784	0	0	0
64	SLV 9	-12	31	730	0	0	0
64	SLV 10	-9	35	731	0	0	0
64	SLV 11	-20	-61	789	0	0	0
64	SLV 12	-18	-57	789	0	0	0
64	SLV 13	-87	-4	757	0	0	0
64	SLV 14	-84	2	758	0	0	0
64	SLV 15	-90	-32	775	0	0	0
64	SLV 16	-86	-26	775	0	0	0
65	SLU 1	16	-15	711	0	0	0
65	SLU 2	16	-14	711	0	0	0
65	SLU 3	16	-14	726	0	0	0
65	SLU 4	16	-13	726	0	0	0
65	SLU 5	16	-13	720	0	0	0
65	SLU 6	16	-14	736	0	0	0
65	SLU 7	16	-13	735	0	0	0
65	SLU 8	16	-14	730	0	0	0
65	SLU 9	16	-13	730	0	0	0
65	SLU 10	16	-15	804	0	0	0
65	SLU 11	16	-15	819	0	0	0
65	SLU 12	16	-14	819	0	0	0
65	SLU 13	16	-14	813	0	0	0
65	SLU 14	16	-15	829	0	0	0
65	SLU 15	16	-14	829	0	0	0
65	SLU 16	16	-15	823	0	0	0
65	SLU 17	16	-14	823	0	0	0
65	SLU 18	16	-16	844	0	0	0
65	SLU 19	16	-15	844	0	0	0
65	SLU 20	16	-16	854	0	0	0
65	SLU 21	16	-15	853	0	0	0
65	SLU 22	17	-13	816	0	0	0
65	SLU 23	17	-12	816	0	0	0
65	SLU 24	18	-13	831	0	0	0
65	SLU 25	18	-12	831	0	0	0
65	SLU 26	18	-12	825	0	0	0
65	SLU 27	18	-12	841	0	0	0
65	SLU 28	18	-12	841	0	0	0
65	SLU 29	18	-12	835	0	0	0
65	SLU 30	18	-12	835	0	0	0
65	SLU 31	18	-13	909	0	0	0
65	SLU 32	18	-14	924	0	0	0
65	SLU 33	18	-13	924	0	0	0
65	SLU 34	18	-13	918	0	0	0
65	SLU 35	18	-13	934	0	0	0
65	SLU 36	18	-13	934	0	0	0
65	SLU 37	18	-13	929	0	0	0
65	SLU 38	18	-13	928	0	0	0
65	SLU 39	18	-15	949	0	0	0
65	SLU 40	18	-14	949	0	0	0
65	SLU 41	18	-14	959	0	0	0
65	SLU 42	18	-14	959	0	0	0
65	SLU 43	20	-19	888	0	0	0
65	SLU 44	20	-18	888	0	0	0
65	SLU 45	20	-19	903	0	0	0
65	SLU 46	20	-18	903	0	0	0
65	SLU 47	20	-18	897	0	0	0
65	SLU 48	20	-18	913	0	0	0
65	SLU 49	20	-18	913	0	0	0
65	SLU 50	20	-18	907	0	0	0
65	SLU 51	20	-18	907	0	0	0
65	SLU 52	20	-19	981	0	0	0
65	SLU 53	20	-20	996	0	0	0
65	SLU 54	20	-19	996	0	0	0
65	SLU 55	20	-19	990	0	0	0
65	SLU 56	20	-19	1006	0	0	0
65	SLU 57	21	-19	1006	0	0	0
65	SLU 58	20	-19	1000	0	0	0
65	SLU 59	20	-19	1000	0	0	0
65	SLU 60	20	-21	1021	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
65	SLU 61	20	-20	1021	0	0	0
65	SLU 62	20	-20	1031	0	0	0
65	SLU 63	20	-20	1031	0	0	0
65	SLU 64	22	-18	993	0	0	0
65	SLU 65	22	-17	993	0	0	0
65	SLU 66	22	-18	1009	0	0	0
65	SLU 67	22	-17	1008	0	0	0
65	SLU 68	22	-17	1003	0	0	0
65	SLU 69	22	-17	1018	0	0	0
65	SLU 70	22	-16	1018	0	0	0
65	SLU 71	22	-17	1013	0	0	0
65	SLU 72	22	-17	1012	0	0	0
65	SLU 73	22	-18	1086	0	0	0
65	SLU 74	22	-18	1102	0	0	0
65	SLU 75	22	-18	1101	0	0	0
65	SLU 76	22	-18	1096	0	0	0
65	SLU 77	22	-18	1111	0	0	0
65	SLU 78	22	-17	1111	0	0	0
65	SLU 79	22	-18	1106	0	0	0
65	SLU 80	22	-17	1105	0	0	0
65	SLU 81	22	-19	1126	0	0	0
65	SLU 82	22	-19	1126	0	0	0
65	SLU 83	22	-19	1136	0	0	0
65	SLU 84	22	-18	1136	0	0	0
65	SLE RA 1	16	-14	741	0	0	0
65	SLE RA 2	16	-13	741	0	0	0
65	SLE RA 3	16	-14	751	0	0	0
65	SLE RA 4	16	-13	751	0	0	0
65	SLE RA 5	16	-13	747	0	0	0
65	SLE RA 6	16	-14	758	0	0	0
65	SLE RA 7	16	-13	757	0	0	0
65	SLE RA 8	16	-14	754	0	0	0
65	SLE RA 9	16	-13	754	0	0	0
65	SLE RA 10	16	-14	803	0	0	0
65	SLE RA 11	17	-14	813	0	0	0
65	SLE RA 12	17	-14	813	0	0	0
65	SLE RA 13	16	-14	809	0	0	0
65	SLE RA 14	17	-14	820	0	0	0
65	SLE RA 15	17	-14	819	0	0	0
65	SLE RA 16	16	-14	816	0	0	0
65	SLE RA 17	17	-14	816	0	0	0
65	SLE RA 18	16	-15	830	0	0	0
65	SLE RA 19	16	-15	830	0	0	0
65	SLE RA 20	16	-15	836	0	0	0
65	SLE RA 21	17	-14	836	0	0	0
65	SLE FR 1	16	-14	741	0	0	0
65	SLE FR 2	16	-14	741	0	0	0
65	SLE FR 3	16	-14	744	0	0	0
65	SLE FR 4	16	-14	768	0	0	0
65	SLE FR 5	16	-14	770	0	0	0
65	SLE FR 6	16	-15	785	0	0	0
65	SLE QP 1	16	-14	741	0	0	0
65	SLE QP 2	16	-14	768	0	0	0
65	SLD 1	61	-7	770	0	0	0
65	SLD 2	62	-6	771	0	0	0
65	SLD 3	60	-19	777	0	0	0
65	SLD 4	61	-17	778	0	0	0
65	SLD 5	31	5	758	0	0	0
65	SLD 6	32	6	758	0	0	0
65	SLD 7	27	-34	781	0	0	0
65	SLD 8	28	-32	781	0	0	0
65	SLD 9	4	4	754	0	0	0
65	SLD 10	5	5	754	0	0	0
65	SLD 11	1	-35	777	0	0	0
65	SLD 12	2	-34	777	0	0	0
65	SLD 13	-29	-12	758	0	0	0
65	SLD 14	-27	-10	758	0	0	0
65	SLD 15	-30	-23	765	0	0	0
65	SLD 16	-28	-21	765	0	0	0
65	SLV 1	120	2	773	0	0	0
65	SLV 2	124	6	774	0	0	0
65	SLV 3	118	-26	791	0	0	0
65	SLV 4	121	-22	791	0	0	0
65	SLV 5	51	32	743	0	0	0
65	SLV 6	53	35	743	0	0	0
65	SLV 7	42	-61	801	0	0	0
65	SLV 8	44	-58	801	0	0	0
65	SLV 9	-12	29	734	0	0	0
65	SLV 10	-9	32	735	0	0	0
65	SLV 11	-21	-64	792	0	0	0
65	SLV 12	-18	-61	792	0	0	0
65	SLV 13	-89	-7	744	0	0	0
65	SLV 14	-85	-3	745	0	0	0
65	SLV 15	-91	-35	761	0	0	0
65	SLV 16	-88	-31	762	0	0	0
66	SLU 1	13	-14	594	0	0	0
66	SLU 2	13	-13	594	0	0	0
66	SLU 3	13	-14	607	0	0	0
66	SLU 4	14	-13	607	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
66	SLU 5	13	-13	602	0	0	0
66	SLU 6	14	-13	615	0	0	0
66	SLU 7	14	-13	615	0	0	0
66	SLU 8	13	-13	611	0	0	0
66	SLU 9	13	-13	610	0	0	0
66	SLU 10	14	-14	673	0	0	0
66	SLU 11	14	-15	686	0	0	0
66	SLU 12	14	-14	685	0	0	0
66	SLU 13	14	-14	681	0	0	0
66	SLU 14	14	-14	694	0	0	0
66	SLU 15	14	-14	694	0	0	0
66	SLU 16	14	-14	689	0	0	0
66	SLU 17	14	-14	689	0	0	0
66	SLU 18	14	-16	707	0	0	0
66	SLU 19	14	-15	706	0	0	0
66	SLU 20	14	-15	715	0	0	0
66	SLU 21	14	-15	714	0	0	0
66	SLU 22	15	-13	683	0	0	0
66	SLU 23	15	-12	682	0	0	0
66	SLU 24	15	-13	695	0	0	0
66	SLU 25	15	-12	695	0	0	0
66	SLU 26	15	-12	690	0	0	0
66	SLU 27	15	-12	704	0	0	0
66	SLU 28	15	-12	703	0	0	0
66	SLU 29	15	-12	699	0	0	0
66	SLU 30	15	-12	699	0	0	0
66	SLU 31	15	-13	761	0	0	0
66	SLU 32	15	-14	774	0	0	0
66	SLU 33	15	-13	774	0	0	0
66	SLU 34	15	-13	769	0	0	0
66	SLU 35	15	-13	782	0	0	0
66	SLU 36	15	-13	782	0	0	0
66	SLU 37	15	-13	777	0	0	0
66	SLU 38	15	-13	777	0	0	0
66	SLU 39	15	-15	795	0	0	0
66	SLU 40	15	-14	795	0	0	0
66	SLU 41	15	-14	803	0	0	0
66	SLU 42	15	-14	803	0	0	0
66	SLU 43	17	-19	743	0	0	0
66	SLU 44	17	-18	742	0	0	0
66	SLU 45	17	-18	755	0	0	0
66	SLU 46	17	-18	755	0	0	0
66	SLU 47	17	-17	750	0	0	0
66	SLU 48	17	-18	763	0	0	0
66	SLU 49	17	-17	763	0	0	0
66	SLU 50	17	-18	759	0	0	0
66	SLU 51	17	-17	759	0	0	0
66	SLU 52	17	-19	821	0	0	0
66	SLU 53	17	-19	834	0	0	0
66	SLU 54	17	-19	834	0	0	0
66	SLU 55	17	-18	829	0	0	0
66	SLU 56	17	-19	842	0	0	0
66	SLU 57	17	-18	842	0	0	0
66	SLU 58	17	-19	837	0	0	0
66	SLU 59	17	-18	837	0	0	0
66	SLU 60	17	-20	855	0	0	0
66	SLU 61	17	-20	854	0	0	0
66	SLU 62	17	-20	863	0	0	0
66	SLU 63	17	-19	863	0	0	0
66	SLU 64	18	-18	831	0	0	0
66	SLU 65	18	-17	830	0	0	0
66	SLU 66	18	-17	844	0	0	0
66	SLU 67	18	-17	843	0	0	0
66	SLU 68	18	-16	839	0	0	0
66	SLU 69	18	-17	852	0	0	0
66	SLU 70	18	-16	851	0	0	0
66	SLU 71	18	-17	847	0	0	0
66	SLU 72	18	-16	847	0	0	0
66	SLU 73	18	-18	909	0	0	0
66	SLU 74	19	-18	922	0	0	0
66	SLU 75	19	-18	922	0	0	0
66	SLU 76	18	-17	917	0	0	0
66	SLU 77	19	-18	930	0	0	0
66	SLU 78	19	-17	930	0	0	0
66	SLU 79	18	-18	925	0	0	0
66	SLU 80	18	-17	925	0	0	0
66	SLU 81	18	-19	943	0	0	0
66	SLU 82	18	-19	943	0	0	0
66	SLU 83	18	-19	951	0	0	0
66	SLU 84	18	-18	951	0	0	0
66	SLE RA 1	14	-14	620	0	0	0
66	SLE RA 2	14	-13	619	0	0	0
66	SLE RA 3	14	-13	628	0	0	0
66	SLE RA 4	14	-13	628	0	0	0
66	SLE RA 5	14	-13	625	0	0	0
66	SLE RA 6	14	-13	634	0	0	0
66	SLE RA 7	14	-13	633	0	0	0
66	SLE RA 8	14	-13	630	0	0	0
66	SLE RA 9	14	-13	630	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
66	SLE RA 10	14	-14	672	0	0	0
66	SLE RA 11	14	-14	680	0	0	0
66	SLE RA 12	14	-14	680	0	0	0
66	SLE RA 13	14	-14	677	0	0	0
66	SLE RA 14	14	-14	686	0	0	0
66	SLE RA 15	14	-14	686	0	0	0
66	SLE RA 16	14	-14	683	0	0	0
66	SLE RA 17	14	-14	683	0	0	0
66	SLE RA 18	14	-15	694	0	0	0
66	SLE RA 19	14	-14	694	0	0	0
66	SLE RA 20	14	-14	700	0	0	0
66	SLE RA 21	14	-14	700	0	0	0
66	SLE FR 1	14	-14	620	0	0	0
66	SLE FR 2	14	-14	620	0	0	0
66	SLE FR 3	14	-14	622	0	0	0
66	SLE FR 4	14	-14	642	0	0	0
66	SLE FR 5	14	-14	644	0	0	0
66	SLE FR 6	14	-14	657	0	0	0
66	SLE QP 1	14	-14	620	0	0	0
66	SLE QP 2	14	-14	642	0	0	0
66	SLD 1	51	-7	652	0	0	0
66	SLD 2	52	-7	652	0	0	0
66	SLD 3	50	-17	658	0	0	0
66	SLD 4	51	-16	658	0	0	0
66	SLD 5	26	2	636	0	0	0
66	SLD 6	27	3	637	0	0	0
66	SLD 7	23	-30	655	0	0	0
66	SLD 8	24	-29	656	0	0	0
66	SLD 9	4	1	629	0	0	0
66	SLD 10	4	2	629	0	0	0
66	SLD 11	0	-31	648	0	0	0
66	SLD 12	1	-31	648	0	0	0
66	SLD 13	-24	-12	626	0	0	0
66	SLD 14	-23	-11	627	0	0	0
66	SLD 15	-25	-22	632	0	0	0
66	SLD 16	-24	-21	632	0	0	0
66	SLV 1	101	2	665	0	0	0
66	SLV 2	104	4	665	0	0	0
66	SLV 3	99	-21	679	0	0	0
66	SLV 4	102	-19	680	0	0	0
66	SLV 5	43	26	627	0	0	0
66	SLV 6	45	27	628	0	0	0
66	SLV 7	35	-52	674	0	0	0
66	SLV 8	37	-51	675	0	0	0
66	SLV 9	-10	23	609	0	0	0
66	SLV 10	-8	24	610	0	0	0
66	SLV 11	-18	-55	656	0	0	0
66	SLV 12	-16	-54	657	0	0	0
66	SLV 13	-75	-9	605	0	0	0
66	SLV 14	-72	-7	606	0	0	0
66	SLV 15	-77	-32	619	0	0	0
66	SLV 16	-74	-30	620	0	0	0
67	SLU 1	16	-10	723	0	0	0
67	SLU 2	16	-9	723	0	0	0
67	SLU 3	16	-10	739	0	0	0
67	SLU 4	16	-9	738	0	0	0
67	SLU 5	16	-9	732	0	0	0
67	SLU 6	16	-9	748	0	0	0
67	SLU 7	16	-9	748	0	0	0
67	SLU 8	16	-9	743	0	0	0
67	SLU 9	16	-9	742	0	0	0
67	SLU 10	16	-10	816	0	0	0
67	SLU 11	16	-10	832	0	0	0
67	SLU 12	16	-10	832	0	0	0
67	SLU 13	16	-9	826	0	0	0
67	SLU 14	16	-10	842	0	0	0
67	SLU 15	16	-9	841	0	0	0
67	SLU 16	16	-10	836	0	0	0
67	SLU 17	16	-9	836	0	0	0
67	SLU 18	16	-11	856	0	0	0
67	SLU 19	16	-10	856	0	0	0
67	SLU 20	16	-11	866	0	0	0
67	SLU 21	16	-10	866	0	0	0
67	SLU 22	17	-8	830	0	0	0
67	SLU 23	17	-7	829	0	0	0
67	SLU 24	18	-8	845	0	0	0
67	SLU 25	18	-7	845	0	0	0
67	SLU 26	18	-7	839	0	0	0
67	SLU 27	18	-7	855	0	0	0
67	SLU 28	18	-7	854	0	0	0
67	SLU 29	18	-8	849	0	0	0
67	SLU 30	18	-7	849	0	0	0
67	SLU 31	18	-8	922	0	0	0
67	SLU 32	18	-8	938	0	0	0
67	SLU 33	18	-8	938	0	0	0
67	SLU 34	18	-7	932	0	0	0
67	SLU 35	18	-8	948	0	0	0
67	SLU 36	18	-7	948	0	0	0
67	SLU 37	18	-8	942	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
67	SLU 38	18	-7	942	0	0	0
67	SLU 39	18	-9	963	0	0	0
67	SLU 40	18	-9	963	0	0	0
67	SLU 41	18	-9	973	0	0	0
67	SLU 42	18	-8	972	0	0	0
67	SLU 43	20	-14	904	0	0	0
67	SLU 44	20	-13	903	0	0	0
67	SLU 45	20	-14	919	0	0	0
67	SLU 46	20	-13	919	0	0	0
67	SLU 47	20	-13	913	0	0	0
67	SLU 48	20	-13	929	0	0	0
67	SLU 49	20	-13	928	0	0	0
67	SLU 50	20	-13	923	0	0	0
67	SLU 51	20	-13	923	0	0	0
67	SLU 52	20	-14	996	0	0	0
67	SLU 53	20	-14	1012	0	0	0
67	SLU 54	20	-13	1012	0	0	0
67	SLU 55	20	-13	1006	0	0	0
67	SLU 56	20	-14	1022	0	0	0
67	SLU 57	21	-13	1022	0	0	0
67	SLU 58	20	-14	1016	0	0	0
67	SLU 59	20	-13	1016	0	0	0
67	SLU 60	20	-15	1037	0	0	0
67	SLU 61	20	-14	1037	0	0	0
67	SLU 62	20	-14	1047	0	0	0
67	SLU 63	20	-14	1046	0	0	0
67	SLU 64	22	-12	1010	0	0	0
67	SLU 65	22	-11	1010	0	0	0
67	SLU 66	22	-12	1025	0	0	0
67	SLU 67	22	-11	1025	0	0	0
67	SLU 68	22	-11	1019	0	0	0
67	SLU 69	22	-11	1035	0	0	0
67	SLU 70	22	-11	1035	0	0	0
67	SLU 71	22	-11	1029	0	0	0
67	SLU 72	22	-11	1029	0	0	0
67	SLU 73	22	-12	1103	0	0	0
67	SLU 74	22	-12	1119	0	0	0
67	SLU 75	22	-12	1118	0	0	0
67	SLU 76	22	-11	1113	0	0	0
67	SLU 77	22	-12	1128	0	0	0
67	SLU 78	22	-11	1128	0	0	0
67	SLU 79	22	-12	1123	0	0	0
67	SLU 80	22	-11	1122	0	0	0
67	SLU 81	22	-13	1143	0	0	0
67	SLU 82	22	-12	1143	0	0	0
67	SLU 83	22	-12	1153	0	0	0
67	SLU 84	22	-12	1153	0	0	0
67	SLE RA 1	16	-10	754	0	0	0
67	SLE RA 2	16	-9	753	0	0	0
67	SLE RA 3	16	-9	764	0	0	0
67	SLE RA 4	16	-9	764	0	0	0
67	SLE RA 5	16	-9	760	0	0	0
67	SLE RA 6	16	-9	770	0	0	0
67	SLE RA 7	16	-9	770	0	0	0
67	SLE RA 8	16	-9	767	0	0	0
67	SLE RA 9	16	-9	766	0	0	0
67	SLE RA 10	16	-9	815	0	0	0
67	SLE RA 11	17	-10	826	0	0	0
67	SLE RA 12	17	-9	826	0	0	0
67	SLE RA 13	16	-9	822	0	0	0
67	SLE RA 14	17	-9	833	0	0	0
67	SLE RA 15	17	-9	832	0	0	0
67	SLE RA 16	16	-10	829	0	0	0
67	SLE RA 17	16	-9	829	0	0	0
67	SLE RA 18	16	-10	842	0	0	0
67	SLE RA 19	16	-10	842	0	0	0
67	SLE RA 20	16	-10	849	0	0	0
67	SLE RA 21	16	-10	849	0	0	0
67	SLE FR 1	16	-10	754	0	0	0
67	SLE FR 2	16	-10	754	0	0	0
67	SLE FR 3	16	-10	756	0	0	0
67	SLE FR 4	16	-10	780	0	0	0
67	SLE FR 5	16	-10	783	0	0	0
67	SLE FR 6	16	-10	798	0	0	0
67	SLE QP 1	16	-10	754	0	0	0
67	SLE QP 2	16	-10	780	0	0	0
67	SLD 1	61	-7	764	0	0	0
67	SLD 2	63	-3	764	0	0	0
67	SLD 3	60	-18	771	0	0	0
67	SLD 4	61	-15	771	0	0	0
67	SLD 5	31	8	763	0	0	0
67	SLD 6	32	10	763	0	0	0
67	SLD 7	27	-31	790	0	0	0
67	SLD 8	28	-29	790	0	0	0
67	SLD 9	4	9	771	0	0	0
67	SLD 10	5	11	771	0	0	0
67	SLD 11	0	-30	797	0	0	0
67	SLD 12	1	-28	797	0	0	0
67	SLD 13	-29	-5	789	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
67	SLD 14	-27	-1	789	0	0	0
67	SLD 15	-30	-17	797	0	0	0
67	SLD 16	-28	-13	797	0	0	0
67	SLV 1	121	-2	741	0	0	0
67	SLV 2	125	6	741	0	0	0
67	SLV 3	118	-30	760	0	0	0
67	SLV 4	122	-22	760	0	0	0
67	SLV 5	51	34	739	0	0	0
67	SLV 6	54	40	739	0	0	0
67	SLV 7	42	-61	804	0	0	0
67	SLV 8	44	-55	804	0	0	0
67	SLV 9	-12	35	757	0	0	0
67	SLV 10	-10	41	757	0	0	0
67	SLV 11	-21	-59	822	0	0	0
67	SLV 12	-19	-54	822	0	0	0
67	SLV 13	-89	2	800	0	0	0
67	SLV 14	-86	10	800	0	0	0
67	SLV 15	-92	-26	820	0	0	0
67	SLV 16	-88	-18	820	0	0	0
69	SLU 1	8	-3	364	0	0	0
69	SLU 2	8	-2	363	0	0	0
69	SLU 3	8	-3	371	0	0	0
69	SLU 4	8	-2	371	0	0	0
69	SLU 5	8	-2	368	0	0	0
69	SLU 6	8	-2	376	0	0	0
69	SLU 7	8	-2	376	0	0	0
69	SLU 8	8	-2	373	0	0	0
69	SLU 9	8	-2	373	0	0	0
69	SLU 10	8	-2	409	0	0	0
69	SLU 11	8	-2	417	0	0	0
69	SLU 12	8	-2	417	0	0	0
69	SLU 13	8	-2	414	0	0	0
69	SLU 14	8	-2	422	0	0	0
69	SLU 15	8	-2	422	0	0	0
69	SLU 16	8	-2	419	0	0	0
69	SLU 17	8	-2	419	0	0	0
69	SLU 18	8	-3	429	0	0	0
69	SLU 19	8	-2	429	0	0	0
69	SLU 20	8	-3	434	0	0	0
69	SLU 21	8	-2	434	0	0	0
69	SLU 22	8	-2	417	0	0	0
69	SLU 23	8	-1	416	0	0	0
69	SLU 24	9	-1	425	0	0	0
69	SLU 25	9	-1	424	0	0	0
69	SLU 26	9	-1	421	0	0	0
69	SLU 27	9	-1	429	0	0	0
69	SLU 28	9	-1	429	0	0	0
69	SLU 29	9	-1	426	0	0	0
69	SLU 30	9	-1	426	0	0	0
69	SLU 31	9	-1	463	0	0	0
69	SLU 32	9	-1	471	0	0	0
69	SLU 33	9	-1	470	0	0	0
69	SLU 34	9	-1	467	0	0	0
69	SLU 35	9	-1	475	0	0	0
69	SLU 36	9	-1	475	0	0	0
69	SLU 37	9	-1	473	0	0	0
69	SLU 38	9	-1	472	0	0	0
69	SLU 39	9	-2	483	0	0	0
69	SLU 40	9	-1	482	0	0	0
69	SLU 41	9	-1	487	0	0	0
69	SLU 42	9	-1	487	0	0	0
69	SLU 43	10	-4	454	0	0	0
69	SLU 44	10	-4	454	0	0	0
69	SLU 45	10	-4	462	0	0	0
69	SLU 46	10	-3	462	0	0	0
69	SLU 47	10	-3	459	0	0	0
69	SLU 48	10	-4	467	0	0	0
69	SLU 49	10	-3	467	0	0	0
69	SLU 50	10	-4	464	0	0	0
69	SLU 51	10	-3	464	0	0	0
69	SLU 52	10	-4	500	0	0	0
69	SLU 53	10	-4	508	0	0	0
69	SLU 54	10	-3	508	0	0	0
69	SLU 55	10	-3	505	0	0	0
69	SLU 56	10	-3	513	0	0	0
69	SLU 57	10	-3	513	0	0	0
69	SLU 58	10	-4	510	0	0	0
69	SLU 59	10	-3	510	0	0	0
69	SLU 60	10	-4	520	0	0	0
69	SLU 61	10	-4	520	0	0	0
69	SLU 62	10	-4	525	0	0	0
69	SLU 63	10	-3	525	0	0	0
69	SLU 64	10	-3	508	0	0	0
69	SLU 65	10	-2	507	0	0	0
69	SLU 66	11	-3	515	0	0	0
69	SLU 67	11	-2	515	0	0	0
69	SLU 68	11	-2	512	0	0	0
69	SLU 69	11	-2	520	0	0	0
69	SLU 70	11	-2	520	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
69	SLU 71	11	-2	517	0	0	0
69	SLU 72	11	-2	517	0	0	0
69	SLU 73	11	-2	553	0	0	0
69	SLU 74	11	-3	561	0	0	0
69	SLU 75	11	-2	561	0	0	0
69	SLU 76	11	-2	558	0	0	0
69	SLU 77	11	-2	566	0	0	0
69	SLU 78	11	-2	566	0	0	0
69	SLU 79	11	-2	563	0	0	0
69	SLU 80	11	-2	563	0	0	0
69	SLU 81	11	-3	573	0	0	0
69	SLU 82	11	-2	573	0	0	0
69	SLU 83	11	-3	578	0	0	0
69	SLU 84	11	-2	578	0	0	0
69	SLE RA 1	8	-2	379	0	0	0
69	SLE RA 2	8	-2	378	0	0	0
69	SLE RA 3	8	-2	384	0	0	0
69	SLE RA 4	8	-2	384	0	0	0
69	SLE RA 5	8	-2	382	0	0	0
69	SLE RA 6	8	-2	387	0	0	0
69	SLE RA 7	8	-2	387	0	0	0
69	SLE RA 8	8	-2	385	0	0	0
69	SLE RA 9	8	-2	385	0	0	0
69	SLE RA 10	8	-2	409	0	0	0
69	SLE RA 11	8	-2	415	0	0	0
69	SLE RA 12	8	-2	414	0	0	0
69	SLE RA 13	8	-2	412	0	0	0
69	SLE RA 14	8	-2	418	0	0	0
69	SLE RA 15	8	-2	418	0	0	0
69	SLE RA 16	8	-2	416	0	0	0
69	SLE RA 17	8	-2	416	0	0	0
69	SLE RA 18	8	-2	423	0	0	0
69	SLE RA 19	8	-2	422	0	0	0
69	SLE RA 20	8	-2	426	0	0	0
69	SLE RA 21	8	-2	426	0	0	0
69	SLE FR 1	8	-2	379	0	0	0
69	SLE FR 2	8	-2	379	0	0	0
69	SLE FR 3	8	-2	380	0	0	0
69	SLE FR 4	8	-2	392	0	0	0
69	SLE FR 5	8	-2	393	0	0	0
69	SLE FR 6	8	-2	401	0	0	0
69	SLE QP 1	8	-2	379	0	0	0
69	SLE QP 2	8	-2	392	0	0	0
69	SLD 1	30	-2	372	0	0	0
69	SLD 2	31	1	372	0	0	0
69	SLD 3	30	-7	378	0	0	0
69	SLD 4	30	-5	378	0	0	0
69	SLD 5	15	6	377	0	0	0
69	SLD 6	16	8	377	0	0	0
69	SLD 7	13	-13	396	0	0	0
69	SLD 8	14	-12	396	0	0	0
69	SLD 9	2	7	388	0	0	0
69	SLD 10	2	9	387	0	0	0
69	SLD 11	0	-13	406	0	0	0
69	SLD 12	0	-11	406	0	0	0
69	SLD 13	-15	0	406	0	0	0
69	SLD 14	-14	3	406	0	0	0
69	SLD 15	-15	-6	412	0	0	0
69	SLD 16	-14	-3	411	0	0	0
69	SLV 1	60	0	346	0	0	0
69	SLV 2	62	6	345	0	0	0
69	SLV 3	59	-15	360	0	0	0
69	SLV 4	60	-8	360	0	0	0
69	SLV 5	25	19	357	0	0	0
69	SLV 6	26	23	356	0	0	0
69	SLV 7	21	-29	404	0	0	0
69	SLV 8	22	-25	404	0	0	0
69	SLV 9	-6	20	380	0	0	0
69	SLV 10	-5	24	380	0	0	0
69	SLV 11	-11	-28	427	0	0	0
69	SLV 12	-10	-24	427	0	0	0
69	SLV 13	-45	3	424	0	0	0
69	SLV 14	-43	10	424	0	0	0
69	SLV 15	-46	-11	438	0	0	0
69	SLV 16	-44	-5	438	0	0	0
70	SLU 1	10	-5	491	0	0	0
70	SLU 2	10	-4	490	0	0	0
70	SLU 3	10	-4	501	0	0	0
70	SLU 4	10	-4	501	0	0	0
70	SLU 5	10	-4	497	0	0	0
70	SLU 6	10	-4	508	0	0	0
70	SLU 7	10	-4	508	0	0	0
70	SLU 8	10	-4	504	0	0	0
70	SLU 9	10	-4	504	0	0	0
70	SLU 10	10	-4	553	0	0	0
70	SLU 11	10	-5	564	0	0	0
70	SLU 12	10	-4	564	0	0	0
70	SLU 13	10	-4	560	0	0	0
70	SLU 14	10	-4	571	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
70	SLU 15	11	-4	570	0	0	0
70	SLU 16	10	-4	567	0	0	0
70	SLU 17	10	-4	566	0	0	0
70	SLU 18	10	-5	580	0	0	0
70	SLU 19	10	-5	580	0	0	0
70	SLU 20	10	-5	587	0	0	0
70	SLU 21	10	-4	587	0	0	0
70	SLU 22	11	-3	563	0	0	0
70	SLU 23	11	-3	563	0	0	0
70	SLU 24	11	-3	574	0	0	0
70	SLU 25	11	-3	573	0	0	0
70	SLU 26	11	-2	569	0	0	0
70	SLU 27	11	-3	580	0	0	0
70	SLU 28	11	-2	580	0	0	0
70	SLU 29	11	-3	576	0	0	0
70	SLU 30	11	-2	576	0	0	0
70	SLU 31	11	-3	625	0	0	0
70	SLU 32	11	-3	636	0	0	0
70	SLU 33	11	-3	636	0	0	0
70	SLU 34	11	-2	632	0	0	0
70	SLU 35	12	-3	643	0	0	0
70	SLU 36	12	-2	643	0	0	0
70	SLU 37	11	-3	639	0	0	0
70	SLU 38	11	-2	639	0	0	0
70	SLU 39	11	-3	653	0	0	0
70	SLU 40	11	-3	652	0	0	0
70	SLU 41	11	-3	659	0	0	0
70	SLU 42	11	-3	659	0	0	0
70	SLU 43	13	-7	613	0	0	0
70	SLU 44	13	-6	613	0	0	0
70	SLU 45	13	-6	624	0	0	0
70	SLU 46	13	-6	624	0	0	0
70	SLU 47	13	-6	619	0	0	0
70	SLU 48	13	-6	630	0	0	0
70	SLU 49	13	-6	630	0	0	0
70	SLU 50	13	-6	627	0	0	0
70	SLU 51	13	-6	626	0	0	0
70	SLU 52	13	-6	676	0	0	0
70	SLU 53	13	-7	687	0	0	0
70	SLU 54	13	-6	686	0	0	0
70	SLU 55	13	-6	682	0	0	0
70	SLU 56	13	-6	693	0	0	0
70	SLU 57	13	-6	693	0	0	0
70	SLU 58	13	-6	689	0	0	0
70	SLU 59	13	-6	689	0	0	0
70	SLU 60	13	-7	703	0	0	0
70	SLU 61	13	-7	703	0	0	0
70	SLU 62	13	-7	710	0	0	0
70	SLU 63	13	-6	709	0	0	0
70	SLU 64	14	-5	686	0	0	0
70	SLU 65	14	-5	685	0	0	0
70	SLU 66	14	-5	696	0	0	0
70	SLU 67	14	-4	696	0	0	0
70	SLU 68	14	-4	692	0	0	0
70	SLU 69	14	-5	703	0	0	0
70	SLU 70	14	-4	702	0	0	0
70	SLU 71	14	-5	699	0	0	0
70	SLU 72	14	-4	699	0	0	0
70	SLU 73	14	-5	748	0	0	0
70	SLU 74	14	-5	759	0	0	0
70	SLU 75	14	-5	759	0	0	0
70	SLU 76	14	-4	754	0	0	0
70	SLU 77	14	-5	766	0	0	0
70	SLU 78	14	-4	765	0	0	0
70	SLU 79	14	-5	762	0	0	0
70	SLU 80	14	-4	761	0	0	0
70	SLU 81	14	-5	775	0	0	0
70	SLU 82	14	-5	775	0	0	0
70	SLU 83	14	-5	782	0	0	0
70	SLU 84	14	-5	782	0	0	0
70	SLE RA 1	10	-4	512	0	0	0
70	SLE RA 2	11	-4	511	0	0	0
70	SLE RA 3	11	-4	519	0	0	0
70	SLE RA 4	11	-4	518	0	0	0
70	SLE RA 5	11	-4	516	0	0	0
70	SLE RA 6	11	-4	523	0	0	0
70	SLE RA 7	11	-4	523	0	0	0
70	SLE RA 8	11	-4	520	0	0	0
70	SLE RA 9	11	-4	520	0	0	0
70	SLE RA 10	11	-4	553	0	0	0
70	SLE RA 11	11	-4	560	0	0	0
70	SLE RA 12	11	-4	560	0	0	0
70	SLE RA 13	11	-4	557	0	0	0
70	SLE RA 14	11	-4	565	0	0	0
70	SLE RA 15	11	-4	565	0	0	0
70	SLE RA 16	11	-4	562	0	0	0
70	SLE RA 17	11	-4	562	0	0	0
70	SLE RA 18	11	-4	571	0	0	0
70	SLE RA 19	11	-4	571	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
70	SLE RA 20	11	-4	576	0	0	0
70	SLE RA 21	11	-4	575	0	0	0
70	SLE FR 1	10	-4	512	0	0	0
70	SLE FR 2	10	-4	512	0	0	0
70	SLE FR 3	10	-4	513	0	0	0
70	SLE FR 4	11	-4	529	0	0	0
70	SLE FR 5	11	-4	531	0	0	0
70	SLE FR 6	11	-4	541	0	0	0
70	SLE QP 1	10	-4	512	0	0	0
70	SLE QP 2	10	-4	529	0	0	0
70	SLD 1	41	-3	507	0	0	0
70	SLD 2	42	0	507	0	0	0
70	SLD 3	40	-11	516	0	0	0
70	SLD 4	41	-8	516	0	0	0
70	SLD 5	21	8	509	0	0	0
70	SLD 6	21	10	509	0	0	0
70	SLD 7	18	-19	539	0	0	0
70	SLD 8	19	-17	539	0	0	0
70	SLD 9	2	8	520	0	0	0
70	SLD 10	3	10	520	0	0	0
70	SLD 11	0	-19	550	0	0	0
70	SLD 12	0	-16	550	0	0	0
70	SLD 13	-20	-1	543	0	0	0
70	SLD 14	-19	2	543	0	0	0
70	SLD 15	-21	-9	552	0	0	0
70	SLD 16	-20	-6	552	0	0	0
70	SLV 1	82	0	477	0	0	0
70	SLV 2	84	7	476	0	0	0
70	SLV 3	80	-20	499	0	0	0
70	SLV 4	82	-12	499	0	0	0
70	SLV 5	34	25	480	0	0	0
70	SLV 6	36	30	480	0	0	0
70	SLV 7	28	-40	554	0	0	0
70	SLV 8	30	-35	554	0	0	0
70	SLV 9	-9	26	505	0	0	0
70	SLV 10	-7	31	505	0	0	0
70	SLV 11	-15	-39	579	0	0	0
70	SLV 12	-13	-34	579	0	0	0
70	SLV 13	-61	3	560	0	0	0
70	SLV 14	-59	11	560	0	0	0
70	SLV 15	-63	-16	583	0	0	0
70	SLV 16	-61	-9	582	0	0	0
71	SLU 1	10	-5	467	-45.46	0	0.97
71	SLU 2	10	-5	467	-45.43	0	0.98
71	SLU 3	10	-5	477	-46.43	0	0.99
71	SLU 4	10	-5	477	-46.41	0	0.99
71	SLU 5	10	-4	473	-46.03	0	0.98
71	SLU 6	10	-5	484	-47.04	0	1
71	SLU 7	10	-4	483	-47.01	0	1
71	SLU 8	10	-5	480	-46.67	0	0.99
71	SLU 9	10	-4	480	-46.65	0	0.99
71	SLU 10	10	-5	527	-51.24	0	0.99
71	SLU 11	10	-5	537	-52.25	0	1
71	SLU 12	10	-5	537	-52.23	0	1.01
71	SLU 13	10	-5	533	-51.85	0	1
71	SLU 14	10	-5	543	-52.85	0	1.01
71	SLU 15	10	-4	543	-52.83	0	1.01
71	SLU 16	10	-5	540	-52.49	0	1
71	SLU 17	10	-4	539	-52.47	0	1
71	SLU 18	10	-6	553	-53.77	0	0.99
71	SLU 19	10	-5	553	-53.75	0	0.99
71	SLU 20	10	-5	559	-54.38	0	1
71	SLU 21	10	-5	559	-54.36	0	1
71	SLU 22	11	-4	536	-52.14	0	1.07
71	SLU 23	11	-3	536	-52.11	0	1.08
71	SLU 24	11	-4	546	-53.11	0	1.09
71	SLU 25	11	-3	546	-53.09	0	1.09
71	SLU 26	11	-3	542	-52.71	0	1.08
71	SLU 27	11	-3	552	-53.72	0	1.09
71	SLU 28	11	-3	552	-53.69	0	1.1
71	SLU 29	11	-3	548	-53.36	0	1.08
71	SLU 30	11	-3	548	-53.33	0	1.09
71	SLU 31	11	-3	595	-57.93	0	1.09
71	SLU 32	11	-4	606	-58.93	0	1.1
71	SLU 33	11	-3	606	-58.91	0	1.1
71	SLU 34	11	-3	602	-58.53	0	1.1
71	SLU 35	11	-3	612	-59.54	0	1.11
71	SLU 36	11	-3	612	-59.51	0	1.11
71	SLU 37	11	-3	608	-59.17	0	1.1
71	SLU 38	11	-3	608	-59.15	0	1.1
71	SLU 39	11	-4	621	-60.45	0	1.09
71	SLU 40	11	-4	621	-60.43	0	1.09
71	SLU 41	11	-4	628	-61.06	0	1.1
71	SLU 42	11	-3	627	-61.04	0	1.1
71	SLU 43	13	-7	584	-56.81	0	1.23
71	SLU 44	13	-7	584	-56.77	0	1.24
71	SLU 45	13	-7	594	-57.78	0	1.25
71	SLU 46	13	-7	594	-57.75	0	1.25
71	SLU 47	13	-6	590	-57.38	0	1.24

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
71	SLU 48	13	-7	600	-58.38	0	1.25
71	SLU 49	13	-6	600	-58.36	0	1.26
71	SLU 50	13	-7	596	-58.02	0	1.24
71	SLU 51	13	-6	596	-58	0	1.25
71	SLU 52	13	-7	643	-62.59	0	1.25
71	SLU 53	13	-7	654	-63.6	0	1.26
71	SLU 54	13	-7	654	-63.57	0	1.26
71	SLU 55	13	-7	650	-63.2	0	1.26
71	SLU 56	13	-7	660	-64.2	0	1.27
71	SLU 57	13	-6	660	-64.18	0	1.27
71	SLU 58	13	-7	656	-63.84	0	1.26
71	SLU 59	13	-7	656	-63.82	0	1.26
71	SLU 60	13	-8	669	-65.12	0	1.25
71	SLU 61	13	-7	669	-65.1	0	1.25
71	SLU 62	13	-7	676	-65.73	0	1.26
71	SLU 63	13	-7	675	-65.71	0	1.26
71	SLU 64	14	-6	653	-63.49	0	1.33
71	SLU 65	14	-5	652	-63.45	0	1.34
71	SLU 66	14	-6	663	-64.46	0	1.35
71	SLU 67	14	-5	662	-64.44	0	1.35
71	SLU 68	14	-5	659	-64.06	0	1.34
71	SLU 69	14	-5	669	-65.06	0	1.35
71	SLU 70	14	-5	669	-65.04	0	1.36
71	SLU 71	14	-5	665	-64.7	0	1.34
71	SLU 72	14	-5	665	-64.68	0	1.35
71	SLU 73	14	-6	712	-69.27	0	1.35
71	SLU 74	14	-6	722	-70.28	0	1.36
71	SLU 75	14	-5	722	-70.25	0	1.36
71	SLU 76	14	-5	718	-69.88	0	1.35
71	SLU 77	14	-5	729	-70.88	0	1.37
71	SLU 78	14	-5	728	-70.86	0	1.37
71	SLU 79	14	-6	725	-70.52	0	1.35
71	SLU 80	14	-5	725	-70.5	0	1.36
71	SLU 81	14	-6	738	-71.8	0	1.35
71	SLU 82	14	-6	738	-71.78	0	1.35
71	SLU 83	14	-6	744	-72.41	0	1.35
71	SLU 84	14	-6	744	-72.39	0	1.36
71	SLE RA 1	10	-5	487	-47.37	0	1
71	SLE RA 2	10	-4	487	-47.35	0	1.01
71	SLE RA 3	10	-5	494	-48.01	0	1.01
71	SLE RA 4	10	-4	493	-48	0	1.02
71	SLE RA 5	10	-4	491	-47.75	0	1.01
71	SLE RA 6	10	-4	498	-48.42	0	1.02
71	SLE RA 7	10	-4	498	-48.4	0	1.02
71	SLE RA 8	10	-5	495	-48.18	0	1.01
71	SLE RA 9	10	-4	495	-48.16	0	1.01
71	SLE RA 10	10	-5	527	-51.23	0	1.01
71	SLE RA 11	11	-5	533	-51.89	0	1.02
71	SLE RA 12	11	-5	533	-51.88	0	1.02
71	SLE RA 13	10	-4	531	-51.63	0	1.02
71	SLE RA 14	11	-5	538	-52.3	0	1.02
71	SLE RA 15	11	-4	537	-52.28	0	1.03
71	SLE RA 16	10	-5	535	-52.06	0	1.02
71	SLE RA 17	10	-4	535	-52.04	0	1.02
71	SLE RA 18	10	-5	544	-52.91	0	1.01
71	SLE RA 19	10	-5	544	-52.9	0	1.02
71	SLE RA 20	10	-5	548	-53.32	0	1.02
71	SLE RA 21	10	-5	548	-53.3	0	1.02
71	SLE FR 1	10	-5	487	-47.37	0	1
71	SLE FR 2	10	-5	487	-47.36	0	1
71	SLE FR 3	10	-5	489	-47.53	0	1
71	SLE FR 4	10	-5	504	-49.03	0	1.01
71	SLE FR 5	10	-5	506	-49.19	0	1.01
71	SLE FR 6	10	-5	515	-50.14	0	1.01
71	SLE QP 1	10	-5	487	-47.37	0	1
71	SLE QP 2	10	-5	504	-49.03	0	1.01
71	SLD 1	39	-3	487	-47.39	0	3.81
71	SLD 2	40	0	487	-47.38	0	3.9
71	SLD 3	38	-11	493	-47.96	0	3.74
71	SLD 4	39	-8	493	-47.95	0	3.83
71	SLD 5	20	7	490	-47.67	0	1.93
71	SLD 6	21	8	490	-47.67	0	1.99
71	SLD 7	18	-19	510	-49.58	0	1.7
71	SLD 8	18	-17	510	-49.57	0	1.76
71	SLD 9	3	7	498	-48.49	0	0.25
71	SLD 10	3	9	498	-48.48	0	0.31
71	SLD 11	0	-18	518	-50.4	0	0.02
71	SLD 12	1	-17	518	-50.39	0	0.08
71	SLD 13	-19	-2	515	-50.11	0	-1.81
71	SLD 14	-18	1	515	-50.1	0	-1.72
71	SLD 15	-19	-10	521	-50.69	0	-1.88
71	SLD 16	-18	-7	521	-50.68	0	-1.79
71	SLV 1	78	0	464	-45.14	0	7.56
71	SLV 2	80	6	464	-45.12	0	7.77
71	SLV 3	76	-19	479	-46.57	0	7.39
71	SLV 4	78	-12	478	-46.55	0	7.6
71	SLV 5	33	23	470	-45.7	0	3.19
71	SLV 6	34	28	470	-45.69	0	3.33
71	SLV 7	27	-38	519	-50.46	0	2.62

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
71	SLV 8	28	-34	519	-50.45	0	2.77
71	SLV 9	-8	24	489	-47.62	0	-0.75
71	SLV 10	-6	28	489	-47.6	0	-0.61
71	SLV 11	-14	-37	538	-52.38	0	-1.32
71	SLV 12	-12	-33	538	-52.36	0	-1.18
71	SLV 13	-57	2	530	-51.52	0	-5.59
71	SLV 14	-55	9	529	-51.5	0	-5.37
71	SLV 15	-59	-16	544	-52.95	0	-5.76
71	SLV 16	-57	-10	544	-52.92	0	-5.54
71	CRTFP Ux+	0	0	0	0	0	0
71	CRTFP Ux-	0	0	0	0	0	0
72	SLU 1	2	-1	118	0	0	0
72	SLU 2	2	-1	118	0	0	0
72	SLU 3	2	-1	121	0	0	0
72	SLU 4	2	-1	120	0	0	0
72	SLU 5	2	-1	119	0	0	0
72	SLU 6	2	-1	122	0	0	0
72	SLU 7	2	-1	122	0	0	0
72	SLU 8	2	-1	121	0	0	0
72	SLU 9	2	-1	121	0	0	0
72	SLU 10	2	-1	133	0	0	0
72	SLU 11	2	-1	136	0	0	0
72	SLU 12	2	-1	136	0	0	0
72	SLU 13	2	-1	135	0	0	0
72	SLU 14	2	-1	137	0	0	0
72	SLU 15	3	-1	137	0	0	0
72	SLU 16	2	-1	136	0	0	0
72	SLU 17	2	-1	136	0	0	0
72	SLU 18	2	-1	140	0	0	0
72	SLU 19	2	-1	139	0	0	0
72	SLU 20	2	-1	141	0	0	0
72	SLU 21	2	-1	141	0	0	0
72	SLU 22	3	-1	135	0	0	0
72	SLU 23	3	-1	135	0	0	0
72	SLU 24	3	-1	138	0	0	0
72	SLU 25	3	-1	138	0	0	0
72	SLU 26	3	-1	137	0	0	0
72	SLU 27	3	-1	140	0	0	0
72	SLU 28	3	-1	139	0	0	0
72	SLU 29	3	-1	139	0	0	0
72	SLU 30	3	-1	138	0	0	0
72	SLU 31	3	-1	150	0	0	0
72	SLU 32	3	-1	153	0	0	0
72	SLU 33	3	-1	153	0	0	0
72	SLU 34	3	-1	152	0	0	0
72	SLU 35	3	-1	155	0	0	0
72	SLU 36	3	-1	155	0	0	0
72	SLU 37	3	-1	154	0	0	0
72	SLU 38	3	-1	154	0	0	0
72	SLU 39	3	-1	157	0	0	0
72	SLU 40	3	-1	157	0	0	0
72	SLU 41	3	-1	159	0	0	0
72	SLU 42	3	-1	158	0	0	0
72	SLU 43	3	-2	147	0	0	0
72	SLU 44	3	-2	147	0	0	0
72	SLU 45	3	-2	150	0	0	0
72	SLU 46	3	-2	150	0	0	0
72	SLU 47	3	-2	149	0	0	0
72	SLU 48	3	-2	152	0	0	0
72	SLU 49	3	-1	151	0	0	0
72	SLU 50	3	-2	151	0	0	0
72	SLU 51	3	-2	150	0	0	0
72	SLU 52	3	-2	162	0	0	0
72	SLU 53	3	-2	165	0	0	0
72	SLU 54	3	-2	165	0	0	0
72	SLU 55	3	-2	164	0	0	0
72	SLU 56	3	-2	167	0	0	0
72	SLU 57	3	-2	167	0	0	0
72	SLU 58	3	-2	166	0	0	0
72	SLU 59	3	-2	166	0	0	0
72	SLU 60	3	-2	169	0	0	0
72	SLU 61	3	-2	169	0	0	0
72	SLU 62	3	-2	171	0	0	0
72	SLU 63	3	-2	170	0	0	0
72	SLU 64	3	-1	165	0	0	0
72	SLU 65	3	-1	165	0	0	0
72	SLU 66	3	-1	167	0	0	0
72	SLU 67	3	-1	167	0	0	0
72	SLU 68	3	-1	166	0	0	0
72	SLU 69	3	-1	169	0	0	0
72	SLU 70	3	-1	169	0	0	0
72	SLU 71	3	-1	168	0	0	0
72	SLU 72	3	-1	168	0	0	0
72	SLU 73	3	-1	180	0	0	0
72	SLU 74	3	-1	182	0	0	0
72	SLU 75	3	-1	182	0	0	0
72	SLU 76	3	-1	181	0	0	0
72	SLU 77	3	-1	184	0	0	0
72	SLU 78	3	-1	184	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
72	SLU 79	3	-1	183	0	0	0
72	SLU 80	3	-1	183	0	0	0
72	SLU 81	3	-1	186	0	0	0
72	SLU 82	3	-1	186	0	0	0
72	SLU 83	3	-1	188	0	0	0
72	SLU 84	3	-1	188	0	0	0
72	SLE RA 1	2	-1	123	0	0	0
72	SLE RA 2	3	-1	123	0	0	0
72	SLE RA 3	3	-1	125	0	0	0
72	SLE RA 4	3	-1	125	0	0	0
72	SLE RA 5	3	-1	124	0	0	0
72	SLE RA 6	3	-1	126	0	0	0
72	SLE RA 7	3	-1	126	0	0	0
72	SLE RA 8	3	-1	125	0	0	0
72	SLE RA 9	3	-1	125	0	0	0
72	SLE RA 10	3	-1	133	0	0	0
72	SLE RA 11	3	-1	135	0	0	0
72	SLE RA 12	3	-1	135	0	0	0
72	SLE RA 13	3	-1	134	0	0	0
72	SLE RA 14	3	-1	136	0	0	0
72	SLE RA 15	3	-1	136	0	0	0
72	SLE RA 16	3	-1	135	0	0	0
72	SLE RA 17	3	-1	135	0	0	0
72	SLE RA 18	3	-1	137	0	0	0
72	SLE RA 19	3	-1	137	0	0	0
72	SLE RA 20	3	-1	138	0	0	0
72	SLE RA 21	3	-1	138	0	0	0
72	SLE FR 1	2	-1	123	0	0	0
72	SLE FR 2	2	-1	123	0	0	0
72	SLE FR 3	2	-1	123	0	0	0
72	SLE FR 4	3	-1	127	0	0	0
72	SLE FR 5	3	-1	128	0	0	0
72	SLE FR 6	3	-1	130	0	0	0
72	SLE QP 1	2	-1	123	0	0	0
72	SLE QP 2	2	-1	127	0	0	0
72	SLD 1	10	-1	122	0	0	0
72	SLD 2	10	0	122	0	0	0
72	SLD 3	10	-3	125	0	0	0
72	SLD 4	10	-2	125	0	0	0
72	SLD 5	5	2	122	0	0	0
72	SLD 6	5	2	122	0	0	0
72	SLD 7	4	-5	130	0	0	0
72	SLD 8	4	-4	130	0	0	0
72	SLD 9	1	2	125	0	0	0
72	SLD 10	1	2	125	0	0	0
72	SLD 11	0	-5	132	0	0	0
72	SLD 12	0	-4	132	0	0	0
72	SLD 13	-5	0	130	0	0	0
72	SLD 14	-5	0	130	0	0	0
72	SLD 15	-5	-2	132	0	0	0
72	SLD 16	-5	-2	132	0	0	0
72	SLV 1	20	0	115	0	0	0
72	SLV 2	20	2	115	0	0	0
72	SLV 3	19	-5	121	0	0	0
72	SLV 4	20	-3	121	0	0	0
72	SLV 5	8	6	115	0	0	0
72	SLV 6	9	7	115	0	0	0
72	SLV 7	7	-10	134	0	0	0
72	SLV 8	7	-8	134	0	0	0
72	SLV 9	-2	6	120	0	0	0
72	SLV 10	-2	7	120	0	0	0
72	SLV 11	-4	-9	140	0	0	0
72	SLV 12	-3	-8	140	0	0	0
72	SLV 13	-15	1	134	0	0	0
72	SLV 14	-14	2	133	0	0	0
72	SLV 15	-15	-4	139	0	0	0
72	SLV 16	-15	-2	139	0	0	0
73	SLU 1	12	-11	623	0	0	0
73	SLU 2	13	-10	622	0	0	0
73	SLU 3	13	-10	636	0	0	0
73	SLU 4	13	-10	635	0	0	0
73	SLU 5	13	-10	630	0	0	0
73	SLU 6	13	-10	645	0	0	0
73	SLU 7	13	-9	644	0	0	0
73	SLU 8	13	-10	640	0	0	0
73	SLU 9	13	-10	639	0	0	0
73	SLU 10	13	-11	703	0	0	0
73	SLU 11	13	-11	717	0	0	0
73	SLU 12	13	-11	717	0	0	0
73	SLU 13	13	-10	711	0	0	0
73	SLU 14	13	-11	726	0	0	0
73	SLU 15	13	-10	725	0	0	0
73	SLU 16	13	-11	721	0	0	0
73	SLU 17	13	-10	720	0	0	0
73	SLU 18	13	-12	739	0	0	0
73	SLU 19	13	-11	738	0	0	0
73	SLU 20	13	-11	747	0	0	0
73	SLU 21	13	-11	747	0	0	0
73	SLU 22	14	-9	716	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
73	SLU 23	14	-9	714	0	0	0
73	SLU 24	14	-9	729	0	0	0
73	SLU 25	14	-8	728	0	0	0
73	SLU 26	14	-8	723	0	0	0
73	SLU 27	14	-9	738	0	0	0
73	SLU 28	14	-8	737	0	0	0
73	SLU 29	14	-9	733	0	0	0
73	SLU 30	14	-8	732	0	0	0
73	SLU 31	14	-9	796	0	0	0
73	SLU 32	14	-10	810	0	0	0
73	SLU 33	14	-9	810	0	0	0
73	SLU 34	14	-9	804	0	0	0
73	SLU 35	14	-9	819	0	0	0
73	SLU 36	14	-9	818	0	0	0
73	SLU 37	14	-9	814	0	0	0
73	SLU 38	14	-9	813	0	0	0
73	SLU 39	14	-10	832	0	0	0
73	SLU 40	14	-10	831	0	0	0
73	SLU 41	14	-10	840	0	0	0
73	SLU 42	14	-9	840	0	0	0
73	SLU 43	16	-15	778	0	0	0
73	SLU 44	16	-14	776	0	0	0
73	SLU 45	16	-14	791	0	0	0
73	SLU 46	16	-14	790	0	0	0
73	SLU 47	16	-13	785	0	0	0
73	SLU 48	16	-14	800	0	0	0
73	SLU 49	16	-13	799	0	0	0
73	SLU 50	16	-14	795	0	0	0
73	SLU 51	16	-13	794	0	0	0
73	SLU 52	16	-14	858	0	0	0
73	SLU 53	16	-15	872	0	0	0
73	SLU 54	16	-14	872	0	0	0
73	SLU 55	16	-14	866	0	0	0
73	SLU 56	16	-14	881	0	0	0
73	SLU 57	16	-14	880	0	0	0
73	SLU 58	16	-14	876	0	0	0
73	SLU 59	16	-14	875	0	0	0
73	SLU 60	16	-16	894	0	0	0
73	SLU 61	16	-15	893	0	0	0
73	SLU 62	16	-15	902	0	0	0
73	SLU 63	16	-15	902	0	0	0
73	SLU 64	17	-13	871	0	0	0
73	SLU 65	17	-12	869	0	0	0
73	SLU 66	17	-13	884	0	0	0
73	SLU 67	17	-12	883	0	0	0
73	SLU 68	17	-12	878	0	0	0
73	SLU 69	17	-12	893	0	0	0
73	SLU 70	17	-12	892	0	0	0
73	SLU 71	17	-12	888	0	0	0
73	SLU 72	17	-12	887	0	0	0
73	SLU 73	17	-13	951	0	0	0
73	SLU 74	17	-13	965	0	0	0
73	SLU 75	17	-13	965	0	0	0
73	SLU 76	17	-13	959	0	0	0
73	SLU 77	17	-13	974	0	0	0
73	SLU 78	17	-12	973	0	0	0
73	SLU 79	17	-13	969	0	0	0
73	SLU 80	17	-12	968	0	0	0
73	SLU 81	17	-14	987	0	0	0
73	SLU 82	17	-14	986	0	0	0
73	SLU 83	17	-14	995	0	0	0
73	SLU 84	17	-13	995	0	0	0
73	SLE RA 1	13	-10	649	0	0	0
73	SLE RA 2	13	-10	648	0	0	0
73	SLE RA 3	13	-10	658	0	0	0
73	SLE RA 4	13	-10	658	0	0	0
73	SLE RA 5	13	-10	654	0	0	0
73	SLE RA 6	13	-10	664	0	0	0
73	SLE RA 7	13	-10	663	0	0	0
73	SLE RA 8	13	-10	661	0	0	0
73	SLE RA 9	13	-10	660	0	0	0
73	SLE RA 10	13	-10	703	0	0	0
73	SLE RA 11	13	-11	712	0	0	0
73	SLE RA 12	13	-10	712	0	0	0
73	SLE RA 13	13	-10	708	0	0	0
73	SLE RA 14	13	-10	718	0	0	0
73	SLE RA 15	13	-10	718	0	0	0
73	SLE RA 16	13	-10	715	0	0	0
73	SLE RA 17	13	-10	714	0	0	0
73	SLE RA 18	13	-11	727	0	0	0
73	SLE RA 19	13	-11	726	0	0	0
73	SLE RA 20	13	-11	732	0	0	0
73	SLE RA 21	13	-10	732	0	0	0
73	SLE FR 1	13	-10	649	0	0	0
73	SLE FR 2	13	-10	649	0	0	0
73	SLE FR 3	13	-10	651	0	0	0
73	SLE FR 4	13	-10	672	0	0	0
73	SLE FR 5	13	-11	675	0	0	0
73	SLE FR 6	13	-11	688	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
73	SLE QP 1	13	-10	649	0	0	0
73	SLE QP 2	13	-11	672	0	0	0
73	SLD 1	52	-5	661	0	0	0
73	SLD 2	53	-3	661	0	0	0
73	SLD 3	52	-16	677	0	0	0
73	SLD 4	52	-13	677	0	0	0
73	SLD 5	26	6	644	0	0	0
73	SLD 6	26	7	644	0	0	0
73	SLD 7	23	-28	698	0	0	0
73	SLD 8	23	-26	698	0	0	0
73	SLD 9	2	5	646	0	0	0
73	SLD 10	3	7	646	0	0	0
73	SLD 11	-1	-29	700	0	0	0
73	SLD 12	0	-27	700	0	0	0
73	SLD 13	-27	-8	667	0	0	0
73	SLD 14	-26	-6	667	0	0	0
73	SLD 15	-28	-18	684	0	0	0
73	SLD 16	-27	-16	684	0	0	0
73	SLV 1	106	2	645	0	0	0
73	SLV 2	107	7	645	0	0	0
73	SLV 3	103	-23	685	0	0	0
73	SLV 4	105	-17	685	0	0	0
73	SLV 5	44	29	603	0	0	0
73	SLV 6	45	33	603	0	0	0
73	SLV 7	36	-52	738	0	0	0
73	SLV 8	38	-49	738	0	0	0
73	SLV 9	-12	28	607	0	0	0
73	SLV 10	-11	31	607	0	0	0
73	SLV 11	-19	-54	742	0	0	0
73	SLV 12	-18	-51	742	0	0	0
73	SLV 13	-80	-4	660	0	0	0
73	SLV 14	-78	1	659	0	0	0
73	SLV 15	-82	-28	700	0	0	0
73	SLV 16	-80	-23	700	0	0	0
74	SLU 1	11	-8	570	0	0	0
74	SLU 2	11	-7	569	0	0	0
74	SLU 3	11	-8	582	0	0	0
74	SLU 4	12	-7	582	0	0	0
74	SLU 5	11	-7	577	0	0	0
74	SLU 6	12	-7	590	0	0	0
74	SLU 7	12	-7	590	0	0	0
74	SLU 8	11	-7	586	0	0	0
74	SLU 9	11	-7	585	0	0	0
74	SLU 10	11	-8	643	0	0	0
74	SLU 11	12	-8	656	0	0	0
74	SLU 12	12	-8	656	0	0	0
74	SLU 13	11	-7	651	0	0	0
74	SLU 14	12	-8	664	0	0	0
74	SLU 15	12	-7	663	0	0	0
74	SLU 16	11	-8	660	0	0	0
74	SLU 17	12	-7	659	0	0	0
74	SLU 18	11	-9	676	0	0	0
74	SLU 19	11	-8	675	0	0	0
74	SLU 20	11	-8	683	0	0	0
74	SLU 21	11	-8	683	0	0	0
74	SLU 22	12	-7	655	0	0	0
74	SLU 23	13	-6	654	0	0	0
74	SLU 24	13	-6	667	0	0	0
74	SLU 25	13	-6	667	0	0	0
74	SLU 26	13	-6	662	0	0	0
74	SLU 27	13	-6	675	0	0	0
74	SLU 28	13	-5	675	0	0	0
74	SLU 29	13	-6	671	0	0	0
74	SLU 30	13	-5	670	0	0	0
74	SLU 31	13	-6	728	0	0	0
74	SLU 32	13	-7	741	0	0	0
74	SLU 33	13	-6	741	0	0	0
74	SLU 34	13	-6	736	0	0	0
74	SLU 35	13	-6	749	0	0	0
74	SLU 36	13	-6	748	0	0	0
74	SLU 37	13	-6	745	0	0	0
74	SLU 38	13	-6	744	0	0	0
74	SLU 39	12	-7	761	0	0	0
74	SLU 40	13	-7	760	0	0	0
74	SLU 41	13	-7	768	0	0	0
74	SLU 42	13	-6	768	0	0	0
74	SLU 43	14	-11	712	0	0	0
74	SLU 44	14	-10	711	0	0	0
74	SLU 45	14	-11	724	0	0	0
74	SLU 46	15	-10	724	0	0	0
74	SLU 47	14	-10	719	0	0	0
74	SLU 48	15	-10	732	0	0	0
74	SLU 49	15	-10	732	0	0	0
74	SLU 50	14	-10	728	0	0	0
74	SLU 51	14	-10	727	0	0	0
74	SLU 52	14	-11	785	0	0	0
74	SLU 53	15	-11	798	0	0	0
74	SLU 54	15	-11	798	0	0	0
74	SLU 55	14	-10	793	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
74	SLU 56	15	-11	806	0	0	0
74	SLU 57	15	-10	805	0	0	0
74	SLU 58	14	-11	801	0	0	0
74	SLU 59	15	-10	801	0	0	0
74	SLU 60	14	-12	817	0	0	0
74	SLU 61	14	-11	817	0	0	0
74	SLU 62	14	-11	825	0	0	0
74	SLU 63	14	-11	825	0	0	0
74	SLU 64	15	-10	797	0	0	0
74	SLU 65	16	-9	796	0	0	0
74	SLU 66	16	-9	809	0	0	0
74	SLU 67	16	-9	809	0	0	0
74	SLU 68	16	-9	804	0	0	0
74	SLU 69	16	-9	817	0	0	0
74	SLU 70	16	-8	816	0	0	0
74	SLU 71	16	-9	813	0	0	0
74	SLU 72	16	-8	812	0	0	0
74	SLU 73	16	-9	870	0	0	0
74	SLU 74	16	-10	883	0	0	0
74	SLU 75	16	-9	882	0	0	0
74	SLU 76	16	-9	878	0	0	0
74	SLU 77	16	-9	891	0	0	0
74	SLU 78	16	-9	890	0	0	0
74	SLU 79	16	-9	886	0	0	0
74	SLU 80	16	-9	886	0	0	0
74	SLU 81	15	-10	902	0	0	0
74	SLU 82	16	-10	902	0	0	0
74	SLU 83	16	-10	910	0	0	0
74	SLU 84	16	-9	910	0	0	0
74	SLE RA 1	12	-8	594	0	0	0
74	SLE RA 2	12	-7	594	0	0	0
74	SLE RA 3	12	-7	603	0	0	0
74	SLE RA 4	12	-7	602	0	0	0
74	SLE RA 5	12	-7	599	0	0	0
74	SLE RA 6	12	-7	608	0	0	0
74	SLE RA 7	12	-7	607	0	0	0
74	SLE RA 8	12	-7	605	0	0	0
74	SLE RA 9	12	-7	604	0	0	0
74	SLE RA 10	12	-7	643	0	0	0
74	SLE RA 11	12	-8	652	0	0	0
74	SLE RA 12	12	-7	651	0	0	0
74	SLE RA 13	12	-7	648	0	0	0
74	SLE RA 14	12	-7	657	0	0	0
74	SLE RA 15	12	-7	657	0	0	0
74	SLE RA 16	12	-8	654	0	0	0
74	SLE RA 17	12	-7	654	0	0	0
74	SLE RA 18	12	-8	665	0	0	0
74	SLE RA 19	12	-8	664	0	0	0
74	SLE RA 20	12	-8	670	0	0	0
74	SLE RA 21	12	-8	669	0	0	0
74	SLE FR 1	12	-8	594	0	0	0
74	SLE FR 2	12	-8	594	0	0	0
74	SLE FR 3	12	-8	596	0	0	0
74	SLE FR 4	12	-8	615	0	0	0
74	SLE FR 5	12	-8	618	0	0	0
74	SLE FR 6	12	-8	629	0	0	0
74	SLE QP 1	12	-8	594	0	0	0
74	SLE QP 2	12	-8	615	0	0	0
74	SLD 1	48	-5	598	0	0	0
74	SLD 2	48	-3	598	0	0	0
74	SLD 3	47	-15	613	0	0	0
74	SLD 4	48	-12	613	0	0	0
74	SLD 5	24	6	588	0	0	0
74	SLD 6	24	8	587	0	0	0
74	SLD 7	21	-24	638	0	0	0
74	SLD 8	21	-23	638	0	0	0
74	SLD 9	2	7	593	0	0	0
74	SLD 10	2	9	593	0	0	0
74	SLD 11	-1	-24	643	0	0	0
74	SLD 12	0	-22	643	0	0	0
74	SLD 13	-24	-4	618	0	0	0
74	SLD 14	-24	-1	617	0	0	0
74	SLD 15	-25	-13	633	0	0	0
74	SLD 16	-24	-10	633	0	0	0
74	SLV 1	96	-1	574	0	0	0
74	SLV 2	98	5	574	0	0	0
74	SLV 3	94	-24	612	0	0	0
74	SLV 4	96	-18	612	0	0	0
74	SLV 5	40	27	546	0	0	0
74	SLV 6	41	31	546	0	0	0
74	SLV 7	33	-48	671	0	0	0
74	SLV 8	34	-44	671	0	0	0
74	SLV 9	-11	28	560	0	0	0
74	SLV 10	-10	32	559	0	0	0
74	SLV 11	-18	-47	685	0	0	0
74	SLV 12	-16	-43	685	0	0	0
74	SLV 13	-72	2	619	0	0	0
74	SLV 14	-71	8	619	0	0	0
74	SLV 15	-74	-21	657	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
74	SLV 16	-73	-14	657	0	0	0
75	SLU 1	14	-14	688	0	0	0
75	SLU 2	14	-13	687	0	0	0
75	SLU 3	14	-14	703	0	0	0
75	SLU 4	14	-13	702	0	0	0
75	SLU 5	14	-13	696	0	0	0
75	SLU 6	14	-13	713	0	0	0
75	SLU 7	14	-13	712	0	0	0
75	SLU 8	14	-13	707	0	0	0
75	SLU 9	14	-13	706	0	0	0
75	SLU 10	14	-14	777	0	0	0
75	SLU 11	14	-15	794	0	0	0
75	SLU 12	14	-14	793	0	0	0
75	SLU 13	14	-14	787	0	0	0
75	SLU 14	14	-14	803	0	0	0
75	SLU 15	14	-14	802	0	0	0
75	SLU 16	14	-14	798	0	0	0
75	SLU 17	14	-14	797	0	0	0
75	SLU 18	14	-15	817	0	0	0
75	SLU 19	14	-15	817	0	0	0
75	SLU 20	14	-15	827	0	0	0
75	SLU 21	14	-14	826	0	0	0
75	SLU 22	15	-13	791	0	0	0
75	SLU 23	15	-12	790	0	0	0
75	SLU 24	15	-12	806	0	0	0
75	SLU 25	15	-12	805	0	0	0
75	SLU 26	15	-11	799	0	0	0
75	SLU 27	16	-12	816	0	0	0
75	SLU 28	16	-11	815	0	0	0
75	SLU 29	15	-12	810	0	0	0
75	SLU 30	15	-11	809	0	0	0
75	SLU 31	15	-13	880	0	0	0
75	SLU 32	16	-13	897	0	0	0
75	SLU 33	16	-13	896	0	0	0
75	SLU 34	15	-12	890	0	0	0
75	SLU 35	16	-13	906	0	0	0
75	SLU 36	16	-12	905	0	0	0
75	SLU 37	15	-13	901	0	0	0
75	SLU 38	15	-12	900	0	0	0
75	SLU 39	15	-14	920	0	0	0
75	SLU 40	15	-14	920	0	0	0
75	SLU 41	15	-14	930	0	0	0
75	SLU 42	15	-13	929	0	0	0
75	SLU 43	17	-19	859	0	0	0
75	SLU 44	18	-18	858	0	0	0
75	SLU 45	18	-18	874	0	0	0
75	SLU 46	18	-18	873	0	0	0
75	SLU 47	18	-17	867	0	0	0
75	SLU 48	18	-18	884	0	0	0
75	SLU 49	18	-17	883	0	0	0
75	SLU 50	18	-18	878	0	0	0
75	SLU 51	18	-17	877	0	0	0
75	SLU 52	18	-19	948	0	0	0
75	SLU 53	18	-19	965	0	0	0
75	SLU 54	18	-19	964	0	0	0
75	SLU 55	18	-18	958	0	0	0
75	SLU 56	18	-19	974	0	0	0
75	SLU 57	18	-18	973	0	0	0
75	SLU 58	18	-19	969	0	0	0
75	SLU 59	18	-18	968	0	0	0
75	SLU 60	18	-20	988	0	0	0
75	SLU 61	18	-20	988	0	0	0
75	SLU 62	18	-20	998	0	0	0
75	SLU 63	18	-19	997	0	0	0
75	SLU 64	19	-17	962	0	0	0
75	SLU 65	19	-17	961	0	0	0
75	SLU 66	19	-17	977	0	0	0
75	SLU 67	19	-16	976	0	0	0
75	SLU 68	19	-16	970	0	0	0
75	SLU 69	19	-17	987	0	0	0
75	SLU 70	19	-16	986	0	0	0
75	SLU 71	19	-17	981	0	0	0
75	SLU 72	19	-16	980	0	0	0
75	SLU 73	19	-17	1051	0	0	0
75	SLU 74	19	-18	1068	0	0	0
75	SLU 75	19	-17	1067	0	0	0
75	SLU 76	19	-17	1061	0	0	0
75	SLU 77	19	-18	1077	0	0	0
75	SLU 78	19	-17	1076	0	0	0
75	SLU 79	19	-18	1072	0	0	0
75	SLU 80	19	-17	1071	0	0	0
75	SLU 81	19	-19	1091	0	0	0
75	SLU 82	19	-18	1091	0	0	0
75	SLU 83	19	-18	1101	0	0	0
75	SLU 84	19	-18	1100	0	0	0
75	SLE RA 1	14	-14	718	0	0	0
75	SLE RA 2	14	-13	717	0	0	0
75	SLE RA 3	14	-13	727	0	0	0
75	SLE RA 4	14	-13	727	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
75	SLE RA 5	14	-13	723	0	0	0
75	SLE RA 6	14	-13	734	0	0	0
75	SLE RA 7	14	-13	733	0	0	0
75	SLE RA 8	14	-13	730	0	0	0
75	SLE RA 9	14	-13	730	0	0	0
75	SLE RA 10	14	-14	777	0	0	0
75	SLE RA 11	14	-14	788	0	0	0
75	SLE RA 12	14	-14	787	0	0	0
75	SLE RA 13	14	-13	783	0	0	0
75	SLE RA 14	14	-14	794	0	0	0
75	SLE RA 15	14	-13	794	0	0	0
75	SLE RA 16	14	-14	791	0	0	0
75	SLE RA 17	14	-13	790	0	0	0
75	SLE RA 18	14	-15	804	0	0	0
75	SLE RA 19	14	-14	803	0	0	0
75	SLE RA 20	14	-14	810	0	0	0
75	SLE RA 21	14	-14	810	0	0	0
75	SLE FR 1	14	-14	718	0	0	0
75	SLE FR 2	14	-14	717	0	0	0
75	SLE FR 3	14	-14	720	0	0	0
75	SLE FR 4	14	-14	743	0	0	0
75	SLE FR 5	14	-14	746	0	0	0
75	SLE FR 6	14	-14	761	0	0	0
75	SLE QP 1	14	-14	718	0	0	0
75	SLE QP 2	14	-14	743	0	0	0
75	SLD 1	58	-7	741	0	0	0
75	SLD 2	59	-6	741	0	0	0
75	SLD 3	57	-18	759	0	0	0
75	SLD 4	58	-17	759	0	0	0
75	SLD 5	29	5	715	0	0	0
75	SLD 6	29	6	715	0	0	0
75	SLD 7	25	-33	776	0	0	0
75	SLD 8	26	-32	776	0	0	0
75	SLD 9	2	4	711	0	0	0
75	SLD 10	3	5	711	0	0	0
75	SLD 11	-1	-34	772	0	0	0
75	SLD 12	0	-33	772	0	0	0
75	SLD 13	-30	-11	728	0	0	0
75	SLD 14	-29	-10	728	0	0	0
75	SLD 15	-31	-22	746	0	0	0
75	SLD 16	-30	-21	746	0	0	0
75	SLV 1	117	2	736	0	0	0
75	SLV 2	119	6	736	0	0	0
75	SLV 3	115	-25	782	0	0	0
75	SLV 4	117	-21	782	0	0	0
75	SLV 5	48	31	672	0	0	0
75	SLV 6	50	34	672	0	0	0
75	SLV 7	40	-59	824	0	0	0
75	SLV 8	42	-56	824	0	0	0
75	SLV 9	-13	28	663	0	0	0
75	SLV 10	-12	31	663	0	0	0
75	SLV 11	-21	-62	815	0	0	0
75	SLV 12	-20	-59	815	0	0	0
75	SLV 13	-88	-7	705	0	0	0
75	SLV 14	-86	-3	705	0	0	0
75	SLV 15	-91	-34	751	0	0	0
75	SLV 16	-89	-30	751	0	0	0
76	SLU 1	9	-12	468	0	0	0
76	SLU 2	10	-11	468	0	0	0
76	SLU 3	10	-12	479	0	0	0
76	SLU 4	10	-11	478	0	0	0
76	SLU 5	10	-11	474	0	0	0
76	SLU 6	10	-11	485	0	0	0
76	SLU 7	10	-11	485	0	0	0
76	SLU 8	10	-11	482	0	0	0
76	SLU 9	10	-11	481	0	0	0
76	SLU 10	10	-12	530	0	0	0
76	SLU 11	10	-13	541	0	0	0
76	SLU 12	10	-12	541	0	0	0
76	SLU 13	10	-12	536	0	0	0
76	SLU 14	10	-12	548	0	0	0
76	SLU 15	10	-12	547	0	0	0
76	SLU 16	10	-12	544	0	0	0
76	SLU 17	10	-12	543	0	0	0
76	SLU 18	10	-13	558	0	0	0
76	SLU 19	10	-13	557	0	0	0
76	SLU 20	10	-13	564	0	0	0
76	SLU 21	10	-13	564	0	0	0
76	SLU 22	10	-11	539	0	0	0
76	SLU 23	10	-11	538	0	0	0
76	SLU 24	11	-11	549	0	0	0
76	SLU 25	11	-11	549	0	0	0
76	SLU 26	11	-10	545	0	0	0
76	SLU 27	11	-11	556	0	0	0
76	SLU 28	11	-10	555	0	0	0
76	SLU 29	11	-11	552	0	0	0
76	SLU 30	11	-10	551	0	0	0
76	SLU 31	11	-12	600	0	0	0
76	SLU 32	11	-12	612	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
76	SLU 33	11	-12	611	0	0	0
76	SLU 34	11	-11	607	0	0	0
76	SLU 35	11	-12	618	0	0	0
76	SLU 36	11	-11	618	0	0	0
76	SLU 37	11	-12	614	0	0	0
76	SLU 38	11	-11	614	0	0	0
76	SLU 39	10	-13	628	0	0	0
76	SLU 40	11	-12	628	0	0	0
76	SLU 41	11	-12	635	0	0	0
76	SLU 42	11	-12	634	0	0	0
76	SLU 43	12	-16	585	0	0	0
76	SLU 44	12	-15	584	0	0	0
76	SLU 45	12	-16	595	0	0	0
76	SLU 46	12	-15	595	0	0	0
76	SLU 47	12	-15	590	0	0	0
76	SLU 48	12	-15	602	0	0	0
76	SLU 49	12	-15	601	0	0	0
76	SLU 50	12	-15	598	0	0	0
76	SLU 51	12	-15	597	0	0	0
76	SLU 52	12	-16	646	0	0	0
76	SLU 53	12	-17	657	0	0	0
76	SLU 54	12	-16	657	0	0	0
76	SLU 55	12	-16	653	0	0	0
76	SLU 56	12	-16	664	0	0	0
76	SLU 57	12	-16	663	0	0	0
76	SLU 58	12	-16	660	0	0	0
76	SLU 59	12	-16	660	0	0	0
76	SLU 60	12	-17	674	0	0	0
76	SLU 61	12	-17	673	0	0	0
76	SLU 62	12	-17	681	0	0	0
76	SLU 63	12	-17	680	0	0	0
76	SLU 64	13	-15	655	0	0	0
76	SLU 65	13	-15	654	0	0	0
76	SLU 66	13	-15	666	0	0	0
76	SLU 67	13	-15	665	0	0	0
76	SLU 68	13	-14	661	0	0	0
76	SLU 69	13	-15	672	0	0	0
76	SLU 70	13	-14	672	0	0	0
76	SLU 71	13	-15	668	0	0	0
76	SLU 72	13	-14	668	0	0	0
76	SLU 73	13	-15	717	0	0	0
76	SLU 74	13	-16	728	0	0	0
76	SLU 75	13	-15	727	0	0	0
76	SLU 76	13	-15	723	0	0	0
76	SLU 77	13	-16	734	0	0	0
76	SLU 78	13	-15	734	0	0	0
76	SLU 79	13	-16	731	0	0	0
76	SLU 80	13	-15	730	0	0	0
76	SLU 81	13	-17	744	0	0	0
76	SLU 82	13	-16	744	0	0	0
76	SLU 83	13	-16	751	0	0	0
76	SLU 84	13	-16	750	0	0	0
76	SLE RA 1	10	-12	489	0	0	0
76	SLE RA 2	10	-11	488	0	0	0
76	SLE RA 3	10	-12	495	0	0	0
76	SLE RA 4	10	-11	495	0	0	0
76	SLE RA 5	10	-11	492	0	0	0
76	SLE RA 6	10	-11	500	0	0	0
76	SLE RA 7	10	-11	499	0	0	0
76	SLE RA 8	10	-11	497	0	0	0
76	SLE RA 9	10	-11	497	0	0	0
76	SLE RA 10	10	-12	530	0	0	0
76	SLE RA 11	10	-12	537	0	0	0
76	SLE RA 12	10	-12	537	0	0	0
76	SLE RA 13	10	-12	534	0	0	0
76	SLE RA 14	10	-12	541	0	0	0
76	SLE RA 15	10	-12	541	0	0	0
76	SLE RA 16	10	-12	539	0	0	0
76	SLE RA 17	10	-12	539	0	0	0
76	SLE RA 18	10	-13	548	0	0	0
76	SLE RA 19	10	-12	548	0	0	0
76	SLE RA 20	10	-13	552	0	0	0
76	SLE RA 21	10	-12	552	0	0	0
76	SLE FR 1	10	-12	489	0	0	0
76	SLE FR 2	10	-12	488	0	0	0
76	SLE FR 3	10	-12	490	0	0	0
76	SLE FR 4	10	-12	506	0	0	0
76	SLE FR 5	10	-12	508	0	0	0
76	SLE FR 6	10	-12	518	0	0	0
76	SLE QP 1	10	-12	489	0	0	0
76	SLE QP 2	10	-12	506	0	0	0
76	SLD 1	40	-6	515	0	0	0
76	SLD 2	41	-6	515	0	0	0
76	SLD 3	39	-14	527	0	0	0
76	SLD 4	40	-14	527	0	0	0
76	SLD 5	20	1	490	0	0	0
76	SLD 6	20	1	490	0	0	0
76	SLD 7	18	-24	532	0	0	0
76	SLD 8	18	-24	532	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
76	SLD 9	2	0	481	0	0	0
76	SLD 10	2	0	481	0	0	0
76	SLD 11	-1	-26	523	0	0	0
76	SLD 12	0	-25	523	0	0	0
76	SLD 13	-20	-11	486	0	0	0
76	SLD 14	-20	-10	486	0	0	0
76	SLD 15	-21	-18	498	0	0	0
76	SLD 16	-21	-18	498	0	0	0
76	SLV 1	81	2	524	0	0	0
76	SLV 2	82	2	525	0	0	0
76	SLV 3	79	-17	556	0	0	0
76	SLV 4	80	-16	556	0	0	0
76	SLV 5	33	20	464	0	0	0
76	SLV 6	34	20	465	0	0	0
76	SLV 7	28	-42	569	0	0	0
76	SLV 8	29	-41	569	0	0	0
76	SLV 9	-9	17	444	0	0	0
76	SLV 10	-8	17	444	0	0	0
76	SLV 11	-15	-45	548	0	0	0
76	SLV 12	-14	-44	549	0	0	0
76	SLV 13	-61	-8	457	0	0	0
76	SLV 14	-60	-8	457	0	0	0
76	SLV 15	-63	-27	488	0	0	0
76	SLV 16	-61	-26	488	0	0	0
77	SLU 1	12	-14	580	0	0	0
77	SLU 2	12	-13	579	0	0	0
77	SLU 3	12	-13	592	0	0	0
77	SLU 4	12	-13	592	0	0	0
77	SLU 5	12	-13	587	0	0	0
77	SLU 6	12	-13	600	0	0	0
77	SLU 7	12	-13	600	0	0	0
77	SLU 8	12	-13	596	0	0	0
77	SLU 9	12	-13	595	0	0	0
77	SLU 10	12	-14	655	0	0	0
77	SLU 11	12	-14	669	0	0	0
77	SLU 12	12	-14	669	0	0	0
77	SLU 13	12	-14	664	0	0	0
77	SLU 14	12	-14	677	0	0	0
77	SLU 15	12	-14	677	0	0	0
77	SLU 16	12	-14	673	0	0	0
77	SLU 17	12	-14	672	0	0	0
77	SLU 18	12	-15	690	0	0	0
77	SLU 19	12	-15	689	0	0	0
77	SLU 20	12	-15	698	0	0	0
77	SLU 21	12	-14	697	0	0	0
77	SLU 22	13	-13	667	0	0	0
77	SLU 23	13	-12	666	0	0	0
77	SLU 24	13	-12	679	0	0	0
77	SLU 25	13	-12	679	0	0	0
77	SLU 26	13	-12	674	0	0	0
77	SLU 27	13	-12	688	0	0	0
77	SLU 28	13	-12	687	0	0	0
77	SLU 29	13	-12	683	0	0	0
77	SLU 30	13	-12	682	0	0	0
77	SLU 31	13	-13	743	0	0	0
77	SLU 32	13	-13	756	0	0	0
77	SLU 33	13	-13	756	0	0	0
77	SLU 34	13	-13	751	0	0	0
77	SLU 35	13	-13	764	0	0	0
77	SLU 36	13	-13	764	0	0	0
77	SLU 37	13	-13	760	0	0	0
77	SLU 38	13	-13	759	0	0	0
77	SLU 39	13	-14	777	0	0	0
77	SLU 40	13	-14	776	0	0	0
77	SLU 41	13	-14	785	0	0	0
77	SLU 42	13	-13	784	0	0	0
77	SLU 43	15	-18	724	0	0	0
77	SLU 44	15	-17	723	0	0	0
77	SLU 45	15	-18	736	0	0	0
77	SLU 46	15	-17	736	0	0	0
77	SLU 47	15	-17	731	0	0	0
77	SLU 48	15	-17	745	0	0	0
77	SLU 49	15	-17	744	0	0	0
77	SLU 50	15	-17	740	0	0	0
77	SLU 51	15	-17	739	0	0	0
77	SLU 52	15	-18	800	0	0	0
77	SLU 53	15	-19	813	0	0	0
77	SLU 54	15	-18	813	0	0	0
77	SLU 55	15	-18	808	0	0	0
77	SLU 56	15	-18	821	0	0	0
77	SLU 57	15	-18	821	0	0	0
77	SLU 58	15	-18	817	0	0	0
77	SLU 59	15	-18	816	0	0	0
77	SLU 60	15	-20	834	0	0	0
77	SLU 61	15	-19	833	0	0	0
77	SLU 62	15	-19	842	0	0	0
77	SLU 63	15	-19	841	0	0	0
77	SLU 64	16	-17	811	0	0	0
77	SLU 65	16	-16	810	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
77	SLU 66	16	-17	824	0	0	0
77	SLU 67	16	-16	823	0	0	0
77	SLU 68	16	-16	818	0	0	0
77	SLU 69	16	-17	832	0	0	0
77	SLU 70	16	-16	831	0	0	0
77	SLU 71	16	-17	827	0	0	0
77	SLU 72	16	-16	826	0	0	0
77	SLU 73	16	-17	887	0	0	0
77	SLU 74	16	-18	900	0	0	0
77	SLU 75	16	-17	900	0	0	0
77	SLU 76	16	-17	895	0	0	0
77	SLU 77	16	-18	909	0	0	0
77	SLU 78	16	-17	908	0	0	0
77	SLU 79	16	-18	904	0	0	0
77	SLU 80	16	-17	903	0	0	0
77	SLU 81	16	-19	921	0	0	0
77	SLU 82	16	-18	920	0	0	0
77	SLU 83	16	-18	929	0	0	0
77	SLU 84	16	-18	928	0	0	0
77	SLE RA 1	12	-13	605	0	0	0
77	SLE RA 2	12	-13	604	0	0	0
77	SLE RA 3	12	-13	613	0	0	0
77	SLE RA 4	12	-13	613	0	0	0
77	SLE RA 5	12	-13	609	0	0	0
77	SLE RA 6	12	-13	618	0	0	0
77	SLE RA 7	12	-13	618	0	0	0
77	SLE RA 8	12	-13	615	0	0	0
77	SLE RA 9	12	-13	615	0	0	0
77	SLE RA 10	12	-14	655	0	0	0
77	SLE RA 11	12	-14	664	0	0	0
77	SLE RA 12	12	-14	664	0	0	0
77	SLE RA 13	12	-13	661	0	0	0
77	SLE RA 14	12	-14	670	0	0	0
77	SLE RA 15	12	-13	669	0	0	0
77	SLE RA 16	12	-14	667	0	0	0
77	SLE RA 17	12	-13	666	0	0	0
77	SLE RA 18	12	-14	678	0	0	0
77	SLE RA 19	12	-14	677	0	0	0
77	SLE RA 20	12	-14	683	0	0	0
77	SLE RA 21	12	-14	683	0	0	0
77	SLE FR 1	12	-13	605	0	0	0
77	SLE FR 2	12	-13	604	0	0	0
77	SLE FR 3	12	-13	607	0	0	0
77	SLE FR 4	12	-14	626	0	0	0
77	SLE FR 5	12	-14	629	0	0	0
77	SLE FR 6	12	-14	641	0	0	0
77	SLE QP 1	12	-13	605	0	0	0
77	SLE QP 2	12	-14	627	0	0	0
77	SLD 1	49	-7	632	0	0	0
77	SLD 2	50	-6	632	0	0	0
77	SLD 3	49	-17	647	0	0	0
77	SLD 4	49	-16	648	0	0	0
77	SLD 5	24	2	604	0	0	0
77	SLD 6	25	3	604	0	0	0
77	SLD 7	22	-29	657	0	0	0
77	SLD 8	22	-29	657	0	0	0
77	SLD 9	2	1	596	0	0	0
77	SLD 10	2	2	596	0	0	0
77	SLD 11	-1	-30	649	0	0	0
77	SLD 12	0	-30	649	0	0	0
77	SLD 13	-25	-12	606	0	0	0
77	SLD 14	-24	-11	606	0	0	0
77	SLD 15	-26	-21	621	0	0	0
77	SLD 16	-25	-20	622	0	0	0
77	SLV 1	99	2	637	0	0	0
77	SLV 2	101	4	637	0	0	0
77	SLV 3	97	-21	677	0	0	0
77	SLV 4	99	-19	677	0	0	0
77	SLV 5	41	25	570	0	0	0
77	SLV 6	42	26	570	0	0	0
77	SLV 7	34	-51	701	0	0	0
77	SLV 8	35	-50	702	0	0	0
77	SLV 9	-11	22	552	0	0	0
77	SLV 10	-10	23	552	0	0	0
77	SLV 11	-18	-54	683	0	0	0
77	SLV 12	-17	-53	683	0	0	0
77	SLV 13	-75	-9	576	0	0	0
77	SLV 14	-73	-7	577	0	0	0
77	SLV 15	-77	-31	616	0	0	0
77	SLV 16	-75	-30	616	0	0	0
79	SLU 1	5	-7	269	0	0	0
79	SLU 2	5	-7	269	0	0	0
79	SLU 3	5	-7	275	0	0	0
79	SLU 4	5	-7	275	0	0	0
79	SLU 5	5	-7	273	0	0	0
79	SLU 6	5	-7	279	0	0	0
79	SLU 7	6	-7	279	0	0	0
79	SLU 8	5	-7	277	0	0	0
79	SLU 9	5	-7	277	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
79	SLU 10	5	-8	305	0	0	0
79	SLU 11	5	-8	311	0	0	0
79	SLU 12	5	-8	311	0	0	0
79	SLU 13	5	-8	309	0	0	0
79	SLU 14	5	-8	315	0	0	0
79	SLU 15	6	-8	315	0	0	0
79	SLU 16	5	-8	313	0	0	0
79	SLU 17	5	-8	313	0	0	0
79	SLU 18	5	-8	321	0	0	0
79	SLU 19	5	-8	321	0	0	0
79	SLU 20	5	-8	325	0	0	0
79	SLU 21	5	-8	324	0	0	0
79	SLU 22	6	-7	310	0	0	0
79	SLU 23	6	-7	310	0	0	0
79	SLU 24	6	-7	316	0	0	0
79	SLU 25	6	-7	316	0	0	0
79	SLU 26	6	-7	313	0	0	0
79	SLU 27	6	-7	320	0	0	0
79	SLU 28	6	-7	319	0	0	0
79	SLU 29	6	-7	318	0	0	0
79	SLU 30	6	-7	317	0	0	0
79	SLU 31	6	-7	346	0	0	0
79	SLU 32	6	-8	352	0	0	0
79	SLU 33	6	-7	352	0	0	0
79	SLU 34	6	-7	349	0	0	0
79	SLU 35	6	-7	356	0	0	0
79	SLU 36	6	-7	356	0	0	0
79	SLU 37	6	-7	354	0	0	0
79	SLU 38	6	-7	353	0	0	0
79	SLU 39	6	-8	362	0	0	0
79	SLU 40	6	-8	361	0	0	0
79	SLU 41	6	-8	365	0	0	0
79	SLU 42	6	-8	365	0	0	0
79	SLU 43	7	-10	336	0	0	0
79	SLU 44	7	-9	336	0	0	0
79	SLU 45	7	-10	342	0	0	0
79	SLU 46	7	-9	342	0	0	0
79	SLU 47	7	-9	340	0	0	0
79	SLU 48	7	-10	346	0	0	0
79	SLU 49	7	-9	346	0	0	0
79	SLU 50	7	-10	344	0	0	0
79	SLU 51	7	-9	344	0	0	0
79	SLU 52	7	-10	372	0	0	0
79	SLU 53	7	-10	378	0	0	0
79	SLU 54	7	-10	378	0	0	0
79	SLU 55	7	-10	376	0	0	0
79	SLU 56	7	-10	382	0	0	0
79	SLU 57	7	-10	382	0	0	0
79	SLU 58	7	-10	380	0	0	0
79	SLU 59	7	-10	380	0	0	0
79	SLU 60	7	-11	388	0	0	0
79	SLU 61	7	-10	388	0	0	0
79	SLU 62	7	-11	392	0	0	0
79	SLU 63	7	-10	391	0	0	0
79	SLU 64	7	-10	377	0	0	0
79	SLU 65	7	-9	376	0	0	0
79	SLU 66	7	-9	383	0	0	0
79	SLU 67	7	-9	383	0	0	0
79	SLU 68	7	-9	380	0	0	0
79	SLU 69	7	-9	387	0	0	0
79	SLU 70	7	-9	386	0	0	0
79	SLU 71	7	-9	385	0	0	0
79	SLU 72	7	-9	384	0	0	0
79	SLU 73	7	-10	412	0	0	0
79	SLU 74	7	-10	419	0	0	0
79	SLU 75	7	-10	419	0	0	0
79	SLU 76	7	-10	416	0	0	0
79	SLU 77	7	-10	423	0	0	0
79	SLU 78	7	-10	422	0	0	0
79	SLU 79	7	-10	421	0	0	0
79	SLU 80	7	-10	420	0	0	0
79	SLU 81	7	-10	429	0	0	0
79	SLU 82	7	-10	428	0	0	0
79	SLU 83	7	-10	432	0	0	0
79	SLU 84	7	-10	432	0	0	0
79	SLE RA 1	6	-7	281	0	0	0
79	SLE RA 2	6	-7	281	0	0	0
79	SLE RA 3	6	-7	285	0	0	0
79	SLE RA 4	6	-7	285	0	0	0
79	SLE RA 5	6	-7	283	0	0	0
79	SLE RA 6	6	-7	288	0	0	0
79	SLE RA 7	6	-7	287	0	0	0
79	SLE RA 8	6	-7	286	0	0	0
79	SLE RA 9	6	-7	286	0	0	0
79	SLE RA 10	6	-8	305	0	0	0
79	SLE RA 11	6	-8	309	0	0	0
79	SLE RA 12	6	-8	309	0	0	0
79	SLE RA 13	6	-7	307	0	0	0
79	SLE RA 14	6	-8	312	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
79	SLE RA 15	6	-7	311	0	0	0
79	SLE RA 16	6	-8	310	0	0	0
79	SLE RA 17	6	-7	310	0	0	0
79	SLE RA 18	6	-8	315	0	0	0
79	SLE RA 19	6	-8	315	0	0	0
79	SLE RA 20	6	-8	318	0	0	0
79	SLE RA 21	6	-8	318	0	0	0
79	SLE FR 1	6	-7	281	0	0	0
79	SLE FR 2	6	-7	281	0	0	0
79	SLE FR 3	6	-7	282	0	0	0
79	SLE FR 4	6	-8	291	0	0	0
79	SLE FR 5	6	-8	292	0	0	0
79	SLE FR 6	6	-8	298	0	0	0
79	SLE QP 1	6	-7	281	0	0	0
79	SLE QP 2	6	-8	291	0	0	0
79	SLD 1	23	-4	298	0	0	0
79	SLD 2	23	-4	298	0	0	0
79	SLD 3	23	-8	306	0	0	0
79	SLD 4	23	-8	306	0	0	0
79	SLD 5	11	0	281	0	0	0
79	SLD 6	12	0	281	0	0	0
79	SLD 7	10	-14	308	0	0	0
79	SLD 8	10	-15	308	0	0	0
79	SLD 9	1	-1	275	0	0	0
79	SLD 10	1	-1	275	0	0	0
79	SLD 11	-1	-15	302	0	0	0
79	SLD 12	0	-15	302	0	0	0
79	SLD 13	-12	-7	277	0	0	0
79	SLD 14	-12	-7	277	0	0	0
79	SLD 15	-12	-11	285	0	0	0
79	SLD 16	-12	-11	285	0	0	0
79	SLV 1	47	1	306	0	0	0
79	SLV 2	47	1	306	0	0	0
79	SLV 3	46	-9	326	0	0	0
79	SLV 4	47	-10	327	0	0	0
79	SLV 5	19	11	265	0	0	0
79	SLV 6	20	11	265	0	0	0
79	SLV 7	16	-24	333	0	0	0
79	SLV 8	16	-24	333	0	0	0
79	SLV 9	-5	9	250	0	0	0
79	SLV 10	-5	9	250	0	0	0
79	SLV 11	-9	-26	318	0	0	0
79	SLV 12	-8	-26	318	0	0	0
79	SLV 13	-35	-6	256	0	0	0
79	SLV 14	-35	-6	256	0	0	0
79	SLV 15	-36	-16	276	0	0	0
79	SLV 16	-36	-16	277	0	0	0
81	SLU 1	10	-11	543	50.92	-0.02	-0.92
81	SLU 2	10	-10	541	50.76	-0.02	-0.92
81	SLU 3	10	-11	555	52.05	-0.02	-0.93
81	SLU 4	10	-10	554	51.95	-0.02	-0.94
81	SLU 5	10	-10	549	51.48	-0.02	-0.93
81	SLU 6	10	-10	563	52.77	-0.02	-0.94
81	SLU 7	10	-10	562	52.67	-0.02	-0.94
81	SLU 8	10	-11	559	52.36	-0.02	-0.93
81	SLU 9	10	-10	558	52.27	-0.02	-0.93
81	SLU 10	10	-11	613	57.48	-0.02	-0.92
81	SLU 11	10	-12	627	58.77	-0.02	-0.93
81	SLU 12	10	-11	626	58.68	-0.02	-0.93
81	SLU 13	10	-11	621	58.21	-0.02	-0.92
81	SLU 14	10	-11	635	59.5	-0.02	-0.93
81	SLU 15	10	-11	634	59.4	-0.02	-0.93
81	SLU 16	10	-11	630	59.09	-0.02	-0.92
81	SLU 17	10	-11	629	58.99	-0.02	-0.92
81	SLU 18	10	-12	646	60.53	-0.02	-0.91
81	SLU 19	10	-12	645	60.43	-0.02	-0.91
81	SLU 20	10	-12	653	61.25	-0.02	-0.91
81	SLU 21	10	-11	652	61.15	-0.02	-0.92
81	SLU 22	11	-10	625	58.63	-0.02	-1.01
81	SLU 23	11	-9	624	58.47	-0.02	-1.02
81	SLU 24	11	-10	637	59.76	-0.02	-1.03
81	SLU 25	11	-9	636	59.66	-0.02	-1.03
81	SLU 26	11	-9	631	59.19	-0.02	-1.02
81	SLU 27	11	-9	645	60.48	-0.02	-1.03
81	SLU 28	11	-9	644	60.38	-0.02	-1.03
81	SLU 29	11	-9	641	60.07	-0.02	-1.02
81	SLU 30	11	-9	640	59.98	-0.02	-1.02
81	SLU 31	11	-10	695	65.2	-0.02	-1.01
81	SLU 32	11	-11	709	66.48	-0.02	-1.02
81	SLU 33	11	-10	708	66.39	-0.02	-1.02
81	SLU 34	11	-10	703	65.92	-0.02	-1.01
81	SLU 35	11	-10	717	67.21	-0.02	-1.02
81	SLU 36	11	-10	716	67.11	-0.02	-1.03
81	SLU 37	11	-10	713	66.8	-0.02	-1.01
81	SLU 38	11	-10	712	66.7	-0.02	-1.02
81	SLU 39	11	-11	728	68.24	-0.02	-1
81	SLU 40	11	-11	727	68.14	-0.02	-1
81	SLU 41	11	-11	736	68.96	-0.02	-1
81	SLU 42	11	-10	735	68.86	-0.02	-1.01

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
81	SLU 43	12	-15	678	63.55	-0.02	-1.16
81	SLU 44	12	-14	676	63.39	-0.02	-1.17
81	SLU 45	13	-15	690	64.68	-0.02	-1.18
81	SLU 46	13	-14	689	64.58	-0.02	-1.18
81	SLU 47	13	-14	684	64.11	-0.02	-1.17
81	SLU 48	13	-14	698	65.4	-0.02	-1.18
81	SLU 49	13	-14	697	65.3	-0.02	-1.19
81	SLU 50	13	-14	693	64.99	-0.02	-1.17
81	SLU 51	13	-14	692	64.9	-0.02	-1.18
81	SLU 52	12	-15	748	70.12	-0.02	-1.16
81	SLU 53	12	-15	762	71.4	-0.02	-1.17
81	SLU 54	13	-15	761	71.31	-0.02	-1.17
81	SLU 55	12	-15	756	70.84	-0.02	-1.16
81	SLU 56	13	-15	769	72.13	-0.02	-1.18
81	SLU 57	13	-14	768	72.03	-0.02	-1.18
81	SLU 58	12	-15	765	71.72	-0.02	-1.17
81	SLU 59	12	-15	764	71.62	-0.02	-1.17
81	SLU 60	12	-16	780	73.16	-0.02	-1.15
81	SLU 61	12	-16	779	73.06	-0.02	-1.15
81	SLU 62	12	-16	788	73.88	-0.02	-1.16
81	SLU 63	12	-15	787	73.78	-0.02	-1.16
81	SLU 64	13	-14	760	71.26	-0.02	-1.25
81	SLU 65	13	-13	758	71.1	-0.02	-1.26
81	SLU 66	14	-13	772	72.39	-0.02	-1.27
81	SLU 67	14	-13	771	72.29	-0.02	-1.27
81	SLU 68	13	-13	766	71.82	-0.02	-1.26
81	SLU 69	14	-13	780	73.11	-0.02	-1.28
81	SLU 70	14	-13	779	73.02	-0.02	-1.28
81	SLU 71	13	-13	776	72.71	-0.02	-1.27
81	SLU 72	14	-13	775	72.61	-0.02	-1.27
81	SLU 73	13	-14	830	77.83	-0.03	-1.25
81	SLU 74	13	-14	844	79.12	-0.03	-1.26
81	SLU 75	13	-14	843	79.02	-0.03	-1.26
81	SLU 76	13	-13	838	78.55	-0.03	-1.26
81	SLU 77	14	-14	852	79.84	-0.03	-1.27
81	SLU 78	14	-13	851	79.74	-0.03	-1.27
81	SLU 79	13	-14	847	79.43	-0.03	-1.26
81	SLU 80	13	-13	846	79.34	-0.03	-1.26
81	SLU 81	13	-15	863	80.87	-0.03	-1.24
81	SLU 82	13	-14	862	80.77	-0.03	-1.25
81	SLU 83	13	-15	870	81.59	-0.03	-1.25
81	SLU 84	13	-14	869	81.5	-0.03	-1.25
81	SLE RA 1	10	-11	567	53.12	-0.02	-0.94
81	SLE RA 2	10	-10	565	53.02	-0.02	-0.95
81	SLE RA 3	10	-11	575	53.87	-0.02	-0.95
81	SLE RA 4	10	-10	574	53.81	-0.02	-0.96
81	SLE RA 5	10	-10	571	53.5	-0.02	-0.95
81	SLE RA 6	10	-10	580	54.36	-0.02	-0.96
81	SLE RA 7	10	-10	579	54.29	-0.02	-0.96
81	SLE RA 8	10	-10	577	54.09	-0.02	-0.95
81	SLE RA 9	10	-10	576	54.02	-0.02	-0.95
81	SLE RA 10	10	-11	613	57.5	-0.02	-0.94
81	SLE RA 11	10	-11	622	58.36	-0.02	-0.95
81	SLE RA 12	10	-11	622	58.29	-0.02	-0.95
81	SLE RA 13	10	-11	618	57.98	-0.02	-0.95
81	SLE RA 14	10	-11	628	58.84	-0.02	-0.95
81	SLE RA 15	10	-11	627	58.78	-0.02	-0.96
81	SLE RA 16	10	-11	625	58.57	-0.02	-0.95
81	SLE RA 17	10	-11	624	58.5	-0.02	-0.95
81	SLE RA 18	10	-12	635	59.53	-0.02	-0.94
81	SLE RA 19	10	-11	634	59.46	-0.02	-0.94
81	SLE RA 20	10	-11	640	60.01	-0.02	-0.94
81	SLE RA 21	10	-11	639	59.94	-0.02	-0.94
81	SLE FR 1	10	-11	567	53.12	-0.02	-0.94
81	SLE FR 2	10	-11	566	53.1	-0.02	-0.94
81	SLE FR 3	10	-11	569	53.31	-0.02	-0.95
81	SLE FR 4	10	-11	587	55.02	-0.02	-0.94
81	SLE FR 5	10	-11	589	55.24	-0.02	-0.94
81	SLE FR 6	10	-11	601	56.32	-0.02	-0.94
81	SLE QP 1	10	-11	567	53.12	-0.02	-0.94
81	SLE QP 2	10	-11	587	55.04	-0.02	-0.94
81	SLD 1	46	-6	581	54.48	-0.02	-4.27
81	SLD 2	46	-4	581	54.47	-0.02	-4.29
81	SLD 3	45	-15	605	56.68	-0.02	-4.2
81	SLD 4	45	-13	604	56.67	-0.02	-4.22
81	SLD 5	22	4	550	51.54	-0.02	-2.05
81	SLD 6	22	5	550	51.54	-0.02	-2.06
81	SLD 7	19	-26	628	58.87	-0.02	-1.8
81	SLD 8	19	-25	628	58.86	-0.02	-1.82
81	SLD 9	1	3	546	51.22	-0.02	-0.06
81	SLD 10	1	4	546	51.22	-0.02	-0.08
81	SLD 11	-2	-27	625	58.55	-0.02	0.18
81	SLD 12	-2	-26	624	58.54	-0.02	0.16
81	SLD 13	-25	-9	570	53.42	-0.02	2.34
81	SLD 14	-25	-8	570	53.41	-0.02	2.32
81	SLD 15	-26	-18	593	55.62	-0.02	2.41
81	SLD 16	-25	-16	593	55.6	-0.02	2.39
81	SLV 1	93	2	571	53.55	-0.02	-8.74
81	SLV 2	94	5	571	53.52	-0.02	-8.79

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
81	SLV 3	91	-20	630	59.06	-0.02	-8.56
81	SLV 4	92	-17	630	59.02	-0.02	-8.61
81	SLV 5	38	25	493	46.26	-0.02	-3.53
81	SLV 6	38	27	493	46.24	-0.02	-3.57
81	SLV 7	32	-47	689	64.6	-0.02	-2.96
81	SLV 8	32	-45	689	64.57	-0.02	-2.99
81	SLV 9	-12	23	485	45.51	-0.02	1.11
81	SLV 10	-11	25	485	45.49	-0.02	1.07
81	SLV 11	-18	-49	681	63.85	-0.02	1.68
81	SLV 12	-18	-47	681	63.83	-0.02	1.65
81	SLV 13	-72	-6	545	51.06	-0.02	6.73
81	SLV 14	-71	-3	544	51.03	-0.02	6.68
81	SLV 15	-74	-27	603	56.56	-0.02	6.9
81	SLV 16	-73	-24	603	56.53	-0.02	6.85
81	CRTFP Ux+	0	0	0	0	0	0
81	CRTFP Ux-	0	0	0	0	0	0
81	CRTFP Uy+	0	0	0	0	0	0
81	CRTFP Uy-	0	0	0	0	0	0
82	SLU 1	10	-10	575	35.92	-0.01	-0.65
82	SLU 2	10	-9	573	35.81	-0.01	-0.66
82	SLU 3	11	-10	587	36.71	-0.01	-0.66
82	SLU 4	11	-9	586	36.65	-0.01	-0.67
82	SLU 5	11	-9	581	36.32	-0.01	-0.66
82	SLU 6	11	-9	595	37.22	-0.01	-0.67
82	SLU 7	11	-9	594	37.15	-0.01	-0.67
82	SLU 8	11	-9	591	36.93	-0.01	-0.66
82	SLU 9	11	-9	590	36.87	-0.01	-0.66
82	SLU 10	10	-10	648	40.52	-0.01	-0.65
82	SLU 11	11	-10	663	41.42	-0.01	-0.66
82	SLU 12	11	-10	662	41.36	-0.01	-0.66
82	SLU 13	10	-9	656	41.03	-0.01	-0.66
82	SLU 14	11	-10	671	41.93	-0.01	-0.66
82	SLU 15	11	-9	670	41.86	-0.01	-0.67
82	SLU 16	10	-10	666	41.64	-0.01	-0.66
82	SLU 17	11	-9	665	41.57	-0.01	-0.66
82	SLU 18	10	-11	682	42.64	-0.01	-0.65
82	SLU 19	10	-10	681	42.58	-0.01	-0.65
82	SLU 20	10	-11	690	43.15	-0.01	-0.65
82	SLU 21	10	-10	689	43.09	-0.01	-0.65
82	SLU 22	11	-9	661	41.34	-0.01	-0.72
82	SLU 23	12	-8	660	41.23	-0.01	-0.72
82	SLU 24	12	-8	674	42.13	-0.01	-0.73
82	SLU 25	12	-8	673	42.07	-0.01	-0.73
82	SLU 26	12	-8	668	41.74	-0.01	-0.73
82	SLU 27	12	-8	682	42.64	-0.01	-0.73
82	SLU 28	12	-7	681	42.57	-0.01	-0.74
82	SLU 29	12	-8	678	42.35	-0.01	-0.73
82	SLU 30	12	-7	677	42.29	-0.01	-0.73
82	SLU 31	11	-8	735	45.94	-0.02	-0.72
82	SLU 32	12	-9	749	46.84	-0.02	-0.72
82	SLU 33	12	-8	748	46.78	-0.02	-0.73
82	SLU 34	12	-8	743	46.45	-0.02	-0.72
82	SLU 35	12	-9	758	47.35	-0.02	-0.73
82	SLU 36	12	-8	757	47.28	-0.02	-0.73
82	SLU 37	12	-9	753	47.06	-0.02	-0.72
82	SLU 38	12	-8	752	47	-0.02	-0.72
82	SLU 39	11	-10	769	48.07	-0.02	-0.71
82	SLU 40	11	-9	768	48	-0.02	-0.71
82	SLU 41	11	-9	777	48.57	-0.02	-0.71
82	SLU 42	11	-9	776	48.51	-0.02	-0.72
82	SLU 43	13	-13	717	44.83	-0.01	-0.83
82	SLU 44	13	-13	716	44.73	-0.01	-0.83
82	SLU 45	13	-13	730	45.63	-0.02	-0.84
82	SLU 46	13	-13	729	45.56	-0.02	-0.84
82	SLU 47	13	-12	724	45.23	-0.02	-0.83
82	SLU 48	13	-13	738	46.13	-0.02	-0.84
82	SLU 49	13	-12	737	46.07	-0.02	-0.84
82	SLU 50	13	-13	734	45.85	-0.02	-0.83
82	SLU 51	13	-12	733	45.78	-0.02	-0.84
82	SLU 52	13	-13	791	49.44	-0.02	-0.82
82	SLU 53	13	-14	805	50.34	-0.02	-0.83
82	SLU 54	13	-13	804	50.27	-0.02	-0.83
82	SLU 55	13	-13	799	49.94	-0.02	-0.83
82	SLU 56	13	-13	813	50.84	-0.02	-0.84
82	SLU 57	13	-13	812	50.78	-0.02	-0.84
82	SLU 58	13	-13	809	50.56	-0.02	-0.83
82	SLU 59	13	-13	808	50.49	-0.02	-0.83
82	SLU 60	13	-14	825	51.56	-0.02	-0.82
82	SLU 61	13	-14	824	51.5	-0.02	-0.82
82	SLU 62	13	-14	833	52.07	-0.02	-0.82
82	SLU 63	13	-13	832	52	-0.02	-0.82
82	SLU 64	14	-12	804	50.26	-0.02	-0.89
82	SLU 65	14	-11	802	50.15	-0.02	-0.89
82	SLU 66	14	-12	817	51.05	-0.02	-0.9
82	SLU 67	14	-11	816	50.98	-0.02	-0.9
82	SLU 68	14	-11	810	50.66	-0.02	-0.9
82	SLU 69	14	-11	825	51.56	-0.02	-0.91
82	SLU 70	15	-11	824	51.49	-0.02	-0.91
82	SLU 71	14	-11	820	51.27	-0.02	-0.9

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
82	SLU 72	14	-11	819	51.2	-0.02	-0.9
82	SLU 73	14	-12	878	54.86	-0.02	-0.89
82	SLU 74	14	-12	892	55.76	-0.02	-0.9
82	SLU 75	14	-12	891	55.69	-0.02	-0.9
82	SLU 76	14	-12	886	55.36	-0.02	-0.89
82	SLU 77	14	-12	900	56.26	-0.02	-0.9
82	SLU 78	14	-11	899	56.2	-0.02	-0.9
82	SLU 79	14	-12	896	55.98	-0.02	-0.89
82	SLU 80	14	-12	895	55.91	-0.02	-0.9
82	SLU 81	14	-13	912	56.98	-0.02	-0.88
82	SLU 82	14	-13	911	56.92	-0.02	-0.89
82	SLU 83	14	-13	920	57.49	-0.02	-0.89
82	SLU 84	14	-12	919	57.42	-0.02	-0.89
82	SLE RA 1	11	-10	599	37.47	-0.01	-0.67
82	SLE RA 2	11	-9	598	37.4	-0.01	-0.67
82	SLE RA 3	11	-9	608	38	-0.01	-0.68
82	SLE RA 4	11	-9	607	37.95	-0.01	-0.68
82	SLE RA 5	11	-9	604	37.73	-0.01	-0.68
82	SLE RA 6	11	-9	613	38.33	-0.01	-0.68
82	SLE RA 7	11	-9	613	38.29	-0.01	-0.68
82	SLE RA 8	11	-9	610	38.14	-0.01	-0.68
82	SLE RA 9	11	-9	610	38.1	-0.01	-0.68
82	SLE RA 10	11	-10	649	40.53	-0.01	-0.67
82	SLE RA 11	11	-10	658	41.13	-0.01	-0.68
82	SLE RA 12	11	-9	657	41.09	-0.01	-0.68
82	SLE RA 13	11	-9	654	40.87	-0.01	-0.67
82	SLE RA 14	11	-10	664	41.47	-0.01	-0.68
82	SLE RA 15	11	-9	663	41.43	-0.01	-0.68
82	SLE RA 16	11	-10	660	41.28	-0.01	-0.67
82	SLE RA 17	11	-9	660	41.24	-0.01	-0.67
82	SLE RA 18	11	-10	671	41.95	-0.01	-0.67
82	SLE RA 19	11	-10	671	41.91	-0.01	-0.67
82	SLE RA 20	11	-10	677	42.29	-0.01	-0.67
82	SLE RA 21	11	-10	676	42.25	-0.01	-0.67
82	SLE FR 1	11	-10	599	37.47	-0.01	-0.67
82	SLE FR 2	11	-10	599	37.45	-0.01	-0.67
82	SLE FR 3	11	-10	602	37.6	-0.01	-0.67
82	SLE FR 4	11	-10	621	38.8	-0.01	-0.67
82	SLE FR 5	11	-10	623	38.95	-0.01	-0.67
82	SLE FR 6	11	-10	635	39.71	-0.01	-0.67
82	SLE QP 1	11	-10	599	37.47	-0.01	-0.67
82	SLE QP 2	11	-10	621	38.81	-0.01	-0.67
82	SLD 1	48	-5	607	37.91	-0.01	-3
82	SLD 2	48	-3	606	37.9	-0.01	-3.02
82	SLD 3	47	-14	630	39.39	-0.01	-2.95
82	SLD 4	47	-12	630	39.38	-0.01	-2.97
82	SLD 5	23	5	581	36.31	-0.01	-1.44
82	SLD 6	23	7	581	36.3	-0.01	-1.46
82	SLD 7	20	-26	660	41.23	-0.01	-1.27
82	SLD 8	21	-24	659	41.22	-0.01	-1.28
82	SLD 9	1	5	583	36.41	-0.01	-0.05
82	SLD 10	1	6	582	36.4	-0.01	-0.07
82	SLD 11	-2	-26	661	41.32	-0.01	0.12
82	SLD 12	-2	-25	661	41.32	-0.01	0.1
82	SLD 13	-26	-7	612	38.25	-0.01	1.63
82	SLD 14	-26	-5	612	38.23	-0.01	1.61
82	SLD 15	-27	-17	636	39.72	-0.01	1.68
82	SLD 16	-27	-15	635	39.71	-0.01	1.66
82	SLV 1	98	2	585	36.59	-0.01	-6.12
82	SLV 2	99	7	585	36.57	-0.01	-6.17
82	SLV 3	96	-21	645	40.29	-0.01	-6
82	SLV 4	97	-16	644	40.26	-0.01	-6.05
82	SLV 5	40	27	521	32.55	-0.01	-2.48
82	SLV 6	40	31	521	32.53	-0.01	-2.51
82	SLV 7	33	-49	718	44.86	-0.02	-2.08
82	SLV 8	34	-45	717	44.84	-0.02	-2.11
82	SLV 9	-12	26	525	32.78	-0.01	0.77
82	SLV 10	-12	29	524	32.76	-0.01	0.74
82	SLV 11	-19	-50	721	45.09	-0.02	1.17
82	SLV 12	-18	-47	721	45.07	-0.02	1.14
82	SLV 13	-75	-4	598	37.37	-0.01	4.71
82	SLV 14	-75	1	597	37.34	-0.01	4.66
82	SLV 15	-77	-26	657	41.06	-0.01	4.83
82	SLV 16	-77	-21	656	41.03	-0.01	4.79
82	CRTFP Ux+	0	0	0	0	0	0
82	CRTFP Ux-	0	0	0	0	0	0
82	CRTFP Uy+	0	0	0	0	0	0
82	CRTFP Uy-	0	0	0	0	0	0
83	SLU 1	10	-8	526	0	0	0
83	SLU 2	10	-7	524	0	0	0
83	SLU 3	10	-7	537	0	0	0
83	SLU 4	10	-7	536	0	0	0
83	SLU 5	10	-6	531	0	0	0
83	SLU 6	10	-7	544	0	0	0
83	SLU 7	10	-6	544	0	0	0
83	SLU 8	10	-7	540	0	0	0
83	SLU 9	10	-6	539	0	0	0
83	SLU 10	10	-7	592	0	0	0
83	SLU 11	10	-8	605	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
83	SLU 12	10	-7	605	0	0	0
83	SLU 13	10	-7	600	0	0	0
83	SLU 14	10	-7	613	0	0	0
83	SLU 15	10	-7	612	0	0	0
83	SLU 16	10	-7	608	0	0	0
83	SLU 17	10	-7	608	0	0	0
83	SLU 18	10	-8	623	0	0	0
83	SLU 19	10	-8	622	0	0	0
83	SLU 20	10	-8	630	0	0	0
83	SLU 21	10	-7	630	0	0	0
83	SLU 22	11	-6	604	0	0	0
83	SLU 23	11	-5	603	0	0	0
83	SLU 24	11	-6	616	0	0	0
83	SLU 25	11	-5	615	0	0	0
83	SLU 26	11	-5	610	0	0	0
83	SLU 27	11	-5	623	0	0	0
83	SLU 28	11	-5	622	0	0	0
83	SLU 29	11	-6	619	0	0	0
83	SLU 30	11	-5	618	0	0	0
83	SLU 31	11	-6	671	0	0	0
83	SLU 32	11	-6	684	0	0	0
83	SLU 33	11	-6	683	0	0	0
83	SLU 34	11	-5	679	0	0	0
83	SLU 35	11	-6	692	0	0	0
83	SLU 36	11	-5	691	0	0	0
83	SLU 37	11	-6	687	0	0	0
83	SLU 38	11	-5	687	0	0	0
83	SLU 39	11	-7	702	0	0	0
83	SLU 40	11	-6	701	0	0	0
83	SLU 41	11	-6	709	0	0	0
83	SLU 42	11	-6	709	0	0	0
83	SLU 43	12	-10	656	0	0	0
83	SLU 44	12	-10	655	0	0	0
83	SLU 45	12	-10	668	0	0	0
83	SLU 46	13	-9	667	0	0	0
83	SLU 47	12	-9	662	0	0	0
83	SLU 48	13	-10	675	0	0	0
83	SLU 49	13	-9	674	0	0	0
83	SLU 50	12	-10	671	0	0	0
83	SLU 51	12	-9	670	0	0	0
83	SLU 52	12	-10	723	0	0	0
83	SLU 53	12	-10	736	0	0	0
83	SLU 54	12	-10	735	0	0	0
83	SLU 55	12	-10	730	0	0	0
83	SLU 56	12	-10	743	0	0	0
83	SLU 57	13	-10	742	0	0	0
83	SLU 58	12	-10	739	0	0	0
83	SLU 59	12	-10	738	0	0	0
83	SLU 60	12	-11	754	0	0	0
83	SLU 61	12	-10	753	0	0	0
83	SLU 62	12	-10	761	0	0	0
83	SLU 63	12	-10	760	0	0	0
83	SLU 64	13	-9	735	0	0	0
83	SLU 65	13	-8	734	0	0	0
83	SLU 66	13	-9	747	0	0	0
83	SLU 67	13	-8	746	0	0	0
83	SLU 68	13	-8	741	0	0	0
83	SLU 69	14	-8	754	0	0	0
83	SLU 70	14	-8	753	0	0	0
83	SLU 71	13	-8	750	0	0	0
83	SLU 72	13	-8	749	0	0	0
83	SLU 73	13	-9	802	0	0	0
83	SLU 74	13	-9	815	0	0	0
83	SLU 75	13	-8	814	0	0	0
83	SLU 76	13	-8	809	0	0	0
83	SLU 77	13	-9	822	0	0	0
83	SLU 78	14	-8	821	0	0	0
83	SLU 79	13	-9	818	0	0	0
83	SLU 80	13	-8	817	0	0	0
83	SLU 81	13	-9	833	0	0	0
83	SLU 82	13	-9	832	0	0	0
83	SLU 83	13	-9	840	0	0	0
83	SLU 84	13	-9	839	0	0	0
83	SLE RA 1	10	-7	548	0	0	0
83	SLE RA 2	10	-7	547	0	0	0
83	SLE RA 3	10	-7	556	0	0	0
83	SLE RA 4	10	-7	555	0	0	0
83	SLE RA 5	10	-6	552	0	0	0
83	SLE RA 6	10	-7	561	0	0	0
83	SLE RA 7	10	-6	560	0	0	0
83	SLE RA 8	10	-7	558	0	0	0
83	SLE RA 9	10	-6	557	0	0	0
83	SLE RA 10	10	-7	593	0	0	0
83	SLE RA 11	10	-7	601	0	0	0
83	SLE RA 12	10	-7	601	0	0	0
83	SLE RA 13	10	-7	598	0	0	0
83	SLE RA 14	10	-7	606	0	0	0
83	SLE RA 15	10	-7	606	0	0	0
83	SLE RA 16	10	-7	603	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
83	SLE RA 17	10	-7	603	0	0	0
83	SLE RA 18	10	-8	613	0	0	0
83	SLE RA 19	10	-7	613	0	0	0
83	SLE RA 20	10	-7	618	0	0	0
83	SLE RA 21	10	-7	617	0	0	0
83	SLE FR 1	10	-7	548	0	0	0
83	SLE FR 2	10	-7	548	0	0	0
83	SLE FR 3	10	-7	550	0	0	0
83	SLE FR 4	10	-7	567	0	0	0
83	SLE FR 5	10	-7	570	0	0	0
83	SLE FR 6	10	-7	581	0	0	0
83	SLE QP 1	10	-7	548	0	0	0
83	SLE QP 2	10	-7	568	0	0	0
83	SLD 1	44	-5	549	0	0	0
83	SLD 2	44	-2	549	0	0	0
83	SLD 3	43	-13	569	0	0	0
83	SLD 4	43	-11	569	0	0	0
83	SLD 5	21	6	533	0	0	0
83	SLD 6	21	8	532	0	0	0
83	SLD 7	19	-23	597	0	0	0
83	SLD 8	19	-21	597	0	0	0
83	SLD 9	1	6	538	0	0	0
83	SLD 10	1	8	538	0	0	0
83	SLD 11	-1	-22	603	0	0	0
83	SLD 12	-1	-21	603	0	0	0
83	SLD 13	-23	-4	567	0	0	0
83	SLD 14	-23	-1	566	0	0	0
83	SLD 15	-24	-12	586	0	0	0
83	SLD 16	-24	-10	586	0	0	0
83	SLV 1	89	-1	523	0	0	0
83	SLV 2	90	5	523	0	0	0
83	SLV 3	87	-22	572	0	0	0
83	SLV 4	88	-16	571	0	0	0
83	SLV 5	36	25	480	0	0	0
83	SLV 6	37	29	480	0	0	0
83	SLV 7	30	-44	643	0	0	0
83	SLV 8	31	-40	643	0	0	0
83	SLV 9	-11	26	493	0	0	0
83	SLV 10	-10	30	492	0	0	0
83	SLV 11	-17	-44	655	0	0	0
83	SLV 12	-16	-40	655	0	0	0
83	SLV 13	-68	2	564	0	0	0
83	SLV 14	-67	8	563	0	0	0
83	SLV 15	-70	-19	612	0	0	0
83	SLV 16	-69	-13	612	0	0	0
84	SLU 1	7	-4	362	-42.28	0	0.82
84	SLU 2	7	-4	361	-42.19	0	0.82
84	SLU 3	7	-4	370	-43.19	0	0.83
84	SLU 4	7	-4	370	-43.14	0	0.83
84	SLU 5	7	-3	366	-42.77	0	0.83
84	SLU 6	7	-4	375	-43.77	0	0.83
84	SLU 7	7	-3	375	-43.72	0	0.84
84	SLU 8	7	-4	372	-43.44	0	0.83
84	SLU 9	7	-3	372	-43.38	0	0.83
84	SLU 10	7	-4	408	-47.63	0	0.82
84	SLU 11	7	-4	417	-48.64	0	0.83
84	SLU 12	7	-4	416	-48.58	0	0.83
84	SLU 13	7	-4	413	-48.21	0	0.83
84	SLU 14	7	-4	422	-49.22	0	0.84
84	SLU 15	7	-3	421	-49.16	0	0.84
84	SLU 16	7	-4	419	-48.88	0	0.83
84	SLU 17	7	-3	418	-48.83	0	0.83
84	SLU 18	7	-4	429	-50.05	0	0.82
84	SLU 19	7	-4	428	-50	0	0.82
84	SLU 20	7	-4	434	-50.63	0	0.82
84	SLU 21	7	-4	433	-50.58	0	0.82
84	SLU 22	8	-3	416	-48.57	0	0.9
84	SLU 23	8	-3	415	-48.48	0	0.9
84	SLU 24	8	-3	424	-49.49	0	0.91
84	SLU 25	8	-2	424	-49.44	0	0.91
84	SLU 26	8	-2	420	-49.06	0	0.91
84	SLU 27	8	-3	429	-50.07	0	0.92
84	SLU 28	8	-2	428	-50.02	0	0.92
84	SLU 29	8	-3	426	-49.73	0	0.91
84	SLU 30	8	-2	426	-49.68	0	0.91
84	SLU 31	8	-3	462	-53.92	0	0.9
84	SLU 32	8	-3	471	-54.93	0	0.91
84	SLU 33	8	-3	470	-54.88	0	0.92
84	SLU 34	8	-2	467	-54.51	0	0.91
84	SLU 35	8	-3	476	-55.51	0	0.92
84	SLU 36	8	-2	475	-55.46	0	0.92
84	SLU 37	8	-3	473	-55.17	0	0.91
84	SLU 38	8	-2	472	-55.12	0	0.91
84	SLU 39	8	-3	483	-56.34	0	0.9
84	SLU 40	8	-3	482	-56.29	0	0.9
84	SLU 41	8	-3	488	-56.93	0	0.9
84	SLU 42	8	-3	487	-56.87	0	0.91
84	SLU 43	9	-6	452	-52.8	0	1.03
84	SLU 44	9	-5	452	-52.71	0	1.04

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
84	SLU 45	9	-5	460	-53.72	0	1.05
84	SLU 46	9	-5	460	-53.67	0	1.05
84	SLU 47	9	-5	457	-53.29	0	1.04
84	SLU 48	9	-5	465	-54.3	0	1.05
84	SLU 49	9	-5	465	-54.25	0	1.05
84	SLU 50	9	-5	462	-53.96	0	1.04
84	SLU 51	9	-5	462	-53.91	0	1.04
84	SLU 52	9	-5	498	-58.15	0	1.04
84	SLU 53	9	-6	507	-59.16	0	1.05
84	SLU 54	9	-5	506	-59.11	0	1.05
84	SLU 55	9	-5	503	-58.73	0	1.04
84	SLU 56	9	-5	512	-59.74	0	1.05
84	SLU 57	9	-5	511	-59.69	0	1.05
84	SLU 58	9	-5	509	-59.4	0	1.04
84	SLU 59	9	-5	508	-59.35	0	1.05
84	SLU 60	9	-6	519	-60.57	0	1.03
84	SLU 61	9	-6	518	-60.52	0	1.04
84	SLU 62	9	-6	524	-61.15	0	1.04
84	SLU 63	9	-5	523	-61.1	0	1.04
84	SLU 64	10	-5	506	-59.09	0	1.11
84	SLU 65	10	-4	505	-59.01	0	1.12
84	SLU 66	10	-4	514	-60.01	0	1.13
84	SLU 67	10	-4	514	-59.96	0	1.13
84	SLU 68	10	-4	510	-59.59	0	1.12
84	SLU 69	10	-4	519	-60.59	0	1.13
84	SLU 70	10	-4	519	-60.54	0	1.14
84	SLU 71	10	-4	516	-60.26	0	1.12
84	SLU 72	10	-4	516	-60.2	0	1.13
84	SLU 73	10	-4	552	-64.45	0	1.12
84	SLU 74	10	-5	561	-65.46	0	1.13
84	SLU 75	10	-4	560	-65.4	0	1.13
84	SLU 76	10	-4	557	-65.03	0	1.12
84	SLU 77	10	-4	566	-66.04	0	1.13
84	SLU 78	10	-4	565	-65.98	0	1.14
84	SLU 79	10	-4	563	-65.7	0	1.12
84	SLU 80	10	-4	562	-65.65	0	1.13
84	SLU 81	10	-5	573	-66.87	0	1.12
84	SLU 82	10	-5	572	-66.82	0	1.12
84	SLU 83	10	-5	578	-67.45	0	1.12
84	SLU 84	10	-4	577	-67.4	0	1.12
84	SLE RA 1	7	-4	378	-44.07	0	0.84
84	SLE RA 2	7	-4	377	-44.02	0	0.84
84	SLE RA 3	7	-4	383	-44.69	0	0.85
84	SLE RA 4	7	-3	383	-44.65	0	0.85
84	SLE RA 5	7	-3	380	-44.4	0	0.85
84	SLE RA 6	7	-3	386	-45.07	0	0.85
84	SLE RA 7	7	-3	386	-45.04	0	0.85
84	SLE RA 8	7	-4	384	-44.85	0	0.85
84	SLE RA 9	7	-3	384	-44.81	0	0.85
84	SLE RA 10	7	-4	408	-47.64	0	0.84
84	SLE RA 11	7	-4	414	-48.31	0	0.85
84	SLE RA 12	7	-4	414	-48.28	0	0.85
84	SLE RA 13	7	-3	411	-48.03	0	0.85
84	SLE RA 14	7	-4	417	-48.7	0	0.85
84	SLE RA 15	7	-3	417	-48.67	0	0.85
84	SLE RA 16	7	-4	415	-48.48	0	0.85
84	SLE RA 17	7	-3	415	-48.44	0	0.85
84	SLE RA 18	7	-4	422	-49.26	0	0.84
84	SLE RA 19	7	-4	422	-49.22	0	0.84
84	SLE RA 20	7	-4	425	-49.64	0	0.84
84	SLE RA 21	7	-4	425	-49.61	0	0.85
84	SLE FR 1	7	-4	378	-44.07	0	0.84
84	SLE FR 2	7	-4	377	-44.06	0	0.84
84	SLE FR 3	7	-4	379	-44.23	0	0.84
84	SLE FR 4	7	-4	391	-45.62	0	0.84
84	SLE FR 5	7	-4	392	-45.78	0	0.84
84	SLE FR 6	7	-4	400	-46.67	0	0.84
84	SLE QP 1	7	-4	378	-44.07	0	0.84
84	SLE QP 2	7	-4	391	-45.63	0	0.84
84	SLD 1	30	-2	375	-43.77	0	3.51
84	SLD 2	30	0	375	-43.75	0	3.56
84	SLD 3	30	-8	386	-45.03	0	3.45
84	SLD 4	30	-6	386	-45.01	0	3.5
84	SLD 5	15	5	370	-43.17	0	1.72
84	SLD 6	15	7	370	-43.15	0	1.76
84	SLD 7	13	-15	406	-47.36	0	1.52
84	SLD 8	13	-13	406	-47.35	0	1.55
84	SLD 9	1	5	376	-43.91	0	0.13
84	SLD 10	1	7	376	-43.9	0	0.16
84	SLD 11	-1	-14	412	-48.1	0	-0.08
84	SLD 12	0	-13	412	-48.09	0	-0.05
84	SLD 13	-16	-2	396	-46.25	0	-1.82
84	SLD 14	-15	1	396	-46.23	0	-1.77
84	SLD 15	-16	-7	407	-47.51	0	-1.88
84	SLD 16	-16	-5	407	-47.49	0	-1.83
84	SLV 1	61	0	353	-41.17	0	7.09
84	SLV 2	62	5	352	-41.13	0	7.2
84	SLV 3	59	-15	380	-44.32	0	6.94
84	SLV 4	60	-10	379	-44.28	0	7.05

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
84	SLV 5	25	18	339	-39.52	0	2.92
84	SLV 6	26	21	338	-39.5	0	2.99
84	SLV 7	21	-30	429	-50.02	0	2.43
84	SLV 8	21	-26	428	-49.99	0	2.5
84	SLV 9	-7	19	353	-41.26	0	-0.82
84	SLV 10	-6	22	353	-41.24	0	-0.75
84	SLV 11	-11	-29	443	-51.76	0	-1.31
84	SLV 12	-11	-26	443	-51.73	0	-1.24
84	SLV 13	-46	2	402	-46.98	0	-5.37
84	SLV 14	-45	7	402	-46.93	0	-5.26
84	SLV 15	-47	-13	429	-50.13	0	-5.52
84	SLV 16	-46	-8	429	-50.08	0	-5.41
84	CRTFP Ux+	0	0	0	0	0	0
84	CRTFP Ux-	0	0	0	0	0	0
84	CRTFP Uy+	0	0	0	0	0	0
84	CRTFP Uy-	0	0	0	0	0	0
85	SLU 1	14	-9	750	0	0	0
85	SLU 2	14	-8	748	0	0	0
85	SLU 3	14	-8	767	0	0	0
85	SLU 4	14	-7	766	0	0	0
85	SLU 5	14	-7	759	0	0	0
85	SLU 6	14	-8	777	0	0	0
85	SLU 7	14	-7	776	0	0	0
85	SLU 8	14	-8	771	0	0	0
85	SLU 9	14	-7	770	0	0	0
85	SLU 10	14	-8	845	0	0	0
85	SLU 11	14	-8	864	0	0	0
85	SLU 12	14	-8	862	0	0	0
85	SLU 13	14	-7	856	0	0	0
85	SLU 14	14	-8	874	0	0	0
85	SLU 15	14	-7	873	0	0	0
85	SLU 16	14	-8	868	0	0	0
85	SLU 17	14	-7	867	0	0	0
85	SLU 18	14	-9	889	0	0	0
85	SLU 19	14	-8	887	0	0	0
85	SLU 20	14	-8	899	0	0	0
85	SLU 21	14	-8	898	0	0	0
85	SLU 22	15	-6	863	0	0	0
85	SLU 23	15	-5	861	0	0	0
85	SLU 24	15	-6	879	0	0	0
85	SLU 25	15	-5	878	0	0	0
85	SLU 26	15	-5	871	0	0	0
85	SLU 27	15	-5	890	0	0	0
85	SLU 28	16	-5	888	0	0	0
85	SLU 29	15	-5	884	0	0	0
85	SLU 30	15	-5	882	0	0	0
85	SLU 31	15	-6	958	0	0	0
85	SLU 32	15	-6	976	0	0	0
85	SLU 33	15	-5	975	0	0	0
85	SLU 34	15	-5	968	0	0	0
85	SLU 35	15	-6	986	0	0	0
85	SLU 36	15	-5	985	0	0	0
85	SLU 37	15	-6	980	0	0	0
85	SLU 38	15	-5	979	0	0	0
85	SLU 39	15	-7	1001	0	0	0
85	SLU 40	15	-6	1000	0	0	0
85	SLU 41	15	-6	1011	0	0	0
85	SLU 42	15	-6	1010	0	0	0
85	SLU 43	17	-12	937	0	0	0
85	SLU 44	18	-11	935	0	0	0
85	SLU 45	18	-11	953	0	0	0
85	SLU 46	18	-11	952	0	0	0
85	SLU 47	18	-10	945	0	0	0
85	SLU 48	18	-11	964	0	0	0
85	SLU 49	18	-10	963	0	0	0
85	SLU 50	18	-11	958	0	0	0
85	SLU 51	18	-10	957	0	0	0
85	SLU 52	17	-11	1032	0	0	0
85	SLU 53	18	-12	1050	0	0	0
85	SLU 54	18	-11	1049	0	0	0
85	SLU 55	18	-11	1042	0	0	0
85	SLU 56	18	-11	1061	0	0	0
85	SLU 57	18	-11	1059	0	0	0
85	SLU 58	18	-11	1055	0	0	0
85	SLU 59	18	-11	1053	0	0	0
85	SLU 60	17	-12	1075	0	0	0
85	SLU 61	17	-12	1074	0	0	0
85	SLU 62	17	-12	1086	0	0	0
85	SLU 63	17	-11	1084	0	0	0
85	SLU 64	19	-10	1049	0	0	0
85	SLU 65	19	-9	1047	0	0	0
85	SLU 66	19	-9	1066	0	0	0
85	SLU 67	19	-9	1065	0	0	0
85	SLU 68	19	-8	1058	0	0	0
85	SLU 69	19	-9	1076	0	0	0
85	SLU 70	19	-8	1075	0	0	0
85	SLU 71	19	-9	1070	0	0	0
85	SLU 72	19	-8	1069	0	0	0
85	SLU 73	19	-9	1144	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
85	SLU 74	19	-9	1163	0	0	0
85	SLU 75	19	-9	1161	0	0	0
85	SLU 76	19	-8	1155	0	0	0
85	SLU 77	19	-9	1173	0	0	0
85	SLU 78	19	-8	1172	0	0	0
85	SLU 79	19	-9	1167	0	0	0
85	SLU 80	19	-8	1166	0	0	0
85	SLU 81	19	-10	1188	0	0	0
85	SLU 82	19	-9	1186	0	0	0
85	SLU 83	19	-10	1198	0	0	0
85	SLU 84	19	-9	1197	0	0	0
85	SLE RA 1	14	-8	782	0	0	0
85	SLE RA 2	14	-7	781	0	0	0
85	SLE RA 3	14	-8	793	0	0	0
85	SLE RA 4	14	-7	793	0	0	0
85	SLE RA 5	14	-7	788	0	0	0
85	SLE RA 6	14	-7	800	0	0	0
85	SLE RA 7	14	-7	800	0	0	0
85	SLE RA 8	14	-7	796	0	0	0
85	SLE RA 9	14	-7	796	0	0	0
85	SLE RA 10	14	-7	846	0	0	0
85	SLE RA 11	14	-8	858	0	0	0
85	SLE RA 12	14	-7	857	0	0	0
85	SLE RA 13	14	-7	853	0	0	0
85	SLE RA 14	14	-7	865	0	0	0
85	SLE RA 15	14	-7	864	0	0	0
85	SLE RA 16	14	-7	861	0	0	0
85	SLE RA 17	14	-7	860	0	0	0
85	SLE RA 18	14	-8	875	0	0	0
85	SLE RA 19	14	-8	874	0	0	0
85	SLE RA 20	14	-8	882	0	0	0
85	SLE RA 21	14	-7	881	0	0	0
85	SLE FR 1	14	-8	782	0	0	0
85	SLE FR 2	14	-8	782	0	0	0
85	SLE FR 3	14	-8	785	0	0	0
85	SLE FR 4	14	-8	810	0	0	0
85	SLE FR 5	14	-8	813	0	0	0
85	SLE FR 6	14	-8	829	0	0	0
85	SLE QP 1	14	-8	782	0	0	0
85	SLE QP 2	14	-8	810	0	0	0
85	SLD 1	62	-5	775	0	0	0
85	SLD 2	63	-1	774	0	0	0
85	SLD 3	61	-17	802	0	0	0
85	SLD 4	62	-13	802	0	0	0
85	SLD 5	30	11	757	0	0	0
85	SLD 6	30	14	757	0	0	0
85	SLD 7	27	-30	850	0	0	0
85	SLD 8	27	-27	850	0	0	0
85	SLD 9	1	11	770	0	0	0
85	SLD 10	2	14	770	0	0	0
85	SLD 11	-2	-30	863	0	0	0
85	SLD 12	-2	-27	863	0	0	0
85	SLD 13	-33	-3	818	0	0	0
85	SLD 14	-33	1	818	0	0	0
85	SLD 15	-34	-15	846	0	0	0
85	SLD 16	-34	-11	846	0	0	0
85	SLV 1	126	0	725	0	0	0
85	SLV 2	128	10	724	0	0	0
85	SLV 3	124	-30	794	0	0	0
85	SLV 4	125	-20	794	0	0	0
85	SLV 5	51	38	679	0	0	0
85	SLV 6	52	45	678	0	0	0
85	SLV 7	43	-62	911	0	0	0
85	SLV 8	44	-55	911	0	0	0
85	SLV 9	-15	39	709	0	0	0
85	SLV 10	-15	46	709	0	0	0
85	SLV 11	-24	-61	942	0	0	0
85	SLV 12	-23	-54	941	0	0	0
85	SLV 13	-97	4	827	0	0	0
85	SLV 14	-95	14	826	0	0	0
85	SLV 15	-99	-26	896	0	0	0
85	SLV 16	-98	-16	896	0	0	0
86	SLU 1	9	-4	482	0	0	0
86	SLU 2	9	-3	481	0	0	0
86	SLU 3	9	-3	493	0	0	0
86	SLU 4	9	-3	492	0	0	0
86	SLU 5	9	-3	488	0	0	0
86	SLU 6	9	-3	499	0	0	0
86	SLU 7	9	-3	499	0	0	0
86	SLU 8	9	-3	495	0	0	0
86	SLU 9	9	-3	495	0	0	0
86	SLU 10	9	-3	542	0	0	0
86	SLU 11	9	-3	554	0	0	0
86	SLU 12	9	-3	553	0	0	0
86	SLU 13	9	-3	549	0	0	0
86	SLU 14	9	-3	561	0	0	0
86	SLU 15	9	-3	560	0	0	0
86	SLU 16	9	-3	557	0	0	0
86	SLU 17	9	-3	556	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
86	SLU 18	9	-4	570	0	0	0
86	SLU 19	9	-3	569	0	0	0
86	SLU 20	9	-3	577	0	0	0
86	SLU 21	9	-3	576	0	0	0
86	SLU 22	10	-2	554	0	0	0
86	SLU 23	10	-1	553	0	0	0
86	SLU 24	10	-2	565	0	0	0
86	SLU 25	10	-1	564	0	0	0
86	SLU 26	10	-1	559	0	0	0
86	SLU 27	10	-1	571	0	0	0
86	SLU 28	10	-1	570	0	0	0
86	SLU 29	10	-1	567	0	0	0
86	SLU 30	10	-1	567	0	0	0
86	SLU 31	10	-1	614	0	0	0
86	SLU 32	10	-2	626	0	0	0
86	SLU 33	10	-1	625	0	0	0
86	SLU 34	10	-1	621	0	0	0
86	SLU 35	10	-1	633	0	0	0
86	SLU 36	10	-1	632	0	0	0
86	SLU 37	10	-1	629	0	0	0
86	SLU 38	10	-1	628	0	0	0
86	SLU 39	10	-2	642	0	0	0
86	SLU 40	10	-2	641	0	0	0
86	SLU 41	10	-2	649	0	0	0
86	SLU 42	10	-1	648	0	0	0
86	SLU 43	11	-5	602	0	0	0
86	SLU 44	11	-5	601	0	0	0
86	SLU 45	11	-5	613	0	0	0
86	SLU 46	11	-5	612	0	0	0
86	SLU 47	11	-4	608	0	0	0
86	SLU 48	11	-5	619	0	0	0
86	SLU 49	11	-4	619	0	0	0
86	SLU 50	11	-5	615	0	0	0
86	SLU 51	11	-4	615	0	0	0
86	SLU 52	11	-5	662	0	0	0
86	SLU 53	11	-5	674	0	0	0
86	SLU 54	11	-5	673	0	0	0
86	SLU 55	11	-4	669	0	0	0
86	SLU 56	11	-5	681	0	0	0
86	SLU 57	11	-4	680	0	0	0
86	SLU 58	11	-5	677	0	0	0
86	SLU 59	11	-4	676	0	0	0
86	SLU 60	11	-5	690	0	0	0
86	SLU 61	11	-5	689	0	0	0
86	SLU 62	11	-5	697	0	0	0
86	SLU 63	11	-5	696	0	0	0
86	SLU 64	12	-4	674	0	0	0
86	SLU 65	12	-3	673	0	0	0
86	SLU 66	12	-3	685	0	0	0
86	SLU 67	12	-3	684	0	0	0
86	SLU 68	12	-3	679	0	0	0
86	SLU 69	12	-3	691	0	0	0
86	SLU 70	12	-3	690	0	0	0
86	SLU 71	12	-3	687	0	0	0
86	SLU 72	12	-3	687	0	0	0
86	SLU 73	12	-3	734	0	0	0
86	SLU 74	12	-3	746	0	0	0
86	SLU 75	12	-3	745	0	0	0
86	SLU 76	12	-3	741	0	0	0
86	SLU 77	12	-3	753	0	0	0
86	SLU 78	12	-3	752	0	0	0
86	SLU 79	12	-3	749	0	0	0
86	SLU 80	12	-3	748	0	0	0
86	SLU 81	12	-4	762	0	0	0
86	SLU 82	12	-3	761	0	0	0
86	SLU 83	12	-3	769	0	0	0
86	SLU 84	12	-3	768	0	0	0
86	SLE RA 1	9	-3	503	0	0	0
86	SLE RA 2	9	-3	502	0	0	0
86	SLE RA 3	9	-3	510	0	0	0
86	SLE RA 4	9	-3	509	0	0	0
86	SLE RA 5	9	-3	506	0	0	0
86	SLE RA 6	9	-3	514	0	0	0
86	SLE RA 7	9	-3	514	0	0	0
86	SLE RA 8	9	-3	512	0	0	0
86	SLE RA 9	9	-3	511	0	0	0
86	SLE RA 10	9	-3	543	0	0	0
86	SLE RA 11	9	-3	551	0	0	0
86	SLE RA 12	9	-3	550	0	0	0
86	SLE RA 13	9	-3	547	0	0	0
86	SLE RA 14	9	-3	555	0	0	0
86	SLE RA 15	9	-3	555	0	0	0
86	SLE RA 16	9	-3	553	0	0	0
86	SLE RA 17	9	-3	552	0	0	0
86	SLE RA 18	9	-3	561	0	0	0
86	SLE RA 19	9	-3	561	0	0	0
86	SLE RA 20	9	-3	566	0	0	0
86	SLE RA 21	9	-3	565	0	0	0
86	SLE FR 1	9	-3	503	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
86	SLE FR 2	9	-3	503	0	0	0
86	SLE FR 3	9	-3	504	0	0	0
86	SLE FR 4	9	-3	520	0	0	0
86	SLE FR 5	9	-3	522	0	0	0
86	SLE FR 6	9	-3	532	0	0	0
86	SLE QP 1	9	-3	503	0	0	0
86	SLE QP 2	9	-3	520	0	0	0
86	SLD 1	40	-2	490	0	0	0
86	SLD 2	40	1	489	0	0	0
86	SLD 3	39	-10	508	0	0	0
86	SLD 4	39	-6	507	0	0	0
86	SLD 5	19	8	484	0	0	0
86	SLD 6	19	11	483	0	0	0
86	SLD 7	17	-18	544	0	0	0
86	SLD 8	17	-16	544	0	0	0
86	SLD 9	1	9	497	0	0	0
86	SLD 10	1	11	497	0	0	0
86	SLD 11	-1	-17	557	0	0	0
86	SLD 12	-1	-15	557	0	0	0
86	SLD 13	-21	0	533	0	0	0
86	SLD 14	-21	4	533	0	0	0
86	SLD 15	-22	-8	551	0	0	0
86	SLD 16	-22	-4	551	0	0	0
86	SLV 1	81	0	447	0	0	0
86	SLV 2	82	8	446	0	0	0
86	SLV 3	79	-20	492	0	0	0
86	SLV 4	80	-11	492	0	0	0
86	SLV 5	33	25	430	0	0	0
86	SLV 6	33	31	429	0	0	0
86	SLV 7	27	-39	581	0	0	0
86	SLV 8	28	-33	580	0	0	0
86	SLV 9	-10	27	460	0	0	0
86	SLV 10	-9	32	460	0	0	0
86	SLV 11	-15	-38	611	0	0	0
86	SLV 12	-15	-32	611	0	0	0
86	SLV 13	-62	5	549	0	0	0
86	SLV 14	-61	13	548	0	0	0
86	SLV 15	-64	-15	594	0	0	0
86	SLV 16	-63	-6	594	0	0	0
88	SLU 1	5	-7	287	0	0	0
88	SLU 2	5	-7	286	0	0	0
88	SLU 3	5	-7	293	0	0	0
88	SLU 4	5	-7	292	0	0	0
88	SLU 5	5	-7	290	0	0	0
88	SLU 6	5	-7	297	0	0	0
88	SLU 7	5	-7	297	0	0	0
88	SLU 8	5	-7	295	0	0	0
88	SLU 9	5	-7	294	0	0	0
88	SLU 10	5	-8	324	0	0	0
88	SLU 11	5	-8	331	0	0	0
88	SLU 12	5	-8	331	0	0	0
88	SLU 13	5	-7	328	0	0	0
88	SLU 14	5	-8	335	0	0	0
88	SLU 15	5	-7	335	0	0	0
88	SLU 16	5	-8	333	0	0	0
88	SLU 17	5	-7	333	0	0	0
88	SLU 18	5	-8	341	0	0	0
88	SLU 19	5	-8	341	0	0	0
88	SLU 20	5	-8	345	0	0	0
88	SLU 21	5	-8	345	0	0	0
88	SLU 22	6	-7	330	0	0	0
88	SLU 23	6	-7	329	0	0	0
88	SLU 24	6	-7	336	0	0	0
88	SLU 25	6	-7	336	0	0	0
88	SLU 26	6	-6	333	0	0	0
88	SLU 27	6	-7	341	0	0	0
88	SLU 28	6	-6	340	0	0	0
88	SLU 29	6	-7	338	0	0	0
88	SLU 30	6	-6	338	0	0	0
88	SLU 31	6	-7	368	0	0	0
88	SLU 32	6	-7	375	0	0	0
88	SLU 33	6	-7	374	0	0	0
88	SLU 34	6	-7	372	0	0	0
88	SLU 35	6	-7	379	0	0	0
88	SLU 36	6	-7	378	0	0	0
88	SLU 37	6	-7	377	0	0	0
88	SLU 38	6	-7	376	0	0	0
88	SLU 39	6	-8	385	0	0	0
88	SLU 40	6	-8	384	0	0	0
88	SLU 41	6	-8	389	0	0	0
88	SLU 42	6	-7	388	0	0	0
88	SLU 43	7	-10	358	0	0	0
88	SLU 44	7	-9	357	0	0	0
88	SLU 45	7	-10	364	0	0	0
88	SLU 46	7	-9	363	0	0	0
88	SLU 47	7	-9	361	0	0	0
88	SLU 48	7	-9	368	0	0	0
88	SLU 49	7	-9	368	0	0	0
88	SLU 50	7	-9	366	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
88	SLU 51	7	-9	365	0	0	0
88	SLU 52	7	-10	395	0	0	0
88	SLU 53	7	-10	402	0	0	0
88	SLU 54	7	-10	402	0	0	0
88	SLU 55	7	-10	399	0	0	0
88	SLU 56	7	-10	406	0	0	0
88	SLU 57	7	-10	406	0	0	0
88	SLU 58	7	-10	404	0	0	0
88	SLU 59	7	-10	404	0	0	0
88	SLU 60	7	-11	412	0	0	0
88	SLU 61	7	-10	412	0	0	0
88	SLU 62	7	-10	416	0	0	0
88	SLU 63	7	-10	416	0	0	0
88	SLU 64	7	-9	401	0	0	0
88	SLU 65	7	-9	400	0	0	0
88	SLU 66	7	-9	408	0	0	0
88	SLU 67	7	-9	407	0	0	0
88	SLU 68	7	-9	404	0	0	0
88	SLU 69	7	-9	412	0	0	0
88	SLU 70	7	-9	411	0	0	0
88	SLU 71	7	-9	409	0	0	0
88	SLU 72	7	-9	409	0	0	0
88	SLU 73	7	-10	439	0	0	0
88	SLU 74	7	-10	446	0	0	0
88	SLU 75	7	-9	445	0	0	0
88	SLU 76	7	-9	443	0	0	0
88	SLU 77	7	-10	450	0	0	0
88	SLU 78	7	-9	449	0	0	0
88	SLU 79	7	-10	448	0	0	0
88	SLU 80	7	-9	447	0	0	0
88	SLU 81	7	-10	456	0	0	0
88	SLU 82	7	-10	455	0	0	0
88	SLU 83	7	-10	460	0	0	0
88	SLU 84	7	-10	459	0	0	0
88	SLE RA 1	5	-7	299	0	0	0
88	SLE RA 2	5	-7	298	0	0	0
88	SLE RA 3	5	-7	303	0	0	0
88	SLE RA 4	6	-7	303	0	0	0
88	SLE RA 5	5	-7	301	0	0	0
88	SLE RA 6	6	-7	306	0	0	0
88	SLE RA 7	6	-7	306	0	0	0
88	SLE RA 8	5	-7	304	0	0	0
88	SLE RA 9	5	-7	304	0	0	0
88	SLE RA 10	5	-7	324	0	0	0
88	SLE RA 11	5	-8	329	0	0	0
88	SLE RA 12	5	-7	328	0	0	0
88	SLE RA 13	5	-7	327	0	0	0
88	SLE RA 14	5	-7	332	0	0	0
88	SLE RA 15	6	-7	331	0	0	0
88	SLE RA 16	5	-7	330	0	0	0
88	SLE RA 17	5	-7	330	0	0	0
88	SLE RA 18	5	-8	336	0	0	0
88	SLE RA 19	5	-8	335	0	0	0
88	SLE RA 20	5	-8	338	0	0	0
88	SLE RA 21	5	-8	338	0	0	0
88	SLE FR 1	5	-7	299	0	0	0
88	SLE FR 2	5	-7	299	0	0	0
88	SLE FR 3	5	-7	300	0	0	0
88	SLE FR 4	5	-7	310	0	0	0
88	SLE FR 5	5	-7	311	0	0	0
88	SLE FR 6	5	-8	317	0	0	0
88	SLE QP 1	5	-7	299	0	0	0
88	SLE QP 2	5	-7	310	0	0	0
88	SLD 1	24	-4	313	0	0	0
88	SLD 2	24	-4	313	0	0	0
88	SLD 3	24	-9	325	0	0	0
88	SLD 4	24	-8	325	0	0	0
88	SLD 5	12	1	293	0	0	0
88	SLD 6	12	1	293	0	0	0
88	SLD 7	10	-15	333	0	0	0
88	SLD 8	10	-15	333	0	0	0
88	SLD 9	0	0	287	0	0	0
88	SLD 10	1	0	287	0	0	0
88	SLD 11	-1	-16	327	0	0	0
88	SLD 12	-1	-16	327	0	0	0
88	SLD 13	-13	-6	295	0	0	0
88	SLD 14	-13	-6	295	0	0	0
88	SLD 15	-14	-11	307	0	0	0
88	SLD 16	-13	-11	307	0	0	0
88	SLV 1	50	1	316	0	0	0
88	SLV 2	50	1	316	0	0	0
88	SLV 3	49	-10	346	0	0	0
88	SLV 4	49	-10	346	0	0	0
88	SLV 5	20	12	267	0	0	0
88	SLV 6	20	12	267	0	0	0
88	SLV 7	17	-25	366	0	0	0
88	SLV 8	17	-25	366	0	0	0
88	SLV 9	-6	10	254	0	0	0
88	SLV 10	-6	11	254	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
88	SLV 11	-10	-27	353	0	0	0
88	SLV 12	-9	-27	353	0	0	0
88	SLV 13	-38	-5	274	0	0	0
88	SLV 14	-38	-5	274	0	0	0
88	SLV 15	-39	-16	304	0	0	0
88	SLV 16	-39	-16	304	0	0	0
90	SLU 1	9	-12	483	0	0	0
90	SLU 2	9	-11	481	0	0	0
90	SLU 3	9	-11	494	0	0	0
90	SLU 4	9	-11	493	0	0	0
90	SLU 5	9	-11	488	0	0	0
90	SLU 6	9	-11	501	0	0	0
90	SLU 7	9	-10	500	0	0	0
90	SLU 8	9	-11	497	0	0	0
90	SLU 9	9	-11	496	0	0	0
90	SLU 10	9	-12	546	0	0	0
90	SLU 11	9	-12	558	0	0	0
90	SLU 12	9	-12	557	0	0	0
90	SLU 13	9	-11	553	0	0	0
90	SLU 14	9	-12	565	0	0	0
90	SLU 15	9	-11	564	0	0	0
90	SLU 16	9	-12	561	0	0	0
90	SLU 17	9	-11	560	0	0	0
90	SLU 18	9	-13	575	0	0	0
90	SLU 19	9	-12	574	0	0	0
90	SLU 20	9	-12	582	0	0	0
90	SLU 21	9	-12	581	0	0	0
90	SLU 22	10	-11	556	0	0	0
90	SLU 23	10	-10	555	0	0	0
90	SLU 24	10	-10	567	0	0	0
90	SLU 25	10	-10	566	0	0	0
90	SLU 26	10	-10	562	0	0	0
90	SLU 27	10	-10	574	0	0	0
90	SLU 28	10	-10	573	0	0	0
90	SLU 29	10	-10	570	0	0	0
90	SLU 30	10	-10	569	0	0	0
90	SLU 31	9	-11	619	0	0	0
90	SLU 32	10	-11	632	0	0	0
90	SLU 33	10	-11	631	0	0	0
90	SLU 34	10	-11	626	0	0	0
90	SLU 35	10	-11	638	0	0	0
90	SLU 36	10	-11	637	0	0	0
90	SLU 37	10	-11	635	0	0	0
90	SLU 38	10	-11	634	0	0	0
90	SLU 39	9	-12	648	0	0	0
90	SLU 40	9	-12	647	0	0	0
90	SLU 41	9	-12	655	0	0	0
90	SLU 42	9	-11	654	0	0	0
90	SLU 43	11	-15	603	0	0	0
90	SLU 44	11	-15	601	0	0	0
90	SLU 45	11	-15	614	0	0	0
90	SLU 46	11	-15	613	0	0	0
90	SLU 47	11	-14	608	0	0	0
90	SLU 48	11	-15	620	0	0	0
90	SLU 49	11	-14	619	0	0	0
90	SLU 50	11	-15	617	0	0	0
90	SLU 51	11	-14	616	0	0	0
90	SLU 52	11	-15	665	0	0	0
90	SLU 53	11	-16	678	0	0	0
90	SLU 54	11	-15	677	0	0	0
90	SLU 55	11	-15	672	0	0	0
90	SLU 56	11	-15	685	0	0	0
90	SLU 57	11	-15	684	0	0	0
90	SLU 58	11	-15	681	0	0	0
90	SLU 59	11	-15	680	0	0	0
90	SLU 60	11	-16	695	0	0	0
90	SLU 61	11	-16	694	0	0	0
90	SLU 62	11	-16	702	0	0	0
90	SLU 63	11	-16	701	0	0	0
90	SLU 64	12	-14	676	0	0	0
90	SLU 65	12	-14	675	0	0	0
90	SLU 66	12	-14	687	0	0	0
90	SLU 67	12	-14	686	0	0	0
90	SLU 68	12	-13	681	0	0	0
90	SLU 69	12	-14	694	0	0	0
90	SLU 70	12	-13	693	0	0	0
90	SLU 71	12	-14	690	0	0	0
90	SLU 72	12	-13	689	0	0	0
90	SLU 73	12	-15	739	0	0	0
90	SLU 74	12	-15	751	0	0	0
90	SLU 75	12	-15	750	0	0	0
90	SLU 76	12	-14	746	0	0	0
90	SLU 77	12	-15	758	0	0	0
90	SLU 78	12	-14	757	0	0	0
90	SLU 79	12	-15	754	0	0	0
90	SLU 80	12	-14	753	0	0	0
90	SLU 81	12	-16	768	0	0	0
90	SLU 82	12	-15	767	0	0	0
90	SLU 83	12	-15	775	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
90	SLU 84	12	-15	774	0	0	0
90	SLE RA 1	9	-11	504	0	0	0
90	SLE RA 2	9	-11	503	0	0	0
90	SLE RA 3	9	-11	511	0	0	0
90	SLE RA 4	9	-11	511	0	0	0
90	SLE RA 5	9	-11	508	0	0	0
90	SLE RA 6	9	-11	516	0	0	0
90	SLE RA 7	9	-11	515	0	0	0
90	SLE RA 8	9	-11	513	0	0	0
90	SLE RA 9	9	-11	513	0	0	0
90	SLE RA 10	9	-11	546	0	0	0
90	SLE RA 11	9	-12	554	0	0	0
90	SLE RA 12	9	-11	553	0	0	0
90	SLE RA 13	9	-11	550	0	0	0
90	SLE RA 14	9	-11	559	0	0	0
90	SLE RA 15	9	-11	558	0	0	0
90	SLE RA 16	9	-11	556	0	0	0
90	SLE RA 17	9	-11	555	0	0	0
90	SLE RA 18	9	-12	565	0	0	0
90	SLE RA 19	9	-12	565	0	0	0
90	SLE RA 20	9	-12	570	0	0	0
90	SLE RA 21	9	-12	569	0	0	0
90	SLE FR 1	9	-11	504	0	0	0
90	SLE FR 2	9	-11	504	0	0	0
90	SLE FR 3	9	-11	506	0	0	0
90	SLE FR 4	9	-11	522	0	0	0
90	SLE FR 5	9	-11	524	0	0	0
90	SLE FR 6	9	-12	535	0	0	0
90	SLE QP 1	9	-11	504	0	0	0
90	SLE QP 2	9	-12	522	0	0	0
90	SLD 1	41	-6	523	0	0	0
90	SLD 2	41	-5	523	0	0	0
90	SLD 3	40	-14	545	0	0	0
90	SLD 4	40	-13	545	0	0	0
90	SLD 5	19	2	489	0	0	0
90	SLD 6	20	2	489	0	0	0
90	SLD 7	17	-24	562	0	0	0
90	SLD 8	17	-24	562	0	0	0
90	SLD 9	0	1	483	0	0	0
90	SLD 10	1	1	483	0	0	0
90	SLD 11	-2	-25	555	0	0	0
90	SLD 12	-2	-25	555	0	0	0
90	SLD 13	-22	-10	500	0	0	0
90	SLD 14	-22	-9	500	0	0	0
90	SLD 15	-23	-18	522	0	0	0
90	SLD 16	-23	-17	522	0	0	0
90	SLV 1	83	2	522	0	0	0
90	SLV 2	84	3	521	0	0	0
90	SLV 3	82	-17	576	0	0	0
90	SLV 4	82	-16	576	0	0	0
90	SLV 5	34	21	439	0	0	0
90	SLV 6	34	22	439	0	0	0
90	SLV 7	28	-42	621	0	0	0
90	SLV 8	28	-42	621	0	0	0
90	SLV 9	-11	18	423	0	0	0
90	SLV 10	-10	19	423	0	0	0
90	SLV 11	-16	-45	606	0	0	0
90	SLV 12	-16	-44	605	0	0	0
90	SLV 13	-64	-7	469	0	0	0
90	SLV 14	-64	-6	469	0	0	0
90	SLV 15	-66	-26	523	0	0	0
90	SLV 16	-66	-25	523	0	0	0
92	SLU 1	4	-7	250	0	0	0
92	SLU 2	4	-7	249	0	0	0
92	SLU 3	4	-7	255	0	0	0
92	SLU 4	4	-7	255	0	0	0
92	SLU 5	4	-6	252	0	0	0
92	SLU 6	4	-7	259	0	0	0
92	SLU 7	4	-6	258	0	0	0
92	SLU 8	4	-7	257	0	0	0
92	SLU 9	4	-6	256	0	0	0
92	SLU 10	4	-7	282	0	0	0
92	SLU 11	4	-7	289	0	0	0
92	SLU 12	4	-7	288	0	0	0
92	SLU 13	4	-7	286	0	0	0
92	SLU 14	4	-7	293	0	0	0
92	SLU 15	4	-7	292	0	0	0
92	SLU 16	4	-7	291	0	0	0
92	SLU 17	4	-7	290	0	0	0
92	SLU 18	4	-8	298	0	0	0
92	SLU 19	4	-8	297	0	0	0
92	SLU 20	4	-8	301	0	0	0
92	SLU 21	4	-7	301	0	0	0
92	SLU 22	5	-7	288	0	0	0
92	SLU 23	5	-6	287	0	0	0
92	SLU 24	5	-7	294	0	0	0
92	SLU 25	5	-6	293	0	0	0
92	SLU 26	5	-6	291	0	0	0
92	SLU 27	5	-6	297	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
92	SLU 28	5	-6	297	0	0	0
92	SLU 29	5	-6	295	0	0	0
92	SLU 30	5	-6	295	0	0	0
92	SLU 31	5	-7	321	0	0	0
92	SLU 32	5	-7	327	0	0	0
92	SLU 33	5	-7	327	0	0	0
92	SLU 34	5	-7	324	0	0	0
92	SLU 35	5	-7	331	0	0	0
92	SLU 36	5	-7	330	0	0	0
92	SLU 37	5	-7	329	0	0	0
92	SLU 38	5	-7	328	0	0	0
92	SLU 39	5	-7	336	0	0	0
92	SLU 40	5	-7	336	0	0	0
92	SLU 41	5	-7	340	0	0	0
92	SLU 42	5	-7	339	0	0	0
92	SLU 43	5	-9	312	0	0	0
92	SLU 44	5	-9	311	0	0	0
92	SLU 45	6	-9	317	0	0	0
92	SLU 46	6	-9	317	0	0	0
92	SLU 47	5	-9	314	0	0	0
92	SLU 48	6	-9	321	0	0	0
92	SLU 49	6	-9	320	0	0	0
92	SLU 50	5	-9	319	0	0	0
92	SLU 51	6	-9	318	0	0	0
92	SLU 52	5	-9	344	0	0	0
92	SLU 53	5	-10	351	0	0	0
92	SLU 54	5	-9	350	0	0	0
92	SLU 55	5	-9	348	0	0	0
92	SLU 56	5	-9	355	0	0	0
92	SLU 57	5	-9	354	0	0	0
92	SLU 58	5	-9	353	0	0	0
92	SLU 59	5	-9	352	0	0	0
92	SLU 60	5	-10	360	0	0	0
92	SLU 61	5	-10	359	0	0	0
92	SLU 62	5	-10	363	0	0	0
92	SLU 63	5	-10	363	0	0	0
92	SLU 64	6	-9	350	0	0	0
92	SLU 65	6	-9	349	0	0	0
92	SLU 66	6	-9	356	0	0	0
92	SLU 67	6	-9	355	0	0	0
92	SLU 68	6	-8	353	0	0	0
92	SLU 69	6	-9	359	0	0	0
92	SLU 70	6	-8	359	0	0	0
92	SLU 71	6	-9	357	0	0	0
92	SLU 72	6	-8	357	0	0	0
92	SLU 73	6	-9	383	0	0	0
92	SLU 74	6	-9	389	0	0	0
92	SLU 75	6	-9	389	0	0	0
92	SLU 76	6	-9	386	0	0	0
92	SLU 77	6	-9	393	0	0	0
92	SLU 78	6	-9	392	0	0	0
92	SLU 79	6	-9	391	0	0	0
92	SLU 80	6	-9	390	0	0	0
92	SLU 81	6	-10	398	0	0	0
92	SLU 82	6	-9	397	0	0	0
92	SLU 83	6	-10	402	0	0	0
92	SLU 84	6	-9	401	0	0	0
92	SLE RA 1	4	-7	261	0	0	0
92	SLE RA 2	4	-7	260	0	0	0
92	SLE RA 3	4	-7	265	0	0	0
92	SLE RA 4	4	-7	264	0	0	0
92	SLE RA 5	4	-7	263	0	0	0
92	SLE RA 6	4	-7	267	0	0	0
92	SLE RA 7	4	-7	267	0	0	0
92	SLE RA 8	4	-7	266	0	0	0
92	SLE RA 9	4	-7	265	0	0	0
92	SLE RA 10	4	-7	283	0	0	0
92	SLE RA 11	4	-7	287	0	0	0
92	SLE RA 12	4	-7	287	0	0	0
92	SLE RA 13	4	-7	285	0	0	0
92	SLE RA 14	4	-7	289	0	0	0
92	SLE RA 15	4	-7	289	0	0	0
92	SLE RA 16	4	-7	288	0	0	0
92	SLE RA 17	4	-7	288	0	0	0
92	SLE RA 18	4	-7	293	0	0	0
92	SLE RA 19	4	-7	292	0	0	0
92	SLE RA 20	4	-7	295	0	0	0
92	SLE RA 21	4	-7	295	0	0	0
92	SLE FR 1	4	-7	261	0	0	0
92	SLE FR 2	4	-7	261	0	0	0
92	SLE FR 3	4	-7	262	0	0	0
92	SLE FR 4	4	-7	270	0	0	0
92	SLE FR 5	4	-7	271	0	0	0
92	SLE FR 6	4	-7	277	0	0	0
92	SLE QP 1	4	-7	261	0	0	0
92	SLE QP 2	4	-7	270	0	0	0
92	SLD 1	21	-4	274	0	0	0
92	SLD 2	21	-4	274	0	0	0
92	SLD 3	21	-8	287	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
92	SLD 4	21	-8	287	0	0	0
92	SLD 5	10	0	251	0	0	0
92	SLD 6	10	0	251	0	0	0
92	SLD 7	9	-13	295	0	0	0
92	SLD 8	9	-14	295	0	0	0
92	SLD 9	0	-1	245	0	0	0
92	SLD 10	0	-1	245	0	0	0
92	SLD 11	-1	-14	289	0	0	0
92	SLD 12	-1	-14	289	0	0	0
92	SLD 13	-12	-6	254	0	0	0
92	SLD 14	-12	-6	254	0	0	0
92	SLD 15	-12	-10	267	0	0	0
92	SLD 16	-12	-10	267	0	0	0
92	SLV 1	44	1	278	0	0	0
92	SLV 2	44	1	278	0	0	0
92	SLV 3	43	-9	311	0	0	0
92	SLV 4	43	-9	311	0	0	0
92	SLV 5	18	10	223	0	0	0
92	SLV 6	17	10	223	0	0	0
92	SLV 7	15	-23	333	0	0	0
92	SLV 8	15	-23	332	0	0	0
92	SLV 9	-6	9	208	0	0	0
92	SLV 10	-6	8	208	0	0	0
92	SLV 11	-9	-24	318	0	0	0
92	SLV 12	-9	-25	318	0	0	0
92	SLV 13	-34	-5	230	0	0	0
92	SLV 14	-34	-5	230	0	0	0
92	SLV 15	-35	-15	263	0	0	0
92	SLV 16	-35	-15	263	0	0	0
93	SLU 1	3	-4	180	0	0	0
93	SLU 2	3	-4	179	0	0	0
93	SLU 3	3	-4	184	0	0	0
93	SLU 4	3	-4	184	0	0	0
93	SLU 5	3	-4	182	0	0	0
93	SLU 6	3	-4	187	0	0	0
93	SLU 7	3	-4	186	0	0	0
93	SLU 8	3	-4	185	0	0	0
93	SLU 9	3	-4	185	0	0	0
93	SLU 10	3	-4	203	0	0	0
93	SLU 11	3	-5	208	0	0	0
93	SLU 12	3	-4	208	0	0	0
93	SLU 13	3	-4	206	0	0	0
93	SLU 14	3	-4	211	0	0	0
93	SLU 15	3	-4	210	0	0	0
93	SLU 16	3	-4	209	0	0	0
93	SLU 17	3	-4	209	0	0	0
93	SLU 18	3	-5	214	0	0	0
93	SLU 19	3	-5	214	0	0	0
93	SLU 20	3	-5	217	0	0	0
93	SLU 21	3	-4	217	0	0	0
93	SLU 22	3	-4	208	0	0	0
93	SLU 23	3	-4	207	0	0	0
93	SLU 24	3	-4	212	0	0	0
93	SLU 25	3	-4	211	0	0	0
93	SLU 26	3	-4	209	0	0	0
93	SLU 27	3	-4	214	0	0	0
93	SLU 28	3	-4	214	0	0	0
93	SLU 29	3	-4	213	0	0	0
93	SLU 30	3	-4	212	0	0	0
93	SLU 31	3	-4	231	0	0	0
93	SLU 32	3	-4	236	0	0	0
93	SLU 33	3	-4	235	0	0	0
93	SLU 34	3	-4	233	0	0	0
93	SLU 35	3	-4	238	0	0	0
93	SLU 36	3	-4	238	0	0	0
93	SLU 37	3	-4	237	0	0	0
93	SLU 38	3	-4	236	0	0	0
93	SLU 39	3	-4	242	0	0	0
93	SLU 40	3	-4	241	0	0	0
93	SLU 41	3	-4	244	0	0	0
93	SLU 42	3	-4	244	0	0	0
93	SLU 43	4	-6	225	0	0	0
93	SLU 44	4	-5	224	0	0	0
93	SLU 45	4	-6	229	0	0	0
93	SLU 46	4	-5	228	0	0	0
93	SLU 47	4	-5	227	0	0	0
93	SLU 48	4	-5	231	0	0	0
93	SLU 49	4	-5	231	0	0	0
93	SLU 50	4	-5	230	0	0	0
93	SLU 51	4	-5	229	0	0	0
93	SLU 52	4	-6	248	0	0	0
93	SLU 53	4	-6	253	0	0	0
93	SLU 54	4	-6	252	0	0	0
93	SLU 55	4	-6	251	0	0	0
93	SLU 56	4	-6	255	0	0	0
93	SLU 57	4	-6	255	0	0	0
93	SLU 58	4	-6	254	0	0	0
93	SLU 59	4	-6	253	0	0	0
93	SLU 60	4	-6	259	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
93	SLU 61	4	-6	259	0	0	0
93	SLU 62	4	-6	262	0	0	0
93	SLU 63	4	-6	261	0	0	0
93	SLU 64	4	-5	252	0	0	0
93	SLU 65	4	-5	251	0	0	0
93	SLU 66	4	-5	256	0	0	0
93	SLU 67	4	-5	256	0	0	0
93	SLU 68	4	-5	254	0	0	0
93	SLU 69	4	-5	259	0	0	0
93	SLU 70	4	-5	258	0	0	0
93	SLU 71	4	-5	257	0	0	0
93	SLU 72	4	-5	257	0	0	0
93	SLU 73	4	-5	275	0	0	0
93	SLU 74	4	-6	280	0	0	0
93	SLU 75	4	-5	280	0	0	0
93	SLU 76	4	-5	278	0	0	0
93	SLU 77	4	-5	283	0	0	0
93	SLU 78	4	-5	282	0	0	0
93	SLU 79	4	-5	281	0	0	0
93	SLU 80	4	-5	281	0	0	0
93	SLU 81	4	-6	286	0	0	0
93	SLU 82	4	-6	286	0	0	0
93	SLU 83	4	-6	289	0	0	0
93	SLU 84	4	-6	289	0	0	0
93	SLE RA 1	3	-4	188	0	0	0
93	SLE RA 2	3	-4	187	0	0	0
93	SLE RA 3	3	-4	191	0	0	0
93	SLE RA 4	3	-4	190	0	0	0
93	SLE RA 5	3	-4	189	0	0	0
93	SLE RA 6	3	-4	192	0	0	0
93	SLE RA 7	3	-4	192	0	0	0
93	SLE RA 8	3	-4	191	0	0	0
93	SLE RA 9	3	-4	191	0	0	0
93	SLE RA 10	3	-4	203	0	0	0
93	SLE RA 11	3	-4	207	0	0	0
93	SLE RA 12	3	-4	206	0	0	0
93	SLE RA 13	3	-4	205	0	0	0
93	SLE RA 14	3	-4	208	0	0	0
93	SLE RA 15	3	-4	208	0	0	0
93	SLE RA 16	3	-4	207	0	0	0
93	SLE RA 17	3	-4	207	0	0	0
93	SLE RA 18	3	-5	211	0	0	0
93	SLE RA 19	3	-4	211	0	0	0
93	SLE RA 20	3	-4	213	0	0	0
93	SLE RA 21	3	-4	212	0	0	0
93	SLE FR 1	3	-4	188	0	0	0
93	SLE FR 2	3	-4	188	0	0	0
93	SLE FR 3	3	-4	189	0	0	0
93	SLE FR 4	3	-4	195	0	0	0
93	SLE FR 5	3	-4	195	0	0	0
93	SLE FR 6	3	-4	199	0	0	0
93	SLE QP 1	3	-4	188	0	0	0
93	SLE QP 2	3	-4	195	0	0	0
93	SLD 1	15	-2	194	0	0	0
93	SLD 2	15	-2	194	0	0	0
93	SLD 3	15	-5	204	0	0	0
93	SLD 4	15	-5	204	0	0	0
93	SLD 5	7	1	180	0	0	0
93	SLD 6	7	1	180	0	0	0
93	SLD 7	6	-9	212	0	0	0
93	SLD 8	6	-9	212	0	0	0
93	SLD 9	0	0	178	0	0	0
93	SLD 10	0	0	178	0	0	0
93	SLD 11	-1	-10	209	0	0	0
93	SLD 12	-1	-9	209	0	0	0
93	SLD 13	-9	-4	186	0	0	0
93	SLD 14	-9	-3	186	0	0	0
93	SLD 15	-9	-7	195	0	0	0
93	SLD 16	-9	-6	195	0	0	0
93	SLV 1	31	1	193	0	0	0
93	SLV 2	31	1	193	0	0	0
93	SLV 3	31	-6	217	0	0	0
93	SLV 4	31	-6	217	0	0	0
93	SLV 5	12	8	158	0	0	0
93	SLV 6	12	8	158	0	0	0
93	SLV 7	10	-16	238	0	0	0
93	SLV 8	10	-15	237	0	0	0
93	SLV 9	-4	7	152	0	0	0
93	SLV 10	-4	7	152	0	0	0
93	SLV 11	-6	-17	232	0	0	0
93	SLV 12	-6	-16	231	0	0	0
93	SLV 13	-24	-3	173	0	0	0
93	SLV 14	-24	-2	173	0	0	0
93	SLV 15	-25	-10	197	0	0	0
93	SLV 16	-25	-9	197	0	0	0
94	SLU 1	3	-4	197	0	0	0
94	SLU 2	3	-4	196	0	0	0
94	SLU 3	3	-4	201	0	0	0
94	SLU 4	3	-4	201	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
94	SLU 5	3	-4	199	0	0	0
94	SLU 6	3	-4	204	0	0	0
94	SLU 7	3	-4	203	0	0	0
94	SLU 8	3	-4	202	0	0	0
94	SLU 9	3	-4	202	0	0	0
94	SLU 10	3	-4	222	0	0	0
94	SLU 11	3	-4	227	0	0	0
94	SLU 12	3	-4	227	0	0	0
94	SLU 13	3	-4	225	0	0	0
94	SLU 14	3	-4	230	0	0	0
94	SLU 15	3	-4	229	0	0	0
94	SLU 16	3	-4	228	0	0	0
94	SLU 17	3	-4	228	0	0	0
94	SLU 18	3	-4	234	0	0	0
94	SLU 19	3	-4	233	0	0	0
94	SLU 20	3	-4	237	0	0	0
94	SLU 21	3	-4	236	0	0	0
94	SLU 22	4	-4	227	0	0	0
94	SLU 23	4	-3	226	0	0	0
94	SLU 24	4	-4	231	0	0	0
94	SLU 25	4	-3	231	0	0	0
94	SLU 26	4	-3	229	0	0	0
94	SLU 27	4	-3	234	0	0	0
94	SLU 28	4	-3	233	0	0	0
94	SLU 29	4	-3	232	0	0	0
94	SLU 30	4	-3	232	0	0	0
94	SLU 31	4	-4	252	0	0	0
94	SLU 32	4	-4	257	0	0	0
94	SLU 33	4	-4	257	0	0	0
94	SLU 34	4	-4	255	0	0	0
94	SLU 35	4	-4	260	0	0	0
94	SLU 36	4	-4	259	0	0	0
94	SLU 37	4	-4	258	0	0	0
94	SLU 38	4	-4	258	0	0	0
94	SLU 39	4	-4	264	0	0	0
94	SLU 40	4	-4	263	0	0	0
94	SLU 41	4	-4	267	0	0	0
94	SLU 42	4	-4	266	0	0	0
94	SLU 43	4	-5	245	0	0	0
94	SLU 44	4	-5	245	0	0	0
94	SLU 45	4	-5	250	0	0	0
94	SLU 46	4	-5	249	0	0	0
94	SLU 47	4	-5	247	0	0	0
94	SLU 48	4	-5	253	0	0	0
94	SLU 49	4	-5	252	0	0	0
94	SLU 50	4	-5	251	0	0	0
94	SLU 51	4	-5	251	0	0	0
94	SLU 52	4	-5	271	0	0	0
94	SLU 53	4	-6	276	0	0	0
94	SLU 54	4	-5	275	0	0	0
94	SLU 55	4	-5	273	0	0	0
94	SLU 56	4	-5	279	0	0	0
94	SLU 57	4	-5	278	0	0	0
94	SLU 58	4	-5	277	0	0	0
94	SLU 59	4	-5	277	0	0	0
94	SLU 60	4	-6	283	0	0	0
94	SLU 61	4	-6	282	0	0	0
94	SLU 62	4	-6	285	0	0	0
94	SLU 63	4	-6	285	0	0	0
94	SLU 64	4	-5	275	0	0	0
94	SLU 65	5	-5	275	0	0	0
94	SLU 66	5	-5	280	0	0	0
94	SLU 67	5	-5	279	0	0	0
94	SLU 68	5	-5	277	0	0	0
94	SLU 69	5	-5	283	0	0	0
94	SLU 70	5	-5	282	0	0	0
94	SLU 71	5	-5	281	0	0	0
94	SLU 72	5	-5	281	0	0	0
94	SLU 73	4	-5	301	0	0	0
94	SLU 74	4	-5	306	0	0	0
94	SLU 75	5	-5	305	0	0	0
94	SLU 76	4	-5	303	0	0	0
94	SLU 77	5	-5	309	0	0	0
94	SLU 78	5	-5	308	0	0	0
94	SLU 79	4	-5	307	0	0	0
94	SLU 80	4	-5	307	0	0	0
94	SLU 81	4	-5	313	0	0	0
94	SLU 82	4	-5	312	0	0	0
94	SLU 83	4	-5	315	0	0	0
94	SLU 84	4	-5	315	0	0	0
94	SLE RA 1	3	-4	205	0	0	0
94	SLE RA 2	3	-4	205	0	0	0
94	SLE RA 3	3	-4	208	0	0	0
94	SLE RA 4	3	-4	208	0	0	0
94	SLE RA 5	3	-4	207	0	0	0
94	SLE RA 6	3	-4	210	0	0	0
94	SLE RA 7	3	-4	210	0	0	0
94	SLE RA 8	3	-4	209	0	0	0
94	SLE RA 9	3	-4	209	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
94	SLE RA 10	3	-4	222	0	0	0
94	SLE RA 11	3	-4	226	0	0	0
94	SLE RA 12	3	-4	225	0	0	0
94	SLE RA 13	3	-4	224	0	0	0
94	SLE RA 14	3	-4	227	0	0	0
94	SLE RA 15	3	-4	227	0	0	0
94	SLE RA 16	3	-4	226	0	0	0
94	SLE RA 17	3	-4	226	0	0	0
94	SLE RA 18	3	-4	230	0	0	0
94	SLE RA 19	3	-4	230	0	0	0
94	SLE RA 20	3	-4	232	0	0	0
94	SLE RA 21	3	-4	232	0	0	0
94	SLE FR 1	3	-4	205	0	0	0
94	SLE FR 2	3	-4	205	0	0	0
94	SLE FR 3	3	-4	206	0	0	0
94	SLE FR 4	3	-4	213	0	0	0
94	SLE FR 5	3	-4	213	0	0	0
94	SLE FR 6	3	-4	218	0	0	0
94	SLE QP 1	3	-4	205	0	0	0
94	SLE QP 2	3	-4	213	0	0	0
94	SLD 1	16	-2	210	0	0	0
94	SLD 2	16	-2	210	0	0	0
94	SLD 3	16	-5	220	0	0	0
94	SLD 4	16	-5	220	0	0	0
94	SLD 5	8	1	196	0	0	0
94	SLD 6	8	2	196	0	0	0
94	SLD 7	7	-9	231	0	0	0
94	SLD 8	7	-9	231	0	0	0
94	SLD 9	0	1	195	0	0	0
94	SLD 10	0	1	195	0	0	0
94	SLD 11	-1	-10	229	0	0	0
94	SLD 12	-1	-9	229	0	0	0
94	SLD 13	-9	-3	205	0	0	0
94	SLD 14	-9	-3	205	0	0	0
94	SLD 15	-10	-6	216	0	0	0
94	SLD 16	-10	-6	216	0	0	0
94	SLV 1	34	1	205	0	0	0
94	SLV 2	34	2	205	0	0	0
94	SLV 3	33	-7	231	0	0	0
94	SLV 4	33	-6	231	0	0	0
94	SLV 5	14	9	171	0	0	0
94	SLV 6	14	10	171	0	0	0
94	SLV 7	11	-17	258	0	0	0
94	SLV 8	11	-16	257	0	0	0
94	SLV 9	-5	8	168	0	0	0
94	SLV 10	-5	9	168	0	0	0
94	SLV 11	-7	-18	255	0	0	0
94	SLV 12	-7	-17	254	0	0	0
94	SLV 13	-26	-2	195	0	0	0
94	SLV 14	-26	-1	195	0	0	0
94	SLV 15	-27	-10	221	0	0	0
94	SLV 16	-27	-9	221	0	0	0
95	SLU 1	4	-4	245	0	0	0
95	SLU 2	4	-4	244	0	0	0
95	SLU 3	4	-4	251	0	0	0
95	SLU 4	4	-4	250	0	0	0
95	SLU 5	4	-4	248	0	0	0
95	SLU 6	4	-4	254	0	0	0
95	SLU 7	4	-4	254	0	0	0
95	SLU 8	4	-4	252	0	0	0
95	SLU 9	4	-4	252	0	0	0
95	SLU 10	4	-4	276	0	0	0
95	SLU 11	4	-4	283	0	0	0
95	SLU 12	4	-4	282	0	0	0
95	SLU 13	4	-4	280	0	0	0
95	SLU 14	4	-4	286	0	0	0
95	SLU 15	4	-4	286	0	0	0
95	SLU 16	4	-4	284	0	0	0
95	SLU 17	4	-4	284	0	0	0
95	SLU 18	4	-5	291	0	0	0
95	SLU 19	4	-4	291	0	0	0
95	SLU 20	4	-4	295	0	0	0
95	SLU 21	4	-4	294	0	0	0
95	SLU 22	4	-4	282	0	0	0
95	SLU 23	5	-3	281	0	0	0
95	SLU 24	5	-4	288	0	0	0
95	SLU 25	5	-3	287	0	0	0
95	SLU 26	5	-3	285	0	0	0
95	SLU 27	5	-3	291	0	0	0
95	SLU 28	5	-3	291	0	0	0
95	SLU 29	5	-3	289	0	0	0
95	SLU 30	5	-3	289	0	0	0
95	SLU 31	4	-4	314	0	0	0
95	SLU 32	4	-4	320	0	0	0
95	SLU 33	5	-4	320	0	0	0
95	SLU 34	4	-3	317	0	0	0
95	SLU 35	5	-4	324	0	0	0
95	SLU 36	5	-3	323	0	0	0
95	SLU 37	4	-4	322	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
95	SLU 38	4	-3	321	0	0	0
95	SLU 39	4	-4	328	0	0	0
95	SLU 40	4	-4	328	0	0	0
95	SLU 41	4	-4	332	0	0	0
95	SLU 42	4	-4	331	0	0	0
95	SLU 43	5	-6	306	0	0	0
95	SLU 44	5	-5	305	0	0	0
95	SLU 45	5	-6	311	0	0	0
95	SLU 46	5	-5	311	0	0	0
95	SLU 47	5	-5	308	0	0	0
95	SLU 48	5	-5	315	0	0	0
95	SLU 49	5	-5	314	0	0	0
95	SLU 50	5	-5	313	0	0	0
95	SLU 51	5	-5	312	0	0	0
95	SLU 52	5	-6	337	0	0	0
95	SLU 53	5	-6	344	0	0	0
95	SLU 54	5	-6	343	0	0	0
95	SLU 55	5	-6	341	0	0	0
95	SLU 56	5	-6	347	0	0	0
95	SLU 57	5	-5	347	0	0	0
95	SLU 58	5	-6	345	0	0	0
95	SLU 59	5	-6	345	0	0	0
95	SLU 60	5	-6	352	0	0	0
95	SLU 61	5	-6	351	0	0	0
95	SLU 62	5	-6	355	0	0	0
95	SLU 63	5	-6	355	0	0	0
95	SLU 64	6	-5	343	0	0	0
95	SLU 65	6	-5	342	0	0	0
95	SLU 66	6	-5	349	0	0	0
95	SLU 67	6	-5	348	0	0	0
95	SLU 68	6	-5	346	0	0	0
95	SLU 69	6	-5	352	0	0	0
95	SLU 70	6	-5	352	0	0	0
95	SLU 71	6	-5	350	0	0	0
95	SLU 72	6	-5	350	0	0	0
95	SLU 73	6	-5	374	0	0	0
95	SLU 74	6	-5	381	0	0	0
95	SLU 75	6	-5	380	0	0	0
95	SLU 76	6	-5	378	0	0	0
95	SLU 77	6	-5	384	0	0	0
95	SLU 78	6	-5	384	0	0	0
95	SLU 79	6	-5	382	0	0	0
95	SLU 80	6	-5	382	0	0	0
95	SLU 81	5	-6	389	0	0	0
95	SLU 82	5	-5	389	0	0	0
95	SLU 83	5	-5	393	0	0	0
95	SLU 84	6	-5	392	0	0	0
95	SLE RA 1	4	-4	256	0	0	0
95	SLE RA 2	4	-4	255	0	0	0
95	SLE RA 3	4	-4	259	0	0	0
95	SLE RA 4	4	-4	259	0	0	0
95	SLE RA 5	4	-4	258	0	0	0
95	SLE RA 6	4	-4	262	0	0	0
95	SLE RA 7	4	-4	261	0	0	0
95	SLE RA 8	4	-4	260	0	0	0
95	SLE RA 9	4	-4	260	0	0	0
95	SLE RA 10	4	-4	277	0	0	0
95	SLE RA 11	4	-4	281	0	0	0
95	SLE RA 12	4	-4	281	0	0	0
95	SLE RA 13	4	-4	279	0	0	0
95	SLE RA 14	4	-4	283	0	0	0
95	SLE RA 15	4	-4	283	0	0	0
95	SLE RA 16	4	-4	282	0	0	0
95	SLE RA 17	4	-4	282	0	0	0
95	SLE RA 18	4	-4	286	0	0	0
95	SLE RA 19	4	-4	286	0	0	0
95	SLE RA 20	4	-4	289	0	0	0
95	SLE RA 21	4	-4	288	0	0	0
95	SLE FR 1	4	-4	256	0	0	0
95	SLE FR 2	4	-4	256	0	0	0
95	SLE FR 3	4	-4	257	0	0	0
95	SLE FR 4	4	-4	265	0	0	0
95	SLE FR 5	4	-4	266	0	0	0
95	SLE FR 6	4	-4	271	0	0	0
95	SLE QP 1	4	-4	256	0	0	0
95	SLE QP 2	4	-4	265	0	0	0
95	SLD 1	20	-2	258	0	0	0
95	SLD 2	20	-1	257	0	0	0
95	SLD 3	20	-6	270	0	0	0
95	SLD 4	20	-5	270	0	0	0
95	SLD 5	10	2	243	0	0	0
95	SLD 6	10	3	243	0	0	0
95	SLD 7	8	-11	286	0	0	0
95	SLD 8	8	-10	286	0	0	0
95	SLD 9	0	2	244	0	0	0
95	SLD 10	0	3	244	0	0	0
95	SLD 11	-1	-11	287	0	0	0
95	SLD 12	-1	-11	287	0	0	0
95	SLD 13	-12	-3	260	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
95	SLD 14	-12	-2	260	0	0	0
95	SLD 15	-12	-7	273	0	0	0
95	SLD 16	-12	-6	272	0	0	0
95	SLV 1	42	1	247	0	0	0
95	SLV 2	42	3	246	0	0	0
95	SLV 3	41	-9	279	0	0	0
95	SLV 4	41	-7	279	0	0	0
95	SLV 5	17	12	210	0	0	0
95	SLV 6	17	13	210	0	0	0
95	SLV 7	14	-21	318	0	0	0
95	SLV 8	14	-19	318	0	0	0
95	SLV 9	-6	11	212	0	0	0
95	SLV 10	-6	12	212	0	0	0
95	SLV 11	-8	-21	320	0	0	0
95	SLV 12	-8	-20	320	0	0	0
95	SLV 13	-33	-2	251	0	0	0
95	SLV 14	-33	1	251	0	0	0
95	SLV 15	-34	-11	284	0	0	0
95	SLV 16	-34	-9	283	0	0	0
96	SLU 1	5	-5	315	0	0	0
96	SLU 2	5	-4	314	0	0	0
96	SLU 3	5	-4	322	0	0	0
96	SLU 4	5	-4	322	0	0	0
96	SLU 5	5	-4	319	0	0	0
96	SLU 6	5	-4	327	0	0	0
96	SLU 7	5	-4	326	0	0	0
96	SLU 8	5	-4	324	0	0	0
96	SLU 9	5	-4	324	0	0	0
96	SLU 10	5	-4	355	0	0	0
96	SLU 11	5	-5	364	0	0	0
96	SLU 12	5	-4	363	0	0	0
96	SLU 13	5	-4	360	0	0	0
96	SLU 14	5	-4	368	0	0	0
96	SLU 15	5	-4	367	0	0	0
96	SLU 16	5	-4	366	0	0	0
96	SLU 17	5	-4	365	0	0	0
96	SLU 18	5	-5	374	0	0	0
96	SLU 19	5	-5	373	0	0	0
96	SLU 20	5	-5	379	0	0	0
96	SLU 21	5	-4	378	0	0	0
96	SLU 22	6	-4	363	0	0	0
96	SLU 23	6	-3	362	0	0	0
96	SLU 24	6	-3	370	0	0	0
96	SLU 25	6	-3	370	0	0	0
96	SLU 26	6	-3	367	0	0	0
96	SLU 27	6	-3	375	0	0	0
96	SLU 28	6	-3	374	0	0	0
96	SLU 29	6	-3	372	0	0	0
96	SLU 30	6	-3	372	0	0	0
96	SLU 31	6	-3	403	0	0	0
96	SLU 32	6	-4	411	0	0	0
96	SLU 33	6	-3	411	0	0	0
96	SLU 34	6	-3	408	0	0	0
96	SLU 35	6	-3	416	0	0	0
96	SLU 36	6	-3	415	0	0	0
96	SLU 37	6	-4	413	0	0	0
96	SLU 38	6	-3	413	0	0	0
96	SLU 39	6	-4	422	0	0	0
96	SLU 40	6	-4	421	0	0	0
96	SLU 41	6	-4	427	0	0	0
96	SLU 42	6	-4	426	0	0	0
96	SLU 43	7	-6	394	0	0	0
96	SLU 44	7	-6	392	0	0	0
96	SLU 45	7	-6	401	0	0	0
96	SLU 46	7	-6	400	0	0	0
96	SLU 47	7	-6	397	0	0	0
96	SLU 48	7	-6	405	0	0	0
96	SLU 49	7	-6	404	0	0	0
96	SLU 50	7	-6	403	0	0	0
96	SLU 51	7	-6	402	0	0	0
96	SLU 52	7	-6	434	0	0	0
96	SLU 53	7	-6	442	0	0	0
96	SLU 54	7	-6	441	0	0	0
96	SLU 55	7	-6	438	0	0	0
96	SLU 56	7	-6	446	0	0	0
96	SLU 57	7	-6	446	0	0	0
96	SLU 58	7	-6	444	0	0	0
96	SLU 59	7	-6	443	0	0	0
96	SLU 60	6	-7	452	0	0	0
96	SLU 61	7	-6	452	0	0	0
96	SLU 62	7	-6	457	0	0	0
96	SLU 63	7	-6	456	0	0	0
96	SLU 64	7	-5	441	0	0	0
96	SLU 65	7	-5	440	0	0	0
96	SLU 66	7	-5	448	0	0	0
96	SLU 67	7	-5	448	0	0	0
96	SLU 68	7	-5	445	0	0	0
96	SLU 69	7	-5	453	0	0	0
96	SLU 70	7	-5	452	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
96	SLU 71	7	-5	450	0	0	0
96	SLU 72	7	-5	450	0	0	0
96	SLU 73	7	-5	481	0	0	0
96	SLU 74	7	-5	490	0	0	0
96	SLU 75	7	-5	489	0	0	0
96	SLU 76	7	-5	486	0	0	0
96	SLU 77	7	-5	494	0	0	0
96	SLU 78	7	-5	493	0	0	0
96	SLU 79	7	-5	492	0	0	0
96	SLU 80	7	-5	491	0	0	0
96	SLU 81	7	-6	500	0	0	0
96	SLU 82	7	-5	500	0	0	0
96	SLU 83	7	-5	505	0	0	0
96	SLU 84	7	-5	504	0	0	0
96	SLE RA 1	5	-4	329	0	0	0
96	SLE RA 2	5	-4	328	0	0	0
96	SLE RA 3	5	-4	334	0	0	0
96	SLE RA 4	5	-4	333	0	0	0
96	SLE RA 5	5	-4	331	0	0	0
96	SLE RA 6	5	-4	337	0	0	0
96	SLE RA 7	5	-4	336	0	0	0
96	SLE RA 8	5	-4	335	0	0	0
96	SLE RA 9	5	-4	335	0	0	0
96	SLE RA 10	5	-4	356	0	0	0
96	SLE RA 11	5	-4	361	0	0	0
96	SLE RA 12	5	-4	361	0	0	0
96	SLE RA 13	5	-4	359	0	0	0
96	SLE RA 14	5	-4	364	0	0	0
96	SLE RA 15	5	-4	364	0	0	0
96	SLE RA 16	5	-4	362	0	0	0
96	SLE RA 17	5	-4	362	0	0	0
96	SLE RA 18	5	-5	368	0	0	0
96	SLE RA 19	5	-4	368	0	0	0
96	SLE RA 20	5	-4	371	0	0	0
96	SLE RA 21	5	-4	371	0	0	0
96	SLE FR 1	5	-4	329	0	0	0
96	SLE FR 2	5	-4	329	0	0	0
96	SLE FR 3	5	-4	330	0	0	0
96	SLE FR 4	5	-4	341	0	0	0
96	SLE FR 5	5	-4	342	0	0	0
96	SLE FR 6	5	-4	349	0	0	0
96	SLE QP 1	5	-4	329	0	0	0
96	SLE QP 2	5	-4	341	0	0	0
96	SLD 1	26	-3	328	0	0	0
96	SLD 2	26	-1	327	0	0	0
96	SLD 3	26	-8	344	0	0	0
96	SLD 4	26	-7	344	0	0	0
96	SLD 5	12	4	312	0	0	0
96	SLD 6	12	5	312	0	0	0
96	SLD 7	11	-14	367	0	0	0
96	SLD 8	11	-13	367	0	0	0
96	SLD 9	0	4	315	0	0	0
96	SLD 10	0	5	315	0	0	0
96	SLD 11	-2	-13	370	0	0	0
96	SLD 12	-2	-12	370	0	0	0
96	SLD 13	-15	-2	338	0	0	0
96	SLD 14	-15	-1	337	0	0	0
96	SLD 15	-15	-7	354	0	0	0
96	SLD 16	-15	-6	354	0	0	0
96	SLV 1	54	-1	309	0	0	0
96	SLV 2	54	3	308	0	0	0
96	SLV 3	53	-13	350	0	0	0
96	SLV 4	53	-10	350	0	0	0
96	SLV 5	21	15	268	0	0	0
96	SLV 6	21	17	268	0	0	0
96	SLV 7	18	-27	407	0	0	0
96	SLV 8	18	-24	406	0	0	0
96	SLV 9	-7	16	275	0	0	0
96	SLV 10	-7	18	275	0	0	0
96	SLV 11	-11	-26	414	0	0	0
96	SLV 12	-11	-24	413	0	0	0
96	SLV 13	-42	1	332	0	0	0
96	SLV 14	-42	5	332	0	0	0
96	SLV 15	-43	-11	373	0	0	0
96	SLV 16	-43	-8	373	0	0	0
97	SLU 1	6	-4	374	0	0	0
97	SLU 2	6	-4	373	0	0	0
97	SLU 3	6	-4	383	0	0	0
97	SLU 4	6	-4	382	0	0	0
97	SLU 5	6	-4	378	0	0	0
97	SLU 6	6	-4	388	0	0	0
97	SLU 7	6	-3	387	0	0	0
97	SLU 8	6	-4	385	0	0	0
97	SLU 9	6	-4	384	0	0	0
97	SLU 10	6	-4	421	0	0	0
97	SLU 11	6	-4	431	0	0	0
97	SLU 12	6	-4	430	0	0	0
97	SLU 13	6	-4	427	0	0	0
97	SLU 14	6	-4	436	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
97	SLU 15	6	-4	436	0	0	0
97	SLU 16	6	-4	433	0	0	0
97	SLU 17	6	-4	432	0	0	0
97	SLU 18	6	-4	443	0	0	0
97	SLU 19	6	-4	443	0	0	0
97	SLU 20	6	-4	449	0	0	0
97	SLU 21	6	-4	448	0	0	0
97	SLU 22	7	-3	431	0	0	0
97	SLU 23	7	-3	429	0	0	0
97	SLU 24	7	-3	439	0	0	0
97	SLU 25	7	-3	438	0	0	0
97	SLU 26	7	-2	435	0	0	0
97	SLU 27	7	-3	445	0	0	0
97	SLU 28	7	-2	444	0	0	0
97	SLU 29	7	-3	442	0	0	0
97	SLU 30	7	-2	441	0	0	0
97	SLU 31	7	-3	478	0	0	0
97	SLU 32	7	-3	488	0	0	0
97	SLU 33	7	-3	487	0	0	0
97	SLU 34	7	-3	483	0	0	0
97	SLU 35	7	-3	493	0	0	0
97	SLU 36	7	-2	492	0	0	0
97	SLU 37	7	-3	490	0	0	0
97	SLU 38	7	-3	489	0	0	0
97	SLU 39	7	-3	500	0	0	0
97	SLU 40	7	-3	499	0	0	0
97	SLU 41	7	-3	505	0	0	0
97	SLU 42	7	-3	505	0	0	0
97	SLU 43	8	-6	467	0	0	0
97	SLU 44	8	-5	466	0	0	0
97	SLU 45	8	-6	475	0	0	0
97	SLU 46	8	-5	475	0	0	0
97	SLU 47	8	-5	471	0	0	0
97	SLU 48	8	-5	481	0	0	0
97	SLU 49	8	-5	480	0	0	0
97	SLU 50	8	-6	478	0	0	0
97	SLU 51	8	-5	477	0	0	0
97	SLU 52	8	-6	514	0	0	0
97	SLU 53	8	-6	524	0	0	0
97	SLU 54	8	-6	523	0	0	0
97	SLU 55	8	-5	519	0	0	0
97	SLU 56	8	-6	529	0	0	0
97	SLU 57	8	-5	528	0	0	0
97	SLU 58	8	-6	526	0	0	0
97	SLU 59	8	-5	525	0	0	0
97	SLU 60	8	-6	536	0	0	0
97	SLU 61	8	-6	535	0	0	0
97	SLU 62	8	-6	542	0	0	0
97	SLU 63	8	-6	541	0	0	0
97	SLU 64	8	-5	524	0	0	0
97	SLU 65	8	-4	522	0	0	0
97	SLU 66	9	-5	532	0	0	0
97	SLU 67	9	-4	531	0	0	0
97	SLU 68	9	-4	528	0	0	0
97	SLU 69	9	-4	537	0	0	0
97	SLU 70	9	-4	537	0	0	0
97	SLU 71	9	-4	534	0	0	0
97	SLU 72	9	-4	533	0	0	0
97	SLU 73	8	-4	571	0	0	0
97	SLU 74	8	-5	581	0	0	0
97	SLU 75	8	-4	580	0	0	0
97	SLU 76	8	-4	576	0	0	0
97	SLU 77	8	-4	586	0	0	0
97	SLU 78	8	-4	585	0	0	0
97	SLU 79	8	-5	583	0	0	0
97	SLU 80	8	-4	582	0	0	0
97	SLU 81	8	-5	593	0	0	0
97	SLU 82	8	-5	592	0	0	0
97	SLU 83	8	-5	598	0	0	0
97	SLU 84	8	-5	597	0	0	0
97	SLE RA 1	6	-4	390	0	0	0
97	SLE RA 2	6	-4	389	0	0	0
97	SLE RA 3	6	-4	396	0	0	0
97	SLE RA 4	6	-4	395	0	0	0
97	SLE RA 5	6	-3	393	0	0	0
97	SLE RA 6	6	-4	400	0	0	0
97	SLE RA 7	6	-3	399	0	0	0
97	SLE RA 8	6	-4	397	0	0	0
97	SLE RA 9	6	-3	397	0	0	0
97	SLE RA 10	6	-4	422	0	0	0
97	SLE RA 11	6	-4	428	0	0	0
97	SLE RA 12	6	-4	428	0	0	0
97	SLE RA 13	6	-4	425	0	0	0
97	SLE RA 14	6	-4	432	0	0	0
97	SLE RA 15	6	-4	431	0	0	0
97	SLE RA 16	6	-4	430	0	0	0
97	SLE RA 17	6	-4	429	0	0	0
97	SLE RA 18	6	-4	437	0	0	0
97	SLE RA 19	6	-4	436	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
97	SLE RA 20	6	-4	440	0	0	0
97	SLE RA 21	6	-4	440	0	0	0
97	SLE FR 1	6	-4	390	0	0	0
97	SLE FR 2	6	-4	390	0	0	0
97	SLE FR 3	6	-4	392	0	0	0
97	SLE FR 4	6	-4	404	0	0	0
97	SLE FR 5	6	-4	406	0	0	0
97	SLE FR 6	6	-4	413	0	0	0
97	SLE QP 1	6	-4	390	0	0	0
97	SLE QP 2	6	-4	404	0	0	0
97	SLD 1	31	-3	384	0	0	0
97	SLD 2	31	0	384	0	0	0
97	SLD 3	30	-9	404	0	0	0
97	SLD 4	30	-6	403	0	0	0
97	SLD 5	14	5	368	0	0	0
97	SLD 6	14	7	368	0	0	0
97	SLD 7	13	-15	434	0	0	0
97	SLD 8	13	-14	434	0	0	0
97	SLD 9	0	6	375	0	0	0
97	SLD 10	0	7	375	0	0	0
97	SLD 11	-2	-15	440	0	0	0
97	SLD 12	-2	-13	440	0	0	0
97	SLD 13	-18	-2	405	0	0	0
97	SLD 14	-18	1	405	0	0	0
97	SLD 15	-18	-8	425	0	0	0
97	SLD 16	-18	-6	425	0	0	0
97	SLV 1	63	0	355	0	0	0
97	SLV 2	63	5	354	0	0	0
97	SLV 3	62	-15	404	0	0	0
97	SLV 4	62	-10	404	0	0	0
97	SLV 5	25	19	315	0	0	0
97	SLV 6	25	22	315	0	0	0
97	SLV 7	21	-31	479	0	0	0
97	SLV 8	21	-28	479	0	0	0
97	SLV 9	-9	20	330	0	0	0
97	SLV 10	-9	23	329	0	0	0
97	SLV 11	-13	-30	494	0	0	0
97	SLV 12	-13	-27	494	0	0	0
97	SLV 13	-50	2	405	0	0	0
97	SLV 14	-50	7	404	0	0	0
97	SLV 15	-51	-13	454	0	0	0
97	SLV 16	-51	-8	453	0	0	0
98	SLU 1	3	-2	211	0	0	0
98	SLU 2	3	-1	210	0	0	0
98	SLU 3	4	-1	216	0	0	0
98	SLU 4	4	-1	215	0	0	0
98	SLU 5	4	-1	213	0	0	0
98	SLU 6	4	-1	219	0	0	0
98	SLU 7	4	-1	218	0	0	0
98	SLU 8	4	-1	217	0	0	0
98	SLU 9	4	-1	217	0	0	0
98	SLU 10	3	-1	237	0	0	0
98	SLU 11	3	-1	243	0	0	0
98	SLU 12	3	-1	242	0	0	0
98	SLU 13	3	-1	240	0	0	0
98	SLU 14	3	-1	246	0	0	0
98	SLU 15	4	-1	245	0	0	0
98	SLU 16	3	-1	244	0	0	0
98	SLU 17	3	-1	244	0	0	0
98	SLU 18	3	-2	250	0	0	0
98	SLU 19	3	-1	249	0	0	0
98	SLU 20	3	-1	253	0	0	0
98	SLU 21	3	-1	252	0	0	0
98	SLU 22	4	-1	243	0	0	0
98	SLU 23	4	-1	242	0	0	0
98	SLU 24	4	-1	248	0	0	0
98	SLU 25	4	-1	247	0	0	0
98	SLU 26	4	0	245	0	0	0
98	SLU 27	4	-1	251	0	0	0
98	SLU 28	4	0	250	0	0	0
98	SLU 29	4	-1	249	0	0	0
98	SLU 30	4	0	249	0	0	0
98	SLU 31	4	-1	269	0	0	0
98	SLU 32	4	-1	275	0	0	0
98	SLU 33	4	-1	274	0	0	0
98	SLU 34	4	0	272	0	0	0
98	SLU 35	4	-1	278	0	0	0
98	SLU 36	4	0	277	0	0	0
98	SLU 37	4	-1	276	0	0	0
98	SLU 38	4	0	276	0	0	0
98	SLU 39	4	-1	282	0	0	0
98	SLU 40	4	-1	281	0	0	0
98	SLU 41	4	-1	285	0	0	0
98	SLU 42	4	-1	284	0	0	0
98	SLU 43	4	-2	264	0	0	0
98	SLU 44	4	-2	263	0	0	0
98	SLU 45	4	-2	268	0	0	0
98	SLU 46	4	-2	268	0	0	0
98	SLU 47	4	-2	266	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
98	SLU 48	4	-2	271	0	0	0
98	SLU 49	4	-2	271	0	0	0
98	SLU 50	4	-2	270	0	0	0
98	SLU 51	4	-2	269	0	0	0
98	SLU 52	4	-2	290	0	0	0
98	SLU 53	4	-2	295	0	0	0
98	SLU 54	4	-2	295	0	0	0
98	SLU 55	4	-2	293	0	0	0
98	SLU 56	4	-2	298	0	0	0
98	SLU 57	4	-2	298	0	0	0
98	SLU 58	4	-2	297	0	0	0
98	SLU 59	4	-2	296	0	0	0
98	SLU 60	4	-2	302	0	0	0
98	SLU 61	4	-2	302	0	0	0
98	SLU 62	4	-2	305	0	0	0
98	SLU 63	4	-2	305	0	0	0
98	SLU 64	5	-2	295	0	0	0
98	SLU 65	5	-1	295	0	0	0
98	SLU 66	5	-1	300	0	0	0
98	SLU 67	5	-1	300	0	0	0
98	SLU 68	5	-1	298	0	0	0
98	SLU 69	5	-1	303	0	0	0
98	SLU 70	5	-1	303	0	0	0
98	SLU 71	5	-1	301	0	0	0
98	SLU 72	5	-1	301	0	0	0
98	SLU 73	5	-1	322	0	0	0
98	SLU 74	5	-1	327	0	0	0
98	SLU 75	5	-1	327	0	0	0
98	SLU 76	5	-1	325	0	0	0
98	SLU 77	5	-1	330	0	0	0
98	SLU 78	5	-1	330	0	0	0
98	SLU 79	5	-1	329	0	0	0
98	SLU 80	5	-1	328	0	0	0
98	SLU 81	5	-2	334	0	0	0
98	SLU 82	5	-1	334	0	0	0
98	SLU 83	5	-2	337	0	0	0
98	SLU 84	5	-1	337	0	0	0
98	SLE RA 1	4	-1	220	0	0	0
98	SLE RA 2	4	-1	220	0	0	0
98	SLE RA 3	4	-1	223	0	0	0
98	SLE RA 4	4	-1	223	0	0	0
98	SLE RA 5	4	-1	222	0	0	0
98	SLE RA 6	4	-1	225	0	0	0
98	SLE RA 7	4	-1	225	0	0	0
98	SLE RA 8	4	-1	224	0	0	0
98	SLE RA 9	4	-1	224	0	0	0
98	SLE RA 10	4	-1	238	0	0	0
98	SLE RA 11	4	-1	241	0	0	0
98	SLE RA 12	4	-1	241	0	0	0
98	SLE RA 13	4	-1	240	0	0	0
98	SLE RA 14	4	-1	243	0	0	0
98	SLE RA 15	4	-1	243	0	0	0
98	SLE RA 16	4	-1	242	0	0	0
98	SLE RA 17	4	-1	242	0	0	0
98	SLE RA 18	4	-1	246	0	0	0
98	SLE RA 19	4	-1	246	0	0	0
98	SLE RA 20	4	-1	248	0	0	0
98	SLE RA 21	4	-1	248	0	0	0
98	SLE FR 1	4	-1	220	0	0	0
98	SLE FR 2	4	-1	220	0	0	0
98	SLE FR 3	4	-1	221	0	0	0
98	SLE FR 4	4	-1	228	0	0	0
98	SLE FR 5	4	-1	229	0	0	0
98	SLE FR 6	4	-1	233	0	0	0
98	SLE QP 1	4	-1	220	0	0	0
98	SLE QP 2	4	-1	228	0	0	0
98	SLD 1	17	-1	213	0	0	0
98	SLD 2	17	1	213	0	0	0
98	SLD 3	17	-4	224	0	0	0
98	SLD 4	17	-3	224	0	0	0
98	SLD 5	8	4	207	0	0	0
98	SLD 6	8	5	207	0	0	0
98	SLD 7	7	-8	244	0	0	0
98	SLD 8	7	-7	244	0	0	0
98	SLD 9	0	4	212	0	0	0
98	SLD 10	0	5	212	0	0	0
98	SLD 11	-1	-8	249	0	0	0
98	SLD 12	-1	-7	249	0	0	0
98	SLD 13	-10	0	232	0	0	0
98	SLD 14	-10	2	232	0	0	0
98	SLD 15	-10	-4	243	0	0	0
98	SLD 16	-10	-2	243	0	0	0
98	SLV 1	36	0	192	0	0	0
98	SLV 2	36	4	192	0	0	0
98	SLV 3	35	-9	220	0	0	0
98	SLV 4	35	-5	220	0	0	0
98	SLV 5	14	11	175	0	0	0
98	SLV 6	14	14	175	0	0	0
98	SLV 7	12	-17	268	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
98	SLV 8	12	-15	268	0	0	0
98	SLV 9	-5	12	188	0	0	0
98	SLV 10	-5	14	188	0	0	0
98	SLV 11	-7	-17	281	0	0	0
98	SLV 12	-7	-14	281	0	0	0
98	SLV 13	-28	2	236	0	0	0
98	SLV 14	-28	6	236	0	0	0
98	SLV 15	-29	-6	264	0	0	0
98	SLV 16	-29	-3	264	0	0	0
170	SLU 1	-1	-7	344	0	0	0
170	SLU 2	-1	-6	354	0	0	0
170	SLU 3	-1	-7	349	0	0	0
170	SLU 4	-1	-6	355	0	0	0
170	SLU 5	-1	-6	357	0	0	0
170	SLU 6	-1	-7	353	0	0	0
170	SLU 7	-1	-6	359	0	0	0
170	SLU 8	-1	-7	351	0	0	0
170	SLU 9	-1	-6	356	0	0	0
170	SLU 10	-1	-6	399	0	0	0
170	SLU 11	-1	-8	394	0	0	0
170	SLU 12	-1	-7	400	0	0	0
170	SLU 13	-1	-6	402	0	0	0
170	SLU 14	-1	-8	397	0	0	0
170	SLU 15	-1	-7	403	0	0	0
170	SLU 16	-1	-8	395	0	0	0
170	SLU 17	-1	-7	401	0	0	0
170	SLU 18	-1	-8	408	0	0	0
170	SLU 19	-1	-7	414	0	0	0
170	SLU 20	-1	-8	411	0	0	0
170	SLU 21	-1	-7	417	0	0	0
170	SLU 22	-1	-8	389	0	0	0
170	SLU 23	-1	-6	399	0	0	0
170	SLU 24	-1	-8	394	0	0	0
170	SLU 25	-1	-7	400	0	0	0
170	SLU 26	-1	-7	402	0	0	0
170	SLU 27	-1	-8	397	0	0	0
170	SLU 28	-1	-7	403	0	0	0
170	SLU 29	-1	-8	395	0	0	0
170	SLU 30	-1	-7	401	0	0	0
170	SLU 31	-1	-7	444	0	0	0
170	SLU 32	-1	-8	439	0	0	0
170	SLU 33	-1	-8	445	0	0	0
170	SLU 34	-1	-7	447	0	0	0
170	SLU 35	-1	-8	442	0	0	0
170	SLU 36	-1	-8	448	0	0	0
170	SLU 37	-1	-8	440	0	0	0
170	SLU 38	-1	-8	446	0	0	0
170	SLU 39	-1	-9	453	0	0	0
170	SLU 40	-1	-8	459	0	0	0
170	SLU 41	-1	-9	456	0	0	0
170	SLU 42	-1	-8	462	0	0	0
170	SLU 43	-1	-9	432	0	0	0
170	SLU 44	-1	-7	442	0	0	0
170	SLU 45	-1	-9	437	0	0	0
170	SLU 46	-1	-8	443	0	0	0
170	SLU 47	-1	-8	445	0	0	0
170	SLU 48	-1	-9	441	0	0	0
170	SLU 49	-1	-8	446	0	0	0
170	SLU 50	-1	-9	439	0	0	0
170	SLU 51	-1	-8	444	0	0	0
170	SLU 52	-1	-8	487	0	0	0
170	SLU 53	-1	-9	482	0	0	0
170	SLU 54	-1	-9	488	0	0	0
170	SLU 55	-1	-8	490	0	0	0
170	SLU 56	-1	-9	485	0	0	0
170	SLU 57	-1	-9	491	0	0	0
170	SLU 58	-1	-9	483	0	0	0
170	SLU 59	-1	-9	489	0	0	0
170	SLU 60	-1	-10	496	0	0	0
170	SLU 61	-1	-9	502	0	0	0
170	SLU 62	-1	-10	499	0	0	0
170	SLU 63	-1	-9	505	0	0	0
170	SLU 64	-1	-9	477	0	0	0
170	SLU 65	-1	-8	487	0	0	0
170	SLU 66	-1	-9	482	0	0	0
170	SLU 67	-1	-9	488	0	0	0
170	SLU 68	-1	-8	490	0	0	0
170	SLU 69	-1	-10	485	0	0	0
170	SLU 70	-1	-9	491	0	0	0
170	SLU 71	-1	-9	483	0	0	0
170	SLU 72	-1	-9	489	0	0	0
170	SLU 73	-1	-9	532	0	0	0
170	SLU 74	-1	-10	527	0	0	0
170	SLU 75	-1	-9	533	0	0	0
170	SLU 76	-1	-9	535	0	0	0
170	SLU 77	-1	-10	530	0	0	0
170	SLU 78	-1	-10	536	0	0	0
170	SLU 79	-1	-10	528	0	0	0
170	SLU 80	-1	-10	534	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
170	SLU 81	-1	-10	541	0	0	0
170	SLU 82	-1	-10	547	0	0	0
170	SLU 83	-1	-10	544	0	0	0
170	SLU 84	-1	-10	550	0	0	0
170	SLE RA 1	-1	-7	357	0	0	0
170	SLE RA 2	-1	-6	364	0	0	0
170	SLE RA 3	-1	-7	361	0	0	0
170	SLE RA 4	-1	-7	364	0	0	0
170	SLE RA 5	-1	-6	366	0	0	0
170	SLE RA 6	-1	-7	363	0	0	0
170	SLE RA 7	-1	-7	367	0	0	0
170	SLE RA 8	-1	-7	361	0	0	0
170	SLE RA 9	-1	-7	365	0	0	0
170	SLE RA 10	-1	-7	393	0	0	0
170	SLE RA 11	-1	-8	390	0	0	0
170	SLE RA 12	-1	-7	394	0	0	0
170	SLE RA 13	-1	-7	396	0	0	0
170	SLE RA 14	-1	-8	392	0	0	0
170	SLE RA 15	-1	-7	396	0	0	0
170	SLE RA 16	-1	-8	391	0	0	0
170	SLE RA 17	-1	-7	395	0	0	0
170	SLE RA 18	-1	-8	400	0	0	0
170	SLE RA 19	-1	-7	404	0	0	0
170	SLE RA 20	-1	-8	402	0	0	0
170	SLE RA 21	-1	-7	406	0	0	0
170	SLE FR 1	-1	-7	357	0	0	0
170	SLE FR 2	-1	-7	358	0	0	0
170	SLE FR 3	-1	-7	358	0	0	0
170	SLE FR 4	-1	-7	371	0	0	0
170	SLE FR 5	-1	-7	371	0	0	0
170	SLE FR 6	-1	-7	378	0	0	0
170	SLE QP 1	-1	-7	357	0	0	0
170	SLE QP 2	-1	-7	370	0	0	0
170	SLD 1	26	-3	470	0	0	0
170	SLD 2	32	-6	466	0	0	0
170	SLD 3	27	-16	337	0	0	0
170	SLD 4	33	-19	333	0	0	0
170	SLD 5	5	14	603	0	0	0
170	SLD 6	9	12	600	0	0	0
170	SLD 7	8	-29	159	0	0	0
170	SLD 8	12	-31	156	0	0	0
170	SLD 9	-14	17	584	0	0	0
170	SLD 10	-9	15	581	0	0	0
170	SLD 11	-10	-27	140	0	0	0
170	SLD 12	-6	-29	137	0	0	0
170	SLD 13	-35	5	407	0	0	0
170	SLD 14	-28	2	402	0	0	0
170	SLD 15	-34	-8	274	0	0	0
170	SLD 16	-27	-11	269	0	0	0
170	SLV 1	61	3	616	0	0	0
170	SLV 2	76	-4	606	0	0	0
170	SLV 3	64	-29	283	0	0	0
170	SLV 4	78	-36	272	0	0	0
170	SLV 5	12	47	951	0	0	0
170	SLV 6	21	42	944	0	0	0
170	SLV 7	19	-62	-160	0	0	0
170	SLV 8	29	-66	-167	0	0	0
170	SLV 9	-31	52	907	0	0	0
170	SLV 10	-21	47	900	0	0	0
170	SLV 11	-23	-56	-205	0	0	0
170	SLV 12	-13	-61	-212	0	0	0
170	SLV 13	-80	22	467	0	0	0
170	SLV 14	-65	15	457	0	0	0
170	SLV 15	-78	-11	134	0	0	0
170	SLV 16	-63	-18	124	0	0	0
170	CRTFP Uy+	0	0	0	0	0	0
170	CRTFP Uy-	0	0	0	0	0	0
171	SLU 1	-2	-12	668	0	0	0
171	SLU 2	-2	-10	687	0	0	0
171	SLU 3	-2	-12	678	0	0	0
171	SLU 4	-2	-11	690	0	0	0
171	SLU 5	-2	-10	693	0	0	0
171	SLU 6	-2	-12	684	0	0	0
171	SLU 7	-2	-11	696	0	0	0
171	SLU 8	-2	-12	680	0	0	0
171	SLU 9	-2	-11	692	0	0	0
171	SLU 10	-1	-11	774	0	0	0
171	SLU 11	-2	-13	765	0	0	0
171	SLU 12	-2	-12	776	0	0	0
171	SLU 13	-1	-11	780	0	0	0
171	SLU 14	-2	-13	771	0	0	0
171	SLU 15	-2	-12	782	0	0	0
171	SLU 16	-2	-13	767	0	0	0
171	SLU 17	-2	-12	779	0	0	0
171	SLU 18	-1	-14	792	0	0	0
171	SLU 19	-1	-12	804	0	0	0
171	SLU 20	-1	-14	798	0	0	0
171	SLU 21	-1	-12	810	0	0	0
171	SLU 22	-2	-13	755	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
171	SLU 23	-2	-11	774	0	0	0
171	SLU 24	-2	-13	765	0	0	0
171	SLU 25	-2	-12	776	0	0	0
171	SLU 26	-2	-11	780	0	0	0
171	SLU 27	-2	-14	771	0	0	0
171	SLU 28	-2	-12	782	0	0	0
171	SLU 29	-2	-13	767	0	0	0
171	SLU 30	-2	-12	778	0	0	0
171	SLU 31	-2	-12	861	0	0	0
171	SLU 32	-2	-15	851	0	0	0
171	SLU 33	-2	-13	863	0	0	0
171	SLU 34	-2	-12	867	0	0	0
171	SLU 35	-2	-15	857	0	0	0
171	SLU 36	-2	-13	869	0	0	0
171	SLU 37	-2	-15	854	0	0	0
171	SLU 38	-2	-13	865	0	0	0
171	SLU 39	-2	-15	879	0	0	0
171	SLU 40	-2	-14	890	0	0	0
171	SLU 41	-2	-15	885	0	0	0
171	SLU 42	-2	-14	896	0	0	0
171	SLU 43	-2	-15	839	0	0	0
171	SLU 44	-2	-13	858	0	0	0
171	SLU 45	-2	-15	849	0	0	0
171	SLU 46	-2	-14	860	0	0	0
171	SLU 47	-2	-13	864	0	0	0
171	SLU 48	-2	-15	855	0	0	0
171	SLU 49	-2	-14	866	0	0	0
171	SLU 50	-2	-15	851	0	0	0
171	SLU 51	-2	-14	863	0	0	0
171	SLU 52	-2	-14	945	0	0	0
171	SLU 53	-2	-16	936	0	0	0
171	SLU 54	-2	-15	947	0	0	0
171	SLU 55	-2	-14	951	0	0	0
171	SLU 56	-2	-17	942	0	0	0
171	SLU 57	-2	-15	953	0	0	0
171	SLU 58	-2	-17	938	0	0	0
171	SLU 59	-2	-15	949	0	0	0
171	SLU 60	-2	-17	963	0	0	0
171	SLU 61	-2	-15	974	0	0	0
171	SLU 62	-2	-17	969	0	0	0
171	SLU 63	-2	-16	980	0	0	0
171	SLU 64	-2	-16	925	0	0	0
171	SLU 65	-2	-14	945	0	0	0
171	SLU 66	-2	-17	935	0	0	0
171	SLU 67	-2	-15	947	0	0	0
171	SLU 68	-2	-14	951	0	0	0
171	SLU 69	-3	-17	941	0	0	0
171	SLU 70	-2	-15	953	0	0	0
171	SLU 71	-2	-17	938	0	0	0
171	SLU 72	-2	-15	949	0	0	0
171	SLU 73	-2	-15	1031	0	0	0
171	SLU 74	-2	-18	1022	0	0	0
171	SLU 75	-2	-16	1034	0	0	0
171	SLU 76	-2	-15	1037	0	0	0
171	SLU 77	-2	-18	1028	0	0	0
171	SLU 78	-2	-17	1040	0	0	0
171	SLU 79	-2	-18	1024	0	0	0
171	SLU 80	-2	-16	1036	0	0	0
171	SLU 81	-2	-18	1049	0	0	0
171	SLU 82	-2	-17	1061	0	0	0
171	SLU 83	-2	-18	1055	0	0	0
171	SLU 84	-2	-17	1067	0	0	0
171	SLE RA 1	-2	-12	693	0	0	0
171	SLE RA 2	-2	-11	706	0	0	0
171	SLE RA 3	-2	-12	699	0	0	0
171	SLE RA 4	-2	-12	707	0	0	0
171	SLE RA 5	-2	-11	710	0	0	0
171	SLE RA 6	-2	-13	704	0	0	0
171	SLE RA 7	-2	-12	711	0	0	0
171	SLE RA 8	-2	-12	701	0	0	0
171	SLE RA 9	-2	-12	709	0	0	0
171	SLE RA 10	-2	-12	763	0	0	0
171	SLE RA 11	-2	-13	757	0	0	0
171	SLE RA 12	-2	-12	765	0	0	0
171	SLE RA 13	-2	-12	768	0	0	0
171	SLE RA 14	-2	-13	761	0	0	0
171	SLE RA 15	-2	-12	769	0	0	0
171	SLE RA 16	-2	-13	759	0	0	0
171	SLE RA 17	-2	-12	766	0	0	0
171	SLE RA 18	-2	-13	775	0	0	0
171	SLE RA 19	-2	-13	783	0	0	0
171	SLE RA 20	-2	-14	780	0	0	0
171	SLE RA 21	-2	-13	787	0	0	0
171	SLE FR 1	-2	-12	693	0	0	0
171	SLE FR 2	-2	-12	695	0	0	0
171	SLE FR 3	-2	-12	694	0	0	0
171	SLE FR 4	-2	-12	720	0	0	0
171	SLE FR 5	-2	-13	719	0	0	0
171	SLE FR 6	-2	-13	734	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
171	SLE QP 1	-2	-12	693	0	0	0
171	SLE QP 2	-2	-13	718	0	0	0
171	SLD 1	51	-3	906	0	0	0
171	SLD 2	63	-9	898	0	0	0
171	SLD 3	53	-30	648	0	0	0
171	SLD 4	65	-35	640	0	0	0
171	SLD 5	9	31	1167	0	0	0
171	SLD 6	17	28	1162	0	0	0
171	SLD 7	15	-57	307	0	0	0
171	SLD 8	23	-60	301	0	0	0
171	SLD 9	-27	35	1134	0	0	0
171	SLD 10	-19	31	1129	0	0	0
171	SLD 11	-20	-53	273	0	0	0
171	SLD 12	-12	-56	268	0	0	0
171	SLD 13	-68	10	795	0	0	0
171	SLD 14	-56	4	787	0	0	0
171	SLD 15	-66	-17	537	0	0	0
171	SLD 16	-54	-22	529	0	0	0
171	SLV 1	121	11	1180	0	0	0
171	SLV 2	149	-1	1161	0	0	0
171	SLV 3	125	-54	533	0	0	0
171	SLV 4	154	-67	514	0	0	0
171	SLV 5	23	96	1840	0	0	0
171	SLV 6	42	88	1828	0	0	0
171	SLV 7	38	-122	-315	0	0	0
171	SLV 8	57	-130	-327	0	0	0
171	SLV 9	-61	105	1763	0	0	0
171	SLV 10	-41	97	1750	0	0	0
171	SLV 11	-45	-113	-393	0	0	0
171	SLV 12	-26	-121	-405	0	0	0
171	SLV 13	-157	41	921	0	0	0
171	SLV 14	-129	29	902	0	0	0
171	SLV 15	-152	-24	274	0	0	0
171	SLV 16	-124	-36	256	0	0	0
171	CRTFP Uy+	0	0	0	0	0	0
171	CRTFP Uy-	0	0	0	0	0	0
172	SLU 1	-2	-11	668	0	0	0
172	SLU 2	-2	-8	687	0	0	0
172	SLU 3	-2	-11	678	0	0	0
172	SLU 4	-2	-10	689	0	0	0
172	SLU 5	-2	-9	693	0	0	0
172	SLU 6	-2	-11	684	0	0	0
172	SLU 7	-2	-10	695	0	0	0
172	SLU 8	-2	-11	680	0	0	0
172	SLU 9	-2	-10	692	0	0	0
172	SLU 10	-1	-10	774	0	0	0
172	SLU 11	-2	-12	765	0	0	0
172	SLU 12	-2	-11	776	0	0	0
172	SLU 13	-1	-10	780	0	0	0
172	SLU 14	-2	-12	771	0	0	0
172	SLU 15	-2	-11	782	0	0	0
172	SLU 16	-2	-12	767	0	0	0
172	SLU 17	-2	-11	779	0	0	0
172	SLU 18	-1	-12	792	0	0	0
172	SLU 19	-1	-11	804	0	0	0
172	SLU 20	-1	-12	798	0	0	0
172	SLU 21	-1	-11	810	0	0	0
172	SLU 22	-2	-12	754	0	0	0
172	SLU 23	-2	-10	773	0	0	0
172	SLU 24	-2	-12	764	0	0	0
172	SLU 25	-2	-11	776	0	0	0
172	SLU 26	-2	-10	779	0	0	0
172	SLU 27	-2	-12	770	0	0	0
172	SLU 28	-2	-11	782	0	0	0
172	SLU 29	-2	-12	766	0	0	0
172	SLU 30	-2	-11	778	0	0	0
172	SLU 31	-2	-11	860	0	0	0
172	SLU 32	-2	-13	851	0	0	0
172	SLU 33	-2	-12	863	0	0	0
172	SLU 34	-2	-11	866	0	0	0
172	SLU 35	-2	-13	857	0	0	0
172	SLU 36	-2	-12	869	0	0	0
172	SLU 37	-2	-13	853	0	0	0
172	SLU 38	-2	-12	865	0	0	0
172	SLU 39	-2	-13	878	0	0	0
172	SLU 40	-2	-12	890	0	0	0
172	SLU 41	-2	-14	884	0	0	0
172	SLU 42	-2	-12	896	0	0	0
172	SLU 43	-2	-14	839	0	0	0
172	SLU 44	-2	-11	858	0	0	0
172	SLU 45	-2	-14	849	0	0	0
172	SLU 46	-2	-12	860	0	0	0
172	SLU 47	-2	-11	864	0	0	0
172	SLU 48	-2	-14	855	0	0	0
172	SLU 49	-2	-12	866	0	0	0
172	SLU 50	-2	-14	851	0	0	0
172	SLU 51	-2	-12	862	0	0	0
172	SLU 52	-2	-12	945	0	0	0
172	SLU 53	-2	-15	936	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
172	SLU 54	-2	-13	947	0	0	0
172	SLU 55	-2	-12	951	0	0	0
172	SLU 56	-2	-15	942	0	0	0
172	SLU 57	-2	-14	953	0	0	0
172	SLU 58	-2	-15	938	0	0	0
172	SLU 59	-2	-13	949	0	0	0
172	SLU 60	-2	-15	963	0	0	0
172	SLU 61	-2	-14	974	0	0	0
172	SLU 62	-2	-15	969	0	0	0
172	SLU 63	-2	-14	981	0	0	0
172	SLU 64	-2	-15	925	0	0	0
172	SLU 65	-2	-12	944	0	0	0
172	SLU 66	-2	-15	935	0	0	0
172	SLU 67	-2	-14	946	0	0	0
172	SLU 68	-2	-13	950	0	0	0
172	SLU 69	-3	-15	941	0	0	0
172	SLU 70	-3	-14	953	0	0	0
172	SLU 71	-3	-15	937	0	0	0
172	SLU 72	-2	-14	949	0	0	0
172	SLU 73	-2	-13	1031	0	0	0
172	SLU 74	-2	-16	1022	0	0	0
172	SLU 75	-2	-15	1033	0	0	0
172	SLU 76	-2	-14	1037	0	0	0
172	SLU 77	-2	-16	1028	0	0	0
172	SLU 78	-2	-15	1039	0	0	0
172	SLU 79	-2	-16	1024	0	0	0
172	SLU 80	-2	-15	1036	0	0	0
172	SLU 81	-2	-16	1049	0	0	0
172	SLU 82	-2	-15	1061	0	0	0
172	SLU 83	-2	-16	1055	0	0	0
172	SLU 84	-2	-15	1067	0	0	0
172	SLE RA 1	-2	-11	693	0	0	0
172	SLE RA 2	-2	-10	705	0	0	0
172	SLE RA 3	-2	-11	699	0	0	0
172	SLE RA 4	-2	-10	707	0	0	0
172	SLE RA 5	-2	-10	709	0	0	0
172	SLE RA 6	-2	-11	703	0	0	0
172	SLE RA 7	-2	-10	711	0	0	0
172	SLE RA 8	-2	-11	701	0	0	0
172	SLE RA 9	-2	-10	708	0	0	0
172	SLE RA 10	-2	-10	763	0	0	0
172	SLE RA 11	-2	-12	757	0	0	0
172	SLE RA 12	-2	-11	765	0	0	0
172	SLE RA 13	-2	-10	767	0	0	0
172	SLE RA 14	-2	-12	761	0	0	0
172	SLE RA 15	-2	-11	769	0	0	0
172	SLE RA 16	-2	-12	759	0	0	0
172	SLE RA 17	-2	-11	766	0	0	0
172	SLE RA 18	-2	-12	775	0	0	0
172	SLE RA 19	-2	-11	783	0	0	0
172	SLE RA 20	-2	-12	779	0	0	0
172	SLE RA 21	-2	-11	787	0	0	0
172	SLE FR 1	-2	-11	693	0	0	0
172	SLE FR 2	-2	-11	695	0	0	0
172	SLE FR 3	-2	-11	694	0	0	0
172	SLE FR 4	-2	-11	720	0	0	0
172	SLE FR 5	-2	-11	719	0	0	0
172	SLE FR 6	-2	-12	734	0	0	0
172	SLE QP 1	-2	-11	693	0	0	0
172	SLE QP 2	-2	-11	717	0	0	0
172	SLD 1	51	-1	899	0	0	0
172	SLD 2	63	-6	891	0	0	0
172	SLD 3	53	-28	641	0	0	0
172	SLD 4	65	-33	633	0	0	0
172	SLD 5	9	34	1164	0	0	0
172	SLD 6	17	31	1159	0	0	0
172	SLD 7	15	-57	305	0	0	0
172	SLD 8	23	-60	300	0	0	0
172	SLD 9	-27	37	1135	0	0	0
172	SLD 10	-19	34	1130	0	0	0
172	SLD 11	-21	-54	276	0	0	0
172	SLD 12	-12	-57	271	0	0	0
172	SLD 13	-69	10	802	0	0	0
172	SLD 14	-56	5	794	0	0	0
172	SLD 15	-67	-17	544	0	0	0
172	SLD 16	-54	-22	536	0	0	0
172	SLV 1	122	15	1163	0	0	0
172	SLV 2	150	4	1145	0	0	0
172	SLV 3	126	-53	517	0	0	0
172	SLV 4	155	-64	499	0	0	0
172	SLV 5	23	101	1834	0	0	0
172	SLV 6	42	94	1822	0	0	0
172	SLV 7	38	-124	-319	0	0	0
172	SLV 8	58	-132	-331	0	0	0
172	SLV 9	-61	109	1766	0	0	0
172	SLV 10	-42	102	1754	0	0	0
172	SLV 11	-46	-117	-387	0	0	0
172	SLV 12	-26	-124	-399	0	0	0
172	SLV 13	-159	41	936	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
172	SLV 14	-130	30	918	0	0	0
172	SLV 15	-154	-27	290	0	0	0
172	SLV 16	-125	-38	272	0	0	0
172	CRTFP Uy+	0	0	0	0	0	0
172	CRTFP Uy-	0	0	0	0	0	0
173	SLU 1	-2	-10	671	0	0	0
173	SLU 2	-2	-7	691	0	0	0
173	SLU 3	-2	-10	681	0	0	0
173	SLU 4	-2	-8	693	0	0	0
173	SLU 5	-2	-7	697	0	0	0
173	SLU 6	-2	-10	688	0	0	0
173	SLU 7	-2	-8	699	0	0	0
173	SLU 8	-2	-10	684	0	0	0
173	SLU 9	-2	-8	695	0	0	0
173	SLU 10	-1	-8	778	0	0	0
173	SLU 11	-1	-11	769	0	0	0
173	SLU 12	-1	-9	781	0	0	0
173	SLU 13	-1	-8	784	0	0	0
173	SLU 14	-2	-11	775	0	0	0
173	SLU 15	-2	-9	787	0	0	0
173	SLU 16	-2	-11	771	0	0	0
173	SLU 17	-2	-9	783	0	0	0
173	SLU 18	-1	-11	796	0	0	0
173	SLU 19	-1	-10	808	0	0	0
173	SLU 20	-1	-11	803	0	0	0
173	SLU 21	-1	-10	814	0	0	0
173	SLU 22	-2	-11	758	0	0	0
173	SLU 23	-2	-8	777	0	0	0
173	SLU 24	-2	-11	768	0	0	0
173	SLU 25	-2	-9	779	0	0	0
173	SLU 26	-2	-8	783	0	0	0
173	SLU 27	-2	-11	774	0	0	0
173	SLU 28	-2	-9	786	0	0	0
173	SLU 29	-2	-11	770	0	0	0
173	SLU 30	-2	-9	782	0	0	0
173	SLU 31	-2	-9	865	0	0	0
173	SLU 32	-2	-12	855	0	0	0
173	SLU 33	-2	-10	867	0	0	0
173	SLU 34	-2	-9	871	0	0	0
173	SLU 35	-2	-12	861	0	0	0
173	SLU 36	-2	-10	873	0	0	0
173	SLU 37	-2	-12	858	0	0	0
173	SLU 38	-2	-10	869	0	0	0
173	SLU 39	-2	-12	883	0	0	0
173	SLU 40	-2	-11	894	0	0	0
173	SLU 41	-2	-12	889	0	0	0
173	SLU 42	-2	-11	901	0	0	0
173	SLU 43	-2	-12	843	0	0	0
173	SLU 44	-2	-10	863	0	0	0
173	SLU 45	-2	-12	853	0	0	0
173	SLU 46	-2	-11	865	0	0	0
173	SLU 47	-2	-10	869	0	0	0
173	SLU 48	-2	-12	859	0	0	0
173	SLU 49	-2	-11	871	0	0	0
173	SLU 50	-2	-12	855	0	0	0
173	SLU 51	-2	-11	867	0	0	0
173	SLU 52	-2	-11	950	0	0	0
173	SLU 53	-2	-13	941	0	0	0
173	SLU 54	-2	-12	952	0	0	0
173	SLU 55	-2	-11	956	0	0	0
173	SLU 56	-2	-13	947	0	0	0
173	SLU 57	-2	-12	958	0	0	0
173	SLU 58	-2	-13	943	0	0	0
173	SLU 59	-2	-12	955	0	0	0
173	SLU 60	-2	-14	968	0	0	0
173	SLU 61	-2	-12	980	0	0	0
173	SLU 62	-2	-14	974	0	0	0
173	SLU 63	-2	-12	986	0	0	0
173	SLU 64	-2	-13	930	0	0	0
173	SLU 65	-2	-11	949	0	0	0
173	SLU 66	-2	-13	940	0	0	0
173	SLU 67	-2	-12	951	0	0	0
173	SLU 68	-2	-11	955	0	0	0
173	SLU 69	-2	-13	946	0	0	0
173	SLU 70	-2	-12	957	0	0	0
173	SLU 71	-2	-13	942	0	0	0
173	SLU 72	-2	-12	953	0	0	0
173	SLU 73	-2	-12	1037	0	0	0
173	SLU 74	-2	-14	1027	0	0	0
173	SLU 75	-2	-13	1039	0	0	0
173	SLU 76	-2	-12	1043	0	0	0
173	SLU 77	-2	-14	1033	0	0	0
173	SLU 78	-2	-13	1045	0	0	0
173	SLU 79	-2	-14	1029	0	0	0
173	SLU 80	-2	-13	1041	0	0	0
173	SLU 81	-2	-15	1055	0	0	0
173	SLU 82	-2	-13	1066	0	0	0
173	SLU 83	-2	-15	1061	0	0	0
173	SLU 84	-2	-13	1072	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
173	SLE RA 1	-2	-10	696	0	0	0
173	SLE RA 2	-2	-8	709	0	0	0
173	SLE RA 3	-2	-10	703	0	0	0
173	SLE RA 4	-2	-9	711	0	0	0
173	SLE RA 5	-2	-8	713	0	0	0
173	SLE RA 6	-2	-10	707	0	0	0
173	SLE RA 7	-2	-9	715	0	0	0
173	SLE RA 8	-2	-10	704	0	0	0
173	SLE RA 9	-2	-9	712	0	0	0
173	SLE RA 10	-2	-9	767	0	0	0
173	SLE RA 11	-2	-11	761	0	0	0
173	SLE RA 12	-2	-10	769	0	0	0
173	SLE RA 13	-2	-9	771	0	0	0
173	SLE RA 14	-2	-11	765	0	0	0
173	SLE RA 15	-2	-10	773	0	0	0
173	SLE RA 16	-2	-11	763	0	0	0
173	SLE RA 17	-2	-10	770	0	0	0
173	SLE RA 18	-1	-11	779	0	0	0
173	SLE RA 19	-1	-10	787	0	0	0
173	SLE RA 20	-2	-11	784	0	0	0
173	SLE RA 21	-2	-10	791	0	0	0
173	SLE FR 1	-2	-10	696	0	0	0
173	SLE FR 2	-2	-10	699	0	0	0
173	SLE FR 3	-2	-10	698	0	0	0
173	SLE FR 4	-2	-10	724	0	0	0
173	SLE FR 5	-2	-10	723	0	0	0
173	SLE FR 6	-2	-10	738	0	0	0
173	SLE QP 1	-2	-10	696	0	0	0
173	SLE QP 2	-2	-10	721	0	0	0
173	SLD 1	52	1	896	0	0	0
173	SLD 2	64	-3	889	0	0	0
173	SLD 3	54	-27	637	0	0	0
173	SLD 4	66	-31	630	0	0	0
173	SLD 5	9	37	1168	0	0	0
173	SLD 6	17	34	1163	0	0	0
173	SLD 7	16	-57	304	0	0	0
173	SLD 8	24	-60	300	0	0	0
173	SLD 9	-27	40	1143	0	0	0
173	SLD 10	-19	37	1138	0	0	0
173	SLD 11	-21	-54	279	0	0	0
173	SLD 12	-13	-57	274	0	0	0
173	SLD 13	-69	11	812	0	0	0
173	SLD 14	-57	7	805	0	0	0
173	SLD 15	-68	-17	553	0	0	0
173	SLD 16	-55	-22	546	0	0	0
173	SLV 1	123	19	1152	0	0	0
173	SLV 2	152	9	1135	0	0	0
173	SLV 3	128	-51	503	0	0	0
173	SLV 4	157	-62	486	0	0	0
173	SLV 5	23	107	1838	0	0	0
173	SLV 6	43	100	1827	0	0	0
173	SLV 7	39	-127	-325	0	0	0
173	SLV 8	59	-134	-337	0	0	0
173	SLV 9	-62	114	1779	0	0	0
173	SLV 10	-42	107	1768	0	0	0
173	SLV 11	-46	-121	-384	0	0	0
173	SLV 12	-27	-127	-395	0	0	0
173	SLV 13	-160	41	956	0	0	0
173	SLV 14	-131	31	939	0	0	0
173	SLV 15	-156	-29	307	0	0	0
173	SLV 16	-127	-39	290	0	0	0
173	CRTFP Uy+	0	0	0	0	0	0
173	CRTFP Uy-	0	0	0	0	0	0
174	SLU 1	-1	-8	675	0	0	0
174	SLU 2	-1	-6	694	0	0	0
174	SLU 3	-2	-9	685	0	0	0
174	SLU 4	-2	-7	697	0	0	0
174	SLU 5	-2	-6	700	0	0	0
174	SLU 6	-2	-9	691	0	0	0
174	SLU 7	-2	-7	703	0	0	0
174	SLU 8	-2	-9	687	0	0	0
174	SLU 9	-2	-7	699	0	0	0
174	SLU 10	-1	-7	783	0	0	0
174	SLU 11	-1	-9	773	0	0	0
174	SLU 12	-1	-8	785	0	0	0
174	SLU 13	-1	-7	789	0	0	0
174	SLU 14	-1	-10	779	0	0	0
174	SLU 15	-1	-8	791	0	0	0
174	SLU 16	-1	-10	775	0	0	0
174	SLU 17	-1	-8	787	0	0	0
174	SLU 18	-1	-10	801	0	0	0
174	SLU 19	-1	-8	813	0	0	0
174	SLU 20	-1	-10	807	0	0	0
174	SLU 21	-1	-8	819	0	0	0
174	SLU 22	-2	-9	762	0	0	0
174	SLU 23	-2	-7	781	0	0	0
174	SLU 24	-2	-9	772	0	0	0
174	SLU 25	-2	-8	783	0	0	0
174	SLU 26	-2	-7	787	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
174	SLU 27	-2	-10	778	0	0	0
174	SLU 28	-2	-8	789	0	0	0
174	SLU 29	-2	-10	774	0	0	0
174	SLU 30	-2	-8	786	0	0	0
174	SLU 31	-2	-8	869	0	0	0
174	SLU 32	-2	-10	860	0	0	0
174	SLU 33	-2	-9	872	0	0	0
174	SLU 34	-2	-8	875	0	0	0
174	SLU 35	-2	-10	866	0	0	0
174	SLU 36	-2	-9	878	0	0	0
174	SLU 37	-2	-10	862	0	0	0
174	SLU 38	-2	-9	874	0	0	0
174	SLU 39	-1	-11	888	0	0	0
174	SLU 40	-1	-9	899	0	0	0
174	SLU 41	-2	-11	894	0	0	0
174	SLU 42	-2	-9	905	0	0	0
174	SLU 43	-2	-11	848	0	0	0
174	SLU 44	-2	-8	867	0	0	0
174	SLU 45	-2	-11	858	0	0	0
174	SLU 46	-2	-9	869	0	0	0
174	SLU 47	-2	-8	873	0	0	0
174	SLU 48	-2	-11	864	0	0	0
174	SLU 49	-2	-9	875	0	0	0
174	SLU 50	-2	-11	860	0	0	0
174	SLU 51	-2	-9	872	0	0	0
174	SLU 52	-2	-9	955	0	0	0
174	SLU 53	-2	-12	946	0	0	0
174	SLU 54	-2	-10	958	0	0	0
174	SLU 55	-2	-9	961	0	0	0
174	SLU 56	-2	-12	952	0	0	0
174	SLU 57	-2	-10	964	0	0	0
174	SLU 58	-2	-12	948	0	0	0
174	SLU 59	-2	-10	960	0	0	0
174	SLU 60	-2	-12	974	0	0	0
174	SLU 61	-1	-10	985	0	0	0
174	SLU 62	-2	-12	980	0	0	0
174	SLU 63	-2	-11	991	0	0	0
174	SLU 64	-2	-12	934	0	0	0
174	SLU 65	-2	-9	954	0	0	0
174	SLU 66	-2	-12	944	0	0	0
174	SLU 67	-2	-10	956	0	0	0
174	SLU 68	-2	-9	960	0	0	0
174	SLU 69	-2	-12	951	0	0	0
174	SLU 70	-2	-10	962	0	0	0
174	SLU 71	-2	-12	947	0	0	0
174	SLU 72	-2	-10	958	0	0	0
174	SLU 73	-2	-10	1042	0	0	0
174	SLU 74	-2	-13	1033	0	0	0
174	SLU 75	-2	-11	1044	0	0	0
174	SLU 76	-2	-10	1048	0	0	0
174	SLU 77	-2	-13	1039	0	0	0
174	SLU 78	-2	-11	1050	0	0	0
174	SLU 79	-2	-13	1035	0	0	0
174	SLU 80	-2	-11	1046	0	0	0
174	SLU 81	-2	-13	1060	0	0	0
174	SLU 82	-2	-11	1072	0	0	0
174	SLU 83	-2	-13	1066	0	0	0
174	SLU 84	-2	-11	1078	0	0	0
174	SLE RA 1	-2	-9	700	0	0	0
174	SLE RA 2	-2	-7	713	0	0	0
174	SLE RA 3	-2	-9	706	0	0	0
174	SLE RA 4	-2	-8	714	0	0	0
174	SLE RA 5	-2	-7	717	0	0	0
174	SLE RA 6	-2	-9	710	0	0	0
174	SLE RA 7	-2	-8	718	0	0	0
174	SLE RA 8	-2	-9	708	0	0	0
174	SLE RA 9	-2	-8	716	0	0	0
174	SLE RA 10	-1	-8	771	0	0	0
174	SLE RA 11	-1	-9	765	0	0	0
174	SLE RA 12	-1	-8	773	0	0	0
174	SLE RA 13	-1	-8	776	0	0	0
174	SLE RA 14	-2	-9	769	0	0	0
174	SLE RA 15	-2	-8	777	0	0	0
174	SLE RA 16	-2	-9	767	0	0	0
174	SLE RA 17	-2	-8	774	0	0	0
174	SLE RA 18	-1	-10	784	0	0	0
174	SLE RA 19	-1	-9	791	0	0	0
174	SLE RA 20	-1	-10	788	0	0	0
174	SLE RA 21	-1	-9	796	0	0	0
174	SLE FR 1	-2	-9	700	0	0	0
174	SLE FR 2	-2	-8	702	0	0	0
174	SLE FR 3	-2	-9	701	0	0	0
174	SLE FR 4	-2	-9	727	0	0	0
174	SLE FR 5	-2	-9	727	0	0	0
174	SLE FR 6	-1	-9	742	0	0	0
174	SLE QP 1	-2	-9	700	0	0	0
174	SLE QP 2	-2	-9	725	0	0	0
174	SLD 1	53	4	893	0	0	0
174	SLD 2	65	0	887	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
174	SLD 3	54	-26	633	0	0	0
174	SLD 4	67	-29	627	0	0	0
174	SLD 5	10	40	1171	0	0	0
174	SLD 6	18	37	1167	0	0	0
174	SLD 7	16	-58	304	0	0	0
174	SLD 8	24	-60	299	0	0	0
174	SLD 9	-27	42	1150	0	0	0
174	SLD 10	-19	40	1146	0	0	0
174	SLD 11	-21	-55	283	0	0	0
174	SLD 12	-13	-58	278	0	0	0
174	SLD 13	-70	12	823	0	0	0
174	SLD 14	-57	8	817	0	0	0
174	SLD 15	-68	-18	563	0	0	0
174	SLD 16	-56	-22	556	0	0	0
174	SLV 1	125	23	1141	0	0	0
174	SLV 2	154	13	1125	0	0	0
174	SLV 3	130	-50	489	0	0	0
174	SLV 4	159	-59	473	0	0	0
174	SLV 5	24	112	1841	0	0	0
174	SLV 6	43	106	1831	0	0	0
174	SLV 7	40	-130	-332	0	0	0
174	SLV 8	59	-136	-342	0	0	0
174	SLV 9	-62	118	1792	0	0	0
174	SLV 10	-43	112	1782	0	0	0
174	SLV 11	-46	-124	-381	0	0	0
174	SLV 12	-27	-130	-392	0	0	0
174	SLV 13	-162	41	977	0	0	0
174	SLV 14	-133	32	961	0	0	0
174	SLV 15	-157	-31	325	0	0	0
174	SLV 16	-128	-41	309	0	0	0
174	CRTFP Uy+	0	0	0	0	0	0
174	CRTFP Uy-	0	0	0	0	0	0
175	SLU 1	-1	-7	678	0	0	0
175	SLU 2	-1	-5	697	0	0	0
175	SLU 3	-1	-7	688	0	0	0
175	SLU 4	-1	-6	700	0	0	0
175	SLU 5	-1	-5	704	0	0	0
175	SLU 6	-2	-7	694	0	0	0
175	SLU 7	-1	-6	706	0	0	0
175	SLU 8	-2	-7	690	0	0	0
175	SLU 9	-1	-6	702	0	0	0
175	SLU 10	-1	-6	786	0	0	0
175	SLU 11	-1	-8	777	0	0	0
175	SLU 12	-1	-7	789	0	0	0
175	SLU 13	-1	-6	793	0	0	0
175	SLU 14	-1	-8	783	0	0	0
175	SLU 15	-1	-7	795	0	0	0
175	SLU 16	-1	-8	779	0	0	0
175	SLU 17	-1	-7	791	0	0	0
175	SLU 18	-1	-8	805	0	0	0
175	SLU 19	-1	-7	817	0	0	0
175	SLU 20	-1	-8	811	0	0	0
175	SLU 21	-1	-7	823	0	0	0
175	SLU 22	-2	-8	765	0	0	0
175	SLU 23	-2	-6	784	0	0	0
175	SLU 24	-2	-8	775	0	0	0
175	SLU 25	-2	-7	787	0	0	0
175	SLU 26	-2	-6	791	0	0	0
175	SLU 27	-2	-8	781	0	0	0
175	SLU 28	-2	-7	793	0	0	0
175	SLU 29	-2	-8	777	0	0	0
175	SLU 30	-2	-7	789	0	0	0
175	SLU 31	-1	-6	873	0	0	0
175	SLU 32	-1	-9	864	0	0	0
175	SLU 33	-1	-7	876	0	0	0
175	SLU 34	-1	-6	880	0	0	0
175	SLU 35	-2	-9	870	0	0	0
175	SLU 36	-2	-7	882	0	0	0
175	SLU 37	-2	-9	866	0	0	0
175	SLU 38	-2	-7	878	0	0	0
175	SLU 39	-1	-9	892	0	0	0
175	SLU 40	-1	-8	904	0	0	0
175	SLU 41	-1	-9	898	0	0	0
175	SLU 42	-1	-8	910	0	0	0
175	SLU 43	-2	-9	851	0	0	0
175	SLU 44	-2	-7	871	0	0	0
175	SLU 45	-2	-9	862	0	0	0
175	SLU 46	-2	-8	873	0	0	0
175	SLU 47	-2	-7	877	0	0	0
175	SLU 48	-2	-9	868	0	0	0
175	SLU 49	-2	-8	879	0	0	0
175	SLU 50	-2	-9	864	0	0	0
175	SLU 51	-2	-8	876	0	0	0
175	SLU 52	-1	-7	960	0	0	0
175	SLU 53	-2	-10	950	0	0	0
175	SLU 54	-1	-9	962	0	0	0
175	SLU 55	-1	-7	966	0	0	0
175	SLU 56	-2	-10	957	0	0	0
175	SLU 57	-2	-9	968	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
175	SLU 58	-2	-10	953	0	0	0
175	SLU 59	-2	-9	964	0	0	0
175	SLU 60	-1	-10	978	0	0	0
175	SLU 61	-1	-9	990	0	0	0
175	SLU 62	-1	-10	985	0	0	0
175	SLU 63	-1	-9	996	0	0	0
175	SLU 64	-2	-10	938	0	0	0
175	SLU 65	-2	-7	958	0	0	0
175	SLU 66	-2	-10	949	0	0	0
175	SLU 67	-2	-9	960	0	0	0
175	SLU 68	-2	-8	964	0	0	0
175	SLU 69	-2	-10	955	0	0	0
175	SLU 70	-2	-9	966	0	0	0
175	SLU 71	-2	-10	951	0	0	0
175	SLU 72	-2	-9	963	0	0	0
175	SLU 73	-2	-8	1047	0	0	0
175	SLU 74	-2	-11	1037	0	0	0
175	SLU 75	-2	-9	1049	0	0	0
175	SLU 76	-2	-8	1053	0	0	0
175	SLU 77	-2	-11	1044	0	0	0
175	SLU 78	-2	-9	1055	0	0	0
175	SLU 79	-2	-11	1040	0	0	0
175	SLU 80	-2	-9	1051	0	0	0
175	SLU 81	-2	-11	1065	0	0	0
175	SLU 82	-2	-9	1077	0	0	0
175	SLU 83	-2	-11	1072	0	0	0
175	SLU 84	-2	-10	1083	0	0	0
175	SLE RA 1	-1	-7	703	0	0	0
175	SLE RA 2	-1	-6	716	0	0	0
175	SLE RA 3	-1	-8	710	0	0	0
175	SLE RA 4	-1	-7	717	0	0	0
175	SLE RA 5	-1	-6	720	0	0	0
175	SLE RA 6	-2	-8	714	0	0	0
175	SLE RA 7	-2	-7	721	0	0	0
175	SLE RA 8	-2	-8	711	0	0	0
175	SLE RA 9	-2	-7	719	0	0	0
175	SLE RA 10	-1	-6	775	0	0	0
175	SLE RA 11	-1	-8	769	0	0	0
175	SLE RA 12	-1	-7	777	0	0	0
175	SLE RA 13	-1	-6	779	0	0	0
175	SLE RA 14	-1	-8	773	0	0	0
175	SLE RA 15	-1	-7	781	0	0	0
175	SLE RA 16	-1	-8	770	0	0	0
175	SLE RA 17	-1	-7	778	0	0	0
175	SLE RA 18	-1	-8	787	0	0	0
175	SLE RA 19	-1	-7	795	0	0	0
175	SLE RA 20	-1	-8	792	0	0	0
175	SLE RA 21	-1	-7	799	0	0	0
175	SLE FR 1	-1	-7	703	0	0	0
175	SLE FR 2	-1	-7	705	0	0	0
175	SLE FR 3	-1	-7	704	0	0	0
175	SLE FR 4	-1	-7	731	0	0	0
175	SLE FR 5	-1	-8	730	0	0	0
175	SLE FR 6	-1	-8	745	0	0	0
175	SLE QP 1	-1	-7	703	0	0	0
175	SLE QP 2	-1	-8	728	0	0	0
175	SLD 1	53	6	890	0	0	0
175	SLD 2	66	2	884	0	0	0
175	SLD 3	55	-24	629	0	0	0
175	SLD 4	68	-28	623	0	0	0
175	SLD 5	10	43	1174	0	0	0
175	SLD 6	18	40	1170	0	0	0
175	SLD 7	16	-58	303	0	0	0
175	SLD 8	25	-60	299	0	0	0
175	SLD 9	-27	44	1157	0	0	0
175	SLD 10	-19	42	1153	0	0	0
175	SLD 11	-21	-56	286	0	0	0
175	SLD 12	-12	-58	282	0	0	0
175	SLD 13	-70	12	834	0	0	0
175	SLD 14	-58	9	827	0	0	0
175	SLD 15	-68	-18	572	0	0	0
175	SLD 16	-56	-21	566	0	0	0
175	SLV 1	126	26	1129	0	0	0
175	SLV 2	155	18	1114	0	0	0
175	SLV 3	131	-49	475	0	0	0
175	SLV 4	160	-57	460	0	0	0
175	SLV 5	24	117	1844	0	0	0
175	SLV 6	44	112	1834	0	0	0
175	SLV 7	40	-132	-338	0	0	0
175	SLV 8	60	-137	-348	0	0	0
175	SLV 9	-63	122	1804	0	0	0
175	SLV 10	-43	117	1794	0	0	0
175	SLV 11	-47	-127	-378	0	0	0
175	SLV 12	-27	-133	-388	0	0	0
175	SLV 13	-163	41	997	0	0	0
175	SLV 14	-133	33	982	0	0	0
175	SLV 15	-158	-34	342	0	0	0
175	SLV 16	-128	-42	327	0	0	0
175	CRTFP Uy+	0	0	0	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
175	CRTFP Uy-	0	0	0	0	0	0
176	SLU 1	-1	-6	681	0	0	0
176	SLU 2	-1	-3	701	0	0	0
176	SLU 3	-1	-6	692	0	0	0
176	SLU 4	-1	-4	703	0	0	0
176	SLU 5	-1	-3	707	0	0	0
176	SLU 6	-1	-6	698	0	0	0
176	SLU 7	-1	-5	710	0	0	0
176	SLU 8	-1	-6	694	0	0	0
176	SLU 9	-1	-5	706	0	0	0
176	SLU 10	-1	-4	791	0	0	0
176	SLU 11	-1	-7	781	0	0	0
176	SLU 12	-1	-5	793	0	0	0
176	SLU 13	-1	-4	797	0	0	0
176	SLU 14	-1	-7	788	0	0	0
176	SLU 15	-1	-5	799	0	0	0
176	SLU 16	-1	-7	784	0	0	0
176	SLU 17	-1	-5	795	0	0	0
176	SLU 18	-1	-7	810	0	0	0
176	SLU 19	-1	-5	821	0	0	0
176	SLU 20	-1	-7	816	0	0	0
176	SLU 21	-1	-5	828	0	0	0
176	SLU 22	-1	-6	769	0	0	0
176	SLU 23	-1	-4	788	0	0	0
176	SLU 24	-2	-7	779	0	0	0
176	SLU 25	-2	-5	791	0	0	0
176	SLU 26	-1	-4	795	0	0	0
176	SLU 27	-2	-7	785	0	0	0
176	SLU 28	-2	-5	797	0	0	0
176	SLU 29	-2	-7	781	0	0	0
176	SLU 30	-2	-5	793	0	0	0
176	SLU 31	-1	-5	878	0	0	0
176	SLU 32	-1	-7	869	0	0	0
176	SLU 33	-1	-6	881	0	0	0
176	SLU 34	-1	-5	884	0	0	0
176	SLU 35	-1	-7	875	0	0	0
176	SLU 36	-1	-6	887	0	0	0
176	SLU 37	-1	-7	871	0	0	0
176	SLU 38	-1	-6	883	0	0	0
176	SLU 39	-1	-7	897	0	0	0
176	SLU 40	-1	-6	909	0	0	0
176	SLU 41	-1	-7	903	0	0	0
176	SLU 42	-1	-6	915	0	0	0
176	SLU 43	-1	-7	856	0	0	0
176	SLU 44	-1	-5	876	0	0	0
176	SLU 45	-2	-8	866	0	0	0
176	SLU 46	-2	-6	878	0	0	0
176	SLU 47	-2	-5	882	0	0	0
176	SLU 48	-2	-8	872	0	0	0
176	SLU 49	-2	-6	884	0	0	0
176	SLU 50	-2	-8	868	0	0	0
176	SLU 51	-2	-6	880	0	0	0
176	SLU 52	-1	-6	965	0	0	0
176	SLU 53	-1	-8	956	0	0	0
176	SLU 54	-1	-7	968	0	0	0
176	SLU 55	-1	-6	971	0	0	0
176	SLU 56	-1	-8	962	0	0	0
176	SLU 57	-1	-7	974	0	0	0
176	SLU 58	-1	-8	958	0	0	0
176	SLU 59	-1	-7	970	0	0	0
176	SLU 60	-1	-8	984	0	0	0
176	SLU 61	-1	-7	996	0	0	0
176	SLU 62	-1	-8	990	0	0	0
176	SLU 63	-1	-7	1002	0	0	0
176	SLU 64	-2	-8	943	0	0	0
176	SLU 65	-2	-6	963	0	0	0
176	SLU 66	-2	-8	953	0	0	0
176	SLU 67	-2	-7	965	0	0	0
176	SLU 68	-2	-6	969	0	0	0
176	SLU 69	-2	-8	960	0	0	0
176	SLU 70	-2	-7	971	0	0	0
176	SLU 71	-2	-8	956	0	0	0
176	SLU 72	-2	-7	967	0	0	0
176	SLU 73	-1	-6	1053	0	0	0
176	SLU 74	-2	-9	1043	0	0	0
176	SLU 75	-2	-7	1055	0	0	0
176	SLU 76	-2	-6	1059	0	0	0
176	SLU 77	-2	-9	1049	0	0	0
176	SLU 78	-2	-7	1061	0	0	0
176	SLU 79	-2	-9	1045	0	0	0
176	SLU 80	-2	-7	1057	0	0	0
176	SLU 81	-1	-9	1071	0	0	0
176	SLU 82	-1	-7	1083	0	0	0
176	SLU 83	-2	-9	1078	0	0	0
176	SLU 84	-1	-7	1089	0	0	0
176	SLE RA 1	-1	-6	706	0	0	0
176	SLE RA 2	-1	-4	719	0	0	0
176	SLE RA 3	-1	-6	713	0	0	0
176	SLE RA 4	-1	-5	721	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
176	SLE RA 5	-1	-4	724	0	0	0
176	SLE RA 6	-1	-6	717	0	0	0
176	SLE RA 7	-1	-5	725	0	0	0
176	SLE RA 8	-1	-6	715	0	0	0
176	SLE RA 9	-1	-5	723	0	0	0
176	SLE RA 10	-1	-5	779	0	0	0
176	SLE RA 11	-1	-7	773	0	0	0
176	SLE RA 12	-1	-6	781	0	0	0
176	SLE RA 13	-1	-5	783	0	0	0
176	SLE RA 14	-1	-7	777	0	0	0
176	SLE RA 15	-1	-6	785	0	0	0
176	SLE RA 16	-1	-7	774	0	0	0
176	SLE RA 17	-1	-6	782	0	0	0
176	SLE RA 18	-1	-7	792	0	0	0
176	SLE RA 19	-1	-6	800	0	0	0
176	SLE RA 20	-1	-7	796	0	0	0
176	SLE RA 21	-1	-6	804	0	0	0
176	SLE FR 1	-1	-6	706	0	0	0
176	SLE FR 2	-1	-6	709	0	0	0
176	SLE FR 3	-1	-6	708	0	0	0
176	SLE FR 4	-1	-6	735	0	0	0
176	SLE FR 5	-1	-6	734	0	0	0
176	SLE FR 6	-1	-6	749	0	0	0
176	SLE QP 1	-1	-6	706	0	0	0
176	SLE QP 2	-1	-6	732	0	0	0
176	SLD 1	55	8	888	0	0	0
176	SLD 2	68	5	882	0	0	0
176	SLD 3	53	-23	626	0	0	0
176	SLD 4	66	-25	620	0	0	0
176	SLD 5	17	46	1178	0	0	0
176	SLD 6	25	44	1174	0	0	0
176	SLD 7	10	-57	303	0	0	0
176	SLD 8	18	-59	299	0	0	0
176	SLD 9	-21	47	1165	0	0	0
176	SLD 10	-12	45	1161	0	0	0
176	SLD 11	-27	-56	290	0	0	0
176	SLD 12	-19	-58	286	0	0	0
176	SLD 13	-69	13	844	0	0	0
176	SLD 14	-56	10	838	0	0	0
176	SLD 15	-71	-18	582	0	0	0
176	SLD 16	-58	-21	576	0	0	0
176	SLV 1	131	30	1119	0	0	0
176	SLV 2	161	23	1105	0	0	0
176	SLV 3	127	-47	461	0	0	0
176	SLV 4	156	-54	447	0	0	0
176	SLV 5	41	123	1848	0	0	0
176	SLV 6	61	118	1838	0	0	0
176	SLV 7	24	-134	-344	0	0	0
176	SLV 8	44	-138	-353	0	0	0
176	SLV 9	-46	126	1817	0	0	0
176	SLV 10	-27	121	1808	0	0	0
176	SLV 11	-63	-131	-374	0	0	0
176	SLV 12	-43	-135	-384	0	0	0
176	SLV 13	-159	41	1017	0	0	0
176	SLV 14	-129	34	1003	0	0	0
176	SLV 15	-164	-36	359	0	0	0
176	SLV 16	-134	-43	345	0	0	0
176	CRTFP Uy+	0	0	0	0	0	0
176	CRTFP Uy-	0	0	0	0	0	0
177	SLU 1	-1	-5	686	0	0	0
177	SLU 2	-1	-2	706	0	0	0
177	SLU 3	-1	-5	696	0	0	0
177	SLU 4	-1	-3	708	0	0	0
177	SLU 5	-1	-2	712	0	0	0
177	SLU 6	-1	-5	703	0	0	0
177	SLU 7	-1	-3	715	0	0	0
177	SLU 8	-1	-5	699	0	0	0
177	SLU 9	-1	-3	710	0	0	0
177	SLU 10	-1	-2	797	0	0	0
177	SLU 11	-1	-5	787	0	0	0
177	SLU 12	-1	-4	799	0	0	0
177	SLU 13	-1	-3	803	0	0	0
177	SLU 14	-1	-5	793	0	0	0
177	SLU 15	-1	-4	805	0	0	0
177	SLU 16	-1	-5	789	0	0	0
177	SLU 17	-1	-4	801	0	0	0
177	SLU 18	-1	-5	816	0	0	0
177	SLU 19	-1	-4	828	0	0	0
177	SLU 20	-1	-5	822	0	0	0
177	SLU 21	-1	-4	834	0	0	0
177	SLU 22	-1	-5	774	0	0	0
177	SLU 23	-1	-2	794	0	0	0
177	SLU 24	-1	-5	784	0	0	0
177	SLU 25	-1	-4	796	0	0	0
177	SLU 26	-1	-2	800	0	0	0
177	SLU 27	-2	-5	791	0	0	0
177	SLU 28	-2	-4	803	0	0	0
177	SLU 29	-2	-5	787	0	0	0
177	SLU 30	-2	-4	799	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
177	SLU 31	-1	-3	885	0	0	0
177	SLU 32	-1	-6	875	0	0	0
177	SLU 33	-1	-4	887	0	0	0
177	SLU 34	-1	-3	891	0	0	0
177	SLU 35	-1	-6	881	0	0	0
177	SLU 36	-1	-4	893	0	0	0
177	SLU 37	-1	-6	877	0	0	0
177	SLU 38	-1	-4	889	0	0	0
177	SLU 39	-1	-6	904	0	0	0
177	SLU 40	-1	-4	916	0	0	0
177	SLU 41	-1	-6	910	0	0	0
177	SLU 42	-1	-4	922	0	0	0
177	SLU 43	-1	-6	862	0	0	0
177	SLU 44	-1	-3	881	0	0	0
177	SLU 45	-2	-6	872	0	0	0
177	SLU 46	-1	-4	884	0	0	0
177	SLU 47	-1	-3	888	0	0	0
177	SLU 48	-2	-6	878	0	0	0
177	SLU 49	-2	-4	890	0	0	0
177	SLU 50	-2	-6	874	0	0	0
177	SLU 51	-2	-4	886	0	0	0
177	SLU 52	-1	-4	972	0	0	0
177	SLU 53	-1	-6	963	0	0	0
177	SLU 54	-1	-5	975	0	0	0
177	SLU 55	-1	-4	979	0	0	0
177	SLU 56	-1	-6	969	0	0	0
177	SLU 57	-1	-5	981	0	0	0
177	SLU 58	-1	-6	965	0	0	0
177	SLU 59	-1	-5	977	0	0	0
177	SLU 60	-1	-6	991	0	0	0
177	SLU 61	-1	-5	1003	0	0	0
177	SLU 62	-1	-7	998	0	0	0
177	SLU 63	-1	-5	1010	0	0	0
177	SLU 64	-2	-6	950	0	0	0
177	SLU 65	-2	-4	970	0	0	0
177	SLU 66	-2	-6	960	0	0	0
177	SLU 67	-2	-5	972	0	0	0
177	SLU 68	-2	-4	976	0	0	0
177	SLU 69	-2	-6	966	0	0	0
177	SLU 70	-2	-5	978	0	0	0
177	SLU 71	-2	-6	962	0	0	0
177	SLU 72	-2	-5	974	0	0	0
177	SLU 73	-1	-4	1060	0	0	0
177	SLU 74	-2	-7	1051	0	0	0
177	SLU 75	-2	-5	1063	0	0	0
177	SLU 76	-1	-4	1067	0	0	0
177	SLU 77	-2	-7	1057	0	0	0
177	SLU 78	-2	-5	1069	0	0	0
177	SLU 79	-2	-7	1053	0	0	0
177	SLU 80	-2	-5	1065	0	0	0
177	SLU 81	-1	-7	1079	0	0	0
177	SLU 82	-1	-5	1091	0	0	0
177	SLU 83	-1	-7	1086	0	0	0
177	SLU 84	-1	-5	1098	0	0	0
177	SLE RA 1	-1	-5	711	0	0	0
177	SLE RA 2	-1	-3	724	0	0	0
177	SLE RA 3	-1	-5	718	0	0	0
177	SLE RA 4	-1	-4	726	0	0	0
177	SLE RA 5	-1	-3	729	0	0	0
177	SLE RA 6	-1	-5	722	0	0	0
177	SLE RA 7	-1	-4	730	0	0	0
177	SLE RA 8	-1	-5	720	0	0	0
177	SLE RA 9	-1	-4	728	0	0	0
177	SLE RA 10	-1	-3	785	0	0	0
177	SLE RA 11	-1	-5	779	0	0	0
177	SLE RA 12	-1	-4	787	0	0	0
177	SLE RA 13	-1	-3	789	0	0	0
177	SLE RA 14	-1	-5	783	0	0	0
177	SLE RA 15	-1	-4	791	0	0	0
177	SLE RA 16	-1	-5	780	0	0	0
177	SLE RA 17	-1	-4	788	0	0	0
177	SLE RA 18	-1	-5	798	0	0	0
177	SLE RA 19	-1	-4	806	0	0	0
177	SLE RA 20	-1	-5	802	0	0	0
177	SLE RA 21	-1	-4	810	0	0	0
177	SLE FR 1	-1	-5	711	0	0	0
177	SLE FR 2	-1	-4	714	0	0	0
177	SLE FR 3	-1	-5	713	0	0	0
177	SLE FR 4	-1	-4	740	0	0	0
177	SLE FR 5	-1	-5	739	0	0	0
177	SLE FR 6	-1	-5	754	0	0	0
177	SLE QP 1	-1	-5	711	0	0	0
177	SLE QP 2	-1	-5	737	0	0	0
177	SLD 1	56	11	888	0	0	0
177	SLD 2	68	8	882	0	0	0
177	SLD 3	54	-21	624	0	0	0
177	SLD 4	66	-23	618	0	0	0
177	SLD 5	17	48	1184	0	0	0
177	SLD 6	25	47	1180	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
177	SLD 7	10	-57	304	0	0	0
177	SLD 8	18	-59	300	0	0	0
177	SLD 9	-21	49	1174	0	0	0
177	SLD 10	-12	48	1170	0	0	0
177	SLD 11	-27	-56	294	0	0	0
177	SLD 12	-19	-58	291	0	0	0
177	SLD 13	-69	14	856	0	0	0
177	SLD 14	-56	11	851	0	0	0
177	SLD 15	-71	-18	592	0	0	0
177	SLD 16	-58	-20	587	0	0	0
177	SLV 1	132	34	1111	0	0	0
177	SLV 2	162	28	1098	0	0	0
177	SLV 3	127	-45	450	0	0	0
177	SLV 4	157	-51	437	0	0	0
177	SLV 5	41	128	1855	0	0	0
177	SLV 6	61	124	1846	0	0	0
177	SLV 7	24	-136	-349	0	0	0
177	SLV 8	44	-140	-358	0	0	0
177	SLV 9	-46	130	1832	0	0	0
177	SLV 10	-26	126	1824	0	0	0
177	SLV 11	-63	-134	-372	0	0	0
177	SLV 12	-43	-137	-380	0	0	0
177	SLV 13	-159	41	1037	0	0	0
177	SLV 14	-129	36	1024	0	0	0
177	SLV 15	-164	-38	376	0	0	0
177	SLV 16	-134	-43	363	0	0	0
177	CRTFP Uy+	0	0	0	0	0	0
177	CRTFP Uy-	0	0	0	0	0	0
178	SLU 1	-1	-3	692	0	0	0
178	SLU 2	-1	0	712	0	0	0
178	SLU 3	-1	-3	702	0	0	0
178	SLU 4	-1	-2	714	0	0	0
178	SLU 5	-1	-1	718	0	0	0
178	SLU 6	-1	-3	709	0	0	0
178	SLU 7	-1	-2	721	0	0	0
178	SLU 8	-1	-3	705	0	0	0
178	SLU 9	-1	-2	717	0	0	0
178	SLU 10	-1	-1	804	0	0	0
178	SLU 11	-1	-3	794	0	0	0
178	SLU 12	-1	-2	806	0	0	0
178	SLU 13	-1	-1	810	0	0	0
178	SLU 14	-1	-4	801	0	0	0
178	SLU 15	-1	-2	813	0	0	0
178	SLU 16	-1	-3	797	0	0	0
178	SLU 17	-1	-2	809	0	0	0
178	SLU 18	-1	-4	823	0	0	0
178	SLU 19	-1	-2	835	0	0	0
178	SLU 20	-1	-4	830	0	0	0
178	SLU 21	-1	-2	842	0	0	0
178	SLU 22	-1	-3	781	0	0	0
178	SLU 23	-1	-1	801	0	0	0
178	SLU 24	-1	-3	791	0	0	0
178	SLU 25	-1	-2	803	0	0	0
178	SLU 26	-1	-1	807	0	0	0
178	SLU 27	-2	-3	797	0	0	0
178	SLU 28	-2	-2	809	0	0	0
178	SLU 29	-2	-3	793	0	0	0
178	SLU 30	-2	-2	805	0	0	0
178	SLU 31	-1	-1	893	0	0	0
178	SLU 32	-1	-4	883	0	0	0
178	SLU 33	-1	-2	895	0	0	0
178	SLU 34	-1	-1	899	0	0	0
178	SLU 35	-1	-4	889	0	0	0
178	SLU 36	-1	-2	901	0	0	0
178	SLU 37	-1	-4	885	0	0	0
178	SLU 38	-1	-2	897	0	0	0
178	SLU 39	-1	-4	912	0	0	0
178	SLU 40	-1	-2	924	0	0	0
178	SLU 41	-1	-4	918	0	0	0
178	SLU 42	-1	-2	930	0	0	0
178	SLU 43	-1	-4	869	0	0	0
178	SLU 44	-1	-1	889	0	0	0
178	SLU 45	-2	-4	879	0	0	0
178	SLU 46	-1	-2	891	0	0	0
178	SLU 47	-1	-1	895	0	0	0
178	SLU 48	-2	-4	886	0	0	0
178	SLU 49	-2	-2	898	0	0	0
178	SLU 50	-2	-4	882	0	0	0
178	SLU 51	-2	-2	894	0	0	0
178	SLU 52	-1	-2	981	0	0	0
178	SLU 53	-1	-4	971	0	0	0
178	SLU 54	-1	-3	983	0	0	0
178	SLU 55	-1	-2	987	0	0	0
178	SLU 56	-1	-4	978	0	0	0
178	SLU 57	-1	-3	990	0	0	0
178	SLU 58	-1	-4	974	0	0	0
178	SLU 59	-1	-3	986	0	0	0
178	SLU 60	-1	-4	1000	0	0	0
178	SLU 61	-1	-3	1012	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
178	SLU 62	-1	-4	1007	0	0	0
178	SLU 63	-1	-3	1019	0	0	0
178	SLU 64	-2	-4	958	0	0	0
178	SLU 65	-2	-2	978	0	0	0
178	SLU 66	-2	-4	968	0	0	0
178	SLU 67	-2	-3	980	0	0	0
178	SLU 68	-2	-2	984	0	0	0
178	SLU 69	-2	-4	975	0	0	0
178	SLU 70	-2	-3	987	0	0	0
178	SLU 71	-2	-4	970	0	0	0
178	SLU 72	-2	-3	982	0	0	0
178	SLU 73	-1	-2	1070	0	0	0
178	SLU 74	-2	-5	1060	0	0	0
178	SLU 75	-2	-3	1072	0	0	0
178	SLU 76	-2	-2	1076	0	0	0
178	SLU 77	-2	-5	1067	0	0	0
178	SLU 78	-2	-3	1079	0	0	0
178	SLU 79	-2	-5	1062	0	0	0
178	SLU 80	-2	-3	1074	0	0	0
178	SLU 81	-1	-5	1089	0	0	0
178	SLU 82	-1	-3	1101	0	0	0
178	SLU 83	-2	-5	1096	0	0	0
178	SLU 84	-2	-3	1108	0	0	0
178	SLE RA 1	-1	-3	717	0	0	0
178	SLE RA 2	-1	-1	731	0	0	0
178	SLE RA 3	-1	-3	724	0	0	0
178	SLE RA 4	-1	-2	732	0	0	0
178	SLE RA 5	-1	-1	735	0	0	0
178	SLE RA 6	-1	-3	728	0	0	0
178	SLE RA 7	-1	-2	736	0	0	0
178	SLE RA 8	-1	-3	726	0	0	0
178	SLE RA 9	-1	-2	734	0	0	0
178	SLE RA 10	-1	-2	792	0	0	0
178	SLE RA 11	-1	-3	785	0	0	0
178	SLE RA 12	-1	-2	793	0	0	0
178	SLE RA 13	-1	-2	796	0	0	0
178	SLE RA 14	-1	-3	790	0	0	0
178	SLE RA 15	-1	-2	798	0	0	0
178	SLE RA 16	-1	-3	787	0	0	0
178	SLE RA 17	-1	-2	795	0	0	0
178	SLE RA 18	-1	-3	805	0	0	0
178	SLE RA 19	-1	-2	813	0	0	0
178	SLE RA 20	-1	-4	809	0	0	0
178	SLE RA 21	-1	-2	817	0	0	0
178	SLE FR 1	-1	-3	717	0	0	0
178	SLE FR 2	-1	-3	720	0	0	0
178	SLE FR 3	-1	-3	719	0	0	0
178	SLE FR 4	-1	-3	746	0	0	0
178	SLE FR 5	-1	-3	745	0	0	0
178	SLE FR 6	-1	-3	761	0	0	0
178	SLE QP 1	-1	-3	717	0	0	0
178	SLE QP 2	-1	-3	744	0	0	0
178	SLD 1	56	13	890	0	0	0
178	SLD 2	69	11	885	0	0	0
178	SLD 3	54	-20	624	0	0	0
178	SLD 4	67	-22	619	0	0	0
178	SLD 5	17	51	1191	0	0	0
178	SLD 6	25	50	1188	0	0	0
178	SLD 7	10	-57	305	0	0	0
178	SLD 8	18	-59	302	0	0	0
178	SLD 9	-21	52	1185	0	0	0
178	SLD 10	-12	51	1182	0	0	0
178	SLD 11	-28	-57	299	0	0	0
178	SLD 12	-19	-58	296	0	0	0
178	SLD 13	-69	15	868	0	0	0
178	SLD 14	-56	13	863	0	0	0
178	SLD 15	-71	-18	602	0	0	0
178	SLD 16	-58	-19	597	0	0	0
178	SLV 1	133	37	1108	0	0	0
178	SLV 2	163	33	1096	0	0	0
178	SLV 3	128	-45	442	0	0	0
178	SLV 4	158	-49	430	0	0	0
178	SLV 5	41	133	1865	0	0	0
178	SLV 6	61	130	1857	0	0	0
178	SLV 7	24	-138	-355	0	0	0
178	SLV 8	44	-141	-363	0	0	0
178	SLV 9	-47	135	1850	0	0	0
178	SLV 10	-26	132	1842	0	0	0
178	SLV 11	-64	-137	-370	0	0	0
178	SLV 12	-44	-140	-378	0	0	0
178	SLV 13	-160	42	1057	0	0	0
178	SLV 14	-130	38	1045	0	0	0
178	SLV 15	-165	-39	391	0	0	0
178	SLV 16	-135	-43	379	0	0	0
178	CRTFP Uy+	0	0	0	0	0	0
178	CRTFP Uy-	0	0	0	0	0	0
179	SLU 1	-2	-11	3254	963.2	-338.29	-0.69
179	SLU 2	-2	2	3343	987.09	-347.46	0.54
179	SLU 3	-3	-11	3304	978.34	-343.5	-0.59

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
179	SLU 4	-2	-3	3358	992.68	-349	0.15
179	SLU 5	-2	2	3374	996.37	-350.64	0.65
179	SLU 6	-3	-11	3335	987.62	-346.67	-0.48
179	SLU 7	-3	-3	3388	1001.96	-352.18	0.26
179	SLU 8	-3	-11	3315	981.76	-344.65	-0.48
179	SLU 9	-3	-3	3369	996.1	-350.15	0.26
179	SLU 10	-2	1	3778	1116.34	-392.7	0.52
179	SLU 11	-3	-12	3739	1107.6	-388.73	-0.61
179	SLU 12	-3	-5	3793	1121.93	-394.23	0.13
179	SLU 13	-2	1	3809	1125.63	-395.87	0.62
179	SLU 14	-3	-13	3770	1116.88	-391.91	-0.51
179	SLU 15	-3	-5	3823	1131.21	-397.41	0.23
179	SLU 16	-3	-13	3750	1111.02	-389.88	-0.51
179	SLU 17	-3	-5	3804	1125.35	-395.39	0.24
179	SLU 18	-3	-13	3876	1147.85	-402.91	-0.73
179	SLU 19	-2	-5	3929	1162.18	-408.41	0.01
179	SLU 20	-3	-13	3906	1157.13	-406.09	-0.62
179	SLU 21	-3	-5	3960	1171.47	-411.59	0.12
179	SLU 22	-3	-12	3675	1088.47	-381.98	-0.59
179	SLU 23	-2	1	3763	1112.36	-391.15	0.65
179	SLU 24	-3	-12	3724	1103.61	-387.18	-0.48
179	SLU 25	-3	-4	3778	1117.94	-392.68	0.26
179	SLU 26	-3	1	3794	1121.64	-394.33	0.76
179	SLU 27	-4	-12	3755	1112.89	-390.36	-0.37
179	SLU 28	-3	-4	3808	1127.23	-395.86	0.37
179	SLU 29	-4	-12	3736	1107.03	-388.34	-0.37
179	SLU 30	-3	-4	3789	1121.37	-393.84	0.37
179	SLU 31	-3	0	4198	1241.61	-436.38	0.63
179	SLU 32	-4	-13	4160	1232.87	-432.41	-0.51
179	SLU 33	-3	-5	4213	1247.2	-437.92	0.24
179	SLU 34	-3	0	4229	1250.9	-439.56	0.73
179	SLU 35	-4	-13	4190	1242.15	-435.59	-0.4
179	SLU 36	-4	-5	4243	1256.48	-441.1	0.34
179	SLU 37	-4	-13	4171	1236.29	-433.57	-0.4
179	SLU 38	-4	-5	4224	1250.62	-439.07	0.34
179	SLU 39	-3	-14	4296	1273.12	-446.6	-0.62
179	SLU 40	-3	-6	4349	1287.45	-452.1	0.12
179	SLU 41	-4	-14	4327	1282.4	-449.78	-0.52
179	SLU 42	-3	-6	4380	1296.74	-455.28	0.23
179	SLU 43	-3	-14	4087	1209.21	-424.8	-0.94
179	SLU 44	-2	-1	4176	1233.1	-433.97	0.3
179	SLU 45	-3	-14	4137	1224.35	-430	-0.83
179	SLU 46	-3	-6	4190	1238.68	-435.51	-0.09
179	SLU 47	-3	-1	4206	1242.38	-437.15	0.4
179	SLU 48	-3	-14	4167	1233.63	-433.18	-0.73
179	SLU 49	-3	-6	4220	1247.97	-438.69	0.02
179	SLU 50	-3	-14	4148	1227.77	-431.16	-0.73
179	SLU 51	-3	-6	4201	1242.11	-436.66	0.02
179	SLU 52	-3	-2	4611	1362.35	-479.21	0.27
179	SLU 53	-3	-16	4572	1353.6	-475.24	-0.86
179	SLU 54	-3	-8	4625	1367.94	-480.74	-0.12
179	SLU 55	-3	-2	4641	1371.64	-482.38	0.38
179	SLU 56	-4	-16	4602	1362.89	-478.42	-0.75
179	SLU 57	-3	-8	4656	1377.22	-483.92	-0.01
179	SLU 58	-4	-16	4583	1357.03	-476.39	-0.75
179	SLU 59	-3	-8	4636	1371.36	-481.9	-0.01
179	SLU 60	-3	-16	4708	1393.86	-489.42	-0.98
179	SLU 61	-3	-8	4761	1408.19	-494.92	-0.23
179	SLU 62	-3	-16	4739	1403.14	-492.6	-0.87
179	SLU 63	-3	-8	4792	1417.48	-498.1	-0.13
179	SLU 64	-3	-15	4507	1334.47	-468.49	-0.83
179	SLU 65	-3	-2	4596	1358.37	-477.66	0.41
179	SLU 66	-4	-15	4557	1349.62	-473.69	-0.72
179	SLU 67	-3	-7	4610	1363.95	-479.19	0.02
179	SLU 68	-3	-2	4626	1367.65	-480.84	0.51
179	SLU 69	-4	-15	4587	1358.9	-476.87	-0.62
179	SLU 70	-4	-7	4641	1373.24	-482.37	0.12
179	SLU 71	-4	-15	4568	1353.04	-474.85	-0.62
179	SLU 72	-4	-7	4621	1367.38	-480.35	0.12
179	SLU 73	-3	-3	5031	1487.62	-522.89	0.38
179	SLU 74	-4	-16	4992	1478.87	-518.92	-0.75
179	SLU 75	-4	-8	5045	1493.21	-524.43	-0.01
179	SLU 76	-4	-3	5061	1496.91	-526.07	0.49
179	SLU 77	-4	-16	5022	1488.16	-522.1	-0.64
179	SLU 78	-4	-8	5076	1502.49	-527.6	0.1
179	SLU 79	-4	-16	5003	1482.3	-520.08	-0.64
179	SLU 80	-4	-8	5056	1496.63	-525.58	0.1
179	SLU 81	-4	-17	5128	1519.13	-533.11	-0.87
179	SLU 82	-3	-9	5182	1533.46	-538.61	-0.13
179	SLU 83	-4	-17	5159	1528.41	-536.29	-0.76
179	SLU 84	-4	-9	5212	1542.74	-541.79	-0.02
179	SLE RA 1	-2	-11	3374	998.99	-350.78	-0.66
179	SLE RA 2	-2	-3	3434	1014.92	-356.89	0.16
179	SLE RA 3	-3	-11	3408	1009.08	-354.24	-0.59
179	SLE RA 4	-2	-6	3443	1018.64	-357.91	-0.1
179	SLE RA 5	-2	-3	3454	1021.1	-359.01	0.23
179	SLE RA 6	-3	-11	3428	1015.27	-356.36	-0.52
179	SLE RA 7	-3	-6	3464	1024.83	-360.03	-0.03
179	SLE RA 8	-3	-11	3415	1011.37	-355.01	-0.52

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
179	SLE RA 9	-3	-6	3451	1020.92	-358.68	-0.03
179	SLE RA 10	-2	-3	3724	1101.09	-387.04	0.14
179	SLE RA 11	-3	-12	3698	1095.25	-384.4	-0.61
179	SLE RA 12	-3	-7	3733	1104.81	-388.07	-0.11
179	SLE RA 13	-3	-3	3744	1107.27	-389.16	0.22
179	SLE RA 14	-3	-12	3718	1101.44	-386.52	-0.54
179	SLE RA 15	-3	-7	3754	1111	-390.19	-0.04
179	SLE RA 16	-3	-12	3705	1097.54	-385.17	-0.54
179	SLE RA 17	-3	-7	3741	1107.09	-388.84	-0.04
179	SLE RA 18	-3	-12	3789	1122.09	-393.85	-0.69
179	SLE RA 19	-3	-7	3824	1131.65	-397.52	-0.19
179	SLE RA 20	-3	-13	3809	1128.28	-395.97	-0.62
179	SLE RA 21	-3	-7	3845	1137.83	-399.64	-0.12
179	SLE FR 1	-2	-11	3374	998.99	-350.78	-0.66
179	SLE FR 2	-2	-9	3386	1002.17	-352	-0.5
179	SLE FR 3	-2	-11	3383	1001.46	-351.62	-0.63
179	SLE FR 4	-2	-10	3511	1039.1	-364.92	-0.51
179	SLE FR 5	-3	-12	3507	1038.39	-364.55	-0.64
179	SLE FR 6	-3	-12	3582	1060.54	-372.31	-0.67
179	SLE QP 1	-2	-11	3374	998.99	-350.78	-0.66
179	SLE QP 2	-2	-12	3499	1035.92	-363.7	-0.67
179	SLD 1	285	81	4130	1206.02	-428.71	-80.8
179	SLD 2	347	74	4113	1202.05	-427.03	-100.87
179	SLD 3	274	-83	2948	888.07	-306.75	-96.26
179	SLD 4	336	-89	2932	884.1	-305.08	-116.33
179	SLD 5	90	265	5483	1569.88	-568.46	2.35
179	SLD 6	131	260	5471	1567.26	-567.36	-10.89
179	SLD 7	52	-279	1545	510.05	-161.96	-49.19
179	SLD 8	93	-283	1534	507.43	-160.86	-62.43
179	SLD 9	-98	260	5464	1564.4	-566.54	61.09
179	SLD 10	-57	256	5452	1561.78	-565.44	47.85
179	SLD 11	-136	-284	1526	504.57	-160.04	9.55
179	SLD 12	-95	-288	1515	501.95	-158.94	-3.69
179	SLD 13	-340	66	4066	1187.74	-422.31	114.99
179	SLD 14	-279	59	4049	1183.77	-420.64	94.92
179	SLD 15	-352	-97	2885	869.79	-300.36	99.53
179	SLD 16	-290	-104	2868	865.82	-298.69	79.46
179	SLV 1	671	216	5073	1460.31	-525.92	-187.07
179	SLV 2	816	202	5033	1450.98	-521.99	-234.25
179	SLV 3	642	-190	2114	663.64	-220.37	-225.15
179	SLV 4	788	-205	2074	654.31	-216.44	-272.33
179	SLV 5	216	676	8467	2373.27	-876.52	9.98
179	SLV 6	314	666	8440	2366.98	-873.88	-21.79
179	SLV 7	120	-679	-1398	-282.31	141.99	-116.97
179	SLV 8	218	-689	-1425	-288.6	144.63	-148.74
179	SLV 9	-223	666	8422	2360.43	-872.03	147.4
179	SLV 10	-125	656	8396	2354.15	-869.39	115.63
179	SLV 11	-319	-690	-1443	-295.15	146.48	20.45
179	SLV 12	-221	-700	-1470	-301.43	149.12	-11.32
179	SLV 13	-792	182	4924	1417.53	-510.96	270.99
179	SLV 14	-647	167	4884	1408.2	-507.03	223.81
179	SLV 15	-821	-225	1964	620.85	-205.4	232.91
179	SLV 16	-676	-240	1924	611.52	-201.48	185.73
179	CRTFP Ux+	0	0	0	0	0	0
179	CRTFP Ux-	0	0	0	0	0	0
179	CRTFP Uy+	0	0	0	0	0	0
179	CRTFP Uy-	0	0	0	0	0	0
187	SLU 1	8	-70	6060	1292.64	1359.28	13.42
187	SLU 2	9	-45	6232	1326.79	1398.34	7.54
187	SLU 3	8	-71	6151	1312.58	1379.79	13.79
187	SLU 4	8	-56	6255	1333.08	1403.22	10.26
187	SLU 5	9	-45	6288	1338.97	1410.81	7.83
187	SLU 6	7	-72	6207	1324.76	1392.26	14.09
187	SLU 7	8	-57	6310	1345.25	1415.7	10.56
187	SLU 8	7	-71	6171	1316.98	1384.23	14.01
187	SLU 9	8	-56	6275	1337.47	1407.66	10.48
187	SLU 10	9	-53	7026	1496.96	1577.06	9.38
187	SLU 11	7	-79	6945	1482.75	1558.52	15.64
187	SLU 12	8	-64	7049	1503.24	1581.95	12.11
187	SLU 13	8	-53	7082	1509.13	1589.54	9.68
187	SLU 14	7	-80	7000	1494.92	1570.99	15.93
187	SLU 15	7	-65	7104	1515.41	1594.42	12.41
187	SLU 16	7	-79	6965	1487.14	1562.95	15.86
187	SLU 17	7	-64	7068	1507.64	1586.39	12.33
187	SLU 18	8	-81	7194	1535.73	1614.61	16.05
187	SLU 19	8	-66	7297	1556.22	1638.04	12.52
187	SLU 20	7	-82	7249	1547.9	1627.08	16.35
187	SLU 21	8	-67	7353	1568.39	1650.51	12.82
187	SLU 22	9	-78	6831	1458.61	1532.5	15.14
187	SLU 23	10	-53	7004	1492.77	1571.55	9.26
187	SLU 24	8	-80	6923	1478.56	1553	15.51
187	SLU 25	9	-64	7027	1499.05	1576.44	11.98
187	SLU 26	9	-54	7060	1504.94	1584.02	9.55
187	SLU 27	8	-80	6979	1490.73	1565.48	15.81
187	SLU 28	8	-65	7082	1511.23	1588.91	12.28
187	SLU 29	8	-80	6943	1482.95	1557.44	15.73
187	SLU 30	8	-65	7047	1503.45	1580.87	12.2
187	SLU 31	9	-61	7798	1662.93	1750.28	11.1
187	SLU 32	8	-87	7717	1648.72	1731.73	17.36

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
187	SLU 33	8	-72	7821	1669.22	1755.16	13.83
187	SLU 34	9	-62	7854	1675.11	1762.75	11.4
187	SLU 35	7	-88	7772	1660.89	1744.2	17.65
187	SLU 36	8	-73	7876	1681.39	1767.63	14.13
187	SLU 37	7	-88	7737	1653.12	1736.17	17.58
187	SLU 38	8	-73	7840	1673.61	1759.6	14.05
187	SLU 39	8	-90	7966	1701.7	1787.82	17.77
187	SLU 40	9	-74	8069	1722.2	1811.25	14.24
187	SLU 41	8	-90	8021	1713.87	1800.29	18.07
187	SLU 42	8	-75	8125	1734.37	1823.72	14.54
187	SLU 43	11	-88	7613	1623.52	1707.68	16.85
187	SLU 44	12	-63	7786	1657.68	1746.73	10.97
187	SLU 45	10	-89	7704	1643.47	1728.19	17.23
187	SLU 46	11	-74	7808	1663.96	1751.62	13.7
187	SLU 47	11	-64	7841	1669.85	1759.21	11.27
187	SLU 48	9	-90	7760	1655.64	1740.66	17.52
187	SLU 49	10	-75	7864	1676.14	1764.09	14
187	SLU 50	9	-90	7724	1647.86	1732.63	17.45
187	SLU 51	10	-74	7828	1668.36	1756.06	13.92
187	SLU 52	11	-71	8580	1827.84	1925.46	12.82
187	SLU 53	10	-97	8498	1813.63	1906.91	19.07
187	SLU 54	10	-82	8602	1834.13	1930.35	15.54
187	SLU 55	10	-71	8635	1840.02	1937.93	13.11
187	SLU 56	9	-98	8554	1825.81	1919.39	19.37
187	SLU 57	10	-83	8657	1846.3	1942.82	15.84
187	SLU 58	9	-97	8518	1818.03	1911.35	19.29
187	SLU 59	9	-82	8622	1838.52	1934.78	15.76
187	SLU 60	10	-99	8747	1866.61	1963	19.49
187	SLU 61	10	-84	8851	1887.11	1986.43	15.96
187	SLU 62	9	-100	8802	1878.78	1975.48	19.78
187	SLU 63	10	-85	8906	1899.28	1998.91	16.26
187	SLU 64	11	-97	8385	1789.5	1880.89	18.57
187	SLU 65	12	-71	8558	1823.65	1919.95	12.69
187	SLU 66	11	-98	8476	1809.44	1901.4	18.95
187	SLU 67	11	-83	8580	1829.94	1924.83	15.42
187	SLU 68	12	-72	8613	1835.83	1932.42	12.99
187	SLU 69	10	-98	8532	1821.62	1913.87	19.24
187	SLU 70	11	-83	8635	1842.11	1937.31	15.72
187	SLU 71	10	-98	8496	1813.84	1905.84	19.17
187	SLU 72	11	-83	8600	1834.33	1929.27	15.64
187	SLU 73	12	-79	9351	1993.82	2098.67	14.54
187	SLU 74	10	-106	9270	1979.61	2080.13	20.79
187	SLU 75	11	-90	9374	2000.1	2103.56	17.26
187	SLU 76	11	-80	9407	2005.99	2111.15	14.83
187	SLU 77	10	-106	9326	1991.78	2092.6	21.09
187	SLU 78	10	-91	9429	2012.27	2116.03	17.56
187	SLU 79	9	-106	9290	1984	2084.57	21.01
187	SLU 80	10	-91	9394	2004.5	2108	17.48
187	SLU 81	10	-108	9519	2032.59	2136.22	21.21
187	SLU 82	11	-93	9623	2053.08	2159.65	17.68
187	SLU 83	10	-108	9574	2044.76	2148.69	21.5
187	SLU 84	10	-93	9678	2065.25	2172.12	17.98
187	SLE RA 1	8	-72	6280	1340.06	1408.77	13.91
187	SLE RA 2	9	-56	6395	1362.83	1434.81	9.99
187	SLE RA 3	8	-73	6341	1353.36	1422.44	14.16
187	SLE RA 4	9	-63	6410	1367.02	1438.07	11.81
187	SLE RA 5	9	-56	6432	1370.94	1443.12	10.19
187	SLE RA 6	8	-74	6378	1361.47	1430.76	14.36
187	SLE RA 7	8	-64	6447	1375.13	1446.38	12
187	SLE RA 8	8	-73	6354	1356.29	1425.4	14.3
187	SLE RA 9	8	-63	6423	1369.95	1441.02	11.95
187	SLE RA 10	9	-61	6925	1476.27	1553.96	11.22
187	SLE RA 11	8	-78	6870	1466.8	1541.59	15.39
187	SLE RA 12	8	-68	6939	1480.46	1557.22	13.04
187	SLE RA 13	8	-61	6962	1484.39	1562.27	11.42
187	SLE RA 14	7	-79	6907	1474.91	1549.91	15.59
187	SLE RA 15	8	-69	6977	1488.58	1565.53	13.23
187	SLE RA 16	7	-79	6883	1469.73	1544.55	15.53
187	SLE RA 17	8	-69	6953	1483.39	1560.18	13.18
187	SLE RA 18	8	-80	7036	1502.12	1578.99	15.66
187	SLE RA 19	8	-70	7105	1515.78	1594.61	13.31
187	SLE RA 20	8	-80	7073	1510.23	1587.3	15.86
187	SLE RA 21	8	-70	7142	1523.9	1602.92	13.51
187	SLE FR 1	8	-72	6280	1340.06	1408.77	13.91
187	SLE FR 2	9	-69	6303	1344.61	1413.98	13.12
187	SLE FR 3	8	-73	6295	1343.3	1412.1	13.99
187	SLE FR 4	8	-71	6530	1393.23	1465.04	13.65
187	SLE FR 5	8	-75	6522	1391.92	1463.16	14.51
187	SLE FR 6	8	-76	6658	1421.09	1493.88	14.79
187	SLE QP 1	8	-72	6280	1340.06	1408.77	13.91
187	SLE QP 2	8	-75	6507	1388.68	1459.84	14.43
187	SLD 1	564	93	7551	1595.75	1701	-144.21
187	SLD 2	685	100	7588	1603.31	1707.59	-171.73
187	SLD 3	538	-215	5244	1140.44	1180.89	-71.01
187	SLD 4	659	-209	5281	1148	1187.48	-98.53
187	SLD 5	193	443	10312	2139.99	2319.83	-139.24
187	SLD 6	272	447	10336	2144.98	2324.18	-157.4
187	SLD 7	106	-586	2623	622.29	586.14	104.78
187	SLD 8	186	-582	2647	627.28	590.49	86.63

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
187	SLD 9	-169	433	10366	2150.07	2329.19	-57.76
187	SLD 10	-90	437	10391	2155.06	2333.54	-75.91
187	SLD 11	-256	-596	2677	632.37	595.49	186.26
187	SLD 12	-176	-592	2702	637.36	599.84	168.11
187	SLD 13	-642	60	7733	1629.35	1732.19	127.39
187	SLD 14	-522	66	7770	1636.91	1738.78	99.88
187	SLD 15	-668	-249	5426	1174.04	1212.08	200.6
187	SLD 16	-548	-243	5463	1181.61	1218.67	173.08
187	SLV 1	1311	342	9141	1910.97	2067.25	-362.53
187	SLV 2	1594	357	9228	1928.75	2082.74	-427.21
187	SLV 3	1244	-427	3359	769.84	763.79	-179.35
187	SLV 4	1527	-413	3447	787.62	779.29	-244.04
187	SLV 5	447	1215	16049	3272.76	3616.07	-364.39
187	SLV 6	638	1225	16108	3284.73	3626.51	-407.94
187	SLV 7	225	-1351	-3222	-531.01	-728.77	246.18
187	SLV 8	416	-1341	-3163	-519.04	-718.34	202.63
187	SLV 9	-399	1191	16177	3296.39	3638.02	-173.76
187	SLV 10	-209	1201	16235	3308.36	3648.45	-217.31
187	SLV 11	-621	-1374	-3094	-507.38	-706.83	436.81
187	SLV 12	-431	-1364	-3035	-495.41	-696.4	393.26
187	SLV 13	-1511	263	9567	1989.73	2140.38	272.9
187	SLV 14	-1228	278	9654	2007.51	2155.88	208.22
187	SLV 15	-1577	-506	3786	848.6	836.93	456.08
187	SLV 16	-1294	-492	3873	866.38	852.42	391.39
187	CRTFP Ux+	0	0	0	0	0	0
187	CRTFP Ux-	0	0	0	0	0	0
187	CRTFP Uy+	0	0	0	-0.01	-0.01	0
187	CRTFP Uy-	0	0	0	0.01	0.01	0
188	SLU 1	1	-8	660	0	0	0
188	SLU 2	1	-6	680	0	0	0
188	SLU 3	1	-8	670	0	0	0
188	SLU 4	1	-7	682	0	0	0
188	SLU 5	1	-6	686	0	0	0
188	SLU 6	1	-8	676	0	0	0
188	SLU 7	1	-7	688	0	0	0
188	SLU 8	1	-8	672	0	0	0
188	SLU 9	1	-7	684	0	0	0
188	SLU 10	1	-6	766	0	0	0
188	SLU 11	1	-9	756	0	0	0
188	SLU 12	1	-8	768	0	0	0
188	SLU 13	1	-7	772	0	0	0
188	SLU 14	1	-9	762	0	0	0
188	SLU 15	1	-8	774	0	0	0
188	SLU 16	1	-9	758	0	0	0
188	SLU 17	1	-8	770	0	0	0
188	SLU 18	1	-10	783	0	0	0
188	SLU 19	1	-8	795	0	0	0
188	SLU 20	1	-10	789	0	0	0
188	SLU 21	1	-8	801	0	0	0
188	SLU 22	1	-9	744	0	0	0
188	SLU 23	1	-7	764	0	0	0
188	SLU 24	1	-9	754	0	0	0
188	SLU 25	1	-8	766	0	0	0
188	SLU 26	1	-7	770	0	0	0
188	SLU 27	1	-9	760	0	0	0
188	SLU 28	1	-8	772	0	0	0
188	SLU 29	1	-9	756	0	0	0
188	SLU 30	1	-8	768	0	0	0
188	SLU 31	1	-7	849	0	0	0
188	SLU 32	1	-10	840	0	0	0
188	SLU 33	1	-9	851	0	0	0
188	SLU 34	1	-8	855	0	0	0
188	SLU 35	1	-10	846	0	0	0
188	SLU 36	1	-9	857	0	0	0
188	SLU 37	1	-10	842	0	0	0
188	SLU 38	1	-9	853	0	0	0
188	SLU 39	1	-11	867	0	0	0
188	SLU 40	1	-9	878	0	0	0
188	SLU 41	1	-11	873	0	0	0
188	SLU 42	1	-9	884	0	0	0
188	SLU 43	1	-10	830	0	0	0
188	SLU 44	1	-8	850	0	0	0
188	SLU 45	1	-11	840	0	0	0
188	SLU 46	1	-9	851	0	0	0
188	SLU 47	1	-8	855	0	0	0
188	SLU 48	1	-11	846	0	0	0
188	SLU 49	1	-9	857	0	0	0
188	SLU 50	1	-11	842	0	0	0
188	SLU 51	1	-9	854	0	0	0
188	SLU 52	1	-9	935	0	0	0
188	SLU 53	1	-11	925	0	0	0
188	SLU 54	1	-10	937	0	0	0
188	SLU 55	1	-9	941	0	0	0
188	SLU 56	1	-12	931	0	0	0
188	SLU 57	1	-10	943	0	0	0
188	SLU 58	1	-11	928	0	0	0
188	SLU 59	1	-10	939	0	0	0
188	SLU 60	1	-12	952	0	0	0
188	SLU 61	1	-10	964	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
188	SLU 62	1	-12	958	0	0	0
188	SLU 63	1	-10	970	0	0	0
188	SLU 64	1	-11	913	0	0	0
188	SLU 65	1	-9	933	0	0	0
188	SLU 66	1	-12	923	0	0	0
188	SLU 67	1	-10	935	0	0	0
188	SLU 68	1	-9	939	0	0	0
188	SLU 69	1	-12	929	0	0	0
188	SLU 70	1	-10	941	0	0	0
188	SLU 71	1	-12	925	0	0	0
188	SLU 72	1	-10	937	0	0	0
188	SLU 73	1	-10	1019	0	0	0
188	SLU 74	1	-12	1009	0	0	0
188	SLU 75	1	-11	1021	0	0	0
188	SLU 76	1	-10	1025	0	0	0
188	SLU 77	1	-13	1015	0	0	0
188	SLU 78	1	-11	1027	0	0	0
188	SLU 79	1	-12	1011	0	0	0
188	SLU 80	1	-11	1023	0	0	0
188	SLU 81	1	-13	1036	0	0	0
188	SLU 82	1	-11	1048	0	0	0
188	SLU 83	1	-13	1042	0	0	0
188	SLU 84	1	-11	1054	0	0	0
188	SLE RA 1	1	-9	684	0	0	0
188	SLE RA 2	1	-7	697	0	0	0
188	SLE RA 3	1	-9	691	0	0	0
188	SLE RA 4	1	-8	699	0	0	0
188	SLE RA 5	1	-7	701	0	0	0
188	SLE RA 6	1	-9	695	0	0	0
188	SLE RA 7	1	-8	703	0	0	0
188	SLE RA 8	1	-9	692	0	0	0
188	SLE RA 9	1	-8	700	0	0	0
188	SLE RA 10	1	-7	755	0	0	0
188	SLE RA 11	1	-9	748	0	0	0
188	SLE RA 12	1	-8	756	0	0	0
188	SLE RA 13	1	-7	759	0	0	0
188	SLE RA 14	1	-9	752	0	0	0
188	SLE RA 15	1	-8	760	0	0	0
188	SLE RA 16	1	-9	749	0	0	0
188	SLE RA 17	1	-8	757	0	0	0
188	SLE RA 18	1	-9	766	0	0	0
188	SLE RA 19	1	-8	774	0	0	0
188	SLE RA 20	1	-9	770	0	0	0
188	SLE RA 21	1	-8	778	0	0	0
188	SLE FR 1	1	-9	684	0	0	0
188	SLE FR 2	1	-8	687	0	0	0
188	SLE FR 3	1	-9	686	0	0	0
188	SLE FR 4	1	-8	711	0	0	0
188	SLE FR 5	1	-9	710	0	0	0
188	SLE FR 6	1	-9	725	0	0	0
188	SLE QP 1	1	-9	684	0	0	0
188	SLE QP 2	1	-9	709	0	0	0
188	SLD 1	60	10	822	0	0	0
188	SLD 2	74	11	827	0	0	0
188	SLD 3	58	-22	559	0	0	0
188	SLD 4	71	-21	564	0	0	0
188	SLD 5	21	45	1141	0	0	0
188	SLD 6	29	46	1144	0	0	0
188	SLD 7	12	-62	264	0	0	0
188	SLD 8	20	-61	267	0	0	0
188	SLD 9	-18	43	1150	0	0	0
188	SLD 10	-10	44	1154	0	0	0
188	SLD 11	-27	-64	273	0	0	0
188	SLD 12	-19	-63	277	0	0	0
188	SLD 13	-69	3	854	0	0	0
188	SLD 14	-56	5	859	0	0	0
188	SLD 15	-72	-29	591	0	0	0
188	SLD 16	-58	-27	596	0	0	0
188	SLV 1	140	37	994	0	0	0
188	SLV 2	171	41	1007	0	0	0
188	SLV 3	133	-43	335	0	0	0
188	SLV 4	164	-39	348	0	0	0
188	SLV 5	47	126	1792	0	0	0
188	SLV 6	68	128	1801	0	0	0
188	SLV 7	25	-141	-405	0	0	0
188	SLV 8	45	-139	-397	0	0	0
188	SLV 9	-43	121	1814	0	0	0
188	SLV 10	-23	124	1823	0	0	0
188	SLV 11	-66	-146	-383	0	0	0
188	SLV 12	-45	-143	-374	0	0	0
188	SLV 13	-162	22	1070	0	0	0
188	SLV 14	-131	26	1082	0	0	0
188	SLV 15	-169	-58	410	0	0	0
188	SLV 16	-138	-55	423	0	0	0
188	CRTFP Uy+	0	0	0	0	0	0
188	CRTFP Uy-	0	0	0	0	0	0
189	SLU 1	1	-9	657	0	0	0
189	SLU 2	1	-6	677	0	0	0
189	SLU 3	1	-9	667	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
189	SLU 4	1	-7	679	0	0	0
189	SLU 5	1	-6	683	0	0	0
189	SLU 6	1	-9	673	0	0	0
189	SLU 7	1	-7	684	0	0	0
189	SLU 8	1	-9	669	0	0	0
189	SLU 9	1	-7	681	0	0	0
189	SLU 10	1	-7	762	0	0	0
189	SLU 11	1	-10	752	0	0	0
189	SLU 12	1	-8	764	0	0	0
189	SLU 13	1	-7	768	0	0	0
189	SLU 14	1	-10	758	0	0	0
189	SLU 15	1	-8	770	0	0	0
189	SLU 16	1	-10	754	0	0	0
189	SLU 17	1	-8	766	0	0	0
189	SLU 18	1	-10	779	0	0	0
189	SLU 19	1	-8	790	0	0	0
189	SLU 20	1	-10	785	0	0	0
189	SLU 21	1	-8	796	0	0	0
189	SLU 22	1	-10	740	0	0	0
189	SLU 23	1	-7	760	0	0	0
189	SLU 24	1	-10	750	0	0	0
189	SLU 25	1	-8	762	0	0	0
189	SLU 26	1	-7	766	0	0	0
189	SLU 27	1	-10	756	0	0	0
189	SLU 28	1	-8	768	0	0	0
189	SLU 29	1	-10	752	0	0	0
189	SLU 30	1	-8	764	0	0	0
189	SLU 31	1	-8	845	0	0	0
189	SLU 32	1	-11	835	0	0	0
189	SLU 33	1	-9	847	0	0	0
189	SLU 34	1	-8	851	0	0	0
189	SLU 35	1	-11	841	0	0	0
189	SLU 36	1	-9	853	0	0	0
189	SLU 37	1	-11	837	0	0	0
189	SLU 38	1	-9	849	0	0	0
189	SLU 39	1	-11	862	0	0	0
189	SLU 40	1	-9	874	0	0	0
189	SLU 41	1	-11	868	0	0	0
189	SLU 42	1	-9	879	0	0	0
189	SLU 43	2	-11	826	0	0	0
189	SLU 44	2	-8	845	0	0	0
189	SLU 45	1	-11	835	0	0	0
189	SLU 46	2	-9	847	0	0	0
189	SLU 47	2	-8	851	0	0	0
189	SLU 48	1	-11	841	0	0	0
189	SLU 49	1	-9	853	0	0	0
189	SLU 50	1	-11	838	0	0	0
189	SLU 51	1	-9	849	0	0	0
189	SLU 52	2	-9	930	0	0	0
189	SLU 53	1	-12	921	0	0	0
189	SLU 54	1	-10	932	0	0	0
189	SLU 55	2	-9	936	0	0	0
189	SLU 56	1	-12	926	0	0	0
189	SLU 57	1	-10	938	0	0	0
189	SLU 58	1	-12	923	0	0	0
189	SLU 59	1	-10	934	0	0	0
189	SLU 60	1	-12	947	0	0	0
189	SLU 61	2	-11	959	0	0	0
189	SLU 62	1	-12	953	0	0	0
189	SLU 63	1	-11	965	0	0	0
189	SLU 64	2	-12	909	0	0	0
189	SLU 65	2	-9	928	0	0	0
189	SLU 66	2	-12	919	0	0	0
189	SLU 67	2	-10	930	0	0	0
189	SLU 68	2	-9	934	0	0	0
189	SLU 69	2	-12	924	0	0	0
189	SLU 70	2	-11	936	0	0	0
189	SLU 71	2	-12	921	0	0	0
189	SLU 72	2	-10	932	0	0	0
189	SLU 73	2	-10	1013	0	0	0
189	SLU 74	2	-13	1004	0	0	0
189	SLU 75	2	-11	1015	0	0	0
189	SLU 76	2	-10	1019	0	0	0
189	SLU 77	1	-13	1010	0	0	0
189	SLU 78	2	-11	1021	0	0	0
189	SLU 79	1	-13	1006	0	0	0
189	SLU 80	2	-11	1017	0	0	0
189	SLU 81	2	-13	1030	0	0	0
189	SLU 82	2	-12	1042	0	0	0
189	SLU 83	2	-13	1036	0	0	0
189	SLU 84	2	-12	1048	0	0	0
189	SLE RA 1	1	-9	681	0	0	0
189	SLE RA 2	1	-7	694	0	0	0
189	SLE RA 3	1	-9	687	0	0	0
189	SLE RA 4	1	-8	695	0	0	0
189	SLE RA 5	1	-7	698	0	0	0
189	SLE RA 6	1	-9	691	0	0	0
189	SLE RA 7	1	-8	699	0	0	0
189	SLE RA 8	1	-9	689	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
189	SLE RA 9	1	-8	697	0	0	0
189	SLE RA 10	1	-8	751	0	0	0
189	SLE RA 11	1	-10	744	0	0	0
189	SLE RA 12	1	-9	752	0	0	0
189	SLE RA 13	1	-8	755	0	0	0
189	SLE RA 14	1	-10	748	0	0	0
189	SLE RA 15	1	-9	756	0	0	0
189	SLE RA 16	1	-10	745	0	0	0
189	SLE RA 17	1	-9	753	0	0	0
189	SLE RA 18	1	-10	762	0	0	0
189	SLE RA 19	1	-9	770	0	0	0
189	SLE RA 20	1	-10	766	0	0	0
189	SLE RA 21	1	-9	774	0	0	0
189	SLE FR 1	1	-9	681	0	0	0
189	SLE FR 2	1	-9	683	0	0	0
189	SLE FR 3	1	-9	682	0	0	0
189	SLE FR 4	1	-9	708	0	0	0
189	SLE FR 5	1	-9	707	0	0	0
189	SLE FR 6	1	-9	721	0	0	0
189	SLE QP 1	1	-9	681	0	0	0
189	SLE QP 2	1	-9	705	0	0	0
189	SLD 1	60	10	813	0	0	0
189	SLD 2	73	12	819	0	0	0
189	SLD 3	57	-22	551	0	0	0
189	SLD 4	70	-20	557	0	0	0
189	SLD 5	21	44	1133	0	0	0
189	SLD 6	29	45	1137	0	0	0
189	SLD 7	12	-61	261	0	0	0
189	SLD 8	20	-60	265	0	0	0
189	SLD 9	-18	41	1146	0	0	0
189	SLD 10	-9	43	1150	0	0	0
189	SLD 11	-27	-64	273	0	0	0
189	SLD 12	-18	-62	277	0	0	0
189	SLD 13	-68	1	854	0	0	0
189	SLD 14	-55	4	860	0	0	0
189	SLD 15	-71	-30	592	0	0	0
189	SLD 16	-58	-28	598	0	0	0
189	SLV 1	139	37	978	0	0	0
189	SLV 2	170	42	992	0	0	0
189	SLV 3	132	-41	322	0	0	0
189	SLV 4	163	-36	336	0	0	0
189	SLV 5	47	123	1780	0	0	0
189	SLV 6	68	126	1789	0	0	0
189	SLV 7	24	-139	-408	0	0	0
189	SLV 8	45	-135	-398	0	0	0
189	SLV 9	-42	117	1809	0	0	0
189	SLV 10	-22	120	1818	0	0	0
189	SLV 11	-66	-145	-379	0	0	0
189	SLV 12	-45	-141	-370	0	0	0
189	SLV 13	-161	18	1074	0	0	0
189	SLV 14	-130	23	1089	0	0	0
189	SLV 15	-168	-61	418	0	0	0
189	SLV 16	-137	-55	432	0	0	0
189	CRTFP Uy+	0	0	0	0	0	0
189	CRTFP Uy-	0	0	0	0	0	0
190	SLU 1	1	-9	654	0	0	0
190	SLU 2	1	-6	673	0	0	0
190	SLU 3	1	-9	664	0	0	0
190	SLU 4	1	-8	675	0	0	0
190	SLU 5	1	-6	679	0	0	0
190	SLU 6	1	-9	669	0	0	0
190	SLU 7	1	-8	681	0	0	0
190	SLU 8	1	-9	666	0	0	0
190	SLU 9	1	-8	677	0	0	0
190	SLU 10	1	-7	758	0	0	0
190	SLU 11	1	-10	748	0	0	0
190	SLU 12	1	-8	760	0	0	0
190	SLU 13	1	-7	764	0	0	0
190	SLU 14	1	-10	754	0	0	0
190	SLU 15	1	-9	766	0	0	0
190	SLU 16	1	-10	750	0	0	0
190	SLU 17	1	-8	762	0	0	0
190	SLU 18	1	-10	775	0	0	0
190	SLU 19	1	-9	786	0	0	0
190	SLU 20	1	-10	780	0	0	0
190	SLU 21	1	-9	792	0	0	0
190	SLU 22	2	-10	737	0	0	0
190	SLU 23	2	-7	756	0	0	0
190	SLU 24	1	-10	746	0	0	0
190	SLU 25	2	-9	758	0	0	0
190	SLU 26	2	-7	762	0	0	0
190	SLU 27	1	-10	752	0	0	0
190	SLU 28	1	-9	764	0	0	0
190	SLU 29	1	-10	748	0	0	0
190	SLU 30	1	-9	760	0	0	0
190	SLU 31	2	-8	841	0	0	0
190	SLU 32	1	-11	831	0	0	0
190	SLU 33	1	-9	842	0	0	0
190	SLU 34	2	-8	846	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
190	SLU 35	1	-11	837	0	0	0
190	SLU 36	1	-10	848	0	0	0
190	SLU 37	1	-11	833	0	0	0
190	SLU 38	1	-10	844	0	0	0
190	SLU 39	1	-11	857	0	0	0
190	SLU 40	2	-10	869	0	0	0
190	SLU 41	1	-11	863	0	0	0
190	SLU 42	1	-10	875	0	0	0
190	SLU 43	2	-11	822	0	0	0
190	SLU 44	2	-9	841	0	0	0
190	SLU 45	2	-11	831	0	0	0
190	SLU 46	2	-10	843	0	0	0
190	SLU 47	2	-9	847	0	0	0
190	SLU 48	2	-11	837	0	0	0
190	SLU 49	2	-10	849	0	0	0
190	SLU 50	2	-11	833	0	0	0
190	SLU 51	2	-10	845	0	0	0
190	SLU 52	2	-10	926	0	0	0
190	SLU 53	2	-12	916	0	0	0
190	SLU 54	2	-11	927	0	0	0
190	SLU 55	2	-10	931	0	0	0
190	SLU 56	2	-12	922	0	0	0
190	SLU 57	2	-11	933	0	0	0
190	SLU 58	2	-12	918	0	0	0
190	SLU 59	2	-11	930	0	0	0
190	SLU 60	2	-13	942	0	0	0
190	SLU 61	2	-11	954	0	0	0
190	SLU 62	2	-13	948	0	0	0
190	SLU 63	2	-11	960	0	0	0
190	SLU 64	2	-12	905	0	0	0
190	SLU 65	2	-10	924	0	0	0
190	SLU 66	2	-12	914	0	0	0
190	SLU 67	2	-11	926	0	0	0
190	SLU 68	2	-10	930	0	0	0
190	SLU 69	2	-12	920	0	0	0
190	SLU 70	2	-11	932	0	0	0
190	SLU 71	2	-12	916	0	0	0
190	SLU 72	2	-11	928	0	0	0
190	SLU 73	2	-11	1008	0	0	0
190	SLU 74	2	-13	999	0	0	0
190	SLU 75	2	-12	1010	0	0	0
190	SLU 76	2	-11	1014	0	0	0
190	SLU 77	2	-13	1004	0	0	0
190	SLU 78	2	-12	1016	0	0	0
190	SLU 79	2	-13	1001	0	0	0
190	SLU 80	2	-12	1012	0	0	0
190	SLU 81	2	-14	1025	0	0	0
190	SLU 82	2	-12	1037	0	0	0
190	SLU 83	2	-14	1031	0	0	0
190	SLU 84	2	-12	1043	0	0	0
190	SLE RA 1	1	-9	678	0	0	0
190	SLE RA 2	1	-7	691	0	0	0
190	SLE RA 3	1	-9	684	0	0	0
190	SLE RA 4	1	-8	692	0	0	0
190	SLE RA 5	1	-8	694	0	0	0
190	SLE RA 6	1	-9	688	0	0	0
190	SLE RA 7	1	-8	696	0	0	0
190	SLE RA 8	1	-9	685	0	0	0
190	SLE RA 9	1	-8	693	0	0	0
190	SLE RA 10	1	-8	747	0	0	0
190	SLE RA 11	1	-10	740	0	0	0
190	SLE RA 12	1	-9	748	0	0	0
190	SLE RA 13	1	-8	751	0	0	0
190	SLE RA 14	1	-10	744	0	0	0
190	SLE RA 15	1	-9	752	0	0	0
190	SLE RA 16	1	-10	742	0	0	0
190	SLE RA 17	1	-9	749	0	0	0
190	SLE RA 18	1	-10	758	0	0	0
190	SLE RA 19	1	-9	766	0	0	0
190	SLE RA 20	1	-10	762	0	0	0
190	SLE RA 21	1	-9	770	0	0	0
190	SLE FR 1	1	-9	678	0	0	0
190	SLE FR 2	1	-9	680	0	0	0
190	SLE FR 3	1	-9	679	0	0	0
190	SLE FR 4	1	-9	704	0	0	0
190	SLE FR 5	1	-9	703	0	0	0
190	SLE FR 6	1	-10	718	0	0	0
190	SLE QP 1	1	-9	678	0	0	0
190	SLE QP 2	1	-9	702	0	0	0
190	SLD 1	60	9	803	0	0	0
190	SLD 2	73	12	809	0	0	0
190	SLD 3	57	-21	542	0	0	0
190	SLD 4	70	-19	549	0	0	0
190	SLD 5	21	42	1126	0	0	0
190	SLD 6	29	44	1131	0	0	0
190	SLD 7	12	-60	257	0	0	0
190	SLD 8	20	-58	262	0	0	0
190	SLD 9	-17	39	1142	0	0	0
190	SLD 10	-9	41	1146	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
190	SLD 11	-27	-63	273	0	0	0
190	SLD 12	-18	-61	277	0	0	0
190	SLD 13	-67	0	855	0	0	0
190	SLD 14	-54	2	861	0	0	0
190	SLD 15	-70	-31	594	0	0	0
190	SLD 16	-57	-28	601	0	0	0
190	SLV 1	138	37	960	0	0	0
190	SLV 2	169	44	975	0	0	0
190	SLV 3	131	-40	306	0	0	0
190	SLV 4	162	-33	322	0	0	0
190	SLV 5	48	120	1768	0	0	0
190	SLV 6	68	124	1778	0	0	0
190	SLV 7	24	-136	-411	0	0	0
190	SLV 8	44	-132	-401	0	0	0
190	SLV 9	-42	113	1804	0	0	0
190	SLV 10	-21	117	1814	0	0	0
190	SLV 11	-65	-143	-374	0	0	0
190	SLV 12	-45	-139	-364	0	0	0
190	SLV 13	-159	14	1082	0	0	0
190	SLV 14	-129	21	1097	0	0	0
190	SLV 15	-166	-62	428	0	0	0
190	SLV 16	-136	-56	443	0	0	0
190	CRTFP Uy+	0	0	0	0	0	0
190	CRTFP Uy-	0	0	0	0	0	0
191	SLU 1	1	-9	652	0	0	0
191	SLU 2	2	-7	671	0	0	0
191	SLU 3	1	-9	662	0	0	0
191	SLU 4	2	-8	673	0	0	0
191	SLU 5	2	-7	677	0	0	0
191	SLU 6	1	-9	667	0	0	0
191	SLU 7	1	-8	679	0	0	0
191	SLU 8	1	-9	664	0	0	0
191	SLU 9	1	-8	675	0	0	0
191	SLU 10	2	-8	755	0	0	0
191	SLU 11	1	-10	746	0	0	0
191	SLU 12	1	-9	757	0	0	0
191	SLU 13	2	-8	761	0	0	0
191	SLU 14	1	-10	751	0	0	0
191	SLU 15	1	-9	763	0	0	0
191	SLU 16	1	-10	748	0	0	0
191	SLU 17	1	-9	759	0	0	0
191	SLU 18	1	-11	772	0	0	0
191	SLU 19	2	-9	784	0	0	0
191	SLU 20	1	-11	778	0	0	0
191	SLU 21	1	-9	789	0	0	0
191	SLU 22	2	-10	735	0	0	0
191	SLU 23	2	-8	754	0	0	0
191	SLU 24	2	-10	744	0	0	0
191	SLU 25	2	-9	756	0	0	0
191	SLU 26	2	-8	760	0	0	0
191	SLU 27	2	-11	750	0	0	0
191	SLU 28	2	-9	762	0	0	0
191	SLU 29	2	-10	746	0	0	0
191	SLU 30	2	-9	758	0	0	0
191	SLU 31	2	-9	838	0	0	0
191	SLU 32	2	-11	828	0	0	0
191	SLU 33	2	-10	840	0	0	0
191	SLU 34	2	-9	844	0	0	0
191	SLU 35	2	-11	834	0	0	0
191	SLU 36	2	-10	846	0	0	0
191	SLU 37	2	-11	830	0	0	0
191	SLU 38	2	-10	842	0	0	0
191	SLU 39	2	-12	854	0	0	0
191	SLU 40	2	-10	866	0	0	0
191	SLU 41	2	-12	860	0	0	0
191	SLU 42	2	-10	872	0	0	0
191	SLU 43	2	-12	819	0	0	0
191	SLU 44	2	-9	839	0	0	0
191	SLU 45	2	-12	829	0	0	0
191	SLU 46	2	-10	841	0	0	0
191	SLU 47	2	-9	845	0	0	0
191	SLU 48	2	-12	835	0	0	0
191	SLU 49	2	-10	846	0	0	0
191	SLU 50	2	-12	831	0	0	0
191	SLU 51	2	-10	843	0	0	0
191	SLU 52	2	-10	923	0	0	0
191	SLU 53	2	-13	913	0	0	0
191	SLU 54	2	-11	925	0	0	0
191	SLU 55	2	-10	929	0	0	0
191	SLU 56	2	-13	919	0	0	0
191	SLU 57	2	-11	930	0	0	0
191	SLU 58	2	-13	915	0	0	0
191	SLU 59	2	-11	927	0	0	0
191	SLU 60	2	-13	939	0	0	0
191	SLU 61	2	-11	951	0	0	0
191	SLU 62	2	-13	945	0	0	0
191	SLU 63	2	-11	957	0	0	0
191	SLU 64	2	-13	902	0	0	0
191	SLU 65	2	-10	921	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
191	SLU 66	2	-13	912	0	0	0
191	SLU 67	2	-11	923	0	0	0
191	SLU 68	2	-10	927	0	0	0
191	SLU 69	2	-13	917	0	0	0
191	SLU 70	2	-11	929	0	0	0
191	SLU 71	2	-13	914	0	0	0
191	SLU 72	2	-11	925	0	0	0
191	SLU 73	2	-11	1005	0	0	0
191	SLU 74	2	-14	995	0	0	0
191	SLU 75	2	-12	1007	0	0	0
191	SLU 76	2	-11	1011	0	0	0
191	SLU 77	2	-14	1001	0	0	0
191	SLU 78	2	-12	1013	0	0	0
191	SLU 79	2	-14	997	0	0	0
191	SLU 80	2	-12	1009	0	0	0
191	SLU 81	2	-14	1022	0	0	0
191	SLU 82	2	-12	1033	0	0	0
191	SLU 83	2	-14	1028	0	0	0
191	SLU 84	2	-13	1039	0	0	0
191	SLE RA 1	2	-9	676	0	0	0
191	SLE RA 2	2	-8	689	0	0	0
191	SLE RA 3	2	-10	682	0	0	0
191	SLE RA 4	2	-9	690	0	0	0
191	SLE RA 5	2	-8	692	0	0	0
191	SLE RA 6	1	-10	686	0	0	0
191	SLE RA 7	2	-9	694	0	0	0
191	SLE RA 8	1	-10	683	0	0	0
191	SLE RA 9	2	-9	691	0	0	0
191	SLE RA 10	2	-8	745	0	0	0
191	SLE RA 11	1	-10	738	0	0	0
191	SLE RA 12	2	-9	746	0	0	0
191	SLE RA 13	2	-8	748	0	0	0
191	SLE RA 14	1	-10	742	0	0	0
191	SLE RA 15	1	-9	750	0	0	0
191	SLE RA 16	1	-10	739	0	0	0
191	SLE RA 17	1	-9	747	0	0	0
191	SLE RA 18	2	-10	756	0	0	0
191	SLE RA 19	2	-9	763	0	0	0
191	SLE RA 20	1	-10	759	0	0	0
191	SLE RA 21	2	-9	767	0	0	0
191	SLE FR 1	2	-9	676	0	0	0
191	SLE FR 2	2	-9	678	0	0	0
191	SLE FR 3	2	-10	677	0	0	0
191	SLE FR 4	2	-9	702	0	0	0
191	SLE FR 5	2	-10	701	0	0	0
191	SLE FR 6	2	-10	716	0	0	0
191	SLE QP 1	2	-9	676	0	0	0
191	SLE QP 2	2	-10	700	0	0	0
191	SLD 1	60	9	794	0	0	0
191	SLD 2	72	13	801	0	0	0
191	SLD 3	57	-21	534	0	0	0
191	SLD 4	70	-18	541	0	0	0
191	SLD 5	21	41	1121	0	0	0
191	SLD 6	29	43	1126	0	0	0
191	SLD 7	12	-59	254	0	0	0
191	SLD 8	20	-57	259	0	0	0
191	SLD 9	-17	38	1140	0	0	0
191	SLD 10	-8	40	1145	0	0	0
191	SLD 11	-26	-63	273	0	0	0
191	SLD 12	-18	-61	278	0	0	0
191	SLD 13	-67	-2	858	0	0	0
191	SLD 14	-54	1	865	0	0	0
191	SLD 15	-69	-32	598	0	0	0
191	SLD 16	-57	-29	605	0	0	0
191	SLV 1	138	37	943	0	0	0
191	SLV 2	168	45	959	0	0	0
191	SLV 3	130	-38	291	0	0	0
191	SLV 4	161	-31	307	0	0	0
191	SLV 5	48	117	1758	0	0	0
191	SLV 6	68	122	1769	0	0	0
191	SLV 7	24	-134	-415	0	0	0
191	SLV 8	44	-129	-404	0	0	0
191	SLV 9	-41	109	1803	0	0	0
191	SLV 10	-21	114	1814	0	0	0
191	SLV 11	-65	-142	-370	0	0	0
191	SLV 12	-45	-136	-359	0	0	0
191	SLV 13	-158	11	1092	0	0	0
191	SLV 14	-127	19	1109	0	0	0
191	SLV 15	-165	-64	440	0	0	0
191	SLV 16	-135	-56	457	0	0	0
191	CRTFP Uy+	0	0	0	0	0	0
191	CRTFP Uy-	0	0	0	0	0	0
192	SLU 1	2	-9	651	0	0	0
192	SLU 2	2	-7	670	0	0	0
192	SLU 3	2	-10	661	0	0	0
192	SLU 4	2	-8	672	0	0	0
192	SLU 5	2	-7	676	0	0	0
192	SLU 6	2	-10	666	0	0	0
192	SLU 7	2	-8	678	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
192	SLU 8	1	-10	663	0	0	0
192	SLU 9	2	-8	674	0	0	0
192	SLU 10	2	-8	754	0	0	0
192	SLU 11	2	-11	744	0	0	0
192	SLU 12	2	-9	756	0	0	0
192	SLU 13	2	-8	760	0	0	0
192	SLU 14	1	-11	750	0	0	0
192	SLU 15	2	-9	762	0	0	0
192	SLU 16	1	-11	746	0	0	0
192	SLU 17	2	-9	758	0	0	0
192	SLU 18	2	-11	770	0	0	0
192	SLU 19	2	-9	782	0	0	0
192	SLU 20	2	-11	776	0	0	0
192	SLU 21	2	-9	788	0	0	0
192	SLU 22	2	-11	734	0	0	0
192	SLU 23	2	-8	753	0	0	0
192	SLU 24	2	-11	743	0	0	0
192	SLU 25	2	-9	755	0	0	0
192	SLU 26	2	-8	759	0	0	0
192	SLU 27	2	-11	749	0	0	0
192	SLU 28	2	-9	761	0	0	0
192	SLU 29	2	-11	745	0	0	0
192	SLU 30	2	-9	757	0	0	0
192	SLU 31	2	-9	836	0	0	0
192	SLU 32	2	-12	827	0	0	0
192	SLU 33	2	-10	838	0	0	0
192	SLU 34	2	-9	842	0	0	0
192	SLU 35	2	-12	832	0	0	0
192	SLU 36	2	-10	844	0	0	0
192	SLU 37	2	-12	829	0	0	0
192	SLU 38	2	-10	840	0	0	0
192	SLU 39	2	-12	853	0	0	0
192	SLU 40	2	-10	865	0	0	0
192	SLU 41	2	-12	859	0	0	0
192	SLU 42	2	-10	870	0	0	0
192	SLU 43	2	-12	818	0	0	0
192	SLU 44	2	-9	838	0	0	0
192	SLU 45	2	-12	828	0	0	0
192	SLU 46	2	-11	839	0	0	0
192	SLU 47	2	-10	843	0	0	0
192	SLU 48	2	-12	834	0	0	0
192	SLU 49	2	-11	845	0	0	0
192	SLU 50	2	-12	830	0	0	0
192	SLU 51	2	-11	841	0	0	0
192	SLU 52	2	-10	921	0	0	0
192	SLU 53	2	-13	911	0	0	0
192	SLU 54	2	-12	923	0	0	0
192	SLU 55	2	-10	927	0	0	0
192	SLU 56	2	-13	917	0	0	0
192	SLU 57	2	-12	929	0	0	0
192	SLU 58	2	-13	913	0	0	0
192	SLU 59	2	-12	925	0	0	0
192	SLU 60	2	-13	938	0	0	0
192	SLU 61	2	-12	949	0	0	0
192	SLU 62	2	-13	943	0	0	0
192	SLU 63	2	-12	955	0	0	0
192	SLU 64	2	-13	901	0	0	0
192	SLU 65	2	-11	920	0	0	0
192	SLU 66	2	-13	910	0	0	0
192	SLU 67	2	-12	922	0	0	0
192	SLU 68	2	-11	926	0	0	0
192	SLU 69	2	-13	916	0	0	0
192	SLU 70	2	-12	928	0	0	0
192	SLU 71	2	-13	912	0	0	0
192	SLU 72	2	-12	924	0	0	0
192	SLU 73	2	-11	1004	0	0	0
192	SLU 74	2	-14	994	0	0	0
192	SLU 75	2	-13	1005	0	0	0
192	SLU 76	2	-12	1009	0	0	0
192	SLU 77	2	-14	1000	0	0	0
192	SLU 78	2	-13	1011	0	0	0
192	SLU 79	2	-14	996	0	0	0
192	SLU 80	2	-13	1007	0	0	0
192	SLU 81	2	-14	1020	0	0	0
192	SLU 82	2	-13	1032	0	0	0
192	SLU 83	2	-14	1026	0	0	0
192	SLU 84	2	-13	1037	0	0	0
192	SLE RA 1	2	-10	675	0	0	0
192	SLE RA 2	2	-8	688	0	0	0
192	SLE RA 3	2	-10	681	0	0	0
192	SLE RA 4	2	-9	689	0	0	0
192	SLE RA 5	2	-8	691	0	0	0
192	SLE RA 6	2	-10	685	0	0	0
192	SLE RA 7	2	-9	693	0	0	0
192	SLE RA 8	2	-10	682	0	0	0
192	SLE RA 9	2	-9	690	0	0	0
192	SLE RA 10	2	-9	743	0	0	0
192	SLE RA 11	2	-10	737	0	0	0
192	SLE RA 12	2	-10	744	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
192	SLE RA 13	2	-9	747	0	0	0
192	SLE RA 14	2	-11	741	0	0	0
192	SLE RA 15	2	-10	748	0	0	0
192	SLE RA 16	2	-11	738	0	0	0
192	SLE RA 17	2	-10	746	0	0	0
192	SLE RA 18	2	-11	754	0	0	0
192	SLE RA 19	2	-10	762	0	0	0
192	SLE RA 20	2	-11	758	0	0	0
192	SLE RA 21	2	-10	766	0	0	0
192	SLE FR 1	2	-10	675	0	0	0
192	SLE FR 2	2	-9	677	0	0	0
192	SLE FR 3	2	-10	676	0	0	0
192	SLE FR 4	2	-10	701	0	0	0
192	SLE FR 5	2	-10	700	0	0	0
192	SLE FR 6	2	-10	714	0	0	0
192	SLE QP 1	2	-10	675	0	0	0
192	SLE QP 2	2	-10	699	0	0	0
192	SLD 1	59	9	787	0	0	0
192	SLD 2	72	13	794	0	0	0
192	SLD 3	56	-21	527	0	0	0
192	SLD 4	69	-17	534	0	0	0
192	SLD 5	21	40	1118	0	0	0
192	SLD 6	29	42	1123	0	0	0
192	SLD 7	11	-59	252	0	0	0
192	SLD 8	20	-56	256	0	0	0
192	SLD 9	-17	36	1141	0	0	0
192	SLD 10	-8	39	1146	0	0	0
192	SLD 11	-26	-62	274	0	0	0
192	SLD 12	-18	-60	279	0	0	0
192	SLD 13	-66	-3	863	0	0	0
192	SLD 14	-53	1	870	0	0	0
192	SLD 15	-69	-33	603	0	0	0
192	SLD 16	-56	-29	611	0	0	0
192	SLV 1	137	37	926	0	0	0
192	SLV 2	167	46	943	0	0	0
192	SLV 3	130	-37	275	0	0	0
192	SLV 4	160	-28	292	0	0	0
192	SLV 5	48	114	1751	0	0	0
192	SLV 6	68	120	1763	0	0	0
192	SLV 7	23	-132	-420	0	0	0
192	SLV 8	44	-125	-408	0	0	0
192	SLV 9	-40	105	1805	0	0	0
192	SLV 10	-20	111	1817	0	0	0
192	SLV 11	-65	-140	-366	0	0	0
192	SLV 12	-44	-134	-354	0	0	0
192	SLV 13	-156	8	1105	0	0	0
192	SLV 14	-126	17	1122	0	0	0
192	SLV 15	-164	-66	454	0	0	0
192	SLV 16	-134	-57	471	0	0	0
192	CRTFP Uy+	0	0	0	0	0	0
192	CRTFP Uy-	0	0	0	0	0	0
193	SLU 1	2	-10	650	0	0	0
193	SLU 2	2	-7	669	0	0	0
193	SLU 3	2	-10	660	0	0	0
193	SLU 4	2	-8	671	0	0	0
193	SLU 5	2	-7	675	0	0	0
193	SLU 6	2	-10	665	0	0	0
193	SLU 7	2	-9	677	0	0	0
193	SLU 8	2	-10	662	0	0	0
193	SLU 9	2	-8	673	0	0	0
193	SLU 10	2	-8	752	0	0	0
193	SLU 11	2	-11	743	0	0	0
193	SLU 12	2	-9	754	0	0	0
193	SLU 13	2	-8	758	0	0	0
193	SLU 14	2	-11	749	0	0	0
193	SLU 15	2	-9	760	0	0	0
193	SLU 16	2	-11	745	0	0	0
193	SLU 17	2	-9	756	0	0	0
193	SLU 18	2	-11	769	0	0	0
193	SLU 19	2	-10	780	0	0	0
193	SLU 20	2	-11	775	0	0	0
193	SLU 21	2	-10	786	0	0	0
193	SLU 22	2	-11	732	0	0	0
193	SLU 23	2	-8	752	0	0	0
193	SLU 24	2	-11	742	0	0	0
193	SLU 25	2	-9	754	0	0	0
193	SLU 26	2	-8	757	0	0	0
193	SLU 27	2	-11	748	0	0	0
193	SLU 28	2	-10	759	0	0	0
193	SLU 29	2	-11	744	0	0	0
193	SLU 30	2	-10	756	0	0	0
193	SLU 31	2	-9	835	0	0	0
193	SLU 32	2	-12	825	0	0	0
193	SLU 33	2	-10	837	0	0	0
193	SLU 34	2	-9	841	0	0	0
193	SLU 35	2	-12	831	0	0	0
193	SLU 36	2	-11	843	0	0	0
193	SLU 37	2	-12	827	0	0	0
193	SLU 38	2	-10	839	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
193	SLU 39	2	-12	851	0	0	0
193	SLU 40	2	-11	863	0	0	0
193	SLU 41	2	-12	857	0	0	0
193	SLU 42	2	-11	869	0	0	0
193	SLU 43	2	-12	817	0	0	0
193	SLU 44	2	-10	836	0	0	0
193	SLU 45	2	-12	826	0	0	0
193	SLU 46	2	-11	838	0	0	0
193	SLU 47	2	-10	842	0	0	0
193	SLU 48	2	-13	832	0	0	0
193	SLU 49	2	-11	844	0	0	0
193	SLU 50	2	-12	828	0	0	0
193	SLU 51	2	-11	840	0	0	0
193	SLU 52	2	-11	919	0	0	0
193	SLU 53	2	-13	909	0	0	0
193	SLU 54	2	-12	921	0	0	0
193	SLU 55	2	-11	925	0	0	0
193	SLU 56	2	-13	915	0	0	0
193	SLU 57	2	-12	927	0	0	0
193	SLU 58	2	-13	912	0	0	0
193	SLU 59	2	-12	923	0	0	0
193	SLU 60	2	-14	936	0	0	0
193	SLU 61	2	-12	947	0	0	0
193	SLU 62	2	-14	941	0	0	0
193	SLU 63	2	-12	953	0	0	0
193	SLU 64	2	-13	899	0	0	0
193	SLU 65	2	-11	918	0	0	0
193	SLU 66	2	-13	909	0	0	0
193	SLU 67	2	-12	920	0	0	0
193	SLU 68	2	-11	924	0	0	0
193	SLU 69	2	-14	914	0	0	0
193	SLU 70	2	-12	926	0	0	0
193	SLU 71	2	-14	911	0	0	0
193	SLU 72	2	-12	922	0	0	0
193	SLU 73	2	-12	1002	0	0	0
193	SLU 74	2	-14	992	0	0	0
193	SLU 75	2	-13	1004	0	0	0
193	SLU 76	2	-12	1007	0	0	0
193	SLU 77	2	-15	998	0	0	0
193	SLU 78	2	-13	1009	0	0	0
193	SLU 79	2	-14	994	0	0	0
193	SLU 80	2	-13	1006	0	0	0
193	SLU 81	2	-15	1018	0	0	0
193	SLU 82	2	-13	1030	0	0	0
193	SLU 83	2	-15	1024	0	0	0
193	SLU 84	2	-13	1035	0	0	0
193	SLE RA 1	2	-10	674	0	0	0
193	SLE RA 2	2	-8	686	0	0	0
193	SLE RA 3	2	-10	680	0	0	0
193	SLE RA 4	2	-9	688	0	0	0
193	SLE RA 5	2	-8	690	0	0	0
193	SLE RA 6	2	-10	684	0	0	0
193	SLE RA 7	2	-9	691	0	0	0
193	SLE RA 8	2	-10	681	0	0	0
193	SLE RA 9	2	-9	689	0	0	0
193	SLE RA 10	2	-9	742	0	0	0
193	SLE RA 11	2	-11	735	0	0	0
193	SLE RA 12	2	-10	743	0	0	0
193	SLE RA 13	2	-9	746	0	0	0
193	SLE RA 14	2	-11	739	0	0	0
193	SLE RA 15	2	-10	747	0	0	0
193	SLE RA 16	2	-11	737	0	0	0
193	SLE RA 17	2	-10	744	0	0	0
193	SLE RA 18	2	-11	753	0	0	0
193	SLE RA 19	2	-10	761	0	0	0
193	SLE RA 20	2	-11	757	0	0	0
193	SLE RA 21	2	-10	764	0	0	0
193	SLE FR 1	2	-10	674	0	0	0
193	SLE FR 2	2	-10	676	0	0	0
193	SLE FR 3	2	-10	675	0	0	0
193	SLE FR 4	2	-10	700	0	0	0
193	SLE FR 5	2	-10	699	0	0	0
193	SLE FR 6	2	-10	713	0	0	0
193	SLE QP 1	2	-10	674	0	0	0
193	SLE QP 2	2	-10	697	0	0	0
193	SLD 1	59	9	779	0	0	0
193	SLD 2	72	13	786	0	0	0
193	SLD 3	56	-20	519	0	0	0
193	SLD 4	69	-16	527	0	0	0
193	SLD 5	21	38	1114	0	0	0
193	SLD 6	29	41	1119	0	0	0
193	SLD 7	11	-58	249	0	0	0
193	SLD 8	20	-55	254	0	0	0
193	SLD 9	-16	34	1141	0	0	0
193	SLD 10	-8	37	1146	0	0	0
193	SLD 11	-26	-62	275	0	0	0
193	SLD 12	-18	-59	281	0	0	0
193	SLD 13	-65	-5	868	0	0	0
193	SLD 14	-53	0	876	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
193	SLD 15	-68	-34	608	0	0	0
193	SLD 16	-56	-29	616	0	0	0
193	SLV 1	136	36	909	0	0	0
193	SLV 2	166	46	927	0	0	0
193	SLV 3	129	-36	258	0	0	0
193	SLV 4	158	-26	277	0	0	0
193	SLV 5	48	111	1745	0	0	0
193	SLV 6	68	118	1757	0	0	0
193	SLV 7	23	-129	-425	0	0	0
193	SLV 8	43	-122	-413	0	0	0
193	SLV 9	-39	102	1807	0	0	0
193	SLV 10	-19	109	1820	0	0	0
193	SLV 11	-64	-138	-362	0	0	0
193	SLV 12	-44	-132	-350	0	0	0
193	SLV 13	-155	5	1118	0	0	0
193	SLV 14	-125	15	1136	0	0	0
193	SLV 15	-162	-67	467	0	0	0
193	SLV 16	-133	-57	486	0	0	0
193	CRTFP Uy+	0	0	0	0	0	0
193	CRTFP Uy-	0	0	0	0	0	0
194	SLU 1	2	-10	648	0	0	0
194	SLU 2	2	-8	667	0	0	0
194	SLU 3	2	-10	658	0	0	0
194	SLU 4	2	-9	669	0	0	0
194	SLU 5	2	-8	673	0	0	0
194	SLU 6	2	-10	663	0	0	0
194	SLU 7	2	-9	675	0	0	0
194	SLU 8	2	-10	660	0	0	0
194	SLU 9	2	-9	671	0	0	0
194	SLU 10	2	-8	750	0	0	0
194	SLU 11	2	-11	740	0	0	0
194	SLU 12	2	-10	752	0	0	0
194	SLU 13	2	-9	756	0	0	0
194	SLU 14	2	-11	746	0	0	0
194	SLU 15	2	-10	758	0	0	0
194	SLU 16	2	-11	742	0	0	0
194	SLU 17	2	-10	754	0	0	0
194	SLU 18	2	-11	766	0	0	0
194	SLU 19	2	-10	778	0	0	0
194	SLU 20	2	-11	772	0	0	0
194	SLU 21	2	-10	784	0	0	0
194	SLU 22	2	-11	730	0	0	0
194	SLU 23	2	-9	750	0	0	0
194	SLU 24	2	-11	740	0	0	0
194	SLU 25	2	-10	751	0	0	0
194	SLU 26	2	-9	755	0	0	0
194	SLU 27	2	-11	746	0	0	0
194	SLU 28	2	-10	757	0	0	0
194	SLU 29	2	-11	742	0	0	0
194	SLU 30	2	-10	754	0	0	0
194	SLU 31	2	-10	833	0	0	0
194	SLU 32	2	-12	823	0	0	0
194	SLU 33	2	-11	834	0	0	0
194	SLU 34	2	-10	838	0	0	0
194	SLU 35	2	-12	829	0	0	0
194	SLU 36	2	-11	840	0	0	0
194	SLU 37	2	-12	825	0	0	0
194	SLU 38	2	-11	836	0	0	0
194	SLU 39	2	-12	849	0	0	0
194	SLU 40	2	-11	860	0	0	0
194	SLU 41	2	-12	855	0	0	0
194	SLU 42	2	-11	866	0	0	0
194	SLU 43	2	-13	814	0	0	0
194	SLU 44	2	-10	833	0	0	0
194	SLU 45	2	-13	824	0	0	0
194	SLU 46	2	-11	835	0	0	0
194	SLU 47	2	-10	839	0	0	0
194	SLU 48	2	-13	829	0	0	0
194	SLU 49	2	-11	841	0	0	0
194	SLU 50	2	-13	826	0	0	0
194	SLU 51	2	-11	837	0	0	0
194	SLU 52	2	-11	916	0	0	0
194	SLU 53	2	-14	907	0	0	0
194	SLU 54	2	-12	918	0	0	0
194	SLU 55	2	-11	922	0	0	0
194	SLU 56	2	-14	912	0	0	0
194	SLU 57	2	-12	924	0	0	0
194	SLU 58	2	-14	909	0	0	0
194	SLU 59	2	-12	920	0	0	0
194	SLU 60	2	-14	933	0	0	0
194	SLU 61	2	-12	944	0	0	0
194	SLU 62	2	-14	938	0	0	0
194	SLU 63	2	-13	950	0	0	0
194	SLU 64	2	-14	897	0	0	0
194	SLU 65	2	-11	916	0	0	0
194	SLU 66	2	-14	906	0	0	0
194	SLU 67	2	-12	918	0	0	0
194	SLU 68	2	-11	922	0	0	0
194	SLU 69	2	-14	912	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
194	SLU 70	2	-12	923	0	0	0
194	SLU 71	2	-14	908	0	0	0
194	SLU 72	2	-12	920	0	0	0
194	SLU 73	2	-12	999	0	0	0
194	SLU 74	2	-15	989	0	0	0
194	SLU 75	2	-13	1001	0	0	0
194	SLU 76	2	-12	1004	0	0	0
194	SLU 77	2	-15	995	0	0	0
194	SLU 78	2	-13	1006	0	0	0
194	SLU 79	2	-15	991	0	0	0
194	SLU 80	2	-13	1003	0	0	0
194	SLU 81	2	-15	1015	0	0	0
194	SLU 82	2	-14	1027	0	0	0
194	SLU 83	2	-15	1021	0	0	0
194	SLU 84	2	-14	1032	0	0	0
194	SLE RA 1	2	-10	672	0	0	0
194	SLE RA 2	2	-9	684	0	0	0
194	SLE RA 3	2	-10	678	0	0	0
194	SLE RA 4	2	-9	686	0	0	0
194	SLE RA 5	2	-9	688	0	0	0
194	SLE RA 6	2	-10	682	0	0	0
194	SLE RA 7	2	-9	689	0	0	0
194	SLE RA 8	2	-10	679	0	0	0
194	SLE RA 9	2	-9	687	0	0	0
194	SLE RA 10	2	-9	740	0	0	0
194	SLE RA 11	2	-11	733	0	0	0
194	SLE RA 12	2	-10	741	0	0	0
194	SLE RA 13	2	-9	743	0	0	0
194	SLE RA 14	2	-11	737	0	0	0
194	SLE RA 15	2	-10	745	0	0	0
194	SLE RA 16	2	-11	735	0	0	0
194	SLE RA 17	2	-10	742	0	0	0
194	SLE RA 18	2	-11	751	0	0	0
194	SLE RA 19	2	-10	758	0	0	0
194	SLE RA 20	2	-11	754	0	0	0
194	SLE RA 21	2	-10	762	0	0	0
194	SLE FR 1	2	-10	672	0	0	0
194	SLE FR 2	2	-10	674	0	0	0
194	SLE FR 3	2	-10	673	0	0	0
194	SLE FR 4	2	-10	698	0	0	0
194	SLE FR 5	2	-11	697	0	0	0
194	SLE FR 6	2	-11	711	0	0	0
194	SLE QP 1	2	-10	672	0	0	0
194	SLE QP 2	2	-10	695	0	0	0
194	SLD 1	58	8	770	0	0	0
194	SLD 2	71	13	778	0	0	0
194	SLD 3	56	-20	511	0	0	0
194	SLD 4	68	-15	519	0	0	0
194	SLD 5	21	37	1109	0	0	0
194	SLD 6	29	40	1115	0	0	0
194	SLD 7	11	-57	245	0	0	0
194	SLD 8	19	-54	251	0	0	0
194	SLD 9	-16	33	1140	0	0	0
194	SLD 10	-8	36	1145	0	0	0
194	SLD 11	-26	-61	276	0	0	0
194	SLD 12	-17	-58	281	0	0	0
194	SLD 13	-65	-6	872	0	0	0
194	SLD 14	-52	-1	880	0	0	0
194	SLD 15	-68	-34	613	0	0	0
194	SLD 16	-55	-29	621	0	0	0
194	SLV 1	135	36	891	0	0	0
194	SLV 2	164	47	910	0	0	0
194	SLV 3	127	-34	242	0	0	0
194	SLV 4	157	-23	261	0	0	0
194	SLV 5	48	108	1736	0	0	0
194	SLV 6	68	115	1749	0	0	0
194	SLV 7	22	-126	-430	0	0	0
194	SLV 8	42	-119	-417	0	0	0
194	SLV 9	-39	98	1807	0	0	0
194	SLV 10	-19	105	1820	0	0	0
194	SLV 11	-64	-136	-358	0	0	0
194	SLV 12	-44	-129	-345	0	0	0
194	SLV 13	-153	2	1130	0	0	0
194	SLV 14	-124	13	1149	0	0	0
194	SLV 15	-161	-68	480	0	0	0
194	SLV 16	-131	-57	499	0	0	0
194	CRTFP Uy+	0	0	0	0	0	0
194	CRTFP Uy-	0	0	0	0	0	0
195	SLU 1	2	-10	647	0	0	0
195	SLU 2	2	-8	666	0	0	0
195	SLU 3	2	-10	656	0	0	0
195	SLU 4	2	-9	668	0	0	0
195	SLU 5	2	-8	672	0	0	0
195	SLU 6	2	-11	662	0	0	0
195	SLU 7	2	-9	674	0	0	0
195	SLU 8	2	-10	658	0	0	0
195	SLU 9	2	-9	670	0	0	0
195	SLU 10	2	-9	749	0	0	0
195	SLU 11	2	-11	739	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
195	SLU 12	2	-10	750	0	0	0
195	SLU 13	2	-9	754	0	0	0
195	SLU 14	2	-11	745	0	0	0
195	SLU 15	2	-10	756	0	0	0
195	SLU 16	2	-11	741	0	0	0
195	SLU 17	2	-10	752	0	0	0
195	SLU 18	2	-12	765	0	0	0
195	SLU 19	2	-10	776	0	0	0
195	SLU 20	2	-12	771	0	0	0
195	SLU 21	2	-10	782	0	0	0
195	SLU 22	2	-11	729	0	0	0
195	SLU 23	2	-9	748	0	0	0
195	SLU 24	2	-12	739	0	0	0
195	SLU 25	2	-10	750	0	0	0
195	SLU 26	2	-9	754	0	0	0
195	SLU 27	2	-12	745	0	0	0
195	SLU 28	2	-10	756	0	0	0
195	SLU 29	2	-12	741	0	0	0
195	SLU 30	2	-10	752	0	0	0
195	SLU 31	2	-10	831	0	0	0
195	SLU 32	2	-12	821	0	0	0
195	SLU 33	2	-11	833	0	0	0
195	SLU 34	2	-10	837	0	0	0
195	SLU 35	2	-13	827	0	0	0
195	SLU 36	2	-11	839	0	0	0
195	SLU 37	2	-13	823	0	0	0
195	SLU 38	2	-11	835	0	0	0
195	SLU 39	2	-13	847	0	0	0
195	SLU 40	2	-11	859	0	0	0
195	SLU 41	2	-13	853	0	0	0
195	SLU 42	2	-11	865	0	0	0
195	SLU 43	2	-13	813	0	0	0
195	SLU 44	2	-11	832	0	0	0
195	SLU 45	2	-13	822	0	0	0
195	SLU 46	2	-12	834	0	0	0
195	SLU 47	2	-11	837	0	0	0
195	SLU 48	2	-13	828	0	0	0
195	SLU 49	2	-12	839	0	0	0
195	SLU 50	2	-13	824	0	0	0
195	SLU 51	2	-12	836	0	0	0
195	SLU 52	2	-12	914	0	0	0
195	SLU 53	2	-14	905	0	0	0
195	SLU 54	2	-13	916	0	0	0
195	SLU 55	2	-12	920	0	0	0
195	SLU 56	2	-14	910	0	0	0
195	SLU 57	2	-13	922	0	0	0
195	SLU 58	2	-14	907	0	0	0
195	SLU 59	2	-13	918	0	0	0
195	SLU 60	2	-14	931	0	0	0
195	SLU 61	2	-13	942	0	0	0
195	SLU 62	2	-14	936	0	0	0
195	SLU 63	2	-13	948	0	0	0
195	SLU 64	2	-14	895	0	0	0
195	SLU 65	2	-12	914	0	0	0
195	SLU 66	2	-14	905	0	0	0
195	SLU 67	2	-13	916	0	0	0
195	SLU 68	2	-12	920	0	0	0
195	SLU 69	2	-14	910	0	0	0
195	SLU 70	2	-13	922	0	0	0
195	SLU 71	2	-14	907	0	0	0
195	SLU 72	2	-13	918	0	0	0
195	SLU 73	2	-13	997	0	0	0
195	SLU 74	2	-15	987	0	0	0
195	SLU 75	2	-14	999	0	0	0
195	SLU 76	2	-13	1003	0	0	0
195	SLU 77	2	-15	993	0	0	0
195	SLU 78	2	-14	1004	0	0	0
195	SLU 79	2	-15	989	0	0	0
195	SLU 80	2	-14	1001	0	0	0
195	SLU 81	2	-15	1013	0	0	0
195	SLU 82	2	-14	1025	0	0	0
195	SLU 83	2	-15	1019	0	0	0
195	SLU 84	2	-14	1030	0	0	0
195	SLE RA 1	2	-11	670	0	0	0
195	SLE RA 2	2	-9	683	0	0	0
195	SLE RA 3	2	-11	677	0	0	0
195	SLE RA 4	2	-10	684	0	0	0
195	SLE RA 5	2	-9	687	0	0	0
195	SLE RA 6	2	-11	681	0	0	0
195	SLE RA 7	2	-10	688	0	0	0
195	SLE RA 8	2	-11	678	0	0	0
195	SLE RA 9	2	-10	686	0	0	0
195	SLE RA 10	2	-10	738	0	0	0
195	SLE RA 11	2	-11	732	0	0	0
195	SLE RA 12	2	-10	739	0	0	0
195	SLE RA 13	2	-10	742	0	0	0
195	SLE RA 14	2	-11	736	0	0	0
195	SLE RA 15	2	-10	743	0	0	0
195	SLE RA 16	2	-11	733	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
195	SLE RA 17	2	-10	741	0	0	0
195	SLE RA 18	2	-11	749	0	0	0
195	SLE RA 19	2	-10	757	0	0	0
195	SLE RA 20	2	-12	753	0	0	0
195	SLE RA 21	2	-11	761	0	0	0
195	SLE FR 1	2	-11	670	0	0	0
195	SLE FR 2	2	-10	673	0	0	0
195	SLE FR 3	2	-11	672	0	0	0
195	SLE FR 4	2	-10	696	0	0	0
195	SLE FR 5	2	-11	695	0	0	0
195	SLE FR 6	2	-11	710	0	0	0
195	SLE QP 1	2	-11	670	0	0	0
195	SLE QP 2	2	-11	694	0	0	0
195	SLD 1	58	8	762	0	0	0
195	SLD 2	70	13	771	0	0	0
195	SLD 3	55	-19	503	0	0	0
195	SLD 4	67	-14	512	0	0	0
195	SLD 5	21	35	1106	0	0	0
195	SLD 6	29	39	1112	0	0	0
195	SLD 7	11	-56	242	0	0	0
195	SLD 8	19	-52	248	0	0	0
195	SLD 9	-16	31	1140	0	0	0
195	SLD 10	-8	34	1146	0	0	0
195	SLD 11	-26	-61	276	0	0	0
195	SLD 12	-17	-57	282	0	0	0
195	SLD 13	-64	-8	876	0	0	0
195	SLD 14	-52	-2	885	0	0	0
195	SLD 15	-67	-35	617	0	0	0
195	SLD 16	-54	-30	626	0	0	0
195	SLV 1	133	36	875	0	0	0
195	SLV 2	163	48	895	0	0	0
195	SLV 3	126	-33	225	0	0	0
195	SLV 4	155	-20	246	0	0	0
195	SLV 5	47	104	1730	0	0	0
195	SLV 6	67	113	1743	0	0	0
195	SLV 7	22	-123	-436	0	0	0
195	SLV 8	42	-115	-422	0	0	0
195	SLV 9	-38	93	1810	0	0	0
195	SLV 10	-19	102	1824	0	0	0
195	SLV 11	-64	-134	-355	0	0	0
195	SLV 12	-44	-126	-342	0	0	0
195	SLV 13	-152	-1	1142	0	0	0
195	SLV 14	-122	11	1163	0	0	0
195	SLV 15	-159	-70	493	0	0	0
195	SLV 16	-130	-57	513	0	0	0
195	CRTFP Uy+	0	0	0	0	0	0
195	CRTFP Uy-	0	0	0	0	0	0
196	SLU 1	1	-5	319	0	0	0
196	SLU 2	1	-4	328	0	0	0
196	SLU 3	1	-5	324	0	0	0
196	SLU 4	1	-5	329	0	0	0
196	SLU 5	1	-4	331	0	0	0
196	SLU 6	1	-5	327	0	0	0
196	SLU 7	1	-5	332	0	0	0
196	SLU 8	1	-5	325	0	0	0
196	SLU 9	1	-5	330	0	0	0
196	SLU 10	1	-5	369	0	0	0
196	SLU 11	1	-6	364	0	0	0
196	SLU 12	1	-5	370	0	0	0
196	SLU 13	1	-5	372	0	0	0
196	SLU 14	1	-6	367	0	0	0
196	SLU 15	1	-5	373	0	0	0
196	SLU 16	1	-6	365	0	0	0
196	SLU 17	1	-5	371	0	0	0
196	SLU 18	1	-6	377	0	0	0
196	SLU 19	1	-5	383	0	0	0
196	SLU 20	1	-6	380	0	0	0
196	SLU 21	1	-5	386	0	0	0
196	SLU 22	1	-6	360	0	0	0
196	SLU 23	1	-5	369	0	0	0
196	SLU 24	1	-6	365	0	0	0
196	SLU 25	1	-5	370	0	0	0
196	SLU 26	1	-5	372	0	0	0
196	SLU 27	1	-6	367	0	0	0
196	SLU 28	1	-5	373	0	0	0
196	SLU 29	1	-6	366	0	0	0
196	SLU 30	1	-5	371	0	0	0
196	SLU 31	1	-5	410	0	0	0
196	SLU 32	1	-6	405	0	0	0
196	SLU 33	1	-6	411	0	0	0
196	SLU 34	1	-5	413	0	0	0
196	SLU 35	1	-6	408	0	0	0
196	SLU 36	1	-6	414	0	0	0
196	SLU 37	1	-6	406	0	0	0
196	SLU 38	1	-6	412	0	0	0
196	SLU 39	1	-6	418	0	0	0
196	SLU 40	1	-6	424	0	0	0
196	SLU 41	1	-7	421	0	0	0
196	SLU 42	1	-6	427	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
196	SLU 43	1	-7	401	0	0	0
196	SLU 44	1	-5	410	0	0	0
196	SLU 45	1	-7	405	0	0	0
196	SLU 46	1	-6	411	0	0	0
196	SLU 47	1	-6	413	0	0	0
196	SLU 48	1	-7	408	0	0	0
196	SLU 49	1	-6	414	0	0	0
196	SLU 50	1	-7	406	0	0	0
196	SLU 51	1	-6	412	0	0	0
196	SLU 52	1	-6	451	0	0	0
196	SLU 53	1	-7	446	0	0	0
196	SLU 54	1	-7	452	0	0	0
196	SLU 55	1	-6	454	0	0	0
196	SLU 56	1	-7	449	0	0	0
196	SLU 57	1	-7	455	0	0	0
196	SLU 58	1	-7	447	0	0	0
196	SLU 59	1	-7	453	0	0	0
196	SLU 60	1	-7	459	0	0	0
196	SLU 61	1	-7	465	0	0	0
196	SLU 62	1	-7	462	0	0	0
196	SLU 63	1	-7	467	0	0	0
196	SLU 64	1	-7	442	0	0	0
196	SLU 65	1	-6	451	0	0	0
196	SLU 66	1	-7	446	0	0	0
196	SLU 67	1	-7	452	0	0	0
196	SLU 68	1	-6	454	0	0	0
196	SLU 69	1	-7	449	0	0	0
196	SLU 70	1	-7	455	0	0	0
196	SLU 71	1	-7	447	0	0	0
196	SLU 72	1	-7	453	0	0	0
196	SLU 73	1	-7	492	0	0	0
196	SLU 74	1	-8	487	0	0	0
196	SLU 75	1	-7	493	0	0	0
196	SLU 76	1	-7	495	0	0	0
196	SLU 77	1	-8	490	0	0	0
196	SLU 78	1	-7	495	0	0	0
196	SLU 79	1	-8	488	0	0	0
196	SLU 80	1	-7	494	0	0	0
196	SLU 81	1	-8	500	0	0	0
196	SLU 82	1	-7	505	0	0	0
196	SLU 83	1	-8	503	0	0	0
196	SLU 84	1	-7	508	0	0	0
196	SLE RA 1	1	-5	331	0	0	0
196	SLE RA 2	1	-5	337	0	0	0
196	SLE RA 3	1	-5	334	0	0	0
196	SLE RA 4	1	-5	338	0	0	0
196	SLE RA 5	1	-5	339	0	0	0
196	SLE RA 6	1	-6	336	0	0	0
196	SLE RA 7	1	-5	339	0	0	0
196	SLE RA 8	1	-5	334	0	0	0
196	SLE RA 9	1	-5	338	0	0	0
196	SLE RA 10	1	-5	364	0	0	0
196	SLE RA 11	1	-6	361	0	0	0
196	SLE RA 12	1	-5	365	0	0	0
196	SLE RA 13	1	-5	366	0	0	0
196	SLE RA 14	1	-6	363	0	0	0
196	SLE RA 15	1	-5	367	0	0	0
196	SLE RA 16	1	-6	362	0	0	0
196	SLE RA 17	1	-5	365	0	0	0
196	SLE RA 18	1	-6	369	0	0	0
196	SLE RA 19	1	-5	373	0	0	0
196	SLE RA 20	1	-6	371	0	0	0
196	SLE RA 21	1	-5	375	0	0	0
196	SLE FR 1	1	-5	331	0	0	0
196	SLE FR 2	1	-5	332	0	0	0
196	SLE FR 3	1	-5	331	0	0	0
196	SLE FR 4	1	-5	344	0	0	0
196	SLE FR 5	1	-6	343	0	0	0
196	SLE FR 6	1	-6	350	0	0	0
196	SLE QP 1	1	-5	331	0	0	0
196	SLE QP 2	1	-6	342	0	0	0
196	SLD 1	28	4	373	0	0	0
196	SLD 2	34	7	377	0	0	0
196	SLD 3	27	-9	245	0	0	0
196	SLD 4	33	-6	249	0	0	0
196	SLD 5	10	17	545	0	0	0
196	SLD 6	14	19	548	0	0	0
196	SLD 7	5	-27	118	0	0	0
196	SLD 8	9	-25	121	0	0	0
196	SLD 9	-8	14	564	0	0	0
196	SLD 10	-4	16	567	0	0	0
196	SLD 11	-13	-30	137	0	0	0
196	SLD 12	-9	-28	140	0	0	0
196	SLD 13	-31	-5	435	0	0	0
196	SLD 14	-25	-2	440	0	0	0
196	SLD 15	-33	-18	307	0	0	0
196	SLD 16	-27	-15	312	0	0	0
196	SLV 1	65	18	425	0	0	0
196	SLV 2	79	24	435	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
196	SLV 3	61	-15	104	0	0	0
196	SLV 4	76	-9	114	0	0	0
196	SLV 5	23	50	852	0	0	0
196	SLV 6	33	54	859	0	0	0
196	SLV 7	11	-60	-218	0	0	0
196	SLV 8	20	-55	-211	0	0	0
196	SLV 9	-19	44	896	0	0	0
196	SLV 10	-9	48	903	0	0	0
196	SLV 11	-31	-66	-174	0	0	0
196	SLV 12	-21	-61	-167	0	0	0
196	SLV 13	-74	-3	570	0	0	0
196	SLV 14	-60	4	581	0	0	0
196	SLV 15	-78	-35	250	0	0	0
196	SLV 16	-63	-29	260	0	0	0
196	CRTFP Uy+	0	0	0	0	0	0
196	CRTFP Uy-	0	0	0	0	0	0
198	SLU 1	-2	-21	4384	253.99	-80.52	-0.41
198	SLU 2	-2	-3	4504	257.44	-82.71	-0.12
198	SLU 3	-3	-21	4452	258.36	-81.75	-0.38
198	SLU 4	-2	-10	4523	260.43	-83.07	-0.21
198	SLU 5	-2	-3	4545	260.15	-83.47	-0.09
198	SLU 6	-3	-21	4493	261.08	-82.5	-0.35
198	SLU 7	-3	-10	4564	263.14	-83.82	-0.18
198	SLU 8	-3	-21	4467	259.42	-82.02	-0.35
198	SLU 9	-3	-10	4538	261.49	-83.34	-0.17
198	SLU 10	-2	-5	5090	293.27	-93.46	-0.12
198	SLU 11	-3	-23	5038	294.2	-92.5	-0.38
198	SLU 12	-3	-12	5109	296.26	-93.82	-0.2
198	SLU 13	-3	-5	5131	295.99	-94.21	-0.09
198	SLU 14	-4	-23	5079	296.91	-93.25	-0.34
198	SLU 15	-3	-12	5150	298.98	-94.57	-0.17
198	SLU 16	-4	-23	5053	295.25	-92.77	-0.34
198	SLU 17	-3	-12	5124	297.32	-94.09	-0.17
198	SLU 18	-3	-23	5222	305.18	-95.87	-0.4
198	SLU 19	-3	-13	5293	307.25	-97.19	-0.23
198	SLU 20	-4	-23	5263	307.9	-96.62	-0.37
198	SLU 21	-3	-13	5334	309.97	-97.94	-0.2
198	SLU 22	-3	-22	4950	288.19	-90.88	-0.41
198	SLU 23	-2	-5	5069	291.63	-93.07	-0.13
198	SLU 24	-3	-23	5017	292.56	-92.11	-0.38
198	SLU 25	-3	-12	5089	294.62	-93.43	-0.21
198	SLU 26	-3	-5	5110	294.35	-93.83	-0.09
198	SLU 27	-4	-23	5059	295.27	-92.86	-0.35
198	SLU 28	-4	-12	5130	297.34	-94.18	-0.18
198	SLU 29	-4	-23	5032	293.61	-92.38	-0.35
198	SLU 30	-4	-12	5104	295.68	-93.7	-0.18
198	SLU 31	-3	-6	5655	327.47	-103.82	-0.12
198	SLU 32	-4	-24	5603	328.39	-102.86	-0.38
198	SLU 33	-4	-14	5675	330.46	-104.18	-0.21
198	SLU 34	-3	-7	5696	330.18	-104.57	-0.09
198	SLU 35	-5	-25	5645	331.1	-103.61	-0.35
198	SLU 36	-4	-14	5716	333.17	-104.93	-0.17
198	SLU 37	-5	-25	5618	329.45	-103.13	-0.34
198	SLU 38	-4	-14	5690	331.52	-104.45	-0.17
198	SLU 39	-4	-25	5787	339.38	-106.23	-0.41
198	SLU 40	-3	-14	5859	341.44	-107.55	-0.23
198	SLU 41	-4	-25	5828	342.09	-106.98	-0.37
198	SLU 42	-4	-15	5900	344.16	-108.3	-0.2
198	SLU 43	-3	-26	5506	318.47	-101.12	-0.53
198	SLU 44	-2	-9	5625	321.91	-103.32	-0.25
198	SLU 45	-3	-26	5573	322.84	-102.35	-0.5
198	SLU 46	-3	-16	5645	324.9	-103.67	-0.33
198	SLU 47	-2	-9	5666	324.63	-104.07	-0.22
198	SLU 48	-4	-27	5614	325.55	-103.11	-0.47
198	SLU 49	-3	-16	5686	327.62	-104.42	-0.3
198	SLU 50	-4	-27	5588	323.89	-102.63	-0.47
198	SLU 51	-3	-16	5660	325.96	-103.94	-0.3
198	SLU 52	-3	-10	6211	357.75	-114.06	-0.24
198	SLU 53	-4	-28	6159	358.67	-113.1	-0.5
198	SLU 54	-3	-18	6231	360.74	-114.42	-0.33
198	SLU 55	-3	-11	6252	360.46	-114.82	-0.21
198	SLU 56	-4	-28	6200	361.39	-113.85	-0.47
198	SLU 57	-4	-18	6272	363.45	-115.17	-0.29
198	SLU 58	-4	-28	6174	359.73	-113.37	-0.46
198	SLU 59	-4	-18	6246	361.8	-114.69	-0.29
198	SLU 60	-3	-29	6343	369.66	-116.47	-0.53
198	SLU 61	-3	-18	6415	371.73	-117.79	-0.36
198	SLU 62	-4	-29	6384	372.37	-117.23	-0.49
198	SLU 63	-4	-18	6456	374.44	-118.54	-0.32
198	SLU 64	-3	-28	6071	352.66	-111.48	-0.54
198	SLU 65	-3	-10	6191	356.11	-113.68	-0.25
198	SLU 66	-4	-28	6139	357.03	-112.71	-0.51
198	SLU 67	-3	-18	6210	359.1	-114.03	-0.33
198	SLU 68	-3	-10	6232	358.82	-114.43	-0.22
198	SLU 69	-4	-28	6180	359.74	-113.47	-0.47
198	SLU 70	-4	-18	6251	361.81	-114.78	-0.3
198	SLU 71	-4	-28	6154	358.09	-112.99	-0.47
198	SLU 72	-4	-18	6225	360.16	-114.3	-0.3
198	SLU 73	-3	-12	6777	391.94	-124.42	-0.24

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
198	SLU 74	-4	-30	6725	392.86	-123.46	-0.5
198	SLU 75	-4	-19	6796	394.93	-124.78	-0.33
198	SLU 76	-4	-12	6818	394.65	-125.18	-0.21
198	SLU 77	-5	-30	6766	395.58	-124.21	-0.47
198	SLU 78	-5	-20	6837	397.65	-125.53	-0.3
198	SLU 79	-5	-30	6740	393.92	-123.73	-0.47
198	SLU 80	-5	-19	6811	395.99	-125.05	-0.29
198	SLU 81	-4	-31	6909	403.85	-126.83	-0.53
198	SLU 82	-4	-20	6980	405.92	-128.15	-0.36
198	SLU 83	-5	-31	6950	406.56	-127.58	-0.5
198	SLU 84	-4	-20	7021	408.63	-128.9	-0.32
198	SLE RA 1	-2	-21	4546	263.76	-83.48	-0.41
198	SLE RA 2	-2	-9	4625	266.06	-84.94	-0.22
198	SLE RA 3	-3	-21	4591	266.68	-84.3	-0.39
198	SLE RA 4	-2	-14	4639	268.05	-85.18	-0.28
198	SLE RA 5	-2	-9	4653	267.87	-85.44	-0.2
198	SLE RA 6	-3	-21	4618	268.48	-84.8	-0.37
198	SLE RA 7	-3	-14	4666	269.86	-85.68	-0.26
198	SLE RA 8	-3	-21	4601	267.38	-84.48	-0.37
198	SLE RA 9	-3	-14	4649	268.76	-85.36	-0.25
198	SLE RA 10	-2	-11	5016	289.95	-92.11	-0.22
198	SLE RA 11	-3	-22	4982	290.56	-91.46	-0.39
198	SLE RA 12	-3	-15	5029	291.94	-92.34	-0.27
198	SLE RA 13	-3	-11	5044	291.76	-92.61	-0.2
198	SLE RA 14	-3	-23	5009	292.37	-91.97	-0.37
198	SLE RA 15	-3	-16	5057	293.75	-92.84	-0.25
198	SLE RA 16	-3	-23	4992	291.27	-91.65	-0.37
198	SLE RA 17	-3	-15	5039	292.65	-92.52	-0.25
198	SLE RA 18	-3	-23	5104	297.89	-93.71	-0.41
198	SLE RA 19	-3	-16	5152	299.27	-94.59	-0.29
198	SLE RA 20	-3	-23	5132	299.7	-94.21	-0.39
198	SLE RA 21	-3	-16	5179	301.08	-95.09	-0.27
198	SLE FR 1	-2	-21	4546	263.76	-83.48	-0.41
198	SLE FR 2	-2	-19	4562	264.22	-83.77	-0.37
198	SLE FR 3	-2	-21	4557	264.49	-83.68	-0.4
198	SLE FR 4	-2	-19	4729	274.46	-86.84	-0.37
198	SLE FR 5	-3	-22	4724	274.72	-86.75	-0.4
198	SLE FR 6	-3	-22	4825	280.83	-88.59	-0.41
198	SLE QP 1	-2	-21	4546	263.76	-83.48	-0.41
198	SLE QP 2	-3	-22	4714	274	-86.55	-0.41
198	SLD 1	391	100	5550	301.76	-100.59	-27.55
198	SLD 2	475	92	5533	302.17	-100.47	-34
198	SLD 3	375	-120	3967	255.85	-71.38	-31.09
198	SLD 4	459	-128	3950	256.26	-71.26	-37.54
198	SLD 5	124	350	7369	351.89	-135.09	-2.02
198	SLD 6	180	344	7358	352.16	-135.01	-6.28
198	SLD 7	72	-383	2091	198.85	-37.71	-13.83
198	SLD 8	127	-388	2080	199.12	-37.63	-18.08
198	SLD 9	-132	345	7347	348.88	-135.47	17.26
198	SLD 10	-77	340	7336	349.15	-135.38	13
198	SLD 11	-185	-388	2069	195.84	-38.08	5.45
198	SLD 12	-129	-393	2058	196.11	-38	1.2
198	SLD 13	-464	85	5477	291.74	-101.84	36.72
198	SLD 14	-380	77	5460	292.15	-101.72	30.27
198	SLD 15	-480	-135	3894	245.83	-72.62	33.17
198	SLD 16	-396	-143	3877	246.24	-72.5	26.73
198	SLV 1	918	279	6803	342.79	-121.83	-63.67
198	SLV 2	1117	261	6763	343.75	-121.54	-78.82
198	SLV 3	878	-269	2835	227.69	-48.63	-72.35
198	SLV 4	1076	-288	2795	228.66	-48.34	-87.5
198	SLV 5	298	903	11365	469.01	-208.22	-3.4
198	SLV 6	431	891	11338	469.66	-208.02	-13.6
198	SLV 7	163	-924	-1860	85.37	35.8	-32.32
198	SLV 8	297	-936	-1887	86.02	36	-42.52
198	SLV 9	-302	893	11314	461.98	-209.09	41.7
198	SLV 10	-169	881	11287	462.63	-208.9	31.5
198	SLV 11	-436	-934	-1911	78.34	34.93	12.78
198	SLV 12	-303	-947	-1938	78.99	35.12	2.58
198	SLV 13	-1081	244	6632	319.34	-124.76	86.68
198	SLV 14	-883	226	6592	320.31	-124.47	71.53
198	SLV 15	-1122	-304	2664	204.25	-51.55	78
198	SLV 16	-923	-322	2624	205.21	-51.26	62.85
198	CRTFP Ux+	0	0	0	0	0	0
198	CRTFP Ux-	0	0	0	0	0	0
198	CRTFP Uy+	0	0	0	0	0	0
198	CRTFP Uy-	0	0	0	0	0	0
199	SLU 1	-2	-30	4801	277.07	1.57	-0.12
199	SLU 2	-1	-11	4932	280.78	1.6	-0.16
199	SLU 3	-2	-31	4875	281.79	1.6	-0.08
199	SLU 4	-2	-19	4954	284.01	1.62	-0.11
199	SLU 5	-2	-11	4977	283.7	1.62	-0.12
199	SLU 6	-3	-31	4920	284.72	1.62	-0.04
199	SLU 7	-2	-19	4998	286.94	1.64	-0.07
199	SLU 8	-3	-31	4891	282.93	1.61	-0.04
199	SLU 9	-2	-19	4970	285.15	1.63	-0.07
199	SLU 10	-2	-13	5573	321.03	1.86	-0.13
199	SLU 11	-3	-33	5516	322.04	1.86	-0.04
199	SLU 12	-3	-21	5594	324.26	1.88	-0.07
199	SLU 13	-2	-14	5618	323.96	1.88	-0.09

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
199	SLU 14	-4	-33	5561	324.97	1.88	0
199	SLU 15	-3	-22	5639	327.19	1.9	-0.03
199	SLU 16	-4	-33	5532	323.19	1.87	0
199	SLU 17	-3	-22	5611	325.41	1.89	-0.03
199	SLU 18	-3	-34	5717	334.58	1.95	-0.06
199	SLU 19	-3	-22	5795	336.8	1.96	-0.09
199	SLU 20	-3	-34	5762	337.51	1.97	-0.02
199	SLU 21	-3	-22	5840	339.73	1.98	-0.05
199	SLU 22	-3	-33	5420	314.39	1.82	-0.09
199	SLU 23	-2	-14	5550	318.09	1.84	-0.14
199	SLU 24	-3	-34	5493	319.1	1.85	-0.06
199	SLU 25	-3	-22	5572	321.32	1.86	-0.09
199	SLU 26	-2	-14	5595	321.02	1.86	-0.1
199	SLU 27	-4	-34	5538	322.03	1.87	-0.02
199	SLU 28	-3	-22	5617	324.25	1.88	-0.05
199	SLU 29	-4	-34	5510	320.24	1.85	-0.02
199	SLU 30	-3	-22	5588	322.47	1.87	-0.05
199	SLU 31	-3	-16	6191	358.34	2.1	-0.1
199	SLU 32	-4	-36	6134	359.36	2.11	-0.02
199	SLU 33	-3	-24	6212	361.58	2.12	-0.05
199	SLU 34	-3	-17	6236	361.27	2.12	-0.07
199	SLU 35	-4	-36	6179	362.29	2.13	0.02
199	SLU 36	-4	-25	6257	364.51	2.14	-0.01
199	SLU 37	-4	-36	6150	360.5	2.12	0.02
199	SLU 38	-4	-25	6229	362.72	2.13	-0.01
199	SLU 39	-4	-37	6335	371.89	2.19	-0.04
199	SLU 40	-3	-25	6413	374.11	2.21	-0.07
199	SLU 41	-4	-37	6380	374.82	2.21	0
199	SLU 42	-4	-25	6458	377.04	2.22	-0.03
199	SLU 43	-2	-38	6030	347.4	1.96	-0.16
199	SLU 44	-1	-19	6161	351.11	1.99	-0.2
199	SLU 45	-3	-39	6103	352.12	1.99	-0.12
199	SLU 46	-2	-27	6182	354.34	2.01	-0.15
199	SLU 47	-2	-19	6206	354.03	2.01	-0.17
199	SLU 48	-3	-39	6148	355.05	2.01	-0.08
199	SLU 49	-3	-27	6227	357.27	2.03	-0.11
199	SLU 50	-3	-39	6120	353.26	2	-0.08
199	SLU 51	-3	-27	6198	355.48	2.02	-0.11
199	SLU 52	-2	-21	6801	391.36	2.25	-0.17
199	SLU 53	-3	-41	6744	392.37	2.25	-0.08
199	SLU 54	-3	-29	6823	394.59	2.27	-0.11
199	SLU 55	-3	-22	6846	394.29	2.27	-0.13
199	SLU 56	-4	-41	6789	395.3	2.27	-0.05
199	SLU 57	-4	-30	6868	397.52	2.29	-0.07
199	SLU 58	-4	-41	6760	393.52	2.26	-0.04
199	SLU 59	-4	-30	6839	395.74	2.28	-0.07
199	SLU 60	-3	-42	6945	404.91	2.34	-0.1
199	SLU 61	-3	-30	7024	407.13	2.35	-0.13
199	SLU 62	-4	-42	6990	407.84	2.36	-0.07
199	SLU 63	-3	-30	7069	410.06	2.37	-0.09
199	SLU 64	-3	-41	6648	384.72	2.21	-0.14
199	SLU 65	-2	-22	6779	388.42	2.23	-0.18
199	SLU 66	-3	-42	6722	389.43	2.24	-0.1
199	SLU 67	-3	-30	6800	391.65	2.25	-0.13
199	SLU 68	-3	-22	6824	391.35	2.25	-0.14
199	SLU 69	-4	-42	6767	392.36	2.25	-0.06
199	SLU 70	-3	-30	6845	394.58	2.27	-0.09
199	SLU 71	-4	-42	6738	390.57	2.24	-0.06
199	SLU 72	-3	-30	6816	392.8	2.26	-0.09
199	SLU 73	-3	-24	7420	428.67	2.49	-0.15
199	SLU 74	-4	-44	7362	429.69	2.5	-0.06
199	SLU 75	-4	-32	7441	431.91	2.51	-0.09
199	SLU 76	-3	-25	7465	431.6	2.51	-0.11
199	SLU 77	-5	-44	7407	432.62	2.52	-0.02
199	SLU 78	-4	-33	7486	434.84	2.53	-0.05
199	SLU 79	-5	-44	7379	430.83	2.51	-0.02
199	SLU 80	-4	-33	7457	433.05	2.52	-0.05
199	SLU 81	-4	-45	7563	442.22	2.58	-0.08
199	SLU 82	-4	-33	7642	444.44	2.59	-0.11
199	SLU 83	-4	-45	7608	445.15	2.6	-0.05
199	SLU 84	-4	-34	7687	447.37	2.61	-0.07
199	SLE RA 1	-2	-31	4978	287.74	1.64	-0.11
199	SLE RA 2	-2	-18	5065	290.2	1.66	-0.14
199	SLE RA 3	-2	-31	5027	290.88	1.66	-0.09
199	SLE RA 4	-2	-24	5079	292.36	1.67	-0.1
199	SLE RA 5	-2	-18	5095	292.16	1.67	-0.11
199	SLE RA 6	-3	-31	5057	292.83	1.68	-0.06
199	SLE RA 7	-2	-24	5109	294.31	1.69	-0.08
199	SLE RA 8	-3	-31	5038	291.64	1.67	-0.06
199	SLE RA 9	-2	-24	5090	293.12	1.68	-0.08
199	SLE RA 10	-2	-20	5492	317.04	1.83	-0.12
199	SLE RA 11	-3	-33	5454	317.72	1.84	-0.06
199	SLE RA 12	-3	-25	5507	319.2	1.85	-0.08
199	SLE RA 13	-2	-20	5522	318.99	1.85	-0.09
199	SLE RA 14	-3	-33	5484	319.67	1.85	-0.04
199	SLE RA 15	-3	-25	5537	321.15	1.86	-0.05
199	SLE RA 16	-3	-33	5465	318.48	1.84	-0.03
199	SLE RA 17	-3	-25	5517	319.96	1.85	-0.05
199	SLE RA 18	-3	-34	5588	326.07	1.89	-0.07

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
199	SLE RA 19	-2	-26	5641	327.55	1.9	-0.09
199	SLE RA 20	-3	-34	5618	328.02	1.91	-0.05
199	SLE RA 21	-3	-26	5671	329.5	1.92	-0.07
199	SLE FR 1	-2	-31	4978	287.74	1.64	-0.11
199	SLE FR 2	-2	-28	4995	288.23	1.65	-0.12
199	SLE FR 3	-2	-31	4990	288.52	1.65	-0.1
199	SLE FR 4	-2	-29	5179	299.73	1.72	-0.1
199	SLE FR 5	-2	-32	5173	300.02	1.72	-0.09
199	SLE FR 6	-2	-32	5283	306.9	1.77	-0.09
199	SLE QP 1	-2	-31	4978	287.74	1.64	-0.11
199	SLE QP 2	-2	-32	5161	299.24	1.72	-0.1
199	SLD 1	433	85	6000	329.3	2.45	-32.85
199	SLD 2	526	78	5989	329.98	2.17	-39.79
199	SLD 3	415	-156	4260	280.27	2.12	-31.49
199	SLD 4	509	-163	4249	280.96	1.85	-38.43
199	SLD 5	139	370	8055	382.49	2.48	-10.74
199	SLD 6	200	365	8047	382.94	2.3	-15.32
199	SLD 7	79	-433	2253	219.07	1.4	-6.2
199	SLD 8	141	-438	2246	219.52	1.22	-10.78
199	SLD 9	-145	375	8077	378.95	2.22	10.58
199	SLD 10	-84	370	8069	379.4	2.04	6
199	SLD 11	-205	-429	2275	215.54	1.14	15.12
199	SLD 12	-143	-434	2268	215.99	0.96	10.54
199	SLD 13	-513	100	6073	317.52	1.59	38.23
199	SLD 14	-420	92	6063	318.2	1.31	31.29
199	SLD 15	-531	-141	4333	268.49	1.27	39.6
199	SLD 16	-437	-149	4322	269.18	0.99	32.65
199	SLV 1	1017	260	7268	373.66	3.45	-76.83
199	SLV 2	1237	243	7243	375.27	2.8	-93.15
199	SLV 3	972	-341	2907	250.76	2.64	-73.35
199	SLV 4	1191	-358	2882	252.37	1.99	-89.67
199	SLV 5	332	970	12413	507.67	3.58	-25.35
199	SLV 6	479	958	12396	508.75	3.14	-36.34
199	SLV 7	180	-1032	-2125	97.99	0.9	-13.75
199	SLV 8	328	-1044	-2142	99.07	0.46	-24.74
199	SLV 9	-332	981	12464	499.4	2.98	24.54
199	SLV 10	-185	969	12447	500.48	2.54	13.55
199	SLV 11	-484	-1022	-2073	89.72	0.3	36.14
199	SLV 12	-336	-1034	-2091	90.8	-0.14	25.15
199	SLV 13	-1196	295	7440	346.11	1.45	89.47
199	SLV 14	-976	277	7415	347.71	0.79	73.15
199	SLV 15	-1241	-306	3079	223.2	0.64	92.95
199	SLV 16	-1022	-324	3054	224.81	-0.01	76.63
199	CRTFP Ux+	0	0	0	0	0	0
199	CRTFP Ux-	0	0	0	0	0	0
199	CRTFP Uy+	0	0	0	0	0	0
199	CRTFP Uy-	0	0	0	0	0	0
200	SLU 1	0	-37	4754	272.95	1.42	-0.18
200	SLU 2	0	-18	4884	276.55	1.44	-0.23
200	SLU 3	-1	-38	4827	277.57	1.45	-0.15
200	SLU 4	-1	-26	4905	279.72	1.46	-0.18
200	SLU 5	0	-18	4929	279.41	1.46	-0.19
200	SLU 6	-2	-38	4871	280.43	1.46	-0.11
200	SLU 7	-1	-27	4949	282.59	1.47	-0.14
200	SLU 8	-2	-38	4843	278.69	1.45	-0.11
200	SLU 9	-1	-26	4921	280.84	1.47	-0.14
200	SLU 10	-1	-21	5517	316.9	1.7	-0.2
200	SLU 11	-2	-41	5459	317.92	1.71	-0.12
200	SLU 12	-1	-30	5537	320.08	1.72	-0.15
200	SLU 13	-1	-22	5561	319.77	1.72	-0.16
200	SLU 14	-2	-42	5504	320.79	1.72	-0.08
200	SLU 15	-2	-30	5582	322.94	1.74	-0.11
200	SLU 16	-2	-42	5475	319.04	1.72	-0.08
200	SLU 17	-2	-30	5553	321.19	1.73	-0.11
200	SLU 18	-2	-42	5658	330.6	1.79	-0.14
200	SLU 19	-1	-31	5736	332.76	1.8	-0.17
200	SLU 20	-2	-43	5702	333.47	1.81	-0.1
200	SLU 21	-2	-31	5780	335.62	1.82	-0.13
200	SLU 22	-1	-42	5365	309.7	1.64	-0.17
200	SLU 23	0	-22	5495	313.3	1.66	-0.22
200	SLU 24	-2	-42	5438	314.31	1.67	-0.14
200	SLU 25	-1	-30	5516	316.47	1.68	-0.17
200	SLU 26	-1	-22	5540	316.16	1.68	-0.18
200	SLU 27	-2	-42	5482	317.18	1.69	-0.1
200	SLU 28	-2	-31	5560	319.34	1.7	-0.13
200	SLU 29	-2	-42	5454	315.43	1.68	-0.1
200	SLU 30	-2	-31	5532	317.59	1.69	-0.13
200	SLU 31	-1	-26	6128	353.65	1.92	-0.19
200	SLU 32	-2	-46	6070	354.67	1.93	-0.11
200	SLU 33	-2	-34	6148	356.82	1.94	-0.13
200	SLU 34	-2	-26	6172	356.51	1.94	-0.15
200	SLU 35	-3	-46	6115	357.53	1.95	-0.07
200	SLU 36	-3	-34	6193	359.69	1.96	-0.1
200	SLU 37	-3	-46	6086	355.79	1.94	-0.07
200	SLU 38	-3	-34	6164	357.94	1.95	-0.09
200	SLU 39	-2	-47	6269	367.35	2.02	-0.13
200	SLU 40	-2	-35	6347	369.5	2.03	-0.16
200	SLU 41	-3	-47	6313	370.21	2.03	-0.09
200	SLU 42	-2	-35	6391	372.37	2.04	-0.12

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
200	SLU 43	0	-47	5971	342.24	1.77	-0.24
200	SLU 44	0	-28	6101	345.83	1.79	-0.29
200	SLU 45	-1	-48	6044	346.85	1.8	-0.21
200	SLU 46	-1	-36	6122	349.01	1.81	-0.24
200	SLU 47	0	-28	6145	348.7	1.81	-0.25
200	SLU 48	-1	-48	6088	349.72	1.81	-0.17
200	SLU 49	-1	-36	6166	351.88	1.82	-0.2
200	SLU 50	-1	-48	6060	347.97	1.8	-0.17
200	SLU 51	-1	-36	6138	350.13	1.82	-0.2
200	SLU 52	-1	-31	6734	386.19	2.05	-0.26
200	SLU 53	-2	-51	6676	387.21	2.06	-0.18
200	SLU 54	-1	-40	6754	389.36	2.07	-0.21
200	SLU 55	-1	-32	6778	389.05	2.07	-0.22
200	SLU 56	-2	-52	6720	390.07	2.07	-0.14
200	SLU 57	-2	-40	6799	392.23	2.09	-0.17
200	SLU 58	-2	-51	6692	388.32	2.07	-0.14
200	SLU 59	-2	-40	6770	390.48	2.08	-0.16
200	SLU 60	-2	-52	6874	399.89	2.14	-0.2
200	SLU 61	-1	-41	6953	402.04	2.15	-0.23
200	SLU 62	-2	-53	6919	402.75	2.16	-0.16
200	SLU 63	-2	-41	6997	404.91	2.17	-0.19
200	SLU 64	-1	-51	6582	378.99	1.99	-0.23
200	SLU 65	0	-32	6712	382.58	2.01	-0.28
200	SLU 66	-2	-52	6655	383.6	2.02	-0.2
200	SLU 67	-1	-40	6733	385.76	2.03	-0.22
200	SLU 68	-1	-32	6756	385.45	2.03	-0.24
200	SLU 69	-2	-52	6699	386.47	2.04	-0.16
200	SLU 70	-2	-41	6777	388.62	2.05	-0.19
200	SLU 71	-2	-52	6671	384.72	2.03	-0.16
200	SLU 72	-2	-40	6749	386.88	2.04	-0.18
200	SLU 73	-1	-35	7344	422.93	2.27	-0.25
200	SLU 74	-2	-55	7287	423.95	2.28	-0.16
200	SLU 75	-2	-44	7365	426.11	2.29	-0.19
200	SLU 76	-2	-36	7389	425.8	2.29	-0.21
200	SLU 77	-3	-56	7331	426.82	2.3	-0.13
200	SLU 78	-3	-44	7410	428.98	2.31	-0.16
200	SLU 79	-3	-56	7303	425.07	2.29	-0.12
200	SLU 80	-3	-44	7381	427.23	2.3	-0.15
200	SLU 81	-2	-56	7485	436.63	2.37	-0.19
200	SLU 82	-2	-45	7563	438.79	2.38	-0.21
200	SLU 83	-3	-57	7530	439.5	2.38	-0.15
200	SLU 84	-2	-45	7608	441.66	2.39	-0.18
200	SLE RA 1	-1	-39	4929	283.45	1.48	-0.18
200	SLE RA 2	0	-26	5015	285.85	1.5	-0.21
200	SLE RA 3	-1	-39	4977	286.53	1.5	-0.16
200	SLE RA 4	-1	-31	5029	287.97	1.51	-0.18
200	SLE RA 5	-1	-26	5045	287.76	1.51	-0.19
200	SLE RA 6	-1	-39	5007	288.44	1.51	-0.13
200	SLE RA 7	-1	-31	5059	289.88	1.52	-0.15
200	SLE RA 8	-1	-39	4988	287.27	1.51	-0.13
200	SLE RA 9	-1	-31	5040	288.71	1.51	-0.15
200	SLE RA 10	-1	-28	5437	312.75	1.67	-0.19
200	SLE RA 11	-2	-41	5399	313.43	1.68	-0.14
200	SLE RA 12	-1	-33	5451	314.87	1.68	-0.16
200	SLE RA 13	-1	-28	5467	314.66	1.68	-0.17
200	SLE RA 14	-2	-42	5428	315.34	1.69	-0.11
200	SLE RA 15	-2	-34	5480	316.78	1.69	-0.13
200	SLE RA 16	-2	-41	5409	314.18	1.68	-0.11
200	SLE RA 17	-2	-34	5462	315.61	1.69	-0.13
200	SLE RA 18	-1	-42	5531	321.88	1.73	-0.15
200	SLE RA 19	-1	-34	5583	323.32	1.74	-0.17
200	SLE RA 20	-2	-42	5561	323.79	1.74	-0.13
200	SLE RA 21	-2	-34	5613	325.23	1.75	-0.14
200	SLE FR 1	-1	-39	4929	283.45	1.48	-0.18
200	SLE FR 2	-1	-36	4946	283.93	1.49	-0.19
200	SLE FR 3	-1	-39	4940	284.22	1.49	-0.17
200	SLE FR 4	-1	-37	5127	295.46	1.56	-0.18
200	SLE FR 5	-1	-40	5121	295.75	1.56	-0.16
200	SLE FR 6	-1	-40	5230	302.67	1.61	-0.17
200	SLE QP 1	-1	-39	4929	283.45	1.48	-0.18
200	SLE QP 2	-1	-40	5109	294.98	1.56	-0.17
200	SLD 1	435	76	5939	322.42	2.2	-32.85
200	SLD 2	528	70	5937	323.11	1.92	-39.77
200	SLD 3	416	-164	4207	274.99	1.97	-31.48
200	SLD 4	510	-170	4205	275.68	1.69	-38.4
200	SLD 5	141	360	7985	375.01	2.15	-10.81
200	SLD 6	202	357	7984	375.47	1.96	-15.38
200	SLD 7	80	-440	2212	216.93	1.39	-6.24
200	SLD 8	141	-444	2211	217.39	1.2	-10.81
200	SLD 9	-143	364	8008	372.57	1.91	10.46
200	SLD 10	-82	361	8007	373.03	1.73	5.9
200	SLD 11	-204	-436	2235	214.49	1.16	15.03
200	SLD 12	-142	-439	2233	214.95	0.97	10.47
200	SLD 13	-511	90	6014	314.28	1.43	38.06
200	SLD 14	-418	85	6012	314.97	1.14	31.13
200	SLD 15	-530	-150	4282	266.86	1.2	39.43
200	SLD 16	-436	-155	4280	267.55	0.92	32.5
200	SLV 1	1019	249	7194	363.13	3.08	-76.73
200	SLV 2	1239	236	7189	364.75	2.41	-93.01

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
200	SLV 3	973	-349	2854	244.24	2.52	-73.22
200	SLV 4	1192	-362	2849	245.86	1.85	-89.5
200	SLV 5	335	957	12318	495.44	2.99	-25.41
200	SLV 6	483	948	12315	496.53	2.54	-36.38
200	SLV 7	180	-1038	-2149	99.14	1.12	-13.73
200	SLV 8	327	-1046	-2152	100.23	0.67	-24.69
200	SLV 9	-329	967	12371	489.73	2.45	24.35
200	SLV 10	-181	959	12368	490.82	2	13.39
200	SLV 11	-484	-1028	-2096	93.43	0.58	36.03
200	SLV 12	-337	-1036	-2099	94.52	0.13	25.07
200	SLV 13	-1194	283	7370	344.1	1.27	89.16
200	SLV 14	-974	270	7365	345.73	0.6	72.88
200	SLV 15	-1240	-316	3030	225.21	0.71	92.67
200	SLV 16	-1021	-328	3025	226.84	0.04	76.38
200	CRTFP Ux+	0	0	0	0	0	0
200	CRTFP Ux-	0	0	0	0	0	0
200	CRTFP Uy+	0	0	0	0	0	0
200	CRTFP Uy-	0	0	0	0	0	0
201	SLU 1	1	-44	4714	271.12	1.12	-0.28
201	SLU 2	2	-24	4844	274.69	1.12	-0.33
201	SLU 3	1	-44	4786	275.69	1.14	-0.25
201	SLU 4	1	-33	4864	277.84	1.14	-0.28
201	SLU 5	1	-25	4888	277.53	1.14	-0.3
201	SLU 6	0	-45	4830	278.54	1.15	-0.21
201	SLU 7	1	-33	4908	280.68	1.16	-0.24
201	SLU 8	0	-45	4802	276.8	1.14	-0.21
201	SLU 9	1	-33	4880	278.95	1.15	-0.24
201	SLU 10	1	-29	5469	314.83	1.35	-0.31
201	SLU 11	0	-49	5411	315.84	1.37	-0.22
201	SLU 12	0	-37	5489	317.98	1.37	-0.25
201	SLU 13	1	-29	5513	317.68	1.37	-0.27
201	SLU 14	0	-49	5455	318.68	1.38	-0.19
201	SLU 15	0	-38	5533	320.82	1.39	-0.22
201	SLU 16	0	-49	5427	316.95	1.37	-0.18
201	SLU 17	0	-37	5505	319.09	1.38	-0.21
201	SLU 18	0	-50	5607	328.47	1.44	-0.25
201	SLU 19	1	-38	5685	330.61	1.45	-0.28
201	SLU 20	0	-51	5651	331.31	1.46	-0.21
201	SLU 21	0	-39	5728	333.45	1.46	-0.24
201	SLU 22	1	-49	5319	307.58	1.29	-0.28
201	SLU 23	2	-29	5449	311.15	1.3	-0.33
201	SLU 24	0	-49	5391	312.16	1.32	-0.25
201	SLU 25	1	-38	5469	314.3	1.32	-0.28
201	SLU 26	1	-30	5493	314	1.32	-0.3
201	SLU 27	0	-50	5435	315	1.33	-0.21
201	SLU 28	0	-38	5513	317.15	1.33	-0.24
201	SLU 29	0	-50	5407	313.27	1.32	-0.21
201	SLU 30	0	-38	5485	315.41	1.33	-0.24
201	SLU 31	1	-34	6073	351.3	1.53	-0.31
201	SLU 32	0	-54	6016	352.3	1.55	-0.23
201	SLU 33	0	-42	6093	354.45	1.55	-0.26
201	SLU 34	0	-34	6117	354.14	1.55	-0.27
201	SLU 35	-1	-54	6060	355.15	1.56	-0.19
201	SLU 36	0	-43	6137	357.29	1.56	-0.22
201	SLU 37	-1	-54	6031	353.41	1.55	-0.19
201	SLU 38	0	-42	6109	355.56	1.56	-0.22
201	SLU 39	0	-55	6211	364.93	1.62	-0.25
201	SLU 40	0	-43	6289	367.07	1.63	-0.28
201	SLU 41	-1	-56	6255	367.77	1.64	-0.21
201	SLU 42	0	-44	6333	369.92	1.64	-0.24
201	SLU 43	2	-55	5921	339.95	1.39	-0.37
201	SLU 44	3	-36	6051	343.52	1.4	-0.42
201	SLU 45	1	-56	5993	344.53	1.41	-0.33
201	SLU 46	2	-44	6071	346.67	1.42	-0.36
201	SLU 47	2	-36	6095	346.37	1.41	-0.38
201	SLU 48	1	-56	6037	347.37	1.42	-0.3
201	SLU 49	1	-44	6115	349.51	1.43	-0.33
201	SLU 50	1	-56	6009	345.64	1.42	-0.29
201	SLU 51	1	-44	6087	347.78	1.42	-0.32
201	SLU 52	2	-40	6676	383.67	1.63	-0.39
201	SLU 53	1	-60	6618	384.67	1.64	-0.31
201	SLU 54	1	-48	6696	386.81	1.64	-0.34
201	SLU 55	1	-40	6720	386.51	1.64	-0.35
201	SLU 56	0	-61	6662	387.51	1.65	-0.27
201	SLU 57	0	-49	6740	389.66	1.66	-0.3
201	SLU 58	0	-60	6634	385.78	1.65	-0.27
201	SLU 59	0	-49	6712	387.92	1.65	-0.3
201	SLU 60	1	-61	6814	397.3	1.72	-0.33
201	SLU 61	1	-50	6892	399.44	1.72	-0.36
201	SLU 62	0	-62	6858	400.14	1.73	-0.29
201	SLU 63	1	-50	6935	402.29	1.74	-0.32
201	SLU 64	1	-60	6526	376.42	1.57	-0.37
201	SLU 65	2	-41	6656	379.99	1.58	-0.42
201	SLU 66	1	-61	6598	380.99	1.59	-0.34
201	SLU 67	1	-49	6676	383.13	1.59	-0.37
201	SLU 68	2	-41	6700	382.83	1.59	-0.38
201	SLU 69	0	-61	6642	383.84	1.6	-0.3
201	SLU 70	1	-50	6720	385.98	1.61	-0.33
201	SLU 71	0	-61	6614	382.1	1.6	-0.3

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
201	SLU 72	1	-49	6692	384.25	1.6	-0.33
201	SLU 73	1	-45	7280	420.13	1.81	-0.39
201	SLU 74	0	-65	7223	421.14	1.82	-0.31
201	SLU 75	1	-54	7300	423.28	1.82	-0.34
201	SLU 76	1	-46	7324	422.97	1.82	-0.36
201	SLU 77	0	-66	7266	423.98	1.83	-0.27
201	SLU 78	0	-54	7344	426.12	1.84	-0.3
201	SLU 79	0	-66	7238	422.25	1.82	-0.27
201	SLU 80	0	-54	7316	424.39	1.83	-0.3
201	SLU 81	0	-67	7418	433.76	1.9	-0.33
201	SLU 82	1	-55	7496	435.91	1.9	-0.36
201	SLU 83	0	-67	7462	436.61	1.91	-0.3
201	SLU 84	0	-55	7540	438.75	1.92	-0.33
201	SLE RA 1	1	-45	4887	281.54	1.17	-0.28
201	SLE RA 2	2	-32	4973	283.92	1.17	-0.32
201	SLE RA 3	1	-46	4935	284.59	1.18	-0.26
201	SLE RA 4	1	-38	4987	286.02	1.18	-0.28
201	SLE RA 5	1	-32	5003	285.81	1.18	-0.29
201	SLE RA 6	1	-46	4964	286.48	1.19	-0.24
201	SLE RA 7	1	-38	5016	287.91	1.19	-0.26
201	SLE RA 8	1	-46	4946	285.33	1.18	-0.23
201	SLE RA 9	1	-38	4997	286.76	1.19	-0.25
201	SLE RA 10	1	-35	5390	310.68	1.33	-0.3
201	SLE RA 11	0	-49	5351	311.35	1.33	-0.24
201	SLE RA 12	1	-41	5403	312.78	1.34	-0.26
201	SLE RA 13	1	-35	5419	312.58	1.34	-0.27
201	SLE RA 14	0	-49	5381	313.25	1.34	-0.22
201	SLE RA 15	0	-41	5433	314.67	1.35	-0.24
201	SLE RA 16	0	-49	5362	312.09	1.34	-0.22
201	SLE RA 17	0	-41	5414	313.52	1.34	-0.24
201	SLE RA 18	1	-49	5482	319.77	1.39	-0.26
201	SLE RA 19	1	-42	5534	321.2	1.39	-0.28
201	SLE RA 20	0	-50	5511	321.66	1.39	-0.23
201	SLE RA 21	0	-42	5563	323.09	1.4	-0.25
201	SLE FR 1	1	-45	4887	281.54	1.17	-0.28
201	SLE FR 2	1	-43	4904	282.01	1.17	-0.29
201	SLE FR 3	1	-45	4899	282.29	1.17	-0.27
201	SLE FR 4	1	-44	5083	293.48	1.23	-0.28
201	SLE FR 5	1	-47	5077	293.76	1.24	-0.27
201	SLE FR 6	1	-47	5184	300.65	1.28	-0.27
201	SLE QP 1	1	-45	4887	281.54	1.17	-0.28
201	SLE QP 2	1	-46	5065	293.01	1.23	-0.28
201	SLD 1	436	82	5884	317.8	1.81	-32.86
201	SLD 2	529	79	5891	318.39	1.52	-39.76
201	SLD 3	417	-158	4157	270.79	1.7	-31.46
201	SLD 4	510	-161	4164	271.39	1.41	-38.36
201	SLD 5	143	357	7929	371.63	1.62	-10.93
201	SLD 6	205	355	7934	372.02	1.43	-15.48
201	SLD 7	81	-444	2172	214.94	1.26	-6.27
201	SLD 8	142	-446	2177	215.34	1.07	-10.83
201	SLD 9	-140	353	7954	370.67	1.39	10.27
201	SLD 10	-79	351	7959	371.07	1.2	5.72
201	SLD 11	-203	-448	2197	213.99	1.04	14.93
201	SLD 12	-141	-450	2202	214.39	0.85	10.37
201	SLD 13	-508	68	5967	314.63	1.05	37.81
201	SLD 14	-415	65	5974	315.22	0.76	30.91
201	SLD 15	-527	-172	4240	267.62	0.95	39.21
201	SLD 16	-434	-175	4247	268.22	0.66	32.31
201	SLV 1	1021	272	7123	354.93	2.58	-76.62
201	SLV 2	1240	265	7139	356.33	1.91	-92.84
201	SLV 3	972	-326	2795	237.1	2.32	-73.05
201	SLV 4	1191	-334	2812	238.49	1.65	-89.27
201	SLV 5	339	959	12243	490.04	2.16	-25.57
201	SLV 6	486	954	12254	490.98	1.7	-36.49
201	SLV 7	179	-1037	-2182	97.26	1.29	-13.67
201	SLV 8	326	-1042	-2171	98.2	0.84	-24.59
201	SLV 9	-324	949	12302	487.81	1.63	24.03
201	SLV 10	-177	944	12313	488.76	1.17	13.11
201	SLV 11	-484	-1047	-2123	95.03	0.76	35.93
201	SLV 12	-337	-1052	-2112	95.97	0.31	25.01
201	SLV 13	-1189	241	7319	347.52	0.82	88.72
201	SLV 14	-970	233	7336	348.92	0.14	72.5
201	SLV 15	-1238	-358	2992	229.68	0.56	92.29
201	SLV 16	-1019	-365	3008	231.08	-0.12	76.07
201	CRTFP Ux+	0	0	0	0	0	0
201	CRTFP Ux-	0	0	0	0	0	0
201	CRTFP Uy+	0	0	0	0	0	0
201	CRTFP Uy-	0	0	0	0	0	0
202	SLU 1	3	-49	4685	272.28	0.73	-0.41
202	SLU 2	4	-29	4815	275.94	0.73	-0.46
202	SLU 3	3	-50	4757	276.89	0.75	-0.38
202	SLU 4	3	-38	4835	279.09	0.75	-0.41
202	SLU 5	4	-30	4858	278.81	0.74	-0.43
202	SLU 6	3	-50	4800	279.76	0.76	-0.34
202	SLU 7	3	-38	4878	281.96	0.76	-0.37
202	SLU 8	2	-50	4772	278.01	0.75	-0.34
202	SLU 9	3	-38	4850	280.21	0.75	-0.37
202	SLU 10	4	-35	5433	315.61	0.91	-0.44
202	SLU 11	2	-55	5375	316.57	0.93	-0.36

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
202	SLU 12	3	-43	5453	318.77	0.93	-0.39
202	SLU 13	3	-35	5477	318.48	0.92	-0.41
202	SLU 14	2	-55	5419	319.44	0.94	-0.32
202	SLU 15	2	-44	5496	321.63	0.94	-0.35
202	SLU 16	2	-55	5391	317.69	0.93	-0.32
202	SLU 17	2	-43	5468	319.88	0.93	-0.35
202	SLU 18	3	-56	5569	328.96	0.99	-0.38
202	SLU 19	3	-45	5646	331.15	0.99	-0.41
202	SLU 20	2	-57	5612	331.83	1	-0.34
202	SLU 21	3	-45	5690	334.02	1	-0.38
202	SLU 22	3	-55	5285	308.83	0.86	-0.43
202	SLU 23	4	-35	5415	312.49	0.86	-0.48
202	SLU 24	3	-55	5357	313.45	0.87	-0.4
202	SLU 25	3	-44	5434	315.64	0.87	-0.43
202	SLU 26	4	-36	5458	315.36	0.87	-0.44
202	SLU 27	3	-56	5400	316.31	0.88	-0.36
202	SLU 28	3	-44	5478	318.51	0.88	-0.39
202	SLU 29	2	-56	5372	314.56	0.88	-0.36
202	SLU 30	3	-44	5450	316.76	0.88	-0.39
202	SLU 31	4	-40	6033	352.17	1.04	-0.46
202	SLU 32	2	-61	5975	353.12	1.05	-0.37
202	SLU 33	3	-49	6053	355.32	1.05	-0.41
202	SLU 34	3	-41	6077	355.03	1.05	-0.42
202	SLU 35	2	-61	6018	355.99	1.06	-0.34
202	SLU 36	2	-49	6096	358.19	1.06	-0.37
202	SLU 37	2	-61	5991	354.24	1.06	-0.34
202	SLU 38	2	-49	6068	356.44	1.06	-0.37
202	SLU 39	3	-62	6168	365.51	1.11	-0.4
202	SLU 40	3	-50	6246	367.71	1.11	-0.43
202	SLU 41	2	-63	6212	368.38	1.12	-0.36
202	SLU 42	3	-51	6290	370.57	1.12	-0.39
202	SLU 43	5	-62	5885	341.43	0.91	-0.52
202	SLU 44	5	-42	6015	345.09	0.91	-0.58
202	SLU 45	4	-62	5957	346.05	0.92	-0.49
202	SLU 46	5	-51	6034	348.24	0.92	-0.52
202	SLU 47	5	-42	6058	347.96	0.92	-0.54
202	SLU 48	4	-63	6000	348.91	0.93	-0.46
202	SLU 49	4	-51	6078	351.11	0.93	-0.49
202	SLU 50	4	-63	5972	347.16	0.93	-0.45
202	SLU 51	4	-51	6050	349.36	0.93	-0.49
202	SLU 52	5	-47	6633	384.77	1.09	-0.56
202	SLU 53	3	-68	6575	385.72	1.1	-0.47
202	SLU 54	4	-56	6653	387.92	1.1	-0.5
202	SLU 55	4	-48	6677	387.63	1.1	-0.52
202	SLU 56	3	-68	6619	388.59	1.11	-0.44
202	SLU 57	3	-56	6696	390.79	1.11	-0.47
202	SLU 58	3	-68	6591	386.84	1.11	-0.43
202	SLU 59	3	-56	6668	389.04	1.11	-0.46
202	SLU 60	4	-69	6769	398.11	1.16	-0.49
202	SLU 61	4	-57	6846	400.31	1.16	-0.53
202	SLU 62	3	-70	6812	400.98	1.17	-0.46
202	SLU 63	4	-58	6890	403.17	1.17	-0.49
202	SLU 64	5	-67	6485	377.98	1.03	-0.54
202	SLU 65	5	-48	6615	381.64	1.04	-0.6
202	SLU 66	4	-68	6556	382.6	1.05	-0.51
202	SLU 67	5	-56	6634	384.79	1.05	-0.54
202	SLU 68	5	-48	6658	384.51	1.05	-0.56
202	SLU 69	4	-69	6600	385.47	1.06	-0.48
202	SLU 70	4	-57	6678	387.66	1.06	-0.51
202	SLU 71	4	-68	6572	383.72	1.05	-0.47
202	SLU 72	4	-57	6650	385.91	1.06	-0.5
202	SLU 73	5	-53	7233	421.32	1.21	-0.58
202	SLU 74	3	-73	7175	422.27	1.23	-0.49
202	SLU 75	4	-62	7253	424.47	1.23	-0.52
202	SLU 76	4	-54	7277	424.19	1.22	-0.54
202	SLU 77	3	-74	7218	425.14	1.24	-0.46
202	SLU 78	3	-62	7296	427.34	1.24	-0.49
202	SLU 79	3	-74	7190	423.39	1.23	-0.45
202	SLU 80	3	-62	7268	425.59	1.23	-0.48
202	SLU 81	4	-75	7368	434.66	1.29	-0.51
202	SLU 82	4	-63	7446	436.86	1.29	-0.55
202	SLU 83	3	-75	7412	437.53	1.3	-0.48
202	SLU 84	4	-64	7490	439.73	1.3	-0.51
202	SLE RA 1	3	-51	4857	282.72	0.77	-0.41
202	SLE RA 2	4	-37	4943	285.16	0.77	-0.45
202	SLE RA 3	3	-51	4904	285.8	0.78	-0.39
202	SLE RA 4	3	-43	4956	287.26	0.78	-0.41
202	SLE RA 5	4	-38	4972	287.07	0.78	-0.43
202	SLE RA 6	3	-51	4933	287.71	0.79	-0.37
202	SLE RA 7	3	-44	4985	289.17	0.79	-0.39
202	SLE RA 8	3	-51	4915	286.54	0.78	-0.37
202	SLE RA 9	3	-43	4967	288.01	0.78	-0.39
202	SLE RA 10	4	-41	5355	311.61	0.89	-0.44
202	SLE RA 11	3	-55	5317	312.25	0.9	-0.38
202	SLE RA 12	3	-47	5368	313.71	0.9	-0.4
202	SLE RA 13	3	-41	5384	313.52	0.89	-0.41
202	SLE RA 14	2	-55	5346	314.16	0.9	-0.36
202	SLE RA 15	3	-47	5397	315.63	0.9	-0.38
202	SLE RA 16	2	-55	5327	313	0.9	-0.35

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
202	SLE RA 17	3	-47	5379	314.46	0.9	-0.37
202	SLE RA 18	3	-56	5446	320.51	0.94	-0.39
202	SLE RA 19	3	-48	5497	321.97	0.94	-0.42
202	SLE RA 20	3	-56	5475	322.42	0.95	-0.37
202	SLE RA 21	3	-48	5526	323.88	0.95	-0.39
202	SLE FR 1	3	-51	4857	282.72	0.77	-0.41
202	SLE FR 2	4	-48	4874	283.21	0.77	-0.42
202	SLE FR 3	3	-51	4868	283.49	0.77	-0.4
202	SLE FR 4	3	-49	5051	294.55	0.82	-0.41
202	SLE FR 5	3	-52	5045	294.82	0.82	-0.4
202	SLE FR 6	3	-53	5151	301.62	0.85	-0.4
202	SLE QP 1	3	-51	4857	282.72	0.77	-0.41
202	SLE QP 2	3	-52	5033	294.06	0.82	-0.41
202	SLD 1	438	76	5839	316.41	1.34	-32.88
202	SLD 2	531	76	5855	317.03	1.06	-39.75
202	SLD 3	418	-165	4113	268.26	1.4	-31.44
202	SLD 4	511	-165	4129	268.88	1.12	-38.3
202	SLD 5	146	352	7890	373.68	0.94	-11.1
202	SLD 6	208	351	7900	374.09	0.76	-15.63
202	SLD 7	82	-451	2137	213.18	1.13	-6.29
202	SLD 8	143	-451	2147	213.59	0.94	-10.82
202	SLD 9	-136	347	7919	374.53	0.7	10.01
202	SLD 10	-75	347	7930	374.94	0.51	5.48
202	SLD 11	-201	-456	2166	214.02	0.88	14.82
202	SLD 12	-140	-456	2177	214.44	0.7	10.29
202	SLD 13	-504	61	5938	319.23	0.52	37.49
202	SLD 14	-412	61	5953	319.86	0.24	30.62
202	SLD 15	-524	-180	4212	271.08	0.58	38.93
202	SLD 16	-431	-180	4228	271.71	0.3	32.07
202	SLV 1	1021	266	7062	350.37	2.04	-76.5
202	SLV 2	1239	266	7099	351.84	1.38	-92.64
202	SLV 3	971	-334	2736	229.66	2.18	-72.81
202	SLV 4	1190	-334	2774	231.13	1.52	-88.95
202	SLV 5	343	954	12195	493.75	1.1	-25.82
202	SLV 6	490	954	12220	494.74	0.65	-36.69
202	SLV 7	177	-1047	-2223	91.39	1.56	-13.51
202	SLV 8	324	-1047	-2198	92.38	1.12	-24.38
202	SLV 9	-318	943	12264	495.74	0.52	23.57
202	SLV 10	-171	943	12290	496.73	0.08	12.7
202	SLV 11	-484	-1058	-2154	93.38	0.99	35.88
202	SLV 12	-337	-1058	-2128	94.36	0.54	25.01
202	SLV 13	-1183	230	7293	356.99	0.12	88.13
202	SLV 14	-965	230	7330	358.46	-0.54	71.99
202	SLV 15	-1233	-370	2967	236.28	0.26	91.83
202	SLV 16	-1014	-370	3005	237.75	-0.4	75.69
202	CRTFP Ux+	0	0	0	0	0	0
202	CRTFP Ux-	0	0	0	0	0	0
202	CRTFP Uy+	0	0	0	0	0	0
202	CRTFP Uy-	0	0	0	0	0	0
203	SLU 1	5	-48	4223	250.72	78.86	0.41
203	SLU 2	6	-30	4341	254.22	81.04	0.03
203	SLU 3	5	-49	4288	255.01	80.06	0.46
203	SLU 4	5	-38	4358	257.11	81.37	0.22
203	SLU 5	5	-30	4380	256.89	81.77	0.07
203	SLU 6	4	-49	4327	257.67	80.8	0.5
203	SLU 7	5	-38	4397	259.77	82.11	0.26
203	SLU 8	4	-49	4302	256.04	80.33	0.49
203	SLU 9	5	-38	4372	258.15	81.63	0.26
203	SLU 10	5	-35	4896	289.58	91.46	0.15
203	SLU 11	4	-54	4843	290.37	90.49	0.57
203	SLU 12	5	-43	4913	292.47	91.8	0.34
203	SLU 13	5	-36	4935	292.24	92.2	0.19
203	SLU 14	4	-54	4882	293.03	91.22	0.61
203	SLU 15	4	-44	4952	295.13	92.53	0.38
203	SLU 16	4	-54	4857	291.4	90.75	0.61
203	SLU 17	4	-43	4927	293.5	92.06	0.38
203	SLU 18	5	-55	5016	301.23	93.75	0.58
203	SLU 19	5	-45	5087	303.33	95.06	0.35
203	SLU 20	4	-56	5056	303.89	94.49	0.62
203	SLU 21	5	-45	5126	306	95.8	0.39
203	SLU 22	5	-54	4763	284.31	88.96	0.49
203	SLU 23	6	-36	4880	287.82	91.14	0.1
203	SLU 24	5	-54	4827	288.6	90.16	0.53
203	SLU 25	5	-44	4898	290.7	91.47	0.3
203	SLU 26	6	-36	4920	290.48	91.87	0.14
203	SLU 27	5	-55	4867	291.26	90.9	0.57
203	SLU 28	5	-44	4937	293.37	92.21	0.34
203	SLU 29	5	-55	4841	289.63	90.43	0.57
203	SLU 30	5	-44	4912	291.74	91.74	0.34
203	SLU 31	6	-41	5436	323.18	101.57	0.22
203	SLU 32	5	-60	5383	323.96	100.59	0.65
203	SLU 33	5	-49	5453	326.06	101.9	0.42
203	SLU 34	5	-42	5475	325.84	102.3	0.26
203	SLU 35	4	-60	5422	326.62	101.32	0.69
203	SLU 36	5	-49	5492	328.72	102.63	0.46
203	SLU 37	4	-60	5397	324.99	100.85	0.69
203	SLU 38	5	-49	5467	327.1	102.16	0.46
203	SLU 39	5	-61	5556	334.82	103.85	0.66
203	SLU 40	5	-50	5627	336.93	105.16	0.43

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
203	SLU 41	4	-62	5595	337.49	104.59	0.7
203	SLU 42	5	-51	5666	339.59	105.9	0.47
203	SLU 43	7	-60	5305	314.42	99.05	0.51
203	SLU 44	7	-42	5422	317.92	101.23	0.13
203	SLU 45	6	-61	5369	318.71	100.26	0.55
203	SLU 46	7	-50	5440	320.81	101.57	0.32
203	SLU 47	7	-43	5462	320.58	101.97	0.17
203	SLU 48	6	-61	5409	321.37	100.99	0.59
203	SLU 49	6	-51	5479	323.47	102.3	0.36
203	SLU 50	6	-61	5383	319.74	100.52	0.59
203	SLU 51	6	-50	5454	321.84	101.83	0.36
203	SLU 52	7	-48	5978	353.28	111.66	0.24
203	SLU 53	6	-66	5925	354.07	110.68	0.67
203	SLU 54	6	-56	5995	356.17	111.99	0.44
203	SLU 55	7	-48	6017	355.94	112.39	0.28
203	SLU 56	5	-67	5964	356.73	111.42	0.71
203	SLU 57	6	-56	6034	358.83	112.73	0.48
203	SLU 58	5	-66	5939	355.1	110.95	0.71
203	SLU 59	6	-56	6009	357.2	112.26	0.48
203	SLU 60	6	-68	6098	364.93	113.95	0.68
203	SLU 61	6	-57	6169	367.03	115.26	0.45
203	SLU 62	6	-68	6137	367.59	114.68	0.72
203	SLU 63	6	-58	6208	369.69	115.99	0.49
203	SLU 64	7	-66	5845	348.01	109.16	0.59
203	SLU 65	8	-48	5962	351.51	111.33	0.2
203	SLU 66	7	-67	5909	352.3	110.36	0.63
203	SLU 67	7	-56	5980	354.4	111.67	0.4
203	SLU 68	7	-49	6002	354.18	112.07	0.24
203	SLU 69	6	-67	5948	354.96	111.09	0.67
203	SLU 70	6	-56	6019	357.06	112.4	0.44
203	SLU 71	6	-67	5923	353.33	110.62	0.67
203	SLU 72	6	-56	5994	355.44	111.93	0.44
203	SLU 73	7	-53	6518	386.87	121.76	0.32
203	SLU 74	6	-72	6465	387.66	120.79	0.75
203	SLU 75	7	-61	6535	389.76	122.09	0.52
203	SLU 76	7	-54	6557	389.54	122.49	0.36
203	SLU 77	6	-72	6504	390.32	121.52	0.79
203	SLU 78	6	-62	6574	392.42	122.83	0.56
203	SLU 79	6	-72	6479	388.69	121.05	0.79
203	SLU 80	6	-62	6549	390.79	122.36	0.55
203	SLU 81	6	-73	6638	398.52	124.05	0.76
203	SLU 82	7	-63	6709	400.63	125.36	0.52
203	SLU 83	6	-74	6677	401.18	124.78	0.8
203	SLU 84	6	-63	6748	403.29	126.09	0.56
203	SLE RA 1	5	-49	4378	260.32	81.75	0.44
203	SLE RA 2	6	-38	4456	262.65	83.2	0.18
203	SLE RA 3	5	-50	4420	263.18	82.55	0.46
203	SLE RA 4	5	-43	4467	264.58	83.42	0.31
203	SLE RA 5	5	-38	4482	264.43	83.69	0.21
203	SLE RA 6	5	-50	4446	264.95	83.04	0.49
203	SLE RA 7	5	-43	4493	266.35	83.91	0.34
203	SLE RA 8	5	-50	4430	263.87	82.72	0.49
203	SLE RA 9	5	-43	4477	265.27	83.6	0.33
203	SLE RA 10	5	-41	4826	286.23	90.15	0.26
203	SLE RA 11	5	-53	4791	286.75	89.5	0.54
203	SLE RA 12	5	-46	4837	288.15	90.37	0.39
203	SLE RA 13	5	-41	4852	288	90.64	0.28
203	SLE RA 14	4	-54	4817	288.52	89.99	0.57
203	SLE RA 15	5	-47	4864	289.93	90.86	0.41
203	SLE RA 16	4	-54	4800	287.44	89.67	0.57
203	SLE RA 17	5	-47	4847	288.84	90.55	0.41
203	SLE RA 18	5	-54	4906	293.99	91.68	0.55
203	SLE RA 19	5	-47	4953	295.39	92.55	0.39
203	SLE RA 20	5	-55	4932	295.77	92.16	0.57
203	SLE RA 21	5	-48	4979	297.17	93.04	0.42
203	SLE FR 1	5	-49	4378	260.32	81.75	0.44
203	SLE FR 2	5	-47	4393	260.78	82.04	0.38
203	SLE FR 3	5	-50	4388	261.03	81.94	0.45
203	SLE FR 4	5	-49	4552	270.89	85.02	0.42
203	SLE FR 5	5	-51	4547	271.13	84.92	0.48
203	SLE FR 6	5	-52	4642	277.15	86.71	0.49
203	SLE QP 1	5	-49	4378	260.32	81.75	0.44
203	SLE QP 2	5	-51	4536	270.42	84.72	0.47
203	SLD 1	397	66	5253	291.67	98.39	-30.8
203	SLD 2	481	69	5275	292.42	98.6	-37.04
203	SLD 3	379	-151	3690	245.42	69.39	-25.71
203	SLD 4	462	-149	3712	246.17	69.6	-31.96
203	SLD 5	135	314	7119	346.81	132.77	-15.5
203	SLD 6	190	316	7133	347.3	132.91	-19.62
203	SLD 7	74	-412	1907	192.64	36.1	1.45
203	SLD 8	130	-410	1922	193.13	36.24	-2.67
203	SLD 9	-119	308	7151	347.71	133.2	3.6
203	SLD 10	-64	310	7165	348.2	133.35	-0.52
203	SLD 11	-180	-418	1939	193.54	36.54	20.56
203	SLD 12	-125	-416	1954	194.03	36.68	16.44
203	SLD 13	-452	47	5361	294.67	99.84	32.89
203	SLD 14	-368	50	5382	295.42	100.06	26.65
203	SLD 15	-470	-171	3797	248.42	70.85	37.98
203	SLD 16	-387	-168	3819	249.17	71.06	31.73

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
203	SLV 1	923	240	6344	323.99	119.1	-73.1
203	SLV 2	1120	247	6395	325.76	119.61	-87.79
203	SLV 3	876	-303	2426	208.05	46.43	-60.27
203	SLV 4	1073	-296	2477	209.81	46.93	-74.96
203	SLV 5	315	859	11011	462.02	205.17	-38.32
203	SLV 6	447	863	11046	463.21	205.5	-48.21
203	SLV 7	159	-951	-2049	75.52	-37.08	4.45
203	SLV 8	292	-947	-2015	76.71	-36.74	-5.44
203	SLV 9	-281	845	11087	464.12	206.19	6.38
203	SLV 10	-149	849	11121	465.31	206.53	-3.51
203	SLV 11	-437	-965	-1973	77.63	-36.06	49.14
203	SLV 12	-304	-960	-1939	78.82	-35.72	39.26
203	SLV 13	-1063	194	6596	331.03	122.52	75.9
203	SLV 14	-866	201	6647	332.79	123.02	61.21
203	SLV 15	-1110	-349	2678	215.08	49.84	88.73
203	SLV 16	-913	-342	2729	216.85	50.35	74.04
203	CRTFP Ux+	0	0	0	0	0	0
203	CRTFP Ux-	0	0	0	0	0	0
203	CRTFP Uy+	0	0	0	0	0	0
203	CRTFP Uy-	0	0	0	0	0	0
213	SLU 1	-3	-13	638	0	0	0
213	SLU 2	-3	-11	655	0	0	0
213	SLU 3	-3	-13	648	0	0	0
213	SLU 4	-3	-12	658	0	0	0
213	SLU 5	-3	-11	661	0	0	0
213	SLU 6	-3	-13	654	0	0	0
213	SLU 7	-3	-12	664	0	0	0
213	SLU 8	-3	-13	650	0	0	0
213	SLU 9	-3	-12	660	0	0	0
213	SLU 10	-3	-12	738	0	0	0
213	SLU 11	-3	-15	731	0	0	0
213	SLU 12	-3	-13	741	0	0	0
213	SLU 13	-3	-12	744	0	0	0
213	SLU 14	-3	-15	737	0	0	0
213	SLU 15	-3	-13	747	0	0	0
213	SLU 16	-3	-15	733	0	0	0
213	SLU 17	-3	-13	743	0	0	0
213	SLU 18	-3	-15	756	0	0	0
213	SLU 19	-3	-14	766	0	0	0
213	SLU 20	-3	-15	762	0	0	0
213	SLU 21	-3	-14	772	0	0	0
213	SLU 22	-3	-14	722	0	0	0
213	SLU 23	-3	-12	739	0	0	0
213	SLU 24	-4	-15	732	0	0	0
213	SLU 25	-4	-13	742	0	0	0
213	SLU 26	-4	-12	745	0	0	0
213	SLU 27	-4	-15	738	0	0	0
213	SLU 28	-4	-13	748	0	0	0
213	SLU 29	-4	-15	734	0	0	0
213	SLU 30	-4	-13	744	0	0	0
213	SLU 31	-3	-14	822	0	0	0
213	SLU 32	-4	-16	814	0	0	0
213	SLU 33	-4	-15	825	0	0	0
213	SLU 34	-4	-14	828	0	0	0
213	SLU 35	-4	-16	820	0	0	0
213	SLU 36	-4	-15	831	0	0	0
213	SLU 37	-4	-16	817	0	0	0
213	SLU 38	-4	-15	827	0	0	0
213	SLU 39	-3	-16	840	0	0	0
213	SLU 40	-3	-15	850	0	0	0
213	SLU 41	-3	-16	846	0	0	0
213	SLU 42	-3	-15	856	0	0	0
213	SLU 43	-4	-16	801	0	0	0
213	SLU 44	-4	-14	818	0	0	0
213	SLU 45	-4	-17	811	0	0	0
213	SLU 46	-4	-15	821	0	0	0
213	SLU 47	-4	-14	824	0	0	0
213	SLU 48	-4	-17	817	0	0	0
213	SLU 49	-4	-16	827	0	0	0
213	SLU 50	-4	-17	813	0	0	0
213	SLU 51	-4	-15	823	0	0	0
213	SLU 52	-4	-16	901	0	0	0
213	SLU 53	-4	-18	893	0	0	0
213	SLU 54	-4	-17	904	0	0	0
213	SLU 55	-4	-16	907	0	0	0
213	SLU 56	-4	-18	899	0	0	0
213	SLU 57	-4	-17	910	0	0	0
213	SLU 58	-4	-18	896	0	0	0
213	SLU 59	-4	-17	906	0	0	0
213	SLU 60	-4	-18	919	0	0	0
213	SLU 61	-4	-17	929	0	0	0
213	SLU 62	-4	-18	925	0	0	0
213	SLU 63	-4	-17	935	0	0	0
213	SLU 64	-4	-18	885	0	0	0
213	SLU 65	-4	-16	902	0	0	0
213	SLU 66	-4	-18	894	0	0	0
213	SLU 67	-4	-17	905	0	0	0
213	SLU 68	-4	-16	908	0	0	0
213	SLU 69	-4	-18	900	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
213	SLU 70	-4	-17	911	0	0	0
213	SLU 71	-4	-18	897	0	0	0
213	SLU 72	-4	-17	907	0	0	0
213	SLU 73	-4	-17	984	0	0	0
213	SLU 74	-4	-19	977	0	0	0
213	SLU 75	-4	-18	987	0	0	0
213	SLU 76	-4	-17	990	0	0	0
213	SLU 77	-4	-20	983	0	0	0
213	SLU 78	-4	-18	993	0	0	0
213	SLU 79	-4	-19	979	0	0	0
213	SLU 80	-4	-18	989	0	0	0
213	SLU 81	-4	-20	1003	0	0	0
213	SLU 82	-4	-18	1013	0	0	0
213	SLU 83	-4	-20	1009	0	0	0
213	SLU 84	-4	-19	1019	0	0	0
213	SLE RA 1	-3	-13	662	0	0	0
213	SLE RA 2	-3	-12	673	0	0	0
213	SLE RA 3	-3	-14	669	0	0	0
213	SLE RA 4	-3	-13	675	0	0	0
213	SLE RA 5	-3	-12	677	0	0	0
213	SLE RA 6	-3	-14	673	0	0	0
213	SLE RA 7	-3	-13	679	0	0	0
213	SLE RA 8	-3	-14	670	0	0	0
213	SLE RA 9	-3	-13	677	0	0	0
213	SLE RA 10	-3	-13	729	0	0	0
213	SLE RA 11	-3	-14	724	0	0	0
213	SLE RA 12	-3	-14	730	0	0	0
213	SLE RA 13	-3	-13	733	0	0	0
213	SLE RA 14	-3	-15	728	0	0	0
213	SLE RA 15	-3	-14	734	0	0	0
213	SLE RA 16	-3	-14	725	0	0	0
213	SLE RA 17	-3	-14	732	0	0	0
213	SLE RA 18	-3	-15	741	0	0	0
213	SLE RA 19	-3	-14	748	0	0	0
213	SLE RA 20	-3	-15	745	0	0	0
213	SLE RA 21	-3	-14	752	0	0	0
213	SLE FR 1	-3	-13	662	0	0	0
213	SLE FR 2	-3	-13	664	0	0	0
213	SLE FR 3	-3	-13	664	0	0	0
213	SLE FR 4	-3	-14	688	0	0	0
213	SLE FR 5	-3	-14	687	0	0	0
213	SLE FR 6	-3	-14	701	0	0	0
213	SLE QP 1	-3	-13	662	0	0	0
213	SLE QP 2	-3	-14	686	0	0	0
213	SLD 1	47	-6	861	0	0	0
213	SLD 2	58	-11	853	0	0	0
213	SLD 3	49	-31	631	0	0	0
213	SLD 4	60	-37	623	0	0	0
213	SLD 5	7	28	1089	0	0	0
213	SLD 6	14	24	1084	0	0	0
213	SLD 7	13	-56	321	0	0	0
213	SLD 8	21	-60	316	0	0	0
213	SLD 9	-27	32	1055	0	0	0
213	SLD 10	-20	28	1050	0	0	0
213	SLD 11	-21	-52	288	0	0	0
213	SLD 12	-13	-55	283	0	0	0
213	SLD 13	-67	9	749	0	0	0
213	SLD 14	-55	3	741	0	0	0
213	SLD 15	-65	-16	518	0	0	0
213	SLD 16	-53	-22	511	0	0	0
213	SLV 1	114	7	1114	0	0	0
213	SLV 2	141	-6	1096	0	0	0
213	SLV 3	119	-56	538	0	0	0
213	SLV 4	146	-69	520	0	0	0
213	SLV 5	20	90	1692	0	0	0
213	SLV 6	38	81	1680	0	0	0
213	SLV 7	36	-119	-230	0	0	0
213	SLV 8	54	-128	-242	0	0	0
213	SLV 9	-60	100	1613	0	0	0
213	SLV 10	-42	91	1601	0	0	0
213	SLV 11	-44	-108	-309	0	0	0
213	SLV 12	-26	-117	-321	0	0	0
213	SLV 13	-152	41	852	0	0	0
213	SLV 14	-125	28	833	0	0	0
213	SLV 15	-147	-21	275	0	0	0
213	SLV 16	-121	-34	257	0	0	0
213	CRTFP Uy+	0	0	0	0	0	0
213	CRTFP Uy-	0	0	0	0	0	0
214	SLU 1	-6	-24	1258	0	0	0
214	SLU 2	-6	-19	1291	0	0	0
214	SLU 3	-6	-24	1277	0	0	0
214	SLU 4	-6	-21	1297	0	0	0
214	SLU 5	-6	-19	1303	0	0	0
214	SLU 6	-6	-24	1289	0	0	0
214	SLU 7	-6	-22	1309	0	0	0
214	SLU 8	-6	-24	1281	0	0	0
214	SLU 9	-6	-21	1301	0	0	0
214	SLU 10	-6	-21	1454	0	0	0
214	SLU 11	-6	-26	1440	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
214	SLU 12	-6	-24	1460	0	0	0
214	SLU 13	-6	-22	1466	0	0	0
214	SLU 14	-6	-27	1452	0	0	0
214	SLU 15	-6	-24	1472	0	0	0
214	SLU 16	-6	-26	1444	0	0	0
214	SLU 17	-6	-24	1464	0	0	0
214	SLU 18	-6	-27	1491	0	0	0
214	SLU 19	-6	-24	1511	0	0	0
214	SLU 20	-6	-27	1502	0	0	0
214	SLU 21	-6	-24	1523	0	0	0
214	SLU 22	-7	-26	1422	0	0	0
214	SLU 23	-7	-22	1456	0	0	0
214	SLU 24	-7	-26	1441	0	0	0
214	SLU 25	-7	-24	1461	0	0	0
214	SLU 26	-7	-22	1467	0	0	0
214	SLU 27	-7	-27	1453	0	0	0
214	SLU 28	-7	-24	1473	0	0	0
214	SLU 29	-7	-27	1446	0	0	0
214	SLU 30	-7	-24	1466	0	0	0
214	SLU 31	-7	-24	1619	0	0	0
214	SLU 32	-7	-29	1604	0	0	0
214	SLU 33	-7	-26	1625	0	0	0
214	SLU 34	-7	-24	1631	0	0	0
214	SLU 35	-7	-29	1616	0	0	0
214	SLU 36	-7	-26	1636	0	0	0
214	SLU 37	-7	-29	1609	0	0	0
214	SLU 38	-7	-26	1629	0	0	0
214	SLU 39	-7	-29	1655	0	0	0
214	SLU 40	-7	-27	1675	0	0	0
214	SLU 41	-7	-30	1667	0	0	0
214	SLU 42	-7	-27	1687	0	0	0
214	SLU 43	-7	-30	1579	0	0	0
214	SLU 44	-7	-25	1612	0	0	0
214	SLU 45	-8	-30	1598	0	0	0
214	SLU 46	-8	-27	1618	0	0	0
214	SLU 47	-8	-26	1624	0	0	0
214	SLU 48	-8	-30	1610	0	0	0
214	SLU 49	-8	-28	1630	0	0	0
214	SLU 50	-8	-30	1602	0	0	0
214	SLU 51	-8	-28	1622	0	0	0
214	SLU 52	-7	-28	1775	0	0	0
214	SLU 53	-8	-32	1761	0	0	0
214	SLU 54	-8	-30	1781	0	0	0
214	SLU 55	-8	-28	1787	0	0	0
214	SLU 56	-8	-33	1773	0	0	0
214	SLU 57	-8	-30	1793	0	0	0
214	SLU 58	-8	-33	1765	0	0	0
214	SLU 59	-8	-30	1785	0	0	0
214	SLU 60	-7	-33	1812	0	0	0
214	SLU 61	-7	-30	1832	0	0	0
214	SLU 62	-8	-33	1823	0	0	0
214	SLU 63	-8	-31	1844	0	0	0
214	SLU 64	-8	-32	1743	0	0	0
214	SLU 65	-8	-28	1777	0	0	0
214	SLU 66	-9	-33	1762	0	0	0
214	SLU 67	-9	-30	1782	0	0	0
214	SLU 68	-9	-28	1788	0	0	0
214	SLU 69	-9	-33	1774	0	0	0
214	SLU 70	-9	-30	1794	0	0	0
214	SLU 71	-9	-33	1767	0	0	0
214	SLU 72	-9	-30	1787	0	0	0
214	SLU 73	-8	-30	1940	0	0	0
214	SLU 74	-9	-35	1925	0	0	0
214	SLU 75	-9	-32	1945	0	0	0
214	SLU 76	-9	-30	1951	0	0	0
214	SLU 77	-9	-35	1937	0	0	0
214	SLU 78	-9	-33	1957	0	0	0
214	SLU 79	-9	-35	1930	0	0	0
214	SLU 80	-9	-32	1950	0	0	0
214	SLU 81	-8	-36	1976	0	0	0
214	SLU 82	-8	-33	1996	0	0	0
214	SLU 83	-8	-36	1988	0	0	0
214	SLU 84	-8	-33	2008	0	0	0
214	SLE RA 1	-6	-24	1305	0	0	0
214	SLE RA 2	-6	-21	1327	0	0	0
214	SLE RA 3	-6	-25	1317	0	0	0
214	SLE RA 4	-6	-23	1331	0	0	0
214	SLE RA 5	-6	-21	1335	0	0	0
214	SLE RA 6	-7	-25	1325	0	0	0
214	SLE RA 7	-7	-23	1339	0	0	0
214	SLE RA 8	-7	-25	1320	0	0	0
214	SLE RA 9	-7	-23	1334	0	0	0
214	SLE RA 10	-6	-23	1436	0	0	0
214	SLE RA 11	-6	-26	1426	0	0	0
214	SLE RA 12	-6	-24	1440	0	0	0
214	SLE RA 13	-6	-23	1444	0	0	0
214	SLE RA 14	-6	-26	1434	0	0	0
214	SLE RA 15	-6	-24	1447	0	0	0
214	SLE RA 16	-6	-26	1429	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
214	SLE RA 17	-6	-24	1443	0	0	0
214	SLE RA 18	-6	-26	1460	0	0	0
214	SLE RA 19	-6	-25	1473	0	0	0
214	SLE RA 20	-6	-27	1468	0	0	0
214	SLE RA 21	-6	-25	1481	0	0	0
214	SLE FR 1	-6	-24	1305	0	0	0
214	SLE FR 2	-6	-24	1309	0	0	0
214	SLE FR 3	-6	-24	1308	0	0	0
214	SLE FR 4	-6	-24	1356	0	0	0
214	SLE FR 5	-6	-25	1354	0	0	0
214	SLE FR 6	-6	-25	1382	0	0	0
214	SLE QP 1	-6	-24	1305	0	0	0
214	SLE QP 2	-6	-25	1351	0	0	0
214	SLD 1	95	-7	1685	0	0	0
214	SLD 2	117	-17	1670	0	0	0
214	SLD 3	99	-58	1231	0	0	0
214	SLD 4	121	-69	1216	0	0	0
214	SLD 5	14	61	2142	0	0	0
214	SLD 6	29	54	2132	0	0	0
214	SLD 7	27	-111	630	0	0	0
214	SLD 8	42	-118	620	0	0	0
214	SLD 9	-55	68	2083	0	0	0
214	SLD 10	-40	61	2073	0	0	0
214	SLD 11	-41	-104	570	0	0	0
214	SLD 12	-27	-111	560	0	0	0
214	SLD 13	-134	19	1486	0	0	0
214	SLD 14	-111	8	1472	0	0	0
214	SLD 15	-130	-33	1032	0	0	0
214	SLD 16	-107	-43	1018	0	0	0
214	SLV 1	230	22	2169	0	0	0
214	SLV 2	283	-3	2135	0	0	0
214	SLV 3	239	-107	1032	0	0	0
214	SLV 4	293	-131	998	0	0	0
214	SLV 5	40	188	3327	0	0	0
214	SLV 6	76	172	3304	0	0	0
214	SLV 7	72	-240	-462	0	0	0
214	SLV 8	108	-256	-485	0	0	0
214	SLV 9	-120	206	3188	0	0	0
214	SLV 10	-84	190	3165	0	0	0
214	SLV 11	-89	-222	-601	0	0	0
214	SLV 12	-53	-238	-625	0	0	0
214	SLV 13	-305	81	1704	0	0	0
214	SLV 14	-252	57	1670	0	0	0
214	SLV 15	-296	-47	568	0	0	0
214	SLV 16	-242	-72	533	0	0	0
214	CRTFP Ux+	0	0	0	0	0	0
214	CRTFP Ux-	0	0	0	0	0	0
214	CRTFP Uy+	0	0	0	0	0	0
214	CRTFP Uy-	0	0	0	0	0	0
215	SLU 1	-6	-21	1262	0	0	0
215	SLU 2	-6	-17	1296	0	0	0
215	SLU 3	-6	-22	1281	0	0	0
215	SLU 4	-6	-19	1301	0	0	0
215	SLU 5	-6	-17	1307	0	0	0
215	SLU 6	-6	-22	1293	0	0	0
215	SLU 7	-6	-19	1313	0	0	0
215	SLU 8	-6	-22	1285	0	0	0
215	SLU 9	-6	-19	1306	0	0	0
215	SLU 10	-6	-19	1459	0	0	0
215	SLU 11	-6	-24	1445	0	0	0
215	SLU 12	-6	-21	1465	0	0	0
215	SLU 13	-6	-19	1471	0	0	0
215	SLU 14	-6	-24	1457	0	0	0
215	SLU 15	-6	-21	1477	0	0	0
215	SLU 16	-6	-24	1449	0	0	0
215	SLU 17	-6	-21	1469	0	0	0
215	SLU 18	-6	-25	1496	0	0	0
215	SLU 19	-6	-22	1516	0	0	0
215	SLU 20	-6	-25	1508	0	0	0
215	SLU 21	-6	-22	1528	0	0	0
215	SLU 22	-7	-24	1426	0	0	0
215	SLU 23	-7	-19	1460	0	0	0
215	SLU 24	-7	-24	1445	0	0	0
215	SLU 25	-7	-21	1466	0	0	0
215	SLU 26	-7	-19	1472	0	0	0
215	SLU 27	-7	-24	1457	0	0	0
215	SLU 28	-7	-22	1477	0	0	0
215	SLU 29	-7	-24	1450	0	0	0
215	SLU 30	-7	-21	1470	0	0	0
215	SLU 31	-7	-21	1624	0	0	0
215	SLU 32	-7	-26	1609	0	0	0
215	SLU 33	-7	-24	1629	0	0	0
215	SLU 34	-7	-22	1635	0	0	0
215	SLU 35	-7	-27	1621	0	0	0
215	SLU 36	-7	-24	1641	0	0	0
215	SLU 37	-7	-26	1613	0	0	0
215	SLU 38	-7	-24	1634	0	0	0
215	SLU 39	-7	-27	1660	0	0	0
215	SLU 40	-7	-24	1680	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
215	SLU 41	-7	-27	1672	0	0	0
215	SLU 42	-7	-24	1692	0	0	0
215	SLU 43	-8	-27	1584	0	0	0
215	SLU 44	-8	-23	1618	0	0	0
215	SLU 45	-8	-27	1603	0	0	0
215	SLU 46	-8	-25	1624	0	0	0
215	SLU 47	-8	-23	1630	0	0	0
215	SLU 48	-8	-28	1615	0	0	0
215	SLU 49	-8	-25	1635	0	0	0
215	SLU 50	-8	-28	1608	0	0	0
215	SLU 51	-8	-25	1628	0	0	0
215	SLU 52	-7	-25	1782	0	0	0
215	SLU 53	-8	-30	1767	0	0	0
215	SLU 54	-8	-27	1787	0	0	0
215	SLU 55	-8	-25	1793	0	0	0
215	SLU 56	-8	-30	1779	0	0	0
215	SLU 57	-8	-27	1799	0	0	0
215	SLU 58	-8	-30	1771	0	0	0
215	SLU 59	-8	-27	1792	0	0	0
215	SLU 60	-7	-30	1818	0	0	0
215	SLU 61	-7	-27	1838	0	0	0
215	SLU 62	-8	-30	1830	0	0	0
215	SLU 63	-8	-28	1850	0	0	0
215	SLU 64	-8	-29	1748	0	0	0
215	SLU 65	-8	-25	1782	0	0	0
215	SLU 66	-9	-30	1768	0	0	0
215	SLU 67	-9	-27	1788	0	0	0
215	SLU 68	-9	-25	1794	0	0	0
215	SLU 69	-9	-30	1779	0	0	0
215	SLU 70	-9	-27	1800	0	0	0
215	SLU 71	-9	-30	1772	0	0	0
215	SLU 72	-9	-27	1792	0	0	0
215	SLU 73	-8	-27	1946	0	0	0
215	SLU 74	-9	-32	1931	0	0	0
215	SLU 75	-9	-29	1952	0	0	0
215	SLU 76	-9	-27	1958	0	0	0
215	SLU 77	-9	-32	1943	0	0	0
215	SLU 78	-9	-29	1963	0	0	0
215	SLU 79	-9	-32	1936	0	0	0
215	SLU 80	-9	-29	1956	0	0	0
215	SLU 81	-8	-33	1982	0	0	0
215	SLU 82	-8	-30	2003	0	0	0
215	SLU 83	-9	-33	1994	0	0	0
215	SLU 84	-9	-30	2014	0	0	0
215	SLE RA 1	-6	-22	1309	0	0	0
215	SLE RA 2	-6	-19	1331	0	0	0
215	SLE RA 3	-6	-22	1322	0	0	0
215	SLE RA 4	-6	-21	1335	0	0	0
215	SLE RA 5	-6	-19	1339	0	0	0
215	SLE RA 6	-7	-23	1329	0	0	0
215	SLE RA 7	-7	-21	1343	0	0	0
215	SLE RA 8	-7	-22	1325	0	0	0
215	SLE RA 9	-7	-21	1338	0	0	0
215	SLE RA 10	-6	-21	1441	0	0	0
215	SLE RA 11	-6	-24	1431	0	0	0
215	SLE RA 12	-6	-22	1444	0	0	0
215	SLE RA 13	-6	-21	1448	0	0	0
215	SLE RA 14	-7	-24	1439	0	0	0
215	SLE RA 15	-7	-22	1452	0	0	0
215	SLE RA 16	-7	-24	1434	0	0	0
215	SLE RA 17	-7	-22	1447	0	0	0
215	SLE RA 18	-6	-24	1465	0	0	0
215	SLE RA 19	-6	-22	1478	0	0	0
215	SLE RA 20	-6	-24	1473	0	0	0
215	SLE RA 21	-6	-23	1486	0	0	0
215	SLE FR 1	-6	-22	1309	0	0	0
215	SLE FR 2	-6	-22	1313	0	0	0
215	SLE FR 3	-6	-22	1312	0	0	0
215	SLE FR 4	-6	-22	1360	0	0	0
215	SLE FR 5	-6	-23	1359	0	0	0
215	SLE FR 6	-6	-23	1387	0	0	0
215	SLE QP 1	-6	-22	1309	0	0	0
215	SLE QP 2	-6	-23	1356	0	0	0
215	SLD 1	97	-2	1678	0	0	0
215	SLD 2	120	-12	1664	0	0	0
215	SLD 3	101	-56	1222	0	0	0
215	SLD 4	124	-66	1209	0	0	0
215	SLD 5	15	67	2146	0	0	0
215	SLD 6	30	61	2137	0	0	0
215	SLD 7	28	-113	627	0	0	0
215	SLD 8	43	-119	618	0	0	0
215	SLD 9	-56	74	2093	0	0	0
215	SLD 10	-40	67	2084	0	0	0
215	SLD 11	-42	-106	575	0	0	0
215	SLD 12	-27	-112	566	0	0	0
215	SLD 13	-137	20	1503	0	0	0
215	SLD 14	-113	11	1489	0	0	0
215	SLD 15	-133	-34	1047	0	0	0
215	SLD 16	-109	-43	1033	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
215	SLV 1	235	29	2148	0	0	0
215	SLV 2	289	7	2115	0	0	0
215	SLV 3	244	-105	1006	0	0	0
215	SLV 4	299	-127	974	0	0	0
215	SLV 5	41	201	3330	0	0	0
215	SLV 6	78	185	3308	0	0	0
215	SLV 7	73	-247	-474	0	0	0
215	SLV 8	110	-262	-496	0	0	0
215	SLV 9	-123	216	3207	0	0	0
215	SLV 10	-86	201	3185	0	0	0
215	SLV 11	-91	-231	-597	0	0	0
215	SLV 12	-54	-246	-619	0	0	0
215	SLV 13	-311	82	1737	0	0	0
215	SLV 14	-257	59	1705	0	0	0
215	SLV 15	-302	-53	596	0	0	0
215	SLV 16	-247	-75	564	0	0	0
215	CRTFP Uy+	0	0	0	0	0	0
215	CRTFP Uy-	0	0	0	0	0	0
216	SLU 1	-6	-20	1273	0	0	0
216	SLU 2	-6	-15	1307	0	0	0
216	SLU 3	-6	-20	1292	0	0	0
216	SLU 4	-6	-17	1312	0	0	0
216	SLU 5	-6	-15	1319	0	0	0
216	SLU 6	-6	-20	1304	0	0	0
216	SLU 7	-6	-17	1324	0	0	0
216	SLU 8	-6	-20	1296	0	0	0
216	SLU 9	-6	-17	1317	0	0	0
216	SLU 10	-6	-17	1472	0	0	0
216	SLU 11	-6	-22	1457	0	0	0
216	SLU 12	-6	-19	1478	0	0	0
216	SLU 13	-6	-17	1484	0	0	0
216	SLU 14	-6	-22	1469	0	0	0
216	SLU 15	-6	-19	1490	0	0	0
216	SLU 16	-6	-22	1462	0	0	0
216	SLU 17	-6	-19	1482	0	0	0
216	SLU 18	-6	-22	1509	0	0	0
216	SLU 19	-6	-20	1529	0	0	0
216	SLU 20	-6	-23	1521	0	0	0
216	SLU 21	-6	-20	1541	0	0	0
216	SLU 22	-7	-22	1438	0	0	0
216	SLU 23	-7	-17	1472	0	0	0
216	SLU 24	-7	-22	1457	0	0	0
216	SLU 25	-7	-19	1477	0	0	0
216	SLU 26	-7	-17	1484	0	0	0
216	SLU 27	-7	-22	1469	0	0	0
216	SLU 28	-7	-19	1489	0	0	0
216	SLU 29	-7	-22	1461	0	0	0
216	SLU 30	-7	-19	1482	0	0	0
216	SLU 31	-7	-19	1637	0	0	0
216	SLU 32	-7	-24	1622	0	0	0
216	SLU 33	-7	-21	1643	0	0	0
216	SLU 34	-7	-19	1649	0	0	0
216	SLU 35	-7	-24	1634	0	0	0
216	SLU 36	-7	-21	1655	0	0	0
216	SLU 37	-7	-24	1627	0	0	0
216	SLU 38	-7	-21	1647	0	0	0
216	SLU 39	-7	-24	1674	0	0	0
216	SLU 40	-7	-22	1694	0	0	0
216	SLU 41	-7	-25	1686	0	0	0
216	SLU 42	-7	-22	1706	0	0	0
216	SLU 43	-7	-25	1598	0	0	0
216	SLU 44	-7	-20	1632	0	0	0
216	SLU 45	-8	-25	1617	0	0	0
216	SLU 46	-8	-22	1638	0	0	0
216	SLU 47	-8	-20	1644	0	0	0
216	SLU 48	-8	-25	1629	0	0	0
216	SLU 49	-8	-22	1649	0	0	0
216	SLU 50	-8	-25	1621	0	0	0
216	SLU 51	-8	-22	1642	0	0	0
216	SLU 52	-7	-22	1797	0	0	0
216	SLU 53	-8	-27	1782	0	0	0
216	SLU 54	-8	-24	1803	0	0	0
216	SLU 55	-8	-22	1809	0	0	0
216	SLU 56	-8	-27	1794	0	0	0
216	SLU 57	-8	-24	1815	0	0	0
216	SLU 58	-8	-27	1787	0	0	0
216	SLU 59	-8	-24	1807	0	0	0
216	SLU 60	-7	-27	1834	0	0	0
216	SLU 61	-7	-25	1855	0	0	0
216	SLU 62	-8	-28	1846	0	0	0
216	SLU 63	-8	-25	1866	0	0	0
216	SLU 64	-8	-27	1763	0	0	0
216	SLU 65	-8	-22	1797	0	0	0
216	SLU 66	-9	-27	1782	0	0	0
216	SLU 67	-9	-24	1803	0	0	0
216	SLU 68	-9	-22	1809	0	0	0
216	SLU 69	-9	-27	1794	0	0	0
216	SLU 70	-9	-24	1814	0	0	0
216	SLU 71	-9	-27	1786	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
216	SLU 72	-9	-24	1807	0	0	0
216	SLU 73	-8	-24	1962	0	0	0
216	SLU 74	-9	-29	1947	0	0	0
216	SLU 75	-9	-26	1968	0	0	0
216	SLU 76	-9	-24	1974	0	0	0
216	SLU 77	-9	-29	1959	0	0	0
216	SLU 78	-9	-26	1980	0	0	0
216	SLU 79	-9	-29	1952	0	0	0
216	SLU 80	-9	-26	1972	0	0	0
216	SLU 81	-8	-30	1999	0	0	0
216	SLU 82	-8	-27	2019	0	0	0
216	SLU 83	-8	-30	2011	0	0	0
216	SLU 84	-8	-27	2031	0	0	0
216	SLE RA 1	-6	-20	1320	0	0	0
216	SLE RA 2	-6	-17	1343	0	0	0
216	SLE RA 3	-6	-20	1333	0	0	0
216	SLE RA 4	-6	-18	1346	0	0	0
216	SLE RA 5	-6	-17	1350	0	0	0
216	SLE RA 6	-7	-20	1341	0	0	0
216	SLE RA 7	-7	-19	1354	0	0	0
216	SLE RA 8	-7	-20	1336	0	0	0
216	SLE RA 9	-7	-18	1349	0	0	0
216	SLE RA 10	-6	-18	1453	0	0	0
216	SLE RA 11	-6	-22	1443	0	0	0
216	SLE RA 12	-6	-20	1457	0	0	0
216	SLE RA 13	-6	-18	1461	0	0	0
216	SLE RA 14	-7	-22	1451	0	0	0
216	SLE RA 15	-7	-20	1464	0	0	0
216	SLE RA 16	-6	-22	1446	0	0	0
216	SLE RA 17	-6	-20	1459	0	0	0
216	SLE RA 18	-6	-22	1477	0	0	0
216	SLE RA 19	-6	-20	1491	0	0	0
216	SLE RA 20	-6	-22	1485	0	0	0
216	SLE RA 21	-6	-20	1499	0	0	0
216	SLE FR 1	-6	-20	1320	0	0	0
216	SLE FR 2	-6	-19	1324	0	0	0
216	SLE FR 3	-6	-20	1323	0	0	0
216	SLE FR 4	-6	-20	1372	0	0	0
216	SLE FR 5	-6	-21	1370	0	0	0
216	SLE FR 6	-6	-21	1398	0	0	0
216	SLE QP 1	-6	-20	1320	0	0	0
216	SLE QP 2	-6	-21	1367	0	0	0
216	SLD 1	99	2	1679	0	0	0
216	SLD 2	123	-7	1666	0	0	0
216	SLD 3	103	-54	1219	0	0	0
216	SLD 4	127	-63	1206	0	0	0
216	SLD 5	15	73	2160	0	0	0
216	SLD 6	31	68	2152	0	0	0
216	SLD 7	28	-115	628	0	0	0
216	SLD 8	44	-121	619	0	0	0
216	SLD 9	-57	79	2115	0	0	0
216	SLD 10	-41	73	2106	0	0	0
216	SLD 11	-43	-109	582	0	0	0
216	SLD 12	-28	-115	574	0	0	0
216	SLD 13	-140	22	1528	0	0	0
216	SLD 14	-116	13	1514	0	0	0
216	SLD 15	-136	-35	1068	0	0	0
216	SLD 16	-112	-44	1055	0	0	0
216	SLV 1	241	37	2136	0	0	0
216	SLV 2	296	16	2105	0	0	0
216	SLV 3	250	-103	984	0	0	0
216	SLV 4	306	-124	953	0	0	0
216	SLV 5	43	214	3350	0	0	0
216	SLV 6	80	200	3329	0	0	0
216	SLV 7	75	-255	-489	0	0	0
216	SLV 8	113	-269	-510	0	0	0
216	SLV 9	-125	227	3244	0	0	0
216	SLV 10	-87	213	3223	0	0	0
216	SLV 11	-93	-241	-595	0	0	0
216	SLV 12	-55	-255	-616	0	0	0
216	SLV 13	-319	83	1781	0	0	0
216	SLV 14	-263	62	1750	0	0	0
216	SLV 15	-309	-58	629	0	0	0
216	SLV 16	-253	-79	598	0	0	0
216	CRTFP Uy+	0	0	0	0	0	0
216	CRTFP Uy-	0	0	0	0	0	0
217	SLU 1	-6	-17	1278	0	0	0
217	SLU 2	-6	-12	1312	0	0	0
217	SLU 3	-6	-18	1297	0	0	0
217	SLU 4	-6	-15	1318	0	0	0
217	SLU 5	-6	-13	1324	0	0	0
217	SLU 6	-6	-18	1309	0	0	0
217	SLU 7	-6	-15	1330	0	0	0
217	SLU 8	-6	-18	1301	0	0	0
217	SLU 9	-6	-15	1322	0	0	0
217	SLU 10	-6	-14	1479	0	0	0
217	SLU 11	-6	-19	1464	0	0	0
217	SLU 12	-6	-16	1484	0	0	0
217	SLU 13	-6	-14	1490	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
217	SLU 14	-6	-20	1475	0	0	0
217	SLU 15	-6	-17	1496	0	0	0
217	SLU 16	-6	-19	1468	0	0	0
217	SLU 17	-6	-17	1489	0	0	0
217	SLU 18	-6	-20	1515	0	0	0
217	SLU 19	-6	-17	1536	0	0	0
217	SLU 20	-6	-20	1527	0	0	0
217	SLU 21	-6	-17	1548	0	0	0
217	SLU 22	-7	-19	1443	0	0	0
217	SLU 23	-7	-14	1477	0	0	0
217	SLU 24	-7	-19	1462	0	0	0
217	SLU 25	-7	-17	1483	0	0	0
217	SLU 26	-7	-14	1489	0	0	0
217	SLU 27	-7	-20	1474	0	0	0
217	SLU 28	-7	-17	1495	0	0	0
217	SLU 29	-7	-20	1467	0	0	0
217	SLU 30	-7	-17	1487	0	0	0
217	SLU 31	-7	-16	1644	0	0	0
217	SLU 32	-7	-21	1629	0	0	0
217	SLU 33	-7	-18	1649	0	0	0
217	SLU 34	-7	-16	1656	0	0	0
217	SLU 35	-7	-21	1641	0	0	0
217	SLU 36	-7	-18	1661	0	0	0
217	SLU 37	-7	-21	1633	0	0	0
217	SLU 38	-7	-18	1654	0	0	0
217	SLU 39	-7	-22	1681	0	0	0
217	SLU 40	-7	-19	1701	0	0	0
217	SLU 41	-7	-22	1692	0	0	0
217	SLU 42	-7	-19	1713	0	0	0
217	SLU 43	-7	-22	1604	0	0	0
217	SLU 44	-7	-17	1639	0	0	0
217	SLU 45	-8	-22	1624	0	0	0
217	SLU 46	-8	-19	1645	0	0	0
217	SLU 47	-8	-17	1651	0	0	0
217	SLU 48	-8	-22	1636	0	0	0
217	SLU 49	-8	-19	1656	0	0	0
217	SLU 50	-8	-22	1628	0	0	0
217	SLU 51	-8	-19	1649	0	0	0
217	SLU 52	-7	-19	1805	0	0	0
217	SLU 53	-7	-24	1790	0	0	0
217	SLU 54	-7	-21	1811	0	0	0
217	SLU 55	-7	-19	1817	0	0	0
217	SLU 56	-8	-24	1802	0	0	0
217	SLU 57	-8	-21	1823	0	0	0
217	SLU 58	-8	-24	1795	0	0	0
217	SLU 59	-8	-21	1815	0	0	0
217	SLU 60	-7	-24	1842	0	0	0
217	SLU 61	-7	-22	1863	0	0	0
217	SLU 62	-7	-25	1854	0	0	0
217	SLU 63	-7	-22	1875	0	0	0
217	SLU 64	-8	-24	1770	0	0	0
217	SLU 65	-8	-19	1804	0	0	0
217	SLU 66	-8	-24	1789	0	0	0
217	SLU 67	-8	-21	1810	0	0	0
217	SLU 68	-8	-19	1816	0	0	0
217	SLU 69	-9	-24	1801	0	0	0
217	SLU 70	-9	-21	1822	0	0	0
217	SLU 71	-9	-24	1793	0	0	0
217	SLU 72	-9	-21	1814	0	0	0
217	SLU 73	-8	-21	1970	0	0	0
217	SLU 74	-8	-26	1955	0	0	0
217	SLU 75	-8	-23	1976	0	0	0
217	SLU 76	-8	-21	1982	0	0	0
217	SLU 77	-9	-26	1967	0	0	0
217	SLU 78	-9	-23	1988	0	0	0
217	SLU 79	-9	-26	1960	0	0	0
217	SLU 80	-9	-23	1980	0	0	0
217	SLU 81	-8	-26	2007	0	0	0
217	SLU 82	-8	-23	2028	0	0	0
217	SLU 83	-8	-26	2019	0	0	0
217	SLU 84	-8	-24	2040	0	0	0
217	SLE RA 1	-6	-18	1325	0	0	0
217	SLE RA 2	-6	-15	1348	0	0	0
217	SLE RA 3	-6	-18	1338	0	0	0
217	SLE RA 4	-6	-16	1352	0	0	0
217	SLE RA 5	-6	-15	1356	0	0	0
217	SLE RA 6	-6	-18	1346	0	0	0
217	SLE RA 7	-6	-16	1360	0	0	0
217	SLE RA 8	-6	-18	1341	0	0	0
217	SLE RA 9	-6	-16	1355	0	0	0
217	SLE RA 10	-6	-16	1459	0	0	0
217	SLE RA 11	-6	-19	1449	0	0	0
217	SLE RA 12	-6	-17	1463	0	0	0
217	SLE RA 13	-6	-16	1467	0	0	0
217	SLE RA 14	-6	-19	1457	0	0	0
217	SLE RA 15	-6	-17	1470	0	0	0
217	SLE RA 16	-6	-19	1452	0	0	0
217	SLE RA 17	-6	-17	1465	0	0	0
217	SLE RA 18	-6	-20	1483	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
217	SLE RA 19	-6	-18	1497	0	0	0
217	SLE RA 20	-6	-20	1491	0	0	0
217	SLE RA 21	-6	-18	1505	0	0	0
217	SLE FR 1	-6	-18	1325	0	0	0
217	SLE FR 2	-6	-17	1330	0	0	0
217	SLE FR 3	-6	-18	1328	0	0	0
217	SLE FR 4	-6	-18	1377	0	0	0
217	SLE FR 5	-6	-18	1376	0	0	0
217	SLE FR 6	-6	-19	1404	0	0	0
217	SLE QP 1	-6	-18	1325	0	0	0
217	SLE QP 2	-6	-18	1372	0	0	0
217	SLD 1	101	7	1673	0	0	0
217	SLD 2	125	-1	1660	0	0	0
217	SLD 3	105	-52	1211	0	0	0
217	SLD 4	129	-60	1198	0	0	0
217	SLD 5	16	79	2165	0	0	0
217	SLD 6	32	74	2157	0	0	0
217	SLD 7	29	-116	626	0	0	0
217	SLD 8	45	-121	617	0	0	0
217	SLD 9	-57	84	2128	0	0	0
217	SLD 10	-41	79	2119	0	0	0
217	SLD 11	-44	-111	588	0	0	0
217	SLD 12	-28	-116	580	0	0	0
217	SLD 13	-141	23	1547	0	0	0
217	SLD 14	-117	15	1534	0	0	0
217	SLD 15	-137	-35	1085	0	0	0
217	SLD 16	-113	-43	1072	0	0	0
217	SLV 1	245	45	2113	0	0	0
217	SLV 2	301	26	2084	0	0	0
217	SLV 3	254	-101	956	0	0	0
217	SLV 4	311	-120	927	0	0	0
217	SLV 5	44	225	3355	0	0	0
217	SLV 6	82	213	3336	0	0	0
217	SLV 7	76	-261	-502	0	0	0
217	SLV 8	114	-274	-522	0	0	0
217	SLV 9	-126	237	3267	0	0	0
217	SLV 10	-88	224	3247	0	0	0
217	SLV 11	-94	-249	-591	0	0	0
217	SLV 12	-56	-262	-610	0	0	0
217	SLV 13	-323	83	1818	0	0	0
217	SLV 14	-266	65	1789	0	0	0
217	SLV 15	-313	-63	661	0	0	0
217	SLV 16	-257	-81	632	0	0	0
217	CRTFP Uy+	0	0	0	0	0	0
217	CRTFP Uy-	0	0	0	0	0	0
218	SLU 1	-6	-15	1282	0	0	0
218	SLU 2	-6	-10	1316	0	0	0
218	SLU 3	-6	-15	1301	0	0	0
218	SLU 4	-6	-12	1322	0	0	0
218	SLU 5	-6	-10	1328	0	0	0
218	SLU 6	-6	-15	1313	0	0	0
218	SLU 7	-6	-12	1334	0	0	0
218	SLU 8	-6	-15	1306	0	0	0
218	SLU 9	-6	-12	1326	0	0	0
218	SLU 10	-6	-11	1484	0	0	0
218	SLU 11	-6	-17	1469	0	0	0
218	SLU 12	-6	-14	1490	0	0	0
218	SLU 13	-6	-11	1496	0	0	0
218	SLU 14	-6	-17	1481	0	0	0
218	SLU 15	-6	-14	1502	0	0	0
218	SLU 16	-6	-17	1473	0	0	0
218	SLU 17	-6	-14	1494	0	0	0
218	SLU 18	-5	-17	1521	0	0	0
218	SLU 19	-5	-14	1542	0	0	0
218	SLU 20	-6	-17	1533	0	0	0
218	SLU 21	-6	-14	1554	0	0	0
218	SLU 22	-7	-16	1447	0	0	0
218	SLU 23	-7	-11	1482	0	0	0
218	SLU 24	-7	-17	1467	0	0	0
218	SLU 25	-7	-14	1487	0	0	0
218	SLU 26	-7	-11	1494	0	0	0
218	SLU 27	-7	-17	1479	0	0	0
218	SLU 28	-7	-14	1499	0	0	0
218	SLU 29	-7	-17	1471	0	0	0
218	SLU 30	-7	-14	1492	0	0	0
218	SLU 31	-6	-13	1649	0	0	0
218	SLU 32	-7	-18	1634	0	0	0
218	SLU 33	-7	-15	1655	0	0	0
218	SLU 34	-7	-13	1661	0	0	0
218	SLU 35	-7	-18	1646	0	0	0
218	SLU 36	-7	-15	1667	0	0	0
218	SLU 37	-7	-18	1639	0	0	0
218	SLU 38	-7	-15	1659	0	0	0
218	SLU 39	-6	-18	1687	0	0	0
218	SLU 40	-6	-15	1707	0	0	0
218	SLU 41	-7	-19	1698	0	0	0
218	SLU 42	-7	-16	1719	0	0	0
218	SLU 43	-7	-19	1610	0	0	0
218	SLU 44	-7	-14	1644	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
218	SLU 45	-7	-19	1629	0	0	0
218	SLU 46	-7	-16	1650	0	0	0
218	SLU 47	-7	-14	1656	0	0	0
218	SLU 48	-8	-19	1641	0	0	0
218	SLU 49	-8	-16	1662	0	0	0
218	SLU 50	-7	-19	1634	0	0	0
218	SLU 51	-7	-16	1654	0	0	0
218	SLU 52	-7	-15	1812	0	0	0
218	SLU 53	-7	-20	1797	0	0	0
218	SLU 54	-7	-17	1817	0	0	0
218	SLU 55	-7	-15	1824	0	0	0
218	SLU 56	-7	-21	1809	0	0	0
218	SLU 57	-7	-18	1829	0	0	0
218	SLU 58	-7	-21	1801	0	0	0
218	SLU 59	-7	-18	1822	0	0	0
218	SLU 60	-7	-21	1849	0	0	0
218	SLU 61	-7	-18	1870	0	0	0
218	SLU 62	-7	-21	1861	0	0	0
218	SLU 63	-7	-18	1882	0	0	0
218	SLU 64	-8	-20	1775	0	0	0
218	SLU 65	-8	-15	1810	0	0	0
218	SLU 66	-8	-21	1795	0	0	0
218	SLU 67	-8	-18	1815	0	0	0
218	SLU 68	-8	-15	1822	0	0	0
218	SLU 69	-8	-21	1806	0	0	0
218	SLU 70	-8	-18	1827	0	0	0
218	SLU 71	-8	-21	1799	0	0	0
218	SLU 72	-8	-18	1820	0	0	0
218	SLU 73	-8	-17	1977	0	0	0
218	SLU 74	-8	-22	1962	0	0	0
218	SLU 75	-8	-19	1983	0	0	0
218	SLU 76	-8	-17	1989	0	0	0
218	SLU 77	-8	-22	1974	0	0	0
218	SLU 78	-8	-19	1995	0	0	0
218	SLU 79	-8	-22	1966	0	0	0
218	SLU 80	-8	-19	1987	0	0	0
218	SLU 81	-8	-22	2014	0	0	0
218	SLU 82	-8	-19	2035	0	0	0
218	SLU 83	-8	-23	2026	0	0	0
218	SLU 84	-8	-20	2047	0	0	0
218	SLE RA 1	-6	-15	1329	0	0	0
218	SLE RA 2	-6	-12	1352	0	0	0
218	SLE RA 3	-6	-15	1342	0	0	0
218	SLE RA 4	-6	-13	1356	0	0	0
218	SLE RA 5	-6	-12	1360	0	0	0
218	SLE RA 6	-6	-16	1350	0	0	0
218	SLE RA 7	-6	-14	1364	0	0	0
218	SLE RA 8	-6	-15	1345	0	0	0
218	SLE RA 9	-6	-13	1359	0	0	0
218	SLE RA 10	-6	-13	1464	0	0	0
218	SLE RA 11	-6	-16	1454	0	0	0
218	SLE RA 12	-6	-14	1468	0	0	0
218	SLE RA 13	-6	-13	1472	0	0	0
218	SLE RA 14	-6	-17	1462	0	0	0
218	SLE RA 15	-6	-15	1476	0	0	0
218	SLE RA 16	-6	-16	1457	0	0	0
218	SLE RA 17	-6	-14	1471	0	0	0
218	SLE RA 18	-6	-17	1489	0	0	0
218	SLE RA 19	-6	-15	1503	0	0	0
218	SLE RA 20	-6	-17	1497	0	0	0
218	SLE RA 21	-6	-15	1510	0	0	0
218	SLE FR 1	-6	-15	1329	0	0	0
218	SLE FR 2	-6	-15	1334	0	0	0
218	SLE FR 3	-6	-15	1332	0	0	0
218	SLE FR 4	-6	-15	1382	0	0	0
218	SLE FR 5	-6	-16	1380	0	0	0
218	SLE FR 6	-6	-16	1409	0	0	0
218	SLE QP 1	-6	-15	1329	0	0	0
218	SLE QP 2	-6	-16	1377	0	0	0
218	SLD 1	102	11	1665	0	0	0
218	SLD 2	127	5	1653	0	0	0
218	SLD 3	106	-49	1201	0	0	0
218	SLD 4	130	-56	1190	0	0	0
218	SLD 5	16	85	2168	0	0	0
218	SLD 6	32	81	2161	0	0	0
218	SLD 7	29	-116	623	0	0	0
218	SLD 8	45	-121	616	0	0	0
218	SLD 9	-57	89	2138	0	0	0
218	SLD 10	-41	85	2131	0	0	0
218	SLD 11	-44	-112	593	0	0	0
218	SLD 12	-28	-117	585	0	0	0
218	SLD 13	-142	25	1564	0	0	0
218	SLD 14	-118	18	1553	0	0	0
218	SLD 15	-138	-36	1101	0	0	0
218	SLD 16	-114	-43	1089	0	0	0
218	SLV 1	247	52	2089	0	0	0
218	SLV 2	304	36	2062	0	0	0
218	SLV 3	256	-98	927	0	0	0
218	SLV 4	313	-114	900	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
218	SLV 5	45	236	3357	0	0	0
218	SLV 6	83	225	3339	0	0	0
218	SLV 7	77	-266	-514	0	0	0
218	SLV 8	115	-277	-533	0	0	0
218	SLV 9	-127	245	3287	0	0	0
218	SLV 10	-89	234	3268	0	0	0
218	SLV 11	-95	-257	-585	0	0	0
218	SLV 12	-57	-268	-603	0	0	0
218	SLV 13	-325	83	1854	0	0	0
218	SLV 14	-268	67	1827	0	0	0
218	SLV 15	-316	-67	692	0	0	0
218	SLV 16	-259	-84	665	0	0	0
218	CRTFP Uy+	0	0	0	0	0	0
218	CRTFP Uy-	0	0	0	0	0	0
219	SLU 1	-6	-12	1290	0	0	0
219	SLU 2	-5	-7	1325	0	0	0
219	SLU 3	-6	-12	1310	0	0	0
219	SLU 4	-6	-9	1331	0	0	0
219	SLU 5	-6	-7	1337	0	0	0
219	SLU 6	-6	-12	1322	0	0	0
219	SLU 7	-6	-9	1343	0	0	0
219	SLU 8	-6	-12	1314	0	0	0
219	SLU 9	-6	-9	1335	0	0	0
219	SLU 10	-5	-8	1494	0	0	0
219	SLU 11	-6	-14	1479	0	0	0
219	SLU 12	-6	-10	1500	0	0	0
219	SLU 13	-6	-8	1506	0	0	0
219	SLU 14	-6	-14	1491	0	0	0
219	SLU 15	-6	-11	1512	0	0	0
219	SLU 16	-6	-14	1483	0	0	0
219	SLU 17	-6	-11	1504	0	0	0
219	SLU 18	-5	-14	1532	0	0	0
219	SLU 19	-5	-11	1553	0	0	0
219	SLU 20	-6	-14	1544	0	0	0
219	SLU 21	-6	-11	1565	0	0	0
219	SLU 22	-6	-13	1456	0	0	0
219	SLU 23	-6	-8	1491	0	0	0
219	SLU 24	-7	-14	1476	0	0	0
219	SLU 25	-7	-10	1497	0	0	0
219	SLU 26	-7	-8	1503	0	0	0
219	SLU 27	-7	-14	1488	0	0	0
219	SLU 28	-7	-11	1509	0	0	0
219	SLU 29	-7	-14	1480	0	0	0
219	SLU 30	-7	-11	1501	0	0	0
219	SLU 31	-6	-9	1661	0	0	0
219	SLU 32	-7	-15	1645	0	0	0
219	SLU 33	-6	-12	1666	0	0	0
219	SLU 34	-6	-10	1673	0	0	0
219	SLU 35	-7	-15	1657	0	0	0
219	SLU 36	-7	-12	1678	0	0	0
219	SLU 37	-7	-15	1650	0	0	0
219	SLU 38	-7	-12	1671	0	0	0
219	SLU 39	-6	-15	1698	0	0	0
219	SLU 40	-6	-12	1719	0	0	0
219	SLU 41	-6	-15	1710	0	0	0
219	SLU 42	-6	-12	1731	0	0	0
219	SLU 43	-7	-15	1620	0	0	0
219	SLU 44	-7	-10	1655	0	0	0
219	SLU 45	-7	-16	1640	0	0	0
219	SLU 46	-7	-13	1660	0	0	0
219	SLU 47	-7	-10	1667	0	0	0
219	SLU 48	-7	-16	1652	0	0	0
219	SLU 49	-7	-13	1672	0	0	0
219	SLU 50	-7	-16	1644	0	0	0
219	SLU 51	-7	-13	1665	0	0	0
219	SLU 52	-7	-12	1824	0	0	0
219	SLU 53	-7	-17	1809	0	0	0
219	SLU 54	-7	-14	1830	0	0	0
219	SLU 55	-7	-12	1836	0	0	0
219	SLU 56	-7	-17	1821	0	0	0
219	SLU 57	-7	-14	1842	0	0	0
219	SLU 58	-7	-17	1813	0	0	0
219	SLU 59	-7	-14	1834	0	0	0
219	SLU 60	-7	-17	1862	0	0	0
219	SLU 61	-7	-14	1883	0	0	0
219	SLU 62	-7	-17	1874	0	0	0
219	SLU 63	-7	-14	1895	0	0	0
219	SLU 64	-8	-17	1786	0	0	0
219	SLU 65	-8	-11	1821	0	0	0
219	SLU 66	-8	-17	1806	0	0	0
219	SLU 67	-8	-14	1827	0	0	0
219	SLU 68	-8	-12	1833	0	0	0
219	SLU 69	-8	-17	1818	0	0	0
219	SLU 70	-8	-14	1839	0	0	0
219	SLU 71	-8	-17	1810	0	0	0
219	SLU 72	-8	-14	1831	0	0	0
219	SLU 73	-8	-13	1991	0	0	0
219	SLU 74	-8	-18	1975	0	0	0
219	SLU 75	-8	-15	1996	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
219	SLU 76	-8	-13	2003	0	0	0
219	SLU 77	-8	-18	1987	0	0	0
219	SLU 78	-8	-15	2008	0	0	0
219	SLU 79	-8	-18	1980	0	0	0
219	SLU 80	-8	-15	2001	0	0	0
219	SLU 81	-8	-18	2028	0	0	0
219	SLU 82	-8	-15	2049	0	0	0
219	SLU 83	-8	-18	2040	0	0	0
219	SLU 84	-8	-15	2061	0	0	0
219	SLE RA 1	-6	-12	1337	0	0	0
219	SLE RA 2	-6	-9	1361	0	0	0
219	SLE RA 3	-6	-13	1351	0	0	0
219	SLE RA 4	-6	-11	1365	0	0	0
219	SLE RA 5	-6	-9	1369	0	0	0
219	SLE RA 6	-6	-13	1359	0	0	0
219	SLE RA 7	-6	-11	1373	0	0	0
219	SLE RA 8	-6	-13	1353	0	0	0
219	SLE RA 9	-6	-11	1367	0	0	0
219	SLE RA 10	-6	-10	1474	0	0	0
219	SLE RA 11	-6	-13	1463	0	0	0
219	SLE RA 12	-6	-11	1477	0	0	0
219	SLE RA 13	-6	-10	1482	0	0	0
219	SLE RA 14	-6	-14	1471	0	0	0
219	SLE RA 15	-6	-11	1485	0	0	0
219	SLE RA 16	-6	-13	1466	0	0	0
219	SLE RA 17	-6	-11	1480	0	0	0
219	SLE RA 18	-6	-14	1499	0	0	0
219	SLE RA 19	-6	-12	1513	0	0	0
219	SLE RA 20	-6	-14	1507	0	0	0
219	SLE RA 21	-6	-12	1521	0	0	0
219	SLE FR 1	-6	-12	1337	0	0	0
219	SLE FR 2	-6	-12	1342	0	0	0
219	SLE FR 3	-6	-13	1341	0	0	0
219	SLE FR 4	-6	-12	1391	0	0	0
219	SLE FR 5	-6	-13	1389	0	0	0
219	SLE FR 6	-6	-13	1418	0	0	0
219	SLE QP 1	-6	-12	1337	0	0	0
219	SLE QP 2	-6	-13	1386	0	0	0
219	SLD 1	103	16	1662	0	0	0
219	SLD 2	127	10	1652	0	0	0
219	SLD 3	107	-46	1196	0	0	0
219	SLD 4	131	-52	1185	0	0	0
219	SLD 5	17	91	2178	0	0	0
219	SLD 6	33	87	2171	0	0	0
219	SLD 7	30	-116	624	0	0	0
219	SLD 8	46	-120	617	0	0	0
219	SLD 9	-57	94	2155	0	0	0
219	SLD 10	-41	90	2148	0	0	0
219	SLD 11	-44	-113	601	0	0	0
219	SLD 12	-28	-117	594	0	0	0
219	SLD 13	-143	26	1586	0	0	0
219	SLD 14	-118	20	1576	0	0	0
219	SLD 15	-139	-36	1120	0	0	0
219	SLD 16	-114	-42	1110	0	0	0
219	SLV 1	248	60	2071	0	0	0
219	SLV 2	305	46	2046	0	0	0
219	SLV 3	258	-95	903	0	0	0
219	SLV 4	315	-109	878	0	0	0
219	SLV 5	45	247	3368	0	0	0
219	SLV 6	84	237	3351	0	0	0
219	SLV 7	77	-270	-526	0	0	0
219	SLV 8	116	-279	-543	0	0	0
219	SLV 9	-127	253	3315	0	0	0
219	SLV 10	-89	244	3298	0	0	0
219	SLV 11	-95	-263	-579	0	0	0
219	SLV 12	-57	-272	-596	0	0	0
219	SLV 13	-326	83	1894	0	0	0
219	SLV 14	-269	69	1869	0	0	0
219	SLV 15	-317	-72	726	0	0	0
219	SLV 16	-260	-86	701	0	0	0
219	CRTFP Uy+	0	0	0	0	0	0
219	CRTFP Uy-	0	0	0	0	0	0
220	SLU 1	-5	-9	1304	0	0	0
220	SLU 2	-5	-4	1340	0	0	0
220	SLU 3	-6	-9	1324	0	0	0
220	SLU 4	-6	-6	1346	0	0	0
220	SLU 5	-6	-4	1352	0	0	0
220	SLU 6	-6	-9	1337	0	0	0
220	SLU 7	-6	-6	1358	0	0	0
220	SLU 8	-6	-9	1329	0	0	0
220	SLU 9	-6	-6	1350	0	0	0
220	SLU 10	-5	-5	1512	0	0	0
220	SLU 11	-6	-10	1497	0	0	0
220	SLU 12	-6	-7	1518	0	0	0
220	SLU 13	-5	-5	1524	0	0	0
220	SLU 14	-6	-10	1509	0	0	0
220	SLU 15	-6	-7	1530	0	0	0
220	SLU 16	-6	-10	1501	0	0	0
220	SLU 17	-6	-7	1522	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
220	SLU 18	-5	-11	1551	0	0	0
220	SLU 19	-5	-7	1572	0	0	0
220	SLU 20	-5	-11	1563	0	0	0
220	SLU 21	-5	-8	1584	0	0	0
220	SLU 22	-6	-10	1473	0	0	0
220	SLU 23	-6	-5	1508	0	0	0
220	SLU 24	-6	-10	1493	0	0	0
220	SLU 25	-6	-7	1514	0	0	0
220	SLU 26	-6	-5	1520	0	0	0
220	SLU 27	-7	-10	1505	0	0	0
220	SLU 28	-7	-7	1526	0	0	0
220	SLU 29	-7	-10	1497	0	0	0
220	SLU 30	-7	-7	1518	0	0	0
220	SLU 31	-6	-6	1680	0	0	0
220	SLU 32	-6	-11	1665	0	0	0
220	SLU 33	-6	-8	1686	0	0	0
220	SLU 34	-6	-6	1692	0	0	0
220	SLU 35	-7	-11	1677	0	0	0
220	SLU 36	-7	-8	1698	0	0	0
220	SLU 37	-7	-11	1669	0	0	0
220	SLU 38	-7	-8	1691	0	0	0
220	SLU 39	-6	-11	1719	0	0	0
220	SLU 40	-6	-8	1740	0	0	0
220	SLU 41	-6	-12	1731	0	0	0
220	SLU 42	-6	-8	1752	0	0	0
220	SLU 43	-7	-12	1638	0	0	0
220	SLU 44	-7	-7	1673	0	0	0
220	SLU 45	-7	-12	1658	0	0	0
220	SLU 46	-7	-9	1679	0	0	0
220	SLU 47	-7	-7	1686	0	0	0
220	SLU 48	-7	-12	1670	0	0	0
220	SLU 49	-7	-9	1691	0	0	0
220	SLU 50	-7	-12	1662	0	0	0
220	SLU 51	-7	-9	1684	0	0	0
220	SLU 52	-7	-7	1846	0	0	0
220	SLU 53	-7	-13	1830	0	0	0
220	SLU 54	-7	-10	1851	0	0	0
220	SLU 55	-7	-8	1858	0	0	0
220	SLU 56	-7	-13	1842	0	0	0
220	SLU 57	-7	-10	1864	0	0	0
220	SLU 58	-7	-13	1835	0	0	0
220	SLU 59	-7	-10	1856	0	0	0
220	SLU 60	-7	-13	1884	0	0	0
220	SLU 61	-7	-10	1905	0	0	0
220	SLU 62	-7	-13	1896	0	0	0
220	SLU 63	-7	-10	1918	0	0	0
220	SLU 64	-8	-13	1806	0	0	0
220	SLU 65	-8	-7	1842	0	0	0
220	SLU 66	-8	-13	1826	0	0	0
220	SLU 67	-8	-10	1847	0	0	0
220	SLU 68	-8	-7	1854	0	0	0
220	SLU 69	-8	-13	1839	0	0	0
220	SLU 70	-8	-10	1860	0	0	0
220	SLU 71	-8	-13	1831	0	0	0
220	SLU 72	-8	-10	1852	0	0	0
220	SLU 73	-7	-8	2014	0	0	0
220	SLU 74	-8	-14	1999	0	0	0
220	SLU 75	-8	-11	2020	0	0	0
220	SLU 76	-8	-8	2026	0	0	0
220	SLU 77	-8	-14	2011	0	0	0
220	SLU 78	-8	-11	2032	0	0	0
220	SLU 79	-8	-14	2003	0	0	0
220	SLU 80	-8	-11	2024	0	0	0
220	SLU 81	-7	-14	2052	0	0	0
220	SLU 82	-7	-11	2074	0	0	0
220	SLU 83	-8	-14	2065	0	0	0
220	SLU 84	-8	-11	2086	0	0	0
220	SLE RA 1	-6	-10	1353	0	0	0
220	SLE RA 2	-6	-6	1376	0	0	0
220	SLE RA 3	-6	-10	1366	0	0	0
220	SLE RA 4	-6	-8	1380	0	0	0
220	SLE RA 5	-6	-6	1384	0	0	0
220	SLE RA 6	-6	-10	1374	0	0	0
220	SLE RA 7	-6	-8	1388	0	0	0
220	SLE RA 8	-6	-10	1369	0	0	0
220	SLE RA 9	-6	-8	1383	0	0	0
220	SLE RA 10	-6	-7	1491	0	0	0
220	SLE RA 11	-6	-10	1481	0	0	0
220	SLE RA 12	-6	-8	1495	0	0	0
220	SLE RA 13	-6	-7	1499	0	0	0
220	SLE RA 14	-6	-10	1489	0	0	0
220	SLE RA 15	-6	-8	1503	0	0	0
220	SLE RA 16	-6	-10	1484	0	0	0
220	SLE RA 17	-6	-8	1498	0	0	0
220	SLE RA 18	-6	-10	1517	0	0	0
220	SLE RA 19	-6	-8	1531	0	0	0
220	SLE RA 20	-6	-10	1525	0	0	0
220	SLE RA 21	-6	-8	1539	0	0	0
220	SLE FR 1	-6	-10	1353	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
220	SLE FR 2	-6	-9	1357	0	0	0
220	SLE FR 3	-6	-10	1356	0	0	0
220	SLE FR 4	-6	-9	1406	0	0	0
220	SLE FR 5	-6	-10	1405	0	0	0
220	SLE FR 6	-6	-10	1435	0	0	0
220	SLE QP 1	-6	-10	1353	0	0	0
220	SLE QP 2	-6	-10	1402	0	0	0
220	SLD 1	103	21	1669	0	0	0
220	SLD 2	128	17	1659	0	0	0
220	SLD 3	107	-43	1198	0	0	0
220	SLD 4	132	-47	1188	0	0	0
220	SLD 5	17	97	2198	0	0	0
220	SLD 6	33	94	2191	0	0	0
220	SLD 7	30	-116	628	0	0	0
220	SLD 8	46	-119	622	0	0	0
220	SLD 9	-57	99	2182	0	0	0
220	SLD 10	-41	96	2175	0	0	0
220	SLD 11	-44	-114	612	0	0	0
220	SLD 12	-28	-117	606	0	0	0
220	SLD 13	-143	28	1615	0	0	0
220	SLD 14	-119	23	1605	0	0	0
220	SLD 15	-139	-36	1144	0	0	0
220	SLD 16	-115	-41	1135	0	0	0
220	SLV 1	249	68	2066	0	0	0
220	SLV 2	307	57	2043	0	0	0
220	SLV 3	259	-91	886	0	0	0
220	SLV 4	316	-103	863	0	0	0
220	SLV 5	46	257	3394	0	0	0
220	SLV 6	84	250	3378	0	0	0
220	SLV 7	77	-274	-537	0	0	0
220	SLV 8	116	-281	-553	0	0	0
220	SLV 9	-127	262	3356	0	0	0
220	SLV 10	-88	254	3341	0	0	0
220	SLV 11	-96	-269	-575	0	0	0
220	SLV 12	-57	-277	-590	0	0	0
220	SLV 13	-327	83	1940	0	0	0
220	SLV 14	-270	72	1917	0	0	0
220	SLV 15	-318	-76	761	0	0	0
220	SLV 16	-260	-88	738	0	0	0
220	CRTFP Uy+	0	0	0	0	0	0
220	CRTFP Uy-	0	0	0	0	0	0
221	SLU 1	-5	-7	1324	0	0	0
221	SLU 2	-5	-1	1360	0	0	0
221	SLU 3	-6	-7	1344	0	0	0
221	SLU 4	-6	-3	1366	0	0	0
221	SLU 5	-6	-1	1372	0	0	0
221	SLU 6	-6	-7	1357	0	0	0
221	SLU 7	-6	-3	1378	0	0	0
221	SLU 8	-6	-7	1349	0	0	0
221	SLU 9	-6	-3	1370	0	0	0
221	SLU 10	-5	-2	1536	0	0	0
221	SLU 11	-6	-7	1520	0	0	0
221	SLU 12	-6	-4	1542	0	0	0
221	SLU 13	-5	-2	1548	0	0	0
221	SLU 14	-6	-7	1533	0	0	0
221	SLU 15	-6	-4	1554	0	0	0
221	SLU 16	-6	-7	1525	0	0	0
221	SLU 17	-6	-4	1546	0	0	0
221	SLU 18	-5	-7	1575	0	0	0
221	SLU 19	-5	-4	1597	0	0	0
221	SLU 20	-5	-8	1588	0	0	0
221	SLU 21	-5	-4	1609	0	0	0
221	SLU 22	-6	-7	1495	0	0	0
221	SLU 23	-6	-2	1531	0	0	0
221	SLU 24	-6	-7	1515	0	0	0
221	SLU 25	-6	-4	1537	0	0	0
221	SLU 26	-6	-2	1543	0	0	0
221	SLU 27	-7	-7	1528	0	0	0
221	SLU 28	-7	-4	1549	0	0	0
221	SLU 29	-7	-7	1520	0	0	0
221	SLU 30	-7	-4	1541	0	0	0
221	SLU 31	-6	-2	1707	0	0	0
221	SLU 32	-6	-8	1691	0	0	0
221	SLU 33	-6	-5	1713	0	0	0
221	SLU 34	-6	-2	1719	0	0	0
221	SLU 35	-7	-8	1704	0	0	0
221	SLU 36	-7	-5	1725	0	0	0
221	SLU 37	-7	-8	1696	0	0	0
221	SLU 38	-7	-5	1717	0	0	0
221	SLU 39	-6	-8	1746	0	0	0
221	SLU 40	-6	-5	1768	0	0	0
221	SLU 41	-6	-8	1759	0	0	0
221	SLU 42	-6	-5	1780	0	0	0
221	SLU 43	-7	-8	1663	0	0	0
221	SLU 44	-7	-3	1698	0	0	0
221	SLU 45	-7	-8	1683	0	0	0
221	SLU 46	-7	-5	1704	0	0	0
221	SLU 47	-7	-3	1711	0	0	0
221	SLU 48	-7	-8	1695	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
221	SLU 49	-7	-5	1717	0	0	0
221	SLU 50	-7	-8	1687	0	0	0
221	SLU 51	-7	-5	1709	0	0	0
221	SLU 52	-7	-4	1874	0	0	0
221	SLU 53	-7	-9	1859	0	0	0
221	SLU 54	-7	-6	1880	0	0	0
221	SLU 55	-7	-4	1887	0	0	0
221	SLU 56	-7	-9	1871	0	0	0
221	SLU 57	-7	-6	1893	0	0	0
221	SLU 58	-7	-9	1863	0	0	0
221	SLU 59	-7	-6	1885	0	0	0
221	SLU 60	-7	-9	1914	0	0	0
221	SLU 61	-7	-6	1935	0	0	0
221	SLU 62	-7	-9	1926	0	0	0
221	SLU 63	-7	-6	1948	0	0	0
221	SLU 64	-8	-9	1834	0	0	0
221	SLU 65	-8	-4	1869	0	0	0
221	SLU 66	-8	-9	1854	0	0	0
221	SLU 67	-8	-6	1875	0	0	0
221	SLU 68	-8	-4	1882	0	0	0
221	SLU 69	-8	-9	1866	0	0	0
221	SLU 70	-8	-6	1888	0	0	0
221	SLU 71	-8	-9	1858	0	0	0
221	SLU 72	-8	-6	1880	0	0	0
221	SLU 73	-7	-4	2045	0	0	0
221	SLU 74	-8	-10	2030	0	0	0
221	SLU 75	-8	-6	2051	0	0	0
221	SLU 76	-8	-4	2058	0	0	0
221	SLU 77	-8	-10	2042	0	0	0
221	SLU 78	-8	-6	2064	0	0	0
221	SLU 79	-8	-10	2034	0	0	0
221	SLU 80	-8	-6	2056	0	0	0
221	SLU 81	-7	-10	2085	0	0	0
221	SLU 82	-7	-7	2106	0	0	0
221	SLU 83	-8	-10	2097	0	0	0
221	SLU 84	-8	-7	2119	0	0	0
221	SLE RA 1	-6	-7	1373	0	0	0
221	SLE RA 2	-6	-3	1397	0	0	0
221	SLE RA 3	-6	-7	1386	0	0	0
221	SLE RA 4	-6	-5	1401	0	0	0
221	SLE RA 5	-6	-3	1405	0	0	0
221	SLE RA 6	-6	-7	1395	0	0	0
221	SLE RA 7	-6	-5	1409	0	0	0
221	SLE RA 8	-6	-7	1389	0	0	0
221	SLE RA 9	-6	-5	1404	0	0	0
221	SLE RA 10	-6	-4	1514	0	0	0
221	SLE RA 11	-6	-7	1504	0	0	0
221	SLE RA 12	-6	-5	1518	0	0	0
221	SLE RA 13	-6	-4	1522	0	0	0
221	SLE RA 14	-6	-7	1512	0	0	0
221	SLE RA 15	-6	-5	1526	0	0	0
221	SLE RA 16	-6	-7	1507	0	0	0
221	SLE RA 17	-6	-5	1521	0	0	0
221	SLE RA 18	-6	-7	1540	0	0	0
221	SLE RA 19	-6	-5	1555	0	0	0
221	SLE RA 20	-6	-7	1549	0	0	0
221	SLE RA 21	-6	-5	1563	0	0	0
221	SLE FR 1	-6	-7	1373	0	0	0
221	SLE FR 2	-6	-6	1378	0	0	0
221	SLE FR 3	-6	-7	1376	0	0	0
221	SLE FR 4	-6	-6	1428	0	0	0
221	SLE FR 5	-6	-7	1426	0	0	0
221	SLE FR 6	-6	-7	1457	0	0	0
221	SLE QP 1	-6	-7	1373	0	0	0
221	SLE QP 2	-6	-7	1423	0	0	0
221	SLD 1	104	26	1684	0	0	0
221	SLD 2	128	22	1675	0	0	0
221	SLD 3	108	-40	1207	0	0	0
221	SLD 4	132	-44	1198	0	0	0
221	SLD 5	17	103	2226	0	0	0
221	SLD 6	33	101	2220	0	0	0
221	SLD 7	30	-116	637	0	0	0
221	SLD 8	46	-118	631	0	0	0
221	SLD 9	-57	105	2215	0	0	0
221	SLD 10	-41	102	2209	0	0	0
221	SLD 11	-44	-114	626	0	0	0
221	SLD 12	-28	-117	621	0	0	0
221	SLD 13	-143	30	1648	0	0	0
221	SLD 14	-119	26	1639	0	0	0
221	SLD 15	-139	-35	1172	0	0	0
221	SLD 16	-115	-39	1163	0	0	0
221	SLV 1	250	74	2072	0	0	0
221	SLV 2	307	65	2051	0	0	0
221	SLV 3	259	-90	878	0	0	0
221	SLV 4	317	-99	857	0	0	0
221	SLV 5	46	267	3433	0	0	0
221	SLV 6	85	261	3419	0	0	0
221	SLV 7	77	-278	-548	0	0	0
221	SLV 8	116	-284	-562	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
221	SLV 9	-127	271	3408	0	0	0
221	SLV 10	-89	265	3394	0	0	0
221	SLV 11	-96	-275	-572	0	0	0
221	SLV 12	-57	-281	-587	0	0	0
221	SLV 13	-328	85	1989	0	0	0
221	SLV 14	-270	76	1968	0	0	0
221	SLV 15	-318	-79	795	0	0	0
221	SLV 16	-261	-88	774	0	0	0
221	CRTFP Uy+	0	0	0	0	0	0
221	CRTFP Uy-	0	0	0	0	0	0
222	SLU 1	-3	-2	673	0	0	0
222	SLU 2	-3	1	691	0	0	0
222	SLU 3	-3	-2	683	0	0	0
222	SLU 4	-3	0	694	0	0	0
222	SLU 5	-3	1	698	0	0	0
222	SLU 6	-3	-2	690	0	0	0
222	SLU 7	-3	0	701	0	0	0
222	SLU 8	-3	-2	686	0	0	0
222	SLU 9	-3	0	697	0	0	0
222	SLU 10	-3	1	781	0	0	0
222	SLU 11	-3	-2	773	0	0	0
222	SLU 12	-3	-1	784	0	0	0
222	SLU 13	-3	1	787	0	0	0
222	SLU 14	-3	-2	780	0	0	0
222	SLU 15	-3	-1	791	0	0	0
222	SLU 16	-3	-2	776	0	0	0
222	SLU 17	-3	-1	787	0	0	0
222	SLU 18	-3	-2	802	0	0	0
222	SLU 19	-3	-1	812	0	0	0
222	SLU 20	-3	-2	808	0	0	0
222	SLU 21	-3	-1	819	0	0	0
222	SLU 22	-3	-2	760	0	0	0
222	SLU 23	-3	1	778	0	0	0
222	SLU 24	-3	-2	771	0	0	0
222	SLU 25	-3	0	781	0	0	0
222	SLU 26	-3	1	785	0	0	0
222	SLU 27	-3	-2	777	0	0	0
222	SLU 28	-3	0	788	0	0	0
222	SLU 29	-3	-2	773	0	0	0
222	SLU 30	-3	0	784	0	0	0
222	SLU 31	-3	1	868	0	0	0
222	SLU 32	-3	-2	860	0	0	0
222	SLU 33	-3	-1	871	0	0	0
222	SLU 34	-3	0	875	0	0	0
222	SLU 35	-3	-2	867	0	0	0
222	SLU 36	-3	-1	878	0	0	0
222	SLU 37	-3	-2	863	0	0	0
222	SLU 38	-3	-1	874	0	0	0
222	SLU 39	-3	-2	889	0	0	0
222	SLU 40	-3	-1	900	0	0	0
222	SLU 41	-3	-2	895	0	0	0
222	SLU 42	-3	-1	906	0	0	0
222	SLU 43	-3	-2	845	0	0	0
222	SLU 44	-3	0	863	0	0	0
222	SLU 45	-3	-2	855	0	0	0
222	SLU 46	-3	-1	866	0	0	0
222	SLU 47	-3	0	870	0	0	0
222	SLU 48	-3	-2	862	0	0	0
222	SLU 49	-3	-1	873	0	0	0
222	SLU 50	-3	-2	858	0	0	0
222	SLU 51	-3	-1	869	0	0	0
222	SLU 52	-3	0	953	0	0	0
222	SLU 53	-3	-3	945	0	0	0
222	SLU 54	-3	-1	956	0	0	0
222	SLU 55	-3	0	960	0	0	0
222	SLU 56	-3	-3	952	0	0	0
222	SLU 57	-3	-1	963	0	0	0
222	SLU 58	-3	-3	948	0	0	0
222	SLU 59	-3	-1	959	0	0	0
222	SLU 60	-3	-3	974	0	0	0
222	SLU 61	-3	-1	984	0	0	0
222	SLU 62	-3	-3	980	0	0	0
222	SLU 63	-3	-1	991	0	0	0
222	SLU 64	-4	-2	932	0	0	0
222	SLU 65	-4	0	950	0	0	0
222	SLU 66	-4	-2	943	0	0	0
222	SLU 67	-4	-1	953	0	0	0
222	SLU 68	-4	0	957	0	0	0
222	SLU 69	-4	-3	949	0	0	0
222	SLU 70	-4	-1	960	0	0	0
222	SLU 71	-4	-3	945	0	0	0
222	SLU 72	-4	-1	956	0	0	0
222	SLU 73	-4	0	1040	0	0	0
222	SLU 74	-4	-3	1032	0	0	0
222	SLU 75	-4	-1	1043	0	0	0
222	SLU 76	-4	0	1047	0	0	0
222	SLU 77	-4	-3	1039	0	0	0
222	SLU 78	-4	-1	1050	0	0	0
222	SLU 79	-4	-3	1035	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
222	SLU 80	-4	-1	1046	0	0	0
222	SLU 81	-4	-3	1061	0	0	0
222	SLU 82	-4	-1	1072	0	0	0
222	SLU 83	-4	-3	1067	0	0	0
222	SLU 84	-4	-1	1078	0	0	0
222	SLE RA 1	-3	-2	698	0	0	0
222	SLE RA 2	-3	0	710	0	0	0
222	SLE RA 3	-3	-2	705	0	0	0
222	SLE RA 4	-3	-1	712	0	0	0
222	SLE RA 5	-3	0	714	0	0	0
222	SLE RA 6	-3	-2	709	0	0	0
222	SLE RA 7	-3	-1	716	0	0	0
222	SLE RA 8	-3	-2	706	0	0	0
222	SLE RA 9	-3	-1	714	0	0	0
222	SLE RA 10	-3	0	770	0	0	0
222	SLE RA 11	-3	-2	765	0	0	0
222	SLE RA 12	-3	-1	772	0	0	0
222	SLE RA 13	-3	0	774	0	0	0
222	SLE RA 14	-3	-2	769	0	0	0
222	SLE RA 15	-3	-1	776	0	0	0
222	SLE RA 16	-3	-2	766	0	0	0
222	SLE RA 17	-3	-1	774	0	0	0
222	SLE RA 18	-3	-2	784	0	0	0
222	SLE RA 19	-3	-1	791	0	0	0
222	SLE RA 20	-3	-2	788	0	0	0
222	SLE RA 21	-3	-1	795	0	0	0
222	SLE FR 1	-3	-2	698	0	0	0
222	SLE FR 2	-3	-2	700	0	0	0
222	SLE FR 3	-3	-2	700	0	0	0
222	SLE FR 4	-3	-2	726	0	0	0
222	SLE FR 5	-3	-2	725	0	0	0
222	SLE FR 6	-3	-2	741	0	0	0
222	SLE QP 1	-3	-2	698	0	0	0
222	SLE QP 2	-3	-2	724	0	0	0
222	SLD 1	52	17	852	0	0	0
222	SLD 2	64	16	848	0	0	0
222	SLD 3	54	-16	611	0	0	0
222	SLD 4	66	-18	607	0	0	0
222	SLD 5	9	56	1129	0	0	0
222	SLD 6	17	55	1127	0	0	0
222	SLD 7	15	-58	324	0	0	0
222	SLD 8	23	-58	321	0	0	0
222	SLD 9	-28	54	1126	0	0	0
222	SLD 10	-20	54	1123	0	0	0
222	SLD 11	-22	-59	320	0	0	0
222	SLD 12	-14	-59	318	0	0	0
222	SLD 13	-72	14	840	0	0	0
222	SLD 14	-59	13	836	0	0	0
222	SLD 15	-70	-20	599	0	0	0
222	SLD 16	-57	-21	595	0	0	0
222	SLV 1	125	46	1045	0	0	0
222	SLV 2	154	43	1036	0	0	0
222	SLV 3	130	-38	439	0	0	0
222	SLV 4	159	-42	430	0	0	0
222	SLV 5	23	141	1740	0	0	0
222	SLV 6	43	139	1734	0	0	0
222	SLV 7	39	-141	-278	0	0	0
222	SLV 8	58	-143	-284	0	0	0
222	SLV 9	-64	139	1731	0	0	0
222	SLV 10	-44	137	1725	0	0	0
222	SLV 11	-48	-143	-286	0	0	0
222	SLV 12	-29	-145	-293	0	0	0
222	SLV 13	-164	38	1017	0	0	0
222	SLV 14	-135	35	1008	0	0	0
222	SLV 15	-159	-47	412	0	0	0
222	SLV 16	-131	-50	402	0	0	0
222	CRTFP Uy+	0	0	0	0	0	0
222	CRTFP Uy-	0	0	0	0	0	0
223	SLU 1	2	-10	614	0	0	0
223	SLU 2	2	-8	631	0	0	0
223	SLU 3	2	-11	623	0	0	0
223	SLU 4	2	-9	633	0	0	0
223	SLU 5	2	-8	637	0	0	0
223	SLU 6	2	-11	629	0	0	0
223	SLU 7	2	-9	639	0	0	0
223	SLU 8	2	-11	625	0	0	0
223	SLU 9	2	-9	636	0	0	0
223	SLU 10	2	-9	709	0	0	0
223	SLU 11	2	-11	702	0	0	0
223	SLU 12	2	-10	712	0	0	0
223	SLU 13	2	-9	715	0	0	0
223	SLU 14	2	-12	707	0	0	0
223	SLU 15	2	-10	717	0	0	0
223	SLU 16	2	-12	704	0	0	0
223	SLU 17	2	-10	714	0	0	0
223	SLU 18	2	-12	726	0	0	0
223	SLU 19	2	-10	736	0	0	0
223	SLU 20	2	-12	732	0	0	0
223	SLU 21	2	-10	742	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
223	SLU 22	2	-11	694	0	0	0
223	SLU 23	2	-9	710	0	0	0
223	SLU 24	2	-12	703	0	0	0
223	SLU 25	2	-10	713	0	0	0
223	SLU 26	2	-9	716	0	0	0
223	SLU 27	2	-12	708	0	0	0
223	SLU 28	2	-10	719	0	0	0
223	SLU 29	2	-12	705	0	0	0
223	SLU 30	2	-10	715	0	0	0
223	SLU 31	2	-10	789	0	0	0
223	SLU 32	2	-13	781	0	0	0
223	SLU 33	2	-11	791	0	0	0
223	SLU 34	2	-10	794	0	0	0
223	SLU 35	2	-13	787	0	0	0
223	SLU 36	2	-11	797	0	0	0
223	SLU 37	2	-13	783	0	0	0
223	SLU 38	2	-11	793	0	0	0
223	SLU 39	2	-13	805	0	0	0
223	SLU 40	2	-11	816	0	0	0
223	SLU 41	2	-13	811	0	0	0
223	SLU 42	2	-12	821	0	0	0
223	SLU 43	3	-13	771	0	0	0
223	SLU 44	3	-11	788	0	0	0
223	SLU 45	3	-13	780	0	0	0
223	SLU 46	3	-12	790	0	0	0
223	SLU 47	3	-11	794	0	0	0
223	SLU 48	3	-13	786	0	0	0
223	SLU 49	3	-12	796	0	0	0
223	SLU 50	3	-13	782	0	0	0
223	SLU 51	3	-12	793	0	0	0
223	SLU 52	3	-12	866	0	0	0
223	SLU 53	3	-14	859	0	0	0
223	SLU 54	3	-13	869	0	0	0
223	SLU 55	3	-12	872	0	0	0
223	SLU 56	3	-14	864	0	0	0
223	SLU 57	3	-13	874	0	0	0
223	SLU 58	3	-14	861	0	0	0
223	SLU 59	3	-13	871	0	0	0
223	SLU 60	3	-14	883	0	0	0
223	SLU 61	3	-13	893	0	0	0
223	SLU 62	3	-15	889	0	0	0
223	SLU 63	3	-13	899	0	0	0
223	SLU 64	3	-14	851	0	0	0
223	SLU 65	3	-12	867	0	0	0
223	SLU 66	3	-14	860	0	0	0
223	SLU 67	3	-13	870	0	0	0
223	SLU 68	3	-12	873	0	0	0
223	SLU 69	3	-14	865	0	0	0
223	SLU 70	3	-13	876	0	0	0
223	SLU 71	3	-14	862	0	0	0
223	SLU 72	3	-13	872	0	0	0
223	SLU 73	3	-13	946	0	0	0
223	SLU 74	3	-15	938	0	0	0
223	SLU 75	3	-14	948	0	0	0
223	SLU 76	3	-13	951	0	0	0
223	SLU 77	3	-15	944	0	0	0
223	SLU 78	3	-14	954	0	0	0
223	SLU 79	3	-15	940	0	0	0
223	SLU 80	3	-14	950	0	0	0
223	SLU 81	3	-16	962	0	0	0
223	SLU 82	3	-14	973	0	0	0
223	SLU 83	3	-16	968	0	0	0
223	SLU 84	3	-14	978	0	0	0
223	SLE RA 1	2	-11	637	0	0	0
223	SLE RA 2	2	-9	648	0	0	0
223	SLE RA 3	2	-11	643	0	0	0
223	SLE RA 4	2	-10	650	0	0	0
223	SLE RA 5	2	-9	652	0	0	0
223	SLE RA 6	2	-11	647	0	0	0
223	SLE RA 7	2	-10	653	0	0	0
223	SLE RA 8	2	-11	644	0	0	0
223	SLE RA 9	2	-10	651	0	0	0
223	SLE RA 10	2	-10	700	0	0	0
223	SLE RA 11	2	-11	695	0	0	0
223	SLE RA 12	2	-11	702	0	0	0
223	SLE RA 13	2	-10	704	0	0	0
223	SLE RA 14	2	-11	699	0	0	0
223	SLE RA 15	2	-11	706	0	0	0
223	SLE RA 16	2	-11	697	0	0	0
223	SLE RA 17	2	-11	703	0	0	0
223	SLE RA 18	2	-12	711	0	0	0
223	SLE RA 19	2	-11	718	0	0	0
223	SLE RA 20	2	-12	715	0	0	0
223	SLE RA 21	2	-11	722	0	0	0
223	SLE FR 1	2	-11	637	0	0	0
223	SLE FR 2	2	-10	639	0	0	0
223	SLE FR 3	2	-11	638	0	0	0
223	SLE FR 4	2	-11	661	0	0	0
223	SLE FR 5	2	-11	661	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
223	SLE FR 6	2	-11	674	0	0	0
223	SLE QP 1	2	-11	637	0	0	0
223	SLE QP 2	2	-11	659	0	0	0
223	SLD 1	56	8	713	0	0	0
223	SLD 2	67	13	721	0	0	0
223	SLD 3	53	-18	484	0	0	0
223	SLD 4	64	-13	492	0	0	0
223	SLD 5	21	33	1021	0	0	0
223	SLD 6	29	37	1027	0	0	0
223	SLD 7	10	-54	257	0	0	0
223	SLD 8	18	-50	263	0	0	0
223	SLD 9	-14	28	1055	0	0	0
223	SLD 10	-6	32	1061	0	0	0
223	SLD 11	-24	-59	291	0	0	0
223	SLD 12	-17	-55	297	0	0	0
223	SLD 13	-60	-9	826	0	0	0
223	SLD 14	-48	-4	835	0	0	0
223	SLD 15	-63	-35	597	0	0	0
223	SLD 16	-52	-30	605	0	0	0
223	SLV 1	128	35	804	0	0	0
223	SLV 2	155	48	824	0	0	0
223	SLV 3	120	-30	229	0	0	0
223	SLV 4	147	-17	249	0	0	0
223	SLV 5	47	99	1570	0	0	0
223	SLV 6	65	108	1583	0	0	0
223	SLV 7	20	-118	-345	0	0	0
223	SLV 8	38	-109	-331	0	0	0
223	SLV 9	-34	87	1650	0	0	0
223	SLV 10	-16	96	1663	0	0	0
223	SLV 11	-61	-130	-265	0	0	0
223	SLV 12	-43	-121	-252	0	0	0
223	SLV 13	-143	-5	1069	0	0	0
223	SLV 14	-116	8	1089	0	0	0
223	SLV 15	-151	-70	495	0	0	0
223	SLV 16	-124	-57	515	0	0	0
223	CRTFP Uy+	0	0	0	0	0	0
223	CRTFP Uy-	0	0	0	0	0	0
225	SLU 1	8	-51	4417	102.43	1321.56	14.8
225	SLU 2	9	-32	4538	105.07	1357.88	9.16
225	SLU 3	8	-52	4484	104.02	1341.8	15.05
225	SLU 4	9	-41	4557	105.61	1363.6	11.67
225	SLU 5	9	-33	4579	106.04	1370.22	9.33
225	SLU 6	8	-52	4525	104.99	1354.14	15.22
225	SLU 7	8	-41	4598	106.58	1375.93	11.84
225	SLU 8	8	-52	4499	104.37	1346.23	15.14
225	SLU 9	8	-41	4572	105.96	1368.03	11.75
225	SLU 10	9	-38	5119	118.59	1532.41	10.88
225	SLU 11	8	-58	5064	117.54	1516.33	16.78
225	SLU 12	8	-46	5137	119.13	1538.12	13.4
225	SLU 13	9	-39	5160	119.56	1544.74	11.05
225	SLU 14	7	-58	5105	118.52	1528.66	16.95
225	SLU 15	8	-47	5178	120.1	1550.46	13.57
225	SLU 16	7	-58	5079	117.89	1520.76	16.86
225	SLU 17	8	-47	5152	119.48	1542.55	13.48
225	SLU 18	8	-59	5246	121.74	1570.88	17.26
225	SLU 19	9	-48	5319	123.33	1592.67	13.88
225	SLU 20	8	-60	5287	122.72	1583.22	17.43
225	SLU 21	8	-49	5360	124.3	1605.01	14.05
225	SLU 22	9	-57	4981	115.62	1490.84	16.59
225	SLU 23	10	-39	5103	118.26	1527.16	10.96
225	SLU 24	9	-58	5049	117.21	1511.08	16.85
225	SLU 25	9	-47	5122	118.8	1532.87	13.47
225	SLU 26	10	-39	5144	119.23	1539.5	11.13
225	SLU 27	8	-59	5090	118.19	1523.42	17.02
225	SLU 28	9	-47	5163	119.77	1545.21	13.64
225	SLU 29	8	-58	5064	117.57	1515.51	16.93
225	SLU 30	9	-47	5137	119.15	1537.3	13.55
225	SLU 31	10	-44	5683	131.78	1701.69	12.68
225	SLU 32	9	-64	5629	130.73	1685.6	18.58
225	SLU 33	9	-53	5702	132.32	1707.4	15.19
225	SLU 34	9	-45	5725	132.75	1714.02	12.85
225	SLU 35	8	-64	5670	131.71	1697.94	18.75
225	SLU 36	9	-53	5743	133.29	1719.73	15.36
225	SLU 37	8	-64	5644	131.09	1690.03	18.66
225	SLU 38	9	-53	5717	132.67	1711.83	15.28
225	SLU 39	9	-66	5811	134.93	1740.16	19.06
225	SLU 40	9	-54	5884	136.52	1761.95	15.68
225	SLU 41	8	-66	5852	135.91	1752.49	19.23
225	SLU 42	9	-55	5925	137.49	1774.29	15.85
225	SLU 43	11	-64	5548	128.63	1659.99	18.62
225	SLU 44	12	-46	5669	131.28	1696.31	12.98
225	SLU 45	10	-65	5615	130.23	1680.23	18.88
225	SLU 46	11	-54	5688	131.81	1702.03	15.49
225	SLU 47	11	-46	5710	132.25	1708.65	13.15
225	SLU 48	10	-66	5656	131.2	1692.57	19.05
225	SLU 49	11	-54	5729	132.79	1714.36	15.66
225	SLU 50	10	-65	5630	130.58	1684.66	18.96
225	SLU 51	10	-54	5703	132.17	1706.46	15.57
225	SLU 52	11	-51	6250	144.8	1870.84	14.7

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
225	SLU 53	10	-71	6196	143.75	1854.76	20.6
225	SLU 54	11	-60	6269	145.33	1876.55	17.22
225	SLU 55	11	-52	6291	145.77	1883.17	14.87
225	SLU 56	10	-71	6237	144.72	1867.09	20.77
225	SLU 57	10	-60	6310	146.31	1888.89	17.39
225	SLU 58	10	-71	6210	144.1	1859.19	20.68
225	SLU 59	10	-60	6283	145.69	1880.98	17.3
225	SLU 60	10	-73	6377	147.95	1909.31	21.08
225	SLU 61	11	-61	6450	149.53	1931.11	17.7
225	SLU 62	10	-73	6418	148.92	1921.65	21.25
225	SLU 63	10	-62	6491	150.51	1943.44	17.87
225	SLU 64	11	-70	6113	141.82	1829.27	20.42
225	SLU 65	12	-52	6234	144.47	1865.59	14.78
225	SLU 66	11	-71	6180	143.42	1849.51	20.67
225	SLU 67	12	-60	6253	145	1871.3	17.29
225	SLU 68	12	-52	6275	145.44	1877.93	14.95
225	SLU 69	11	-72	6221	144.39	1861.85	20.84
225	SLU 70	11	-61	6294	145.98	1883.64	17.46
225	SLU 71	11	-72	6195	143.77	1853.94	20.76
225	SLU 72	11	-60	6268	145.36	1875.73	17.37
225	SLU 73	12	-58	6815	157.99	2040.12	16.5
225	SLU 74	11	-77	6760	156.94	2024.03	22.4
225	SLU 75	11	-66	6833	158.52	2045.83	19.02
225	SLU 76	12	-58	6856	158.96	2052.45	16.67
225	SLU 77	10	-78	6802	157.91	2036.37	22.57
225	SLU 78	11	-66	6875	159.5	2058.16	19.19
225	SLU 79	10	-77	6775	157.29	2028.46	22.48
225	SLU 80	11	-66	6848	158.88	2050.26	19.1
225	SLU 81	11	-79	6942	161.14	2078.59	22.88
225	SLU 82	12	-68	7015	162.72	2100.38	19.5
225	SLU 83	11	-79	6983	162.11	2090.92	23.05
225	SLU 84	11	-68	7056	163.7	2112.72	19.67
225	SLE RA 1	9	-53	4578	106.2	1369.93	15.31
225	SLE RA 2	9	-40	4659	107.96	1394.14	11.55
225	SLE RA 3	8	-53	4623	107.26	1383.42	15.48
225	SLE RA 4	9	-46	4672	108.32	1397.95	13.23
225	SLE RA 5	9	-41	4686	108.61	1402.36	11.66
225	SLE RA 6	8	-54	4650	107.91	1391.64	15.59
225	SLE RA 7	8	-46	4699	108.96	1406.17	13.34
225	SLE RA 8	8	-54	4633	107.49	1386.37	15.54
225	SLE RA 9	8	-46	4681	108.55	1400.9	13.28
225	SLE RA 10	9	-44	5046	116.97	1510.49	12.7
225	SLE RA 11	8	-57	5010	116.27	1499.77	16.63
225	SLE RA 12	9	-50	5058	117.33	1514.3	14.38
225	SLE RA 13	9	-45	5073	117.62	1518.71	12.81
225	SLE RA 14	8	-58	5037	116.92	1507.99	16.74
225	SLE RA 15	8	-50	5086	117.98	1522.52	14.49
225	SLE RA 16	8	-57	5020	116.51	1502.72	16.69
225	SLE RA 17	8	-50	5068	117.56	1517.25	14.43
225	SLE RA 18	8	-58	5131	119.07	1536.14	16.95
225	SLE RA 19	9	-51	5179	120.13	1550.67	14.7
225	SLE RA 20	8	-59	5158	119.72	1544.36	17.07
225	SLE RA 21	8	-51	5207	120.78	1558.89	14.81
225	SLE FR 1	9	-53	4578	106.2	1369.93	15.31
225	SLE FR 2	9	-50	4594	106.55	1374.77	14.56
225	SLE FR 3	9	-53	4589	106.46	1373.22	15.35
225	SLE FR 4	9	-52	4760	110.41	1424.63	15.05
225	SLE FR 5	8	-55	4755	110.32	1423.08	15.85
225	SLE FR 6	9	-56	4854	112.63	1453.03	16.13
225	SLE QP 1	9	-53	4578	106.2	1369.93	15.31
225	SLE QP 2	9	-55	4744	110.06	1419.79	15.8
225	SLD 1	418	70	5486	126.41	1647.12	-30.27
225	SLD 2	505	74	5511	126.94	1652.75	-33.23
225	SLD 3	397	-160	3865	91.23	1163.91	38.87
225	SLD 4	484	-156	3890	91.76	1169.54	35.91
225	SLD 5	147	330	7421	168.23	2219.84	-102.36
225	SLD 6	204	333	7437	168.58	2223.55	-104.31
225	SLD 7	79	-435	2017	50.95	609.15	128.12
225	SLD 8	136	-432	2033	51.31	612.87	126.17
225	SLD 9	-119	323	7454	168.81	2226.71	-94.57
225	SLD 10	-61	326	7471	169.17	2230.43	-96.52
225	SLD 11	-187	-442	2050	51.54	616.03	135.91
225	SLD 12	-130	-439	2067	51.89	619.74	133.96
225	SLD 13	-467	47	5597	128.36	1670.04	-4.31
225	SLD 14	-380	51	5623	128.89	1675.67	-7.27
225	SLD 15	-488	-183	3976	93.17	1186.83	64.84
225	SLD 16	-401	-179	4001	93.71	1192.46	61.88
225	SLV 1	968	254	6615	151.23	1991.78	-97.31
225	SLV 2	1173	263	6674	152.49	2005.01	-104.27
225	SLV 3	916	-318	2552	63.06	780.8	75.13
225	SLV 4	1120	-309	2611	64.32	794.03	68.18
225	SLV 5	338	904	11456	255.91	3425.56	-278.38
225	SLV 6	476	910	11496	256.76	3434.47	-283.06
225	SLV 7	163	-1003	-2087	-38.01	-611.02	296.45
225	SLV 8	301	-997	-2047	-37.17	-602.11	291.76
225	SLV 9	-283	888	11535	257.28	3441.69	-260.16
225	SLV 10	-146	894	11574	258.13	3450.6	-264.84
225	SLV 11	-458	-1019	-2008	-36.64	-594.89	314.67
225	SLV 12	-321	-1013	-1969	-35.8	-585.98	309.98

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
225	SLV 13	-1103	200	6876	155.8	2045.55	-36.57
225	SLV 14	-898	209	6935	157.06	2058.78	-43.53
225	SLV 15	-1155	-372	2813	67.62	834.57	135.88
225	SLV 16	-951	-363	2872	68.88	847.8	128.92
225	CRTFP Ux+	0	0	0	0	0	0
225	CRTFP Ux-	0	0	0	0	0	0
225	CRTFP Uy+	0	0	0	0	-0.01	0
225	CRTFP Uy-	0	0	0	0	0.01	0
226	SLU 1	3	-17	1289	0	0	0
226	SLU 2	3	-11	1325	0	0	0
226	SLU 3	3	-17	1309	0	0	0
226	SLU 4	3	-14	1330	0	0	0
226	SLU 5	3	-12	1337	0	0	0
226	SLU 6	3	-17	1321	0	0	0
226	SLU 7	3	-14	1342	0	0	0
226	SLU 8	3	-17	1313	0	0	0
226	SLU 9	3	-14	1334	0	0	0
226	SLU 10	3	-13	1493	0	0	0
226	SLU 11	3	-19	1477	0	0	0
226	SLU 12	3	-16	1498	0	0	0
226	SLU 13	3	-13	1505	0	0	0
226	SLU 14	3	-19	1489	0	0	0
226	SLU 15	3	-16	1510	0	0	0
226	SLU 16	3	-19	1481	0	0	0
226	SLU 17	3	-16	1503	0	0	0
226	SLU 18	3	-19	1529	0	0	0
226	SLU 19	3	-16	1551	0	0	0
226	SLU 20	3	-20	1541	0	0	0
226	SLU 21	3	-16	1563	0	0	0
226	SLU 22	3	-19	1454	0	0	0
226	SLU 23	3	-13	1489	0	0	0
226	SLU 24	3	-19	1473	0	0	0
226	SLU 25	3	-16	1495	0	0	0
226	SLU 26	3	-14	1501	0	0	0
226	SLU 27	3	-19	1485	0	0	0
226	SLU 28	3	-16	1507	0	0	0
226	SLU 29	3	-19	1478	0	0	0
226	SLU 30	3	-16	1499	0	0	0
226	SLU 31	3	-15	1658	0	0	0
226	SLU 32	3	-21	1641	0	0	0
226	SLU 33	3	-18	1663	0	0	0
226	SLU 34	3	-15	1669	0	0	0
226	SLU 35	3	-21	1653	0	0	0
226	SLU 36	3	-18	1675	0	0	0
226	SLU 37	3	-21	1646	0	0	0
226	SLU 38	3	-18	1667	0	0	0
226	SLU 39	3	-21	1694	0	0	0
226	SLU 40	3	-18	1715	0	0	0
226	SLU 41	3	-22	1706	0	0	0
226	SLU 42	3	-18	1727	0	0	0
226	SLU 43	4	-21	1620	0	0	0
226	SLU 44	4	-16	1655	0	0	0
226	SLU 45	4	-21	1639	0	0	0
226	SLU 46	4	-18	1661	0	0	0
226	SLU 47	4	-16	1667	0	0	0
226	SLU 48	3	-22	1651	0	0	0
226	SLU 49	4	-18	1672	0	0	0
226	SLU 50	3	-21	1643	0	0	0
226	SLU 51	4	-18	1665	0	0	0
226	SLU 52	4	-18	1823	0	0	0
226	SLU 53	4	-23	1807	0	0	0
226	SLU 54	4	-20	1829	0	0	0
226	SLU 55	4	-18	1835	0	0	0
226	SLU 56	3	-23	1819	0	0	0
226	SLU 57	4	-20	1841	0	0	0
226	SLU 58	3	-23	1811	0	0	0
226	SLU 59	4	-20	1833	0	0	0
226	SLU 60	4	-24	1860	0	0	0
226	SLU 61	4	-20	1881	0	0	0
226	SLU 62	3	-24	1872	0	0	0
226	SLU 63	4	-21	1893	0	0	0
226	SLU 64	4	-23	1784	0	0	0
226	SLU 65	4	-18	1820	0	0	0
226	SLU 66	4	-23	1804	0	0	0
226	SLU 67	4	-20	1825	0	0	0
226	SLU 68	4	-18	1832	0	0	0
226	SLU 69	4	-24	1816	0	0	0
226	SLU 70	4	-20	1837	0	0	0
226	SLU 71	4	-24	1808	0	0	0
226	SLU 72	4	-20	1829	0	0	0
226	SLU 73	4	-20	1988	0	0	0
226	SLU 74	4	-25	1972	0	0	0
226	SLU 75	4	-22	1993	0	0	0
226	SLU 76	4	-20	2000	0	0	0
226	SLU 77	4	-25	1984	0	0	0
226	SLU 78	4	-22	2005	0	0	0
226	SLU 79	4	-25	1976	0	0	0
226	SLU 80	4	-22	1997	0	0	0
226	SLU 81	4	-26	2024	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
226	SLU 82	4	-22	2046	0	0	0
226	SLU 83	4	-26	2036	0	0	0
226	SLU 84	4	-23	2058	0	0	0
226	SLE RA 1	3	-17	1336	0	0	0
226	SLE RA 2	3	-14	1360	0	0	0
226	SLE RA 3	3	-18	1349	0	0	0
226	SLE RA 4	3	-15	1364	0	0	0
226	SLE RA 5	3	-14	1368	0	0	0
226	SLE RA 6	3	-18	1357	0	0	0
226	SLE RA 7	3	-16	1371	0	0	0
226	SLE RA 8	3	-18	1352	0	0	0
226	SLE RA 9	3	-15	1366	0	0	0
226	SLE RA 10	3	-15	1472	0	0	0
226	SLE RA 11	3	-19	1461	0	0	0
226	SLE RA 12	3	-17	1476	0	0	0
226	SLE RA 13	3	-15	1480	0	0	0
226	SLE RA 14	3	-19	1469	0	0	0
226	SLE RA 15	3	-17	1484	0	0	0
226	SLE RA 16	3	-19	1464	0	0	0
226	SLE RA 17	3	-17	1478	0	0	0
226	SLE RA 18	3	-19	1496	0	0	0
226	SLE RA 19	3	-17	1511	0	0	0
226	SLE RA 20	3	-19	1504	0	0	0
226	SLE RA 21	3	-17	1519	0	0	0
226	SLE FR 1	3	-17	1336	0	0	0
226	SLE FR 2	3	-17	1341	0	0	0
226	SLE FR 3	3	-17	1339	0	0	0
226	SLE FR 4	3	-17	1389	0	0	0
226	SLE FR 5	3	-18	1387	0	0	0
226	SLE FR 6	3	-18	1416	0	0	0
226	SLE QP 1	3	-17	1336	0	0	0
226	SLE QP 2	3	-18	1384	0	0	0
226	SLD 1	122	20	1590	0	0	0
226	SLD 2	148	23	1600	0	0	0
226	SLD 3	116	-45	1113	0	0	0
226	SLD 4	142	-42	1123	0	0	0
226	SLD 5	44	92	2168	0	0	0
226	SLD 6	60	94	2175	0	0	0
226	SLD 7	23	-126	577	0	0	0
226	SLD 8	40	-123	583	0	0	0
226	SLD 9	-34	88	2185	0	0	0
226	SLD 10	-17	90	2192	0	0	0
226	SLD 11	-54	-130	593	0	0	0
226	SLD 12	-38	-127	600	0	0	0
226	SLD 13	-136	6	1646	0	0	0
226	SLD 14	-110	10	1656	0	0	0
226	SLD 15	-142	-59	1168	0	0	0
226	SLD 16	-116	-56	1178	0	0	0
226	SLV 1	283	75	1906	0	0	0
226	SLV 2	342	83	1930	0	0	0
226	SLV 3	267	-87	709	0	0	0
226	SLV 4	327	-79	733	0	0	0
226	SLV 5	100	255	3352	0	0	0
226	SLV 6	140	260	3367	0	0	0
226	SLV 7	47	-287	-638	0	0	0
226	SLV 8	87	-281	-622	0	0	0
226	SLV 9	-81	246	3390	0	0	0
226	SLV 10	-41	251	3406	0	0	0
226	SLV 11	-134	-296	-599	0	0	0
226	SLV 12	-94	-291	-583	0	0	0
226	SLV 13	-321	44	2036	0	0	0
226	SLV 14	-261	52	2059	0	0	0
226	SLV 15	-337	-119	839	0	0	0
226	SLV 16	-277	-111	863	0	0	0
226	CRTFP Uy+	0	0	0	0	0	0
226	CRTFP Uy-	0	0	0	0	0	0
227	SLU 1	3	-17	1272	0	0	0
227	SLU 2	3	-12	1307	0	0	0
227	SLU 3	3	-18	1291	0	0	0
227	SLU 4	3	-15	1313	0	0	0
227	SLU 5	3	-12	1319	0	0	0
227	SLU 6	3	-18	1303	0	0	0
227	SLU 7	3	-15	1324	0	0	0
227	SLU 8	3	-18	1296	0	0	0
227	SLU 9	3	-15	1317	0	0	0
227	SLU 10	3	-14	1473	0	0	0
227	SLU 11	3	-20	1456	0	0	0
227	SLU 12	3	-16	1478	0	0	0
227	SLU 13	3	-14	1484	0	0	0
227	SLU 14	3	-20	1468	0	0	0
227	SLU 15	3	-17	1489	0	0	0
227	SLU 16	3	-20	1461	0	0	0
227	SLU 17	3	-16	1482	0	0	0
227	SLU 18	3	-20	1508	0	0	0
227	SLU 19	3	-17	1529	0	0	0
227	SLU 20	3	-20	1520	0	0	0
227	SLU 21	3	-17	1541	0	0	0
227	SLU 22	4	-19	1434	0	0	0
227	SLU 23	4	-14	1470	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
227	SLU 24	3	-20	1454	0	0	0
227	SLU 25	4	-17	1475	0	0	0
227	SLU 26	4	-14	1481	0	0	0
227	SLU 27	3	-20	1465	0	0	0
227	SLU 28	4	-17	1486	0	0	0
227	SLU 29	3	-20	1458	0	0	0
227	SLU 30	3	-17	1479	0	0	0
227	SLU 31	4	-16	1635	0	0	0
227	SLU 32	3	-22	1619	0	0	0
227	SLU 33	4	-18	1640	0	0	0
227	SLU 34	4	-16	1646	0	0	0
227	SLU 35	3	-22	1630	0	0	0
227	SLU 36	3	-19	1651	0	0	0
227	SLU 37	3	-22	1623	0	0	0
227	SLU 38	3	-19	1644	0	0	0
227	SLU 39	3	-22	1670	0	0	0
227	SLU 40	4	-19	1691	0	0	0
227	SLU 41	3	-22	1682	0	0	0
227	SLU 42	4	-19	1703	0	0	0
227	SLU 43	4	-22	1598	0	0	0
227	SLU 44	4	-17	1633	0	0	0
227	SLU 45	4	-22	1617	0	0	0
227	SLU 46	4	-19	1639	0	0	0
227	SLU 47	4	-17	1645	0	0	0
227	SLU 48	4	-22	1629	0	0	0
227	SLU 49	4	-19	1650	0	0	0
227	SLU 50	4	-22	1622	0	0	0
227	SLU 51	4	-19	1643	0	0	0
227	SLU 52	4	-18	1799	0	0	0
227	SLU 53	4	-24	1783	0	0	0
227	SLU 54	4	-21	1804	0	0	0
227	SLU 55	4	-19	1810	0	0	0
227	SLU 56	4	-24	1794	0	0	0
227	SLU 57	4	-21	1815	0	0	0
227	SLU 58	4	-24	1787	0	0	0
227	SLU 59	4	-21	1808	0	0	0
227	SLU 60	4	-25	1834	0	0	0
227	SLU 61	4	-21	1855	0	0	0
227	SLU 62	4	-25	1846	0	0	0
227	SLU 63	4	-22	1867	0	0	0
227	SLU 64	4	-24	1760	0	0	0
227	SLU 65	5	-19	1796	0	0	0
227	SLU 66	4	-24	1780	0	0	0
227	SLU 67	4	-21	1801	0	0	0
227	SLU 68	5	-19	1807	0	0	0
227	SLU 69	4	-24	1791	0	0	0
227	SLU 70	4	-21	1812	0	0	0
227	SLU 71	4	-24	1784	0	0	0
227	SLU 72	4	-21	1805	0	0	0
227	SLU 73	5	-21	1961	0	0	0
227	SLU 74	4	-26	1945	0	0	0
227	SLU 75	4	-23	1966	0	0	0
227	SLU 76	5	-21	1972	0	0	0
227	SLU 77	4	-26	1956	0	0	0
227	SLU 78	4	-23	1978	0	0	0
227	SLU 79	4	-26	1949	0	0	0
227	SLU 80	4	-23	1970	0	0	0
227	SLU 81	4	-27	1996	0	0	0
227	SLU 82	5	-23	2017	0	0	0
227	SLU 83	4	-27	2008	0	0	0
227	SLU 84	4	-24	2029	0	0	0
227	SLE RA 1	3	-18	1318	0	0	0
227	SLE RA 2	3	-14	1342	0	0	0
227	SLE RA 3	3	-18	1331	0	0	0
227	SLE RA 4	3	-16	1345	0	0	0
227	SLE RA 5	3	-15	1350	0	0	0
227	SLE RA 6	3	-18	1339	0	0	0
227	SLE RA 7	3	-16	1353	0	0	0
227	SLE RA 8	3	-18	1334	0	0	0
227	SLE RA 9	3	-16	1348	0	0	0
227	SLE RA 10	3	-16	1452	0	0	0
227	SLE RA 11	3	-19	1441	0	0	0
227	SLE RA 12	3	-17	1455	0	0	0
227	SLE RA 13	3	-16	1460	0	0	0
227	SLE RA 14	3	-20	1449	0	0	0
227	SLE RA 15	3	-17	1463	0	0	0
227	SLE RA 16	3	-19	1444	0	0	0
227	SLE RA 17	3	-17	1458	0	0	0
227	SLE RA 18	3	-20	1476	0	0	0
227	SLE RA 19	3	-18	1490	0	0	0
227	SLE RA 20	3	-20	1484	0	0	0
227	SLE RA 21	3	-18	1498	0	0	0
227	SLE FR 1	3	-18	1318	0	0	0
227	SLE FR 2	3	-17	1323	0	0	0
227	SLE FR 3	3	-18	1322	0	0	0
227	SLE FR 4	3	-18	1370	0	0	0
227	SLE FR 5	3	-19	1369	0	0	0
227	SLE FR 6	3	-19	1397	0	0	0
227	SLE QP 1	3	-18	1318	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
227	SLE QP 2	3	-18	1366	0	0	0
227	SLD 1	121	19	1560	0	0	0
227	SLD 2	146	24	1571	0	0	0
227	SLD 3	115	-44	1088	0	0	0
227	SLD 4	140	-39	1099	0	0	0
227	SLD 5	44	88	2137	0	0	0
227	SLD 6	60	91	2145	0	0	0
227	SLD 7	23	-123	565	0	0	0
227	SLD 8	39	-120	572	0	0	0
227	SLD 9	-33	83	2159	0	0	0
227	SLD 10	-16	86	2167	0	0	0
227	SLD 11	-54	-128	587	0	0	0
227	SLD 12	-37	-125	594	0	0	0
227	SLD 13	-133	2	1632	0	0	0
227	SLD 14	-108	7	1643	0	0	0
227	SLD 15	-140	-61	1160	0	0	0
227	SLD 16	-115	-56	1172	0	0	0
227	SLV 1	280	75	1859	0	0	0
227	SLV 2	339	86	1885	0	0	0
227	SLV 3	264	-83	676	0	0	0
227	SLV 4	323	-72	703	0	0	0
227	SLV 5	99	247	3302	0	0	0
227	SLV 6	139	254	3320	0	0	0
227	SLV 7	46	-280	-639	0	0	0
227	SLV 8	86	-272	-622	0	0	0
227	SLV 9	-79	235	3353	0	0	0
227	SLV 10	-40	243	3371	0	0	0
227	SLV 11	-132	-291	-589	0	0	0
227	SLV 12	-93	-284	-571	0	0	0
227	SLV 13	-316	35	2029	0	0	0
227	SLV 14	-257	46	2055	0	0	0
227	SLV 15	-332	-123	846	0	0	0
227	SLV 16	-273	-112	872	0	0	0
227	CRTFP Uy+	0	0	0	0	0	0
227	CRTFP Uy-	0	0	0	0	0	0
228	SLU 1	4	-18	1260	0	0	0
228	SLU 2	4	-13	1294	0	0	0
228	SLU 3	3	-18	1279	0	0	0
228	SLU 4	4	-15	1299	0	0	0
228	SLU 5	4	-13	1306	0	0	0
228	SLU 6	3	-18	1290	0	0	0
228	SLU 7	4	-15	1311	0	0	0
228	SLU 8	3	-18	1283	0	0	0
228	SLU 9	3	-15	1304	0	0	0
228	SLU 10	4	-15	1457	0	0	0
228	SLU 11	3	-20	1441	0	0	0
228	SLU 12	4	-17	1462	0	0	0
228	SLU 13	4	-15	1469	0	0	0
228	SLU 14	3	-20	1453	0	0	0
228	SLU 15	3	-17	1474	0	0	0
228	SLU 16	3	-20	1445	0	0	0
228	SLU 17	3	-17	1466	0	0	0
228	SLU 18	3	-21	1492	0	0	0
228	SLU 19	4	-18	1513	0	0	0
228	SLU 20	3	-21	1504	0	0	0
228	SLU 21	4	-18	1525	0	0	0
228	SLU 22	4	-20	1420	0	0	0
228	SLU 23	4	-15	1455	0	0	0
228	SLU 24	4	-20	1439	0	0	0
228	SLU 25	4	-17	1460	0	0	0
228	SLU 26	4	-15	1466	0	0	0
228	SLU 27	4	-21	1451	0	0	0
228	SLU 28	4	-18	1472	0	0	0
228	SLU 29	4	-20	1443	0	0	0
228	SLU 30	4	-17	1464	0	0	0
228	SLU 31	4	-17	1618	0	0	0
228	SLU 32	4	-22	1602	0	0	0
228	SLU 33	4	-19	1623	0	0	0
228	SLU 34	4	-17	1629	0	0	0
228	SLU 35	4	-22	1613	0	0	0
228	SLU 36	4	-19	1634	0	0	0
228	SLU 37	4	-22	1606	0	0	0
228	SLU 38	4	-19	1627	0	0	0
228	SLU 39	4	-23	1653	0	0	0
228	SLU 40	4	-20	1674	0	0	0
228	SLU 41	4	-23	1664	0	0	0
228	SLU 42	4	-20	1685	0	0	0
228	SLU 43	4	-23	1582	0	0	0
228	SLU 44	5	-17	1617	0	0	0
228	SLU 45	4	-23	1601	0	0	0
228	SLU 46	5	-20	1622	0	0	0
228	SLU 47	5	-18	1629	0	0	0
228	SLU 48	4	-23	1613	0	0	0
228	SLU 49	4	-20	1634	0	0	0
228	SLU 50	4	-23	1606	0	0	0
228	SLU 51	4	-20	1626	0	0	0
228	SLU 52	5	-19	1780	0	0	0
228	SLU 53	4	-25	1764	0	0	0
228	SLU 54	5	-22	1785	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
228	SLU 55	5	-20	1792	0	0	0
228	SLU 56	4	-25	1776	0	0	0
228	SLU 57	4	-22	1797	0	0	0
228	SLU 58	4	-25	1768	0	0	0
228	SLU 59	4	-22	1789	0	0	0
228	SLU 60	4	-25	1815	0	0	0
228	SLU 61	5	-22	1836	0	0	0
228	SLU 62	4	-25	1827	0	0	0
228	SLU 63	4	-22	1847	0	0	0
228	SLU 64	5	-25	1743	0	0	0
228	SLU 65	5	-20	1778	0	0	0
228	SLU 66	5	-25	1762	0	0	0
228	SLU 67	5	-22	1783	0	0	0
228	SLU 68	5	-20	1789	0	0	0
228	SLU 69	5	-25	1773	0	0	0
228	SLU 70	5	-22	1794	0	0	0
228	SLU 71	5	-25	1766	0	0	0
228	SLU 72	5	-22	1787	0	0	0
228	SLU 73	5	-21	1941	0	0	0
228	SLU 74	5	-27	1925	0	0	0
228	SLU 75	5	-24	1946	0	0	0
228	SLU 76	5	-22	1952	0	0	0
228	SLU 77	5	-27	1936	0	0	0
228	SLU 78	5	-24	1957	0	0	0
228	SLU 79	5	-27	1929	0	0	0
228	SLU 80	5	-24	1950	0	0	0
228	SLU 81	5	-27	1975	0	0	0
228	SLU 82	5	-24	1996	0	0	0
228	SLU 83	5	-28	1987	0	0	0
228	SLU 84	5	-25	2008	0	0	0
228	SLE RA 1	4	-19	1305	0	0	0
228	SLE RA 2	4	-15	1329	0	0	0
228	SLE RA 3	4	-19	1318	0	0	0
228	SLE RA 4	4	-17	1332	0	0	0
228	SLE RA 5	4	-15	1336	0	0	0
228	SLE RA 6	4	-19	1326	0	0	0
228	SLE RA 7	4	-17	1340	0	0	0
228	SLE RA 8	3	-19	1321	0	0	0
228	SLE RA 9	4	-17	1335	0	0	0
228	SLE RA 10	4	-16	1437	0	0	0
228	SLE RA 11	4	-20	1427	0	0	0
228	SLE RA 12	4	-18	1441	0	0	0
228	SLE RA 13	4	-17	1445	0	0	0
228	SLE RA 14	3	-20	1434	0	0	0
228	SLE RA 15	4	-18	1448	0	0	0
228	SLE RA 16	3	-20	1429	0	0	0
228	SLE RA 17	4	-18	1443	0	0	0
228	SLE RA 18	4	-20	1460	0	0	0
228	SLE RA 19	4	-18	1474	0	0	0
228	SLE RA 20	4	-20	1468	0	0	0
228	SLE RA 21	4	-18	1482	0	0	0
228	SLE FR 1	4	-19	1305	0	0	0
228	SLE FR 2	4	-18	1310	0	0	0
228	SLE FR 3	4	-19	1309	0	0	0
228	SLE FR 4	4	-18	1357	0	0	0
228	SLE FR 5	4	-19	1355	0	0	0
228	SLE FR 6	4	-19	1383	0	0	0
228	SLE QP 1	4	-19	1305	0	0	0
228	SLE QP 2	4	-19	1352	0	0	0
228	SLD 1	120	19	1533	0	0	0
228	SLD 2	145	25	1546	0	0	0
228	SLD 3	114	-43	1066	0	0	0
228	SLD 4	139	-37	1078	0	0	0
228	SLD 5	44	85	2113	0	0	0
228	SLD 6	60	89	2121	0	0	0
228	SLD 7	23	-121	555	0	0	0
228	SLD 8	39	-117	563	0	0	0
228	SLD 9	-32	79	2141	0	0	0
228	SLD 10	-15	83	2149	0	0	0
228	SLD 11	-53	-127	583	0	0	0
228	SLD 12	-36	-123	591	0	0	0
228	SLD 13	-132	-1	1626	0	0	0
228	SLD 14	-107	5	1638	0	0	0
228	SLD 15	-138	-63	1158	0	0	0
228	SLD 16	-113	-57	1170	0	0	0
228	SLV 1	277	75	1815	0	0	0
228	SLV 2	336	88	1844	0	0	0
228	SLV 3	261	-79	644	0	0	0
228	SLV 4	320	-66	672	0	0	0
228	SLV 5	99	240	3263	0	0	0
228	SLV 6	139	249	3282	0	0	0
228	SLV 7	46	-273	-643	0	0	0
228	SLV 8	85	-265	-624	0	0	0
228	SLV 9	-78	226	3328	0	0	0
228	SLV 10	-38	235	3347	0	0	0
228	SLV 11	-131	-287	-578	0	0	0
228	SLV 12	-92	-279	-559	0	0	0
228	SLV 13	-312	28	2032	0	0	0
228	SLV 14	-254	41	2060	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
228	SLV 15	-329	-126	860	0	0	0
228	SLV 16	-270	-113	888	0	0	0
228	CRTFP Uy+	0	0	0	0	0	0
228	CRTFP Uy-	0	0	0	0	0	0
229	SLU 1	4	-19	1252	0	0	0
229	SLU 2	4	-13	1287	0	0	0
229	SLU 3	4	-19	1271	0	0	0
229	SLU 4	4	-16	1292	0	0	0
229	SLU 5	4	-14	1298	0	0	0
229	SLU 6	4	-19	1283	0	0	0
229	SLU 7	4	-16	1303	0	0	0
229	SLU 8	4	-19	1275	0	0	0
229	SLU 9	4	-16	1296	0	0	0
229	SLU 10	4	-15	1448	0	0	0
229	SLU 11	4	-21	1432	0	0	0
229	SLU 12	4	-18	1453	0	0	0
229	SLU 13	4	-16	1460	0	0	0
229	SLU 14	4	-21	1444	0	0	0
229	SLU 15	4	-18	1465	0	0	0
229	SLU 16	4	-21	1436	0	0	0
229	SLU 17	4	-18	1457	0	0	0
229	SLU 18	4	-21	1483	0	0	0
229	SLU 19	4	-18	1503	0	0	0
229	SLU 20	4	-21	1494	0	0	0
229	SLU 21	4	-18	1515	0	0	0
229	SLU 22	4	-21	1412	0	0	0
229	SLU 23	4	-16	1447	0	0	0
229	SLU 24	4	-21	1431	0	0	0
229	SLU 25	4	-18	1452	0	0	0
229	SLU 26	4	-16	1458	0	0	0
229	SLU 27	4	-21	1442	0	0	0
229	SLU 28	4	-18	1463	0	0	0
229	SLU 29	4	-21	1435	0	0	0
229	SLU 30	4	-18	1456	0	0	0
229	SLU 31	4	-17	1608	0	0	0
229	SLU 32	4	-23	1592	0	0	0
229	SLU 33	4	-20	1613	0	0	0
229	SLU 34	4	-18	1619	0	0	0
229	SLU 35	4	-23	1603	0	0	0
229	SLU 36	4	-20	1624	0	0	0
229	SLU 37	4	-23	1596	0	0	0
229	SLU 38	4	-20	1617	0	0	0
229	SLU 39	4	-23	1642	0	0	0
229	SLU 40	4	-20	1663	0	0	0
229	SLU 41	4	-24	1654	0	0	0
229	SLU 42	4	-21	1675	0	0	0
229	SLU 43	5	-23	1573	0	0	0
229	SLU 44	5	-18	1608	0	0	0
229	SLU 45	5	-24	1592	0	0	0
229	SLU 46	5	-21	1613	0	0	0
229	SLU 47	5	-19	1619	0	0	0
229	SLU 48	5	-24	1604	0	0	0
229	SLU 49	5	-21	1624	0	0	0
229	SLU 50	5	-24	1596	0	0	0
229	SLU 51	5	-21	1617	0	0	0
229	SLU 52	5	-20	1769	0	0	0
229	SLU 53	5	-26	1753	0	0	0
229	SLU 54	5	-23	1774	0	0	0
229	SLU 55	5	-20	1781	0	0	0
229	SLU 56	5	-26	1765	0	0	0
229	SLU 57	5	-23	1786	0	0	0
229	SLU 58	5	-26	1757	0	0	0
229	SLU 59	5	-23	1778	0	0	0
229	SLU 60	5	-26	1804	0	0	0
229	SLU 61	5	-23	1824	0	0	0
229	SLU 62	5	-26	1815	0	0	0
229	SLU 63	5	-23	1836	0	0	0
229	SLU 64	5	-25	1733	0	0	0
229	SLU 65	5	-20	1768	0	0	0
229	SLU 66	5	-26	1752	0	0	0
229	SLU 67	5	-23	1773	0	0	0
229	SLU 68	5	-21	1779	0	0	0
229	SLU 69	5	-26	1763	0	0	0
229	SLU 70	5	-23	1784	0	0	0
229	SLU 71	5	-26	1756	0	0	0
229	SLU 72	5	-23	1777	0	0	0
229	SLU 73	5	-22	1929	0	0	0
229	SLU 74	5	-28	1913	0	0	0
229	SLU 75	5	-25	1934	0	0	0
229	SLU 76	5	-23	1940	0	0	0
229	SLU 77	5	-28	1924	0	0	0
229	SLU 78	5	-25	1945	0	0	0
229	SLU 79	5	-28	1917	0	0	0
229	SLU 80	5	-25	1938	0	0	0
229	SLU 81	5	-28	1963	0	0	0
229	SLU 82	5	-25	1984	0	0	0
229	SLU 83	5	-28	1975	0	0	0
229	SLU 84	5	-25	1995	0	0	0
229	SLE RA 1	4	-19	1298	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
229	SLE RA 2	4	-16	1321	0	0	0
229	SLE RA 3	4	-19	1311	0	0	0
229	SLE RA 4	4	-17	1324	0	0	0
229	SLE RA 5	4	-16	1329	0	0	0
229	SLE RA 6	4	-20	1318	0	0	0
229	SLE RA 7	4	-17	1332	0	0	0
229	SLE RA 8	4	-19	1313	0	0	0
229	SLE RA 9	4	-17	1327	0	0	0
229	SLE RA 10	4	-17	1429	0	0	0
229	SLE RA 11	4	-21	1418	0	0	0
229	SLE RA 12	4	-19	1432	0	0	0
229	SLE RA 13	4	-17	1436	0	0	0
229	SLE RA 14	4	-21	1426	0	0	0
229	SLE RA 15	4	-19	1439	0	0	0
229	SLE RA 16	4	-21	1421	0	0	0
229	SLE RA 17	4	-19	1435	0	0	0
229	SLE RA 18	4	-21	1452	0	0	0
229	SLE RA 19	4	-19	1465	0	0	0
229	SLE RA 20	4	-21	1459	0	0	0
229	SLE RA 21	4	-19	1473	0	0	0
229	SLE FR 1	4	-19	1298	0	0	0
229	SLE FR 2	4	-18	1303	0	0	0
229	SLE FR 3	4	-19	1301	0	0	0
229	SLE FR 4	4	-19	1349	0	0	0
229	SLE FR 5	4	-20	1347	0	0	0
229	SLE FR 6	4	-20	1375	0	0	0
229	SLE QP 1	4	-19	1298	0	0	0
229	SLE QP 2	4	-20	1344	0	0	0
229	SLD 1	120	18	1513	0	0	0
229	SLD 2	144	25	1526	0	0	0
229	SLD 3	113	-42	1048	0	0	0
229	SLD 4	138	-35	1061	0	0	0
229	SLD 5	44	82	2098	0	0	0
229	SLD 6	60	87	2106	0	0	0
229	SLD 7	23	-119	547	0	0	0
229	SLD 8	39	-115	556	0	0	0
229	SLD 9	-31	75	2132	0	0	0
229	SLD 10	-15	80	2141	0	0	0
229	SLD 11	-52	-126	582	0	0	0
229	SLD 12	-36	-122	590	0	0	0
229	SLD 13	-130	-4	1627	0	0	0
229	SLD 14	-106	3	1640	0	0	0
229	SLD 15	-137	-65	1162	0	0	0
229	SLD 16	-112	-58	1175	0	0	0
229	SLV 1	275	74	1778	0	0	0
229	SLV 2	334	90	1808	0	0	0
229	SLV 3	259	-76	612	0	0	0
229	SLV 4	317	-61	642	0	0	0
229	SLV 5	99	234	3237	0	0	0
229	SLV 6	138	245	3257	0	0	0
229	SLV 7	45	-268	-649	0	0	0
229	SLV 8	84	-257	-629	0	0	0
229	SLV 9	-76	218	3317	0	0	0
229	SLV 10	-37	229	3338	0	0	0
229	SLV 11	-131	-284	-569	0	0	0
229	SLV 12	-92	-273	-549	0	0	0
229	SLV 13	-309	21	2046	0	0	0
229	SLV 14	-251	37	2076	0	0	0
229	SLV 15	-326	-129	880	0	0	0
229	SLV 16	-268	-114	910	0	0	0
229	CRTFP Uy+	0	0	0	0	0	0
229	CRTFP Uy-	0	0	0	0	0	0
230	SLU 1	4	-19	1248	0	0	0
230	SLU 2	4	-14	1282	0	0	0
230	SLU 3	4	-19	1267	0	0	0
230	SLU 4	4	-16	1287	0	0	0
230	SLU 5	4	-14	1294	0	0	0
230	SLU 6	4	-20	1278	0	0	0
230	SLU 7	4	-17	1299	0	0	0
230	SLU 8	4	-19	1271	0	0	0
230	SLU 9	4	-16	1291	0	0	0
230	SLU 10	4	-16	1442	0	0	0
230	SLU 11	4	-21	1427	0	0	0
230	SLU 12	4	-18	1447	0	0	0
230	SLU 13	4	-16	1454	0	0	0
230	SLU 14	4	-21	1438	0	0	0
230	SLU 15	4	-18	1459	0	0	0
230	SLU 16	4	-21	1431	0	0	0
230	SLU 17	4	-18	1451	0	0	0
230	SLU 18	4	-22	1477	0	0	0
230	SLU 19	4	-19	1497	0	0	0
230	SLU 20	4	-22	1488	0	0	0
230	SLU 21	4	-19	1509	0	0	0
230	SLU 22	4	-21	1407	0	0	0
230	SLU 23	5	-16	1442	0	0	0
230	SLU 24	4	-22	1426	0	0	0
230	SLU 25	5	-19	1447	0	0	0
230	SLU 26	5	-16	1453	0	0	0
230	SLU 27	4	-22	1437	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
230	SLU 28	4	-19	1458	0	0	0
230	SLU 29	4	-22	1430	0	0	0
230	SLU 30	4	-19	1451	0	0	0
230	SLU 31	5	-18	1602	0	0	0
230	SLU 32	4	-23	1586	0	0	0
230	SLU 33	5	-20	1607	0	0	0
230	SLU 34	5	-18	1613	0	0	0
230	SLU 35	4	-24	1598	0	0	0
230	SLU 36	4	-21	1618	0	0	0
230	SLU 37	4	-23	1590	0	0	0
230	SLU 38	4	-21	1611	0	0	0
230	SLU 39	4	-24	1636	0	0	0
230	SLU 40	5	-21	1657	0	0	0
230	SLU 41	4	-24	1647	0	0	0
230	SLU 42	5	-21	1668	0	0	0
230	SLU 43	5	-24	1568	0	0	0
230	SLU 44	5	-19	1602	0	0	0
230	SLU 45	5	-24	1586	0	0	0
230	SLU 46	5	-21	1607	0	0	0
230	SLU 47	5	-19	1613	0	0	0
230	SLU 48	5	-25	1598	0	0	0
230	SLU 49	5	-22	1618	0	0	0
230	SLU 50	5	-24	1590	0	0	0
230	SLU 51	5	-21	1611	0	0	0
230	SLU 52	5	-21	1762	0	0	0
230	SLU 53	5	-26	1747	0	0	0
230	SLU 54	5	-23	1767	0	0	0
230	SLU 55	5	-21	1774	0	0	0
230	SLU 56	5	-26	1758	0	0	0
230	SLU 57	5	-23	1779	0	0	0
230	SLU 58	5	-26	1751	0	0	0
230	SLU 59	5	-23	1771	0	0	0
230	SLU 60	5	-27	1796	0	0	0
230	SLU 61	5	-24	1817	0	0	0
230	SLU 62	5	-27	1808	0	0	0
230	SLU 63	5	-24	1828	0	0	0
230	SLU 64	6	-26	1727	0	0	0
230	SLU 65	6	-21	1761	0	0	0
230	SLU 66	5	-26	1746	0	0	0
230	SLU 67	6	-24	1766	0	0	0
230	SLU 68	6	-21	1773	0	0	0
230	SLU 69	5	-27	1757	0	0	0
230	SLU 70	6	-24	1778	0	0	0
230	SLU 71	5	-27	1750	0	0	0
230	SLU 72	5	-24	1770	0	0	0
230	SLU 73	6	-23	1922	0	0	0
230	SLU 74	5	-28	1906	0	0	0
230	SLU 75	6	-25	1927	0	0	0
230	SLU 76	6	-23	1933	0	0	0
230	SLU 77	5	-29	1917	0	0	0
230	SLU 78	6	-26	1938	0	0	0
230	SLU 79	5	-28	1910	0	0	0
230	SLU 80	5	-25	1931	0	0	0
230	SLU 81	5	-29	1956	0	0	0
230	SLU 82	6	-26	1976	0	0	0
230	SLU 83	5	-29	1967	0	0	0
230	SLU 84	6	-26	1988	0	0	0
230	SLE RA 1	4	-20	1293	0	0	0
230	SLE RA 2	4	-16	1316	0	0	0
230	SLE RA 3	4	-20	1306	0	0	0
230	SLE RA 4	4	-18	1320	0	0	0
230	SLE RA 5	4	-16	1324	0	0	0
230	SLE RA 6	4	-20	1314	0	0	0
230	SLE RA 7	4	-18	1327	0	0	0
230	SLE RA 8	4	-20	1309	0	0	0
230	SLE RA 9	4	-18	1322	0	0	0
230	SLE RA 10	4	-18	1423	0	0	0
230	SLE RA 11	4	-21	1413	0	0	0
230	SLE RA 12	4	-19	1426	0	0	0
230	SLE RA 13	4	-18	1431	0	0	0
230	SLE RA 14	4	-21	1420	0	0	0
230	SLE RA 15	4	-19	1434	0	0	0
230	SLE RA 16	4	-21	1415	0	0	0
230	SLE RA 17	4	-19	1429	0	0	0
230	SLE RA 18	4	-21	1446	0	0	0
230	SLE RA 19	4	-19	1460	0	0	0
230	SLE RA 20	4	-22	1454	0	0	0
230	SLE RA 21	4	-20	1467	0	0	0
230	SLE FR 1	4	-20	1293	0	0	0
230	SLE FR 2	4	-19	1298	0	0	0
230	SLE FR 3	4	-20	1297	0	0	0
230	SLE FR 4	4	-20	1344	0	0	0
230	SLE FR 5	4	-20	1342	0	0	0
230	SLE FR 6	4	-21	1370	0	0	0
230	SLE QP 1	4	-20	1293	0	0	0
230	SLE QP 2	4	-20	1339	0	0	0
230	SLD 1	119	18	1495	0	0	0
230	SLD 2	143	26	1509	0	0	0
230	SLD 3	112	-41	1032	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
230	SLD 4	137	-33	1045	0	0	0
230	SLD 5	44	79	2087	0	0	0
230	SLD 6	60	84	2096	0	0	0
230	SLD 7	22	-117	541	0	0	0
230	SLD 8	39	-112	550	0	0	0
230	SLD 9	-30	72	2128	0	0	0
230	SLD 10	-14	77	2137	0	0	0
230	SLD 11	-52	-125	583	0	0	0
230	SLD 12	-36	-120	592	0	0	0
230	SLD 13	-129	-7	1633	0	0	0
230	SLD 14	-104	1	1647	0	0	0
230	SLD 15	-135	-66	1169	0	0	0
230	SLD 16	-111	-58	1183	0	0	0
230	SLV 1	273	73	1743	0	0	0
230	SLV 2	331	92	1775	0	0	0
230	SLV 3	257	-74	581	0	0	0
230	SLV 4	314	-55	613	0	0	0
230	SLV 5	99	228	3217	0	0	0
230	SLV 6	138	240	3239	0	0	0
230	SLV 7	44	-263	-657	0	0	0
230	SLV 8	83	-250	-635	0	0	0
230	SLV 9	-75	210	3314	0	0	0
230	SLV 10	-36	222	3336	0	0	0
230	SLV 11	-130	-280	-560	0	0	0
230	SLV 12	-91	-268	-539	0	0	0
230	SLV 13	-306	15	2066	0	0	0
230	SLV 14	-248	33	2098	0	0	0
230	SLV 15	-323	-132	903	0	0	0
230	SLV 16	-265	-114	936	0	0	0
230	CRTFP Uy+	0	0	0	0	0	0
230	CRTFP Uy-	0	0	0	0	0	0
231	SLU 1	4	-19	1242	0	0	0
231	SLU 2	4	-14	1276	0	0	0
231	SLU 3	4	-20	1261	0	0	0
231	SLU 4	4	-17	1281	0	0	0
231	SLU 5	4	-15	1288	0	0	0
231	SLU 6	4	-20	1272	0	0	0
231	SLU 7	4	-17	1293	0	0	0
231	SLU 8	4	-20	1265	0	0	0
231	SLU 9	4	-17	1285	0	0	0
231	SLU 10	4	-16	1435	0	0	0
231	SLU 11	4	-22	1420	0	0	0
231	SLU 12	4	-19	1440	0	0	0
231	SLU 13	4	-17	1447	0	0	0
231	SLU 14	4	-22	1431	0	0	0
231	SLU 15	4	-19	1452	0	0	0
231	SLU 16	4	-22	1424	0	0	0
231	SLU 17	4	-19	1444	0	0	0
231	SLU 18	4	-22	1469	0	0	0
231	SLU 19	4	-19	1490	0	0	0
231	SLU 20	4	-22	1481	0	0	0
231	SLU 21	4	-19	1501	0	0	0
231	SLU 22	5	-22	1401	0	0	0
231	SLU 23	5	-17	1435	0	0	0
231	SLU 24	5	-22	1420	0	0	0
231	SLU 25	5	-19	1440	0	0	0
231	SLU 26	5	-17	1447	0	0	0
231	SLU 27	4	-22	1431	0	0	0
231	SLU 28	5	-19	1452	0	0	0
231	SLU 29	4	-22	1424	0	0	0
231	SLU 30	5	-19	1444	0	0	0
231	SLU 31	5	-19	1594	0	0	0
231	SLU 32	5	-24	1579	0	0	0
231	SLU 33	5	-21	1599	0	0	0
231	SLU 34	5	-19	1606	0	0	0
231	SLU 35	4	-24	1590	0	0	0
231	SLU 36	5	-21	1611	0	0	0
231	SLU 37	4	-24	1583	0	0	0
231	SLU 38	5	-21	1603	0	0	0
231	SLU 39	5	-24	1628	0	0	0
231	SLU 40	5	-21	1649	0	0	0
231	SLU 41	5	-24	1640	0	0	0
231	SLU 42	5	-21	1660	0	0	0
231	SLU 43	5	-24	1560	0	0	0
231	SLU 44	6	-20	1595	0	0	0
231	SLU 45	5	-25	1579	0	0	0
231	SLU 46	5	-22	1600	0	0	0
231	SLU 47	5	-20	1606	0	0	0
231	SLU 48	5	-25	1590	0	0	0
231	SLU 49	5	-22	1611	0	0	0
231	SLU 50	5	-25	1583	0	0	0
231	SLU 51	5	-22	1604	0	0	0
231	SLU 52	6	-21	1754	0	0	0
231	SLU 53	5	-27	1738	0	0	0
231	SLU 54	5	-24	1759	0	0	0
231	SLU 55	5	-22	1765	0	0	0
231	SLU 56	5	-27	1749	0	0	0
231	SLU 57	5	-24	1770	0	0	0
231	SLU 58	5	-27	1742	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
231	SLU 59	5	-24	1763	0	0	0
231	SLU 60	5	-27	1788	0	0	0
231	SLU 61	5	-24	1808	0	0	0
231	SLU 62	5	-27	1799	0	0	0
231	SLU 63	5	-24	1819	0	0	0
231	SLU 64	6	-27	1719	0	0	0
231	SLU 65	6	-22	1754	0	0	0
231	SLU 66	6	-27	1738	0	0	0
231	SLU 67	6	-24	1759	0	0	0
231	SLU 68	6	-22	1765	0	0	0
231	SLU 69	6	-27	1749	0	0	0
231	SLU 70	6	-24	1770	0	0	0
231	SLU 71	6	-27	1742	0	0	0
231	SLU 72	6	-24	1763	0	0	0
231	SLU 73	6	-24	1913	0	0	0
231	SLU 74	6	-29	1897	0	0	0
231	SLU 75	6	-26	1918	0	0	0
231	SLU 76	6	-24	1924	0	0	0
231	SLU 77	6	-29	1908	0	0	0
231	SLU 78	6	-26	1929	0	0	0
231	SLU 79	6	-29	1901	0	0	0
231	SLU 80	6	-26	1922	0	0	0
231	SLU 81	6	-29	1947	0	0	0
231	SLU 82	6	-26	1967	0	0	0
231	SLU 83	6	-29	1958	0	0	0
231	SLU 84	6	-27	1978	0	0	0
231	SLE RA 1	4	-20	1288	0	0	0
231	SLE RA 2	4	-17	1310	0	0	0
231	SLE RA 3	4	-20	1300	0	0	0
231	SLE RA 4	4	-18	1314	0	0	0
231	SLE RA 5	4	-17	1318	0	0	0
231	SLE RA 6	4	-20	1308	0	0	0
231	SLE RA 7	4	-18	1321	0	0	0
231	SLE RA 8	4	-20	1303	0	0	0
231	SLE RA 9	4	-18	1317	0	0	0
231	SLE RA 10	4	-18	1416	0	0	0
231	SLE RA 11	4	-21	1406	0	0	0
231	SLE RA 12	4	-19	1420	0	0	0
231	SLE RA 13	4	-18	1424	0	0	0
231	SLE RA 14	4	-22	1414	0	0	0
231	SLE RA 15	4	-20	1427	0	0	0
231	SLE RA 16	4	-21	1409	0	0	0
231	SLE RA 17	4	-20	1423	0	0	0
231	SLE RA 18	4	-22	1439	0	0	0
231	SLE RA 19	4	-20	1453	0	0	0
231	SLE RA 20	4	-22	1447	0	0	0
231	SLE RA 21	4	-20	1460	0	0	0
231	SLE FR 1	4	-20	1288	0	0	0
231	SLE FR 2	4	-19	1292	0	0	0
231	SLE FR 3	4	-20	1291	0	0	0
231	SLE FR 4	4	-20	1338	0	0	0
231	SLE FR 5	4	-21	1336	0	0	0
231	SLE FR 6	4	-21	1363	0	0	0
231	SLE QP 1	4	-20	1288	0	0	0
231	SLE QP 2	4	-20	1333	0	0	0
231	SLD 1	118	17	1476	0	0	0
231	SLD 2	142	26	1491	0	0	0
231	SLD 3	111	-40	1014	0	0	0
231	SLD 4	135	-31	1029	0	0	0
231	SLD 5	44	76	2074	0	0	0
231	SLD 6	60	82	2083	0	0	0
231	SLD 7	22	-115	534	0	0	0
231	SLD 8	38	-109	544	0	0	0
231	SLD 9	-29	68	2122	0	0	0
231	SLD 10	-14	74	2132	0	0	0
231	SLD 11	-51	-123	583	0	0	0
231	SLD 12	-35	-117	592	0	0	0
231	SLD 13	-127	-10	1637	0	0	0
231	SLD 14	-102	-1	1652	0	0	0
231	SLD 15	-133	-67	1176	0	0	0
231	SLD 16	-109	-58	1190	0	0	0
231	SLV 1	270	72	1706	0	0	0
231	SLV 2	327	93	1740	0	0	0
231	SLV 3	253	-71	549	0	0	0
231	SLV 4	310	-50	583	0	0	0
231	SLV 5	99	220	3194	0	0	0
231	SLV 6	137	234	3217	0	0	0
231	SLV 7	43	-256	-664	0	0	0
231	SLV 8	81	-243	-641	0	0	0
231	SLV 9	-73	202	3308	0	0	0
231	SLV 10	-34	215	3330	0	0	0
231	SLV 11	-128	-275	-551	0	0	0
231	SLV 12	-90	-261	-528	0	0	0
231	SLV 13	-301	9	2083	0	0	0
231	SLV 14	-245	30	2118	0	0	0
231	SLV 15	-318	-134	926	0	0	0
231	SLV 16	-261	-113	960	0	0	0
231	CRTFP Uy+	0	0	0	0	0	0
231	CRTFP Uy-	0	0	0	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
232	SLU 1	4	-20	1232	0	0	0
232	SLU 2	5	-15	1266	0	0	0
232	SLU 3	4	-20	1251	0	0	0
232	SLU 4	4	-17	1271	0	0	0
232	SLU 5	4	-15	1277	0	0	0
232	SLU 6	4	-20	1262	0	0	0
232	SLU 7	4	-17	1282	0	0	0
232	SLU 8	4	-20	1255	0	0	0
232	SLU 9	4	-17	1275	0	0	0
232	SLU 10	5	-17	1424	0	0	0
232	SLU 11	4	-22	1408	0	0	0
232	SLU 12	4	-19	1429	0	0	0
232	SLU 13	4	-17	1435	0	0	0
232	SLU 14	4	-22	1420	0	0	0
232	SLU 15	4	-19	1440	0	0	0
232	SLU 16	4	-22	1412	0	0	0
232	SLU 17	4	-19	1433	0	0	0
232	SLU 18	4	-22	1457	0	0	0
232	SLU 19	4	-19	1478	0	0	0
232	SLU 20	4	-22	1469	0	0	0
232	SLU 21	4	-20	1489	0	0	0
232	SLU 22	5	-22	1391	0	0	0
232	SLU 23	5	-17	1424	0	0	0
232	SLU 24	5	-22	1409	0	0	0
232	SLU 25	5	-19	1429	0	0	0
232	SLU 26	5	-17	1436	0	0	0
232	SLU 27	5	-22	1420	0	0	0
232	SLU 28	5	-20	1441	0	0	0
232	SLU 29	5	-22	1413	0	0	0
232	SLU 30	5	-19	1433	0	0	0
232	SLU 31	5	-19	1582	0	0	0
232	SLU 32	5	-24	1567	0	0	0
232	SLU 33	5	-21	1587	0	0	0
232	SLU 34	5	-19	1593	0	0	0
232	SLU 35	5	-24	1578	0	0	0
232	SLU 36	5	-21	1598	0	0	0
232	SLU 37	5	-24	1571	0	0	0
232	SLU 38	5	-21	1591	0	0	0
232	SLU 39	5	-24	1616	0	0	0
232	SLU 40	5	-22	1636	0	0	0
232	SLU 41	5	-25	1627	0	0	0
232	SLU 42	5	-22	1647	0	0	0
232	SLU 43	5	-25	1548	0	0	0
232	SLU 44	6	-20	1582	0	0	0
232	SLU 45	5	-25	1566	0	0	0
232	SLU 46	5	-22	1587	0	0	0
232	SLU 47	6	-20	1593	0	0	0
232	SLU 48	5	-25	1578	0	0	0
232	SLU 49	5	-22	1598	0	0	0
232	SLU 50	5	-25	1570	0	0	0
232	SLU 51	5	-22	1591	0	0	0
232	SLU 52	6	-22	1739	0	0	0
232	SLU 53	5	-27	1724	0	0	0
232	SLU 54	5	-24	1744	0	0	0
232	SLU 55	6	-22	1750	0	0	0
232	SLU 56	5	-27	1735	0	0	0
232	SLU 57	5	-24	1755	0	0	0
232	SLU 58	5	-27	1728	0	0	0
232	SLU 59	5	-24	1748	0	0	0
232	SLU 60	5	-27	1773	0	0	0
232	SLU 61	6	-25	1793	0	0	0
232	SLU 62	5	-28	1784	0	0	0
232	SLU 63	5	-25	1804	0	0	0
232	SLU 64	6	-27	1706	0	0	0
232	SLU 65	6	-22	1740	0	0	0
232	SLU 66	6	-27	1725	0	0	0
232	SLU 67	6	-24	1745	0	0	0
232	SLU 68	6	-22	1751	0	0	0
232	SLU 69	6	-27	1736	0	0	0
232	SLU 70	6	-25	1756	0	0	0
232	SLU 71	6	-27	1729	0	0	0
232	SLU 72	6	-25	1749	0	0	0
232	SLU 73	6	-24	1897	0	0	0
232	SLU 74	6	-29	1882	0	0	0
232	SLU 75	6	-26	1902	0	0	0
232	SLU 76	6	-24	1909	0	0	0
232	SLU 77	6	-29	1893	0	0	0
232	SLU 78	6	-26	1914	0	0	0
232	SLU 79	6	-29	1886	0	0	0
232	SLU 80	6	-26	1906	0	0	0
232	SLU 81	6	-30	1931	0	0	0
232	SLU 82	6	-27	1951	0	0	0
232	SLU 83	6	-30	1942	0	0	0
232	SLU 84	6	-27	1963	0	0	0
232	SLE RA 1	4	-20	1278	0	0	0
232	SLE RA 2	5	-17	1300	0	0	0
232	SLE RA 3	4	-20	1290	0	0	0
232	SLE RA 4	4	-19	1303	0	0	0
232	SLE RA 5	4	-17	1308	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
232	SLE RA 6	4	-21	1297	0	0	0
232	SLE RA 7	4	-19	1311	0	0	0
232	SLE RA 8	4	-21	1293	0	0	0
232	SLE RA 9	4	-19	1306	0	0	0
232	SLE RA 10	5	-18	1405	0	0	0
232	SLE RA 11	4	-22	1395	0	0	0
232	SLE RA 12	4	-20	1408	0	0	0
232	SLE RA 13	5	-18	1413	0	0	0
232	SLE RA 14	4	-22	1402	0	0	0
232	SLE RA 15	4	-20	1416	0	0	0
232	SLE RA 16	4	-22	1398	0	0	0
232	SLE RA 17	4	-20	1411	0	0	0
232	SLE RA 18	4	-22	1428	0	0	0
232	SLE RA 19	4	-20	1441	0	0	0
232	SLE RA 20	4	-22	1435	0	0	0
232	SLE RA 21	4	-20	1449	0	0	0
232	SLE FR 1	4	-20	1278	0	0	0
232	SLE FR 2	4	-20	1282	0	0	0
232	SLE FR 3	4	-20	1281	0	0	0
232	SLE FR 4	4	-20	1327	0	0	0
232	SLE FR 5	4	-21	1326	0	0	0
232	SLE FR 6	4	-21	1353	0	0	0
232	SLE QP 1	4	-20	1278	0	0	0
232	SLE QP 2	4	-21	1323	0	0	0
232	SLD 1	115	17	1453	0	0	0
232	SLD 2	139	26	1468	0	0	0
232	SLD 3	109	-39	994	0	0	0
232	SLD 4	133	-29	1009	0	0	0
232	SLD 5	43	73	2054	0	0	0
232	SLD 6	59	79	2064	0	0	0
232	SLD 7	22	-112	526	0	0	0
232	SLD 8	37	-106	536	0	0	0
232	SLD 9	-29	64	2109	0	0	0
232	SLD 10	-13	70	2119	0	0	0
232	SLD 11	-50	-120	581	0	0	0
232	SLD 12	-35	-114	591	0	0	0
232	SLD 13	-124	-12	1636	0	0	0
232	SLD 14	-100	-3	1651	0	0	0
232	SLD 15	-130	-67	1177	0	0	0
232	SLD 16	-107	-58	1192	0	0	0
232	SLV 1	265	71	1665	0	0	0
232	SLV 2	320	93	1701	0	0	0
232	SLV 3	248	-68	516	0	0	0
232	SLV 4	304	-45	551	0	0	0
232	SLV 5	97	212	3162	0	0	0
232	SLV 6	135	227	3186	0	0	0
232	SLV 7	42	-248	-669	0	0	0
232	SLV 8	79	-233	-645	0	0	0
232	SLV 9	-71	192	3290	0	0	0
232	SLV 10	-33	207	3314	0	0	0
232	SLV 11	-126	-269	-541	0	0	0
232	SLV 12	-89	-254	-517	0	0	0
232	SLV 13	-295	4	2094	0	0	0
232	SLV 14	-239	26	2130	0	0	0
232	SLV 15	-312	-134	944	0	0	0
232	SLV 16	-256	-112	980	0	0	0
232	CRTFP Ux+	0	0	0	0	0	0
232	CRTFP Ux-	0	0	0	0	0	0
232	CRTFP Uy+	0	0	0	0	0	0
232	CRTFP Uy-	0	0	0	0	0	0
233	SLU 1	4	-20	1225	0	0	0
233	SLU 2	4	-15	1258	0	0	0
233	SLU 3	4	-20	1243	0	0	0
233	SLU 4	4	-18	1263	0	0	0
233	SLU 5	4	-16	1270	0	0	0
233	SLU 6	4	-21	1254	0	0	0
233	SLU 7	4	-18	1275	0	0	0
233	SLU 8	4	-20	1247	0	0	0
233	SLU 9	4	-18	1267	0	0	0
233	SLU 10	5	-17	1415	0	0	0
233	SLU 11	4	-22	1399	0	0	0
233	SLU 12	4	-19	1420	0	0	0
233	SLU 13	4	-17	1426	0	0	0
233	SLU 14	4	-22	1411	0	0	0
233	SLU 15	4	-20	1431	0	0	0
233	SLU 16	4	-22	1403	0	0	0
233	SLU 17	4	-20	1424	0	0	0
233	SLU 18	4	-23	1448	0	0	0
233	SLU 19	4	-20	1468	0	0	0
233	SLU 20	4	-23	1459	0	0	0
233	SLU 21	4	-20	1479	0	0	0
233	SLU 22	5	-22	1382	0	0	0
233	SLU 23	5	-18	1416	0	0	0
233	SLU 24	5	-23	1401	0	0	0
233	SLU 25	5	-20	1421	0	0	0
233	SLU 26	5	-18	1427	0	0	0
233	SLU 27	5	-23	1412	0	0	0
233	SLU 28	5	-20	1432	0	0	0
233	SLU 29	5	-23	1405	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
233	SLU 30	5	-20	1425	0	0	0
233	SLU 31	5	-19	1572	0	0	0
233	SLU 32	5	-24	1557	0	0	0
233	SLU 33	5	-22	1577	0	0	0
233	SLU 34	5	-20	1584	0	0	0
233	SLU 35	5	-25	1569	0	0	0
233	SLU 36	5	-22	1589	0	0	0
233	SLU 37	5	-24	1561	0	0	0
233	SLU 38	5	-22	1581	0	0	0
233	SLU 39	5	-25	1606	0	0	0
233	SLU 40	5	-22	1626	0	0	0
233	SLU 41	5	-25	1617	0	0	0
233	SLU 42	5	-22	1637	0	0	0
233	SLU 43	5	-25	1538	0	0	0
233	SLU 44	6	-21	1572	0	0	0
233	SLU 45	5	-26	1556	0	0	0
233	SLU 46	5	-23	1577	0	0	0
233	SLU 47	5	-21	1583	0	0	0
233	SLU 48	5	-26	1568	0	0	0
233	SLU 49	5	-23	1588	0	0	0
233	SLU 50	5	-26	1560	0	0	0
233	SLU 51	5	-23	1581	0	0	0
233	SLU 52	6	-22	1728	0	0	0
233	SLU 53	5	-27	1713	0	0	0
233	SLU 54	5	-25	1733	0	0	0
233	SLU 55	5	-23	1739	0	0	0
233	SLU 56	5	-28	1724	0	0	0
233	SLU 57	5	-25	1744	0	0	0
233	SLU 58	5	-28	1717	0	0	0
233	SLU 59	5	-25	1737	0	0	0
233	SLU 60	5	-28	1761	0	0	0
233	SLU 61	5	-25	1781	0	0	0
233	SLU 62	5	-28	1772	0	0	0
233	SLU 63	5	-25	1793	0	0	0
233	SLU 64	6	-27	1696	0	0	0
233	SLU 65	6	-23	1729	0	0	0
233	SLU 66	6	-28	1714	0	0	0
233	SLU 67	6	-25	1734	0	0	0
233	SLU 68	6	-23	1741	0	0	0
233	SLU 69	6	-28	1725	0	0	0
233	SLU 70	6	-25	1746	0	0	0
233	SLU 71	6	-28	1718	0	0	0
233	SLU 72	6	-25	1738	0	0	0
233	SLU 73	6	-25	1886	0	0	0
233	SLU 74	6	-30	1871	0	0	0
233	SLU 75	6	-27	1891	0	0	0
233	SLU 76	6	-25	1897	0	0	0
233	SLU 77	6	-30	1882	0	0	0
233	SLU 78	6	-27	1902	0	0	0
233	SLU 79	6	-30	1875	0	0	0
233	SLU 80	6	-27	1895	0	0	0
233	SLU 81	6	-30	1919	0	0	0
233	SLU 82	6	-27	1939	0	0	0
233	SLU 83	6	-30	1930	0	0	0
233	SLU 84	6	-28	1950	0	0	0
233	SLE RA 1	4	-21	1270	0	0	0
233	SLE RA 2	5	-18	1292	0	0	0
233	SLE RA 3	4	-21	1282	0	0	0
233	SLE RA 4	4	-19	1295	0	0	0
233	SLE RA 5	4	-18	1300	0	0	0
233	SLE RA 6	4	-21	1290	0	0	0
233	SLE RA 7	4	-19	1303	0	0	0
233	SLE RA 8	4	-21	1285	0	0	0
233	SLE RA 9	4	-19	1298	0	0	0
233	SLE RA 10	5	-19	1396	0	0	0
233	SLE RA 11	4	-22	1386	0	0	0
233	SLE RA 12	4	-20	1400	0	0	0
233	SLE RA 13	4	-19	1404	0	0	0
233	SLE RA 14	4	-22	1394	0	0	0
233	SLE RA 15	4	-20	1407	0	0	0
233	SLE RA 16	4	-22	1389	0	0	0
233	SLE RA 17	4	-20	1402	0	0	0
233	SLE RA 18	4	-22	1419	0	0	0
233	SLE RA 19	4	-21	1432	0	0	0
233	SLE RA 20	4	-22	1426	0	0	0
233	SLE RA 21	4	-21	1440	0	0	0
233	SLE FR 1	4	-21	1270	0	0	0
233	SLE FR 2	4	-20	1274	0	0	0
233	SLE FR 3	4	-21	1273	0	0	0
233	SLE FR 4	4	-21	1319	0	0	0
233	SLE FR 5	4	-21	1317	0	0	0
233	SLE FR 6	4	-21	1344	0	0	0
233	SLE QP 1	4	-21	1270	0	0	0
233	SLE QP 2	4	-21	1314	0	0	0
233	SLD 1	113	16	1432	0	0	0
233	SLD 2	136	26	1448	0	0	0
233	SLD 3	107	-38	976	0	0	0
233	SLD 4	130	-27	992	0	0	0
233	SLD 5	43	69	2039	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
233	SLD 6	58	76	2049	0	0	0
233	SLD 7	21	-109	518	0	0	0
233	SLD 8	36	-102	529	0	0	0
233	SLD 9	-28	60	2100	0	0	0
233	SLD 10	-13	67	2111	0	0	0
233	SLD 11	-49	-118	579	0	0	0
233	SLD 12	-34	-111	590	0	0	0
233	SLD 13	-121	-15	1637	0	0	0
233	SLD 14	-98	-5	1653	0	0	0
233	SLD 15	-128	-68	1181	0	0	0
233	SLD 16	-104	-58	1196	0	0	0
233	SLV 1	260	69	1628	0	0	0
233	SLV 2	314	94	1666	0	0	0
233	SLV 3	243	-64	484	0	0	0
233	SLV 4	298	-40	522	0	0	0
233	SLV 5	96	204	3136	0	0	0
233	SLV 6	132	220	3161	0	0	0
233	SLV 7	41	-241	-676	0	0	0
233	SLV 8	78	-225	-651	0	0	0
233	SLV 9	-69	182	3280	0	0	0
233	SLV 10	-32	199	3305	0	0	0
233	SLV 11	-124	-262	-533	0	0	0
233	SLV 12	-87	-246	-507	0	0	0
233	SLV 13	-289	-2	2107	0	0	0
233	SLV 14	-234	22	2144	0	0	0
233	SLV 15	-305	-136	963	0	0	0
233	SLV 16	-251	-112	1001	0	0	0
233	CRTFP Ux+	0	0	0	0	0	0
233	CRTFP Ux-	0	0	0	0	0	0
233	CRTFP Uy+	0	0	0	0	0	0
233	CRTFP Uy-	0	0	0	0	0	0
234	SLU 1	-4	-12	578	0	0	0
234	SLU 2	-4	-10	592	0	0	0
234	SLU 3	-4	-12	587	0	0	0
234	SLU 4	-4	-11	596	0	0	0
234	SLU 5	-4	-10	598	0	0	0
234	SLU 6	-4	-13	593	0	0	0
234	SLU 7	-4	-11	601	0	0	0
234	SLU 8	-4	-12	589	0	0	0
234	SLU 9	-4	-11	598	0	0	0
234	SLU 10	-4	-11	667	0	0	0
234	SLU 11	-4	-14	662	0	0	0
234	SLU 12	-4	-12	670	0	0	0
234	SLU 13	-4	-12	673	0	0	0
234	SLU 14	-4	-14	667	0	0	0
234	SLU 15	-5	-13	676	0	0	0
234	SLU 16	-4	-14	664	0	0	0
234	SLU 17	-4	-12	673	0	0	0
234	SLU 18	-4	-14	685	0	0	0
234	SLU 19	-4	-13	693	0	0	0
234	SLU 20	-4	-14	690	0	0	0
234	SLU 21	-4	-13	699	0	0	0
234	SLU 22	-5	-14	655	0	0	0
234	SLU 23	-5	-11	669	0	0	0
234	SLU 24	-5	-14	664	0	0	0
234	SLU 25	-5	-13	672	0	0	0
234	SLU 26	-5	-12	674	0	0	0
234	SLU 27	-5	-14	669	0	0	0
234	SLU 28	-5	-13	678	0	0	0
234	SLU 29	-5	-14	666	0	0	0
234	SLU 30	-5	-13	674	0	0	0
234	SLU 31	-5	-13	744	0	0	0
234	SLU 32	-5	-15	739	0	0	0
234	SLU 33	-5	-14	747	0	0	0
234	SLU 34	-5	-13	749	0	0	0
234	SLU 35	-5	-15	744	0	0	0
234	SLU 36	-5	-14	753	0	0	0
234	SLU 37	-5	-15	741	0	0	0
234	SLU 38	-5	-14	749	0	0	0
234	SLU 39	-5	-15	762	0	0	0
234	SLU 40	-5	-14	770	0	0	0
234	SLU 41	-5	-15	767	0	0	0
234	SLU 42	-5	-14	776	0	0	0
234	SLU 43	-5	-15	725	0	0	0
234	SLU 44	-5	-13	739	0	0	0
234	SLU 45	-5	-16	734	0	0	0
234	SLU 46	-5	-14	743	0	0	0
234	SLU 47	-5	-14	745	0	0	0
234	SLU 48	-5	-16	740	0	0	0
234	SLU 49	-5	-15	748	0	0	0
234	SLU 50	-5	-16	736	0	0	0
234	SLU 51	-5	-14	745	0	0	0
234	SLU 52	-5	-15	814	0	0	0
234	SLU 53	-5	-17	809	0	0	0
234	SLU 54	-5	-16	818	0	0	0
234	SLU 55	-5	-15	820	0	0	0
234	SLU 56	-6	-17	815	0	0	0
234	SLU 57	-6	-16	823	0	0	0
234	SLU 58	-5	-17	811	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
234	SLU 59	-6	-16	820	0	0	0
234	SLU 60	-5	-17	832	0	0	0
234	SLU 61	-5	-16	841	0	0	0
234	SLU 62	-5	-17	838	0	0	0
234	SLU 63	-5	-16	846	0	0	0
234	SLU 64	-6	-17	802	0	0	0
234	SLU 65	-6	-15	816	0	0	0
234	SLU 66	-6	-17	811	0	0	0
234	SLU 67	-6	-16	819	0	0	0
234	SLU 68	-6	-15	822	0	0	0
234	SLU 69	-6	-17	816	0	0	0
234	SLU 70	-6	-16	825	0	0	0
234	SLU 71	-6	-17	813	0	0	0
234	SLU 72	-6	-16	822	0	0	0
234	SLU 73	-6	-16	891	0	0	0
234	SLU 74	-6	-18	886	0	0	0
234	SLU 75	-6	-17	894	0	0	0
234	SLU 76	-6	-16	896	0	0	0
234	SLU 77	-6	-18	891	0	0	0
234	SLU 78	-6	-17	900	0	0	0
234	SLU 79	-6	-18	888	0	0	0
234	SLU 80	-6	-17	896	0	0	0
234	SLU 81	-6	-18	909	0	0	0
234	SLU 82	-6	-17	917	0	0	0
234	SLU 83	-6	-19	914	0	0	0
234	SLU 84	-6	-17	923	0	0	0
234	SLE RA 1	-4	-13	600	0	0	0
234	SLE RA 2	-4	-11	609	0	0	0
234	SLE RA 3	-4	-13	606	0	0	0
234	SLE RA 4	-4	-12	612	0	0	0
234	SLE RA 5	-4	-11	613	0	0	0
234	SLE RA 6	-4	-13	610	0	0	0
234	SLE RA 7	-4	-12	615	0	0	0
234	SLE RA 8	-4	-13	607	0	0	0
234	SLE RA 9	-4	-12	613	0	0	0
234	SLE RA 10	-4	-12	659	0	0	0
234	SLE RA 11	-4	-14	656	0	0	0
234	SLE RA 12	-4	-13	662	0	0	0
234	SLE RA 13	-4	-12	663	0	0	0
234	SLE RA 14	-5	-14	660	0	0	0
234	SLE RA 15	-5	-13	665	0	0	0
234	SLE RA 16	-5	-14	657	0	0	0
234	SLE RA 17	-5	-13	663	0	0	0
234	SLE RA 18	-4	-14	671	0	0	0
234	SLE RA 19	-4	-13	677	0	0	0
234	SLE RA 20	-4	-14	675	0	0	0
234	SLE RA 21	-4	-13	681	0	0	0
234	SLE FR 1	-4	-13	600	0	0	0
234	SLE FR 2	-4	-12	602	0	0	0
234	SLE FR 3	-4	-13	601	0	0	0
234	SLE FR 4	-4	-13	623	0	0	0
234	SLE FR 5	-4	-13	623	0	0	0
234	SLE FR 6	-4	-13	636	0	0	0
234	SLE QP 1	-4	-13	600	0	0	0
234	SLE QP 2	-4	-13	621	0	0	0
234	SLD 1	42	-5	769	0	0	0
234	SLD 2	52	-11	762	0	0	0
234	SLD 3	44	-29	577	0	0	0
234	SLD 4	54	-34	570	0	0	0
234	SLD 5	4	26	959	0	0	0
234	SLD 6	11	23	955	0	0	0
234	SLD 7	12	-53	317	0	0	0
234	SLD 8	18	-56	312	0	0	0
234	SLD 9	-27	30	930	0	0	0
234	SLD 10	-20	27	926	0	0	0
234	SLD 11	-20	-49	288	0	0	0
234	SLD 12	-13	-52	284	0	0	0
234	SLD 13	-63	8	673	0	0	0
234	SLD 14	-53	3	666	0	0	0
234	SLD 15	-61	-15	480	0	0	0
234	SLD 16	-51	-21	473	0	0	0
234	SLV 1	104	7	983	0	0	0
234	SLV 2	128	-6	967	0	0	0
234	SLV 3	109	-52	501	0	0	0
234	SLV 4	133	-64	484	0	0	0
234	SLV 5	16	84	1465	0	0	0
234	SLV 6	32	76	1454	0	0	0
234	SLV 7	33	-111	-144	0	0	0
234	SLV 8	49	-120	-155	0	0	0
234	SLV 9	-58	94	1397	0	0	0
234	SLV 10	-42	86	1386	0	0	0
234	SLV 11	-41	-102	-211	0	0	0
234	SLV 12	-24	-110	-222	0	0	0
234	SLV 13	-142	38	758	0	0	0
234	SLV 14	-118	26	742	0	0	0
234	SLV 15	-137	-20	276	0	0	0
234	SLV 16	-113	-33	259	0	0	0
234	CRTFP Uy+	0	0	0	0	0	0
234	CRTFP Uy-	0	0	0	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
235	SLU 1	-8	-22	1140	0	0	0
235	SLU 2	-8	-18	1168	0	0	0
235	SLU 3	-9	-23	1157	0	0	0
235	SLU 4	-9	-20	1174	0	0	0
235	SLU 5	-9	-18	1179	0	0	0
235	SLU 6	-9	-23	1168	0	0	0
235	SLU 7	-9	-20	1185	0	0	0
235	SLU 8	-9	-23	1161	0	0	0
235	SLU 9	-9	-20	1178	0	0	0
235	SLU 10	-9	-20	1315	0	0	0
235	SLU 11	-9	-25	1305	0	0	0
235	SLU 12	-9	-22	1322	0	0	0
235	SLU 13	-9	-20	1326	0	0	0
235	SLU 14	-9	-25	1316	0	0	0
235	SLU 15	-9	-22	1333	0	0	0
235	SLU 16	-9	-25	1309	0	0	0
235	SLU 17	-9	-22	1326	0	0	0
235	SLU 18	-9	-25	1350	0	0	0
235	SLU 19	-9	-23	1367	0	0	0
235	SLU 20	-9	-26	1361	0	0	0
235	SLU 21	-9	-23	1378	0	0	0
235	SLU 22	-10	-25	1290	0	0	0
235	SLU 23	-10	-20	1318	0	0	0
235	SLU 24	-10	-25	1308	0	0	0
235	SLU 25	-10	-22	1325	0	0	0
235	SLU 26	-10	-21	1329	0	0	0
235	SLU 27	-10	-25	1319	0	0	0
235	SLU 28	-10	-23	1336	0	0	0
235	SLU 29	-10	-25	1312	0	0	0
235	SLU 30	-10	-23	1329	0	0	0
235	SLU 31	-10	-23	1465	0	0	0
235	SLU 32	-10	-27	1455	0	0	0
235	SLU 33	-10	-25	1472	0	0	0
235	SLU 34	-10	-23	1476	0	0	0
235	SLU 35	-10	-27	1466	0	0	0
235	SLU 36	-10	-25	1483	0	0	0
235	SLU 37	-10	-27	1459	0	0	0
235	SLU 38	-10	-25	1476	0	0	0
235	SLU 39	-10	-28	1500	0	0	0
235	SLU 40	-10	-25	1517	0	0	0
235	SLU 41	-10	-28	1511	0	0	0
235	SLU 42	-10	-25	1528	0	0	0
235	SLU 43	-10	-28	1430	0	0	0
235	SLU 44	-11	-24	1458	0	0	0
235	SLU 45	-11	-28	1448	0	0	0
235	SLU 46	-11	-26	1464	0	0	0
235	SLU 47	-11	-24	1469	0	0	0
235	SLU 48	-11	-29	1459	0	0	0
235	SLU 49	-11	-26	1475	0	0	0
235	SLU 50	-11	-28	1452	0	0	0
235	SLU 51	-11	-26	1469	0	0	0
235	SLU 52	-11	-26	1605	0	0	0
235	SLU 53	-11	-31	1595	0	0	0
235	SLU 54	-11	-28	1612	0	0	0
235	SLU 55	-11	-26	1616	0	0	0
235	SLU 56	-11	-31	1606	0	0	0
235	SLU 57	-11	-28	1623	0	0	0
235	SLU 58	-11	-31	1599	0	0	0
235	SLU 59	-11	-28	1616	0	0	0
235	SLU 60	-11	-31	1640	0	0	0
235	SLU 61	-11	-29	1657	0	0	0
235	SLU 62	-11	-31	1651	0	0	0
235	SLU 63	-11	-29	1668	0	0	0
235	SLU 64	-12	-30	1580	0	0	0
235	SLU 65	-12	-26	1608	0	0	0
235	SLU 66	-12	-31	1598	0	0	0
235	SLU 67	-12	-28	1615	0	0	0
235	SLU 68	-12	-26	1619	0	0	0
235	SLU 69	-12	-31	1609	0	0	0
235	SLU 70	-12	-28	1626	0	0	0
235	SLU 71	-12	-31	1602	0	0	0
235	SLU 72	-12	-28	1619	0	0	0
235	SLU 73	-12	-28	1756	0	0	0
235	SLU 74	-12	-33	1745	0	0	0
235	SLU 75	-12	-30	1762	0	0	0
235	SLU 76	-12	-29	1767	0	0	0
235	SLU 77	-12	-33	1756	0	0	0
235	SLU 78	-12	-31	1773	0	0	0
235	SLU 79	-12	-33	1750	0	0	0
235	SLU 80	-12	-31	1766	0	0	0
235	SLU 81	-12	-34	1791	0	0	0
235	SLU 82	-12	-31	1808	0	0	0
235	SLU 83	-12	-34	1802	0	0	0
235	SLU 84	-12	-31	1819	0	0	0
235	SLE RA 1	-9	-23	1183	0	0	0
235	SLE RA 2	-9	-20	1201	0	0	0
235	SLE RA 3	-9	-23	1194	0	0	0
235	SLE RA 4	-9	-21	1206	0	0	0
235	SLE RA 5	-9	-20	1209	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
235	SLE RA 6	-9	-23	1202	0	0	0
235	SLE RA 7	-9	-22	1213	0	0	0
235	SLE RA 8	-9	-23	1197	0	0	0
235	SLE RA 9	-9	-21	1208	0	0	0
235	SLE RA 10	-9	-22	1299	0	0	0
235	SLE RA 11	-9	-25	1293	0	0	0
235	SLE RA 12	-9	-23	1304	0	0	0
235	SLE RA 13	-9	-22	1307	0	0	0
235	SLE RA 14	-9	-25	1300	0	0	0
235	SLE RA 15	-9	-23	1311	0	0	0
235	SLE RA 16	-9	-25	1295	0	0	0
235	SLE RA 17	-9	-23	1307	0	0	0
235	SLE RA 18	-9	-25	1323	0	0	0
235	SLE RA 19	-9	-23	1334	0	0	0
235	SLE RA 20	-9	-25	1330	0	0	0
235	SLE RA 21	-9	-23	1341	0	0	0
235	SLE FR 1	-9	-23	1183	0	0	0
235	SLE FR 2	-9	-22	1186	0	0	0
235	SLE FR 3	-9	-23	1185	0	0	0
235	SLE FR 4	-9	-23	1228	0	0	0
235	SLE FR 5	-9	-24	1228	0	0	0
235	SLE FR 6	-9	-24	1253	0	0	0
235	SLE QP 1	-9	-23	1183	0	0	0
235	SLE QP 2	-9	-23	1225	0	0	0
235	SLD 1	85	-6	1506	0	0	0
235	SLD 2	105	-16	1493	0	0	0
235	SLD 3	89	-55	1126	0	0	0
235	SLD 4	110	-65	1113	0	0	0
235	SLD 5	9	58	1888	0	0	0
235	SLD 6	22	51	1879	0	0	0
235	SLD 7	24	-105	621	0	0	0
235	SLD 8	37	-112	613	0	0	0
235	SLD 9	-55	65	1836	0	0	0
235	SLD 10	-41	58	1828	0	0	0
235	SLD 11	-40	-98	570	0	0	0
235	SLD 12	-27	-105	562	0	0	0
235	SLD 13	-127	18	1336	0	0	0
235	SLD 14	-107	8	1323	0	0	0
235	SLD 15	-123	-31	956	0	0	0
235	SLD 16	-103	-41	943	0	0	0
235	SLV 1	210	21	1915	0	0	0
235	SLV 2	258	-2	1885	0	0	0
235	SLV 3	221	-101	964	0	0	0
235	SLV 4	269	-124	933	0	0	0
235	SLV 5	32	178	2881	0	0	0
235	SLV 6	64	163	2860	0	0	0
235	SLV 7	67	-227	-291	0	0	0
235	SLV 8	99	-242	-312	0	0	0
235	SLV 9	-117	195	2761	0	0	0
235	SLV 10	-85	180	2740	0	0	0
235	SLV 11	-82	-210	-411	0	0	0
235	SLV 12	-49	-225	-431	0	0	0
235	SLV 13	-286	77	1516	0	0	0
235	SLV 14	-238	54	1486	0	0	0
235	SLV 15	-276	-45	564	0	0	0
235	SLV 16	-228	-68	534	0	0	0
235	CRTFP Uy+	0	0	0	0	0	0
235	CRTFP Uy-	0	0	0	0	0	0
236	SLU 1	-9	-21	1167	0	0	0
236	SLU 2	-9	-17	1196	0	0	0
236	SLU 3	-9	-21	1185	0	0	0
236	SLU 4	-9	-19	1202	0	0	0
236	SLU 5	-9	-17	1207	0	0	0
236	SLU 6	-9	-22	1196	0	0	0
236	SLU 7	-9	-19	1214	0	0	0
236	SLU 8	-9	-21	1189	0	0	0
236	SLU 9	-9	-19	1207	0	0	0
236	SLU 10	-9	-19	1347	0	0	0
236	SLU 11	-9	-23	1336	0	0	0
236	SLU 12	-9	-21	1353	0	0	0
236	SLU 13	-9	-19	1358	0	0	0
236	SLU 14	-9	-24	1347	0	0	0
236	SLU 15	-9	-21	1364	0	0	0
236	SLU 16	-9	-24	1340	0	0	0
236	SLU 17	-9	-21	1357	0	0	0
236	SLU 18	-9	-24	1383	0	0	0
236	SLU 19	-9	-21	1400	0	0	0
236	SLU 20	-9	-24	1394	0	0	0
236	SLU 21	-9	-22	1411	0	0	0
236	SLU 22	-10	-23	1320	0	0	0
236	SLU 23	-10	-19	1349	0	0	0
236	SLU 24	-10	-24	1338	0	0	0
236	SLU 25	-10	-21	1356	0	0	0
236	SLU 26	-10	-19	1360	0	0	0
236	SLU 27	-11	-24	1350	0	0	0
236	SLU 28	-11	-21	1367	0	0	0
236	SLU 29	-10	-24	1343	0	0	0
236	SLU 30	-11	-21	1360	0	0	0
236	SLU 31	-10	-21	1500	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
236	SLU 32	-10	-26	1489	0	0	0
236	SLU 33	-11	-23	1507	0	0	0
236	SLU 34	-10	-21	1511	0	0	0
236	SLU 35	-11	-26	1500	0	0	0
236	SLU 36	-11	-23	1518	0	0	0
236	SLU 37	-11	-26	1493	0	0	0
236	SLU 38	-11	-23	1511	0	0	0
236	SLU 39	-10	-26	1536	0	0	0
236	SLU 40	-10	-24	1553	0	0	0
236	SLU 41	-10	-27	1547	0	0	0
236	SLU 42	-11	-24	1564	0	0	0
236	SLU 43	-11	-27	1464	0	0	0
236	SLU 44	-11	-22	1493	0	0	0
236	SLU 45	-11	-27	1483	0	0	0
236	SLU 46	-11	-24	1500	0	0	0
236	SLU 47	-11	-22	1504	0	0	0
236	SLU 48	-11	-27	1494	0	0	0
236	SLU 49	-11	-24	1511	0	0	0
236	SLU 50	-11	-27	1487	0	0	0
236	SLU 51	-11	-24	1504	0	0	0
236	SLU 52	-11	-24	1644	0	0	0
236	SLU 53	-11	-29	1634	0	0	0
236	SLU 54	-11	-26	1651	0	0	0
236	SLU 55	-11	-24	1655	0	0	0
236	SLU 56	-12	-29	1645	0	0	0
236	SLU 57	-12	-27	1662	0	0	0
236	SLU 58	-12	-29	1638	0	0	0
236	SLU 59	-12	-26	1655	0	0	0
236	SLU 60	-11	-30	1680	0	0	0
236	SLU 61	-11	-27	1697	0	0	0
236	SLU 62	-11	-30	1691	0	0	0
236	SLU 63	-11	-27	1708	0	0	0
236	SLU 64	-12	-29	1618	0	0	0
236	SLU 65	-12	-24	1647	0	0	0
236	SLU 66	-12	-29	1636	0	0	0
236	SLU 67	-13	-26	1653	0	0	0
236	SLU 68	-12	-25	1658	0	0	0
236	SLU 69	-13	-29	1647	0	0	0
236	SLU 70	-13	-27	1664	0	0	0
236	SLU 71	-13	-29	1640	0	0	0
236	SLU 72	-13	-27	1657	0	0	0
236	SLU 73	-12	-26	1797	0	0	0
236	SLU 74	-13	-31	1787	0	0	0
236	SLU 75	-13	-29	1804	0	0	0
236	SLU 76	-13	-27	1809	0	0	0
236	SLU 77	-13	-31	1798	0	0	0
236	SLU 78	-13	-29	1815	0	0	0
236	SLU 79	-13	-31	1791	0	0	0
236	SLU 80	-13	-29	1808	0	0	0
236	SLU 81	-12	-32	1833	0	0	0
236	SLU 82	-12	-29	1851	0	0	0
236	SLU 83	-13	-32	1844	0	0	0
236	SLU 84	-13	-29	1862	0	0	0
236	SLE RA 1	-9	-22	1211	0	0	0
236	SLE RA 2	-9	-19	1230	0	0	0
236	SLE RA 3	-9	-22	1223	0	0	0
236	SLE RA 4	-9	-20	1234	0	0	0
236	SLE RA 5	-9	-19	1237	0	0	0
236	SLE RA 6	-9	-22	1230	0	0	0
236	SLE RA 7	-9	-20	1242	0	0	0
236	SLE RA 8	-9	-22	1226	0	0	0
236	SLE RA 9	-9	-20	1237	0	0	0
236	SLE RA 10	-9	-20	1331	0	0	0
236	SLE RA 11	-9	-23	1323	0	0	0
236	SLE RA 12	-9	-22	1335	0	0	0
236	SLE RA 13	-9	-20	1338	0	0	0
236	SLE RA 14	-10	-23	1331	0	0	0
236	SLE RA 15	-10	-22	1342	0	0	0
236	SLE RA 16	-10	-23	1326	0	0	0
236	SLE RA 17	-10	-22	1338	0	0	0
236	SLE RA 18	-9	-24	1354	0	0	0
236	SLE RA 19	-9	-22	1366	0	0	0
236	SLE RA 20	-9	-24	1362	0	0	0
236	SLE RA 21	-9	-22	1373	0	0	0
236	SLE FR 1	-9	-22	1211	0	0	0
236	SLE FR 2	-9	-21	1215	0	0	0
236	SLE FR 3	-9	-22	1214	0	0	0
236	SLE FR 4	-9	-22	1258	0	0	0
236	SLE FR 5	-9	-22	1257	0	0	0
236	SLE FR 6	-9	-23	1283	0	0	0
236	SLE QP 1	-9	-22	1211	0	0	0
236	SLE QP 2	-9	-22	1254	0	0	0
236	SLD 1	89	-2	1532	0	0	0
236	SLD 2	111	-12	1519	0	0	0
236	SLD 3	94	-55	1142	0	0	0
236	SLD 4	115	-64	1130	0	0	0
236	SLD 5	10	65	1930	0	0	0
236	SLD 6	24	59	1922	0	0	0
236	SLD 7	25	-110	632	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
236	SLD 8	39	-116	624	0	0	0
236	SLD 9	-57	71	1884	0	0	0
236	SLD 10	-43	65	1875	0	0	0
236	SLD 11	-42	-103	586	0	0	0
236	SLD 12	-28	-109	578	0	0	0
236	SLD 13	-134	20	1378	0	0	0
236	SLD 14	-112	10	1365	0	0	0
236	SLD 15	-129	-33	988	0	0	0
236	SLD 16	-108	-42	976	0	0	0
236	SLV 1	221	28	1936	0	0	0
236	SLV 2	271	6	1907	0	0	0
236	SLV 3	232	-102	961	0	0	0
236	SLV 4	282	-124	932	0	0	0
236	SLV 5	34	195	2943	0	0	0
236	SLV 6	68	180	2923	0	0	0
236	SLV 7	70	-240	-308	0	0	0
236	SLV 8	104	-255	-327	0	0	0
236	SLV 9	-123	210	2835	0	0	0
236	SLV 10	-89	195	2815	0	0	0
236	SLV 11	-86	-224	-416	0	0	0
236	SLV 12	-52	-239	-435	0	0	0
236	SLV 13	-300	79	1576	0	0	0
236	SLV 14	-250	57	1547	0	0	0
236	SLV 15	-289	-51	601	0	0	0
236	SLV 16	-239	-73	571	0	0	0
236	CRTFP Uy+	0	0	0	0	0	0
236	CRTFP Uy-	0	0	0	0	0	0
237	SLU 1	-9	-20	1206	0	0	0
237	SLU 2	-9	-15	1236	0	0	0
237	SLU 3	-9	-20	1225	0	0	0
237	SLU 4	-9	-17	1243	0	0	0
237	SLU 5	-9	-15	1247	0	0	0
237	SLU 6	-9	-20	1236	0	0	0
237	SLU 7	-10	-18	1254	0	0	0
237	SLU 8	-9	-20	1229	0	0	0
237	SLU 9	-9	-18	1247	0	0	0
237	SLU 10	-9	-17	1392	0	0	0
237	SLU 11	-9	-22	1381	0	0	0
237	SLU 12	-9	-19	1399	0	0	0
237	SLU 13	-9	-17	1403	0	0	0
237	SLU 14	-10	-22	1392	0	0	0
237	SLU 15	-10	-20	1410	0	0	0
237	SLU 16	-10	-22	1385	0	0	0
237	SLU 17	-10	-20	1403	0	0	0
237	SLU 18	-9	-23	1429	0	0	0
237	SLU 19	-9	-20	1447	0	0	0
237	SLU 20	-9	-23	1441	0	0	0
237	SLU 21	-9	-20	1458	0	0	0
237	SLU 22	-10	-22	1364	0	0	0
237	SLU 23	-10	-17	1394	0	0	0
237	SLU 24	-11	-22	1382	0	0	0
237	SLU 25	-11	-20	1400	0	0	0
237	SLU 26	-11	-18	1405	0	0	0
237	SLU 27	-11	-23	1394	0	0	0
237	SLU 28	-11	-20	1412	0	0	0
237	SLU 29	-11	-22	1387	0	0	0
237	SLU 30	-11	-20	1405	0	0	0
237	SLU 31	-10	-19	1550	0	0	0
237	SLU 32	-11	-24	1538	0	0	0
237	SLU 33	-11	-22	1556	0	0	0
237	SLU 34	-11	-20	1561	0	0	0
237	SLU 35	-11	-25	1550	0	0	0
237	SLU 36	-11	-22	1568	0	0	0
237	SLU 37	-11	-25	1543	0	0	0
237	SLU 38	-11	-22	1561	0	0	0
237	SLU 39	-10	-25	1587	0	0	0
237	SLU 40	-11	-22	1605	0	0	0
237	SLU 41	-11	-25	1598	0	0	0
237	SLU 42	-11	-22	1616	0	0	0
237	SLU 43	-11	-25	1514	0	0	0
237	SLU 44	-11	-20	1544	0	0	0
237	SLU 45	-11	-26	1533	0	0	0
237	SLU 46	-12	-23	1550	0	0	0
237	SLU 47	-12	-21	1555	0	0	0
237	SLU 48	-12	-26	1544	0	0	0
237	SLU 49	-12	-23	1562	0	0	0
237	SLU 50	-12	-26	1537	0	0	0
237	SLU 51	-12	-23	1555	0	0	0
237	SLU 52	-11	-22	1700	0	0	0
237	SLU 53	-12	-28	1689	0	0	0
237	SLU 54	-12	-25	1707	0	0	0
237	SLU 55	-12	-23	1711	0	0	0
237	SLU 56	-12	-28	1700	0	0	0
237	SLU 57	-12	-25	1718	0	0	0
237	SLU 58	-12	-28	1693	0	0	0
237	SLU 59	-12	-25	1711	0	0	0
237	SLU 60	-11	-28	1737	0	0	0
237	SLU 61	-11	-25	1755	0	0	0
237	SLU 62	-12	-28	1748	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
237	SLU 63	-12	-25	1766	0	0	0
237	SLU 64	-12	-27	1671	0	0	0
237	SLU 65	-13	-23	1701	0	0	0
237	SLU 66	-13	-28	1690	0	0	0
237	SLU 67	-13	-25	1708	0	0	0
237	SLU 68	-13	-23	1713	0	0	0
237	SLU 69	-13	-28	1702	0	0	0
237	SLU 70	-13	-25	1720	0	0	0
237	SLU 71	-13	-28	1694	0	0	0
237	SLU 72	-13	-25	1712	0	0	0
237	SLU 73	-13	-25	1857	0	0	0
237	SLU 74	-13	-30	1846	0	0	0
237	SLU 75	-13	-27	1864	0	0	0
237	SLU 76	-13	-25	1869	0	0	0
237	SLU 77	-13	-30	1858	0	0	0
237	SLU 78	-13	-27	1876	0	0	0
237	SLU 79	-13	-30	1850	0	0	0
237	SLU 80	-13	-27	1868	0	0	0
237	SLU 81	-13	-30	1894	0	0	0
237	SLU 82	-13	-27	1912	0	0	0
237	SLU 83	-13	-30	1906	0	0	0
237	SLU 84	-13	-28	1924	0	0	0
237	SLE RA 1	-9	-21	1251	0	0	0
237	SLE RA 2	-9	-17	1271	0	0	0
237	SLE RA 3	-10	-21	1264	0	0	0
237	SLE RA 4	-10	-19	1275	0	0	0
237	SLE RA 5	-10	-18	1279	0	0	0
237	SLE RA 6	-10	-21	1271	0	0	0
237	SLE RA 7	-10	-19	1283	0	0	0
237	SLE RA 8	-10	-21	1266	0	0	0
237	SLE RA 9	-10	-19	1278	0	0	0
237	SLE RA 10	-9	-19	1375	0	0	0
237	SLE RA 11	-10	-22	1368	0	0	0
237	SLE RA 12	-10	-20	1380	0	0	0
237	SLE RA 13	-10	-19	1383	0	0	0
237	SLE RA 14	-10	-22	1375	0	0	0
237	SLE RA 15	-10	-20	1387	0	0	0
237	SLE RA 16	-10	-22	1370	0	0	0
237	SLE RA 17	-10	-20	1382	0	0	0
237	SLE RA 18	-9	-22	1400	0	0	0
237	SLE RA 19	-10	-21	1412	0	0	0
237	SLE RA 20	-10	-23	1407	0	0	0
237	SLE RA 21	-10	-21	1419	0	0	0
237	SLE FR 1	-9	-21	1251	0	0	0
237	SLE FR 2	-9	-20	1255	0	0	0
237	SLE FR 3	-9	-21	1254	0	0	0
237	SLE FR 4	-9	-20	1300	0	0	0
237	SLE FR 5	-9	-21	1299	0	0	0
237	SLE FR 6	-9	-22	1325	0	0	0
237	SLE QP 1	-9	-21	1251	0	0	0
237	SLE QP 2	-9	-21	1296	0	0	0
237	SLD 1	95	2	1571	0	0	0
237	SLD 2	118	-7	1559	0	0	0
237	SLD 3	100	-55	1168	0	0	0
237	SLD 4	122	-64	1156	0	0	0
237	SLD 5	11	73	1992	0	0	0
237	SLD 6	26	67	1984	0	0	0
237	SLD 7	26	-115	649	0	0	0
237	SLD 8	41	-121	641	0	0	0
237	SLD 9	-60	79	1951	0	0	0
237	SLD 10	-45	73	1943	0	0	0
237	SLD 11	-44	-109	608	0	0	0
237	SLD 12	-29	-115	600	0	0	0
237	SLD 13	-141	22	1435	0	0	0
237	SLD 14	-118	13	1423	0	0	0
237	SLD 15	-136	-35	1032	0	0	0
237	SLD 16	-114	-44	1020	0	0	0
237	SLV 1	234	36	1974	0	0	0
237	SLV 2	287	15	1945	0	0	0
237	SLV 3	246	-104	964	0	0	0
237	SLV 4	299	-125	936	0	0	0
237	SLV 5	36	214	3035	0	0	0
237	SLV 6	72	199	3016	0	0	0
237	SLV 7	74	-256	-329	0	0	0
237	SLV 8	110	-270	-349	0	0	0
237	SLV 9	-129	228	2940	0	0	0
237	SLV 10	-93	213	2921	0	0	0
237	SLV 11	-91	-242	-425	0	0	0
237	SLV 12	-55	-256	-444	0	0	0
237	SLV 13	-318	83	1656	0	0	0
237	SLV 14	-264	62	1627	0	0	0
237	SLV 15	-306	-58	646	0	0	0
237	SLV 16	-253	-79	618	0	0	0
237	CRTFP Uy+	0	0	0	0	0	0
237	CRTFP Uy-	0	0	0	0	0	0
238	SLU 1	-9	-18	1215	0	0	0
238	SLU 2	-9	-13	1245	0	0	0
238	SLU 3	-9	-18	1233	0	0	0
238	SLU 4	-9	-15	1251	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
238	SLU 5	-9	-13	1256	0	0	0
238	SLU 6	-9	-18	1245	0	0	0
238	SLU 7	-9	-15	1263	0	0	0
238	SLU 8	-9	-18	1238	0	0	0
238	SLU 9	-9	-15	1256	0	0	0
238	SLU 10	-9	-15	1402	0	0	0
238	SLU 11	-9	-20	1391	0	0	0
238	SLU 12	-9	-17	1409	0	0	0
238	SLU 13	-9	-15	1414	0	0	0
238	SLU 14	-10	-20	1402	0	0	0
238	SLU 15	-10	-17	1421	0	0	0
238	SLU 16	-9	-20	1395	0	0	0
238	SLU 17	-10	-17	1413	0	0	0
238	SLU 18	-9	-20	1440	0	0	0
238	SLU 19	-9	-18	1458	0	0	0
238	SLU 20	-9	-21	1451	0	0	0
238	SLU 21	-9	-18	1469	0	0	0
238	SLU 22	-10	-20	1373	0	0	0
238	SLU 23	-10	-15	1403	0	0	0
238	SLU 24	-10	-20	1391	0	0	0
238	SLU 25	-10	-17	1410	0	0	0
238	SLU 26	-10	-15	1414	0	0	0
238	SLU 27	-11	-20	1403	0	0	0
238	SLU 28	-11	-17	1421	0	0	0
238	SLU 29	-11	-20	1396	0	0	0
238	SLU 30	-11	-17	1414	0	0	0
238	SLU 31	-10	-17	1560	0	0	0
238	SLU 32	-11	-22	1549	0	0	0
238	SLU 33	-11	-19	1567	0	0	0
238	SLU 34	-11	-17	1572	0	0	0
238	SLU 35	-11	-22	1560	0	0	0
238	SLU 36	-11	-19	1579	0	0	0
238	SLU 37	-11	-22	1553	0	0	0
238	SLU 38	-11	-19	1571	0	0	0
238	SLU 39	-10	-22	1598	0	0	0
238	SLU 40	-10	-19	1616	0	0	0
238	SLU 41	-11	-23	1609	0	0	0
238	SLU 42	-11	-20	1627	0	0	0
238	SLU 43	-11	-23	1525	0	0	0
238	SLU 44	-11	-18	1555	0	0	0
238	SLU 45	-11	-23	1544	0	0	0
238	SLU 46	-11	-20	1562	0	0	0
238	SLU 47	-11	-18	1566	0	0	0
238	SLU 48	-12	-23	1555	0	0	0
238	SLU 49	-12	-20	1573	0	0	0
238	SLU 50	-12	-23	1548	0	0	0
238	SLU 51	-12	-20	1566	0	0	0
238	SLU 52	-11	-19	1712	0	0	0
238	SLU 53	-12	-25	1701	0	0	0
238	SLU 54	-12	-22	1719	0	0	0
238	SLU 55	-12	-20	1724	0	0	0
238	SLU 56	-12	-25	1713	0	0	0
238	SLU 57	-12	-22	1731	0	0	0
238	SLU 58	-12	-25	1705	0	0	0
238	SLU 59	-12	-22	1723	0	0	0
238	SLU 60	-11	-25	1750	0	0	0
238	SLU 61	-11	-22	1768	0	0	0
238	SLU 62	-12	-25	1761	0	0	0
238	SLU 63	-12	-22	1779	0	0	0
238	SLU 64	-12	-25	1683	0	0	0
238	SLU 65	-12	-20	1713	0	0	0
238	SLU 66	-13	-25	1702	0	0	0
238	SLU 67	-13	-22	1720	0	0	0
238	SLU 68	-13	-20	1725	0	0	0
238	SLU 69	-13	-25	1713	0	0	0
238	SLU 70	-13	-22	1731	0	0	0
238	SLU 71	-13	-25	1706	0	0	0
238	SLU 72	-13	-22	1724	0	0	0
238	SLU 73	-13	-21	1870	0	0	0
238	SLU 74	-13	-27	1859	0	0	0
238	SLU 75	-13	-24	1877	0	0	0
238	SLU 76	-13	-22	1882	0	0	0
238	SLU 77	-13	-27	1871	0	0	0
238	SLU 78	-13	-24	1889	0	0	0
238	SLU 79	-13	-27	1863	0	0	0
238	SLU 80	-13	-24	1881	0	0	0
238	SLU 81	-13	-27	1908	0	0	0
238	SLU 82	-13	-24	1926	0	0	0
238	SLU 83	-13	-27	1919	0	0	0
238	SLU 84	-13	-24	1937	0	0	0
238	SLE RA 1	-9	-18	1260	0	0	0
238	SLE RA 2	-9	-15	1280	0	0	0
238	SLE RA 3	-9	-19	1272	0	0	0
238	SLE RA 4	-9	-17	1284	0	0	0
238	SLE RA 5	-9	-15	1288	0	0	0
238	SLE RA 6	-10	-19	1280	0	0	0
238	SLE RA 7	-10	-17	1292	0	0	0
238	SLE RA 8	-10	-19	1275	0	0	0
238	SLE RA 9	-10	-17	1287	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
238	SLE RA 10	-9	-16	1385	0	0	0
238	SLE RA 11	-10	-20	1377	0	0	0
238	SLE RA 12	-10	-18	1389	0	0	0
238	SLE RA 13	-10	-16	1393	0	0	0
238	SLE RA 14	-10	-20	1385	0	0	0
238	SLE RA 15	-10	-18	1397	0	0	0
238	SLE RA 16	-10	-20	1380	0	0	0
238	SLE RA 17	-10	-18	1392	0	0	0
238	SLE RA 18	-9	-20	1410	0	0	0
238	SLE RA 19	-9	-18	1422	0	0	0
238	SLE RA 20	-10	-20	1417	0	0	0
238	SLE RA 21	-10	-18	1429	0	0	0
238	SLE FR 1	-9	-18	1260	0	0	0
238	SLE FR 2	-9	-18	1264	0	0	0
238	SLE FR 3	-9	-18	1263	0	0	0
238	SLE FR 4	-9	-18	1309	0	0	0
238	SLE FR 5	-9	-19	1308	0	0	0
238	SLE FR 6	-9	-19	1335	0	0	0
238	SLE QP 1	-9	-18	1260	0	0	0
238	SLE QP 2	-9	-19	1305	0	0	0
238	SLD 1	98	6	1570	0	0	0
238	SLD 2	121	-2	1558	0	0	0
238	SLD 3	102	-53	1163	0	0	0
238	SLD 4	126	-61	1152	0	0	0
238	SLD 5	11	80	2003	0	0	0
238	SLD 6	27	75	1995	0	0	0
238	SLD 7	27	-118	648	0	0	0
238	SLD 8	43	-123	640	0	0	0
238	SLD 9	-61	85	1969	0	0	0
238	SLD 10	-46	80	1962	0	0	0
238	SLD 11	-45	-113	614	0	0	0
238	SLD 12	-30	-118	607	0	0	0
238	SLD 13	-144	23	1457	0	0	0
238	SLD 14	-121	15	1446	0	0	0
238	SLD 15	-139	-36	1051	0	0	0
238	SLD 16	-116	-44	1040	0	0	0
238	SLV 1	241	44	1959	0	0	0
238	SLV 2	295	25	1932	0	0	0
238	SLV 3	252	-103	940	0	0	0
238	SLV 4	307	-122	914	0	0	0
238	SLV 5	38	227	3050	0	0	0
238	SLV 6	75	215	3032	0	0	0
238	SLV 7	76	-265	-344	0	0	0
238	SLV 8	113	-277	-362	0	0	0
238	SLV 9	-132	240	2972	0	0	0
238	SLV 10	-95	227	2954	0	0	0
238	SLV 11	-94	-253	-423	0	0	0
238	SLV 12	-57	-265	-441	0	0	0
238	SLV 13	-325	84	1696	0	0	0
238	SLV 14	-270	65	1669	0	0	0
238	SLV 15	-314	-63	677	0	0	0
238	SLV 16	-259	-82	651	0	0	0
238	CRTFP Uy+	0	0	0	0	0	0
238	CRTFP Uy-	0	0	0	0	0	0
239	SLU 1	-9	-15	1218	0	0	0
239	SLU 2	-9	-10	1248	0	0	0
239	SLU 3	-9	-16	1236	0	0	0
239	SLU 4	-9	-13	1255	0	0	0
239	SLU 5	-9	-10	1260	0	0	0
239	SLU 6	-9	-16	1248	0	0	0
239	SLU 7	-9	-13	1266	0	0	0
239	SLU 8	-9	-16	1241	0	0	0
239	SLU 9	-9	-13	1259	0	0	0
239	SLU 10	-9	-12	1406	0	0	0
239	SLU 11	-9	-17	1395	0	0	0
239	SLU 12	-9	-14	1413	0	0	0
239	SLU 13	-9	-12	1418	0	0	0
239	SLU 14	-9	-17	1407	0	0	0
239	SLU 15	-9	-14	1425	0	0	0
239	SLU 16	-9	-17	1399	0	0	0
239	SLU 17	-9	-14	1417	0	0	0
239	SLU 18	-9	-18	1444	0	0	0
239	SLU 19	-9	-15	1462	0	0	0
239	SLU 20	-9	-18	1456	0	0	0
239	SLU 21	-9	-15	1474	0	0	0
239	SLU 22	-10	-17	1376	0	0	0
239	SLU 23	-10	-12	1406	0	0	0
239	SLU 24	-10	-17	1394	0	0	0
239	SLU 25	-10	-14	1413	0	0	0
239	SLU 26	-10	-12	1418	0	0	0
239	SLU 27	-11	-17	1406	0	0	0
239	SLU 28	-11	-14	1424	0	0	0
239	SLU 29	-10	-17	1399	0	0	0
239	SLU 30	-11	-14	1417	0	0	0
239	SLU 31	-10	-13	1565	0	0	0
239	SLU 32	-10	-19	1553	0	0	0
239	SLU 33	-10	-16	1571	0	0	0
239	SLU 34	-10	-14	1576	0	0	0
239	SLU 35	-11	-19	1565	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
239	SLU 36	-11	-16	1583	0	0	0
239	SLU 37	-11	-19	1557	0	0	0
239	SLU 38	-11	-16	1575	0	0	0
239	SLU 39	-10	-19	1602	0	0	0
239	SLU 40	-10	-16	1620	0	0	0
239	SLU 41	-10	-19	1614	0	0	0
239	SLU 42	-10	-16	1632	0	0	0
239	SLU 43	-11	-19	1529	0	0	0
239	SLU 44	-11	-14	1559	0	0	0
239	SLU 45	-11	-20	1548	0	0	0
239	SLU 46	-11	-17	1566	0	0	0
239	SLU 47	-11	-15	1571	0	0	0
239	SLU 48	-11	-20	1559	0	0	0
239	SLU 49	-11	-17	1577	0	0	0
239	SLU 50	-11	-20	1552	0	0	0
239	SLU 51	-11	-17	1570	0	0	0
239	SLU 52	-11	-16	1718	0	0	0
239	SLU 53	-11	-21	1706	0	0	0
239	SLU 54	-11	-18	1724	0	0	0
239	SLU 55	-11	-16	1729	0	0	0
239	SLU 56	-12	-21	1718	0	0	0
239	SLU 57	-12	-18	1736	0	0	0
239	SLU 58	-12	-21	1710	0	0	0
239	SLU 59	-12	-18	1729	0	0	0
239	SLU 60	-11	-22	1755	0	0	0
239	SLU 61	-11	-19	1773	0	0	0
239	SLU 62	-11	-22	1767	0	0	0
239	SLU 63	-11	-19	1785	0	0	0
239	SLU 64	-12	-21	1687	0	0	0
239	SLU 65	-12	-16	1717	0	0	0
239	SLU 66	-12	-21	1706	0	0	0
239	SLU 67	-13	-18	1724	0	0	0
239	SLU 68	-12	-16	1729	0	0	0
239	SLU 69	-13	-21	1717	0	0	0
239	SLU 70	-13	-18	1735	0	0	0
239	SLU 71	-13	-21	1710	0	0	0
239	SLU 72	-13	-18	1728	0	0	0
239	SLU 73	-12	-18	1876	0	0	0
239	SLU 74	-13	-23	1864	0	0	0
239	SLU 75	-13	-20	1882	0	0	0
239	SLU 76	-13	-18	1887	0	0	0
239	SLU 77	-13	-23	1876	0	0	0
239	SLU 78	-13	-20	1894	0	0	0
239	SLU 79	-13	-23	1868	0	0	0
239	SLU 80	-13	-20	1887	0	0	0
239	SLU 81	-12	-23	1913	0	0	0
239	SLU 82	-12	-20	1931	0	0	0
239	SLU 83	-13	-23	1925	0	0	0
239	SLU 84	-13	-20	1943	0	0	0
239	SLE RA 1	-9	-16	1263	0	0	0
239	SLE RA 2	-9	-12	1283	0	0	0
239	SLE RA 3	-9	-16	1275	0	0	0
239	SLE RA 4	-9	-14	1287	0	0	0
239	SLE RA 5	-9	-13	1291	0	0	0
239	SLE RA 6	-9	-16	1283	0	0	0
239	SLE RA 7	-9	-14	1295	0	0	0
239	SLE RA 8	-9	-16	1278	0	0	0
239	SLE RA 9	-9	-14	1290	0	0	0
239	SLE RA 10	-9	-13	1389	0	0	0
239	SLE RA 11	-9	-17	1381	0	0	0
239	SLE RA 12	-9	-15	1393	0	0	0
239	SLE RA 13	-9	-14	1396	0	0	0
239	SLE RA 14	-10	-17	1389	0	0	0
239	SLE RA 15	-10	-15	1401	0	0	0
239	SLE RA 16	-9	-17	1384	0	0	0
239	SLE RA 17	-10	-15	1396	0	0	0
239	SLE RA 18	-9	-17	1414	0	0	0
239	SLE RA 19	-9	-15	1426	0	0	0
239	SLE RA 20	-9	-17	1421	0	0	0
239	SLE RA 21	-9	-15	1434	0	0	0
239	SLE FR 1	-9	-16	1263	0	0	0
239	SLE FR 2	-9	-15	1267	0	0	0
239	SLE FR 3	-9	-16	1266	0	0	0
239	SLE FR 4	-9	-16	1312	0	0	0
239	SLE FR 5	-9	-16	1311	0	0	0
239	SLE FR 6	-9	-17	1338	0	0	0
239	SLE QP 1	-9	-16	1263	0	0	0
239	SLE QP 2	-9	-16	1308	0	0	0
239	SLD 1	99	11	1561	0	0	0
239	SLD 2	123	4	1551	0	0	0
239	SLD 3	104	-50	1153	0	0	0
239	SLD 4	127	-57	1143	0	0	0
239	SLD 5	12	86	2005	0	0	0
239	SLD 6	27	82	1998	0	0	0
239	SLD 7	28	-118	644	0	0	0
239	SLD 8	43	-123	638	0	0	0
239	SLD 9	-61	90	1979	0	0	0
239	SLD 10	-46	86	1972	0	0	0
239	SLD 11	-46	-114	618	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
239	SLD 12	-30	-119	611	0	0	0
239	SLD 13	-145	25	1473	0	0	0
239	SLD 14	-122	18	1463	0	0	0
239	SLD 15	-141	-37	1065	0	0	0
239	SLD 16	-117	-44	1055	0	0	0
239	SLV 1	244	52	1934	0	0	0
239	SLV 2	299	36	1910	0	0	0
239	SLV 3	255	-100	912	0	0	0
239	SLV 4	310	-117	887	0	0	0
239	SLV 5	39	239	3051	0	0	0
239	SLV 6	76	228	3035	0	0	0
239	SLV 7	77	-270	-357	0	0	0
239	SLV 8	114	-282	-374	0	0	0
239	SLV 9	-132	249	2990	0	0	0
239	SLV 10	-95	238	2973	0	0	0
239	SLV 11	-95	-261	-419	0	0	0
239	SLV 12	-57	-272	-435	0	0	0
239	SLV 13	-328	85	1729	0	0	0
239	SLV 14	-273	68	1704	0	0	0
239	SLV 15	-317	-68	706	0	0	0
239	SLV 16	-262	-85	682	0	0	0
239	CRTFP Uy+	0	0	0	0	0	0
239	CRTFP Uy-	0	0	0	0	0	0
240	SLU 1	-9	-13	1227	0	0	0
240	SLU 2	-9	-7	1257	0	0	0
240	SLU 3	-9	-13	1246	0	0	0
240	SLU 4	-9	-10	1264	0	0	0
240	SLU 5	-9	-7	1269	0	0	0
240	SLU 6	-9	-13	1257	0	0	0
240	SLU 7	-9	-10	1276	0	0	0
240	SLU 8	-9	-13	1250	0	0	0
240	SLU 9	-9	-10	1268	0	0	0
240	SLU 10	-9	-9	1418	0	0	0
240	SLU 11	-9	-14	1406	0	0	0
240	SLU 12	-9	-11	1425	0	0	0
240	SLU 13	-9	-9	1429	0	0	0
240	SLU 14	-9	-14	1418	0	0	0
240	SLU 15	-9	-11	1436	0	0	0
240	SLU 16	-9	-14	1410	0	0	0
240	SLU 17	-9	-11	1429	0	0	0
240	SLU 18	-9	-14	1456	0	0	0
240	SLU 19	-9	-11	1474	0	0	0
240	SLU 20	-9	-14	1468	0	0	0
240	SLU 21	-9	-11	1486	0	0	0
240	SLU 22	-10	-14	1386	0	0	0
240	SLU 23	-10	-9	1416	0	0	0
240	SLU 24	-10	-14	1405	0	0	0
240	SLU 25	-10	-11	1423	0	0	0
240	SLU 26	-10	-9	1428	0	0	0
240	SLU 27	-10	-14	1416	0	0	0
240	SLU 28	-10	-11	1435	0	0	0
240	SLU 29	-10	-14	1409	0	0	0
240	SLU 30	-10	-11	1427	0	0	0
240	SLU 31	-10	-10	1577	0	0	0
240	SLU 32	-10	-15	1565	0	0	0
240	SLU 33	-10	-12	1584	0	0	0
240	SLU 34	-10	-10	1588	0	0	0
240	SLU 35	-10	-15	1577	0	0	0
240	SLU 36	-11	-12	1595	0	0	0
240	SLU 37	-10	-15	1569	0	0	0
240	SLU 38	-10	-12	1588	0	0	0
240	SLU 39	-10	-16	1615	0	0	0
240	SLU 40	-10	-12	1633	0	0	0
240	SLU 41	-10	-16	1627	0	0	0
240	SLU 42	-10	-13	1645	0	0	0
240	SLU 43	-11	-16	1540	0	0	0
240	SLU 44	-11	-11	1571	0	0	0
240	SLU 45	-11	-16	1559	0	0	0
240	SLU 46	-11	-13	1577	0	0	0
240	SLU 47	-11	-11	1582	0	0	0
240	SLU 48	-11	-16	1571	0	0	0
240	SLU 49	-11	-13	1589	0	0	0
240	SLU 50	-11	-16	1563	0	0	0
240	SLU 51	-11	-13	1582	0	0	0
240	SLU 52	-11	-12	1731	0	0	0
240	SLU 53	-11	-17	1720	0	0	0
240	SLU 54	-11	-14	1738	0	0	0
240	SLU 55	-11	-12	1743	0	0	0
240	SLU 56	-11	-17	1731	0	0	0
240	SLU 57	-11	-14	1750	0	0	0
240	SLU 58	-11	-17	1724	0	0	0
240	SLU 59	-11	-14	1742	0	0	0
240	SLU 60	-11	-18	1769	0	0	0
240	SLU 61	-11	-15	1788	0	0	0
240	SLU 62	-11	-18	1781	0	0	0
240	SLU 63	-11	-15	1799	0	0	0
240	SLU 64	-12	-17	1699	0	0	0
240	SLU 65	-12	-12	1730	0	0	0
240	SLU 66	-12	-17	1718	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
240	SLU 67	-12	-14	1737	0	0	0
240	SLU 68	-12	-12	1741	0	0	0
240	SLU 69	-12	-17	1730	0	0	0
240	SLU 70	-13	-14	1748	0	0	0
240	SLU 71	-12	-17	1722	0	0	0
240	SLU 72	-12	-14	1741	0	0	0
240	SLU 73	-12	-13	1890	0	0	0
240	SLU 74	-12	-19	1879	0	0	0
240	SLU 75	-12	-15	1897	0	0	0
240	SLU 76	-12	-13	1902	0	0	0
240	SLU 77	-13	-19	1890	0	0	0
240	SLU 78	-13	-16	1909	0	0	0
240	SLU 79	-13	-19	1883	0	0	0
240	SLU 80	-13	-16	1901	0	0	0
240	SLU 81	-12	-19	1928	0	0	0
240	SLU 82	-12	-16	1947	0	0	0
240	SLU 83	-12	-19	1940	0	0	0
240	SLU 84	-12	-16	1958	0	0	0
240	SLE RA 1	-9	-13	1272	0	0	0
240	SLE RA 2	-9	-9	1292	0	0	0
240	SLE RA 3	-9	-13	1285	0	0	0
240	SLE RA 4	-9	-11	1297	0	0	0
240	SLE RA 5	-9	-10	1300	0	0	0
240	SLE RA 6	-9	-13	1292	0	0	0
240	SLE RA 7	-9	-11	1305	0	0	0
240	SLE RA 8	-9	-13	1288	0	0	0
240	SLE RA 9	-9	-11	1300	0	0	0
240	SLE RA 10	-9	-10	1399	0	0	0
240	SLE RA 11	-9	-14	1392	0	0	0
240	SLE RA 12	-9	-12	1404	0	0	0
240	SLE RA 13	-9	-10	1407	0	0	0
240	SLE RA 14	-9	-14	1399	0	0	0
240	SLE RA 15	-9	-12	1412	0	0	0
240	SLE RA 16	-9	-14	1395	0	0	0
240	SLE RA 17	-9	-12	1407	0	0	0
240	SLE RA 18	-9	-14	1425	0	0	0
240	SLE RA 19	-9	-12	1437	0	0	0
240	SLE RA 20	-9	-14	1433	0	0	0
240	SLE RA 21	-9	-12	1445	0	0	0
240	SLE FR 1	-9	-13	1272	0	0	0
240	SLE FR 2	-9	-12	1276	0	0	0
240	SLE FR 3	-9	-13	1275	0	0	0
240	SLE FR 4	-9	-13	1322	0	0	0
240	SLE FR 5	-9	-13	1321	0	0	0
240	SLE FR 6	-9	-14	1348	0	0	0
240	SLE QP 1	-9	-13	1272	0	0	0
240	SLE QP 2	-9	-13	1318	0	0	0
240	SLD 1	100	16	1561	0	0	0
240	SLD 2	123	10	1551	0	0	0
240	SLD 3	104	-47	1149	0	0	0
240	SLD 4	128	-53	1140	0	0	0
240	SLD 5	12	93	2016	0	0	0
240	SLD 6	28	89	2010	0	0	0
240	SLD 7	28	-118	645	0	0	0
240	SLD 8	43	-122	639	0	0	0
240	SLD 9	-61	96	1997	0	0	0
240	SLD 10	-46	92	1990	0	0	0
240	SLD 11	-46	-115	626	0	0	0
240	SLD 12	-30	-119	620	0	0	0
240	SLD 13	-146	26	1496	0	0	0
240	SLD 14	-122	20	1486	0	0	0
240	SLD 15	-141	-37	1085	0	0	0
240	SLD 16	-118	-43	1075	0	0	0
240	SLV 1	245	61	1920	0	0	0
240	SLV 2	301	47	1897	0	0	0
240	SLV 3	256	-97	889	0	0	0
240	SLV 4	312	-111	867	0	0	0
240	SLV 5	40	251	3065	0	0	0
240	SLV 6	77	241	3050	0	0	0
240	SLV 7	77	-275	-369	0	0	0
240	SLV 8	115	-284	-384	0	0	0
240	SLV 9	-132	258	3020	0	0	0
240	SLV 10	-95	248	3005	0	0	0
240	SLV 11	-95	-268	-414	0	0	0
240	SLV 12	-58	-277	-430	0	0	0
240	SLV 13	-330	85	1769	0	0	0
240	SLV 14	-274	70	1746	0	0	0
240	SLV 15	-319	-73	739	0	0	0
240	SLV 16	-263	-87	716	0	0	0
240	CRTFP Uy+	0	0	0	0	0	0
240	CRTFP Uy-	0	0	0	0	0	0
241	SLU 1	-8	-10	1246	0	0	0
241	SLU 2	-9	-4	1277	0	0	0
241	SLU 3	-9	-10	1266	0	0	0
241	SLU 4	-9	-7	1284	0	0	0
241	SLU 5	-9	-4	1289	0	0	0
241	SLU 6	-9	-10	1277	0	0	0
241	SLU 7	-9	-7	1296	0	0	0
241	SLU 8	-9	-10	1270	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
241	SLU 9	-9	-7	1289	0	0	0
241	SLU 10	-9	-5	1441	0	0	0
241	SLU 11	-9	-11	1430	0	0	0
241	SLU 12	-9	-8	1448	0	0	0
241	SLU 13	-9	-5	1453	0	0	0
241	SLU 14	-9	-11	1442	0	0	0
241	SLU 15	-9	-8	1460	0	0	0
241	SLU 16	-9	-11	1434	0	0	0
241	SLU 17	-9	-8	1453	0	0	0
241	SLU 18	-9	-11	1481	0	0	0
241	SLU 19	-9	-8	1499	0	0	0
241	SLU 20	-9	-11	1493	0	0	0
241	SLU 21	-9	-8	1511	0	0	0
241	SLU 22	-10	-11	1408	0	0	0
241	SLU 23	-10	-5	1439	0	0	0
241	SLU 24	-10	-11	1427	0	0	0
241	SLU 25	-10	-7	1446	0	0	0
241	SLU 26	-10	-5	1451	0	0	0
241	SLU 27	-10	-11	1439	0	0	0
241	SLU 28	-10	-8	1458	0	0	0
241	SLU 29	-10	-11	1432	0	0	0
241	SLU 30	-10	-8	1450	0	0	0
241	SLU 31	-10	-6	1603	0	0	0
241	SLU 32	-10	-12	1591	0	0	0
241	SLU 33	-10	-8	1610	0	0	0
241	SLU 34	-10	-6	1615	0	0	0
241	SLU 35	-10	-12	1603	0	0	0
241	SLU 36	-10	-9	1622	0	0	0
241	SLU 37	-10	-12	1596	0	0	0
241	SLU 38	-10	-8	1615	0	0	0
241	SLU 39	-10	-12	1642	0	0	0
241	SLU 40	-10	-9	1661	0	0	0
241	SLU 41	-10	-12	1654	0	0	0
241	SLU 42	-10	-9	1673	0	0	0
241	SLU 43	-11	-12	1564	0	0	0
241	SLU 44	-11	-7	1596	0	0	0
241	SLU 45	-11	-12	1584	0	0	0
241	SLU 46	-11	-9	1603	0	0	0
241	SLU 47	-11	-7	1608	0	0	0
241	SLU 48	-11	-12	1596	0	0	0
241	SLU 49	-11	-9	1615	0	0	0
241	SLU 50	-11	-12	1588	0	0	0
241	SLU 51	-11	-9	1607	0	0	0
241	SLU 52	-11	-8	1760	0	0	0
241	SLU 53	-11	-13	1748	0	0	0
241	SLU 54	-11	-10	1767	0	0	0
241	SLU 55	-11	-8	1772	0	0	0
241	SLU 56	-11	-13	1760	0	0	0
241	SLU 57	-11	-10	1779	0	0	0
241	SLU 58	-11	-13	1752	0	0	0
241	SLU 59	-11	-10	1771	0	0	0
241	SLU 60	-11	-14	1799	0	0	0
241	SLU 61	-11	-10	1818	0	0	0
241	SLU 62	-11	-14	1811	0	0	0
241	SLU 63	-11	-11	1830	0	0	0
241	SLU 64	-12	-13	1726	0	0	0
241	SLU 65	-12	-8	1757	0	0	0
241	SLU 66	-12	-13	1746	0	0	0
241	SLU 67	-12	-10	1764	0	0	0
241	SLU 68	-12	-8	1769	0	0	0
241	SLU 69	-12	-13	1758	0	0	0
241	SLU 70	-12	-10	1776	0	0	0
241	SLU 71	-12	-13	1750	0	0	0
241	SLU 72	-12	-10	1769	0	0	0
241	SLU 73	-12	-9	1922	0	0	0
241	SLU 74	-12	-14	1910	0	0	0
241	SLU 75	-12	-11	1928	0	0	0
241	SLU 76	-12	-9	1933	0	0	0
241	SLU 77	-12	-14	1922	0	0	0
241	SLU 78	-13	-11	1940	0	0	0
241	SLU 79	-12	-14	1914	0	0	0
241	SLU 80	-12	-11	1933	0	0	0
241	SLU 81	-12	-14	1961	0	0	0
241	SLU 82	-12	-11	1979	0	0	0
241	SLU 83	-12	-15	1973	0	0	0
241	SLU 84	-12	-11	1991	0	0	0
241	SLE RA 1	-9	-10	1292	0	0	0
241	SLE RA 2	-9	-6	1313	0	0	0
241	SLE RA 3	-9	-10	1305	0	0	0
241	SLE RA 4	-9	-8	1318	0	0	0
241	SLE RA 5	-9	-6	1321	0	0	0
241	SLE RA 6	-9	-10	1313	0	0	0
241	SLE RA 7	-9	-8	1326	0	0	0
241	SLE RA 8	-9	-10	1308	0	0	0
241	SLE RA 9	-9	-8	1321	0	0	0
241	SLE RA 10	-9	-7	1423	0	0	0
241	SLE RA 11	-9	-11	1415	0	0	0
241	SLE RA 12	-9	-8	1427	0	0	0
241	SLE RA 13	-9	-7	1430	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
241	SLE RA 14	-9	-11	1423	0	0	0
241	SLE RA 15	-9	-9	1435	0	0	0
241	SLE RA 16	-9	-11	1418	0	0	0
241	SLE RA 17	-9	-9	1430	0	0	0
241	SLE RA 18	-9	-11	1449	0	0	0
241	SLE RA 19	-9	-9	1461	0	0	0
241	SLE RA 20	-9	-11	1457	0	0	0
241	SLE RA 21	-9	-9	1469	0	0	0
241	SLE FR 1	-9	-10	1292	0	0	0
241	SLE FR 2	-9	-9	1296	0	0	0
241	SLE FR 3	-9	-10	1295	0	0	0
241	SLE FR 4	-9	-9	1343	0	0	0
241	SLE FR 5	-9	-10	1342	0	0	0
241	SLE FR 6	-9	-10	1370	0	0	0
241	SLE QP 1	-9	-10	1292	0	0	0
241	SLE QP 2	-9	-10	1339	0	0	0
241	SLD 1	100	22	1574	0	0	0
241	SLD 2	124	17	1565	0	0	0
241	SLD 3	105	-44	1157	0	0	0
241	SLD 4	128	-49	1148	0	0	0
241	SLD 5	13	99	2044	0	0	0
241	SLD 6	28	96	2038	0	0	0
241	SLD 7	28	-118	653	0	0	0
241	SLD 8	44	-121	647	0	0	0
241	SLD 9	-61	101	2031	0	0	0
241	SLD 10	-46	98	2025	0	0	0
241	SLD 11	-46	-116	640	0	0	0
241	SLD 12	-30	-119	634	0	0	0
241	SLD 13	-146	28	1530	0	0	0
241	SLD 14	-122	23	1522	0	0	0
241	SLD 15	-141	-37	1113	0	0	0
241	SLD 16	-118	-42	1104	0	0	0
241	SLV 1	246	69	1923	0	0	0
241	SLV 2	301	57	1902	0	0	0
241	SLV 3	257	-93	878	0	0	0
241	SLV 4	312	-105	857	0	0	0
241	SLV 5	40	262	3104	0	0	0
241	SLV 6	78	254	3090	0	0	0
241	SLV 7	77	-279	-381	0	0	0
241	SLV 8	115	-287	-395	0	0	0
241	SLV 9	-132	266	3073	0	0	0
241	SLV 10	-95	258	3059	0	0	0
241	SLV 11	-95	-274	-411	0	0	0
241	SLV 12	-58	-282	-425	0	0	0
241	SLV 13	-330	85	1821	0	0	0
241	SLV 14	-274	73	1800	0	0	0
241	SLV 15	-319	-78	776	0	0	0
241	SLV 16	-263	-89	755	0	0	0
241	CRTFP Uy+	0	0	0	0	0	0
241	CRTFP Uy-	0	0	0	0	0	0
242	SLU 1	-8	-7	1276	0	0	0
242	SLU 2	-8	-1	1308	0	0	0
242	SLU 3	-9	-7	1296	0	0	0
242	SLU 4	-9	-4	1315	0	0	0
242	SLU 5	-9	-1	1320	0	0	0
242	SLU 6	-9	-7	1308	0	0	0
242	SLU 7	-9	-4	1328	0	0	0
242	SLU 8	-9	-7	1301	0	0	0
242	SLU 9	-9	-4	1320	0	0	0
242	SLU 10	-9	-2	1477	0	0	0
242	SLU 11	-9	-7	1466	0	0	0
242	SLU 12	-9	-4	1485	0	0	0
242	SLU 13	-9	-2	1490	0	0	0
242	SLU 14	-9	-8	1478	0	0	0
242	SLU 15	-9	-4	1497	0	0	0
242	SLU 16	-9	-8	1470	0	0	0
242	SLU 17	-9	-4	1489	0	0	0
242	SLU 18	-9	-8	1518	0	0	0
242	SLU 19	-9	-4	1537	0	0	0
242	SLU 20	-9	-8	1530	0	0	0
242	SLU 21	-9	-5	1550	0	0	0
242	SLU 22	-10	-7	1442	0	0	0
242	SLU 23	-10	-2	1474	0	0	0
242	SLU 24	-10	-7	1462	0	0	0
242	SLU 25	-10	-4	1481	0	0	0
242	SLU 26	-10	-2	1486	0	0	0
242	SLU 27	-10	-7	1474	0	0	0
242	SLU 28	-10	-4	1494	0	0	0
242	SLU 29	-10	-7	1467	0	0	0
242	SLU 30	-10	-4	1486	0	0	0
242	SLU 31	-10	-2	1643	0	0	0
242	SLU 32	-10	-8	1631	0	0	0
242	SLU 33	-10	-5	1651	0	0	0
242	SLU 34	-10	-3	1656	0	0	0
242	SLU 35	-10	-8	1644	0	0	0
242	SLU 36	-10	-5	1663	0	0	0
242	SLU 37	-10	-8	1636	0	0	0
242	SLU 38	-10	-5	1655	0	0	0
242	SLU 39	-10	-8	1684	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
242	SLU 40	-10	-5	1703	0	0	0
242	SLU 41	-10	-8	1696	0	0	0
242	SLU 42	-10	-5	1716	0	0	0
242	SLU 43	-10	-9	1602	0	0	0
242	SLU 44	-10	-3	1634	0	0	0
242	SLU 45	-11	-9	1622	0	0	0
242	SLU 46	-11	-5	1641	0	0	0
242	SLU 47	-11	-3	1646	0	0	0
242	SLU 48	-11	-9	1634	0	0	0
242	SLU 49	-11	-5	1654	0	0	0
242	SLU 50	-11	-9	1627	0	0	0
242	SLU 51	-11	-5	1646	0	0	0
242	SLU 52	-11	-4	1803	0	0	0
242	SLU 53	-11	-9	1792	0	0	0
242	SLU 54	-11	-6	1811	0	0	0
242	SLU 55	-11	-4	1816	0	0	0
242	SLU 56	-11	-9	1804	0	0	0
242	SLU 57	-11	-6	1823	0	0	0
242	SLU 58	-11	-9	1796	0	0	0
242	SLU 59	-11	-6	1815	0	0	0
242	SLU 60	-11	-10	1844	0	0	0
242	SLU 61	-11	-6	1863	0	0	0
242	SLU 62	-11	-10	1856	0	0	0
242	SLU 63	-11	-6	1876	0	0	0
242	SLU 64	-12	-9	1768	0	0	0
242	SLU 65	-12	-4	1800	0	0	0
242	SLU 66	-12	-9	1788	0	0	0
242	SLU 67	-12	-6	1807	0	0	0
242	SLU 68	-12	-4	1812	0	0	0
242	SLU 69	-12	-9	1800	0	0	0
242	SLU 70	-12	-6	1820	0	0	0
242	SLU 71	-12	-9	1793	0	0	0
242	SLU 72	-12	-6	1812	0	0	0
242	SLU 73	-12	-4	1969	0	0	0
242	SLU 74	-12	-10	1957	0	0	0
242	SLU 75	-12	-7	1977	0	0	0
242	SLU 76	-12	-4	1982	0	0	0
242	SLU 77	-12	-10	1970	0	0	0
242	SLU 78	-12	-7	1989	0	0	0
242	SLU 79	-12	-10	1962	0	0	0
242	SLU 80	-12	-7	1981	0	0	0
242	SLU 81	-12	-10	2010	0	0	0
242	SLU 82	-12	-7	2029	0	0	0
242	SLU 83	-12	-10	2022	0	0	0
242	SLU 84	-12	-7	2041	0	0	0
242	SLE RA 1	-9	-7	1324	0	0	0
242	SLE RA 2	-9	-3	1345	0	0	0
242	SLE RA 3	-9	-7	1337	0	0	0
242	SLE RA 4	-9	-5	1350	0	0	0
242	SLE RA 5	-9	-3	1353	0	0	0
242	SLE RA 6	-9	-7	1345	0	0	0
242	SLE RA 7	-9	-5	1358	0	0	0
242	SLE RA 8	-9	-7	1340	0	0	0
242	SLE RA 9	-9	-5	1353	0	0	0
242	SLE RA 10	-9	-4	1458	0	0	0
242	SLE RA 11	-9	-7	1450	0	0	0
242	SLE RA 12	-9	-5	1463	0	0	0
242	SLE RA 13	-9	-4	1466	0	0	0
242	SLE RA 14	-9	-7	1458	0	0	0
242	SLE RA 15	-9	-5	1471	0	0	0
242	SLE RA 16	-9	-7	1453	0	0	0
242	SLE RA 17	-9	-5	1466	0	0	0
242	SLE RA 18	-9	-8	1485	0	0	0
242	SLE RA 19	-9	-5	1498	0	0	0
242	SLE RA 20	-9	-8	1493	0	0	0
242	SLE RA 21	-9	-5	1506	0	0	0
242	SLE FR 1	-9	-7	1324	0	0	0
242	SLE FR 2	-9	-6	1328	0	0	0
242	SLE FR 3	-9	-7	1327	0	0	0
242	SLE FR 4	-9	-6	1376	0	0	0
242	SLE FR 5	-9	-7	1375	0	0	0
242	SLE FR 6	-9	-7	1404	0	0	0
242	SLE QP 1	-9	-7	1324	0	0	0
242	SLE QP 2	-9	-7	1372	0	0	0
242	SLD 1	100	26	1602	0	0	0
242	SLD 2	124	22	1594	0	0	0
242	SLD 3	105	-41	1176	0	0	0
242	SLD 4	129	-45	1168	0	0	0
242	SLD 5	13	105	2089	0	0	0
242	SLD 6	28	103	2083	0	0	0
242	SLD 7	28	-118	669	0	0	0
242	SLD 8	44	-121	663	0	0	0
242	SLD 9	-61	107	2081	0	0	0
242	SLD 10	-45	104	2075	0	0	0
242	SLD 11	-46	-117	661	0	0	0
242	SLD 12	-30	-119	655	0	0	0
242	SLD 13	-146	31	1575	0	0	0
242	SLD 14	-122	27	1568	0	0	0
242	SLD 15	-141	-36	1149	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
242	SLD 16	-118	-40	1142	0	0	0
242	SLV 1	246	75	1946	0	0	0
242	SLV 2	302	66	1928	0	0	0
242	SLV 3	257	-92	879	0	0	0
242	SLV 4	313	-101	860	0	0	0
242	SLV 5	41	272	3167	0	0	0
242	SLV 6	78	266	3154	0	0	0
242	SLV 7	77	-284	-391	0	0	0
242	SLV 8	115	-290	-404	0	0	0
242	SLV 9	-132	276	3148	0	0	0
242	SLV 10	-95	270	3135	0	0	0
242	SLV 11	-96	-280	-410	0	0	0
242	SLV 12	-58	-287	-423	0	0	0
242	SLV 13	-330	86	1884	0	0	0
242	SLV 14	-274	78	1865	0	0	0
242	SLV 15	-319	-80	816	0	0	0
242	SLV 16	-263	-89	797	0	0	0
242	CRTFP Uy+	0	0	0	0	0	0
242	CRTFP Uy-	0	0	0	0	0	0
243	SLU 1	-4	-2	657	0	0	0
243	SLU 2	-4	1	674	0	0	0
243	SLU 3	-4	-2	668	0	0	0
243	SLU 4	-4	0	678	0	0	0
243	SLU 5	-4	1	680	0	0	0
243	SLU 6	-5	-2	674	0	0	0
243	SLU 7	-5	0	684	0	0	0
243	SLU 8	-4	-2	670	0	0	0
243	SLU 9	-4	0	680	0	0	0
243	SLU 10	-4	1	762	0	0	0
243	SLU 11	-4	-2	756	0	0	0
243	SLU 12	-4	-1	765	0	0	0
243	SLU 13	-4	1	768	0	0	0
243	SLU 14	-5	-2	762	0	0	0
243	SLU 15	-5	-1	772	0	0	0
243	SLU 16	-5	-2	758	0	0	0
243	SLU 17	-5	-1	768	0	0	0
243	SLU 18	-4	-2	783	0	0	0
243	SLU 19	-4	-1	793	0	0	0
243	SLU 20	-4	-2	789	0	0	0
243	SLU 21	-4	-1	799	0	0	0
243	SLU 22	-5	-2	743	0	0	0
243	SLU 23	-5	1	759	0	0	0
243	SLU 24	-5	-2	753	0	0	0
243	SLU 25	-5	0	763	0	0	0
243	SLU 26	-5	1	766	0	0	0
243	SLU 27	-5	-2	760	0	0	0
243	SLU 28	-5	0	770	0	0	0
243	SLU 29	-5	-2	756	0	0	0
243	SLU 30	-5	0	766	0	0	0
243	SLU 31	-5	0	847	0	0	0
243	SLU 32	-5	-2	841	0	0	0
243	SLU 33	-5	-1	851	0	0	0
243	SLU 34	-5	0	854	0	0	0
243	SLU 35	-5	-2	848	0	0	0
243	SLU 36	-5	-1	858	0	0	0
243	SLU 37	-5	-2	844	0	0	0
243	SLU 38	-5	-1	854	0	0	0
243	SLU 39	-5	-2	869	0	0	0
243	SLU 40	-5	-1	878	0	0	0
243	SLU 41	-5	-2	875	0	0	0
243	SLU 42	-5	-1	885	0	0	0
243	SLU 43	-5	-3	825	0	0	0
243	SLU 44	-5	0	842	0	0	0
243	SLU 45	-5	-3	836	0	0	0
243	SLU 46	-5	-1	845	0	0	0
243	SLU 47	-5	0	848	0	0	0
243	SLU 48	-6	-3	842	0	0	0
243	SLU 49	-6	-1	852	0	0	0
243	SLU 50	-6	-3	838	0	0	0
243	SLU 51	-6	-1	848	0	0	0
243	SLU 52	-5	0	929	0	0	0
243	SLU 53	-6	-3	923	0	0	0
243	SLU 54	-6	-1	933	0	0	0
243	SLU 55	-6	0	936	0	0	0
243	SLU 56	-6	-3	930	0	0	0
243	SLU 57	-6	-1	940	0	0	0
243	SLU 58	-6	-3	926	0	0	0
243	SLU 59	-6	-1	936	0	0	0
243	SLU 60	-5	-3	951	0	0	0
243	SLU 61	-5	-1	961	0	0	0
243	SLU 62	-5	-3	957	0	0	0
243	SLU 63	-6	-1	967	0	0	0
243	SLU 64	-6	-3	911	0	0	0
243	SLU 65	-6	0	927	0	0	0
243	SLU 66	-6	-3	921	0	0	0
243	SLU 67	-6	-1	931	0	0	0
243	SLU 68	-6	0	934	0	0	0
243	SLU 69	-6	-3	928	0	0	0
243	SLU 70	-6	-1	937	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
243	SLU 71	-6	-3	924	0	0	0
243	SLU 72	-6	-1	933	0	0	0
243	SLU 73	-6	0	1015	0	0	0
243	SLU 74	-6	-3	1009	0	0	0
243	SLU 75	-6	-1	1019	0	0	0
243	SLU 76	-6	0	1022	0	0	0
243	SLU 77	-6	-3	1016	0	0	0
243	SLU 78	-6	-1	1025	0	0	0
243	SLU 79	-6	-3	1012	0	0	0
243	SLU 80	-6	-1	1021	0	0	0
243	SLU 81	-6	-3	1036	0	0	0
243	SLU 82	-6	-1	1046	0	0	0
243	SLU 83	-6	-3	1043	0	0	0
243	SLU 84	-6	-1	1053	0	0	0
243	SLE RA 1	-4	-2	682	0	0	0
243	SLE RA 2	-4	0	693	0	0	0
243	SLE RA 3	-5	-2	689	0	0	0
243	SLE RA 4	-5	-1	695	0	0	0
243	SLE RA 5	-5	0	697	0	0	0
243	SLE RA 6	-5	-2	693	0	0	0
243	SLE RA 7	-5	-1	700	0	0	0
243	SLE RA 8	-5	-2	690	0	0	0
243	SLE RA 9	-5	-1	697	0	0	0
243	SLE RA 10	-4	0	751	0	0	0
243	SLE RA 11	-5	-2	747	0	0	0
243	SLE RA 12	-5	-1	754	0	0	0
243	SLE RA 13	-5	0	756	0	0	0
243	SLE RA 14	-5	-2	752	0	0	0
243	SLE RA 15	-5	-1	758	0	0	0
243	SLE RA 16	-5	-2	749	0	0	0
243	SLE RA 17	-5	-1	755	0	0	0
243	SLE RA 18	-4	-2	766	0	0	0
243	SLE RA 19	-4	-1	772	0	0	0
243	SLE RA 20	-5	-2	770	0	0	0
243	SLE RA 21	-5	-1	776	0	0	0
243	SLE FR 1	-4	-2	682	0	0	0
243	SLE FR 2	-4	-2	684	0	0	0
243	SLE FR 3	-4	-2	684	0	0	0
243	SLE FR 4	-4	-2	709	0	0	0
243	SLE FR 5	-4	-2	709	0	0	0
243	SLE FR 6	-4	-2	724	0	0	0
243	SLE QP 1	-4	-2	682	0	0	0
243	SLE QP 2	-4	-2	707	0	0	0
243	SLD 1	50	18	813	0	0	0
243	SLD 2	62	16	810	0	0	0
243	SLD 3	52	-17	595	0	0	0
243	SLD 4	64	-18	591	0	0	0
243	SLD 5	6	56	1071	0	0	0
243	SLD 6	14	55	1069	0	0	0
243	SLD 7	14	-59	342	0	0	0
243	SLD 8	22	-59	340	0	0	0
243	SLD 9	-31	55	1074	0	0	0
243	SLD 10	-23	54	1071	0	0	0
243	SLD 11	-23	-60	345	0	0	0
243	SLD 12	-15	-60	343	0	0	0
243	SLD 13	-73	14	823	0	0	0
243	SLD 14	-61	13	819	0	0	0
243	SLD 15	-71	-20	604	0	0	0
243	SLD 16	-59	-22	601	0	0	0
243	SLV 1	123	47	974	0	0	0
243	SLV 2	151	43	965	0	0	0
243	SLV 3	128	-39	426	0	0	0
243	SLV 4	156	-43	418	0	0	0
243	SLV 5	20	143	1619	0	0	0
243	SLV 6	39	141	1613	0	0	0
243	SLV 7	39	-143	-206	0	0	0
243	SLV 8	57	-145	-212	0	0	0
243	SLV 9	-66	141	1626	0	0	0
243	SLV 10	-47	139	1620	0	0	0
243	SLV 11	-48	-145	-200	0	0	0
243	SLV 12	-29	-148	-205	0	0	0
243	SLV 13	-165	38	996	0	0	0
243	SLV 14	-137	35	988	0	0	0
243	SLV 15	-160	-47	448	0	0	0
243	SLV 16	-132	-51	440	0	0	0
243	CRTFP Uy+	0	0	0	0	0	0
243	CRTFP Uy-	0	0	0	0	0	0
244	SLU 1	2	-10	558	0	0	0
244	SLU 2	3	-8	572	0	0	0
244	SLU 3	2	-10	567	0	0	0
244	SLU 4	2	-9	575	0	0	0
244	SLU 5	3	-8	578	0	0	0
244	SLU 6	2	-10	572	0	0	0
244	SLU 7	2	-9	581	0	0	0
244	SLU 8	2	-10	569	0	0	0
244	SLU 9	2	-9	577	0	0	0
244	SLU 10	3	-8	644	0	0	0
244	SLU 11	2	-11	638	0	0	0
244	SLU 12	3	-9	647	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
244	SLU 13	3	-9	649	0	0	0
244	SLU 14	2	-11	643	0	0	0
244	SLU 15	2	-10	652	0	0	0
244	SLU 16	2	-11	640	0	0	0
244	SLU 17	2	-9	649	0	0	0
244	SLU 18	2	-11	660	0	0	0
244	SLU 19	3	-10	668	0	0	0
244	SLU 20	2	-11	665	0	0	0
244	SLU 21	3	-10	674	0	0	0
244	SLU 22	3	-11	631	0	0	0
244	SLU 23	3	-9	645	0	0	0
244	SLU 24	3	-11	640	0	0	0
244	SLU 25	3	-10	648	0	0	0
244	SLU 26	3	-9	651	0	0	0
244	SLU 27	3	-11	645	0	0	0
244	SLU 28	3	-10	654	0	0	0
244	SLU 29	3	-11	642	0	0	0
244	SLU 30	3	-10	650	0	0	0
244	SLU 31	3	-9	717	0	0	0
244	SLU 32	3	-12	711	0	0	0
244	SLU 33	3	-10	720	0	0	0
244	SLU 34	3	-10	722	0	0	0
244	SLU 35	3	-12	717	0	0	0
244	SLU 36	3	-11	725	0	0	0
244	SLU 37	3	-12	713	0	0	0
244	SLU 38	3	-10	722	0	0	0
244	SLU 39	3	-12	733	0	0	0
244	SLU 40	3	-11	741	0	0	0
244	SLU 41	3	-12	738	0	0	0
244	SLU 42	3	-11	747	0	0	0
244	SLU 43	3	-12	701	0	0	0
244	SLU 44	3	-10	715	0	0	0
244	SLU 45	3	-12	709	0	0	0
244	SLU 46	3	-11	718	0	0	0
244	SLU 47	3	-10	720	0	0	0
244	SLU 48	3	-12	715	0	0	0
244	SLU 49	3	-11	723	0	0	0
244	SLU 50	3	-12	711	0	0	0
244	SLU 51	3	-11	720	0	0	0
244	SLU 52	3	-11	786	0	0	0
244	SLU 53	3	-13	781	0	0	0
244	SLU 54	3	-12	789	0	0	0
244	SLU 55	3	-11	791	0	0	0
244	SLU 56	3	-13	786	0	0	0
244	SLU 57	3	-12	794	0	0	0
244	SLU 58	3	-13	783	0	0	0
244	SLU 59	3	-12	791	0	0	0
244	SLU 60	3	-13	802	0	0	0
244	SLU 61	3	-12	811	0	0	0
244	SLU 62	3	-14	808	0	0	0
244	SLU 63	3	-12	816	0	0	0
244	SLU 64	3	-13	774	0	0	0
244	SLU 65	3	-11	788	0	0	0
244	SLU 66	3	-13	782	0	0	0
244	SLU 67	3	-12	791	0	0	0
244	SLU 68	3	-11	793	0	0	0
244	SLU 69	3	-13	788	0	0	0
244	SLU 70	3	-12	796	0	0	0
244	SLU 71	3	-13	784	0	0	0
244	SLU 72	3	-12	793	0	0	0
244	SLU 73	3	-12	859	0	0	0
244	SLU 74	3	-14	854	0	0	0
244	SLU 75	3	-13	862	0	0	0
244	SLU 76	3	-12	864	0	0	0
244	SLU 77	3	-14	859	0	0	0
244	SLU 78	3	-13	867	0	0	0
244	SLU 79	3	-14	856	0	0	0
244	SLU 80	3	-13	864	0	0	0
244	SLU 81	3	-14	876	0	0	0
244	SLU 82	3	-13	884	0	0	0
244	SLU 83	3	-15	881	0	0	0
244	SLU 84	3	-13	889	0	0	0
244	SLE RA 1	2	-10	579	0	0	0
244	SLE RA 2	3	-9	589	0	0	0
244	SLE RA 3	2	-10	585	0	0	0
244	SLE RA 4	3	-9	591	0	0	0
244	SLE RA 5	3	-9	592	0	0	0
244	SLE RA 6	2	-10	589	0	0	0
244	SLE RA 7	3	-9	594	0	0	0
244	SLE RA 8	2	-10	586	0	0	0
244	SLE RA 9	2	-9	592	0	0	0
244	SLE RA 10	3	-9	636	0	0	0
244	SLE RA 11	2	-11	632	0	0	0
244	SLE RA 12	3	-10	638	0	0	0
244	SLE RA 13	3	-9	640	0	0	0
244	SLE RA 14	2	-11	636	0	0	0
244	SLE RA 15	3	-10	642	0	0	0
244	SLE RA 16	2	-11	634	0	0	0
244	SLE RA 17	3	-10	639	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
244	SLE RA 18	3	-11	647	0	0	0
244	SLE RA 19	3	-10	653	0	0	0
244	SLE RA 20	2	-11	651	0	0	0
244	SLE RA 21	3	-10	656	0	0	0
244	SLE FR 1	2	-10	579	0	0	0
244	SLE FR 2	2	-10	581	0	0	0
244	SLE FR 3	2	-10	581	0	0	0
244	SLE FR 4	3	-10	601	0	0	0
244	SLE FR 5	2	-10	601	0	0	0
244	SLE FR 6	2	-10	613	0	0	0
244	SLE QP 1	2	-10	579	0	0	0
244	SLE QP 2	2	-10	600	0	0	0
244	SLD 1	52	7	643	0	0	0
244	SLD 2	63	12	651	0	0	0
244	SLD 3	49	-17	451	0	0	0
244	SLD 4	59	-12	459	0	0	0
244	SLD 5	21	31	902	0	0	0
244	SLD 6	27	34	907	0	0	0
244	SLD 7	10	-50	263	0	0	0
244	SLD 8	16	-47	268	0	0	0
244	SLD 9	-11	26	931	0	0	0
244	SLD 10	-5	30	936	0	0	0
244	SLD 11	-22	-55	292	0	0	0
244	SLD 12	-16	-51	297	0	0	0
244	SLD 13	-54	-8	740	0	0	0
244	SLD 14	-44	-3	748	0	0	0
244	SLD 15	-58	-33	548	0	0	0
244	SLD 16	-47	-27	556	0	0	0
244	SLV 1	120	32	718	0	0	0
244	SLV 2	144	44	736	0	0	0
244	SLV 3	111	-29	237	0	0	0
244	SLV 4	135	-16	254	0	0	0
244	SLV 5	46	92	1361	0	0	0
244	SLV 6	62	101	1373	0	0	0
244	SLV 7	18	-110	-242	0	0	0
244	SLV 8	34	-102	-230	0	0	0
244	SLV 9	-29	82	1429	0	0	0
244	SLV 10	-13	90	1441	0	0	0
244	SLV 11	-57	-121	-174	0	0	0
244	SLV 12	-41	-113	-162	0	0	0
244	SLV 13	-130	-4	945	0	0	0
244	SLV 14	-106	8	962	0	0	0
244	SLV 15	-139	-65	464	0	0	0
244	SLV 16	-115	-52	481	0	0	0
244	CRTFP Uy+	0	0	0	0	0	0
244	CRTFP Uy-	0	0	0	0	0	0
246	SLU 1	15	-59	4951	-4.39	1509.98	17.53
246	SLU 2	16	-37	5077	-4.79	1548.52	10.9
246	SLU 3	14	-60	5028	-4.41	1533.62	17.82
246	SLU 4	15	-47	5104	-4.65	1556.74	13.85
246	SLU 5	16	-38	5124	-4.8	1562.96	11.09
246	SLU 6	14	-60	5075	-4.42	1548.06	18.01
246	SLU 7	15	-47	5151	-4.66	1571.18	14.03
246	SLU 8	14	-60	5045	-4.41	1538.87	17.9
246	SLU 9	15	-47	5121	-4.65	1561.99	13.93
246	SLU 10	16	-44	5730	-5.29	1748.85	12.94
246	SLU 11	14	-67	5681	-4.91	1733.95	19.86
246	SLU 12	15	-53	5757	-5.15	1757.07	15.88
246	SLU 13	16	-44	5777	-5.3	1763.29	13.13
246	SLU 14	14	-67	5728	-4.92	1748.39	20.04
246	SLU 15	15	-54	5804	-5.16	1771.52	16.07
246	SLU 16	14	-67	5698	-4.91	1739.2	19.94
246	SLU 17	15	-54	5774	-5.15	1762.32	15.96
246	SLU 18	15	-68	5884	-5.11	1796.17	20.44
246	SLU 19	15	-55	5960	-5.35	1819.29	16.46
246	SLU 20	14	-69	5931	-5.11	1810.61	20.62
246	SLU 21	15	-56	6007	-5.35	1833.74	16.65
246	SLU 22	16	-66	5589	-4.82	1704.85	19.65
246	SLU 23	17	-44	5715	-5.22	1743.39	13.03
246	SLU 24	16	-67	5666	-4.84	1728.49	19.94
246	SLU 25	17	-54	5742	-5.08	1751.61	15.97
246	SLU 26	17	-45	5762	-5.23	1757.83	13.21
246	SLU 27	15	-68	5713	-4.84	1742.93	20.13
246	SLU 28	16	-54	5789	-5.08	1766.05	16.16
246	SLU 29	15	-67	5683	-4.83	1733.74	20.03
246	SLU 30	16	-54	5759	-5.07	1756.86	16.05
246	SLU 31	17	-51	6368	-5.72	1943.72	15.06
246	SLU 32	16	-74	6319	-5.34	1928.82	21.98
246	SLU 33	17	-61	6395	-5.58	1951.94	18.01
246	SLU 34	17	-52	6416	-5.73	1958.16	15.25
246	SLU 35	15	-74	6367	-5.34	1943.26	22.17
246	SLU 36	16	-61	6442	-5.58	1966.38	18.19
246	SLU 37	15	-74	6337	-5.33	1934.07	22.06
246	SLU 38	16	-61	6412	-5.57	1957.19	18.09
246	SLU 39	16	-76	6522	-5.53	1991.04	22.56
246	SLU 40	17	-62	6598	-5.77	2014.16	18.59
246	SLU 41	16	-76	6569	-5.54	2005.48	22.75
246	SLU 42	16	-63	6645	-5.78	2028.6	18.77
246	SLU 43	19	-74	6217	-5.56	1896.17	22.06

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
246	SLU 44	20	-52	6343	-5.96	1934.7	15.43
246	SLU 45	18	-75	6294	-5.58	1919.8	22.35
246	SLU 46	19	-62	6370	-5.82	1942.92	18.38
246	SLU 47	20	-53	6390	-5.97	1949.15	15.62
246	SLU 48	18	-76	6341	-5.59	1934.25	22.54
246	SLU 49	19	-63	6417	-5.83	1957.37	18.56
246	SLU 50	18	-75	6311	-5.58	1925.05	22.43
246	SLU 51	19	-62	6387	-5.82	1948.17	18.46
246	SLU 52	20	-59	6997	-6.46	2135.03	17.47
246	SLU 53	18	-82	6948	-6.08	2120.14	24.39
246	SLU 54	19	-69	7023	-6.32	2143.26	20.41
246	SLU 55	19	-60	7044	-6.47	2149.48	17.66
246	SLU 56	18	-82	6995	-6.09	2134.58	24.57
246	SLU 57	19	-69	7071	-6.33	2157.7	20.6
246	SLU 58	18	-82	6965	-6.08	2125.38	24.47
246	SLU 59	19	-69	7041	-6.32	2148.51	20.49
246	SLU 60	19	-84	7150	-6.28	2182.36	24.97
246	SLU 61	19	-71	7226	-6.52	2205.48	20.99
246	SLU 62	18	-84	7198	-6.29	2196.8	25.15
246	SLU 63	19	-71	7273	-6.53	2219.92	21.18
246	SLU 64	20	-81	6855	-5.99	2091.03	24.18
246	SLU 65	21	-59	6981	-6.39	2129.57	17.56
246	SLU 66	20	-82	6932	-6.01	2114.67	24.47
246	SLU 67	21	-69	7008	-6.25	2137.79	20.5
246	SLU 68	21	-60	7029	-6.4	2144.01	17.74
246	SLU 69	19	-83	6979	-6.02	2129.11	24.66
246	SLU 70	20	-70	7055	-6.26	2152.23	20.69
246	SLU 71	19	-82	6949	-6	2119.92	24.56
246	SLU 72	20	-69	7025	-6.24	2143.04	20.58
246	SLU 73	21	-66	7635	-6.89	2329.9	19.59
246	SLU 74	20	-89	7586	-6.51	2315	26.51
246	SLU 75	20	-76	7662	-6.75	2338.12	22.54
246	SLU 76	21	-67	7682	-6.9	2344.34	19.78
246	SLU 77	19	-89	7633	-6.52	2329.44	26.7
246	SLU 78	20	-76	7709	-6.76	2352.57	22.72
246	SLU 79	19	-89	7603	-6.5	2320.25	26.59
246	SLU 80	20	-76	7679	-6.74	2343.37	22.62
246	SLU 81	20	-91	7789	-6.7	2377.22	27.09
246	SLU 82	21	-78	7864	-6.94	2400.34	23.12
246	SLU 83	20	-91	7836	-6.71	2391.66	27.28
246	SLU 84	20	-78	7912	-6.95	2414.79	23.3
246	SLE RA 1	15	-61	5133	-4.51	1565.66	18.13
246	SLE RA 2	16	-46	5217	-4.78	1591.35	13.72
246	SLE RA 3	15	-61	5184	-4.53	1581.42	18.33
246	SLE RA 4	15	-53	5235	-4.69	1596.83	15.68
246	SLE RA 5	16	-47	5249	-4.79	1600.98	13.84
246	SLE RA 6	15	-62	5216	-4.53	1591.05	18.45
246	SLE RA 7	15	-53	5266	-4.69	1606.46	15.8
246	SLE RA 8	15	-62	5196	-4.52	1584.92	18.38
246	SLE RA 9	15	-53	5246	-4.68	1600.33	15.73
246	SLE RA 10	16	-51	5653	-5.11	1724.9	15.08
246	SLE RA 11	15	-66	5620	-4.86	1714.97	19.69
246	SLE RA 12	15	-57	5671	-5.02	1730.39	17.04
246	SLE RA 13	16	-51	5684	-5.12	1734.53	15.2
246	SLE RA 14	15	-66	5651	-4.86	1724.6	19.81
246	SLE RA 15	15	-58	5702	-5.02	1740.01	17.16
246	SLE RA 16	15	-66	5631	-4.86	1718.47	19.74
246	SLE RA 17	15	-57	5682	-5.02	1733.89	17.09
246	SLE RA 18	15	-67	5755	-4.99	1756.45	20.07
246	SLE RA 19	16	-59	5806	-5.15	1771.87	17.42
246	SLE RA 20	15	-68	5787	-4.99	1766.08	20.2
246	SLE RA 21	15	-59	5837	-5.15	1781.49	17.55
246	SLE FR 1	15	-61	5133	-4.51	1565.66	18.13
246	SLE FR 2	15	-58	5150	-4.57	1570.8	17.25
246	SLE FR 3	15	-61	5145	-4.51	1569.51	18.18
246	SLE FR 4	15	-60	5336	-4.71	1628.04	17.83
246	SLE FR 5	15	-63	5332	-4.66	1626.75	18.77
246	SLE FR 6	15	-64	5444	-4.75	1661.06	19.1
246	SLE QP 1	15	-61	5133	-4.51	1565.66	18.13
246	SLE QP 2	15	-63	5320	-4.66	1622.9	18.72
246	SLD 1	484	81	6101	-6.72	1865.1	-24.83
246	SLD 2	580	85	6127	-6.79	1871.26	-25.8
246	SLD 3	457	-185	4418	-1.34	1353.01	56.34
246	SLD 4	553	-181	4445	-1.41	1359.17	55.37
246	SLD 5	180	383	8100	-13.42	2471.12	-117.28
246	SLD 6	243	386	8118	-13.47	2475.18	-117.92
246	SLD 7	89	-504	2493	4.51	764.15	153.29
246	SLD 8	153	-501	2511	4.47	768.22	152.65
246	SLD 9	-122	375	8128	-13.78	2477.57	-115.22
246	SLD 10	-59	378	8146	-13.82	2481.64	-115.85
246	SLD 11	-212	-511	2521	4.16	770.61	155.36
246	SLD 12	-149	-509	2539	4.11	774.68	154.72
246	SLD 13	-522	55	6194	-7.9	1886.62	-17.94
246	SLD 14	-426	60	6221	-7.97	1892.79	-18.91
246	SLD 15	-549	-211	4512	-2.52	1374.54	63.23
246	SLD 16	-453	-206	4538	-2.59	1380.7	62.26
246	SLV 1	1114	294	7287	-9.94	2232.11	-89.39
246	SLV 2	1339	304	7349	-10.09	2246.6	-91.67
246	SLV 3	1045	-369	3071	3.54	948.72	113

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
246	SLV 4	1270	-359	3133	3.39	963.21	110.72
246	SLV 5	408	1048	12292	-26.66	3749.44	-320.24
246	SLV 6	560	1055	12334	-26.76	3759.19	-321.77
246	SLV 7	177	-1163	-1761	18.28	-528.54	354.38
246	SLV 8	329	-1156	-1719	18.17	-518.78	352.84
246	SLV 9	-298	1030	12358	-27.48	3764.58	-315.41
246	SLV 10	-147	1037	12400	-27.59	3774.33	-316.94
246	SLV 11	-529	-1181	-1695	17.45	-513.39	359.21
246	SLV 12	-377	-1174	-1653	17.35	-503.64	357.67
246	SLV 13	-1240	234	7506	-12.7	2282.59	-73.29
246	SLV 14	-1014	244	7568	-12.85	2297.08	-75.56
246	SLV 15	-1309	-429	3290	0.78	999.2	129.1
246	SLV 16	-1084	-419	3352	0.63	1013.68	126.82
246	CRTFP Ux+	0	0	0	0	0	0
246	CRTFP Ux-	0	0	0	0	0	0
246	CRTFP Uy+	0	0	0	0	-0.01	0
246	CRTFP Uy-	0	0	0	0	0.01	0
248	SLU 1	4	-17	1285	0	0	0
248	SLU 2	4	-12	1318	0	0	0
248	SLU 3	4	-18	1305	0	0	0
248	SLU 4	4	-14	1325	0	0	0
248	SLU 5	4	-12	1330	0	0	0
248	SLU 6	4	-18	1318	0	0	0
248	SLU 7	4	-15	1337	0	0	0
248	SLU 8	4	-18	1310	0	0	0
248	SLU 9	4	-14	1329	0	0	0
248	SLU 10	4	-14	1486	0	0	0
248	SLU 11	4	-20	1474	0	0	0
248	SLU 12	4	-16	1493	0	0	0
248	SLU 13	4	-14	1499	0	0	0
248	SLU 14	4	-20	1486	0	0	0
248	SLU 15	4	-16	1505	0	0	0
248	SLU 16	4	-20	1478	0	0	0
248	SLU 17	4	-16	1498	0	0	0
248	SLU 18	4	-20	1526	0	0	0
248	SLU 19	4	-17	1545	0	0	0
248	SLU 20	4	-20	1538	0	0	0
248	SLU 21	4	-17	1557	0	0	0
248	SLU 22	4	-20	1451	0	0	0
248	SLU 23	5	-14	1484	0	0	0
248	SLU 24	4	-20	1471	0	0	0
248	SLU 25	5	-16	1490	0	0	0
248	SLU 26	5	-14	1496	0	0	0
248	SLU 27	4	-20	1483	0	0	0
248	SLU 28	5	-17	1503	0	0	0
248	SLU 29	4	-20	1475	0	0	0
248	SLU 30	4	-17	1495	0	0	0
248	SLU 31	5	-16	1652	0	0	0
248	SLU 32	4	-22	1639	0	0	0
248	SLU 33	5	-18	1659	0	0	0
248	SLU 34	5	-16	1664	0	0	0
248	SLU 35	4	-22	1651	0	0	0
248	SLU 36	5	-19	1671	0	0	0
248	SLU 37	4	-22	1643	0	0	0
248	SLU 38	4	-18	1663	0	0	0
248	SLU 39	4	-22	1691	0	0	0
248	SLU 40	5	-19	1711	0	0	0
248	SLU 41	4	-22	1703	0	0	0
248	SLU 42	5	-19	1723	0	0	0
248	SLU 43	5	-22	1614	0	0	0
248	SLU 44	6	-16	1647	0	0	0
248	SLU 45	5	-22	1634	0	0	0
248	SLU 46	5	-19	1654	0	0	0
248	SLU 47	5	-17	1659	0	0	0
248	SLU 48	5	-22	1646	0	0	0
248	SLU 49	5	-19	1666	0	0	0
248	SLU 50	5	-22	1639	0	0	0
248	SLU 51	5	-19	1658	0	0	0
248	SLU 52	6	-18	1815	0	0	0
248	SLU 53	5	-24	1802	0	0	0
248	SLU 54	5	-21	1822	0	0	0
248	SLU 55	5	-18	1827	0	0	0
248	SLU 56	5	-24	1815	0	0	0
248	SLU 57	5	-21	1834	0	0	0
248	SLU 58	5	-24	1807	0	0	0
248	SLU 59	5	-21	1827	0	0	0
248	SLU 60	5	-25	1855	0	0	0
248	SLU 61	5	-21	1874	0	0	0
248	SLU 62	5	-25	1867	0	0	0
248	SLU 63	5	-21	1886	0	0	0
248	SLU 64	6	-24	1780	0	0	0
248	SLU 65	6	-18	1812	0	0	0
248	SLU 66	5	-24	1800	0	0	0
248	SLU 67	6	-21	1819	0	0	0
248	SLU 68	6	-19	1825	0	0	0
248	SLU 69	5	-25	1812	0	0	0
248	SLU 70	6	-21	1831	0	0	0
248	SLU 71	5	-24	1804	0	0	0
248	SLU 72	6	-21	1824	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
248	SLU 73	6	-20	1981	0	0	0
248	SLU 74	5	-26	1968	0	0	0
248	SLU 75	6	-23	1987	0	0	0
248	SLU 76	6	-21	1993	0	0	0
248	SLU 77	5	-26	1980	0	0	0
248	SLU 78	6	-23	2000	0	0	0
248	SLU 79	5	-26	1972	0	0	0
248	SLU 80	6	-23	1992	0	0	0
248	SLU 81	6	-27	2020	0	0	0
248	SLU 82	6	-23	2040	0	0	0
248	SLU 83	5	-27	2032	0	0	0
248	SLU 84	6	-24	2052	0	0	0
248	SLE RA 1	4	-18	1333	0	0	0
248	SLE RA 2	4	-14	1354	0	0	0
248	SLE RA 3	4	-18	1346	0	0	0
248	SLE RA 4	4	-16	1359	0	0	0
248	SLE RA 5	4	-14	1363	0	0	0
248	SLE RA 6	4	-18	1354	0	0	0
248	SLE RA 7	4	-16	1367	0	0	0
248	SLE RA 8	4	-18	1349	0	0	0
248	SLE RA 9	4	-16	1362	0	0	0
248	SLE RA 10	4	-16	1467	0	0	0
248	SLE RA 11	4	-19	1458	0	0	0
248	SLE RA 12	4	-17	1471	0	0	0
248	SLE RA 13	4	-16	1475	0	0	0
248	SLE RA 14	4	-20	1466	0	0	0
248	SLE RA 15	4	-17	1479	0	0	0
248	SLE RA 16	4	-20	1461	0	0	0
248	SLE RA 17	4	-17	1474	0	0	0
248	SLE RA 18	4	-20	1493	0	0	0
248	SLE RA 19	4	-18	1506	0	0	0
248	SLE RA 20	4	-20	1501	0	0	0
248	SLE RA 21	4	-18	1514	0	0	0
248	SLE FR 1	4	-18	1333	0	0	0
248	SLE FR 2	4	-17	1337	0	0	0
248	SLE FR 3	4	-18	1336	0	0	0
248	SLE FR 4	4	-18	1385	0	0	0
248	SLE FR 5	4	-19	1384	0	0	0
248	SLE FR 6	4	-19	1413	0	0	0
248	SLE QP 1	4	-18	1333	0	0	0
248	SLE QP 2	4	-19	1381	0	0	0
248	SLD 1	127	21	1571	0	0	0
248	SLD 2	152	24	1581	0	0	0
248	SLD 3	119	-47	1133	0	0	0
248	SLD 4	145	-43	1143	0	0	0
248	SLD 5	47	95	2101	0	0	0
248	SLD 6	64	97	2107	0	0	0
248	SLD 7	23	-130	640	0	0	0
248	SLD 8	40	-128	647	0	0	0
248	SLD 9	-31	90	2115	0	0	0
248	SLD 10	-15	93	2121	0	0	0
248	SLD 11	-56	-134	654	0	0	0
248	SLD 12	-39	-132	661	0	0	0
248	SLD 13	-136	6	1619	0	0	0
248	SLD 14	-111	10	1628	0	0	0
248	SLD 15	-143	-61	1180	0	0	0
248	SLD 16	-118	-58	1190	0	0	0
248	SLV 1	291	78	1864	0	0	0
248	SLV 2	350	86	1886	0	0	0
248	SLV 3	273	-90	765	0	0	0
248	SLV 4	332	-82	788	0	0	0
248	SLV 5	107	264	3187	0	0	0
248	SLV 6	147	269	3202	0	0	0
248	SLV 7	46	-296	-473	0	0	0
248	SLV 8	85	-291	-458	0	0	0
248	SLV 9	-77	254	3220	0	0	0
248	SLV 10	-37	259	3235	0	0	0
248	SLV 11	-139	-306	-440	0	0	0
248	SLV 12	-99	-301	-425	0	0	0
248	SLV 13	-323	45	1974	0	0	0
248	SLV 14	-265	53	1996	0	0	0
248	SLV 15	-342	-123	876	0	0	0
248	SLV 16	-283	-115	898	0	0	0
248	CRTFP Uy+	0	0	0	0	0	0
248	CRTFP Uy-	0	0	0	0	0	0
249	SLU 1	4	-18	1244	0	0	0
249	SLU 2	5	-12	1276	0	0	0
249	SLU 3	4	-18	1263	0	0	0
249	SLU 4	4	-15	1282	0	0	0
249	SLU 5	4	-13	1287	0	0	0
249	SLU 6	4	-18	1275	0	0	0
249	SLU 7	4	-15	1294	0	0	0
249	SLU 8	4	-18	1267	0	0	0
249	SLU 9	4	-15	1286	0	0	0
249	SLU 10	5	-14	1437	0	0	0
249	SLU 11	4	-20	1425	0	0	0
249	SLU 12	4	-17	1444	0	0	0
249	SLU 13	4	-15	1449	0	0	0
249	SLU 14	4	-20	1437	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
249	SLU 15	4	-17	1456	0	0	0
249	SLU 16	4	-20	1429	0	0	0
249	SLU 17	4	-17	1448	0	0	0
249	SLU 18	4	-20	1475	0	0	0
249	SLU 19	4	-17	1494	0	0	0
249	SLU 20	4	-21	1487	0	0	0
249	SLU 21	4	-17	1506	0	0	0
249	SLU 22	5	-20	1404	0	0	0
249	SLU 23	5	-15	1435	0	0	0
249	SLU 24	5	-20	1423	0	0	0
249	SLU 25	5	-17	1442	0	0	0
249	SLU 26	5	-15	1447	0	0	0
249	SLU 27	5	-20	1435	0	0	0
249	SLU 28	5	-17	1454	0	0	0
249	SLU 29	4	-20	1427	0	0	0
249	SLU 30	5	-17	1446	0	0	0
249	SLU 31	5	-16	1597	0	0	0
249	SLU 32	5	-22	1585	0	0	0
249	SLU 33	5	-19	1604	0	0	0
249	SLU 34	5	-17	1609	0	0	0
249	SLU 35	5	-22	1597	0	0	0
249	SLU 36	5	-19	1616	0	0	0
249	SLU 37	4	-22	1589	0	0	0
249	SLU 38	5	-19	1608	0	0	0
249	SLU 39	5	-23	1635	0	0	0
249	SLU 40	5	-19	1654	0	0	0
249	SLU 41	5	-23	1647	0	0	0
249	SLU 42	5	-20	1666	0	0	0
249	SLU 43	5	-22	1562	0	0	0
249	SLU 44	6	-17	1594	0	0	0
249	SLU 45	5	-23	1581	0	0	0
249	SLU 46	5	-20	1600	0	0	0
249	SLU 47	6	-17	1606	0	0	0
249	SLU 48	5	-23	1593	0	0	0
249	SLU 49	5	-20	1612	0	0	0
249	SLU 50	5	-23	1586	0	0	0
249	SLU 51	5	-20	1605	0	0	0
249	SLU 52	6	-19	1756	0	0	0
249	SLU 53	5	-25	1743	0	0	0
249	SLU 54	5	-21	1762	0	0	0
249	SLU 55	6	-19	1767	0	0	0
249	SLU 56	5	-25	1755	0	0	0
249	SLU 57	5	-22	1774	0	0	0
249	SLU 58	5	-25	1748	0	0	0
249	SLU 59	5	-21	1767	0	0	0
249	SLU 60	5	-25	1793	0	0	0
249	SLU 61	6	-22	1812	0	0	0
249	SLU 62	5	-25	1805	0	0	0
249	SLU 63	5	-22	1824	0	0	0
249	SLU 64	6	-25	1722	0	0	0
249	SLU 65	6	-19	1754	0	0	0
249	SLU 66	6	-25	1741	0	0	0
249	SLU 67	6	-22	1760	0	0	0
249	SLU 68	6	-19	1765	0	0	0
249	SLU 69	6	-25	1753	0	0	0
249	SLU 70	6	-22	1772	0	0	0
249	SLU 71	6	-25	1746	0	0	0
249	SLU 72	6	-22	1765	0	0	0
249	SLU 73	6	-21	1916	0	0	0
249	SLU 74	6	-27	1903	0	0	0
249	SLU 75	6	-23	1922	0	0	0
249	SLU 76	6	-21	1927	0	0	0
249	SLU 77	6	-27	1915	0	0	0
249	SLU 78	6	-24	1934	0	0	0
249	SLU 79	6	-27	1907	0	0	0
249	SLU 80	6	-24	1926	0	0	0
249	SLU 81	6	-27	1953	0	0	0
249	SLU 82	6	-24	1972	0	0	0
249	SLU 83	6	-27	1965	0	0	0
249	SLU 84	6	-24	1984	0	0	0
249	SLE RA 1	4	-18	1290	0	0	0
249	SLE RA 2	5	-15	1311	0	0	0
249	SLE RA 3	4	-19	1302	0	0	0
249	SLE RA 4	4	-16	1315	0	0	0
249	SLE RA 5	5	-15	1318	0	0	0
249	SLE RA 6	4	-19	1310	0	0	0
249	SLE RA 7	4	-17	1323	0	0	0
249	SLE RA 8	4	-19	1305	0	0	0
249	SLE RA 9	4	-17	1318	0	0	0
249	SLE RA 10	5	-16	1419	0	0	0
249	SLE RA 11	4	-20	1410	0	0	0
249	SLE RA 12	4	-18	1423	0	0	0
249	SLE RA 13	5	-16	1426	0	0	0
249	SLE RA 14	4	-20	1418	0	0	0
249	SLE RA 15	4	-18	1431	0	0	0
249	SLE RA 16	4	-20	1413	0	0	0
249	SLE RA 17	4	-18	1426	0	0	0
249	SLE RA 18	4	-20	1444	0	0	0
249	SLE RA 19	4	-18	1456	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
249	SLE RA 20	4	-20	1451	0	0	0
249	SLE RA 21	4	-18	1464	0	0	0
249	SLE FR 1	4	-18	1290	0	0	0
249	SLE FR 2	4	-18	1294	0	0	0
249	SLE FR 3	4	-18	1293	0	0	0
249	SLE FR 4	4	-18	1340	0	0	0
249	SLE FR 5	4	-19	1339	0	0	0
249	SLE FR 6	4	-19	1367	0	0	0
249	SLE QP 1	4	-18	1290	0	0	0
249	SLE QP 2	4	-19	1336	0	0	0
249	SLD 1	124	20	1511	0	0	0
249	SLD 2	148	24	1522	0	0	0
249	SLD 3	116	-45	1087	0	0	0
249	SLD 4	141	-40	1097	0	0	0
249	SLD 5	47	90	2030	0	0	0
249	SLD 6	63	93	2037	0	0	0
249	SLD 7	23	-125	615	0	0	0
249	SLD 8	39	-122	622	0	0	0
249	SLD 9	-30	84	2049	0	0	0
249	SLD 10	-14	88	2056	0	0	0
249	SLD 11	-54	-131	634	0	0	0
249	SLD 12	-38	-128	641	0	0	0
249	SLD 13	-132	2	1574	0	0	0
249	SLD 14	-108	7	1585	0	0	0
249	SLD 15	-139	-62	1150	0	0	0
249	SLD 16	-115	-58	1160	0	0	0
249	SLV 1	284	77	1782	0	0	0
249	SLV 2	341	88	1806	0	0	0
249	SLV 3	266	-84	718	0	0	0
249	SLV 4	323	-73	742	0	0	0
249	SLV 5	105	252	3079	0	0	0
249	SLV 6	144	259	3095	0	0	0
249	SLV 7	44	-285	-468	0	0	0
249	SLV 8	83	-277	-452	0	0	0
249	SLV 9	-74	239	3123	0	0	0
249	SLV 10	-35	247	3139	0	0	0
249	SLV 11	-135	-297	-424	0	0	0
249	SLV 12	-97	-290	-407	0	0	0
249	SLV 13	-314	35	1929	0	0	0
249	SLV 14	-257	46	1954	0	0	0
249	SLV 15	-332	-125	865	0	0	0
249	SLV 16	-275	-114	890	0	0	0
249	CRTFP Uy+	0	0	0	0	0	0
249	CRTFP Uy-	0	0	0	0	0	0
250	SLU 1	4	-18	1221	0	0	0
250	SLU 2	5	-13	1253	0	0	0
250	SLU 3	4	-19	1240	0	0	0
250	SLU 4	5	-16	1259	0	0	0
250	SLU 5	5	-13	1264	0	0	0
250	SLU 6	4	-19	1252	0	0	0
250	SLU 7	4	-16	1270	0	0	0
250	SLU 8	4	-19	1244	0	0	0
250	SLU 9	4	-16	1263	0	0	0
250	SLU 10	5	-15	1411	0	0	0
250	SLU 11	4	-21	1398	0	0	0
250	SLU 12	5	-17	1417	0	0	0
250	SLU 13	5	-15	1422	0	0	0
250	SLU 14	4	-21	1410	0	0	0
250	SLU 15	4	-18	1428	0	0	0
250	SLU 16	4	-21	1402	0	0	0
250	SLU 17	4	-18	1421	0	0	0
250	SLU 18	4	-21	1447	0	0	0
250	SLU 19	5	-18	1466	0	0	0
250	SLU 20	4	-21	1459	0	0	0
250	SLU 21	5	-18	1477	0	0	0
250	SLU 22	5	-20	1378	0	0	0
250	SLU 23	5	-15	1409	0	0	0
250	SLU 24	5	-21	1397	0	0	0
250	SLU 25	5	-18	1416	0	0	0
250	SLU 26	5	-15	1421	0	0	0
250	SLU 27	5	-21	1409	0	0	0
250	SLU 28	5	-18	1427	0	0	0
250	SLU 29	5	-21	1401	0	0	0
250	SLU 30	5	-18	1420	0	0	0
250	SLU 31	5	-17	1567	0	0	0
250	SLU 32	5	-23	1555	0	0	0
250	SLU 33	5	-20	1574	0	0	0
250	SLU 34	5	-17	1579	0	0	0
250	SLU 35	5	-23	1567	0	0	0
250	SLU 36	5	-20	1585	0	0	0
250	SLU 37	5	-23	1559	0	0	0
250	SLU 38	5	-20	1578	0	0	0
250	SLU 39	5	-23	1604	0	0	0
250	SLU 40	5	-20	1623	0	0	0
250	SLU 41	5	-23	1616	0	0	0
250	SLU 42	5	-20	1634	0	0	0
250	SLU 43	6	-23	1534	0	0	0
250	SLU 44	6	-18	1565	0	0	0
250	SLU 45	6	-23	1553	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
250	SLU 46	6	-20	1572	0	0	0
250	SLU 47	6	-18	1577	0	0	0
250	SLU 48	5	-24	1564	0	0	0
250	SLU 49	6	-20	1583	0	0	0
250	SLU 50	5	-24	1557	0	0	0
250	SLU 51	6	-20	1576	0	0	0
250	SLU 52	6	-20	1723	0	0	0
250	SLU 53	6	-25	1711	0	0	0
250	SLU 54	6	-22	1730	0	0	0
250	SLU 55	6	-20	1735	0	0	0
250	SLU 56	5	-26	1722	0	0	0
250	SLU 57	6	-22	1741	0	0	0
250	SLU 58	5	-25	1715	0	0	0
250	SLU 59	6	-22	1734	0	0	0
250	SLU 60	6	-26	1760	0	0	0
250	SLU 61	6	-23	1778	0	0	0
250	SLU 62	6	-26	1771	0	0	0
250	SLU 63	6	-23	1790	0	0	0
250	SLU 64	6	-25	1691	0	0	0
250	SLU 65	6	-20	1722	0	0	0
250	SLU 66	6	-26	1710	0	0	0
250	SLU 67	6	-22	1728	0	0	0
250	SLU 68	6	-20	1734	0	0	0
250	SLU 69	6	-26	1721	0	0	0
250	SLU 70	6	-23	1740	0	0	0
250	SLU 71	6	-26	1714	0	0	0
250	SLU 72	6	-23	1733	0	0	0
250	SLU 73	6	-22	1880	0	0	0
250	SLU 74	6	-27	1868	0	0	0
250	SLU 75	6	-24	1886	0	0	0
250	SLU 76	6	-22	1892	0	0	0
250	SLU 77	6	-28	1879	0	0	0
250	SLU 78	6	-25	1898	0	0	0
250	SLU 79	6	-28	1872	0	0	0
250	SLU 80	6	-24	1891	0	0	0
250	SLU 81	6	-28	1917	0	0	0
250	SLU 82	6	-25	1935	0	0	0
250	SLU 83	6	-28	1928	0	0	0
250	SLU 84	6	-25	1947	0	0	0
250	SLE RA 1	5	-19	1266	0	0	0
250	SLE RA 2	5	-15	1287	0	0	0
250	SLE RA 3	5	-19	1279	0	0	0
250	SLE RA 4	5	-17	1291	0	0	0
250	SLE RA 5	5	-16	1295	0	0	0
250	SLE RA 6	4	-19	1286	0	0	0
250	SLE RA 7	5	-17	1299	0	0	0
250	SLE RA 8	4	-19	1282	0	0	0
250	SLE RA 9	5	-17	1294	0	0	0
250	SLE RA 10	5	-17	1392	0	0	0
250	SLE RA 11	5	-20	1384	0	0	0
250	SLE RA 12	5	-18	1397	0	0	0
250	SLE RA 13	5	-17	1400	0	0	0
250	SLE RA 14	4	-21	1392	0	0	0
250	SLE RA 15	5	-18	1404	0	0	0
250	SLE RA 16	4	-20	1387	0	0	0
250	SLE RA 17	5	-18	1399	0	0	0
250	SLE RA 18	5	-21	1417	0	0	0
250	SLE RA 19	5	-19	1429	0	0	0
250	SLE RA 20	5	-21	1424	0	0	0
250	SLE RA 21	5	-19	1437	0	0	0
250	SLE FR 1	5	-19	1266	0	0	0
250	SLE FR 2	5	-18	1270	0	0	0
250	SLE FR 3	5	-19	1269	0	0	0
250	SLE FR 4	5	-19	1316	0	0	0
250	SLE FR 5	5	-20	1314	0	0	0
250	SLE FR 6	5	-20	1342	0	0	0
250	SLE QP 1	5	-19	1266	0	0	0
250	SLE QP 2	5	-19	1311	0	0	0
250	SLD 1	122	19	1474	0	0	0
250	SLD 2	146	25	1485	0	0	0
250	SLD 3	115	-43	1056	0	0	0
250	SLD 4	139	-38	1068	0	0	0
250	SLD 5	46	86	1991	0	0	0
250	SLD 6	62	90	1998	0	0	0
250	SLD 7	22	-123	600	0	0	0
250	SLD 8	38	-119	607	0	0	0
250	SLD 9	-29	80	2015	0	0	0
250	SLD 10	-13	84	2023	0	0	0
250	SLD 11	-53	-129	625	0	0	0
250	SLD 12	-37	-125	632	0	0	0
250	SLD 13	-130	-1	1555	0	0	0
250	SLD 14	-106	4	1566	0	0	0
250	SLD 15	-137	-64	1138	0	0	0
250	SLD 16	-113	-58	1149	0	0	0
250	SLV 1	280	76	1726	0	0	0
250	SLV 2	337	89	1752	0	0	0
250	SLV 3	262	-80	680	0	0	0
250	SLV 4	318	-67	706	0	0	0
250	SLV 5	105	243	3017	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
250	SLV 6	143	252	3035	0	0	0
250	SLV 7	43	-277	-469	0	0	0
250	SLV 8	81	-268	-451	0	0	0
250	SLV 9	-72	229	3074	0	0	0
250	SLV 10	-34	238	3092	0	0	0
250	SLV 11	-134	-291	-412	0	0	0
250	SLV 12	-96	-282	-394	0	0	0
250	SLV 13	-309	28	1917	0	0	0
250	SLV 14	-253	41	1943	0	0	0
250	SLV 15	-328	-128	871	0	0	0
250	SLV 16	-271	-115	897	0	0	0
250	CRTFP Uy+	0	0	0	0	0	0
250	CRTFP Uy-	0	0	0	0	0	0
251	SLU 1	5	-19	1210	0	0	0
251	SLU 2	5	-14	1240	0	0	0
251	SLU 3	5	-19	1228	0	0	0
251	SLU 4	5	-16	1247	0	0	0
251	SLU 5	5	-14	1252	0	0	0
251	SLU 6	5	-19	1240	0	0	0
251	SLU 7	5	-16	1258	0	0	0
251	SLU 8	4	-19	1232	0	0	0
251	SLU 9	5	-16	1251	0	0	0
251	SLU 10	5	-16	1396	0	0	0
251	SLU 11	5	-21	1384	0	0	0
251	SLU 12	5	-18	1402	0	0	0
251	SLU 13	5	-16	1408	0	0	0
251	SLU 14	5	-21	1395	0	0	0
251	SLU 15	5	-18	1414	0	0	0
251	SLU 16	4	-21	1388	0	0	0
251	SLU 17	5	-18	1407	0	0	0
251	SLU 18	5	-22	1432	0	0	0
251	SLU 19	5	-19	1451	0	0	0
251	SLU 20	5	-22	1444	0	0	0
251	SLU 21	5	-19	1462	0	0	0
251	SLU 22	5	-21	1365	0	0	0
251	SLU 23	6	-16	1396	0	0	0
251	SLU 24	5	-21	1384	0	0	0
251	SLU 25	5	-18	1402	0	0	0
251	SLU 26	5	-16	1407	0	0	0
251	SLU 27	5	-22	1395	0	0	0
251	SLU 28	5	-19	1414	0	0	0
251	SLU 29	5	-21	1388	0	0	0
251	SLU 30	5	-18	1406	0	0	0
251	SLU 31	6	-18	1552	0	0	0
251	SLU 32	5	-23	1540	0	0	0
251	SLU 33	5	-20	1558	0	0	0
251	SLU 34	5	-18	1563	0	0	0
251	SLU 35	5	-24	1551	0	0	0
251	SLU 36	5	-20	1569	0	0	0
251	SLU 37	5	-23	1544	0	0	0
251	SLU 38	5	-20	1562	0	0	0
251	SLU 39	5	-24	1588	0	0	0
251	SLU 40	5	-21	1606	0	0	0
251	SLU 41	5	-24	1599	0	0	0
251	SLU 42	5	-21	1618	0	0	0
251	SLU 43	6	-24	1519	0	0	0
251	SLU 44	6	-19	1550	0	0	0
251	SLU 45	6	-24	1538	0	0	0
251	SLU 46	6	-21	1556	0	0	0
251	SLU 47	6	-19	1561	0	0	0
251	SLU 48	6	-24	1549	0	0	0
251	SLU 49	6	-21	1568	0	0	0
251	SLU 50	6	-24	1542	0	0	0
251	SLU 51	6	-21	1560	0	0	0
251	SLU 52	6	-21	1706	0	0	0
251	SLU 53	6	-26	1694	0	0	0
251	SLU 54	6	-23	1712	0	0	0
251	SLU 55	6	-21	1717	0	0	0
251	SLU 56	6	-26	1705	0	0	0
251	SLU 57	6	-23	1723	0	0	0
251	SLU 58	6	-26	1698	0	0	0
251	SLU 59	6	-23	1716	0	0	0
251	SLU 60	6	-26	1742	0	0	0
251	SLU 61	6	-23	1760	0	0	0
251	SLU 62	6	-27	1753	0	0	0
251	SLU 63	6	-24	1772	0	0	0
251	SLU 64	6	-26	1675	0	0	0
251	SLU 65	7	-21	1705	0	0	0
251	SLU 66	6	-26	1693	0	0	0
251	SLU 67	7	-23	1712	0	0	0
251	SLU 68	7	-21	1717	0	0	0
251	SLU 69	6	-27	1705	0	0	0
251	SLU 70	6	-23	1723	0	0	0
251	SLU 71	6	-26	1698	0	0	0
251	SLU 72	6	-23	1716	0	0	0
251	SLU 73	7	-23	1861	0	0	0
251	SLU 74	6	-28	1849	0	0	0
251	SLU 75	7	-25	1868	0	0	0
251	SLU 76	7	-23	1873	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
251	SLU 77	6	-28	1861	0	0	0
251	SLU 78	6	-25	1879	0	0	0
251	SLU 79	6	-28	1853	0	0	0
251	SLU 80	6	-25	1872	0	0	0
251	SLU 81	6	-29	1897	0	0	0
251	SLU 82	7	-26	1916	0	0	0
251	SLU 83	6	-29	1909	0	0	0
251	SLU 84	7	-26	1927	0	0	0
251	SLE RA 1	5	-19	1254	0	0	0
251	SLE RA 2	5	-16	1275	0	0	0
251	SLE RA 3	5	-20	1267	0	0	0
251	SLE RA 4	5	-18	1279	0	0	0
251	SLE RA 5	5	-16	1282	0	0	0
251	SLE RA 6	5	-20	1274	0	0	0
251	SLE RA 7	5	-18	1286	0	0	0
251	SLE RA 8	5	-20	1269	0	0	0
251	SLE RA 9	5	-18	1282	0	0	0
251	SLE RA 10	5	-17	1378	0	0	0
251	SLE RA 11	5	-21	1370	0	0	0
251	SLE RA 12	5	-19	1383	0	0	0
251	SLE RA 13	5	-18	1386	0	0	0
251	SLE RA 14	5	-21	1378	0	0	0
251	SLE RA 15	5	-19	1390	0	0	0
251	SLE RA 16	5	-21	1373	0	0	0
251	SLE RA 17	5	-19	1385	0	0	0
251	SLE RA 18	5	-21	1402	0	0	0
251	SLE RA 19	5	-19	1415	0	0	0
251	SLE RA 20	5	-21	1410	0	0	0
251	SLE RA 21	5	-19	1422	0	0	0
251	SLE FR 1	5	-19	1254	0	0	0
251	SLE FR 2	5	-19	1258	0	0	0
251	SLE FR 3	5	-20	1257	0	0	0
251	SLE FR 4	5	-19	1303	0	0	0
251	SLE FR 5	5	-20	1302	0	0	0
251	SLE FR 6	5	-20	1328	0	0	0
251	SLE QP 1	5	-19	1254	0	0	0
251	SLE QP 2	5	-20	1299	0	0	0
251	SLD 1	121	19	1448	0	0	0
251	SLD 2	145	26	1460	0	0	0
251	SLD 3	114	-42	1035	0	0	0
251	SLD 4	138	-35	1047	0	0	0
251	SLD 5	46	83	1968	0	0	0
251	SLD 6	62	87	1976	0	0	0
251	SLD 7	22	-120	590	0	0	0
251	SLD 8	38	-116	598	0	0	0
251	SLD 9	-28	76	1999	0	0	0
251	SLD 10	-13	80	2007	0	0	0
251	SLD 11	-53	-127	621	0	0	0
251	SLD 12	-37	-123	629	0	0	0
251	SLD 13	-128	-5	1550	0	0	0
251	SLD 14	-104	2	1562	0	0	0
251	SLD 15	-135	-66	1137	0	0	0
251	SLD 16	-112	-59	1149	0	0	0
251	SLV 1	278	75	1683	0	0	0
251	SLV 2	334	91	1712	0	0	0
251	SLV 3	259	-77	647	0	0	0
251	SLV 4	315	-61	675	0	0	0
251	SLV 5	105	236	2981	0	0	0
251	SLV 6	142	247	3000	0	0	0
251	SLV 7	42	-271	-474	0	0	0
251	SLV 8	80	-260	-455	0	0	0
251	SLV 9	-70	220	3052	0	0	0
251	SLV 10	-33	230	3071	0	0	0
251	SLV 11	-133	-287	-402	0	0	0
251	SLV 12	-95	-276	-383	0	0	0
251	SLV 13	-305	21	1922	0	0	0
251	SLV 14	-249	37	1950	0	0	0
251	SLV 15	-324	-131	886	0	0	0
251	SLV 16	-268	-115	914	0	0	0
251	CRTFP Uy+	0	0	0	0	0	0
251	CRTFP Uy-	0	0	0	0	0	0
252	SLU 1	5	-19	1202	0	0	0
252	SLU 2	5	-14	1233	0	0	0
252	SLU 3	5	-20	1221	0	0	0
252	SLU 4	5	-17	1239	0	0	0
252	SLU 5	5	-15	1244	0	0	0
252	SLU 6	5	-20	1232	0	0	0
252	SLU 7	5	-17	1250	0	0	0
252	SLU 8	5	-20	1225	0	0	0
252	SLU 9	5	-17	1243	0	0	0
252	SLU 10	5	-16	1387	0	0	0
252	SLU 11	5	-22	1375	0	0	0
252	SLU 12	5	-19	1393	0	0	0
252	SLU 13	5	-16	1398	0	0	0
252	SLU 14	5	-22	1386	0	0	0
252	SLU 15	5	-19	1404	0	0	0
252	SLU 16	5	-22	1379	0	0	0
252	SLU 17	5	-19	1397	0	0	0
252	SLU 18	5	-22	1422	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
252	SLU 19	5	-19	1441	0	0	0
252	SLU 20	5	-22	1434	0	0	0
252	SLU 21	5	-19	1452	0	0	0
252	SLU 22	5	-21	1357	0	0	0
252	SLU 23	6	-16	1387	0	0	0
252	SLU 24	5	-22	1375	0	0	0
252	SLU 25	6	-19	1394	0	0	0
252	SLU 26	6	-17	1399	0	0	0
252	SLU 27	5	-22	1387	0	0	0
252	SLU 28	5	-19	1405	0	0	0
252	SLU 29	5	-22	1380	0	0	0
252	SLU 30	5	-19	1398	0	0	0
252	SLU 31	6	-18	1542	0	0	0
252	SLU 32	5	-24	1530	0	0	0
252	SLU 33	6	-21	1548	0	0	0
252	SLU 34	6	-19	1553	0	0	0
252	SLU 35	5	-24	1541	0	0	0
252	SLU 36	6	-21	1559	0	0	0
252	SLU 37	5	-24	1534	0	0	0
252	SLU 38	5	-21	1552	0	0	0
252	SLU 39	5	-24	1577	0	0	0
252	SLU 40	6	-21	1596	0	0	0
252	SLU 41	5	-24	1589	0	0	0
252	SLU 42	6	-21	1607	0	0	0
252	SLU 43	6	-24	1510	0	0	0
252	SLU 44	7	-19	1540	0	0	0
252	SLU 45	6	-25	1528	0	0	0
252	SLU 46	6	-22	1546	0	0	0
252	SLU 47	6	-20	1551	0	0	0
252	SLU 48	6	-25	1539	0	0	0
252	SLU 49	6	-22	1558	0	0	0
252	SLU 50	6	-25	1532	0	0	0
252	SLU 51	6	-22	1551	0	0	0
252	SLU 52	7	-21	1694	0	0	0
252	SLU 53	6	-27	1682	0	0	0
252	SLU 54	6	-24	1701	0	0	0
252	SLU 55	6	-21	1706	0	0	0
252	SLU 56	6	-27	1694	0	0	0
252	SLU 57	6	-24	1712	0	0	0
252	SLU 58	6	-27	1686	0	0	0
252	SLU 59	6	-24	1705	0	0	0
252	SLU 60	6	-27	1730	0	0	0
252	SLU 61	6	-24	1748	0	0	0
252	SLU 62	6	-27	1741	0	0	0
252	SLU 63	6	-24	1760	0	0	0
252	SLU 64	7	-27	1665	0	0	0
252	SLU 65	7	-22	1695	0	0	0
252	SLU 66	7	-27	1683	0	0	0
252	SLU 67	7	-24	1701	0	0	0
252	SLU 68	7	-22	1706	0	0	0
252	SLU 69	7	-27	1694	0	0	0
252	SLU 70	7	-24	1713	0	0	0
252	SLU 71	7	-27	1687	0	0	0
252	SLU 72	7	-24	1705	0	0	0
252	SLU 73	7	-23	1849	0	0	0
252	SLU 74	7	-29	1837	0	0	0
252	SLU 75	7	-26	1855	0	0	0
252	SLU 76	7	-24	1860	0	0	0
252	SLU 77	7	-29	1849	0	0	0
252	SLU 78	7	-26	1867	0	0	0
252	SLU 79	7	-29	1841	0	0	0
252	SLU 80	7	-26	1860	0	0	0
252	SLU 81	7	-29	1885	0	0	0
252	SLU 82	7	-26	1903	0	0	0
252	SLU 83	7	-29	1896	0	0	0
252	SLU 84	7	-26	1914	0	0	0
252	SLE RA 1	5	-20	1246	0	0	0
252	SLE RA 2	5	-17	1267	0	0	0
252	SLE RA 3	5	-20	1259	0	0	0
252	SLE RA 4	5	-18	1271	0	0	0
252	SLE RA 5	5	-17	1274	0	0	0
252	SLE RA 6	5	-20	1266	0	0	0
252	SLE RA 7	5	-18	1278	0	0	0
252	SLE RA 8	5	-20	1261	0	0	0
252	SLE RA 9	5	-18	1274	0	0	0
252	SLE RA 10	5	-18	1369	0	0	0
252	SLE RA 11	5	-21	1362	0	0	0
252	SLE RA 12	5	-19	1374	0	0	0
252	SLE RA 13	5	-18	1377	0	0	0
252	SLE RA 14	5	-22	1369	0	0	0
252	SLE RA 15	5	-20	1381	0	0	0
252	SLE RA 16	5	-21	1364	0	0	0
252	SLE RA 17	5	-19	1376	0	0	0
252	SLE RA 18	5	-22	1393	0	0	0
252	SLE RA 19	5	-20	1405	0	0	0
252	SLE RA 20	5	-22	1401	0	0	0
252	SLE RA 21	5	-20	1413	0	0	0
252	SLE FR 1	5	-20	1246	0	0	0
252	SLE FR 2	5	-19	1250	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
252	SLE FR 3	5	-20	1249	0	0	0
252	SLE FR 4	5	-20	1294	0	0	0
252	SLE FR 5	5	-21	1293	0	0	0
252	SLE FR 6	5	-21	1320	0	0	0
252	SLE QP 1	5	-20	1246	0	0	0
252	SLE QP 2	5	-20	1290	0	0	0
252	SLD 1	120	18	1428	0	0	0
252	SLD 2	143	26	1441	0	0	0
252	SLD 3	113	-41	1017	0	0	0
252	SLD 4	136	-33	1030	0	0	0
252	SLD 5	46	79	1953	0	0	0
252	SLD 6	62	85	1961	0	0	0
252	SLD 7	22	-118	583	0	0	0
252	SLD 8	37	-113	591	0	0	0
252	SLD 9	-27	72	1990	0	0	0
252	SLD 10	-12	77	1998	0	0	0
252	SLD 11	-52	-126	620	0	0	0
252	SLD 12	-36	-120	628	0	0	0
252	SLD 13	-126	-8	1551	0	0	0
252	SLD 14	-102	0	1564	0	0	0
252	SLD 15	-133	-67	1140	0	0	0
252	SLD 16	-110	-59	1153	0	0	0
252	SLV 1	275	74	1646	0	0	0
252	SLV 2	330	93	1676	0	0	0
252	SLV 3	256	-74	616	0	0	0
252	SLV 4	311	-55	646	0	0	0
252	SLV 5	104	228	2954	0	0	0
252	SLV 6	141	241	2974	0	0	0
252	SLV 7	41	-264	-480	0	0	0
252	SLV 8	79	-251	-460	0	0	0
252	SLV 9	-69	211	3041	0	0	0
252	SLV 10	-31	223	3061	0	0	0
252	SLV 11	-131	-282	-394	0	0	0
252	SLV 12	-94	-269	-373	0	0	0
252	SLV 13	-301	14	1935	0	0	0
252	SLV 14	-246	33	1965	0	0	0
252	SLV 15	-320	-133	905	0	0	0
252	SLV 16	-264	-115	935	0	0	0
252	CRTFP Uy+	0	0	0	0	0	0
252	CRTFP Uy-	0	0	0	0	0	0
253	SLU 1	5	-19	1190	0	0	0
253	SLU 2	5	-15	1220	0	0	0
253	SLU 3	5	-20	1208	0	0	0
253	SLU 4	5	-17	1226	0	0	0
253	SLU 5	5	-15	1231	0	0	0
253	SLU 6	5	-20	1219	0	0	0
253	SLU 7	5	-17	1237	0	0	0
253	SLU 8	5	-20	1212	0	0	0
253	SLU 9	5	-17	1230	0	0	0
253	SLU 10	5	-16	1372	0	0	0
253	SLU 11	5	-22	1360	0	0	0
253	SLU 12	5	-19	1378	0	0	0
253	SLU 13	5	-17	1383	0	0	0
253	SLU 14	5	-22	1371	0	0	0
253	SLU 15	5	-19	1389	0	0	0
253	SLU 16	5	-22	1364	0	0	0
253	SLU 17	5	-19	1382	0	0	0
253	SLU 18	5	-22	1407	0	0	0
253	SLU 19	5	-19	1425	0	0	0
253	SLU 20	5	-22	1418	0	0	0
253	SLU 21	5	-19	1436	0	0	0
253	SLU 22	6	-22	1343	0	0	0
253	SLU 23	6	-17	1373	0	0	0
253	SLU 24	6	-22	1362	0	0	0
253	SLU 25	6	-19	1380	0	0	0
253	SLU 26	6	-17	1385	0	0	0
253	SLU 27	6	-22	1373	0	0	0
253	SLU 28	6	-19	1391	0	0	0
253	SLU 29	5	-22	1366	0	0	0
253	SLU 30	6	-19	1384	0	0	0
253	SLU 31	6	-19	1525	0	0	0
253	SLU 32	6	-24	1514	0	0	0
253	SLU 33	6	-21	1532	0	0	0
253	SLU 34	6	-19	1537	0	0	0
253	SLU 35	6	-24	1525	0	0	0
253	SLU 36	6	-21	1543	0	0	0
253	SLU 37	6	-24	1518	0	0	0
253	SLU 38	6	-21	1536	0	0	0
253	SLU 39	6	-24	1561	0	0	0
253	SLU 40	6	-21	1579	0	0	0
253	SLU 41	6	-24	1572	0	0	0
253	SLU 42	6	-22	1590	0	0	0
253	SLU 43	6	-24	1494	0	0	0
253	SLU 44	7	-20	1524	0	0	0
253	SLU 45	6	-25	1512	0	0	0
253	SLU 46	7	-22	1530	0	0	0
253	SLU 47	7	-20	1535	0	0	0
253	SLU 48	6	-25	1523	0	0	0
253	SLU 49	6	-22	1541	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
253	SLU 50	6	-25	1516	0	0	0
253	SLU 51	6	-22	1534	0	0	0
253	SLU 52	7	-22	1676	0	0	0
253	SLU 53	6	-27	1664	0	0	0
253	SLU 54	7	-24	1682	0	0	0
253	SLU 55	7	-22	1687	0	0	0
253	SLU 56	6	-27	1675	0	0	0
253	SLU 57	7	-24	1693	0	0	0
253	SLU 58	6	-27	1668	0	0	0
253	SLU 59	7	-24	1686	0	0	0
253	SLU 60	6	-27	1711	0	0	0
253	SLU 61	7	-24	1729	0	0	0
253	SLU 62	6	-27	1722	0	0	0
253	SLU 63	7	-24	1740	0	0	0
253	SLU 64	7	-27	1647	0	0	0
253	SLU 65	7	-22	1677	0	0	0
253	SLU 66	7	-27	1666	0	0	0
253	SLU 67	7	-24	1684	0	0	0
253	SLU 68	7	-22	1689	0	0	0
253	SLU 69	7	-27	1677	0	0	0
253	SLU 70	7	-24	1695	0	0	0
253	SLU 71	7	-27	1670	0	0	0
253	SLU 72	7	-24	1688	0	0	0
253	SLU 73	7	-24	1830	0	0	0
253	SLU 74	7	-29	1818	0	0	0
253	SLU 75	7	-26	1836	0	0	0
253	SLU 76	7	-24	1841	0	0	0
253	SLU 77	7	-29	1829	0	0	0
253	SLU 78	7	-26	1847	0	0	0
253	SLU 79	7	-29	1822	0	0	0
253	SLU 80	7	-26	1840	0	0	0
253	SLU 81	7	-29	1865	0	0	0
253	SLU 82	7	-26	1883	0	0	0
253	SLU 83	7	-30	1876	0	0	0
253	SLU 84	7	-27	1894	0	0	0
253	SLE RA 1	5	-20	1233	0	0	0
253	SLE RA 2	5	-17	1253	0	0	0
253	SLE RA 3	5	-20	1246	0	0	0
253	SLE RA 4	5	-18	1258	0	0	0
253	SLE RA 5	5	-17	1261	0	0	0
253	SLE RA 6	5	-20	1253	0	0	0
253	SLE RA 7	5	-18	1265	0	0	0
253	SLE RA 8	5	-20	1248	0	0	0
253	SLE RA 9	5	-18	1260	0	0	0
253	SLE RA 10	6	-18	1355	0	0	0
253	SLE RA 11	5	-21	1347	0	0	0
253	SLE RA 12	5	-20	1359	0	0	0
253	SLE RA 13	5	-18	1362	0	0	0
253	SLE RA 14	5	-22	1355	0	0	0
253	SLE RA 15	5	-20	1367	0	0	0
253	SLE RA 16	5	-22	1350	0	0	0
253	SLE RA 17	5	-20	1362	0	0	0
253	SLE RA 18	5	-22	1378	0	0	0
253	SLE RA 19	5	-20	1390	0	0	0
253	SLE RA 20	5	-22	1386	0	0	0
253	SLE RA 21	5	-20	1398	0	0	0
253	SLE FR 1	5	-20	1233	0	0	0
253	SLE FR 2	5	-19	1237	0	0	0
253	SLE FR 3	5	-20	1236	0	0	0
253	SLE FR 4	5	-20	1281	0	0	0
253	SLE FR 5	5	-21	1280	0	0	0
253	SLE FR 6	5	-21	1306	0	0	0
253	SLE QP 1	5	-20	1233	0	0	0
253	SLE QP 2	5	-21	1277	0	0	0
253	SLD 1	117	17	1401	0	0	0
253	SLD 2	140	26	1415	0	0	0
253	SLD 3	110	-40	994	0	0	0
253	SLD 4	133	-31	1008	0	0	0
253	SLD 5	46	76	1929	0	0	0
253	SLD 6	61	81	1938	0	0	0
253	SLD 7	21	-114	573	0	0	0
253	SLD 8	37	-109	582	0	0	0
253	SLD 9	-26	68	1972	0	0	0
253	SLD 10	-11	73	1981	0	0	0
253	SLD 11	-51	-123	616	0	0	0
253	SLD 12	-35	-117	625	0	0	0
253	SLD 13	-123	-10	1546	0	0	0
253	SLD 14	-100	-1	1559	0	0	0
253	SLD 15	-130	-67	1139	0	0	0
253	SLD 16	-107	-58	1153	0	0	0
253	SLV 1	269	72	1602	0	0	0
253	SLV 2	322	93	1634	0	0	0
253	SLV 3	250	-70	582	0	0	0
253	SLV 4	304	-50	614	0	0	0
253	SLV 5	103	219	2916	0	0	0
253	SLV 6	139	233	2937	0	0	0
253	SLV 7	40	-255	-485	0	0	0
253	SLV 8	76	-241	-463	0	0	0
253	SLV 9	-66	200	3017	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
253	SLV 10	-30	214	3038	0	0	0
253	SLV 11	-128	-274	-383	0	0	0
253	SLV 12	-92	-260	-362	0	0	0
253	SLV 13	-293	9	1940	0	0	0
253	SLV 14	-239	29	1972	0	0	0
253	SLV 15	-312	-134	920	0	0	0
253	SLV 16	-258	-113	952	0	0	0
253	CRTFP Uy+	0	0	0	0	0	0
253	CRTFP Uy-	0	0	0	0	0	0
254	SLU 1	5	-19	1158	0	0	0
254	SLU 2	5	-14	1187	0	0	0
254	SLU 3	5	-19	1176	0	0	0
254	SLU 4	5	-17	1193	0	0	0
254	SLU 5	5	-15	1198	0	0	0
254	SLU 6	5	-20	1187	0	0	0
254	SLU 7	5	-17	1204	0	0	0
254	SLU 8	5	-19	1180	0	0	0
254	SLU 9	5	-17	1197	0	0	0
254	SLU 10	6	-16	1335	0	0	0
254	SLU 11	5	-21	1324	0	0	0
254	SLU 12	5	-18	1341	0	0	0
254	SLU 13	5	-16	1346	0	0	0
254	SLU 14	5	-21	1335	0	0	0
254	SLU 15	5	-19	1352	0	0	0
254	SLU 16	5	-21	1328	0	0	0
254	SLU 17	5	-19	1345	0	0	0
254	SLU 18	5	-22	1369	0	0	0
254	SLU 19	5	-19	1387	0	0	0
254	SLU 20	5	-22	1380	0	0	0
254	SLU 21	5	-19	1398	0	0	0
254	SLU 22	6	-21	1308	0	0	0
254	SLU 23	6	-17	1338	0	0	0
254	SLU 24	6	-22	1326	0	0	0
254	SLU 25	6	-19	1344	0	0	0
254	SLU 26	6	-17	1348	0	0	0
254	SLU 27	6	-22	1337	0	0	0
254	SLU 28	6	-19	1355	0	0	0
254	SLU 29	6	-22	1330	0	0	0
254	SLU 30	6	-19	1348	0	0	0
254	SLU 31	6	-18	1485	0	0	0
254	SLU 32	6	-23	1474	0	0	0
254	SLU 33	6	-21	1492	0	0	0
254	SLU 34	6	-19	1496	0	0	0
254	SLU 35	6	-24	1485	0	0	0
254	SLU 36	6	-21	1503	0	0	0
254	SLU 37	6	-23	1478	0	0	0
254	SLU 38	6	-21	1496	0	0	0
254	SLU 39	6	-24	1520	0	0	0
254	SLU 40	6	-21	1537	0	0	0
254	SLU 41	6	-24	1531	0	0	0
254	SLU 42	6	-21	1548	0	0	0
254	SLU 43	6	-24	1454	0	0	0
254	SLU 44	7	-19	1483	0	0	0
254	SLU 45	6	-24	1472	0	0	0
254	SLU 46	7	-22	1489	0	0	0
254	SLU 47	7	-20	1494	0	0	0
254	SLU 48	6	-25	1483	0	0	0
254	SLU 49	7	-22	1500	0	0	0
254	SLU 50	6	-24	1476	0	0	0
254	SLU 51	7	-22	1493	0	0	0
254	SLU 52	7	-21	1631	0	0	0
254	SLU 53	6	-26	1620	0	0	0
254	SLU 54	7	-23	1637	0	0	0
254	SLU 55	7	-21	1642	0	0	0
254	SLU 56	6	-26	1631	0	0	0
254	SLU 57	7	-24	1648	0	0	0
254	SLU 58	6	-26	1624	0	0	0
254	SLU 59	7	-24	1641	0	0	0
254	SLU 60	7	-27	1665	0	0	0
254	SLU 61	7	-24	1683	0	0	0
254	SLU 62	6	-27	1676	0	0	0
254	SLU 63	7	-24	1694	0	0	0
254	SLU 64	7	-26	1604	0	0	0
254	SLU 65	7	-22	1633	0	0	0
254	SLU 66	7	-27	1622	0	0	0
254	SLU 67	7	-24	1640	0	0	0
254	SLU 68	7	-22	1644	0	0	0
254	SLU 69	7	-27	1633	0	0	0
254	SLU 70	7	-24	1651	0	0	0
254	SLU 71	7	-27	1626	0	0	0
254	SLU 72	7	-24	1644	0	0	0
254	SLU 73	7	-23	1781	0	0	0
254	SLU 74	7	-28	1770	0	0	0
254	SLU 75	7	-26	1788	0	0	0
254	SLU 76	7	-24	1792	0	0	0
254	SLU 77	7	-29	1781	0	0	0
254	SLU 78	7	-26	1798	0	0	0
254	SLU 79	7	-28	1774	0	0	0
254	SLU 80	7	-26	1791	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
254	SLU 81	7	-29	1815	0	0	0
254	SLU 82	7	-26	1833	0	0	0
254	SLU 83	7	-29	1826	0	0	0
254	SLU 84	7	-26	1844	0	0	0
254	SLE RA 1	5	-20	1201	0	0	0
254	SLE RA 2	5	-17	1220	0	0	0
254	SLE RA 3	5	-20	1213	0	0	0
254	SLE RA 4	5	-18	1225	0	0	0
254	SLE RA 5	5	-17	1228	0	0	0
254	SLE RA 6	5	-20	1220	0	0	0
254	SLE RA 7	5	-18	1232	0	0	0
254	SLE RA 8	5	-20	1216	0	0	0
254	SLE RA 9	5	-18	1227	0	0	0
254	SLE RA 10	6	-18	1319	0	0	0
254	SLE RA 11	5	-21	1312	0	0	0
254	SLE RA 12	5	-19	1323	0	0	0
254	SLE RA 13	6	-18	1326	0	0	0
254	SLE RA 14	5	-21	1319	0	0	0
254	SLE RA 15	5	-19	1330	0	0	0
254	SLE RA 16	5	-21	1314	0	0	0
254	SLE RA 17	5	-19	1326	0	0	0
254	SLE RA 18	5	-21	1342	0	0	0
254	SLE RA 19	5	-20	1354	0	0	0
254	SLE RA 20	5	-22	1349	0	0	0
254	SLE RA 21	5	-20	1361	0	0	0
254	SLE FR 1	5	-20	1201	0	0	0
254	SLE FR 2	5	-19	1205	0	0	0
254	SLE FR 3	5	-20	1204	0	0	0
254	SLE FR 4	5	-20	1247	0	0	0
254	SLE FR 5	5	-20	1246	0	0	0
254	SLE FR 6	5	-21	1271	0	0	0
254	SLE QP 1	5	-20	1201	0	0	0
254	SLE QP 2	5	-20	1243	0	0	0
254	SLD 1	113	16	1354	0	0	0
254	SLD 2	135	25	1368	0	0	0
254	SLD 3	106	-38	957	0	0	0
254	SLD 4	128	-28	971	0	0	0
254	SLD 5	44	71	1875	0	0	0
254	SLD 6	59	77	1885	0	0	0
254	SLD 7	21	-109	553	0	0	0
254	SLD 8	35	-103	563	0	0	0
254	SLD 9	-25	62	1924	0	0	0
254	SLD 10	-10	69	1933	0	0	0
254	SLD 11	-48	-117	602	0	0	0
254	SLD 12	-34	-111	611	0	0	0
254	SLD 13	-117	-12	1515	0	0	0
254	SLD 14	-95	-3	1529	0	0	0
254	SLD 15	-124	-66	1119	0	0	0
254	SLD 16	-102	-56	1133	0	0	0
254	SLV 1	257	69	1535	0	0	0
254	SLV 2	309	91	1567	0	0	0
254	SLV 3	239	-66	540	0	0	0
254	SLV 4	291	-44	573	0	0	0
254	SLV 5	99	206	2832	0	0	0
254	SLV 6	134	221	2854	0	0	0
254	SLV 7	38	-242	-481	0	0	0
254	SLV 8	73	-227	-459	0	0	0
254	SLV 9	-62	187	2946	0	0	0
254	SLV 10	-28	202	2968	0	0	0
254	SLV 11	-123	-261	-368	0	0	0
254	SLV 12	-88	-247	-346	0	0	0
254	SLV 13	-280	3	1913	0	0	0
254	SLV 14	-228	25	1946	0	0	0
254	SLV 15	-298	-131	919	0	0	0
254	SLV 16	-247	-109	952	0	0	0
254	CRTFP Uy+	0	0	0	0	0	0
254	CRTFP Uy-	0	0	0	0	0	0
255	SLU 1	5	-19	1120	0	0	0
255	SLU 2	5	-14	1148	0	0	0
255	SLU 3	5	-19	1138	0	0	0
255	SLU 4	5	-16	1154	0	0	0
255	SLU 5	5	-15	1159	0	0	0
255	SLU 6	5	-19	1148	0	0	0
255	SLU 7	5	-17	1165	0	0	0
255	SLU 8	5	-19	1141	0	0	0
255	SLU 9	5	-17	1158	0	0	0
255	SLU 10	5	-16	1291	0	0	0
255	SLU 11	5	-21	1280	0	0	0
255	SLU 12	5	-18	1297	0	0	0
255	SLU 13	5	-16	1302	0	0	0
255	SLU 14	5	-21	1291	0	0	0
255	SLU 15	5	-18	1308	0	0	0
255	SLU 16	5	-21	1284	0	0	0
255	SLU 17	5	-18	1301	0	0	0
255	SLU 18	5	-21	1324	0	0	0
255	SLU 19	5	-19	1341	0	0	0
255	SLU 20	5	-21	1335	0	0	0
255	SLU 21	5	-19	1352	0	0	0
255	SLU 22	5	-21	1266	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
255	SLU 23	6	-16	1294	0	0	0
255	SLU 24	5	-21	1283	0	0	0
255	SLU 25	6	-19	1300	0	0	0
255	SLU 26	6	-17	1305	0	0	0
255	SLU 27	5	-21	1294	0	0	0
255	SLU 28	6	-19	1311	0	0	0
255	SLU 29	5	-21	1287	0	0	0
255	SLU 30	6	-19	1304	0	0	0
255	SLU 31	6	-18	1437	0	0	0
255	SLU 32	6	-23	1426	0	0	0
255	SLU 33	6	-20	1443	0	0	0
255	SLU 34	6	-18	1448	0	0	0
255	SLU 35	5	-23	1437	0	0	0
255	SLU 36	6	-20	1454	0	0	0
255	SLU 37	5	-23	1430	0	0	0
255	SLU 38	6	-20	1447	0	0	0
255	SLU 39	6	-23	1470	0	0	0
255	SLU 40	6	-21	1487	0	0	0
255	SLU 41	6	-23	1481	0	0	0
255	SLU 42	6	-21	1498	0	0	0
255	SLU 43	6	-24	1406	0	0	0
255	SLU 44	7	-19	1434	0	0	0
255	SLU 45	6	-24	1424	0	0	0
255	SLU 46	6	-21	1441	0	0	0
255	SLU 47	6	-20	1445	0	0	0
255	SLU 48	6	-24	1434	0	0	0
255	SLU 49	6	-22	1451	0	0	0
255	SLU 50	6	-24	1427	0	0	0
255	SLU 51	6	-22	1444	0	0	0
255	SLU 52	7	-21	1577	0	0	0
255	SLU 53	6	-26	1566	0	0	0
255	SLU 54	6	-23	1583	0	0	0
255	SLU 55	7	-21	1588	0	0	0
255	SLU 56	6	-26	1577	0	0	0
255	SLU 57	6	-23	1594	0	0	0
255	SLU 58	6	-26	1570	0	0	0
255	SLU 59	6	-23	1587	0	0	0
255	SLU 60	6	-26	1610	0	0	0
255	SLU 61	7	-24	1627	0	0	0
255	SLU 62	6	-26	1621	0	0	0
255	SLU 63	6	-24	1638	0	0	0
255	SLU 64	7	-26	1552	0	0	0
255	SLU 65	7	-21	1580	0	0	0
255	SLU 66	7	-26	1570	0	0	0
255	SLU 67	7	-23	1586	0	0	0
255	SLU 68	7	-22	1591	0	0	0
255	SLU 69	7	-26	1580	0	0	0
255	SLU 70	7	-24	1597	0	0	0
255	SLU 71	7	-26	1573	0	0	0
255	SLU 72	7	-24	1590	0	0	0
255	SLU 73	7	-23	1723	0	0	0
255	SLU 74	7	-28	1712	0	0	0
255	SLU 75	7	-25	1729	0	0	0
255	SLU 76	7	-23	1734	0	0	0
255	SLU 77	7	-28	1723	0	0	0
255	SLU 78	7	-25	1740	0	0	0
255	SLU 79	7	-28	1716	0	0	0
255	SLU 80	7	-25	1733	0	0	0
255	SLU 81	7	-28	1756	0	0	0
255	SLU 82	7	-26	1773	0	0	0
255	SLU 83	7	-28	1767	0	0	0
255	SLU 84	7	-26	1784	0	0	0
255	SLE RA 1	5	-19	1162	0	0	0
255	SLE RA 2	5	-16	1181	0	0	0
255	SLE RA 3	5	-20	1173	0	0	0
255	SLE RA 4	5	-18	1185	0	0	0
255	SLE RA 5	5	-17	1188	0	0	0
255	SLE RA 6	5	-20	1181	0	0	0
255	SLE RA 7	5	-18	1192	0	0	0
255	SLE RA 8	5	-20	1176	0	0	0
255	SLE RA 9	5	-18	1187	0	0	0
255	SLE RA 10	5	-18	1276	0	0	0
255	SLE RA 11	5	-21	1269	0	0	0
255	SLE RA 12	5	-19	1280	0	0	0
255	SLE RA 13	5	-18	1283	0	0	0
255	SLE RA 14	5	-21	1276	0	0	0
255	SLE RA 15	5	-19	1287	0	0	0
255	SLE RA 16	5	-21	1271	0	0	0
255	SLE RA 17	5	-19	1283	0	0	0
255	SLE RA 18	5	-21	1298	0	0	0
255	SLE RA 19	5	-19	1309	0	0	0
255	SLE RA 20	5	-21	1305	0	0	0
255	SLE RA 21	5	-19	1316	0	0	0
255	SLE FR 1	5	-19	1162	0	0	0
255	SLE FR 2	5	-19	1166	0	0	0
255	SLE FR 3	5	-19	1165	0	0	0
255	SLE FR 4	5	-19	1206	0	0	0
255	SLE FR 5	5	-20	1206	0	0	0
255	SLE FR 6	5	-20	1230	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
255	SLE QP 1	5	-19	1162	0	0	0
255	SLE QP 2	5	-20	1203	0	0	0
255	SLD 1	107	15	1300	0	0	0
255	SLD 2	128	25	1314	0	0	0
255	SLD 3	100	-36	916	0	0	0
255	SLD 4	121	-26	930	0	0	0
255	SLD 5	42	65	1812	0	0	0
255	SLD 6	56	72	1821	0	0	0
255	SLD 7	20	-103	531	0	0	0
255	SLD 8	33	-96	541	0	0	0
255	SLD 9	-23	57	1865	0	0	0
255	SLD 10	-9	63	1874	0	0	0
255	SLD 11	-46	-112	584	0	0	0
255	SLD 12	-32	-105	593	0	0	0
255	SLD 13	-111	-14	1476	0	0	0
255	SLD 14	-90	-4	1490	0	0	0
255	SLD 15	-118	-64	1091	0	0	0
255	SLD 16	-97	-55	1106	0	0	0
255	SLV 1	244	65	1462	0	0	0
255	SLV 2	293	88	1495	0	0	0
255	SLV 3	227	-61	499	0	0	0
255	SLV 4	276	-38	532	0	0	0
255	SLV 5	94	192	2735	0	0	0
255	SLV 6	127	208	2758	0	0	0
255	SLV 7	36	-227	-476	0	0	0
255	SLV 8	69	-212	-453	0	0	0
255	SLV 9	-59	172	2858	0	0	0
255	SLV 10	-26	188	2881	0	0	0
255	SLV 11	-117	-248	-352	0	0	0
255	SLV 12	-84	-232	-330	0	0	0
255	SLV 13	-266	-2	1873	0	0	0
255	SLV 14	-217	21	1907	0	0	0
255	SLV 15	-283	-128	910	0	0	0
255	SLV 16	-234	-105	944	0	0	0
255	CRTFP Uy+	0	0	0	0	0	0
255	CRTFP Uy-	0	0	0	0	0	0
256	SLU 1	-5	-11	508	0	0	0
256	SLU 2	-5	-9	519	0	0	0
256	SLU 3	-5	-11	516	0	0	0
256	SLU 4	-5	-10	523	0	0	0
256	SLU 5	-5	-9	524	0	0	0
256	SLU 6	-5	-11	521	0	0	0
256	SLU 7	-6	-10	528	0	0	0
256	SLU 8	-5	-11	518	0	0	0
256	SLU 9	-5	-10	525	0	0	0
256	SLU 10	-6	-10	585	0	0	0
256	SLU 11	-6	-12	582	0	0	0
256	SLU 12	-6	-11	589	0	0	0
256	SLU 13	-6	-10	590	0	0	0
256	SLU 14	-6	-12	587	0	0	0
256	SLU 15	-6	-11	594	0	0	0
256	SLU 16	-6	-12	584	0	0	0
256	SLU 17	-6	-11	591	0	0	0
256	SLU 18	-6	-13	602	0	0	0
256	SLU 19	-6	-11	609	0	0	0
256	SLU 20	-6	-13	607	0	0	0
256	SLU 21	-6	-12	614	0	0	0
256	SLU 22	-6	-12	576	0	0	0
256	SLU 23	-6	-10	587	0	0	0
256	SLU 24	-6	-12	584	0	0	0
256	SLU 25	-6	-11	591	0	0	0
256	SLU 26	-6	-10	593	0	0	0
256	SLU 27	-6	-12	589	0	0	0
256	SLU 28	-6	-11	596	0	0	0
256	SLU 29	-6	-12	586	0	0	0
256	SLU 30	-6	-11	593	0	0	0
256	SLU 31	-6	-11	653	0	0	0
256	SLU 32	-6	-13	650	0	0	0
256	SLU 33	-6	-12	657	0	0	0
256	SLU 34	-6	-12	658	0	0	0
256	SLU 35	-6	-14	655	0	0	0
256	SLU 36	-6	-12	662	0	0	0
256	SLU 37	-6	-13	652	0	0	0
256	SLU 38	-6	-12	659	0	0	0
256	SLU 39	-6	-14	670	0	0	0
256	SLU 40	-6	-13	677	0	0	0
256	SLU 41	-6	-14	675	0	0	0
256	SLU 42	-6	-13	682	0	0	0
256	SLU 43	-7	-14	637	0	0	0
256	SLU 44	-7	-12	648	0	0	0
256	SLU 45	-7	-14	645	0	0	0
256	SLU 46	-7	-13	652	0	0	0
256	SLU 47	-7	-12	654	0	0	0
256	SLU 48	-7	-14	650	0	0	0
256	SLU 49	-7	-13	657	0	0	0
256	SLU 50	-7	-14	647	0	0	0
256	SLU 51	-7	-13	654	0	0	0
256	SLU 52	-7	-13	714	0	0	0
256	SLU 53	-7	-15	711	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
256	SLU 54	-7	-14	718	0	0	0
256	SLU 55	-7	-13	719	0	0	0
256	SLU 56	-7	-15	716	0	0	0
256	SLU 57	-7	-14	723	0	0	0
256	SLU 58	-7	-15	713	0	0	0
256	SLU 59	-7	-14	720	0	0	0
256	SLU 60	-7	-15	731	0	0	0
256	SLU 61	-7	-14	738	0	0	0
256	SLU 62	-7	-16	736	0	0	0
256	SLU 63	-7	-14	743	0	0	0
256	SLU 64	-7	-15	705	0	0	0
256	SLU 65	-7	-13	717	0	0	0
256	SLU 66	-7	-15	713	0	0	0
256	SLU 67	-7	-14	720	0	0	0
256	SLU 68	-7	-13	722	0	0	0
256	SLU 69	-8	-15	718	0	0	0
256	SLU 70	-8	-14	725	0	0	0
256	SLU 71	-7	-15	715	0	0	0
256	SLU 72	-8	-14	722	0	0	0
256	SLU 73	-8	-14	782	0	0	0
256	SLU 74	-8	-16	779	0	0	0
256	SLU 75	-8	-15	786	0	0	0
256	SLU 76	-8	-14	787	0	0	0
256	SLU 77	-8	-16	784	0	0	0
256	SLU 78	-8	-15	791	0	0	0
256	SLU 79	-8	-16	781	0	0	0
256	SLU 80	-8	-15	788	0	0	0
256	SLU 81	-8	-17	799	0	0	0
256	SLU 82	-8	-15	806	0	0	0
256	SLU 83	-8	-17	804	0	0	0
256	SLU 84	-8	-16	811	0	0	0
256	SLE RA 1	-5	-11	527	0	0	0
256	SLE RA 2	-5	-10	535	0	0	0
256	SLE RA 3	-6	-11	533	0	0	0
256	SLE RA 4	-6	-11	538	0	0	0
256	SLE RA 5	-6	-10	538	0	0	0
256	SLE RA 6	-6	-12	536	0	0	0
256	SLE RA 7	-6	-11	541	0	0	0
256	SLE RA 8	-6	-11	534	0	0	0
256	SLE RA 9	-6	-11	539	0	0	0
256	SLE RA 10	-6	-11	579	0	0	0
256	SLE RA 11	-6	-12	577	0	0	0
256	SLE RA 12	-6	-11	581	0	0	0
256	SLE RA 13	-6	-11	582	0	0	0
256	SLE RA 14	-6	-12	580	0	0	0
256	SLE RA 15	-6	-11	585	0	0	0
256	SLE RA 16	-6	-12	578	0	0	0
256	SLE RA 17	-6	-11	582	0	0	0
256	SLE RA 18	-6	-12	590	0	0	0
256	SLE RA 19	-6	-12	594	0	0	0
256	SLE RA 20	-6	-12	593	0	0	0
256	SLE RA 21	-6	-12	598	0	0	0
256	SLE FR 1	-5	-11	527	0	0	0
256	SLE FR 2	-5	-11	529	0	0	0
256	SLE FR 3	-5	-11	529	0	0	0
256	SLE FR 4	-5	-11	548	0	0	0
256	SLE FR 5	-6	-12	548	0	0	0
256	SLE FR 6	-6	-12	559	0	0	0
256	SLE QP 1	-5	-11	527	0	0	0
256	SLE QP 2	-5	-12	546	0	0	0
256	SLD 1	36	-4	666	0	0	0
256	SLD 2	45	-9	661	0	0	0
256	SLD 3	39	-26	512	0	0	0
256	SLD 4	48	-31	506	0	0	0
256	SLD 5	2	24	818	0	0	0
256	SLD 6	7	21	814	0	0	0
256	SLD 7	10	-48	302	0	0	0
256	SLD 8	16	-51	298	0	0	0
256	SLD 9	-27	28	794	0	0	0
256	SLD 10	-21	25	790	0	0	0
256	SLD 11	-18	-44	278	0	0	0
256	SLD 12	-13	-48	274	0	0	0
256	SLD 13	-58	8	587	0	0	0
256	SLD 14	-50	3	581	0	0	0
256	SLD 15	-56	-14	432	0	0	0
256	SLD 16	-47	-19	426	0	0	0
256	SLV 1	92	7	840	0	0	0
256	SLV 2	113	-4	826	0	0	0
256	SLV 3	98	-47	453	0	0	0
256	SLV 4	119	-58	438	0	0	0
256	SLV 5	11	78	1225	0	0	0
256	SLV 6	25	70	1216	0	0	0
256	SLV 7	31	-102	-68	0	0	0
256	SLV 8	45	-110	-77	0	0	0
256	SLV 9	-56	86	1169	0	0	0
256	SLV 10	-42	79	1160	0	0	0
256	SLV 11	-35	-94	-124	0	0	0
256	SLV 12	-22	-101	-133	0	0	0
256	SLV 13	-130	35	654	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
256	SLV 14	-109	24	640	0	0	0
256	SLV 15	-124	-19	266	0	0	0
256	SLV 16	-103	-30	252	0	0	0
256	CRTFP Uy+	0	0	0	0	0	0
256	CRTFP Uy-	0	0	0	0	0	0
257	SLU 1	-11	-20	999	0	0	0
257	SLU 2	-11	-16	1021	0	0	0
257	SLU 3	-11	-20	1015	0	0	0
257	SLU 4	-11	-18	1028	0	0	0
257	SLU 5	-11	-16	1031	0	0	0
257	SLU 6	-11	-21	1025	0	0	0
257	SLU 7	-11	-18	1038	0	0	0
257	SLU 8	-11	-20	1018	0	0	0
257	SLU 9	-11	-18	1032	0	0	0
257	SLU 10	-11	-18	1150	0	0	0
257	SLU 11	-11	-22	1144	0	0	0
257	SLU 12	-11	-20	1157	0	0	0
257	SLU 13	-11	-18	1160	0	0	0
257	SLU 14	-12	-23	1153	0	0	0
257	SLU 15	-12	-20	1167	0	0	0
257	SLU 16	-11	-22	1147	0	0	0
257	SLU 17	-12	-20	1161	0	0	0
257	SLU 18	-11	-23	1183	0	0	0
257	SLU 19	-11	-21	1196	0	0	0
257	SLU 20	-11	-23	1193	0	0	0
257	SLU 21	-11	-21	1206	0	0	0
257	SLU 22	-12	-22	1132	0	0	0
257	SLU 23	-12	-18	1154	0	0	0
257	SLU 24	-12	-23	1148	0	0	0
257	SLU 25	-12	-20	1161	0	0	0
257	SLU 26	-12	-19	1164	0	0	0
257	SLU 27	-13	-23	1158	0	0	0
257	SLU 28	-13	-20	1171	0	0	0
257	SLU 29	-12	-23	1152	0	0	0
257	SLU 30	-13	-20	1165	0	0	0
257	SLU 31	-13	-20	1283	0	0	0
257	SLU 32	-13	-25	1277	0	0	0
257	SLU 33	-13	-22	1290	0	0	0
257	SLU 34	-13	-21	1293	0	0	0
257	SLU 35	-13	-25	1287	0	0	0
257	SLU 36	-13	-22	1300	0	0	0
257	SLU 37	-13	-25	1280	0	0	0
257	SLU 38	-13	-22	1294	0	0	0
257	SLU 39	-13	-25	1316	0	0	0
257	SLU 40	-13	-23	1329	0	0	0
257	SLU 41	-13	-25	1326	0	0	0
257	SLU 42	-13	-23	1339	0	0	0
257	SLU 43	-13	-25	1253	0	0	0
257	SLU 44	-13	-21	1275	0	0	0
257	SLU 45	-14	-26	1269	0	0	0
257	SLU 46	-14	-23	1282	0	0	0
257	SLU 47	-14	-22	1285	0	0	0
257	SLU 48	-14	-26	1279	0	0	0
257	SLU 49	-14	-24	1292	0	0	0
257	SLU 50	-14	-26	1272	0	0	0
257	SLU 51	-14	-23	1286	0	0	0
257	SLU 52	-14	-23	1404	0	0	0
257	SLU 53	-14	-28	1397	0	0	0
257	SLU 54	-14	-25	1411	0	0	0
257	SLU 55	-14	-24	1414	0	0	0
257	SLU 56	-14	-28	1407	0	0	0
257	SLU 57	-14	-26	1421	0	0	0
257	SLU 58	-14	-28	1401	0	0	0
257	SLU 59	-14	-25	1415	0	0	0
257	SLU 60	-14	-28	1437	0	0	0
257	SLU 61	-14	-26	1450	0	0	0
257	SLU 62	-14	-28	1446	0	0	0
257	SLU 63	-14	-26	1460	0	0	0
257	SLU 64	-15	-27	1386	0	0	0
257	SLU 65	-15	-24	1408	0	0	0
257	SLU 66	-15	-28	1402	0	0	0
257	SLU 67	-15	-25	1415	0	0	0
257	SLU 68	-15	-24	1418	0	0	0
257	SLU 69	-15	-28	1412	0	0	0
257	SLU 70	-15	-26	1425	0	0	0
257	SLU 71	-15	-28	1406	0	0	0
257	SLU 72	-15	-26	1419	0	0	0
257	SLU 73	-15	-26	1537	0	0	0
257	SLU 74	-15	-30	1531	0	0	0
257	SLU 75	-15	-27	1544	0	0	0
257	SLU 76	-15	-26	1547	0	0	0
257	SLU 77	-16	-30	1541	0	0	0
257	SLU 78	-16	-28	1554	0	0	0
257	SLU 79	-16	-30	1534	0	0	0
257	SLU 80	-16	-28	1548	0	0	0
257	SLU 81	-15	-30	1570	0	0	0
257	SLU 82	-15	-28	1583	0	0	0
257	SLU 83	-15	-30	1580	0	0	0
257	SLU 84	-16	-28	1593	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
257	SLE RA 1	-11	-21	1037	0	0	0
257	SLE RA 2	-11	-18	1052	0	0	0
257	SLE RA 3	-11	-21	1047	0	0	0
257	SLE RA 4	-11	-19	1056	0	0	0
257	SLE RA 5	-11	-18	1058	0	0	0
257	SLE RA 6	-11	-21	1054	0	0	0
257	SLE RA 7	-11	-19	1063	0	0	0
257	SLE RA 8	-11	-21	1050	0	0	0
257	SLE RA 9	-11	-19	1059	0	0	0
257	SLE RA 10	-11	-19	1137	0	0	0
257	SLE RA 11	-11	-22	1133	0	0	0
257	SLE RA 12	-12	-21	1142	0	0	0
257	SLE RA 13	-12	-20	1144	0	0	0
257	SLE RA 14	-12	-22	1140	0	0	0
257	SLE RA 15	-12	-21	1149	0	0	0
257	SLE RA 16	-12	-22	1136	0	0	0
257	SLE RA 17	-12	-21	1145	0	0	0
257	SLE RA 18	-11	-23	1159	0	0	0
257	SLE RA 19	-11	-21	1168	0	0	0
257	SLE RA 20	-12	-23	1166	0	0	0
257	SLE RA 21	-12	-21	1175	0	0	0
257	SLE FR 1	-11	-21	1037	0	0	0
257	SLE FR 2	-11	-20	1040	0	0	0
257	SLE FR 3	-11	-21	1039	0	0	0
257	SLE FR 4	-11	-21	1077	0	0	0
257	SLE FR 5	-11	-21	1076	0	0	0
257	SLE FR 6	-11	-22	1098	0	0	0
257	SLE QP 1	-11	-21	1037	0	0	0
257	SLE QP 2	-11	-21	1074	0	0	0
257	SLD 1	73	-5	1302	0	0	0
257	SLD 2	91	-14	1291	0	0	0
257	SLD 3	78	-50	998	0	0	0
257	SLD 4	96	-59	987	0	0	0
257	SLD 5	3	53	1605	0	0	0
257	SLD 6	15	48	1598	0	0	0
257	SLD 7	20	-96	592	0	0	0
257	SLD 8	32	-102	585	0	0	0
257	SLD 9	-54	60	1563	0	0	0
257	SLD 10	-42	54	1555	0	0	0
257	SLD 11	-37	-90	549	0	0	0
257	SLD 12	-25	-96	542	0	0	0
257	SLD 13	-118	16	1160	0	0	0
257	SLD 14	-100	7	1149	0	0	0
257	SLD 15	-113	-29	856	0	0	0
257	SLD 16	-95	-38	845	0	0	0
257	SLV 1	186	20	1633	0	0	0
257	SLV 2	227	-1	1607	0	0	0
257	SLV 3	198	-91	871	0	0	0
257	SLV 4	240	-113	845	0	0	0
257	SLV 5	21	165	2401	0	0	0
257	SLV 6	50	151	2383	0	0	0
257	SLV 7	62	-208	-137	0	0	0
257	SLV 8	91	-222	-155	0	0	0
257	SLV 9	-113	180	2302	0	0	0
257	SLV 10	-85	166	2284	0	0	0
257	SLV 11	-72	-193	-236	0	0	0
257	SLV 12	-44	-207	-254	0	0	0
257	SLV 13	-262	70	1302	0	0	0
257	SLV 14	-220	49	1276	0	0	0
257	SLV 15	-250	-42	541	0	0	0
257	SLV 16	-208	-63	514	0	0	0
257	CRTFP Uy+	0	0	0	0	0	0
257	CRTFP Uy-	0	0	0	0	0	0
258	SLU 1	-11	-20	1063	0	0	0
258	SLU 2	-11	-16	1086	0	0	0
258	SLU 3	-11	-21	1079	0	0	0
258	SLU 4	-12	-18	1094	0	0	0
258	SLU 5	-11	-16	1097	0	0	0
258	SLU 6	-12	-21	1090	0	0	0
258	SLU 7	-12	-18	1104	0	0	0
258	SLU 8	-12	-21	1083	0	0	0
258	SLU 9	-12	-18	1098	0	0	0
258	SLU 10	-12	-18	1223	0	0	0
258	SLU 11	-12	-23	1216	0	0	0
258	SLU 12	-12	-20	1231	0	0	0
258	SLU 13	-12	-18	1234	0	0	0
258	SLU 14	-12	-23	1227	0	0	0
258	SLU 15	-12	-21	1241	0	0	0
258	SLU 16	-12	-23	1220	0	0	0
258	SLU 17	-12	-20	1235	0	0	0
258	SLU 18	-12	-23	1258	0	0	0
258	SLU 19	-12	-21	1272	0	0	0
258	SLU 20	-12	-24	1269	0	0	0
258	SLU 21	-12	-21	1283	0	0	0
258	SLU 22	-13	-23	1203	0	0	0
258	SLU 23	-13	-18	1227	0	0	0
258	SLU 24	-13	-23	1220	0	0	0
258	SLU 25	-13	-20	1235	0	0	0
258	SLU 26	-13	-19	1238	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
258	SLU 27	-13	-23	1231	0	0	0
258	SLU 28	-13	-21	1245	0	0	0
258	SLU 29	-13	-23	1224	0	0	0
258	SLU 30	-13	-21	1239	0	0	0
258	SLU 31	-13	-20	1364	0	0	0
258	SLU 32	-13	-25	1357	0	0	0
258	SLU 33	-13	-23	1372	0	0	0
258	SLU 34	-13	-21	1375	0	0	0
258	SLU 35	-14	-25	1368	0	0	0
258	SLU 36	-14	-23	1382	0	0	0
258	SLU 37	-14	-25	1361	0	0	0
258	SLU 38	-14	-23	1376	0	0	0
258	SLU 39	-13	-26	1399	0	0	0
258	SLU 40	-13	-23	1413	0	0	0
258	SLU 41	-13	-26	1410	0	0	0
258	SLU 42	-14	-23	1424	0	0	0
258	SLU 43	-14	-26	1333	0	0	0
258	SLU 44	-14	-22	1357	0	0	0
258	SLU 45	-14	-26	1350	0	0	0
258	SLU 46	-14	-24	1364	0	0	0
258	SLU 47	-14	-22	1367	0	0	0
258	SLU 48	-14	-26	1360	0	0	0
258	SLU 49	-15	-24	1375	0	0	0
258	SLU 50	-14	-26	1354	0	0	0
258	SLU 51	-14	-24	1368	0	0	0
258	SLU 52	-14	-24	1494	0	0	0
258	SLU 53	-15	-28	1487	0	0	0
258	SLU 54	-15	-26	1501	0	0	0
258	SLU 55	-15	-24	1504	0	0	0
258	SLU 56	-15	-28	1497	0	0	0
258	SLU 57	-15	-26	1512	0	0	0
258	SLU 58	-15	-28	1491	0	0	0
258	SLU 59	-15	-26	1505	0	0	0
258	SLU 60	-14	-29	1529	0	0	0
258	SLU 61	-15	-26	1543	0	0	0
258	SLU 62	-15	-29	1539	0	0	0
258	SLU 63	-15	-26	1553	0	0	0
258	SLU 64	-15	-28	1474	0	0	0
258	SLU 65	-16	-24	1498	0	0	0
258	SLU 66	-16	-28	1491	0	0	0
258	SLU 67	-16	-26	1505	0	0	0
258	SLU 68	-16	-24	1508	0	0	0
258	SLU 69	-16	-29	1501	0	0	0
258	SLU 70	-16	-26	1516	0	0	0
258	SLU 71	-16	-28	1495	0	0	0
258	SLU 72	-16	-26	1509	0	0	0
258	SLU 73	-16	-26	1635	0	0	0
258	SLU 74	-16	-30	1628	0	0	0
258	SLU 75	-16	-28	1642	0	0	0
258	SLU 76	-16	-26	1645	0	0	0
258	SLU 77	-16	-31	1638	0	0	0
258	SLU 78	-17	-28	1653	0	0	0
258	SLU 79	-16	-31	1632	0	0	0
258	SLU 80	-16	-28	1646	0	0	0
258	SLU 81	-16	-31	1669	0	0	0
258	SLU 82	-16	-28	1684	0	0	0
258	SLU 83	-16	-31	1680	0	0	0
258	SLU 84	-16	-29	1694	0	0	0
258	SLE RA 1	-12	-21	1103	0	0	0
258	SLE RA 2	-12	-18	1119	0	0	0
258	SLE RA 3	-12	-21	1114	0	0	0
258	SLE RA 4	-12	-20	1124	0	0	0
258	SLE RA 5	-12	-18	1126	0	0	0
258	SLE RA 6	-12	-21	1121	0	0	0
258	SLE RA 7	-12	-20	1131	0	0	0
258	SLE RA 8	-12	-21	1117	0	0	0
258	SLE RA 9	-12	-20	1126	0	0	0
258	SLE RA 10	-12	-20	1210	0	0	0
258	SLE RA 11	-12	-23	1205	0	0	0
258	SLE RA 12	-12	-21	1215	0	0	0
258	SLE RA 13	-12	-20	1217	0	0	0
258	SLE RA 14	-12	-23	1212	0	0	0
258	SLE RA 15	-12	-21	1222	0	0	0
258	SLE RA 16	-12	-23	1208	0	0	0
258	SLE RA 17	-12	-21	1218	0	0	0
258	SLE RA 18	-12	-23	1233	0	0	0
258	SLE RA 19	-12	-21	1243	0	0	0
258	SLE RA 20	-12	-23	1240	0	0	0
258	SLE RA 21	-12	-21	1250	0	0	0
258	SLE FR 1	-12	-21	1103	0	0	0
258	SLE FR 2	-12	-21	1106	0	0	0
258	SLE FR 3	-12	-21	1106	0	0	0
258	SLE FR 4	-12	-21	1145	0	0	0
258	SLE FR 5	-12	-22	1145	0	0	0
258	SLE FR 6	-12	-22	1168	0	0	0
258	SLE QP 1	-12	-21	1103	0	0	0
258	SLE QP 2	-12	-22	1142	0	0	0
258	SLD 1	81	-3	1376	0	0	0
258	SLD 2	101	-12	1364	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
258	SLD 3	86	-53	1052	0	0	0
258	SLD 4	106	-62	1041	0	0	0
258	SLD 5	4	62	1704	0	0	0
258	SLD 6	17	56	1697	0	0	0
258	SLD 7	22	-105	627	0	0	0
258	SLD 8	35	-111	620	0	0	0
258	SLD 9	-59	68	1664	0	0	0
258	SLD 10	-46	62	1657	0	0	0
258	SLD 11	-41	-99	587	0	0	0
258	SLD 12	-28	-105	580	0	0	0
258	SLD 13	-129	19	1243	0	0	0
258	SLD 14	-110	9	1231	0	0	0
258	SLD 15	-124	-32	919	0	0	0
258	SLD 16	-104	-41	908	0	0	0
258	SLV 1	205	26	1715	0	0	0
258	SLV 2	251	5	1689	0	0	0
258	SLV 3	218	-98	906	0	0	0
258	SLV 4	264	-120	880	0	0	0
258	SLV 5	25	186	2546	0	0	0
258	SLV 6	56	171	2529	0	0	0
258	SLV 7	68	-230	-152	0	0	0
258	SLV 8	100	-244	-169	0	0	0
258	SLV 9	-123	201	2453	0	0	0
258	SLV 10	-92	186	2435	0	0	0
258	SLV 11	-79	-215	-245	0	0	0
258	SLV 12	-48	-229	-263	0	0	0
258	SLV 13	-287	76	1404	0	0	0
258	SLV 14	-241	55	1378	0	0	0
258	SLV 15	-274	-48	595	0	0	0
258	SLV 16	-228	-70	568	0	0	0
258	CRTFP Uy+	0	0	0	0	0	0
258	CRTFP Uy-	0	0	0	0	0	0
259	SLU 1	-12	-21	1170	0	0	0
259	SLU 2	-12	-16	1197	0	0	0
259	SLU 3	-12	-21	1189	0	0	0
259	SLU 4	-13	-18	1205	0	0	0
259	SLU 5	-13	-16	1208	0	0	0
259	SLU 6	-13	-22	1200	0	0	0
259	SLU 7	-13	-19	1216	0	0	0
259	SLU 8	-13	-22	1193	0	0	0
259	SLU 9	-13	-19	1209	0	0	0
259	SLU 10	-13	-18	1347	0	0	0
259	SLU 11	-13	-24	1340	0	0	0
259	SLU 12	-13	-21	1355	0	0	0
259	SLU 13	-13	-19	1359	0	0	0
259	SLU 14	-13	-24	1351	0	0	0
259	SLU 15	-13	-21	1367	0	0	0
259	SLU 16	-13	-24	1344	0	0	0
259	SLU 17	-13	-21	1360	0	0	0
259	SLU 18	-13	-24	1386	0	0	0
259	SLU 19	-13	-21	1401	0	0	0
259	SLU 20	-13	-24	1397	0	0	0
259	SLU 21	-13	-21	1413	0	0	0
259	SLU 22	-14	-23	1325	0	0	0
259	SLU 23	-14	-18	1351	0	0	0
259	SLU 24	-14	-24	1343	0	0	0
259	SLU 25	-14	-21	1359	0	0	0
259	SLU 26	-14	-19	1362	0	0	0
259	SLU 27	-14	-24	1355	0	0	0
259	SLU 28	-14	-21	1370	0	0	0
259	SLU 29	-14	-24	1347	0	0	0
259	SLU 30	-14	-21	1363	0	0	0
259	SLU 31	-14	-21	1502	0	0	0
259	SLU 32	-15	-26	1494	0	0	0
259	SLU 33	-15	-23	1510	0	0	0
259	SLU 34	-15	-21	1513	0	0	0
259	SLU 35	-15	-26	1505	0	0	0
259	SLU 36	-15	-23	1521	0	0	0
259	SLU 37	-15	-26	1498	0	0	0
259	SLU 38	-15	-23	1514	0	0	0
259	SLU 39	-14	-26	1540	0	0	0
259	SLU 40	-14	-23	1556	0	0	0
259	SLU 41	-15	-27	1551	0	0	0
259	SLU 42	-15	-24	1567	0	0	0
259	SLU 43	-15	-27	1468	0	0	0
259	SLU 44	-15	-22	1495	0	0	0
259	SLU 45	-15	-27	1487	0	0	0
259	SLU 46	-16	-24	1503	0	0	0
259	SLU 47	-16	-22	1506	0	0	0
259	SLU 48	-16	-27	1498	0	0	0
259	SLU 49	-16	-24	1514	0	0	0
259	SLU 50	-16	-27	1491	0	0	0
259	SLU 51	-16	-24	1507	0	0	0
259	SLU 52	-16	-24	1645	0	0	0
259	SLU 53	-16	-29	1638	0	0	0
259	SLU 54	-16	-26	1654	0	0	0
259	SLU 55	-16	-24	1657	0	0	0
259	SLU 56	-16	-29	1649	0	0	0
259	SLU 57	-16	-26	1665	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
259	SLU 58	-16	-29	1642	0	0	0
259	SLU 59	-16	-26	1658	0	0	0
259	SLU 60	-16	-30	1684	0	0	0
259	SLU 61	-16	-27	1700	0	0	0
259	SLU 62	-16	-30	1695	0	0	0
259	SLU 63	-16	-27	1711	0	0	0
259	SLU 64	-17	-29	1623	0	0	0
259	SLU 65	-17	-24	1649	0	0	0
259	SLU 66	-17	-29	1641	0	0	0
259	SLU 67	-17	-26	1657	0	0	0
259	SLU 68	-17	-24	1660	0	0	0
259	SLU 69	-17	-29	1653	0	0	0
259	SLU 70	-18	-27	1669	0	0	0
259	SLU 71	-17	-29	1646	0	0	0
259	SLU 72	-17	-26	1661	0	0	0
259	SLU 73	-17	-26	1800	0	0	0
259	SLU 74	-18	-31	1792	0	0	0
259	SLU 75	-18	-28	1808	0	0	0
259	SLU 76	-18	-26	1811	0	0	0
259	SLU 77	-18	-32	1804	0	0	0
259	SLU 78	-18	-29	1819	0	0	0
259	SLU 79	-18	-31	1796	0	0	0
259	SLU 80	-18	-28	1812	0	0	0
259	SLU 81	-17	-32	1838	0	0	0
259	SLU 82	-18	-29	1854	0	0	0
259	SLU 83	-18	-32	1850	0	0	0
259	SLU 84	-18	-29	1865	0	0	0
259	SLE RA 1	-13	-22	1214	0	0	0
259	SLE RA 2	-13	-18	1232	0	0	0
259	SLE RA 3	-13	-22	1227	0	0	0
259	SLE RA 4	-13	-20	1237	0	0	0
259	SLE RA 5	-13	-19	1239	0	0	0
259	SLE RA 6	-13	-22	1234	0	0	0
259	SLE RA 7	-13	-20	1245	0	0	0
259	SLE RA 8	-13	-22	1230	0	0	0
259	SLE RA 9	-13	-20	1240	0	0	0
259	SLE RA 10	-13	-20	1332	0	0	0
259	SLE RA 11	-13	-23	1327	0	0	0
259	SLE RA 12	-13	-21	1338	0	0	0
259	SLE RA 13	-13	-20	1340	0	0	0
259	SLE RA 14	-13	-24	1335	0	0	0
259	SLE RA 15	-13	-22	1345	0	0	0
259	SLE RA 16	-13	-23	1330	0	0	0
259	SLE RA 17	-13	-21	1341	0	0	0
259	SLE RA 18	-13	-24	1358	0	0	0
259	SLE RA 19	-13	-22	1368	0	0	0
259	SLE RA 20	-13	-24	1366	0	0	0
259	SLE RA 21	-13	-22	1376	0	0	0
259	SLE FR 1	-13	-22	1214	0	0	0
259	SLE FR 2	-13	-21	1218	0	0	0
259	SLE FR 3	-13	-22	1217	0	0	0
259	SLE FR 4	-13	-22	1261	0	0	0
259	SLE FR 5	-13	-22	1260	0	0	0
259	SLE FR 6	-13	-23	1286	0	0	0
259	SLE QP 1	-13	-22	1214	0	0	0
259	SLE QP 2	-13	-22	1257	0	0	0
259	SLD 1	93	1	1503	0	0	0
259	SLD 2	115	-9	1492	0	0	0
259	SLD 3	99	-57	1147	0	0	0
259	SLD 4	121	-67	1136	0	0	0
259	SLD 5	6	75	1873	0	0	0
259	SLD 6	21	68	1866	0	0	0
259	SLD 7	26	-119	686	0	0	0
259	SLD 8	41	-126	679	0	0	0
259	SLD 9	-66	81	1836	0	0	0
259	SLD 10	-51	75	1828	0	0	0
259	SLD 11	-46	-113	649	0	0	0
259	SLD 12	-31	-119	641	0	0	0
259	SLD 13	-147	22	1379	0	0	0
259	SLD 14	-124	13	1368	0	0	0
259	SLD 15	-141	-36	1023	0	0	0
259	SLD 16	-118	-45	1012	0	0	0
259	SLV 1	234	36	1862	0	0	0
259	SLV 2	286	14	1835	0	0	0
259	SLV 3	248	-109	970	0	0	0
259	SLV 4	301	-131	943	0	0	0
259	SLV 5	30	219	2797	0	0	0
259	SLV 6	65	204	2779	0	0	0
259	SLV 7	78	-264	-177	0	0	0
259	SLV 8	113	-278	-195	0	0	0
259	SLV 9	-138	234	2710	0	0	0
259	SLV 10	-103	219	2692	0	0	0
259	SLV 11	-90	-249	-264	0	0	0
259	SLV 12	-55	-264	-282	0	0	0
259	SLV 13	-326	86	1572	0	0	0
259	SLV 14	-274	64	1545	0	0	0
259	SLV 15	-312	-59	680	0	0	0
259	SLV 16	-259	-81	653	0	0	0
259	CRTFP Uy+	0	0	0	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
259	CRTFP Uy-	0	0	0	0	0	0
260	SLU 1	-12	-19	1159	0	0	0
260	SLU 2	-12	-14	1186	0	0	0
260	SLU 3	-12	-19	1178	0	0	0
260	SLU 4	-12	-16	1194	0	0	0
260	SLU 5	-12	-14	1197	0	0	0
260	SLU 6	-13	-19	1189	0	0	0
260	SLU 7	-13	-16	1205	0	0	0
260	SLU 8	-12	-19	1182	0	0	0
260	SLU 9	-13	-16	1198	0	0	0
260	SLU 10	-12	-16	1335	0	0	0
260	SLU 11	-13	-21	1327	0	0	0
260	SLU 12	-13	-18	1343	0	0	0
260	SLU 13	-13	-16	1347	0	0	0
260	SLU 14	-13	-21	1339	0	0	0
260	SLU 15	-13	-18	1355	0	0	0
260	SLU 16	-13	-21	1332	0	0	0
260	SLU 17	-13	-18	1347	0	0	0
260	SLU 18	-12	-22	1373	0	0	0
260	SLU 19	-13	-18	1389	0	0	0
260	SLU 20	-13	-22	1385	0	0	0
260	SLU 21	-13	-19	1400	0	0	0
260	SLU 22	-14	-21	1312	0	0	0
260	SLU 23	-14	-16	1338	0	0	0
260	SLU 24	-14	-21	1330	0	0	0
260	SLU 25	-14	-18	1346	0	0	0
260	SLU 26	-14	-16	1349	0	0	0
260	SLU 27	-14	-21	1341	0	0	0
260	SLU 28	-14	-18	1357	0	0	0
260	SLU 29	-14	-21	1334	0	0	0
260	SLU 30	-14	-18	1350	0	0	0
260	SLU 31	-14	-18	1487	0	0	0
260	SLU 32	-14	-23	1480	0	0	0
260	SLU 33	-14	-20	1495	0	0	0
260	SLU 34	-14	-18	1499	0	0	0
260	SLU 35	-15	-23	1491	0	0	0
260	SLU 36	-15	-20	1507	0	0	0
260	SLU 37	-15	-23	1484	0	0	0
260	SLU 38	-15	-20	1499	0	0	0
260	SLU 39	-14	-23	1525	0	0	0
260	SLU 40	-14	-20	1541	0	0	0
260	SLU 41	-14	-24	1537	0	0	0
260	SLU 42	-15	-21	1552	0	0	0
260	SLU 43	-15	-24	1455	0	0	0
260	SLU 44	-15	-19	1481	0	0	0
260	SLU 45	-15	-24	1474	0	0	0
260	SLU 46	-15	-21	1489	0	0	0
260	SLU 47	-15	-19	1493	0	0	0
260	SLU 48	-16	-24	1485	0	0	0
260	SLU 49	-16	-21	1501	0	0	0
260	SLU 50	-15	-24	1478	0	0	0
260	SLU 51	-16	-21	1494	0	0	0
260	SLU 52	-15	-21	1631	0	0	0
260	SLU 53	-16	-26	1623	0	0	0
260	SLU 54	-16	-23	1639	0	0	0
260	SLU 55	-16	-21	1642	0	0	0
260	SLU 56	-16	-26	1635	0	0	0
260	SLU 57	-16	-23	1650	0	0	0
260	SLU 58	-16	-26	1627	0	0	0
260	SLU 59	-16	-23	1643	0	0	0
260	SLU 60	-15	-26	1669	0	0	0
260	SLU 61	-16	-23	1685	0	0	0
260	SLU 62	-16	-27	1680	0	0	0
260	SLU 63	-16	-24	1696	0	0	0
260	SLU 64	-17	-26	1607	0	0	0
260	SLU 65	-17	-21	1633	0	0	0
260	SLU 66	-17	-26	1626	0	0	0
260	SLU 67	-17	-23	1641	0	0	0
260	SLU 68	-17	-21	1645	0	0	0
260	SLU 69	-17	-26	1637	0	0	0
260	SLU 70	-17	-23	1653	0	0	0
260	SLU 71	-17	-26	1630	0	0	0
260	SLU 72	-17	-23	1646	0	0	0
260	SLU 73	-17	-23	1783	0	0	0
260	SLU 74	-17	-28	1775	0	0	0
260	SLU 75	-17	-25	1791	0	0	0
260	SLU 76	-17	-23	1794	0	0	0
260	SLU 77	-18	-28	1787	0	0	0
260	SLU 78	-18	-25	1802	0	0	0
260	SLU 79	-18	-28	1779	0	0	0
260	SLU 80	-18	-25	1795	0	0	0
260	SLU 81	-17	-28	1821	0	0	0
260	SLU 82	-17	-25	1837	0	0	0
260	SLU 83	-17	-29	1832	0	0	0
260	SLU 84	-18	-26	1848	0	0	0
260	SLE RA 1	-12	-19	1203	0	0	0
260	SLE RA 2	-12	-16	1220	0	0	0
260	SLE RA 3	-13	-20	1215	0	0	0
260	SLE RA 4	-13	-18	1226	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
260	SLE RA 5	-13	-16	1228	0	0	0
260	SLE RA 6	-13	-20	1223	0	0	0
260	SLE RA 7	-13	-18	1233	0	0	0
260	SLE RA 8	-13	-20	1218	0	0	0
260	SLE RA 9	-13	-18	1228	0	0	0
260	SLE RA 10	-13	-17	1320	0	0	0
260	SLE RA 11	-13	-21	1315	0	0	0
260	SLE RA 12	-13	-19	1325	0	0	0
260	SLE RA 13	-13	-17	1328	0	0	0
260	SLE RA 14	-13	-21	1322	0	0	0
260	SLE RA 15	-13	-19	1333	0	0	0
260	SLE RA 16	-13	-21	1318	0	0	0
260	SLE RA 17	-13	-19	1328	0	0	0
260	SLE RA 18	-13	-21	1345	0	0	0
260	SLE RA 19	-13	-19	1356	0	0	0
260	SLE RA 20	-13	-21	1353	0	0	0
260	SLE RA 21	-13	-19	1363	0	0	0
260	SLE FR 1	-12	-19	1203	0	0	0
260	SLE FR 2	-12	-19	1206	0	0	0
260	SLE FR 3	-12	-19	1206	0	0	0
260	SLE FR 4	-13	-19	1249	0	0	0
260	SLE FR 5	-13	-20	1249	0	0	0
260	SLE FR 6	-13	-20	1274	0	0	0
260	SLE QP 1	-12	-19	1203	0	0	0
260	SLE QP 2	-12	-20	1246	0	0	0
260	SLD 1	95	6	1477	0	0	0
260	SLD 2	118	-3	1467	0	0	0
260	SLD 3	101	-55	1124	0	0	0
260	SLD 4	124	-63	1113	0	0	0
260	SLD 5	7	81	1853	0	0	0
260	SLD 6	22	75	1846	0	0	0
260	SLD 7	26	-121	675	0	0	0
260	SLD 8	41	-126	668	0	0	0
260	SLD 9	-66	86	1823	0	0	0
260	SLD 10	-51	81	1816	0	0	0
260	SLD 11	-47	-115	645	0	0	0
260	SLD 12	-32	-121	638	0	0	0
260	SLD 13	-149	24	1378	0	0	0
260	SLD 14	-126	15	1368	0	0	0
260	SLD 15	-143	-37	1025	0	0	0
260	SLD 16	-120	-45	1014	0	0	0
260	SLV 1	238	44	1817	0	0	0
260	SLV 2	292	24	1792	0	0	0
260	SLV 3	253	-107	931	0	0	0
260	SLV 4	306	-126	907	0	0	0
260	SLV 5	31	232	2765	0	0	0
260	SLV 6	67	218	2748	0	0	0
260	SLV 7	79	-271	-187	0	0	0
260	SLV 8	115	-284	-204	0	0	0
260	SLV 9	-140	244	2695	0	0	0
260	SLV 10	-104	231	2679	0	0	0
260	SLV 11	-92	-258	-257	0	0	0
260	SLV 12	-56	-271	-274	0	0	0
260	SLV 13	-331	87	1585	0	0	0
260	SLV 14	-278	67	1560	0	0	0
260	SLV 15	-317	-64	699	0	0	0
260	SLV 16	-263	-84	674	0	0	0
260	CRTFP Uy+	0	0	0	0	0	0
260	CRTFP Uy-	0	0	0	0	0	0
261	SLU 1	-12	-16	1152	0	0	0
261	SLU 2	-12	-11	1179	0	0	0
261	SLU 3	-12	-16	1171	0	0	0
261	SLU 4	-12	-13	1186	0	0	0
261	SLU 5	-12	-11	1190	0	0	0
261	SLU 6	-12	-16	1182	0	0	0
261	SLU 7	-13	-13	1198	0	0	0
261	SLU 8	-12	-16	1175	0	0	0
261	SLU 9	-12	-13	1191	0	0	0
261	SLU 10	-12	-12	1328	0	0	0
261	SLU 11	-13	-18	1320	0	0	0
261	SLU 12	-13	-15	1336	0	0	0
261	SLU 13	-13	-13	1339	0	0	0
261	SLU 14	-13	-18	1331	0	0	0
261	SLU 15	-13	-15	1347	0	0	0
261	SLU 16	-13	-18	1324	0	0	0
261	SLU 17	-13	-15	1340	0	0	0
261	SLU 18	-12	-18	1366	0	0	0
261	SLU 19	-12	-15	1381	0	0	0
261	SLU 20	-13	-18	1377	0	0	0
261	SLU 21	-13	-15	1393	0	0	0
261	SLU 22	-13	-18	1303	0	0	0
261	SLU 23	-14	-12	1329	0	0	0
261	SLU 24	-14	-18	1321	0	0	0
261	SLU 25	-14	-15	1337	0	0	0
261	SLU 26	-14	-13	1340	0	0	0
261	SLU 27	-14	-18	1332	0	0	0
261	SLU 28	-14	-15	1348	0	0	0
261	SLU 29	-14	-18	1325	0	0	0
261	SLU 30	-14	-15	1341	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
261	SLU 31	-14	-14	1478	0	0	0
261	SLU 32	-14	-20	1470	0	0	0
261	SLU 33	-14	-16	1486	0	0	0
261	SLU 34	-14	-14	1490	0	0	0
261	SLU 35	-14	-20	1482	0	0	0
261	SLU 36	-15	-17	1497	0	0	0
261	SLU 37	-14	-20	1475	0	0	0
261	SLU 38	-14	-17	1490	0	0	0
261	SLU 39	-14	-20	1516	0	0	0
261	SLU 40	-14	-17	1532	0	0	0
261	SLU 41	-14	-20	1527	0	0	0
261	SLU 42	-14	-17	1543	0	0	0
261	SLU 43	-15	-20	1446	0	0	0
261	SLU 44	-15	-15	1473	0	0	0
261	SLU 45	-15	-20	1465	0	0	0
261	SLU 46	-15	-17	1480	0	0	0
261	SLU 47	-15	-15	1484	0	0	0
261	SLU 48	-15	-21	1476	0	0	0
261	SLU 49	-15	-18	1492	0	0	0
261	SLU 50	-15	-21	1469	0	0	0
261	SLU 51	-15	-17	1485	0	0	0
261	SLU 52	-15	-17	1622	0	0	0
261	SLU 53	-16	-22	1614	0	0	0
261	SLU 54	-16	-19	1630	0	0	0
261	SLU 55	-16	-17	1633	0	0	0
261	SLU 56	-16	-22	1625	0	0	0
261	SLU 57	-16	-19	1641	0	0	0
261	SLU 58	-16	-22	1618	0	0	0
261	SLU 59	-16	-19	1634	0	0	0
261	SLU 60	-15	-23	1660	0	0	0
261	SLU 61	-15	-19	1675	0	0	0
261	SLU 62	-16	-23	1671	0	0	0
261	SLU 63	-16	-20	1687	0	0	0
261	SLU 64	-16	-22	1597	0	0	0
261	SLU 65	-17	-17	1623	0	0	0
261	SLU 66	-17	-22	1615	0	0	0
261	SLU 67	-17	-19	1631	0	0	0
261	SLU 68	-17	-17	1634	0	0	0
261	SLU 69	-17	-22	1626	0	0	0
261	SLU 70	-17	-19	1642	0	0	0
261	SLU 71	-17	-22	1619	0	0	0
261	SLU 72	-17	-19	1635	0	0	0
261	SLU 73	-17	-18	1772	0	0	0
261	SLU 74	-17	-24	1764	0	0	0
261	SLU 75	-17	-21	1780	0	0	0
261	SLU 76	-17	-19	1784	0	0	0
261	SLU 77	-17	-24	1776	0	0	0
261	SLU 78	-18	-21	1791	0	0	0
261	SLU 79	-17	-24	1769	0	0	0
261	SLU 80	-17	-21	1784	0	0	0
261	SLU 81	-17	-24	1810	0	0	0
261	SLU 82	-17	-21	1826	0	0	0
261	SLU 83	-17	-24	1821	0	0	0
261	SLU 84	-17	-21	1837	0	0	0
261	SLE RA 1	-12	-16	1195	0	0	0
261	SLE RA 2	-12	-13	1213	0	0	0
261	SLE RA 3	-12	-17	1208	0	0	0
261	SLE RA 4	-13	-15	1218	0	0	0
261	SLE RA 5	-13	-13	1220	0	0	0
261	SLE RA 6	-13	-17	1215	0	0	0
261	SLE RA 7	-13	-15	1225	0	0	0
261	SLE RA 8	-13	-17	1210	0	0	0
261	SLE RA 9	-13	-15	1221	0	0	0
261	SLE RA 10	-13	-14	1312	0	0	0
261	SLE RA 11	-13	-18	1307	0	0	0
261	SLE RA 12	-13	-16	1318	0	0	0
261	SLE RA 13	-13	-14	1320	0	0	0
261	SLE RA 14	-13	-18	1315	0	0	0
261	SLE RA 15	-13	-16	1325	0	0	0
261	SLE RA 16	-13	-18	1310	0	0	0
261	SLE RA 17	-13	-16	1320	0	0	0
261	SLE RA 18	-13	-18	1338	0	0	0
261	SLE RA 19	-13	-16	1348	0	0	0
261	SLE RA 20	-13	-18	1345	0	0	0
261	SLE RA 21	-13	-16	1355	0	0	0
261	SLE FR 1	-12	-16	1195	0	0	0
261	SLE FR 2	-12	-16	1199	0	0	0
261	SLE FR 3	-12	-17	1198	0	0	0
261	SLE FR 4	-12	-16	1242	0	0	0
261	SLE FR 5	-12	-17	1241	0	0	0
261	SLE FR 6	-12	-17	1266	0	0	0
261	SLE QP 1	-12	-16	1195	0	0	0
261	SLE QP 2	-12	-17	1238	0	0	0
261	SLD 1	96	11	1456	0	0	0
261	SLD 2	119	3	1447	0	0	0
261	SLD 3	102	-52	1104	0	0	0
261	SLD 4	125	-59	1095	0	0	0
261	SLD 5	7	88	1839	0	0	0
261	SLD 6	22	83	1833	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
261	SLD 7	27	-121	665	0	0	0
261	SLD 8	42	-126	659	0	0	0
261	SLD 9	-66	92	1817	0	0	0
261	SLD 10	-51	87	1811	0	0	0
261	SLD 11	-47	-117	643	0	0	0
261	SLD 12	-32	-121	637	0	0	0
261	SLD 13	-149	25	1381	0	0	0
261	SLD 14	-126	18	1372	0	0	0
261	SLD 15	-143	-37	1029	0	0	0
261	SLD 16	-121	-45	1020	0	0	0
261	SLV 1	240	53	1778	0	0	0
261	SLV 2	294	35	1756	0	0	0
261	SLV 3	255	-103	896	0	0	0
261	SLV 4	308	-120	873	0	0	0
261	SLV 5	32	243	2742	0	0	0
261	SLV 6	68	232	2727	0	0	0
261	SLV 7	79	-276	-199	0	0	0
261	SLV 8	116	-287	-214	0	0	0
261	SLV 9	-140	254	2690	0	0	0
261	SLV 10	-104	242	2675	0	0	0
261	SLV 11	-93	-266	-251	0	0	0
261	SLV 12	-57	-277	-266	0	0	0
261	SLV 13	-333	87	1603	0	0	0
261	SLV 14	-279	69	1580	0	0	0
261	SLV 15	-319	-69	720	0	0	0
261	SLV 16	-265	-87	698	0	0	0
261	CRTFP Uy+	0	0	0	0	0	0
261	CRTFP Uy-	0	0	0	0	0	0
262	SLU 1	-12	-13	1158	0	0	0
262	SLU 2	-12	-8	1184	0	0	0
262	SLU 3	-12	-13	1176	0	0	0
262	SLU 4	-12	-10	1192	0	0	0
262	SLU 5	-12	-8	1196	0	0	0
262	SLU 6	-12	-13	1187	0	0	0
262	SLU 7	-12	-10	1203	0	0	0
262	SLU 8	-12	-13	1180	0	0	0
262	SLU 9	-12	-10	1196	0	0	0
262	SLU 10	-12	-9	1335	0	0	0
262	SLU 11	-12	-15	1327	0	0	0
262	SLU 12	-13	-11	1343	0	0	0
262	SLU 13	-13	-9	1346	0	0	0
262	SLU 14	-13	-15	1338	0	0	0
262	SLU 15	-13	-12	1354	0	0	0
262	SLU 16	-13	-15	1331	0	0	0
262	SLU 17	-13	-11	1347	0	0	0
262	SLU 18	-12	-15	1373	0	0	0
262	SLU 19	-12	-12	1389	0	0	0
262	SLU 20	-13	-15	1385	0	0	0
262	SLU 21	-13	-12	1400	0	0	0
262	SLU 22	-13	-14	1309	0	0	0
262	SLU 23	-13	-9	1335	0	0	0
262	SLU 24	-14	-15	1327	0	0	0
262	SLU 25	-14	-11	1343	0	0	0
262	SLU 26	-14	-9	1347	0	0	0
262	SLU 27	-14	-15	1338	0	0	0
262	SLU 28	-14	-11	1354	0	0	0
262	SLU 29	-14	-15	1331	0	0	0
262	SLU 30	-14	-11	1347	0	0	0
262	SLU 31	-14	-10	1486	0	0	0
262	SLU 32	-14	-16	1478	0	0	0
262	SLU 33	-14	-13	1494	0	0	0
262	SLU 34	-14	-11	1497	0	0	0
262	SLU 35	-14	-16	1489	0	0	0
262	SLU 36	-14	-13	1505	0	0	0
262	SLU 37	-14	-16	1482	0	0	0
262	SLU 38	-14	-13	1498	0	0	0
262	SLU 39	-14	-16	1524	0	0	0
262	SLU 40	-14	-13	1540	0	0	0
262	SLU 41	-14	-16	1536	0	0	0
262	SLU 42	-14	-13	1551	0	0	0
262	SLU 43	-15	-17	1453	0	0	0
262	SLU 44	-15	-11	1480	0	0	0
262	SLU 45	-15	-17	1472	0	0	0
262	SLU 46	-15	-14	1488	0	0	0
262	SLU 47	-15	-11	1491	0	0	0
262	SLU 48	-15	-17	1483	0	0	0
262	SLU 49	-15	-14	1499	0	0	0
262	SLU 50	-15	-17	1476	0	0	0
262	SLU 51	-15	-14	1492	0	0	0
262	SLU 52	-15	-13	1631	0	0	0
262	SLU 53	-15	-18	1623	0	0	0
262	SLU 54	-16	-15	1638	0	0	0
262	SLU 55	-15	-13	1642	0	0	0
262	SLU 56	-16	-18	1634	0	0	0
262	SLU 57	-16	-15	1650	0	0	0
262	SLU 58	-16	-18	1627	0	0	0
262	SLU 59	-16	-15	1643	0	0	0
262	SLU 60	-15	-18	1669	0	0	0
262	SLU 61	-15	-15	1685	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
262	SLU 62	-16	-19	1680	0	0	0
262	SLU 63	-16	-15	1696	0	0	0
262	SLU 64	-16	-18	1604	0	0	0
262	SLU 65	-16	-13	1631	0	0	0
262	SLU 66	-17	-18	1623	0	0	0
262	SLU 67	-17	-15	1639	0	0	0
262	SLU 68	-17	-13	1642	0	0	0
262	SLU 69	-17	-18	1634	0	0	0
262	SLU 70	-17	-15	1650	0	0	0
262	SLU 71	-17	-18	1627	0	0	0
262	SLU 72	-17	-15	1643	0	0	0
262	SLU 73	-17	-14	1782	0	0	0
262	SLU 74	-17	-19	1774	0	0	0
262	SLU 75	-17	-16	1789	0	0	0
262	SLU 76	-17	-14	1793	0	0	0
262	SLU 77	-17	-19	1785	0	0	0
262	SLU 78	-17	-16	1801	0	0	0
262	SLU 79	-17	-19	1778	0	0	0
262	SLU 80	-17	-16	1794	0	0	0
262	SLU 81	-17	-20	1820	0	0	0
262	SLU 82	-17	-17	1836	0	0	0
262	SLU 83	-17	-20	1831	0	0	0
262	SLU 84	-17	-17	1847	0	0	0
262	SLE RA 1	-12	-13	1201	0	0	0
262	SLE RA 2	-12	-10	1219	0	0	0
262	SLE RA 3	-12	-14	1213	0	0	0
262	SLE RA 4	-12	-11	1224	0	0	0
262	SLE RA 5	-12	-10	1226	0	0	0
262	SLE RA 6	-13	-14	1221	0	0	0
262	SLE RA 7	-13	-12	1231	0	0	0
262	SLE RA 8	-13	-14	1216	0	0	0
262	SLE RA 9	-13	-11	1227	0	0	0
262	SLE RA 10	-13	-11	1319	0	0	0
262	SLE RA 11	-13	-14	1314	0	0	0
262	SLE RA 12	-13	-12	1324	0	0	0
262	SLE RA 13	-13	-11	1327	0	0	0
262	SLE RA 14	-13	-15	1321	0	0	0
262	SLE RA 15	-13	-12	1332	0	0	0
262	SLE RA 16	-13	-14	1317	0	0	0
262	SLE RA 17	-13	-12	1327	0	0	0
262	SLE RA 18	-13	-15	1345	0	0	0
262	SLE RA 19	-13	-13	1355	0	0	0
262	SLE RA 20	-13	-15	1352	0	0	0
262	SLE RA 21	-13	-13	1363	0	0	0
262	SLE FR 1	-12	-13	1201	0	0	0
262	SLE FR 2	-12	-13	1204	0	0	0
262	SLE FR 3	-12	-13	1204	0	0	0
262	SLE FR 4	-12	-13	1248	0	0	0
262	SLE FR 5	-12	-14	1247	0	0	0
262	SLE FR 6	-12	-14	1273	0	0	0
262	SLE QP 1	-12	-13	1201	0	0	0
262	SLE QP 2	-12	-14	1244	0	0	0
262	SLD 1	96	16	1452	0	0	0
262	SLD 2	119	10	1443	0	0	0
262	SLD 3	102	-48	1097	0	0	0
262	SLD 4	125	-54	1089	0	0	0
262	SLD 5	7	94	1846	0	0	0
262	SLD 6	22	90	1840	0	0	0
262	SLD 7	27	-121	664	0	0	0
262	SLD 8	42	-125	658	0	0	0
262	SLD 9	-66	97	1830	0	0	0
262	SLD 10	-51	93	1824	0	0	0
262	SLD 11	-47	-117	648	0	0	0
262	SLD 12	-32	-122	642	0	0	0
262	SLD 13	-150	27	1399	0	0	0
262	SLD 14	-127	21	1391	0	0	0
262	SLD 15	-144	-38	1045	0	0	0
262	SLD 16	-121	-44	1036	0	0	0
262	SLV 1	241	61	1759	0	0	0
262	SLV 2	295	47	1739	0	0	0
262	SLV 3	255	-99	871	0	0	0
262	SLV 4	309	-114	851	0	0	0
262	SLV 5	32	255	2750	0	0	0
262	SLV 6	69	245	2736	0	0	0
262	SLV 7	79	-280	-211	0	0	0
262	SLV 8	116	-290	-225	0	0	0
262	SLV 9	-140	262	2713	0	0	0
262	SLV 10	-104	252	2699	0	0	0
262	SLV 11	-93	-273	-248	0	0	0
262	SLV 12	-57	-282	-262	0	0	0
262	SLV 13	-334	86	1637	0	0	0
262	SLV 14	-280	71	1617	0	0	0
262	SLV 15	-320	-74	749	0	0	0
262	SLV 16	-266	-89	729	0	0	0
262	CRTFP Uy+	0	0	0	0	0	0
262	CRTFP Uy-	0	0	0	0	0	0
263	SLU 1	-12	-10	1180	0	0	0
263	SLU 2	-12	-5	1207	0	0	0
263	SLU 3	-12	-10	1198	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
263	SLU 4	-12	-7	1215	0	0	0
263	SLU 5	-12	-5	1218	0	0	0
263	SLU 6	-12	-10	1210	0	0	0
263	SLU 7	-12	-7	1226	0	0	0
263	SLU 8	-12	-10	1203	0	0	0
263	SLU 9	-12	-7	1219	0	0	0
263	SLU 10	-12	-6	1361	0	0	0
263	SLU 11	-12	-11	1353	0	0	0
263	SLU 12	-12	-8	1369	0	0	0
263	SLU 13	-12	-6	1373	0	0	0
263	SLU 14	-13	-11	1365	0	0	0
263	SLU 15	-13	-8	1381	0	0	0
263	SLU 16	-13	-11	1358	0	0	0
263	SLU 17	-13	-8	1374	0	0	0
263	SLU 18	-12	-11	1401	0	0	0
263	SLU 19	-12	-8	1417	0	0	0
263	SLU 20	-12	-12	1412	0	0	0
263	SLU 21	-13	-8	1429	0	0	0
263	SLU 22	-13	-11	1334	0	0	0
263	SLU 23	-13	-5	1361	0	0	0
263	SLU 24	-14	-11	1352	0	0	0
263	SLU 25	-14	-8	1369	0	0	0
263	SLU 26	-14	-6	1372	0	0	0
263	SLU 27	-14	-11	1364	0	0	0
263	SLU 28	-14	-8	1380	0	0	0
263	SLU 29	-14	-11	1357	0	0	0
263	SLU 30	-14	-8	1373	0	0	0
263	SLU 31	-14	-6	1515	0	0	0
263	SLU 32	-14	-12	1507	0	0	0
263	SLU 33	-14	-9	1523	0	0	0
263	SLU 34	-14	-7	1527	0	0	0
263	SLU 35	-14	-12	1519	0	0	0
263	SLU 36	-14	-9	1535	0	0	0
263	SLU 37	-14	-12	1512	0	0	0
263	SLU 38	-14	-9	1528	0	0	0
263	SLU 39	-14	-12	1555	0	0	0
263	SLU 40	-14	-9	1571	0	0	0
263	SLU 41	-14	-12	1566	0	0	0
263	SLU 42	-14	-9	1583	0	0	0
263	SLU 43	-14	-13	1481	0	0	0
263	SLU 44	-15	-7	1508	0	0	0
263	SLU 45	-15	-13	1499	0	0	0
263	SLU 46	-15	-10	1516	0	0	0
263	SLU 47	-15	-7	1519	0	0	0
263	SLU 48	-15	-13	1511	0	0	0
263	SLU 49	-15	-10	1527	0	0	0
263	SLU 50	-15	-13	1504	0	0	0
263	SLU 51	-15	-10	1520	0	0	0
263	SLU 52	-15	-8	1663	0	0	0
263	SLU 53	-15	-14	1654	0	0	0
263	SLU 54	-15	-11	1671	0	0	0
263	SLU 55	-15	-8	1674	0	0	0
263	SLU 56	-16	-14	1666	0	0	0
263	SLU 57	-16	-11	1682	0	0	0
263	SLU 58	-15	-14	1659	0	0	0
263	SLU 59	-16	-11	1675	0	0	0
263	SLU 60	-15	-14	1702	0	0	0
263	SLU 61	-15	-11	1718	0	0	0
263	SLU 62	-15	-14	1713	0	0	0
263	SLU 63	-15	-11	1730	0	0	0
263	SLU 64	-16	-14	1635	0	0	0
263	SLU 65	-16	-8	1662	0	0	0
263	SLU 66	-16	-14	1653	0	0	0
263	SLU 67	-17	-10	1670	0	0	0
263	SLU 68	-17	-8	1673	0	0	0
263	SLU 69	-17	-14	1665	0	0	0
263	SLU 70	-17	-11	1681	0	0	0
263	SLU 71	-17	-14	1658	0	0	0
263	SLU 72	-17	-10	1674	0	0	0
263	SLU 73	-17	-9	1816	0	0	0
263	SLU 74	-17	-15	1808	0	0	0
263	SLU 75	-17	-11	1824	0	0	0
263	SLU 76	-17	-9	1828	0	0	0
263	SLU 77	-17	-15	1820	0	0	0
263	SLU 78	-17	-12	1836	0	0	0
263	SLU 79	-17	-15	1813	0	0	0
263	SLU 80	-17	-12	1829	0	0	0
263	SLU 81	-17	-15	1856	0	0	0
263	SLU 82	-17	-12	1872	0	0	0
263	SLU 83	-17	-15	1867	0	0	0
263	SLU 84	-17	-12	1884	0	0	0
263	SLE RA 1	-12	-10	1224	0	0	0
263	SLE RA 2	-12	-7	1242	0	0	0
263	SLE RA 3	-12	-10	1236	0	0	0
263	SLE RA 4	-12	-8	1247	0	0	0
263	SLE RA 5	-12	-7	1249	0	0	0
263	SLE RA 6	-12	-10	1244	0	0	0
263	SLE RA 7	-13	-8	1255	0	0	0
263	SLE RA 8	-12	-10	1239	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
263	SLE RA 9	-12	-8	1250	0	0	0
263	SLE RA 10	-12	-7	1345	0	0	0
263	SLE RA 11	-13	-11	1339	0	0	0
263	SLE RA 12	-13	-9	1350	0	0	0
263	SLE RA 13	-13	-7	1353	0	0	0
263	SLE RA 14	-13	-11	1347	0	0	0
263	SLE RA 15	-13	-9	1358	0	0	0
263	SLE RA 16	-13	-11	1342	0	0	0
263	SLE RA 17	-13	-9	1353	0	0	0
263	SLE RA 18	-12	-11	1371	0	0	0
263	SLE RA 19	-12	-9	1382	0	0	0
263	SLE RA 20	-13	-11	1379	0	0	0
263	SLE RA 21	-13	-9	1390	0	0	0
263	SLE FR 1	-12	-10	1224	0	0	0
263	SLE FR 2	-12	-9	1227	0	0	0
263	SLE FR 3	-12	-10	1227	0	0	0
263	SLE FR 4	-12	-10	1271	0	0	0
263	SLE FR 5	-12	-11	1271	0	0	0
263	SLE FR 6	-12	-11	1297	0	0	0
263	SLE QP 1	-12	-10	1224	0	0	0
263	SLE QP 2	-12	-10	1268	0	0	0
263	SLD 1	96	22	1469	0	0	0
263	SLD 2	119	17	1461	0	0	0
263	SLD 3	102	-44	1107	0	0	0
263	SLD 4	125	-50	1099	0	0	0
263	SLD 5	8	101	1878	0	0	0
263	SLD 6	23	97	1873	0	0	0
263	SLD 7	27	-120	673	0	0	0
263	SLD 8	42	-124	668	0	0	0
263	SLD 9	-66	103	1868	0	0	0
263	SLD 10	-51	99	1863	0	0	0
263	SLD 11	-47	-118	663	0	0	0
263	SLD 12	-32	-122	658	0	0	0
263	SLD 13	-149	29	1436	0	0	0
263	SLD 14	-127	23	1428	0	0	0
263	SLD 15	-144	-38	1075	0	0	0
263	SLD 16	-121	-43	1067	0	0	0
263	SLV 1	242	70	1768	0	0	0
263	SLV 2	296	58	1750	0	0	0
263	SLV 3	256	-95	862	0	0	0
263	SLV 4	310	-107	844	0	0	0
263	SLV 5	33	266	2795	0	0	0
263	SLV 6	69	258	2782	0	0	0
263	SLV 7	79	-284	-224	0	0	0
263	SLV 8	116	-292	-236	0	0	0
263	SLV 9	-140	271	2772	0	0	0
263	SLV 10	-104	263	2760	0	0	0
263	SLV 11	-93	-279	-247	0	0	0
263	SLV 12	-57	-287	-259	0	0	0
263	SLV 13	-334	86	1692	0	0	0
263	SLV 14	-280	74	1673	0	0	0
263	SLV 15	-320	-79	786	0	0	0
263	SLV 16	-266	-91	768	0	0	0
263	CRTFP Uy+	0	0	0	0	0	0
263	CRTFP Uy-	0	0	0	0	0	0
264	SLU 1	-11	-7	1218	0	0	0
264	SLU 2	-12	-1	1246	0	0	0
264	SLU 3	-12	-7	1238	0	0	0
264	SLU 4	-12	-4	1255	0	0	0
264	SLU 5	-12	-1	1258	0	0	0
264	SLU 6	-12	-7	1250	0	0	0
264	SLU 7	-12	-4	1267	0	0	0
264	SLU 8	-12	-7	1242	0	0	0
264	SLU 9	-12	-4	1259	0	0	0
264	SLU 10	-12	-2	1408	0	0	0
264	SLU 11	-12	-8	1399	0	0	0
264	SLU 12	-12	-4	1416	0	0	0
264	SLU 13	-12	-2	1420	0	0	0
264	SLU 14	-13	-8	1411	0	0	0
264	SLU 15	-13	-4	1428	0	0	0
264	SLU 16	-12	-8	1404	0	0	0
264	SLU 17	-13	-4	1421	0	0	0
264	SLU 18	-12	-8	1449	0	0	0
264	SLU 19	-12	-5	1466	0	0	0
264	SLU 20	-12	-8	1461	0	0	0
264	SLU 21	-12	-5	1478	0	0	0
264	SLU 22	-13	-7	1378	0	0	0
264	SLU 23	-13	-2	1406	0	0	0
264	SLU 24	-13	-7	1397	0	0	0
264	SLU 25	-14	-4	1414	0	0	0
264	SLU 26	-14	-2	1418	0	0	0
264	SLU 27	-14	-7	1409	0	0	0
264	SLU 28	-14	-4	1426	0	0	0
264	SLU 29	-14	-7	1402	0	0	0
264	SLU 30	-14	-4	1419	0	0	0
264	SLU 31	-14	-3	1567	0	0	0
264	SLU 32	-14	-8	1559	0	0	0
264	SLU 33	-14	-5	1576	0	0	0
264	SLU 34	-14	-3	1579	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
264	SLU 35	-14	-8	1571	0	0	0
264	SLU 36	-14	-5	1588	0	0	0
264	SLU 37	-14	-8	1563	0	0	0
264	SLU 38	-14	-5	1580	0	0	0
264	SLU 39	-14	-8	1608	0	0	0
264	SLU 40	-14	-5	1625	0	0	0
264	SLU 41	-14	-8	1620	0	0	0
264	SLU 42	-14	-5	1637	0	0	0
264	SLU 43	-14	-9	1529	0	0	0
264	SLU 44	-15	-3	1557	0	0	0
264	SLU 45	-15	-9	1549	0	0	0
264	SLU 46	-15	-5	1566	0	0	0
264	SLU 47	-15	-3	1569	0	0	0
264	SLU 48	-15	-9	1561	0	0	0
264	SLU 49	-15	-5	1578	0	0	0
264	SLU 50	-15	-9	1553	0	0	0
264	SLU 51	-15	-5	1570	0	0	0
264	SLU 52	-15	-4	1719	0	0	0
264	SLU 53	-15	-9	1710	0	0	0
264	SLU 54	-15	-6	1727	0	0	0
264	SLU 55	-15	-4	1731	0	0	0
264	SLU 56	-15	-9	1722	0	0	0
264	SLU 57	-16	-6	1739	0	0	0
264	SLU 58	-15	-9	1715	0	0	0
264	SLU 59	-15	-6	1731	0	0	0
264	SLU 60	-15	-10	1760	0	0	0
264	SLU 61	-15	-6	1777	0	0	0
264	SLU 62	-15	-10	1772	0	0	0
264	SLU 63	-15	-6	1789	0	0	0
264	SLU 64	-16	-9	1689	0	0	0
264	SLU 65	-16	-4	1717	0	0	0
264	SLU 66	-16	-9	1708	0	0	0
264	SLU 67	-16	-6	1725	0	0	0
264	SLU 68	-16	-4	1729	0	0	0
264	SLU 69	-17	-9	1720	0	0	0
264	SLU 70	-17	-6	1737	0	0	0
264	SLU 71	-17	-9	1713	0	0	0
264	SLU 72	-17	-6	1729	0	0	0
264	SLU 73	-17	-4	1878	0	0	0
264	SLU 74	-17	-10	1870	0	0	0
264	SLU 75	-17	-7	1886	0	0	0
264	SLU 76	-17	-4	1890	0	0	0
264	SLU 77	-17	-10	1882	0	0	0
264	SLU 78	-17	-7	1898	0	0	0
264	SLU 79	-17	-10	1874	0	0	0
264	SLU 80	-17	-7	1891	0	0	0
264	SLU 81	-17	-10	1919	0	0	0
264	SLU 82	-17	-7	1936	0	0	0
264	SLU 83	-17	-10	1931	0	0	0
264	SLU 84	-17	-7	1948	0	0	0
264	SLE RA 1	-12	-7	1264	0	0	0
264	SLE RA 2	-12	-3	1283	0	0	0
264	SLE RA 3	-12	-7	1277	0	0	0
264	SLE RA 4	-12	-5	1288	0	0	0
264	SLE RA 5	-12	-3	1291	0	0	0
264	SLE RA 6	-12	-7	1285	0	0	0
264	SLE RA 7	-12	-5	1296	0	0	0
264	SLE RA 8	-12	-7	1280	0	0	0
264	SLE RA 9	-12	-5	1291	0	0	0
264	SLE RA 10	-12	-4	1390	0	0	0
264	SLE RA 11	-12	-7	1385	0	0	0
264	SLE RA 12	-13	-5	1396	0	0	0
264	SLE RA 13	-12	-4	1398	0	0	0
264	SLE RA 14	-13	-8	1393	0	0	0
264	SLE RA 15	-13	-5	1404	0	0	0
264	SLE RA 16	-13	-7	1388	0	0	0
264	SLE RA 17	-13	-5	1399	0	0	0
264	SLE RA 18	-12	-8	1418	0	0	0
264	SLE RA 19	-12	-5	1429	0	0	0
264	SLE RA 20	-12	-8	1426	0	0	0
264	SLE RA 21	-13	-5	1437	0	0	0
264	SLE FR 1	-12	-7	1264	0	0	0
264	SLE FR 2	-12	-6	1268	0	0	0
264	SLE FR 3	-12	-7	1267	0	0	0
264	SLE FR 4	-12	-6	1314	0	0	0
264	SLE FR 5	-12	-7	1313	0	0	0
264	SLE FR 6	-12	-7	1341	0	0	0
264	SLE QP 1	-12	-7	1264	0	0	0
264	SLE QP 2	-12	-7	1310	0	0	0
264	SLD 1	96	26	1509	0	0	0
264	SLD 2	119	23	1502	0	0	0
264	SLD 3	102	-42	1136	0	0	0
264	SLD 4	125	-46	1129	0	0	0
264	SLD 5	8	107	1936	0	0	0
264	SLD 6	23	104	1932	0	0	0
264	SLD 7	27	-120	694	0	0	0
264	SLD 8	42	-123	689	0	0	0
264	SLD 9	-66	108	1931	0	0	0
264	SLD 10	-51	106	1926	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
264	SLD 11	-47	-119	688	0	0	0
264	SLD 12	-32	-121	684	0	0	0
264	SLD 13	-149	31	1491	0	0	0
264	SLD 14	-126	27	1484	0	0	0
264	SLD 15	-144	-37	1118	0	0	0
264	SLD 16	-121	-41	1111	0	0	0
264	SLV 1	241	77	1807	0	0	0
264	SLV 2	295	68	1790	0	0	0
264	SLV 3	256	-93	873	0	0	0
264	SLV 4	310	-102	856	0	0	0
264	SLV 5	32	277	2879	0	0	0
264	SLV 6	69	271	2868	0	0	0
264	SLV 7	80	-289	-235	0	0	0
264	SLV 8	116	-295	-246	0	0	0
264	SLV 9	-140	281	2866	0	0	0
264	SLV 10	-104	275	2855	0	0	0
264	SLV 11	-93	-285	-248	0	0	0
264	SLV 12	-57	-292	-259	0	0	0
264	SLV 13	-334	88	1764	0	0	0
264	SLV 14	-280	79	1747	0	0	0
264	SLV 15	-320	-82	830	0	0	0
264	SLV 16	-266	-91	813	0	0	0
264	CRTFP Uy+	0	0	0	0	0	0
264	CRTFP Uy-	0	0	0	0	0	0
265	SLU 1	-6	-2	636	0	0	0
265	SLU 2	-6	1	650	0	0	0
265	SLU 3	-6	-2	646	0	0	0
265	SLU 4	-6	0	655	0	0	0
265	SLU 5	-6	1	657	0	0	0
265	SLU 6	-6	-2	652	0	0	0
265	SLU 7	-6	0	661	0	0	0
265	SLU 8	-6	-2	648	0	0	0
265	SLU 9	-6	0	657	0	0	0
265	SLU 10	-6	1	735	0	0	0
265	SLU 11	-6	-2	731	0	0	0
265	SLU 12	-6	-1	740	0	0	0
265	SLU 13	-6	1	742	0	0	0
265	SLU 14	-6	-2	737	0	0	0
265	SLU 15	-6	-1	746	0	0	0
265	SLU 16	-6	-2	734	0	0	0
265	SLU 17	-6	-1	742	0	0	0
265	SLU 18	-6	-2	757	0	0	0
265	SLU 19	-6	-1	766	0	0	0
265	SLU 20	-6	-2	764	0	0	0
265	SLU 21	-6	-1	772	0	0	0
265	SLU 22	-7	-2	719	0	0	0
265	SLU 23	-7	1	734	0	0	0
265	SLU 24	-7	-2	730	0	0	0
265	SLU 25	-7	0	738	0	0	0
265	SLU 26	-7	1	740	0	0	0
265	SLU 27	-7	-2	736	0	0	0
265	SLU 28	-7	0	745	0	0	0
265	SLU 29	-7	-2	732	0	0	0
265	SLU 30	-7	0	741	0	0	0
265	SLU 31	-7	1	819	0	0	0
265	SLU 32	-7	-2	815	0	0	0
265	SLU 33	-7	-1	823	0	0	0
265	SLU 34	-7	1	825	0	0	0
265	SLU 35	-7	-2	821	0	0	0
265	SLU 36	-7	-1	830	0	0	0
265	SLU 37	-7	-2	817	0	0	0
265	SLU 38	-7	-1	826	0	0	0
265	SLU 39	-7	-2	841	0	0	0
265	SLU 40	-7	-1	850	0	0	0
265	SLU 41	-7	-2	847	0	0	0
265	SLU 42	-7	-1	856	0	0	0
265	SLU 43	-7	-3	798	0	0	0
265	SLU 44	-7	0	812	0	0	0
265	SLU 45	-7	-3	808	0	0	0
265	SLU 46	-7	-1	817	0	0	0
265	SLU 47	-7	0	819	0	0	0
265	SLU 48	-7	-3	815	0	0	0
265	SLU 49	-8	-1	823	0	0	0
265	SLU 50	-7	-3	811	0	0	0
265	SLU 51	-7	-1	819	0	0	0
265	SLU 52	-7	0	898	0	0	0
265	SLU 53	-8	-3	893	0	0	0
265	SLU 54	-8	-1	902	0	0	0
265	SLU 55	-8	0	904	0	0	0
265	SLU 56	-8	-3	900	0	0	0
265	SLU 57	-8	-1	908	0	0	0
265	SLU 58	-8	-3	896	0	0	0
265	SLU 59	-8	-1	904	0	0	0
265	SLU 60	-7	-3	919	0	0	0
265	SLU 61	-7	-1	928	0	0	0
265	SLU 62	-8	-3	926	0	0	0
265	SLU 63	-8	-1	934	0	0	0
265	SLU 64	-8	-3	881	0	0	0
265	SLU 65	-8	0	896	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
265	SLU 66	-8	-3	892	0	0	0
265	SLU 67	-8	-1	900	0	0	0
265	SLU 68	-8	0	902	0	0	0
265	SLU 69	-8	-3	898	0	0	0
265	SLU 70	-8	-1	907	0	0	0
265	SLU 71	-8	-3	894	0	0	0
265	SLU 72	-8	-1	903	0	0	0
265	SLU 73	-8	0	981	0	0	0
265	SLU 74	-8	-3	977	0	0	0
265	SLU 75	-8	-1	985	0	0	0
265	SLU 76	-8	0	987	0	0	0
265	SLU 77	-8	-3	983	0	0	0
265	SLU 78	-9	-1	992	0	0	0
265	SLU 79	-8	-3	979	0	0	0
265	SLU 80	-8	-1	988	0	0	0
265	SLU 81	-8	-3	1003	0	0	0
265	SLU 82	-8	-1	1012	0	0	0
265	SLU 83	-8	-3	1009	0	0	0
265	SLU 84	-8	-1	1018	0	0	0
265	SLE RA 1	-6	-2	660	0	0	0
265	SLE RA 2	-6	0	669	0	0	0
265	SLE RA 3	-6	-2	667	0	0	0
265	SLE RA 4	-6	-1	672	0	0	0
265	SLE RA 5	-6	0	674	0	0	0
265	SLE RA 6	-6	-2	671	0	0	0
265	SLE RA 7	-6	-1	677	0	0	0
265	SLE RA 8	-6	-2	668	0	0	0
265	SLE RA 9	-6	-1	674	0	0	0
265	SLE RA 10	-6	0	726	0	0	0
265	SLE RA 11	-6	-2	723	0	0	0
265	SLE RA 12	-6	-1	729	0	0	0
265	SLE RA 13	-6	0	730	0	0	0
265	SLE RA 14	-6	-2	727	0	0	0
265	SLE RA 15	-6	-1	733	0	0	0
265	SLE RA 16	-6	-2	725	0	0	0
265	SLE RA 17	-6	-1	731	0	0	0
265	SLE RA 18	-6	-2	741	0	0	0
265	SLE RA 19	-6	-1	746	0	0	0
265	SLE RA 20	-6	-2	745	0	0	0
265	SLE RA 21	-6	-1	751	0	0	0
265	SLE FR 1	-6	-2	660	0	0	0
265	SLE FR 2	-6	-2	662	0	0	0
265	SLE FR 3	-6	-2	661	0	0	0
265	SLE FR 4	-6	-2	686	0	0	0
265	SLE FR 5	-6	-2	686	0	0	0
265	SLE FR 6	-6	-2	700	0	0	0
265	SLE QP 1	-6	-2	660	0	0	0
265	SLE QP 2	-6	-2	684	0	0	0
265	SLD 1	48	18	778	0	0	0
265	SLD 2	60	17	774	0	0	0
265	SLD 3	51	-17	584	0	0	0
265	SLD 4	63	-19	580	0	0	0
265	SLD 5	4	57	1007	0	0	0
265	SLD 6	11	56	1005	0	0	0
265	SLD 7	14	-60	360	0	0	0
265	SLD 8	21	-60	358	0	0	0
265	SLD 9	-33	56	1010	0	0	0
265	SLD 10	-25	55	1008	0	0	0
265	SLD 11	-23	-61	363	0	0	0
265	SLD 12	-16	-61	361	0	0	0
265	SLD 13	-75	14	787	0	0	0
265	SLD 14	-63	13	784	0	0	0
265	SLD 15	-72	-21	594	0	0	0
265	SLD 16	-60	-22	590	0	0	0
265	SLV 1	121	47	919	0	0	0
265	SLV 2	148	44	912	0	0	0
265	SLV 3	128	-40	433	0	0	0
265	SLV 4	155	-43	426	0	0	0
265	SLV 5	16	146	1493	0	0	0
265	SLV 6	35	144	1488	0	0	0
265	SLV 7	40	-146	-127	0	0	0
265	SLV 8	58	-148	-132	0	0	0
265	SLV 9	-70	144	1500	0	0	0
265	SLV 10	-52	141	1495	0	0	0
265	SLV 11	-47	-148	-120	0	0	0
265	SLV 12	-28	-150	-125	0	0	0
265	SLV 13	-167	39	942	0	0	0
265	SLV 14	-140	36	935	0	0	0
265	SLV 15	-160	-48	456	0	0	0
265	SLV 16	-133	-51	449	0	0	0
265	CRTFP Uy+	0	0	0	0	0	0
265	CRTFP Uy-	0	0	0	0	0	0
266	SLU 1	3	-9	492	0	0	0
266	SLU 2	3	-7	503	0	0	0
266	SLU 3	3	-9	500	0	0	0
266	SLU 4	3	-8	506	0	0	0
266	SLU 5	3	-7	508	0	0	0
266	SLU 6	3	-9	505	0	0	0
266	SLU 7	3	-8	511	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
266	SLU 8	3	-9	502	0	0	0
266	SLU 9	3	-8	508	0	0	0
266	SLU 10	3	-8	566	0	0	0
266	SLU 11	3	-10	562	0	0	0
266	SLU 12	3	-8	569	0	0	0
266	SLU 13	3	-8	571	0	0	0
266	SLU 14	3	-10	567	0	0	0
266	SLU 15	3	-9	574	0	0	0
266	SLU 16	3	-10	564	0	0	0
266	SLU 17	3	-8	571	0	0	0
266	SLU 18	3	-10	581	0	0	0
266	SLU 19	3	-9	588	0	0	0
266	SLU 20	3	-10	586	0	0	0
266	SLU 21	3	-9	593	0	0	0
266	SLU 22	3	-10	557	0	0	0
266	SLU 23	3	-8	568	0	0	0
266	SLU 24	3	-10	565	0	0	0
266	SLU 25	3	-9	572	0	0	0
266	SLU 26	3	-8	573	0	0	0
266	SLU 27	3	-10	570	0	0	0
266	SLU 28	3	-9	576	0	0	0
266	SLU 29	3	-10	567	0	0	0
266	SLU 30	3	-9	573	0	0	0
266	SLU 31	3	-8	631	0	0	0
266	SLU 32	3	-10	627	0	0	0
266	SLU 33	3	-9	634	0	0	0
266	SLU 34	3	-9	636	0	0	0
266	SLU 35	3	-11	632	0	0	0
266	SLU 36	3	-9	639	0	0	0
266	SLU 37	3	-11	629	0	0	0
266	SLU 38	3	-9	636	0	0	0
266	SLU 39	3	-11	646	0	0	0
266	SLU 40	3	-10	653	0	0	0
266	SLU 41	3	-11	651	0	0	0
266	SLU 42	3	-10	658	0	0	0
266	SLU 43	4	-11	617	0	0	0
266	SLU 44	4	-9	628	0	0	0
266	SLU 45	4	-11	625	0	0	0
266	SLU 46	4	-10	632	0	0	0
266	SLU 47	4	-9	633	0	0	0
266	SLU 48	3	-11	630	0	0	0
266	SLU 49	4	-10	637	0	0	0
266	SLU 50	3	-11	627	0	0	0
266	SLU 51	4	-10	634	0	0	0
266	SLU 52	4	-10	691	0	0	0
266	SLU 53	4	-12	688	0	0	0
266	SLU 54	4	-11	694	0	0	0
266	SLU 55	4	-10	696	0	0	0
266	SLU 56	4	-12	692	0	0	0
266	SLU 57	4	-11	699	0	0	0
266	SLU 58	4	-12	689	0	0	0
266	SLU 59	4	-11	696	0	0	0
266	SLU 60	4	-12	707	0	0	0
266	SLU 61	4	-11	713	0	0	0
266	SLU 62	4	-12	711	0	0	0
266	SLU 63	4	-11	718	0	0	0
266	SLU 64	4	-12	682	0	0	0
266	SLU 65	4	-10	693	0	0	0
266	SLU 66	4	-12	690	0	0	0
266	SLU 67	4	-11	697	0	0	0
266	SLU 68	4	-10	698	0	0	0
266	SLU 69	4	-12	695	0	0	0
266	SLU 70	4	-11	702	0	0	0
266	SLU 71	4	-12	692	0	0	0
266	SLU 72	4	-11	699	0	0	0
266	SLU 73	4	-11	756	0	0	0
266	SLU 74	4	-13	753	0	0	0
266	SLU 75	4	-12	759	0	0	0
266	SLU 76	4	-11	761	0	0	0
266	SLU 77	4	-13	758	0	0	0
266	SLU 78	4	-12	764	0	0	0
266	SLU 79	4	-13	755	0	0	0
266	SLU 80	4	-12	761	0	0	0
266	SLU 81	4	-13	772	0	0	0
266	SLU 82	4	-12	778	0	0	0
266	SLU 83	4	-13	777	0	0	0
266	SLU 84	4	-12	783	0	0	0
266	SLE RA 1	3	-9	510	0	0	0
266	SLE RA 2	3	-8	518	0	0	0
266	SLE RA 3	3	-9	516	0	0	0
266	SLE RA 4	3	-8	520	0	0	0
266	SLE RA 5	3	-8	521	0	0	0
266	SLE RA 6	3	-9	519	0	0	0
266	SLE RA 7	3	-8	523	0	0	0
266	SLE RA 8	3	-9	517	0	0	0
266	SLE RA 9	3	-8	521	0	0	0
266	SLE RA 10	3	-8	560	0	0	0
266	SLE RA 11	3	-10	557	0	0	0
266	SLE RA 12	3	-9	562	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
266	SLE RA 13	3	-8	563	0	0	0
266	SLE RA 14	3	-10	561	0	0	0
266	SLE RA 15	3	-9	565	0	0	0
266	SLE RA 16	3	-10	559	0	0	0
266	SLE RA 17	3	-9	563	0	0	0
266	SLE RA 18	3	-10	570	0	0	0
266	SLE RA 19	3	-9	575	0	0	0
266	SLE RA 20	3	-10	573	0	0	0
266	SLE RA 21	3	-9	578	0	0	0
266	SLE FR 1	3	-9	510	0	0	0
266	SLE FR 2	3	-9	512	0	0	0
266	SLE FR 3	3	-9	512	0	0	0
266	SLE FR 4	3	-9	530	0	0	0
266	SLE FR 5	3	-9	530	0	0	0
266	SLE FR 6	3	-9	540	0	0	0
266	SLE QP 1	3	-9	510	0	0	0
266	SLE QP 2	3	-9	528	0	0	0
266	SLD 1	48	6	562	0	0	0
266	SLD 2	57	11	569	0	0	0
266	SLD 3	45	-16	408	0	0	0
266	SLD 4	53	-11	415	0	0	0
266	SLD 5	20	28	771	0	0	0
266	SLD 6	26	31	776	0	0	0
266	SLD 7	9	-46	257	0	0	0
266	SLD 8	14	-42	261	0	0	0
266	SLD 9	-9	24	795	0	0	0
266	SLD 10	-3	27	799	0	0	0
266	SLD 11	-20	-50	281	0	0	0
266	SLD 12	-14	-46	285	0	0	0
266	SLD 13	-48	-7	642	0	0	0
266	SLD 14	-39	-2	649	0	0	0
266	SLD 15	-51	-29	488	0	0	0
266	SLD 16	-42	-25	494	0	0	0
266	SLV 1	109	29	621	0	0	0
266	SLV 2	130	40	636	0	0	0
266	SLV 3	100	-27	234	0	0	0
266	SLV 4	121	-15	249	0	0	0
266	SLV 5	44	84	1140	0	0	0
266	SLV 6	58	91	1150	0	0	0
266	SLV 7	15	-100	-149	0	0	0
266	SLV 8	29	-93	-139	0	0	0
266	SLV 9	-23	74	1196	0	0	0
266	SLV 10	-9	82	1206	0	0	0
266	SLV 11	-52	-110	-93	0	0	0
266	SLV 12	-38	-102	-83	0	0	0
266	SLV 13	-115	-3	807	0	0	0
266	SLV 14	-94	8	823	0	0	0
266	SLV 15	-124	-58	421	0	0	0
266	SLV 16	-103	-47	436	0	0	0
266	CRTFP Uy+	0	0	0	0	0	0
266	CRTFP Uy-	0	0	0	0	0	0
268	SLU 1	17	-52	4206	-101.63	1245.45	15.31
268	SLU 2	18	-32	4305	-104.19	1274.72	9.7
268	SLU 3	17	-52	4273	-103.22	1265.38	15.56
268	SLU 4	18	-41	4333	-104.76	1282.94	12.19
268	SLU 5	18	-33	4346	-105.16	1286.92	9.85
268	SLU 6	17	-53	4315	-104.19	1277.58	15.71
268	SLU 7	17	-41	4374	-105.73	1295.14	12.34
268	SLU 8	16	-53	4289	-103.57	1269.86	15.62
268	SLU 9	17	-41	4348	-105.11	1287.42	12.25
268	SLU 10	19	-38	4862	-117.62	1440.62	11.45
268	SLU 11	17	-58	4831	-116.66	1431.28	17.31
268	SLU 12	18	-47	4890	-118.19	1448.84	13.94
268	SLU 13	18	-39	4903	-118.6	1452.82	11.61
268	SLU 14	17	-59	4872	-117.63	1443.48	17.46
268	SLU 15	18	-47	4931	-119.17	1461.04	14.1
268	SLU 16	17	-59	4846	-117.01	1435.76	17.37
268	SLU 17	17	-47	4905	-118.55	1453.32	14
268	SLU 18	17	-60	5003	-120.82	1482.45	17.81
268	SLU 19	18	-49	5062	-122.36	1500.01	14.45
268	SLU 20	17	-61	5044	-121.8	1494.66	17.97
268	SLU 21	18	-49	5103	-123.33	1512.22	14.6
268	SLU 22	19	-58	4753	-114.75	1407.38	17.16
268	SLU 23	20	-39	4851	-117.31	1436.64	11.55
268	SLU 24	19	-59	4820	-116.34	1427.3	17.4
268	SLU 25	19	-47	4879	-117.87	1444.86	14.04
268	SLU 26	20	-39	4892	-118.28	1448.85	11.7
268	SLU 27	18	-59	4861	-117.31	1439.5	17.56
268	SLU 28	19	-48	4920	-118.85	1457.06	14.19
268	SLU 29	18	-59	4835	-116.69	1431.78	17.46
268	SLU 30	19	-47	4894	-118.23	1449.34	14.1
268	SLU 31	20	-45	5409	-130.74	1602.54	13.3
268	SLU 32	19	-65	5377	-129.78	1593.2	19.16
268	SLU 33	20	-53	5436	-131.31	1610.76	15.79
268	SLU 34	20	-45	5450	-131.72	1614.75	13.45
268	SLU 35	18	-65	5418	-130.75	1605.4	19.31
268	SLU 36	19	-54	5477	-132.28	1622.96	15.94
268	SLU 37	18	-65	5392	-130.13	1597.68	19.22
268	SLU 38	19	-53	5451	-131.67	1615.24	15.85

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
268	SLU 39	19	-66	5549	-133.94	1644.38	19.66
268	SLU 40	20	-55	5608	-135.48	1661.94	16.3
268	SLU 41	19	-67	5590	-134.92	1656.58	19.81
268	SLU 42	20	-55	5649	-136.45	1674.14	16.45
268	SLU 43	22	-65	5281	-127.62	1563.57	19.27
268	SLU 44	23	-46	5379	-130.18	1592.84	13.66
268	SLU 45	21	-66	5348	-129.21	1583.5	19.52
268	SLU 46	22	-54	5407	-130.75	1601.06	16.15
268	SLU 47	23	-46	5421	-131.15	1605.04	13.81
268	SLU 48	21	-66	5389	-130.18	1595.7	19.67
268	SLU 49	22	-55	5448	-131.72	1613.26	16.3
268	SLU 50	21	-66	5363	-129.56	1587.98	19.57
268	SLU 51	22	-55	5422	-131.1	1605.54	16.21
268	SLU 52	23	-52	5937	-143.61	1758.74	15.41
268	SLU 53	22	-72	5905	-142.65	1749.4	21.27
268	SLU 54	22	-60	5964	-144.18	1766.95	17.9
268	SLU 55	23	-52	5978	-144.59	1770.94	15.56
268	SLU 56	21	-72	5946	-143.62	1761.6	21.42
268	SLU 57	22	-61	6006	-145.16	1779.16	18.05
268	SLU 58	21	-72	5920	-143	1753.88	21.33
268	SLU 59	22	-60	5980	-144.54	1771.44	17.96
268	SLU 60	22	-73	6077	-146.81	1800.57	21.77
268	SLU 61	23	-62	6136	-148.35	1818.13	18.41
268	SLU 62	22	-74	6118	-147.79	1812.78	21.93
268	SLU 63	22	-63	6177	-149.32	1830.34	18.56
268	SLU 64	23	-71	5827	-140.74	1725.5	21.12
268	SLU 65	25	-52	5926	-143.3	1754.76	15.51
268	SLU 66	23	-72	5895	-142.33	1745.42	21.36
268	SLU 67	24	-61	5954	-143.86	1762.98	18
268	SLU 68	24	-53	5967	-144.27	1766.97	15.66
268	SLU 69	23	-73	5936	-143.3	1757.62	21.52
268	SLU 70	24	-61	5995	-144.84	1775.18	18.15
268	SLU 71	23	-72	5910	-142.68	1749.9	21.42
268	SLU 72	24	-61	5969	-144.22	1767.46	18.06
268	SLU 73	25	-58	6483	-156.73	1920.66	17.26
268	SLU 74	23	-78	6452	-155.77	1911.32	23.12
268	SLU 75	24	-66	6511	-157.3	1928.88	19.75
268	SLU 76	25	-59	6524	-157.71	1932.87	17.41
268	SLU 77	23	-79	6493	-156.74	1923.52	23.27
268	SLU 78	24	-67	6552	-158.27	1941.08	19.9
268	SLU 79	23	-78	6467	-156.12	1915.8	23.18
268	SLU 80	24	-67	6526	-157.66	1933.36	19.81
268	SLU 81	24	-80	6624	-159.93	1962.5	23.62
268	SLU 82	24	-68	6683	-161.47	1980.06	20.26
268	SLU 83	23	-80	6665	-160.91	1974.7	23.77
268	SLU 84	24	-69	6724	-162.44	1992.26	20.41
268	SLE RA 1	18	-53	4363	-105.38	1291.72	15.84
268	SLE RA 2	18	-41	4428	-107.08	1311.23	12.1
268	SLE RA 3	17	-54	4407	-106.44	1305	16
268	SLE RA 4	18	-46	4447	-107.46	1316.71	13.76
268	SLE RA 5	18	-41	4456	-107.73	1319.36	12.2
268	SLE RA 6	17	-54	4435	-107.09	1313.13	16.1
268	SLE RA 7	18	-47	4474	-108.11	1324.84	13.86
268	SLE RA 8	17	-54	4417	-106.67	1307.99	16.04
268	SLE RA 9	18	-46	4457	-107.7	1319.69	13.8
268	SLE RA 10	19	-45	4800	-116.04	1421.83	13.27
268	SLE RA 11	18	-58	4779	-115.39	1415.6	17.17
268	SLE RA 12	18	-50	4818	-116.42	1427.31	14.93
268	SLE RA 13	18	-45	4827	-116.69	1429.96	13.37
268	SLE RA 14	17	-58	4806	-116.04	1423.73	17.27
268	SLE RA 15	18	-51	4846	-117.07	1435.44	15.03
268	SLE RA 16	17	-58	4789	-115.63	1418.59	17.21
268	SLE RA 17	18	-50	4828	-116.66	1430.29	14.97
268	SLE RA 18	18	-59	4893	-118.17	1449.72	17.51
268	SLE RA 19	18	-51	4933	-119.2	1461.42	15.26
268	SLE RA 20	18	-59	4921	-118.82	1457.85	17.61
268	SLE RA 21	18	-52	4960	-119.85	1469.56	15.37
268	SLE FR 1	18	-53	4363	-105.38	1291.72	15.84
268	SLE FR 2	18	-51	4376	-105.72	1295.62	15.09
268	SLE FR 3	17	-53	4373	-105.64	1294.97	15.88
268	SLE FR 4	18	-52	4535	-109.56	1343.02	15.59
268	SLE FR 5	18	-55	4533	-109.47	1342.37	16.38
268	SLE FR 6	18	-56	4628	-111.77	1370.72	16.67
268	SLE QP 1	18	-53	4363	-105.38	1291.72	15.84
268	SLE QP 2	18	-55	4522	-109.21	1339.12	16.34
268	SLD 1	425	71	5137	-125.12	1540.64	-10.22
268	SLD 2	505	75	5158	-125.65	1545.46	-9.17
268	SLD 3	398	-163	3826	-91.04	1152.22	58.34
268	SLD 4	478	-159	3848	-91.57	1157.04	59.38
268	SLD 5	167	337	6690	-165.58	1987.81	-95.79
268	SLD 6	219	339	6704	-165.93	1990.99	-95.1
268	SLD 7	76	-443	2322	-51.98	693.08	132.73
268	SLD 8	129	-440	2336	-52.33	696.26	133.42
268	SLD 9	-94	330	6708	-166.1	1981.98	-100.74
268	SLD 10	-41	333	6722	-166.45	1985.16	-100.05
268	SLD 11	-184	-449	2339	-52.5	687.24	127.78
268	SLD 12	-131	-447	2353	-52.85	690.42	128.47
268	SLD 13	-443	49	5196	-126.86	1521.19	-26.71
268	SLD 14	-363	52	5217	-127.39	1526.02	-25.66

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
268	SLD 15	-470	-185	3885	-92.78	1132.77	41.85
268	SLD 16	-390	-181	3907	-93.31	1137.6	42.89
268	SLV 1	973	259	6070	-149.27	1842.96	-51.04
268	SLV 2	1161	267	6120	-150.51	1854.29	-48.59
268	SLV 3	904	-325	2785	-63.85	869.47	119.84
268	SLV 4	1092	-316	2835	-65.09	880.81	122.29
268	SLV 5	374	922	9959	-250.55	2964.61	-263.5
268	SLV 6	501	928	9992	-251.38	2972.24	-261.85
268	SLV 7	143	-1022	-991	34.17	-280.34	306.1
268	SLV 8	270	-1016	-957	33.34	-272.71	307.75
268	SLV 9	-234	906	10000	-251.77	2950.95	-275.07
268	SLV 10	-108	912	10034	-252.6	2958.58	-273.42
268	SLV 11	-466	-1038	-949	32.95	-294	294.52
268	SLV 12	-339	-1032	-915	32.12	-286.37	296.18
268	SLV 13	-1056	206	6208	-153.34	1797.43	-89.61
268	SLV 14	-869	214	6259	-154.58	1808.76	-87.16
268	SLV 15	-1126	-378	2924	-67.92	823.94	81.26
268	SLV 16	-938	-369	2974	-69.16	835.28	83.72
268	CRTFP Ux+	0	0	0	0	0	0
268	CRTFP Ux-	0	0	0	0	0	0
268	CRTFP Uy+	0	0	0	0	-0.01	0
268	CRTFP Uy-	0	0	0	0	0.01	0
269	SLU 1	5	-18	1292	0	0	0
269	SLU 2	6	-12	1322	0	0	0
269	SLU 3	5	-18	1313	0	0	0
269	SLU 4	6	-15	1331	0	0	0
269	SLU 5	6	-13	1335	0	0	0
269	SLU 6	5	-19	1325	0	0	0
269	SLU 7	6	-15	1343	0	0	0
269	SLU 8	5	-19	1318	0	0	0
269	SLU 9	6	-15	1336	0	0	0
269	SLU 10	6	-14	1492	0	0	0
269	SLU 11	5	-20	1483	0	0	0
269	SLU 12	6	-17	1500	0	0	0
269	SLU 13	6	-15	1505	0	0	0
269	SLU 14	5	-21	1495	0	0	0
269	SLU 15	6	-17	1513	0	0	0
269	SLU 16	5	-21	1487	0	0	0
269	SLU 17	6	-17	1505	0	0	0
269	SLU 18	6	-21	1535	0	0	0
269	SLU 19	6	-18	1553	0	0	0
269	SLU 20	5	-21	1547	0	0	0
269	SLU 21	6	-18	1565	0	0	0
269	SLU 22	6	-20	1460	0	0	0
269	SLU 23	6	-15	1490	0	0	0
269	SLU 24	6	-21	1481	0	0	0
269	SLU 25	6	-17	1499	0	0	0
269	SLU 26	6	-15	1503	0	0	0
269	SLU 27	6	-21	1493	0	0	0
269	SLU 28	6	-17	1511	0	0	0
269	SLU 29	6	-21	1485	0	0	0
269	SLU 30	6	-17	1503	0	0	0
269	SLU 31	6	-17	1660	0	0	0
269	SLU 32	6	-23	1650	0	0	0
269	SLU 33	6	-19	1668	0	0	0
269	SLU 34	6	-17	1672	0	0	0
269	SLU 35	6	-23	1663	0	0	0
269	SLU 36	6	-19	1681	0	0	0
269	SLU 37	6	-23	1655	0	0	0
269	SLU 38	6	-19	1673	0	0	0
269	SLU 39	6	-23	1702	0	0	0
269	SLU 40	6	-20	1720	0	0	0
269	SLU 41	6	-23	1715	0	0	0
269	SLU 42	6	-20	1733	0	0	0
269	SLU 43	7	-23	1623	0	0	0
269	SLU 44	7	-17	1652	0	0	0
269	SLU 45	7	-23	1643	0	0	0
269	SLU 46	7	-20	1661	0	0	0
269	SLU 47	7	-17	1665	0	0	0
269	SLU 48	7	-23	1656	0	0	0
269	SLU 49	7	-20	1674	0	0	0
269	SLU 50	7	-23	1648	0	0	0
269	SLU 51	7	-20	1666	0	0	0
269	SLU 52	7	-19	1822	0	0	0
269	SLU 53	7	-25	1813	0	0	0
269	SLU 54	7	-22	1831	0	0	0
269	SLU 55	7	-19	1835	0	0	0
269	SLU 56	7	-25	1825	0	0	0
269	SLU 57	7	-22	1843	0	0	0
269	SLU 58	7	-25	1817	0	0	0
269	SLU 59	7	-22	1835	0	0	0
269	SLU 60	7	-26	1865	0	0	0
269	SLU 61	7	-22	1883	0	0	0
269	SLU 62	7	-26	1877	0	0	0
269	SLU 63	7	-22	1895	0	0	0
269	SLU 64	7	-25	1790	0	0	0
269	SLU 65	8	-19	1820	0	0	0
269	SLU 66	7	-25	1811	0	0	0
269	SLU 67	8	-22	1829	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
269	SLU 68	8	-19	1833	0	0	0
269	SLU 69	7	-26	1823	0	0	0
269	SLU 70	8	-22	1841	0	0	0
269	SLU 71	7	-25	1815	0	0	0
269	SLU 72	7	-22	1833	0	0	0
269	SLU 73	8	-21	1990	0	0	0
269	SLU 74	7	-27	1980	0	0	0
269	SLU 75	8	-24	1998	0	0	0
269	SLU 76	8	-21	2002	0	0	0
269	SLU 77	7	-28	1993	0	0	0
269	SLU 78	8	-24	2011	0	0	0
269	SLU 79	7	-27	1985	0	0	0
269	SLU 80	8	-24	2003	0	0	0
269	SLU 81	7	-28	2033	0	0	0
269	SLU 82	8	-24	2051	0	0	0
269	SLU 83	7	-28	2045	0	0	0
269	SLU 84	8	-25	2063	0	0	0
269	SLE RA 1	6	-19	1340	0	0	0
269	SLE RA 2	6	-15	1360	0	0	0
269	SLE RA 3	6	-19	1354	0	0	0
269	SLE RA 4	6	-17	1366	0	0	0
269	SLE RA 5	6	-15	1369	0	0	0
269	SLE RA 6	5	-19	1362	0	0	0
269	SLE RA 7	6	-17	1374	0	0	0
269	SLE RA 8	5	-19	1357	0	0	0
269	SLE RA 9	6	-17	1369	0	0	0
269	SLE RA 10	6	-16	1473	0	0	0
269	SLE RA 11	6	-20	1467	0	0	0
269	SLE RA 12	6	-18	1479	0	0	0
269	SLE RA 13	6	-16	1482	0	0	0
269	SLE RA 14	6	-20	1475	0	0	0
269	SLE RA 15	6	-18	1487	0	0	0
269	SLE RA 16	6	-20	1470	0	0	0
269	SLE RA 17	6	-18	1482	0	0	0
269	SLE RA 18	6	-21	1502	0	0	0
269	SLE RA 19	6	-18	1514	0	0	0
269	SLE RA 20	6	-21	1510	0	0	0
269	SLE RA 21	6	-18	1522	0	0	0
269	SLE FR 1	6	-19	1340	0	0	0
269	SLE FR 2	6	-18	1344	0	0	0
269	SLE FR 3	6	-19	1344	0	0	0
269	SLE FR 4	6	-19	1393	0	0	0
269	SLE FR 5	6	-19	1392	0	0	0
269	SLE FR 6	6	-20	1421	0	0	0
269	SLE QP 1	6	-19	1340	0	0	0
269	SLE QP 2	6	-19	1389	0	0	0
269	SLD 1	132	22	1565	0	0	0
269	SLD 2	157	25	1574	0	0	0
269	SLD 3	124	-49	1165	0	0	0
269	SLD 4	149	-45	1174	0	0	0
269	SLD 5	52	99	2047	0	0	0
269	SLD 6	69	102	2053	0	0	0
269	SLD 7	24	-136	713	0	0	0
269	SLD 8	40	-133	719	0	0	0
269	SLD 9	-29	94	2059	0	0	0
269	SLD 10	-12	97	2065	0	0	0
269	SLD 11	-57	-140	724	0	0	0
269	SLD 12	-41	-138	730	0	0	0
269	SLD 13	-137	6	1604	0	0	0
269	SLD 14	-113	10	1613	0	0	0
269	SLD 15	-146	-64	1203	0	0	0
269	SLD 16	-121	-60	1212	0	0	0
269	SLV 1	303	82	1835	0	0	0
269	SLV 2	362	91	1856	0	0	0
269	SLV 3	281	-94	831	0	0	0
269	SLV 4	340	-85	852	0	0	0
269	SLV 5	117	276	3041	0	0	0
269	SLV 6	157	282	3055	0	0	0
269	SLV 7	44	-310	-305	0	0	0
269	SLV 8	83	-304	-290	0	0	0
269	SLV 9	-72	265	3068	0	0	0
269	SLV 10	-33	271	3082	0	0	0
269	SLV 11	-145	-320	-277	0	0	0
269	SLV 12	-106	-314	-263	0	0	0
269	SLV 13	-328	46	1925	0	0	0
269	SLV 14	-270	55	1946	0	0	0
269	SLV 15	-350	-129	922	0	0	0
269	SLV 16	-292	-121	943	0	0	0
269	CRTFP Uy+	0	0	0	0	0	0
269	CRTFP Uy-	0	0	0	0	0	0
270	SLU 1	5	-18	1198	0	0	0
270	SLU 2	6	-13	1225	0	0	0
270	SLU 3	5	-18	1217	0	0	0
270	SLU 4	5	-15	1233	0	0	0
270	SLU 5	6	-13	1237	0	0	0
270	SLU 6	5	-18	1228	0	0	0
270	SLU 7	5	-15	1245	0	0	0
270	SLU 8	5	-18	1221	0	0	0
270	SLU 9	5	-15	1238	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
270	SLU 10	6	-14	1382	0	0	0
270	SLU 11	5	-20	1373	0	0	0
270	SLU 12	5	-17	1390	0	0	0
270	SLU 13	6	-15	1393	0	0	0
270	SLU 14	5	-20	1385	0	0	0
270	SLU 15	5	-17	1401	0	0	0
270	SLU 16	5	-20	1377	0	0	0
270	SLU 17	5	-17	1394	0	0	0
270	SLU 18	5	-21	1421	0	0	0
270	SLU 19	6	-17	1437	0	0	0
270	SLU 20	5	-21	1432	0	0	0
270	SLU 21	5	-18	1449	0	0	0
270	SLU 22	6	-20	1353	0	0	0
270	SLU 23	6	-15	1381	0	0	0
270	SLU 24	6	-20	1372	0	0	0
270	SLU 25	6	-17	1389	0	0	0
270	SLU 26	6	-15	1392	0	0	0
270	SLU 27	6	-21	1384	0	0	0
270	SLU 28	6	-17	1400	0	0	0
270	SLU 29	6	-20	1376	0	0	0
270	SLU 30	6	-17	1393	0	0	0
270	SLU 31	6	-17	1537	0	0	0
270	SLU 32	6	-22	1528	0	0	0
270	SLU 33	6	-19	1545	0	0	0
270	SLU 34	6	-17	1548	0	0	0
270	SLU 35	6	-22	1540	0	0	0
270	SLU 36	6	-19	1556	0	0	0
270	SLU 37	6	-22	1532	0	0	0
270	SLU 38	6	-19	1549	0	0	0
270	SLU 39	6	-23	1576	0	0	0
270	SLU 40	6	-20	1593	0	0	0
270	SLU 41	6	-23	1588	0	0	0
270	SLU 42	6	-20	1604	0	0	0
270	SLU 43	7	-23	1504	0	0	0
270	SLU 44	7	-17	1532	0	0	0
270	SLU 45	7	-23	1523	0	0	0
270	SLU 46	7	-20	1539	0	0	0
270	SLU 47	7	-17	1543	0	0	0
270	SLU 48	6	-23	1534	0	0	0
270	SLU 49	7	-20	1551	0	0	0
270	SLU 50	6	-23	1527	0	0	0
270	SLU 51	7	-20	1544	0	0	0
270	SLU 52	7	-19	1688	0	0	0
270	SLU 53	7	-25	1679	0	0	0
270	SLU 54	7	-22	1696	0	0	0
270	SLU 55	7	-19	1699	0	0	0
270	SLU 56	7	-25	1691	0	0	0
270	SLU 57	7	-22	1707	0	0	0
270	SLU 58	6	-25	1683	0	0	0
270	SLU 59	7	-22	1700	0	0	0
270	SLU 60	7	-25	1727	0	0	0
270	SLU 61	7	-22	1744	0	0	0
270	SLU 62	7	-25	1739	0	0	0
270	SLU 63	7	-22	1755	0	0	0
270	SLU 64	7	-25	1659	0	0	0
270	SLU 65	8	-19	1687	0	0	0
270	SLU 66	7	-25	1678	0	0	0
270	SLU 67	7	-22	1695	0	0	0
270	SLU 68	7	-20	1698	0	0	0
270	SLU 69	7	-25	1690	0	0	0
270	SLU 70	7	-22	1706	0	0	0
270	SLU 71	7	-25	1682	0	0	0
270	SLU 72	7	-22	1699	0	0	0
270	SLU 73	8	-21	1843	0	0	0
270	SLU 74	7	-27	1834	0	0	0
270	SLU 75	7	-24	1851	0	0	0
270	SLU 76	8	-21	1855	0	0	0
270	SLU 77	7	-27	1846	0	0	0
270	SLU 78	7	-24	1862	0	0	0
270	SLU 79	7	-27	1839	0	0	0
270	SLU 80	7	-24	1855	0	0	0
270	SLU 81	7	-27	1882	0	0	0
270	SLU 82	7	-24	1899	0	0	0
270	SLU 83	7	-28	1894	0	0	0
270	SLU 84	7	-24	1910	0	0	0
270	SLE RA 1	5	-19	1242	0	0	0
270	SLE RA 2	6	-15	1261	0	0	0
270	SLE RA 3	5	-19	1255	0	0	0
270	SLE RA 4	6	-17	1266	0	0	0
270	SLE RA 5	6	-15	1268	0	0	0
270	SLE RA 6	5	-19	1263	0	0	0
270	SLE RA 7	5	-17	1274	0	0	0
270	SLE RA 8	5	-19	1258	0	0	0
270	SLE RA 9	5	-17	1269	0	0	0
270	SLE RA 10	6	-16	1365	0	0	0
270	SLE RA 11	5	-20	1359	0	0	0
270	SLE RA 12	6	-18	1370	0	0	0
270	SLE RA 13	6	-16	1372	0	0	0
270	SLE RA 14	5	-20	1367	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
270	SLE RA 15	5	-18	1378	0	0	0
270	SLE RA 16	5	-20	1362	0	0	0
270	SLE RA 17	5	-18	1373	0	0	0
270	SLE RA 18	5	-20	1391	0	0	0
270	SLE RA 19	6	-18	1402	0	0	0
270	SLE RA 20	5	-20	1399	0	0	0
270	SLE RA 21	6	-18	1410	0	0	0
270	SLE FR 1	5	-19	1242	0	0	0
270	SLE FR 2	5	-18	1246	0	0	0
270	SLE FR 3	5	-19	1245	0	0	0
270	SLE FR 4	5	-18	1290	0	0	0
270	SLE FR 5	5	-19	1290	0	0	0
270	SLE FR 6	5	-19	1316	0	0	0
270	SLE QP 1	5	-19	1242	0	0	0
270	SLE QP 2	5	-19	1287	0	0	0
270	SLD 1	124	20	1441	0	0	0
270	SLD 2	147	25	1451	0	0	0
270	SLD 3	116	-45	1070	0	0	0
270	SLD 4	139	-40	1080	0	0	0
270	SLD 5	49	90	1895	0	0	0
270	SLD 6	65	93	1901	0	0	0
270	SLD 7	22	-126	657	0	0	0
270	SLD 8	37	-123	663	0	0	0
270	SLD 9	-27	85	1910	0	0	0
270	SLD 10	-11	88	1916	0	0	0
270	SLD 11	-54	-131	673	0	0	0
270	SLD 12	-38	-128	679	0	0	0
270	SLD 13	-129	2	1494	0	0	0
270	SLD 14	-105	7	1503	0	0	0
270	SLD 15	-137	-63	1123	0	0	0
270	SLD 16	-113	-58	1132	0	0	0
270	SLV 1	284	77	1680	0	0	0
270	SLV 2	339	89	1702	0	0	0
270	SLV 3	263	-84	749	0	0	0
270	SLV 4	318	-73	771	0	0	0
270	SLV 5	110	253	2812	0	0	0
270	SLV 6	147	260	2827	0	0	0
270	SLV 7	41	-286	-290	0	0	0
270	SLV 8	78	-278	-275	0	0	0
270	SLV 9	-67	240	2849	0	0	0
270	SLV 10	-30	248	2864	0	0	0
270	SLV 11	-136	-298	-253	0	0	0
270	SLV 12	-100	-291	-238	0	0	0
270	SLV 13	-307	35	1802	0	0	0
270	SLV 14	-253	46	1824	0	0	0
270	SLV 15	-328	-127	872	0	0	0
270	SLV 16	-273	-115	894	0	0	0
270	CRTFP Uy+	0	0	0	0	0	0
270	CRTFP Uy-	0	0	0	0	0	0
271	SLU 1	5	-19	1177	0	0	0
271	SLU 2	6	-13	1205	0	0	0
271	SLU 3	5	-19	1196	0	0	0
271	SLU 4	6	-16	1212	0	0	0
271	SLU 5	6	-14	1216	0	0	0
271	SLU 6	5	-19	1207	0	0	0
271	SLU 7	6	-16	1224	0	0	0
271	SLU 8	5	-19	1200	0	0	0
271	SLU 9	5	-16	1216	0	0	0
271	SLU 10	6	-15	1357	0	0	0
271	SLU 11	5	-21	1349	0	0	0
271	SLU 12	6	-18	1365	0	0	0
271	SLU 13	6	-15	1368	0	0	0
271	SLU 14	5	-21	1360	0	0	0
271	SLU 15	6	-18	1376	0	0	0
271	SLU 16	5	-21	1353	0	0	0
271	SLU 17	6	-18	1369	0	0	0
271	SLU 18	5	-21	1395	0	0	0
271	SLU 19	6	-18	1412	0	0	0
271	SLU 20	5	-22	1407	0	0	0
271	SLU 21	6	-18	1423	0	0	0
271	SLU 22	6	-21	1330	0	0	0
271	SLU 23	6	-16	1357	0	0	0
271	SLU 24	6	-21	1349	0	0	0
271	SLU 25	6	-18	1365	0	0	0
271	SLU 26	6	-16	1368	0	0	0
271	SLU 27	6	-21	1360	0	0	0
271	SLU 28	6	-18	1376	0	0	0
271	SLU 29	6	-21	1353	0	0	0
271	SLU 30	6	-18	1369	0	0	0
271	SLU 31	6	-17	1510	0	0	0
271	SLU 32	6	-23	1501	0	0	0
271	SLU 33	6	-20	1517	0	0	0
271	SLU 34	6	-18	1521	0	0	0
271	SLU 35	6	-23	1512	0	0	0
271	SLU 36	6	-20	1529	0	0	0
271	SLU 37	6	-23	1505	0	0	0
271	SLU 38	6	-20	1522	0	0	0
271	SLU 39	6	-24	1548	0	0	0
271	SLU 40	6	-20	1564	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
271	SLU 41	6	-24	1559	0	0	0
271	SLU 42	6	-21	1576	0	0	0
271	SLU 43	7	-23	1478	0	0	0
271	SLU 44	7	-18	1505	0	0	0
271	SLU 45	7	-24	1497	0	0	0
271	SLU 46	7	-21	1513	0	0	0
271	SLU 47	7	-18	1517	0	0	0
271	SLU 48	7	-24	1508	0	0	0
271	SLU 49	7	-21	1525	0	0	0
271	SLU 50	7	-24	1501	0	0	0
271	SLU 51	7	-21	1517	0	0	0
271	SLU 52	7	-20	1658	0	0	0
271	SLU 53	7	-26	1649	0	0	0
271	SLU 54	7	-23	1666	0	0	0
271	SLU 55	7	-20	1669	0	0	0
271	SLU 56	7	-26	1661	0	0	0
271	SLU 57	7	-23	1677	0	0	0
271	SLU 58	7	-26	1654	0	0	0
271	SLU 59	7	-23	1670	0	0	0
271	SLU 60	7	-26	1696	0	0	0
271	SLU 61	7	-23	1712	0	0	0
271	SLU 62	7	-26	1708	0	0	0
271	SLU 63	7	-23	1724	0	0	0
271	SLU 64	7	-26	1631	0	0	0
271	SLU 65	8	-20	1658	0	0	0
271	SLU 66	7	-26	1649	0	0	0
271	SLU 67	8	-23	1666	0	0	0
271	SLU 68	8	-21	1669	0	0	0
271	SLU 69	7	-26	1661	0	0	0
271	SLU 70	7	-23	1677	0	0	0
271	SLU 71	7	-26	1654	0	0	0
271	SLU 72	7	-23	1670	0	0	0
271	SLU 73	8	-22	1811	0	0	0
271	SLU 74	7	-28	1802	0	0	0
271	SLU 75	8	-25	1818	0	0	0
271	SLU 76	8	-23	1822	0	0	0
271	SLU 77	7	-28	1813	0	0	0
271	SLU 78	8	-25	1830	0	0	0
271	SLU 79	7	-28	1806	0	0	0
271	SLU 80	7	-25	1822	0	0	0
271	SLU 81	7	-28	1849	0	0	0
271	SLU 82	8	-25	1865	0	0	0
271	SLU 83	7	-29	1860	0	0	0
271	SLU 84	8	-25	1876	0	0	0
271	SLE RA 1	6	-19	1221	0	0	0
271	SLE RA 2	6	-16	1239	0	0	0
271	SLE RA 3	6	-19	1233	0	0	0
271	SLE RA 4	6	-17	1244	0	0	0
271	SLE RA 5	6	-16	1247	0	0	0
271	SLE RA 6	5	-20	1241	0	0	0
271	SLE RA 7	6	-18	1252	0	0	0
271	SLE RA 8	5	-20	1236	0	0	0
271	SLE RA 9	6	-17	1247	0	0	0
271	SLE RA 10	6	-17	1341	0	0	0
271	SLE RA 11	6	-21	1335	0	0	0
271	SLE RA 12	6	-19	1346	0	0	0
271	SLE RA 13	6	-17	1348	0	0	0
271	SLE RA 14	5	-21	1343	0	0	0
271	SLE RA 15	6	-19	1354	0	0	0
271	SLE RA 16	5	-21	1338	0	0	0
271	SLE RA 17	6	-19	1349	0	0	0
271	SLE RA 18	6	-21	1366	0	0	0
271	SLE RA 19	6	-19	1377	0	0	0
271	SLE RA 20	6	-21	1374	0	0	0
271	SLE RA 21	6	-19	1385	0	0	0
271	SLE FR 1	6	-19	1221	0	0	0
271	SLE FR 2	6	-19	1225	0	0	0
271	SLE FR 3	6	-19	1224	0	0	0
271	SLE FR 4	6	-19	1268	0	0	0
271	SLE FR 5	6	-20	1268	0	0	0
271	SLE FR 6	6	-20	1294	0	0	0
271	SLE QP 1	6	-19	1221	0	0	0
271	SLE QP 2	6	-20	1265	0	0	0
271	SLD 1	123	19	1407	0	0	0
271	SLD 2	146	25	1417	0	0	0
271	SLD 3	115	-44	1042	0	0	0
271	SLD 4	138	-38	1052	0	0	0
271	SLD 5	49	86	1859	0	0	0
271	SLD 6	64	90	1866	0	0	0
271	SLD 7	22	-124	642	0	0	0
271	SLD 8	37	-120	649	0	0	0
271	SLD 9	-26	80	1880	0	0	0
271	SLD 10	-11	84	1887	0	0	0
271	SLD 11	-53	-130	663	0	0	0
271	SLD 12	-38	-126	670	0	0	0
271	SLD 13	-127	-2	1477	0	0	0
271	SLD 14	-104	4	1487	0	0	0
271	SLD 15	-135	-65	1112	0	0	0
271	SLD 16	-112	-59	1122	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
271	SLV 1	282	77	1628	0	0	0
271	SLV 2	336	91	1653	0	0	0
271	SLV 3	261	-81	713	0	0	0
271	SLV 4	315	-66	738	0	0	0
271	SLV 5	110	245	2757	0	0	0
271	SLV 6	147	254	2773	0	0	0
271	SLV 7	40	-279	-293	0	0	0
271	SLV 8	77	-270	-277	0	0	0
271	SLV 9	-66	230	2806	0	0	0
271	SLV 10	-29	239	2822	0	0	0
271	SLV 11	-136	-294	-244	0	0	0
271	SLV 12	-99	-284	-228	0	0	0
271	SLV 13	-304	27	1792	0	0	0
271	SLV 14	-250	41	1816	0	0	0
271	SLV 15	-325	-130	877	0	0	0
271	SLV 16	-271	-116	901	0	0	0
271	CRTFP Uy+	0	0	0	0	0	0
271	CRTFP Uy-	0	0	0	0	0	0
272	SLU 1	6	-19	1168	0	0	0
272	SLU 2	6	-14	1195	0	0	0
272	SLU 3	6	-20	1186	0	0	0
272	SLU 4	6	-17	1202	0	0	0
272	SLU 5	6	-14	1206	0	0	0
272	SLU 6	5	-20	1198	0	0	0
272	SLU 7	6	-17	1214	0	0	0
272	SLU 8	5	-20	1191	0	0	0
272	SLU 9	6	-17	1207	0	0	0
272	SLU 10	6	-16	1345	0	0	0
272	SLU 11	6	-22	1337	0	0	0
272	SLU 12	6	-18	1353	0	0	0
272	SLU 13	6	-16	1357	0	0	0
272	SLU 14	6	-22	1348	0	0	0
272	SLU 15	6	-19	1364	0	0	0
272	SLU 16	5	-22	1341	0	0	0
272	SLU 17	6	-19	1357	0	0	0
272	SLU 18	6	-22	1383	0	0	0
272	SLU 19	6	-19	1399	0	0	0
272	SLU 20	6	-22	1394	0	0	0
272	SLU 21	6	-19	1410	0	0	0
272	SLU 22	6	-21	1320	0	0	0
272	SLU 23	7	-16	1346	0	0	0
272	SLU 24	6	-22	1338	0	0	0
272	SLU 25	6	-19	1354	0	0	0
272	SLU 26	6	-17	1358	0	0	0
272	SLU 27	6	-22	1349	0	0	0
272	SLU 28	6	-19	1365	0	0	0
272	SLU 29	6	-22	1342	0	0	0
272	SLU 30	6	-19	1358	0	0	0
272	SLU 31	7	-18	1497	0	0	0
272	SLU 32	6	-24	1488	0	0	0
272	SLU 33	6	-21	1504	0	0	0
272	SLU 34	7	-18	1508	0	0	0
272	SLU 35	6	-24	1500	0	0	0
272	SLU 36	6	-21	1516	0	0	0
272	SLU 37	6	-24	1493	0	0	0
272	SLU 38	6	-21	1509	0	0	0
272	SLU 39	6	-24	1534	0	0	0
272	SLU 40	6	-21	1551	0	0	0
272	SLU 41	6	-24	1546	0	0	0
272	SLU 42	6	-21	1562	0	0	0
272	SLU 43	7	-24	1466	0	0	0
272	SLU 44	7	-19	1493	0	0	0
272	SLU 45	7	-25	1485	0	0	0
272	SLU 46	7	-22	1501	0	0	0
272	SLU 47	7	-19	1505	0	0	0
272	SLU 48	7	-25	1496	0	0	0
272	SLU 49	7	-22	1512	0	0	0
272	SLU 50	7	-25	1489	0	0	0
272	SLU 51	7	-22	1505	0	0	0
272	SLU 52	8	-21	1644	0	0	0
272	SLU 53	7	-27	1635	0	0	0
272	SLU 54	7	-23	1651	0	0	0
272	SLU 55	7	-21	1655	0	0	0
272	SLU 56	7	-27	1647	0	0	0
272	SLU 57	7	-24	1663	0	0	0
272	SLU 58	7	-27	1639	0	0	0
272	SLU 59	7	-24	1656	0	0	0
272	SLU 60	7	-27	1681	0	0	0
272	SLU 61	7	-24	1697	0	0	0
272	SLU 62	7	-27	1693	0	0	0
272	SLU 63	7	-24	1709	0	0	0
272	SLU 64	8	-27	1618	0	0	0
272	SLU 65	8	-21	1645	0	0	0
272	SLU 66	8	-27	1636	0	0	0
272	SLU 67	8	-24	1652	0	0	0
272	SLU 68	8	-22	1656	0	0	0
272	SLU 69	8	-27	1648	0	0	0
272	SLU 70	8	-24	1664	0	0	0
272	SLU 71	7	-27	1641	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
272	SLU 72	8	-24	1657	0	0	0
272	SLU 73	8	-23	1795	0	0	0
272	SLU 74	8	-29	1787	0	0	0
272	SLU 75	8	-26	1803	0	0	0
272	SLU 76	8	-24	1807	0	0	0
272	SLU 77	8	-29	1798	0	0	0
272	SLU 78	8	-26	1814	0	0	0
272	SLU 79	8	-29	1791	0	0	0
272	SLU 80	8	-26	1807	0	0	0
272	SLU 81	8	-29	1833	0	0	0
272	SLU 82	8	-26	1849	0	0	0
272	SLU 83	8	-29	1844	0	0	0
272	SLU 84	8	-26	1860	0	0	0
272	SLE RA 1	6	-20	1211	0	0	0
272	SLE RA 2	6	-16	1229	0	0	0
272	SLE RA 3	6	-20	1224	0	0	0
272	SLE RA 4	6	-18	1234	0	0	0
272	SLE RA 5	6	-17	1237	0	0	0
272	SLE RA 6	6	-20	1231	0	0	0
272	SLE RA 7	6	-18	1242	0	0	0
272	SLE RA 8	6	-20	1226	0	0	0
272	SLE RA 9	6	-18	1237	0	0	0
272	SLE RA 10	6	-18	1329	0	0	0
272	SLE RA 11	6	-21	1324	0	0	0
272	SLE RA 12	6	-19	1335	0	0	0
272	SLE RA 13	6	-18	1337	0	0	0
272	SLE RA 14	6	-22	1331	0	0	0
272	SLE RA 15	6	-20	1342	0	0	0
272	SLE RA 16	6	-21	1327	0	0	0
272	SLE RA 17	6	-19	1337	0	0	0
272	SLE RA 18	6	-22	1355	0	0	0
272	SLE RA 19	6	-20	1365	0	0	0
272	SLE RA 20	6	-22	1362	0	0	0
272	SLE RA 21	6	-20	1373	0	0	0
272	SLE FR 1	6	-20	1211	0	0	0
272	SLE FR 2	6	-19	1215	0	0	0
272	SLE FR 3	6	-20	1214	0	0	0
272	SLE FR 4	6	-20	1258	0	0	0
272	SLE FR 5	6	-21	1257	0	0	0
272	SLE FR 6	6	-21	1283	0	0	0
272	SLE QP 1	6	-20	1211	0	0	0
272	SLE QP 2	6	-20	1254	0	0	0
272	SLD 1	123	19	1385	0	0	0
272	SLD 2	146	26	1396	0	0	0
272	SLD 3	115	-43	1023	0	0	0
272	SLD 4	137	-36	1034	0	0	0
272	SLD 5	49	83	1841	0	0	0
272	SLD 6	64	88	1848	0	0	0
272	SLD 7	22	-122	634	0	0	0
272	SLD 8	37	-117	641	0	0	0
272	SLD 9	-25	76	1867	0	0	0
272	SLD 10	-10	81	1875	0	0	0
272	SLD 11	-53	-129	660	0	0	0
272	SLD 12	-38	-124	668	0	0	0
272	SLD 13	-126	-5	1474	0	0	0
272	SLD 14	-103	2	1486	0	0	0
272	SLD 15	-134	-67	1112	0	0	0
272	SLD 16	-111	-60	1123	0	0	0
272	SLV 1	280	76	1590	0	0	0
272	SLV 2	334	93	1617	0	0	0
272	SLV 3	259	-77	683	0	0	0
272	SLV 4	313	-61	709	0	0	0
272	SLV 5	110	238	2727	0	0	0
272	SLV 6	146	249	2745	0	0	0
272	SLV 7	40	-273	-299	0	0	0
272	SLV 8	76	-262	-281	0	0	0
272	SLV 9	-64	221	2790	0	0	0
272	SLV 10	-28	232	2807	0	0	0
272	SLV 11	-135	-290	-236	0	0	0
272	SLV 12	-99	-279	-219	0	0	0
272	SLV 13	-302	20	1799	0	0	0
272	SLV 14	-248	36	1826	0	0	0
272	SLV 15	-323	-134	892	0	0	0
272	SLV 16	-269	-117	918	0	0	0
272	CRTFP Uy+	0	0	0	0	0	0
272	CRTFP Uy-	0	0	0	0	0	0
273	SLU 1	6	-20	1165	0	0	0
273	SLU 2	6	-15	1192	0	0	0
273	SLU 3	6	-20	1184	0	0	0
273	SLU 4	6	-17	1200	0	0	0
273	SLU 5	6	-15	1203	0	0	0
273	SLU 6	6	-20	1195	0	0	0
273	SLU 7	6	-17	1211	0	0	0
273	SLU 8	6	-20	1188	0	0	0
273	SLU 9	6	-17	1204	0	0	0
273	SLU 10	6	-17	1341	0	0	0
273	SLU 11	6	-22	1333	0	0	0
273	SLU 12	6	-19	1349	0	0	0
273	SLU 13	6	-17	1353	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
273	SLU 14	6	-22	1344	0	0	0
273	SLU 15	6	-19	1360	0	0	0
273	SLU 16	6	-22	1337	0	0	0
273	SLU 17	6	-19	1353	0	0	0
273	SLU 18	6	-23	1379	0	0	0
273	SLU 19	6	-20	1395	0	0	0
273	SLU 20	6	-23	1390	0	0	0
273	SLU 21	6	-20	1406	0	0	0
273	SLU 22	6	-22	1317	0	0	0
273	SLU 23	7	-17	1343	0	0	0
273	SLU 24	6	-22	1335	0	0	0
273	SLU 25	7	-19	1351	0	0	0
273	SLU 26	7	-17	1355	0	0	0
273	SLU 27	6	-23	1346	0	0	0
273	SLU 28	7	-20	1362	0	0	0
273	SLU 29	6	-22	1339	0	0	0
273	SLU 30	6	-19	1355	0	0	0
273	SLU 31	7	-19	1493	0	0	0
273	SLU 32	6	-24	1485	0	0	0
273	SLU 33	7	-21	1501	0	0	0
273	SLU 34	7	-19	1504	0	0	0
273	SLU 35	6	-25	1496	0	0	0
273	SLU 36	7	-22	1512	0	0	0
273	SLU 37	6	-24	1489	0	0	0
273	SLU 38	7	-21	1505	0	0	0
273	SLU 39	6	-25	1530	0	0	0
273	SLU 40	7	-22	1546	0	0	0
273	SLU 41	6	-25	1542	0	0	0
273	SLU 42	7	-22	1558	0	0	0
273	SLU 43	7	-25	1463	0	0	0
273	SLU 44	8	-20	1489	0	0	0
273	SLU 45	7	-25	1481	0	0	0
273	SLU 46	8	-22	1497	0	0	0
273	SLU 47	8	-20	1501	0	0	0
273	SLU 48	7	-26	1492	0	0	0
273	SLU 49	7	-22	1508	0	0	0
273	SLU 50	7	-25	1485	0	0	0
273	SLU 51	7	-22	1501	0	0	0
273	SLU 52	8	-22	1639	0	0	0
273	SLU 53	7	-27	1631	0	0	0
273	SLU 54	8	-24	1647	0	0	0
273	SLU 55	8	-22	1650	0	0	0
273	SLU 56	7	-27	1642	0	0	0
273	SLU 57	8	-24	1658	0	0	0
273	SLU 58	7	-27	1635	0	0	0
273	SLU 59	7	-24	1651	0	0	0
273	SLU 60	7	-28	1676	0	0	0
273	SLU 61	8	-25	1692	0	0	0
273	SLU 62	7	-28	1688	0	0	0
273	SLU 63	8	-25	1704	0	0	0
273	SLU 64	8	-27	1614	0	0	0
273	SLU 65	8	-22	1641	0	0	0
273	SLU 66	8	-28	1633	0	0	0
273	SLU 67	8	-25	1649	0	0	0
273	SLU 68	8	-22	1652	0	0	0
273	SLU 69	8	-28	1644	0	0	0
273	SLU 70	8	-25	1660	0	0	0
273	SLU 71	8	-28	1637	0	0	0
273	SLU 72	8	-25	1653	0	0	0
273	SLU 73	8	-24	1791	0	0	0
273	SLU 74	8	-29	1782	0	0	0
273	SLU 75	8	-26	1798	0	0	0
273	SLU 76	8	-24	1802	0	0	0
273	SLU 77	8	-30	1793	0	0	0
273	SLU 78	8	-27	1810	0	0	0
273	SLU 79	8	-30	1786	0	0	0
273	SLU 80	8	-27	1802	0	0	0
273	SLU 81	8	-30	1828	0	0	0
273	SLU 82	8	-27	1844	0	0	0
273	SLU 83	8	-30	1839	0	0	0
273	SLU 84	8	-27	1855	0	0	0
273	SLE RA 1	6	-20	1209	0	0	0
273	SLE RA 2	6	-17	1226	0	0	0
273	SLE RA 3	6	-21	1221	0	0	0
273	SLE RA 4	6	-19	1231	0	0	0
273	SLE RA 5	6	-17	1234	0	0	0
273	SLE RA 6	6	-21	1228	0	0	0
273	SLE RA 7	6	-19	1239	0	0	0
273	SLE RA 8	6	-21	1224	0	0	0
273	SLE RA 9	6	-19	1234	0	0	0
273	SLE RA 10	6	-18	1326	0	0	0
273	SLE RA 11	6	-22	1320	0	0	0
273	SLE RA 12	6	-20	1331	0	0	0
273	SLE RA 13	6	-18	1333	0	0	0
273	SLE RA 14	6	-22	1328	0	0	0
273	SLE RA 15	6	-20	1339	0	0	0
273	SLE RA 16	6	-22	1323	0	0	0
273	SLE RA 17	6	-20	1334	0	0	0
273	SLE RA 18	6	-22	1351	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
273	SLE RA 19	6	-20	1362	0	0	0
273	SLE RA 20	6	-22	1358	0	0	0
273	SLE RA 21	6	-20	1369	0	0	0
273	SLE FR 1	6	-20	1209	0	0	0
273	SLE FR 2	6	-20	1212	0	0	0
273	SLE FR 3	6	-20	1212	0	0	0
273	SLE FR 4	6	-20	1255	0	0	0
273	SLE FR 5	6	-21	1254	0	0	0
273	SLE FR 6	6	-21	1280	0	0	0
273	SLE QP 1	6	-20	1209	0	0	0
273	SLE QP 2	6	-21	1251	0	0	0
273	SLD 1	122	18	1371	0	0	0
273	SLD 2	145	26	1383	0	0	0
273	SLD 3	114	-42	1009	0	0	0
273	SLD 4	136	-34	1021	0	0	0
273	SLD 5	49	80	1833	0	0	0
273	SLD 6	64	86	1841	0	0	0
273	SLD 7	22	-120	628	0	0	0
273	SLD 8	36	-114	636	0	0	0
273	SLD 9	-25	72	1866	0	0	0
273	SLD 10	-10	78	1874	0	0	0
273	SLD 11	-52	-127	661	0	0	0
273	SLD 12	-37	-122	669	0	0	0
273	SLD 13	-124	-8	1481	0	0	0
273	SLD 14	-102	0	1493	0	0	0
273	SLD 15	-133	-68	1120	0	0	0
273	SLD 16	-110	-60	1132	0	0	0
273	SLV 1	278	75	1561	0	0	0
273	SLV 2	331	94	1589	0	0	0
273	SLV 3	257	-74	655	0	0	0
273	SLV 4	310	-55	683	0	0	0
273	SLV 5	110	231	2713	0	0	0
273	SLV 6	146	244	2732	0	0	0
273	SLV 7	39	-267	-307	0	0	0
273	SLV 8	75	-254	-288	0	0	0
273	SLV 9	-63	212	2791	0	0	0
273	SLV 10	-27	225	2810	0	0	0
273	SLV 11	-134	-286	-230	0	0	0
273	SLV 12	-98	-273	-211	0	0	0
273	SLV 13	-298	13	1819	0	0	0
273	SLV 14	-245	32	1848	0	0	0
273	SLV 15	-319	-136	913	0	0	0
273	SLV 16	-266	-117	941	0	0	0
273	CRTFP Uy+	0	0	0	0	0	0
273	CRTFP Uy-	0	0	0	0	0	0
274	SLU 1	6	-20	1159	0	0	0
274	SLU 2	6	-15	1185	0	0	0
274	SLU 3	6	-20	1177	0	0	0
274	SLU 4	6	-17	1193	0	0	0
274	SLU 5	6	-15	1196	0	0	0
274	SLU 6	6	-20	1188	0	0	0
274	SLU 7	6	-18	1204	0	0	0
274	SLU 8	6	-20	1181	0	0	0
274	SLU 9	6	-17	1197	0	0	0
274	SLU 10	7	-17	1333	0	0	0
274	SLU 11	6	-22	1325	0	0	0
274	SLU 12	6	-19	1341	0	0	0
274	SLU 13	6	-17	1345	0	0	0
274	SLU 14	6	-22	1336	0	0	0
274	SLU 15	6	-19	1352	0	0	0
274	SLU 16	6	-22	1329	0	0	0
274	SLU 17	6	-19	1345	0	0	0
274	SLU 18	6	-23	1370	0	0	0
274	SLU 19	6	-20	1386	0	0	0
274	SLU 20	6	-23	1382	0	0	0
274	SLU 21	6	-20	1397	0	0	0
274	SLU 22	7	-22	1310	0	0	0
274	SLU 23	7	-17	1336	0	0	0
274	SLU 24	7	-23	1328	0	0	0
274	SLU 25	7	-20	1344	0	0	0
274	SLU 26	7	-17	1348	0	0	0
274	SLU 27	7	-23	1340	0	0	0
274	SLU 28	7	-20	1355	0	0	0
274	SLU 29	7	-23	1332	0	0	0
274	SLU 30	7	-20	1348	0	0	0
274	SLU 31	7	-19	1485	0	0	0
274	SLU 32	7	-24	1476	0	0	0
274	SLU 33	7	-21	1492	0	0	0
274	SLU 34	7	-19	1496	0	0	0
274	SLU 35	7	-25	1488	0	0	0
274	SLU 36	7	-22	1504	0	0	0
274	SLU 37	7	-25	1481	0	0	0
274	SLU 38	7	-22	1497	0	0	0
274	SLU 39	7	-25	1522	0	0	0
274	SLU 40	7	-22	1538	0	0	0
274	SLU 41	7	-25	1533	0	0	0
274	SLU 42	7	-22	1549	0	0	0
274	SLU 43	8	-25	1454	0	0	0
274	SLU 44	8	-20	1481	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
274	SLU 45	8	-25	1473	0	0	0
274	SLU 46	8	-23	1489	0	0	0
274	SLU 47	8	-20	1492	0	0	0
274	SLU 48	8	-26	1484	0	0	0
274	SLU 49	8	-23	1500	0	0	0
274	SLU 50	7	-26	1477	0	0	0
274	SLU 51	8	-23	1493	0	0	0
274	SLU 52	8	-22	1629	0	0	0
274	SLU 53	8	-27	1621	0	0	0
274	SLU 54	8	-24	1637	0	0	0
274	SLU 55	8	-22	1640	0	0	0
274	SLU 56	8	-28	1632	0	0	0
274	SLU 57	8	-25	1648	0	0	0
274	SLU 58	8	-27	1625	0	0	0
274	SLU 59	8	-25	1641	0	0	0
274	SLU 60	8	-28	1666	0	0	0
274	SLU 61	8	-25	1682	0	0	0
274	SLU 62	8	-28	1677	0	0	0
274	SLU 63	8	-25	1693	0	0	0
274	SLU 64	8	-27	1606	0	0	0
274	SLU 65	9	-22	1632	0	0	0
274	SLU 66	8	-28	1624	0	0	0
274	SLU 67	8	-25	1640	0	0	0
274	SLU 68	9	-23	1643	0	0	0
274	SLU 69	8	-28	1635	0	0	0
274	SLU 70	8	-25	1651	0	0	0
274	SLU 71	8	-28	1628	0	0	0
274	SLU 72	8	-25	1644	0	0	0
274	SLU 73	9	-24	1780	0	0	0
274	SLU 74	8	-30	1772	0	0	0
274	SLU 75	9	-27	1788	0	0	0
274	SLU 76	9	-25	1792	0	0	0
274	SLU 77	8	-30	1783	0	0	0
274	SLU 78	9	-27	1799	0	0	0
274	SLU 79	8	-30	1776	0	0	0
274	SLU 80	8	-27	1792	0	0	0
274	SLU 81	8	-30	1817	0	0	0
274	SLU 82	9	-27	1833	0	0	0
274	SLU 83	8	-30	1829	0	0	0
274	SLU 84	9	-27	1844	0	0	0
274	SLE RA 1	6	-21	1202	0	0	0
274	SLE RA 2	6	-17	1220	0	0	0
274	SLE RA 3	6	-21	1214	0	0	0
274	SLE RA 4	6	-19	1225	0	0	0
274	SLE RA 5	6	-17	1227	0	0	0
274	SLE RA 6	6	-21	1222	0	0	0
274	SLE RA 7	6	-19	1232	0	0	0
274	SLE RA 8	6	-21	1217	0	0	0
274	SLE RA 9	6	-19	1227	0	0	0
274	SLE RA 10	7	-19	1318	0	0	0
274	SLE RA 11	6	-22	1313	0	0	0
274	SLE RA 12	6	-20	1323	0	0	0
274	SLE RA 13	7	-19	1326	0	0	0
274	SLE RA 14	6	-22	1320	0	0	0
274	SLE RA 15	6	-20	1331	0	0	0
274	SLE RA 16	6	-22	1316	0	0	0
274	SLE RA 17	6	-20	1326	0	0	0
274	SLE RA 18	6	-22	1343	0	0	0
274	SLE RA 19	6	-20	1354	0	0	0
274	SLE RA 20	6	-23	1350	0	0	0
274	SLE RA 21	6	-21	1361	0	0	0
274	SLE FR 1	6	-21	1202	0	0	0
274	SLE FR 2	6	-20	1205	0	0	0
274	SLE FR 3	6	-21	1205	0	0	0
274	SLE FR 4	6	-20	1248	0	0	0
274	SLE FR 5	6	-21	1247	0	0	0
274	SLE FR 6	6	-21	1272	0	0	0
274	SLE QP 1	6	-21	1202	0	0	0
274	SLE QP 2	6	-21	1244	0	0	0
274	SLD 1	120	17	1352	0	0	0
274	SLD 2	142	26	1365	0	0	0
274	SLD 3	111	-40	992	0	0	0
274	SLD 4	134	-31	1005	0	0	0
274	SLD 5	49	76	1820	0	0	0
274	SLD 6	64	82	1829	0	0	0
274	SLD 7	21	-116	620	0	0	0
274	SLD 8	36	-110	629	0	0	0
274	SLD 9	-23	68	1859	0	0	0
274	SLD 10	-9	74	1868	0	0	0
274	SLD 11	-51	-125	660	0	0	0
274	SLD 12	-36	-119	668	0	0	0
274	SLD 13	-121	-11	1483	0	0	0
274	SLD 14	-99	-2	1496	0	0	0
274	SLD 15	-129	-69	1123	0	0	0
274	SLD 16	-107	-59	1136	0	0	0
274	SLV 1	272	73	1527	0	0	0
274	SLV 2	325	94	1557	0	0	0
274	SLV 3	251	-71	625	0	0	0
274	SLV 4	303	-50	655	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
274	SLV 5	109	222	2692	0	0	0
274	SLV 6	144	236	2712	0	0	0
274	SLV 7	38	-259	-316	0	0	0
274	SLV 8	73	-244	-295	0	0	0
274	SLV 9	-60	202	2784	0	0	0
274	SLV 10	-25	216	2804	0	0	0
274	SLV 11	-131	-278	-224	0	0	0
274	SLV 12	-96	-264	-203	0	0	0
274	SLV 13	-291	7	1834	0	0	0
274	SLV 14	-239	29	1864	0	0	0
274	SLV 15	-312	-137	931	0	0	0
274	SLV 16	-260	-115	962	0	0	0
274	CRTFP Uy+	0	0	0	0	0	0
274	CRTFP Uy-	0	0	0	0	0	0
275	SLU 1	6	-19	1096	0	0	0
275	SLU 2	6	-14	1121	0	0	0
275	SLU 3	6	-19	1113	0	0	0
275	SLU 4	6	-16	1128	0	0	0
275	SLU 5	6	-14	1132	0	0	0
275	SLU 6	6	-19	1124	0	0	0
275	SLU 7	6	-17	1139	0	0	0
275	SLU 8	6	-19	1117	0	0	0
275	SLU 9	6	-17	1132	0	0	0
275	SLU 10	7	-16	1261	0	0	0
275	SLU 11	6	-21	1253	0	0	0
275	SLU 12	6	-18	1268	0	0	0
275	SLU 13	6	-16	1271	0	0	0
275	SLU 14	6	-21	1264	0	0	0
275	SLU 15	6	-18	1279	0	0	0
275	SLU 16	6	-21	1257	0	0	0
275	SLU 17	6	-18	1272	0	0	0
275	SLU 18	6	-21	1296	0	0	0
275	SLU 19	6	-19	1311	0	0	0
275	SLU 20	6	-21	1306	0	0	0
275	SLU 21	6	-19	1321	0	0	0
275	SLU 22	7	-21	1240	0	0	0
275	SLU 23	7	-16	1265	0	0	0
275	SLU 24	7	-21	1257	0	0	0
275	SLU 25	7	-18	1272	0	0	0
275	SLU 26	7	-17	1275	0	0	0
275	SLU 27	7	-21	1268	0	0	0
275	SLU 28	7	-19	1283	0	0	0
275	SLU 29	7	-21	1261	0	0	0
275	SLU 30	7	-19	1276	0	0	0
275	SLU 31	7	-18	1405	0	0	0
275	SLU 32	7	-23	1397	0	0	0
275	SLU 33	7	-20	1412	0	0	0
275	SLU 34	7	-18	1415	0	0	0
275	SLU 35	7	-23	1408	0	0	0
275	SLU 36	7	-20	1423	0	0	0
275	SLU 37	7	-23	1401	0	0	0
275	SLU 38	7	-20	1416	0	0	0
275	SLU 39	7	-23	1439	0	0	0
275	SLU 40	7	-21	1454	0	0	0
275	SLU 41	7	-24	1450	0	0	0
275	SLU 42	7	-21	1465	0	0	0
275	SLU 43	8	-24	1375	0	0	0
275	SLU 44	8	-19	1400	0	0	0
275	SLU 45	8	-24	1393	0	0	0
275	SLU 46	8	-21	1408	0	0	0
275	SLU 47	8	-19	1411	0	0	0
275	SLU 48	8	-24	1403	0	0	0
275	SLU 49	8	-22	1418	0	0	0
275	SLU 50	7	-24	1397	0	0	0
275	SLU 51	8	-21	1412	0	0	0
275	SLU 52	8	-21	1540	0	0	0
275	SLU 53	8	-26	1533	0	0	0
275	SLU 54	8	-23	1548	0	0	0
275	SLU 55	8	-21	1551	0	0	0
275	SLU 56	8	-26	1543	0	0	0
275	SLU 57	8	-23	1558	0	0	0
275	SLU 58	8	-26	1537	0	0	0
275	SLU 59	8	-23	1552	0	0	0
275	SLU 60	8	-26	1575	0	0	0
275	SLU 61	8	-23	1590	0	0	0
275	SLU 62	8	-26	1586	0	0	0
275	SLU 63	8	-24	1601	0	0	0
275	SLU 64	8	-26	1519	0	0	0
275	SLU 65	9	-21	1544	0	0	0
275	SLU 66	8	-26	1537	0	0	0
275	SLU 67	8	-23	1552	0	0	0
275	SLU 68	9	-21	1555	0	0	0
275	SLU 69	8	-26	1547	0	0	0
275	SLU 70	8	-24	1562	0	0	0
275	SLU 71	8	-26	1540	0	0	0
275	SLU 72	8	-23	1555	0	0	0
275	SLU 73	9	-23	1684	0	0	0
275	SLU 74	8	-28	1676	0	0	0
275	SLU 75	9	-25	1691	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
275	SLU 76	9	-23	1695	0	0	0
275	SLU 77	8	-28	1687	0	0	0
275	SLU 78	9	-25	1702	0	0	0
275	SLU 79	8	-28	1680	0	0	0
275	SLU 80	8	-25	1695	0	0	0
275	SLU 81	8	-28	1719	0	0	0
275	SLU 82	9	-26	1734	0	0	0
275	SLU 83	8	-28	1730	0	0	0
275	SLU 84	9	-26	1745	0	0	0
275	SLE RA 1	6	-19	1137	0	0	0
275	SLE RA 2	6	-16	1154	0	0	0
275	SLE RA 3	6	-20	1149	0	0	0
275	SLE RA 4	6	-18	1159	0	0	0
275	SLE RA 5	6	-17	1161	0	0	0
275	SLE RA 6	6	-20	1156	0	0	0
275	SLE RA 7	6	-18	1166	0	0	0
275	SLE RA 8	6	-20	1151	0	0	0
275	SLE RA 9	6	-18	1161	0	0	0
275	SLE RA 10	7	-18	1247	0	0	0
275	SLE RA 11	6	-21	1242	0	0	0
275	SLE RA 12	6	-19	1252	0	0	0
275	SLE RA 13	7	-18	1254	0	0	0
275	SLE RA 14	6	-21	1249	0	0	0
275	SLE RA 15	6	-19	1259	0	0	0
275	SLE RA 16	6	-21	1244	0	0	0
275	SLE RA 17	6	-19	1254	0	0	0
275	SLE RA 18	6	-21	1270	0	0	0
275	SLE RA 19	6	-19	1280	0	0	0
275	SLE RA 20	6	-21	1277	0	0	0
275	SLE RA 21	6	-19	1287	0	0	0
275	SLE FR 1	6	-19	1137	0	0	0
275	SLE FR 2	6	-19	1140	0	0	0
275	SLE FR 3	6	-19	1140	0	0	0
275	SLE FR 4	6	-19	1180	0	0	0
275	SLE FR 5	6	-20	1180	0	0	0
275	SLE FR 6	6	-20	1204	0	0	0
275	SLE QP 1	6	-19	1137	0	0	0
275	SLE QP 2	6	-20	1177	0	0	0
275	SLD 1	111	16	1269	0	0	0
275	SLD 2	132	25	1282	0	0	0
275	SLD 3	103	-37	928	0	0	0
275	SLD 4	124	-28	941	0	0	0
275	SLD 5	46	69	1720	0	0	0
275	SLD 6	60	75	1728	0	0	0
275	SLD 7	20	-107	582	0	0	0
275	SLD 8	33	-101	591	0	0	0
275	SLD 9	-21	61	1763	0	0	0
275	SLD 10	-7	67	1771	0	0	0
275	SLD 11	-47	-115	626	0	0	0
275	SLD 12	-34	-109	634	0	0	0
275	SLD 13	-111	-12	1413	0	0	0
275	SLD 14	-91	-3	1426	0	0	0
275	SLD 15	-119	-65	1072	0	0	0
275	SLD 16	-99	-55	1085	0	0	0
275	SLV 1	252	67	1421	0	0	0
275	SLV 2	301	89	1452	0	0	0
275	SLV 3	232	-64	566	0	0	0
275	SLV 4	280	-43	596	0	0	0
275	SLV 5	102	202	2542	0	0	0
275	SLV 6	134	217	2562	0	0	0
275	SLV 7	34	-237	-309	0	0	0
275	SLV 8	67	-222	-289	0	0	0
275	SLV 9	-54	183	2643	0	0	0
275	SLV 10	-22	197	2663	0	0	0
275	SLV 11	-122	-256	-208	0	0	0
275	SLV 12	-89	-242	-188	0	0	0
275	SLV 13	-268	3	1757	0	0	0
275	SLV 14	-220	25	1788	0	0	0
275	SLV 15	-288	-129	902	0	0	0
275	SLV 16	-240	-107	933	0	0	0
275	CRTFP Uy+	0	0	0	0	0	0
275	CRTFP Uy-	0	0	0	0	0	0
276	SLU 1	6	-17	984	0	0	0
276	SLU 2	6	-13	1007	0	0	0
276	SLU 3	6	-17	1000	0	0	0
276	SLU 4	6	-15	1013	0	0	0
276	SLU 5	6	-13	1016	0	0	0
276	SLU 6	6	-17	1010	0	0	0
276	SLU 7	6	-15	1023	0	0	0
276	SLU 8	6	-17	1004	0	0	0
276	SLU 9	6	-15	1017	0	0	0
276	SLU 10	6	-14	1132	0	0	0
276	SLU 11	6	-18	1125	0	0	0
276	SLU 12	6	-16	1139	0	0	0
276	SLU 13	6	-14	1142	0	0	0
276	SLU 14	6	-19	1135	0	0	0
276	SLU 15	6	-16	1149	0	0	0
276	SLU 16	6	-19	1129	0	0	0
276	SLU 17	6	-16	1143	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
276	SLU 18	6	-19	1164	0	0	0
276	SLU 19	6	-16	1177	0	0	0
276	SLU 20	6	-19	1173	0	0	0
276	SLU 21	6	-17	1187	0	0	0
276	SLU 22	6	-18	1114	0	0	0
276	SLU 23	7	-15	1136	0	0	0
276	SLU 24	6	-19	1130	0	0	0
276	SLU 25	6	-16	1143	0	0	0
276	SLU 26	7	-15	1146	0	0	0
276	SLU 27	6	-19	1139	0	0	0
276	SLU 28	6	-17	1153	0	0	0
276	SLU 29	6	-19	1133	0	0	0
276	SLU 30	6	-16	1147	0	0	0
276	SLU 31	7	-16	1262	0	0	0
276	SLU 32	6	-20	1255	0	0	0
276	SLU 33	7	-18	1269	0	0	0
276	SLU 34	7	-16	1272	0	0	0
276	SLU 35	6	-20	1265	0	0	0
276	SLU 36	7	-18	1278	0	0	0
276	SLU 37	6	-20	1259	0	0	0
276	SLU 38	7	-18	1272	0	0	0
276	SLU 39	6	-21	1293	0	0	0
276	SLU 40	7	-18	1307	0	0	0
276	SLU 41	6	-21	1303	0	0	0
276	SLU 42	7	-18	1316	0	0	0
276	SLU 43	7	-21	1235	0	0	0
276	SLU 44	8	-17	1258	0	0	0
276	SLU 45	7	-21	1251	0	0	0
276	SLU 46	7	-19	1264	0	0	0
276	SLU 47	7	-17	1267	0	0	0
276	SLU 48	7	-22	1260	0	0	0
276	SLU 49	7	-19	1274	0	0	0
276	SLU 50	7	-21	1254	0	0	0
276	SLU 51	7	-19	1268	0	0	0
276	SLU 52	8	-19	1383	0	0	0
276	SLU 53	7	-23	1376	0	0	0
276	SLU 54	7	-20	1390	0	0	0
276	SLU 55	8	-19	1393	0	0	0
276	SLU 56	7	-23	1386	0	0	0
276	SLU 57	7	-21	1399	0	0	0
276	SLU 58	7	-23	1380	0	0	0
276	SLU 59	7	-21	1393	0	0	0
276	SLU 60	7	-23	1414	0	0	0
276	SLU 61	8	-21	1428	0	0	0
276	SLU 62	7	-23	1424	0	0	0
276	SLU 63	8	-21	1437	0	0	0
276	SLU 64	8	-23	1365	0	0	0
276	SLU 65	8	-19	1387	0	0	0
276	SLU 66	8	-23	1380	0	0	0
276	SLU 67	8	-21	1394	0	0	0
276	SLU 68	8	-19	1397	0	0	0
276	SLU 69	8	-23	1390	0	0	0
276	SLU 70	8	-21	1404	0	0	0
276	SLU 71	8	-23	1384	0	0	0
276	SLU 72	8	-21	1398	0	0	0
276	SLU 73	8	-20	1513	0	0	0
276	SLU 74	8	-25	1506	0	0	0
276	SLU 75	8	-22	1519	0	0	0
276	SLU 76	8	-21	1522	0	0	0
276	SLU 77	8	-25	1516	0	0	0
276	SLU 78	8	-23	1529	0	0	0
276	SLU 79	8	-25	1510	0	0	0
276	SLU 80	8	-22	1523	0	0	0
276	SLU 81	8	-25	1544	0	0	0
276	SLU 82	8	-23	1558	0	0	0
276	SLU 83	8	-25	1554	0	0	0
276	SLU 84	8	-23	1567	0	0	0
276	SLE RA 1	6	-17	1021	0	0	0
276	SLE RA 2	6	-15	1036	0	0	0
276	SLE RA 3	6	-17	1032	0	0	0
276	SLE RA 4	6	-16	1041	0	0	0
276	SLE RA 5	6	-15	1043	0	0	0
276	SLE RA 6	6	-18	1038	0	0	0
276	SLE RA 7	6	-16	1047	0	0	0
276	SLE RA 8	6	-17	1034	0	0	0
276	SLE RA 9	6	-16	1043	0	0	0
276	SLE RA 10	6	-16	1120	0	0	0
276	SLE RA 11	6	-18	1115	0	0	0
276	SLE RA 12	6	-17	1124	0	0	0
276	SLE RA 13	6	-16	1126	0	0	0
276	SLE RA 14	6	-19	1122	0	0	0
276	SLE RA 15	6	-17	1131	0	0	0
276	SLE RA 16	6	-18	1118	0	0	0
276	SLE RA 17	6	-17	1127	0	0	0
276	SLE RA 18	6	-19	1141	0	0	0
276	SLE RA 19	6	-17	1150	0	0	0
276	SLE RA 20	6	-19	1147	0	0	0
276	SLE RA 21	6	-17	1156	0	0	0
276	SLE FR 1	6	-17	1021	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
276	SLE FR 2	6	-17	1024	0	0	0
276	SLE FR 3	6	-17	1024	0	0	0
276	SLE FR 4	6	-17	1060	0	0	0
276	SLE FR 5	6	-18	1060	0	0	0
276	SLE FR 6	6	-18	1081	0	0	0
276	SLE QP 1	6	-17	1021	0	0	0
276	SLE QP 2	6	-18	1057	0	0	0
276	SLD 1	98	14	1132	0	0	0
276	SLD 2	116	22	1145	0	0	0
276	SLD 3	91	-32	825	0	0	0
276	SLD 4	109	-24	837	0	0	0
276	SLD 5	41	60	1544	0	0	0
276	SLD 6	53	66	1552	0	0	0
276	SLD 7	17	-93	519	0	0	0
276	SLD 8	29	-87	527	0	0	0
276	SLD 9	-18	52	1587	0	0	0
276	SLD 10	-6	58	1595	0	0	0
276	SLD 11	-41	-101	562	0	0	0
276	SLD 12	-29	-95	571	0	0	0
276	SLD 13	-97	-12	1277	0	0	0
276	SLD 14	-79	-3	1289	0	0	0
276	SLD 15	-104	-58	970	0	0	0
276	SLD 16	-86	-49	982	0	0	0
276	SLV 1	222	59	1259	0	0	0
276	SLV 2	264	80	1288	0	0	0
276	SLV 3	204	-56	488	0	0	0
276	SLV 4	246	-35	517	0	0	0
276	SLV 5	90	175	2281	0	0	0
276	SLV 6	119	189	2301	0	0	0
276	SLV 7	30	-207	-288	0	0	0
276	SLV 8	58	-193	-268	0	0	0
276	SLV 9	-47	158	2383	0	0	0
276	SLV 10	-18	172	2402	0	0	0
276	SLV 11	-107	-225	-186	0	0	0
276	SLV 12	-79	-211	-167	0	0	0
276	SLV 13	-235	0	1597	0	0	0
276	SLV 14	-192	21	1626	0	0	0
276	SLV 15	-253	-115	827	0	0	0
276	SLV 16	-210	-94	856	0	0	0
276	CRTFP Uy+	0	0	0	0	0	0
276	CRTFP Uy-	0	0	0	0	0	0
277	SLU 1	-75	69	5415	1232.9	-918.6	30.63
277	SLU 2	-79	101	5525	1256.04	-937.43	37.21
277	SLU 3	-77	69	5507	1254.35	-934.14	31.27
277	SLU 4	-79	88	5574	1268.24	-945.44	35.22
277	SLU 5	-80	101	5582	1269.29	-947.02	37.64
277	SLU 6	-79	70	5565	1267.6	-943.74	31.71
277	SLU 7	-81	89	5631	1281.49	-955.04	35.65
277	SLU 8	-78	69	5529	1259.4	-937.79	31.5
277	SLU 9	-80	88	5595	1273.28	-949.08	35.45
277	SLU 10	-81	110	6176	1403.39	-1047.51	39.39
277	SLU 11	-79	78	6158	1401.7	-1044.22	33.45
277	SLU 12	-81	98	6225	1415.58	-1055.52	37.39
277	SLU 13	-82	110	6233	1416.64	-1057.1	39.82
277	SLU 14	-81	79	6215	1414.95	-1053.82	33.88
277	SLU 15	-83	98	6282	1428.84	-1065.12	37.83
277	SLU 16	-80	78	6180	1406.74	-1047.86	33.67
277	SLU 17	-82	98	6246	1420.63	-1059.16	37.62
277	SLU 18	-78	82	6345	1443.39	-1075.85	33.74
277	SLU 19	-80	101	6411	1457.28	-1087.15	37.69
277	SLU 20	-80	82	6402	1456.64	-1085.45	34.17
277	SLU 21	-82	101	6468	1470.53	-1096.74	38.12
277	SLU 22	-84	75	6145	1399.64	-1041.67	33.86
277	SLU 23	-87	106	6255	1422.79	-1060.5	40.43
277	SLU 24	-86	75	6237	1421.1	-1057.22	34.5
277	SLU 25	-88	94	6304	1434.98	-1068.51	38.44
277	SLU 26	-89	107	6312	1436.04	-1070.09	40.87
277	SLU 27	-87	75	6295	1434.35	-1066.81	34.93
277	SLU 28	-90	95	6361	1448.24	-1078.11	38.88
277	SLU 29	-87	75	6259	1426.14	-1060.86	34.72
277	SLU 30	-89	94	6325	1440.03	-1072.16	38.67
277	SLU 31	-90	116	6906	1570.13	-1170.58	42.61
277	SLU 32	-88	84	6888	1568.44	-1167.29	36.67
277	SLU 33	-90	103	6955	1582.33	-1178.59	40.62
277	SLU 34	-91	116	6963	1583.38	-1180.17	43.04
277	SLU 35	-90	85	6946	1581.69	-1176.89	37.1
277	SLU 36	-92	104	7012	1595.58	-1188.19	41.05
277	SLU 37	-89	84	6910	1573.49	-1170.94	36.9
277	SLU 38	-91	104	6976	1587.38	-1182.23	40.84
277	SLU 39	-87	88	7075	1610.14	-1198.92	36.96
277	SLU 40	-89	107	7141	1624.02	-1210.22	40.91
277	SLU 41	-88	88	7132	1623.39	-1208.52	37.4
277	SLU 42	-91	107	7198	1637.27	-1219.82	41.34
277	SLU 43	-94	87	6789	1545.59	-1151.98	38.72
277	SLU 44	-98	119	6899	1568.74	-1170.81	45.3
277	SLU 45	-97	88	6882	1567.05	-1167.53	39.36
277	SLU 46	-99	107	6948	1580.94	-1178.82	43.31
277	SLU 47	-100	119	6956	1581.99	-1180.4	45.73
277	SLU 48	-98	88	6939	1580.3	-1177.12	39.79

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
277	SLU 49	-100	107	7005	1594.19	-1188.42	43.74
277	SLU 50	-97	88	6903	1572.1	-1171.17	39.59
277	SLU 51	-100	107	6969	1585.98	-1182.47	43.53
277	SLU 52	-100	128	7550	1716.09	-1280.89	47.47
277	SLU 53	-99	97	7532	1714.4	-1277.61	41.53
277	SLU 54	-101	116	7599	1728.28	-1288.9	45.48
277	SLU 55	-102	129	7607	1729.34	-1290.48	47.9
277	SLU 56	-100	97	7590	1727.65	-1287.2	41.97
277	SLU 57	-102	116	7656	1741.53	-1298.5	45.91
277	SLU 58	-100	97	7554	1719.44	-1281.25	41.76
277	SLU 59	-102	116	7620	1733.33	-1292.55	45.71
277	SLU 60	-98	100	7719	1756.09	-1309.23	41.82
277	SLU 61	-100	119	7785	1769.98	-1320.53	45.77
277	SLU 62	-99	101	7776	1769.34	-1318.83	42.26
277	SLU 63	-101	120	7842	1783.23	-1330.13	46.2
277	SLU 64	-103	93	7519	1712.34	-1275.05	41.94
277	SLU 65	-107	125	7629	1735.49	-1293.88	48.52
277	SLU 66	-105	94	7612	1733.8	-1290.6	42.58
277	SLU 67	-108	113	7678	1747.68	-1301.9	46.53
277	SLU 68	-108	125	7687	1748.74	-1303.48	48.95
277	SLU 69	-107	94	7669	1747.05	-1300.19	43.02
277	SLU 70	-109	113	7735	1760.93	-1311.49	46.96
277	SLU 71	-106	94	7633	1738.84	-1294.24	42.81
277	SLU 72	-108	113	7700	1752.73	-1305.54	46.76
277	SLU 73	-109	134	8280	1882.83	-1403.96	50.69
277	SLU 74	-108	103	8263	1881.14	-1400.68	44.76
277	SLU 75	-110	122	8329	1895.03	-1411.97	48.7
277	SLU 76	-111	135	8337	1896.08	-1413.55	51.13
277	SLU 77	-109	103	8320	1894.39	-1410.27	45.19
277	SLU 78	-111	122	8386	1908.28	-1421.57	49.14
277	SLU 79	-108	103	8284	1886.19	-1404.32	44.98
277	SLU 80	-111	122	8350	1900.08	-1415.62	48.93
277	SLU 81	-106	106	8449	1922.84	-1432.31	45.05
277	SLU 82	-109	125	8515	1936.72	-1443.6	48.99
277	SLU 83	-108	107	8506	1936.09	-1441.9	45.48
277	SLU 84	-110	126	8572	1949.97	-1453.2	49.43
277	SLE RA 1	-77	70	5623	1280.54	-953.76	31.55
277	SLE RA 2	-80	92	5697	1295.97	-966.31	35.94
277	SLE RA 3	-79	71	5685	1294.84	-964.12	31.98
277	SLE RA 4	-80	83	5729	1304.1	-971.66	34.61
277	SLE RA 5	-81	92	5735	1304.8	-972.71	36.23
277	SLE RA 6	-80	71	5723	1303.67	-970.52	32.27
277	SLE RA 7	-81	84	5767	1312.93	-978.05	34.9
277	SLE RA 8	-79	71	5700	1298.2	-966.55	32.13
277	SLE RA 9	-81	84	5744	1307.46	-974.08	34.76
277	SLE RA 10	-81	98	6131	1394.2	-1039.7	37.39
277	SLE RA 11	-80	77	6119	1393.07	-1037.51	33.43
277	SLE RA 12	-82	90	6163	1402.33	-1045.04	36.06
277	SLE RA 13	-82	98	6169	1403.03	-1046.1	37.68
277	SLE RA 14	-81	77	6157	1401.91	-1043.91	33.72
277	SLE RA 15	-83	90	6201	1411.16	-1051.44	36.35
277	SLE RA 16	-81	77	6134	1396.44	-1039.94	33.58
277	SLE RA 17	-82	90	6178	1405.69	-1047.47	36.21
277	SLE RA 18	-80	79	6243	1420.87	-1058.6	33.62
277	SLE RA 19	-81	92	6287	1430.13	-1066.13	36.26
277	SLE RA 20	-81	79	6281	1429.7	-1064.99	33.91
277	SLE RA 21	-82	92	6326	1438.96	-1072.53	36.55
277	SLE FR 1	-77	70	5623	1280.54	-953.76	31.55
277	SLE FR 2	-78	75	5638	1283.62	-956.27	32.43
277	SLE FR 3	-78	70	5639	1284.07	-956.32	31.67
277	SLE FR 4	-79	77	5824	1325.72	-987.72	33.05
277	SLE FR 5	-78	73	5825	1326.17	-987.77	32.29
277	SLE FR 6	-79	75	5933	1350.7	-1006.18	32.59
277	SLE QP 1	-77	70	5623	1280.54	-953.76	31.55
277	SLE QP 2	-78	73	5809	1322.64	-985.21	32.18
277	SLD 1	346	380	8402	1896.49	-1418.29	-27.98
277	SLD 2	437	215	8248	1864.33	-1392.38	-79.8
277	SLD 3	395	18	6807	1564.6	-1145.09	-104.58
277	SLD 4	486	-147	6654	1532.44	-1119.18	-156.4
277	SLD 5	-40	745	9033	2003.95	-1534.15	139.62
277	SLD 6	20	636	8932	1982.74	-1517.06	105.44
277	SLD 7	121	-464	3718	897.63	-623.47	-115.71
277	SLD 8	181	-573	3617	876.42	-606.38	-149.89
277	SLD 9	-337	719	8002	1768.85	-1364.04	214.24
277	SLD 10	-277	610	7900	1747.64	-1346.95	180.06
277	SLD 11	-176	-490	2687	662.53	-453.36	-41.09
277	SLD 12	-116	-599	2586	641.32	-436.27	-75.27
277	SLD 13	-642	293	4965	1112.83	-851.24	220.75
277	SLD 14	-551	128	4811	1080.68	-825.33	168.93
277	SLD 15	-594	-69	3370	780.94	-578.04	144.15
277	SLD 16	-503	-234	3217	748.78	-552.13	92.33
277	SLV 1	912	819	12007	2692.85	-2021.16	-102.87
277	SLV 2	1126	431	11646	2617.27	-1960.26	-224.67
277	SLV 3	1031	-81	8016	1861.97	-1337.19	-292.84
277	SLV 4	1245	-469	7655	1786.38	-1276.29	-414.64
277	SLV 5	-2	1735	13790	3007.99	-2344.72	302.51
277	SLV 6	143	1473	13547	2957.1	-2303.71	220.5
277	SLV 7	395	-1266	485	238.36	-64.82	-330.71
277	SLV 8	539	-1528	242	187.47	-23.82	-412.71

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
277	SLV 9	-695	1674	11377	2457.8	-1946.61	477.07
277	SLV 10	-551	1412	11134	2406.91	-1905.6	395.06
277	SLV 11	-299	-1328	-1928	-311.83	333.29	-156.15
277	SLV 12	-155	-1589	-2171	-362.72	374.29	-238.16
277	SLV 13	-1401	615	3964	858.9	-694.13	478.99
277	SLV 14	-1187	227	3603	783.31	-633.23	357.19
277	SLV 15	-1282	-285	-28	28.01	-10.16	289.02
277	SLV 16	-1068	-674	-389	-47.58	50.74	167.22
277	CRTFP Ux+	0	0	0	0	0	0
277	CRTFP Ux-	0	0	0	0	0	0
277	CRTFP Uy+	0	0	0	0	0	0
277	CRTFP Uy-	0	0	0	0	0	0
279	SLU 1	-52	46	3580	995.06	-93.05	19.42
279	SLU 2	-54	67	3651	1013.06	-94.88	20.71
279	SLU 3	-54	46	3641	1012.23	-94.63	19.97
279	SLU 4	-55	59	3684	1023.03	-95.72	20.74
279	SLU 5	-55	68	3689	1023.67	-95.85	21.09
279	SLU 6	-55	46	3679	1022.84	-95.6	20.34
279	SLU 7	-56	59	3722	1033.64	-96.7	21.12
279	SLU 8	-54	46	3656	1016.28	-95	20.17
279	SLU 9	-56	59	3698	1027.08	-96.1	20.95
279	SLU 10	-56	74	4080	1129.67	-105.99	21.38
279	SLU 11	-55	52	4070	1128.84	-105.74	20.64
279	SLU 12	-56	65	4113	1139.65	-106.83	21.41
279	SLU 13	-57	74	4118	1140.28	-106.96	21.76
279	SLU 14	-56	53	4108	1139.45	-106.71	21.01
279	SLU 15	-57	66	4151	1150.26	-107.81	21.79
279	SLU 16	-56	52	4085	1132.89	-106.11	20.84
279	SLU 17	-57	65	4127	1143.69	-107.21	21.62
279	SLU 18	-54	55	4193	1161.65	-108.92	20.38
279	SLU 19	-55	68	4235	1172.45	-110.02	21.15
279	SLU 20	-55	55	4231	1172.26	-109.89	20.76
279	SLU 21	-57	68	4273	1183.06	-110.99	21.53
279	SLU 22	-58	50	4062	1127.56	-105.49	21.69
279	SLU 23	-60	71	4133	1145.56	-107.32	22.98
279	SLU 24	-60	50	4123	1144.73	-107.07	22.23
279	SLU 25	-61	63	4165	1155.53	-108.17	23.01
279	SLU 26	-61	72	4170	1156.17	-108.3	23.35
279	SLU 27	-61	50	4161	1155.34	-108.05	22.61
279	SLU 28	-62	63	4203	1166.14	-109.14	23.38
279	SLU 29	-60	50	4137	1148.78	-107.44	22.44
279	SLU 30	-62	63	4180	1159.58	-108.54	23.21
279	SLU 31	-62	78	4561	1262.17	-118.43	23.65
279	SLU 32	-61	56	4552	1261.35	-118.18	22.9
279	SLU 33	-63	69	4594	1272.15	-119.28	23.68
279	SLU 34	-63	78	4599	1272.78	-119.41	24.02
279	SLU 35	-62	57	4589	1271.96	-119.16	23.28
279	SLU 36	-64	69	4632	1282.76	-120.25	24.05
279	SLU 37	-62	56	4566	1265.39	-118.55	23.11
279	SLU 38	-63	69	4609	1276.19	-119.65	23.88
279	SLU 39	-60	59	4674	1294.15	-121.36	22.65
279	SLU 40	-62	72	4717	1304.95	-122.46	23.42
279	SLU 41	-61	59	4712	1304.76	-122.34	23.02
279	SLU 42	-63	72	4755	1315.56	-123.44	23.79
279	SLU 43	-66	58	4489	1248.15	-116.69	24.47
279	SLU 44	-68	80	4560	1266.15	-118.53	25.76
279	SLU 45	-67	59	4550	1265.32	-118.27	25.02
279	SLU 46	-68	72	4593	1276.12	-119.37	25.79
279	SLU 47	-69	80	4598	1276.76	-119.5	26.14
279	SLU 48	-68	59	4588	1275.93	-119.25	25.39
279	SLU 49	-70	72	4631	1286.73	-120.35	26.17
279	SLU 50	-68	59	4565	1269.37	-118.64	25.22
279	SLU 51	-69	72	4607	1280.17	-119.74	26
279	SLU 52	-69	86	4989	1382.76	-129.64	26.43
279	SLU 53	-69	65	4979	1381.93	-129.38	25.69
279	SLU 54	-70	78	5022	1392.73	-130.48	26.46
279	SLU 55	-70	86	5027	1393.37	-130.61	26.81
279	SLU 56	-70	65	5017	1392.54	-130.36	26.06
279	SLU 57	-71	78	5060	1403.34	-131.46	26.84
279	SLU 58	-69	65	4994	1385.98	-129.75	25.89
279	SLU 59	-71	78	5036	1396.78	-130.85	26.67
279	SLU 60	-68	67	5102	1414.74	-132.57	25.43
279	SLU 61	-69	80	5144	1425.54	-133.66	26.2
279	SLU 62	-69	67	5140	1425.35	-133.54	25.81
279	SLU 63	-70	80	5182	1436.15	-134.64	26.58
279	SLU 64	-72	62	4971	1380.65	-129.14	26.74
279	SLU 65	-74	84	5042	1398.65	-130.97	28.03
279	SLU 66	-73	63	5032	1397.82	-130.72	27.28
279	SLU 67	-75	75	5074	1408.62	-131.82	28.06
279	SLU 68	-75	84	5079	1409.26	-131.95	28.4
279	SLU 69	-74	63	5070	1408.43	-131.69	27.66
279	SLU 70	-76	76	5112	1419.23	-132.79	28.43
279	SLU 71	-74	63	5046	1401.87	-131.09	27.49
279	SLU 72	-75	76	5089	1412.67	-132.19	28.26
279	SLU 73	-75	90	5470	1515.26	-142.08	28.7
279	SLU 74	-75	69	5461	1514.43	-141.83	27.95
279	SLU 75	-76	82	5503	1525.23	-142.93	28.73
279	SLU 76	-76	90	5508	1525.87	-143.06	29.07
279	SLU 77	-76	69	5498	1525.04	-142.8	28.33

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
279	SLU 78	-77	82	5541	1535.85	-143.9	29.1
279	SLU 79	-75	69	5475	1518.48	-142.2	28.16
279	SLU 80	-77	82	5518	1529.28	-143.3	28.93
279	SLU 81	-74	71	5583	1547.24	-145.01	27.7
279	SLU 82	-75	84	5626	1558.04	-146.11	28.47
279	SLU 83	-75	71	5621	1557.85	-145.99	28.07
279	SLU 84	-76	84	5664	1568.65	-147.08	28.84
279	SLE RA 1	-54	47	3718	1032.92	-96.6	20.07
279	SLE RA 2	-55	61	3765	1044.92	-97.82	20.93
279	SLE RA 3	-55	47	3759	1044.36	-97.66	20.43
279	SLE RA 4	-56	56	3787	1051.57	-98.39	20.95
279	SLE RA 5	-56	61	3790	1051.99	-98.47	21.18
279	SLE RA 6	-56	47	3784	1051.44	-98.31	20.68
279	SLE RA 7	-56	56	3812	1058.64	-99.04	21.2
279	SLE RA 8	-55	47	3768	1047.06	-97.9	20.57
279	SLE RA 9	-56	56	3797	1054.26	-98.64	21.09
279	SLE RA 10	-56	65	4051	1122.66	-105.23	21.37
279	SLE RA 11	-56	51	4044	1122.11	-105.06	20.88
279	SLE RA 12	-57	60	4073	1129.31	-105.79	21.39
279	SLE RA 13	-57	66	4076	1129.73	-105.88	21.63
279	SLE RA 14	-57	51	4070	1129.18	-105.71	21.13
279	SLE RA 15	-57	60	4098	1136.38	-106.44	21.65
279	SLE RA 16	-56	51	4054	1124.8	-105.31	21.02
279	SLE RA 17	-57	60	4082	1132	-106.04	21.53
279	SLE RA 18	-55	53	4126	1143.97	-107.18	20.71
279	SLE RA 19	-56	61	4155	1151.18	-107.92	21.22
279	SLE RA 20	-56	53	4151	1151.05	-107.83	20.96
279	SLE RA 21	-57	62	4180	1158.25	-108.57	21.47
279	SLE FR 1	-54	47	3718	1032.92	-96.6	20.07
279	SLE FR 2	-54	50	3727	1035.32	-96.85	20.24
279	SLE FR 3	-54	47	3728	1035.74	-96.86	20.17
279	SLE FR 4	-55	52	3850	1068.63	-100.02	20.43
279	SLE FR 5	-55	49	3850	1069.06	-100.04	20.36
279	SLE FR 6	-55	50	3922	1088.44	-101.89	20.39
279	SLE QP 1	-54	47	3718	1032.92	-96.6	20.07
279	SLE QP 2	-54	49	3840	1066.23	-99.78	20.26
279	SLD 1	249	257	5513	1518.34	-142.19	-81.48
279	SLD 2	311	145	5416	1493.59	-139.71	-106.12
279	SLD 3	280	9	4486	1263.9	-115.61	-98.55
279	SLD 4	342	-103	4389	1239.16	-113.14	-123.19
279	SLD 5	-21	507	5917	1592.21	-153.26	20.06
279	SLD 6	20	434	5853	1575.88	-151.62	3.8
279	SLD 7	81	-319	2494	744.09	-64.66	-36.83
279	SLD 8	122	-393	2430	727.77	-63.03	-53.09
279	SLD 9	-230	491	5251	1404.7	-136.53	93.61
279	SLD 10	-190	417	5186	1388.38	-134.89	77.36
279	SLD 11	-129	-336	1828	556.58	-47.93	36.72
279	SLD 12	-88	-410	1763	540.26	-46.3	20.47
279	SLD 13	-450	200	3292	893.31	-86.42	163.71
279	SLD 14	-388	89	3194	868.56	-83.94	139.07
279	SLD 15	-420	-48	2265	638.87	-59.84	146.64
279	SLD 16	-358	-159	2167	614.13	-57.36	122
279	SLV 1	654	554	7840	2145.17	-201.22	-216.52
279	SLV 2	800	292	7610	2087	-195.4	-274.44
279	SLV 3	728	-62	5269	1508.19	-134.68	-258.63
279	SLV 4	874	-324	5039	1450.02	-128.85	-316.55
279	SLV 5	17	1184	8982	2366.86	-232.22	23.9
279	SLV 6	116	1007	8827	2327.7	-228.3	-15.1
279	SLV 7	267	-870	413	243.58	-10.41	-116.46
279	SLV 8	365	-1046	258	204.42	-6.49	-155.46
279	SLV 9	-474	1144	7422	1928.04	-193.06	195.98
279	SLV 10	-375	967	7268	1888.88	-189.15	156.98
279	SLV 11	-224	-910	-1147	-195.23	28.75	55.62
279	SLV 12	-126	-1086	-1301	-234.4	32.67	16.62
279	SLV 13	-983	421	2641	682.44	-70.7	357.08
279	SLV 14	-837	159	2411	624.28	-64.88	299.15
279	SLV 15	-908	-195	70	45.46	-4.16	314.97
279	SLV 16	-762	-457	-159	-12.71	1.66	257.05
279	CRTFP Ux+	0	0	0	0	0	0
279	CRTFP Ux-	0	0	0	0	0	0
279	CRTFP Uy+	0	0	0	0	0	0
279	CRTFP Uy-	0	0	0	0	0	0
280	SLU 1	-61	48	3887	933.38	9.62	21.29
280	SLU 2	-64	71	3963	950.26	9.83	22.06
280	SLU 3	-63	48	3953	949.14	9.8	21.92
280	SLU 4	-65	62	3999	959.27	9.93	22.38
280	SLU 5	-65	71	4004	960	9.94	22.49
280	SLU 6	-64	48	3993	958.88	9.91	22.35
280	SLU 7	-66	62	4039	969.01	10.04	22.81
280	SLU 8	-64	48	3968	952.86	9.84	22.16
280	SLU 9	-65	62	4014	962.98	9.97	22.62
280	SLU 10	-66	78	4427	1057.02	11.03	22.64
280	SLU 11	-65	55	4417	1055.9	10.99	22.5
280	SLU 12	-66	69	4463	1066.03	11.12	22.96
280	SLU 13	-67	78	4468	1066.76	11.14	23.08
280	SLU 14	-66	55	4458	1065.64	11.11	22.94
280	SLU 15	-68	69	4503	1075.76	11.23	23.4
280	SLU 16	-66	55	4432	1059.61	11.04	22.74
280	SLU 17	-67	69	4478	1069.74	11.16	23.2

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
280	SLU 18	-64	57	4550	1085.89	11.32	22.13
280	SLU 19	-65	71	4596	1096.02	11.45	22.59
280	SLU 20	-65	57	4591	1095.63	11.44	22.56
280	SLU 21	-67	71	4636	1105.76	11.57	23.02
280	SLU 22	-69	52	4407	1054.69	11	23.83
280	SLU 23	-71	75	4483	1071.57	11.21	24.59
280	SLU 24	-71	52	4472	1070.45	11.18	24.45
280	SLU 25	-72	66	4518	1080.57	11.31	24.91
280	SLU 26	-72	75	4524	1081.3	11.33	25.03
280	SLU 27	-72	52	4513	1080.19	11.29	24.89
280	SLU 28	-73	66	4559	1090.31	11.42	25.35
280	SLU 29	-71	52	4488	1074.16	11.22	24.69
280	SLU 30	-73	66	4534	1084.29	11.35	25.15
280	SLU 31	-73	82	4947	1178.32	12.41	25.18
280	SLU 32	-72	59	4937	1177.21	12.38	25.04
280	SLU 33	-74	73	4982	1187.33	12.51	25.5
280	SLU 34	-74	82	4988	1188.06	12.52	25.61
280	SLU 35	-74	59	4977	1186.94	12.49	25.47
280	SLU 36	-75	73	5023	1197.07	12.62	25.93
280	SLU 37	-73	59	4952	1180.92	12.42	25.28
280	SLU 38	-74	73	4998	1191.05	12.55	25.74
280	SLU 39	-71	61	5070	1207.2	12.71	24.66
280	SLU 40	-73	75	5115	1217.33	12.84	25.12
280	SLU 41	-72	61	5110	1216.94	12.82	25.1
280	SLU 42	-74	75	5156	1227.07	12.95	25.56
280	SLU 43	-77	61	4875	1171.8	12.03	26.8
280	SLU 44	-80	84	4951	1188.68	12.24	27.57
280	SLU 45	-79	61	4941	1187.56	12.21	27.43
280	SLU 46	-81	75	4986	1197.69	12.34	27.89
280	SLU 47	-81	84	4992	1198.42	12.35	28.01
280	SLU 48	-80	61	4981	1197.3	12.32	27.87
280	SLU 49	-82	75	5027	1207.43	12.45	28.33
280	SLU 50	-80	61	4956	1191.28	12.25	27.67
280	SLU 51	-81	75	5002	1201.41	12.38	28.13
280	SLU 52	-82	91	5415	1295.44	13.44	28.16
280	SLU 53	-81	68	5405	1294.32	13.4	28.02
280	SLU 54	-82	82	5451	1304.45	13.53	28.48
280	SLU 55	-83	91	5456	1305.18	13.55	28.59
280	SLU 56	-82	68	5445	1304.06	13.52	28.45
280	SLU 57	-84	82	5491	1314.19	13.64	28.91
280	SLU 58	-82	68	5420	1298.04	13.45	28.26
280	SLU 59	-83	82	5466	1308.17	13.57	28.72
280	SLU 60	-80	70	5538	1324.32	13.73	27.64
280	SLU 61	-81	84	5584	1334.44	13.86	28.1
280	SLU 62	-81	70	5578	1334.05	13.85	28.08
280	SLU 63	-83	84	5624	1344.18	13.98	28.54
280	SLU 64	-85	65	5394	1293.11	13.41	29.34
280	SLU 65	-87	88	5471	1309.99	13.63	30.11
280	SLU 66	-86	65	5460	1308.87	13.59	29.97
280	SLU 67	-88	79	5506	1319	13.72	30.43
280	SLU 68	-88	88	5512	1319.73	13.74	30.54
280	SLU 69	-88	65	5501	1318.61	13.7	30.4
280	SLU 70	-89	79	5547	1328.74	13.83	30.86
280	SLU 71	-87	65	5476	1312.59	13.63	30.21
280	SLU 72	-89	79	5522	1322.71	13.76	30.67
280	SLU 73	-89	95	5935	1416.75	14.82	30.7
280	SLU 74	-88	72	5924	1415.63	14.79	30.56
280	SLU 75	-90	86	5970	1425.76	14.92	31.02
280	SLU 76	-90	95	5976	1426.49	14.93	31.13
280	SLU 77	-89	72	5965	1425.37	14.9	30.99
280	SLU 78	-91	86	6011	1435.49	15.03	31.45
280	SLU 79	-89	72	5940	1419.34	14.83	30.8
280	SLU 80	-90	86	5986	1429.47	14.96	31.26
280	SLU 81	-87	74	6057	1445.62	15.12	30.18
280	SLU 82	-89	88	6103	1455.75	15.25	30.64
280	SLU 83	-88	74	6098	1455.36	15.23	30.61
280	SLU 84	-90	88	6144	1465.49	15.36	31.07
280	SLE RA 1	-64	49	4035	968.04	10.01	22.01
280	SLE RA 2	-65	64	4086	979.29	10.15	22.52
280	SLE RA 3	-65	49	4079	978.55	10.13	22.43
280	SLE RA 4	-66	58	4110	985.3	10.22	22.74
280	SLE RA 5	-66	65	4113	985.78	10.23	22.81
280	SLE RA 6	-66	49	4106	985.04	10.21	22.72
280	SLE RA 7	-67	59	4137	991.79	10.29	23.03
280	SLE RA 8	-65	49	4090	981.02	10.16	22.59
280	SLE RA 9	-66	58	4120	987.77	10.25	22.9
280	SLE RA 10	-66	69	4396	1050.46	10.95	22.92
280	SLE RA 11	-66	54	4389	1049.72	10.93	22.82
280	SLE RA 12	-67	63	4419	1056.47	11.02	23.13
280	SLE RA 13	-67	69	4423	1056.96	11.03	23.2
280	SLE RA 14	-67	54	4416	1056.21	11	23.11
280	SLE RA 15	-68	63	4446	1062.96	11.09	23.42
280	SLE RA 16	-66	54	4399	1052.2	10.96	22.98
280	SLE RA 17	-67	63	4430	1058.95	11.04	23.29
280	SLE RA 18	-65	55	4477	1069.71	11.15	22.57
280	SLE RA 19	-66	65	4508	1076.47	11.24	22.88
280	SLE RA 20	-66	55	4504	1076.21	11.23	22.86
280	SLE RA 21	-67	65	4535	1082.96	11.31	23.17
280	SLE FR 1	-64	49	4035	968.04	10.01	22.01

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
280	SLE FR 2	-64	52	4046	970.29	10.04	22.12
280	SLE FR 3	-64	49	4046	970.64	10.04	22.13
280	SLE FR 4	-64	54	4178	1000.79	10.38	22.28
280	SLE FR 5	-64	51	4179	1001.14	10.38	22.3
280	SLE FR 6	-64	52	4256	1018.88	10.58	22.29
280	SLE QP 1	-64	49	4035	968.04	10.01	22.01
280	SLE QP 2	-64	51	4168	998.54	10.35	22.18
280	SLD 1	292	277	5934	1412.52	16.53	-102.85
280	SLD 2	365	156	5831	1389.91	16.17	-127.97
280	SLD 3	328	4	4824	1178.25	13.59	-114.69
280	SLD 4	400	-117	4721	1155.65	13.22	-139.81
280	SLD 5	-24	554	6399	1482.1	16.74	7.15
280	SLD 6	24	475	6331	1467.19	16.5	-9.43
280	SLD 7	94	-356	2701	701.22	6.92	-32.32
280	SLD 8	142	-435	2633	686.31	6.68	-48.89
280	SLD 9	-270	537	5703	1310.78	14.02	93.26
280	SLD 10	-222	457	5635	1295.86	13.78	76.68
280	SLD 11	-152	-373	2005	529.89	4.21	53.79
280	SLD 12	-104	-453	1937	514.98	3.97	37.21
280	SLD 13	-528	218	3614	841.43	7.48	184.18
280	SLD 14	-456	98	3511	818.83	7.12	159.05
280	SLD 15	-493	-55	2505	607.17	4.54	172.34
280	SLD 16	-420	-175	2402	584.56	4.18	147.21
280	SLV 1	767	600	8392	1986.61	25.05	-269.49
280	SLV 2	938	317	8150	1933.47	24.2	-328.55
280	SLV 3	854	-78	5614	1400.11	17.68	-298.56
280	SLV 4	1025	-362	5372	1346.97	16.83	-357.62
280	SLV 5	21	1297	9693	2194.41	26.1	-10.21
280	SLV 6	136	1106	9530	2158.63	25.52	-49.98
280	SLV 7	312	-964	434	239.4	1.54	-107.1
280	SLV 8	427	-1154	271	203.62	0.96	-146.87
280	SLV 9	-555	1256	8065	1793.46	19.74	191.23
280	SLV 10	-440	1065	7902	1757.68	19.17	151.46
280	SLV 11	-264	-1005	-1194	-161.55	-4.82	94.34
280	SLV 12	-149	-1195	-1357	-197.32	-5.39	54.57
280	SLV 13	-1153	463	2964	650.11	3.88	401.98
280	SLV 14	-982	180	2722	596.98	3.02	342.92
280	SLV 15	-1066	-215	186	63.61	-3.49	372.92
280	SLV 16	-895	-498	-56	10.47	-4.34	313.85
280	CRTFP Ux+	0	0	0	0	0	0
280	CRTFP Ux-	0	0	0	0	0	0
280	CRTFP Uy+	0	0	0	0	0	0
280	CRTFP Uy-	0	0	0	0	0	0
281	SLU 1	-62	41	3608	733.39	7.83	21.37
281	SLU 2	-64	62	3678	746.67	8	22.12
281	SLU 3	-64	41	3669	745.41	7.97	22
281	SLU 4	-65	53	3711	753.38	8.08	22.45
281	SLU 5	-65	62	3716	754.11	8.1	22.55
281	SLU 6	-65	41	3706	752.84	8.07	22.43
281	SLU 7	-66	53	3748	760.81	8.17	22.88
281	SLU 8	-64	41	3683	748.25	8.01	22.24
281	SLU 9	-66	53	3725	756.22	8.12	22.69
281	SLU 10	-66	67	4108	827.78	8.97	22.72
281	SLU 11	-65	46	4098	826.51	8.94	22.6
281	SLU 12	-67	59	4140	834.49	9.05	23.05
281	SLU 13	-67	67	4145	835.21	9.06	23.15
281	SLU 14	-67	46	4136	833.95	9.03	23.03
281	SLU 15	-68	59	4178	841.92	9.14	23.48
281	SLU 16	-66	46	4112	829.35	8.97	22.84
281	SLU 17	-67	59	4155	837.32	9.08	23.29
281	SLU 18	-64	49	4222	849.25	9.2	22.22
281	SLU 19	-66	61	4264	857.22	9.31	22.67
281	SLU 20	-66	49	4259	856.68	9.3	22.66
281	SLU 21	-67	61	4301	864.65	9.4	23.11
281	SLU 22	-69	44	4088	825.54	8.95	23.92
281	SLU 23	-71	65	4158	838.82	9.13	24.67
281	SLU 24	-71	44	4148	837.56	9.1	24.55
281	SLU 25	-72	57	4190	845.53	9.2	25
281	SLU 26	-73	65	4195	846.25	9.22	25.11
281	SLU 27	-72	44	4186	844.99	9.19	24.99
281	SLU 28	-74	57	4228	852.96	9.3	25.44
281	SLU 29	-72	44	4163	840.4	9.13	24.79
281	SLU 30	-73	57	4205	848.37	9.24	25.24
281	SLU 31	-73	71	4587	919.92	10.09	25.27
281	SLU 32	-73	50	4578	918.66	10.06	25.15
281	SLU 33	-74	62	4620	926.63	10.17	25.6
281	SLU 34	-74	71	4625	927.36	10.18	25.71
281	SLU 35	-74	50	4615	926.09	10.15	25.58
281	SLU 36	-75	62	4657	934.06	10.26	26.03
281	SLU 37	-73	50	4592	921.5	10.1	25.39
281	SLU 38	-75	62	4634	929.47	10.2	25.84
281	SLU 39	-72	52	4701	941.4	10.33	24.78
281	SLU 40	-73	65	4743	949.37	10.43	25.23
281	SLU 41	-73	52	4739	948.83	10.42	25.21
281	SLU 42	-74	65	4781	956.8	10.52	25.66
281	SLU 43	-78	52	4526	921.81	9.79	26.9
281	SLU 44	-80	73	4596	935.1	9.97	27.65
281	SLU 45	-80	52	4587	933.84	9.94	27.53
281	SLU 46	-81	64	4629	941.81	10.04	27.98

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
281	SLU 47	-81	73	4634	942.53	10.06	28.09
281	SLU 48	-81	52	4624	941.27	10.03	27.97
281	SLU 49	-82	64	4666	949.24	10.14	28.42
281	SLU 50	-80	52	4601	936.67	9.97	27.77
281	SLU 51	-82	64	4643	944.65	10.08	28.22
281	SLU 52	-82	78	5026	1016.2	10.93	28.25
281	SLU 53	-81	57	5016	1014.94	10.9	28.13
281	SLU 54	-83	70	5058	1022.91	11.01	28.58
281	SLU 55	-83	78	5063	1023.63	11.02	28.69
281	SLU 56	-83	57	5054	1022.37	10.99	28.56
281	SLU 57	-84	70	5096	1030.34	11.1	29.02
281	SLU 58	-82	57	5030	1017.78	10.94	28.37
281	SLU 59	-83	70	5072	1025.75	11.04	28.82
281	SLU 60	-80	60	5140	1037.67	11.17	27.76
281	SLU 61	-82	72	5182	1045.64	11.27	28.21
281	SLU 62	-82	60	5177	1045.1	11.26	28.19
281	SLU 63	-83	72	5219	1053.07	11.37	28.64
281	SLU 64	-85	55	5006	1013.96	10.91	29.46
281	SLU 65	-87	76	5076	1027.25	11.09	30.21
281	SLU 66	-87	55	5066	1025.98	11.06	30.09
281	SLU 67	-88	68	5108	1033.96	11.17	30.54
281	SLU 68	-89	76	5113	1034.68	11.18	30.64
281	SLU 69	-88	55	5104	1033.41	11.15	30.52
281	SLU 70	-90	68	5146	1041.39	11.26	30.97
281	SLU 71	-88	55	5081	1028.82	11.09	30.33
281	SLU 72	-89	68	5123	1036.79	11.2	30.78
281	SLU 73	-89	82	5505	1108.35	12.05	30.81
281	SLU 74	-89	61	5496	1107.09	12.02	30.68
281	SLU 75	-90	73	5538	1115.06	12.13	31.13
281	SLU 76	-90	82	5543	1115.78	12.15	31.24
281	SLU 77	-90	61	5533	1114.52	12.12	31.12
281	SLU 78	-91	73	5575	1122.49	12.22	31.57
281	SLU 79	-89	61	5510	1109.93	12.06	30.93
281	SLU 80	-91	73	5552	1117.9	12.17	31.38
281	SLU 81	-88	63	5619	1129.82	12.29	30.31
281	SLU 82	-89	76	5661	1137.79	12.4	30.76
281	SLU 83	-89	63	5657	1137.25	12.38	30.75
281	SLU 84	-90	76	5699	1145.22	12.49	31.2
281	SLE RA 1	-64	41	3745	759.72	8.15	22.1
281	SLE RA 2	-65	56	3792	768.57	8.27	22.6
281	SLE RA 3	-65	42	3785	767.73	8.25	22.52
281	SLE RA 4	-66	50	3814	773.05	8.32	22.82
281	SLE RA 5	-66	56	3817	773.53	8.33	22.89
281	SLE RA 6	-66	42	3810	772.69	8.31	22.81
281	SLE RA 7	-67	50	3839	778	8.38	23.11
281	SLE RA 8	-65	42	3795	769.63	8.27	22.68
281	SLE RA 9	-66	50	3823	774.94	8.34	22.98
281	SLE RA 10	-67	59	4078	822.64	8.91	23
281	SLE RA 11	-66	45	4072	821.8	8.89	22.92
281	SLE RA 12	-67	54	4100	827.12	8.96	23.22
281	SLE RA 13	-67	59	4103	827.6	8.97	23.29
281	SLE RA 14	-67	45	4097	826.75	8.95	23.21
281	SLE RA 15	-68	54	4125	832.07	9.02	23.51
281	SLE RA 16	-67	45	4081	823.69	8.91	23.08
281	SLE RA 17	-68	54	4109	829.01	8.98	23.38
281	SLE RA 18	-66	47	4154	836.96	9.07	22.67
281	SLE RA 19	-66	55	4182	842.27	9.14	22.97
281	SLE RA 20	-66	47	4179	841.91	9.13	22.96
281	SLE RA 21	-67	55	4207	847.23	9.2	23.26
281	SLE FR 1	-64	41	3745	759.72	8.15	22.1
281	SLE FR 2	-64	44	3754	761.49	8.17	22.2
281	SLE FR 3	-64	42	3755	761.7	8.17	22.21
281	SLE FR 4	-65	46	3877	784.66	8.45	22.37
281	SLE FR 5	-65	43	3878	784.87	8.45	22.38
281	SLE FR 6	-65	44	3950	798.34	8.61	22.38
281	SLE QP 1	-64	41	3745	759.72	8.15	22.1
281	SLE QP 2	-64	43	3868	782.89	8.42	22.27
281	SLD 1	292	251	5450	1095.47	13.73	-103.01
281	SLD 2	365	141	5358	1078.54	13.41	-128.16
281	SLD 3	328	-4	4427	916.47	11.29	-114.8
281	SLD 4	400	-113	4335	899.54	10.98	-139.95
281	SLD 5	-24	511	5912	1151.19	13.76	7.09
281	SLD 6	24	438	5851	1140.02	13.55	-9.5
281	SLD 7	94	-337	2500	554.52	5.65	-32.21
281	SLD 8	142	-409	2439	543.35	5.44	-48.81
281	SLD 9	-270	495	5297	1022.43	11.4	93.34
281	SLD 10	-222	423	5236	1011.26	11.2	76.75
281	SLD 11	-153	-352	1885	425.76	3.29	54.04
281	SLD 12	-105	-424	1824	414.59	3.09	37.45
281	SLD 13	-529	200	3401	666.24	5.87	184.49
281	SLD 14	-456	90	3309	649.31	5.55	159.34
281	SLD 15	-494	-54	2377	487.24	3.43	172.7
281	SLD 16	-421	-164	2285	470.31	3.12	147.55
281	SLV 1	768	548	7656	1529.11	21.03	-270
281	SLV 2	939	289	7439	1489.32	20.3	-329.12
281	SLV 3	854	-83	5093	1080.96	14.94	-298.94
281	SLV 4	1025	-342	4876	1041.17	14.21	-358.06
281	SLV 5	22	1200	8931	1693.88	21.57	-10.48
281	SLV 6	137	1026	8785	1667.09	21.08	-50.28

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
281	SLV 7	311	-904	389	200.04	1.28	-106.96
281	SLV 8	426	-1078	243	173.25	0.79	-146.76
281	SLV 9	-555	1164	7493	1392.53	16.06	191.3
281	SLV 10	-439	990	7346	1365.74	15.56	151.49
281	SLV 11	-266	-940	-1050	-101.31	-4.23	94.82
281	SLV 12	-151	-1114	-1196	-128.1	-4.73	55.02
281	SLV 13	-1154	428	2859	524.61	2.64	402.6
281	SLV 14	-983	170	2642	484.82	1.9	343.48
281	SLV 15	-1067	-203	297	76.46	-3.45	373.66
281	SLV 16	-896	-462	80	36.67	-4.18	314.53
281	CRTFP Ux+	0	0	0	0	0	0
281	CRTFP Ux-	0	0	0	0	0	0
281	CRTFP Uy+	0	0	0	0	0	0
281	CRTFP Uy-	0	0	0	0	0	0
282	SLU 1	-62	33	3388	580.52	5.96	21.42
282	SLU 2	-64	52	3453	591.1	6.1	22.16
282	SLU 3	-64	33	3444	589.69	6.07	22.05
282	SLU 4	-65	44	3483	596.04	6.16	22.49
282	SLU 5	-65	52	3488	596.77	6.17	22.59
282	SLU 6	-65	33	3479	595.37	6.14	22.49
282	SLU 7	-66	44	3518	601.72	6.22	22.93
282	SLU 8	-64	33	3458	591.87	6.1	22.3
282	SLU 9	-66	44	3497	598.22	6.18	22.74
282	SLU 10	-66	57	3856	652.65	6.82	22.77
282	SLU 11	-66	38	3847	651.24	6.79	22.66
282	SLU 12	-67	49	3886	657.59	6.88	23.11
282	SLU 13	-67	57	3890	658.33	6.89	23.21
282	SLU 14	-67	38	3882	656.92	6.86	23.1
282	SLU 15	-68	49	3921	663.27	6.95	23.54
282	SLU 16	-66	37	3860	653.42	6.82	22.91
282	SLU 17	-68	49	3899	659.77	6.9	23.35
282	SLU 18	-65	40	3963	668.45	6.99	22.3
282	SLU 19	-66	51	4002	674.8	7.07	22.74
282	SLU 20	-66	40	3998	674.12	7.06	22.73
282	SLU 21	-67	51	4037	680.47	7.14	23.17
282	SLU 22	-69	35	3836	650.42	6.81	23.99
282	SLU 23	-72	54	3901	661	6.95	24.73
282	SLU 24	-71	35	3893	659.59	6.92	24.62
282	SLU 25	-73	47	3932	665.94	7	25.06
282	SLU 26	-73	54	3936	666.68	7.02	25.16
282	SLU 27	-72	35	3927	665.27	6.99	25.06
282	SLU 28	-74	47	3966	671.62	7.07	25.5
282	SLU 29	-72	35	3906	661.77	6.95	24.87
282	SLU 30	-73	47	3945	668.12	7.03	25.31
282	SLU 31	-73	59	4304	722.55	7.67	25.34
282	SLU 32	-73	40	4295	721.14	7.64	25.23
282	SLU 33	-74	52	4334	727.49	7.72	25.68
282	SLU 34	-75	59	4339	728.23	7.74	25.78
282	SLU 35	-74	40	4330	726.82	7.71	25.67
282	SLU 36	-76	52	4369	733.17	7.79	26.11
282	SLU 37	-74	40	4308	723.32	7.67	25.48
282	SLU 38	-75	52	4347	729.67	7.75	25.92
282	SLU 39	-72	42	4411	738.35	7.84	24.87
282	SLU 40	-73	54	4450	744.7	7.92	25.31
282	SLU 41	-73	42	4446	744.02	7.91	25.3
282	SLU 42	-75	54	4485	750.37	7.99	25.74
282	SLU 43	-78	42	4251	730.71	7.46	26.97
282	SLU 44	-80	61	4316	741.29	7.59	27.7
282	SLU 45	-80	42	4307	739.88	7.57	27.6
282	SLU 46	-81	53	4346	746.23	7.65	28.04
282	SLU 47	-81	61	4351	746.96	7.66	28.14
282	SLU 48	-81	42	4342	745.56	7.64	28.03
282	SLU 49	-82	53	4381	751.91	7.72	28.48
282	SLU 50	-80	42	4320	742.06	7.59	27.84
282	SLU 51	-82	53	4359	748.4	7.68	28.28
282	SLU 52	-82	66	4718	802.84	8.32	28.32
282	SLU 53	-82	46	4710	801.43	8.29	28.21
282	SLU 54	-83	58	4749	807.78	8.37	28.65
282	SLU 55	-83	65	4753	808.52	8.39	28.75
282	SLU 56	-83	46	4745	807.11	8.36	28.65
282	SLU 57	-84	58	4784	813.46	8.44	29.09
282	SLU 58	-82	46	4723	803.61	8.32	28.45
282	SLU 59	-84	58	4762	809.96	8.4	28.89
282	SLU 60	-81	49	4826	818.64	8.49	27.84
282	SLU 61	-82	60	4865	824.99	8.57	28.29
282	SLU 62	-82	48	4861	824.31	8.56	28.28
282	SLU 63	-83	60	4900	830.66	8.64	28.72
282	SLU 64	-85	44	4699	800.61	8.3	29.54
282	SLU 65	-88	63	4764	811.19	8.44	30.27
282	SLU 66	-87	44	4755	809.78	8.42	30.17
282	SLU 67	-89	56	4794	816.13	8.5	30.61
282	SLU 68	-89	63	4799	816.87	8.51	30.71
282	SLU 69	-88	44	4790	815.46	8.49	30.6
282	SLU 70	-90	56	4829	821.81	8.57	31.05
282	SLU 71	-88	44	4769	811.96	8.44	30.41
282	SLU 72	-89	56	4808	818.31	8.53	30.85
282	SLU 73	-89	68	5166	872.74	9.16	30.89
282	SLU 74	-89	49	5158	871.33	9.14	30.78
282	SLU 75	-90	60	5197	877.68	9.22	31.22

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
282	SLU 76	-91	68	5201	878.42	9.23	31.32
282	SLU 77	-90	49	5193	877.01	9.21	31.22
282	SLU 78	-92	60	5232	883.36	9.29	31.66
282	SLU 79	-90	49	5171	873.51	9.16	31.02
282	SLU 80	-91	60	5210	879.86	9.25	31.46
282	SLU 81	-88	51	5274	888.54	9.33	30.41
282	SLU 82	-89	63	5313	894.89	9.42	30.86
282	SLU 83	-89	51	5309	894.21	9.4	30.85
282	SLU 84	-91	63	5348	900.56	9.49	31.29
282	SLE RA 1	-64	34	3516	600.49	6.2	22.16
282	SLE RA 2	-66	46	3559	607.55	6.29	22.65
282	SLE RA 3	-65	34	3554	606.61	6.28	22.58
282	SLE RA 4	-66	41	3580	610.84	6.33	22.87
282	SLE RA 5	-66	46	3583	611.33	6.34	22.94
282	SLE RA 6	-66	34	3577	610.39	6.32	22.87
282	SLE RA 7	-67	41	3603	614.62	6.38	23.16
282	SLE RA 8	-66	34	3562	608.05	6.29	22.74
282	SLE RA 9	-67	41	3588	612.29	6.35	23.03
282	SLE RA 10	-67	49	3828	648.58	6.77	23.06
282	SLE RA 11	-66	37	3822	647.64	6.76	22.99
282	SLE RA 12	-67	44	3848	651.87	6.81	23.28
282	SLE RA 13	-68	49	3851	652.36	6.82	23.35
282	SLE RA 14	-67	37	3845	651.42	6.8	23.28
282	SLE RA 15	-68	44	3871	655.66	6.86	23.57
282	SLE RA 16	-67	37	3831	649.09	6.77	23.15
282	SLE RA 17	-68	44	3857	653.32	6.83	23.44
282	SLE RA 18	-66	38	3899	659.11	6.89	22.74
282	SLE RA 19	-67	46	3925	663.34	6.94	23.03
282	SLE RA 20	-67	38	3923	662.89	6.93	23.03
282	SLE RA 21	-68	46	3949	667.13	6.99	23.33
282	SLE FR 1	-64	34	3516	600.49	6.2	22.16
282	SLE FR 2	-64	36	3525	601.9	6.22	22.26
282	SLE FR 3	-64	34	3525	602	6.22	22.27
282	SLE FR 4	-65	37	3640	619.49	6.43	22.43
282	SLE FR 5	-65	35	3640	619.59	6.43	22.45
282	SLE FR 6	-65	36	3708	629.8	6.55	22.45
282	SLE QP 1	-64	34	3516	600.49	6.2	22.16
282	SLE QP 2	-65	35	3631	618.08	6.41	22.33
282	SLD 1	293	226	5059	850.97	10.81	-103.17
282	SLD 2	366	126	4976	838.49	10.55	-128.36
282	SLD 3	328	-11	4104	714.15	8.92	-114.93
282	SLD 4	401	-111	4021	701.67	8.66	-140.12
282	SLD 5	-24	469	5522	897.7	10.64	7.05
282	SLD 6	24	403	5467	889.46	10.47	-9.56
282	SLD 7	93	-319	2340	441.64	4.34	-32.16
282	SLD 8	141	-385	2285	433.4	4.17	-48.77
282	SLD 9	-270	455	4977	802.75	8.64	93.44
282	SLD 10	-222	389	4922	794.52	8.47	76.82
282	SLD 11	-154	-333	1795	346.69	2.35	54.23
282	SLD 12	-105	-399	1740	338.45	2.18	37.61
282	SLD 13	-530	180	3241	534.48	4.16	184.79
282	SLD 14	-457	80	3158	522	3.9	159.6
282	SLD 15	-495	-56	2286	397.66	2.27	173.02
282	SLD 16	-422	-156	2203	385.18	2.01	147.84
282	SLV 1	769	499	7051	1174.35	16.86	-270.46
282	SLV 2	940	264	6856	1145.02	16.25	-329.67
282	SLV 3	855	-88	4661	831.82	12.13	-299.33
282	SLV 4	1026	-323	4466	802.49	11.52	-358.54
282	SLV 5	23	1108	8318	1309.94	16.82	-10.67
282	SLV 6	138	950	8187	1290.19	16.41	-50.53
282	SLV 7	310	-848	352	168.17	1.07	-106.9
282	SLV 8	425	-1007	220	148.42	0.66	-146.76
282	SLV 9	-554	1076	7042	1087.73	12.16	191.43
282	SLV 10	-439	918	6910	1067.98	11.75	151.57
282	SLV 11	-267	-880	-925	-54.04	-3.6	95.2
282	SLV 12	-152	-1038	-1057	-73.79	-4.01	55.33
282	SLV 13	-1155	393	2796	433.67	1.3	403.2
282	SLV 14	-984	158	2601	404.33	0.69	343.99
282	SLV 15	-1069	-194	406	91.14	-3.43	374.33
282	SLV 16	-898	-429	211	61.8	-4.04	315.12
282	CRTFP Ux+	0	0	0	0	0	0
282	CRTFP Ux-	0	0	0	0	0	0
282	CRTFP Uy+	0	0	0	0	0	0
282	CRTFP Uy-	0	0	0	0	0	0
283	SLU 1	-62	25	3227	473.25	4.13	21.44
283	SLU 2	-64	42	3288	482	4.23	22.15
283	SLU 3	-64	25	3280	480.44	4.21	22.06
283	SLU 4	-65	35	3317	485.69	4.27	22.49
283	SLU 5	-65	42	3321	486.45	4.27	22.59
283	SLU 6	-65	25	3313	484.89	4.25	22.5
283	SLU 7	-66	35	3350	490.14	4.31	22.93
283	SLU 8	-64	25	3293	482.15	4.22	22.31
283	SLU 9	-66	35	3330	487.4	4.28	22.74
283	SLU 10	-66	46	3672	529.93	4.71	22.78
283	SLU 11	-66	29	3664	528.37	4.69	22.69
283	SLU 12	-67	39	3701	533.62	4.75	23.12
283	SLU 13	-67	46	3705	534.38	4.76	23.21
283	SLU 14	-67	28	3697	532.82	4.74	23.12
283	SLU 15	-68	39	3734	538.07	4.8	23.55

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
283	SLU 16	-66	29	3676	530.08	4.71	22.93
283	SLU 17	-68	39	3713	535.33	4.77	23.36
283	SLU 18	-65	30	3775	541.73	4.82	22.33
283	SLU 19	-66	41	3811	546.98	4.88	22.76
283	SLU 20	-66	30	3808	546.18	4.86	22.76
283	SLU 21	-67	41	3844	551.43	4.92	23.19
283	SLU 22	-69	27	3652	527.61	4.71	24.02
283	SLU 23	-72	44	3714	536.36	4.81	24.73
283	SLU 24	-71	27	3706	534.8	4.79	24.65
283	SLU 25	-72	37	3743	540.04	4.84	25.08
283	SLU 26	-73	44	3747	540.81	4.85	25.17
283	SLU 27	-72	27	3739	539.25	4.83	25.08
283	SLU 28	-74	37	3776	544.49	4.89	25.51
283	SLU 29	-72	27	3718	536.51	4.8	24.89
283	SLU 30	-73	37	3755	541.76	4.86	25.32
283	SLU 31	-73	48	4097	584.29	5.29	25.36
283	SLU 32	-73	30	4089	582.73	5.27	25.27
283	SLU 33	-74	41	4126	587.98	5.33	25.7
283	SLU 34	-75	48	4130	588.74	5.34	25.79
283	SLU 35	-74	30	4122	587.18	5.32	25.7
283	SLU 36	-76	41	4159	592.43	5.37	26.13
283	SLU 37	-74	30	4102	584.44	5.28	25.51
283	SLU 38	-75	41	4139	589.69	5.34	25.94
283	SLU 39	-72	32	4200	596.08	5.4	24.91
283	SLU 40	-73	42	4237	601.33	5.46	25.34
283	SLU 41	-73	32	4233	600.53	5.44	25.34
283	SLU 42	-75	42	4270	605.78	5.5	25.77
283	SLU 43	-78	32	4049	596.59	5.17	26.98
283	SLU 44	-80	49	4110	605.34	5.27	27.7
283	SLU 45	-80	32	4103	603.78	5.25	27.61
283	SLU 46	-81	42	4139	609.03	5.31	28.04
283	SLU 47	-81	49	4143	609.79	5.31	28.13
283	SLU 48	-81	32	4136	608.23	5.29	28.05
283	SLU 49	-82	42	4172	613.48	5.35	28.48
283	SLU 50	-80	32	4115	605.49	5.26	27.85
283	SLU 51	-82	42	4152	610.74	5.32	28.28
283	SLU 52	-82	53	4494	653.27	5.75	28.32
283	SLU 53	-82	35	4486	651.71	5.73	28.23
283	SLU 54	-83	46	4523	656.96	5.79	28.66
283	SLU 55	-83	53	4527	657.72	5.8	28.76
283	SLU 56	-83	35	4519	656.16	5.78	28.67
283	SLU 57	-84	46	4556	661.41	5.84	29.1
283	SLU 58	-82	35	4499	653.42	5.75	28.48
283	SLU 59	-84	46	4535	658.67	5.81	28.91
283	SLU 60	-81	37	4597	665.07	5.86	27.87
283	SLU 61	-82	48	4634	670.32	5.92	28.3
283	SLU 62	-82	37	4630	669.52	5.9	28.31
283	SLU 63	-83	47	4667	674.76	5.96	28.74
283	SLU 64	-85	34	4475	650.95	5.75	29.56
283	SLU 65	-88	51	4536	659.69	5.85	30.28
283	SLU 66	-87	34	4528	658.13	5.83	30.19
283	SLU 67	-89	44	4565	663.38	5.88	30.62
283	SLU 68	-89	51	4569	664.14	5.89	30.72
283	SLU 69	-88	33	4561	662.58	5.87	30.63
283	SLU 70	-90	44	4598	667.83	5.93	31.06
283	SLU 71	-88	33	4541	659.85	5.84	30.43
283	SLU 72	-89	44	4577	665.09	5.9	30.86
283	SLU 73	-89	55	4919	707.63	6.33	30.9
283	SLU 74	-89	37	4911	706.07	6.31	30.81
283	SLU 75	-90	48	4948	711.32	6.37	31.24
283	SLU 76	-91	55	4952	712.08	6.38	31.34
283	SLU 77	-90	37	4944	710.52	6.36	31.25
283	SLU 78	-92	48	4981	715.77	6.41	31.68
283	SLU 79	-90	37	4924	707.78	6.32	31.06
283	SLU 80	-91	48	4961	713.03	6.38	31.49
283	SLU 81	-88	39	5022	719.42	6.44	30.45
283	SLU 82	-89	49	5059	724.67	6.5	30.88
283	SLU 83	-89	39	5055	723.87	6.48	30.89
283	SLU 84	-91	49	5092	729.12	6.54	31.32
283	SLE RA 1	-64	26	3348	488.78	4.29	22.17
283	SLE RA 2	-66	37	3389	494.61	4.36	22.65
283	SLE RA 3	-65	25	3384	493.57	4.35	22.59
283	SLE RA 4	-66	32	3409	497.07	4.39	22.88
283	SLE RA 5	-66	37	3411	497.58	4.39	22.94
283	SLE RA 6	-66	25	3406	496.54	4.38	22.88
283	SLE RA 7	-67	32	3431	500.04	4.42	23.17
283	SLE RA 8	-66	25	3393	494.71	4.36	22.75
283	SLE RA 9	-67	32	3417	498.21	4.4	23.04
283	SLE RA 10	-67	39	3645	526.57	4.68	23.07
283	SLE RA 11	-67	28	3640	525.53	4.67	23.01
283	SLE RA 12	-67	35	3664	529.03	4.71	23.29
283	SLE RA 13	-68	39	3667	529.54	4.71	23.36
283	SLE RA 14	-67	28	3662	528.5	4.7	23.3
283	SLE RA 15	-68	35	3686	532	4.74	23.58
283	SLE RA 16	-67	28	3648	526.67	4.68	23.17
283	SLE RA 17	-68	35	3673	530.17	4.72	23.46
283	SLE RA 18	-66	29	3714	534.43	4.75	22.77
283	SLE RA 19	-67	36	3738	537.93	4.79	23.05
283	SLE RA 20	-67	29	3736	537.4	4.78	23.06

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
283	SLE RA 21	-68	36	3760	540.9	4.82	23.34
283	SLE FR 1	-64	26	3348	488.78	4.29	22.17
283	SLE FR 2	-64	28	3357	489.95	4.31	22.27
283	SLE FR 3	-64	25	3357	489.97	4.31	22.29
283	SLE FR 4	-65	29	3466	503.64	4.44	22.45
283	SLE FR 5	-65	27	3467	503.66	4.44	22.47
283	SLE FR 6	-65	27	3531	511.61	4.52	22.47
283	SLE QP 1	-64	26	3348	488.78	4.29	22.17
283	SLE QP 2	-65	27	3458	502.48	4.43	22.35
283	SLD 1	293	203	4760	676.24	7.96	-103.35
283	SLD 2	366	112	4684	667	7.76	-128.58
283	SLD 3	328	-18	3857	568.82	6.61	-115.09
283	SLD 4	401	-109	3781	559.58	6.41	-140.32
283	SLD 5	-23	431	5232	719.18	7.57	6.99
283	SLD 6	25	370	5182	713.09	7.44	-9.66
283	SLD 7	93	-305	2222	361.13	3.08	-32.15
283	SLD 8	141	-365	2172	355.03	2.94	-48.79
283	SLD 9	-270	418	4744	649.92	5.92	93.5
283	SLD 10	-222	358	4694	643.83	5.79	76.86
283	SLD 11	-154	-317	1734	291.87	1.43	54.36
283	SLD 12	-106	-377	1684	285.77	1.29	37.72
283	SLD 13	-530	162	3135	445.37	2.46	185.03
283	SLD 14	-457	71	3059	436.13	2.25	159.8
283	SLD 15	-495	-59	2232	337.95	1.11	173.29
283	SLD 16	-423	-150	2157	328.72	0.9	148.06
283	SLV 1	771	456	6578	917.92	12.8	-270.91
283	SLV 2	942	242	6400	896.2	12.32	-330.22
283	SLV 3	856	-92	4317	649.05	9.43	-299.73
283	SLV 4	1027	-306	4139	627.33	8.94	-359.03
283	SLV 5	24	1026	7856	1038.95	12.15	-10.86
283	SLV 6	140	882	7736	1024.33	11.83	-50.78
283	SLV 7	309	-800	320	142.71	0.9	-106.91
283	SLV 8	424	-944	200	128.09	0.58	-146.83
283	SLV 9	-554	997	6716	876.86	8.29	191.54
283	SLV 10	-438	853	6596	862.24	7.96	151.61
283	SLV 11	-269	-829	-820	-19.38	-2.96	95.49
283	SLV 12	-154	-973	-940	-34	-3.29	55.56
283	SLV 13	-1156	359	2777	377.62	-0.08	403.74
283	SLV 14	-985	145	2599	355.9	-0.57	344.43
283	SLV 15	-1071	-189	516	108.75	-3.46	374.92
283	SLV 16	-900	-403	338	87.03	-3.94	315.62
283	CRTFP Ux+	0	0	0	0	0	0
283	CRTFP Ux-	0	0	0	0	0	0
283	CRTFP Uy+	0	0	0	0	0	0
283	CRTFP Uy-	0	0	0	0	0	0
284	SLU 1	-62	18	3123	408.53	2.37	21.41
284	SLU 2	-64	33	3182	416.24	2.43	22.11
284	SLU 3	-64	17	3175	414.53	2.41	22.04
284	SLU 4	-65	27	3210	419.16	2.45	22.45
284	SLU 5	-65	33	3214	419.96	2.46	22.54
284	SLU 6	-65	17	3207	418.25	2.44	22.47
284	SLU 7	-66	27	3242	422.88	2.48	22.89
284	SLU 8	-64	17	3187	415.97	2.42	22.28
284	SLU 9	-66	27	3222	420.6	2.46	22.7
284	SLU 10	-66	36	3554	456.11	2.68	22.74
284	SLU 11	-66	20	3547	454.4	2.66	22.67
284	SLU 12	-67	30	3582	459.03	2.7	23.09
284	SLU 13	-67	36	3586	459.83	2.71	23.17
284	SLU 14	-67	20	3578	458.12	2.69	23.1
284	SLU 15	-68	29	3614	462.75	2.73	23.52
284	SLU 16	-66	20	3559	455.84	2.67	22.91
284	SLU 17	-67	29	3594	460.47	2.71	23.33
284	SLU 18	-65	22	3654	465.49	2.73	22.32
284	SLU 19	-66	31	3690	470.12	2.76	22.73
284	SLU 20	-66	21	3686	469.21	2.75	22.75
284	SLU 21	-67	31	3722	473.83	2.79	23.17
284	SLU 22	-69	19	3534	453.6	2.69	24
284	SLU 23	-71	34	3593	461.31	2.75	24.7
284	SLU 24	-71	18	3586	459.6	2.73	24.63
284	SLU 25	-72	28	3621	464.22	2.77	25.04
284	SLU 26	-73	34	3625	465.03	2.78	25.13
284	SLU 27	-72	18	3618	463.31	2.76	25.06
284	SLU 28	-74	28	3653	467.94	2.8	25.48
284	SLU 29	-72	18	3598	461.03	2.74	24.87
284	SLU 30	-73	28	3633	465.66	2.78	25.29
284	SLU 31	-73	37	3965	501.18	3	25.33
284	SLU 32	-73	21	3958	499.47	2.98	25.26
284	SLU 33	-74	31	3993	504.09	3.02	25.68
284	SLU 34	-75	37	3997	504.9	3.03	25.76
284	SLU 35	-74	21	3989	503.18	3.01	25.69
284	SLU 36	-75	30	4025	507.81	3.05	26.11
284	SLU 37	-74	21	3970	500.9	2.99	25.5
284	SLU 38	-75	31	4005	505.53	3.03	25.92
284	SLU 39	-72	23	4066	510.55	3.05	24.9
284	SLU 40	-73	32	4101	515.18	3.08	25.32
284	SLU 41	-73	22	4097	514.27	3.07	25.34
284	SLU 42	-74	32	4133	518.9	3.11	25.76
284	SLU 43	-78	23	3919	515.64	2.97	26.95
284	SLU 44	-80	38	3978	523.35	3.03	27.64

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
284	SLU 45	-80	22	3971	521.64	3.01	27.57
284	SLU 46	-81	32	4006	526.27	3.05	27.99
284	SLU 47	-81	38	4010	527.07	3.06	28.08
284	SLU 48	-81	22	4003	525.36	3.04	28.01
284	SLU 49	-82	32	4038	529.99	3.08	28.42
284	SLU 50	-80	22	3983	523.08	3.02	27.82
284	SLU 51	-82	32	4018	527.71	3.06	28.23
284	SLU 52	-82	41	4350	563.22	3.28	28.28
284	SLU 53	-81	25	4343	561.51	3.27	28.21
284	SLU 54	-83	34	4378	566.14	3.3	28.62
284	SLU 55	-83	41	4382	566.94	3.31	28.71
284	SLU 56	-83	25	4374	565.23	3.29	28.64
284	SLU 57	-84	34	4410	569.86	3.33	29.06
284	SLU 58	-82	25	4355	562.95	3.27	28.45
284	SLU 59	-83	34	4390	567.58	3.31	28.87
284	SLU 60	-81	26	4451	572.6	3.33	27.85
284	SLU 61	-82	36	4486	577.23	3.36	28.27
284	SLU 62	-82	26	4482	576.32	3.36	28.29
284	SLU 63	-83	36	4518	580.94	3.39	28.7
284	SLU 64	-85	24	4331	560.71	3.29	29.54
284	SLU 65	-87	39	4389	568.42	3.35	30.23
284	SLU 66	-87	23	4382	566.71	3.33	30.16
284	SLU 67	-88	33	4417	571.33	3.37	30.58
284	SLU 68	-89	39	4421	572.14	3.38	30.67
284	SLU 69	-88	23	4414	570.42	3.36	30.6
284	SLU 70	-90	33	4449	575.05	3.4	31.01
284	SLU 71	-88	23	4394	568.14	3.34	30.4
284	SLU 72	-89	33	4429	572.77	3.38	30.82
284	SLU 73	-89	42	4761	608.29	3.6	30.87
284	SLU 74	-89	26	4754	606.58	3.59	30.79
284	SLU 75	-90	36	4789	611.2	3.62	31.21
284	SLU 76	-91	42	4793	612.01	3.63	31.3
284	SLU 77	-90	26	4786	610.29	3.61	31.23
284	SLU 78	-91	35	4821	614.92	3.65	31.65
284	SLU 79	-90	26	4766	608.01	3.59	31.04
284	SLU 80	-91	35	4801	612.64	3.63	31.45
284	SLU 81	-88	27	4862	617.66	3.65	30.44
284	SLU 82	-89	37	4897	622.29	3.68	30.86
284	SLU 83	-89	27	4893	621.38	3.68	30.87
284	SLU 84	-90	37	4929	626.01	3.71	31.29
284	SLE RA 1	-64	18	3241	421.41	2.46	22.15
284	SLE RA 2	-65	28	3280	426.55	2.5	22.62
284	SLE RA 3	-65	18	3275	425.41	2.49	22.57
284	SLE RA 4	-66	24	3299	428.49	2.51	22.85
284	SLE RA 5	-66	28	3301	429.03	2.52	22.9
284	SLE RA 6	-66	18	3296	427.89	2.51	22.86
284	SLE RA 7	-67	24	3320	430.97	2.53	23.14
284	SLE RA 8	-66	18	3283	426.37	2.5	22.73
284	SLE RA 9	-66	24	3307	429.45	2.52	23.01
284	SLE RA 10	-67	30	3528	453.13	2.67	23.04
284	SLE RA 11	-66	20	3523	451.99	2.66	22.99
284	SLE RA 12	-67	26	3546	455.07	2.68	23.27
284	SLE RA 13	-67	30	3549	455.61	2.69	23.33
284	SLE RA 14	-67	19	3544	454.47	2.68	23.28
284	SLE RA 15	-68	26	3568	457.55	2.7	23.56
284	SLE RA 16	-67	19	3531	452.95	2.66	23.15
284	SLE RA 17	-68	26	3555	456.03	2.69	23.43
284	SLE RA 18	-66	20	3595	459.38	2.7	22.75
284	SLE RA 19	-67	27	3618	462.46	2.72	23.03
284	SLE RA 20	-67	20	3616	461.86	2.72	23.04
284	SLE RA 21	-67	27	3640	464.94	2.74	23.32
284	SLE FR 1	-64	18	3241	421.41	2.46	22.15
284	SLE FR 2	-64	20	3249	422.44	2.47	22.24
284	SLE FR 3	-64	18	3249	422.4	2.47	22.27
284	SLE FR 4	-65	21	3355	433.83	2.54	22.43
284	SLE FR 5	-65	19	3356	433.79	2.54	22.45
284	SLE FR 6	-65	19	3418	440.39	2.58	22.45
284	SLE QP 1	-64	18	3241	421.41	2.46	22.15
284	SLE QP 2	-64	19	3347	432.8	2.53	22.33
284	SLD 1	294	145	4549	566.04	5.25	-103.55
284	SLD 2	367	61	4479	558.9	5.1	-128.82
284	SLD 3	329	-63	3681	476.12	4.43	-115.27
284	SLD 4	401	-146	3611	468.99	4.27	-140.54
284	SLD 5	-22	386	5037	610.42	4.63	6.89
284	SLD 6	26	332	4991	605.72	4.53	-9.78
284	SLD 7	93	-306	2143	310.71	1.88	-32.18
284	SLD 8	141	-361	2097	306	1.78	-48.85
284	SLD 9	-270	398	4598	559.6	3.29	93.52
284	SLD 10	-222	343	4551	554.89	3.19	76.85
284	SLD 11	-155	-294	1703	259.88	0.54	54.45
284	SLD 12	-107	-349	1657	255.18	0.44	37.77
284	SLD 13	-530	184	3083	396.61	0.79	185.21
284	SLD 14	-458	100	3013	389.48	0.63	159.93
284	SLD 15	-496	-24	2215	306.7	-0.04	173.49
284	SLD 16	-423	-107	2145	299.56	-0.19	148.21
284	SLV 1	772	328	6231	751.93	8.97	-271.35
284	SLV 2	943	133	6067	735.16	8.61	-330.75
284	SLV 3	857	-187	4057	526.94	6.91	-300.11
284	SLV 4	1028	-383	3892	510.17	6.54	-359.51

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
284	SLV 5	26	930	7541	872.91	7.66	-11.06
284	SLV 6	142	799	7430	861.61	7.41	-51.06
284	SLV 7	308	-789	293	122.93	0.78	-106.94
284	SLV 8	424	-921	182	111.64	0.54	-146.93
284	SLV 9	-553	958	6512	753.96	4.53	191.6
284	SLV 10	-437	826	6401	742.66	4.28	151.6
284	SLV 11	-270	-762	-736	3.99	-2.35	95.72
284	SLV 12	-155	-893	-847	-7.31	-2.6	55.73
284	SLV 13	-1157	420	2802	355.43	-1.48	404.18
284	SLV 14	-986	225	2637	338.66	-1.84	344.78
284	SLV 15	-1072	-96	627	130.44	-3.54	375.42
284	SLV 16	-901	-291	463	113.67	-3.91	316.01
284	CRTFP Ux+	0	0	0	0	0	0
284	CRTFP Ux-	0	0	0	0	0	0
284	CRTFP Uy+	0	0	0	0	0	0
284	CRTFP Uy-	0	0	0	0	0	0
285	SLU 1	-62	11	3075	383.76	0.71	21.34
285	SLU 2	-64	26	3132	391.19	0.73	22.02
285	SLU 3	-63	11	3125	389.32	0.72	21.97
285	SLU 4	-65	19	3160	393.78	0.73	22.37
285	SLU 5	-65	25	3163	394.64	0.74	22.45
285	SLU 6	-65	10	3156	392.77	0.73	22.4
285	SLU 7	-66	19	3191	397.23	0.74	22.8
285	SLU 8	-64	10	3137	390.66	0.72	22.21
285	SLU 9	-65	19	3172	395.12	0.73	22.61
285	SLU 10	-65	27	3499	428.23	0.76	22.66
285	SLU 11	-65	12	3492	426.37	0.75	22.61
285	SLU 12	-66	21	3527	430.82	0.76	23.01
285	SLU 13	-67	27	3530	431.68	0.77	23.09
285	SLU 14	-66	12	3524	429.82	0.76	23.04
285	SLU 15	-68	21	3558	434.27	0.77	23.44
285	SLU 16	-66	12	3504	427.71	0.75	22.85
285	SLU 17	-67	21	3539	432.16	0.77	23.25
285	SLU 18	-64	14	3599	436.69	0.75	22.26
285	SLU 19	-65	22	3634	441.14	0.76	22.66
285	SLU 20	-66	13	3630	440.14	0.76	22.69
285	SLU 21	-67	22	3665	444.59	0.77	23.1
285	SLU 22	-69	11	3479	425.41	0.78	23.94
285	SLU 23	-71	26	3537	432.84	0.8	24.61
285	SLU 24	-71	11	3530	430.97	0.79	24.56
285	SLU 25	-72	20	3564	435.43	0.81	24.96
285	SLU 26	-72	26	3568	436.29	0.81	25.04
285	SLU 27	-72	11	3561	434.42	0.8	24.99
285	SLU 28	-73	20	3596	438.88	0.82	25.39
285	SLU 29	-71	11	3542	432.31	0.8	24.8
285	SLU 30	-73	20	3576	436.77	0.81	25.2
285	SLU 31	-73	28	3904	469.88	0.84	25.25
285	SLU 32	-73	13	3897	468.02	0.83	25.2
285	SLU 33	-74	22	3932	472.47	0.84	25.6
285	SLU 34	-74	28	3935	473.33	0.84	25.68
285	SLU 35	-74	13	3928	471.47	0.83	25.63
285	SLU 36	-75	21	3963	475.92	0.85	26.03
285	SLU 37	-73	13	3909	469.36	0.83	25.44
285	SLU 38	-75	22	3944	473.81	0.84	25.85
285	SLU 39	-72	14	4004	478.33	0.83	24.85
285	SLU 40	-73	23	4038	482.79	0.84	25.26
285	SLU 41	-73	14	4035	481.78	0.83	25.28
285	SLU 42	-74	23	4070	486.24	0.85	25.69
285	SLU 43	-77	14	3858	484.61	0.89	26.86
285	SLU 44	-79	29	3916	492.04	0.91	27.53
285	SLU 45	-79	14	3909	490.17	0.91	27.48
285	SLU 46	-80	22	3943	494.63	0.92	27.88
285	SLU 47	-81	29	3947	495.49	0.92	27.96
285	SLU 48	-80	13	3940	493.62	0.91	27.91
285	SLU 49	-82	22	3974	498.08	0.93	28.32
285	SLU 50	-80	14	3921	491.51	0.91	27.72
285	SLU 51	-81	22	3955	495.97	0.92	28.13
285	SLU 52	-81	31	4283	529.08	0.95	28.17
285	SLU 53	-81	16	4276	527.22	0.94	28.12
285	SLU 54	-82	24	4310	531.67	0.95	28.52
285	SLU 55	-83	30	4314	532.53	0.95	28.6
285	SLU 56	-82	15	4307	530.67	0.95	28.55
285	SLU 57	-84	24	4342	535.12	0.96	28.96
285	SLU 58	-82	15	4288	528.56	0.94	28.36
285	SLU 59	-83	24	4322	533.01	0.95	28.77
285	SLU 60	-80	17	4383	537.53	0.94	27.77
285	SLU 61	-81	25	4417	541.99	0.95	28.18
285	SLU 62	-81	16	4414	540.99	0.95	28.21
285	SLU 63	-83	25	4448	545.44	0.96	28.61
285	SLU 64	-85	14	4263	526.26	0.97	29.45
285	SLU 65	-87	29	4320	533.69	0.99	30.12
285	SLU 66	-87	14	4313	531.82	0.98	30.07
285	SLU 67	-88	23	4348	536.28	0.99	30.48
285	SLU 68	-88	29	4352	537.14	1	30.56
285	SLU 69	-88	14	4345	535.27	0.99	30.5
285	SLU 70	-89	23	4379	539.73	1	30.91
285	SLU 71	-87	14	4325	533.16	0.98	30.31
285	SLU 72	-89	23	4360	537.62	1	30.72
285	SLU 73	-89	31	4688	570.73	1.02	30.76

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
285	SLU 74	-89	16	4681	568.87	1.01	30.71
285	SLU 75	-90	25	4715	573.32	1.03	31.12
285	SLU 76	-90	31	4719	574.18	1.03	31.2
285	SLU 77	-90	16	4712	572.32	1.02	31.15
285	SLU 78	-91	25	4746	576.77	1.03	31.55
285	SLU 79	-89	16	4693	570.21	1.01	30.96
285	SLU 80	-90	25	4727	574.66	1.03	31.36
285	SLU 81	-88	17	4788	579.18	1.01	30.37
285	SLU 82	-89	26	4822	583.64	1.03	30.77
285	SLU 83	-89	17	4819	582.63	1.02	30.8
285	SLU 84	-90	26	4853	587.09	1.03	31.2
285	SLE RA 1	-64	11	3190	395.66	0.73	22.08
285	SLE RA 2	-65	21	3228	400.61	0.74	22.53
285	SLE RA 3	-65	11	3224	399.37	0.74	22.5
285	SLE RA 4	-66	17	3247	402.34	0.75	22.77
285	SLE RA 5	-66	21	3249	402.91	0.75	22.82
285	SLE RA 6	-66	11	3245	401.67	0.74	22.79
285	SLE RA 7	-66	17	3268	404.64	0.75	23.06
285	SLE RA 8	-65	11	3232	400.26	0.74	22.66
285	SLE RA 9	-66	17	3255	403.23	0.75	22.93
285	SLE RA 10	-66	22	3473	425.31	0.76	22.96
285	SLE RA 11	-66	12	3469	424.07	0.76	22.93
285	SLE RA 12	-67	18	3492	427.04	0.77	23.2
285	SLE RA 13	-67	22	3494	427.61	0.77	23.25
285	SLE RA 14	-67	12	3490	426.37	0.76	23.21
285	SLE RA 15	-68	18	3513	429.34	0.77	23.48
285	SLE RA 16	-67	12	3477	424.96	0.76	23.09
285	SLE RA 17	-67	18	3500	427.93	0.77	23.36
285	SLE RA 18	-65	13	3540	430.94	0.76	22.7
285	SLE RA 19	-66	19	3563	433.91	0.77	22.96
285	SLE RA 20	-66	13	3561	433.24	0.76	22.98
285	SLE RA 21	-67	18	3584	436.21	0.77	23.25
285	SLE FR 1	-64	11	3190	395.66	0.73	22.08
285	SLE FR 2	-64	13	3198	396.65	0.73	22.17
285	SLE FR 3	-64	11	3199	396.58	0.73	22.2
285	SLE FR 4	-64	13	3303	407.24	0.74	22.36
285	SLE FR 5	-65	11	3303	407.17	0.74	22.38
285	SLE FR 6	-65	12	3365	413.3	0.74	22.39
285	SLE QP 1	-64	11	3190	395.66	0.73	22.08
285	SLE QP 2	-64	12	3295	406.25	0.74	22.27
285	SLD 1	295	129	4422	515.8	2.73	-103.77
285	SLD 2	368	53	4356	509.75	2.62	-129.08
285	SLD 3	329	-69	3572	432.3	2.4	-115.46
285	SLD 4	402	-145	3506	426.25	2.3	-140.77
285	SLD 5	-21	361	4934	566.84	1.85	6.75
285	SLD 6	27	311	4891	562.85	1.78	-9.95
285	SLD 7	92	-299	2101	288.51	0.76	-32.23
285	SLD 8	140	-350	2057	284.52	0.69	-48.93
285	SLD 9	-269	373	4533	527.97	0.79	93.47
285	SLD 10	-221	322	4489	523.98	0.72	76.77
285	SLD 11	-155	-287	1699	249.65	-0.31	54.49
285	SLD 12	-107	-338	1656	245.65	-0.38	37.79
285	SLD 13	-530	168	3084	386.24	-0.82	185.31
285	SLD 14	-458	92	3018	380.19	-0.93	159.99
285	SLD 15	-496	-30	2234	302.75	-1.15	173.61
285	SLD 16	-423	-106	2168	296.69	-1.26	148.3
285	SLV 1	774	302	6002	669.4	5.43	-271.77
285	SLV 2	945	122	5848	655.17	5.18	-331.27
285	SLV 3	858	-190	3874	460.51	4.61	-300.46
285	SLV 4	1029	-370	3719	446.29	4.36	-359.96
285	SLV 5	28	878	7364	804.65	3.44	-11.32
285	SLV 6	144	757	7260	795.07	3.27	-51.38
285	SLV 7	307	-761	269	108.38	0.7	-106.96
285	SLV 8	423	-882	165	98.8	0.53	-147.02
285	SLV 9	-551	905	6425	713.69	0.94	191.56
285	SLV 10	-436	784	6321	704.12	0.77	151.5
285	SLV 11	-272	-734	-670	17.42	-1.79	95.92
285	SLV 12	-157	-855	-774	7.84	-1.96	55.86
285	SLV 13	-1157	393	2871	366.2	-2.88	404.5
285	SLV 14	-986	213	2717	351.98	-3.14	345
285	SLV 15	-1074	-99	743	157.32	-3.7	375.8
285	SLV 16	-902	-279	588	143.1	-3.96	316.31
285	CRTFP Ux+	0	0	0	0	0	0
285	CRTFP Ux-	0	0	0	0	0	0
285	CRTFP Uy+	0	0	0	0	0	0
285	CRTFP Uy-	0	0	0	0	0	0
286	SLU 1	-61	5	3077	395.89	-0.86	21.25
286	SLU 2	-63	19	3135	403.7	-0.88	21.89
286	SLU 3	-63	5	3128	401.7	-0.88	21.86
286	SLU 4	-64	13	3162	406.38	-0.89	22.25
286	SLU 5	-64	19	3166	407.31	-0.89	22.32
286	SLU 6	-64	4	3159	405.31	-0.89	22.29
286	SLU 7	-65	13	3194	409.99	-0.9	22.68
286	SLU 8	-64	5	3140	403.11	-0.88	22.1
286	SLU 9	-65	13	3174	407.79	-0.89	22.49
286	SLU 10	-65	20	3504	442.8	-1.05	22.54
286	SLU 11	-65	6	3497	440.79	-1.06	22.51
286	SLU 12	-66	14	3532	445.48	-1.06	22.9
286	SLU 13	-66	20	3535	446.4	-1.06	22.97

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
286	SLU 14	-66	5	3529	444.4	-1.07	22.94
286	SLU 15	-67	14	3563	449.09	-1.08	23.33
286	SLU 16	-66	6	3509	442.2	-1.06	22.75
286	SLU 17	-67	14	3544	446.89	-1.07	23.14
286	SLU 18	-64	7	3605	451.74	-1.11	22.17
286	SLU 19	-65	15	3640	456.43	-1.12	22.56
286	SLU 20	-65	6	3637	455.35	-1.13	22.6
286	SLU 21	-66	15	3671	460.04	-1.13	22.99
286	SLU 22	-69	5	3483	439.56	-1.02	23.84
286	SLU 23	-71	19	3541	447.37	-1.03	24.49
286	SLU 24	-70	4	3534	445.37	-1.04	24.46
286	SLU 25	-72	13	3568	450.05	-1.04	24.84
286	SLU 26	-72	19	3572	450.98	-1.04	24.92
286	SLU 27	-72	4	3565	448.98	-1.05	24.89
286	SLU 28	-73	13	3600	453.66	-1.06	25.27
286	SLU 29	-71	4	3546	446.78	-1.04	24.7
286	SLU 30	-72	13	3580	451.46	-1.05	25.09
286	SLU 31	-72	20	3910	486.46	-1.21	25.14
286	SLU 32	-72	6	3904	484.46	-1.21	25.11
286	SLU 33	-73	14	3938	489.15	-1.22	25.49
286	SLU 34	-74	20	3942	490.07	-1.22	25.57
286	SLU 35	-74	5	3935	488.07	-1.22	25.54
286	SLU 36	-75	14	3969	492.76	-1.23	25.92
286	SLU 37	-73	5	3916	485.87	-1.22	25.35
286	SLU 38	-74	14	3950	490.56	-1.23	25.74
286	SLU 39	-71	6	4011	495.41	-1.27	24.77
286	SLU 40	-73	15	4046	500.1	-1.28	25.16
286	SLU 41	-73	6	4043	499.02	-1.28	25.2
286	SLU 42	-74	15	4077	503.7	-1.29	25.59
286	SLU 43	-77	7	3861	499.69	-1.07	26.73
286	SLU 44	-79	21	3918	507.49	-1.08	27.38
286	SLU 45	-79	6	3912	505.49	-1.08	27.35
286	SLU 46	-80	15	3946	510.18	-1.09	27.74
286	SLU 47	-80	20	3950	511.1	-1.09	27.81
286	SLU 48	-80	6	3943	509.1	-1.1	27.78
286	SLU 49	-81	14	3977	513.79	-1.1	28.17
286	SLU 50	-79	6	3924	506.9	-1.09	27.59
286	SLU 51	-81	15	3958	511.59	-1.1	27.98
286	SLU 52	-81	22	4288	546.59	-1.26	28.03
286	SLU 53	-81	7	4281	544.59	-1.26	28
286	SLU 54	-82	16	4316	549.27	-1.27	28.39
286	SLU 55	-82	21	4319	550.2	-1.27	28.46
286	SLU 56	-82	7	4313	548.2	-1.27	28.43
286	SLU 57	-83	15	4347	552.88	-1.28	28.82
286	SLU 58	-81	7	4293	546	-1.27	28.24
286	SLU 59	-83	16	4328	550.68	-1.27	28.63
286	SLU 60	-80	8	4389	555.54	-1.32	27.66
286	SLU 61	-81	17	4424	560.22	-1.33	28.05
286	SLU 62	-81	8	4420	559.15	-1.33	28.09
286	SLU 63	-82	16	4455	563.83	-1.34	28.48
286	SLU 64	-84	6	4267	543.36	-1.22	29.32
286	SLU 65	-86	20	4325	551.16	-1.24	29.97
286	SLU 66	-86	6	4318	549.16	-1.24	29.94
286	SLU 67	-87	14	4352	553.85	-1.25	30.33
286	SLU 68	-88	20	4356	554.77	-1.25	30.4
286	SLU 69	-87	6	4349	552.77	-1.25	30.37
286	SLU 70	-89	14	4384	557.46	-1.26	30.76
286	SLU 71	-87	6	4330	550.57	-1.25	30.18
286	SLU 72	-88	14	4364	555.26	-1.25	30.57
286	SLU 73	-88	22	4694	590.26	-1.41	30.62
286	SLU 74	-88	7	4687	588.26	-1.42	30.59
286	SLU 75	-89	16	4722	592.94	-1.43	30.98
286	SLU 76	-89	21	4726	593.87	-1.43	31.05
286	SLU 77	-89	7	4719	591.87	-1.43	31.02
286	SLU 78	-90	15	4753	596.55	-1.44	31.41
286	SLU 79	-89	7	4700	589.67	-1.42	30.83
286	SLU 80	-90	15	4734	594.35	-1.43	31.22
286	SLU 81	-87	8	4795	599.21	-1.48	30.25
286	SLU 82	-88	16	4830	603.89	-1.48	30.64
286	SLU 83	-88	8	4827	602.81	-1.49	30.68
286	SLU 84	-90	16	4861	607.5	-1.5	31.07
286	SLE RA 1	-63	5	3193	408.37	-0.91	21.99
286	SLE RA 2	-65	14	3231	413.57	-0.92	22.42
286	SLE RA 3	-64	5	3227	412.24	-0.92	22.4
286	SLE RA 4	-65	10	3250	415.36	-0.92	22.66
286	SLE RA 5	-65	14	3252	415.98	-0.92	22.71
286	SLE RA 6	-65	5	3248	414.65	-0.93	22.68
286	SLE RA 7	-66	10	3271	417.77	-0.93	22.94
286	SLE RA 8	-65	5	3235	413.18	-0.92	22.56
286	SLE RA 9	-66	10	3258	416.3	-0.93	22.82
286	SLE RA 10	-66	15	3478	439.64	-1.03	22.85
286	SLE RA 11	-66	5	3473	438.3	-1.04	22.83
286	SLE RA 12	-67	11	3496	441.43	-1.04	23.09
286	SLE RA 13	-67	15	3499	442.04	-1.04	23.14
286	SLE RA 14	-67	5	3494	440.71	-1.04	23.12
286	SLE RA 15	-67	11	3517	443.83	-1.05	23.38
286	SLE RA 16	-66	5	3481	439.24	-1.04	22.99
286	SLE RA 17	-67	11	3504	442.37	-1.04	23.25
286	SLE RA 18	-65	6	3545	445.6	-1.08	22.61

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
286	SLE RA 19	-66	12	3568	448.73	-1.08	22.86
286	SLE RA 20	-66	6	3566	448.01	-1.08	22.89
286	SLE RA 21	-67	11	3589	451.13	-1.09	23.15
286	SLE FR 1	-63	5	3193	408.37	-0.91	21.99
286	SLE FR 2	-64	7	3201	409.41	-0.91	22.07
286	SLE FR 3	-64	5	3202	409.33	-0.91	22.1
286	SLE FR 4	-64	7	3306	420.58	-0.96	22.26
286	SLE FR 5	-64	5	3307	420.5	-0.96	22.29
286	SLE FR 6	-64	5	3369	426.99	-0.99	22.3
286	SLE QP 1	-63	5	3193	408.37	-0.91	21.99
286	SLE QP 2	-64	5	3299	419.54	-0.96	22.17
286	SLD 1	296	116	4373	520.25	0.39	-103.99
286	SLD 2	369	45	4310	514.41	0.32	-129.33
286	SLD 3	330	-75	3526	433.16	0.53	-115.64
286	SLD 4	402	-146	3463	427.32	0.46	-140.99
286	SLD 5	-20	342	4917	582.9	-0.76	6.56
286	SLD 6	28	295	4876	579.04	-0.8	-10.16
286	SLD 7	92	-297	2093	292.58	-0.29	-32.29
286	SLD 8	140	-344	2052	288.73	-0.33	-49.01
286	SLD 9	-268	354	4546	550.35	-1.59	93.36
286	SLD 10	-220	308	4504	546.49	-1.63	76.64
286	SLD 11	-156	-285	1722	260.03	-1.11	54.5
286	SLD 12	-108	-332	1681	256.18	-1.16	37.78
286	SLD 13	-530	157	3135	411.76	-2.38	185.33
286	SLD 14	-457	86	3072	405.92	-2.44	159.99
286	SLD 15	-497	-35	2288	324.66	-2.24	173.67
286	SLD 16	-424	-106	2225	318.82	-2.3	148.33
286	SLV 1	776	279	5882	662.3	2.18	-272.17
286	SLV 2	947	113	5733	648.57	2.02	-331.74
286	SLV 3	858	-197	3760	444.4	2.53	-300.76
286	SLV 4	1029	-364	3612	430.67	2.38	-360.33
286	SLV 5	31	841	7319	825.4	-0.53	-11.64
286	SLV 6	146	729	7219	816.16	-0.63	-51.75
286	SLV 7	306	-747	248	99.08	0.66	-106.96
286	SLV 8	421	-859	148	89.84	0.55	-147.07
286	SLV 9	-549	870	6450	749.23	-2.47	191.41
286	SLV 10	-434	757	6350	739.99	-2.57	151.3
286	SLV 11	-274	-718	-621	22.92	-1.28	96.09
286	SLV 12	-158	-831	-721	13.68	-1.39	55.99
286	SLV 13	-1157	374	2986	408.4	-4.29	404.68
286	SLV 14	-986	207	2837	394.68	-4.45	345.11
286	SLV 15	-1075	-102	864	190.51	-3.94	376.08
286	SLV 16	-903	-269	716	176.78	-4.09	316.51
286	CRTFP Ux+	0	0	0	0	0	0
286	CRTFP Ux-	0	0	0	0	0	0
286	CRTFP Uy+	0	0	0	0	0	0
286	CRTFP Uy-	0	0	0	0	0	0
287	SLU 1	-61	0	3128	442.77	-2.33	21.12
287	SLU 2	-63	14	3187	451.57	-2.37	21.74
287	SLU 3	-63	0	3180	449.47	-2.37	21.73
287	SLU 4	-64	8	3215	454.75	-2.4	22.11
287	SLU 5	-64	14	3219	455.74	-2.4	22.17
287	SLU 6	-64	-1	3212	453.64	-2.4	22.16
287	SLU 7	-65	8	3247	458.92	-2.43	22.53
287	SLU 8	-63	-1	3192	451.1	-2.38	21.98
287	SLU 9	-64	8	3227	456.39	-2.41	22.35
287	SLU 10	-64	14	3565	497.35	-2.74	22.4
287	SLU 11	-64	0	3558	495.25	-2.74	22.39
287	SLU 12	-66	8	3593	500.53	-2.77	22.77
287	SLU 13	-66	14	3597	501.52	-2.77	22.83
287	SLU 14	-66	0	3590	499.42	-2.77	22.82
287	SLU 15	-67	8	3625	504.7	-2.8	23.19
287	SLU 16	-65	0	3571	496.88	-2.75	22.63
287	SLU 17	-66	8	3606	502.16	-2.78	23.01
287	SLU 18	-64	1	3669	508.17	-2.86	22.06
287	SLU 19	-65	9	3704	513.45	-2.88	22.44
287	SLU 20	-65	0	3701	512.34	-2.88	22.49
287	SLU 21	-66	9	3736	517.62	-2.91	22.86
287	SLU 22	-68	-1	3543	493.6	-2.7	23.71
287	SLU 23	-70	13	3601	502.4	-2.75	24.34
287	SLU 24	-70	-1	3595	500.31	-2.74	24.33
287	SLU 25	-71	7	3630	505.59	-2.77	24.7
287	SLU 26	-71	13	3633	506.57	-2.77	24.76
287	SLU 27	-71	-1	3627	504.47	-2.77	24.75
287	SLU 28	-72	7	3662	509.75	-2.8	25.13
287	SLU 29	-71	-1	3607	501.94	-2.75	24.57
287	SLU 30	-72	7	3642	507.22	-2.78	24.94
287	SLU 31	-72	14	3980	548.18	-3.12	25
287	SLU 32	-72	-1	3973	546.08	-3.11	24.99
287	SLU 33	-73	8	4008	551.37	-3.14	25.36
287	SLU 34	-73	13	4012	552.35	-3.15	25.42
287	SLU 35	-73	-1	4005	550.25	-3.14	25.41
287	SLU 36	-74	7	4040	555.53	-3.17	25.79
287	SLU 37	-73	-1	3985	547.71	-3.13	25.23
287	SLU 38	-74	8	4020	553	-3.15	25.6
287	SLU 39	-71	0	4083	559	-3.23	24.66
287	SLU 40	-72	8	4118	564.28	-3.26	25.03
287	SLU 41	-72	0	4115	563.17	-3.26	25.08
287	SLU 42	-73	8	4150	568.45	-3.29	25.46

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
287	SLU 43	-76	0	3925	558.17	-2.9	26.57
287	SLU 44	-78	14	3983	566.97	-2.94	27.19
287	SLU 45	-78	0	3976	564.88	-2.94	27.18
287	SLU 46	-79	8	4011	570.16	-2.97	27.55
287	SLU 47	-79	14	4015	571.14	-2.97	27.62
287	SLU 48	-79	-1	4008	569.04	-2.97	27.61
287	SLU 49	-80	8	4043	574.33	-3	27.98
287	SLU 50	-79	0	3989	566.51	-2.95	27.42
287	SLU 51	-80	8	4024	571.79	-2.98	27.8
287	SLU 52	-80	14	4361	612.75	-3.31	27.85
287	SLU 53	-80	0	4355	610.66	-3.31	27.84
287	SLU 54	-81	8	4390	615.94	-3.34	28.21
287	SLU 55	-81	14	4393	616.92	-3.34	28.28
287	SLU 56	-81	0	4387	614.82	-3.34	28.27
287	SLU 57	-82	8	4422	620.1	-3.37	28.64
287	SLU 58	-81	0	4367	612.29	-3.32	28.08
287	SLU 59	-82	8	4402	617.57	-3.35	28.46
287	SLU 60	-79	1	4465	623.57	-3.43	27.51
287	SLU 61	-80	9	4500	628.85	-3.45	27.88
287	SLU 62	-80	0	4497	627.74	-3.45	27.94
287	SLU 63	-82	9	4532	633.02	-3.48	28.31
287	SLU 64	-84	0	4339	609	-3.27	29.16
287	SLU 65	-86	13	4398	617.81	-3.32	29.78
287	SLU 66	-86	-1	4391	615.71	-3.31	29.77
287	SLU 67	-87	7	4426	620.99	-3.34	30.15
287	SLU 68	-87	13	4430	621.97	-3.34	30.21
287	SLU 69	-87	-1	4423	619.88	-3.34	30.2
287	SLU 70	-88	7	4458	625.16	-3.37	30.57
287	SLU 71	-86	-1	4403	617.34	-3.32	30.02
287	SLU 72	-87	7	4438	622.62	-3.35	30.39
287	SLU 73	-88	14	4776	663.59	-3.69	30.44
287	SLU 74	-88	0	4769	661.49	-3.68	30.43
287	SLU 75	-89	8	4804	666.77	-3.71	30.81
287	SLU 76	-89	14	4808	667.75	-3.72	30.87
287	SLU 77	-89	-1	4801	665.65	-3.71	30.86
287	SLU 78	-90	8	4836	670.94	-3.74	31.23
287	SLU 79	-88	-1	4782	663.12	-3.7	30.68
287	SLU 80	-89	8	4817	668.4	-3.72	31.05
287	SLU 81	-87	0	4880	674.4	-3.8	30.1
287	SLU 82	-88	8	4915	679.68	-3.83	30.48
287	SLU 83	-88	0	4912	678.57	-3.83	30.53
287	SLU 84	-89	8	4947	683.85	-3.86	30.9
287	SLE RA 1	-63	0	3247	457.29	-2.43	21.86
287	SLE RA 2	-64	9	3286	463.16	-2.46	22.28
287	SLE RA 3	-64	0	3281	461.76	-2.46	22.27
287	SLE RA 4	-65	5	3305	465.28	-2.48	22.52
287	SLE RA 5	-65	9	3307	465.94	-2.48	22.56
287	SLE RA 6	-65	-1	3303	464.54	-2.48	22.55
287	SLE RA 7	-66	5	3326	468.06	-2.5	22.8
287	SLE RA 8	-65	-1	3289	462.85	-2.47	22.43
287	SLE RA 9	-65	5	3313	466.37	-2.49	22.68
287	SLE RA 10	-65	9	3538	493.68	-2.71	22.72
287	SLE RA 11	-65	0	3533	492.28	-2.71	22.71
287	SLE RA 12	-66	5	3557	495.8	-2.73	22.96
287	SLE RA 13	-66	9	3559	496.46	-2.73	23
287	SLE RA 14	-66	0	3555	495.06	-2.73	22.99
287	SLE RA 15	-67	5	3578	498.58	-2.75	23.24
287	SLE RA 16	-66	0	3542	493.37	-2.72	22.87
287	SLE RA 17	-67	5	3565	496.89	-2.74	23.12
287	SLE RA 18	-65	0	3607	500.89	-2.79	22.49
287	SLE RA 19	-65	6	3631	504.41	-2.8	22.74
287	SLE RA 20	-66	0	3628	503.67	-2.8	22.77
287	SLE RA 21	-66	6	3652	507.19	-2.82	23.02
287	SLE FR 1	-63	0	3247	457.29	-2.43	21.86
287	SLE FR 2	-63	2	3255	458.47	-2.44	21.95
287	SLE FR 3	-63	0	3255	458.4	-2.44	21.98
287	SLE FR 4	-64	2	3363	471.55	-2.54	22.13
287	SLE FR 5	-64	0	3363	471.48	-2.55	22.16
287	SLE FR 6	-64	0	3427	479.09	-2.61	22.18
287	SLE QP 1	-63	0	3247	457.29	-2.43	21.86
287	SLE QP 2	-63	0	3355	470.37	-2.54	22.05
287	SLD 1	297	106	4395	575.47	-1.76	-104.21
287	SLD 2	370	39	4334	569.11	-1.79	-129.57
287	SLD 3	330	-83	3537	475.52	-1.19	-115.81
287	SLD 4	403	-149	3475	469.16	-1.22	-141.18
287	SLD 5	-19	330	4980	654.63	-3.16	6.33
287	SLD 6	29	286	4940	650.44	-3.18	-10.4
287	SLD 7	92	-299	2118	321.48	-1.27	-32.35
287	SLD 8	140	-343	2078	317.28	-1.28	-49.08
287	SLD 9	-267	343	4632	623.47	-3.79	93.18
287	SLD 10	-219	299	4591	619.27	-3.81	76.45
287	SLD 11	-156	-286	1770	290.31	-1.9	54.5
287	SLD 12	-108	-330	1730	286.11	-1.91	37.77
287	SLD 13	-530	149	3235	471.59	-3.86	185.28
287	SLD 14	-457	83	3173	465.22	-3.89	159.91
287	SLD 15	-497	-40	2376	371.64	-3.29	173.68
287	SLD 16	-424	-106	2315	365.28	-3.32	148.31
287	SLV 1	777	262	5860	724.47	-0.77	-272.53
287	SLV 2	948	106	5715	709.51	-0.83	-332.15

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
287	SLV 3	859	-207	3710	474.33	0.66	-300.99
287	SLV 4	1030	-364	3565	459.38	0.6	-360.61
287	SLV 5	33	820	7394	928.77	-4.16	-12.03
287	SLV 6	148	714	7297	918.69	-4.2	-52.17
287	SLV 7	305	-745	228	94.98	0.6	-106.9
287	SLV 8	420	-850	130	84.91	0.56	-147.04
287	SLV 9	-547	850	6580	855.84	-5.63	191.14
287	SLV 10	-432	745	6482	845.76	-5.67	151
287	SLV 11	-275	-714	-587	22.05	-0.88	96.27
287	SLV 12	-160	-820	-684	11.98	-0.92	56.13
287	SLV 13	-1157	364	3145	481.37	-5.68	404.72
287	SLV 14	-986	207	3000	466.41	-5.74	345.09
287	SLV 15	-1075	-106	995	231.24	-4.25	376.26
287	SLV 16	-904	-262	850	216.28	-4.31	316.63
287	CRTFP Ux+	0	0	0	0	0	0
287	CRTFP Ux-	0	0	0	0	0	0
287	CRTFP Uy+	0	0	0	0	0	0
287	CRTFP Uy-	0	0	0	0	0	0
288	SLU 1	-60	-5	3224	522.01	-3.66	20.98
288	SLU 2	-62	9	3285	532.34	-3.74	21.58
288	SLU 3	-62	-5	3278	530.22	-3.73	21.59
288	SLU 4	-63	3	3314	536.41	-3.78	21.95
288	SLU 5	-63	9	3318	537.44	-3.78	22
288	SLU 6	-63	-5	3311	535.32	-3.78	22.01
288	SLU 7	-64	3	3347	541.51	-3.82	22.37
288	SLU 8	-63	-5	3291	532.21	-3.75	21.83
288	SLU 9	-64	3	3327	538.41	-3.8	22.19
288	SLU 10	-64	9	3678	589.16	-4.29	22.25
288	SLU 11	-64	-5	3671	587.04	-4.28	22.26
288	SLU 12	-65	3	3707	593.23	-4.33	22.62
288	SLU 13	-65	9	3711	594.26	-4.33	22.67
288	SLU 14	-65	-5	3704	592.13	-4.33	22.69
288	SLU 15	-66	3	3740	598.33	-4.37	23.04
288	SLU 16	-65	-5	3684	589.03	-4.3	22.5
288	SLU 17	-66	3	3720	595.23	-4.35	22.86
288	SLU 18	-63	-5	3786	603.18	-4.45	21.94
288	SLU 19	-64	4	3822	609.38	-4.5	22.3
288	SLU 20	-64	-5	3819	608.28	-4.49	22.37
288	SLU 21	-65	3	3855	614.48	-4.54	22.72
288	SLU 22	-68	-5	3654	584.82	-4.23	23.58
288	SLU 23	-69	8	3714	595.14	-4.31	24.17
288	SLU 24	-70	-6	3707	593.02	-4.3	24.18
288	SLU 25	-71	2	3744	599.21	-4.35	24.54
288	SLU 26	-71	8	3747	600.24	-4.35	24.6
288	SLU 27	-71	-6	3741	598.12	-4.35	24.61
288	SLU 28	-72	2	3777	604.31	-4.39	24.96
288	SLU 29	-70	-6	3720	595.02	-4.32	24.42
288	SLU 30	-71	2	3756	601.21	-4.37	24.78
288	SLU 31	-71	8	4107	651.96	-4.86	24.84
288	SLU 32	-71	-6	4101	649.84	-4.85	24.85
288	SLU 33	-72	2	4137	656.03	-4.9	25.21
288	SLU 34	-73	8	4141	657.06	-4.9	25.27
288	SLU 35	-73	-6	4134	654.94	-4.9	25.28
288	SLU 36	-74	2	4170	661.13	-4.94	25.64
288	SLU 37	-72	-6	4113	651.83	-4.87	25.1
288	SLU 38	-73	2	4150	658.03	-4.92	25.45
288	SLU 39	-71	-6	4216	665.99	-5.02	24.54
288	SLU 40	-72	3	4252	672.18	-5.07	24.89
288	SLU 41	-72	-6	4249	671.09	-5.06	24.96
288	SLU 42	-73	2	4285	677.28	-5.11	25.32
288	SLU 43	-76	-6	4044	657.09	-4.57	26.39
288	SLU 44	-78	8	4105	667.41	-4.64	26.98
288	SLU 45	-78	-6	4098	665.29	-4.64	27
288	SLU 46	-79	2	4134	671.48	-4.68	27.35
288	SLU 47	-79	8	4138	672.51	-4.69	27.41
288	SLU 48	-79	-6	4131	670.39	-4.68	27.42
288	SLU 49	-80	2	4167	676.58	-4.73	27.78
288	SLU 50	-78	-6	4111	667.29	-4.65	27.24
288	SLU 51	-79	2	4147	673.48	-4.7	27.59
288	SLU 52	-80	8	4498	724.23	-5.19	27.66
288	SLU 53	-80	-6	4491	722.11	-5.19	27.67
288	SLU 54	-81	2	4527	728.3	-5.23	28.02
288	SLU 55	-81	8	4531	729.33	-5.24	28.08
288	SLU 56	-81	-6	4524	727.21	-5.23	28.09
288	SLU 57	-82	2	4560	733.4	-5.28	28.45
288	SLU 58	-80	-6	4504	724.1	-5.2	27.91
288	SLU 59	-81	2	4540	730.3	-5.25	28.27
288	SLU 60	-79	-6	4606	738.26	-5.35	27.35
288	SLU 61	-80	3	4642	744.45	-5.4	27.71
288	SLU 62	-80	-6	4639	743.36	-5.4	27.77
288	SLU 63	-81	2	4675	749.55	-5.44	28.13
288	SLU 64	-83	-7	4474	719.89	-5.14	28.98
288	SLU 65	-85	7	4534	730.21	-5.21	29.58
288	SLU 66	-85	-7	4527	728.09	-5.21	29.59
288	SLU 67	-86	1	4564	734.29	-5.25	29.95
288	SLU 68	-86	7	4567	735.31	-5.26	30
288	SLU 69	-86	-7	4561	733.19	-5.25	30.01
288	SLU 70	-87	1	4597	739.38	-5.3	30.37
288	SLU 71	-86	-7	4540	730.09	-5.22	29.83

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
288	SLU 72	-87	1	4576	736.28	-5.27	30.19
288	SLU 73	-87	7	4927	787.03	-5.76	30.25
288	SLU 74	-87	-7	4921	784.91	-5.76	30.26
288	SLU 75	-88	1	4957	791.1	-5.8	30.62
288	SLU 76	-88	7	4961	792.13	-5.81	30.67
288	SLU 77	-88	-7	4954	790.01	-5.8	30.68
288	SLU 78	-89	1	4990	796.2	-5.85	31.04
288	SLU 79	-88	-7	4933	786.91	-5.77	30.5
288	SLU 80	-89	1	4970	793.1	-5.82	30.86
288	SLU 81	-86	-7	5036	801.06	-5.92	29.94
288	SLU 82	-87	2	5072	807.25	-5.97	30.3
288	SLU 83	-87	-7	5069	806.16	-5.97	30.37
288	SLU 84	-88	1	5105	812.35	-6.01	30.72
288	SLE RA 1	-62	-5	3347	539.96	-3.83	21.72
288	SLE RA 2	-64	4	3387	546.84	-3.88	22.12
288	SLE RA 3	-64	-5	3383	545.43	-3.87	22.13
288	SLE RA 4	-64	0	3407	549.56	-3.9	22.37
288	SLE RA 5	-64	4	3409	550.24	-3.91	22.4
288	SLE RA 6	-64	-5	3405	548.83	-3.9	22.41
288	SLE RA 7	-65	0	3429	552.96	-3.93	22.65
288	SLE RA 8	-64	-5	3391	546.76	-3.88	22.29
288	SLE RA 9	-65	0	3415	550.89	-3.92	22.53
288	SLE RA 10	-65	4	3649	584.72	-4.24	22.57
288	SLE RA 11	-65	-5	3645	583.31	-4.24	22.58
288	SLE RA 12	-66	0	3669	587.43	-4.27	22.81
288	SLE RA 13	-66	4	3671	588.12	-4.27	22.85
288	SLE RA 14	-66	-5	3667	586.7	-4.27	22.86
288	SLE RA 15	-66	0	3691	590.83	-4.3	23.1
288	SLE RA 16	-65	-5	3653	584.64	-4.25	22.74
288	SLE RA 17	-66	0	3677	588.77	-4.28	22.98
288	SLE RA 18	-64	-5	3721	594.07	-4.35	22.36
288	SLE RA 19	-65	1	3746	598.2	-4.38	22.6
288	SLE RA 20	-65	-5	3744	597.47	-4.38	22.65
288	SLE RA 21	-66	0	3768	601.6	-4.41	22.88
288	SLE FR 1	-62	-5	3347	539.96	-3.83	21.72
288	SLE FR 2	-63	-3	3355	541.33	-3.84	21.8
288	SLE FR 3	-63	-5	3356	541.32	-3.84	21.84
288	SLE FR 4	-63	-3	3467	557.57	-3.99	22
288	SLE FR 5	-63	-5	3468	557.55	-3.99	22.03
288	SLE FR 6	-63	-5	3534	567.01	-4.09	22.04
288	SLE QP 1	-62	-5	3347	539.96	-3.83	21.72
288	SLE QP 2	-63	-5	3459	556.19	-3.98	21.92
288	SLD 1	298	98	4483	677.17	-3.69	-104.42
288	SLD 2	370	35	4421	669.66	-3.68	-129.8
288	SLD 3	330	-91	3600	555.98	-2.74	-115.96
288	SLD 4	403	-155	3539	548.48	-2.73	-141.33
288	SLD 5	-18	324	5117	777.63	-5.34	6.07
288	SLD 6	30	282	5076	772.69	-5.33	-10.67
288	SLD 7	92	-306	2173	373.68	-2.17	-32.37
288	SLD 8	140	-348	2133	368.73	-2.16	-49.11
288	SLD 9	-266	338	4786	743.66	-5.8	92.95
288	SLD 10	-218	296	4745	738.71	-5.8	76.21
288	SLD 11	-156	-292	1843	339.7	-2.63	54.5
288	SLD 12	-108	-334	1802	334.75	-2.63	37.76
288	SLD 13	-529	145	3380	563.91	-5.24	185.16
288	SLD 14	-457	81	3319	556.41	-5.23	159.79
288	SLD 15	-496	-44	2497	442.72	-4.28	173.63
288	SLD 16	-424	-108	2436	435.22	-4.28	148.25
288	SLV 1	778	250	5927	849.23	-3.37	-272.86
288	SLV 2	949	101	5783	831.59	-3.35	-332.5
288	SLV 3	859	-220	3716	545.83	-0.99	-301.14
288	SLV 4	1030	-369	3572	528.2	-0.97	-360.78
288	SLV 5	35	812	7580	1107.54	-7.41	-12.49
288	SLV 6	151	712	7483	1095.67	-7.4	-52.65
288	SLV 7	304	-754	210	96.23	0.52	-106.76
288	SLV 8	419	-855	113	84.35	0.53	-146.92
288	SLV 9	-545	845	6806	1028.03	-8.5	190.75
288	SLV 10	-430	745	6709	1016.16	-8.49	150.59
288	SLV 11	-277	-721	-564	16.72	-0.56	96.48
288	SLV 12	-162	-822	-661	4.84	-0.55	56.32
288	SLV 13	-1156	359	3347	584.19	-6.99	404.61
288	SLV 14	-985	211	3203	566.55	-6.98	344.97
288	SLV 15	-1076	-110	1136	280.79	-4.61	376.33
288	SLV 16	-905	-259	992	263.16	-4.6	316.69
288	CRTFP Ux+	0	0	0	0	0	0
288	CRTFP Ux-	0	0	0	0	0	0
288	CRTFP Uy+	0	0	0	0	0	0
288	CRTFP Uy-	0	0	0	0	0	0
289	SLU 1	-60	-9	3360	630.93	-4.81	20.84
289	SLU 2	-61	5	3423	643.23	-4.91	21.4
289	SLU 3	-62	-9	3416	641.19	-4.9	21.44
289	SLU 4	-63	-1	3454	648.57	-4.96	21.78
289	SLU 5	-63	5	3458	649.61	-4.97	21.82
289	SLU 6	-63	-10	3451	647.56	-4.96	21.86
289	SLU 7	-64	-1	3489	654.94	-5.02	22.2
289	SLU 8	-62	-9	3430	643.68	-4.92	21.68
289	SLU 9	-63	-1	3468	651.06	-4.99	22.02
289	SLU 10	-64	5	3837	715.11	-5.62	22.09
289	SLU 11	-64	-10	3829	713.07	-5.61	22.12

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
289	SLU 12	-65	-1	3867	720.45	-5.67	22.46
289	SLU 13	-65	5	3871	721.49	-5.67	22.51
289	SLU 14	-65	-10	3864	719.44	-5.66	22.54
289	SLU 15	-66	-2	3902	726.82	-5.72	22.88
289	SLU 16	-64	-10	3843	715.56	-5.63	22.36
289	SLU 17	-65	-1	3881	722.94	-5.69	22.7
289	SLU 18	-63	-10	3950	733.62	-5.81	21.82
289	SLU 19	-64	-1	3988	741	-5.88	22.16
289	SLU 20	-64	-10	3985	739.99	-5.87	22.24
289	SLU 21	-65	-1	4023	747.37	-5.93	22.58
289	SLU 22	-67	-10	3811	710.13	-5.55	23.43
289	SLU 23	-69	4	3874	722.43	-5.65	24
289	SLU 24	-69	-11	3867	720.39	-5.64	24.03
289	SLU 25	-70	-2	3905	727.76	-5.7	24.37
289	SLU 26	-70	4	3909	728.8	-5.71	24.42
289	SLU 27	-70	-11	3902	726.76	-5.7	24.45
289	SLU 28	-71	-2	3940	734.14	-5.76	24.79
289	SLU 29	-70	-11	3880	722.88	-5.66	24.27
289	SLU 30	-71	-2	3918	730.26	-5.72	24.61
289	SLU 31	-71	4	4287	794.31	-6.35	24.68
289	SLU 32	-71	-11	4280	792.27	-6.34	24.72
289	SLU 33	-72	-3	4318	799.64	-6.41	25.06
289	SLU 34	-72	3	4322	800.68	-6.41	25.1
289	SLU 35	-72	-12	4315	798.64	-6.4	25.14
289	SLU 36	-73	-3	4353	806.02	-6.46	25.48
289	SLU 37	-72	-11	4294	794.76	-6.37	24.96
289	SLU 38	-73	-3	4331	802.14	-6.43	25.3
289	SLU 39	-70	-11	4401	812.82	-6.55	24.41
289	SLU 40	-71	-2	4439	820.2	-6.61	24.75
289	SLU 41	-71	-11	4436	819.19	-6.61	24.83
289	SLU 42	-72	-3	4474	826.57	-6.67	25.17
289	SLU 43	-75	-11	4214	793.06	-6	26.2
289	SLU 44	-77	3	4277	805.36	-6.1	26.76
289	SLU 45	-77	-12	4270	803.31	-6.09	26.8
289	SLU 46	-78	-3	4308	810.69	-6.15	27.14
289	SLU 47	-78	3	4312	811.73	-6.16	27.18
289	SLU 48	-78	-12	4304	809.69	-6.15	27.22
289	SLU 49	-79	-3	4342	817.07	-6.21	27.56
289	SLU 50	-78	-12	4283	805.81	-6.11	27.04
289	SLU 51	-79	-3	4321	813.19	-6.18	27.38
289	SLU 52	-79	3	4690	877.24	-6.81	27.45
289	SLU 53	-79	-12	4683	875.19	-6.79	27.48
289	SLU 54	-80	-4	4721	882.57	-6.86	27.82
289	SLU 55	-80	2	4725	883.61	-6.86	27.87
289	SLU 56	-80	-13	4718	881.57	-6.85	27.9
289	SLU 57	-81	-4	4756	888.95	-6.91	28.24
289	SLU 58	-80	-12	4696	877.69	-6.82	27.72
289	SLU 59	-81	-4	4734	885.07	-6.88	28.06
289	SLU 60	-78	-12	4804	895.74	-7	27.18
289	SLU 61	-79	-3	4842	903.12	-7.07	27.52
289	SLU 62	-79	-12	4839	902.12	-7.06	27.6
289	SLU 63	-80	-4	4877	909.5	-7.12	27.94
289	SLU 64	-83	-12	4664	872.26	-6.74	28.79
289	SLU 65	-84	2	4728	884.55	-6.84	29.36
289	SLU 66	-85	-13	4720	882.51	-6.83	29.39
289	SLU 67	-85	-4	4758	889.89	-6.89	29.73
289	SLU 68	-86	2	4762	890.93	-6.9	29.78
289	SLU 69	-86	-13	4755	888.89	-6.89	29.81
289	SLU 70	-87	-5	4793	896.27	-6.95	30.15
289	SLU 71	-85	-13	4734	885.01	-6.85	29.63
289	SLU 72	-86	-4	4772	892.39	-6.91	29.97
289	SLU 73	-86	1	5141	956.43	-7.54	30.04
289	SLU 74	-87	-14	5134	954.39	-7.53	30.08
289	SLU 75	-87	-5	5171	961.77	-7.59	30.42
289	SLU 76	-88	1	5176	962.81	-7.6	30.46
289	SLU 77	-88	-14	5168	960.77	-7.59	30.5
289	SLU 78	-89	-5	5206	968.15	-7.65	30.84
289	SLU 79	-87	-14	5147	956.89	-7.56	30.32
289	SLU 80	-88	-5	5185	964.27	-7.62	30.66
289	SLU 81	-86	-13	5255	974.94	-7.74	29.77
289	SLU 82	-87	-5	5293	982.32	-7.8	30.11
289	SLU 83	-87	-14	5289	981.32	-7.8	30.19
289	SLU 84	-88	-5	5327	988.7	-7.86	30.53
289	SLE RA 1	-62	-9	3489	653.56	-5.02	21.58
289	SLE RA 2	-63	0	3531	661.76	-5.09	21.95
289	SLE RA 3	-63	-10	3526	660.4	-5.08	21.98
289	SLE RA 4	-64	-4	3552	665.32	-5.12	22.2
289	SLE RA 5	-64	0	3554	666.01	-5.13	22.23
289	SLE RA 6	-64	-10	3549	664.65	-5.12	22.26
289	SLE RA 7	-65	-4	3575	669.57	-5.16	22.48
289	SLE RA 8	-64	-10	3535	662.06	-5.1	22.14
289	SLE RA 9	-64	-4	3561	666.98	-5.14	22.36
289	SLE RA 10	-64	0	3807	709.68	-5.56	22.41
289	SLE RA 11	-65	-10	3802	708.32	-5.55	22.43
289	SLE RA 12	-65	-4	3827	713.24	-5.59	22.66
289	SLE RA 13	-65	0	3830	713.93	-5.6	22.69
289	SLE RA 14	-65	-10	3825	712.57	-5.59	22.71
289	SLE RA 15	-66	-4	3850	717.49	-5.63	22.94
289	SLE RA 16	-65	-10	3811	709.98	-5.57	22.6

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
289	SLE RA 17	-66	-4	3836	714.9	-5.61	22.82
289	SLE RA 18	-64	-10	3882	722.02	-5.69	22.23
289	SLE RA 19	-65	-4	3908	726.94	-5.73	22.46
289	SLE RA 20	-65	-10	3906	726.27	-5.73	22.51
289	SLE RA 21	-65	-4	3931	731.19	-5.77	22.74
289	SLE FR 1	-62	-9	3489	653.56	-5.02	21.58
289	SLE FR 2	-62	-7	3497	655.2	-5.03	21.65
289	SLE FR 3	-62	-9	3498	655.26	-5.04	21.69
289	SLE FR 4	-63	-8	3615	675.74	-5.23	21.85
289	SLE FR 5	-63	-10	3616	675.8	-5.24	21.88
289	SLE FR 6	-63	-10	3686	687.79	-5.36	21.9
289	SLE QP 1	-62	-9	3489	653.56	-5.02	21.58
289	SLE QP 2	-63	-10	3607	674.1	-5.22	21.77
289	SLD 1	298	91	4627	820.69	-5.31	-104.62
289	SLD 2	371	30	4565	811.56	-5.28	-129.99
289	SLD 3	331	-100	3709	670.87	-4.05	-116.06
289	SLD 4	403	-161	3647	661.73	-4.02	-141.43
289	SLD 5	-17	323	5317	946.95	-7.16	5.77
289	SLD 6	31	282	5276	940.92	-7.14	-10.97
289	SLD 7	91	-317	2256	447.54	-2.97	-32.37
289	SLD 8	139	-357	2215	441.52	-2.95	-49.1
289	SLD 9	-265	338	4999	906.68	-7.5	92.65
289	SLD 10	-217	298	4958	900.65	-7.48	75.91
289	SLD 11	-157	-301	1938	407.27	-3.3	54.51
289	SLD 12	-109	-342	1897	401.25	-3.28	37.78
289	SLD 13	-529	142	3567	686.46	-6.43	184.98
289	SLD 14	-456	81	3505	677.32	-6.39	159.61
289	SLD 15	-496	-49	2648	536.64	-5.17	173.54
289	SLD 16	-424	-110	2587	527.5	-5.14	148.17
289	SLV 1	780	241	6070	1029.48	-5.53	-273.14
289	SLV 2	950	98	5925	1008	-5.45	-332.78
289	SLV 3	859	-236	3771	654.32	-2.37	-301.19
289	SLV 4	1030	-379	3625	632.84	-2.3	-360.83
289	SLV 5	38	815	7861	1353.72	-10.11	-13.03
289	SLV 6	153	719	7763	1339.26	-10.06	-53.18
289	SLV 7	302	-774	195	103.18	0.4	-106.53
289	SLV 8	417	-870	97	88.71	0.45	-146.68
289	SLV 9	-543	851	7117	1259.48	-10.89	190.22
289	SLV 10	-428	755	7019	1245.02	-10.84	150.07
289	SLV 11	-278	-738	-549	8.94	-0.38	96.73
289	SLV 12	-163	-834	-647	-5.53	-0.33	56.58
289	SLV 13	-1155	360	3589	715.36	-8.14	404.37
289	SLV 14	-984	217	3443	693.88	-8.07	344.74
289	SLV 15	-1076	-117	1289	340.2	-4.99	376.32
289	SLV 16	-905	-260	1143	318.71	-4.92	316.69
289	CRTFP Ux+	0	0	0	0	0	0
289	CRTFP Ux-	0	0	0	0	0	0
289	CRTFP Uy+	0	0	0	0	0	0
289	CRTFP Uy-	0	0	0	0	0	0
290	SLU 1	-60	-14	3528	765.14	-5.66	20.68
290	SLU 2	-61	1	3595	779.74	-5.77	21.22
290	SLU 3	-61	-14	3587	777.92	-5.76	21.28
290	SLU 4	-62	-5	3627	786.68	-5.84	21.6
290	SLU 5	-62	1	3632	787.69	-5.84	21.64
290	SLU 6	-62	-15	3624	785.87	-5.83	21.69
290	SLU 7	-63	-5	3664	794.63	-5.9	22.02
290	SLU 8	-62	-14	3602	781.03	-5.79	21.52
290	SLU 9	-63	-5	3642	789.8	-5.86	21.84
290	SLU 10	-63	0	4032	870.13	-6.59	21.92
290	SLU 11	-63	-15	4025	868.31	-6.58	21.98
290	SLU 12	-64	-6	4065	877.07	-6.65	22.3
290	SLU 13	-64	0	4069	878.08	-6.66	22.34
290	SLU 14	-65	-16	4062	876.26	-6.65	22.4
290	SLU 15	-65	-7	4102	885.02	-6.72	22.72
290	SLU 16	-64	-16	4039	871.42	-6.61	22.22
290	SLU 17	-65	-6	4079	880.18	-6.68	22.54
290	SLU 18	-63	-15	4153	894.27	-6.82	21.69
290	SLU 19	-63	-6	4193	903.03	-6.9	22.01
290	SLU 20	-64	-16	4190	902.21	-6.89	22.1
290	SLU 21	-65	-7	4230	910.98	-6.96	22.43
290	SLU 22	-67	-16	4004	864.52	-6.52	23.28
290	SLU 23	-68	0	4071	879.12	-6.64	23.81
290	SLU 24	-69	-16	4064	877.3	-6.63	23.87
290	SLU 25	-70	-7	4104	886.06	-6.7	24.19
290	SLU 26	-70	-1	4108	887.07	-6.7	24.23
290	SLU 27	-70	-16	4100	885.25	-6.69	24.29
290	SLU 28	-71	-7	4141	894.01	-6.77	24.61
290	SLU 29	-69	-16	4078	880.41	-6.65	24.11
290	SLU 30	-70	-7	4118	889.17	-6.73	24.43
290	SLU 31	-71	-2	4509	969.51	-7.46	24.52
290	SLU 32	-71	-17	4501	967.69	-7.45	24.57
290	SLU 33	-72	-8	4541	976.45	-7.52	24.9
290	SLU 34	-72	-2	4546	977.46	-7.52	24.93
290	SLU 35	-72	-17	4538	975.63	-7.51	24.99
290	SLU 36	-73	-8	4578	984.4	-7.58	25.31
290	SLU 37	-71	-17	4516	970.8	-7.47	24.82
290	SLU 38	-72	-8	4556	979.56	-7.54	25.14
290	SLU 39	-70	-17	4630	993.64	-7.69	24.28
290	SLU 40	-71	-8	4670	1002.41	-7.76	24.6

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
290	SLU 41	-71	-17	4666	1001.59	-7.75	24.7
290	SLU 42	-72	-8	4706	1010.35	-7.83	25.02
290	SLU 43	-75	-17	4423	960.61	-7.06	26
290	SLU 44	-76	-2	4490	975.21	-7.18	26.53
290	SLU 45	-77	-18	4482	973.39	-7.17	26.59
290	SLU 46	-77	-9	4522	982.15	-7.24	26.91
290	SLU 47	-78	-3	4527	983.16	-7.24	26.95
290	SLU 48	-78	-18	4519	981.34	-7.23	27.01
290	SLU 49	-79	-9	4559	990.1	-7.3	27.33
290	SLU 50	-77	-18	4497	976.5	-7.19	26.83
290	SLU 51	-78	-9	4537	985.27	-7.26	27.15
290	SLU 52	-78	-3	4928	1065.6	-7.99	27.24
290	SLU 53	-79	-19	4920	1063.78	-7.98	27.29
290	SLU 54	-80	-10	4960	1072.54	-8.05	27.62
290	SLU 55	-80	-4	4964	1073.55	-8.06	27.65
290	SLU 56	-80	-19	4957	1071.73	-8.05	27.71
290	SLU 57	-81	-10	4997	1080.49	-8.12	28.03
290	SLU 58	-79	-19	4934	1066.89	-8.01	27.54
290	SLU 59	-80	-10	4974	1075.65	-8.08	27.86
290	SLU 60	-78	-19	5048	1089.74	-8.23	27
290	SLU 61	-79	-10	5088	1098.5	-8.3	27.32
290	SLU 62	-79	-19	5085	1097.68	-8.29	27.42
290	SLU 63	-80	-10	5125	1106.44	-8.36	27.74
290	SLU 64	-82	-19	4899	1059.99	-7.92	28.59
290	SLU 65	-84	-4	4966	1074.59	-8.04	29.13
290	SLU 66	-84	-20	4959	1072.77	-8.03	29.19
290	SLU 67	-85	-10	4999	1081.53	-8.1	29.51
290	SLU 68	-85	-4	5003	1082.54	-8.11	29.55
290	SLU 69	-85	-20	4996	1080.71	-8.1	29.6
290	SLU 70	-86	-11	5036	1089.48	-8.17	29.93
290	SLU 71	-85	-20	4973	1075.88	-8.05	29.43
290	SLU 72	-86	-11	5013	1084.64	-8.13	29.75
290	SLU 73	-86	-5	5404	1164.98	-8.86	29.83
290	SLU 74	-86	-21	5396	1163.16	-8.85	29.89
290	SLU 75	-87	-12	5436	1171.92	-8.92	30.21
290	SLU 76	-87	-5	5441	1172.93	-8.92	30.25
290	SLU 77	-87	-21	5433	1171.1	-8.91	30.31
290	SLU 78	-88	-12	5473	1179.87	-8.98	30.63
290	SLU 79	-87	-21	5411	1166.27	-8.87	30.13
290	SLU 80	-88	-12	5451	1175.03	-8.94	30.45
290	SLU 81	-85	-21	5525	1189.11	-9.09	29.6
290	SLU 82	-86	-12	5565	1197.88	-9.16	29.92
290	SLU 83	-86	-21	5561	1197.06	-9.16	30.01
290	SLU 84	-87	-12	5602	1205.82	-9.23	30.34
290	SLE RA 1	-62	-14	3664	793.53	-5.9	21.42
290	SLE RA 2	-63	-4	3709	803.27	-5.98	21.78
290	SLE RA 3	-63	-15	3704	802.05	-5.97	21.82
290	SLE RA 4	-63	-9	3730	807.9	-6.02	22.03
290	SLE RA 5	-63	-4	3733	808.57	-6.03	22.06
290	SLE RA 6	-64	-15	3728	807.35	-6.02	22.1
290	SLE RA 7	-64	-9	3755	813.19	-6.07	22.31
290	SLE RA 8	-63	-15	3713	804.13	-5.99	21.98
290	SLE RA 9	-64	-9	3740	809.97	-6.04	22.2
290	SLE RA 10	-64	-5	4000	863.53	-6.53	22.25
290	SLE RA 11	-64	-15	3995	862.31	-6.52	22.29
290	SLE RA 12	-65	-9	4022	868.15	-6.57	22.5
290	SLE RA 13	-65	-5	4025	868.83	-6.57	22.53
290	SLE RA 14	-65	-16	4020	867.61	-6.57	22.57
290	SLE RA 15	-66	-10	4047	873.45	-6.61	22.78
290	SLE RA 16	-65	-15	4005	864.39	-6.54	22.45
290	SLE RA 17	-65	-9	4032	870.23	-6.59	22.66
290	SLE RA 18	-64	-15	4081	879.62	-6.68	22.09
290	SLE RA 19	-64	-9	4108	885.46	-6.73	22.31
290	SLE RA 20	-64	-16	4105	884.92	-6.73	22.37
290	SLE RA 21	-65	-10	4132	890.76	-6.77	22.59
290	SLE FR 1	-62	-14	3664	793.53	-5.9	21.42
290	SLE FR 2	-62	-12	3673	795.48	-5.92	21.49
290	SLE FR 3	-62	-14	3674	795.65	-5.92	21.53
290	SLE FR 4	-62	-13	3798	821.31	-6.15	21.7
290	SLE FR 5	-63	-15	3799	821.48	-6.15	21.74
290	SLE FR 6	-63	-15	3873	836.58	-6.29	21.76
290	SLE QP 1	-62	-14	3664	793.53	-5.9	21.42
290	SLE QP 2	-62	-15	3789	819.36	-6.14	21.62
290	SLD 1	299	85	4817	999	-6.48	-104.81
290	SLD 2	371	26	4754	987.85	-6.43	-130.16
290	SLD 3	331	-111	3855	814.74	-5.02	-116.14
290	SLD 4	403	-170	3792	803.6	-4.97	-141.48
290	SLD 5	-15	323	5568	1154.71	-8.46	5.42
290	SLD 6	32	285	5526	1147.36	-8.43	-11.3
290	SLD 7	91	-330	2361	540.53	-3.6	-32.32
290	SLD 8	139	-369	2320	533.17	-3.57	-49.04
290	SLD 9	-263	340	5259	1105.55	-8.71	92.29
290	SLD 10	-216	301	5217	1098.19	-8.67	75.57
290	SLD 11	-157	-314	2052	491.36	-3.84	54.54
290	SLD 12	-109	-353	2010	484.01	-3.81	37.82
290	SLD 13	-528	140	3787	835.12	-7.3	184.73
290	SLD 14	-455	81	3723	823.98	-7.25	159.38
290	SLD 15	-496	-56	2825	650.87	-5.84	173.41
290	SLD 16	-423	-115	2761	639.72	-5.8	148.06

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
290	SLV 1	780	234	6273	1254.93	-7.05	-273.4
290	SLV 2	951	96	6125	1228.73	-6.94	-332.98
290	SLV 3	859	-254	3864	793.49	-3.4	-301.15
290	SLV 4	1029	-392	3716	767.29	-3.29	-360.73
290	SLV 5	40	826	8216	1654.77	-11.97	-13.68
290	SLV 6	155	732	8116	1637.13	-11.9	-53.79
290	SLV 7	301	-800	186	116.64	0.2	-106.18
290	SLV 8	416	-893	86	99	0.28	-146.29
290	SLV 9	-540	864	7493	1539.72	-12.55	189.54
290	SLV 10	-425	771	7393	1522.08	-12.48	149.42
290	SLV 11	-279	-761	-538	1.59	-0.37	97.04
290	SLV 12	-165	-855	-638	-16.05	-0.3	56.92
290	SLV 13	-1154	363	3863	871.43	-8.98	403.98
290	SLV 14	-983	224	3714	845.23	-8.87	344.4
290	SLV 15	-1076	-125	1453	409.99	-5.33	376.23
290	SLV 16	-905	-263	1305	383.79	-5.22	316.65
290	CRTFP Ux+	0	0	0	0	0	0
290	CRTFP Ux-	0	0	0	0	0	0
290	CRTFP Uy+	0	0	0	0	0	0
290	CRTFP Uy-	0	0	0	0	0	0
291	SLU 1	-59	-20	3716	917.61	-6.02	20.52
291	SLU 2	-61	-4	3786	934.69	-6.14	21.02
291	SLU 3	-61	-20	3779	933.26	-6.13	21.1
291	SLU 4	-62	-11	3821	943.51	-6.2	21.41
291	SLU 5	-62	-4	3825	944.42	-6.21	21.44
291	SLU 6	-62	-21	3818	943	-6.2	21.52
291	SLU 7	-63	-11	3860	953.24	-6.28	21.82
291	SLU 8	-62	-20	3794	937.08	-6.16	21.34
291	SLU 9	-62	-11	3836	947.33	-6.23	21.65
291	SLU 10	-63	-6	4251	1046.09	-7	21.74
291	SLU 11	-63	-22	4243	1044.66	-7	21.83
291	SLU 12	-64	-12	4286	1054.91	-7.07	22.13
291	SLU 13	-64	-6	4290	1055.82	-7.08	22.16
291	SLU 14	-64	-22	4282	1054.39	-7.07	22.24
291	SLU 15	-65	-13	4325	1064.64	-7.14	22.54
291	SLU 16	-64	-22	4258	1048.48	-7.03	22.07
291	SLU 17	-65	-13	4301	1058.72	-7.1	22.37
291	SLU 18	-62	-22	4380	1076.75	-7.25	21.55
291	SLU 19	-63	-13	4422	1087	-7.33	21.85
291	SLU 20	-63	-23	4419	1086.48	-7.32	21.96
291	SLU 21	-64	-13	4461	1096.73	-7.4	22.27
291	SLU 22	-67	-22	4221	1039.91	-6.93	23.11
291	SLU 23	-68	-6	4291	1056.99	-7.05	23.62
291	SLU 24	-68	-23	4284	1055.56	-7.05	23.7
291	SLU 25	-69	-13	4326	1065.81	-7.12	24
291	SLU 26	-69	-6	4330	1066.72	-7.12	24.03
291	SLU 27	-70	-23	4323	1065.29	-7.12	24.11
291	SLU 28	-70	-13	4365	1075.54	-7.19	24.42
291	SLU 29	-69	-23	4299	1059.37	-7.07	23.94
291	SLU 30	-70	-13	4341	1069.62	-7.15	24.24
291	SLU 31	-70	-8	4756	1168.38	-7.92	24.34
291	SLU 32	-70	-24	4748	1166.95	-7.91	24.42
291	SLU 33	-71	-15	4791	1177.2	-7.98	24.73
291	SLU 34	-71	-8	4795	1178.12	-7.99	24.76
291	SLU 35	-72	-25	4787	1176.69	-7.98	24.84
291	SLU 36	-73	-15	4830	1186.94	-8.06	25.14
291	SLU 37	-71	-24	4763	1170.77	-7.94	24.66
291	SLU 38	-72	-15	4806	1181.02	-8.01	24.97
291	SLU 39	-70	-25	4885	1199.05	-8.17	24.14
291	SLU 40	-71	-15	4927	1209.29	-8.24	24.45
291	SLU 41	-71	-25	4924	1208.78	-8.24	24.56
291	SLU 42	-72	-15	4966	1219.03	-8.31	24.86
291	SLU 43	-74	-25	4657	1150.96	-7.51	25.78
291	SLU 44	-76	-9	4728	1168.04	-7.63	26.29
291	SLU 45	-76	-25	4720	1166.61	-7.62	26.37
291	SLU 46	-77	-16	4763	1176.86	-7.7	26.67
291	SLU 47	-77	-9	4767	1177.78	-7.7	26.7
291	SLU 48	-77	-26	4759	1176.35	-7.69	26.78
291	SLU 49	-78	-16	4802	1186.6	-7.77	27.09
291	SLU 50	-77	-25	4735	1170.43	-7.65	26.61
291	SLU 51	-78	-16	4778	1180.68	-7.72	26.91
291	SLU 52	-78	-11	5193	1279.44	-8.49	27.01
291	SLU 53	-78	-27	5185	1278.01	-8.49	27.09
291	SLU 54	-79	-18	5227	1288.26	-8.56	27.39
291	SLU 55	-79	-11	5232	1289.17	-8.57	27.42
291	SLU 56	-79	-27	5224	1287.75	-8.56	27.5
291	SLU 57	-80	-18	5266	1297.99	-8.63	27.81
291	SLU 58	-79	-27	5200	1281.83	-8.52	27.33
291	SLU 59	-80	-18	5242	1292.08	-8.59	27.63
291	SLU 60	-77	-27	5321	1310.1	-8.74	26.81
291	SLU 61	-78	-18	5364	1320.35	-8.82	27.11
291	SLU 62	-79	-28	5360	1319.84	-8.82	27.23
291	SLU 63	-79	-18	5403	1330.08	-8.89	27.53
291	SLU 64	-82	-27	5162	1273.26	-8.42	28.38
291	SLU 65	-83	-11	5233	1290.34	-8.54	28.88
291	SLU 66	-84	-28	5225	1288.91	-8.54	28.96
291	SLU 67	-84	-18	5268	1299.16	-8.61	29.27
291	SLU 68	-84	-12	5272	1300.07	-8.61	29.3
291	SLU 69	-85	-28	5264	1298.64	-8.61	29.38

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
291	SLU 70	-86	-18	5307	1308.89	-8.68	29.68
291	SLU 71	-84	-28	5240	1292.73	-8.56	29.21
291	SLU 72	-85	-18	5283	1302.97	-8.64	29.51
291	SLU 73	-85	-13	5698	1401.74	-9.41	29.6
291	SLU 74	-86	-29	5690	1400.31	-9.4	29.69
291	SLU 75	-87	-20	5732	1410.56	-9.48	29.99
291	SLU 76	-87	-13	5737	1411.47	-9.48	30.02
291	SLU 77	-87	-30	5729	1410.04	-9.47	30.1
291	SLU 78	-88	-20	5771	1420.29	-9.55	30.41
291	SLU 79	-86	-30	5705	1404.12	-9.43	29.93
291	SLU 80	-87	-20	5747	1414.37	-9.5	30.23
291	SLU 81	-85	-30	5826	1432.4	-9.66	29.41
291	SLU 82	-86	-20	5868	1442.65	-9.73	29.71
291	SLU 83	-86	-30	5865	1442.13	-9.73	29.82
291	SLU 84	-87	-20	5908	1452.38	-9.8	30.13
291	SLE RA 1	-61	-20	3860	952.55	-6.28	21.26
291	SLE RA 2	-62	-10	3907	963.94	-6.36	21.59
291	SLE RA 3	-62	-21	3902	962.99	-6.35	21.65
291	SLE RA 4	-63	-14	3930	969.82	-6.4	21.85
291	SLE RA 5	-63	-10	3933	970.43	-6.41	21.87
291	SLE RA 6	-63	-21	3928	969.48	-6.4	21.93
291	SLE RA 7	-64	-15	3956	976.31	-6.45	22.13
291	SLE RA 8	-63	-21	3912	965.53	-6.37	21.81
291	SLE RA 9	-63	-14	3940	972.36	-6.42	22.01
291	SLE RA 10	-64	-11	4217	1038.2	-6.94	22.08
291	SLE RA 11	-64	-22	4212	1037.25	-6.93	22.13
291	SLE RA 12	-64	-16	4240	1044.08	-6.98	22.33
291	SLE RA 13	-64	-11	4243	1044.69	-6.98	22.35
291	SLE RA 14	-65	-22	4238	1043.74	-6.98	22.41
291	SLE RA 15	-65	-16	4266	1050.57	-7.03	22.61
291	SLE RA 16	-64	-22	4222	1039.8	-6.95	22.29
291	SLE RA 17	-65	-16	4250	1046.63	-7	22.49
291	SLE RA 18	-63	-22	4303	1058.64	-7.1	21.94
291	SLE RA 19	-64	-16	4331	1065.48	-7.15	22.15
291	SLE RA 20	-64	-22	4329	1065.13	-7.15	22.22
291	SLE RA 21	-65	-16	4357	1071.97	-7.2	22.42
291	SLE FR 1	-61	-20	3860	952.55	-6.28	21.26
291	SLE FR 2	-62	-18	3869	954.83	-6.29	21.32
291	SLE FR 3	-62	-20	3870	955.15	-6.3	21.37
291	SLE FR 4	-62	-19	4002	986.66	-6.54	21.53
291	SLE FR 5	-62	-21	4003	986.98	-6.54	21.57
291	SLE FR 6	-62	-21	4081	1005.6	-6.69	21.6
291	SLE QP 1	-61	-20	3860	952.55	-6.28	21.26
291	SLE QP 2	-62	-21	3993	984.38	-6.52	21.46
291	SLD 1	299	79	5033	1201.47	-6.94	-105
291	SLD 2	372	22	4968	1188.12	-6.89	-130.31
291	SLD 3	331	-122	4024	979.37	-5.45	-116.18
291	SLD 4	403	-179	3959	966.02	-5.4	-141.48
291	SLD 5	-14	324	5848	1388.76	-8.92	5.02
291	SLD 6	33	287	5805	1379.95	-8.89	-11.68
291	SLD 7	91	-346	2483	648.43	-3.95	-32.22
291	SLD 8	138	-384	2440	639.62	-3.92	-48.92
291	SLD 9	-262	342	5546	1329.14	-9.13	91.84
291	SLD 10	-215	304	5503	1320.33	-9.1	75.15
291	SLD 11	-157	-328	2181	588.81	-4.16	54.6
291	SLD 12	-110	-366	2138	580	-4.13	37.91
291	SLD 13	-527	138	4027	1002.74	-7.65	184.41
291	SLD 14	-455	80	3962	989.39	-7.6	159.1
291	SLD 15	-496	-63	3017	780.64	-6.15	173.24
291	SLD 16	-423	-121	2952	767.29	-6.11	147.93
291	SLV 1	781	228	6511	1510.72	-7.62	-273.64
291	SLV 2	951	93	6359	1479.34	-7.51	-333.13
291	SLV 3	858	-272	3983	954.48	-3.89	-301.01
291	SLV 4	1029	-407	3830	923.1	-3.78	-360.5
291	SLV 5	42	837	8611	1991.77	-12.54	-14.45
291	SLV 6	157	747	8509	1970.64	-12.47	-54.5
291	SLV 7	299	-830	184	137.64	-0.09	-105.69
291	SLV 8	414	-920	81	116.51	-0.01	-145.74
291	SLV 9	-538	879	7904	1852.25	-13.04	188.67
291	SLV 10	-423	788	7802	1831.12	-12.96	148.62
291	SLV 11	-281	-788	-523	-1.88	-0.58	97.43
291	SLV 12	-166	-879	-625	-23.01	-0.51	57.38
291	SLV 13	-1153	365	4155	1045.66	-9.27	403.43
291	SLV 14	-982	231	4003	1014.28	-9.16	343.94
291	SLV 15	-1075	-135	1627	489.42	-5.54	376.05
291	SLV 16	-905	-270	1475	458.04	-5.43	316.57
291	CRTFP Ux+	0	0	0	0	0	0
291	CRTFP Ux-	0	0	0	0	0	0
291	CRTFP Uy+	0	0	0	0	0	0
291	CRTFP Uy-	0	0	0	0	0	0
292	SLU 1	-59	-27	3903	1077.55	-5.62	20.32
292	SLU 2	-60	-11	3978	1097.03	-5.72	20.8
292	SLU 3	-60	-28	3970	1096.22	-5.72	20.9
292	SLU 4	-61	-18	4015	1107.9	-5.79	21.19
292	SLU 5	-61	-11	4019	1108.64	-5.79	21.21
292	SLU 6	-62	-28	4011	1107.83	-5.79	21.32
292	SLU 7	-62	-18	4056	1119.52	-5.85	21.6
292	SLU 8	-61	-28	3986	1100.78	-5.75	21.14
292	SLU 9	-62	-18	4031	1112.46	-5.81	21.43

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
292	SLU 10	-62	-13	4470	1230.47	-6.53	21.54
292	SLU 11	-63	-30	4462	1229.66	-6.54	21.65
292	SLU 12	-63	-20	4506	1241.35	-6.6	21.93
292	SLU 13	-63	-13	4511	1242.08	-6.6	21.95
292	SLU 14	-64	-31	4503	1241.27	-6.6	22.06
292	SLU 15	-65	-21	4548	1252.96	-6.67	22.34
292	SLU 16	-63	-31	4478	1234.22	-6.56	21.89
292	SLU 17	-64	-21	4522	1245.9	-6.63	22.17
292	SLU 18	-62	-31	4606	1268.18	-6.77	21.38
292	SLU 19	-63	-21	4651	1279.87	-6.84	21.67
292	SLU 20	-63	-31	4647	1279.79	-6.84	21.79
292	SLU 21	-64	-21	4692	1291.48	-6.91	22.08
292	SLU 22	-66	-30	4437	1223.89	-6.47	22.92
292	SLU 23	-68	-14	4511	1243.37	-6.57	23.39
292	SLU 24	-68	-31	4503	1242.56	-6.58	23.5
292	SLU 25	-69	-21	4548	1254.24	-6.64	23.79
292	SLU 26	-69	-14	4553	1254.98	-6.64	23.81
292	SLU 27	-69	-31	4545	1254.17	-6.64	23.91
292	SLU 28	-70	-21	4589	1265.86	-6.71	24.2
292	SLU 29	-69	-31	4519	1247.12	-6.6	23.74
292	SLU 30	-69	-21	4564	1258.8	-6.67	24.03
292	SLU 31	-70	-16	5003	1376.81	-7.38	24.13
292	SLU 32	-70	-33	4995	1376	-7.39	24.24
292	SLU 33	-71	-23	5040	1387.69	-7.45	24.53
292	SLU 34	-71	-17	5044	1388.42	-7.45	24.55
292	SLU 35	-71	-34	5036	1387.61	-7.45	24.65
292	SLU 36	-72	-24	5081	1399.3	-7.52	24.94
292	SLU 37	-71	-34	5011	1380.56	-7.41	24.48
292	SLU 38	-72	-24	5056	1392.24	-7.48	24.77
292	SLU 39	-69	-34	5139	1414.52	-7.63	23.98
292	SLU 40	-70	-24	5184	1426.21	-7.69	24.26
292	SLU 41	-71	-34	5181	1426.13	-7.69	24.39
292	SLU 42	-71	-24	5225	1437.82	-7.76	24.67
292	SLU 43	-74	-34	4892	1350.64	-7.01	25.53
292	SLU 44	-75	-18	4966	1370.12	-7.11	26.01
292	SLU 45	-76	-35	4958	1369.31	-7.12	26.11
292	SLU 46	-76	-25	5003	1380.99	-7.18	26.4
292	SLU 47	-76	-18	5007	1381.73	-7.18	26.42
292	SLU 48	-77	-35	4999	1380.92	-7.18	26.52
292	SLU 49	-78	-25	5044	1392.61	-7.25	26.81
292	SLU 50	-76	-35	4974	1373.87	-7.14	26.35
292	SLU 51	-77	-25	5019	1385.55	-7.21	26.64
292	SLU 52	-77	-20	5458	1503.56	-7.93	26.75
292	SLU 53	-78	-37	5450	1502.75	-7.93	26.85
292	SLU 54	-79	-27	5494	1514.44	-7.99	27.14
292	SLU 55	-79	-21	5499	1515.17	-7.99	27.16
292	SLU 56	-79	-38	5491	1514.36	-8	27.26
292	SLU 57	-80	-28	5536	1526.05	-8.06	27.55
292	SLU 58	-78	-38	5466	1507.31	-7.95	27.09
292	SLU 59	-79	-28	5510	1519	-8.02	27.38
292	SLU 60	-77	-38	5594	1541.27	-8.17	26.59
292	SLU 61	-78	-28	5639	1552.96	-8.23	26.87
292	SLU 62	-78	-38	5635	1552.89	-8.24	27
292	SLU 63	-79	-28	5680	1564.57	-8.3	27.28
292	SLU 64	-81	-37	5425	1496.98	-7.86	28.12
292	SLU 65	-83	-21	5499	1516.46	-7.97	28.6
292	SLU 66	-83	-38	5492	1515.65	-7.97	28.71
292	SLU 67	-84	-28	5536	1527.33	-8.03	28.99
292	SLU 68	-84	-21	5541	1528.07	-8.03	29.01
292	SLU 69	-84	-38	5533	1527.26	-8.04	29.12
292	SLU 70	-85	-28	5577	1538.95	-8.1	29.4
292	SLU 71	-84	-38	5508	1520.21	-8	28.95
292	SLU 72	-85	-28	5552	1531.89	-8.06	29.23
292	SLU 73	-85	-23	5991	1649.9	-8.78	29.34
292	SLU 74	-85	-41	5983	1649.09	-8.78	29.45
292	SLU 75	-86	-31	6028	1660.78	-8.84	29.73
292	SLU 76	-86	-24	6032	1661.51	-8.85	29.75
292	SLU 77	-86	-41	6025	1660.7	-8.85	29.86
292	SLU 78	-87	-31	6069	1672.39	-8.91	30.14
292	SLU 79	-86	-41	5999	1653.65	-8.81	29.69
292	SLU 80	-87	-31	6044	1665.34	-8.87	29.97
292	SLU 81	-85	-41	6128	1687.61	-9.02	29.18
292	SLU 82	-85	-31	6172	1699.3	-9.08	29.47
292	SLU 83	-86	-41	6169	1699.23	-9.09	29.59
292	SLU 84	-86	-31	6213	1710.91	-9.15	29.88
292	SLE RA 1	-61	-28	4056	1119.36	-5.86	21.06
292	SLE RA 2	-62	-17	4105	1132.35	-5.93	21.38
292	SLE RA 3	-62	-29	4100	1131.81	-5.93	21.45
292	SLE RA 4	-63	-22	4130	1139.6	-5.97	21.64
292	SLE RA 5	-63	-17	4133	1140.09	-5.98	21.66
292	SLE RA 6	-63	-29	4128	1139.55	-5.98	21.73
292	SLE RA 7	-63	-22	4157	1147.34	-6.02	21.92
292	SLE RA 8	-63	-29	4111	1134.85	-5.95	21.61
292	SLE RA 9	-63	-22	4141	1142.64	-5.99	21.8
292	SLE RA 10	-63	-19	4433	1221.31	-6.47	21.88
292	SLE RA 11	-64	-30	4428	1220.77	-6.47	21.95
292	SLE RA 12	-64	-24	4458	1228.56	-6.51	22.14
292	SLE RA 13	-64	-19	4461	1229.05	-6.52	22.15
292	SLE RA 14	-64	-30	4456	1228.51	-6.52	22.22

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
292	SLE RA 15	-65	-24	4485	1236.3	-6.56	22.41
292	SLE RA 16	-64	-30	4439	1223.81	-6.49	22.11
292	SLE RA 17	-65	-24	4468	1231.6	-6.53	22.3
292	SLE RA 18	-63	-31	4524	1246.45	-6.63	21.77
292	SLE RA 19	-64	-24	4554	1254.24	-6.67	21.96
292	SLE RA 20	-64	-31	4552	1254.19	-6.68	22.04
292	SLE RA 21	-64	-24	4581	1261.98	-6.72	22.23
292	SLE FR 1	-61	-28	4056	1119.36	-5.86	21.06
292	SLE FR 2	-61	-26	4066	1121.96	-5.87	21.13
292	SLE FR 3	-61	-28	4067	1122.46	-5.88	21.17
292	SLE FR 4	-62	-27	4206	1160.08	-6.11	21.34
292	SLE FR 5	-62	-29	4207	1160.58	-6.11	21.39
292	SLE FR 6	-62	-29	4290	1182.91	-6.25	21.42
292	SLE QP 1	-61	-28	4056	1119.36	-5.86	21.06
292	SLE QP 2	-62	-29	4196	1157.49	-6.09	21.28
292	SLD 1	300	71	5248	1412.37	-6.33	-105.21
292	SLD 2	372	15	5182	1396.84	-6.3	-130.46
292	SLD 3	331	-135	4194	1152.51	-5.05	-116.19
292	SLD 4	403	-190	4128	1136.99	-5.03	-141.43
292	SLD 5	-13	322	6123	1630.85	-8.11	4.52
292	SLD 6	34	286	6079	1620.61	-8.09	-12.13
292	SLD 7	90	-362	2608	764.68	-3.85	-32.08
292	SLD 8	138	-399	2565	754.44	-3.83	-48.73
292	SLD 9	-261	341	5828	1560.54	-8.35	91.28
292	SLD 10	-213	304	5784	1550.3	-8.34	74.63
292	SLD 11	-158	-344	2313	694.36	-4.09	54.68
292	SLD 12	-110	-380	2270	684.12	-4.08	38.03
292	SLD 13	-526	132	4265	1177.98	-7.16	183.99
292	SLD 14	-454	77	4199	1162.46	-7.13	158.74
292	SLD 15	-495	-73	3211	918.13	-5.88	173.01
292	SLD 16	-423	-128	3145	902.61	-5.85	147.76
292	SLV 1	782	219	6745	1775.38	-6.76	-273.9
292	SLV 2	952	89	6590	1738.89	-6.69	-333.23
292	SLV 3	858	-291	4104	1124.57	-3.56	-300.79
292	SLV 4	1028	-422	3949	1088.08	-3.49	-360.12
292	SLV 5	44	845	8995	2336.73	-11.16	-15.42
292	SLV 6	159	757	8890	2312.16	-11.12	-55.37
292	SLV 7	298	-858	193	167.36	-0.49	-105.05
292	SLV 8	412	-946	88	142.79	-0.44	-145
292	SLV 9	-536	888	8304	2172.18	-11.74	187.55
292	SLV 10	-421	800	8200	2147.61	-11.69	147.6
292	SLV 11	-282	-815	-497	2.82	-1.07	97.92
292	SLV 12	-167	-902	-602	-21.75	-1.02	57.97
292	SLV 13	-1151	364	4444	1226.89	-8.69	402.67
292	SLV 14	-981	234	4289	1190.41	-8.62	343.34
292	SLV 15	-1075	-147	1803	576.09	-5.49	375.79
292	SLV 16	-905	-277	1648	539.6	-5.42	316.45
292	CRTFP Ux+	0	0	0	0	0	0
292	CRTFP Ux-	0	0	0	0	0	0
292	CRTFP Uy+	0	0	0	0	0	0
292	CRTFP Uy-	0	0	0	0	0	0
293	SLU 1	-53	-33	3660	1106.78	65.03	18.78
293	SLU 2	-54	-17	3730	1126.12	66.28	18.89
293	SLU 3	-54	-33	3723	1126.17	66.14	19.31
293	SLU 4	-55	-24	3764	1137.77	66.88	19.38
293	SLU 5	-55	-17	3768	1138.19	66.96	19.27
293	SLU 6	-55	-34	3762	1138.24	66.82	19.69
293	SLU 7	-56	-24	3803	1149.84	67.57	19.75
293	SLU 8	-55	-33	3738	1130.92	66.4	19.53
293	SLU 9	-55	-24	3780	1142.52	67.15	19.6
293	SLU 10	-56	-20	4193	1265.08	74.45	19.63
293	SLU 11	-56	-36	4186	1265.14	74.31	20.05
293	SLU 12	-57	-27	4228	1276.74	75.06	20.12
293	SLU 13	-57	-21	4232	1277.15	75.14	20.01
293	SLU 14	-57	-37	4225	1277.21	75	20.43
293	SLU 15	-58	-27	4267	1288.81	75.75	20.5
293	SLU 16	-57	-36	4202	1269.89	74.58	20.27
293	SLU 17	-57	-27	4243	1281.49	75.33	20.34
293	SLU 18	-55	-37	4323	1305.31	76.71	19.84
293	SLU 19	-56	-28	4364	1316.91	77.46	19.91
293	SLU 20	-57	-37	4361	1317.37	77.4	20.22
293	SLU 21	-57	-28	4403	1328.97	78.15	20.28
293	SLU 22	-59	-36	4162	1259.07	73.91	21.19
293	SLU 23	-60	-21	4232	1278.4	75.15	21.3
293	SLU 24	-61	-37	4225	1278.46	75.02	21.72
293	SLU 25	-62	-28	4267	1290.06	75.76	21.79
293	SLU 26	-62	-21	4271	1290.47	75.84	21.67
293	SLU 27	-62	-37	4264	1290.53	75.7	22.1
293	SLU 28	-63	-28	4305	1302.13	76.45	22.16
293	SLU 29	-61	-37	4240	1283.21	75.28	21.94
293	SLU 30	-62	-28	4282	1294.81	76.03	22.01
293	SLU 31	-62	-24	4696	1417.37	83.33	22.04
293	SLU 32	-63	-40	4689	1417.42	83.19	22.46
293	SLU 33	-64	-31	4730	1429.02	83.94	22.53
293	SLU 34	-64	-24	4734	1429.44	84.02	22.42
293	SLU 35	-64	-40	4728	1429.49	83.88	22.84
293	SLU 36	-65	-31	4769	1441.09	84.63	22.9
293	SLU 37	-63	-40	4704	1422.17	83.46	22.68
293	SLU 38	-64	-31	4745	1433.77	84.21	22.75

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
293	SLU 39	-62	-41	4825	1457.59	85.59	22.25
293	SLU 40	-63	-31	4866	1469.19	86.34	22.32
293	SLU 41	-63	-41	4864	1469.66	86.28	22.62
293	SLU 42	-64	-32	4905	1481.26	87.02	22.69
293	SLU 43	-66	-41	4586	1386.61	81.5	23.59
293	SLU 44	-67	-26	4655	1405.94	82.74	23.7
293	SLU 45	-68	-42	4648	1406	82.6	24.12
293	SLU 46	-68	-32	4690	1417.6	83.35	24.19
293	SLU 47	-68	-26	4694	1418.01	83.43	24.07
293	SLU 48	-69	-42	4687	1418.07	83.29	24.49
293	SLU 49	-69	-33	4729	1429.67	84.04	24.56
293	SLU 50	-68	-42	4664	1410.74	82.87	24.34
293	SLU 51	-69	-33	4705	1422.34	83.62	24.41
293	SLU 52	-69	-29	5119	1544.91	90.92	24.44
293	SLU 53	-70	-45	5112	1544.96	90.78	24.86
293	SLU 54	-70	-36	5154	1556.56	91.53	24.93
293	SLU 55	-70	-29	5158	1556.97	91.6	24.82
293	SLU 56	-71	-45	5151	1557.03	91.47	25.24
293	SLU 57	-71	-36	5193	1568.63	92.21	25.3
293	SLU 58	-70	-45	5127	1549.71	91.05	25.08
293	SLU 59	-71	-36	5169	1561.31	91.79	25.15
293	SLU 60	-69	-46	5248	1585.13	93.18	24.65
293	SLU 61	-70	-36	5290	1596.73	93.92	24.72
293	SLU 62	-70	-46	5287	1597.2	93.86	25.02
293	SLU 63	-71	-37	5329	1608.8	94.61	25.09
293	SLU 64	-73	-45	5088	1538.89	90.38	26
293	SLU 65	-74	-29	5158	1558.23	91.62	26.11
293	SLU 66	-74	-45	5151	1558.28	91.48	26.53
293	SLU 67	-75	-36	5192	1569.88	92.23	26.59
293	SLU 68	-75	-30	5196	1570.29	92.31	26.48
293	SLU 69	-75	-46	5190	1570.35	92.17	26.9
293	SLU 70	-76	-37	5231	1581.95	92.91	26.97
293	SLU 71	-75	-46	5166	1563.03	91.75	26.75
293	SLU 72	-76	-36	5208	1574.63	92.5	26.81
293	SLU 73	-76	-32	5621	1697.19	99.8	26.85
293	SLU 74	-76	-49	5614	1697.25	99.66	27.27
293	SLU 75	-77	-39	5656	1708.85	100.4	27.34
293	SLU 76	-77	-33	5660	1709.26	100.48	27.23
293	SLU 77	-77	-49	5653	1709.31	100.34	27.65
293	SLU 78	-78	-40	5695	1720.91	101.09	27.71
293	SLU 79	-77	-49	5630	1701.99	99.93	27.49
293	SLU 80	-78	-39	5671	1713.59	100.67	27.56
293	SLU 81	-76	-49	5751	1737.41	102.06	27.06
293	SLU 82	-76	-40	5792	1749.01	102.8	27.12
293	SLU 83	-77	-50	5789	1749.48	102.74	27.43
293	SLU 84	-77	-40	5831	1761.08	103.49	27.5
293	SLE RA 1	-55	-34	3804	1150.29	67.57	19.47
293	SLE RA 2	-55	-23	3850	1163.18	68.4	19.54
293	SLE RA 3	-56	-34	3845	1163.22	68.31	19.82
293	SLE RA 4	-56	-28	3873	1170.95	68.8	19.87
293	SLE RA 5	-56	-24	3876	1171.23	68.86	19.79
293	SLE RA 6	-56	-34	3871	1171.27	68.76	20.07
293	SLE RA 7	-57	-28	3899	1179	69.26	20.12
293	SLE RA 8	-56	-34	3855	1166.39	68.48	19.97
293	SLE RA 9	-56	-28	3883	1174.12	68.98	20.01
293	SLE RA 10	-57	-25	4159	1255.83	73.85	20.04
293	SLE RA 11	-57	-36	4154	1255.86	73.76	20.32
293	SLE RA 12	-57	-30	4182	1263.6	74.25	20.36
293	SLE RA 13	-57	-26	4185	1263.87	74.31	20.29
293	SLE RA 14	-58	-36	4180	1263.91	74.21	20.57
293	SLE RA 15	-58	-30	4208	1271.64	74.71	20.61
293	SLE RA 16	-57	-36	4165	1259.03	73.93	20.46
293	SLE RA 17	-58	-30	4192	1266.76	74.43	20.51
293	SLE RA 18	-56	-37	4245	1282.64	75.36	20.18
293	SLE RA 19	-57	-30	4273	1290.37	75.85	20.22
293	SLE RA 20	-57	-37	4271	1290.69	75.81	20.43
293	SLE RA 21	-58	-31	4299	1298.42	76.31	20.47
293	SLE FR 1	-55	-34	3804	1150.29	67.57	19.47
293	SLE FR 2	-55	-32	3813	1152.87	67.73	19.48
293	SLE FR 3	-55	-34	3814	1153.51	67.75	19.57
293	SLE FR 4	-55	-32	3945	1192.58	70.07	19.69
293	SLE FR 5	-55	-35	3946	1193.22	70.09	19.78
293	SLE FR 6	-55	-35	4024	1216.47	71.46	19.82
293	SLE QP 1	-55	-34	3804	1150.29	67.57	19.47
293	SLE QP 2	-55	-35	3936	1190	69.9	19.68
293	SLD 1	271	54	4886	1449.46	87.77	-96.04
293	SLD 2	336	6	4826	1433.76	86.65	-117.87
293	SLD 3	299	-133	3906	1185.77	70.08	-102.54
293	SLD 4	364	-181	3846	1170.07	68.96	-124.37
293	SLD 5	-11	285	5718	1670.58	102.3	-1.25
293	SLD 6	32	253	5679	1660.22	101.56	-15.65
293	SLD 7	81	-340	2451	791.63	43.33	-22.92
293	SLD 8	124	-371	2412	781.28	42.59	-37.32
293	SLD 9	-234	302	5460	1598.72	97.22	76.68
293	SLD 10	-191	270	5421	1588.36	96.48	62.28
293	SLD 11	-142	-322	2193	719.77	38.25	55.01
293	SLD 12	-99	-354	2154	709.42	37.51	40.61
293	SLD 13	-474	112	4026	1209.92	70.85	163.73
293	SLD 14	-409	64	3966	1194.22	69.73	141.9

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
293	SLD 15	-446	-76	3046	946.24	53.16	157.23
293	SLD 16	-381	-123	2986	930.54	52.04	135.4
293	SLV 1	706	188	6240	1818.93	113.17	-250.62
293	SLV 2	859	75	6099	1782.02	110.54	-301.94
293	SLV 3	774	-278	3785	1158.51	68.87	-266.42
293	SLV 4	927	-391	3645	1121.61	66.23	-317.74
293	SLV 5	42	760	8376	2387.2	150.57	-27.87
293	SLV 6	145	684	8282	2362.35	148.8	-62.42
293	SLV 7	268	-793	194	185.81	2.89	-80.53
293	SLV 8	371	-869	99	160.96	1.11	-115.08
293	SLV 9	-481	800	7773	2219.04	138.69	154.44
293	SLV 10	-378	724	7678	2194.19	136.92	119.89
293	SLV 11	-255	-753	-410	17.65	-8.99	101.78
293	SLV 12	-152	-829	-504	-7.2	-10.76	67.23
293	SLV 13	-1037	322	4228	1258.39	73.58	357.1
293	SLV 14	-884	209	4087	1221.49	70.94	305.78
293	SLV 15	-969	-144	1773	597.97	29.27	341.3
293	SLV 16	-816	-257	1632	561.07	26.63	289.98
293	CRTFP Ux+	0	0	0	0	0	0
293	CRTFP Ux-	0	0	0	0	0	0
293	CRTFP Uy+	0	0	0	0	0	0
293	CRTFP Uy-	0	0	0	0	0	0
295	SLU 1	-137	-106	9507	2172.25	13.18	29.92
295	SLU 2	-140	-67	9691	2210.45	13.93	30.39
295	SLU 3	-141	-108	9669	2210.21	13.33	30.78
295	SLU 4	-142	-85	9779	2233.14	13.78	31.06
295	SLU 5	-142	-68	9791	2234.08	14.01	31
295	SLU 6	-143	-110	9769	2233.84	13.42	31.4
295	SLU 7	-145	-86	9880	2256.77	13.87	31.68
295	SLU 8	-142	-109	9708	2219.5	13.35	31.15
295	SLU 9	-144	-85	9818	2242.43	13.8	31.43
295	SLU 10	-145	-77	10901	2486.47	14.6	31.49
295	SLU 11	-146	-118	10879	2486.23	14.01	31.89
295	SLU 12	-148	-95	10990	2509.15	14.45	32.17
295	SLU 13	-148	-78	11002	2510.09	14.69	32.11
295	SLU 14	-149	-120	10980	2509.85	14.09	32.5
295	SLU 15	-151	-96	11090	2532.78	14.54	32.79
295	SLU 16	-148	-119	10919	2495.52	14.02	32.25
295	SLU 17	-150	-95	11029	2518.44	14.47	32.54
295	SLU 18	-145	-121	11236	2566.55	14.14	31.5
295	SLU 19	-147	-97	11347	2589.47	14.59	31.78
295	SLU 20	-148	-122	11337	2590.18	14.23	32.11
295	SLU 21	-149	-98	11447	2613.1	14.67	32.39
295	SLU 22	-154	-118	10811	2472.94	14.54	33.81
295	SLU 23	-157	-79	10995	2511.15	15.29	34.28
295	SLU 24	-158	-120	10973	2510.91	14.69	34.67
295	SLU 25	-160	-97	11083	2533.83	15.14	34.95
295	SLU 26	-160	-80	11095	2534.77	15.37	34.89
295	SLU 27	-161	-122	11073	2534.53	14.78	35.29
295	SLU 28	-163	-98	11184	2557.46	15.23	35.57
295	SLU 29	-160	-121	11012	2520.2	14.71	35.04
295	SLU 30	-161	-97	11122	2543.12	15.16	35.32
295	SLU 31	-163	-89	12205	2787.16	15.96	35.38
295	SLU 32	-164	-130	12183	2786.92	15.36	35.78
295	SLU 33	-166	-107	12294	2809.84	15.81	36.06
295	SLU 34	-166	-90	12306	2810.79	16.05	36
295	SLU 35	-167	-132	12284	2810.55	15.45	36.39
295	SLU 36	-168	-108	12394	2833.47	15.9	36.68
295	SLU 37	-166	-131	12223	2796.21	15.38	36.14
295	SLU 38	-167	-107	12333	2819.13	15.83	36.43
295	SLU 39	-163	-133	12540	2867.24	15.5	35.39
295	SLU 40	-164	-109	12651	2890.16	15.95	35.67
295	SLU 41	-165	-134	12641	2890.87	15.58	36
295	SLU 42	-167	-110	12751	2913.79	16.03	36.28
295	SLU 43	-172	-134	11912	2720.83	16.67	37.56
295	SLU 44	-175	-95	12096	2759.03	17.42	38.03
295	SLU 45	-176	-136	12074	2758.79	16.82	38.42
295	SLU 46	-177	-112	12184	2781.72	17.27	38.71
295	SLU 47	-177	-96	12196	2782.66	17.5	38.64
295	SLU 48	-178	-137	12174	2782.42	16.91	39.04
295	SLU 49	-180	-114	12285	2805.35	17.36	39.32
295	SLU 50	-177	-136	12113	2768.08	16.84	38.79
295	SLU 51	-179	-113	12223	2791.01	17.29	39.07
295	SLU 52	-180	-105	13306	3035.05	18.09	39.13
295	SLU 53	-181	-146	13284	3034.81	17.49	39.53
295	SLU 54	-183	-122	13395	3057.73	17.94	39.81
295	SLU 55	-183	-106	13407	3058.67	18.17	39.75
295	SLU 56	-184	-147	13385	3058.43	17.58	40.15
295	SLU 57	-186	-124	13495	3081.36	18.03	40.43
295	SLU 58	-183	-147	13324	3044.1	17.51	39.9
295	SLU 59	-185	-123	13434	3067.02	17.96	40.18
295	SLU 60	-180	-148	13641	3115.13	17.63	39.14
295	SLU 61	-182	-125	13752	3138.05	18.08	39.42
295	SLU 62	-183	-150	13742	3138.76	17.71	39.75
295	SLU 63	-184	-126	13852	3161.68	18.16	40.04
295	SLU 64	-190	-146	13216	3021.52	18.03	41.45
295	SLU 65	-192	-107	13400	3059.73	18.78	41.92
295	SLU 66	-193	-148	13378	3059.49	18.18	42.31
295	SLU 67	-195	-124	13488	3082.41	18.63	42.59

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
295	SLU 68	-195	-108	13500	3083.35	18.86	42.53
295	SLU 69	-196	-149	13478	3083.11	18.27	42.93
295	SLU 70	-198	-126	13589	3106.04	18.72	43.21
295	SLU 71	-195	-149	13417	3068.77	18.2	42.68
295	SLU 72	-197	-125	13527	3091.7	18.65	42.96
295	SLU 73	-198	-117	14610	3335.74	19.45	43.02
295	SLU 74	-199	-158	14588	3335.5	18.85	43.42
295	SLU 75	-201	-135	14699	3358.42	19.3	43.7
295	SLU 76	-201	-118	14711	3359.37	19.53	43.64
295	SLU 77	-202	-159	14689	3359.13	18.94	44.04
295	SLU 78	-203	-136	14799	3382.05	19.39	44.32
295	SLU 79	-201	-159	14628	3344.79	18.87	43.79
295	SLU 80	-202	-135	14738	3367.71	19.32	44.07
295	SLU 81	-198	-160	14945	3415.82	18.99	43.03
295	SLU 82	-199	-137	15056	3438.74	19.44	43.31
295	SLU 83	-200	-162	15046	3439.45	19.07	43.64
295	SLU 84	-202	-138	15156	3462.37	19.52	43.93
295	SLE RA 1	-142	-110	9880	2258.16	13.57	31.03
295	SLE RA 2	-144	-83	10002	2283.63	14.07	31.34
295	SLE RA 3	-144	-111	9987	2283.47	13.67	31.61
295	SLE RA 4	-146	-95	10061	2298.75	13.97	31.79
295	SLE RA 5	-145	-84	10069	2299.38	14.13	31.75
295	SLE RA 6	-146	-112	10054	2299.22	13.73	32.02
295	SLE RA 7	-147	-96	10128	2314.51	14.03	32.2
295	SLE RA 8	-146	-111	10014	2289.66	13.68	31.85
295	SLE RA 9	-147	-96	10087	2304.95	13.98	32.04
295	SLE RA 10	-147	-90	10809	2467.64	14.52	32.08
295	SLE RA 11	-148	-118	10795	2467.48	14.12	32.34
295	SLE RA 12	-149	-102	10868	2482.76	14.42	32.53
295	SLE RA 13	-149	-91	10876	2483.39	14.57	32.49
295	SLE RA 14	-150	-119	10862	2483.23	14.18	32.75
295	SLE RA 15	-151	-103	10935	2498.51	14.48	32.94
295	SLE RA 16	-149	-118	10821	2473.67	14.13	32.59
295	SLE RA 17	-150	-102	10894	2488.95	14.43	32.77
295	SLE RA 18	-147	-119	11033	2521.03	14.21	32.08
295	SLE RA 19	-148	-104	11106	2536.31	14.51	32.27
295	SLE RA 20	-149	-120	11100	2536.78	14.27	32.49
295	SLE RA 21	-150	-104	11173	2552.06	14.57	32.68
295	SLE FR 1	-142	-110	9880	2258.16	13.57	31.03
295	SLE FR 2	-142	-104	9904	2263.25	13.67	31.09
295	SLE FR 3	-143	-110	9906	2264.46	13.59	31.19
295	SLE FR 4	-144	-107	10250	2342.11	13.86	31.41
295	SLE FR 5	-144	-113	10252	2343.32	13.78	31.51
295	SLE FR 6	-145	-114	10456	2389.59	13.89	31.55
295	SLE QP 1	-142	-110	9880	2258.16	13.57	31.03
295	SLE QP 2	-144	-113	10225	2337.02	13.76	31.34
295	SLD 1	671	105	12627	2852.06	41.72	-166.04
295	SLD 2	837	-7	12475	2820.29	39.85	-203.91
295	SLD 3	741	-362	10043	2318.1	29.26	-180
295	SLD 4	907	-474	9891	2286.33	27.39	-217.87
295	SLD 5	-35	681	14893	3307.08	41.38	0.12
295	SLD 6	74	607	14793	3286.13	40.14	-24.86
295	SLD 7	198	-876	6278	1527.22	-0.14	-46.43
295	SLD 8	307	-950	6178	1506.26	-1.38	-71.41
295	SLD 9	-594	725	14273	3167.78	28.9	134.1
295	SLD 10	-485	651	14173	3146.82	27.67	109.11
295	SLD 11	-361	-833	5658	1387.91	-12.62	87.55
295	SLD 12	-252	-907	5558	1366.95	-13.85	62.57
295	SLD 13	-1194	249	10560	2387.7	0.13	280.56
295	SLD 14	-1028	137	10408	2355.93	-1.74	242.69
295	SLD 15	-1124	-218	7976	1853.74	-12.33	266.6
295	SLD 16	-959	-330	7823	1821.98	-14.19	228.72
295	SLV 1	1759	432	16060	3586.35	80.18	-429.51
295	SLV 2	2147	168	15702	3511.67	75.79	-518.54
295	SLV 3	1930	-731	9586	2249	49.05	-463.58
295	SLV 4	2318	-994	9228	2174.32	44.66	-552.61
295	SLV 5	95	1863	21860	4754.07	81.72	-38.61
295	SLV 6	357	1685	21619	4703.79	78.76	-98.55
295	SLV 7	665	-2012	283	296.23	-22.04	-152.2
295	SLV 8	927	-2189	42	245.96	-25	-212.15
295	SLV 9	-1214	1964	20409	4428.08	52.52	274.83
295	SLV 10	-952	1787	20168	4377.8	49.57	214.89
295	SLV 11	-644	-1911	-1168	-29.76	-51.24	161.24
295	SLV 12	-382	-2088	-1409	-80.03	-54.2	101.3
295	SLV 13	-2605	769	11222	2499.71	-17.14	615.3
295	SLV 14	-2217	506	10864	2425.04	-21.53	526.27
295	SLV 15	-2434	-393	4749	1162.36	-48.27	581.22
295	SLV 16	-2046	-657	4391	1087.69	-52.66	492.19
295	CRTFP Ux+	0	0	0	0	0	0
295	CRTFP Ux-	0	0	0	0	0	0
295	CRTFP Uy+	0	0	0	-0.01	0	0
295	CRTFP Uy-	0	0	0	0.01	0	0
297	SLU 1	-46	-48	3384	1093.11	-62.91	14.94
297	SLU 2	-47	-34	3446	1110.9	-64.06	15.53
297	SLU 3	-47	-48	3442	1112.46	-63.99	15.38
297	SLU 4	-48	-40	3479	1123.13	-64.68	15.73
297	SLU 5	-48	-34	3483	1122.96	-64.73	15.84
297	SLU 6	-48	-49	3478	1124.52	-64.66	15.69
297	SLU 7	-49	-41	3516	1135.19	-65.35	16.05

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
297	SLU 8	-48	-49	3456	1117.23	-64.26	15.57
297	SLU 9	-48	-40	3494	1127.91	-64.94	15.92
297	SLU 10	-49	-38	3878	1249.62	-72.11	16.06
297	SLU 11	-49	-53	3874	1251.17	-72.05	15.91
297	SLU 12	-50	-45	3911	1261.85	-72.73	16.26
297	SLU 13	-50	-39	3915	1261.68	-72.78	16.37
297	SLU 14	-50	-54	3910	1263.23	-72.72	16.23
297	SLU 15	-50	-45	3948	1273.91	-73.4	16.58
297	SLU 16	-50	-53	3888	1255.95	-72.31	16.1
297	SLU 17	-50	-45	3926	1266.62	-73	16.45
297	SLU 18	-48	-54	4001	1291.28	-74.42	15.7
297	SLU 19	-49	-46	4038	1301.95	-75.11	16.05
297	SLU 20	-49	-55	4037	1303.34	-75.09	16.01
297	SLU 21	-50	-46	4075	1314.01	-75.78	16.37
297	SLU 22	-52	-53	3849	1245.02	-71.57	16.91
297	SLU 23	-53	-39	3912	1262.81	-72.72	17.5
297	SLU 24	-53	-54	3908	1264.36	-72.65	17.35
297	SLU 25	-54	-45	3945	1275.04	-73.34	17.7
297	SLU 26	-54	-40	3948	1274.87	-73.39	17.81
297	SLU 27	-54	-54	3944	1276.42	-73.32	17.66
297	SLU 28	-55	-46	3981	1287.1	-74.01	18.02
297	SLU 29	-54	-54	3922	1269.14	-72.91	17.54
297	SLU 30	-54	-46	3959	1279.81	-73.6	17.89
297	SLU 31	-55	-43	4344	1401.53	-80.77	18.03
297	SLU 32	-55	-58	4340	1403.08	-80.7	17.88
297	SLU 33	-56	-50	4377	1413.75	-81.39	18.23
297	SLU 34	-56	-44	4380	1413.59	-81.44	18.34
297	SLU 35	-56	-59	4376	1415.14	-81.37	18.2
297	SLU 36	-56	-51	4413	1425.81	-82.06	18.55
297	SLU 37	-56	-59	4354	1407.86	-80.97	18.07
297	SLU 38	-56	-50	4391	1418.53	-81.65	18.42
297	SLU 39	-54	-59	4467	1443.19	-83.08	17.67
297	SLU 40	-55	-51	4504	1453.86	-83.76	18.02
297	SLU 41	-55	-60	4503	1455.25	-83.75	17.98
297	SLU 42	-56	-52	4540	1465.92	-84.43	18.34
297	SLU 43	-58	-60	4239	1368.97	-78.82	18.75
297	SLU 44	-59	-46	4302	1386.76	-79.97	19.33
297	SLU 45	-59	-61	4297	1388.31	-79.9	19.19
297	SLU 46	-59	-52	4335	1398.98	-80.59	19.54
297	SLU 47	-59	-47	4338	1398.82	-80.64	19.65
297	SLU 48	-60	-61	4333	1400.37	-80.57	19.5
297	SLU 49	-60	-53	4371	1411.04	-81.26	19.85
297	SLU 50	-59	-61	4311	1393.09	-80.16	19.38
297	SLU 51	-60	-53	4349	1403.76	-80.85	19.73
297	SLU 52	-60	-50	4734	1525.47	-88.02	19.87
297	SLU 53	-61	-65	4729	1527.02	-87.95	19.72
297	SLU 54	-61	-57	4767	1537.7	-88.64	20.07
297	SLU 55	-61	-51	4770	1537.53	-88.69	20.18
297	SLU 56	-62	-66	4765	1539.08	-88.62	20.03
297	SLU 57	-62	-58	4803	1549.76	-89.31	20.39
297	SLU 58	-61	-66	4743	1531.8	-88.22	19.91
297	SLU 59	-62	-57	4781	1542.48	-88.9	20.26
297	SLU 60	-60	-66	4856	1567.13	-90.32	19.51
297	SLU 61	-61	-58	4894	1577.81	-91.01	19.86
297	SLU 62	-61	-67	4892	1579.19	-91	19.82
297	SLU 63	-62	-59	4930	1589.87	-91.68	20.17
297	SLU 64	-64	-65	4705	1520.87	-87.48	20.72
297	SLU 65	-64	-51	4768	1538.66	-88.62	21.3
297	SLU 66	-65	-66	4763	1540.21	-88.56	21.16
297	SLU 67	-65	-58	4801	1550.89	-89.24	21.51
297	SLU 68	-65	-52	4804	1550.72	-89.29	21.62
297	SLU 69	-66	-67	4799	1552.27	-89.23	21.47
297	SLU 70	-66	-58	4837	1562.95	-89.91	21.82
297	SLU 71	-65	-67	4777	1544.99	-88.82	21.35
297	SLU 72	-66	-58	4815	1555.67	-89.51	21.7
297	SLU 73	-66	-56	5200	1677.38	-96.68	21.84
297	SLU 74	-67	-71	5195	1678.93	-96.61	21.69
297	SLU 75	-67	-62	5233	1689.6	-97.3	22.04
297	SLU 76	-67	-56	5236	1689.44	-97.35	22.15
297	SLU 77	-68	-71	5231	1690.99	-97.28	22
297	SLU 78	-68	-63	5269	1701.66	-97.97	22.36
297	SLU 79	-67	-71	5209	1683.71	-96.87	21.88
297	SLU 80	-68	-63	5247	1694.38	-97.56	22.23
297	SLU 81	-66	-72	5322	1719.04	-98.98	21.48
297	SLU 82	-67	-63	5360	1729.71	-99.67	21.83
297	SLU 83	-67	-72	5358	1731.1	-99.65	21.79
297	SLU 84	-68	-64	5396	1741.77	-100.34	22.14
297	SLE RA 1	-48	-49	3517	1136.52	-65.39	15.5
297	SLE RA 2	-48	-40	3559	1148.38	-66.15	15.89
297	SLE RA 3	-48	-50	3555	1149.41	-66.11	15.8
297	SLE RA 4	-49	-44	3581	1156.53	-66.57	16.03
297	SLE RA 5	-49	-40	3583	1156.42	-66.6	16.1
297	SLE RA 6	-49	-50	3580	1157.45	-66.55	16.01
297	SLE RA 7	-49	-44	3605	1164.57	-67.01	16.24
297	SLE RA 8	-49	-50	3565	1152.6	-66.28	15.92
297	SLE RA 9	-49	-44	3590	1159.71	-66.74	16.16
297	SLE RA 10	-49	-43	3847	1240.85	-71.52	16.25
297	SLE RA 11	-50	-53	3843	1241.89	-71.48	16.15
297	SLE RA 12	-50	-47	3869	1249	-71.93	16.39

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
297	SLE RA 13	-50	-43	3871	1248.89	-71.97	16.46
297	SLE RA 14	-50	-53	3868	1249.93	-71.92	16.36
297	SLE RA 15	-51	-47	3893	1257.04	-72.38	16.6
297	SLE RA 16	-50	-53	3853	1245.07	-71.65	16.28
297	SLE RA 17	-50	-47	3878	1252.19	-72.11	16.51
297	SLE RA 18	-49	-53	3928	1268.63	-73.06	16.01
297	SLE RA 19	-50	-48	3953	1275.74	-73.52	16.24
297	SLE RA 20	-50	-54	3952	1276.67	-73.5	16.22
297	SLE RA 21	-50	-48	3977	1283.78	-73.96	16.45
297	SLE FR 1	-48	-49	3517	1136.52	-65.39	15.5
297	SLE FR 2	-48	-47	3525	1138.89	-65.54	15.58
297	SLE FR 3	-48	-49	3526	1139.73	-65.57	15.59
297	SLE FR 4	-48	-49	3649	1178.52	-67.84	15.73
297	SLE FR 5	-48	-51	3650	1179.36	-67.87	15.74
297	SLE FR 6	-48	-51	3722	1202.57	-69.22	15.76
297	SLE QP 1	-48	-49	3517	1136.52	-65.39	15.5
297	SLE QP 2	-48	-50	3640	1176.15	-67.69	15.66
297	SLD 1	245	23	4440	1415.21	-81.67	-85.66
297	SLD 2	303	-14	4390	1400.16	-80.81	-106.74
297	SLD 3	269	-141	3562	1166.2	-65.7	-96.98
297	SLD 4	327	-179	3512	1151.16	-64.84	-118.06
297	SLD 5	-7	228	5221	1628.23	-96.26	6.22
297	SLD 6	31	203	5188	1618.31	-95.69	-7.69
297	SLD 7	73	-320	2293	798.21	-43.02	-31.51
297	SLD 8	112	-345	2261	788.29	-42.46	-45.42
297	SLD 9	-208	244	5020	1564.01	-92.92	76.73
297	SLD 10	-169	220	4987	1554.09	-92.35	62.82
297	SLD 11	-127	-304	2092	733.99	-39.68	39
297	SLD 12	-89	-329	2059	724.07	-39.12	25.09
297	SLD 13	-424	78	3768	1201.14	-70.54	149.37
297	SLD 14	-365	40	3719	1186.1	-69.68	128.29
297	SLD 15	-399	-87	2890	952.13	-54.57	138.05
297	SLD 16	-341	-124	2840	937.09	-53.71	116.97
297	SLV 1	636	135	5585	1756.13	-101.72	-220.59
297	SLV 2	773	47	5467	1720.77	-99.71	-270.15
297	SLV 3	695	-275	3385	1132.46	-61.72	-248.39
297	SLV 4	832	-363	3268	1097.1	-59.71	-297.95
297	SLV 5	42	642	7582	2302.65	-138.95	-3.79
297	SLV 6	134	583	7503	2278.85	-137.59	-37.16
297	SLV 7	239	-722	249	223.73	-5.6	-96.49
297	SLV 8	331	-781	170	199.93	-4.25	-129.85
297	SLV 9	-427	681	7110	2152.37	-131.13	161.16
297	SLV 10	-335	621	7031	2128.57	-129.78	127.8
297	SLV 11	-230	-684	-223	73.45	2.21	68.47
297	SLV 12	-138	-743	-302	49.64	3.57	35.1
297	SLV 13	-928	262	4013	1255.2	-75.67	329.27
297	SLV 14	-791	174	3896	1219.84	-73.66	279.71
297	SLV 15	-869	-147	1813	631.52	-35.67	301.46
297	SLV 16	-732	-236	1696	596.16	-33.65	251.9
297	CRTFP Ux+	0	0	0	0	0	0
297	CRTFP Ux-	0	0	0	0	0	0
297	CRTFP Uy+	0	0	0	0	0	0
297	CRTFP Uy-	0	0	0	0	0	0
298	SLU 1	-51	-64	3767	1200.73	1.32	17.61
298	SLU 2	-52	-49	3836	1219.68	1.38	17.97
298	SLU 3	-53	-65	3832	1221.94	1.35	18.12
298	SLU 4	-53	-56	3873	1233.31	1.38	18.33
298	SLU 5	-53	-49	3876	1232.91	1.39	18.33
298	SLU 6	-54	-66	3872	1235.17	1.36	18.48
298	SLU 7	-54	-57	3913	1246.55	1.4	18.7
298	SLU 8	-53	-66	3847	1227.19	1.35	18.34
298	SLU 9	-54	-56	3889	1238.57	1.39	18.55
298	SLU 10	-54	-55	4318	1371.92	1.53	18.68
298	SLU 11	-55	-72	4313	1374.19	1.5	18.83
298	SLU 12	-55	-62	4355	1385.56	1.54	19.05
298	SLU 13	-55	-56	4358	1385.16	1.55	19.04
298	SLU 14	-56	-72	4353	1387.42	1.52	19.19
298	SLU 15	-56	-63	4395	1398.79	1.55	19.41
298	SLU 16	-55	-72	4329	1379.44	1.51	19.05
298	SLU 17	-56	-62	4370	1390.81	1.54	19.26
298	SLU 18	-54	-73	4455	1418.22	1.54	18.63
298	SLU 19	-55	-64	4496	1429.59	1.57	18.84
298	SLU 20	-55	-74	4495	1431.45	1.56	18.99
298	SLU 21	-56	-64	4537	1442.83	1.59	19.21
298	SLU 22	-58	-71	4285	1367.34	1.53	19.94
298	SLU 23	-59	-56	4354	1386.3	1.59	20.29
298	SLU 24	-59	-73	4350	1388.56	1.56	20.45
298	SLU 25	-60	-63	4391	1399.93	1.59	20.66
298	SLU 26	-60	-57	4394	1399.53	1.6	20.66
298	SLU 27	-60	-73	4390	1401.79	1.57	20.81
298	SLU 28	-61	-64	4431	1413.16	1.61	21.02
298	SLU 29	-60	-73	4365	1393.81	1.56	20.66
298	SLU 30	-61	-64	4407	1405.18	1.6	20.88
298	SLU 31	-61	-62	4836	1538.54	1.74	21.01
298	SLU 32	-62	-79	4831	1540.8	1.71	21.16
298	SLU 33	-62	-69	4873	1552.18	1.75	21.37
298	SLU 34	-62	-63	4876	1551.78	1.76	21.37
298	SLU 35	-63	-79	4871	1554.04	1.73	21.52
298	SLU 36	-63	-70	4913	1565.41	1.76	21.74

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
298	SLU 37	-62	-79	4847	1546.06	1.72	21.38
298	SLU 38	-63	-70	4888	1557.43	1.75	21.59
298	SLU 39	-61	-80	4973	1584.84	1.75	20.96
298	SLU 40	-62	-71	5014	1596.21	1.78	21.17
298	SLU 41	-62	-81	5013	1598.07	1.77	21.32
298	SLU 42	-63	-72	5055	1609.44	1.8	21.53
298	SLU 43	-64	-81	4720	1503.82	1.64	22.1
298	SLU 44	-65	-65	4788	1522.77	1.7	22.45
298	SLU 45	-66	-82	4784	1525.03	1.67	22.6
298	SLU 46	-66	-73	4826	1536.4	1.7	22.82
298	SLU 47	-66	-66	4829	1536	1.72	22.81
298	SLU 48	-67	-83	4824	1538.27	1.69	22.97
298	SLU 49	-67	-74	4866	1549.64	1.72	23.18
298	SLU 50	-66	-83	4800	1530.29	1.68	22.82
298	SLU 51	-67	-73	4841	1541.66	1.71	23.03
298	SLU 52	-67	-72	5270	1675.02	1.85	23.16
298	SLU 53	-68	-88	5266	1677.28	1.82	23.32
298	SLU 54	-69	-79	5307	1688.65	1.86	23.53
298	SLU 55	-69	-72	5310	1688.25	1.87	23.53
298	SLU 56	-69	-89	5306	1690.51	1.84	23.68
298	SLU 57	-70	-80	5347	1701.88	1.88	23.89
298	SLU 58	-69	-89	5282	1682.53	1.83	23.53
298	SLU 59	-69	-79	5323	1693.9	1.87	23.75
298	SLU 60	-67	-90	5408	1721.31	1.86	23.11
298	SLU 61	-68	-80	5449	1732.68	1.9	23.33
298	SLU 62	-68	-91	5448	1734.55	1.88	23.48
298	SLU 63	-69	-81	5489	1745.92	1.91	23.69
298	SLU 64	-71	-88	5238	1670.44	1.85	24.42
298	SLU 65	-72	-73	5306	1689.39	1.91	24.78
298	SLU 66	-73	-89	5302	1691.65	1.88	24.93
298	SLU 67	-73	-80	5343	1703.02	1.92	25.14
298	SLU 68	-73	-73	5347	1702.62	1.93	25.14
298	SLU 69	-74	-90	5342	1704.88	1.9	25.29
298	SLU 70	-74	-81	5384	1716.26	1.93	25.51
298	SLU 71	-73	-90	5318	1696.9	1.89	25.15
298	SLU 72	-74	-80	5359	1708.28	1.92	25.36
298	SLU 73	-74	-79	5788	1841.63	2.06	25.49
298	SLU 74	-75	-96	5784	1843.9	2.04	25.64
298	SLU 75	-75	-86	5825	1855.27	2.07	25.86
298	SLU 76	-75	-80	5828	1854.87	2.08	25.85
298	SLU 77	-76	-96	5824	1857.13	2.05	26.01
298	SLU 78	-76	-87	5865	1868.5	2.09	26.22
298	SLU 79	-75	-96	5800	1849.15	2.04	25.86
298	SLU 80	-76	-86	5841	1860.52	2.08	26.08
298	SLU 81	-74	-97	5926	1887.93	2.07	25.44
298	SLU 82	-75	-88	5967	1899.3	2.11	25.65
298	SLU 83	-75	-98	5966	1901.16	2.09	25.8
298	SLU 84	-76	-88	6007	1912.54	2.13	26.02
298	SLE RA 1	-53	-66	3915	1248.33	1.38	18.28
298	SLE RA 2	-54	-56	3961	1260.97	1.42	18.51
298	SLE RA 3	-54	-67	3958	1262.47	1.4	18.61
298	SLE RA 4	-55	-61	3986	1270.06	1.42	18.76
298	SLE RA 5	-55	-56	3988	1269.79	1.43	18.75
298	SLE RA 6	-55	-68	3985	1271.3	1.41	18.86
298	SLE RA 7	-55	-61	4012	1278.88	1.43	19
298	SLE RA 8	-55	-67	3969	1265.98	1.4	18.76
298	SLE RA 9	-55	-61	3996	1273.56	1.43	18.9
298	SLE RA 10	-55	-60	4282	1362.46	1.52	18.99
298	SLE RA 11	-56	-71	4279	1363.97	1.5	19.09
298	SLE RA 12	-56	-65	4307	1371.55	1.52	19.23
298	SLE RA 13	-56	-60	4309	1371.29	1.53	19.23
298	SLE RA 14	-56	-72	4306	1372.79	1.51	19.33
298	SLE RA 15	-57	-65	4334	1380.38	1.54	19.47
298	SLE RA 16	-56	-71	4290	1367.47	1.51	19.23
298	SLE RA 17	-56	-65	4317	1375.05	1.53	19.38
298	SLE RA 18	-55	-72	4374	1393.33	1.53	18.95
298	SLE RA 19	-56	-66	4401	1400.91	1.55	19.1
298	SLE RA 20	-56	-73	4401	1402.15	1.54	19.2
298	SLE RA 21	-56	-66	4428	1409.73	1.56	19.34
298	SLE FR 1	-53	-66	3915	1248.33	1.38	18.28
298	SLE FR 2	-53	-64	3924	1250.86	1.39	18.32
298	SLE FR 3	-53	-66	3926	1251.86	1.38	18.37
298	SLE FR 4	-54	-66	4062	1294.36	1.43	18.53
298	SLE FR 5	-54	-68	4063	1295.36	1.43	18.58
298	SLE FR 6	-54	-69	4144	1320.83	1.45	18.61
298	SLE QP 1	-53	-66	3915	1248.33	1.38	18.28
298	SLE QP 2	-54	-68	4053	1291.83	1.42	18.48
298	SLD 1	275	8	4900	1540.28	3.07	-96.78
298	SLD 2	340	-32	4848	1524.23	2.94	-119.67
298	SLD 3	302	-173	3940	1274.24	2.18	-106.09
298	SLD 4	367	-213	3888	1258.19	2.04	-128.98
298	SLD 5	-8	237	5772	1772.75	3.29	2.14
298	SLD 6	36	210	5738	1762.17	3.21	-12.96
298	SLD 7	82	-367	2572	885.94	0.32	-28.9
298	SLD 8	125	-393	2538	875.35	0.23	-44
298	SLD 9	-233	257	5568	1708.31	2.61	80.95
298	SLD 10	-189	231	5533	1697.72	2.53	65.85
298	SLD 11	-143	-346	2367	821.5	-0.36	49.92
298	SLD 12	-100	-373	2333	810.91	-0.45	34.82

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
298	SLD 13	-475	77	4218	1325.47	0.8	165.94
298	SLD 14	-409	37	4166	1309.42	0.67	143.05
298	SLD 15	-448	-104	3257	1059.43	-0.09	156.63
298	SLD 16	-382	-144	3205	1043.38	-0.22	133.74
298	SLV 1	713	124	6115	1895.21	5.34	-250.56
298	SLV 2	867	29	5992	1857.49	5.04	-304.36
298	SLV 3	779	-327	3710	1228.84	3.11	-273.32
298	SLV 4	933	-422	3588	1191.12	2.81	-327.12
298	SLV 5	48	690	8341	2490.55	6.04	-17.67
298	SLV 6	152	626	8259	2465.15	5.84	-53.89
298	SLV 7	267	-811	325	269.31	-1.4	-93.54
298	SLV 8	371	-875	243	243.91	-1.6	-129.76
298	SLV 9	-478	739	7862	2339.75	4.45	166.72
298	SLV 10	-375	675	7780	2314.35	4.24	130.5
298	SLV 11	-259	-762	-154	118.51	-2.99	90.85
298	SLV 12	-156	-826	-236	93.11	-3.2	54.63
298	SLV 13	-1041	286	4518	1392.54	0.04	364.08
298	SLV 14	-887	191	4396	1354.82	-0.27	310.28
298	SLV 15	-975	-165	2113	726.17	-2.19	341.32
298	SLV 16	-821	-260	1991	688.45	-2.5	287.52
298	CRTFP Ux+	0	0	0	0	0	0
298	CRTFP Ux-	0	0	0	0	0	0
298	CRTFP Uy+	0	0	0	0	0	0
298	CRTFP Uy-	0	0	0	0	0	0
299	SLU 1	-43	-62	3110	983.14	88.21	16.68
299	SLU 2	-44	-49	3166	998.1	89.81	16.62
299	SLU 3	-44	-63	3163	1000.46	89.72	17.14
299	SLU 4	-45	-55	3196	1009.44	90.68	17.1
299	SLU 5	-45	-49	3199	1008.92	90.75	16.94
299	SLU 6	-45	-63	3196	1011.28	90.66	17.47
299	SLU 7	-46	-56	3229	1020.26	91.62	17.43
299	SLU 8	-45	-63	3176	1004.76	90.08	17.33
299	SLU 9	-45	-55	3209	1013.74	91.05	17.29
299	SLU 10	-46	-55	3563	1122.67	101.09	17.44
299	SLU 11	-46	-69	3560	1125.03	101	17.96
299	SLU 12	-47	-61	3594	1134.01	101.96	17.92
299	SLU 13	-47	-55	3596	1133.48	102.03	17.76
299	SLU 14	-47	-69	3594	1135.84	101.94	18.28
299	SLU 15	-48	-62	3627	1144.83	102.9	18.25
299	SLU 16	-47	-69	3573	1129.33	101.37	18.15
299	SLU 17	-47	-61	3607	1138.31	102.33	18.11
299	SLU 18	-46	-70	3678	1161.09	104.32	17.85
299	SLU 19	-46	-62	3711	1170.07	105.29	17.81
299	SLU 20	-47	-71	3711	1171.9	105.26	18.17
299	SLU 21	-47	-63	3744	1180.88	106.23	18.14
299	SLU 22	-49	-68	3536	1119.27	100.33	18.86
299	SLU 23	-50	-56	3592	1134.24	101.94	18.8
299	SLU 24	-50	-70	3589	1136.6	101.84	19.32
299	SLU 25	-51	-62	3623	1145.58	102.81	19.28
299	SLU 26	-51	-56	3625	1145.05	102.88	19.12
299	SLU 27	-51	-70	3622	1147.41	102.78	19.65
299	SLU 28	-51	-62	3656	1156.39	103.75	19.61
299	SLU 29	-51	-70	3602	1140.9	102.21	19.51
299	SLU 30	-51	-62	3636	1149.88	103.17	19.47
299	SLU 31	-52	-61	3990	1258.81	113.22	19.62
299	SLU 32	-52	-75	3987	1261.17	113.13	20.14
299	SLU 33	-53	-68	4021	1270.15	114.09	20.1
299	SLU 34	-52	-62	4023	1269.62	114.16	19.94
299	SLU 35	-53	-76	4020	1271.98	114.07	20.46
299	SLU 36	-53	-68	4054	1280.96	115.03	20.43
299	SLU 37	-53	-76	4000	1265.46	113.49	20.33
299	SLU 38	-53	-68	4033	1274.44	114.46	20.29
299	SLU 39	-52	-77	4104	1297.22	116.45	20.03
299	SLU 40	-52	-69	4138	1306.2	117.41	19.99
299	SLU 41	-52	-78	4137	1308.04	117.39	20.35
299	SLU 42	-53	-70	4171	1317.02	118.35	20.32
299	SLU 43	-54	-78	3896	1231.4	110.51	20.94
299	SLU 44	-55	-65	3952	1246.37	112.11	20.88
299	SLU 45	-55	-79	3949	1248.73	112.02	21.4
299	SLU 46	-56	-71	3983	1257.71	112.98	21.36
299	SLU 47	-56	-66	3985	1257.18	113.05	21.2
299	SLU 48	-56	-80	3982	1259.54	112.96	21.72
299	SLU 49	-57	-72	4016	1268.52	113.92	21.69
299	SLU 50	-56	-79	3962	1253.03	112.39	21.59
299	SLU 51	-56	-71	3996	1262.01	113.35	21.55
299	SLU 52	-57	-71	4350	1370.94	123.4	21.69
299	SLU 53	-57	-85	4347	1373.3	123.3	22.22
299	SLU 54	-58	-77	4381	1382.28	124.27	22.18
299	SLU 55	-58	-72	4383	1381.75	124.34	22.02
299	SLU 56	-58	-86	4380	1384.11	124.24	22.54
299	SLU 57	-59	-78	4414	1393.09	125.2	22.5
299	SLU 58	-58	-85	4360	1377.6	123.67	22.41
299	SLU 59	-58	-77	4394	1386.58	124.63	22.37
299	SLU 60	-57	-86	4464	1409.36	126.63	22.11
299	SLU 61	-57	-79	4498	1418.34	127.59	22.07
299	SLU 62	-58	-87	4498	1420.17	127.57	22.43
299	SLU 63	-58	-79	4531	1429.15	128.53	22.39
299	SLU 64	-60	-85	4323	1367.54	122.64	23.12
299	SLU 65	-61	-72	4379	1382.5	124.24	23.06

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
299	SLU 66	-61	-86	4376	1384.86	124.15	23.58
299	SLU 67	-62	-78	4409	1393.84	125.11	23.54
299	SLU 68	-62	-72	4412	1393.32	125.18	23.38
299	SLU 69	-62	-86	4409	1395.68	125.09	23.9
299	SLU 70	-62	-79	4442	1404.66	126.05	23.87
299	SLU 71	-62	-86	4389	1389.16	124.51	23.77
299	SLU 72	-62	-78	4422	1398.14	125.48	23.73
299	SLU 73	-63	-78	4776	1507.07	135.52	23.87
299	SLU 74	-63	-92	4774	1509.43	135.43	24.4
299	SLU 75	-63	-84	4807	1518.41	136.39	24.36
299	SLU 76	-63	-78	4809	1517.88	136.46	24.2
299	SLU 77	-64	-92	4807	1520.24	136.37	24.72
299	SLU 78	-64	-85	4840	1529.23	137.33	24.68
299	SLU 79	-63	-92	4787	1513.73	135.8	24.59
299	SLU 80	-64	-84	4820	1522.71	136.76	24.55
299	SLU 81	-63	-93	4891	1545.49	138.75	24.29
299	SLU 82	-63	-85	4925	1554.47	139.72	24.25
299	SLU 83	-63	-94	4924	1556.3	139.69	24.61
299	SLU 84	-64	-86	4958	1565.28	140.66	24.57
299	SLE RA 1	-45	-64	3231	1022.03	91.67	17.3
299	SLE RA 2	-45	-55	3269	1032.01	92.74	17.26
299	SLE RA 3	-46	-64	3267	1033.58	92.68	17.61
299	SLE RA 4	-46	-59	3289	1039.57	93.32	17.59
299	SLE RA 5	-46	-55	3291	1039.22	93.37	17.48
299	SLE RA 6	-46	-65	3289	1040.79	93.3	17.83
299	SLE RA 7	-47	-60	3311	1046.78	93.95	17.8
299	SLE RA 8	-46	-64	3275	1036.45	92.92	17.74
299	SLE RA 9	-46	-59	3298	1042.44	93.56	17.71
299	SLE RA 10	-47	-59	3534	1115.05	100.26	17.81
299	SLE RA 11	-47	-68	3532	1116.63	100.2	18.16
299	SLE RA 12	-47	-63	3554	1122.62	100.84	18.13
299	SLE RA 13	-47	-59	3556	1122.26	100.89	18.02
299	SLE RA 14	-47	-69	3554	1123.84	100.83	18.37
299	SLE RA 15	-48	-64	3576	1129.82	101.47	18.35
299	SLE RA 16	-47	-68	3541	1119.49	100.44	18.28
299	SLE RA 17	-48	-63	3563	1125.48	101.09	18.26
299	SLE RA 18	-47	-69	3610	1140.67	102.42	18.08
299	SLE RA 19	-47	-64	3633	1146.65	103.06	18.06
299	SLE RA 20	-47	-70	3632	1147.88	103.04	18.3
299	SLE RA 21	-48	-65	3655	1153.86	103.68	18.27
299	SLE FR 1	-45	-64	3231	1022.03	91.67	17.3
299	SLE FR 2	-45	-62	3239	1024.03	91.88	17.3
299	SLE FR 3	-45	-64	3240	1024.91	91.92	17.39
299	SLE FR 4	-45	-64	3353	1059.62	95.11	17.53
299	SLE FR 5	-46	-65	3354	1060.51	95.14	17.62
299	SLE FR 6	-46	-66	3421	1081.35	97.04	17.69
299	SLE QP 1	-45	-64	3231	1022.03	91.67	17.3
299	SLE QP 2	-45	-65	3345	1057.62	94.89	17.54
299	SLD 1	231	-7	4008	1247.74	114.49	-80.52
299	SLD 2	286	-40	3968	1235.15	113.29	-98.83
299	SLD 3	253	-156	3230	1037.12	92.12	-84.67
299	SLD 4	308	-189	3190	1024.53	90.92	-102.98
299	SLD 5	-6	185	4731	1436.37	134.92	-2.29
299	SLD 6	30	164	4705	1428.06	134.13	-14.37
299	SLD 7	68	-314	2138	734.29	60.35	-16.12
299	SLD 8	104	-335	2112	725.98	59.56	-28.2
299	SLD 9	-195	205	4578	1389.26	130.23	63.28
299	SLD 10	-159	183	4552	1380.95	129.44	51.2
299	SLD 11	-121	-294	1986	687.18	55.66	49.45
299	SLD 12	-84	-316	1959	678.88	54.87	37.37
299	SLD 13	-399	59	3500	1090.72	98.86	138.06
299	SLD 14	-344	26	3460	1078.13	97.67	119.75
299	SLD 15	-376	-91	2722	880.09	76.49	133.91
299	SLD 16	-321	-124	2682	867.51	75.3	115.6
299	SLV 1	599	83	4961	1519.92	142.6	-211.61
299	SLV 2	728	6	4867	1490.33	139.79	-254.65
299	SLV 3	653	-289	3012	992.34	86.57	-221.63
299	SLV 4	783	-367	2919	962.75	83.76	-264.67
299	SLV 5	41	558	6803	2002	194.72	-27.98
299	SLV 6	128	506	6739	1982.07	192.82	-56.96
299	SLV 7	223	-683	308	243.4	7.93	-61.37
299	SLV 8	310	-735	244	223.47	6.04	-90.35
299	SLV 9	-401	604	6446	1891.77	183.75	125.42
299	SLV 10	-314	552	6383	1871.84	181.85	96.45
299	SLV 11	-219	-637	-49	133.17	-3.04	92.04
299	SLV 12	-132	-689	-112	113.25	-4.93	63.06
299	SLV 13	-873	236	3772	1152.49	106.03	299.74
299	SLV 14	-744	159	3678	1122.9	103.22	256.71
299	SLV 15	-819	-136	1823	624.91	50	289.73
299	SLV 16	-689	-214	1729	595.32	47.19	246.69
299	CRTFP Ux+	0	0	0	0	0	0
299	CRTFP Ux-	0	0	0	0	0	0
299	CRTFP Uy+	0	0	0	0	0	0
299	CRTFP Uy-	0	0	0	0	0	0
300	SLU 1	-65	-99	4551	1389.08	96.17	23.57
300	SLU 2	-66	-79	4632	1409.32	97.92	23.61
300	SLU 3	-67	-100	4628	1413.5	97.82	24.22
300	SLU 4	-68	-89	4677	1425.65	98.87	24.25
300	SLU 5	-68	-80	4680	1424.56	98.94	24.07

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
300	SLU 6	-68	-101	4676	1428.75	98.84	24.68
300	SLU 7	-69	-90	4725	1440.89	99.89	24.71
300	SLU 8	-68	-101	4647	1419.57	98.22	24.49
300	SLU 9	-69	-89	4696	1431.71	99.27	24.52
300	SLU 10	-69	-89	5214	1585.63	110.23	24.79
300	SLU 11	-70	-110	5210	1589.82	110.13	25.4
300	SLU 12	-71	-98	5259	1601.96	111.18	25.43
300	SLU 13	-71	-90	5262	1600.87	111.26	25.25
300	SLU 14	-71	-111	5258	1605.06	111.16	25.86
300	SLU 15	-72	-99	5307	1617.21	112.21	25.89
300	SLU 16	-71	-110	5229	1595.88	110.54	25.67
300	SLU 17	-72	-99	5278	1608.02	111.59	25.7
300	SLU 18	-69	-112	5382	1640.95	113.76	25.26
300	SLU 19	-70	-101	5431	1653.09	114.81	25.28
300	SLU 20	-71	-113	5430	1656.2	114.79	25.72
300	SLU 21	-72	-102	5479	1668.34	115.84	25.74
300	SLU 22	-74	-109	5172	1581.1	109.42	26.67
300	SLU 23	-75	-90	5253	1601.34	111.17	26.71
300	SLU 24	-76	-111	5249	1605.53	111.07	27.32
300	SLU 25	-76	-100	5298	1617.67	112.12	27.35
300	SLU 26	-76	-91	5301	1616.59	112.19	27.18
300	SLU 27	-77	-112	5297	1620.78	112.1	27.79
300	SLU 28	-78	-101	5346	1632.92	113.15	27.81
300	SLU 29	-76	-111	5268	1611.59	111.47	27.6
300	SLU 30	-77	-100	5317	1623.74	112.52	27.62
300	SLU 31	-78	-100	5835	1777.65	123.48	27.9
300	SLU 32	-79	-121	5831	1781.84	123.39	28.51
300	SLU 33	-79	-109	5880	1793.98	124.43	28.53
300	SLU 34	-79	-101	5883	1792.9	124.51	28.36
300	SLU 35	-80	-122	5879	1797.09	124.41	28.97
300	SLU 36	-81	-110	5928	1809.23	125.46	28.99
300	SLU 37	-79	-121	5850	1787.9	123.79	28.78
300	SLU 38	-80	-110	5899	1800.05	124.84	28.8
300	SLU 39	-78	-123	6004	1832.97	127.01	28.36
300	SLU 40	-79	-112	6052	1845.12	128.06	28.39
300	SLU 41	-79	-124	6052	1848.22	128.04	28.82
300	SLU 42	-80	-113	6100	1860.36	129.09	28.85
300	SLU 43	-82	-124	5703	1739.96	120.48	29.58
300	SLU 44	-83	-105	5784	1760.2	122.23	29.62
300	SLU 45	-84	-126	5780	1764.39	122.13	30.23
300	SLU 46	-84	-115	5829	1776.53	123.18	30.25
300	SLU 47	-84	-106	5832	1775.45	123.25	30.08
300	SLU 48	-85	-127	5828	1779.64	123.15	30.69
300	SLU 49	-86	-116	5877	1791.78	124.2	30.71
300	SLU 50	-84	-127	5799	1770.45	122.53	30.5
300	SLU 51	-85	-115	5848	1782.6	123.58	30.52
300	SLU 52	-86	-115	6366	1936.51	134.54	30.8
300	SLU 53	-87	-136	6362	1940.7	134.44	31.41
300	SLU 54	-87	-124	6411	1952.85	135.49	31.43
300	SLU 55	-87	-116	6414	1951.76	135.57	31.26
300	SLU 56	-88	-137	6410	1955.95	135.47	31.87
300	SLU 57	-89	-125	6459	1968.09	136.52	31.89
300	SLU 58	-87	-136	6381	1946.77	134.84	31.68
300	SLU 59	-88	-125	6430	1958.91	135.89	31.71
300	SLU 60	-86	-138	6534	1991.84	138.07	31.27
300	SLU 61	-87	-127	6583	2003.98	139.12	31.29
300	SLU 62	-87	-139	6583	2007.08	139.1	31.73
300	SLU 63	-88	-128	6631	2019.23	140.15	31.75
300	SLU 64	-90	-135	6324	1931.99	133.73	32.68
300	SLU 65	-92	-116	6405	1952.23	135.48	32.72
300	SLU 66	-92	-137	6402	1956.42	135.38	33.33
300	SLU 67	-93	-125	6450	1968.56	136.43	33.36
300	SLU 68	-93	-117	6453	1967.47	136.5	33.18
300	SLU 69	-94	-138	6450	1971.66	136.4	33.79
300	SLU 70	-94	-126	6498	1983.81	137.45	33.82
300	SLU 71	-93	-137	6420	1962.48	135.78	33.6
300	SLU 72	-94	-126	6469	1974.62	136.83	33.63
300	SLU 73	-95	-126	6987	2128.54	147.79	33.9
300	SLU 74	-95	-147	6984	2132.73	147.69	34.51
300	SLU 75	-96	-135	7032	2144.87	148.74	34.54
300	SLU 76	-96	-127	7035	2143.78	148.82	34.36
300	SLU 77	-97	-148	7032	2147.97	148.72	34.97
300	SLU 78	-97	-136	7080	2160.12	149.77	35
300	SLU 79	-96	-147	7002	2138.79	148.09	34.79
300	SLU 80	-97	-135	7051	2150.93	149.14	34.81
300	SLU 81	-95	-149	7156	2183.86	151.32	34.37
300	SLU 82	-95	-137	7204	2196	152.37	34.39
300	SLU 83	-96	-150	7204	2199.11	152.35	34.83
300	SLU 84	-97	-139	7252	2211.25	153.4	34.85
300	SLE RA 1	-68	-102	4728	1443.94	99.96	24.46
300	SLE RA 2	-68	-89	4782	1457.43	101.12	24.48
300	SLE RA 3	-69	-103	4780	1460.23	101.06	24.89
300	SLE RA 4	-69	-95	4812	1468.32	101.75	24.91
300	SLE RA 5	-69	-89	4814	1467.6	101.81	24.79
300	SLE RA 6	-70	-103	4812	1470.39	101.74	25.2
300	SLE RA 7	-70	-96	4844	1478.49	102.44	25.21
300	SLE RA 8	-69	-103	4792	1464.27	101.32	25.07
300	SLE RA 9	-70	-95	4825	1472.36	102.02	25.09
300	SLE RA 10	-70	-95	5170	1574.97	109.33	25.27

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
300	SLE RA 11	-71	-109	5168	1577.77	109.27	25.68
300	SLE RA 12	-71	-102	5200	1585.86	109.97	25.69
300	SLE RA 13	-71	-96	5202	1585.14	110.02	25.58
300	SLE RA 14	-72	-110	5200	1587.93	109.95	25.99
300	SLE RA 15	-72	-102	5232	1596.03	110.65	26
300	SLE RA 16	-71	-109	5180	1581.81	109.53	25.86
300	SLE RA 17	-72	-102	5213	1589.91	110.23	25.88
300	SLE RA 18	-70	-111	5283	1611.86	111.68	25.58
300	SLE RA 19	-71	-103	5315	1619.95	112.38	25.6
300	SLE RA 20	-71	-112	5315	1622.02	112.37	25.89
300	SLE RA 21	-72	-104	5347	1630.12	113.07	25.91
300	SLE FR 1	-68	-102	4728	1443.94	99.96	24.46
300	SLE FR 2	-68	-99	4739	1446.64	100.19	24.46
300	SLE FR 3	-68	-102	4741	1448.01	100.23	24.58
300	SLE FR 4	-69	-102	4905	1497.01	103.71	24.8
300	SLE FR 5	-69	-105	4907	1498.38	103.75	24.92
300	SLE FR 6	-69	-106	5005	1527.9	105.82	25.02
300	SLE QP 1	-68	-102	4728	1443.94	99.96	24.46
300	SLE QP 2	-68	-104	4895	1494.32	103.47	24.79
300	SLD 1	346	-21	5810	1738.92	125.03	-115.25
300	SLD 2	428	-68	5757	1722.39	123.72	-141.82
300	SLD 3	379	-245	4687	1453.69	100.64	-122.38
300	SLD 4	462	-292	4633	1437.16	99.33	-148.95
300	SLD 5	-9	269	6884	2003.27	147.17	-1.62
300	SLD 6	45	238	6848	1992.36	146.3	-19.15
300	SLD 7	101	-478	3137	1052.5	65.87	-25.4
300	SLD 8	156	-509	3102	1041.59	65	-42.92
300	SLD 9	-293	300	6687	1947.04	141.94	92.51
300	SLD 10	-238	269	6652	1936.13	141.08	74.99
300	SLD 11	-182	-447	2941	996.27	60.65	68.74
300	SLD 12	-128	-478	2906	985.36	59.78	51.21
300	SLD 13	-599	83	5156	1551.47	107.62	198.54
300	SLD 14	-516	36	5103	1534.95	106.31	171.97
300	SLD 15	-565	-141	4033	1266.24	83.23	191.41
300	SLD 16	-483	-188	3979	1249.71	81.92	164.84
300	SLV 1	898	108	7131	2090.29	155.93	-302.4
300	SLV 2	1093	-3	7004	2051.44	152.84	-364.85
300	SLV 3	980	-449	4315	1375.79	94.83	-319.68
300	SLV 4	1174	-560	4189	1336.93	91.75	-382.13
300	SLV 5	62	826	9859	2764.03	212.44	-35.5
300	SLV 6	193	751	9774	2737.87	210.36	-77.55
300	SLV 7	333	-1033	474	382.34	8.8	-93.1
300	SLV 8	464	-1108	389	356.18	6.73	-135.15
300	SLV 9	-601	899	9400	2632.45	200.22	184.74
300	SLV 10	-470	824	9315	2606.29	198.14	142.69
300	SLV 11	-330	-960	15	250.76	-3.41	127.14
300	SLV 12	-199	-1035	-70	224.6	-5.49	85.09
300	SLV 13	-1311	351	5600	1651.7	115.2	431.72
300	SLV 14	-1117	241	5474	1612.84	112.11	369.27
300	SLV 15	-1230	-206	2785	937.19	54.11	414.44
300	SLV 16	-1035	-317	2659	898.34	51.02	351.99
300	CRTFP Ux+	0	0	0	0	0	0
300	CRTFP Ux-	0	0	0	0	0	0
300	CRTFP Uy+	0	0	0	0	0	0
300	CRTFP Uy-	0	0	0	0	0	0
301	SLU 1	-37	-57	2535	672.2	-57.58	9.62
301	SLU 2	-38	-46	2580	681.75	-58.58	10.09
301	SLU 3	-38	-58	2577	683.97	-58.55	9.9
301	SLU 4	-39	-51	2605	689.7	-59.16	10.18
301	SLU 5	-39	-46	2607	689.1	-59.19	10.29
301	SLU 6	-39	-58	2604	691.32	-59.16	10.11
301	SLU 7	-39	-52	2631	697.05	-59.76	10.39
301	SLU 8	-39	-58	2588	686.89	-58.79	10.03
301	SLU 9	-39	-51	2615	692.62	-59.39	10.31
301	SLU 10	-40	-51	2904	767.02	-65.94	10.48
301	SLU 11	-40	-63	2901	769.24	-65.91	10.3
301	SLU 12	-40	-57	2929	774.97	-66.51	10.58
301	SLU 13	-40	-52	2931	774.37	-66.54	10.69
301	SLU 14	-41	-64	2928	776.59	-66.51	10.5
301	SLU 15	-41	-57	2955	782.32	-67.11	10.78
301	SLU 16	-41	-64	2912	772.16	-66.14	10.42
301	SLU 17	-41	-57	2939	777.89	-66.74	10.7
301	SLU 18	-40	-65	2997	794.01	-68.08	10.18
301	SLU 19	-40	-58	3025	799.74	-68.69	10.46
301	SLU 20	-41	-65	3024	801.36	-68.69	10.39
301	SLU 21	-41	-59	3051	807.09	-69.29	10.67
301	SLU 22	-42	-63	2879	764.74	-65.39	10.93
301	SLU 23	-43	-52	2924	774.29	-66.4	11.4
301	SLU 24	-43	-64	2921	776.51	-66.37	11.22
301	SLU 25	-44	-57	2949	782.24	-66.97	11.5
301	SLU 26	-44	-53	2951	781.64	-67	11.61
301	SLU 27	-44	-64	2948	783.86	-66.97	11.42
301	SLU 28	-44	-58	2975	789.59	-67.57	11.71
301	SLU 29	-44	-64	2932	779.43	-66.6	11.34
301	SLU 30	-44	-58	2959	785.16	-67.21	11.63
301	SLU 31	-45	-58	3248	859.56	-73.75	11.8
301	SLU 32	-45	-70	3245	861.78	-73.72	11.61
301	SLU 33	-45	-63	3273	867.51	-74.32	11.89
301	SLU 34	-45	-58	3275	866.91	-74.35	12

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
301	SLU 35	-46	-70	3272	869.13	-74.32	11.82
301	SLU 36	-46	-64	3299	874.86	-74.93	12.1
301	SLU 37	-45	-70	3256	864.7	-73.96	11.74
301	SLU 38	-46	-63	3283	870.44	-74.56	12.02
301	SLU 39	-45	-71	3342	886.55	-75.9	11.5
301	SLU 40	-45	-64	3369	892.28	-76.5	11.78
301	SLU 41	-45	-72	3368	893.9	-76.5	11.7
301	SLU 42	-46	-65	3395	899.63	-77.1	11.98
301	SLU 43	-47	-72	3177	842.13	-72.18	12.05
301	SLU 44	-47	-61	3222	851.68	-73.18	12.52
301	SLU 45	-48	-73	3220	853.9	-73.15	12.34
301	SLU 46	-48	-66	3247	859.63	-73.75	12.62
301	SLU 47	-48	-61	3249	859.03	-73.78	12.73
301	SLU 48	-48	-73	3246	861.25	-73.75	12.54
301	SLU 49	-49	-67	3273	866.98	-74.36	12.82
301	SLU 50	-48	-73	3230	856.82	-73.39	12.46
301	SLU 51	-49	-66	3257	862.55	-73.99	12.74
301	SLU 52	-49	-66	3546	936.95	-80.53	12.91
301	SLU 53	-50	-78	3544	939.17	-80.5	12.73
301	SLU 54	-50	-72	3571	944.9	-81.1	13.01
301	SLU 55	-50	-67	3573	944.3	-81.14	13.12
301	SLU 56	-50	-79	3570	946.52	-81.11	12.94
301	SLU 57	-51	-72	3598	952.25	-81.71	13.22
301	SLU 58	-50	-78	3554	942.09	-80.74	12.86
301	SLU 59	-50	-72	3581	947.83	-81.34	13.14
301	SLU 60	-49	-80	3640	963.94	-82.68	12.61
301	SLU 61	-50	-73	3667	969.67	-83.28	12.89
301	SLU 62	-50	-80	3666	971.29	-83.28	12.82
301	SLU 63	-50	-74	3694	977.02	-83.89	13.1
301	SLU 64	-52	-78	3521	934.67	-79.99	13.37
301	SLU 65	-52	-67	3566	944.22	-80.99	13.84
301	SLU 66	-53	-79	3564	946.44	-80.96	13.65
301	SLU 67	-53	-72	3591	952.17	-81.57	13.93
301	SLU 68	-53	-67	3593	951.57	-81.6	14.04
301	SLU 69	-53	-79	3590	953.79	-81.57	13.86
301	SLU 70	-54	-73	3618	959.52	-82.17	14.14
301	SLU 71	-53	-79	3574	949.36	-81.2	13.78
301	SLU 72	-54	-72	3601	955.1	-81.8	14.06
301	SLU 73	-54	-72	3891	1029.49	-88.35	14.23
301	SLU 74	-54	-84	3888	1031.71	-88.32	14.05
301	SLU 75	-55	-78	3915	1037.44	-88.92	14.33
301	SLU 76	-55	-73	3917	1036.84	-88.95	14.44
301	SLU 77	-55	-85	3914	1039.06	-88.92	14.25
301	SLU 78	-56	-78	3942	1044.79	-89.52	14.53
301	SLU 79	-55	-85	3898	1034.63	-88.55	14.17
301	SLU 80	-55	-78	3925	1040.37	-89.15	14.45
301	SLU 81	-54	-86	3984	1056.48	-90.49	13.93
301	SLU 82	-55	-79	4011	1062.22	-91.09	14.21
301	SLU 83	-55	-86	4011	1063.83	-91.1	14.14
301	SLU 84	-55	-80	4038	1069.56	-91.7	14.42
301	SLE RA 1	-39	-58	2633	698.64	-59.81	9.99
301	SLE RA 2	-39	-51	2663	705.01	-60.48	10.3
301	SLE RA 3	-39	-59	2661	706.49	-60.46	10.18
301	SLE RA 4	-40	-55	2680	710.31	-60.86	10.37
301	SLE RA 5	-40	-52	2681	709.9	-60.89	10.44
301	SLE RA 6	-40	-60	2679	711.38	-60.87	10.32
301	SLE RA 7	-40	-55	2697	715.21	-61.27	10.51
301	SLE RA 8	-40	-59	2668	708.43	-60.62	10.27
301	SLE RA 9	-40	-55	2686	712.25	-61.02	10.45
301	SLE RA 10	-40	-55	2879	761.85	-65.38	10.57
301	SLE RA 11	-41	-63	2877	763.33	-65.36	10.45
301	SLE RA 12	-41	-58	2896	767.15	-65.77	10.63
301	SLE RA 13	-41	-55	2897	766.75	-65.79	10.71
301	SLE RA 14	-41	-63	2895	768.23	-65.77	10.58
301	SLE RA 15	-41	-59	2913	772.05	-66.17	10.77
301	SLE RA 16	-41	-63	2884	765.28	-65.52	10.53
301	SLE RA 17	-41	-59	2902	769.1	-65.92	10.72
301	SLE RA 18	-40	-64	2941	779.85	-66.82	10.37
301	SLE RA 19	-41	-59	2960	783.67	-67.22	10.56
301	SLE RA 20	-41	-64	2959	784.74	-67.22	10.51
301	SLE RA 21	-41	-60	2977	788.57	-67.62	10.69
301	SLE FR 1	-39	-58	2633	698.64	-59.81	9.99
301	SLE FR 2	-39	-57	2639	699.91	-59.95	10.05
301	SLE FR 3	-39	-59	2640	700.6	-59.98	10.05
301	SLE FR 4	-39	-59	2732	724.27	-62.05	10.17
301	SLE FR 5	-39	-60	2733	724.96	-62.08	10.16
301	SLE FR 6	-39	-61	2787	739.24	-63.31	10.18
301	SLE QP 1	-39	-58	2633	698.64	-59.81	9.99
301	SLE QP 2	-39	-60	2725	723	-61.91	10.1
301	SLD 1	196	-13	3214	832.37	-72.54	-57.69
301	SLD 2	244	-38	3186	825.05	-71.92	-71.99
301	SLD 3	215	-141	2587	698.13	-58.69	-66.09
301	SLD 4	262	-167	2559	690.81	-58.08	-80.39
301	SLD 5	-5	153	3828	960.71	-86.21	5.08
301	SLD 6	26	136	3810	955.89	-85.8	-4.35
301	SLD 7	57	-274	1738	513.26	-40.06	-22.92
301	SLD 8	88	-291	1719	508.44	-39.65	-32.36
301	SLD 9	-166	171	3731	937.56	-84.17	52.57
301	SLD 10	-135	154	3713	932.73	-83.77	43.13

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
301	SLD 11	-104	-257	1641	490.11	-38.02	24.56
301	SLD 12	-73	-273	1623	485.28	-37.62	15.13
301	SLD 13	-341	47	2892	755.18	-65.75	100.6
301	SLD 14	-293	21	2864	747.87	-65.14	86.3
301	SLD 15	-322	-82	2265	620.95	-51.91	92.2
301	SLD 16	-275	-107	2237	613.63	-51.29	77.9
301	SLV 1	511	60	3920	990.03	-87.92	-147.91
301	SLV 2	622	0	3854	972.84	-86.47	-181.53
301	SLV 3	556	-259	2349	653.75	-53.23	-168.57
301	SLV 4	667	-319	2284	636.55	-51.79	-202.19
301	SLV 5	36	471	5478	1316.35	-122.59	0.32
301	SLV 6	111	431	5434	1304.77	-121.62	-22.32
301	SLV 7	188	-593	242	195.41	-6.97	-68.56
301	SLV 8	263	-633	198	183.83	-6	-91.2
301	SLV 9	-341	513	5253	1262.17	-117.83	111.41
301	SLV 10	-266	472	5209	1250.59	-116.86	88.77
301	SLV 11	-189	-551	17	141.23	-2.21	42.53
301	SLV 12	-114	-591	-28	129.65	-1.24	19.89
301	SLV 13	-746	199	3167	809.44	-72.04	222.4
301	SLV 14	-635	139	3102	792.25	-70.6	188.78
301	SLV 15	-700	-120	1596	473.16	-37.35	201.74
301	SLV 16	-589	-180	1531	455.96	-35.91	168.12
301	CRTFP Ux+	0	0	0	0	0	0
301	CRTFP Ux-	0	0	0	0	0	0
301	CRTFP Uy+	0	0	0	0	0	0
301	CRTFP Uy-	0	0	0	0	0	0
302	SLU 1	-57	-83	3724	1028.58	-99.36	15.34
302	SLU 2	-58	-66	3790	1042.97	-101.07	16.15
302	SLU 3	-59	-85	3787	1046.53	-101.03	15.79
302	SLU 4	-59	-75	3826	1055.16	-102.06	16.28
302	SLU 5	-59	-67	3829	1054.17	-102.11	16.48
302	SLU 6	-60	-85	3825	1057.72	-102.07	16.12
302	SLU 7	-60	-75	3865	1066.36	-103.1	16.61
302	SLU 8	-59	-85	3802	1050.98	-101.44	15.99
302	SLU 9	-60	-75	3841	1059.61	-102.46	16.48
302	SLU 10	-61	-75	4265	1173.31	-113.74	16.81
302	SLU 11	-61	-93	4262	1176.86	-113.7	16.45
302	SLU 12	-62	-83	4302	1185.5	-114.72	16.94
302	SLU 13	-62	-76	4304	1184.5	-114.78	17.14
302	SLU 14	-63	-94	4301	1188.06	-114.73	16.78
302	SLU 15	-63	-84	4341	1196.69	-115.76	17.27
302	SLU 16	-62	-93	4277	1181.31	-114.1	16.65
302	SLU 17	-63	-83	4317	1189.95	-115.13	17.14
302	SLU 18	-61	-95	4403	1214.77	-117.46	16.28
302	SLU 19	-62	-85	4443	1223.41	-118.48	16.77
302	SLU 20	-62	-96	4442	1225.97	-118.49	16.61
302	SLU 21	-63	-86	4482	1234.6	-119.52	17.1
302	SLU 22	-65	-92	4227	1169.51	-112.74	17.44
302	SLU 23	-66	-75	4293	1183.9	-114.45	18.25
302	SLU 24	-66	-94	4290	1187.46	-114.41	17.89
302	SLU 25	-67	-84	4329	1196.09	-115.44	18.38
302	SLU 26	-67	-76	4332	1195.1	-115.49	18.58
302	SLU 27	-67	-94	4329	1198.66	-115.45	18.22
302	SLU 28	-68	-84	4368	1207.29	-116.47	18.71
302	SLU 29	-67	-94	4305	1191.91	-114.81	18.09
302	SLU 30	-68	-84	4345	1200.54	-115.84	18.58
302	SLU 31	-69	-84	4769	1314.24	-127.12	18.91
302	SLU 32	-69	-102	4765	1317.79	-127.08	18.55
302	SLU 33	-70	-92	4805	1326.43	-128.1	19.04
302	SLU 34	-70	-85	4808	1325.44	-128.16	19.24
302	SLU 35	-70	-103	4804	1328.99	-128.11	18.88
302	SLU 36	-71	-93	4844	1337.62	-129.14	19.37
302	SLU 37	-70	-102	4781	1322.24	-127.48	18.75
302	SLU 38	-70	-92	4820	1330.88	-128.51	19.24
302	SLU 39	-69	-104	4907	1355.7	-130.83	18.38
302	SLU 40	-69	-94	4946	1364.34	-131.86	18.87
302	SLU 41	-70	-105	4946	1366.9	-131.87	18.71
302	SLU 42	-70	-95	4985	1375.54	-132.9	19.2
302	SLU 43	-71	-105	4669	1288.83	-124.59	19.22
302	SLU 44	-73	-88	4734	1303.23	-126.3	20.03
302	SLU 45	-73	-106	4731	1306.78	-126.25	19.67
302	SLU 46	-74	-96	4771	1315.42	-127.28	20.16
302	SLU 47	-74	-89	4773	1314.43	-127.33	20.36
302	SLU 48	-74	-107	4770	1317.98	-127.29	20
302	SLU 49	-75	-97	4810	1326.62	-128.32	20.49
302	SLU 50	-74	-107	4746	1311.23	-126.66	19.87
302	SLU 51	-74	-97	4786	1319.87	-127.69	20.36
302	SLU 52	-75	-97	5210	1433.56	-138.96	20.69
302	SLU 53	-76	-115	5207	1437.11	-138.92	20.33
302	SLU 54	-77	-105	5246	1445.75	-139.95	20.82
302	SLU 55	-77	-97	5249	1444.76	-140	21.02
302	SLU 56	-77	-116	5246	1448.31	-139.96	20.66
302	SLU 57	-78	-106	5285	1456.95	-140.98	21.15
302	SLU 58	-77	-115	5222	1441.56	-139.32	20.53
302	SLU 59	-77	-105	5261	1450.2	-140.35	21.02
302	SLU 60	-76	-117	5348	1475.02	-142.68	20.16
302	SLU 61	-76	-107	5387	1483.66	-143.71	20.65
302	SLU 62	-77	-118	5387	1486.22	-143.72	20.49
302	SLU 63	-77	-108	5426	1494.86	-144.74	20.98

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
302	SLU 64	-79	-114	5172	1429.77	-137.96	21.32
302	SLU 65	-80	-97	5238	1444.16	-139.67	22.13
302	SLU 66	-81	-115	5234	1447.71	-139.63	21.77
302	SLU 67	-81	-105	5274	1456.35	-140.66	22.26
302	SLU 68	-81	-98	5277	1455.36	-140.71	22.46
302	SLU 69	-82	-116	5273	1458.91	-140.67	22.1
302	SLU 70	-83	-106	5313	1467.55	-141.7	22.59
302	SLU 71	-81	-116	5250	1452.16	-140.04	21.97
302	SLU 72	-82	-106	5289	1460.8	-141.06	22.46
302	SLU 73	-83	-106	5713	1574.49	-152.34	22.79
302	SLU 74	-84	-124	5710	1578.04	-152.3	22.43
302	SLU 75	-84	-114	5750	1586.68	-153.32	22.92
302	SLU 76	-84	-106	5752	1585.69	-153.38	23.12
302	SLU 77	-85	-125	5749	1589.24	-153.33	22.76
302	SLU 78	-85	-115	5788	1597.88	-154.36	23.25
302	SLU 79	-84	-124	5725	1582.49	-152.7	22.63
302	SLU 80	-85	-114	5765	1591.13	-153.73	23.12
302	SLU 81	-83	-126	5851	1615.96	-156.06	22.26
302	SLU 82	-84	-116	5891	1624.59	-157.08	22.75
302	SLU 83	-84	-127	5890	1627.15	-157.09	22.59
302	SLU 84	-85	-117	5930	1635.79	-158.12	23.08
302	SLE RA 1	-59	-86	3868	1068.85	-103.19	15.94
302	SLE RA 2	-60	-75	3912	1078.44	-104.33	16.48
302	SLE RA 3	-60	-87	3909	1080.81	-104.3	16.24
302	SLE RA 4	-61	-80	3936	1086.57	-104.98	16.57
302	SLE RA 5	-61	-75	3938	1085.91	-105.02	16.7
302	SLE RA 6	-61	-87	3935	1088.28	-104.99	16.46
302	SLE RA 7	-61	-81	3962	1094.03	-105.67	16.78
302	SLE RA 8	-61	-87	3920	1083.78	-104.57	16.37
302	SLE RA 9	-61	-80	3946	1089.53	-105.25	16.7
302	SLE RA 10	-62	-80	4229	1165.33	-112.77	16.92
302	SLE RA 11	-62	-92	4227	1167.7	-112.74	16.68
302	SLE RA 12	-63	-86	4253	1173.46	-113.43	17.01
302	SLE RA 13	-63	-81	4255	1172.8	-113.46	17.14
302	SLE RA 14	-63	-93	4252	1175.16	-113.43	16.9
302	SLE RA 15	-63	-86	4279	1180.92	-114.12	17.22
302	SLE RA 16	-63	-92	4237	1170.67	-113.01	16.81
302	SLE RA 17	-63	-86	4263	1176.42	-113.7	17.14
302	SLE RA 18	-62	-94	4321	1192.97	-115.25	16.57
302	SLE RA 19	-62	-87	4347	1198.73	-115.93	16.89
302	SLE RA 20	-63	-94	4347	1200.44	-115.94	16.79
302	SLE RA 21	-63	-88	4373	1206.2	-116.62	17.11
302	SLE FR 1	-59	-86	3868	1068.85	-103.19	15.94
302	SLE FR 2	-59	-84	3877	1070.76	-103.41	16.05
302	SLE FR 3	-59	-86	3878	1071.83	-103.46	16.03
302	SLE FR 4	-60	-86	4012	1108	-107.03	16.24
302	SLE FR 5	-60	-88	4014	1109.07	-107.08	16.21
302	SLE FR 6	-61	-90	4094	1130.91	-109.22	16.25
302	SLE QP 1	-59	-86	3868	1068.85	-103.19	15.94
302	SLE QP 2	-60	-88	4004	1106.08	-106.8	16.13
302	SLD 1	297	-14	4684	1262.64	-123.7	-90.26
302	SLD 2	369	-51	4646	1252.26	-122.75	-112.83
302	SLD 3	326	-211	3776	1061.08	-100.17	-104.37
302	SLD 4	397	-248	3738	1050.7	-99.22	-126.94
302	SLD 5	-9	239	5592	1460.62	-147.74	9.67
302	SLD 6	38	215	5567	1453.77	-147.11	-5.22
302	SLD 7	86	-417	2565	788.75	-69.29	-37.36
302	SLD 8	133	-442	2539	781.9	-68.67	-52.25
302	SLD 9	-253	265	5468	1430.27	-144.94	84.51
302	SLD 10	-206	241	5443	1423.42	-144.31	69.62
302	SLD 11	-158	-392	2440	758.4	-66.5	37.48
302	SLD 12	-111	-416	2415	751.55	-65.87	22.59
302	SLD 13	-517	72	4270	1161.47	-114.39	159.2
302	SLD 14	-446	35	4231	1151.09	-113.44	136.63
302	SLD 15	-489	-125	3361	959.91	-90.86	145.09
302	SLD 16	-417	-162	3323	949.53	-89.9	122.52
302	SLV 1	774	99	5672	1489.12	-148.3	-231.79
302	SLV 2	942	13	5581	1464.72	-146.06	-284.84
302	SLV 3	843	-391	3396	984.15	-89.34	-266.52
302	SLV 4	1011	-477	3306	959.75	-87.1	-319.57
302	SLV 5	53	728	7972	1991.42	-209.09	4.32
302	SLV 6	167	670	7911	1974.99	-207.58	-31.4
302	SLV 7	285	-907	387	308.19	-12.57	-111.43
302	SLV 8	398	-964	326	291.76	-11.06	-147.15
302	SLV 9	-518	788	7681	1920.41	-202.55	179.41
302	SLV 10	-405	730	7620	1903.98	-201.04	143.69
302	SLV 11	-287	-846	96	237.17	-6.03	63.65
302	SLV 12	-173	-904	35	220.75	-4.52	27.93
302	SLV 13	-1131	301	4701	1252.42	-126.51	351.83
302	SLV 14	-963	215	4611	1228.02	-124.26	298.77
302	SLV 15	-1062	-189	2426	747.44	-67.55	317.1
302	SLV 16	-894	-275	2335	723.05	-65.31	264.04
302	CRTFP Ux+	0	0	0	0	0	0
302	CRTFP Ux-	0	0	0	0	0	0
302	CRTFP Uy+	0	0	0	0	0	0
302	CRTFP Uy-	0	0	0	0	0	0
303	SLU 1	-68	-90	4221	1173.38	5.29	21.54
303	SLU 2	-69	-70	4295	1189.48	5.39	21.97
303	SLU 3	-70	-91	4291	1193.75	5.39	22.14

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
303	SLU 4	-71	-79	4336	1203.41	5.45	22.39
303	SLU 5	-71	-71	4339	1202.19	5.45	22.39
303	SLU 6	-71	-92	4335	1206.46	5.45	22.56
303	SLU 7	-72	-80	4380	1216.13	5.51	22.81
303	SLU 8	-71	-92	4308	1198.8	5.41	22.39
303	SLU 9	-71	-80	4353	1208.46	5.47	22.64
303	SLU 10	-73	-79	4833	1337.94	6.07	23.11
303	SLU 11	-73	-100	4830	1342.21	6.07	23.28
303	SLU 12	-74	-88	4874	1351.87	6.13	23.53
303	SLU 13	-74	-80	4877	1350.65	6.13	23.53
303	SLU 14	-75	-101	4873	1354.92	6.13	23.7
303	SLU 15	-75	-89	4918	1364.58	6.19	23.95
303	SLU 16	-74	-101	4847	1347.26	6.09	23.53
303	SLU 17	-75	-89	4891	1356.92	6.15	23.78
303	SLU 18	-73	-103	4990	1385.46	6.26	23.17
303	SLU 19	-74	-91	5034	1395.12	6.32	23.43
303	SLU 20	-74	-104	5034	1398.17	6.32	23.59
303	SLU 21	-75	-92	5078	1407.83	6.38	23.85
303	SLU 22	-77	-99	4787	1333	6.12	24.41
303	SLU 23	-78	-79	4861	1349.1	6.22	24.83
303	SLU 24	-79	-101	4858	1353.37	6.22	25
303	SLU 25	-80	-89	4902	1363.03	6.28	25.26
303	SLU 26	-80	-80	4905	1361.81	6.28	25.25
303	SLU 27	-80	-102	4902	1366.08	6.28	25.43
303	SLU 28	-81	-90	4946	1375.74	6.34	25.68
303	SLU 29	-80	-101	4875	1358.42	6.24	25.25
303	SLU 30	-81	-89	4919	1368.08	6.3	25.51
303	SLU 31	-82	-88	5400	1497.56	6.9	25.97
303	SLU 32	-82	-110	5396	1501.83	6.9	26.14
303	SLU 33	-83	-98	5441	1511.49	6.96	26.4
303	SLU 34	-83	-89	5444	1510.27	6.96	26.4
303	SLU 35	-84	-111	5440	1514.54	6.96	26.57
303	SLU 36	-85	-99	5485	1524.2	7.02	26.82
303	SLU 37	-83	-110	5413	1506.88	6.92	26.39
303	SLU 38	-84	-98	5458	1516.54	6.98	26.65
303	SLU 39	-82	-112	5556	1545.08	7.09	26.04
303	SLU 40	-83	-100	5601	1554.74	7.15	26.29
303	SLU 41	-83	-113	5600	1557.79	7.15	26.46
303	SLU 42	-84	-101	5645	1567.45	7.21	26.71
303	SLU 43	-85	-113	5292	1470.67	6.59	27.02
303	SLU 44	-87	-93	5367	1486.77	6.69	27.44
303	SLU 45	-87	-115	5363	1491.04	6.69	27.62
303	SLU 46	-88	-103	5408	1500.7	6.75	27.87
303	SLU 47	-88	-94	5411	1499.48	6.75	27.87
303	SLU 48	-88	-116	5407	1503.75	6.75	28.04
303	SLU 49	-89	-104	5451	1513.41	6.81	28.29
303	SLU 50	-88	-115	5380	1496.09	6.71	27.87
303	SLU 51	-89	-103	5425	1505.75	6.77	28.12
303	SLU 52	-90	-102	5905	1635.23	7.37	28.59
303	SLU 53	-91	-124	5901	1639.5	7.37	28.76
303	SLU 54	-91	-112	5946	1649.16	7.43	29.01
303	SLU 55	-91	-103	5949	1647.94	7.43	29.01
303	SLU 56	-92	-125	5945	1652.21	7.43	29.18
303	SLU 57	-93	-113	5990	1661.87	7.49	29.43
303	SLU 58	-91	-124	5919	1644.55	7.39	29.01
303	SLU 59	-92	-112	5963	1654.21	7.45	29.26
303	SLU 60	-90	-126	6062	1682.75	7.56	28.65
303	SLU 61	-91	-114	6106	1692.41	7.62	28.9
303	SLU 62	-92	-127	6105	1695.46	7.62	29.07
303	SLU 63	-92	-115	6150	1705.12	7.68	29.33
303	SLU 64	-94	-123	5859	1630.29	7.42	29.89
303	SLU 65	-96	-103	5933	1646.39	7.52	30.31
303	SLU 66	-96	-124	5930	1650.66	7.52	30.48
303	SLU 67	-97	-112	5974	1660.32	7.58	30.74
303	SLU 68	-97	-104	5977	1659.1	7.58	30.73
303	SLU 69	-98	-125	5973	1663.37	7.58	30.9
303	SLU 70	-98	-113	6018	1673.03	7.64	31.16
303	SLU 71	-97	-125	5947	1655.71	7.54	30.73
303	SLU 72	-98	-113	5991	1665.37	7.6	30.99
303	SLU 73	-99	-112	6472	1794.85	8.2	31.45
303	SLU 74	-100	-134	6468	1799.12	8.2	31.62
303	SLU 75	-100	-121	6513	1808.78	8.26	31.88
303	SLU 76	-100	-113	6516	1807.56	8.26	31.87
303	SLU 77	-101	-134	6512	1811.83	8.26	32.05
303	SLU 78	-102	-122	6556	1821.49	8.32	32.3
303	SLU 79	-100	-134	6485	1804.17	8.22	31.87
303	SLU 80	-101	-122	6530	1813.83	8.28	32.13
303	SLU 81	-99	-136	6628	1842.37	8.39	31.52
303	SLU 82	-100	-124	6673	1852.03	8.45	31.77
303	SLU 83	-101	-137	6672	1855.08	8.45	31.94
303	SLU 84	-101	-125	6717	1864.74	8.51	32.19
303	SLE RA 1	-71	-92	4382	1218.99	5.52	22.36
303	SLE RA 2	-71	-79	4432	1229.72	5.59	22.64
303	SLE RA 3	-72	-93	4430	1232.57	5.59	22.76
303	SLE RA 4	-72	-85	4459	1239.01	5.63	22.93
303	SLE RA 5	-72	-80	4461	1238.19	5.63	22.92
303	SLE RA 6	-73	-94	4459	1241.04	5.63	23.04
303	SLE RA 7	-73	-86	4488	1247.48	5.67	23.21
303	SLE RA 8	-72	-94	4441	1235.93	5.61	22.92

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
303	SLE RA 9	-73	-86	4471	1242.37	5.65	23.09
303	SLE RA 10	-74	-85	4791	1328.69	6.05	23.4
303	SLE RA 11	-74	-100	4788	1331.54	6.04	23.52
303	SLE RA 12	-75	-91	4818	1337.98	6.08	23.69
303	SLE RA 13	-75	-86	4820	1337.17	6.09	23.69
303	SLE RA 14	-75	-100	4818	1340.01	6.09	23.8
303	SLE RA 15	-76	-92	4847	1346.45	6.13	23.97
303	SLE RA 16	-75	-100	4800	1334.9	6.06	23.68
303	SLE RA 17	-75	-92	4830	1341.35	6.1	23.85
303	SLE RA 18	-74	-101	4895	1360.37	6.17	23.45
303	SLE RA 19	-74	-93	4925	1366.81	6.21	23.62
303	SLE RA 20	-75	-102	4924	1368.85	6.21	23.73
303	SLE RA 21	-75	-94	4954	1375.29	6.25	23.9
303	SLE FR 1	-71	-92	4382	1218.99	5.52	22.36
303	SLE FR 2	-71	-90	4392	1221.13	5.54	22.42
303	SLE FR 3	-71	-93	4394	1222.37	5.54	22.47
303	SLE FR 4	-72	-92	4546	1263.55	5.73	22.74
303	SLE FR 5	-72	-95	4548	1264.79	5.73	22.8
303	SLE FR 6	-72	-97	4639	1289.68	5.85	22.9
303	SLE QP 1	-71	-92	4382	1218.99	5.52	22.36
303	SLE QP 2	-72	-95	4536	1261.4	5.72	22.69
303	SLD 1	350	-2	5257	1423.93	8.11	-106.43
303	SLD 2	435	-41	5217	1413.29	7.94	-132.08
303	SLD 3	384	-240	4239	1199.55	6.6	-117.1
303	SLD 4	468	-279	4199	1188.91	6.43	-142.76
303	SLD 5	-11	301	6304	1652.39	8.75	4.76
303	SLD 6	44	275	6278	1645.37	8.64	-12.17
303	SLD 7	101	-493	2910	904.44	3.72	-30.83
303	SLD 8	157	-519	2884	897.43	3.62	-47.75
303	SLD 9	-300	329	6189	1625.38	7.82	93.13
303	SLD 10	-244	303	6163	1618.36	7.71	76.2
303	SLD 11	-187	-466	2795	877.43	2.79	57.54
303	SLD 12	-132	-492	2769	870.42	2.68	40.62
303	SLD 13	-611	89	4874	1333.89	5	188.13
303	SLD 14	-527	50	4834	1323.26	4.84	162.48
303	SLD 15	-578	-149	3856	1109.51	3.49	177.46
303	SLD 16	-493	-188	3816	1098.87	3.33	151.8
303	SLV 1	913	141	6307	1660.31	11.43	-278.66
303	SLV 2	1111	49	6213	1635.3	11.05	-338.97
303	SLV 3	995	-452	3756	1098.13	7.65	-304.77
303	SLV 4	1193	-544	3662	1073.12	7.27	-365.09
303	SLV 5	62	893	8954	2238.38	13.23	-16.85
303	SLV 6	195	830	8891	2221.54	12.97	-57.46
303	SLV 7	336	-1084	451	364.45	0.64	-103.9
303	SLV 8	470	-1147	388	347.61	0.38	-144.51
303	SLV 9	-613	956	8685	2175.19	11.05	189.88
303	SLV 10	-479	894	8622	2158.35	10.79	149.28
303	SLV 11	-339	-1020	182	301.26	-1.54	102.83
303	SLV 12	-205	-1083	119	284.42	-1.8	62.23
303	SLV 13	-1336	354	5410	1449.68	4.17	410.46
303	SLV 14	-1138	262	5317	1424.67	3.78	350.15
303	SLV 15	-1254	-239	2859	887.5	0.39	384.35
303	SLV 16	-1056	-331	2766	862.49	0.01	324.03
303	CRTFP Ux+	0	0	0	0	0	0
303	CRTFP Ux-	0	0	0	0	0	0
303	CRTFP Uy+	0	0	0	0	0	0
303	CRTFP Uy-	0	0	0	0	0	0
304	SLU 1	-68	-78	4069	1119.01	3.75	21.74
304	SLU 2	-70	-58	4140	1134.16	3.81	22.17
304	SLU 3	-70	-80	4137	1138.35	3.82	22.33
304	SLU 4	-71	-67	4179	1147.44	3.86	22.59
304	SLU 5	-71	-59	4182	1146.22	3.86	22.59
304	SLU 6	-72	-80	4179	1150.42	3.87	22.75
304	SLU 7	-73	-68	4221	1159.51	3.9	23.01
304	SLU 8	-71	-80	4153	1143.14	3.84	22.58
304	SLU 9	-72	-68	4196	1152.23	3.88	22.84
304	SLU 10	-73	-66	4660	1275.71	4.26	23.35
304	SLU 11	-74	-88	4656	1279.91	4.28	23.52
304	SLU 12	-75	-75	4699	1289	4.31	23.78
304	SLU 13	-75	-67	4702	1287.78	4.31	23.78
304	SLU 14	-75	-88	4698	1291.97	4.32	23.94
304	SLU 15	-76	-76	4741	1301.06	4.35	24.2
304	SLU 16	-75	-88	4672	1284.69	4.29	23.77
304	SLU 17	-76	-76	4715	1293.78	4.33	24.03
304	SLU 18	-74	-90	4811	1321.23	4.4	23.43
304	SLU 19	-74	-77	4854	1330.32	4.44	23.69
304	SLU 20	-75	-90	4853	1333.29	4.44	23.85
304	SLU 21	-76	-78	4896	1342.38	4.48	24.11
304	SLU 22	-78	-87	4611	1270.01	4.36	24.63
304	SLU 23	-79	-66	4683	1285.16	4.42	25.06
304	SLU 24	-80	-88	4679	1289.35	4.43	25.23
304	SLU 25	-80	-76	4722	1298.44	4.46	25.48
304	SLU 26	-80	-67	4725	1297.23	4.46	25.48
304	SLU 27	-81	-89	4721	1301.42	4.47	25.65
304	SLU 28	-82	-76	4764	1310.51	4.51	25.91
304	SLU 29	-80	-88	4695	1294.14	4.44	25.48
304	SLU 30	-81	-76	4738	1303.23	4.48	25.73
304	SLU 31	-83	-74	5202	1426.71	4.87	26.25
304	SLU 32	-83	-96	5198	1430.91	4.88	26.41

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
304	SLU 33	-84	-84	5241	1440	4.92	26.67
304	SLU 34	-84	-75	5244	1438.78	4.91	26.67
304	SLU 35	-84	-97	5240	1442.97	4.92	26.83
304	SLU 36	-85	-84	5283	1452.06	4.96	27.09
304	SLU 37	-84	-96	5214	1435.69	4.9	26.66
304	SLU 38	-85	-84	5257	1444.79	4.93	26.92
304	SLU 39	-83	-98	5353	1472.23	5	26.32
304	SLU 40	-84	-86	5396	1481.32	5.04	26.58
304	SLU 41	-84	-99	5395	1484.29	5.05	26.75
304	SLU 42	-85	-86	5438	1493.39	5.08	27.01
304	SLU 43	-86	-99	5104	1402.94	4.67	27.27
304	SLU 44	-87	-78	5175	1418.09	4.73	27.7
304	SLU 45	-88	-100	5171	1422.28	4.74	27.86
304	SLU 46	-89	-88	5214	1431.37	4.78	28.12
304	SLU 47	-89	-79	5217	1430.15	4.77	28.12
304	SLU 48	-89	-101	5213	1434.35	4.78	28.28
304	SLU 49	-90	-89	5256	1443.44	4.82	28.54
304	SLU 50	-89	-101	5188	1427.07	4.76	28.11
304	SLU 51	-89	-88	5230	1436.16	4.79	28.37
304	SLU 52	-91	-86	5694	1559.64	5.18	28.88
304	SLU 53	-91	-108	5691	1563.83	5.19	29.05
304	SLU 54	-92	-96	5734	1572.93	5.23	29.3
304	SLU 55	-92	-87	5736	1571.71	5.23	29.3
304	SLU 56	-93	-109	5733	1575.9	5.24	29.47
304	SLU 57	-94	-97	5776	1584.99	5.27	29.73
304	SLU 58	-92	-108	5707	1568.62	5.21	29.3
304	SLU 59	-93	-96	5750	1577.71	5.25	29.55
304	SLU 60	-91	-110	5845	1605.16	5.32	28.96
304	SLU 61	-92	-98	5888	1614.25	5.35	29.22
304	SLU 62	-92	-111	5887	1617.22	5.36	29.38
304	SLU 63	-93	-99	5930	1626.31	5.4	29.64
304	SLU 64	-95	-107	5646	1553.94	5.27	30.16
304	SLU 65	-96	-87	5717	1569.09	5.33	30.59
304	SLU 66	-97	-109	5714	1573.28	5.34	30.75
304	SLU 67	-98	-96	5756	1582.37	5.38	31.01
304	SLU 68	-98	-88	5759	1581.16	5.38	31.01
304	SLU 69	-98	-109	5756	1585.35	5.39	31.18
304	SLU 70	-99	-97	5798	1594.44	5.42	31.44
304	SLU 71	-98	-109	5730	1578.07	5.36	31
304	SLU 72	-99	-97	5773	1587.16	5.4	31.26
304	SLU 73	-100	-95	6237	1710.64	5.79	31.78
304	SLU 74	-101	-116	6233	1714.84	5.8	31.94
304	SLU 75	-101	-104	6276	1723.93	5.83	32.2
304	SLU 76	-101	-95	6279	1722.71	5.83	32.2
304	SLU 77	-102	-117	6275	1726.9	5.84	32.36
304	SLU 78	-103	-105	6318	1735.99	5.88	32.62
304	SLU 79	-101	-117	6249	1719.62	5.82	32.19
304	SLU 80	-102	-104	6292	1728.71	5.85	32.45
304	SLU 81	-100	-119	6388	1756.16	5.92	31.85
304	SLU 82	-101	-106	6431	1765.25	5.96	32.11
304	SLU 83	-102	-119	6430	1768.22	5.97	32.27
304	SLU 84	-102	-107	6473	1777.31	6	32.53
304	SLE RA 1	-71	-81	4224	1162.15	3.92	22.56
304	SLE RA 2	-72	-67	4271	1172.25	3.96	22.85
304	SLE RA 3	-72	-82	4269	1175.05	3.97	22.96
304	SLE RA 4	-73	-73	4298	1181.11	4	23.13
304	SLE RA 5	-73	-68	4299	1180.29	3.99	23.13
304	SLE RA 6	-73	-82	4297	1183.09	4	23.24
304	SLE RA 7	-74	-74	4326	1189.15	4.02	23.41
304	SLE RA 8	-73	-82	4280	1178.24	3.98	23.13
304	SLE RA 9	-73	-74	4308	1184.3	4.01	23.3
304	SLE RA 10	-74	-72	4618	1266.62	4.27	23.64
304	SLE RA 11	-75	-87	4615	1269.42	4.27	23.75
304	SLE RA 12	-75	-79	4644	1275.48	4.3	23.92
304	SLE RA 13	-75	-73	4646	1274.66	4.3	23.92
304	SLE RA 14	-76	-87	4643	1277.46	4.3	24.03
304	SLE RA 15	-76	-79	4672	1283.52	4.33	24.2
304	SLE RA 16	-75	-87	4626	1272.61	4.29	23.92
304	SLE RA 17	-76	-79	4655	1278.67	4.31	24.09
304	SLE RA 18	-75	-88	4718	1296.96	4.36	23.69
304	SLE RA 19	-75	-80	4747	1303.02	4.38	23.86
304	SLE RA 20	-75	-89	4746	1305.01	4.39	23.97
304	SLE RA 21	-76	-81	4775	1311.07	4.41	24.15
304	SLE FR 1	-71	-81	4224	1162.15	3.92	22.56
304	SLE FR 2	-71	-78	4233	1164.17	3.93	22.62
304	SLE FR 3	-71	-81	4235	1165.37	3.94	22.68
304	SLE FR 4	-72	-80	4382	1204.61	4.06	22.96
304	SLE FR 5	-72	-83	4383	1205.81	4.07	23.01
304	SLE FR 6	-73	-84	4471	1229.56	4.14	23.13
304	SLE QP 1	-71	-81	4224	1162.15	3.92	22.56
304	SLE QP 2	-72	-83	4372	1202.59	4.05	22.9
304	SLD 1	349	19	5018	1341.91	6	-105.82
304	SLD 2	434	-16	4983	1333.01	5.85	-131.4
304	SLD 3	383	-226	4041	1132.13	5.04	-116.55
304	SLD 4	468	-261	4006	1123.23	4.9	-142.13
304	SLD 5	-12	326	6054	1564.16	6.11	5.16
304	SLD 6	44	303	6031	1558.29	6.02	-11.72
304	SLD 7	101	-491	2797	864.88	2.93	-30.61
304	SLD 8	156	-515	2775	859.01	2.83	-47.49

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
304	SLD 9	-300	349	5970	1546.18	5.28	93.29
304	SLD 10	-245	326	5947	1540.3	5.18	76.41
304	SLD 11	-188	-469	2713	846.9	2.09	57.52
304	SLD 12	-132	-492	2691	841.03	2	40.64
304	SLD 13	-612	95	4738	1281.96	3.21	187.94
304	SLD 14	-527	60	4703	1273.06	3.07	162.35
304	SLD 15	-578	-150	3761	1072.18	2.25	177.21
304	SLD 16	-494	-185	3727	1063.28	2.11	151.62
304	SLV 1	912	174	5964	1545.98	8.68	-277.52
304	SLV 2	1110	92	5883	1525.05	8.34	-337.66
304	SLV 3	995	-436	3516	1020.35	6.29	-303.77
304	SLV 4	1193	-518	3435	999.42	5.95	-363.92
304	SLV 5	61	935	8577	2106.72	9.13	-16.18
304	SLV 6	194	880	8522	2092.63	8.91	-56.67
304	SLV 7	336	-1099	419	354.62	1.16	-103.69
304	SLV 8	470	-1155	364	340.53	0.93	-144.19
304	SLV 9	-614	989	8380	2064.66	7.18	189.99
304	SLV 10	-480	933	8326	2050.57	6.95	149.5
304	SLV 11	-339	-1046	222	312.56	-0.8	102.48
304	SLV 12	-205	-1101	167	298.47	-1.02	61.99
304	SLV 13	-1337	352	5309	1405.76	2.16	409.72
304	SLV 14	-1139	270	5228	1384.84	1.82	349.58
304	SLV 15	-1255	-258	2862	880.13	-0.23	383.47
304	SLV 16	-1056	-340	2780	859.21	-0.57	323.32
304	CRTFP Ux+	0	0	0	0	0	0
304	CRTFP Ux-	0	0	0	0	0	0
304	CRTFP Uy+	0	0	0	0	0	0
304	CRTFP Uy-	0	0	0	0	0	0
305	SLU 1	-69	-66	3978	1084.94	1.59	21.82
305	SLU 2	-70	-45	4048	1099.67	1.6	22.26
305	SLU 3	-71	-67	4044	1103.64	1.62	22.42
305	SLU 4	-71	-55	4086	1112.48	1.62	22.68
305	SLU 5	-71	-46	4089	1111.33	1.61	22.68
305	SLU 6	-72	-68	4085	1115.3	1.63	22.84
305	SLU 7	-73	-55	4127	1124.14	1.64	23.1
305	SLU 8	-71	-67	4060	1108.25	1.62	22.67
305	SLU 9	-72	-55	4102	1117.09	1.63	22.93
305	SLU 10	-74	-52	4557	1237.32	1.73	23.47
305	SLU 11	-74	-74	4553	1241.29	1.75	23.63
305	SLU 12	-75	-61	4595	1250.13	1.76	23.89
305	SLU 13	-75	-53	4598	1248.98	1.75	23.89
305	SLU 14	-76	-74	4594	1252.95	1.77	24.05
305	SLU 15	-76	-62	4636	1261.79	1.77	24.31
305	SLU 16	-75	-74	4569	1245.9	1.76	23.88
305	SLU 17	-76	-62	4611	1254.74	1.76	24.14
305	SLU 18	-74	-76	4705	1281.58	1.78	23.55
305	SLU 19	-75	-63	4748	1290.42	1.78	23.81
305	SLU 20	-75	-76	4746	1293.24	1.8	23.97
305	SLU 21	-76	-64	4789	1302.08	1.8	24.24
305	SLU 22	-78	-73	4505	1230.32	1.87	24.73
305	SLU 23	-79	-52	4575	1245.06	1.88	25.17
305	SLU 24	-80	-74	4571	1249.03	1.9	25.33
305	SLU 25	-81	-61	4613	1257.86	1.9	25.59
305	SLU 26	-81	-53	4616	1256.71	1.9	25.59
305	SLU 27	-81	-75	4612	1260.69	1.92	25.75
305	SLU 28	-82	-62	4654	1269.52	1.92	26.01
305	SLU 29	-81	-74	4587	1253.64	1.91	25.58
305	SLU 30	-81	-62	4629	1262.48	1.91	25.84
305	SLU 31	-83	-59	5085	1382.71	2.01	26.38
305	SLU 32	-84	-81	5080	1386.68	2.03	26.54
305	SLU 33	-84	-68	5122	1395.51	2.04	26.8
305	SLU 34	-84	-59	5125	1394.36	2.03	26.8
305	SLU 35	-85	-81	5121	1398.34	2.05	26.96
305	SLU 36	-86	-69	5163	1407.17	2.06	27.22
305	SLU 37	-84	-81	5096	1391.29	2.04	26.79
305	SLU 38	-85	-68	5138	1400.13	2.05	27.05
305	SLU 39	-83	-82	5232	1426.97	2.06	26.46
305	SLU 40	-84	-70	5275	1435.81	2.07	26.72
305	SLU 41	-85	-83	5273	1438.63	2.08	26.88
305	SLU 42	-85	-71	5316	1447.46	2.08	27.15
305	SLU 43	-86	-84	4990	1360.57	1.97	27.37
305	SLU 44	-88	-63	5061	1375.3	1.97	27.81
305	SLU 45	-88	-85	5056	1379.27	2	27.97
305	SLU 46	-89	-72	5099	1388.11	2	28.23
305	SLU 47	-89	-63	5102	1386.96	1.99	28.23
305	SLU 48	-89	-85	5097	1390.93	2.01	28.39
305	SLU 49	-90	-73	5139	1399.77	2.02	28.65
305	SLU 50	-89	-85	5072	1383.89	2	28.22
305	SLU 51	-90	-72	5114	1392.73	2.01	28.48
305	SLU 52	-91	-69	5570	1512.95	2.11	29.02
305	SLU 53	-92	-91	5566	1516.92	2.13	29.18
305	SLU 54	-93	-79	5608	1525.76	2.13	29.44
305	SLU 55	-93	-70	5611	1524.61	2.13	29.44
305	SLU 56	-93	-92	5607	1528.58	2.15	29.6
305	SLU 57	-94	-79	5649	1537.42	2.15	29.86
305	SLU 58	-93	-92	5582	1521.54	2.14	29.43
305	SLU 59	-93	-79	5624	1530.38	2.14	29.69
305	SLU 60	-91	-93	5718	1557.21	2.16	29.1
305	SLU 61	-92	-81	5760	1566.05	2.16	29.36

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
305	SLU 62	-93	-94	5759	1568.87	2.18	29.52
305	SLU 63	-94	-81	5801	1577.71	2.18	29.79
305	SLU 64	-95	-90	5517	1505.96	2.25	30.28
305	SLU 65	-97	-69	5588	1520.69	2.26	30.72
305	SLU 66	-97	-91	5583	1524.66	2.28	30.87
305	SLU 67	-98	-79	5626	1533.5	2.28	31.14
305	SLU 68	-98	-70	5629	1532.35	2.28	31.14
305	SLU 69	-99	-92	5624	1536.32	2.3	31.3
305	SLU 70	-99	-80	5667	1545.16	2.3	31.56
305	SLU 71	-98	-92	5599	1529.28	2.29	31.12
305	SLU 72	-99	-79	5641	1538.11	2.29	31.39
305	SLU 73	-100	-76	6097	1658.34	2.39	31.93
305	SLU 74	-101	-98	6093	1662.31	2.41	32.09
305	SLU 75	-102	-86	6135	1671.15	2.42	32.35
305	SLU 76	-102	-77	6138	1670	2.41	32.35
305	SLU 77	-102	-99	6134	1673.97	2.43	32.51
305	SLU 78	-103	-86	6176	1682.81	2.44	32.77
305	SLU 79	-102	-98	6109	1666.93	2.42	32.34
305	SLU 80	-103	-86	6151	1675.76	2.42	32.6
305	SLU 81	-101	-100	6245	1702.6	2.44	32.01
305	SLU 82	-101	-87	6287	1711.44	2.45	32.27
305	SLU 83	-102	-101	6286	1714.26	2.46	32.43
305	SLU 84	-103	-88	6328	1723.1	2.46	32.69
305	SLE RA 1	-71	-68	4128	1126.48	1.67	22.65
305	SLE RA 2	-72	-54	4175	1136.3	1.67	22.94
305	SLE RA 3	-73	-69	4172	1138.94	1.69	23.05
305	SLE RA 4	-73	-60	4200	1144.84	1.69	23.22
305	SLE RA 5	-73	-55	4202	1144.07	1.69	23.23
305	SLE RA 6	-74	-69	4200	1146.72	1.7	23.33
305	SLE RA 7	-74	-61	4228	1152.61	1.7	23.51
305	SLE RA 8	-73	-69	4183	1142.02	1.69	23.22
305	SLE RA 9	-74	-61	4211	1147.91	1.7	23.39
305	SLE RA 10	-75	-59	4515	1228.06	1.76	23.75
305	SLE RA 11	-75	-73	4512	1230.71	1.78	23.86
305	SLE RA 12	-76	-65	4540	1236.6	1.78	24.03
305	SLE RA 13	-76	-59	4542	1235.84	1.78	24.03
305	SLE RA 14	-76	-74	4539	1238.48	1.79	24.14
305	SLE RA 15	-77	-65	4567	1244.38	1.79	24.31
305	SLE RA 16	-76	-73	4522	1233.79	1.78	24.02
305	SLE RA 17	-76	-65	4551	1239.68	1.79	24.2
305	SLE RA 18	-75	-74	4613	1257.57	1.8	23.81
305	SLE RA 19	-75	-66	4642	1263.46	1.8	23.98
305	SLE RA 20	-76	-75	4641	1265.34	1.81	24.09
305	SLE RA 21	-76	-66	4669	1271.24	1.81	24.26
305	SLE FR 1	-71	-68	4128	1126.48	1.67	22.65
305	SLE FR 2	-72	-65	4138	1128.44	1.67	22.71
305	SLE FR 3	-72	-68	4139	1129.58	1.67	22.77
305	SLE FR 4	-73	-67	4283	1167.77	1.71	23.06
305	SLE FR 5	-73	-70	4285	1168.91	1.71	23.11
305	SLE FR 6	-73	-71	4371	1192.02	1.73	23.23
305	SLE QP 1	-71	-68	4128	1126.48	1.67	22.65
305	SLE QP 2	-72	-70	4274	1165.8	1.71	23
305	SLD 1	349	41	4860	1287.64	3.14	-105.4
305	SLD 2	433	11	4831	1280.22	3.02	-130.92
305	SLD 3	383	-211	3904	1085.29	2.88	-116.17
305	SLD 4	467	-241	3874	1077.87	2.76	-141.7
305	SLD 5	-13	351	5905	1510.59	2.56	5.42
305	SLD 6	43	331	5886	1505.69	2.48	-11.42
305	SLD 7	100	-489	2718	836.09	1.68	-30.51
305	SLD 8	156	-509	2698	831.19	1.6	-47.35
305	SLD 9	-301	369	5849	1500.42	1.81	93.34
305	SLD 10	-245	349	5829	1495.52	1.73	76.5
305	SLD 11	-188	-471	2662	825.92	0.93	57.42
305	SLD 12	-132	-491	2642	821.02	0.85	40.58
305	SLD 13	-612	101	4673	1253.74	0.65	187.7
305	SLD 14	-527	71	4643	1246.31	0.53	162.17
305	SLD 15	-578	-151	3717	1051.39	0.39	176.92
305	SLD 16	-493	-181	3687	1043.97	0.27	151.39
305	SLV 1	910	210	5726	1467.67	5.09	-276.66
305	SLV 2	1108	138	5656	1450.22	4.81	-336.66
305	SLV 3	993	-418	3330	960.64	4.44	-303.03
305	SLV 4	1191	-490	3260	943.19	4.15	-363.03
305	SLV 5	60	980	8356	2028.62	3.77	-15.71
305	SLV 6	193	932	8309	2016.87	3.58	-56.1
305	SLV 7	336	-1114	370	338.52	1.59	-103.6
305	SLV 8	469	-1162	323	326.77	1.39	-144
305	SLV 9	-614	1022	8225	2004.84	2.02	190
305	SLV 10	-481	974	8177	1993.09	1.83	149.6
305	SLV 11	-338	-1072	239	314.74	-0.16	102.1
305	SLV 12	-205	-1120	191	302.99	-0.36	61.71
305	SLV 13	-1336	350	5288	1388.42	-0.74	409.03
305	SLV 14	-1138	279	5218	1370.96	-1.03	349.03
305	SLV 15	-1253	-278	2892	881.39	-1.4	382.66
305	SLV 16	-1055	-349	2822	863.93	-1.68	322.66
305	CRTFP Ux+	0	0	0	0	0	0
305	CRTFP Ux-	0	0	0	0	0	0
305	CRTFP Uy+	0	0	0	0	0	0
305	CRTFP Uy-	0	0	0	0	0	0
306	SLU 1	-69	-54	3967	1077.26	-0.85	21.87

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
306	SLU 2	-70	-32	4038	1092.19	-0.9	22.31
306	SLU 3	-71	-54	4032	1095.81	-0.87	22.46
306	SLU 4	-72	-42	4075	1104.77	-0.9	22.73
306	SLU 5	-72	-33	4078	1103.75	-0.91	22.73
306	SLU 6	-72	-55	4073	1107.37	-0.88	22.88
306	SLU 7	-73	-42	4116	1116.33	-0.91	23.15
306	SLU 8	-72	-55	4048	1100.38	-0.87	22.71
306	SLU 9	-72	-42	4091	1109.34	-0.9	22.98
306	SLU 10	-74	-38	4549	1229.8	-1.12	23.54
306	SLU 11	-74	-60	4544	1233.42	-1.09	23.69
306	SLU 12	-75	-47	4586	1242.38	-1.12	23.95
306	SLU 13	-75	-38	4590	1241.36	-1.13	23.96
306	SLU 14	-76	-60	4584	1244.98	-1.1	24.11
306	SLU 15	-77	-48	4627	1253.94	-1.13	24.38
306	SLU 16	-75	-60	4559	1237.98	-1.09	23.94
306	SLU 17	-76	-47	4602	1246.95	-1.12	24.2
306	SLU 18	-74	-61	4697	1273.84	-1.17	23.62
306	SLU 19	-75	-49	4740	1282.8	-1.2	23.89
306	SLU 20	-76	-62	4738	1285.4	-1.18	24.04
306	SLU 21	-76	-49	4780	1294.36	-1.21	24.31
306	SLU 22	-78	-59	4490	1220.95	-0.93	24.79
306	SLU 23	-79	-38	4561	1235.88	-0.98	25.23
306	SLU 24	-80	-60	4556	1239.5	-0.95	25.38
306	SLU 25	-81	-47	4599	1248.46	-0.98	25.65
306	SLU 26	-81	-38	4602	1247.44	-0.99	25.65
306	SLU 27	-81	-60	4597	1251.06	-0.96	25.8
306	SLU 28	-82	-47	4640	1260.02	-0.99	26.07
306	SLU 29	-81	-60	4572	1244.07	-0.95	25.63
306	SLU 30	-82	-47	4615	1253.03	-0.98	25.9
306	SLU 31	-83	-43	5073	1373.49	-1.2	26.46
306	SLU 32	-84	-65	5067	1377.11	-1.17	26.61
306	SLU 33	-85	-52	5110	1386.07	-1.2	26.87
306	SLU 34	-85	-44	5113	1385.05	-1.21	26.88
306	SLU 35	-85	-66	5108	1388.67	-1.18	27.03
306	SLU 36	-86	-53	5151	1397.63	-1.21	27.3
306	SLU 37	-85	-65	5083	1381.68	-1.18	26.86
306	SLU 38	-85	-53	5126	1390.64	-1.2	27.12
306	SLU 39	-83	-67	5221	1417.53	-1.25	26.54
306	SLU 40	-84	-54	5263	1426.49	-1.28	26.81
306	SLU 41	-85	-67	5261	1429.09	-1.26	26.96
306	SLU 42	-86	-54	5304	1438.05	-1.29	27.23
306	SLU 43	-86	-68	4977	1351.17	-1.08	27.42
306	SLU 44	-88	-46	5048	1366.1	-1.13	27.87
306	SLU 45	-88	-69	5043	1369.72	-1.1	28.02
306	SLU 46	-89	-56	5085	1378.68	-1.12	28.28
306	SLU 47	-89	-47	5089	1377.66	-1.14	28.29
306	SLU 48	-90	-69	5084	1381.28	-1.11	28.44
306	SLU 49	-90	-56	5126	1390.24	-1.13	28.71
306	SLU 50	-89	-69	5059	1374.29	-1.1	28.27
306	SLU 51	-90	-56	5101	1383.25	-1.13	28.53
306	SLU 52	-91	-52	5559	1503.71	-1.35	29.1
306	SLU 53	-92	-74	5554	1507.33	-1.32	29.25
306	SLU 54	-93	-61	5597	1516.29	-1.35	29.51
306	SLU 55	-93	-52	5600	1515.27	-1.36	29.52
306	SLU 56	-93	-75	5595	1518.89	-1.33	29.67
306	SLU 57	-94	-62	5638	1527.85	-1.36	29.93
306	SLU 58	-93	-74	5570	1511.9	-1.32	29.5
306	SLU 59	-94	-62	5612	1520.86	-1.35	29.76
306	SLU 60	-92	-76	5707	1547.75	-1.4	29.18
306	SLU 61	-93	-63	5750	1556.71	-1.43	29.44
306	SLU 62	-93	-76	5748	1559.31	-1.41	29.6
306	SLU 63	-94	-63	5791	1568.27	-1.44	29.87
306	SLU 64	-96	-73	5501	1494.86	-1.16	30.34
306	SLU 65	-97	-52	5572	1509.79	-1.21	30.79
306	SLU 66	-97	-74	5567	1513.41	-1.18	30.94
306	SLU 67	-98	-61	5609	1522.37	-1.21	31.2
306	SLU 68	-98	-52	5613	1521.35	-1.22	31.21
306	SLU 69	-99	-74	5607	1524.97	-1.19	31.36
306	SLU 70	-100	-62	5650	1533.93	-1.22	31.63
306	SLU 71	-98	-74	5582	1517.98	-1.18	31.19
306	SLU 72	-99	-61	5625	1526.94	-1.21	31.45
306	SLU 73	-101	-57	6083	1647.4	-1.43	32.02
306	SLU 74	-101	-79	6078	1651.02	-1.4	32.17
306	SLU 75	-102	-67	6120	1659.98	-1.43	32.43
306	SLU 76	-102	-58	6124	1658.96	-1.44	32.44
306	SLU 77	-103	-80	6119	1662.58	-1.41	32.59
306	SLU 78	-103	-67	6161	1671.54	-1.44	32.85
306	SLU 79	-102	-80	6094	1655.59	-1.4	32.42
306	SLU 80	-103	-67	6136	1664.55	-1.43	32.68
306	SLU 81	-101	-81	6231	1691.44	-1.48	32.1
306	SLU 82	-102	-68	6274	1700.4	-1.51	32.36
306	SLU 83	-102	-81	6272	1703	-1.49	32.52
306	SLU 84	-103	-69	6315	1711.96	-1.52	32.79
306	SLE RA 1	-71	-55	4116	1118.31	-0.87	22.7
306	SLE RA 2	-72	-41	4164	1128.27	-0.91	23
306	SLE RA 3	-73	-56	4160	1130.68	-0.89	23.1
306	SLE RA 4	-73	-47	4189	1136.65	-0.9	23.27
306	SLE RA 5	-73	-41	4191	1135.97	-0.91	23.28
306	SLE RA 6	-74	-56	4187	1138.39	-0.89	23.38

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
306	SLE RA 7	-74	-47	4216	1144.36	-0.91	23.56
306	SLE RA 8	-73	-56	4171	1133.72	-0.89	23.26
306	SLE RA 9	-74	-47	4199	1139.7	-0.91	23.44
306	SLE RA 10	-75	-45	4504	1220.01	-1.05	23.81
306	SLE RA 11	-75	-59	4501	1222.42	-1.03	23.91
306	SLE RA 12	-76	-51	4529	1228.39	-1.05	24.09
306	SLE RA 13	-76	-45	4532	1227.71	-1.06	24.1
306	SLE RA 14	-76	-60	4528	1230.13	-1.04	24.2
306	SLE RA 15	-77	-51	4557	1236.1	-1.06	24.37
306	SLE RA 16	-76	-59	4511	1225.46	-1.04	24.08
306	SLE RA 17	-76	-51	4540	1231.44	-1.06	24.26
306	SLE RA 18	-75	-60	4603	1249.37	-1.09	23.87
306	SLE RA 19	-76	-52	4632	1255.34	-1.11	24.05
306	SLE RA 20	-76	-61	4630	1257.07	-1.09	24.15
306	SLE RA 21	-76	-52	4659	1263.05	-1.11	24.33
306	SLE FR 1	-71	-55	4116	1118.31	-0.87	22.7
306	SLE FR 2	-72	-52	4126	1120.3	-0.88	22.76
306	SLE FR 3	-72	-55	4127	1121.39	-0.88	22.81
306	SLE FR 4	-73	-54	4272	1159.62	-0.94	23.11
306	SLE FR 5	-73	-57	4273	1160.71	-0.94	23.16
306	SLE FR 6	-73	-58	4360	1183.84	-0.98	23.28
306	SLE QP 1	-71	-55	4116	1118.31	-0.87	22.7
306	SLE QP 2	-73	-57	4262	1157.63	-0.94	23.05
306	SLD 1	348	64	4809	1269.09	-0.01	-105.06
306	SLD 2	432	39	4783	1262.88	-0.11	-130.52
306	SLD 3	382	-195	3848	1065.72	0.47	-115.87
306	SLD 4	466	-221	3822	1059.51	0.37	-141.33
306	SLD 5	-13	378	5888	1500.62	-1.37	5.59
306	SLD 6	42	361	5871	1496.53	-1.44	-11.2
306	SLD 7	100	-487	2686	822.73	0.23	-30.44
306	SLD 8	156	-504	2669	818.64	0.17	-47.24
306	SLD 9	-301	391	5856	1496.62	-2.04	93.34
306	SLD 10	-245	374	5839	1492.52	-2.11	76.54
306	SLD 11	-188	-474	2654	818.73	-0.44	57.3
306	SLD 12	-132	-491	2637	814.63	-0.5	40.51
306	SLD 13	-611	108	4702	1255.74	-2.25	187.43
306	SLD 14	-527	82	4676	1249.53	-2.35	161.97
306	SLD 15	-577	-152	3742	1052.38	-1.77	176.62
306	SLD 16	-493	-177	3716	1046.17	-1.87	151.16
306	SLV 1	909	246	5621	1435.29	1.2	-275.93
306	SLV 2	1106	186	5560	1420.7	0.96	-335.79
306	SLV 3	992	-400	3214	925.69	2.41	-302.38
306	SLV 4	1189	-461	3153	911.09	2.17	-362.24
306	SLV 5	59	1026	8331	2016.55	-2.09	-15.35
306	SLV 6	192	985	8290	2006.73	-2.25	-55.65
306	SLV 7	336	-1129	309	317.87	1.94	-103.53
306	SLV 8	469	-1170	268	308.04	1.78	-143.83
306	SLV 9	-614	1056	8256	2007.22	-3.66	189.93
306	SLV 10	-481	1016	8215	1997.39	-3.82	149.63
306	SLV 11	-337	-1098	234	308.53	0.37	101.75
306	SLV 12	-204	-1139	193	298.7	0.21	61.45
306	SLV 13	-1334	348	5371	1404.17	-4.05	408.34
306	SLV 14	-1137	287	5310	1389.57	-4.28	348.48
306	SLV 15	-1251	-299	2965	894.56	-2.84	381.89
306	SLV 16	-1054	-359	2904	879.96	-3.08	322.03
306	CRTFP Ux+	0	0	0	0	0	0
306	CRTFP Ux-	0	0	0	0	0	0
306	CRTFP Uy+	0	0	0	0	0	0
306	CRTFP Uy-	0	0	0	0	0	0
307	SLU 1	-69	-41	4041	1097.4	-3.28	21.91
307	SLU 2	-70	-19	4115	1113.17	-3.38	22.36
307	SLU 3	-71	-41	4109	1116.33	-3.35	22.51
307	SLU 4	-72	-28	4153	1125.79	-3.4	22.77
307	SLU 5	-72	-19	4157	1124.95	-3.42	22.78
307	SLU 6	-72	-42	4151	1128.12	-3.38	22.93
307	SLU 7	-73	-29	4195	1137.58	-3.44	23.2
307	SLU 8	-72	-42	4125	1120.97	-3.36	22.76
307	SLU 9	-72	-29	4169	1130.43	-3.42	23.02
307	SLU 10	-74	-23	4641	1254.79	-3.96	23.61
307	SLU 11	-75	-46	4635	1257.96	-3.92	23.75
307	SLU 12	-75	-33	4679	1267.42	-3.98	24.02
307	SLU 13	-75	-24	4683	1266.58	-4	24.03
307	SLU 14	-76	-46	4676	1269.74	-3.96	24.17
307	SLU 15	-77	-33	4720	1279.2	-4.02	24.44
307	SLU 16	-75	-46	4651	1262.59	-3.94	24
307	SLU 17	-76	-33	4695	1272.05	-4	24.27
307	SLU 18	-74	-47	4793	1299.72	-4.11	23.69
307	SLU 19	-75	-34	4837	1309.18	-4.17	23.96
307	SLU 20	-76	-47	4834	1311.51	-4.15	24.11
307	SLU 21	-77	-34	4878	1320.97	-4.21	24.38
307	SLU 22	-78	-45	4575	1243.53	-3.73	24.84
307	SLU 23	-80	-23	4649	1259.29	-3.82	25.29
307	SLU 24	-80	-45	4642	1262.45	-3.79	25.44
307	SLU 25	-81	-32	4686	1271.92	-3.85	25.71
307	SLU 26	-81	-23	4690	1271.08	-3.86	25.71
307	SLU 27	-81	-45	4684	1274.24	-3.83	25.86
307	SLU 28	-82	-32	4728	1283.7	-3.89	26.13
307	SLU 29	-81	-45	4658	1267.09	-3.8	25.69
307	SLU 30	-82	-32	4702	1276.55	-3.86	25.96

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
307	SLU 31	-83	-27	5174	1400.92	-4.4	26.54
307	SLU 32	-84	-49	5168	1404.08	-4.37	26.68
307	SLU 33	-85	-36	5212	1413.54	-4.43	26.95
307	SLU 34	-85	-28	5216	1412.7	-4.44	26.96
307	SLU 35	-85	-50	5210	1415.86	-4.4	27.11
307	SLU 36	-86	-37	5254	1425.32	-4.46	27.37
307	SLU 37	-85	-50	5184	1408.72	-4.38	26.93
307	SLU 38	-86	-37	5228	1418.18	-4.44	27.2
307	SLU 39	-84	-51	5326	1445.85	-4.55	26.62
307	SLU 40	-84	-38	5370	1455.31	-4.61	26.89
307	SLU 41	-85	-51	5368	1457.63	-4.59	27.04
307	SLU 42	-86	-38	5412	1467.09	-4.65	27.31
307	SLU 43	-86	-52	5071	1376.52	-4.12	27.48
307	SLU 44	-88	-30	5145	1392.29	-4.21	27.93
307	SLU 45	-88	-52	5138	1395.45	-4.18	28.07
307	SLU 46	-89	-39	5183	1404.91	-4.24	28.34
307	SLU 47	-89	-30	5187	1404.08	-4.25	28.35
307	SLU 48	-90	-53	5180	1407.24	-4.22	28.5
307	SLU 49	-91	-40	5224	1416.7	-4.28	28.76
307	SLU 50	-89	-52	5154	1400.09	-4.19	28.32
307	SLU 51	-90	-39	5199	1409.55	-4.25	28.59
307	SLU 52	-92	-34	5671	1533.92	-4.79	29.17
307	SLU 53	-92	-57	5664	1537.08	-4.76	29.32
307	SLU 54	-93	-44	5708	1546.54	-4.82	29.59
307	SLU 55	-93	-35	5712	1545.7	-4.83	29.59
307	SLU 56	-94	-57	5706	1548.86	-4.79	29.74
307	SLU 57	-94	-44	5750	1558.32	-4.85	30.01
307	SLU 58	-93	-57	5680	1541.72	-4.77	29.57
307	SLU 59	-94	-44	5724	1551.18	-4.83	29.84
307	SLU 60	-92	-58	5822	1578.85	-4.94	29.26
307	SLU 61	-93	-45	5866	1588.31	-5	29.53
307	SLU 62	-93	-58	5864	1590.63	-4.98	29.68
307	SLU 63	-94	-45	5908	1600.09	-5.04	29.95
307	SLU 64	-96	-55	5604	1522.65	-4.56	30.41
307	SLU 65	-97	-34	5678	1538.41	-4.66	30.86
307	SLU 66	-98	-56	5672	1541.58	-4.62	31.01
307	SLU 67	-98	-43	5716	1551.04	-4.68	31.28
307	SLU 68	-98	-34	5720	1550.2	-4.7	31.28
307	SLU 69	-99	-56	5713	1553.36	-4.66	31.43
307	SLU 70	-100	-43	5758	1562.82	-4.72	31.7
307	SLU 71	-98	-56	5688	1546.21	-4.63	31.26
307	SLU 72	-99	-43	5732	1555.67	-4.69	31.52
307	SLU 73	-101	-38	6204	1680.04	-5.24	32.11
307	SLU 74	-101	-60	6197	1683.2	-5.2	32.25
307	SLU 75	-102	-47	6242	1692.66	-5.26	32.52
307	SLU 76	-102	-38	6246	1691.82	-5.27	32.53
307	SLU 77	-103	-61	6239	1694.98	-5.24	32.67
307	SLU 78	-104	-48	6283	1704.44	-5.3	32.94
307	SLU 79	-102	-61	6214	1687.84	-5.21	32.5
307	SLU 80	-103	-48	6258	1697.3	-5.27	32.77
307	SLU 81	-101	-62	6355	1724.97	-5.38	32.19
307	SLU 82	-102	-49	6400	1734.43	-5.44	32.46
307	SLU 83	-103	-62	6397	1736.75	-5.42	32.61
307	SLU 84	-103	-49	6441	1746.21	-5.48	32.88
307	SLE RA 1	-72	-42	4194	1139.15	-3.41	22.75
307	SLE RA 2	-73	-27	4243	1149.66	-3.47	23.05
307	SLE RA 3	-73	-42	4239	1151.77	-3.45	23.15
307	SLE RA 4	-73	-34	4268	1158.08	-3.49	23.32
307	SLE RA 5	-73	-28	4271	1157.52	-3.5	23.33
307	SLE RA 6	-74	-42	4267	1159.63	-3.48	23.43
307	SLE RA 7	-74	-34	4296	1165.93	-3.52	23.61
307	SLE RA 8	-73	-42	4249	1154.86	-3.46	23.31
307	SLE RA 9	-74	-34	4279	1161.17	-3.5	23.49
307	SLE RA 10	-75	-30	4594	1244.08	-3.86	23.88
307	SLE RA 11	-75	-45	4589	1246.19	-3.84	23.98
307	SLE RA 12	-76	-36	4619	1252.49	-3.88	24.15
307	SLE RA 13	-76	-30	4621	1251.94	-3.89	24.16
307	SLE RA 14	-76	-45	4617	1254.04	-3.86	24.26
307	SLE RA 15	-77	-37	4647	1260.35	-3.9	24.44
307	SLE RA 16	-76	-45	4600	1249.28	-3.85	24.14
307	SLE RA 17	-76	-37	4629	1255.59	-3.88	24.32
307	SLE RA 18	-75	-46	4695	1274.03	-3.96	23.93
307	SLE RA 19	-76	-37	4724	1280.34	-4	24.11
307	SLE RA 20	-76	-46	4722	1281.89	-3.99	24.22
307	SLE RA 21	-77	-38	4752	1288.19	-4.02	24.4
307	SLE FR 1	-72	-42	4194	1139.15	-3.41	22.75
307	SLE FR 2	-72	-39	4204	1141.25	-3.42	22.81
307	SLE FR 3	-72	-42	4205	1142.29	-3.42	22.86
307	SLE FR 4	-73	-40	4354	1181.72	-3.59	23.16
307	SLE FR 5	-73	-43	4355	1182.76	-3.58	23.22
307	SLE FR 6	-73	-44	4444	1206.59	-3.68	23.34
307	SLE QP 1	-72	-42	4194	1139.15	-3.41	22.75
307	SLE QP 2	-73	-43	4344	1179.62	-3.57	23.1
307	SLD 1	347	87	4875	1280.61	-3.1	-104.74
307	SLD 2	431	66	4852	1275.38	-3.18	-130.13
307	SLD 3	381	-180	3885	1067.71	-1.92	-115.56
307	SLD 4	465	-201	3862	1062.49	-2	-140.95
307	SLD 5	-13	405	6009	1533.74	-5.21	5.73
307	SLD 6	42	391	5994	1530.29	-5.27	-11.03

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
307	SLD 7	100	-485	2708	824.1	-1.27	-30.33
307	SLD 8	155	-499	2693	820.65	-1.32	-47.09
307	SLD 9	-300	413	5995	1538.58	-5.83	93.3
307	SLD 10	-245	399	5980	1535.13	-5.88	76.54
307	SLD 11	-187	-477	2694	828.94	-1.88	57.24
307	SLD 12	-132	-491	2679	825.49	-1.94	40.48
307	SLD 13	-610	115	4826	1296.74	-5.15	187.16
307	SLD 14	-526	94	4804	1291.52	-5.23	161.77
307	SLD 15	-576	-152	3836	1083.85	-3.97	176.34
307	SLD 16	-492	-173	3813	1078.63	-4.05	150.95
307	SLV 1	907	282	5668	1433.62	-2.56	-275.26
307	SLV 2	1104	232	5615	1421.34	-2.76	-334.95
307	SLV 3	990	-384	3187	900.13	0.41	-301.73
307	SLV 4	1187	-433	3134	887.85	0.21	-361.42
307	SLV 5	58	1073	8515	2067.24	-7.73	-15.11
307	SLV 6	191	1040	8479	2058.97	-7.86	-55.3
307	SLV 7	335	-1145	244	288.93	2.16	-103.36
307	SLV 8	468	-1178	208	280.66	2.02	-143.55
307	SLV 9	-613	1092	8480	2078.57	-9.17	189.75
307	SLV 10	-480	1059	8445	2070.3	-9.3	149.57
307	SLV 11	-337	-1126	209	300.26	0.72	101.51
307	SLV 12	-204	-1159	173	291.99	0.58	61.32
307	SLV 13	-1332	347	5554	1471.39	-7.36	407.63
307	SLV 14	-1135	298	5501	1459.11	-7.56	347.94
307	SLV 15	-1249	-319	3073	937.89	-4.39	381.16
307	SLV 16	-1052	-368	3020	925.61	-4.59	321.47
307	CRTFP Ux+	0	0	0	0	0	0
307	CRTFP Ux-	0	0	0	0	0	0
307	CRTFP Uy+	0	0	0	0	0	0
307	CRTFP Uy-	0	0	0	0	0	0
309	SLU 1	-63	-26	3846	1031.23	57.03	20.24
309	SLU 2	-64	-5	3918	1046.66	58.04	20.32
309	SLU 3	-65	-26	3910	1049.08	57.98	20.78
309	SLU 4	-66	-14	3953	1058.33	58.59	20.83
309	SLU 5	-66	-6	3957	1057.76	58.63	20.7
309	SLU 6	-66	-26	3950	1060.18	58.57	21.16
309	SLU 7	-67	-14	3993	1069.43	59.17	21.21
309	SLU 8	-66	-26	3926	1053.43	58.21	21.01
309	SLU 9	-66	-14	3969	1062.69	58.81	21.05
309	SLU 10	-68	-8	4423	1181.3	65.4	21.5
309	SLU 11	-68	-29	4416	1183.72	65.34	21.97
309	SLU 12	-69	-17	4459	1192.98	65.95	22.02
309	SLU 13	-69	-9	4463	1192.4	65.99	21.89
309	SLU 14	-70	-29	4456	1194.82	65.93	22.35
309	SLU 15	-70	-17	4499	1204.08	66.53	22.4
309	SLU 16	-69	-29	4431	1188.08	65.57	22.2
309	SLU 17	-70	-17	4474	1197.33	66.17	22.24
309	SLU 18	-68	-30	4568	1223.58	67.55	21.94
309	SLU 19	-69	-18	4611	1232.84	68.15	21.98
309	SLU 20	-69	-30	4608	1234.68	68.13	22.32
309	SLU 21	-70	-18	4651	1243.94	68.74	22.37
309	SLU 22	-72	-28	4354	1168.66	64.54	22.93
309	SLU 23	-73	-8	4426	1184.09	65.55	23.01
309	SLU 24	-73	-28	4419	1186.51	65.49	23.47
309	SLU 25	-74	-16	4462	1195.76	66.1	23.52
309	SLU 26	-74	-8	4466	1195.19	66.14	23.39
309	SLU 27	-75	-28	4459	1197.61	66.08	23.86
309	SLU 28	-75	-16	4502	1206.86	66.69	23.9
309	SLU 29	-74	-28	4434	1190.86	65.72	23.7
309	SLU 30	-75	-16	4477	1200.11	66.33	23.75
309	SLU 31	-76	-10	4932	1318.73	72.91	24.2
309	SLU 32	-77	-31	4924	1321.15	72.85	24.66
309	SLU 33	-78	-19	4967	1330.41	73.46	24.71
309	SLU 34	-78	-11	4971	1329.83	73.5	24.58
309	SLU 35	-78	-31	4964	1332.25	73.44	25.05
309	SLU 36	-79	-19	5007	1341.51	74.05	25.09
309	SLU 37	-78	-31	4940	1325.51	73.08	24.89
309	SLU 38	-78	-19	4983	1334.76	73.69	24.94
309	SLU 39	-77	-32	5077	1361.01	75.06	24.63
309	SLU 40	-77	-20	5120	1370.27	75.66	24.68
309	SLU 41	-78	-32	5117	1372.11	75.65	25.01
309	SLU 42	-79	-20	5159	1381.37	76.25	25.06
309	SLU 43	-79	-33	4825	1293.48	71.57	25.38
309	SLU 44	-80	-13	4897	1308.91	72.57	25.46
309	SLU 45	-81	-33	4890	1311.33	72.51	25.93
309	SLU 46	-82	-21	4933	1320.59	73.12	25.97
309	SLU 47	-82	-13	4937	1320.01	73.16	25.85
309	SLU 48	-82	-33	4930	1322.43	73.1	26.31
309	SLU 49	-83	-21	4973	1331.69	73.71	26.36
309	SLU 50	-82	-33	4905	1315.68	72.74	26.15
309	SLU 51	-82	-21	4948	1324.94	73.35	26.2
309	SLU 52	-84	-15	5403	1443.56	79.93	26.65
309	SLU 53	-84	-36	5395	1445.98	79.87	27.12
309	SLU 54	-85	-24	5438	1455.23	80.48	27.16
309	SLU 55	-85	-16	5442	1454.66	80.52	27.04
309	SLU 56	-86	-36	5435	1457.08	80.46	27.5
309	SLU 57	-86	-24	5478	1466.33	81.07	27.55
309	SLU 58	-85	-36	5411	1450.33	80.1	27.34
309	SLU 59	-86	-24	5454	1459.58	80.71	27.39

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
309	SLU 60	-84	-37	5548	1485.84	82.08	27.08
309	SLU 61	-85	-25	5591	1495.09	82.69	27.13
309	SLU 62	-85	-37	5588	1496.93	82.67	27.47
309	SLU 63	-86	-25	5631	1506.19	83.27	27.52
309	SLU 64	-88	-35	5334	1430.91	79.08	28.08
309	SLU 65	-89	-15	5405	1446.34	80.09	28.16
309	SLU 66	-89	-35	5398	1448.76	80.03	28.62
309	SLU 67	-90	-23	5441	1458.01	80.63	28.67
309	SLU 68	-90	-15	5445	1457.44	80.67	28.54
309	SLU 69	-91	-35	5438	1459.86	80.61	29
309	SLU 70	-91	-23	5481	1469.11	81.22	29.05
309	SLU 71	-90	-35	5414	1453.11	80.25	28.85
309	SLU 72	-91	-23	5457	1462.37	80.86	28.89
309	SLU 73	-92	-17	5911	1580.98	87.45	29.35
309	SLU 74	-93	-38	5904	1583.4	87.39	29.81
309	SLU 75	-94	-26	5947	1592.66	87.99	29.86
309	SLU 76	-94	-18	5951	1592.08	88.04	29.73
309	SLU 77	-94	-38	5944	1594.5	87.97	30.19
309	SLU 78	-95	-26	5987	1603.76	88.58	30.24
309	SLU 79	-94	-38	5919	1587.76	87.61	30.04
309	SLU 80	-94	-26	5962	1597.01	88.22	30.08
309	SLU 81	-93	-39	6056	1623.26	89.59	29.78
309	SLU 82	-93	-27	6099	1632.52	90.2	29.82
309	SLU 83	-94	-39	6096	1634.36	90.18	30.16
309	SLU 84	-95	-27	6139	1643.62	90.79	30.21
309	SLE RA 1	-66	-26	3991	1070.5	59.18	21.01
309	SLE RA 2	-66	-13	4039	1080.78	59.85	21.06
309	SLE RA 3	-67	-27	4034	1082.39	59.81	21.37
309	SLE RA 4	-67	-18	4063	1088.57	60.21	21.4
309	SLE RA 5	-67	-13	4066	1088.18	60.24	21.32
309	SLE RA 6	-68	-27	4061	1089.79	60.2	21.62
309	SLE RA 7	-68	-19	4089	1095.96	60.61	21.66
309	SLE RA 8	-67	-27	4044	1085.3	59.96	21.52
309	SLE RA 9	-68	-19	4073	1091.47	60.37	21.55
309	SLE RA 10	-69	-15	4376	1170.55	64.76	21.85
309	SLE RA 11	-69	-28	4371	1172.16	64.72	22.16
309	SLE RA 12	-70	-20	4400	1178.33	65.12	22.19
309	SLE RA 13	-70	-15	4403	1177.95	65.15	22.11
309	SLE RA 14	-70	-29	4398	1179.56	65.11	22.42
309	SLE RA 15	-70	-20	4426	1185.73	65.51	22.45
309	SLE RA 16	-70	-29	4381	1175.06	64.87	22.31
309	SLE RA 17	-70	-20	4410	1181.23	65.27	22.34
309	SLE RA 18	-69	-29	4473	1198.73	66.19	22.14
309	SLE RA 19	-69	-21	4501	1204.9	66.59	22.17
309	SLE RA 20	-70	-29	4499	1206.13	66.58	22.4
309	SLE RA 21	-70	-21	4528	1212.3	66.98	22.43
309	SLE FR 1	-66	-26	3991	1070.5	59.18	21.01
309	SLE FR 2	-66	-24	4001	1072.55	59.31	21.02
309	SLE FR 3	-66	-26	4002	1073.46	59.33	21.11
309	SLE FR 4	-67	-24	4145	1111.02	61.42	21.36
309	SLE FR 5	-67	-27	4146	1111.93	61.44	21.45
309	SLE FR 6	-67	-28	4232	1134.61	62.68	21.57
309	SLE QP 1	-66	-26	3991	1070.5	59.18	21.01
309	SLE QP 2	-67	-27	4136	1108.97	61.28	21.35
309	SLD 1	318	97	4593	1199.36	68.7	-96.12
309	SLD 2	394	82	4574	1195.33	68.36	-118.81
309	SLD 3	349	-154	3637	992.56	55.11	-102.23
309	SLD 4	425	-169	3618	988.53	54.77	-124.92
309	SLD 5	-12	394	5726	1450.46	84.18	-0.55
309	SLD 6	39	384	5714	1447.8	83.95	-15.52
309	SLD 7	91	-444	2539	761.12	38.88	-20.91
309	SLD 8	142	-454	2527	758.47	38.65	-35.88
309	SLD 9	-275	400	5745	1459.47	83.91	78.57
309	SLD 10	-224	390	5732	1456.81	83.68	63.6
309	SLD 11	-172	-439	2557	770.13	38.61	58.21
309	SLD 12	-121	-448	2545	767.48	38.38	43.24
309	SLD 13	-559	115	4653	1229.4	67.79	167.61
309	SLD 14	-482	100	4635	1225.38	67.45	144.92
309	SLD 15	-528	-137	3697	1022.6	54.21	161.5
309	SLD 16	-451	-151	3679	1018.58	53.87	138.81
309	SLV 1	830	283	5285	1337.65	79.76	-253.09
309	SLV 2	1011	248	5241	1328.19	78.96	-306.41
309	SLV 3	906	-344	2888	819.4	45.71	-267.89
309	SLV 4	1087	-379	2845	809.95	44.91	-321.22
309	SLV 5	54	1023	8122	1965.34	118.62	-28.58
309	SLV 6	176	1000	8093	1958.97	118.08	-64.48
309	SLV 7	306	-1066	135	237.86	5.11	-77.92
309	SLV 8	428	-1090	106	231.5	4.58	-113.83
309	SLV 9	-561	1036	8165	1986.44	117.99	156.52
309	SLV 10	-439	1012	8136	1980.07	117.45	120.62
309	SLV 11	-309	-1054	178	258.97	4.48	107.18
309	SLV 12	-187	-1077	149	252.6	3.94	71.27
309	SLV 13	-1220	325	5426	1407.99	77.65	363.91
309	SLV 14	-1039	290	5383	1398.53	76.85	310.58
309	SLV 15	-1144	-302	3030	889.75	43.6	349.11
309	SLV 16	-964	-337	2987	880.29	42.8	295.78
309	CRTFP Ux+	0	0	0	0	0	0
309	CRTFP Ux-	0	0	0	0	0	0
309	CRTFP Uy+	0	0	0	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
309	CRTFP Uy-	0	0	0	0	0	0
312	SLU 1	-152	-54	9167	3005.6	2497.87	71.31
312	SLU 2	-155	-5	9337	3057.07	2543.45	58.55
312	SLU 3	-156	-55	9321	3056.74	2539.62	72.97
312	SLU 4	-157	-26	9423	3087.62	2566.97	65.31
312	SLU 5	-157	-6	9432	3088.79	2569.31	59.73
312	SLU 6	-159	-55	9417	3088.46	2565.48	74.16
312	SLU 7	-160	-26	9519	3119.33	2592.83	66.5
312	SLU 8	-157	-55	9358	3069.04	2549.59	73.69
312	SLU 9	-159	-26	9460	3099.92	2576.94	66.03
312	SLU 10	-163	-12	10545	3451.92	2869.79	63.87
312	SLU 11	-165	-61	10530	3451.59	2865.97	78.29
312	SLU 12	-166	-32	10631	3482.47	2893.31	70.64
312	SLU 13	-166	-12	10641	3483.64	2895.65	65.06
312	SLU 14	-167	-62	10625	3483.31	2891.83	79.48
312	SLU 15	-169	-32	10727	3514.19	2919.17	71.82
312	SLU 16	-166	-61	10566	3463.89	2875.93	79.01
312	SLU 17	-168	-32	10668	3494.77	2903.28	71.36
312	SLU 18	-164	-63	10893	3569.68	2964.08	78.92
312	SLU 19	-166	-34	10995	3600.56	2991.42	71.26
312	SLU 20	-167	-64	10989	3601.4	2989.94	80.11
312	SLU 21	-169	-35	11091	3632.28	3017.28	72.45
312	SLU 22	-172	-58	10380	3404.41	2827.39	80
312	SLU 23	-175	-10	10550	3455.87	2872.97	67.23
312	SLU 24	-176	-59	10534	3455.54	2869.14	81.66
312	SLU 25	-178	-30	10636	3486.42	2896.49	74
312	SLU 26	-178	-10	10645	3487.59	2898.83	68.42
312	SLU 27	-179	-59	10630	3487.26	2895	82.85
312	SLU 28	-181	-30	10732	3518.14	2922.35	75.19
312	SLU 29	-178	-59	10571	3467.85	2879.11	82.38
312	SLU 30	-180	-30	10673	3498.73	2906.46	74.72
312	SLU 31	-184	-16	11758	3850.73	3199.31	72.56
312	SLU 32	-185	-65	11743	3850.4	3195.49	86.98
312	SLU 33	-187	-36	11845	3881.28	3222.83	79.32
312	SLU 34	-187	-17	11854	3882.45	3225.17	73.75
312	SLU 35	-188	-66	11838	3882.12	3221.35	88.17
312	SLU 36	-190	-37	11940	3913	3248.69	80.51
312	SLU 37	-187	-66	11779	3862.7	3205.45	87.7
312	SLU 38	-188	-36	11881	3893.58	3232.8	80.04
312	SLU 39	-185	-67	12106	3968.49	3293.6	87.61
312	SLU 40	-186	-38	12208	3999.37	3320.94	79.95
312	SLU 41	-187	-68	12202	4000.21	3319.46	88.8
312	SLU 42	-189	-39	12304	4031.08	3346.8	81.14
312	SLU 43	-190	-69	11502	3770.54	3134.25	89.73
312	SLU 44	-193	-20	11671	3822.01	3179.83	76.96
312	SLU 45	-194	-69	11656	3821.68	3176.01	91.38
312	SLU 46	-196	-40	11757	3852.56	3203.35	83.72
312	SLU 47	-196	-21	11767	3853.73	3205.69	78.15
312	SLU 48	-197	-70	11751	3853.4	3201.87	92.57
312	SLU 49	-199	-41	11853	3884.28	3229.21	84.91
312	SLU 50	-196	-70	11692	3833.98	3185.97	92.1
312	SLU 51	-198	-41	11794	3864.86	3213.32	84.44
312	SLU 52	-202	-27	12880	4216.86	3506.18	82.29
312	SLU 53	-203	-76	12864	4216.53	3502.35	96.71
312	SLU 54	-205	-47	12966	4247.41	3529.7	89.05
312	SLU 55	-205	-27	12975	4248.58	3532.04	83.47
312	SLU 56	-206	-76	12959	4248.25	3528.21	97.9
312	SLU 57	-208	-47	13061	4279.13	3555.56	90.24
312	SLU 58	-205	-76	12901	4228.84	3512.32	97.43
312	SLU 59	-206	-47	13002	4259.72	3539.66	89.77
312	SLU 60	-203	-78	13228	4334.62	3600.46	97.33
312	SLU 61	-204	-49	13330	4365.5	3627.81	89.67
312	SLU 62	-206	-79	13323	4366.34	3626.32	98.52
312	SLU 63	-207	-49	13425	4397.22	3653.67	90.86
312	SLU 64	-211	-73	12715	4169.35	3463.78	98.41
312	SLU 65	-213	-24	12884	4220.82	3509.35	85.65
312	SLU 66	-215	-74	12869	4220.49	3505.53	100.07
312	SLU 67	-216	-44	12970	4251.37	3532.87	92.41
312	SLU 68	-216	-25	12980	4252.54	3535.21	86.84
312	SLU 69	-218	-74	12964	4252.21	3531.39	101.26
312	SLU 70	-219	-45	13066	4283.09	3558.73	93.6
312	SLU 71	-216	-74	12905	4232.79	3515.49	100.79
312	SLU 72	-218	-45	13007	4263.67	3542.84	93.13
312	SLU 73	-222	-31	14093	4615.67	3835.7	90.97
312	SLU 74	-223	-80	14077	4615.34	3831.87	105.4
312	SLU 75	-225	-51	14179	4646.22	3859.22	97.74
312	SLU 76	-225	-31	14188	4647.39	3861.56	92.16
312	SLU 77	-226	-81	14172	4647.06	3857.73	106.59
312	SLU 78	-228	-51	14274	4677.94	3885.08	98.93
312	SLU 79	-225	-80	14114	4627.65	3841.84	106.12
312	SLU 80	-227	-51	14215	4658.53	3869.18	98.46
312	SLU 81	-223	-82	14441	4733.43	3929.98	106.02
312	SLU 82	-225	-53	14543	4764.31	3957.33	98.36
312	SLU 83	-226	-83	14536	4765.15	3955.84	107.21
312	SLU 84	-228	-54	14638	4796.03	3983.19	99.55
312	SLE RA 1	-157	-55	9514	3119.54	2592.02	73.79
312	SLE RA 2	-159	-23	9627	3153.86	2622.41	65.28
312	SLE RA 3	-160	-56	9617	3153.64	2619.85	74.9
312	SLE RA 4	-161	-36	9684	3174.22	2638.09	69.79

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
312	SLE RA 5	-161	-23	9691	3175	2639.65	66.08
312	SLE RA 6	-162	-56	9680	3174.78	2637.09	75.69
312	SLE RA 7	-163	-37	9748	3195.37	2655.33	70.59
312	SLE RA 8	-161	-56	9641	3161.84	2626.5	75.38
312	SLE RA 9	-163	-36	9709	3182.42	2644.73	70.27
312	SLE RA 10	-165	-27	10433	3417.09	2839.97	68.83
312	SLE RA 11	-166	-60	10422	3416.87	2837.42	78.45
312	SLE RA 12	-167	-40	10490	3437.46	2855.65	73.34
312	SLE RA 13	-167	-27	10496	3438.24	2857.21	69.63
312	SLE RA 14	-168	-60	10486	3438.02	2854.66	79.24
312	SLE RA 15	-169	-41	10554	3458.6	2872.89	74.14
312	SLE RA 16	-167	-60	10447	3425.07	2844.06	78.93
312	SLE RA 17	-168	-41	10514	3445.66	2862.29	73.82
312	SLE RA 18	-166	-61	10665	3495.6	2902.82	78.87
312	SLE RA 19	-167	-42	10733	3516.18	2921.05	73.76
312	SLE RA 20	-168	-62	10728	3516.74	2920.06	79.66
312	SLE RA 21	-169	-42	10796	3537.33	2938.29	74.55
312	SLE FR 1	-157	-55	9514	3119.54	2592.02	73.79
312	SLE FR 2	-158	-49	9536	3126.41	2598.1	72.09
312	SLE FR 3	-158	-55	9539	3128	2598.92	74.11
312	SLE FR 4	-160	-51	9882	3239.22	2691.34	73.61
312	SLE FR 5	-161	-57	9885	3240.82	2692.16	75.63
312	SLE FR 6	-162	-58	10089	3307.57	2747.42	76.33
312	SLE QP 1	-157	-55	9514	3119.54	2592.02	73.79
312	SLE QP 2	-160	-57	9859	3232.36	2685.26	75.32
312	SLD 1	751	283	10920	3544.72	2980.45	-330.54
312	SLD 2	931	251	10879	3532.21	2967.94	-381.77
312	SLD 3	823	-321	8654	2857.25	2370.27	-182.48
312	SLD 4	1002	-353	8613	2844.73	2357.76	-233.71
312	SLD 5	-27	967	13622	4370.99	3701.51	-261.78
312	SLD 6	91	945	13595	4362.74	3693.25	-295.58
312	SLD 7	211	-1046	6068	2079.4	1667.58	231.75
312	SLD 8	329	-1067	6041	2071.15	1659.32	197.95
312	SLD 9	-649	953	13677	4393.57	3711.2	-47.32
312	SLD 10	-531	932	13650	4385.32	3702.94	-81.12
312	SLD 11	-411	-1060	6124	2101.98	1677.27	446.21
312	SLD 12	-293	-1081	6097	2093.73	1669.02	412.41
312	SLD 13	-1322	239	11105	3619.99	3012.76	384.34
312	SLD 14	-1143	207	11064	3607.47	3000.25	333.11
312	SLD 15	-1251	-365	8839	2932.51	2402.58	532.4
312	SLD 16	-1071	-397	8798	2920	2390.07	481.17
312	SLV 1	1967	785	12529	4020.3	3426.59	-885.77
312	SLV 2	2389	710	12433	3990.88	3397.18	-1006.2
312	SLV 3	2142	-720	6851	2297.57	1897.64	-515.59
312	SLV 4	2564	-795	6754	2268.15	1868.22	-636.02
312	SLV 5	135	2493	19290	6087.03	5232.06	-751.98
312	SLV 6	419	2442	19225	6067.22	5212.26	-833.06
312	SLV 7	716	-2525	362	344.62	135.55	481.96
312	SLV 8	1000	-2576	297	324.81	115.75	400.88
312	SLV 9	-1320	2461	19421	6139.91	5254.77	-250.25
312	SLV 10	-1036	2411	19356	6120.1	5234.97	-331.33
312	SLV 11	-739	-2556	493	397.5	158.26	983.69
312	SLV 12	-455	-2607	428	377.69	138.46	902.61
312	SLV 13	-2884	681	12964	4196.57	3502.3	786.65
312	SLV 14	-2462	606	12868	4167.15	3472.88	666.22
312	SLV 15	-2709	-824	7285	2473.84	1973.35	1156.83
312	SLV 16	-2287	-899	7189	2444.42	1943.93	1036.4
312	CRTFP Ux+	0	0	0	0	0	0
312	CRTFP Ux-	0	0	0	0	0	0
312	CRTFP Uy+	0	0	0	-0.01	-0.01	0
312	CRTFP Uy-	0	0	0	0.01	0.01	0
313	SLU 1	28	-68	4473	1286.48	3.57	-8.62
313	SLU 2	30	-46	4556	1306.21	3.66	-9.3
313	SLU 3	28	-69	4547	1308.6	3.63	-8.62
313	SLU 4	29	-56	4597	1320.45	3.68	-9.02
313	SLU 5	29	-47	4602	1319.9	3.7	-9.23
313	SLU 6	27	-70	4593	1322.29	3.67	-8.55
313	SLU 7	29	-57	4643	1334.13	3.72	-8.95
313	SLU 8	27	-70	4564	1313.85	3.64	-8.48
313	SLU 9	28	-57	4614	1325.69	3.7	-8.88
313	SLU 10	30	-54	5145	1476.15	4.23	-9.46
313	SLU 11	28	-77	5136	1478.54	4.2	-8.78
313	SLU 12	29	-64	5186	1490.38	4.26	-9.19
313	SLU 13	30	-54	5191	1489.83	4.27	-9.39
313	SLU 14	28	-77	5182	1492.22	4.24	-8.71
313	SLU 15	29	-64	5232	1504.06	4.3	-9.11
313	SLU 16	28	-77	5154	1483.78	4.22	-8.64
313	SLU 17	29	-64	5204	1495.63	4.27	-9.05
313	SLU 18	28	-79	5314	1529.24	4.39	-8.86
313	SLU 19	30	-66	5364	1541.08	4.44	-9.26
313	SLU 20	28	-79	5360	1542.93	4.43	-8.78
313	SLU 21	29	-66	5410	1554.77	4.48	-9.19
313	SLU 22	30	-76	5062	1458.01	4.05	-9.5
313	SLU 23	32	-54	5145	1477.74	4.14	-10.17
313	SLU 24	30	-77	5137	1480.13	4.11	-9.49
313	SLU 25	32	-64	5187	1491.97	4.16	-9.9
313	SLU 26	32	-55	5191	1491.43	4.17	-10.1
313	SLU 27	30	-78	5183	1493.82	4.15	-9.42
313	SLU 28	31	-65	5233	1505.66	4.2	-9.83

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
313	SLU 29	30	-78	5154	1485.38	4.12	-9.35
313	SLU 30	31	-65	5204	1497.22	4.18	-9.76
313	SLU 31	33	-62	5735	1647.67	4.71	-10.34
313	SLU 32	31	-85	5726	1650.06	4.68	-9.66
313	SLU 33	32	-72	5776	1661.91	4.74	-10.06
313	SLU 34	33	-63	5781	1661.36	4.75	-10.26
313	SLU 35	31	-86	5772	1663.75	4.72	-9.58
313	SLU 36	32	-73	5822	1675.59	4.77	-9.99
313	SLU 37	30	-85	5743	1655.31	4.7	-9.52
313	SLU 38	32	-72	5793	1667.15	4.75	-9.92
313	SLU 39	31	-87	5904	1700.77	4.87	-9.73
313	SLU 40	32	-74	5954	1712.61	4.92	-10.14
313	SLU 41	31	-88	5950	1714.45	4.9	-9.66
313	SLU 42	32	-75	6000	1726.3	4.96	-10.06
313	SLU 43	35	-86	5612	1613.61	4.47	-10.91
313	SLU 44	37	-64	5695	1633.35	4.56	-11.59
313	SLU 45	35	-87	5687	1635.74	4.54	-10.91
313	SLU 46	36	-74	5737	1647.58	4.59	-11.31
313	SLU 47	37	-65	5741	1647.04	4.6	-11.51
313	SLU 48	35	-88	5733	1649.42	4.58	-10.83
313	SLU 49	36	-75	5783	1661.27	4.63	-11.24
313	SLU 50	34	-87	5704	1640.99	4.55	-10.77
313	SLU 51	36	-74	5754	1652.83	4.6	-11.17
313	SLU 52	38	-71	6285	1803.28	5.14	-11.75
313	SLU 53	35	-94	6276	1805.67	5.11	-11.07
313	SLU 54	37	-81	6326	1817.51	5.17	-11.47
313	SLU 55	37	-72	6331	1816.97	5.18	-11.68
313	SLU 56	35	-95	6322	1819.36	5.15	-11
313	SLU 57	36	-82	6372	1831.2	5.2	-11.4
313	SLU 58	35	-95	6293	1810.92	5.12	-10.93
313	SLU 59	36	-82	6343	1822.76	5.18	-11.34
313	SLU 60	36	-96	6454	1856.37	5.29	-11.14
313	SLU 61	37	-83	6504	1868.21	5.35	-11.55
313	SLU 62	35	-97	6500	1870.06	5.33	-11.07
313	SLU 63	37	-84	6550	1881.9	5.39	-11.48
313	SLU 64	38	-94	6202	1785.14	4.95	-11.79
313	SLU 65	40	-72	6285	1804.88	5.04	-12.46
313	SLU 66	38	-95	6276	1807.27	5.02	-11.78
313	SLU 67	39	-82	6326	1819.11	5.07	-12.18
313	SLU 68	40	-73	6331	1818.56	5.08	-12.39
313	SLU 69	37	-96	6322	1820.95	5.05	-11.71
313	SLU 70	39	-83	6372	1832.79	5.11	-12.11
313	SLU 71	37	-95	6294	1812.51	5.03	-11.64
313	SLU 72	38	-82	6344	1824.36	5.08	-12.05
313	SLU 73	40	-79	6874	1974.81	5.62	-12.62
313	SLU 74	38	-102	6865	1977.2	5.59	-11.94
313	SLU 75	39	-89	6915	1989.04	5.64	-12.35
313	SLU 76	40	-80	6920	1988.5	5.65	-12.55
313	SLU 77	38	-103	6911	1990.88	5.63	-11.87
313	SLU 78	39	-90	6961	2002.73	5.68	-12.28
313	SLU 79	38	-103	6883	1982.45	5.6	-11.8
313	SLU 80	39	-90	6933	1994.29	5.66	-12.21
313	SLU 81	38	-104	7043	2027.9	5.77	-12.02
313	SLU 82	40	-91	7093	2039.74	5.83	-12.42
313	SLU 83	38	-105	7089	2041.59	5.81	-11.95
313	SLU 84	39	-92	7139	2053.43	5.86	-12.35
313	SLE RA 1	28	-70	4641	1335.49	3.7	-8.87
313	SLE RA 2	30	-56	4697	1348.64	3.76	-9.32
313	SLE RA 3	28	-71	4691	1350.24	3.75	-8.87
313	SLE RA 4	29	-62	4724	1358.13	3.78	-9.14
313	SLE RA 5	30	-56	4727	1357.77	3.79	-9.28
313	SLE RA 6	28	-72	4721	1359.36	3.77	-8.82
313	SLE RA 7	29	-63	4755	1367.26	3.81	-9.09
313	SLE RA 8	28	-71	4702	1353.74	3.76	-8.78
313	SLE RA 9	29	-63	4736	1361.63	3.79	-9.05
313	SLE RA 10	30	-61	5089	1461.93	4.15	-9.43
313	SLE RA 11	29	-76	5083	1463.52	4.13	-8.98
313	SLE RA 12	30	-67	5117	1471.42	4.16	-9.25
313	SLE RA 13	30	-61	5120	1471.06	4.17	-9.38
313	SLE RA 14	29	-77	5114	1472.65	4.15	-8.93
313	SLE RA 15	29	-68	5147	1480.54	4.19	-9.2
313	SLE RA 16	28	-76	5095	1467.02	4.14	-8.89
313	SLE RA 17	29	-68	5128	1474.92	4.17	-9.16
313	SLE RA 18	29	-77	5202	1497.33	4.25	-9.03
313	SLE RA 19	30	-69	5235	1505.22	4.29	-9.3
313	SLE RA 20	29	-78	5233	1506.45	4.28	-8.98
313	SLE RA 21	30	-69	5266	1514.35	4.31	-9.25
313	SLE FR 1	28	-70	4641	1335.49	3.7	-8.87
313	SLE FR 2	29	-67	4652	1338.12	3.72	-8.96
313	SLE FR 3	28	-71	4653	1339.14	3.71	-8.85
313	SLE FR 4	29	-70	4820	1386.67	3.88	-9.01
313	SLE FR 5	28	-73	4822	1387.69	3.88	-8.9
313	SLE FR 6	29	-74	4922	1416.41	3.98	-8.95
313	SLE QP 1	28	-70	4641	1335.49	3.7	-8.87
313	SLE QP 2	29	-72	4809	1384.04	3.87	-8.92
313	SLD 1	497	82	5315	1506.09	5.19	-150.98
313	SLD 2	580	96	5342	1513.35	5.1	-176.06
313	SLD 3	457	-182	4200	1242.05	4.11	-138.47
313	SLD 4	540	-167	4228	1249.31	4.02	-163.55

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
313	SLD 5	214	371	6646	1819.81	5.91	-66.01
313	SLD 6	270	381	6665	1824.6	5.85	-82.56
313	SLD 7	81	-508	2931	939.68	2.33	-24.29
313	SLD 8	137	-498	2949	944.46	2.27	-40.84
313	SLD 9	-80	353	6669	1823.62	5.47	23
313	SLD 10	-24	363	6688	1828.4	5.41	6.45
313	SLD 11	-213	-526	2954	943.48	1.88	64.72
313	SLD 12	-157	-516	2972	948.26	1.83	48.17
313	SLD 13	-483	22	5391	1518.77	3.71	145.71
313	SLD 14	-400	37	5419	1526.02	3.62	120.63
313	SLD 15	-523	-241	4276	1254.73	2.64	158.22
313	SLD 16	-440	-227	4304	1261.98	2.55	133.14
313	SLV 1	1128	308	6084	1691.68	7.05	-342.41
313	SLV 2	1324	343	6150	1708.73	6.84	-401.36
313	SLV 3	1026	-349	3290	1029.71	4.35	-310.59
313	SLV 4	1223	-314	3356	1046.76	4.14	-369.54
313	SLV 5	475	1032	9417	2477.14	8.94	-146.22
313	SLV 6	608	1055	9461	2488.62	8.8	-185.91
313	SLV 7	137	-1159	104	270.57	-0.03	-40.16
313	SLV 8	270	-1135	148	282.05	-0.17	-79.85
313	SLV 9	-213	990	9471	2486.03	7.91	62.01
313	SLV 10	-80	1014	9515	2497.51	7.77	22.32
313	SLV 11	-551	-1200	157	279.46	-1.07	168.07
313	SLV 12	-418	-1177	201	290.94	-1.21	128.38
313	SLV 13	-1166	169	6263	1721.32	3.59	351.7
313	SLV 14	-969	204	6328	1738.37	3.38	292.75
313	SLV 15	-1267	-488	3469	1059.34	0.9	383.52
313	SLV 16	-1071	-453	3534	1076.39	0.69	324.57
313	CRTFP Ux+	0	0	0	0	0	0
313	CRTFP Ux-	0	0	0	0	0	0
313	CRTFP Uy+	0	0	0	0	0	0
313	CRTFP Uy-	0	0	0	0	0	0
314	SLU 1	25	-72	3809	1095.75	95.21	-5.78
314	SLU 2	27	-55	3878	1111.87	96.89	-6.79
314	SLU 3	25	-73	3872	1114.76	96.8	-5.75
314	SLU 4	26	-63	3914	1124.43	97.81	-6.36
314	SLU 5	27	-56	3917	1123.67	97.88	-6.71
314	SLU 6	25	-74	3912	1126.55	97.79	-5.67
314	SLU 7	26	-64	3953	1136.23	98.8	-6.28
314	SLU 8	25	-73	3887	1119.35	97.18	-5.62
314	SLU 9	26	-63	3929	1129.02	98.19	-6.22
314	SLU 10	27	-62	4363	1251.27	109.04	-6.69
314	SLU 11	25	-80	4357	1254.15	108.95	-5.66
314	SLU 12	26	-70	4399	1263.82	109.96	-6.26
314	SLU 13	27	-62	4402	1263.07	110.02	-6.61
314	SLU 14	25	-81	4397	1265.95	109.93	-5.58
314	SLU 15	26	-70	4438	1275.62	110.94	-6.18
314	SLU 16	25	-80	4372	1258.75	109.32	-5.53
314	SLU 17	26	-70	4414	1268.42	110.33	-6.13
314	SLU 18	25	-81	4502	1294.89	112.56	-5.65
314	SLU 19	26	-71	4543	1304.56	113.57	-6.25
314	SLU 20	25	-82	4541	1306.69	113.54	-5.57
314	SLU 21	26	-72	4583	1316.36	114.55	-6.17
314	SLU 22	27	-80	4319	1244.61	107.93	-6.34
314	SLU 23	29	-63	4388	1260.73	109.61	-7.34
314	SLU 24	27	-81	4382	1263.61	109.52	-6.31
314	SLU 25	29	-71	4424	1273.29	110.53	-6.91
314	SLU 26	29	-64	4427	1272.53	110.6	-7.26
314	SLU 27	27	-82	4422	1275.41	110.5	-6.23
314	SLU 28	28	-72	4463	1285.08	111.51	-6.83
314	SLU 29	27	-81	4397	1268.21	109.89	-6.18
314	SLU 30	28	-71	4439	1277.88	110.91	-6.78
314	SLU 31	30	-69	4873	1400.13	121.76	-7.25
314	SLU 32	28	-88	4868	1403.01	121.66	-6.22
314	SLU 33	29	-78	4909	1412.68	122.67	-6.82
314	SLU 34	29	-70	4912	1411.93	122.74	-7.17
314	SLU 35	28	-89	4907	1414.81	122.65	-6.14
314	SLU 36	29	-78	4948	1424.48	123.66	-6.74
314	SLU 37	27	-88	4883	1407.61	122.04	-6.08
314	SLU 38	28	-78	4924	1417.28	123.05	-6.69
314	SLU 39	28	-89	5012	1443.75	125.28	-6.2
314	SLU 40	29	-79	5053	1453.42	126.29	-6.81
314	SLU 41	28	-90	5051	1455.55	126.26	-6.12
314	SLU 42	29	-80	5093	1465.22	127.27	-6.73
314	SLU 43	32	-91	4776	1373.44	119.41	-7.32
314	SLU 44	33	-74	4845	1389.56	121.1	-8.33
314	SLU 45	32	-92	4840	1392.44	121	-7.3
314	SLU 46	33	-82	4881	1402.11	122.01	-7.9
314	SLU 47	33	-74	4885	1401.36	122.08	-8.25
314	SLU 48	31	-93	4879	1404.24	121.99	-7.22
314	SLU 49	32	-83	4921	1413.91	123	-7.82
314	SLU 50	31	-92	4855	1397.04	121.38	-7.16
314	SLU 51	32	-82	4896	1406.71	122.39	-7.77
314	SLU 52	34	-80	5331	1528.96	133.24	-8.24
314	SLU 53	32	-99	5325	1531.84	133.15	-7.2
314	SLU 54	33	-88	5367	1541.51	134.16	-7.81
314	SLU 55	34	-81	5370	1540.76	134.23	-8.16
314	SLU 56	32	-99	5364	1543.64	134.13	-7.12
314	SLU 57	33	-89	5406	1553.31	135.14	-7.73

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
314	SLU 58	31	-99	5340	1536.44	133.52	-7.07
314	SLU 59	33	-89	5382	1546.11	134.54	-7.68
314	SLU 60	32	-100	5469	1572.58	136.76	-7.19
314	SLU 61	33	-90	5511	1582.25	137.77	-7.79
314	SLU 62	32	-101	5509	1584.38	137.75	-7.11
314	SLU 63	33	-91	5550	1594.05	138.76	-7.72
314	SLU 64	34	-99	5286	1522.3	132.13	-7.88
314	SLU 65	36	-82	5356	1538.42	133.81	-8.88
314	SLU 66	34	-100	5350	1541.3	133.72	-7.85
314	SLU 67	35	-90	5392	1550.97	134.73	-8.45
314	SLU 68	36	-82	5395	1550.22	134.8	-8.81
314	SLU 69	34	-101	5389	1553.1	134.71	-7.77
314	SLU 70	35	-90	5431	1562.77	135.72	-8.38
314	SLU 71	34	-100	5365	1545.9	134.1	-7.72
314	SLU 72	35	-90	5407	1555.57	135.11	-8.32
314	SLU 73	36	-88	5841	1677.82	145.96	-8.79
314	SLU 74	34	-106	5835	1680.7	145.87	-7.76
314	SLU 75	35	-96	5877	1690.37	146.88	-8.36
314	SLU 76	36	-89	5880	1689.61	146.94	-8.71
314	SLU 77	34	-107	5875	1692.5	146.85	-7.68
314	SLU 78	35	-97	5916	1702.17	147.86	-8.28
314	SLU 79	34	-107	5850	1685.29	146.24	-7.63
314	SLU 80	35	-97	5892	1694.97	147.25	-8.23
314	SLU 81	34	-108	5980	1721.44	149.48	-7.75
314	SLU 82	36	-98	6021	1731.11	150.49	-8.35
314	SLU 83	34	-109	6019	1733.24	150.46	-7.67
314	SLU 84	35	-99	6060	1742.91	151.47	-8.27
314	SLE RA 1	26	-74	3954	1138.28	98.84	-5.94
314	SLE RA 2	27	-63	4000	1149.03	99.97	-6.61
314	SLE RA 3	26	-75	3997	1150.95	99.9	-5.92
314	SLE RA 4	26	-68	4024	1157.4	100.58	-6.32
314	SLE RA 5	27	-63	4027	1156.9	100.62	-6.56
314	SLE RA 6	26	-75	4023	1158.82	100.56	-5.87
314	SLE RA 7	26	-69	4051	1165.27	101.23	-6.27
314	SLE RA 8	25	-75	4007	1154.02	100.15	-5.83
314	SLE RA 9	26	-68	4034	1160.46	100.83	-6.23
314	SLE RA 10	27	-67	4324	1241.96	108.06	-6.55
314	SLE RA 11	26	-79	4320	1243.88	108	-5.86
314	SLE RA 12	27	-73	4348	1250.33	108.67	-6.26
314	SLE RA 13	27	-68	4350	1249.83	108.72	-6.49
314	SLE RA 14	26	-80	4347	1251.75	108.66	-5.81
314	SLE RA 15	26	-73	4374	1258.2	109.33	-6.21
314	SLE RA 16	26	-80	4330	1246.95	108.25	-5.77
314	SLE RA 17	26	-73	4358	1253.39	108.93	-6.17
314	SLE RA 18	26	-80	4416	1271.04	110.41	-5.85
314	SLE RA 19	27	-74	4444	1277.49	111.08	-6.25
314	SLE RA 20	26	-81	4443	1278.91	111.07	-5.8
314	SLE RA 21	27	-74	4470	1285.36	111.74	-6.2
314	SLE FR 1	26	-74	3954	1138.28	98.84	-5.94
314	SLE FR 2	26	-72	3964	1140.43	99.07	-6.07
314	SLE FR 3	26	-74	3965	1141.43	99.1	-5.92
314	SLE FR 4	26	-74	4102	1180.26	102.54	-6.05
314	SLE FR 5	26	-76	4103	1181.26	102.57	-5.89
314	SLE FR 6	26	-77	4185	1204.66	104.63	-5.89
314	SLE QP 1	26	-74	3954	1138.28	98.84	-5.94
314	SLE QP 2	26	-76	4093	1178.11	102.31	-5.91
314	SLD 1	423	58	4330	1229.39	108.77	-130.94
314	SLD 2	494	94	4374	1241.65	109.8	-153.42
314	SLD 3	388	-140	3376	1004.23	85.59	-115.25
314	SLD 4	459	-105	3420	1016.48	86.61	-137.74
314	SLD 5	185	259	5603	1532.79	139.23	-63.16
314	SLD 6	232	282	5632	1540.88	139.9	-78
314	SLD 7	69	-403	2423	782.24	61.95	-10.88
314	SLD 8	115	-379	2452	790.33	62.63	-25.72
314	SLD 9	-64	227	5734	1565.89	142	13.89
314	SLD 10	-17	251	5763	1573.98	142.67	-0.94
314	SLD 11	-180	-434	2554	815.35	64.72	66.17
314	SLD 12	-134	-411	2583	823.43	65.4	51.34
314	SLD 13	-407	-47	4766	1339.74	118.01	125.92
314	SLD 14	-336	-12	4810	1352	119.04	103.43
314	SLD 15	-442	-246	3812	1114.58	94.83	141.6
314	SLD 16	-371	-210	3856	1126.83	95.85	119.12
314	SLV 1	958	253	4726	1316.91	119.36	-299.79
314	SLV 2	1125	337	4829	1345.72	121.77	-352.64
314	SLV 3	869	-242	2335	752.23	61.23	-260.1
314	SLV 4	1036	-158	2438	781.04	63.64	-312.95
314	SLV 5	409	758	7891	2070.81	195.14	-144.41
314	SLV 6	521	814	7960	2090.21	196.76	-179.99
314	SLV 7	113	-892	-81	188.53	1.37	-12.11
314	SLV 8	225	-836	-12	207.93	3	-47.69
314	SLV 9	-174	684	8198	2148.3	201.63	35.87
314	SLV 10	-61	741	8267	2167.69	203.25	0.28
314	SLV 11	-470	-966	226	266.01	7.86	168.17
314	SLV 12	-358	-910	295	285.41	9.49	132.58
314	SLV 13	-984	6	5748	1575.19	140.99	301.13
314	SLV 14	-817	90	5851	1604	143.4	248.27
314	SLV 15	-1073	-489	3357	1010.5	82.86	340.82
314	SLV 16	-906	-405	3460	1039.31	85.27	287.96
314	CRTFP Ux+	0	0	0	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
314	CRTFP Ux-	0	0	0	0	0	0
314	CRTFP Uy+	0	0	0	0	0	0
314	CRTFP Uy-	0	0	0	0	0	0
315	SLU 1	17	-48	2629	718.39	60.16	-3.76
315	SLU 2	18	-36	2678	729.07	61.24	-4.39
315	SLU 3	17	-49	2673	730.88	61.18	-3.74
315	SLU 4	18	-42	2702	737.3	61.82	-4.12
315	SLU 5	18	-37	2705	736.84	61.87	-4.34
315	SLU 6	17	-49	2700	738.65	61.8	-3.69
315	SLU 7	18	-42	2729	745.06	62.45	-4.07
315	SLU 8	17	-49	2684	733.91	61.42	-3.65
315	SLU 9	18	-42	2713	740.32	62.06	-4.03
315	SLU 10	19	-41	3012	820.33	68.9	-4.32
315	SLU 11	17	-53	3008	822.14	68.83	-3.68
315	SLU 12	18	-46	3037	828.55	69.48	-4.05
315	SLU 13	18	-41	3039	828.09	69.52	-4.27
315	SLU 14	17	-54	3035	829.9	69.46	-3.62
315	SLU 15	18	-47	3064	836.31	70.1	-4
315	SLU 16	17	-53	3018	825.17	69.07	-3.59
315	SLU 17	18	-46	3047	831.58	69.72	-3.97
315	SLU 18	17	-54	3107	848.75	71.11	-3.66
315	SLU 19	18	-47	3136	855.16	71.75	-4.04
315	SLU 20	17	-55	3134	856.51	71.73	-3.61
315	SLU 21	18	-48	3163	862.93	72.38	-3.99
315	SLU 22	19	-53	2983	816.34	68.25	-4.12
315	SLU 23	20	-42	3031	827.03	69.33	-4.75
315	SLU 24	19	-54	3027	828.84	69.26	-4.1
315	SLU 25	20	-47	3056	835.25	69.91	-4.48
315	SLU 26	20	-42	3058	834.79	69.95	-4.7
315	SLU 27	19	-55	3054	836.6	69.89	-4.05
315	SLU 28	19	-48	3083	843.01	70.53	-4.43
315	SLU 29	19	-54	3037	831.86	69.5	-4.02
315	SLU 30	19	-47	3066	838.27	70.15	-4.4
315	SLU 31	20	-46	3365	918.28	76.98	-4.69
315	SLU 32	19	-58	3361	920.09	76.92	-4.04
315	SLU 33	20	-51	3390	926.5	77.57	-4.42
315	SLU 34	20	-47	3393	926.04	77.61	-4.64
315	SLU 35	19	-59	3388	927.85	77.54	-3.99
315	SLU 36	20	-52	3417	934.27	78.19	-4.37
315	SLU 37	19	-59	3372	923.12	77.16	-3.95
315	SLU 38	19	-52	3401	929.53	77.8	-4.33
315	SLU 39	19	-59	3460	946.7	79.19	-4.03
315	SLU 40	20	-52	3490	953.12	79.84	-4.41
315	SLU 41	19	-60	3488	954.46	79.82	-3.98
315	SLU 42	20	-53	3517	960.88	80.46	-4.36
315	SLU 43	22	-60	3297	900.32	75.44	-4.76
315	SLU 44	23	-49	3345	911.01	76.52	-5.39
315	SLU 45	22	-61	3341	912.82	76.45	-4.74
315	SLU 46	22	-54	3370	919.23	77.1	-5.12
315	SLU 47	23	-50	3372	918.77	77.14	-5.34
315	SLU 48	21	-62	3368	920.58	77.08	-4.69
315	SLU 49	22	-55	3397	926.99	77.72	-5.07
315	SLU 50	21	-62	3351	915.84	76.69	-4.66
315	SLU 51	22	-55	3380	922.26	77.34	-5.04
315	SLU 52	23	-53	3680	1002.26	84.18	-5.33
315	SLU 53	22	-66	3675	1004.07	84.11	-4.68
315	SLU 54	23	-59	3704	1010.48	84.76	-5.06
315	SLU 55	23	-54	3707	1010.02	84.8	-5.28
315	SLU 56	22	-66	3703	1011.83	84.74	-4.63
315	SLU 57	22	-59	3732	1018.25	85.38	-5.01
315	SLU 58	22	-66	3686	1007.1	84.35	-4.59
315	SLU 59	22	-59	3715	1013.51	85	-4.97
315	SLU 60	22	-67	3775	1030.68	86.38	-4.67
315	SLU 61	23	-60	3804	1037.1	87.03	-5.05
315	SLU 62	22	-67	3802	1038.45	87.01	-4.61
315	SLU 63	22	-60	3831	1044.86	87.65	-4.99
315	SLU 64	23	-66	3650	998.27	83.53	-5.12
315	SLU 65	25	-54	3698	1008.96	84.6	-5.75
315	SLU 66	23	-67	3694	1010.77	84.54	-5.11
315	SLU 67	24	-60	3723	1017.18	85.18	-5.49
315	SLU 68	24	-55	3726	1016.72	85.23	-5.7
315	SLU 69	23	-67	3721	1018.53	85.16	-5.06
315	SLU 70	24	-60	3750	1024.94	85.81	-5.44
315	SLU 71	23	-67	3705	1013.79	84.78	-5.02
315	SLU 72	24	-60	3734	1020.21	85.42	-5.4
315	SLU 73	25	-59	4033	1100.21	92.26	-5.69
315	SLU 74	24	-71	4029	1102.02	92.2	-5.04
315	SLU 75	24	-64	4058	1108.44	92.84	-5.42
315	SLU 76	25	-59	4060	1107.98	92.89	-5.64
315	SLU 77	23	-71	4056	1109.79	92.82	-4.99
315	SLU 78	24	-65	4085	1116.2	93.47	-5.37
315	SLU 79	23	-71	4039	1105.05	92.44	-4.96
315	SLU 80	24	-64	4068	1111.46	93.08	-5.34
315	SLU 81	24	-72	4128	1128.64	94.47	-5.03
315	SLU 82	24	-65	4157	1135.05	95.11	-5.41
315	SLU 83	23	-72	4155	1136.4	95.09	-4.98
315	SLU 84	24	-66	4184	1142.81	95.74	-5.36
315	SLE RA 1	18	-49	2730	746.37	62.47	-3.86
315	SLE RA 2	18	-42	2762	753.5	63.19	-4.28

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
315	SLE RA 3	18	-50	2760	754.7	63.15	-3.85
315	SLE RA 4	18	-45	2779	758.98	63.58	-4.1
315	SLE RA 5	18	-42	2781	758.67	63.61	-4.25
315	SLE RA 6	17	-50	2778	759.88	63.57	-3.82
315	SLE RA 7	18	-46	2797	764.15	64	-4.07
315	SLE RA 8	17	-50	2766	756.72	63.31	-3.79
315	SLE RA 9	18	-46	2786	761	63.74	-4.05
315	SLE RA 10	19	-45	2985	814.33	68.3	-4.24
315	SLE RA 11	18	-53	2983	815.54	68.25	-3.81
315	SLE RA 12	18	-48	3002	819.82	68.68	-4.06
315	SLE RA 13	18	-45	3004	819.51	68.71	-4.21
315	SLE RA 14	18	-53	3001	820.72	68.67	-3.77
315	SLE RA 15	18	-49	3020	824.99	69.1	-4.03
315	SLE RA 16	18	-53	2990	817.56	68.41	-3.75
315	SLE RA 17	18	-48	3009	821.83	68.84	-4
315	SLE RA 18	18	-54	3049	833.28	69.77	-3.8
315	SLE RA 19	18	-49	3068	837.56	70.2	-4.05
315	SLE RA 20	18	-54	3067	838.46	70.19	-3.76
315	SLE RA 21	18	-49	3086	842.73	70.62	-4.02
315	SLE FR 1	18	-49	2730	746.37	62.47	-3.86
315	SLE FR 2	18	-48	2737	747.8	62.62	-3.94
315	SLE FR 3	18	-50	2737	748.44	62.64	-3.85
315	SLE FR 4	18	-49	2832	773.87	64.81	-3.93
315	SLE FR 5	18	-51	2833	774.52	64.83	-3.83
315	SLE FR 6	18	-51	2889	789.83	66.12	-3.83
315	SLE QP 1	18	-49	2730	746.37	62.47	-3.86
315	SLE QP 2	18	-51	2826	772.45	64.66	-3.84
315	SLD 1	286	39	2974	801.46	68.12	-84.39
315	SLD 2	334	65	3006	810.02	68.83	-98.93
315	SLD 3	262	-94	2305	651.56	53.24	-74.45
315	SLD 4	311	-69	2337	660.12	53.95	-88.99
315	SLD 5	126	174	3879	1006.96	88.15	-40.46
315	SLD 6	157	191	3900	1012.61	88.61	-50.06
315	SLD 7	46	-270	1650	507.29	38.54	-7.33
315	SLD 8	78	-253	1671	512.94	39	-16.93
315	SLD 9	-43	152	3981	1031.96	90.32	9.24
315	SLD 10	-11	169	4002	1037.6	90.79	-0.35
315	SLD 11	-122	-292	1752	532.28	40.71	42.38
315	SLD 12	-90	-275	1773	537.93	41.18	32.78
315	SLD 13	-275	-33	3314	884.78	75.38	81.31
315	SLD 14	-227	-7	3346	893.33	76.09	66.76
315	SLD 15	-299	-166	2646	734.87	60.49	91.25
315	SLD 16	-251	-140	2678	743.43	61.2	76.7
315	SLV 1	648	169	3228	852.85	74	-193.15
315	SLV 2	762	229	3303	872.97	75.67	-227.34
315	SLV 3	588	-163	1551	476.91	36.68	-167.99
315	SLV 4	701	-103	1626	497.03	38.35	-202.18
315	SLV 5	278	508	5475	1362.99	123.75	-92.41
315	SLV 6	354	548	5526	1376.53	124.88	-115.43
315	SLV 7	76	-599	-113	109.86	-0.64	-8.54
315	SLV 8	152	-559	-63	123.4	0.48	-31.56
315	SLV 9	-117	458	5714	1421.49	128.85	23.88
315	SLV 10	-40	498	5765	1435.03	129.97	0.86
315	SLV 11	-319	-650	126	168.36	4.45	107.75
315	SLV 12	-242	-609	176	181.9	5.57	84.73
315	SLV 13	-666	1	4025	1047.86	90.98	194.5
315	SLV 14	-553	62	4100	1067.98	92.65	160.3
315	SLV 15	-726	-331	2349	671.92	53.66	219.66
315	SLV 16	-613	-270	2424	692.04	55.33	185.46
315	CRTFP Ux+	0	0	0	0	0	0
315	CRTFP Ux-	0	0	0	0	0	0
315	CRTFP Uy+	0	0	0	0	0	0
315	CRTFP Uy-	0	0	0	0	0	0
316	SLU 1	30	-81	4770	1493.99	-115.53	-11.59
316	SLU 2	33	-60	4857	1516.68	-117.68	-11.87
316	SLU 3	30	-82	4850	1520.08	-117.49	-11.63
316	SLU 4	32	-70	4903	1533.69	-118.78	-11.8
316	SLU 5	32	-61	4907	1532.88	-118.89	-11.81
316	SLU 6	30	-83	4900	1536.28	-118.7	-11.57
316	SLU 7	31	-71	4952	1549.89	-119.99	-11.74
316	SLU 8	30	-82	4869	1526.4	-117.96	-11.47
316	SLU 9	31	-70	4922	1540.01	-119.25	-11.64
316	SLU 10	33	-67	5463	1706.15	-132.33	-12.05
316	SLU 11	31	-89	5456	1709.54	-132.14	-11.82
316	SLU 12	32	-77	5509	1723.15	-133.43	-11.98
316	SLU 13	33	-68	5513	1722.35	-133.54	-12
316	SLU 14	30	-90	5506	1725.75	-133.36	-11.76
316	SLU 15	32	-78	5559	1739.36	-134.65	-11.92
316	SLU 16	30	-89	5476	1715.87	-132.61	-11.66
316	SLU 17	31	-77	5528	1729.48	-133.9	-11.83
316	SLU 18	31	-91	5636	1764.66	-136.46	-11.86
316	SLU 19	32	-78	5688	1778.27	-137.75	-12.02
316	SLU 20	30	-92	5686	1780.86	-137.67	-11.8
316	SLU 21	32	-79	5738	1794.47	-138.96	-11.96
316	SLU 22	33	-89	5414	1698.4	-131.24	-12.75
316	SLU 23	36	-69	5501	1721.08	-133.39	-13.03
316	SLU 24	33	-91	5494	1724.48	-133.2	-12.79
316	SLU 25	35	-78	5547	1738.09	-134.49	-12.96
316	SLU 26	35	-70	5551	1737.29	-134.6	-12.97

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
316	SLU 27	33	-92	5544	1740.68	-134.41	-12.74
316	SLU 28	34	-79	5596	1754.3	-135.7	-12.9
316	SLU 29	33	-91	5513	1730.8	-133.67	-12.64
316	SLU 30	34	-79	5566	1744.41	-134.96	-12.8
316	SLU 31	36	-76	6107	1910.55	-148.04	-13.22
316	SLU 32	34	-98	6101	1913.95	-147.85	-12.98
316	SLU 33	35	-85	6153	1927.56	-149.14	-13.15
316	SLU 34	36	-77	6157	1926.75	-149.25	-13.16
316	SLU 35	33	-99	6150	1930.15	-149.07	-12.92
316	SLU 36	35	-86	6203	1943.76	-150.36	-13.09
316	SLU 37	33	-98	6120	1920.27	-148.32	-12.82
316	SLU 38	34	-86	6172	1933.88	-149.61	-12.99
316	SLU 39	34	-99	6280	1969.06	-152.17	-13.02
316	SLU 40	35	-87	6332	1982.68	-153.46	-13.19
316	SLU 41	33	-100	6330	1985.27	-153.38	-12.96
316	SLU 42	35	-88	6382	1998.88	-154.67	-13.13
316	SLU 43	38	-102	5980	1872.11	-144.8	-14.67
316	SLU 44	41	-81	6067	1894.8	-146.95	-14.94
316	SLU 45	38	-103	6060	1898.19	-146.76	-14.71
316	SLU 46	40	-91	6113	1911.8	-148.05	-14.87
316	SLU 47	40	-82	6117	1911	-148.16	-14.89
316	SLU 48	38	-104	6110	1914.4	-147.98	-14.65
316	SLU 49	39	-92	6162	1928.01	-149.27	-14.82
316	SLU 50	38	-104	6079	1904.52	-147.23	-14.55
316	SLU 51	39	-91	6132	1918.13	-148.52	-14.72
316	SLU 52	41	-88	6673	2084.26	-161.6	-15.13
316	SLU 53	39	-110	6667	2087.66	-161.41	-14.89
316	SLU 54	40	-98	6719	2101.27	-162.7	-15.06
316	SLU 55	41	-89	6723	2100.47	-162.81	-15.07
316	SLU 56	38	-111	6716	2103.86	-162.63	-14.84
316	SLU 57	40	-99	6769	2117.47	-163.92	-15
316	SLU 58	38	-111	6686	2093.98	-161.88	-14.74
316	SLU 59	39	-98	6738	2107.59	-163.17	-14.9
316	SLU 60	39	-112	6846	2142.78	-165.73	-14.93
316	SLU 61	40	-100	6898	2156.39	-167.02	-15.1
316	SLU 62	38	-113	6896	2158.98	-166.94	-14.88
316	SLU 63	40	-101	6948	2172.59	-168.23	-15.04
316	SLU 64	41	-110	6624	2076.51	-160.51	-15.83
316	SLU 65	44	-90	6711	2099.2	-162.66	-16.11
316	SLU 66	41	-112	6704	2102.6	-162.47	-15.87
316	SLU 67	43	-100	6757	2116.21	-163.76	-16.04
316	SLU 68	43	-91	6761	2115.4	-163.87	-16.05
316	SLU 69	41	-113	6754	2118.8	-163.69	-15.81
316	SLU 70	43	-101	6807	2132.41	-164.98	-15.98
316	SLU 71	41	-112	6723	2108.92	-162.94	-15.72
316	SLU 72	42	-100	6776	2122.53	-164.23	-15.88
316	SLU 73	44	-97	7317	2288.67	-177.31	-16.29
316	SLU 74	42	-119	7311	2292.06	-177.12	-16.06
316	SLU 75	43	-107	7363	2305.68	-178.41	-16.22
316	SLU 76	44	-98	7367	2304.87	-178.52	-16.24
316	SLU 77	41	-120	7360	2308.27	-178.34	-16
316	SLU 78	43	-108	7413	2321.88	-179.63	-16.17
316	SLU 79	41	-119	7330	2298.39	-177.59	-15.9
316	SLU 80	42	-107	7382	2312	-178.88	-16.07
316	SLU 81	42	-120	7490	2347.18	-181.44	-16.1
316	SLU 82	43	-108	7542	2360.79	-182.73	-16.26
316	SLU 83	41	-121	7540	2363.38	-182.65	-16.04
316	SLU 84	43	-109	7592	2377	-183.94	-16.21
316	SLE RA 1	31	-83	4954	1552.4	-120.01	-11.92
316	SLE RA 2	33	-69	5012	1567.52	-121.45	-12.11
316	SLE RA 3	31	-84	5007	1569.78	-121.32	-11.95
316	SLE RA 4	32	-76	5042	1578.86	-122.18	-12.06
316	SLE RA 5	33	-70	5045	1578.32	-122.26	-12.07
316	SLE RA 6	31	-85	5041	1580.59	-122.13	-11.91
316	SLE RA 7	32	-76	5076	1589.66	-122.99	-12.02
316	SLE RA 8	31	-84	5020	1574	-121.63	-11.85
316	SLE RA 9	32	-76	5055	1583.07	-122.49	-11.96
316	SLE RA 10	33	-74	5416	1693.83	-131.22	-12.23
316	SLE RA 11	31	-89	5412	1696.09	-131.09	-12.07
316	SLE RA 12	32	-81	5446	1705.17	-131.95	-12.18
316	SLE RA 13	33	-75	5449	1704.63	-132.03	-12.19
316	SLE RA 14	31	-89	5445	1706.9	-131.9	-12.04
316	SLE RA 15	32	-81	5480	1715.97	-132.76	-12.15
316	SLE RA 16	31	-89	5424	1700.31	-131.4	-11.97
316	SLE RA 17	32	-81	5459	1709.38	-132.26	-12.08
316	SLE RA 18	31	-90	5531	1732.84	-133.97	-12.1
316	SLE RA 19	32	-82	5566	1741.91	-134.83	-12.21
316	SLE RA 20	31	-90	5564	1743.64	-134.78	-12.06
316	SLE RA 21	32	-82	5599	1752.72	-135.64	-12.17
316	SLE FR 1	31	-83	4954	1552.4	-120.01	-11.92
316	SLE FR 2	31	-80	4965	1555.42	-120.3	-11.96
316	SLE FR 3	31	-83	4967	1556.72	-120.34	-11.91
316	SLE FR 4	32	-82	5139	1609.55	-124.49	-12.01
316	SLE FR 5	31	-85	5140	1610.85	-124.52	-11.96
316	SLE FR 6	31	-86	5242	1642.62	-126.99	-12.01
316	SLE QP 1	31	-83	4954	1552.4	-120.01	-11.92
316	SLE QP 2	31	-85	5127	1606.53	-124.2	-11.98
316	SLD 1	513	71	5354	1655.61	-128.08	-169.66
316	SLD 2	599	119	5416	1674.81	-129.76	-197.01

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
316	SLD 3	470	-167	4142	1336.19	-98.02	-160.21
316	SLD 4	556	-118	4204	1355.4	-99.7	-187.56
316	SLD 5	226	314	7023	2102.24	-170.66	-68.69
316	SLD 6	282	346	7063	2114.91	-171.76	-86.74
316	SLD 7	82	-479	2982	1037.53	-70.45	-37.2
316	SLD 8	139	-447	3023	1050.2	-71.56	-55.24
316	SLD 9	-76	277	7231	2162.86	-176.85	31.28
316	SLD 10	-20	309	7272	2175.53	-177.95	13.24
316	SLD 11	-220	-516	3191	1098.15	-76.64	62.78
316	SLD 12	-163	-484	3231	1110.82	-77.74	44.74
316	SLD 13	-493	-52	6050	1857.66	-148.71	163.6
316	SLD 14	-407	-3	6112	1876.86	-150.38	136.26
316	SLD 15	-536	-289	4838	1538.24	-118.64	173.05
316	SLD 16	-451	-241	4900	1557.45	-120.32	145.71
316	SLV 1	1162	298	5760	1748.03	-135.79	-381.72
316	SLV 2	1364	412	5905	1793.17	-139.72	-446.01
316	SLV 3	1053	-295	2720	946.97	-60.4	-357.61
316	SLV 4	1254	-181	2865	992.12	-64.34	-421.9
316	SLV 5	499	908	9900	2855.49	-241.27	-147.47
316	SLV 6	635	985	9998	2885.88	-243.92	-190.76
316	SLV 7	134	-1069	-232	185.3	10	-67.1
316	SLV 8	270	-992	-135	215.69	7.35	-110.38
316	SLV 9	-207	822	10389	2997.36	-255.75	86.43
316	SLV 10	-71	899	10486	3027.76	-258.4	43.15
316	SLV 11	-573	-1155	256	327.17	-4.48	166.8
316	SLV 12	-437	-1078	354	357.57	-7.13	123.52
316	SLV 13	-1192	11	7389	2220.94	-184.06	397.94
316	SLV 14	-990	125	7534	2266.09	-188	333.66
316	SLV 15	-1302	-582	4349	1419.88	-108.68	422.06
316	SLV 16	-1100	-468	4494	1465.03	-112.62	357.77
316	CRTFP Ux+	0	0	0	0	0	0
316	CRTFP Ux-	0	0	0	0	0	0
316	CRTFP Uy+	0	0	0	0	0	0
316	CRTFP Uy-	0	0	0	0	0	0
317	SLU 1	21	-49	3326	1087.46	-93.79	-8.51
317	SLU 2	23	-35	3388	1104.59	-95.54	-8.67
317	SLU 3	21	-50	3383	1106.5	-95.38	-8.55
317	SLU 4	22	-41	3420	1116.78	-96.43	-8.64
317	SLU 5	22	-35	3423	1116.42	-96.53	-8.63
317	SLU 6	21	-50	3418	1118.34	-96.37	-8.51
317	SLU 7	22	-42	3454	1128.62	-97.42	-8.61
317	SLU 8	21	-50	3396	1111.13	-95.76	-8.44
317	SLU 9	22	-41	3433	1121.41	-96.81	-8.53
317	SLU 10	23	-39	3810	1242.01	-107.43	-8.8
317	SLU 11	21	-54	3805	1243.93	-107.27	-8.67
317	SLU 12	22	-45	3842	1254.2	-108.32	-8.77
317	SLU 13	22	-39	3845	1253.85	-108.41	-8.76
317	SLU 14	21	-54	3840	1255.76	-108.25	-8.63
317	SLU 15	22	-46	3877	1266.04	-109.31	-8.73
317	SLU 16	21	-54	3818	1248.56	-107.65	-8.56
317	SLU 17	22	-45	3855	1258.83	-108.7	-8.66
317	SLU 18	21	-55	3929	1283.78	-110.77	-8.69
317	SLU 19	22	-46	3966	1294.06	-111.82	-8.79
317	SLU 20	21	-55	3964	1295.62	-111.75	-8.65
317	SLU 21	22	-47	4001	1305.89	-112.81	-8.75
317	SLU 22	23	-54	3777	1236.55	-106.53	-9.37
317	SLU 23	25	-40	3839	1253.68	-108.28	-9.53
317	SLU 24	23	-55	3834	1255.59	-108.12	-9.4
317	SLU 25	24	-46	3871	1265.87	-109.18	-9.5
317	SLU 26	24	-40	3874	1265.52	-109.27	-9.49
317	SLU 27	23	-55	3869	1267.43	-109.11	-9.36
317	SLU 28	24	-47	3905	1277.71	-110.16	-9.46
317	SLU 29	23	-55	3847	1260.22	-108.5	-9.29
317	SLU 30	24	-47	3884	1270.5	-109.55	-9.38
317	SLU 31	25	-44	4261	1391.1	-120.17	-9.65
317	SLU 32	23	-59	4256	1393.02	-120.01	-9.52
317	SLU 33	24	-50	4293	1403.3	-121.06	-9.62
317	SLU 34	25	-44	4296	1402.94	-121.16	-9.61
317	SLU 35	23	-59	4291	1404.85	-121	-9.48
317	SLU 36	24	-51	4328	1415.13	-122.05	-9.58
317	SLU 37	23	-59	4269	1397.65	-120.39	-9.41
317	SLU 38	24	-51	4306	1407.93	-121.44	-9.51
317	SLU 39	23	-60	4380	1432.87	-123.51	-9.54
317	SLU 40	24	-51	4417	1443.15	-124.57	-9.64
317	SLU 41	23	-60	4415	1444.71	-124.5	-9.5
317	SLU 42	24	-52	4452	1454.99	-125.55	-9.6
317	SLU 43	27	-62	4170	1362.58	-117.55	-10.78
317	SLU 44	28	-48	4231	1379.71	-119.31	-10.94
317	SLU 45	27	-63	4226	1381.62	-119.15	-10.81
317	SLU 46	28	-54	4263	1391.9	-120.2	-10.91
317	SLU 47	28	-48	4266	1391.55	-120.29	-10.9
317	SLU 48	26	-63	4261	1393.46	-120.13	-10.77
317	SLU 49	27	-55	4298	1403.74	-121.18	-10.87
317	SLU 50	26	-63	4239	1386.25	-119.52	-10.7
317	SLU 51	27	-54	4276	1396.53	-120.58	-10.79
317	SLU 52	28	-52	4653	1517.13	-131.19	-11.06
317	SLU 53	27	-67	4648	1519.05	-131.03	-10.93
317	SLU 54	28	-58	4685	1529.33	-132.09	-11.03
317	SLU 55	28	-52	4688	1528.97	-132.18	-11.02

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
317	SLU 56	26	-67	4683	1530.88	-132.02	-10.89
317	SLU 57	27	-59	4720	1541.16	-133.07	-10.99
317	SLU 58	26	-67	4661	1523.68	-131.41	-10.82
317	SLU 59	27	-58	4698	1533.96	-132.46	-10.92
317	SLU 60	27	-67	4773	1558.9	-134.53	-10.95
317	SLU 61	28	-59	4809	1569.18	-135.59	-11.05
317	SLU 62	26	-68	4807	1570.74	-135.52	-10.91
317	SLU 63	27	-60	4844	1581.02	-136.57	-11.01
317	SLU 64	29	-67	4621	1511.67	-130.3	-11.63
317	SLU 65	30	-53	4682	1528.8	-132.05	-11.79
317	SLU 66	29	-68	4677	1530.71	-131.89	-11.66
317	SLU 67	30	-59	4714	1540.99	-132.94	-11.76
317	SLU 68	30	-53	4717	1540.64	-133.04	-11.75
317	SLU 69	28	-68	4712	1542.55	-132.88	-11.62
317	SLU 70	29	-60	4749	1552.83	-133.93	-11.72
317	SLU 71	28	-68	4690	1535.34	-132.27	-11.55
317	SLU 72	29	-59	4727	1545.62	-133.32	-11.65
317	SLU 73	30	-57	5104	1666.23	-143.94	-11.91
317	SLU 74	29	-72	5099	1668.14	-143.78	-11.79
317	SLU 75	30	-63	5136	1678.42	-144.83	-11.88
317	SLU 76	30	-57	5139	1678.06	-144.92	-11.87
317	SLU 77	29	-72	5134	1679.97	-144.76	-11.75
317	SLU 78	30	-64	5171	1690.25	-145.82	-11.84
317	SLU 79	28	-72	5112	1672.77	-144.16	-11.67
317	SLU 80	29	-63	5149	1683.05	-145.21	-11.77
317	SLU 81	29	-73	5224	1707.99	-147.28	-11.8
317	SLU 82	30	-64	5260	1718.27	-148.33	-11.9
317	SLU 83	29	-73	5259	1719.83	-148.26	-11.76
317	SLU 84	30	-65	5295	1730.11	-149.32	-11.86
317	SLE RA 1	22	-50	3455	1130.06	-97.43	-8.76
317	SLE RA 2	23	-41	3496	1141.48	-98.6	-8.86
317	SLE RA 3	22	-51	3493	1142.75	-98.49	-8.78
317	SLE RA 4	22	-45	3517	1149.6	-99.19	-8.84
317	SLE RA 5	22	-41	3519	1149.37	-99.25	-8.84
317	SLE RA 6	21	-51	3516	1150.64	-99.15	-8.75
317	SLE RA 7	22	-46	3541	1157.49	-99.85	-8.82
317	SLE RA 8	21	-51	3502	1145.84	-98.74	-8.71
317	SLE RA 9	22	-45	3526	1152.69	-99.44	-8.77
317	SLE RA 10	23	-44	3778	1233.09	-106.52	-8.95
317	SLE RA 11	22	-54	3774	1234.37	-106.41	-8.86
317	SLE RA 12	22	-48	3799	1241.22	-107.12	-8.93
317	SLE RA 13	23	-44	3801	1240.98	-107.18	-8.92
317	SLE RA 14	22	-54	3797	1242.26	-107.07	-8.84
317	SLE RA 15	22	-48	3822	1249.11	-107.77	-8.9
317	SLE RA 16	21	-54	3783	1237.45	-106.67	-8.79
317	SLE RA 17	22	-48	3808	1244.31	-107.37	-8.85
317	SLE RA 18	22	-54	3857	1260.94	-108.75	-8.87
317	SLE RA 19	22	-48	3882	1267.79	-109.45	-8.94
317	SLE RA 20	22	-54	3880	1268.83	-109.41	-8.85
317	SLE RA 21	22	-49	3905	1275.68	-110.11	-8.91
317	SLE FR 1	22	-50	3455	1130.06	-97.43	-8.76
317	SLE FR 2	22	-48	3463	1132.34	-97.66	-8.78
317	SLE FR 3	22	-50	3464	1133.21	-97.69	-8.75
317	SLE FR 4	22	-50	3584	1171.6	-101.06	-8.81
317	SLE FR 5	22	-52	3585	1172.48	-101.09	-8.78
317	SLE FR 6	22	-52	3656	1195.5	-103.09	-8.82
317	SLE QP 1	22	-50	3455	1130.06	-97.43	-8.76
317	SLE QP 2	22	-51	3576	1169.32	-100.82	-8.79
317	SLD 1	352	51	3706	1195.41	-103.96	-122.17
317	SLD 2	411	86	3752	1210.26	-105.34	-141.76
317	SLD 3	322	-113	2849	954.07	-79.42	-115.7
317	SLD 4	381	-78	2895	968.93	-80.8	-135.29
317	SLD 5	156	221	4906	1540.49	-138.74	-49.09
317	SLD 6	195	244	4937	1550.29	-139.66	-62.01
317	SLD 7	56	-324	2049	736.06	-56.92	-27.54
317	SLD 8	94	-301	2080	745.86	-57.83	-40.46
317	SLD 9	-51	199	5071	1592.79	-143.81	22.88
317	SLD 10	-12	222	5102	1602.59	-144.72	9.95
317	SLD 11	-152	-347	2215	788.35	-61.99	44.43
317	SLD 12	-113	-324	2245	798.15	-62.9	31.5
317	SLD 13	-338	-25	4256	1369.71	-120.85	117.71
317	SLD 14	-279	10	4303	1384.57	-122.23	98.12
317	SLD 15	-368	-189	3399	1128.38	-96.3	124.18
317	SLD 16	-309	-154	3446	1143.24	-97.68	104.58
317	SLV 1	798	200	3951	1250.48	-110.21	-274.61
317	SLV 2	937	283	4060	1285.4	-113.46	-320.67
317	SLV 3	722	-208	1802	645.27	-48.66	-258.11
317	SLV 4	860	-126	1911	680.19	-51.91	-304.17
317	SLV 5	345	628	6927	2105.06	-196.38	-104.96
317	SLV 6	438	684	7001	2128.57	-198.57	-135.97
317	SLV 7	90	-733	-236	87.68	8.78	-49.97
317	SLV 8	183	-678	-163	111.19	6.6	-80.98
317	SLV 9	-140	575	7314	2227.45	-208.24	63.4
317	SLV 10	-47	631	7387	2250.96	-210.43	32.39
317	SLV 11	-395	-787	151	210.07	-3.08	118.39
317	SLV 12	-302	-731	224	233.58	-5.26	87.38
317	SLV 13	-817	23	5240	1658.46	-149.74	286.58
317	SLV 14	-679	105	5349	1693.37	-152.98	240.53
317	SLV 15	-894	-386	3091	1053.24	-88.19	303.08

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
317	SLV 16	-755	-303	3200	1088.16	-91.43	257.03
317	CRTFP Ux+	0	0	0	0	0	0
317	CRTFP Ux-	0	0	0	0	0	0
317	CRTFP Uy+	0	0	0	0	0	0
317	CRTFP Uy-	0	0	0	0	0	0
318	SLU 1	26	-48	3965	1298.95	-0.4	-8.63
318	SLU 2	28	-31	4040	1320.09	-0.45	-9.3
318	SLU 3	26	-48	4033	1321.75	-0.41	-8.65
318	SLU 4	27	-38	4077	1334.44	-0.44	-9.05
318	SLU 5	27	-31	4081	1334.27	-0.46	-9.24
318	SLU 6	26	-49	4074	1335.93	-0.42	-8.58
318	SLU 7	27	-39	4119	1348.62	-0.45	-8.99
318	SLU 8	25	-49	4049	1327.31	-0.42	-8.51
318	SLU 9	26	-39	4093	1340	-0.45	-8.91
318	SLU 10	28	-34	4542	1483.92	-0.47	-9.29
318	SLU 11	26	-52	4535	1485.58	-0.43	-8.64
318	SLU 12	27	-42	4580	1498.27	-0.46	-9.04
318	SLU 13	27	-35	4584	1498.1	-0.48	-9.23
318	SLU 14	26	-53	4577	1499.76	-0.44	-8.58
318	SLU 15	27	-43	4621	1512.45	-0.47	-8.98
318	SLU 16	25	-52	4551	1491.14	-0.44	-8.5
318	SLU 17	27	-42	4596	1503.82	-0.47	-8.9
318	SLU 18	26	-53	4683	1532.99	-0.43	-8.62
318	SLU 19	27	-43	4727	1545.67	-0.46	-9.02
318	SLU 20	26	-53	4725	1547.17	-0.44	-8.56
318	SLU 21	27	-43	4769	1559.86	-0.47	-8.96
318	SLU 22	28	-52	4504	1477.33	-0.48	-9.48
318	SLU 23	30	-36	4578	1498.48	-0.53	-10.15
318	SLU 24	28	-53	4571	1500.14	-0.49	-9.5
318	SLU 25	29	-43	4616	1512.82	-0.52	-9.9
318	SLU 26	30	-36	4620	1512.66	-0.54	-10.09
318	SLU 27	28	-54	4613	1514.32	-0.5	-9.44
318	SLU 28	29	-44	4658	1527	-0.53	-9.84
318	SLU 29	28	-53	4587	1505.69	-0.5	-9.36
318	SLU 30	29	-43	4632	1518.38	-0.53	-9.76
318	SLU 31	30	-39	5081	1662.3	-0.55	-10.14
318	SLU 32	28	-57	5074	1663.96	-0.51	-9.49
318	SLU 33	29	-47	5118	1676.65	-0.54	-9.89
318	SLU 34	30	-40	5122	1676.48	-0.56	-10.08
318	SLU 35	28	-57	5115	1678.14	-0.52	-9.43
318	SLU 36	29	-47	5160	1690.83	-0.55	-9.83
318	SLU 37	28	-57	5090	1669.52	-0.52	-9.35
318	SLU 38	29	-47	5134	1682.21	-0.54	-9.76
318	SLU 39	28	-58	5222	1711.37	-0.51	-9.47
318	SLU 40	29	-48	5266	1724.06	-0.54	-9.87
318	SLU 41	28	-58	5263	1725.55	-0.52	-9.41
318	SLU 42	29	-48	5308	1738.24	-0.55	-9.81
318	SLU 43	32	-60	4970	1627.47	-0.5	-10.92
318	SLU 44	34	-43	5044	1648.62	-0.55	-11.59
318	SLU 45	33	-61	5037	1650.28	-0.51	-10.94
318	SLU 46	34	-51	5082	1662.96	-0.54	-11.34
318	SLU 47	34	-44	5086	1662.8	-0.55	-11.53
318	SLU 48	32	-62	5079	1664.46	-0.51	-10.88
318	SLU 49	33	-51	5124	1677.14	-0.54	-11.28
318	SLU 50	32	-61	5053	1655.84	-0.51	-10.8
318	SLU 51	33	-51	5098	1668.52	-0.54	-11.2
318	SLU 52	34	-47	5547	1812.45	-0.56	-11.59
318	SLU 53	33	-65	5540	1814.11	-0.53	-10.94
318	SLU 54	34	-55	5584	1826.79	-0.56	-11.34
318	SLU 55	34	-48	5589	1826.63	-0.57	-11.53
318	SLU 56	32	-65	5581	1828.29	-0.53	-10.88
318	SLU 57	34	-55	5626	1840.97	-0.56	-11.28
318	SLU 58	32	-65	5556	1819.66	-0.53	-10.8
318	SLU 59	33	-55	5600	1832.35	-0.56	-11.2
318	SLU 60	33	-65	5688	1861.51	-0.52	-10.92
318	SLU 61	34	-55	5732	1874.2	-0.55	-11.32
318	SLU 62	32	-66	5729	1875.69	-0.53	-10.86
318	SLU 63	34	-56	5774	1888.38	-0.56	-11.26
318	SLU 64	35	-65	5509	1805.86	-0.58	-11.77
318	SLU 65	37	-48	5583	1827	-0.62	-12.44
318	SLU 66	35	-66	5576	1828.66	-0.59	-11.79
318	SLU 67	36	-56	5621	1841.35	-0.62	-12.19
318	SLU 68	37	-49	5625	1841.18	-0.63	-12.38
318	SLU 69	35	-66	5618	1842.84	-0.59	-11.73
318	SLU 70	36	-56	5662	1855.53	-0.62	-12.13
318	SLU 71	35	-66	5592	1834.22	-0.59	-11.65
318	SLU 72	36	-56	5637	1846.9	-0.62	-12.05
318	SLU 73	37	-52	6086	1990.83	-0.64	-12.44
318	SLU 74	35	-70	6078	1992.49	-0.61	-11.79
318	SLU 75	36	-59	6123	2005.17	-0.64	-12.19
318	SLU 76	37	-52	6127	2005.01	-0.65	-12.38
318	SLU 77	35	-70	6120	2006.67	-0.61	-11.73
318	SLU 78	36	-60	6165	2019.35	-0.64	-12.13
318	SLU 79	35	-70	6094	1998.05	-0.61	-11.65
318	SLU 80	36	-60	6139	2010.73	-0.64	-12.05
318	SLU 81	35	-70	6226	2039.9	-0.6	-11.77
318	SLU 82	36	-60	6271	2052.58	-0.63	-12.17
318	SLU 83	35	-71	6268	2054.08	-0.61	-11.71
318	SLU 84	36	-61	6313	2066.76	-0.64	-12.11

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
318	SLE RA 1	26	-49	4119	1349.92	-0.43	-8.87
318	SLE RA 2	28	-38	4169	1364.01	-0.46	-9.32
318	SLE RA 3	26	-49	4164	1365.12	-0.43	-8.88
318	SLE RA 4	27	-43	4194	1373.58	-0.45	-9.15
318	SLE RA 5	28	-38	4197	1373.47	-0.46	-9.28
318	SLE RA 6	26	-50	4192	1374.57	-0.44	-8.84
318	SLE RA 7	27	-43	4222	1383.03	-0.46	-9.11
318	SLE RA 8	26	-50	4175	1368.82	-0.43	-8.79
318	SLE RA 9	27	-43	4204	1377.28	-0.45	-9.06
318	SLE RA 10	28	-40	4504	1473.23	-0.47	-9.31
318	SLE RA 11	26	-52	4499	1474.34	-0.45	-8.88
318	SLE RA 12	27	-45	4529	1482.79	-0.47	-9.15
318	SLE RA 13	28	-41	4531	1482.68	-0.48	-9.27
318	SLE RA 14	26	-52	4527	1483.79	-0.45	-8.84
318	SLE RA 15	27	-46	4557	1492.25	-0.47	-9.11
318	SLE RA 16	26	-52	4510	1478.04	-0.45	-8.79
318	SLE RA 17	27	-45	4539	1486.5	-0.47	-9.06
318	SLE RA 18	26	-52	4598	1505.94	-0.44	-8.87
318	SLE RA 19	27	-46	4627	1514.4	-0.46	-9.13
318	SLE RA 20	26	-53	4625	1515.4	-0.45	-8.83
318	SLE RA 21	27	-46	4655	1523.85	-0.47	-9.09
318	SLE FR 1	26	-49	4119	1349.92	-0.43	-8.87
318	SLE FR 2	27	-47	4129	1352.74	-0.43	-8.96
318	SLE FR 3	26	-49	4130	1353.7	-0.43	-8.85
318	SLE FR 4	27	-48	4273	1399.54	-0.44	-8.96
318	SLE FR 5	26	-50	4274	1400.51	-0.43	-8.85
318	SLE FR 6	26	-51	4358	1427.93	-0.43	-8.87
318	SLE QP 1	26	-49	4119	1349.92	-0.43	-8.87
318	SLE QP 2	26	-50	4263	1396.72	-0.43	-8.87
318	SLD 1	418	65	4392	1419.66	0.31	-145.97
318	SLD 2	487	108	4451	1438.19	0.18	-170.27
318	SLD 3	381	-131	3350	1122	1.1	-133.37
318	SLD 4	451	-88	3409	1140.53	0.97	-157.67
318	SLD 5	186	274	5872	1851.72	-1.39	-64.74
318	SLD 6	232	302	5911	1863.94	-1.47	-80.77
318	SLD 7	65	-379	2397	859.53	1.25	-22.74
318	SLD 8	111	-351	2436	871.75	1.17	-38.77
318	SLD 9	-59	251	6089	1921.7	-2.03	21.03
318	SLD 10	-13	279	6128	1933.92	-2.11	5
318	SLD 11	-179	-402	2614	929.5	0.61	63.03
318	SLD 12	-133	-374	2653	941.73	0.53	47
318	SLD 13	-398	-12	5116	1652.92	-1.83	139.93
318	SLD 14	-329	31	5175	1671.45	-1.96	115.63
318	SLD 15	-434	-208	4074	1355.26	-1.04	152.53
318	SLD 16	-365	-165	4133	1373.79	-1.17	128.23
318	SLV 1	945	234	4653	1475.19	1.23	-330.75
318	SLV 2	1108	335	4792	1518.74	0.93	-387.88
318	SLV 3	853	-255	2039	728.74	3.21	-298.73
318	SLV 4	1016	-154	2178	772.3	2.91	-355.86
318	SLV 5	411	758	8318	2544.24	-2.88	-143.33
318	SLV 6	521	826	8412	2573.57	-3.09	-181.79
318	SLV 7	104	-872	-395	56.09	3.73	-36.6
318	SLV 8	214	-804	-301	85.42	3.52	-75.07
318	SLV 9	-161	704	8826	2708.03	-4.39	57.33
318	SLV 10	-51	773	8920	2737.36	-4.59	18.87
318	SLV 11	-468	-926	114	219.88	2.22	164.06
318	SLV 12	-358	-858	207	249.21	2.02	125.59
318	SLV 13	-964	54	6347	2021.15	-3.77	338.12
318	SLV 14	-800	155	6486	2064.71	-4.07	280.99
318	SLV 15	-1056	-435	3734	1274.7	-1.79	370.14
318	SLV 16	-892	-334	3872	1318.26	-2.09	313.01
318	CRTFP Ux+	0	0	0	0	0	0
318	CRTFP Ux-	0	0	0	0	0	0
318	CRTFP Uy+	0	0	0	0	0	0
318	CRTFP Uy-	0	0	0	0	0	0
319	SLU 1	18	-25	2599	855.77	161.48	-4.49
319	SLU 2	19	-14	2649	870.07	164.55	-5.63
319	SLU 3	18	-26	2643	870.81	164.23	-4.48
319	SLU 4	18	-19	2673	879.39	166.07	-5.17
319	SLU 5	19	-14	2676	879.43	166.25	-5.58
319	SLU 6	17	-26	2671	880.16	165.93	-4.43
319	SLU 7	18	-19	2700	888.74	167.77	-5.11
319	SLU 8	17	-26	2654	874.48	164.88	-4.38
319	SLU 9	18	-19	2683	883.06	166.72	-5.07
319	SLU 10	19	-16	2977	977.86	184.98	-5.54
319	SLU 11	18	-28	2972	978.6	184.66	-4.39
319	SLU 12	18	-21	3002	987.18	186.5	-5.07
319	SLU 13	19	-16	3005	987.22	186.68	-5.48
319	SLU 14	18	-28	2999	987.95	186.36	-4.34
319	SLU 15	18	-21	3029	996.53	188.2	-5.02
319	SLU 16	17	-28	2982	982.27	185.31	-4.29
319	SLU 17	18	-21	3012	990.85	187.15	-4.98
319	SLU 18	18	-28	3069	1009.75	190.67	-4.35
319	SLU 19	18	-21	3098	1018.34	192.51	-5.04
319	SLU 20	18	-28	3096	1019.11	192.37	-4.3
319	SLU 21	18	-21	3126	1027.69	194.21	-4.99
319	SLU 22	19	-28	2952	973.38	183.44	-4.93
319	SLU 23	21	-17	3002	987.68	186.51	-6.07
319	SLU 24	19	-28	2997	988.42	186.18	-4.92

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
319	SLU 25	20	-22	3026	997	188.03	-5.61
319	SLU 26	20	-17	3029	997.04	188.21	-6.02
319	SLU 27	19	-28	3024	997.77	187.88	-4.87
319	SLU 28	20	-22	3054	1006.35	189.73	-5.56
319	SLU 29	19	-28	3007	992.09	186.84	-4.83
319	SLU 30	20	-22	3037	1000.67	188.68	-5.51
319	SLU 31	21	-18	3331	1095.47	206.94	-5.98
319	SLU 32	19	-30	3325	1096.21	206.61	-4.83
319	SLU 33	20	-23	3355	1104.79	208.46	-5.52
319	SLU 34	21	-19	3358	1104.83	208.64	-5.93
319	SLU 35	19	-30	3353	1105.56	208.31	-4.78
319	SLU 36	20	-24	3382	1114.14	210.16	-5.46
319	SLU 37	19	-30	3336	1099.88	207.27	-4.73
319	SLU 38	20	-23	3366	1108.46	209.11	-5.42
319	SLU 39	19	-30	3422	1127.36	212.62	-4.8
319	SLU 40	20	-24	3452	1135.95	214.46	-5.48
319	SLU 41	19	-31	3449	1136.72	214.32	-4.75
319	SLU 42	20	-24	3479	1145.3	216.16	-5.43
319	SLU 43	22	-32	3258	1072.17	202.4	-5.68
319	SLU 44	23	-21	3307	1086.48	205.47	-6.82
319	SLU 45	22	-32	3302	1087.21	205.14	-5.67
319	SLU 46	23	-26	3332	1095.8	206.99	-6.36
319	SLU 47	23	-21	3335	1095.83	207.17	-6.77
319	SLU 48	22	-33	3329	1096.57	206.84	-5.62
319	SLU 49	23	-26	3359	1105.15	208.69	-6.31
319	SLU 50	22	-33	3312	1090.88	205.8	-5.58
319	SLU 51	23	-26	3342	1099.47	207.64	-6.26
319	SLU 52	24	-23	3636	1194.27	225.9	-6.73
319	SLU 53	22	-34	3630	1195	225.57	-5.58
319	SLU 54	23	-28	3660	1203.59	227.42	-6.27
319	SLU 55	23	-23	3663	1203.62	227.6	-6.68
319	SLU 56	22	-35	3658	1204.36	227.27	-5.53
319	SLU 57	23	-28	3688	1212.94	229.12	-6.22
319	SLU 58	22	-34	3641	1198.67	226.23	-5.49
319	SLU 59	23	-28	3671	1207.26	228.07	-6.17
319	SLU 60	22	-35	3727	1226.16	231.58	-5.55
319	SLU 61	23	-28	3757	1234.74	233.42	-6.23
319	SLU 62	22	-35	3754	1235.51	233.28	-5.5
319	SLU 63	23	-28	3784	1244.1	235.12	-6.18
319	SLU 64	24	-34	3611	1189.78	224.35	-6.12
319	SLU 65	25	-23	3661	1204.09	227.42	-7.26
319	SLU 66	24	-35	3655	1204.82	227.1	-6.12
319	SLU 67	25	-28	3685	1213.41	228.94	-6.8
319	SLU 68	25	-24	3688	1213.44	229.12	-7.21
319	SLU 69	24	-35	3683	1214.18	228.8	-6.07
319	SLU 70	25	-29	3712	1222.76	230.64	-6.75
319	SLU 71	24	-35	3666	1208.49	227.75	-6.02
319	SLU 72	25	-28	3695	1217.08	229.59	-6.71
319	SLU 73	25	-25	3989	1311.88	247.85	-7.17
319	SLU 74	24	-37	3984	1312.61	247.53	-6.03
319	SLU 75	25	-30	4014	1321.2	249.37	-6.71
319	SLU 76	25	-25	4017	1321.23	249.55	-7.12
319	SLU 77	24	-37	4011	1321.97	249.23	-5.97
319	SLU 78	25	-30	4041	1330.55	251.07	-6.66
319	SLU 79	24	-37	3994	1316.28	248.18	-5.93
319	SLU 80	25	-30	4024	1324.87	250.02	-6.61
319	SLU 81	24	-37	4080	1343.77	253.54	-5.99
319	SLU 82	25	-30	4110	1352.35	255.38	-6.68
319	SLU 83	24	-37	4108	1353.12	255.24	-5.94
319	SLU 84	25	-31	4138	1361.71	257.08	-6.63
319	SLE RA 1	18	-26	2700	889.37	167.75	-4.61
319	SLE RA 2	19	-19	2733	898.91	169.8	-5.37
319	SLE RA 3	18	-26	2729	899.4	169.59	-4.61
319	SLE RA 4	19	-22	2749	905.12	170.81	-5.07
319	SLE RA 5	19	-19	2751	905.14	170.93	-5.34
319	SLE RA 6	18	-26	2748	905.63	170.72	-4.57
319	SLE RA 7	19	-22	2768	911.35	171.95	-5.03
319	SLE RA 8	18	-26	2736	901.84	170.02	-4.54
319	SLE RA 9	18	-22	2756	907.56	171.25	-5
319	SLE RA 10	19	-20	2952	970.77	183.42	-5.31
319	SLE RA 11	18	-27	2949	971.26	183.21	-4.55
319	SLE RA 12	19	-23	2968	976.98	184.43	-5
319	SLE RA 13	19	-20	2970	977	184.55	-5.28
319	SLE RA 14	18	-28	2967	977.49	184.34	-4.51
319	SLE RA 15	19	-23	2987	983.21	185.57	-4.97
319	SLE RA 16	18	-28	2956	973.7	183.64	-4.48
319	SLE RA 17	18	-23	2975	979.42	184.87	-4.94
319	SLE RA 18	18	-28	3013	992.03	187.21	-4.53
319	SLE RA 19	19	-23	3033	997.75	188.44	-4.98
319	SLE RA 20	18	-28	3031	998.26	188.34	-4.49
319	SLE RA 21	19	-23	3051	1003.99	189.57	-4.95
319	SLE FR 1	18	-26	2700	889.37	167.75	-4.61
319	SLE FR 2	18	-24	2707	891.28	168.16	-4.77
319	SLE FR 3	18	-26	2707	891.86	168.21	-4.6
319	SLE FR 4	18	-25	2801	922.07	174	-4.74
319	SLE FR 5	18	-27	2801	922.66	174.04	-4.57
319	SLE FR 6	18	-27	2856	940.7	177.48	-4.57
319	SLE QP 1	18	-26	2700	889.37	167.75	-4.61
319	SLE QP 2	18	-26	2794	920.17	173.59	-4.59

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
319	SLD 1	274	46	2866	931.98	178.26	-98.66
319	SLD 2	320	76	2907	944.48	180.77	-116.44
319	SLD 3	250	-84	2171	730.97	135.22	-82.41
319	SLD 4	296	-55	2212	743.47	137.73	-100.19
319	SLD 5	123	187	3863	1226.33	239.82	-54.26
319	SLD 6	154	207	3890	1234.58	241.47	-65.99
319	SLD 7	43	-247	1544	556.3	96.35	-0.09
319	SLD 8	73	-227	1571	564.54	98.01	-11.82
319	SLD 9	-37	174	4016	1275.79	249.17	2.64
319	SLD 10	-7	194	4043	1284.04	250.83	-9.09
319	SLD 11	-117	-260	1697	605.76	105.71	56.82
319	SLD 12	-87	-240	1724	614	107.36	45.09
319	SLD 13	-260	2	3376	1096.86	209.45	91.02
319	SLD 14	-214	31	3417	1109.36	211.96	73.24
319	SLD 15	-284	-129	2681	895.85	166.41	107.27
319	SLD 16	-238	-99	2721	908.35	168.92	89.49
319	SLV 1	620	153	3021	964.56	188.1	-226.06
319	SLV 2	727	223	3117	993.94	194	-267.86
319	SLV 3	559	-172	1277	460.49	80.18	-185.07
319	SLV 4	666	-102	1373	489.87	86.08	-226.87
319	SLV 5	272	507	5490	1692.5	340.52	-125.4
319	SLV 6	344	554	5555	1712.28	344.49	-153.54
319	SLV 7	67	-576	-325	12.28	-19.21	11.24
319	SLV 8	139	-529	-260	32.06	-15.24	-16.9
319	SLV 9	-103	476	5848	1808.27	362.42	7.73
319	SLV 10	-31	523	5913	1828.05	366.39	-20.41
319	SLV 11	-308	-607	33	128.06	2.69	144.37
319	SLV 12	-236	-560	98	147.84	6.66	116.23
319	SLV 13	-630	49	4215	1350.46	261.1	217.7
319	SLV 14	-523	119	4311	1379.84	267	175.9
319	SLV 15	-691	-276	2470	846.4	153.18	258.69
319	SLV 16	-584	-206	2566	875.78	159.08	216.89
319	CRTFP Ux+	0	0	0	0	0	0
319	CRTFP Ux-	0	0	0	0	0	0
319	CRTFP Uy+	0	0	0	0	0	0
319	CRTFP Uy-	0	0	0	0	0	0
321	SLU 1	47	-43	6031	1028.05	4.84	-6.14
321	SLU 2	50	-18	6154	1047.68	4.17	-6.53
321	SLU 3	48	-44	6132	1045.61	5.01	-6.15
321	SLU 4	49	-29	6206	1057.39	4.6	-6.39
321	SLU 5	50	-18	6216	1058.55	4.28	-6.49
321	SLU 6	47	-45	6195	1056.48	5.12	-6.1
321	SLU 7	49	-29	6268	1068.26	4.71	-6.34
321	SLU 8	47	-44	6156	1049.8	5.06	-6.04
321	SLU 9	49	-29	6230	1061.57	4.66	-6.28
321	SLU 10	51	-21	6914	1177.05	5.81	-6.46
321	SLU 11	48	-47	6893	1174.99	6.65	-6.08
321	SLU 12	50	-32	6966	1186.76	6.24	-6.31
321	SLU 13	51	-21	6977	1187.93	5.92	-6.41
321	SLU 14	48	-48	6955	1185.86	6.76	-6.03
321	SLU 15	50	-32	7029	1197.64	6.35	-6.27
321	SLU 16	48	-47	6916	1179.17	6.7	-5.97
321	SLU 17	50	-32	6990	1190.95	6.3	-6.21
321	SLU 18	48	-48	7118	1212.87	7.19	-6.03
321	SLU 19	50	-32	7191	1224.65	6.78	-6.27
321	SLU 20	48	-48	7180	1223.75	7.3	-5.98
321	SLU 21	50	-33	7253	1235.52	6.89	-6.22
321	SLU 22	52	-48	6847	1167.94	5.86	-6.72
321	SLU 23	55	-22	6970	1187.56	5.18	-7.12
321	SLU 24	52	-48	6948	1185.5	6.02	-6.74
321	SLU 25	54	-33	7022	1197.27	5.62	-6.98
321	SLU 26	55	-22	7032	1198.43	5.29	-7.08
321	SLU 27	52	-49	7010	1196.37	6.13	-6.69
321	SLU 28	54	-33	7084	1208.14	5.73	-6.93
321	SLU 29	52	-49	6972	1189.68	6.08	-6.63
321	SLU 30	54	-33	7045	1201.46	5.67	-6.87
321	SLU 31	56	-25	7730	1316.94	6.82	-7.05
321	SLU 32	53	-51	7708	1314.87	7.66	-6.66
321	SLU 33	55	-36	7782	1326.65	7.26	-6.9
321	SLU 34	56	-25	7792	1327.81	6.94	-7
321	SLU 35	53	-52	7771	1325.75	7.77	-6.62
321	SLU 36	55	-36	7844	1337.52	7.37	-6.86
321	SLU 37	53	-51	7732	1319.06	7.72	-6.56
321	SLU 38	54	-36	7806	1330.83	7.32	-6.8
321	SLU 39	53	-52	7933	1352.76	8.2	-6.62
321	SLU 40	55	-36	8007	1364.54	7.8	-6.86
321	SLU 41	53	-52	7995	1363.63	8.31	-6.57
321	SLU 42	55	-37	8069	1375.41	7.91	-6.81
321	SLU 43	60	-55	7561	1288.5	5.95	-7.77
321	SLU 44	63	-29	7684	1308.13	5.27	-8.17
321	SLU 45	60	-56	7662	1306.07	6.11	-7.79
321	SLU 46	62	-41	7736	1317.84	5.71	-8.03
321	SLU 47	63	-30	7746	1319	5.38	-8.13
321	SLU 48	60	-56	7725	1316.94	6.22	-7.74
321	SLU 49	62	-41	7798	1328.71	5.82	-7.98
321	SLU 50	60	-56	7686	1310.25	6.17	-7.68
321	SLU 51	61	-41	7759	1322.03	5.76	-7.92
321	SLU 52	64	-32	8444	1437.51	6.91	-8.1
321	SLU 53	61	-59	8423	1435.44	7.75	-7.71

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
321	SLU 54	63	-43	8496	1447.22	7.35	-7.95
321	SLU 55	63	-33	8507	1448.38	7.03	-8.05
321	SLU 56	61	-59	8485	1446.32	7.86	-7.67
321	SLU 57	63	-44	8559	1458.09	7.46	-7.91
321	SLU 58	60	-59	8446	1439.63	7.81	-7.61
321	SLU 59	62	-44	8520	1451.4	7.41	-7.85
321	SLU 60	61	-59	8647	1473.33	8.29	-7.67
321	SLU 61	63	-44	8721	1485.11	7.89	-7.91
321	SLU 62	61	-60	8710	1484.2	8.4	-7.62
321	SLU 63	63	-44	8783	1495.98	8	-7.86
321	SLU 64	65	-59	8377	1428.39	6.96	-8.36
321	SLU 65	68	-34	8499	1448.02	6.29	-8.76
321	SLU 66	65	-60	8478	1445.95	7.13	-8.38
321	SLU 67	67	-45	8551	1457.73	6.72	-8.62
321	SLU 68	67	-34	8562	1458.89	6.4	-8.71
321	SLU 69	65	-61	8540	1456.82	7.24	-8.33
321	SLU 70	67	-45	8614	1468.6	6.83	-8.57
321	SLU 71	64	-60	8501	1450.14	7.18	-8.27
321	SLU 72	66	-45	8575	1461.91	6.78	-8.51
321	SLU 73	68	-36	9260	1577.39	7.93	-8.69
321	SLU 74	66	-63	9238	1575.33	8.77	-8.3
321	SLU 75	67	-47	9312	1587.1	8.36	-8.54
321	SLU 76	68	-37	9322	1588.27	8.04	-8.64
321	SLU 77	66	-63	9300	1586.2	8.88	-8.26
321	SLU 78	67	-48	9374	1597.98	8.47	-8.5
321	SLU 79	65	-63	9262	1579.51	8.82	-8.2
321	SLU 80	67	-48	9335	1591.29	8.42	-8.44
321	SLU 81	66	-63	9463	1613.21	9.31	-8.26
321	SLU 82	68	-48	9537	1624.99	8.9	-8.5
321	SLU 83	66	-64	9525	1624.09	9.42	-8.21
321	SLU 84	67	-48	9599	1635.86	9.01	-8.45
321	SLE RA 1	49	-45	6264	1068.02	5.13	-6.3
321	SLE RA 2	51	-28	6346	1081.1	4.68	-6.57
321	SLE RA 3	49	-45	6332	1079.72	5.24	-6.31
321	SLE RA 4	50	-35	6381	1087.58	4.97	-6.47
321	SLE RA 5	51	-28	6388	1088.35	4.76	-6.54
321	SLE RA 6	49	-46	6373	1086.97	5.32	-6.28
321	SLE RA 7	50	-35	6422	1094.82	5.05	-6.44
321	SLE RA 8	48	-45	6348	1082.51	5.28	-6.24
321	SLE RA 9	50	-35	6397	1090.37	5.01	-6.4
321	SLE RA 10	51	-29	6853	1167.35	5.78	-6.52
321	SLE RA 11	49	-47	6839	1165.98	6.34	-6.26
321	SLE RA 12	51	-37	6888	1173.83	6.07	-6.42
321	SLE RA 13	51	-30	6895	1174.6	5.85	-6.49
321	SLE RA 14	49	-47	6880	1173.22	6.41	-6.23
321	SLE RA 15	50	-37	6929	1181.08	6.14	-6.39
321	SLE RA 16	49	-47	6854	1168.77	6.37	-6.19
321	SLE RA 17	50	-37	6903	1176.62	6.1	-6.35
321	SLE RA 18	49	-47	6988	1191.23	6.7	-6.23
321	SLE RA 19	51	-37	7038	1199.08	6.43	-6.39
321	SLE RA 20	49	-48	7030	1198.48	6.77	-6.2
321	SLE RA 21	51	-37	7079	1206.33	6.5	-6.36
321	SLE FR 1	49	-45	6264	1068.02	5.13	-6.3
321	SLE FR 2	49	-41	6281	1070.63	5.04	-6.36
321	SLE FR 3	49	-45	6281	1070.92	5.16	-6.29
321	SLE FR 4	49	-42	6498	1107.6	5.51	-6.34
321	SLE FR 5	49	-46	6498	1107.88	5.63	-6.27
321	SLE FR 6	49	-46	6626	1129.63	5.91	-6.27
321	SLE QP 1	49	-45	6264	1068.02	5.13	-6.3
321	SLE QP 2	49	-45	6482	1104.98	5.6	-6.28
321	SLD 1	640	119	6647	1126.42	15.6	-110.08
321	SLD 2	748	193	6752	1143.27	13.78	-127.59
321	SLD 3	582	-186	4915	850.46	27.02	-102.12
321	SLD 4	690	-112	5021	867.31	25.2	-119.63
321	SLD 5	295	453	9138	1526.92	-8.41	-46.34
321	SLD 6	366	501	9208	1538.04	-9.61	-57.89
321	SLD 7	102	-563	3367	607.06	29.69	-19.82
321	SLD 8	173	-514	3436	618.17	28.49	-31.37
321	SLD 9	-75	423	9527	1591.79	-17.28	18.8
321	SLD 10	-4	472	9596	1602.91	-18.49	7.25
321	SLD 11	-268	-592	3756	671.93	20.81	45.33
321	SLD 12	-197	-544	3825	683.04	19.61	33.78
321	SLD 13	-592	21	7943	1342.65	-14	107.06
321	SLD 14	-485	95	8048	1359.5	-15.82	89.55
321	SLD 15	-650	-284	6211	1066.69	-2.57	115.02
321	SLD 16	-542	-210	6317	1083.54	-4.39	97.51
321	SLV 1	1438	363	7012	1178.11	28.06	-249.83
321	SLV 2	1691	536	7259	1217.72	23.78	-290.99
321	SLV 3	1291	-398	2671	486.14	56.69	-229.58
321	SLV 4	1544	-225	2918	525.75	52.41	-270.73
321	SLV 5	641	1198	13179	2169.01	-30.3	-102.39
321	SLV 6	811	1315	13345	2195.67	-33.18	-130.1
321	SLV 7	152	-1337	-1292	-137.54	65.16	-34.87
321	SLV 8	322	-1221	-1126	-110.87	62.28	-62.58
321	SLV 9	-224	1130	14089	2320.84	-51.08	50.01
321	SLV 10	-54	1246	14255	2347.5	-53.96	22.3
321	SLV 11	-713	-1406	-382	14.29	44.38	117.53
321	SLV 12	-543	-1289	-216	40.96	41.5	89.82
321	SLV 13	-1446	134	10045	1684.21	-41.21	258.17

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
321	SLV 14	-1193	307	10293	1723.82	-45.49	217.01
321	SLV 15	-1593	-627	5704	992.25	-12.57	278.42
321	SLV 16	-1340	-454	5951	1031.86	-16.85	237.27
321	CRTFP Ux+	0	0	0	0	0	0
321	CRTFP Ux-	0	0	0	0	0	0
321	CRTFP Uy+	0	0	0	0	0	0
321	CRTFP Uy-	0	0	0	0	0	0
323	SLU 1	20	-14	2707	831.88	-166.78	-7.84
323	SLU 2	22	-2	2761	847.1	-170.1	-7.61
323	SLU 3	20	-14	2753	846.35	-169.61	-7.89
323	SLU 4	21	-7	2785	855.48	-171.6	-7.75
323	SLU 5	21	-2	2789	856.1	-171.85	-7.59
323	SLU 6	20	-14	2781	855.36	-171.35	-7.87
323	SLU 7	21	-7	2813	864.49	-173.34	-7.73
323	SLU 8	20	-14	2764	849.9	-170.27	-7.8
323	SLU 9	21	-7	2796	859.02	-172.26	-7.66
323	SLU 10	22	-3	3100	950.51	-190.99	-7.7
323	SLU 11	20	-15	3092	949.77	-190.49	-7.98
323	SLU 12	21	-8	3124	958.89	-192.48	-7.85
323	SLU 13	22	-3	3128	959.52	-192.73	-7.68
323	SLU 14	20	-15	3121	958.77	-192.24	-7.96
323	SLU 15	21	-8	3153	967.9	-194.23	-7.82
323	SLU 16	20	-15	3103	953.31	-191.16	-7.89
323	SLU 17	21	-8	3135	962.44	-193.15	-7.75
323	SLU 18	20	-15	3192	979.62	-196.62	-7.97
323	SLU 19	21	-8	3224	988.74	-198.61	-7.83
323	SLU 20	20	-15	3220	988.62	-198.37	-7.95
323	SLU 21	21	-8	3252	997.75	-200.36	-7.81
323	SLU 22	22	-15	3074	945.21	-189.39	-8.61
323	SLU 23	24	-3	3128	960.42	-192.7	-8.38
323	SLU 24	22	-16	3120	959.68	-192.21	-8.66
323	SLU 25	23	-8	3152	968.81	-194.2	-8.52
323	SLU 26	23	-4	3156	969.43	-194.45	-8.36
323	SLU 27	22	-16	3148	968.69	-193.95	-8.64
323	SLU 28	23	-9	3180	977.82	-195.94	-8.5
323	SLU 29	22	-16	3131	963.22	-192.87	-8.57
323	SLU 30	23	-8	3163	972.35	-194.87	-8.43
323	SLU 31	24	-4	3467	1063.84	-213.59	-8.47
323	SLU 32	22	-16	3459	1063.09	-213.09	-8.75
323	SLU 33	23	-9	3491	1072.22	-215.09	-8.61
323	SLU 34	24	-4	3495	1072.85	-215.34	-8.45
323	SLU 35	22	-16	3488	1072.1	-214.84	-8.73
323	SLU 36	23	-9	3520	1081.23	-216.83	-8.59
323	SLU 37	22	-16	3470	1066.64	-213.76	-8.66
323	SLU 38	23	-9	3502	1075.77	-215.75	-8.52
323	SLU 39	22	-16	3559	1092.94	-219.22	-8.74
323	SLU 40	23	-9	3591	1102.07	-221.22	-8.6
323	SLU 41	22	-17	3587	1101.95	-220.97	-8.72
323	SLU 42	23	-9	3619	1111.08	-222.96	-8.58
323	SLU 43	25	-18	3393	1042.59	-209.07	-9.93
323	SLU 44	27	-6	3447	1057.8	-212.39	-9.7
323	SLU 45	26	-18	3439	1057.06	-211.89	-9.98
323	SLU 46	26	-11	3471	1066.19	-213.88	-9.84
323	SLU 47	27	-6	3475	1066.81	-214.13	-9.68
323	SLU 48	25	-18	3467	1066.07	-213.64	-9.96
323	SLU 49	26	-11	3500	1075.2	-215.63	-9.82
323	SLU 50	25	-18	3450	1060.6	-212.56	-9.89
323	SLU 51	26	-11	3482	1069.73	-214.55	-9.75
323	SLU 52	27	-7	3786	1161.22	-233.28	-9.79
323	SLU 53	26	-19	3778	1160.47	-232.78	-10.07
323	SLU 54	27	-12	3811	1169.6	-234.77	-9.93
323	SLU 55	27	-7	3815	1170.23	-235.02	-9.77
323	SLU 56	26	-19	3807	1169.48	-234.52	-10.05
323	SLU 57	27	-12	3839	1178.61	-236.52	-9.91
323	SLU 58	25	-19	3789	1164.02	-233.45	-9.98
323	SLU 59	26	-12	3822	1173.15	-235.44	-9.84
323	SLU 60	26	-19	3878	1190.32	-238.91	-10.06
323	SLU 61	27	-12	3910	1199.45	-240.9	-9.92
323	SLU 62	26	-19	3906	1199.33	-240.65	-10.04
323	SLU 63	26	-12	3939	1208.46	-242.65	-9.9
323	SLU 64	27	-19	3760	1155.92	-231.67	-10.7
323	SLU 65	29	-7	3814	1171.13	-234.99	-10.47
323	SLU 66	28	-19	3806	1170.39	-234.49	-10.75
323	SLU 67	28	-12	3838	1179.52	-236.49	-10.61
323	SLU 68	29	-7	3842	1180.14	-236.74	-10.45
323	SLU 69	27	-19	3834	1179.4	-236.24	-10.73
323	SLU 70	28	-12	3867	1188.52	-238.23	-10.59
323	SLU 71	27	-19	3817	1173.93	-235.16	-10.65
323	SLU 72	28	-12	3849	1183.06	-237.15	-10.52
323	SLU 73	29	-8	4153	1274.55	-255.88	-10.56
323	SLU 74	28	-20	4145	1273.8	-255.38	-10.84
323	SLU 75	29	-13	4178	1282.93	-257.37	-10.7
323	SLU 76	29	-8	4182	1283.55	-257.62	-10.54
323	SLU 77	28	-20	4174	1282.81	-257.12	-10.82
323	SLU 78	29	-13	4206	1291.94	-259.12	-10.68
323	SLU 79	27	-20	4156	1277.35	-256.05	-10.75
323	SLU 80	28	-13	4189	1286.48	-258.04	-10.61
323	SLU 81	28	-20	4245	1303.65	-261.51	-10.83
323	SLU 82	29	-13	4277	1312.78	-263.5	-10.69

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
323	SLU 83	28	-20	4273	1312.66	-263.25	-10.81
323	SLU 84	28	-13	4306	1321.79	-265.25	-10.67
323	SLE RA 1	21	-14	2812	864.26	-173.24	-8.06
323	SLE RA 2	22	-6	2848	874.4	-175.45	-7.91
323	SLE RA 3	21	-15	2842	873.91	-175.12	-8.09
323	SLE RA 4	21	-10	2864	879.99	-176.45	-8
323	SLE RA 5	22	-7	2867	880.41	-176.62	-7.89
323	SLE RA 6	21	-15	2861	879.91	-176.29	-8.08
323	SLE RA 7	21	-10	2883	886	-177.61	-7.99
323	SLE RA 8	21	-15	2850	876.27	-175.57	-8.03
323	SLE RA 9	21	-10	2871	882.36	-176.9	-7.94
323	SLE RA 10	22	-7	3074	943.35	-189.38	-7.97
323	SLE RA 11	21	-15	3069	942.85	-189.05	-8.15
323	SLE RA 12	21	-10	3090	948.94	-190.38	-8.06
323	SLE RA 13	22	-7	3093	949.35	-190.54	-7.95
323	SLE RA 14	21	-15	3088	948.86	-190.21	-8.14
323	SLE RA 15	21	-10	3109	954.94	-191.54	-8.05
323	SLE RA 16	21	-15	3076	945.21	-189.49	-8.09
323	SLE RA 17	21	-10	3097	951.3	-190.82	-8
323	SLE RA 18	21	-15	3135	962.75	-193.13	-8.15
323	SLE RA 19	21	-10	3157	968.84	-194.46	-8.06
323	SLE RA 20	21	-15	3154	968.76	-194.3	-8.13
323	SLE RA 21	21	-10	3175	974.84	-195.62	-8.04
323	SLE FR 1	21	-14	2812	864.26	-173.24	-8.06
323	SLE FR 2	21	-13	2819	866.29	-173.68	-8.03
323	SLE FR 3	21	-14	2819	866.66	-173.71	-8.05
323	SLE FR 4	21	-13	2916	895.84	-179.65	-8.06
323	SLE FR 5	21	-15	2916	896.21	-179.67	-8.08
323	SLE FR 6	21	-15	2973	913.51	-183.19	-8.1
323	SLE QP 1	21	-14	2812	864.26	-173.24	-8.06
323	SLE QP 2	21	-15	2909	893.81	-179.21	-8.09
323	SLD 1	299	61	2955	907.4	-181.87	-102.14
323	SLD 2	348	99	3003	920.24	-184.85	-117.14
323	SLD 3	272	-83	2196	698.45	-134.9	-98.97
323	SLD 4	321	-45	2244	711.3	-137.88	-113.97
323	SLD 5	136	220	4066	1212.48	-250.71	-38.41
323	SLD 6	169	244	4097	1220.95	-252.68	-48.31
323	SLD 7	47	-260	1535	515.99	-94.14	-27.84
323	SLD 8	79	-235	1566	524.46	-96.11	-37.74
323	SLD 9	-38	206	4251	1263.15	-262.31	21.57
323	SLD 10	-5	231	4283	1271.63	-264.28	11.67
323	SLD 11	-127	-273	1720	566.67	-105.74	32.14
323	SLD 12	-94	-249	1752	575.14	-107.71	22.24
323	SLD 13	-280	16	3574	1076.32	-220.54	97.8
323	SLD 14	-230	53	3622	1089.16	-223.52	82.8
323	SLD 15	-307	-128	2814	867.37	-173.57	100.97
323	SLD 16	-257	-91	2862	880.22	-176.55	85.97
323	SLV 1	674	174	3081	942.99	-189.33	-228.18
323	SLV 2	790	262	3193	973.18	-196.34	-263.45
323	SLV 3	605	-185	1177	419.07	-71.56	-220.47
323	SLV 4	722	-98	1289	449.26	-78.56	-255.74
323	SLV 5	298	571	5827	1697.54	-359.57	-79.23
323	SLV 6	376	630	5903	1717.87	-364.29	-102.97
323	SLV 7	71	-627	-520	-48.86	33.02	-53.53
323	SLV 8	150	-568	-444	-28.54	28.31	-77.27
323	SLV 9	-108	539	6262	1816.15	-386.73	61.1
323	SLV 10	-30	598	6337	1836.48	-391.44	37.35
323	SLV 11	-335	-659	-85	69.75	5.87	86.8
323	SLV 12	-257	-600	-10	90.07	1.15	63.06
323	SLV 13	-680	69	4528	1338.36	-279.86	239.57
323	SLV 14	-564	156	4641	1368.55	-286.86	204.3
323	SLV 15	-748	-291	2624	814.44	-162.08	247.28
323	SLV 16	-632	-203	2737	844.63	-169.09	212.01
323	CRTFP Ux+	0	0	0	0	0	0
323	CRTFP Ux-	0	0	0	0	0	0
323	CRTFP Uy+	0	0	0	0	0	0
323	CRTFP Uy-	0	0	0	0	0	0
324	SLU 1	31	-15	3890	1108.15	5.26	-10.64
324	SLU 2	33	2	3967	1129.21	5.35	-11.45
324	SLU 3	31	-15	3955	1127.25	5.36	-10.7
324	SLU 4	32	-5	4002	1139.88	5.41	-11.19
324	SLU 5	33	2	4008	1141.1	5.41	-11.41
324	SLU 6	31	-16	3996	1139.14	5.42	-10.66
324	SLU 7	32	-5	4042	1151.78	5.47	-11.14
324	SLU 8	31	-15	3971	1131.94	5.38	-10.56
324	SLU 9	32	-5	4017	1144.57	5.44	-11.04
324	SLU 10	33	2	4453	1265.39	6.1	-11.53
324	SLU 11	31	-16	4441	1263.43	6.11	-10.78
324	SLU 12	33	-6	4487	1276.07	6.16	-11.26
324	SLU 13	33	1	4493	1277.28	6.16	-11.48
324	SLU 14	31	-16	4481	1275.32	6.17	-10.74
324	SLU 15	33	-6	4528	1287.96	6.22	-11.22
324	SLU 16	31	-16	4456	1268.12	6.13	-10.63
324	SLU 17	32	-6	4503	1280.75	6.19	-11.12
324	SLU 18	31	-16	4583	1302.7	6.33	-10.75
324	SLU 19	33	-6	4630	1315.33	6.38	-11.24
324	SLU 20	31	-16	4624	1314.59	6.39	-10.71
324	SLU 21	33	-6	4670	1327.22	6.44	-11.19
324	SLU 22	34	-16	4416	1257.65	6.04	-11.7

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
324	SLU 23	36	1	4493	1278.7	6.13	-12.5
324	SLU 24	34	-17	4481	1276.75	6.14	-11.76
324	SLU 25	36	-6	4528	1289.38	6.19	-12.24
324	SLU 26	36	1	4534	1290.6	6.19	-12.46
324	SLU 27	34	-17	4522	1288.64	6.2	-11.71
324	SLU 28	35	-6	4568	1301.27	6.26	-12.2
324	SLU 29	34	-17	4497	1281.43	6.17	-11.61
324	SLU 30	35	-6	4543	1294.07	6.22	-12.09
324	SLU 31	37	0	4979	1414.89	6.88	-12.58
324	SLU 32	34	-17	4967	1412.93	6.89	-11.83
324	SLU 33	36	-7	5013	1425.56	6.94	-12.32
324	SLU 34	36	0	5019	1426.78	6.94	-12.54
324	SLU 35	34	-17	5007	1424.82	6.95	-11.79
324	SLU 36	36	-7	5054	1437.45	7	-12.27
324	SLU 37	34	-17	4982	1417.62	6.91	-11.69
324	SLU 38	35	-7	5029	1430.25	6.97	-12.17
324	SLU 39	34	-17	5109	1452.19	7.11	-11.81
324	SLU 40	36	-7	5156	1464.83	7.16	-12.29
324	SLU 41	34	-17	5149	1464.09	7.17	-11.76
324	SLU 42	36	-7	5196	1476.72	7.23	-12.25
324	SLU 43	39	-19	4876	1389.34	6.57	-13.47
324	SLU 44	41	-2	4954	1410.4	6.66	-14.28
324	SLU 45	39	-20	4942	1408.44	6.67	-13.53
324	SLU 46	41	-9	4989	1421.07	6.72	-14.02
324	SLU 47	41	-2	4995	1422.29	6.72	-14.24
324	SLU 48	39	-20	4982	1420.33	6.73	-13.49
324	SLU 49	41	-9	5029	1432.97	6.78	-13.97
324	SLU 50	39	-20	4957	1413.13	6.69	-13.39
324	SLU 51	40	-9	5004	1425.76	6.75	-13.87
324	SLU 52	42	-2	5440	1546.58	7.41	-14.36
324	SLU 53	40	-20	5427	1544.62	7.42	-13.61
324	SLU 54	41	-10	5474	1557.26	7.47	-14.09
324	SLU 55	42	-3	5480	1558.47	7.47	-14.31
324	SLU 56	40	-20	5468	1556.51	7.48	-13.57
324	SLU 57	41	-10	5515	1569.15	7.53	-14.05
324	SLU 58	39	-20	5443	1549.31	7.44	-13.47
324	SLU 59	41	-10	5489	1561.94	7.5	-13.95
324	SLU 60	40	-20	5570	1583.89	7.64	-13.58
324	SLU 61	41	-10	5616	1596.52	7.69	-14.07
324	SLU 62	39	-20	5610	1595.78	7.7	-13.54
324	SLU 63	41	-10	5657	1608.41	7.75	-14.03
324	SLU 64	42	-20	5402	1538.84	7.35	-14.53
324	SLU 65	44	-3	5480	1559.89	7.44	-15.33
324	SLU 66	42	-21	5468	1557.94	7.45	-14.59
324	SLU 67	44	-10	5514	1570.57	7.5	-15.07
324	SLU 68	44	-3	5520	1571.79	7.5	-15.29
324	SLU 69	42	-21	5508	1569.83	7.51	-14.54
324	SLU 70	44	-11	5555	1582.46	7.57	-15.03
324	SLU 71	42	-21	5483	1562.62	7.48	-14.44
324	SLU 72	43	-10	5530	1575.26	7.53	-14.93
324	SLU 73	45	-4	5965	1696.08	8.19	-15.41
324	SLU 74	43	-21	5953	1694.12	8.2	-14.66
324	SLU 75	44	-11	6000	1706.75	8.25	-15.15
324	SLU 76	45	-4	6006	1707.97	8.25	-15.37
324	SLU 77	43	-22	5994	1706.01	8.26	-14.62
324	SLU 78	44	-11	6040	1718.64	8.31	-15.11
324	SLU 79	42	-21	5969	1698.81	8.22	-14.52
324	SLU 80	44	-11	6015	1711.44	8.28	-15
324	SLU 81	43	-21	6096	1733.38	8.42	-14.64
324	SLU 82	44	-11	6142	1746.02	8.47	-15.12
324	SLU 83	43	-21	6136	1745.28	8.48	-14.6
324	SLU 84	44	-11	6183	1757.91	8.54	-15.08
324	SLE RA 1	32	-15	4040	1150.87	5.48	-10.94
324	SLE RA 2	33	-4	4092	1164.9	5.54	-11.48
324	SLE RA 3	32	-16	4084	1163.6	5.55	-10.98
324	SLE RA 4	33	-9	4115	1172.02	5.58	-11.31
324	SLE RA 5	33	-4	4119	1172.83	5.58	-11.45
324	SLE RA 6	32	-16	4111	1171.53	5.59	-10.95
324	SLE RA 7	33	-9	4142	1179.95	5.63	-11.28
324	SLE RA 8	32	-16	4094	1166.72	5.57	-10.89
324	SLE RA 9	33	-9	4125	1175.14	5.6	-11.21
324	SLE RA 10	34	-4	4415	1255.69	6.04	-11.53
324	SLE RA 11	32	-16	4407	1254.39	6.05	-11.03
324	SLE RA 12	33	-9	4438	1262.81	6.08	-11.36
324	SLE RA 13	33	-4	4442	1263.62	6.08	-11.5
324	SLE RA 14	32	-16	4434	1262.31	6.09	-11.01
324	SLE RA 15	33	-9	4465	1270.74	6.13	-11.33
324	SLE RA 16	32	-16	4418	1257.51	6.07	-10.94
324	SLE RA 17	33	-9	4449	1265.93	6.1	-11.26
324	SLE RA 18	32	-16	4502	1280.56	6.2	-11.02
324	SLE RA 19	33	-9	4533	1288.98	6.23	-11.34
324	SLE RA 20	32	-16	4529	1288.49	6.24	-10.99
324	SLE RA 21	33	-9	4560	1296.91	6.27	-11.31
324	SLE FR 1	32	-15	4040	1150.87	5.48	-10.94
324	SLE FR 2	32	-13	4050	1153.67	5.49	-11.05
324	SLE FR 3	32	-15	4051	1154.04	5.5	-10.93
324	SLE FR 4	32	-13	4189	1192.58	5.71	-11.07
324	SLE FR 5	32	-16	4189	1192.95	5.71	-10.95
324	SLE FR 6	32	-16	4271	1215.71	5.84	-10.98

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
324	SLE QP 1	32	-15	4040	1150.87	5.48	-10.94
324	SLE QP 2	32	-16	4179	1189.77	5.7	-10.97
324	SLD 1	444	94	4226	1212.89	6.58	-155.39
324	SLD 2	518	151	4297	1230.37	6.59	-181.08
324	SLD 3	404	-118	3121	928.83	5.51	-141.14
324	SLD 4	477	-60	3192	946.31	5.52	-166.83
324	SLD 5	204	328	5855	1624.39	7.58	-71.29
324	SLD 6	252	366	5902	1635.93	7.59	-88.24
324	SLD 7	69	-378	2174	677.52	4.01	-23.78
324	SLD 8	117	-340	2221	689.05	4.02	-40.73
324	SLD 9	-54	309	6137	1690.5	7.37	18.8
324	SLD 10	-5	346	6184	1702.03	7.38	1.85
324	SLD 11	-188	-397	2455	743.62	3.8	66.31
324	SLD 12	-140	-359	2502	755.15	3.81	49.36
324	SLD 13	-414	29	5165	1433.24	5.87	144.9
324	SLD 14	-340	86	5236	1450.72	5.89	119.21
324	SLD 15	-454	-183	4060	1149.17	4.8	159.15
324	SLD 16	-380	-125	4132	1166.66	4.81	133.46
324	SLV 1	1000	258	4380	1267.48	7.85	-350.12
324	SLV 2	1173	392	4548	1308.58	7.88	-410.52
324	SLV 3	897	-271	1611	555.22	5.17	-313.93
324	SLV 4	1070	-137	1779	596.33	5.2	-374.33
324	SLV 5	446	843	8408	2285.66	10.41	-156.33
324	SLV 6	562	934	8520	2313.34	10.43	-196.99
324	SLV 7	103	-919	-823	-88.51	1.46	-35.7
324	SLV 8	220	-829	-710	-60.84	1.48	-76.36
324	SLV 9	-156	797	9067	2440.39	9.91	54.43
324	SLV 10	-40	888	9180	2468.06	9.94	13.77
324	SLV 11	-499	-965	-163	66.21	0.96	175.06
324	SLV 12	-382	-874	-51	93.89	0.98	134.39
324	SLV 13	-1007	105	6579	1783.22	6.2	352.4
324	SLV 14	-834	240	6746	1824.32	6.23	292
324	SLV 15	-1109	-423	3809	1070.97	3.51	388.59
324	SLV 16	-936	-289	3977	1112.07	3.54	328.19
324	CRTFP Ux+	0	0	0	0	0	0
324	CRTFP Ux-	0	0	0	0	0	0
324	CRTFP Uy+	0	0	0	0	0	0
324	CRTFP Uy-	0	0	0	0	0	0
325	SLU 1	32	-10	3707	951.68	5.99	-11.09
325	SLU 2	34	7	3782	970.42	6.11	-11.94
325	SLU 3	32	-10	3770	967.84	6.11	-11.16
325	SLU 4	34	0	3814	979.09	6.17	-11.67
325	SLU 5	34	6	3820	980.49	6.18	-11.9
325	SLU 6	32	-10	3808	977.91	6.18	-11.12
325	SLU 7	34	0	3853	989.16	6.25	-11.63
325	SLU 8	32	-10	3784	971.82	6.13	-11.02
325	SLU 9	33	0	3829	983.06	6.2	-11.53
325	SLU 10	35	6	4242	1085.24	6.95	-12.03
325	SLU 11	33	-10	4229	1082.66	6.95	-11.25
325	SLU 12	34	-1	4274	1093.91	7.02	-11.77
325	SLU 13	35	6	4280	1095.31	7.02	-12
325	SLU 14	32	-11	4268	1092.73	7.02	-11.22
325	SLU 15	34	-1	4312	1103.97	7.09	-11.73
325	SLU 16	32	-11	4244	1086.63	6.98	-11.11
325	SLU 17	34	-1	4288	1097.88	7.05	-11.62
325	SLU 18	32	-10	4364	1115.71	7.2	-11.22
325	SLU 19	34	0	4409	1126.95	7.27	-11.73
325	SLU 20	32	-10	4402	1125.77	7.27	-11.19
325	SLU 21	34	0	4447	1137.02	7.34	-11.7
325	SLU 22	35	-11	4206	1077.98	6.89	-12.18
325	SLU 23	38	6	4281	1096.73	7	-13.03
325	SLU 24	35	-11	4268	1094.15	7	-12.25
325	SLU 25	37	-1	4313	1105.39	7.07	-12.76
325	SLU 26	37	6	4319	1106.79	7.07	-13
325	SLU 27	35	-11	4307	1104.21	7.07	-12.22
325	SLU 28	37	-1	4351	1115.46	7.14	-12.73
325	SLU 29	35	-11	4283	1098.12	7.03	-12.11
325	SLU 30	36	-1	4328	1109.36	7.1	-12.62
325	SLU 31	38	6	4740	1211.54	7.85	-13.13
325	SLU 32	36	-11	4728	1208.96	7.85	-12.35
325	SLU 33	37	-1	4773	1220.21	7.92	-12.86
325	SLU 34	38	5	4779	1221.61	7.92	-13.09
325	SLU 35	36	-11	4766	1219.03	7.92	-12.31
325	SLU 36	37	-1	4811	1230.27	7.99	-12.82
325	SLU 37	35	-11	4742	1212.93	7.88	-12.2
325	SLU 38	37	-1	4787	1224.18	7.95	-12.71
325	SLU 39	36	-11	4863	1242.01	8.1	-12.32
325	SLU 40	37	-1	4907	1253.25	8.17	-12.83
325	SLU 41	36	-11	4901	1252.07	8.17	-12.28
325	SLU 42	37	-1	4946	1263.32	8.24	-12.79
325	SLU 43	41	-13	4649	1193.88	7.48	-14.04
325	SLU 44	43	4	4723	1212.63	7.6	-14.89
325	SLU 45	41	-13	4711	1210.05	7.6	-14.11
325	SLU 46	42	-3	4756	1221.29	7.66	-14.62
325	SLU 47	43	4	4762	1222.69	7.67	-14.86
325	SLU 48	41	-13	4749	1220.11	7.67	-14.08
325	SLU 49	42	-3	4794	1231.36	7.74	-14.59
325	SLU 50	40	-13	4725	1214.02	7.62	-13.97
325	SLU 51	42	-3	4770	1225.26	7.69	-14.48

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
325	SLU 52	43	4	5183	1327.44	8.44	-14.99
325	SLU 53	41	-13	5170	1324.86	8.44	-14.21
325	SLU 54	42	-3	5215	1336.11	8.51	-14.72
325	SLU 55	43	3	5221	1337.51	8.52	-14.95
325	SLU 56	41	-13	5209	1334.93	8.51	-14.17
325	SLU 57	42	-3	5254	1346.17	8.58	-14.68
325	SLU 58	41	-13	5185	1328.83	8.47	-14.06
325	SLU 59	42	-3	5230	1340.08	8.54	-14.57
325	SLU 60	41	-13	5305	1357.91	8.69	-14.18
325	SLU 61	42	-3	5350	1369.15	8.76	-14.69
325	SLU 62	41	-13	5344	1367.97	8.76	-14.14
325	SLU 63	42	-3	5388	1379.22	8.83	-14.65
325	SLU 64	44	-14	5147	1320.19	8.38	-15.13
325	SLU 65	46	3	5222	1338.93	8.49	-15.99
325	SLU 66	44	-14	5210	1336.35	8.49	-15.21
325	SLU 67	45	-4	5254	1347.59	8.56	-15.72
325	SLU 68	46	3	5260	1348.99	8.56	-15.95
325	SLU 69	44	-14	5248	1346.42	8.56	-15.17
325	SLU 70	45	-4	5293	1357.66	8.63	-15.68
325	SLU 71	44	-14	5224	1340.32	8.52	-15.06
325	SLU 72	45	-4	5269	1351.57	8.59	-15.57
325	SLU 73	46	3	5681	1453.74	9.34	-16.08
325	SLU 74	44	-14	5669	1451.16	9.34	-15.3
325	SLU 75	46	-4	5714	1462.41	9.41	-15.81
325	SLU 76	46	3	5720	1463.81	9.41	-16.04
325	SLU 77	44	-14	5707	1461.23	9.41	-15.26
325	SLU 78	46	-4	5752	1472.48	9.48	-15.77
325	SLU 79	44	-14	5684	1455.14	9.37	-15.16
325	SLU 80	45	-4	5728	1466.38	9.44	-15.67
325	SLU 81	44	-14	5804	1484.21	9.59	-15.27
325	SLU 82	46	-4	5849	1495.45	9.66	-15.78
325	SLU 83	44	-14	5842	1494.28	9.66	-15.23
325	SLU 84	45	-4	5887	1505.52	9.73	-15.74
325	SLE RA 1	33	-10	3850	987.77	6.25	-11.4
325	SLE RA 2	35	1	3900	1000.26	6.32	-11.97
325	SLE RA 3	33	-10	3891	998.54	6.32	-11.45
325	SLE RA 4	34	-4	3921	1006.04	6.37	-11.79
325	SLE RA 5	34	1	3925	1006.98	6.37	-11.94
325	SLE RA 6	33	-11	3917	1005.26	6.37	-11.42
325	SLE RA 7	34	-4	3947	1012.75	6.42	-11.77
325	SLE RA 8	33	-10	3901	1001.19	6.34	-11.35
325	SLE RA 9	34	-4	3931	1008.69	6.39	-11.69
325	SLE RA 10	35	1	4206	1076.81	6.89	-12.03
325	SLE RA 11	33	-11	4198	1075.09	6.89	-11.51
325	SLE RA 12	34	-4	4228	1082.58	6.93	-11.85
325	SLE RA 13	35	1	4232	1083.52	6.94	-12.01
325	SLE RA 14	33	-11	4223	1081.8	6.94	-11.49
325	SLE RA 15	34	-4	4253	1089.3	6.98	-11.83
325	SLE RA 16	33	-11	4207	1077.74	6.91	-11.42
325	SLE RA 17	34	-4	4237	1085.23	6.95	-11.76
325	SLE RA 18	33	-10	4288	1097.12	7.05	-11.49
325	SLE RA 19	34	-4	4317	1104.61	7.1	-11.83
325	SLE RA 20	33	-11	4313	1103.83	7.1	-11.47
325	SLE RA 21	34	-4	4343	1111.33	7.15	-11.81
325	SLE FR 1	33	-10	3850	987.77	6.25	-11.4
325	SLE FR 2	33	-8	3860	990.27	6.26	-11.51
325	SLE FR 3	33	-10	3860	990.45	6.27	-11.39
325	SLE FR 4	33	-8	3991	1023.07	6.5	-11.54
325	SLE FR 5	33	-10	3991	1023.26	6.51	-11.42
325	SLE FR 6	33	-10	4069	1042.44	6.65	-11.45
325	SLE QP 1	33	-10	3850	987.77	6.25	-11.4
325	SLE QP 2	33	-10	3981	1020.57	6.49	-11.43
325	SLD 1	445	95	3998	1044.5	7.5	-155.92
325	SLD 2	519	154	4068	1059.8	7.54	-181.69
325	SLD 3	404	-113	2935	797.32	6.05	-141.32
325	SLD 4	478	-54	3005	812.62	6.09	-167.08
325	SLD 5	206	325	5586	1399.89	8.98	-72.29
325	SLD 6	255	364	5633	1409.98	9	-89.29
325	SLD 7	68	-366	2042	575.96	4.16	-23.61
325	SLD 8	117	-327	2088	586.05	4.19	-40.61
325	SLD 9	-51	307	5874	1455.09	8.79	17.75
325	SLD 10	-2	346	5921	1465.19	8.82	0.76
325	SLD 11	-189	-385	2330	631.17	3.97	66.43
325	SLD 12	-140	-346	2376	641.26	4	49.43
325	SLD 13	-412	33	4958	1228.53	6.89	144.23
325	SLD 14	-338	92	5028	1243.82	6.93	118.46
325	SLD 15	-453	-175	3894	981.35	5.44	158.83
325	SLD 16	-379	-116	3964	996.65	5.48	133.07
325	SLV 1	1001	252	4109	1097.1	8.97	-350.78
325	SLV 2	1175	391	4274	1133.06	9.07	-411.34
325	SLV 3	897	-266	1443	477.36	5.34	-313.71
325	SLV 4	1070	-127	1608	513.31	5.44	-374.27
325	SLV 5	450	828	8033	1976.77	12.71	-158.15
325	SLV 6	567	922	8144	2000.98	12.78	-198.93
325	SLV 7	101	-899	-855	-89.05	0.63	-34.58
325	SLV 8	217	-805	-744	-64.84	0.7	-75.36
325	SLV 9	-151	785	8706	2105.99	12.28	52.5
325	SLV 10	-35	878	8817	2130.2	12.35	11.73
325	SLV 11	-501	-942	-181	40.17	0.2	176.07

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
325	SLV 12	-384	-849	-70	64.38	0.27	135.3
325	SLV 13	-1004	107	6355	1527.83	7.54	351.41
325	SLV 14	-831	246	6520	1563.79	7.64	290.85
325	SLV 15	-1109	-411	3688	908.09	3.91	388.49
325	SLV 16	-935	-273	3853	944.05	4.01	327.92
325	CRTFP Ux+	0	0	0	0	0	0
325	CRTFP Ux-	0	0	0	0	0	0
325	CRTFP Uy+	0	0	0	0	0	0
325	CRTFP Uy-	0	0	0	0	0	0
326	SLU 1	33	-7	3517	796.48	5.85	-11.47
326	SLU 2	35	9	3587	812.64	5.97	-12.37
326	SLU 3	33	-7	3575	809.73	5.96	-11.56
326	SLU 4	35	2	3618	819.42	6.03	-12.09
326	SLU 5	35	9	3623	820.89	6.04	-12.34
326	SLU 6	33	-7	3611	817.98	6.03	-11.53
326	SLU 7	35	2	3654	827.68	6.1	-12.06
326	SLU 8	33	-7	3589	812.98	5.99	-11.41
326	SLU 9	34	2	3631	822.68	6.06	-11.95
326	SLU 10	36	9	4020	906.29	6.79	-12.47
326	SLU 11	34	-7	4008	903.38	6.78	-11.66
326	SLU 12	35	2	4050	913.08	6.86	-12.2
326	SLU 13	36	9	4056	914.55	6.86	-12.44
326	SLU 14	33	-7	4044	911.64	6.85	-11.63
326	SLU 15	35	2	4086	921.33	6.93	-12.17
326	SLU 16	33	-7	4021	906.64	6.81	-11.52
326	SLU 17	35	2	4064	916.34	6.88	-12.06
326	SLU 18	33	-7	4135	930.27	7.03	-11.62
326	SLU 19	35	3	4177	939.97	7.1	-12.16
326	SLU 20	33	-7	4171	938.53	7.1	-11.59
326	SLU 21	35	3	4213	948.22	7.17	-12.13
326	SLU 22	36	-7	3987	899.72	6.73	-12.6
326	SLU 23	39	8	4057	915.88	6.84	-13.49
326	SLU 24	36	-8	4045	912.97	6.84	-12.68
326	SLU 25	38	2	4088	922.67	6.91	-13.22
326	SLU 26	39	8	4093	924.14	6.91	-13.46
326	SLU 27	36	-8	4081	921.22	6.91	-12.65
326	SLU 28	38	2	4124	930.92	6.98	-13.19
326	SLU 29	36	-8	4059	916.23	6.86	-12.54
326	SLU 30	38	2	4101	925.92	6.94	-13.07
326	SLU 31	39	8	4490	1009.54	7.67	-13.6
326	SLU 32	37	-8	4478	1006.63	7.66	-12.79
326	SLU 33	38	2	4520	1016.32	7.73	-13.32
326	SLU 34	39	8	4526	1017.79	7.74	-13.57
326	SLU 35	37	-8	4514	1014.88	7.73	-12.76
326	SLU 36	38	2	4556	1024.58	7.8	-13.29
326	SLU 37	36	-8	4491	1009.88	7.69	-12.64
326	SLU 38	38	2	4534	1019.58	7.76	-13.18
326	SLU 39	37	-7	4605	1033.52	7.91	-12.75
326	SLU 40	38	2	4647	1043.21	7.98	-13.29
326	SLU 41	37	-8	4641	1041.77	7.98	-12.72
326	SLU 42	38	2	4683	1051.47	8.05	-13.26
326	SLU 43	42	-9	4410	1000.02	7.3	-14.53
326	SLU 44	44	7	4481	1016.18	7.42	-15.42
326	SLU 45	42	-9	4469	1013.27	7.41	-14.61
326	SLU 46	44	0	4511	1022.97	7.48	-15.15
326	SLU 47	44	7	4517	1024.44	7.49	-15.39
326	SLU 48	42	-9	4505	1021.53	7.48	-14.58
326	SLU 49	43	0	4547	1031.22	7.55	-15.12
326	SLU 50	42	-9	4483	1016.53	7.44	-14.47
326	SLU 51	43	0	4525	1026.23	7.51	-15.01
326	SLU 52	45	7	4914	1109.84	8.25	-15.53
326	SLU 53	42	-9	4902	1106.93	8.24	-14.72
326	SLU 54	44	0	4944	1116.63	8.31	-15.26
326	SLU 55	44	7	4950	1118.09	8.32	-15.5
326	SLU 56	42	-9	4938	1115.18	8.31	-14.69
326	SLU 57	44	0	4980	1124.88	8.38	-15.23
326	SLU 58	42	-9	4915	1110.19	8.27	-14.57
326	SLU 59	43	1	4958	1119.88	8.34	-15.11
326	SLU 60	42	-9	5028	1133.82	8.48	-14.68
326	SLU 61	44	1	5071	1143.51	8.55	-15.22
326	SLU 62	42	-9	5065	1142.07	8.55	-14.65
326	SLU 63	44	1	5107	1151.77	8.62	-15.19
326	SLU 64	45	-9	4880	1103.27	8.18	-15.65
326	SLU 65	47	6	4951	1119.43	8.3	-16.55
326	SLU 66	45	-10	4939	1116.52	8.29	-15.74
326	SLU 67	47	0	4981	1126.21	8.36	-16.27
326	SLU 68	47	6	4987	1127.68	8.37	-16.52
326	SLU 69	45	-10	4975	1124.77	8.36	-15.71
326	SLU 70	47	0	5017	1134.47	8.43	-16.24
326	SLU 71	45	-10	4953	1119.77	8.32	-15.59
326	SLU 72	46	0	4995	1129.47	8.39	-16.13
326	SLU 73	48	7	5384	1213.08	9.12	-16.66
326	SLU 74	46	-10	5372	1210.17	9.12	-15.84
326	SLU 75	47	0	5414	1219.87	9.19	-16.38
326	SLU 76	48	6	5420	1221.34	9.19	-16.62
326	SLU 77	45	-10	5408	1218.43	9.19	-15.81
326	SLU 78	47	0	5450	1228.12	9.26	-16.35
326	SLU 79	45	-10	5385	1213.43	9.14	-15.7
326	SLU 80	47	0	5428	1223.13	9.22	-16.24

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
326	SLU 81	45	-9	5498	1237.06	9.36	-15.81
326	SLU 82	47	0	5541	1246.76	9.43	-16.34
326	SLU 83	45	-9	5535	1245.32	9.43	-15.78
326	SLU 84	47	0	5577	1255.01	9.5	-16.31
326	SLE RA 1	34	-7	3651	825.98	6.1	-11.79
326	SLE RA 2	36	3	3698	836.75	6.18	-12.39
326	SLE RA 3	34	-7	3690	834.81	6.17	-11.85
326	SLE RA 4	35	-1	3718	841.27	6.22	-12.21
326	SLE RA 5	36	3	3722	842.25	6.22	-12.37
326	SLE RA 6	34	-7	3714	840.31	6.22	-11.83
326	SLE RA 7	35	-1	3742	846.78	6.27	-12.19
326	SLE RA 8	34	-7	3699	836.98	6.19	-11.75
326	SLE RA 9	35	-1	3727	843.45	6.24	-12.11
326	SLE RA 10	36	3	3986	899.19	6.73	-12.46
326	SLE RA 11	34	-7	3978	897.25	6.72	-11.92
326	SLE RA 12	35	-1	4007	903.71	6.77	-12.28
326	SLE RA 13	36	3	4010	904.69	6.77	-12.44
326	SLE RA 14	34	-7	4002	902.75	6.77	-11.9
326	SLE RA 15	35	-1	4031	909.21	6.82	-12.26
326	SLE RA 16	34	-7	3987	899.42	6.74	-11.82
326	SLE RA 17	35	-1	4016	905.88	6.79	-12.18
326	SLE RA 18	34	-7	4063	915.17	6.89	-11.9
326	SLE RA 19	35	-1	4091	921.64	6.93	-12.25
326	SLE RA 20	34	-7	4087	920.67	6.93	-11.88
326	SLE RA 21	35	-1	4115	927.14	6.98	-12.23
326	SLE FR 1	34	-7	3651	825.98	6.1	-11.79
326	SLE FR 2	34	-5	3660	828.13	6.11	-11.91
326	SLE FR 3	34	-7	3660	828.18	6.12	-11.79
326	SLE FR 4	34	-5	3784	854.89	6.35	-11.94
326	SLE FR 5	34	-7	3784	854.94	6.35	-11.82
326	SLE FR 6	34	-7	3857	870.57	6.49	-11.84
326	SLE QP 1	34	-7	3651	825.98	6.1	-11.79
326	SLE QP 2	34	-7	3774	852.74	6.33	-11.82
326	SLD 1	446	93	3758	875.65	7.43	-156.34
326	SLD 2	520	153	3827	888.57	7.48	-182.15
326	SLD 3	404	-109	2742	668.17	5.92	-141.44
326	SLD 4	478	-49	2811	681.09	5.97	-167.25
326	SLD 5	208	318	5297	1171.96	8.94	-73.13
326	SLD 6	257	358	5343	1180.48	8.97	-90.16
326	SLD 7	68	-355	1912	480.37	3.91	-23.47
326	SLD 8	117	-315	1957	488.89	3.95	-40.5
326	SLD 9	-49	301	5591	1216.58	8.72	16.85
326	SLD 10	0	341	5637	1225.1	8.75	-0.18
326	SLD 11	-189	-372	2206	524.99	3.69	66.51
326	SLD 12	-140	-332	2252	533.51	3.73	49.48
326	SLD 13	-410	34	4738	1024.38	6.69	143.61
326	SLD 14	-336	95	4807	1037.3	6.74	117.79
326	SLD 15	-452	-167	3722	816.9	5.19	158.5
326	SLD 16	-378	-107	3791	829.82	5.23	132.69
326	SLV 1	1003	242	3820	923.57	9.03	-351.25
326	SLV 2	1176	385	3981	953.95	9.15	-411.93
326	SLV 3	896	-262	1273	403.4	5.25	-313.43
326	SLV 4	1069	-120	1435	433.77	5.36	-374.11
326	SLV 5	454	806	7620	1657.25	12.86	-159.68
326	SLV 6	571	902	7729	1677.7	12.93	-200.54
326	SLV 7	98	-875	-868	-76.67	0.25	-33.63
326	SLV 8	215	-779	-760	-56.22	0.33	-74.48
326	SLV 9	-147	765	8309	1761.69	12.34	50.83
326	SLV 10	-30	861	8417	1782.14	12.41	9.98
326	SLV 11	-503	-916	-180	27.77	-0.26	176.89
326	SLV 12	-386	-820	-71	48.22	-0.19	136.03
326	SLV 13	-1001	106	6114	1271.7	7.3	350.46
326	SLV 14	-828	248	6276	1302.07	7.42	289.78
326	SLV 15	-1108	-399	3568	751.52	3.52	388.28
326	SLV 16	-935	-256	3729	781.9	3.64	327.6
326	CRTFP Ux+	0	0	0	0	0	0
326	CRTFP Ux-	0	0	0	0	0	0
326	CRTFP Uy+	0	0	0	0	0	0
326	CRTFP Uy-	0	0	0	0	0	0
327	SLU 1	34	-5	3340	656.57	5.11	-11.82
327	SLU 2	37	10	3407	670.22	5.22	-12.76
327	SLU 3	34	-5	3396	667.19	5.21	-11.92
327	SLU 4	36	4	3436	675.38	5.27	-12.48
327	SLU 5	36	10	3441	676.84	5.28	-12.73
327	SLU 6	34	-6	3430	673.81	5.27	-11.89
327	SLU 7	36	4	3470	682	5.33	-12.45
327	SLU 8	34	-5	3408	669.8	5.23	-11.77
327	SLU 9	35	4	3449	677.99	5.3	-12.33
327	SLU 10	37	10	3815	744.81	5.95	-12.87
327	SLU 11	34	-5	3803	741.78	5.94	-12.03
327	SLU 12	36	4	3843	749.97	6	-12.59
327	SLU 13	37	10	3849	751.42	6.01	-12.85
327	SLU 14	34	-5	3837	748.4	6	-12.01
327	SLU 15	36	4	3877	756.59	6.06	-12.57
327	SLU 16	34	-5	3816	744.39	5.96	-11.89
327	SLU 17	36	4	3856	752.58	6.03	-12.45
327	SLU 18	34	-5	3923	763.12	6.15	-11.99
327	SLU 19	36	4	3963	771.31	6.22	-12.55
327	SLU 20	34	-5	3957	769.74	6.22	-11.96

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
327	SLU 21	36	4	3997	777.93	6.28	-12.53
327	SLU 22	37	-6	3784	738.99	5.89	-12.97
327	SLU 23	40	9	3851	752.64	5.99	-13.91
327	SLU 24	37	-6	3839	749.62	5.98	-13.07
327	SLU 25	39	3	3879	757.81	6.05	-13.63
327	SLU 26	40	9	3885	759.26	6.05	-13.89
327	SLU 27	37	-6	3873	756.23	6.04	-13.04
327	SLU 28	39	3	3913	764.42	6.11	-13.61
327	SLU 29	37	-6	3852	752.23	6.01	-12.92
327	SLU 30	39	3	3892	760.42	6.07	-13.49
327	SLU 31	40	9	4258	827.23	6.72	-14.03
327	SLU 32	38	-6	4247	824.21	6.71	-13.18
327	SLU 33	39	3	4287	832.4	6.78	-13.75
327	SLU 34	40	9	4292	833.85	6.78	-14
327	SLU 35	38	-6	4281	830.82	6.77	-13.16
327	SLU 36	39	3	4321	839.01	6.84	-13.72
327	SLU 37	37	-6	4259	826.81	6.74	-13.04
327	SLU 38	39	3	4300	835	6.8	-13.6
327	SLU 39	38	-6	4366	845.55	6.93	-13.14
327	SLU 40	39	3	4406	853.74	6.99	-13.7
327	SLU 41	38	-6	4400	852.16	6.99	-13.12
327	SLU 42	39	3	4440	860.35	7.05	-13.68
327	SLU 43	43	-7	4190	825.28	6.38	-14.97
327	SLU 44	46	9	4257	838.93	6.49	-15.91
327	SLU 45	43	-7	4246	835.91	6.48	-15.07
327	SLU 46	45	2	4286	844.1	6.54	-15.63
327	SLU 47	45	8	4291	845.55	6.55	-15.89
327	SLU 48	43	-7	4280	842.52	6.54	-15.04
327	SLU 49	45	2	4320	850.71	6.6	-15.6
327	SLU 50	43	-7	4258	838.51	6.5	-14.92
327	SLU 51	44	2	4299	846.7	6.57	-15.49
327	SLU 52	46	9	4665	913.52	7.22	-16.03
327	SLU 53	44	-7	4653	910.49	7.21	-15.18
327	SLU 54	45	2	4693	918.68	7.27	-15.75
327	SLU 55	46	9	4699	920.13	7.28	-16
327	SLU 56	43	-7	4687	917.11	7.27	-15.16
327	SLU 57	45	2	4727	925.3	7.33	-15.72
327	SLU 58	43	-7	4666	913.1	7.23	-15.04
327	SLU 59	45	2	4706	921.29	7.3	-15.6
327	SLU 60	43	-6	4773	931.84	7.42	-15.14
327	SLU 61	45	3	4813	940.02	7.49	-15.7
327	SLU 62	43	-6	4807	938.45	7.48	-15.11
327	SLU 63	45	3	4847	946.64	7.55	-15.68
327	SLU 64	46	-7	4634	907.7	7.16	-16.12
327	SLU 65	49	8	4701	921.35	7.26	-17.06
327	SLU 66	46	-7	4689	918.33	7.25	-16.22
327	SLU 67	48	2	4729	926.52	7.32	-16.78
327	SLU 68	49	8	4735	927.97	7.32	-17.04
327	SLU 69	46	-7	4723	924.95	7.31	-16.19
327	SLU 70	48	2	4763	933.14	7.38	-16.76
327	SLU 71	46	-7	4702	920.94	7.28	-16.08
327	SLU 72	48	2	4742	929.13	7.34	-16.64
327	SLU 73	49	8	5109	995.94	7.99	-17.18
327	SLU 74	47	-7	5097	992.92	7.98	-16.34
327	SLU 75	48	2	5137	1001.11	8.04	-16.9
327	SLU 76	49	8	5142	1002.56	8.05	-17.15
327	SLU 77	47	-7	5131	999.53	8.04	-16.31
327	SLU 78	48	2	5171	1007.72	8.11	-16.87
327	SLU 79	46	-7	5109	995.53	8.01	-16.19
327	SLU 80	48	2	5150	1003.72	8.07	-16.75
327	SLU 81	47	-7	5216	1014.26	8.2	-16.29
327	SLU 82	48	2	5256	1022.45	8.26	-16.85
327	SLU 83	47	-7	5250	1020.88	8.26	-16.27
327	SLU 84	48	2	5290	1029.07	8.32	-16.83
327	SLE RA 1	35	-5	3467	680.12	5.33	-12.15
327	SLE RA 2	37	5	3512	689.22	5.41	-12.78
327	SLE RA 3	35	-6	3504	687.2	5.4	-12.21
327	SLE RA 4	36	0	3531	692.66	5.44	-12.59
327	SLE RA 5	37	5	3534	693.63	5.45	-12.76
327	SLE RA 6	35	-6	3526	691.61	5.44	-12.2
327	SLE RA 7	36	0	3553	697.07	5.48	-12.57
327	SLE RA 8	35	-5	3512	688.94	5.42	-12.12
327	SLE RA 9	36	1	3539	694.4	5.46	-12.49
327	SLE RA 10	37	5	3783	738.94	5.89	-12.85
327	SLE RA 11	35	-5	3776	736.93	5.88	-12.29
327	SLE RA 12	36	1	3802	742.39	5.93	-12.67
327	SLE RA 13	37	5	3806	743.36	5.93	-12.84
327	SLE RA 14	35	-6	3798	741.34	5.92	-12.27
327	SLE RA 15	36	1	3825	746.8	5.97	-12.65
327	SLE RA 16	35	-5	3784	738.67	5.9	-12.2
327	SLE RA 17	36	1	3811	744.13	5.94	-12.57
327	SLE RA 18	35	-5	3855	751.16	6.03	-12.26
327	SLE RA 19	36	1	3882	756.62	6.07	-12.64
327	SLE RA 20	35	-5	3878	755.57	6.07	-12.25
327	SLE RA 21	36	1	3905	761.03	6.11	-12.62
327	SLE FR 1	35	-5	3467	680.12	5.33	-12.15
327	SLE FR 2	35	-3	3476	681.94	5.35	-12.28
327	SLE FR 3	35	-5	3476	681.88	5.35	-12.14
327	SLE FR 4	35	-3	3592	703.25	5.56	-12.31

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
327	SLE FR 5	35	-5	3593	703.19	5.56	-12.18
327	SLE FR 6	35	-5	3661	715.64	5.68	-12.21
327	SLE QP 1	35	-5	3467	680.12	5.33	-12.15
327	SLE QP 2	35	-5	3583	701.43	5.54	-12.18
327	SLD 1	447	89	3531	721.49	6.72	-156.68
327	SLD 2	521	151	3598	732.16	6.76	-182.52
327	SLD 3	404	-107	2561	551.65	5.36	-141.52
327	SLD 4	478	-45	2628	562.31	5.4	-167.37
327	SLD 5	210	310	5026	963.12	7.94	-73.87
327	SLD 6	259	351	5070	970.16	7.97	-90.91
327	SLD 7	67	-345	1794	396.99	3.43	-23.36
327	SLD 8	116	-304	1839	404.02	3.45	-40.4
327	SLD 9	-46	293	5328	998.84	7.63	16.04
327	SLD 10	2	334	5373	1005.87	7.66	-1.01
327	SLD 11	-189	-361	2097	432.7	3.12	66.55
327	SLD 12	-140	-320	2141	439.74	3.14	49.5
327	SLD 13	-409	35	4539	840.55	5.68	143
327	SLD 14	-335	97	4606	851.21	5.72	117.15
327	SLD 15	-451	-162	3569	670.7	4.33	158.15
327	SLD 16	-377	-100	3636	681.37	4.37	132.31
327	SLV 1	1003	231	3540	762.45	8.41	-351.57
327	SLV 2	1177	377	3699	787.52	8.5	-412.32
327	SLV 3	895	-260	1109	336.67	5.01	-313.12
327	SLV 4	1069	-114	1268	361.74	5.1	-373.87
327	SLV 5	458	782	7228	1360.82	11.53	-160.99
327	SLV 6	575	881	7334	1377.7	11.59	-201.88
327	SLV 7	95	-853	-875	-58.43	0.22	-32.8
327	SLV 8	213	-755	-769	-41.56	0.28	-73.7
327	SLV 9	-143	744	7936	1444.42	10.81	49.34
327	SLV 10	-26	842	8042	1461.3	10.87	8.44
327	SLV 11	-505	-891	-167	25.17	-0.51	177.52
327	SLV 12	-388	-793	-61	42.04	-0.45	136.62
327	SLV 13	-999	103	5899	1041.12	5.98	349.5
327	SLV 14	-825	249	6058	1066.19	6.07	288.75
327	SLV 15	-1107	-388	3468	615.34	2.59	387.95
327	SLV 16	-934	-241	3627	640.41	2.68	327.21
327	CRTFP Ux+	0	0	0	0	0	0
327	CRTFP Ux-	0	0	0	0	0	0
327	CRTFP Uy+	0	0	0	0	0	0
327	CRTFP Uy-	0	0	0	0	0	0
328	SLU 1	35	-4	3193	540.02	4.05	-12.14
328	SLU 2	37	10	3257	551.44	4.13	-13.11
328	SLU 3	35	-5	3246	548.46	4.12	-12.24
328	SLU 4	37	4	3284	555.31	4.17	-12.83
328	SLU 5	37	10	3289	556.7	4.18	-13.1
328	SLU 6	35	-5	3278	553.71	4.17	-12.22
328	SLU 7	37	4	3316	560.56	4.22	-12.81
328	SLU 8	35	-4	3258	550.52	4.14	-12.1
328	SLU 9	36	4	3296	557.38	4.19	-12.69
328	SLU 10	38	10	3644	610.13	4.72	-13.24
328	SLU 11	35	-4	3632	607.14	4.71	-12.37
328	SLU 12	37	4	3671	614	4.76	-12.95
328	SLU 13	38	10	3676	615.38	4.77	-13.22
328	SLU 14	35	-4	3664	612.39	4.76	-12.35
328	SLU 15	37	4	3703	619.25	4.81	-12.93
328	SLU 16	35	-4	3644	609.21	4.73	-12.22
328	SLU 17	37	4	3683	616.06	4.78	-12.81
328	SLU 18	35	-4	3745	623.85	4.89	-12.32
328	SLU 19	37	5	3784	630.71	4.94	-12.9
328	SLU 20	35	-4	3778	629.11	4.94	-12.3
328	SLU 21	37	5	3816	635.96	4.99	-12.88
328	SLU 22	38	-5	3614	605.06	4.67	-13.31
328	SLU 23	41	9	3678	616.49	4.75	-14.29
328	SLU 24	38	-5	3667	613.5	4.74	-13.42
328	SLU 25	40	3	3705	620.35	4.79	-14
328	SLU 26	41	9	3711	621.74	4.8	-14.27
328	SLU 27	38	-5	3699	618.75	4.79	-13.4
328	SLU 28	40	3	3737	625.61	4.84	-13.99
328	SLU 29	38	-5	3679	615.56	4.76	-13.28
328	SLU 30	40	4	3717	622.42	4.81	-13.86
328	SLU 31	41	10	4065	675.17	5.34	-14.42
328	SLU 32	39	-5	4053	672.18	5.33	-13.54
328	SLU 33	40	3	4092	679.04	5.38	-14.13
328	SLU 34	41	10	4097	680.42	5.39	-14.4
328	SLU 35	39	-5	4085	677.43	5.38	-13.52
328	SLU 36	40	3	4124	684.29	5.43	-14.11
328	SLU 37	38	-5	4065	674.25	5.35	-13.4
328	SLU 38	40	4	4104	681.1	5.4	-13.99
328	SLU 39	39	-5	4166	688.9	5.51	-13.49
328	SLU 40	40	4	4205	695.75	5.56	-14.08
328	SLU 41	39	-5	4199	694.15	5.55	-13.47
328	SLU 42	40	4	4237	701	5.61	-14.06
328	SLU 43	44	-5	4007	679.73	5.05	-15.37
328	SLU 44	47	9	4071	691.15	5.13	-16.35
328	SLU 45	44	-6	4059	688.17	5.13	-15.48
328	SLU 46	46	3	4098	695.02	5.18	-16.07
328	SLU 47	47	9	4103	696.4	5.18	-16.33
328	SLU 48	44	-6	4091	693.42	5.17	-15.46
328	SLU 49	46	3	4130	700.27	5.22	-16.05

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
328	SLU 50	44	-5	4071	690.23	5.15	-15.34
328	SLU 51	46	3	4110	697.08	5.2	-15.92
328	SLU 52	47	9	4457	749.83	5.72	-16.48
328	SLU 53	45	-5	4446	746.85	5.71	-15.6
328	SLU 54	46	3	4484	753.7	5.76	-16.19
328	SLU 55	47	9	4490	755.08	5.77	-16.46
328	SLU 56	45	-6	4478	752.1	5.76	-15.59
328	SLU 57	46	3	4516	758.95	5.81	-16.17
328	SLU 58	44	-5	4458	748.91	5.73	-15.46
328	SLU 59	46	3	4496	755.77	5.78	-16.05
328	SLU 60	45	-5	4559	763.56	5.89	-15.55
328	SLU 61	46	4	4597	770.41	5.94	-16.14
328	SLU 62	44	-5	4591	768.81	5.94	-15.53
328	SLU 63	46	3	4630	775.67	5.99	-16.12
328	SLU 64	47	-6	4428	744.77	5.67	-16.55
328	SLU 65	50	8	4492	756.19	5.75	-17.53
328	SLU 66	48	-6	4480	753.21	5.75	-16.66
328	SLU 67	49	2	4519	760.06	5.8	-17.24
328	SLU 68	50	8	4524	761.44	5.8	-17.51
328	SLU 69	48	-6	4513	758.46	5.79	-16.64
328	SLU 70	49	2	4551	765.31	5.84	-17.22
328	SLU 71	47	-6	4492	755.27	5.77	-16.51
328	SLU 72	49	3	4531	762.13	5.82	-17.1
328	SLU 73	50	9	4878	814.87	6.34	-17.65
328	SLU 74	48	-6	4867	811.89	6.33	-16.78
328	SLU 75	50	2	4905	818.74	6.38	-17.37
328	SLU 76	50	8	4911	820.13	6.39	-17.64
328	SLU 77	48	-6	4899	817.14	6.38	-16.76
328	SLU 78	50	2	4937	823.99	6.43	-17.35
328	SLU 79	48	-6	4879	813.95	6.35	-16.64
328	SLU 80	49	3	4917	820.81	6.4	-17.23
328	SLU 81	48	-6	4980	828.6	6.51	-16.73
328	SLU 82	50	3	5018	835.46	6.56	-17.32
328	SLU 83	48	-6	5012	833.85	6.56	-16.71
328	SLU 84	49	3	5051	840.71	6.61	-17.3
328	SLE RA 1	36	-5	3314	558.61	4.23	-12.47
328	SLE RA 2	38	5	3356	566.22	4.28	-13.12
328	SLE RA 3	36	-5	3349	564.23	4.28	-12.54
328	SLE RA 4	37	1	3374	568.8	4.31	-12.93
328	SLE RA 5	37	5	3378	569.72	4.31	-13.11
328	SLE RA 6	36	-5	3370	567.73	4.31	-12.53
328	SLE RA 7	37	1	3396	572.3	4.34	-12.92
328	SLE RA 8	36	-5	3357	565.61	4.29	-12.45
328	SLE RA 9	37	1	3382	570.18	4.32	-12.84
328	SLE RA 10	38	5	3614	605.34	4.67	-13.21
328	SLE RA 11	36	-5	3606	603.35	4.67	-12.63
328	SLE RA 12	37	1	3632	607.92	4.7	-13.02
328	SLE RA 13	38	5	3635	608.84	4.7	-13.2
328	SLE RA 14	36	-5	3628	606.85	4.7	-12.61
328	SLE RA 15	37	1	3653	611.42	4.73	-13
328	SLE RA 16	36	-5	3614	604.73	4.68	-12.53
328	SLE RA 17	37	1	3640	609.3	4.71	-12.92
328	SLE RA 18	36	-4	3682	614.49	4.78	-12.59
328	SLE RA 19	37	1	3707	619.06	4.82	-12.98
328	SLE RA 20	36	-4	3703	617.99	4.82	-12.58
328	SLE RA 21	37	1	3729	622.56	4.85	-12.97
328	SLE FR 1	36	-5	3314	558.61	4.23	-12.47
328	SLE FR 2	36	-3	3322	560.13	4.24	-12.6
328	SLE FR 3	36	-5	3322	560.01	4.24	-12.47
328	SLE FR 4	36	-3	3432	576.89	4.4	-12.64
328	SLE FR 5	36	-4	3433	576.77	4.41	-12.5
328	SLE FR 6	36	-4	3498	586.55	4.51	-12.53
328	SLE QP 1	36	-5	3314	558.61	4.23	-12.47
328	SLE QP 2	36	-4	3424	575.37	4.39	-12.51
328	SLD 1	448	85	3332	590.73	5.64	-156.94
328	SLD 2	522	149	3399	599.46	5.66	-182.79
328	SLD 3	404	-107	2402	453.41	4.58	-141.57
328	SLD 4	478	-43	2468	462.14	4.59	-167.42
328	SLD 5	212	302	4796	786.68	6.38	-74.5
328	SLD 6	261	344	4840	792.44	6.39	-91.55
328	SLD 7	67	-338	1694	328.95	2.83	-23.27
328	SLD 8	116	-296	1738	334.7	2.84	-40.32
328	SLD 9	-44	287	5110	816.04	5.95	15.3
328	SLD 10	5	329	5154	821.8	5.96	-1.75
328	SLD 11	-190	-353	2008	358.31	2.39	66.53
328	SLD 12	-141	-311	2052	364.06	2.4	49.48
328	SLD 13	-407	34	4380	688.61	4.2	142.4
328	SLD 14	-333	98	4446	697.33	4.21	116.55
328	SLD 15	-450	-158	3449	551.29	3.13	157.77
328	SLD 16	-376	-94	3515	560.01	3.14	131.92
328	SLV 1	1004	219	3287	622.67	7.41	-351.76
328	SLV 2	1178	370	3443	643.18	7.44	-412.54
328	SLV 3	893	-260	954	278.49	4.73	-312.77
328	SLV 4	1067	-109	1110	298.99	4.77	-373.54
328	SLV 5	462	762	6893	1107.75	9.35	-162.09
328	SLV 6	579	864	6998	1121.55	9.37	-203.01
328	SLV 7	93	-837	-885	-39.53	0.43	-32.1
328	SLV 8	210	-735	-780	-25.73	0.46	-73.01
328	SLV 9	-138	726	7628	1176.47	8.33	48

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
328	SLV 10	-21	828	7733	1190.28	8.35	7.08
328	SLV 11	-507	-873	-150	29.19	-0.58	177.99
328	SLV 12	-390	-771	-45	42.99	-0.56	137.07
328	SLV 13	-996	100	5738	851.75	4.02	348.52
328	SLV 14	-822	251	5894	872.26	4.06	287.75
328	SLV 15	-1106	-379	3405	507.57	1.34	387.52
328	SLV 16	-932	-228	3561	528.07	1.38	326.75
328	CRTFP Ux+	0	0	0	0	0	0
328	CRTFP Ux-	0	0	0	0	0	0
328	CRTFP Uy+	0	0	0	0	0	0
328	CRTFP Uy-	0	0	0	0	0	0
329	SLU 1	36	-4	3084	451.13	2.77	-12.43
329	SLU 2	38	11	3146	460.75	2.82	-13.44
329	SLU 3	36	-4	3134	457.9	2.82	-12.54
329	SLU 4	38	5	3171	463.68	2.85	-13.15
329	SLU 5	38	11	3176	464.96	2.86	-13.43
329	SLU 6	36	-4	3165	462.11	2.85	-12.53
329	SLU 7	38	5	3202	467.88	2.89	-13.14
329	SLU 8	36	-4	3146	459.55	2.84	-12.4
329	SLU 9	37	5	3183	465.32	2.87	-13.01
329	SLU 10	39	11	3516	507.25	3.24	-13.58
329	SLU 11	36	-4	3505	504.4	3.24	-12.68
329	SLU 12	38	5	3542	510.18	3.27	-13.29
329	SLU 13	39	11	3547	511.46	3.27	-13.56
329	SLU 14	36	-4	3535	508.61	3.27	-12.66
329	SLU 15	38	5	3573	514.38	3.3	-13.27
329	SLU 16	36	-4	3516	506.05	3.25	-12.53
329	SLU 17	38	5	3553	511.82	3.29	-13.14
329	SLU 18	36	-3	3613	517.56	3.37	-12.62
329	SLU 19	38	5	3650	523.33	3.4	-13.23
329	SLU 20	36	-3	3644	521.77	3.4	-12.61
329	SLU 21	38	5	3681	527.54	3.43	-13.22
329	SLU 22	39	-5	3488	502.86	3.2	-13.63
329	SLU 23	42	10	3550	512.49	3.26	-14.64
329	SLU 24	39	-5	3538	509.63	3.25	-13.74
329	SLU 25	41	4	3575	515.41	3.29	-14.35
329	SLU 26	42	10	3581	516.69	3.29	-14.63
329	SLU 27	39	-5	3569	513.84	3.29	-13.73
329	SLU 28	41	4	3606	519.62	3.32	-14.34
329	SLU 29	39	-5	3550	511.28	3.27	-13.6
329	SLU 30	41	4	3587	517.05	3.3	-14.21
329	SLU 31	42	10	3920	558.99	3.67	-14.78
329	SLU 32	40	-5	3909	556.13	3.67	-13.87
329	SLU 33	41	4	3946	561.91	3.7	-14.48
329	SLU 34	42	10	3951	563.19	3.71	-14.76
329	SLU 35	40	-5	3940	560.34	3.7	-13.86
329	SLU 36	41	4	3977	566.12	3.74	-14.47
329	SLU 37	39	-4	3920	557.78	3.69	-13.73
329	SLU 38	41	4	3957	563.55	3.72	-14.34
329	SLU 39	40	-4	4017	569.29	3.8	-13.82
329	SLU 40	41	4	4054	575.07	3.83	-14.43
329	SLU 41	39	-4	4048	573.5	3.83	-13.8
329	SLU 42	41	4	4085	579.27	3.86	-14.41
329	SLU 43	45	-4	3870	568.73	3.45	-15.74
329	SLU 44	48	10	3932	578.36	3.51	-16.76
329	SLU 45	45	-5	3921	575.5	3.5	-15.86
329	SLU 46	47	4	3958	581.28	3.54	-16.47
329	SLU 47	48	10	3963	582.56	3.54	-16.75
329	SLU 48	45	-5	3952	579.71	3.54	-15.85
329	SLU 49	47	4	3989	585.49	3.57	-16.46
329	SLU 50	45	-4	3932	577.15	3.52	-15.72
329	SLU 51	47	4	3969	582.92	3.55	-16.33
329	SLU 52	48	10	4302	624.86	3.92	-16.9
329	SLU 53	46	-5	4291	622.01	3.92	-15.99
329	SLU 54	48	4	4328	627.78	3.95	-16.6
329	SLU 55	48	10	4333	629.06	3.96	-16.88
329	SLU 56	46	-5	4322	626.21	3.95	-15.98
329	SLU 57	47	4	4359	631.99	3.99	-16.59
329	SLU 58	45	-4	4303	623.65	3.94	-15.85
329	SLU 59	47	4	4340	629.42	3.97	-16.46
329	SLU 60	46	-4	4399	635.16	4.05	-15.94
329	SLU 61	47	4	4436	640.94	4.08	-16.55
329	SLU 62	46	-4	4430	639.37	4.08	-15.92
329	SLU 63	47	4	4467	645.14	4.11	-16.53
329	SLU 64	48	-5	4275	620.47	3.89	-16.94
329	SLU 65	51	9	4336	630.09	3.94	-17.96
329	SLU 66	49	-6	4325	627.24	3.94	-17.06
329	SLU 67	51	3	4362	633.01	3.97	-17.67
329	SLU 68	51	9	4367	634.3	3.97	-17.95
329	SLU 69	49	-6	4356	631.44	3.97	-17.04
329	SLU 70	51	3	4393	637.22	4	-17.66
329	SLU 71	48	-5	4336	628.88	3.95	-16.92
329	SLU 72	50	3	4373	634.65	3.98	-17.53
329	SLU 73	52	9	4707	676.59	4.36	-18.09
329	SLU 74	49	-5	4695	673.74	4.35	-17.19
329	SLU 75	51	3	4732	679.51	4.39	-17.8
329	SLU 76	52	9	4738	680.8	4.39	-18.08
329	SLU 77	49	-5	4726	677.95	4.39	-17.18
329	SLU 78	51	3	4763	683.72	4.42	-17.79

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
329	SLU 79	49	-5	4707	675.38	4.37	-17.05
329	SLU 80	51	3	4744	681.16	4.4	-17.66
329	SLU 81	49	-5	4804	686.9	4.48	-17.13
329	SLU 82	51	3	4841	692.67	4.51	-17.74
329	SLU 83	49	-5	4835	691.1	4.52	-17.12
329	SLU 84	51	3	4872	696.88	4.55	-17.73
329	SLE RA 1	37	-4	3199	465.91	2.89	-12.77
329	SLE RA 2	38	6	3240	472.33	2.93	-13.45
329	SLE RA 3	37	-4	3233	470.43	2.93	-12.85
329	SLE RA 4	38	2	3258	474.27	2.95	-13.25
329	SLE RA 5	38	6	3261	475.13	2.95	-13.44
329	SLE RA 6	37	-4	3253	473.23	2.95	-12.84
329	SLE RA 7	38	2	3278	477.08	2.97	-13.24
329	SLE RA 8	37	-4	3241	471.52	2.94	-12.75
329	SLE RA 9	38	2	3265	475.37	2.96	-13.16
329	SLE RA 10	39	6	3487	503.33	3.21	-13.54
329	SLE RA 11	37	-4	3480	501.43	3.21	-12.94
329	SLE RA 12	38	2	3504	505.27	3.23	-13.34
329	SLE RA 13	39	6	3508	506.13	3.23	-13.53
329	SLE RA 14	37	-4	3500	504.23	3.23	-12.93
329	SLE RA 15	38	2	3525	508.08	3.25	-13.33
329	SLE RA 16	37	-4	3487	502.52	3.22	-12.84
329	SLE RA 17	38	2	3512	506.37	3.24	-13.25
329	SLE RA 18	37	-4	3552	510.2	3.29	-12.9
329	SLE RA 19	38	2	3577	514.05	3.31	-13.3
329	SLE RA 20	37	-4	3573	513	3.31	-12.89
329	SLE RA 21	38	2	3597	516.85	3.33	-13.3
329	SLE FR 1	37	-4	3199	465.91	2.89	-12.77
329	SLE FR 2	37	-2	3207	467.19	2.9	-12.91
329	SLE FR 3	37	-4	3208	467.03	2.9	-12.77
329	SLE FR 4	37	-2	3313	480.48	3.02	-12.94
329	SLE FR 5	37	-4	3313	480.32	3.02	-12.8
329	SLE FR 6	37	-4	3376	488.05	3.09	-12.83
329	SLE QP 1	37	-4	3199	465.91	2.89	-12.77
329	SLE QP 2	37	-4	3305	479.2	3.01	-12.81
329	SLD 1	449	81	3172	487.96	4.35	-157.13
329	SLD 2	523	148	3239	495.23	4.33	-182.98
329	SLD 3	404	-108	2270	376.13	3.66	-141.57
329	SLD 4	478	-42	2337	383.4	3.64	-167.42
329	SLD 5	214	297	4622	650.13	4.46	-75.05
329	SLD 6	263	341	4666	654.92	4.45	-92.1
329	SLD 7	66	-335	1614	277.36	2.16	-23.2
329	SLD 8	115	-291	1658	282.16	2.15	-40.25
329	SLD 9	-42	283	4952	676.24	3.88	14.63
329	SLD 10	7	327	4996	681.04	3.87	-2.42
329	SLD 11	-190	-349	1945	303.47	1.57	66.48
329	SLD 12	-141	-305	1988	308.27	1.56	49.43
329	SLD 13	-405	34	4274	575	2.39	141.81
329	SLD 14	-331	101	4340	582.27	2.37	115.96
329	SLD 15	-449	-156	3371	463.17	1.7	157.36
329	SLD 16	-375	-89	3438	470.44	1.68	131.51
329	SLV 1	1004	210	3070	508.9	6.19	-351.83
329	SLV 2	1179	367	3226	525.99	6.15	-412.59
329	SLV 3	892	-263	807	228.69	4.46	-312.37
329	SLV 4	1066	-106	963	245.78	4.42	-373.13
329	SLV 5	465	749	6637	909.9	6.6	-163.03
329	SLV 6	582	855	6742	921.41	6.57	-203.94
329	SLV 7	90	-829	-905	-24.13	0.83	-31.48
329	SLV 8	207	-724	-800	-12.62	0.8	-72.39
329	SLV 9	-134	716	7410	971.02	5.22	46.77
329	SLV 10	-17	822	7515	982.53	5.2	5.86
329	SLV 11	-509	-863	-132	36.98	-0.55	178.32
329	SLV 12	-392	-757	-27	48.49	-0.57	137.41
329	SLV 13	-993	99	5647	712.62	1.61	347.51
329	SLV 14	-819	256	5803	729.71	1.57	286.75
329	SLV 15	-1105	-375	3384	432.41	-0.12	386.98
329	SLV 16	-931	-218	3540	449.5	-0.16	326.22
329	CRTFP Ux+	0	0	0	0	0	0
329	CRTFP Ux-	0	0	0	0	0	0
329	CRTFP Uy+	0	0	0	0	0	0
329	CRTFP Uy-	0	0	0	0	0	0
330	SLU 1	36	-3	3018	393.45	1.32	-12.69
330	SLU 2	39	12	3079	401.81	1.34	-13.74
330	SLU 3	37	-3	3067	399.14	1.34	-12.81
330	SLU 4	39	6	3104	404.16	1.35	-13.44
330	SLU 5	39	12	3109	405.34	1.35	-13.73
330	SLU 6	37	-3	3097	402.67	1.36	-12.8
330	SLU 7	39	6	3134	407.69	1.37	-13.44
330	SLU 8	36	-2	3078	400.51	1.35	-12.67
330	SLU 9	38	6	3115	405.53	1.36	-13.3
330	SLU 10	40	12	3439	440.3	1.57	-13.88
330	SLU 11	37	-3	3427	437.64	1.57	-12.95
330	SLU 12	39	6	3464	442.65	1.58	-13.59
330	SLU 13	40	12	3469	443.83	1.58	-13.88
330	SLU 14	37	-3	3457	441.17	1.58	-12.95
330	SLU 15	39	6	3494	446.18	1.6	-13.58
330	SLU 16	37	-2	3438	439	1.58	-12.81
330	SLU 17	39	6	3475	444.02	1.59	-13.45
330	SLU 18	37	-2	3532	448.44	1.64	-12.89

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
330	SLU 19	39	6	3569	453.46	1.65	-13.52
330	SLU 20	37	-2	3562	451.97	1.66	-12.88
330	SLU 21	39	6	3599	456.99	1.67	-13.52
330	SLU 22	40	-4	3412	436.47	1.54	-13.91
330	SLU 23	43	11	3472	444.83	1.56	-14.96
330	SLU 24	40	-4	3461	442.16	1.56	-14.03
330	SLU 25	42	5	3497	447.17	1.58	-14.66
330	SLU 26	43	11	3503	448.36	1.58	-14.95
330	SLU 27	40	-4	3491	445.69	1.58	-14.02
330	SLU 28	42	5	3527	450.7	1.59	-14.66
330	SLU 29	40	-4	3472	443.53	1.57	-13.89
330	SLU 30	42	5	3508	448.54	1.58	-14.52
330	SLU 31	43	11	3832	483.32	1.79	-15.1
330	SLU 32	41	-4	3821	480.65	1.79	-14.17
330	SLU 33	42	5	3857	485.67	1.8	-14.81
330	SLU 34	43	11	3863	486.85	1.8	-15.09
330	SLU 35	41	-4	3851	484.18	1.81	-14.17
330	SLU 36	42	5	3887	489.2	1.82	-14.8
330	SLU 37	40	-3	3832	482.02	1.8	-14.03
330	SLU 38	42	5	3868	487.04	1.81	-14.67
330	SLU 39	40	-3	3926	491.46	1.86	-14.11
330	SLU 40	42	5	3962	496.47	1.88	-14.74
330	SLU 41	40	-3	3956	494.99	1.88	-14.1
330	SLU 42	42	5	3993	500	1.89	-14.73
330	SLU 43	46	-3	3788	496.74	1.64	-16.08
330	SLU 44	49	11	3849	505.09	1.66	-17.13
330	SLU 45	46	-3	3838	502.43	1.66	-16.2
330	SLU 46	48	5	3874	507.44	1.68	-16.83
330	SLU 47	49	11	3879	508.62	1.68	-17.12
330	SLU 48	46	-3	3868	505.96	1.68	-16.19
330	SLU 49	48	5	3904	510.97	1.69	-16.83
330	SLU 50	46	-3	3849	503.8	1.67	-16.06
330	SLU 51	48	6	3885	508.81	1.68	-16.69
330	SLU 52	50	11	4209	543.59	1.89	-17.27
330	SLU 53	47	-3	4198	540.92	1.89	-16.34
330	SLU 54	49	6	4234	545.94	1.9	-16.98
330	SLU 55	50	11	4239	547.12	1.9	-17.26
330	SLU 56	47	-3	4228	544.45	1.91	-16.34
330	SLU 57	49	6	4264	549.47	1.92	-16.97
330	SLU 58	46	-3	4209	542.29	1.9	-16.2
330	SLU 59	48	6	4245	547.31	1.91	-16.84
330	SLU 60	47	-3	4303	551.73	1.96	-16.28
330	SLU 61	49	6	4339	556.74	1.98	-16.91
330	SLU 62	47	-3	4333	555.26	1.98	-16.27
330	SLU 63	48	6	4369	560.27	1.99	-16.9
330	SLU 64	50	-4	4182	539.75	1.86	-17.29
330	SLU 65	53	10	4243	548.11	1.88	-18.35
330	SLU 66	50	-4	4231	545.45	1.88	-17.42
330	SLU 67	52	4	4268	550.46	1.9	-18.05
330	SLU 68	53	10	4273	551.64	1.9	-18.34
330	SLU 69	50	-4	4262	548.98	1.9	-17.41
330	SLU 70	52	4	4298	553.99	1.91	-18.04
330	SLU 71	50	-4	4242	546.81	1.89	-17.28
330	SLU 72	51	5	4279	551.83	1.9	-17.91
330	SLU 73	53	10	4603	586.61	2.11	-18.49
330	SLU 74	50	-4	4591	583.94	2.11	-17.56
330	SLU 75	52	4	4628	588.95	2.12	-18.19
330	SLU 76	53	10	4633	590.14	2.12	-18.48
330	SLU 77	50	-4	4622	587.47	2.13	-17.55
330	SLU 78	52	4	4658	592.48	2.14	-18.19
330	SLU 79	50	-4	4602	585.31	2.12	-17.42
330	SLU 80	52	5	4639	590.32	2.13	-18.05
330	SLU 81	50	-4	4696	594.75	2.18	-17.5
330	SLU 82	52	5	4733	599.76	2.2	-18.13
330	SLU 83	50	-4	4727	598.28	2.2	-17.49
330	SLU 84	52	5	4763	603.29	2.21	-18.12
330	SLE RA 1	37	-3	3130	405.74	1.38	-13.04
330	SLE RA 2	39	7	3171	411.31	1.4	-13.74
330	SLE RA 3	38	-3	3163	409.54	1.4	-13.12
330	SLE RA 4	39	3	3188	412.88	1.41	-13.54
330	SLE RA 5	39	7	3191	413.67	1.41	-13.73
330	SLE RA 6	38	-3	3183	411.89	1.41	-13.11
330	SLE RA 7	39	3	3208	415.23	1.42	-13.54
330	SLE RA 8	37	-3	3171	410.45	1.4	-13.03
330	SLE RA 9	39	3	3195	413.79	1.41	-13.45
330	SLE RA 10	40	7	3411	436.98	1.55	-13.83
330	SLE RA 11	38	-3	3403	435.2	1.55	-13.21
330	SLE RA 12	39	3	3428	438.54	1.56	-13.64
330	SLE RA 13	40	7	3431	439.33	1.56	-13.83
330	SLE RA 14	38	-3	3423	437.55	1.56	-13.21
330	SLE RA 15	39	3	3448	440.89	1.57	-13.63
330	SLE RA 16	38	-3	3411	436.11	1.55	-13.12
330	SLE RA 17	39	3	3435	439.45	1.56	-13.54
330	SLE RA 18	38	-3	3473	442.4	1.6	-13.17
330	SLE RA 19	39	3	3498	445.75	1.61	-13.59
330	SLE RA 20	38	-3	3493	444.76	1.61	-13.17
330	SLE RA 21	39	3	3518	448.1	1.62	-13.59
330	SLE FR 1	37	-3	3130	405.74	1.38	-13.04
330	SLE FR 2	38	-1	3139	406.86	1.39	-13.18

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
330	SLE FR 3	37	-3	3139	406.68	1.39	-13.03
330	SLE FR 4	38	-1	3241	417.85	1.45	-13.22
330	SLE FR 5	37	-3	3241	417.68	1.45	-13.07
330	SLE FR 6	38	-3	3302	424.07	1.49	-13.1
330	SLE QP 1	37	-3	3130	405.74	1.38	-13.04
330	SLE QP 2	37	-3	3233	416.74	1.45	-13.08
330	SLD 1	449	79	3056	416.48	2.9	-157.25
330	SLD 2	523	150	3124	422.91	2.84	-183.09
330	SLD 3	404	-110	2169	321.72	2.65	-141.54
330	SLD 4	478	-40	2237	328.15	2.6	-167.37
330	SLD 5	216	297	4514	559.23	2.26	-75.52
330	SLD 6	265	344	4558	563.46	2.23	-92.56
330	SLD 7	66	-336	1556	243.36	1.45	-23.14
330	SLD 8	115	-289	1601	247.6	1.41	-40.18
330	SLD 9	-40	284	4866	585.88	1.49	14.03
330	SLD 10	9	330	4910	590.12	1.45	-3.02
330	SLD 11	-190	-349	1908	270.02	0.67	66.41
330	SLD 12	-141	-303	1953	274.25	0.63	49.36
330	SLD 13	-403	34	4230	505.33	0.3	141.22
330	SLD 14	-329	105	4297	511.76	0.25	115.39
330	SLD 15	-448	-155	3343	410.57	0.06	156.93
330	SLD 16	-374	-85	3410	417	0	131.1
330	SLV 1	1004	204	2893	423.89	4.85	-351.77
330	SLV 2	1179	370	3052	438.99	4.73	-412.5
330	SLV 3	890	-270	668	186.53	4.24	-311.91
330	SLV 4	1065	-104	827	201.63	4.11	-372.63
330	SLV 5	468	747	6476	776.06	3.42	-163.81
330	SLV 6	586	859	6583	786.23	3.34	-204.7
330	SLV 7	88	-833	-940	-15.14	1.38	-30.93
330	SLV 8	205	-721	-833	-4.97	1.29	-71.82
330	SLV 9	-130	716	7300	838.45	1.6	45.66
330	SLV 10	-13	827	7407	848.62	1.52	4.78
330	SLV 11	-511	-864	-116	47.25	-0.44	178.54
330	SLV 12	-393	-753	-9	57.42	-0.53	137.66
330	SLV 13	-990	99	5640	631.85	-1.22	346.48
330	SLV 14	-815	264	5798	646.95	-1.34	285.76
330	SLV 15	-1104	-375	3415	394.49	-1.83	386.35
330	SLV 16	-930	-210	3573	409.59	-1.96	325.62
330	CRTFP Ux+	0	0	0	0	0	0
330	CRTFP Ux-	0	0	0	0	0	0
330	CRTFP Uy+	0	0	0	0	0	0
330	CRTFP Uy-	0	0	0	0	0	0
331	SLU 1	37	-1	3001	370.77	-0.27	-12.91
331	SLU 2	40	14	3062	378.52	-0.29	-14
331	SLU 3	37	-1	3050	376.04	-0.28	-13.04
331	SLU 4	39	8	3086	380.69	-0.29	-13.7
331	SLU 5	40	14	3092	381.78	-0.29	-14
331	SLU 6	37	-1	3080	379.31	-0.28	-13.04
331	SLU 7	39	8	3116	383.95	-0.29	-13.69
331	SLU 8	37	0	3061	377.3	-0.28	-12.9
331	SLU 9	39	8	3097	381.94	-0.29	-13.56
331	SLU 10	41	14	3418	413.65	-0.27	-14.15
331	SLU 11	38	-1	3406	411.18	-0.26	-13.19
331	SLU 12	40	8	3442	415.82	-0.27	-13.84
331	SLU 13	41	14	3448	416.91	-0.28	-14.14
331	SLU 14	38	0	3436	414.44	-0.27	-13.19
331	SLU 15	40	8	3472	419.09	-0.28	-13.84
331	SLU 16	38	0	3417	412.43	-0.26	-13.05
331	SLU 17	39	9	3453	417.08	-0.27	-13.71
331	SLU 18	38	0	3510	420.96	-0.25	-13.12
331	SLU 19	40	8	3546	425.61	-0.26	-13.77
331	SLU 20	38	0	3540	424.22	-0.25	-13.12
331	SLU 21	40	9	3576	428.87	-0.26	-13.77
331	SLU 22	41	-2	3391	410.21	-0.28	-14.14
331	SLU 23	44	13	3452	417.96	-0.3	-15.23
331	SLU 24	41	-2	3440	415.49	-0.29	-14.28
331	SLU 25	43	7	3477	420.13	-0.3	-14.93
331	SLU 26	44	13	3482	421.22	-0.31	-15.23
331	SLU 27	41	-2	3470	418.75	-0.29	-14.28
331	SLU 28	43	7	3507	423.4	-0.31	-14.93
331	SLU 29	41	-2	3451	416.74	-0.29	-14.14
331	SLU 30	43	7	3488	421.39	-0.3	-14.79
331	SLU 31	44	13	3808	453.09	-0.29	-15.38
331	SLU 32	41	-2	3796	450.62	-0.27	-14.43
331	SLU 33	43	7	3833	455.27	-0.29	-15.08
331	SLU 34	44	13	3838	456.35	-0.29	-15.38
331	SLU 35	41	-2	3826	453.88	-0.28	-14.42
331	SLU 36	43	7	3863	458.53	-0.29	-15.08
331	SLU 37	41	-1	3807	451.87	-0.27	-14.29
331	SLU 38	43	7	3844	456.52	-0.29	-14.94
331	SLU 39	41	-1	3900	460.4	-0.26	-14.36
331	SLU 40	43	7	3936	465.05	-0.27	-15.01
331	SLU 41	41	-1	3930	463.67	-0.26	-14.35
331	SLU 42	43	7	3966	468.31	-0.28	-15.01
331	SLU 43	47	0	3767	468.48	-0.35	-16.36
331	SLU 44	50	14	3828	476.22	-0.37	-17.45
331	SLU 45	47	-1	3816	473.75	-0.35	-16.49
331	SLU 46	49	8	3853	478.4	-0.37	-17.15
331	SLU 47	50	14	3858	479.49	-0.37	-17.44

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
331	SLU 48	47	0	3846	477.01	-0.36	-16.49
331	SLU 49	49	8	3883	481.66	-0.37	-17.14
331	SLU 50	47	0	3827	475	-0.35	-16.35
331	SLU 51	49	9	3864	479.65	-0.37	-17.01
331	SLU 52	51	14	4184	511.35	-0.35	-17.6
331	SLU 53	48	0	4172	508.88	-0.34	-16.64
331	SLU 54	50	8	4209	513.53	-0.35	-17.29
331	SLU 55	51	15	4214	514.62	-0.35	-17.59
331	SLU 56	48	0	4202	512.15	-0.34	-16.64
331	SLU 57	50	9	4239	516.79	-0.35	-17.29
331	SLU 58	47	0	4183	510.14	-0.34	-16.5
331	SLU 59	49	9	4220	514.78	-0.35	-17.16
331	SLU 60	48	0	4276	518.67	-0.32	-16.57
331	SLU 61	50	9	4312	523.31	-0.34	-17.22
331	SLU 62	48	0	4306	521.93	-0.33	-16.57
331	SLU 63	50	9	4342	526.58	-0.34	-17.22
331	SLU 64	51	-2	4158	507.92	-0.36	-17.59
331	SLU 65	54	13	4218	515.67	-0.38	-18.68
331	SLU 66	51	-2	4207	513.2	-0.37	-17.73
331	SLU 67	53	7	4243	517.84	-0.38	-18.38
331	SLU 68	54	13	4248	518.93	-0.38	-18.68
331	SLU 69	51	-2	4237	516.46	-0.37	-17.72
331	SLU 70	53	7	4273	521.1	-0.38	-18.38
331	SLU 71	51	-1	4218	514.45	-0.37	-17.59
331	SLU 72	52	7	4254	519.09	-0.38	-18.24
331	SLU 73	54	13	4574	550.8	-0.36	-18.83
331	SLU 74	51	-2	4563	548.33	-0.35	-17.88
331	SLU 75	53	7	4599	552.97	-0.36	-18.53
331	SLU 76	54	13	4604	554.06	-0.37	-18.83
331	SLU 77	51	-1	4593	551.59	-0.35	-17.87
331	SLU 78	53	7	4629	556.24	-0.37	-18.53
331	SLU 79	51	-1	4574	549.58	-0.35	-17.74
331	SLU 80	53	8	4610	554.23	-0.36	-18.39
331	SLU 81	51	-1	4666	558.11	-0.34	-17.81
331	SLU 82	53	7	4703	562.76	-0.35	-18.46
331	SLU 83	51	-1	4696	561.37	-0.34	-17.8
331	SLU 84	53	8	4733	566.02	-0.35	-18.46
331	SLE RA 1	38	-1	3112	382.04	-0.27	-13.26
331	SLE RA 2	40	9	3153	387.2	-0.29	-13.99
331	SLE RA 3	38	-1	3145	385.56	-0.28	-13.35
331	SLE RA 4	40	5	3169	388.65	-0.29	-13.79
331	SLE RA 5	40	9	3173	389.38	-0.29	-13.99
331	SLE RA 6	38	-1	3165	387.73	-0.28	-13.35
331	SLE RA 7	40	5	3189	390.83	-0.29	-13.78
331	SLE RA 8	38	-1	3152	386.39	-0.28	-13.26
331	SLE RA 9	39	5	3177	389.49	-0.29	-13.69
331	SLE RA 10	41	9	3390	410.62	-0.28	-14.09
331	SLE RA 11	39	-1	3382	408.98	-0.27	-13.45
331	SLE RA 12	40	5	3407	412.07	-0.28	-13.89
331	SLE RA 13	41	9	3410	412.8	-0.28	-14.09
331	SLE RA 14	39	-1	3402	411.15	-0.27	-13.45
331	SLE RA 15	40	5	3427	414.25	-0.28	-13.88
331	SLE RA 16	38	-1	3390	409.81	-0.27	-13.36
331	SLE RA 17	40	5	3414	412.91	-0.28	-13.79
331	SLE RA 18	39	-1	3452	415.5	-0.26	-13.4
331	SLE RA 19	40	5	3476	418.6	-0.27	-13.84
331	SLE RA 20	39	-1	3472	417.67	-0.26	-13.4
331	SLE RA 21	40	5	3496	420.77	-0.27	-13.84
331	SLE FR 1	38	-1	3112	382.04	-0.27	-13.26
331	SLE FR 2	39	1	3121	383.07	-0.28	-13.41
331	SLE FR 3	38	-1	3120	382.91	-0.27	-13.26
331	SLE FR 4	39	1	3222	393.11	-0.27	-13.45
331	SLE FR 5	38	-1	3222	392.95	-0.27	-13.3
331	SLE FR 6	38	-1	3282	398.77	-0.27	-13.33
331	SLE QP 1	38	-1	3112	382.04	-0.27	-13.26
331	SLE QP 2	38	-1	3214	392.08	-0.27	-13.3
331	SLD 1	449	80	2989	379.39	1.34	-157.3
331	SLD 2	524	155	3059	385.73	1.24	-183.11
331	SLD 3	404	-113	2101	291.86	1.59	-141.45
331	SLD 4	478	-38	2171	298.2	1.49	-167.26
331	SLD 5	218	303	4480	519.89	-0.16	-75.9
331	SLD 6	266	352	4526	524.07	-0.22	-92.92
331	SLD 7	65	-341	1522	228.11	0.7	-23.07
331	SLD 8	114	-291	1568	232.3	0.63	-40.09
331	SLD 9	-38	290	4860	551.86	-1.17	13.49
331	SLD 10	11	339	4906	556.04	-1.23	-3.54
331	SLD 11	-190	-354	1903	260.08	-0.31	66.31
331	SLD 12	-141	-304	1949	264.26	-0.38	49.29
331	SLD 13	-402	36	4257	485.96	-2.03	140.65
331	SLD 14	-327	111	4327	492.3	-2.13	114.84
331	SLD 15	-447	-157	3370	398.42	-1.78	156.5
331	SLD 16	-373	-82	3440	404.76	-1.87	130.69
331	SLV 1	1004	203	2760	369.54	3.47	-351.59
331	SLV 2	1179	379	2925	384.44	3.23	-412.25
331	SLV 3	888	-279	535	150.3	4.11	-311.39
331	SLV 4	1063	-103	700	165.21	3.88	-372.05
331	SLV 5	471	758	6422	715.04	-0.08	-164.44
331	SLV 6	589	877	6533	725.08	-0.24	-205.28
331	SLV 7	85	-848	-995	-15.75	2.06	-30.44

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
331	SLV 8	202	-729	-884	-5.71	1.91	-71.28
331	SLV 9	-126	727	7312	789.87	-2.44	44.67
331	SLV 10	-9	846	7423	799.9	-2.6	3.83
331	SLV 11	-512	-878	-104	59.08	-0.3	178.67
331	SLV 12	-395	-760	6	69.11	-0.46	137.83
331	SLV 13	-986	101	5729	618.95	-4.42	345.44
331	SLV 14	-812	277	5893	633.85	-4.65	284.78
331	SLV 15	-1102	-381	3504	399.71	-3.77	385.64
331	SLV 16	-928	-205	3668	414.62	-4	324.98
331	CRTFP Ux+	0	0	0	0	0	0
331	CRTFP Ux-	0	0	0	0	0	0
331	CRTFP Uy+	0	0	0	0	0	0
331	CRTFP Uy-	0	0	0	0	0	0
332	SLU 1	38	2	3037	385.99	-1.98	-13.08
332	SLU 2	41	17	3099	393.86	-2.05	-14.2
332	SLU 3	38	2	3086	391.56	-2.03	-13.22
332	SLU 4	40	11	3124	396.29	-2.06	-13.89
332	SLU 5	41	18	3129	397.31	-2.07	-14.2
332	SLU 6	38	2	3117	395	-2.05	-13.22
332	SLU 7	40	12	3154	399.73	-2.09	-13.89
332	SLU 8	38	3	3098	392.87	-2.03	-13.08
332	SLU 9	40	12	3135	397.6	-2.07	-13.75
332	SLU 10	41	18	3458	430.62	-2.26	-14.35
332	SLU 11	39	3	3446	428.31	-2.24	-13.37
332	SLU 12	41	12	3483	433.04	-2.27	-14.04
332	SLU 13	41	18	3488	434.06	-2.28	-14.35
332	SLU 14	39	3	3476	431.76	-2.26	-13.37
332	SLU 15	41	12	3513	436.48	-2.3	-14.05
332	SLU 16	38	3	3457	429.62	-2.24	-13.24
332	SLU 17	40	12	3494	434.35	-2.28	-13.91
332	SLU 18	38	3	3550	438.49	-2.28	-13.3
332	SLU 19	40	12	3587	443.22	-2.32	-13.97
332	SLU 20	38	3	3580	441.93	-2.31	-13.3
332	SLU 21	40	12	3617	446.66	-2.35	-13.97
332	SLU 22	41	1	3431	427.4	-2.25	-14.32
332	SLU 23	45	16	3493	435.28	-2.31	-15.44
332	SLU 24	42	1	3481	432.98	-2.29	-14.46
332	SLU 25	44	10	3518	437.7	-2.33	-15.14
332	SLU 26	45	17	3524	438.72	-2.33	-15.45
332	SLU 27	42	1	3512	436.42	-2.31	-14.47
332	SLU 28	44	10	3549	441.14	-2.35	-15.14
332	SLU 29	41	2	3492	434.28	-2.3	-14.33
332	SLU 30	43	11	3529	439.01	-2.33	-15
332	SLU 31	45	17	3852	472.04	-2.52	-15.6
332	SLU 32	42	2	3840	469.73	-2.5	-14.62
332	SLU 33	44	11	3877	474.46	-2.54	-15.29
332	SLU 34	45	17	3883	475.48	-2.54	-15.6
332	SLU 35	42	2	3871	473.17	-2.52	-14.62
332	SLU 36	44	11	3908	477.9	-2.56	-15.29
332	SLU 37	42	2	3851	471.04	-2.51	-14.48
332	SLU 38	44	11	3889	475.77	-2.54	-15.15
332	SLU 39	42	2	3944	479.91	-2.55	-14.54
332	SLU 40	44	11	3982	484.64	-2.58	-15.21
332	SLU 41	42	2	3975	483.35	-2.57	-14.54
332	SLU 42	44	11	4012	488.08	-2.61	-15.22
332	SLU 43	48	3	3812	487.58	-2.49	-16.57
332	SLU 44	51	18	3874	495.46	-2.55	-17.69
332	SLU 45	48	3	3862	493.15	-2.53	-16.72
332	SLU 46	50	12	3899	497.88	-2.57	-17.39
332	SLU 47	51	19	3905	498.9	-2.58	-17.7
332	SLU 48	48	3	3893	496.6	-2.56	-16.72
332	SLU 49	50	13	3930	501.32	-2.59	-17.39
332	SLU 50	48	4	3873	494.46	-2.54	-16.58
332	SLU 51	50	13	3910	499.19	-2.58	-17.25
332	SLU 52	51	19	4233	532.21	-2.76	-17.85
332	SLU 53	49	4	4221	529.91	-2.74	-16.87
332	SLU 54	51	13	4258	534.64	-2.78	-17.54
332	SLU 55	52	19	4264	535.66	-2.79	-17.85
332	SLU 56	49	4	4252	533.35	-2.77	-16.87
332	SLU 57	51	13	4289	538.08	-2.8	-17.54
332	SLU 58	48	4	4232	531.22	-2.75	-16.73
332	SLU 59	50	13	4270	535.95	-2.79	-17.4
332	SLU 60	48	4	4325	540.09	-2.79	-16.79
332	SLU 61	50	13	4363	544.82	-2.83	-17.46
332	SLU 62	48	4	4356	543.53	-2.81	-16.79
332	SLU 63	50	13	4393	548.26	-2.85	-17.47
332	SLU 64	51	2	4207	529	-2.75	-17.82
332	SLU 65	55	17	4269	536.88	-2.81	-18.94
332	SLU 66	52	2	4257	534.57	-2.79	-17.96
332	SLU 67	54	11	4294	539.3	-2.83	-18.63
332	SLU 68	55	18	4299	540.32	-2.84	-18.94
332	SLU 69	52	2	4287	538.01	-2.82	-17.96
332	SLU 70	54	11	4324	542.74	-2.86	-18.64
332	SLU 71	51	3	4268	535.88	-2.8	-17.82
332	SLU 72	53	12	4305	540.61	-2.84	-18.5
332	SLU 73	55	18	4628	573.63	-3.02	-19.09
332	SLU 74	52	3	4616	571.33	-3	-18.11
332	SLU 75	54	12	4653	576.05	-3.04	-18.79
332	SLU 76	55	18	4659	577.07	-3.05	-19.09

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
332	SLU 77	52	3	4646	574.77	-3.03	-18.12
332	SLU 78	54	12	4684	579.5	-3.07	-18.79
332	SLU 79	52	3	4627	572.64	-3.01	-17.98
332	SLU 80	54	12	4664	577.36	-3.05	-18.65
332	SLU 81	52	3	4720	581.5	-3.05	-18.04
332	SLU 82	54	12	4757	586.23	-3.09	-18.71
332	SLU 83	52	3	4751	584.95	-3.08	-18.04
332	SLU 84	54	12	4788	589.67	-3.11	-18.71
332	SLE RA 1	39	2	3149	397.82	-2.06	-13.43
332	SLE RA 2	41	12	3191	403.07	-2.1	-14.18
332	SLE RA 3	39	2	3183	401.53	-2.09	-13.53
332	SLE RA 4	40	8	3207	404.69	-2.11	-13.98
332	SLE RA 5	41	12	3211	405.37	-2.12	-14.18
332	SLE RA 6	39	2	3203	403.83	-2.1	-13.53
332	SLE RA 7	40	8	3228	406.98	-2.13	-13.98
332	SLE RA 8	39	2	3190	402.41	-2.09	-13.44
332	SLE RA 9	40	8	3215	405.56	-2.12	-13.88
332	SLE RA 10	41	12	3430	427.57	-2.24	-14.28
332	SLE RA 11	39	2	3422	426.04	-2.23	-13.63
332	SLE RA 12	41	8	3447	429.19	-2.25	-14.08
332	SLE RA 13	41	13	3450	429.87	-2.26	-14.28
332	SLE RA 14	39	2	3442	428.33	-2.24	-13.63
332	SLE RA 15	41	8	3467	431.48	-2.27	-14.08
332	SLE RA 16	39	3	3429	426.91	-2.23	-13.54
332	SLE RA 17	40	9	3454	430.06	-2.26	-13.99
332	SLE RA 18	39	2	3492	432.82	-2.26	-13.58
332	SLE RA 19	40	8	3516	435.98	-2.28	-14.03
332	SLE RA 20	39	3	3512	435.12	-2.28	-13.58
332	SLE RA 21	40	9	3537	438.27	-2.3	-14.03
332	SLE FR 1	39	2	3149	397.82	-2.06	-13.43
332	SLE FR 2	39	4	3158	398.87	-2.07	-13.58
332	SLE FR 3	39	2	3158	398.74	-2.07	-13.43
332	SLE FR 4	39	4	3260	409.37	-2.13	-13.63
332	SLE FR 5	39	2	3260	409.24	-2.13	-13.48
332	SLE FR 6	39	2	3320	415.32	-2.16	-13.51
332	SLE QP 1	39	2	3149	397.82	-2.06	-13.43
332	SLE QP 2	39	2	3252	408.32	-2.12	-13.48
332	SLD 1	450	83	2972	378.91	-0.31	-157.26
332	SLD 2	524	163	3046	386.1	-0.45	-183.03
332	SLD 3	403	-116	2068	287.64	0.49	-141.3
332	SLD 4	477	-36	2142	294.82	0.35	-167.07
332	SLD 5	219	314	4526	536.64	-2.76	-76.18
332	SLD 6	268	367	4575	541.38	-2.86	-93.18
332	SLD 7	65	-350	1513	232.39	-0.1	-22.98
332	SLD 8	114	-297	1561	237.13	-0.2	-39.98
332	SLD 9	-36	301	4943	579.51	-4.04	13.03
332	SLD 10	13	354	4992	584.25	-4.14	-3.97
332	SLD 11	-190	-363	1930	275.27	-1.38	66.23
332	SLD 12	-141	-310	1978	280	-1.48	49.23
332	SLD 13	-400	40	4362	521.82	-4.59	140.12
332	SLD 14	-326	120	4436	529	-4.73	114.34
332	SLD 15	-446	-159	3458	430.54	-3.79	156.08
332	SLD 16	-372	-79	3532	437.73	-3.93	130.3
332	SLV 1	1004	206	2672	346.98	2.06	-351.27
332	SLV 2	1178	396	2846	363.86	1.72	-411.85
332	SLV 3	887	-291	405	118.31	4.06	-310.79
332	SLV 4	1061	-101	579	135.19	3.72	-371.37
332	SLV 5	474	782	6484	733.58	-3.84	-164.9
332	SLV 6	591	910	6601	744.95	-4.07	-205.69
332	SLV 7	83	-875	-1073	-28.65	2.84	-29.97
332	SLV 8	200	-748	-956	-17.28	2.6	-70.76
332	SLV 9	-122	752	7460	833.92	-6.84	43.8
332	SLV 10	-5	879	7577	845.29	-7.07	3.02
332	SLV 11	-513	-906	-97	71.69	-0.17	178.73
332	SLV 12	-396	-778	20	83.06	-0.4	137.95
332	SLV 13	-983	105	5926	681.45	-7.96	344.42
332	SLV 14	-809	295	6099	698.33	-8.3	283.84
332	SLV 15	-1101	-392	3659	452.78	-5.95	384.89
332	SLV 16	-926	-202	3832	469.66	-6.3	324.32
332	CRTFP Ux+	0	0	0	0	0	0
332	CRTFP Ux-	0	0	0	0	0	0
332	CRTFP Uy+	0	0	0	0	0	0
332	CRTFP Uy-	0	0	0	0	0	0
333	SLU 1	38	6	3129	442.36	-3.83	-13.19
333	SLU 2	41	22	3194	451.2	-3.93	-14.34
333	SLU 3	38	6	3181	449.02	-3.91	-13.34
333	SLU 4	41	16	3220	454.32	-3.97	-14.03
333	SLU 5	41	23	3226	455.31	-3.98	-14.35
333	SLU 6	39	6	3213	453.12	-3.95	-13.34
333	SLU 7	41	16	3251	458.43	-4.02	-14.03
333	SLU 8	38	7	3193	450.57	-3.92	-13.2
333	SLU 9	40	17	3231	455.87	-3.98	-13.89
333	SLU 10	42	23	3564	494.96	-4.38	-14.49
333	SLU 11	39	7	3551	492.78	-4.36	-13.49
333	SLU 12	41	17	3589	498.08	-4.42	-14.18
333	SLU 13	42	24	3595	499.07	-4.43	-14.5
333	SLU 14	39	7	3582	496.88	-4.4	-13.5
333	SLU 15	41	17	3621	502.19	-4.47	-14.19
333	SLU 16	39	8	3562	494.33	-4.37	-13.35

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
333	SLU 17	41	17	3601	499.63	-4.44	-14.04
333	SLU 18	39	7	3658	504.87	-4.47	-13.41
333	SLU 19	41	17	3696	510.18	-4.54	-14.1
333	SLU 20	39	8	3689	508.98	-4.52	-13.41
333	SLU 21	41	18	3728	514.28	-4.58	-14.1
333	SLU 22	42	5	3537	491.76	-4.36	-14.44
333	SLU 23	45	21	3601	500.61	-4.47	-15.59
333	SLU 24	42	5	3588	498.42	-4.44	-14.59
333	SLU 25	44	15	3627	503.73	-4.5	-15.28
333	SLU 26	45	22	3633	504.71	-4.51	-15.6
333	SLU 27	42	6	3620	502.53	-4.49	-14.59
333	SLU 28	44	15	3659	507.83	-4.55	-15.28
333	SLU 29	42	6	3600	499.97	-4.46	-14.45
333	SLU 30	44	16	3639	505.28	-4.52	-15.14
333	SLU 31	46	22	3971	544.37	-4.92	-15.74
333	SLU 32	43	6	3958	542.18	-4.89	-14.74
333	SLU 33	45	16	3997	547.49	-4.95	-15.43
333	SLU 34	46	23	4003	548.47	-4.96	-15.75
333	SLU 35	43	7	3990	546.28	-4.94	-14.75
333	SLU 36	45	16	4028	551.59	-5	-15.44
333	SLU 37	42	7	3970	543.73	-4.91	-14.6
333	SLU 38	44	17	4008	549.04	-4.97	-15.29
333	SLU 39	42	6	4065	554.28	-5.01	-14.66
333	SLU 40	44	16	4104	559.58	-5.07	-15.35
333	SLU 41	42	7	4096	558.38	-5.05	-14.66
333	SLU 42	44	17	4135	563.69	-5.12	-15.35
333	SLU 43	48	8	3929	558.13	-4.79	-16.72
333	SLU 44	52	24	3993	566.97	-4.9	-17.87
333	SLU 45	49	8	3980	564.79	-4.87	-16.87
333	SLU 46	51	18	4019	570.09	-4.93	-17.56
333	SLU 47	52	25	4025	571.08	-4.95	-17.87
333	SLU 48	49	8	4012	568.89	-4.92	-16.87
333	SLU 49	51	18	4050	574.2	-4.98	-17.56
333	SLU 50	48	9	3992	566.34	-4.89	-16.73
333	SLU 51	50	19	4030	571.64	-4.95	-17.42
333	SLU 52	52	25	4363	610.73	-5.35	-18.02
333	SLU 53	49	9	4350	608.55	-5.32	-17.02
333	SLU 54	51	19	4389	613.85	-5.38	-17.71
333	SLU 55	52	26	4394	614.84	-5.4	-18.03
333	SLU 56	49	9	4381	612.65	-5.37	-17.02
333	SLU 57	51	19	4420	617.96	-5.43	-17.71
333	SLU 58	49	10	4361	610.1	-5.34	-16.88
333	SLU 59	51	20	4400	615.4	-5.4	-17.57
333	SLU 60	49	9	4457	620.64	-5.44	-16.93
333	SLU 61	51	19	4495	625.95	-5.5	-17.62
333	SLU 62	49	10	4488	624.75	-5.48	-16.94
333	SLU 63	51	20	4527	630.05	-5.55	-17.63
333	SLU 64	52	7	4336	607.53	-5.33	-17.97
333	SLU 65	55	24	4400	616.38	-5.43	-19.12
333	SLU 66	52	7	4388	614.19	-5.4	-18.12
333	SLU 67	54	17	4426	619.5	-5.47	-18.81
333	SLU 68	55	24	4432	620.48	-5.48	-19.12
333	SLU 69	52	8	4419	618.29	-5.45	-18.12
333	SLU 70	54	17	4458	623.6	-5.51	-18.81
333	SLU 71	52	8	4399	615.74	-5.42	-17.98
333	SLU 72	54	18	4438	621.05	-5.48	-18.67
333	SLU 73	56	24	4770	660.14	-5.88	-19.27
333	SLU 74	53	8	4757	657.95	-5.86	-18.27
333	SLU 75	55	18	4796	663.26	-5.92	-18.96
333	SLU 76	56	25	4802	664.24	-5.93	-19.28
333	SLU 77	53	9	4789	662.05	-5.9	-18.27
333	SLU 78	55	18	4828	667.36	-5.97	-18.96
333	SLU 79	52	9	4769	659.5	-5.87	-18.13
333	SLU 80	54	19	4808	664.81	-5.93	-18.82
333	SLU 81	53	9	4864	670.05	-5.97	-18.18
333	SLU 82	55	18	4903	675.35	-6.03	-18.87
333	SLU 83	53	9	4896	674.15	-6.02	-18.19
333	SLU 84	55	19	4934	679.46	-6.08	-18.88
333	SLE RA 1	39	6	3246	456.48	-3.98	-13.55
333	SLE RA 2	41	17	3289	462.37	-4.05	-14.31
333	SLE RA 3	39	6	3280	460.91	-4.03	-13.65
333	SLE RA 4	41	12	3306	464.45	-4.07	-14.1
333	SLE RA 5	41	17	3310	465.11	-4.08	-14.32
333	SLE RA 6	39	6	3301	463.65	-4.06	-13.65
333	SLE RA 7	41	13	3327	467.19	-4.11	-14.11
333	SLE RA 8	39	6	3288	461.95	-4.04	-13.56
333	SLE RA 9	40	13	3314	465.48	-4.08	-14.01
333	SLE RA 10	42	17	3535	491.54	-4.35	-14.41
333	SLE RA 11	40	6	3527	490.09	-4.33	-13.75
333	SLE RA 12	41	13	3553	493.62	-4.37	-14.21
333	SLE RA 13	42	18	3556	494.28	-4.38	-14.42
333	SLE RA 14	40	7	3548	492.82	-4.36	-13.75
333	SLE RA 15	41	13	3574	496.36	-4.41	-14.21
333	SLE RA 16	39	7	3534	491.12	-4.34	-13.66
333	SLE RA 17	41	13	3560	494.66	-4.39	-14.12
333	SLE RA 18	40	7	3598	498.15	-4.41	-13.69
333	SLE RA 19	41	13	3624	501.69	-4.45	-14.15
333	SLE RA 20	40	7	3619	500.89	-4.44	-13.7
333	SLE RA 21	41	13	3645	504.42	-4.48	-14.16

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
333	SLE FR 1	39	6	3246	456.48	-3.98	-13.55
333	SLE FR 2	40	8	3254	457.65	-3.99	-13.7
333	SLE FR 3	39	6	3254	457.57	-3.99	-13.55
333	SLE FR 4	40	8	3360	470.16	-4.12	-13.74
333	SLE FR 5	39	6	3360	470.07	-4.12	-13.59
333	SLE FR 6	39	6	3422	477.31	-4.2	-13.62
333	SLE QP 1	39	6	3246	456.48	-3.98	-13.55
333	SLE QP 2	39	6	3351	468.98	-4.11	-13.59
333	SLD 1	449	88	3009	417.59	-2.03	-157.13
333	SLD 2	524	176	3089	426.69	-2.23	-182.86
333	SLD 3	403	-120	2071	310.43	-0.65	-141.08
333	SLD 4	477	-33	2150	319.53	-0.85	-166.81
333	SLD 5	220	331	4658	614.45	-5.54	-76.37
333	SLD 6	269	388	4710	620.46	-5.67	-93.34
333	SLD 7	64	-363	1529	257.25	-0.95	-22.86
333	SLD 8	113	-306	1582	263.25	-1.08	-39.84
333	SLD 9	-34	318	5121	674.7	-7.14	12.66
333	SLD 10	14	375	5174	680.71	-7.27	-4.32
333	SLD 11	-190	-376	1992	317.5	-2.55	66.17
333	SLD 12	-141	-319	2045	323.5	-2.68	49.19
333	SLD 13	-398	44	4553	618.43	-7.37	139.63
333	SLD 14	-324	132	4632	627.53	-7.57	113.9
333	SLD 15	-445	-164	3614	511.26	-5.99	155.68
333	SLD 16	-371	-76	3694	520.37	-6.19	129.95
333	SLV 1	1003	215	2629	357.56	0.64	-350.82
333	SLV 2	1177	420	2815	378.95	0.17	-411.31
333	SLV 3	884	-305	275	88.95	4.1	-310.11
333	SLV 4	1059	-100	461	110.35	3.63	-370.6
333	SLV 5	476	819	6670	838.94	-7.84	-165.21
333	SLV 6	593	957	6796	853.35	-8.16	-205.94
333	SLV 7	80	-914	-1177	-56.4	3.69	-29.51
333	SLV 8	198	-776	-1051	-42	3.37	-70.24
333	SLV 9	-119	788	7754	979.96	-11.59	43.06
333	SLV 10	-2	926	7880	994.36	-11.9	2.33
333	SLV 11	-515	-945	-93	84.61	-0.06	178.76
333	SLV 12	-397	-807	33	99.02	-0.38	138.03
333	SLV 13	-980	112	6241	827.61	-11.85	343.42
333	SLV 14	-806	317	6428	849	-12.32	282.93
333	SLV 15	-1099	-408	3887	559	-8.39	384.13
333	SLV 16	-925	-203	4074	580.4	-8.86	323.64
333	CRTFP Ux+	0	0	0	0	0	0
333	CRTFP Ux-	0	0	0	0	0	0
333	CRTFP Uy+	0	0	0	0	0	0
333	CRTFP Uy-	0	0	0	0	0	0
334	SLU 1	38	10	3283	543.61	-5.79	-13.24
334	SLU 2	42	28	3352	554.33	-5.95	-14.41
334	SLU 3	39	11	3338	552.21	-5.91	-13.39
334	SLU 4	41	21	3379	558.64	-6	-14.09
334	SLU 5	42	29	3385	559.63	-6.02	-14.42
334	SLU 6	39	11	3371	557.5	-5.98	-13.4
334	SLU 7	41	22	3412	563.94	-6.07	-14.11
334	SLU 8	38	12	3350	554.2	-5.94	-13.26
334	SLU 9	40	22	3391	560.63	-6.03	-13.96
334	SLU 10	42	30	3740	610.95	-6.65	-14.56
334	SLU 11	39	12	3726	608.82	-6.62	-13.54
334	SLU 12	41	23	3767	615.25	-6.71	-14.24
334	SLU 13	42	30	3773	616.24	-6.72	-14.57
334	SLU 14	39	13	3759	614.11	-6.69	-13.55
334	SLU 15	41	23	3801	620.55	-6.78	-14.25
334	SLU 16	39	13	3738	610.81	-6.64	-13.4
334	SLU 17	41	24	3779	617.24	-6.73	-14.11
334	SLU 18	39	13	3838	624.48	-6.81	-13.45
334	SLU 19	41	23	3879	630.92	-6.9	-14.15
334	SLU 20	39	13	3871	629.78	-6.88	-13.46
334	SLU 21	41	24	3912	636.21	-6.97	-14.16
334	SLU 22	42	10	3712	607.56	-6.62	-14.48
334	SLU 23	45	28	3781	618.28	-6.77	-15.66
334	SLU 24	42	10	3767	616.16	-6.73	-14.64
334	SLU 25	44	21	3808	622.59	-6.82	-15.34
334	SLU 26	45	28	3814	623.58	-6.84	-15.67
334	SLU 27	42	11	3800	621.45	-6.8	-14.65
334	SLU 28	44	21	3841	627.89	-6.89	-15.35
334	SLU 29	42	11	3779	618.15	-6.76	-14.5
334	SLU 30	44	22	3820	624.58	-6.85	-15.21
334	SLU 31	46	29	4169	674.89	-7.47	-15.8
334	SLU 32	43	12	4155	672.77	-7.44	-14.78
334	SLU 33	45	22	4196	679.2	-7.53	-15.49
334	SLU 34	46	30	4202	680.19	-7.54	-15.81
334	SLU 35	43	12	4188	678.06	-7.51	-14.79
334	SLU 36	45	23	4230	684.5	-7.6	-15.5
334	SLU 37	42	13	4167	674.76	-7.46	-14.65
334	SLU 38	45	23	4208	681.19	-7.55	-15.36
334	SLU 39	43	12	4267	688.43	-7.63	-14.69
334	SLU 40	45	23	4308	694.87	-7.72	-15.4
334	SLU 41	43	13	4300	693.73	-7.7	-14.7
334	SLU 42	45	23	4341	700.16	-7.79	-15.41
334	SLU 43	48	14	4121	684.77	-7.25	-16.78
334	SLU 44	52	32	4189	695.49	-7.4	-17.95
334	SLU 45	49	14	4176	693.37	-7.37	-16.93

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
334	SLU 46	51	25	4217	699.8	-7.46	-17.64
334	SLU 47	52	32	4223	700.79	-7.47	-17.96
334	SLU 48	49	15	4209	698.66	-7.44	-16.94
334	SLU 49	51	25	4250	705.1	-7.53	-17.65
334	SLU 50	49	15	4188	695.36	-7.39	-16.8
334	SLU 51	51	25	4229	701.79	-7.48	-17.51
334	SLU 52	52	33	4578	752.1	-8.11	-18.1
334	SLU 53	49	15	4564	749.98	-8.07	-17.08
334	SLU 54	52	26	4605	756.41	-8.17	-17.78
334	SLU 55	52	34	4611	757.4	-8.18	-18.11
334	SLU 56	49	16	4597	755.27	-8.15	-17.09
334	SLU 57	52	27	4638	761.71	-8.24	-17.8
334	SLU 58	49	16	4576	751.97	-8.1	-16.95
334	SLU 59	51	27	4617	758.4	-8.19	-17.65
334	SLU 60	49	16	4675	765.64	-8.26	-16.99
334	SLU 61	51	27	4717	772.08	-8.35	-17.69
334	SLU 62	49	16	4709	770.94	-8.33	-17
334	SLU 63	51	27	4750	777.37	-8.42	-17.7
334	SLU 64	52	13	4550	748.72	-8.07	-18.02
334	SLU 65	56	31	4619	759.44	-8.22	-19.2
334	SLU 66	53	14	4605	757.31	-8.19	-18.18
334	SLU 67	55	24	4646	763.75	-8.28	-18.88
334	SLU 68	56	32	4652	764.74	-8.29	-19.21
334	SLU 69	53	14	4638	762.61	-8.26	-18.19
334	SLU 70	55	25	4679	769.04	-8.35	-18.89
334	SLU 71	52	14	4617	759.3	-8.21	-18.05
334	SLU 72	54	25	4658	765.74	-8.3	-18.75
334	SLU 73	56	33	5007	816.05	-8.93	-19.35
334	SLU 74	53	15	4993	813.93	-8.9	-18.33
334	SLU 75	55	26	5034	820.36	-8.99	-19.03
334	SLU 76	56	33	5040	821.35	-9	-19.36
334	SLU 77	53	16	5026	819.22	-8.97	-18.34
334	SLU 78	55	26	5067	825.65	-9.06	-19.04
334	SLU 79	53	16	5005	815.92	-8.92	-18.19
334	SLU 80	55	27	5046	822.35	-9.01	-18.9
334	SLU 81	53	15	5104	829.59	-9.08	-18.23
334	SLU 82	55	26	5146	836.02	-9.17	-18.94
334	SLU 83	53	16	5138	834.88	-9.15	-18.25
334	SLU 84	55	27	5179	841.32	-9.24	-18.95
334	SLE RA 1	39	10	3406	561.88	-6.03	-13.59
334	SLE RA 2	42	22	3451	569.03	-6.13	-14.38
334	SLE RA 3	40	10	3442	567.61	-6.11	-13.69
334	SLE RA 4	41	18	3470	571.9	-6.17	-14.16
334	SLE RA 5	42	23	3474	572.56	-6.18	-14.38
334	SLE RA 6	40	11	3464	571.14	-6.15	-13.7
334	SLE RA 7	41	18	3492	575.43	-6.21	-14.17
334	SLE RA 8	39	11	3450	568.94	-6.12	-13.61
334	SLE RA 9	41	18	3478	573.23	-6.18	-14.08
334	SLE RA 10	42	23	3710	606.77	-6.6	-14.47
334	SLE RA 11	40	11	3701	605.35	-6.58	-13.79
334	SLE RA 12	41	19	3728	609.64	-6.64	-14.26
334	SLE RA 13	42	24	3732	610.3	-6.65	-14.48
334	SLE RA 14	40	12	3723	608.88	-6.63	-13.8
334	SLE RA 15	41	19	3751	613.17	-6.69	-14.27
334	SLE RA 16	40	12	3709	606.68	-6.6	-13.7
334	SLE RA 17	41	19	3736	610.97	-6.66	-14.17
334	SLE RA 18	40	12	3775	615.8	-6.7	-13.73
334	SLE RA 19	41	19	3803	620.09	-6.76	-14.2
334	SLE RA 20	40	12	3798	619.33	-6.75	-13.74
334	SLE RA 21	41	19	3825	623.62	-6.81	-14.21
334	SLE FR 1	39	10	3406	561.88	-6.03	-13.59
334	SLE FR 2	40	13	3415	563.31	-6.05	-13.75
334	SLE FR 3	39	10	3415	563.29	-6.05	-13.59
334	SLE FR 4	40	13	3526	579.49	-6.25	-13.79
334	SLE FR 5	39	11	3525	579.47	-6.25	-13.64
334	SLE FR 6	40	11	3590	588.84	-6.37	-13.66
334	SLE QP 1	39	10	3406	561.88	-6.03	-13.59
334	SLE QP 2	39	11	3517	578.06	-6.23	-13.63
334	SLD 1	449	96	3103	498.33	-3.83	-156.91
334	SLD 2	523	191	3190	510.58	-4.09	-182.6
334	SLD 3	402	-123	2110	361.84	-1.84	-140.78
334	SLD 4	476	-28	2197	374.1	-2.1	-166.47
334	SLD 5	220	353	4882	758.94	-8.49	-76.46
334	SLD 6	269	415	4939	767.03	-8.66	-93.41
334	SLD 7	63	-380	1574	303.98	-1.85	-22.69
334	SLD 8	112	-317	1631	312.06	-2.02	-39.64
334	SLD 9	-33	339	5402	844.05	-10.45	12.37
334	SLD 10	16	401	5459	852.13	-10.62	-4.58
334	SLD 11	-191	-394	2094	389.09	-3.81	66.14
334	SLD 12	-142	-331	2151	397.17	-3.98	49.19
334	SLD 13	-397	50	4836	782.02	-10.36	139.21
334	SLD 14	-323	145	4923	794.27	-10.62	113.51
334	SLD 15	-444	-170	3843	645.53	-8.37	155.34
334	SLD 16	-370	-75	3930	657.78	-8.63	129.64
334	SLV 1	1002	228	2631	402.78	-0.79	-350.26
334	SLV 2	1176	451	2835	431.59	-1.39	-410.65
334	SLV 3	882	-321	142	60.55	4.21	-309.35
334	SLV 4	1056	-97	346	89.36	3.6	-369.75
334	SLV 5	477	866	6988	1039.14	-12.06	-165.39

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
334	SLV 6	594	1016	7125	1058.54	-12.47	-206.05
334	SLV 7	78	-962	-1309	-101.62	4.59	-29.04
334	SLV 8	196	-812	-1172	-82.22	4.18	-69.7
334	SLV 9	-117	833	8205	1238.33	-16.65	42.43
334	SLV 10	0	984	8342	1257.73	-17.05	1.77
334	SLV 11	-515	-995	-92	97.57	0.01	178.79
334	SLV 12	-398	-844	45	116.97	-0.4	138.12
334	SLV 13	-978	119	6687	1066.75	-16.07	342.48
334	SLV 14	-803	342	6891	1095.56	-16.67	282.08
334	SLV 15	-1097	-430	4198	724.52	-11.07	383.39
334	SLV 16	-923	-206	4402	753.33	-11.68	322.99
334	CRTFP Ux+	0	0	0	0	0	0
334	CRTFP Ux-	0	0	0	0	0	0
334	CRTFP Uy+	0	0	0	0	0	0
334	CRTFP Uy-	0	0	0	0	0	0
335	SLU 1	38	16	3501	693.77	-7.87	-13.22
335	SLU 2	42	35	3576	707.37	-8.07	-14.42
335	SLU 3	39	16	3560	705.24	-8.02	-13.38
335	SLU 4	41	28	3605	713.4	-8.14	-14.1
335	SLU 5	42	36	3612	714.43	-8.16	-14.43
335	SLU 6	39	17	3597	712.3	-8.12	-13.39
335	SLU 7	41	28	3641	720.47	-8.24	-14.11
335	SLU 8	38	17	3574	707.89	-8.06	-13.25
335	SLU 9	40	29	3618	716.05	-8.18	-13.97
335	SLU 10	42	37	3991	783.19	-9.04	-14.56
335	SLU 11	39	18	3976	781.06	-9	-13.51
335	SLU 12	41	30	4020	789.22	-9.12	-14.23
335	SLU 13	42	38	4027	790.25	-9.14	-14.57
335	SLU 14	39	19	4012	788.12	-9.1	-13.53
335	SLU 15	41	30	4056	796.29	-9.22	-14.25
335	SLU 16	39	19	3989	783.71	-9.04	-13.38
335	SLU 17	41	31	4033	791.87	-9.15	-14.1
335	SLU 18	39	19	4094	802.08	-9.26	-13.42
335	SLU 19	41	30	4139	810.24	-9.38	-14.14
335	SLU 20	39	19	4131	809.14	-9.36	-13.43
335	SLU 21	41	31	4175	817.31	-9.48	-14.15
335	SLU 22	42	16	3961	779.4	-8.99	-14.46
335	SLU 23	45	35	4036	793	-9.19	-15.66
335	SLU 24	42	16	4021	790.87	-9.15	-14.61
335	SLU 25	44	28	4065	799.04	-9.27	-15.33
335	SLU 26	45	36	4072	800.07	-9.29	-15.67
335	SLU 27	42	17	4057	797.94	-9.24	-14.63
335	SLU 28	44	28	4101	806.1	-9.36	-15.35
335	SLU 29	42	17	4034	793.52	-9.18	-14.48
335	SLU 30	44	29	4078	801.69	-9.3	-15.2
335	SLU 31	46	37	4451	868.82	-10.17	-15.79
335	SLU 32	43	18	4436	866.69	-10.13	-14.75
335	SLU 33	45	30	4480	874.86	-10.24	-15.47
335	SLU 34	46	38	4487	875.89	-10.26	-15.81
335	SLU 35	43	19	4472	873.76	-10.22	-14.76
335	SLU 36	45	30	4516	881.92	-10.34	-15.48
335	SLU 37	42	19	4449	869.34	-10.16	-14.62
335	SLU 38	45	31	4493	877.51	-10.28	-15.34
335	SLU 39	42	19	4555	887.71	-10.39	-14.65
335	SLU 40	45	30	4599	895.88	-10.51	-15.37
335	SLU 41	43	19	4591	894.78	-10.48	-14.66
335	SLU 42	45	31	4635	902.94	-10.6	-15.38
335	SLU 43	48	20	4394	872.54	-9.84	-16.76
335	SLU 44	52	40	4468	886.14	-10.04	-17.96
335	SLU 45	49	21	4453	884.01	-10	-16.92
335	SLU 46	51	32	4498	892.17	-10.12	-17.64
335	SLU 47	52	40	4504	893.2	-10.14	-17.98
335	SLU 48	49	21	4489	891.07	-10.09	-16.93
335	SLU 49	51	33	4534	899.24	-10.21	-17.65
335	SLU 50	49	22	4466	886.66	-10.03	-16.79
335	SLU 51	51	33	4511	894.82	-10.15	-17.51
335	SLU 52	53	42	4883	961.96	-11.02	-18.1
335	SLU 53	49	23	4868	959.83	-10.98	-17.06
335	SLU 54	52	34	4913	968	-11.1	-17.78
335	SLU 55	53	42	4919	969.02	-11.11	-18.11
335	SLU 56	49	23	4904	966.89	-11.07	-17.07
335	SLU 57	52	35	4949	975.06	-11.19	-17.79
335	SLU 58	49	24	4881	962.48	-11.01	-16.93
335	SLU 59	51	35	4926	970.65	-11.13	-17.65
335	SLU 60	49	23	4987	980.85	-11.24	-16.96
335	SLU 61	51	35	5032	989.01	-11.36	-17.68
335	SLU 62	49	24	5023	987.91	-11.34	-16.97
335	SLU 63	51	35	5068	996.08	-11.45	-17.69
335	SLU 64	52	20	4854	958.17	-10.97	-18
335	SLU 65	56	40	4928	971.77	-11.16	-19.2
335	SLU 66	53	21	4913	969.64	-11.12	-18.16
335	SLU 67	55	32	4958	977.81	-11.24	-18.88
335	SLU 68	56	40	4964	978.84	-11.26	-19.21
335	SLU 69	53	21	4949	976.71	-11.22	-18.17
335	SLU 70	55	33	4994	984.87	-11.34	-18.89
335	SLU 71	52	22	4926	972.29	-11.16	-18.03
335	SLU 72	54	33	4971	980.46	-11.28	-18.74
335	SLU 73	56	42	5343	1047.59	-12.14	-19.33
335	SLU 74	53	23	5328	1045.46	-12.1	-18.29

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
335	SLU 75	55	34	5373	1053.63	-12.22	-19.01
335	SLU 76	56	42	5380	1054.66	-12.24	-19.35
335	SLU 77	53	23	5364	1052.53	-12.2	-18.31
335	SLU 78	55	35	5409	1060.69	-12.31	-19.03
335	SLU 79	53	24	5341	1048.11	-12.14	-18.16
335	SLU 80	55	35	5386	1056.28	-12.25	-18.88
335	SLU 81	53	23	5447	1066.48	-12.36	-18.19
335	SLU 82	55	35	5492	1074.65	-12.48	-18.91
335	SLU 83	53	24	5483	1073.55	-12.46	-18.21
335	SLU 84	55	35	5528	1081.71	-12.58	-18.93
335	SLE RA 1	39	16	3633	718.23	-8.19	-13.57
335	SLE RA 2	42	28	3682	727.3	-8.32	-14.37
335	SLE RA 3	40	16	3672	725.88	-8.29	-13.68
335	SLE RA 4	41	24	3702	731.32	-8.37	-14.16
335	SLE RA 5	42	29	3706	732.01	-8.38	-14.38
335	SLE RA 6	40	16	3696	730.59	-8.36	-13.69
335	SLE RA 7	41	24	3726	736.03	-8.44	-14.17
335	SLE RA 8	39	16	3681	727.65	-8.32	-13.59
335	SLE RA 9	41	24	3711	733.09	-8.4	-14.07
335	SLE RA 10	42	30	3959	777.85	-8.97	-14.46
335	SLE RA 11	40	17	3949	776.43	-8.95	-13.77
335	SLE RA 12	41	25	3979	781.87	-9.02	-14.25
335	SLE RA 13	42	30	3983	782.56	-9.04	-14.47
335	SLE RA 14	40	18	3973	781.14	-9.01	-13.78
335	SLE RA 15	41	25	4003	786.58	-9.09	-14.26
335	SLE RA 16	40	18	3958	778.2	-8.97	-13.68
335	SLE RA 17	41	26	3987	783.64	-9.05	-14.16
335	SLE RA 18	40	18	4028	790.44	-9.12	-13.7
335	SLE RA 19	41	25	4058	795.88	-9.2	-14.18
335	SLE RA 20	40	18	4052	795.15	-9.18	-13.71
335	SLE RA 21	41	26	4082	800.59	-9.26	-14.19
335	SLE FR 1	39	16	3633	718.23	-8.19	-13.57
335	SLE FR 2	40	18	3643	720.05	-8.22	-13.73
335	SLE FR 3	39	16	3642	720.12	-8.22	-13.58
335	SLE FR 4	40	19	3761	741.71	-8.5	-13.77
335	SLE FR 5	39	16	3761	741.78	-8.49	-13.62
335	SLE FR 6	39	17	3831	754.34	-8.66	-13.64
335	SLE QP 1	39	16	3633	718.23	-8.19	-13.57
335	SLE QP 2	39	16	3751	739.9	-8.47	-13.61
335	SLD 1	448	106	3256	624.15	-5.71	-156.61
335	SLD 2	522	210	3351	640.89	-6.03	-182.27
335	SLD 3	401	-127	2189	443.7	-3.08	-140.41
335	SLD 4	475	-23	2285	460.44	-3.4	-166.07
335	SLD 5	221	378	5203	975.83	-11.57	-76.47
335	SLD 6	270	446	5266	986.88	-11.78	-93.4
335	SLD 7	62	-399	1648	374.35	-2.81	-22.46
335	SLD 8	111	-330	1712	385.4	-3.02	-39.39
335	SLD 9	-33	363	5791	1094.39	-13.92	12.16
335	SLD 10	16	431	5855	1105.44	-14.13	-4.76
335	SLD 11	-191	-414	2237	492.91	-5.16	66.18
335	SLD 12	-142	-346	2300	503.96	-5.37	49.25
335	SLD 13	-396	56	5218	1019.35	-13.54	138.85
335	SLD 14	-322	159	5314	1036.09	-13.86	113.19
335	SLD 15	-444	-177	4151	838.9	-10.91	155.05
335	SLD 16	-370	-74	4247	855.64	-11.23	129.39
335	SLV 1	1000	245	2680	484	-2.23	-349.6
335	SLV 2	1174	488	2905	523.36	-2.97	-409.92
335	SLV 3	880	-337	5	31.49	4.36	-308.51
335	SLV 4	1054	-93	231	70.84	3.62	-368.83
335	SLV 5	478	921	7444	1342.09	-16.46	-165.47
335	SLV 6	595	1085	7595	1368.59	-16.96	-206.08
335	SLV 7	76	-1017	-1470	-166.28	5.52	-28.51
335	SLV 8	194	-853	-1319	-139.79	5.02	-69.12
335	SLV 9	-115	886	8821	1619.58	-21.96	41.89
335	SLV 10	2	1050	8973	1646.07	-22.46	1.28
335	SLV 11	-516	-1053	-92	111.2	0.02	178.85
335	SLV 12	-399	-889	59	137.7	-0.48	138.24
335	SLV 13	-975	126	7272	1408.95	-20.56	341.6
335	SLV 14	-801	369	7497	1448.3	-21.3	281.29
335	SLV 15	-1096	-456	4598	956.44	-13.96	382.69
335	SLV 16	-922	-212	4823	995.79	-14.71	322.38
335	CRTFP Ux+	0	0	0	0	0	0
335	CRTFP Ux-	0	0	0	0	0	0
335	CRTFP Uy+	0	0	0	0	0	0
335	CRTFP Uy-	0	0	0	0	0	0
336	SLU 1	38	21	3787	897.63	-9.96	-13.15
336	SLU 2	42	42	3868	915.22	-10.2	-14.37
336	SLU 3	39	21	3851	913.01	-10.16	-13.31
336	SLU 4	41	34	3900	923.57	-10.3	-14.04
336	SLU 5	42	43	3907	924.69	-10.32	-14.38
336	SLU 6	39	22	3891	922.48	-10.28	-13.32
336	SLU 7	41	35	3940	933.03	-10.42	-14.06
336	SLU 8	38	22	3866	916.56	-10.2	-13.18
336	SLU 9	40	35	3914	927.12	-10.35	-13.91
336	SLU 10	42	45	4319	1017.22	-11.45	-14.49
336	SLU 11	39	24	4302	1015.01	-11.4	-13.43
336	SLU 12	41	37	4351	1025.56	-11.55	-14.16
336	SLU 13	42	45	4358	1026.68	-11.57	-14.51
336	SLU 14	39	25	4342	1024.48	-11.52	-13.45

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
336	SLU 15	41	38	4390	1035.03	-11.67	-14.18
336	SLU 16	39	25	4316	1018.56	-11.45	-13.3
336	SLU 17	41	38	4365	1029.11	-11.59	-14.03
336	SLU 18	39	25	4431	1043.34	-11.74	-13.32
336	SLU 19	41	37	4479	1053.89	-11.89	-14.06
336	SLU 20	39	25	4470	1052.81	-11.86	-13.34
336	SLU 21	41	38	4519	1063.36	-12.01	-14.07
336	SLU 22	42	21	4288	1012.78	-11.39	-14.37
336	SLU 23	45	42	4369	1030.37	-11.63	-15.59
336	SLU 24	42	22	4352	1028.17	-11.59	-14.53
336	SLU 25	44	35	4401	1038.72	-11.73	-15.26
336	SLU 26	45	43	4408	1039.84	-11.75	-15.6
336	SLU 27	42	23	4392	1037.63	-11.71	-14.54
336	SLU 28	44	35	4441	1048.19	-11.85	-15.27
336	SLU 29	42	23	4367	1031.72	-11.63	-14.4
336	SLU 30	44	36	4415	1042.27	-11.78	-15.13
336	SLU 31	46	45	4820	1132.37	-12.88	-15.71
336	SLU 32	42	25	4803	1130.16	-12.83	-14.65
336	SLU 33	45	37	4852	1140.72	-12.98	-15.38
336	SLU 34	46	46	4859	1141.84	-13	-15.73
336	SLU 35	43	25	4843	1139.63	-12.95	-14.66
336	SLU 36	45	38	4891	1150.19	-13.1	-15.4
336	SLU 37	42	26	4817	1133.71	-12.88	-14.52
336	SLU 38	44	38	4866	1144.27	-13.02	-15.25
336	SLU 39	42	25	4932	1158.49	-13.17	-14.54
336	SLU 40	44	38	4980	1169.05	-13.32	-15.27
336	SLU 41	42	26	4971	1167.96	-13.29	-14.56
336	SLU 42	44	39	5020	1178.51	-13.44	-15.29
336	SLU 43	48	27	4751	1127.44	-12.46	-16.67
336	SLU 44	52	48	4832	1145.03	-12.7	-17.89
336	SLU 45	49	28	4816	1142.82	-12.65	-16.83
336	SLU 46	51	40	4864	1153.37	-12.8	-17.57
336	SLU 47	52	49	4872	1154.49	-12.82	-17.91
336	SLU 48	49	28	4855	1152.29	-12.77	-16.85
336	SLU 49	51	41	4904	1162.84	-12.92	-17.58
336	SLU 50	48	29	4830	1146.37	-12.7	-16.71
336	SLU 51	51	41	4879	1156.92	-12.84	-17.44
336	SLU 52	52	51	5283	1247.02	-13.95	-18.02
336	SLU 53	49	30	5266	1244.82	-13.9	-16.96
336	SLU 54	51	43	5315	1255.37	-14.05	-17.69
336	SLU 55	52	51	5322	1256.49	-14.07	-18.03
336	SLU 56	49	31	5306	1254.28	-14.02	-16.97
336	SLU 57	51	44	5355	1264.84	-14.17	-17.7
336	SLU 58	49	31	5281	1248.37	-13.95	-16.83
336	SLU 59	51	44	5329	1258.92	-14.09	-17.56
336	SLU 60	49	31	5395	1273.15	-14.24	-16.85
336	SLU 61	51	43	5443	1283.7	-14.39	-17.58
336	SLU 62	49	32	5434	1282.61	-14.36	-16.86
336	SLU 63	51	44	5483	1293.17	-14.51	-17.6
336	SLU 64	52	27	5252	1242.59	-13.89	-17.89
336	SLU 65	55	49	5333	1260.18	-14.13	-19.11
336	SLU 66	52	28	5317	1257.97	-14.08	-18.05
336	SLU 67	54	41	5365	1268.53	-14.23	-18.78
336	SLU 68	55	49	5373	1269.65	-14.25	-19.13
336	SLU 69	52	29	5356	1267.44	-14.2	-18.07
336	SLU 70	54	41	5405	1278	-14.35	-18.8
336	SLU 71	52	29	5331	1261.52	-14.13	-17.92
336	SLU 72	54	42	5380	1272.08	-14.27	-18.66
336	SLU 73	56	51	5784	1362.18	-15.38	-19.24
336	SLU 74	53	31	5767	1359.97	-15.33	-18.17
336	SLU 75	55	43	5816	1370.53	-15.48	-18.91
336	SLU 76	56	52	5823	1371.64	-15.5	-19.25
336	SLU 77	53	32	5807	1369.44	-15.45	-18.19
336	SLU 78	55	44	5856	1379.99	-15.6	-18.92
336	SLU 79	52	32	5782	1363.52	-15.38	-18.05
336	SLU 80	54	44	5830	1374.08	-15.52	-18.78
336	SLU 81	52	31	5896	1388.3	-15.67	-18.07
336	SLU 82	55	44	5944	1398.85	-15.82	-18.8
336	SLU 83	52	32	5935	1397.77	-15.79	-18.08
336	SLU 84	55	45	5984	1408.32	-15.94	-18.82
336	SLE RA 1	39	21	3930	930.53	-10.37	-13.5
336	SLE RA 2	41	35	3984	942.26	-10.53	-14.31
336	SLE RA 3	39	21	3973	940.79	-10.5	-13.6
336	SLE RA 4	41	30	4005	947.82	-10.6	-14.09
336	SLE RA 5	42	36	4010	948.57	-10.61	-14.32
336	SLE RA 6	39	22	3999	947.1	-10.58	-13.61
336	SLE RA 7	41	30	4032	954.13	-10.68	-14.1
336	SLE RA 8	39	22	3982	943.15	-10.53	-13.52
336	SLE RA 9	41	31	4015	950.19	-10.62	-14
336	SLE RA 10	42	37	4284	1010.25	-11.36	-14.39
336	SLE RA 11	40	23	4273	1008.78	-11.33	-13.68
336	SLE RA 12	41	32	4306	1015.82	-11.43	-14.17
336	SLE RA 13	42	37	4311	1016.57	-11.44	-14.4
336	SLE RA 14	40	24	4300	1015.1	-11.41	-13.69
336	SLE RA 15	41	32	4332	1022.13	-11.51	-14.18
336	SLE RA 16	39	24	4283	1011.15	-11.36	-13.6
336	SLE RA 17	41	32	4315	1018.19	-11.46	-14.09
336	SLE RA 18	39	24	4359	1027.67	-11.56	-13.61
336	SLE RA 19	41	32	4392	1034.71	-11.65	-14.1

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
336	SLE RA 20	39	24	4385	1033.98	-11.64	-13.62
336	SLE RA 21	41	33	4418	1041.02	-11.73	-14.11
336	SLE FR 1	39	21	3930	930.53	-10.37	-13.5
336	SLE FR 2	40	24	3941	932.88	-10.4	-13.66
336	SLE FR 3	39	21	3940	933.05	-10.4	-13.5
336	SLE FR 4	40	25	4069	962.02	-10.76	-13.69
336	SLE FR 5	39	22	4069	962.2	-10.76	-13.53
336	SLE FR 6	39	22	4144	979.1	-10.96	-13.55
336	SLE QP 1	39	21	3930	930.53	-10.37	-13.5
336	SLE QP 2	39	22	4059	959.67	-10.72	-13.53
336	SLD 1	447	117	3468	798.8	-7.58	-156.25
336	SLD 2	522	230	3575	821.47	-7.95	-181.89
336	SLD 3	400	-130	2308	558.44	-4.32	-139.97
336	SLD 4	474	-17	2415	581.11	-4.69	-165.61
336	SLD 5	221	405	5622	1271.88	-14.66	-76.43
336	SLD 6	270	479	5693	1286.84	-14.9	-93.34
336	SLD 7	62	-419	1754	470.68	-3.79	-22.16
336	SLD 8	110	-344	1824	485.63	-4.04	-39.07
336	SLD 9	-32	388	6293	1433.71	-17.41	12.01
336	SLD 10	17	462	6363	1448.67	-17.66	-4.9
336	SLD 11	-191	-436	2424	632.51	-6.54	66.28
336	SLD 12	-142	-361	2495	647.46	-6.79	49.37
336	SLD 13	-395	61	5702	1338.23	-16.75	138.55
336	SLD 14	-321	173	5809	1360.9	-17.13	112.91
336	SLD 15	-443	-187	4542	1097.87	-13.49	154.83
336	SLD 16	-369	-74	4649	1120.54	-13.87	129.19
336	SLV 1	999	265	2774	603.18	-3.63	-348.87
336	SLV 2	1173	530	3025	656.47	-4.51	-409.13
336	SLV 3	878	-353	-137	0.38	4.54	-307.6
336	SLV 4	1052	-87	114	53.67	3.66	-367.86
336	SLV 5	478	981	8040	1757.02	-20.83	-165.49
336	SLV 6	595	1160	8209	1792.9	-21.43	-206.06
336	SLV 7	75	-1076	-1661	-252.3	6.42	-27.9
336	SLV 8	192	-897	-1492	-216.42	5.83	-68.47
336	SLV 9	-114	941	9609	2135.77	-27.28	41.41
336	SLV 10	4	1119	9778	2171.65	-27.87	0.84
336	SLV 11	-517	-1116	-92	126.45	-0.02	179
336	SLV 12	-400	-938	77	162.33	-0.62	138.43
336	SLV 13	-973	131	8003	1865.67	-25.11	340.8
336	SLV 14	-799	396	8254	1918.96	-25.99	280.54
336	SLV 15	-1094	-486	5092	1262.88	-16.93	382.07
336	SLV 16	-920	-221	5343	1316.17	-17.81	321.81
336	CRTFP Ux+	0	0	0	0	0	0
336	CRTFP Ux-	0	0	0	0	0	0
336	CRTFP Uy+	0	0	0	0	0	0
336	CRTFP Uy-	0	0	0	0	0	0
337	SLU 1	32	22	3507	974.54	90.57	-11.78
337	SLU 2	35	41	3583	993.65	92.52	-13.39
337	SLU 3	33	23	3567	991.67	92.12	-11.93
337	SLU 4	34	34	3613	1003.14	93.29	-12.9
337	SLU 5	35	42	3620	1004.2	93.47	-13.42
337	SLU 6	33	23	3605	1002.22	93.07	-11.97
337	SLU 7	35	35	3650	1013.69	94.24	-12.94
337	SLU 8	32	24	3581	995.63	92.47	-11.85
337	SLU 9	34	35	3627	1007.1	93.64	-12.82
337	SLU 10	36	44	4002	1107.52	103.3	-13.56
337	SLU 11	33	25	3987	1105.54	102.91	-12.11
337	SLU 12	35	37	4032	1117.01	104.07	-13.07
337	SLU 13	36	45	4039	1118.07	104.25	-13.6
337	SLU 14	33	26	4024	1116.09	103.85	-12.14
337	SLU 15	35	38	4069	1127.56	105.02	-13.11
337	SLU 16	33	26	4000	1109.5	103.25	-12.03
337	SLU 17	34	38	4046	1120.97	104.42	-12.99
337	SLU 18	33	26	4106	1137.21	105.98	-12.02
337	SLU 19	35	37	4151	1148.68	107.14	-12.99
337	SLU 20	33	27	4143	1147.76	106.92	-12.06
337	SLU 21	35	38	4188	1159.23	108.09	-13.03
337	SLU 22	35	23	3974	1103.06	102.56	-12.83
337	SLU 23	38	42	4050	1122.18	104.51	-14.44
337	SLU 24	36	23	4035	1120.2	104.11	-12.99
337	SLU 25	37	35	4080	1131.67	105.28	-13.95
337	SLU 26	38	43	4087	1132.73	105.45	-14.47
337	SLU 27	36	24	4072	1130.75	105.06	-13.02
337	SLU 28	37	36	4117	1142.22	106.22	-13.99
337	SLU 29	35	24	4048	1124.16	104.45	-12.91
337	SLU 30	37	36	4094	1135.63	105.62	-13.87
337	SLU 31	39	45	4469	1236.05	115.29	-14.61
337	SLU 32	36	26	4454	1234.07	114.89	-13.16
337	SLU 33	38	38	4499	1245.54	116.06	-14.12
337	SLU 34	39	46	4506	1246.6	116.23	-14.65
337	SLU 35	36	27	4491	1244.62	115.84	-13.2
337	SLU 36	38	39	4537	1256.09	117.01	-14.16
337	SLU 37	36	27	4467	1238.03	115.24	-13.08
337	SLU 38	37	39	4513	1249.5	116.4	-14.04
337	SLU 39	36	27	4573	1265.74	117.96	-13.08
337	SLU 40	37	38	4619	1277.21	119.13	-14.04
337	SLU 41	36	28	4610	1276.28	118.91	-13.11
337	SLU 42	38	39	4656	1287.75	120.08	-14.08
337	SLU 43	41	28	4399	1222.83	113.64	-14.95

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
337	SLU 44	44	48	4475	1241.95	115.58	-16.56
337	SLU 45	41	29	4459	1239.97	115.19	-15.11
337	SLU 46	43	40	4505	1251.44	116.35	-16.07
337	SLU 47	44	48	4512	1252.49	116.53	-16.6
337	SLU 48	41	30	4496	1250.51	116.13	-15.15
337	SLU 49	43	41	4542	1261.98	117.3	-16.11
337	SLU 50	41	30	4473	1243.92	115.53	-15.03
337	SLU 51	43	41	4518	1255.39	116.7	-15.99
337	SLU 52	44	50	4894	1355.82	126.36	-16.73
337	SLU 53	42	32	4879	1353.84	125.97	-15.28
337	SLU 54	43	43	4924	1365.31	127.14	-16.24
337	SLU 55	44	51	4931	1366.36	127.31	-16.77
337	SLU 56	42	32	4916	1364.38	126.91	-15.32
337	SLU 57	43	44	4961	1375.85	128.08	-16.28
337	SLU 58	41	33	4892	1357.79	126.31	-15.2
337	SLU 59	43	44	4938	1369.26	127.48	-16.16
337	SLU 60	41	32	4998	1385.5	129.04	-15.2
337	SLU 61	43	44	5043	1396.97	130.21	-16.16
337	SLU 62	41	33	5035	1396.05	129.99	-15.23
337	SLU 63	43	45	5080	1407.52	131.15	-16.2
337	SLU 64	44	29	4866	1351.36	125.62	-16
337	SLU 65	47	48	4942	1370.47	127.57	-17.61
337	SLU 66	44	30	4927	1368.49	127.17	-16.16
337	SLU 67	46	41	4972	1379.96	128.34	-17.12
337	SLU 68	47	49	4979	1381.02	128.52	-17.65
337	SLU 69	44	31	4964	1379.04	128.12	-16.2
337	SLU 70	46	42	5009	1390.51	129.29	-17.16
337	SLU 71	44	31	4940	1372.45	127.52	-16.08
337	SLU 72	46	42	4986	1383.92	128.68	-17.04
337	SLU 73	47	51	5361	1484.35	138.35	-17.78
337	SLU 74	44	33	5346	1482.37	137.95	-16.33
337	SLU 75	46	44	5391	1493.84	139.12	-17.3
337	SLU 76	47	52	5398	1494.89	139.3	-17.82
337	SLU 77	45	33	5383	1492.91	138.9	-16.37
337	SLU 78	46	45	5428	1504.38	140.07	-17.33
337	SLU 79	44	33	5359	1486.32	138.3	-16.25
337	SLU 80	46	45	5405	1497.79	139.47	-17.21
337	SLU 81	44	33	5465	1514.03	141.03	-16.25
337	SLU 82	46	45	5510	1525.5	142.19	-17.21
337	SLU 83	44	34	5502	1524.58	141.97	-16.29
337	SLU 84	46	45	5547	1536.05	143.14	-17.25
337	SLE RA 1	33	22	3640	1011.26	94	-12.08
337	SLE RA 2	35	35	3691	1024	95.3	-13.15
337	SLE RA 3	33	23	3681	1022.68	95.03	-12.18
337	SLE RA 4	35	30	3711	1030.33	95.81	-12.83
337	SLE RA 5	35	36	3716	1031.03	95.93	-13.18
337	SLE RA 6	33	23	3705	1029.71	95.66	-12.21
337	SLE RA 7	35	31	3736	1037.36	96.44	-12.85
337	SLE RA 8	33	23	3690	1025.32	95.26	-12.13
337	SLE RA 9	34	31	3720	1032.97	96.04	-12.77
337	SLE RA 10	35	37	3970	1099.92	102.48	-13.27
337	SLE RA 11	34	24	3960	1098.6	102.22	-12.3
337	SLE RA 12	35	32	3991	1106.24	103	-12.94
337	SLE RA 13	35	37	3995	1106.95	103.12	-13.29
337	SLE RA 14	34	25	3985	1105.63	102.85	-12.32
337	SLE RA 15	35	33	4015	1113.27	103.63	-12.97
337	SLE RA 16	33	25	3969	1101.23	102.45	-12.24
337	SLE RA 17	35	33	4000	1108.88	103.23	-12.89
337	SLE RA 18	33	25	4040	1119.71	104.27	-12.24
337	SLE RA 19	35	33	4070	1127.35	105.05	-12.89
337	SLE RA 20	33	25	4064	1126.74	104.9	-12.27
337	SLE RA 21	35	33	4095	1134.39	105.68	-12.91
337	SLE FR 1	33	22	3640	1011.26	94	-12.08
337	SLE FR 2	33	25	3650	1013.81	94.26	-12.29
337	SLE FR 3	33	22	3650	1014.07	94.25	-12.09
337	SLE FR 4	34	26	3770	1046.34	97.34	-12.34
337	SLE FR 5	33	23	3770	1046.61	97.33	-12.14
337	SLE FR 6	33	24	3840	1065.48	99.13	-12.16
337	SLE QP 1	33	22	3640	1011.26	94	-12.08
337	SLE QP 2	33	23	3760	1043.79	97.08	-12.13
337	SLD 1	381	110	3172	862.19	82.84	-135.83
337	SLD 2	444	214	3274	887.43	85.41	-160.67
337	SLD 3	340	-112	2093	596.08	55.06	-115.77
337	SLD 4	403	-8	2194	621.32	57.63	-140.61
337	SLD 5	188	367	5203	1388.38	134.48	-75.2
337	SLD 6	230	435	5270	1405.03	136.18	-91.58
337	SLD 7	52	-373	1604	501.34	41.88	-8.33
337	SLD 8	94	-304	1671	517.98	43.57	-24.71
337	SLD 9	-27	350	5849	1569.6	150.59	0.46
337	SLD 10	14	419	5916	1586.25	152.28	-15.93
337	SLD 11	-164	-389	2250	682.56	57.98	67.33
337	SLD 12	-122	-321	2317	699.21	59.67	50.94
337	SLD 13	-337	54	5326	1466.27	136.53	116.35
337	SLD 14	-274	158	5428	1491.51	139.1	91.52
337	SLD 15	-378	-168	4247	1200.16	108.75	136.41
337	SLD 16	-315	-64	4348	1225.39	111.31	111.58
337	SLV 1	851	244	2474	640.92	66.08	-303.27
337	SLV 2	1000	487	2713	700.24	72.11	-361.64
337	SLV 3	747	-311	-234	-26.45	-3.6	-252.58

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
337	SLV 4	896	-67	5	32.86	2.43	-310.96
337	SLV 5	408	884	7437	1924.05	192.33	-165.44
337	SLV 6	508	1049	7597	1963.99	196.39	-204.75
337	SLV 7	62	-963	-1590	-300.54	-39.92	3.5
337	SLV 8	162	-799	-1429	-260.61	-35.86	-35.8
337	SLV 9	-96	845	8949	2348.19	230.02	11.55
337	SLV 10	4	1009	9110	2388.13	234.08	-27.76
337	SLV 11	-442	-1003	-77	123.6	-2.23	180.49
337	SLV 12	-342	-838	83	163.53	1.83	141.19
337	SLV 13	-830	113	7516	2054.73	191.73	286.7
337	SLV 14	-681	357	7754	2114.04	197.76	228.32
337	SLV 15	-933	-441	4808	1387.35	122.05	337.39
337	SLV 16	-785	-198	5046	1446.66	128.08	279.01
337	CRTFP Ux+	0	0	0	0	0	0
337	CRTFP Ux-	0	0	0	0	0	0
337	CRTFP Uy+	0	0	0	0	0	0
337	CRTFP Uy-	0	0	0	0	0	0
339	SLU 1	51	37	5705	1267.07	1233.85	-20.23
339	SLU 2	56	67	5833	1293.03	1261.66	-28.6
339	SLU 3	51	38	5804	1289.48	1254.76	-20.63
339	SLU 4	55	56	5880	1305.05	1271.44	-25.65
339	SLU 5	56	68	5893	1306.79	1274.4	-28.92
339	SLU 6	52	39	5864	1303.23	1267.49	-20.95
339	SLU 7	55	57	5941	1318.81	1284.18	-25.97
339	SLU 8	51	39	5826	1294.59	1259.32	-20.87
339	SLU 9	54	57	5902	1310.16	1276	-25.89
339	SLU 10	57	72	6518	1444.26	1408.97	-29.76
339	SLU 11	52	42	6489	1440.71	1402.06	-21.79
339	SLU 12	55	60	6565	1456.28	1418.75	-26.81
339	SLU 13	57	73	6578	1458.02	1421.7	-30.08
339	SLU 14	52	43	6549	1454.46	1414.79	-22.11
339	SLU 15	55	62	6625	1470.04	1431.48	-27.13
339	SLU 16	52	44	6510	1445.81	1406.62	-22.03
339	SLU 17	55	62	6587	1461.39	1423.31	-27.05
339	SLU 18	52	43	6684	1483.12	1444.29	-21.89
339	SLU 19	55	61	6760	1498.69	1460.98	-26.91
339	SLU 20	52	44	6744	1496.87	1457.02	-22.21
339	SLU 21	55	63	6820	1512.45	1473.71	-27.23
339	SLU 22	55	38	6467	1436.9	1396.93	-21.68
339	SLU 23	61	69	6594	1462.86	1424.74	-30.05
339	SLU 24	56	39	6565	1459.31	1417.84	-22.08
339	SLU 25	59	58	6642	1474.88	1434.52	-27.1
339	SLU 26	61	70	6654	1476.61	1437.48	-30.37
339	SLU 27	56	41	6626	1473.06	1430.57	-22.4
339	SLU 28	59	59	6702	1488.64	1447.26	-27.42
339	SLU 29	56	41	6587	1464.41	1422.4	-22.32
339	SLU 30	59	59	6664	1479.99	1439.08	-27.34
339	SLU 31	61	73	7279	1614.09	1572.05	-31.21
339	SLU 32	57	44	7250	1610.54	1565.14	-23.24
339	SLU 33	60	62	7327	1626.11	1581.83	-28.26
339	SLU 34	62	74	7339	1627.84	1584.78	-31.53
339	SLU 35	57	45	7310	1624.29	1577.87	-23.56
339	SLU 36	60	63	7387	1639.87	1594.56	-28.58
339	SLU 37	56	45	7272	1615.64	1569.7	-23.48
339	SLU 38	60	64	7348	1631.22	1586.39	-28.51
339	SLU 39	56	45	7445	1652.94	1607.37	-23.34
339	SLU 40	60	63	7522	1668.52	1624.06	-28.36
339	SLU 41	56	46	7505	1666.7	1620.1	-23.66
339	SLU 42	60	64	7582	1682.27	1636.79	-28.68
339	SLU 43	64	47	7156	1588.97	1548.09	-25.8
339	SLU 44	70	77	7283	1614.93	1575.91	-34.17
339	SLU 45	65	48	7255	1611.37	1569	-26.2
339	SLU 46	68	66	7331	1626.95	1585.69	-31.22
339	SLU 47	70	79	7343	1628.68	1588.64	-34.49
339	SLU 48	65	49	7315	1625.13	1581.73	-26.52
339	SLU 49	68	68	7391	1640.7	1598.42	-31.54
339	SLU 50	65	50	7276	1616.48	1573.56	-26.44
339	SLU 51	68	68	7353	1632.05	1590.25	-31.46
339	SLU 52	70	82	7968	1766.16	1723.21	-35.33
339	SLU 53	66	53	7939	1762.6	1716.3	-27.36
339	SLU 54	69	71	8016	1778.18	1732.99	-32.38
339	SLU 55	70	83	8028	1779.91	1735.94	-35.65
339	SLU 56	66	54	7999	1776.36	1729.04	-27.68
339	SLU 57	69	72	8076	1791.93	1745.72	-32.7
339	SLU 58	65	54	7961	1767.71	1720.86	-27.6
339	SLU 59	68	72	8037	1783.28	1737.55	-32.62
339	SLU 60	65	53	8134	1805.01	1758.53	-27.46
339	SLU 61	68	72	8211	1820.58	1775.22	-32.48
339	SLU 62	65	55	8194	1818.77	1771.26	-27.78
339	SLU 63	69	73	8271	1834.34	1787.95	-32.8
339	SLU 64	69	49	7917	1758.8	1711.17	-27.25
339	SLU 65	74	79	8045	1784.75	1738.98	-35.62
339	SLU 66	70	50	8016	1781.2	1732.08	-27.65
339	SLU 67	73	68	8092	1796.78	1748.77	-32.67
339	SLU 68	75	80	8105	1798.51	1751.72	-35.94
339	SLU 69	70	51	8076	1794.96	1744.81	-27.97
339	SLU 70	73	69	8153	1810.53	1761.5	-32.99
339	SLU 71	69	51	8038	1786.31	1736.64	-27.89
339	SLU 72	73	69	8114	1801.88	1753.33	-32.91

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
339	SLU 73	75	84	8730	1935.98	1886.29	-36.78
339	SLU 74	70	54	8701	1932.43	1879.38	-28.81
339	SLU 75	74	72	8777	1948	1896.07	-33.83
339	SLU 76	75	85	8790	1949.74	1899.02	-37.1
339	SLU 77	70	56	8761	1946.19	1892.12	-29.13
339	SLU 78	74	74	8837	1961.76	1908.8	-34.15
339	SLU 79	70	56	8722	1937.54	1883.94	-29.06
339	SLU 80	73	74	8799	1953.11	1900.63	-34.08
339	SLU 81	70	55	8896	1974.84	1921.61	-28.91
339	SLU 82	73	73	8972	1990.41	1938.3	-33.93
339	SLU 83	70	56	8956	1988.59	1934.34	-29.23
339	SLU 84	73	75	9032	2004.17	1951.03	-34.25
339	SLE RA 1	52	37	5923	1315.6	1280.44	-20.64
339	SLE RA 2	56	57	6008	1332.9	1298.99	-26.22
339	SLE RA 3	53	38	5989	1330.53	1294.38	-20.91
339	SLE RA 4	55	50	6040	1340.92	1305.51	-24.26
339	SLE RA 5	56	58	6048	1342.07	1307.47	-26.44
339	SLE RA 6	53	39	6029	1339.7	1302.87	-21.12
339	SLE RA 7	55	51	6080	1350.09	1314	-24.47
339	SLE RA 8	52	39	6003	1333.94	1297.42	-21.07
339	SLE RA 9	54	51	6054	1344.32	1308.55	-24.42
339	SLE RA 10	56	60	6464	1433.72	1397.19	-27
339	SLE RA 11	53	41	6445	1431.35	1392.59	-21.68
339	SLE RA 12	55	53	6496	1441.73	1403.71	-25.03
339	SLE RA 13	56	61	6504	1442.89	1405.68	-27.21
339	SLE RA 14	53	42	6485	1440.52	1401.07	-21.9
339	SLE RA 15	55	54	6536	1450.91	1412.2	-25.24
339	SLE RA 16	53	42	6460	1434.76	1395.63	-21.85
339	SLE RA 17	55	54	6511	1445.14	1406.75	-25.19
339	SLE RA 18	53	41	6575	1459.62	1420.74	-21.75
339	SLE RA 19	55	54	6626	1470.01	1431.86	-25.1
339	SLE RA 20	53	42	6615	1468.79	1429.22	-21.96
339	SLE RA 21	55	54	6666	1479.18	1440.35	-25.31
339	SLE FR 1	52	37	5923	1315.6	1280.44	-20.64
339	SLE FR 2	53	41	5940	1319.06	1284.15	-21.76
339	SLE FR 3	52	37	5939	1319.26	1283.84	-20.73
339	SLE FR 4	53	42	6136	1362.27	1326.24	-22.09
339	SLE FR 5	52	39	6135	1362.47	1325.93	-21.06
339	SLE FR 6	52	39	6249	1387.61	1350.59	-21.2
339	SLE QP 1	52	37	5923	1315.6	1280.44	-20.64
339	SLE QP 2	52	38	6119	1358.8	1322.53	-20.98
339	SLD 1	588	176	5152	1127.63	1130.41	-175.94
339	SLD 2	688	340	5324	1162.31	1167.52	-237.8
339	SLD 3	520	-172	3343	761.09	733.16	-79.08
339	SLD 4	621	-8	3514	795.76	770.27	-140.95
339	SLD 5	297	577	8542	1839.14	1860.71	-203.23
339	SLD 6	363	685	8655	1862.02	1885.19	-244.05
339	SLD 7	73	-581	2511	617.33	536.56	119.62
339	SLD 8	139	-473	2624	640.2	561.04	78.8
339	SLD 9	-34	549	9613	2077.41	2084.02	-120.76
339	SLD 10	32	658	9726	2100.28	2108.5	-161.57
339	SLD 11	-258	-608	3582	855.59	759.88	202.1
339	SLD 12	-192	-500	3695	878.47	784.36	161.28
339	SLD 13	-516	84	8723	1921.84	1874.79	99
339	SLD 14	-416	248	8894	1956.52	1911.9	37.13
339	SLD 15	-583	-263	6914	1555.3	1477.55	195.85
339	SLD 16	-483	-99	7085	1589.98	1514.66	133.98
339	SLV 1	1311	387	4007	848.27	905.94	-391.15
339	SLV 2	1546	772	4410	929.78	993.17	-536.58
339	SLV 3	1140	-481	-530	-70.97	-90.31	-148.51
339	SLV 4	1376	-95	-127	10.54	-3.07	-293.94
339	SLV 5	644	1387	12292	2584.61	2692.25	-472.89
339	SLV 6	802	1647	12563	2639.49	2750.98	-570.8
339	SLV 7	77	-1506	-2833	-479.52	-628.57	335.91
339	SLV 8	235	-1246	-2562	-424.65	-569.84	238
339	SLV 9	-131	1323	14799	3142.25	3214.91	-279.95
339	SLV 10	28	1583	15070	3197.13	3273.64	-377.86
339	SLV 11	-698	-1570	-326	78.12	-105.91	528.85
339	SLV 12	-539	-1310	-55	132.99	-47.18	430.94
339	SLV 13	-1271	172	12364	2707.07	2648.14	251.99
339	SLV 14	-1036	558	12767	2788.58	2735.37	106.56
339	SLV 15	-1441	-696	7827	1787.83	1651.89	494.63
339	SLV 16	-1206	-310	8230	1869.34	1739.12	349.2
339	CRTFP Ux+	0	0	0	0	0	0
339	CRTFP Ux-	0	0	0	0	0	0
339	CRTFP Uy+	0	0	0	-0.01	-0.01	0
339	CRTFP Uy-	0	0	0	0.01	0.01	0
341	SLU 1	45	-107	8119	864.08	1408.34	11.02
341	SLU 2	48	-68	8282	876.71	1439.08	3.94
341	SLU 3	45	-109	8253	879.08	1431.26	11.31
341	SLU 4	47	-86	8351	886.66	1449.7	7.06
341	SLU 5	48	-69	8365	885.99	1453.13	4.16
341	SLU 6	44	-110	8335	888.36	1445.31	11.53
341	SLU 7	46	-87	8433	895.93	1463.76	7.28
341	SLU 8	44	-109	8284	882.63	1436.45	11.48
341	SLU 9	46	-86	8382	890.21	1454.89	7.22
341	SLU 10	49	-81	9360	991.44	1627.49	5.85
341	SLU 11	46	-121	9331	993.81	1619.66	13.22
341	SLU 12	48	-98	9429	1001.39	1638.11	8.97

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
341	SLU 13	49	-82	9443	1000.72	1641.54	6.07
341	SLU 14	45	-123	9413	1003.09	1633.72	13.44
341	SLU 15	47	-99	9511	1010.66	1652.16	9.19
341	SLU 16	45	-122	9361	997.37	1624.85	13.38
341	SLU 17	47	-99	9459	1004.94	1643.3	9.13
341	SLU 18	46	-125	9659	1027.98	1677.49	13.75
341	SLU 19	48	-102	9757	1035.56	1695.94	9.5
341	SLU 20	46	-126	9741	1037.26	1691.55	13.98
341	SLU 21	48	-103	9839	1044.84	1709.99	9.73
341	SLU 22	50	-120	9185	979.6	1592.3	12.48
341	SLU 23	53	-81	9349	992.23	1623.04	5.4
341	SLU 24	49	-122	9319	994.6	1615.22	12.77
341	SLU 25	52	-99	9417	1002.18	1633.66	8.51
341	SLU 26	53	-82	9431	1001.51	1637.1	5.62
341	SLU 27	49	-123	9402	1003.88	1629.27	12.99
341	SLU 28	51	-100	9500	1011.45	1647.72	8.74
341	SLU 29	49	-122	9350	998.15	1620.41	12.93
341	SLU 30	51	-99	9448	1005.73	1638.85	8.68
341	SLU 31	54	-94	10427	1106.96	1811.45	7.3
341	SLU 32	50	-134	10397	1109.33	1803.63	14.67
341	SLU 33	52	-111	10495	1116.91	1822.07	10.42
341	SLU 34	53	-95	10509	1116.24	1825.5	7.53
341	SLU 35	50	-135	10479	1118.61	1817.68	14.9
341	SLU 36	52	-112	10577	1126.18	1836.13	10.65
341	SLU 37	50	-135	10428	1112.89	1808.82	14.84
341	SLU 38	52	-111	10526	1120.46	1827.26	10.59
341	SLU 39	51	-138	10725	1143.5	1861.46	15.21
341	SLU 40	53	-114	10823	1151.08	1879.9	10.96
341	SLU 41	50	-139	10807	1152.78	1875.51	15.43
341	SLU 42	52	-116	10905	1160.36	1893.95	11.18
341	SLU 43	57	-135	10189	1083.69	1767.77	13.83
341	SLU 44	60	-96	10353	1096.32	1798.51	6.75
341	SLU 45	57	-137	10323	1098.69	1790.69	14.12
341	SLU 46	59	-113	10421	1106.27	1809.13	9.86
341	SLU 47	60	-97	10435	1105.6	1812.56	6.97
341	SLU 48	56	-138	10405	1107.97	1804.74	14.34
341	SLU 49	58	-114	10503	1115.55	1823.18	10.09
341	SLU 50	56	-137	10354	1102.25	1795.87	14.28
341	SLU 51	58	-114	10452	1109.83	1814.32	10.03
341	SLU 52	61	-108	11430	1211.06	1986.92	8.66
341	SLU 53	58	-149	11401	1213.42	1979.09	16.02
341	SLU 54	60	-126	11499	1221	1997.54	11.77
341	SLU 55	61	-109	11513	1220.33	2000.97	8.88
341	SLU 56	57	-150	11483	1222.7	1993.15	16.25
341	SLU 57	59	-127	11581	1230.28	2011.59	12
341	SLU 58	57	-150	11431	1216.98	1984.28	16.19
341	SLU 59	59	-126	11530	1224.56	2002.73	11.94
341	SLU 60	58	-153	11729	1247.59	2036.92	16.56
341	SLU 61	60	-129	11827	1255.17	2055.37	12.31
341	SLU 62	58	-154	11811	1256.87	2050.98	16.78
341	SLU 63	60	-130	11909	1264.45	2069.42	12.53
341	SLU 64	62	-148	11255	1199.21	1951.73	15.29
341	SLU 65	65	-109	11419	1211.84	1982.47	8.2
341	SLU 66	61	-150	11389	1214.21	1974.65	15.57
341	SLU 67	63	-126	11487	1221.79	1993.09	11.32
341	SLU 68	65	-110	11501	1221.12	1996.53	8.43
341	SLU 69	61	-151	11472	1223.49	1988.7	15.8
341	SLU 70	63	-127	11570	1231.07	2007.15	11.55
341	SLU 71	61	-150	11420	1217.77	1979.84	15.74
341	SLU 72	63	-127	11518	1225.35	1998.28	11.49
341	SLU 73	66	-121	12497	1326.58	2170.88	10.11
341	SLU 74	62	-162	12467	1328.94	2163.06	17.48
341	SLU 75	64	-139	12565	1336.52	2181.5	13.23
341	SLU 76	65	-122	12579	1335.85	2184.93	10.34
341	SLU 77	62	-163	12549	1338.22	2177.11	17.71
341	SLU 78	64	-140	12647	1345.8	2195.55	13.46
341	SLU 79	61	-163	12498	1332.5	2168.24	17.65
341	SLU 80	64	-139	12596	1340.08	2186.69	13.4
341	SLU 81	63	-166	12795	1363.11	2220.88	18.02
341	SLU 82	65	-142	12893	1370.69	2239.33	13.76
341	SLU 83	62	-167	12877	1372.39	2234.94	18.24
341	SLU 84	64	-143	12976	1379.97	2253.38	13.99
341	SLE RA 1	46	-111	8424	897.08	1460.9	11.44
341	SLE RA 2	49	-85	8533	905.5	1481.39	6.72
341	SLE RA 3	46	-112	8513	907.08	1476.18	11.63
341	SLE RA 4	48	-96	8578	912.13	1488.47	8.8
341	SLE RA 5	48	-86	8588	911.69	1490.76	6.87
341	SLE RA 6	46	-113	8568	913.27	1485.55	11.78
341	SLE RA 7	47	-97	8633	918.32	1497.84	8.95
341	SLE RA 8	46	-112	8533	909.45	1479.64	11.74
341	SLE RA 9	47	-97	8599	914.51	1491.93	8.91
341	SLE RA 10	49	-93	9251	981.99	1607	7.99
341	SLE RA 11	47	-120	9231	983.57	1601.78	12.9
341	SLE RA 12	48	-105	9297	988.62	1614.08	10.07
341	SLE RA 13	49	-94	9306	988.18	1616.37	8.14
341	SLE RA 14	46	-121	9286	989.76	1611.15	13.05
341	SLE RA 15	48	-106	9352	994.81	1623.45	10.22
341	SLE RA 16	46	-121	9252	985.94	1605.24	13.01
341	SLE RA 17	48	-105	9317	990.99	1617.54	10.18

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
341	SLE RA 18	47	-123	9450	1006.35	1640.34	13.26
341	SLE RA 19	49	-107	9515	1011.4	1652.63	10.42
341	SLE RA 20	47	-123	9505	1012.54	1649.7	13.41
341	SLE RA 21	48	-108	9570	1017.59	1662	10.57
341	SLE FR 1	46	-111	8424	897.08	1460.9	11.44
341	SLE FR 2	47	-106	8445	898.77	1465	10.5
341	SLE FR 3	46	-111	8446	899.56	1464.65	11.5
341	SLE FR 4	47	-109	8753	931.55	1518.83	11.04
341	SLE FR 5	46	-115	8754	932.34	1518.48	12.05
341	SLE FR 6	47	-117	8937	951.72	1550.62	12.35
341	SLE QP 1	46	-111	8424	897.08	1460.9	11.44
341	SLE QP 2	47	-114	8732	929.86	1514.73	11.99
341	SLD 1	867	146	9848	1017.9	1733.7	-124.86
341	SLD 2	1018	156	9888	1022.04	1737.92	-141.89
341	SLD 3	802	-330	7672	849.67	1326.88	-35.61
341	SLD 4	952	-319	7712	853.8	1331.09	-52.64
341	SLD 5	365	683	12360	1210.69	2196.68	-161.36
341	SLD 6	464	690	12385	1213.42	2199.46	-172.59
341	SLD 7	146	-902	5107	649.9	840.6	136.12
341	SLD 8	246	-895	5133	652.63	843.38	124.89
341	SLD 9	-153	666	12330	1207.09	2186.08	-100.92
341	SLD 10	-53	673	12356	1209.82	2188.86	-112.15
341	SLD 11	-371	-919	5078	646.31	830	196.56
341	SLD 12	-272	-912	5104	649.04	832.78	185.33
341	SLD 13	-859	90	9751	1005.92	1698.37	76.62
341	SLD 14	-708	101	9791	1010.06	1702.58	59.59
341	SLD 15	-924	-385	7576	837.69	1291.54	165.86
341	SLD 16	-774	-374	7615	841.82	1295.76	148.83
341	SLV 1	1972	530	11526	1149.89	2060.92	-315.17
341	SLV 2	2326	556	11618	1159.61	2070.82	-355.2
341	SLV 3	1805	-655	6072	728.11	1041.31	-92.17
341	SLV 4	2159	-630	6164	737.84	1051.21	-132.2
341	SLV 5	812	1873	17824	1633.75	3223.14	-416.91
341	SLV 6	1050	1890	17886	1640.29	3229.81	-443.85
341	SLV 7	255	-2080	-355	227.83	-175.55	326.42
341	SLV 8	493	-2063	-293	234.38	-168.88	299.48
341	SLV 9	-400	1834	17756	1625.35	3198.34	-275.5
341	SLV 10	-161	1851	17818	1631.89	3205.01	-302.45
341	SLV 11	-957	-2119	-423	219.43	-200.35	467.83
341	SLV 12	-719	-2101	-361	225.98	-193.68	440.88
341	SLV 13	-2066	401	11299	1121.89	1978.25	156.17
341	SLV 14	-1712	427	11391	1131.61	1988.15	116.15
341	SLV 15	-2233	-785	5845	700.11	958.64	379.17
341	SLV 16	-1879	-759	5937	709.84	968.54	339.14
341	CRTFP Ux+	0	0	0	0	0	0
341	CRTFP Ux-	0	0	0	0	0	0
341	CRTFP Uy+	0	0	0	0	-0.01	0
341	CRTFP Uy-	0	0	0	0	0.01	0
342	SLU 1	28	-71	4360	1256.93	1.99	-8.65
342	SLU 2	30	-50	4441	1275.8	2.05	-9.32
342	SLU 3	28	-73	4433	1278.54	2.02	-8.65
342	SLU 4	29	-60	4481	1289.86	2.06	-9.05
342	SLU 5	29	-51	4486	1289.18	2.07	-9.25
342	SLU 6	27	-73	4478	1291.92	2.04	-8.58
342	SLU 7	29	-61	4526	1303.24	2.08	-8.98
342	SLU 8	27	-73	4450	1283.69	2.03	-8.51
342	SLU 9	28	-60	4498	1295.01	2.07	-8.91
342	SLU 10	30	-58	5011	1440.62	2.42	-9.48
342	SLU 11	28	-80	5003	1443.37	2.4	-8.8
342	SLU 12	29	-67	5052	1454.68	2.44	-9.2
342	SLU 13	30	-59	5056	1454	2.45	-9.4
342	SLU 14	28	-81	5048	1456.75	2.42	-8.73
342	SLU 15	29	-68	5096	1468.06	2.46	-9.13
342	SLU 16	28	-81	5020	1448.52	2.41	-8.66
342	SLU 17	29	-68	5068	1459.84	2.44	-9.06
342	SLU 18	28	-82	5175	1492.4	2.53	-8.87
342	SLU 19	30	-69	5224	1503.72	2.56	-9.27
342	SLU 20	28	-83	5220	1505.78	2.55	-8.8
342	SLU 21	29	-70	5268	1517.1	2.58	-9.2
342	SLU 22	30	-80	4935	1424.59	2.25	-9.52
342	SLU 23	32	-59	5016	1443.46	2.31	-10.19
342	SLU 24	30	-81	5008	1446.2	2.28	-9.52
342	SLU 25	32	-68	5056	1457.52	2.32	-9.92
342	SLU 26	32	-59	5060	1456.84	2.33	-10.12
342	SLU 27	30	-82	5052	1459.58	2.31	-9.45
342	SLU 28	31	-69	5101	1470.9	2.34	-9.85
342	SLU 29	30	-81	5025	1451.35	2.29	-9.38
342	SLU 30	31	-69	5073	1462.67	2.33	-9.78
342	SLU 31	33	-66	5586	1608.28	2.69	-10.34
342	SLU 32	31	-89	5578	1611.03	2.66	-9.67
342	SLU 33	32	-76	5626	1622.34	2.7	-10.07
342	SLU 34	33	-67	5631	1621.66	2.71	-10.27
342	SLU 35	31	-89	5623	1624.41	2.68	-9.6
342	SLU 36	32	-77	5671	1635.72	2.72	-10
342	SLU 37	30	-89	5595	1616.18	2.67	-9.53
342	SLU 38	32	-76	5643	1627.5	2.7	-9.93
342	SLU 39	31	-91	5750	1660.06	2.79	-9.74
342	SLU 40	32	-78	5798	1671.38	2.82	-10.14
342	SLU 41	31	-91	5795	1673.44	2.81	-9.67

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
342	SLU 42	32	-79	5843	1684.76	2.84	-10.07
342	SLU 43	35	-90	5472	1576.53	2.49	-10.95
342	SLU 44	37	-69	5552	1595.39	2.55	-11.62
342	SLU 45	35	-91	5544	1598.14	2.53	-10.95
342	SLU 46	36	-78	5592	1609.45	2.57	-11.35
342	SLU 47	37	-70	5597	1608.77	2.57	-11.55
342	SLU 48	35	-92	5589	1611.52	2.55	-10.87
342	SLU 49	36	-79	5637	1622.83	2.59	-11.27
342	SLU 50	34	-92	5561	1603.29	2.54	-10.81
342	SLU 51	36	-79	5609	1614.61	2.57	-11.21
342	SLU 52	38	-76	6122	1760.22	2.93	-11.77
342	SLU 53	35	-99	6114	1762.96	2.91	-11.1
342	SLU 54	37	-86	6163	1774.28	2.94	-11.5
342	SLU 55	37	-77	6167	1773.6	2.95	-11.7
342	SLU 56	35	-100	6159	1776.34	2.93	-11.03
342	SLU 57	36	-87	6207	1787.66	2.96	-11.43
342	SLU 58	35	-99	6131	1768.11	2.91	-10.96
342	SLU 59	36	-86	6180	1779.43	2.95	-11.36
342	SLU 60	36	-101	6286	1811.99	3.03	-11.17
342	SLU 61	37	-88	6335	1823.31	3.07	-11.57
342	SLU 62	35	-102	6331	1825.37	3.05	-11.1
342	SLU 63	37	-89	6379	1836.69	3.09	-11.5
342	SLU 64	38	-98	6046	1744.19	2.75	-11.82
342	SLU 65	40	-77	6127	1763.05	2.81	-12.49
342	SLU 66	38	-100	6119	1765.8	2.79	-11.82
342	SLU 67	39	-87	6167	1777.11	2.83	-12.22
342	SLU 68	40	-78	6171	1776.43	2.84	-12.42
342	SLU 69	37	-100	6163	1779.18	2.81	-11.74
342	SLU 70	39	-88	6212	1790.49	2.85	-12.14
342	SLU 71	37	-100	6136	1770.95	2.8	-11.68
342	SLU 72	38	-87	6184	1782.27	2.83	-12.08
342	SLU 73	40	-85	6697	1927.88	3.19	-12.64
342	SLU 74	38	-107	6689	1930.62	3.17	-11.97
342	SLU 75	39	-94	6737	1941.94	3.2	-12.37
342	SLU 76	40	-85	6742	1941.26	3.21	-12.57
342	SLU 77	38	-108	6734	1944	3.19	-11.9
342	SLU 78	39	-95	6782	1955.32	3.23	-12.3
342	SLU 79	38	-108	6706	1935.77	3.17	-11.83
342	SLU 80	39	-95	6754	1947.09	3.21	-12.23
342	SLU 81	38	-109	6861	1979.65	3.29	-12.04
342	SLU 82	40	-96	6909	1990.97	3.33	-12.44
342	SLU 83	38	-110	6906	1993.03	3.31	-11.97
342	SLU 84	39	-97	6954	2004.35	3.35	-12.37
342	SLE RA 1	28	-74	4525	1304.83	2.06	-8.9
342	SLE RA 2	30	-60	4578	1317.41	2.1	-9.35
342	SLE RA 3	28	-75	4573	1319.24	2.09	-8.9
342	SLE RA 4	29	-66	4605	1326.79	2.11	-9.17
342	SLE RA 5	30	-60	4608	1326.33	2.12	-9.3
342	SLE RA 6	28	-75	4603	1328.16	2.1	-8.85
342	SLE RA 7	29	-67	4635	1335.71	2.12	-9.12
342	SLE RA 8	28	-75	4584	1322.68	2.09	-8.81
342	SLE RA 9	29	-66	4616	1330.22	2.11	-9.07
342	SLE RA 10	30	-65	4959	1427.29	2.35	-9.45
342	SLE RA 11	29	-80	4953	1429.12	2.34	-9
342	SLE RA 12	30	-71	4985	1436.67	2.36	-9.27
342	SLE RA 13	30	-65	4988	1436.21	2.37	-9.4
342	SLE RA 14	29	-80	4983	1438.04	2.35	-8.95
342	SLE RA 15	29	-72	5015	1445.59	2.38	-9.22
342	SLE RA 16	28	-80	4965	1432.56	2.34	-8.91
342	SLE RA 17	29	-71	4997	1440.1	2.37	-9.18
342	SLE RA 18	29	-81	5068	1461.81	2.42	-9.05
342	SLE RA 19	30	-73	5100	1469.36	2.44	-9.32
342	SLE RA 20	29	-82	5098	1470.73	2.43	-9
342	SLE RA 21	30	-73	5130	1478.28	2.46	-9.27
342	SLE FR 1	28	-74	4525	1304.83	2.06	-8.9
342	SLE FR 2	29	-71	4535	1307.35	2.07	-8.99
342	SLE FR 3	28	-74	4537	1308.4	2.07	-8.88
342	SLE FR 4	29	-73	4698	1354.44	2.18	-9.03
342	SLE FR 5	28	-76	4700	1355.5	2.17	-8.93
342	SLE FR 6	29	-77	4796	1383.32	2.24	-8.98
342	SLE QP 1	28	-74	4525	1304.83	2.06	-8.9
342	SLE QP 2	29	-76	4688	1351.93	2.17	-8.95
342	SLD 1	494	79	5150	1464.26	3.35	-151
342	SLD 2	577	99	5181	1472.44	3.25	-176.1
342	SLD 3	454	-177	4071	1210.36	2.67	-138.53
342	SLD 4	537	-158	4102	1218.54	2.58	-163.63
342	SLD 5	214	356	6458	1769.24	3.56	-65.95
342	SLD 6	269	369	6478	1774.64	3.5	-82.51
342	SLD 7	81	-498	2860	922.9	1.32	-24.41
342	SLD 8	136	-486	2881	928.3	1.26	-40.96
342	SLD 9	-79	334	6495	1775.56	3.08	23.07
342	SLD 10	-24	347	6515	1780.95	3.02	6.51
342	SLD 11	-212	-521	2897	929.22	0.84	64.62
342	SLD 12	-157	-508	2918	934.62	0.78	48.06
342	SLD 13	-480	6	5274	1485.32	1.76	145.74
342	SLD 14	-397	25	5305	1493.5	1.66	120.64
342	SLD 15	-520	-251	4194	1231.42	1.08	158.2
342	SLD 16	-437	-231	4225	1239.6	0.99	133.11
342	SLV 1	1122	306	5859	1635.97	4.98	-342.4

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
342	SLV 2	1317	352	5932	1655.2	4.76	-401.4
342	SLV 3	1020	-333	3154	999.37	3.29	-310.71
342	SLV 4	1216	-287	3227	1018.6	3.08	-369.71
342	SLV 5	474	999	9129	2399.05	5.6	-146.03
342	SLV 6	605	1030	9178	2412	5.46	-185.75
342	SLV 7	136	-1131	111	277.07	-0.01	-40.41
342	SLV 8	267	-1100	160	290.02	-0.15	-80.13
342	SLV 9	-210	948	9216	2413.84	4.49	62.24
342	SLV 10	-79	979	9265	2426.78	4.34	22.52
342	SLV 11	-548	-1182	198	291.86	-1.12	167.86
342	SLV 12	-417	-1151	247	304.8	-1.27	128.14
342	SLV 13	-1159	135	6149	1685.25	1.26	351.82
342	SLV 14	-963	181	6222	1704.48	1.04	292.82
342	SLV 15	-1260	-504	3443	1048.66	-0.42	383.51
342	SLV 16	-1064	-458	3516	1067.89	-0.64	324.51
342	CRTFP Ux+	0	0	0	0	0	0
342	CRTFP Ux-	0	0	0	0	0	0
342	CRTFP Uy+	0	0	0	0	0	0
342	CRTFP Uy-	0	0	0	0	0	0
343	SLU 1	28	-75	4297	1235.74	1.12	-8.73
343	SLU 2	30	-54	4376	1253.92	1.16	-9.4
343	SLU 3	28	-76	4369	1256.98	1.14	-8.73
343	SLU 4	29	-64	4416	1267.89	1.16	-9.13
343	SLU 5	30	-55	4420	1267.08	1.17	-9.33
343	SLU 6	28	-77	4413	1270.15	1.15	-8.66
343	SLU 7	29	-64	4460	1281.05	1.17	-9.06
343	SLU 8	27	-77	4385	1262.07	1.14	-8.59
343	SLU 9	29	-64	4432	1272.97	1.17	-8.99
343	SLU 10	30	-62	4934	1414.63	1.42	-9.55
343	SLU 11	28	-84	4927	1417.69	1.4	-8.88
343	SLU 12	30	-71	4974	1428.59	1.42	-9.28
343	SLU 13	30	-62	4978	1427.79	1.43	-9.48
343	SLU 14	28	-85	4971	1430.85	1.41	-8.8
343	SLU 15	29	-72	5018	1441.76	1.43	-9.21
343	SLU 16	28	-84	4943	1422.78	1.4	-8.74
343	SLU 17	29	-72	4990	1433.68	1.42	-9.14
343	SLU 18	29	-86	5094	1465.33	1.49	-8.94
343	SLU 19	30	-73	5141	1476.23	1.51	-9.34
343	SLU 20	28	-87	5138	1478.49	1.5	-8.87
343	SLU 21	30	-74	5185	1489.39	1.52	-9.27
343	SLU 22	31	-84	4864	1400.78	1.24	-9.6
343	SLU 23	33	-63	4943	1418.95	1.28	-10.27
343	SLU 24	31	-85	4935	1422.02	1.26	-9.6
343	SLU 25	32	-72	4982	1432.92	1.29	-10
343	SLU 26	33	-63	4987	1432.11	1.3	-10.2
343	SLU 27	30	-86	4979	1435.18	1.28	-9.53
343	SLU 28	32	-73	5027	1446.08	1.3	-9.93
343	SLU 29	30	-85	4952	1427.1	1.27	-9.46
343	SLU 30	31	-73	4999	1438.01	1.29	-9.86
343	SLU 31	33	-70	5500	1579.66	1.54	-10.42
343	SLU 32	31	-93	5493	1582.72	1.52	-9.75
343	SLU 33	32	-80	5540	1593.63	1.55	-10.15
343	SLU 34	33	-71	5544	1592.82	1.56	-10.35
343	SLU 35	31	-93	5537	1595.89	1.54	-9.68
343	SLU 36	32	-81	5584	1606.79	1.56	-10.08
343	SLU 37	31	-93	5510	1587.81	1.53	-9.61
343	SLU 38	32	-80	5557	1598.71	1.55	-10.01
343	SLU 39	31	-95	5661	1630.36	1.61	-9.81
343	SLU 40	33	-82	5708	1641.26	1.64	-10.22
343	SLU 41	31	-95	5705	1643.52	1.63	-9.74
343	SLU 42	32	-83	5752	1654.43	1.65	-10.14
343	SLU 43	35	-94	5392	1549.88	1.41	-11.05
343	SLU 44	37	-73	5471	1568.06	1.45	-11.72
343	SLU 45	35	-96	5464	1571.12	1.43	-11.05
343	SLU 46	37	-83	5511	1582.03	1.45	-11.45
343	SLU 47	37	-74	5515	1581.22	1.46	-11.65
343	SLU 48	35	-96	5508	1584.29	1.44	-10.98
343	SLU 49	36	-84	5555	1595.19	1.46	-11.38
343	SLU 50	35	-96	5480	1576.21	1.43	-10.91
343	SLU 51	36	-83	5527	1587.11	1.46	-11.31
343	SLU 52	38	-81	6029	1728.77	1.71	-11.87
343	SLU 53	36	-103	6022	1731.83	1.69	-11.2
343	SLU 54	37	-91	6069	1742.74	1.71	-11.6
343	SLU 55	38	-82	6073	1741.93	1.72	-11.8
343	SLU 56	35	-104	6066	1744.99	1.7	-11.13
343	SLU 57	37	-92	6113	1755.9	1.72	-11.53
343	SLU 58	35	-104	6038	1736.92	1.69	-11.06
343	SLU 59	37	-91	6085	1747.82	1.72	-11.46
343	SLU 60	36	-105	6189	1779.47	1.78	-11.26
343	SLU 61	37	-93	6236	1790.37	1.8	-11.66
343	SLU 62	36	-106	6233	1792.63	1.79	-11.19
343	SLU 63	37	-94	6280	1803.53	1.81	-11.59
343	SLU 64	38	-103	5959	1714.92	1.54	-11.92
343	SLU 65	40	-82	6037	1733.09	1.58	-12.59
343	SLU 66	38	-104	6030	1736.16	1.56	-11.92
343	SLU 67	39	-92	6077	1747.06	1.58	-12.32
343	SLU 68	40	-83	6081	1746.25	1.59	-12.52
343	SLU 69	38	-105	6074	1749.32	1.57	-11.85
343	SLU 70	39	-93	6121	1760.22	1.59	-12.25

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
343	SLU 71	38	-105	6047	1741.24	1.56	-11.78
343	SLU 72	39	-92	6094	1752.15	1.58	-12.18
343	SLU 73	41	-90	6595	1893.8	1.84	-12.74
343	SLU 74	38	-112	6588	1896.86	1.82	-12.07
343	SLU 75	40	-99	6635	1907.77	1.84	-12.47
343	SLU 76	40	-91	6639	1906.96	1.85	-12.67
343	SLU 77	38	-113	6632	1910.03	1.83	-12
343	SLU 78	40	-100	6679	1920.93	1.85	-12.4
343	SLU 79	38	-112	6605	1901.95	1.82	-11.93
343	SLU 80	39	-100	6652	1912.85	1.84	-12.33
343	SLU 81	39	-114	6756	1944.5	1.91	-12.13
343	SLU 82	40	-101	6803	1955.4	1.93	-12.54
343	SLU 83	38	-115	6800	1957.66	1.92	-12.06
343	SLU 84	40	-102	6847	1968.57	1.94	-12.46
343	SLE RA 1	29	-77	4459	1282.9	1.15	-8.98
343	SLE RA 2	30	-63	4512	1295.01	1.18	-9.42
343	SLE RA 3	29	-78	4507	1297.06	1.17	-8.98
343	SLE RA 4	29	-70	4538	1304.33	1.18	-9.24
343	SLE RA 5	30	-64	4541	1303.79	1.19	-9.38
343	SLE RA 6	28	-79	4536	1305.83	1.17	-8.93
343	SLE RA 7	29	-70	4568	1313.1	1.19	-9.2
343	SLE RA 8	28	-78	4518	1300.45	1.17	-8.88
343	SLE RA 9	29	-70	4549	1307.72	1.19	-9.15
343	SLE RA 10	30	-68	4883	1402.15	1.35	-9.52
343	SLE RA 11	29	-83	4879	1404.19	1.34	-9.08
343	SLE RA 12	30	-75	4910	1411.46	1.36	-9.34
343	SLE RA 13	30	-69	4913	1410.93	1.36	-9.48
343	SLE RA 14	29	-84	4908	1412.97	1.35	-9.03
343	SLE RA 15	30	-76	4939	1420.24	1.36	-9.3
343	SLE RA 16	29	-84	4890	1407.59	1.34	-8.98
343	SLE RA 17	29	-75	4921	1414.85	1.36	-9.25
343	SLE RA 18	29	-85	4991	1435.95	1.4	-9.12
343	SLE RA 19	30	-76	5022	1443.22	1.42	-9.39
343	SLE RA 20	29	-85	5020	1444.73	1.41	-9.07
343	SLE RA 21	30	-77	5051	1452	1.42	-9.34
343	SLE FR 1	29	-77	4459	1282.9	1.15	-8.98
343	SLE FR 2	29	-75	4470	1285.32	1.16	-9.07
343	SLE FR 3	29	-78	4471	1286.41	1.16	-8.96
343	SLE FR 4	29	-77	4629	1331.24	1.23	-9.11
343	SLE FR 5	29	-80	4630	1332.32	1.23	-9
343	SLE FR 6	29	-81	4725	1359.42	1.28	-9.05
343	SLE QP 1	29	-77	4459	1282.9	1.15	-8.98
343	SLE QP 2	29	-79	4619	1328.81	1.23	-9.02
343	SLD 1	495	77	5039	1429.47	2.36	-151.44
343	SLD 2	578	101	5074	1438.62	2.27	-176.61
343	SLD 3	455	-174	3981	1183.07	1.97	-138.91
343	SLD 4	538	-150	4016	1192.22	1.88	-164.08
343	SLD 5	214	344	6344	1731.07	2.18	-66.21
343	SLD 6	269	360	6366	1737.1	2.12	-82.82
343	SLD 7	81	-493	2817	909.74	0.87	-24.47
343	SLD 8	136	-477	2839	915.78	0.81	-41.07
343	SLD 9	-78	318	6398	1741.85	1.64	23.03
343	SLD 10	-23	334	6421	1747.88	1.58	6.43
343	SLD 11	-212	-519	2871	920.52	0.34	64.78
343	SLD 12	-157	-503	2894	926.56	0.28	48.17
343	SLD 13	-481	-9	5222	1465.41	0.58	146.04
343	SLD 14	-397	15	5256	1474.55	0.48	120.87
343	SLD 15	-521	-260	4164	1219.01	0.19	158.56
343	SLD 16	-437	-236	4198	1228.16	0.09	133.39
343	SLV 1	1123	306	5691	1584.92	3.92	-343.33
343	SLV 2	1319	363	5772	1606.42	3.69	-402.5
343	SLV 3	1021	-320	3039	967.1	2.94	-311.49
343	SLV 4	1217	-263	3119	988.6	2.71	-370.66
343	SLV 5	475	975	8949	2338.66	3.56	-146.56
343	SLV 6	607	1014	9003	2353.14	3.41	-186.4
343	SLV 7	135	-1112	106	279.25	0.3	-40.43
343	SLV 8	267	-1073	161	293.73	0.15	-80.27
343	SLV 9	-210	914	9077	2363.9	2.31	62.22
343	SLV 10	-78	953	9131	2378.37	2.15	22.39
343	SLV 11	-549	-1173	234	304.49	-0.95	168.36
343	SLV 12	-418	-1134	289	318.96	-1.1	128.52
343	SLV 13	-1159	104	6118	1669.03	-0.26	352.62
343	SLV 14	-963	161	6199	1690.53	-0.48	293.45
343	SLV 15	-1261	-522	3465	1051.2	-1.24	384.46
343	SLV 16	-1065	-465	3546	1072.71	-1.46	325.29
343	CRTFP Ux+	0	0	0	0	0	0
343	CRTFP Ux-	0	0	0	0	0	0
343	CRTFP Uy+	0	0	0	0	0	0
343	CRTFP Uy-	0	0	0	0	0	0
344	SLU 1	28	-78	4278	1228.28	-0.23	-8.84
344	SLU 2	30	-57	4356	1246.09	-0.22	-9.51
344	SLU 3	28	-79	4349	1249.4	-0.24	-8.84
344	SLU 4	30	-67	4396	1260.09	-0.23	-9.24
344	SLU 5	30	-58	4400	1259.19	-0.23	-9.44
344	SLU 6	28	-80	4393	1262.5	-0.24	-8.77
344	SLU 7	29	-68	4440	1273.19	-0.24	-9.17
344	SLU 8	28	-80	4366	1254.48	-0.24	-8.7
344	SLU 9	29	-67	4413	1265.17	-0.23	-9.1
344	SLU 10	31	-65	4907	1404.56	-0.16	-9.66

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
344	SLU 11	29	-87	4901	1407.87	-0.17	-8.99
344	SLU 12	30	-75	4947	1418.56	-0.16	-9.39
344	SLU 13	31	-66	4951	1417.66	-0.16	-9.58
344	SLU 14	28	-88	4945	1420.98	-0.17	-8.91
344	SLU 15	30	-76	4991	1431.66	-0.17	-9.32
344	SLU 16	28	-88	4918	1412.95	-0.17	-8.84
344	SLU 17	29	-75	4964	1423.64	-0.17	-9.25
344	SLU 18	29	-89	5066	1454.67	-0.14	-9.05
344	SLU 19	30	-77	5113	1465.35	-0.13	-9.45
344	SLU 20	29	-90	5110	1467.77	-0.14	-8.98
344	SLU 21	30	-78	5157	1478.45	-0.13	-9.38
344	SLU 22	31	-87	4844	1392.75	-0.31	-9.72
344	SLU 23	33	-66	4921	1410.56	-0.3	-10.39
344	SLU 24	31	-88	4915	1413.87	-0.31	-9.72
344	SLU 25	32	-76	4961	1424.56	-0.31	-10.12
344	SLU 26	33	-67	4965	1423.66	-0.3	-10.32
344	SLU 27	31	-89	4959	1426.97	-0.32	-9.65
344	SLU 28	32	-77	5005	1437.66	-0.31	-10.05
344	SLU 29	31	-89	4931	1418.95	-0.32	-9.58
344	SLU 30	32	-76	4978	1429.64	-0.31	-9.98
344	SLU 31	34	-74	5473	1569.03	-0.23	-10.53
344	SLU 32	32	-96	5466	1572.34	-0.25	-9.86
344	SLU 33	33	-84	5513	1583.03	-0.24	-10.27
344	SLU 34	33	-75	5517	1582.13	-0.24	-10.46
344	SLU 35	31	-97	5510	1585.45	-0.25	-9.79
344	SLU 36	33	-85	5557	1596.13	-0.24	-10.2
344	SLU 37	31	-97	5483	1577.42	-0.25	-9.72
344	SLU 38	32	-84	5529	1588.11	-0.24	-10.12
344	SLU 39	32	-98	5632	1619.14	-0.21	-9.93
344	SLU 40	33	-86	5678	1629.82	-0.21	-10.33
344	SLU 41	31	-99	5676	1632.24	-0.22	-9.85
344	SLU 42	33	-87	5722	1642.92	-0.21	-10.26
344	SLU 43	36	-98	5368	1540.37	-0.28	-11.19
344	SLU 44	38	-78	5445	1558.18	-0.27	-11.86
344	SLU 45	36	-100	5439	1561.5	-0.28	-11.19
344	SLU 46	37	-87	5486	1572.18	-0.28	-11.59
344	SLU 47	38	-79	5489	1571.29	-0.27	-11.79
344	SLU 48	36	-101	5483	1574.6	-0.28	-11.12
344	SLU 49	37	-88	5529	1585.28	-0.28	-11.52
344	SLU 50	35	-100	5456	1566.57	-0.28	-11.05
344	SLU 51	37	-88	5502	1577.26	-0.28	-11.45
344	SLU 52	38	-85	5997	1716.66	-0.2	-12.01
344	SLU 53	36	-108	5991	1719.97	-0.21	-11.34
344	SLU 54	37	-95	6037	1730.66	-0.21	-11.74
344	SLU 55	38	-86	6041	1729.76	-0.2	-11.94
344	SLU 56	36	-108	6034	1733.07	-0.22	-11.27
344	SLU 57	37	-96	6081	1743.76	-0.21	-11.67
344	SLU 58	36	-108	6007	1725.05	-0.22	-11.19
344	SLU 59	37	-96	6054	1735.73	-0.21	-11.6
344	SLU 60	36	-109	6156	1766.76	-0.18	-11.4
344	SLU 61	38	-97	6202	1777.45	-0.17	-11.8
344	SLU 62	36	-110	6200	1779.86	-0.18	-11.33
344	SLU 63	37	-98	6246	1790.55	-0.18	-11.73
344	SLU 64	39	-107	5933	1704.84	-0.35	-12.07
344	SLU 65	41	-87	6011	1722.65	-0.34	-12.74
344	SLU 66	39	-109	6004	1725.97	-0.36	-12.07
344	SLU 67	40	-96	6051	1736.65	-0.35	-12.47
344	SLU 68	40	-88	6055	1735.76	-0.35	-12.67
344	SLU 69	38	-110	6048	1739.07	-0.36	-12
344	SLU 70	40	-97	6095	1749.75	-0.36	-12.4
344	SLU 71	38	-109	6021	1731.04	-0.36	-11.93
344	SLU 72	39	-97	6068	1741.73	-0.35	-12.33
344	SLU 73	41	-94	6562	1881.13	-0.28	-12.88
344	SLU 74	39	-117	6556	1884.44	-0.29	-12.22
344	SLU 75	40	-104	6602	1895.13	-0.28	-12.62
344	SLU 76	41	-95	6606	1894.23	-0.28	-12.81
344	SLU 77	39	-117	6600	1897.54	-0.29	-12.14
344	SLU 78	40	-105	6646	1908.23	-0.29	-12.55
344	SLU 79	39	-117	6573	1889.52	-0.29	-12.07
344	SLU 80	40	-105	6619	1900.2	-0.29	-12.48
344	SLU 81	39	-118	6721	1931.23	-0.26	-12.28
344	SLU 82	40	-106	6768	1941.92	-0.25	-12.68
344	SLU 83	39	-119	6765	1944.33	-0.26	-12.21
344	SLU 84	40	-107	6812	1955.02	-0.25	-12.61
344	SLE RA 1	29	-81	4440	1275.27	-0.25	-9.09
344	SLE RA 2	30	-67	4492	1287.15	-0.25	-9.54
344	SLE RA 3	29	-82	4487	1289.35	-0.26	-9.09
344	SLE RA 4	30	-73	4518	1296.48	-0.25	-9.36
344	SLE RA 5	30	-67	4521	1295.88	-0.25	-9.49
344	SLE RA 6	29	-82	4516	1298.09	-0.26	-9.04
344	SLE RA 7	30	-74	4547	1305.21	-0.26	-9.31
344	SLE RA 8	29	-82	4498	1292.74	-0.26	-9
344	SLE RA 9	30	-74	4529	1299.86	-0.26	-9.27
344	SLE RA 10	31	-72	4859	1392.79	-0.2	-9.63
344	SLE RA 11	29	-87	4855	1395	-0.21	-9.19
344	SLE RA 12	30	-78	4886	1402.13	-0.21	-9.46
344	SLE RA 13	31	-73	4888	1401.53	-0.21	-9.59
344	SLE RA 14	29	-87	4884	1403.73	-0.21	-9.14
344	SLE RA 15	30	-79	4915	1410.86	-0.21	-9.41

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
344	SLE RA 16	29	-87	4866	1398.39	-0.21	-9.09
344	SLE RA 17	30	-79	4897	1405.51	-0.21	-9.36
344	SLE RA 18	29	-88	4965	1426.2	-0.19	-9.23
344	SLE RA 19	30	-80	4996	1433.32	-0.19	-9.5
344	SLE RA 20	29	-89	4994	1434.93	-0.19	-9.18
344	SLE RA 21	30	-80	5025	1442.05	-0.19	-9.45
344	SLE FR 1	29	-81	4440	1275.27	-0.25	-9.09
344	SLE FR 2	29	-78	4450	1277.65	-0.25	-9.18
344	SLE FR 3	29	-81	4452	1278.76	-0.26	-9.07
344	SLE FR 4	29	-80	4608	1322.92	-0.23	-9.22
344	SLE FR 5	29	-83	4609	1324.04	-0.24	-9.11
344	SLE FR 6	29	-84	4703	1350.73	-0.22	-9.16
344	SLE QP 1	29	-81	4440	1275.27	-0.25	-9.09
344	SLE QP 2	29	-83	4598	1320.55	-0.23	-9.13
344	SLD 1	496	75	4979	1409.95	0.81	-151.88
344	SLD 2	580	104	5017	1420.18	0.7	-177.11
344	SLD 3	456	-171	3927	1166.49	0.87	-139.29
344	SLD 4	539	-142	3966	1176.72	0.77	-164.52
344	SLD 5	215	333	6299	1714.77	0	-66.51
344	SLD 6	270	352	6324	1721.52	-0.07	-83.16
344	SLD 7	81	-488	2795	903.24	0.21	-24.55
344	SLD 8	136	-469	2820	909.99	0.14	-41.2
344	SLD 9	-78	304	6375	1731.1	-0.61	22.93
344	SLD 10	-23	323	6400	1737.85	-0.68	6.28
344	SLD 11	-212	-518	2871	919.57	-0.4	64.89
344	SLD 12	-157	-499	2896	926.32	-0.47	48.24
344	SLD 13	-481	-23	5229	1464.38	-1.24	146.26
344	SLD 14	-397	6	5268	1474.61	-1.34	121.02
344	SLD 15	-521	-270	4178	1220.92	-1.17	158.85
344	SLD 16	-438	-241	4216	1231.15	-1.28	133.61
344	SLV 1	1125	305	5577	1550.07	2.2	-344.22
344	SLV 2	1321	374	5666	1574.12	1.95	-403.54
344	SLV 3	1023	-309	2941	939.57	2.36	-312.21
344	SLV 4	1219	-241	3031	963.63	2.11	-371.54
344	SLV 5	477	953	8872	2310.83	0.3	-147.13
344	SLV 6	609	999	8932	2327.03	0.13	-187.07
344	SLV 7	135	-1096	87	275.85	0.84	-40.44
344	SLV 8	267	-1050	147	292.04	0.67	-80.38
344	SLV 9	-209	884	9048	2349.05	-1.14	62.12
344	SLV 10	-77	930	9108	2365.25	-1.31	22.18
344	SLV 11	-551	-1165	263	314.07	-0.6	168.8
344	SLV 12	-419	-1119	323	330.26	-0.77	128.86
344	SLV 13	-1160	75	6164	1677.47	-2.58	353.27
344	SLV 14	-964	144	6254	1701.52	-2.83	293.95
344	SLV 15	-1263	-539	3529	1066.97	-2.42	385.27
344	SLV 16	-1067	-471	3618	1091.03	-2.67	325.95
344	CRTFP Ux+	0	0	0	0	0	0
344	CRTFP Ux-	0	0	0	0	0	0
344	CRTFP Uy+	0	0	0	0	0	0
344	CRTFP Uy-	0	0	0	0	0	0
345	SLU 1	29	-81	4311	1238.16	-1.69	-8.96
345	SLU 2	31	-61	4389	1256.04	-1.71	-9.63
345	SLU 3	29	-83	4383	1259.49	-1.72	-8.96
345	SLU 4	30	-70	4429	1270.22	-1.74	-9.37
345	SLU 5	31	-62	4433	1269.27	-1.73	-9.56
345	SLU 6	28	-83	4427	1272.73	-1.74	-8.89
345	SLU 7	30	-71	4474	1283.45	-1.76	-9.3
345	SLU 8	28	-83	4400	1264.63	-1.73	-8.82
345	SLU 9	29	-71	4446	1275.36	-1.74	-9.22
345	SLU 10	31	-69	4941	1414.74	-1.86	-9.77
345	SLU 11	29	-90	4935	1418.19	-1.86	-9.1
345	SLU 12	30	-78	4982	1428.92	-1.88	-9.5
345	SLU 13	31	-70	4986	1427.98	-1.88	-9.7
345	SLU 14	29	-91	4980	1431.43	-1.88	-9.03
345	SLU 15	30	-79	5026	1442.16	-1.9	-9.43
345	SLU 16	29	-91	4952	1423.33	-1.87	-8.96
345	SLU 17	30	-79	4999	1434.06	-1.89	-9.36
345	SLU 18	29	-92	5100	1464.88	-1.89	-9.15
345	SLU 19	31	-80	5147	1475.6	-1.91	-9.56
345	SLU 20	29	-93	5145	1478.11	-1.91	-9.08
345	SLU 21	30	-81	5191	1488.84	-1.93	-9.49
345	SLU 22	32	-90	4883	1404.64	-1.98	-9.85
345	SLU 23	34	-70	4961	1422.52	-2.01	-10.52
345	SLU 24	32	-92	4954	1425.97	-2.01	-9.85
345	SLU 25	33	-79	5001	1436.7	-2.03	-10.26
345	SLU 26	33	-71	5005	1435.76	-2.03	-10.45
345	SLU 27	31	-93	4999	1439.21	-2.03	-9.78
345	SLU 28	33	-80	5045	1449.94	-2.05	-10.19
345	SLU 29	31	-92	4971	1431.11	-2.02	-9.71
345	SLU 30	32	-80	5018	1441.84	-2.04	-10.11
345	SLU 31	34	-78	5513	1581.22	-2.15	-10.66
345	SLU 32	32	-100	5507	1584.68	-2.15	-9.99
345	SLU 33	33	-87	5554	1595.4	-2.17	-10.39
345	SLU 34	34	-79	5557	1594.46	-2.17	-10.59
345	SLU 35	32	-101	5551	1597.91	-2.18	-9.92
345	SLU 36	33	-88	5598	1608.64	-2.19	-10.32
345	SLU 37	31	-100	5524	1589.82	-2.16	-9.85
345	SLU 38	33	-88	5571	1600.54	-2.18	-10.25
345	SLU 39	32	-102	5672	1631.36	-2.18	-10.04

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
345	SLU 40	33	-89	5719	1642.09	-2.2	-10.45
345	SLU 41	32	-103	5717	1644.6	-2.2	-9.97
345	SLU 42	33	-90	5763	1655.32	-2.22	-10.38
345	SLU 43	36	-102	5408	1552.53	-2.09	-11.34
345	SLU 44	38	-82	5486	1570.4	-2.12	-12.01
345	SLU 45	36	-104	5480	1573.86	-2.12	-11.35
345	SLU 46	38	-91	5527	1584.58	-2.14	-11.75
345	SLU 47	38	-83	5530	1583.64	-2.14	-11.94
345	SLU 48	36	-105	5524	1587.1	-2.15	-11.28
345	SLU 49	37	-92	5571	1597.82	-2.16	-11.68
345	SLU 50	36	-104	5497	1579	-2.13	-11.2
345	SLU 51	37	-92	5543	1589.73	-2.15	-11.61
345	SLU 52	39	-90	6039	1729.11	-2.26	-12.15
345	SLU 53	37	-112	6033	1732.56	-2.27	-11.48
345	SLU 54	38	-99	6079	1743.29	-2.28	-11.89
345	SLU 55	39	-91	6083	1742.34	-2.28	-12.08
345	SLU 56	36	-113	6077	1745.8	-2.29	-11.41
345	SLU 57	38	-100	6123	1756.53	-2.31	-11.82
345	SLU 58	36	-112	6049	1737.7	-2.28	-11.34
345	SLU 59	38	-100	6096	1748.43	-2.29	-11.74
345	SLU 60	37	-114	6198	1779.24	-2.3	-11.54
345	SLU 61	38	-101	6244	1789.97	-2.31	-11.94
345	SLU 62	37	-114	6242	1792.48	-2.32	-11.47
345	SLU 63	38	-102	6289	1803.21	-2.33	-11.87
345	SLU 64	39	-111	5980	1719.01	-2.39	-12.23
345	SLU 65	41	-91	6058	1736.89	-2.41	-12.9
345	SLU 66	39	-113	6052	1740.34	-2.42	-12.24
345	SLU 67	40	-101	6098	1751.07	-2.43	-12.64
345	SLU 68	41	-92	6102	1750.12	-2.43	-12.83
345	SLU 69	39	-114	6096	1753.58	-2.44	-12.17
345	SLU 70	40	-102	6143	1764.3	-2.45	-12.57
345	SLU 71	39	-113	6069	1745.48	-2.43	-12.09
345	SLU 72	40	-101	6115	1756.21	-2.44	-12.5
345	SLU 73	42	-99	6610	1895.59	-2.56	-13.04
345	SLU 74	40	-121	6604	1899.04	-2.56	-12.37
345	SLU 75	41	-109	6651	1909.77	-2.58	-12.77
345	SLU 76	41	-100	6655	1908.83	-2.58	-12.97
345	SLU 77	39	-122	6649	1912.28	-2.58	-12.3
345	SLU 78	41	-110	6695	1923.01	-2.6	-12.7
345	SLU 79	39	-121	6621	1904.19	-2.57	-12.23
345	SLU 80	40	-109	6668	1914.91	-2.59	-12.63
345	SLU 81	40	-123	6770	1945.73	-2.59	-12.43
345	SLU 82	41	-111	6816	1956.45	-2.61	-12.83
345	SLU 83	40	-124	6814	1958.96	-2.61	-12.36
345	SLU 84	41	-111	6860	1969.69	-2.63	-12.76
345	SLE RA 1	29	-84	4474	1285.72	-1.77	-9.21
345	SLE RA 2	31	-70	4526	1297.64	-1.79	-9.66
345	SLE RA 3	29	-85	4522	1299.95	-1.79	-9.22
345	SLE RA 4	30	-77	4553	1307.1	-1.8	-9.48
345	SLE RA 5	31	-71	4556	1306.47	-1.8	-9.61
345	SLE RA 6	29	-85	4552	1308.77	-1.81	-9.17
345	SLE RA 7	30	-77	4583	1315.92	-1.82	-9.44
345	SLE RA 8	29	-85	4533	1303.37	-1.8	-9.12
345	SLE RA 9	30	-77	4565	1310.52	-1.81	-9.39
345	SLE RA 10	31	-75	4895	1403.45	-1.88	-9.75
345	SLE RA 11	30	-90	4891	1405.75	-1.89	-9.31
345	SLE RA 12	31	-82	4922	1412.9	-1.9	-9.58
345	SLE RA 13	31	-76	4924	1412.27	-1.9	-9.71
345	SLE RA 14	30	-91	4920	1414.57	-1.9	-9.26
345	SLE RA 15	30	-82	4951	1421.72	-1.91	-9.53
345	SLE RA 16	29	-90	4902	1409.18	-1.89	-9.21
345	SLE RA 17	30	-82	4933	1416.33	-1.9	-9.48
345	SLE RA 18	30	-91	5001	1436.87	-1.91	-9.34
345	SLE RA 19	31	-83	5032	1444.02	-1.92	-9.61
345	SLE RA 20	30	-92	5030	1445.7	-1.92	-9.3
345	SLE RA 21	31	-84	5061	1452.85	-1.93	-9.57
345	SLE FR 1	29	-84	4474	1285.72	-1.77	-9.21
345	SLE FR 2	30	-81	4485	1288.11	-1.77	-9.3
345	SLE FR 3	29	-84	4486	1289.25	-1.78	-9.2
345	SLE FR 4	30	-83	4643	1333.45	-1.82	-9.34
345	SLE FR 5	30	-86	4644	1334.6	-1.82	-9.23
345	SLE FR 6	30	-87	4738	1361.3	-1.84	-9.28
345	SLE QP 1	29	-84	4474	1285.72	-1.77	-9.21
345	SLE QP 2	30	-86	4632	1331.07	-1.81	-9.25
345	SLD 1	497	73	4977	1410.18	-0.85	-152.33
345	SLD 2	581	107	5019	1421.68	-0.98	-177.63
345	SLD 3	457	-169	3915	1163.83	-0.31	-139.66
345	SLD 4	540	-135	3958	1175.32	-0.43	-164.96
345	SLD 5	216	323	6338	1726.38	-2.33	-66.83
345	SLD 6	272	345	6366	1733.97	-2.41	-83.52
345	SLD 7	81	-484	2800	905.18	-0.51	-24.62
345	SLD 8	136	-462	2828	912.77	-0.59	-41.31
345	SLD 9	-77	290	6437	1749.37	-3.03	22.8
345	SLD 10	-22	312	6465	1756.95	-3.11	6.11
345	SLD 11	-212	-517	2899	928.17	-1.21	65.02
345	SLD 12	-157	-495	2927	935.76	-1.29	48.33
345	SLD 13	-481	-36	5307	1486.81	-3.19	146.46
345	SLD 14	-397	-3	5349	1498.31	-3.31	121.16
345	SLD 15	-522	-278	4246	1240.45	-2.65	159.12

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
345	SLD 16	-438	-245	4288	1251.95	-2.77	133.82
345	SLV 1	1127	304	5527	1536.78	0.38	-345.12
345	SLV 2	1324	383	5626	1563.81	0.1	-404.59
345	SLV 3	1024	-300	2866	918.98	1.75	-312.92
345	SLV 4	1220	-220	2965	946	1.47	-372.4
345	SLV 5	479	932	8918	2324.74	-3.17	-147.75
345	SLV 6	611	985	8985	2342.93	-3.37	-187.79
345	SLV 7	135	-1080	48	265.4	1.38	-40.42
345	SLV 8	267	-1027	115	283.59	1.19	-80.46
345	SLV 9	-208	855	9150	2378.54	-4.82	61.96
345	SLV 10	-75	908	9217	2396.74	-5.01	21.92
345	SLV 11	-552	-1157	280	319.2	-0.26	169.28
345	SLV 12	-420	-1104	346	337.4	-0.45	129.24
345	SLV 13	-1161	48	6300	1716.13	-5.09	353.89
345	SLV 14	-965	128	6399	1743.16	-5.37	294.42
345	SLV 15	-1264	-555	3639	1098.33	-3.72	386.09
345	SLV 16	-1068	-476	3738	1125.36	-4.01	326.62
345	CRTFP Ux+	0	0	0	0	0	0
345	CRTFP Ux-	0	0	0	0	0	0
345	CRTFP Uy+	0	0	0	0	0	0
345	CRTFP Uy-	0	0	0	0	0	0
346	SLU 1	29	-84	4390	1263.79	-2.88	-9.04
346	SLU 2	31	-63	4469	1282.16	-2.94	-9.71
346	SLU 3	29	-85	4463	1285.63	-2.93	-9.04
346	SLU 4	30	-73	4510	1296.65	-2.97	-9.45
346	SLU 5	31	-64	4514	1295.71	-2.97	-9.64
346	SLU 6	29	-86	4508	1299.19	-2.97	-8.97
346	SLU 7	30	-74	4556	1310.21	-3	-9.38
346	SLU 8	29	-86	4480	1290.91	-2.95	-8.9
346	SLU 9	30	-73	4528	1301.92	-2.98	-9.3
346	SLU 10	32	-71	5029	1443.39	-3.26	-9.83
346	SLU 11	29	-93	5023	1446.86	-3.25	-9.16
346	SLU 12	31	-81	5071	1457.88	-3.29	-9.57
346	SLU 13	31	-72	5075	1456.94	-3.29	-9.76
346	SLU 14	29	-94	5068	1460.42	-3.29	-9.09
346	SLU 15	31	-82	5116	1471.44	-3.32	-9.5
346	SLU 16	29	-94	5040	1452.14	-3.27	-9.02
346	SLU 17	30	-81	5088	1463.16	-3.3	-9.42
346	SLU 18	30	-95	5190	1494.13	-3.33	-9.21
346	SLU 19	31	-83	5238	1505.14	-3.37	-9.61
346	SLU 20	29	-96	5236	1507.68	-3.37	-9.14
346	SLU 21	31	-84	5283	1518.7	-3.4	-9.54
346	SLU 22	32	-93	4975	1434.61	-3.35	-9.93
346	SLU 23	34	-73	5054	1452.97	-3.41	-10.61
346	SLU 24	32	-95	5048	1456.45	-3.4	-9.94
346	SLU 25	33	-82	5095	1467.47	-3.44	-10.34
346	SLU 26	34	-74	5099	1466.53	-3.44	-10.54
346	SLU 27	32	-95	5093	1470	-3.44	-9.87
346	SLU 28	33	-83	5141	1481.02	-3.47	-10.28
346	SLU 29	31	-95	5065	1461.72	-3.42	-9.8
346	SLU 30	33	-83	5113	1472.74	-3.45	-10.2
346	SLU 31	34	-81	5614	1614.21	-3.73	-10.73
346	SLU 32	32	-102	5608	1617.68	-3.72	-10.06
346	SLU 33	34	-90	5656	1628.7	-3.76	-10.46
346	SLU 34	34	-82	5660	1627.76	-3.76	-10.66
346	SLU 35	32	-103	5654	1631.24	-3.76	-9.99
346	SLU 36	33	-91	5701	1642.25	-3.79	-10.4
346	SLU 37	32	-103	5626	1622.95	-3.73	-9.92
346	SLU 38	33	-91	5673	1633.97	-3.77	-10.32
346	SLU 39	32	-104	5775	1664.94	-3.8	-10.11
346	SLU 40	34	-92	5823	1675.96	-3.84	-10.51
346	SLU 41	32	-105	5821	1678.5	-3.84	-10.04
346	SLU 42	34	-93	5868	1689.52	-3.87	-10.44
346	SLU 43	37	-105	5506	1584.37	-3.58	-11.44
346	SLU 44	39	-85	5585	1602.73	-3.64	-12.11
346	SLU 45	37	-107	5579	1606.21	-3.64	-11.45
346	SLU 46	38	-95	5627	1617.22	-3.67	-11.85
346	SLU 47	39	-86	5630	1616.29	-3.68	-12.04
346	SLU 48	37	-108	5624	1619.76	-3.67	-11.38
346	SLU 49	38	-96	5672	1630.78	-3.71	-11.78
346	SLU 50	36	-107	5596	1611.48	-3.65	-11.3
346	SLU 51	38	-95	5644	1622.5	-3.69	-11.71
346	SLU 52	39	-93	6146	1763.96	-3.96	-12.23
346	SLU 53	37	-115	6140	1767.44	-3.96	-11.57
346	SLU 54	38	-103	6187	1778.45	-3.99	-11.97
346	SLU 55	39	-94	6191	1777.52	-3.99	-12.16
346	SLU 56	37	-116	6185	1780.99	-3.99	-11.5
346	SLU 57	38	-104	6232	1792.01	-4.03	-11.9
346	SLU 58	37	-115	6157	1772.71	-3.97	-11.42
346	SLU 59	38	-103	6204	1783.73	-4.01	-11.83
346	SLU 60	37	-117	6307	1814.7	-4.04	-11.61
346	SLU 61	39	-105	6354	1825.72	-4.07	-12.02
346	SLU 62	37	-118	6352	1828.25	-4.07	-11.54
346	SLU 63	38	-106	6399	1839.27	-4.11	-11.95
346	SLU 64	40	-115	6091	1755.18	-4.05	-12.34
346	SLU 65	42	-95	6170	1773.55	-4.11	-13.01
346	SLU 66	40	-116	6164	1777.02	-4.1	-12.34
346	SLU 67	41	-104	6212	1788.04	-4.14	-12.75
346	SLU 68	42	-96	6215	1787.1	-4.14	-12.94

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
346	SLU 69	39	-117	6209	1790.58	-4.14	-12.27
346	SLU 70	41	-105	6257	1801.59	-4.17	-12.68
346	SLU 71	39	-117	6181	1782.29	-4.12	-12.2
346	SLU 72	40	-105	6229	1793.31	-4.15	-12.6
346	SLU 73	42	-103	6731	1934.78	-4.43	-13.13
346	SLU 74	40	-124	6725	1938.25	-4.42	-12.46
346	SLU 75	41	-112	6772	1949.27	-4.46	-12.87
346	SLU 76	42	-104	6776	1948.33	-4.46	-13.06
346	SLU 77	40	-125	6770	1951.81	-4.46	-12.4
346	SLU 78	41	-113	6817	1962.83	-4.49	-12.8
346	SLU 79	40	-125	6742	1943.53	-4.44	-12.32
346	SLU 80	41	-113	6789	1954.54	-4.47	-12.72
346	SLU 81	40	-126	6892	1985.52	-4.51	-12.51
346	SLU 82	42	-114	6939	1996.53	-4.54	-12.91
346	SLU 83	40	-127	6937	1999.07	-4.54	-12.44
346	SLU 84	41	-115	6984	2010.09	-4.58	-12.84
346	SLE RA 1	30	-86	4557	1312.6	-3.01	-9.29
346	SLE RA 2	31	-73	4610	1324.84	-3.05	-9.74
346	SLE RA 3	30	-87	4606	1327.16	-3.05	-9.3
346	SLE RA 4	31	-79	4637	1334.5	-3.07	-9.57
346	SLE RA 5	31	-73	4640	1333.88	-3.07	-9.7
346	SLE RA 6	30	-88	4636	1336.19	-3.07	-9.25
346	SLE RA 7	31	-80	4667	1343.54	-3.1	-9.52
346	SLE RA 8	30	-88	4617	1330.67	-3.06	-9.2
346	SLE RA 9	30	-80	4649	1338.02	-3.08	-9.47
346	SLE RA 10	32	-78	4983	1432.33	-3.27	-9.82
346	SLE RA 11	30	-93	4979	1434.65	-3.26	-9.38
346	SLE RA 12	31	-85	5011	1441.99	-3.29	-9.65
346	SLE RA 13	31	-79	5013	1441.37	-3.29	-9.78
346	SLE RA 14	30	-93	5009	1443.68	-3.28	-9.33
346	SLE RA 15	31	-85	5041	1451.03	-3.31	-9.6
346	SLE RA 16	30	-93	4991	1438.16	-3.27	-9.28
346	SLE RA 17	31	-85	5022	1445.51	-3.29	-9.55
346	SLE RA 18	30	-94	5091	1466.15	-3.32	-9.41
346	SLE RA 19	31	-86	5122	1473.5	-3.34	-9.68
346	SLE RA 20	30	-95	5121	1475.19	-3.34	-9.36
346	SLE RA 21	31	-86	5152	1482.54	-3.36	-9.63
346	SLE FR 1	30	-86	4557	1312.6	-3.01	-9.29
346	SLE FR 2	30	-84	4567	1315.05	-3.02	-9.38
346	SLE FR 3	30	-87	4569	1316.21	-3.02	-9.27
346	SLE FR 4	30	-86	4728	1361.11	-3.11	-9.42
346	SLE FR 5	30	-89	4729	1362.28	-3.11	-9.31
346	SLE FR 6	30	-90	4824	1389.38	-3.16	-9.35
346	SLE QP 1	30	-86	4557	1312.6	-3.01	-9.29
346	SLE QP 2	30	-89	4717	1358.67	-3.1	-9.33
346	SLD 1	498	70	5027	1428.25	-2.2	-152.78
346	SLD 2	582	109	5074	1441.22	-2.34	-178.15
346	SLD 3	457	-167	3939	1173.3	-1.22	-140.03
346	SLD 4	541	-129	3986	1186.26	-1.35	-165.4
346	SLD 5	217	313	6452	1763.9	-4.3	-67.14
346	SLD 6	273	338	6482	1772.45	-4.39	-83.88
346	SLD 7	81	-480	2825	914.04	-1.02	-24.64
346	SLD 8	136	-454	2856	922.59	-1.11	-41.38
346	SLD 9	-76	277	6578	1794.74	-5.1	22.72
346	SLD 10	-21	302	6609	1803.3	-5.19	5.98
346	SLD 11	-213	-515	2951	944.88	-1.81	65.22
346	SLD 12	-157	-490	2982	953.43	-1.9	48.48
346	SLD 13	-481	-48	5448	1531.07	-4.85	146.75
346	SLD 14	-397	-10	5495	1544.04	-4.99	121.38
346	SLD 15	-522	-286	4360	1276.11	-3.87	159.5
346	SLD 16	-438	-248	4407	1289.08	-4	134.13
346	SLV 1	1129	302	5533	1542.8	-1.08	-346.09
346	SLV 2	1325	391	5644	1573.28	-1.4	-405.73
346	SLV 3	1025	-291	2806	903.41	1.39	-313.67
346	SLV 4	1221	-201	2916	933.89	1.07	-373.32
346	SLV 5	481	911	9078	2377.96	-6.19	-148.38
346	SLV 6	613	971	9153	2398.48	-6.41	-188.54
346	SLV 7	134	-1065	-14	246.66	2.06	-40.34
346	SLV 8	266	-1005	60	267.18	1.84	-80.5
346	SLV 9	-206	828	9374	2450.15	-8.05	61.84
346	SLV 10	-74	888	9448	2470.68	-8.26	21.68
346	SLV 11	-553	-1148	281	318.85	0.2	169.89
346	SLV 12	-421	-1088	356	339.37	-0.02	129.73
346	SLV 13	-1161	24	6518	1783.44	-7.28	354.66
346	SLV 14	-965	114	6628	1813.92	-7.6	295.02
346	SLV 15	-1265	-569	3790	1144.05	-4.8	387.08
346	SLV 16	-1069	-479	3901	1174.53	-5.13	327.43
346	CRTFP Ux+	0	0	0	0	0	0
346	CRTFP Ux-	0	0	0	0	0	0
346	CRTFP Uy+	0	0	0	0	0	0
346	CRTFP Uy-	0	0	0	0	0	0
348	SLU 1	19	-39	2993	81.51	938.82	13.15
348	SLU 2	20	-24	3049	82.88	956.2	7.92
348	SLU 3	18	-40	3044	82.9	954.25	13.38
348	SLU 4	19	-31	3077	83.72	964.68	10.24
348	SLU 5	20	-25	3080	83.74	965.67	8.07
348	SLU 6	18	-40	3075	83.75	963.72	13.53
348	SLU 7	19	-31	3108	84.58	974.15	10.4
348	SLU 8	18	-40	3055	83.22	957.75	13.45

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
348	SLU 9	19	-31	3089	84.05	968.18	10.32
348	SLU 10	20	-29	3447	93.73	1080.73	9.55
348	SLU 11	19	-45	3442	93.75	1078.78	15.01
348	SLU 12	20	-36	3475	94.57	1089.21	11.87
348	SLU 13	20	-29	3478	94.59	1090.2	9.7
348	SLU 14	19	-45	3473	94.61	1088.25	15.16
348	SLU 15	20	-36	3506	95.43	1098.68	12.02
348	SLU 16	19	-45	3454	94.07	1082.28	15.08
348	SLU 17	20	-36	3487	94.9	1092.71	11.94
348	SLU 18	19	-46	3563	97.01	1116.72	15.47
348	SLU 19	20	-37	3596	97.84	1127.15	12.34
348	SLU 20	19	-46	3594	97.87	1126.18	15.63
348	SLU 21	20	-37	3627	98.69	1136.61	12.49
348	SLU 22	20	-44	3389	92.33	1060.82	14.76
348	SLU 23	22	-29	3444	93.7	1078.21	9.53
348	SLU 24	20	-45	3439	93.72	1076.26	14.99
348	SLU 25	21	-36	3472	94.54	1086.69	11.85
348	SLU 26	22	-30	3475	94.56	1087.67	9.68
348	SLU 27	20	-45	3470	94.58	1085.72	15.14
348	SLU 28	21	-36	3503	95.4	1096.15	12
348	SLU 29	20	-45	3451	94.04	1079.75	15.06
348	SLU 30	21	-36	3484	94.87	1090.18	11.92
348	SLU 31	22	-34	3843	104.56	1202.74	11.16
348	SLU 32	21	-49	3837	104.57	1200.78	16.62
348	SLU 33	22	-40	3871	105.4	1211.22	13.48
348	SLU 34	22	-34	3874	105.41	1212.2	11.31
348	SLU 35	21	-50	3868	105.43	1210.25	16.77
348	SLU 36	22	-41	3902	106.25	1220.68	13.63
348	SLU 37	21	-49	3849	104.9	1204.28	16.69
348	SLU 38	21	-41	3882	105.72	1214.71	13.55
348	SLU 39	21	-51	3958	107.84	1238.72	17.08
348	SLU 40	22	-42	3991	108.66	1249.15	13.94
348	SLU 41	21	-51	3989	108.69	1248.19	17.23
348	SLU 42	22	-42	4022	109.52	1258.62	14.1
348	SLU 43	23	-49	3756	102.25	1178.64	16.54
348	SLU 44	25	-34	3811	103.62	1196.02	11.31
348	SLU 45	23	-50	3806	103.64	1194.07	16.77
348	SLU 46	24	-41	3839	104.46	1204.5	13.64
348	SLU 47	25	-35	3842	104.48	1205.48	11.47
348	SLU 48	23	-50	3837	104.5	1203.53	16.93
348	SLU 49	24	-41	3870	105.32	1213.96	13.79
348	SLU 50	23	-50	3818	103.96	1197.56	16.85
348	SLU 51	24	-41	3851	104.79	1208	13.71
348	SLU 52	25	-39	4210	114.47	1320.55	12.94
348	SLU 53	24	-55	4205	114.49	1318.6	18.4
348	SLU 54	25	-46	4238	115.32	1329.03	15.26
348	SLU 55	25	-40	4241	115.33	1330.01	13.09
348	SLU 56	24	-55	4236	115.35	1328.06	18.55
348	SLU 57	25	-46	4269	116.17	1338.49	15.42
348	SLU 58	24	-55	4216	114.82	1322.09	18.47
348	SLU 59	24	-46	4249	115.64	1332.52	15.34
348	SLU 60	24	-56	4325	117.75	1356.53	18.87
348	SLU 61	25	-47	4358	118.58	1366.96	15.73
348	SLU 62	24	-56	4356	118.61	1366	19.02
348	SLU 63	25	-48	4389	119.43	1376.43	15.88
348	SLU 64	25	-54	4151	113.07	1300.64	18.15
348	SLU 65	27	-39	4207	114.44	1318.02	12.92
348	SLU 66	25	-55	4201	114.46	1316.07	18.38
348	SLU 67	26	-46	4235	115.29	1326.5	15.25
348	SLU 68	27	-40	4238	115.3	1327.49	13.07
348	SLU 69	25	-55	4232	115.32	1325.54	18.53
348	SLU 70	26	-46	4266	116.14	1335.97	15.4
348	SLU 71	25	-55	4213	114.79	1319.57	18.45
348	SLU 72	26	-46	4246	115.61	1330	15.32
348	SLU 73	27	-44	4605	125.3	1442.55	14.55
348	SLU 74	26	-59	4600	125.32	1440.6	20.01
348	SLU 75	27	-50	4633	126.14	1451.03	16.87
348	SLU 76	27	-44	4636	126.15	1452.02	14.7
348	SLU 77	26	-60	4631	126.17	1450.07	20.16
348	SLU 78	26	-51	4664	127	1460.5	17.02
348	SLU 79	25	-60	4612	125.64	1444.1	20.08
348	SLU 80	26	-51	4645	126.46	1454.53	16.94
348	SLU 81	26	-61	4721	128.58	1478.54	20.48
348	SLU 82	27	-52	4754	129.4	1488.97	17.34
348	SLU 83	26	-61	4751	129.43	1488	20.63
348	SLU 84	27	-52	4785	130.26	1498.43	17.49
348	SLE RA 1	19	-41	3106	84.6	973.68	13.61
348	SLE RA 2	20	-31	3143	85.51	985.27	10.12
348	SLE RA 3	19	-41	3140	85.53	983.97	13.76
348	SLE RA 4	20	-35	3162	86.08	990.92	11.67
348	SLE RA 5	20	-31	3164	86.09	991.58	10.22
348	SLE RA 6	19	-41	3160	86.1	990.28	13.86
348	SLE RA 7	19	-35	3183	86.65	997.23	11.77
348	SLE RA 8	19	-41	3148	85.74	986.3	13.81
348	SLE RA 9	19	-35	3170	86.29	993.25	11.72
348	SLE RA 10	20	-34	3409	92.75	1068.29	11.21
348	SLE RA 11	19	-44	3406	92.76	1066.98	14.85
348	SLE RA 12	20	-38	3428	93.31	1073.94	12.76
348	SLE RA 13	20	-34	3430	93.32	1074.6	11.31

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
348	SLE RA 14	19	-44	3426	93.33	1073.29	14.95
348	SLE RA 15	20	-38	3448	93.88	1080.25	12.86
348	SLE RA 16	19	-44	3413	92.98	1069.32	14.9
348	SLE RA 17	20	-38	3435	93.53	1076.27	12.8
348	SLE RA 18	19	-45	3486	94.94	1092.28	15.16
348	SLE RA 19	20	-39	3508	95.49	1099.23	13.07
348	SLE RA 20	19	-45	3507	95.51	1098.59	15.26
348	SLE RA 21	20	-39	3529	96.06	1105.54	13.17
348	SLE FR 1	19	-41	3106	84.6	973.68	13.61
348	SLE FR 2	19	-39	3114	84.78	976	12.91
348	SLE FR 3	19	-41	3115	84.83	976.2	13.65
348	SLE FR 4	19	-40	3228	87.88	1011.58	13.38
348	SLE FR 5	19	-42	3228	87.93	1011.78	14.11
348	SLE FR 6	19	-43	3296	89.77	1032.98	14.38
348	SLE QP 1	19	-41	3106	84.6	973.68	13.61
348	SLE QP 2	19	-42	3220	87.7	1009.26	14.07
348	SLD 1	325	56	3607	97.47	1135.25	-27.99
348	SLD 2	379	58	3620	97.78	1137.74	-30.25
348	SLD 3	299	-126	2872	79.27	905.2	36.25
348	SLD 4	353	-123	2884	79.58	907.69	33.99
348	SLD 5	141	262	4450	118.18	1395.52	-95.57
348	SLD 6	176	264	4458	118.39	1397.16	-97.06
348	SLD 7	54	-343	1998	57.51	628.68	118.56
348	SLD 8	90	-341	2006	57.71	630.33	117.07
348	SLD 9	-51	258	4435	117.69	1388.19	-88.92
348	SLD 10	-16	259	4443	117.89	1389.83	-90.41
348	SLD 11	-138	-348	1983	57.01	621.36	125.2
348	SLD 12	-102	-346	1991	57.22	623	123.71
348	SLD 13	-315	40	3557	95.82	1110.83	-5.84
348	SLD 14	-261	42	3569	96.13	1113.32	-8.1
348	SLD 15	-341	-142	2821	77.62	880.78	58.39
348	SLD 16	-287	-140	2833	77.93	883.27	56.13
348	SLV 1	737	201	4187	112.08	1323.2	-89.28
348	SLV 2	864	206	4216	112.81	1329.05	-94.59
348	SLV 3	671	-252	2343	66.45	746.59	70.94
348	SLV 4	798	-246	2372	67.18	752.45	65.62
348	SLV 5	311	716	6302	164.08	1976.87	-258.93
348	SLV 6	396	720	6321	164.57	1980.81	-262.5
348	SLV 7	91	-793	155	11.99	54.85	275.11
348	SLV 8	176	-789	175	12.48	58.79	271.54
348	SLV 9	-138	705	6266	162.92	1959.73	-243.39
348	SLV 10	-53	709	6285	163.41	1963.67	-246.97
348	SLV 11	-358	-804	120	10.83	37.71	290.65
348	SLV 12	-273	-800	139	11.33	41.65	287.08
348	SLV 13	-760	163	4068	108.22	1266.07	-37.48
348	SLV 14	-633	168	4097	108.95	1271.92	-42.79
348	SLV 15	-826	-290	2225	62.59	689.46	122.74
348	SLV 16	-699	-284	2253	63.33	695.32	117.42
348	CRTFP Ux+	0	0	0	0	0	0
348	CRTFP Ux-	0	0	0	0	0	0
348	CRTFP Uy+	0	0	0	0	0	0
348	CRTFP Uy-	0	0	0	0	0	0
411	SLU 1	-45	42	3198	84.42	-607.27	11.56
411	SLU 2	-47	61	3260	85.93	-619.2	16.46
411	SLU 3	-46	42	3253	85.9	-617.39	11.68
411	SLU 4	-47	54	3290	86.81	-624.54	14.62
411	SLU 5	-48	61	3294	86.85	-625.44	16.53
411	SLU 6	-47	42	3287	86.81	-623.63	11.76
411	SLU 7	-48	54	3324	87.72	-630.78	14.69
411	SLU 8	-47	42	3266	86.25	-619.76	11.71
411	SLU 9	-48	54	3303	87.16	-626.91	14.65
411	SLU 10	-48	67	3644	96.02	-690.86	17.89
411	SLU 11	-48	47	3636	95.98	-689.04	13.11
411	SLU 12	-49	59	3674	96.89	-696.2	16.05
411	SLU 13	-49	67	3678	96.93	-697.1	17.96
411	SLU 14	-48	48	3670	96.9	-695.28	13.19
411	SLU 15	-49	59	3708	97.81	-702.44	16.12
411	SLU 16	-48	48	3649	96.33	-691.41	13.14
411	SLU 17	-49	59	3687	97.24	-698.57	16.08
411	SLU 18	-47	49	3745	98.83	-709.64	13.6
411	SLU 19	-48	61	3783	99.73	-716.79	16.54
411	SLU 20	-48	50	3779	99.74	-715.88	13.68
411	SLU 21	-49	61	3817	100.65	-723.04	16.61
411	SLU 22	-50	45	3629	95.87	-687.38	12.6
411	SLU 23	-52	65	3692	97.38	-699.31	17.49
411	SLU 24	-52	45	3684	97.35	-697.49	12.72
411	SLU 25	-53	57	3722	98.26	-704.65	15.65
411	SLU 26	-53	65	3726	98.3	-705.55	17.57
411	SLU 27	-52	46	3718	98.26	-703.73	12.79
411	SLU 28	-54	57	3756	99.17	-710.89	15.73
411	SLU 29	-52	45	3697	97.7	-699.86	12.75
411	SLU 30	-53	57	3735	98.61	-707.02	15.68
411	SLU 31	-53	70	4075	107.47	-770.96	18.92
411	SLU 32	-53	51	4068	107.43	-769.15	14.15
411	SLU 33	-54	63	4105	108.34	-776.3	17.08
411	SLU 34	-54	70	4109	108.38	-777.2	19
411	SLU 35	-54	51	4102	108.35	-775.39	14.22
411	SLU 36	-55	63	4139	109.26	-782.54	17.16
411	SLU 37	-53	51	4081	107.78	-771.52	14.18

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
411	SLU 38	-54	63	4118	108.69	-778.67	17.11
411	SLU 39	-52	53	4177	110.28	-789.74	14.64
411	SLU 40	-53	65	4215	111.18	-796.9	17.58
411	SLU 41	-53	53	4211	111.19	-795.99	14.71
411	SLU 42	-54	65	4249	112.1	-803.14	17.65
411	SLU 43	-57	53	4009	105.82	-761.99	14.68
411	SLU 44	-58	72	4071	107.33	-773.92	19.57
411	SLU 45	-58	53	4064	107.3	-772.1	14.8
411	SLU 46	-59	65	4102	108.21	-779.26	17.73
411	SLU 47	-59	72	4105	108.25	-780.16	19.65
411	SLU 48	-59	53	4098	108.21	-778.34	14.87
411	SLU 49	-60	65	4136	109.12	-785.5	17.81
411	SLU 50	-58	53	4077	107.65	-774.47	14.83
411	SLU 51	-59	65	4114	108.56	-781.63	17.76
411	SLU 52	-60	78	4455	117.42	-845.57	21
411	SLU 53	-59	59	4447	117.38	-843.76	16.22
411	SLU 54	-60	70	4485	118.29	-850.91	19.16
411	SLU 55	-60	78	4489	118.33	-851.81	21.07
411	SLU 56	-60	59	4481	118.3	-850	16.3
411	SLU 57	-61	71	4519	119.21	-857.16	19.24
411	SLU 58	-60	59	4460	117.73	-846.13	16.26
411	SLU 59	-61	70	4498	118.64	-853.29	19.19
411	SLU 60	-58	61	4557	120.22	-864.35	16.72
411	SLU 61	-59	72	4594	121.13	-871.51	19.65
411	SLU 62	-59	61	4591	121.14	-870.6	16.79
411	SLU 63	-60	73	4628	122.05	-877.75	19.73
411	SLU 64	-62	56	4441	117.27	-842.1	15.71
411	SLU 65	-64	76	4503	118.78	-854.02	20.61
411	SLU 66	-63	57	4496	118.75	-852.21	15.83
411	SLU 67	-64	68	4533	119.66	-859.37	18.77
411	SLU 68	-65	76	4537	119.7	-860.27	20.68
411	SLU 69	-64	57	4530	119.66	-858.45	15.91
411	SLU 70	-65	69	4567	120.57	-865.61	18.84
411	SLU 71	-64	57	4509	119.1	-854.58	15.86
411	SLU 72	-65	68	4546	120.01	-861.74	18.8
411	SLU 73	-65	81	4887	128.87	-925.68	22.03
411	SLU 74	-64	62	4879	128.83	-923.86	17.26
411	SLU 75	-66	74	4917	129.74	-931.02	20.2
411	SLU 76	-66	82	4921	129.78	-931.92	22.11
411	SLU 77	-65	62	4913	129.75	-930.1	17.33
411	SLU 78	-66	74	4951	130.66	-937.26	20.27
411	SLU 79	-65	62	4892	129.18	-926.23	17.29
411	SLU 80	-66	74	4930	130.09	-933.39	20.23
411	SLU 81	-64	64	4988	131.67	-944.46	17.75
411	SLU 82	-65	76	5026	132.58	-951.62	20.69
411	SLU 83	-65	64	5022	132.59	-950.7	17.83
411	SLU 84	-66	76	5060	133.5	-957.86	20.76
411	SLE RA 1	-46	43	3321	87.69	-630.16	11.86
411	SLE RA 2	-48	56	3363	88.7	-638.11	15.12
411	SLE RA 3	-47	43	3358	88.68	-636.9	11.94
411	SLE RA 4	-48	51	3383	89.28	-641.67	13.9
411	SLE RA 5	-48	56	3385	89.31	-642.27	15.17
411	SLE RA 6	-48	43	3380	89.29	-641.06	11.99
411	SLE RA 7	-49	51	3405	89.89	-645.83	13.95
411	SLE RA 8	-48	43	3366	88.91	-638.48	11.96
411	SLE RA 9	-48	51	3391	89.51	-643.25	13.92
411	SLE RA 10	-48	59	3618	95.42	-685.88	16.07
411	SLE RA 11	-48	46	3613	95.4	-684.67	12.89
411	SLE RA 12	-49	54	3638	96.01	-689.44	14.85
411	SLE RA 13	-49	59	3641	96.03	-690.04	16.12
411	SLE RA 14	-49	47	3636	96.01	-688.83	12.94
411	SLE RA 15	-49	54	3661	96.62	-693.6	14.9
411	SLE RA 16	-49	47	3622	95.63	-686.25	12.91
411	SLE RA 17	-49	54	3647	96.24	-691.02	14.87
411	SLE RA 18	-48	48	3686	97.29	-698.4	13.22
411	SLE RA 19	-48	56	3711	97.9	-703.17	15.18
411	SLE RA 20	-48	48	3709	97.9	-702.56	13.27
411	SLE RA 21	-49	56	3734	98.51	-707.34	15.23
411	SLE FR 1	-46	43	3321	87.69	-630.16	11.86
411	SLE FR 2	-47	45	3329	87.89	-631.75	12.51
411	SLE FR 3	-47	43	3330	87.93	-631.83	11.88
411	SLE FR 4	-47	47	3439	90.77	-652.22	12.92
411	SLE FR 5	-47	44	3440	90.81	-652.3	12.29
411	SLE FR 6	-47	45	3504	92.49	-664.28	12.54
411	SLE QP 1	-46	43	3321	87.69	-630.16	11.86
411	SLE QP 2	-47	44	3430	90.57	-650.63	12.27
411	SLD 1	215	231	4932	128.97	-926.85	41.53
411	SLD 2	268	131	4845	126.87	-910.4	15.07
411	SLD 3	241	10	4029	107.24	-752.11	-14.42
411	SLD 4	293	-91	3943	105.14	-735.66	-40.88
411	SLD 5	-17	455	5266	135.42	-1001.48	110.66
411	SLD 6	18	389	5208	134.04	-990.63	93.21
411	SLD 7	69	-285	2257	62.99	-419.01	-75.84
411	SLD 8	104	-351	2199	61.61	-408.16	-93.29
411	SLD 9	-198	439	4662	119.53	-893.11	117.82
411	SLD 10	-163	373	4604	118.15	-882.25	100.38
411	SLD 11	-111	-300	1652	47.1	-310.64	-68.68
411	SLD 12	-77	-367	1595	45.72	-299.79	-86.12
411	SLD 13	-387	179	2918	76	-565.61	65.41

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
411	SLD 14	-334	79	2832	73.9	-549.16	38.96
411	SLD 15	-361	-43	2016	54.27	-390.87	9.46
411	SLD 16	-308	-143	1929	52.17	-374.42	-16.99
411	SLV 1	563	499	7019	182.21	-1311.41	84.86
411	SLV 2	687	263	6815	177.29	-1272.74	22.69
411	SLV 3	627	-52	4759	127.81	-873.94	-54.06
411	SLV 4	751	-288	4555	122.89	-835.26	-116.24
411	SLV 5	17	1060	7973	201.49	-1519.58	256.36
411	SLV 6	100	901	7835	198.18	-1493.54	214.5
411	SLV 7	229	-776	439	20.15	-61.35	-206.74
411	SLV 8	312	-935	302	16.84	-35.31	-248.6
411	SLV 9	-406	1024	6559	164.3	-1265.96	273.13
411	SLV 10	-322	864	6421	160.99	-1239.92	231.27
411	SLV 11	-194	-813	-974	-17.04	192.28	-189.96
411	SLV 12	-110	-972	-1112	-20.35	218.31	-231.82
411	SLV 13	-845	377	2306	58.25	-466	140.77
411	SLV 14	-721	140	2102	53.33	-427.33	78.6
411	SLV 15	-781	-174	46	3.84	-28.53	1.85
411	SLV 16	-657	-411	-158	-1.07	10.14	-60.33
411	CRTFP Ux+	0	0	0	0	0	0
411	CRTFP Ux-	0	0	0	0	0	0
411	CRTFP Uy+	0	0	0	0	0	0
411	CRTFP Uy-	0	0	0	0	0	0
414	SLU 1	-83	-68	6151	167.15	-33.85	-0.14
414	SLU 2	-85	-42	6264	169.96	-33.88	-0.1
414	SLU 3	-86	-69	6257	170.11	-34.52	-0.13
414	SLU 4	-87	-54	6325	171.8	-34.54	-0.1
414	SLU 5	-87	-43	6331	171.81	-34.31	-0.09
414	SLU 6	-88	-70	6323	171.96	-34.95	-0.11
414	SLU 7	-89	-55	6391	173.65	-34.97	-0.09
414	SLU 8	-87	-70	6283	170.84	-34.71	-0.12
414	SLU 9	-88	-54	6351	172.53	-34.73	-0.09
414	SLU 10	-88	-49	7048	191.23	-39.38	-0.22
414	SLU 11	-89	-76	7040	191.38	-40.02	-0.25
414	SLU 12	-90	-60	7108	193.07	-40.04	-0.22
414	SLU 13	-90	-49	7114	193.08	-39.81	-0.21
414	SLU 14	-91	-77	7106	193.23	-40.46	-0.24
414	SLU 15	-92	-61	7174	194.91	-40.48	-0.21
414	SLU 16	-90	-76	7066	192.11	-40.21	-0.24
414	SLU 17	-91	-61	7134	193.8	-40.23	-0.21
414	SLU 18	-88	-77	7270	197.53	-41.71	-0.32
414	SLU 19	-89	-62	7338	199.22	-41.73	-0.29
414	SLU 20	-90	-78	7336	199.38	-42.14	-0.3
414	SLU 21	-91	-62	7404	201.06	-42.16	-0.28
414	SLU 22	-94	-76	6999	190.44	-39.05	-0.14
414	SLU 23	-96	-50	7113	193.25	-39.08	-0.1
414	SLU 24	-97	-77	7105	193.4	-39.72	-0.12
414	SLU 25	-98	-62	7174	195.09	-39.74	-0.1
414	SLU 26	-98	-51	7179	195.1	-39.51	-0.08
414	SLU 27	-98	-78	7171	195.25	-40.16	-0.11
414	SLU 28	-99	-62	7240	196.94	-40.17	-0.08
414	SLU 29	-98	-77	7131	194.13	-39.91	-0.11
414	SLU 30	-99	-62	7199	195.82	-39.93	-0.09
414	SLU 31	-99	-56	7896	214.52	-44.58	-0.22
414	SLU 32	-100	-84	7888	214.67	-45.23	-0.25
414	SLU 33	-101	-68	7957	216.36	-45.25	-0.22
414	SLU 34	-101	-57	7962	216.36	-45.02	-0.21
414	SLU 35	-102	-84	7954	216.51	-45.66	-0.23
414	SLU 36	-103	-69	8023	218.2	-45.68	-0.21
414	SLU 37	-101	-84	7914	215.4	-45.42	-0.23
414	SLU 38	-102	-68	7982	217.08	-45.44	-0.21
414	SLU 39	-99	-85	8118	220.82	-46.91	-0.31
414	SLU 40	-100	-69	8186	222.51	-46.93	-0.29
414	SLU 41	-101	-86	8184	222.66	-47.34	-0.3
414	SLU 42	-102	-70	8252	224.35	-47.36	-0.28
414	SLU 43	-105	-86	7705	209.31	-42.22	-0.19
414	SLU 44	-107	-60	7819	212.12	-42.25	-0.14
414	SLU 45	-107	-87	7812	212.27	-42.89	-0.17
414	SLU 46	-108	-72	7880	213.96	-42.91	-0.15
414	SLU 47	-108	-61	7885	213.97	-42.68	-0.13
414	SLU 48	-109	-88	7878	214.12	-43.32	-0.16
414	SLU 49	-110	-72	7946	215.81	-43.34	-0.13
414	SLU 50	-108	-87	7837	213	-43.08	-0.16
414	SLU 51	-109	-72	7906	214.69	-43.1	-0.13
414	SLU 52	-110	-66	8602	233.39	-47.75	-0.27
414	SLU 53	-110	-93	8595	233.54	-48.4	-0.29
414	SLU 54	-111	-78	8663	235.23	-48.41	-0.27
414	SLU 55	-111	-67	8668	235.24	-48.19	-0.25
414	SLU 56	-112	-94	8661	235.39	-48.83	-0.28
414	SLU 57	-113	-79	8729	237.07	-48.85	-0.25
414	SLU 58	-111	-94	8620	234.27	-48.59	-0.28
414	SLU 59	-112	-78	8689	235.96	-48.6	-0.26
414	SLU 60	-109	-95	8824	239.69	-50.08	-0.36
414	SLU 61	-110	-79	8892	241.38	-50.1	-0.34
414	SLU 62	-111	-96	8890	241.54	-50.51	-0.35
414	SLU 63	-112	-80	8958	243.22	-50.53	-0.32
414	SLU 64	-116	-94	8554	232.6	-47.42	-0.18
414	SLU 65	-117	-68	8667	235.41	-47.45	-0.14
414	SLU 66	-118	-95	8660	235.56	-48.09	-0.17

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
414	SLU 67	-119	-79	8728	237.25	-48.11	-0.14
414	SLU 68	-119	-68	8733	237.26	-47.88	-0.13
414	SLU 69	-120	-96	8726	237.41	-48.53	-0.15
414	SLU 70	-121	-80	8794	239.1	-48.54	-0.13
414	SLU 71	-119	-95	8686	236.29	-48.28	-0.16
414	SLU 72	-120	-80	8754	237.98	-48.3	-0.13
414	SLU 73	-121	-74	9450	256.68	-52.96	-0.26
414	SLU 74	-121	-101	9443	256.83	-53.6	-0.29
414	SLU 75	-122	-86	9511	258.52	-53.62	-0.26
414	SLU 76	-122	-75	9516	258.52	-53.39	-0.25
414	SLU 77	-123	-102	9509	258.67	-54.03	-0.28
414	SLU 78	-124	-87	9577	260.36	-54.05	-0.25
414	SLU 79	-122	-102	9469	257.56	-53.79	-0.28
414	SLU 80	-123	-86	9537	259.24	-53.81	-0.25
414	SLU 81	-120	-103	9672	262.98	-55.28	-0.36
414	SLU 82	-121	-87	9740	264.67	-55.3	-0.33
414	SLU 83	-122	-104	9738	264.82	-55.71	-0.34
414	SLU 84	-123	-88	9806	266.51	-55.73	-0.32
414	SLE RA 1	-87	-70	6393	173.8	-35.33	-0.14
414	SLE RA 2	-88	-53	6469	175.68	-35.35	-0.11
414	SLE RA 3	-88	-71	6464	175.78	-35.78	-0.13
414	SLE RA 4	-89	-61	6509	176.9	-35.8	-0.11
414	SLE RA 5	-89	-54	6513	176.91	-35.64	-0.1
414	SLE RA 6	-89	-72	6508	177.01	-36.07	-0.12
414	SLE RA 7	-90	-61	6554	178.14	-36.08	-0.1
414	SLE RA 8	-89	-71	6481	176.26	-35.91	-0.12
414	SLE RA 9	-90	-61	6527	177.39	-35.92	-0.11
414	SLE RA 10	-90	-57	6991	189.86	-39.02	-0.2
414	SLE RA 11	-90	-75	6986	189.96	-39.45	-0.21
414	SLE RA 12	-91	-65	7032	191.08	-39.46	-0.2
414	SLE RA 13	-91	-58	7035	191.09	-39.31	-0.19
414	SLE RA 14	-91	-76	7030	191.19	-39.74	-0.2
414	SLE RA 15	-92	-66	7076	192.31	-39.75	-0.19
414	SLE RA 16	-91	-76	7003	190.44	-39.58	-0.21
414	SLE RA 17	-92	-65	7049	191.57	-39.59	-0.19
414	SLE RA 18	-90	-76	7139	194.06	-40.57	-0.26
414	SLE RA 19	-90	-66	7184	195.18	-40.59	-0.24
414	SLE RA 20	-91	-77	7183	195.29	-40.86	-0.25
414	SLE RA 21	-91	-67	7228	196.41	-40.88	-0.23
414	SLE FR 1	-87	-70	6393	173.8	-35.33	-0.14
414	SLE FR 2	-87	-67	6408	174.18	-35.34	-0.14
414	SLE FR 3	-87	-70	6411	174.3	-35.45	-0.14
414	SLE FR 4	-88	-69	6632	180.25	-36.91	-0.17
414	SLE FR 5	-88	-72	6635	180.37	-37.02	-0.17
414	SLE FR 6	-88	-73	6766	183.93	-37.95	-0.2
414	SLE QP 1	-87	-70	6393	173.8	-35.33	-0.14
414	SLE QP 2	-87	-72	6617	179.88	-36.91	-0.18
414	SLD 1	448	72	8126	218.63	-15.81	-15.31
414	SLD 2	553	-1	8032	216.28	-17.23	-16.79
414	SLD 3	491	-235	6533	179.37	-17.83	-15.74
414	SLD 4	596	-309	6438	177.01	-19.25	-17.22
414	SLD 5	-12	451	9504	251.48	-27.26	-3.8
414	SLD 6	57	403	9442	249.93	-28.2	-4.78
414	SLD 7	134	-574	4191	120.6	-33.99	-5.23
414	SLD 8	203	-623	4129	119.04	-34.92	-6.2
414	SLD 9	-378	479	9105	240.72	-38.89	5.85
414	SLD 10	-309	430	9043	239.16	-39.82	4.88
414	SLD 11	-232	-547	3792	109.83	-45.61	4.42
414	SLD 12	-163	-595	3730	108.27	-46.55	3.45
414	SLD 13	-771	165	6796	182.75	-54.56	16.87
414	SLD 14	-666	91	6701	180.39	-55.98	15.39
414	SLD 15	-728	-143	5202	143.48	-56.58	16.44
414	SLD 16	-623	-216	5107	141.12	-58	14.96
414	SLV 1	1162	289	10281	273.81	12.54	-35.57
414	SLV 2	1408	116	10059	268.27	9.22	-39.04
414	SLV 3	1269	-477	6289	175.46	7.65	-36.6
414	SLV 4	1515	-649	6067	169.92	4.32	-40.07
414	SLV 5	79	1229	13812	358.25	-14.03	-8.59
414	SLV 6	245	1113	13662	354.52	-16.27	-10.93
414	SLV 7	436	-1322	506	30.43	-30.34	-12.01
414	SLV 8	601	-1438	356	26.7	-32.58	-14.35
414	SLV 9	-776	1294	12878	333.06	-41.23	14
414	SLV 10	-610	1178	12728	329.33	-43.47	11.66
414	SLV 11	-420	-1257	-428	5.24	-57.54	10.57
414	SLV 12	-254	-1373	-578	1.5	-59.78	8.23
414	SLV 13	-1690	505	7167	189.84	-78.13	39.72
414	SLV 14	-1444	332	6945	184.29	-81.46	36.24
414	SLV 15	-1583	-260	3175	91.49	-83.03	38.69
414	SLV 16	-1337	-433	2953	85.95	-86.36	35.22
414	CRTFP Ux+	0	0	0	0	0	0
414	CRTFP Ux-	0	0	0	0	0	0
414	CRTFP Uy+	0	0	0	0	0	0
414	CRTFP Uy-	0	0	0	0	0	0
417	SLU 1	43	-43	6094	165.16	43.52	0.5
417	SLU 2	46	-17	6210	168.03	43.45	0.41
417	SLU 3	43	-44	6198	168.06	44.36	0.52
417	SLU 4	45	-28	6268	169.78	44.32	0.46
417	SLU 5	45	-17	6274	169.83	43.98	0.43
417	SLU 6	43	-45	6262	169.87	44.89	0.53

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
417	SLU 7	44	-29	6332	171.59	44.85	0.48
417	SLU 8	42	-44	6223	168.77	44.58	0.53
417	SLU 9	44	-28	6292	170.49	44.54	0.48
417	SLU 10	46	-20	6978	188.81	50.12	0.55
417	SLU 11	43	-47	6965	188.85	51.02	0.65
417	SLU 12	45	-31	7035	190.57	50.98	0.6
417	SLU 13	46	-20	7042	190.62	50.65	0.57
417	SLU 14	43	-47	7030	190.66	51.55	0.67
417	SLU 15	45	-31	7100	192.38	51.52	0.62
417	SLU 16	42	-47	6990	189.56	51.24	0.67
417	SLU 17	44	-31	7060	191.28	51.2	0.62
417	SLU 18	43	-47	7190	194.85	53.04	0.69
417	SLU 19	45	-31	7260	196.57	53	0.64
417	SLU 20	43	-48	7255	196.66	53.57	0.71
417	SLU 21	45	-32	7324	198.38	53.53	0.66
417	SLU 22	47	-47	6923	187.88	49.84	0.57
417	SLU 23	50	-21	7040	190.75	49.77	0.49
417	SLU 24	47	-48	7027	190.78	50.68	0.59
417	SLU 25	49	-32	7097	192.5	50.64	0.54
417	SLU 26	50	-21	7104	192.55	50.31	0.5
417	SLU 27	47	-49	7092	192.59	51.21	0.6
417	SLU 28	49	-33	7162	194.31	51.17	0.55
417	SLU 29	46	-48	7052	191.49	50.9	0.6
417	SLU 30	48	-32	7122	193.21	50.86	0.55
417	SLU 31	50	-24	7807	211.53	56.44	0.62
417	SLU 32	47	-51	7795	211.57	57.34	0.73
417	SLU 33	49	-35	7865	213.29	57.31	0.67
417	SLU 34	50	-24	7872	213.34	56.97	0.64
417	SLU 35	47	-51	7860	213.37	57.88	0.74
417	SLU 36	49	-36	7929	215.09	57.84	0.69
417	SLU 37	47	-51	7820	212.28	57.56	0.74
417	SLU 38	48	-35	7890	214	57.53	0.69
417	SLU 39	47	-51	8020	217.57	59.36	0.77
417	SLU 40	49	-35	8090	219.29	59.32	0.72
417	SLU 41	47	-52	8084	219.38	59.89	0.78
417	SLU 42	49	-36	8154	221.1	59.85	0.73
417	SLU 43	54	-55	7637	206.92	54.41	0.62
417	SLU 44	57	-28	7754	209.79	54.34	0.54
417	SLU 45	54	-56	7741	209.82	55.25	0.64
417	SLU 46	56	-40	7811	211.54	55.21	0.59
417	SLU 47	57	-29	7818	211.59	54.87	0.55
417	SLU 48	54	-56	7806	211.63	55.78	0.66
417	SLU 49	56	-40	7876	213.35	55.74	0.61
417	SLU 50	53	-56	7766	210.53	55.47	0.66
417	SLU 51	55	-40	7836	212.25	55.43	0.61
417	SLU 52	57	-31	8521	230.57	61	0.68
417	SLU 53	54	-59	8509	230.61	61.91	0.78
417	SLU 54	56	-43	8579	232.33	61.87	0.73
417	SLU 55	57	-32	8586	232.38	61.54	0.69
417	SLU 56	54	-59	8573	232.42	62.44	0.79
417	SLU 57	56	-43	8643	234.14	62.4	0.74
417	SLU 58	54	-59	8534	231.32	62.13	0.79
417	SLU 59	56	-43	8604	233.04	62.09	0.74
417	SLU 60	54	-59	8734	236.61	63.93	0.82
417	SLU 61	56	-43	8804	238.33	63.89	0.77
417	SLU 62	54	-59	8798	238.42	64.46	0.84
417	SLU 63	56	-43	8868	240.14	64.42	0.78
417	SLU 64	58	-59	8467	229.64	60.73	0.7
417	SLU 65	61	-32	8583	232.51	60.66	0.61
417	SLU 66	58	-60	8571	232.54	61.57	0.71
417	SLU 67	60	-44	8641	234.26	61.53	0.66
417	SLU 68	61	-33	8648	234.31	61.19	0.63
417	SLU 69	58	-60	8636	234.35	62.1	0.73
417	SLU 70	60	-44	8705	236.07	62.06	0.68
417	SLU 71	58	-60	8596	233.25	61.79	0.73
417	SLU 72	60	-44	8666	234.97	61.75	0.68
417	SLU 73	61	-35	9351	253.29	67.33	0.75
417	SLU 74	58	-63	9339	253.33	68.23	0.85
417	SLU 75	60	-47	9408	255.05	68.19	0.8
417	SLU 76	61	-36	9415	255.1	67.86	0.76
417	SLU 77	58	-63	9403	255.13	68.76	0.87
417	SLU 78	60	-47	9473	256.85	68.72	0.82
417	SLU 79	58	-63	9363	254.04	68.45	0.87
417	SLU 80	60	-47	9433	255.76	68.41	0.82
417	SLU 81	58	-63	9563	259.33	70.25	0.89
417	SLU 82	60	-47	9633	261.05	70.21	0.84
417	SLU 83	58	-63	9628	261.14	70.78	0.91
417	SLU 84	60	-48	9698	262.86	70.74	0.86
417	SLE RA 1	44	-45	6331	171.65	45.32	0.52
417	SLE RA 2	46	-27	6408	173.56	45.28	0.46
417	SLE RA 3	44	-45	6400	173.59	45.89	0.53
417	SLE RA 4	45	-34	6447	174.73	45.86	0.5
417	SLE RA 5	46	-27	6451	174.77	45.64	0.47
417	SLE RA 6	44	-45	6443	174.79	46.24	0.54
417	SLE RA 7	45	-35	6490	175.94	46.21	0.51
417	SLE RA 8	43	-45	6417	174.06	46.03	0.54
417	SLE RA 9	45	-35	6463	175.21	46.01	0.51
417	SLE RA 10	46	-29	6920	187.42	49.72	0.55
417	SLE RA 11	44	-47	6912	187.44	50.33	0.62

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
417	SLE RA 12	45	-36	6958	188.59	50.3	0.59
417	SLE RA 13	46	-29	6963	188.62	50.08	0.57
417	SLE RA 14	44	-47	6955	188.65	50.68	0.63
417	SLE RA 15	45	-37	7001	189.8	50.66	0.6
417	SLE RA 16	44	-47	6928	187.92	50.47	0.63
417	SLE RA 17	45	-36	6975	189.06	50.45	0.6
417	SLE RA 18	44	-47	7062	191.45	51.67	0.65
417	SLE RA 19	45	-37	7108	192.59	51.64	0.62
417	SLE RA 20	44	-47	7105	192.65	52.02	0.66
417	SLE RA 21	45	-37	7151	193.8	52	0.63
417	SLE FR 1	44	-45	6331	171.65	45.32	0.52
417	SLE FR 2	44	-41	6346	172.03	45.32	0.51
417	SLE FR 3	44	-45	6348	172.13	45.47	0.52
417	SLE FR 4	44	-42	6565	177.97	47.22	0.55
417	SLE FR 5	44	-45	6567	178.07	47.37	0.56
417	SLE FR 6	44	-46	6696	181.55	48.5	0.58
417	SLE QP 1	44	-45	6331	171.65	45.32	0.52
417	SLE QP 2	44	-45	6550	177.59	47.23	0.56
417	SLD 1	653	124	6675	179.34	58.87	-15.7
417	SLD 2	761	200	6775	181.82	57.44	-17.35
417	SLD 3	596	-192	5037	139.16	61.98	-14.81
417	SLD 4	703	-116	5137	141.63	60.55	-16.45
417	SLD 5	294	471	9055	238.62	46.26	-5.38
417	SLD 6	365	521	9121	240.25	45.31	-6.47
417	SLD 7	103	-582	3593	104.67	56.63	-2.4
417	SLD 8	174	-532	3659	106.3	55.69	-3.48
417	SLD 9	-86	441	9441	248.88	38.77	4.6
417	SLD 10	-16	492	9507	250.51	37.83	3.51
417	SLD 11	-278	-612	3979	114.93	49.14	7.58
417	SLD 12	-207	-561	4045	116.56	48.2	6.5
417	SLD 13	-616	25	7963	213.55	33.91	17.57
417	SLD 14	-508	102	8063	216.02	32.48	15.92
417	SLD 15	-673	-290	6325	173.36	37.02	18.46
417	SLD 16	-566	-214	6425	175.84	35.59	16.82
417	SLV 1	1475	375	6979	185.04	74.24	-37.56
417	SLV 2	1727	553	7214	190.85	70.88	-41.43
417	SLV 3	1329	-414	2870	84.27	81.98	-35.29
417	SLV 4	1581	-235	3106	90.08	78.62	-39.16
417	SLV 5	647	1243	12867	331.57	44.21	-13.6
417	SLV 6	817	1364	13025	335.48	41.95	-16.2
417	SLV 7	161	-1385	-830	-4.32	70.02	-6.04
417	SLV 8	331	-1265	-671	-0.4	67.76	-8.64
417	SLV 9	-243	1174	13771	355.58	26.69	9.76
417	SLV 10	-74	1295	13929	359.5	24.43	7.15
417	SLV 11	-729	-1454	75	19.7	52.51	17.32
417	SLV 12	-560	-1334	233	23.61	50.24	14.71
417	SLV 13	-1494	145	9994	265.1	15.84	40.28
417	SLV 14	-1242	323	10229	270.91	12.48	36.41
417	SLV 15	-1639	-644	5885	164.33	23.58	42.54
417	SLV 16	-1388	-465	6121	170.15	20.22	38.68
417	CRTFP Ux+	0	0	0	0	0	0
417	CRTFP Ux-	0	0	0	0	0	0
417	CRTFP Uy+	0	0	0	0	0	0
417	CRTFP Uy-	0	0	0	0	0	0
420	SLU 1	32	23	3622	95.7	991.64	-8.86
420	SLU 2	35	43	3699	97.55	1012.69	-15.96
420	SLU 3	33	24	3685	97.4	1008.22	-9.1
420	SLU 4	34	36	3731	98.51	1020.85	-13.36
420	SLU 5	35	44	3738	98.6	1022.8	-16.25
420	SLU 6	33	25	3723	98.46	1018.33	-9.39
420	SLU 7	34	37	3770	99.57	1030.96	-13.65
420	SLU 8	32	25	3699	97.8	1011.87	-9.44
420	SLU 9	34	37	3745	98.91	1024.5	-13.7
420	SLU 10	35	46	4132	108.94	1129.25	-16.96
420	SLU 11	33	27	4118	108.8	1124.78	-10.1
420	SLU 12	35	39	4164	109.91	1137.41	-14.36
420	SLU 13	36	47	4171	109.99	1139.37	-17.25
420	SLU 14	33	27	4156	109.85	1134.9	-10.39
420	SLU 15	35	39	4203	110.96	1147.53	-14.65
420	SLU 16	32	28	4132	109.19	1128.44	-10.44
420	SLU 17	34	40	4178	110.3	1141.06	-14.7
420	SLU 18	32	27	4240	111.97	1158.16	-10.28
420	SLU 19	34	39	4287	113.08	1170.79	-14.54
420	SLU 20	33	28	4279	113.02	1168.28	-10.57
420	SLU 21	34	40	4325	114.13	1180.9	-14.84
420	SLU 22	35	24	4105	108.54	1120.91	-9.25
420	SLU 23	38	44	4182	110.39	1141.96	-16.36
420	SLU 24	35	25	4168	110.25	1137.49	-9.5
420	SLU 25	37	37	4215	111.36	1150.12	-13.76
420	SLU 26	38	45	4221	111.44	1152.07	-16.65
420	SLU 27	36	25	4207	111.3	1147.61	-9.79
420	SLU 28	37	38	4253	112.41	1160.24	-14.05
420	SLU 29	35	26	4183	110.64	1141.15	-9.84
420	SLU 30	37	38	4229	111.75	1153.77	-14.1
420	SLU 31	38	47	4615	121.78	1258.52	-17.35
420	SLU 32	36	27	4601	121.64	1254.06	-10.49
420	SLU 33	38	40	4648	122.75	1266.68	-14.75
420	SLU 34	38	48	4654	122.83	1268.64	-17.65
420	SLU 35	36	28	4640	122.69	1264.17	-10.78

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
420	SLU 36	38	40	4686	123.8	1276.8	-15.05
420	SLU 37	35	28	4616	122.04	1257.71	-10.83
420	SLU 38	37	41	4662	123.15	1270.34	-15.1
420	SLU 39	35	28	4724	124.82	1287.43	-10.68
420	SLU 40	37	40	4770	125.93	1300.06	-14.94
420	SLU 41	35	29	4762	125.87	1297.55	-10.97
420	SLU 42	37	41	4809	126.98	1310.18	-15.23
420	SLU 43	41	30	4543	120	1244.81	-11.38
420	SLU 44	44	50	4620	121.85	1265.85	-18.48
420	SLU 45	41	30	4606	121.71	1261.39	-11.62
420	SLU 46	43	42	4652	122.82	1274.02	-15.88
420	SLU 47	44	51	4658	122.91	1275.97	-18.78
420	SLU 48	41	31	4644	122.76	1271.5	-11.91
420	SLU 49	43	43	4690	123.87	1284.13	-16.18
420	SLU 50	41	31	4620	122.11	1265.04	-11.96
420	SLU 51	43	43	4666	123.22	1277.67	-16.23
420	SLU 52	44	53	5053	133.25	1382.42	-19.48
420	SLU 53	41	33	5039	133.1	1377.95	-12.62
420	SLU 54	43	45	5085	134.21	1390.58	-16.88
420	SLU 55	44	53	5091	134.3	1392.54	-19.77
420	SLU 56	41	34	5077	134.15	1388.07	-12.91
420	SLU 57	43	46	5123	135.26	1400.7	-17.17
420	SLU 58	41	34	5053	133.5	1381.61	-12.96
420	SLU 59	43	46	5099	134.61	1394.23	-17.22
420	SLU 60	41	34	5161	136.28	1411.33	-12.8
420	SLU 61	43	46	5207	137.39	1423.96	-17.07
420	SLU 62	41	35	5200	137.33	1421.45	-13.1
420	SLU 63	43	47	5246	138.44	1434.07	-17.36
420	SLU 64	44	31	5026	132.85	1374.08	-11.77
420	SLU 65	47	51	5103	134.7	1395.13	-18.88
420	SLU 66	44	31	5089	134.55	1390.66	-12.02
420	SLU 67	46	43	5135	135.66	1403.29	-16.28
420	SLU 68	47	51	5142	135.75	1405.24	-19.17
420	SLU 69	44	32	5128	135.6	1400.78	-12.31
420	SLU 70	46	44	5174	136.72	1413.4	-16.57
420	SLU 71	44	32	5103	134.95	1394.32	-12.36
420	SLU 72	46	44	5150	136.06	1406.94	-16.62
420	SLU 73	47	54	5536	146.09	1511.69	-19.87
420	SLU 74	44	34	5522	145.95	1507.23	-13.01
420	SLU 75	46	46	5568	147.06	1519.85	-17.28
420	SLU 76	47	54	5575	147.14	1521.81	-20.17
420	SLU 77	44	35	5561	147	1517.34	-13.31
420	SLU 78	46	47	5607	148.11	1529.97	-17.57
420	SLU 79	44	35	5536	146.34	1510.88	-13.35
420	SLU 80	46	47	5583	147.45	1523.51	-17.62
420	SLU 81	44	35	5645	149.12	1540.6	-13.2
420	SLU 82	46	47	5691	150.23	1553.23	-17.46
420	SLU 83	44	35	5683	150.17	1550.72	-13.49
420	SLU 84	46	48	5730	151.28	1563.35	-17.75
420	SLE RA 1	33	23	3760	99.37	1028.58	-8.97
420	SLE RA 2	35	37	3811	100.6	1042.61	-13.71
420	SLE RA 3	33	24	3802	100.51	1039.63	-9.13
420	SLE RA 4	35	32	3833	101.25	1048.05	-11.97
420	SLE RA 5	35	37	3837	101.3	1049.35	-13.9
420	SLE RA 6	33	24	3828	101.21	1046.37	-9.33
420	SLE RA 7	35	32	3859	101.95	1054.79	-12.17
420	SLE RA 8	33	24	3811	100.77	1042.06	-9.36
420	SLE RA 9	34	32	3842	101.51	1050.48	-12.2
420	SLE RA 10	35	39	4100	108.2	1120.32	-14.37
420	SLE RA 11	33	26	4091	108.1	1117.34	-9.8
420	SLE RA 12	35	34	4121	108.84	1125.76	-12.64
420	SLE RA 13	35	39	4126	108.9	1127.06	-14.57
420	SLE RA 14	33	26	4116	108.8	1124.08	-9.99
420	SLE RA 15	35	34	4147	109.54	1132.5	-12.83
420	SLE RA 16	33	26	4100	108.36	1119.77	-10.02
420	SLE RA 17	34	34	4131	109.1	1128.19	-12.87
420	SLE RA 18	33	26	4172	110.22	1139.59	-9.92
420	SLE RA 19	34	34	4203	110.96	1148.01	-12.76
420	SLE RA 20	33	27	4198	110.92	1146.33	-10.11
420	SLE RA 21	34	35	4229	111.66	1154.75	-12.96
420	SLE FR 1	33	23	3760	99.37	1028.58	-8.97
420	SLE FR 2	33	26	3770	99.61	1031.38	-9.92
420	SLE FR 3	33	24	3770	99.65	1031.27	-9.05
420	SLE FR 4	33	27	3894	102.87	1064.69	-10.2
420	SLE FR 5	33	24	3894	102.9	1064.58	-9.33
420	SLE FR 6	33	25	3966	104.79	1084.08	-9.44
420	SLE QP 1	33	23	3760	99.37	1028.58	-8.97
420	SLE QP 2	33	24	3884	102.62	1061.88	-9.25
420	SLD 1	389	114	3262	85.13	910.62	-48.58
420	SLD 2	452	223	3365	87.58	938.86	-88.05
420	SLD 3	348	-116	2167	58.97	607.17	33.14
420	SLD 4	411	-8	2270	61.41	635.41	-6.32
420	SLD 5	190	382	5339	136.62	1471.65	-137.9
420	SLD 6	232	453	5407	138.23	1490.28	-163.94
420	SLD 7	54	-388	1690	49.41	460.16	134.51
420	SLD 8	96	-316	1757	51.02	478.79	108.47
420	SLD 9	-30	365	6010	154.23	1644.97	-126.98
420	SLD 10	12	436	6078	155.84	1663.6	-153.02
420	SLD 11	-166	-405	2360	67.02	633.48	145.43

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
420	SLD 12	-124	-334	2428	68.63	652.11	119.39
420	SLD 13	-345	56	5497	143.83	1488.35	-12.19
420	SLD 14	-281	165	5600	146.27	1516.58	-51.65
420	SLD 15	-386	-174	4402	117.67	1184.9	69.54
420	SLD 16	-322	-66	4505	120.11	1213.14	30.07
420	SLV 1	868	253	2520	63.87	733.12	-107.58
420	SLV 2	1018	508	2762	69.61	799.5	-200.34
420	SLV 3	765	-324	-226	-1.74	-27.88	96.62
420	SLV 4	914	-69	16	4	38.49	3.85
420	SLV 5	413	921	7594	189.44	2105.06	-331.14
420	SLV 6	514	1092	7757	193.3	2149.75	-393.6
420	SLV 7	67	-1003	-1559	-29.27	-431.63	349.52
420	SLV 8	168	-831	-1396	-25.41	-386.95	287.07
420	SLV 9	-102	880	9163	230.65	2510.7	-305.58
420	SLV 10	-1	1051	9326	234.52	2555.39	-368.03
420	SLV 11	-448	-1044	10	11.94	-25.99	375.09
420	SLV 12	-347	-872	173	15.81	18.7	312.63
420	SLV 13	-848	117	7751	201.25	2085.27	-22.36
420	SLV 14	-698	372	7993	206.99	2151.64	-115.13
420	SLV 15	-952	-460	5006	135.63	1324.26	181.83
420	SLV 16	-802	-205	5247	141.37	1390.63	89.07
420	CRTFP Ux+	0	0	0	0	0	0
420	CRTFP Ux-	0	0	0	0	0	0
420	CRTFP Uy+	0	0	0	0	0	0
420	CRTFP Uy-	0	0	0	0	0	0
423	SLU 1	24	-47	3470	-2.63	1019.07	16.41
423	SLU 2	26	-29	3527	-2.9	1035.38	10.21
423	SLU 3	24	-48	3530	-2.63	1035.92	16.69
423	SLU 4	25	-37	3564	-2.8	1045.71	12.97
423	SLU 5	26	-30	3564	-2.9	1045.71	10.39
423	SLU 6	24	-48	3567	-2.64	1046.25	16.87
423	SLU 7	25	-38	3601	-2.8	1056.04	13.15
423	SLU 8	24	-48	3544	-2.63	1039.72	16.77
423	SLU 9	25	-37	3578	-2.8	1049.51	13.05
423	SLU 10	27	-35	3989	-3.26	1170.01	12.22
423	SLU 11	25	-54	3992	-3	1170.56	18.7
423	SLU 12	26	-43	4026	-3.16	1180.35	14.98
423	SLU 13	27	-36	4026	-3.26	1180.34	12.4
423	SLU 14	25	-54	4028	-3	1180.88	18.88
423	SLU 15	26	-44	4063	-3.16	1190.67	15.16
423	SLU 16	25	-54	4006	-3	1174.35	18.78
423	SLU 17	26	-43	4040	-3.16	1184.14	15.06
423	SLU 18	25	-55	4130	-3.15	1211.4	19.28
423	SLU 19	26	-45	4164	-3.31	1221.19	15.56
423	SLU 20	25	-56	4167	-3.15	1221.73	19.46
423	SLU 21	26	-45	4201	-3.31	1231.51	15.74
423	SLU 22	27	-53	3932	-2.88	1151.05	18.42
423	SLU 23	28	-35	3989	-3.15	1167.36	12.22
423	SLU 24	27	-54	3991	-2.89	1167.91	18.69
423	SLU 25	28	-43	4026	-3.05	1177.69	14.98
423	SLU 26	28	-36	4026	-3.15	1177.69	12.39
423	SLU 27	26	-54	4028	-2.89	1178.23	18.87
423	SLU 28	27	-44	4062	-3.05	1188.02	15.15
423	SLU 29	26	-54	4005	-2.88	1171.7	18.77
423	SLU 30	27	-43	4039	-3.05	1181.49	15.05
423	SLU 31	29	-41	4451	-3.51	1301.99	14.22
423	SLU 32	28	-59	4453	-3.25	1302.54	20.7
423	SLU 33	29	-49	4487	-3.41	1312.33	16.98
423	SLU 34	29	-41	4487	-3.51	1312.32	14.4
423	SLU 35	27	-60	4490	-3.25	1312.86	20.88
423	SLU 36	28	-49	4524	-3.41	1322.65	17.16
423	SLU 37	27	-60	4467	-3.25	1306.33	20.78
423	SLU 38	28	-49	4501	-3.41	1316.12	17.06
423	SLU 39	28	-61	4592	-3.4	1343.38	21.28
423	SLU 40	29	-50	4626	-3.56	1353.17	17.56
423	SLU 41	28	-62	4628	-3.4	1353.71	21.46
423	SLU 42	29	-51	4663	-3.56	1363.49	17.74
423	SLU 43	30	-59	4353	-3.33	1279.54	20.65
423	SLU 44	32	-42	4410	-3.6	1295.85	14.45
423	SLU 45	30	-60	4413	-3.34	1296.39	20.93
423	SLU 46	31	-49	4447	-3.5	1306.18	17.21
423	SLU 47	32	-42	4447	-3.6	1306.18	14.63
423	SLU 48	30	-61	4449	-3.34	1306.72	21.11
423	SLU 49	31	-50	4484	-3.5	1316.51	17.39
423	SLU 50	30	-60	4427	-3.34	1300.19	21.01
423	SLU 51	31	-50	4461	-3.5	1309.98	17.29
423	SLU 52	33	-47	4872	-3.96	1430.48	16.46
423	SLU 53	31	-66	4875	-3.7	1431.03	22.94
423	SLU 54	32	-55	4909	-3.86	1440.81	19.22
423	SLU 55	33	-48	4909	-3.97	1440.81	16.64
423	SLU 56	31	-66	4911	-3.7	1441.35	23.11
423	SLU 57	32	-56	4945	-3.87	1451.14	19.39
423	SLU 58	31	-66	4889	-3.7	1434.82	23.01
423	SLU 59	32	-55	4923	-3.86	1444.61	19.29
423	SLU 60	32	-67	5013	-3.85	1471.87	23.52
423	SLU 61	33	-57	5047	-4.01	1481.66	19.8
423	SLU 62	32	-68	5050	-3.85	1482.2	23.69
423	SLU 63	33	-57	5084	-4.01	1491.98	19.97
423	SLU 64	33	-65	4815	-3.58	1411.52	22.65

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
423	SLU 65	35	-47	4872	-3.85	1427.83	16.45
423	SLU 66	33	-66	4874	-3.59	1428.38	22.93
423	SLU 67	34	-55	4909	-3.75	1438.16	19.21
423	SLU 68	34	-48	4908	-3.85	1438.16	16.63
423	SLU 69	33	-66	4911	-3.59	1438.7	23.11
423	SLU 70	34	-56	4945	-3.75	1448.49	19.39
423	SLU 71	33	-66	4888	-3.59	1432.17	23.01
423	SLU 72	34	-55	4922	-3.75	1441.96	19.29
423	SLU 73	36	-53	5334	-4.21	1562.46	18.46
423	SLU 74	34	-72	5336	-3.95	1563.01	24.94
423	SLU 75	35	-61	5370	-4.11	1572.8	21.22
423	SLU 76	35	-54	5370	-4.22	1572.79	18.64
423	SLU 77	34	-72	5373	-3.95	1573.33	25.12
423	SLU 78	35	-61	5407	-4.12	1583.12	21.4
423	SLU 79	34	-72	5350	-3.95	1566.8	25.01
423	SLU 80	35	-61	5384	-4.11	1576.59	21.3
423	SLU 81	34	-73	5475	-4.1	1603.85	25.52
423	SLU 82	35	-63	5509	-4.26	1613.64	21.8
423	SLU 83	34	-74	5511	-4.1	1614.18	25.7
423	SLU 84	35	-63	5545	-4.27	1623.96	21.98
423	SLE RA 1	25	-49	3602	-2.7	1056.78	16.99
423	SLE RA 2	26	-37	3640	-2.88	1067.65	12.85
423	SLE RA 3	25	-49	3642	-2.7	1068.01	17.17
423	SLE RA 4	25	-42	3665	-2.81	1074.54	14.69
423	SLE RA 5	26	-37	3665	-2.88	1074.54	12.97
423	SLE RA 6	25	-50	3666	-2.71	1074.9	17.29
423	SLE RA 7	25	-43	3689	-2.81	1081.42	14.81
423	SLE RA 8	25	-49	3651	-2.7	1070.54	17.22
423	SLE RA 9	25	-42	3674	-2.81	1077.07	14.74
423	SLE RA 10	26	-41	3948	-3.12	1157.41	14.19
423	SLE RA 11	25	-53	3950	-2.95	1157.77	18.51
423	SLE RA 12	26	-46	3973	-3.05	1164.29	16.03
423	SLE RA 13	26	-41	3973	-3.12	1164.29	14.31
423	SLE RA 14	25	-53	3974	-2.95	1164.65	18.63
423	SLE RA 15	26	-46	3997	-3.06	1171.18	16.15
423	SLE RA 16	25	-53	3959	-2.95	1160.3	18.56
423	SLE RA 17	26	-46	3982	-3.05	1166.82	16.08
423	SLE RA 18	26	-54	4042	-3.05	1185	18.9
423	SLE RA 19	26	-47	4065	-3.15	1191.52	16.42
423	SLE RA 20	26	-55	4067	-3.05	1191.88	19.01
423	SLE RA 21	26	-47	4089	-3.16	1198.41	16.53
423	SLE FR 1	25	-49	3602	-2.7	1056.78	16.99
423	SLE FR 2	25	-46	3610	-2.74	1058.95	16.16
423	SLE FR 3	25	-49	3612	-2.7	1059.53	17.03
423	SLE FR 4	25	-48	3742	-2.84	1097.42	16.73
423	SLE FR 5	25	-51	3744	-2.8	1098	17.61
423	SLE FR 6	25	-51	3822	-2.87	1120.89	17.94
423	SLE QP 1	25	-49	3602	-2.7	1056.78	16.99
423	SLE QP 2	25	-50	3734	-2.8	1095.24	17.56
423	SLD 1	381	67	4141	-4.36	1218.03	-23.14
423	SLD 2	440	69	4154	-4.41	1220.2	-23.98
423	SLD 3	350	-151	3386	-0.77	1002.48	52.81
423	SLD 4	409	-148	3399	-0.81	1004.65	51.96
423	SLD 5	168	313	4999	-8.71	1458.61	-109.68
423	SLD 6	207	315	5008	-8.74	1460.04	-110.24
423	SLD 7	65	-410	2482	3.26	740.1	143.47
423	SLD 8	104	-408	2491	3.23	741.53	142.91
423	SLD 9	-54	307	4978	-8.84	1448.95	-107.79
423	SLD 10	-15	309	4986	-8.87	1450.38	-108.35
423	SLD 11	-157	-416	2461	3.13	730.45	145.36
423	SLD 12	-118	-414	2470	3.1	731.88	144.8
423	SLD 13	-359	47	4070	-4.79	1185.84	-16.84
423	SLD 14	-300	50	4083	-4.84	1188.01	-17.69
423	SLD 15	-390	-170	3315	-1.2	970.29	59.1
423	SLD 16	-331	-167	3328	-1.25	972.45	58.25
423	SLV 1	860	240	4748	-6.75	1400.5	-83.48
423	SLV 2	999	247	4779	-6.85	1405.59	-85.47
423	SLV 3	782	-301	2856	2.25	860.2	105.88
423	SLV 4	921	-295	2886	2.15	865.29	103.89
423	SLV 5	368	856	6903	-17.62	2005.32	-299.58
423	SLV 6	462	861	6924	-17.69	2008.75	-300.92
423	SLV 7	107	-948	594	12.39	204.33	331.63
423	SLV 8	201	-943	615	12.31	207.76	330.28
423	SLV 9	-151	842	6853	-17.92	1982.73	-295.17
423	SLV 10	-57	847	6874	-17.99	1986.16	-296.51
423	SLV 11	-412	-962	545	12.08	181.74	336.04
423	SLV 12	-318	-957	565	12.01	185.17	334.7
423	SLV 13	-871	194	4582	-7.76	1325.19	-68.77
423	SLV 14	-732	201	4613	-7.86	1330.28	-70.77
423	SLV 15	-949	-347	2690	1.24	784.9	120.59
423	SLV 16	-810	-341	2720	1.14	789.99	118.6
423	CRTFP Ux+	0	0	0	0	0	0
423	CRTFP Ux-	0	0	0	0	0	0
423	CRTFP Uy+	0	0	0	0	0	0
423	CRTFP Uy-	0	0	0	0	0	0
425	SLU 1	-50	48	3540	-5.48	-579.19	11.97
425	SLU 2	-51	71	3603	-5.81	-589.27	17.64
425	SLU 3	-51	48	3603	-5.53	-588.9	12.06
425	SLU 4	-52	62	3640	-5.73	-594.95	15.46

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
425	SLU 5	-52	71	3642	-5.84	-595.27	17.69
425	SLU 6	-52	49	3641	-5.56	-594.89	12.12
425	SLU 7	-53	62	3679	-5.76	-600.94	15.52
425	SLU 8	-52	49	3617	-5.54	-591.18	12.08
425	SLU 9	-53	62	3655	-5.74	-597.23	15.48
425	SLU 10	-53	77	4026	-6.51	-656.6	19.26
425	SLU 11	-53	55	4026	-6.22	-656.23	13.69
425	SLU 12	-54	69	4064	-6.42	-662.28	17.09
425	SLU 13	-54	78	4065	-6.53	-662.6	19.32
425	SLU 14	-54	55	4064	-6.25	-662.22	13.75
425	SLU 15	-55	69	4102	-6.45	-668.27	17.15
425	SLU 16	-54	55	4040	-6.23	-658.51	13.71
425	SLU 17	-54	69	4078	-6.43	-664.56	17.11
425	SLU 18	-52	57	4145	-6.47	-675.38	14.3
425	SLU 19	-53	71	4183	-6.67	-681.43	17.7
425	SLU 20	-53	58	4183	-6.5	-681.37	14.35
425	SLU 21	-54	71	4221	-6.7	-687.42	17.75
425	SLU 22	-56	52	4021	-6.11	-655.12	12.99
425	SLU 23	-57	75	4084	-6.44	-665.2	18.66
425	SLU 24	-57	53	4083	-6.16	-664.83	13.09
425	SLU 25	-58	66	4121	-6.35	-670.88	16.49
425	SLU 26	-58	75	4123	-6.47	-671.2	18.72
425	SLU 27	-58	53	4122	-6.19	-670.82	13.14
425	SLU 28	-59	66	4160	-6.38	-676.87	16.54
425	SLU 29	-58	53	4098	-6.17	-667.11	13.11
425	SLU 30	-59	66	4136	-6.36	-673.16	16.51
425	SLU 31	-59	81	4507	-7.13	-732.53	20.29
425	SLU 32	-59	59	4507	-6.85	-732.16	14.72
425	SLU 33	-60	73	4544	-7.05	-738.21	18.12
425	SLU 34	-60	82	4546	-7.16	-738.53	20.34
425	SLU 35	-60	59	4545	-6.88	-738.15	14.77
425	SLU 36	-61	73	4583	-7.08	-744.2	18.17
425	SLU 37	-59	59	4521	-6.86	-734.44	14.73
425	SLU 38	-60	73	4559	-7.06	-740.49	18.13
425	SLU 39	-58	62	4626	-7.1	-751.31	15.32
425	SLU 40	-59	75	4663	-7.3	-757.36	18.72
425	SLU 41	-59	62	4664	-7.13	-757.3	15.38
425	SLU 42	-60	75	4702	-7.33	-763.35	18.78
425	SLU 43	-63	61	4438	-6.91	-726.92	15.21
425	SLU 44	-64	84	4501	-7.24	-737	20.87
425	SLU 45	-64	62	4500	-6.96	-736.62	15.3
425	SLU 46	-65	75	4538	-7.16	-742.67	18.7
425	SLU 47	-65	84	4539	-7.27	-742.99	20.93
425	SLU 48	-65	62	4538	-6.99	-742.62	15.36
425	SLU 49	-66	75	4576	-7.19	-748.67	18.76
425	SLU 50	-65	62	4515	-6.97	-738.91	15.32
425	SLU 51	-66	75	4552	-7.17	-744.96	18.72
425	SLU 52	-66	90	4924	-7.93	-804.33	22.5
425	SLU 53	-66	68	4923	-7.65	-803.95	16.93
425	SLU 54	-67	82	4961	-7.85	-810	20.33
425	SLU 55	-67	91	4962	-7.96	-810.32	22.56
425	SLU 56	-67	68	4962	-7.68	-809.95	16.99
425	SLU 57	-68	82	4999	-7.88	-816	20.38
425	SLU 58	-66	68	4938	-7.66	-806.24	16.95
425	SLU 59	-67	82	4975	-7.86	-812.29	20.35
425	SLU 60	-65	70	5042	-7.9	-823.1	17.54
425	SLU 61	-66	84	5080	-8.1	-829.15	20.93
425	SLU 62	-66	71	5081	-7.93	-829.1	17.59
425	SLU 63	-67	84	5118	-8.13	-835.15	20.99
425	SLU 64	-69	65	4918	-7.54	-802.84	16.23
425	SLU 65	-70	88	4981	-7.87	-812.93	21.9
425	SLU 66	-70	66	4981	-7.59	-812.55	16.33
425	SLU 67	-71	79	5018	-7.78	-818.6	19.73
425	SLU 68	-71	88	5020	-7.9	-818.92	21.96
425	SLU 69	-71	66	5019	-7.62	-818.55	16.38
425	SLU 70	-72	80	5057	-7.81	-824.6	19.78
425	SLU 71	-71	66	4995	-7.6	-814.84	16.34
425	SLU 72	-72	79	5033	-7.79	-820.88	19.74
425	SLU 73	-72	95	5405	-8.56	-880.26	23.53
425	SLU 74	-72	72	5404	-8.28	-879.88	17.96
425	SLU 75	-73	86	5442	-8.48	-885.93	21.35
425	SLU 76	-73	95	5443	-8.59	-886.25	23.58
425	SLU 77	-73	72	5442	-8.31	-885.88	18.01
425	SLU 78	-74	86	5480	-8.51	-891.93	21.41
425	SLU 79	-72	72	5419	-8.29	-882.17	17.97
425	SLU 80	-73	86	5456	-8.49	-888.22	21.37
425	SLU 81	-71	75	5523	-8.53	-899.03	18.56
425	SLU 82	-72	88	5561	-8.73	-905.08	21.96
425	SLU 83	-72	75	5561	-8.56	-905.03	18.62
425	SLU 84	-73	88	5599	-8.75	-911.08	22.02
425	SLE RA 1	-52	49	3678	-5.66	-600.89	12.26
425	SLE RA 2	-52	64	3720	-5.88	-607.61	16.04
425	SLE RA 3	-53	50	3719	-5.69	-607.36	12.32
425	SLE RA 4	-53	59	3744	-5.83	-611.39	14.59
425	SLE RA 5	-53	65	3745	-5.9	-611.6	16.08
425	SLE RA 6	-53	50	3745	-5.71	-611.35	12.36
425	SLE RA 7	-54	59	3770	-5.84	-615.39	14.63
425	SLE RA 8	-53	50	3729	-5.7	-608.88	12.34
425	SLE RA 9	-54	59	3754	-5.83	-612.91	14.6

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
425	SLE RA 10	-53	69	4002	-6.34	-652.49	17.13
425	SLE RA 11	-54	54	4001	-6.16	-652.24	13.41
425	SLE RA 12	-54	63	4027	-6.29	-656.28	15.68
425	SLE RA 13	-54	69	4027	-6.36	-656.49	17.16
425	SLE RA 14	-54	54	4027	-6.17	-656.24	13.45
425	SLE RA 15	-55	63	4052	-6.31	-660.27	15.71
425	SLE RA 16	-54	54	4011	-6.16	-653.77	13.42
425	SLE RA 17	-54	63	4036	-6.29	-657.8	15.69
425	SLE RA 18	-53	55	4081	-6.32	-665.01	13.81
425	SLE RA 19	-54	65	4106	-6.45	-669.04	16.08
425	SLE RA 20	-54	56	4106	-6.34	-669.01	13.85
425	SLE RA 21	-54	65	4132	-6.47	-673.04	16.12
425	SLE FR 1	-52	49	3678	-5.66	-600.89	12.26
425	SLE FR 2	-52	52	3686	-5.7	-602.23	13.02
425	SLE FR 3	-52	49	3688	-5.67	-602.48	12.28
425	SLE FR 4	-52	54	3807	-5.9	-621.47	13.48
425	SLE FR 5	-52	51	3809	-5.87	-621.72	12.74
425	SLE FR 6	-52	52	3879	-5.99	-632.95	13.04
425	SLE QP 1	-52	49	3678	-5.66	-600.89	12.26
425	SLE QP 2	-52	51	3799	-5.86	-620.12	12.73
425	SLD 1	250	270	5404	-10.44	-869.96	67.01
425	SLD 2	303	152	5317	-9.97	-855.97	37.87
425	SLD 3	272	11	4501	-5.51	-721.62	2.37
425	SLD 4	326	-107	4415	-5.04	-707.63	-26.77
425	SLD 5	-6	531	5664	-14.8	-922.58	132.29
425	SLD 6	30	454	5607	-14.49	-913.35	113.06
425	SLD 7	70	-333	2657	1.64	-428.1	-83.17
425	SLD 8	105	-411	2600	1.95	-418.87	-102.4
425	SLD 9	-210	513	4998	-13.67	-821.37	127.86
425	SLD 10	-174	436	4940	-13.36	-812.14	108.63
425	SLD 11	-134	-351	1991	2.77	-326.9	-87.61
425	SLD 12	-99	-429	1933	3.08	-317.67	-106.83
425	SLD 13	-430	209	3183	-6.67	-532.61	52.23
425	SLD 14	-377	92	3096	-6.21	-518.62	23.08
425	SLD 15	-408	-50	2281	-1.74	-384.27	-12.41
425	SLD 16	-354	-168	2194	-1.28	-370.28	-41.55
425	SLV 1	652	583	7629	-16.99	-1217.01	144.6
425	SLV 2	778	306	7424	-15.89	-1184.12	76.09
425	SLV 3	708	-61	5370	-4.64	-845.62	-15.93
425	SLV 4	834	-338	5166	-3.54	-812.73	-84.43
425	SLV 5	51	1239	8411	-28.13	-1368.6	308.54
425	SLV 6	136	1053	8274	-27.39	-1346.46	262.42
425	SLV 7	236	-908	883	13.02	-130.63	-226.55
425	SLV 8	321	-1094	745	13.76	-108.49	-272.67
425	SLV 9	-426	1196	6852	-25.48	-1131.75	298.13
425	SLV 10	-341	1010	6714	-24.74	-1109.61	252
425	SLV 11	-241	-951	-676	15.67	106.21	-236.96
425	SLV 12	-156	-1137	-814	16.41	128.36	-283.08
425	SLV 13	-938	440	2431	-8.17	-427.51	109.89
425	SLV 14	-812	164	2227	-7.07	-394.63	41.39
425	SLV 15	-883	-204	173	4.17	-56.12	-50.64
425	SLV 16	-757	-480	-31	5.27	-23.24	-119.14
425	CRTFP Ux+	0	0	0	0	0	0
425	CRTFP Ux-	0	0	0	0	0	0
425	CRTFP Uy+	0	0	0	0	0	0
425	CRTFP Uy-	0	0	0	0	0	0
428	SLU 1	-85	-76	7007	-4.69	-36.46	-2.31
428	SLU 2	-86	-46	7123	-5.21	-36.43	-2.33
428	SLU 3	-87	-78	7131	-4.64	-37.21	-2.36
428	SLU 4	-88	-60	7201	-4.96	-37.19	-2.38
428	SLU 5	-88	-47	7201	-5.18	-36.91	-2.37
428	SLU 6	-89	-79	7209	-4.61	-37.69	-2.4
428	SLU 7	-90	-61	7279	-4.92	-37.67	-2.42
428	SLU 8	-88	-78	7162	-4.62	-37.43	-2.38
428	SLU 9	-89	-60	7232	-4.93	-37.41	-2.4
428	SLU 10	-89	-53	8015	-5.8	-42.45	-2.51
428	SLU 11	-90	-85	8023	-5.23	-43.23	-2.54
428	SLU 12	-91	-67	8093	-5.54	-43.21	-2.56
428	SLU 13	-91	-54	8093	-5.76	-42.93	-2.55
428	SLU 14	-92	-86	8101	-5.2	-43.72	-2.58
428	SLU 15	-93	-68	8171	-5.51	-43.7	-2.59
428	SLU 16	-91	-85	8054	-5.21	-43.45	-2.56
428	SLU 17	-92	-67	8124	-5.52	-43.43	-2.58
428	SLU 18	-88	-87	8281	-5.53	-45.07	-2.56
428	SLU 19	-90	-68	8351	-5.84	-45.05	-2.58
428	SLU 20	-90	-88	8358	-5.5	-45.55	-2.6
428	SLU 21	-91	-69	8428	-5.81	-45.53	-2.61
428	SLU 22	-96	-85	7984	-4.93	-42.13	-2.61
428	SLU 23	-97	-55	8101	-5.45	-42.09	-2.63
428	SLU 24	-98	-87	8109	-4.89	-42.87	-2.66
428	SLU 25	-99	-69	8179	-5.2	-42.85	-2.68
428	SLU 26	-99	-56	8179	-5.42	-42.57	-2.67
428	SLU 27	-100	-88	8187	-4.85	-43.36	-2.7
428	SLU 28	-101	-69	8257	-5.16	-43.34	-2.72
428	SLU 29	-99	-87	8140	-4.86	-43.09	-2.69
428	SLU 30	-100	-69	8210	-5.18	-43.07	-2.7
428	SLU 31	-100	-62	8993	-6.04	-48.11	-2.81
428	SLU 32	-101	-94	9001	-5.48	-48.9	-2.84
428	SLU 33	-102	-76	9071	-5.79	-48.88	-2.86

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
428	SLU 34	-102	-63	9071	-6.01	-48.6	-2.85
428	SLU 35	-103	-95	9078	-5.44	-49.38	-2.88
428	SLU 36	-104	-77	9148	-5.75	-49.36	-2.89
428	SLU 37	-102	-94	9031	-5.45	-49.11	-2.86
428	SLU 38	-103	-76	9101	-5.77	-49.09	-2.88
428	SLU 39	-99	-95	9258	-5.77	-50.73	-2.86
428	SLU 40	-101	-77	9328	-6.09	-50.71	-2.88
428	SLU 41	-101	-96	9336	-5.74	-51.21	-2.9
428	SLU 42	-102	-78	9406	-6.05	-51.19	-2.92
428	SLU 43	-106	-96	8773	-6.01	-45.46	-2.9
428	SLU 44	-108	-66	8890	-6.53	-45.43	-2.92
428	SLU 45	-109	-98	8898	-5.97	-46.21	-2.95
428	SLU 46	-110	-80	8968	-6.28	-46.19	-2.97
428	SLU 47	-110	-67	8968	-6.5	-45.91	-2.96
428	SLU 48	-110	-99	8976	-5.93	-46.69	-2.99
428	SLU 49	-112	-81	9046	-6.24	-46.67	-3
428	SLU 50	-110	-98	8929	-5.94	-46.43	-2.97
428	SLU 51	-111	-80	8999	-6.26	-46.41	-2.99
428	SLU 52	-111	-73	9782	-7.12	-51.45	-3.1
428	SLU 53	-111	-105	9790	-6.56	-52.23	-3.13
428	SLU 54	-113	-87	9860	-6.87	-52.21	-3.14
428	SLU 55	-113	-74	9860	-7.09	-51.93	-3.14
428	SLU 56	-113	-106	9868	-6.52	-52.71	-3.17
428	SLU 57	-114	-88	9938	-6.83	-52.69	-3.18
428	SLU 58	-112	-105	9821	-6.53	-52.45	-3.15
428	SLU 59	-114	-87	9891	-6.85	-52.43	-3.17
428	SLU 60	-110	-107	10048	-6.85	-54.06	-3.15
428	SLU 61	-111	-88	10118	-7.17	-54.04	-3.16
428	SLU 62	-112	-108	10125	-6.82	-54.55	-3.19
428	SLU 63	-113	-89	10195	-7.13	-54.53	-3.2
428	SLU 64	-117	-105	9751	-6.26	-51.12	-3.2
428	SLU 65	-119	-75	9868	-6.78	-51.09	-3.22
428	SLU 66	-120	-107	9876	-6.21	-51.87	-3.25
428	SLU 67	-121	-88	9946	-6.52	-51.85	-3.27
428	SLU 68	-121	-76	9946	-6.74	-51.57	-3.26
428	SLU 69	-121	-108	9953	-6.18	-52.35	-3.29
428	SLU 70	-123	-89	10023	-6.49	-52.33	-3.31
428	SLU 71	-121	-107	9906	-6.19	-52.09	-3.27
428	SLU 72	-122	-89	9976	-6.5	-52.07	-3.29
428	SLU 73	-122	-82	10760	-7.37	-57.11	-3.4
428	SLU 74	-122	-114	10768	-6.8	-57.89	-3.43
428	SLU 75	-124	-96	10838	-7.11	-57.87	-3.45
428	SLU 76	-124	-83	10837	-7.33	-57.59	-3.44
428	SLU 77	-124	-115	10845	-6.76	-58.38	-3.47
428	SLU 78	-125	-97	10915	-7.08	-58.36	-3.48
428	SLU 79	-123	-114	10798	-6.78	-58.11	-3.45
428	SLU 80	-125	-96	10868	-7.09	-58.09	-3.47
428	SLU 81	-121	-115	11025	-7.1	-59.73	-3.45
428	SLU 82	-122	-97	11095	-7.41	-59.71	-3.47
428	SLU 83	-123	-116	11103	-7.06	-60.21	-3.49
428	SLU 84	-124	-98	11173	-7.38	-60.19	-3.5
428	SLE RA 1	-88	-79	7286	-4.76	-38.08	-2.39
428	SLE RA 2	-89	-59	7364	-5.11	-38.06	-2.41
428	SLE RA 3	-89	-80	7369	-4.73	-38.58	-2.43
428	SLE RA 4	-90	-68	7416	-4.94	-38.57	-2.44
428	SLE RA 5	-90	-59	7416	-5.08	-38.38	-2.44
428	SLE RA 6	-91	-81	7421	-4.71	-38.9	-2.46
428	SLE RA 7	-91	-68	7468	-4.91	-38.89	-2.47
428	SLE RA 8	-90	-80	7389	-4.71	-38.72	-2.44
428	SLE RA 9	-91	-68	7436	-4.92	-38.71	-2.45
428	SLE RA 10	-91	-64	7958	-5.5	-42.07	-2.53
428	SLE RA 11	-91	-85	7964	-5.12	-42.59	-2.55
428	SLE RA 12	-92	-73	8010	-5.33	-42.58	-2.56
428	SLE RA 13	-92	-64	8010	-5.48	-42.39	-2.55
428	SLE RA 14	-92	-85	8015	-5.1	-42.92	-2.57
428	SLE RA 15	-93	-73	8062	-5.31	-42.9	-2.58
428	SLE RA 16	-92	-85	7984	-5.11	-42.74	-2.56
428	SLE RA 17	-93	-73	8031	-5.31	-42.73	-2.57
428	SLE RA 18	-90	-86	8135	-5.32	-43.82	-2.56
428	SLE RA 19	-91	-74	8182	-5.53	-43.8	-2.57
428	SLE RA 20	-91	-86	8187	-5.3	-44.14	-2.59
428	SLE RA 21	-92	-74	8234	-5.51	-44.12	-2.6
428	SLE FR 1	-88	-79	7286	-4.76	-38.08	-2.39
428	SLE FR 2	-88	-75	7302	-4.83	-38.08	-2.4
428	SLE FR 3	-88	-79	7307	-4.75	-38.21	-2.4
428	SLE FR 4	-89	-77	7556	-5	-39.8	-2.45
428	SLE FR 5	-89	-81	7561	-4.92	-39.93	-2.45
428	SLE FR 6	-89	-82	7711	-5.04	-40.95	-2.48
428	SLE QP 1	-88	-79	7286	-4.76	-38.08	-2.39
428	SLE QP 2	-88	-81	7541	-4.93	-39.8	-2.44
428	SLD 1	535	89	9158	-9.56	-14.88	-2.07
428	SLD 2	648	4	9060	-9.16	-16.47	0.1
428	SLD 3	581	-271	7528	-1.98	-17.82	-0.88
428	SLD 4	693	-356	7430	-1.58	-19.41	1.29
428	SLD 5	9	532	10516	-17.89	-27.57	-4.52
428	SLD 6	84	475	10452	-17.62	-28.62	-3.1
428	SLD 7	161	-669	5082	7.39	-37.39	-0.56
428	SLD 8	235	-725	5017	7.65	-38.44	0.87
428	SLD 9	-412	563	10064	-17.5	-41.17	-5.76

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
428	SLD 10	-338	507	10000	-17.24	-42.21	-4.33
428	SLD 11	-260	-638	4630	7.77	-50.98	-1.79
428	SLD 12	-186	-694	4565	8.03	-52.03	-0.36
428	SLD 13	-870	194	7652	-8.28	-60.19	-6.18
428	SLD 14	-758	109	7554	-7.88	-61.78	-4.01
428	SLD 15	-824	-166	6021	-0.7	-63.14	-4.99
428	SLD 16	-712	-252	5923	-0.3	-64.73	-2.82
428	SLV 1	1367	345	11461	-16.38	18.69	-1.65
428	SLV 2	1632	144	11230	-15.45	14.96	3.45
428	SLV 3	1479	-551	7377	2.6	11.48	1.28
428	SLV 4	1743	-752	7147	3.54	7.74	6.37
428	SLV 5	130	1444	14953	-37.33	-10.61	-7.59
428	SLV 6	308	1308	14798	-36.71	-13.13	-4.16
428	SLV 7	501	-1544	1342	25.95	-34.67	2.16
428	SLV 8	679	-1679	1186	26.58	-37.18	5.59
428	SLV 9	-856	1517	13895	-36.44	-42.42	-10.48
428	SLV 10	-678	1382	13740	-35.81	-44.94	-7.05
428	SLV 11	-485	-1470	284	26.85	-66.48	-0.73
428	SLV 12	-307	-1606	128	27.48	-68.99	2.7
428	SLV 13	-1920	590	7935	-13.39	-87.34	-11.26
428	SLV 14	-1655	389	7704	-12.46	-91.08	-6.17
428	SLV 15	-1809	-306	3851	5.6	-94.56	-8.33
428	SLV 16	-1544	-507	3621	6.53	-98.3	-3.24
428	CRTFP Ux+	0	0	0	0	0	0
428	CRTFP Ux-	0	0	0	0	0	0
428	CRTFP Uy+	0	0	0	0	0	0
428	CRTFP Uy-	0	0	0	0	0	0
431	SLU 1	42	-48	6922	-5.29	47.91	1.19
431	SLU 2	46	-16	7041	-5.85	47.71	1.22
431	SLU 3	42	-48	7044	-5.25	48.86	1.2
431	SLU 4	44	-30	7115	-5.59	48.74	1.22
431	SLU 5	45	-17	7117	-5.81	48.31	1.22
431	SLU 6	42	-49	7120	-5.22	49.46	1.2
431	SLU 7	44	-30	7191	-5.55	49.34	1.22
431	SLU 8	42	-49	7074	-5.22	49.11	1.19
431	SLU 9	44	-30	7145	-5.55	48.99	1.21
431	SLU 10	45	-19	7912	-6.52	55.1	1.3
431	SLU 11	42	-51	7915	-5.92	56.25	1.29
431	SLU 12	44	-33	7987	-6.26	56.13	1.3
431	SLU 13	45	-20	7988	-6.48	55.7	1.3
431	SLU 14	42	-52	7991	-5.88	56.85	1.29
431	SLU 15	44	-33	8063	-6.22	56.73	1.3
431	SLU 16	41	-52	7945	-5.89	56.5	1.28
431	SLU 17	43	-33	8017	-6.22	56.38	1.29
431	SLU 18	42	-52	8167	-6.25	58.46	1.31
431	SLU 19	44	-33	8238	-6.58	58.35	1.33
431	SLU 20	41	-52	8243	-6.21	59.06	1.31
431	SLU 21	43	-34	8314	-6.54	58.95	1.33
431	SLU 22	46	-52	7875	-5.63	54.89	1.33
431	SLU 23	50	-21	7994	-6.18	54.69	1.35
431	SLU 24	46	-53	7997	-5.59	55.84	1.34
431	SLU 25	48	-34	8069	-5.92	55.72	1.35
431	SLU 26	49	-21	8070	-6.14	55.29	1.35
431	SLU 27	46	-53	8073	-5.55	56.44	1.34
431	SLU 28	48	-35	8145	-5.88	56.32	1.35
431	SLU 29	46	-53	8027	-5.55	56.09	1.33
431	SLU 30	48	-34	8099	-5.88	55.97	1.34
431	SLU 31	49	-24	8866	-6.85	62.08	1.44
431	SLU 32	46	-56	8869	-6.26	63.23	1.42
431	SLU 33	48	-37	8940	-6.59	63.11	1.44
431	SLU 34	49	-24	8942	-6.81	62.68	1.44
431	SLU 35	46	-56	8945	-6.22	63.83	1.42
431	SLU 36	48	-38	9016	-6.55	63.71	1.44
431	SLU 37	45	-56	8899	-6.22	63.48	1.41
431	SLU 38	47	-37	8970	-6.55	63.36	1.43
431	SLU 39	46	-56	9120	-6.58	65.44	1.45
431	SLU 40	48	-37	9192	-6.91	65.33	1.47
431	SLU 41	45	-57	9196	-6.54	66.04	1.45
431	SLU 42	48	-38	9268	-6.88	65.93	1.47
431	SLU 43	53	-60	8672	-6.77	59.89	1.51
431	SLU 44	57	-29	8791	-7.32	59.69	1.53
431	SLU 45	53	-61	8794	-6.73	60.84	1.51
431	SLU 46	56	-43	8865	-7.06	60.72	1.53
431	SLU 47	57	-30	8867	-7.28	60.29	1.53
431	SLU 48	53	-62	8870	-6.69	61.44	1.51
431	SLU 49	55	-43	8941	-7.02	61.32	1.53
431	SLU 50	53	-61	8824	-6.69	61.09	1.5
431	SLU 51	55	-43	8895	-7.02	60.97	1.52
431	SLU 52	57	-32	9662	-7.99	67.08	1.61
431	SLU 53	53	-64	9665	-7.4	68.23	1.6
431	SLU 54	55	-45	9737	-7.73	68.11	1.61
431	SLU 55	56	-33	9738	-7.95	67.68	1.61
431	SLU 56	53	-65	9741	-7.36	68.83	1.6
431	SLU 57	55	-46	9813	-7.69	68.71	1.61
431	SLU 58	52	-64	9695	-7.36	68.48	1.59
431	SLU 59	55	-46	9766	-7.69	68.36	1.6
431	SLU 60	53	-64	9917	-7.73	70.44	1.63
431	SLU 61	55	-46	9988	-8.06	70.33	1.64
431	SLU 62	53	-65	9993	-7.69	71.04	1.63

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
431	SLU 63	55	-46	10064	-8.02	70.93	1.64
431	SLU 64	57	-65	9625	-7.1	66.87	1.64
431	SLU 65	61	-34	9744	-7.66	66.67	1.67
431	SLU 66	57	-66	9747	-7.06	67.82	1.65
431	SLU 67	60	-47	9819	-7.39	67.7	1.66
431	SLU 68	61	-34	9820	-7.62	67.27	1.67
431	SLU 69	57	-66	9823	-7.02	68.42	1.65
431	SLU 70	59	-47	9895	-7.35	68.3	1.66
431	SLU 71	57	-66	9777	-7.02	68.07	1.64
431	SLU 72	59	-47	9848	-7.36	67.95	1.66
431	SLU 73	61	-37	10616	-8.32	74.06	1.75
431	SLU 74	57	-69	10619	-7.73	75.21	1.73
431	SLU 75	59	-50	10690	-8.06	75.09	1.75
431	SLU 76	60	-37	10692	-8.29	74.66	1.75
431	SLU 77	57	-69	10695	-7.69	75.81	1.73
431	SLU 78	59	-50	10766	-8.02	75.69	1.75
431	SLU 79	56	-69	10648	-7.69	75.46	1.73
431	SLU 80	59	-50	10720	-8.02	75.34	1.74
431	SLU 81	57	-69	10870	-8.06	77.42	1.76
431	SLU 82	59	-50	10941	-8.39	77.31	1.78
431	SLU 83	57	-69	10946	-8.02	78.02	1.76
431	SLU 84	59	-51	11017	-8.35	77.91	1.78
431	SLE RA 1	43	-49	7194	-5.39	49.9	1.23
431	SLE RA 2	46	-28	7274	-5.76	49.77	1.25
431	SLE RA 3	43	-49	7276	-5.36	50.54	1.24
431	SLE RA 4	45	-37	7323	-5.58	50.46	1.25
431	SLE RA 5	45	-28	7324	-5.73	50.17	1.25
431	SLE RA 6	43	-50	7326	-5.34	50.94	1.24
431	SLE RA 7	45	-37	7374	-5.56	50.86	1.25
431	SLE RA 8	43	-50	7296	-5.34	50.7	1.23
431	SLE RA 9	44	-37	7343	-5.56	50.63	1.24
431	SLE RA 10	45	-30	7855	-6.21	54.7	1.31
431	SLE RA 11	43	-51	7857	-5.81	55.46	1.3
431	SLE RA 12	45	-39	7904	-6.03	55.38	1.3
431	SLE RA 13	45	-30	7905	-6.18	55.1	1.3
431	SLE RA 14	43	-52	7907	-5.78	55.86	1.29
431	SLE RA 15	44	-39	7955	-6	55.79	1.3
431	SLE RA 16	43	-51	7877	-5.78	55.63	1.29
431	SLE RA 17	44	-39	7924	-6.01	55.55	1.3
431	SLE RA 18	43	-52	8024	-6.03	56.94	1.31
431	SLE RA 19	44	-39	8072	-6.25	56.86	1.32
431	SLE RA 20	43	-52	8075	-6	57.34	1.31
431	SLE RA 21	44	-40	8123	-6.22	57.26	1.32
431	SLE FR 1	43	-49	7194	-5.39	49.9	1.23
431	SLE FR 2	44	-45	7210	-5.46	49.88	1.24
431	SLE FR 3	43	-49	7215	-5.38	50.06	1.23
431	SLE FR 4	44	-46	7459	-5.65	51.99	1.26
431	SLE FR 5	43	-50	7464	-5.57	52.17	1.26
431	SLE FR 6	43	-50	7609	-5.71	53.42	1.27
431	SLE QP 1	43	-49	7194	-5.39	49.9	1.23
431	SLE QP 2	43	-50	7443	-5.58	52.01	1.26
431	SLD 1	746	146	7509	-8.38	63.75	3.42
431	SLD 2	862	235	7611	-8.84	62.13	5.48
431	SLD 3	684	-224	5840	-0.36	68.67	2.36
431	SLD 4	799	-135	5943	-0.82	67.05	4.42
431	SLD 5	327	554	9975	-18.5	48.37	3.14
431	SLD 6	404	612	10043	-18.8	47.3	4.5
431	SLD 7	120	-679	4413	8.23	64.76	-0.39
431	SLD 8	197	-620	4481	7.93	63.69	0.97
431	SLD 9	-110	521	10406	-19.09	40.33	1.55
431	SLD 10	-34	579	10474	-19.39	39.26	2.91
431	SLD 11	-317	-712	4844	7.64	56.73	-1.99
431	SLD 12	-241	-653	4911	7.34	55.66	-0.63
431	SLD 13	-713	36	8944	-10.34	36.97	-1.9
431	SLD 14	-597	124	9047	-10.8	35.35	0.16
431	SLD 15	-775	-334	7275	-2.32	41.89	-2.96
431	SLD 16	-660	-245	7378	-2.78	40.27	-0.9
431	SLV 1	1693	437	7735	-12.8	79.11	6.41
431	SLV 2	1965	645	7977	-13.87	75.3	11.25
431	SLV 3	1535	-486	3551	7.31	91.38	3.71
431	SLV 4	1807	-278	3792	6.23	87.58	8.56
431	SLV 5	727	1458	13832	-38.04	42.24	5.98
431	SLV 6	910	1598	13994	-38.77	39.67	9.25
431	SLV 7	200	-1620	-116	28.98	83.15	-3
431	SLV 8	384	-1480	47	28.26	80.59	0.27
431	SLV 9	-297	1380	14840	-39.42	23.44	2.25
431	SLV 10	-114	1521	15002	-40.14	20.87	5.51
431	SLV 11	-823	-1697	892	27.6	64.36	-6.73
431	SLV 12	-640	-1557	1055	26.88	61.79	-3.47
431	SLV 13	-1721	179	11094	-17.4	16.45	-6.04
431	SLV 14	-1449	387	11336	-18.47	12.64	-1.2
431	SLV 15	-1878	-744	6910	2.71	28.73	-8.74
431	SLV 16	-1606	-536	7152	1.64	24.92	-3.89
431	CRTFP Ux+	0	0	0	0	0	0
431	CRTFP Ux-	0	0	0	0	0	0
431	CRTFP Uy+	0	0	0	0	0	0
431	CRTFP Uy-	0	0	0	0	0	0
434	SLU 1	34	26	4010	-6.3	979.49	-9.03
434	SLU 2	36	50	4087	-6.73	997.54	-17.22

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
434	SLU 3	34	27	4082	-6.34	996.08	-9.3
434	SLU 4	36	41	4128	-6.6	1006.91	-14.21
434	SLU 5	36	51	4131	-6.75	1007.74	-17.56
434	SLU 6	34	28	4126	-6.35	1006.28	-9.64
434	SLU 7	36	42	4172	-6.61	1017.11	-14.55
434	SLU 8	34	28	4099	-6.33	999.89	-9.71
434	SLU 9	35	42	4145	-6.59	1010.72	-14.62
434	SLU 10	36	53	4564	-7.54	1110.98	-18.35
434	SLU 11	34	30	4559	-7.14	1109.52	-10.43
434	SLU 12	35	44	4605	-7.41	1120.35	-15.34
434	SLU 13	36	54	4609	-7.55	1121.18	-18.69
434	SLU 14	34	31	4604	-7.16	1119.72	-10.76
434	SLU 15	35	45	4650	-7.42	1130.55	-15.68
434	SLU 16	33	31	4576	-7.13	1113.33	-10.84
434	SLU 17	35	45	4622	-7.39	1124.16	-15.75
434	SLU 18	33	31	4692	-7.45	1141.55	-10.65
434	SLU 19	35	45	4738	-7.71	1152.38	-15.56
434	SLU 20	33	32	4737	-7.46	1151.75	-10.98
434	SLU 21	35	46	4783	-7.72	1162.58	-15.9
434	SLU 22	36	27	4549	-7	1106.63	-9.36
434	SLU 23	39	51	4626	-7.44	1124.68	-17.55
434	SLU 24	37	28	4621	-7.04	1123.22	-9.63
434	SLU 25	38	42	4667	-7.3	1134.05	-14.54
434	SLU 26	39	52	4670	-7.45	1134.88	-17.89
434	SLU 27	37	29	4665	-7.05	1133.42	-9.96
434	SLU 28	38	43	4711	-7.32	1144.25	-14.88
434	SLU 29	36	29	4638	-7.03	1127.03	-10.03
434	SLU 30	38	43	4684	-7.29	1137.86	-14.95
434	SLU 31	39	54	5103	-8.24	1238.12	-18.68
434	SLU 32	37	31	5098	-7.85	1236.66	-10.76
434	SLU 33	38	45	5144	-8.11	1247.48	-15.67
434	SLU 34	39	55	5148	-8.26	1248.32	-19.02
434	SLU 35	37	32	5143	-7.86	1246.86	-11.09
434	SLU 36	38	46	5189	-8.12	1257.68	-16.01
434	SLU 37	36	32	5115	-7.83	1240.47	-11.16
434	SLU 38	38	46	5161	-8.1	1251.3	-16.08
434	SLU 39	36	32	5231	-8.15	1268.68	-10.97
434	SLU 40	38	46	5277	-8.41	1279.51	-15.89
434	SLU 41	36	33	5276	-8.16	1278.88	-11.31
434	SLU 42	38	47	5322	-8.43	1289.71	-16.22
434	SLU 43	43	34	5028	-7.94	1229.75	-11.63
434	SLU 44	45	57	5105	-8.38	1247.8	-19.82
434	SLU 45	43	34	5100	-7.99	1246.34	-11.9
434	SLU 46	45	49	5146	-8.25	1257.17	-16.81
434	SLU 47	45	58	5149	-8.4	1258	-20.16
434	SLU 48	43	35	5144	-8	1256.54	-12.23
434	SLU 49	45	49	5190	-8.26	1267.37	-17.15
434	SLU 50	43	36	5117	-7.97	1250.15	-12.3
434	SLU 51	44	50	5163	-8.24	1260.98	-17.22
434	SLU 52	45	60	5583	-9.19	1361.24	-20.95
434	SLU 53	43	38	5578	-8.79	1359.78	-13.03
434	SLU 54	44	52	5624	-9.05	1370.61	-17.94
434	SLU 55	45	61	5627	-9.2	1371.44	-21.29
434	SLU 56	43	39	5622	-8.81	1369.98	-13.36
434	SLU 57	44	53	5668	-9.07	1380.81	-18.28
434	SLU 58	43	39	5594	-8.78	1363.59	-13.43
434	SLU 59	44	53	5640	-9.04	1374.42	-18.35
434	SLU 60	42	38	5711	-9.09	1391.81	-13.24
434	SLU 61	44	52	5757	-9.36	1402.64	-18.16
434	SLU 62	42	39	5755	-9.11	1402.01	-13.58
434	SLU 63	44	53	5801	-9.37	1412.84	-18.49
434	SLU 64	45	35	5567	-8.65	1356.89	-11.96
434	SLU 65	48	58	5644	-9.08	1374.94	-20.15
434	SLU 66	46	35	5639	-8.69	1373.48	-12.22
434	SLU 67	47	49	5685	-8.95	1384.3	-17.14
434	SLU 68	48	59	5688	-9.1	1385.14	-20.48
434	SLU 69	46	36	5683	-8.7	1383.68	-12.56
434	SLU 70	47	50	5729	-8.97	1394.5	-17.47
434	SLU 71	46	37	5656	-8.68	1377.29	-12.63
434	SLU 72	47	51	5702	-8.94	1388.12	-17.55
434	SLU 73	48	61	6122	-9.89	1488.37	-21.28
434	SLU 74	46	39	6117	-9.49	1486.91	-13.35
434	SLU 75	47	53	6163	-9.76	1497.74	-18.27
434	SLU 76	48	62	6166	-9.9	1498.57	-21.61
434	SLU 77	46	40	6161	-9.51	1497.11	-13.69
434	SLU 78	47	54	6207	-9.77	1507.94	-18.6
434	SLU 79	45	40	6133	-9.48	1490.73	-13.76
434	SLU 80	47	54	6179	-9.74	1501.55	-18.68
434	SLU 81	45	39	6250	-9.8	1518.94	-13.57
434	SLU 82	47	53	6296	-10.06	1529.77	-18.49
434	SLU 83	45	40	6294	-9.81	1529.14	-13.91
434	SLU 84	47	54	6340	-10.07	1539.97	-18.82
434	SLE RA 1	34	26	4164	-6.5	1015.82	-9.13
434	SLE RA 2	36	42	4215	-6.79	1027.85	-14.59
434	SLE RA 3	35	27	4212	-6.52	1026.88	-9.3
434	SLE RA 4	36	36	4243	-6.7	1034.1	-12.58
434	SLE RA 5	36	43	4245	-6.8	1034.65	-14.81
434	SLE RA 6	35	28	4241	-6.53	1033.68	-9.53
434	SLE RA 7	36	37	4272	-6.71	1040.9	-12.8

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
434	SLE RA 8	34	28	4223	-6.52	1029.42	-9.58
434	SLE RA 9	35	37	4254	-6.69	1036.64	-12.85
434	SLE RA 10	36	44	4534	-7.33	1103.48	-15.34
434	SLE RA 11	35	29	4530	-7.06	1102.5	-10.06
434	SLE RA 12	36	39	4561	-7.24	1109.72	-13.33
434	SLE RA 13	36	45	4563	-7.34	1110.28	-15.56
434	SLE RA 14	35	30	4560	-7.07	1109.3	-10.28
434	SLE RA 15	36	39	4591	-7.25	1116.52	-13.56
434	SLE RA 16	34	30	4541	-7.05	1105.04	-10.33
434	SLE RA 17	35	39	4572	-7.23	1112.26	-13.6
434	SLE RA 18	34	30	4619	-7.26	1123.85	-10.2
434	SLE RA 19	35	39	4650	-7.44	1131.07	-13.48
434	SLE RA 20	34	30	4648	-7.27	1130.65	-10.43
434	SLE RA 21	35	40	4679	-7.45	1137.87	-13.7
434	SLE FR 1	34	26	4164	-6.5	1015.82	-9.13
434	SLE FR 2	35	30	4174	-6.55	1018.22	-10.22
434	SLE FR 3	34	27	4176	-6.5	1018.54	-9.22
434	SLE FR 4	35	30	4311	-6.78	1050.63	-10.54
434	SLE FR 5	34	28	4312	-6.73	1050.95	-9.54
434	SLE FR 6	34	28	4392	-6.88	1069.84	-9.66
434	SLE QP 1	34	26	4164	-6.5	1015.82	-9.13
434	SLE QP 2	34	27	4301	-6.73	1048.23	-9.45
434	SLD 1	438	133	3563	-7.36	888.27	-46.08
434	SLD 2	503	259	3664	-7.99	912.61	-90.03
434	SLD 3	399	-137	2479	-1.01	626.09	48.05
434	SLD 4	464	-10	2580	-1.63	650.43	4.09
434	SLD 5	203	445	5706	-16.44	1393.5	-155.3
434	SLD 6	246	529	5772	-16.85	1409.56	-184.29
434	SLD 7	72	-454	2091	4.74	519.57	158.47
434	SLD 8	116	-370	2158	4.33	535.63	129.47
434	SLD 9	-47	425	6443	-17.78	1560.83	-148.37
434	SLD 10	-4	508	6510	-18.19	1576.89	-177.36
434	SLD 11	-178	-474	2829	3.4	686.9	165.39
434	SLD 12	-134	-391	2896	2.99	702.95	136.4
434	SLD 13	-396	65	6021	-11.82	1446.03	-22.99
434	SLD 14	-330	192	6122	-12.44	1470.37	-66.95
434	SLD 15	-435	-205	4937	-5.47	1183.85	71.14
434	SLD 16	-369	-78	5038	-6.09	1208.19	27.18
434	SLV 1	982	295	2664	-8.74	695.67	-102.47
434	SLV 2	1136	592	2902	-10.21	752.89	-205.78
434	SLV 3	882	-379	-55	7.19	38.16	132.66
434	SLV 4	1037	-82	183	5.73	95.38	29.35
434	SLV 5	440	1074	7889	-31.22	1929	-374.68
434	SLV 6	544	1274	8049	-32.21	1967.52	-444.24
434	SLV 7	109	-1172	-1174	21.89	-262.69	409.08
434	SLV 8	213	-972	-1014	20.9	-224.17	339.52
434	SLV 9	-144	1026	9615	-34.35	2320.63	-358.42
434	SLV 10	-40	1226	9775	-35.34	2359.15	-427.98
434	SLV 11	-476	-1219	552	18.76	128.93	425.35
434	SLV 12	-372	-1019	712	17.77	167.45	355.79
434	SLV 13	-968	136	8418	-19.18	2001.08	-48.25
434	SLV 14	-813	433	8656	-20.64	2058.29	-151.56
434	SLV 15	-1067	-537	5699	-3.25	1343.57	186.88
434	SLV 16	-913	-240	5937	-4.71	1400.79	83.57
434	CRTFP Ux+	0	0	0	0	0	0
434	CRTFP Ux-	0	0	0	0	0	0
434	CRTFP Uy+	0	0	0	0	0	0
434	CRTFP Uy-	0	0	0	0	0	0
437	SLU 1	26	-48	3397	-1.55	959.72	16.64
437	SLU 2	28	-30	3445	-1.8	972.38	10.43
437	SLU 3	26	-49	3456	-1.54	975.81	16.93
437	SLU 4	27	-38	3485	-1.69	983.4	13.2
437	SLU 5	28	-31	3481	-1.79	982.22	10.61
437	SLU 6	26	-49	3493	-1.53	985.65	17.11
437	SLU 7	27	-38	3522	-1.68	993.24	13.38
437	SLU 8	26	-49	3470	-1.54	979.41	17
437	SLU 9	27	-38	3499	-1.68	987	13.28
437	SLU 10	30	-36	3896	-2.02	1098.79	12.51
437	SLU 11	28	-55	3907	-1.77	1102.22	19
437	SLU 12	29	-44	3936	-1.92	1109.82	15.28
437	SLU 13	30	-37	3933	-2.02	1108.63	12.69
437	SLU 14	28	-55	3944	-1.76	1112.06	19.19
437	SLU 15	29	-44	3973	-1.91	1119.66	15.46
437	SLU 16	28	-55	3921	-1.77	1105.82	19.08
437	SLU 17	29	-44	3950	-1.91	1113.41	15.36
437	SLU 18	29	-56	4041	-1.88	1140.31	19.61
437	SLU 19	30	-46	4070	-2.03	1147.91	15.88
437	SLU 20	29	-57	4078	-1.87	1150.15	19.79
437	SLU 21	30	-46	4107	-2.02	1157.75	16.06
437	SLU 22	29	-54	3852	-1.66	1084.15	18.68
437	SLU 23	31	-36	3900	-1.9	1096.8	12.47
437	SLU 24	29	-54	3911	-1.64	1100.23	18.96
437	SLU 25	30	-44	3940	-1.79	1107.83	15.24
437	SLU 26	31	-36	3937	-1.89	1106.65	12.65
437	SLU 27	29	-55	3948	-1.64	1110.08	19.15
437	SLU 28	30	-44	3977	-1.78	1117.67	15.42
437	SLU 29	29	-55	3925	-1.64	1103.83	19.04
437	SLU 30	30	-44	3954	-1.78	1111.43	15.32
437	SLU 31	33	-42	4351	-2.13	1223.22	14.55

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
437	SLU 32	31	-60	4363	-1.87	1226.65	21.04
437	SLU 33	32	-50	4391	-2.02	1234.24	17.32
437	SLU 34	33	-42	4388	-2.12	1233.06	14.73
437	SLU 35	31	-61	4399	-1.87	1236.49	21.22
437	SLU 36	32	-50	4428	-2.01	1244.09	17.5
437	SLU 37	31	-61	4377	-1.87	1230.25	21.12
437	SLU 38	32	-50	4405	-2.01	1237.84	17.4
437	SLU 39	32	-62	4497	-1.98	1264.74	21.65
437	SLU 40	33	-52	4525	-2.13	1272.33	17.92
437	SLU 41	32	-63	4533	-1.98	1274.58	21.83
437	SLU 42	33	-52	4562	-2.12	1282.18	18.1
437	SLU 43	33	-60	4260	-1.99	1204.97	20.93
437	SLU 44	35	-42	4307	-2.23	1217.63	14.72
437	SLU 45	33	-61	4319	-1.97	1221.06	21.22
437	SLU 46	34	-50	4348	-2.12	1228.66	17.49
437	SLU 47	35	-43	4344	-2.22	1227.48	14.9
437	SLU 48	33	-61	4356	-1.97	1230.9	21.4
437	SLU 49	34	-51	4385	-2.11	1238.5	17.67
437	SLU 50	33	-61	4333	-1.97	1224.66	21.3
437	SLU 51	34	-50	4362	-2.11	1232.26	17.57
437	SLU 52	37	-48	4759	-2.46	1344.05	16.8
437	SLU 53	35	-67	4770	-2.2	1347.47	23.3
437	SLU 54	36	-56	4799	-2.35	1355.07	19.57
437	SLU 55	36	-49	4796	-2.45	1353.89	16.98
437	SLU 56	35	-67	4807	-2.2	1357.32	23.48
437	SLU 57	36	-57	4836	-2.34	1364.91	19.75
437	SLU 58	35	-67	4784	-2.2	1351.07	23.37
437	SLU 59	36	-56	4813	-2.34	1358.67	19.65
437	SLU 60	36	-69	4904	-2.31	1385.56	23.9
437	SLU 61	37	-58	4933	-2.46	1393.16	20.17
437	SLU 62	36	-69	4941	-2.31	1395.41	24.08
437	SLU 63	37	-59	4970	-2.45	1403	20.36
437	SLU 64	36	-66	4715	-2.09	1329.4	22.97
437	SLU 65	38	-48	4763	-2.33	1342.06	16.76
437	SLU 66	36	-67	4774	-2.08	1345.49	23.26
437	SLU 67	37	-56	4803	-2.22	1353.08	19.53
437	SLU 68	38	-49	4799	-2.32	1351.9	16.94
437	SLU 69	36	-67	4811	-2.07	1355.33	23.44
437	SLU 70	37	-57	4840	-2.21	1362.93	19.71
437	SLU 71	36	-67	4788	-2.07	1349.09	23.34
437	SLU 72	37	-56	4817	-2.21	1356.68	19.61
437	SLU 73	39	-54	5214	-2.56	1468.47	18.84
437	SLU 74	38	-73	5226	-2.31	1471.9	25.34
437	SLU 75	39	-62	5254	-2.45	1479.5	21.61
437	SLU 76	39	-55	5251	-2.55	1478.32	19.02
437	SLU 77	38	-73	5262	-2.3	1481.75	25.52
437	SLU 78	39	-63	5291	-2.44	1489.34	21.79
437	SLU 79	38	-73	5240	-2.3	1475.5	25.41
437	SLU 80	39	-62	5268	-2.44	1483.1	21.69
437	SLU 81	39	-75	5359	-2.42	1509.99	25.94
437	SLU 82	40	-64	5388	-2.56	1517.59	22.21
437	SLU 83	39	-75	5396	-2.41	1519.84	26.12
437	SLU 84	40	-64	5425	-2.55	1527.43	22.4
437	SLE RA 1	27	-49	3527	-1.58	995.27	17.22
437	SLE RA 2	28	-38	3559	-1.74	1003.71	13.08
437	SLE RA 3	27	-50	3566	-1.58	1005.99	17.41
437	SLE RA 4	28	-43	3586	-1.67	1011.06	14.93
437	SLE RA 5	28	-38	3583	-1.74	1010.27	13.2
437	SLE RA 6	27	-50	3591	-1.57	1012.56	17.53
437	SLE RA 7	28	-43	3610	-1.67	1017.62	15.05
437	SLE RA 8	27	-50	3576	-1.57	1008.39	17.47
437	SLE RA 9	28	-43	3595	-1.67	1013.46	14.98
437	SLE RA 10	29	-42	3860	-1.9	1087.98	14.47
437	SLE RA 11	28	-54	3867	-1.73	1090.27	18.8
437	SLE RA 12	29	-47	3886	-1.83	1095.33	16.31
437	SLE RA 13	29	-42	3884	-1.89	1094.55	14.59
437	SLE RA 14	28	-54	3892	-1.72	1096.83	18.92
437	SLE RA 15	29	-47	3911	-1.82	1101.9	16.44
437	SLE RA 16	28	-54	3877	-1.73	1092.67	18.85
437	SLE RA 17	29	-47	3896	-1.82	1097.73	16.37
437	SLE RA 18	29	-55	3957	-1.8	1115.66	19.2
437	SLE RA 19	29	-48	3976	-1.9	1120.73	16.72
437	SLE RA 20	29	-55	3981	-1.8	1122.23	19.32
437	SLE RA 21	29	-48	4000	-1.89	1127.29	16.84
437	SLE FR 1	27	-49	3527	-1.58	995.27	17.22
437	SLE FR 2	27	-47	3533	-1.62	996.96	16.39
437	SLE FR 3	27	-50	3536	-1.58	997.89	17.27
437	SLE FR 4	28	-49	3662	-1.68	1033.08	16.99
437	SLE FR 5	28	-51	3665	-1.65	1034.01	17.86
437	SLE FR 6	28	-52	3742	-1.69	1055.47	18.21
437	SLE QP 1	27	-49	3527	-1.58	995.27	17.22
437	SLE QP 2	28	-51	3656	-1.65	1031.39	17.82
437	SLD 1	371	66	4008	-3.07	1130.9	-22.99
437	SLD 2	424	69	4019	-3.11	1132.49	-23.84
437	SLD 3	342	-151	3372	0.14	963.95	53.08
437	SLD 4	395	-148	3384	0.1	965.53	52.23
437	SLD 5	165	313	4723	-6.94	1314.17	-109.64
437	SLD 6	200	315	4730	-6.96	1315.21	-110.2
437	SLD 7	68	-412	2605	3.76	757.66	143.92

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
437	SLD 8	103	-410	2613	3.73	758.7	143.36
437	SLD 9	-48	307	4699	-7.03	1304.07	-107.72
437	SLD 10	-13	309	4706	-7.06	1305.11	-108.29
437	SLD 11	-145	-418	2581	3.66	747.56	145.83
437	SLD 12	-110	-416	2588	3.64	748.61	145.27
437	SLD 13	-339	46	3927	-3.4	1097.24	-16.6
437	SLD 14	-286	49	3939	-3.43	1098.82	-17.45
437	SLD 15	-369	-171	3292	-0.19	930.29	59.47
437	SLD 16	-316	-168	3304	-0.23	931.87	58.62
437	SLV 1	834	240	4532	-5.25	1278.16	-83.48
437	SLV 2	958	247	4560	-5.34	1281.88	-85.48
437	SLV 3	759	-302	2940	2.79	859.65	106.19
437	SLV 4	884	-295	2967	2.7	863.37	104.19
437	SLV 5	359	857	6329	-14.9	1739.47	-299.86
437	SLV 6	442	862	6348	-14.97	1741.98	-301.2
437	SLV 7	112	-950	1020	11.89	344.42	332.36
437	SLV 8	195	-946	1038	11.83	346.93	331.01
437	SLV 9	-140	843	6273	-15.13	1715.85	-295.38
437	SLV 10	-56	848	6291	-15.19	1718.35	-296.73
437	SLV 11	-387	-964	964	11.67	320.8	336.83
437	SLV 12	-303	-960	982	11.61	323.3	335.49
437	SLV 13	-828	193	4344	-6	1199.41	-68.56
437	SLV 14	-704	200	4372	-6.09	1203.13	-70.56
437	SLV 15	-903	-349	2752	2.04	780.9	121.11
437	SLV 16	-778	-342	2779	1.95	784.61	119.11
437	CRTFP Ux+	0	0	0	0	0	0
437	CRTFP Ux-	0	0	0	0	0	0
437	CRTFP Uy+	0	0	0	0	0	0
437	CRTFP Uy-	0	0	0	0	0	0
439	SLU 1	-49	48	3406	-3.12	-493.16	11.93
439	SLU 2	-49	71	3459	-3.41	-500.1	17.61
439	SLU 3	-50	48	3468	-3.13	-501.62	12.02
439	SLU 4	-51	62	3500	-3.3	-505.79	15.43
439	SLU 5	-50	71	3497	-3.42	-505.34	17.67
439	SLU 6	-51	48	3506	-3.13	-506.86	12.07
439	SLU 7	-51	62	3538	-3.3	-511.03	15.48
439	SLU 8	-51	48	3482	-3.12	-503.63	12.04
439	SLU 9	-51	62	3514	-3.3	-507.8	15.45
439	SLU 10	-51	77	3866	-3.8	-556.75	19.24
439	SLU 11	-52	55	3874	-3.51	-558.27	13.65
439	SLU 12	-52	68	3906	-3.69	-562.44	17.06
439	SLU 13	-52	77	3904	-3.8	-561.99	19.3
439	SLU 14	-53	55	3912	-3.51	-563.51	13.7
439	SLU 15	-53	69	3944	-3.69	-567.68	17.11
439	SLU 16	-52	55	3889	-3.51	-560.28	13.67
439	SLU 17	-53	68	3920	-3.69	-564.45	17.08
439	SLU 18	-51	57	3987	-3.67	-574.08	14.26
439	SLU 19	-52	71	4019	-3.85	-578.25	17.67
439	SLU 20	-52	57	4025	-3.67	-579.32	14.31
439	SLU 21	-53	71	4057	-3.85	-583.49	17.72
439	SLU 22	-55	52	3873	-3.4	-557.98	12.94
439	SLU 23	-55	75	3926	-3.69	-564.93	18.63
439	SLU 24	-56	52	3934	-3.4	-566.45	13.03
439	SLU 25	-56	66	3966	-3.58	-570.62	16.45
439	SLU 26	-56	75	3964	-3.69	-570.16	18.68
439	SLU 27	-57	52	3972	-3.4	-571.69	13.09
439	SLU 28	-57	66	4004	-3.58	-575.85	16.5
439	SLU 29	-57	52	3949	-3.4	-568.45	13.05
439	SLU 30	-57	66	3981	-3.58	-572.62	16.46
439	SLU 31	-57	81	4333	-4.08	-621.58	20.26
439	SLU 32	-58	59	4341	-3.79	-623.1	14.67
439	SLU 33	-58	72	4373	-3.96	-627.27	18.08
439	SLU 34	-58	81	4371	-4.08	-626.81	20.32
439	SLU 35	-59	59	4379	-3.79	-628.33	14.72
439	SLU 36	-59	73	4411	-3.96	-632.5	18.13
439	SLU 37	-58	59	4355	-3.79	-625.1	14.68
439	SLU 38	-59	72	4387	-3.96	-629.27	18.09
439	SLU 39	-57	61	4453	-3.95	-638.91	15.27
439	SLU 40	-57	75	4485	-4.12	-643.08	18.69
439	SLU 41	-58	61	4491	-3.95	-644.14	15.33
439	SLU 42	-58	75	4523	-4.13	-648.31	18.74
439	SLU 43	-62	61	4268	-3.96	-618.88	15.16
439	SLU 44	-62	84	4321	-4.26	-625.82	20.84
439	SLU 45	-63	61	4329	-3.97	-627.35	15.25
439	SLU 46	-63	75	4361	-4.14	-631.51	18.66
439	SLU 47	-63	84	4359	-4.26	-631.06	20.9
439	SLU 48	-64	61	4367	-3.97	-632.58	15.3
439	SLU 49	-64	75	4399	-4.15	-636.75	18.71
439	SLU 50	-63	61	4344	-3.97	-629.35	15.27
439	SLU 51	-64	75	4376	-4.14	-633.52	18.68
439	SLU 52	-64	90	4728	-4.64	-682.47	22.47
439	SLU 53	-65	68	4736	-4.35	-683.99	16.88
439	SLU 54	-65	81	4768	-4.53	-688.16	20.29
439	SLU 55	-65	90	4766	-4.64	-687.71	22.53
439	SLU 56	-65	68	4774	-4.36	-689.23	16.93
439	SLU 57	-66	81	4806	-4.53	-693.4	20.34
439	SLU 58	-65	68	4750	-4.35	-686	16.9
439	SLU 59	-65	81	4782	-4.53	-690.17	20.31
439	SLU 60	-64	70	4849	-4.52	-699.8	17.49

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
439	SLU 61	-64	84	4880	-4.69	-703.97	20.9
439	SLU 62	-65	70	4887	-4.52	-705.04	17.54
439	SLU 63	-65	84	4918	-4.69	-709.21	20.95
439	SLU 64	-67	65	4735	-4.24	-683.7	16.17
439	SLU 65	-68	88	4788	-4.53	-690.65	21.86
439	SLU 66	-69	65	4796	-4.24	-692.17	16.26
439	SLU 67	-69	79	4828	-4.42	-696.34	19.68
439	SLU 68	-69	88	4826	-4.53	-695.89	21.91
439	SLU 69	-70	65	4834	-4.25	-697.41	16.32
439	SLU 70	-70	79	4866	-4.42	-701.58	19.73
439	SLU 71	-69	65	4811	-4.24	-694.18	16.28
439	SLU 72	-70	79	4843	-4.42	-698.34	19.69
439	SLU 73	-70	94	5194	-4.92	-747.3	23.49
439	SLU 74	-70	72	5203	-4.63	-748.82	17.9
439	SLU 75	-71	85	5234	-4.81	-752.99	21.31
439	SLU 76	-71	94	5232	-4.92	-752.53	23.54
439	SLU 77	-71	72	5241	-4.63	-754.06	17.95
439	SLU 78	-72	86	5272	-4.81	-758.22	21.36
439	SLU 79	-71	72	5217	-4.63	-750.82	17.91
439	SLU 80	-71	85	5249	-4.8	-754.99	21.32
439	SLU 81	-70	74	5315	-4.79	-764.63	18.5
439	SLU 82	-70	88	5347	-4.97	-768.8	21.92
439	SLU 83	-71	74	5353	-4.79	-769.87	18.56
439	SLU 84	-71	88	5385	-4.97	-774.03	21.97
439	SLE RA 1	-51	49	3540	-3.2	-511.68	12.22
439	SLE RA 2	-51	64	3575	-3.4	-516.31	16.01
439	SLE RA 3	-51	49	3580	-3.2	-517.32	12.28
439	SLE RA 4	-52	58	3602	-3.32	-520.1	14.55
439	SLE RA 5	-52	64	3600	-3.4	-519.8	16.04
439	SLE RA 6	-52	49	3606	-3.2	-520.81	12.31
439	SLE RA 7	-52	58	3627	-3.32	-523.59	14.59
439	SLE RA 8	-52	49	3590	-3.2	-518.66	12.29
439	SLE RA 9	-52	58	3611	-3.32	-521.44	14.56
439	SLE RA 10	-52	68	3846	-3.65	-554.07	17.1
439	SLE RA 11	-53	54	3851	-3.46	-555.09	13.37
439	SLE RA 12	-53	63	3873	-3.58	-557.87	15.64
439	SLE RA 13	-53	69	3871	-3.65	-557.57	17.13
439	SLE RA 14	-53	54	3877	-3.46	-558.58	13.4
439	SLE RA 15	-53	63	3898	-3.58	-561.36	15.68
439	SLE RA 16	-53	54	3861	-3.46	-556.43	13.38
439	SLE RA 17	-53	63	3882	-3.58	-559.2	15.65
439	SLE RA 18	-52	55	3927	-3.57	-565.63	13.77
439	SLE RA 19	-52	64	3948	-3.69	-568.41	16.05
439	SLE RA 20	-53	55	3952	-3.57	-569.12	13.81
439	SLE RA 21	-53	64	3973	-3.69	-571.9	16.08
439	SLE FR 1	-51	49	3540	-3.2	-511.68	12.22
439	SLE FR 2	-51	52	3547	-3.24	-512.6	12.98
439	SLE FR 3	-51	49	3550	-3.2	-513.07	12.23
439	SLE FR 4	-51	54	3663	-3.35	-528.79	13.44
439	SLE FR 5	-51	51	3666	-3.31	-529.26	12.7
439	SLE FR 6	-51	52	3733	-3.38	-538.65	12.99
439	SLE QP 1	-51	49	3540	-3.2	-511.68	12.22
439	SLE QP 2	-51	51	3656	-3.31	-527.86	12.68
439	SLD 1	243	270	5135	-6.81	-724.26	67.11
439	SLD 2	289	152	5062	-6.4	-714.63	37.89
439	SLD 3	262	10	4377	-2.46	-621.93	2.24
439	SLD 4	308	-108	4304	-2.05	-612.3	-26.98
439	SLD 5	1	532	5261	-11.04	-743.71	132.66
439	SLD 6	32	454	5213	-10.77	-737.36	113.38
439	SLD 7	62	-334	2737	3.47	-402.61	-83.59
439	SLD 8	93	-412	2688	3.74	-396.26	-102.86
439	SLD 9	-195	514	4623	-10.37	-659.46	128.23
439	SLD 10	-164	436	4575	-10.1	-653.11	108.95
439	SLD 11	-134	-352	2098	4.14	-318.36	-88.01
439	SLD 12	-103	-430	2050	4.41	-312.01	-107.29
439	SLD 13	-410	209	3007	-4.58	-443.42	52.35
439	SLD 14	-364	92	2934	-4.17	-433.8	23.13
439	SLD 15	-392	-50	2250	-0.22	-341.09	-12.52
439	SLD 16	-345	-168	2176	0.19	-331.47	-41.74
439	SLV 1	636	583	7180	-11.85	-995.89	144.91
439	SLV 2	745	306	7008	-10.89	-973.27	76.23
439	SLV 3	681	-62	5283	-0.96	-739.69	-16.19
439	SLV 4	789	-339	5111	0.01	-717.06	-84.88
439	SLV 5	67	1241	7621	-22.58	-1061.07	309.52
439	SLV 6	140	1054	7505	-21.93	-1045.83	263.27
439	SLV 7	216	-910	1300	13.74	-207.06	-227.5
439	SLV 8	289	-1097	1184	14.39	-191.83	-273.75
439	SLV 9	-391	1198	6127	-21.02	-863.9	299.12
439	SLV 10	-318	1012	6011	-20.37	-848.67	252.87
439	SLV 11	-242	-953	-194	15.31	-9.89	-237.9
439	SLV 12	-169	-1139	-310	15.96	5.34	-284.15
439	SLV 13	-892	441	2200	-6.63	-338.66	110.25
439	SLV 14	-783	164	2028	-5.67	-316.04	41.56
439	SLV 15	-847	-204	304	4.27	-82.46	-50.86
439	SLV 16	-738	-481	132	5.23	-59.84	-119.54
439	CRTFP Ux+	0	0	0	0	0	0
439	CRTFP Ux-	0	0	0	0	0	0
439	CRTFP Uy+	0	0	0	0	0	0
439	CRTFP Uy-	0	0	0	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
442	SLU 1	-74	-73	6890	-2.88	-33.4	-1.6
442	SLU 2	-76	-43	6991	-3.37	-33.29	-1.64
442	SLU 3	-77	-75	7017	-2.8	-34.12	-1.65
442	SLU 4	-78	-56	7077	-3.1	-34.05	-1.67
442	SLU 5	-78	-44	7070	-3.32	-33.75	-1.67
442	SLU 6	-78	-76	7096	-2.75	-34.58	-1.68
442	SLU 7	-79	-57	7156	-3.05	-34.51	-1.71
442	SLU 8	-78	-75	7048	-2.77	-34.33	-1.67
442	SLU 9	-79	-57	7109	-3.07	-34.26	-1.69
442	SLU 10	-78	-50	7869	-3.71	-38.92	-1.74
442	SLU 11	-79	-81	7894	-3.14	-39.74	-1.75
442	SLU 12	-80	-63	7955	-3.43	-39.67	-1.77
442	SLU 13	-80	-50	7948	-3.65	-39.38	-1.78
442	SLU 14	-80	-82	7974	-3.08	-40.21	-1.79
442	SLU 15	-81	-64	8034	-3.38	-40.14	-1.81
442	SLU 16	-80	-82	7926	-3.11	-39.96	-1.77
442	SLU 17	-81	-64	7987	-3.4	-39.89	-1.8
442	SLU 18	-77	-83	8144	-3.36	-41.44	-1.75
442	SLU 19	-78	-65	8205	-3.65	-41.37	-1.77
442	SLU 20	-79	-84	8223	-3.3	-41.9	-1.78
442	SLU 21	-80	-66	8284	-3.6	-41.84	-1.8
442	SLU 22	-84	-82	7865	-2.86	-38.66	-1.84
442	SLU 23	-86	-51	7966	-3.35	-38.55	-1.88
442	SLU 24	-86	-83	7991	-2.78	-39.37	-1.88
442	SLU 25	-87	-65	8052	-3.08	-39.31	-1.91
442	SLU 26	-87	-52	8045	-3.3	-39.01	-1.91
442	SLU 27	-88	-84	8070	-2.73	-39.84	-1.92
442	SLU 28	-89	-66	8131	-3.02	-39.77	-1.94
442	SLU 29	-87	-83	8023	-2.75	-39.59	-1.91
442	SLU 30	-88	-65	8083	-3.05	-39.52	-1.93
442	SLU 31	-88	-58	8843	-3.68	-44.17	-1.98
442	SLU 32	-88	-90	8869	-3.11	-45	-1.99
442	SLU 33	-89	-72	8930	-3.41	-44.93	-2.01
442	SLU 34	-89	-59	8922	-3.63	-44.64	-2.01
442	SLU 35	-90	-91	8948	-3.06	-45.46	-2.02
442	SLU 36	-91	-72	9009	-3.35	-45.4	-2.04
442	SLU 37	-89	-90	8900	-3.08	-45.21	-2.01
442	SLU 38	-90	-72	8961	-3.38	-45.15	-2.03
442	SLU 39	-87	-91	9118	-3.33	-46.7	-1.98
442	SLU 40	-88	-73	9179	-3.63	-46.63	-2.01
442	SLU 41	-88	-92	9198	-3.28	-47.16	-2.02
442	SLU 42	-90	-74	9258	-3.57	-47.09	-2.04
442	SLU 43	-94	-92	8623	-3.75	-41.62	-2
442	SLU 44	-95	-62	8724	-4.25	-41.51	-2.04
442	SLU 45	-96	-94	8750	-3.67	-42.33	-2.05
442	SLU 46	-97	-75	8810	-3.97	-42.27	-2.07
442	SLU 47	-97	-63	8803	-4.19	-41.97	-2.07
442	SLU 48	-97	-95	8829	-3.62	-42.8	-2.08
442	SLU 49	-98	-76	8889	-3.92	-42.73	-2.11
442	SLU 50	-97	-94	8781	-3.64	-42.55	-2.07
442	SLU 51	-98	-76	8842	-3.94	-42.48	-2.09
442	SLU 52	-97	-69	9602	-4.58	-47.14	-2.14
442	SLU 53	-98	-100	9627	-4.01	-47.96	-2.15
442	SLU 54	-99	-82	9688	-4.3	-47.89	-2.17
442	SLU 55	-99	-70	9681	-4.53	-47.6	-2.18
442	SLU 56	-99	-101	9707	-3.95	-48.42	-2.19
442	SLU 57	-100	-83	9767	-4.25	-48.36	-2.21
442	SLU 58	-99	-101	9659	-3.98	-48.17	-2.17
442	SLU 59	-100	-83	9720	-4.27	-48.11	-2.19
442	SLU 60	-96	-102	9877	-4.23	-49.66	-2.15
442	SLU 61	-97	-84	9938	-4.52	-49.59	-2.17
442	SLU 62	-98	-103	9956	-4.17	-50.12	-2.18
442	SLU 63	-99	-85	10017	-4.47	-50.06	-2.2
442	SLU 64	-103	-101	9598	-3.73	-46.88	-2.24
442	SLU 65	-105	-70	9699	-4.22	-46.77	-2.28
442	SLU 66	-105	-102	9724	-3.65	-47.59	-2.28
442	SLU 67	-106	-84	9785	-3.95	-47.52	-2.31
442	SLU 68	-106	-71	9778	-4.17	-47.23	-2.31
442	SLU 69	-107	-103	9803	-3.6	-48.05	-2.32
442	SLU 70	-108	-85	9864	-3.89	-47.99	-2.34
442	SLU 71	-106	-103	9756	-3.62	-47.81	-2.31
442	SLU 72	-107	-84	9816	-3.92	-47.74	-2.33
442	SLU 73	-107	-77	10576	-4.56	-52.39	-2.38
442	SLU 74	-107	-109	10602	-3.98	-53.22	-2.39
442	SLU 75	-108	-91	10663	-4.28	-53.15	-2.41
442	SLU 76	-108	-78	10655	-4.5	-52.86	-2.41
442	SLU 77	-109	-110	10681	-3.93	-53.68	-2.42
442	SLU 78	-110	-92	10742	-4.23	-53.61	-2.44
442	SLU 79	-108	-109	10633	-3.95	-53.43	-2.41
442	SLU 80	-109	-91	10694	-4.25	-53.36	-2.43
442	SLU 81	-106	-110	10851	-4.2	-54.92	-2.38
442	SLU 82	-107	-92	10912	-4.5	-54.85	-2.4
442	SLU 83	-108	-111	10930	-4.15	-55.38	-2.42
442	SLU 84	-109	-93	10991	-4.45	-55.31	-2.44
442	SLE RA 1	-77	-76	7169	-2.87	-34.9	-1.67
442	SLE RA 2	-78	-55	7236	-3.2	-34.83	-1.69
442	SLE RA 3	-79	-77	7253	-2.82	-35.38	-1.7
442	SLE RA 4	-79	-64	7293	-3.02	-35.33	-1.72
442	SLE RA 5	-79	-56	7289	-3.17	-35.14	-1.72

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
442	SLE RA 6	-80	-77	7306	-2.79	-35.69	-1.72
442	SLE RA 7	-80	-65	7346	-2.98	-35.64	-1.74
442	SLE RA 8	-79	-77	7274	-2.8	-35.52	-1.71
442	SLE RA 9	-80	-65	7314	-3	-35.48	-1.73
442	SLE RA 10	-80	-60	7821	-3.43	-38.58	-1.76
442	SLE RA 11	-80	-81	7838	-3.04	-39.13	-1.77
442	SLE RA 12	-81	-69	7879	-3.24	-39.09	-1.78
442	SLE RA 13	-81	-60	7874	-3.39	-38.89	-1.79
442	SLE RA 14	-81	-82	7891	-3.01	-39.44	-1.79
442	SLE RA 15	-82	-70	7931	-3.21	-39.4	-1.81
442	SLE RA 16	-81	-81	7859	-3.02	-39.27	-1.78
442	SLE RA 17	-81	-69	7900	-3.22	-39.23	-1.8
442	SLE RA 18	-79	-82	8005	-3.19	-40.26	-1.77
442	SLE RA 19	-80	-70	8045	-3.39	-40.22	-1.78
442	SLE RA 20	-80	-83	8057	-3.15	-40.57	-1.79
442	SLE RA 21	-81	-71	8098	-3.35	-40.53	-1.8
442	SLE FR 1	-77	-76	7169	-2.87	-34.9	-1.67
442	SLE FR 2	-77	-72	7182	-2.94	-34.89	-1.67
442	SLE FR 3	-78	-76	7190	-2.86	-35.03	-1.68
442	SLE FR 4	-78	-73	7433	-3.03	-36.5	-1.7
442	SLE FR 5	-78	-78	7440	-2.95	-36.64	-1.71
442	SLE FR 6	-78	-79	7587	-3.03	-37.58	-1.72
442	SLE QP 1	-77	-76	7169	-2.87	-34.9	-1.67
442	SLE QP 2	-78	-78	7419	-2.97	-36.51	-1.7
442	SLD 1	542	95	8902	-7.1	-11.05	-0.98
442	SLD 2	642	10	8816	-6.72	-12.58	1.48
442	SLD 3	582	-266	7501	0.03	-14.7	0.28
442	SLD 4	682	-351	7415	0.41	-16.23	2.74
442	SLD 5	31	538	10006	-15.09	-23.06	-3.84
442	SLD 6	97	481	9949	-14.84	-24.07	-2.21
442	SLD 7	161	-667	5334	8.68	-35.23	0.36
442	SLD 8	227	-723	5277	8.93	-36.24	1.99
442	SLD 9	-383	568	9562	-14.86	-36.78	-5.39
442	SLD 10	-317	512	9505	-14.61	-37.79	-3.76
442	SLD 11	-253	-637	4890	8.9	-48.96	-1.18
442	SLD 12	-187	-693	4833	9.15	-49.97	0.44
442	SLD 13	-837	196	7424	-6.35	-56.79	-6.14
442	SLD 14	-737	111	7338	-5.97	-58.33	-3.67
442	SLD 15	-798	-165	6022	0.78	-60.45	-4.88
442	SLD 16	-698	-250	5936	1.16	-61.98	-2.41
442	SLV 1	1371	354	11006	-13.22	23.32	-0.11
442	SLV 2	1606	154	10803	-12.33	19.72	5.68
442	SLV 3	1466	-546	7495	4.64	14.31	2.99
442	SLV 4	1701	-746	7293	5.53	10.71	8.78
442	SLV 5	168	1453	13857	-33.29	-4.22	-7
442	SLV 6	326	1318	13721	-32.69	-6.65	-3.1
442	SLV 7	486	-1544	2156	26.22	-34.26	3.32
442	SLV 8	645	-1679	2019	26.82	-36.69	7.23
442	SLV 9	-800	1524	12819	-32.76	-36.34	-10.62
442	SLV 10	-642	1389	12683	-32.16	-38.76	-6.72
442	SLV 11	-482	-1473	1118	26.75	-66.38	-0.3
442	SLV 12	-324	-1608	982	27.35	-68.8	3.61
442	SLV 13	-1857	590	7546	-11.47	-83.73	-12.18
442	SLV 14	-1622	390	7344	-10.57	-87.33	-6.38
442	SLV 15	-1761	-309	4035	6.39	-92.75	-9.08
442	SLV 16	-1526	-509	3833	7.28	-96.35	-3.28
442	CRTFP Ux+	0	0	0	0	0	0
442	CRTFP Ux-	0	0	0	0	0	0
442	CRTFP Uy+	0	0	0	0	0	0
442	CRTFP Uy-	0	0	0	0	0	0
445	SLU 1	38	-44	6787	-3.43	45.11	0.43
445	SLU 2	42	-13	6890	-3.95	44.79	0.47
445	SLU 3	38	-45	6911	-3.36	46.04	0.42
445	SLU 4	40	-26	6973	-3.67	45.84	0.45
445	SLU 5	41	-13	6967	-3.89	45.37	0.46
445	SLU 6	38	-45	6989	-3.3	46.62	0.41
445	SLU 7	40	-27	7050	-3.61	46.43	0.44
445	SLU 8	38	-45	6943	-3.31	46.28	0.41
445	SLU 9	40	-26	7004	-3.62	46.09	0.43
445	SLU 10	41	-15	7745	-4.36	51.81	0.48
445	SLU 11	38	-47	7766	-3.77	53.06	0.43
445	SLU 12	40	-29	7828	-4.08	52.86	0.46
445	SLU 13	41	-16	7822	-4.3	52.39	0.47
445	SLU 14	38	-48	7844	-3.71	53.65	0.42
445	SLU 15	40	-29	7905	-4.02	53.45	0.44
445	SLU 16	37	-48	7797	-3.72	53.3	0.41
445	SLU 17	39	-29	7859	-4.03	53.11	0.44
445	SLU 18	37	-48	8009	-4.02	55.14	0.44
445	SLU 19	39	-29	8070	-4.33	54.95	0.47
445	SLU 20	37	-48	8086	-3.96	55.73	0.43
445	SLU 21	39	-29	8148	-4.27	55.53	0.45
445	SLU 22	42	-48	7735	-3.49	51.71	0.49
445	SLU 23	45	-17	7837	-4.01	51.38	0.53
445	SLU 24	42	-49	7859	-3.42	52.64	0.48
445	SLU 25	44	-30	7920	-3.73	52.44	0.5
445	SLU 26	45	-17	7915	-3.95	51.97	0.51
445	SLU 27	42	-49	7936	-3.36	53.22	0.46
445	SLU 28	44	-31	7998	-3.67	53.03	0.49
445	SLU 29	41	-49	7890	-3.38	52.88	0.46

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
445	SLU 30	43	-30	7952	-3.69	52.68	0.48
445	SLU 31	45	-19	8692	-4.42	58.4	0.53
445	SLU 32	41	-51	8714	-3.83	59.66	0.48
445	SLU 33	43	-33	8775	-4.14	59.46	0.51
445	SLU 34	44	-20	8770	-4.36	58.99	0.52
445	SLU 35	41	-52	8791	-3.77	60.24	0.47
445	SLU 36	43	-33	8853	-4.08	60.05	0.5
445	SLU 37	41	-52	8745	-3.78	59.9	0.47
445	SLU 38	43	-33	8806	-4.1	59.71	0.49
445	SLU 39	41	-52	8956	-4.08	61.74	0.5
445	SLU 40	43	-33	9018	-4.39	61.54	0.52
445	SLU 41	41	-52	9034	-4.02	62.33	0.48
445	SLU 42	43	-33	9095	-4.33	62.13	0.51
445	SLU 43	48	-56	8499	-4.44	56.39	0.54
445	SLU 44	52	-25	8601	-4.96	56.06	0.59
445	SLU 45	48	-57	8623	-4.37	57.31	0.54
445	SLU 46	51	-38	8684	-4.68	57.12	0.56
445	SLU 47	51	-25	8679	-4.9	56.64	0.57
445	SLU 48	48	-57	8700	-4.31	57.9	0.52
445	SLU 49	50	-39	8762	-4.62	57.7	0.55
445	SLU 50	48	-57	8654	-4.32	57.56	0.52
445	SLU 51	50	-38	8715	-4.63	57.36	0.54
445	SLU 52	51	-27	9456	-5.37	63.08	0.59
445	SLU 53	48	-59	9478	-4.78	64.33	0.54
445	SLU 54	50	-41	9539	-5.09	64.14	0.57
445	SLU 55	51	-28	9534	-5.31	63.66	0.58
445	SLU 56	48	-60	9555	-4.72	64.92	0.53
445	SLU 57	50	-41	9617	-5.03	64.72	0.55
445	SLU 58	47	-59	9509	-4.73	64.58	0.53
445	SLU 59	49	-41	9570	-5.04	64.38	0.55
445	SLU 60	48	-60	9720	-5.02	66.42	0.55
445	SLU 61	50	-41	9781	-5.33	66.22	0.58
445	SLU 62	47	-60	9798	-4.96	67	0.54
445	SLU 63	49	-41	9859	-5.28	66.8	0.57
445	SLU 64	52	-60	9446	-4.5	62.98	0.6
445	SLU 65	55	-29	9549	-5.02	62.66	0.64
445	SLU 66	52	-61	9570	-4.43	63.91	0.59
445	SLU 67	54	-42	9632	-4.74	63.71	0.61
445	SLU 68	55	-29	9626	-4.96	63.24	0.63
445	SLU 69	52	-61	9648	-4.37	64.49	0.58
445	SLU 70	54	-43	9709	-4.68	64.3	0.6
445	SLU 71	51	-61	9601	-4.38	64.15	0.57
445	SLU 72	54	-42	9663	-4.69	63.96	0.6
445	SLU 73	55	-31	10404	-5.43	69.68	0.65
445	SLU 74	52	-63	10425	-4.84	70.93	0.6
445	SLU 75	54	-45	10487	-5.15	70.73	0.62
445	SLU 76	55	-32	10481	-5.37	70.26	0.63
445	SLU 77	51	-64	10503	-4.78	71.51	0.58
445	SLU 78	53	-45	10564	-5.09	71.32	0.61
445	SLU 79	51	-63	10456	-4.79	71.17	0.58
445	SLU 80	53	-45	10518	-5.1	70.98	0.6
445	SLU 81	51	-64	10668	-5.09	73.01	0.61
445	SLU 82	53	-45	10729	-5.4	72.82	0.63
445	SLU 83	51	-64	10745	-5.03	73.6	0.59
445	SLU 84	53	-45	10807	-5.34	73.4	0.62
445	SLE RA 1	39	-45	7058	-3.45	47	0.45
445	SLE RA 2	41	-24	7126	-3.79	46.78	0.48
445	SLE RA 3	39	-46	7141	-3.4	47.62	0.44
445	SLE RA 4	41	-33	7182	-3.61	47.48	0.46
445	SLE RA 5	41	-25	7178	-3.75	47.17	0.47
445	SLE RA 6	39	-46	7192	-3.36	48.01	0.43
445	SLE RA 7	40	-34	7233	-3.57	47.87	0.45
445	SLE RA 8	39	-46	7162	-3.37	47.78	0.43
445	SLE RA 9	40	-33	7203	-3.58	47.65	0.45
445	SLE RA 10	41	-26	7696	-4.07	51.46	0.48
445	SLE RA 11	39	-47	7711	-3.67	52.3	0.45
445	SLE RA 12	40	-35	7752	-3.88	52.17	0.46
445	SLE RA 13	41	-26	7748	-4.03	51.85	0.47
445	SLE RA 14	39	-48	7762	-3.63	52.69	0.44
445	SLE RA 15	40	-35	7803	-3.84	52.56	0.45
445	SLE RA 16	39	-48	7731	-3.64	52.46	0.44
445	SLE RA 17	40	-35	7772	-3.85	52.33	0.45
445	SLE RA 18	39	-48	7872	-3.84	53.69	0.45
445	SLE RA 19	40	-35	7913	-4.05	53.55	0.47
445	SLE RA 20	39	-48	7924	-3.8	54.08	0.45
445	SLE RA 21	40	-35	7965	-4.01	53.94	0.46
445	SLE FR 1	39	-45	7058	-3.45	47	0.45
445	SLE FR 2	40	-41	7072	-3.52	46.96	0.45
445	SLE FR 3	39	-45	7079	-3.43	47.15	0.44
445	SLE FR 4	39	-42	7316	-3.63	48.96	0.46
445	SLE FR 5	39	-46	7323	-3.55	49.16	0.45
445	SLE FR 6	39	-46	7465	-3.64	50.34	0.45
445	SLE QP 1	39	-45	7058	-3.45	47	0.45
445	SLE QP 2	39	-46	7302	-3.57	49	0.45
445	SLD 1	728	148	7279	-6.42	58.81	3.37
445	SLD 2	831	236	7368	-6.85	57.23	5.76
445	SLD 3	671	-223	5851	1.03	65.19	2.19
445	SLD 4	775	-135	5940	0.61	63.62	4.57
445	SLD 5	312	559	9445	-15.65	42.54	2.7

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
445	SLD 6	381	617	9504	-15.94	41.5	4.27
445	SLD 7	125	-678	4685	9.2	63.83	-1.26
445	SLD 8	193	-619	4744	8.92	62.79	0.32
445	SLD 9	-115	527	9861	-16.05	35.22	0.58
445	SLD 10	-47	586	9919	-16.33	34.18	2.16
445	SLD 11	-303	-709	5101	8.8	56.51	-3.37
445	SLD 12	-234	-651	5160	8.52	55.47	-1.8
445	SLD 13	-697	43	8665	-7.74	34.39	-3.67
445	SLD 14	-593	131	8754	-8.16	32.81	-1.29
445	SLD 15	-753	-328	7237	-0.28	40.78	-4.86
445	SLD 16	-650	-240	7326	-0.71	39.2	-2.47
445	SLV 1	1655	437	7367	-10.87	71.44	7.39
445	SLV 2	1899	644	7576	-11.88	67.73	13.01
445	SLV 3	1512	-490	3786	7.82	87.4	4.38
445	SLV 4	1756	-282	3995	6.82	83.69	9.99
445	SLV 5	695	1465	12713	-33.92	32.22	6.06
445	SLV 6	859	1605	12854	-34.6	29.72	9.84
445	SLV 7	219	-1623	778	28.39	85.43	-4
445	SLV 8	383	-1483	919	27.71	82.93	-0.22
445	SLV 9	-305	1391	13686	-34.84	15.08	1.12
445	SLV 10	-141	1531	13827	-35.52	12.58	4.9
445	SLV 11	-781	-1697	1751	27.47	68.29	-8.94
445	SLV 12	-617	-1557	1892	26.79	65.79	-5.16
445	SLV 13	-1678	190	10609	-13.95	14.32	-9.09
445	SLV 14	-1434	398	10819	-14.95	10.61	-3.48
445	SLV 15	-1821	-736	7029	4.74	30.28	-12.11
445	SLV 16	-1577	-529	7238	3.74	26.57	-6.49
445	CRTFP Ux+	0	0	0	0	0	0
445	CRTFP Ux-	0	0	0	0	0	0
445	CRTFP Uy+	0	0	0	0	0	0
445	CRTFP Uy-	0	0	0	0	0	0
448	SLU 1	31	25	3855	-3.62	856.85	-8.77
448	SLU 2	33	49	3919	-4.01	869.28	-16.97
448	SLU 3	31	26	3926	-3.61	871.82	-9.03
448	SLU 4	32	40	3965	-3.85	879.28	-13.95
448	SLU 5	33	50	3963	-4	878.59	-17.3
448	SLU 6	31	27	3971	-3.6	881.13	-9.37
448	SLU 7	32	41	4009	-3.83	888.59	-14.28
448	SLU 8	31	27	3944	-3.59	875.46	-9.44
448	SLU 9	32	41	3982	-3.82	882.92	-14.36
448	SLU 10	32	52	4377	-4.47	967.27	-18.07
448	SLU 11	31	29	4384	-4.07	969.81	-10.13
448	SLU 12	32	43	4423	-4.3	977.27	-15.05
448	SLU 13	32	53	4421	-4.45	976.58	-18.41
448	SLU 14	31	30	4428	-4.05	979.12	-10.47
448	SLU 15	32	44	4467	-4.28	986.58	-15.39
448	SLU 16	30	30	4402	-4.04	973.46	-10.54
448	SLU 17	32	44	4440	-4.28	980.92	-15.46
448	SLU 18	30	30	4509	-4.27	996.83	-10.35
448	SLU 19	31	44	4547	-4.51	1004.29	-15.26
448	SLU 20	30	31	4553	-4.26	1006.14	-10.68
448	SLU 21	31	45	4592	-4.49	1013.6	-15.6
448	SLU 22	33	26	4378	-3.93	968.49	-9.06
448	SLU 23	35	50	4442	-4.32	980.92	-17.26
448	SLU 24	33	27	4450	-3.92	983.46	-9.32
448	SLU 25	35	41	4488	-4.15	990.92	-14.24
448	SLU 26	35	51	4486	-4.3	990.23	-17.59
448	SLU 27	34	28	4494	-3.9	992.77	-9.65
448	SLU 28	35	42	4532	-4.13	1000.23	-14.57
448	SLU 29	33	28	4467	-3.89	987.11	-9.73
448	SLU 30	34	42	4505	-4.13	994.57	-14.65
448	SLU 31	35	53	4900	-4.77	1078.92	-18.36
448	SLU 32	33	30	4907	-4.37	1081.45	-10.42
448	SLU 33	34	44	4946	-4.61	1088.91	-15.34
448	SLU 34	35	54	4944	-4.76	1088.22	-18.69
448	SLU 35	33	31	4952	-4.36	1090.76	-10.75
448	SLU 36	34	45	4990	-4.59	1098.22	-15.67
448	SLU 37	33	31	4925	-4.35	1085.1	-10.83
448	SLU 38	34	45	4963	-4.58	1092.56	-15.75
448	SLU 39	32	31	5032	-4.58	1108.48	-10.63
448	SLU 40	34	45	5071	-4.81	1115.94	-15.55
448	SLU 41	33	32	5077	-4.56	1117.79	-10.97
448	SLU 42	34	46	5115	-4.8	1125.25	-15.89
448	SLU 43	39	33	4832	-4.61	1075.62	-11.3
448	SLU 44	41	56	4896	-5	1088.05	-19.5
448	SLU 45	39	33	4904	-4.6	1090.59	-11.56
448	SLU 46	41	47	4942	-4.83	1098.05	-16.48
448	SLU 47	41	57	4940	-4.98	1097.36	-19.84
448	SLU 48	40	34	4948	-4.58	1099.9	-11.9
448	SLU 49	41	48	4986	-4.81	1107.36	-16.82
448	SLU 50	39	34	4921	-4.57	1094.24	-11.97
448	SLU 51	40	49	4959	-4.81	1101.7	-16.89
448	SLU 52	41	59	5354	-5.45	1186.05	-20.6
448	SLU 53	39	36	5361	-5.05	1188.59	-12.67
448	SLU 54	40	51	5400	-5.29	1196.05	-17.58
448	SLU 55	41	60	5398	-5.43	1195.36	-20.94
448	SLU 56	39	37	5406	-5.03	1197.9	-13
448	SLU 57	40	51	5444	-5.27	1205.36	-17.92
448	SLU 58	39	38	5379	-5.03	1192.23	-13.08

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
448	SLU 59	40	52	5417	-5.26	1199.69	-17.99
448	SLU 60	38	37	5486	-5.26	1215.61	-12.88
448	SLU 61	40	51	5525	-5.49	1223.07	-17.8
448	SLU 62	39	38	5531	-5.24	1224.92	-13.21
448	SLU 63	40	52	5569	-5.47	1232.38	-18.13
448	SLU 64	42	33	5356	-4.91	1187.27	-11.59
448	SLU 65	43	57	5419	-5.3	1199.7	-19.79
448	SLU 66	42	34	5427	-4.9	1202.24	-11.85
448	SLU 67	43	48	5465	-5.13	1209.7	-16.77
448	SLU 68	43	58	5464	-5.28	1209.01	-20.12
448	SLU 69	42	35	5471	-4.88	1211.55	-12.19
448	SLU 70	43	49	5509	-5.12	1219.01	-17.1
448	SLU 71	42	35	5444	-4.88	1205.88	-12.26
448	SLU 72	43	49	5482	-5.11	1213.34	-17.18
448	SLU 73	43	60	5877	-5.76	1297.69	-20.89
448	SLU 74	41	37	5885	-5.36	1300.23	-12.95
448	SLU 75	43	51	5923	-5.59	1307.69	-17.87
448	SLU 76	43	61	5921	-5.74	1307	-21.23
448	SLU 77	41	38	5929	-5.34	1309.54	-13.29
448	SLU 78	43	52	5967	-5.57	1317	-18.21
448	SLU 79	41	38	5902	-5.33	1303.88	-13.36
448	SLU 80	42	53	5940	-5.57	1311.34	-18.28
448	SLU 81	41	38	6010	-5.56	1327.25	-13.17
448	SLU 82	42	52	6048	-5.8	1334.71	-18.08
448	SLU 83	41	39	6054	-5.54	1336.56	-13.5
448	SLU 84	42	53	6092	-5.78	1344.02	-18.42
448	SLE RA 1	31	25	4005	-3.71	888.74	-8.85
448	SLE RA 2	33	41	4047	-3.97	897.03	-14.32
448	SLE RA 3	32	26	4052	-3.7	898.73	-9.03
448	SLE RA 4	32	35	4078	-3.86	903.7	-12.31
448	SLE RA 5	33	42	4077	-3.96	903.24	-14.54
448	SLE RA 6	32	27	4082	-3.69	904.93	-9.25
448	SLE RA 7	32	36	4107	-3.85	909.91	-12.53
448	SLE RA 8	31	27	4064	-3.69	901.16	-9.3
448	SLE RA 9	32	36	4089	-3.84	906.13	-12.58
448	SLE RA 10	32	43	4352	-4.27	962.36	-15.05
448	SLE RA 11	31	28	4357	-4.01	964.05	-9.76
448	SLE RA 12	32	37	4383	-4.16	969.03	-13.04
448	SLE RA 13	32	44	4382	-4.26	968.57	-15.28
448	SLE RA 14	31	29	4387	-4	970.26	-9.98
448	SLE RA 15	32	38	4412	-4.15	975.23	-13.26
448	SLE RA 16	31	29	4369	-3.99	966.48	-10.03
448	SLE RA 17	32	38	4394	-4.15	971.46	-13.31
448	SLE RA 18	31	28	4441	-4.14	982.07	-9.9
448	SLE RA 19	32	38	4466	-4.3	987.04	-13.18
448	SLE RA 20	31	29	4470	-4.13	988.28	-10.13
448	SLE RA 21	32	39	4496	-4.29	993.25	-13.4
448	SLE FR 1	31	25	4005	-3.71	888.74	-8.85
448	SLE FR 2	32	29	4013	-3.76	890.4	-9.95
448	SLE FR 3	31	26	4016	-3.71	891.23	-8.94
448	SLE FR 4	32	30	4144	-3.89	918.4	-10.26
448	SLE FR 5	31	27	4147	-3.84	919.22	-9.26
448	SLE FR 6	31	27	4223	-3.93	935.41	-9.38
448	SLE QP 1	31	25	4005	-3.71	888.74	-8.85
448	SLE QP 2	31	26	4135	-3.84	916.74	-9.17
448	SLD 1	422	132	3370	-5.01	761.88	-45.84
448	SLD 2	479	258	3452	-5.56	778.59	-89.86
448	SLD 3	390	-138	2473	0.64	579.72	48.41
448	SLD 4	447	-11	2555	0.09	596.43	4.39
448	SLD 5	187	445	5251	-12.66	1143.55	-155.2
448	SLD 6	224	528	5306	-13.02	1154.57	-184.24
448	SLD 7	80	-455	2261	6.17	536.36	158.97
448	SLD 8	118	-371	2316	5.8	547.38	129.93
448	SLD 9	-55	424	5955	-13.49	1286.1	-148.27
448	SLD 10	-18	508	6010	-13.85	1297.13	-177.3
448	SLD 11	-162	-475	2965	5.34	678.91	165.9
448	SLD 12	-124	-392	3019	4.97	689.94	136.86
448	SLD 13	-385	64	5716	-7.77	1237.05	-22.73
448	SLD 14	-328	191	5798	-8.32	1253.76	-66.74
448	SLD 15	-417	-206	4818	-2.12	1054.89	71.52
448	SLD 16	-360	-79	4901	-2.68	1071.61	27.51
448	SLV 1	949	294	2418	-7.04	569.45	-102.29
448	SLV 2	1083	592	2612	-8.35	608.74	-205.76
448	SLV 3	868	-380	168	7.13	112.64	133.14
448	SLV 4	1002	-82	363	5.82	151.93	29.67
448	SLV 5	405	1074	6996	-26.04	1498.04	-374.86
448	SLV 6	495	1274	7127	-26.92	1524.49	-444.52
448	SLV 7	134	-1173	-503	21.18	-24.64	409.9
448	SLV 8	224	-973	-372	20.3	1.81	340.24
448	SLV 9	-162	1026	8643	-27.98	1831.67	-358.58
448	SLV 10	-72	1226	8774	-28.86	1858.13	-428.24
448	SLV 11	-432	-1221	1144	19.24	308.99	426.19
448	SLV 12	-342	-1021	1275	18.36	335.44	356.53
448	SLV 13	-939	135	7908	-13.5	1681.55	-48.01
448	SLV 14	-805	433	8103	-14.81	1720.84	-151.47
448	SLV 15	-1020	-539	5659	0.66	1224.75	187.42
448	SLV 16	-886	-241	5853	-0.64	1264.03	83.96
448	CRTFP Ux+	0	0	0	0	0	0
448	CRTFP Ux-	0	0	0	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
448	CRTFP Uy+	0	0	0	0	0	0
448	CRTFP Uy-	0	0	0	0	0	0
450	SLU 1	29	-49	3361	-0.49	942.62	16.91
450	SLU 2	31	-31	3401	-0.71	952.54	10.69
450	SLU 3	29	-49	3421	-0.46	958.75	17.2
450	SLU 4	30	-39	3445	-0.59	964.7	13.47
450	SLU 5	31	-31	3438	-0.69	962.42	10.88
450	SLU 6	29	-50	3458	-0.44	968.63	17.39
450	SLU 7	30	-39	3482	-0.57	974.58	13.66
450	SLU 8	29	-50	3435	-0.45	962.37	17.28
450	SLU 9	30	-39	3459	-0.58	968.32	13.55
450	SLU 10	33	-37	3846	-0.8	1076.55	12.85
450	SLU 11	32	-56	3867	-0.55	1082.76	19.36
450	SLU 12	33	-45	3891	-0.68	1088.71	15.63
450	SLU 13	33	-38	3884	-0.78	1086.42	13.03
450	SLU 14	32	-56	3904	-0.53	1092.64	19.54
450	SLU 15	33	-46	3928	-0.66	1098.59	15.81
450	SLU 16	32	-56	3881	-0.54	1086.38	19.44
450	SLU 17	33	-45	3905	-0.67	1092.33	15.71
450	SLU 18	33	-57	3998	-0.62	1119.78	19.99
450	SLU 19	34	-47	4021	-0.75	1125.73	16.26
450	SLU 20	33	-58	4035	-0.6	1129.65	20.18
450	SLU 21	34	-47	4059	-0.73	1135.6	16.44
450	SLU 22	33	-55	3815	-0.44	1065.69	18.99
450	SLU 23	34	-37	3855	-0.65	1075.61	12.77
450	SLU 24	33	-55	3876	-0.41	1081.82	19.28
450	SLU 25	34	-45	3899	-0.54	1087.77	15.55
450	SLU 26	34	-37	3892	-0.63	1085.48	12.96
450	SLU 27	33	-56	3913	-0.39	1091.7	19.47
450	SLU 28	34	-45	3937	-0.52	1097.65	15.74
450	SLU 29	33	-56	3890	-0.4	1085.44	19.36
450	SLU 30	34	-45	3914	-0.53	1091.39	15.63
450	SLU 31	37	-43	4301	-0.74	1199.62	14.93
450	SLU 32	35	-62	4321	-0.5	1205.83	21.44
450	SLU 33	36	-51	4345	-0.62	1211.78	17.71
450	SLU 34	37	-44	4338	-0.72	1209.49	15.12
450	SLU 35	35	-62	4359	-0.47	1215.71	21.63
450	SLU 36	36	-52	4382	-0.6	1221.66	17.9
450	SLU 37	35	-62	4335	-0.49	1209.45	21.52
450	SLU 38	36	-51	4359	-0.61	1215.4	17.79
450	SLU 39	36	-63	4452	-0.57	1242.85	22.07
450	SLU 40	37	-53	4476	-0.69	1248.8	18.34
450	SLU 41	36	-64	4489	-0.54	1252.72	22.26
450	SLU 42	37	-53	4513	-0.67	1258.67	18.53
450	SLU 43	37	-61	4213	-0.66	1183.21	21.26
450	SLU 44	38	-43	4253	-0.88	1193.13	15.04
450	SLU 45	37	-62	4273	-0.63	1199.35	21.56
450	SLU 46	38	-51	4297	-0.76	1205.3	17.83
450	SLU 47	38	-44	4290	-0.86	1203.01	15.23
450	SLU 48	37	-62	4311	-0.61	1209.22	21.74
450	SLU 49	38	-52	4335	-0.74	1215.17	18.01
450	SLU 50	37	-62	4288	-0.62	1202.96	21.64
450	SLU 51	38	-51	4312	-0.75	1208.91	17.91
450	SLU 52	41	-50	4699	-0.96	1317.14	17.2
450	SLU 53	40	-68	4719	-0.72	1323.35	23.71
450	SLU 54	40	-57	4743	-0.85	1329.3	19.98
450	SLU 55	41	-50	4736	-0.94	1327.01	17.39
450	SLU 56	40	-69	4756	-0.7	1333.23	23.9
450	SLU 57	40	-58	4780	-0.83	1339.18	20.17
450	SLU 58	39	-68	4733	-0.71	1326.97	23.8
450	SLU 59	40	-58	4757	-0.84	1332.92	20.06
450	SLU 60	40	-70	4850	-0.79	1360.37	24.35
450	SLU 61	41	-59	4874	-0.92	1366.32	20.61
450	SLU 62	40	-71	4887	-0.77	1370.24	24.53
450	SLU 63	41	-60	4911	-0.89	1376.19	20.8
450	SLU 64	40	-67	4668	-0.61	1306.28	23.35
450	SLU 65	42	-49	4708	-0.82	1316.2	17.13
450	SLU 66	40	-68	4728	-0.57	1322.42	23.64
450	SLU 67	41	-57	4752	-0.7	1328.37	19.91
450	SLU 68	42	-50	4745	-0.8	1326.08	17.32
450	SLU 69	40	-68	4765	-0.55	1332.29	23.83
450	SLU 70	41	-58	4789	-0.68	1338.24	20.1
450	SLU 71	40	-68	4742	-0.56	1326.03	23.72
450	SLU 72	41	-57	4766	-0.69	1331.98	19.99
450	SLU 73	44	-56	5153	-0.91	1440.21	19.29
450	SLU 74	43	-74	5174	-0.66	1446.42	25.8
450	SLU 75	44	-63	5198	-0.79	1452.37	22.07
450	SLU 76	44	-56	5191	-0.89	1450.08	19.47
450	SLU 77	43	-75	5211	-0.64	1456.3	25.99
450	SLU 78	44	-64	5235	-0.77	1462.25	22.25
450	SLU 79	43	-74	5188	-0.65	1450.04	25.88
450	SLU 80	44	-64	5212	-0.78	1455.99	22.15
450	SLU 81	44	-76	5304	-0.73	1483.44	26.43
450	SLU 82	45	-65	5328	-0.86	1489.39	22.7
450	SLU 83	44	-77	5342	-0.71	1493.31	26.62
450	SLU 84	45	-66	5366	-0.84	1499.26	22.89
450	SLE RA 1	30	-50	3491	-0.48	977.78	17.5
450	SLE RA 2	31	-38	3517	-0.62	984.4	13.36
450	SLE RA 3	30	-51	3531	-0.46	988.54	17.7

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
450	SLE RA 4	31	-44	3547	-0.54	992.51	15.21
450	SLE RA 5	31	-39	3542	-0.61	990.98	13.48
450	SLE RA 6	30	-51	3556	-0.44	995.12	17.82
450	SLE RA 7	31	-44	3572	-0.53	999.09	15.33
450	SLE RA 8	30	-51	3540	-0.45	990.95	17.75
450	SLE RA 9	31	-44	3556	-0.54	994.92	15.26
450	SLE RA 10	33	-43	3814	-0.68	1067.07	14.79
450	SLE RA 11	32	-55	3828	-0.52	1071.21	19.14
450	SLE RA 12	33	-48	3844	-0.6	1075.18	16.65
450	SLE RA 13	33	-43	3839	-0.67	1073.65	14.92
450	SLE RA 14	32	-55	3853	-0.5	1077.8	19.26
450	SLE RA 15	33	-48	3869	-0.59	1081.76	16.77
450	SLE RA 16	32	-55	3837	-0.51	1073.62	19.19
450	SLE RA 17	32	-48	3853	-0.6	1077.59	16.7
450	SLE RA 18	33	-56	3915	-0.56	1095.89	19.56
450	SLE RA 19	33	-49	3931	-0.65	1099.86	17.07
450	SLE RA 20	33	-57	3940	-0.55	1102.47	19.68
450	SLE RA 21	33	-49	3956	-0.63	1106.44	17.19
450	SLE FR 1	30	-50	3491	-0.48	977.78	17.5
450	SLE FR 2	30	-48	3496	-0.51	979.11	16.67
450	SLE FR 3	30	-50	3501	-0.47	980.42	17.55
450	SLE FR 4	31	-50	3623	-0.53	1014.54	17.29
450	SLE FR 5	31	-52	3628	-0.5	1015.85	18.17
450	SLE FR 6	31	-53	3703	-0.52	1036.84	18.53
450	SLE QP 1	30	-50	3491	-0.48	977.78	17.5
450	SLE QP 2	31	-52	3618	-0.5	1013.22	18.12
450	SLD 1	361	66	3921	-1.78	1094.73	-22.83
450	SLD 2	408	69	3931	-1.82	1095.94	-23.7
450	SLD 3	335	-152	3393	1.09	964.19	53.35
450	SLD 4	381	-149	3403	1.05	965.39	52.48
450	SLD 5	162	313	4509	-5.23	1235.45	-109.54
450	SLD 6	192	315	4515	-5.26	1236.24	-110.12
450	SLD 7	74	-413	2747	4.33	800.3	144.38
450	SLD 8	104	-411	2754	4.31	801.09	143.8
450	SLD 9	-42	307	4482	-5.32	1225.34	-107.57
450	SLD 10	-12	309	4489	-5.34	1226.14	-108.14
450	SLD 11	-131	-419	2721	4.25	790.19	146.35
450	SLD 12	-100	-417	2727	4.23	790.98	145.78
450	SLD 13	-319	45	3833	-2.06	1061.04	-16.25
450	SLD 14	-273	48	3843	-2.1	1062.25	-17.12
450	SLD 15	-346	-173	3304	0.81	930.5	59.93
450	SLD 16	-299	-170	3315	0.77	931.7	59.06
450	SLV 1	806	240	4371	-3.73	1214.85	-83.52
450	SLV 2	915	247	4396	-3.81	1217.68	-85.56
450	SLV 3	739	-303	3047	3.46	887.56	106.42
450	SLV 4	848	-296	3071	3.38	890.4	104.38
450	SLV 5	345	858	5849	-12.37	1569.56	-300.07
450	SLV 6	418	863	5865	-12.42	1571.47	-301.44
450	SLV 7	121	-953	1433	11.61	478.61	333.06
450	SLV 8	194	-948	1449	11.55	480.51	331.69
450	SLV 9	-133	844	5787	-12.56	1545.92	-295.45
450	SLV 10	-59	849	5803	-12.62	1547.82	-296.83
450	SLV 11	-356	-967	1371	11.41	454.96	337.68
450	SLV 12	-283	-962	1387	11.36	456.87	336.3
450	SLV 13	-786	192	4165	-4.38	1136.04	-68.14
450	SLV 14	-677	199	4189	-4.47	1138.87	-70.19
450	SLV 15	-853	-351	2840	2.81	808.75	121.8
450	SLV 16	-744	-344	2864	2.73	811.58	119.75
450	CRTFP Ux+	0	0	0	0	0	0
450	CRTFP Ux-	0	0	0	0	0	0
450	CRTFP Uy+	0	0	0	0	0	0
450	CRTFP Uy-	0	0	0	0	0	0
452	SLU 1	-294	-100	10428	-269.64	-30.38	6.86
452	SLU 2	-297	-29	10534	-287.33	-31.06	6.53
452	SLU 3	-301	-101	10619	-271.35	-30.96	6.89
452	SLU 4	-303	-59	10683	-281.96	-31.37	6.7
452	SLU 5	-302	-30	10654	-288.17	-31.42	6.51
452	SLU 6	-305	-102	10738	-272.18	-31.32	6.88
452	SLU 7	-307	-60	10802	-282.8	-31.73	6.68
452	SLU 8	-303	-102	10667	-271.31	-31.1	6.82
452	SLU 9	-305	-60	10731	-281.93	-31.51	6.63
452	SLU 10	-322	-43	11885	-324.09	-35.92	7.91
452	SLU 11	-325	-115	11969	-308.11	-35.83	8.28
452	SLU 12	-327	-73	12033	-318.72	-36.23	8.08
452	SLU 13	-326	-44	12004	-324.93	-36.28	7.89
452	SLU 14	-330	-116	12089	-308.94	-36.19	8.26
452	SLU 15	-332	-74	12152	-319.56	-36.6	8.06
452	SLU 16	-327	-116	12017	-308.07	-35.96	8.21
452	SLU 17	-330	-73	12081	-318.69	-36.37	8.01
452	SLU 18	-329	-120	12357	-322.15	-37.32	8.84
452	SLU 19	-331	-77	12421	-332.77	-37.73	8.64
452	SLU 20	-333	-121	12476	-322.99	-37.69	8.82
452	SLU 21	-335	-78	12540	-333.6	-38.09	8.62
452	SLU 22	-332	-110	11845	-296.49	-34.7	7.58
452	SLU 23	-336	-39	11952	-314.18	-35.38	7.25
452	SLU 24	-339	-111	12036	-298.2	-35.28	7.62
452	SLU 25	-341	-69	12100	-308.81	-35.69	7.42
452	SLU 26	-340	-40	12071	-315.02	-35.74	7.23
452	SLU 27	-344	-112	12155	-299.04	-35.65	7.6

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
452	SLU 28	-346	-70	12219	-309.65	-36.05	7.4
452	SLU 29	-341	-112	12084	-298.17	-35.42	7.55
452	SLU 30	-343	-69	12148	-308.78	-35.83	7.35
452	SLU 31	-360	-53	13302	-350.94	-40.24	8.64
452	SLU 32	-364	-125	13386	-334.96	-40.15	9
452	SLU 33	-366	-82	13450	-345.57	-40.56	8.8
452	SLU 34	-365	-54	13422	-351.78	-40.61	8.62
452	SLU 35	-368	-126	13506	-335.8	-40.51	8.98
452	SLU 36	-370	-84	13570	-346.41	-40.92	8.78
452	SLU 37	-366	-126	13434	-334.92	-40.28	8.93
452	SLU 38	-368	-83	13498	-345.54	-40.69	8.73
452	SLU 39	-367	-129	13774	-349	-41.65	9.56
452	SLU 40	-369	-87	13838	-359.62	-42.06	9.36
452	SLU 41	-372	-130	13894	-349.84	-42.01	9.54
452	SLU 42	-374	-88	13958	-360.46	-42.42	9.34
452	SLU 43	-369	-126	13070	-341.32	-38.01	8.67
452	SLU 44	-372	-56	13177	-359.01	-38.69	8.34
452	SLU 45	-376	-128	13261	-343.03	-38.59	8.7
452	SLU 46	-378	-85	13325	-353.65	-39	8.51
452	SLU 47	-377	-57	13296	-359.85	-39.05	8.32
452	SLU 48	-380	-129	13381	-343.87	-38.96	8.69
452	SLU 49	-382	-87	13445	-354.48	-39.37	8.49
452	SLU 50	-378	-129	13309	-343	-38.73	8.63
452	SLU 51	-380	-86	13373	-353.61	-39.14	8.44
452	SLU 52	-397	-69	14527	-395.77	-43.55	9.72
452	SLU 53	-400	-142	14611	-379.79	-43.46	10.09
452	SLU 54	-402	-99	14675	-390.41	-43.87	9.89
452	SLU 55	-401	-71	14647	-396.61	-43.92	9.71
452	SLU 56	-405	-143	14731	-380.63	-43.82	10.07
452	SLU 57	-407	-100	14795	-391.24	-44.23	9.87
452	SLU 58	-402	-142	14660	-379.76	-43.59	10.02
452	SLU 59	-405	-100	14724	-390.37	-44	9.82
452	SLU 60	-404	-146	14999	-393.84	-44.96	10.65
452	SLU 61	-406	-104	15063	-404.45	-45.37	10.45
452	SLU 62	-408	-147	15119	-394.67	-45.32	10.63
452	SLU 63	-410	-105	15183	-405.29	-45.73	10.43
452	SLU 64	-407	-136	14487	-368.18	-42.33	9.39
452	SLU 65	-411	-66	14594	-385.87	-43.01	9.06
452	SLU 66	-414	-138	14678	-369.88	-42.92	9.43
452	SLU 67	-416	-95	14742	-380.5	-43.33	9.23
452	SLU 68	-415	-67	14714	-386.7	-43.37	9.04
452	SLU 69	-419	-139	14798	-370.72	-43.28	9.41
452	SLU 70	-421	-96	14862	-381.34	-43.69	9.21
452	SLU 71	-416	-138	14727	-369.85	-43.05	9.36
452	SLU 72	-419	-96	14791	-380.47	-43.46	9.16
452	SLU 73	-435	-79	15944	-422.63	-47.88	10.45
452	SLU 74	-439	-151	16029	-406.64	-47.78	10.81
452	SLU 75	-441	-109	16093	-417.26	-48.19	10.61
452	SLU 76	-440	-80	16064	-423.46	-48.24	10.43
452	SLU 77	-443	-153	16148	-407.48	-48.14	10.79
452	SLU 78	-445	-110	16212	-418.1	-48.55	10.59
452	SLU 79	-441	-152	16077	-406.61	-47.92	10.74
452	SLU 80	-443	-110	16141	-417.22	-48.32	10.54
452	SLU 81	-442	-156	16417	-420.69	-49.28	11.37
452	SLU 82	-444	-114	16481	-431.3	-49.69	11.17
452	SLU 83	-447	-157	16536	-421.53	-49.64	11.35
452	SLU 84	-449	-115	16600	-432.14	-50.05	11.15
452	SLE RA 1	-305	-103	10833	-277.31	-31.61	7.07
452	SLE RA 2	-307	-56	10904	-289.1	-32.07	6.85
452	SLE RA 3	-309	-104	10960	-278.45	-32	7.09
452	SLE RA 4	-311	-75	11003	-285.53	-32.28	6.96
452	SLE RA 5	-310	-56	10984	-289.66	-32.31	6.83
452	SLE RA 6	-312	-104	11040	-279.01	-32.24	7.08
452	SLE RA 7	-314	-76	11082	-286.08	-32.52	6.95
452	SLE RA 8	-311	-104	10992	-278.43	-32.09	7.04
452	SLE RA 9	-312	-76	11035	-285.5	-32.37	6.91
452	SLE RA 10	-323	-65	11804	-313.61	-35.31	7.77
452	SLE RA 11	-326	-113	11860	-302.96	-35.24	8.01
452	SLE RA 12	-327	-85	11903	-310.03	-35.52	7.88
452	SLE RA 13	-326	-65	11884	-314.17	-35.55	7.76
452	SLE RA 14	-329	-114	11940	-303.51	-35.49	8
452	SLE RA 15	-330	-85	11983	-310.59	-35.76	7.87
452	SLE RA 16	-327	-113	11892	-302.93	-35.34	7.97
452	SLE RA 17	-329	-85	11935	-310.01	-35.61	7.83
452	SLE RA 18	-328	-116	12119	-312.32	-36.24	8.38
452	SLE RA 19	-329	-87	12161	-319.4	-36.52	8.25
452	SLE RA 20	-331	-117	12198	-312.88	-36.48	8.37
452	SLE RA 21	-333	-88	12241	-319.95	-36.76	8.24
452	SLE FR 1	-305	-103	10833	-277.31	-31.61	7.07
452	SLE FR 2	-305	-93	10847	-279.67	-31.7	7.02
452	SLE FR 3	-306	-103	10865	-277.53	-31.71	7.06
452	SLE FR 4	-312	-97	11233	-290.17	-33.09	7.42
452	SLE FR 5	-313	-107	11250	-288.04	-33.1	7.46
452	SLE FR 6	-316	-109	11476	-294.81	-33.93	7.73
452	SLE QP 1	-305	-103	10833	-277.31	-31.61	7.07
452	SLE QP 2	-312	-107	11219	-287.81	-33	7.46
452	SLD 1	948	389	11711	-426.76	-32.88	15.01
452	SLD 2	1131	339	11679	-423.37	-33.16	28.21
452	SLD 3	1034	-489	10279	-190.99	-24.28	21.51

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
452	SLD 4	1217	-539	10247	-187.61	-24.56	34.71
452	SLD 5	-97	1381	13543	-687.68	-45.96	-2.51
452	SLD 6	24	1348	13523	-685.45	-46.14	6.2
452	SLD 7	189	-1543	8771	98.2	-17.29	19.17
452	SLD 8	310	-1576	8750	100.43	-17.48	27.88
452	SLD 9	-934	1362	13687	-676.06	-48.53	-12.95
452	SLD 10	-813	1329	13666	-673.82	-48.71	-4.24
452	SLD 11	-647	-1562	8914	109.82	-19.86	8.73
452	SLD 12	-526	-1595	8894	112.05	-20.05	17.44
452	SLD 13	-1841	325	12190	-388.02	-41.45	-19.79
452	SLD 14	-1657	275	12158	-384.63	-41.72	-6.59
452	SLD 15	-1755	-552	10758	-152.25	-32.85	-13.29
452	SLD 16	-1571	-602	10726	-148.87	-33.12	-0.08
452	SLV 1	2629	1119	12489	-632.45	-33.43	24.68
452	SLV 2	3061	1002	12415	-624.49	-34.08	55.72
452	SLV 3	2840	-1067	8900	-41.77	-11.87	40.61
452	SLV 4	3272	-1185	8826	-33.81	-12.53	71.65
452	SLV 5	170	3600	17056	-1288.55	-65.7	-17.33
452	SLV 6	461	3520	17006	-1283.2	-66.14	3.57
452	SLV 7	873	-3689	5094	680.38	6.15	35.78
452	SLV 8	1164	-3769	5044	685.74	5.71	56.67
452	SLV 9	-1787	3555	17393	-1261.36	-71.72	-41.75
452	SLV 10	-1497	3476	17343	-1256.01	-72.16	-20.85
452	SLV 11	-1084	-3734	5431	707.57	0.14	11.35
452	SLV 12	-794	-3813	5381	712.93	-0.3	32.25
452	SLV 13	-3895	972	13611	-541.81	-53.48	-56.73
452	SLV 14	-3463	854	13537	-533.86	-54.13	-25.69
452	SLV 15	-3684	-1215	10022	48.87	-31.92	-40.79
452	SLV 16	-3253	-1333	9948	56.82	-32.57	-9.76
452	CRTFP Ux+	0	0	0	0	0	0
452	CRTFP Ux-	0	0	0	0	0	0
452	CRTFP Uy+	0	0	0	0	0	0
452	CRTFP Uy-	0	0	0	0	0	0
454	SLU 1	-49	47	3344	-0.87	-455.18	11.88
454	SLU 2	-49	70	3389	-1.13	-459.8	17.57
454	SLU 3	-50	48	3406	-0.83	-463.33	11.96
454	SLU 4	-50	61	3433	-0.99	-466.1	15.38
454	SLU 5	-50	70	3427	-1.11	-464.85	17.63
454	SLU 6	-51	48	3445	-0.81	-468.38	12.01
454	SLU 7	-51	62	3471	-0.96	-471.15	15.43
454	SLU 8	-51	48	3421	-0.82	-465.27	11.98
454	SLU 9	-51	62	3448	-0.98	-468.05	15.4
454	SLU 10	-51	77	3788	-1.22	-511.94	19.2
454	SLU 11	-52	54	3805	-0.92	-515.47	13.59
454	SLU 12	-52	68	3832	-1.08	-518.24	17.01
454	SLU 13	-52	77	3826	-1.2	-516.98	19.26
454	SLU 14	-53	55	3843	-0.9	-520.51	13.64
454	SLU 15	-53	68	3870	-1.06	-523.29	17.06
454	SLU 16	-52	54	3820	-0.91	-517.41	13.61
454	SLU 17	-53	68	3847	-1.07	-520.18	17.03
454	SLU 18	-52	57	3914	-1	-529.66	14.2
454	SLU 19	-52	70	3941	-1.16	-532.43	17.62
454	SLU 20	-52	57	3952	-0.98	-534.71	14.26
454	SLU 21	-53	71	3979	-1.13	-537.48	17.67
454	SLU 22	-55	52	3808	-0.81	-515.96	12.88
454	SLU 23	-55	74	3852	-1.07	-520.58	18.58
454	SLU 24	-56	52	3870	-0.77	-524.11	12.97
454	SLU 25	-56	66	3896	-0.93	-526.88	16.39
454	SLU 26	-56	75	3891	-1.05	-525.63	18.63
454	SLU 27	-57	52	3908	-0.75	-529.16	13.02
454	SLU 28	-57	66	3935	-0.9	-531.93	16.44
454	SLU 29	-56	52	3884	-0.76	-526.06	12.99
454	SLU 30	-56	66	3911	-0.92	-528.83	16.41
454	SLU 31	-57	81	4251	-1.16	-572.72	20.21
454	SLU 32	-58	58	4269	-0.86	-576.25	14.6
454	SLU 33	-58	72	4295	-1.02	-579.02	18.02
454	SLU 34	-58	81	4290	-1.14	-577.77	20.26
454	SLU 35	-59	59	4307	-0.84	-581.3	14.65
454	SLU 36	-59	72	4334	-0.99	-584.07	18.07
454	SLU 37	-58	58	4283	-0.85	-578.19	14.62
454	SLU 38	-58	72	4310	-1.01	-580.97	18.03
454	SLU 39	-57	61	4378	-0.94	-590.44	15.21
454	SLU 40	-57	74	4404	-1.1	-593.21	18.63
454	SLU 41	-58	61	4416	-0.92	-595.49	15.26
454	SLU 42	-58	75	4443	-1.07	-598.26	18.68
454	SLU 43	-62	60	4188	-1.16	-570.89	15.09
454	SLU 44	-62	83	4233	-1.42	-575.51	20.79
454	SLU 45	-63	61	4250	-1.12	-579.04	15.18
454	SLU 46	-63	74	4277	-1.27	-581.81	18.6
454	SLU 47	-63	83	4272	-1.39	-580.56	20.84
454	SLU 48	-64	61	4289	-1.09	-584.09	15.23
454	SLU 49	-64	75	4316	-1.25	-586.86	18.65
454	SLU 50	-63	61	4265	-1.1	-580.99	15.2
454	SLU 51	-63	74	4292	-1.26	-583.76	18.62
454	SLU 52	-64	90	4632	-1.51	-627.65	22.42
454	SLU 53	-65	67	4649	-1.21	-631.18	16.81
454	SLU 54	-65	81	4676	-1.36	-633.95	20.23
454	SLU 55	-65	90	4670	-1.48	-632.7	22.47
454	SLU 56	-66	67	4688	-1.18	-636.23	16.86

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
454	SLU 57	-66	81	4715	-1.34	-639	20.28
454	SLU 58	-65	67	4664	-1.2	-633.13	16.83
454	SLU 59	-65	81	4691	-1.35	-635.9	20.25
454	SLU 60	-64	70	4758	-1.29	-645.38	17.42
454	SLU 61	-64	83	4785	-1.44	-648.15	20.84
454	SLU 62	-65	70	4797	-1.26	-650.42	17.47
454	SLU 63	-65	83	4824	-1.42	-653.19	20.89
454	SLU 64	-67	64	4652	-1.09	-631.67	16.1
454	SLU 65	-68	87	4697	-1.35	-636.29	21.8
454	SLU 66	-68	65	4714	-1.06	-639.83	16.19
454	SLU 67	-69	78	4741	-1.21	-642.6	19.61
454	SLU 68	-68	87	4735	-1.33	-641.34	21.85
454	SLU 69	-69	65	4752	-1.03	-644.87	16.24
454	SLU 70	-70	79	4779	-1.19	-647.64	19.66
454	SLU 71	-69	65	4729	-1.04	-641.77	16.2
454	SLU 72	-69	78	4755	-1.2	-644.54	19.62
454	SLU 73	-69	94	5096	-1.45	-688.43	23.43
454	SLU 74	-70	71	5113	-1.15	-691.96	17.82
454	SLU 75	-71	85	5140	-1.3	-694.73	21.24
454	SLU 76	-70	94	5134	-1.42	-693.48	23.48
454	SLU 77	-71	71	5151	-1.12	-697.01	17.87
454	SLU 78	-71	85	5178	-1.28	-699.78	21.29
454	SLU 79	-71	71	5128	-1.13	-693.91	17.83
454	SLU 80	-71	85	5154	-1.29	-696.68	21.25
454	SLU 81	-70	74	5222	-1.22	-706.16	18.43
454	SLU 82	-70	87	5249	-1.38	-708.93	21.85
454	SLU 83	-71	74	5260	-1.2	-711.21	18.48
454	SLU 84	-71	88	5287	-1.35	-713.98	21.9
454	SLE RA 1	-50	49	3477	-0.86	-472.54	12.16
454	SLE RA 2	-51	64	3506	-1.03	-475.62	15.96
454	SLE RA 3	-51	49	3518	-0.83	-477.98	12.22
454	SLE RA 4	-51	58	3536	-0.93	-479.83	14.5
454	SLE RA 5	-51	64	3532	-1.01	-478.99	16
454	SLE RA 6	-52	49	3543	-0.81	-481.34	12.26
454	SLE RA 7	-52	58	3561	-0.92	-483.19	14.54
454	SLE RA 8	-52	49	3528	-0.82	-479.28	12.23
454	SLE RA 9	-52	58	3546	-0.93	-481.12	14.51
454	SLE RA 10	-52	68	3772	-1.09	-510.38	17.05
454	SLE RA 11	-53	53	3784	-0.89	-512.74	13.31
454	SLE RA 12	-53	62	3802	-0.99	-514.58	15.59
454	SLE RA 13	-53	68	3798	-1.07	-513.75	17.08
454	SLE RA 14	-53	53	3809	-0.87	-516.1	13.34
454	SLE RA 15	-53	62	3827	-0.98	-517.95	15.62
454	SLE RA 16	-53	53	3794	-0.88	-514.03	13.32
454	SLE RA 17	-53	62	3812	-0.99	-515.88	15.6
454	SLE RA 18	-52	55	3857	-0.94	-522.2	13.71
454	SLE RA 19	-52	64	3874	-1.05	-524.05	15.99
454	SLE RA 20	-53	55	3882	-0.93	-525.57	13.75
454	SLE RA 21	-53	64	3900	-1.03	-527.41	16.03
454	SLE FR 1	-50	49	3477	-0.86	-472.54	12.16
454	SLE FR 2	-51	52	3483	-0.89	-473.16	12.92
454	SLE FR 3	-51	49	3487	-0.85	-473.89	12.18
454	SLE FR 4	-51	54	3597	-0.92	-488.06	13.39
454	SLE FR 5	-51	51	3601	-0.87	-488.79	12.64
454	SLE FR 6	-51	52	3667	-0.9	-497.37	12.94
454	SLE QP 1	-50	49	3477	-0.86	-472.54	12.16
454	SLE QP 2	-51	50	3591	-0.88	-487.44	12.63
454	SLD 1	235	270	4977	-3.36	-652.06	67.18
454	SLD 2	275	152	4916	-3	-645.73	37.89
454	SLD 3	252	9	4348	0.48	-584.3	2.13
454	SLD 4	291	-109	4286	0.84	-577.97	-27.16
454	SLD 5	3	532	4973	-7.52	-640.73	132.92
454	SLD 6	29	454	4932	-7.28	-636.55	113.6
454	SLD 7	58	-335	2874	5.3	-414.87	-83.91
454	SLD 8	84	-413	2833	5.53	-410.7	-103.24
454	SLD 9	-186	514	4348	-7.3	-564.18	128.49
454	SLD 10	-160	436	4308	-7.06	-560.01	109.17
454	SLD 11	-131	-353	2249	5.52	-338.33	-88.34
454	SLD 12	-105	-431	2208	5.76	-334.16	-107.67
454	SLD 13	-393	209	2895	-2.61	-396.91	52.42
454	SLD 14	-354	92	2834	-2.25	-390.58	23.12
454	SLD 15	-377	-51	2265	1.24	-329.15	-12.64
454	SLD 16	-337	-169	2204	1.6	-322.83	-41.93
454	SLV 1	617	583	6888	-7	-878.25	145.17
454	SLV 2	710	306	6744	-6.15	-863.38	76.32
454	SLV 3	658	-63	5311	2.62	-708.6	-16.38
454	SLV 4	751	-341	5167	3.47	-693.73	-85.23
454	SLV 5	71	1242	6998	-17.47	-864.76	310.25
454	SLV 6	133	1055	6901	-16.9	-854.75	263.9
454	SLV 7	206	-912	1742	14.61	-299.26	-228.24
454	SLV 8	268	-1099	1645	15.18	-289.25	-274.59
454	SLV 9	-370	1200	5536	-16.95	-685.63	299.85
454	SLV 10	-308	1013	5439	-16.37	-675.62	253.5
454	SLV 11	-235	-955	280	15.14	-120.13	-238.64
454	SLV 12	-173	-1141	183	15.71	-110.12	-285
454	SLV 13	-853	442	2014	-5.24	-281.15	110.49
454	SLV 14	-760	164	1870	-4.39	-266.28	41.64
454	SLV 15	-812	-205	437	4.39	-111.5	-51.06
454	SLV 16	-719	-482	293	5.24	-96.63	-119.91

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
454	CRTFP Ux+	0	0	0	0	0	0
454	CRTFP Ux-	0	0	0	0	0	0
454	CRTFP Uy+	0	0	0	0	0	0
454	CRTFP Uy-	0	0	0	0	0	0
457	SLU 1	-68	-70	6820	-1.71	-30.39	-0.97
457	SLU 2	-69	-39	6906	-2.19	-30.2	-1.01
457	SLU 3	-70	-71	6949	-1.61	-31.06	-1.01
457	SLU 4	-71	-53	7001	-1.9	-30.95	-1.03
457	SLU 5	-71	-40	6986	-2.12	-30.64	-1.04
457	SLU 6	-71	-72	7030	-1.54	-31.51	-1.04
457	SLU 7	-72	-54	7081	-1.83	-31.39	-1.07
457	SLU 8	-71	-72	6982	-1.58	-31.27	-1.03
457	SLU 9	-72	-53	7033	-1.87	-31.16	-1.06
457	SLU 10	-71	-46	7776	-2.35	-35.43	-1.05
457	SLU 11	-72	-78	7819	-1.77	-36.3	-1.04
457	SLU 12	-72	-59	7871	-2.06	-36.19	-1.07
457	SLU 13	-72	-47	7857	-2.29	-35.88	-1.08
457	SLU 14	-73	-79	7900	-1.71	-36.75	-1.07
457	SLU 15	-74	-60	7952	-2	-36.63	-1.1
457	SLU 16	-72	-78	7852	-1.74	-36.51	-1.06
457	SLU 17	-73	-60	7903	-2.03	-36.4	-1.09
457	SLU 18	-70	-79	8063	-1.94	-37.87	-1.02
457	SLU 19	-71	-61	8114	-2.23	-37.76	-1.05
457	SLU 20	-72	-80	8144	-1.87	-38.32	-1.05
457	SLU 21	-73	-62	8195	-2.16	-38.2	-1.08
457	SLU 22	-76	-78	7798	-1.51	-35.25	-1.14
457	SLU 23	-78	-48	7884	-1.99	-35.05	-1.19
457	SLU 24	-78	-79	7927	-1.41	-35.92	-1.18
457	SLU 25	-79	-61	7979	-1.7	-35.81	-1.21
457	SLU 26	-79	-48	7965	-1.93	-35.5	-1.22
457	SLU 27	-80	-80	8008	-1.35	-36.37	-1.21
457	SLU 28	-81	-62	8059	-1.64	-36.25	-1.24
457	SLU 29	-79	-80	7960	-1.38	-36.13	-1.2
457	SLU 30	-80	-62	8011	-1.67	-36.02	-1.23
457	SLU 31	-80	-54	8754	-2.15	-40.29	-1.22
457	SLU 32	-80	-86	8797	-1.57	-41.16	-1.22
457	SLU 33	-81	-68	8849	-1.86	-41.05	-1.24
457	SLU 34	-81	-55	8835	-2.09	-40.74	-1.25
457	SLU 35	-81	-87	8878	-1.51	-41.61	-1.25
457	SLU 36	-82	-68	8930	-1.8	-41.49	-1.28
457	SLU 37	-81	-86	8830	-1.54	-41.37	-1.24
457	SLU 38	-82	-68	8881	-1.83	-41.26	-1.27
457	SLU 39	-79	-87	9041	-1.74	-42.73	-1.19
457	SLU 40	-80	-69	9092	-2.03	-42.61	-1.22
457	SLU 41	-80	-88	9122	-1.67	-43.17	-1.22
457	SLU 42	-81	-70	9173	-1.96	-43.06	-1.25
457	SLU 43	-85	-88	8530	-2.29	-37.84	-1.2
457	SLU 44	-87	-58	8616	-2.77	-37.64	-1.25
457	SLU 45	-87	-90	8660	-2.19	-38.51	-1.24
457	SLU 46	-88	-71	8711	-2.48	-38.4	-1.27
457	SLU 47	-88	-59	8697	-2.7	-38.09	-1.28
457	SLU 48	-89	-90	8741	-2.12	-38.96	-1.27
457	SLU 49	-90	-72	8792	-2.41	-38.84	-1.3
457	SLU 50	-88	-90	8692	-2.16	-38.72	-1.26
457	SLU 51	-89	-72	8744	-2.45	-38.61	-1.29
457	SLU 52	-88	-64	9486	-2.93	-42.88	-1.28
457	SLU 53	-89	-96	9530	-2.35	-43.75	-1.27
457	SLU 54	-90	-78	9581	-2.64	-43.64	-1.3
457	SLU 55	-90	-65	9567	-2.87	-43.33	-1.31
457	SLU 56	-90	-97	9611	-2.29	-44.2	-1.3
457	SLU 57	-91	-79	9662	-2.58	-44.08	-1.33
457	SLU 58	-90	-96	9562	-2.32	-43.96	-1.3
457	SLU 59	-91	-78	9614	-2.61	-43.85	-1.32
457	SLU 60	-88	-97	9773	-2.52	-45.32	-1.25
457	SLU 61	-89	-79	9825	-2.81	-45.21	-1.28
457	SLU 62	-89	-98	9854	-2.45	-45.76	-1.28
457	SLU 63	-90	-80	9906	-2.74	-45.65	-1.31
457	SLU 64	-94	-96	9508	-2.09	-42.69	-1.37
457	SLU 65	-95	-66	9594	-2.57	-42.5	-1.42
457	SLU 66	-96	-98	9638	-1.99	-43.37	-1.41
457	SLU 67	-97	-79	9689	-2.28	-43.26	-1.44
457	SLU 68	-97	-67	9675	-2.51	-42.95	-1.45
457	SLU 69	-97	-99	9719	-1.93	-43.82	-1.44
457	SLU 70	-98	-80	9770	-2.22	-43.7	-1.47
457	SLU 71	-97	-98	9670	-1.96	-43.58	-1.43
457	SLU 72	-98	-80	9722	-2.25	-43.47	-1.46
457	SLU 73	-97	-72	10464	-2.73	-47.74	-1.46
457	SLU 74	-97	-104	10508	-2.15	-48.61	-1.45
457	SLU 75	-98	-86	10559	-2.44	-48.5	-1.48
457	SLU 76	-98	-73	10545	-2.67	-48.19	-1.49
457	SLU 77	-99	-105	10589	-2.09	-49.06	-1.48
457	SLU 78	-100	-87	10640	-2.38	-48.94	-1.51
457	SLU 79	-98	-104	10540	-2.12	-48.82	-1.47
457	SLU 80	-99	-86	10592	-2.41	-48.71	-1.5
457	SLU 81	-96	-105	10751	-2.32	-50.18	-1.42
457	SLU 82	-97	-87	10803	-2.61	-50.06	-1.45
457	SLU 83	-98	-106	10832	-2.25	-50.62	-1.45
457	SLU 84	-99	-88	10884	-2.54	-50.51	-1.48
457	SLE RA 1	-70	-72	7099	-1.65	-31.77	-1.02

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
457	SLE RA 2	-71	-52	7156	-1.97	-31.65	-1.05
457	SLE RA 3	-72	-73	7185	-1.59	-32.23	-1.04
457	SLE RA 4	-72	-61	7220	-1.78	-32.15	-1.06
457	SLE RA 5	-72	-53	7210	-1.93	-31.94	-1.07
457	SLE RA 6	-73	-74	7239	-1.54	-32.52	-1.06
457	SLE RA 7	-73	-62	7274	-1.74	-32.45	-1.08
457	SLE RA 8	-72	-73	7207	-1.56	-32.37	-1.06
457	SLE RA 9	-73	-61	7241	-1.76	-32.29	-1.08
457	SLE RA 10	-72	-56	7736	-2.08	-35.14	-1.07
457	SLE RA 11	-73	-77	7765	-1.69	-35.72	-1.07
457	SLE RA 12	-73	-65	7800	-1.89	-35.64	-1.09
457	SLE RA 13	-73	-57	7790	-2.04	-35.44	-1.09
457	SLE RA 14	-74	-78	7819	-1.65	-36.01	-1.09
457	SLE RA 15	-74	-66	7854	-1.84	-35.94	-1.11
457	SLE RA 16	-73	-78	7787	-1.67	-35.86	-1.08
457	SLE RA 17	-74	-66	7821	-1.86	-35.78	-1.1
457	SLE RA 18	-72	-78	7928	-1.8	-36.76	-1.05
457	SLE RA 19	-72	-66	7962	-2	-36.69	-1.07
457	SLE RA 20	-73	-79	7982	-1.76	-37.06	-1.07
457	SLE RA 21	-73	-67	8016	-1.95	-36.98	-1.09
457	SLE FR 1	-70	-72	7099	-1.65	-31.77	-1.02
457	SLE FR 2	-71	-68	7111	-1.72	-31.75	-1.02
457	SLE FR 3	-71	-73	7121	-1.63	-31.89	-1.02
457	SLE FR 4	-71	-70	7359	-1.76	-33.25	-1.03
457	SLE FR 5	-71	-74	7369	-1.68	-33.39	-1.03
457	SLE FR 6	-71	-75	7514	-1.73	-34.27	-1.03
457	SLE QP 1	-70	-72	7099	-1.65	-31.77	-1.02
457	SLE QP 2	-71	-74	7348	-1.7	-33.27	-1.03
457	SLD 1	545	100	8709	-5.56	-7.22	-0.24
457	SLD 2	632	16	8635	-5.19	-8.7	2.4
457	SLD 3	578	-262	7526	1.33	-11.61	1.03
457	SLD 4	664	-347	7452	1.71	-13.09	3.67
457	SLD 5	49	543	9564	-13.38	-18.53	-3.2
457	SLD 6	106	487	9515	-13.13	-19.51	-1.46
457	SLD 7	157	-665	5620	9.6	-33.16	1.05
457	SLD 8	215	-721	5571	9.84	-34.14	2.79
457	SLD 9	-356	572	9125	-13.24	-32.4	-4.84
457	SLD 10	-299	516	9076	-12.99	-33.38	-3.1
457	SLD 11	-248	-635	5180	9.73	-47.03	-0.6
457	SLD 12	-191	-691	5131	9.98	-48.01	1.14
457	SLD 13	-806	198	7244	-5.1	-53.46	-5.72
457	SLD 14	-719	114	7170	-4.72	-54.93	-3.08
457	SLD 15	-773	-164	6061	1.79	-57.85	-4.45
457	SLD 16	-687	-249	5986	2.17	-59.32	-1.81
457	SLV 1	1368	362	10632	-11.31	27.99	0.72
457	SLV 2	1571	162	10457	-10.42	24.52	6.92
457	SLV 3	1447	-540	7668	5.95	17.13	3.84
457	SLV 4	1651	-739	7493	6.83	13.65	10.05
457	SLV 5	203	1461	12861	-30.92	2.24	-6.4
457	SLV 6	340	1327	12743	-30.33	-0.1	-2.22
457	SLV 7	467	-1544	2981	26.61	-33.99	4.02
457	SLV 8	604	-1678	2864	27.2	-36.33	8.19
457	SLV 9	-745	1530	11832	-30.6	-30.22	-10.25
457	SLV 10	-608	1396	11714	-30	-32.55	-6.07
457	SLV 11	-481	-1475	1952	26.93	-66.45	0.17
457	SLV 12	-344	-1609	1835	27.53	-68.78	4.35
457	SLV 13	-1792	591	7202	-10.23	-80.2	-12.1
457	SLV 14	-1589	392	7028	-9.34	-83.67	-5.89
457	SLV 15	-1713	-311	4239	7.03	-91.07	-8.98
457	SLV 16	-1510	-510	4064	7.92	-94.54	-2.77
457	CRTFP Ux+	0	0	0	0	0	0
457	CRTFP Ux-	0	0	0	0	0	0
457	CRTFP Uy+	0	0	0	0	0	0
457	CRTFP Uy-	0	0	0	0	0	0
460	SLU 1	38	-41	6700	-2.22	42.38	-0.15
460	SLU 2	41	-9	6787	-2.72	41.92	-0.09
460	SLU 3	38	-41	6827	-2.13	43.28	-0.17
460	SLU 4	40	-22	6879	-2.43	43.01	-0.14
460	SLU 5	41	-10	6867	-2.65	42.49	-0.12
460	SLU 6	38	-42	6906	-2.06	43.85	-0.19
460	SLU 7	40	-23	6958	-2.36	43.58	-0.16
460	SLU 8	37	-41	6860	-2.08	43.52	-0.19
460	SLU 9	39	-23	6912	-2.38	43.25	-0.16
460	SLU 10	40	-11	7632	-2.95	48.59	-0.14
460	SLU 11	38	-43	7672	-2.36	49.95	-0.22
460	SLU 12	39	-25	7724	-2.66	49.67	-0.19
460	SLU 13	40	-12	7712	-2.88	49.16	-0.16
460	SLU 14	37	-44	7751	-2.29	50.52	-0.24
460	SLU 15	39	-25	7803	-2.59	50.24	-0.21
460	SLU 16	37	-44	7705	-2.31	50.19	-0.24
460	SLU 17	39	-25	7756	-2.61	49.91	-0.21
460	SLU 18	37	-43	7908	-2.56	51.9	-0.22
460	SLU 19	39	-25	7959	-2.86	51.63	-0.18
460	SLU 20	37	-44	7987	-2.48	52.47	-0.24
460	SLU 21	39	-25	8039	-2.78	52.2	-0.21
460	SLU 22	41	-44	7649	-2.11	48.61	-0.16
460	SLU 23	44	-13	7735	-2.61	48.15	-0.1
460	SLU 24	41	-45	7775	-2.02	49.51	-0.18
460	SLU 25	43	-26	7827	-2.32	49.23	-0.15

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
460	SLU 26	44	-13	7815	-2.54	48.72	-0.13
460	SLU 27	41	-45	7855	-1.95	50.08	-0.2
460	SLU 28	43	-27	7907	-2.25	49.8	-0.17
460	SLU 29	41	-45	7808	-1.97	49.75	-0.2
460	SLU 30	43	-26	7860	-2.27	49.47	-0.17
460	SLU 31	44	-15	8580	-2.84	54.81	-0.15
460	SLU 32	41	-47	8620	-2.25	56.17	-0.23
460	SLU 33	43	-28	8672	-2.55	55.89	-0.2
460	SLU 34	44	-15	8660	-2.77	55.38	-0.18
460	SLU 35	41	-47	8700	-2.18	56.74	-0.25
460	SLU 36	43	-29	8752	-2.48	56.46	-0.22
460	SLU 37	41	-47	8653	-2.2	56.41	-0.25
460	SLU 38	43	-28	8705	-2.5	56.13	-0.22
460	SLU 39	41	-47	8856	-2.45	58.13	-0.23
460	SLU 40	43	-28	8908	-2.75	57.85	-0.2
460	SLU 41	41	-48	8936	-2.37	58.7	-0.25
460	SLU 42	42	-29	8987	-2.67	58.42	-0.22
460	SLU 43	48	-51	8385	-2.92	52.96	-0.19
460	SLU 44	51	-20	8472	-3.42	52.5	-0.13
460	SLU 45	48	-52	8512	-2.83	53.87	-0.21
460	SLU 46	50	-33	8564	-3.13	53.59	-0.18
460	SLU 47	51	-21	8552	-3.35	53.07	-0.16
460	SLU 48	48	-53	8591	-2.76	54.43	-0.23
460	SLU 49	50	-34	8643	-3.06	54.16	-0.2
460	SLU 50	48	-52	8545	-2.78	54.1	-0.23
460	SLU 51	49	-34	8596	-3.08	53.83	-0.2
460	SLU 52	51	-22	9317	-3.66	59.17	-0.18
460	SLU 53	48	-54	9357	-3.07	60.53	-0.26
460	SLU 54	50	-35	9409	-3.37	60.25	-0.23
460	SLU 55	50	-23	9396	-3.59	59.74	-0.21
460	SLU 56	48	-55	9436	-2.99	61.1	-0.28
460	SLU 57	49	-36	9488	-3.29	60.82	-0.25
460	SLU 58	47	-54	9389	-3.02	60.77	-0.28
460	SLU 59	49	-36	9441	-3.32	60.49	-0.25
460	SLU 60	47	-54	9592	-3.26	62.48	-0.26
460	SLU 61	49	-36	9644	-3.56	62.21	-0.23
460	SLU 62	47	-55	9672	-3.19	63.05	-0.28
460	SLU 63	49	-36	9724	-3.49	62.78	-0.25
460	SLU 64	51	-55	9334	-2.81	59.19	-0.2
460	SLU 65	54	-24	9420	-3.31	58.73	-0.14
460	SLU 66	52	-56	9460	-2.72	60.09	-0.22
460	SLU 67	53	-37	9512	-3.02	59.81	-0.19
460	SLU 68	54	-24	9500	-3.24	59.3	-0.17
460	SLU 69	51	-56	9540	-2.65	60.66	-0.24
460	SLU 70	53	-37	9592	-2.95	60.38	-0.21
460	SLU 71	51	-56	9493	-2.67	60.33	-0.25
460	SLU 72	53	-37	9545	-2.97	60.05	-0.21
460	SLU 73	54	-26	10265	-3.55	65.39	-0.19
460	SLU 74	51	-58	10305	-2.96	66.75	-0.27
460	SLU 75	53	-39	10357	-3.26	66.48	-0.24
460	SLU 76	54	-26	10345	-3.48	65.96	-0.22
460	SLU 77	51	-58	10385	-2.88	67.32	-0.29
460	SLU 78	53	-40	10437	-3.18	67.05	-0.26
460	SLU 79	51	-58	10338	-2.91	66.99	-0.29
460	SLU 80	53	-39	10390	-3.21	66.71	-0.26
460	SLU 81	51	-58	10541	-3.15	68.71	-0.27
460	SLU 82	53	-39	10593	-3.45	68.43	-0.24
460	SLU 83	51	-58	10620	-3.08	69.28	-0.29
460	SLU 84	53	-40	10672	-3.38	69	-0.26
460	SLE RA 1	39	-42	6971	-2.19	44.16	-0.15
460	SLE RA 2	41	-21	7029	-2.52	43.85	-0.11
460	SLE RA 3	39	-42	7056	-2.13	44.76	-0.17
460	SLE RA 4	40	-30	7090	-2.33	44.58	-0.14
460	SLE RA 5	41	-21	7082	-2.47	44.23	-0.13
460	SLE RA 6	39	-42	7109	-2.08	45.14	-0.18
460	SLE RA 7	40	-30	7143	-2.28	44.96	-0.16
460	SLE RA 8	39	-42	7078	-2.09	44.92	-0.18
460	SLE RA 9	40	-30	7112	-2.29	44.74	-0.16
460	SLE RA 10	41	-22	7592	-2.68	48.3	-0.15
460	SLE RA 11	39	-43	7619	-2.28	49.2	-0.2
460	SLE RA 12	40	-31	7654	-2.48	49.02	-0.18
460	SLE RA 13	40	-22	7645	-2.63	48.68	-0.16
460	SLE RA 14	39	-44	7672	-2.24	49.58	-0.21
460	SLE RA 15	40	-31	7707	-2.44	49.4	-0.19
460	SLE RA 16	38	-44	7641	-2.25	49.36	-0.21
460	SLE RA 17	40	-31	7675	-2.45	49.18	-0.19
460	SLE RA 18	38	-44	7776	-2.41	50.51	-0.2
460	SLE RA 19	40	-31	7811	-2.61	50.32	-0.18
460	SLE RA 20	38	-44	7829	-2.36	50.89	-0.21
460	SLE RA 21	40	-31	7864	-2.56	50.7	-0.19
460	SLE FR 1	39	-42	6971	-2.19	44.16	-0.15
460	SLE FR 2	39	-37	6983	-2.25	44.1	-0.14
460	SLE FR 3	39	-42	6993	-2.17	44.31	-0.16
460	SLE FR 4	39	-38	7224	-2.32	46	-0.16
460	SLE FR 5	39	-42	7234	-2.24	46.22	-0.17
460	SLE FR 6	39	-43	7374	-2.3	47.33	-0.17
460	SLE QP 1	39	-42	6971	-2.19	44.16	-0.15
460	SLE QP 2	39	-42	7213	-2.25	46.07	-0.17
460	SLD 1	710	150	7099	-5.18	53.94	3.05

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
460	SLD 2	801	238	7175	-5.6	52.4	5.65
460	SLD 3	661	-222	5898	1.94	61.82	1.79
460	SLD 4	751	-134	5974	1.53	60.28	4.38
460	SLD 5	299	564	8986	-13.86	36.77	2.26
460	SLD 6	359	622	9037	-14.13	35.75	3.97
460	SLD 7	134	-676	4983	9.88	63.01	-1.97
460	SLD 8	193	-618	5033	9.6	61.99	-0.26
460	SLD 9	-116	534	9392	-14.11	30.14	-0.07
460	SLD 10	-56	592	9443	-14.39	29.12	1.64
460	SLD 11	-282	-706	5389	9.62	56.38	-4.3
460	SLD 12	-222	-648	5439	9.35	55.37	-2.59
460	SLD 13	-674	49	8452	-6.03	31.85	-4.72
460	SLD 14	-583	138	8528	-6.45	30.31	-2.12
460	SLD 15	-724	-322	7251	1.09	39.73	-5.98
460	SLD 16	-633	-234	7327	0.67	38.19	-3.38
460	SLV 1	1615	436	7046	-9.69	63.87	7.48
460	SLV 2	1827	643	7224	-10.67	60.25	13.59
460	SLV 3	1488	-492	4034	8.16	83.56	4.25
460	SLV 4	1701	-285	4213	7.18	79.94	10.36
460	SLV 5	663	1471	11697	-31.38	22.21	5.89
460	SLV 6	806	1611	11817	-32.04	19.78	10
460	SLV 7	242	-1624	1658	28.13	87.86	-4.88
460	SLV 8	386	-1485	1778	27.47	85.42	-0.76
460	SLV 9	-308	1401	12647	-31.98	6.71	0.43
460	SLV 10	-165	1540	12768	-32.64	4.27	4.55
460	SLV 11	-729	-1695	2608	27.53	72.36	-10.33
460	SLV 12	-586	-1556	2729	26.87	69.92	-6.22
460	SLV 13	-1624	201	10213	-11.69	12.19	-10.7
460	SLV 14	-1411	408	10392	-12.67	8.57	-4.58
460	SLV 15	-1750	-728	7201	6.16	31.88	-13.92
460	SLV 16	-1537	-521	7380	5.18	28.26	-7.81
460	CRTFP Ux+	0	0	0	0	0	0
460	CRTFP Ux-	0	0	0	0	0	0
460	CRTFP Uy+	0	0	0	0	0	0
460	CRTFP Uy-	0	0	0	0	0	0
463	SLU 1	30	24	3784	-0.95	801.02	-8.5
463	SLU 2	31	48	3836	-1.29	809.1	-16.7
463	SLU 3	30	25	3856	-0.88	815.72	-8.76
463	SLU 4	31	39	3888	-1.09	820.56	-13.68
463	SLU 5	31	49	3882	-1.24	818.34	-17.04
463	SLU 6	30	26	3902	-0.83	824.97	-9.09
463	SLU 7	31	40	3933	-1.04	829.81	-14.01
463	SLU 8	30	26	3875	-0.85	819.52	-9.17
463	SLU 9	31	40	3906	-1.05	824.36	-14.09
463	SLU 10	30	51	4285	-1.4	900.3	-17.78
463	SLU 11	29	28	4306	-0.99	906.92	-9.83
463	SLU 12	30	42	4337	-1.2	911.76	-14.75
463	SLU 13	31	52	4331	-1.35	909.55	-18.11
463	SLU 14	30	29	4351	-0.94	916.17	-10.16
463	SLU 15	30	43	4382	-1.14	921.01	-15.08
463	SLU 16	29	29	4324	-0.95	910.72	-10.24
463	SLU 17	30	43	4355	-1.16	915.57	-15.16
463	SLU 18	29	29	4426	-1.1	931.31	-10.03
463	SLU 19	30	43	4457	-1.3	936.16	-14.96
463	SLU 20	29	30	4471	-1.05	940.56	-10.37
463	SLU 21	30	44	4502	-1.25	945.4	-15.29
463	SLU 22	32	25	4304	-0.85	907.04	-8.75
463	SLU 23	33	48	4356	-1.2	915.11	-16.95
463	SLU 24	32	26	4376	-0.79	921.74	-9
463	SLU 25	33	40	4408	-1	926.58	-13.92
463	SLU 26	33	49	4402	-1.15	924.36	-17.28
463	SLU 27	32	27	4422	-0.74	930.98	-9.33
463	SLU 28	33	41	4453	-0.94	935.83	-14.25
463	SLU 29	32	27	4395	-0.75	925.54	-9.41
463	SLU 30	33	41	4426	-0.96	930.38	-14.33
463	SLU 31	33	52	4805	-1.3	1006.31	-18.02
463	SLU 32	32	29	4825	-0.89	1012.94	-10.07
463	SLU 33	32	43	4857	-1.1	1017.78	-14.99
463	SLU 34	33	53	4851	-1.25	1015.56	-18.35
463	SLU 35	32	30	4871	-0.84	1022.19	-10.4
463	SLU 36	33	44	4902	-1.05	1027.03	-15.33
463	SLU 37	31	30	4844	-0.85	1016.74	-10.48
463	SLU 38	32	44	4875	-1.06	1021.58	-15.4
463	SLU 39	31	29	4946	-1	1037.33	-10.28
463	SLU 40	32	43	4977	-1.21	1042.17	-15.2
463	SLU 41	31	30	4991	-0.95	1046.58	-10.61
463	SLU 42	32	44	5022	-1.16	1051.42	-15.53
463	SLU 43	38	31	4741	-1.27	1004.98	-10.97
463	SLU 44	39	55	4793	-1.61	1013.05	-19.17
463	SLU 45	38	32	4813	-1.2	1019.68	-11.22
463	SLU 46	39	46	4845	-1.41	1024.52	-16.14
463	SLU 47	39	56	4839	-1.56	1022.3	-19.5
463	SLU 48	38	33	4859	-1.15	1028.93	-11.55
463	SLU 49	39	47	4890	-1.36	1033.77	-16.47
463	SLU 50	38	33	4832	-1.16	1023.48	-11.63
463	SLU 51	39	47	4863	-1.37	1028.32	-16.55
463	SLU 52	39	58	5242	-1.71	1104.26	-20.24
463	SLU 53	38	35	5262	-1.3	1110.88	-12.29
463	SLU 54	38	49	5294	-1.51	1115.72	-17.22

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
463	SLU 55	39	59	5288	-1.66	1113.5	-20.57
463	SLU 56	38	36	5308	-1.25	1120.13	-12.63
463	SLU 57	39	50	5339	-1.46	1124.97	-17.55
463	SLU 58	37	36	5281	-1.27	1114.68	-12.7
463	SLU 59	38	50	5312	-1.47	1119.52	-17.63
463	SLU 60	37	36	5383	-1.41	1135.27	-12.5
463	SLU 61	38	50	5414	-1.62	1140.11	-17.42
463	SLU 62	37	37	5428	-1.36	1144.52	-12.83
463	SLU 63	38	51	5459	-1.57	1149.36	-17.75
463	SLU 64	40	32	5261	-1.17	1111	-11.22
463	SLU 65	41	56	5313	-1.52	1119.07	-19.42
463	SLU 66	40	33	5333	-1.11	1125.69	-11.47
463	SLU 67	41	47	5365	-1.31	1130.54	-16.39
463	SLU 68	41	56	5359	-1.46	1128.32	-19.75
463	SLU 69	40	34	5379	-1.05	1134.94	-11.8
463	SLU 70	41	48	5410	-1.26	1139.79	-16.72
463	SLU 71	40	34	5352	-1.07	1129.5	-11.88
463	SLU 72	41	48	5383	-1.28	1134.34	-16.8
463	SLU 73	41	59	5762	-1.62	1210.27	-20.49
463	SLU 74	40	36	5782	-1.21	1216.9	-12.54
463	SLU 75	41	50	5814	-1.42	1221.74	-17.46
463	SLU 76	41	60	5808	-1.57	1219.52	-20.82
463	SLU 77	40	37	5828	-1.16	1226.14	-12.87
463	SLU 78	41	51	5859	-1.37	1230.99	-17.79
463	SLU 79	40	37	5801	-1.17	1220.7	-12.95
463	SLU 80	40	51	5832	-1.38	1225.54	-17.87
463	SLU 81	39	36	5902	-1.32	1241.29	-12.75
463	SLU 82	40	51	5934	-1.53	1246.13	-17.67
463	SLU 83	39	37	5948	-1.27	1250.54	-13.08
463	SLU 84	40	51	5979	-1.47	1255.38	-18
463	SLE RA 1	30	25	3933	-0.92	831.31	-8.57
463	SLE RA 2	31	40	3967	-1.15	836.7	-14.04
463	SLE RA 3	31	25	3981	-0.88	841.11	-8.74
463	SLE RA 4	31	34	4002	-1.02	844.34	-12.02
463	SLE RA 5	31	41	3998	-1.12	842.86	-14.26
463	SLE RA 6	31	26	4011	-0.84	847.28	-8.96
463	SLE RA 7	31	35	4032	-0.98	850.51	-12.24
463	SLE RA 8	30	26	3993	-0.85	843.65	-9.02
463	SLE RA 9	31	35	4014	-0.99	846.87	-12.3
463	SLE RA 10	31	42	4267	-1.22	897.5	-14.76
463	SLE RA 11	30	27	4280	-0.95	901.91	-9.46
463	SLE RA 12	31	36	4301	-1.09	905.14	-12.74
463	SLE RA 13	31	43	4297	-1.19	903.66	-14.98
463	SLE RA 14	30	28	4310	-0.91	908.08	-9.68
463	SLE RA 15	31	37	4331	-1.05	911.31	-12.96
463	SLE RA 16	30	28	4292	-0.92	904.45	-9.73
463	SLE RA 17	31	37	4313	-1.06	907.68	-13.01
463	SLE RA 18	30	27	4360	-1.02	918.17	-9.59
463	SLE RA 19	30	37	4381	-1.16	921.4	-12.87
463	SLE RA 20	30	28	4390	-0.99	924.34	-9.82
463	SLE RA 21	30	37	4411	-1.12	927.57	-13.1
463	SLE FR 1	30	25	3933	-0.92	831.31	-8.57
463	SLE FR 2	30	28	3940	-0.97	832.39	-9.67
463	SLE FR 3	30	25	3945	-0.91	833.78	-8.66
463	SLE FR 4	30	29	4068	-1	858.45	-9.97
463	SLE FR 5	30	26	4073	-0.94	859.84	-8.97
463	SLE FR 6	30	26	4146	-0.97	874.74	-9.08
463	SLE QP 1	30	25	3933	-0.92	831.31	-8.57
463	SLE QP 2	30	25	4061	-0.95	857.37	-8.88
463	SLD 1	410	131	3250	-2.67	694.61	-45.61
463	SLD 2	459	258	3316	-3.16	705.23	-89.69
463	SLD 3	383	-139	2518	2.32	575.24	48.73
463	SLD 4	432	-12	2585	1.82	585.86	4.65
463	SLD 5	175	444	4915	-8.94	987.68	-155.06
463	SLD 6	208	527	4959	-9.27	994.68	-184.13
463	SLD 7	87	-456	2477	7.68	589.78	159.41
463	SLD 8	119	-373	2521	7.36	596.78	130.33
463	SLD 9	-59	423	5601	-9.26	1117.96	-148.09
463	SLD 10	-27	507	5645	-9.58	1124.96	-177.17
463	SLD 11	-147	-476	3163	7.37	720.06	166.37
463	SLD 12	-115	-393	3207	7.04	727.06	137.3
463	SLD 13	-372	63	5537	-3.72	1128.89	-22.41
463	SLD 14	-323	190	5603	-4.22	1139.5	-66.49
463	SLD 15	-398	-207	4806	1.26	1009.52	71.93
463	SLD 16	-350	-80	4872	0.77	1020.13	27.85
463	SLV 1	921	293	2223	-5.39	486.38	-102.15
463	SLV 2	1036	591	2380	-6.55	511.34	-205.75
463	SLV 3	854	-381	389	7.12	187.05	133.5
463	SLV 4	968	-83	545	5.96	212.01	29.9
463	SLV 5	378	1073	6262	-21.04	1195.4	-374.93
463	SLV 6	455	1273	6367	-21.82	1212.2	-444.68
463	SLV 7	154	-1175	149	20.66	197.63	410.57
463	SLV 8	231	-974	254	19.88	214.44	340.82
463	SLV 9	-171	1025	7868	-21.78	1500.31	-358.58
463	SLV 10	-94	1226	7973	-22.56	1517.11	-428.33
463	SLV 11	-395	-1223	1754	19.92	502.54	426.92
463	SLV 12	-318	-1022	1859	19.13	519.34	357.17
463	SLV 13	-908	134	7576	-7.86	1502.74	-47.66
463	SLV 14	-793	432	7732	-9.02	1527.69	-151.26

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
463	SLV 15	-975	-540	5742	4.65	1203.41	187.99
463	SLV 16	-861	-243	5898	3.49	1228.36	84.39
463	CRTFP Ux+	0	0	0	0	0	0
463	CRTFP Ux-	0	0	0	0	0	0
463	CRTFP Uy+	0	0	0	0	0	0
463	CRTFP Uy-	0	0	0	0	0	0
465	SLU 1	32	-49	3359	0.38	964.37	17.18
465	SLU 2	33	-32	3392	0.18	972.31	10.95
465	SLU 3	32	-50	3421	0.43	981.36	17.48
465	SLU 4	33	-40	3441	0.31	986.12	13.75
465	SLU 5	33	-32	3430	0.22	982.74	11.15
465	SLU 6	33	-51	3459	0.46	991.79	17.67
465	SLU 7	33	-40	3479	0.34	996.56	13.94
465	SLU 8	32	-50	3436	0.44	985.24	17.56
465	SLU 9	33	-40	3455	0.33	990	13.83
465	SLU 10	37	-38	3837	0.22	1099.41	13.2
465	SLU 11	36	-57	3866	0.46	1108.46	19.72
465	SLU 12	37	-46	3886	0.34	1113.22	15.99
465	SLU 13	37	-39	3875	0.25	1109.84	13.39
465	SLU 14	36	-57	3904	0.49	1118.89	19.92
465	SLU 15	37	-47	3924	0.38	1123.65	16.18
465	SLU 16	36	-57	3881	0.48	1112.34	19.81
465	SLU 17	37	-46	3900	0.36	1117.1	16.07
465	SLU 18	37	-59	3995	0.43	1145.94	20.38
465	SLU 19	38	-48	4015	0.31	1150.71	16.65
465	SLU 20	37	-59	4033	0.46	1156.38	20.57
465	SLU 21	38	-48	4053	0.34	1161.14	16.84
465	SLU 22	36	-55	3818	0.57	1092.06	19.31
465	SLU 23	37	-38	3851	0.37	1099.99	13.08
465	SLU 24	36	-56	3880	0.62	1109.04	19.61
465	SLU 25	37	-46	3900	0.5	1113.8	15.87
465	SLU 26	37	-38	3889	0.41	1110.43	13.28
465	SLU 27	37	-57	3918	0.65	1119.48	19.8
465	SLU 28	37	-46	3938	0.53	1124.24	16.07
465	SLU 29	36	-57	3895	0.64	1112.92	19.69
465	SLU 30	37	-46	3914	0.52	1117.69	15.96
465	SLU 31	41	-44	4296	0.41	1227.09	15.32
465	SLU 32	40	-63	4325	0.65	1236.14	21.85
465	SLU 33	41	-52	4344	0.54	1240.9	18.12
465	SLU 34	41	-45	4334	0.44	1237.53	15.52
465	SLU 35	40	-63	4363	0.69	1246.58	22.04
465	SLU 36	41	-53	4383	0.57	1251.34	18.31
465	SLU 37	40	-63	4340	0.67	1240.02	21.94
465	SLU 38	41	-52	4359	0.55	1244.78	18.2
465	SLU 39	41	-65	4454	0.62	1273.63	22.51
465	SLU 40	42	-54	4473	0.5	1278.39	18.78
465	SLU 41	41	-65	4492	0.65	1284.06	22.7
465	SLU 42	42	-55	4512	0.53	1288.82	18.97
465	SLU 43	40	-62	4210	0.43	1209.91	21.6
465	SLU 44	42	-44	4243	0.23	1217.84	15.38
465	SLU 45	41	-63	4272	0.48	1226.89	21.9
465	SLU 46	41	-52	4291	0.36	1231.66	18.17
465	SLU 47	42	-45	4281	0.26	1228.28	15.57
465	SLU 48	41	-63	4310	0.51	1237.33	22.1
465	SLU 49	42	-53	4329	0.39	1242.09	18.36
465	SLU 50	41	-63	4286	0.49	1230.78	21.99
465	SLU 51	41	-52	4306	0.37	1235.54	18.25
465	SLU 52	45	-51	4687	0.26	1344.94	17.62
465	SLU 53	44	-69	4716	0.51	1353.99	24.15
465	SLU 54	45	-59	4736	0.39	1358.76	20.41
465	SLU 55	45	-51	4726	0.3	1355.38	17.81
465	SLU 56	44	-70	4755	0.54	1364.43	24.34
465	SLU 57	45	-59	4774	0.43	1369.19	20.6
465	SLU 58	44	-70	4731	0.53	1357.88	24.23
465	SLU 59	45	-59	4751	0.41	1362.64	20.49
465	SLU 60	45	-71	4845	0.48	1391.48	24.8
465	SLU 61	46	-61	4865	0.36	1396.24	21.07
465	SLU 62	45	-72	4884	0.51	1401.91	25
465	SLU 63	46	-61	4903	0.39	1406.67	21.26
465	SLU 64	44	-68	4669	0.62	1337.59	23.73
465	SLU 65	46	-50	4701	0.42	1345.53	17.51
465	SLU 66	45	-69	4730	0.67	1354.58	24.03
465	SLU 67	45	-58	4750	0.55	1359.34	20.3
465	SLU 68	46	-51	4740	0.45	1355.96	17.7
465	SLU 69	45	-70	4769	0.7	1365.01	24.23
465	SLU 70	46	-59	4788	0.58	1369.77	20.49
465	SLU 71	45	-69	4745	0.68	1358.46	24.12
465	SLU 72	45	-59	4765	0.57	1363.22	20.38
465	SLU 73	49	-57	5146	0.46	1472.63	19.75
465	SLU 74	48	-75	5175	0.7	1481.68	26.28
465	SLU 75	49	-65	5195	0.58	1486.44	22.54
465	SLU 76	49	-57	5185	0.49	1483.06	19.94
465	SLU 77	48	-76	5214	0.73	1492.11	26.47
465	SLU 78	49	-65	5233	0.62	1496.87	22.73
465	SLU 79	48	-76	5190	0.72	1485.56	26.36
465	SLU 80	49	-65	5210	0.6	1490.32	22.62
465	SLU 81	49	-77	5304	0.67	1519.16	26.93
465	SLU 82	50	-67	5324	0.55	1523.92	23.2
465	SLU 83	49	-78	5342	0.7	1529.6	27.13

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
465	SLU 84	50	-67	5362	0.58	1534.36	23.39
465	SLE RA 1	33	-51	3490	0.43	1000.85	17.79
465	SLE RA 2	34	-39	3512	0.3	1006.15	13.64
465	SLE RA 3	34	-52	3532	0.47	1012.18	17.99
465	SLE RA 4	34	-45	3545	0.39	1015.35	15.5
465	SLE RA 5	34	-40	3538	0.32	1013.1	13.77
465	SLE RA 6	34	-52	3557	0.49	1019.13	18.12
465	SLE RA 7	34	-45	3570	0.41	1022.31	15.63
465	SLE RA 8	33	-52	3541	0.48	1014.77	18.04
465	SLE RA 9	34	-45	3555	0.4	1017.94	15.55
465	SLE RA 10	36	-44	3809	0.33	1090.88	15.13
465	SLE RA 11	36	-56	3828	0.49	1096.91	19.48
465	SLE RA 12	36	-49	3841	0.41	1100.09	16.99
465	SLE RA 13	36	-44	3834	0.35	1097.83	15.26
465	SLE RA 14	36	-56	3854	0.51	1103.87	19.61
465	SLE RA 15	36	-49	3867	0.43	1107.04	17.12
465	SLE RA 16	36	-56	3838	0.5	1099.5	19.54
465	SLE RA 17	36	-49	3851	0.42	1102.67	17.05
465	SLE RA 18	37	-57	3914	0.47	1121.9	19.92
465	SLE RA 19	37	-50	3927	0.39	1125.08	17.43
465	SLE RA 20	37	-58	3940	0.49	1128.86	20.05
465	SLE RA 21	37	-50	3953	0.41	1132.03	17.56
465	SLE FR 1	33	-51	3490	0.43	1000.85	17.79
465	SLE FR 2	33	-49	3495	0.41	1001.91	16.96
465	SLE FR 3	33	-51	3501	0.44	1003.64	17.84
465	SLE FR 4	34	-51	3622	0.42	1038.23	17.6
465	SLE FR 5	34	-53	3628	0.45	1039.95	18.48
465	SLE FR 6	35	-54	3702	0.45	1061.38	18.85
465	SLE QP 1	33	-51	3490	0.43	1000.85	17.79
465	SLE QP 2	34	-53	3618	0.44	1037.17	18.43
465	SLD 1	353	65	3877	-0.7	1105.64	-22.7
465	SLD 2	393	68	3886	-0.73	1106.62	-23.6
465	SLD 3	330	-153	3445	1.91	1001.32	53.58
465	SLD 4	369	-150	3454	1.87	1002.3	52.68
465	SLD 5	158	313	4349	-3.84	1215.76	-109.44
465	SLD 6	184	315	4355	-3.86	1216.41	-110.04
465	SLD 7	81	-414	2909	4.84	868.01	144.83
465	SLD 8	107	-412	2915	4.81	868.66	144.23
465	SLD 9	-38	307	4321	-3.93	1205.68	-107.38
465	SLD 10	-12	309	4327	-3.95	1206.32	-107.98
465	SLD 11	-116	-421	2880	4.75	857.93	146.89
465	SLD 12	-89	-419	2886	4.73	858.58	146.3
465	SLD 13	-301	44	3781	-0.99	1072.04	-15.83
465	SLD 14	-261	47	3790	-1.02	1073.02	-16.73
465	SLD 15	-324	-174	3349	1.62	967.71	60.45
465	SLD 16	-284	-171	3358	1.58	968.7	59.55
465	SLV 1	782	240	4261	-2.44	1206.11	-83.64
465	SLV 2	875	248	4283	-2.52	1208.42	-85.77
465	SLV 3	723	-304	3177	4.08	944.53	106.56
465	SLV 4	816	-297	3199	4	946.84	104.44
465	SLV 5	331	859	5450	-10.3	1484.15	-300.28
465	SLV 6	393	864	5465	-10.36	1485.71	-301.7
465	SLV 7	134	-955	1838	11.45	612.21	333.74
465	SLV 8	197	-950	1852	11.39	613.77	332.31
465	SLV 9	-128	844	5383	-10.51	1460.57	-295.46
465	SLV 10	-66	849	5397	-10.56	1462.13	-296.89
465	SLV 11	-325	-970	1770	11.24	588.62	338.56
465	SLV 12	-262	-965	1785	11.19	590.18	337.13
465	SLV 13	-747	191	4036	-3.12	1127.5	-67.59
465	SLV 14	-654	198	4058	-3.2	1129.81	-69.71
465	SLV 15	-806	-353	2953	3.41	865.91	122.62
465	SLV 16	-713	-346	2974	3.33	868.22	120.5
465	CRTFP Ux+	0	0	0	0	0	0
465	CRTFP Ux-	0	0	0	0	0	0
465	CRTFP Uy+	0	0	0	0	0	0
465	CRTFP Uy-	0	0	0	0	0	0
468	SLU 1	-49	47	3349	1.16	-460.82	11.81
468	SLU 2	-50	70	3386	0.93	-463.77	17.52
468	SLU 3	-51	48	3413	1.24	-469.5	11.9
468	SLU 4	-51	61	3435	1.1	-471.27	15.32
468	SLU 5	-51	70	3426	0.98	-469.15	17.57
468	SLU 6	-51	48	3453	1.29	-474.88	11.95
468	SLU 7	-52	61	3475	1.15	-476.65	15.37
468	SLU 8	-51	48	3428	1.26	-471.58	11.92
468	SLU 9	-51	61	3450	1.12	-473.35	15.34
468	SLU 10	-52	76	3786	1.1	-516.99	19.14
468	SLU 11	-53	54	3813	1.42	-522.73	13.52
468	SLU 12	-53	68	3836	1.28	-524.5	16.95
468	SLU 13	-53	77	3826	1.15	-522.38	19.19
468	SLU 14	-53	54	3853	1.47	-528.11	13.57
468	SLU 15	-54	68	3875	1.33	-529.88	17
468	SLU 16	-53	54	3829	1.44	-524.81	13.54
468	SLU 17	-53	68	3851	1.3	-526.58	16.96
468	SLU 18	-52	56	3921	1.41	-536.86	14.14
468	SLU 19	-53	70	3943	1.27	-538.63	17.56
468	SLU 20	-53	57	3961	1.46	-542.24	14.19
468	SLU 21	-53	70	3983	1.32	-544.01	17.61
468	SLU 22	-55	51	3819	1.53	-524.01	12.81
468	SLU 23	-55	74	3856	1.3	-526.96	18.51

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
468	SLU 24	-56	52	3883	1.61	-532.69	12.89
468	SLU 25	-56	65	3905	1.47	-534.46	16.31
468	SLU 26	-56	74	3896	1.35	-532.34	18.56
468	SLU 27	-57	52	3923	1.66	-538.07	12.94
468	SLU 28	-57	65	3945	1.52	-539.84	16.37
468	SLU 29	-57	52	3899	1.63	-534.78	12.91
468	SLU 30	-57	65	3921	1.49	-536.55	16.33
468	SLU 31	-58	80	4257	1.47	-580.19	20.14
468	SLU 32	-58	58	4284	1.78	-585.92	14.52
468	SLU 33	-59	72	4306	1.64	-587.69	17.94
468	SLU 34	-58	81	4296	1.52	-585.57	20.19
468	SLU 35	-59	58	4323	1.83	-591.3	14.57
468	SLU 36	-59	72	4345	1.69	-593.07	17.99
468	SLU 37	-59	58	4299	1.8	-588.01	14.54
468	SLU 38	-59	72	4321	1.66	-589.78	17.96
468	SLU 39	-58	60	4391	1.78	-600.05	15.13
468	SLU 40	-58	74	4414	1.64	-601.82	18.55
468	SLU 41	-59	61	4431	1.83	-605.43	15.18
468	SLU 42	-59	74	4453	1.69	-607.2	18.6
468	SLU 43	-62	60	4193	1.38	-577.4	15.02
468	SLU 44	-63	83	4230	1.15	-580.34	20.72
468	SLU 45	-64	60	4257	1.46	-586.08	15.1
468	SLU 46	-64	74	4279	1.32	-587.85	18.52
468	SLU 47	-64	83	4269	1.2	-585.73	20.77
468	SLU 48	-64	60	4296	1.51	-591.46	15.15
468	SLU 49	-65	74	4318	1.37	-593.23	18.57
468	SLU 50	-64	60	4272	1.48	-588.16	15.12
468	SLU 51	-64	74	4294	1.34	-589.93	18.54
468	SLU 52	-65	89	4630	1.33	-633.57	22.35
468	SLU 53	-66	67	4657	1.64	-639.3	16.73
468	SLU 54	-66	80	4679	1.5	-641.07	20.15
468	SLU 55	-66	89	4670	1.38	-638.96	22.4
468	SLU 56	-66	67	4696	1.69	-644.69	16.78
468	SLU 57	-67	81	4719	1.55	-646.46	20.2
468	SLU 58	-66	67	4672	1.66	-641.39	16.74
468	SLU 59	-66	81	4694	1.52	-643.16	20.17
468	SLU 60	-65	69	4765	1.63	-653.44	17.34
468	SLU 61	-66	83	4787	1.49	-655.21	20.76
468	SLU 62	-66	69	4804	1.68	-658.82	17.39
468	SLU 63	-66	83	4826	1.54	-660.59	20.81
468	SLU 64	-68	64	4663	1.75	-640.59	16.01
468	SLU 65	-68	87	4700	1.52	-643.54	21.71
468	SLU 66	-69	64	4727	1.83	-649.27	16.1
468	SLU 67	-69	78	4749	1.69	-651.04	19.52
468	SLU 68	-69	87	4739	1.57	-648.92	21.77
468	SLU 69	-70	64	4766	1.88	-654.65	16.15
468	SLU 70	-70	78	4788	1.74	-656.42	19.57
468	SLU 71	-69	64	4742	1.85	-651.36	16.11
468	SLU 72	-70	78	4764	1.71	-653.13	19.53
468	SLU 73	-70	93	5100	1.69	-696.77	23.34
468	SLU 74	-71	71	5127	2.01	-702.5	17.72
468	SLU 75	-71	84	5149	1.87	-704.27	21.14
468	SLU 76	-71	93	5140	1.74	-702.15	23.39
468	SLU 77	-72	71	5167	2.06	-707.88	17.77
468	SLU 78	-72	85	5189	1.92	-709.65	21.19
468	SLU 79	-72	71	5142	2.03	-704.59	17.74
468	SLU 80	-72	85	5165	1.89	-706.35	21.16
468	SLU 81	-71	73	5235	2	-716.63	18.33
468	SLU 82	-71	87	5257	1.86	-718.4	21.76
468	SLU 83	-72	73	5274	2.05	-722.01	18.38
468	SLU 84	-72	87	5297	1.91	-723.78	21.81
468	SLE RA 1	-51	48	3484	1.27	-478.87	12.1
468	SLE RA 2	-51	63	3508	1.11	-480.84	15.9
468	SLE RA 3	-52	49	3526	1.32	-484.66	12.15
468	SLE RA 4	-52	58	3541	1.23	-485.84	14.44
468	SLE RA 5	-52	64	3535	1.14	-484.43	15.93
468	SLE RA 6	-52	49	3552	1.35	-488.25	12.19
468	SLE RA 7	-52	58	3567	1.26	-489.43	14.47
468	SLE RA 8	-52	49	3536	1.33	-486.05	12.17
468	SLE RA 9	-52	58	3551	1.24	-487.23	14.45
468	SLE RA 10	-53	68	3775	1.23	-516.32	16.98
468	SLE RA 11	-53	53	3793	1.44	-520.14	13.24
468	SLE RA 12	-53	62	3808	1.34	-521.32	15.52
468	SLE RA 13	-53	68	3801	1.26	-519.91	17.02
468	SLE RA 14	-54	53	3819	1.47	-523.73	13.27
468	SLE RA 15	-54	62	3834	1.38	-524.91	15.55
468	SLE RA 16	-53	53	3803	1.45	-521.54	13.25
468	SLE RA 17	-54	62	3818	1.36	-522.72	15.53
468	SLE RA 18	-53	54	3865	1.43	-529.57	13.65
468	SLE RA 19	-53	64	3880	1.34	-530.75	15.93
468	SLE RA 20	-54	55	3891	1.47	-533.16	13.68
468	SLE RA 21	-54	64	3906	1.37	-534.33	15.96
468	SLE FR 1	-51	48	3484	1.27	-478.87	12.1
468	SLE FR 2	-51	51	3488	1.24	-479.26	12.86
468	SLE FR 3	-51	48	3494	1.28	-480.31	12.11
468	SLE FR 4	-52	53	3603	1.29	-494.47	13.32
468	SLE FR 5	-52	50	3608	1.33	-495.52	12.58
468	SLE FR 6	-52	51	3674	1.35	-504.22	12.87
468	SLE QP 1	-51	48	3484	1.27	-478.87	12.1

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
468	SLE QP 2	-52	50	3598	1.32	-494.08	12.56
468	SLD 1	228	269	4923	-0.19	-646.05	67.21
468	SLD 2	261	151	4872	0.13	-642.13	37.87
468	SLD 3	244	9	4406	3.24	-603.46	2.04
468	SLD 4	278	-109	4356	3.56	-599.53	-27.31
468	SLD 5	1	532	4788	-4.39	-604.98	133.08
468	SLD 6	23	454	4755	-4.18	-602.39	113.72
468	SLD 7	56	-336	3066	7.03	-462.99	-84.16
468	SLD 8	78	-414	3033	7.24	-460.4	-103.52
468	SLD 9	-182	514	4163	-4.61	-527.76	128.64
468	SLD 10	-159	437	4130	-4.4	-525.17	109.29
468	SLD 11	-126	-354	2441	6.81	-385.76	-88.6
468	SLD 12	-104	-432	2408	7.02	-383.17	-107.95
468	SLD 13	-381	210	2840	-0.92	-388.63	52.43
468	SLD 14	-348	91	2789	-0.61	-384.7	23.08
468	SLD 15	-365	-51	2323	2.5	-346.03	-12.74
468	SLD 16	-331	-169	2273	2.82	-342.1	-42.09
468	SLV 1	601	583	6741	-2.48	-853.24	145.33
468	SLV 2	680	305	6623	-1.73	-844.01	76.35
468	SLV 3	641	-64	5448	6.09	-746.57	-16.52
468	SLV 4	721	-342	5329	6.84	-737.34	-85.5
468	SLV 5	68	1243	6525	-12.96	-765.33	310.73
468	SLV 6	121	1056	6445	-12.46	-759.11	264.29
468	SLV 7	203	-914	2213	15.61	-409.77	-228.76
468	SLV 8	256	-1101	2133	16.12	-403.56	-275.2
468	SLV 9	-360	1201	5062	-13.48	-584.6	300.32
468	SLV 10	-306	1014	4982	-12.98	-578.39	253.88
468	SLV 11	-224	-956	751	15.09	-229.05	-239.17
468	SLV 12	-171	-1143	671	15.6	-222.83	-285.61
468	SLV 13	-824	442	1867	-4.21	-250.82	110.62
468	SLV 14	-745	165	1748	-3.46	-241.59	41.64
468	SLV 15	-783	-205	573	4.36	-144.15	-51.23
468	SLV 16	-704	-482	454	5.11	-134.92	-120.21
468	CRTFP Ux+	0	0	0	0	0	0
468	CRTFP Ux-	0	0	0	0	0	0
468	CRTFP Uy+	0	0	0	0	0	0
468	CRTFP Uy-	0	0	0	0	0	0
471	SLU 1	-64	-67	6779	-0.94	-27.41	-0.41
471	SLU 2	-66	-36	6850	-1.42	-27.14	-0.46
471	SLU 3	-66	-68	6912	-0.83	-28.05	-0.44
471	SLU 4	-67	-50	6954	-1.12	-27.89	-0.47
471	SLU 5	-67	-37	6933	-1.35	-27.57	-0.49
471	SLU 6	-67	-69	6995	-0.76	-28.48	-0.47
471	SLU 7	-68	-51	7037	-1.05	-28.32	-0.5
471	SLU 8	-67	-69	6945	-0.79	-28.26	-0.46
471	SLU 9	-68	-50	6988	-1.08	-28.1	-0.49
471	SLU 10	-67	-42	7717	-1.46	-32	-0.45
471	SLU 11	-68	-74	7779	-0.87	-32.91	-0.43
471	SLU 12	-69	-56	7821	-1.16	-32.75	-0.46
471	SLU 13	-69	-43	7800	-1.39	-32.43	-0.48
471	SLU 14	-69	-75	7862	-0.8	-33.34	-0.45
471	SLU 15	-70	-57	7904	-1.09	-33.18	-0.49
471	SLU 16	-69	-75	7812	-0.84	-33.12	-0.45
471	SLU 17	-69	-56	7855	-1.13	-32.96	-0.48
471	SLU 18	-67	-75	8018	-1	-34.35	-0.39
471	SLU 19	-67	-57	8060	-1.29	-34.19	-0.42
471	SLU 20	-68	-76	8101	-0.93	-34.78	-0.42
471	SLU 21	-69	-58	8143	-1.22	-34.62	-0.45
471	SLU 22	-72	-75	7765	-0.63	-31.88	-0.52
471	SLU 23	-73	-44	7836	-1.11	-31.61	-0.58
471	SLU 24	-74	-76	7898	-0.52	-32.52	-0.55
471	SLU 25	-75	-58	7940	-0.81	-32.36	-0.59
471	SLU 26	-75	-45	7919	-1.04	-32.03	-0.6
471	SLU 27	-75	-77	7981	-0.45	-32.95	-0.58
471	SLU 28	-76	-58	8023	-0.74	-32.78	-0.61
471	SLU 29	-75	-76	7931	-0.48	-32.73	-0.57
471	SLU 30	-75	-58	7974	-0.77	-32.57	-0.61
471	SLU 31	-75	-50	8703	-1.15	-36.47	-0.56
471	SLU 32	-76	-82	8765	-0.56	-37.38	-0.54
471	SLU 33	-76	-64	8807	-0.85	-37.22	-0.57
471	SLU 34	-76	-51	8786	-1.08	-36.89	-0.59
471	SLU 35	-77	-83	8848	-0.49	-37.81	-0.57
471	SLU 36	-78	-65	8890	-0.78	-37.64	-0.6
471	SLU 37	-76	-82	8798	-0.53	-37.59	-0.56
471	SLU 38	-77	-64	8841	-0.81	-37.43	-0.59
471	SLU 39	-75	-83	9004	-0.69	-38.82	-0.5
471	SLU 40	-75	-65	9046	-0.98	-38.66	-0.54
471	SLU 41	-76	-84	9087	-0.62	-39.25	-0.53
471	SLU 42	-77	-66	9129	-0.9	-39.08	-0.56
471	SLU 43	-81	-84	8475	-1.33	-34.1	-0.5
471	SLU 44	-82	-54	8546	-1.81	-33.83	-0.55
471	SLU 45	-83	-86	8607	-1.22	-34.75	-0.53
471	SLU 46	-84	-67	8650	-1.51	-34.58	-0.56
471	SLU 47	-84	-54	8629	-1.74	-34.26	-0.57
471	SLU 48	-84	-86	8690	-1.15	-35.17	-0.55
471	SLU 49	-85	-68	8733	-1.44	-35.01	-0.58
471	SLU 50	-84	-86	8641	-1.18	-34.95	-0.55
471	SLU 51	-84	-68	8683	-1.47	-34.79	-0.58
471	SLU 52	-84	-60	9413	-1.85	-38.69	-0.54

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
471	SLU 53	-85	-92	9474	-1.26	-39.6	-0.51
471	SLU 54	-85	-73	9517	-1.55	-39.44	-0.54
471	SLU 55	-85	-61	9496	-1.78	-39.12	-0.56
471	SLU 56	-86	-92	9557	-1.19	-40.03	-0.54
471	SLU 57	-87	-74	9600	-1.48	-39.87	-0.57
471	SLU 58	-85	-92	9508	-1.23	-39.81	-0.53
471	SLU 59	-86	-74	9550	-1.51	-39.65	-0.56
471	SLU 60	-83	-93	9713	-1.39	-41.04	-0.48
471	SLU 61	-84	-75	9756	-1.68	-40.88	-0.51
471	SLU 62	-85	-94	9796	-1.32	-41.47	-0.5
471	SLU 63	-85	-75	9839	-1.6	-41.31	-0.53
471	SLU 64	-89	-92	9461	-1.02	-38.57	-0.61
471	SLU 65	-90	-61	9532	-1.5	-38.3	-0.66
471	SLU 66	-91	-93	9593	-0.91	-39.21	-0.64
471	SLU 67	-91	-75	9636	-1.2	-39.05	-0.67
471	SLU 68	-91	-62	9615	-1.43	-38.73	-0.69
471	SLU 69	-92	-94	9676	-0.84	-39.64	-0.66
471	SLU 70	-93	-76	9719	-1.12	-39.48	-0.7
471	SLU 71	-91	-94	9627	-0.87	-39.42	-0.66
471	SLU 72	-92	-75	9669	-1.16	-39.26	-0.69
471	SLU 73	-92	-67	10399	-1.54	-43.16	-0.65
471	SLU 74	-92	-99	10460	-0.95	-44.07	-0.63
471	SLU 75	-93	-81	10503	-1.24	-43.91	-0.66
471	SLU 76	-93	-68	10482	-1.47	-43.58	-0.67
471	SLU 77	-94	-100	10543	-0.88	-44.5	-0.65
471	SLU 78	-94	-82	10586	-1.17	-44.34	-0.68
471	SLU 79	-93	-100	10494	-0.91	-44.28	-0.65
471	SLU 80	-94	-81	10536	-1.2	-44.12	-0.68
471	SLU 81	-91	-101	10699	-1.08	-45.51	-0.59
471	SLU 82	-92	-82	10742	-1.37	-45.35	-0.62
471	SLU 83	-92	-102	10782	-1	-45.94	-0.61
471	SLU 84	-93	-83	10825	-1.29	-45.77	-0.65
471	SLE RA 1	-67	-69	7061	-0.85	-28.69	-0.44
471	SLE RA 2	-67	-49	7108	-1.17	-28.51	-0.48
471	SLE RA 3	-68	-70	7149	-0.78	-29.12	-0.46
471	SLE RA 4	-68	-58	7177	-0.97	-29.01	-0.49
471	SLE RA 5	-68	-49	7163	-1.12	-28.79	-0.5
471	SLE RA 6	-69	-70	7205	-0.73	-29.4	-0.48
471	SLE RA 7	-69	-58	7233	-0.92	-29.29	-0.5
471	SLE RA 8	-68	-70	7172	-0.75	-29.26	-0.48
471	SLE RA 9	-69	-58	7200	-0.95	-29.15	-0.5
471	SLE RA 10	-69	-53	7686	-1.2	-31.75	-0.47
471	SLE RA 11	-69	-74	7727	-0.81	-32.36	-0.45
471	SLE RA 12	-69	-62	7755	-1	-32.25	-0.48
471	SLE RA 13	-69	-53	7741	-1.15	-32.03	-0.49
471	SLE RA 14	-70	-75	7783	-0.76	-32.64	-0.47
471	SLE RA 15	-70	-62	7811	-0.95	-32.53	-0.49
471	SLE RA 16	-69	-74	7750	-0.78	-32.49	-0.47
471	SLE RA 17	-70	-62	7778	-0.97	-32.39	-0.49
471	SLE RA 18	-68	-75	7887	-0.89	-33.31	-0.43
471	SLE RA 19	-69	-63	7915	-1.08	-33.21	-0.45
471	SLE RA 20	-69	-75	7942	-0.84	-33.6	-0.45
471	SLE RA 21	-70	-63	7970	-1.03	-33.49	-0.47
471	SLE FR 1	-67	-69	7061	-0.85	-28.69	-0.44
471	SLE FR 2	-67	-65	7070	-0.91	-28.65	-0.45
471	SLE FR 3	-67	-69	7083	-0.83	-28.8	-0.45
471	SLE FR 4	-67	-67	7318	-0.93	-30.04	-0.45
471	SLE FR 5	-67	-71	7331	-0.84	-30.19	-0.45
471	SLE FR 6	-67	-72	7474	-0.87	-31	-0.44
471	SLE QP 1	-67	-69	7061	-0.85	-28.69	-0.44
471	SLE QP 2	-67	-71	7309	-0.86	-30.08	-0.44
471	SLD 1	545	105	8556	-4.24	-3.41	0.21
471	SLD 2	617	21	8494	-3.86	-4.83	2.92
471	SLD 3	571	-257	7586	2.54	-8.55	1.44
471	SLD 4	643	-342	7524	2.92	-9.98	4.15
471	SLD 5	64	548	9166	-12.22	-14.02	-2.6
471	SLD 6	112	492	9125	-11.97	-14.96	-0.81
471	SLD 7	151	-662	5931	10.36	-31.16	1.5
471	SLD 8	198	-718	5890	10.62	-32.1	3.29
471	SLD 9	-333	576	8727	-12.34	-28.05	-4.17
471	SLD 10	-285	520	8686	-12.09	-28.99	-2.38
471	SLD 11	-246	-634	5492	10.24	-45.19	-0.07
471	SLD 12	-198	-689	5451	10.49	-46.13	1.72
471	SLD 13	-777	200	7093	-4.64	-50.18	-5.03
471	SLD 14	-705	116	7031	-4.26	-51.6	-2.32
471	SLD 15	-751	-163	6123	2.13	-55.32	-3.8
471	SLD 16	-679	-247	6061	2.51	-56.74	-1.09
471	SLV 1	1363	369	10309	-9.32	32.7	1.01
471	SLV 2	1533	171	10162	-8.42	29.35	7.36
471	SLV 3	1426	-534	7878	7.65	19.93	4.02
471	SLV 4	1596	-732	7732	8.54	16.58	10.38
471	SLV 5	234	1468	11923	-29.3	8.75	-5.77
471	SLV 6	349	1334	11824	-28.7	6.5	-1.49
471	SLV 7	445	-1542	3820	27.25	-33.82	4.29
471	SLV 8	560	-1676	3721	27.86	-36.07	8.56
471	SLV 9	-694	1534	10896	-29.58	-24.08	-9.44
471	SLV 10	-579	1401	10797	-28.98	-26.33	-5.17
471	SLV 11	-483	-1476	2793	26.97	-66.65	0.61
471	SLV 12	-368	-1609	2694	27.57	-68.9	4.89

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
471	SLV 13	-1730	591	6886	-10.27	-76.73	-11.26
471	SLV 14	-1561	392	6739	-9.37	-80.08	-4.9
471	SLV 15	-1667	-312	4455	6.7	-89.5	-8.24
471	SLV 16	-1497	-511	4308	7.59	-92.85	-1.89
471	CRTFP Ux+	0	0	0	0	0	0
471	CRTFP Ux-	0	0	0	0	0	0
471	CRTFP Uy+	0	0	0	0	0	0
471	CRTFP Uy-	0	0	0	0	0	0
474	SLU 1	40	-37	6644	-1.45	39.71	-0.55
474	SLU 2	43	-6	6715	-1.94	39.12	-0.48
474	SLU 3	40	-38	6774	-1.34	40.59	-0.58
474	SLU 4	42	-19	6816	-1.64	40.23	-0.54
474	SLU 5	43	-6	6797	-1.86	39.67	-0.51
474	SLU 6	40	-38	6855	-1.26	41.14	-0.6
474	SLU 7	42	-19	6898	-1.56	40.79	-0.57
474	SLU 8	40	-38	6808	-1.29	40.82	-0.6
474	SLU 9	42	-19	6850	-1.59	40.47	-0.56
474	SLU 10	43	-7	7555	-2.06	45.43	-0.56
474	SLU 11	40	-39	7613	-1.46	46.9	-0.66
474	SLU 12	42	-20	7656	-1.76	46.55	-0.62
474	SLU 13	43	-8	7636	-1.98	45.99	-0.59
474	SLU 14	40	-40	7695	-1.38	47.46	-0.69
474	SLU 15	42	-21	7738	-1.68	47.1	-0.65
474	SLU 16	40	-39	7647	-1.41	47.14	-0.69
474	SLU 17	42	-21	7690	-1.71	46.78	-0.65
474	SLU 18	40	-39	7843	-1.62	48.73	-0.66
474	SLU 19	42	-20	7886	-1.91	48.38	-0.62
474	SLU 20	40	-40	7925	-1.54	49.29	-0.69
474	SLU 21	42	-21	7968	-1.83	48.93	-0.65
474	SLU 22	44	-40	7598	-1.23	45.57	-0.6
474	SLU 23	46	-9	7669	-1.72	44.98	-0.53
474	SLU 24	44	-41	7727	-1.12	46.45	-0.63
474	SLU 25	46	-22	7770	-1.42	46.09	-0.59
474	SLU 26	46	-9	7751	-1.64	45.53	-0.56
474	SLU 27	44	-41	7809	-1.04	47	-0.66
474	SLU 28	46	-22	7852	-1.34	46.65	-0.62
474	SLU 29	44	-41	7761	-1.07	46.68	-0.66
474	SLU 30	45	-22	7804	-1.37	46.33	-0.62
474	SLU 31	46	-10	8508	-1.84	51.29	-0.62
474	SLU 32	44	-42	8567	-1.24	52.76	-0.71
474	SLU 33	46	-24	8609	-1.54	52.41	-0.67
474	SLU 34	46	-11	8590	-1.76	51.85	-0.65
474	SLU 35	44	-43	8649	-1.16	53.32	-0.74
474	SLU 36	46	-24	8691	-1.46	52.96	-0.7
474	SLU 37	44	-43	8601	-1.19	53	-0.74
474	SLU 38	45	-24	8644	-1.49	52.64	-0.7
474	SLU 39	44	-42	8797	-1.4	54.59	-0.72
474	SLU 40	45	-24	8840	-1.69	54.24	-0.68
474	SLU 41	44	-43	8879	-1.32	55.15	-0.75
474	SLU 42	45	-24	8922	-1.61	54.79	-0.71
474	SLU 43	51	-47	8310	-1.96	49.62	-0.69
474	SLU 44	53	-15	8381	-2.45	49.02	-0.62
474	SLU 45	51	-47	8440	-1.85	50.49	-0.72
474	SLU 46	53	-29	8482	-2.15	50.14	-0.68
474	SLU 47	53	-16	8463	-2.37	49.58	-0.65
474	SLU 48	51	-48	8522	-1.77	51.05	-0.75
474	SLU 49	53	-29	8564	-2.07	50.69	-0.71
474	SLU 50	51	-48	8474	-1.8	50.73	-0.75
474	SLU 51	52	-29	8517	-2.09	50.37	-0.71
474	SLU 52	53	-17	9221	-2.57	55.34	-0.71
474	SLU 53	51	-49	9279	-1.97	56.81	-0.8
474	SLU 54	53	-30	9322	-2.27	56.45	-0.76
474	SLU 55	53	-18	9303	-2.49	55.89	-0.74
474	SLU 56	51	-50	9361	-1.89	57.36	-0.83
474	SLU 57	53	-31	9404	-2.19	57.01	-0.79
474	SLU 58	51	-49	9313	-1.92	57.04	-0.83
474	SLU 59	52	-31	9356	-2.21	56.69	-0.79
474	SLU 60	51	-49	9509	-2.13	58.64	-0.81
474	SLU 61	52	-30	9552	-2.42	58.28	-0.77
474	SLU 62	51	-50	9591	-2.05	59.19	-0.84
474	SLU 63	52	-31	9634	-2.34	58.84	-0.8
474	SLU 64	54	-50	9264	-1.74	55.48	-0.74
474	SLU 65	57	-19	9335	-2.23	54.88	-0.68
474	SLU 66	55	-51	9393	-1.63	56.35	-0.78
474	SLU 67	56	-32	9436	-1.93	56	-0.74
474	SLU 68	57	-19	9417	-2.15	55.44	-0.71
474	SLU 69	55	-51	9475	-1.55	56.91	-0.8
474	SLU 70	56	-32	9518	-1.85	56.55	-0.76
474	SLU 71	54	-51	9428	-1.58	56.59	-0.8
474	SLU 72	56	-32	9470	-1.87	56.23	-0.76
474	SLU 73	57	-20	10174	-2.35	61.2	-0.76
474	SLU 74	55	-52	10233	-1.75	62.67	-0.86
474	SLU 75	56	-33	10276	-2.05	62.31	-0.82
474	SLU 76	57	-21	10256	-2.27	61.75	-0.79
474	SLU 77	55	-53	10315	-1.67	63.22	-0.89
474	SLU 78	56	-34	10357	-1.97	62.87	-0.85
474	SLU 79	54	-52	10267	-1.7	62.9	-0.88
474	SLU 80	56	-34	10310	-1.99	62.54	-0.85
474	SLU 81	54	-52	10463	-1.91	64.5	-0.86

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
474	SLU 82	56	-34	10506	-2.2	64.14	-0.82
474	SLU 83	54	-53	10545	-1.83	65.05	-0.89
474	SLU 84	56	-34	10588	-2.12	64.7	-0.85
474	SLE RA 1	41	-38	6916	-1.38	41.39	-0.56
474	SLE RA 2	43	-17	6964	-1.71	40.99	-0.52
474	SLE RA 3	41	-38	7003	-1.31	41.97	-0.58
474	SLE RA 4	42	-26	7031	-1.51	41.73	-0.55
474	SLE RA 5	43	-17	7018	-1.66	41.36	-0.54
474	SLE RA 6	41	-38	7057	-1.26	42.34	-0.6
474	SLE RA 7	42	-26	7086	-1.46	42.1	-0.57
474	SLE RA 8	41	-38	7026	-1.28	42.13	-0.6
474	SLE RA 9	42	-26	7054	-1.48	41.89	-0.57
474	SLE RA 10	43	-18	7524	-1.79	45.2	-0.57
474	SLE RA 11	41	-39	7562	-1.39	46.18	-0.64
474	SLE RA 12	42	-27	7591	-1.59	45.94	-0.61
474	SLE RA 13	43	-18	7578	-1.74	45.57	-0.59
474	SLE RA 14	41	-40	7617	-1.34	46.55	-0.66
474	SLE RA 15	42	-27	7646	-1.54	46.31	-0.63
474	SLE RA 16	41	-39	7585	-1.36	46.34	-0.65
474	SLE RA 17	42	-27	7614	-1.56	46.1	-0.63
474	SLE RA 18	41	-39	7716	-1.5	47.4	-0.64
474	SLE RA 19	42	-27	7744	-1.69	47.16	-0.61
474	SLE RA 20	41	-40	7771	-1.45	47.77	-0.66
474	SLE RA 21	42	-27	7799	-1.64	47.53	-0.63
474	SLE FR 1	41	-38	6916	-1.38	41.39	-0.56
474	SLE FR 2	41	-34	6926	-1.45	41.31	-0.55
474	SLE FR 3	41	-38	6938	-1.36	41.53	-0.57
474	SLE FR 4	41	-34	7166	-1.48	43.11	-0.58
474	SLE FR 5	41	-38	7178	-1.4	43.34	-0.59
474	SLE FR 6	41	-39	7316	-1.44	44.39	-0.6
474	SLE QP 1	41	-38	6916	-1.38	41.39	-0.56
474	SLE QP 2	41	-38	7156	-1.42	43.19	-0.58
474	SLD 1	696	152	6949	-4.42	49.16	2.55
474	SLD 2	772	240	7012	-4.83	47.65	5.26
474	SLD 3	653	-221	5967	2.53	58.53	1.24
474	SLD 4	729	-133	6030	2.11	57.03	3.95
474	SLD 5	289	568	8572	-12.78	31.03	1.86
474	SLD 6	339	626	8613	-13.05	30.04	3.64
474	SLD 7	146	-674	5299	10.38	62.28	-2.51
474	SLD 8	196	-616	5340	10.1	61.29	-0.72
474	SLD 9	-114	540	8972	-12.94	25.09	-0.44
474	SLD 10	-64	598	9014	-13.21	24.1	1.34
474	SLD 11	-257	-703	5699	10.22	56.34	-4.81
474	SLD 12	-207	-645	5741	9.94	55.35	-3.03
474	SLD 13	-647	56	8283	-4.95	29.35	-5.12
474	SLD 14	-571	144	8346	-5.37	27.85	-2.41
474	SLD 15	-690	-316	7301	2	38.73	-6.43
474	SLD 16	-614	-229	7364	1.58	37.23	-3.72
474	SLV 1	1576	436	6752	-9.01	56.38	6.87
474	SLV 2	1756	642	6900	-9.99	52.85	13.24
474	SLV 3	1467	-494	4290	8.41	79.85	3.53
474	SLV 4	1647	-288	4438	7.43	76.31	9.9
474	SLV 5	633	1477	10742	-29.93	12.22	5.52
474	SLV 6	754	1616	10842	-30.59	9.84	9.81
474	SLV 7	270	-1625	2534	28.13	90.44	-5.6
474	SLV 8	391	-1486	2634	27.47	88.06	-1.31
474	SLV 9	-309	1409	11679	-30.31	-1.67	0.14
474	SLV 10	-188	1548	11779	-30.96	-4.05	4.43
474	SLV 11	-672	-1692	3471	27.75	76.54	-10.98
474	SLV 12	-551	-1553	3571	27.09	74.16	-6.69
474	SLV 13	-1565	212	9875	-10.26	10.07	-11.07
474	SLV 14	-1385	418	10023	-11.24	6.53	-4.7
474	SLV 15	-1674	-719	7412	7.15	33.53	-14.4
474	SLV 16	-1494	-512	7561	6.18	30	-8.04
474	CRTFP Ux+	0	0	0	0	0	0
474	CRTFP Ux-	0	0	0	0	0	0
474	CRTFP Uy+	0	0	0	0	0	0
474	CRTFP Uy-	0	0	0	0	0	0
477	SLU 1	30	23	3794	1.55	808.31	-8.23
477	SLU 2	32	47	3836	1.25	813.11	-16.43
477	SLU 3	31	24	3869	1.67	824.01	-8.47
477	SLU 4	32	38	3895	1.48	826.89	-13.39
477	SLU 5	32	48	3884	1.33	823.09	-16.76
477	SLU 6	31	25	3917	1.75	834	-8.8
477	SLU 7	32	39	3942	1.57	836.87	-13.72
477	SLU 8	31	25	3889	1.72	828.28	-8.88
477	SLU 9	31	39	3914	1.53	831.16	-13.8
477	SLU 10	31	50	4287	1.47	905.7	-17.47
477	SLU 11	30	27	4320	1.89	916.6	-9.52
477	SLU 12	31	41	4346	1.71	919.48	-14.44
477	SLU 13	31	51	4335	1.55	915.69	-17.8
477	SLU 14	31	28	4368	1.98	926.59	-9.84
477	SLU 15	31	42	4393	1.79	929.47	-14.76
477	SLU 16	30	28	4340	1.94	920.88	-9.93
477	SLU 17	31	42	4365	1.76	923.75	-14.85
477	SLU 18	30	28	4438	1.87	940.58	-9.72
477	SLU 19	30	42	4464	1.69	943.46	-14.64
477	SLU 20	30	29	4486	1.96	950.57	-10.05
477	SLU 21	31	43	4511	1.77	953.45	-14.96

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
477	SLU 22	33	24	4323	2.02	918.08	-8.43
477	SLU 23	34	47	4365	1.72	922.87	-16.63
477	SLU 24	33	25	4398	2.14	933.78	-8.68
477	SLU 25	34	39	4423	1.96	936.65	-13.6
477	SLU 26	34	48	4412	1.8	932.86	-16.96
477	SLU 27	33	26	4445	2.22	943.76	-9
477	SLU 28	34	40	4471	2.04	946.64	-13.92
477	SLU 29	33	26	4418	2.19	938.05	-9.09
477	SLU 30	34	40	4443	2.01	940.93	-14.01
477	SLU 31	33	50	4816	1.94	1015.47	-17.67
477	SLU 32	32	28	4849	2.36	1026.37	-9.72
477	SLU 33	33	42	4874	2.18	1029.25	-14.64
477	SLU 34	33	51	4864	2.03	1025.45	-18
477	SLU 35	33	29	4897	2.45	1036.36	-10.05
477	SLU 36	33	43	4922	2.26	1039.23	-14.96
477	SLU 37	32	29	4869	2.41	1030.64	-10.13
477	SLU 38	33	43	4894	2.23	1033.52	-15.05
477	SLU 39	32	28	4967	2.35	1050.35	-9.92
477	SLU 40	32	42	4993	2.16	1053.23	-14.84
477	SLU 41	32	29	5015	2.43	1060.34	-10.25
477	SLU 42	33	43	5040	2.25	1063.22	-15.17
477	SLU 43	39	30	4751	1.86	1013.17	-10.63
477	SLU 44	40	54	4793	1.55	1017.96	-18.83
477	SLU 45	39	31	4826	1.97	1028.87	-10.87
477	SLU 46	40	45	4851	1.79	1031.75	-15.79
477	SLU 47	40	55	4840	1.63	1027.95	-19.16
477	SLU 48	40	32	4874	2.05	1038.85	-11.2
477	SLU 49	40	46	4899	1.87	1041.73	-16.12
477	SLU 50	39	32	4846	2.02	1033.14	-11.28
477	SLU 51	40	46	4871	1.84	1036.02	-16.2
477	SLU 52	39	57	5244	1.78	1110.56	-19.87
477	SLU 53	39	34	5277	2.2	1121.46	-11.92
477	SLU 54	39	48	5302	2.01	1124.34	-16.84
477	SLU 55	40	58	5292	1.86	1120.54	-20.2
477	SLU 56	39	35	5325	2.28	1131.45	-12.24
477	SLU 57	40	49	5350	2.1	1134.33	-17.16
477	SLU 58	39	35	5297	2.25	1125.73	-12.33
477	SLU 59	39	49	5322	2.06	1128.61	-17.24
477	SLU 60	38	34	5395	2.18	1145.44	-12.12
477	SLU 61	39	48	5421	1.99	1148.32	-17.04
477	SLU 62	38	35	5443	2.26	1155.43	-12.44
477	SLU 63	39	49	5468	2.08	1158.31	-17.36
477	SLU 64	41	31	5280	2.33	1122.93	-10.83
477	SLU 65	42	54	5322	2.02	1127.73	-19.03
477	SLU 66	41	31	5355	2.44	1138.63	-11.08
477	SLU 67	42	45	5380	2.26	1141.51	-16
477	SLU 68	42	55	5369	2.1	1137.72	-19.36
477	SLU 69	42	32	5402	2.53	1148.62	-11.4
477	SLU 70	42	46	5428	2.34	1151.5	-16.32
477	SLU 71	41	33	5375	2.49	1142.91	-11.49
477	SLU 72	42	47	5400	2.31	1145.79	-16.41
477	SLU 73	42	57	5773	2.25	1220.32	-20.07
477	SLU 74	41	34	5806	2.67	1231.23	-12.12
477	SLU 75	42	48	5831	2.48	1234.1	-17.04
477	SLU 76	42	58	5820	2.33	1230.31	-20.4
477	SLU 77	41	35	5853	2.75	1241.21	-12.45
477	SLU 78	42	49	5879	2.57	1244.09	-17.36
477	SLU 79	41	36	5826	2.72	1235.5	-12.53
477	SLU 80	41	50	5851	2.54	1238.38	-17.45
477	SLU 81	40	35	5924	2.65	1255.21	-12.32
477	SLU 82	41	49	5949	2.47	1258.09	-17.24
477	SLU 83	40	36	5972	2.73	1265.2	-12.65
477	SLU 84	41	50	5997	2.55	1268.07	-17.57
477	SLE RA 1	31	24	3945	1.69	839.67	-8.29
477	SLE RA 2	32	39	3973	1.48	842.87	-13.75
477	SLE RA 3	31	24	3995	1.76	850.14	-8.45
477	SLE RA 4	32	33	4012	1.64	852.06	-11.73
477	SLE RA 5	32	40	4005	1.54	849.53	-13.97
477	SLE RA 6	31	25	4027	1.82	856.8	-8.67
477	SLE RA 7	32	34	4044	1.7	858.71	-11.95
477	SLE RA 8	31	25	4008	1.8	852.99	-8.72
477	SLE RA 9	32	34	4025	1.68	854.91	-12
477	SLE RA 10	31	41	4274	1.63	904.6	-14.45
477	SLE RA 11	31	26	4296	1.91	911.87	-9.15
477	SLE RA 12	31	35	4313	1.79	913.78	-12.43
477	SLE RA 13	32	42	4306	1.69	911.26	-14.67
477	SLE RA 14	31	27	4328	1.97	918.52	-9.36
477	SLE RA 15	32	36	4344	1.85	920.44	-12.64
477	SLE RA 16	31	27	4309	1.95	914.72	-9.42
477	SLE RA 17	31	36	4326	1.83	916.63	-12.7
477	SLE RA 18	31	26	4375	1.9	927.85	-9.28
477	SLE RA 19	31	36	4392	1.78	929.77	-12.56
477	SLE RA 20	31	27	4406	1.96	934.51	-9.5
477	SLE RA 21	31	36	4423	1.83	936.43	-12.78
477	SLE FR 1	31	24	3945	1.69	839.67	-8.29
477	SLE FR 2	31	27	3951	1.65	840.31	-9.38
477	SLE FR 3	31	24	3958	1.71	842.33	-8.38
477	SLE FR 4	31	27	4080	1.71	866.77	-9.68
477	SLE FR 5	31	25	4087	1.77	868.79	-8.67

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
477	SLE FR 6	31	25	4160	1.79	883.76	-8.78
477	SLE QP 1	31	24	3945	1.69	839.67	-8.29
477	SLE QP 2	31	24	4074	1.75	866.13	-8.59
477	SLD 1	401	130	3200	-0.56	682.63	-45.38
477	SLD 2	442	257	3252	-0.99	688.52	-89.51
477	SLD 3	379	-140	2615	3.84	610.92	49.01
477	SLD 4	420	-13	2667	3.41	616.8	4.88
477	SLD 5	169	443	4690	-5.53	918.79	-154.85
477	SLD 6	196	526	4724	-5.82	922.67	-183.96
477	SLD 7	94	-457	2739	9.13	679.73	159.79
477	SLD 8	121	-374	2773	8.84	683.61	130.68
477	SLD 9	-59	422	5374	-5.34	1048.64	-147.85
477	SLD 10	-32	506	5409	-5.62	1052.52	-176.96
477	SLD 11	-134	-478	3424	9.32	809.58	166.79
477	SLD 12	-107	-394	3458	9.03	813.46	137.68
477	SLD 13	-358	62	5481	0.1	1115.45	-22.06
477	SLD 14	-317	189	5533	-0.34	1121.34	-66.18
477	SLD 15	-380	-208	4896	4.5	1043.74	72.34
477	SLD 16	-339	-81	4948	4.06	1049.62	28.21
477	SLV 1	899	292	2077	-4.01	442.65	-102
477	SLV 2	996	590	2199	-5.04	456.47	-205.73
477	SLV 3	842	-382	610	7.02	262.84	133.78
477	SLV 4	939	-84	732	5.99	276.67	30.05
477	SLV 5	360	1072	5678	-16.52	1009.2	-374.85
477	SLV 6	425	1273	5760	-17.21	1018.51	-444.69
477	SLV 7	170	-1176	786	20.25	409.86	411.08
477	SLV 8	235	-975	868	19.56	419.17	341.25
477	SLV 9	-173	1024	7280	-16.06	1313.08	-358.42
477	SLV 10	-108	1225	7362	-16.75	1322.39	-428.26
477	SLV 11	-363	-1224	2388	20.71	713.74	427.52
477	SLV 12	-298	-1023	2470	20.02	723.05	357.68
477	SLV 13	-877	133	7416	-2.49	1455.58	-47.22
477	SLV 14	-780	431	7538	-3.51	1469.41	-150.95
477	SLV 15	-934	-542	5948	8.54	1275.78	188.56
477	SLV 16	-837	-244	6070	7.52	1289.61	84.83
477	CRTFP Ux+	0	0	0	0	0	0
477	CRTFP Ux-	0	0	0	0	0	0
477	CRTFP Uy+	0	0	0	0	0	0
477	CRTFP Uy-	0	0	0	0	0	0
479	SLU 1	32	-46	3139	-38.24	949.15	16.57
479	SLU 2	33	-30	3163	-38.69	955.35	10.79
479	SLU 3	32	-47	3198	-38.93	966.47	16.86
479	SLU 4	33	-37	3213	-39.19	970.19	13.39
479	SLU 5	33	-30	3200	-39.11	966.08	10.98
479	SLU 6	33	-48	3235	-39.35	977.19	17.04
479	SLU 7	33	-38	3249	-39.62	980.92	13.58
479	SLU 8	32	-47	3212	-39.08	970.59	16.94
479	SLU 9	33	-37	3227	-39.35	974.32	13.47
479	SLU 10	37	-36	3579	-43.76	1081.25	12.99
479	SLU 11	36	-53	3613	-43.99	1092.36	19.06
479	SLU 12	37	-43	3628	-44.26	1096.09	15.6
479	SLU 13	37	-36	3615	-44.18	1091.97	13.18
479	SLU 14	36	-54	3650	-44.41	1103.08	19.25
479	SLU 15	37	-44	3665	-44.68	1106.81	15.78
479	SLU 16	36	-54	3628	-44.15	1096.48	19.14
479	SLU 17	37	-44	3642	-44.42	1100.21	15.68
479	SLU 18	37	-55	3732	-45.48	1128.99	19.71
479	SLU 19	38	-45	3747	-45.75	1132.72	16.25
479	SLU 20	38	-56	3769	-45.9	1139.71	19.9
479	SLU 21	38	-46	3784	-46.17	1143.44	16.43
479	SLU 22	36	-52	3573	-43.39	1077.45	18.63
479	SLU 23	37	-36	3597	-43.84	1083.65	12.86
479	SLU 24	37	-53	3632	-44.08	1094.77	18.92
479	SLU 25	37	-43	3646	-44.35	1098.5	15.46
479	SLU 26	37	-36	3634	-44.27	1094.38	13.04
479	SLU 27	37	-53	3668	-44.5	1105.49	19.11
479	SLU 28	37	-44	3683	-44.77	1109.22	15.65
479	SLU 29	37	-53	3646	-44.24	1098.89	19
479	SLU 30	37	-43	3661	-44.51	1102.62	15.54
479	SLU 31	41	-42	4012	-48.91	1209.55	15.06
479	SLU 32	40	-59	4047	-49.14	1220.66	21.13
479	SLU 33	41	-49	4062	-49.41	1224.39	17.66
479	SLU 34	41	-42	4049	-49.33	1220.27	15.25
479	SLU 35	40	-60	4084	-49.56	1231.39	21.31
479	SLU 36	41	-50	4098	-49.83	1235.11	17.85
479	SLU 37	40	-59	4061	-49.3	1224.78	21.21
479	SLU 38	41	-49	4076	-49.57	1228.51	17.74
479	SLU 39	41	-61	4166	-50.63	1257.29	21.78
479	SLU 40	42	-51	4181	-50.9	1261.02	18.31
479	SLU 41	42	-61	4203	-51.05	1268.02	21.96
479	SLU 42	42	-52	4217	-51.32	1271.74	18.5
479	SLU 43	40	-58	3932	-47.95	1189.9	20.83
479	SLU 44	41	-42	3956	-48.4	1196.11	15.05
479	SLU 45	41	-59	3991	-48.63	1207.23	21.12
479	SLU 46	41	-49	4006	-48.9	1210.95	17.65
479	SLU 47	41	-42	3993	-48.82	1206.83	15.24
479	SLU 48	41	-60	4028	-49.05	1217.95	21.31
479	SLU 49	41	-50	4042	-49.32	1221.67	17.84
479	SLU 50	41	-59	4005	-48.79	1211.35	21.2

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
479	SLU 51	41	-49	4020	-49.06	1215.07	17.74
479	SLU 52	45	-48	4372	-53.46	1322	17.25
479	SLU 53	44	-65	4406	-53.7	1333.12	23.32
479	SLU 54	45	-55	4421	-53.97	1336.84	19.86
479	SLU 55	45	-48	4408	-53.88	1332.72	17.44
479	SLU 56	45	-66	4443	-54.12	1343.84	23.51
479	SLU 57	45	-56	4458	-54.39	1347.56	20.04
479	SLU 58	44	-65	4421	-53.86	1337.24	23.4
479	SLU 59	45	-56	4435	-54.12	1340.96	19.94
479	SLU 60	45	-67	4525	-55.18	1369.75	23.97
479	SLU 61	46	-57	4540	-55.45	1373.47	20.51
479	SLU 62	46	-68	4562	-55.6	1380.47	24.16
479	SLU 63	46	-58	4577	-55.87	1384.19	20.69
479	SLU 64	44	-64	4366	-53.1	1318.2	22.89
479	SLU 65	45	-47	4390	-53.55	1324.41	17.12
479	SLU 66	45	-65	4425	-53.78	1335.53	23.18
479	SLU 67	45	-55	4439	-54.05	1339.25	19.72
479	SLU 68	45	-48	4427	-53.97	1335.13	17.31
479	SLU 69	45	-65	4461	-54.21	1346.25	23.37
479	SLU 70	45	-55	4476	-54.47	1349.97	19.91
479	SLU 71	45	-65	4439	-53.94	1339.65	23.27
479	SLU 72	45	-55	4454	-54.21	1343.37	19.8
479	SLU 73	49	-54	4805	-58.61	1450.3	19.32
479	SLU 74	48	-71	4840	-58.85	1461.42	25.39
479	SLU 75	49	-61	4855	-59.12	1465.14	21.92
479	SLU 76	49	-54	4842	-59.04	1461.02	19.51
479	SLU 77	49	-72	4877	-59.27	1472.14	25.57
479	SLU 78	49	-62	4891	-59.54	1475.86	22.11
479	SLU 79	48	-71	4854	-59.01	1465.54	25.47
479	SLU 80	49	-61	4869	-59.28	1469.26	22
479	SLU 81	50	-73	4959	-60.34	1498.05	26.04
479	SLU 82	50	-63	4974	-60.61	1501.77	22.57
479	SLU 83	50	-73	4996	-60.76	1508.77	26.23
479	SLU 84	50	-63	5010	-61.03	1512.49	22.76
479	SLE RA 1	33	-48	3263	-39.71	985.8	17.16
479	SLE RA 2	34	-37	3279	-40.01	989.94	13.31
479	SLE RA 3	33	-49	3302	-40.17	997.35	17.35
479	SLE RA 4	34	-42	3312	-40.35	999.84	15.04
479	SLE RA 5	34	-37	3304	-40.29	997.09	13.43
479	SLE RA 6	34	-49	3327	-40.45	1004.5	17.47
479	SLE RA 7	34	-42	3336	-40.63	1006.98	15.17
479	SLE RA 8	33	-49	3312	-40.28	1000.1	17.4
479	SLE RA 9	34	-42	3322	-40.46	1002.58	15.09
479	SLE RA 10	36	-41	3556	-43.39	1073.87	14.77
479	SLE RA 11	36	-53	3579	-43.55	1081.28	18.82
479	SLE RA 12	36	-46	3589	-43.73	1083.76	16.51
479	SLE RA 13	36	-41	3580	-43.67	1081.02	14.9
479	SLE RA 14	36	-53	3604	-43.83	1088.43	18.94
479	SLE RA 15	36	-46	3613	-44.01	1090.91	16.63
479	SLE RA 16	36	-53	3589	-43.65	1084.03	18.87
479	SLE RA 17	36	-46	3598	-43.83	1086.51	16.56
479	SLE RA 18	37	-54	3658	-44.54	1105.7	19.25
479	SLE RA 19	37	-47	3668	-44.72	1108.18	16.94
479	SLE RA 20	37	-54	3683	-44.82	1112.85	19.38
479	SLE RA 21	37	-48	3693	-45	1115.33	17.07
479	SLE FR 1	33	-48	3263	-39.71	985.8	17.16
479	SLE FR 2	33	-46	3266	-39.77	986.63	16.39
479	SLE FR 3	33	-48	3273	-39.83	988.66	17.21
479	SLE FR 4	34	-48	3385	-41.22	1022.6	17.02
479	SLE FR 5	34	-50	3391	-41.27	1024.63	17.83
479	SLE FR 6	35	-51	3461	-42.13	1045.75	18.2
479	SLE QP 1	33	-48	3263	-39.71	985.8	17.16
479	SLE QP 2	34	-50	3382	-41.16	1021.77	17.78
479	SLD 1	322	60	3588	-44.56	1078.24	-15.13
479	SLD 2	353	63	3595	-44.68	1079.08	-15.65
479	SLD 3	303	-143	3266	-38.62	996.59	55.58
479	SLD 4	335	-140	3273	-38.74	997.43	55.06
479	SLD 5	143	290	3931	-51.17	1162.39	-99.24
479	SLD 6	164	292	3935	-51.25	1162.95	-99.58
479	SLD 7	81	-386	2857	-31.37	890.23	136.46
479	SLD 8	102	-384	2862	-31.45	890.79	136.12
479	SLD 9	-33	284	3901	-50.87	1152.76	-100.55
479	SLD 10	-13	286	3906	-50.95	1153.31	-100.89
479	SLD 11	-95	-392	2828	-31.08	880.6	135.15
479	SLD 12	-75	-390	2833	-31.16	881.15	134.81
479	SLD 13	-266	40	3490	-43.59	1046.12	-19.49
479	SLD 14	-235	43	3497	-43.71	1046.96	-20.01
479	SLD 15	-285	-163	3168	-37.65	964.47	51.22
479	SLD 16	-254	-160	3175	-37.77	965.31	50.7
479	SLV 1	709	223	3891	-49.6	1160.74	-64.67
479	SLV 2	782	230	3908	-49.88	1162.71	-65.88
479	SLV 3	662	-282	3084	-34.71	955.98	111.63
479	SLV 4	735	-275	3101	-34.99	957.96	110.42
479	SLV 5	295	798	4756	-66.22	1373.64	-274.11
479	SLV 6	344	803	4768	-66.41	1374.97	-274.93
479	SLV 7	137	-888	2064	-16.59	691.13	313.55
479	SLV 8	187	-883	2076	-16.78	692.45	312.74
479	SLV 9	-118	784	4687	-65.54	1351.09	-277.17
479	SLV 10	-69	788	4699	-65.73	1352.42	-277.98

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
479	SLV 11	-275	-902	1995	-15.91	668.58	310.49
479	SLV 12	-226	-897	2007	-16.1	669.91	309.68
479	SLV 13	-667	176	3662	-47.33	1085.59	-74.85
479	SLV 14	-593	183	3679	-47.61	1087.56	-76.06
479	SLV 15	-714	-330	2855	-32.44	880.83	101.45
479	SLV 16	-641	-323	2872	-32.72	882.81	100.24
479	CRTFP Ux+	0	0	0	0	0	0
479	CRTFP Ux-	0	0	0	0	0	0
479	CRTFP Uy+	0	0	0	0	0	0
479	CRTFP Uy-	0	0	0	0	0	0
482	SLU 1	-50	47	3413	2.9	-504.49	11.74
482	SLU 2	-51	70	3443	2.69	-506.27	17.44
482	SLU 3	-52	47	3480	3.01	-514.44	11.82
482	SLU 4	-52	61	3498	2.89	-515.51	15.24
482	SLU 5	-52	70	3485	2.76	-512.46	17.49
482	SLU 6	-52	47	3522	3.08	-520.62	11.87
482	SLU 7	-53	61	3540	2.96	-521.7	15.29
482	SLU 8	-52	47	3496	3.04	-516.85	11.84
482	SLU 9	-52	61	3514	2.91	-517.92	15.26
482	SLU 10	-53	76	3853	3.09	-565.47	19.06
482	SLU 11	-54	54	3890	3.42	-573.64	13.44
482	SLU 12	-54	67	3908	3.29	-574.71	16.86
482	SLU 13	-54	76	3894	3.16	-571.65	19.11
482	SLU 14	-54	54	3931	3.49	-579.82	13.49
482	SLU 15	-55	67	3949	3.36	-580.89	16.91
482	SLU 16	-54	54	3906	3.45	-576.05	13.45
482	SLU 17	-55	67	3924	3.32	-577.12	16.87
482	SLU 18	-54	56	3998	3.48	-589.05	14.05
482	SLU 19	-54	70	4016	3.35	-590.12	17.47
482	SLU 20	-54	56	4040	3.55	-595.23	14.1
482	SLU 21	-55	70	4058	3.42	-596.3	17.52
482	SLU 22	-56	51	3899	3.53	-575.74	12.72
482	SLU 23	-56	74	3929	3.32	-577.53	18.42
482	SLU 24	-57	51	3966	3.64	-585.69	12.8
482	SLU 25	-57	65	3984	3.52	-586.77	16.22
482	SLU 26	-57	74	3971	3.39	-583.71	18.47
482	SLU 27	-58	51	4008	3.71	-591.88	12.85
482	SLU 28	-58	65	4026	3.59	-592.95	16.27
482	SLU 29	-57	51	3982	3.67	-588.1	12.82
482	SLU 30	-58	65	4000	3.55	-589.18	16.24
482	SLU 31	-59	80	4339	3.72	-636.72	20.04
482	SLU 32	-59	58	4376	4.05	-644.89	14.42
482	SLU 33	-59	71	4394	3.92	-645.96	17.84
482	SLU 34	-59	80	4380	3.79	-642.9	20.09
482	SLU 35	-60	58	4417	4.12	-651.07	14.47
482	SLU 36	-60	71	4435	3.99	-652.14	17.89
482	SLU 37	-59	58	4392	4.08	-647.3	14.43
482	SLU 38	-60	71	4410	3.95	-648.37	17.86
482	SLU 39	-59	60	4484	4.11	-660.3	15.03
482	SLU 40	-59	74	4502	3.98	-661.38	18.45
482	SLU 41	-60	60	4526	4.18	-666.49	15.08
482	SLU 42	-60	74	4544	4.05	-667.56	18.5
482	SLU 43	-64	59	4271	3.55	-631.4	14.92
482	SLU 44	-64	82	4301	3.34	-633.19	20.62
482	SLU 45	-65	60	4338	3.67	-641.36	15
482	SLU 46	-65	73	4356	3.54	-642.43	18.42
482	SLU 47	-65	82	4342	3.41	-639.37	20.67
482	SLU 48	-66	60	4379	3.74	-647.54	15.05
482	SLU 49	-66	74	4397	3.61	-648.61	18.47
482	SLU 50	-65	60	4354	3.7	-643.77	15.02
482	SLU 51	-66	74	4372	3.57	-644.84	18.44
482	SLU 52	-67	89	4710	3.74	-692.38	22.24
482	SLU 53	-67	66	4747	4.07	-700.55	16.62
482	SLU 54	-67	80	4765	3.94	-701.62	20.04
482	SLU 55	-67	89	4752	3.82	-698.57	22.29
482	SLU 56	-68	66	4789	4.14	-706.73	16.67
482	SLU 57	-68	80	4807	4.01	-707.81	20.09
482	SLU 58	-67	66	4763	4.1	-702.96	16.64
482	SLU 59	-68	80	4781	3.97	-704.03	20.06
482	SLU 60	-67	69	4856	4.13	-715.97	17.23
482	SLU 61	-67	82	4874	4	-717.04	20.65
482	SLU 62	-68	69	4897	4.2	-722.15	17.28
482	SLU 63	-68	83	4915	4.07	-723.22	20.7
482	SLU 64	-69	63	4757	4.18	-702.66	15.9
482	SLU 65	-70	86	4787	3.97	-704.44	21.6
482	SLU 66	-70	64	4823	4.3	-712.61	15.98
482	SLU 67	-71	77	4841	4.17	-713.68	19.4
482	SLU 68	-70	86	4828	4.04	-710.62	21.65
482	SLU 69	-71	64	4865	4.37	-718.79	16.03
482	SLU 70	-71	78	4883	4.24	-719.86	19.45
482	SLU 71	-70	64	4840	4.33	-715.02	16
482	SLU 72	-71	78	4858	4.2	-716.09	19.42
482	SLU 73	-72	93	5196	4.38	-763.64	23.22
482	SLU 74	-72	70	5233	4.7	-771.8	17.6
482	SLU 75	-73	84	5251	4.57	-772.88	21.02
482	SLU 76	-73	93	5238	4.45	-769.82	23.27
482	SLU 77	-73	70	5274	4.77	-777.99	17.65
482	SLU 78	-73	84	5292	4.64	-779.06	21.07
482	SLU 79	-73	70	5249	4.73	-774.21	17.62

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
482	SLU 80	-73	84	5267	4.6	-775.29	21.04
482	SLU 81	-72	73	5342	4.76	-787.22	18.21
482	SLU 82	-73	86	5360	4.63	-788.29	21.64
482	SLU 83	-73	73	5383	4.83	-793.4	18.26
482	SLU 84	-73	87	5401	4.7	-794.47	21.68
482	SLE RA 1	-52	48	3552	3.08	-524.84	12.02
482	SLE RA 2	-52	63	3572	2.94	-526.04	15.82
482	SLE RA 3	-53	48	3597	3.15	-531.48	12.07
482	SLE RA 4	-53	57	3609	3.07	-532.2	14.35
482	SLE RA 5	-53	63	3600	2.99	-530.16	15.85
482	SLE RA 6	-53	48	3624	3.2	-535.6	12.1
482	SLE RA 7	-53	57	3636	3.12	-536.32	14.38
482	SLE RA 8	-53	48	3607	3.17	-533.09	12.08
482	SLE RA 9	-53	57	3619	3.09	-533.8	14.36
482	SLE RA 10	-54	67	3845	3.21	-565.5	16.9
482	SLE RA 11	-54	52	3870	3.42	-570.94	13.15
482	SLE RA 12	-54	62	3882	3.34	-571.66	15.43
482	SLE RA 13	-54	68	3873	3.26	-569.62	16.93
482	SLE RA 14	-55	53	3897	3.47	-575.07	13.18
482	SLE RA 15	-55	62	3909	3.39	-575.78	15.46
482	SLE RA 16	-54	53	3880	3.44	-572.55	13.16
482	SLE RA 17	-55	62	3892	3.36	-573.27	15.44
482	SLE RA 18	-54	54	3942	3.46	-581.22	13.56
482	SLE RA 19	-54	63	3954	3.38	-581.93	15.84
482	SLE RA 20	-55	54	3970	3.51	-585.34	13.59
482	SLE RA 21	-55	63	3982	3.43	-586.06	15.87
482	SLE FR 1	-52	48	3552	3.08	-524.84	12.02
482	SLE FR 2	-52	51	3556	3.05	-525.08	12.78
482	SLE FR 3	-52	48	3563	3.1	-526.49	12.03
482	SLE FR 4	-53	53	3673	3.17	-542	13.24
482	SLE FR 5	-53	50	3680	3.21	-543.41	12.49
482	SLE FR 6	-53	51	3747	3.27	-553.03	12.79
482	SLE QP 1	-52	48	3552	3.08	-524.84	12.02
482	SLE QP 2	-53	50	3669	3.19	-541.76	12.48
482	SLD 1	223	269	4960	2.47	-697.44	67.19
482	SLD 2	251	151	4918	2.76	-695.17	37.8
482	SLD 3	240	8	4544	5.56	-672.53	1.95
482	SLD 4	269	-110	4503	5.84	-670.26	-27.43
482	SLD 5	-2	532	4694	-1.75	-626.65	133.11
482	SLD 6	17	454	4667	-1.56	-625.15	113.73
482	SLD 7	57	-337	3309	8.53	-543.62	-84.33
482	SLD 8	75	-415	3282	8.71	-542.12	-103.71
482	SLD 9	-181	514	4056	-2.32	-541.4	128.67
482	SLD 10	-162	436	4029	-2.14	-539.89	109.29
482	SLD 11	-122	-355	2672	7.95	-458.36	-88.77
482	SLD 12	-104	-433	2645	8.13	-456.86	-108.15
482	SLD 13	-374	209	2835	0.55	-413.26	52.39
482	SLD 14	-346	91	2794	0.83	-410.98	23.01
482	SLD 15	-356	-51	2420	3.63	-388.35	-12.84
482	SLD 16	-328	-169	2379	3.92	-386.07	-42.23
482	SLV 1	591	582	6723	1.26	-908.14	145.38
482	SLV 2	658	305	6626	1.92	-902.8	76.31
482	SLV 3	634	-65	5683	8.97	-845.77	-16.62
482	SLV 4	700	-343	5586	9.63	-840.42	-85.68
482	SLV 5	63	1244	6181	-9.21	-747.27	310.94
482	SLV 6	108	1057	6116	-8.76	-743.67	264.44
482	SLV 7	206	-915	2714	16.5	-539.36	-229.05
482	SLV 8	251	-1102	2649	16.95	-535.76	-275.56
482	SLV 9	-356	1202	4689	-10.56	-547.76	300.52
482	SLV 10	-311	1015	4624	-10.11	-544.16	254.01
482	SLV 11	-213	-957	1223	15.15	-339.84	-239.48
482	SLV 12	-168	-1144	1158	15.6	-336.24	-285.98
482	SLV 13	-806	443	1752	-3.25	-243.09	110.64
482	SLV 14	-739	165	1655	-2.58	-237.74	41.57
482	SLV 15	-763	-205	712	4.47	-180.71	-51.35
482	SLV 16	-696	-483	615	5.13	-175.37	-120.42
482	CRTFP Ux+	0	0	0	0	0	0
482	CRTFP Ux-	0	0	0	0	0	0
482	CRTFP Uy+	0	0	0	0	0	0
482	CRTFP Uy-	0	0	0	0	0	0
485	SLU 1	-64	-64	6759	-0.39	-24.47	0.06
485	SLU 2	-65	-33	6814	-0.87	-24.12	0
485	SLU 3	-65	-65	6895	-0.28	-25.08	0.03
485	SLU 4	-66	-47	6928	-0.57	-24.87	0
485	SLU 5	-66	-34	6900	-0.8	-24.53	-0.02
485	SLU 6	-66	-66	6980	-0.2	-25.49	0.01
485	SLU 7	-67	-48	7014	-0.49	-25.28	-0.02
485	SLU 8	-66	-65	6929	-0.24	-25.29	0.02
485	SLU 9	-67	-47	6963	-0.53	-25.08	-0.02
485	SLU 10	-66	-39	7682	-0.83	-28.61	0.05
485	SLU 11	-67	-71	7762	-0.23	-29.57	0.09
485	SLU 12	-68	-52	7795	-0.52	-29.36	0.05
485	SLU 13	-68	-40	7767	-0.75	-29.02	0.03
485	SLU 14	-68	-72	7847	-0.16	-29.98	0.07
485	SLU 15	-69	-53	7881	-0.44	-29.77	0.03
485	SLU 16	-68	-71	7797	-0.19	-29.78	0.07
485	SLU 17	-68	-53	7830	-0.48	-29.57	0.04
485	SLU 18	-66	-72	7997	-0.33	-30.88	0.13
485	SLU 19	-67	-54	8031	-0.61	-30.67	0.1

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
485	SLU 20	-67	-73	8083	-0.25	-31.29	0.11
485	SLU 21	-68	-55	8116	-0.54	-31.08	0.08
485	SLU 22	-71	-71	7756	0	-28.56	0
485	SLU 23	-72	-41	7812	-0.48	-28.21	-0.06
485	SLU 24	-73	-73	7892	0.12	-29.17	-0.02
485	SLU 25	-73	-54	7925	-0.17	-28.96	-0.06
485	SLU 26	-73	-42	7897	-0.4	-28.61	-0.08
485	SLU 27	-74	-73	7977	0.19	-29.57	-0.04
485	SLU 28	-74	-55	8011	-0.1	-29.36	-0.08
485	SLU 29	-73	-73	7927	0.15	-29.37	-0.04
485	SLU 30	-74	-55	7960	-0.13	-29.16	-0.08
485	SLU 31	-74	-46	8679	-0.43	-32.69	0
485	SLU 32	-74	-78	8759	0.16	-33.65	0.03
485	SLU 33	-75	-60	8792	-0.13	-33.44	0
485	SLU 34	-75	-47	8764	-0.36	-33.1	-0.02
485	SLU 35	-76	-79	8844	0.24	-34.06	0.01
485	SLU 36	-76	-61	8878	-0.05	-33.85	-0.02
485	SLU 37	-75	-79	8794	0.2	-33.86	0.01
485	SLU 38	-76	-60	8827	-0.09	-33.65	-0.02
485	SLU 39	-74	-79	8994	0.07	-34.96	0.07
485	SLU 40	-74	-61	9028	-0.22	-34.75	0.04
485	SLU 41	-75	-80	9080	0.14	-35.37	0.05
485	SLU 42	-75	-62	9113	-0.14	-35.16	0.02
485	SLU 43	-80	-80	8444	-0.65	-30.42	0.09
485	SLU 44	-81	-50	8500	-1.13	-30.07	0.04
485	SLU 45	-82	-82	8580	-0.53	-31.03	0.07
485	SLU 46	-82	-63	8614	-0.82	-30.82	0.04
485	SLU 47	-82	-51	8586	-1.05	-30.48	0.02
485	SLU 48	-83	-82	8666	-0.46	-31.43	0.05
485	SLU 49	-84	-64	8699	-0.74	-31.22	0.02
485	SLU 50	-83	-82	8615	-0.49	-31.23	0.05
485	SLU 51	-83	-64	8649	-0.78	-31.02	0.02
485	SLU 52	-83	-56	9367	-1.08	-34.55	0.09
485	SLU 53	-84	-87	9447	-0.49	-35.51	0.12
485	SLU 54	-84	-69	9481	-0.77	-35.3	0.09
485	SLU 55	-84	-56	9453	-1	-34.96	0.07
485	SLU 56	-85	-88	9533	-0.41	-35.92	0.1
485	SLU 57	-85	-70	9566	-0.7	-35.71	0.07
485	SLU 58	-84	-88	9482	-0.45	-35.72	0.11
485	SLU 59	-85	-69	9516	-0.73	-35.51	0.07
485	SLU 60	-83	-89	9683	-0.58	-36.82	0.17
485	SLU 61	-83	-70	9717	-0.87	-36.61	0.14
485	SLU 62	-84	-89	9769	-0.5	-37.23	0.15
485	SLU 63	-85	-71	9802	-0.79	-37.02	0.12
485	SLU 64	-88	-88	9441	-0.25	-34.5	0.03
485	SLU 65	-89	-57	9497	-0.73	-34.15	-0.02
485	SLU 66	-89	-89	9577	-0.14	-35.11	0.01
485	SLU 67	-90	-71	9611	-0.43	-34.9	-0.02
485	SLU 68	-90	-58	9583	-0.65	-34.56	-0.04
485	SLU 69	-90	-90	9663	-0.06	-35.52	-0.01
485	SLU 70	-91	-72	9696	-0.35	-35.31	-0.04
485	SLU 71	-90	-89	9612	-0.1	-35.31	-0.01
485	SLU 72	-90	-71	9646	-0.39	-35.1	-0.04
485	SLU 73	-90	-63	10364	-0.69	-38.63	0.03
485	SLU 74	-91	-95	10445	-0.09	-39.59	0.07
485	SLU 75	-92	-77	10478	-0.38	-39.38	0.03
485	SLU 76	-92	-64	10450	-0.61	-39.04	0.01
485	SLU 77	-92	-96	10530	-0.02	-40	0.05
485	SLU 78	-93	-77	10563	-0.3	-39.79	0.01
485	SLU 79	-92	-95	10479	-0.05	-39.8	0.05
485	SLU 80	-92	-77	10513	-0.34	-39.59	0.01
485	SLU 81	-90	-96	10680	-0.19	-40.91	0.11
485	SLU 82	-91	-78	10714	-0.47	-40.7	0.08
485	SLU 83	-91	-97	10766	-0.11	-41.31	0.09
485	SLU 84	-92	-79	10799	-0.4	-41.1	0.06
485	SLE RA 1	-66	-66	7044	-0.28	-25.64	0.04
485	SLE RA 2	-66	-46	7081	-0.6	-25.41	0
485	SLE RA 3	-67	-67	7134	-0.2	-26.05	0.02
485	SLE RA 4	-67	-55	7157	-0.4	-25.91	0
485	SLE RA 5	-67	-46	7138	-0.55	-25.68	-0.01
485	SLE RA 6	-68	-67	7191	-0.15	-26.32	0.01
485	SLE RA 7	-68	-55	7213	-0.34	-26.18	-0.01
485	SLE RA 8	-67	-67	7157	-0.18	-26.18	0.01
485	SLE RA 9	-68	-55	7180	-0.37	-26.04	-0.01
485	SLE RA 10	-68	-49	7659	-0.57	-28.4	0.04
485	SLE RA 11	-68	-71	7712	-0.17	-29.04	0.06
485	SLE RA 12	-68	-58	7735	-0.36	-28.9	0.04
485	SLE RA 13	-68	-50	7716	-0.52	-28.67	0.02
485	SLE RA 14	-69	-71	7769	-0.12	-29.31	0.05
485	SLE RA 15	-69	-59	7792	-0.31	-29.17	0.03
485	SLE RA 16	-69	-71	7735	-0.15	-29.17	0.05
485	SLE RA 17	-69	-59	7758	-0.34	-29.03	0.03
485	SLE RA 18	-67	-71	7869	-0.24	-29.91	0.09
485	SLE RA 19	-68	-59	7892	-0.43	-29.77	0.07
485	SLE RA 20	-68	-72	7926	-0.19	-30.18	0.08
485	SLE RA 21	-69	-60	7949	-0.38	-30.04	0.05
485	SLE FR 1	-66	-66	7044	-0.28	-25.64	0.04
485	SLE FR 2	-66	-62	7051	-0.34	-25.59	0.03
485	SLE FR 3	-66	-66	7066	-0.26	-25.75	0.03

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
485	SLE FR 4	-66	-63	7299	-0.33	-26.87	0.05
485	SLE FR 5	-67	-68	7314	-0.25	-27.03	0.05
485	SLE FR 6	-67	-69	7456	-0.26	-27.78	0.06
485	SLE QP 1	-66	-66	7044	-0.28	-25.64	0.04
485	SLE QP 2	-66	-68	7291	-0.27	-26.92	0.05
485	SLD 1	543	110	8431	-3.56	0.39	0.46
485	SLD 2	601	26	8381	-3.17	-0.98	3.13
485	SLD 3	563	-253	7670	3.12	-5.52	1.59
485	SLD 4	621	-337	7620	3.51	-6.89	4.26
485	SLD 5	76	552	8796	-11.46	-9.51	-2.02
485	SLD 6	114	496	8763	-11.2	-10.42	-0.26
485	SLD 7	142	-659	6260	10.81	-29.22	1.76
485	SLD 8	181	-714	6227	11.06	-30.13	3.52
485	SLD 9	-313	579	8355	-11.6	-23.72	-3.41
485	SLD 10	-275	524	8322	-11.35	-24.62	-1.65
485	SLD 11	-247	-631	5820	10.67	-43.42	0.37
485	SLD 12	-208	-687	5787	10.92	-44.33	2.13
485	SLD 13	-753	202	6963	-4.04	-46.95	-4.15
485	SLD 14	-695	118	6912	-3.66	-48.32	-1.49
485	SLD 15	-733	-161	6202	2.64	-52.86	-3.02
485	SLD 16	-675	-245	6151	3.02	-54.23	-0.35
485	SLV 1	1358	376	10021	-8.52	37.43	0.93
485	SLV 2	1494	178	9903	-7.61	34.21	7.2
485	SLV 3	1406	-528	8116	8.21	22.73	3.71
485	SLV 4	1543	-726	7997	9.12	19.5	9.97
485	SLV 5	262	1473	11022	-28.28	15.29	-5.06
485	SLV 6	354	1340	10942	-27.67	13.12	-0.85
485	SLV 7	424	-1540	4671	27.48	-33.73	4.19
485	SLV 8	515	-1673	4591	28.09	-35.9	8.41
485	SLV 9	-648	1538	9991	-28.62	-17.94	-8.3
485	SLV 10	-556	1405	9911	-28.02	-20.11	-4.08
485	SLV 11	-486	-1475	3640	27.14	-66.96	0.95
485	SLV 12	-394	-1608	3560	27.75	-69.13	5.17
485	SLV 13	-1675	591	6585	-9.65	-73.34	-9.87
485	SLV 14	-1539	393	6466	-8.75	-76.57	-3.6
485	SLV 15	-1627	-313	4680	7.08	-88.05	-7.09
485	SLV 16	-1490	-511	4561	7.98	-91.28	-0.82
485	CRTFP Ux+	0	0	0	0	0	0
485	CRTFP Ux-	0	0	0	0	0	0
485	CRTFP Uy+	0	0	0	0	0	0
485	CRTFP Uy-	0	0	0	0	0	0
488	SLU 1	44	-33	6608	-0.91	37.1	-0.75
488	SLU 2	46	-2	6663	-1.4	36.37	-0.68
488	SLU 3	44	-34	6740	-0.8	37.95	-0.79
488	SLU 4	46	-15	6774	-1.09	37.51	-0.74
488	SLU 5	46	-2	6748	-1.32	36.91	-0.71
488	SLU 6	44	-34	6825	-0.72	38.49	-0.82
488	SLU 7	46	-15	6858	-1.01	38.06	-0.78
488	SLU 8	44	-34	6776	-0.75	38.18	-0.82
488	SLU 9	45	-15	6810	-1.04	37.74	-0.77
488	SLU 10	47	-3	7500	-1.44	42.34	-0.77
488	SLU 11	45	-35	7578	-0.83	43.92	-0.88
488	SLU 12	46	-16	7611	-1.13	43.49	-0.84
488	SLU 13	47	-3	7585	-1.35	42.88	-0.81
488	SLU 14	45	-35	7662	-0.75	44.47	-0.91
488	SLU 15	46	-17	7695	-1.05	44.03	-0.87
488	SLU 16	45	-35	7614	-0.78	44.15	-0.91
488	SLU 17	46	-16	7647	-1.08	43.72	-0.87
488	SLU 18	44	-35	7803	-0.96	45.63	-0.89
488	SLU 19	46	-16	7837	-1.26	45.19	-0.84
488	SLU 20	45	-35	7888	-0.88	46.17	-0.92
488	SLU 21	46	-17	7921	-1.17	45.74	-0.88
488	SLU 22	48	-36	7569	-0.61	42.6	-0.83
488	SLU 23	50	-5	7625	-1.11	41.87	-0.76
488	SLU 24	48	-36	7702	-0.5	43.45	-0.87
488	SLU 25	50	-18	7736	-0.8	43.02	-0.82
488	SLU 26	50	-5	7710	-1.02	42.41	-0.79
488	SLU 27	49	-37	7787	-0.42	44	-0.9
488	SLU 28	50	-18	7820	-0.72	43.56	-0.85
488	SLU 29	48	-37	7738	-0.45	43.68	-0.89
488	SLU 30	50	-18	7772	-0.74	43.25	-0.85
488	SLU 31	51	-6	8462	-1.14	47.85	-0.85
488	SLU 32	49	-38	8539	-0.54	49.43	-0.96
488	SLU 33	50	-19	8573	-0.83	48.99	-0.92
488	SLU 34	51	-6	8547	-1.06	48.39	-0.88
488	SLU 35	49	-38	8624	-0.46	49.97	-0.99
488	SLU 36	51	-19	8657	-0.75	49.53	-0.95
488	SLU 37	49	-38	8575	-0.48	49.66	-0.99
488	SLU 38	50	-19	8609	-0.78	49.22	-0.95
488	SLU 39	49	-38	8765	-0.66	51.13	-0.97
488	SLU 40	50	-19	8799	-0.96	50.7	-0.92
488	SLU 41	49	-38	8850	-0.58	51.68	-1
488	SLU 42	50	-19	8883	-0.88	51.24	-0.95
488	SLU 43	55	-42	8260	-1.29	46.34	-0.95
488	SLU 44	58	-11	8316	-1.78	45.61	-0.88
488	SLU 45	56	-43	8393	-1.17	47.19	-0.99
488	SLU 46	57	-24	8426	-1.47	46.76	-0.94
488	SLU 47	58	-11	8400	-1.69	46.15	-0.91
488	SLU 48	56	-43	8477	-1.09	47.73	-1.02

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
488	SLU 49	58	-24	8511	-1.39	47.3	-0.97
488	SLU 50	56	-43	8429	-1.12	47.42	-1.02
488	SLU 51	57	-24	8462	-1.42	46.99	-0.97
488	SLU 52	58	-12	9153	-1.81	51.58	-0.97
488	SLU 53	56	-44	9230	-1.21	53.17	-1.08
488	SLU 54	58	-25	9264	-1.5	52.73	-1.04
488	SLU 55	58	-12	9237	-1.73	52.13	-1
488	SLU 56	57	-44	9314	-1.13	53.71	-1.11
488	SLU 57	58	-26	9348	-1.42	53.27	-1.07
488	SLU 58	56	-44	9266	-1.16	53.4	-1.11
488	SLU 59	58	-25	9299	-1.45	52.96	-1.07
488	SLU 60	56	-44	9456	-1.34	54.87	-1.09
488	SLU 61	58	-25	9489	-1.63	54.44	-1.04
488	SLU 62	56	-44	9540	-1.25	55.42	-1.12
488	SLU 63	58	-26	9574	-1.55	54.98	-1.07
488	SLU 64	59	-45	9222	-0.99	51.84	-1.03
488	SLU 65	62	-14	9278	-1.48	51.11	-0.96
488	SLU 66	60	-46	9355	-0.88	52.7	-1.06
488	SLU 67	62	-27	9388	-1.17	52.26	-1.02
488	SLU 68	62	-14	9362	-1.4	51.66	-0.99
488	SLU 69	60	-46	9439	-0.8	53.24	-1.1
488	SLU 70	62	-27	9473	-1.09	52.8	-1.05
488	SLU 71	60	-46	9391	-0.82	52.93	-1.09
488	SLU 72	61	-27	9424	-1.12	52.49	-1.05
488	SLU 73	62	-15	10115	-1.52	57.09	-1.05
488	SLU 74	61	-47	10192	-0.91	58.67	-1.16
488	SLU 75	62	-28	10225	-1.21	58.23	-1.11
488	SLU 76	63	-15	10199	-1.43	57.63	-1.08
488	SLU 77	61	-47	10276	-0.83	59.21	-1.19
488	SLU 78	62	-28	10310	-1.13	58.77	-1.15
488	SLU 79	60	-47	10228	-0.86	58.9	-1.19
488	SLU 80	62	-28	10261	-1.15	58.46	-1.14
488	SLU 81	60	-47	10418	-1.04	60.38	-1.16
488	SLU 82	62	-28	10451	-1.33	59.94	-1.12
488	SLU 83	60	-47	10502	-0.96	60.92	-1.2
488	SLU 84	62	-28	10536	-1.25	60.48	-1.15
488	SLE RA 1	45	-34	6882	-0.83	38.67	-0.77
488	SLE RA 2	46	-13	6920	-1.15	38.18	-0.73
488	SLE RA 3	45	-34	6971	-0.75	39.24	-0.8
488	SLE RA 4	46	-22	6993	-0.95	38.95	-0.77
488	SLE RA 5	47	-13	6976	-1.1	38.54	-0.75
488	SLE RA 6	45	-35	7027	-0.7	39.6	-0.82
488	SLE RA 7	46	-22	7050	-0.89	39.31	-0.79
488	SLE RA 8	45	-34	6995	-0.72	39.39	-0.82
488	SLE RA 9	46	-22	7017	-0.91	39.1	-0.79
488	SLE RA 10	47	-14	7478	-1.18	42.17	-0.79
488	SLE RA 11	46	-35	7529	-0.78	43.22	-0.86
488	SLE RA 12	47	-23	7551	-0.97	42.93	-0.83
488	SLE RA 13	47	-14	7534	-1.12	42.53	-0.81
488	SLE RA 14	46	-35	7585	-0.72	43.58	-0.88
488	SLE RA 15	47	-23	7608	-0.92	43.29	-0.85
488	SLE RA 16	45	-35	7553	-0.74	43.37	-0.88
488	SLE RA 17	46	-23	7575	-0.94	43.08	-0.85
488	SLE RA 18	45	-35	7680	-0.86	44.36	-0.86
488	SLE RA 19	46	-23	7702	-1.06	44.07	-0.84
488	SLE RA 20	45	-35	7736	-0.8	44.72	-0.89
488	SLE RA 21	46	-23	7758	-1	44.43	-0.86
488	SLE FR 1	45	-34	6882	-0.83	38.67	-0.77
488	SLE FR 2	45	-30	6890	-0.89	38.57	-0.76
488	SLE FR 3	45	-34	6905	-0.8	38.81	-0.78
488	SLE FR 4	45	-30	7129	-0.9	40.28	-0.79
488	SLE FR 5	45	-34	7144	-0.81	40.52	-0.81
488	SLE FR 6	45	-35	7281	-0.84	41.51	-0.82
488	SLE QP 1	45	-34	6882	-0.83	38.67	-0.77
488	SLE QP 2	45	-34	7122	-0.84	40.38	-0.8
488	SLD 1	684	154	6817	-3.89	44.44	1.95
488	SLD 2	746	242	6867	-4.31	42.97	4.68
488	SLD 3	648	-219	6051	2.98	55.34	0.63
488	SLD 4	710	-132	6100	2.56	53.87	3.36
488	SLD 5	280	572	8184	-12.1	25.33	1.53
488	SLD 6	321	630	8217	-12.38	24.36	3.33
488	SLD 7	160	-671	5629	10.81	61.66	-2.86
488	SLD 8	201	-614	5661	10.53	60.69	-1.06
488	SLD 9	-111	545	8582	-12.2	20.07	-0.54
488	SLD 10	-70	603	8615	-12.48	19.1	1.26
488	SLD 11	-231	-699	6026	10.7	56.39	-4.93
488	SLD 12	-190	-641	6059	10.43	55.42	-3.13
488	SLD 13	-620	63	8143	-4.23	26.88	-4.96
488	SLD 14	-558	150	8193	-4.65	25.41	-2.24
488	SLD 15	-656	-310	7376	2.64	37.78	-6.28
488	SLD 16	-594	-223	7426	2.22	36.31	-3.55
488	SLV 1	1543	435	6473	-8.56	48.99	5.76
488	SLV 2	1689	641	6591	-9.55	45.54	12.16
488	SLV 3	1451	-496	4551	8.67	76.27	2.41
488	SLV 4	1597	-291	4668	7.68	72.81	8.81
488	SLV 5	606	1481	9821	-29.1	2.24	5.06
488	SLV 6	704	1620	9900	-29.76	-0.09	9.37
488	SLV 7	301	-1624	3412	28.33	93.16	-6.12
488	SLV 8	399	-1486	3491	27.66	90.83	-1.81

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
488	SLV 9	-309	1417	10752	-29.33	-10.08	0.2
488	SLV 10	-211	1556	10831	-30	-12.41	4.52
488	SLV 11	-614	-1688	4343	28.09	80.84	-10.97
488	SLV 12	-516	-1550	4422	27.43	78.52	-6.66
488	SLV 13	-1507	222	9575	-9.35	7.94	-10.41
488	SLV 14	-1361	428	9693	-10.34	4.48	-4.01
488	SLV 15	-1599	-710	7652	7.88	35.21	-13.77
488	SLV 16	-1453	-504	7770	6.89	31.76	-7.36
488	CRTFP Ux+	0	0	0	0	0	0
488	CRTFP Ux-	0	0	0	0	0	0
488	CRTFP Uy+	0	0	0	0	0	0
488	CRTFP Uy-	0	0	0	0	0	0
491	SLU 1	33	22	3877	3.68	872.33	-7.96
491	SLU 2	34	46	3910	3.41	874.78	-16.16
491	SLU 3	34	23	3956	3.84	890.2	-8.2
491	SLU 4	34	37	3976	3.68	891.68	-13.12
491	SLU 5	34	47	3960	3.52	886.24	-16.48
491	SLU 6	34	24	4007	3.95	901.66	-8.52
491	SLU 7	34	38	4027	3.79	903.13	-13.44
491	SLU 8	34	24	3978	3.9	895.24	-8.61
491	SLU 9	34	38	3997	3.74	896.71	-13.52
491	SLU 10	34	49	4372	3.92	976.11	-17.17
491	SLU 11	33	26	4419	4.35	991.53	-9.21
491	SLU 12	34	40	4439	4.18	993.01	-14.13
491	SLU 13	34	50	4423	4.03	987.57	-17.49
491	SLU 14	34	27	4469	4.46	1002.99	-9.53
491	SLU 15	34	41	4489	4.29	1004.46	-14.45
491	SLU 16	33	27	4440	4.41	996.57	-9.62
491	SLU 17	34	41	4460	4.24	998.04	-14.53
491	SLU 18	33	27	4538	4.4	1017.09	-9.41
491	SLU 19	33	41	4557	4.24	1018.56	-14.32
491	SLU 20	33	27	4588	4.51	1028.54	-9.73
491	SLU 21	33	41	4608	4.35	1030.02	-14.65
491	SLU 22	35	23	4425	4.48	994.31	-8.12
491	SLU 23	36	46	4459	4.2	996.76	-16.32
491	SLU 24	36	24	4505	4.63	1012.18	-8.36
491	SLU 25	36	38	4525	4.47	1013.65	-13.27
491	SLU 26	36	47	4509	4.31	1008.22	-16.64
491	SLU 27	36	24	4555	4.74	1023.64	-8.68
491	SLU 28	37	38	4575	4.58	1025.11	-13.6
491	SLU 29	36	25	4526	4.7	1017.22	-8.77
491	SLU 30	36	39	4546	4.53	1018.69	-13.68
491	SLU 31	36	49	4921	4.71	1098.09	-17.33
491	SLU 32	36	26	4967	5.14	1113.51	-9.37
491	SLU 33	36	40	4987	4.98	1114.98	-14.29
491	SLU 34	36	50	4972	4.82	1109.55	-17.65
491	SLU 35	36	27	5018	5.25	1124.97	-9.69
491	SLU 36	36	41	5038	5.09	1126.44	-14.61
491	SLU 37	36	28	4989	5.2	1118.55	-9.78
491	SLU 38	36	42	5009	5.04	1120.02	-14.69
491	SLU 39	35	27	5086	5.2	1139.07	-9.57
491	SLU 40	35	41	5106	5.03	1140.54	-14.48
491	SLU 41	35	28	5137	5.31	1150.52	-9.89
491	SLU 42	36	42	5157	5.14	1151.99	-14.81
491	SLU 43	42	29	4852	4.52	1092.21	-10.3
491	SLU 44	43	52	4885	4.24	1094.66	-18.49
491	SLU 45	43	30	4931	4.67	1110.08	-10.53
491	SLU 46	43	44	4951	4.51	1111.56	-15.45
491	SLU 47	43	53	4935	4.35	1106.12	-18.81
491	SLU 48	43	31	4981	4.78	1121.54	-10.86
491	SLU 49	44	45	5001	4.62	1123.01	-15.77
491	SLU 50	43	31	4952	4.74	1115.12	-10.94
491	SLU 51	43	45	4972	4.57	1116.59	-15.86
491	SLU 52	43	55	5347	4.75	1195.99	-19.5
491	SLU 53	42	33	5394	5.18	1211.41	-11.55
491	SLU 54	43	47	5414	5.02	1212.89	-16.46
491	SLU 55	43	56	5398	4.86	1207.45	-19.82
491	SLU 56	43	33	5444	5.29	1222.87	-11.87
491	SLU 57	43	48	5464	5.13	1224.34	-16.78
491	SLU 58	43	34	5415	5.24	1216.45	-11.95
491	SLU 59	43	48	5435	5.08	1217.92	-16.87
491	SLU 60	42	33	5512	5.24	1236.97	-11.74
491	SLU 61	42	47	5532	5.07	1238.44	-16.66
491	SLU 62	42	34	5563	5.35	1248.42	-12.07
491	SLU 63	43	48	5583	5.18	1249.9	-16.98
491	SLU 64	44	29	5400	5.31	1214.19	-10.46
491	SLU 65	45	53	5433	5.04	1216.64	-18.65
491	SLU 66	45	30	5480	5.47	1232.06	-10.69
491	SLU 67	46	44	5500	5.3	1233.53	-15.61
491	SLU 68	46	54	5484	5.15	1228.1	-18.97
491	SLU 69	45	31	5530	5.58	1243.52	-11.02
491	SLU 70	46	45	5550	5.41	1244.99	-15.93
491	SLU 71	45	31	5501	5.53	1237.1	-11.1
491	SLU 72	46	45	5521	5.36	1238.57	-16.02
491	SLU 73	45	56	5896	5.54	1317.97	-19.66
491	SLU 74	45	33	5942	5.97	1333.39	-11.7
491	SLU 75	45	47	5962	5.81	1334.86	-16.62
491	SLU 76	45	57	5946	5.65	1329.43	-19.98
491	SLU 77	45	34	5993	6.08	1344.85	-12.03

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
491	SLU 78	46	48	6013	5.92	1346.32	-16.94
491	SLU 79	45	34	5964	6.03	1338.43	-12.11
491	SLU 80	45	48	5984	5.87	1339.9	-17.03
491	SLU 81	44	34	6061	6.03	1358.94	-11.9
491	SLU 82	44	48	6081	5.87	1360.42	-16.82
491	SLU 83	44	34	6112	6.14	1370.4	-12.22
491	SLU 84	45	49	6131	5.98	1371.87	-17.14
491	SLE RA 1	34	23	4033	3.91	907.18	-8.01
491	SLE RA 2	34	38	4056	3.73	908.82	-13.47
491	SLE RA 3	34	23	4086	4.01	919.1	-8.17
491	SLE RA 4	34	32	4100	3.91	920.08	-11.44
491	SLE RA 5	34	39	4089	3.8	916.45	-13.69
491	SLE RA 6	34	24	4120	4.09	926.73	-8.38
491	SLE RA 7	35	33	4133	3.98	927.72	-11.66
491	SLE RA 8	34	24	4101	4.06	922.46	-8.44
491	SLE RA 9	34	33	4114	3.95	923.44	-11.72
491	SLE RA 10	34	40	4364	4.06	976.37	-14.15
491	SLE RA 11	34	25	4395	4.35	986.65	-8.84
491	SLE RA 12	34	34	4408	4.24	987.63	-12.12
491	SLE RA 13	34	41	4398	4.14	984.01	-14.36
491	SLE RA 14	34	26	4428	4.42	994.29	-9.06
491	SLE RA 15	34	35	4442	4.32	995.27	-12.33
491	SLE RA 16	34	26	4409	4.39	990.01	-9.11
491	SLE RA 17	34	35	4422	4.28	990.99	-12.39
491	SLE RA 18	33	25	4474	4.39	1003.69	-8.97
491	SLE RA 19	34	35	4487	4.28	1004.67	-12.25
491	SLE RA 20	34	26	4508	4.46	1011.32	-9.19
491	SLE RA 21	34	35	4521	4.35	1012.31	-12.46
491	SLE FR 1	34	23	4033	3.91	907.18	-8.01
491	SLE FR 2	34	26	4038	3.87	907.51	-9.1
491	SLE FR 3	34	23	4047	3.94	910.24	-8.1
491	SLE FR 4	34	27	4170	4.02	936.46	-9.39
491	SLE FR 5	34	24	4179	4.08	939.19	-8.38
491	SLE FR 6	34	24	4254	4.15	955.43	-8.49
491	SLE QP 1	34	23	4033	3.91	907.18	-8.01
491	SLE QP 2	34	23	4166	4.05	936.13	-8.3
491	SLD 1	397	129	3213	1.29	720.04	-45.15
491	SLD 2	430	256	3252	0.9	722.38	-89.32
491	SLD 3	377	-141	2757	5.18	682.92	49.26
491	SLD 4	411	-14	2796	4.79	685.26	5.09
491	SLD 5	166	442	4565	-2.61	927.18	-154.61
491	SLD 6	188	525	4590	-2.87	928.72	-183.74
491	SLD 7	101	-458	3044	10.37	803.45	160.11
491	SLD 8	123	-375	3070	10.11	804.99	130.97
491	SLD 9	-56	421	5261	-2	1067.27	-147.57
491	SLD 10	-34	505	5287	-2.26	1068.82	-176.7
491	SLD 11	-121	-479	3741	10.97	943.54	167.15
491	SLD 12	-99	-395	3767	10.72	945.09	138.01
491	SLD 13	-344	61	5536	3.32	1187.01	-21.69
491	SLD 14	-310	188	5575	2.93	1189.35	-65.86
491	SLD 15	-363	-209	5079	7.21	1149.89	72.72
491	SLD 16	-330	-82	5118	6.82	1152.23	28.56
491	SLV 1	885	291	1974	-2.75	433.46	-101.85
491	SLV 2	964	590	2066	-3.66	438.96	-205.67
491	SLV 3	836	-383	830	7.02	340.45	133.98
491	SLV 4	915	-85	922	6.11	345.95	30.16
491	SLV 5	349	1071	5226	-12.63	925.36	-374.66
491	SLV 6	402	1272	5288	-13.24	929.06	-444.56
491	SLV 7	185	-1177	1413	19.92	615.35	411.44
491	SLV 8	238	-976	1475	19.31	619.05	341.54
491	SLV 9	-171	1023	6856	-11.2	1253.22	-358.14
491	SLV 10	-118	1224	6918	-11.82	1256.92	-428.03
491	SLV 11	-335	-1225	3044	21.35	943.2	427.96
491	SLV 12	-281	-1024	3105	20.74	946.91	358.07
491	SLV 13	-848	132	7410	2	1526.31	-46.76
491	SLV 14	-768	430	7501	1.09	1531.81	-150.57
491	SLV 15	-897	-543	6266	11.77	1433.31	189.07
491	SLV 16	-818	-245	6358	10.86	1438.81	85.26
491	CRTFP Ux+	0	0	0	0	0	0
491	CRTFP Ux-	0	0	0	0	0	0
491	CRTFP Uy+	0	0	0	0	0	0
491	CRTFP Uy-	0	0	0	0	0	0
493	SLU 1	30	-42	2855	-151.11	939.25	16.25
493	SLU 2	30	-27	2872	-152.14	944.54	11.06
493	SLU 3	30	-43	2910	-153.99	957.12	16.53
493	SLU 4	30	-34	2920	-154.6	960.29	13.42
493	SLU 5	30	-27	2907	-153.93	955.75	11.25
493	SLU 6	30	-43	2944	-155.78	968.33	16.71
493	SLU 7	31	-34	2955	-156.39	971.5	13.6
493	SLU 8	30	-43	2923	-154.69	961.67	16.61
493	SLU 9	30	-34	2934	-155.3	964.84	13.5
493	SLU 10	34	-33	3250	-172.13	1070.76	13.24
493	SLU 11	33	-48	3288	-173.98	1083.33	18.71
493	SLU 12	34	-39	3298	-174.6	1086.51	15.59
493	SLU 13	34	-33	3284	-173.92	1081.96	13.42
493	SLU 14	34	-49	3322	-175.77	1094.54	18.89
493	SLU 15	34	-40	3332	-176.39	1097.71	15.77
493	SLU 16	33	-49	3301	-174.68	1087.88	18.78
493	SLU 17	34	-40	3312	-175.3	1091.05	15.67

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
493	SLU 18	34	-50	3395	-179.67	1119.56	19.35
493	SLU 19	35	-41	3405	-180.28	1122.73	16.24
493	SLU 20	35	-51	3429	-181.46	1130.76	19.53
493	SLU 21	35	-42	3439	-182.07	1133.94	16.42
493	SLU 22	33	-47	3254	-172.11	1069.75	18.29
493	SLU 23	34	-32	3271	-173.14	1075.04	13.1
493	SLU 24	34	-48	3309	-174.99	1087.62	18.57
493	SLU 25	34	-39	3319	-175.6	1090.79	15.46
493	SLU 26	34	-33	3305	-174.93	1086.24	13.29
493	SLU 27	34	-48	3343	-176.78	1098.82	18.76
493	SLU 28	34	-39	3353	-177.39	1102	15.64
493	SLU 29	34	-48	3322	-175.69	1092.16	18.65
493	SLU 30	34	-39	3333	-176.31	1095.33	15.54
493	SLU 31	37	-38	3649	-193.13	1201.25	15.28
493	SLU 32	37	-54	3687	-194.98	1213.83	20.75
493	SLU 33	38	-45	3697	-195.6	1217	17.63
493	SLU 34	38	-38	3683	-194.92	1212.46	15.46
493	SLU 35	37	-54	3721	-196.77	1225.03	20.93
493	SLU 36	38	-45	3731	-197.39	1228.21	17.82
493	SLU 37	37	-54	3700	-195.68	1218.37	20.82
493	SLU 38	38	-45	3710	-196.3	1221.55	17.71
493	SLU 39	38	-55	3793	-200.67	1250.05	21.39
493	SLU 40	39	-46	3804	-201.28	1253.22	18.28
493	SLU 41	38	-56	3828	-202.46	1261.26	21.57
493	SLU 42	39	-47	3838	-203.07	1264.43	18.46
493	SLU 43	37	-53	3575	-189.24	1176.29	20.43
493	SLU 44	38	-38	3592	-190.27	1181.58	15.24
493	SLU 45	37	-53	3630	-192.12	1194.16	20.71
493	SLU 46	38	-45	3640	-192.74	1197.33	17.6
493	SLU 47	38	-38	3626	-192.06	1192.78	15.42
493	SLU 48	38	-54	3664	-193.91	1205.36	20.89
493	SLU 49	38	-45	3674	-194.53	1208.54	17.78
493	SLU 50	37	-54	3643	-192.82	1198.7	20.79
493	SLU 51	38	-45	3654	-193.44	1201.88	17.68
493	SLU 52	41	-43	3970	-210.26	1307.79	17.41
493	SLU 53	41	-59	4007	-212.11	1320.37	22.88
493	SLU 54	41	-50	4018	-212.73	1323.54	19.77
493	SLU 55	41	-44	4004	-212.05	1319	17.59
493	SLU 56	41	-60	4042	-213.9	1331.58	23.06
493	SLU 57	41	-51	4052	-214.52	1334.75	19.95
493	SLU 58	41	-59	4021	-212.81	1324.91	22.96
493	SLU 59	41	-50	4031	-213.43	1328.09	19.85
493	SLU 60	42	-61	4114	-217.8	1356.59	23.53
493	SLU 61	42	-52	4125	-218.42	1359.77	20.42
493	SLU 62	42	-61	4149	-219.59	1367.8	23.71
493	SLU 63	43	-52	4159	-220.21	1370.97	20.6
493	SLU 64	41	-58	3974	-210.24	1306.78	22.47
493	SLU 65	42	-43	3991	-211.27	1312.07	17.28
493	SLU 66	41	-59	4029	-213.12	1324.65	22.75
493	SLU 67	42	-50	4039	-213.74	1327.82	19.64
493	SLU 68	42	-44	4025	-213.06	1323.28	17.46
493	SLU 69	42	-59	4063	-214.91	1335.86	22.93
493	SLU 70	42	-50	4073	-215.53	1339.03	19.82
493	SLU 71	41	-59	4042	-213.82	1329.2	22.83
493	SLU 72	42	-50	4052	-214.44	1332.37	19.72
493	SLU 73	45	-49	4369	-231.26	1438.28	19.45
493	SLU 74	45	-64	4406	-233.11	1450.86	24.92
493	SLU 75	45	-55	4417	-233.73	1454.04	21.81
493	SLU 76	45	-49	4403	-233.05	1449.49	19.63
493	SLU 77	45	-65	4440	-234.9	1462.07	25.1
493	SLU 78	45	-56	4451	-235.52	1465.24	21.99
493	SLU 79	45	-65	4420	-233.81	1455.41	25
493	SLU 80	45	-56	4430	-234.43	1458.58	21.89
493	SLU 81	46	-66	4513	-238.8	1487.09	25.57
493	SLU 82	46	-57	4524	-239.42	1490.26	22.46
493	SLU 83	46	-67	4547	-240.59	1498.29	25.75
493	SLU 84	46	-58	4558	-241.21	1501.47	22.64
493	SLE RA 1	31	-43	2969	-157.11	976.54	16.83
493	SLE RA 2	31	-33	2980	-157.79	980.06	13.38
493	SLE RA 3	31	-44	3006	-159.03	988.45	17.02
493	SLE RA 4	31	-38	3013	-159.44	990.57	14.95
493	SLE RA 5	31	-34	3003	-158.99	987.53	13.5
493	SLE RA 6	31	-44	3028	-160.22	995.92	17.14
493	SLE RA 7	31	-38	3035	-160.63	998.04	15.07
493	SLE RA 8	31	-44	3015	-159.5	991.48	17.07
493	SLE RA 9	31	-38	3021	-159.91	993.6	15
493	SLE RA 10	33	-37	3232	-171.12	1064.21	14.82
493	SLE RA 11	33	-48	3257	-172.36	1072.59	18.47
493	SLE RA 12	33	-42	3264	-172.77	1074.71	16.4
493	SLE RA 13	33	-38	3255	-172.31	1071.68	14.94
493	SLE RA 14	33	-48	3280	-173.55	1080.06	18.59
493	SLE RA 15	34	-42	3287	-173.96	1082.18	16.52
493	SLE RA 16	33	-48	3266	-172.82	1075.62	18.52
493	SLE RA 17	33	-42	3273	-173.23	1077.74	16.45
493	SLE RA 18	34	-49	3329	-176.15	1096.74	18.9
493	SLE RA 19	34	-43	3336	-176.56	1098.86	16.83
493	SLE RA 20	34	-49	3352	-177.34	1104.21	19.02
493	SLE RA 21	34	-43	3358	-177.75	1106.33	16.95
493	SLE FR 1	31	-43	2969	-157.11	976.54	16.83

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
493	SLE FR 2	31	-41	2971	-157.25	977.24	16.14
493	SLE FR 3	31	-44	2978	-157.59	979.53	16.88
493	SLE FR 4	32	-43	3079	-162.96	1013.3	16.76
493	SLE FR 5	32	-45	3086	-163.3	1015.59	17.5
493	SLE FR 6	32	-46	3149	-166.63	1036.64	17.87
493	SLE QP 1	31	-43	2969	-157.11	976.54	16.83
493	SLE QP 2	32	-45	3077	-162.82	1012.6	17.45
493	SLD 1	287	54	3237	-171.89	1062.51	-3.11
493	SLD 2	311	57	3243	-172.22	1063.34	-2.71
493	SLD 3	273	-129	3009	-158.37	992.59	60.24
493	SLD 4	297	-126	3014	-158.69	993.42	60.64
493	SLD 5	126	262	3470	-185.99	1133.47	-84.87
493	SLD 6	142	264	3474	-186.2	1134.01	-84.61
493	SLD 7	78	-348	2709	-140.92	900.4	126.3
493	SLD 8	93	-347	2713	-141.13	900.95	126.56
493	SLD 9	-30	256	3441	-184.51	1124.25	-91.66
493	SLD 10	-14	258	3445	-184.72	1124.79	-91.39
493	SLD 11	-79	-354	2680	-139.44	891.18	119.51
493	SLD 12	-63	-352	2684	-139.65	891.73	119.78
493	SLD 13	-233	36	3139	-166.95	1031.78	-25.73
493	SLD 14	-210	39	3145	-167.27	1032.61	-25.33
493	SLD 15	-248	-147	2911	-153.42	961.86	37.62
493	SLD 16	-224	-145	2917	-153.75	962.69	38.02
493	SLV 1	631	202	3471	-185.18	1135.24	-35.52
493	SLV 2	687	208	3484	-185.94	1137.2	-34.58
493	SLV 3	594	-255	2898	-151.27	959.89	122.4
493	SLV 4	650	-248	2911	-152.03	961.85	123.34
493	SLV 5	257	720	4061	-220.82	1314.97	-238.13
493	SLV 6	294	725	4070	-221.33	1316.28	-237.5
493	SLV 7	134	-802	2152	-107.79	730.48	288.28
493	SLV 8	172	-797	2161	-108.3	731.8	288.91
493	SLV 9	-109	707	3992	-217.34	1293.4	-254
493	SLV 10	-71	712	4001	-217.85	1294.72	-253.37
493	SLV 11	-231	-815	2084	-104.31	708.91	272.4
493	SLV 12	-194	-810	2093	-104.82	710.23	273.03
493	SLV 13	-587	158	3242	-173.61	1063.35	-88.43
493	SLV 14	-531	165	3255	-174.37	1065.3	-87.49
493	SLV 15	-624	-298	2670	-139.7	888	69.49
493	SLV 16	-568	-292	2683	-140.46	889.96	70.43
493	CRTFP Ux+	0	0	0	0	0	0
493	CRTFP Ux-	0	0	0	0	0	0
493	CRTFP Uy+	0	0	0	0	0	0
493	CRTFP Uy-	0	0	0	0	0	0
500	SLU 1	32	-89	4105	-37.04	-734.92	-16.14
500	SLU 2	33	-67	4130	-40.04	-739.29	-12.29
500	SLU 3	33	-89	4185	-36.78	-749.23	-16.27
500	SLU 4	33	-76	4200	-38.58	-751.86	-13.96
500	SLU 5	33	-67	4181	-39.84	-748.31	-12.37
500	SLU 6	33	-90	4236	-36.58	-758.25	-16.35
500	SLU 7	33	-77	4251	-38.38	-760.88	-14.04
500	SLU 8	33	-89	4206	-36.64	-752.96	-16.3
500	SLU 9	33	-76	4221	-38.44	-755.59	-13.99
500	SLU 10	36	-87	4711	-50.07	-843.3	-15.9
500	SLU 11	36	-109	4766	-46.81	-853.24	-19.88
500	SLU 12	37	-96	4781	-48.61	-855.87	-17.57
500	SLU 13	37	-87	4761	-49.87	-852.33	-15.97
500	SLU 14	36	-109	4817	-46.61	-862.27	-19.95
500	SLU 15	37	-97	4832	-48.41	-864.89	-17.64
500	SLU 16	36	-109	4787	-46.67	-856.98	-19.9
500	SLU 17	37	-96	4802	-48.47	-859.6	-17.59
500	SLU 18	37	-117	4935	-51.37	-883.51	-21.29
500	SLU 19	38	-104	4950	-53.16	-886.13	-18.98
500	SLU 20	37	-117	4986	-51.17	-892.53	-21.37
500	SLU 21	38	-104	5000	-52.97	-895.15	-19.06
500	SLU 22	36	-97	4697	-39.91	-840.61	-17.71
500	SLU 23	37	-76	4722	-42.91	-844.98	-13.87
500	SLU 24	37	-98	4777	-39.65	-854.92	-17.85
500	SLU 25	37	-85	4792	-41.45	-857.55	-15.54
500	SLU 26	37	-76	4772	-42.71	-854.01	-13.94
500	SLU 27	37	-98	4827	-39.45	-863.95	-17.92
500	SLU 28	37	-85	4842	-41.25	-866.57	-15.62
500	SLU 29	37	-98	4798	-39.51	-858.65	-17.87
500	SLU 30	37	-85	4813	-41.31	-861.28	-15.56
500	SLU 31	41	-95	5302	-52.94	-949	-17.47
500	SLU 32	40	-118	5358	-49.68	-958.94	-21.45
500	SLU 33	41	-105	5373	-51.48	-961.56	-19.14
500	SLU 34	41	-96	5353	-52.74	-958.02	-17.55
500	SLU 35	40	-118	5408	-49.48	-967.96	-21.53
500	SLU 36	41	-105	5423	-51.28	-970.58	-19.22
500	SLU 37	40	-118	5379	-49.54	-962.67	-21.47
500	SLU 38	41	-105	5393	-51.34	-965.29	-19.16
500	SLU 39	41	-125	5526	-54.24	-989.2	-22.86
500	SLU 40	42	-112	5541	-56.03	-991.82	-20.55
500	SLU 41	41	-126	5577	-54.04	-998.22	-22.94
500	SLU 42	42	-113	5592	-55.84	-1000.85	-20.63
500	SLU 43	40	-112	5134	-47.17	-919.16	-20.44
500	SLU 44	41	-91	5159	-50.16	-923.53	-16.6
500	SLU 45	41	-113	5214	-46.91	-933.47	-20.58
500	SLU 46	41	-100	5229	-48.71	-936.09	-18.27

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
500	SLU 47	42	-91	5209	-49.97	-932.55	-16.67
500	SLU 48	41	-113	5265	-46.71	-942.49	-20.65
500	SLU 49	42	-100	5280	-48.51	-945.12	-18.35
500	SLU 50	41	-113	5235	-46.77	-937.2	-20.6
500	SLU 51	41	-100	5250	-48.57	-939.82	-18.29
500	SLU 52	45	-111	5740	-60.19	-1027.54	-20.2
500	SLU 53	44	-133	5795	-56.94	-1037.48	-24.18
500	SLU 54	45	-120	5810	-58.74	-1040.11	-21.87
500	SLU 55	45	-111	5790	-60	-1036.56	-20.28
500	SLU 56	45	-133	5846	-56.74	-1046.51	-24.26
500	SLU 57	45	-120	5860	-58.54	-1049.13	-21.95
500	SLU 58	44	-133	5816	-56.8	-1041.21	-24.2
500	SLU 59	45	-120	5831	-58.6	-1043.84	-21.89
500	SLU 60	45	-141	5964	-61.49	-1067.75	-25.59
500	SLU 61	46	-128	5979	-63.29	-1070.37	-23.28
500	SLU 62	46	-141	6014	-61.3	-1076.77	-25.67
500	SLU 63	46	-128	6029	-63.09	-1079.39	-23.36
500	SLU 64	45	-121	5726	-50.04	-1024.85	-22.02
500	SLU 65	45	-99	5750	-53.03	-1029.22	-18.17
500	SLU 66	45	-121	5806	-49.78	-1039.16	-22.15
500	SLU 67	45	-108	5821	-51.58	-1041.79	-19.84
500	SLU 68	46	-100	5801	-52.84	-1038.24	-18.25
500	SLU 69	45	-122	5856	-49.58	-1048.18	-22.23
500	SLU 70	46	-109	5871	-51.38	-1050.81	-19.92
500	SLU 71	45	-121	5827	-49.64	-1042.89	-22.17
500	SLU 72	46	-109	5841	-51.44	-1045.52	-19.86
500	SLU 73	49	-119	6331	-63.06	-1133.23	-21.77
500	SLU 74	48	-141	6387	-59.81	-1143.17	-25.75
500	SLU 75	49	-128	6401	-61.61	-1145.8	-23.44
500	SLU 76	49	-119	6382	-62.87	-1142.26	-21.85
500	SLU 77	49	-142	6437	-59.61	-1152.2	-25.83
500	SLU 78	49	-129	6452	-61.41	-1154.82	-23.52
500	SLU 79	48	-141	6407	-59.67	-1146.9	-25.78
500	SLU 80	49	-128	6422	-61.47	-1149.53	-23.47
500	SLU 81	49	-149	6555	-64.36	-1173.44	-27.16
500	SLU 82	50	-136	6570	-66.16	-1176.06	-24.85
500	SLU 83	50	-149	6606	-64.17	-1182.46	-27.24
500	SLU 84	50	-137	6621	-65.96	-1185.08	-24.93
500	SLE RA 1	33	-91	4274	-37.86	-765.11	-16.59
500	SLE RA 2	34	-77	4291	-39.86	-768.03	-14.02
500	SLE RA 3	34	-91	4328	-37.69	-774.66	-16.68
500	SLE RA 4	34	-83	4338	-38.89	-776.41	-15.14
500	SLE RA 5	34	-77	4324	-39.73	-774.05	-14.08
500	SLE RA 6	34	-92	4361	-37.56	-780.67	-16.73
500	SLE RA 7	34	-83	4371	-38.75	-782.42	-15.19
500	SLE RA 8	34	-91	4342	-37.59	-777.14	-16.69
500	SLE RA 9	34	-83	4352	-38.79	-778.89	-15.15
500	SLE RA 10	36	-90	4678	-46.54	-837.37	-16.43
500	SLE RA 11	36	-105	4715	-44.37	-844	-19.08
500	SLE RA 12	36	-96	4725	-45.57	-845.75	-17.54
500	SLE RA 13	36	-90	4712	-46.41	-843.39	-16.48
500	SLE RA 14	36	-105	4749	-44.24	-850.01	-19.13
500	SLE RA 15	36	-96	4759	-45.44	-851.76	-17.59
500	SLE RA 16	36	-105	4729	-44.28	-846.49	-19.1
500	SLE RA 17	36	-96	4739	-45.48	-848.24	-17.56
500	SLE RA 18	37	-110	4827	-47.41	-864.18	-20.02
500	SLE RA 19	37	-101	4837	-48.61	-865.92	-18.48
500	SLE RA 20	37	-110	4861	-47.28	-870.19	-20.07
500	SLE RA 21	37	-102	4871	-48.48	-871.94	-18.53
500	SLE FR 1	33	-91	4274	-37.86	-765.11	-16.59
500	SLE FR 2	34	-88	4278	-38.26	-765.7	-16.08
500	SLE FR 3	33	-91	4288	-37.81	-767.52	-16.61
500	SLE FR 4	34	-94	4444	-41.12	-795.42	-17.11
500	SLE FR 5	34	-97	4454	-40.67	-797.24	-17.64
500	SLE FR 6	35	-100	4551	-42.63	-814.65	-18.31
500	SLE QP 1	33	-91	4274	-37.86	-765.11	-16.59
500	SLE QP 2	34	-97	4440	-40.72	-794.83	-17.62
500	SLD 1	350	16	4568	-64.39	-817.53	2.82
500	SLD 2	377	1	4557	-64.63	-815.65	0.12
500	SLD 3	334	-249	4241	-24.88	-759.86	-44.77
500	SLD 4	360	-265	4230	-25.13	-757.98	-47.47
500	SLD 5	149	343	4976	-107.69	-889.45	61.18
500	SLD 6	167	333	4968	-107.86	-888.21	59.4
500	SLD 7	95	-542	3887	23.99	-697.21	-97.46
500	SLD 8	112	-553	3880	23.82	-695.97	-99.24
500	SLD 9	-44	359	5000	-105.27	-893.7	64
500	SLD 10	-26	349	4993	-105.43	-892.45	62.22
500	SLD 11	-98	-526	3912	26.41	-701.46	-94.64
500	SLD 12	-80	-536	3905	26.24	-700.22	-96.42
500	SLD 13	-292	72	4650	-56.32	-831.69	12.23
500	SLD 14	-265	56	4639	-56.56	-829.8	9.53
500	SLD 15	-308	-194	4323	-16.81	-774.02	-35.36
500	SLD 16	-281	-209	4313	-17.06	-772.13	-38.06
500	SLV 1	774	187	4766	-99.34	-852.75	33.84
500	SLV 2	837	151	4740	-99.92	-848.32	27.5
500	SLV 3	733	-474	3947	-0.4	-708.22	-84.75
500	SLV 4	796	-511	3922	-0.98	-703.78	-91.09
500	SLV 5	307	999	5783	-208.26	-1032.25	178.86
500	SLV 6	349	974	5766	-208.65	-1029.26	174.59

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
500	SLV 7	170	-1207	3056	121.54	-550.46	-216.43
500	SLV 8	212	-1231	3039	121.15	-547.48	-220.7
500	SLV 9	-143	1038	5841	-202.6	-1042.19	185.47
500	SLV 10	-101	1013	5824	-202.99	-1039.2	181.19
500	SLV 11	-281	-1168	3114	127.21	-560.4	-209.83
500	SLV 12	-238	-1192	3097	126.81	-557.42	-214.1
500	SLV 13	-727	317	4958	-80.47	-885.88	55.85
500	SLV 14	-664	281	4933	-81.05	-881.45	49.51
500	SLV 15	-768	-344	4140	18.48	-741.35	-62.74
500	SLV 16	-705	-381	4115	17.89	-736.91	-69.08
500	CRTFP Ux+	0	0	0	0	0	0
500	CRTFP Ux-	0	0	0	0	0	0
500	CRTFP Uy+	0	0	0	0	0	0
500	CRTFP Uy-	0	0	0	0	0	0
501	SLU 1	50	-146	5961	-93.63	72.09	0.94
501	SLU 2	51	-115	5994	-98.72	72.66	0.57
501	SLU 3	50	-148	6076	-93.63	73.56	0.93
501	SLU 4	51	-129	6095	-96.69	73.9	0.71
501	SLU 5	51	-116	6066	-98.67	73.59	0.56
501	SLU 6	51	-149	6148	-93.57	74.48	0.92
501	SLU 7	51	-130	6167	-96.63	74.83	0.7
501	SLU 8	50	-148	6106	-93.51	73.94	0.92
501	SLU 9	51	-129	6125	-96.57	74.28	0.7
501	SLU 10	56	-146	6837	-122.29	83.06	0.88
501	SLU 11	56	-179	6919	-117.2	83.96	1.25
501	SLU 12	56	-160	6938	-120.25	84.3	1.02
501	SLU 13	57	-147	6909	-122.23	83.99	0.88
501	SLU 14	56	-180	6991	-117.14	84.88	1.24
501	SLU 15	57	-161	7010	-120.2	85.23	1.01
501	SLU 16	56	-179	6948	-117.07	84.34	1.24
501	SLU 17	56	-160	6968	-120.13	84.68	1.02
501	SLU 18	57	-191	7166	-127.29	86.95	1.39
501	SLU 19	58	-172	7185	-130.35	87.29	1.17
501	SLU 20	58	-192	7238	-127.23	87.87	1.38
501	SLU 21	58	-173	7257	-130.29	88.22	1.16
501	SLU 22	56	-162	6809	-102.88	82.9	0.94
501	SLU 23	57	-131	6841	-107.98	83.48	0.57
501	SLU 24	57	-164	6923	-102.89	84.37	0.93
501	SLU 25	57	-145	6943	-105.95	84.72	0.71
501	SLU 26	58	-132	6913	-107.92	84.4	0.56
501	SLU 27	57	-165	6995	-102.83	85.3	0.92
501	SLU 28	58	-146	7015	-105.89	85.64	0.7
501	SLU 29	57	-164	6953	-102.77	84.76	0.93
501	SLU 30	57	-145	6972	-105.83	85.1	0.7
501	SLU 31	63	-162	7684	-131.54	93.88	0.89
501	SLU 32	62	-195	7766	-126.45	94.77	1.25
501	SLU 33	63	-176	7785	-129.51	95.12	1.03
501	SLU 34	63	-163	7756	-131.48	94.8	0.88
501	SLU 35	62	-196	7838	-126.39	95.7	1.24
501	SLU 36	63	-177	7858	-129.45	96.04	1.02
501	SLU 37	62	-195	7796	-126.33	95.16	1.24
501	SLU 38	63	-176	7815	-129.39	95.5	1.02
501	SLU 39	64	-207	8013	-136.54	97.76	1.4
501	SLU 40	64	-188	8032	-139.6	98.11	1.17
501	SLU 41	64	-208	8085	-136.49	98.69	1.39
501	SLU 42	65	-189	8104	-139.54	99.03	1.16
501	SLU 43	62	-185	7459	-118.54	90	1.22
501	SLU 44	64	-153	7492	-123.64	90.58	0.85
501	SLU 45	63	-186	7574	-118.55	91.47	1.21
501	SLU 46	64	-167	7593	-121.6	91.82	0.99
501	SLU 47	64	-154	7564	-123.58	91.5	0.84
501	SLU 48	63	-187	7646	-118.49	92.4	1.2
501	SLU 49	64	-168	7665	-121.55	92.74	0.98
501	SLU 50	63	-186	7603	-118.43	91.86	1.2
501	SLU 51	64	-168	7623	-121.48	92.2	0.98
501	SLU 52	69	-184	8335	-147.2	100.98	1.17
501	SLU 53	68	-217	8417	-142.11	101.88	1.53
501	SLU 54	69	-198	8436	-145.17	102.22	1.3
501	SLU 55	69	-185	8407	-147.14	101.91	1.16
501	SLU 56	69	-218	8489	-142.05	102.8	1.52
501	SLU 57	69	-199	8508	-145.11	103.15	1.29
501	SLU 58	68	-218	8446	-141.99	102.26	1.52
501	SLU 59	69	-199	8466	-145.05	102.6	1.3
501	SLU 60	70	-229	8663	-152.2	104.86	1.67
501	SLU 61	71	-210	8683	-155.26	105.21	1.45
501	SLU 62	70	-230	8736	-152.14	105.79	1.66
501	SLU 63	71	-211	8755	-155.2	106.13	1.44
501	SLU 64	69	-201	8307	-127.79	100.82	1.23
501	SLU 65	70	-169	8339	-132.89	101.39	0.85
501	SLU 66	69	-202	8421	-127.8	102.29	1.21
501	SLU 67	70	-183	8440	-130.86	102.63	0.99
501	SLU 68	70	-170	8411	-132.84	102.32	0.84
501	SLU 69	70	-203	8493	-127.74	103.22	1.21
501	SLU 70	70	-184	8512	-130.8	103.56	0.98
501	SLU 71	69	-202	8451	-127.68	102.67	1.21
501	SLU 72	70	-184	8470	-130.74	103.02	0.99
501	SLU 73	75	-200	9182	-156.46	111.8	1.17
501	SLU 74	75	-233	9264	-151.36	112.69	1.53
501	SLU 75	75	-214	9283	-154.42	113.04	1.31

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
501	SLU 76	76	-201	9254	-156.4	112.72	1.16
501	SLU 77	75	-234	9336	-151.31	113.62	1.52
501	SLU 78	76	-215	9355	-154.37	113.96	1.3
501	SLU 79	75	-234	9294	-151.24	113.08	1.52
501	SLU 80	75	-215	9313	-154.3	113.42	1.3
501	SLU 81	76	-245	9511	-161.46	115.68	1.68
501	SLU 82	77	-226	9530	-164.52	116.02	1.45
501	SLU 83	77	-246	9583	-161.4	116.61	1.67
501	SLU 84	77	-227	9602	-164.46	116.95	1.44
501	SLE RA 1	51	-151	6203	-96.27	75.18	0.94
501	SLE RA 2	52	-130	6225	-99.67	75.56	0.69
501	SLE RA 3	52	-152	6280	-96.27	76.16	0.93
501	SLE RA 4	52	-139	6293	-98.31	76.39	0.79
501	SLE RA 5	53	-130	6273	-99.63	76.18	0.69
501	SLE RA 6	52	-152	6328	-96.24	76.77	0.93
501	SLE RA 7	53	-140	6341	-98.28	77	0.78
501	SLE RA 8	52	-152	6300	-96.19	76.41	0.93
501	SLE RA 9	52	-139	6313	-98.23	76.64	0.78
501	SLE RA 10	56	-151	6787	-115.38	82.49	0.9
501	SLE RA 11	55	-173	6842	-111.98	83.09	1.14
501	SLE RA 12	56	-160	6855	-114.02	83.32	1
501	SLE RA 13	56	-151	6835	-115.34	83.11	0.9
501	SLE RA 14	56	-173	6890	-111.94	83.71	1.14
501	SLE RA 15	56	-161	6903	-113.98	83.94	0.99
501	SLE RA 16	56	-173	6862	-111.9	83.35	1.14
501	SLE RA 17	56	-160	6874	-113.94	83.58	0.99
501	SLE RA 18	57	-180	7006	-118.71	85.08	1.24
501	SLE RA 19	57	-168	7019	-120.75	85.31	1.09
501	SLE RA 20	57	-181	7054	-118.67	85.7	1.24
501	SLE RA 21	57	-168	7067	-120.71	85.93	1.09
501	SLE FR 1	51	-151	6203	-96.27	75.18	0.94
501	SLE FR 2	52	-147	6208	-96.95	75.25	0.89
501	SLE FR 3	52	-151	6223	-96.25	75.42	0.94
501	SLE FR 4	53	-155	6449	-103.68	78.23	0.98
501	SLE FR 5	53	-160	6463	-102.99	78.4	1.03
501	SLE FR 6	54	-166	6605	-107.49	80.13	1.09
501	SLE QP 1	51	-151	6203	-96.27	75.18	0.94
501	SLE QP 2	53	-160	6444	-103	78.15	1.03
501	SLD 1	537	20	6620	-140.17	80.73	-0.18
501	SLD 2	578	3	6607	-140.55	80.46	0.32
501	SLD 3	512	-367	6192	-72.46	73.23	4.47
501	SLD 4	553	-385	6179	-72.84	72.96	4.97
501	SLD 5	229	485	7149	-216.78	90.34	-6.48
501	SLD 6	256	474	7139	-217.03	90.17	-6.15
501	SLD 7	145	-807	5722	8.93	65.35	9.03
501	SLD 8	173	-818	5713	8.68	65.18	9.36
501	SLD 9	-67	499	7175	-214.68	91.12	-7.3
501	SLD 10	-39	487	7166	-214.93	90.95	-6.97
501	SLD 11	-150	-793	5749	11.03	66.13	8.21
501	SLD 12	-123	-805	5740	10.78	65.96	8.54
501	SLD 13	-447	66	6710	-133.17	83.33	-2.91
501	SLD 14	-406	48	6696	-133.55	83.07	-2.41
501	SLD 15	-472	-322	6282	-65.46	75.84	1.74
501	SLD 16	-431	-340	6268	-65.83	75.57	2.25
501	SLV 1	1188	291	6892	-195.55	84.8	-2.16
501	SLV 2	1285	249	6859	-196.43	84.18	-0.98
501	SLV 3	1125	-675	5819	-25.94	66.02	9.43
501	SLV 4	1221	-716	5787	-26.83	65.4	10.61
501	SLV 5	472	1448	8211	-387.83	108.74	-17.73
501	SLV 6	537	1420	8190	-388.43	108.33	-16.93
501	SLV 7	261	-1771	4636	177.52	46.14	20.91
501	SLV 8	325	-1799	4614	176.92	45.72	21.7
501	SLV 9	-219	1480	8274	-382.92	110.57	-19.64
501	SLV 10	-155	1452	8253	-383.52	110.16	-18.85
501	SLV 11	-431	-1739	4699	182.43	47.97	19
501	SLV 12	-366	-1767	4677	181.83	47.55	19.79
501	SLV 13	-1116	397	7102	-179.17	90.9	-8.54
501	SLV 14	-1019	355	7069	-180.06	90.28	-7.36
501	SLV 15	-1179	-569	6029	-9.57	72.12	3.05
501	SLV 16	-1082	-610	5997	-10.46	71.5	4.23
501	CRTFP Ux+	0	0	0	0	0	0
501	CRTFP Ux-	0	0	0	0	0	0
501	CRTFP Uy+	0	0	0	0	0	0
501	CRTFP Uy-	0	0	0	0	0	0
502	SLU 1	98	-241	10470	-174.87	-2211.81	-44.55
502	SLU 2	100	-186	10521	-179	-2222.37	-32.81
502	SLU 3	99	-245	10670	-177.25	-2254.19	-45.25
502	SLU 4	101	-211	10701	-179.73	-2260.52	-38.21
502	SLU 5	101	-188	10647	-180.41	-2248.98	-33.26
502	SLU 6	100	-247	10796	-178.67	-2280.79	-45.7
502	SLU 7	101	-213	10826	-181.14	-2287.13	-38.65
502	SLU 8	99	-245	10721	-177.7	-2265.02	-45.44
502	SLU 9	101	-212	10752	-180.17	-2271.36	-38.4
502	SLU 10	111	-230	11969	-211	-2522.9	-40.24
502	SLU 11	110	-289	12117	-209.26	-2554.72	-52.67
502	SLU 12	111	-256	12148	-211.74	-2561.05	-45.63
502	SLU 13	111	-233	12094	-212.42	-2549.51	-40.68
502	SLU 14	111	-291	12243	-210.67	-2581.32	-53.12
502	SLU 15	112	-258	12273	-213.15	-2587.66	-46.08

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
502	SLU 16	110	-290	12169	-209.7	-2565.55	-52.87
502	SLU 17	111	-257	12199	-212.18	-2571.89	-45.82
502	SLU 18	113	-305	12538	-220.59	-2641.14	-55.16
502	SLU 19	114	-272	12568	-223.07	-2647.48	-48.12
502	SLU 20	114	-307	12663	-222.01	-2667.74	-55.6
502	SLU 21	115	-274	12694	-224.48	-2674.08	-48.56
502	SLU 22	110	-270	11939	-198.42	-2521.21	-50.13
502	SLU 23	113	-215	11990	-202.54	-2531.77	-38.4
502	SLU 24	112	-274	12139	-200.8	-2563.58	-50.83
502	SLU 25	113	-241	12170	-203.28	-2569.92	-43.79
502	SLU 26	113	-217	12116	-203.96	-2558.38	-38.84
502	SLU 27	113	-276	12264	-202.21	-2590.19	-51.28
502	SLU 28	114	-243	12295	-204.69	-2596.53	-44.23
502	SLU 29	112	-275	12190	-201.24	-2574.42	-51.02
502	SLU 30	113	-241	12221	-203.72	-2580.76	-43.98
502	SLU 31	123	-260	13437	-234.55	-2832.3	-45.82
502	SLU 32	122	-319	13586	-232.81	-2864.11	-58.26
502	SLU 33	124	-285	13617	-235.28	-2870.45	-51.21
502	SLU 34	124	-262	13563	-235.96	-2858.91	-46.27
502	SLU 35	123	-321	13712	-234.22	-2890.72	-58.7
502	SLU 36	124	-287	13742	-236.7	-2897.06	-51.66
502	SLU 37	123	-319	13638	-233.25	-2874.95	-58.45
502	SLU 38	124	-286	13668	-235.72	-2881.29	-51.41
502	SLU 39	126	-334	14007	-244.14	-2950.54	-60.74
502	SLU 40	127	-301	14037	-246.62	-2956.88	-53.7
502	SLU 41	126	-336	14132	-245.55	-2977.14	-61.18
502	SLU 42	128	-303	14163	-248.03	-2983.48	-54.14
502	SLU 43	123	-304	13108	-219.26	-2769.28	-56
502	SLU 44	125	-248	13159	-223.39	-2779.84	-44.27
502	SLU 45	124	-307	13307	-221.64	-2811.65	-56.7
502	SLU 46	126	-274	13338	-224.12	-2817.99	-49.66
502	SLU 47	126	-250	13284	-224.8	-2806.44	-44.71
502	SLU 48	125	-309	13433	-223.05	-2838.25	-57.15
502	SLU 49	126	-276	13464	-225.53	-2844.59	-50.1
502	SLU 50	124	-308	13359	-222.08	-2822.48	-56.89
502	SLU 51	126	-274	13390	-224.56	-2828.82	-49.85
502	SLU 52	136	-293	14606	-255.39	-3080.37	-51.69
502	SLU 53	135	-352	14754	-253.65	-3112.18	-64.13
502	SLU 54	136	-318	14785	-256.12	-3118.52	-57.08
502	SLU 55	136	-295	14732	-256.8	-3106.97	-52.14
502	SLU 56	136	-354	14880	-255.06	-3138.78	-64.57
502	SLU 57	137	-320	14911	-257.54	-3145.12	-57.53
502	SLU 58	135	-352	14806	-254.09	-3123.01	-64.32
502	SLU 59	136	-319	14837	-256.57	-3129.35	-57.28
502	SLU 60	138	-367	15175	-264.98	-3198.6	-66.61
502	SLU 61	139	-334	15206	-267.46	-3204.94	-59.57
502	SLU 62	139	-369	15301	-266.39	-3225.21	-67.05
502	SLU 63	140	-336	15331	-268.87	-3231.55	-60.01
502	SLU 64	135	-333	14576	-242.8	-3078.67	-61.58
502	SLU 65	138	-277	14628	-246.93	-3089.24	-49.85
502	SLU 66	137	-336	14776	-245.19	-3121.05	-62.28
502	SLU 67	138	-303	14807	-247.66	-3127.39	-55.24
502	SLU 68	138	-279	14753	-248.34	-3115.84	-50.29
502	SLU 69	138	-338	14902	-246.6	-3147.65	-62.73
502	SLU 70	139	-305	14933	-249.08	-3153.99	-55.69
502	SLU 71	137	-337	14828	-245.63	-3131.88	-62.47
502	SLU 72	138	-304	14858	-248.11	-3138.22	-55.43
502	SLU 73	148	-322	16075	-278.94	-3389.77	-57.27
502	SLU 74	147	-381	16223	-277.19	-3421.58	-69.71
502	SLU 75	149	-348	16254	-279.67	-3427.92	-62.67
502	SLU 76	149	-324	16201	-280.35	-3416.37	-57.72
502	SLU 77	148	-383	16349	-278.61	-3448.18	-70.15
502	SLU 78	150	-350	16380	-281.08	-3454.52	-63.11
502	SLU 79	148	-382	16275	-277.64	-3432.41	-69.9
502	SLU 80	149	-348	16306	-280.11	-3438.75	-62.86
502	SLU 81	151	-397	16644	-288.53	-3508	-72.19
502	SLU 82	152	-363	16675	-291	-3514.34	-65.15
502	SLU 83	151	-399	16770	-289.94	-3534.61	-72.64
502	SLU 84	153	-365	16800	-292.42	-3540.94	-65.59
502	SLE RA 1	101	-250	10890	-181.6	-2300.21	-46.15
502	SLE RA 2	103	-213	10924	-184.35	-2307.25	-38.32
502	SLE RA 3	102	-252	11023	-183.19	-2328.46	-46.61
502	SLE RA 4	103	-230	11043	-184.84	-2332.69	-41.92
502	SLE RA 5	103	-214	11008	-185.29	-2324.99	-38.62
502	SLE RA 6	103	-253	11107	-184.13	-2346.2	-46.91
502	SLE RA 7	104	-231	11127	-185.78	-2350.42	-42.21
502	SLE RA 8	102	-252	11057	-183.48	-2335.68	-46.74
502	SLE RA 9	103	-230	11078	-185.13	-2339.91	-42.04
502	SLE RA 10	110	-242	11889	-205.69	-2507.61	-43.27
502	SLE RA 11	109	-282	11988	-204.52	-2528.81	-51.56
502	SLE RA 12	110	-259	12008	-206.17	-2533.04	-46.87
502	SLE RA 13	111	-244	11973	-206.63	-2525.34	-43.57
502	SLE RA 14	110	-283	12072	-205.47	-2546.55	-51.86
502	SLE RA 15	111	-261	12092	-207.12	-2550.77	-47.16
502	SLE RA 16	109	-282	12022	-204.82	-2536.04	-51.69
502	SLE RA 17	110	-260	12043	-206.47	-2540.26	-46.99
502	SLE RA 18	112	-292	12268	-212.08	-2586.43	-53.22
502	SLE RA 19	112	-270	12289	-213.73	-2590.65	-48.52
502	SLE RA 20	112	-294	12352	-213.02	-2604.17	-53.51

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
502	SLE RA 21	113	-271	12372	-214.67	-2608.39	-48.82
502	SLE FR 1	101	-250	10890	-181.6	-2300.21	-46.15
502	SLE FR 2	102	-242	10897	-182.15	-2301.62	-44.58
502	SLE FR 3	102	-250	10923	-181.97	-2307.31	-46.26
502	SLE FR 4	105	-255	11310	-191.29	-2387.48	-46.7
502	SLE FR 5	105	-263	11337	-191.12	-2393.17	-48.39
502	SLE FR 6	106	-271	11579	-196.84	-2443.32	-49.68
502	SLE QP 1	101	-250	10890	-181.6	-2300.21	-46.15
502	SLE QP 2	104	-262	11303	-190.74	-2386.08	-48.27
502	SLD 1	1019	108	11675	-207.86	-2475.14	30.72
502	SLD 2	1096	93	11665	-208.75	-2475.18	29.6
502	SLD 3	971	-574	10998	-153.14	-2335.48	-113.12
502	SLD 4	1048	-589	10988	-154.03	-2335.52	-114.25
502	SLD 5	437	885	12444	-278.71	-2624.61	193.8
502	SLD 6	488	875	12437	-279.3	-2624.63	193.06
502	SLD 7	279	-1387	10186	-96.3	-2159.07	-285.69
502	SLD 8	330	-1396	10179	-96.89	-2159.09	-286.43
502	SLD 9	-121	872	12427	-284.59	-2613.06	189.9
502	SLD 10	-70	862	12420	-285.18	-2613.08	189.15
502	SLD 11	-279	-1400	10169	-102.18	-2147.52	-289.59
502	SLD 12	-228	-1410	10163	-102.77	-2147.54	-290.33
502	SLD 13	-840	64	11619	-227.46	-2436.64	17.71
502	SLD 14	-762	49	11609	-228.35	-2436.67	16.59
502	SLD 15	-887	-618	10942	-172.73	-2296.97	-126.13
502	SLD 16	-810	-632	10931	-173.62	-2297.01	-127.26
502	SLV 1	2247	655	12230	-235.33	-2606.17	147.54
502	SLV 2	2429	621	12206	-237.42	-2606.25	144.9
502	SLV 3	2127	-1043	10532	-98.19	-2255.92	-211.03
502	SLV 4	2309	-1078	10508	-100.28	-2256.01	-213.67
502	SLV 5	895	2595	14162	-411.72	-2983.29	554.8
502	SLV 6	1017	2572	14145	-413.13	-2983.35	553.03
502	SLV 7	496	-3066	8501	45.41	-1815.81	-640.44
502	SLV 8	618	-3089	8484	44	-1815.87	-642.22
502	SLV 9	-409	2565	14122	-425.48	-2956.28	545.68
502	SLV 10	-287	2542	14106	-426.89	-2956.34	543.9
502	SLV 11	-808	-3097	8462	31.65	-1788.8	-649.56
502	SLV 12	-686	-3120	8445	30.24	-1788.86	-651.34
502	SLV 13	-2100	553	12099	-281.2	-2516.14	117.14
502	SLV 14	-1918	519	12074	-283.29	-2516.23	114.5
502	SLV 15	-2220	-1145	10401	-144.06	-2165.9	-241.43
502	SLV 16	-2038	-1180	10376	-146.15	-2165.99	-244.08
502	CRTFP Ux+	0	0	0	0	0	0
502	CRTFP Ux-	0	0	0	0	0	0
502	CRTFP Uy+	0	0	0	0	0	0
502	CRTFP Uy-	0	0	0	0	0	0
504	SLU 1	96	-148	9579	90.99	3602.08	57.69
504	SLU 2	98	-99	9627	87.62	3619.72	38.72
504	SLU 3	97	-151	9765	93.84	3672.01	58.69
504	SLU 4	98	-121	9794	91.82	3682.6	47.31
504	SLU 5	99	-100	9743	89.52	3663.48	39.36
504	SLU 6	98	-153	9882	95.73	3715.77	59.33
504	SLU 7	99	-123	9911	93.71	3726.35	47.95
504	SLU 8	97	-152	9812	94.77	3689.6	58.97
504	SLU 9	99	-122	9841	92.76	3700.18	47.59
504	SLU 10	108	-120	10897	98.89	4101.04	47.24
504	SLU 11	108	-172	11036	105.1	4153.33	67.21
504	SLU 12	109	-142	11064	103.09	4163.91	55.83
504	SLU 13	109	-121	11013	100.78	4144.8	47.88
504	SLU 14	108	-174	11152	107	4197.08	67.85
504	SLU 15	110	-144	11181	104.98	4207.67	56.47
504	SLU 16	108	-173	11082	106.04	4170.91	67.49
504	SLU 17	109	-143	11111	104.02	4181.5	56.11
504	SLU 18	111	-179	11393	107.08	4289.68	69.86
504	SLU 19	112	-149	11422	105.06	4300.26	58.48
504	SLU 20	112	-180	11510	108.98	4333.43	70.5
504	SLU 21	113	-150	11539	106.96	4344.02	59.12
504	SLU 22	108	-167	10926	107.59	4108.17	64.91
504	SLU 23	110	-117	10975	104.23	4125.81	45.94
504	SLU 24	110	-170	11113	110.44	4178.1	65.9
504	SLU 25	111	-140	11142	108.42	4188.68	54.52
504	SLU 26	111	-119	11091	106.12	4169.57	46.58
504	SLU 27	110	-171	11230	112.33	4221.86	66.54
504	SLU 28	112	-141	11259	110.32	4232.44	55.16
504	SLU 29	110	-170	11160	111.38	4195.68	66.19
504	SLU 30	111	-140	11188	109.36	4206.27	54.8
504	SLU 31	121	-138	12245	115.49	4607.13	54.46
504	SLU 32	120	-191	12383	121.71	4659.41	74.42
504	SLU 33	121	-161	12412	119.69	4670	63.04
504	SLU 34	122	-140	12361	117.39	4650.88	55.1
504	SLU 35	121	-192	12500	123.6	4703.17	75.06
504	SLU 36	122	-163	12529	121.58	4713.76	63.68
504	SLU 37	120	-191	12430	122.64	4677	74.71
504	SLU 38	122	-162	12459	120.63	4687.58	63.32
504	SLU 39	123	-197	12741	123.68	4795.76	77.08
504	SLU 40	125	-167	12770	121.67	4806.35	65.7
504	SLU 41	124	-199	12858	125.58	4839.52	77.72
504	SLU 42	125	-169	12886	123.56	4850.11	66.34
504	SLU 43	120	-187	11990	112.59	4509.19	72.53
504	SLU 44	122	-137	12038	109.23	4526.83	53.56

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
504	SLU 45	122	-189	12177	115.44	4579.12	73.52
504	SLU 46	123	-159	12206	113.42	4589.7	62.14
504	SLU 47	123	-138	12155	111.12	4570.59	54.2
504	SLU 48	122	-191	12293	117.33	4622.88	74.16
504	SLU 49	124	-161	12322	115.32	4633.46	62.78
504	SLU 50	122	-190	12223	116.38	4596.71	73.81
504	SLU 51	123	-160	12252	114.36	4607.29	62.42
504	SLU 52	133	-158	13308	120.49	5008.15	62.08
504	SLU 53	132	-210	13447	126.71	5060.44	82.04
504	SLU 54	133	-180	13476	124.69	5071.02	70.66
504	SLU 55	134	-160	13425	122.39	5051.91	62.72
504	SLU 56	133	-212	13564	128.6	5104.19	82.68
504	SLU 57	134	-182	13593	126.58	5114.78	71.3
504	SLU 58	132	-211	13493	127.64	5078.02	82.33
504	SLU 59	134	-181	13522	125.63	5088.61	70.94
504	SLU 60	135	-217	13805	128.68	5196.79	84.7
504	SLU 61	137	-187	13834	126.67	5207.37	73.32
504	SLU 62	136	-218	13921	130.58	5240.54	85.34
504	SLU 63	137	-189	13950	128.56	5251.13	73.96
504	SLU 64	133	-205	13338	129.19	5015.28	79.74
504	SLU 65	135	-155	13386	125.83	5032.92	60.77
504	SLU 66	134	-208	13525	132.04	5085.21	80.74
504	SLU 67	135	-178	13554	130.02	5095.79	69.36
504	SLU 68	136	-157	13503	127.72	5076.68	61.41
504	SLU 69	135	-209	13641	133.94	5128.96	81.38
504	SLU 70	136	-180	13670	131.92	5139.55	70
504	SLU 71	134	-208	13571	132.98	5102.79	81.02
504	SLU 72	135	-179	13600	130.96	5113.38	69.64
504	SLU 73	145	-176	14656	137.1	5514.24	69.29
504	SLU 74	145	-229	14795	143.31	5566.52	89.26
504	SLU 75	146	-199	14824	141.29	5577.11	77.88
504	SLU 76	146	-178	14773	138.99	5557.99	69.93
504	SLU 77	145	-231	14912	145.2	5610.28	89.9
504	SLU 78	147	-201	14940	143.19	5620.86	78.52
504	SLU 79	145	-230	14841	144.25	5584.11	89.54
504	SLU 80	146	-200	14870	142.23	5594.69	78.16
504	SLU 81	148	-235	15153	145.29	5702.87	91.91
504	SLU 82	149	-205	15181	143.27	5713.46	80.53
504	SLU 83	149	-237	15269	147.18	5746.63	92.55
504	SLU 84	150	-207	15298	145.16	5757.22	81.17
504	SLE RA 1	99	-154	9964	95.73	3746.68	59.75
504	SLE RA 2	101	-121	9996	93.49	3758.44	47.11
504	SLE RA 3	100	-155	10088	97.63	3793.3	60.42
504	SLE RA 4	101	-136	10107	96.28	3800.35	52.83
504	SLE RA 5	101	-122	10073	94.75	3787.61	47.53
504	SLE RA 6	101	-157	10166	98.89	3822.47	60.85
504	SLE RA 7	102	-137	10185	97.55	3829.53	53.26
504	SLE RA 8	100	-156	10119	98.26	3805.02	60.61
504	SLE RA 9	101	-136	10138	96.91	3812.08	53.02
504	SLE RA 10	108	-135	10843	101	4079.32	52.79
504	SLE RA 11	107	-170	10935	105.14	4114.17	66.1
504	SLE RA 12	108	-150	10954	103.8	4121.23	58.51
504	SLE RA 13	108	-136	10920	102.26	4108.49	53.21
504	SLE RA 14	108	-171	11013	106.4	4143.35	66.53
504	SLE RA 15	109	-151	11032	105.06	4150.4	58.94
504	SLE RA 16	107	-170	10966	105.77	4125.9	66.29
504	SLE RA 17	108	-150	10985	104.42	4132.96	58.7
504	SLE RA 18	109	-174	11173	106.46	4205.08	67.87
504	SLE RA 19	110	-154	11193	105.11	4212.13	60.28
504	SLE RA 20	110	-175	11251	107.72	4234.25	68.3
504	SLE RA 21	111	-155	11270	106.38	4241.3	60.71
504	SLE FR 1	99	-154	9964	95.73	3746.68	59.75
504	SLE FR 2	100	-147	9970	95.28	3749.03	57.23
504	SLE FR 3	100	-154	9995	96.23	3758.35	59.93
504	SLE FR 4	103	-153	10333	98.5	3886.55	59.66
504	SLE FR 5	103	-160	10358	99.45	3895.87	62.36
504	SLE FR 6	104	-164	10569	101.09	3975.88	63.81
504	SLE QP 1	99	-154	9964	95.73	3746.68	59.75
504	SLE QP 2	102	-160	10327	98.95	3884.2	62.19
504	SLD 1	947	173	10795	84.74	4053.7	-72.2
504	SLD 2	1018	183	10810	84.03	4057.73	-75.22
504	SLD 3	904	-438	10164	129.4	3821.43	160.64
504	SLD 4	975	-428	10179	128.69	3825.46	157.61
504	SLD 5	409	865	11422	27.07	4286.6	-330.72
504	SLD 6	456	872	11432	26.6	4289.26	-332.72
504	SLD 7	264	-1172	9318	175.95	3512.36	445.41
504	SLD 8	310	-1165	9328	175.48	3515.02	443.41
504	SLD 9	-106	846	11326	22.41	4253.38	-319.03
504	SLD 10	-59	852	11336	21.94	4256.04	-321.03
504	SLD 11	-252	-1191	9222	171.29	3479.13	457.1
504	SLD 12	-205	-1185	9232	170.82	3481.79	455.1
504	SLD 13	-770	109	10474	69.2	3942.94	-33.24
504	SLD 14	-699	118	10490	68.49	3946.97	-36.26
504	SLD 15	-814	-502	9843	113.87	3710.66	199.6
504	SLD 16	-743	-493	9858	113.16	3714.7	196.57
504	SLV 1	2083	666	11475	62.01	4300.29	-270.11
504	SLV 2	2250	689	11511	60.34	4309.77	-277.23
504	SLV 3	1972	-858	9892	173.92	3717.71	310.49
504	SLV 4	2139	-835	9928	172.25	3727.19	303.37

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
504	SLV 5	833	2395	13066	-81.55	4890.84	-916.74
504	SLV 6	946	2410	13090	-82.68	4897.23	-921.53
504	SLV 7	464	-2685	7788	291.48	2948.89	1018.58
504	SLV 8	577	-2669	7812	290.36	2955.28	1013.79
504	SLV 9	-372	2350	12841	-92.46	4813.12	-889.41
504	SLV 10	-260	2365	12865	-93.58	4819.5	-894.2
504	SLV 11	-741	-2730	7563	280.57	2871.17	1045.91
504	SLV 12	-629	-2715	7587	279.45	2877.55	1041.12
504	SLV 13	-1935	516	10726	25.65	4041.21	-178.99
504	SLV 14	-1768	538	10761	23.98	4050.69	-186.11
504	SLV 15	-2045	-1008	9142	137.56	3458.63	401.6
504	SLV 16	-1878	-986	9178	135.89	3468.1	394.49
504	CRTFP Ux+	0	0	0	0	0	0
504	CRTFP Ux-	0	0	0	0	0	0
504	CRTFP Uy+	0	0	0	0	0	0
504	CRTFP Uy-	0	0	0	0	0	0
505	SLU 1	-52	46	3525	4.18	-579.54	11.65
505	SLU 2	-53	69	3549	3.99	-580.57	17.34
505	SLU 3	-53	47	3596	4.32	-591.39	11.72
505	SLU 4	-53	60	3610	4.2	-592	15.14
505	SLU 5	-53	69	3593	4.07	-587.93	17.39
505	SLU 6	-53	47	3640	4.41	-598.75	11.77
505	SLU 7	-54	61	3654	4.29	-599.37	15.19
505	SLU 8	-53	47	3613	4.35	-594.27	11.74
505	SLU 9	-54	60	3627	4.24	-594.88	15.16
505	SLU 10	-55	76	3974	4.56	-649.73	18.95
505	SLU 11	-55	53	4021	4.89	-660.55	13.33
505	SLU 12	-56	67	4035	4.77	-661.17	16.75
505	SLU 13	-56	76	4018	4.64	-657.09	18.99
505	SLU 14	-56	53	4065	4.98	-667.91	13.38
505	SLU 15	-56	67	4079	4.86	-668.53	16.79
505	SLU 16	-55	53	4038	4.93	-663.43	13.35
505	SLU 17	-56	67	4052	4.81	-664.05	16.76
505	SLU 18	-55	56	4132	5	-678.34	13.94
505	SLU 19	-55	69	4146	4.88	-678.96	17.36
505	SLU 20	-56	56	4176	5.08	-685.71	13.99
505	SLU 21	-56	69	4190	4.97	-686.32	17.41
505	SLU 22	-57	50	4034	5.01	-663.51	12.61
505	SLU 23	-58	73	4058	4.81	-664.54	18.3
505	SLU 24	-58	51	4105	5.14	-675.36	12.69
505	SLU 25	-58	64	4119	5.03	-675.98	16.1
505	SLU 26	-58	73	4101	4.9	-671.91	18.35
505	SLU 27	-58	51	4149	5.23	-682.73	12.74
505	SLU 28	-59	64	4163	5.11	-683.35	16.15
505	SLU 29	-58	51	4122	5.18	-678.24	12.71
505	SLU 30	-59	64	4136	5.06	-678.86	16.12
505	SLU 31	-60	79	4482	5.38	-733.71	19.91
505	SLU 32	-60	57	4529	5.71	-744.53	14.3
505	SLU 33	-61	71	4544	5.6	-745.14	17.71
505	SLU 34	-61	80	4526	5.47	-741.07	19.96
505	SLU 35	-61	57	4573	5.8	-751.89	14.34
505	SLU 36	-61	71	4588	5.68	-752.51	17.76
505	SLU 37	-60	57	4547	5.75	-747.41	14.31
505	SLU 38	-61	71	4561	5.63	-748.02	17.73
505	SLU 39	-60	59	4641	5.82	-762.32	14.91
505	SLU 40	-61	73	4655	5.7	-762.94	18.32
505	SLU 41	-61	60	4685	5.91	-769.68	14.95
505	SLU 42	-61	73	4699	5.79	-770.3	18.37
505	SLU 43	-65	59	4408	5.15	-724.61	14.81
505	SLU 44	-66	82	4432	4.96	-725.64	20.5
505	SLU 45	-66	59	4479	5.29	-736.45	14.89
505	SLU 46	-67	73	4493	5.17	-737.07	18.3
505	SLU 47	-67	82	4476	5.04	-733	20.55
505	SLU 48	-67	60	4523	5.38	-743.82	14.93
505	SLU 49	-68	73	4537	5.26	-744.44	18.35
505	SLU 50	-67	59	4496	5.33	-739.34	14.9
505	SLU 51	-67	73	4510	5.21	-739.95	18.32
505	SLU 52	-69	88	4857	5.53	-794.8	22.11
505	SLU 53	-69	66	4904	5.86	-805.62	16.49
505	SLU 54	-69	79	4918	5.75	-806.23	19.91
505	SLU 55	-69	88	4901	5.62	-802.16	22.16
505	SLU 56	-69	66	4948	5.95	-812.98	16.54
505	SLU 57	-70	80	4962	5.83	-813.6	19.96
505	SLU 58	-69	66	4921	5.9	-808.5	16.51
505	SLU 59	-70	79	4935	5.78	-809.12	19.93
505	SLU 60	-69	68	5015	5.97	-823.41	17.11
505	SLU 61	-69	82	5029	5.85	-824.03	20.52
505	SLU 62	-69	68	5059	6.06	-830.77	17.15
505	SLU 63	-70	82	5073	5.94	-831.39	20.57
505	SLU 64	-70	63	4917	5.98	-808.58	15.77
505	SLU 65	-71	86	4941	5.78	-809.61	21.47
505	SLU 66	-72	63	4988	6.11	-820.43	15.85
505	SLU 67	-72	77	5002	6	-821.05	19.27
505	SLU 68	-72	86	4985	5.87	-816.98	21.51
505	SLU 69	-72	63	5032	6.2	-827.8	15.9
505	SLU 70	-73	77	5046	6.08	-828.41	19.31
505	SLU 71	-72	63	5005	6.15	-823.31	15.87
505	SLU 72	-72	77	5019	6.03	-823.93	19.28
505	SLU 73	-74	92	5365	6.35	-878.78	23.07

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
505	SLU 74	-74	70	5413	6.69	-889.59	17.46
505	SLU 75	-74	83	5427	6.57	-890.21	20.87
505	SLU 76	-74	92	5409	6.44	-886.14	23.12
505	SLU 77	-75	70	5456	6.77	-896.96	17.51
505	SLU 78	-75	83	5471	6.66	-897.58	20.92
505	SLU 79	-74	70	5430	6.72	-892.48	17.48
505	SLU 80	-75	83	5444	6.61	-893.09	20.89
505	SLU 81	-74	72	5524	6.79	-907.39	18.07
505	SLU 82	-74	86	5538	6.68	-908	21.49
505	SLU 83	-74	72	5568	6.88	-914.75	18.12
505	SLU 84	-75	86	5582	6.76	-915.37	21.53
505	SLE RA 1	-53	48	3670	4.42	-603.53	11.92
505	SLE RA 2	-54	63	3686	4.29	-604.22	15.72
505	SLE RA 3	-54	48	3718	4.51	-611.43	11.97
505	SLE RA 4	-54	57	3727	4.43	-611.84	14.25
505	SLE RA 5	-54	63	3715	4.34	-609.13	15.75
505	SLE RA 6	-54	48	3747	4.57	-616.34	12
505	SLE RA 7	-55	57	3756	4.49	-616.75	14.28
505	SLE RA 8	-54	48	3729	4.53	-613.35	11.98
505	SLE RA 9	-54	57	3738	4.45	-613.76	14.26
505	SLE RA 10	-55	67	3969	4.67	-650.33	16.79
505	SLE RA 11	-55	52	4001	4.89	-657.54	13.05
505	SLE RA 12	-56	61	4010	4.81	-657.95	15.32
505	SLE RA 13	-56	67	3999	4.73	-655.24	16.82
505	SLE RA 14	-56	52	4030	4.95	-662.45	13.08
505	SLE RA 15	-56	61	4040	4.87	-662.86	15.35
505	SLE RA 16	-56	52	4012	4.91	-659.46	13.06
505	SLE RA 17	-56	61	4022	4.84	-659.87	15.33
505	SLE RA 18	-55	54	4075	4.96	-669.4	13.45
505	SLE RA 19	-56	63	4085	4.88	-669.81	15.73
505	SLE RA 20	-56	54	4104	5.02	-674.31	13.48
505	SLE RA 21	-56	63	4114	4.94	-674.72	15.76
505	SLE FR 1	-53	48	3670	4.42	-603.53	11.92
505	SLE FR 2	-53	51	3674	4.39	-603.67	12.68
505	SLE FR 3	-53	48	3682	4.44	-605.49	11.93
505	SLE FR 4	-54	52	3795	4.55	-623.43	13.14
505	SLE FR 5	-54	49	3804	4.6	-625.26	12.39
505	SLE FR 6	-54	51	3873	4.69	-636.47	12.69
505	SLE QP 1	-53	48	3670	4.42	-603.53	11.92
505	SLE QP 2	-54	49	3792	4.58	-623.29	12.38
505	SLD 1	221	268	5070	4.47	-796.2	67.09
505	SLD 2	245	150	5037	4.72	-794.96	37.69
505	SLD 3	240	8	4746	7.27	-782.98	1.86
505	SLD 4	263	-111	4713	7.53	-781.74	-27.54
505	SLD 5	-3	532	4672	0.24	-695.45	133.02
505	SLD 6	12	454	4650	0.41	-694.63	113.62
505	SLD 7	58	-338	3593	9.6	-651.36	-84.42
505	SLD 8	73	-416	3571	9.77	-650.54	-103.82
505	SLD 9	-181	514	4012	-0.61	-596.04	128.58
505	SLD 10	-165	436	3991	-0.44	-595.22	109.19
505	SLD 11	-120	-355	2933	8.75	-551.96	-88.86
505	SLD 12	-104	-433	2911	8.91	-551.13	-108.26
505	SLD 13	-371	209	2871	1.63	-464.85	52.3
505	SLD 14	-347	91	2838	1.89	-463.6	22.9
505	SLD 15	-352	-52	2547	4.44	-451.62	-12.93
505	SLD 16	-329	-170	2514	4.69	-450.38	-42.33
505	SLV 1	589	582	6809	4.09	-1029.03	145.3
505	SLV 2	644	304	6732	4.68	-1026.1	76.19
505	SLV 3	634	-66	5998	11.11	-995.94	-16.7
505	SLV 4	689	-344	5921	11.71	-993.02	-85.81
505	SLV 5	60	1243	5941	-6.33	-795.74	310.85
505	SLV 6	97	1056	5889	-5.93	-793.77	264.32
505	SLV 7	211	-916	3239	17.08	-685.45	-229.14
505	SLV 8	248	-1103	3187	17.48	-683.48	-275.67
505	SLV 9	-356	1202	4397	-8.32	-563.1	300.43
505	SLV 10	-318	1015	4345	-7.92	-561.14	253.9
505	SLV 11	-205	-958	1695	15.09	-452.81	-239.56
505	SLV 12	-168	-1145	1643	15.49	-450.84	-286.09
505	SLV 13	-797	443	1663	-2.55	-253.57	110.57
505	SLV 14	-741	165	1585	-1.95	-250.64	41.46
505	SLV 15	-752	-205	852	4.48	-220.48	-51.43
505	SLV 16	-696	-483	775	5.07	-217.56	-120.53
505	CRTFP Ux+	0	0	0	0	0	0
505	CRTFP Ux-	0	0	0	0	0	0
505	CRTFP Uy+	0	0	0	0	0	0
505	CRTFP Uy-	0	0	0	0	0	0
508	SLU 1	-65	-61	6753	0.01	-21.57	0.43
508	SLU 2	-66	-30	6794	-0.46	-21.14	0.38
508	SLU 3	-67	-62	6893	0.13	-22.15	0.41
508	SLU 4	-67	-44	6917	-0.15	-21.89	0.38
508	SLU 5	-67	-31	6882	-0.38	-21.53	0.36
508	SLU 6	-68	-63	6980	0.21	-22.54	0.4
508	SLU 7	-68	-45	7005	-0.07	-22.28	0.37
508	SLU 8	-67	-62	6929	0.17	-22.35	0.4
508	SLU 9	-68	-44	6953	-0.11	-22.09	0.37
508	SLU 10	-68	-36	7664	-0.34	-25.26	0.46
508	SLU 11	-69	-68	7762	0.24	-26.27	0.49
508	SLU 12	-69	-49	7787	-0.04	-26.01	0.46
508	SLU 13	-69	-37	7751	-0.27	-25.65	0.44

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
508	SLU 14	-70	-68	7850	0.32	-26.66	0.48
508	SLU 15	-70	-50	7875	0.04	-26.4	0.45
508	SLU 16	-69	-68	7798	0.28	-26.47	0.48
508	SLU 17	-70	-50	7823	0	-26.21	0.45
508	SLU 18	-68	-69	7995	0.17	-27.45	0.54
508	SLU 19	-69	-50	8020	-0.11	-27.2	0.51
508	SLU 20	-69	-69	8083	0.25	-27.84	0.53
508	SLU 21	-70	-51	8108	-0.03	-27.59	0.5
508	SLU 22	-72	-68	7763	0.46	-25.27	0.42
508	SLU 23	-73	-37	7804	-0.01	-24.84	0.37
508	SLU 24	-74	-69	7903	0.58	-25.85	0.4
508	SLU 25	-74	-51	7927	0.3	-25.59	0.37
508	SLU 26	-74	-38	7892	0.07	-25.23	0.35
508	SLU 27	-75	-70	7991	0.66	-26.24	0.39
508	SLU 28	-75	-52	8015	0.38	-25.98	0.36
508	SLU 29	-74	-70	7939	0.62	-26.05	0.39
508	SLU 30	-75	-51	7964	0.34	-25.8	0.36
508	SLU 31	-75	-43	8674	0.11	-28.96	0.45
508	SLU 32	-76	-75	8773	0.7	-29.97	0.48
508	SLU 33	-76	-56	8797	0.41	-29.71	0.45
508	SLU 34	-76	-44	8762	0.19	-29.35	0.43
508	SLU 35	-77	-76	8860	0.77	-30.36	0.47
508	SLU 36	-78	-57	8885	0.49	-30.1	0.44
508	SLU 37	-77	-75	8809	0.73	-30.17	0.47
508	SLU 38	-77	-57	8833	0.45	-29.91	0.44
508	SLU 39	-75	-76	9006	0.63	-31.16	0.53
508	SLU 40	-76	-58	9030	0.34	-30.9	0.5
508	SLU 41	-76	-77	9093	0.7	-31.55	0.52
508	SLU 42	-77	-58	9118	0.42	-31.29	0.49
508	SLU 43	-82	-77	8432	-0.14	-26.77	0.56
508	SLU 44	-83	-46	8473	-0.61	-26.34	0.51
508	SLU 45	-84	-78	8572	-0.02	-27.35	0.54
508	SLU 46	-84	-60	8597	-0.3	-27.09	0.51
508	SLU 47	-84	-47	8561	-0.53	-26.73	0.49
508	SLU 48	-85	-79	8660	0.06	-27.74	0.53
508	SLU 49	-85	-60	8684	-0.23	-27.48	0.5
508	SLU 50	-84	-78	8608	0.02	-27.55	0.53
508	SLU 51	-85	-60	8633	-0.27	-27.3	0.5
508	SLU 52	-85	-52	9343	-0.5	-30.46	0.59
508	SLU 53	-86	-83	9442	0.09	-31.47	0.62
508	SLU 54	-86	-65	9466	-0.19	-31.21	0.59
508	SLU 55	-86	-52	9431	-0.42	-30.85	0.57
508	SLU 56	-87	-84	9530	0.17	-31.86	0.61
508	SLU 57	-87	-66	9554	-0.11	-31.6	0.58
508	SLU 58	-87	-84	9478	0.13	-31.67	0.61
508	SLU 59	-87	-65	9502	-0.15	-31.41	0.58
508	SLU 60	-85	-84	9675	0.02	-32.66	0.67
508	SLU 61	-86	-66	9699	-0.26	-32.4	0.64
508	SLU 62	-86	-85	9763	0.1	-33.05	0.66
508	SLU 63	-87	-67	9787	-0.18	-32.79	0.63
508	SLU 64	-89	-84	9443	0.31	-30.47	0.55
508	SLU 65	-90	-53	9484	-0.16	-30.05	0.5
508	SLU 66	-91	-85	9582	0.43	-31.05	0.53
508	SLU 67	-91	-67	9607	0.15	-30.79	0.5
508	SLU 68	-91	-54	9572	-0.08	-30.44	0.48
508	SLU 69	-92	-86	9670	0.51	-31.44	0.52
508	SLU 70	-92	-68	9695	0.23	-31.18	0.49
508	SLU 71	-91	-85	9618	0.47	-31.26	0.52
508	SLU 72	-92	-67	9643	0.19	-31	0.49
508	SLU 73	-92	-59	10353	-0.04	-34.16	0.58
508	SLU 74	-93	-91	10452	0.54	-35.17	0.61
508	SLU 75	-94	-72	10477	0.26	-34.91	0.58
508	SLU 76	-93	-60	10441	0.03	-34.55	0.56
508	SLU 77	-94	-91	10540	0.62	-35.56	0.6
508	SLU 78	-95	-73	10564	0.34	-35.3	0.57
508	SLU 79	-94	-91	10488	0.58	-35.37	0.6
508	SLU 80	-94	-73	10513	0.3	-35.12	0.57
508	SLU 81	-92	-92	10685	0.47	-36.36	0.66
508	SLU 82	-93	-73	10710	0.19	-36.1	0.63
508	SLU 83	-94	-92	10773	0.55	-36.75	0.65
508	SLU 84	-94	-74	10798	0.27	-36.49	0.62
508	SLE RA 1	-67	-63	7042	0.14	-22.63	0.42
508	SLE RA 2	-68	-43	7069	-0.17	-22.34	0.39
508	SLE RA 3	-68	-64	7135	0.22	-23.01	0.41
508	SLE RA 4	-68	-51	7151	0.03	-22.84	0.39
508	SLE RA 5	-68	-43	7127	-0.12	-22.6	0.38
508	SLE RA 6	-69	-64	7193	0.27	-23.27	0.41
508	SLE RA 7	-69	-52	7210	0.08	-23.1	0.39
508	SLE RA 8	-69	-64	7159	0.25	-23.15	0.4
508	SLE RA 9	-69	-52	7175	0.06	-22.98	0.38
508	SLE RA 10	-69	-46	7649	-0.1	-25.09	0.44
508	SLE RA 11	-70	-67	7714	0.3	-25.76	0.47
508	SLE RA 12	-70	-55	7731	0.11	-25.59	0.45
508	SLE RA 13	-70	-47	7707	-0.04	-25.35	0.43
508	SLE RA 14	-70	-68	7773	0.35	-26.02	0.46
508	SLE RA 15	-71	-56	7789	0.16	-25.85	0.44
508	SLE RA 16	-70	-68	7738	0.32	-25.89	0.46
508	SLE RA 17	-70	-55	7755	0.13	-25.72	0.44
508	SLE RA 18	-69	-68	7870	0.25	-26.55	0.5

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
508	SLE RA 19	-70	-56	7886	0.06	-26.38	0.48
508	SLE RA 20	-70	-69	7928	0.3	-26.81	0.49
508	SLE RA 21	-70	-56	7945	0.11	-26.64	0.47
508	SLE FR 1	-67	-63	7042	0.14	-22.63	0.42
508	SLE FR 2	-67	-59	7047	0.08	-22.57	0.42
508	SLE FR 3	-67	-63	7065	0.16	-22.73	0.42
508	SLE FR 4	-68	-60	7296	0.11	-23.75	0.44
508	SLE FR 5	-68	-65	7313	0.19	-23.91	0.44
508	SLE FR 6	-68	-65	7456	0.19	-24.59	0.46
508	SLE QP 1	-67	-63	7042	0.14	-22.63	0.42
508	SLE QP 2	-68	-64	7290	0.17	-23.81	0.45
508	SLD 1	540	114	8327	-2.97	4.18	0.56
508	SLD 2	584	31	8288	-2.6	2.86	3.1
508	SLD 3	555	-249	7772	3.54	-2.51	1.55
508	SLD 4	599	-332	7733	3.92	-3.83	4.09
508	SLD 5	84	555	8449	-10.72	-5.02	-1.47
508	SLD 6	113	500	8424	-10.47	-5.89	0.2
508	SLD 7	133	-656	6600	11	-27.33	1.82
508	SLD 8	163	-711	6575	11.24	-28.21	3.49
508	SLD 9	-298	582	8005	-10.9	-19.4	-2.6
508	SLD 10	-269	527	7980	-10.65	-20.28	-0.93
508	SLD 11	-249	-629	6156	10.82	-41.72	0.69
508	SLD 12	-220	-684	6131	11.06	-42.59	2.37
508	SLD 13	-735	204	6847	-3.57	-43.78	-3.2
508	SLD 14	-690	120	6808	-3.2	-45.1	-0.66
508	SLD 15	-720	-160	6292	2.94	-50.47	-2.21
508	SLD 16	-676	-243	6253	3.32	-51.79	0.33
508	SLV 1	1354	382	9762	-7.72	42.2	0.66
508	SLV 2	1457	185	9671	-6.84	39.09	6.62
508	SLV 3	1389	-522	8373	8.59	25.52	3.07
508	SLV 4	1493	-719	8282	9.48	22.41	9.03
508	SLV 5	285	1477	10156	-27.1	21.87	-4.27
508	SLV 6	355	1345	10095	-26.51	19.77	-0.25
508	SLV 7	404	-1536	5524	27.28	-33.72	3.78
508	SLV 8	474	-1669	5463	27.87	-35.81	7.8
508	SLV 9	-609	1540	9117	-27.53	-11.8	-6.91
508	SLV 10	-540	1407	9056	-26.93	-13.89	-2.89
508	SLV 11	-491	-1474	4485	26.85	-67.38	1.14
508	SLV 12	-421	-1606	4424	27.45	-69.48	5.16
508	SLV 13	-1629	590	6298	-9.13	-70.02	-8.14
508	SLV 14	-1525	394	6208	-8.24	-73.13	-2.18
508	SLV 15	-1593	-314	4909	7.18	-86.7	-5.73
508	SLV 16	-1489	-510	4818	8.07	-89.81	0.24
508	CRTFP Ux+	0	0	0	0	0	0
508	CRTFP Ux-	0	0	0	0	0	0
508	CRTFP Uy+	0	0	0	0	0	0
508	CRTFP Uy-	0	0	0	0	0	0
511	SLU 1	48	-29	6586	-0.47	34.53	-0.76
511	SLU 2	50	2	6626	-0.97	33.67	-0.69
511	SLU 3	49	-30	6722	-0.36	35.37	-0.8
511	SLU 4	50	-11	6747	-0.65	34.85	-0.75
511	SLU 5	50	2	6713	-0.88	34.2	-0.72
511	SLU 6	49	-30	6810	-0.27	35.89	-0.83
511	SLU 7	50	-12	6834	-0.57	35.38	-0.79
511	SLU 8	49	-30	6760	-0.3	35.59	-0.83
511	SLU 9	50	-11	6784	-0.6	35.07	-0.78
511	SLU 10	51	1	7464	-0.93	39.31	-0.77
511	SLU 11	50	-31	7560	-0.32	41.01	-0.88
511	SLU 12	51	-12	7584	-0.62	40.49	-0.84
511	SLU 13	51	1	7551	-0.84	39.84	-0.8
511	SLU 14	50	-31	7647	-0.23	41.54	-0.92
511	SLU 15	51	-12	7671	-0.53	41.02	-0.87
511	SLU 16	50	-31	7597	-0.26	41.23	-0.91
511	SLU 17	51	-12	7622	-0.56	40.72	-0.87
511	SLU 18	50	-31	7782	-0.42	42.59	-0.89
511	SLU 19	51	-12	7806	-0.72	42.08	-0.84
511	SLU 20	50	-31	7869	-0.33	43.12	-0.92
511	SLU 21	51	-12	7893	-0.63	42.6	-0.87
511	SLU 22	53	-32	7558	-0.11	39.69	-0.84
511	SLU 23	55	0	7598	-0.61	38.82	-0.77
511	SLU 24	53	-32	7695	0.01	40.52	-0.88
511	SLU 25	55	-13	7719	-0.29	40	-0.83
511	SLU 26	55	-1	7686	-0.52	39.35	-0.8
511	SLU 27	54	-33	7782	0.09	41.05	-0.91
511	SLU 28	55	-14	7806	-0.21	40.53	-0.87
511	SLU 29	53	-32	7732	0.06	40.75	-0.91
511	SLU 30	55	-14	7756	-0.24	40.23	-0.86
511	SLU 31	56	-1	8436	-0.57	44.47	-0.85
511	SLU 32	54	-33	8532	0.04	46.16	-0.96
511	SLU 33	56	-14	8556	-0.25	45.64	-0.92
511	SLU 34	56	-2	8523	-0.48	44.99	-0.88
511	SLU 35	55	-34	8619	0.13	46.69	-1
511	SLU 36	56	-15	8643	-0.17	46.17	-0.95
511	SLU 37	54	-33	8569	0.1	46.39	-0.99
511	SLU 38	56	-15	8594	-0.2	45.87	-0.95
511	SLU 39	54	-33	8754	-0.06	47.75	-0.96
511	SLU 40	55	-14	8778	-0.36	47.23	-0.92
511	SLU 41	54	-33	8841	0.03	48.28	-1
511	SLU 42	56	-15	8865	-0.27	47.76	-0.95

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
511	SLU 43	61	-38	8229	-0.74	43.13	-0.97
511	SLU 44	63	-6	8269	-1.23	42.26	-0.89
511	SLU 45	62	-38	8365	-0.62	43.96	-1
511	SLU 46	63	-19	8389	-0.92	43.44	-0.96
511	SLU 47	63	-7	8356	-1.15	42.79	-0.92
511	SLU 48	62	-38	8452	-0.54	44.49	-1.03
511	SLU 49	63	-20	8476	-0.83	43.97	-0.99
511	SLU 50	62	-38	8403	-0.57	44.18	-1.03
511	SLU 51	63	-19	8427	-0.86	43.67	-0.98
511	SLU 52	64	-7	9106	-1.2	47.9	-0.97
511	SLU 53	63	-39	9202	-0.59	49.6	-1.09
511	SLU 54	64	-20	9226	-0.88	49.08	-1.04
511	SLU 55	64	-7	9193	-1.11	48.43	-1.01
511	SLU 56	63	-39	9289	-0.5	50.13	-1.12
511	SLU 57	64	-20	9313	-0.8	49.61	-1.07
511	SLU 58	63	-39	9240	-0.53	49.83	-1.12
511	SLU 59	64	-20	9264	-0.83	49.31	-1.07
511	SLU 60	62	-39	9424	-0.69	51.19	-1.09
511	SLU 61	64	-20	9449	-0.98	50.67	-1.04
511	SLU 62	63	-39	9512	-0.6	51.72	-1.12
511	SLU 63	64	-20	9536	-0.9	51.2	-1.07
511	SLU 64	65	-40	9201	-0.38	48.28	-1.05
511	SLU 65	67	-8	9241	-0.87	47.42	-0.97
511	SLU 66	66	-40	9337	-0.26	49.11	-1.08
511	SLU 67	67	-22	9361	-0.56	48.59	-1.03
511	SLU 68	68	-9	9328	-0.79	47.95	-1
511	SLU 69	67	-41	9424	-0.17	49.64	-1.11
511	SLU 70	68	-22	9448	-0.47	49.12	-1.07
511	SLU 71	66	-41	9375	-0.21	49.34	-1.11
511	SLU 72	67	-22	9399	-0.5	48.82	-1.06
511	SLU 73	69	-9	10078	-0.84	53.06	-1.05
511	SLU 74	67	-41	10174	-0.22	54.76	-1.17
511	SLU 75	68	-22	10198	-0.52	54.24	-1.12
511	SLU 76	69	-10	10165	-0.75	53.59	-1.09
511	SLU 77	68	-42	10261	-0.14	55.28	-1.2
511	SLU 78	69	-23	10285	-0.43	54.77	-1.15
511	SLU 79	67	-41	10212	-0.17	54.98	-1.2
511	SLU 80	68	-23	10236	-0.47	54.46	-1.15
511	SLU 81	67	-41	10397	-0.33	56.34	-1.17
511	SLU 82	68	-22	10421	-0.62	55.82	-1.12
511	SLU 83	67	-41	10484	-0.24	56.87	-1.2
511	SLU 84	69	-23	10508	-0.54	56.35	-1.15
511	SLE RA 1	49	-30	6864	-0.37	36.01	-0.79
511	SLE RA 2	51	-9	6891	-0.7	35.43	-0.73
511	SLE RA 3	50	-30	6955	-0.29	36.56	-0.81
511	SLE RA 4	51	-18	6971	-0.49	36.22	-0.78
511	SLE RA 5	51	-9	6949	-0.64	35.78	-0.76
511	SLE RA 6	50	-31	7013	-0.23	36.91	-0.83
511	SLE RA 7	51	-18	7029	-0.43	36.57	-0.8
511	SLE RA 8	50	-31	6980	-0.26	36.71	-0.83
511	SLE RA 9	51	-18	6996	-0.45	36.37	-0.8
511	SLE RA 10	51	-10	7449	-0.68	39.19	-0.79
511	SLE RA 11	51	-31	7513	-0.27	40.32	-0.87
511	SLE RA 12	51	-19	7529	-0.47	39.98	-0.84
511	SLE RA 13	52	-10	7507	-0.62	39.54	-0.81
511	SLE RA 14	51	-31	7571	-0.21	40.68	-0.89
511	SLE RA 15	52	-19	7587	-0.41	40.33	-0.86
511	SLE RA 16	51	-31	7538	-0.23	40.47	-0.89
511	SLE RA 17	51	-19	7554	-0.43	40.13	-0.86
511	SLE RA 18	50	-31	7661	-0.34	41.38	-0.87
511	SLE RA 19	51	-18	7677	-0.53	41.03	-0.84
511	SLE RA 20	51	-31	7719	-0.28	41.73	-0.89
511	SLE RA 21	51	-19	7735	-0.48	41.39	-0.86
511	SLE FR 1	49	-30	6864	-0.37	36.01	-0.79
511	SLE FR 2	50	-26	6869	-0.44	35.89	-0.78
511	SLE FR 3	49	-30	6887	-0.35	36.15	-0.8
511	SLE FR 4	50	-26	7108	-0.43	37.5	-0.8
511	SLE FR 5	50	-30	7126	-0.34	37.76	-0.82
511	SLE FR 6	50	-31	7262	-0.35	38.69	-0.83
511	SLE QP 1	49	-30	6864	-0.37	36.01	-0.79
511	SLE QP 2	50	-30	7103	-0.36	37.62	-0.81
511	SLD 1	676	156	6698	-3.75	39.81	1.34
511	SLD 2	723	243	6735	-4.18	38.37	4
511	SLD 3	646	-217	6145	3.11	52.24	0.05
511	SLD 4	694	-130	6182	2.68	50.8	2.71
511	SLD 5	273	576	7813	-11.7	19.67	1.32
511	SLD 6	305	634	7837	-11.98	18.73	3.07
511	SLD 7	176	-669	5971	11.16	61.12	-2.99
511	SLD 8	207	-611	5995	10.88	60.17	-1.24
511	SLD 9	-108	550	8211	-11.6	15.06	-0.38
511	SLD 10	-76	608	8235	-11.88	14.11	1.37
511	SLD 11	-206	-695	6369	11.26	56.51	-4.69
511	SLD 12	-174	-637	6393	10.98	55.56	-2.94
511	SLD 13	-595	69	8024	-3.4	24.43	-4.33
511	SLD 14	-547	157	8061	-3.83	23	-1.67
511	SLD 15	-624	-304	7471	3.46	36.87	-5.62
511	SLD 16	-576	-217	7508	3.03	35.43	-2.96
511	SLV 1	1516	435	6201	-8.87	41.7	4.35
511	SLV 2	1629	640	6288	-9.87	38.32	10.59

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
511	SLV 3	1442	-498	4815	8.33	72.83	1.06
511	SLV 4	1555	-293	4902	7.33	69.45	7.3
511	SLV 5	581	1485	8919	-28.81	-7.74	4.56
511	SLV 6	657	1623	8977	-29.48	-10.02	8.77
511	SLV 7	334	-1623	4298	28.52	96.03	-6.41
511	SLV 8	410	-1485	4356	27.84	93.75	-2.2
511	SLV 9	-310	1424	9850	-28.56	-18.52	0.58
511	SLV 10	-235	1562	9908	-29.24	-20.79	4.78
511	SLV 11	-558	-1684	5229	28.76	85.25	-10.39
511	SLV 12	-482	-1546	5287	28.08	82.98	-6.18
511	SLV 13	-1455	232	9304	-8.05	5.78	-8.92
511	SLV 14	-1343	437	9391	-9.05	2.4	-2.68
511	SLV 15	-1529	-700	7918	9.15	36.91	-12.21
511	SLV 16	-1417	-495	8004	8.15	33.53	-5.97
511	CRTFP Ux+	0	0	0	0	0	0
511	CRTFP Ux-	0	0	0	0	0	0
511	CRTFP Uy+	0	0	0	0	0	0
511	CRTFP Uy-	0	0	0	0	0	0
514	SLU 1	37	22	4017	5.22	982.5	-7.71
514	SLU 2	38	45	4042	4.98	983.37	-15.89
514	SLU 3	38	22	4102	5.41	1003.49	-7.93
514	SLU 4	38	36	4117	5.26	1004.02	-12.84
514	SLU 5	38	46	4096	5.1	996.89	-16.21
514	SLU 6	38	23	4156	5.54	1017.01	-8.25
514	SLU 7	39	37	4171	5.39	1017.53	-13.16
514	SLU 8	38	23	4125	5.48	1009.53	-8.34
514	SLU 9	39	37	4141	5.33	1010.06	-13.25
514	SLU 10	38	48	4524	5.68	1099.38	-16.87
514	SLU 11	38	25	4584	6.11	1119.5	-8.92
514	SLU 12	38	39	4599	5.97	1120.03	-13.82
514	SLU 13	39	49	4578	5.81	1112.9	-17.19
514	SLU 14	38	26	4638	6.24	1133.02	-9.23
514	SLU 15	39	40	4653	6.1	1133.55	-14.14
514	SLU 16	38	26	4607	6.18	1125.54	-9.32
514	SLU 17	39	40	4622	6.04	1126.07	-14.23
514	SLU 18	37	26	4705	6.23	1148.23	-9.11
514	SLU 19	38	40	4720	6.08	1148.75	-14.02
514	SLU 20	38	26	4759	6.36	1161.74	-9.43
514	SLU 21	38	40	4775	6.21	1162.27	-14.33
514	SLU 22	40	22	4594	6.24	1123.53	-7.82
514	SLU 23	41	45	4619	6	1124.41	-16.01
514	SLU 24	41	22	4679	6.43	1144.53	-8.05
514	SLU 25	41	37	4694	6.28	1145.05	-12.96
514	SLU 26	41	46	4674	6.13	1137.93	-16.32
514	SLU 27	41	23	4733	6.56	1158.04	-8.37
514	SLU 28	41	37	4749	6.41	1158.57	-13.28
514	SLU 29	41	24	4703	6.5	1150.57	-8.46
514	SLU 30	41	38	4718	6.35	1151.09	-13.37
514	SLU 31	41	48	5101	6.7	1240.42	-16.99
514	SLU 32	41	25	5161	7.14	1260.54	-9.03
514	SLU 33	41	39	5176	6.99	1261.06	-13.94
514	SLU 34	41	49	5155	6.83	1253.94	-17.3
514	SLU 35	41	26	5215	7.26	1274.06	-9.35
514	SLU 36	41	40	5230	7.12	1274.58	-14.26
514	SLU 37	41	26	5184	7.2	1266.58	-9.44
514	SLU 38	41	40	5200	7.06	1267.11	-14.35
514	SLU 39	40	26	5283	7.25	1289.26	-9.23
514	SLU 40	40	40	5298	7.1	1289.79	-14.14
514	SLU 41	40	27	5337	7.38	1302.78	-9.54
514	SLU 42	41	41	5352	7.23	1303.31	-14.45
514	SLU 43	48	28	5024	6.43	1228.89	-9.98
514	SLU 44	48	51	5049	6.19	1229.77	-18.16
514	SLU 45	48	29	5109	6.62	1249.88	-10.21
514	SLU 46	49	43	5124	6.48	1250.41	-15.12
514	SLU 47	49	52	5104	6.32	1243.28	-18.48
514	SLU 48	49	29	5163	6.75	1263.4	-10.52
514	SLU 49	49	43	5179	6.61	1263.93	-15.43
514	SLU 50	48	30	5133	6.69	1255.93	-10.61
514	SLU 51	49	44	5148	6.55	1256.45	-15.52
514	SLU 52	48	54	5531	6.9	1345.78	-19.14
514	SLU 53	48	31	5591	7.33	1365.9	-11.19
514	SLU 54	49	45	5606	7.18	1366.42	-16.1
514	SLU 55	49	55	5585	7.03	1359.3	-19.46
514	SLU 56	49	32	5645	7.46	1379.41	-11.5
514	SLU 57	49	46	5660	7.31	1379.94	-16.41
514	SLU 58	48	32	5614	7.4	1371.94	-11.59
514	SLU 59	49	47	5630	7.25	1372.46	-16.5
514	SLU 60	48	32	5712	7.44	1394.62	-11.38
514	SLU 61	48	46	5728	7.3	1395.15	-16.29
514	SLU 62	48	33	5767	7.57	1408.14	-11.7
514	SLU 63	48	47	5782	7.43	1408.66	-16.61
514	SLU 64	50	28	5602	7.46	1369.93	-10.1
514	SLU 65	51	52	5627	7.21	1370.8	-18.28
514	SLU 66	51	29	5687	7.64	1390.92	-10.32
514	SLU 67	51	43	5702	7.5	1391.45	-15.23
514	SLU 68	51	53	5681	7.34	1384.32	-18.6
514	SLU 69	51	30	5741	7.77	1404.44	-10.64
514	SLU 70	52	44	5756	7.63	1404.96	-15.55
514	SLU 71	51	30	5710	7.71	1396.96	-10.73

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
514	SLU 72	51	44	5725	7.57	1397.49	-15.64
514	SLU 73	51	54	6108	7.92	1486.81	-19.26
514	SLU 74	51	32	6168	8.35	1506.93	-11.3
514	SLU 75	51	46	6183	8.2	1507.46	-16.21
514	SLU 76	51	55	6163	8.05	1500.33	-19.58
514	SLU 77	51	33	6222	8.48	1520.45	-11.62
514	SLU 78	52	47	6238	8.33	1520.97	-16.53
514	SLU 79	51	33	6192	8.42	1512.97	-11.71
514	SLU 80	51	47	6207	8.27	1513.5	-16.62
514	SLU 81	50	32	6290	8.47	1535.66	-11.5
514	SLU 82	51	46	6305	8.32	1536.18	-16.41
514	SLU 83	51	33	6344	8.59	1549.17	-11.81
514	SLU 84	51	47	6359	8.45	1549.7	-16.72
514	SLE RA 1	38	22	4182	5.51	1022.79	-7.74
514	SLE RA 2	39	37	4199	5.35	1023.38	-13.2
514	SLE RA 3	38	22	4239	5.64	1036.79	-7.89
514	SLE RA 4	39	31	4249	5.54	1037.14	-11.16
514	SLE RA 5	39	38	4235	5.43	1032.39	-13.41
514	SLE RA 6	39	23	4275	5.72	1045.8	-8.1
514	SLE RA 7	39	32	4285	5.63	1046.15	-11.38
514	SLE RA 8	39	23	4254	5.68	1040.82	-8.16
514	SLE RA 9	39	32	4264	5.59	1041.17	-11.44
514	SLE RA 10	39	39	4520	5.82	1100.72	-13.85
514	SLE RA 11	38	24	4560	6.11	1114.13	-8.55
514	SLE RA 12	39	33	4570	6.01	1114.48	-11.82
514	SLE RA 13	39	40	4556	5.91	1109.73	-14.06
514	SLE RA 14	39	25	4596	6.19	1123.14	-8.76
514	SLE RA 15	39	34	4606	6.1	1123.49	-12.03
514	SLE RA 16	39	25	4575	6.15	1118.16	-8.82
514	SLE RA 17	39	34	4585	6.06	1118.51	-12.09
514	SLE RA 18	38	24	4641	6.18	1133.28	-8.68
514	SLE RA 19	38	34	4651	6.09	1133.63	-11.95
514	SLE RA 20	38	25	4677	6.27	1142.29	-8.89
514	SLE RA 21	39	34	4687	6.17	1142.64	-12.16
514	SLE FR 1	38	22	4182	5.51	1022.79	-7.74
514	SLE FR 2	38	25	4185	5.48	1022.91	-8.83
514	SLE FR 3	38	22	4196	5.55	1026.4	-7.83
514	SLE FR 4	38	26	4323	5.68	1056.06	-9.11
514	SLE FR 5	38	23	4334	5.75	1059.54	-8.11
514	SLE FR 6	38	23	4411	5.85	1078.04	-8.21
514	SLE QP 1	38	22	4182	5.51	1022.79	-7.74
514	SLE QP 2	38	22	4320	5.71	1055.94	-8.02
514	SLD 1	396	128	3275	2.62	797.64	-44.92
514	SLD 2	423	255	3303	2.27	797.47	-89.11
514	SLD 3	379	-142	2933	6.08	784.08	49.48
514	SLD 4	406	-15	2961	5.74	783.91	5.28
514	SLD 5	166	441	4520	-0.41	999.05	-154.31
514	SLD 6	184	524	4538	-0.64	998.93	-183.47
514	SLD 7	110	-459	3381	11.14	953.85	160.34
514	SLD 8	127	-375	3399	10.91	953.73	131.19
514	SLD 9	-52	420	5240	0.51	1158.15	-147.23
514	SLD 10	-34	504	5259	0.28	1158.03	-176.39
514	SLD 11	-108	-479	4101	12.06	1112.94	167.42
514	SLD 12	-90	-396	4120	11.84	1112.83	138.27
514	SLD 13	-330	60	5678	5.69	1327.97	-21.33
514	SLD 14	-303	187	5706	5.34	1327.8	-65.52
514	SLD 15	-347	-210	5336	9.15	1314.41	73.07
514	SLD 16	-320	-83	5364	8.81	1314.24	28.88
514	SLV 1	877	291	1904	-1.83	452.51	-101.67
514	SLV 2	941	589	1969	-2.63	452.1	-205.55
514	SLV 3	835	-384	1047	6.87	418.67	134.12
514	SLV 4	898	-85	1112	6.06	418.26	30.23
514	SLV 5	343	1070	4882	-9.58	926.3	-374.34
514	SLV 6	386	1271	4926	-10.13	926.03	-444.28
514	SLV 7	200	-1178	2027	19.39	813.51	411.62
514	SLV 8	243	-977	2070	18.85	813.24	341.68
514	SLV 9	-167	1022	6569	-7.43	1298.64	-357.72
514	SLV 10	-124	1222	6613	-7.97	1298.36	-427.66
514	SLV 11	-310	-1226	3714	21.55	1185.85	428.24
514	SLV 12	-267	-1025	3757	21.01	1185.57	358.3
514	SLV 13	-822	130	7527	5.36	1693.62	-46.28
514	SLV 14	-759	429	7592	4.56	1693.21	-150.16
514	SLV 15	-865	-544	6671	14.06	1659.78	189.51
514	SLV 16	-802	-246	6736	13.25	1659.37	85.63
514	CRTFP Ux+	0	0	0	0	0	0
514	CRTFP Ux-	0	0	0	0	0	0
514	CRTFP Uy+	0	0	0	0	0	0
514	CRTFP Uy-	0	0	0	0	0	0
517	SLU 1	29	-41	2894	0.37	1123.74	16.54
517	SLU 2	30	-26	2904	0.26	1127.27	10.55
517	SLU 3	29	-42	2952	0.41	1146.08	16.84
517	SLU 4	30	-33	2958	0.34	1148.2	13.25
517	SLU 5	30	-27	2940	0.29	1141.34	10.74
517	SLU 6	30	-43	2988	0.44	1160.16	17.04
517	SLU 7	30	-34	2994	0.37	1162.27	13.44
517	SLU 8	30	-42	2966	0.43	1151.89	16.93
517	SLU 9	30	-33	2973	0.36	1154.01	13.33
517	SLU 10	33	-32	3287	0.32	1277.96	12.82
517	SLU 11	32	-48	3335	0.47	1296.77	19.11

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
517	SLU 12	33	-39	3341	0.4	1298.89	15.51
517	SLU 13	33	-32	3324	0.35	1292.03	13.01
517	SLU 14	33	-48	3371	0.49	1310.85	19.3
517	SLU 15	33	-39	3377	0.43	1312.96	15.71
517	SLU 16	33	-48	3350	0.48	1302.58	19.2
517	SLU 17	33	-39	3356	0.42	1304.7	15.6
517	SLU 18	33	-49	3442	0.45	1339.01	19.78
517	SLU 19	34	-40	3448	0.39	1341.13	16.18
517	SLU 20	34	-50	3478	0.48	1353.09	19.97
517	SLU 21	34	-41	3484	0.42	1355.2	16.38
517	SLU 22	33	-47	3306	0.55	1283.53	18.62
517	SLU 23	33	-32	3317	0.44	1287.05	12.62
517	SLU 24	33	-47	3364	0.59	1305.87	18.91
517	SLU 25	34	-38	3370	0.53	1307.98	15.32
517	SLU 26	34	-32	3353	0.47	1301.13	12.82
517	SLU 27	34	-48	3400	0.62	1319.94	19.11
517	SLU 28	34	-39	3407	0.55	1322.06	15.51
517	SLU 29	33	-47	3379	0.61	1311.68	19
517	SLU 30	34	-38	3385	0.54	1313.79	15.41
517	SLU 31	36	-37	3700	0.5	1437.74	14.89
517	SLU 32	36	-53	3748	0.65	1456.56	21.18
517	SLU 33	37	-44	3754	0.58	1458.67	17.59
517	SLU 34	37	-38	3736	0.53	1451.82	15.08
517	SLU 35	37	-53	3784	0.68	1470.63	21.37
517	SLU 36	37	-44	3790	0.61	1472.75	17.78
517	SLU 37	36	-53	3762	0.66	1462.37	21.27
517	SLU 38	37	-44	3768	0.6	1464.48	17.67
517	SLU 39	37	-55	3854	0.63	1498.8	21.85
517	SLU 40	37	-46	3860	0.57	1500.92	18.26
517	SLU 41	37	-55	3890	0.66	1512.87	22.05
517	SLU 42	38	-46	3896	0.6	1514.99	18.45
517	SLU 43	36	-52	3621	0.42	1406.08	20.8
517	SLU 44	37	-37	3631	0.31	1409.61	14.8
517	SLU 45	37	-53	3679	0.46	1428.42	21.09
517	SLU 46	37	-44	3685	0.39	1430.54	17.5
517	SLU 47	37	-37	3667	0.34	1423.68	15
517	SLU 48	37	-53	3715	0.48	1442.49	21.29
517	SLU 49	37	-44	3721	0.42	1444.61	17.69
517	SLU 50	37	-53	3693	0.47	1434.23	21.18
517	SLU 51	37	-44	3699	0.41	1436.35	17.59
517	SLU 52	40	-43	4014	0.37	1560.3	17.07
517	SLU 53	40	-58	4062	0.51	1579.11	23.36
517	SLU 54	40	-49	4068	0.45	1581.23	19.77
517	SLU 55	40	-43	4051	0.4	1574.37	17.26
517	SLU 56	40	-59	4098	0.54	1593.18	23.55
517	SLU 57	40	-50	4104	0.48	1595.3	19.96
517	SLU 58	40	-59	4077	0.53	1584.92	23.45
517	SLU 59	40	-50	4083	0.47	1587.04	19.85
517	SLU 60	41	-60	4168	0.5	1621.35	24.03
517	SLU 61	41	-51	4174	0.44	1623.47	20.44
517	SLU 62	41	-61	4205	0.53	1635.43	24.23
517	SLU 63	41	-52	4211	0.47	1637.54	20.63
517	SLU 64	40	-57	4033	0.6	1565.87	22.87
517	SLU 65	41	-42	4043	0.49	1569.39	16.87
517	SLU 66	41	-58	4091	0.64	1588.21	23.17
517	SLU 67	41	-49	4097	0.57	1590.32	19.57
517	SLU 68	41	-43	4080	0.52	1583.47	17.07
517	SLU 69	41	-58	4127	0.67	1602.28	23.36
517	SLU 70	41	-49	4133	0.6	1604.4	19.76
517	SLU 71	41	-58	4106	0.65	1594.02	23.25
517	SLU 72	41	-49	4112	0.59	1596.13	19.66
517	SLU 73	44	-48	4427	0.55	1720.08	19.14
517	SLU 74	44	-64	4474	0.69	1738.9	25.43
517	SLU 75	44	-55	4480	0.63	1741.01	21.84
517	SLU 76	44	-48	4463	0.58	1734.16	19.33
517	SLU 77	44	-64	4511	0.72	1752.97	25.63
517	SLU 78	44	-55	4517	0.66	1755.09	22.03
517	SLU 79	44	-64	4489	0.71	1744.71	25.52
517	SLU 80	44	-55	4495	0.65	1746.82	21.92
517	SLU 81	45	-65	4581	0.68	1781.14	26.11
517	SLU 82	45	-56	4587	0.62	1783.25	22.51
517	SLU 83	45	-66	4617	0.71	1795.21	26.3
517	SLU 84	45	-57	4623	0.65	1797.33	22.7
517	SLE RA 1	30	-43	3012	0.42	1169.4	17.14
517	SLE RA 2	30	-33	3019	0.35	1171.75	13.14
517	SLE RA 3	30	-43	3050	0.45	1184.29	17.33
517	SLE RA 4	31	-37	3054	0.4	1185.7	14.94
517	SLE RA 5	31	-33	3043	0.37	1181.13	13.27
517	SLE RA 6	31	-44	3075	0.47	1193.67	17.46
517	SLE RA 7	31	-38	3079	0.42	1195.08	15.07
517	SLE RA 8	30	-43	3060	0.46	1188.16	17.39
517	SLE RA 9	31	-37	3064	0.42	1189.57	15
517	SLE RA 10	32	-37	3274	0.39	1272.21	14.65
517	SLE RA 11	32	-47	3306	0.48	1284.75	18.85
517	SLE RA 12	33	-41	3310	0.44	1286.16	16.45
517	SLE RA 13	33	-37	3298	0.41	1281.59	14.78
517	SLE RA 14	33	-47	3330	0.5	1294.13	18.97
517	SLE RA 15	33	-41	3334	0.46	1295.54	16.58
517	SLE RA 16	32	-47	3316	0.5	1288.62	18.9

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
517	SLE RA 17	33	-41	3320	0.45	1290.03	16.51
517	SLE RA 18	33	-48	3377	0.47	1312.91	19.29
517	SLE RA 19	33	-42	3381	0.43	1314.32	16.9
517	SLE RA 20	33	-49	3401	0.49	1322.29	19.42
517	SLE RA 21	33	-43	3405	0.45	1323.7	17.03
517	SLE FR 1	30	-43	3012	0.42	1169.4	17.14
517	SLE FR 2	30	-41	3013	0.41	1169.87	16.34
517	SLE FR 3	30	-43	3021	0.43	1173.15	17.19
517	SLE FR 4	31	-42	3123	0.42	1212.92	16.98
517	SLE FR 5	31	-45	3131	0.44	1216.2	17.83
517	SLE FR 6	32	-46	3194	0.45	1241.15	18.21
517	SLE QP 1	30	-43	3012	0.42	1169.4	17.14
517	SLE QP 2	31	-44	3121	0.44	1212.45	17.78
517	SLD 1	285	56	3245	-0.06	1260.01	-22.36
517	SLD 2	303	59	3249	-0.08	1260.8	-23.39
517	SLD 3	274	-128	3112	1.33	1213.46	51.14
517	SLD 4	292	-125	3116	1.31	1214.25	50.11
517	SLD 5	121	264	3360	-1.81	1297.18	-105.56
517	SLD 6	133	266	3363	-1.83	1297.7	-106.24
517	SLD 7	84	-349	2916	2.82	1142.01	139.46
517	SLD 8	96	-347	2918	2.8	1142.53	138.78
517	SLD 9	-34	258	3324	-1.93	1282.37	-103.21
517	SLD 10	-22	260	3327	-1.94	1282.89	-103.89
517	SLD 11	-71	-355	2880	2.7	1127.2	141.8
517	SLD 12	-59	-353	2883	2.69	1127.72	141.13
517	SLD 13	-230	36	3126	-0.43	1210.65	-14.55
517	SLD 14	-212	39	3130	-0.46	1211.44	-15.58
517	SLD 15	-242	-148	2993	0.95	1164.1	58.96
517	SLD 16	-224	-145	2997	0.93	1164.89	57.93
517	SLV 1	627	204	3423	-0.84	1327.65	-81.79
517	SLV 2	670	211	3432	-0.89	1329.52	-84.21
517	SLV 3	599	-254	3089	2.65	1210.86	101.5
517	SLV 4	641	-247	3098	2.59	1212.73	99.08
517	SLV 5	245	724	3717	-5.21	1423.8	-289.64
517	SLV 6	274	729	3723	-5.25	1425.05	-291.27
517	SLV 7	150	-804	2603	6.39	1034.49	321.35
517	SLV 8	179	-799	2609	6.35	1035.75	319.72
517	SLV 9	-117	710	3634	-5.48	1389.15	-284.16
517	SLV 10	-89	715	3640	-5.52	1390.41	-285.79
517	SLV 11	-212	-817	2519	6.12	999.85	326.83
517	SLV 12	-183	-813	2526	6.09	1001.1	325.2
517	SLV 13	-579	159	3145	-1.72	1212.17	-63.52
517	SLV 14	-537	165	3154	-1.77	1214.04	-65.94
517	SLV 15	-608	-300	2810	1.76	1095.38	119.78
517	SLV 16	-565	-293	2820	1.71	1097.24	117.36
517	CRTFP Ux+	0	0	0	0	0	0
517	CRTFP Ux-	0	0	0	0	0	0
517	CRTFP Uy+	0	0	0	0	0	0
517	CRTFP Uy-	0	0	0	0	0	0
519	SLU 1	-281	-111	10276	-15.64	-6.53	-14.99
519	SLU 2	-281	-43	10280	-22.24	-6.18	-15.32
519	SLU 3	-287	-113	10493	-13.33	-6.7	-15.36
519	SLU 4	-287	-72	10495	-17.3	-6.5	-15.56
519	SLU 5	-285	-45	10418	-20.69	-6.3	-15.58
519	SLU 6	-290	-114	10630	-11.78	-6.82	-15.62
519	SLU 7	-290	-74	10633	-15.75	-6.62	-15.81
519	SLU 8	-288	-114	10551	-12.54	-6.77	-15.5
519	SLU 9	-288	-73	10553	-16.5	-6.56	-15.7
519	SLU 10	-309	-61	11631	-19.23	-7.39	-16.58
519	SLU 11	-314	-130	11843	-10.32	-7.91	-16.61
519	SLU 12	-314	-89	11845	-14.28	-7.71	-16.81
519	SLU 13	-312	-62	11768	-17.68	-7.51	-16.83
519	SLU 14	-318	-132	11980	-8.77	-8.03	-16.87
519	SLU 15	-318	-91	11983	-12.74	-7.83	-17.07
519	SLU 16	-316	-131	11901	-9.53	-7.98	-16.75
519	SLU 17	-316	-90	11904	-13.49	-7.77	-16.95
519	SLU 18	-320	-136	12205	-11.33	-8.26	-16.78
519	SLU 19	-320	-95	12208	-15.3	-8.05	-16.98
519	SLU 20	-324	-137	12342	-9.78	-8.38	-17.04
519	SLU 21	-324	-96	12345	-13.75	-8.17	-17.23
519	SLU 22	-316	-124	11787	-4.82	-7.36	-17.01
519	SLU 23	-316	-56	11791	-11.43	-7.02	-17.34
519	SLU 24	-322	-126	12003	-2.52	-7.54	-17.38
519	SLU 25	-322	-85	12006	-6.48	-7.33	-17.58
519	SLU 26	-320	-57	11928	-9.88	-7.14	-17.59
519	SLU 27	-326	-127	12141	-0.97	-7.65	-17.63
519	SLU 28	-326	-86	12143	-4.93	-7.45	-17.83
519	SLU 29	-324	-126	12061	-1.72	-7.6	-17.52
519	SLU 30	-324	-86	12064	-5.69	-7.39	-17.71
519	SLU 31	-344	-73	13141	-8.41	-8.23	-18.59
519	SLU 32	-350	-143	13354	0.49	-8.74	-18.63
519	SLU 33	-350	-102	13356	-3.47	-8.54	-18.83
519	SLU 34	-348	-74	13278	-6.87	-8.35	-18.85
519	SLU 35	-353	-144	13491	2.04	-8.86	-18.88
519	SLU 36	-353	-103	13493	-1.92	-8.66	-19.08
519	SLU 37	-351	-144	13412	1.29	-8.81	-18.77
519	SLU 38	-351	-103	13414	-2.67	-8.6	-18.97
519	SLU 39	-356	-148	13716	-0.52	-9.09	-18.8
519	SLU 40	-356	-108	13718	-4.48	-8.88	-19

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
519	SLU 41	-359	-150	13853	1.03	-9.21	-19.05
519	SLU 42	-359	-109	13855	-2.93	-9	-19.25
519	SLU 43	-353	-140	12841	-24.03	-8.2	-18.8
519	SLU 44	-353	-72	12845	-30.64	-7.86	-19.13
519	SLU 45	-359	-142	13058	-21.73	-8.38	-19.17
519	SLU 46	-359	-101	13060	-25.69	-8.17	-19.37
519	SLU 47	-357	-74	12983	-29.09	-7.98	-19.38
519	SLU 48	-363	-143	13195	-20.18	-8.5	-19.42
519	SLU 49	-363	-103	13198	-24.14	-8.29	-19.62
519	SLU 50	-360	-143	13116	-20.93	-8.44	-19.31
519	SLU 51	-360	-102	13118	-24.9	-8.23	-19.5
519	SLU 52	-381	-90	14196	-27.63	-9.07	-20.38
519	SLU 53	-386	-159	14408	-18.72	-9.59	-20.42
519	SLU 54	-386	-118	14410	-22.68	-9.38	-20.62
519	SLU 55	-384	-91	14333	-26.08	-9.19	-20.64
519	SLU 56	-390	-161	14545	-17.17	-9.7	-20.67
519	SLU 57	-390	-120	14548	-21.13	-9.5	-20.87
519	SLU 58	-388	-160	14466	-17.92	-9.65	-20.56
519	SLU 59	-388	-119	14469	-21.89	-9.44	-20.76
519	SLU 60	-392	-165	14770	-19.73	-9.93	-20.59
519	SLU 61	-392	-124	14773	-23.69	-9.72	-20.79
519	SLU 62	-396	-166	14907	-18.18	-10.05	-20.84
519	SLU 63	-396	-125	14910	-22.14	-9.84	-21.04
519	SLU 64	-388	-153	14352	-13.22	-9.03	-20.82
519	SLU 65	-389	-85	14356	-19.82	-8.69	-21.15
519	SLU 66	-394	-155	14568	-10.92	-9.21	-21.19
519	SLU 67	-394	-114	14571	-14.88	-9	-21.38
519	SLU 68	-392	-86	14493	-18.27	-8.81	-21.4
519	SLU 69	-398	-156	14706	-9.37	-9.33	-21.44
519	SLU 70	-398	-115	14708	-13.33	-9.12	-21.64
519	SLU 71	-396	-156	14626	-10.12	-9.27	-21.32
519	SLU 72	-396	-115	14629	-14.08	-9.07	-21.52
519	SLU 73	-416	-102	15706	-16.81	-9.9	-22.4
519	SLU 74	-422	-172	15919	-7.91	-10.42	-22.44
519	SLU 75	-422	-131	15921	-11.87	-10.21	-22.64
519	SLU 76	-420	-104	15843	-15.26	-10.02	-22.65
519	SLU 77	-425	-173	16056	-6.36	-10.54	-22.69
519	SLU 78	-426	-132	16058	-10.32	-10.33	-22.89
519	SLU 79	-423	-173	15977	-7.11	-10.48	-22.58
519	SLU 80	-423	-132	15979	-11.07	-10.28	-22.77
519	SLU 81	-428	-177	16281	-8.92	-10.76	-22.61
519	SLU 82	-428	-137	16283	-12.88	-10.56	-22.8
519	SLU 83	-431	-179	16418	-7.37	-10.88	-22.86
519	SLU 84	-431	-138	16420	-11.33	-10.67	-23.06
519	SLE RA 1	-291	-115	10708	-12.55	-6.77	-15.57
519	SLE RA 2	-291	-70	10711	-16.95	-6.54	-15.79
519	SLE RA 3	-295	-116	10852	-11.01	-6.88	-15.82
519	SLE RA 4	-295	-89	10854	-13.65	-6.74	-15.95
519	SLE RA 5	-294	-70	10802	-15.92	-6.62	-15.96
519	SLE RA 6	-297	-117	10944	-9.98	-6.96	-15.98
519	SLE RA 7	-297	-90	10945	-12.62	-6.82	-16.12
519	SLE RA 8	-296	-117	10891	-10.48	-6.93	-15.91
519	SLE RA 9	-296	-89	10893	-13.12	-6.79	-16.04
519	SLE RA 10	-309	-81	11611	-14.94	-7.34	-16.63
519	SLE RA 11	-313	-127	11752	-9	-7.69	-16.65
519	SLE RA 12	-313	-100	11754	-11.65	-7.55	-16.78
519	SLE RA 13	-312	-82	11702	-13.91	-7.42	-16.79
519	SLE RA 14	-316	-128	11844	-7.97	-7.77	-16.82
519	SLE RA 15	-316	-101	11846	-10.61	-7.63	-16.95
519	SLE RA 16	-314	-128	11791	-8.47	-7.73	-16.74
519	SLE RA 17	-314	-101	11793	-11.11	-7.59	-16.87
519	SLE RA 18	-317	-131	11994	-9.68	-7.92	-16.76
519	SLE RA 19	-317	-104	11995	-12.32	-7.78	-16.9
519	SLE RA 20	-320	-132	12085	-8.65	-8	-16.93
519	SLE RA 21	-320	-105	12087	-11.29	-7.86	-17.06
519	SLE FR 1	-291	-115	10708	-12.55	-6.77	-15.57
519	SLE FR 2	-291	-106	10708	-13.43	-6.72	-15.61
519	SLE FR 3	-292	-115	10745	-12.13	-6.8	-15.64
519	SLE FR 4	-299	-111	11094	-12.57	-7.07	-15.97
519	SLE FR 5	-300	-120	11130	-11.27	-7.14	-16
519	SLE FR 6	-304	-123	11351	-11.11	-7.34	-16.17
519	SLE QP 1	-291	-115	10708	-12.55	-6.77	-15.57
519	SLE QP 2	-299	-120	11094	-11.69	-7.11	-15.93
519	SLD 1	914	356	10799	-53.21	-1.88	11.27
519	SLD 2	989	308	10782	-52.65	-1.95	23.37
519	SLD 3	937	-485	10726	36.42	-6.19	18.35
519	SLD 4	1013	-533	10709	36.99	-6.26	30.45
519	SLD 5	16	1307	11118	-160.19	1.01	-20.68
519	SLD 6	66	1275	11107	-159.81	0.96	-12.7
519	SLD 7	94	-1495	10876	138.58	-13.36	2.91
519	SLD 8	144	-1527	10865	138.96	-13.41	10.9
519	SLD 9	-742	1288	11322	-162.33	-0.81	-42.75
519	SLD 10	-692	1256	11311	-161.96	-0.86	-34.77
519	SLD 11	-663	-1514	11080	136.44	-15.18	-19.16
519	SLD 12	-614	-1546	11069	136.82	-15.23	-11.18
519	SLD 13	-1611	294	11478	-60.36	-7.96	-62.31
519	SLD 14	-1535	245	11461	-59.79	-8.03	-50.21
519	SLD 15	-1587	-547	11405	29.28	-12.27	-55.23
519	SLD 16	-1512	-595	11388	29.84	-12.35	-43.13

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
519	SLV 1	2537	1058	10408	-116.31	5.48	47.19
519	SLV 2	2715	944	10368	-114.97	5.3	75.64
519	SLV 3	2593	-1038	10231	108.34	-5.3	64.63
519	SLV 4	2771	-1152	10191	109.67	-5.48	93.07
519	SLV 5	433	3433	11164	-384.03	13.04	-28.74
519	SLV 6	553	3356	11137	-383.13	12.92	-9.59
519	SLV 7	621	-3552	10574	364.78	-22.88	29.37
519	SLV 8	741	-3629	10547	365.68	-23	48.52
519	SLV 9	-1339	3389	11640	-389.05	8.77	-80.38
519	SLV 10	-1219	3313	11614	-388.15	8.65	-61.23
519	SLV 11	-1150	-3596	11050	359.76	-27.14	-22.27
519	SLV 12	-1031	-3673	11024	360.66	-27.26	-3.12
519	SLV 13	-3369	912	11997	-133.04	-8.75	-124.93
519	SLV 14	-3191	798	11957	-131.71	-8.93	-96.48
519	SLV 15	-3312	-1183	11820	91.6	-19.52	-107.49
519	SLV 16	-3135	-1297	11780	92.93	-19.7	-79.05
519	CRTFP Ux+	0	0	0	0	0	0
519	CRTFP Ux-	0	0	0	0	0	0
519	CRTFP Uy+	0	0	0	0	0	0
519	CRTFP Uy-	0	0	0	0	0	0
522	SLU 1	-53	46	3667	4.78	-676.12	11.54
522	SLU 2	-54	69	3685	4.6	-676.7	17.22
522	SLU 3	-54	46	3742	4.93	-690.28	11.61
522	SLU 4	-55	60	3753	4.82	-690.63	15.02
522	SLU 5	-55	69	3731	4.69	-685.51	17.26
522	SLU 6	-55	46	3789	5.02	-699.08	11.66
522	SLU 7	-56	60	3799	4.91	-699.44	15.06
522	SLU 8	-54	46	3760	4.96	-693.73	11.63
522	SLU 9	-55	60	3771	4.86	-694.08	15.04
522	SLU 10	-57	75	4129	5.24	-758.53	18.81
522	SLU 11	-57	53	4186	5.57	-772.1	13.21
522	SLU 12	-57	66	4197	5.46	-772.45	16.61
522	SLU 13	-57	75	4175	5.34	-767.34	18.85
522	SLU 14	-57	53	4233	5.67	-780.91	13.25
522	SLU 15	-58	66	4244	5.56	-781.26	16.66
522	SLU 16	-57	53	4204	5.61	-775.56	13.22
522	SLU 17	-57	66	4215	5.5	-775.91	16.63
522	SLU 18	-56	55	4301	5.7	-793.01	13.82
522	SLU 19	-57	69	4312	5.59	-793.36	17.22
522	SLU 20	-57	55	4348	5.8	-801.82	13.86
522	SLU 21	-58	69	4359	5.69	-802.17	17.27
522	SLU 22	-58	50	4203	5.69	-775.96	12.48
522	SLU 23	-59	72	4221	5.51	-776.54	18.16
522	SLU 24	-59	50	4278	5.83	-790.11	12.56
522	SLU 25	-60	64	4289	5.73	-790.46	15.96
522	SLU 26	-60	73	4267	5.6	-785.35	18.21
522	SLU 27	-60	50	4325	5.93	-798.92	12.6
522	SLU 28	-60	64	4336	5.82	-799.27	16.01
522	SLU 29	-59	50	4296	5.87	-793.57	12.58
522	SLU 30	-60	64	4307	5.76	-793.92	15.98
522	SLU 31	-61	79	4665	6.15	-858.37	19.76
522	SLU 32	-61	56	4722	6.48	-871.94	14.15
522	SLU 33	-62	70	4733	6.37	-872.29	17.56
522	SLU 34	-62	79	4712	6.25	-867.17	19.8
522	SLU 35	-62	57	4769	6.57	-880.75	14.2
522	SLU 36	-63	70	4780	6.47	-881.1	17.6
522	SLU 37	-62	56	4740	6.52	-875.4	14.17
522	SLU 38	-62	70	4751	6.41	-875.75	17.58
522	SLU 39	-61	59	4837	6.61	-892.85	14.76
522	SLU 40	-62	72	4848	6.5	-893.2	18.17
522	SLU 41	-62	59	4884	6.7	-901.66	14.81
522	SLU 42	-63	73	4895	6.6	-902.01	18.21
522	SLU 43	-67	58	4583	5.9	-844.73	14.68
522	SLU 44	-69	81	4601	5.72	-845.31	20.35
522	SLU 45	-68	59	4658	6.05	-858.88	14.75
522	SLU 46	-69	72	4669	5.94	-859.23	18.16
522	SLU 47	-69	81	4647	5.81	-854.12	20.4
522	SLU 48	-69	59	4705	6.14	-867.69	14.8
522	SLU 49	-70	73	4716	6.03	-868.04	18.2
522	SLU 50	-69	59	4676	6.09	-862.34	14.77
522	SLU 51	-69	72	4687	5.98	-862.69	18.17
522	SLU 52	-71	88	5045	6.37	-927.14	21.95
522	SLU 53	-71	65	5102	6.69	-940.71	16.34
522	SLU 54	-71	79	5113	6.59	-941.06	19.75
522	SLU 55	-71	88	5092	6.46	-935.94	21.99
522	SLU 56	-71	65	5149	6.79	-949.52	16.39
522	SLU 57	-72	79	5160	6.68	-949.87	19.8
522	SLU 58	-71	65	5121	6.73	-944.17	16.36
522	SLU 59	-72	79	5131	6.63	-944.52	19.77
522	SLU 60	-71	68	5217	6.82	-961.62	16.95
522	SLU 61	-71	81	5228	6.72	-961.97	20.36
522	SLU 62	-71	68	5264	6.92	-970.43	17
522	SLU 63	-72	81	5275	6.81	-970.78	20.4
522	SLU 64	-72	62	5119	6.81	-944.56	15.62
522	SLU 65	-73	85	5137	6.63	-945.15	21.3
522	SLU 66	-73	63	5194	6.96	-958.72	15.7
522	SLU 67	-74	76	5205	6.85	-959.07	19.1
522	SLU 68	-74	85	5184	6.72	-953.95	21.34
522	SLU 69	-74	63	5241	7.05	-967.53	15.74

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
522	SLU 70	-75	76	5252	6.94	-967.88	19.15
522	SLU 71	-74	63	5213	6.99	-962.18	15.71
522	SLU 72	-74	76	5223	6.89	-962.53	19.12
522	SLU 73	-76	91	5581	7.27	-1026.97	22.89
522	SLU 74	-76	69	5638	7.6	-1040.55	17.29
522	SLU 75	-76	83	5649	7.49	-1040.9	20.7
522	SLU 76	-76	91	5628	7.37	-1035.78	22.94
522	SLU 77	-76	69	5685	7.7	-1049.35	17.34
522	SLU 78	-77	83	5696	7.59	-1049.7	20.74
522	SLU 79	-76	69	5657	7.64	-1044	17.31
522	SLU 80	-77	83	5667	7.53	-1044.35	20.71
522	SLU 81	-76	71	5753	7.73	-1061.46	17.9
522	SLU 82	-76	85	5764	7.62	-1061.81	21.3
522	SLU 83	-76	72	5800	7.83	-1070.26	17.94
522	SLU 84	-77	85	5811	7.72	-1070.61	21.35
522	SLE RA 1	-55	47	3820	5.04	-704.64	11.81
522	SLE RA 2	-55	62	3832	4.92	-705.03	15.59
522	SLE RA 3	-55	47	3870	5.14	-714.08	11.86
522	SLE RA 4	-56	56	3877	5.06	-714.32	14.13
522	SLE RA 5	-56	62	3863	4.98	-710.9	15.62
522	SLE RA 6	-56	47	3901	5.2	-719.95	11.89
522	SLE RA 7	-56	56	3908	5.13	-720.19	14.16
522	SLE RA 8	-55	47	3882	5.16	-716.39	11.87
522	SLE RA 9	-56	56	3889	5.09	-716.62	14.14
522	SLE RA 10	-57	66	4128	5.35	-759.58	16.66
522	SLE RA 11	-57	51	4166	5.57	-768.63	12.92
522	SLE RA 12	-57	61	4173	5.5	-768.87	15.19
522	SLE RA 13	-57	67	4159	5.41	-765.46	16.69
522	SLE RA 14	-57	52	4197	5.63	-774.5	12.95
522	SLE RA 15	-58	61	4204	5.56	-774.74	15.22
522	SLE RA 16	-57	52	4178	5.59	-770.94	12.93
522	SLE RA 17	-57	61	4185	5.52	-771.17	15.2
522	SLE RA 18	-57	53	4243	5.65	-782.57	13.33
522	SLE RA 19	-57	62	4250	5.58	-782.81	15.6
522	SLE RA 20	-57	53	4274	5.72	-788.44	13.36
522	SLE RA 21	-58	62	4281	5.64	-788.68	15.63
522	SLE FR 1	-55	47	3820	5.04	-704.64	11.81
522	SLE FR 2	-55	50	3822	5.01	-704.72	12.57
522	SLE FR 3	-55	47	3832	5.06	-706.99	11.82
522	SLE FR 4	-55	52	3949	5.2	-728.1	13.02
522	SLE FR 5	-55	49	3959	5.25	-730.37	12.28
522	SLE FR 6	-56	50	4031	5.35	-743.61	12.57
522	SLE QP 1	-55	47	3820	5.04	-704.64	11.81
522	SLE QP 2	-55	49	3947	5.22	-728.02	12.26
522	SLD 1	223	268	5227	5.47	-927.96	66.92
522	SLD 2	242	150	5202	5.69	-927.22	37.53
522	SLD 3	242	7	4987	8.04	-921.57	1.75
522	SLD 4	260	-111	4962	8.27	-920.83	-27.64
522	SLD 5	-3	531	4699	1.35	-797.83	132.79
522	SLD 6	10	453	4683	1.49	-797.34	113.4
522	SLD 7	58	-338	3899	9.94	-776.53	-84.45
522	SLD 8	70	-416	3883	10.09	-776.04	-103.84
522	SLD 9	-181	514	4011	0.36	-680	128.37
522	SLD 10	-168	436	3994	0.51	-679.51	108.97
522	SLD 11	-120	-356	3211	8.95	-658.71	-88.87
522	SLD 12	-108	-434	3194	9.1	-658.22	-108.26
522	SLD 13	-371	209	2932	2.17	-535.22	52.17
522	SLD 14	-352	91	2906	2.4	-534.48	22.78
522	SLD 15	-352	-52	2692	4.75	-528.83	-13
522	SLD 16	-334	-170	2666	4.98	-528.09	-42.39
522	SLV 1	595	581	6963	5.58	-1196.39	145.05
522	SLV 2	639	303	6904	6.11	-1194.65	75.95
522	SLV 3	640	-67	6362	12.04	-1180.51	-16.8
522	SLV 4	684	-345	6303	12.57	-1178.77	-85.89
522	SLV 5	64	1243	5774	-4.56	-892.95	310.45
522	SLV 6	93	1055	5734	-4.2	-891.77	263.94
522	SLV 7	213	-916	3771	16.95	-840.01	-229.02
522	SLV 8	243	-1103	3731	17.31	-838.83	-275.54
522	SLV 9	-353	1201	4163	-6.87	-617.21	300.07
522	SLV 10	-324	1014	4122	-6.51	-616.04	253.55
522	SLV 11	-204	-958	2159	14.64	-564.27	-239.41
522	SLV 12	-174	-1145	2119	15	-563.1	-285.93
522	SLV 13	-794	443	1591	-2.12	-277.28	110.42
522	SLV 14	-750	165	1531	-1.59	-275.53	41.32
522	SLV 15	-749	-205	990	4.33	-261.39	-51.42
522	SLV 16	-706	-483	930	4.86	-259.65	-120.52
522	CRTFP Ux+	0	0	0	0	0	0
522	CRTFP Ux-	0	0	0	0	0	0
522	CRTFP Uy+	0	0	0	0	0	0
522	CRTFP Uy-	0	0	0	0	0	0
525	SLU 1	-68	-58	6758	0.3	-18.7	0.69
525	SLU 2	-69	-27	6785	-0.15	-18.19	0.65
525	SLU 3	-70	-59	6901	0.42	-19.24	0.69
525	SLU 4	-70	-41	6917	0.15	-18.94	0.66
525	SLU 5	-70	-28	6875	-0.07	-18.56	0.64
525	SLU 6	-71	-60	6992	0.49	-19.62	0.68
525	SLU 7	-71	-42	7008	0.23	-19.31	0.65
525	SLU 8	-70	-60	6939	0.45	-19.45	0.67
525	SLU 9	-71	-41	6955	0.19	-19.14	0.65

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
525	SLU 10	-71	-33	7659	0.01	-21.94	0.74
525	SLU 11	-72	-64	7775	0.58	-23	0.78
525	SLU 12	-73	-46	7791	0.31	-22.69	0.76
525	SLU 13	-72	-34	7749	0.09	-22.32	0.73
525	SLU 14	-73	-65	7866	0.65	-23.37	0.77
525	SLU 15	-74	-47	7882	0.39	-23.07	0.75
525	SLU 16	-73	-65	7813	0.61	-23.2	0.77
525	SLU 17	-73	-47	7829	0.35	-22.9	0.74
525	SLU 18	-72	-65	8007	0.53	-24.06	0.82
525	SLU 19	-72	-47	8023	0.26	-23.76	0.8
525	SLU 20	-73	-66	8097	0.61	-24.44	0.82
525	SLU 21	-73	-48	8113	0.34	-24.13	0.79
525	SLU 22	-75	-65	7783	0.78	-22.03	0.72
525	SLU 23	-76	-34	7810	0.34	-21.52	0.68
525	SLU 24	-77	-66	7926	0.9	-22.57	0.72
525	SLU 25	-77	-48	7942	0.63	-22.26	0.7
525	SLU 26	-77	-35	7900	0.42	-21.89	0.67
525	SLU 27	-78	-67	8017	0.98	-22.94	0.71
525	SLU 28	-78	-49	8033	0.71	-22.64	0.69
525	SLU 29	-77	-67	7964	0.94	-22.77	0.71
525	SLU 30	-78	-48	7980	0.67	-22.47	0.68
525	SLU 31	-79	-40	8684	0.5	-25.27	0.78
525	SLU 32	-80	-71	8800	1.06	-26.33	0.81
525	SLU 33	-80	-53	8816	0.79	-26.02	0.79
525	SLU 34	-80	-40	8774	0.58	-25.65	0.77
525	SLU 35	-81	-72	8891	1.14	-26.7	0.81
525	SLU 36	-81	-54	8907	0.87	-26.39	0.78
525	SLU 37	-80	-72	8838	1.1	-26.53	0.8
525	SLU 38	-80	-53	8854	0.83	-26.22	0.78
525	SLU 39	-79	-72	9032	1.01	-27.39	0.86
525	SLU 40	-80	-54	9048	0.75	-27.09	0.83
525	SLU 41	-80	-73	9122	1.09	-27.77	0.85
525	SLU 42	-81	-55	9138	0.82	-27.46	0.82
525	SLU 43	-86	-73	8434	0.22	-23.17	0.89
525	SLU 44	-87	-43	8461	-0.22	-22.66	0.84
525	SLU 45	-88	-74	8577	0.34	-23.71	0.88
525	SLU 46	-88	-56	8593	0.07	-23.41	0.86
525	SLU 47	-88	-43	8551	-0.14	-23.03	0.84
525	SLU 48	-89	-75	8668	0.42	-24.09	0.88
525	SLU 49	-89	-57	8684	0.15	-23.78	0.85
525	SLU 50	-88	-75	8615	0.38	-23.92	0.87
525	SLU 51	-89	-56	8631	0.11	-23.61	0.85
525	SLU 52	-89	-48	9335	-0.06	-26.41	0.94
525	SLU 53	-90	-79	9451	0.5	-27.47	0.98
525	SLU 54	-91	-61	9467	0.23	-27.16	0.95
525	SLU 55	-90	-49	9425	0.02	-26.79	0.93
525	SLU 56	-91	-80	9542	0.58	-27.84	0.97
525	SLU 57	-92	-62	9558	0.31	-27.54	0.94
525	SLU 58	-91	-80	9489	0.54	-27.67	0.96
525	SLU 59	-91	-62	9505	0.27	-27.37	0.94
525	SLU 60	-90	-80	9683	0.45	-28.53	1.02
525	SLU 61	-90	-62	9699	0.18	-28.23	0.99
525	SLU 62	-91	-81	9773	0.53	-28.91	1.01
525	SLU 63	-91	-63	9789	0.26	-28.6	0.99
525	SLU 64	-93	-80	9459	0.71	-26.49	0.92
525	SLU 65	-94	-49	9486	0.26	-25.98	0.88
525	SLU 66	-95	-81	9602	0.83	-27.04	0.92
525	SLU 67	-95	-63	9618	0.56	-26.73	0.89
525	SLU 68	-95	-50	9576	0.34	-26.36	0.87
525	SLU 69	-96	-82	9693	0.9	-27.41	0.91
525	SLU 70	-96	-64	9709	0.64	-27.11	0.88
525	SLU 71	-95	-82	9640	0.86	-27.24	0.9
525	SLU 72	-96	-63	9656	0.6	-26.94	0.88
525	SLU 73	-97	-55	10360	0.42	-29.74	0.97
525	SLU 74	-98	-86	10476	0.99	-30.8	1.01
525	SLU 75	-98	-68	10492	0.72	-30.49	0.99
525	SLU 76	-98	-55	10450	0.5	-30.11	0.96
525	SLU 77	-99	-87	10567	1.06	-31.17	1
525	SLU 78	-99	-69	10583	0.8	-30.86	0.98
525	SLU 79	-98	-87	10514	1.02	-31	1
525	SLU 80	-98	-68	10530	0.76	-30.69	0.97
525	SLU 81	-97	-87	10708	0.94	-31.86	1.05
525	SLU 82	-98	-69	10724	0.67	-31.55	1.03
525	SLU 83	-98	-88	10798	1.01	-32.23	1.05
525	SLU 84	-99	-70	10814	0.75	-31.93	1.02
525	SLE RA 1	-70	-60	7051	0.44	-19.65	0.7
525	SLE RA 2	-71	-40	7069	0.14	-19.31	0.67
525	SLE RA 3	-71	-61	7146	0.52	-20.01	0.7
525	SLE RA 4	-72	-49	7157	0.34	-19.81	0.68
525	SLE RA 5	-71	-40	7129	0.19	-19.56	0.67
525	SLE RA 6	-72	-61	7207	0.57	-20.26	0.69
525	SLE RA 7	-72	-49	7217	0.39	-20.06	0.68
525	SLE RA 8	-72	-61	7171	0.54	-20.15	0.69
525	SLE RA 9	-72	-49	7182	0.36	-19.94	0.67
525	SLE RA 10	-72	-43	7651	0.25	-21.81	0.73
525	SLE RA 11	-73	-64	7729	0.62	-22.52	0.76
525	SLE RA 12	-73	-52	7740	0.44	-22.31	0.74
525	SLE RA 13	-73	-44	7712	0.3	-22.06	0.73
525	SLE RA 14	-74	-65	7789	0.67	-22.77	0.76

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
525	SLE RA 15	-74	-53	7800	0.5	-22.56	0.74
525	SLE RA 16	-73	-65	7754	0.65	-22.65	0.75
525	SLE RA 17	-74	-52	7765	0.47	-22.45	0.74
525	SLE RA 18	-73	-65	7883	0.59	-23.23	0.79
525	SLE RA 19	-73	-53	7894	0.41	-23.02	0.77
525	SLE RA 20	-74	-65	7943	0.64	-23.48	0.78
525	SLE RA 21	-74	-53	7954	0.46	-23.27	0.77
525	SLE FR 1	-70	-60	7051	0.44	-19.65	0.7
525	SLE FR 2	-70	-56	7054	0.38	-19.58	0.69
525	SLE FR 3	-71	-60	7075	0.46	-19.75	0.7
525	SLE FR 4	-71	-57	7304	0.42	-20.65	0.72
525	SLE FR 5	-71	-62	7325	0.5	-20.82	0.73
525	SLE FR 6	-72	-62	7467	0.51	-21.44	0.75
525	SLE QP 1	-70	-60	7051	0.44	-19.65	0.7
525	SLE QP 2	-71	-61	7301	0.48	-20.72	0.73
525	SLD 1	537	118	8241	-2.42	7.97	0.59
525	SLD 2	568	35	8214	-2.06	6.7	2.91
525	SLD 3	548	-245	7884	3.75	0.48	1.39
525	SLD 4	579	-328	7857	4.1	-0.79	3.71
525	SLD 5	90	558	8129	-9.8	-0.52	-0.94
525	SLD 6	110	503	8111	-9.57	-1.37	0.59
525	SLD 7	125	-652	6940	10.75	-25.49	1.71
525	SLD 8	146	-707	6922	10.98	-26.33	3.24
525	SLD 9	-288	584	7680	-10.02	-15.11	-1.79
525	SLD 10	-267	529	7662	-9.78	-15.95	-0.26
525	SLD 11	-252	-626	6490	10.54	-40.08	0.86
525	SLD 12	-232	-681	6472	10.77	-40.92	2.39
525	SLD 13	-721	205	6744	-3.13	-40.65	-2.25
525	SLD 14	-690	122	6717	-2.78	-41.93	0.07
525	SLD 15	-711	-158	6387	3.03	-48.14	-1.46
525	SLD 16	-679	-241	6360	3.38	-49.42	0.86
525	SLV 1	1351	387	9531	-6.81	47	0.36
525	SLV 2	1425	191	9467	-5.98	44	5.81
525	SLV 3	1377	-517	8638	8.63	28.33	2.3
525	SLV 4	1450	-712	8574	9.46	25.33	7.75
525	SLV 5	303	1480	9337	-25.28	28.48	-3.34
525	SLV 6	353	1348	9294	-24.72	26.46	0.33
525	SLV 7	388	-1532	6358	26.19	-33.77	3.12
525	SLV 8	438	-1663	6315	26.75	-35.79	6.79
525	SLV 9	-580	1540	8286	-25.78	-5.65	-5.34
525	SLV 10	-530	1409	8243	-25.23	-7.67	-1.67
525	SLV 11	-495	-1471	5307	25.69	-67.9	1.13
525	SLV 12	-445	-1603	5264	26.25	-69.92	4.8
525	SLV 13	-1592	589	6027	-8.49	-66.77	-6.29
525	SLV 14	-1519	394	5964	-7.66	-69.77	-0.84
525	SLV 15	-1567	-314	5134	6.95	-85.45	-4.35
525	SLV 16	-1493	-510	5070	7.78	-88.45	1.1
525	CRTFP Ux+	0	0	0	0	0	0
525	CRTFP Ux-	0	0	0	0	0	0
525	CRTFP Uy+	0	0	0	0	0	0
525	CRTFP Uy-	0	0	0	0	0	0
528	SLU 1	52	-26	6578	0	32.02	-0.57
528	SLU 2	54	6	6603	-0.5	31.02	-0.5
528	SLU 3	53	-26	6719	0.13	32.83	-0.61
528	SLU 4	54	-7	6734	-0.17	32.23	-0.56
528	SLU 5	54	5	6693	-0.41	31.53	-0.53
528	SLU 6	53	-27	6809	0.22	33.35	-0.64
528	SLU 7	54	-8	6823	-0.08	32.75	-0.59
528	SLU 8	53	-26	6758	0.18	33.05	-0.64
528	SLU 9	54	-8	6773	-0.12	32.45	-0.59
528	SLU 10	55	5	7443	-0.39	36.34	-0.55
528	SLU 11	54	-27	7558	0.24	38.15	-0.66
528	SLU 12	55	-8	7573	-0.06	37.55	-0.61
528	SLU 13	56	5	7533	-0.29	36.85	-0.58
528	SLU 14	55	-27	7648	0.33	38.67	-0.69
528	SLU 15	56	-8	7663	0.03	38.07	-0.64
528	SLU 16	54	-27	7598	0.3	38.37	-0.69
528	SLU 17	55	-8	7613	0	37.77	-0.64
528	SLU 18	54	-26	7778	0.16	39.62	-0.65
528	SLU 19	55	-8	7793	-0.14	39.02	-0.6
528	SLU 20	55	-27	7868	0.25	40.13	-0.68
528	SLU 21	55	-8	7882	-0.05	39.53	-0.63
528	SLU 22	57	-28	7563	0.44	36.83	-0.63
528	SLU 23	59	4	7588	-0.06	35.83	-0.56
528	SLU 24	58	-28	7703	0.56	37.64	-0.67
528	SLU 25	59	-9	7718	0.26	37.04	-0.62
528	SLU 26	59	3	7678	0.03	36.35	-0.59
528	SLU 27	58	-28	7793	0.65	38.16	-0.7
528	SLU 28	59	-10	7808	0.35	37.56	-0.65
528	SLU 29	58	-28	7743	0.62	37.87	-0.69
528	SLU 30	59	-9	7757	0.32	37.26	-0.65
528	SLU 31	60	3	8427	0.05	41.15	-0.61
528	SLU 32	59	-29	8543	0.67	42.96	-0.72
528	SLU 33	60	-10	8558	0.38	42.36	-0.67
528	SLU 34	60	3	8517	0.14	41.67	-0.64
528	SLU 35	60	-29	8632	0.77	43.48	-0.75
528	SLU 36	61	-10	8647	0.47	42.88	-0.7
528	SLU 37	59	-29	8582	0.73	43.18	-0.75
528	SLU 38	60	-10	8597	0.43	42.58	-0.7

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
528	SLU 39	59	-28	8762	0.6	44.43	-0.71
528	SLU 40	60	-10	8777	0.3	43.83	-0.66
528	SLU 41	60	-29	8852	0.69	44.95	-0.74
528	SLU 42	60	-10	8867	0.39	44.35	-0.69
528	SLU 43	66	-33	8214	-0.15	39.97	-0.73
528	SLU 44	67	-2	8239	-0.65	38.97	-0.65
528	SLU 45	67	-33	8355	-0.02	40.79	-0.76
528	SLU 46	68	-15	8370	-0.32	40.19	-0.71
528	SLU 47	68	-2	8329	-0.56	39.49	-0.68
528	SLU 48	67	-34	8445	0.07	41.3	-0.79
528	SLU 49	68	-15	8459	-0.23	40.7	-0.74
528	SLU 50	67	-33	8394	0.04	41.01	-0.79
528	SLU 51	68	-15	8409	-0.26	40.41	-0.74
528	SLU 52	69	-2	9079	-0.53	44.29	-0.7
528	SLU 53	68	-34	9194	0.09	46.11	-0.81
528	SLU 54	69	-15	9209	-0.21	45.5	-0.77
528	SLU 55	69	-2	9169	-0.44	44.81	-0.73
528	SLU 56	69	-34	9284	0.18	46.62	-0.84
528	SLU 57	70	-15	9299	-0.12	46.02	-0.8
528	SLU 58	68	-34	9234	0.15	46.33	-0.84
528	SLU 59	69	-15	9249	-0.15	45.73	-0.79
528	SLU 60	68	-34	9414	0.01	47.57	-0.8
528	SLU 61	69	-15	9429	-0.29	46.97	-0.76
528	SLU 62	68	-34	9504	0.1	48.09	-0.83
528	SLU 63	69	-15	9518	-0.19	47.49	-0.79
528	SLU 64	71	-35	9199	0.29	44.79	-0.79
528	SLU 65	72	-3	9224	-0.21	43.79	-0.71
528	SLU 66	72	-35	9339	0.41	45.6	-0.82
528	SLU 67	73	-16	9354	0.11	45	-0.77
528	SLU 68	73	-4	9314	-0.12	44.3	-0.74
528	SLU 69	72	-36	9429	0.5	46.12	-0.85
528	SLU 70	73	-17	9444	0.21	45.51	-0.8
528	SLU 71	72	-35	9379	0.47	45.82	-0.85
528	SLU 72	73	-17	9393	0.17	45.22	-0.8
528	SLU 73	74	-4	10063	-0.1	49.1	-0.76
528	SLU 74	73	-36	10179	0.53	50.92	-0.87
528	SLU 75	74	-17	10194	0.23	50.32	-0.82
528	SLU 76	74	-4	10153	-0.01	49.62	-0.79
528	SLU 77	74	-36	10268	0.62	51.43	-0.9
528	SLU 78	75	-17	10283	0.32	50.83	-0.86
528	SLU 79	73	-36	10218	0.58	51.14	-0.9
528	SLU 80	74	-17	10233	0.28	50.54	-0.85
528	SLU 81	73	-35	10398	0.45	52.39	-0.86
528	SLU 82	74	-17	10413	0.15	51.78	-0.82
528	SLU 83	73	-36	10488	0.54	52.9	-0.89
528	SLU 84	74	-17	10503	0.24	52.3	-0.85
528	SLE RA 1	53	-26	6860	0.12	33.39	-0.59
528	SLE RA 2	54	-5	6876	-0.21	32.73	-0.54
528	SLE RA 3	54	-27	6953	0.21	33.94	-0.61
528	SLE RA 4	55	-14	6963	0.01	33.53	-0.58
528	SLE RA 5	55	-6	6936	-0.15	33.07	-0.56
528	SLE RA 6	54	-27	7013	0.27	34.28	-0.63
528	SLE RA 7	55	-14	7023	0.07	33.88	-0.6
528	SLE RA 8	54	-27	6979	0.25	34.08	-0.63
528	SLE RA 9	55	-14	6989	0.05	33.68	-0.6
528	SLE RA 10	55	-6	7436	-0.13	36.27	-0.57
528	SLE RA 11	55	-27	7513	0.28	37.48	-0.65
528	SLE RA 12	56	-14	7523	0.08	37.08	-0.62
528	SLE RA 13	56	-6	7496	-0.07	36.62	-0.6
528	SLE RA 14	55	-27	7573	0.35	37.83	-0.67
528	SLE RA 15	56	-15	7583	0.15	37.43	-0.64
528	SLE RA 16	55	-27	7539	0.32	37.63	-0.67
528	SLE RA 17	56	-15	7549	0.12	37.23	-0.64
528	SLE RA 18	55	-27	7659	0.23	38.46	-0.64
528	SLE RA 19	55	-14	7669	0.03	38.06	-0.61
528	SLE RA 20	55	-27	7719	0.29	38.8	-0.66
528	SLE RA 21	56	-14	7729	0.09	38.4	-0.63
528	SLE FR 1	53	-26	6860	0.12	33.39	-0.59
528	SLE FR 2	54	-22	6863	0.06	33.26	-0.58
528	SLE FR 3	53	-26	6884	0.15	33.53	-0.6
528	SLE FR 4	54	-22	7103	0.09	34.78	-0.6
528	SLE FR 5	54	-27	7124	0.18	35.05	-0.62
528	SLE FR 6	54	-27	7259	0.18	35.93	-0.62
528	SLE QP 1	53	-26	6860	0.12	33.39	-0.59
528	SLE QP 2	54	-26	7100	0.16	34.91	-0.61
528	SLD 1	670	158	6589	-3.36	35.26	0.81
528	SLD 2	704	245	6613	-3.79	33.85	3.33
528	SLD 3	648	-216	6251	3.52	49.25	-0.43
528	SLD 4	682	-129	6274	3.09	47.84	2.08
528	SLD 5	267	580	7456	-11.25	14.05	1.25
528	SLD 6	290	637	7471	-11.54	13.12	2.91
528	SLD 7	191	-665	6327	11.68	60.69	-2.89
528	SLD 8	214	-608	6342	11.39	59.76	-1.23
528	SLD 9	-106	555	7857	-11.08	10.07	0.02
528	SLD 10	-84	612	7872	-11.37	9.14	1.67
528	SLD 11	-182	-690	6728	11.85	56.7	-4.12
528	SLD 12	-160	-632	6743	11.57	55.78	-2.46
528	SLD 13	-574	76	7925	-2.78	21.99	-3.3
528	SLD 14	-540	163	7949	-3.21	20.58	-0.79

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
528	SLD 15	-597	-298	7587	4.1	35.98	-4.54
528	SLD 16	-563	-211	7610	3.67	34.57	-2.03
528	SLV 1	1498	434	5934	-8.64	34.54	2.83
528	SLV 2	1578	638	5989	-9.66	31.24	8.74
528	SLV 3	1441	-499	5084	8.61	69.57	-0.33
528	SLV 4	1521	-294	5139	7.59	66.27	5.58
528	SLV 5	559	1488	8028	-28.46	-17.71	4.11
528	SLV 6	613	1625	8065	-29.14	-19.94	8.09
528	SLV 7	368	-1620	5196	29.05	99.06	-6.42
528	SLV 8	422	-1483	5233	28.36	96.83	-2.44
528	SLV 9	-314	1430	8966	-28.05	-27.01	1.23
528	SLV 10	-260	1568	9003	-28.73	-29.23	5.2
528	SLV 11	-506	-1678	6134	29.46	89.77	-9.3
528	SLV 12	-452	-1540	6171	28.77	87.54	-5.33
528	SLV 13	-1413	241	9060	-7.28	3.56	-6.79
528	SLV 14	-1333	446	9115	-8.3	0.25	-0.88
528	SLV 15	-1471	-691	8211	9.97	38.59	-9.95
528	SLV 16	-1391	-487	8266	8.96	35.28	-4.04
528	CRTFP Ux+	0	0	0	0	0	0
528	CRTFP Ux-	0	0	0	0	0	0
528	CRTFP Uy+	0	0	0	0	0	0
528	CRTFP Uy-	0	0	0	0	0	0
531	SLU 1	43	21	4192	5.85	1123.42	-7.48
531	SLU 2	43	44	4210	5.63	1123.36	-15.65
531	SLU 3	44	21	4283	6.05	1148.14	-7.7
531	SLU 4	44	35	4294	5.92	1148.11	-12.59
531	SLU 5	44	45	4268	5.77	1139.33	-15.95
531	SLU 6	44	22	4342	6.19	1164.11	-8.01
531	SLU 7	45	36	4352	6.05	1164.07	-12.9
531	SLU 8	44	23	4309	6.12	1155.34	-8.1
531	SLU 9	44	37	4320	5.99	1155.31	-13
531	SLU 10	44	47	4715	6.42	1257.95	-16.6
531	SLU 11	44	24	4788	6.84	1282.73	-8.65
531	SLU 12	45	38	4799	6.71	1282.7	-13.55
531	SLU 13	45	48	4774	6.55	1273.91	-16.91
531	SLU 14	45	25	4847	6.97	1298.69	-8.96
531	SLU 15	45	39	4858	6.84	1298.66	-13.86
531	SLU 16	44	25	4814	6.91	1289.93	-9.05
531	SLU 17	45	39	4825	6.78	1289.89	-13.95
531	SLU 18	43	25	4914	6.98	1315.68	-8.84
531	SLU 19	44	39	4925	6.84	1315.65	-13.74
531	SLU 20	44	26	4972	7.11	1331.64	-9.15
531	SLU 21	44	40	4983	6.98	1331.61	-14.05
531	SLU 22	46	21	4803	6.96	1287.95	-7.56
531	SLU 23	47	44	4821	6.74	1287.9	-15.72
531	SLU 24	47	22	4894	7.16	1312.68	-7.77
531	SLU 25	47	36	4905	7.02	1312.65	-12.67
531	SLU 26	47	45	4879	6.87	1303.86	-16.03
531	SLU 27	47	22	4952	7.29	1328.64	-8.08
531	SLU 28	48	36	4963	7.16	1328.61	-12.98
531	SLU 29	47	23	4920	7.23	1319.88	-8.18
531	SLU 30	47	37	4930	7.1	1319.85	-13.07
531	SLU 31	47	47	5326	7.52	1422.49	-16.67
531	SLU 32	47	24	5399	7.94	1447.27	-8.72
531	SLU 33	48	38	5410	7.81	1447.23	-13.62
531	SLU 34	48	48	5385	7.66	1438.45	-16.98
531	SLU 35	48	25	5458	8.08	1463.23	-9.03
531	SLU 36	48	39	5468	7.95	1463.19	-13.93
531	SLU 37	47	25	5425	8.01	1454.46	-9.13
531	SLU 38	48	39	5436	7.88	1454.43	-14.03
531	SLU 39	47	25	5525	8.08	1480.22	-8.92
531	SLU 40	47	39	5536	7.95	1480.19	-13.82
531	SLU 41	47	26	5583	8.22	1496.18	-9.23
531	SLU 42	48	40	5594	8.08	1496.15	-14.13
531	SLU 43	54	27	5240	7.23	1404.03	-9.7
531	SLU 44	55	50	5258	7.01	1403.98	-17.86
531	SLU 45	55	28	5331	7.43	1428.76	-9.91
531	SLU 46	56	42	5342	7.3	1428.72	-14.81
531	SLU 47	56	51	5317	7.14	1419.94	-18.17
531	SLU 48	56	28	5390	7.56	1444.72	-10.22
531	SLU 49	56	43	5400	7.43	1444.69	-15.12
531	SLU 50	56	29	5357	7.5	1435.95	-10.32
531	SLU 51	56	43	5368	7.37	1435.92	-15.22
531	SLU 52	56	53	5764	7.8	1538.56	-18.82
531	SLU 53	56	30	5837	8.21	1563.34	-10.87
531	SLU 54	56	44	5847	8.08	1563.31	-15.76
531	SLU 55	56	54	5822	7.93	1554.52	-19.13
531	SLU 56	56	31	5895	8.35	1579.3	-11.18
531	SLU 57	57	45	5906	8.22	1579.27	-16.07
531	SLU 58	56	31	5862	8.29	1570.54	-11.27
531	SLU 59	57	45	5873	8.15	1570.51	-16.17
531	SLU 60	55	31	5962	8.35	1596.3	-11.06
531	SLU 61	56	45	5973	8.22	1596.26	-15.96
531	SLU 62	56	32	6021	8.49	1612.26	-11.37
531	SLU 63	56	46	6031	8.36	1612.22	-16.27
531	SLU 64	57	27	5851	8.33	1568.57	-9.77
531	SLU 65	58	51	5869	8.11	1568.51	-17.94
531	SLU 66	58	28	5942	8.53	1593.29	-9.99
531	SLU 67	59	42	5953	8.4	1593.26	-14.89

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
531	SLU 68	59	51	5927	8.25	1584.47	-18.25
531	SLU 69	59	29	6001	8.67	1609.25	-10.3
531	SLU 70	59	43	6011	8.54	1609.22	-15.2
531	SLU 71	59	29	5968	8.6	1600.49	-10.39
531	SLU 72	59	43	5979	8.47	1600.46	-15.29
531	SLU 73	59	53	6374	8.9	1703.1	-18.89
531	SLU 74	59	30	6448	9.32	1727.88	-10.94
531	SLU 75	59	44	6458	9.19	1727.85	-15.84
531	SLU 76	59	54	6433	9.04	1719.06	-19.2
531	SLU 77	60	31	6506	9.45	1743.84	-11.25
531	SLU 78	60	45	6517	9.32	1743.81	-16.15
531	SLU 79	59	32	6473	9.39	1735.08	-11.35
531	SLU 80	60	46	6484	9.26	1735.04	-16.24
531	SLU 81	58	31	6573	9.46	1760.83	-11.13
531	SLU 82	59	45	6584	9.33	1760.8	-16.03
531	SLU 83	59	32	6631	9.59	1776.79	-11.44
531	SLU 84	59	46	6642	9.46	1776.76	-16.34
531	SLE RA 1	44	21	4367	6.17	1170.43	-7.5
531	SLE RA 2	44	36	4379	6.02	1170.39	-12.94
531	SLE RA 3	44	21	4427	6.3	1186.91	-7.64
531	SLE RA 4	44	31	4435	6.21	1186.89	-10.91
531	SLE RA 5	44	37	4417	6.11	1181.03	-13.15
531	SLE RA 6	45	22	4466	6.39	1197.55	-7.85
531	SLE RA 7	45	31	4473	6.3	1197.53	-11.12
531	SLE RA 8	44	22	4444	6.35	1191.71	-7.91
531	SLE RA 9	45	31	4452	6.26	1191.69	-11.18
531	SLE RA 10	44	38	4715	6.55	1260.12	-13.58
531	SLE RA 11	44	23	4764	6.82	1276.64	-8.28
531	SLE RA 12	45	32	4771	6.74	1276.61	-11.55
531	SLE RA 13	45	39	4754	6.64	1270.76	-13.79
531	SLE RA 14	45	24	4803	6.91	1287.28	-8.49
531	SLE RA 15	45	33	4810	6.83	1287.26	-11.75
531	SLE RA 16	45	24	4781	6.87	1281.43	-8.55
531	SLE RA 17	45	33	4788	6.78	1281.41	-11.82
531	SLE RA 18	44	23	4848	6.92	1298.6	-8.41
531	SLE RA 19	44	33	4855	6.83	1298.58	-11.67
531	SLE RA 20	44	24	4887	7.01	1309.25	-8.61
531	SLE RA 21	45	33	4894	6.92	1309.22	-11.88
531	SLE FR 1	44	21	4367	6.17	1170.43	-7.5
531	SLE FR 2	44	24	4369	6.14	1170.42	-8.59
531	SLE FR 3	44	21	4382	6.2	1174.68	-7.58
531	SLE FR 4	44	25	4513	6.36	1208.87	-8.86
531	SLE FR 5	44	22	4527	6.43	1213.14	-7.86
531	SLE FR 6	44	22	4607	6.54	1234.52	-7.95
531	SLE QP 1	44	21	4367	6.17	1170.43	-7.5
531	SLE QP 2	44	22	4511	6.39	1208.88	-7.77
531	SLD 1	399	127	3368	3.21	901.24	-44.68
531	SLD 2	419	254	3386	2.91	899.46	-88.89
531	SLD 3	384	-143	3129	6.31	904.76	49.66
531	SLD 4	405	-16	3146	6.01	902.98	5.46
531	SLD 5	169	440	4528	0.79	1111.57	-153.99
531	SLD 6	182	523	4540	0.59	1110.4	-183.15
531	SLD 7	120	-460	3730	11.13	1123.3	160.5
531	SLD 8	133	-376	3741	10.93	1122.13	131.33
531	SLD 9	-46	419	5281	1.86	1295.63	-146.88
531	SLD 10	-33	503	5292	1.66	1294.46	-176.04
531	SLD 11	-95	-480	4482	12.2	1307.37	167.6
531	SLD 12	-82	-396	4494	12	1306.2	138.44
531	SLD 13	-317	59	5876	6.77	1514.78	-21
531	SLD 14	-297	186	5893	6.47	1513.01	-65.21
531	SLD 15	-332	-211	5636	9.88	1518.3	73.34
531	SLD 16	-312	-84	5654	9.57	1516.53	29.14
531	SLV 1	876	290	1856	-1.31	488.85	-101.45
531	SLV 2	924	588	1898	-2.02	484.68	-205.36
531	SLV 3	839	-384	1256	6.47	497.23	134.21
531	SLV 4	887	-86	1297	5.76	493.06	30.3
531	SLV 5	341	1068	4617	-7.59	980.95	-373.89
531	SLV 6	373	1269	4645	-8.07	978.14	-443.85
531	SLV 7	217	-1178	2616	18.35	1008.86	411.63
531	SLV 8	249	-977	2644	17.87	1006.06	341.67
531	SLV 9	-162	1020	6378	-5.09	1411.71	-357.21
531	SLV 10	-130	1221	6406	-5.57	1408.9	-427.17
531	SLV 11	-285	-1226	4377	20.85	1439.62	428.31
531	SLV 12	-253	-1025	4405	20.37	1436.81	358.35
531	SLV 13	-799	129	7725	7.03	1924.7	-45.85
531	SLV 14	-752	428	7766	6.31	1920.54	-149.75
531	SLV 15	-836	-545	7124	14.81	1933.08	189.81
531	SLV 16	-789	-246	7166	14.1	1928.91	85.9
531	CRTFP Ux+	0	0	0	0	0	0
531	CRTFP Ux-	0	0	0	0	0	0
531	CRTFP Uy+	0	0	0	0	0	0
531	CRTFP Uy-	0	0	0	0	0	0
533	SLU 1	29	-41	2907	0.24	1135.48	16.28
533	SLU 2	29	-26	2912	0.14	1137.24	10.28
533	SLU 3	29	-41	2966	0.28	1158.67	16.57
533	SLU 4	30	-32	2970	0.22	1159.72	12.97
533	SLU 5	30	-26	2950	0.17	1151.9	10.47
533	SLU 6	30	-42	3004	0.31	1173.33	16.77
533	SLU 7	30	-33	3007	0.25	1174.38	13.17

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
533	SLU 8	29	-42	2982	0.3	1164.81	16.66
533	SLU 9	30	-33	2985	0.24	1165.86	13.06
533	SLU 10	32	-31	3298	0.18	1289.41	12.52
533	SLU 11	32	-47	3352	0.33	1310.83	18.81
533	SLU 12	33	-38	3355	0.26	1311.89	15.21
533	SLU 13	32	-32	3335	0.21	1304.07	12.71
533	SLU 14	33	-47	3389	0.36	1325.5	19
533	SLU 15	33	-38	3392	0.29	1326.55	15.4
533	SLU 16	32	-47	3367	0.35	1316.98	18.9
533	SLU 17	33	-38	3370	0.28	1318.03	15.3
533	SLU 18	33	-49	3457	0.31	1352.87	19.47
533	SLU 19	33	-40	3461	0.25	1353.92	15.87
533	SLU 20	33	-49	3495	0.34	1367.53	19.66
533	SLU 21	34	-40	3498	0.27	1368.58	16.07
533	SLU 22	33	-46	3326	0.41	1299.27	18.32
533	SLU 23	33	-31	3332	0.31	1301.02	12.32
533	SLU 24	33	-46	3386	0.45	1322.45	18.61
533	SLU 25	33	-37	3389	0.39	1323.5	15.01
533	SLU 26	33	-31	3370	0.34	1315.69	12.51
533	SLU 27	33	-47	3423	0.48	1337.11	18.81
533	SLU 28	34	-38	3427	0.42	1338.16	15.21
533	SLU 29	33	-47	3401	0.47	1328.59	18.7
533	SLU 30	33	-38	3405	0.41	1329.64	15.1
533	SLU 31	36	-36	3718	0.35	1453.19	14.56
533	SLU 32	36	-52	3771	0.5	1474.62	20.85
533	SLU 33	36	-43	3775	0.43	1475.67	17.25
533	SLU 34	36	-37	3755	0.38	1467.85	14.75
533	SLU 35	36	-53	3809	0.53	1489.28	21.04
533	SLU 36	36	-44	3812	0.46	1490.33	17.44
533	SLU 37	36	-52	3787	0.52	1480.76	20.94
533	SLU 38	36	-43	3790	0.45	1481.81	17.34
533	SLU 39	37	-54	3877	0.48	1516.65	21.51
533	SLU 40	37	-45	3881	0.42	1517.7	17.91
533	SLU 41	37	-54	3915	0.51	1531.31	21.7
533	SLU 42	37	-45	3918	0.44	1532.37	18.11
533	SLU 43	36	-51	3635	0.26	1419.98	20.46
533	SLU 44	37	-36	3640	0.15	1421.73	14.46
533	SLU 45	37	-52	3694	0.3	1443.16	20.76
533	SLU 46	37	-43	3698	0.23	1444.21	17.16
533	SLU 47	37	-37	3678	0.18	1436.4	14.65
533	SLU 48	37	-52	3732	0.32	1457.82	20.95
533	SLU 49	37	-43	3735	0.26	1458.87	17.35
533	SLU 50	37	-52	3710	0.31	1449.3	20.84
533	SLU 51	37	-43	3713	0.25	1450.35	17.24
533	SLU 52	40	-42	4026	0.2	1573.9	16.7
533	SLU 53	40	-57	4080	0.34	1595.33	22.99
533	SLU 54	40	-48	4083	0.28	1596.38	19.39
533	SLU 55	40	-42	4063	0.23	1588.56	16.89
533	SLU 56	40	-58	4117	0.37	1609.99	23.19
533	SLU 57	40	-49	4121	0.31	1611.04	19.59
533	SLU 58	40	-58	4095	0.36	1601.47	23.08
533	SLU 59	40	-49	4099	0.3	1602.52	19.48
533	SLU 60	40	-59	4185	0.32	1637.36	23.66
533	SLU 61	41	-50	4189	0.26	1638.41	20.06
533	SLU 62	41	-60	4223	0.35	1652.02	23.85
533	SLU 63	41	-51	4226	0.29	1653.08	20.25
533	SLU 64	40	-56	4054	0.43	1583.76	22.5
533	SLU 65	40	-41	4060	0.32	1585.52	16.5
533	SLU 66	41	-57	4114	0.47	1606.94	22.8
533	SLU 67	41	-48	4117	0.4	1607.99	19.2
533	SLU 68	41	-42	4098	0.35	1600.18	16.69
533	SLU 69	41	-57	4151	0.49	1621.6	22.99
533	SLU 70	41	-48	4155	0.43	1622.66	19.39
533	SLU 71	41	-57	4129	0.48	1613.08	22.88
533	SLU 72	41	-48	4133	0.42	1614.14	19.29
533	SLU 73	43	-47	4446	0.37	1737.68	18.74
533	SLU 74	43	-63	4499	0.51	1759.11	25.03
533	SLU 75	44	-54	4503	0.45	1760.16	21.44
533	SLU 76	44	-47	4483	0.4	1752.35	18.93
533	SLU 77	44	-63	4537	0.54	1773.77	25.23
533	SLU 78	44	-54	4540	0.48	1774.82	21.63
533	SLU 79	43	-63	4515	0.53	1765.25	25.12
533	SLU 80	44	-54	4518	0.47	1766.3	21.52
533	SLU 81	44	-64	4605	0.49	1801.14	25.7
533	SLU 82	44	-55	4609	0.43	1802.2	22.1
533	SLU 83	44	-65	4643	0.52	1815.8	25.89
533	SLU 84	45	-56	4646	0.46	1816.86	22.29
533	SLE RA 1	30	-42	3027	0.29	1182.28	16.86
533	SLE RA 2	30	-32	3030	0.22	1183.45	12.86
533	SLE RA 3	30	-43	3066	0.32	1197.73	17.06
533	SLE RA 4	31	-37	3069	0.27	1198.44	14.66
533	SLE RA 5	30	-32	3055	0.24	1193.23	12.99
533	SLE RA 6	31	-43	3091	0.34	1207.51	17.19
533	SLE RA 7	31	-37	3093	0.29	1208.21	14.79
533	SLE RA 8	30	-43	3077	0.33	1201.83	17.12
533	SLE RA 9	31	-37	3079	0.29	1202.53	14.72
533	SLE RA 10	32	-36	3287	0.25	1284.9	14.35
533	SLE RA 11	32	-46	3323	0.35	1299.18	18.55
533	SLE RA 12	32	-40	3325	0.31	1299.88	16.15

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
533	SLE RA 13	32	-36	3312	0.27	1294.67	14.48
533	SLE RA 14	32	-47	3348	0.37	1308.95	18.68
533	SLE RA 15	33	-41	3350	0.32	1309.66	16.28
533	SLE RA 16	32	-46	3333	0.36	1303.27	18.61
533	SLE RA 17	32	-40	3336	0.32	1303.98	16.21
533	SLE RA 18	33	-47	3394	0.34	1327.2	18.99
533	SLE RA 19	33	-41	3396	0.29	1327.9	16.59
533	SLE RA 20	33	-48	3419	0.35	1336.98	19.12
533	SLE RA 21	33	-42	3421	0.31	1337.68	16.72
533	SLE FR 1	30	-42	3027	0.29	1182.28	16.86
533	SLE FR 2	30	-40	3027	0.28	1182.51	16.06
533	SLE FR 3	30	-42	3037	0.3	1186.19	16.91
533	SLE FR 4	31	-42	3137	0.29	1225.99	16.7
533	SLE FR 5	31	-44	3147	0.31	1229.67	17.55
533	SLE FR 6	31	-45	3210	0.31	1254.74	17.92
533	SLE QP 1	30	-42	3027	0.29	1182.28	16.86
533	SLE QP 2	31	-44	3137	0.3	1225.76	17.5
533	SLD 1	286	57	3240	-0.19	1267.11	-22.81
533	SLD 2	301	60	3243	-0.22	1267.65	-23.85
533	SLD 3	277	-127	3165	1.2	1243.8	50.76
533	SLD 4	292	-124	3168	1.17	1244.34	49.73
533	SLD 5	119	265	3281	-1.94	1273.42	-106
533	SLD 6	128	267	3283	-1.96	1273.78	-106.68
533	SLD 7	88	-348	3031	2.68	1195.71	139.25
533	SLD 8	98	-346	3033	2.66	1196.07	138.57
533	SLD 9	-36	259	3241	-2.06	1255.44	-103.57
533	SLD 10	-27	261	3243	-2.07	1255.8	-104.26
533	SLD 11	-67	-354	2990	2.57	1177.73	141.68
533	SLD 12	-57	-352	2992	2.55	1178.09	141
533	SLD 13	-230	37	3106	-0.56	1207.18	-14.73
533	SLD 14	-216	40	3109	-0.59	1207.71	-15.76
533	SLD 15	-239	-147	3030	0.83	1183.86	58.85
533	SLD 16	-225	-144	3033	0.8	1184.4	57.81
533	SLV 1	629	206	3385	-0.97	1324.48	-82.47
533	SLV 2	664	212	3392	-1.03	1325.75	-84.91
533	SLV 3	607	-253	3196	2.51	1266	101
533	SLV 4	641	-246	3203	2.45	1267.26	98.57
533	SLV 5	239	726	3496	-5.34	1343.84	-290.31
533	SLV 6	262	730	3501	-5.38	1344.69	-291.95
533	SLV 7	162	-803	2867	6.25	1148.89	321.27
533	SLV 8	185	-799	2872	6.21	1149.74	319.63
533	SLV 9	-124	712	3402	-5.6	1301.77	-284.64
533	SLV 10	-101	716	3406	-5.64	1302.62	-286.28
533	SLV 11	-200	-817	2773	5.99	1106.82	326.95
533	SLV 12	-177	-813	2777	5.95	1107.68	325.31
533	SLV 13	-579	159	3070	-1.84	1184.25	-63.57
533	SLV 14	-545	165	3077	-1.9	1185.52	-66
533	SLV 15	-602	-300	2882	1.64	1125.77	119.91
533	SLV 16	-568	-293	2889	1.58	1127.03	117.47
533	CRTFP Ux+	0	0	0	0	0	0
533	CRTFP Ux-	0	0	0	0	0	0
533	CRTFP Uy+	0	0	0	0	0	0
533	CRTFP Uy-	0	0	0	0	0	0
538	SLU 1	28	-40	2914	0.12	1145.39	16.08
538	SLU 2	28	-25	2916	0.01	1145.41	10.08
538	SLU 3	29	-41	2975	0.15	1169.39	16.38
538	SLU 4	29	-32	2976	0.09	1169.4	12.78
538	SLU 5	29	-26	2954	0.04	1160.65	10.27
538	SLU 6	29	-41	3014	0.18	1184.63	16.57
538	SLU 7	29	-32	3015	0.12	1184.65	12.97
538	SLU 8	29	-41	2992	0.17	1175.88	16.46
538	SLU 9	29	-32	2992	0.11	1175.89	12.86
538	SLU 10	31	-31	3303	0.05	1298.92	12.3
538	SLU 11	31	-46	3363	0.18	1322.9	18.6
538	SLU 12	31	-37	3363	0.12	1322.91	14.99
538	SLU 13	31	-31	3342	0.07	1314.16	12.49
538	SLU 14	31	-47	3401	0.21	1338.15	18.79
538	SLU 15	32	-38	3402	0.15	1338.16	15.18
538	SLU 16	31	-47	3379	0.2	1329.39	18.68
538	SLU 17	31	-38	3380	0.14	1329.4	15.08
538	SLU 18	32	-48	3467	0.16	1364.69	19.25
538	SLU 19	32	-39	3468	0.1	1364.7	15.65
538	SLU 20	32	-48	3506	0.19	1379.93	19.44
538	SLU 21	32	-39	3507	0.13	1379.94	15.84
538	SLU 22	32	-45	3341	0.27	1313.06	18.1
538	SLU 23	32	-30	3342	0.17	1313.07	12.1
538	SLU 24	32	-46	3402	0.31	1337.06	18.39
538	SLU 25	32	-37	3403	0.25	1337.07	14.79
538	SLU 26	32	-31	3381	0.2	1328.32	12.29
538	SLU 27	32	-46	3441	0.33	1352.3	18.59
538	SLU 28	33	-37	3441	0.27	1352.31	14.98
538	SLU 29	32	-46	3418	0.33	1343.55	18.48
538	SLU 30	32	-37	3419	0.26	1343.56	14.88
538	SLU 31	35	-36	3730	0.2	1466.59	14.32
538	SLU 32	35	-51	3789	0.34	1490.57	20.61
538	SLU 33	35	-42	3790	0.28	1490.58	17.01
538	SLU 34	35	-36	3768	0.23	1481.83	14.51
538	SLU 35	35	-52	3828	0.37	1505.81	20.8
538	SLU 36	35	-43	3829	0.31	1505.83	17.2

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
538	SLU 37	35	-52	3805	0.36	1497.06	20.7
538	SLU 38	35	-43	3806	0.3	1497.07	17.1
538	SLU 39	35	-53	3894	0.32	1532.36	21.27
538	SLU 40	36	-44	3895	0.26	1532.37	17.67
538	SLU 41	36	-53	3933	0.35	1547.6	21.46
538	SLU 42	36	-44	3934	0.28	1547.61	17.86
538	SLU 43	35	-50	3642	0.1	1431.52	20.22
538	SLU 44	36	-35	3644	0	1431.54	14.21
538	SLU 45	36	-51	3703	0.13	1455.52	20.51
538	SLU 46	36	-42	3704	0.07	1455.53	16.91
538	SLU 47	36	-36	3682	0.02	1446.78	14.41
538	SLU 48	36	-52	3742	0.16	1470.77	20.7
538	SLU 49	36	-43	3743	0.1	1470.78	17.1
538	SLU 50	36	-51	3720	0.15	1462.01	20.6
538	SLU 51	36	-42	3720	0.09	1462.02	17
538	SLU 52	38	-41	4031	0.03	1585.05	16.43
538	SLU 53	38	-57	4091	0.17	1609.03	22.73
538	SLU 54	39	-48	4091	0.1	1609.04	19.13
538	SLU 55	39	-41	4070	0.05	1600.29	16.62
538	SLU 56	39	-57	4129	0.19	1624.28	22.92
538	SLU 57	39	-48	4130	0.13	1624.29	19.32
538	SLU 58	39	-57	4107	0.19	1615.52	22.82
538	SLU 59	39	-48	4108	0.12	1615.53	19.21
538	SLU 60	39	-58	4195	0.14	1650.82	23.38
538	SLU 61	39	-49	4196	0.08	1650.83	19.78
538	SLU 62	39	-59	4234	0.17	1666.06	23.57
538	SLU 63	40	-50	4235	0.11	1666.08	19.97
538	SLU 64	39	-55	4069	0.25	1599.19	22.23
538	SLU 65	39	-40	4070	0.15	1599.2	16.23
538	SLU 66	39	-56	4130	0.29	1623.19	22.53
538	SLU 67	40	-47	4131	0.23	1623.2	18.93
538	SLU 68	39	-41	4109	0.18	1614.45	16.42
538	SLU 69	40	-57	4169	0.32	1638.43	22.72
538	SLU 70	40	-48	4170	0.25	1638.44	19.12
538	SLU 71	39	-56	4146	0.31	1629.68	22.61
538	SLU 72	40	-47	4147	0.25	1629.69	19.01
538	SLU 73	42	-46	4458	0.18	1752.72	18.45
538	SLU 74	42	-62	4517	0.32	1776.7	24.75
538	SLU 75	42	-53	4518	0.26	1776.71	21.14
538	SLU 76	42	-46	4496	0.21	1767.96	18.64
538	SLU 77	42	-62	4556	0.35	1791.94	24.94
538	SLU 78	42	-53	4557	0.29	1791.96	21.33
538	SLU 79	42	-62	4533	0.34	1783.19	24.83
538	SLU 80	42	-53	4534	0.28	1783.2	21.23
538	SLU 81	43	-63	4622	0.3	1818.49	25.4
538	SLU 82	43	-54	4623	0.24	1818.5	21.8
538	SLU 83	43	-64	4661	0.33	1833.73	25.59
538	SLU 84	43	-55	4662	0.27	1833.74	21.99
538	SLE RA 1	29	-42	3036	0.16	1193.29	16.66
538	SLE RA 2	29	-32	3037	0.09	1193.31	12.66
538	SLE RA 3	29	-42	3077	0.18	1209.29	16.86
538	SLE RA 4	30	-36	3077	0.14	1209.3	14.46
538	SLE RA 5	30	-32	3063	0.11	1203.47	12.79
538	SLE RA 6	30	-42	3103	0.2	1219.46	16.98
538	SLE RA 7	30	-36	3103	0.16	1219.47	14.58
538	SLE RA 8	30	-42	3088	0.2	1213.62	16.91
538	SLE RA 9	30	-36	3088	0.16	1213.63	14.51
538	SLE RA 10	31	-35	3295	0.11	1295.65	14.14
538	SLE RA 11	31	-46	3335	0.21	1311.64	18.33
538	SLE RA 12	31	-40	3336	0.17	1311.64	15.93
538	SLE RA 13	31	-36	3321	0.13	1305.81	14.26
538	SLE RA 14	31	-46	3361	0.22	1321.8	18.46
538	SLE RA 15	32	-40	3361	0.18	1321.81	16.06
538	SLE RA 16	31	-46	3346	0.22	1315.96	18.39
538	SLE RA 17	31	-40	3346	0.18	1315.97	15.99
538	SLE RA 18	32	-47	3405	0.19	1339.49	18.77
538	SLE RA 19	32	-41	3405	0.15	1339.5	16.37
538	SLE RA 20	32	-47	3431	0.21	1349.66	18.9
538	SLE RA 21	32	-41	3431	0.17	1349.66	16.5
538	SLE FR 1	29	-42	3036	0.16	1193.29	16.66
538	SLE FR 2	29	-40	3036	0.15	1193.3	15.86
538	SLE FR 3	29	-42	3047	0.17	1197.36	16.71
538	SLE FR 4	30	-41	3147	0.16	1237.16	16.49
538	SLE FR 5	30	-43	3157	0.18	1241.22	17.34
538	SLE FR 6	30	-44	3221	0.18	1266.39	17.72
538	SLE QP 1	29	-42	3036	0.16	1193.29	16.66
538	SLE QP 2	30	-43	3147	0.17	1237.15	17.29
538	SLD 1	288	58	3230	-0.35	1273.46	-23.15
538	SLD 2	299	61	3231	-0.38	1273.69	-24.2
538	SLD 3	281	-126	3210	1.01	1269.21	50.48
538	SLD 4	292	-123	3212	0.99	1269.44	49.43
538	SLD 5	116	266	3200	-2.06	1254.45	-106.32
538	SLD 6	123	268	3201	-2.07	1254.61	-107.01
538	SLD 7	92	-348	3137	2.5	1240.28	139.11
538	SLD 8	100	-346	3138	2.48	1240.44	138.42
538	SLD 9	-40	260	3156	-2.14	1233.87	-103.83
538	SLD 10	-32	261	3157	-2.16	1234.03	-104.52
538	SLD 11	-64	-354	3092	2.41	1219.7	141.6
538	SLD 12	-56	-352	3093	2.4	1219.86	140.91

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
538	SLD 13	-232	37	3081	-0.65	1204.86	-14.85
538	SLD 14	-221	40	3083	-0.67	1205.1	-15.89
538	SLD 15	-239	-147	3062	0.72	1200.61	58.78
538	SLD 16	-228	-144	3064	0.69	1200.85	57.74
538	SLV 1	634	207	3342	-1.17	1322.01	-82.99
538	SLV 2	660	214	3346	-1.23	1322.57	-85.45
538	SLV 3	616	-252	3294	2.26	1312.23	100.62
538	SLV 4	642	-245	3299	2.2	1312.79	98.17
538	SLV 5	233	727	3276	-5.42	1277.35	-290.81
538	SLV 6	251	731	3279	-5.46	1277.72	-292.47
538	SLV 7	174	-803	3118	6.01	1244.73	321.23
538	SLV 8	191	-798	3121	5.96	1245.11	319.57
538	SLV 9	-131	712	3172	-5.62	1229.2	-284.99
538	SLV 10	-114	717	3175	-5.67	1229.58	-286.64
538	SLV 11	-191	-817	3014	5.8	1196.58	327.05
538	SLV 12	-174	-813	3017	5.76	1196.96	325.4
538	SLV 13	-582	159	2995	-1.86	1161.52	-63.58
538	SLV 14	-556	166	2999	-1.92	1162.08	-66.04
538	SLV 15	-600	-300	2948	1.57	1151.74	120.03
538	SLV 16	-574	-293	2952	1.51	1152.29	117.57
538	CRTFP Ux+	0	0	0	0	0	0
538	CRTFP Ux-	0	0	0	0	0	0
538	CRTFP Uy+	0	0	0	0	0	0
538	CRTFP Uy-	0	0	0	0	0	0
541	SLU 1	-55	46	3811	4.31	-780.59	11.42
541	SLU 2	-56	68	3824	4.14	-781	17.08
541	SLU 3	-56	46	3891	4.44	-797.19	11.49
541	SLU 4	-56	59	3898	4.34	-797.43	14.89
541	SLU 5	-56	68	3873	4.22	-791.33	17.12
541	SLU 6	-56	46	3940	4.53	-807.52	11.54
541	SLU 7	-57	60	3948	4.42	-807.76	14.93
541	SLU 8	-56	46	3910	4.48	-801.25	11.51
541	SLU 9	-57	59	3918	4.37	-801.49	14.9
541	SLU 10	-58	74	4287	4.72	-876.37	18.65
541	SLU 11	-58	52	4355	5.02	-892.56	13.07
541	SLU 12	-59	66	4362	4.92	-892.8	16.46
541	SLU 13	-59	75	4337	4.8	-886.7	18.7
541	SLU 14	-59	52	4404	5.11	-902.89	13.11
541	SLU 15	-59	66	4412	5.01	-903.13	16.51
541	SLU 16	-58	52	4374	5.06	-896.62	13.09
541	SLU 17	-59	66	4382	4.96	-896.86	16.48
541	SLU 18	-58	55	4474	5.14	-916.84	13.68
541	SLU 19	-59	68	4481	5.03	-917.08	17.07
541	SLU 20	-59	55	4523	5.22	-927.16	13.72
541	SLU 21	-59	68	4531	5.12	-927.41	17.11
541	SLU 22	-59	49	4375	5.13	-897.27	12.35
541	SLU 23	-61	72	4387	4.96	-897.67	18
541	SLU 24	-60	50	4454	5.26	-913.86	12.42
541	SLU 25	-61	63	4462	5.16	-914.11	15.81
541	SLU 26	-61	72	4437	5.04	-908	18.05
541	SLU 27	-61	50	4504	5.35	-924.19	12.46
541	SLU 28	-62	63	4512	5.25	-924.44	15.86
541	SLU 29	-61	50	4474	5.3	-917.93	12.44
541	SLU 30	-61	63	4481	5.2	-918.17	15.83
541	SLU 31	-63	78	4851	5.54	-993.04	19.58
541	SLU 32	-63	56	4918	5.84	-1009.23	14
541	SLU 33	-63	69	4926	5.74	-1009.48	17.39
541	SLU 34	-63	78	4900	5.62	-1003.37	19.62
541	SLU 35	-63	56	4968	5.93	-1019.56	14.04
541	SLU 36	-64	70	4975	5.83	-1019.81	17.43
541	SLU 37	-63	56	4938	5.88	-1013.3	14.01
541	SLU 38	-64	69	4945	5.78	-1013.54	17.41
541	SLU 39	-63	58	5037	5.96	-1033.51	14.6
541	SLU 40	-63	72	5045	5.86	-1033.75	18
541	SLU 41	-63	58	5087	6.04	-1043.84	14.65
541	SLU 42	-64	72	5094	5.94	-1044.08	18.04
541	SLU 43	-69	58	4761	5.32	-974.77	14.53
541	SLU 44	-71	81	4774	5.15	-975.17	20.19
541	SLU 45	-70	58	4841	5.45	-991.37	14.6
541	SLU 46	-71	72	4848	5.35	-991.61	17.99
541	SLU 47	-71	81	4823	5.23	-985.5	20.23
541	SLU 48	-71	58	4891	5.54	-1001.69	14.65
541	SLU 49	-72	72	4898	5.43	-1001.94	18.04
541	SLU 50	-71	58	4860	5.49	-995.43	14.62
541	SLU 51	-71	72	4868	5.38	-995.67	18.01
541	SLU 52	-73	87	5237	5.73	-1070.54	21.76
541	SLU 53	-73	64	5305	6.03	-1086.73	16.18
541	SLU 54	-73	78	5312	5.93	-1086.98	19.57
541	SLU 55	-73	87	5287	5.81	-1080.87	21.81
541	SLU 56	-73	65	5354	6.12	-1097.06	16.22
541	SLU 57	-74	78	5362	6.02	-1097.31	19.62
541	SLU 58	-73	65	5324	6.07	-1090.8	16.2
541	SLU 59	-74	78	5332	5.97	-1091.04	19.59
541	SLU 60	-73	67	5424	6.15	-1111.01	16.79
541	SLU 61	-73	81	5431	6.04	-1111.26	20.18
541	SLU 62	-73	67	5473	6.23	-1121.34	16.83
541	SLU 63	-74	81	5481	6.13	-1121.58	20.22
541	SLU 64	-74	62	5325	6.14	-1091.44	15.46
541	SLU 65	-75	84	5337	5.97	-1091.85	21.11

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
541	SLU 66	-75	62	5405	6.27	-1108.04	15.53
541	SLU 67	-76	75	5412	6.17	-1108.28	18.92
541	SLU 68	-76	84	5387	6.05	-1102.18	21.16
541	SLU 69	-76	62	5454	6.36	-1118.37	15.57
541	SLU 70	-77	76	5462	6.26	-1118.61	18.96
541	SLU 71	-75	62	5424	6.31	-1112.1	15.55
541	SLU 72	-76	76	5432	6.21	-1112.34	18.94
541	SLU 73	-78	91	5801	6.55	-1187.22	22.69
541	SLU 74	-78	68	5868	6.85	-1203.41	17.11
541	SLU 75	-78	82	5876	6.75	-1203.65	20.5
541	SLU 76	-78	91	5851	6.63	-1197.55	22.73
541	SLU 77	-78	68	5918	6.94	-1213.74	17.15
541	SLU 78	-79	82	5925	6.84	-1213.98	20.54
541	SLU 79	-78	68	5888	6.89	-1207.47	17.12
541	SLU 80	-78	82	5895	6.79	-1207.71	20.52
541	SLU 81	-77	71	5987	6.97	-1227.69	17.71
541	SLU 82	-78	84	5995	6.87	-1227.93	21.1
541	SLU 83	-78	71	6037	7.05	-1238.02	17.76
541	SLU 84	-79	84	6044	6.95	-1238.26	21.15
541	SLE RA 1	-56	47	3972	4.54	-813.93	11.69
541	SLE RA 2	-57	62	3980	4.43	-814.2	15.46
541	SLE RA 3	-57	47	4025	4.63	-824.99	11.73
541	SLE RA 4	-57	56	4030	4.56	-825.16	14
541	SLE RA 5	-57	62	4014	4.48	-821.09	15.49
541	SLE RA 6	-57	47	4058	4.69	-831.88	11.76
541	SLE RA 7	-58	56	4063	4.62	-832.04	14.03
541	SLE RA 8	-57	47	4038	4.65	-827.7	11.75
541	SLE RA 9	-57	56	4043	4.59	-827.86	14.01
541	SLE RA 10	-58	66	4290	4.82	-877.78	16.51
541	SLE RA 11	-58	51	4334	5.02	-888.57	12.79
541	SLE RA 12	-59	60	4339	4.95	-888.74	15.05
541	SLE RA 13	-59	66	4323	4.87	-884.67	16.54
541	SLE RA 14	-59	51	4368	5.07	-895.46	12.82
541	SLE RA 15	-59	60	4373	5.01	-895.62	15.08
541	SLE RA 16	-58	51	4347	5.04	-891.28	12.8
541	SLE RA 17	-59	60	4352	4.97	-891.44	15.06
541	SLE RA 18	-58	53	4414	5.09	-904.76	13.19
541	SLE RA 19	-59	62	4419	5.03	-904.92	15.45
541	SLE RA 20	-59	53	4447	5.15	-911.64	13.22
541	SLE RA 21	-59	62	4452	5.08	-911.81	15.48
541	SLE FR 1	-56	47	3972	4.54	-813.93	11.69
541	SLE FR 2	-56	50	3974	4.52	-813.98	12.44
541	SLE FR 3	-56	47	3985	4.56	-816.68	11.7
541	SLE FR 4	-57	51	4106	4.68	-841.23	12.89
541	SLE FR 5	-57	48	4118	4.73	-843.93	12.15
541	SLE FR 6	-57	50	4193	4.82	-859.34	12.44
541	SLE QP 1	-56	47	3972	4.54	-813.93	11.69
541	SLE QP 2	-57	48	4105	4.71	-841.18	12.14
541	SLD 1	228	267	5394	4.94	-1073.15	66.67
541	SLD 2	242	149	5375	5.14	-1072.44	37.31
541	SLD 3	244	6	5231	7.31	-1069.44	1.62
541	SLD 4	258	-112	5212	7.51	-1068.73	-27.74
541	SLD 5	2	530	4742	1.13	-916.52	132.43
541	SLD 6	11	453	4730	1.26	-916.06	113.06
541	SLD 7	56	-338	4199	9.06	-904.16	-84.39
541	SLD 8	65	-416	4186	9.19	-903.69	-103.76
541	SLD 9	-178	513	4023	0.22	-778.67	128.03
541	SLD 10	-169	435	4011	0.35	-778.2	108.66
541	SLD 11	-124	-356	3480	8.15	-766.3	-88.78
541	SLD 12	-115	-434	3467	8.28	-765.83	-108.15
541	SLD 13	-371	209	2998	1.9	-613.63	52.02
541	SLD 14	-358	90	2979	2.1	-612.92	22.65
541	SLD 15	-355	-52	2835	4.28	-609.92	-13.03
541	SLD 16	-342	-170	2816	4.48	-609.21	-42.39
541	SLV 1	609	579	7134	5.05	-1384.23	144.62
541	SLV 2	641	302	7090	5.52	-1382.56	75.6
541	SLV 3	648	-68	6727	11.01	-1375.19	-16.91
541	SLV 4	680	-345	6682	11.47	-1373.52	-85.93
541	SLV 5	77	1241	5641	-4.32	-1018.12	309.75
541	SLV 6	98	1054	5611	-4	-1016.99	263.28
541	SLV 7	209	-916	4281	15.54	-987.99	-228.68
541	SLV 8	231	-1103	4251	15.86	-986.86	-275.15
541	SLV 9	-344	1200	3958	-6.45	-695.5	299.43
541	SLV 10	-323	1013	3929	-6.13	-694.37	252.96
541	SLV 11	-212	-957	2598	13.41	-665.37	-239
541	SLV 12	-190	-1144	2569	13.73	-664.24	-285.47
541	SLV 13	-794	442	1527	-2.06	-308.84	110.21
541	SLV 14	-762	165	1483	-1.59	-307.16	41.19
541	SLV 15	-754	-205	1119	3.9	-299.8	-51.32
541	SLV 16	-722	-483	1075	4.36	-298.12	-120.34
541	CRTFP Ux+	0	0	0	0	0	0
541	CRTFP Ux-	0	0	0	0	0	0
541	CRTFP Uy+	0	0	0	0	0	0
541	CRTFP Uy-	0	0	0	0	0	0
544	SLU 1	-72	-55	6769	0.39	-15.85	0.84
544	SLU 2	-73	-25	6783	0	-15.26	0.81
544	SLU 3	-74	-56	6916	0.5	-16.37	0.85
544	SLU 4	-74	-38	6924	0.26	-16.01	0.83
544	SLU 5	-74	-26	6875	0.07	-15.62	0.81

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
544	SLU 6	-75	-57	7009	0.57	-16.72	0.85
544	SLU 7	-75	-39	7017	0.33	-16.37	0.83
544	SLU 8	-74	-57	6955	0.54	-16.57	0.84
544	SLU 9	-75	-39	6963	0.3	-16.21	0.82
544	SLU 10	-76	-30	7662	0.17	-18.66	0.91
544	SLU 11	-77	-61	7795	0.67	-19.77	0.94
544	SLU 12	-77	-43	7804	0.43	-19.41	0.92
544	SLU 13	-77	-31	7755	0.24	-19.02	0.9
544	SLU 14	-78	-62	7888	0.74	-20.12	0.94
544	SLU 15	-78	-44	7896	0.5	-19.77	0.92
544	SLU 16	-78	-62	7834	0.71	-19.97	0.93
544	SLU 17	-78	-44	7842	0.47	-19.61	0.91
544	SLU 18	-77	-62	8025	0.64	-20.71	0.98
544	SLU 19	-77	-44	8034	0.4	-20.35	0.96
544	SLU 20	-78	-63	8118	0.71	-21.07	0.97
544	SLU 21	-78	-45	8126	0.47	-20.71	0.96
544	SLU 22	-80	-62	7809	0.87	-18.81	0.91
544	SLU 23	-80	-32	7823	0.47	-18.22	0.88
544	SLU 24	-82	-63	7956	0.97	-19.32	0.92
544	SLU 25	-82	-45	7964	0.73	-18.97	0.9
544	SLU 26	-81	-32	7915	0.54	-18.58	0.88
544	SLU 27	-83	-64	8049	1.04	-19.68	0.92
544	SLU 28	-83	-46	8057	0.81	-19.33	0.9
544	SLU 29	-82	-64	7995	1.01	-19.52	0.91
544	SLU 30	-82	-45	8003	0.77	-19.17	0.89
544	SLU 31	-83	-36	8702	0.64	-21.62	0.98
544	SLU 32	-85	-68	8835	1.14	-22.72	1.01
544	SLU 33	-85	-50	8844	0.9	-22.37	0.99
544	SLU 34	-84	-37	8795	0.71	-21.98	0.97
544	SLU 35	-86	-69	8928	1.21	-23.08	1.01
544	SLU 36	-86	-51	8936	0.98	-22.73	0.99
544	SLU 37	-85	-68	8874	1.18	-22.92	1
544	SLU 38	-85	-50	8882	0.94	-22.57	0.98
544	SLU 39	-85	-69	9065	1.11	-23.67	1.05
544	SLU 40	-85	-51	9074	0.87	-23.31	1.03
544	SLU 41	-86	-70	9158	1.18	-24.02	1.04
544	SLU 42	-86	-52	9166	0.94	-23.67	1.03
544	SLU 43	-92	-69	8444	0.35	-19.59	1.07
544	SLU 44	-92	-39	8457	-0.05	-19	1.04
544	SLU 45	-93	-71	8590	0.46	-20.11	1.08
544	SLU 46	-93	-52	8599	0.22	-19.75	1.06
544	SLU 47	-93	-40	8550	0.02	-19.36	1.04
544	SLU 48	-94	-71	8683	0.53	-20.47	1.08
544	SLU 49	-94	-53	8691	0.29	-20.11	1.06
544	SLU 50	-94	-71	8629	0.49	-20.31	1.07
544	SLU 51	-94	-53	8637	0.25	-19.95	1.05
544	SLU 52	-95	-44	9336	0.12	-22.4	1.14
544	SLU 53	-96	-76	9470	0.63	-23.51	1.17
544	SLU 54	-97	-57	9478	0.39	-23.15	1.15
544	SLU 55	-96	-45	9429	0.19	-22.76	1.13
544	SLU 56	-97	-76	9562	0.7	-23.87	1.17
544	SLU 57	-98	-58	9570	0.46	-23.51	1.15
544	SLU 58	-97	-76	9508	0.66	-23.71	1.16
544	SLU 59	-97	-58	9516	0.42	-23.35	1.14
544	SLU 60	-96	-77	9700	0.59	-24.45	1.21
544	SLU 61	-96	-58	9708	0.35	-24.1	1.19
544	SLU 62	-97	-77	9792	0.66	-24.81	1.2
544	SLU 63	-97	-59	9800	0.43	-24.45	1.19
544	SLU 64	-99	-76	9484	0.82	-22.55	1.14
544	SLU 65	-99	-46	9497	0.42	-21.96	1.11
544	SLU 66	-101	-77	9630	0.93	-23.07	1.15
544	SLU 67	-101	-59	9639	0.69	-22.71	1.13
544	SLU 68	-100	-47	9590	0.5	-22.32	1.11
544	SLU 69	-102	-78	9723	1	-23.42	1.14
544	SLU 70	-102	-60	9731	0.76	-23.07	1.13
544	SLU 71	-101	-78	9669	0.96	-23.27	1.14
544	SLU 72	-101	-60	9677	0.73	-22.91	1.12
544	SLU 73	-103	-51	10376	0.59	-25.36	1.21
544	SLU 74	-104	-82	10510	1.1	-26.47	1.24
544	SLU 75	-104	-64	10518	0.86	-26.11	1.22
544	SLU 76	-104	-52	10469	0.66	-25.72	1.2
544	SLU 77	-105	-83	10602	1.17	-26.82	1.24
544	SLU 78	-105	-65	10610	0.93	-26.47	1.22
544	SLU 79	-104	-83	10548	1.13	-26.67	1.23
544	SLU 80	-104	-64	10556	0.89	-26.31	1.21
544	SLU 81	-104	-83	10740	1.06	-27.41	1.28
544	SLU 82	-104	-65	10748	0.83	-27.05	1.26
544	SLU 83	-105	-84	10832	1.14	-27.77	1.27
544	SLU 84	-105	-66	10840	0.9	-27.41	1.26
544	SLE RA 1	-75	-57	7067	0.53	-16.7	0.86
544	SLE RA 2	-75	-37	7076	0.26	-16.3	0.84
544	SLE RA 3	-76	-58	7164	0.6	-17.04	0.87
544	SLE RA 4	-76	-46	7170	0.44	-16.8	0.85
544	SLE RA 5	-75	-37	7137	0.31	-16.54	0.84
544	SLE RA 6	-76	-58	7226	0.65	-17.28	0.87
544	SLE RA 7	-76	-46	7232	0.49	-17.04	0.85
544	SLE RA 8	-76	-58	7190	0.62	-17.17	0.86
544	SLE RA 9	-76	-46	7195	0.46	-16.94	0.85
544	SLE RA 10	-77	-40	7662	0.38	-18.57	0.91

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
544	SLE RA 11	-78	-61	7751	0.71	-19.31	0.93
544	SLE RA 12	-78	-49	7756	0.55	-19.07	0.92
544	SLE RA 13	-78	-41	7723	0.42	-18.81	0.9
544	SLE RA 14	-78	-62	7812	0.76	-19.55	0.93
544	SLE RA 15	-79	-50	7818	0.6	-19.31	0.92
544	SLE RA 16	-78	-62	7776	0.74	-19.44	0.92
544	SLE RA 17	-78	-49	7782	0.58	-19.2	0.91
544	SLE RA 18	-78	-62	7904	0.69	-19.94	0.95
544	SLE RA 19	-78	-50	7909	0.53	-19.7	0.94
544	SLE RA 20	-78	-62	7966	0.74	-20.17	0.95
544	SLE RA 21	-78	-50	7971	0.58	-19.94	0.94
544	SLE FR 1	-75	-57	7067	0.53	-16.7	0.86
544	SLE FR 2	-75	-53	7068	0.48	-16.62	0.86
544	SLE FR 3	-75	-57	7091	0.55	-16.79	0.86
544	SLE FR 4	-76	-55	7320	0.52	-17.59	0.89
544	SLE FR 5	-76	-59	7342	0.6	-17.76	0.89
544	SLE FR 6	-76	-60	7485	0.61	-18.32	0.91
544	SLE QP 1	-75	-57	7067	0.53	-16.7	0.86
544	SLE QP 2	-76	-59	7318	0.58	-17.67	0.89
544	SLD 1	534	122	8173	-1.92	11.77	0.61
544	SLD 2	554	39	8156	-1.62	10.54	2.63
544	SLD 3	542	-241	7999	3.6	3.47	1.17
544	SLD 4	562	-323	7982	3.9	2.24	3.19
544	SLD 5	92	560	7842	-8.6	3.97	-0.41
544	SLD 6	105	506	7830	-8.4	3.16	0.92
544	SLD 7	118	-648	7261	9.8	-23.7	1.46
544	SLD 8	131	-703	7250	10	-24.51	2.79
544	SLD 9	-282	586	7386	-8.85	-10.83	-1.01
544	SLD 10	-269	531	7375	-8.65	-11.64	0.32
544	SLD 11	-256	-623	6805	9.55	-38.5	0.86
544	SLD 12	-243	-677	6794	9.75	-39.31	2.19
544	SLD 13	-713	206	6654	-2.75	-37.57	-1.41
544	SLD 14	-693	123	6637	-2.44	-38.8	0.61
544	SLD 15	-705	-156	6480	2.78	-45.87	-0.85
544	SLD 16	-685	-239	6463	3.08	-47.1	1.17
544	SLV 1	1350	391	9333	-5.73	51.86	0.19
544	SLV 2	1397	197	9293	-5.02	48.97	4.94
544	SLV 3	1369	-511	8897	8.1	31.15	1.55
544	SLV 4	1415	-705	8857	8.81	28.26	6.31
544	SLV 5	315	1481	8592	-22.42	35.14	-2.27
544	SLV 6	346	1350	8565	-21.94	33.19	0.93
544	SLV 7	378	-1526	7137	23.67	-33.89	2.26
544	SLV 8	409	-1657	7110	24.15	-35.84	5.46
544	SLV 9	-560	1540	7525	-23	0.5	-3.68
544	SLV 10	-529	1409	7498	-22.52	-1.45	-0.48
544	SLV 11	-497	-1467	6071	23.1	-68.53	0.85
544	SLV 12	-466	-1598	6044	23.57	-70.47	4.05
544	SLV 13	-1566	588	5778	-7.65	-63.6	-4.53
544	SLV 14	-1520	394	5739	-6.94	-66.49	0.23
544	SLV 15	-1548	-314	5342	6.17	-84.3	-3.16
544	SLV 16	-1501	-508	5302	6.89	-87.2	1.59
544	CRTFP Ux+	0	0	0	0	0	0
544	CRTFP Ux-	0	0	0	0	0	0
544	CRTFP Uy+	0	0	0	0	0	0
544	CRTFP Uy-	0	0	0	0	0	0
547	SLU 1	54	-22	6588	0.62	29.55	-0.18
547	SLU 2	55	9	6597	0.12	28.41	-0.1
547	SLU 3	55	-22	6732	0.76	30.34	-0.2
547	SLU 4	56	-4	6738	0.46	29.66	-0.16
547	SLU 5	56	9	6690	0.22	28.91	-0.13
547	SLU 6	56	-23	6825	0.86	30.85	-0.23
547	SLU 7	57	-4	6830	0.56	30.16	-0.18
547	SLU 8	56	-23	6773	0.82	30.56	-0.23
547	SLU 9	56	-4	6779	0.52	29.88	-0.18
547	SLU 10	57	9	7441	0.32	33.41	-0.1
547	SLU 11	57	-23	7577	0.97	35.34	-0.2
547	SLU 12	58	-4	7582	0.66	34.66	-0.16
547	SLU 13	58	9	7534	0.42	33.92	-0.13
547	SLU 14	58	-23	7669	1.07	35.85	-0.23
547	SLU 15	58	-4	7675	0.76	35.17	-0.18
547	SLU 16	57	-23	7618	1.03	35.56	-0.23
547	SLU 17	58	-4	7623	0.73	34.88	-0.18
547	SLU 18	57	-22	7794	0.92	36.7	-0.18
547	SLU 19	57	-3	7800	0.61	36.01	-0.13
547	SLU 20	57	-23	7887	1.02	37.2	-0.2
547	SLU 21	58	-4	7892	0.71	36.52	-0.16
547	SLU 22	60	-24	7587	1.16	34.03	-0.2
547	SLU 23	61	8	7596	0.65	32.89	-0.12
547	SLU 24	61	-24	7732	1.3	34.82	-0.22
547	SLU 25	61	-5	7737	0.99	34.14	-0.17
547	SLU 26	61	7	7689	0.75	33.39	-0.14
547	SLU 27	61	-24	7824	1.4	35.33	-0.24
547	SLU 28	62	-5	7830	1.09	34.64	-0.2
547	SLU 29	61	-24	7773	1.36	35.04	-0.24
547	SLU 30	62	-5	7778	1.05	34.35	-0.2
547	SLU 31	62	8	8441	0.86	37.89	-0.12
547	SLU 32	62	-24	8576	1.5	39.82	-0.22
547	SLU 33	63	-5	8582	1.2	39.14	-0.17
547	SLU 34	63	7	8534	0.96	38.4	-0.14

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
547	SLU 35	63	-24	8669	1.6	40.33	-0.24
547	SLU 36	64	-6	8674	1.3	39.64	-0.2
547	SLU 37	63	-24	8617	1.56	40.04	-0.24
547	SLU 38	63	-5	8623	1.26	39.36	-0.2
547	SLU 39	62	-24	8793	1.45	41.17	-0.2
547	SLU 40	63	-5	8799	1.15	40.49	-0.15
547	SLU 41	63	-24	8886	1.55	41.68	-0.22
547	SLU 42	63	-5	8892	1.25	41	-0.17
547	SLU 43	69	-28	8221	0.62	36.88	-0.23
547	SLU 44	70	3	8231	0.12	35.74	-0.15
547	SLU 45	70	-29	8366	0.76	37.67	-0.25
547	SLU 46	71	-10	8371	0.46	36.99	-0.2
547	SLU 47	71	3	8323	0.22	36.24	-0.17
547	SLU 48	71	-29	8459	0.87	38.18	-0.28
547	SLU 49	71	-10	8464	0.56	37.49	-0.23
547	SLU 50	70	-29	8407	0.83	37.89	-0.28
547	SLU 51	71	-10	8413	0.52	37.21	-0.23
547	SLU 52	72	3	9075	0.33	40.74	-0.15
547	SLU 53	72	-29	9210	0.97	42.67	-0.25
547	SLU 54	72	-10	9216	0.67	41.99	-0.2
547	SLU 55	72	3	9168	0.43	41.25	-0.17
547	SLU 56	72	-29	9303	1.07	43.18	-0.28
547	SLU 57	73	-10	9309	0.77	42.5	-0.23
547	SLU 58	72	-29	9251	1.03	42.89	-0.28
547	SLU 59	73	-10	9257	0.73	42.21	-0.23
547	SLU 60	71	-28	9428	0.92	44.03	-0.23
547	SLU 61	72	-10	9433	0.62	43.34	-0.18
547	SLU 62	72	-29	9520	1.02	44.53	-0.25
547	SLU 63	73	-10	9526	0.72	43.85	-0.2
547	SLU 64	74	-30	9221	1.16	41.36	-0.24
547	SLU 65	75	2	9230	0.65	40.22	-0.17
547	SLU 66	75	-30	9365	1.3	42.15	-0.27
547	SLU 67	76	-11	9371	1	41.47	-0.22
547	SLU 68	76	1	9323	0.75	40.72	-0.19
547	SLU 69	76	-30	9458	1.4	42.65	-0.29
547	SLU 70	77	-12	9464	1.1	41.97	-0.25
547	SLU 71	75	-30	9406	1.36	42.37	-0.29
547	SLU 72	76	-11	9412	1.06	41.68	-0.25
547	SLU 73	77	2	10074	0.86	45.22	-0.17
547	SLU 74	77	-30	10210	1.5	47.15	-0.27
547	SLU 75	77	-11	10215	1.2	46.47	-0.22
547	SLU 76	78	1	10167	0.96	45.72	-0.19
547	SLU 77	77	-30	10302	1.61	47.66	-0.29
547	SLU 78	78	-12	10308	1.3	46.97	-0.25
547	SLU 79	77	-30	10251	1.57	47.37	-0.29
547	SLU 80	78	-12	10256	1.26	46.69	-0.25
547	SLU 81	76	-30	10427	1.45	48.5	-0.24
547	SLU 82	77	-11	10433	1.15	47.82	-0.2
547	SLU 83	77	-30	10520	1.55	49.01	-0.27
547	SLU 84	78	-11	10525	1.25	48.33	-0.22
547	SLE RA 1	56	-22	6873	0.77	30.83	-0.18
547	SLE RA 2	57	-2	6879	0.44	30.07	-0.13
547	SLE RA 3	57	-23	6970	0.87	31.36	-0.2
547	SLE RA 4	57	-10	6973	0.67	30.9	-0.17
547	SLE RA 5	57	-2	6941	0.5	30.41	-0.15
547	SLE RA 6	57	-23	7031	0.93	31.69	-0.22
547	SLE RA 7	57	-10	7035	0.73	31.24	-0.18
547	SLE RA 8	57	-23	6997	0.91	31.5	-0.22
547	SLE RA 9	57	-10	7001	0.71	31.05	-0.19
547	SLE RA 10	58	-2	7442	0.57	33.4	-0.13
547	SLE RA 11	58	-23	7532	1	34.69	-0.2
547	SLE RA 12	58	-10	7536	0.8	34.24	-0.17
547	SLE RA 13	58	-2	7504	0.64	33.74	-0.15
547	SLE RA 14	58	-23	7594	1.07	35.03	-0.22
547	SLE RA 15	59	-11	7598	0.87	34.57	-0.18
547	SLE RA 16	58	-23	7560	1.05	34.84	-0.22
547	SLE RA 17	58	-10	7564	0.84	34.38	-0.19
547	SLE RA 18	57	-23	7677	0.97	35.59	-0.18
547	SLE RA 19	58	-10	7681	0.77	35.14	-0.15
547	SLE RA 20	58	-23	7739	1.04	35.93	-0.2
547	SLE RA 21	58	-10	7743	0.84	35.47	-0.17
547	SLE FR 1	56	-22	6873	0.77	30.83	-0.18
547	SLE FR 2	56	-18	6875	0.71	30.68	-0.17
547	SLE FR 3	56	-23	6898	0.8	30.96	-0.19
547	SLE FR 4	56	-18	7116	0.77	32.11	-0.17
547	SLE FR 5	56	-23	7139	0.86	32.39	-0.19
547	SLE FR 6	57	-23	7275	0.87	33.21	-0.18
547	SLE QP 1	56	-22	6873	0.77	30.83	-0.18
547	SLE QP 2	56	-23	7115	0.83	32.26	-0.18
547	SLD 1	668	160	6493	-2.88	30.82	0.46
547	SLD 2	689	246	6503	-3.32	29.44	2.76
547	SLD 3	651	-214	6369	4.05	46.39	-0.71
547	SLD 4	673	-127	6379	3.61	45.01	1.59
547	SLD 5	261	583	7115	-10.72	8.46	1.37
547	SLD 6	275	640	7121	-11.01	7.55	2.88
547	SLD 7	205	-662	6701	12.39	60.36	-2.52
547	SLD 8	220	-604	6707	12.1	59.45	-1.01
547	SLD 9	-107	559	7522	-10.43	5.07	0.64
547	SLD 10	-93	616	7528	-10.72	4.16	2.16

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
547	SLD 11	-163	-685	7108	12.67	56.96	-3.25
547	SLD 12	-149	-628	7114	12.38	56.05	-1.73
547	SLD 13	-560	82	7850	-1.94	19.51	-1.95
547	SLD 14	-539	169	7860	-2.38	18.13	0.34
547	SLD 15	-577	-291	7726	4.99	35.08	-3.12
547	SLD 16	-555	-205	7736	4.55	33.7	-0.82
547	SLV 1	1489	433	5670	-8.44	27.57	1.42
547	SLV 2	1539	636	5693	-9.48	24.33	6.82
547	SLV 3	1447	-499	5359	8.94	66.55	-1.54
547	SLV 4	1497	-296	5382	7.9	63.31	3.85
547	SLV 5	540	1489	7149	-28.12	-27.67	3.79
547	SLV 6	574	1627	7165	-28.81	-29.85	7.43
547	SLV 7	400	-1617	6112	29.82	102.28	-6.1
547	SLV 8	434	-1480	6127	29.12	100.1	-2.47
547	SLV 9	-322	1435	8102	-27.45	-35.58	2.1
547	SLV 10	-288	1572	8118	-28.15	-37.76	5.73
547	SLV 11	-462	-1672	7065	30.48	94.37	-7.79
547	SLV 12	-428	-1534	7080	29.78	92.19	-4.16
547	SLV 13	-1384	251	8847	-6.24	1.2	-4.22
547	SLV 14	-1334	454	8870	-7.27	-2.04	1.18
547	SLV 15	-1426	-681	8536	11.14	40.19	-7.19
547	SLV 16	-1376	-478	8559	10.11	36.95	-1.79
547	CRTFP Ux+	0	0	0	0	0	0
547	CRTFP Ux-	0	0	0	0	0	0
547	CRTFP Uy+	0	0	0	0	0	0
547	CRTFP Uy-	0	0	0	0	0	0
550	SLU 1	49	20	4367	5.17	1273.24	-7.3
550	SLU 2	49	44	4379	4.97	1272.8	-15.45
550	SLU 3	50	21	4464	5.35	1301.81	-7.51
550	SLU 4	50	35	4471	5.23	1301.54	-12.39
550	SLU 5	50	44	4441	5.09	1291.27	-15.75
550	SLU 6	50	22	4527	5.47	1320.27	-7.81
550	SLU 7	51	36	4534	5.35	1320.01	-12.7
550	SLU 8	50	22	4492	5.41	1310.17	-7.91
550	SLU 9	51	36	4499	5.29	1309.91	-12.8
550	SLU 10	50	46	4908	5.66	1426.93	-16.37
550	SLU 11	51	23	4993	6.04	1455.94	-8.44
550	SLU 12	51	37	5000	5.92	1455.67	-13.32
550	SLU 13	51	47	4970	5.78	1445.4	-16.68
550	SLU 14	52	24	5056	6.16	1474.41	-8.74
550	SLU 15	52	38	5062	6.04	1474.14	-13.63
550	SLU 16	51	25	5021	6.1	1464.31	-8.84
550	SLU 17	52	39	5028	5.98	1464.04	-13.72
550	SLU 18	50	24	5123	6.15	1493.43	-8.63
550	SLU 19	51	38	5130	6.04	1493.17	-13.51
550	SLU 20	51	25	5185	6.28	1511.9	-8.93
550	SLU 21	51	39	5192	6.16	1511.63	-13.82
550	SLU 22	52	20	5011	6.15	1462.24	-7.34
550	SLU 23	53	44	5023	5.95	1461.8	-15.49
550	SLU 24	54	21	5108	6.32	1490.8	-7.55
550	SLU 25	54	35	5115	6.2	1490.54	-12.44
550	SLU 26	54	44	5085	6.07	1480.26	-15.79
550	SLU 27	54	22	5171	6.44	1509.27	-7.85
550	SLU 28	55	36	5177	6.33	1509	-12.74
550	SLU 29	54	22	5136	6.39	1499.17	-7.95
550	SLU 30	54	36	5143	6.27	1498.91	-12.84
550	SLU 31	54	46	5551	6.64	1615.93	-16.42
550	SLU 32	55	24	5637	7.01	1644.94	-8.48
550	SLU 33	55	37	5644	6.89	1644.67	-13.36
550	SLU 34	55	47	5614	6.76	1634.4	-16.72
550	SLU 35	55	24	5699	7.13	1663.4	-8.78
550	SLU 36	56	38	5706	7.02	1663.14	-13.67
550	SLU 37	55	25	5665	7.08	1653.3	-8.88
550	SLU 38	55	39	5672	6.96	1653.04	-13.77
550	SLU 39	54	24	5767	7.13	1682.43	-8.67
550	SLU 40	55	38	5773	7.01	1682.16	-13.56
550	SLU 41	55	25	5829	7.25	1700.89	-8.97
550	SLU 42	55	39	5836	7.13	1700.63	-13.86
550	SLU 43	62	26	5457	6.38	1590.41	-9.48
550	SLU 44	63	50	5468	6.19	1589.97	-17.62
550	SLU 45	63	27	5554	6.56	1618.98	-9.68
550	SLU 46	63	41	5561	6.44	1618.71	-14.57
550	SLU 47	63	51	5531	6.31	1608.44	-17.93
550	SLU 48	64	28	5616	6.68	1637.45	-9.99
550	SLU 49	64	42	5623	6.56	1637.18	-14.87
550	SLU 50	63	28	5582	6.63	1627.35	-10.08
550	SLU 51	64	42	5588	6.51	1627.08	-14.97
550	SLU 52	64	52	5997	6.88	1744.1	-18.55
550	SLU 53	64	30	6083	7.25	1773.11	-10.61
550	SLU 54	65	44	6089	7.13	1772.85	-15.5
550	SLU 55	64	53	6059	7	1762.57	-18.85
550	SLU 56	65	30	6145	7.37	1791.58	-10.92
550	SLU 57	65	44	6152	7.25	1791.31	-15.8
550	SLU 58	64	31	6110	7.32	1781.48	-11.01
550	SLU 59	65	45	6117	7.2	1781.21	-15.9
550	SLU 60	64	30	6212	7.37	1810.6	-10.8
550	SLU 61	64	44	6219	7.25	1810.34	-15.69
550	SLU 62	64	31	6275	7.49	1829.07	-11.11
550	SLU 63	65	45	6282	7.37	1828.81	-15.99

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
550	SLU 64	66	26	6101	7.36	1779.41	-9.52
550	SLU 65	66	50	6112	7.16	1778.97	-17.66
550	SLU 66	67	27	6198	7.54	1807.98	-9.72
550	SLU 67	67	41	6204	7.42	1807.71	-14.61
550	SLU 68	67	51	6174	7.28	1797.44	-17.97
550	SLU 69	68	28	6260	7.66	1826.44	-10.03
550	SLU 70	68	42	6267	7.54	1826.18	-14.92
550	SLU 71	67	28	6225	7.6	1816.34	-10.13
550	SLU 72	68	42	6232	7.48	1816.08	-15.01
550	SLU 73	68	52	6641	7.85	1933.1	-18.59
550	SLU 74	68	30	6726	8.23	1962.11	-10.65
550	SLU 75	68	44	6733	8.11	1961.84	-15.54
550	SLU 76	68	53	6703	7.97	1951.57	-18.9
550	SLU 77	69	30	6789	8.35	1980.58	-10.96
550	SLU 78	69	44	6796	8.23	1980.31	-15.84
550	SLU 79	68	31	6754	8.29	1970.48	-11.05
550	SLU 80	69	45	6761	8.17	1970.21	-15.94
550	SLU 81	67	30	6856	8.35	1999.6	-10.84
550	SLU 82	68	44	6863	8.23	1999.34	-15.73
550	SLU 83	68	31	6918	8.47	2018.07	-11.15
550	SLU 84	69	45	6925	8.35	2017.8	-16.03
550	SLE RA 1	50	20	4551	5.45	1327.24	-7.31
550	SLE RA 2	50	36	4559	5.32	1326.94	-12.74
550	SLE RA 3	50	21	4616	5.57	1346.28	-7.45
550	SLE RA 4	51	30	4621	5.49	1346.11	-10.71
550	SLE RA 5	51	36	4601	5.4	1339.26	-12.94
550	SLE RA 6	51	21	4658	5.65	1358.59	-7.65
550	SLE RA 7	51	31	4662	5.57	1358.42	-10.91
550	SLE RA 8	51	21	4634	5.61	1351.86	-7.72
550	SLE RA 9	51	31	4639	5.53	1351.69	-10.98
550	SLE RA 10	51	38	4911	5.78	1429.7	-13.36
550	SLE RA 11	51	22	4968	6.03	1449.04	-8.07
550	SLE RA 12	51	32	4973	5.95	1448.86	-11.33
550	SLE RA 13	51	38	4953	5.86	1442.01	-13.56
550	SLE RA 14	52	23	5010	6.11	1461.35	-8.27
550	SLE RA 15	52	32	5015	6.03	1461.17	-11.53
550	SLE RA 16	51	23	4987	6.07	1454.62	-8.34
550	SLE RA 17	52	33	4992	5.99	1454.44	-11.59
550	SLE RA 18	51	23	5055	6.1	1474.03	-8.2
550	SLE RA 19	51	32	5060	6.03	1473.86	-11.45
550	SLE RA 20	51	23	5097	6.19	1486.34	-8.4
550	SLE RA 21	52	33	5101	6.11	1486.17	-11.66
550	SLE FR 1	50	20	4551	5.45	1327.24	-7.31
550	SLE FR 2	50	23	4553	5.42	1327.18	-8.4
550	SLE FR 3	50	21	4568	5.48	1332.16	-7.39
550	SLE FR 4	50	24	4704	5.62	1371.22	-8.66
550	SLE FR 5	50	21	4719	5.68	1376.2	-7.66
550	SLE FR 6	50	22	4803	5.78	1400.64	-7.75
550	SLE QP 1	50	20	4551	5.45	1327.24	-7.31
550	SLE QP 2	50	21	4702	5.64	1371.28	-7.58
550	SLD 1	404	127	3464	2.76	1016.34	-44.46
550	SLD 2	418	253	3473	2.5	1013.82	-88.66
550	SLD 3	392	-143	3316	5.54	1025.33	49.8
550	SLD 4	405	-16	3325	5.28	1022.81	5.6
550	SLD 5	172	439	4554	0.61	1251.61	-153.64
550	SLD 6	181	522	4560	0.44	1249.95	-182.8
550	SLD 7	132	-460	4060	9.88	1281.58	160.53
550	SLD 8	141	-376	4066	9.7	1279.92	131.38
550	SLD 9	-41	418	5339	1.58	1462.63	-146.53
550	SLD 10	-32	502	5345	1.41	1460.97	-175.69
550	SLD 11	-81	-480	4845	10.85	1492.61	167.65
550	SLD 12	-72	-397	4851	10.68	1490.94	138.49
550	SLD 13	-305	58	6080	6.01	1719.75	-20.75
550	SLD 14	-292	185	6089	5.75	1717.23	-64.95
550	SLD 15	-317	-211	5932	8.79	1728.74	73.5
550	SLD 16	-304	-84	5941	8.53	1726.22	29.3
550	SLV 1	879	289	1817	-1.33	539.95	-101.17
550	SLV 2	911	587	1837	-1.95	534.02	-205.07
550	SLV 3	848	-385	1446	5.64	562.38	134.26
550	SLV 4	881	-86	1466	5.02	556.45	30.36
550	SLV 5	339	1067	4396	-6.91	1088.97	-373.34
550	SLV 6	360	1268	4410	-7.33	1084.98	-443.28
550	SLV 7	238	-1178	3159	16.34	1163.73	411.43
550	SLV 8	259	-977	3173	15.92	1159.74	341.48
550	SLV 9	-159	1019	6232	-4.63	1582.82	-356.64
550	SLV 10	-137	1220	6246	-5.05	1578.83	-426.59
550	SLV 11	-260	-1226	4995	18.62	1657.58	428.13
550	SLV 12	-239	-1025	5009	18.2	1653.59	358.18
550	SLV 13	-780	129	7938	6.27	2186.1	-45.52
550	SLV 14	-748	427	7959	5.65	2180.18	-149.41
550	SLV 15	-811	-545	7567	13.24	2208.53	189.91
550	SLV 16	-779	-247	7588	12.62	2202.61	86.02
550	CRTFP Ux+	0	0	0	0	0	0
550	CRTFP Ux-	0	0	0	0	0	0
550	CRTFP Uy+	0	0	0	0	0	0
550	CRTFP Uy-	0	0	0	0	0	0
554	SLU 1	26	-40	2915	-0.09	1151.7	15.96
554	SLU 2	26	-25	2912	-0.19	1150.04	9.96
554	SLU 3	26	-40	2978	-0.06	1176.43	16.26

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
554	SLU 4	26	-31	2976	-0.12	1175.44	12.65
554	SLU 5	26	-25	2952	-0.17	1165.81	10.15
554	SLU 6	26	-41	3017	-0.04	1192.2	16.45
554	SLU 7	26	-32	3016	-0.1	1191.21	12.84
554	SLU 8	26	-41	2995	-0.05	1183.24	16.34
554	SLU 9	26	-32	2993	-0.11	1182.24	12.74
554	SLU 10	28	-30	3300	-0.19	1304.47	12.17
554	SLU 11	28	-46	3366	-0.06	1330.86	18.46
554	SLU 12	28	-37	3364	-0.12	1329.87	14.86
554	SLU 13	28	-31	3340	-0.17	1320.24	12.36
554	SLU 14	28	-46	3405	-0.04	1346.63	18.65
554	SLU 15	29	-37	3404	-0.1	1345.64	15.05
554	SLU 16	28	-46	3383	-0.04	1337.67	18.55
554	SLU 17	28	-37	3381	-0.1	1336.68	14.95
554	SLU 18	29	-47	3469	-0.09	1372.31	19.12
554	SLU 19	29	-38	3468	-0.15	1371.32	15.51
554	SLU 20	29	-48	3509	-0.06	1388.08	19.31
554	SLU 21	29	-39	3507	-0.12	1387.09	15.7
554	SLU 22	29	-45	3348	0.03	1322.74	17.97
554	SLU 23	29	-30	3345	-0.07	1321.09	11.96
554	SLU 24	29	-45	3410	0.06	1347.48	18.26
554	SLU 25	29	-36	3408	0	1346.49	14.66
554	SLU 26	29	-30	3385	-0.05	1336.86	12.15
554	SLU 27	29	-46	3450	0.08	1363.25	18.45
554	SLU 28	30	-37	3448	0.02	1362.26	14.85
554	SLU 29	29	-46	3427	0.07	1354.28	18.35
554	SLU 30	29	-37	3425	0.01	1353.29	14.74
554	SLU 31	31	-35	3733	-0.07	1475.52	14.17
554	SLU 32	31	-51	3798	0.06	1501.91	20.47
554	SLU 33	32	-42	3796	0	1500.92	16.86
554	SLU 34	31	-36	3773	-0.04	1491.29	14.36
554	SLU 35	32	-51	3838	0.09	1517.68	20.66
554	SLU 36	32	-42	3836	0.03	1516.69	17.05
554	SLU 37	31	-51	3815	0.08	1508.72	20.55
554	SLU 38	32	-42	3813	0.02	1507.72	16.95
554	SLU 39	32	-52	3902	0.03	1543.36	21.12
554	SLU 40	32	-43	3900	-0.03	1542.37	17.52
554	SLU 41	32	-53	3942	0.06	1559.13	21.31
554	SLU 42	32	-44	3940	0	1558.14	17.71
554	SLU 43	32	-50	3641	-0.16	1438.56	20.07
554	SLU 44	32	-35	3639	-0.26	1436.9	14.06
554	SLU 45	33	-51	3704	-0.13	1463.29	20.36
554	SLU 46	33	-42	3702	-0.19	1462.3	16.76
554	SLU 47	33	-35	3678	-0.24	1452.68	14.25
554	SLU 48	33	-51	3744	-0.11	1479.06	20.55
554	SLU 49	33	-42	3742	-0.17	1478.07	16.95
554	SLU 50	33	-51	3721	-0.12	1470.1	20.45
554	SLU 51	33	-42	3719	-0.18	1469.11	16.84
554	SLU 52	35	-40	4027	-0.26	1591.34	16.27
554	SLU 53	35	-56	4092	-0.13	1617.73	22.57
554	SLU 54	35	-47	4090	-0.19	1616.73	18.96
554	SLU 55	35	-41	4066	-0.24	1607.11	16.46
554	SLU 56	35	-57	4132	-0.11	1633.5	22.76
554	SLU 57	35	-48	4130	-0.17	1632.5	19.15
554	SLU 58	35	-56	4109	-0.11	1624.53	22.65
554	SLU 59	35	-47	4107	-0.17	1623.54	19.05
554	SLU 60	35	-58	4196	-0.16	1659.18	23.22
554	SLU 61	36	-49	4194	-0.22	1658.18	19.62
554	SLU 62	36	-58	4235	-0.13	1674.95	23.41
554	SLU 63	36	-49	4234	-0.19	1673.95	19.81
554	SLU 64	35	-55	4074	-0.04	1609.61	22.07
554	SLU 65	36	-40	4071	-0.14	1607.95	16.06
554	SLU 66	36	-56	4136	-0.01	1634.34	22.36
554	SLU 67	36	-47	4135	-0.07	1633.35	18.76
554	SLU 68	36	-40	4111	-0.12	1623.72	16.25
554	SLU 69	36	-56	4176	0.01	1650.11	22.55
554	SLU 70	36	-47	4174	-0.05	1649.12	18.95
554	SLU 71	36	-56	4153	0	1641.15	22.45
554	SLU 72	36	-47	4152	-0.06	1640.16	18.85
554	SLU 73	38	-45	4459	-0.14	1762.39	18.27
554	SLU 74	38	-61	4524	-0.01	1788.77	24.57
554	SLU 75	38	-52	4523	-0.07	1787.78	20.97
554	SLU 76	38	-46	4499	-0.11	1778.16	18.46
554	SLU 77	38	-61	4564	0.02	1804.54	24.76
554	SLU 78	38	-52	4562	-0.04	1803.55	21.16
554	SLU 79	38	-61	4541	0.01	1795.58	24.66
554	SLU 80	38	-52	4540	-0.05	1794.59	21.05
554	SLU 81	39	-63	4628	-0.04	1830.22	25.22
554	SLU 82	39	-54	4627	-0.1	1829.23	21.62
554	SLU 83	39	-63	4668	-0.01	1845.99	25.41
554	SLU 84	39	-54	4666	-0.07	1845	21.81
554	SLE RA 1	27	-41	3039	-0.06	1200.57	16.54
554	SLE RA 2	27	-31	3037	-0.13	1199.46	12.53
554	SLE RA 3	27	-42	3080	-0.04	1217.06	16.73
554	SLE RA 4	27	-36	3079	-0.08	1216.39	14.33
554	SLE RA 5	27	-31	3063	-0.11	1209.98	12.66
554	SLE RA 6	27	-42	3107	-0.02	1227.57	16.86
554	SLE RA 7	27	-36	3106	-0.06	1226.91	14.46
554	SLE RA 8	27	-42	3092	-0.03	1221.59	16.79

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
554	SLE RA 9	27	-36	3091	-0.07	1220.93	14.39
554	SLE RA 10	28	-35	3296	-0.12	1302.42	14
554	SLE RA 11	28	-45	3339	-0.04	1320.01	18.2
554	SLE RA 12	28	-39	3338	-0.08	1319.35	15.8
554	SLE RA 13	28	-35	3322	-0.11	1312.93	14.13
554	SLE RA 14	28	-46	3366	-0.02	1330.52	18.33
554	SLE RA 15	29	-40	3364	-0.06	1329.86	15.93
554	SLE RA 16	28	-45	3350	-0.03	1324.55	18.26
554	SLE RA 17	28	-39	3349	-0.06	1323.89	15.86
554	SLE RA 18	29	-46	3408	-0.06	1347.64	18.64
554	SLE RA 19	29	-40	3407	-0.09	1346.98	16.24
554	SLE RA 20	29	-47	3435	-0.04	1358.16	18.76
554	SLE RA 21	29	-41	3434	-0.08	1357.5	16.36
554	SLE FR 1	27	-41	3039	-0.06	1200.57	16.54
554	SLE FR 2	27	-39	3038	-0.07	1200.35	15.74
554	SLE FR 3	27	-41	3049	-0.05	1204.77	16.59
554	SLE FR 4	27	-41	3149	-0.07	1244.47	16.37
554	SLE FR 5	27	-43	3160	-0.05	1248.89	17.22
554	SLE FR 6	28	-44	3223	-0.06	1274.11	17.59
554	SLE QP 1	27	-41	3039	-0.06	1200.57	16.54
554	SLE QP 2	27	-43	3150	-0.06	1244.69	17.17
554	SLD 1	289	58	3207	-0.63	1270.19	-23.36
554	SLD 2	296	61	3208	-0.66	1270.1	-24.41
554	SLD 3	283	-126	3248	0.69	1292.92	50.31
554	SLD 4	291	-123	3249	0.66	1292.83	49.25
554	SLD 5	113	266	3105	-2.23	1217.88	-106.53
554	SLD 6	118	268	3105	-2.24	1217.82	-107.23
554	SLD 7	94	-347	3241	2.17	1293.65	139.03
554	SLD 8	99	-345	3241	2.15	1293.59	138.33
554	SLD 9	-45	260	3058	-2.27	1195.78	-104
554	SLD 10	-40	262	3058	-2.29	1195.73	-104.7
554	SLD 11	-64	-353	3194	2.13	1271.56	141.56
554	SLD 12	-58	-352	3194	2.11	1271.5	140.86
554	SLD 13	-236	38	3050	-0.78	1196.54	-14.92
554	SLD 14	-229	40	3051	-0.81	1196.46	-15.98
554	SLD 15	-242	-146	3091	0.54	1219.28	58.75
554	SLD 16	-234	-144	3092	0.51	1219.19	57.69
554	SLV 1	639	208	3282	-1.51	1302.65	-83.3
554	SLV 2	657	214	3284	-1.57	1302.45	-85.79
554	SLV 3	625	-251	3383	1.8	1359.25	100.4
554	SLV 4	643	-244	3385	1.74	1359.05	97.91
554	SLV 5	228	727	3035	-5.49	1176.27	-291.13
554	SLV 6	241	732	3036	-5.53	1176.13	-292.81
554	SLV 7	182	-802	3373	5.52	1364.94	321.22
554	SLV 8	194	-798	3374	5.48	1364.8	319.55
554	SLV 9	-140	713	2925	-5.6	1124.58	-285.21
554	SLV 10	-128	717	2926	-5.64	1124.44	-286.89
554	SLV 11	-187	-817	3263	5.42	1313.24	327.14
554	SLV 12	-174	-813	3264	5.38	1313.11	325.46
554	SLV 13	-589	159	2914	-1.86	1130.33	-63.58
554	SLV 14	-571	166	2916	-1.92	1130.13	-66.07
554	SLV 15	-603	-300	3016	1.45	1186.93	120.13
554	SLV 16	-585	-293	3017	1.39	1186.73	117.64
554	CRTFP Ux+	0	0	0	0	0	0
554	CRTFP Ux-	0	0	0	0	0	0
554	CRTFP Uy+	0	0	0	0	0	0
554	CRTFP Uy-	0	0	0	0	0	0
557	SLU 1	-47	39	3354	-92.08	-746.5	8.39
557	SLU 2	-48	58	3361	-92.36	-746.91	13.19
557	SLU 3	-48	39	3425	-94.01	-762.5	8.42
557	SLU 4	-49	51	3429	-94.18	-762.74	11.3
557	SLU 5	-49	58	3405	-93.56	-756.87	13.21
557	SLU 6	-49	39	3470	-95.21	-772.46	8.44
557	SLU 7	-49	51	3474	-95.38	-772.7	11.32
557	SLU 8	-49	39	3443	-94.48	-766.42	8.43
557	SLU 9	-49	51	3447	-94.65	-766.67	11.31
557	SLU 10	-50	64	3770	-103.57	-838.53	14.48
557	SLU 11	-50	44	3834	-105.22	-854.12	9.71
557	SLU 12	-51	56	3838	-105.39	-854.36	12.59
557	SLU 13	-51	64	3814	-104.78	-848.49	14.5
557	SLU 14	-51	45	3879	-106.42	-864.08	9.73
557	SLU 15	-51	56	3883	-106.59	-864.32	12.61
557	SLU 16	-50	45	3852	-105.69	-858.04	9.72
557	SLU 17	-51	56	3856	-105.86	-858.29	12.6
557	SLU 18	-50	47	3939	-108.1	-877.39	10.23
557	SLU 19	-51	58	3943	-108.27	-877.63	13.11
557	SLU 20	-51	47	3983	-109.3	-887.35	10.25
557	SLU 21	-51	58	3987	-109.47	-887.59	13.13
557	SLU 22	-51	42	3854	-105.71	-858.76	9.05
557	SLU 23	-52	61	3861	-106	-859.16	13.86
557	SLU 24	-52	42	3925	-107.65	-874.75	9.08
557	SLU 25	-53	54	3929	-107.82	-875	11.97
557	SLU 26	-53	61	3905	-107.2	-869.12	13.88
557	SLU 27	-53	42	3970	-108.85	-884.72	9.11
557	SLU 28	-53	54	3974	-109.02	-884.96	11.99
557	SLU 29	-53	42	3943	-108.12	-878.68	9.09
557	SLU 30	-53	54	3947	-108.29	-878.92	11.98
557	SLU 31	-54	67	4270	-117.21	-950.78	15.15
557	SLU 32	-54	48	4335	-118.86	-966.37	10.37

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
557	SLU 33	-55	59	4339	-119.03	-966.62	13.26
557	SLU 34	-55	67	4314	-118.41	-960.74	15.17
557	SLU 35	-55	48	4379	-120.06	-976.34	10.39
557	SLU 36	-55	59	4383	-120.23	-976.58	13.28
557	SLU 37	-54	48	4352	-119.33	-970.3	10.38
557	SLU 38	-55	59	4356	-119.5	-970.54	13.27
557	SLU 39	-54	50	4439	-121.74	-989.64	10.89
557	SLU 40	-55	61	4443	-121.91	-989.89	13.78
557	SLU 41	-55	50	4483	-122.94	-999.6	10.91
557	SLU 42	-55	61	4487	-123.11	-999.85	13.8
557	SLU 43	-60	49	4189	-115.02	-931.96	10.67
557	SLU 44	-61	69	4195	-115.31	-932.37	15.48
557	SLU 45	-61	50	4260	-116.95	-947.96	10.71
557	SLU 46	-62	61	4264	-117.12	-948.2	13.59
557	SLU 47	-61	69	4240	-116.51	-942.33	15.5
557	SLU 48	-62	50	4304	-118.16	-957.92	10.73
557	SLU 49	-62	61	4308	-118.33	-958.17	13.61
557	SLU 50	-61	50	4277	-117.43	-951.89	10.72
557	SLU 51	-62	61	4281	-117.6	-952.13	13.6
557	SLU 52	-63	74	4605	-126.52	-1023.99	16.77
557	SLU 53	-63	55	4669	-128.17	-1039.58	11.99
557	SLU 54	-63	67	4673	-128.34	-1039.83	14.88
557	SLU 55	-63	74	4649	-127.72	-1033.95	16.79
557	SLU 56	-64	55	4713	-129.37	-1049.54	12.01
557	SLU 57	-64	67	4717	-129.54	-1049.79	14.9
557	SLU 58	-63	55	4687	-128.64	-1043.51	12
557	SLU 59	-64	67	4691	-128.81	-1043.75	14.89
557	SLU 60	-63	57	4773	-131.04	-1062.85	12.51
557	SLU 61	-63	69	4777	-131.21	-1063.09	15.4
557	SLU 62	-64	57	4818	-132.25	-1072.81	12.53
557	SLU 63	-64	69	4822	-132.42	-1073.05	15.42
557	SLU 64	-64	53	4689	-128.66	-1044.22	11.34
557	SLU 65	-65	72	4695	-128.95	-1044.62	16.15
557	SLU 66	-65	53	4760	-130.59	-1060.22	11.37
557	SLU 67	-66	64	4764	-130.76	-1060.46	14.26
557	SLU 68	-66	72	4740	-130.15	-1054.59	16.17
557	SLU 69	-66	53	4804	-131.79	-1070.18	11.39
557	SLU 70	-66	65	4808	-131.96	-1070.42	14.28
557	SLU 71	-65	53	4778	-131.06	-1064.14	11.38
557	SLU 72	-66	64	4781	-131.23	-1064.39	14.27
557	SLU 73	-67	77	5105	-140.16	-1136.25	17.43
557	SLU 74	-67	58	5169	-141.81	-1151.84	12.66
557	SLU 75	-68	70	5173	-141.98	-1152.08	15.54
557	SLU 76	-67	77	5149	-141.36	-1146.21	17.46
557	SLU 77	-68	58	5214	-143.01	-1161.8	12.68
557	SLU 78	-68	70	5218	-143.18	-1162.04	15.56
557	SLU 79	-67	58	5187	-142.28	-1155.76	12.67
557	SLU 80	-68	70	5191	-142.45	-1156.01	15.55
557	SLU 81	-67	60	5273	-144.68	-1175.11	13.18
557	SLU 82	-67	72	5277	-144.85	-1175.35	16.06
557	SLU 83	-68	60	5318	-145.88	-1185.07	13.2
557	SLU 84	-68	72	5322	-146.05	-1185.31	16.08
557	SLE RA 1	-49	40	3497	-95.97	-778.57	8.58
557	SLE RA 2	-49	53	3501	-96.16	-778.84	11.78
557	SLE RA 3	-49	40	3544	-97.26	-789.24	8.6
557	SLE RA 4	-49	48	3547	-97.37	-789.4	10.52
557	SLE RA 5	-49	53	3531	-96.96	-785.49	11.8
557	SLE RA 6	-50	40	3574	-98.06	-795.88	8.61
557	SLE RA 7	-50	48	3577	-98.17	-796.04	10.53
557	SLE RA 8	-49	40	3556	-97.57	-791.86	8.6
557	SLE RA 9	-50	48	3559	-97.69	-792.02	10.53
557	SLE RA 10	-50	56	3774	-103.64	-839.92	12.64
557	SLE RA 11	-50	43	3817	-104.74	-850.32	9.46
557	SLE RA 12	-51	51	3820	-104.85	-850.48	11.38
557	SLE RA 13	-51	56	3804	-104.44	-846.57	12.65
557	SLE RA 14	-51	44	3847	-105.54	-856.96	9.47
557	SLE RA 15	-51	51	3849	-105.65	-857.12	11.39
557	SLE RA 16	-51	44	3829	-105.05	-852.94	9.46
557	SLE RA 17	-51	51	3831	-105.16	-853.1	11.39
557	SLE RA 18	-50	45	3887	-106.65	-865.83	9.8
557	SLE RA 19	-51	53	3889	-106.77	-865.99	11.73
557	SLE RA 20	-51	45	3916	-107.45	-872.47	9.82
557	SLE RA 21	-51	53	3919	-107.57	-872.63	11.74
557	SLE FR 1	-49	40	3497	-95.97	-778.57	8.58
557	SLE FR 2	-49	42	3498	-96.01	-778.63	9.22
557	SLE FR 3	-49	40	3509	-96.29	-781.23	8.58
557	SLE FR 4	-49	44	3615	-99.22	-804.81	9.59
557	SLE FR 5	-49	41	3626	-99.5	-807.41	8.95
557	SLE FR 6	-49	42	3692	-101.31	-822.2	9.19
557	SLE QP 1	-49	40	3497	-95.97	-778.57	8.58
557	SLE QP 2	-49	41	3614	-99.18	-804.75	8.94
557	SLD 1	202	228	4719	-130.2	-1028.71	57.31
557	SLD 2	209	127	4708	-129.77	-1027.75	32.34
557	SLD 3	212	5	4636	-126.5	-1025.07	1.92
557	SLD 4	219	-96	4625	-126.07	-1024.11	-23.05
557	SLD 5	10	454	4073	-114.17	-877.63	111.94
557	SLD 6	14	387	4066	-113.89	-876.99	95.47
557	SLD 7	43	-290	3797	-101.84	-865.5	-72.67
557	SLD 8	48	-357	3789	-101.56	-864.87	-89.14

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
557	SLD 9	-146	439	3438	-96.8	-744.63	107.03
557	SLD 10	-141	372	3431	-96.51	-744	90.56
557	SLD 11	-113	-305	3162	-84.47	-732.51	-77.58
557	SLD 12	-108	-371	3154	-84.18	-731.87	-94.05
557	SLD 13	-317	179	2603	-72.28	-585.39	40.94
557	SLD 14	-310	77	2591	-71.85	-584.43	15.96
557	SLD 15	-307	-45	2520	-68.59	-581.75	-14.45
557	SLD 16	-300	-146	2508	-68.16	-580.79	-39.42
557	SLV 1	537	496	6208	-172.08	-1329.07	126.27
557	SLV 2	553	258	6181	-171.07	-1326.81	67.58
557	SLV 3	561	-58	6000	-162.82	-1320.17	-11.26
557	SLV 4	578	-296	5973	-161.81	-1317.91	-69.96
557	SLV 5	86	1062	4712	-135.28	-975.97	263.7
557	SLV 6	98	902	4694	-134.6	-974.45	224.18
557	SLV 7	168	-785	4020	-104.42	-946.29	-194.76
557	SLV 8	179	-945	4002	-103.74	-944.77	-234.28
557	SLV 9	-277	1027	3226	-94.62	-664.73	252.17
557	SLV 10	-266	867	3208	-93.94	-663.21	212.65
557	SLV 11	-196	-820	2534	-63.76	-635.05	-206.29
557	SLV 12	-185	-980	2515	-63.08	-633.53	-245.81
557	SLV 13	-676	379	1254	-36.55	-291.6	87.85
557	SLV 14	-659	141	1227	-35.53	-289.34	29.15
557	SLV 15	-652	-175	1046	-27.29	-282.69	-49.69
557	SLV 16	-635	-413	1020	-26.28	-280.43	-108.39
557	CRTFP Ux+	0	0	0	0	0	0
557	CRTFP Ux-	0	0	0	0	0	0
557	CRTFP Uy+	0	0	0	0	0	0
557	CRTFP Uy-	0	0	0	0	0	0
560	SLU 1	-66	-45	5810	-162.06	-11.45	-1.12
560	SLU 2	-66	-19	5812	-162.34	-10.88	-1.14
560	SLU 3	-67	-46	5938	-165.59	-11.87	-1.15
560	SLU 4	-67	-31	5940	-165.75	-11.53	-1.16
560	SLU 5	-67	-20	5893	-164.56	-11.17	-1.16
560	SLU 6	-68	-47	6019	-167.81	-12.17	-1.17
560	SLU 7	-68	-31	6021	-167.98	-11.82	-1.18
560	SLU 8	-68	-46	5972	-166.51	-12.04	-1.16
560	SLU 9	-68	-31	5973	-166.67	-11.7	-1.17
560	SLU 10	-69	-23	6570	-183.4	-13.53	-1.16
560	SLU 11	-70	-50	6696	-186.65	-14.53	-1.17
560	SLU 12	-70	-35	6697	-186.82	-14.18	-1.18
560	SLU 13	-70	-24	6651	-185.62	-13.83	-1.18
560	SLU 14	-71	-51	6777	-188.88	-14.82	-1.19
560	SLU 15	-71	-35	6778	-189.04	-14.48	-1.2
560	SLU 16	-71	-51	6729	-187.57	-14.7	-1.18
560	SLU 17	-71	-35	6731	-187.74	-14.35	-1.19
560	SLU 18	-70	-51	6892	-192.15	-15.25	-1.15
560	SLU 19	-70	-35	6893	-192.32	-14.9	-1.16
560	SLU 20	-71	-52	6973	-194.37	-15.54	-1.17
560	SLU 21	-71	-36	6974	-194.54	-15.2	-1.18
560	SLU 22	-73	-51	6712	-187	-13.71	-1.23
560	SLU 23	-73	-25	6715	-187.28	-13.14	-1.25
560	SLU 24	-74	-52	6840	-190.53	-14.13	-1.26
560	SLU 25	-74	-36	6842	-190.69	-13.79	-1.27
560	SLU 26	-74	-25	6796	-189.5	-13.44	-1.27
560	SLU 27	-75	-52	6921	-192.75	-14.43	-1.28
560	SLU 28	-75	-37	6923	-192.92	-14.09	-1.29
560	SLU 29	-74	-52	6874	-191.45	-14.31	-1.28
560	SLU 30	-74	-36	6876	-191.61	-13.96	-1.28
560	SLU 31	-76	-29	7472	-208.34	-15.8	-1.27
560	SLU 32	-77	-56	7598	-211.59	-16.79	-1.28
560	SLU 33	-77	-40	7599	-211.76	-16.44	-1.29
560	SLU 34	-77	-29	7553	-210.56	-16.09	-1.29
560	SLU 35	-78	-56	7679	-213.81	-17.08	-1.3
560	SLU 36	-78	-41	7680	-213.98	-16.74	-1.31
560	SLU 37	-78	-56	7631	-212.51	-16.96	-1.3
560	SLU 38	-78	-41	7633	-212.68	-16.62	-1.3
560	SLU 39	-77	-57	7794	-217.09	-17.51	-1.26
560	SLU 40	-77	-41	7796	-217.26	-17.16	-1.27
560	SLU 41	-78	-57	7875	-219.31	-17.8	-1.28
560	SLU 42	-78	-42	7877	-219.48	-17.46	-1.29
560	SLU 43	-83	-57	7243	-202.13	-14.11	-1.42
560	SLU 44	-83	-31	7246	-202.4	-13.54	-1.43
560	SLU 45	-85	-58	7372	-205.65	-14.53	-1.45
560	SLU 46	-85	-42	7373	-205.82	-14.19	-1.46
560	SLU 47	-84	-31	7327	-204.63	-13.83	-1.45
560	SLU 48	-86	-58	7453	-207.88	-14.83	-1.47
560	SLU 49	-86	-43	7454	-208.04	-14.48	-1.48
560	SLU 50	-85	-58	7405	-206.58	-14.7	-1.46
560	SLU 51	-85	-43	7407	-206.74	-14.36	-1.47
560	SLU 52	-87	-35	8003	-223.47	-16.19	-1.45
560	SLU 53	-88	-62	8129	-226.72	-17.19	-1.47
560	SLU 54	-88	-46	8131	-226.88	-16.84	-1.48
560	SLU 55	-87	-36	8084	-225.69	-16.49	-1.47
560	SLU 56	-89	-63	8210	-228.94	-17.48	-1.49
560	SLU 57	-89	-47	8212	-229.11	-17.14	-1.5
560	SLU 58	-88	-62	8163	-227.64	-17.36	-1.48
560	SLU 59	-88	-47	8164	-227.8	-17.02	-1.49
560	SLU 60	-88	-63	8325	-232.22	-17.91	-1.45
560	SLU 61	-88	-47	8327	-232.38	-17.56	-1.46

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
560	SLU 62	-89	-63	8406	-234.44	-18.2	-1.47
560	SLU 63	-89	-48	8408	-234.61	-17.86	-1.48
560	SLU 64	-90	-62	8146	-227.07	-16.37	-1.53
560	SLU 65	-90	-36	8148	-227.34	-15.8	-1.55
560	SLU 66	-92	-63	8274	-230.59	-16.79	-1.56
560	SLU 67	-92	-48	8276	-230.76	-16.45	-1.57
560	SLU 68	-91	-37	8229	-229.57	-16.1	-1.57
560	SLU 69	-92	-64	8355	-232.82	-17.09	-1.58
560	SLU 70	-92	-48	8357	-232.98	-16.75	-1.59
560	SLU 71	-92	-64	8308	-231.52	-16.97	-1.57
560	SLU 72	-92	-48	8309	-231.68	-16.62	-1.58
560	SLU 73	-93	-40	8906	-248.41	-18.46	-1.57
560	SLU 74	-95	-67	9031	-251.66	-19.45	-1.58
560	SLU 75	-95	-52	9033	-251.82	-19.1	-1.59
560	SLU 76	-94	-41	8987	-250.63	-18.75	-1.59
560	SLU 77	-95	-68	9112	-253.88	-19.75	-1.6
560	SLU 78	-96	-53	9114	-254.05	-19.4	-1.61
560	SLU 79	-95	-68	9065	-252.58	-19.62	-1.59
560	SLU 80	-95	-52	9067	-252.74	-19.28	-1.6
560	SLU 81	-95	-68	9228	-257.16	-20.17	-1.56
560	SLU 82	-95	-53	9229	-257.32	-19.82	-1.57
560	SLU 83	-95	-69	9309	-259.38	-20.46	-1.58
560	SLU 84	-96	-53	9310	-259.55	-20.12	-1.59
560	SLE RA 1	-68	-47	6068	-169.19	-12.1	-1.15
560	SLE RA 2	-68	-29	6069	-169.37	-11.72	-1.16
560	SLE RA 3	-69	-47	6153	-171.54	-12.38	-1.17
560	SLE RA 4	-69	-37	6154	-171.65	-12.15	-1.18
560	SLE RA 5	-68	-30	6123	-170.85	-11.91	-1.18
560	SLE RA 6	-69	-48	6207	-173.02	-12.58	-1.19
560	SLE RA 7	-69	-37	6208	-173.13	-12.35	-1.19
560	SLE RA 8	-69	-48	6176	-172.15	-12.49	-1.18
560	SLE RA 9	-69	-37	6177	-172.26	-12.26	-1.19
560	SLE RA 10	-70	-32	6574	-183.41	-13.49	-1.18
560	SLE RA 11	-71	-50	6658	-185.58	-14.15	-1.19
560	SLE RA 12	-71	-40	6659	-185.69	-13.92	-1.19
560	SLE RA 13	-71	-33	6628	-184.89	-13.68	-1.19
560	SLE RA 14	-71	-51	6712	-187.06	-14.35	-1.2
560	SLE RA 15	-71	-40	6713	-187.17	-14.12	-1.21
560	SLE RA 16	-71	-50	6681	-186.19	-14.26	-1.19
560	SLE RA 17	-71	-40	6682	-186.3	-14.03	-1.2
560	SLE RA 18	-71	-51	6789	-189.25	-14.63	-1.17
560	SLE RA 19	-71	-40	6790	-189.36	-14.4	-1.18
560	SLE RA 20	-71	-51	6843	-190.73	-14.82	-1.19
560	SLE RA 21	-71	-41	6844	-190.84	-14.59	-1.19
560	SLE FR 1	-68	-47	6068	-169.19	-12.1	-1.15
560	SLE FR 2	-68	-43	6068	-169.22	-12.02	-1.16
560	SLE FR 3	-68	-47	6089	-169.78	-12.18	-1.16
560	SLE FR 4	-69	-44	6284	-175.24	-12.78	-1.16
560	SLE FR 5	-69	-48	6306	-175.8	-12.94	-1.16
560	SLE FR 6	-69	-49	6428	-179.22	-13.36	-1.16
560	SLE QP 1	-68	-47	6068	-169.19	-12.1	-1.15
560	SLE QP 2	-69	-48	6284	-175.2	-12.86	-1.16
560	SLD 1	455	107	6962	-195.33	13.11	13.2
560	SLD 2	464	37	6954	-194.97	12.09	14.82
560	SLD 3	461	-203	6936	-191.81	5.32	13.56
560	SLD 4	470	-273	6928	-191.44	4.29	15.19
560	SLD 5	78	482	6529	-186.66	6.94	2.31
560	SLD 6	84	435	6524	-186.42	6.26	3.38
560	SLD 7	97	-552	6441	-174.9	-19.04	3.51
560	SLD 8	103	-598	6436	-174.66	-19.72	4.58
560	SLD 9	-241	503	6132	-175.75	-6	-6.9
560	SLD 10	-235	456	6127	-175.51	-6.67	-5.83
560	SLD 11	-222	-531	6044	-163.99	-31.98	-5.7
560	SLD 12	-216	-577	6039	-163.75	-32.66	-4.63
560	SLD 13	-607	178	5640	-158.96	-30.01	-17.5
560	SLD 14	-598	107	5632	-158.6	-31.03	-15.88
560	SLD 15	-602	-133	5614	-155.44	-37.8	-17.14
560	SLD 16	-593	-203	5606	-155.07	-38.83	-15.52
560	SLV 1	1157	338	7873	-222.6	48.53	32.41
560	SLV 2	1178	173	7854	-221.75	46.12	36.23
560	SLV 3	1170	-433	7808	-213.77	29.07	33.28
560	SLV 4	1192	-599	7789	-212.91	26.66	37.1
560	SLV 5	274	1269	6862	-202.98	35.52	6.88
560	SLV 6	289	1158	6850	-202.4	33.9	9.45
560	SLV 7	320	-1303	6646	-173.54	-29.34	9.78
560	SLV 8	334	-1414	6634	-172.96	-30.97	12.35
560	SLV 9	-471	1319	5934	-177.45	5.25	-14.67
560	SLV 10	-457	1207	5922	-176.87	3.63	-12.1
560	SLV 11	-426	-1254	5718	-148	-59.61	-11.77
560	SLV 12	-412	-1365	5706	-147.43	-61.24	-9.2
560	SLV 13	-1329	503	4779	-137.49	-52.37	-39.42
560	SLV 14	-1308	338	4760	-136.64	-54.79	-35.6
560	SLV 15	-1315	-269	4714	-128.66	-71.83	-38.55
560	SLV 16	-1294	-434	4696	-127.81	-74.25	-34.73
560	CRTFP Ux+	0	0	0	0	0	0
560	CRTFP Ux-	0	0	0	0	0	0
560	CRTFP Uy+	0	0	0	0	0	0
560	CRTFP Uy-	0	0	0	0	0	0
563	SLU 1	46	-16	5671	-157.4	23.56	1.61

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
563	SLU 2	47	11	5666	-157.59	22.47	1.69
563	SLU 3	47	-16	5799	-160.85	24.23	1.63
563	SLU 4	48	0	5796	-160.97	23.58	1.68
563	SLU 5	48	11	5749	-159.81	22.9	1.69
563	SLU 6	48	-16	5881	-163.08	24.66	1.63
563	SLU 7	49	0	5878	-163.19	24	1.68
563	SLU 8	48	-16	5836	-161.84	24.42	1.62
563	SLU 9	48	0	5833	-161.96	23.76	1.67
563	SLU 10	48	11	6397	-177.77	26.54	1.78
563	SLU 11	49	-16	6529	-181.03	28.3	1.72
563	SLU 12	49	0	6526	-181.15	27.65	1.77
563	SLU 13	49	11	6479	-179.99	26.97	1.79
563	SLU 14	49	-16	6611	-183.26	28.73	1.72
563	SLU 15	50	0	6608	-183.37	28.07	1.77
563	SLU 16	49	-16	6566	-182.02	28.49	1.71
563	SLU 17	50	0	6563	-182.14	27.83	1.76
563	SLU 18	48	-16	6714	-186.23	29.38	1.74
563	SLU 19	49	0	6711	-186.34	28.72	1.79
563	SLU 20	49	-16	6796	-188.45	29.8	1.75
563	SLU 21	49	0	6794	-188.56	29.15	1.79
563	SLU 22	51	-17	6543	-181.3	27.17	1.77
563	SLU 23	52	10	6538	-181.49	26.07	1.85
563	SLU 24	52	-17	6670	-184.76	27.83	1.79
563	SLU 25	52	-1	6667	-184.87	27.18	1.84
563	SLU 26	52	10	6620	-183.72	26.5	1.85
563	SLU 27	53	-17	6752	-186.98	28.26	1.79
563	SLU 28	53	-1	6749	-187.1	27.61	1.84
563	SLU 29	52	-17	6707	-185.75	28.02	1.78
563	SLU 30	53	-1	6704	-185.86	27.36	1.83
563	SLU 31	53	10	7268	-201.67	30.14	1.94
563	SLU 32	53	-17	7400	-204.94	31.9	1.88
563	SLU 33	54	-1	7397	-205.05	31.25	1.93
563	SLU 34	54	10	7350	-203.9	30.57	1.95
563	SLU 35	54	-17	7482	-207.16	32.33	1.88
563	SLU 36	54	-1	7480	-207.28	31.68	1.93
563	SLU 37	54	-17	7437	-205.93	32.09	1.87
563	SLU 38	54	-1	7434	-206.04	31.43	1.92
563	SLU 39	53	-17	7586	-210.13	32.98	1.9
563	SLU 40	53	-1	7583	-210.25	32.32	1.95
563	SLU 41	53	-17	7668	-212.35	33.41	1.91
563	SLU 42	54	-1	7665	-212.47	32.75	1.95
563	SLU 43	59	-20	7074	-196.42	29.4	2.04
563	SLU 44	60	6	7069	-196.61	28.31	2.12
563	SLU 45	60	-21	7201	-199.88	30.07	2.05
563	SLU 46	60	-5	7198	-199.99	29.41	2.1
563	SLU 47	60	6	7151	-198.83	28.73	2.12
563	SLU 48	61	-21	7283	-202.1	30.49	2.06
563	SLU 49	61	-5	7281	-202.22	29.84	2.11
563	SLU 50	60	-21	7238	-200.87	30.25	2.05
563	SLU 51	61	-5	7235	-200.98	29.6	2.09
563	SLU 52	61	7	7799	-216.79	32.37	2.21
563	SLU 53	61	-21	7931	-220.06	34.14	2.15
563	SLU 54	62	-4	7929	-220.17	33.48	2.2
563	SLU 55	62	6	7881	-219.01	32.8	2.21
563	SLU 56	62	-21	8014	-222.28	34.56	2.15
563	SLU 57	62	-5	8011	-222.4	33.91	2.2
563	SLU 58	62	-21	7968	-221.05	34.32	2.14
563	SLU 59	62	-5	7965	-221.16	33.67	2.19
563	SLU 60	61	-20	8117	-225.25	35.21	2.17
563	SLU 61	61	-4	8114	-225.36	34.56	2.22
563	SLU 62	61	-20	8199	-227.47	35.64	2.17
563	SLU 63	62	-4	8196	-227.59	34.98	2.22
563	SLU 64	63	-21	7945	-220.33	33	2.2
563	SLU 65	64	5	7940	-220.52	31.91	2.28
563	SLU 66	64	-22	8073	-223.78	33.67	2.21
563	SLU 67	65	-6	8070	-223.9	33.01	2.26
563	SLU 68	65	5	8023	-222.74	32.33	2.28
563	SLU 69	65	-22	8155	-226.01	34.1	2.22
563	SLU 70	65	-6	8152	-226.12	33.44	2.27
563	SLU 71	65	-22	8110	-224.77	33.85	2.21
563	SLU 72	65	-6	8107	-224.89	33.2	2.25
563	SLU 73	65	6	8671	-240.7	35.98	2.37
563	SLU 74	66	-21	8803	-243.96	37.74	2.31
563	SLU 75	66	-5	8800	-244.08	37.08	2.36
563	SLU 76	66	5	8753	-242.92	36.4	2.37
563	SLU 77	66	-22	8885	-246.19	38.17	2.31
563	SLU 78	67	-6	8882	-246.3	37.51	2.36
563	SLU 79	66	-22	8840	-244.95	37.92	2.3
563	SLU 80	66	-6	8837	-245.07	37.27	2.35
563	SLU 81	65	-21	8988	-249.15	38.81	2.33
563	SLU 82	66	-5	8985	-249.27	38.16	2.38
563	SLU 83	66	-21	9070	-251.38	39.24	2.33
563	SLU 84	66	-5	9068	-251.49	38.58	2.38
563	SLE RA 1	48	-16	5920	-164.23	24.59	1.65
563	SLE RA 2	48	2	5917	-164.35	23.86	1.71
563	SLE RA 3	48	-16	6005	-166.53	25.04	1.67
563	SLE RA 4	49	-6	6003	-166.61	24.6	1.7
563	SLE RA 5	49	1	5972	-165.84	24.15	1.71
563	SLE RA 6	49	-17	6060	-168.01	25.32	1.67

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
563	SLE RA 7	49	-6	6058	-168.09	24.89	1.7
563	SLE RA 8	49	-17	6030	-167.19	25.16	1.66
563	SLE RA 9	49	-6	6028	-167.27	24.73	1.69
563	SLE RA 10	49	2	6404	-177.81	26.58	1.77
563	SLE RA 11	49	-16	6492	-179.99	27.75	1.73
563	SLE RA 12	50	-6	6490	-180.06	27.31	1.76
563	SLE RA 13	50	2	6459	-179.29	26.86	1.77
563	SLE RA 14	50	-16	6547	-181.47	28.04	1.73
563	SLE RA 15	50	-6	6545	-181.54	27.6	1.76
563	SLE RA 16	50	-16	6517	-180.64	27.88	1.72
563	SLE RA 17	50	-6	6515	-180.72	27.44	1.75
563	SLE RA 18	49	-16	6616	-183.45	28.47	1.74
563	SLE RA 19	49	-5	6614	-183.52	28.03	1.77
563	SLE RA 20	49	-16	6670	-184.93	28.75	1.75
563	SLE RA 21	50	-5	6668	-185	28.32	1.78
563	SLE FR 1	48	-16	5920	-164.23	24.59	1.65
563	SLE FR 2	48	-13	5920	-164.25	24.45	1.66
563	SLE FR 3	48	-16	5942	-164.82	24.71	1.65
563	SLE FR 4	48	-13	6128	-170.02	25.61	1.69
563	SLE FR 5	48	-16	6151	-170.59	25.87	1.68
563	SLE FR 6	48	-16	6268	-173.84	26.53	1.7
563	SLE QP 1	48	-16	5920	-164.23	24.59	1.65
563	SLE QP 2	48	-16	6129	-169.99	25.76	1.68
563	SLD 1	572	138	5500	-154.97	23.2	16.14
563	SLD 2	581	212	5497	-155.17	22.03	18.07
563	SLD 3	562	-181	5569	-152.41	37.86	15.01
563	SLD 4	571	-107	5567	-152.62	36.69	16.93
563	SLD 5	219	502	5836	-169.33	2.96	7.4
563	SLD 6	225	550	5834	-169.46	2.19	8.66
563	SLD 7	185	-564	6067	-160.8	51.84	3.61
563	SLD 8	191	-515	6065	-160.94	51.07	4.88
563	SLD 9	-95	483	6193	-179.05	0.44	-1.52
563	SLD 10	-89	531	6191	-179.18	-0.33	-0.25
563	SLD 11	-129	-583	6424	-170.52	49.32	-5.3
563	SLD 12	-123	-534	6422	-170.66	48.55	-4.04
563	SLD 13	-475	75	6691	-187.37	14.82	-13.57
563	SLD 14	-466	149	6688	-187.58	13.65	-11.65
563	SLD 15	-485	-245	6760	-184.81	29.48	-14.71
563	SLD 16	-476	-171	6757	-185.02	28.31	-12.78
563	SLV 1	1274	370	4652	-135.04	18.51	35.62
563	SLV 2	1296	544	4646	-135.53	15.77	40.14
563	SLV 3	1249	-428	4825	-128.62	55.24	32.74
563	SLV 4	1271	-254	4819	-129.11	52.49	37.26
563	SLV 5	450	1277	5425	-169.14	-31.61	15.38
563	SLV 6	464	1395	5421	-169.47	-33.46	18.42
563	SLV 7	366	-1383	6001	-147.77	90.81	5.79
563	SLV 8	381	-1265	5996	-148.1	88.97	8.83
563	SLV 9	-285	1233	6261	-191.89	-37.46	-5.47
563	SLV 10	-270	1350	6257	-192.22	-39.3	-2.43
563	SLV 11	-368	-1427	6837	-170.52	84.97	-15.06
563	SLV 12	-354	-1310	6832	-170.85	83.12	-12.02
563	SLV 13	-1174	222	7439	-210.87	-0.98	-33.9
563	SLV 14	-1153	396	7433	-211.36	-3.73	-29.38
563	SLV 15	-1199	-576	7612	-204.46	35.74	-36.78
563	SLV 16	-1178	-402	7605	-204.95	33	-32.26
563	CRTFP Ux+	0	0	0	0	0	0
563	CRTFP Ux-	0	0	0	0	0	0
563	CRTFP Uy+	0	0	0	0	0	0
563	CRTFP Uy-	0	0	0	0	0	0
566	SLU 1	46	17	3847	-105.57	1199.46	-4.88
566	SLU 2	46	37	3852	-105.83	1199.2	-11.83
566	SLU 3	47	18	3934	-107.92	1226.66	-5.02
566	SLU 4	47	30	3937	-108.08	1226.5	-9.19
566	SLU 5	47	38	3908	-107.34	1216.8	-12.07
566	SLU 6	48	19	3990	-109.44	1244.25	-5.26
566	SLU 7	48	30	3993	-109.59	1244.09	-9.43
566	SLU 8	47	19	3959	-108.6	1234.65	-5.35
566	SLU 9	48	31	3962	-108.75	1234.49	-9.52
566	SLU 10	48	39	4319	-118.63	1345.21	-12.57
566	SLU 11	49	20	4401	-120.72	1372.67	-5.76
566	SLU 12	49	32	4404	-120.88	1372.51	-9.93
566	SLU 13	49	40	4375	-120.14	1362.81	-12.81
566	SLU 14	49	21	4457	-122.24	1390.26	-6
566	SLU 15	49	33	4460	-122.39	1390.11	-10.17
566	SLU 16	49	21	4426	-121.4	1380.66	-6.09
566	SLU 17	49	33	4430	-121.55	1380.51	-10.26
566	SLU 18	48	20	4514	-123.86	1408.05	-5.94
566	SLU 19	48	32	4517	-124.01	1407.89	-10.11
566	SLU 20	49	21	4571	-125.37	1425.65	-6.17
566	SLU 21	49	33	4574	-125.52	1425.49	-10.34
566	SLU 22	50	17	4419	-121.17	1378.75	-4.78
566	SLU 23	50	37	4424	-121.42	1378.49	-11.74
566	SLU 24	51	18	4506	-123.52	1405.95	-4.93
566	SLU 25	51	30	4509	-123.67	1405.79	-9.1
566	SLU 26	51	38	4480	-122.94	1396.08	-11.97
566	SLU 27	52	19	4562	-125.03	1423.54	-5.16
566	SLU 28	52	30	4565	-125.18	1423.38	-9.33
566	SLU 29	51	19	4531	-124.19	1413.94	-5.26
566	SLU 30	52	31	4534	-124.35	1413.78	-9.43

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
566	SLU 31	52	39	4891	-134.22	1524.5	-12.48
566	SLU 32	52	20	4973	-136.32	1551.96	-5.67
566	SLU 33	53	32	4976	-136.47	1551.8	-9.84
566	SLU 34	52	40	4947	-135.73	1542.09	-12.71
566	SLU 35	53	21	5029	-137.83	1569.55	-5.9
566	SLU 36	53	33	5032	-137.98	1569.39	-10.07
566	SLU 37	53	21	4998	-136.99	1559.95	-6
566	SLU 38	53	33	5001	-137.15	1559.79	-10.17
566	SLU 39	52	20	5086	-139.45	1587.34	-5.84
566	SLU 40	52	32	5089	-139.6	1587.18	-10.01
566	SLU 41	53	21	5142	-140.96	1604.93	-6.08
566	SLU 42	53	33	5146	-141.12	1604.77	-10.25
566	SLU 43	58	23	4805	-131.9	1497.83	-6.37
566	SLU 44	59	42	4810	-132.16	1497.57	-13.33
566	SLU 45	60	23	4892	-134.25	1525.03	-6.52
566	SLU 46	60	35	4895	-134.4	1524.87	-10.69
566	SLU 47	60	43	4866	-133.67	1515.16	-13.56
566	SLU 48	60	24	4948	-135.76	1542.62	-6.75
566	SLU 49	61	36	4951	-135.92	1542.46	-10.92
566	SLU 50	60	24	4917	-134.93	1533.02	-6.85
566	SLU 51	60	36	4920	-135.08	1532.86	-11.02
566	SLU 52	60	45	5277	-144.95	1643.58	-14.07
566	SLU 53	61	25	5359	-147.05	1671.04	-7.26
566	SLU 54	61	37	5362	-147.2	1670.88	-11.43
566	SLU 55	61	45	5334	-146.47	1661.18	-14.3
566	SLU 56	62	26	5415	-148.56	1688.63	-7.49
566	SLU 57	62	38	5418	-148.72	1688.48	-11.66
566	SLU 58	61	26	5384	-147.72	1679.03	-7.59
566	SLU 59	62	38	5388	-147.88	1678.87	-11.76
566	SLU 60	61	26	5472	-150.18	1706.42	-7.43
566	SLU 61	61	38	5476	-150.34	1706.26	-11.6
566	SLU 62	61	26	5529	-151.7	1724.01	-7.67
566	SLU 63	62	38	5532	-151.85	1723.86	-11.84
566	SLU 64	62	23	5377	-147.49	1677.12	-6.28
566	SLU 65	63	42	5382	-147.75	1676.86	-13.23
566	SLU 66	63	23	5464	-149.84	1704.32	-6.42
566	SLU 67	64	35	5467	-150	1704.16	-10.59
566	SLU 68	64	43	5438	-149.26	1694.45	-13.47
566	SLU 69	64	24	5520	-151.36	1721.91	-6.66
566	SLU 70	64	36	5523	-151.51	1721.75	-10.83
566	SLU 71	64	24	5489	-150.52	1712.31	-6.75
566	SLU 72	64	36	5492	-150.67	1712.15	-10.92
566	SLU 73	64	45	5849	-160.55	1822.87	-13.97
566	SLU 74	65	25	5931	-162.64	1850.33	-7.16
566	SLU 75	65	37	5934	-162.8	1850.17	-11.33
566	SLU 76	65	45	5905	-162.06	1840.46	-14.21
566	SLU 77	66	26	5987	-164.16	1867.92	-7.4
566	SLU 78	66	38	5990	-164.31	1867.76	-11.57
566	SLU 79	65	26	5956	-163.32	1858.32	-7.49
566	SLU 80	65	38	5960	-163.47	1858.16	-11.67
566	SLU 81	64	26	6044	-165.78	1885.71	-7.34
566	SLU 82	65	38	6047	-165.93	1885.55	-11.51
566	SLU 83	65	26	6101	-167.29	1903.3	-7.58
566	SLU 84	65	38	6104	-167.44	1903.14	-11.75
566	SLE RA 1	47	17	4011	-110.03	1250.69	-4.85
566	SLE RA 2	47	31	4014	-110.2	1250.51	-9.49
566	SLE RA 3	48	18	4069	-111.6	1268.82	-4.95
566	SLE RA 4	48	26	4071	-111.7	1268.71	-7.73
566	SLE RA 5	48	31	4051	-111.21	1262.24	-9.64
566	SLE RA 6	48	18	4106	-112.61	1280.55	-5.1
566	SLE RA 7	48	26	4108	-112.71	1280.44	-7.88
566	SLE RA 8	48	18	4085	-112.05	1274.15	-5.17
566	SLE RA 9	48	26	4087	-112.15	1274.04	-7.95
566	SLE RA 10	48	32	4325	-118.73	1347.86	-9.98
566	SLE RA 11	49	19	4380	-120.13	1366.16	-5.44
566	SLE RA 12	49	27	4382	-120.23	1366.05	-8.22
566	SLE RA 13	49	33	4363	-119.74	1359.58	-10.14
566	SLE RA 14	49	20	4417	-121.14	1377.89	-5.6
566	SLE RA 15	49	28	4419	-121.24	1377.78	-8.38
566	SLE RA 16	49	20	4397	-120.58	1371.49	-5.66
566	SLE RA 17	49	28	4399	-120.68	1371.38	-8.44
566	SLE RA 18	48	19	4455	-122.22	1389.75	-5.56
566	SLE RA 19	49	27	4457	-122.32	1389.64	-8.34
566	SLE RA 20	49	20	4493	-123.23	1401.48	-5.72
566	SLE RA 21	49	28	4495	-123.33	1401.37	-8.5
566	SLE FR 1	47	17	4011	-110.03	1250.69	-4.85
566	SLE FR 2	47	20	4011	-110.06	1250.65	-5.78
566	SLE FR 3	47	18	4026	-110.43	1255.38	-4.91
566	SLE FR 4	48	21	4145	-113.72	1292.37	-5.99
566	SLE FR 5	48	18	4159	-114.09	1297.1	-5.13
566	SLE FR 6	48	18	4233	-116.12	1320.22	-5.2
566	SLE QP 1	47	17	4011	-110.03	1250.69	-4.85
566	SLE QP 2	48	18	4144	-113.69	1292.41	-5.06
566	SLD 1	350	108	3020	-83.63	955.52	-18.09
566	SLD 2	357	217	3021	-83.81	953.48	-55.82
566	SLD 3	342	-123	2958	-80.34	962.86	62.42
566	SLD 4	349	-14	2959	-80.52	960.82	24.69
566	SLD 5	149	376	3901	-109.62	1180.57	-124.3
566	SLD 6	153	447	3902	-109.74	1179.23	-149.19

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
566	SLD 7	123	-394	3694	-98.66	1205.04	144.08
566	SLD 8	127	-322	3695	-98.78	1203.7	119.19
566	SLD 9	-32	358	4593	-128.59	1381.11	-129.32
566	SLD 10	-28	430	4594	-128.71	1379.77	-154.21
566	SLD 11	-58	-411	4387	-117.63	1405.59	139.07
566	SLD 12	-54	-340	4387	-117.75	1404.24	114.17
566	SLD 13	-254	50	5329	-146.85	1623.99	-34.82
566	SLD 14	-247	159	5330	-147.03	1621.95	-72.55
566	SLD 15	-261	-181	5267	-143.56	1631.33	45.69
566	SLD 16	-255	-72	5268	-143.74	1629.29	7.96
566	SLV 1	756	247	1518	-43.61	503.46	-41.57
566	SLV 2	771	502	1522	-44.04	498.68	-130.26
566	SLV 3	736	-330	1363	-35.38	521.75	159.54
566	SLV 4	752	-74	1367	-35.8	516.96	70.85
566	SLV 5	287	914	3590	-105.07	1028.88	-304.48
566	SLV 6	297	1086	3593	-105.36	1025.66	-364.2
566	SLV 7	222	-1009	3074	-77.62	1089.84	365.89
566	SLV 8	232	-837	3077	-77.91	1086.61	306.18
566	SLV 9	-137	872	5211	-149.46	1498.2	-316.31
566	SLV 10	-127	1044	5214	-149.75	1494.98	-376.02
566	SLV 11	-202	-1050	4695	-122.01	1559.15	354.07
566	SLV 12	-191	-878	4698	-122.3	1555.93	294.36
566	SLV 13	-657	110	6921	-191.57	2067.85	-80.98
566	SLV 14	-641	366	6925	-192	2063.06	-169.67
566	SLV 15	-676	-466	6767	-183.33	2086.14	120.13
566	SLV 16	-661	-211	6770	-183.76	2081.35	31.44
566	CRTFP Ux+	0	0	0	0	0	0
566	CRTFP Ux-	0	0	0	0	0	0
566	CRTFP Uy+	0	0	0	0	0	0
566	CRTFP Uy-	0	0	0	0	0	0
570	SLU 1	17	-32	2347	-65.74	930.98	13.27
570	SLU 2	17	-20	2342	-65.64	928.5	8.43
570	SLU 3	17	-32	2398	-67.16	951.39	13.52
570	SLU 4	17	-25	2395	-67.1	949.9	10.61
570	SLU 5	17	-20	2374	-66.55	941.55	8.59
570	SLU 6	17	-33	2431	-68.07	964.43	13.67
570	SLU 7	18	-25	2428	-68.01	962.95	10.77
570	SLU 8	17	-33	2412	-67.55	957.08	13.59
570	SLU 9	17	-25	2409	-67.49	955.59	10.68
570	SLU 10	18	-24	2655	-74.4	1053.39	10.24
570	SLU 11	19	-37	2711	-75.92	1076.27	15.33
570	SLU 12	19	-29	2708	-75.86	1074.79	12.42
570	SLU 13	19	-24	2687	-75.3	1066.44	10.4
570	SLU 14	19	-37	2744	-76.82	1089.32	15.49
570	SLU 15	19	-30	2741	-76.76	1087.83	12.58
570	SLU 16	19	-37	2725	-76.31	1081.96	15.4
570	SLU 17	19	-30	2722	-76.25	1080.48	12.49
570	SLU 18	19	-38	2794	-78.25	1109.39	15.86
570	SLU 19	19	-31	2791	-78.19	1107.91	12.95
570	SLU 20	19	-38	2827	-79.15	1122.44	16.02
570	SLU 21	19	-31	2824	-79.1	1120.95	13.11
570	SLU 22	19	-36	2699	-75.54	1070.98	14.94
570	SLU 23	19	-24	2694	-75.44	1068.5	10.09
570	SLU 24	19	-36	2751	-76.96	1091.38	15.18
570	SLU 25	19	-29	2747	-76.9	1089.89	12.27
570	SLU 26	19	-24	2727	-76.35	1081.54	10.25
570	SLU 27	19	-37	2783	-77.87	1104.43	15.34
570	SLU 28	20	-29	2780	-77.81	1102.94	12.43
570	SLU 29	19	-36	2765	-77.35	1097.07	15.25
570	SLU 30	19	-29	2762	-77.29	1095.58	12.34
570	SLU 31	20	-28	3007	-84.2	1193.38	11.9
570	SLU 32	21	-41	3063	-85.72	1216.27	16.99
570	SLU 33	21	-33	3060	-85.66	1214.78	14.08
570	SLU 34	21	-28	3040	-85.1	1206.43	12.06
570	SLU 35	21	-41	3096	-86.62	1229.31	17.15
570	SLU 36	21	-34	3093	-86.56	1227.83	14.24
570	SLU 37	21	-41	3078	-86.11	1221.96	17.06
570	SLU 38	21	-34	3075	-86.05	1220.47	14.15
570	SLU 39	21	-42	3146	-88.05	1249.39	17.52
570	SLU 40	21	-35	3143	-87.99	1247.9	14.62
570	SLU 41	21	-42	3179	-88.96	1262.43	17.68
570	SLU 42	21	-35	3176	-88.9	1260.95	14.77
570	SLU 43	21	-40	2930	-82.1	1162.28	16.69
570	SLU 44	22	-28	2925	-82.01	1159.8	11.84
570	SLU 45	22	-40	2982	-83.52	1182.68	16.93
570	SLU 46	22	-33	2978	-83.46	1181.2	14.02
570	SLU 47	22	-28	2958	-82.91	1172.85	12
570	SLU 48	22	-41	3014	-84.43	1195.73	17.09
570	SLU 49	22	-34	3011	-84.37	1194.24	14.18
570	SLU 50	22	-41	2996	-83.91	1188.37	17
570	SLU 51	22	-33	2993	-83.85	1186.89	14.09
570	SLU 52	23	-32	3238	-90.76	1284.69	13.65
570	SLU 53	23	-45	3294	-92.28	1307.57	18.74
570	SLU 54	23	-38	3291	-92.22	1306.08	15.83
570	SLU 55	23	-33	3271	-91.67	1297.74	13.81
570	SLU 56	23	-45	3327	-93.18	1320.62	18.9
570	SLU 57	23	-38	3324	-93.12	1319.13	15.99
570	SLU 58	23	-45	3309	-92.67	1313.26	18.81
570	SLU 59	23	-38	3305	-92.61	1311.77	15.9

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
570	SLU 60	23	-46	3377	-94.61	1340.69	19.27
570	SLU 61	23	-39	3374	-94.55	1339.2	16.37
570	SLU 62	23	-47	3410	-95.52	1353.74	19.43
570	SLU 63	23	-39	3407	-95.46	1352.25	16.52
570	SLU 64	23	-44	3283	-91.9	1302.27	18.35
570	SLU 65	24	-32	3277	-91.81	1299.79	13.5
570	SLU 66	24	-44	3334	-93.32	1322.68	18.59
570	SLU 67	24	-37	3331	-93.27	1321.19	15.68
570	SLU 68	24	-32	3310	-92.71	1312.84	13.66
570	SLU 69	24	-45	3367	-94.23	1335.72	18.75
570	SLU 70	24	-38	3363	-94.17	1334.24	15.84
570	SLU 71	24	-45	3348	-93.71	1328.37	18.66
570	SLU 72	24	-37	3345	-93.65	1326.88	15.75
570	SLU 73	25	-36	3590	-100.56	1424.68	15.31
570	SLU 74	25	-49	3647	-102.08	1447.56	20.4
570	SLU 75	25	-42	3644	-102.02	1446.08	17.5
570	SLU 76	25	-37	3623	-101.47	1437.73	15.47
570	SLU 77	25	-49	3680	-102.98	1460.61	20.56
570	SLU 78	25	-42	3676	-102.93	1459.12	17.65
570	SLU 79	25	-49	3661	-102.47	1453.25	20.47
570	SLU 80	25	-42	3658	-102.41	1451.77	17.57
570	SLU 81	25	-50	3730	-104.41	1480.68	20.94
570	SLU 82	25	-43	3727	-104.35	1479.2	18.03
570	SLU 83	25	-51	3762	-105.32	1493.73	21.09
570	SLU 84	25	-43	3759	-105.26	1492.24	18.19
570	SLE RA 1	18	-33	2448	-68.54	970.98	13.75
570	SLE RA 2	18	-25	2444	-68.48	969.33	10.52
570	SLE RA 3	18	-33	2482	-69.49	984.58	13.91
570	SLE RA 4	18	-28	2480	-69.45	983.59	11.97
570	SLE RA 5	18	-25	2466	-69.08	978.03	10.62
570	SLE RA 6	18	-34	2504	-70.09	993.28	14.02
570	SLE RA 7	18	-29	2502	-70.05	992.29	12.08
570	SLE RA 8	18	-33	2491	-69.75	988.38	13.96
570	SLE RA 9	18	-29	2489	-69.71	987.39	12.02
570	SLE RA 10	18	-28	2653	-74.31	1052.59	11.73
570	SLE RA 11	19	-36	2690	-75.33	1067.84	15.12
570	SLE RA 12	19	-31	2688	-75.29	1066.85	13.18
570	SLE RA 13	19	-28	2675	-74.92	1061.28	11.83
570	SLE RA 14	19	-36	2712	-75.93	1076.54	15.22
570	SLE RA 15	19	-32	2710	-75.89	1075.55	13.29
570	SLE RA 16	19	-36	2700	-75.58	1071.64	15.17
570	SLE RA 17	19	-31	2698	-75.55	1070.64	13.23
570	SLE RA 18	19	-37	2746	-76.88	1089.92	15.47
570	SLE RA 19	19	-32	2744	-76.84	1088.93	13.54
570	SLE RA 20	19	-37	2767	-77.48	1098.62	15.58
570	SLE RA 21	19	-32	2765	-77.44	1097.63	13.64
570	SLE FR 1	18	-33	2448	-68.54	970.98	13.75
570	SLE FR 2	18	-31	2447	-68.53	970.65	13.1
570	SLE FR 3	18	-33	2456	-68.78	974.46	13.79
570	SLE FR 4	18	-33	2536	-71.03	1006.33	13.62
570	SLE FR 5	18	-34	2546	-71.28	1010.14	14.31
570	SLE FR 6	18	-35	2597	-72.71	1030.45	14.61
570	SLE QP 1	18	-33	2448	-68.54	970.98	13.75
570	SLE QP 2	18	-34	2537	-71.04	1006.66	14.27
570	SLD 1	232	47	2565	-72.17	1019.91	-11.65
570	SLD 2	236	50	2565	-72.18	1019.6	-12.42
570	SLD 3	228	-101	2637	-73.53	1053.34	47.79
570	SLD 4	232	-99	2637	-73.53	1053.03	47.01
570	SLD 5	87	215	2437	-69.32	959.99	-83.52
570	SLD 6	90	217	2437	-69.32	959.79	-84.03
570	SLD 7	74	-280	2676	-73.85	1071.42	114.61
570	SLD 8	77	-279	2676	-73.85	1071.22	114.1
570	SLD 9	-41	210	2398	-68.23	942.11	-85.57
570	SLD 10	-39	212	2398	-68.24	941.9	-86.08
570	SLD 11	-54	-285	2638	-72.76	1053.54	112.56
570	SLD 12	-51	-284	2638	-72.77	1053.33	112.05
570	SLD 13	-196	31	2437	-68.55	960.3	-18.48
570	SLD 14	-192	33	2437	-68.56	959.98	-19.25
570	SLD 15	-200	-118	2509	-69.91	993.73	40.96
570	SLD 16	-196	-116	2509	-69.92	993.41	40.18
570	SLV 1	519	168	2597	-73.57	1035.01	-50.95
570	SLV 2	529	174	2597	-73.59	1034.27	-52.76
570	SLV 3	510	-202	2777	-76.95	1118.55	97.27
570	SLV 4	519	-197	2777	-76.97	1117.81	95.46
570	SLV 5	181	588	2283	-66.66	888.6	-229.76
570	SLV 6	187	591	2283	-66.67	888.11	-230.98
570	SLV 7	149	-648	2881	-77.95	1167.07	264.31
570	SLV 8	156	-644	2881	-77.96	1166.57	263.09
570	SLV 9	-120	576	2193	-64.12	846.75	-234.55
570	SLV 10	-113	579	2193	-64.14	846.26	-235.78
570	SLV 11	-151	-659	2791	-75.41	1125.22	259.52
570	SLV 12	-145	-656	2791	-75.43	1124.73	258.29
570	SLV 13	-483	129	2298	-65.11	895.51	-66.93
570	SLV 14	-474	134	2297	-65.13	894.78	-68.74
570	SLV 15	-493	-242	2477	-68.5	979.05	81.3
570	SLV 16	-483	-236	2477	-68.52	978.32	79.48
570	CRTFP Ux+	0	0	0	0	0	0
570	CRTFP Ux-	0	0	0	0	0	0
570	CRTFP Uy+	0	0	0	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
570	CRTFP Uy-	0	0	0	0	0	0
625	SLU 1	-132	117	9938	-36.22	-1808.41	20.03
625	SLU 2	-132	174	9945	-38.91	-1809.67	30.39
625	SLU 3	-134	117	10152	-36.4	-1847.37	20.14
625	SLU 4	-134	152	10156	-38.02	-1848.12	26.35
625	SLU 5	-133	174	10078	-39	-1833.94	30.46
625	SLU 6	-136	118	10285	-36.5	-1871.64	20.21
625	SLU 7	-136	152	10289	-38.11	-1872.39	26.42
625	SLU 8	-135	118	10204	-36.4	-1856.96	20.17
625	SLU 9	-135	152	10208	-38.01	-1857.71	26.39
625	SLU 10	-137	190	11156	-43.46	-2031.34	33.21
625	SLU 11	-139	133	11363	-40.95	-2069.04	22.95
625	SLU 12	-139	168	11368	-42.57	-2069.8	29.17
625	SLU 13	-138	190	11290	-43.55	-2055.62	33.28
625	SLU 14	-141	134	11497	-41.05	-2093.32	23.02
625	SLU 15	-141	168	11501	-42.66	-2094.07	29.24
625	SLU 16	-140	134	11416	-40.95	-2078.64	22.98
625	SLU 17	-140	168	11420	-42.56	-2079.39	29.2
625	SLU 18	-138	140	11669	-42.71	-2125.09	24.05
625	SLU 19	-138	174	11673	-44.33	-2125.85	30.27
625	SLU 20	-140	140	11802	-42.81	-2149.37	24.12
625	SLU 21	-140	174	11806	-44.42	-2150.12	30.34
625	SLU 22	-143	126	11428	-39.85	-2080.68	21.62
625	SLU 23	-143	183	11435	-42.54	-2081.93	31.98
625	SLU 24	-146	127	11642	-40.04	-2119.63	21.72
625	SLU 25	-146	161	11646	-41.66	-2120.39	27.94
625	SLU 26	-145	184	11568	-42.64	-2106.21	32.05
625	SLU 27	-147	127	11775	-40.13	-2143.91	21.79
625	SLU 28	-147	161	11779	-41.75	-2144.66	28.01
625	SLU 29	-146	127	11695	-40.04	-2129.23	21.76
625	SLU 30	-146	161	11699	-41.65	-2129.98	27.97
625	SLU 31	-148	199	12647	-47.09	-2303.61	34.79
625	SLU 32	-150	143	12854	-44.59	-2341.31	24.54
625	SLU 33	-150	177	12858	-46.21	-2342.06	30.75
625	SLU 34	-149	200	12780	-47.19	-2327.89	34.86
625	SLU 35	-152	143	12987	-44.68	-2365.59	24.6
625	SLU 36	-152	177	12991	-46.3	-2366.34	30.82
625	SLU 37	-151	143	12907	-44.59	-2350.9	24.57
625	SLU 38	-151	177	12911	-46.2	-2351.66	30.78
625	SLU 39	-150	149	13159	-46.35	-2397.36	25.64
625	SLU 40	-150	183	13164	-47.97	-2398.11	31.85
625	SLU 41	-151	149	13293	-46.44	-2421.63	25.71
625	SLU 42	-151	184	13297	-48.06	-2422.39	31.92
625	SLU 43	-167	149	12408	-45.83	-2257.58	25.5
625	SLU 44	-168	206	12415	-48.52	-2258.84	35.86
625	SLU 45	-170	149	12622	-46.02	-2296.54	25.61
625	SLU 46	-170	183	12626	-47.64	-2297.29	31.82
625	SLU 47	-169	206	12548	-48.62	-2283.11	35.93
625	SLU 48	-172	150	12755	-46.11	-2320.81	25.67
625	SLU 49	-172	184	12759	-47.73	-2321.57	31.89
625	SLU 50	-171	149	12674	-46.02	-2306.13	25.64
625	SLU 51	-171	184	12679	-47.63	-2306.89	31.85
625	SLU 52	-172	222	13627	-53.07	-2480.52	38.67
625	SLU 53	-175	165	13834	-50.57	-2518.22	28.42
625	SLU 54	-175	199	13838	-52.19	-2518.97	34.63
625	SLU 55	-174	222	13760	-53.16	-2504.79	38.74
625	SLU 56	-176	166	13967	-50.66	-2542.49	28.49
625	SLU 57	-176	200	13971	-52.28	-2543.25	34.7
625	SLU 58	-175	165	13886	-50.57	-2527.81	28.45
625	SLU 59	-175	200	13890	-52.18	-2528.56	34.67
625	SLU 60	-174	171	14139	-52.33	-2574.27	29.52
625	SLU 61	-174	206	14143	-53.95	-2575.02	35.74
625	SLU 62	-176	172	14272	-52.42	-2598.54	29.59
625	SLU 63	-176	206	14277	-54.04	-2599.29	35.8
625	SLU 64	-179	158	13898	-49.47	-2529.85	27.09
625	SLU 65	-179	215	13905	-52.16	-2531.11	37.45
625	SLU 66	-181	159	14112	-49.66	-2568.81	27.19
625	SLU 67	-181	193	14116	-51.27	-2569.56	33.41
625	SLU 68	-180	215	14039	-52.25	-2555.38	37.51
625	SLU 69	-183	159	14246	-49.75	-2593.08	27.26
625	SLU 70	-183	193	14250	-51.37	-2593.84	33.47
625	SLU 71	-182	159	14165	-49.65	-2578.4	27.22
625	SLU 72	-182	193	14169	-51.27	-2579.15	33.44
625	SLU 73	-183	231	15117	-56.71	-2752.78	40.26
625	SLU 74	-186	175	15324	-54.21	-2790.48	30
625	SLU 75	-186	209	15328	-55.82	-2791.24	36.22
625	SLU 76	-185	231	15250	-56.8	-2777.06	40.33
625	SLU 77	-187	175	15458	-54.3	-2814.76	30.07
625	SLU 78	-188	209	15462	-55.92	-2815.51	36.29
625	SLU 79	-186	175	15377	-54.2	-2800.08	30.04
625	SLU 80	-187	209	15381	-55.82	-2800.83	36.25
625	SLU 81	-185	181	15630	-55.97	-2846.53	31.1
625	SLU 82	-185	215	15634	-57.58	-2847.29	37.32
625	SLU 83	-187	181	15763	-56.06	-2870.81	31.17
625	SLU 84	-187	215	15767	-57.68	-2871.56	37.39
625	SLE RA 1	-135	119	10364	-37.25	-1886.2	20.49
625	SLE RA 2	-135	157	10368	-39.05	-1887.04	27.39
625	SLE RA 3	-137	120	10506	-37.38	-1912.17	20.56
625	SLE RA 4	-137	143	10509	-38.46	-1912.67	24.7

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
625	SLE RA 5	-136	158	10457	-39.11	-1903.22	27.44
625	SLE RA 6	-138	120	10595	-37.44	-1928.35	20.6
625	SLE RA 7	-138	143	10598	-38.52	-1928.86	24.75
625	SLE RA 8	-137	120	10541	-37.38	-1918.57	20.58
625	SLE RA 9	-137	143	10544	-38.45	-1919.07	24.72
625	SLE RA 10	-138	168	11176	-42.08	-2034.82	29.27
625	SLE RA 11	-140	131	11314	-40.41	-2059.96	22.43
625	SLE RA 12	-140	153	11317	-41.49	-2060.46	26.58
625	SLE RA 13	-139	168	11265	-42.14	-2051.01	29.31
625	SLE RA 14	-141	131	11403	-40.47	-2076.14	22.48
625	SLE RA 15	-141	154	11406	-41.55	-2076.64	26.62
625	SLE RA 16	-140	131	11349	-40.41	-2066.35	22.45
625	SLE RA 17	-140	153	11352	-41.49	-2066.85	26.6
625	SLE RA 18	-139	135	11518	-41.59	-2097.32	23.17
625	SLE RA 19	-139	157	11520	-42.66	-2097.82	27.31
625	SLE RA 20	-140	135	11607	-41.65	-2113.5	23.21
625	SLE RA 21	-140	158	11609	-42.72	-2114.01	27.36
625	SLE FR 1	-135	119	10364	-37.25	-1886.2	20.49
625	SLE FR 2	-135	127	10364	-37.61	-1886.37	21.87
625	SLE FR 3	-135	120	10399	-37.28	-1892.67	20.51
625	SLE FR 4	-136	132	10711	-38.91	-1949.7	22.67
625	SLE FR 5	-137	124	10745	-38.58	-1956.01	21.31
625	SLE FR 6	-137	127	10941	-39.42	-1991.76	21.83
625	SLE QP 1	-135	119	10364	-37.25	-1886.2	20.49
625	SLE QP 2	-136	124	10710	-38.55	-1949.54	21.29
625	SLD 1	622	676	13931	-67.64	-2512.1	120.77
625	SLD 2	624	376	13911	-64.79	-2508.5	67.09
625	SLD 3	630	18	13858	-30.21	-2499.41	1.09
625	SLD 4	633	-282	13838	-27.36	-2495.82	-52.58
625	SLD 5	77	1341	11791	-104.56	-2138.18	242.29
625	SLD 6	79	1144	11777	-102.68	-2135.81	206.88
625	SLD 7	107	-852	11547	20.2	-2095.91	-156.62
625	SLD 8	108	-1049	11534	22.09	-2093.54	-192.03
625	SLD 9	-381	1297	9886	-99.2	-1805.53	234.61
625	SLD 10	-379	1100	9872	-97.31	-1803.16	199.2
625	SLD 11	-352	-896	9642	25.57	-1763.26	-164.3
625	SLD 12	-350	-1093	9629	27.45	-1760.89	-199.71
625	SLD 13	-906	530	7581	-49.75	-1403.25	95.16
625	SLD 14	-903	230	7561	-46.9	-1399.66	41.49
625	SLD 15	-897	-128	7508	-12.32	-1390.57	-24.51
625	SLD 16	-894	-428	7488	-9.47	-1386.98	-78.19
625	SLV 1	1637	1464	18254	-109.72	-3266.93	263.05
625	SLV 2	1643	761	18207	-103.01	-3258.48	136.88
625	SLV 3	1658	-169	18073	-15.97	-3235.56	-34.15
625	SLV 4	1664	-873	18026	-9.26	-3227.11	-160.32
625	SLV 5	363	3136	13256	-203.35	-2393.9	568.12
625	SLV 6	367	2662	13224	-198.83	-2388.21	483.17
625	SLV 7	433	-2311	12654	109.16	-2289.35	-422.54
625	SLV 8	437	-2784	12622	113.68	-2283.66	-507.49
625	SLV 9	-709	3032	8798	-190.79	-1615.41	550.07
625	SLV 10	-705	2559	8766	-186.27	-1609.72	465.13
625	SLV 11	-639	-2414	8196	121.72	-1510.86	-440.59
625	SLV 12	-635	-2887	8164	126.24	-1505.17	-525.54
625	SLV 13	-1936	1121	3393	-67.85	-671.96	202.9
625	SLV 14	-1930	417	3346	-61.14	-663.51	76.73
625	SLV 15	-1915	-513	3213	25.9	-640.59	-94.3
625	SLV 16	-1909	-1216	3166	32.61	-632.14	-220.47
625	CRTFP Ux+	0	0	0	0	0	0
625	CRTFP Ux-	0	0	0	0	0	0
625	CRTFP Uy+	0	0	0	0	0	0
625	CRTFP Uy-	0	0	0	0	0	0
627	SLU 1	-87	72	6483	-10.76	-178.92	0.48
627	SLU 2	-87	109	6487	-13.82	-179.05	1.21
627	SLU 3	-89	73	6622	-10.31	-182.78	0.48
627	SLU 4	-89	94	6625	-12.15	-182.86	0.91
627	SLU 5	-88	109	6574	-13.51	-181.45	1.21
627	SLU 6	-90	73	6709	-10	-185.19	0.47
627	SLU 7	-90	95	6712	-11.84	-185.26	0.91
627	SLU 8	-89	73	6657	-10.14	-183.73	0.47
627	SLU 9	-89	95	6659	-11.98	-183.81	0.91
627	SLU 10	-90	119	7281	-15.29	-201.09	1.3
627	SLU 11	-92	83	7416	-11.78	-204.82	0.57
627	SLU 12	-92	104	7419	-13.62	-204.9	1
627	SLU 13	-91	119	7368	-14.98	-203.49	1.3
627	SLU 14	-93	83	7503	-11.47	-207.23	0.56
627	SLU 15	-93	105	7506	-13.31	-207.31	1
627	SLU 16	-92	83	7451	-11.61	-205.78	0.56
627	SLU 17	-92	105	7453	-13.45	-205.85	1
627	SLU 18	-91	86	7617	-12.86	-210.41	0.61
627	SLU 19	-91	108	7620	-14.7	-210.48	1.05
627	SLU 20	-92	87	7704	-12.55	-212.82	0.61
627	SLU 21	-92	109	7707	-14.39	-212.89	1.04
627	SLU 22	-94	78	7458	-10.31	-205.97	0.49
627	SLU 23	-94	114	7463	-13.37	-206.09	1.22
627	SLU 24	-96	78	7598	-9.86	-209.83	0.48
627	SLU 25	-96	100	7601	-11.69	-209.9	0.92
627	SLU 26	-95	115	7550	-13.06	-208.5	1.21
627	SLU 27	-97	78	7685	-9.55	-212.23	0.48
627	SLU 28	-97	100	7688	-11.38	-212.31	0.91

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
627	SLU 29	-96	78	7632	-9.68	-210.78	0.48
627	SLU 30	-96	100	7635	-11.52	-210.85	0.92
627	SLU 31	-98	124	8257	-14.84	-228.13	1.31
627	SLU 32	-99	88	8392	-11.32	-231.87	0.57
627	SLU 33	-99	110	8394	-13.16	-231.94	1.01
627	SLU 34	-99	125	8344	-14.53	-230.54	1.3
627	SLU 35	-100	88	8479	-11.01	-234.28	0.57
627	SLU 36	-100	110	8481	-12.85	-234.35	1
627	SLU 37	-100	88	8426	-11.15	-232.82	0.57
627	SLU 38	-100	110	8429	-12.99	-232.9	1.01
627	SLU 39	-99	92	8592	-12.4	-237.45	0.62
627	SLU 40	-99	114	8595	-14.24	-237.53	1.06
627	SLU 41	-100	92	8679	-12.09	-239.86	0.61
627	SLU 42	-100	114	8682	-13.93	-239.94	1.05
627	SLU 43	-111	92	8093	-14.15	-223.33	0.62
627	SLU 44	-111	128	8098	-17.21	-223.45	1.35
627	SLU 45	-112	92	8233	-13.7	-227.19	0.62
627	SLU 46	-112	114	8235	-15.54	-227.26	1.05
627	SLU 47	-112	129	8185	-16.9	-225.86	1.35
627	SLU 48	-113	92	8320	-13.39	-229.59	0.61
627	SLU 49	-113	114	8323	-15.22	-229.67	1.05
627	SLU 50	-113	92	8267	-13.53	-228.14	0.62
627	SLU 51	-113	114	8270	-15.36	-228.21	1.05
627	SLU 52	-114	138	8891	-18.68	-245.49	1.44
627	SLU 53	-115	102	9027	-15.17	-249.23	0.71
627	SLU 54	-115	124	9029	-17	-249.3	1.14
627	SLU 55	-115	139	8978	-18.37	-247.9	1.44
627	SLU 56	-116	102	9114	-14.86	-251.64	0.7
627	SLU 57	-116	124	9116	-16.69	-251.71	1.14
627	SLU 58	-116	102	9061	-14.99	-250.18	0.71
627	SLU 59	-116	124	9064	-16.83	-250.26	1.14
627	SLU 60	-115	106	9227	-16.25	-254.81	0.75
627	SLU 61	-115	128	9230	-18.08	-254.89	1.19
627	SLU 62	-116	106	9314	-15.93	-257.22	0.75
627	SLU 63	-116	128	9317	-17.77	-257.3	1.18
627	SLU 64	-118	98	9069	-13.69	-250.37	0.63
627	SLU 65	-118	134	9073	-16.75	-250.49	1.36
627	SLU 66	-120	98	9208	-13.24	-254.23	0.63
627	SLU 67	-120	120	9211	-15.08	-254.31	1.06
627	SLU 68	-119	134	9160	-16.44	-252.9	1.36
627	SLU 69	-121	98	9295	-12.93	-256.64	0.62
627	SLU 70	-121	120	9298	-14.77	-256.71	1.06
627	SLU 71	-120	98	9243	-13.07	-255.18	0.62
627	SLU 72	-120	120	9245	-14.91	-255.26	1.06
627	SLU 73	-121	144	9867	-18.22	-272.54	1.45
627	SLU 74	-123	108	10002	-14.71	-276.27	0.72
627	SLU 75	-123	130	10005	-16.55	-276.35	1.15
627	SLU 76	-122	144	9954	-17.91	-274.94	1.44
627	SLU 77	-124	108	10089	-14.4	-278.68	0.71
627	SLU 78	-124	130	10092	-16.24	-278.75	1.15
627	SLU 79	-123	108	10037	-14.54	-277.22	0.71
627	SLU 80	-123	130	10039	-16.38	-277.3	1.15
627	SLU 81	-122	112	10203	-15.79	-281.86	0.76
627	SLU 82	-122	134	10205	-17.63	-281.93	1.2
627	SLU 83	-123	112	10290	-15.48	-284.26	0.76
627	SLU 84	-123	134	10292	-17.32	-284.34	1.19
627	SLE RA 1	-89	74	6761	-10.63	-186.65	0.48
627	SLE RA 2	-89	98	6764	-12.67	-186.73	0.97
627	SLE RA 3	-90	74	6855	-10.33	-189.22	0.48
627	SLE RA 4	-90	89	6856	-11.56	-189.27	0.77
627	SLE RA 5	-90	98	6822	-12.47	-188.34	0.97
627	SLE RA 6	-91	74	6913	-10.13	-190.83	0.48
627	SLE RA 7	-91	89	6914	-11.35	-190.88	0.77
627	SLE RA 8	-90	74	6877	-10.22	-189.86	0.48
627	SLE RA 9	-90	89	6879	-11.44	-189.91	0.77
627	SLE RA 10	-91	105	7294	-13.65	-201.43	1.03
627	SLE RA 11	-92	81	7384	-11.31	-203.92	0.54
627	SLE RA 12	-92	95	7386	-12.54	-203.97	0.83
627	SLE RA 13	-92	105	7352	-13.45	-203.03	1.03
627	SLE RA 14	-93	81	7442	-11.1	-205.52	0.54
627	SLE RA 15	-93	95	7444	-12.33	-205.57	0.83
627	SLE RA 16	-93	81	7407	-11.2	-204.55	0.54
627	SLE RA 17	-93	95	7409	-12.42	-204.6	0.83
627	SLE RA 18	-92	83	7517	-12.03	-207.64	0.57
627	SLE RA 19	-92	98	7519	-13.26	-207.69	0.86
627	SLE RA 20	-93	83	7576	-11.82	-209.24	0.57
627	SLE RA 21	-93	98	7577	-13.05	-209.29	0.86
627	SLE FR 1	-89	74	6761	-10.63	-186.65	0.48
627	SLE FR 2	-89	79	6762	-11.04	-186.66	0.58
627	SLE FR 3	-89	74	6785	-10.55	-187.29	0.48
627	SLE FR 4	-90	81	6989	-11.46	-192.96	0.61
627	SLE FR 5	-90	77	7011	-10.97	-193.59	0.51
627	SLE FR 6	-91	79	7139	-11.33	-197.14	0.53
627	SLE QP 1	-89	74	6761	-10.63	-186.65	0.48
627	SLE QP 2	-90	77	6988	-11.05	-192.95	0.51
627	SLD 1	410	430	9028	-35.32	-246.85	5.32
627	SLD 2	411	240	9015	-32.14	-246.5	2.27
627	SLD 3	415	7	8982	7.38	-245.63	-3.12
627	SLD 4	417	-183	8969	10.55	-245.28	-6.17

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
627	SLD 5	51	857	7672	-83.66	-211.03	15.3
627	SLD 6	52	732	7663	-81.57	-210.8	13.28
627	SLD 7	70	-551	7519	58.66	-206.97	-12.82
627	SLD 8	71	-676	7511	60.76	-206.73	-14.83
627	SLD 9	-251	829	6466	-82.86	-179.16	15.86
627	SLD 10	-250	704	6457	-80.77	-178.92	13.84
627	SLD 11	-232	-579	6313	59.46	-175.09	-12.26
627	SLD 12	-231	-704	6305	61.56	-174.86	-14.27
627	SLD 13	-597	336	5007	-32.66	-140.61	7.19
627	SLD 14	-595	146	4994	-29.48	-140.26	4.14
627	SLD 15	-591	-86	4961	10.04	-139.39	-1.25
627	SLD 16	-590	-276	4948	13.22	-139.04	-4.3
627	SLV 1	1079	934	11765	-71.38	-319.19	12.39
627	SLV 2	1083	488	11734	-63.91	-318.36	5.22
627	SLV 3	1093	-115	11652	35.57	-316.17	-8.58
627	SLV 4	1096	-562	11621	43.04	-315.34	-15.75
627	SLV 5	239	2009	8599	-192.75	-235.54	37.21
627	SLV 6	242	1708	8578	-187.72	-234.98	32.39
627	SLV 7	285	-1489	8221	163.75	-225.5	-32.68
627	SLV 8	287	-1790	8201	168.77	-224.94	-37.51
627	SLV 9	-467	1943	5776	-190.88	-160.95	38.53
627	SLV 10	-465	1642	5755	-185.85	-160.39	33.7
627	SLV 11	-422	-1555	5398	165.62	-150.91	-31.37
627	SLV 12	-419	-1855	5378	170.65	-150.35	-36.19
627	SLV 13	-1276	715	2355	-65.14	-70.55	16.77
627	SLV 14	-1272	268	2325	-57.68	-69.72	9.6
627	SLV 15	-1263	-334	2242	41.81	-67.54	-4.2
627	SLV 16	-1259	-781	2212	49.27	-66.7	-11.37
627	CRTFP Ux+	0	0	0	0	0	0
627	CRTFP Ux-	0	0	0	0	0	0
627	CRTFP Uy+	0	0	0	0	0	0
627	CRTFP Uy-	0	0	0	0	0	0
628	SLU 1	-102	75	7527	-13.43	1.97	-2.07
628	SLU 2	-102	116	7532	-16.95	1.97	-2.45
628	SLU 3	-104	75	7689	-12.93	2.01	-2.09
628	SLU 4	-104	100	7692	-15.04	2	-2.32
628	SLU 5	-103	116	7633	-16.6	1.99	-2.47
628	SLU 6	-105	76	7790	-12.58	2.02	-2.11
628	SLU 7	-105	100	7794	-14.69	2.02	-2.34
628	SLU 8	-104	76	7729	-12.73	2.01	-2.1
628	SLU 9	-104	100	7732	-14.84	2.01	-2.33
628	SLU 10	-106	127	8460	-18.78	2	-2.71
628	SLU 11	-108	86	8617	-14.76	2.03	-2.35
628	SLU 12	-108	111	8620	-16.87	2.03	-2.58
628	SLU 13	-107	127	8561	-18.43	2.02	-2.73
628	SLU 14	-109	86	8718	-14.41	2.05	-2.37
628	SLU 15	-109	111	8722	-16.52	2.05	-2.6
628	SLU 16	-108	86	8657	-14.57	2.04	-2.36
628	SLU 17	-108	111	8660	-16.68	2.04	-2.59
628	SLU 18	-107	90	8852	-16.06	2.01	-2.44
628	SLU 19	-107	115	8856	-18.16	2.01	-2.67
628	SLU 20	-109	90	8954	-15.71	2.03	-2.46
628	SLU 21	-109	115	8957	-17.81	2.03	-2.68
628	SLU 22	-111	81	8665	-13.04	2.07	-2.28
628	SLU 23	-111	122	8670	-16.55	2.07	-2.66
628	SLU 24	-113	81	8828	-12.54	2.1	-2.3
628	SLU 25	-113	106	8831	-14.65	2.1	-2.53
628	SLU 26	-112	122	8772	-16.2	2.09	-2.67
628	SLU 27	-114	81	8929	-12.19	2.12	-2.32
628	SLU 28	-114	106	8932	-14.3	2.12	-2.55
628	SLU 29	-113	81	8868	-12.34	2.11	-2.31
628	SLU 30	-113	106	8871	-14.45	2.11	-2.54
628	SLU 31	-115	132	9598	-18.39	2.09	-2.92
628	SLU 32	-116	92	9756	-14.37	2.12	-2.56
628	SLU 33	-117	116	9759	-16.48	2.12	-2.79
628	SLU 34	-116	133	9700	-18.04	2.11	-2.93
628	SLU 35	-118	92	9857	-14.02	2.14	-2.58
628	SLU 36	-118	117	9860	-16.13	2.14	-2.81
628	SLU 37	-117	92	9796	-14.18	2.13	-2.57
628	SLU 38	-117	116	9799	-16.29	2.13	-2.8
628	SLU 39	-116	96	9991	-15.66	2.1	-2.65
628	SLU 40	-116	120	9994	-17.77	2.1	-2.88
628	SLU 41	-117	96	10092	-15.31	2.12	-2.66
628	SLU 42	-117	121	10095	-17.42	2.12	-2.89
628	SLU 43	-130	96	9394	-17.6	2.53	-2.62
628	SLU 44	-130	137	9399	-21.11	2.53	-3
628	SLU 45	-132	96	9557	-17.09	2.57	-2.64
628	SLU 46	-132	121	9560	-19.2	2.56	-2.87
628	SLU 47	-131	137	9501	-20.76	2.55	-3.01
628	SLU 48	-133	96	9658	-16.74	2.58	-2.66
628	SLU 49	-133	121	9661	-18.85	2.58	-2.89
628	SLU 50	-132	96	9597	-16.9	2.57	-2.65
628	SLU 51	-132	121	9600	-19	2.57	-2.88
628	SLU 52	-133	147	10328	-22.95	2.56	-3.26
628	SLU 53	-135	106	10485	-18.93	2.59	-2.9
628	SLU 54	-135	131	10488	-21.04	2.59	-3.13
628	SLU 55	-135	147	10429	-22.6	2.58	-3.27
628	SLU 56	-137	107	10586	-18.58	2.61	-2.92
628	SLU 57	-137	131	10589	-20.69	2.61	-3.15

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
628	SLU 58	-136	107	10525	-18.73	2.6	-2.91
628	SLU 59	-136	131	10528	-20.84	2.6	-3.14
628	SLU 60	-135	111	10720	-20.22	2.57	-2.99
628	SLU 61	-135	135	10723	-22.33	2.57	-3.22
628	SLU 62	-136	111	10821	-19.87	2.59	-3
628	SLU 63	-136	136	10825	-21.98	2.59	-3.23
628	SLU 64	-138	101	10533	-17.2	2.63	-2.82
628	SLU 65	-138	142	10538	-20.72	2.63	-3.21
628	SLU 66	-140	102	10695	-16.7	2.66	-2.85
628	SLU 67	-140	126	10698	-18.81	2.66	-3.08
628	SLU 68	-140	143	10639	-20.37	2.65	-3.22
628	SLU 69	-142	102	10796	-16.35	2.68	-2.87
628	SLU 70	-142	127	10800	-18.46	2.68	-3.1
628	SLU 71	-141	102	10735	-16.5	2.67	-2.86
628	SLU 72	-141	126	10738	-18.61	2.67	-3.09
628	SLU 73	-142	153	11466	-22.56	2.65	-3.47
628	SLU 74	-144	112	11623	-18.54	2.68	-3.11
628	SLU 75	-144	137	11626	-20.65	2.68	-3.34
628	SLU 76	-143	153	11567	-22.21	2.67	-3.48
628	SLU 77	-145	112	11725	-18.19	2.7	-3.13
628	SLU 78	-145	137	11728	-20.3	2.7	-3.36
628	SLU 79	-144	112	11663	-18.34	2.69	-3.12
628	SLU 80	-145	137	11667	-20.45	2.69	-3.35
628	SLU 81	-144	116	11859	-19.83	2.66	-3.2
628	SLU 82	-144	141	11862	-21.94	2.66	-3.43
628	SLU 83	-145	117	11960	-19.48	2.68	-3.21
628	SLU 84	-145	141	11963	-21.59	2.68	-3.44
628	SLE RA 1	-105	77	7852	-13.32	2	-2.13
628	SLE RA 2	-105	104	7855	-15.66	2	-2.38
628	SLE RA 3	-106	77	7960	-12.98	2.02	-2.14
628	SLE RA 4	-106	93	7962	-14.39	2.02	-2.3
628	SLE RA 5	-105	104	7923	-15.43	2.01	-2.39
628	SLE RA 6	-107	77	8028	-12.75	2.03	-2.15
628	SLE RA 7	-107	94	8030	-14.16	2.03	-2.31
628	SLE RA 8	-106	77	7987	-12.85	2.03	-2.15
628	SLE RA 9	-106	93	7989	-14.26	2.03	-2.3
628	SLE RA 10	-107	111	8474	-16.89	2.02	-2.56
628	SLE RA 11	-108	84	8579	-14.21	2.04	-2.32
628	SLE RA 12	-108	100	8581	-15.61	2.04	-2.47
628	SLE RA 13	-108	111	8542	-16.65	2.03	-2.57
628	SLE RA 14	-109	84	8646	-13.98	2.05	-2.33
628	SLE RA 15	-109	101	8649	-15.38	2.05	-2.48
628	SLE RA 16	-109	84	8606	-14.08	2.04	-2.32
628	SLE RA 17	-109	100	8608	-15.48	2.04	-2.47
628	SLE RA 18	-108	87	8736	-15.07	2.02	-2.38
628	SLE RA 19	-108	103	8738	-16.47	2.02	-2.53
628	SLE RA 20	-109	87	8803	-14.84	2.04	-2.39
628	SLE RA 21	-109	103	8805	-16.24	2.04	-2.54
628	SLE FR 1	-105	77	7852	-13.32	2	-2.13
628	SLE FR 2	-105	82	7853	-13.79	2	-2.18
628	SLE FR 3	-105	77	7879	-13.23	2.01	-2.13
628	SLE FR 4	-106	85	8118	-14.31	2.01	-2.25
628	SLE FR 5	-106	80	8144	-13.75	2.01	-2.21
628	SLE FR 6	-106	82	8294	-14.19	2.01	-2.25
628	SLE QP 1	-105	77	7852	-13.32	2	-2.13
628	SLE QP 2	-106	80	8117	-13.84	2.01	-2.2
628	SLD 1	481	474	10372	-41.67	6.41	-6.56
628	SLD 2	483	265	10357	-38.11	6.4	-3.75
628	SLD 3	488	-1	10321	7.36	6.33	-2.25
628	SLD 4	490	-210	10306	10.92	6.32	0.57
628	SLD 5	60	956	8874	-97.2	3.46	-10.56
628	SLD 6	61	818	8864	-94.85	3.45	-8.71
628	SLD 7	82	-627	8703	66.24	3.18	3.83
628	SLD 8	84	-765	8694	68.59	3.18	5.68
628	SLD 9	-295	925	7541	-96.28	0.84	-10.09
628	SLD 10	-294	787	7531	-93.93	0.84	-8.23
628	SLD 11	-272	-658	7370	67.16	0.57	4.3
628	SLD 12	-271	-797	7361	69.51	0.56	6.16
628	SLD 13	-701	370	5928	-38.61	-2.3	-4.97
628	SLD 14	-699	160	5914	-35.05	-2.31	-2.16
628	SLD 15	-694	-105	5877	10.42	-2.39	-0.65
628	SLD 16	-692	-315	5862	13.98	-2.4	2.16
628	SLV 1	1267	1038	13397	-83.02	12.32	-12.73
628	SLV 2	1272	546	13362	-74.65	12.3	-6.11
628	SLV 3	1283	-142	13270	39.8	12.11	-2.03
628	SLV 4	1288	-634	13236	48.17	12.1	4.58
628	SLV 5	281	2248	9899	-222.44	5.41	-22.81
628	SLV 6	284	1917	9875	-216.81	5.4	-18.36
628	SLV 7	335	-1684	9478	186.97	4.73	12.84
628	SLV 8	338	-2015	9455	192.61	4.72	17.29
628	SLV 9	-549	2175	6780	-220.3	-0.7	-21.69
628	SLV 10	-546	1843	6756	-214.66	-0.72	-17.24
628	SLV 11	-495	-1757	6359	189.12	-1.39	13.96
628	SLV 12	-492	-2089	6335	194.75	-1.4	18.41
628	SLV 13	-1499	793	2999	-75.86	-8.08	-8.99
628	SLV 14	-1495	301	2964	-67.49	-8.1	-2.37
628	SLV 15	-1483	-387	2872	46.96	-8.28	1.71
628	SLV 16	-1478	-879	2837	55.33	-8.3	8.32
628	CRTFP Ux+	0	0	0	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
628	CRTFP Ux-	0	0	0	0	0	0
628	CRTFP Uy+	0	0	0	0	0	0
628	CRTFP Uy-	0	0	0	0	0	0
629	SLU 1	-102	64	7474	-14.42	1.41	-2.21
629	SLU 2	-102	103	7479	-17.87	1.41	-2.6
629	SLU 3	-104	64	7635	-13.94	1.43	-2.24
629	SLU 4	-104	88	7638	-16.01	1.43	-2.47
629	SLU 5	-103	103	7580	-17.53	1.42	-2.61
629	SLU 6	-105	64	7736	-13.6	1.44	-2.26
629	SLU 7	-105	88	7739	-15.67	1.44	-2.49
629	SLU 8	-104	64	7675	-13.74	1.43	-2.25
629	SLU 9	-104	88	7678	-15.81	1.43	-2.48
629	SLU 10	-106	112	8407	-19.85	1.37	-2.88
629	SLU 11	-108	73	8564	-15.91	1.39	-2.52
629	SLU 12	-108	97	8567	-17.98	1.39	-2.75
629	SLU 13	-107	112	8508	-19.51	1.38	-2.89
629	SLU 14	-109	73	8665	-15.57	1.4	-2.54
629	SLU 15	-109	97	8668	-17.65	1.4	-2.77
629	SLU 16	-108	73	8604	-15.72	1.39	-2.53
629	SLU 17	-108	97	8607	-17.79	1.39	-2.76
629	SLU 18	-107	77	8800	-17.24	1.35	-2.61
629	SLU 19	-107	100	8803	-19.31	1.35	-2.84
629	SLU 20	-109	77	8901	-16.9	1.37	-2.63
629	SLU 21	-109	101	8904	-18.97	1.36	-2.86
629	SLU 22	-111	69	8611	-14.18	1.43	-2.44
629	SLU 23	-111	108	8616	-17.63	1.42	-2.82
629	SLU 24	-113	69	8772	-13.7	1.45	-2.46
629	SLU 25	-113	92	8775	-15.77	1.44	-2.7
629	SLU 26	-112	108	8717	-17.3	1.44	-2.84
629	SLU 27	-114	69	8873	-13.36	1.46	-2.48
629	SLU 28	-114	92	8876	-15.43	1.46	-2.71
629	SLU 29	-113	69	8812	-13.51	1.45	-2.47
629	SLU 30	-113	92	8815	-15.58	1.45	-2.7
629	SLU 31	-115	117	9544	-19.61	1.39	-3.1
629	SLU 32	-117	78	9701	-15.67	1.41	-2.75
629	SLU 33	-117	101	9704	-17.75	1.41	-2.98
629	SLU 34	-116	117	9645	-19.27	1.4	-3.12
629	SLU 35	-118	78	9802	-15.34	1.42	-2.76
629	SLU 36	-118	101	9805	-17.41	1.42	-2.99
629	SLU 37	-117	78	9741	-15.48	1.41	-2.75
629	SLU 38	-117	101	9744	-17.55	1.41	-2.98
629	SLU 39	-116	82	9937	-17	1.37	-2.84
629	SLU 40	-116	105	9940	-19.07	1.37	-3.07
629	SLU 41	-117	82	10038	-16.67	1.38	-2.86
629	SLU 42	-117	105	10041	-18.74	1.38	-3.09
629	SLU 43	-129	82	9326	-18.82	1.83	-2.8
629	SLU 44	-130	121	9331	-22.28	1.83	-3.18
629	SLU 45	-131	82	9488	-18.34	1.85	-2.83
629	SLU 46	-132	105	9491	-20.41	1.84	-3.06
629	SLU 47	-131	121	9432	-21.94	1.84	-3.2
629	SLU 48	-133	82	9588	-18	1.86	-2.84
629	SLU 49	-133	105	9592	-20.08	1.86	-3.07
629	SLU 50	-132	82	9528	-18.15	1.85	-2.83
629	SLU 51	-132	105	9531	-20.22	1.85	-3.06
629	SLU 52	-133	130	10260	-24.25	1.79	-3.46
629	SLU 53	-135	91	10416	-20.32	1.81	-3.11
629	SLU 54	-135	114	10419	-22.39	1.81	-3.34
629	SLU 55	-135	130	10361	-23.91	1.8	-3.48
629	SLU 56	-136	91	10517	-19.98	1.82	-3.12
629	SLU 57	-137	114	10520	-22.05	1.82	-3.35
629	SLU 58	-136	91	10456	-20.12	1.81	-3.11
629	SLU 59	-136	114	10459	-22.2	1.81	-3.34
629	SLU 60	-135	95	10652	-21.64	1.77	-3.2
629	SLU 61	-135	118	10656	-23.72	1.77	-3.43
629	SLU 62	-136	95	10753	-21.31	1.78	-3.22
629	SLU 63	-136	118	10756	-23.38	1.78	-3.45
629	SLU 64	-138	86	10463	-18.59	1.84	-3.02
629	SLU 65	-138	125	10468	-22.04	1.84	-3.41
629	SLU 66	-140	86	10625	-18.11	1.86	-3.05
629	SLU 67	-140	110	10628	-20.18	1.86	-3.28
629	SLU 68	-140	125	10569	-21.7	1.85	-3.42
629	SLU 69	-142	87	10725	-17.77	1.87	-3.07
629	SLU 70	-142	110	10729	-19.84	1.87	-3.3
629	SLU 71	-141	86	10664	-17.91	1.87	-3.06
629	SLU 72	-141	110	10668	-19.98	1.86	-3.29
629	SLU 73	-142	134	11397	-24.02	1.8	-3.69
629	SLU 74	-144	96	11553	-20.08	1.82	-3.33
629	SLU 75	-144	119	11556	-22.15	1.82	-3.56
629	SLU 76	-143	135	11497	-23.68	1.81	-3.71
629	SLU 77	-145	96	11654	-19.74	1.83	-3.35
629	SLU 78	-145	119	11657	-21.82	1.83	-3.58
629	SLU 79	-145	96	11593	-19.89	1.83	-3.34
629	SLU 80	-145	119	11596	-21.96	1.83	-3.57
629	SLU 81	-144	99	11789	-21.41	1.79	-3.43
629	SLU 82	-144	123	11792	-23.48	1.79	-3.66
629	SLU 83	-145	99	11890	-21.07	1.8	-3.44
629	SLU 84	-145	123	11893	-23.14	1.8	-3.67
629	SLE RA 1	-104	65	7798	-14.35	1.41	-2.28
629	SLE RA 2	-104	91	7802	-16.65	1.41	-2.53

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
629	SLE RA 3	-106	65	7906	-14.03	1.43	-2.29
629	SLE RA 4	-106	81	7908	-15.41	1.43	-2.45
629	SLE RA 5	-105	91	7869	-16.43	1.42	-2.54
629	SLE RA 6	-107	66	7973	-13.8	1.43	-2.31
629	SLE RA 7	-107	81	7976	-15.19	1.43	-2.46
629	SLE RA 8	-106	65	7933	-13.9	1.43	-2.3
629	SLE RA 9	-106	81	7935	-15.28	1.43	-2.45
629	SLE RA 10	-107	97	8421	-17.97	1.39	-2.72
629	SLE RA 11	-108	72	8525	-15.35	1.4	-2.48
629	SLE RA 12	-108	87	8527	-16.73	1.4	-2.64
629	SLE RA 13	-108	97	8488	-17.74	1.4	-2.73
629	SLE RA 14	-109	72	8592	-15.12	1.41	-2.49
629	SLE RA 15	-109	87	8595	-16.5	1.41	-2.65
629	SLE RA 16	-109	72	8552	-15.22	1.4	-2.49
629	SLE RA 17	-109	87	8554	-16.6	1.4	-2.64
629	SLE RA 18	-108	74	8683	-16.23	1.38	-2.54
629	SLE RA 19	-108	90	8685	-17.61	1.38	-2.7
629	SLE RA 20	-109	74	8750	-16.01	1.38	-2.56
629	SLE RA 21	-109	90	8752	-17.39	1.38	-2.71
629	SLE FR 1	-104	65	7798	-14.35	1.41	-2.28
629	SLE FR 2	-104	71	7799	-14.81	1.41	-2.33
629	SLE FR 3	-105	65	7825	-14.26	1.42	-2.28
629	SLE FR 4	-106	73	8064	-15.37	1.4	-2.41
629	SLE FR 5	-106	68	8091	-14.82	1.41	-2.36
629	SLE FR 6	-106	70	8241	-15.29	1.4	-2.41
629	SLE QP 1	-104	65	7798	-14.35	1.41	-2.28
629	SLE QP 2	-106	68	8064	-14.91	1.4	-2.36
629	SLD 1	482	441	10182	-42.24	5.53	-6.74
629	SLD 2	484	247	10167	-38.83	5.53	-3.96
629	SLD 3	489	-11	10133	5.99	5.46	-2.46
629	SLD 4	491	-206	10119	9.4	5.46	0.32
629	SLD 5	60	901	8776	-96.87	2.75	-10.66
629	SLD 6	61	773	8766	-94.62	2.75	-8.83
629	SLD 7	83	-607	8613	63.89	2.52	3.6
629	SLD 8	84	-736	8604	66.14	2.51	5.43
629	SLD 9	-295	871	7524	-95.96	0.29	-10.15
629	SLD 10	-294	743	7514	-93.72	0.29	-8.31
629	SLD 11	-273	-637	7362	64.79	0.06	4.11
629	SLD 12	-271	-765	7352	67.04	0.06	5.94
629	SLD 13	-702	342	6009	-39.22	-2.65	-5.03
629	SLD 14	-700	147	5994	-35.82	-2.66	-2.26
629	SLD 15	-695	-111	5960	9	-2.72	-0.75
629	SLD 16	-693	-306	5946	12.41	-2.73	2.02
629	SLV 1	1270	976	13024	-82.85	11.07	-12.92
629	SLV 2	1274	518	12989	-74.84	11.06	-6.4
629	SLV 3	1286	-148	12904	37.96	10.9	-2.32
629	SLV 4	1290	-606	12869	45.97	10.89	4.2
629	SLV 5	282	2130	9741	-220.02	4.57	-22.81
629	SLV 6	285	1822	9718	-214.63	4.56	-18.42
629	SLV 7	335	-1616	9340	182.69	3.99	12.51
629	SLV 8	338	-1924	9316	188.08	3.99	16.9
629	SLV 9	-549	2060	6811	-217.9	-1.18	-21.61
629	SLV 10	-546	1752	6788	-212.51	-1.19	-17.22
629	SLV 11	-496	-1686	6410	184.8	-1.75	13.71
629	SLV 12	-493	-1995	6387	190.19	-1.76	18.1
629	SLV 13	-1501	742	3258	-75.79	-8.08	-8.91
629	SLV 14	-1497	284	3224	-67.79	-8.1	-2.39
629	SLV 15	-1485	-382	3138	45.02	-8.26	1.68
629	SLV 16	-1481	-840	3103	53.02	-8.27	8.21
629	CRTFP Ux+	0	0	0	0	0	0
629	CRTFP Ux-	0	0	0	0	0	0
629	CRTFP Uy+	0	0	0	0	0	0
629	CRTFP Uy-	0	0	0	0	0	0
630	SLU 1	-102	52	7430	-15.42	1.34	-2.3
630	SLU 2	-102	89	7435	-18.82	1.34	-2.67
630	SLU 3	-104	52	7591	-14.96	1.36	-2.33
630	SLU 4	-104	75	7594	-17	1.36	-2.55
630	SLU 5	-103	89	7536	-18.49	1.35	-2.68
630	SLU 6	-105	52	7692	-14.64	1.37	-2.35
630	SLU 7	-105	75	7695	-16.67	1.37	-2.57
630	SLU 8	-104	52	7631	-14.77	1.36	-2.34
630	SLU 9	-104	75	7634	-16.81	1.36	-2.56
630	SLU 10	-106	97	8365	-20.93	1.31	-2.96
630	SLU 11	-108	60	8521	-17.08	1.33	-2.62
630	SLU 12	-108	82	8524	-19.11	1.33	-2.84
630	SLU 13	-107	97	8466	-20.61	1.32	-2.98
630	SLU 14	-109	60	8622	-16.75	1.34	-2.64
630	SLU 15	-109	82	8625	-18.79	1.34	-2.86
630	SLU 16	-108	60	8561	-16.89	1.33	-2.63
630	SLU 17	-108	82	8564	-18.92	1.33	-2.85
630	SLU 18	-107	63	8758	-18.44	1.29	-2.72
630	SLU 19	-107	85	8762	-20.48	1.29	-2.94
630	SLU 20	-109	63	8859	-18.12	1.31	-2.74
630	SLU 21	-109	85	8862	-20.16	1.3	-2.96
630	SLU 22	-111	56	8567	-15.34	1.36	-2.54
630	SLU 23	-111	93	8572	-18.74	1.36	-2.9
630	SLU 24	-113	56	8728	-14.88	1.38	-2.57
630	SLU 25	-113	78	8731	-16.92	1.38	-2.79
630	SLU 26	-112	93	8672	-18.41	1.37	-2.92

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
630	SLU 27	-114	56	8828	-14.56	1.39	-2.58
630	SLU 28	-114	78	8831	-16.59	1.39	-2.8
630	SLU 29	-113	56	8768	-14.69	1.39	-2.57
630	SLU 30	-113	78	8771	-16.73	1.38	-2.79
630	SLU 31	-115	100	9502	-20.85	1.33	-3.2
630	SLU 32	-117	63	9658	-17	1.35	-2.86
630	SLU 33	-117	86	9661	-19.03	1.35	-3.08
630	SLU 34	-116	100	9602	-20.53	1.34	-3.22
630	SLU 35	-118	63	9758	-16.67	1.36	-2.88
630	SLU 36	-118	86	9761	-18.71	1.36	-3.1
630	SLU 37	-117	63	9697	-16.81	1.35	-2.87
630	SLU 38	-117	86	9701	-18.84	1.35	-3.09
630	SLU 39	-116	67	9895	-18.36	1.32	-2.96
630	SLU 40	-116	89	9898	-20.4	1.32	-3.18
630	SLU 41	-118	67	9995	-18.04	1.33	-2.97
630	SLU 42	-118	89	9999	-20.08	1.33	-3.19
630	SLU 43	-129	67	9270	-20.07	1.74	-2.91
630	SLU 44	-129	104	9275	-23.47	1.74	-3.27
630	SLU 45	-131	67	9431	-19.61	1.76	-2.94
630	SLU 46	-131	89	9434	-21.65	1.75	-3.16
630	SLU 47	-131	104	9375	-23.15	1.75	-3.29
630	SLU 48	-132	67	9531	-19.29	1.77	-2.95
630	SLU 49	-133	89	9534	-21.33	1.76	-3.17
630	SLU 50	-132	67	9471	-19.42	1.76	-2.94
630	SLU 51	-132	89	9474	-21.46	1.76	-3.16
630	SLU 52	-133	112	10205	-25.59	1.7	-3.57
630	SLU 53	-135	74	10360	-21.73	1.72	-3.23
630	SLU 54	-135	97	10364	-23.77	1.72	-3.45
630	SLU 55	-134	112	10305	-25.26	1.71	-3.59
630	SLU 56	-136	75	10461	-21.4	1.73	-3.25
630	SLU 57	-136	97	10464	-23.44	1.73	-3.47
630	SLU 58	-136	75	10400	-21.54	1.72	-3.24
630	SLU 59	-136	97	10403	-23.58	1.72	-3.46
630	SLU 60	-135	78	10598	-23.1	1.69	-3.33
630	SLU 61	-135	100	10601	-25.13	1.69	-3.55
630	SLU 62	-136	78	10698	-22.77	1.7	-3.35
630	SLU 63	-136	100	10701	-24.81	1.7	-3.57
630	SLU 64	-138	70	10406	-19.99	1.76	-3.14
630	SLU 65	-138	107	10411	-23.39	1.76	-3.51
630	SLU 66	-140	70	10567	-19.53	1.78	-3.17
630	SLU 67	-140	93	10570	-21.57	1.78	-3.39
630	SLU 68	-140	107	10512	-23.07	1.77	-3.53
630	SLU 69	-141	70	10668	-19.21	1.79	-3.19
630	SLU 70	-142	93	10671	-21.25	1.79	-3.41
630	SLU 71	-141	70	10607	-19.34	1.78	-3.18
630	SLU 72	-141	93	10610	-21.38	1.78	-3.4
630	SLU 73	-142	115	11341	-25.51	1.73	-3.81
630	SLU 74	-144	78	11497	-21.65	1.74	-3.47
630	SLU 75	-144	100	11500	-23.69	1.74	-3.69
630	SLU 76	-143	115	11442	-25.18	1.74	-3.82
630	SLU 77	-145	78	11597	-21.32	1.76	-3.49
630	SLU 78	-145	100	11601	-23.36	1.75	-3.71
630	SLU 79	-145	78	11537	-21.46	1.75	-3.48
630	SLU 80	-145	100	11540	-23.5	1.75	-3.7
630	SLU 81	-144	81	11734	-23.02	1.71	-3.57
630	SLU 82	-144	103	11737	-25.05	1.71	-3.79
630	SLU 83	-145	81	11835	-22.69	1.72	-3.58
630	SLU 84	-145	103	11838	-24.73	1.72	-3.8
630	SLE RA 1	-104	53	7755	-15.4	1.35	-2.37
630	SLE RA 2	-104	78	7758	-17.66	1.35	-2.61
630	SLE RA 3	-106	53	7862	-15.09	1.36	-2.39
630	SLE RA 4	-106	68	7864	-16.45	1.36	-2.53
630	SLE RA 5	-105	78	7825	-17.45	1.35	-2.62
630	SLE RA 6	-107	53	7929	-14.87	1.37	-2.4
630	SLE RA 7	-107	68	7931	-16.23	1.37	-2.54
630	SLE RA 8	-106	53	7889	-14.96	1.36	-2.39
630	SLE RA 9	-106	68	7891	-16.32	1.36	-2.54
630	SLE RA 10	-107	83	8378	-19.07	1.33	-2.81
630	SLE RA 11	-108	58	8482	-16.5	1.34	-2.58
630	SLE RA 12	-108	73	8484	-17.86	1.34	-2.73
630	SLE RA 13	-108	83	8445	-18.86	1.33	-2.82
630	SLE RA 14	-109	58	8549	-16.28	1.35	-2.59
630	SLE RA 15	-109	73	8551	-17.64	1.35	-2.74
630	SLE RA 16	-109	58	8509	-16.37	1.34	-2.59
630	SLE RA 17	-109	73	8511	-17.73	1.34	-2.73
630	SLE RA 18	-108	61	8640	-17.41	1.32	-2.65
630	SLE RA 19	-108	75	8642	-18.77	1.32	-2.79
630	SLE RA 20	-109	61	8707	-17.2	1.32	-2.66
630	SLE RA 21	-109	75	8709	-18.55	1.32	-2.81
630	SLE FR 1	-104	53	7755	-15.4	1.35	-2.37
630	SLE FR 2	-104	58	7756	-15.85	1.35	-2.42
630	SLE FR 3	-105	53	7782	-15.31	1.35	-2.37
630	SLE FR 4	-105	60	8021	-16.45	1.34	-2.5
630	SLE FR 5	-106	55	8047	-15.92	1.34	-2.46
630	SLE FR 6	-106	57	8198	-16.4	1.33	-2.51
630	SLE QP 1	-104	53	7755	-15.4	1.35	-2.37
630	SLE QP 2	-105	55	8020	-16	1.34	-2.45
630	SLD 1	483	313	10008	-42.86	5.35	-6.68
630	SLD 2	485	133	9994	-39.6	5.35	-4.02

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
630	SLD 3	490	-118	9962	4.62	5.29	-2.65
630	SLD 4	492	-298	9947	7.88	5.29	0.01
630	SLD 5	61	819	8690	-96.65	2.63	-10.31
630	SLD 6	62	699	8681	-94.51	2.63	-8.56
630	SLD 7	83	-617	8535	61.61	2.43	3.12
630	SLD 8	84	-737	8525	63.76	2.43	4.88
630	SLD 9	-295	847	7516	-95.76	0.24	-9.78
630	SLD 10	-294	728	7506	-93.61	0.24	-8.02
630	SLD 11	-273	-589	7360	62.5	0.05	3.65
630	SLD 12	-272	-708	7351	64.65	0.05	5.41
630	SLD 13	-703	409	6094	-39.88	-2.61	-4.91
630	SLD 14	-701	228	6079	-36.63	-2.61	-2.25
630	SLD 15	-696	-22	6047	7.6	-2.67	-0.88
630	SLD 16	-694	-202	6033	10.85	-2.67	1.78
630	SLV 1	1272	690	12676	-82.78	10.72	-12.64
630	SLV 2	1276	266	12641	-75.13	10.72	-6.39
630	SLV 3	1288	-380	12560	36.16	10.58	-2.66
630	SLV 4	1292	-805	12526	43.81	10.58	3.59
630	SLV 5	283	1949	9599	-217.86	4.37	-21.81
630	SLV 6	286	1663	9576	-212.71	4.37	-17.6
630	SLV 7	336	-1619	9214	178.62	3.89	11.45
630	SLV 8	339	-1905	9190	183.77	3.89	15.66
630	SLV 9	-550	2016	6850	-215.77	-1.21	-20.57
630	SLV 10	-547	1730	6827	-210.62	-1.22	-16.36
630	SLV 11	-497	-1552	6465	180.71	-1.69	12.7
630	SLV 12	-494	-1838	6442	185.86	-1.7	16.91
630	SLV 13	-1503	916	3515	-75.82	-7.9	-8.49
630	SLV 14	-1499	491	3481	-68.16	-7.9	-2.24
630	SLV 15	-1487	-155	3400	43.13	-8.04	1.49
630	SLV 16	-1483	-580	3365	50.78	-8.05	7.74
630	CRTFP Ux+	0	0	0	0	0	0
630	CRTFP Ux-	0	0	0	0	0	0
630	CRTFP Uy+	0	0	0	0	0	0
630	CRTFP Uy-	0	0	0	0	0	0
631	SLU 1	-102	40	7384	-16.44	1.54	-2.34
631	SLU 2	-102	76	7390	-19.79	1.54	-2.67
631	SLU 3	-104	40	7545	-16	1.56	-2.37
631	SLU 4	-104	61	7548	-18.01	1.56	-2.57
631	SLU 5	-103	76	7490	-19.47	1.55	-2.69
631	SLU 6	-105	40	7645	-15.69	1.58	-2.39
631	SLU 7	-105	61	7648	-17.7	1.58	-2.59
631	SLU 8	-104	40	7584	-15.82	1.57	-2.37
631	SLU 9	-104	61	7588	-17.82	1.56	-2.57
631	SLU 10	-106	82	8320	-22.05	1.55	-2.97
631	SLU 11	-108	46	8475	-18.26	1.57	-2.67
631	SLU 12	-108	67	8478	-20.27	1.57	-2.87
631	SLU 13	-107	82	8420	-21.73	1.56	-2.99
631	SLU 14	-109	46	8575	-17.95	1.59	-2.68
631	SLU 15	-109	67	8578	-19.96	1.59	-2.88
631	SLU 16	-108	46	8515	-18.08	1.58	-2.67
631	SLU 17	-108	67	8518	-20.08	1.58	-2.87
631	SLU 18	-107	49	8713	-19.67	1.55	-2.76
631	SLU 19	-108	70	8716	-21.68	1.55	-2.96
631	SLU 20	-109	49	8813	-19.36	1.57	-2.78
631	SLU 21	-109	70	8816	-21.36	1.57	-2.98
631	SLU 22	-111	42	8519	-16.52	1.61	-2.58
631	SLU 23	-111	78	8525	-19.86	1.61	-2.91
631	SLU 24	-113	42	8680	-16.08	1.64	-2.61
631	SLU 25	-113	64	8683	-18.09	1.63	-2.81
631	SLU 26	-112	78	8625	-19.55	1.62	-2.93
631	SLU 27	-114	42	8780	-15.77	1.65	-2.63
631	SLU 28	-114	64	8783	-17.77	1.65	-2.83
631	SLU 29	-113	42	8719	-15.89	1.64	-2.62
631	SLU 30	-113	64	8723	-17.9	1.64	-2.82
631	SLU 31	-115	84	9455	-22.12	1.62	-3.21
631	SLU 32	-117	48	9610	-18.34	1.65	-2.91
631	SLU 33	-117	70	9613	-20.34	1.65	-3.11
631	SLU 34	-116	84	9555	-21.81	1.63	-3.23
631	SLU 35	-118	48	9710	-18.03	1.66	-2.93
631	SLU 36	-118	70	9713	-20.03	1.66	-3.13
631	SLU 37	-117	48	9650	-18.15	1.65	-2.92
631	SLU 38	-117	70	9653	-20.16	1.65	-3.12
631	SLU 39	-117	51	9848	-19.75	1.63	-3.01
631	SLU 40	-117	72	9851	-21.75	1.63	-3.21
631	SLU 41	-118	51	9948	-19.43	1.64	-3.02
631	SLU 42	-118	72	9951	-21.44	1.64	-3.23
631	SLU 43	-129	52	9210	-21.35	1.98	-2.95
631	SLU 44	-129	87	9216	-24.69	1.97	-3.29
631	SLU 45	-131	52	9371	-20.91	2	-2.98
631	SLU 46	-131	73	9374	-22.92	2	-3.19
631	SLU 47	-130	87	9316	-24.38	1.99	-3.31
631	SLU 48	-132	52	9471	-20.6	2.01	-3
631	SLU 49	-132	73	9474	-22.61	2.01	-3.2
631	SLU 50	-131	52	9411	-20.72	2	-2.99
631	SLU 51	-131	73	9414	-22.73	2	-3.19
631	SLU 52	-133	93	10146	-26.95	1.98	-3.59
631	SLU 53	-135	58	10301	-23.17	2.01	-3.28
631	SLU 54	-135	79	10304	-25.18	2.01	-3.48
631	SLU 55	-134	93	10246	-26.64	2	-3.61

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
631	SLU 56	-136	58	10401	-22.86	2.02	-3.3
631	SLU 57	-136	79	10404	-24.86	2.02	-3.5
631	SLU 58	-136	58	10341	-22.98	2.01	-3.29
631	SLU 59	-136	79	10344	-24.99	2.01	-3.49
631	SLU 60	-135	60	10539	-24.58	1.99	-3.38
631	SLU 61	-135	81	10542	-26.58	1.99	-3.58
631	SLU 62	-136	60	10639	-24.26	2	-3.4
631	SLU 63	-136	81	10643	-26.27	2	-3.6
631	SLU 64	-138	54	10345	-21.42	2.05	-3.2
631	SLU 65	-138	89	10351	-24.77	2.05	-3.53
631	SLU 66	-140	54	10506	-20.99	2.07	-3.23
631	SLU 67	-140	75	10509	-22.99	2.07	-3.43
631	SLU 68	-139	89	10451	-24.46	2.06	-3.55
631	SLU 69	-141	54	10606	-20.67	2.09	-3.25
631	SLU 70	-141	75	10609	-22.68	2.08	-3.45
631	SLU 71	-141	54	10546	-20.8	2.08	-3.23
631	SLU 72	-141	75	10549	-22.81	2.07	-3.44
631	SLU 73	-142	95	11281	-27.03	2.06	-3.83
631	SLU 74	-144	60	11436	-23.25	2.08	-3.53
631	SLU 75	-144	81	11439	-25.25	2.08	-3.73
631	SLU 76	-144	95	11381	-26.72	2.07	-3.85
631	SLU 77	-145	60	11536	-22.93	2.1	-3.54
631	SLU 78	-145	81	11539	-24.94	2.1	-3.75
631	SLU 79	-145	60	11476	-23.06	2.09	-3.53
631	SLU 80	-145	81	11479	-25.07	2.08	-3.73
631	SLU 81	-144	62	11674	-24.65	2.06	-3.62
631	SLU 82	-144	84	11677	-26.66	2.06	-3.82
631	SLU 83	-145	62	11774	-24.34	2.08	-3.64
631	SLU 84	-145	84	11778	-26.35	2.08	-3.84
631	SLE RA 1	-104	41	7708	-16.46	1.56	-2.41
631	SLE RA 2	-104	64	7712	-18.69	1.56	-2.63
631	SLE RA 3	-106	41	7815	-16.17	1.58	-2.43
631	SLE RA 4	-106	55	7818	-17.51	1.57	-2.56
631	SLE RA 5	-105	64	7779	-18.49	1.57	-2.64
631	SLE RA 6	-106	41	7882	-15.96	1.58	-2.44
631	SLE RA 7	-106	55	7884	-17.3	1.58	-2.57
631	SLE RA 8	-106	41	7842	-16.05	1.58	-2.43
631	SLE RA 9	-106	55	7844	-17.39	1.58	-2.56
631	SLE RA 10	-107	68	8332	-20.2	1.57	-2.83
631	SLE RA 11	-108	45	8436	-17.68	1.58	-2.63
631	SLE RA 12	-108	59	8438	-19.02	1.58	-2.76
631	SLE RA 13	-108	68	8399	-19.99	1.57	-2.84
631	SLE RA 14	-109	45	8502	-17.47	1.59	-2.64
631	SLE RA 15	-109	59	8505	-18.81	1.59	-2.77
631	SLE RA 16	-109	45	8462	-17.55	1.58	-2.63
631	SLE RA 17	-109	59	8464	-18.89	1.58	-2.76
631	SLE RA 18	-108	47	8594	-18.62	1.57	-2.69
631	SLE RA 19	-108	61	8597	-19.95	1.57	-2.82
631	SLE RA 20	-109	47	8661	-18.41	1.58	-2.7
631	SLE RA 21	-109	61	8663	-19.75	1.58	-2.84
631	SLE FR 1	-104	41	7708	-16.46	1.56	-2.41
631	SLE FR 2	-104	46	7709	-16.91	1.56	-2.45
631	SLE FR 3	-105	41	7735	-16.38	1.56	-2.41
631	SLE FR 4	-105	47	7975	-17.56	1.56	-2.54
631	SLE FR 5	-106	43	8001	-17.03	1.57	-2.5
631	SLE FR 6	-106	44	8151	-17.54	1.56	-2.55
631	SLE QP 1	-104	41	7708	-16.46	1.56	-2.41
631	SLE QP 2	-105	43	7974	-17.11	1.56	-2.49
631	SLD 1	484	285	9834	-43.53	5.53	-6.44
631	SLD 2	486	118	9820	-40.42	5.53	-3.95
631	SLD 3	491	-126	9789	3.26	5.48	-2.81
631	SLD 4	493	-293	9774	6.37	5.48	-0.32
631	SLD 5	61	769	8603	-96.56	2.83	-9.62
631	SLD 6	62	658	8594	-94.51	2.83	-7.98
631	SLD 7	83	-601	8453	59.41	2.66	2.46
631	SLD 8	85	-712	8443	61.46	2.67	4.1
631	SLD 9	-295	797	7505	-95.68	0.46	-9.09
631	SLD 10	-294	686	7496	-93.63	0.46	-7.45
631	SLD 11	-273	-573	7355	60.29	0.3	3
631	SLD 12	-272	-683	7345	62.34	0.3	4.64
631	SLD 13	-704	379	6174	-40.59	-2.36	-4.66
631	SLD 14	-702	211	6159	-37.48	-2.36	-2.17
631	SLD 15	-697	-32	6129	6.2	-2.41	-1.03
631	SLD 16	-695	-200	6114	9.31	-2.41	1.45
631	SLV 1	1274	640	12330	-82.82	10.85	-11.99
631	SLV 2	1278	247	12296	-75.52	10.86	-6.14
631	SLV 3	1290	-381	12218	34.4	10.73	-3.01
631	SLV 4	1294	-775	12184	41.7	10.74	2.83
631	SLV 5	283	1844	9457	-215.97	4.53	-20.04
631	SLV 6	286	1579	9434	-211.05	4.53	-16.11
631	SLV 7	337	-1560	9084	174.76	4.13	9.87
631	SLV 8	340	-1825	9061	179.68	4.14	13.81
631	SLV 9	-550	1910	6887	-213.9	-1.01	-18.79
631	SLV 10	-547	1645	6864	-208.98	-1.01	-14.86
631	SLV 11	-497	-1494	6515	176.83	-1.4	11.12
631	SLV 12	-494	-1759	6492	181.75	-1.4	15.06
631	SLV 13	-1505	860	3764	-75.92	-7.61	-7.82
631	SLV 14	-1501	466	3730	-68.62	-7.61	-1.97
631	SLV 15	-1489	-161	3653	41.3	-7.73	1.16

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
631	SLV 16	-1485	-555	3618	48.6	-7.73	7
631	CRTFP Ux+	0	0	0	0	0	0
631	CRTFP Ux-	0	0	0	0	0	0
631	CRTFP Uy+	0	0	0	0	0	0
631	CRTFP Uy-	0	0	0	0	0	0
632	SLU 1	-101	28	7330	-17.49	1.87	-2.33
632	SLU 2	-101	62	7335	-20.78	1.87	-2.62
632	SLU 3	-103	28	7489	-17.07	1.9	-2.36
632	SLU 4	-103	48	7492	-19.05	1.9	-2.54
632	SLU 5	-103	62	7435	-20.48	1.89	-2.64
632	SLU 6	-105	28	7589	-16.77	1.92	-2.38
632	SLU 7	-105	48	7592	-18.74	1.92	-2.55
632	SLU 8	-104	28	7529	-16.88	1.91	-2.37
632	SLU 9	-104	48	7532	-18.86	1.91	-2.54
632	SLU 10	-106	66	8264	-23.19	1.94	-2.92
632	SLU 11	-108	33	8418	-19.47	1.97	-2.66
632	SLU 12	-108	53	8421	-21.45	1.97	-2.83
632	SLU 13	-107	66	8364	-22.89	1.96	-2.94
632	SLU 14	-109	32	8518	-19.17	1.99	-2.68
632	SLU 15	-109	53	8521	-21.15	1.99	-2.85
632	SLU 16	-108	32	8458	-19.29	1.98	-2.66
632	SLU 17	-108	53	8461	-21.27	1.98	-2.84
632	SLU 18	-107	35	8657	-20.92	1.97	-2.75
632	SLU 19	-107	55	8660	-22.9	1.97	-2.93
632	SLU 20	-109	35	8756	-20.62	1.99	-2.77
632	SLU 21	-109	55	8759	-22.6	1.99	-2.95
632	SLU 22	-111	29	8461	-17.72	2.02	-2.57
632	SLU 23	-111	63	8466	-21.01	2.02	-2.86
632	SLU 24	-113	29	8621	-17.3	2.05	-2.6
632	SLU 25	-113	49	8624	-19.28	2.05	-2.78
632	SLU 26	-112	63	8566	-20.71	2.03	-2.88
632	SLU 27	-114	29	8720	-17	2.07	-2.62
632	SLU 28	-114	49	8724	-18.98	2.07	-2.8
632	SLU 29	-113	29	8660	-17.11	2.05	-2.61
632	SLU 30	-113	49	8664	-19.09	2.05	-2.78
632	SLU 31	-115	67	9395	-23.42	2.09	-3.16
632	SLU 32	-117	33	9550	-19.7	2.12	-2.9
632	SLU 33	-117	54	9553	-21.68	2.12	-3.07
632	SLU 34	-116	67	9495	-23.12	2.11	-3.18
632	SLU 35	-118	33	9649	-19.4	2.14	-2.92
632	SLU 36	-118	53	9652	-21.38	2.14	-3.09
632	SLU 37	-117	33	9589	-19.52	2.13	-2.91
632	SLU 38	-117	54	9592	-21.5	2.13	-3.08
632	SLU 39	-117	36	9788	-21.15	2.12	-3
632	SLU 40	-117	56	9791	-23.13	2.12	-3.17
632	SLU 41	-118	35	9888	-20.85	2.14	-3.01
632	SLU 42	-118	56	9891	-22.83	2.14	-3.19
632	SLU 43	-129	36	9141	-22.65	2.38	-2.95
632	SLU 44	-129	70	9146	-25.95	2.38	-3.24
632	SLU 45	-131	36	9300	-22.23	2.41	-2.98
632	SLU 46	-131	56	9303	-24.21	2.41	-3.15
632	SLU 47	-130	70	9246	-25.65	2.4	-3.26
632	SLU 48	-132	36	9400	-21.93	2.43	-3
632	SLU 49	-132	56	9403	-23.91	2.43	-3.17
632	SLU 50	-131	36	9340	-22.05	2.42	-2.98
632	SLU 51	-131	56	9343	-24.03	2.42	-3.16
632	SLU 52	-133	75	10075	-28.35	2.45	-3.53
632	SLU 53	-135	41	10229	-24.64	2.48	-3.27
632	SLU 54	-135	61	10232	-26.62	2.48	-3.45
632	SLU 55	-134	74	10174	-28.05	2.47	-3.55
632	SLU 56	-136	41	10329	-24.34	2.5	-3.29
632	SLU 57	-136	61	10332	-26.32	2.5	-3.47
632	SLU 58	-135	41	10269	-24.46	2.49	-3.28
632	SLU 59	-135	61	10272	-26.43	2.49	-3.45
632	SLU 60	-135	43	10468	-26.09	2.48	-3.37
632	SLU 61	-135	63	10471	-28.07	2.48	-3.54
632	SLU 62	-136	43	10567	-25.79	2.5	-3.39
632	SLU 63	-136	63	10570	-27.77	2.5	-3.56
632	SLU 64	-138	37	10272	-22.88	2.53	-3.19
632	SLU 65	-138	71	10277	-26.18	2.53	-3.48
632	SLU 66	-140	37	10432	-22.47	2.56	-3.22
632	SLU 67	-140	57	10435	-24.44	2.56	-3.39
632	SLU 68	-139	71	10377	-25.88	2.54	-3.5
632	SLU 69	-141	37	10531	-22.16	2.58	-3.24
632	SLU 70	-141	57	10534	-24.14	2.58	-3.41
632	SLU 71	-140	37	10471	-22.28	2.56	-3.23
632	SLU 72	-140	57	10474	-24.26	2.56	-3.4
632	SLU 73	-142	75	11206	-28.58	2.6	-3.78
632	SLU 74	-144	42	11361	-24.87	2.63	-3.51
632	SLU 75	-144	62	11364	-26.85	2.63	-3.69
632	SLU 76	-143	75	11306	-28.28	2.62	-3.79
632	SLU 77	-145	41	11460	-24.57	2.65	-3.53
632	SLU 78	-145	62	11463	-26.55	2.65	-3.71
632	SLU 79	-145	42	11400	-24.69	2.64	-3.52
632	SLU 80	-145	62	11403	-26.66	2.64	-3.7
632	SLU 81	-144	44	11599	-26.32	2.63	-3.61
632	SLU 82	-144	64	11602	-28.3	2.63	-3.79
632	SLU 83	-145	44	11699	-26.02	2.65	-3.63
632	SLU 84	-145	64	11702	-28	2.65	-3.81

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
632	SLE RA 1	-104	29	7653	-17.55	1.91	-2.4
632	SLE RA 2	-104	51	7656	-19.75	1.91	-2.59
632	SLE RA 3	-105	28	7759	-17.27	1.93	-2.42
632	SLE RA 4	-105	42	7761	-18.59	1.93	-2.54
632	SLE RA 5	-105	51	7723	-19.55	1.92	-2.61
632	SLE RA 6	-106	28	7826	-17.07	1.94	-2.43
632	SLE RA 7	-106	42	7828	-18.39	1.94	-2.55
632	SLE RA 8	-106	28	7786	-17.15	1.94	-2.42
632	SLE RA 9	-106	42	7788	-18.47	1.94	-2.54
632	SLE RA 10	-107	54	8276	-21.35	1.96	-2.79
632	SLE RA 11	-108	31	8379	-18.88	1.98	-2.62
632	SLE RA 12	-108	45	8381	-20.2	1.98	-2.73
632	SLE RA 13	-108	54	8342	-21.15	1.97	-2.8
632	SLE RA 14	-109	31	8445	-18.68	1.99	-2.63
632	SLE RA 15	-109	45	8447	-19.99	1.99	-2.75
632	SLE RA 16	-108	31	8405	-18.75	1.98	-2.62
632	SLE RA 17	-109	45	8407	-20.07	1.98	-2.74
632	SLE RA 18	-108	33	8538	-19.84	1.98	-2.68
632	SLE RA 19	-108	46	8540	-21.16	1.98	-2.8
632	SLE RA 20	-109	33	8604	-19.64	1.99	-2.69
632	SLE RA 21	-109	46	8606	-20.96	1.99	-2.81
632	SLE FR 1	-104	29	7653	-17.55	1.91	-2.4
632	SLE FR 2	-104	33	7654	-17.99	1.91	-2.44
632	SLE FR 3	-104	28	7679	-17.47	1.92	-2.4
632	SLE FR 4	-105	34	7919	-18.68	1.93	-2.52
632	SLE FR 5	-106	30	7945	-18.16	1.94	-2.49
632	SLE FR 6	-106	31	8095	-18.7	1.95	-2.54
632	SLE QP 1	-104	29	7653	-17.55	1.91	-2.4
632	SLE QP 2	-105	30	7918	-18.24	1.93	-2.48
632	SLD 1	485	258	9651	-44.26	5.9	-6.04
632	SLD 2	487	103	9636	-41.3	5.9	-3.76
632	SLD 3	492	-136	9607	1.9	5.86	-2.93
632	SLD 4	494	-291	9592	4.86	5.86	-0.65
632	SLD 5	61	723	8508	-96.58	3.19	-8.68
632	SLD 6	63	621	8498	-94.63	3.19	-7.18
632	SLD 7	84	-589	8361	57.27	3.05	1.69
632	SLD 8	85	-691	8351	59.23	3.05	3.2
632	SLD 9	-295	751	7486	-95.71	0.82	-8.17
632	SLD 10	-294	648	7476	-93.75	0.82	-6.66
632	SLD 11	-273	-561	7339	58.15	0.68	2.21
632	SLD 12	-272	-663	7329	60.1	0.68	3.71
632	SLD 13	-704	351	6244	-41.34	-2	-4.32
632	SLD 14	-702	195	6230	-38.37	-1.99	-2.04
632	SLD 15	-697	-43	6200	4.82	-2.04	-1.21
632	SLD 16	-696	-198	6186	7.78	-2.03	1.07
632	SLV 1	1276	592	11976	-82.96	11.22	-11.04
632	SLV 2	1280	228	11942	-76	11.23	-5.68
632	SLV 3	1291	-386	11867	32.68	11.12	-3.34
632	SLV 4	1296	-750	11833	39.64	11.13	2.02
632	SLV 5	284	1750	9308	-214.34	4.87	-17.73
632	SLV 6	287	1504	9284	-209.65	4.87	-14.12
632	SLV 7	337	-1510	8944	171.12	4.53	7.94
632	SLV 8	340	-1756	8921	175.81	4.54	11.55
632	SLV 9	-551	1815	6916	-212.29	-0.68	-16.52
632	SLV 10	-548	1570	6893	-207.6	-0.67	-12.91
632	SLV 11	-498	-1445	6552	173.17	-1.01	9.15
632	SLV 12	-495	-1690	6529	177.86	-1	12.76
632	SLV 13	-1506	810	4004	-76.12	-7.26	-6.99
632	SLV 14	-1502	445	3969	-69.15	-7.25	-1.63
632	SLV 15	-1490	-168	3895	39.52	-7.36	0.71
632	SLV 16	-1486	-533	3860	46.48	-7.35	6.07
632	CRTFP Ux+	0	0	0	0	0	0
632	CRTFP Ux-	0	0	0	0	0	0
632	CRTFP Uy+	0	0	0	0	0	0
632	CRTFP Uy-	0	0	0	0	0	0
633	SLU 1	-101	16	7263	-18.55	2.27	-2.28
633	SLU 2	-101	49	7269	-21.8	2.27	-2.53
633	SLU 3	-103	16	7422	-18.15	2.32	-2.31
633	SLU 4	-103	35	7425	-20.1	2.31	-2.46
633	SLU 5	-102	48	7367	-21.51	2.3	-2.54
633	SLU 6	-104	16	7520	-17.86	2.34	-2.33
633	SLU 7	-104	35	7524	-19.81	2.34	-2.48
633	SLU 8	-103	16	7461	-17.97	2.32	-2.32
633	SLU 9	-103	35	7464	-19.92	2.32	-2.47
633	SLU 10	-105	52	8194	-24.36	2.42	-2.81
633	SLU 11	-107	19	8347	-20.71	2.46	-2.6
633	SLU 12	-107	38	8350	-22.66	2.46	-2.74
633	SLU 13	-107	51	8293	-24.07	2.44	-2.83
633	SLU 14	-109	19	8446	-20.42	2.49	-2.62
633	SLU 15	-109	38	8449	-22.37	2.49	-2.76
633	SLU 16	-108	19	8386	-20.53	2.47	-2.61
633	SLU 17	-108	38	8390	-22.48	2.47	-2.75
633	SLU 18	-107	21	8585	-22.2	2.48	-2.69
633	SLU 19	-107	40	8588	-24.15	2.48	-2.84
633	SLU 20	-108	20	8684	-21.91	2.51	-2.71
633	SLU 21	-109	40	8687	-23.86	2.51	-2.86
633	SLU 22	-110	16	8389	-18.94	2.51	-2.52
633	SLU 23	-110	48	8394	-22.19	2.51	-2.76
633	SLU 24	-112	16	8547	-18.54	2.55	-2.55

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
633	SLU 25	-112	35	8550	-20.49	2.55	-2.69
633	SLU 26	-112	48	8493	-21.9	2.53	-2.78
633	SLU 27	-114	15	8646	-18.25	2.57	-2.57
633	SLU 28	-114	35	8649	-20.2	2.57	-2.71
633	SLU 29	-113	16	8586	-18.36	2.55	-2.56
633	SLU 30	-113	35	8590	-20.31	2.55	-2.7
633	SLU 31	-115	51	9319	-24.74	2.65	-3.05
633	SLU 32	-117	19	9472	-21.09	2.7	-2.84
633	SLU 33	-117	38	9476	-23.05	2.7	-2.98
633	SLU 34	-116	51	9418	-24.45	2.68	-3.07
633	SLU 35	-118	18	9571	-20.8	2.72	-2.85
633	SLU 36	-118	38	9574	-22.76	2.72	-3
633	SLU 37	-117	19	9512	-20.91	2.7	-2.84
633	SLU 38	-117	38	9515	-22.86	2.7	-2.99
633	SLU 39	-117	20	9710	-22.59	2.72	-2.93
633	SLU 40	-117	40	9714	-24.54	2.72	-3.07
633	SLU 41	-118	20	9809	-22.3	2.74	-2.95
633	SLU 42	-118	39	9813	-24.25	2.74	-3.09
633	SLU 43	-128	21	9056	-23.98	2.88	-2.89
633	SLU 44	-128	54	9062	-27.24	2.88	-3.13
633	SLU 45	-130	21	9215	-23.59	2.92	-2.92
633	SLU 46	-130	40	9218	-25.54	2.92	-3.06
633	SLU 47	-129	53	9161	-26.95	2.9	-3.15
633	SLU 48	-131	21	9314	-23.3	2.94	-2.94
633	SLU 49	-131	40	9317	-25.25	2.94	-3.08
633	SLU 50	-130	21	9254	-23.4	2.92	-2.92
633	SLU 51	-130	40	9257	-25.36	2.92	-3.07
633	SLU 52	-132	57	9987	-29.79	3.02	-3.42
633	SLU 53	-134	24	10140	-26.14	3.06	-3.2
633	SLU 54	-134	43	10143	-28.09	3.06	-3.35
633	SLU 55	-134	56	10086	-29.5	3.05	-3.43
633	SLU 56	-136	24	10239	-25.85	3.09	-3.22
633	SLU 57	-136	43	10242	-27.8	3.09	-3.37
633	SLU 58	-135	24	10179	-25.96	3.07	-3.21
633	SLU 59	-135	43	10183	-27.91	3.07	-3.36
633	SLU 60	-134	26	10378	-27.63	3.09	-3.3
633	SLU 61	-134	45	10381	-29.58	3.09	-3.44
633	SLU 62	-135	25	10477	-27.34	3.11	-3.31
633	SLU 63	-136	45	10480	-29.29	3.11	-3.46
633	SLU 64	-137	21	10182	-24.37	3.11	-3.12
633	SLU 65	-137	53	10187	-27.62	3.11	-3.37
633	SLU 66	-139	21	10340	-23.97	3.15	-3.15
633	SLU 67	-139	40	10343	-25.92	3.15	-3.3
633	SLU 68	-139	53	10286	-27.33	3.13	-3.38
633	SLU 69	-141	20	10439	-23.68	3.17	-3.17
633	SLU 70	-141	40	10442	-25.63	3.17	-3.32
633	SLU 71	-140	21	10379	-23.79	3.16	-3.16
633	SLU 72	-140	40	10383	-25.74	3.16	-3.31
633	SLU 73	-142	56	11112	-30.18	3.26	-3.65
633	SLU 74	-144	24	11265	-26.53	3.3	-3.44
633	SLU 75	-144	43	11269	-28.48	3.3	-3.59
633	SLU 76	-143	56	11211	-29.89	3.28	-3.67
633	SLU 77	-145	23	11364	-26.24	3.32	-3.46
633	SLU 78	-145	43	11368	-28.19	3.32	-3.6
633	SLU 79	-144	24	11305	-26.35	3.3	-3.45
633	SLU 80	-144	43	11308	-28.3	3.3	-3.59
633	SLU 81	-144	25	11504	-28.02	3.32	-3.53
633	SLU 82	-144	45	11507	-29.97	3.32	-3.68
633	SLU 83	-145	25	11603	-27.73	3.34	-3.55
633	SLU 84	-145	44	11606	-29.68	3.34	-3.7
633	SLE RA 1	-104	16	7585	-18.66	2.34	-2.35
633	SLE RA 2	-104	38	7588	-20.83	2.34	-2.51
633	SLE RA 3	-105	16	7690	-18.4	2.37	-2.37
633	SLE RA 4	-105	29	7692	-19.7	2.37	-2.47
633	SLE RA 5	-104	38	7654	-20.64	2.36	-2.52
633	SLE RA 6	-106	16	7756	-18.2	2.38	-2.38
633	SLE RA 7	-106	29	7758	-19.5	2.38	-2.48
633	SLE RA 8	-105	16	7717	-18.28	2.37	-2.38
633	SLE RA 9	-105	29	7719	-19.58	2.37	-2.47
633	SLE RA 10	-107	40	8205	-22.53	2.44	-2.7
633	SLE RA 11	-108	18	8307	-20.1	2.47	-2.56
633	SLE RA 12	-108	31	8309	-21.4	2.47	-2.66
633	SLE RA 13	-107	40	8271	-22.34	2.45	-2.72
633	SLE RA 14	-109	18	8373	-19.91	2.48	-2.57
633	SLE RA 15	-109	31	8375	-21.21	2.48	-2.67
633	SLE RA 16	-108	18	8334	-19.98	2.47	-2.57
633	SLE RA 17	-108	31	8336	-21.28	2.47	-2.66
633	SLE RA 18	-108	19	8466	-21.09	2.48	-2.62
633	SLE RA 19	-108	32	8468	-22.4	2.48	-2.72
633	SLE RA 20	-109	19	8532	-20.9	2.5	-2.64
633	SLE RA 21	-109	32	8534	-22.2	2.5	-2.73
633	SLE FR 1	-104	16	7585	-18.66	2.34	-2.35
633	SLE FR 2	-104	21	7585	-19.1	2.34	-2.38
633	SLE FR 3	-104	16	7611	-18.58	2.35	-2.36
633	SLE FR 4	-105	21	7850	-19.82	2.38	-2.46
633	SLE FR 5	-105	17	7875	-19.31	2.39	-2.44
633	SLE FR 6	-106	18	8025	-19.88	2.41	-2.49
633	SLE QP 1	-104	16	7585	-18.66	2.34	-2.35
633	SLE QP 2	-105	17	7849	-19.39	2.38	-2.43

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
633	SLD 1	486	232	9455	-42.14	6.36	-5.53
633	SLD 2	488	88	9440	-39.32	6.36	-3.48
633	SLD 3	493	-147	9411	3.44	6.32	-3
633	SLD 4	495	-291	9396	6.26	6.32	-0.94
633	SLD 5	62	682	8399	-95.85	3.63	-7.58
633	SLD 6	63	587	8389	-93.99	3.64	-6.23
633	SLD 7	84	-581	8255	56.08	3.5	0.88
633	SLD 8	85	-676	8245	57.94	3.51	2.24
633	SLD 9	-295	710	7453	-96.72	1.26	-7.1
633	SLD 10	-294	615	7443	-94.86	1.26	-5.74
633	SLD 11	-273	-553	7309	55.21	1.13	1.36
633	SLD 12	-272	-648	7299	57.07	1.13	2.72
633	SLD 13	-704	325	6302	-45.05	-1.56	-3.93
633	SLD 14	-702	181	6287	-42.22	-1.55	-1.87
633	SLD 15	-698	-54	6258	0.53	-1.6	-1.39
633	SLD 16	-696	-198	6243	3.36	-1.59	0.67
633	SLV 1	1277	548	11610	-76.41	11.68	-9.87
633	SLV 2	1282	210	11575	-69.77	11.7	-5.04
633	SLV 3	1293	-394	11502	37.79	11.59	-3.6
633	SLV 4	1298	-732	11467	44.43	11.6	1.24
633	SLV 5	285	1668	9147	-210.94	5.31	-15.08
633	SLV 6	288	1441	9123	-206.47	5.32	-11.83
633	SLV 7	338	-1472	8789	169.73	5	5.83
633	SLV 8	341	-1700	8765	174.19	5.01	9.09
633	SLV 9	-550	1734	6933	-212.98	-0.24	-13.95
633	SLV 10	-547	1506	6909	-208.51	-0.23	-10.7
633	SLV 11	-498	-1406	6575	167.69	-0.56	6.96
633	SLV 12	-495	-1634	6552	172.15	-0.55	10.22
633	SLV 13	-1507	767	4231	-83.21	-6.84	-6.1
633	SLV 14	-1503	428	4196	-76.57	-6.82	-1.27
633	SLV 15	-1492	-176	4124	30.99	-6.93	0.17
633	SLV 16	-1487	-514	4089	37.63	-6.92	5.01
633	CRTFP Ux+	0	0	0	0	0	0
633	CRTFP Ux-	0	0	0	0	0	0
633	CRTFP Uy+	0	0	0	0	0	0
633	CRTFP Uy-	0	0	0	0	0	0
634	SLU 1	-100	5	7183	-19.64	2.72	-2.2
634	SLU 2	-100	36	7188	-22.85	2.72	-2.39
634	SLU 3	-102	4	7340	-19.26	2.77	-2.23
634	SLU 4	-102	23	7343	-21.19	2.78	-2.34
634	SLU 5	-101	36	7286	-22.57	2.75	-2.41
634	SLU 6	-103	4	7438	-18.98	2.8	-2.24
634	SLU 7	-103	23	7441	-20.91	2.8	-2.36
634	SLU 8	-103	4	7379	-19.08	2.78	-2.23
634	SLU 9	-103	23	7382	-21.01	2.78	-2.35
634	SLU 10	-105	37	8108	-25.56	2.95	-2.66
634	SLU 11	-107	6	8259	-21.97	3	-2.5
634	SLU 12	-107	24	8262	-23.89	3	-2.61
634	SLU 13	-106	37	8206	-25.28	2.98	-2.68
634	SLU 14	-108	5	8357	-21.69	3.03	-2.52
634	SLU 15	-108	24	8360	-23.62	3.03	-2.63
634	SLU 16	-107	6	8298	-21.79	3.01	-2.5
634	SLU 17	-107	24	8302	-23.72	3.01	-2.62
634	SLU 18	-107	7	8496	-23.51	3.05	-2.58
634	SLU 19	-107	26	8500	-25.43	3.05	-2.7
634	SLU 20	-108	7	8594	-23.23	3.08	-2.6
634	SLU 21	-108	25	8598	-25.15	3.08	-2.72
634	SLU 22	-110	3	8299	-20.18	3.05	-2.42
634	SLU 23	-110	34	8305	-23.39	3.05	-2.61
634	SLU 24	-112	3	8456	-19.8	3.1	-2.45
634	SLU 25	-112	21	8459	-21.73	3.1	-2.57
634	SLU 26	-111	34	8403	-23.11	3.08	-2.63
634	SLU 27	-113	2	8554	-19.53	3.13	-2.47
634	SLU 28	-113	21	8557	-21.45	3.13	-2.58
634	SLU 29	-112	3	8495	-19.63	3.11	-2.46
634	SLU 30	-112	21	8499	-21.55	3.11	-2.57
634	SLU 31	-114	36	9224	-26.1	3.28	-2.88
634	SLU 32	-116	4	9376	-22.51	3.33	-2.72
634	SLU 33	-116	23	9379	-24.44	3.33	-2.84
634	SLU 34	-116	36	9322	-25.82	3.31	-2.9
634	SLU 35	-118	4	9474	-22.23	3.36	-2.74
634	SLU 36	-118	23	9477	-24.16	3.36	-2.86
634	SLU 37	-117	4	9415	-22.33	3.34	-2.73
634	SLU 38	-117	23	9418	-24.26	3.34	-2.84
634	SLU 39	-116	5	9613	-24.05	3.38	-2.81
634	SLU 40	-116	24	9616	-25.98	3.38	-2.92
634	SLU 41	-118	5	9711	-23.77	3.41	-2.83
634	SLU 42	-118	24	9714	-25.7	3.41	-2.94
634	SLU 43	-127	7	8955	-25.35	3.43	-2.78
634	SLU 44	-127	38	8960	-28.56	3.43	-2.97
634	SLU 45	-129	6	9112	-24.97	3.48	-2.81
634	SLU 46	-129	25	9115	-26.89	3.48	-2.92
634	SLU 47	-128	38	9058	-28.28	3.46	-2.99
634	SLU 48	-130	6	9210	-24.69	3.51	-2.83
634	SLU 49	-130	25	9213	-26.61	3.51	-2.94
634	SLU 50	-129	6	9151	-24.79	3.49	-2.82
634	SLU 51	-129	25	9154	-26.71	3.49	-2.93
634	SLU 52	-132	39	9880	-31.26	3.66	-3.24
634	SLU 53	-134	8	10031	-27.67	3.71	-3.08

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
634	SLU 54	-134	26	10035	-29.6	3.71	-3.19
634	SLU 55	-133	39	9978	-30.98	3.69	-3.26
634	SLU 56	-135	7	10129	-27.4	3.74	-3.1
634	SLU 57	-135	26	10133	-29.32	3.74	-3.21
634	SLU 58	-134	8	10071	-27.5	3.72	-3.09
634	SLU 59	-134	26	10074	-29.42	3.72	-3.2
634	SLU 60	-133	9	10268	-29.21	3.75	-3.17
634	SLU 61	-134	28	10272	-31.14	3.75	-3.28
634	SLU 62	-135	9	10366	-28.93	3.78	-3.18
634	SLU 63	-135	27	10370	-30.86	3.78	-3.3
634	SLU 64	-137	5	10071	-25.89	3.76	-3.01
634	SLU 65	-137	36	10077	-29.1	3.76	-3.2
634	SLU 66	-139	5	10228	-25.51	3.81	-3.03
634	SLU 67	-139	23	10232	-27.44	3.81	-3.15
634	SLU 68	-138	36	10175	-28.82	3.79	-3.21
634	SLU 69	-140	4	10326	-25.23	3.84	-3.05
634	SLU 70	-140	23	10330	-27.16	3.84	-3.17
634	SLU 71	-139	5	10267	-25.33	3.82	-3.04
634	SLU 72	-139	23	10271	-27.26	3.82	-3.16
634	SLU 73	-141	38	10996	-31.81	3.99	-3.47
634	SLU 74	-143	6	11148	-28.22	4.04	-3.31
634	SLU 75	-143	25	11151	-30.14	4.04	-3.42
634	SLU 76	-142	38	11094	-31.53	4.01	-3.48
634	SLU 77	-144	6	11246	-27.94	4.07	-3.32
634	SLU 78	-144	25	11249	-29.86	4.07	-3.44
634	SLU 79	-144	6	11187	-28.04	4.04	-3.31
634	SLU 80	-144	25	11190	-29.96	4.04	-3.43
634	SLU 81	-143	7	11385	-29.76	4.08	-3.39
634	SLU 82	-143	26	11388	-31.68	4.08	-3.51
634	SLU 83	-144	7	11483	-29.48	4.11	-3.41
634	SLU 84	-144	26	11486	-31.4	4.11	-3.52
634	SLE RA 1	-103	4	7502	-19.79	2.82	-2.26
634	SLE RA 2	-103	25	7505	-21.94	2.82	-2.39
634	SLE RA 3	-104	4	7606	-19.54	2.85	-2.28
634	SLE RA 4	-104	16	7609	-20.83	2.85	-2.36
634	SLE RA 5	-104	25	7571	-21.75	2.84	-2.4
634	SLE RA 6	-105	4	7672	-19.36	2.87	-2.29
634	SLE RA 7	-105	16	7674	-20.64	2.87	-2.37
634	SLE RA 8	-105	4	7633	-19.42	2.86	-2.29
634	SLE RA 9	-105	16	7635	-20.71	2.86	-2.36
634	SLE RA 10	-106	26	8118	-23.74	2.97	-2.57
634	SLE RA 11	-107	5	8219	-21.35	3	-2.46
634	SLE RA 12	-107	17	8222	-22.63	3	-2.54
634	SLE RA 13	-107	26	8184	-23.55	2.99	-2.58
634	SLE RA 14	-108	5	8285	-21.16	3.02	-2.47
634	SLE RA 15	-108	17	8287	-22.45	3.02	-2.55
634	SLE RA 16	-108	5	8246	-21.23	3.01	-2.47
634	SLE RA 17	-108	17	8248	-22.51	3.01	-2.54
634	SLE RA 18	-107	6	8377	-22.37	3.03	-2.52
634	SLE RA 19	-107	18	8380	-23.66	3.04	-2.6
634	SLE RA 20	-108	6	8443	-22.19	3.05	-2.53
634	SLE RA 21	-108	18	8445	-23.47	3.05	-2.61
634	SLE FR 1	-103	4	7502	-19.79	2.82	-2.26
634	SLE FR 2	-103	8	7503	-20.22	2.82	-2.29
634	SLE FR 3	-103	4	7528	-19.72	2.83	-2.27
634	SLE FR 4	-104	9	7765	-21	2.88	-2.37
634	SLE FR 5	-105	5	7791	-20.49	2.89	-2.34
634	SLE FR 6	-105	5	7940	-21.08	2.93	-2.39
634	SLE QP 1	-103	4	7502	-19.79	2.82	-2.26
634	SLE QP 2	-104	5	7765	-20.57	2.88	-2.34
634	SLD 1	487	208	9243	-42.99	6.84	-4.94
634	SLD 2	489	74	9228	-40.3	6.85	-3.11
634	SLD 3	494	-159	9200	2.07	6.8	-2.99
634	SLD 4	496	-293	9185	4.75	6.81	-1.16
634	SLD 5	63	647	8276	-96.12	4.13	-6.4
634	SLD 6	64	559	8266	-94.34	4.14	-5.19
634	SLD 7	85	-578	8133	54.08	3.99	0.09
634	SLD 8	86	-666	8123	55.85	4	1.3
634	SLD 9	-295	676	7406	-96.99	1.77	-5.98
634	SLD 10	-293	587	7396	-95.21	1.77	-4.77
634	SLD 11	-272	-550	7263	53.21	1.63	0.51
634	SLD 12	-271	-638	7253	54.98	1.63	1.72
634	SLD 13	-704	303	6344	-45.89	-1.04	-3.52
634	SLD 14	-702	169	6329	-43.2	-1.03	-1.69
634	SLD 15	-697	-65	6301	-0.83	-1.08	-1.57
634	SLD 16	-696	-199	6286	1.85	-1.07	0.26
634	SLV 1	1279	509	11228	-76.78	12.14	-8.57
634	SLV 2	1284	194	11192	-70.47	12.16	-4.25
634	SLV 3	1295	-405	11122	36.12	12.05	-3.76
634	SLV 4	1299	-720	11086	42.43	12.06	0.55
634	SLV 5	286	1601	8971	-209.84	5.81	-12.3
634	SLV 6	289	1389	8947	-205.59	5.82	-9.4
634	SLV 7	339	-1445	8618	166.49	5.48	3.72
634	SLV 8	342	-1657	8594	170.74	5.49	6.62
634	SLV 9	-550	1667	6935	-211.87	0.27	-11.3
634	SLV 10	-547	1455	6911	-207.62	0.28	-8.4
634	SLV 11	-497	-1379	6582	164.45	-0.05	4.72
634	SLV 12	-494	-1591	6558	168.7	-0.04	7.62
634	SLV 13	-1508	730	4443	-83.57	-6.3	-5.23

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
634	SLV 14	-1503	415	4407	-77.25	-6.28	-0.92
634	SLV 15	-1492	-184	4337	29.33	-6.39	-0.43
634	SLV 16	-1487	-499	4301	35.65	-6.38	3.89
634	CRTFP Ux+	0	0	0	0	0	0
634	CRTFP Ux-	0	0	0	0	0	0
634	CRTFP Uy+	0	0	0	0	0	0
634	CRTFP Uy-	0	0	0	0	0	0
635	SLU 1	-99	-6	7088	-20.75	3.18	-2.08
635	SLU 2	-99	24	7093	-23.93	3.19	-2.21
635	SLU 3	-101	-7	7243	-20.39	3.25	-2.1
635	SLU 4	-101	11	7246	-22.3	3.25	-2.19
635	SLU 5	-100	24	7190	-23.66	3.22	-2.23
635	SLU 6	-102	-7	7340	-20.12	3.28	-2.12
635	SLU 7	-102	11	7343	-22.03	3.28	-2.2
635	SLU 8	-101	-7	7282	-20.22	3.25	-2.11
635	SLU 9	-101	11	7285	-22.12	3.26	-2.19
635	SLU 10	-104	24	8004	-26.79	3.5	-2.46
635	SLU 11	-106	-7	8154	-23.26	3.56	-2.35
635	SLU 12	-106	11	8157	-25.16	3.56	-2.44
635	SLU 13	-105	24	8101	-26.52	3.54	-2.48
635	SLU 14	-107	-7	8251	-22.99	3.59	-2.37
635	SLU 15	-107	11	8254	-24.89	3.59	-2.45
635	SLU 16	-106	-7	8193	-23.08	3.57	-2.36
635	SLU 17	-106	11	8196	-24.98	3.57	-2.44
635	SLU 18	-106	-6	8389	-24.84	3.63	-2.43
635	SLU 19	-106	12	8392	-26.75	3.63	-2.51
635	SLU 20	-107	-6	8486	-24.57	3.66	-2.45
635	SLU 21	-107	12	8489	-26.48	3.67	-2.53
635	SLU 22	-109	-9	8192	-21.45	3.61	-2.29
635	SLU 23	-109	21	8197	-24.63	3.61	-2.42
635	SLU 24	-111	-10	8347	-21.09	3.67	-2.31
635	SLU 25	-111	9	8350	-23	3.67	-2.4
635	SLU 26	-110	21	8294	-24.36	3.65	-2.44
635	SLU 27	-112	-10	8444	-20.83	3.71	-2.33
635	SLU 28	-112	8	8447	-22.73	3.71	-2.41
635	SLU 29	-111	-10	8386	-20.92	3.68	-2.32
635	SLU 30	-111	8	8389	-22.82	3.68	-2.4
635	SLU 31	-114	22	9108	-27.49	3.92	-2.67
635	SLU 32	-115	-9	9258	-23.96	3.98	-2.56
635	SLU 33	-115	9	9261	-25.86	3.98	-2.65
635	SLU 34	-115	21	9205	-27.22	3.96	-2.69
635	SLU 35	-117	-10	9355	-23.69	4.02	-2.58
635	SLU 36	-117	8	9358	-25.59	4.02	-2.66
635	SLU 37	-116	-10	9297	-23.78	3.99	-2.57
635	SLU 38	-116	9	9300	-25.68	3.99	-2.65
635	SLU 39	-115	-9	9493	-25.54	4.05	-2.64
635	SLU 40	-116	10	9496	-27.45	4.06	-2.72
635	SLU 41	-117	-9	9590	-25.28	4.09	-2.66
635	SLU 42	-117	9	9593	-27.18	4.09	-2.74
635	SLU 43	-125	-7	8836	-26.74	3.99	-2.63
635	SLU 44	-126	23	8841	-29.91	4	-2.77
635	SLU 45	-127	-8	8991	-26.38	4.05	-2.65
635	SLU 46	-127	10	8994	-28.28	4.06	-2.74
635	SLU 47	-127	23	8938	-29.64	4.03	-2.78
635	SLU 48	-129	-8	9088	-26.11	4.09	-2.67
635	SLU 49	-129	10	9091	-28.01	4.09	-2.75
635	SLU 50	-128	-8	9030	-26.2	4.06	-2.66
635	SLU 51	-128	10	9033	-28.11	4.07	-2.74
635	SLU 52	-130	23	9752	-32.78	4.31	-3.01
635	SLU 53	-132	-8	9901	-29.24	4.37	-2.9
635	SLU 54	-132	10	9905	-31.15	4.37	-2.99
635	SLU 55	-131	23	9849	-32.51	4.35	-3.03
635	SLU 56	-133	-8	9998	-28.97	4.4	-2.92
635	SLU 57	-133	10	10002	-30.88	4.4	-3
635	SLU 58	-133	-8	9940	-29.07	4.38	-2.91
635	SLU 59	-133	10	9944	-30.97	4.38	-2.99
635	SLU 60	-132	-7	10137	-30.83	4.44	-2.98
635	SLU 61	-132	11	10140	-32.73	4.44	-3.07
635	SLU 62	-133	-7	10234	-30.56	4.47	-3
635	SLU 63	-133	11	10237	-32.46	4.48	-3.08
635	SLU 64	-135	-10	9940	-27.44	4.42	-2.84
635	SLU 65	-135	20	9945	-30.61	4.42	-2.98
635	SLU 66	-137	-11	10095	-27.08	4.48	-2.86
635	SLU 67	-137	8	10098	-28.98	4.48	-2.95
635	SLU 68	-136	20	10042	-30.34	4.46	-2.99
635	SLU 69	-138	-11	10192	-26.81	4.51	-2.88
635	SLU 70	-138	7	10195	-28.72	4.52	-2.96
635	SLU 71	-137	-11	10134	-26.9	4.49	-2.87
635	SLU 72	-138	7	10137	-28.81	4.49	-2.95
635	SLU 73	-140	21	10856	-33.48	4.73	-3.22
635	SLU 74	-142	-10	11006	-29.94	4.79	-3.11
635	SLU 75	-142	8	11009	-31.85	4.79	-3.2
635	SLU 76	-141	20	10953	-33.21	4.77	-3.24
635	SLU 77	-143	-11	11103	-29.67	4.83	-3.13
635	SLU 78	-143	7	11106	-31.58	4.83	-3.21
635	SLU 79	-142	-11	11045	-29.77	4.8	-3.12
635	SLU 80	-142	8	11048	-31.67	4.8	-3.2
635	SLU 81	-142	-10	11241	-31.53	4.86	-3.19
635	SLU 82	-142	9	11244	-33.43	4.87	-3.28

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
635	SLU 83	-143	-10	11338	-31.26	4.9	-3.21
635	SLU 84	-143	8	11341	-33.17	4.9	-3.29
635	SLE RA 1	-102	-7	7403	-20.95	3.31	-2.14
635	SLE RA 2	-102	13	7407	-23.07	3.31	-2.23
635	SLE RA 3	-103	-8	7507	-20.71	3.35	-2.15
635	SLE RA 4	-103	5	7509	-21.98	3.35	-2.21
635	SLE RA 5	-103	13	7472	-22.89	3.33	-2.24
635	SLE RA 6	-104	-8	7571	-20.53	3.37	-2.17
635	SLE RA 7	-104	4	7574	-21.8	3.37	-2.22
635	SLE RA 8	-103	-8	7533	-20.6	3.35	-2.16
635	SLE RA 9	-103	5	7535	-21.86	3.35	-2.21
635	SLE RA 10	-105	13	8014	-24.98	3.52	-2.39
635	SLE RA 11	-106	-7	8114	-22.62	3.55	-2.32
635	SLE RA 12	-106	5	8116	-23.89	3.56	-2.38
635	SLE RA 13	-106	13	8079	-24.8	3.54	-2.41
635	SLE RA 14	-107	-8	8179	-22.44	3.58	-2.33
635	SLE RA 15	-107	4	8181	-23.71	3.58	-2.39
635	SLE RA 16	-107	-7	8140	-22.5	3.56	-2.33
635	SLE RA 17	-107	5	8142	-23.77	3.56	-2.38
635	SLE RA 18	-106	-7	8271	-23.68	3.6	-2.37
635	SLE RA 19	-106	5	8273	-24.95	3.6	-2.43
635	SLE RA 20	-107	-7	8335	-23.5	3.63	-2.38
635	SLE RA 21	-107	5	8338	-24.77	3.63	-2.44
635	SLE FR 1	-102	-7	7403	-20.95	3.31	-2.14
635	SLE FR 2	-102	-3	7404	-21.38	3.31	-2.15
635	SLE FR 3	-102	-7	7429	-20.88	3.32	-2.14
635	SLE FR 4	-103	-3	7664	-22.19	3.4	-2.23
635	SLE FR 5	-103	-7	7689	-21.7	3.4	-2.21
635	SLE FR 6	-104	-7	7837	-22.32	3.45	-2.25
635	SLE QP 1	-102	-7	7403	-20.95	3.31	-2.14
635	SLE QP 2	-103	-7	7664	-21.77	3.39	-2.21
635	SLD 1	488	187	9016	-43.89	7.28	-4.29
635	SLD 2	490	62	9001	-41.34	7.28	-2.67
635	SLD 3	495	-172	8975	0.7	7.22	-2.91
635	SLD 4	497	-297	8959	3.25	7.22	-1.28
635	SLD 5	64	619	8135	-96.5	4.65	-5.22
635	SLD 6	65	536	8125	-94.81	4.66	-4.15
635	SLD 7	86	-579	7997	52.14	4.45	-0.61
635	SLD 8	87	-661	7987	53.82	4.45	0.46
635	SLD 9	-294	647	7341	-97.37	2.34	-4.87
635	SLD 10	-292	565	7331	-95.68	2.34	-3.8
635	SLD 11	-272	-550	7202	51.27	2.13	-0.26
635	SLD 12	-270	-633	7192	52.95	2.14	0.81
635	SLD 13	-703	283	6368	-46.79	-0.43	-3.13
635	SLD 14	-701	158	6352	-44.24	-0.43	-1.5
635	SLD 15	-697	-76	6326	-2.2	-0.49	-1.75
635	SLD 16	-695	-201	6311	0.35	-0.49	-0.12
635	SLV 1	1281	475	10832	-77.24	12.49	-7.19
635	SLV 2	1285	180	10796	-71.24	12.5	-3.36
635	SLV 3	1297	-419	10729	34.49	12.33	-3.78
635	SLV 4	1301	-713	10693	40.49	12.34	0.04
635	SLV 5	288	1547	8777	-208.99	6.35	-9.58
635	SLV 6	291	1349	8753	-204.95	6.36	-7.01
635	SLV 7	340	-1430	8434	163.45	5.84	1.77
635	SLV 8	343	-1628	8410	167.49	5.85	4.35
635	SLV 9	-549	1614	6918	-211.03	0.94	-8.76
635	SLV 10	-546	1416	6893	-206.99	0.95	-6.19
635	SLV 11	-497	-1363	6574	161.41	0.43	2.59
635	SLV 12	-494	-1561	6550	165.45	0.44	5.17
635	SLV 13	-1507	699	4634	-84.03	-5.56	-4.46
635	SLV 14	-1503	405	4598	-78.03	-5.54	-0.63
635	SLV 15	-1492	-194	4531	27.7	-5.71	-1.05
635	SLV 16	-1487	-489	4495	33.7	-5.7	2.77
635	CRTFP Ux+	0	0	0	0	0	0
635	CRTFP Ux-	0	0	0	0	0	0
635	CRTFP Uy+	0	0	0	0	0	0
635	CRTFP Uy-	0	0	0	0	0	0
636	SLU 1	-97	-17	6979	-21.89	3.57	-1.92
636	SLU 2	-98	13	6984	-25.03	3.59	-2.01
636	SLU 3	-99	-17	7132	-21.55	3.64	-1.94
636	SLU 4	-99	0	7135	-23.44	3.65	-2
636	SLU 5	-99	13	7080	-24.77	3.63	-2.02
636	SLU 6	-101	-18	7228	-21.29	3.68	-1.96
636	SLU 7	-101	0	7231	-23.18	3.69	-2.01
636	SLU 8	-100	-18	7171	-21.38	3.65	-1.95
636	SLU 9	-100	0	7174	-23.26	3.66	-2
636	SLU 10	-102	12	7883	-28.05	3.97	-2.23
636	SLU 11	-104	-18	8031	-24.57	4.03	-2.16
636	SLU 12	-104	-1	8034	-26.46	4.03	-2.22
636	SLU 13	-104	12	7979	-27.8	4.01	-2.25
636	SLU 14	-105	-19	8127	-24.32	4.07	-2.18
636	SLU 15	-105	-1	8130	-26.2	4.07	-2.23
636	SLU 16	-105	-19	8070	-24.4	4.04	-2.17
636	SLU 17	-105	-1	8073	-26.28	4.05	-2.23
636	SLU 18	-104	-18	8264	-26.21	4.12	-2.23
636	SLU 19	-104	0	8267	-28.09	4.13	-2.29
636	SLU 20	-105	-19	8360	-25.95	4.16	-2.25
636	SLU 21	-106	-1	8363	-27.84	4.17	-2.3
636	SLU 22	-107	-20	8068	-22.75	4.08	-2.11

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
636	SLU 23	-107	9	8073	-25.89	4.1	-2.2
636	SLU 24	-109	-21	8221	-22.41	4.15	-2.13
636	SLU 25	-109	-3	8224	-24.29	4.16	-2.18
636	SLU 26	-108	9	8169	-25.63	4.14	-2.21
636	SLU 27	-110	-22	8317	-22.15	4.19	-2.15
636	SLU 28	-110	-4	8320	-24.04	4.2	-2.2
636	SLU 29	-109	-21	8260	-22.23	4.16	-2.14
636	SLU 30	-110	-3	8263	-24.12	4.17	-2.19
636	SLU 31	-112	8	8973	-28.91	4.48	-2.42
636	SLU 32	-114	-22	9121	-25.43	4.54	-2.35
636	SLU 33	-114	-4	9124	-27.32	4.54	-2.41
636	SLU 34	-113	8	9068	-28.66	4.52	-2.43
636	SLU 35	-115	-23	9216	-25.17	4.57	-2.37
636	SLU 36	-115	-5	9219	-27.06	4.58	-2.42
636	SLU 37	-114	-22	9159	-25.26	4.55	-2.36
636	SLU 38	-114	-4	9162	-27.14	4.55	-2.41
636	SLU 39	-114	-22	9353	-27.07	4.63	-2.42
636	SLU 40	-114	-4	9356	-28.95	4.64	-2.48
636	SLU 41	-115	-22	9449	-26.81	4.67	-2.44
636	SLU 42	-115	-4	9452	-28.7	4.68	-2.49
636	SLU 43	-123	-20	8699	-28.16	4.47	-2.43
636	SLU 44	-123	9	8704	-31.31	4.49	-2.52
636	SLU 45	-125	-21	8852	-27.82	4.54	-2.45
636	SLU 46	-125	-3	8855	-29.71	4.55	-2.51
636	SLU 47	-125	9	8800	-31.05	4.52	-2.54
636	SLU 48	-126	-22	8948	-27.57	4.58	-2.47
636	SLU 49	-127	-4	8951	-29.45	4.59	-2.52
636	SLU 50	-126	-21	8891	-27.65	4.55	-2.46
636	SLU 51	-126	-4	8894	-29.53	4.56	-2.51
636	SLU 52	-128	8	9604	-34.33	4.87	-2.74
636	SLU 53	-130	-22	9752	-30.85	4.92	-2.67
636	SLU 54	-130	-4	9755	-32.73	4.93	-2.73
636	SLU 55	-129	8	9700	-34.07	4.91	-2.76
636	SLU 56	-131	-23	9848	-30.59	4.96	-2.69
636	SLU 57	-131	-5	9851	-32.47	4.97	-2.74
636	SLU 58	-130	-22	9790	-30.67	4.94	-2.68
636	SLU 59	-131	-5	9793	-32.56	4.94	-2.74
636	SLU 60	-130	-22	9984	-32.48	5.02	-2.74
636	SLU 61	-130	-4	9987	-34.37	5.03	-2.8
636	SLU 62	-131	-22	10080	-32.22	5.06	-2.76
636	SLU 63	-131	-4	10083	-34.11	5.07	-2.82
636	SLU 64	-133	-24	9788	-29.02	4.98	-2.62
636	SLU 65	-133	6	9793	-32.16	4.99	-2.71
636	SLU 66	-135	-25	9941	-28.68	5.05	-2.64
636	SLU 67	-135	-7	9944	-30.57	5.06	-2.7
636	SLU 68	-134	5	9889	-31.91	5.03	-2.72
636	SLU 69	-136	-25	10037	-28.42	5.09	-2.66
636	SLU 70	-136	-8	10040	-30.31	5.1	-2.71
636	SLU 71	-135	-25	9980	-28.51	5.06	-2.65
636	SLU 72	-135	-7	9983	-30.39	5.07	-2.7
636	SLU 73	-138	5	10693	-35.19	5.38	-2.93
636	SLU 74	-140	-26	10841	-31.71	5.43	-2.86
636	SLU 75	-140	-8	10844	-33.59	5.44	-2.92
636	SLU 76	-139	4	10789	-34.93	5.42	-2.94
636	SLU 77	-141	-26	10937	-31.45	5.47	-2.88
636	SLU 78	-141	-9	10940	-33.33	5.48	-2.93
636	SLU 79	-140	-26	10879	-31.53	5.44	-2.87
636	SLU 80	-140	-8	10883	-33.41	5.45	-2.92
636	SLU 81	-140	-25	11073	-33.34	5.53	-2.93
636	SLU 82	-140	-8	11076	-35.23	5.54	-2.99
636	SLU 83	-141	-26	11169	-33.08	5.57	-2.95
636	SLU 84	-141	-8	11172	-34.97	5.58	-3
636	SLE RA 1	-100	-18	7290	-22.14	3.72	-1.97
636	SLE RA 2	-100	2	7294	-24.23	3.73	-2.03
636	SLE RA 3	-102	-18	7392	-21.91	3.76	-1.99
636	SLE RA 4	-102	-6	7394	-23.17	3.77	-2.02
636	SLE RA 5	-101	2	7357	-24.06	3.75	-2.04
636	SLE RA 6	-102	-19	7456	-21.74	3.79	-2
636	SLE RA 7	-102	-7	7458	-22.99	3.8	-2.03
636	SLE RA 8	-102	-18	7418	-21.79	3.77	-1.99
636	SLE RA 9	-102	-6	7420	-23.05	3.78	-2.03
636	SLE RA 10	-103	1	7893	-26.25	3.98	-2.18
636	SLE RA 11	-105	-19	7992	-23.92	4.02	-2.14
636	SLE RA 12	-105	-7	7994	-25.18	4.03	-2.17
636	SLE RA 13	-104	1	7957	-26.07	4.01	-2.19
636	SLE RA 14	-105	-19	8056	-23.75	4.05	-2.15
636	SLE RA 15	-106	-7	8058	-25.01	4.05	-2.18
636	SLE RA 16	-105	-19	8018	-23.81	4.03	-2.14
636	SLE RA 17	-105	-7	8020	-25.06	4.03	-2.18
636	SLE RA 18	-105	-19	8147	-25.02	4.09	-2.18
636	SLE RA 19	-105	-7	8149	-26.27	4.09	-2.22
636	SLE RA 20	-106	-19	8211	-24.84	4.11	-2.19
636	SLE RA 21	-106	-7	8213	-26.1	4.12	-2.23
636	SLE FR 1	-100	-18	7290	-22.14	3.72	-1.97
636	SLE FR 2	-100	-14	7291	-22.56	3.72	-1.98
636	SLE FR 3	-101	-18	7316	-22.07	3.73	-1.98
636	SLE FR 4	-102	-14	7548	-23.42	3.83	-2.05
636	SLE FR 5	-102	-18	7573	-22.93	3.84	-2.04
636	SLE FR 6	-102	-18	7718	-23.58	3.9	-2.08

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
636	SLE QP 1	-100	-18	7290	-22.14	3.72	-1.97
636	SLE QP 2	-102	-18	7547	-23	3.83	-2.03
636	SLD 1	490	169	8778	-44.84	7.54	-3.63
636	SLD 2	492	52	8762	-42.42	7.54	-2.18
636	SLD 3	497	-184	8739	-0.66	7.39	-2.74
636	SLD 4	499	-302	8724	1.76	7.39	-1.29
636	SLD 5	66	596	7977	-96.99	5.17	-4.12
636	SLD 6	67	518	7967	-95.39	5.17	-3.17
636	SLD 7	88	-583	7849	50.27	4.67	-1.16
636	SLD 8	89	-661	7839	51.86	4.67	-0.2
636	SLD 9	-292	625	7255	-97.87	2.99	-3.87
636	SLD 10	-291	547	7245	-96.27	2.99	-2.91
636	SLD 11	-270	-554	7127	49.39	2.49	-0.9
636	SLD 12	-269	-632	7117	50.99	2.49	0.05
636	SLD 13	-702	266	6370	-47.76	0.27	-2.78
636	SLD 14	-700	149	6355	-45.34	0.27	-1.33
636	SLD 15	-695	-88	6332	-3.58	0.12	-1.89
636	SLD 16	-693	-205	6317	-1.16	0.12	-0.44
636	SLV 1	1283	447	10429	-77.78	12.53	-5.84
636	SLV 2	1288	171	10393	-72.1	12.52	-2.42
636	SLV 3	1298	-433	10334	32.92	12.15	-3.65
636	SLV 4	1303	-709	10298	38.6	12.14	-0.24
636	SLV 5	289	1507	8563	-208.39	7.01	-7.12
636	SLV 6	292	1321	8539	-204.56	7.01	-4.82
636	SLV 7	341	-1425	8246	160.61	5.75	0.15
636	SLV 8	344	-1611	8221	164.44	5.75	2.45
636	SLV 9	-547	1575	6873	-210.44	1.91	-6.52
636	SLV 10	-544	1389	6849	-206.61	1.91	-4.22
636	SLV 11	-496	-1357	6556	158.56	0.65	0.75
636	SLV 12	-493	-1543	6531	162.39	0.64	3.05
636	SLV 13	-1506	673	4796	-84.61	-4.48	-3.83
636	SLV 14	-1502	397	4760	-78.92	-4.49	-0.42
636	SLV 15	-1491	-207	4701	26.1	-4.86	-1.65
636	SLV 16	-1486	-482	4665	31.78	-4.87	1.77
636	CRTFP Ux+	0	0	0	0	0	0
636	CRTFP Ux-	0	0	0	0	0	0
636	CRTFP Uy+	0	0	0	0	0	0
636	CRTFP Uy-	0	0	0	0	0	0
637	SLU 1	-95	-26	6861	-23.06	3.7	-1.72
637	SLU 2	-95	3	6866	-26.17	3.73	-1.77
637	SLU 3	-97	-27	7012	-22.73	3.77	-1.74
637	SLU 4	-97	-9	7015	-24.6	3.79	-1.77
637	SLU 5	-97	3	6960	-25.92	3.77	-1.79
637	SLU 6	-98	-28	7107	-22.49	3.81	-1.76
637	SLU 7	-98	-10	7109	-24.35	3.82	-1.79
637	SLU 8	-98	-27	7050	-22.56	3.78	-1.75
637	SLU 9	-98	-10	7053	-24.43	3.8	-1.78
637	SLU 10	-100	1	7752	-29.35	4.15	-1.96
637	SLU 11	-102	-29	7898	-25.92	4.19	-1.93
637	SLU 12	-102	-11	7901	-27.79	4.2	-1.96
637	SLU 13	-101	1	7847	-29.11	4.19	-1.97
637	SLU 14	-103	-30	7993	-25.67	4.23	-1.94
637	SLU 15	-103	-12	7996	-27.54	4.24	-1.98
637	SLU 16	-102	-29	7937	-25.75	4.2	-1.94
637	SLU 17	-102	-12	7939	-27.62	4.21	-1.97
637	SLU 18	-102	-29	8127	-27.61	4.3	-1.99
637	SLU 19	-102	-11	8130	-29.48	4.32	-2.02
637	SLU 20	-103	-30	8222	-27.36	4.34	-2
637	SLU 21	-103	-12	8225	-29.23	4.36	-2.03
637	SLU 22	-105	-31	7933	-24.08	4.25	-1.88
637	SLU 23	-105	-1	7938	-27.19	4.28	-1.93
637	SLU 24	-107	-32	8084	-23.75	4.31	-1.9
637	SLU 25	-107	-14	8087	-25.62	4.33	-1.93
637	SLU 26	-106	-2	8032	-26.94	4.31	-1.95
637	SLU 27	-108	-32	8179	-23.51	4.35	-1.92
637	SLU 28	-108	-15	8181	-25.37	4.37	-1.95
637	SLU 29	-107	-32	8122	-23.58	4.32	-1.91
637	SLU 30	-107	-14	8125	-25.45	4.34	-1.94
637	SLU 31	-110	-3	8824	-30.37	4.69	-2.12
637	SLU 32	-112	-34	8970	-26.94	4.73	-2.09
637	SLU 33	-112	-16	8973	-28.81	4.75	-2.12
637	SLU 34	-111	-4	8919	-30.13	4.73	-2.13
637	SLU 35	-113	-34	9065	-26.69	4.77	-2.1
637	SLU 36	-113	-17	9068	-28.56	4.79	-2.14
637	SLU 37	-112	-34	9009	-26.77	4.74	-2.1
637	SLU 38	-112	-16	9011	-28.63	4.76	-2.13
637	SLU 39	-112	-34	9200	-28.63	4.84	-2.15
637	SLU 40	-112	-16	9202	-30.49	4.86	-2.18
637	SLU 41	-113	-34	9294	-28.38	4.88	-2.16
637	SLU 42	-113	-17	9297	-30.25	4.9	-2.19
637	SLU 43	-121	-32	8552	-29.63	4.62	-2.18
637	SLU 44	-121	-3	8556	-32.74	4.65	-2.23
637	SLU 45	-122	-33	8703	-29.3	4.69	-2.2
637	SLU 46	-123	-16	8705	-31.17	4.71	-2.23
637	SLU 47	-122	-3	8651	-32.49	4.69	-2.25
637	SLU 48	-124	-34	8797	-29.06	4.73	-2.22
637	SLU 49	-124	-16	8800	-30.92	4.75	-2.25
637	SLU 50	-123	-33	8741	-29.13	4.7	-2.21
637	SLU 51	-123	-16	8744	-31	4.72	-2.24

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
637	SLU 52	-125	-5	9443	-35.92	5.07	-2.42
637	SLU 53	-127	-35	9589	-32.49	5.11	-2.39
637	SLU 54	-127	-18	9592	-34.36	5.13	-2.42
637	SLU 55	-127	-6	9537	-35.68	5.11	-2.44
637	SLU 56	-128	-36	9684	-32.24	5.15	-2.41
637	SLU 57	-129	-18	9686	-34.11	5.17	-2.44
637	SLU 58	-128	-36	9627	-32.32	5.12	-2.4
637	SLU 59	-128	-18	9630	-34.18	5.14	-2.43
637	SLU 60	-127	-35	9818	-34.18	5.22	-2.45
637	SLU 61	-128	-18	9821	-36.04	5.24	-2.48
637	SLU 62	-129	-36	9913	-33.93	5.26	-2.46
637	SLU 63	-129	-18	9915	-35.8	5.28	-2.5
637	SLU 64	-130	-37	9624	-30.64	5.17	-2.34
637	SLU 65	-130	-7	9628	-33.75	5.2	-2.39
637	SLU 66	-132	-38	9775	-30.32	5.24	-2.36
637	SLU 67	-132	-20	9777	-32.19	5.25	-2.39
637	SLU 68	-131	-8	9723	-33.51	5.24	-2.41
637	SLU 69	-133	-38	9869	-30.07	5.28	-2.38
637	SLU 70	-133	-21	9872	-31.94	5.29	-2.41
637	SLU 71	-133	-38	9813	-30.15	5.25	-2.37
637	SLU 72	-133	-20	9816	-32.02	5.26	-2.4
637	SLU 73	-135	-10	10515	-36.94	5.62	-2.58
637	SLU 74	-137	-40	10661	-33.51	5.66	-2.55
637	SLU 75	-137	-22	10664	-35.37	5.67	-2.58
637	SLU 76	-136	-10	10609	-36.69	5.66	-2.6
637	SLU 77	-138	-40	10756	-33.26	5.69	-2.57
637	SLU 78	-138	-23	10758	-35.13	5.71	-2.6
637	SLU 79	-137	-40	10700	-33.33	5.67	-2.56
637	SLU 80	-137	-22	10702	-35.2	5.68	-2.59
637	SLU 81	-137	-40	10890	-35.2	5.77	-2.61
637	SLU 82	-137	-22	10893	-37.06	5.78	-2.64
637	SLU 83	-138	-40	10985	-34.95	5.81	-2.63
637	SLU 84	-138	-23	10988	-36.81	5.82	-2.66
637	SLE RA 1	-98	-27	7167	-23.35	3.86	-1.77
637	SLE RA 2	-98	-8	7170	-25.42	3.88	-1.8
637	SLE RA 3	-99	-28	7268	-23.13	3.9	-1.78
637	SLE RA 4	-99	-16	7270	-24.38	3.91	-1.8
637	SLE RA 5	-99	-8	7233	-25.26	3.9	-1.81
637	SLE RA 6	-100	-28	7331	-22.97	3.93	-1.79
637	SLE RA 7	-100	-17	7333	-24.21	3.94	-1.81
637	SLE RA 8	-100	-28	7294	-23.02	3.91	-1.79
637	SLE RA 9	-100	-16	7295	-24.26	3.92	-1.81
637	SLE RA 10	-101	-9	7761	-27.55	4.15	-1.93
637	SLE RA 11	-103	-29	7859	-25.26	4.18	-1.91
637	SLE RA 12	-103	-18	7861	-26.5	4.19	-1.93
637	SLE RA 13	-102	-10	7824	-27.38	4.18	-1.94
637	SLE RA 14	-103	-30	7922	-25.09	4.21	-1.92
637	SLE RA 15	-103	-18	7924	-26.34	4.22	-1.94
637	SLE RA 16	-103	-29	7884	-25.14	4.19	-1.91
637	SLE RA 17	-103	-18	7886	-26.39	4.2	-1.93
637	SLE RA 18	-103	-29	8012	-26.38	4.25	-1.95
637	SLE RA 19	-103	-18	8013	-27.63	4.27	-1.97
637	SLE RA 20	-103	-30	8075	-26.22	4.28	-1.96
637	SLE RA 21	-103	-18	8076	-27.46	4.29	-1.98
637	SLE FR 1	-98	-27	7167	-23.35	3.86	-1.77
637	SLE FR 2	-98	-23	7168	-23.76	3.86	-1.77
637	SLE FR 3	-98	-28	7193	-23.28	3.87	-1.77
637	SLE FR 4	-99	-24	7421	-24.67	3.98	-1.83
637	SLE FR 5	-100	-28	7446	-24.19	3.99	-1.82
637	SLE FR 6	-100	-28	7590	-24.87	4.05	-1.86
637	SLE QP 1	-98	-27	7167	-23.35	3.86	-1.77
637	SLE QP 2	-99	-28	7421	-24.26	3.98	-1.82
637	SLD 1	492	154	8537	-45.84	7.34	-3.04
637	SLD 2	494	44	8522	-43.55	7.32	-1.71
637	SLD 3	499	-196	8506	-2.02	7	-2.53
637	SLD 4	501	-306	8491	0.27	6.98	-1.2
637	SLD 5	68	578	7805	-97.6	5.51	-3.2
637	SLD 6	69	505	7795	-96.09	5.5	-2.32
637	SLD 7	90	-590	7702	48.46	4.36	-1.5
637	SLD 8	91	-663	7692	49.97	4.35	-0.62
637	SLD 9	-290	607	7149	-98.48	3.6	-3.02
637	SLD 10	-288	534	7139	-96.97	3.59	-2.15
637	SLD 11	-268	-561	7046	47.57	2.45	-1.32
637	SLD 12	-267	-634	7036	49.08	2.44	-0.44
637	SLD 13	-700	251	6350	-48.79	0.98	-2.44
637	SLD 14	-698	140	6335	-46.5	0.95	-1.12
637	SLD 15	-693	-100	6319	-4.97	0.63	-1.93
637	SLD 16	-691	-210	6304	-2.68	0.61	-0.61
637	SLV 1	1285	425	10035	-78.4	11.88	-4.7
637	SLV 2	1290	165	10000	-73.02	11.84	-1.59
637	SLV 3	1301	-447	9959	31.4	11.02	-3.46
637	SLV 4	1305	-706	9924	36.78	10.97	-0.34
637	SLV 5	292	1478	8327	-208.04	7.67	-5.15
637	SLV 6	295	1304	8304	-204.41	7.64	-3.06
637	SLV 7	343	-1427	8073	157.96	4.78	-1
637	SLV 8	346	-1602	8049	161.59	4.75	1.09
637	SLV 9	-545	1546	6792	-210.1	3.2	-4.73
637	SLV 10	-542	1371	6768	-206.48	3.17	-2.64
637	SLV 11	-494	-1360	6538	155.9	0.31	-0.58

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
637	SLV 12	-491	-1534	6514	159.52	0.28	1.51
637	SLV 13	-1504	650	4917	-85.3	-3.02	-3.3
637	SLV 14	-1499	391	4882	-79.91	-3.07	-0.19
637	SLV 15	-1489	-221	4841	24.5	-3.88	-2.05
637	SLV 16	-1484	-481	4806	29.89	-3.93	1.06
637	CRTFP Ux+	0	0	0	0	0	0
637	CRTFP Ux-	0	0	0	0	0	0
637	CRTFP Uy+	0	0	0	0	0	0
637	CRTFP Uy-	0	0	0	0	0	0
638	SLU 1	-80	-29	5743	-272.99	136.31	-4.02
638	SLU 2	-80	-4	5747	-275.72	136.32	-4.63
638	SLU 3	-81	-30	5870	-278.31	139.33	-4.08
638	SLU 4	-81	-15	5872	-279.94	139.34	-4.45
638	SLU 5	-81	-4	5826	-279.01	138.21	-4.66
638	SLU 6	-82	-30	5949	-281.6	141.23	-4.12
638	SLU 7	-82	-15	5951	-283.24	141.23	-4.49
638	SLU 8	-81	-30	5902	-279.59	140.1	-4.1
638	SLU 9	-81	-15	5904	-281.22	140.1	-4.46
638	SLU 10	-84	-6	6490	-311.26	153.92	-4.87
638	SLU 11	-85	-32	6613	-313.84	156.93	-4.33
638	SLU 12	-85	-17	6615	-315.48	156.94	-4.69
638	SLU 13	-85	-7	6569	-314.55	155.81	-4.91
638	SLU 14	-86	-33	6692	-317.14	158.83	-4.37
638	SLU 15	-86	-18	6695	-318.78	158.83	-4.73
638	SLU 16	-86	-32	6645	-315.13	157.7	-4.34
638	SLU 17	-86	-17	6647	-316.76	157.7	-4.71
638	SLU 18	-85	-32	6805	-323.76	161.46	-4.37
638	SLU 19	-85	-17	6807	-325.4	161.46	-4.73
638	SLU 20	-86	-33	6885	-327.06	163.35	-4.41
638	SLU 21	-86	-18	6887	-328.69	163.35	-4.77
638	SLU 22	-88	-33	6641	-313.47	157.69	-4.37
638	SLU 23	-88	-8	6644	-316.19	157.7	-4.98
638	SLU 24	-89	-34	6767	-318.78	160.71	-4.44
638	SLU 25	-89	-19	6769	-320.41	160.72	-4.8
638	SLU 26	-89	-9	6723	-319.49	159.59	-5.02
638	SLU 27	-90	-35	6846	-322.08	162.61	-4.48
638	SLU 28	-90	-20	6849	-323.71	162.61	-4.84
638	SLU 29	-90	-34	6799	-320.06	161.48	-4.45
638	SLU 30	-90	-19	6801	-321.69	161.48	-4.82
638	SLU 31	-92	-11	7388	-351.73	175.3	-5.23
638	SLU 32	-93	-37	7511	-354.32	178.31	-4.68
638	SLU 33	-93	-22	7513	-355.95	178.32	-5.05
638	SLU 34	-93	-11	7467	-355.03	177.19	-5.27
638	SLU 35	-94	-37	7590	-357.62	180.21	-4.72
638	SLU 36	-94	-22	7592	-359.25	180.21	-5.09
638	SLU 37	-94	-37	7543	-355.6	179.08	-4.7
638	SLU 38	-94	-22	7545	-357.23	179.08	-5.06
638	SLU 39	-94	-37	7703	-364.24	182.84	-4.73
638	SLU 40	-94	-22	7705	-365.87	182.84	-5.09
638	SLU 41	-94	-37	7782	-367.53	184.73	-4.77
638	SLU 42	-95	-22	7784	-369.17	184.73	-5.13
638	SLU 43	-101	-36	7159	-341.01	169.88	-5.1
638	SLU 44	-101	-11	7162	-343.74	169.88	-5.71
638	SLU 45	-102	-37	7285	-346.33	172.9	-5.17
638	SLU 46	-102	-22	7287	-347.96	172.9	-5.53
638	SLU 47	-102	-12	7241	-347.03	171.78	-5.75
638	SLU 48	-103	-37	7364	-349.62	174.79	-5.2
638	SLU 49	-103	-22	7366	-351.26	174.79	-5.57
638	SLU 50	-103	-37	7317	-347.61	173.66	-5.18
638	SLU 51	-103	-22	7319	-349.24	173.67	-5.54
638	SLU 52	-105	-13	7905	-379.28	187.48	-5.96
638	SLU 53	-106	-39	8028	-381.87	190.5	-5.41
638	SLU 54	-106	-24	8030	-383.5	190.5	-5.78
638	SLU 55	-106	-14	7985	-382.57	189.38	-5.99
638	SLU 56	-107	-40	8108	-385.16	192.39	-5.45
638	SLU 57	-107	-25	8110	-386.8	192.39	-5.82
638	SLU 58	-107	-39	8061	-383.15	191.26	-5.43
638	SLU 59	-107	-24	8063	-384.78	191.27	-5.79
638	SLU 60	-106	-39	8221	-391.78	195.02	-5.45
638	SLU 61	-107	-24	8223	-393.42	195.02	-5.82
638	SLU 62	-107	-40	8300	-395.08	196.91	-5.49
638	SLU 63	-107	-25	8302	-396.71	196.92	-5.86
638	SLU 64	-109	-40	8056	-381.49	191.26	-5.46
638	SLU 65	-109	-15	8059	-384.21	191.26	-6.07
638	SLU 66	-110	-41	8182	-386.8	194.28	-5.52
638	SLU 67	-110	-26	8184	-388.43	194.28	-5.89
638	SLU 68	-110	-16	8139	-387.51	193.16	-6.1
638	SLU 69	-111	-42	8262	-390.1	196.17	-5.56
638	SLU 70	-111	-27	8264	-391.73	196.17	-5.93
638	SLU 71	-111	-41	8215	-388.08	195.04	-5.54
638	SLU 72	-111	-27	8217	-389.71	195.05	-5.9
638	SLU 73	-113	-18	8803	-419.75	208.86	-6.31
638	SLU 74	-114	-44	8926	-422.34	211.88	-5.77
638	SLU 75	-114	-29	8928	-423.97	211.88	-6.13
638	SLU 76	-114	-18	8882	-423.05	210.76	-6.35
638	SLU 77	-115	-44	9005	-425.64	213.77	-5.81
638	SLU 78	-115	-29	9007	-427.27	213.77	-6.17
638	SLU 79	-115	-44	8958	-423.62	212.64	-5.78
638	SLU 80	-115	-29	8960	-425.25	212.65	-6.15

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
638	SLU 81	-115	-44	9118	-432.26	216.4	-5.81
638	SLU 82	-115	-29	9120	-433.89	216.4	-6.17
638	SLU 83	-116	-44	9197	-435.55	218.29	-5.85
638	SLU 84	-116	-29	9199	-437.19	218.3	-6.21
638	SLE RA 1	-82	-30	6000	-284.56	142.42	-4.12
638	SLE RA 2	-82	-13	6002	-286.37	142.43	-4.53
638	SLE RA 3	-83	-31	6084	-288.1	144.43	-4.16
638	SLE RA 4	-83	-21	6085	-289.19	144.44	-4.41
638	SLE RA 5	-83	-14	6055	-288.57	143.69	-4.55
638	SLE RA 6	-84	-31	6137	-290.3	145.7	-4.19
638	SLE RA 7	-84	-21	6138	-291.39	145.7	-4.43
638	SLE RA 8	-83	-31	6105	-288.95	144.95	-4.17
638	SLE RA 9	-83	-21	6107	-290.04	144.95	-4.42
638	SLE RA 10	-85	-15	6498	-310.06	154.16	-4.69
638	SLE RA 11	-86	-32	6580	-311.79	156.17	-4.33
638	SLE RA 12	-86	-22	6581	-312.88	156.17	-4.57
638	SLE RA 13	-85	-15	6550	-312.26	155.42	-4.72
638	SLE RA 14	-86	-33	6632	-313.99	157.43	-4.35
638	SLE RA 15	-86	-23	6634	-315.08	157.43	-4.6
638	SLE RA 16	-86	-32	6601	-312.64	156.68	-4.34
638	SLE RA 17	-86	-22	6602	-313.73	156.68	-4.58
638	SLE RA 18	-86	-32	6708	-318.4	159.18	-4.36
638	SLE RA 19	-86	-22	6709	-319.49	159.19	-4.6
638	SLE RA 20	-86	-33	6761	-320.6	160.45	-4.38
638	SLE RA 21	-86	-23	6762	-321.69	160.45	-4.62
638	SLE FR 1	-82	-30	6000	-284.56	142.42	-4.12
638	SLE FR 2	-82	-27	6000	-284.92	142.42	-4.2
638	SLE FR 3	-82	-30	6021	-285.44	142.93	-4.13
638	SLE FR 4	-83	-27	6213	-295.07	147.45	-4.27
638	SLE FR 5	-83	-31	6233	-295.59	147.95	-4.2
638	SLE FR 6	-84	-31	6354	-301.48	150.8	-4.24
638	SLE QP 1	-82	-30	6000	-284.56	142.42	-4.12
638	SLE QP 2	-83	-31	6212	-294.71	147.45	-4.19
638	SLD 1	420	122	7086	-350.66	169.14	14.02
638	SLD 2	422	33	7073	-348.3	168.9	17.21
638	SLD 3	425	-175	7062	-313.36	169.82	21.27
638	SLD 4	427	-263	7049	-311	169.57	24.47
638	SLD 5	59	481	6512	-368.48	152.98	-10.31
638	SLD 6	61	422	6504	-366.93	152.82	-8.21
638	SLD 7	77	-508	6433	-244.16	155.23	13.88
638	SLD 8	79	-566	6425	-242.61	155.06	15.99
638	SLD 9	-245	505	5999	-346.81	139.84	-24.37
638	SLD 10	-243	446	5991	-345.26	139.67	-22.27
638	SLD 11	-227	-484	5920	-222.49	142.08	-0.18
638	SLD 12	-225	-542	5912	-220.94	141.92	1.93
638	SLD 13	-593	202	5375	-278.42	125.33	-32.85
638	SLD 14	-591	113	5362	-276.06	125.08	-29.66
638	SLD 15	-588	-95	5351	-241.12	126	-25.59
638	SLD 16	-586	-183	5339	-238.76	125.76	-22.4
638	SLV 1	1093	348	8258	-428.72	198.17	37.86
638	SLV 2	1098	140	8229	-423.19	197.59	45.37
638	SLV 3	1106	-389	8199	-335.27	199.84	55.89
638	SLV 4	1111	-597	8170	-329.74	199.27	63.4
638	SLV 5	249	1240	6920	-477.68	160.23	-20.33
638	SLV 6	253	1100	6901	-473.96	159.84	-15.28
638	SLV 7	292	-1218	6724	-166.17	165.82	39.79
638	SLV 8	296	-1358	6705	-162.45	165.43	44.84
638	SLV 9	-462	1296	5719	-426.97	129.47	-53.23
638	SLV 10	-458	1156	5700	-423.25	129.08	-48.17
638	SLV 11	-419	-1162	5523	-115.46	135.06	6.9
638	SLV 12	-415	-1302	5504	-111.74	134.67	11.95
638	SLV 13	-1277	536	4254	-259.68	95.63	-71.78
638	SLV 14	-1272	328	4225	-254.15	95.06	-64.28
638	SLV 15	-1264	-202	4195	-166.23	97.31	-53.75
638	SLV 16	-1259	-410	4166	-160.7	96.73	-46.24
638	CRTFP Ux+	0	0	0	0	0	0
638	CRTFP Ux-	0	0	0	0	0	0
638	CRTFP Uy+	0	0	0	0	0	0
638	CRTFP Uy-	0	0	0	0	0	0
640	SLU 1	-244	-118	18491	2345.48	-1930.3	13.02
640	SLU 2	-244	-36	18484	2337.15	-1927.9	21.72
640	SLU 3	-249	-121	18903	2399.8	-1973.83	13.28
640	SLU 4	-249	-72	18899	2394.8	-1972.39	18.5
640	SLU 5	-247	-38	18744	2371.42	-1955.39	21.86
640	SLU 6	-252	-123	19163	2434.07	-2001.32	13.42
640	SLU 7	-252	-74	19159	2429.08	-1999.88	18.64
640	SLU 8	-250	-122	19010	2414.03	-1985.29	13.3
640	SLU 9	-250	-73	19006	2409.03	-1983.85	18.52
640	SLU 10	-256	-47	20883	2641.03	-2179.86	21.57
640	SLU 11	-261	-131	21302	2703.69	-2225.79	13.14
640	SLU 12	-261	-82	21298	2698.69	-2224.34	18.36
640	SLU 13	-259	-49	21143	2675.31	-2207.35	21.71
640	SLU 14	-264	-133	21562	2737.96	-2253.28	13.28
640	SLU 15	-264	-84	21558	2732.97	-2251.84	18.5
640	SLU 16	-262	-132	21409	2717.92	-2237.25	13.15
640	SLU 17	-262	-83	21405	2712.92	-2235.81	18.37
640	SLU 18	-261	-133	21918	2779.6	-2290.24	12.81
640	SLU 19	-261	-84	21914	2774.61	-2288.8	18.03
640	SLU 20	-264	-135	22178	2813.88	-2317.73	12.95

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
640	SLU 21	-264	-86	22174	2808.88	-2316.29	18.17
640	SLU 22	-269	-134	21392	2720.03	-2233.59	14.07
640	SLU 23	-269	-53	21385	2711.7	-2231.18	22.77
640	SLU 24	-274	-138	21804	2774.35	-2277.11	14.34
640	SLU 25	-274	-89	21800	2769.35	-2275.67	19.56
640	SLU 26	-272	-55	21644	2745.97	-2258.68	22.91
640	SLU 27	-277	-140	22063	2808.63	-2304.61	14.48
640	SLU 28	-277	-91	22059	2803.63	-2303.17	19.7
640	SLU 29	-275	-138	21910	2788.58	-2288.58	14.35
640	SLU 30	-275	-90	21906	2783.58	-2287.13	19.57
640	SLU 31	-282	-63	23784	3015.59	-2483.14	22.63
640	SLU 32	-286	-148	24203	3078.24	-2529.07	14.19
640	SLU 33	-286	-99	24199	3073.24	-2527.63	19.41
640	SLU 34	-285	-65	24043	3049.86	-2510.64	22.77
640	SLU 35	-289	-150	24462	3112.52	-2556.57	14.33
640	SLU 36	-289	-101	24458	3107.52	-2555.12	19.55
640	SLU 37	-287	-149	24309	3092.47	-2540.53	14.2
640	SLU 38	-287	-100	24305	3087.47	-2539.09	19.43
640	SLU 39	-287	-149	24819	3154.15	-2593.52	13.86
640	SLU 40	-287	-100	24815	3149.16	-2592.08	19.08
640	SLU 41	-290	-151	25078	3188.43	-2621.02	14
640	SLU 42	-290	-102	25074	3183.43	-2619.58	19.22
640	SLU 43	-308	-147	23044	2920.7	-2405.41	16.56
640	SLU 44	-308	-66	23037	2912.37	-2403.01	25.26
640	SLU 45	-313	-151	23456	2975.02	-2448.94	16.83
640	SLU 46	-313	-102	23452	2970.02	-2447.49	22.05
640	SLU 47	-311	-68	23297	2946.65	-2430.5	25.4
640	SLU 48	-316	-153	23716	3009.3	-2476.43	16.97
640	SLU 49	-316	-104	23711	3004.3	-2474.99	22.19
640	SLU 50	-314	-151	23563	2989.26	-2460.4	16.84
640	SLU 51	-314	-103	23559	2984.26	-2458.96	22.06
640	SLU 52	-321	-76	25436	3216.26	-2654.96	25.11
640	SLU 53	-326	-161	25855	3278.91	-2700.89	16.68
640	SLU 54	-326	-112	25851	3273.91	-2699.45	21.9
640	SLU 55	-324	-78	25696	3250.54	-2682.46	25.25
640	SLU 56	-329	-163	26115	3313.19	-2728.39	16.82
640	SLU 57	-329	-114	26110	3308.19	-2726.95	22.04
640	SLU 58	-327	-162	25962	3293.15	-2712.35	16.69
640	SLU 59	-327	-113	25958	3288.15	-2710.91	21.91
640	SLU 60	-326	-162	26471	3354.83	-2765.35	16.35
640	SLU 61	-326	-113	26467	3349.83	-2763.9	21.57
640	SLU 62	-329	-164	26731	3389.11	-2792.84	16.49
640	SLU 63	-329	-115	26726	3384.11	-2791.4	21.71
640	SLU 64	-334	-164	25945	3295.25	-2708.69	17.62
640	SLU 65	-334	-83	25938	3286.92	-2706.29	26.32
640	SLU 66	-339	-167	26357	3349.57	-2752.22	17.88
640	SLU 67	-339	-118	26353	3344.57	-2750.78	23.1
640	SLU 68	-337	-85	26197	3321.2	-2733.79	26.46
640	SLU 69	-342	-169	26616	3383.85	-2779.72	18.02
640	SLU 70	-342	-120	26612	3378.85	-2778.27	23.24
640	SLU 71	-340	-168	26463	3363.81	-2763.68	17.89
640	SLU 72	-340	-119	26459	3358.81	-2762.24	23.12
640	SLU 73	-346	-93	28337	3590.81	-2958.25	26.17
640	SLU 74	-351	-178	28756	3653.46	-3004.18	17.73
640	SLU 75	-351	-129	28752	3648.46	-3002.74	22.96
640	SLU 76	-349	-95	28596	3625.09	-2985.74	26.31
640	SLU 77	-354	-180	29015	3687.74	-3031.67	17.87
640	SLU 78	-354	-131	29011	3682.74	-3030.23	23.1
640	SLU 79	-352	-178	28862	3667.7	-3015.64	17.75
640	SLU 80	-352	-130	28858	3662.7	-3014.2	22.97
640	SLU 81	-351	-179	29372	3729.38	-3068.63	17.4
640	SLU 82	-351	-130	29368	3724.38	-3067.19	22.63
640	SLU 83	-354	-181	29631	3763.66	-3096.13	17.54
640	SLU 84	-354	-132	29627	3758.66	-3094.68	22.77
640	SLE RA 1	-251	-123	19320	2452.49	-2016.95	13.32
640	SLE RA 2	-251	-68	19315	2446.94	-2015.35	19.12
640	SLE RA 3	-254	-125	19595	2488.7	-2045.97	13.5
640	SLE RA 4	-254	-92	19592	2485.37	-2045.01	16.98
640	SLE RA 5	-253	-70	19488	2469.79	-2033.68	19.21
640	SLE RA 6	-256	-126	19767	2511.56	-2064.3	13.59
640	SLE RA 7	-256	-93	19765	2508.22	-2063.34	17.07
640	SLE RA 8	-255	-125	19666	2498.19	-2053.61	13.5
640	SLE RA 9	-255	-93	19663	2494.86	-2052.65	16.98
640	SLE RA 10	-259	-75	20915	2649.53	-2183.32	19.02
640	SLE RA 11	-263	-132	21194	2691.3	-2213.94	13.4
640	SLE RA 12	-263	-99	21191	2687.97	-2212.98	16.88
640	SLE RA 13	-261	-76	21088	2672.38	-2201.65	19.11
640	SLE RA 14	-265	-133	21367	2714.15	-2232.27	13.49
640	SLE RA 15	-265	-100	21364	2710.82	-2231.31	16.97
640	SLE RA 16	-263	-132	21265	2700.79	-2221.58	13.41
640	SLE RA 17	-263	-100	21262	2697.46	-2220.62	16.89
640	SLE RA 18	-263	-132	21605	2741.91	-2256.91	13.18
640	SLE RA 19	-263	-100	21602	2738.58	-2255.95	16.66
640	SLE RA 20	-265	-134	21778	2764.76	-2275.24	13.27
640	SLE RA 21	-265	-101	21775	2761.43	-2274.28	16.75
640	SLE FR 1	-251	-123	19320	2452.49	-2016.95	13.32
640	SLE FR 2	-251	-112	19319	2451.38	-2016.63	14.48
640	SLE FR 3	-252	-123	19389	2461.63	-2024.29	13.36
640	SLE FR 4	-255	-115	20004	2538.2	-2088.62	14.44

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
640	SLE FR 5	-255	-126	20074	2548.46	-2096.27	13.31
640	SLE FR 6	-257	-128	20462	2597.2	-2136.93	13.25
640	SLE QP 1	-251	-123	19320	2452.49	-2016.95	13.32
640	SLE QP 2	-255	-126	20005	2539.32	-2088.94	13.28
640	SLD 1	1400	372	22508	2817.53	-2299.86	-147.52
640	SLD 2	1400	104	22482	2819.23	-2298.71	-168.32
640	SLD 3	1418	-602	22675	2944.2	-2337.35	-251.68
640	SLD 4	1417	-869	22649	2945.9	-2336.19	-272.49
640	SLD 5	216	1548	20507	2430.36	-2095.57	126.76
640	SLD 6	215	1371	20490	2431.49	-2094.81	113.04
640	SLD 7	273	-1696	21064	2852.59	-2220.52	-220.45
640	SLD 8	273	-1873	21047	2853.71	-2219.76	-234.18
640	SLD 9	-782	1622	18963	2224.92	-1958.12	260.73
640	SLD 10	-783	1445	18946	2226.05	-1957.36	247
640	SLD 11	-725	-1622	19520	2647.14	-2083.07	-86.48
640	SLD 12	-725	-1799	19503	2648.27	-2082.31	-100.21
640	SLD 13	-1926	618	17361	2132.73	-1841.69	299.04
640	SLD 14	-1927	350	17336	2134.43	-1840.54	278.23
640	SLD 15	-1909	-355	17528	2259.4	-1879.17	194.88
640	SLD 16	-1910	-623	17503	2261.1	-1878.02	174.07
640	SLV 1	3617	1111	25848	3179.87	-2579.52	-355
640	SLV 2	3616	482	25788	3183.87	-2576.81	-403.91
640	SLV 3	3658	-1310	26267	3497.36	-2673.33	-614.26
640	SLV 4	3657	-1939	26207	3501.37	-2670.62	-663.17
640	SLV 5	846	4035	21135	2249.2	-2094.34	305.13
640	SLV 6	845	3611	21094	2251.9	-2092.51	272.2
640	SLV 7	981	-4035	22530	3307.52	-2407.05	-559.07
640	SLV 8	980	-4459	22489	3310.21	-2405.22	-592
640	SLV 9	-1489	4208	17521	1768.42	-1772.66	618.55
640	SLV 10	-1490	3784	17481	1771.11	-1770.84	585.62
640	SLV 11	-1354	-3862	18917	2826.74	-2085.37	-245.65
640	SLV 12	-1355	-4286	18876	2829.43	-2083.55	-278.58
640	SLV 13	-4166	1688	13804	1577.26	-1507.26	689.72
640	SLV 14	-4167	1059	13744	1581.27	-1504.55	640.81
640	SLV 15	-4125	-733	14223	1894.76	-1601.07	430.46
640	SLV 16	-4127	-1362	14162	1898.76	-1598.36	381.55
640	CRTFP Ux+	0	0	0	0	0	0
640	CRTFP Ux-	0	0	0	0	0	0
640	CRTFP Uy+	0	0	0	0	0	0
640	CRTFP Uy-	0	0	0	0	0	0
642	SLU 1	-199	-125	16354	-1271.63	-990.76	-20.8
642	SLU 2	-199	-52	16345	-1275.96	-989.9	-16.44
642	SLU 3	-203	-128	16720	-1298.7	-1013	-21.23
642	SLU 4	-203	-84	16714	-1301.3	-1012.49	-18.62
642	SLU 5	-202	-53	16575	-1293.01	-1003.99	-16.72
642	SLU 6	-205	-129	16951	-1315.76	-1027.09	-21.51
642	SLU 7	-206	-86	16945	-1318.35	-1026.58	-18.9
642	SLU 8	-204	-128	16816	-1305.74	-1018.94	-21.36
642	SLU 9	-204	-85	16810	-1308.34	-1018.43	-18.74
642	SLU 10	-209	-63	18478	-1441.14	-1120.78	-17.74
642	SLU 11	-213	-139	18854	-1463.89	-1143.88	-22.53
642	SLU 12	-213	-95	18848	-1466.48	-1143.37	-19.91
642	SLU 13	-211	-65	18709	-1458.19	-1134.87	-18.02
642	SLU 14	-215	-141	19084	-1480.94	-1157.97	-22.81
642	SLU 15	-215	-97	19078	-1483.54	-1157.46	-20.19
642	SLU 16	-214	-140	18949	-1470.92	-1149.82	-22.66
642	SLU 17	-214	-96	18944	-1473.52	-1149.31	-20.04
642	SLU 18	-213	-141	19402	-1507.61	-1177.73	-22.65
642	SLU 19	-213	-97	19397	-1510.2	-1177.21	-20.04
642	SLU 20	-215	-143	19633	-1524.66	-1191.82	-22.93
642	SLU 21	-216	-99	19627	-1527.26	-1191.31	-20.32
642	SLU 22	-220	-140	18915	-1464.76	-1145.62	-23.03
642	SLU 23	-220	-67	18905	-1469.08	-1144.77	-18.67
642	SLU 24	-224	-143	19280	-1491.83	-1167.86	-23.46
642	SLU 25	-224	-99	19274	-1494.43	-1167.35	-20.84
642	SLU 26	-222	-69	19136	-1486.14	-1158.86	-18.95
642	SLU 27	-226	-145	19511	-1508.89	-1181.96	-23.74
642	SLU 28	-226	-101	19505	-1511.48	-1181.44	-21.13
642	SLU 29	-224	-144	19376	-1498.87	-1173.8	-23.59
642	SLU 30	-225	-100	19370	-1501.46	-1173.29	-20.97
642	SLU 31	-230	-79	21039	-1634.27	-1275.64	-19.96
642	SLU 32	-233	-154	21414	-1657.01	-1298.74	-24.76
642	SLU 33	-234	-111	21408	-1659.61	-1298.23	-22.14
642	SLU 34	-232	-80	21269	-1651.32	-1289.74	-20.24
642	SLU 35	-236	-156	21644	-1674.07	-1312.83	-25.04
642	SLU 36	-236	-113	21639	-1676.66	-1312.32	-22.42
642	SLU 37	-234	-155	21509	-1664.05	-1304.68	-24.89
642	SLU 38	-234	-112	21504	-1666.65	-1304.17	-22.27
642	SLU 39	-234	-156	21963	-1700.73	-1332.59	-24.88
642	SLU 40	-234	-113	21957	-1703.33	-1332.08	-22.26
642	SLU 41	-236	-158	22193	-1717.79	-1346.68	-25.16
642	SLU 42	-236	-114	22188	-1720.38	-1346.17	-22.54
642	SLU 43	-251	-157	20383	-1586.9	-1234.89	-26.28
642	SLU 44	-252	-84	20373	-1591.23	-1234.03	-21.92
642	SLU 45	-256	-159	20748	-1613.98	-1257.13	-26.71
642	SLU 46	-256	-116	20743	-1616.57	-1256.62	-24.09
642	SLU 47	-254	-85	20604	-1608.29	-1248.13	-22.2
642	SLU 48	-258	-161	20979	-1631.03	-1271.22	-26.99
642	SLU 49	-258	-118	20973	-1633.63	-1270.71	-24.37

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
642	SLU 50	-256	-160	20844	-1621.01	-1263.07	-26.84
642	SLU 51	-256	-117	20838	-1623.61	-1262.56	-24.22
642	SLU 52	-262	-95	22507	-1756.41	-1364.91	-23.21
642	SLU 53	-265	-171	22882	-1779.16	-1388.01	-28.01
642	SLU 54	-266	-127	22876	-1781.75	-1387.5	-25.39
642	SLU 55	-264	-97	22738	-1773.47	-1379	-23.49
642	SLU 56	-268	-173	23113	-1796.21	-1402.1	-28.29
642	SLU 57	-268	-129	23107	-1798.81	-1401.59	-25.67
642	SLU 58	-266	-172	22978	-1786.2	-1393.95	-28.13
642	SLU 59	-266	-128	22972	-1788.79	-1393.44	-25.52
642	SLU 60	-266	-173	23431	-1822.88	-1421.86	-28.13
642	SLU 61	-266	-129	23425	-1825.48	-1421.35	-25.51
642	SLU 62	-268	-175	23662	-1839.93	-1435.95	-28.41
642	SLU 63	-268	-131	23656	-1842.53	-1435.44	-25.79
642	SLU 64	-272	-172	22943	-1780.03	-1389.75	-28.51
642	SLU 65	-272	-99	22933	-1784.36	-1388.9	-24.14
642	SLU 66	-276	-175	23309	-1807.1	-1412	-28.94
642	SLU 67	-276	-131	23303	-1809.7	-1411.48	-26.32
642	SLU 68	-275	-101	23164	-1801.41	-1402.99	-24.42
642	SLU 69	-279	-177	23539	-1824.16	-1426.09	-29.22
642	SLU 70	-279	-133	23534	-1826.76	-1425.58	-26.6
642	SLU 71	-277	-176	23404	-1814.14	-1417.93	-29.07
642	SLU 72	-277	-132	23399	-1816.74	-1417.42	-26.45
642	SLU 73	-282	-111	25067	-1949.54	-1519.78	-25.44
642	SLU 74	-286	-186	25442	-1972.29	-1542.87	-30.23
642	SLU 75	-286	-143	25437	-1974.88	-1542.36	-27.62
642	SLU 76	-285	-112	25298	-1966.6	-1533.87	-25.72
642	SLU 77	-289	-188	25673	-1989.34	-1556.97	-30.51
642	SLU 78	-289	-145	25667	-1991.94	-1556.45	-27.9
642	SLU 79	-287	-187	25538	-1979.33	-1548.81	-30.36
642	SLU 80	-287	-144	25532	-1981.92	-1548.3	-27.75
642	SLU 81	-286	-188	25991	-2016.01	-1576.72	-30.36
642	SLU 82	-286	-145	25985	-2018.6	-1576.21	-27.74
642	SLU 83	-289	-190	26222	-2033.06	-1590.81	-30.64
642	SLU 84	-289	-146	26216	-2035.66	-1590.3	-28.02
642	SLE RA 1	-205	-129	17086	-1326.81	-1035	-21.44
642	SLE RA 2	-205	-80	17079	-1329.69	-1034.43	-18.53
642	SLE RA 3	-207	-131	17330	-1344.86	-1049.83	-21.73
642	SLE RA 4	-208	-102	17326	-1346.59	-1049.49	-19.98
642	SLE RA 5	-207	-82	17233	-1341.06	-1043.83	-18.72
642	SLE RA 6	-209	-132	17483	-1356.23	-1059.23	-21.91
642	SLE RA 7	-209	-103	17479	-1357.96	-1058.89	-20.17
642	SLE RA 8	-208	-132	17393	-1349.55	-1053.79	-21.81
642	SLE RA 9	-208	-102	17390	-1351.28	-1053.45	-20.07
642	SLE RA 10	-211	-88	18502	-1439.82	-1121.69	-19.39
642	SLE RA 11	-214	-139	18752	-1454.98	-1137.09	-22.59
642	SLE RA 12	-214	-109	18748	-1456.71	-1136.75	-20.85
642	SLE RA 13	-213	-89	18656	-1451.19	-1131.08	-19.58
642	SLE RA 14	-216	-140	18906	-1466.35	-1146.48	-22.78
642	SLE RA 15	-216	-111	18902	-1468.08	-1146.14	-21.03
642	SLE RA 16	-215	-139	18816	-1459.67	-1141.04	-22.68
642	SLE RA 17	-215	-110	18812	-1461.4	-1140.7	-20.93
642	SLE RA 18	-214	-140	19118	-1484.13	-1159.65	-22.67
642	SLE RA 19	-214	-111	19114	-1485.86	-1159.31	-20.93
642	SLE RA 20	-216	-141	19272	-1495.5	-1169.04	-22.86
642	SLE RA 21	-216	-112	19268	-1497.23	-1168.7	-21.11
642	SLE FR 1	-205	-129	17086	-1326.81	-1035	-21.44
642	SLE FR 2	-205	-119	17085	-1327.39	-1034.89	-20.86
642	SLE FR 3	-205	-130	17147	-1331.36	-1038.76	-21.51
642	SLE FR 4	-208	-123	17694	-1374.58	-1072.28	-21.23
642	SLE FR 5	-208	-133	17757	-1378.55	-1076.15	-21.88
642	SLE FR 6	-209	-134	18102	-1405.47	-1097.33	-22.06
642	SLE QP 1	-205	-129	17086	-1326.81	-1035	-21.44
642	SLE QP 2	-208	-132	17695	-1374	-1072.4	-21.81
642	SLD 1	1271	306	19576	-1541.59	-1145.56	118.7
642	SLD 2	1280	101	19563	-1537.52	-1146.02	111.86
642	SLD 3	1287	-566	19753	-1482.62	-1159.25	66.78
642	SLD 4	1296	-771	19740	-1478.55	-1159.71	59.94
642	SLD 5	211	1358	17993	-1514.45	-1073.5	100.32
642	SLD 6	217	1222	17985	-1511.77	-1073.8	95.81
642	SLD 7	263	-1547	18584	-1317.88	-1119.13	-72.75
642	SLD 8	269	-1682	18575	-1315.2	-1119.44	-77.26
642	SLD 9	-684	1418	16816	-1432.81	-1025.35	33.64
642	SLD 10	-678	1282	16807	-1430.13	-1025.66	29.13
642	SLD 11	-632	-1487	17406	-1236.24	-1070.99	-139.42
642	SLD 12	-626	-1622	17398	-1233.56	-1071.3	-143.93
642	SLD 13	-1711	506	15651	-1269.46	-985.08	-103.56
642	SLD 14	-1702	301	15638	-1265.39	-985.54	-110.39
642	SLD 15	-1695	-365	15828	-1210.49	-998.78	-155.48
642	SLD 16	-1687	-571	15815	-1206.42	-999.24	-162.31
642	SLV 1	3252	959	22082	-1771.07	-1242.63	310.88
642	SLV 2	3273	476	22052	-1761.52	-1243.71	294.81
642	SLV 3	3289	-1210	22525	-1623.32	-1276.64	181.56
642	SLV 4	3309	-1692	22495	-1613.77	-1277.72	165.49
642	SLV 5	771	3574	18346	-1718.99	-1071.68	277.12
642	SLV 6	785	3249	18326	-1712.56	-1072.41	266.3
642	SLV 7	893	-3654	19821	-1226.49	-1185.04	-153.93
642	SLV 8	907	-3979	19800	-1220.07	-1185.77	-164.75
642	SLV 9	-1322	3714	15590	-1527.94	-959.02	121.13

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
642	SLV 10	-1308	3390	15570	-1521.52	-959.75	110.31
642	SLV 11	-1200	-3514	17065	-1035.45	-1072.38	-309.92
642	SLV 12	-1186	-3839	17045	-1029.02	-1073.11	-320.74
642	SLV 13	-3725	1427	12896	-1134.24	-867.07	-209.11
642	SLV 14	-3704	945	12866	-1124.69	-868.16	-225.18
642	SLV 15	-3688	-741	13339	-986.49	-901.08	-338.42
642	SLV 16	-3668	-1224	13308	-976.94	-902.16	-354.49
642	CRTFP Ux+	0	0	0	0	0	0
642	CRTFP Ux-	0	0	0	0	0	0
642	CRTFP Uy+	0	0	0	0	0	0
642	CRTFP Uy-	0	0	0	0	0	0
643	SLU 1	-30	-18	2409	584.87	-128.68	6.67
643	SLU 2	-30	-7	2405	583.38	-128.47	7.25
643	SLU 3	-31	-18	2463	598.25	-131.6	6.81
643	SLU 4	-31	-12	2461	597.35	-131.47	7.15
643	SLU 5	-31	-7	2439	591.83	-130.31	7.33
643	SLU 6	-31	-18	2498	606.7	-133.44	6.88
643	SLU 7	-31	-12	2495	605.8	-133.31	7.23
643	SLU 8	-31	-18	2478	601.77	-132.36	6.83
643	SLU 9	-31	-12	2475	600.87	-132.24	7.17
643	SLU 10	-32	-8	2720	659.92	-145.35	7.55
643	SLU 11	-32	-20	2779	674.79	-148.47	7.11
643	SLU 12	-32	-13	2776	673.89	-148.34	7.46
643	SLU 13	-32	-9	2755	668.37	-147.19	7.63
643	SLU 14	-33	-20	2813	683.23	-150.31	7.19
643	SLU 15	-33	-13	2811	682.34	-150.18	7.54
643	SLU 16	-33	-20	2793	678.31	-149.24	7.14
643	SLU 17	-33	-13	2791	677.41	-149.11	7.48
643	SLU 18	-33	-20	2859	694.21	-152.78	7.11
643	SLU 19	-33	-13	2857	693.32	-152.66	7.46
643	SLU 20	-33	-20	2894	702.66	-154.63	7.19
643	SLU 21	-33	-14	2891	701.77	-154.5	7.54
643	SLU 22	-34	-20	2789	677.74	-148.99	7.36
643	SLU 23	-34	-9	2785	676.24	-148.78	7.94
643	SLU 24	-34	-20	2843	691.11	-151.9	7.5
643	SLU 25	-34	-14	2841	690.22	-151.78	7.84
643	SLU 26	-34	-9	2819	684.69	-150.62	8.02
643	SLU 27	-35	-20	2878	699.56	-153.74	7.57
643	SLU 28	-35	-14	2875	698.66	-153.62	7.92
643	SLU 29	-34	-20	2858	694.63	-152.67	7.52
643	SLU 30	-34	-14	2855	693.74	-152.55	7.86
643	SLU 31	-35	-11	3100	752.78	-165.65	8.25
643	SLU 32	-36	-22	3159	767.65	-168.78	7.8
643	SLU 33	-36	-15	3156	766.75	-168.65	8.15
643	SLU 34	-35	-11	3135	761.23	-167.49	8.32
643	SLU 35	-36	-22	3193	776.1	-170.62	7.88
643	SLU 36	-36	-16	3191	775.2	-170.49	8.23
643	SLU 37	-36	-22	3173	771.17	-169.54	7.83
643	SLU 38	-36	-15	3171	770.27	-169.42	8.17
643	SLU 39	-36	-22	3239	787.08	-173.09	7.8
643	SLU 40	-36	-16	3237	786.18	-172.97	8.15
643	SLU 41	-36	-22	3274	795.52	-174.93	7.88
643	SLU 42	-36	-16	3271	794.63	-174.81	8.23
643	SLU 43	-38	-22	3001	728.5	-160.32	8.43
643	SLU 44	-38	-11	2997	727	-160.12	9.01
643	SLU 45	-39	-23	3055	741.87	-163.24	8.57
643	SLU 46	-39	-16	3053	740.98	-163.11	8.92
643	SLU 47	-39	-12	3031	735.45	-161.96	9.09
643	SLU 48	-39	-23	3090	750.32	-165.08	8.65
643	SLU 49	-39	-16	3088	749.42	-164.95	8.99
643	SLU 50	-39	-23	3070	745.39	-164.01	8.59
643	SLU 51	-39	-16	3067	744.5	-163.88	8.94
643	SLU 52	-40	-13	3312	803.54	-176.99	9.32
643	SLU 53	-40	-24	3371	818.41	-180.11	8.88
643	SLU 54	-40	-18	3369	817.51	-179.99	9.22
643	SLU 55	-40	-13	3347	811.99	-178.83	9.4
643	SLU 56	-41	-24	3405	826.86	-181.95	8.96
643	SLU 57	-41	-18	3403	825.96	-181.83	9.3
643	SLU 58	-41	-24	3385	821.93	-180.88	8.9
643	SLU 59	-41	-18	3383	821.03	-180.75	9.25
643	SLU 60	-41	-24	3452	837.84	-184.43	8.87
643	SLU 61	-41	-18	3449	836.94	-184.3	9.22
643	SLU 62	-41	-25	3486	846.28	-186.27	8.95
643	SLU 63	-41	-18	3484	845.39	-186.14	9.3
643	SLU 64	-42	-24	3381	821.36	-180.63	9.12
643	SLU 65	-42	-14	3377	819.87	-180.42	9.7
643	SLU 66	-42	-25	3435	834.73	-183.55	9.26
643	SLU 67	-42	-18	3433	833.84	-183.42	9.61
643	SLU 68	-42	-14	3411	828.31	-182.26	9.78
643	SLU 69	-42	-25	3470	843.18	-185.39	9.34
643	SLU 70	-43	-19	3468	842.29	-185.26	9.68
643	SLU 71	-42	-25	3450	838.25	-184.31	9.28
643	SLU 72	-42	-18	3447	837.36	-184.19	9.63
643	SLU 73	-43	-15	3693	896.4	-197.3	10.01
643	SLU 74	-44	-26	3751	911.27	-200.42	9.57
643	SLU 75	-44	-20	3749	910.38	-200.29	9.91
643	SLU 76	-43	-15	3727	904.85	-199.14	10.09
643	SLU 77	-44	-27	3785	919.72	-202.26	9.65
643	SLU 78	-44	-20	3783	918.83	-202.13	9.99

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
643	SLU 79	-44	-26	3765	914.79	-201.19	9.59
643	SLU 80	-44	-20	3763	913.9	-201.06	9.94
643	SLU 81	-44	-27	3832	930.7	-204.73	9.56
643	SLU 82	-44	-20	3829	929.8	-204.61	9.91
643	SLU 83	-44	-27	3866	939.15	-206.58	9.64
643	SLU 84	-44	-20	3864	938.25	-206.45	9.99
643	SLE RA 1	-31	-18	2517	611.4	-134.48	6.87
643	SLE RA 2	-31	-11	2515	610.41	-134.34	7.25
643	SLE RA 3	-32	-18	2554	620.32	-136.43	6.96
643	SLE RA 4	-32	-14	2552	619.72	-136.34	7.19
643	SLE RA 5	-31	-11	2538	616.04	-135.57	7.3
643	SLE RA 6	-32	-19	2577	625.95	-137.65	7.01
643	SLE RA 7	-32	-14	2575	625.36	-137.57	7.24
643	SLE RA 8	-32	-19	2563	622.67	-136.94	6.97
643	SLE RA 9	-32	-14	2562	622.07	-136.86	7.2
643	SLE RA 10	-32	-12	2725	661.44	-145.59	7.46
643	SLE RA 11	-33	-20	2764	671.35	-147.68	7.16
643	SLE RA 12	-33	-15	2762	670.75	-147.59	7.39
643	SLE RA 13	-33	-12	2748	667.07	-146.82	7.51
643	SLE RA 14	-33	-20	2787	676.98	-148.9	7.22
643	SLE RA 15	-33	-15	2785	676.38	-148.82	7.45
643	SLE RA 16	-33	-20	2773	673.69	-148.19	7.18
643	SLE RA 17	-33	-15	2772	673.1	-148.1	7.41
643	SLE RA 18	-33	-20	2818	684.3	-150.55	7.16
643	SLE RA 19	-33	-15	2816	683.7	-150.47	7.39
643	SLE RA 20	-33	-20	2841	689.93	-151.78	7.21
643	SLE RA 21	-33	-16	2839	689.33	-151.7	7.44
643	SLE FR 1	-31	-18	2517	611.4	-134.48	6.87
643	SLE FR 2	-31	-17	2517	611.21	-134.46	6.94
643	SLE FR 3	-31	-18	2526	613.66	-134.97	6.89
643	SLE FR 4	-32	-17	2607	633.07	-139.28	7.03
643	SLE FR 5	-32	-19	2617	635.53	-139.8	6.98
643	SLE FR 6	-32	-19	2667	647.85	-142.52	7.01
643	SLE QP 1	-31	-18	2517	611.4	-134.48	6.87
643	SLE QP 2	-32	-19	2607	633.27	-139.3	6.96
643	SLD 1	186	46	2856	688.13	-152.22	-44.19
643	SLD 2	186	17	2856	688.42	-152.22	-45.5
643	SLD 3	189	-83	2917	710.91	-155.47	-51.22
643	SLD 4	188	-111	2917	711.2	-155.47	-52.53
643	SLD 5	30	200	2590	615.14	-138.24	2.51
643	SLD 6	30	181	2590	615.33	-138.24	1.64
643	SLD 7	38	-227	2793	691.05	-149.09	-20.92
643	SLD 8	38	-246	2793	691.24	-149.09	-21.79
643	SLD 9	-101	209	2422	575.3	-129.52	35.7
643	SLD 10	-101	190	2422	575.49	-129.52	34.83
643	SLD 11	-93	-219	2625	651.22	-140.36	12.27
643	SLD 12	-94	-238	2625	651.41	-140.37	11.4
643	SLD 13	-251	74	2297	555.35	-123.13	66.45
643	SLD 14	-252	45	2297	555.64	-123.14	65.13
643	SLD 15	-249	-54	2358	578.12	-126.39	59.41
643	SLD 16	-250	-83	2358	578.41	-126.39	58.1
643	SLV 1	478	142	3185	759.77	-169.25	-112.16
643	SLV 2	477	74	3185	760.46	-169.26	-115.26
643	SLV 3	484	-178	3338	816.84	-177.4	-129.66
643	SLV 4	482	-245	3338	817.52	-177.41	-132.76
643	SLV 5	114	526	2549	584.55	-135.93	-1.66
643	SLV 6	112	481	2549	585.01	-135.93	-3.75
643	SLV 7	131	-538	3058	774.76	-163.09	-59.99
643	SLV 8	130	-584	3058	775.22	-163.1	-62.07
643	SLV 9	-194	546	2157	491.32	-115.51	75.98
643	SLV 10	-195	501	2157	491.78	-115.52	73.9
643	SLV 11	-176	-518	2665	681.54	-142.67	17.66
643	SLV 12	-177	-564	2665	682	-142.68	15.57
643	SLV 13	-545	208	1877	449.02	-101.19	146.67
643	SLV 14	-547	140	1877	449.71	-101.21	143.57
643	SLV 15	-540	-112	2030	506.09	-109.34	129.17
643	SLV 16	-542	-179	2030	506.77	-109.36	126.07
643	CRTFP Ux+	0	0	0	0	0	0
643	CRTFP Ux-	0	0	0	0	0	0
643	CRTFP Uy+	0	0	0	0	0	0
643	CRTFP Uy-	0	0	0	0	0	0
646	SLU 1	-75	-40	6368	75.75	-59.01	2.34
646	SLU 2	-75	-12	6362	73.28	-58.98	2.59
646	SLU 3	-77	-41	6512	78.12	-60.33	2.39
646	SLU 4	-77	-24	6508	76.64	-60.32	2.53
646	SLU 5	-76	-12	6452	74.78	-59.82	2.61
646	SLU 6	-78	-41	6602	79.63	-61.17	2.41
646	SLU 7	-78	-25	6598	78.15	-61.16	2.56
646	SLU 8	-77	-41	6549	78.76	-60.69	2.39
646	SLU 9	-77	-24	6545	77.28	-60.67	2.54
646	SLU 10	-79	-15	7198	83.8	-66.82	2.74
646	SLU 11	-80	-45	7348	88.64	-68.17	2.54
646	SLU 12	-80	-28	7344	87.16	-68.16	2.69
646	SLU 13	-80	-16	7288	85.31	-67.66	2.77
646	SLU 14	-81	-45	7438	90.15	-69.01	2.56
646	SLU 15	-81	-28	7434	88.67	-69	2.71
646	SLU 16	-81	-45	7385	89.28	-68.53	2.54
646	SLU 17	-81	-28	7381	87.8	-68.51	2.69
646	SLU 18	-81	-45	7562	90.78	-70.21	2.56

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
646	SLU 19	-81	-28	7558	89.3	-70.19	2.71
646	SLU 20	-81	-46	7653	92.28	-71.05	2.59
646	SLU 21	-82	-29	7649	90.8	-71.03	2.73
646	SLU 22	-83	-45	7369	90.91	-68.27	2.61
646	SLU 23	-83	-17	7362	88.44	-68.24	2.86
646	SLU 24	-85	-46	7512	93.29	-69.6	2.66
646	SLU 25	-85	-29	7508	91.8	-69.58	2.8
646	SLU 26	-84	-17	7453	89.95	-69.08	2.88
646	SLU 27	-85	-46	7603	94.79	-70.44	2.68
646	SLU 28	-86	-30	7599	93.31	-70.42	2.83
646	SLU 29	-85	-46	7550	93.92	-69.95	2.66
646	SLU 30	-85	-29	7546	92.44	-69.94	2.81
646	SLU 31	-87	-20	8198	98.96	-76.08	3.01
646	SLU 32	-88	-50	8348	103.81	-77.44	2.81
646	SLU 33	-88	-33	8344	102.33	-77.42	2.96
646	SLU 34	-88	-21	8289	100.47	-76.92	3.04
646	SLU 35	-89	-50	8439	105.31	-78.28	2.83
646	SLU 36	-89	-33	8435	103.83	-78.26	2.98
646	SLU 37	-89	-50	8386	104.45	-77.79	2.81
646	SLU 38	-89	-33	8382	102.96	-77.78	2.96
646	SLU 39	-89	-50	8563	105.94	-79.47	2.83
646	SLU 40	-89	-33	8559	104.46	-79.46	2.98
646	SLU 41	-89	-51	8654	107.45	-80.31	2.86
646	SLU 42	-89	-34	8650	105.97	-80.3	3
646	SLU 43	-95	-50	7936	93.27	-73.53	2.95
646	SLU 44	-95	-22	7929	90.8	-73.51	3.2
646	SLU 45	-96	-51	8079	95.65	-74.86	2.99
646	SLU 46	-96	-34	8075	94.16	-74.84	3.14
646	SLU 47	-96	-23	8020	92.31	-74.34	3.22
646	SLU 48	-97	-52	8169	97.15	-75.7	3.02
646	SLU 49	-97	-35	8166	95.67	-75.68	3.17
646	SLU 50	-97	-51	8117	96.28	-75.21	3
646	SLU 51	-97	-34	8113	94.8	-75.2	3.14
646	SLU 52	-99	-26	8765	101.33	-81.34	3.35
646	SLU 53	-100	-55	8915	106.17	-82.7	3.15
646	SLU 54	-100	-38	8911	104.69	-82.68	3.3
646	SLU 55	-100	-26	8856	102.83	-82.18	3.37
646	SLU 56	-101	-55	9005	107.67	-83.54	3.17
646	SLU 57	-101	-38	9002	106.19	-83.52	3.32
646	SLU 58	-101	-55	8953	106.81	-83.05	3.15
646	SLU 59	-101	-38	8949	105.32	-83.04	3.3
646	SLU 60	-100	-55	9130	108.3	-84.73	3.17
646	SLU 61	-100	-38	9126	106.82	-84.72	3.32
646	SLU 62	-101	-56	9220	109.81	-85.57	3.19
646	SLU 63	-101	-39	9216	108.33	-85.56	3.34
646	SLU 64	-103	-55	8936	108.44	-82.8	3.22
646	SLU 65	-103	-27	8930	105.97	-82.77	3.47
646	SLU 66	-104	-56	9080	110.81	-84.13	3.26
646	SLU 67	-104	-39	9076	109.33	-84.11	3.41
646	SLU 68	-104	-28	9020	107.47	-83.61	3.49
646	SLU 69	-105	-57	9170	112.32	-84.97	3.29
646	SLU 70	-105	-40	9166	110.83	-84.95	3.44
646	SLU 71	-105	-56	9117	111.45	-84.48	3.27
646	SLU 72	-105	-39	9113	109.97	-84.46	3.41
646	SLU 73	-107	-31	9766	116.49	-90.61	3.62
646	SLU 74	-108	-60	9916	121.33	-91.97	3.42
646	SLU 75	-108	-43	9912	119.85	-91.95	3.57
646	SLU 76	-108	-31	9856	118	-91.45	3.64
646	SLU 77	-109	-60	10006	122.84	-92.81	3.44
646	SLU 78	-109	-43	10002	121.36	-92.79	3.59
646	SLU 79	-109	-60	9953	121.97	-92.32	3.42
646	SLU 80	-109	-43	9949	120.49	-92.3	3.57
646	SLU 81	-108	-60	10131	123.47	-94	3.44
646	SLU 82	-108	-43	10127	121.99	-93.98	3.59
646	SLU 83	-109	-61	10221	124.97	-94.84	3.46
646	SLU 84	-109	-44	10217	123.49	-94.82	3.61
646	SLE RA 1	-77	-41	6654	80.08	-61.66	2.42
646	SLE RA 2	-77	-22	6650	78.43	-61.64	2.58
646	SLE RA 3	-78	-42	6750	81.66	-62.54	2.45
646	SLE RA 4	-78	-31	6747	80.67	-62.53	2.55
646	SLE RA 5	-78	-23	6710	79.44	-62.2	2.6
646	SLE RA 6	-79	-42	6810	82.67	-63.1	2.46
646	SLE RA 7	-79	-31	6807	81.68	-63.09	2.56
646	SLE RA 8	-79	-42	6775	82.09	-62.78	2.45
646	SLE RA 9	-79	-31	6772	81.1	-62.76	2.55
646	SLE RA 10	-80	-25	7207	85.45	-66.86	2.68
646	SLE RA 11	-81	-44	7307	88.68	-67.77	2.55
646	SLE RA 12	-81	-33	7304	87.69	-67.75	2.65
646	SLE RA 13	-81	-25	7267	86.45	-67.42	2.7
646	SLE RA 14	-82	-45	7367	89.68	-68.33	2.57
646	SLE RA 15	-82	-34	7365	88.69	-68.31	2.67
646	SLE RA 16	-81	-45	7332	89.1	-68	2.55
646	SLE RA 17	-81	-33	7330	88.12	-67.99	2.65
646	SLE RA 18	-81	-45	7450	90.1	-69.12	2.56
646	SLE RA 19	-81	-34	7448	89.11	-69.11	2.66
646	SLE RA 20	-82	-45	7511	91.1	-69.68	2.58
646	SLE RA 21	-82	-34	7508	90.12	-69.67	2.68
646	SLE FR 1	-77	-41	6654	80.08	-61.66	2.42
646	SLE FR 2	-77	-38	6653	79.75	-61.65	2.45

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
646	SLE FR 3	-78	-41	6678	80.48	-61.88	2.42
646	SLE FR 4	-78	-39	6892	82.76	-63.89	2.49
646	SLE FR 5	-79	-43	6917	83.49	-64.12	2.47
646	SLE FR 6	-79	-43	7052	85.09	-65.39	2.49
646	SLE QP 1	-77	-41	6654	80.08	-61.66	2.42
646	SLE QP 2	-78	-42	6893	83.09	-63.9	2.46
646	SLD 1	495	127	7510	78.09	-67.6	-3.3
646	SLD 2	497	57	7508	79.36	-67.57	-2.87
646	SLD 3	501	-210	7618	113.98	-68.15	-6.43
646	SLD 4	503	-280	7616	115.25	-68.12	-6
646	SLD 5	84	533	6914	26.92	-64.17	5.41
646	SLD 6	86	487	6913	27.76	-64.15	5.7
646	SLD 7	104	-592	7275	146.56	-66.02	-5.04
646	SLD 8	105	-638	7274	147.4	-66	-4.76
646	SLD 9	-262	553	6512	18.77	-61.79	9.68
646	SLD 10	-261	507	6511	19.61	-61.78	9.96
646	SLD 11	-243	-571	6873	138.41	-63.64	-0.78
646	SLD 12	-241	-618	6872	139.25	-63.62	-0.49
646	SLD 13	-660	196	6170	50.92	-59.67	10.92
646	SLD 14	-658	125	6168	52.2	-59.64	11.35
646	SLD 15	-654	-142	6278	86.81	-60.22	7.79
646	SLD 16	-652	-212	6276	88.09	-60.19	8.22
646	SLV 1	1264	380	8328	68.4	-72.52	-10.76
646	SLV 2	1268	215	8324	71.4	-72.45	-9.75
646	SLV 3	1278	-460	8598	158.36	-73.89	-18.6
646	SLV 4	1282	-625	8594	161.35	-73.82	-17.59
646	SLV 5	303	1389	6914	-58.31	-64.41	10.19
646	SLV 6	306	1278	6911	-56.29	-64.36	10.87
646	SLV 7	348	-1411	7816	241.54	-69	-15.94
646	SLV 8	352	-1522	7813	243.56	-68.95	-15.25
646	SLV 9	-508	1437	5973	-77.38	-58.84	20.17
646	SLV 10	-505	1326	5970	-75.37	-58.79	20.86
646	SLV 11	-462	-1363	6875	222.47	-63.43	-5.95
646	SLV 12	-459	-1474	6872	224.48	-63.38	-5.27
646	SLV 13	-1439	540	5192	4.82	-53.97	22.51
646	SLV 14	-1435	375	5188	7.82	-53.9	23.52
646	SLV 15	-1425	-300	5462	94.78	-55.34	14.67
646	SLV 16	-1421	-465	5458	97.77	-55.27	15.68
646	CRTFP Ux+	0	0	0	0	0	0
646	CRTFP Ux-	0	0	0	0	0	0
646	CRTFP Uy+	0	0	0	0	0	0
646	CRTFP Uy-	0	0	0	0	0	0
647	SLU 1	-77	-30	6730	-5.91	-0.53	2.51
647	SLU 2	-77	-1	6723	-8.2	-0.54	2.5
647	SLU 3	-78	-31	6881	-5.39	-0.55	2.56
647	SLU 4	-78	-13	6877	-6.76	-0.56	2.56
647	SLU 5	-77	-1	6819	-7.86	-0.56	2.53
647	SLU 6	-79	-31	6977	-5.05	-0.57	2.59
647	SLU 7	-79	-14	6973	-6.43	-0.57	2.58
647	SLU 8	-78	-31	6921	-5.24	-0.56	2.57
647	SLU 9	-78	-13	6917	-6.62	-0.57	2.56
647	SLU 10	-81	-3	7610	-8.4	-0.73	2.7
647	SLU 11	-82	-34	7768	-5.59	-0.74	2.76
647	SLU 12	-82	-16	7764	-6.96	-0.75	2.75
647	SLU 13	-82	-4	7706	-8.06	-0.75	2.73
647	SLU 14	-83	-34	7864	-5.25	-0.76	2.78
647	SLU 15	-83	-17	7860	-6.63	-0.76	2.78
647	SLU 16	-83	-34	7808	-5.44	-0.75	2.76
647	SLU 17	-83	-16	7804	-6.82	-0.76	2.76
647	SLU 18	-82	-34	7997	-6.19	-0.8	2.79
647	SLU 19	-82	-17	7993	-7.57	-0.81	2.79
647	SLU 20	-83	-35	8093	-5.86	-0.82	2.82
647	SLU 21	-83	-17	8089	-7.23	-0.82	2.81
647	SLU 22	-85	-34	7788	-3.51	-0.67	2.81
647	SLU 23	-85	-4	7782	-5.8	-0.68	2.8
647	SLU 24	-86	-35	7940	-2.99	-0.68	2.86
647	SLU 25	-86	-17	7936	-4.37	-0.69	2.85
647	SLU 26	-86	-5	7878	-5.47	-0.69	2.83
647	SLU 27	-87	-35	8036	-2.66	-0.7	2.89
647	SLU 28	-87	-18	8032	-4.03	-0.7	2.88
647	SLU 29	-87	-35	7980	-2.85	-0.69	2.86
647	SLU 30	-87	-17	7976	-4.22	-0.7	2.86
647	SLU 31	-89	-7	8669	-6	-0.86	3
647	SLU 32	-90	-38	8827	-3.19	-0.87	3.05
647	SLU 33	-90	-20	8823	-4.57	-0.88	3.05
647	SLU 34	-90	-8	8765	-5.67	-0.88	3.02
647	SLU 35	-91	-38	8923	-2.86	-0.89	3.08
647	SLU 36	-91	-21	8919	-4.23	-0.89	3.08
647	SLU 37	-91	-38	8867	-3.05	-0.88	3.06
647	SLU 38	-91	-20	8863	-4.42	-0.89	3.05
647	SLU 39	-91	-38	9056	-3.8	-0.93	3.09
647	SLU 40	-91	-20	9052	-5.17	-0.94	3.08
647	SLU 41	-92	-39	9151	-3.46	-0.95	3.11
647	SLU 42	-92	-21	9147	-4.84	-0.95	3.11
647	SLU 43	-97	-38	8386	-8.5	-0.65	3.17
647	SLU 44	-97	-8	8379	-10.79	-0.66	3.16
647	SLU 45	-98	-39	8537	-7.98	-0.67	3.21
647	SLU 46	-98	-21	8533	-9.35	-0.68	3.21
647	SLU 47	-98	-9	8475	-10.46	-0.67	3.18

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
647	SLU 48	-99	-39	8633	-7.65	-0.68	3.24
647	SLU 49	-99	-21	8629	-9.02	-0.69	3.24
647	SLU 50	-99	-39	8577	-7.83	-0.68	3.22
647	SLU 51	-99	-21	8573	-9.21	-0.68	3.21
647	SLU 52	-101	-11	9266	-10.99	-0.85	3.35
647	SLU 53	-102	-42	9424	-8.18	-0.86	3.41
647	SLU 54	-102	-24	9420	-9.55	-0.86	3.4
647	SLU 55	-102	-12	9362	-10.66	-0.86	3.38
647	SLU 56	-103	-42	9520	-7.85	-0.87	3.44
647	SLU 57	-103	-24	9516	-9.22	-0.88	3.43
647	SLU 58	-103	-42	9464	-8.03	-0.87	3.41
647	SLU 59	-103	-24	9460	-9.41	-0.87	3.41
647	SLU 60	-103	-42	9653	-8.79	-0.92	3.44
647	SLU 61	-103	-24	9649	-10.16	-0.92	3.44
647	SLU 62	-103	-43	9749	-8.45	-0.93	3.47
647	SLU 63	-103	-25	9745	-9.83	-0.94	3.46
647	SLU 64	-105	-42	9444	-6.1	-0.78	3.46
647	SLU 65	-105	-12	9438	-8.4	-0.79	3.45
647	SLU 66	-107	-43	9596	-5.58	-0.8	3.51
647	SLU 67	-107	-25	9592	-6.96	-0.81	3.51
647	SLU 68	-106	-13	9533	-8.06	-0.8	3.48
647	SLU 69	-107	-43	9692	-5.25	-0.81	3.54
647	SLU 70	-107	-25	9688	-6.63	-0.82	3.53
647	SLU 71	-107	-43	9636	-5.44	-0.81	3.52
647	SLU 72	-107	-25	9632	-6.81	-0.81	3.51
647	SLU 73	-109	-15	10325	-8.6	-0.98	3.65
647	SLU 74	-111	-46	10483	-5.78	-0.99	3.71
647	SLU 75	-111	-28	10479	-7.16	-0.99	3.7
647	SLU 76	-110	-16	10421	-8.26	-0.99	3.68
647	SLU 77	-112	-46	10579	-5.45	-1	3.73
647	SLU 78	-112	-28	10575	-6.83	-1.01	3.73
647	SLU 79	-111	-46	10523	-5.64	-1	3.71
647	SLU 80	-111	-28	10519	-7.01	-1	3.71
647	SLU 81	-111	-46	10711	-6.39	-1.05	3.74
647	SLU 82	-111	-28	10707	-7.77	-1.05	3.74
647	SLU 83	-112	-47	10807	-6.06	-1.06	3.77
647	SLU 84	-112	-29	10803	-7.43	-1.07	3.76
647	SLE RA 1	-79	-31	7032	-5.22	-0.57	2.6
647	SLE RA 2	-79	-12	7028	-6.75	-0.58	2.59
647	SLE RA 3	-80	-32	7133	-4.88	-0.58	2.63
647	SLE RA 4	-80	-20	7131	-5.79	-0.59	2.63
647	SLE RA 5	-80	-12	7092	-6.53	-0.59	2.61
647	SLE RA 6	-81	-32	7197	-4.65	-0.59	2.65
647	SLE RA 7	-81	-20	7195	-5.57	-0.6	2.65
647	SLE RA 8	-80	-32	7160	-4.78	-0.59	2.63
647	SLE RA 9	-80	-20	7157	-5.69	-0.59	2.63
647	SLE RA 10	-82	-14	7619	-6.88	-0.7	2.72
647	SLE RA 11	-83	-34	7725	-5.01	-0.71	2.76
647	SLE RA 12	-83	-22	7722	-5.93	-0.71	2.76
647	SLE RA 13	-82	-14	7683	-6.66	-0.71	2.74
647	SLE RA 14	-83	-34	7789	-4.79	-0.72	2.78
647	SLE RA 15	-83	-22	7786	-5.7	-0.72	2.78
647	SLE RA 16	-83	-34	7751	-4.91	-0.72	2.76
647	SLE RA 17	-83	-22	7749	-5.83	-0.72	2.76
647	SLE RA 18	-83	-34	7877	-5.41	-0.75	2.78
647	SLE RA 19	-83	-22	7874	-6.33	-0.75	2.78
647	SLE RA 20	-83	-34	7941	-5.19	-0.76	2.8
647	SLE RA 21	-83	-23	7938	-6.11	-0.76	2.8
647	SLE FR 1	-79	-31	7032	-5.22	-0.57	2.6
647	SLE FR 2	-79	-27	7031	-5.53	-0.57	2.6
647	SLE FR 3	-79	-31	7058	-5.13	-0.58	2.6
647	SLE FR 4	-80	-28	7285	-5.58	-0.63	2.65
647	SLE FR 5	-80	-32	7311	-5.19	-0.63	2.66
647	SLE FR 6	-81	-33	7455	-5.32	-0.66	2.69
647	SLE QP 1	-79	-31	7032	-5.22	-0.57	2.6
647	SLE QP 2	-80	-32	7286	-5.28	-0.63	2.65
647	SLD 1	525	148	7855	-16.04	2.13	3.35
647	SLD 2	527	80	7853	-14.85	2.16	4.4
647	SLD 3	531	-207	7966	17.36	2.25	3.07
647	SLD 4	533	-275	7964	18.56	2.28	4.12
647	SLD 5	92	574	7289	-59.38	0.01	3.09
647	SLD 6	93	529	7288	-58.59	0.03	3.78
647	SLD 7	112	-612	7658	51.95	0.42	2.17
647	SLD 8	114	-657	7656	52.74	0.44	2.87
647	SLD 9	-274	592	6915	-63.3	-1.69	2.44
647	SLD 10	-272	547	6913	-62.51	-1.67	3.13
647	SLD 11	-253	-593	7283	48.03	-1.28	1.52
647	SLD 12	-252	-638	7282	48.82	-1.26	2.22
647	SLD 13	-693	211	6607	-29.11	-3.53	1.18
647	SLD 14	-691	143	6605	-27.91	-3.51	2.23
647	SLD 15	-687	-144	6718	4.29	-3.41	0.91
647	SLD 16	-685	-213	6716	5.49	-3.38	1.96
647	SLV 1	1335	418	8610	-33.25	5.82	4.3
647	SLV 2	1340	257	8605	-30.43	5.89	6.77
647	SLV 3	1350	-468	8887	50.47	6.12	3.6
647	SLV 4	1355	-628	8882	53.29	6.19	6.07
647	SLV 5	322	1476	7264	-141.17	0.84	3.75
647	SLV 6	325	1367	7261	-139.27	0.88	5.41
647	SLV 7	370	-1476	8187	137.89	1.84	1.42

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
647	SLV 8	373	-1584	8183	139.79	1.89	3.08
647	SLV 9	-533	1520	6388	-150.35	-3.14	2.23
647	SLV 10	-530	1411	6384	-148.45	-3.09	3.89
647	SLV 11	-485	-1432	7310	128.71	-2.13	-0.1
647	SLV 12	-482	-1540	7307	130.61	-2.09	1.56
647	SLV 13	-1515	564	5689	-63.85	-7.44	-0.77
647	SLV 14	-1510	404	5684	-61.03	-7.37	1.71
647	SLV 15	-1500	-321	5966	19.87	-7.14	-1.46
647	SLV 16	-1495	-482	5961	22.69	-7.07	1.01
647	CRTFP Ux+	0	0	0	0	0	0
647	CRTFP Ux-	0	0	0	0	0	0
647	CRTFP Uy+	0	0	0	0	0	0
647	CRTFP Uy-	0	0	0	0	0	0
648	SLU 1	-75	-16	6733	-7.45	0.37	2.78
648	SLU 2	-75	14	6727	-9.52	0.35	2.78
648	SLU 3	-76	-16	6885	-7.02	0.38	2.84
648	SLU 4	-76	2	6881	-8.27	0.36	2.84
648	SLU 5	-75	14	6823	-9.25	0.35	2.81
648	SLU 6	-77	-16	6981	-6.75	0.38	2.87
648	SLU 7	-77	1	6977	-7.99	0.36	2.87
648	SLU 8	-76	-16	6925	-6.91	0.37	2.84
648	SLU 9	-76	1	6921	-8.15	0.36	2.84
648	SLU 10	-79	12	7618	-10.03	0.29	2.99
648	SLU 11	-80	-18	7776	-7.54	0.32	3.04
648	SLU 12	-80	0	7772	-8.78	0.31	3.04
648	SLU 13	-80	12	7714	-9.76	0.3	3.02
648	SLU 14	-81	-18	7872	-7.27	0.32	3.07
648	SLU 15	-81	-1	7868	-8.51	0.31	3.07
648	SLU 16	-81	-18	7816	-7.42	0.32	3.05
648	SLU 17	-81	0	7812	-8.66	0.31	3.05
648	SLU 18	-81	-18	8006	-8.18	0.29	3.08
648	SLU 19	-81	0	8002	-9.42	0.28	3.08
648	SLU 20	-81	-19	8102	-7.91	0.3	3.11
648	SLU 21	-81	-1	8098	-9.15	0.28	3.11
648	SLU 22	-83	-18	7793	-5.47	0.4	3.1
648	SLU 23	-83	12	7787	-7.53	0.38	3.11
648	SLU 24	-84	-18	7945	-5.04	0.4	3.16
648	SLU 25	-84	0	7941	-6.28	0.39	3.16
648	SLU 26	-84	11	7883	-7.26	0.38	3.14
648	SLU 27	-85	-19	8041	-4.77	0.41	3.19
648	SLU 28	-85	-1	8038	-6.01	0.39	3.19
648	SLU 29	-85	-19	7985	-4.92	0.4	3.16
648	SLU 30	-85	-1	7982	-6.17	0.39	3.17
648	SLU 31	-87	10	8678	-8.05	0.32	3.31
648	SLU 32	-89	-20	8836	-5.55	0.35	3.36
648	SLU 33	-88	-2	8832	-6.79	0.34	3.37
648	SLU 34	-88	10	8774	-7.78	0.32	3.34
648	SLU 35	-89	-20	8932	-5.28	0.35	3.39
648	SLU 36	-89	-3	8928	-6.52	0.34	3.4
648	SLU 37	-89	-20	8876	-5.44	0.35	3.37
648	SLU 38	-89	-3	8873	-6.68	0.34	3.37
648	SLU 39	-89	-20	9066	-6.2	0.32	3.4
648	SLU 40	-89	-3	9062	-7.44	0.31	3.4
648	SLU 41	-90	-21	9162	-5.93	0.32	3.43
648	SLU 42	-90	-3	9158	-7.17	0.31	3.43
648	SLU 43	-94	-20	8389	-10.37	0.47	3.51
648	SLU 44	-94	10	8383	-12.43	0.45	3.51
648	SLU 45	-96	-20	8541	-9.94	0.48	3.56
648	SLU 46	-96	-2	8537	-11.18	0.46	3.56
648	SLU 47	-95	10	8479	-12.16	0.45	3.54
648	SLU 48	-97	-20	8637	-9.67	0.48	3.59
648	SLU 49	-97	-3	8633	-10.91	0.46	3.59
648	SLU 50	-96	-20	8581	-9.83	0.48	3.57
648	SLU 51	-96	-3	8577	-11.07	0.46	3.57
648	SLU 52	-98	8	9274	-12.95	0.39	3.71
648	SLU 53	-100	-22	9432	-10.45	0.42	3.77
648	SLU 54	-100	-4	9428	-11.69	0.41	3.77
648	SLU 55	-99	8	9370	-12.68	0.4	3.74
648	SLU 56	-101	-22	9528	-10.18	0.42	3.8
648	SLU 57	-101	-4	9524	-11.42	0.41	3.8
648	SLU 58	-100	-22	9472	-10.34	0.42	3.77
648	SLU 59	-100	-4	9468	-11.58	0.41	3.77
648	SLU 60	-100	-22	9662	-11.1	0.39	3.8
648	SLU 61	-100	-4	9658	-12.34	0.38	3.8
648	SLU 62	-101	-23	9758	-10.83	0.4	3.83
648	SLU 63	-101	-5	9754	-12.07	0.38	3.83
648	SLU 64	-102	-22	9449	-8.38	0.5	3.83
648	SLU 65	-102	8	9443	-10.45	0.48	3.83
648	SLU 66	-104	-22	9601	-7.96	0.51	3.88
648	SLU 67	-104	-4	9598	-9.2	0.49	3.88
648	SLU 68	-103	8	9539	-10.18	0.48	3.86
648	SLU 69	-105	-23	9697	-7.68	0.51	3.91
648	SLU 70	-105	-5	9694	-8.93	0.49	3.91
648	SLU 71	-104	-23	9642	-7.84	0.5	3.89
648	SLU 72	-104	-5	9638	-9.08	0.49	3.89
648	SLU 73	-106	6	10334	-10.96	0.42	4.04
648	SLU 74	-108	-24	10492	-8.47	0.45	4.09
648	SLU 75	-108	-6	10489	-9.71	0.44	4.09
648	SLU 76	-107	6	10430	-10.69	0.43	4.07

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
648	SLU 77	-109	-24	10588	-8.2	0.45	4.12
648	SLU 78	-109	-7	10585	-9.44	0.44	4.12
648	SLU 79	-108	-24	10533	-8.35	0.45	4.09
648	SLU 80	-108	-7	10529	-9.59	0.44	4.1
648	SLU 81	-108	-24	10722	-9.12	0.42	4.12
648	SLU 82	-108	-7	10719	-10.36	0.41	4.12
648	SLU 83	-109	-25	10818	-8.84	0.43	4.15
648	SLU 84	-109	-7	10815	-10.08	0.41	4.15
648	SLE RA 1	-77	-16	7036	-6.88	0.38	2.87
648	SLE RA 2	-77	4	7032	-8.26	0.36	2.88
648	SLE RA 3	-78	-17	7137	-6.6	0.38	2.91
648	SLE RA 4	-78	-5	7135	-7.43	0.37	2.91
648	SLE RA 5	-78	3	7096	-8.08	0.36	2.9
648	SLE RA 6	-79	-17	7201	-6.42	0.38	2.93
648	SLE RA 7	-79	-5	7199	-7.25	0.37	2.93
648	SLE RA 8	-78	-17	7164	-6.52	0.38	2.91
648	SLE RA 9	-78	-5	7161	-7.35	0.37	2.91
648	SLE RA 10	-80	2	7626	-8.6	0.33	3.01
648	SLE RA 11	-81	-18	7731	-6.94	0.35	3.05
648	SLE RA 12	-81	-6	7729	-7.77	0.34	3.05
648	SLE RA 13	-80	2	7690	-8.42	0.33	3.03
648	SLE RA 14	-81	-18	7795	-6.76	0.35	3.07
648	SLE RA 15	-81	-6	7793	-7.59	0.34	3.07
648	SLE RA 16	-81	-18	7758	-6.87	0.35	3.05
648	SLE RA 17	-81	-6	7755	-7.69	0.34	3.05
648	SLE RA 18	-81	-18	7884	-7.37	0.33	3.07
648	SLE RA 19	-81	-6	7882	-8.2	0.32	3.07
648	SLE RA 20	-82	-18	7948	-7.19	0.33	3.09
648	SLE RA 21	-82	-6	7946	-8.02	0.32	3.09
648	SLE FR 1	-77	-16	7036	-6.88	0.38	2.87
648	SLE FR 2	-77	-12	7035	-7.16	0.38	2.87
648	SLE FR 3	-77	-16	7061	-6.81	0.38	2.88
648	SLE FR 4	-78	-13	7289	-7.31	0.36	2.93
648	SLE FR 5	-78	-17	7316	-6.96	0.36	2.94
648	SLE FR 6	-79	-17	7460	-7.13	0.35	2.97
648	SLE QP 1	-77	-16	7036	-6.88	0.38	2.87
648	SLE QP 2	-78	-17	7290	-7.03	0.36	2.93
648	SLD 1	527	167	7769	-15.26	3.35	3.92
648	SLD 2	529	104	7765	-14.22	3.39	4.87
648	SLD 3	534	-190	7873	15.15	3.64	3.47
648	SLD 4	536	-253	7870	16.19	3.68	4.42
648	SLD 5	94	591	7277	-55.8	0.81	3.73
648	SLD 6	95	550	7274	-55.12	0.84	4.36
648	SLD 7	114	-599	7624	45.55	1.77	2.25
648	SLD 8	116	-640	7621	46.24	1.81	2.88
648	SLD 9	-272	607	6959	-60.3	-1.08	2.99
648	SLD 10	-270	565	6957	-59.61	-1.05	3.62
648	SLD 11	-252	-583	7306	41.05	-0.12	1.51
648	SLD 12	-250	-625	7304	41.74	-0.08	2.13
648	SLD 13	-692	219	6711	-30.25	-2.96	1.44
648	SLD 14	-690	156	6707	-29.21	-2.91	2.39
648	SLD 15	-686	-138	6815	0.16	-2.67	1
648	SLD 16	-684	-201	6812	1.2	-2.62	1.95
648	SLV 1	1339	441	8402	-28.81	7.32	5.28
648	SLV 2	1343	292	8394	-26.37	7.44	7.51
648	SLV 3	1353	-448	8663	47.4	8.04	4.15
648	SLV 4	1358	-597	8654	49.84	8.16	6.38
648	SLV 5	325	1496	7230	-129.61	1.34	4.93
648	SLV 6	328	1396	7225	-127.96	1.42	6.43
648	SLV 7	372	-1467	8099	124.43	3.73	1.17
648	SLV 8	375	-1567	8093	126.07	3.81	2.67
648	SLV 9	-531	1533	6487	-140.13	-3.08	3.2
648	SLV 10	-528	1433	6482	-138.49	-3.01	4.7
648	SLV 11	-484	-1430	7356	113.9	-0.69	-0.57
648	SLV 12	-481	-1530	7350	115.54	-0.62	0.93
648	SLV 13	-1514	563	5926	-63.9	-7.43	-0.51
648	SLV 14	-1509	415	5918	-61.46	-7.32	1.72
648	SLV 15	-1500	-326	6187	12.31	-6.71	-1.64
648	SLV 16	-1495	-474	6178	14.75	-6.6	0.59
648	CRTFP Ux+	0	0	0	0	0	0
648	CRTFP Ux-	0	0	0	0	0	0
648	CRTFP Uy+	0	0	0	0	0	0
648	CRTFP Uy-	0	0	0	0	0	0
649	SLU 1	-73	-1	6704	-9.01	1.45	2.6
649	SLU 2	-73	29	6699	-10.85	1.42	2.62
649	SLU 3	-74	-1	6855	-8.67	1.48	2.66
649	SLU 4	-74	17	6852	-9.78	1.47	2.67
649	SLU 5	-74	29	6795	-10.64	1.44	2.65
649	SLU 6	-75	-1	6951	-8.46	1.5	2.68
649	SLU 7	-75	17	6948	-9.57	1.49	2.7
649	SLU 8	-75	-1	6896	-8.59	1.49	2.66
649	SLU 9	-75	17	6892	-9.7	1.47	2.67
649	SLU 10	-77	28	7589	-11.68	1.53	2.8
649	SLU 11	-79	-2	7746	-9.5	1.59	2.83
649	SLU 12	-79	16	7742	-10.61	1.58	2.85
649	SLU 13	-78	28	7685	-11.47	1.55	2.83
649	SLU 14	-80	-2	7841	-9.29	1.61	2.86
649	SLU 15	-80	16	7838	-10.4	1.6	2.87
649	SLU 16	-79	-2	7786	-9.42	1.6	2.84

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
649	SLU 17	-79	16	7783	-10.52	1.58	2.85
649	SLU 18	-79	-2	7976	-10.19	1.61	2.86
649	SLU 19	-79	16	7973	-11.3	1.59	2.87
649	SLU 20	-80	-2	8071	-9.98	1.63	2.89
649	SLU 21	-80	16	8068	-11.09	1.61	2.9
649	SLU 22	-81	-1	7761	-7.43	1.67	2.9
649	SLU 23	-81	28	7755	-9.27	1.64	2.92
649	SLU 24	-83	-1	7912	-7.09	1.71	2.95
649	SLU 25	-82	16	7909	-8.2	1.69	2.97
649	SLU 26	-82	28	7851	-9.06	1.66	2.95
649	SLU 27	-83	-2	8008	-6.89	1.73	2.98
649	SLU 28	-83	16	8005	-7.99	1.71	2.99
649	SLU 29	-83	-2	7952	-7.01	1.71	2.96
649	SLU 30	-83	16	7949	-8.12	1.7	2.97
649	SLU 31	-85	28	8645	-10.1	1.75	3.1
649	SLU 32	-87	-2	8802	-7.92	1.82	3.13
649	SLU 33	-87	16	8799	-9.03	1.8	3.15
649	SLU 34	-86	27	8741	-9.89	1.77	3.13
649	SLU 35	-88	-2	8898	-7.71	1.84	3.16
649	SLU 36	-88	15	8895	-8.82	1.82	3.17
649	SLU 37	-87	-3	8842	-7.84	1.82	3.14
649	SLU 38	-87	15	8839	-8.94	1.8	3.15
649	SLU 39	-87	-2	9032	-8.61	1.83	3.16
649	SLU 40	-87	15	9029	-9.72	1.81	3.17
649	SLU 41	-88	-3	9128	-8.4	1.85	3.19
649	SLU 42	-88	15	9125	-9.51	1.83	3.2
649	SLU 43	-92	-1	8353	-12.25	1.81	3.28
649	SLU 44	-92	29	8348	-14.1	1.78	3.3
649	SLU 45	-93	-1	8504	-11.92	1.84	3.33
649	SLU 46	-93	17	8501	-13.02	1.82	3.35
649	SLU 47	-93	29	8444	-13.89	1.8	3.33
649	SLU 48	-94	-1	8600	-11.71	1.86	3.36
649	SLU 49	-94	17	8597	-12.81	1.85	3.37
649	SLU 50	-94	-1	8545	-11.83	1.85	3.34
649	SLU 51	-94	16	8541	-12.94	1.83	3.35
649	SLU 52	-96	28	9238	-14.92	1.89	3.48
649	SLU 53	-98	-2	9395	-12.74	1.95	3.51
649	SLU 54	-98	16	9391	-13.85	1.93	3.53
649	SLU 55	-97	28	9334	-14.71	1.91	3.51
649	SLU 56	-99	-2	9490	-12.53	1.97	3.54
649	SLU 57	-99	16	9487	-13.64	1.95	3.55
649	SLU 58	-98	-2	9435	-12.66	1.96	3.52
649	SLU 59	-98	16	9432	-13.77	1.94	3.53
649	SLU 60	-98	-2	9625	-13.43	1.96	3.54
649	SLU 61	-98	16	9622	-14.54	1.95	3.55
649	SLU 62	-99	-2	9720	-13.22	1.99	3.57
649	SLU 63	-99	16	9717	-14.33	1.97	3.58
649	SLU 64	-100	-1	9410	-10.67	2.03	3.58
649	SLU 65	-100	28	9404	-12.52	2	3.6
649	SLU 66	-102	-2	9561	-10.34	2.06	3.63
649	SLU 67	-102	16	9558	-11.44	2.05	3.65
649	SLU 68	-101	28	9500	-12.31	2.02	3.63
649	SLU 69	-102	-2	9657	-10.13	2.09	3.66
649	SLU 70	-102	16	9654	-11.24	2.07	3.67
649	SLU 71	-102	-2	9601	-10.25	2.07	3.64
649	SLU 72	-102	16	9598	-11.36	2.05	3.65
649	SLU 73	-104	28	10294	-13.34	2.11	3.78
649	SLU 74	-106	-2	10451	-11.16	2.17	3.81
649	SLU 75	-106	16	10448	-12.27	2.16	3.82
649	SLU 76	-105	27	10390	-13.14	2.13	3.81
649	SLU 77	-107	-3	10547	-10.96	2.19	3.84
649	SLU 78	-107	15	10544	-12.06	2.18	3.85
649	SLU 79	-106	-3	10491	-11.08	2.18	3.82
649	SLU 80	-106	15	10488	-12.19	2.16	3.83
649	SLU 81	-106	-2	10681	-11.85	2.19	3.84
649	SLU 82	-106	15	10678	-12.96	2.17	3.85
649	SLU 83	-107	-3	10777	-11.64	2.21	3.87
649	SLU 84	-107	15	10774	-12.75	2.19	3.88
649	SLE RA 1	-75	-1	7006	-8.56	1.51	2.69
649	SLE RA 2	-75	19	7002	-9.79	1.49	2.7
649	SLE RA 3	-76	-1	7107	-8.33	1.54	2.72
649	SLE RA 4	-76	11	7105	-9.07	1.52	2.73
649	SLE RA 5	-76	19	7066	-9.65	1.51	2.72
649	SLE RA 6	-77	-1	7171	-8.19	1.55	2.74
649	SLE RA 7	-77	11	7169	-8.93	1.54	2.75
649	SLE RA 8	-76	-1	7134	-8.28	1.54	2.73
649	SLE RA 9	-76	11	7132	-9.02	1.53	2.74
649	SLE RA 10	-78	18	7596	-10.34	1.57	2.82
649	SLE RA 11	-79	-2	7700	-8.88	1.61	2.84
649	SLE RA 12	-79	10	7698	-9.62	1.6	2.85
649	SLE RA 13	-79	18	7660	-10.2	1.58	2.84
649	SLE RA 14	-80	-2	7764	-8.75	1.62	2.86
649	SLE RA 15	-80	10	7762	-9.48	1.61	2.87
649	SLE RA 16	-79	-2	7727	-8.83	1.61	2.85
649	SLE RA 17	-79	10	7725	-9.57	1.6	2.85
649	SLE RA 18	-79	-2	7854	-9.34	1.62	2.86
649	SLE RA 19	-79	10	7852	-10.08	1.61	2.87
649	SLE RA 20	-80	-2	7918	-9.2	1.63	2.88
649	SLE RA 21	-80	10	7915	-9.94	1.62	2.89

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
649	SLE FR 1	-75	-1	7006	-8.56	1.51	2.69
649	SLE FR 2	-75	3	7005	-8.8	1.51	2.69
649	SLE FR 3	-75	-1	7032	-8.5	1.52	2.7
649	SLE FR 4	-76	3	7260	-9.04	1.54	2.74
649	SLE FR 5	-77	-1	7286	-8.74	1.55	2.75
649	SLE FR 6	-77	-1	7430	-8.95	1.57	2.78
649	SLE QP 1	-75	-1	7006	-8.56	1.51	2.69
649	SLE QP 2	-76	-1	7260	-8.79	1.54	2.74
649	SLD 1	529	187	7643	-14.48	4.64	3.93
649	SLD 2	531	128	7637	-13.61	4.7	4.8
649	SLD 3	536	-173	7736	12.97	5.03	3.26
649	SLD 4	537	-231	7731	13.84	5.08	4.14
649	SLD 5	96	611	7234	-52.29	1.88	3.95
649	SLD 6	97	572	7231	-51.71	1.92	4.52
649	SLD 7	116	-588	7546	39.21	3.16	1.73
649	SLD 8	117	-626	7542	39.79	3.2	2.31
649	SLD 9	-270	624	6978	-57.37	-0.11	3.17
649	SLD 10	-269	585	6975	-56.79	-0.07	3.75
649	SLD 11	-250	-575	7290	34.13	1.17	0.96
649	SLD 12	-249	-613	7286	34.71	1.21	1.54
649	SLD 13	-690	229	6790	-31.43	-1.99	1.34
649	SLD 14	-688	171	6785	-30.55	-1.94	2.22
649	SLD 15	-684	-131	6883	-3.98	-1.61	0.68
649	SLD 16	-682	-189	6878	-3.1	-1.55	1.56
649	SLV 1	1341	466	8147	-24.39	8.76	5.57
649	SLV 2	1346	328	8135	-22.33	8.89	7.63
649	SLV 3	1355	-430	8381	44.41	9.72	3.89
649	SLV 4	1360	-567	8369	46.47	9.85	5.95
649	SLV 5	327	1523	7174	-118.21	2.23	5.75
649	SLV 6	330	1430	7166	-116.82	2.32	7.14
649	SLV 7	374	-1462	7954	111.13	5.42	0.15
649	SLV 8	377	-1555	7945	112.52	5.51	1.54
649	SLV 9	-529	1553	6575	-130.1	-2.42	3.94
649	SLV 10	-526	1460	6567	-128.72	-2.34	5.33
649	SLV 11	-482	-1433	7355	99.23	0.77	-1.66
649	SLV 12	-479	-1525	7347	100.62	0.85	-0.27
649	SLV 13	-1512	565	6152	-64.05	-6.76	-0.47
649	SLV 14	-1508	427	6139	-61.99	-6.63	1.59
649	SLV 15	-1498	-331	6386	4.75	-5.8	-2.15
649	SLV 16	-1494	-468	6373	6.81	-5.67	-0.09
649	CRTFP Ux+	0	0	0	0	0	0
649	CRTFP Ux-	0	0	0	0	0	0
649	CRTFP Uy+	0	0	0	0	0	0
649	CRTFP Uy-	0	0	0	0	0	0
650	SLU 1	-71	12	6640	-10.57	2.59	1.98
650	SLU 2	-71	42	6636	-12.2	2.56	2.02
650	SLU 3	-73	12	6790	-10.33	2.66	2.02
650	SLU 4	-73	30	6787	-11.31	2.64	2.05
650	SLU 5	-72	42	6731	-12.05	2.6	2.04
650	SLU 6	-73	12	6885	-10.19	2.7	2.04
650	SLU 7	-73	30	6882	-11.16	2.68	2.07
650	SLU 8	-73	12	6830	-10.28	2.67	2.03
650	SLU 9	-73	30	6827	-11.26	2.65	2.05
650	SLU 10	-75	42	7520	-13.34	2.85	2.14
650	SLU 11	-77	12	7674	-11.48	2.94	2.14
650	SLU 12	-77	30	7671	-12.45	2.92	2.16
650	SLU 13	-76	42	7614	-13.2	2.89	2.16
650	SLU 14	-78	12	7769	-11.33	2.98	2.16
650	SLU 15	-78	30	7766	-12.3	2.96	2.18
650	SLU 16	-77	12	7714	-11.42	2.96	2.14
650	SLU 17	-77	30	7711	-12.4	2.94	2.16
650	SLU 18	-77	12	7903	-12.21	3	2.15
650	SLU 19	-77	30	7900	-13.18	2.98	2.17
650	SLU 20	-78	12	7998	-12.06	3.04	2.17
650	SLU 21	-78	30	7995	-13.03	3.02	2.19
650	SLU 22	-79	13	7686	-9.4	3.02	2.21
650	SLU 23	-79	43	7682	-11.03	2.99	2.25
650	SLU 24	-81	13	7836	-9.16	3.09	2.25
650	SLU 25	-81	31	7833	-10.13	3.07	2.27
650	SLU 26	-80	43	7777	-10.88	3.03	2.27
650	SLU 27	-82	13	7931	-9.01	3.13	2.27
650	SLU 28	-82	31	7928	-9.99	3.11	2.29
650	SLU 29	-81	13	7876	-9.11	3.1	2.25
650	SLU 30	-81	31	7873	-10.08	3.08	2.28
650	SLU 31	-84	43	8566	-12.17	3.28	2.36
650	SLU 32	-85	13	8720	-10.3	3.37	2.36
650	SLU 33	-85	31	8717	-11.28	3.35	2.39
650	SLU 34	-84	43	8661	-12.02	3.32	2.38
650	SLU 35	-86	13	8815	-10.15	3.41	2.39
650	SLU 36	-86	31	8812	-11.13	3.39	2.41
650	SLU 37	-85	13	8760	-10.25	3.39	2.37
650	SLU 38	-85	31	8757	-11.22	3.37	2.39
650	SLU 39	-86	13	8949	-11.03	3.43	2.37
650	SLU 40	-85	31	8946	-12.01	3.41	2.4
650	SLU 41	-86	13	9044	-10.89	3.47	2.39
650	SLU 42	-86	31	9041	-11.86	3.45	2.42
650	SLU 43	-90	15	8273	-14.15	3.22	2.5
650	SLU 44	-90	45	8269	-15.78	3.19	2.54
650	SLU 45	-91	15	8423	-13.91	3.29	2.54

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
650	SLU 46	-91	33	8421	-14.88	3.27	2.56
650	SLU 47	-90	45	8364	-15.63	3.23	2.56
650	SLU 48	-92	15	8518	-13.76	3.33	2.56
650	SLU 49	-92	33	8515	-14.74	3.31	2.58
650	SLU 50	-91	15	8463	-13.86	3.3	2.54
650	SLU 51	-91	33	8460	-14.83	3.28	2.57
650	SLU 52	-94	45	9153	-16.92	3.48	2.65
650	SLU 53	-96	15	9307	-15.05	3.57	2.65
650	SLU 54	-95	33	9305	-16.03	3.55	2.68
650	SLU 55	-95	45	9248	-16.77	3.52	2.68
650	SLU 56	-96	15	9402	-14.9	3.61	2.68
650	SLU 57	-96	33	9399	-15.88	3.59	2.7
650	SLU 58	-96	15	9347	-15	3.59	2.66
650	SLU 59	-96	33	9344	-15.97	3.57	2.68
650	SLU 60	-96	15	9536	-15.78	3.63	2.66
650	SLU 61	-96	33	9534	-16.76	3.61	2.69
650	SLU 62	-97	15	9631	-15.63	3.67	2.69
650	SLU 63	-97	33	9628	-16.61	3.65	2.71
650	SLU 64	-98	16	9320	-12.98	3.65	2.73
650	SLU 65	-98	46	9315	-14.6	3.62	2.76
650	SLU 66	-99	16	9469	-12.73	3.72	2.77
650	SLU 67	-99	34	9467	-13.71	3.7	2.79
650	SLU 68	-99	46	9410	-14.45	3.66	2.79
650	SLU 69	-100	16	9564	-12.59	3.76	2.79
650	SLU 70	-100	34	9562	-13.56	3.74	2.81
650	SLU 71	-100	16	9509	-12.68	3.73	2.77
650	SLU 72	-100	34	9507	-13.66	3.71	2.79
650	SLU 73	-102	46	10199	-15.74	3.91	2.88
650	SLU 74	-104	16	10353	-13.88	4	2.88
650	SLU 75	-104	34	10351	-14.85	3.98	2.9
650	SLU 76	-103	46	10294	-15.6	3.95	2.9
650	SLU 77	-105	16	10448	-13.73	4.04	2.9
650	SLU 78	-105	34	10445	-14.7	4.02	2.93
650	SLU 79	-104	16	10393	-13.82	4.02	2.88
650	SLU 80	-104	34	10390	-14.8	4	2.91
650	SLU 81	-104	16	10582	-14.61	4.06	2.89
650	SLU 82	-104	34	10580	-15.58	4.04	2.91
650	SLU 83	-105	16	10677	-14.46	4.1	2.91
650	SLU 84	-105	34	10675	-15.44	4.08	2.94
650	SLE RA 1	-73	12	6939	-10.24	2.72	2.05
650	SLE RA 2	-73	32	6936	-11.32	2.7	2.07
650	SLE RA 3	-74	12	7039	-10.08	2.76	2.07
650	SLE RA 4	-74	24	7037	-10.73	2.75	2.09
650	SLE RA 5	-74	32	6999	-11.23	2.72	2.09
650	SLE RA 6	-75	12	7102	-9.98	2.78	2.09
650	SLE RA 7	-75	24	7100	-10.63	2.77	2.1
650	SLE RA 8	-75	12	7065	-10.04	2.77	2.08
650	SLE RA 9	-75	24	7064	-10.69	2.76	2.09
650	SLE RA 10	-76	32	7525	-12.08	2.88	2.15
650	SLE RA 11	-77	12	7628	-10.84	2.95	2.15
650	SLE RA 12	-77	24	7626	-11.49	2.94	2.17
650	SLE RA 13	-77	32	7589	-11.99	2.91	2.16
650	SLE RA 14	-78	12	7691	-10.74	2.97	2.16
650	SLE RA 15	-78	24	7690	-11.39	2.96	2.18
650	SLE RA 16	-78	12	7655	-10.8	2.96	2.15
650	SLE RA 17	-78	24	7653	-11.46	2.95	2.17
650	SLE RA 18	-78	12	7781	-11.33	2.98	2.16
650	SLE RA 19	-78	24	7779	-11.98	2.97	2.17
650	SLE RA 20	-78	12	7844	-11.23	3.01	2.17
650	SLE RA 21	-78	24	7842	-11.88	3	2.19
650	SLE FR 1	-73	12	6939	-10.24	2.72	2.05
650	SLE FR 2	-73	16	6938	-10.46	2.71	2.05
650	SLE FR 3	-74	12	6964	-10.2	2.73	2.05
650	SLE FR 4	-75	16	7191	-10.78	2.79	2.09
650	SLE FR 5	-75	12	7217	-10.53	2.81	2.09
650	SLE FR 6	-75	12	7360	-10.78	2.85	2.1
650	SLE QP 1	-73	12	6939	-10.24	2.72	2.05
650	SLE QP 2	-75	12	7192	-10.57	2.8	2.08
650	SLD 1	537	203	7476	-13.73	5.91	3.35
650	SLD 2	539	149	7469	-13.01	5.96	4.19
650	SLD 3	531	-160	7557	10.8	6.3	2.47
650	SLD 4	533	-214	7550	11.52	6.35	3.31
650	SLD 5	118	631	7155	-48.85	3.13	3.64
650	SLD 6	119	595	7151	-48.37	3.16	4.2
650	SLD 7	98	-581	7425	32.92	4.43	0.71
650	SLD 8	99	-617	7421	33.39	4.47	1.27
650	SLD 9	-248	641	6963	-54.53	1.12	2.89
650	SLD 10	-247	605	6958	-54.05	1.16	3.45
650	SLD 11	-268	-570	7233	27.24	2.43	-0.04
650	SLD 12	-267	-606	7228	27.72	2.47	0.52
650	SLD 13	-682	239	6834	-32.65	-0.76	0.85
650	SLD 14	-680	184	6827	-31.94	-0.71	1.69
650	SLD 15	-688	-125	6915	-8.12	-0.37	-0.03
650	SLD 16	-686	-179	6908	-7.4	-0.31	0.81
650	SLV 1	1357	487	7849	-20	10.05	5.12
650	SLV 2	1361	360	7833	-18.31	10.17	7.09
650	SLV 3	1343	-418	8052	41.48	11.02	2.9
650	SLV 4	1347	-545	8036	43.17	11.15	4.87
650	SLV 5	375	1552	7084	-106.96	3.47	5.99

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
650	SLV 6	378	1466	7073	-105.82	3.55	7.31
650	SLV 7	328	-1466	7761	97.98	6.72	-1.4
650	SLV 8	331	-1552	7750	99.12	6.81	-0.08
650	SLV 9	-481	1577	6633	-120.25	-1.21	4.24
650	SLV 10	-478	1491	6622	-119.11	-1.13	5.56
650	SLV 11	-528	-1442	7310	84.69	2.04	-3.15
650	SLV 12	-525	-1527	7299	85.83	2.13	-1.83
650	SLV 13	-1496	570	6347	-64.3	-5.56	-0.71
650	SLV 14	-1492	443	6331	-62.62	-5.43	1.26
650	SLV 15	-1510	-336	6550	-2.82	-4.58	-2.93
650	SLV 16	-1506	-463	6534	-1.13	-4.46	-0.96
650	CRTFP Ux+	0	0	0	0	0	0
650	CRTFP Ux-	0	0	0	0	0	0
650	CRTFP Uy+	0	0	0	0	0	0
650	CRTFP Uy-	0	0	0	0	0	0
651	SLU 1	-69	20	6541	-12.16	3.62	0.91
651	SLU 2	-69	50	6538	-13.57	3.61	0.97
651	SLU 3	-71	21	6688	-12.01	3.71	0.94
651	SLU 4	-71	39	6686	-12.85	3.7	0.97
651	SLU 5	-70	50	6631	-13.48	3.66	0.98
651	SLU 6	-72	21	6782	-11.92	3.77	0.95
651	SLU 7	-71	39	6780	-12.77	3.76	0.98
651	SLU 8	-71	20	6728	-11.99	3.74	0.94
651	SLU 9	-71	38	6725	-12.83	3.73	0.97
651	SLU 10	-74	51	7410	-15.03	4.04	0.98
651	SLU 11	-75	21	7561	-13.47	4.15	0.95
651	SLU 12	-75	39	7559	-14.31	4.14	0.98
651	SLU 13	-75	51	7503	-14.94	4.1	0.99
651	SLU 14	-76	21	7654	-13.38	4.21	0.96
651	SLU 15	-76	39	7652	-14.23	4.2	0.99
651	SLU 16	-76	21	7600	-13.45	4.18	0.95
651	SLU 17	-75	39	7598	-14.29	4.16	0.98
651	SLU 18	-76	21	7787	-14.24	4.25	0.93
651	SLU 19	-76	39	7785	-15.09	4.24	0.97
651	SLU 20	-77	21	7881	-14.16	4.31	0.94
651	SLU 21	-77	39	7878	-15	4.3	0.98
651	SLU 22	-77	22	7571	-11.39	4.25	1.02
651	SLU 23	-77	52	7567	-12.8	4.23	1.07
651	SLU 24	-79	22	7718	-11.24	4.34	1.04
651	SLU 25	-79	41	7716	-12.08	4.33	1.07
651	SLU 26	-78	52	7660	-12.71	4.28	1.09
651	SLU 27	-80	22	7811	-11.15	4.39	1.05
651	SLU 28	-80	41	7809	-12	4.38	1.08
651	SLU 29	-79	22	7757	-11.22	4.36	1.04
651	SLU 30	-79	40	7755	-12.06	4.35	1.07
651	SLU 31	-82	53	8439	-14.26	4.67	1.09
651	SLU 32	-83	23	8590	-12.7	4.78	1.05
651	SLU 33	-83	41	8588	-13.54	4.76	1.09
651	SLU 34	-83	53	8533	-14.17	4.72	1.1
651	SLU 35	-84	23	8683	-12.61	4.83	1.06
651	SLU 36	-84	41	8681	-13.46	4.82	1.1
651	SLU 37	-84	23	8629	-12.68	4.8	1.05
651	SLU 38	-84	41	8627	-13.52	4.79	1.09
651	SLU 39	-84	23	8817	-13.47	4.87	1.04
651	SLU 40	-84	41	8815	-14.32	4.86	1.07
651	SLU 41	-85	23	8910	-13.39	4.93	1.05
651	SLU 42	-85	41	8908	-14.23	4.92	1.08
651	SLU 43	-87	26	8151	-16.07	4.5	1.15
651	SLU 44	-87	56	8147	-17.48	4.48	1.21
651	SLU 45	-89	26	8298	-15.92	4.59	1.17
651	SLU 46	-89	44	8296	-16.77	4.58	1.21
651	SLU 47	-88	56	8240	-17.39	4.54	1.22
651	SLU 48	-90	26	8391	-15.84	4.65	1.19
651	SLU 49	-89	44	8389	-16.68	4.63	1.22
651	SLU 50	-89	26	8337	-15.9	4.61	1.18
651	SLU 51	-89	44	8335	-16.75	4.6	1.21
651	SLU 52	-92	56	9019	-18.94	4.92	1.22
651	SLU 53	-93	26	9170	-17.38	5.03	1.19
651	SLU 54	-93	44	9168	-18.22	5.02	1.22
651	SLU 55	-93	56	9113	-18.85	4.97	1.23
651	SLU 56	-94	26	9263	-17.29	5.08	1.2
651	SLU 57	-94	44	9261	-18.14	5.07	1.23
651	SLU 58	-94	26	9209	-17.36	5.05	1.19
651	SLU 59	-93	44	9207	-18.2	5.04	1.22
651	SLU 60	-94	26	9397	-18.15	5.13	1.17
651	SLU 61	-94	44	9395	-19	5.11	1.21
651	SLU 62	-95	26	9490	-18.07	5.18	1.18
651	SLU 63	-95	44	9488	-18.91	5.17	1.22
651	SLU 64	-95	28	9180	-15.3	5.12	1.26
651	SLU 65	-95	58	9176	-16.71	5.1	1.31
651	SLU 66	-97	28	9327	-15.15	5.21	1.28
651	SLU 67	-97	46	9325	-16	5.2	1.31
651	SLU 68	-96	58	9270	-16.62	5.16	1.32
651	SLU 69	-98	28	9420	-15.07	5.27	1.29
651	SLU 70	-98	46	9418	-15.91	5.26	1.32
651	SLU 71	-97	28	9366	-15.13	5.23	1.28
651	SLU 72	-97	46	9364	-15.97	5.22	1.31
651	SLU 73	-100	58	10049	-18.17	5.54	1.33
651	SLU 74	-101	28	10200	-16.61	5.65	1.29

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
651	SLU 75	-101	46	10197	-17.45	5.64	1.32
651	SLU 76	-101	58	10142	-18.08	5.6	1.34
651	SLU 77	-102	28	10293	-16.52	5.71	1.3
651	SLU 78	-102	46	10291	-17.37	5.7	1.34
651	SLU 79	-102	28	10239	-16.59	5.67	1.29
651	SLU 80	-102	46	10237	-17.43	5.66	1.33
651	SLU 81	-102	28	10426	-17.38	5.75	1.28
651	SLU 82	-102	46	10424	-18.23	5.74	1.31
651	SLU 83	-103	28	10519	-17.3	5.8	1.29
651	SLU 84	-103	46	10517	-18.14	5.79	1.32
651	SLE RA 1	-71	21	6835	-11.94	3.8	0.94
651	SLE RA 2	-71	41	6833	-12.88	3.79	0.98
651	SLE RA 3	-72	21	6933	-11.84	3.86	0.96
651	SLE RA 4	-72	33	6932	-12.4	3.86	0.98
651	SLE RA 5	-72	41	6895	-12.82	3.83	0.99
651	SLE RA 6	-73	21	6996	-11.78	3.9	0.97
651	SLE RA 7	-73	33	6994	-12.35	3.89	0.99
651	SLE RA 8	-73	21	6960	-11.83	3.88	0.96
651	SLE RA 9	-73	33	6958	-12.39	3.87	0.98
651	SLE RA 10	-74	41	7414	-13.85	4.08	0.99
651	SLE RA 11	-76	21	7515	-12.81	4.16	0.97
651	SLE RA 12	-75	33	7514	-13.37	4.15	0.99
651	SLE RA 13	-75	41	7477	-13.79	4.12	1
651	SLE RA 14	-76	21	7577	-12.75	4.19	0.97
651	SLE RA 15	-76	33	7576	-13.32	4.19	1
651	SLE RA 16	-76	21	7541	-12.8	4.17	0.97
651	SLE RA 17	-76	33	7540	-13.36	4.16	0.99
651	SLE RA 18	-76	21	7666	-13.33	4.22	0.96
651	SLE RA 19	-76	33	7665	-13.89	4.21	0.98
651	SLE RA 20	-76	21	7728	-13.27	4.26	0.96
651	SLE RA 21	-76	33	7727	-13.83	4.25	0.99
651	SLE FR 1	-71	21	6835	-11.94	3.8	0.94
651	SLE FR 2	-71	25	6835	-12.13	3.8	0.95
651	SLE FR 3	-72	21	6860	-11.92	3.82	0.95
651	SLE FR 4	-73	25	7084	-12.54	3.93	0.96
651	SLE FR 5	-73	21	7109	-12.33	3.94	0.95
651	SLE FR 6	-74	21	7251	-12.63	4.01	0.95
651	SLE QP 1	-71	21	6835	-11.94	3.8	0.94
651	SLE QP 2	-73	21	7084	-12.36	3.93	0.95
651	SLD 1	539	246	7271	-12.99	6.96	2.15
651	SLD 2	540	196	7263	-12.43	7.01	3
651	SLD 3	533	-122	7342	8.66	7.23	1.11
651	SLD 4	534	-172	7333	9.22	7.27	1.96
651	SLD 5	119	656	7035	-45.48	4.43	2.74
651	SLD 6	121	624	7030	-45.11	4.46	3.3
651	SLD 7	99	-572	7270	26.68	5.31	-0.74
651	SLD 8	101	-605	7264	27.05	5.34	-0.18
651	SLD 9	-246	647	6905	-51.76	2.52	2.07
651	SLD 10	-245	614	6899	-51.39	2.55	2.63
651	SLD 11	-266	-582	7139	20.4	3.4	-1.4
651	SLD 12	-265	-614	7134	20.76	3.43	-0.84
651	SLD 13	-680	214	6836	-33.93	0.58	-0.06
651	SLD 14	-678	164	6827	-33.37	0.63	0.79
651	SLD 15	-686	-155	6906	-12.28	0.85	-1.1
651	SLD 16	-684	-204	6898	-11.73	0.89	-0.25
651	SLV 1	1358	576	7516	-15.62	11.01	3.85
651	SLV 2	1362	459	7496	-14.31	11.12	5.84
651	SLV 3	1344	-342	7692	38.62	11.67	1.23
651	SLV 4	1348	-459	7672	39.94	11.77	3.22
651	SLV 5	377	1602	6950	-95.86	5.04	5.43
651	SLV 6	380	1523	6936	-94.97	5.11	6.76
651	SLV 7	330	-1458	7538	84.97	7.22	-3.32
651	SLV 8	333	-1537	7525	85.85	7.3	-1.98
651	SLV 9	-478	1579	6644	-110.57	0.56	3.87
651	SLV 10	-476	1500	6631	-109.68	0.63	5.21
651	SLV 11	-525	-1481	7233	70.26	2.75	-4.87
651	SLV 12	-523	-1560	7219	71.15	2.82	-3.53
651	SLV 13	-1493	501	6497	-64.65	-3.92	-1.32
651	SLV 14	-1489	384	6477	-63.34	-3.81	0.67
651	SLV 15	-1508	-417	6673	-10.4	-3.26	-3.94
651	SLV 16	-1503	-535	6653	-9.09	-3.15	-1.95
651	CRTFP Ux+	0	0	0	0	0	0
651	CRTFP Ux-	0	0	0	0	0	0
651	CRTFP Uy+	0	0	0	0	0	0
651	CRTFP Uy-	0	0	0	0	0	0
652	SLU 1	-69	23	6590	35.46	-31.05	-0.07
652	SLU 2	-69	54	6586	34.22	-31.01	0.17
652	SLU 3	-70	23	6738	36.64	-31.74	-0.07
652	SLU 4	-70	42	6736	35.9	-31.71	0.08
652	SLU 5	-70	54	6680	34.96	-31.45	0.17
652	SLU 6	-71	23	6832	37.38	-32.18	-0.07
652	SLU 7	-71	42	6830	36.63	-32.15	0.08
652	SLU 8	-71	23	6777	36.93	-31.92	-0.07
652	SLU 9	-70	41	6775	36.19	-31.9	0.07
652	SLU 10	-73	54	7466	39.07	-35.2	0.07
652	SLU 11	-75	23	7618	41.49	-35.93	-0.17
652	SLU 12	-75	42	7616	40.75	-35.9	-0.02
652	SLU 13	-74	54	7560	39.8	-35.63	0.07
652	SLU 14	-76	23	7712	42.23	-36.36	-0.16

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
652	SLU 15	-76	42	7710	41.48	-36.34	-0.02
652	SLU 16	-75	23	7658	41.78	-36.11	-0.17
652	SLU 17	-75	42	7655	41.03	-36.09	-0.02
652	SLU 18	-76	23	7847	42.39	-37.03	-0.21
652	SLU 19	-76	42	7845	41.64	-37.01	-0.07
652	SLU 20	-77	23	7941	43.12	-37.47	-0.21
652	SLU 21	-76	42	7939	42.38	-37.44	-0.07
652	SLU 22	-77	25	7625	43.67	-35.86	-0.08
652	SLU 23	-77	56	7621	42.43	-35.82	0.16
652	SLU 24	-78	25	7773	44.85	-36.55	-0.07
652	SLU 25	-78	44	7771	44.11	-36.53	0.07
652	SLU 26	-78	56	7715	43.16	-36.26	0.16
652	SLU 27	-79	25	7867	45.58	-36.99	-0.07
652	SLU 28	-79	44	7865	44.84	-36.96	0.07
652	SLU 29	-79	25	7812	45.14	-36.74	-0.07
652	SLU 30	-79	44	7810	44.39	-36.71	0.07
652	SLU 31	-82	56	8501	47.28	-40.01	0.06
652	SLU 32	-83	25	8653	49.7	-40.74	-0.17
652	SLU 33	-83	44	8651	48.95	-40.71	-0.03
652	SLU 34	-83	56	8595	48.01	-40.44	0.06
652	SLU 35	-84	25	8747	50.43	-41.18	-0.17
652	SLU 36	-84	44	8745	49.69	-41.15	-0.03
652	SLU 37	-84	25	8693	49.99	-40.92	-0.17
652	SLU 38	-83	44	8690	49.24	-40.9	-0.03
652	SLU 39	-84	25	8882	50.6	-41.84	-0.22
652	SLU 40	-84	44	8880	49.85	-41.82	-0.07
652	SLU 41	-85	25	8976	51.33	-42.28	-0.22
652	SLU 42	-85	44	8974	50.59	-42.26	-0.07
652	SLU 43	-87	29	8212	43.29	-38.71	-0.09
652	SLU 44	-87	60	8208	42.05	-38.67	0.15
652	SLU 45	-88	29	8360	44.47	-39.4	-0.09
652	SLU 46	-88	48	8358	43.72	-39.38	0.06
652	SLU 47	-87	60	8302	42.78	-39.11	0.15
652	SLU 48	-89	29	8454	45.2	-39.84	-0.09
652	SLU 49	-89	48	8452	44.46	-39.82	0.06
652	SLU 50	-88	29	8399	44.76	-39.59	-0.09
652	SLU 51	-88	47	8397	44.01	-39.57	0.05
652	SLU 52	-91	60	9089	46.9	-42.86	0.05
652	SLU 53	-93	29	9240	49.32	-43.59	-0.18
652	SLU 54	-93	48	9238	48.57	-43.57	-0.04
652	SLU 55	-92	60	9182	47.63	-43.3	0.05
652	SLU 56	-94	29	9334	50.05	-44.03	-0.18
652	SLU 57	-94	48	9332	49.31	-44.01	-0.04
652	SLU 58	-93	29	9280	49.6	-43.78	-0.19
652	SLU 59	-93	48	9277	48.86	-43.75	-0.04
652	SLU 60	-93	29	9469	50.21	-44.69	-0.23
652	SLU 61	-93	48	9467	49.47	-44.67	-0.09
652	SLU 62	-94	29	9563	50.95	-45.13	-0.23
652	SLU 63	-94	48	9561	50.2	-45.11	-0.09
652	SLU 64	-95	31	9247	51.5	-43.52	-0.1
652	SLU 65	-95	62	9243	50.25	-43.48	0.14
652	SLU 66	-96	31	9395	52.68	-44.21	-0.09
652	SLU 67	-96	50	9393	51.93	-44.19	0.05
652	SLU 68	-96	62	9337	50.99	-43.92	0.14
652	SLU 69	-97	31	9489	53.41	-44.65	-0.09
652	SLU 70	-97	50	9487	52.66	-44.63	0.05
652	SLU 71	-97	31	9434	52.96	-44.4	-0.09
652	SLU 72	-96	50	9432	52.22	-44.38	0.05
652	SLU 73	-99	62	10124	55.1	-47.67	0.04
652	SLU 74	-101	31	10275	57.52	-48.4	-0.19
652	SLU 75	-101	50	10273	56.78	-48.38	-0.05
652	SLU 76	-100	62	10217	55.84	-48.11	0.04
652	SLU 77	-102	31	10369	58.26	-48.84	-0.19
652	SLU 78	-102	50	10367	57.51	-48.82	-0.05
652	SLU 79	-101	31	10315	57.81	-48.59	-0.19
652	SLU 80	-101	50	10313	57.07	-48.56	-0.05
652	SLU 81	-102	31	10504	58.42	-49.51	-0.24
652	SLU 82	-102	50	10502	57.68	-49.48	-0.09
652	SLU 83	-103	31	10598	59.16	-49.94	-0.23
652	SLU 84	-102	50	10596	58.41	-49.92	-0.09
652	SLE RA 1	-71	23	6886	37.81	-32.42	-0.07
652	SLE RA 2	-71	44	6883	36.98	-32.4	0.09
652	SLE RA 3	-72	23	6984	38.59	-32.88	-0.07
652	SLE RA 4	-72	36	6983	38.1	-32.87	0.03
652	SLE RA 5	-72	44	6946	37.47	-32.69	0.09
652	SLE RA 6	-73	23	7047	39.08	-33.18	-0.07
652	SLE RA 7	-73	36	7045	38.59	-33.16	0.03
652	SLE RA 8	-72	23	7011	38.79	-33.01	-0.07
652	SLE RA 9	-72	36	7009	38.29	-32.99	0.02
652	SLE RA 10	-74	44	7470	40.21	-35.19	0.02
652	SLE RA 11	-75	24	7571	41.83	-35.67	-0.14
652	SLE RA 12	-75	36	7570	41.33	-35.66	-0.04
652	SLE RA 13	-75	44	7532	40.7	-35.48	0.02
652	SLE RA 14	-76	24	7634	42.32	-35.97	-0.13
652	SLE RA 15	-76	36	7632	41.82	-35.95	-0.04
652	SLE RA 16	-75	23	7597	42.02	-35.8	-0.14
652	SLE RA 17	-75	36	7596	41.52	-35.78	-0.04
652	SLE RA 18	-76	23	7724	42.43	-36.41	-0.17
652	SLE RA 19	-76	36	7722	41.93	-36.39	-0.07

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
652	SLE RA 20	-76	23	7786	42.92	-36.7	-0.17
652	SLE RA 21	-76	36	7785	42.42	-36.69	-0.07
652	SLE FR 1	-71	23	6886	37.81	-32.42	-0.07
652	SLE FR 2	-71	27	6885	37.64	-32.42	-0.04
652	SLE FR 3	-71	23	6911	38	-32.54	-0.07
652	SLE FR 4	-72	27	7137	39.03	-33.61	-0.07
652	SLE FR 5	-73	23	7162	39.39	-33.74	-0.1
652	SLE FR 6	-73	23	7305	40.12	-34.42	-0.12
652	SLE QP 1	-71	23	6886	37.81	-32.42	-0.07
652	SLE QP 2	-72	23	7137	39.19	-33.62	-0.1
652	SLD 1	555	256	7232	41.57	-31.01	-2.09
652	SLD 2	557	209	7222	41.89	-30.92	-1.41
652	SLD 3	549	-129	7302	61.23	-31.65	-5.3
652	SLD 4	551	-175	7292	61.55	-31.56	-4.63
652	SLD 5	125	685	7061	10.02	-31.88	4.06
652	SLD 6	126	654	7055	10.24	-31.82	4.51
652	SLD 7	104	-597	7294	75.57	-34.02	-6.66
652	SLD 8	105	-628	7288	75.78	-33.96	-6.22
652	SLD 9	-250	674	6986	2.61	-33.28	6.02
652	SLD 10	-249	644	6980	2.82	-33.22	6.46
652	SLD 11	-271	-608	7219	68.15	-35.42	-4.71
652	SLD 12	-270	-638	7213	68.36	-35.36	-4.26
652	SLD 13	-695	222	6982	16.84	-35.67	4.43
652	SLD 14	-694	175	6972	17.16	-35.59	5.1
652	SLD 15	-702	-163	7052	36.5	-36.31	1.21
652	SLD 16	-700	-210	7042	36.82	-36.23	1.88
652	SLV 1	1396	597	7354	43.13	-27.46	-4.49
652	SLV 2	1400	488	7330	43.88	-27.26	-2.91
652	SLV 3	1381	-361	7529	92.4	-29.07	-12.54
652	SLV 4	1385	-471	7506	93.15	-28.86	-10.95
652	SLV 5	389	1669	6940	-34.5	-29.37	10.49
652	SLV 6	392	1596	6924	-33.99	-29.23	11.55
652	SLV 7	341	-1525	7525	129.75	-34.73	-16.33
652	SLV 8	344	-1599	7510	130.25	-34.6	-15.26
652	SLV 9	-489	1645	6764	-51.86	-32.64	15.06
652	SLV 10	-486	1572	6749	-51.36	-32.5	16.13
652	SLV 11	-537	-1549	7350	112.38	-38.01	-11.75
652	SLV 12	-534	-1623	7334	112.88	-37.87	-10.69
652	SLV 13	-1530	517	6768	-14.76	-38.37	10.75
652	SLV 14	-1526	407	6745	-14.01	-38.17	12.33
652	SLV 15	-1545	-441	6944	34.51	-39.98	2.71
652	SLV 16	-1541	-551	6920	35.26	-39.78	4.29
652	CRTFP Ux+	0	0	0	0	0	0
652	CRTFP Ux-	0	0	0	0	0	0
652	CRTFP Uy+	0	0	0	0	0	0
652	CRTFP Uy-	0	0	0	0	0	0
653	SLU 1	-37	7	3155	-758.78	1.83	-9.37
653	SLU 2	-37	22	3154	-758.74	1.87	-9.32
653	SLU 3	-37	7	3226	-775.58	1.87	-9.57
653	SLU 4	-37	16	3225	-775.56	1.89	-9.54
653	SLU 5	-37	22	3199	-769.39	1.89	-9.44
653	SLU 6	-38	7	3271	-786.23	1.89	-9.68
653	SLU 7	-38	16	3270	-786.21	1.91	-9.65
653	SLU 8	-38	7	3245	-780.08	1.87	-9.61
653	SLU 9	-38	16	3244	-780.06	1.9	-9.58
653	SLU 10	-39	22	3576	-859.96	2.08	-10.07
653	SLU 11	-40	7	3648	-876.8	2.08	-10.32
653	SLU 12	-40	16	3647	-876.78	2.1	-10.29
653	SLU 13	-40	22	3621	-870.61	2.11	-10.19
653	SLU 14	-41	7	3693	-887.45	2.1	-10.43
653	SLU 15	-41	16	3692	-887.43	2.13	-10.4
653	SLU 16	-41	6	3667	-881.3	2.09	-10.36
653	SLU 17	-40	16	3666	-881.27	2.11	-10.33
653	SLU 18	-41	6	3759	-903.37	2.13	-10.44
653	SLU 19	-41	15	3758	-903.35	2.16	-10.41
653	SLU 20	-41	6	3803	-914.03	2.16	-10.56
653	SLU 21	-41	15	3802	-914	2.18	-10.53
653	SLU 22	-41	8	3648	-876	2.15	-10.5
653	SLU 23	-41	23	3646	-875.95	2.19	-10.45
653	SLU 24	-42	8	3719	-892.8	2.18	-10.69
653	SLU 25	-42	17	3718	-892.77	2.21	-10.66
653	SLU 26	-41	23	3691	-886.61	2.21	-10.56
653	SLU 27	-42	8	3763	-903.45	2.21	-10.81
653	SLU 28	-42	17	3762	-903.43	2.23	-10.78
653	SLU 29	-42	7	3737	-897.3	2.19	-10.73
653	SLU 30	-42	17	3737	-897.27	2.22	-10.7
653	SLU 31	-44	22	4069	-977.17	2.4	-11.2
653	SLU 32	-45	7	4141	-994.02	2.4	-11.44
653	SLU 33	-45	16	4140	-993.99	2.42	-11.41
653	SLU 34	-44	22	4113	-987.82	2.42	-11.31
653	SLU 35	-45	7	4186	-1004.67	2.42	-11.56
653	SLU 36	-45	16	4185	-1004.64	2.45	-11.53
653	SLU 37	-45	7	4160	-998.51	2.41	-11.48
653	SLU 38	-45	16	4159	-998.49	2.43	-11.45
653	SLU 39	-45	7	4251	-1020.59	2.45	-11.57
653	SLU 40	-45	16	4250	-1020.57	2.48	-11.54
653	SLU 41	-46	7	4296	-1031.24	2.48	-11.68
653	SLU 42	-46	16	4295	-1031.22	2.5	-11.65
653	SLU 43	-46	9	3933	-946.23	2.27	-11.8

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
653	SLU 44	-46	24	3932	-946.18	2.31	-11.75
653	SLU 45	-47	9	4004	-963.03	2.3	-11.99
653	SLU 46	-47	18	4003	-963	2.33	-11.96
653	SLU 47	-46	24	3976	-956.83	2.33	-11.87
653	SLU 48	-47	9	4049	-973.68	2.33	-12.11
653	SLU 49	-47	18	4048	-973.65	2.35	-12.08
653	SLU 50	-47	9	4023	-967.53	2.31	-12.03
653	SLU 51	-47	18	4022	-967.5	2.34	-12
653	SLU 52	-49	24	4354	-1047.4	2.52	-12.5
653	SLU 53	-50	8	4426	-1064.25	2.52	-12.74
653	SLU 54	-50	18	4425	-1064.22	2.54	-12.71
653	SLU 55	-49	24	4399	-1058.05	2.54	-12.62
653	SLU 56	-50	8	4471	-1074.9	2.54	-12.86
653	SLU 57	-50	18	4470	-1074.87	2.57	-12.83
653	SLU 58	-50	8	4445	-1068.74	2.53	-12.78
653	SLU 59	-50	17	4444	-1068.72	2.55	-12.75
653	SLU 60	-50	8	4536	-1090.82	2.57	-12.87
653	SLU 61	-50	17	4535	-1090.8	2.6	-12.84
653	SLU 62	-51	8	4581	-1101.47	2.6	-12.99
653	SLU 63	-51	17	4580	-1101.45	2.62	-12.96
653	SLU 64	-51	9	4426	-1063.44	2.58	-12.92
653	SLU 65	-50	25	4424	-1063.4	2.62	-12.87
653	SLU 66	-51	9	4496	-1080.24	2.62	-13.12
653	SLU 67	-51	19	4495	-1080.22	2.65	-13.09
653	SLU 68	-51	25	4469	-1074.05	2.65	-12.99
653	SLU 69	-52	9	4541	-1090.9	2.65	-13.23
653	SLU 70	-52	19	4540	-1090.87	2.67	-13.2
653	SLU 71	-52	9	4515	-1084.74	2.63	-13.16
653	SLU 72	-51	19	4514	-1084.72	2.66	-13.13
653	SLU 73	-53	24	4846	-1164.62	2.84	-13.62
653	SLU 74	-54	9	4919	-1181.46	2.84	-13.87
653	SLU 75	-54	18	4918	-1181.44	2.86	-13.84
653	SLU 76	-54	24	4891	-1175.27	2.86	-13.74
653	SLU 77	-55	9	4963	-1192.11	2.86	-13.98
653	SLU 78	-55	18	4962	-1192.09	2.89	-13.95
653	SLU 79	-54	9	4937	-1185.96	2.85	-13.91
653	SLU 80	-54	18	4936	-1185.93	2.87	-13.88
653	SLU 81	-55	9	5029	-1208.04	2.89	-13.99
653	SLU 82	-55	18	5028	-1208.01	2.91	-13.96
653	SLU 83	-55	9	5074	-1218.69	2.91	-14.11
653	SLU 84	-55	18	5073	-1218.66	2.94	-14.08
653	SLE RA 1	-38	7	3296	-792.27	1.92	-9.69
653	SLE RA 2	-38	17	3295	-792.24	1.94	-9.66
653	SLE RA 3	-38	7	3343	-803.47	1.94	-9.82
653	SLE RA 4	-38	13	3343	-803.46	1.96	-9.8
653	SLE RA 5	-38	17	3325	-799.34	1.96	-9.74
653	SLE RA 6	-39	7	3373	-810.57	1.96	-9.9
653	SLE RA 7	-39	13	3372	-810.56	1.98	-9.88
653	SLE RA 8	-39	7	3356	-806.47	1.95	-9.85
653	SLE RA 9	-39	13	3355	-806.45	1.97	-9.83
653	SLE RA 10	-40	17	3577	-859.72	2.09	-10.16
653	SLE RA 11	-40	7	3625	-870.95	2.09	-10.32
653	SLE RA 12	-40	13	3624	-870.93	2.1	-10.3
653	SLE RA 13	-40	17	3606	-866.82	2.1	-10.24
653	SLE RA 14	-41	7	3655	-878.05	2.1	-10.4
653	SLE RA 15	-41	13	3654	-878.03	2.12	-10.38
653	SLE RA 16	-41	7	3637	-873.95	2.09	-10.35
653	SLE RA 17	-40	13	3637	-873.93	2.11	-10.33
653	SLE RA 18	-41	7	3698	-888.67	2.12	-10.41
653	SLE RA 19	-41	13	3698	-888.65	2.14	-10.39
653	SLE RA 20	-41	7	3728	-895.77	2.14	-10.49
653	SLE RA 21	-41	13	3727	-895.75	2.15	-10.47
653	SLE FR 1	-38	7	3296	-792.27	1.92	-9.69
653	SLE FR 2	-38	9	3296	-792.26	1.92	-9.69
653	SLE FR 3	-38	7	3308	-795.11	1.92	-9.73
653	SLE FR 4	-39	9	3417	-821.18	1.98	-9.9
653	SLE FR 5	-39	7	3429	-824.03	1.99	-9.94
653	SLE FR 6	-39	7	3497	-840.47	2.02	-10.05
653	SLE QP 1	-38	7	3296	-792.27	1.92	-9.69
653	SLE QP 2	-39	7	3417	-821.19	1.98	-9.91
653	SLD 1	267	121	3418	-823.5	3.61	66.46
653	SLD 2	269	101	3412	-822.13	3.61	67.18
653	SLD 3	263	-69	3447	-825.93	3.1	65.47
653	SLD 4	265	-89	3442	-824.56	3.09	66.19
653	SLD 5	58	333	3373	-818.44	3.25	14.37
653	SLD 6	60	320	3369	-817.54	3.25	14.84
653	SLD 7	46	-300	3472	-826.55	1.54	11.08
653	SLD 8	47	-314	3469	-825.64	1.53	11.56
653	SLD 9	-125	328	3365	-816.74	2.42	-31.37
653	SLD 10	-123	314	3361	-815.83	2.42	-30.9
653	SLD 11	-137	-306	3464	-824.84	0.71	-34.66
653	SLD 12	-136	-319	3461	-823.94	0.71	-34.18
653	SLD 13	-343	103	3391	-817.82	0.86	-86.01
653	SLD 14	-340	83	3386	-816.45	0.86	-85.29
653	SLD 15	-347	-87	3421	-820.25	0.35	-86.99
653	SLD 16	-344	-107	3416	-818.88	0.34	-86.27
653	SLV 1	676	288	3416	-826.4	5.85	168.79
653	SLV 2	682	241	3403	-823.17	5.83	170.48
653	SLV 3	667	-185	3490	-832.24	4.56	166.41

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
653	SLV 4	673	-233	3478	-829.02	4.55	168.1
653	SLV 5	188	818	3305	-814.48	5.09	46.99
653	SLV 6	192	786	3297	-812.31	5.08	48.13
653	SLV 7	158	-760	3554	-833.98	0.81	39.07
653	SLV 8	162	-792	3546	-831.8	0.8	40.21
653	SLV 9	-240	806	3287	-810.57	3.16	-60.02
653	SLV 10	-236	774	3279	-808.4	3.15	-58.88
653	SLV 11	-270	-773	3536	-830.07	-1.12	-67.94
653	SLV 12	-266	-805	3528	-827.89	-1.13	-66.8
653	SLV 13	-750	247	3355	-813.36	-0.59	-187.92
653	SLV 14	-744	199	3343	-810.13	-0.6	-186.23
653	SLV 15	-759	-227	3430	-819.21	-1.87	-190.29
653	SLV 16	-753	-274	3418	-815.98	-1.89	-188.6
653	CRTFP Ux+	0	0	0	0	0	0
653	CRTFP Ux-	0	0	0	0	0	0
653	CRTFP Uy+	0	0	0	0	0	0
653	CRTFP Uy-	0	0	0	0	0	0
655	SLU 1	-177	-1	18167	2480.5	398.34	4.09
655	SLU 2	-177	90	18146	2476.63	399.94	2.75
655	SLU 3	-180	-1	18575	2536.63	407.39	4.28
655	SLU 4	-180	53	18562	2534.31	408.35	3.47
655	SLU 5	-179	89	18404	2512.15	405.62	2.88
655	SLU 6	-183	-2	18834	2572.15	413.07	4.4
655	SLU 7	-183	53	18821	2569.83	414.03	3.6
655	SLU 8	-181	-2	18684	2551.54	409.7	4.35
655	SLU 9	-181	52	18671	2549.22	410.65	3.54
655	SLU 10	-190	82	20580	2808.52	451.54	2.32
655	SLU 11	-194	-9	21009	2868.52	459	3.84
655	SLU 12	-193	45	20997	2866.19	459.95	3.04
655	SLU 13	-192	81	20839	2844.04	457.22	2.44
655	SLU 14	-196	-10	21268	2904.04	464.67	3.97
655	SLU 15	-196	45	21255	2901.71	465.63	3.17
655	SLU 16	-194	-10	21119	2883.43	461.3	3.91
655	SLU 17	-194	44	21106	2881.1	462.26	3.11
655	SLU 18	-195	-13	21645	2954.62	472.06	3.47
655	SLU 19	-195	42	21632	2952.3	473.02	2.67
655	SLU 20	-198	-13	21903	2990.14	477.74	3.6
655	SLU 21	-198	41	21891	2987.82	478.7	2.8
655	SLU 22	-198	-3	21009	2873.05	464.1	4.77
655	SLU 23	-198	89	20988	2869.18	465.69	3.43
655	SLU 24	-202	-3	21417	2929.18	473.15	4.95
655	SLU 25	-202	52	21404	2926.86	474.1	4.15
655	SLU 26	-201	88	21246	2904.7	471.37	3.55
655	SLU 27	-204	-3	21676	2964.7	478.82	5.08
655	SLU 28	-204	51	21663	2962.37	479.78	4.27
655	SLU 29	-203	-4	21526	2944.09	475.45	5.02
655	SLU 30	-203	51	21514	2941.77	476.41	4.22
655	SLU 31	-211	81	23422	3201.06	517.29	2.99
655	SLU 32	-215	-11	23852	3261.06	524.75	4.52
655	SLU 33	-215	44	23839	3258.74	525.71	3.71
655	SLU 34	-214	80	23681	3236.58	522.97	3.12
655	SLU 35	-217	-11	24110	3296.58	530.42	4.64
655	SLU 36	-217	43	24097	3294.26	531.38	3.84
655	SLU 37	-216	-12	23961	3275.97	527.05	4.59
655	SLU 38	-216	43	23948	3273.65	528.01	3.78
655	SLU 39	-217	-14	24487	3347.17	537.81	4.15
655	SLU 40	-217	41	24474	3344.85	538.77	3.34
655	SLU 41	-219	-15	24745	3382.69	543.49	4.27
655	SLU 42	-219	40	24733	3380.37	544.45	3.47
655	SLU 43	-222	-1	22643	3090.06	495.3	5.09
655	SLU 44	-222	90	22621	3086.19	496.9	3.75
655	SLU 45	-226	-1	23051	3146.19	504.35	5.27
655	SLU 46	-226	53	23038	3143.87	505.31	4.47
655	SLU 47	-225	90	22880	3121.71	502.58	3.88
655	SLU 48	-228	-2	23309	3181.71	510.03	5.4
655	SLU 49	-228	53	23297	3179.39	510.99	4.6
655	SLU 50	-227	-2	23160	3161.1	506.66	5.34
655	SLU 51	-227	52	23147	3158.78	507.61	4.54
655	SLU 52	-235	82	25056	3418.08	548.5	3.31
655	SLU 53	-239	-9	25485	3478.08	555.96	4.84
655	SLU 54	-239	45	25472	3475.76	556.91	4.03
655	SLU 55	-238	82	25314	3453.6	554.18	3.44
655	SLU 56	-241	-10	25744	3513.6	561.63	4.97
655	SLU 57	-241	45	25731	3511.28	562.59	4.16
655	SLU 58	-240	-10	25594	3492.99	558.26	4.91
655	SLU 59	-240	44	25582	3490.67	559.22	4.1
655	SLU 60	-241	-13	26120	3564.19	569.02	4.47
655	SLU 61	-241	42	26108	3561.86	569.98	3.66
655	SLU 62	-243	-13	26379	3599.71	574.7	4.6
655	SLU 63	-243	42	26366	3597.38	575.66	3.79
655	SLU 64	-244	-3	25485	3482.61	561.06	5.76
655	SLU 65	-244	89	25464	3478.74	562.65	4.42
655	SLU 66	-248	-3	25893	3538.74	570.11	5.95
655	SLU 67	-248	52	25880	3536.42	571.06	5.14
655	SLU 68	-246	88	25722	3514.26	568.33	4.55
655	SLU 69	-250	-3	26151	3574.26	575.78	6.07
655	SLU 70	-250	51	26139	3571.94	576.74	5.27
655	SLU 71	-249	-4	26002	3553.65	572.41	6.02
655	SLU 72	-248	51	25989	3551.33	573.37	5.21

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
655	SLU 73	-257	81	27898	3810.63	614.25	3.99
655	SLU 74	-261	-11	28327	3870.63	621.71	5.51
655	SLU 75	-261	44	28315	3868.3	622.67	4.71
655	SLU 76	-259	80	28157	3846.15	619.93	4.12
655	SLU 77	-263	-11	28586	3906.15	627.38	5.64
655	SLU 78	-263	43	28573	3903.82	628.34	4.84
655	SLU 79	-262	-12	28436	3885.54	624.01	5.58
655	SLU 80	-262	43	28424	3883.21	624.97	4.78
655	SLU 81	-263	-14	28963	3956.73	634.77	5.14
655	SLU 82	-263	41	28950	3954.41	635.73	4.34
655	SLU 83	-265	-15	29221	3992.25	640.45	5.27
655	SLU 84	-265	40	29208	3989.93	641.41	4.47
655	SLE RA 1	-183	-2	18979	2592.66	417.13	4.29
655	SLE RA 2	-183	59	18965	2590.08	418.19	3.39
655	SLE RA 3	-185	-2	19251	2630.08	423.16	4.41
655	SLE RA 4	-185	35	19243	2628.53	423.8	3.87
655	SLE RA 5	-184	59	19137	2613.76	421.98	3.48
655	SLE RA 6	-187	-2	19424	2653.76	426.95	4.49
655	SLE RA 7	-187	34	19415	2652.21	427.59	3.96
655	SLE RA 8	-186	-2	19324	2640.02	424.7	4.45
655	SLE RA 9	-186	34	19315	2638.47	425.34	3.92
655	SLE RA 10	-192	54	20588	2811.33	452.6	3.1
655	SLE RA 11	-194	-7	20874	2851.33	457.57	4.12
655	SLE RA 12	-194	29	20866	2849.79	458.2	3.58
655	SLE RA 13	-193	53	20760	2835.01	456.38	3.19
655	SLE RA 14	-196	-8	21046	2875.01	461.35	4.2
655	SLE RA 15	-196	29	21038	2873.47	461.99	3.67
655	SLE RA 16	-195	-8	20947	2861.27	459.1	4.17
655	SLE RA 17	-195	29	20938	2859.73	459.74	3.63
655	SLE RA 18	-195	-9	21298	2908.74	466.28	3.87
655	SLE RA 19	-195	27	21289	2907.19	466.91	3.34
655	SLE RA 20	-197	-10	21470	2932.42	470.06	3.96
655	SLE RA 21	-197	27	21461	2930.87	470.7	3.42
655	SLE FR 1	-183	-2	18979	2592.66	417.13	4.29
655	SLE FR 2	-183	11	18976	2592.14	417.34	4.11
655	SLE FR 3	-183	-2	19048	2602.13	418.64	4.32
655	SLE FR 4	-187	8	19672	2686.97	432.09	3.98
655	SLE FR 5	-187	-4	19744	2696.95	433.39	4.2
655	SLE FR 6	-189	-5	20138	2750.7	441.7	4.08
655	SLE QP 1	-183	-2	18979	2592.66	417.13	4.29
655	SLE QP 2	-187	-4	19675	2687.48	431.87	4.16
655	SLD 1	1579	665	19578	2703.68	504.3	-247.87
655	SLD 2	1578	561	19546	2699.01	504.06	-239.5
655	SLD 3	1596	-464	19921	2768.58	487.32	-232.07
655	SLD 4	1595	-567	19889	2763.91	487.08	-223.71
655	SLD 5	316	1927	19131	2594.76	479.39	-96.91
655	SLD 6	316	1859	19111	2591.68	479.23	-91.39
655	SLD 7	375	-1835	20274	2811.07	422.8	-44.26
655	SLD 8	375	-1904	20253	2807.99	422.65	-38.74
655	SLD 9	-748	1896	19096	2566.97	441.1	47.06
655	SLD 10	-748	1827	19075	2563.89	440.94	52.58
655	SLD 11	-689	-1867	20239	2783.29	384.51	99.71
655	SLD 12	-690	-1935	20218	2780.21	384.35	105.23
655	SLD 13	-1969	559	19460	2611.06	376.67	232.03
655	SLD 14	-1969	456	19428	2606.39	376.42	240.4
655	SLD 15	-1951	-569	19803	2675.95	359.69	247.83
655	SLD 16	-1952	-673	19771	2671.28	359.45	256.19
655	SLV 1	3943	1649	19418	2719.93	602.64	-586.69
655	SLV 2	3942	1405	19343	2708.95	602.07	-567.02
655	SLV 3	3984	-1165	20277	2882.76	560.37	-547.47
655	SLV 4	3983	-1409	20203	2871.78	559.8	-527.8
655	SLV 5	990	4805	18308	2452.31	547.32	-236.25
655	SLV 6	989	4640	18257	2444.92	546.93	-223.01
655	SLV 7	1127	-4574	21173	2995.07	406.42	-105.51
655	SLV 8	1126	-4738	21123	2987.68	406.04	-92.27
655	SLV 9	-1499	4730	18226	2387.28	457.71	100.59
655	SLV 10	-1500	4566	18176	2379.89	457.33	113.83
655	SLV 11	-1363	-4648	21092	2930.05	316.81	231.33
655	SLV 12	-1363	-4812	21042	2922.66	316.43	244.57
655	SLV 13	-4356	1401	19146	2503.18	303.95	536.12
655	SLV 14	-4357	1157	19072	2492.21	303.38	555.79
655	SLV 15	-4315	-1413	20006	2666.01	261.68	575.34
655	SLV 16	-4316	-1656	19932	2655.04	261.11	595.01
655	CRTFP Ux+	0	0	0	0	0	0
655	CRTFP Ux-	0	0	0	0	0	0
655	CRTFP Uy+	0	0	0	0	0	0
655	CRTFP Uy-	0	0	0	0	0	0
657	SLU 1	-189	-133	15281	-2713.48	464.83	-51.96
657	SLU 2	-189	-52	15249	-2708.83	465.43	-54.04
657	SLU 3	-193	-136	15624	-2773.32	475.18	-52.99
657	SLU 4	-193	-87	15604	-2770.53	475.54	-54.24
657	SLU 5	-191	-54	15466	-2746.86	471.96	-54.65
657	SLU 6	-196	-138	15841	-2811.34	481.71	-53.61
657	SLU 7	-195	-89	15821	-2808.55	482.07	-54.85
657	SLU 8	-194	-137	15716	-2789.53	477.89	-53.19
657	SLU 9	-194	-88	15697	-2786.74	478.25	-54.43
657	SLU 10	-206	-75	17305	-3071.76	527.08	-59.02
657	SLU 11	-210	-159	17680	-3136.24	536.83	-57.97
657	SLU 12	-210	-110	17660	-3133.45	537.19	-59.22

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
657	SLU 13	-208	-77	17522	-3109.78	533.61	-59.63
657	SLU 14	-213	-160	17897	-3174.26	543.36	-58.58
657	SLU 15	-212	-112	17877	-3171.47	543.72	-59.83
657	SLU 16	-211	-160	17772	-3152.46	539.54	-58.16
657	SLU 17	-211	-111	17753	-3149.67	539.9	-59.41
657	SLU 18	-214	-166	18219	-3231.94	552.9	-59.07
657	SLU 19	-213	-117	18199	-3229.15	553.26	-60.32
657	SLU 20	-216	-168	18436	-3269.97	559.43	-59.68
657	SLU 21	-216	-119	18416	-3267.18	559.79	-60.93
657	SLU 22	-213	-150	17644	-3125.91	538.07	-58.35
657	SLU 23	-212	-69	17612	-3121.26	538.67	-60.43
657	SLU 24	-217	-152	17986	-3185.74	548.42	-59.38
657	SLU 25	-216	-104	17967	-3182.95	548.78	-60.63
657	SLU 26	-214	-70	17829	-3159.28	545.2	-61.04
657	SLU 27	-219	-154	18204	-3223.77	554.95	-60
657	SLU 28	-219	-105	18184	-3220.98	555.31	-61.24
657	SLU 29	-217	-153	18079	-3201.96	551.13	-59.58
657	SLU 30	-217	-105	18060	-3199.17	551.49	-60.82
657	SLU 31	-229	-91	19668	-3484.18	600.32	-65.41
657	SLU 32	-234	-175	20042	-3548.66	610.07	-64.36
657	SLU 33	-233	-126	20023	-3545.87	610.43	-65.61
657	SLU 34	-231	-93	19885	-3522.21	606.85	-66.02
657	SLU 35	-236	-177	20260	-3586.69	616.6	-64.97
657	SLU 36	-236	-128	20240	-3583.9	616.96	-66.22
657	SLU 37	-234	-176	20135	-3564.88	612.78	-64.55
657	SLU 38	-234	-127	20116	-3562.09	613.14	-65.8
657	SLU 39	-237	-182	20582	-3644.37	626.14	-65.46
657	SLU 40	-236	-134	20562	-3641.58	626.5	-66.71
657	SLU 41	-239	-184	20799	-3682.39	632.67	-66.07
657	SLU 42	-239	-135	20779	-3679.6	633.03	-67.32
657	SLU 43	-238	-168	19056	-3386.12	579.17	-65.36
657	SLU 44	-238	-86	19023	-3381.48	579.77	-67.44
657	SLU 45	-242	-170	19398	-3445.96	589.52	-66.39
657	SLU 46	-242	-121	19378	-3443.17	589.88	-67.64
657	SLU 47	-240	-88	19241	-3419.5	586.3	-68.05
657	SLU 48	-245	-172	19615	-3483.98	596.05	-67
657	SLU 49	-244	-123	19596	-3481.19	596.41	-68.25
657	SLU 50	-243	-171	19490	-3462.18	592.23	-66.58
657	SLU 51	-243	-122	19471	-3459.39	592.59	-67.83
657	SLU 52	-254	-109	21079	-3744.4	641.42	-72.41
657	SLU 53	-259	-193	21454	-3808.88	651.17	-71.37
657	SLU 54	-259	-144	21434	-3806.09	651.53	-72.61
657	SLU 55	-257	-111	21297	-3782.42	647.95	-73.03
657	SLU 56	-261	-195	21671	-3846.91	657.7	-71.98
657	SLU 57	-261	-146	21652	-3844.12	658.06	-73.23
657	SLU 58	-260	-194	21546	-3825.1	653.88	-71.56
657	SLU 59	-259	-145	21527	-3822.31	654.24	-72.81
657	SLU 60	-262	-200	21993	-3904.58	667.24	-72.47
657	SLU 61	-262	-151	21974	-3901.8	667.6	-73.71
657	SLU 62	-265	-202	22210	-3942.61	673.77	-73.08
657	SLU 63	-264	-153	22191	-3939.82	674.13	-74.33
657	SLU 64	-262	-184	21419	-3798.55	652.4	-71.75
657	SLU 65	-261	-103	21386	-3793.9	653.01	-73.83
657	SLU 66	-265	-187	21761	-3858.38	662.76	-72.78
657	SLU 67	-265	-138	21741	-3855.59	663.12	-74.03
657	SLU 68	-263	-105	21604	-3831.93	659.54	-74.44
657	SLU 69	-268	-188	21978	-3896.41	669.29	-73.39
657	SLU 70	-267	-140	21959	-3893.62	669.65	-74.64
657	SLU 71	-266	-188	21853	-3874.6	665.47	-72.97
657	SLU 72	-266	-139	21834	-3871.81	665.83	-74.22
657	SLU 73	-278	-126	23442	-4156.82	714.66	-78.8
657	SLU 74	-282	-209	23817	-4221.3	724.41	-77.76
657	SLU 75	-282	-161	23797	-4218.52	724.77	-79
657	SLU 76	-280	-127	23660	-4194.85	721.19	-79.42
657	SLU 77	-285	-211	24034	-4259.33	730.94	-78.37
657	SLU 78	-284	-162	24015	-4256.54	731.3	-79.62
657	SLU 79	-283	-211	23909	-4237.52	727.11	-77.95
657	SLU 80	-283	-162	23890	-4234.73	727.48	-79.2
657	SLU 81	-286	-217	24356	-4317.01	740.47	-78.86
657	SLU 82	-285	-168	24336	-4314.22	740.84	-80.1
657	SLU 83	-288	-219	24573	-4355.03	747	-79.47
657	SLU 84	-288	-170	24554	-4352.25	747.37	-80.72
657	SLE RA 1	-196	-138	15957	-2831.32	485.75	-53.79
657	SLE RA 2	-196	-84	15935	-2828.22	486.16	-55.17
657	SLE RA 3	-199	-140	16185	-2871.21	492.65	-54.47
657	SLE RA 4	-198	-107	16172	-2869.35	492.9	-55.31
657	SLE RA 5	-197	-85	16080	-2853.57	490.51	-55.58
657	SLE RA 6	-200	-141	16329	-2896.56	497.01	-54.88
657	SLE RA 7	-200	-108	16317	-2894.7	497.25	-55.72
657	SLE RA 8	-199	-140	16246	-2882.02	494.46	-54.6
657	SLE RA 9	-199	-108	16233	-2880.16	494.7	-55.44
657	SLE RA 10	-207	-99	17306	-3070.17	527.26	-58.49
657	SLE RA 11	-210	-155	17555	-3113.15	533.75	-57.79
657	SLE RA 12	-210	-122	17542	-3111.3	534	-58.62
657	SLE RA 13	-208	-100	17451	-3095.52	531.61	-58.9
657	SLE RA 14	-212	-156	17700	-3138.51	538.11	-58.2
657	SLE RA 15	-211	-124	17687	-3136.65	538.35	-59.03
657	SLE RA 16	-211	-156	17617	-3123.97	535.56	-57.92
657	SLE RA 17	-210	-123	17604	-3122.11	535.8	-58.75

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
657	SLE RA 18	-212	-160	17915	-3176.96	544.47	-58.53
657	SLE RA 19	-212	-127	17902	-3175.1	544.71	-59.36
657	SLE RA 20	-214	-161	18060	-3202.31	548.82	-58.93
657	SLE RA 21	-214	-128	18047	-3200.45	549.06	-59.77
657	SLE FR 1	-196	-138	15957	-2831.32	485.75	-53.79
657	SLE FR 2	-196	-127	15952	-2830.7	485.83	-54.06
657	SLE FR 3	-197	-139	16015	-2841.46	487.49	-53.95
657	SLE FR 4	-201	-134	16540	-2934.39	503.45	-55.49
657	SLE FR 5	-202	-145	16602	-2945.15	505.11	-55.37
657	SLE FR 6	-204	-149	16936	-3004.14	515.11	-56.16
657	SLE QP 1	-196	-138	15957	-2831.32	485.75	-53.79
657	SLE QP 2	-201	-145	16544	-2935.01	503.37	-55.21
657	SLD 1	1333	429	15994	-2812.09	511.33	216.3
657	SLD 2	1346	368	15968	-2808.09	510.27	224.99
657	SLD 3	1316	-577	16448	-2875.02	505.58	243.11
657	SLD 4	1329	-639	16423	-2871.02	504.52	251.8
657	SLD 5	282	1566	15694	-2803.41	514.67	-15.99
657	SLD 6	291	1525	15677	-2800.78	513.97	-10.25
657	SLD 7	227	-1790	17209	-3013.17	495.5	73.39
657	SLD 8	235	-1831	17193	-3010.54	494.8	79.13
657	SLD 9	-637	1542	15895	-2859.48	511.93	-189.54
657	SLD 10	-629	1501	15879	-2856.85	511.23	-183.81
657	SLD 11	-692	-1814	17411	-3069.25	492.77	-100.16
657	SLD 12	-684	-1855	17394	-3066.61	492.07	-94.43
657	SLD 13	-1731	350	16665	-2999	502.21	-362.22
657	SLD 14	-1718	288	16640	-2995	501.15	-353.53
657	SLD 15	-1748	-657	17120	-3061.93	496.46	-335.41
657	SLD 16	-1735	-719	17094	-3057.93	495.4	-326.71
657	SLV 1	3388	1276	15219	-2642.51	522.35	577.95
657	SLV 2	3419	1131	15159	-2633.12	519.86	598.39
657	SLV 3	3349	-1234	16357	-2799.5	508.07	644.67
657	SLV 4	3379	-1378	16298	-2790.11	505.58	665.11
657	SLV 5	929	4115	14431	-2610.91	531.18	29.74
657	SLV 6	950	4017	14391	-2604.59	529.51	43.5
657	SLV 7	799	-4250	18225	-3134.21	483.58	252.13
657	SLV 8	819	-4348	18185	-3127.89	481.91	265.89
657	SLV 9	-1221	4059	14903	-2742.13	524.83	-376.31
657	SLV 10	-1201	3961	14863	-2735.81	523.15	-362.55
657	SLV 11	-1352	-4306	18697	-3265.43	477.23	-153.91
657	SLV 12	-1331	-4404	18657	-3259.11	475.55	-140.15
657	SLV 13	-3781	1089	16790	-3079.91	501.16	-775.53
657	SLV 14	-3751	945	16731	-3070.52	498.67	-755.09
657	SLV 15	-3821	-1420	17929	-3236.9	486.88	-708.81
657	SLV 16	-3790	-1565	17869	-3227.51	484.39	-688.37
657	CRTFP Ux+	0	0	0	0	0	0
657	CRTFP Ux-	0	0	0	0	0	0
657	CRTFP Uy+	0	0	0	0	0	0
657	CRTFP Uy-	0	0	0	0	0	0
659	SLU 1	-42	-66	4843	318.92	382.36	2.42
659	SLU 2	-41	-41	4829	317.53	381.35	0.46
659	SLU 3	-42	-67	4952	326.41	390.96	2.47
659	SLU 4	-42	-52	4944	325.58	390.35	1.29
659	SLU 5	-42	-42	4899	322.29	386.82	0.49
659	SLU 6	-43	-68	5022	331.16	396.43	2.51
659	SLU 7	-43	-53	5014	330.33	395.82	1.33
659	SLU 8	-43	-68	4982	328.43	393.29	2.5
659	SLU 9	-43	-53	4974	327.6	392.69	1.32
659	SLU 10	-45	-51	5484	361.39	432.98	0.82
659	SLU 11	-46	-77	5608	370.26	442.6	2.84
659	SLU 12	-46	-62	5599	369.43	441.99	1.66
659	SLU 13	-45	-52	5554	366.14	438.45	0.86
659	SLU 14	-46	-78	5677	375.02	448.06	2.87
659	SLU 15	-46	-63	5669	374.19	447.46	1.7
659	SLU 16	-46	-78	5637	372.28	444.93	2.86
659	SLU 17	-46	-63	5629	371.45	444.32	1.69
659	SLU 18	-46	-81	5779	381.57	456.12	2.94
659	SLU 19	-46	-65	5771	380.73	455.52	1.77
659	SLU 20	-47	-81	5849	386.32	461.59	2.98
659	SLU 21	-47	-66	5840	385.49	460.99	1.81
659	SLU 22	-47	-74	5595	370.7	441.63	2.72
659	SLU 23	-47	-49	5581	369.32	440.62	0.75
659	SLU 24	-48	-75	5704	378.19	450.23	2.77
659	SLU 25	-48	-60	5696	377.36	449.62	1.59
659	SLU 26	-47	-50	5651	374.08	446.09	0.79
659	SLU 27	-48	-76	5774	382.95	455.7	2.8
659	SLU 28	-48	-61	5765	382.12	455.09	1.63
659	SLU 29	-48	-76	5734	380.21	452.56	2.79
659	SLU 30	-48	-61	5726	379.38	451.96	1.62
659	SLU 31	-50	-59	6236	413.17	492.25	1.12
659	SLU 32	-51	-86	6360	422.05	501.87	3.13
659	SLU 33	-51	-71	6351	421.22	501.26	1.96
659	SLU 34	-51	-60	6306	417.93	497.72	1.16
659	SLU 35	-52	-86	6429	426.8	507.33	3.17
659	SLU 36	-51	-71	6421	425.97	506.73	1.99
659	SLU 37	-51	-86	6389	424.07	504.2	3.16
659	SLU 38	-51	-71	6381	423.24	503.59	1.98
659	SLU 39	-52	-89	6531	433.35	515.39	3.24
659	SLU 40	-52	-74	6523	432.52	514.79	2.06
659	SLU 41	-52	-90	6600	438.11	520.86	3.28

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
659	SLU 42	-52	-75	6592	437.28	520.26	2.1
659	SLU 43	-52	-83	6038	396.83	476.74	3.04
659	SLU 44	-52	-58	6024	395.45	475.73	1.08
659	SLU 45	-53	-84	6148	404.32	485.35	3.09
659	SLU 46	-53	-69	6139	403.49	484.74	1.91
659	SLU 47	-53	-59	6094	400.2	481.2	1.12
659	SLU 48	-54	-85	6217	409.08	490.81	3.13
659	SLU 49	-54	-70	6209	408.25	490.21	1.95
659	SLU 50	-53	-85	6177	406.34	487.68	3.12
659	SLU 51	-53	-70	6169	405.51	487.07	1.94
659	SLU 52	-56	-68	6680	439.3	527.37	1.45
659	SLU 53	-57	-94	6803	448.18	536.98	3.46
659	SLU 54	-56	-79	6794	447.35	536.38	2.28
659	SLU 55	-56	-69	6749	444.06	532.84	1.49
659	SLU 56	-57	-95	6872	452.93	542.45	3.5
659	SLU 57	-57	-80	6864	452.1	541.84	2.32
659	SLU 58	-57	-95	6832	450.2	539.31	3.49
659	SLU 59	-57	-80	6824	449.37	538.71	2.31
659	SLU 60	-57	-98	6974	459.48	550.51	3.57
659	SLU 61	-57	-82	6966	458.65	549.9	2.39
659	SLU 62	-58	-98	7044	464.24	555.98	3.61
659	SLU 63	-58	-83	7035	463.41	555.37	2.43
659	SLU 64	-57	-91	6790	448.62	536.01	3.34
659	SLU 65	-57	-66	6776	447.24	535	1.38
659	SLU 66	-58	-92	6900	456.11	544.62	3.39
659	SLU 67	-58	-77	6891	455.28	544.01	2.21
659	SLU 68	-58	-67	6846	451.99	540.47	1.42
659	SLU 69	-59	-93	6969	460.87	550.08	3.43
659	SLU 70	-59	-78	6961	460.04	549.48	2.25
659	SLU 71	-58	-93	6929	458.13	546.95	3.42
659	SLU 72	-58	-78	6921	457.3	546.34	2.24
659	SLU 73	-61	-76	7431	491.09	586.64	1.74
659	SLU 74	-62	-103	7555	499.97	596.25	3.76
659	SLU 75	-62	-88	7546	499.14	595.65	2.58
659	SLU 76	-61	-77	7501	495.85	592.11	1.78
659	SLU 77	-62	-103	7624	504.72	601.72	3.8
659	SLU 78	-62	-88	7616	503.89	601.11	2.62
659	SLU 79	-62	-103	7584	501.99	598.58	3.78
659	SLU 80	-62	-88	7576	501.16	597.98	2.61
659	SLU 81	-62	-106	7726	511.27	609.78	3.87
659	SLU 82	-62	-91	7718	510.44	609.17	2.69
659	SLU 83	-63	-107	7796	516.03	615.25	3.9
659	SLU 84	-63	-92	7787	515.2	614.64	2.73
659	SLE RA 1	-43	-68	5058	333.71	399.29	2.5
659	SLE RA 2	-43	-52	5049	332.79	398.62	1.19
659	SLE RA 3	-44	-69	5131	338.71	405.03	2.54
659	SLE RA 4	-44	-59	5125	338.15	404.62	1.75
659	SLE RA 5	-43	-52	5095	335.96	402.26	1.22
659	SLE RA 6	-44	-70	5177	341.88	408.67	2.56
659	SLE RA 7	-44	-60	5172	341.32	408.27	1.78
659	SLE RA 8	-44	-69	5151	340.05	406.58	2.56
659	SLE RA 9	-44	-59	5145	339.5	406.18	1.77
659	SLE RA 10	-45	-58	5485	362.03	433.04	1.44
659	SLE RA 11	-46	-76	5568	367.94	439.45	2.78
659	SLE RA 12	-46	-66	5562	367.39	439.05	2
659	SLE RA 13	-46	-59	5532	365.2	436.69	1.47
659	SLE RA 14	-46	-77	5614	371.11	443.1	2.81
659	SLE RA 15	-46	-66	5608	370.56	442.69	2.02
659	SLE RA 16	-46	-76	5587	369.29	441.01	2.8
659	SLE RA 17	-46	-66	5582	368.74	440.6	2.02
659	SLE RA 18	-46	-78	5682	375.48	448.47	2.85
659	SLE RA 19	-46	-68	5676	374.93	448.07	2.07
659	SLE RA 20	-47	-79	5728	378.65	452.11	2.88
659	SLE RA 21	-47	-69	5723	378.1	451.71	2.09
659	SLE FR 1	-43	-68	5058	333.71	399.29	2.5
659	SLE FR 2	-43	-65	5056	333.53	399.16	2.24
659	SLE FR 3	-43	-69	5077	334.98	400.75	2.51
659	SLE FR 4	-44	-68	5243	346.06	413.91	2.35
659	SLE FR 5	-44	-72	5264	347.51	415.5	2.62
659	SLE FR 6	-45	-73	5370	354.6	423.88	2.68
659	SLE QP 1	-43	-68	5058	333.71	399.29	2.5
659	SLE QP 2	-44	-71	5245	346.24	414.04	2.61
659	SLD 1	429	103	5045	341.53	398.66	-36.14
659	SLD 2	430	88	5038	340.85	398.04	-34.26
659	SLD 3	424	-209	5239	361.78	412.66	-11.82
659	SLD 4	425	-224	5231	361.1	412.04	-9.94
659	SLD 5	105	457	4893	314.23	388.32	-46.24
659	SLD 6	106	447	4888	313.78	387.91	-45
659	SLD 7	89	-583	5538	381.74	434.97	34.83
659	SLD 8	90	-593	5533	381.29	434.56	36.07
659	SLD 9	-178	450	4958	311.19	393.53	-30.86
659	SLD 10	-177	440	4952	310.74	393.12	-29.62
659	SLD 11	-194	-589	5602	378.7	440.18	50.22
659	SLD 12	-193	-599	5597	378.25	439.77	51.46
659	SLD 13	-513	81	5259	331.39	416.05	15.15
659	SLD 14	-512	66	5252	330.7	415.43	17.03
659	SLD 15	-518	-231	5453	351.64	430.05	39.48
659	SLD 16	-517	-246	5445	350.96	429.43	41.36
659	SLV 1	1062	361	4762	333.52	376.91	-89.92

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
659	SLV 2	1065	326	4743	331.91	375.45	-85.5
659	SLV 3	1051	-416	5246	384.31	411.95	-29.29
659	SLV 4	1054	-452	5228	382.71	410.49	-24.87
659	SLV 5	304	1244	4369	265.69	350.03	-117.93
659	SLV 6	306	1220	4357	264.61	349.05	-114.96
659	SLV 7	267	-1347	5983	435	466.84	84.17
659	SLV 8	269	-1371	5971	433.92	465.86	87.15
659	SLV 9	-357	1229	4519	258.57	362.23	-81.93
659	SLV 10	-355	1205	4507	257.49	361.25	-78.95
659	SLV 11	-394	-1363	6134	427.87	479.04	120.17
659	SLV 12	-392	-1387	6121	426.8	478.06	123.15
659	SLV 13	-1142	309	5263	309.78	417.59	30.09
659	SLV 14	-1139	274	5244	308.17	416.14	34.5
659	SLV 15	-1153	-468	5747	360.57	452.64	90.72
659	SLV 16	-1150	-504	5729	358.97	451.18	95.13
659	CRTFP Ux+	0	0	0	0	0	0
659	CRTFP Ux-	0	0	0	0	0	0
659	CRTFP Uy+	0	0	0	0	0	0
659	CRTFP Uy-	0	0	0	0	0	0
660	SLU 1	-20	-85	4270	1032.15	-877.33	-13.61
660	SLU 2	-20	-63	4255	1027.68	-873.95	-9.08
660	SLU 3	-20	-86	4367	1055.62	-897.26	-13.83
660	SLU 4	-20	-73	4358	1052.94	-895.24	-11.11
660	SLU 5	-20	-64	4316	1042.65	-886.66	-9.23
660	SLU 6	-20	-87	4429	1070.58	-909.97	-13.98
660	SLU 7	-20	-74	4420	1067.9	-907.94	-11.26
660	SLU 8	-20	-87	4394	1062.07	-902.74	-13.91
660	SLU 9	-20	-74	4385	1059.39	-900.71	-11.19
660	SLU 10	-21	-75	4835	1167.39	-993.16	-11.51
660	SLU 11	-22	-99	4947	1195.33	-1016.47	-16.26
660	SLU 12	-21	-86	4938	1192.65	-1014.44	-13.54
660	SLU 13	-21	-76	4896	1182.35	-1005.86	-11.66
660	SLU 14	-22	-100	5009	1210.29	-1029.17	-16.41
660	SLU 15	-22	-87	5000	1207.61	-1027.15	-13.69
660	SLU 16	-22	-99	4974	1201.78	-1021.94	-16.34
660	SLU 17	-22	-86	4965	1199.1	-1019.92	-13.62
660	SLU 18	-22	-103	5099	1231.74	-1047.62	-17.08
660	SLU 19	-22	-90	5090	1229.06	-1045.59	-14.36
660	SLU 20	-22	-104	5161	1246.7	-1060.32	-17.23
660	SLU 21	-22	-91	5151	1244.02	-1058.3	-14.51
660	SLU 22	-22	-95	4935	1192.73	-1013.77	-15.35
660	SLU 23	-22	-73	4919	1188.27	-1010.4	-10.82
660	SLU 24	-23	-97	5032	1216.21	-1033.71	-15.57
660	SLU 25	-23	-84	5022	1213.53	-1031.69	-12.85
660	SLU 26	-22	-74	4981	1203.23	-1023.1	-10.96
660	SLU 27	-23	-98	5094	1231.17	-1046.42	-15.71
660	SLU 28	-23	-85	5084	1228.49	-1044.39	-13
660	SLU 29	-23	-97	5058	1222.66	-1039.18	-15.64
660	SLU 30	-23	-84	5049	1219.98	-1037.16	-12.92
660	SLU 31	-23	-86	5499	1327.98	-1129.6	-13.24
660	SLU 32	-24	-110	5612	1355.92	-1152.92	-17.99
660	SLU 33	-24	-96	5602	1353.24	-1150.89	-15.28
660	SLU 34	-24	-87	5561	1342.94	-1142.31	-13.39
660	SLU 35	-24	-111	5674	1370.88	-1165.62	-18.14
660	SLU 36	-24	-97	5664	1368.2	-1163.6	-15.42
660	SLU 37	-24	-110	5638	1362.37	-1158.39	-18.07
660	SLU 38	-24	-97	5629	1359.69	-1156.36	-15.35
660	SLU 39	-24	-113	5764	1392.32	-1184.07	-18.81
660	SLU 40	-24	-100	5754	1389.64	-1182.04	-16.1
660	SLU 41	-24	-114	5825	1407.28	-1196.77	-18.96
660	SLU 42	-24	-101	5816	1404.6	-1194.75	-16.24
660	SLU 43	-25	-106	5324	1286.74	-1093.74	-17.1
660	SLU 44	-25	-84	5308	1282.27	-1090.37	-12.57
660	SLU 45	-25	-108	5421	1310.21	-1113.68	-17.32
660	SLU 46	-25	-95	5411	1307.53	-1111.65	-14.6
660	SLU 47	-25	-85	5370	1297.23	-1103.07	-12.72
660	SLU 48	-26	-109	5483	1325.17	-1126.38	-17.47
660	SLU 49	-26	-96	5473	1322.49	-1124.36	-14.75
660	SLU 50	-25	-108	5447	1316.66	-1119.15	-17.4
660	SLU 51	-25	-95	5438	1313.98	-1117.13	-14.68
660	SLU 52	-26	-97	5888	1421.98	-1209.57	-15
660	SLU 53	-27	-121	6001	1449.92	-1232.88	-19.75
660	SLU 54	-27	-107	5991	1447.24	-1230.86	-17.03
660	SLU 55	-26	-98	5950	1436.94	-1222.28	-15.15
660	SLU 56	-27	-122	6063	1464.88	-1245.59	-19.9
660	SLU 57	-27	-108	6053	1462.2	-1243.56	-17.18
660	SLU 58	-27	-121	6027	1456.37	-1238.36	-19.82
660	SLU 59	-27	-108	6018	1453.69	-1236.33	-17.11
660	SLU 60	-27	-124	6152	1486.32	-1264.03	-20.57
660	SLU 61	-27	-111	6143	1483.64	-1262.01	-17.85
660	SLU 62	-27	-125	6214	1501.28	-1276.74	-20.72
660	SLU 63	-27	-112	6205	1498.6	-1274.71	-18
660	SLU 64	-27	-117	5988	1447.32	-1230.19	-18.84
660	SLU 65	-27	-95	5972	1442.86	-1226.81	-14.3
660	SLU 66	-28	-119	6085	1470.8	-1250.13	-19.05
660	SLU 67	-28	-106	6076	1468.12	-1248.1	-16.34
660	SLU 68	-28	-96	6034	1457.82	-1239.52	-14.45
660	SLU 69	-28	-120	6147	1485.76	-1262.83	-19.2
660	SLU 70	-28	-107	6137	1483.08	-1260.81	-16.48

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
660	SLU 71	-28	-119	6112	1477.24	-1255.6	-19.13
660	SLU 72	-28	-106	6102	1474.56	-1253.57	-16.41
660	SLU 73	-29	-108	6552	1582.56	-1346.02	-16.73
660	SLU 74	-29	-131	6665	1610.5	-1369.33	-21.48
660	SLU 75	-29	-118	6656	1607.82	-1367.31	-18.77
660	SLU 76	-29	-109	6614	1597.53	-1358.72	-16.88
660	SLU 77	-29	-132	6727	1625.46	-1382.04	-21.63
660	SLU 78	-29	-119	6718	1622.78	-1380.01	-18.91
660	SLU 79	-29	-132	6692	1616.95	-1374.8	-21.56
660	SLU 80	-29	-119	6682	1614.27	-1372.78	-18.84
660	SLU 81	-29	-135	6817	1646.91	-1400.48	-22.3
660	SLU 82	-29	-122	6807	1644.23	-1398.46	-19.59
660	SLU 83	-29	-136	6879	1661.87	-1413.19	-22.45
660	SLU 84	-29	-123	6869	1659.19	-1411.16	-19.73
660	SLE RA 1	-20	-88	4460	1078.03	-916.31	-14.11
660	SLE RA 2	-20	-73	4450	1075.05	-914.06	-11.09
660	SLE RA 3	-21	-89	4525	1093.68	-929.6	-14.25
660	SLE RA 4	-21	-80	4519	1091.89	-928.25	-12.44
660	SLE RA 5	-21	-74	4491	1085.03	-922.53	-11.19
660	SLE RA 6	-21	-89	4566	1103.65	-938.07	-14.35
660	SLE RA 7	-21	-81	4560	1101.87	-936.72	-12.54
660	SLE RA 8	-21	-89	4543	1097.98	-933.25	-14.3
660	SLE RA 9	-21	-80	4536	1096.19	-931.9	-12.49
660	SLE RA 10	-21	-82	4836	1168.19	-993.53	-12.71
660	SLE RA 11	-22	-97	4912	1186.82	-1009.07	-15.87
660	SLE RA 12	-22	-88	4905	1185.03	-1007.72	-14.06
660	SLE RA 13	-21	-82	4878	1178.17	-1002	-12.8
660	SLE RA 14	-22	-98	4953	1196.79	-1017.54	-15.97
660	SLE RA 15	-22	-89	4946	1195.01	-1016.19	-14.16
660	SLE RA 16	-22	-98	4929	1191.12	-1012.72	-15.92
660	SLE RA 17	-22	-89	4923	1189.33	-1011.37	-14.11
660	SLE RA 18	-22	-100	5013	1211.09	-1029.84	-16.42
660	SLE RA 19	-22	-91	5006	1209.3	-1028.49	-14.61
660	SLE RA 20	-22	-100	5054	1221.06	-1038.31	-16.52
660	SLE RA 21	-22	-92	5048	1219.28	-1036.96	-14.71
660	SLE FR 1	-20	-88	4460	1078.03	-916.31	-14.11
660	SLE FR 2	-20	-85	4458	1077.44	-915.86	-13.5
660	SLE FR 3	-21	-88	4477	1082.02	-919.7	-14.15
660	SLE FR 4	-21	-88	4624	1117.35	-949.92	-14.2
660	SLE FR 5	-21	-92	4642	1121.94	-953.76	-14.84
660	SLE FR 6	-21	-94	4736	1144.56	-973.07	-15.26
660	SLE QP 1	-20	-88	4460	1078.03	-916.31	-14.11
660	SLE QP 2	-21	-91	4626	1117.95	-950.37	-14.8
660	SLD 1	388	58	4438	1084.95	-911.63	-86.99
660	SLD 2	387	49	4432	1083.44	-910.33	-88.57
660	SLD 3	384	-214	4654	1145.81	-957.53	-143.01
660	SLD 4	383	-223	4647	1144.31	-956.24	-144.59
660	SLD 5	108	368	4244	1016	-869.36	48.79
660	SLD 6	108	362	4240	1015.01	-868.5	47.75
660	SLD 7	95	-539	4963	1218.89	-1022.37	-137.94
660	SLD 8	94	-545	4958	1217.9	-1021.52	-138.99
660	SLD 9	-136	362	4294	1018	-879.22	109.39
660	SLD 10	-136	356	4289	1017	-878.36	108.34
660	SLD 11	-149	-544	5012	1220.89	-1032.23	-77.35
660	SLD 12	-150	-551	5008	1219.89	-1031.38	-78.39
660	SLD 13	-425	40	4605	1091.59	-944.5	114.99
660	SLD 14	-426	31	4598	1090.08	-943.21	113.41
660	SLD 15	-429	-232	4820	1152.46	-990.4	58.97
660	SLD 16	-430	-241	4814	1150.95	-989.11	57.39
660	SLV 1	936	280	4169	1035.76	-855.96	-179.4
660	SLV 2	934	257	4154	1032.22	-852.91	-183.13
660	SLV 3	927	-399	4709	1188.2	-970.9	-319.04
660	SLV 4	925	-421	4694	1184.66	-967.86	-322.77
660	SLV 5	281	1053	3673	862.75	-748.28	148.3
660	SLV 6	279	1038	3663	860.37	-746.23	145.8
660	SLV 7	250	-1208	5473	1370.89	-1131.43	-317.17
660	SLV 8	248	-1223	5462	1368.51	-1129.39	-319.67
660	SLV 9	-290	1040	3790	867.39	-771.35	290.07
660	SLV 10	-291	1025	3779	865.01	-769.3	287.56
660	SLV 11	-321	-1221	5589	1375.53	-1154.51	-175.4
660	SLV 12	-322	-1235	5579	1373.15	-1152.46	-177.91
660	SLV 13	-966	238	4558	1051.24	-932.88	293.16
660	SLV 14	-968	216	4543	1047.7	-929.83	289.44
660	SLV 15	-976	-440	5098	1203.68	-1047.82	153.52
660	SLV 16	-978	-462	5083	1200.14	-1044.78	149.8
660	CRTFP Ux+	0	0	0	0	0	0
660	CRTFP Ux-	0	0	0	0	0	0
660	CRTFP Uy+	0	0	0	0	0	0
660	CRTFP Uy-	0	0	0	0	0	0
661	SLU 1	-18	-142	5838	1191.58	863.91	24.96
661	SLU 2	-18	-112	5813	1183.96	860.33	20.41
661	SLU 3	-18	-145	5971	1218.51	883.57	25.43
661	SLU 4	-18	-127	5956	1213.94	881.42	22.7
661	SLU 5	-18	-113	5898	1201.25	872.87	20.71
661	SLU 6	-18	-147	6056	1235.8	896.11	25.73
661	SLU 7	-18	-128	6041	1231.23	893.96	23
661	SLU 8	-18	-146	6008	1226.16	889	25.56
661	SLU 9	-18	-127	5993	1221.59	886.85	22.83
661	SLU 10	-19	-134	6605	1341.7	977.74	23.93

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
661	SLU 11	-20	-167	6764	1376.26	1000.99	28.95
661	SLU 12	-20	-148	6748	1371.68	998.84	26.22
661	SLU 13	-20	-135	6690	1358.99	990.29	24.23
661	SLU 14	-20	-168	6849	1393.55	1013.53	29.25
661	SLU 15	-20	-150	6833	1388.97	1011.38	26.52
661	SLU 16	-20	-168	6801	1383.91	1006.42	29.08
661	SLU 17	-20	-149	6785	1379.33	1004.27	26.35
661	SLU 18	-20	-174	6971	1416.93	1031.65	29.98
661	SLU 19	-20	-155	6955	1412.36	1029.5	27.26
661	SLU 20	-20	-175	7056	1434.22	1044.19	30.28
661	SLU 21	-20	-157	7040	1429.65	1042.04	27.56
661	SLU 22	-20	-161	6744	1373.44	998.15	28.17
661	SLU 23	-20	-130	6719	1365.82	994.57	23.62
661	SLU 24	-21	-163	6877	1400.37	1017.81	28.64
661	SLU 25	-20	-145	6862	1395.8	1015.66	25.91
661	SLU 26	-20	-132	6804	1383.11	1007.11	23.92
661	SLU 27	-21	-165	6962	1417.66	1030.36	28.94
661	SLU 28	-21	-147	6947	1413.09	1028.21	26.21
661	SLU 29	-21	-164	6914	1408.02	1023.24	28.77
661	SLU 30	-21	-146	6899	1403.45	1021.09	26.04
661	SLU 31	-22	-152	7511	1523.56	1111.99	27.14
661	SLU 32	-22	-185	7670	1558.12	1135.23	32.16
661	SLU 33	-22	-167	7654	1553.54	1133.08	29.43
661	SLU 34	-22	-154	7596	1540.85	1124.53	27.44
661	SLU 35	-22	-187	7755	1575.41	1147.77	32.46
661	SLU 36	-22	-168	7739	1570.83	1145.62	29.73
661	SLU 37	-22	-186	7707	1565.77	1140.66	32.29
661	SLU 38	-22	-168	7691	1561.19	1138.51	29.56
661	SLU 39	-23	-192	7877	1598.79	1165.89	33.2
661	SLU 40	-22	-174	7861	1594.22	1163.74	30.47
661	SLU 41	-23	-194	7962	1616.08	1178.44	33.5
661	SLU 42	-23	-175	7946	1611.51	1176.29	30.77
661	SLU 43	-22	-179	7279	1486.7	1077.06	31.34
661	SLU 44	-22	-148	7254	1479.08	1073.47	26.8
661	SLU 45	-23	-181	7412	1513.64	1096.72	31.82
661	SLU 46	-23	-163	7397	1509.06	1094.57	29.09
661	SLU 47	-22	-150	7339	1496.37	1086.02	27.1
661	SLU 48	-23	-183	7497	1530.93	1109.26	32.12
661	SLU 49	-23	-165	7482	1526.35	1107.11	29.39
661	SLU 50	-23	-182	7449	1521.29	1102.14	31.94
661	SLU 51	-23	-164	7434	1516.71	1099.99	29.22
661	SLU 52	-24	-170	8046	1636.83	1190.89	30.32
661	SLU 53	-24	-203	8205	1671.38	1214.14	35.33
661	SLU 54	-24	-185	8189	1666.81	1211.99	32.61
661	SLU 55	-24	-172	8131	1654.12	1203.44	30.62
661	SLU 56	-25	-205	8290	1688.67	1226.68	35.63
661	SLU 57	-25	-187	8274	1684.1	1224.53	32.91
661	SLU 58	-25	-204	8242	1679.03	1219.56	35.46
661	SLU 59	-24	-186	8226	1674.46	1217.41	32.73
661	SLU 60	-25	-210	8411	1712.05	1244.8	36.37
661	SLU 61	-25	-192	8396	1707.48	1242.65	33.64
661	SLU 62	-25	-212	8496	1729.34	1257.34	36.67
661	SLU 63	-25	-193	8481	1724.77	1255.19	33.94
661	SLU 64	-25	-197	8185	1668.57	1211.3	34.56
661	SLU 65	-25	-167	8160	1660.94	1207.72	30.01
661	SLU 66	-25	-200	8318	1695.5	1230.96	35.03
661	SLU 67	-25	-181	8303	1690.92	1228.81	32.3
661	SLU 68	-25	-168	8245	1678.23	1220.26	30.31
661	SLU 69	-25	-201	8403	1712.79	1243.5	35.33
661	SLU 70	-25	-183	8388	1708.21	1241.35	32.6
661	SLU 71	-25	-201	8355	1703.15	1236.39	35.16
661	SLU 72	-25	-182	8340	1698.57	1234.24	32.43
661	SLU 73	-26	-189	8952	1818.69	1325.13	33.53
661	SLU 74	-27	-222	9111	1853.24	1348.38	38.55
661	SLU 75	-27	-203	9095	1848.67	1346.23	35.82
661	SLU 76	-26	-190	9037	1835.98	1337.68	33.83
661	SLU 77	-27	-223	9196	1870.53	1360.92	38.85
661	SLU 78	-27	-205	9180	1865.96	1358.77	36.12
661	SLU 79	-27	-222	9148	1860.89	1353.8	38.67
661	SLU 80	-27	-204	9132	1856.32	1351.66	35.95
661	SLU 81	-27	-229	9317	1893.91	1379.04	39.58
661	SLU 82	-27	-210	9302	1889.34	1376.89	36.85
661	SLU 83	-27	-230	9402	1911.2	1391.58	39.88
661	SLU 84	-27	-212	9387	1906.63	1389.43	37.15
661	SLE RA 1	-18	-148	6097	1243.54	902.26	25.88
661	SLE RA 2	-18	-127	6080	1238.46	899.88	22.84
661	SLE RA 3	-19	-149	6186	1261.5	915.37	26.19
661	SLE RA 4	-19	-137	6176	1258.45	913.94	24.37
661	SLE RA 5	-19	-128	6137	1249.99	908.24	23.04
661	SLE RA 6	-19	-151	6243	1273.02	923.73	26.39
661	SLE RA 7	-19	-138	6232	1269.97	922.3	24.57
661	SLE RA 8	-19	-150	6211	1266.6	918.99	26.28
661	SLE RA 9	-19	-138	6200	1263.55	917.56	24.46
661	SLE RA 10	-19	-142	6608	1343.62	978.15	25.19
661	SLE RA 11	-20	-164	6714	1366.66	993.65	28.54
661	SLE RA 12	-20	-152	6704	1363.61	992.22	26.72
661	SLE RA 13	-20	-143	6665	1355.15	986.52	25.39
661	SLE RA 14	-20	-165	6771	1378.19	1002.01	28.74
661	SLE RA 15	-20	-153	6761	1375.14	1000.58	26.92

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
661	SLE RA 16	-20	-164	6739	1371.76	997.27	28.62
661	SLE RA 17	-20	-152	6729	1368.71	995.84	26.8
661	SLE RA 18	-20	-169	6852	1393.77	1014.09	29.23
661	SLE RA 19	-20	-156	6842	1390.73	1012.66	27.41
661	SLE RA 20	-20	-170	6909	1405.3	1022.45	29.43
661	SLE RA 21	-20	-157	6898	1402.25	1021.02	27.61
661	SLE FR 1	-18	-148	6097	1243.54	902.26	25.88
661	SLE FR 2	-18	-144	6094	1242.53	901.79	25.27
661	SLE FR 3	-19	-148	6120	1248.15	905.61	25.96
661	SLE FR 4	-19	-150	6320	1287.6	935.33	26.27
661	SLE FR 5	-19	-154	6346	1293.22	939.16	26.96
661	SLE FR 6	-19	-158	6475	1318.66	958.18	27.55
661	SLE QP 1	-18	-148	6097	1243.54	902.26	25.88
661	SLE QP 2	-19	-154	6324	1288.61	935.81	26.88
661	SLD 1	541	53	6099	1260.59	898.68	-142.03
661	SLD 2	540	44	6091	1259.59	897.47	-140.2
661	SLD 3	535	-325	6445	1361.74	947.18	-85.97
661	SLD 4	534	-333	6437	1360.74	945.96	-84.15
661	SLD 5	158	482	5732	1126.98	851.34	-109.14
661	SLD 6	157	477	5727	1126.32	850.53	-107.94
661	SLD 7	139	-777	6887	1464.13	1013	77.72
661	SLD 8	138	-782	6882	1463.47	1012.19	78.93
661	SLD 9	-176	474	5766	1113.75	859.43	-25.16
661	SLD 10	-177	469	5760	1113.09	858.63	-23.96
661	SLD 11	-195	-785	6920	1450.9	1021.09	161.7
661	SLD 12	-196	-790	6915	1450.24	1020.29	162.91
661	SLD 13	-572	25	6210	1216.49	925.66	137.91
661	SLD 14	-573	17	6202	1215.49	924.44	139.73
661	SLD 15	-578	-352	6556	1317.63	974.16	193.97
661	SLD 16	-579	-361	6549	1316.63	972.94	195.79
661	SLV 1	1292	359	5769	1214.81	844.97	-372.61
661	SLV 2	1289	339	5751	1212.46	842.11	-368.32
661	SLV 3	1278	-582	6636	1467.97	966.4	-232.86
661	SLV 4	1275	-603	6618	1465.62	963.54	-228.57
661	SLV 5	396	1432	4845	882.96	724.92	-305.72
661	SLV 6	394	1418	4833	881.37	723	-302.84
661	SLV 7	350	-1707	7736	1726.82	1129.69	160.11
661	SLV 8	348	-1720	7724	1725.23	1127.77	163
661	SLV 9	-386	1412	4923	851.99	743.86	-109.24
661	SLV 10	-388	1399	4911	850.41	741.93	-106.35
661	SLV 11	-432	-1726	7814	1695.86	1148.63	356.6
661	SLV 12	-434	-1740	7802	1694.27	1146.7	359.49
661	SLV 13	-1313	295	6029	1111.61	908.09	282.33
661	SLV 14	-1316	274	6011	1109.25	905.23	286.62
661	SLV 15	-1327	-647	6897	1364.77	1029.52	422.08
661	SLV 16	-1330	-667	6878	1362.41	1026.66	426.37
661	CRTFP Ux+	0	0	0	0	0	0
661	CRTFP Ux-	0	0	0	0	0	0
661	CRTFP Uy+	0	0	0	0	0	0
661	CRTFP Uy-	0	0	0	0	0	0
663	SLU 1	-8	-122	5479	1115.69	-900.22	-16.36
663	SLU 2	-8	-93	5453	1107.47	-895.79	-11.66
663	SLU 3	-8	-124	5604	1140.88	-920.69	-16.64
663	SLU 4	-8	-107	5588	1135.95	-918.04	-13.82
663	SLU 5	-8	-95	5533	1123.75	-908.94	-11.84
663	SLU 6	-8	-126	5684	1157.16	-933.83	-16.82
663	SLU 7	-8	-108	5668	1152.23	-931.18	-14
663	SLU 8	-8	-125	5640	1148.24	-926.5	-16.72
663	SLU 9	-8	-108	5624	1143.31	-923.85	-13.89
663	SLU 10	-9	-112	6193	1254	-1017	-14.04
663	SLU 11	-10	-143	6344	1287.41	-1041.89	-19.02
663	SLU 12	-10	-126	6328	1282.48	-1039.24	-16.2
663	SLU 13	-9	-113	6273	1270.28	-1030.14	-14.21
663	SLU 14	-10	-144	6424	1303.69	-1055.04	-19.19
663	SLU 15	-10	-127	6408	1298.76	-1052.38	-16.37
663	SLU 16	-10	-144	6379	1294.77	-1047.71	-19.09
663	SLU 17	-10	-126	6363	1289.84	-1045.05	-16.27
663	SLU 18	-10	-149	6536	1325.01	-1073.36	-19.76
663	SLU 19	-10	-131	6520	1320.09	-1070.71	-16.93
663	SLU 20	-10	-150	6616	1341.29	-1086.51	-19.93
663	SLU 21	-10	-133	6600	1336.36	-1083.85	-17.11
663	SLU 22	-9	-138	6326	1284.83	-1039.11	-18.43
663	SLU 23	-9	-109	6300	1276.62	-1034.69	-13.73
663	SLU 24	-10	-140	6451	1310.02	-1059.59	-18.71
663	SLU 25	-9	-123	6435	1305.1	-1056.94	-15.89
663	SLU 26	-9	-110	6380	1292.89	-1047.84	-13.9
663	SLU 27	-10	-142	6531	1326.3	-1072.73	-18.88
663	SLU 28	-10	-124	6515	1321.37	-1070.08	-16.06
663	SLU 29	-10	-141	6486	1317.39	-1065.4	-18.78
663	SLU 30	-9	-123	6470	1312.46	-1062.75	-15.96
663	SLU 31	-11	-128	7039	1423.15	-1155.89	-16.1
663	SLU 32	-11	-159	7191	1456.56	-1180.79	-21.08
663	SLU 33	-11	-141	7175	1451.63	-1178.14	-18.26
663	SLU 34	-11	-129	7119	1439.43	-1169.04	-16.28
663	SLU 35	-11	-160	7271	1472.83	-1193.94	-21.26
663	SLU 36	-11	-143	7255	1467.91	-1191.28	-18.44
663	SLU 37	-11	-159	7226	1463.92	-1186.61	-21.16
663	SLU 38	-11	-142	7210	1458.99	-1183.95	-18.34
663	SLU 39	-11	-165	7383	1494.16	-1212.26	-21.82

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
663	SLU 40	-11	-147	7367	1489.23	-1209.61	-19
663	SLU 41	-12	-166	7463	1510.44	-1225.41	-22
663	SLU 42	-11	-149	7447	1505.51	-1222.75	-19.18
663	SLU 43	-10	-153	6833	1392.4	-1122.66	-20.56
663	SLU 44	-10	-124	6806	1384.18	-1118.23	-15.86
663	SLU 45	-10	-156	6958	1417.59	-1143.13	-20.84
663	SLU 46	-10	-138	6942	1412.66	-1140.48	-18.02
663	SLU 47	-10	-126	6887	1400.46	-1131.38	-16.04
663	SLU 48	-10	-157	7038	1433.87	-1156.28	-21.02
663	SLU 49	-10	-140	7022	1428.94	-1153.62	-18.2
663	SLU 50	-10	-156	6993	1424.96	-1148.95	-20.92
663	SLU 51	-10	-139	6977	1420.03	-1146.29	-18.09
663	SLU 52	-11	-143	7546	1530.71	-1239.44	-18.24
663	SLU 53	-12	-174	7697	1564.12	-1264.33	-23.22
663	SLU 54	-12	-157	7681	1559.19	-1261.68	-20.4
663	SLU 55	-11	-144	7626	1546.99	-1252.58	-18.41
663	SLU 56	-12	-176	7777	1580.4	-1277.48	-23.39
663	SLU 57	-12	-158	7762	1575.47	-1274.83	-20.57
663	SLU 58	-12	-175	7733	1571.49	-1270.15	-23.29
663	SLU 59	-12	-157	7717	1566.56	-1267.5	-20.47
663	SLU 60	-12	-180	7890	1601.73	-1295.8	-23.96
663	SLU 61	-12	-163	7874	1596.8	-1293.15	-21.13
663	SLU 62	-12	-181	7970	1618.01	-1308.95	-24.13
663	SLU 63	-12	-164	7954	1613.08	-1306.3	-21.31
663	SLU 64	-11	-169	7680	1561.54	-1261.56	-22.63
663	SLU 65	-11	-140	7653	1553.33	-1257.13	-17.93
663	SLU 66	-12	-171	7805	1586.74	-1282.03	-22.91
663	SLU 67	-11	-154	7789	1581.81	-1279.38	-20.09
663	SLU 68	-11	-142	7733	1569.61	-1270.28	-18.1
663	SLU 69	-12	-173	7885	1603.02	-1295.18	-23.08
663	SLU 70	-12	-155	7869	1598.09	-1292.52	-20.26
663	SLU 71	-12	-172	7840	1594.1	-1287.85	-22.98
663	SLU 72	-11	-155	7824	1589.17	-1285.19	-20.16
663	SLU 73	-13	-159	8393	1699.86	-1378.34	-20.3
663	SLU 74	-13	-190	8544	1733.27	-1403.23	-25.28
663	SLU 75	-13	-173	8528	1728.34	-1400.58	-22.46
663	SLU 76	-13	-160	8473	1716.14	-1391.48	-20.48
663	SLU 77	-13	-191	8624	1749.55	-1416.38	-25.46
663	SLU 78	-13	-174	8608	1744.62	-1413.73	-22.64
663	SLU 79	-13	-191	8579	1740.63	-1409.05	-25.36
663	SLU 80	-13	-173	8564	1735.7	-1406.4	-22.54
663	SLU 81	-14	-196	8736	1770.87	-1434.7	-26.02
663	SLU 82	-13	-178	8721	1765.94	-1432.05	-23.2
663	SLU 83	-14	-197	8816	1787.15	-1447.85	-26.2
663	SLU 84	-13	-180	8801	1782.22	-1445.19	-23.38
663	SLE RA 1	-9	-127	5721	1164.01	-939.9	-16.95
663	SLE RA 2	-8	-107	5704	1158.54	-936.95	-13.82
663	SLE RA 3	-9	-128	5805	1180.81	-953.55	-17.14
663	SLE RA 4	-9	-117	5794	1177.52	-951.78	-15.26
663	SLE RA 5	-8	-108	5757	1169.39	-945.72	-13.94
663	SLE RA 6	-9	-129	5858	1191.66	-962.31	-17.26
663	SLE RA 7	-9	-117	5847	1188.37	-960.54	-15.38
663	SLE RA 8	-9	-129	5828	1185.72	-957.43	-17.19
663	SLE RA 9	-9	-117	5818	1182.43	-955.66	-15.31
663	SLE RA 10	-9	-120	6197	1256.22	-1017.75	-15.4
663	SLE RA 11	-10	-141	6298	1278.5	-1034.35	-18.72
663	SLE RA 12	-9	-129	6287	1275.21	-1032.58	-16.84
663	SLE RA 13	-9	-121	6250	1267.08	-1026.52	-15.52
663	SLE RA 14	-10	-142	6351	1289.35	-1043.12	-18.84
663	SLE RA 15	-10	-130	6340	1286.06	-1041.35	-16.96
663	SLE RA 16	-10	-141	6321	1283.4	-1038.23	-18.77
663	SLE RA 17	-10	-129	6311	1280.12	-1036.46	-16.89
663	SLE RA 18	-10	-144	6426	1303.57	-1055.33	-19.21
663	SLE RA 19	-10	-133	6415	1300.28	-1053.56	-17.33
663	SLE RA 20	-10	-145	6479	1314.42	-1064.09	-19.33
663	SLE RA 21	-10	-134	6469	1311.13	-1062.33	-17.45
663	SLE FR 1	-9	-127	5721	1164.01	-939.9	-16.95
663	SLE FR 2	-8	-123	5718	1162.92	-939.31	-16.33
663	SLE FR 3	-9	-127	5743	1168.35	-943.41	-17
663	SLE FR 4	-9	-128	5929	1204.78	-973.94	-17
663	SLE FR 5	-9	-132	5954	1210.22	-978.04	-17.68
663	SLE FR 6	-9	-136	6074	1233.79	-997.62	-18.08
663	SLE QP 1	-9	-127	5721	1164.01	-939.9	-16.95
663	SLE QP 2	-9	-132	5933	1205.88	-974.53	-17.63
663	SLD 1	520	67	5808	1233.63	-958.74	-117.13
663	SLD 2	519	64	5802	1233.14	-957.87	-117.02
663	SLD 3	513	-291	6164	1342.18	-1018.12	-174.83
663	SLD 4	512	-294	6158	1341.7	-1017.26	-174.72
663	SLD 5	160	470	5356	1049.65	-879.87	40.01
663	SLD 6	159	468	5352	1049.33	-879.31	40.08
663	SLD 7	138	-721	6543	1411.5	-1077.83	-152.32
663	SLD 8	137	-723	6540	1411.18	-1077.27	-152.25
663	SLD 9	-155	459	5326	1000.58	-871.79	116.99
663	SLD 10	-156	457	5322	1000.26	-871.23	117.06
663	SLD 11	-177	-732	6513	1362.43	-1069.75	-75.34
663	SLD 12	-178	-734	6509	1362.11	-1069.19	-75.27
663	SLD 13	-530	30	5707	1070.06	-931.8	139.46
663	SLD 14	-531	27	5702	1069.57	-930.94	139.57
663	SLD 15	-536	-328	6063	1178.61	-991.19	81.76

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
663	SLD 16	-538	-331	6058	1178.13	-990.32	81.87
663	SLV 1	1228	360	5611	1262	-932.7	-246
663	SLV 2	1226	353	5598	1260.86	-930.68	-245.75
663	SLV 3	1212	-530	6503	1533.68	-1081.37	-389.84
663	SLV 4	1210	-538	6489	1532.54	-1079.35	-389.59
663	SLV 5	386	1367	4487	810.89	-736.88	131.96
663	SLV 6	385	1363	4477	810.12	-735.51	132.13
663	SLV 7	334	-1601	7459	1716.47	-1232.44	-347.49
663	SLV 8	333	-1606	7449	1715.71	-1231.08	-347.32
663	SLV 9	-350	1342	4416	696.05	-717.98	312.06
663	SLV 10	-352	1337	4407	695.28	-716.62	312.23
663	SLV 11	-402	-1627	7388	1601.64	-1213.55	-167.39
663	SLV 12	-404	-1632	7379	1600.87	-1212.18	-167.22
663	SLV 13	-1228	274	5376	879.22	-869.71	354.32
663	SLV 14	-1230	266	5363	878.08	-867.69	354.57
663	SLV 15	-1243	-617	6268	1150.9	-1018.38	210.49
663	SLV 16	-1246	-624	6254	1149.76	-1016.36	210.74
663	CRTFP Ux+	0	0	0	0	0	0
663	CRTFP Ux-	0	0	0	0	0	0
663	CRTFP Uy+	0	0	0	0	0	0
663	CRTFP Uy-	0	0	0	0	0	0
665	SLU 1	1	-69	4521	1062.25	1007.74	16.69
665	SLU 2	1	-45	4499	1055.34	1002.84	11.27
665	SLU 3	1	-70	4624	1086.69	1030.6	17
665	SLU 4	1	-56	4611	1082.54	1027.66	13.74
665	SLU 5	1	-46	4565	1071.11	1017.53	11.46
665	SLU 6	1	-71	4689	1102.46	1045.28	17.2
665	SLU 7	1	-57	4676	1098.31	1042.35	13.94
665	SLU 8	1	-71	4653	1093.8	1037.11	17.09
665	SLU 9	1	-56	4640	1089.65	1034.17	13.83
665	SLU 10	0	-55	5105	1197.19	1137.96	13.97
665	SLU 11	0	-80	5229	1228.54	1165.71	19.7
665	SLU 12	0	-66	5216	1224.39	1162.78	16.45
665	SLU 13	0	-56	5170	1212.96	1152.65	14.17
665	SLU 14	0	-81	5295	1244.31	1180.4	19.9
665	SLU 15	0	-67	5282	1240.16	1177.46	16.64
665	SLU 16	0	-81	5258	1235.65	1172.22	19.79
665	SLU 17	0	-66	5245	1231.5	1169.29	16.53
665	SLU 18	-1	-83	5386	1264.89	1200.76	20.55
665	SLU 19	-1	-69	5373	1260.74	1197.83	17.3
665	SLU 20	-1	-84	5451	1280.67	1215.45	20.75
665	SLU 21	-1	-70	5438	1276.52	1212.51	17.49
665	SLU 22	1	-78	5217	1226.8	1162.88	18.89
665	SLU 23	1	-54	5195	1219.89	1157.99	13.46
665	SLU 24	1	-79	5319	1251.24	1185.74	19.2
665	SLU 25	1	-65	5306	1247.09	1182.8	15.94
665	SLU 26	1	-55	5261	1235.66	1172.67	13.66
665	SLU 27	1	-80	5385	1267.01	1200.42	19.39
665	SLU 28	1	-66	5372	1262.86	1197.49	16.14
665	SLU 29	1	-79	5348	1258.35	1192.25	19.28
665	SLU 30	1	-65	5335	1254.2	1189.31	16.03
665	SLU 31	0	-64	5800	1361.74	1293.1	16.17
665	SLU 32	-1	-89	5924	1393.09	1320.86	21.9
665	SLU 33	0	-75	5911	1388.94	1317.92	18.64
665	SLU 34	0	-65	5866	1377.51	1307.79	16.36
665	SLU 35	-1	-90	5990	1408.86	1335.54	22.09
665	SLU 36	0	-75	5977	1404.71	1332.6	18.84
665	SLU 37	-1	-89	5953	1400.2	1327.36	21.98
665	SLU 38	0	-75	5940	1396.05	1324.43	18.73
665	SLU 39	-1	-92	6081	1429.44	1355.9	22.75
665	SLU 40	-1	-78	6068	1425.29	1352.97	19.49
665	SLU 41	-1	-93	6147	1445.22	1370.59	22.95
665	SLU 42	-1	-78	6134	1441.07	1367.65	19.69
665	SLU 43	1	-87	5639	1324.51	1256.87	20.95
665	SLU 44	1	-63	5617	1317.6	1251.98	15.52
665	SLU 45	1	-88	5741	1348.95	1279.73	21.25
665	SLU 46	1	-74	5728	1344.8	1276.79	18
665	SLU 47	1	-64	5683	1333.37	1266.66	15.72
665	SLU 48	1	-89	5807	1364.72	1294.41	21.45
665	SLU 49	1	-74	5794	1360.57	1291.48	18.19
665	SLU 50	1	-88	5771	1356.06	1286.24	21.34
665	SLU 51	1	-74	5758	1351.91	1283.3	18.08
665	SLU 52	0	-73	6223	1459.44	1387.09	18.22
665	SLU 53	0	-98	6347	1490.8	1414.85	23.96
665	SLU 54	0	-84	6334	1486.65	1411.91	20.7
665	SLU 55	0	-74	6288	1475.22	1401.78	18.42
665	SLU 56	0	-99	6412	1506.57	1429.53	24.15
665	SLU 57	0	-84	6399	1502.42	1426.59	20.9
665	SLU 58	0	-98	6376	1497.9	1421.35	24.04
665	SLU 59	0	-84	6363	1493.75	1418.42	20.79
665	SLU 60	-1	-101	6504	1527.15	1449.89	24.81
665	SLU 61	0	-87	6491	1523	1446.96	21.55
665	SLU 62	-1	-102	6569	1542.92	1464.58	25.01
665	SLU 63	0	-87	6556	1538.77	1461.64	21.75
665	SLU 64	1	-95	6334	1489.06	1412.01	23.14
665	SLU 65	1	-72	6313	1482.15	1407.12	17.72
665	SLU 66	1	-97	6437	1513.5	1434.87	23.45
665	SLU 67	1	-82	6424	1509.35	1431.93	20.19
665	SLU 68	1	-72	6379	1497.92	1421.8	17.91

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
665	SLU 69	1	-98	6503	1529.27	1449.55	23.65
665	SLU 70	1	-83	6490	1525.12	1446.62	20.39
665	SLU 71	1	-97	6466	1520.61	1441.38	23.54
665	SLU 72	1	-83	6453	1516.46	1438.44	20.28
665	SLU 73	0	-82	6918	1623.99	1542.23	20.42
665	SLU 74	0	-107	7042	1655.35	1569.99	26.15
665	SLU 75	0	-92	7029	1651.2	1567.05	22.9
665	SLU 76	0	-82	6984	1639.77	1556.92	20.62
665	SLU 77	0	-107	7108	1671.12	1584.67	26.35
665	SLU 78	0	-93	7095	1666.97	1581.73	23.09
665	SLU 79	0	-107	7071	1662.45	1576.49	26.24
665	SLU 80	0	-93	7058	1658.3	1573.56	22.98
665	SLU 81	-1	-110	7199	1691.7	1605.03	27.01
665	SLU 82	0	-95	7186	1687.55	1602.1	23.75
665	SLU 83	-1	-110	7265	1707.48	1619.72	27.2
665	SLU 84	0	-96	7252	1703.33	1616.78	23.95
665	SLE RA 1	1	-72	4720	1109.27	1052.06	17.32
665	SLE RA 2	1	-56	4705	1104.66	1048.8	13.7
665	SLE RA 3	1	-72	4788	1125.56	1067.3	17.52
665	SLE RA 4	1	-63	4779	1122.79	1065.35	15.35
665	SLE RA 5	1	-56	4749	1115.17	1058.59	13.83
665	SLE RA 6	1	-73	4832	1136.07	1077.09	17.66
665	SLE RA 7	1	-63	4823	1133.31	1075.14	15.48
665	SLE RA 8	1	-73	4808	1130.3	1071.64	17.58
665	SLE RA 9	1	-63	4799	1127.53	1069.69	15.41
665	SLE RA 10	0	-62	5109	1199.22	1138.88	15.5
665	SLE RA 11	0	-79	5192	1220.13	1157.38	19.33
665	SLE RA 12	0	-69	5183	1217.36	1155.42	17.16
665	SLE RA 13	0	-63	5153	1209.74	1148.67	15.64
665	SLE RA 14	0	-80	5235	1230.64	1167.17	19.46
665	SLE RA 15	0	-70	5227	1227.87	1165.21	17.29
665	SLE RA 16	0	-79	5211	1224.86	1161.72	19.38
665	SLE RA 17	0	-70	5202	1222.1	1159.76	17.21
665	SLE RA 18	0	-81	5296	1244.36	1180.75	19.89
665	SLE RA 19	0	-71	5288	1241.6	1178.79	17.72
665	SLE RA 20	0	-82	5340	1254.88	1190.54	20.03
665	SLE RA 21	0	-72	5331	1252.11	1188.58	17.85
665	SLE FR 1	1	-72	4720	1109.27	1052.06	17.32
665	SLE FR 2	1	-68	4717	1108.35	1051.41	16.6
665	SLE FR 3	1	-72	4737	1113.47	1055.98	17.37
665	SLE FR 4	0	-71	4890	1148.87	1090.02	17.37
665	SLE FR 5	0	-75	4910	1154	1094.58	18.15
665	SLE FR 6	0	-76	5008	1176.81	1116.41	18.61
665	SLE QP 1	1	-72	4720	1109.27	1052.06	17.32
665	SLE QP 2	0	-74	4893	1149.8	1090.67	18.09
665	SLD 1	436	86	4845	1126.87	1078.78	-126.35
665	SLD 2	435	90	4842	1125.96	1077.99	-126.65
665	SLD 3	430	-207	5137	1219.29	1144.58	-59.71
665	SLD 4	429	-203	5134	1218.39	1143.79	-60
665	SLD 5	141	417	4437	1002.9	987.44	-126.26
665	SLD 6	141	420	4435	1002.31	986.92	-126.46
665	SLD 7	119	-559	5409	1310.99	1206.79	95.88
665	SLD 8	119	-557	5407	1310.39	1206.27	95.68
665	SLD 9	-118	408	4379	989.2	975.07	-59.5
665	SLD 10	-119	410	4377	988.61	974.55	-59.69
665	SLD 11	-140	-569	5351	1297.29	1194.42	162.64
665	SLD 12	-140	-566	5349	1296.69	1193.9	162.45
665	SLD 13	-428	54	4652	1081.2	1037.54	96.19
665	SLD 14	-429	58	4649	1080.3	1036.76	95.89
665	SLD 15	-435	-239	4943	1173.63	1103.35	162.83
665	SLD 16	-435	-235	4940	1172.72	1102.56	162.53
665	SLV 1	1020	324	4758	1088.57	1057.46	-324.98
665	SLV 2	1018	332	4750	1086.44	1055.6	-325.68
665	SLV 3	1004	-407	5488	1319.98	1222.19	-158.79
665	SLV 4	1002	-398	5480	1317.85	1220.33	-159.49
665	SLV 5	331	1151	3746	780.85	831.21	-336.75
665	SLV 6	329	1157	3741	779.42	829.96	-337.22
665	SLV 7	278	-1284	6180	1552.22	1380.31	217.21
665	SLV 8	277	-1278	6175	1550.79	1379.06	216.74
665	SLV 9	-276	1129	3610	748.8	802.28	-180.55
665	SLV 10	-277	1135	3605	747.37	801.03	-181.02
665	SLV 11	-329	-1306	6044	1520.18	1351.37	373.4
665	SLV 12	-330	-1300	6039	1518.74	1350.13	372.93
665	SLV 13	-1002	249	4305	981.74	961	195.68
665	SLV 14	-1004	258	4298	979.61	959.15	194.98
665	SLV 15	-1017	-481	5035	1213.15	1125.73	361.86
665	SLV 16	-1019	-473	5028	1211.03	1123.88	361.16
665	CRTFP Ux+	0	0	0	0	0	0
665	CRTFP Ux-	0	0	0	0	0	0
665	CRTFP Uy+	0	0	0	0	0	0
665	CRTFP Uy-	0	0	0	0	0	0
666	SLU 1	19	-64	7594	1165.9	-593.26	3.03
666	SLU 2	19	-24	7564	1159.11	-590.95	5.97
666	SLU 3	19	-65	7763	1192.63	-606.49	3.07
666	SLU 4	19	-41	7746	1188.56	-605.11	4.83
666	SLU 5	19	-25	7673	1176.32	-599.41	5.96
666	SLU 6	19	-66	7872	1209.84	-614.95	3.06
666	SLU 7	19	-42	7854	1205.76	-613.57	4.82
666	SLU 8	19	-65	7811	1200.31	-610.18	3.01

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
666	SLU 9	19	-42	7793	1196.24	-608.8	4.78
666	SLU 10	19	-34	8572	1313.73	-667.9	6.57
666	SLU 11	18	-75	8771	1347.25	-683.45	3.66
666	SLU 12	19	-51	8754	1343.17	-682.06	5.43
666	SLU 13	19	-35	8681	1330.93	-676.37	6.56
666	SLU 14	19	-76	8880	1364.45	-691.91	3.65
666	SLU 15	19	-52	8862	1360.38	-690.52	5.42
666	SLU 16	18	-75	8819	1354.93	-687.14	3.61
666	SLU 17	19	-51	8802	1350.85	-685.75	5.37
666	SLU 18	18	-78	9034	1386.79	-703.19	3.89
666	SLU 19	18	-54	9016	1382.71	-701.81	5.65
666	SLU 20	18	-78	9143	1403.99	-711.66	3.88
666	SLU 21	18	-55	9125	1399.91	-710.27	5.64
666	SLU 22	20	-72	8753	1347.45	-684.29	3.52
666	SLU 23	21	-32	8723	1340.66	-681.98	6.45
666	SLU 24	21	-73	8922	1374.18	-697.52	3.55
666	SLU 25	21	-49	8904	1370.1	-696.14	5.31
666	SLU 26	21	-33	8832	1357.86	-690.44	6.44
666	SLU 27	21	-74	9031	1391.38	-705.98	3.54
666	SLU 28	21	-50	9013	1387.31	-704.6	5.3
666	SLU 29	21	-73	8970	1381.86	-701.21	3.49
666	SLU 30	21	-50	8952	1377.78	-699.83	5.26
666	SLU 31	21	-42	9731	1495.27	-758.93	7.05
666	SLU 32	20	-83	9930	1528.79	-774.48	4.15
666	SLU 33	21	-59	9913	1524.72	-773.09	5.91
666	SLU 34	21	-43	9840	1512.48	-767.4	7.04
666	SLU 35	20	-83	10039	1546	-782.94	4.13
666	SLU 36	21	-60	10021	1541.92	-781.55	5.9
666	SLU 37	20	-83	9978	1536.47	-778.17	4.09
666	SLU 38	21	-59	9960	1532.4	-776.78	5.85
666	SLU 39	20	-85	10193	1568.33	-794.22	4.37
666	SLU 40	20	-62	10175	1564.25	-792.84	6.13
666	SLU 41	20	-86	10302	1585.53	-802.69	4.36
666	SLU 42	20	-63	10284	1581.46	-801.3	6.12
666	SLU 43	23	-80	9474	1453.43	-740.03	3.78
666	SLU 44	24	-40	9445	1446.64	-737.72	6.72
666	SLU 45	24	-81	9644	1480.16	-753.26	3.81
666	SLU 46	24	-57	9626	1476.09	-751.88	5.57
666	SLU 47	24	-41	9554	1463.84	-746.18	6.71
666	SLU 48	24	-82	9753	1497.36	-761.72	3.8
666	SLU 49	24	-58	9735	1493.29	-760.34	5.56
666	SLU 50	24	-82	9692	1487.84	-756.95	3.76
666	SLU 51	24	-58	9674	1483.76	-755.57	5.52
666	SLU 52	24	-50	10453	1601.26	-814.67	7.32
666	SLU 53	23	-91	10652	1634.78	-830.21	4.41
666	SLU 54	24	-67	10635	1630.7	-828.83	6.17
666	SLU 55	24	-51	10562	1618.46	-823.13	7.3
666	SLU 56	24	-92	10761	1651.98	-838.68	4.4
666	SLU 57	24	-68	10743	1647.91	-837.29	6.16
666	SLU 58	23	-92	10700	1642.45	-833.91	4.36
666	SLU 59	24	-68	10682	1638.38	-832.52	6.12
666	SLU 60	23	-94	10915	1674.31	-849.96	4.63
666	SLU 61	23	-70	10897	1670.24	-848.58	6.4
666	SLU 62	23	-95	11023	1691.52	-858.42	4.62
666	SLU 63	23	-71	11006	1687.44	-857.04	6.39
666	SLU 64	25	-88	10633	1634.98	-831.06	4.26
666	SLU 65	26	-48	10604	1628.19	-828.75	7.2
666	SLU 66	26	-89	10803	1661.7	-844.29	4.29
666	SLU 67	26	-65	10785	1657.63	-842.9	6.06
666	SLU 68	26	-49	10712	1645.39	-837.21	7.19
666	SLU 69	26	-90	10912	1678.91	-852.75	4.28
666	SLU 70	26	-66	10894	1674.83	-851.37	6.04
666	SLU 71	26	-90	10851	1669.38	-847.98	4.24
666	SLU 72	26	-66	10833	1665.31	-846.6	6
666	SLU 73	26	-58	11612	1782.8	-905.7	7.8
666	SLU 74	25	-99	11811	1816.32	-921.24	4.89
666	SLU 75	26	-75	11793	1812.25	-919.86	6.65
666	SLU 76	26	-59	11721	1800.01	-914.16	7.79
666	SLU 77	25	-100	11920	1833.52	-929.71	4.88
666	SLU 78	26	-76	11902	1829.45	-928.32	6.64
666	SLU 79	25	-99	11859	1824	-924.93	4.84
666	SLU 80	26	-76	11841	1819.92	-923.55	6.6
666	SLU 81	25	-102	12074	1855.86	-940.99	5.12
666	SLU 82	25	-78	12056	1851.78	-939.61	6.88
666	SLU 83	25	-103	12182	1873.06	-949.45	5.1
666	SLU 84	25	-79	12165	1868.99	-948.07	6.87
666	SLE RA 1	19	-66	7925	1217.77	-619.27	3.17
666	SLE RA 2	20	-39	7905	1213.25	-617.73	5.13
666	SLE RA 3	19	-67	8038	1235.59	-628.09	3.19
666	SLE RA 4	20	-51	8026	1232.88	-627.17	4.37
666	SLE RA 5	20	-40	7978	1224.72	-623.37	5.12
666	SLE RA 6	19	-67	8110	1247.06	-633.73	3.19
666	SLE RA 7	20	-51	8099	1244.35	-632.81	4.36
666	SLE RA 8	19	-67	8070	1240.71	-630.55	3.16
666	SLE RA 9	20	-51	8058	1238	-629.63	4.33
666	SLE RA 10	19	-46	8577	1316.32	-669.03	5.53
666	SLE RA 11	19	-73	8710	1338.67	-679.39	3.59
666	SLE RA 12	19	-57	8698	1335.95	-678.47	4.77
666	SLE RA 13	19	-47	8650	1327.79	-674.67	5.52

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
666	SLE RA 14	19	-74	8782	1350.14	-685.03	3.58
666	SLE RA 15	19	-58	8771	1347.42	-684.11	4.76
666	SLE RA 16	19	-74	8742	1343.79	-681.85	3.56
666	SLE RA 17	19	-58	8730	1341.07	-680.93	4.73
666	SLE RA 18	19	-75	8885	1365.03	-692.56	3.74
666	SLE RA 19	19	-59	8873	1362.31	-691.63	4.92
666	SLE RA 20	19	-76	8957	1376.5	-698.2	3.73
666	SLE RA 21	19	-60	8946	1373.78	-697.28	4.91
666	SLE FR 1	19	-66	7925	1217.77	-619.27	3.17
666	SLE FR 2	19	-61	7921	1216.87	-618.96	3.56
666	SLE FR 3	19	-66	7954	1222.36	-621.53	3.17
666	SLE FR 4	19	-63	8209	1261.05	-640.95	3.73
666	SLE FR 5	19	-69	8242	1266.54	-643.51	3.34
666	SLE FR 6	19	-71	8405	1291.4	-655.91	3.46
666	SLE QP 1	19	-66	7925	1217.77	-619.27	3.17
666	SLE QP 2	19	-69	8213	1261.95	-641.26	3.34
666	SLD 1	744	184	8158	1229.03	-619.59	-96.67
666	SLD 2	745	201	8157	1228.64	-619.97	-92.86
666	SLD 3	731	-303	8559	1321.1	-651.84	-133.14
666	SLD 4	732	-286	8558	1320.7	-652.22	-129.33
666	SLD 5	255	742	7589	1112.52	-585.77	27.96
666	SLD 6	256	754	7587	1112.26	-586.02	30.47
666	SLD 7	214	-880	8925	1419.39	-693.28	-93.6
666	SLD 8	214	-869	8924	1419.13	-693.53	-91.08
666	SLD 9	-177	732	7501	1104.77	-588.98	97.77
666	SLD 10	-176	743	7500	1104.51	-589.23	100.28
666	SLD 11	-218	-891	8838	1411.64	-696.49	-23.79
666	SLD 12	-217	-880	8837	1411.38	-696.74	-21.28
666	SLD 13	-695	148	7868	1203.2	-630.29	136.02
666	SLD 14	-694	165	7866	1202.81	-630.67	139.83
666	SLD 15	-707	-339	8269	1295.26	-662.54	99.55
666	SLD 16	-706	-321	8267	1294.87	-662.92	103.36
666	SLV 1	1716	560	8053	1177.31	-587.92	-227.82
666	SLV 2	1718	601	8049	1176.39	-588.81	-218.87
666	SLV 3	1685	-654	9057	1407.89	-668.71	-318.87
666	SLV 4	1688	-614	9053	1406.97	-669.6	-309.91
666	SLV 5	573	1954	6643	887.02	-502.55	70.4
666	SLV 6	575	1982	6640	886.4	-503.15	76.43
666	SLV 7	473	-2094	9989	1655.61	-771.87	-233.07
666	SLV 8	474	-2067	9987	1654.99	-772.47	-227.04
666	SLV 9	-436	1929	6439	868.91	-510.04	233.73
666	SLV 10	-435	1957	6436	868.29	-510.65	239.76
666	SLV 11	-537	-2119	9785	1637.5	-779.36	-69.75
666	SLV 12	-535	-2092	9783	1636.88	-779.96	-63.72
666	SLV 13	-1650	477	7373	1116.93	-612.91	316.6
666	SLV 14	-1648	517	7369	1116.01	-613.8	325.55
666	SLV 15	-1680	-738	8377	1347.51	-693.7	225.55
666	SLV 16	-1678	-697	8373	1346.59	-694.6	234.51
666	CRTFP Ux+	0	0	0	0	0	0
666	CRTFP Ux-	0	0	0	0	0	0
666	CRTFP Uy+	0	0	0	0	0	0
666	CRTFP Uy-	0	0	0	0	0	0
673	SLU 1	65	168	16530	4269.23	5116.22	-52.35
673	SLU 2	67	252	16489	4260.16	5100.74	-79.26
673	SLU 3	67	170	16892	4362.05	5228.91	-53.14
673	SLU 4	68	221	16868	4356.61	5219.62	-69.28
673	SLU 5	68	253	16720	4319.11	5172.63	-79.44
673	SLU 6	67	170	17122	4421.01	5300.79	-53.32
673	SLU 7	69	221	17098	4415.57	5291.51	-69.46
673	SLU 8	67	168	16991	4387.13	5259.98	-52.71
673	SLU 9	68	219	16966	4381.69	5250.7	-68.86
673	SLU 10	67	264	18648	4817.92	5771.92	-81.13
673	SLU 11	66	182	19051	4919.82	5900.09	-55.01
673	SLU 12	67	233	19026	4914.38	5890.8	-71.16
673	SLU 13	68	264	18878	4876.87	5843.81	-81.31
673	SLU 14	67	182	19281	4978.77	5971.97	-55.19
673	SLU 15	68	233	19256	4973.33	5962.68	-71.33
673	SLU 16	66	180	19149	4944.89	5931.16	-54.58
673	SLU 17	68	231	19125	4939.45	5921.88	-70.73
673	SLU 18	65	185	19614	5066.03	6075.05	-55.03
673	SLU 19	66	235	19589	5060.59	6065.76	-71.17
673	SLU 20	65	185	19844	5124.98	6146.93	-55.21
673	SLU 21	67	236	19819	5119.54	6137.64	-71.35
673	SLU 22	72	188	19040	4919.43	5894.15	-58.23
673	SLU 23	74	272	18999	4910.36	5878.68	-85.14
673	SLU 24	73	190	19402	5012.25	6006.84	-59.02
673	SLU 25	74	241	19377	5006.81	5997.56	-75.16
673	SLU 26	75	273	19229	4969.31	5950.56	-85.32
673	SLU 27	74	190	19632	5071.21	6078.72	-59.2
673	SLU 28	75	241	19607	5065.77	6069.44	-75.34
673	SLU 29	73	188	19500	5037.33	6037.92	-58.59
673	SLU 30	75	239	19476	5031.89	6028.63	-74.74
673	SLU 31	73	284	21157	5468.12	6549.86	-87.01
673	SLU 32	72	202	21560	5570.02	6678.02	-60.89
673	SLU 33	74	253	21536	5564.58	6668.73	-77.04
673	SLU 34	74	285	21387	5527.07	6621.74	-87.19
673	SLU 35	73	202	21790	5628.97	6749.9	-61.07
673	SLU 36	75	253	21766	5623.53	6740.62	-77.21
673	SLU 37	73	200	21658	5595.09	6709.1	-60.47

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
673	SLU 38	74	251	21634	5589.65	6699.81	-76.61
673	SLU 39	71	205	22123	5716.23	6852.98	-60.91
673	SLU 40	72	255	22099	5710.79	6843.69	-77.05
673	SLU 41	72	205	22353	5775.18	6924.86	-61.09
673	SLU 42	73	256	22329	5769.74	6915.58	-77.23
673	SLU 43	83	211	20629	5327.07	6384.37	-66.04
673	SLU 44	85	296	20588	5318	6368.89	-92.95
673	SLU 45	84	214	20991	5419.9	6497.05	-66.83
673	SLU 46	85	264	20966	5414.46	6487.77	-82.97
673	SLU 47	86	296	20818	5376.95	6440.77	-93.13
673	SLU 48	85	214	21221	5478.85	6568.94	-67.01
673	SLU 49	86	265	21197	5473.41	6559.65	-83.15
673	SLU 50	84	212	21089	5444.97	6528.13	-66.4
673	SLU 51	86	263	21065	5439.53	6518.85	-82.55
673	SLU 52	84	308	22746	5875.76	7040.07	-94.82
673	SLU 53	83	225	23149	5977.66	7168.23	-68.7
673	SLU 54	85	276	23125	5972.22	7158.95	-84.85
673	SLU 55	85	308	22977	5934.72	7111.95	-95
673	SLU 56	84	226	23379	6036.61	7240.12	-68.88
673	SLU 57	86	276	23355	6031.17	7230.83	-85.02
673	SLU 58	84	224	23248	6002.73	7199.31	-68.27
673	SLU 59	85	274	23223	5997.3	7190.02	-84.42
673	SLU 60	82	228	23712	6123.87	7343.19	-68.72
673	SLU 61	83	279	23688	6118.43	7333.91	-84.86
673	SLU 62	83	229	23942	6182.82	7415.07	-68.9
673	SLU 63	84	279	23918	6177.38	7405.79	-85.04
673	SLU 64	89	231	23138	5977.27	7162.3	-71.92
673	SLU 65	91	316	23097	5968.2	7146.82	-98.83
673	SLU 66	90	234	23500	6070.1	7274.99	-72.71
673	SLU 67	92	284	23476	6064.66	7265.7	-88.85
673	SLU 68	92	316	23328	6027.15	7218.71	-99.01
673	SLU 69	91	234	23730	6129.05	7346.87	-72.89
673	SLU 70	92	285	23706	6123.61	7337.58	-89.03
673	SLU 71	91	232	23599	6095.17	7306.06	-72.28
673	SLU 72	92	283	23574	6089.73	7296.78	-88.43
673	SLU 73	91	328	25256	6525.96	7818	-100.7
673	SLU 74	90	245	25659	6627.86	7946.17	-74.58
673	SLU 75	91	296	25634	6622.42	7936.88	-90.73
673	SLU 76	92	328	25486	6584.92	7889.88	-100.88
673	SLU 77	91	246	25889	6686.81	8018.05	-74.76
673	SLU 78	92	296	25864	6681.37	8008.76	-90.9
673	SLU 79	90	244	25757	6652.94	7977.24	-74.15
673	SLU 80	91	294	25733	6647.5	7967.96	-90.3
673	SLU 81	88	248	26222	6774.07	8121.12	-74.6
673	SLU 82	90	299	26197	6768.63	8111.84	-90.74
673	SLU 83	89	249	26452	6833.02	8193.01	-74.78
673	SLU 84	90	299	26427	6827.58	8183.72	-90.92
673	SLE RA 1	67	174	17247	4455	5338.49	-54.03
673	SLE RA 2	69	230	17220	4448.95	5328.17	-71.97
673	SLE RA 3	68	175	17488	4516.88	5413.61	-54.56
673	SLE RA 4	69	209	17472	4513.26	5407.42	-65.32
673	SLE RA 5	69	230	17373	4488.25	5376.09	-72.09
673	SLE RA 6	68	175	17642	4556.18	5461.53	-54.67
673	SLE RA 7	69	209	17626	4552.56	5455.34	-65.44
673	SLE RA 8	68	174	17554	4533.6	5434.33	-54.27
673	SLE RA 9	69	208	17538	4529.97	5428.14	-65.03
673	SLE RA 10	68	238	18659	4820.8	5775.62	-73.22
673	SLE RA 11	68	183	18927	4888.72	5861.06	-55.8
673	SLE RA 12	69	217	18911	4885.1	5854.87	-66.57
673	SLE RA 13	69	238	18812	4860.1	5823.54	-73.34
673	SLE RA 14	68	183	19081	4928.03	5908.99	-55.92
673	SLE RA 15	69	217	19065	4924.4	5902.8	-66.69
673	SLE RA 16	68	182	18993	4905.44	5881.78	-55.52
673	SLE RA 17	69	216	18977	4901.82	5875.59	-66.28
673	SLE RA 18	67	185	19303	4986.2	5977.7	-55.82
673	SLE RA 19	68	219	19286	4982.57	5971.51	-66.58
673	SLE RA 20	67	185	19456	5025.5	6025.63	-55.94
673	SLE RA 21	68	219	19440	5021.88	6019.44	-66.7
673	SLE FR 1	67	174	17247	4455	5338.49	-54.03
673	SLE FR 2	67	185	17242	4453.79	5336.42	-57.62
673	SLE FR 3	67	174	17308	4470.72	5357.65	-54.08
673	SLE FR 4	67	188	17858	4613.15	5528.19	-58.16
673	SLE FR 5	67	177	17925	4630.08	5549.42	-54.62
673	SLE FR 6	67	179	18275	4720.6	5658.09	-54.93
673	SLE QP 1	67	174	17247	4455	5338.49	-54.03
673	SLE QP 2	67	177	17864	4614.36	5530.25	-54.57
673	SLD 1	1693	609	17156	4409.92	5398.03	-632.57
673	SLD 2	1689	705	17169	4416.78	5400.43	-655.7
673	SLD 3	1660	-437	17738	4542.84	5613.92	-299.24
673	SLD 4	1656	-341	17751	4549.7	5616.32	-322.37
673	SLD 5	605	1876	16766	4350.19	5162.71	-729.37
673	SLD 6	603	1939	16775	4354.72	5164.3	-744.62
673	SLD 7	496	-1611	18706	4793.27	5882.36	381.74
673	SLD 8	493	-1548	18715	4797.79	5883.94	366.49
673	SLD 9	-359	1902	17012	4430.92	5176.56	-475.62
673	SLD 10	-362	1965	17021	4435.45	5178.14	-490.88
673	SLD 11	-469	-1585	18953	4874	5896.2	635.49
673	SLD 12	-471	-1522	18961	4878.52	5897.79	620.23
673	SLD 13	-1522	695	17976	4679.01	5444.18	213.23

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
673	SLD 14	-1526	791	17990	4685.88	5446.58	190.1
673	SLD 15	-1555	-351	18558	4811.94	5660.07	546.57
673	SLD 16	-1559	-255	18572	4818.8	5662.48	523.44
673	SLV 1	3873	1269	16159	4125	5203.48	-1432.88
673	SLV 2	3864	1495	16191	4141.13	5209.12	-1487.25
673	SLV 3	3792	-1342	17617	4457.88	5744.01	-600.67
673	SLV 4	3782	-1117	17648	4474.01	5749.66	-655.04
673	SLV 5	1334	4424	15136	3959.67	4611.36	-1720.09
673	SLV 6	1327	4576	15157	3970.53	4615.16	-1756.7
673	SLV 7	1063	-4282	19994	5069.27	6413.13	1053.93
673	SLV 8	1057	-4130	20015	5080.13	6416.93	1017.32
673	SLV 9	-923	4484	15712	4148.59	4643.57	-1126.46
673	SLV 10	-929	4636	15733	4159.44	4647.37	-1163.06
673	SLV 11	-1193	-4222	20570	5258.19	6445.34	1647.56
673	SLV 12	-1200	-4070	20591	5269.04	6449.14	1610.96
673	SLV 13	-3648	1471	18079	4754.71	5310.85	545.9
673	SLV 14	-3658	1696	18111	4770.84	5316.49	491.54
673	SLV 15	-3730	-1141	19537	5087.59	5851.38	1378.11
673	SLV 16	-3739	-915	19568	5103.72	5857.02	1323.74
673	CRTFP Ux+	0	0	0	0	0	0
673	CRTFP Ux-	0	0	0	0	0	0
673	CRTFP Uy+	0	0	0	0	0	0
673	CRTFP Uy-	0	0	0	0	0	0
675	SLU 1	29	61	5821	519.2	158.76	-6.51
675	SLU 2	30	89	5807	518.86	158.47	-7.53
675	SLU 3	30	62	5950	530.04	162.16	-6.61
675	SLU 4	30	79	5941	529.83	161.99	-7.23
675	SLU 5	30	89	5889	525.65	160.62	-7.57
675	SLU 6	30	62	6032	536.83	164.31	-6.66
675	SLU 7	30	79	6023	536.62	164.13	-7.27
675	SLU 8	30	61	5985	532.78	163.05	-6.6
675	SLU 9	30	78	5977	532.57	162.88	-7.21
675	SLU 10	30	94	6567	585.24	179.03	-7.76
675	SLU 11	30	66	6710	596.42	182.71	-6.85
675	SLU 12	30	83	6701	596.21	182.54	-7.46
675	SLU 13	30	94	6649	592.03	181.17	-7.81
675	SLU 14	30	67	6792	603.21	184.86	-6.89
675	SLU 15	31	83	6783	603	184.69	-7.51
675	SLU 16	30	66	6745	599.17	183.6	-6.83
675	SLU 17	30	83	6737	598.96	183.43	-7.44
675	SLU 18	29	68	6907	614.04	188.12	-6.84
675	SLU 19	30	84	6899	613.83	187.95	-7.45
675	SLU 20	30	68	6989	620.83	190.27	-6.89
675	SLU 21	30	85	6980	620.62	190.09	-7.5
675	SLU 22	32	68	6707	597.1	182.66	-7.2
675	SLU 23	33	96	6693	596.75	182.37	-8.22
675	SLU 24	33	69	6836	607.93	186.06	-7.31
675	SLU 25	33	86	6828	607.72	185.88	-7.92
675	SLU 26	33	97	6775	603.54	184.52	-8.27
675	SLU 27	33	69	6918	614.72	188.2	-7.35
675	SLU 28	33	86	6910	614.51	188.03	-7.96
675	SLU 29	33	69	6871	610.67	186.95	-7.29
675	SLU 30	33	85	6863	610.47	186.78	-7.9
675	SLU 31	33	101	7453	663.13	202.92	-8.46
675	SLU 32	33	74	7596	674.31	206.61	-7.54
675	SLU 33	33	91	7588	674.1	206.44	-8.15
675	SLU 34	33	101	7535	669.92	205.07	-8.5
675	SLU 35	33	74	7678	681.1	208.76	-7.59
675	SLU 36	34	91	7670	680.89	208.58	-8.2
675	SLU 37	33	73	7631	677.06	207.5	-7.53
675	SLU 38	33	90	7623	676.85	207.33	-8.14
675	SLU 39	32	75	7793	691.93	212.02	-7.54
675	SLU 40	32	92	7785	691.72	211.85	-8.15
675	SLU 41	33	75	7875	698.72	214.16	-7.58
675	SLU 42	33	92	7867	698.51	213.99	-8.19
675	SLU 43	37	77	7264	648.26	198.19	-8.22
675	SLU 44	37	105	7250	647.91	197.91	-9.24
675	SLU 45	37	78	7392	659.09	201.59	-8.33
675	SLU 46	38	94	7384	658.88	201.42	-8.94
675	SLU 47	38	105	7332	654.7	200.05	-9.29
675	SLU 48	38	78	7474	665.88	203.74	-8.37
675	SLU 49	38	95	7466	665.67	203.57	-8.98
675	SLU 50	38	77	7428	661.84	202.49	-8.31
675	SLU 51	38	94	7419	661.63	202.32	-8.92
675	SLU 52	37	109	8010	714.29	218.46	-9.48
675	SLU 53	37	82	8152	725.48	222.15	-8.56
675	SLU 54	38	99	8144	725.27	221.97	-9.17
675	SLU 55	38	110	8092	721.08	220.61	-9.52
675	SLU 56	38	82	8234	732.26	224.29	-8.61
675	SLU 57	38	99	8226	732.06	224.12	-9.22
675	SLU 58	38	82	8188	728.22	223.04	-8.55
675	SLU 59	38	98	8179	728.01	222.87	-9.16
675	SLU 60	37	83	8349	743.09	227.55	-8.56
675	SLU 61	37	100	8341	742.88	227.38	-9.17
675	SLU 62	37	83	8431	749.88	229.7	-8.6
675	SLU 63	38	100	8423	749.67	229.53	-9.21
675	SLU 64	40	84	8150	726.15	222.09	-8.91
675	SLU 65	40	112	8136	725.8	221.81	-9.93
675	SLU 66	40	85	8279	736.98	225.49	-9.02

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
675	SLU 67	41	102	8270	736.78	225.32	-9.63
675	SLU 68	41	112	8218	732.59	223.95	-9.98
675	SLU 69	41	85	8361	743.77	227.64	-9.07
675	SLU 70	41	102	8352	743.56	227.47	-9.68
675	SLU 71	40	84	8314	739.73	226.38	-9
675	SLU 72	41	101	8305	739.52	226.21	-9.62
675	SLU 73	40	117	8896	792.19	242.36	-10.17
675	SLU 74	40	90	9039	803.37	246.04	-9.26
675	SLU 75	41	106	9030	803.16	245.87	-9.87
675	SLU 76	41	117	8978	798.97	244.5	-10.21
675	SLU 77	41	90	9121	810.16	248.19	-9.3
675	SLU 78	41	107	9112	809.95	248.02	-9.91
675	SLU 79	41	89	9074	806.11	246.94	-9.24
675	SLU 80	41	106	9065	805.9	246.76	-9.85
675	SLU 81	40	91	9236	820.98	251.45	-9.25
675	SLU 82	40	108	9227	820.77	251.28	-9.86
675	SLU 83	40	91	9318	827.77	253.6	-9.29
675	SLU 84	41	108	9309	827.56	253.43	-9.91
675	SLE RA 1	30	63	6074	541.46	165.59	-6.7
675	SLE RA 2	30	82	6065	541.23	165.4	-7.38
675	SLE RA 3	30	64	6160	548.68	167.85	-6.78
675	SLE RA 4	31	75	6155	548.54	167.74	-7.18
675	SLE RA 5	31	82	6120	545.75	166.83	-7.41
675	SLE RA 6	31	64	6215	553.21	169.28	-6.81
675	SLE RA 7	31	75	6209	553.07	169.17	-7.21
675	SLE RA 8	30	63	6184	550.51	168.45	-6.76
675	SLE RA 9	31	74	6178	550.37	168.33	-7.17
675	SLE RA 10	30	85	6572	585.48	179.1	-7.54
675	SLE RA 11	30	67	6667	592.94	181.56	-6.93
675	SLE RA 12	31	78	6661	592.8	181.44	-7.34
675	SLE RA 13	31	85	6626	590.01	180.53	-7.57
675	SLE RA 14	31	67	6721	597.46	182.99	-6.96
675	SLE RA 15	31	78	6716	597.32	182.87	-7.37
675	SLE RA 16	30	66	6690	594.77	182.15	-6.92
675	SLE RA 17	31	78	6685	594.63	182.04	-7.33
675	SLE RA 18	30	67	6798	604.68	185.16	-6.93
675	SLE RA 19	30	79	6793	604.54	185.05	-7.34
675	SLE RA 20	30	68	6853	609.21	186.59	-6.96
675	SLE RA 21	30	79	6847	609.07	186.48	-7.37
675	SLE FR 1	30	63	6074	541.46	165.59	-6.7
675	SLE FR 2	30	67	6073	541.41	165.55	-6.84
675	SLE FR 3	30	63	6096	543.27	166.16	-6.72
675	SLE FR 4	30	68	6290	560.38	171.42	-6.91
675	SLE FR 5	30	64	6313	562.24	172.03	-6.78
675	SLE FR 6	30	65	6436	573.07	175.37	-6.82
675	SLE QP 1	30	63	6074	541.46	165.59	-6.7
675	SLE QP 2	30	64	6292	560.42	171.46	-6.77
675	SLD 1	584	206	5917	518.33	165.18	-77.09
675	SLD 2	585	245	5918	521.53	165.6	-77.74
675	SLD 3	575	-140	6118	527.48	169.61	-64.15
675	SLD 4	575	-101	6119	530.68	170.03	-64.8
675	SLD 5	211	624	5874	533.34	162.78	-47.38
675	SLD 6	211	650	5875	535.46	163.05	-47.8
675	SLD 7	179	-528	6544	563.84	177.55	-4.24
675	SLD 8	179	-503	6545	565.95	177.83	-4.67
675	SLD 9	-119	631	6038	554.9	165.09	-8.87
675	SLD 10	-119	657	6039	557.01	165.37	-9.3
675	SLD 11	-151	-521	6708	585.39	179.87	34.26
675	SLD 12	-151	-495	6709	587.5	180.14	33.83
675	SLD 13	-515	230	6464	590.17	172.89	51.26
675	SLD 14	-515	269	6466	593.37	173.31	50.61
675	SLD 15	-525	-116	6665	599.32	177.32	64.2
675	SLD 16	-524	-77	6667	602.52	177.74	63.55
675	SLV 1	1327	421	5398	461.27	156.4	-172.32
675	SLV 2	1328	513	5401	468.79	157.39	-173.84
675	SLV 3	1304	-442	5901	483.93	167.5	-139.99
675	SLV 4	1304	-350	5904	491.45	168.48	-141.51
675	SLV 5	455	1463	5259	494.9	149.93	-105.18
675	SLV 6	456	1525	5262	499.96	150.59	-106.21
675	SLV 7	376	-1414	6937	570.45	186.92	2.58
675	SLV 8	376	-1352	6939	575.51	187.58	1.56
675	SLV 9	-317	1481	5644	545.34	155.34	-15.1
675	SLV 10	-316	1542	5646	550.4	156	-16.12
675	SLV 11	-396	-1397	7321	620.89	192.33	92.67
675	SLV 12	-395	-1335	7324	625.95	192.99	91.64
675	SLV 13	-1245	478	6679	629.4	174.43	127.97
675	SLV 14	-1244	570	6682	636.92	175.42	126.44
675	SLV 15	-1268	-385	7182	652.06	185.53	160.3
675	SLV 16	-1268	-293	7186	659.58	186.52	158.77
675	CRTFP Ux+	0	0	0	0	0	0
675	CRTFP Ux-	0	0	0	0	0	0
675	CRTFP Uy+	0	0	0	0	0	0
675	CRTFP Uy-	0	0	0	0	0	0
676	SLU 1	31	54	6258	-203.95	0.28	-2.14
676	SLU 2	32	83	6242	-202.47	0.29	-2.23
676	SLU 3	32	55	6398	-209.15	0.26	-2.16
676	SLU 4	33	72	6388	-208.27	0.27	-2.21
676	SLU 5	32	83	6331	-205.92	0.27	-2.23
676	SLU 6	33	55	6487	-212.6	0.24	-2.16

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
676	SLU 7	33	73	6477	-211.72	0.25	-2.21
676	SLU 8	32	55	6436	-210.84	0.24	-2.14
676	SLU 9	33	72	6427	-209.95	0.25	-2.19
676	SLU 10	32	87	7060	-230.9	0.32	-2.37
676	SLU 11	32	59	7216	-237.58	0.29	-2.31
676	SLU 12	33	77	7207	-236.69	0.29	-2.36
676	SLU 13	33	87	7150	-234.34	0.3	-2.37
676	SLU 14	33	59	7305	-241.02	0.27	-2.31
676	SLU 15	33	77	7296	-240.14	0.28	-2.35
676	SLU 16	33	59	7255	-239.26	0.27	-2.28
676	SLU 17	33	76	7245	-238.38	0.28	-2.33
676	SLU 18	32	60	7427	-244.55	0.32	-2.35
676	SLU 19	32	78	7418	-243.67	0.32	-2.4
676	SLU 20	32	60	7517	-248	0.3	-2.34
676	SLU 21	32	78	7507	-247.12	0.31	-2.39
676	SLU 22	35	61	7215	-236.5	0.24	-2.37
676	SLU 23	35	90	7199	-235.02	0.25	-2.45
676	SLU 24	35	62	7354	-241.7	0.22	-2.39
676	SLU 25	36	79	7345	-240.82	0.22	-2.44
676	SLU 26	36	90	7288	-238.47	0.23	-2.45
676	SLU 27	36	62	7444	-245.15	0.2	-2.39
676	SLU 28	36	79	7434	-244.26	0.21	-2.44
676	SLU 29	36	61	7393	-243.39	0.2	-2.37
676	SLU 30	36	79	7383	-242.5	0.21	-2.42
676	SLU 31	35	94	8017	-263.45	0.27	-2.59
676	SLU 32	36	66	8173	-270.13	0.24	-2.53
676	SLU 33	36	83	8163	-269.24	0.25	-2.58
676	SLU 34	36	94	8106	-266.89	0.26	-2.59
676	SLU 35	36	66	8262	-273.57	0.23	-2.53
676	SLU 36	36	84	8253	-272.69	0.23	-2.58
676	SLU 37	36	66	8212	-271.81	0.23	-2.51
676	SLU 38	36	83	8202	-270.93	0.24	-2.56
676	SLU 39	35	67	8384	-277.1	0.28	-2.57
676	SLU 40	35	84	8374	-276.22	0.28	-2.62
676	SLU 41	35	67	8473	-280.55	0.26	-2.57
676	SLU 42	36	84	8464	-279.66	0.26	-2.62
676	SLU 43	40	68	7807	-253.97	0.38	-2.71
676	SLU 44	40	97	7791	-252.5	0.39	-2.79
676	SLU 45	41	69	7947	-259.18	0.36	-2.73
676	SLU 46	41	86	7937	-258.29	0.36	-2.78
676	SLU 47	41	97	7880	-255.94	0.37	-2.79
676	SLU 48	41	69	8036	-262.62	0.34	-2.73
676	SLU 49	41	86	8026	-261.74	0.35	-2.78
676	SLU 50	41	68	7986	-260.86	0.34	-2.71
676	SLU 51	41	86	7976	-259.98	0.35	-2.76
676	SLU 52	40	101	8610	-280.92	0.41	-2.93
676	SLU 53	41	73	8766	-287.6	0.38	-2.87
676	SLU 54	41	90	8756	-286.72	0.39	-2.92
676	SLU 55	41	101	8699	-284.37	0.4	-2.93
676	SLU 56	41	73	8855	-291.05	0.37	-2.87
676	SLU 57	42	91	8845	-290.16	0.37	-2.92
676	SLU 58	41	73	8804	-289.29	0.37	-2.85
676	SLU 59	41	90	8795	-288.4	0.38	-2.9
676	SLU 60	40	74	8977	-294.58	0.41	-2.91
676	SLU 61	40	91	8967	-293.69	0.42	-2.96
676	SLU 62	40	74	9066	-298.02	0.4	-2.91
676	SLU 63	41	92	9056	-297.14	0.4	-2.96
676	SLU 64	43	75	8764	-286.52	0.33	-2.93
676	SLU 65	44	104	8748	-285.05	0.34	-3.02
676	SLU 66	44	76	8904	-291.73	0.31	-2.95
676	SLU 67	44	93	8894	-290.84	0.32	-3
676	SLU 68	44	104	8837	-288.49	0.33	-3.02
676	SLU 69	44	76	8993	-295.17	0.3	-2.95
676	SLU 70	45	93	8983	-294.29	0.3	-3
676	SLU 71	44	75	8943	-293.41	0.3	-2.93
676	SLU 72	44	93	8933	-292.53	0.31	-2.98
676	SLU 73	44	108	9567	-313.47	0.37	-3.16
676	SLU 74	44	80	9722	-320.15	0.34	-3.1
676	SLU 75	44	97	9713	-319.27	0.35	-3.15
676	SLU 76	44	108	9656	-316.92	0.35	-3.16
676	SLU 77	44	80	9812	-323.6	0.33	-3.1
676	SLU 78	45	97	9802	-322.71	0.33	-3.14
676	SLU 79	44	79	9761	-321.84	0.33	-3.07
676	SLU 80	44	97	9752	-320.95	0.33	-3.12
676	SLU 81	43	81	9934	-327.13	0.37	-3.14
676	SLU 82	43	98	9924	-326.24	0.38	-3.19
676	SLU 83	44	81	10023	-330.57	0.36	-3.13
676	SLU 84	44	98	10013	-329.69	0.36	-3.18
676	SLE RA 1	32	56	6531	-213.25	0.27	-2.21
676	SLE RA 2	33	75	6520	-212.27	0.27	-2.26
676	SLE RA 3	33	57	6624	-216.72	0.25	-2.22
676	SLE RA 4	33	68	6618	-216.13	0.26	-2.25
676	SLE RA 5	33	75	6580	-214.56	0.26	-2.26
676	SLE RA 6	33	57	6684	-219.01	0.24	-2.22
676	SLE RA 7	33	68	6677	-218.43	0.25	-2.25
676	SLE RA 8	33	56	6650	-217.84	0.24	-2.21
676	SLE RA 9	33	68	6644	-217.25	0.25	-2.24
676	SLE RA 10	33	78	7066	-231.21	0.29	-2.36
676	SLE RA 11	33	59	7170	-235.67	0.27	-2.32

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
676	SLE RA 12	33	71	7164	-235.08	0.28	-2.35
676	SLE RA 13	33	78	7126	-233.51	0.28	-2.36
676	SLE RA 14	33	60	7230	-237.96	0.26	-2.32
676	SLE RA 15	34	71	7223	-237.38	0.26	-2.35
676	SLE RA 16	33	59	7196	-236.79	0.26	-2.3
676	SLE RA 17	33	71	7190	-236.2	0.27	-2.33
676	SLE RA 18	32	60	7311	-240.32	0.29	-2.34
676	SLE RA 19	33	72	7304	-239.73	0.3	-2.38
676	SLE RA 20	33	60	7370	-242.61	0.28	-2.34
676	SLE RA 21	33	72	7364	-242.03	0.28	-2.37
676	SLE FR 1	32	56	6531	-213.25	0.27	-2.21
676	SLE FR 2	32	60	6529	-213.05	0.27	-2.22
676	SLE FR 3	33	56	6555	-214.17	0.26	-2.21
676	SLE FR 4	32	61	6763	-221.17	0.28	-2.26
676	SLE FR 5	33	57	6789	-222.29	0.27	-2.25
676	SLE FR 6	32	58	6921	-226.78	0.28	-2.28
676	SLE QP 1	32	56	6531	-213.25	0.27	-2.21
676	SLE QP 2	32	57	6765	-221.37	0.27	-2.25
676	SLD 1	614	201	6272	-221.98	3.01	-2.11
676	SLD 2	615	245	6270	-218.47	3.05	-1.48
676	SLD 3	605	-154	6500	-239.48	2.84	-0.69
676	SLD 4	607	-109	6498	-235.97	2.88	-0.06
676	SLD 5	219	630	6271	-195.64	1.35	-4.47
676	SLD 6	220	659	6270	-193.32	1.37	-4.06
676	SLD 7	191	-552	7033	-253.98	0.78	0.26
676	SLD 8	192	-522	7031	-251.67	0.8	0.68
676	SLD 9	-127	637	6499	-191.07	-0.26	-5.17
676	SLD 10	-127	666	6498	-188.76	-0.23	-4.76
676	SLD 11	-155	-545	7261	-249.41	-0.82	-0.44
676	SLD 12	-154	-516	7259	-247.1	-0.8	-0.02
676	SLD 13	-542	224	7032	-206.76	-2.33	-4.44
676	SLD 14	-541	268	7030	-203.26	-2.3	-3.81
676	SLD 15	-550	-131	7261	-224.26	-2.5	-3.02
676	SLD 16	-549	-86	7258	-220.76	-2.47	-2.39
676	SLV 1	1393	421	5592	-221.5	6.7	-2.04
676	SLV 2	1396	525	5587	-213.27	6.78	-0.56
676	SLV 3	1373	-465	6164	-265.06	6.28	1.51
676	SLV 4	1376	-360	6159	-256.82	6.36	2.99
676	SLV 5	471	1489	5546	-156.89	2.83	-7.85
676	SLV 6	473	1560	5543	-151.34	2.89	-6.86
676	SLV 7	403	-1461	7454	-302.07	1.42	3.99
676	SLV 8	405	-1391	7450	-296.53	1.47	4.99
676	SLV 9	-340	1506	6080	-146.21	-0.92	-9.48
676	SLV 10	-338	1576	6077	-140.66	-0.87	-8.49
676	SLV 11	-408	-1445	7987	-291.4	-2.34	2.36
676	SLV 12	-406	-1375	7984	-285.85	-2.28	3.35
676	SLV 13	-1311	475	7371	-185.91	-5.81	-7.49
676	SLV 14	-1308	579	7366	-177.68	-5.73	-6.01
676	SLV 15	-1331	-411	7943	-229.47	-6.23	-3.93
676	SLV 16	-1328	-306	7938	-221.23	-6.15	-2.46
676	CRTFP Ux+	0	0	0	0	0	0
676	CRTFP Ux-	0	0	0	0	0	0
676	CRTFP Uy+	0	0	0	0	0	0
676	CRTFP Uy-	0	0	0	0	0	0
677	SLU 1	34	42	6240	-203.39	0.81	-2.53
677	SLU 2	35	71	6224	-201.94	0.82	-2.59
677	SLU 3	35	43	6380	-208.57	0.8	-2.56
677	SLU 4	35	60	6370	-207.7	0.81	-2.6
677	SLU 5	35	71	6313	-205.37	0.81	-2.6
677	SLU 6	36	43	6470	-212	0.8	-2.56
677	SLU 7	36	60	6460	-211.13	0.8	-2.6
677	SLU 8	35	42	6420	-210.25	0.79	-2.54
677	SLU 9	36	60	6410	-209.38	0.8	-2.58
677	SLU 10	35	74	7040	-230.27	0.93	-2.76
677	SLU 11	35	46	7197	-236.9	0.92	-2.72
677	SLU 12	35	63	7187	-236.03	0.92	-2.76
677	SLU 13	35	74	7130	-233.7	0.92	-2.76
677	SLU 14	36	46	7286	-240.33	0.91	-2.73
677	SLU 15	36	63	7276	-239.46	0.91	-2.77
677	SLU 16	35	46	7236	-238.57	0.9	-2.7
677	SLU 17	36	63	7226	-237.7	0.91	-2.74
677	SLU 18	34	47	7406	-243.86	0.97	-2.76
677	SLU 19	35	64	7397	-242.99	0.97	-2.8
677	SLU 20	35	47	7496	-247.28	0.96	-2.77
677	SLU 21	35	64	7486	-246.41	0.97	-2.81
677	SLU 22	38	47	7197	-235.84	0.86	-2.8
677	SLU 23	38	76	7180	-234.39	0.86	-2.86
677	SLU 24	38	48	7337	-241.02	0.85	-2.83
677	SLU 25	39	65	7327	-240.15	0.86	-2.87
677	SLU 26	39	76	7270	-237.81	0.86	-2.87
677	SLU 27	39	48	7427	-244.44	0.84	-2.83
677	SLU 28	39	65	7417	-243.58	0.85	-2.87
677	SLU 29	39	48	7376	-242.69	0.84	-2.81
677	SLU 30	39	65	7366	-241.82	0.85	-2.85
677	SLU 31	38	79	7997	-262.71	0.98	-3.02
677	SLU 32	39	52	8153	-269.34	0.96	-2.99
677	SLU 33	39	69	8143	-268.47	0.97	-3.03
677	SLU 34	39	80	8086	-266.14	0.97	-3.03
677	SLU 35	39	52	8243	-272.77	0.96	-3

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
677	SLU 36	39	69	8233	-271.9	0.96	-3.04
677	SLU 37	39	51	8193	-271.02	0.95	-2.97
677	SLU 38	39	68	8183	-270.15	0.96	-3.01
677	SLU 39	38	52	8363	-276.3	1.02	-3.03
677	SLU 40	38	70	8353	-275.43	1.02	-3.07
677	SLU 41	38	53	8453	-279.73	1.01	-3.04
677	SLU 42	39	70	8443	-278.86	1.01	-3.07
677	SLU 43	43	53	7784	-253.28	1.03	-3.19
677	SLU 44	44	81	7768	-251.84	1.04	-3.26
677	SLU 45	44	53	7924	-258.47	1.03	-3.22
677	SLU 46	44	71	7914	-257.6	1.03	-3.26
677	SLU 47	44	81	7857	-255.26	1.03	-3.26
677	SLU 48	45	54	8014	-261.89	1.02	-3.23
677	SLU 49	45	71	8004	-261.02	1.03	-3.27
677	SLU 50	44	53	7964	-260.14	1.02	-3.2
677	SLU 51	45	70	7954	-259.27	1.02	-3.24
677	SLU 52	44	85	8584	-280.16	1.15	-3.42
677	SLU 53	44	57	8741	-286.79	1.14	-3.39
677	SLU 54	45	74	8731	-285.92	1.15	-3.43
677	SLU 55	44	85	8674	-283.59	1.15	-3.43
677	SLU 56	45	57	8830	-290.22	1.13	-3.39
677	SLU 57	45	74	8820	-289.35	1.14	-3.43
677	SLU 58	45	57	8780	-288.47	1.13	-3.37
677	SLU 59	45	74	8770	-287.6	1.13	-3.41
677	SLU 60	44	58	8950	-293.75	1.19	-3.43
677	SLU 61	44	75	8941	-292.88	1.2	-3.47
677	SLU 62	44	58	9040	-297.18	1.19	-3.43
677	SLU 63	44	75	9030	-296.31	1.19	-3.47
677	SLU 64	47	58	8741	-285.73	1.08	-3.46
677	SLU 65	47	87	8724	-284.28	1.09	-3.53
677	SLU 66	47	59	8881	-290.91	1.08	-3.49
677	SLU 67	48	76	8871	-290.04	1.08	-3.53
677	SLU 68	48	87	8814	-287.71	1.08	-3.53
677	SLU 69	48	59	8971	-294.34	1.07	-3.5
677	SLU 70	48	76	8961	-293.47	1.07	-3.54
677	SLU 71	48	59	8920	-292.58	1.07	-3.47
677	SLU 72	48	76	8910	-291.71	1.07	-3.51
677	SLU 73	47	90	9541	-312.61	1.2	-3.69
677	SLU 74	48	62	9697	-319.24	1.19	-3.66
677	SLU 75	48	79	9687	-318.37	1.2	-3.7
677	SLU 76	48	90	9631	-316.03	1.19	-3.7
677	SLU 77	48	63	9787	-322.66	1.18	-3.66
677	SLU 78	49	80	9777	-321.79	1.19	-3.7
677	SLU 79	48	62	9737	-320.91	1.18	-3.64
677	SLU 80	48	79	9727	-320.04	1.18	-3.68
677	SLU 81	47	63	9907	-326.19	1.24	-3.7
677	SLU 82	47	80	9897	-325.33	1.25	-3.74
677	SLU 83	47	63	9997	-329.62	1.23	-3.7
677	SLU 84	48	80	9987	-328.75	1.24	-3.74
677	SLE RA 1	35	44	6513	-212.66	0.82	-2.6
677	SLE RA 2	35	63	6503	-211.7	0.83	-2.65
677	SLE RA 3	36	44	6607	-216.12	0.82	-2.62
677	SLE RA 4	36	55	6600	-215.54	0.82	-2.65
677	SLE RA 5	36	63	6562	-213.98	0.82	-2.65
677	SLE RA 6	36	44	6667	-218.4	0.81	-2.63
677	SLE RA 7	36	56	6660	-217.82	0.82	-2.65
677	SLE RA 8	36	44	6633	-217.23	0.81	-2.61
677	SLE RA 9	36	55	6626	-216.65	0.81	-2.64
677	SLE RA 10	36	65	7047	-230.58	0.9	-2.76
677	SLE RA 11	36	46	7151	-235	0.89	-2.73
677	SLE RA 12	36	58	7145	-234.42	0.9	-2.76
677	SLE RA 13	36	65	7107	-232.86	0.9	-2.76
677	SLE RA 14	36	46	7211	-237.28	0.89	-2.74
677	SLE RA 15	36	58	7204	-236.7	0.89	-2.76
677	SLE RA 16	36	46	7177	-236.11	0.89	-2.72
677	SLE RA 17	36	58	7171	-235.54	0.89	-2.75
677	SLE RA 18	35	47	7291	-239.64	0.93	-2.76
677	SLE RA 19	36	58	7284	-239.06	0.93	-2.79
677	SLE RA 20	36	47	7351	-241.92	0.92	-2.76
677	SLE RA 21	36	58	7344	-241.34	0.93	-2.79
677	SLE FR 1	35	44	6513	-212.66	0.82	-2.6
677	SLE FR 2	35	47	6511	-212.47	0.82	-2.61
677	SLE FR 3	35	44	6537	-213.57	0.82	-2.61
677	SLE FR 4	35	48	6745	-220.56	0.85	-2.66
677	SLE FR 5	35	45	6771	-221.67	0.85	-2.65
677	SLE FR 6	35	45	6902	-226.15	0.87	-2.68
677	SLE QP 1	35	44	6513	-212.66	0.82	-2.6
677	SLE QP 2	35	45	6747	-220.75	0.85	-2.65
677	SLD 1	616	208	6165	-221.37	3.39	-2.43
677	SLD 2	617	255	6162	-217.87	3.43	-1.77
677	SLD 3	607	-140	6398	-238.56	3.26	-1.21
677	SLD 4	609	-92	6395	-235.06	3.3	-0.55
677	SLD 5	222	613	6219	-195.49	1.8	-4.54
677	SLD 6	223	644	6217	-193.18	1.82	-4.11
677	SLD 7	194	-547	6997	-252.8	1.38	-0.5
677	SLD 8	195	-516	6995	-250.49	1.4	-0.06
677	SLD 9	-124	605	6499	-191.02	0.3	-5.24
677	SLD 10	-123	636	6497	-188.71	0.33	-4.8
677	SLD 11	-152	-555	7277	-248.32	-0.12	-1.19

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
677	SLD 12	-151	-524	7275	-246.01	-0.09	-0.76
677	SLD 13	-538	181	7098	-206.45	-1.59	-4.75
677	SLD 14	-537	229	7095	-202.95	-1.55	-4.09
677	SLD 15	-547	-166	7332	-223.64	-1.72	-3.54
677	SLD 16	-545	-119	7329	-220.14	-1.68	-2.88
677	SLV 1	1394	454	5366	-220.93	6.79	-2.23
677	SLV 2	1397	566	5358	-212.7	6.88	-0.67
677	SLV 3	1373	-415	5951	-263.7	6.48	0.81
677	SLV 4	1377	-303	5943	-255.47	6.57	2.36
677	SLV 5	473	1464	5447	-157.48	3.09	-7.41
677	SLV 6	475	1539	5442	-151.93	3.15	-6.37
677	SLV 7	405	-1432	7396	-300.04	2.05	2.7
677	SLV 8	407	-1356	7391	-294.5	2.11	3.74
677	SLV 9	-337	1445	6103	-147.01	-0.4	-9.04
677	SLV 10	-335	1521	6097	-141.47	-0.34	-8
677	SLV 11	-405	-1450	8052	-289.57	-1.45	1.07
677	SLV 12	-403	-1375	8046	-284.03	-1.39	2.11
677	SLV 13	-1306	392	7551	-186.04	-4.86	-7.66
677	SLV 14	-1303	504	7543	-177.81	-4.77	-6.11
677	SLV 15	-1327	-477	8135	-228.81	-5.18	-4.63
677	SLV 16	-1323	-365	8128	-220.58	-5.09	-3.07
677	CRTFP Ux+	0	0	0	0	0	0
677	CRTFP Ux-	0	0	0	0	0	0
677	CRTFP Uy+	0	0	0	0	0	0
677	CRTFP Uy-	0	0	0	0	0	0
678	SLU 1	37	29	6202	-203.06	1.45	-2.67
678	SLU 2	38	57	6186	-201.63	1.45	-2.71
678	SLU 3	38	29	6342	-208.22	1.47	-2.7
678	SLU 4	38	46	6332	-207.37	1.47	-2.73
678	SLU 5	38	57	6276	-205.05	1.46	-2.72
678	SLU 6	38	29	6432	-211.64	1.47	-2.71
678	SLU 7	39	46	6422	-210.78	1.47	-2.74
678	SLU 8	38	29	6382	-209.89	1.46	-2.69
678	SLU 9	38	46	6372	-209.03	1.46	-2.71
678	SLU 10	38	59	6997	-229.89	1.68	-2.88
678	SLU 11	38	32	7153	-236.48	1.69	-2.87
678	SLU 12	39	49	7143	-235.63	1.69	-2.9
678	SLU 13	38	60	7086	-233.31	1.68	-2.89
678	SLU 14	39	32	7243	-239.9	1.7	-2.88
678	SLU 15	39	49	7233	-239.04	1.7	-2.91
678	SLU 16	39	31	7193	-238.15	1.69	-2.86
678	SLU 17	39	48	7183	-237.29	1.69	-2.88
678	SLU 18	37	32	7361	-243.43	1.77	-2.91
678	SLU 19	38	49	7351	-242.57	1.77	-2.93
678	SLU 20	38	32	7451	-246.84	1.78	-2.92
678	SLU 21	38	49	7441	-245.99	1.78	-2.94
678	SLU 22	41	33	7156	-235.44	1.62	-2.95
678	SLU 23	41	61	7139	-234.01	1.62	-3
678	SLU 24	42	33	7295	-240.6	1.63	-2.99
678	SLU 25	42	50	7285	-239.74	1.63	-3.02
678	SLU 26	42	61	7229	-237.42	1.62	-3.01
678	SLU 27	42	33	7385	-244.01	1.64	-3
678	SLU 28	42	50	7375	-243.16	1.64	-3.03
678	SLU 29	42	33	7335	-242.26	1.63	-2.97
678	SLU 30	42	50	7325	-241.41	1.63	-3
678	SLU 31	42	63	7950	-262.27	1.84	-3.17
678	SLU 32	42	36	8106	-268.86	1.86	-3.16
678	SLU 33	42	53	8096	-268	1.86	-3.19
678	SLU 34	42	64	8040	-265.68	1.85	-3.18
678	SLU 35	42	36	8196	-272.27	1.86	-3.17
678	SLU 36	43	53	8186	-271.42	1.86	-3.2
678	SLU 37	42	36	8146	-270.52	1.85	-3.14
678	SLU 38	42	52	8136	-269.67	1.85	-3.17
678	SLU 39	41	36	8314	-275.81	1.94	-3.2
678	SLU 40	41	53	8304	-274.95	1.94	-3.22
678	SLU 41	42	36	8404	-279.22	1.94	-3.21
678	SLU 42	42	53	8394	-278.36	1.94	-3.23
678	SLU 43	47	36	7736	-252.88	1.83	-3.37
678	SLU 44	47	64	7720	-251.45	1.83	-3.41
678	SLU 45	48	36	7876	-258.04	1.85	-3.4
678	SLU 46	48	53	7866	-257.19	1.85	-3.43
678	SLU 47	48	64	7809	-254.86	1.84	-3.42
678	SLU 48	48	36	7966	-261.45	1.85	-3.41
678	SLU 49	49	53	7956	-260.6	1.85	-3.44
678	SLU 50	48	36	7916	-259.7	1.84	-3.39
678	SLU 51	48	53	7906	-258.85	1.84	-3.41
678	SLU 52	48	67	8531	-279.71	2.06	-3.58
678	SLU 53	48	39	8687	-286.3	2.07	-3.57
678	SLU 54	48	56	8677	-285.44	2.07	-3.6
678	SLU 55	48	67	8620	-283.12	2.06	-3.59
678	SLU 56	49	39	8777	-289.71	2.07	-3.58
678	SLU 57	49	56	8767	-288.86	2.08	-3.61
678	SLU 58	48	39	8727	-287.96	2.06	-3.56
678	SLU 59	49	56	8717	-287.11	2.07	-3.58
678	SLU 60	47	39	8895	-293.25	2.15	-3.61
678	SLU 61	48	56	8885	-292.39	2.15	-3.64
678	SLU 62	48	40	8984	-296.66	2.15	-3.62
678	SLU 63	48	57	8974	-295.81	2.16	-3.65
678	SLU 64	51	40	8690	-285.26	2	-3.65

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
678	SLU 65	51	68	8673	-283.83	2	-3.7
678	SLU 66	51	40	8829	-290.42	2.01	-3.69
678	SLU 67	52	57	8819	-289.56	2.01	-3.72
678	SLU 68	52	68	8763	-287.24	2	-3.71
678	SLU 69	52	40	8919	-293.83	2.02	-3.7
678	SLU 70	52	57	8909	-292.97	2.02	-3.73
678	SLU 71	52	40	8869	-292.08	2.01	-3.68
678	SLU 72	52	57	8859	-291.23	2.01	-3.7
678	SLU 73	51	71	9484	-312.09	2.22	-3.87
678	SLU 74	52	43	9640	-318.68	2.24	-3.86
678	SLU 75	52	60	9630	-317.82	2.24	-3.89
678	SLU 76	52	71	9573	-315.5	2.23	-3.88
678	SLU 77	52	43	9730	-322.09	2.24	-3.87
678	SLU 78	53	60	9720	-321.23	2.24	-3.9
678	SLU 79	52	43	9680	-320.34	2.23	-3.85
678	SLU 80	52	60	9670	-319.48	2.23	-3.87
678	SLU 81	51	43	9848	-325.62	2.32	-3.9
678	SLU 82	51	60	9838	-324.77	2.32	-3.92
678	SLU 83	52	44	9938	-329.04	2.32	-3.91
678	SLU 84	52	61	9928	-328.18	2.32	-3.93
678	SLE RA 1	38	30	6475	-212.31	1.5	-2.75
678	SLE RA 2	38	49	6464	-211.36	1.5	-2.78
678	SLE RA 3	39	30	6568	-215.75	1.51	-2.77
678	SLE RA 4	39	41	6561	-215.18	1.51	-2.79
678	SLE RA 5	39	49	6524	-213.64	1.5	-2.78
678	SLE RA 6	39	30	6628	-218.03	1.51	-2.78
678	SLE RA 7	39	41	6621	-217.46	1.51	-2.8
678	SLE RA 8	39	30	6594	-216.86	1.51	-2.76
678	SLE RA 9	39	41	6588	-216.29	1.51	-2.78
678	SLE RA 10	39	50	7004	-230.2	1.65	-2.89
678	SLE RA 11	39	32	7109	-234.59	1.66	-2.89
678	SLE RA 12	39	43	7102	-234.02	1.66	-2.9
678	SLE RA 13	39	50	7064	-232.47	1.65	-2.9
678	SLE RA 14	39	32	7168	-236.87	1.66	-2.89
678	SLE RA 15	39	43	7162	-236.3	1.66	-2.91
678	SLE RA 16	39	32	7135	-235.7	1.65	-2.87
678	SLE RA 17	39	43	7128	-235.13	1.66	-2.89
678	SLE RA 18	38	32	7247	-239.22	1.71	-2.91
678	SLE RA 19	39	43	7240	-238.65	1.71	-2.93
678	SLE RA 20	39	32	7307	-241.5	1.72	-2.92
678	SLE RA 21	39	44	7300	-240.93	1.72	-2.93
678	SLE FR 1	38	30	6475	-212.31	1.5	-2.75
678	SLE FR 2	38	33	6473	-212.12	1.5	-2.75
678	SLE FR 3	38	30	6499	-213.22	1.5	-2.75
678	SLE FR 4	38	34	6704	-220.2	1.56	-2.8
678	SLE FR 5	38	30	6730	-221.3	1.56	-2.8
678	SLE FR 6	38	31	6861	-225.77	1.61	-2.83
678	SLE QP 1	38	30	6475	-212.31	1.5	-2.75
678	SLE QP 2	38	30	6706	-220.39	1.56	-2.8
678	SLD 1	617	193	6047	-221	3.65	-2.52
678	SLD 2	619	244	6042	-217.5	3.69	-1.8
678	SLD 3	609	-150	6283	-237.91	3.61	-1.59
678	SLD 4	610	-99	6278	-234.41	3.65	-0.87
678	SLD 5	224	590	6152	-195.55	2.25	-4.26
678	SLD 6	225	623	6148	-193.24	2.27	-3.78
678	SLD 7	196	-552	6938	-251.92	2.11	-1.15
678	SLD 8	197	-519	6935	-249.61	2.14	-0.68
678	SLD 9	-121	580	6478	-191.16	0.99	-4.92
678	SLD 10	-120	613	6475	-188.85	1.02	-4.44
678	SLD 11	-149	-563	7264	-247.53	0.86	-1.81
678	SLD 12	-148	-529	7261	-245.22	0.88	-1.34
678	SLD 13	-534	159	7135	-206.36	-0.53	-4.72
678	SLD 14	-533	210	7130	-202.86	-0.49	-4
678	SLD 15	-542	-183	7371	-223.27	-0.57	-3.79
678	SLD 16	-541	-132	7366	-219.77	-0.53	-3.07
678	SLV 1	1394	438	5144	-220.59	6.46	-2.24
678	SLV 2	1397	558	5133	-212.36	6.55	-0.53
678	SLV 3	1373	-418	5735	-262.66	6.36	0.09
678	SLV 4	1376	-298	5724	-254.42	6.45	1.79
678	SLV 5	475	1428	5343	-158.19	3.16	-6.47
678	SLV 6	478	1508	5336	-152.65	3.22	-5.32
678	SLV 7	407	-1424	7313	-298.4	2.84	1.27
678	SLV 8	409	-1343	7306	-292.85	2.9	2.42
678	SLV 9	-333	1404	6107	-147.92	0.23	-8.01
678	SLV 10	-331	1485	6100	-142.37	0.29	-6.87
678	SLV 11	-401	-1447	8077	-288.13	-0.1	-0.27
678	SLV 12	-399	-1367	8070	-282.58	-0.03	0.88
678	SLV 13	-1300	359	7689	-186.35	-3.32	-7.38
678	SLV 14	-1297	479	7678	-178.12	-3.23	-5.68
678	SLV 15	-1321	-497	8280	-228.41	-3.42	-5.06
678	SLV 16	-1317	-377	8269	-220.18	-3.33	-3.36
678	CRTFP Ux+	0	0	0	0	0	0
678	CRTFP Ux-	0	0	0	0	0	0
678	CRTFP Uy+	0	0	0	0	0	0
678	CRTFP Uy-	0	0	0	0	0	0
679	SLU 1	40	15	6144	-202.95	2.05	-2.56
679	SLU 2	41	43	6127	-201.55	2.04	-2.58
679	SLU 3	41	15	6283	-208.1	2.08	-2.6
679	SLU 4	41	32	6273	-207.26	2.07	-2.61

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
679	SLU 5	41	43	6216	-204.95	2.06	-2.59
679	SLU 6	42	15	6372	-211.51	2.1	-2.62
679	SLU 7	42	32	6362	-210.66	2.09	-2.63
679	SLU 8	41	15	6322	-209.76	2.08	-2.59
679	SLU 9	42	32	6312	-208.92	2.08	-2.6
679	SLU 10	41	45	6929	-229.77	2.37	-2.74
679	SLU 11	42	17	7084	-236.33	2.41	-2.76
679	SLU 12	42	34	7074	-235.48	2.4	-2.77
679	SLU 13	42	45	7018	-233.17	2.38	-2.75
679	SLU 14	42	17	7174	-239.73	2.42	-2.78
679	SLU 15	43	34	7164	-238.89	2.42	-2.79
679	SLU 16	42	17	7124	-237.98	2.41	-2.75
679	SLU 17	42	34	7114	-237.14	2.4	-2.76
679	SLU 18	41	18	7289	-243.27	2.52	-2.79
679	SLU 19	41	34	7279	-242.43	2.51	-2.8
679	SLU 20	42	18	7378	-246.68	2.53	-2.8
679	SLU 21	42	34	7368	-245.83	2.53	-2.82
679	SLU 22	44	18	7089	-235.3	2.32	-2.85
679	SLU 23	45	46	7073	-233.89	2.31	-2.86
679	SLU 24	45	18	7228	-240.45	2.35	-2.88
679	SLU 25	45	35	7218	-239.6	2.35	-2.9
679	SLU 26	45	46	7162	-237.29	2.33	-2.88
679	SLU 27	46	18	7318	-243.85	2.37	-2.9
679	SLU 28	46	35	7308	-243.01	2.36	-2.91
679	SLU 29	45	18	7268	-242.1	2.35	-2.87
679	SLU 30	46	35	7258	-241.26	2.35	-2.88
679	SLU 31	45	47	7874	-262.11	2.64	-3.02
679	SLU 32	46	20	8030	-268.67	2.68	-3.04
679	SLU 33	46	37	8020	-267.83	2.68	-3.06
679	SLU 34	46	48	7964	-265.52	2.66	-3.04
679	SLU 35	46	20	8119	-272.07	2.7	-3.06
679	SLU 36	47	37	8109	-271.23	2.69	-3.07
679	SLU 37	46	20	8070	-270.33	2.68	-3.03
679	SLU 38	46	36	8060	-269.48	2.68	-3.04
679	SLU 39	45	20	8234	-275.62	2.79	-3.07
679	SLU 40	45	37	8224	-274.77	2.78	-3.08
679	SLU 41	46	20	8324	-279.02	2.81	-3.09
679	SLU 42	46	37	8314	-278.18	2.8	-3.1
679	SLU 43	51	19	7662	-252.75	2.57	-3.24
679	SLU 44	51	47	7646	-251.34	2.56	-3.25
679	SLU 45	52	19	7801	-257.9	2.6	-3.27
679	SLU 46	52	36	7791	-257.06	2.59	-3.29
679	SLU 47	52	47	7735	-254.75	2.58	-3.27
679	SLU 48	53	19	7891	-261.3	2.62	-3.29
679	SLU 49	53	36	7881	-260.46	2.61	-3.3
679	SLU 50	52	19	7841	-259.56	2.6	-3.26
679	SLU 51	53	36	7831	-258.71	2.6	-3.27
679	SLU 52	52	49	8447	-279.57	2.89	-3.41
679	SLU 53	52	21	8603	-286.12	2.93	-3.43
679	SLU 54	53	38	8593	-285.28	2.92	-3.45
679	SLU 55	53	49	8537	-282.97	2.9	-3.43
679	SLU 56	53	21	8692	-289.53	2.94	-3.45
679	SLU 57	53	38	8682	-288.68	2.94	-3.46
679	SLU 58	53	21	8643	-287.78	2.93	-3.42
679	SLU 59	53	37	8633	-286.94	2.92	-3.43
679	SLU 60	52	21	8807	-293.07	3.04	-3.46
679	SLU 61	52	38	8797	-292.23	3.03	-3.47
679	SLU 62	52	21	8897	-296.47	3.05	-3.48
679	SLU 63	53	38	8887	-295.63	3.05	-3.49
679	SLU 64	55	21	8608	-285.1	2.84	-3.52
679	SLU 65	55	49	8592	-283.69	2.83	-3.54
679	SLU 66	56	22	8747	-290.25	2.87	-3.56
679	SLU 67	56	38	8737	-289.4	2.87	-3.57
679	SLU 68	56	49	8681	-287.09	2.85	-3.55
679	SLU 69	56	22	8837	-293.65	2.89	-3.57
679	SLU 70	57	39	8827	-292.8	2.88	-3.58
679	SLU 71	56	21	8787	-291.9	2.87	-3.54
679	SLU 72	56	38	8777	-291.06	2.87	-3.56
679	SLU 73	56	51	9393	-311.91	3.16	-3.7
679	SLU 74	56	23	9549	-318.47	3.2	-3.72
679	SLU 75	57	40	9539	-317.62	3.2	-3.73
679	SLU 76	57	51	9482	-315.31	3.18	-3.71
679	SLU 77	57	23	9638	-321.87	3.22	-3.73
679	SLU 78	57	40	9628	-321.03	3.21	-3.74
679	SLU 79	57	23	9588	-320.12	3.2	-3.7
679	SLU 80	57	40	9578	-319.28	3.2	-3.72
679	SLU 81	56	24	9753	-325.41	3.31	-3.75
679	SLU 82	56	41	9743	-324.57	3.3	-3.76
679	SLU 83	56	24	9843	-328.82	3.33	-3.76
679	SLU 84	57	41	9833	-327.97	3.32	-3.77
679	SLE RA 1	41	16	6414	-212.2	2.12	-2.64
679	SLE RA 2	42	35	6403	-211.26	2.12	-2.66
679	SLE RA 3	42	16	6506	-215.63	2.15	-2.67
679	SLE RA 4	42	27	6500	-215.07	2.14	-2.68
679	SLE RA 5	42	35	6462	-213.53	2.13	-2.66
679	SLE RA 6	42	16	6566	-217.9	2.16	-2.68
679	SLE RA 7	43	27	6559	-217.33	2.15	-2.69
679	SLE RA 8	42	16	6533	-216.73	2.15	-2.66
679	SLE RA 9	42	27	6526	-216.17	2.14	-2.67

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
679	SLE RA 10	42	36	6937	-230.07	2.34	-2.76
679	SLE RA 11	42	17	7041	-234.44	2.37	-2.78
679	SLE RA 12	43	28	7034	-233.88	2.36	-2.78
679	SLE RA 13	42	36	6997	-232.34	2.35	-2.77
679	SLE RA 14	43	17	7100	-236.71	2.38	-2.79
679	SLE RA 15	43	28	7094	-236.15	2.37	-2.79
679	SLE RA 16	43	17	7067	-235.55	2.37	-2.77
679	SLE RA 17	43	28	7061	-234.99	2.36	-2.78
679	SLE RA 18	42	17	7177	-239.07	2.44	-2.8
679	SLE RA 19	42	29	7171	-238.51	2.43	-2.8
679	SLE RA 20	42	17	7237	-241.34	2.45	-2.8
679	SLE RA 21	42	29	7230	-240.78	2.45	-2.81
679	SLE FR 1	41	16	6414	-212.2	2.12	-2.64
679	SLE FR 2	41	20	6412	-212.01	2.12	-2.65
679	SLE FR 3	42	16	6438	-213.1	2.13	-2.65
679	SLE FR 4	42	20	6641	-220.07	2.22	-2.69
679	SLE FR 5	42	16	6667	-221.17	2.22	-2.69
679	SLE FR 6	42	17	6795	-225.64	2.28	-2.72
679	SLE QP 1	41	16	6414	-212.2	2.12	-2.64
679	SLE QP 2	42	16	6643	-220.26	2.22	-2.69
679	SLD 1	619	179	5925	-220.87	3.57	-2.42
679	SLD 2	621	234	5919	-217.36	3.6	-1.6
679	SLD 3	611	-159	6160	-237.54	3.68	-1.81
679	SLD 4	612	-105	6154	-234.03	3.72	-1
679	SLD 5	227	569	6073	-195.8	2.44	-3.68
679	SLD 6	228	606	6069	-193.49	2.46	-3.14
679	SLD 7	199	-560	6855	-251.35	2.83	-1.65
679	SLD 8	200	-524	6851	-249.03	2.85	-1.11
679	SLD 9	-117	557	6435	-191.49	1.58	-4.27
679	SLD 10	-116	593	6431	-189.17	1.61	-3.73
679	SLD 11	-145	-573	7217	-247.03	1.97	-2.24
679	SLD 12	-144	-537	7213	-244.72	2	-1.7
679	SLD 13	-529	137	7132	-206.49	0.72	-4.38
679	SLD 14	-528	192	7126	-202.98	0.75	-3.57
679	SLD 15	-538	-202	7366	-223.15	0.83	-3.77
679	SLD 16	-536	-147	7360	-219.65	0.87	-2.96
679	SLV 1	1393	424	4944	-220.49	5.37	-2.11
679	SLV 2	1397	553	4930	-212.24	5.45	-0.19
679	SLV 3	1373	-422	5532	-261.92	5.65	-0.6
679	SLV 4	1376	-293	5518	-253.67	5.74	1.32
679	SLV 5	478	1398	5245	-159.02	2.71	-5.17
679	SLV 6	480	1485	5235	-153.47	2.77	-3.88
679	SLV 7	409	-1422	7203	-297.14	3.67	-0.13
679	SLV 8	411	-1336	7194	-291.59	3.73	1.17
679	SLV 9	-328	1368	6092	-148.93	0.7	-6.55
679	SLV 10	-326	1455	6082	-143.38	0.76	-5.25
679	SLV 11	-397	-1452	8050	-287.05	1.67	-1.5
679	SLV 12	-395	-1365	8041	-281.5	1.73	-0.21
679	SLV 13	-1293	325	7768	-186.84	-1.31	-6.7
679	SLV 14	-1290	454	7753	-178.6	-1.22	-4.78
679	SLV 15	-1314	-521	8355	-228.28	-1.02	-5.19
679	SLV 16	-1310	-392	8341	-220.03	-0.93	-3.27
679	CRTFP Ux+	0	0	0	0	0	0
679	CRTFP Ux-	0	0	0	0	0	0
679	CRTFP Uy+	0	0	0	0	0	0
679	CRTFP Uy-	0	0	0	0	0	0
680	SLU 1	77	-1	10157	-261.13	-1249.26	-4.96
680	SLU 2	77	47	10130	-259.39	-1246.08	0.95
680	SLU 3	78	-1	10387	-267.8	-1277.66	-5.03
680	SLU 4	79	28	10371	-266.76	-1275.75	-1.48
680	SLU 5	79	47	10279	-263.81	-1264.39	0.91
680	SLU 6	80	-1	10536	-272.21	-1295.97	-5.07
680	SLU 7	80	28	10520	-271.17	-1294.06	-1.52
680	SLU 8	79	-1	10454	-269.95	-1285.88	-5.04
680	SLU 9	80	28	10438	-268.91	-1283.97	-1.49
680	SLU 10	79	48	11449	-296.23	-1407.88	0.86
680	SLU 11	80	1	11706	-304.63	-1439.47	-5.12
680	SLU 12	81	29	11690	-303.59	-1437.56	-1.58
680	SLU 13	80	48	11598	-300.64	-1426.19	0.82
680	SLU 14	81	1	11855	-309.04	-1457.78	-5.16
680	SLU 15	82	29	11839	-308	-1455.87	-1.62
680	SLU 16	81	1	11773	-306.78	-1447.69	-5.13
680	SLU 17	81	29	11757	-305.74	-1445.78	-1.58
680	SLU 18	79	1	12041	-313.74	-1480.41	-5.09
680	SLU 19	79	30	12025	-312.7	-1478.5	-1.54
680	SLU 20	80	1	12190	-318.16	-1498.72	-5.13
680	SLU 21	81	30	12174	-317.12	-1496.81	-1.58
680	SLU 22	84	1	11723	-303.03	-1442.03	-5.33
680	SLU 23	85	48	11696	-301.3	-1438.85	0.58
680	SLU 24	86	1	11953	-309.7	-1470.43	-5.4
680	SLU 25	87	29	11937	-308.66	-1468.52	-1.85
680	SLU 26	86	48	11845	-305.71	-1457.16	0.54
680	SLU 27	87	1	12102	-314.11	-1488.75	-5.44
680	SLU 28	88	29	12086	-313.07	-1486.84	-1.89
680	SLU 29	87	1	12020	-311.85	-1478.66	-5.41
680	SLU 30	87	29	12004	-310.81	-1476.75	-1.86
680	SLU 31	87	49	13015	-338.13	-1600.66	0.49
680	SLU 32	88	2	13273	-346.53	-1632.24	-5.49
680	SLU 33	88	31	13257	-345.49	-1630.33	-1.95

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
680	SLU 34	88	49	13164	-342.54	-1618.97	0.45
680	SLU 35	89	2	13421	-350.94	-1650.55	-5.53
680	SLU 36	89	31	13405	-349.91	-1648.64	-1.99
680	SLU 37	88	2	13339	-348.69	-1640.46	-5.5
680	SLU 38	89	30	13323	-347.65	-1638.55	-1.95
680	SLU 39	86	3	13607	-355.65	-1673.19	-5.46
680	SLU 40	87	31	13591	-354.61	-1671.28	-1.91
680	SLU 41	88	3	13756	-360.06	-1691.5	-5.5
680	SLU 42	88	31	13740	-359.02	-1689.59	-1.95
680	SLU 43	97	-2	12667	-325.1	-1557.94	-6.32
680	SLU 44	98	46	12640	-323.36	-1554.76	-0.41
680	SLU 45	99	-1	12897	-331.77	-1586.34	-6.39
680	SLU 46	99	27	12881	-330.73	-1584.43	-2.84
680	SLU 47	99	46	12789	-327.78	-1573.07	-0.45
680	SLU 48	100	-1	13046	-336.18	-1604.65	-6.43
680	SLU 49	101	27	13030	-335.14	-1602.74	-2.88
680	SLU 50	99	-2	12964	-333.92	-1594.56	-6.4
680	SLU 51	100	27	12948	-332.88	-1592.65	-2.85
680	SLU 52	99	47	13959	-360.2	-1716.57	-0.5
680	SLU 53	100	0	14216	-368.6	-1748.15	-6.48
680	SLU 54	101	28	14200	-367.56	-1746.24	-2.94
680	SLU 55	101	47	14108	-364.61	-1734.88	-0.54
680	SLU 56	102	0	14365	-373.01	-1766.46	-6.52
680	SLU 57	102	28	14349	-371.97	-1764.55	-2.97
680	SLU 58	101	0	14283	-370.75	-1756.37	-6.49
680	SLU 59	101	28	14267	-369.71	-1754.46	-2.94
680	SLU 60	99	0	14551	-377.71	-1789.09	-6.45
680	SLU 61	100	29	14535	-376.67	-1787.18	-2.9
680	SLU 62	100	0	14700	-382.13	-1807.41	-6.49
680	SLU 63	101	29	14684	-381.09	-1805.5	-2.94
680	SLU 64	105	0	14233	-367	-1750.72	-6.69
680	SLU 65	105	47	14206	-365.27	-1747.53	-0.78
680	SLU 66	106	0	14463	-373.67	-1779.12	-6.76
680	SLU 67	107	28	14447	-372.63	-1777.21	-3.21
680	SLU 68	107	47	14355	-369.68	-1765.84	-0.82
680	SLU 69	108	0	14612	-378.08	-1797.43	-6.8
680	SLU 70	108	28	14596	-377.04	-1795.52	-3.25
680	SLU 71	107	0	14530	-375.82	-1787.34	-6.77
680	SLU 72	108	28	14514	-374.78	-1785.43	-3.22
680	SLU 73	107	49	15525	-402.1	-1909.34	-0.87
680	SLU 74	108	1	15783	-410.5	-1940.92	-6.85
680	SLU 75	108	30	15767	-409.46	-1939.01	-3.31
680	SLU 76	108	49	15674	-406.51	-1927.65	-0.91
680	SLU 77	109	1	15931	-414.91	-1959.24	-6.89
680	SLU 78	110	30	15915	-413.88	-1957.33	-3.35
680	SLU 79	109	1	15849	-412.66	-1949.15	-6.86
680	SLU 80	109	30	15833	-411.62	-1947.24	-3.31
680	SLU 81	107	2	16117	-419.62	-1981.87	-6.82
680	SLU 82	107	30	16101	-418.58	-1979.96	-3.27
680	SLU 83	108	2	16266	-424.03	-2000.18	-6.86
680	SLU 84	109	30	16250	-422.99	-1998.27	-3.31
680	SLE RA 1	79	0	10604	-273.1	-1304.34	-5.06
680	SLE RA 2	79	31	10586	-271.94	-1302.22	-1.12
680	SLE RA 3	80	0	10758	-277.54	-1323.27	-5.11
680	SLE RA 4	80	19	10747	-276.85	-1322	-2.75
680	SLE RA 5	80	31	10685	-274.88	-1314.42	-1.15
680	SLE RA 6	81	0	10857	-280.49	-1335.48	-5.14
680	SLE RA 7	81	19	10846	-279.79	-1334.21	-2.77
680	SLE RA 8	80	0	10802	-278.98	-1328.75	-5.12
680	SLE RA 9	81	19	10792	-278.29	-1327.48	-2.75
680	SLE RA 10	80	32	11466	-296.5	-1410.09	-1.18
680	SLE RA 11	81	1	11637	-302.1	-1431.14	-5.17
680	SLE RA 12	81	20	11627	-301.41	-1429.87	-2.81
680	SLE RA 13	81	32	11565	-299.44	-1422.29	-1.21
680	SLE RA 14	82	1	11736	-305.04	-1443.35	-5.2
680	SLE RA 15	82	20	11726	-304.35	-1442.08	-2.83
680	SLE RA 16	81	1	11682	-303.54	-1436.62	-5.18
680	SLE RA 17	82	19	11671	-302.84	-1435.35	-2.81
680	SLE RA 18	80	1	11860	-308.18	-1458.44	-5.15
680	SLE RA 19	81	20	11850	-307.48	-1457.17	-2.79
680	SLE RA 20	81	1	11960	-311.12	-1470.65	-5.18
680	SLE RA 21	81	20	11949	-310.43	-1469.37	-2.81
680	SLE FR 1	79	0	10604	-273.1	-1304.34	-5.06
680	SLE FR 2	79	6	10601	-272.87	-1303.91	-4.27
680	SLE FR 3	79	0	10644	-274.27	-1309.22	-5.07
680	SLE FR 4	79	6	10977	-283.39	-1350.14	-4.3
680	SLE FR 5	80	0	11021	-284.8	-1355.45	-5.1
680	SLE FR 6	80	0	11232	-290.64	-1381.39	-5.11
680	SLE QP 1	79	0	10604	-273.1	-1304.34	-5.06
680	SLE QP 2	79	0	10981	-283.62	-1350.57	-5.09
680	SLD 1	1046	276	9719	-295.54	-1192.31	19.25
680	SLD 2	1048	379	9707	-290.29	-1190.76	34.06
680	SLD 3	1032	-291	10096	-315.5	-1237.5	-50.98
680	SLD 4	1034	-188	10084	-310.25	-1235.95	-36.17
680	SLD 5	390	924	10032	-257.87	-1234.83	106.07
680	SLD 6	392	992	10024	-254.4	-1233.8	115.84
680	SLD 7	343	-965	11290	-324.4	-1385.47	-128.04
680	SLD 8	345	-898	11282	-320.94	-1384.45	-118.27
680	SLD 9	-186	898	10680	-246.3	-1316.69	108.09

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
680	SLD 10	-185	965	10672	-242.84	-1315.66	117.86
680	SLD 11	-233	-992	11938	-312.84	-1467.33	-126.02
680	SLD 12	-232	-924	11930	-309.38	-1466.31	-116.25
680	SLD 13	-876	188	11878	-256.99	-1465.18	25.99
680	SLD 14	-873	291	11866	-251.74	-1463.63	40.8
680	SLD 15	-890	-379	12256	-276.95	-1510.38	-44.24
680	SLD 16	-888	-276	12243	-271.7	-1508.83	-29.43
680	SLV 1	2342	690	7996	-310.21	-976.49	57.21
680	SLV 2	2347	931	7967	-297.87	-972.85	92.03
680	SLV 3	2307	-725	8941	-359.57	-1089.69	-118.09
680	SLV 4	2313	-484	8912	-347.23	-1086.04	-83.27
680	SLV 5	809	2308	8658	-219.03	-1067.34	272.98
680	SLV 6	813	2470	8639	-210.72	-1064.89	296.41
680	SLV 7	694	-2409	11807	-383.58	-1444.67	-311.36
680	SLV 8	698	-2247	11788	-375.27	-1442.21	-287.92
680	SLV 9	-540	2247	10174	-191.97	-1258.92	277.74
680	SLV 10	-536	2409	10155	-183.66	-1256.47	301.18
680	SLV 11	-654	-2470	13323	-356.52	-1636.25	-306.59
680	SLV 12	-651	-2308	13304	-348.21	-1633.79	-283.15
680	SLV 13	-2155	484	13050	-220.01	-1615.09	73.1
680	SLV 14	-2149	725	13021	-207.67	-1611.45	107.91
680	SLV 15	-2189	-931	13995	-269.37	-1728.29	-102.2
680	SLV 16	-2183	-690	13966	-257.04	-1724.64	-67.39
680	CRTFP Ux+	0	0	0	0	0	0
680	CRTFP Ux-	0	0	0	0	0	0
680	CRTFP Uy+	0	0	0	0	0	0
680	CRTFP Uy-	0	0	0	0	0	0
681	SLU 1	81	9	7855	1654.28	-443	-17.14
681	SLU 2	82	49	7837	1652.43	-442.12	-15.03
681	SLU 3	83	10	8034	1691.31	-453.34	-17.58
681	SLU 4	83	33	8023	1690.2	-452.8	-16.32
681	SLU 5	83	49	7953	1676.34	-448.86	-15.34
681	SLU 6	84	10	8150	1715.22	-460.08	-17.89
681	SLU 7	85	33	8139	1714.11	-459.55	-16.62
681	SLU 8	84	9	8087	1702.1	-456.49	-17.75
681	SLU 9	84	33	8076	1700.99	-455.96	-16.48
681	SLU 10	84	52	8846	1861.45	-498.42	-15.15
681	SLU 11	86	13	9043	1900.33	-509.64	-17.7
681	SLU 12	86	36	9032	1899.22	-509.11	-16.44
681	SLU 13	86	52	8961	1885.36	-505.17	-15.46
681	SLU 14	87	13	9159	1924.24	-516.38	-18.01
681	SLU 15	87	36	9148	1923.13	-515.85	-16.74
681	SLU 16	86	13	9096	1911.12	-512.79	-17.87
681	SLU 17	87	36	9085	1910.01	-512.26	-16.61
681	SLU 18	85	14	9296	1952.88	-523.44	-17.31
681	SLU 19	85	38	9285	1951.77	-522.91	-16.05
681	SLU 20	86	14	9412	1976.79	-530.18	-17.62
681	SLU 21	87	38	9401	1975.68	-529.65	-16.35
681	SLU 22	90	12	9070	1905.98	-512.24	-18.78
681	SLU 23	90	51	9052	1904.13	-511.36	-16.67
681	SLU 24	92	12	9249	1943.01	-522.58	-19.23
681	SLU 25	92	36	9238	1941.91	-522.05	-17.96
681	SLU 26	91	51	9168	1928.05	-518.1	-16.98
681	SLU 27	93	12	9365	1966.92	-529.32	-19.53
681	SLU 28	93	36	9354	1965.82	-528.79	-18.27
681	SLU 29	92	12	9302	1953.8	-525.73	-19.39
681	SLU 30	92	35	9291	1952.7	-525.2	-18.13
681	SLU 31	93	54	10061	2113.15	-567.66	-16.8
681	SLU 32	94	15	10258	2152.03	-578.88	-19.35
681	SLU 33	94	39	10247	2150.93	-578.35	-18.08
681	SLU 34	94	54	10177	2137.07	-574.41	-17.1
681	SLU 35	95	15	10374	2175.94	-585.62	-19.65
681	SLU 36	96	39	10363	2174.84	-585.09	-18.39
681	SLU 37	95	15	10311	2162.82	-582.04	-19.51
681	SLU 38	95	39	10300	2161.71	-581.51	-18.25
681	SLU 39	93	17	10511	2204.58	-592.68	-18.96
681	SLU 40	94	40	10500	2203.47	-592.15	-17.69
681	SLU 41	95	17	10627	2228.49	-599.42	-19.26
681	SLU 42	95	40	10616	2227.38	-598.89	-18
681	SLU 43	103	11	9795	2064.26	-552.16	-21.72
681	SLU 44	103	51	9777	2062.42	-551.28	-19.61
681	SLU 45	105	12	9974	2101.3	-562.5	-22.16
681	SLU 46	105	35	9963	2100.19	-561.97	-20.9
681	SLU 47	104	51	9892	2086.33	-558.02	-19.91
681	SLU 48	106	12	10090	2125.21	-569.24	-22.47
681	SLU 49	106	35	10079	2124.1	-568.71	-21.2
681	SLU 50	105	11	10026	2112.08	-565.65	-22.33
681	SLU 51	106	35	10016	2110.98	-565.12	-21.06
681	SLU 52	106	54	10785	2271.44	-607.58	-19.73
681	SLU 53	107	15	10983	2310.31	-618.8	-22.28
681	SLU 54	108	38	10972	2309.21	-618.27	-21.02
681	SLU 55	107	54	10901	2295.35	-614.33	-20.04
681	SLU 56	109	15	11099	2334.23	-625.54	-22.59
681	SLU 57	109	38	11088	2333.12	-625.01	-21.32
681	SLU 58	108	15	11035	2321.1	-621.96	-22.45
681	SLU 59	108	38	11024	2320	-621.42	-21.18
681	SLU 60	107	16	11236	2362.86	-632.6	-21.89
681	SLU 61	107	40	11225	2361.75	-632.07	-20.63
681	SLU 62	108	16	11352	2386.77	-639.34	-22.2

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
681	SLU 63	108	40	11341	2385.66	-638.81	-20.93
681	SLU 64	111	14	11010	2315.96	-621.4	-23.36
681	SLU 65	112	53	10992	2314.12	-620.52	-21.25
681	SLU 66	113	14	11189	2353	-631.74	-23.8
681	SLU 67	113	38	11178	2351.89	-631.21	-22.54
681	SLU 68	113	53	11108	2338.03	-627.26	-21.56
681	SLU 69	114	14	11305	2376.91	-638.48	-24.11
681	SLU 70	115	38	11294	2375.8	-637.95	-22.84
681	SLU 71	114	14	11242	2363.79	-634.89	-23.97
681	SLU 72	114	37	11231	2362.68	-634.36	-22.71
681	SLU 73	114	56	12001	2523.14	-676.82	-21.37
681	SLU 74	116	17	12198	2562.02	-688.04	-23.93
681	SLU 75	116	41	12187	2560.91	-687.51	-22.66
681	SLU 76	115	56	12116	2547.05	-683.57	-21.68
681	SLU 77	117	17	12314	2585.93	-694.79	-24.23
681	SLU 78	117	41	12303	2584.82	-694.26	-22.97
681	SLU 79	116	17	12251	2572.81	-691.2	-24.09
681	SLU 80	117	41	12240	2571.7	-690.67	-22.83
681	SLU 81	115	19	12451	2614.56	-701.84	-23.54
681	SLU 82	115	42	12440	2613.46	-701.31	-22.27
681	SLU 83	116	19	12567	2638.47	-708.58	-23.84
681	SLU 84	116	42	12556	2637.37	-708.05	-22.58
681	SLE RA 1	84	10	8202	1726.19	-462.79	-17.61
681	SLE RA 2	84	36	8190	1724.96	-462.2	-16.2
681	SLE RA 3	85	10	8322	1750.88	-469.67	-17.9
681	SLE RA 4	85	26	8314	1750.14	-469.32	-17.06
681	SLE RA 5	85	36	8267	1740.9	-466.69	-16.41
681	SLE RA 6	86	10	8399	1766.82	-474.17	-18.11
681	SLE RA 7	86	26	8392	1766.08	-473.82	-17.26
681	SLE RA 8	85	10	8357	1758.07	-471.78	-18.02
681	SLE RA 9	85	26	8349	1757.34	-471.42	-17.17
681	SLE RA 10	86	38	8863	1864.31	-499.73	-16.28
681	SLE RA 11	87	12	8994	1890.23	-507.21	-17.99
681	SLE RA 12	87	28	8987	1889.49	-506.86	-17.14
681	SLE RA 13	87	38	8940	1880.25	-504.23	-16.49
681	SLE RA 14	88	12	9071	1906.17	-511.71	-18.19
681	SLE RA 15	88	28	9064	1905.43	-511.35	-17.35
681	SLE RA 16	87	12	9029	1897.42	-509.31	-18.1
681	SLE RA 17	87	28	9022	1896.68	-508.96	-17.25
681	SLE RA 18	86	13	9163	1925.26	-516.41	-17.72
681	SLE RA 19	86	29	9156	1924.52	-516.05	-16.88
681	SLE RA 20	87	13	9240	1941.2	-520.9	-17.93
681	SLE RA 21	87	29	9233	1940.46	-520.55	-17.08
681	SLE FR 1	84	10	8202	1726.19	-462.79	-17.61
681	SLE FR 2	84	15	8200	1725.95	-462.67	-17.33
681	SLE FR 3	84	10	8233	1732.57	-464.58	-17.69
681	SLE FR 4	84	16	8488	1785.67	-478.75	-17.36
681	SLE FR 5	85	11	8521	1792.29	-480.67	-17.72
681	SLE FR 6	85	12	8682	1825.72	-489.6	-17.67
681	SLE QP 1	84	10	8202	1726.19	-462.79	-17.61
681	SLE QP 2	84	11	8490	1785.91	-478.87	-17.64
681	SLD 1	870	224	7471	1528.13	-425.55	-204.71
681	SLD 2	866	326	7466	1532.2	-425.13	-196.17
681	SLD 3	859	-245	7736	1561.73	-438.76	-229.87
681	SLD 4	856	-143	7731	1565.8	-438.34	-221.33
681	SLD 5	336	767	7783	1656.88	-442.93	-37.15
681	SLD 6	334	835	7780	1659.56	-442.65	-31.52
681	SLD 7	302	-795	8667	1768.89	-486.94	-121
681	SLD 8	300	-728	8663	1771.58	-486.66	-115.36
681	SLD 9	-131	750	8317	1800.25	-471.09	80.08
681	SLD 10	-133	817	8314	1802.93	-470.81	85.71
681	SLD 11	-165	-813	9200	1912.26	-515.09	-3.77
681	SLD 12	-167	-745	9197	1914.94	-514.82	1.86
681	SLD 13	-687	165	9250	2006.02	-519.41	186.04
681	SLD 14	-691	267	9245	2010.09	-518.99	194.58
681	SLD 15	-697	-304	9515	2039.63	-532.61	160.89
681	SLD 16	-701	-202	9510	2043.7	-532.19	169.43
681	SLV 1	1922	545	6082	1179.84	-352.99	-453.4
681	SLV 2	1914	785	6070	1189.41	-352	-433.32
681	SLV 3	1897	-625	6746	1263.96	-386.12	-516.2
681	SLV 4	1889	-385	6735	1273.53	-385.13	-496.12
681	SLV 5	675	1901	6763	1474.73	-391.04	-56.87
681	SLV 6	669	2063	6755	1481.18	-390.37	-43.35
681	SLV 7	592	-2000	8976	1755.11	-501.49	-266.2
681	SLV 8	587	-1838	8969	1761.55	-500.82	-252.69
681	SLV 9	-418	1860	8012	1810.27	-456.93	217.4
681	SLV 10	-423	2022	8004	1816.71	-456.26	230.92
681	SLV 11	-500	-2041	10226	2090.65	-567.37	8.07
681	SLV 12	-506	-1879	10218	2097.09	-566.71	21.58
681	SLV 13	-1720	407	10246	2298.3	-572.61	460.84
681	SLV 14	-1728	647	10234	2307.87	-571.62	480.91
681	SLV 15	-1745	-763	10910	2382.41	-605.75	398.04
681	SLV 16	-1753	-523	10898	2391.98	-604.76	418.11
681	CRTFP Ux+	0	0	0	0	0	0
681	CRTFP Ux-	0	0	0	0	0	0
681	CRTFP Uy+	0	0	0	0	0	0
681	CRTFP Uy-	0	0	0	0	0	0
684	SLU 1	101	-25	12673	-2635.14	3175.23	32.82
684	SLU 2	103	35	12646	-2633.82	3164.93	18.84

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
684	SLU 3	104	-25	12961	-2694.15	3248.1	33.46
684	SLU 4	105	11	12945	-2693.36	3241.92	25.07
684	SLU 5	104	35	12833	-2671.86	3211.98	19.25
684	SLU 6	105	-25	13148	-2732.19	3295.15	33.86
684	SLU 7	106	10	13132	-2731.4	3288.97	25.47
684	SLU 8	105	-25	13046	-2711.21	3269.34	33.63
684	SLU 9	105	10	13030	-2710.42	3263.16	25.24
684	SLU 10	105	36	14282	-2973.14	3578.2	19.83
684	SLU 11	106	-24	14598	-3033.47	3661.37	34.44
684	SLU 12	107	12	14582	-3032.68	3655.19	26.06
684	SLU 13	107	36	14469	-3011.17	3625.26	20.23
684	SLU 14	108	-24	14784	-3071.5	3708.43	34.85
684	SLU 15	109	12	14768	-3070.71	3702.24	26.46
684	SLU 16	107	-24	14682	-3050.53	3682.61	34.61
684	SLU 17	108	12	14666	-3049.74	3676.43	26.23
684	SLU 18	105	-23	15010	-3119.88	3765.62	34.23
684	SLU 19	106	13	14994	-3119.09	3759.44	25.84
684	SLU 20	107	-23	15197	-3157.91	3812.68	34.63
684	SLU 21	107	13	15181	-3157.12	3806.49	26.25
684	SLU 22	111	-25	14634	-3039.37	3666.69	35.69
684	SLU 23	112	34	14608	-3038.05	3656.39	21.71
684	SLU 24	114	-26	14923	-3098.38	3739.56	36.32
684	SLU 25	114	10	14907	-3097.59	3733.38	27.93
684	SLU 26	114	34	14794	-3076.09	3703.44	22.11
684	SLU 27	115	-26	15110	-3136.42	3786.61	36.72
684	SLU 28	116	9	15094	-3135.63	3780.43	28.34
684	SLU 29	114	-26	15007	-3115.44	3760.8	36.49
684	SLU 30	115	9	14991	-3114.65	3754.61	28.11
684	SLU 31	115	35	16244	-3377.37	4069.66	22.69
684	SLU 32	116	-25	16559	-3437.7	4152.83	37.31
684	SLU 33	117	11	16543	-3436.91	4146.65	28.92
684	SLU 34	116	35	16430	-3415.41	4116.71	23.1
684	SLU 35	118	-25	16746	-3475.74	4199.88	37.71
684	SLU 36	118	11	16730	-3474.95	4193.7	29.32
684	SLU 37	117	-25	16644	-3454.76	4174.07	37.48
684	SLU 38	118	11	16628	-3453.97	4167.89	29.09
684	SLU 39	115	-23	16972	-3524.11	4257.08	37.09
684	SLU 40	115	12	16956	-3523.32	4250.9	28.71
684	SLU 41	116	-24	17158	-3562.14	4304.13	37.5
684	SLU 42	117	12	17142	-3561.35	4297.95	29.11
684	SLU 43	129	-32	15802	-3287.09	3959.31	41.69
684	SLU 44	130	28	15775	-3285.77	3949	27.71
684	SLU 45	131	-32	16091	-3346.1	4032.17	42.32
684	SLU 46	132	4	16075	-3345.31	4025.99	33.94
684	SLU 47	131	28	15962	-3323.81	3996.05	28.11
684	SLU 48	133	-32	16277	-3384.14	4079.23	42.73
684	SLU 49	133	3	16261	-3383.35	4073.04	34.34
684	SLU 50	132	-32	16175	-3363.16	4053.41	42.49
684	SLU 51	132	3	16159	-3362.37	4047.23	34.11
684	SLU 52	132	29	17411	-3625.08	4362.27	28.69
684	SLU 53	133	-31	17727	-3685.41	4445.45	43.31
684	SLU 54	134	5	17711	-3684.62	4439.26	34.92
684	SLU 55	134	29	17598	-3663.12	4409.33	29.1
684	SLU 56	135	-31	17913	-3723.45	4492.5	43.71
684	SLU 57	136	5	17897	-3722.66	4486.32	35.32
684	SLU 58	134	-31	17811	-3702.47	4466.68	43.48
684	SLU 59	135	5	17795	-3701.68	4460.5	35.09
684	SLU 60	132	-30	18139	-3771.82	4549.69	43.09
684	SLU 61	133	6	18123	-3771.03	4543.51	34.71
684	SLU 62	134	-30	18326	-3809.86	4596.75	43.5
684	SLU 63	134	6	18310	-3809.07	4590.57	35.11
684	SLU 64	138	-32	17763	-3691.32	4450.76	44.55
684	SLU 65	139	27	17737	-3690	4440.46	30.57
684	SLU 66	141	-33	18052	-3750.33	4523.63	45.19
684	SLU 67	141	3	18036	-3749.54	4517.45	36.8
684	SLU 68	141	27	17923	-3728.04	4487.51	30.98
684	SLU 69	142	-33	18239	-3788.37	4570.68	45.59
684	SLU 70	143	2	18223	-3787.58	4564.5	37.2
684	SLU 71	141	-33	18137	-3767.39	4544.87	45.36
684	SLU 72	142	2	18121	-3766.6	4538.69	36.97
684	SLU 73	142	28	19373	-4029.32	4853.73	31.56
684	SLU 74	143	-32	19688	-4089.65	4936.9	46.17
684	SLU 75	144	4	19672	-4088.86	4930.72	37.78
684	SLU 76	144	28	19560	-4067.35	4900.78	31.96
684	SLU 77	145	-32	19875	-4127.68	4983.95	46.57
684	SLU 78	145	4	19859	-4126.89	4977.77	38.19
684	SLU 79	144	-32	19773	-4106.71	4958.14	46.34
684	SLU 80	145	4	19757	-4105.92	4951.96	37.96
684	SLU 81	142	-30	20101	-4176.05	5041.15	45.96
684	SLU 82	143	5	20085	-4175.26	5034.97	37.57
684	SLU 83	143	-31	20287	-4214.09	5088.2	46.36
684	SLU 84	144	5	20271	-4213.3	5082.02	37.97
684	SLE RA 1	104	-25	13233	-2750.63	3315.65	33.64
684	SLE RA 2	105	15	13215	-2749.76	3308.78	24.32
684	SLE RA 3	106	-25	13426	-2789.98	3364.23	34.06
684	SLE RA 4	106	-1	13415	-2789.45	3360.11	28.47
684	SLE RA 5	106	15	13340	-2775.11	3340.15	24.59
684	SLE RA 6	107	-25	13550	-2815.33	3395.6	34.33
684	SLE RA 7	107	-2	13539	-2814.81	3391.48	28.74

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
684	SLE RA 8	106	-25	13482	-2801.35	3378.39	34.18
684	SLE RA 9	107	-2	13471	-2800.82	3374.27	28.59
684	SLE RA 10	107	16	14306	-2975.97	3584.3	24.98
684	SLE RA 11	107	-24	14516	-3016.19	3639.74	34.72
684	SLE RA 12	108	0	14506	-3015.66	3635.62	29.13
684	SLE RA 13	108	16	14430	-3001.32	3615.66	25.25
684	SLE RA 14	109	-24	14641	-3041.54	3671.11	34.99
684	SLE RA 15	109	-1	14630	-3041.02	3666.99	29.4
684	SLE RA 16	108	-24	14573	-3027.56	3653.9	34.84
684	SLE RA 17	109	-1	14562	-3027.03	3649.78	29.24
684	SLE RA 18	107	-23	14791	-3073.79	3709.24	34.58
684	SLE RA 19	107	0	14781	-3073.26	3705.12	28.99
684	SLE RA 20	108	-24	14916	-3099.15	3740.61	34.85
684	SLE RA 21	108	0	14905	-3098.62	3736.49	29.26
684	SLE FR 1	104	-25	13233	-2750.63	3315.65	33.64
684	SLE FR 2	104	-17	13229	-2750.46	3314.28	31.78
684	SLE FR 3	105	-25	13283	-2760.78	3328.2	33.75
684	SLE FR 4	105	-16	13697	-2847.4	3432.35	32.06
684	SLE FR 5	105	-24	13750	-2857.72	3446.28	34.03
684	SLE FR 6	105	-24	14012	-2912.21	3512.45	34.11
684	SLE QP 1	104	-25	13233	-2750.63	3315.65	33.64
684	SLE QP 2	105	-24	13700	-2847.58	3433.73	33.92
684	SLD 1	1273	313	12176	-2564.26	3045.86	192.11
684	SLD 2	1282	477	12156	-2563.67	3037.28	162.55
684	SLD 3	1255	-397	12550	-2585.06	3187.67	358.57
684	SLD 4	1264	-233	12530	-2584.47	3179.1	329.02
684	SLD 5	481	1124	12679	-2731.14	3103.82	-165.78
684	SLD 6	487	1233	12666	-2730.75	3098.16	-185.28
684	SLD 7	421	-1243	13927	-2800.48	3576.54	389.11
684	SLD 8	428	-1134	13913	-2800.09	3570.88	369.61
684	SLD 9	-218	1086	13488	-2895.07	3296.57	-301.76
684	SLD 10	-211	1194	13474	-2894.68	3290.92	-321.26
684	SLD 11	-277	-1281	14735	-2964.41	3769.29	253.12
684	SLD 12	-271	-1173	14722	-2964.02	3763.63	233.62
684	SLD 13	-1054	184	14871	-3110.7	3688.36	-261.17
684	SLD 14	-1045	348	14851	-3110.1	3679.78	-290.73
684	SLD 15	-1072	-526	15245	-3131.5	3830.18	-94.71
684	SLD 16	-1063	-362	15225	-3130.9	3821.6	-124.27
684	SLV 1	2838	821	10103	-2183.13	2514.46	391.27
684	SLV 2	2860	1206	10055	-2181.74	2494.29	321.79
684	SLV 3	2795	-952	11040	-2234.63	2869.54	806.62
684	SLV 4	2817	-567	10992	-2233.24	2849.38	737.15
684	SLV 5	987	2846	11209	-2570.4	2623.16	-475.87
684	SLV 6	1001	3106	11177	-2569.47	2609.59	-522.64
684	SLV 7	842	-3064	14332	-2742.06	3806.78	908.66
684	SLV 8	857	-2804	14300	-2741.12	3793.21	861.88
684	SLV 9	-647	2755	13101	-2954.04	3074.25	-794.04
684	SLV 10	-632	3015	13069	-2953.1	3060.67	-840.81
684	SLV 11	-792	-3155	16224	-3125.69	4257.87	590.49
684	SLV 12	-777	-2895	16192	-3124.76	4244.29	543.71
684	SLV 13	-2607	518	16409	-3461.92	4018.08	-669.3
684	SLV 14	-2585	904	16361	-3460.53	3997.91	-738.78
684	SLV 15	-2650	-1255	17346	-3513.42	4373.16	-253.95
684	SLV 16	-2628	-869	17298	-3512.03	4353	-323.42
684	CRTFP Ux+	0	0	0	0	0	0
684	CRTFP Ux-	0	0	0	0	0	0
684	CRTFP Uy+	0	0	0	0	0	0
684	CRTFP Uy-	0	0	0	0	0	0
685	SLU 1	208	79	18921	3036.1	3362.11	-49.83
685	SLU 2	209	172	18895	3026.14	3354.28	-66.54
685	SLU 3	213	80	19355	3107.95	3439.65	-50.99
685	SLU 4	214	135	19339	3101.98	3434.95	-61.02
685	SLU 5	212	171	19177	3073.2	3404.58	-67.22
685	SLU 6	217	79	19636	3155.01	3489.94	-51.67
685	SLU 7	217	135	19621	3149.04	3485.25	-61.69
685	SLU 8	215	79	19484	3130.22	3462.7	-51.18
685	SLU 9	215	134	19469	3124.25	3458	-61.2
685	SLU 10	217	186	21315	3412.62	3785.01	-70.72
685	SLU 11	222	94	21774	3494.43	3870.38	-55.18
685	SLU 12	222	150	21759	3488.45	3865.68	-65.2
685	SLU 13	221	186	21596	3459.68	3835.3	-71.4
685	SLU 14	225	94	22056	3541.49	3920.67	-55.85
685	SLU 15	226	150	22040	3535.51	3915.97	-65.88
685	SLU 16	223	93	21904	3516.7	3893.42	-55.36
685	SLU 17	224	149	21888	3510.72	3888.72	-65.39
685	SLU 18	220	100	22378	3588.21	3977.43	-55.8
685	SLU 19	221	156	22362	3582.23	3972.74	-65.83
685	SLU 20	223	100	22659	3635.27	4027.72	-56.48
685	SLU 21	224	155	22644	3629.29	4023.03	-66.51
685	SLU 22	230	90	21860	3512.06	3884.94	-56.02
685	SLU 23	231	182	21834	3502.1	3877.11	-72.73
685	SLU 24	235	90	22293	3583.91	3962.48	-57.18
685	SLU 25	236	146	22278	3577.94	3957.78	-67.21
685	SLU 26	234	182	22115	3549.16	3927.41	-73.4
685	SLU 27	238	90	22575	3630.97	4012.77	-57.86
685	SLU 28	239	145	22560	3625	4008.08	-67.88
685	SLU 29	237	89	22423	3606.18	3985.53	-57.37
685	SLU 30	237	145	22407	3600.21	3980.83	-67.39
685	SLU 31	239	197	24253	3888.58	4307.84	-76.91

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
685	SLU 32	243	105	24713	3970.39	4393.21	-61.36
685	SLU 33	244	160	24697	3964.41	4388.51	-71.39
685	SLU 34	242	197	24535	3935.64	4358.13	-77.59
685	SLU 35	247	105	24995	4017.45	4443.5	-62.04
685	SLU 36	247	160	24979	4011.47	4438.8	-72.06
685	SLU 37	245	104	24842	3992.66	4416.25	-61.55
685	SLU 38	245	159	24827	3986.68	4411.55	-71.58
685	SLU 39	242	111	25316	4064.17	4500.26	-61.99
685	SLU 40	242	166	25301	4058.19	4495.57	-72.02
685	SLU 41	245	110	25598	4111.23	4550.55	-62.67
685	SLU 42	246	166	25582	4105.25	4545.86	-72.69
685	SLU 43	263	99	23590	3783.75	4191.49	-62.66
685	SLU 44	264	192	23564	3773.79	4183.66	-79.37
685	SLU 45	268	100	24024	3855.6	4269.03	-63.82
685	SLU 46	269	155	24008	3849.62	4264.33	-73.85
685	SLU 47	268	192	23846	3820.85	4233.95	-80.04
685	SLU 48	272	99	24305	3902.66	4319.32	-64.49
685	SLU 49	272	155	24290	3896.68	4314.62	-74.52
685	SLU 50	270	99	24153	3877.87	4292.07	-64
685	SLU 51	271	154	24138	3871.89	4287.38	-74.03
685	SLU 52	272	206	25984	4160.26	4614.39	-83.55
685	SLU 53	277	114	26443	4242.07	4699.75	-68
685	SLU 54	277	170	26428	4236.1	4695.06	-78.03
685	SLU 55	276	206	26265	4207.32	4664.68	-84.22
685	SLU 56	280	114	26725	4289.13	4750.04	-68.68
685	SLU 57	281	170	26709	4283.16	4745.35	-78.7
685	SLU 58	278	113	26573	4264.34	4722.8	-68.19
685	SLU 59	279	169	26557	4258.37	4718.1	-78.21
685	SLU 60	275	120	27046	4335.86	4806.81	-68.63
685	SLU 61	276	176	27031	4329.88	4802.11	-78.66
685	SLU 62	279	120	27328	4382.92	4857.1	-69.31
685	SLU 63	279	175	27313	4376.94	4852.41	-79.33
685	SLU 64	285	110	26529	4259.71	4714.32	-68.85
685	SLU 65	286	202	26503	4249.75	4706.49	-85.56
685	SLU 66	290	110	26962	4331.56	4791.86	-70.01
685	SLU 67	291	166	26947	4325.58	4787.16	-80.04
685	SLU 68	289	202	26784	4296.81	4756.78	-86.23
685	SLU 69	293	110	27244	4378.62	4842.15	-70.68
685	SLU 70	294	166	27228	4372.64	4837.45	-80.71
685	SLU 71	292	109	27092	4353.83	4814.9	-70.19
685	SLU 72	292	165	27076	4347.85	4810.21	-80.22
685	SLU 73	294	217	28922	4636.22	5137.22	-89.74
685	SLU 74	298	125	29382	4718.03	5222.58	-74.19
685	SLU 75	299	181	29366	4712.06	5217.89	-84.22
685	SLU 76	297	217	29204	4683.28	5187.51	-90.41
685	SLU 77	302	125	29663	4765.09	5272.88	-74.86
685	SLU 78	302	180	29648	4759.12	5268.18	-84.89
685	SLU 79	300	124	29511	4740.3	5245.63	-74.38
685	SLU 80	300	180	29496	4734.33	5240.93	-84.4
685	SLU 81	297	131	29985	4811.82	5329.64	-74.82
685	SLU 82	297	186	29969	4805.84	5324.94	-84.85
685	SLU 83	300	130	30267	4858.88	5379.93	-75.49
685	SLU 84	301	186	30251	4852.9	5375.24	-85.52
685	SLE RA 1	215	82	19761	3172.09	3511.49	-51.6
685	SLE RA 2	215	144	19744	3165.45	3506.27	-62.74
685	SLE RA 3	218	82	20050	3219.99	3563.19	-52.37
685	SLE RA 4	218	119	20040	3216.01	3560.05	-59.06
685	SLE RA 5	217	144	19931	3196.83	3539.8	-63.19
685	SLE RA 6	220	82	20238	3251.37	3596.71	-52.82
685	SLE RA 7	220	119	20227	3247.38	3593.58	-59.51
685	SLE RA 8	219	82	20136	3234.84	3578.55	-52.5
685	SLE RA 9	219	119	20126	3230.86	3575.42	-59.18
685	SLE RA 10	221	154	21357	3423.1	3793.42	-65.53
685	SLE RA 11	223	92	21663	3477.64	3850.33	-55.16
685	SLE RA 12	224	129	21653	3473.66	3847.2	-61.85
685	SLE RA 13	223	153	21544	3454.48	3826.95	-65.98
685	SLE RA 14	226	92	21851	3509.02	3883.86	-55.61
685	SLE RA 15	226	129	21840	3505.03	3880.73	-62.3
685	SLE RA 16	224	92	21749	3492.49	3865.7	-55.28
685	SLE RA 17	225	129	21739	3488.5	3862.57	-61.97
685	SLE RA 18	222	96	22065	3540.16	3921.71	-55.58
685	SLE RA 19	223	133	22055	3536.18	3918.57	-62.27
685	SLE RA 20	225	96	22253	3571.54	3955.23	-56.03
685	SLE RA 21	225	133	22242	3567.55	3952.1	-62.72
685	SLE FR 1	215	82	19761	3172.09	3511.49	-51.6
685	SLE FR 2	215	94	19757	3170.77	3510.45	-53.83
685	SLE FR 3	215	82	19836	3184.64	3524.9	-51.78
685	SLE FR 4	217	99	20449	3281.19	3633.51	-55.02
685	SLE FR 5	218	86	20527	3295.06	3647.97	-52.97
685	SLE FR 6	218	89	20913	3356.13	3716.6	-53.59
685	SLE QP 1	215	82	19761	3172.09	3511.49	-51.6
685	SLE QP 2	217	86	20452	3282.51	3634.56	-52.79
685	SLD 1	1986	426	18100	2844.89	3215.84	-422.6
685	SLD 2	1980	730	18086	2839.85	3213.79	-467.3
685	SLD 3	1966	-687	18507	2995.51	3329.94	-222.06
685	SLD 4	1960	-383	18494	2990.47	3327.89	-266.76
685	SLD 5	780	1821	19131	2923.7	3336.26	-459.84
685	SLD 6	776	2021	19122	2920.37	3334.91	-489.33
685	SLD 7	711	-1888	20489	3425.75	3716.59	208.62

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
685	SLD 8	708	-1688	20480	3422.43	3715.24	179.13
685	SLD 9	-274	1860	20424	3142.6	3553.88	-284.71
685	SLD 10	-278	2060	20415	3139.27	3552.53	-314.2
685	SLD 11	-342	-1849	21782	3644.66	3934.2	383.75
685	SLD 12	-346	-1649	21773	3641.33	3932.85	354.26
685	SLD 13	-1526	556	22410	3574.56	3941.22	161.18
685	SLD 14	-1532	859	22397	3569.52	3939.18	116.47
685	SLD 15	-1547	-557	22818	3725.18	4055.32	361.71
685	SLD 16	-1553	-254	22804	3720.14	4053.28	317.01
685	SLV 1	4357	967	14913	2245.64	2645.13	-933.44
685	SLV 2	4343	1680	14882	2233.79	2640.33	-1038.52
685	SLV 3	4308	-1813	15936	2623.66	2931.21	-432.7
685	SLV 4	4294	-1100	15904	2611.81	2926.4	-537.78
685	SLV 5	1536	4434	17245	2400.33	2904.74	-1056.83
685	SLV 6	1526	4914	17224	2392.36	2901.5	-1127.58
685	SLV 7	1373	-4833	20654	3660.4	3858.34	612.3
685	SLV 8	1363	-4353	20633	3652.42	3855.1	541.56
685	SLV 9	-930	4525	20271	2912.61	3414.01	-647.14
685	SLV 10	-939	5005	20250	2904.63	3410.78	-717.89
685	SLV 11	-1093	-4741	23680	4172.67	4367.61	1021.99
685	SLV 12	-1102	-4261	23659	4164.7	4364.37	951.25
685	SLV 13	-3861	1272	25000	3953.22	4342.71	432.19
685	SLV 14	-3875	1986	24968	3941.37	4337.9	327.11
685	SLV 15	-3910	-1508	26022	4331.24	4628.79	932.93
685	SLV 16	-3924	-794	25991	4319.39	4623.98	827.85
685	CRTFP Ux+	0	0	0	0	0	0
685	CRTFP Ux-	0	0	0	0	0	0
685	CRTFP Uy+	0	0	0	0	0	0
685	CRTFP Uy-	0	0	0	0	0	0
687	SLU 1	65	24	5770	-212.38	-114.3	2.63
687	SLU 2	65	51	5768	-214.44	-114.23	3.22
687	SLU 3	66	24	5901	-216.34	-116.92	2.66
687	SLU 4	67	40	5900	-217.57	-116.88	3.02
687	SLU 5	66	51	5853	-216.84	-115.93	3.24
687	SLU 6	67	24	5986	-218.74	-118.62	2.68
687	SLU 7	68	40	5984	-219.98	-118.58	3.04
687	SLU 8	67	23	5940	-217.19	-117.71	2.67
687	SLU 9	67	40	5938	-218.43	-117.66	3.03
687	SLU 10	68	56	6506	-242.16	-128.8	3.38
687	SLU 11	69	28	6639	-244.06	-131.5	2.82
687	SLU 12	69	45	6637	-245.29	-131.45	3.18
687	SLU 13	69	56	6590	-244.56	-130.51	3.4
687	SLU 14	70	28	6723	-246.46	-133.2	2.84
687	SLU 15	70	45	6722	-247.69	-133.16	3.2
687	SLU 16	69	28	6677	-244.91	-132.29	2.83
687	SLU 17	70	44	6676	-246.14	-132.24	3.19
687	SLU 18	69	30	6824	-251.98	-135.12	2.85
687	SLU 19	69	47	6823	-253.21	-135.08	3.21
687	SLU 20	70	30	6909	-254.38	-136.83	2.88
687	SLU 21	70	46	6907	-255.62	-136.79	3.23
687	SLU 22	71	26	6664	-243.48	-132.07	2.83
687	SLU 23	72	54	6662	-245.54	-132	3.42
687	SLU 24	73	26	6795	-247.44	-134.69	2.86
687	SLU 25	73	43	6794	-248.67	-134.65	3.22
687	SLU 26	73	54	6747	-247.94	-133.7	3.44
687	SLU 27	74	26	6880	-249.84	-136.4	2.89
687	SLU 28	74	43	6878	-251.08	-136.35	3.24
687	SLU 29	73	26	6834	-248.29	-135.48	2.87
687	SLU 30	74	43	6832	-249.53	-135.44	3.23
687	SLU 31	74	58	7400	-273.26	-146.58	3.58
687	SLU 32	76	31	7532	-275.16	-149.27	3.02
687	SLU 33	76	47	7531	-276.39	-149.23	3.38
687	SLU 34	75	58	7484	-275.66	-148.28	3.6
687	SLU 35	77	31	7617	-277.56	-150.97	3.04
687	SLU 36	77	47	7616	-278.8	-150.93	3.4
687	SLU 37	76	30	7571	-276.01	-150.06	3.03
687	SLU 38	76	47	7570	-277.25	-150.01	3.39
687	SLU 39	75	33	7718	-283.08	-152.9	3.05
687	SLU 40	75	49	7717	-284.31	-152.85	3.41
687	SLU 41	76	32	7803	-285.48	-154.6	3.08
687	SLU 42	76	49	7801	-286.72	-154.56	3.43
687	SLU 43	82	30	7194	-265.43	-142.5	3.35
687	SLU 44	82	58	7192	-267.49	-142.42	3.94
687	SLU 45	84	30	7325	-269.39	-145.12	3.38
687	SLU 46	84	47	7324	-270.62	-145.07	3.73
687	SLU 47	83	58	7277	-269.89	-144.13	3.96
687	SLU 48	85	30	7410	-271.79	-146.82	3.4
687	SLU 49	85	46	7409	-273.03	-146.78	3.76
687	SLU 50	84	30	7364	-270.24	-145.9	3.39
687	SLU 51	84	46	7363	-271.48	-145.86	3.75
687	SLU 52	85	62	7930	-295.21	-157	4.09
687	SLU 53	86	34	8063	-297.11	-159.69	3.54
687	SLU 54	86	51	8062	-298.34	-159.65	3.89
687	SLU 55	86	62	8015	-297.61	-158.71	4.12
687	SLU 56	87	34	8148	-299.51	-161.4	3.56
687	SLU 57	87	51	8147	-300.75	-161.35	3.92
687	SLU 58	87	34	8102	-297.96	-160.48	3.55
687	SLU 59	87	51	8101	-299.2	-160.44	3.9
687	SLU 60	86	36	8248	-305.03	-163.32	3.57

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
687	SLU 61	86	53	8247	-306.26	-163.28	3.93
687	SLU 62	87	36	8333	-307.44	-165.03	3.6
687	SLU 63	87	53	8332	-308.67	-164.98	3.95
687	SLU 64	89	33	8088	-296.53	-160.27	3.55
687	SLU 65	89	60	8086	-298.59	-160.19	4.14
687	SLU 66	90	33	8219	-300.49	-162.89	3.58
687	SLU 67	90	49	8218	-301.72	-162.84	3.94
687	SLU 68	90	60	8171	-301	-161.9	4.16
687	SLU 69	91	32	8304	-302.89	-164.59	3.6
687	SLU 70	91	49	8303	-304.13	-164.55	3.96
687	SLU 71	91	32	8258	-301.34	-163.68	3.59
687	SLU 72	91	49	8257	-302.58	-163.63	3.95
687	SLU 73	92	65	8824	-326.31	-174.77	4.3
687	SLU 74	93	37	8957	-328.21	-177.47	3.74
687	SLU 75	93	54	8956	-329.44	-177.42	4.09
687	SLU 76	93	64	8909	-328.71	-176.48	4.32
687	SLU 77	94	37	9042	-330.61	-179.17	3.76
687	SLU 78	94	53	9041	-331.85	-179.13	4.12
687	SLU 79	93	37	8996	-329.06	-178.25	3.75
687	SLU 80	93	53	8995	-330.3	-178.21	4.11
687	SLU 81	92	39	9142	-336.13	-181.09	3.77
687	SLU 82	93	55	9141	-337.36	-181.05	4.13
687	SLU 83	93	39	9227	-338.54	-182.8	3.8
687	SLU 84	94	55	9226	-339.77	-182.75	4.15
687	SLE RA 1	67	25	6025	-221.27	-119.38	2.68
687	SLE RA 2	67	43	6024	-222.64	-119.33	3.08
687	SLE RA 3	68	25	6113	-223.9	-121.12	2.71
687	SLE RA 4	68	36	6112	-224.73	-121.09	2.94
687	SLE RA 5	68	43	6081	-224.24	-120.46	3.09
687	SLE RA 6	68	24	6169	-225.51	-122.26	2.72
687	SLE RA 7	69	35	6168	-226.33	-122.23	2.96
687	SLE RA 8	68	24	6138	-224.47	-121.65	2.71
687	SLE RA 9	68	35	6138	-225.3	-121.62	2.95
687	SLE RA 10	69	46	6516	-241.12	-129.05	3.18
687	SLE RA 11	70	27	6604	-242.38	-130.84	2.81
687	SLE RA 12	70	38	6604	-243.21	-130.81	3.05
687	SLE RA 13	69	46	6572	-242.72	-130.18	3.2
687	SLE RA 14	70	27	6661	-243.99	-131.98	2.83
687	SLE RA 15	70	38	6660	-244.81	-131.95	3.06
687	SLE RA 16	70	27	6630	-242.95	-131.37	2.82
687	SLE RA 17	70	38	6629	-243.78	-131.34	3.06
687	SLE RA 18	69	29	6728	-247.67	-133.26	2.84
687	SLE RA 19	69	40	6727	-248.49	-133.23	3.07
687	SLE RA 20	70	29	6784	-249.27	-134.4	2.85
687	SLE RA 21	70	40	6784	-250.09	-134.37	3.09
687	SLE FR 1	67	25	6025	-221.27	-119.38	2.68
687	SLE FR 2	67	28	6025	-221.54	-119.37	2.76
687	SLE FR 3	67	24	6048	-221.91	-119.83	2.69
687	SLE FR 4	68	29	6236	-229.46	-123.53	2.81
687	SLE FR 5	68	26	6259	-229.83	-124	2.73
687	SLE FR 6	68	27	6377	-234.47	-126.32	2.76
687	SLE QP 1	67	25	6025	-221.27	-119.38	2.68
687	SLE QP 2	67	26	6236	-229.19	-123.54	2.73
687	SLD 1	588	121	5521	-222.6	-107.67	22.47
687	SLD 2	589	220	5518	-223.9	-107.57	25.52
687	SLD 3	580	-211	5566	-192.94	-109.16	15.41
687	SLD 4	582	-112	5564	-194.24	-109.06	18.47
687	SLD 5	234	541	5953	-271.96	-116.54	18.8
687	SLD 6	235	606	5952	-272.82	-116.47	20.82
687	SLD 7	210	-567	6104	-173.09	-121.5	-4.72
687	SLD 8	211	-502	6103	-173.95	-121.44	-2.7
687	SLD 9	-76	553	6369	-284.42	-125.65	8.16
687	SLD 10	-75	618	6368	-285.28	-125.58	10.17
687	SLD 11	-100	-554	6521	-185.55	-130.61	-15.36
687	SLD 12	-99	-489	6519	-186.41	-130.54	-13.35
687	SLD 13	-447	164	6909	-264.13	-138.03	-13.01
687	SLD 14	-445	262	6906	-265.43	-137.93	-9.96
687	SLD 15	-454	-168	6954	-234.47	-139.52	-20.06
687	SLD 16	-453	-70	6951	-235.77	-139.42	-17.01
687	SLV 1	1284	275	4558	-216.28	-86.27	49.47
687	SLV 2	1288	507	4553	-219.35	-86.03	56.64
687	SLV 3	1267	-555	4672	-141.86	-90.01	31.81
687	SLV 4	1270	-324	4667	-144.93	-89.77	38.99
687	SLV 5	459	1317	5561	-337.61	-106.73	42.19
687	SLV 6	461	1473	5557	-339.68	-106.57	47.02
687	SLV 7	400	-1451	5941	-89.55	-119.2	-16.66
687	SLV 8	402	-1295	5937	-91.61	-119.04	-11.83
687	SLV 9	-267	1347	6535	-366.76	-128.04	17.29
687	SLV 10	-265	1503	6531	-368.83	-127.88	22.12
687	SLV 11	-326	-1421	6915	-118.7	-140.51	-41.56
687	SLV 12	-324	-1265	6911	-120.76	-140.35	-36.73
687	SLV 13	-1135	375	7806	-313.45	-157.31	-33.53
687	SLV 14	-1132	607	7800	-316.51	-157.07	-26.36
687	SLV 15	-1153	-455	7920	-239.03	-161.05	-51.19
687	SLV 16	-1149	-223	7914	-242.09	-160.82	-44.01
687	CRTFP Ux+	0	0	0	0	0	0
687	CRTFP Ux-	0	0	0	0	0	0
687	CRTFP Uy+	0	0	0	0	0	0
687	CRTFP Uy-	0	0	0	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
688	SLU 1	77	27	6672	-23.58	-4.37	0.1
688	SLU 2	77	59	6670	-26.08	-4.4	0.14
688	SLU 3	79	27	6823	-23.15	-4.47	0.09
688	SLU 4	79	46	6822	-24.65	-4.49	0.12
688	SLU 5	79	59	6769	-25.62	-4.46	0.14
688	SLU 6	80	27	6922	-22.69	-4.53	0.1
688	SLU 7	80	46	6921	-24.19	-4.55	0.12
688	SLU 8	79	27	6868	-22.66	-4.5	0.11
688	SLU 9	80	46	6867	-24.16	-4.51	0.13
688	SLU 10	81	64	7522	-29.7	-4.92	0.13
688	SLU 11	82	32	7675	-26.77	-4.99	0.09
688	SLU 12	82	51	7674	-28.27	-5.01	0.11
688	SLU 13	82	64	7621	-29.24	-4.99	0.13
688	SLU 14	83	32	7774	-26.31	-5.06	0.09
688	SLU 15	83	51	7773	-27.81	-5.07	0.12
688	SLU 16	82	32	7720	-26.28	-5.02	0.1
688	SLU 17	83	51	7720	-27.78	-5.04	0.13
688	SLU 18	81	34	7889	-28.76	-5.12	0.09
688	SLU 19	82	53	7888	-30.26	-5.14	0.11
688	SLU 20	83	34	7987	-28.3	-5.18	0.09
688	SLU 21	83	53	7986	-29.8	-5.2	0.12
688	SLU 22	85	30	7706	-25.19	-5.03	0.03
688	SLU 23	85	62	7704	-27.69	-5.06	0.07
688	SLU 24	86	30	7857	-24.75	-5.13	0.03
688	SLU 25	87	49	7856	-26.25	-5.15	0.05
688	SLU 26	86	61	7803	-27.23	-5.13	0.08
688	SLU 27	88	30	7956	-24.29	-5.2	0.04
688	SLU 28	88	49	7955	-25.79	-5.21	0.06
688	SLU 29	87	30	7902	-24.27	-5.16	0.05
688	SLU 30	87	48	7901	-25.77	-5.18	0.07
688	SLU 31	88	66	8556	-31.31	-5.59	0.06
688	SLU 32	90	35	8709	-28.37	-5.66	0.02
688	SLU 33	90	54	8708	-29.87	-5.67	0.04
688	SLU 34	89	66	8655	-30.85	-5.65	0.07
688	SLU 35	91	35	8808	-27.91	-5.72	0.03
688	SLU 36	91	53	8807	-29.41	-5.74	0.05
688	SLU 37	90	34	8754	-27.89	-5.69	0.04
688	SLU 38	90	53	8753	-29.39	-5.7	0.06
688	SLU 39	89	37	8923	-30.36	-5.78	0.02
688	SLU 40	89	56	8922	-31.86	-5.8	0.04
688	SLU 41	90	37	9021	-29.9	-5.85	0.03
688	SLU 42	91	56	9020	-31.4	-5.86	0.05
688	SLU 43	97	35	8319	-30.11	-5.45	0.15
688	SLU 44	98	66	8317	-32.61	-5.48	0.19
688	SLU 45	99	35	8470	-29.67	-5.55	0.15
688	SLU 46	99	53	8469	-31.17	-5.57	0.17
688	SLU 47	99	66	8416	-32.15	-5.54	0.2
688	SLU 48	100	34	8569	-29.21	-5.61	0.15
688	SLU 49	101	53	8568	-30.71	-5.63	0.18
688	SLU 50	100	34	8515	-29.19	-5.58	0.16
688	SLU 51	100	53	8515	-30.69	-5.6	0.19
688	SLU 52	101	71	9169	-36.23	-6.01	0.18
688	SLU 53	102	39	9322	-33.29	-6.08	0.14
688	SLU 54	103	58	9322	-34.79	-6.09	0.16
688	SLU 55	102	71	9268	-35.77	-6.07	0.19
688	SLU 56	104	39	9421	-32.83	-6.14	0.14
688	SLU 57	104	58	9420	-34.33	-6.16	0.17
688	SLU 58	103	39	9368	-32.81	-6.1	0.15
688	SLU 59	103	58	9367	-34.31	-6.12	0.18
688	SLU 60	102	42	9536	-35.28	-6.2	0.14
688	SLU 61	102	60	9535	-36.78	-6.22	0.16
688	SLU 62	103	41	9634	-34.82	-6.27	0.14
688	SLU 63	103	60	9633	-36.32	-6.28	0.17
688	SLU 64	105	37	9353	-31.71	-6.11	0.09
688	SLU 65	105	69	9351	-34.21	-6.14	0.12
688	SLU 66	107	37	9504	-31.28	-6.21	0.08
688	SLU 67	107	56	9503	-32.78	-6.23	0.1
688	SLU 68	107	69	9450	-33.75	-6.21	0.13
688	SLU 69	108	37	9603	-30.82	-6.28	0.09
688	SLU 70	108	56	9602	-32.32	-6.3	0.11
688	SLU 71	107	37	9549	-30.79	-6.24	0.1
688	SLU 72	108	56	9548	-32.29	-6.26	0.12
688	SLU 73	109	74	10203	-37.83	-6.67	0.12
688	SLU 74	110	42	10356	-34.9	-6.74	0.07
688	SLU 75	110	61	10355	-36.4	-6.76	0.1
688	SLU 76	110	73	10302	-37.37	-6.73	0.12
688	SLU 77	111	42	10455	-34.44	-6.8	0.08
688	SLU 78	111	61	10454	-35.94	-6.82	0.1
688	SLU 79	111	42	10401	-34.41	-6.77	0.09
688	SLU 80	111	61	10401	-35.91	-6.79	0.11
688	SLU 81	110	44	10570	-36.89	-6.87	0.07
688	SLU 82	110	63	10569	-38.39	-6.88	0.1
688	SLU 83	111	44	10668	-36.43	-6.93	0.08
688	SLU 84	111	63	10667	-37.93	-6.95	0.1
688	SLE RA 1	79	28	6967	-24.04	-4.56	0.08
688	SLE RA 2	79	49	6966	-25.71	-4.58	0.11
688	SLE RA 3	80	28	7068	-23.75	-4.62	0.08
688	SLE RA 4	80	41	7068	-24.75	-4.64	0.09
688	SLE RA 5	80	49	7032	-25.4	-4.62	0.11

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
688	SLE RA 6	81	28	7134	-23.44	-4.67	0.08
688	SLE RA 7	81	41	7133	-24.44	-4.68	0.1
688	SLE RA 8	81	28	7098	-23.43	-4.64	0.09
688	SLE RA 9	81	40	7098	-24.43	-4.65	0.1
688	SLE RA 10	82	52	7534	-28.12	-4.93	0.1
688	SLE RA 11	82	31	7636	-26.17	-4.97	0.07
688	SLE RA 12	83	44	7636	-27.16	-4.99	0.09
688	SLE RA 13	82	52	7600	-27.82	-4.97	0.1
688	SLE RA 14	83	31	7702	-25.86	-5.02	0.08
688	SLE RA 15	83	44	7701	-26.86	-5.03	0.09
688	SLE RA 16	83	31	7666	-25.84	-4.99	0.08
688	SLE RA 17	83	44	7666	-26.84	-5.01	0.1
688	SLE RA 18	82	33	7779	-27.49	-5.06	0.07
688	SLE RA 19	82	45	7778	-28.49	-5.07	0.09
688	SLE RA 20	83	33	7844	-27.18	-5.1	0.08
688	SLE RA 21	83	45	7844	-28.18	-5.11	0.09
688	SLE FR 1	79	28	6967	-24.04	-4.56	0.08
688	SLE FR 2	79	32	6967	-24.38	-4.56	0.09
688	SLE FR 3	79	28	6993	-23.92	-4.57	0.08
688	SLE FR 4	80	34	7211	-25.41	-4.71	0.08
688	SLE FR 5	80	29	7237	-24.95	-4.72	0.08
688	SLE FR 6	81	30	7373	-25.77	-4.81	0.08
688	SLE QP 1	79	28	6967	-24.04	-4.56	0.08
688	SLE QP 2	80	29	7211	-25.08	-4.71	0.08
688	SLD 1	669	134	6319	-44.23	-1.68	0.1
688	SLD 2	670	252	6315	-45.99	-1.67	1.33
688	SLD 3	661	-244	6364	-7.83	-1.33	-0.25
688	SLD 4	662	-127	6360	-9.59	-1.32	0.99
688	SLD 5	269	613	6876	-85.71	-4.33	0.39
688	SLD 6	269	691	6873	-86.87	-4.32	1.21
688	SLD 7	242	-648	7025	35.61	-3.17	-0.77
688	SLD 8	243	-570	7023	34.46	-3.16	0.04
688	SLD 9	-83	629	7398	-84.61	-6.25	0.11
688	SLD 10	-82	707	7396	-85.77	-6.25	0.93
688	SLD 11	-109	-632	7548	36.71	-5.09	-1.05
688	SLD 12	-109	-554	7546	35.56	-5.09	-0.24
688	SLD 13	-502	186	8061	-40.57	-8.09	-0.83
688	SLD 14	-501	303	8058	-42.32	-8.08	0.4
688	SLD 15	-510	-193	8106	-4.17	-7.75	-1.18
688	SLD 16	-509	-75	8103	-5.92	-7.74	0.05
688	SLV 1	1459	303	5120	-72.96	2.35	0.16
688	SLV 2	1461	580	5112	-77.09	2.38	3.05
688	SLV 3	1439	-642	5233	18.38	3.22	-0.71
688	SLV 4	1442	-366	5224	14.26	3.24	2.18
688	SLV 5	523	1494	6414	-177.21	-3.91	0.89
688	SLV 6	524	1680	6408	-179.99	-3.89	2.83
688	SLV 7	458	-1658	6790	127.27	-1.02	-2.02
688	SLV 8	459	-1471	6784	124.49	-1	-0.07
688	SLV 9	-299	1530	7637	-174.64	-8.41	0.23
688	SLV 10	-298	1717	7632	-177.42	-8.4	2.18
688	SLV 11	-364	-1621	8013	129.83	-5.52	-2.68
688	SLV 12	-363	-1435	8008	127.06	-5.51	-0.73
688	SLV 13	-1281	425	9197	-64.41	-12.66	-2.03
688	SLV 14	-1279	701	9189	-68.53	-12.63	0.87
688	SLV 15	-1301	-521	9310	26.93	-11.79	-2.9
688	SLV 16	-1299	-244	9302	22.81	-11.77	0
688	CRTFP Ux+	0	0	0	0	0	0
688	CRTFP Ux-	0	0	0	0	0	0
688	CRTFP Uy+	0	0	0	0	0	0
688	CRTFP Uy-	0	0	0	0	0	0
689	SLU 1	80	28	6804	-22.39	-3.8	0.14
689	SLU 2	80	60	6803	-24.96	-3.82	0.18
689	SLU 3	82	28	6958	-21.94	-3.89	0.15
689	SLU 4	82	47	6958	-23.48	-3.9	0.17
689	SLU 5	81	60	6903	-24.49	-3.88	0.2
689	SLU 6	83	28	7058	-21.47	-3.95	0.16
689	SLU 7	83	47	7058	-23.01	-3.96	0.19
689	SLU 8	82	28	7004	-21.46	-3.92	0.18
689	SLU 9	83	47	7004	-23	-3.93	0.2
689	SLU 10	84	64	7670	-28.39	-4.25	0.18
689	SLU 11	85	33	7826	-25.37	-4.32	0.14
689	SLU 12	85	52	7825	-26.91	-4.33	0.17
689	SLU 13	85	64	7771	-27.92	-4.31	0.19
689	SLU 14	86	33	7926	-24.9	-4.38	0.16
689	SLU 15	86	52	7925	-26.44	-4.39	0.18
689	SLU 16	86	32	7872	-24.89	-4.35	0.17
689	SLU 17	86	52	7871	-26.43	-4.36	0.19
689	SLU 18	85	35	8043	-27.3	-4.42	0.13
689	SLU 19	85	54	8042	-28.84	-4.43	0.16
689	SLU 20	86	35	8143	-26.83	-4.48	0.15
689	SLU 21	86	54	8143	-28.37	-4.48	0.17
689	SLU 22	88	30	7857	-23.81	-4.36	0.08
689	SLU 23	88	62	7856	-26.38	-4.37	0.13
689	SLU 24	90	30	8012	-23.36	-4.45	0.09
689	SLU 25	90	49	8011	-24.9	-4.46	0.12
689	SLU 26	89	62	7957	-25.91	-4.43	0.14
689	SLU 27	91	30	8112	-22.89	-4.5	0.11
689	SLU 28	91	49	8112	-24.43	-4.51	0.13
689	SLU 29	90	30	8058	-22.87	-4.47	0.12

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
689	SLU 30	90	49	8057	-24.42	-4.48	0.14
689	SLU 31	91	67	8724	-29.81	-4.8	0.12
689	SLU 32	93	35	8879	-26.79	-4.88	0.09
689	SLU 33	93	54	8879	-28.33	-4.89	0.11
689	SLU 34	93	67	8824	-29.34	-4.86	0.14
689	SLU 35	94	35	8980	-26.32	-4.93	0.1
689	SLU 36	94	54	8979	-27.86	-4.94	0.13
689	SLU 37	93	35	8925	-26.31	-4.9	0.11
689	SLU 38	94	54	8925	-27.85	-4.91	0.14
689	SLU 39	92	37	9097	-28.72	-4.97	0.08
689	SLU 40	93	56	9096	-30.26	-4.98	0.1
689	SLU 41	94	37	9197	-28.25	-5.03	0.09
689	SLU 42	94	56	9196	-29.79	-5.04	0.12
689	SLU 43	101	36	8484	-28.62	-4.76	0.2
689	SLU 44	102	67	8483	-31.19	-4.77	0.24
689	SLU 45	103	35	8638	-28.17	-4.85	0.21
689	SLU 46	103	55	8638	-29.71	-4.85	0.23
689	SLU 47	103	67	8583	-30.72	-4.83	0.26
689	SLU 48	104	35	8738	-27.7	-4.9	0.23
689	SLU 49	104	54	8738	-29.24	-4.91	0.25
689	SLU 50	104	35	8684	-27.69	-4.87	0.24
689	SLU 51	104	54	8683	-29.23	-4.88	0.26
689	SLU 52	105	72	9350	-34.62	-5.2	0.24
689	SLU 53	106	40	9506	-31.6	-5.28	0.2
689	SLU 54	107	59	9505	-33.14	-5.28	0.23
689	SLU 55	106	72	9450	-34.16	-5.26	0.26
689	SLU 56	107	40	9606	-31.13	-5.33	0.22
689	SLU 57	108	59	9605	-32.67	-5.34	0.25
689	SLU 58	107	40	9552	-31.12	-5.3	0.23
689	SLU 59	107	59	9551	-32.66	-5.31	0.26
689	SLU 60	106	42	9723	-33.53	-5.37	0.19
689	SLU 61	106	61	9722	-35.07	-5.38	0.22
689	SLU 62	107	42	9823	-33.06	-5.43	0.21
689	SLU 63	107	61	9823	-34.6	-5.44	0.24
689	SLU 64	109	38	9537	-30.04	-5.31	0.15
689	SLU 65	109	70	9536	-32.61	-5.33	0.19
689	SLU 66	111	38	9692	-29.59	-5.4	0.15
689	SLU 67	111	57	9691	-31.13	-5.41	0.18
689	SLU 68	111	69	9637	-32.14	-5.38	0.2
689	SLU 69	112	38	9792	-29.12	-5.46	0.17
689	SLU 70	112	57	9791	-30.66	-5.47	0.19
689	SLU 71	111	38	9738	-29.11	-5.42	0.18
689	SLU 72	112	57	9737	-30.65	-5.43	0.21
689	SLU 73	113	74	10404	-36.04	-5.76	0.18
689	SLU 74	114	43	10559	-33.02	-5.83	0.15
689	SLU 75	114	62	10559	-34.56	-5.84	0.17
689	SLU 76	114	74	10504	-35.57	-5.81	0.2
689	SLU 77	115	42	10659	-32.55	-5.89	0.16
689	SLU 78	116	62	10659	-34.09	-5.89	0.19
689	SLU 79	115	42	10605	-32.54	-5.85	0.18
689	SLU 80	115	61	10605	-34.08	-5.86	0.2
689	SLU 81	114	45	10776	-34.95	-5.92	0.14
689	SLU 82	114	64	10776	-36.49	-5.93	0.16
689	SLU 83	115	45	10877	-34.48	-5.98	0.16
689	SLU 84	115	64	10876	-36.02	-5.99	0.18
689	SLE RA 1	82	29	7105	-22.8	-3.96	0.12
689	SLE RA 2	82	50	7104	-24.51	-3.97	0.15
689	SLE RA 3	83	29	7208	-22.49	-4.02	0.13
689	SLE RA 4	84	41	7207	-23.52	-4.03	0.15
689	SLE RA 5	83	50	7171	-24.2	-4.01	0.16
689	SLE RA 6	84	28	7275	-22.18	-4.06	0.14
689	SLE RA 7	84	41	7274	-23.21	-4.07	0.16
689	SLE RA 8	84	28	7238	-22.17	-4.04	0.15
689	SLE RA 9	84	41	7238	-23.2	-4.04	0.16
689	SLE RA 10	85	53	7683	-26.8	-4.26	0.15
689	SLE RA 11	86	32	7786	-24.78	-4.31	0.13
689	SLE RA 12	86	44	7786	-25.81	-4.32	0.14
689	SLE RA 13	85	53	7749	-26.49	-4.3	0.16
689	SLE RA 14	86	32	7853	-24.47	-4.35	0.14
689	SLE RA 15	87	44	7853	-25.5	-4.35	0.15
689	SLE RA 16	86	32	7817	-24.46	-4.33	0.14
689	SLE RA 17	86	44	7816	-25.49	-4.33	0.16
689	SLE RA 18	85	33	7931	-26.07	-4.37	0.12
689	SLE RA 19	85	46	7931	-27.09	-4.38	0.14
689	SLE RA 20	86	33	7998	-25.75	-4.41	0.13
689	SLE RA 21	86	46	7997	-26.78	-4.42	0.15
689	SLE FR 1	82	29	7105	-22.8	-3.96	0.12
689	SLE FR 2	82	33	7105	-23.14	-3.97	0.13
689	SLE FR 3	82	29	7131	-22.67	-3.98	0.13
689	SLE FR 4	83	34	7352	-24.12	-4.09	0.13
689	SLE FR 5	83	30	7379	-23.65	-4.1	0.13
689	SLE FR 6	84	31	7518	-24.43	-4.17	0.12
689	SLE QP 1	82	29	7105	-22.8	-3.96	0.12
689	SLE QP 2	83	30	7353	-23.78	-4.09	0.12
689	SLD 1	672	130	6351	-43.03	-0.38	0.14
689	SLD 2	673	254	6348	-44.98	-0.37	1.38
689	SLD 3	664	-249	6389	-5.86	-0.2	-0.2
689	SLD 4	665	-125	6385	-7.8	-0.19	1.04
689	SLD 5	272	613	6996	-85.59	-3.25	0.42

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
689	SLD 6	272	695	6994	-86.87	-3.24	1.23
689	SLD 7	245	-651	7121	38.33	-2.65	-0.71
689	SLD 8	245	-570	7118	37.05	-2.64	0.11
689	SLD 9	-79	630	7587	-84.6	-5.53	0.14
689	SLD 10	-79	711	7584	-85.89	-5.52	0.95
689	SLD 11	-106	-635	7711	39.32	-4.93	-0.99
689	SLD 12	-106	-553	7709	38.03	-4.92	-0.17
689	SLD 13	-498	185	8320	-39.75	-7.98	-0.8
689	SLD 14	-498	309	8317	-41.7	-7.97	0.44
689	SLD 15	-507	-194	8358	-2.57	-7.8	-1.13
689	SLD 16	-506	-70	8354	-4.52	-7.79	0.11
689	SLV 1	1461	293	5006	-71.97	4.57	0.17
689	SLV 2	1463	585	4997	-76.55	4.6	3.08
689	SLV 3	1441	-655	5100	21.33	5.02	-0.65
689	SLV 4	1443	-363	5091	16.75	5.05	2.27
689	SLV 5	526	1493	6508	-178.89	-2.17	0.83
689	SLV 6	527	1689	6502	-181.97	-2.16	2.79
689	SLV 7	460	-1668	6821	132.12	-0.68	-1.89
689	SLV 8	462	-1472	6815	129.04	-0.66	0.07
689	SLV 9	-295	1532	7890	-176.59	-7.51	0.17
689	SLV 10	-294	1728	7884	-179.67	-7.49	2.14
689	SLV 11	-361	-1629	8203	134.42	-6.02	-2.55
689	SLV 12	-360	-1433	8197	131.33	-6	-0.59
689	SLV 13	-1277	423	9614	-64.31	-13.22	-2.02
689	SLV 14	-1275	715	9605	-68.89	-13.19	0.89
689	SLV 15	-1297	-525	9708	28.99	-12.77	-2.84
689	SLV 16	-1295	-233	9699	24.41	-12.74	0.08
689	CRTFP Ux+	0	0	0	0	0	0
689	CRTFP Ux-	0	0	0	0	0	0
689	CRTFP Uy+	0	0	0	0	0	0
689	CRTFP Uy-	0	0	0	0	0	0
690	SLU 1	82	29	6915	-21.23	-3.13	0.18
690	SLU 2	83	61	6915	-23.87	-3.14	0.23
690	SLU 3	84	29	7072	-20.75	-3.21	0.19
690	SLU 4	84	48	7072	-22.34	-3.21	0.23
690	SLU 5	84	61	7017	-23.39	-3.19	0.26
690	SLU 6	85	29	7174	-20.28	-3.26	0.22
690	SLU 7	86	48	7174	-21.86	-3.26	0.25
690	SLU 8	85	29	7119	-20.28	-3.23	0.23
690	SLU 9	85	48	7119	-21.86	-3.23	0.26
690	SLU 10	86	66	7794	-27.12	-3.46	0.23
690	SLU 11	87	34	7952	-24	-3.53	0.19
690	SLU 12	88	53	7952	-25.59	-3.53	0.22
690	SLU 13	87	66	7896	-26.64	-3.51	0.26
690	SLU 14	89	34	8054	-23.53	-3.57	0.22
690	SLU 15	89	53	8054	-25.11	-3.58	0.25
690	SLU 16	88	34	7999	-23.53	-3.55	0.23
690	SLU 17	88	53	7998	-25.11	-3.55	0.26
690	SLU 18	87	36	8172	-25.87	-3.59	0.17
690	SLU 19	87	55	8171	-27.45	-3.59	0.21
690	SLU 20	88	36	8274	-25.4	-3.63	0.2
690	SLU 21	88	55	8273	-26.98	-3.64	0.23
690	SLU 22	90	31	7985	-22.46	-3.56	0.13
690	SLU 23	91	63	7984	-25.1	-3.57	0.18
690	SLU 24	92	31	8142	-21.99	-3.63	0.14
690	SLU 25	92	50	8141	-23.57	-3.64	0.18
690	SLU 26	92	63	8086	-24.62	-3.61	0.21
690	SLU 27	93	31	8244	-21.51	-3.68	0.17
690	SLU 28	94	50	8243	-23.1	-3.68	0.2
690	SLU 29	93	31	8188	-21.51	-3.65	0.18
690	SLU 30	93	50	8188	-23.09	-3.66	0.21
690	SLU 31	94	68	8864	-28.35	-3.88	0.18
690	SLU 32	95	36	9021	-25.24	-3.95	0.14
690	SLU 33	96	55	9021	-26.82	-3.95	0.17
690	SLU 34	95	68	8965	-27.88	-3.93	0.21
690	SLU 35	97	36	9123	-24.76	-4	0.17
690	SLU 36	97	55	9123	-26.35	-4	0.2
690	SLU 37	96	36	9068	-24.76	-3.97	0.18
690	SLU 38	96	55	9068	-26.35	-3.97	0.21
690	SLU 39	95	38	9241	-27.11	-4.01	0.12
690	SLU 40	95	57	9241	-28.69	-4.02	0.16
690	SLU 41	96	38	9343	-26.63	-4.06	0.15
690	SLU 42	96	57	9343	-28.21	-4.06	0.18
690	SLU 43	104	37	8623	-27.17	-3.93	0.25
690	SLU 44	105	69	8623	-29.81	-3.94	0.3
690	SLU 45	106	37	8780	-26.7	-4	0.26
690	SLU 46	106	56	8780	-28.28	-4.01	0.29
690	SLU 47	106	69	8725	-29.33	-3.98	0.33
690	SLU 48	107	37	8882	-26.22	-4.05	0.29
690	SLU 49	108	56	8882	-27.81	-4.06	0.32
690	SLU 50	107	37	8827	-26.22	-4.02	0.3
690	SLU 51	107	56	8827	-27.8	-4.03	0.33
690	SLU 52	108	73	9502	-33.06	-4.25	0.3
690	SLU 53	109	42	9660	-29.95	-4.32	0.26
690	SLU 54	110	61	9660	-31.53	-4.33	0.29
690	SLU 55	109	73	9604	-32.59	-4.3	0.33
690	SLU 56	111	41	9762	-29.47	-4.37	0.28
690	SLU 57	111	61	9761	-31.06	-4.37	0.32
690	SLU 58	110	41	9706	-29.47	-4.34	0.3

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
690	SLU 59	110	61	9706	-31.05	-4.35	0.33
690	SLU 60	109	44	9880	-31.82	-4.38	0.24
690	SLU 61	109	63	9879	-33.4	-4.39	0.28
690	SLU 62	110	44	9982	-31.34	-4.43	0.27
690	SLU 63	110	63	9981	-32.92	-4.43	0.3
690	SLU 64	112	39	9693	-28.41	-4.35	0.2
690	SLU 65	113	71	9692	-31.04	-4.36	0.25
690	SLU 66	114	39	9850	-27.93	-4.43	0.21
690	SLU 67	114	58	9849	-29.52	-4.43	0.25
690	SLU 68	114	71	9794	-30.57	-4.41	0.28
690	SLU 69	115	39	9952	-27.46	-4.47	0.24
690	SLU 70	116	58	9951	-29.04	-4.48	0.27
690	SLU 71	115	39	9896	-27.46	-4.45	0.25
690	SLU 72	115	58	9896	-29.04	-4.45	0.28
690	SLU 73	116	76	10572	-34.3	-4.68	0.25
690	SLU 74	117	44	10729	-31.18	-4.74	0.21
690	SLU 75	118	63	10729	-32.77	-4.75	0.24
690	SLU 76	117	75	10673	-33.82	-4.72	0.28
690	SLU 77	119	44	10831	-30.71	-4.79	0.24
690	SLU 78	119	63	10831	-32.29	-4.8	0.27
690	SLU 79	118	44	10776	-30.71	-4.76	0.25
690	SLU 80	118	63	10775	-32.29	-4.77	0.28
690	SLU 81	117	46	10949	-33.05	-4.81	0.19
690	SLU 82	117	65	10949	-34.63	-4.81	0.23
690	SLU 83	118	46	11051	-32.58	-4.85	0.22
690	SLU 84	118	65	11051	-34.16	-4.86	0.25
690	SLE RA 1	84	29	7221	-21.58	-3.25	0.16
690	SLE RA 2	85	51	7220	-23.34	-3.26	0.2
690	SLE RA 3	86	29	7326	-21.26	-3.3	0.17
690	SLE RA 4	86	42	7325	-22.32	-3.31	0.19
690	SLE RA 5	86	51	7288	-23.02	-3.29	0.22
690	SLE RA 6	87	29	7393	-20.95	-3.34	0.19
690	SLE RA 7	87	42	7393	-22	-3.34	0.21
690	SLE RA 8	86	29	7357	-20.95	-3.32	0.2
690	SLE RA 9	86	42	7356	-22	-3.32	0.22
690	SLE RA 10	87	54	7807	-25.51	-3.47	0.2
690	SLE RA 11	88	33	7912	-23.43	-3.52	0.17
690	SLE RA 12	88	45	7912	-24.49	-3.52	0.19
690	SLE RA 13	88	54	7875	-25.19	-3.5	0.22
690	SLE RA 14	89	33	7980	-23.11	-3.55	0.19
690	SLE RA 15	89	45	7980	-24.17	-3.55	0.21
690	SLE RA 16	88	33	7943	-23.11	-3.53	0.2
690	SLE RA 17	89	45	7943	-24.17	-3.53	0.22
690	SLE RA 18	88	34	8058	-24.68	-3.56	0.16
690	SLE RA 19	88	47	8058	-25.73	-3.56	0.18
690	SLE RA 20	88	34	8126	-24.36	-3.59	0.18
690	SLE RA 21	89	47	8126	-25.41	-3.59	0.2
690	SLE FR 1	84	29	7221	-21.58	-3.25	0.16
690	SLE FR 2	85	34	7221	-21.93	-3.26	0.17
690	SLE FR 3	85	29	7248	-21.45	-3.27	0.17
690	SLE FR 4	85	35	7472	-22.86	-3.35	0.17
690	SLE FR 5	86	31	7499	-22.38	-3.36	0.17
690	SLE FR 6	86	32	7640	-23.13	-3.41	0.16
690	SLE QP 1	84	29	7221	-21.58	-3.25	0.16
690	SLE QP 2	85	31	7472	-22.51	-3.35	0.16
690	SLD 1	673	186	6346	-41.91	0.68	0.22
690	SLD 2	674	316	6342	-44.05	0.69	1.53
690	SLD 3	665	-195	6380	-3.9	0.78	-0.24
690	SLD 4	666	-65	6375	-6.05	0.79	1.07
690	SLD 5	274	631	7084	-85.58	-2.3	0.64
690	SLD 6	275	717	7081	-86.99	-2.29	1.51
690	SLD 7	247	-638	7196	41.1	-1.95	-0.89
690	SLD 8	247	-552	7194	39.68	-1.95	-0.03
690	SLD 9	-77	613	7751	-84.7	-4.74	0.35
690	SLD 10	-76	699	7748	-86.11	-4.74	1.22
690	SLD 11	-104	-656	7863	41.98	-4.4	-1.18
690	SLD 12	-103	-570	7860	40.56	-4.39	-0.32
690	SLD 13	-495	126	8569	-38.97	-7.48	-0.75
690	SLD 14	-494	257	8565	-41.11	-7.47	0.56
690	SLD 15	-503	-254	8603	-0.97	-7.38	-1.21
690	SLD 16	-503	-124	8598	-3.11	-7.37	0.1
690	SLV 1	1462	423	4834	-71.11	6.06	0.32
690	SLV 2	1464	729	4824	-76.14	6.09	3.4
690	SLV 3	1442	-528	4918	24.27	6.31	-0.79
690	SLV 4	1444	-222	4908	19.23	6.34	2.29
690	SLV 5	528	1534	6554	-180.8	-0.92	1.32
690	SLV 6	529	1740	6547	-184.19	-0.9	3.4
690	SLV 7	462	-1637	6836	137.12	-0.07	-2.39
690	SLV 8	463	-1431	6830	133.73	-0.05	-0.31
690	SLV 9	-292	1492	8114	-178.74	-6.64	0.64
690	SLV 10	-291	1699	8108	-182.13	-6.62	2.71
690	SLV 11	-358	-1679	8397	139.18	-5.8	-3.07
690	SLV 12	-357	-1472	8390	135.78	-5.77	-1
690	SLV 13	-1273	283	10036	-64.25	-13.03	-1.97
690	SLV 14	-1271	590	10026	-69.29	-13	1.12
690	SLV 15	-1293	-668	10121	31.13	-12.78	-3.08
690	SLV 16	-1291	-361	10111	26.09	-12.75	0
690	CRTFP Ux+	0	0	0	0	0	0
690	CRTFP Ux-	0	0	0	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
690	CRTFP Uy+	0	0	0	0	0	0
690	CRTFP Uy-	0	0	0	0	0	0
691	SLU 1	84	30	7006	-20.09	-2.5	0.2
691	SLU 2	85	62	7005	-22.8	-2.51	0.28
691	SLU 3	86	30	7165	-19.6	-2.56	0.22
691	SLU 4	86	49	7165	-21.22	-2.57	0.27
691	SLU 5	86	62	7109	-22.32	-2.55	0.31
691	SLU 6	87	30	7268	-19.11	-2.6	0.26
691	SLU 7	88	49	7268	-20.74	-2.61	0.3
691	SLU 8	87	30	7212	-19.12	-2.58	0.27
691	SLU 9	87	49	7212	-20.75	-2.58	0.32
691	SLU 10	88	67	7893	-25.87	-2.72	0.28
691	SLU 11	89	35	8053	-22.67	-2.78	0.22
691	SLU 12	90	54	8053	-24.3	-2.78	0.27
691	SLU 13	89	67	7997	-25.39	-2.76	0.31
691	SLU 14	91	35	8156	-22.19	-2.81	0.26
691	SLU 15	91	54	8156	-23.81	-2.82	0.3
691	SLU 16	90	35	8100	-22.19	-2.79	0.27
691	SLU 17	90	54	8100	-23.82	-2.79	0.32
691	SLU 18	89	37	8274	-24.48	-2.8	0.2
691	SLU 19	89	56	8274	-26.11	-2.81	0.25
691	SLU 20	90	37	8377	-24	-2.84	0.23
691	SLU 21	90	56	8377	-25.62	-2.85	0.28
691	SLU 22	92	32	8087	-21.14	-2.8	0.16
691	SLU 23	93	64	8086	-23.85	-2.81	0.24
691	SLU 24	94	32	8246	-20.65	-2.87	0.18
691	SLU 25	94	51	8246	-22.28	-2.87	0.23
691	SLU 26	94	64	8190	-23.37	-2.85	0.27
691	SLU 27	95	32	8349	-20.17	-2.9	0.21
691	SLU 28	96	51	8349	-21.79	-2.91	0.26
691	SLU 29	95	32	8293	-20.17	-2.88	0.23
691	SLU 30	95	51	8293	-21.8	-2.88	0.27
691	SLU 31	96	69	8974	-26.93	-3.02	0.24
691	SLU 32	97	37	9134	-23.72	-3.08	0.18
691	SLU 33	98	56	9134	-25.35	-3.08	0.23
691	SLU 34	97	69	9078	-26.44	-3.06	0.27
691	SLU 35	99	37	9237	-23.24	-3.11	0.21
691	SLU 36	99	56	9237	-24.87	-3.12	0.26
691	SLU 37	98	37	9181	-23.25	-3.09	0.22
691	SLU 38	98	56	9181	-24.87	-3.09	0.27
691	SLU 39	97	38	9355	-25.53	-3.11	0.16
691	SLU 40	97	58	9355	-27.16	-3.11	0.2
691	SLU 41	98	39	9458	-25.05	-3.14	0.19
691	SLU 42	98	58	9458	-26.68	-3.15	0.24
691	SLU 43	107	38	8737	-25.75	-3.15	0.28
691	SLU 44	107	70	8737	-28.47	-3.16	0.36
691	SLU 45	109	38	8896	-25.26	-3.21	0.3
691	SLU 46	109	58	8896	-26.89	-3.22	0.35
691	SLU 47	108	70	8840	-27.98	-3.2	0.39
691	SLU 48	110	38	8999	-24.78	-3.25	0.33
691	SLU 49	110	58	8999	-26.41	-3.25	0.38
691	SLU 50	109	38	8943	-24.79	-3.23	0.34
691	SLU 51	109	58	8943	-26.42	-3.23	0.39
691	SLU 52	110	75	9625	-31.54	-3.37	0.36
691	SLU 53	112	43	9784	-28.34	-3.42	0.3
691	SLU 54	112	62	9784	-29.96	-3.43	0.35
691	SLU 55	112	75	9728	-31.06	-3.41	0.39
691	SLU 56	113	43	9887	-27.85	-3.46	0.33
691	SLU 57	113	62	9887	-29.48	-3.47	0.38
691	SLU 58	113	43	9831	-27.86	-3.44	0.34
691	SLU 59	113	63	9831	-29.49	-3.44	0.39
691	SLU 60	111	45	10005	-30.14	-3.45	0.28
691	SLU 61	112	64	10005	-31.77	-3.46	0.32
691	SLU 62	113	45	10109	-29.66	-3.49	0.31
691	SLU 63	113	64	10108	-31.29	-3.49	0.36
691	SLU 64	115	40	9818	-26.81	-3.45	0.23
691	SLU 65	115	72	9817	-29.52	-3.46	0.31
691	SLU 66	117	40	9977	-26.32	-3.51	0.26
691	SLU 67	117	59	9977	-27.94	-3.52	0.3
691	SLU 68	116	72	9921	-29.04	-3.5	0.35
691	SLU 69	118	40	10080	-25.83	-3.55	0.29
691	SLU 70	118	60	10080	-27.46	-3.55	0.34
691	SLU 71	117	40	10024	-25.84	-3.53	0.3
691	SLU 72	117	60	10024	-27.47	-3.53	0.35
691	SLU 73	118	77	10705	-32.59	-3.67	0.31
691	SLU 74	120	45	10865	-29.39	-3.72	0.25
691	SLU 75	120	64	10865	-31.02	-3.73	0.3
691	SLU 76	120	77	10809	-32.11	-3.71	0.35
691	SLU 77	121	45	10968	-28.9	-3.76	0.29
691	SLU 78	121	64	10968	-30.53	-3.77	0.34
691	SLU 79	121	45	10912	-28.91	-3.74	0.3
691	SLU 80	121	64	10912	-30.54	-3.74	0.35
691	SLU 81	119	47	11086	-31.2	-3.75	0.23
691	SLU 82	120	66	11086	-32.83	-3.76	0.28
691	SLU 83	121	47	11190	-30.71	-3.79	0.27
691	SLU 84	121	66	11189	-32.34	-3.79	0.31
691	SLE RA 1	86	30	7315	-20.39	-2.59	0.19
691	SLE RA 2	87	52	7314	-22.2	-2.59	0.24
691	SLE RA 3	88	30	7421	-20.06	-2.63	0.2

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
691	SLE RA 4	88	43	7421	-21.15	-2.63	0.24
691	SLE RA 5	88	52	7383	-21.88	-2.62	0.26
691	SLE RA 6	89	30	7490	-19.74	-2.66	0.23
691	SLE RA 7	89	43	7490	-20.82	-2.66	0.26
691	SLE RA 8	88	30	7452	-19.74	-2.64	0.23
691	SLE RA 9	88	43	7452	-20.83	-2.64	0.27
691	SLE RA 10	89	55	7906	-24.25	-2.73	0.24
691	SLE RA 11	90	34	8013	-22.11	-2.77	0.2
691	SLE RA 12	90	46	8013	-23.2	-2.77	0.23
691	SLE RA 13	90	55	7975	-23.92	-2.76	0.26
691	SLE RA 14	91	34	8082	-21.79	-2.8	0.23
691	SLE RA 15	91	47	8081	-22.87	-2.8	0.26
691	SLE RA 16	90	34	8044	-21.79	-2.78	0.23
691	SLE RA 17	91	47	8044	-22.88	-2.78	0.27
691	SLE RA 18	90	35	8160	-23.32	-2.79	0.19
691	SLE RA 19	90	48	8160	-24.4	-2.79	0.22
691	SLE RA 20	90	35	8229	-22.99	-2.82	0.21
691	SLE RA 21	91	48	8229	-24.08	-2.82	0.24
691	SLE FR 1	86	30	7315	-20.39	-2.59	0.19
691	SLE FR 2	86	35	7314	-20.75	-2.59	0.2
691	SLE FR 3	87	30	7342	-20.26	-2.6	0.2
691	SLE FR 4	87	36	7568	-21.63	-2.65	0.2
691	SLE FR 5	88	32	7596	-21.14	-2.66	0.2
691	SLE FR 6	88	33	7737	-21.85	-2.69	0.19
691	SLE QP 1	86	30	7315	-20.39	-2.59	0.19
691	SLE QP 2	87	32	7568	-21.27	-2.65	0.19
691	SLD 1	675	186	6310	-40.86	1.47	0.34
691	SLD 2	675	324	6306	-43.2	1.49	1.77
691	SLD 3	666	-197	6342	-1.98	1.55	-0.35
691	SLD 4	667	-59	6338	-4.32	1.56	1.08
691	SLD 5	276	634	7143	-85.68	-1.53	1.01
691	SLD 6	276	725	7140	-87.23	-1.52	1.96
691	SLD 7	249	-642	7250	43.9	-1.27	-1.27
691	SLD 8	249	-552	7247	42.36	-1.27	-0.32
691	SLD 9	-74	615	7890	-84.89	-4.03	0.7
691	SLD 10	-74	706	7887	-86.44	-4.02	1.64
691	SLD 11	-102	-661	7996	44.69	-3.78	-1.58
691	SLD 12	-101	-571	7993	43.15	-3.77	-0.64
691	SLD 13	-493	123	8799	-38.21	-6.86	-0.71
691	SLD 14	-492	260	8794	-40.55	-6.85	0.72
691	SLD 15	-501	-260	8831	0.66	-6.79	-1.39
691	SLD 16	-500	-123	8826	-1.68	-6.77	0.04
691	SLV 1	1462	424	4622	-70.38	7	0.56
691	SLV 2	1464	747	4611	-75.89	7.03	3.93
691	SLV 3	1442	-533	4702	27.18	7.19	-1.1
691	SLV 4	1444	-210	4691	21.68	7.22	2.26
691	SLV 5	529	1540	6565	-182.95	-0.05	2.2
691	SLV 6	531	1758	6558	-186.66	-0.03	4.46
691	SLV 7	463	-1649	6832	142.27	0.58	-3.35
691	SLV 8	465	-1432	6825	138.56	0.6	-1.09
691	SLV 9	-290	1495	8312	-181.1	-5.9	1.47
691	SLV 10	-288	1713	8305	-184.81	-5.88	3.73
691	SLV 11	-356	-1694	8579	144.12	-5.27	-4.09
691	SLV 12	-355	-1477	8572	140.42	-5.25	-1.82
691	SLV 13	-1269	274	10445	-64.21	-12.52	-1.88
691	SLV 14	-1267	597	10434	-69.72	-12.49	1.48
691	SLV 15	-1289	-683	10525	33.35	-12.33	-3.55
691	SLV 16	-1287	-360	10514	27.85	-12.3	-0.19
691	CRTFP Ux+	0	0	0	0	0	0
691	CRTFP Ux-	0	0	0	0	0	0
691	CRTFP Uy+	0	0	0	0	0	0
691	CRTFP Uy-	0	0	0	0	0	0
692	SLU 1	86	31	7077	-18.98	-1.96	0.21
692	SLU 2	86	64	7077	-21.77	-1.97	0.32
692	SLU 3	88	31	7238	-18.47	-2.01	0.24
692	SLU 4	88	51	7238	-20.14	-2.01	0.3
692	SLU 5	87	64	7182	-21.27	-2	0.36
692	SLU 6	89	31	7343	-17.97	-2.04	0.28
692	SLU 7	89	51	7343	-19.65	-2.04	0.34
692	SLU 8	88	32	7286	-17.99	-2.02	0.29
692	SLU 9	89	51	7286	-19.67	-2.03	0.35
692	SLU 10	89	68	7970	-24.67	-2.08	0.32
692	SLU 11	91	36	8132	-21.36	-2.13	0.24
692	SLU 12	91	56	8132	-23.04	-2.13	0.3
692	SLU 13	91	69	8075	-24.17	-2.11	0.36
692	SLU 14	92	36	8236	-20.87	-2.16	0.28
692	SLU 15	93	56	8236	-22.55	-2.16	0.34
692	SLU 16	92	36	8179	-20.89	-2.14	0.29
692	SLU 17	92	56	8179	-22.56	-2.14	0.35
692	SLU 18	90	38	8353	-23.12	-2.13	0.21
692	SLU 19	91	57	8353	-24.79	-2.13	0.28
692	SLU 20	92	38	8458	-22.63	-2.16	0.25
692	SLU 21	92	58	8458	-24.3	-2.16	0.32
692	SLU 22	94	32	8166	-19.85	-2.15	0.17
692	SLU 23	94	65	8166	-22.64	-2.16	0.28
692	SLU 24	96	33	8327	-19.34	-2.2	0.2
692	SLU 25	96	52	8327	-21.01	-2.21	0.26
692	SLU 26	95	66	8270	-22.15	-2.19	0.32
692	SLU 27	97	33	8432	-18.84	-2.23	0.24

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
692	SLU 28	97	53	8432	-20.52	-2.24	0.3
692	SLU 29	96	33	8375	-18.86	-2.22	0.25
692	SLU 30	97	53	8375	-20.54	-2.22	0.31
692	SLU 31	97	70	9059	-25.54	-2.28	0.28
692	SLU 32	99	38	9220	-22.24	-2.32	0.2
692	SLU 33	99	57	9220	-23.91	-2.32	0.26
692	SLU 34	99	70	9164	-25.04	-2.31	0.32
692	SLU 35	100	38	9325	-21.74	-2.35	0.24
692	SLU 36	101	57	9325	-23.42	-2.35	0.3
692	SLU 37	100	38	9268	-21.76	-2.33	0.25
692	SLU 38	100	58	9268	-23.44	-2.34	0.31
692	SLU 39	99	39	9442	-23.99	-2.32	0.17
692	SLU 40	99	59	9442	-25.66	-2.32	0.24
692	SLU 41	100	40	9546	-23.5	-2.35	0.21
692	SLU 42	100	59	9546	-25.17	-2.35	0.28
692	SLU 43	109	40	8827	-24.37	-2.48	0.29
692	SLU 44	109	72	8827	-27.16	-2.49	0.4
692	SLU 45	111	40	8988	-23.86	-2.53	0.32
692	SLU 46	111	59	8988	-25.53	-2.54	0.38
692	SLU 47	110	73	8931	-26.67	-2.52	0.44
692	SLU 48	112	40	9093	-23.37	-2.56	0.36
692	SLU 49	112	60	9093	-25.04	-2.57	0.42
692	SLU 50	111	40	9036	-23.39	-2.55	0.37
692	SLU 51	112	60	9036	-25.06	-2.55	0.43
692	SLU 52	112	77	9720	-30.06	-2.61	0.4
692	SLU 53	114	45	9881	-26.76	-2.65	0.32
692	SLU 54	114	64	9881	-28.43	-2.65	0.38
692	SLU 55	114	77	9825	-29.57	-2.64	0.44
692	SLU 56	115	45	9986	-26.27	-2.68	0.36
692	SLU 57	116	65	9986	-27.94	-2.68	0.42
692	SLU 58	115	45	9929	-26.28	-2.66	0.37
692	SLU 59	115	65	9929	-27.96	-2.67	0.43
692	SLU 60	113	46	10103	-28.51	-2.65	0.29
692	SLU 61	114	66	10103	-30.19	-2.65	0.36
692	SLU 62	115	47	10208	-28.02	-2.68	0.33
692	SLU 63	115	66	10207	-29.69	-2.69	0.39
692	SLU 64	117	41	9916	-25.24	-2.68	0.25
692	SLU 65	117	74	9916	-28.03	-2.68	0.36
692	SLU 66	119	41	10077	-24.73	-2.73	0.28
692	SLU 67	119	61	10077	-26.41	-2.73	0.34
692	SLU 68	118	74	10020	-27.54	-2.71	0.4
692	SLU 69	120	42	10181	-24.24	-2.76	0.32
692	SLU 70	120	61	10181	-25.91	-2.76	0.38
692	SLU 71	119	42	10125	-24.26	-2.74	0.33
692	SLU 72	120	62	10125	-25.93	-2.74	0.39
692	SLU 73	120	79	10809	-30.93	-2.8	0.36
692	SLU 74	122	46	10970	-27.63	-2.84	0.28
692	SLU 75	122	66	10970	-29.3	-2.85	0.34
692	SLU 76	122	79	10913	-30.44	-2.83	0.4
692	SLU 77	123	47	11075	-27.14	-2.87	0.32
692	SLU 78	124	66	11075	-28.81	-2.88	0.38
692	SLU 79	123	47	11018	-27.16	-2.86	0.33
692	SLU 80	123	66	11018	-28.83	-2.86	0.39
692	SLU 81	121	48	11192	-29.38	-2.84	0.25
692	SLU 82	122	68	11192	-31.06	-2.85	0.32
692	SLU 83	123	48	11296	-28.89	-2.88	0.29
692	SLU 84	123	68	11296	-30.57	-2.88	0.35
692	SLE RA 1	88	31	7388	-19.23	-2.02	0.2
692	SLE RA 2	88	53	7388	-21.09	-2.02	0.27
692	SLE RA 3	89	31	7496	-18.89	-2.05	0.22
692	SLE RA 4	90	45	7496	-20	-2.05	0.26
692	SLE RA 5	89	53	7458	-20.76	-2.04	0.3
692	SLE RA 6	90	32	7565	-18.56	-2.07	0.25
692	SLE RA 7	90	45	7565	-19.67	-2.07	0.29
692	SLE RA 8	90	32	7528	-18.57	-2.06	0.25
692	SLE RA 9	90	45	7527	-19.69	-2.06	0.3
692	SLE RA 10	91	56	7984	-23.02	-2.1	0.27
692	SLE RA 11	92	35	8091	-20.82	-2.13	0.22
692	SLE RA 12	92	48	8091	-21.93	-2.13	0.26
692	SLE RA 13	91	57	8053	-22.69	-2.12	0.3
692	SLE RA 14	92	35	8161	-20.49	-2.15	0.25
692	SLE RA 15	93	48	8161	-21.61	-2.15	0.29
692	SLE RA 16	92	35	8123	-20.5	-2.14	0.25
692	SLE RA 17	92	48	8123	-21.62	-2.14	0.3
692	SLE RA 18	91	36	8239	-21.99	-2.13	0.2
692	SLE RA 19	91	49	8239	-23.1	-2.13	0.25
692	SLE RA 20	92	36	8309	-21.66	-2.15	0.23
692	SLE RA 21	92	49	8309	-22.77	-2.15	0.27
692	SLE FR 1	88	31	7388	-19.23	-2.02	0.2
692	SLE FR 2	88	36	7388	-19.6	-2.02	0.22
692	SLE FR 3	88	31	7416	-19.09	-2.02	0.21
692	SLE FR 4	89	37	7644	-20.43	-2.05	0.22
692	SLE FR 5	89	33	7671	-19.92	-2.06	0.21
692	SLE FR 6	90	34	7814	-20.61	-2.07	0.2
692	SLE QP 1	88	31	7388	-19.23	-2.02	0.2
692	SLE QP 2	89	33	7644	-20.05	-2.05	0.2
692	SLD 1	675	188	6253	-37.48	2.07	0.47
692	SLD 2	676	333	6247	-40.02	2.09	2.05
692	SLD 3	667	-199	6283	2.32	2.15	-0.51

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
692	SLD 4	668	-54	6278	-0.22	2.16	1.07
692	SLD 5	277	640	7180	-85.18	-0.93	1.49
692	SLD 6	278	735	7177	-86.86	-0.92	2.53
692	SLD 7	250	-649	7283	47.47	-0.68	-1.78
692	SLD 8	250	-554	7280	45.8	-0.67	-0.74
692	SLD 9	-72	619	8007	-85.91	-3.43	1.15
692	SLD 10	-72	715	8004	-87.58	-3.42	2.19
692	SLD 11	-100	-670	8110	46.75	-3.18	-2.12
692	SLD 12	-99	-574	8107	45.07	-3.17	-1.08
692	SLD 13	-490	119	9009	-39.89	-6.26	-0.66
692	SLD 14	-489	264	9004	-42.43	-6.25	0.92
692	SLD 15	-498	-267	9040	-0.09	-6.19	-1.65
692	SLD 16	-497	-122	9035	-2.63	-6.18	-0.06
692	SLV 1	1461	426	4386	-64.19	7.6	0.88
692	SLV 2	1463	767	4374	-70.16	7.63	4.59
692	SLV 3	1441	-540	4463	35.69	7.78	-1.53
692	SLV 4	1443	-199	4451	29.71	7.81	2.18
692	SLV 5	530	1553	6552	-183.66	0.56	3.37
692	SLV 6	532	1782	6544	-187.68	0.59	5.87
692	SLV 7	464	-1668	6808	149.26	1.17	-4.67
692	SLV 8	465	-1439	6800	145.24	1.19	-2.17
692	SLV 9	-287	1504	8487	-185.35	-5.29	2.57
692	SLV 10	-286	1734	8479	-189.37	-5.27	5.07
692	SLV 11	-354	-1717	8743	147.57	-4.69	-5.46
692	SLV 12	-352	-1487	8735	143.55	-4.66	-2.96
692	SLV 13	-1265	265	10836	-69.82	-11.91	-1.78
692	SLV 14	-1263	606	10824	-75.8	-11.88	1.94
692	SLV 15	-1285	-702	10913	30.05	-11.73	-4.19
692	SLV 16	-1283	-361	10901	24.08	-11.7	-0.47
692	CRTFP Ux+	0	0	0	0	0	0
692	CRTFP Ux-	0	0	0	0	0	0
692	CRTFP Uy+	0	0	0	0	0	0
692	CRTFP Uy-	0	0	0	0	0	0
693	SLU 1	87	32	7133	-17.89	-1.52	0.21
693	SLU 2	88	65	7133	-20.76	-1.52	0.35
693	SLU 3	89	32	7296	-17.36	-1.56	0.24
693	SLU 4	89	52	7296	-19.08	-1.56	0.32
693	SLU 5	89	66	7238	-20.26	-1.55	0.39
693	SLU 6	90	33	7401	-16.86	-1.58	0.28
693	SLU 7	91	53	7401	-18.58	-1.59	0.36
693	SLU 8	90	33	7344	-16.88	-1.57	0.29
693	SLU 9	90	53	7344	-18.61	-1.57	0.37
693	SLU 10	91	70	8029	-23.49	-1.56	0.34
693	SLU 11	92	37	8191	-20.09	-1.6	0.24
693	SLU 12	93	57	8191	-21.81	-1.6	0.32
693	SLU 13	92	71	8134	-22.99	-1.59	0.39
693	SLU 14	94	38	8296	-19.58	-1.62	0.28
693	SLU 15	94	58	8297	-21.31	-1.62	0.36
693	SLU 16	93	38	8239	-19.61	-1.61	0.29
693	SLU 17	93	58	8239	-21.34	-1.61	0.37
693	SLU 18	92	39	8413	-21.79	-1.57	0.21
693	SLU 19	92	59	8413	-23.51	-1.58	0.29
693	SLU 20	93	39	8518	-21.28	-1.6	0.25
693	SLU 21	93	59	8518	-23.01	-1.6	0.33
693	SLU 22	95	33	8226	-18.58	-1.62	0.17
693	SLU 23	96	67	8226	-21.45	-1.62	0.31
693	SLU 24	97	34	8389	-18.05	-1.66	0.2
693	SLU 25	97	54	8389	-19.77	-1.66	0.28
693	SLU 26	97	67	8332	-20.95	-1.65	0.35
693	SLU 27	98	34	8494	-17.55	-1.68	0.24
693	SLU 28	99	54	8494	-19.27	-1.69	0.32
693	SLU 29	98	34	8437	-17.58	-1.67	0.25
693	SLU 30	98	55	8437	-19.3	-1.67	0.33
693	SLU 31	99	72	9122	-24.18	-1.66	0.31
693	SLU 32	100	39	9285	-20.78	-1.7	0.2
693	SLU 33	101	59	9285	-22.5	-1.7	0.28
693	SLU 34	100	72	9227	-23.68	-1.69	0.35
693	SLU 35	102	39	9390	-20.28	-1.72	0.24
693	SLU 36	102	59	9390	-22	-1.73	0.32
693	SLU 37	101	39	9333	-20.31	-1.71	0.25
693	SLU 38	101	59	9333	-22.03	-1.71	0.33
693	SLU 39	100	40	9506	-22.48	-1.68	0.17
693	SLU 40	100	60	9506	-24.2	-1.68	0.25
693	SLU 41	101	41	9611	-21.98	-1.7	0.21
693	SLU 42	101	61	9611	-23.7	-1.7	0.29
693	SLU 43	111	41	8898	-23.02	-1.94	0.29
693	SLU 44	111	74	8898	-25.89	-1.94	0.42
693	SLU 45	113	41	9061	-22.49	-1.98	0.31
693	SLU 46	113	62	9061	-24.21	-1.98	0.4
693	SLU 47	112	75	9003	-25.39	-1.97	0.46
693	SLU 48	114	42	9166	-21.99	-2	0.35
693	SLU 49	114	62	9166	-23.71	-2.01	0.44
693	SLU 50	113	42	9108	-22.01	-1.99	0.37
693	SLU 51	113	62	9108	-23.74	-1.99	0.45
693	SLU 52	114	79	9794	-28.62	-1.98	0.42
693	SLU 53	116	46	9956	-25.22	-2.02	0.31
693	SLU 54	116	66	9956	-26.94	-2.02	0.39
693	SLU 55	116	80	9899	-28.12	-2.01	0.46
693	SLU 56	117	47	10061	-24.71	-2.04	0.35

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
693	SLU 57	117	67	10061	-26.44	-2.05	0.43
693	SLU 58	116	47	10004	-24.74	-2.03	0.37
693	SLU 59	117	67	10004	-26.46	-2.03	0.45
693	SLU 60	115	48	10178	-26.92	-2	0.28
693	SLU 61	115	68	10178	-28.64	-2	0.37
693	SLU 62	117	48	10283	-26.41	-2.02	0.32
693	SLU 63	117	69	10283	-28.14	-2.02	0.41
693	SLU 64	119	43	9991	-23.71	-2.04	0.25
693	SLU 65	119	76	9991	-26.58	-2.04	0.38
693	SLU 66	121	43	10154	-23.18	-2.08	0.27
693	SLU 67	121	63	10154	-24.9	-2.08	0.36
693	SLU 68	120	76	10097	-26.08	-2.07	0.42
693	SLU 69	122	43	10259	-22.68	-2.1	0.31
693	SLU 70	122	63	10259	-24.4	-2.11	0.4
693	SLU 71	121	44	10202	-22.71	-2.09	0.33
693	SLU 72	121	64	10202	-24.43	-2.09	0.41
693	SLU 73	122	81	10887	-29.31	-2.08	0.38
693	SLU 74	124	48	11050	-25.91	-2.12	0.27
693	SLU 75	124	68	11050	-27.63	-2.12	0.35
693	SLU 76	124	81	10992	-28.81	-2.11	0.42
693	SLU 77	125	48	11155	-25.41	-2.14	0.31
693	SLU 78	125	68	11155	-27.13	-2.15	0.4
693	SLU 79	124	48	11098	-25.43	-2.13	0.33
693	SLU 80	125	68	11098	-27.16	-2.13	0.41
693	SLU 81	123	49	11271	-27.61	-2.1	0.24
693	SLU 82	123	69	11271	-29.33	-2.1	0.33
693	SLU 83	125	50	11376	-27.11	-2.12	0.29
693	SLU 84	125	70	11376	-28.83	-2.12	0.37
693	SLE RA 1	89	32	7445	-18.09	-1.55	0.2
693	SLE RA 2	90	55	7445	-20	-1.55	0.29
693	SLE RA 3	91	33	7554	-17.73	-1.57	0.22
693	SLE RA 4	91	46	7554	-18.88	-1.58	0.27
693	SLE RA 5	91	55	7516	-19.67	-1.57	0.32
693	SLE RA 6	92	33	7624	-17.4	-1.59	0.24
693	SLE RA 7	92	46	7624	-18.55	-1.59	0.3
693	SLE RA 8	91	33	7586	-17.42	-1.58	0.25
693	SLE RA 9	91	46	7586	-18.57	-1.58	0.31
693	SLE RA 10	92	58	8043	-21.82	-1.58	0.29
693	SLE RA 11	93	36	8151	-19.55	-1.6	0.22
693	SLE RA 12	93	49	8151	-20.7	-1.6	0.27
693	SLE RA 13	93	58	8113	-21.48	-1.59	0.32
693	SLE RA 14	94	36	8221	-19.22	-1.62	0.24
693	SLE RA 15	94	50	8221	-20.36	-1.62	0.3
693	SLE RA 16	93	36	8183	-19.24	-1.61	0.25
693	SLE RA 17	94	50	8183	-20.38	-1.61	0.31
693	SLE RA 18	93	37	8298	-20.69	-1.58	0.2
693	SLE RA 19	93	50	8298	-21.83	-1.59	0.25
693	SLE RA 20	93	37	8369	-20.35	-1.6	0.22
693	SLE RA 21	94	51	8369	-21.5	-1.6	0.28
693	SLE FR 1	89	32	7445	-18.09	-1.55	0.2
693	SLE FR 2	89	37	7445	-18.47	-1.55	0.22
693	SLE FR 3	90	33	7473	-17.95	-1.55	0.21
693	SLE FR 4	90	38	7701	-19.25	-1.56	0.22
693	SLE FR 5	91	34	7729	-18.73	-1.57	0.21
693	SLE FR 6	91	35	7872	-19.39	-1.57	0.2
693	SLE QP 1	89	32	7445	-18.09	-1.55	0.2
693	SLE QP 2	90	34	7701	-18.87	-1.56	0.2
693	SLD 1	676	190	6178	-36.75	2.54	0.6
693	SLD 2	676	344	6172	-39.49	2.55	2.35
693	SLD 3	667	-202	6207	4.02	2.61	-0.71
693	SLD 4	668	-48	6202	1.28	2.63	1.03
693	SLD 5	278	648	7200	-85.57	-0.45	2
693	SLD 6	279	749	7197	-87.38	-0.44	3.15
693	SLD 7	251	-660	7299	50.32	-0.19	-2.38
693	SLD 8	251	-558	7295	48.51	-0.18	-1.23
693	SLD 9	-71	626	8107	-86.25	-2.94	1.63
693	SLD 10	-70	727	8104	-88.06	-2.93	2.78
693	SLD 11	-98	-682	8206	49.65	-2.67	-2.75
693	SLD 12	-97	-580	8202	47.83	-2.66	-1.6
693	SLD 13	-488	116	9201	-39.01	-5.75	-0.64
693	SLD 14	-487	270	9195	-41.75	-5.73	1.11
693	SLD 15	-496	-276	9231	1.76	-5.67	-1.95
693	SLD 16	-495	-123	9225	-0.99	-5.65	-0.2
693	SLV 1	1460	430	4133	-64.15	8.02	1.21
693	SLV 2	1462	792	4120	-70.6	8.05	5.32
693	SLV 3	1440	-550	4207	38.16	8.21	-2.03
693	SLV 4	1442	-189	4194	31.71	8.25	2.08
693	SLV 5	531	1572	6521	-186.42	1.01	4.66
693	SLV 6	532	1815	6513	-190.77	1.04	7.42
693	SLV 7	465	-1695	6767	154.62	1.66	-6.16
693	SLV 8	466	-1452	6759	150.27	1.68	-3.39
693	SLV 9	-285	1520	8644	-188.01	-4.8	3.79
693	SLV 10	-284	1763	8635	-192.35	-4.78	6.55
693	SLV 11	-352	-1747	8890	153.03	-4.16	-7.02
693	SLV 12	-350	-1504	8881	148.69	-4.13	-4.26
693	SLV 13	-1261	256	11209	-69.44	-11.36	-1.68
693	SLV 14	-1259	617	11195	-75.89	-11.33	2.43
693	SLV 15	-1281	-724	11282	32.87	-11.17	-4.92
693	SLV 16	-1279	-363	11269	26.42	-11.14	-0.82

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
693	CRTFP Ux+	0	0	0	0	0	0
693	CRTFP Ux-	0	0	0	0	0	0
693	CRTFP Uy+	0	0	0	0	0	0
693	CRTFP Uy-	0	0	0	0	0	0
694	SLU 1	88	33	7176	-16.82	-1.2	0.19
694	SLU 2	89	67	7177	-19.78	-1.21	0.35
694	SLU 3	90	34	7340	-16.27	-1.24	0.21
694	SLU 4	91	54	7340	-18.04	-1.24	0.31
694	SLU 5	90	68	7283	-19.27	-1.23	0.39
694	SLU 6	92	34	7446	-15.76	-1.26	0.25
694	SLU 7	92	55	7446	-17.53	-1.26	0.35
694	SLU 8	91	35	7388	-15.8	-1.25	0.27
694	SLU 9	91	55	7388	-17.57	-1.25	0.36
694	SLU 10	92	72	8072	-22.34	-1.19	0.34
694	SLU 11	94	38	8236	-18.83	-1.22	0.21
694	SLU 12	94	59	8236	-20.61	-1.22	0.31
694	SLU 13	93	73	8178	-21.83	-1.21	0.38
694	SLU 14	95	39	8342	-18.32	-1.24	0.25
694	SLU 15	95	60	8342	-20.09	-1.24	0.35
694	SLU 16	94	39	8284	-18.36	-1.22	0.26
694	SLU 17	95	60	8284	-20.13	-1.23	0.36
694	SLU 18	93	40	8456	-20.48	-1.17	0.18
694	SLU 19	93	60	8456	-22.26	-1.18	0.28
694	SLU 20	94	41	8562	-19.97	-1.2	0.22
694	SLU 21	95	61	8562	-21.74	-1.2	0.32
694	SLU 22	96	34	8272	-17.34	-1.24	0.14
694	SLU 23	97	68	8272	-20.29	-1.24	0.31
694	SLU 24	98	35	8436	-16.79	-1.27	0.17
694	SLU 25	99	55	8436	-18.56	-1.27	0.27
694	SLU 26	98	69	8378	-19.78	-1.26	0.35
694	SLU 27	100	36	8542	-16.27	-1.29	0.21
694	SLU 28	100	56	8542	-18.05	-1.29	0.31
694	SLU 29	99	36	8484	-16.31	-1.28	0.22
694	SLU 30	99	56	8484	-18.09	-1.28	0.32
694	SLU 31	100	73	9168	-22.85	-1.22	0.3
694	SLU 32	102	40	9332	-19.35	-1.25	0.17
694	SLU 33	102	60	9332	-21.12	-1.25	0.26
694	SLU 34	101	74	9274	-22.34	-1.24	0.34
694	SLU 35	103	40	9438	-18.83	-1.27	0.21
694	SLU 36	103	61	9438	-20.61	-1.27	0.3
694	SLU 37	102	41	9380	-18.87	-1.26	0.22
694	SLU 38	103	61	9380	-20.65	-1.26	0.32
694	SLU 39	101	41	9552	-21	-1.21	0.14
694	SLU 40	101	62	9552	-22.77	-1.21	0.23
694	SLU 41	102	42	9658	-20.48	-1.23	0.18
694	SLU 42	103	62	9658	-22.26	-1.23	0.27
694	SLU 43	112	43	8954	-21.7	-1.55	0.26
694	SLU 44	113	77	8954	-24.65	-1.56	0.42
694	SLU 45	114	43	9117	-21.14	-1.59	0.28
694	SLU 46	114	64	9117	-22.92	-1.59	0.38
694	SLU 47	114	77	9060	-24.14	-1.58	0.46
694	SLU 48	116	44	9223	-20.63	-1.61	0.32
694	SLU 49	116	64	9223	-22.4	-1.61	0.42
694	SLU 50	115	44	9166	-20.67	-1.6	0.34
694	SLU 51	115	65	9166	-22.44	-1.6	0.43
694	SLU 52	116	81	9850	-27.21	-1.54	0.41
694	SLU 53	117	48	10013	-23.7	-1.57	0.28
694	SLU 54	118	68	10013	-25.48	-1.57	0.38
694	SLU 55	117	82	9956	-26.7	-1.56	0.45
694	SLU 56	119	49	10119	-23.19	-1.59	0.32
694	SLU 57	119	69	10119	-24.96	-1.59	0.42
694	SLU 58	118	49	10062	-23.23	-1.57	0.33
694	SLU 59	118	69	10062	-25	-1.58	0.43
694	SLU 60	117	49	10234	-25.35	-1.52	0.25
694	SLU 61	117	70	10234	-27.13	-1.53	0.35
694	SLU 62	118	50	10340	-24.84	-1.55	0.29
694	SLU 63	118	71	10340	-26.61	-1.55	0.39
694	SLU 64	120	44	10049	-22.21	-1.59	0.21
694	SLU 65	121	78	10049	-25.16	-1.59	0.38
694	SLU 66	122	44	10213	-21.66	-1.62	0.24
694	SLU 67	122	65	10213	-23.43	-1.62	0.34
694	SLU 68	122	79	10155	-24.65	-1.61	0.42
694	SLU 69	124	45	10319	-21.14	-1.64	0.28
694	SLU 70	124	66	10319	-22.92	-1.64	0.38
694	SLU 71	123	45	10261	-21.18	-1.63	0.29
694	SLU 72	123	66	10261	-22.96	-1.63	0.39
694	SLU 73	124	83	10945	-27.72	-1.57	0.37
694	SLU 74	125	49	11109	-24.22	-1.6	0.24
694	SLU 75	126	70	11109	-25.99	-1.6	0.33
694	SLU 76	125	83	11051	-27.21	-1.59	0.41
694	SLU 77	127	50	11215	-23.71	-1.62	0.28
694	SLU 78	127	70	11215	-25.48	-1.62	0.37
694	SLU 79	126	50	11157	-23.75	-1.61	0.29
694	SLU 80	126	71	11157	-25.52	-1.61	0.39
694	SLU 81	125	51	11329	-25.87	-1.56	0.21
694	SLU 82	125	71	11329	-27.64	-1.56	0.3
694	SLU 83	126	51	11435	-25.36	-1.58	0.25
694	SLU 84	126	72	11435	-27.13	-1.58	0.34
694	SLE RA 1	91	33	7489	-16.97	-1.21	0.17

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
694	SLE RA 2	91	56	7490	-18.94	-1.22	0.28
694	SLE RA 3	92	34	7599	-16.6	-1.23	0.19
694	SLE RA 4	92	47	7599	-17.78	-1.24	0.26
694	SLE RA 5	92	57	7560	-18.6	-1.23	0.31
694	SLE RA 6	93	34	7669	-16.26	-1.25	0.22
694	SLE RA 7	93	48	7669	-17.44	-1.25	0.28
694	SLE RA 8	92	34	7631	-16.29	-1.24	0.23
694	SLE RA 9	93	48	7631	-17.47	-1.24	0.29
694	SLE RA 10	93	59	8087	-20.65	-1.2	0.28
694	SLE RA 11	94	37	8196	-18.31	-1.22	0.19
694	SLE RA 12	94	51	8196	-19.49	-1.22	0.25
694	SLE RA 13	94	60	8157	-20.31	-1.22	0.3
694	SLE RA 14	95	37	8267	-17.97	-1.23	0.22
694	SLE RA 15	95	51	8267	-19.15	-1.24	0.28
694	SLE RA 16	95	38	8228	-18	-1.23	0.22
694	SLE RA 17	95	51	8228	-19.18	-1.23	0.29
694	SLE RA 18	94	38	8343	-19.41	-1.19	0.17
694	SLE RA 19	94	52	8343	-20.59	-1.19	0.23
694	SLE RA 20	95	38	8413	-19.07	-1.21	0.2
694	SLE RA 21	95	52	8413	-20.25	-1.21	0.26
694	SLE FR 1	91	33	7489	-16.97	-1.21	0.17
694	SLE FR 2	91	38	7489	-17.37	-1.21	0.2
694	SLE FR 3	91	34	7518	-16.83	-1.22	0.18
694	SLE FR 4	92	39	7745	-18.1	-1.21	0.19
694	SLE FR 5	92	35	7774	-17.57	-1.21	0.18
694	SLE FR 6	92	36	7916	-18.19	-1.2	0.17
694	SLE QP 1	91	33	7489	-16.97	-1.21	0.17
694	SLE QP 2	92	35	7745	-17.7	-1.21	0.17
694	SLD 1	676	193	6090	-36.02	2.87	0.71
694	SLD 2	677	356	6084	-38.97	2.89	2.62
694	SLD 3	668	-206	6118	5.77	2.96	-0.93
694	SLD 4	668	-43	6112	2.82	2.97	0.98
694	SLD 5	279	659	7207	-86.05	-0.11	2.47
694	SLD 6	280	767	7203	-87.99	-0.1	3.73
694	SLD 7	252	-673	7302	53.25	0.17	-2.98
694	SLD 8	252	-565	7298	51.3	0.18	-1.72
694	SLD 9	-69	635	8193	-86.71	-2.59	2.07
694	SLD 10	-69	743	8189	-88.66	-2.58	3.33
694	SLD 11	-96	-697	8288	52.59	-2.31	-3.39
694	SLD 12	-96	-590	8284	50.64	-2.3	-2.12
694	SLD 13	-485	113	9379	-38.23	-5.39	-0.64
694	SLD 14	-484	276	9373	-41.18	-5.37	1.27
694	SLD 15	-493	-287	9407	3.56	-5.3	-2.27
694	SLD 16	-493	-124	9401	0.61	-5.29	-0.36
694	SLV 1	1459	437	3869	-64.08	8.34	1.53
694	SLV 2	1460	820	3855	-71.02	8.37	6.02
694	SLV 3	1439	-562	3940	40.79	8.55	-2.53
694	SLV 4	1441	-179	3925	33.85	8.58	1.97
694	SLV 5	531	1598	6478	-189.38	1.33	5.89
694	SLV 6	533	1856	6468	-194.05	1.36	8.91
694	SLV 7	465	-1730	6714	160.2	2.03	-7.62
694	SLV 8	467	-1472	6704	155.53	2.05	-4.6
694	SLV 9	-283	1542	8787	-190.93	-4.47	4.94
694	SLV 10	-282	1800	8777	-195.6	-4.44	7.97
694	SLV 11	-349	-1787	9022	158.64	-3.77	-8.57
694	SLV 12	-348	-1529	9013	153.97	-3.75	-5.54
694	SLV 13	-1257	248	11565	-69.26	-11	-1.62
694	SLV 14	-1256	631	11551	-76.2	-10.96	2.87
694	SLV 15	-1277	-750	11636	35.61	-10.79	-5.68
694	SLV 16	-1275	-367	11622	28.67	-10.75	-1.18
694	CRTFP Ux+	0	0	0	0	0	0
694	CRTFP Ux-	0	0	0	0	0	0
694	CRTFP Uy+	0	0	0	0	0	0
694	CRTFP Uy-	0	0	0	0	0	0
695	SLU 1	90	34	7213	-15.78	-1.11	0.14
695	SLU 2	90	69	7213	-18.82	-1.12	0.32
695	SLU 3	92	35	7378	-15.21	-1.14	0.16
695	SLU 4	92	56	7378	-17.03	-1.15	0.27
695	SLU 5	91	70	7320	-18.3	-1.14	0.36
695	SLU 6	93	36	7484	-14.68	-1.16	0.2
695	SLU 7	93	57	7485	-16.51	-1.17	0.31
695	SLU 8	92	36	7426	-14.74	-1.15	0.21
695	SLU 9	92	57	7426	-16.56	-1.16	0.32
695	SLU 10	93	74	8108	-21.22	-1.07	0.31
695	SLU 11	95	39	8272	-17.6	-1.1	0.15
695	SLU 12	95	60	8273	-19.43	-1.1	0.26
695	SLU 13	95	75	8215	-20.7	-1.09	0.34
695	SLU 14	96	40	8379	-17.08	-1.12	0.19
695	SLU 15	96	61	8379	-18.91	-1.12	0.3
695	SLU 16	96	41	8321	-17.13	-1.1	0.2
695	SLU 17	96	62	8321	-18.96	-1.11	0.31
695	SLU 18	94	41	8491	-19.21	-1.04	0.12
695	SLU 19	94	62	8491	-21.03	-1.05	0.23
695	SLU 20	96	42	8598	-18.68	-1.06	0.16
695	SLU 21	96	63	8598	-20.51	-1.07	0.27
695	SLU 22	98	35	8309	-16.12	-1.11	0.09
695	SLU 23	98	70	8309	-19.16	-1.12	0.27
695	SLU 24	100	36	8474	-15.54	-1.15	0.12
695	SLU 25	100	57	8474	-17.37	-1.15	0.22

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
695	SLU 26	99	71	8416	-18.64	-1.14	0.31
695	SLU 27	101	37	8580	-15.02	-1.17	0.15
695	SLU 28	101	58	8581	-16.85	-1.17	0.26
695	SLU 29	100	37	8522	-15.07	-1.15	0.17
695	SLU 30	100	58	8522	-16.9	-1.16	0.27
695	SLU 31	101	75	9204	-21.56	-1.07	0.26
695	SLU 32	103	40	9368	-17.94	-1.1	0.1
695	SLU 33	103	61	9369	-19.77	-1.1	0.21
695	SLU 34	103	76	9311	-21.03	-1.09	0.3
695	SLU 35	104	41	9475	-17.42	-1.12	0.14
695	SLU 36	104	62	9475	-19.24	-1.12	0.25
695	SLU 37	104	42	9417	-17.47	-1.11	0.15
695	SLU 38	104	63	9417	-19.29	-1.11	0.26
695	SLU 39	102	42	9587	-19.54	-1.04	0.07
695	SLU 40	102	63	9587	-21.37	-1.05	0.18
695	SLU 41	104	43	9694	-19.02	-1.07	0.11
695	SLU 42	104	64	9694	-20.84	-1.07	0.22
695	SLU 43	114	44	9001	-20.4	-1.45	0.19
695	SLU 44	114	79	9001	-23.44	-1.45	0.37
695	SLU 45	116	44	9166	-19.83	-1.48	0.22
695	SLU 46	116	65	9166	-21.65	-1.48	0.33
695	SLU 47	115	80	9108	-22.92	-1.47	0.41
695	SLU 48	117	45	9272	-19.3	-1.5	0.26
695	SLU 49	117	66	9273	-21.13	-1.5	0.36
695	SLU 50	116	46	9214	-19.35	-1.49	0.27
695	SLU 51	117	67	9215	-21.18	-1.49	0.38
695	SLU 52	117	84	9896	-25.84	-1.4	0.36
695	SLU 53	119	49	10061	-22.22	-1.43	0.21
695	SLU 54	119	70	10061	-24.05	-1.43	0.32
695	SLU 55	119	85	10003	-25.32	-1.42	0.4
695	SLU 56	120	50	10167	-21.7	-1.45	0.24
695	SLU 57	121	71	10167	-23.53	-1.45	0.35
695	SLU 58	120	50	10109	-21.75	-1.44	0.26
695	SLU 59	120	71	10109	-23.58	-1.44	0.36
695	SLU 60	118	51	10279	-23.82	-1.38	0.18
695	SLU 61	119	72	10279	-25.65	-1.38	0.29
695	SLU 62	120	51	10386	-23.3	-1.4	0.21
695	SLU 63	120	73	10386	-25.13	-1.4	0.32
695	SLU 64	122	45	10097	-20.74	-1.45	0.15
695	SLU 65	122	80	10097	-23.78	-1.45	0.33
695	SLU 66	124	45	10262	-20.16	-1.48	0.17
695	SLU 67	124	66	10262	-21.99	-1.48	0.28
695	SLU 68	123	81	10204	-23.25	-1.47	0.37
695	SLU 69	125	46	10368	-19.64	-1.5	0.21
695	SLU 70	125	67	10369	-21.46	-1.5	0.32
695	SLU 71	124	47	10310	-19.69	-1.49	0.22
695	SLU 72	125	68	10311	-21.52	-1.49	0.33
695	SLU 73	125	85	10992	-26.18	-1.4	0.32
695	SLU 74	127	50	11157	-22.56	-1.43	0.16
695	SLU 75	127	71	11157	-24.38	-1.43	0.27
695	SLU 76	127	86	11099	-25.65	-1.42	0.35
695	SLU 77	128	51	11263	-22.04	-1.45	0.2
695	SLU 78	129	72	11263	-23.86	-1.45	0.31
695	SLU 79	128	51	11205	-22.09	-1.44	0.21
695	SLU 80	128	72	11205	-23.91	-1.44	0.32
695	SLU 81	126	52	11375	-24.16	-1.38	0.13
695	SLU 82	127	73	11376	-25.99	-1.38	0.24
695	SLU 83	128	52	11482	-23.64	-1.4	0.17
695	SLU 84	128	74	11482	-25.46	-1.4	0.28
695	SLE RA 1	92	34	7526	-15.88	-1.11	0.12
695	SLE RA 2	92	58	7526	-17.9	-1.12	0.24
695	SLE RA 3	93	35	7636	-15.49	-1.13	0.14
695	SLE RA 4	93	49	7636	-16.71	-1.14	0.21
695	SLE RA 5	93	58	7597	-17.56	-1.13	0.27
695	SLE RA 6	94	35	7707	-15.15	-1.15	0.17
695	SLE RA 7	94	49	7707	-16.36	-1.15	0.24
695	SLE RA 8	94	35	7668	-15.18	-1.14	0.17
695	SLE RA 9	94	49	7668	-16.4	-1.14	0.25
695	SLE RA 10	94	61	8123	-19.5	-1.08	0.24
695	SLE RA 11	95	38	8232	-17.09	-1.1	0.13
695	SLE RA 12	96	52	8233	-18.31	-1.1	0.2
695	SLE RA 13	95	61	8194	-19.15	-1.1	0.26
695	SLE RA 14	96	38	8304	-16.74	-1.11	0.16
695	SLE RA 15	96	52	8304	-17.96	-1.12	0.23
695	SLE RA 16	96	39	8265	-16.78	-1.11	0.17
695	SLE RA 17	96	53	8265	-17.99	-1.11	0.24
695	SLE RA 18	95	39	8378	-18.16	-1.07	0.11
695	SLE RA 19	95	53	8378	-19.38	-1.07	0.18
695	SLE RA 20	96	39	8449	-17.81	-1.08	0.14
695	SLE RA 21	96	53	8449	-19.03	-1.08	0.21
695	SLE FR 1	92	34	7526	-15.88	-1.11	0.12
695	SLE FR 2	92	39	7526	-16.28	-1.11	0.15
695	SLE FR 3	92	34	7555	-15.74	-1.12	0.13
695	SLE FR 4	93	40	7782	-16.97	-1.1	0.14
695	SLE FR 5	93	36	7810	-16.42	-1.1	0.13
695	SLE FR 6	93	36	7952	-17.02	-1.09	0.12
695	SLE QP 1	92	34	7526	-15.88	-1.11	0.12
695	SLE QP 2	93	36	7782	-16.56	-1.1	0.12
695	SLD 1	676	197	5994	-35.28	3.03	0.77

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
695	SLD 2	676	370	5987	-38.44	3.05	2.83
695	SLD 3	668	-212	6021	7.58	3.12	-1.13
695	SLD 4	668	-39	6015	4.42	3.14	0.92
695	SLD 5	280	673	7205	-86.62	0	2.83
695	SLD 6	280	787	7200	-88.7	0.01	4.19
695	SLD 7	253	-690	7296	56.26	0.3	-3.51
695	SLD 8	253	-575	7292	54.17	0.31	-2.15
695	SLD 9	-68	647	8271	-87.3	-2.51	2.39
695	SLD 10	-67	761	8267	-89.38	-2.5	3.75
695	SLD 11	-95	-716	8363	55.58	-2.21	-3.94
695	SLD 12	-94	-601	8359	53.49	-2.2	-2.59
695	SLD 13	-483	110	9549	-37.55	-5.33	-0.68
695	SLD 14	-482	283	9543	-40.71	-5.32	1.37
695	SLD 15	-491	-299	9577	5.32	-5.25	-2.59
695	SLD 16	-490	-126	9570	2.15	-5.23	-0.53
695	SLV 1	1457	445	3595	-63.97	8.56	1.76
695	SLV 2	1458	852	3580	-71.4	8.6	6.6
695	SLV 3	1437	-576	3663	43.59	8.78	-2.96
695	SLV 4	1439	-169	3648	36.16	8.82	1.88
695	SLV 5	532	1631	6426	-192.53	1.46	6.87
695	SLV 6	533	1905	6416	-197.53	1.48	10.13
695	SLV 7	466	-1772	6652	166.01	2.19	-8.87
695	SLV 8	467	-1498	6641	161	2.22	-5.61
695	SLV 9	-281	1569	8922	-194.13	-4.42	5.85
695	SLV 10	-280	1844	8912	-199.13	-4.39	9.11
695	SLV 11	-347	-1834	9148	164.41	-3.68	-9.89
695	SLV 12	-346	-1560	9137	159.41	-3.66	-6.63
695	SLV 13	-1253	240	11916	-69.29	-11.02	-1.64
695	SLV 14	-1252	647	11901	-76.72	-10.98	3.2
695	SLV 15	-1273	-781	11984	38.27	-10.8	-6.36
695	SLV 16	-1271	-374	11968	30.84	-10.76	-1.52
695	CRTFP Ux+	0	0	0	0	0	0
695	CRTFP Ux-	0	0	0	0	0	0
695	CRTFP Uy+	0	0	0	0	0	0
695	CRTFP Uy-	0	0	0	0	0	0
696	SLU 1	91	34	7253	-14.76	-1.46	0.06
696	SLU 2	91	71	7253	-17.89	-1.46	0.25
696	SLU 3	93	35	7419	-14.16	-1.5	0.08
696	SLU 4	93	57	7419	-16.04	-1.5	0.19
696	SLU 5	92	72	7361	-17.36	-1.49	0.28
696	SLU 6	94	36	7526	-13.63	-1.53	0.11
696	SLU 7	94	58	7527	-15.51	-1.53	0.23
696	SLU 8	93	37	7468	-13.69	-1.51	0.12
696	SLU 9	94	58	7468	-15.57	-1.52	0.24
696	SLU 10	94	75	8147	-20.13	-1.45	0.23
696	SLU 11	96	40	8312	-16.4	-1.49	0.06
696	SLU 12	96	62	8313	-18.28	-1.49	0.17
696	SLU 13	96	76	8254	-19.59	-1.48	0.26
696	SLU 14	97	41	8420	-15.86	-1.51	0.09
696	SLU 15	98	63	8420	-17.74	-1.52	0.2
696	SLU 16	97	41	8361	-15.93	-1.5	0.1
696	SLU 17	97	63	8362	-17.81	-1.5	0.22
696	SLU 18	95	41	8530	-17.95	-1.44	0.03
696	SLU 19	96	63	8530	-19.83	-1.44	0.14
696	SLU 20	97	42	8637	-17.42	-1.47	0.06
696	SLU 21	97	64	8637	-19.3	-1.47	0.17
696	SLU 22	99	35	8350	-14.92	-1.51	0.01
696	SLU 23	99	71	8350	-18.05	-1.51	0.2
696	SLU 24	101	36	8515	-14.32	-1.55	0.03
696	SLU 25	101	58	8516	-16.2	-1.55	0.14
696	SLU 26	100	72	8457	-17.52	-1.54	0.23
696	SLU 27	102	37	8623	-13.79	-1.57	0.06
696	SLU 28	102	59	8623	-15.67	-1.58	0.17
696	SLU 29	101	37	8564	-13.85	-1.56	0.07
696	SLU 30	102	59	8565	-15.73	-1.56	0.18
696	SLU 31	102	76	9244	-20.29	-1.49	0.17
696	SLU 32	104	41	9409	-16.56	-1.53	0
696	SLU 33	104	62	9409	-18.44	-1.53	0.12
696	SLU 34	104	77	9351	-19.75	-1.52	0.21
696	SLU 35	106	42	9516	-16.02	-1.56	0.04
696	SLU 36	106	63	9517	-17.9	-1.56	0.15
696	SLU 37	105	42	9458	-16.08	-1.54	0.05
696	SLU 38	105	64	9458	-17.96	-1.55	0.16
696	SLU 39	103	42	9626	-18.11	-1.48	-0.02
696	SLU 40	104	64	9626	-19.99	-1.49	0.09
696	SLU 41	105	43	9734	-17.58	-1.51	0.01
696	SLU 42	105	65	9734	-19.46	-1.51	0.12
696	SLU 43	115	45	9053	-19.13	-1.88	0.1
696	SLU 44	115	81	9053	-22.26	-1.89	0.29
696	SLU 45	117	45	9219	-18.54	-1.93	0.12
696	SLU 46	117	67	9219	-20.42	-1.93	0.23
696	SLU 47	117	82	9161	-21.73	-1.91	0.32
696	SLU 48	119	46	9326	-18	-1.95	0.15
696	SLU 49	119	68	9327	-19.88	-1.95	0.26
696	SLU 50	118	47	9268	-18.06	-1.94	0.16
696	SLU 51	118	68	9268	-19.94	-1.94	0.27
696	SLU 52	119	85	9947	-24.5	-1.87	0.26
696	SLU 53	121	50	10112	-20.77	-1.91	0.09
696	SLU 54	121	72	10113	-22.65	-1.91	0.21

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
696	SLU 55	120	86	10054	-23.97	-1.9	0.3
696	SLU 56	122	51	10220	-20.24	-1.94	0.13
696	SLU 57	122	73	10220	-22.12	-1.94	0.24
696	SLU 58	121	51	10161	-20.3	-1.92	0.14
696	SLU 59	121	73	10162	-22.18	-1.92	0.25
696	SLU 60	120	51	10330	-22.33	-1.86	0.06
696	SLU 61	120	73	10330	-24.21	-1.86	0.18
696	SLU 62	121	52	10437	-21.79	-1.89	0.1
696	SLU 63	121	74	10437	-23.67	-1.89	0.21
696	SLU 64	123	45	10150	-19.29	-1.93	0.04
696	SLU 65	124	81	10150	-22.42	-1.93	0.23
696	SLU 66	125	46	10315	-18.69	-1.97	0.06
696	SLU 67	125	68	10316	-20.57	-1.97	0.18
696	SLU 68	125	82	10257	-21.89	-1.96	0.26
696	SLU 69	127	47	10423	-18.16	-2	0.09
696	SLU 70	127	69	10423	-20.04	-2	0.21
696	SLU 71	126	48	10364	-18.22	-1.98	0.11
696	SLU 72	126	69	10365	-20.1	-1.98	0.22
696	SLU 73	127	86	11044	-24.66	-1.92	0.21
696	SLU 74	129	51	11209	-20.93	-1.95	0.04
696	SLU 75	129	72	11209	-22.81	-1.96	0.15
696	SLU 76	128	87	11151	-24.12	-1.94	0.24
696	SLU 77	130	52	11316	-20.4	-1.98	0.07
696	SLU 78	130	74	11317	-22.28	-1.98	0.19
696	SLU 79	129	52	11258	-20.46	-1.97	0.08
696	SLU 80	129	74	11258	-22.34	-1.97	0.2
696	SLU 81	128	52	11426	-22.48	-1.91	0.01
696	SLU 82	128	74	11426	-24.36	-1.91	0.13
696	SLU 83	129	53	11534	-21.95	-1.93	0.04
696	SLU 84	129	75	11534	-23.83	-1.94	0.16
696	SLE RA 1	93	35	7566	-14.8	-1.47	0.04
696	SLE RA 2	93	59	7567	-16.89	-1.48	0.17
696	SLE RA 3	94	35	7677	-14.41	-1.5	0.06
696	SLE RA 4	95	50	7677	-15.66	-1.5	0.13
696	SLE RA 5	94	59	7638	-16.54	-1.49	0.19
696	SLE RA 6	95	36	7749	-14.05	-1.52	0.08
696	SLE RA 7	95	50	7749	-15.3	-1.52	0.16
696	SLE RA 8	95	36	7710	-14.09	-1.51	0.09
696	SLE RA 9	95	51	7710	-15.34	-1.51	0.16
696	SLE RA 10	95	62	8162	-18.38	-1.47	0.16
696	SLE RA 11	97	38	8273	-15.9	-1.49	0.04
696	SLE RA 12	97	53	8273	-17.15	-1.49	0.12
696	SLE RA 13	96	63	8234	-18.03	-1.48	0.18
696	SLE RA 14	97	39	8344	-15.54	-1.51	0.06
696	SLE RA 15	98	53	8344	-16.79	-1.51	0.14
696	SLE RA 16	97	39	8305	-15.58	-1.5	0.07
696	SLE RA 17	97	54	8305	-16.84	-1.5	0.15
696	SLE RA 18	96	39	8417	-16.93	-1.46	0.02
696	SLE RA 19	96	54	8418	-18.19	-1.46	0.1
696	SLE RA 20	97	40	8489	-16.58	-1.48	0.05
696	SLE RA 21	97	54	8489	-17.83	-1.48	0.12
696	SLE FR 1	93	35	7566	-14.8	-1.47	0.04
696	SLE FR 2	93	40	7566	-15.22	-1.47	0.07
696	SLE FR 3	93	35	7595	-14.66	-1.48	0.05
696	SLE FR 4	94	41	7822	-15.86	-1.47	0.06
696	SLE FR 5	94	36	7850	-15.3	-1.48	0.05
696	SLE FR 6	95	37	7992	-15.87	-1.47	0.03
696	SLE QP 1	93	35	7566	-14.8	-1.47	0.04
696	SLE QP 2	94	36	7822	-15.44	-1.47	0.04
696	SLD 1	675	201	5897	-34.54	2.85	0.76
696	SLD 2	676	385	5890	-37.91	2.86	2.93
696	SLD 3	667	-218	5924	9.45	2.94	-1.3
696	SLD 4	668	-34	5917	6.08	2.95	0.86
696	SLD 5	281	688	7205	-87.28	-0.32	3
696	SLD 6	281	809	7201	-89.5	-0.31	4.42
696	SLD 7	254	-709	7294	59.35	-0.01	-3.88
696	SLD 8	254	-587	7289	57.12	0	-2.45
696	SLD 9	-66	659	8354	-88	-2.94	2.53
696	SLD 10	-66	781	8349	-90.23	-2.93	3.96
696	SLD 11	-93	-737	8443	58.62	-2.63	-4.35
696	SLD 12	-93	-616	8438	56.39	-2.62	-2.92
696	SLD 13	-480	106	9727	-36.96	-5.89	-0.79
696	SLD 14	-480	290	9720	-40.34	-5.88	1.38
696	SLD 15	-488	-313	9753	7.02	-5.8	-2.85
696	SLD 16	-488	-129	9746	3.65	-5.79	-0.69
696	SLV 1	1455	454	3317	-63.82	8.62	1.88
696	SLV 2	1456	887	3300	-71.75	8.66	6.97
696	SLV 3	1435	-593	3382	46.56	8.85	-3.26
696	SLV 4	1437	-160	3365	38.63	8.89	1.83
696	SLV 5	532	1668	6374	-195.88	1.21	7.43
696	SLV 6	533	1959	6363	-201.22	1.24	10.86
696	SLV 7	466	-1821	6592	172.05	1.96	-9.69
696	SLV 8	467	-1529	6580	166.71	1.98	-6.27
696	SLV 9	-280	1601	9063	-197.59	-4.92	6.35
696	SLV 10	-278	1893	9052	-202.93	-4.9	9.77
696	SLV 11	-345	-1887	9280	170.34	-4.18	-10.78
696	SLV 12	-344	-1596	9269	165	-4.15	-7.36
696	SLV 13	-1249	232	12278	-69.51	-11.83	-1.75
696	SLV 14	-1247	665	12262	-77.44	-11.79	3.33

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
696	SLV 15	-1269	-815	12344	40.87	-11.6	-6.89
696	SLV 16	-1267	-382	12327	32.94	-11.56	-1.8
696	CRTFP Ux+	0	0	0	0	0	0
696	CRTFP Ux-	0	0	0	0	0	0
696	CRTFP Uy+	0	0	0	0	0	0
696	CRTFP Uy-	0	0	0	0	0	0
697	SLU 1	92	35	7317	-13.75	-2.65	-0.05
697	SLU 2	92	72	7317	-16.98	-2.66	0.13
697	SLU 3	94	35	7484	-13.14	-2.72	-0.04
697	SLU 4	94	58	7485	-15.07	-2.73	0.07
697	SLU 5	93	73	7426	-16.44	-2.7	0.16
697	SLU 6	95	37	7593	-12.59	-2.77	-0.01
697	SLU 7	95	59	7593	-14.53	-2.77	0.1
697	SLU 8	94	37	7534	-12.66	-2.75	0
697	SLU 9	95	59	7534	-14.6	-2.75	0.11
697	SLU 10	95	76	8212	-19.06	-2.79	0.1
697	SLU 11	97	40	8380	-15.21	-2.86	-0.07
697	SLU 12	97	62	8380	-17.15	-2.86	0.04
697	SLU 13	97	77	8321	-18.51	-2.83	0.12
697	SLU 14	99	41	8488	-14.67	-2.9	-0.05
697	SLU 15	99	63	8488	-16.6	-2.9	0.06
697	SLU 16	98	42	8429	-14.74	-2.88	-0.04
697	SLU 17	98	64	8429	-16.68	-2.88	0.07
697	SLU 18	96	41	8596	-16.72	-2.84	-0.1
697	SLU 19	97	63	8596	-18.66	-2.84	0.01
697	SLU 20	98	42	8704	-16.18	-2.89	-0.08
697	SLU 21	98	65	8704	-18.11	-2.89	0.03
697	SLU 22	100	35	8417	-13.74	-2.88	-0.11
697	SLU 23	100	72	8418	-16.96	-2.88	0.07
697	SLU 24	102	36	8585	-13.12	-2.95	-0.1
697	SLU 25	102	58	8585	-15.05	-2.95	0.01
697	SLU 26	102	73	8526	-16.42	-2.93	0.09
697	SLU 27	103	37	8694	-12.57	-3	-0.08
697	SLU 28	104	59	8694	-14.51	-3	0.03
697	SLU 29	103	38	8634	-12.64	-2.97	-0.07
697	SLU 30	103	60	8635	-14.58	-2.97	0.04
697	SLU 31	104	77	9313	-19.04	-3.02	0.03
697	SLU 32	105	40	9480	-15.2	-3.08	-0.14
697	SLU 33	106	63	9480	-17.13	-3.08	-0.03
697	SLU 34	105	78	9422	-18.5	-3.06	0.06
697	SLU 35	107	42	9589	-14.65	-3.13	-0.11
697	SLU 36	107	64	9589	-16.59	-3.13	0
697	SLU 37	106	42	9530	-14.72	-3.1	-0.1
697	SLU 38	106	64	9530	-16.66	-3.11	0.01
697	SLU 39	105	41	9696	-16.71	-3.07	-0.16
697	SLU 40	105	64	9696	-18.64	-3.07	-0.05
697	SLU 41	106	43	9805	-16.16	-3.12	-0.14
697	SLU 42	106	65	9805	-18.1	-3.12	-0.03
697	SLU 43	116	45	9135	-17.89	-3.37	-0.04
697	SLU 44	117	82	9135	-21.11	-3.37	0.14
697	SLU 45	119	46	9302	-17.27	-3.44	-0.03
697	SLU 46	119	68	9302	-19.2	-3.44	0.08
697	SLU 47	118	83	9244	-20.57	-3.42	0.16
697	SLU 48	120	47	9411	-16.72	-3.49	-0.01
697	SLU 49	120	69	9411	-18.66	-3.49	0.1
697	SLU 50	119	47	9352	-16.79	-3.46	0.01
697	SLU 51	119	70	9352	-18.73	-3.46	0.12
697	SLU 52	120	86	10030	-23.19	-3.51	0.1
697	SLU 53	122	50	10197	-19.35	-3.57	-0.07
697	SLU 54	122	72	10198	-21.28	-3.57	0.04
697	SLU 55	121	88	10139	-22.65	-3.55	0.13
697	SLU 56	123	51	10306	-18.8	-3.62	-0.04
697	SLU 57	123	74	10306	-20.74	-3.62	0.07
697	SLU 58	123	52	10247	-18.87	-3.59	-0.03
697	SLU 59	123	74	10247	-20.81	-3.6	0.08
697	SLU 60	121	51	10413	-20.86	-3.56	-0.09
697	SLU 61	121	73	10414	-22.79	-3.56	0.02
697	SLU 62	123	53	10522	-20.31	-3.61	-0.07
697	SLU 63	123	75	10522	-22.25	-3.61	0.04
697	SLU 64	125	45	10235	-17.87	-3.6	-0.11
697	SLU 65	125	82	10236	-21.1	-3.6	0.08
697	SLU 66	127	46	10403	-17.25	-3.67	-0.09
697	SLU 67	127	68	10403	-19.19	-3.67	0.02
697	SLU 68	126	84	10344	-20.55	-3.65	0.1
697	SLU 69	128	47	10511	-16.7	-3.72	-0.07
697	SLU 70	128	70	10512	-18.64	-3.72	0.04
697	SLU 71	127	48	10452	-16.78	-3.69	-0.06
697	SLU 72	128	70	10452	-18.71	-3.69	0.05
697	SLU 73	128	87	11131	-23.17	-3.73	0.04
697	SLU 74	130	51	11298	-19.33	-3.8	-0.13
697	SLU 75	130	73	11298	-21.27	-3.8	-0.02
697	SLU 76	130	88	11239	-22.63	-3.78	0.06
697	SLU 77	131	52	11406	-18.78	-3.85	-0.11
697	SLU 78	132	74	11407	-20.72	-3.85	0
697	SLU 79	131	52	11347	-18.86	-3.82	-0.09
697	SLU 80	131	75	11348	-20.79	-3.82	0.02
697	SLU 81	129	52	11514	-20.84	-3.79	-0.16
697	SLU 82	130	74	11514	-22.77	-3.79	-0.05
697	SLU 83	131	53	11622	-20.29	-3.83	-0.13

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
697	SLU 84	131	75	11623	-22.23	-3.83	-0.02
697	SLE RA 1	94	35	7631	-13.75	-2.72	-0.07
697	SLE RA 2	94	59	7632	-15.9	-2.72	0.05
697	SLE RA 3	95	35	7743	-13.34	-2.77	-0.06
697	SLE RA 4	96	50	7743	-14.63	-2.77	0.01
697	SLE RA 5	95	60	7704	-15.54	-2.75	0.07
697	SLE RA 6	96	36	7815	-12.97	-2.8	-0.04
697	SLE RA 7	97	51	7816	-14.26	-2.8	0.03
697	SLE RA 8	96	36	7776	-13.02	-2.78	-0.04
697	SLE RA 9	96	51	7776	-14.31	-2.78	0.04
697	SLE RA 10	96	62	8228	-17.29	-2.81	0.03
697	SLE RA 11	98	38	8340	-14.72	-2.85	-0.08
697	SLE RA 12	98	53	8340	-16.01	-2.85	-0.01
697	SLE RA 13	97	63	8301	-16.92	-2.84	0.05
697	SLE RA 14	99	39	8412	-14.36	-2.88	-0.07
697	SLE RA 15	99	54	8412	-15.65	-2.88	0.01
697	SLE RA 16	98	39	8373	-14.41	-2.87	-0.06
697	SLE RA 17	98	54	8373	-15.7	-2.87	0.01
697	SLE RA 18	97	39	8484	-15.73	-2.84	-0.1
697	SLE RA 19	97	54	8484	-17.02	-2.84	-0.03
697	SLE RA 20	98	40	8556	-15.36	-2.87	-0.09
697	SLE RA 21	98	55	8556	-16.66	-2.88	-0.01
697	SLE FR 1	94	35	7631	-13.75	-2.72	-0.07
697	SLE FR 2	94	40	7631	-14.18	-2.72	-0.04
697	SLE FR 3	94	35	7660	-13.6	-2.73	-0.06
697	SLE FR 4	95	41	7887	-14.77	-2.76	-0.05
697	SLE FR 5	95	36	7916	-14.2	-2.77	-0.07
697	SLE FR 6	96	37	8058	-14.74	-2.78	-0.08
697	SLE QP 1	94	35	7631	-13.75	-2.72	-0.07
697	SLE QP 2	95	36	7887	-14.34	-2.76	-0.08
697	SLD 1	675	204	5816	-33.8	2	0.67
697	SLD 2	676	400	5809	-37.39	2.02	2.88
697	SLD 3	667	-226	5843	11.37	2.09	-1.4
697	SLD 4	668	-30	5835	7.78	2.11	0.81
697	SLD 5	281	703	7227	-88.03	-1.47	2.9
697	SLD 6	282	832	7222	-90.4	-1.46	4.35
697	SLD 7	254	-730	7315	62.51	-1.17	-4.02
697	SLD 8	255	-601	7310	60.14	-1.16	-2.56
697	SLD 9	-65	673	8464	-88.83	-4.35	2.41
697	SLD 10	-64	802	8459	-91.2	-4.34	3.86
697	SLD 11	-92	-760	8552	61.71	-4.06	-4.51
697	SLD 12	-91	-631	8547	59.34	-4.04	-3.05
697	SLD 13	-478	102	9939	-36.46	-7.62	-0.96
697	SLD 14	-477	298	9932	-40.05	-7.6	1.25
697	SLD 15	-486	-328	9966	8.7	-7.53	-3.04
697	SLD 16	-485	-132	9958	5.11	-7.51	-0.83
697	SLV 1	1453	463	3040	-63.65	8.37	1.83
697	SLV 2	1454	923	3022	-72.09	8.41	7.02
697	SLV 3	1433	-611	3104	49.67	8.59	-3.35
697	SLV 4	1435	-151	3085	41.23	8.63	1.84
697	SLV 5	531	1707	6340	-199.44	0.24	7.38
697	SLV 6	533	2016	6328	-205.12	0.27	10.87
697	SLV 7	467	-1872	6552	178.32	0.97	-9.88
697	SLV 8	468	-1563	6540	172.63	1	-6.39
697	SLV 9	-278	1635	9234	-201.32	-6.51	6.23
697	SLV 10	-277	1944	9222	-207	-6.48	9.73
697	SLV 11	-343	-1944	9447	176.44	-5.78	-11.03
697	SLV 12	-341	-1635	9434	170.75	-5.75	-7.53
697	SLV 13	-1245	223	12689	-69.92	-14.14	-2
697	SLV 14	-1243	683	12671	-78.36	-14.1	3.2
697	SLV 15	-1264	-851	12752	43.41	-13.92	-7.17
697	SLV 16	-1263	-391	12734	34.97	-13.88	-1.98
697	CRTFP Ux+	0	0	0	0	0	0
697	CRTFP Ux-	0	0	0	0	0	0
697	CRTFP Uy+	0	0	0	0	0	0
697	CRTFP Uy-	0	0	0	0	0	0
698	SLU 1	79	29	6334	-11.02	173.66	-0.96
698	SLU 2	79	61	6334	-13.87	173.67	-1.73
698	SLU 3	81	30	6479	-10.48	177.64	-0.98
698	SLU 4	81	49	6479	-12.18	177.64	-1.44
698	SLU 5	80	63	6428	-13.39	176.25	-1.75
698	SLU 6	82	31	6573	-10	180.21	-1
698	SLU 7	82	50	6573	-11.7	180.22	-1.46
698	SLU 8	81	31	6522	-10.07	178.81	-1
698	SLU 9	81	51	6522	-11.77	178.82	-1.47
698	SLU 10	82	65	7104	-15.53	194.89	-1.88
698	SLU 11	84	34	7249	-12.14	198.86	-1.13
698	SLU 12	84	53	7249	-13.84	198.86	-1.59
698	SLU 13	83	66	7198	-15.05	197.47	-1.9
698	SLU 14	85	35	7343	-11.66	201.43	-1.15
698	SLU 15	85	54	7344	-13.36	201.44	-1.61
698	SLU 16	84	35	7292	-11.73	200.03	-1.15
698	SLU 17	84	54	7292	-13.43	200.04	-1.61
698	SLU 18	83	34	7434	-13.4	203.98	-1.17
698	SLU 19	83	54	7434	-15.1	203.98	-1.63
698	SLU 20	84	36	7528	-12.92	206.55	-1.19
698	SLU 21	84	55	7528	-14.62	206.56	-1.65
698	SLU 22	86	29	7282	-10.87	199.76	-1.03
698	SLU 23	86	61	7283	-13.71	199.77	-1.8

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
698	SLU 24	88	30	7428	-10.33	203.73	-1.04
698	SLU 25	88	49	7428	-12.03	203.74	-1.51
698	SLU 26	87	63	7377	-13.24	202.34	-1.82
698	SLU 27	89	31	7522	-9.85	206.31	-1.06
698	SLU 28	89	51	7522	-11.55	206.32	-1.53
698	SLU 29	88	32	7471	-9.92	204.91	-1.07
698	SLU 30	88	51	7471	-11.62	204.92	-1.53
698	SLU 31	89	65	8053	-15.38	220.99	-1.94
698	SLU 32	91	34	8198	-11.99	224.96	-1.19
698	SLU 33	91	53	8198	-13.69	224.96	-1.65
698	SLU 34	90	66	8147	-14.9	223.57	-1.96
698	SLU 35	92	35	8292	-11.51	227.53	-1.21
698	SLU 36	92	54	8292	-13.21	227.54	-1.67
698	SLU 37	91	35	8241	-11.58	226.13	-1.21
698	SLU 38	91	55	8241	-13.28	226.14	-1.68
698	SLU 39	90	34	8382	-13.25	230.07	-1.23
698	SLU 40	90	54	8383	-14.95	230.08	-1.7
698	SLU 41	91	36	8477	-12.77	232.65	-1.26
698	SLU 42	91	55	8477	-14.47	232.66	-1.72
698	SLU 43	100	38	7909	-14.38	216.81	-1.23
698	SLU 44	100	70	7909	-17.23	216.82	-2
698	SLU 45	102	39	8054	-13.84	220.79	-1.24
698	SLU 46	102	58	8054	-15.54	220.79	-1.71
698	SLU 47	102	71	8003	-16.75	219.4	-2.02
698	SLU 48	103	40	8148	-13.36	223.36	-1.27
698	SLU 49	103	59	8148	-15.06	223.37	-1.73
698	SLU 50	102	40	8097	-13.43	221.96	-1.27
698	SLU 51	103	59	8097	-15.13	221.97	-1.73
698	SLU 52	103	74	8679	-18.89	238.04	-2.14
698	SLU 53	105	42	8824	-15.5	242.01	-1.39
698	SLU 54	105	62	8824	-17.2	242.01	-1.85
698	SLU 55	104	75	8773	-18.41	240.62	-2.17
698	SLU 56	106	43	8918	-15.02	244.58	-1.41
698	SLU 57	106	63	8918	-16.72	244.59	-1.87
698	SLU 58	105	44	8867	-15.09	243.18	-1.42
698	SLU 59	105	63	8867	-16.79	243.19	-1.88
698	SLU 60	104	43	9009	-16.76	247.13	-1.44
698	SLU 61	104	62	9009	-18.46	247.13	-1.9
698	SLU 62	105	44	9103	-16.28	249.7	-1.46
698	SLU 63	106	64	9103	-17.98	249.71	-1.92
698	SLU 64	107	38	8857	-14.23	242.91	-1.29
698	SLU 65	107	70	8858	-17.07	242.92	-2.06
698	SLU 66	109	39	9002	-13.68	246.88	-1.31
698	SLU 67	109	58	9003	-15.39	246.89	-1.77
698	SLU 68	109	71	8952	-16.6	245.49	-2.08
698	SLU 69	110	40	9097	-13.21	249.46	-1.33
698	SLU 70	110	59	9097	-14.91	249.47	-1.79
698	SLU 71	109	40	9045	-13.28	248.06	-1.33
698	SLU 72	110	60	9046	-14.98	248.07	-1.8
698	SLU 73	110	74	9628	-18.74	264.14	-2.21
698	SLU 74	112	42	9773	-15.35	268.11	-1.46
698	SLU 75	112	62	9773	-17.05	268.11	-1.92
698	SLU 76	111	75	9722	-18.26	266.72	-2.23
698	SLU 77	113	44	9867	-14.87	270.68	-1.48
698	SLU 78	113	63	9867	-16.57	270.69	-1.94
698	SLU 79	112	44	9816	-14.94	269.28	-1.48
698	SLU 80	113	63	9816	-16.64	269.29	-1.94
698	SLU 81	111	43	9957	-16.61	273.22	-1.5
698	SLU 82	111	63	9958	-18.31	273.23	-1.96
698	SLU 83	112	44	10051	-16.13	275.8	-1.52
698	SLU 84	113	64	10052	-17.83	275.81	-1.98
698	SLE RA 1	81	29	6605	-10.98	181.12	-0.98
698	SLE RA 2	81	51	6605	-12.88	181.12	-1.49
698	SLE RA 3	82	30	6702	-10.62	183.77	-0.99
698	SLE RA 4	82	43	6702	-11.75	183.77	-1.3
698	SLE RA 5	82	51	6668	-12.56	182.84	-1.51
698	SLE RA 6	83	30	6764	-10.3	185.48	-1.01
698	SLE RA 7	83	43	6765	-11.43	185.49	-1.31
698	SLE RA 8	82	31	6730	-10.34	184.55	-1.01
698	SLE RA 9	83	44	6730	-11.48	184.55	-1.32
698	SLE RA 10	83	53	7118	-13.98	195.27	-1.59
698	SLE RA 11	84	32	7215	-11.72	197.92	-1.09
698	SLE RA 12	84	45	7215	-12.86	197.92	-1.4
698	SLE RA 13	84	54	7181	-13.66	196.99	-1.6
698	SLE RA 14	85	33	7278	-11.4	199.63	-1.1
698	SLE RA 15	85	46	7278	-12.54	199.64	-1.41
698	SLE RA 16	84	33	7244	-11.45	198.7	-1.1
698	SLE RA 17	84	46	7244	-12.59	198.7	-1.41
698	SLE RA 18	84	33	7338	-12.56	201.33	-1.12
698	SLE RA 19	84	46	7338	-13.7	201.33	-1.43
698	SLE RA 20	84	33	7401	-12.24	203.04	-1.13
698	SLE RA 21	84	46	7401	-13.38	203.05	-1.44
698	SLE FR 1	81	29	6605	-10.98	181.12	-0.98
698	SLE FR 2	81	33	6605	-11.36	181.12	-1.08
698	SLE FR 3	81	29	6630	-10.85	181.8	-0.98
698	SLE FR 4	82	34	6825	-11.83	187.18	-1.12
698	SLE FR 5	82	30	6850	-11.33	187.87	-1.03
698	SLE FR 6	82	31	6971	-11.77	191.22	-1.05
698	SLE QP 1	81	29	6605	-10.98	181.12	-0.98

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
698	SLE QP 2	82	30	6825	-11.46	187.18	-1.02
698	SLD 1	575	176	4928	-28.4	137.7	-3.21
698	SLD 2	576	352	4921	-31.65	137.52	-6.34
698	SLD 3	568	-198	4950	11.26	138.32	5.71
698	SLD 4	569	-23	4943	8.01	138.14	2.58
698	SLD 5	240	611	6223	-76.11	171.43	-14.64
698	SLD 6	240	727	6218	-78.25	171.31	-16.7
698	SLD 7	217	-639	6298	56.1	173.5	15.08
698	SLD 8	218	-523	6293	53.96	173.37	13.02
698	SLD 9	-54	583	7356	-76.87	200.98	-15.06
698	SLD 10	-54	699	7352	-79.01	200.86	-17.12
698	SLD 11	-77	-667	7431	55.34	203.05	14.66
698	SLD 12	-77	-551	7427	53.2	202.93	12.59
698	SLD 13	-406	83	8706	-30.93	236.22	-4.62
698	SLD 14	-405	259	8699	-34.17	236.04	-7.75
698	SLD 15	-412	-292	8729	8.74	236.84	4.3
698	SLD 16	-412	-116	8721	5.49	236.66	1.17
698	SLV 1	1237	402	2385	-54.43	71.37	-6.82
698	SLV 2	1238	815	2368	-62.07	70.93	-14.17
698	SLV 3	1220	-535	2439	45.09	72.87	15.45
698	SLV 4	1222	-122	2423	37.45	72.44	8.09
698	SLV 5	453	1485	5414	-173.87	150.24	-35.15
698	SLV 6	454	1763	5403	-179.01	149.95	-40.1
698	SLV 7	398	-1637	5594	157.87	155.25	39.06
698	SLV 8	399	-1359	5583	152.73	154.96	34.1
698	SLV 9	-236	1419	8066	-175.65	219.4	-36.15
698	SLV 10	-235	1697	8055	-180.79	219.11	-41.1
698	SLV 11	-290	-1703	8247	156.09	224.41	38.06
698	SLV 12	-290	-1425	8236	150.95	224.12	33.11
698	SLV 13	-1058	182	11227	-60.36	301.92	-10.13
698	SLV 14	-1057	595	11210	-68	301.49	-17.49
698	SLV 15	-1075	-754	11281	39.16	303.43	12.13
698	SLV 16	-1073	-341	11264	31.52	302.99	4.77
698	CRTFP Ux+	0	0	0	0	0	0
698	CRTFP Ux-	0	0	0	0	0	0
698	CRTFP Uy+	0	0	0	0	0	0
698	CRTFP Uy-	0	0	0	0	0	0
700	SLU 1	134	49	10803	12.57	2564.52	-12.69
700	SLU 2	134	104	10804	9.99	2564.71	-26.25
700	SLU 3	137	50	11051	13.58	2623.18	-13.03
700	SLU 4	137	83	11052	12.03	2623.29	-21.17
700	SLU 5	136	106	10965	10.76	2602.7	-26.75
700	SLU 6	139	52	11212	14.34	2661.17	-13.54
700	SLU 7	139	85	11212	12.79	2661.28	-21.67
700	SLU 8	138	53	11125	14.1	2640.5	-13.7
700	SLU 9	138	86	11125	12.55	2640.61	-21.83
700	SLU 10	139	110	12114	11.24	2877.08	-27.84
700	SLU 11	142	56	12361	14.83	2935.55	-14.63
700	SLU 12	142	89	12362	13.28	2935.66	-22.76
700	SLU 13	141	112	12275	12	2915.07	-28.34
700	SLU 14	144	58	12522	15.59	2973.54	-15.13
700	SLU 15	144	91	12522	14.04	2973.65	-23.26
700	SLU 16	142	59	12435	15.35	2952.87	-15.29
700	SLU 17	143	92	12435	13.8	2952.98	-23.42
700	SLU 18	141	57	12675	14.36	3010.77	-14.97
700	SLU 19	141	90	12675	12.81	3010.88	-23.1
700	SLU 20	143	59	12835	15.12	3048.75	-15.47
700	SLU 21	143	92	12836	13.57	3048.87	-23.6
700	SLU 22	145	49	12418	16.08	2948.87	-12.8
700	SLU 23	146	104	12419	13.5	2949.05	-26.36
700	SLU 24	148	50	12666	17.08	3007.52	-13.14
700	SLU 25	149	83	12667	15.54	3007.63	-21.27
700	SLU 26	148	106	12580	14.26	2987.04	-26.86
700	SLU 27	151	52	12827	17.85	3045.51	-13.64
700	SLU 28	151	85	12827	16.3	3045.62	-21.78
700	SLU 29	149	53	12739	17.6	3024.84	-13.8
700	SLU 30	150	86	12740	16.05	3024.95	-21.94
700	SLU 31	151	110	13729	14.75	3261.42	-27.95
700	SLU 32	153	56	13976	18.33	3319.89	-14.73
700	SLU 33	154	89	13977	16.79	3320.01	-22.87
700	SLU 34	153	112	13890	15.51	3299.41	-28.45
700	SLU 35	155	58	14137	19.1	3357.88	-15.23
700	SLU 36	156	91	14137	17.55	3357.99	-23.37
700	SLU 37	154	59	14050	18.85	3337.21	-15.4
700	SLU 38	155	92	14050	17.3	3337.32	-23.53
700	SLU 39	152	57	14290	17.86	3395.11	-15.07
700	SLU 40	153	90	14290	16.31	3395.22	-23.21
700	SLU 41	154	59	14450	18.62	3433.1	-15.58
700	SLU 42	155	92	14451	17.08	3433.21	-23.71
700	SLU 43	170	63	13490	15.14	3202.11	-16.47
700	SLU 44	170	118	13491	12.56	3202.29	-30.02
700	SLU 45	173	65	13738	16.15	3260.76	-16.81
700	SLU 46	173	98	13739	14.6	3260.87	-24.94
700	SLU 47	172	120	13652	13.33	3240.28	-30.52
700	SLU 48	175	67	13899	16.91	3298.75	-17.31
700	SLU 49	175	100	13900	15.36	3298.86	-25.44
700	SLU 50	174	67	13812	16.67	3278.08	-17.47
700	SLU 51	174	100	13812	15.12	3278.19	-25.6
700	SLU 52	175	125	14801	13.81	3514.66	-31.61

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
700	SLU 53	178	71	15048	17.4	3573.13	-18.4
700	SLU 54	178	104	15049	15.85	3573.24	-26.53
700	SLU 55	177	127	14962	14.57	3552.65	-32.11
700	SLU 56	180	73	15209	18.16	3611.12	-18.9
700	SLU 57	180	106	15210	16.61	3611.23	-27.03
700	SLU 58	178	73	15122	17.92	3590.45	-19.06
700	SLU 59	179	106	15122	16.37	3590.56	-27.19
700	SLU 60	177	72	15362	16.93	3648.35	-18.74
700	SLU 61	177	105	15362	15.38	3648.46	-26.87
700	SLU 62	179	74	15522	17.69	3686.34	-19.24
700	SLU 63	179	107	15523	16.14	3686.45	-27.37
700	SLU 64	181	63	15105	18.65	3586.45	-16.57
700	SLU 65	182	118	15106	16.07	3586.64	-30.13
700	SLU 66	184	65	15353	19.66	3645.1	-16.91
700	SLU 67	185	98	15354	18.11	3645.22	-25.05
700	SLU 68	184	120	15267	16.83	3624.62	-30.63
700	SLU 69	186	67	15514	20.42	3683.09	-17.41
700	SLU 70	187	100	15515	18.87	3683.2	-25.55
700	SLU 71	185	67	15427	20.17	3662.42	-17.58
700	SLU 72	186	100	15427	18.62	3662.53	-25.71
700	SLU 73	187	124	16416	17.32	3899.01	-31.72
700	SLU 74	189	71	16663	20.9	3957.48	-18.5
700	SLU 75	190	104	16664	19.36	3957.59	-26.64
700	SLU 76	189	126	16577	18.08	3936.99	-32.22
700	SLU 77	191	73	16824	21.67	3995.46	-19.01
700	SLU 78	192	106	16825	20.12	3995.57	-27.14
700	SLU 79	190	73	16737	21.42	3974.79	-19.17
700	SLU 80	191	106	16737	19.87	3974.9	-27.3
700	SLU 81	188	72	16977	20.43	4032.69	-18.85
700	SLU 82	189	105	16977	18.88	4032.81	-26.98
700	SLU 83	190	74	17137	21.19	4070.68	-19.35
700	SLU 84	191	107	17138	19.65	4070.79	-27.48
700	SLE RA 1	137	49	11264	13.57	2674.34	-12.73
700	SLE RA 2	137	85	11265	11.85	2674.46	-21.76
700	SLE RA 3	139	50	11430	14.25	2713.44	-12.95
700	SLE RA 4	139	72	11430	13.21	2713.51	-18.37
700	SLE RA 5	139	87	11372	12.36	2699.78	-22.1
700	SLE RA 6	140	51	11537	14.75	2738.76	-13.29
700	SLE RA 7	140	73	11537	13.72	2738.84	-18.71
700	SLE RA 8	140	51	11479	14.59	2724.98	-13.39
700	SLE RA 9	140	73	11479	13.56	2725.06	-18.82
700	SLE RA 10	140	89	12138	12.69	2882.71	-22.82
700	SLE RA 11	142	54	12303	15.08	2921.69	-14.01
700	SLE RA 12	142	76	12304	14.05	2921.76	-19.43
700	SLE RA 13	142	91	12245	13.2	2908.03	-23.16
700	SLE RA 14	144	55	12410	15.59	2947.01	-14.35
700	SLE RA 15	144	77	12411	14.55	2947.09	-19.77
700	SLE RA 16	143	55	12352	15.42	2933.23	-14.45
700	SLE RA 17	143	77	12352	14.39	2933.31	-19.88
700	SLE RA 18	142	54	12512	14.76	2971.83	-14.24
700	SLE RA 19	142	77	12512	13.73	2971.91	-19.66
700	SLE RA 20	143	56	12619	15.27	2997.16	-14.57
700	SLE RA 21	143	78	12620	14.24	2997.23	-20
700	SLE FR 1	137	49	11264	13.57	2674.34	-12.73
700	SLE FR 2	137	56	11265	13.23	2674.36	-14.53
700	SLE FR 3	137	49	11307	13.78	2684.47	-12.86
700	SLE FR 4	138	58	11639	13.59	2763.61	-14.99
700	SLE FR 5	139	51	11682	14.13	2773.71	-13.31
700	SLE FR 6	139	52	11888	14.17	2823.08	-13.48
700	SLE QP 1	137	49	11264	13.57	2674.34	-12.73
700	SLE QP 2	138	50	11639	13.93	2763.58	-13.18
700	SLD 1	972	300	8323	-8.53	2021.7	-75.61
700	SLD 2	972	604	8311	-11.54	2018.96	-148.91
700	SLD 3	960	-340	8362	27.48	2030.77	81.64
700	SLD 4	961	-36	8350	24.47	2028.03	8.34
700	SLD 5	405	1042	10588	-46.89	2527.76	-257.22
700	SLD 6	406	1242	10579	-48.88	2525.96	-305.58
700	SLD 7	367	-1093	10717	73.16	2557.98	266.94
700	SLD 8	368	-892	10709	71.17	2556.17	218.59
700	SLD 9	-91	993	12569	-43.31	2971	-244.95
700	SLD 10	-91	1194	12561	-45.3	2969.19	-293.3
700	SLD 11	-129	-1142	12698	76.74	3001.21	279.22
700	SLD 12	-129	-941	12690	74.75	2999.41	230.86
700	SLD 13	-684	137	14928	3.39	3499.14	-34.7
700	SLD 14	-684	441	14915	0.38	3496.4	-108
700	SLD 15	-696	-503	14967	39.41	3508.21	122.55
700	SLD 16	-695	-199	14954	36.4	3505.47	49.25
700	SLV 1	2088	684	3879	-41.67	1027.05	-171.44
700	SLV 2	2090	1399	3849	-48.74	1020.6	-343.74
700	SLV 3	2061	-916	3972	48.7	1048.98	221.35
700	SLV 4	2063	-200	3942	41.63	1042.53	49.05
700	SLV 5	765	2533	9175	-138.49	2210.57	-624.23
700	SLV 6	766	3015	9155	-143.25	2206.23	-740.23
700	SLV 7	673	-2799	9486	162.74	2283.66	685.06
700	SLV 8	674	-2317	9466	157.98	2279.32	569.06
700	SLV 9	-398	2418	13812	-130.12	3247.85	-595.42
700	SLV 10	-396	2900	13792	-134.88	3243.51	-711.42
700	SLV 11	-489	-2914	14123	171.11	3320.94	713.87
700	SLV 12	-488	-2432	14103	166.35	3316.6	597.87

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
700	SLV 13	-1786	301	19335	-13.76	4484.64	-75.41
700	SLV 14	-1784	1016	19306	-20.84	4478.19	-247.71
700	SLV 15	-1814	-1298	19428	76.61	4506.57	317.38
700	SLV 16	-1812	-583	19399	69.53	4500.12	145.08
700	CRTFP Ux+	0	0	0	0	0.01	0
700	CRTFP Ux-	0	0	0	0	-0.01	0
700	CRTFP Uy+	0	0	0	0	0	0
700	CRTFP Uy-	0	0	0	0	0	0
757	SLU 1	-38	37	3115	85.37	-691.92	10.25
757	SLU 2	-37	55	3113	85.24	-692.54	14.74
757	SLU 3	-39	37	3183	87.24	-706.79	10.33
757	SLU 4	-38	48	3182	87.16	-707.16	13.02
757	SLU 5	-38	55	3156	86.41	-701.8	14.78
757	SLU 6	-39	37	3225	88.41	-716.06	10.37
757	SLU 7	-39	48	3224	88.33	-716.43	13.07
757	SLU 8	-39	37	3200	87.71	-710.46	10.35
757	SLU 9	-39	48	3199	87.63	-710.83	13.04
757	SLU 10	-38	60	3493	95.63	-777.33	16.03
757	SLU 11	-40	42	3563	97.63	-791.59	11.62
757	SLU 12	-39	53	3562	97.55	-791.95	14.31
757	SLU 13	-39	60	3535	96.8	-786.6	16.08
757	SLU 14	-40	43	3605	98.8	-800.85	11.67
757	SLU 15	-40	53	3604	98.72	-801.22	14.36
757	SLU 16	-40	42	3579	98.09	-795.25	11.64
757	SLU 17	-40	53	3578	98.02	-795.62	14.33
757	SLU 18	-40	44	3657	100.21	-813.05	12.1
757	SLU 19	-39	55	3656	100.13	-813.42	14.79
757	SLU 20	-40	45	3700	101.38	-822.32	12.15
757	SLU 21	-40	55	3699	101.3	-822.69	14.84
757	SLU 22	-41	40	3585	98.27	-796.06	11.08
757	SLU 23	-41	58	3583	98.15	-796.67	15.56
757	SLU 24	-42	40	3653	100.15	-810.93	11.15
757	SLU 25	-42	51	3652	100.07	-811.3	13.84
757	SLU 26	-41	58	3625	99.32	-805.94	15.61
757	SLU 27	-42	40	3695	101.32	-820.2	11.2
757	SLU 28	-42	51	3694	101.24	-820.57	13.89
757	SLU 29	-42	40	3669	100.61	-814.6	11.17
757	SLU 30	-42	51	3668	100.54	-814.97	13.86
757	SLU 31	-42	63	3963	108.53	-881.47	16.86
757	SLU 32	-43	45	4032	110.54	-895.72	12.45
757	SLU 33	-43	56	4031	110.46	-896.09	15.14
757	SLU 34	-42	63	4005	109.7	-890.73	16.9
757	SLU 35	-44	46	4075	111.71	-904.99	12.49
757	SLU 36	-43	56	4074	111.63	-905.36	15.19
757	SLU 37	-43	45	4049	111	-899.39	12.47
757	SLU 38	-43	56	4048	110.92	-899.76	15.16
757	SLU 39	-43	47	4127	113.11	-917.19	12.93
757	SLU 40	-42	58	4126	113.04	-917.56	15.62
757	SLU 41	-43	47	4170	114.28	-926.46	12.98
757	SLU 42	-43	58	4169	114.21	-926.83	15.67
757	SLU 43	-48	47	3888	106.55	-863.8	13.05
757	SLU 44	-48	65	3887	106.42	-864.41	17.53
757	SLU 45	-49	47	3956	108.43	-878.67	13.12
757	SLU 46	-49	58	3955	108.35	-879.03	15.81
757	SLU 47	-48	65	3929	107.59	-873.68	17.58
757	SLU 48	-50	48	3999	109.6	-887.93	13.17
757	SLU 49	-49	58	3998	109.52	-888.3	15.86
757	SLU 50	-49	48	3973	108.89	-882.33	13.14
757	SLU 51	-49	58	3972	108.81	-882.7	15.83
757	SLU 52	-49	70	4266	116.81	-949.2	18.83
757	SLU 53	-50	53	4336	118.81	-963.46	14.42
757	SLU 54	-50	63	4335	118.74	-963.83	17.11
757	SLU 55	-49	71	4309	117.98	-958.47	18.87
757	SLU 56	-51	53	4378	119.98	-972.73	14.46
757	SLU 57	-50	64	4377	119.91	-973.09	17.15
757	SLU 58	-50	53	4353	119.28	-967.12	14.44
757	SLU 59	-50	63	4352	119.2	-967.49	17.13
757	SLU 60	-50	54	4431	121.39	-984.93	14.9
757	SLU 61	-49	65	4430	121.31	-985.29	17.59
757	SLU 62	-50	55	4473	122.56	-994.2	14.94
757	SLU 63	-50	65	4472	122.48	-994.56	17.63
757	SLU 64	-51	50	4358	119.46	-967.93	13.87
757	SLU 65	-51	68	4356	119.33	-968.55	18.35
757	SLU 66	-52	50	4426	121.33	-982.8	13.95
757	SLU 67	-52	61	4425	121.26	-983.17	16.64
757	SLU 68	-51	68	4399	120.5	-977.81	18.4
757	SLU 69	-53	51	4468	122.5	-992.07	13.99
757	SLU 70	-52	61	4467	122.43	-992.44	16.68
757	SLU 71	-52	50	4443	121.8	-986.47	13.97
757	SLU 72	-52	61	4442	121.72	-986.84	16.66
757	SLU 73	-52	73	4736	129.72	-1053.34	19.65
757	SLU 74	-53	56	4806	131.72	-1067.6	15.24
757	SLU 75	-53	66	4805	131.64	-1067.96	17.93
757	SLU 76	-52	73	4779	130.89	-1062.61	19.7
757	SLU 77	-54	56	4848	132.89	-1076.86	15.29
757	SLU 78	-53	66	4847	132.81	-1077.23	17.98
757	SLU 79	-54	56	4823	132.19	-1071.26	15.26
757	SLU 80	-53	66	4822	132.11	-1071.63	17.95
757	SLU 81	-53	57	4901	134.3	-1089.07	15.72

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
757	SLU 82	-53	68	4900	134.22	-1089.43	18.41
757	SLU 83	-53	58	4943	135.47	-1098.33	15.77
757	SLU 84	-53	68	4942	135.39	-1098.7	18.46
757	SLE RA 1	-39	38	3249	89.05	-721.68	10.49
757	SLE RA 2	-38	50	3248	88.97	-722.09	13.48
757	SLE RA 3	-39	38	3294	90.3	-731.59	10.54
757	SLE RA 4	-39	45	3294	90.25	-731.84	12.33
757	SLE RA 5	-39	50	3276	89.75	-728.26	13.51
757	SLE RA 6	-40	38	3323	91.08	-737.77	10.57
757	SLE RA 7	-39	45	3322	91.03	-738.01	12.36
757	SLE RA 8	-40	38	3306	90.61	-734.03	10.55
757	SLE RA 9	-39	45	3305	90.56	-734.28	12.35
757	SLE RA 10	-39	53	3501	95.89	-778.61	14.34
757	SLE RA 11	-40	41	3548	97.23	-788.12	11.4
757	SLE RA 12	-40	49	3547	97.18	-788.36	13.2
757	SLE RA 13	-40	53	3529	96.67	-784.79	14.37
757	SLE RA 14	-40	42	3576	98.01	-794.3	11.43
757	SLE RA 15	-40	49	3575	97.96	-794.54	13.23
757	SLE RA 16	-40	42	3559	97.54	-790.56	11.42
757	SLE RA 17	-40	49	3558	97.49	-790.81	13.21
757	SLE RA 18	-40	43	3611	98.95	-802.43	11.72
757	SLE RA 19	-40	50	3610	98.9	-802.68	13.52
757	SLE RA 20	-40	43	3639	99.73	-808.61	11.75
757	SLE RA 21	-40	50	3638	99.68	-808.86	13.55
757	SLE FR 1	-39	38	3249	89.05	-721.68	10.49
757	SLE FR 2	-39	40	3249	89.04	-721.76	11.09
757	SLE FR 3	-39	38	3260	89.37	-724.15	10.5
757	SLE FR 4	-39	42	3357	92.01	-745.98	11.46
757	SLE FR 5	-39	39	3369	92.33	-748.37	10.87
757	SLE FR 6	-39	40	3430	94	-762.05	11.11
757	SLE QP 1	-39	38	3249	89.05	-721.68	10.49
757	SLE QP 2	-39	39	3358	92.02	-745.9	10.86
757	SLD 1	209	214	4331	118.11	-958.25	38.78
757	SLD 2	204	119	4329	118.15	-956.46	15.36
757	SLD 3	202	5	4365	120.17	-952.16	-13.12
757	SLD 4	198	-89	4363	120.2	-950.36	-36.54
757	SLD 5	46	425	3598	96.72	-819.18	102.16
757	SLD 6	43	363	3597	96.74	-818	86.71
757	SLD 7	24	-270	3712	103.58	-798.85	-70.83
757	SLD 8	21	-333	3711	103.6	-797.67	-86.28
757	SLD 9	-100	412	3004	80.44	-694.14	108
757	SLD 10	-103	349	3003	80.46	-692.95	92.55
757	SLD 11	-121	-284	3119	87.3	-673.81	-64.99
757	SLD 12	-124	-347	3117	87.32	-672.63	-80.44
757	SLD 13	-276	168	2352	63.84	-541.44	58.26
757	SLD 14	-281	73	2350	63.87	-539.65	34.83
757	SLD 15	-282	-41	2386	65.9	-535.34	6.36
757	SLD 16	-287	-135	2384	65.93	-533.55	-17.06
757	SLV 1	541	464	5633	152.91	-1243.29	80.03
757	SLV 2	530	241	5628	152.99	-1239.08	24.97
757	SLV 3	525	-55	5718	158.06	-1228.18	-48.85
757	SLV 4	514	-277	5713	158.14	-1223.97	-103.91
757	SLV 5	161	994	3912	102.47	-918.83	237.35
757	SLV 6	154	845	3908	102.52	-915.99	200.28
757	SLV 7	108	-733	4196	119.63	-868.45	-192.24
757	SLV 8	101	-883	4193	119.68	-865.61	-229.31
757	SLV 9	-179	962	2522	64.36	-626.19	251.03
757	SLV 10	-186	812	2519	64.41	-623.36	213.96
757	SLV 11	-232	-766	2807	81.53	-575.81	-178.57
757	SLV 12	-240	-916	2804	81.58	-572.98	-215.63
757	SLV 13	-593	356	1002	25.91	-267.84	125.62
757	SLV 14	-604	133	997	25.98	-263.63	70.57
757	SLV 15	-609	-163	1087	31.05	-252.72	-3.25
757	SLV 16	-620	-385	1082	31.13	-248.51	-58.31
757	CRTFP Ux+	0	0	0	0	0	0
757	CRTFP Ux-	0	0	0	0	0	0
757	CRTFP Uy+	0	0	0	0	0	0
757	CRTFP Uy-	0	0	0	0	0	0
760	SLU 1	50	19	3982	108.26	1224.99	-8.12
760	SLU 2	50	40	3977	107.99	1225.54	-15.38
760	SLU 3	52	20	4074	110.8	1252.76	-8.33
760	SLU 4	51	32	4071	110.65	1253.09	-12.69
760	SLU 5	51	41	4037	109.65	1243.54	-15.67
760	SLU 6	52	21	4134	112.47	1270.76	-8.62
760	SLU 7	52	33	4132	112.31	1271.09	-12.98
760	SLU 8	52	21	4102	111.58	1260.98	-8.7
760	SLU 9	52	33	4099	111.42	1261.31	-13.05
760	SLU 10	52	42	4459	121.07	1374.14	-16.28
760	SLU 11	54	22	4557	123.88	1401.36	-9.23
760	SLU 12	53	35	4554	123.72	1401.7	-13.59
760	SLU 13	53	43	4519	122.73	1392.14	-16.57
760	SLU 14	54	23	4617	125.54	1419.36	-9.52
760	SLU 15	54	35	4614	125.38	1419.7	-13.88
760	SLU 16	54	23	4584	124.65	1409.58	-9.6
760	SLU 17	54	36	4581	124.49	1409.92	-13.95
760	SLU 18	53	23	4671	126.93	1437.27	-9.41
760	SLU 19	53	35	4668	126.77	1437.6	-13.76
760	SLU 20	54	24	4731	128.59	1455.27	-9.7
760	SLU 21	54	36	4728	128.43	1455.6	-14.05

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
760	SLU 22	55	19	4580	124.56	1407.74	-8.29
760	SLU 23	55	40	4575	124.3	1408.29	-15.54
760	SLU 24	56	20	4672	127.11	1435.52	-8.5
760	SLU 25	56	32	4669	126.95	1435.85	-12.85
760	SLU 26	56	41	4635	125.96	1426.29	-15.83
760	SLU 27	57	21	4733	128.77	1453.52	-8.79
760	SLU 28	57	33	4730	128.61	1453.85	-13.14
760	SLU 29	57	21	4700	127.88	1443.74	-8.87
760	SLU 30	56	33	4697	127.72	1444.07	-13.22
760	SLU 31	57	43	5057	137.37	1556.89	-16.44
760	SLU 32	58	22	5155	140.18	1584.12	-9.4
760	SLU 33	58	35	5152	140.02	1584.45	-13.75
760	SLU 34	58	43	5117	139.03	1574.89	-16.73
760	SLU 35	59	23	5215	141.84	1602.12	-9.69
760	SLU 36	59	36	5212	141.68	1602.45	-14.04
760	SLU 37	58	23	5183	140.95	1592.34	-9.77
760	SLU 38	58	36	5180	140.8	1592.67	-14.12
760	SLU 39	58	23	5269	143.23	1620.03	-9.57
760	SLU 40	58	35	5266	143.08	1620.36	-13.93
760	SLU 41	59	24	5329	144.9	1638.03	-9.86
760	SLU 42	58	36	5326	144.74	1638.36	-14.22
760	SLU 43	64	25	4971	135.14	1529.82	-10.5
760	SLU 44	64	46	4966	134.88	1530.37	-17.76
760	SLU 45	65	26	5064	137.69	1557.6	-10.71
760	SLU 46	65	38	5061	137.53	1557.93	-15.07
760	SLU 47	64	47	5026	136.54	1548.37	-18.05
760	SLU 48	66	26	5124	139.35	1575.6	-11
760	SLU 49	66	39	5121	139.2	1575.93	-15.36
760	SLU 50	65	27	5091	138.47	1565.82	-11.08
760	SLU 51	65	39	5088	138.31	1566.15	-15.43
760	SLU 52	66	48	5448	147.95	1678.98	-18.66
760	SLU 53	67	28	5546	150.76	1706.2	-11.61
760	SLU 54	67	40	5543	150.61	1706.53	-15.97
760	SLU 55	66	49	5509	149.61	1696.97	-18.95
760	SLU 56	68	29	5606	152.43	1724.2	-11.9
760	SLU 57	68	41	5603	152.27	1724.53	-16.26
760	SLU 58	67	29	5574	151.54	1714.42	-11.98
760	SLU 59	67	41	5571	151.38	1714.75	-16.33
760	SLU 60	67	28	5660	153.82	1742.11	-11.79
760	SLU 61	67	41	5657	153.66	1742.44	-16.14
760	SLU 62	68	29	5720	155.48	1760.11	-12.08
760	SLU 63	67	42	5717	155.32	1760.44	-16.43
760	SLU 64	69	25	5569	151.45	1712.58	-10.67
760	SLU 65	68	46	5564	151.18	1713.13	-17.92
760	SLU 66	70	26	5662	153.99	1740.35	-10.88
760	SLU 67	70	38	5659	153.84	1740.69	-15.23
760	SLU 68	69	47	5624	152.84	1731.13	-18.21
760	SLU 69	70	26	5722	155.66	1758.35	-11.17
760	SLU 70	70	39	5719	155.5	1758.69	-15.52
760	SLU 71	70	27	5690	154.77	1748.57	-11.25
760	SLU 72	70	39	5687	154.61	1748.91	-15.6
760	SLU 73	70	48	6047	164.26	1861.73	-18.82
760	SLU 74	72	28	6144	167.07	1888.96	-11.78
760	SLU 75	72	41	6141	166.91	1889.29	-16.13
760	SLU 76	71	49	6107	165.92	1879.73	-19.11
760	SLU 77	72	29	6204	168.73	1906.95	-12.07
760	SLU 78	72	41	6201	168.57	1907.29	-16.42
760	SLU 79	72	29	6172	167.84	1897.18	-12.15
760	SLU 80	72	42	6169	167.68	1897.51	-16.5
760	SLU 81	71	29	6258	170.12	1924.86	-11.95
760	SLU 82	71	41	6255	169.96	1925.2	-16.31
760	SLU 83	72	29	6318	171.78	1942.86	-12.24
760	SLU 84	72	42	6315	171.62	1943.19	-16.6
760	SLE RA 1	52	19	4152	112.91	1277.2	-8.17
760	SLE RA 2	52	33	4149	112.74	1277.57	-13.01
760	SLE RA 3	52	20	4214	114.61	1295.72	-8.31
760	SLE RA 4	52	28	4212	114.51	1295.94	-11.21
760	SLE RA 5	52	34	4189	113.85	1289.57	-13.2
760	SLE RA 6	53	20	4254	115.72	1307.72	-8.5
760	SLE RA 7	53	28	4252	115.62	1307.94	-11.41
760	SLE RA 8	53	20	4233	115.13	1301.2	-8.56
760	SLE RA 9	53	29	4231	115.02	1301.42	-11.46
760	SLE RA 10	53	35	4471	121.45	1376.64	-13.61
760	SLE RA 11	54	21	4536	123.33	1394.79	-8.91
760	SLE RA 12	54	30	4534	123.22	1395.01	-11.81
760	SLE RA 13	53	35	4511	122.56	1388.64	-13.8
760	SLE RA 14	54	22	4576	124.44	1406.79	-9.1
760	SLE RA 15	54	30	4574	124.33	1407.01	-12.01
760	SLE RA 16	54	22	4554	123.84	1400.27	-9.16
760	SLE RA 17	54	30	4552	123.74	1400.49	-12.06
760	SLE RA 18	54	22	4612	125.36	1418.73	-9.03
760	SLE RA 19	54	30	4610	125.26	1418.95	-11.93
760	SLE RA 20	54	22	4652	126.47	1430.73	-9.22
760	SLE RA 21	54	30	4650	126.37	1430.95	-12.12
760	SLE FR 1	52	19	4152	112.91	1277.2	-8.17
760	SLE FR 2	52	22	4152	112.88	1277.27	-9.14
760	SLE FR 3	52	20	4169	113.36	1282	-8.25
760	SLE FR 4	52	23	4290	116.61	1319.73	-9.39
760	SLE FR 5	52	20	4306	117.09	1324.46	-8.5

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
760	SLE FR 6	53	20	4382	119.14	1347.96	-8.6
760	SLE QP 1	52	19	4152	112.91	1277.2	-8.17
760	SLE QP 2	52	20	4290	116.65	1319.66	-8.43
760	SLD 1	364	114	3055	82.22	975.8	-47.91
760	SLD 2	358	228	3044	81.77	975.57	-87.37
760	SLD 3	368	-127	3134	86.16	970.88	36.37
760	SLD 4	362	-14	3124	85.71	970.65	-3.08
760	SLD 5	141	394	3801	100.43	1224.01	-141.01
760	SLD 6	137	469	3794	100.13	1223.85	-167.03
760	SLD 7	154	-411	4066	113.56	1207.6	139.94
760	SLD 8	150	-336	4059	113.26	1207.45	113.91
760	SLD 9	-45	376	4521	120.04	1431.87	-130.76
760	SLD 10	-49	451	4514	119.74	1431.71	-156.79
760	SLD 11	-33	-429	4787	133.16	1415.46	150.18
760	SLD 12	-37	-354	4780	132.87	1415.31	124.15
760	SLD 13	-257	54	5457	147.59	1668.67	-13.77
760	SLD 14	-263	167	5446	147.14	1668.44	-53.22
760	SLD 15	-253	-188	5537	151.52	1663.75	70.51
760	SLD 16	-260	-74	5526	151.07	1663.51	31.06
760	SLV 1	782	258	1392	35.75	515.06	-107.29
760	SLV 2	767	526	1367	34.69	514.51	-200.04
760	SLV 3	791	-344	1592	45.64	503.31	103.23
760	SLV 4	776	-77	1567	44.58	502.75	10.49
760	SLV 5	260	956	3122	77.58	1096.21	-340.08
760	SLV 6	250	1136	3105	76.87	1095.83	-402.52
760	SLV 7	290	-1053	3789	110.54	1057.03	361.68
760	SLV 8	281	-873	3772	109.83	1056.66	299.24
760	SLV 9	-176	913	4808	123.47	1582.66	-316.09
760	SLV 10	-186	1093	4791	122.76	1582.28	-378.53
760	SLV 11	-146	-1096	5476	156.43	1543.48	385.66
760	SLV 12	-156	-916	5459	155.72	1543.11	323.22
760	SLV 13	-672	117	7014	188.72	2136.56	-27.34
760	SLV 14	-686	384	6988	187.66	2136.01	-120.09
760	SLV 15	-663	-486	7214	198.61	2124.81	183.18
760	SLV 16	-677	-218	7189	197.55	2124.26	90.44
760	CRTFP Ux+	0	0	0	0	0	0
760	CRTFP Ux-	0	0	0	0	0	0
760	CRTFP Uy+	0	0	0	0	0	0
760	CRTFP Uy-	0	0	0	0	0	0
761	SLU 1	-41	44	3566	-4.06	-728.79	10.88
761	SLU 2	-40	65	3560	-4.21	-729.53	16.19
761	SLU 3	-42	44	3644	-4.13	-744.37	10.94
761	SLU 4	-41	57	3641	-4.21	-744.82	14.12
761	SLU 5	-40	65	3609	-4.25	-739.25	16.23
761	SLU 6	-42	44	3693	-4.17	-754.08	10.98
761	SLU 7	-42	57	3689	-4.25	-754.53	14.17
761	SLU 8	-42	44	3664	-4.14	-748.21	10.96
761	SLU 9	-41	57	3660	-4.23	-748.66	14.14
761	SLU 10	-41	71	3993	-4.75	-818.38	17.69
761	SLU 11	-43	50	4078	-4.67	-833.21	12.44
761	SLU 12	-42	63	4074	-4.76	-833.66	15.63
761	SLU 13	-42	71	4042	-4.79	-828.09	17.73
761	SLU 14	-44	50	4127	-4.71	-842.93	12.48
761	SLU 15	-43	63	4123	-4.8	-843.37	15.67
761	SLU 16	-43	50	4097	-4.69	-837.06	12.46
761	SLU 17	-43	63	4093	-4.77	-837.5	15.65
761	SLU 18	-43	52	4185	-4.84	-855.7	13.02
761	SLU 19	-42	65	4181	-4.93	-856.15	16.21
761	SLU 20	-43	53	4234	-4.88	-865.42	13.06
761	SLU 21	-42	65	4230	-4.97	-865.86	16.25
761	SLU 22	-45	47	4105	-4.64	-837.94	11.75
761	SLU 23	-43	69	4099	-4.78	-838.69	17.06
761	SLU 24	-45	48	4183	-4.71	-853.52	11.81
761	SLU 25	-45	60	4180	-4.79	-853.97	14.99
761	SLU 26	-44	69	4148	-4.82	-848.4	17.1
761	SLU 27	-46	48	4232	-4.75	-863.24	11.85
761	SLU 28	-45	61	4229	-4.83	-863.69	15.03
761	SLU 29	-46	48	4203	-4.72	-857.37	11.83
761	SLU 30	-45	60	4199	-4.81	-857.82	15.01
761	SLU 31	-45	75	4532	-5.33	-927.53	18.56
761	SLU 32	-47	54	4617	-5.25	-942.36	13.31
761	SLU 33	-46	66	4613	-5.34	-942.81	16.49
761	SLU 34	-45	75	4581	-5.37	-937.24	18.6
761	SLU 35	-47	54	4666	-5.29	-952.08	13.35
761	SLU 36	-46	67	4662	-5.38	-952.53	16.53
761	SLU 37	-47	54	4636	-5.27	-946.21	13.33
761	SLU 38	-46	67	4633	-5.35	-946.66	16.51
761	SLU 39	-46	56	4724	-5.42	-964.85	13.89
761	SLU 40	-45	69	4720	-5.51	-965.3	17.08
761	SLU 41	-47	56	4773	-5.46	-974.57	13.93
761	SLU 42	-46	69	4769	-5.55	-975.02	17.12
761	SLU 43	-52	56	4451	-5.08	-910	13.84
761	SLU 44	-51	77	4445	-5.23	-910.75	19.15
761	SLU 45	-53	56	4529	-5.15	-925.58	13.9
761	SLU 46	-52	69	4525	-5.24	-926.03	17.09
761	SLU 47	-52	77	4494	-5.27	-920.46	19.19
761	SLU 48	-54	56	4578	-5.19	-935.3	13.94
761	SLU 49	-53	69	4574	-5.27	-935.75	17.13
761	SLU 50	-53	56	4549	-5.16	-929.43	13.92

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
761	SLU 51	-53	69	4545	-5.25	-929.88	17.11
761	SLU 52	-52	83	4878	-5.77	-999.59	20.66
761	SLU 53	-54	62	4963	-5.7	-1014.42	15.4
761	SLU 54	-53	75	4959	-5.78	-1014.87	18.59
761	SLU 55	-53	83	4927	-5.81	-1009.3	20.7
761	SLU 56	-55	62	5012	-5.73	-1024.14	15.44
761	SLU 57	-54	75	5008	-5.82	-1024.59	18.63
761	SLU 58	-54	62	4982	-5.71	-1018.27	15.42
761	SLU 59	-54	75	4978	-5.8	-1018.72	18.61
761	SLU 60	-54	64	5070	-5.86	-1036.91	15.99
761	SLU 61	-53	77	5066	-5.95	-1037.36	19.17
761	SLU 62	-54	65	5119	-5.9	-1046.63	16.03
761	SLU 63	-54	77	5115	-5.99	-1047.08	19.21
761	SLU 64	-56	59	4990	-5.66	-1019.15	14.71
761	SLU 65	-55	81	4984	-5.81	-1019.9	20.02
761	SLU 66	-57	60	5068	-5.73	-1034.74	14.77
761	SLU 67	-56	72	5065	-5.81	-1035.18	17.96
761	SLU 68	-55	81	5033	-5.84	-1029.61	20.06
761	SLU 69	-57	60	5117	-5.77	-1044.45	14.81
761	SLU 70	-56	73	5113	-5.85	-1044.9	18
761	SLU 71	-57	60	5088	-5.74	-1038.58	14.79
761	SLU 72	-56	72	5084	-5.83	-1039.03	17.98
761	SLU 73	-56	87	5417	-6.35	-1108.74	21.52
761	SLU 74	-58	66	5502	-6.27	-1123.58	16.27
761	SLU 75	-57	78	5498	-6.36	-1124.02	19.46
761	SLU 76	-56	87	5466	-6.39	-1118.45	21.56
761	SLU 77	-58	66	5551	-6.31	-1133.29	16.31
761	SLU 78	-57	79	5547	-6.4	-1133.74	19.5
761	SLU 79	-58	66	5521	-6.29	-1127.42	16.29
761	SLU 80	-57	78	5517	-6.37	-1127.87	19.48
761	SLU 81	-57	68	5609	-6.44	-1146.07	16.86
761	SLU 82	-57	81	5605	-6.53	-1146.52	20.04
761	SLU 83	-58	68	5658	-6.48	-1155.78	16.9
761	SLU 84	-57	81	5654	-6.57	-1156.23	20.08
761	SLE RA 1	-42	45	3720	-4.23	-759.97	11.13
761	SLE RA 2	-41	59	3716	-4.32	-760.47	14.67
761	SLE RA 3	-43	45	3772	-4.27	-770.36	11.17
761	SLE RA 4	-42	54	3770	-4.33	-770.66	13.29
761	SLE RA 5	-42	59	3748	-4.35	-766.95	14.69
761	SLE RA 6	-43	45	3805	-4.3	-776.84	11.19
761	SLE RA 7	-43	54	3802	-4.36	-777.14	13.32
761	SLE RA 8	-43	45	3785	-4.28	-772.93	11.18
761	SLE RA 9	-42	54	3783	-4.34	-773.22	13.3
761	SLE RA 10	-42	63	4005	-4.69	-819.7	15.67
761	SLE RA 11	-43	49	4061	-4.64	-829.59	12.17
761	SLE RA 12	-43	58	4059	-4.69	-829.89	14.29
761	SLE RA 13	-42	63	4037	-4.71	-826.17	15.69
761	SLE RA 14	-44	49	4094	-4.66	-836.07	12.19
761	SLE RA 15	-43	58	4091	-4.72	-836.36	14.32
761	SLE RA 16	-43	49	4074	-4.64	-832.15	12.18
761	SLE RA 17	-43	58	4072	-4.7	-832.45	14.3
761	SLE RA 18	-43	51	4133	-4.75	-844.58	12.55
761	SLE RA 19	-43	59	4130	-4.81	-844.88	14.68
761	SLE RA 20	-43	51	4165	-4.77	-851.06	12.58
761	SLE RA 21	-43	59	4163	-4.83	-851.36	14.71
761	SLE FR 1	-42	45	3720	-4.23	-759.97	11.13
761	SLE FR 2	-42	48	3719	-4.25	-760.07	11.83
761	SLE FR 3	-42	45	3733	-4.24	-762.56	11.14
761	SLE FR 4	-42	49	3843	-4.4	-785.46	12.26
761	SLE FR 5	-43	47	3857	-4.39	-787.95	11.57
761	SLE FR 6	-43	48	3926	-4.49	-802.28	11.84
761	SLE QP 1	-42	45	3720	-4.23	-759.97	11.13
761	SLE QP 2	-42	47	3844	-4.38	-785.36	11.55
761	SLD 1	250	253	4926	-6.78	-1010.05	62.85
761	SLD 2	240	141	4929	-6.6	-1007.84	35.06
761	SLD 3	238	6	5024	-4.82	-1002.57	1.34
761	SLD 4	228	-106	5026	-4.65	-1000.35	-26.45
761	SLD 5	66	502	4020	-8.09	-864.52	125.23
761	SLD 6	59	429	4022	-7.98	-863.06	106.9
761	SLD 7	25	-319	4345	-1.59	-839.56	-79.81
761	SLD 8	18	-393	4347	-1.47	-838.1	-98.14
761	SLD 9	-103	486	3341	-7.3	-732.61	121.25
761	SLD 10	-110	413	3343	-7.18	-731.15	102.91
761	SLD 11	-144	-335	3665	-0.79	-707.66	-83.79
761	SLD 12	-151	-409	3667	-0.67	-706.19	-102.12
761	SLD 13	-312	199	2661	-4.12	-570.36	49.56
761	SLD 14	-323	87	2664	-3.95	-568.14	21.77
761	SLD 15	-325	-48	2759	-2.16	-562.88	-11.95
761	SLD 16	-335	-159	2761	-1.99	-560.66	-39.74
761	SLV 1	643	547	6369	-10.14	-1311.75	136.2
761	SLV 2	619	285	6375	-9.74	-1306.53	70.88
761	SLV 3	613	-65	6613	-5.25	-1293.18	-16.55
761	SLV 4	589	-328	6619	-4.85	-1287.97	-81.88
761	SLV 5	214	1174	4231	-13.6	-972.4	292.82
761	SLV 6	197	998	4235	-13.33	-968.89	248.84
761	SLV 7	113	-866	5043	2.69	-910.53	-216.36
761	SLV 8	96	-1043	5047	2.97	-907.02	-260.34
761	SLV 9	-181	1136	2641	-11.74	-663.7	283.45
761	SLV 10	-198	960	2644	-11.46	-660.19	239.47

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
761	SLV 11	-282	-904	3453	4.56	-601.82	-225.73
761	SLV 12	-299	-1081	3457	4.83	-598.31	-269.71
761	SLV 13	-673	421	1069	-3.92	-282.74	104.98
761	SLV 14	-698	158	1074	-3.52	-277.53	39.66
761	SLV 15	-704	-191	1312	0.97	-264.18	-47.77
761	SLV 16	-728	-454	1318	1.37	-258.97	-113.09
761	CRTFP Ux+	0	0	0	0	0	0
761	CRTFP Ux-	0	0	0	0	0	0
761	CRTFP Uy+	0	0	0	0	0	0
761	CRTFP Uy-	0	0	0	0	0	0
764	SLU 1	57	22	4452	-6.92	1260.99	-7.78
764	SLU 2	56	47	4441	-7.13	1261.94	-16.2
764	SLU 3	58	23	4557	-7.04	1289.27	-7.98
764	SLU 4	58	37	4550	-7.17	1289.84	-13.04
764	SLU 5	57	47	4509	-7.2	1280.27	-16.51
764	SLU 6	59	24	4625	-7.11	1307.6	-8.29
764	SLU 7	58	38	4619	-7.24	1308.17	-13.35
764	SLU 8	58	24	4589	-7.06	1297.65	-8.4
764	SLU 9	58	39	4582	-7.19	1298.22	-13.45
764	SLU 10	58	49	4978	-8.07	1413.54	-17.18
764	SLU 11	60	26	5094	-7.97	1440.88	-8.96
764	SLU 12	60	40	5087	-8.1	1441.44	-14.01
764	SLU 13	59	50	5046	-8.14	1431.87	-17.49
764	SLU 14	61	27	5163	-8.04	1459.21	-9.27
764	SLU 15	61	41	5156	-8.17	1459.77	-14.32
764	SLU 16	61	27	5126	-7.99	1449.26	-9.38
764	SLU 17	60	41	5119	-8.12	1449.82	-14.43
764	SLU 18	60	26	5219	-8.26	1477.57	-9.18
764	SLU 19	60	41	5213	-8.38	1478.14	-14.23
764	SLU 20	61	27	5288	-8.32	1495.9	-9.49
764	SLU 21	60	42	5281	-8.45	1496.47	-14.54
764	SLU 22	62	23	5122	-7.93	1447.41	-7.81
764	SLU 23	61	47	5111	-8.14	1448.35	-16.23
764	SLU 24	63	23	5227	-8.05	1475.69	-8.01
764	SLU 25	63	38	5220	-8.18	1476.25	-13.06
764	SLU 26	62	47	5179	-8.21	1466.68	-16.54
764	SLU 27	64	24	5296	-8.12	1494.02	-8.32
764	SLU 28	64	38	5289	-8.25	1494.59	-13.38
764	SLU 29	64	24	5259	-8.07	1484.07	-8.43
764	SLU 30	63	39	5252	-8.2	1484.64	-13.48
764	SLU 31	64	49	5648	-9.08	1599.96	-17.21
764	SLU 32	66	26	5764	-8.98	1627.29	-8.99
764	SLU 33	65	40	5757	-9.11	1627.86	-14.04
764	SLU 34	64	50	5716	-9.15	1618.29	-17.52
764	SLU 35	66	27	5833	-9.05	1645.62	-9.3
764	SLU 36	66	41	5826	-9.18	1646.19	-14.35
764	SLU 37	66	27	5796	-9	1635.67	-9.41
764	SLU 38	66	42	5789	-9.13	1636.24	-14.46
764	SLU 39	65	26	5890	-9.27	1663.99	-9.2
764	SLU 40	65	41	5883	-9.39	1664.55	-14.26
764	SLU 41	66	27	5958	-9.33	1682.32	-9.51
764	SLU 42	66	42	5951	-9.46	1682.88	-14.57
764	SLU 43	72	29	5558	-8.65	1575.38	-10.1
764	SLU 44	71	53	5547	-8.86	1576.32	-18.52
764	SLU 45	73	30	5663	-8.77	1603.66	-10.31
764	SLU 46	73	44	5656	-8.9	1604.22	-15.36
764	SLU 47	72	54	5615	-8.93	1594.65	-18.84
764	SLU 48	74	31	5731	-8.84	1621.99	-10.62
764	SLU 49	73	45	5725	-8.97	1622.55	-15.67
764	SLU 50	73	31	5695	-8.79	1612.04	-10.73
764	SLU 51	73	45	5688	-8.92	1612.6	-15.78
764	SLU 52	73	56	6084	-9.8	1727.92	-19.5
764	SLU 53	75	32	6200	-9.7	1755.26	-11.28
764	SLU 54	75	47	6193	-9.83	1755.83	-16.34
764	SLU 55	74	57	6152	-9.87	1746.25	-19.81
764	SLU 56	76	33	6268	-9.77	1773.59	-11.6
764	SLU 57	76	48	6262	-9.9	1774.16	-16.65
764	SLU 58	76	34	6232	-9.72	1763.64	-11.7
764	SLU 59	75	48	6225	-9.85	1764.21	-16.76
764	SLU 60	75	33	6325	-9.98	1791.95	-11.5
764	SLU 61	75	48	6319	-10.11	1792.52	-16.55
764	SLU 62	76	34	6394	-10.05	1810.28	-11.81
764	SLU 63	76	48	6387	-10.18	1810.85	-16.86
764	SLU 64	77	29	6228	-9.66	1761.79	-10.13
764	SLU 65	76	53	6217	-9.87	1762.74	-18.55
764	SLU 66	78	30	6333	-9.78	1790.07	-10.34
764	SLU 67	78	44	6326	-9.91	1790.64	-15.39
764	SLU 68	77	54	6285	-9.94	1781.07	-18.86
764	SLU 69	79	31	6401	-9.85	1808.4	-10.65
764	SLU 70	79	45	6395	-9.98	1808.97	-15.7
764	SLU 71	79	31	6365	-9.8	1798.45	-10.75
764	SLU 72	78	45	6358	-9.93	1799.02	-15.81
764	SLU 73	79	56	6754	-10.81	1914.34	-19.53
764	SLU 74	81	33	6870	-10.71	1941.68	-11.31
764	SLU 75	80	47	6863	-10.84	1942.24	-16.36
764	SLU 76	80	57	6822	-10.88	1932.67	-19.84
764	SLU 77	82	33	6939	-10.78	1960.01	-11.62
764	SLU 78	81	48	6932	-10.91	1960.57	-16.68
764	SLU 79	81	34	6902	-10.73	1950.06	-11.73

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
764	SLU 80	81	48	6895	-10.86	1950.62	-16.78
764	SLU 81	80	33	6995	-10.99	1978.37	-11.53
764	SLU 82	80	48	6989	-11.12	1978.94	-16.58
764	SLU 83	81	34	7064	-11.06	1996.7	-11.84
764	SLU 84	81	49	7057	-11.19	1997.27	-16.89
764	SLE RA 1	58	22	4644	-7.21	1314.25	-7.79
764	SLE RA 2	58	39	4636	-7.35	1314.88	-13.4
764	SLE RA 3	59	23	4714	-7.29	1333.11	-7.92
764	SLE RA 4	59	32	4709	-7.37	1333.48	-11.29
764	SLE RA 5	58	39	4682	-7.4	1327.1	-13.61
764	SLE RA 6	60	23	4759	-7.33	1345.33	-8.13
764	SLE RA 7	59	33	4755	-7.42	1345.71	-11.5
764	SLE RA 8	59	24	4735	-7.3	1338.7	-8.2
764	SLE RA 9	59	33	4730	-7.39	1339.07	-11.57
764	SLE RA 10	59	40	4994	-7.97	1415.95	-14.05
764	SLE RA 11	61	25	5072	-7.91	1434.18	-8.57
764	SLE RA 12	60	34	5067	-8	1434.55	-11.94
764	SLE RA 13	60	41	5040	-8.02	1428.17	-14.26
764	SLE RA 14	61	25	5117	-7.96	1446.4	-8.78
764	SLE RA 15	61	35	5113	-8.04	1446.77	-12.15
764	SLE RA 16	61	25	5093	-7.92	1439.76	-8.85
764	SLE RA 17	61	35	5088	-8.01	1440.14	-12.22
764	SLE RA 18	60	25	5155	-8.1	1458.64	-8.72
764	SLE RA 19	60	35	5151	-8.18	1459.02	-12.09
764	SLE RA 20	61	26	5201	-8.14	1470.86	-8.93
764	SLE RA 21	61	35	5196	-8.23	1471.24	-12.29
764	SLE FR 1	58	22	4644	-7.21	1314.25	-7.79
764	SLE FR 2	58	26	4642	-7.24	1314.38	-8.91
764	SLE FR 3	58	23	4662	-7.23	1319.14	-7.87
764	SLE FR 4	59	26	4796	-7.5	1357.7	-9.19
764	SLE FR 5	59	23	4815	-7.49	1362.46	-8.15
764	SLE FR 6	59	24	4899	-7.65	1386.45	-8.25
764	SLE QP 1	58	22	4644	-7.21	1314.25	-7.79
764	SLE QP 2	59	23	4797	-7.48	1357.57	-8.07
764	SLD 1	419	132	3379	-6.65	1005.02	-46.12
764	SLD 2	406	264	3360	-6.92	1005.56	-92.08
764	SLD 3	427	-148	3549	-3.76	996.21	51.78
764	SLD 4	413	-16	3529	-4.03	996.75	5.82
764	SLD 5	157	457	4117	-11.57	1265.07	-159.71
764	SLD 6	148	544	4105	-11.75	1265.43	-190.02
764	SLD 7	184	-477	4684	-1.92	1235.7	166.64
764	SLD 8	175	-390	4671	-2.1	1236.06	136.32
764	SLD 9	-57	436	4923	-12.85	1479.08	-152.46
764	SLD 10	-66	523	4910	-13.03	1479.44	-182.78
764	SLD 11	-31	-498	5490	-3.2	1449.71	173.89
764	SLD 12	-40	-411	5477	-3.38	1450.07	143.57
764	SLD 13	-296	63	6065	-10.92	1718.39	-21.96
764	SLD 14	-310	195	6045	-11.19	1718.93	-67.92
764	SLD 15	-288	-218	6235	-8.03	1709.58	75.95
764	SLD 16	-302	-86	6215	-8.3	1710.12	29.99
764	SLV 1	902	300	1464	-5.8	532.99	-104.7
764	SLV 2	870	610	1418	-6.42	534.26	-212.73
764	SLV 3	921	-400	1891	1.46	511.4	139.85
764	SLV 4	889	-90	1845	0.83	512.67	31.82
764	SLV 5	288	1110	3158	-17.86	1142.71	-387.79
764	SLV 6	266	1319	3128	-18.28	1143.56	-460.53
764	SLV 7	353	-1223	4581	6.33	1070.73	427.37
764	SLV 8	331	-1014	4550	5.91	1071.59	354.64
764	SLV 9	-214	1061	5044	-20.86	1643.55	-370.77
764	SLV 10	-236	1270	5013	-21.28	1644.41	-443.5
764	SLV 11	-149	-1272	6467	3.33	1571.58	444.39
764	SLV 12	-171	-1063	6436	2.91	1572.43	371.66
764	SLV 13	-772	136	7749	-15.78	2202.47	-47.95
764	SLV 14	-804	447	7704	-16.41	2203.74	-155.98
764	SLV 15	-752	-563	8176	-8.53	2180.88	196.6
764	SLV 16	-784	-253	8130	-9.15	2182.15	88.56
764	CRTFP Ux+	0	0	0	0	0	0
764	CRTFP Ux-	0	0	0	0	0	0
764	CRTFP Uy+	0	0	0	0	0	0
764	CRTFP Uy-	0	0	0	0	0	0
766	SLU 1	-124	-60	10087	-1017.78	273.08	-11.7
766	SLU 2	-123	-14	10059	-1016.16	274.37	-12.94
766	SLU 3	-126	-61	10318	-1040.82	278.71	-11.92
766	SLU 4	-126	-34	10301	-1039.84	279.48	-12.67
766	SLU 5	-125	-16	10205	-1030.66	277.85	-13.08
766	SLU 6	-128	-63	10464	-1055.32	282.18	-12.06
766	SLU 7	-128	-35	10447	-1054.34	282.96	-12.81
766	SLU 8	-127	-62	10379	-1046.79	280.04	-11.97
766	SLU 9	-127	-35	10362	-1045.82	280.81	-12.71
766	SLU 10	-129	-20	11364	-1147.93	308.37	-13.45
766	SLU 11	-132	-67	11624	-1172.59	312.7	-12.43
766	SLU 12	-132	-40	11607	-1171.61	313.47	-13.18
766	SLU 13	-130	-21	11510	-1162.43	311.84	-13.58
766	SLU 14	-134	-68	11770	-1187.09	316.18	-12.56
766	SLU 15	-133	-41	11753	-1186.11	316.95	-13.31
766	SLU 16	-133	-67	11684	-1178.56	314.03	-12.47
766	SLU 17	-132	-40	11667	-1177.59	314.8	-13.22
766	SLU 18	-132	-67	11952	-1206.03	321.65	-12.42
766	SLU 19	-131	-40	11935	-1205.05	322.42	-13.17

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
766	SLU 20	-133	-68	12098	-1220.53	325.12	-12.55
766	SLU 21	-133	-41	12081	-1219.55	325.9	-13.3
766	SLU 22	-137	-69	11689	-1178.54	314.76	-12.84
766	SLU 23	-137	-23	11661	-1176.92	316.05	-14.08
766	SLU 24	-140	-70	11921	-1201.57	320.38	-13.06
766	SLU 25	-139	-43	11904	-1200.6	321.16	-13.81
766	SLU 26	-138	-24	11807	-1191.42	319.53	-14.22
766	SLU 27	-141	-71	12067	-1216.08	323.86	-13.2
766	SLU 28	-141	-44	12050	-1215.1	324.63	-13.95
766	SLU 29	-140	-71	11981	-1207.55	321.71	-13.11
766	SLU 30	-140	-44	11964	-1206.58	322.49	-13.85
766	SLU 31	-142	-29	12966	-1308.69	350.04	-14.59
766	SLU 32	-145	-76	13226	-1333.34	354.38	-13.57
766	SLU 33	-145	-48	13209	-1332.37	355.15	-14.32
766	SLU 34	-144	-30	13112	-1323.19	353.52	-14.72
766	SLU 35	-147	-77	13372	-1347.85	357.85	-13.7
766	SLU 36	-147	-50	13355	-1346.87	358.63	-14.45
766	SLU 37	-146	-76	13287	-1339.32	355.7	-13.61
766	SLU 38	-145	-49	13270	-1338.35	356.48	-14.36
766	SLU 39	-145	-76	13554	-1366.79	363.32	-13.56
766	SLU 40	-145	-49	13537	-1365.81	364.1	-14.31
766	SLU 41	-147	-77	13700	-1381.29	366.8	-13.69
766	SLU 42	-146	-50	13683	-1380.31	367.57	-14.44
766	SLU 43	-156	-75	12564	-1268	340.72	-14.82
766	SLU 44	-156	-29	12535	-1266.37	342.01	-16.06
766	SLU 45	-159	-76	12795	-1291.03	346.34	-15.04
766	SLU 46	-159	-49	12778	-1290.06	347.12	-15.79
766	SLU 47	-158	-30	12681	-1280.88	345.49	-16.2
766	SLU 48	-161	-77	12941	-1305.54	349.82	-15.18
766	SLU 49	-160	-50	12924	-1304.56	350.59	-15.92
766	SLU 50	-160	-77	12856	-1297.01	347.67	-15.08
766	SLU 51	-159	-50	12839	-1296.03	348.45	-15.83
766	SLU 52	-161	-35	13841	-1398.14	376	-16.57
766	SLU 53	-165	-82	14101	-1422.8	380.34	-15.55
766	SLU 54	-164	-54	14084	-1421.83	381.11	-16.3
766	SLU 55	-163	-36	13987	-1412.65	379.48	-16.7
766	SLU 56	-166	-83	14247	-1437.31	383.81	-15.68
766	SLU 57	-166	-56	14230	-1436.33	384.59	-16.43
766	SLU 58	-165	-82	14161	-1428.78	381.66	-15.59
766	SLU 59	-165	-55	14144	-1427.8	382.44	-16.34
766	SLU 60	-164	-82	14429	-1456.24	389.28	-15.54
766	SLU 61	-164	-55	14412	-1455.27	390.06	-16.29
766	SLU 62	-166	-83	14575	-1470.75	392.76	-15.67
766	SLU 63	-166	-56	14558	-1469.77	393.53	-16.42
766	SLU 64	-170	-84	14166	-1428.76	382.4	-15.96
766	SLU 65	-169	-38	14138	-1427.13	383.69	-17.2
766	SLU 66	-172	-85	14398	-1451.79	388.02	-16.18
766	SLU 67	-172	-58	14381	-1450.82	388.79	-16.93
766	SLU 68	-171	-39	14284	-1441.64	387.16	-17.34
766	SLU 69	-174	-86	14544	-1466.3	391.49	-16.32
766	SLU 70	-174	-59	14527	-1465.32	392.27	-17.06
766	SLU 71	-173	-86	14458	-1457.77	389.35	-16.22
766	SLU 72	-173	-58	14441	-1456.79	390.12	-16.97
766	SLU 73	-175	-44	15443	-1558.9	417.68	-17.71
766	SLU 74	-178	-91	15703	-1583.56	422.01	-16.69
766	SLU 75	-178	-63	15686	-1582.59	422.79	-17.44
766	SLU 76	-176	-45	15589	-1573.41	421.16	-17.84
766	SLU 77	-179	-92	15849	-1598.07	425.49	-16.82
766	SLU 78	-179	-64	15832	-1597.09	426.26	-17.57
766	SLU 79	-178	-91	15763	-1589.54	423.34	-16.73
766	SLU 80	-178	-64	15746	-1588.56	424.12	-17.48
766	SLU 81	-178	-91	16031	-1617	430.96	-16.68
766	SLU 82	-177	-64	16014	-1616.03	431.73	-17.43
766	SLU 83	-179	-92	16177	-1631.51	434.43	-16.81
766	SLU 84	-179	-65	16160	-1630.53	435.21	-17.56
766	SLE RA 1	-128	-62	10545	-1063.72	284.99	-12.02
766	SLE RA 2	-127	-32	10526	-1062.63	285.85	-12.85
766	SLE RA 3	-129	-63	10699	-1079.07	288.74	-12.17
766	SLE RA 4	-129	-45	10688	-1078.42	289.26	-12.67
766	SLE RA 5	-128	-33	10623	-1072.3	288.17	-12.94
766	SLE RA 6	-130	-64	10796	-1088.74	291.06	-12.26
766	SLE RA 7	-130	-46	10785	-1088.09	291.57	-12.76
766	SLE RA 8	-130	-64	10739	-1083.06	289.63	-12.2
766	SLE RA 9	-130	-46	10728	-1082.4	290.14	-12.7
766	SLE RA 10	-131	-36	11396	-1150.48	308.51	-13.19
766	SLE RA 11	-133	-67	11569	-1166.92	311.4	-12.51
766	SLE RA 12	-133	-49	11558	-1166.26	311.92	-13.01
766	SLE RA 13	-132	-36	11494	-1160.15	310.83	-13.28
766	SLE RA 14	-134	-68	11667	-1176.59	313.72	-12.6
766	SLE RA 15	-134	-50	11655	-1175.93	314.24	-13.1
766	SLE RA 16	-133	-67	11610	-1170.9	312.29	-12.54
766	SLE RA 17	-133	-49	11598	-1170.25	312.8	-13.04
766	SLE RA 18	-133	-67	11788	-1189.21	317.37	-12.5
766	SLE RA 19	-133	-49	11777	-1188.56	317.88	-13
766	SLE RA 20	-134	-68	11885	-1198.88	319.68	-12.59
766	SLE RA 21	-134	-50	11874	-1198.23	320.2	-13.09
766	SLE FR 1	-128	-62	10545	-1063.72	284.99	-12.02
766	SLE FR 2	-127	-56	10541	-1063.5	285.16	-12.19
766	SLE FR 3	-128	-63	10584	-1067.58	285.92	-12.06

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
766	SLE FR 4	-129	-58	10914	-1101.15	294.88	-12.33
766	SLE FR 5	-130	-64	10957	-1105.23	295.63	-12.2
766	SLE FR 6	-130	-65	11166	-1126.46	301.18	-12.26
766	SLE QP 1	-128	-62	10545	-1063.72	284.99	-12.02
766	SLE QP 2	-129	-64	10918	-1101.36	294.7	-12.17
766	SLD 1	796	214	12146	-1235.13	363.98	71.75
766	SLD 2	772	63	12150	-1234.52	363.04	76.49
766	SLD 3	785	-327	12584	-1262.37	349.31	86.99
766	SLD 4	761	-478	12587	-1261.76	348.37	91.73
766	SLD 5	169	867	10622	-1100.29	337.9	-10.96
766	SLD 6	153	768	10624	-1099.89	337.28	-7.84
766	SLD 7	133	-936	12081	-1191.09	289.01	39.85
766	SLD 8	118	-1036	12083	-1190.69	288.39	42.97
766	SLD 9	-376	908	9752	-1012.04	301.02	-67.31
766	SLD 10	-392	809	9755	-1011.64	300.4	-64.18
766	SLD 11	-411	-895	11212	-1102.84	252.12	-16.5
766	SLD 12	-427	-995	11214	-1102.44	251.5	-13.37
766	SLD 13	-1020	351	9248	-940.97	241.04	-116.07
766	SLD 14	-1044	200	9252	-940.35	240.1	-111.33
766	SLD 15	-1030	-190	9686	-968.2	226.37	-100.83
766	SLD 16	-1054	-342	9690	-967.59	225.43	-96.08
766	SLV 1	2036	627	13755	-1412.14	457.92	183
766	SLV 2	1979	271	13764	-1410.71	455.71	194.15
766	SLV 3	2010	-719	14853	-1480.43	421.33	220.92
766	SLV 4	1954	-1075	14861	-1479	419.13	232.07
766	SLV 5	569	2252	10103	-1091.29	399.56	-13.2
766	SLV 6	531	2012	10109	-1090.33	398.08	-5.69
766	SLV 7	485	-2236	13761	-1318.92	277.62	113.18
766	SLV 8	447	-2475	13767	-1317.96	276.13	120.69
766	SLV 9	-705	2348	8069	-884.77	313.27	-145.02
766	SLV 10	-743	2108	8075	-883.8	311.79	-137.51
766	SLV 11	-789	-2140	11726	-1112.4	191.33	-18.64
766	SLV 12	-827	-2379	11732	-1111.43	189.84	-11.14
766	SLV 13	-2212	947	6974	-723.73	170.28	-256.4
766	SLV 14	-2269	592	6983	-722.3	168.07	-245.25
766	SLV 15	-2237	-399	8071	-792.02	133.7	-218.49
766	SLV 16	-2294	-754	8080	-790.59	131.49	-207.34
766	CRTFP Ux+	0	0	0	0	0	0
766	CRTFP Ux-	0	0	0	0	0	0
766	CRTFP Uy+	0	0	0	0	0	0
766	CRTFP Uy-	0	0	0	0	0	0
769	SLU 1	-48	15	13114	-197.26	-686.15	-12.43
769	SLU 2	-49	83	13093	-198.31	-683.04	-8.57
769	SLU 3	-49	15	13409	-201.6	-701.76	-12.66
769	SLU 4	-50	56	13396	-202.23	-699.9	-10.35
769	SLU 5	-50	83	13279	-201.09	-692.94	-8.73
769	SLU 6	-50	14	13595	-204.37	-711.66	-12.82
769	SLU 7	-51	55	13583	-205	-709.8	-10.5
769	SLU 8	-50	14	13487	-202.82	-705.94	-12.74
769	SLU 9	-50	55	13474	-203.45	-704.08	-10.43
769	SLU 10	-51	79	14836	-226.22	-774.8	-9.88
769	SLU 11	-51	10	15151	-229.5	-793.52	-13.97
769	SLU 12	-52	52	15139	-230.13	-791.66	-11.66
769	SLU 13	-51	79	15022	-228.99	-784.69	-10.04
769	SLU 14	-52	10	15338	-232.28	-803.41	-14.13
769	SLU 15	-52	51	15325	-232.91	-801.55	-11.81
769	SLU 16	-51	10	15229	-230.72	-797.69	-14.05
769	SLU 17	-52	51	15217	-231.35	-795.83	-11.74
769	SLU 18	-50	9	15603	-237.13	-817.22	-14.3
769	SLU 19	-51	50	15591	-237.76	-815.36	-11.98
769	SLU 20	-51	8	15790	-239.91	-827.12	-14.46
769	SLU 21	-52	49	15777	-240.53	-825.26	-12.14
769	SLU 22	-55	15	15181	-227.34	-792.76	-13.77
769	SLU 23	-56	84	15160	-228.38	-789.66	-9.91
769	SLU 24	-56	15	15476	-231.67	-808.38	-14
769	SLU 25	-57	56	15464	-232.3	-806.51	-11.69
769	SLU 26	-57	83	15347	-231.16	-799.55	-10.07
769	SLU 27	-57	15	15663	-234.45	-818.27	-14.16
769	SLU 28	-58	56	15650	-235.08	-816.41	-11.84
769	SLU 29	-57	15	15554	-232.89	-812.55	-14.08
769	SLU 30	-57	56	15542	-233.52	-810.69	-11.77
769	SLU 31	-58	79	16903	-256.29	-881.41	-11.22
769	SLU 32	-58	11	17219	-259.57	-900.13	-15.31
769	SLU 33	-59	52	17206	-260.2	-898.27	-13
769	SLU 34	-59	79	17090	-259.07	-891.31	-11.38
769	SLU 35	-59	11	17405	-262.35	-910.03	-15.47
769	SLU 36	-60	52	17393	-262.98	-908.16	-13.16
769	SLU 37	-58	10	17297	-260.79	-904.31	-15.39
769	SLU 38	-59	51	17284	-261.42	-902.44	-13.08
769	SLU 39	-58	9	17671	-267.2	-923.84	-15.64
769	SLU 40	-58	50	17658	-267.83	-921.98	-13.33
769	SLU 41	-58	9	17857	-269.98	-933.73	-15.8
769	SLU 42	-59	50	17845	-270.61	-931.87	-13.48
769	SLU 43	-60	19	16339	-246.13	-855.44	-15.69
769	SLU 44	-61	87	16318	-247.18	-852.33	-11.84
769	SLU 45	-61	19	16634	-250.47	-871.05	-15.93
769	SLU 46	-62	60	16622	-251.1	-869.19	-13.61
769	SLU 47	-62	87	16505	-249.96	-862.23	-11.99
769	SLU 48	-62	19	16820	-253.24	-880.95	-16.08

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
769	SLU 49	-63	60	16808	-253.87	-879.09	-13.77
769	SLU 50	-61	18	16712	-251.69	-875.23	-16.01
769	SLU 51	-62	59	16700	-252.32	-873.37	-13.69
769	SLU 52	-63	83	18061	-275.09	-944.09	-13.15
769	SLU 53	-63	15	18377	-278.37	-962.81	-17.24
769	SLU 54	-64	56	18364	-279	-960.95	-14.92
769	SLU 55	-63	83	18247	-277.86	-953.98	-13.3
769	SLU 56	-64	14	18563	-281.15	-972.71	-17.39
769	SLU 57	-64	55	18551	-281.78	-970.84	-15.08
769	SLU 58	-63	14	18455	-279.59	-966.99	-17.32
769	SLU 59	-64	55	18442	-280.22	-965.12	-15
769	SLU 60	-62	13	18829	-286	-986.52	-17.57
769	SLU 61	-63	54	18816	-286.63	-984.65	-15.25
769	SLU 62	-63	12	19015	-288.77	-996.41	-17.72
769	SLU 63	-64	53	19002	-289.4	-994.55	-15.41
769	SLU 64	-67	19	18407	-276.2	-962.05	-17.03
769	SLU 65	-68	88	18386	-277.25	-958.95	-13.18
769	SLU 66	-68	19	18702	-280.54	-977.67	-17.27
769	SLU 67	-69	61	18689	-281.17	-975.8	-14.96
769	SLU 68	-69	88	18572	-280.03	-968.84	-13.34
769	SLU 69	-69	19	18888	-283.31	-987.56	-17.43
769	SLU 70	-70	60	18876	-283.94	-985.7	-15.11
769	SLU 71	-69	19	18779	-281.76	-981.84	-17.35
769	SLU 72	-69	60	18767	-282.39	-979.98	-15.04
769	SLU 73	-70	84	20128	-305.16	-1050.7	-14.49
769	SLU 74	-70	15	20444	-308.44	-1069.42	-18.58
769	SLU 75	-71	56	20432	-309.07	-1067.56	-16.27
769	SLU 76	-70	83	20315	-307.94	-1060.6	-14.65
769	SLU 77	-71	15	20631	-311.22	-1079.32	-18.74
769	SLU 78	-71	56	20618	-311.85	-1077.46	-16.42
769	SLU 79	-70	15	20522	-309.66	-1073.6	-18.66
769	SLU 80	-71	56	20510	-310.29	-1071.74	-16.35
769	SLU 81	-69	13	20896	-316.07	-1093.13	-18.91
769	SLU 82	-70	54	20884	-316.7	-1091.27	-16.59
769	SLU 83	-70	13	21082	-318.85	-1103.02	-19.06
769	SLU 84	-71	54	21070	-319.48	-1101.16	-16.75
769	SLE RA 1	-50	15	13705	-205.86	-716.61	-12.81
769	SLE RA 2	-50	60	13691	-206.55	-714.54	-10.24
769	SLE RA 3	-51	15	13901	-208.74	-727.02	-12.96
769	SLE RA 4	-51	42	13893	-209.16	-725.78	-11.42
769	SLE RA 5	-51	60	13815	-208.41	-721.14	-10.34
769	SLE RA 6	-51	15	14025	-210.6	-733.62	-13.07
769	SLE RA 7	-52	42	14017	-211.02	-732.37	-11.53
769	SLE RA 8	-51	14	13953	-209.56	-729.8	-13.02
769	SLE RA 9	-51	42	13945	-209.98	-728.56	-11.48
769	SLE RA 10	-52	58	14852	-225.16	-775.71	-11.11
769	SLE RA 11	-52	12	15063	-227.35	-788.19	-13.84
769	SLE RA 12	-52	39	15055	-227.77	-786.95	-12.3
769	SLE RA 13	-52	57	14977	-227.01	-782.31	-11.22
769	SLE RA 14	-53	12	15187	-229.2	-794.79	-13.94
769	SLE RA 15	-53	39	15179	-229.62	-793.54	-12.4
769	SLE RA 16	-52	12	15115	-228.16	-790.97	-13.89
769	SLE RA 17	-53	39	15107	-228.58	-789.73	-12.35
769	SLE RA 18	-52	11	15364	-232.43	-803.99	-14.06
769	SLE RA 19	-52	38	15356	-232.85	-802.75	-12.51
769	SLE RA 20	-52	11	15488	-234.28	-810.59	-14.16
769	SLE RA 21	-53	38	15480	-234.7	-809.35	-12.62
769	SLE FR 1	-50	15	13705	-205.86	-716.61	-12.81
769	SLE FR 2	-50	24	13702	-206	-716.19	-12.29
769	SLE FR 3	-50	15	13754	-206.6	-719.25	-12.85
769	SLE FR 4	-50	23	14200	-213.97	-742.41	-12.67
769	SLE FR 5	-51	13	14252	-214.57	-745.46	-13.23
769	SLE FR 6	-51	13	14534	-219.14	-760.3	-13.43
769	SLE QP 1	-50	15	13705	-205.86	-716.61	-12.81
769	SLE QP 2	-50	14	14202	-213.83	-742.82	-13.18
769	SLD 1	1276	518	14327	-208.26	-686.33	25.75
769	SLD 2	1241	440	14299	-208.04	-684.57	26.83
769	SLD 3	1296	-329	14677	-193.31	-730.28	-21.96
769	SLD 4	1261	-407	14649	-193.09	-728.52	-20.88
769	SLD 5	323	1463	13714	-234.86	-659.53	70.66
769	SLD 6	300	1411	13696	-234.72	-658.37	71.38
769	SLD 7	391	-1359	14880	-185.05	-806.04	-88.37
769	SLD 8	368	-1411	14862	-184.9	-804.87	-87.66
769	SLD 9	-468	1438	13543	-242.75	-680.77	61.29
769	SLD 10	-491	1386	13524	-242.61	-679.61	62.01
769	SLD 11	-401	-1384	14709	-192.94	-827.28	-97.74
769	SLD 12	-424	-1436	14691	-192.79	-826.11	-97.03
769	SLD 13	-1362	434	13756	-234.56	-757.13	-5.49
769	SLD 14	-1397	356	13728	-234.34	-755.36	-4.41
769	SLD 15	-1342	-413	14106	-219.62	-801.08	-53.2
769	SLD 16	-1376	-491	14078	-219.4	-799.31	-52.12
769	SLV 1	3051	1259	14464	-202.03	-606.96	81.57
769	SLV 2	2969	1075	14399	-201.52	-602.81	84.11
769	SLV 3	3101	-852	15342	-164.59	-717.17	-37.43
769	SLV 4	3019	-1036	15277	-164.08	-713.02	-34.89
769	SLV 5	820	3623	12961	-267.17	-535.69	195.26
769	SLV 6	765	3499	12918	-266.82	-532.89	196.97
769	SLV 7	986	-3413	15888	-142.37	-903.05	-201.42
769	SLV 8	931	-3537	15844	-142.02	-900.26	-199.71

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
769	SLV 9	-1032	3564	12560	-285.63	-585.39	173.34
769	SLV 10	-1087	3440	12517	-285.29	-582.59	175.05
769	SLV 11	-865	-3471	15487	-160.83	-952.75	-223.33
769	SLV 12	-920	-3596	15444	-160.49	-949.96	-221.62
769	SLV 13	-3120	1063	13127	-263.58	-772.63	8.52
769	SLV 14	-3202	879	13063	-263.06	-768.48	11.06
769	SLV 15	-3070	-1048	14005	-226.14	-882.84	-110.48
769	SLV 16	-3152	-1232	13941	-225.62	-878.69	-107.94
769	CRTFP Ux+	0	0	0	0	0	0
769	CRTFP Ux-	0	0	0	0	0	0
769	CRTFP Uy+	0	0	0	0	0	0
769	CRTFP Uy-	0	0	0	0	0	0
772	SLU 1	20	140	9488	-1231.77	-29.46	5.21
772	SLU 2	22	194	9480	-1230.16	-30.08	5.43
772	SLU 3	21	142	9689	-1258.17	-30.24	5.31
772	SLU 4	22	175	9684	-1257.21	-30.61	5.45
772	SLU 5	22	195	9607	-1246.87	-30.5	5.49
772	SLU 6	21	142	9815	-1274.88	-30.66	5.37
772	SLU 7	22	175	9811	-1273.92	-31.03	5.5
772	SLU 8	21	141	9741	-1265.18	-30.31	5.33
772	SLU 9	22	174	9736	-1264.22	-30.68	5.46
772	SLU 10	20	205	10717	-1390.84	-32.58	5.36
772	SLU 11	19	153	10926	-1418.86	-32.74	5.24
772	SLU 12	20	186	10921	-1417.89	-33.11	5.37
772	SLU 13	21	206	10844	-1407.55	-33	5.42
772	SLU 14	19	153	11053	-1435.56	-33.16	5.3
772	SLU 15	20	186	11048	-1434.6	-33.53	5.43
772	SLU 16	19	152	10978	-1425.86	-32.81	5.25
772	SLU 17	20	185	10973	-1424.9	-33.18	5.39
772	SLU 18	18	156	11256	-1461.31	-33.03	5.11
772	SLU 19	19	188	11251	-1460.35	-33.4	5.24
772	SLU 20	18	156	11382	-1478.02	-33.46	5.17
772	SLU 21	19	189	11377	-1477.06	-33.83	5.3
772	SLU 22	22	157	10941	-1419.54	-33.73	5.72
772	SLU 23	23	211	10933	-1417.94	-34.35	5.94
772	SLU 24	22	159	11142	-1445.95	-34.51	5.82
772	SLU 25	23	192	11137	-1444.99	-34.88	5.95
772	SLU 26	24	212	11060	-1434.64	-34.77	5.99
772	SLU 27	22	159	11269	-1462.65	-34.93	5.87
772	SLU 28	24	192	11264	-1461.69	-35.3	6.01
772	SLU 29	22	158	11194	-1452.95	-34.58	5.83
772	SLU 30	23	190	11189	-1451.99	-34.95	5.96
772	SLU 31	22	222	12171	-1578.62	-36.85	5.86
772	SLU 32	21	170	12379	-1606.63	-37.01	5.74
772	SLU 33	22	203	12375	-1605.67	-37.38	5.88
772	SLU 34	22	223	12297	-1595.33	-37.27	5.92
772	SLU 35	21	170	12506	-1623.34	-37.43	5.8
772	SLU 36	22	203	12501	-1622.38	-37.8	5.93
772	SLU 37	21	169	12432	-1613.64	-37.08	5.76
772	SLU 38	22	202	12427	-1612.67	-37.45	5.89
772	SLU 39	19	173	12709	-1649.09	-37.3	5.61
772	SLU 40	20	205	12704	-1648.12	-37.67	5.74
772	SLU 41	20	173	12835	-1665.79	-37.73	5.67
772	SLU 42	21	206	12831	-1664.83	-38.1	5.8
772	SLU 43	26	176	11837	-1536.92	-36.83	6.61
772	SLU 44	27	231	11829	-1535.31	-37.45	6.82
772	SLU 45	26	178	12037	-1563.32	-37.61	6.7
772	SLU 46	27	211	12032	-1562.36	-37.98	6.84
772	SLU 47	28	231	11955	-1552.02	-37.87	6.88
772	SLU 48	26	178	12164	-1580.03	-38.03	6.76
772	SLU 49	27	211	12159	-1579.07	-38.4	6.89
772	SLU 50	26	177	12089	-1570.33	-37.68	6.72
772	SLU 51	27	210	12085	-1569.37	-38.05	6.85
772	SLU 52	26	242	13066	-1695.99	-39.95	6.75
772	SLU 53	25	189	13275	-1724.01	-40.11	6.63
772	SLU 54	26	222	13270	-1723.04	-40.48	6.76
772	SLU 55	26	242	13192	-1712.7	-40.37	6.81
772	SLU 56	25	189	13401	-1740.71	-40.54	6.69
772	SLU 57	26	222	13396	-1739.75	-40.9	6.82
772	SLU 58	25	188	13327	-1731.01	-40.18	6.64
772	SLU 59	26	221	13322	-1730.05	-40.55	6.78
772	SLU 60	23	192	13604	-1766.46	-40.41	6.5
772	SLU 61	24	224	13599	-1765.5	-40.78	6.63
772	SLU 62	24	192	13730	-1783.17	-40.83	6.56
772	SLU 63	25	225	13726	-1782.21	-41.2	6.69
772	SLU 64	27	193	13290	-1724.69	-41.1	7.11
772	SLU 65	29	248	13282	-1723.09	-41.72	7.33
772	SLU 66	28	195	13490	-1751.1	-41.88	7.21
772	SLU 67	29	228	13486	-1750.14	-42.25	7.34
772	SLU 68	29	248	13408	-1739.79	-42.14	7.39
772	SLU 69	28	195	13617	-1767.8	-42.31	7.27
772	SLU 70	29	228	13612	-1766.84	-42.68	7.4
772	SLU 71	28	194	13543	-1758.1	-41.95	7.22
772	SLU 72	29	227	13538	-1757.14	-42.32	7.35
772	SLU 73	27	259	14519	-1883.77	-44.22	7.26
772	SLU 74	26	206	14728	-1911.78	-44.38	7.14
772	SLU 75	27	239	14723	-1910.82	-44.75	7.27
772	SLU 76	28	259	14645	-1900.48	-44.64	7.31
772	SLU 77	26	206	14854	-1928.49	-44.81	7.19

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
772	SLU 78	27	239	14849	-1927.53	-45.18	7.32
772	SLU 79	26	205	14780	-1918.79	-44.45	7.15
772	SLU 80	27	238	14775	-1917.82	-44.82	7.28
772	SLU 81	25	209	15057	-1954.24	-44.68	7
772	SLU 82	26	241	15052	-1953.27	-45.05	7.14
772	SLU 83	25	209	15184	-1970.94	-45.1	7.06
772	SLU 84	26	242	15179	-1969.98	-45.47	7.19
772	SLE RA 1	21	145	9904	-1285.42	-30.68	5.36
772	SLE RA 2	22	181	9898	-1284.35	-31.09	5.5
772	SLE RA 3	21	146	10037	-1303.02	-31.2	5.42
772	SLE RA 4	22	168	10034	-1302.38	-31.45	5.51
772	SLE RA 5	22	181	9982	-1295.48	-31.37	5.54
772	SLE RA 6	21	146	10122	-1314.16	-31.48	5.46
772	SLE RA 7	22	168	10118	-1313.52	-31.73	5.55
772	SLE RA 8	21	145	10072	-1307.69	-31.24	5.43
772	SLE RA 9	22	167	10069	-1307.05	-31.49	5.52
772	SLE RA 10	21	188	10723	-1391.47	-32.76	5.46
772	SLE RA 11	20	153	10862	-1410.14	-32.87	5.38
772	SLE RA 12	21	175	10859	-1409.5	-33.11	5.46
772	SLE RA 13	21	189	10807	-1402.61	-33.04	5.49
772	SLE RA 14	20	154	10946	-1421.28	-33.15	5.41
772	SLE RA 15	21	176	10943	-1420.64	-33.39	5.5
772	SLE RA 16	20	153	10897	-1414.81	-32.91	5.38
772	SLE RA 17	21	174	10894	-1414.17	-33.16	5.47
772	SLE RA 18	19	155	11082	-1438.45	-33.06	5.29
772	SLE RA 19	20	177	11079	-1437.81	-33.31	5.38
772	SLE RA 20	19	155	11166	-1449.58	-33.34	5.33
772	SLE RA 21	20	177	11163	-1448.94	-33.59	5.41
772	SLE FR 1	21	145	9904	-1285.42	-30.68	5.36
772	SLE FR 2	21	152	9902	-1285.2	-30.76	5.39
772	SLE FR 3	21	145	9937	-1289.87	-30.79	5.37
772	SLE FR 4	20	155	10256	-1331.11	-31.48	5.37
772	SLE FR 5	20	148	10291	-1335.78	-31.51	5.35
772	SLE FR 6	20	150	10493	-1361.93	-31.87	5.32
772	SLE QP 1	21	145	9904	-1285.42	-30.68	5.36
772	SLE QP 2	20	148	10257	-1331.32	-31.39	5.34
772	SLD 1	1081	421	9603	-1259.89	26.75	134.63
772	SLD 2	1056	489	9639	-1263.08	25.88	135.15
772	SLD 3	1057	-254	9752	-1285.59	34.18	131.46
772	SLD 4	1032	-187	9788	-1288.78	33.31	131.99
772	SLD 5	379	1243	9829	-1270.34	-25.05	48.83
772	SLD 6	362	1287	9853	-1272.45	-25.63	49.17
772	SLD 7	300	-1010	10324	-1356.01	-0.31	38.29
772	SLD 8	283	-966	10348	-1358.12	-0.88	38.63
772	SLD 9	-243	1261	10166	-1304.53	-61.91	-27.96
772	SLD 10	-260	1306	10190	-1306.64	-62.48	-27.61
772	SLD 11	-322	-992	10661	-1390.2	-37.16	-38.5
772	SLD 12	-339	-947	10685	-1392.31	-37.74	-38.15
772	SLD 13	-992	483	10726	-1373.87	-96.1	-121.31
772	SLD 14	-1017	550	10762	-1377.06	-96.97	-120.79
772	SLD 15	-1016	-193	10875	-1399.57	-88.67	-124.47
772	SLD 16	-1041	-126	10911	-1402.76	-89.54	-123.95
772	SLV 1	2504	841	8714	-1162.03	104.14	308.05
772	SLV 2	2445	999	8799	-1169.54	102.09	309.28
772	SLV 3	2446	-847	9086	-1226.38	122.62	300.2
772	SLV 4	2386	-689	9171	-1233.88	120.58	301.43
772	SLV 5	865	2886	9215	-1181.54	-18.39	107.83
772	SLV 6	825	2993	9272	-1186.6	-19.77	108.66
772	SLV 7	670	-2740	10454	-1396.03	43.23	81.65
772	SLV 8	630	-2634	10511	-1401.09	41.85	82.48
772	SLV 9	-590	2929	10003	-1261.56	-104.64	-71.81
772	SLV 10	-630	3036	10060	-1266.62	-106.02	-70.98
772	SLV 11	-785	-2697	11242	-1476.05	-43.02	-97.99
772	SLV 12	-825	-2590	11299	-1481.11	-44.4	-97.16
772	SLV 13	-2346	985	11343	-1428.77	-183.37	-290.75
772	SLV 14	-2406	1143	11428	-1436.27	-185.41	-289.52
772	SLV 15	-2404	-703	11715	-1493.11	-164.88	-298.6
772	SLV 16	-2464	-545	11800	-1500.62	-166.93	-297.38
772	CRTFP Ux+	0	0	0	0	0	0
772	CRTFP Ux-	0	0	0	0	0	0
772	CRTFP Uy+	0	0	0	0	0	0
772	CRTFP Uy-	0	0	0	0	0	0
775	SLU 1	119	49	9582	-994.34	-266.51	11.55
775	SLU 2	118	97	9549	-992.08	-267.68	12.95
775	SLU 3	123	50	9809	-1017.56	-272.29	11.78
775	SLU 4	122	78	9790	-1016.21	-272.99	12.63
775	SLU 5	120	97	9698	-1007.26	-271.59	13.09
775	SLU 6	125	49	9958	-1032.75	-276.19	11.92
775	SLU 7	124	78	9939	-1031.39	-276.89	12.76
775	SLU 8	124	49	9880	-1024.71	-274.32	11.82
775	SLU 9	123	78	9860	-1023.35	-275.02	12.67
775	SLU 10	124	106	10769	-1118.74	-300.24	13.51
775	SLU 11	129	58	11028	-1144.23	-304.84	12.34
775	SLU 12	128	87	11009	-1142.87	-305.54	13.18
775	SLU 13	126	105	10918	-1133.93	-304.14	13.64
775	SLU 14	131	58	11177	-1159.41	-308.74	12.47
775	SLU 15	130	87	11158	-1158.05	-309.45	13.31
775	SLU 16	130	57	11099	-1151.37	-306.87	12.38
775	SLU 17	129	86	11080	-1150.01	-307.57	13.22

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
775	SLU 18	128	61	11323	-1175.29	-313.02	12.34
775	SLU 19	127	90	11304	-1173.93	-313.72	13.18
775	SLU 20	130	61	11472	-1190.47	-316.92	12.48
775	SLU 21	129	90	11453	-1189.11	-317.62	13.32
775	SLU 22	133	56	11085	-1149.55	-305.99	12.72
775	SLU 23	132	103	11053	-1147.28	-307.16	14.12
775	SLU 24	137	56	11312	-1172.77	-311.76	12.95
775	SLU 25	136	85	11293	-1171.41	-312.46	13.79
775	SLU 26	134	103	11202	-1162.47	-311.06	14.25
775	SLU 27	139	56	11461	-1187.95	-315.67	13.08
775	SLU 28	139	84	11442	-1186.6	-316.37	13.93
775	SLU 29	138	55	11383	-1179.91	-313.79	12.99
775	SLU 30	137	84	11364	-1178.56	-314.5	13.83
775	SLU 31	138	112	12272	-1273.95	-339.71	14.67
775	SLU 32	143	64	12532	-1299.43	-344.32	13.5
775	SLU 33	142	93	12512	-1298.08	-345.02	14.34
775	SLU 34	140	112	12421	-1289.13	-343.61	14.81
775	SLU 35	145	64	12681	-1314.62	-348.22	13.64
775	SLU 36	144	93	12661	-1313.26	-348.92	14.48
775	SLU 37	144	64	12603	-1306.58	-346.35	13.54
775	SLU 38	143	92	12583	-1305.22	-347.05	14.38
775	SLU 39	142	68	12827	-1330.49	-352.49	13.51
775	SLU 40	141	96	12807	-1329.14	-353.19	14.35
775	SLU 41	144	67	12976	-1345.68	-356.39	13.64
775	SLU 42	143	96	12957	-1344.32	-357.1	14.48
775	SLU 43	150	62	11941	-1239.43	-332.93	14.62
775	SLU 44	149	110	11908	-1237.16	-334.1	16.02
775	SLU 45	154	62	12168	-1262.65	-338.71	14.85
775	SLU 46	153	91	12149	-1261.29	-339.41	15.69
775	SLU 47	151	110	12058	-1252.35	-338.01	16.16
775	SLU 48	156	62	12317	-1277.83	-342.61	14.99
775	SLU 49	155	91	12298	-1276.48	-343.31	15.83
775	SLU 50	155	62	12239	-1269.8	-340.74	14.89
775	SLU 51	154	90	12220	-1268.44	-341.44	15.73
775	SLU 52	155	118	13128	-1363.83	-366.66	16.57
775	SLU 53	160	71	13387	-1389.31	-371.26	15.4
775	SLU 54	159	99	13368	-1387.96	-371.96	16.24
775	SLU 55	157	118	13277	-1379.01	-370.56	16.71
775	SLU 56	162	71	13536	-1404.5	-375.16	15.54
775	SLU 57	161	99	13517	-1403.14	-375.87	16.38
775	SLU 58	161	70	13458	-1396.46	-373.29	15.44
775	SLU 59	160	99	13439	-1395.1	-373.99	16.28
775	SLU 60	159	74	13682	-1420.38	-379.44	15.41
775	SLU 61	158	103	13663	-1419.02	-380.14	16.25
775	SLU 62	161	74	13832	-1435.56	-383.34	15.54
775	SLU 63	160	103	13812	-1434.2	-384.04	16.39
775	SLU 64	164	68	13444	-1394.63	-372.41	15.78
775	SLU 65	163	116	13412	-1392.37	-373.58	17.18
775	SLU 66	168	69	13671	-1417.86	-378.18	16.01
775	SLU 67	167	97	13652	-1416.5	-378.88	16.86
775	SLU 68	165	116	13561	-1407.56	-377.48	17.32
775	SLU 69	170	68	13821	-1433.04	-382.09	16.15
775	SLU 70	169	97	13801	-1431.68	-382.79	16.99
775	SLU 71	169	68	13742	-1425	-380.21	16.05
775	SLU 72	168	97	13723	-1423.65	-380.92	16.9
775	SLU 73	169	124	14631	-1519.04	-406.13	17.74
775	SLU 74	174	77	14891	-1544.52	-410.74	16.57
775	SLU 75	173	106	14871	-1543.16	-411.44	17.41
775	SLU 76	171	124	14780	-1534.22	-410.03	17.87
775	SLU 77	176	77	15040	-1559.71	-414.64	16.7
775	SLU 78	175	105	15020	-1558.35	-415.34	17.54
775	SLU 79	175	76	14962	-1551.67	-412.77	16.61
775	SLU 80	174	105	14942	-1550.31	-413.47	17.45
775	SLU 81	173	80	15186	-1575.58	-418.91	16.57
775	SLU 82	172	109	15167	-1574.22	-419.61	17.41
775	SLU 83	175	80	15335	-1590.77	-422.81	16.71
775	SLU 84	174	109	15316	-1589.41	-423.52	17.55
775	SLE RA 1	123	51	10011	-1038.68	-277.79	11.88
775	SLE RA 2	122	83	9990	-1037.18	-278.57	12.82
775	SLE RA 3	126	51	10163	-1054.17	-281.64	12.04
775	SLE RA 4	125	70	10150	-1053.26	-282.11	12.6
775	SLE RA 5	124	83	10089	-1047.3	-281.17	12.91
775	SLE RA 6	127	51	10262	-1064.29	-284.24	12.13
775	SLE RA 7	127	70	10249	-1063.38	-284.71	12.69
775	SLE RA 8	126	51	10210	-1058.93	-283	12.07
775	SLE RA 9	126	70	10197	-1058.02	-283.46	12.63
775	SLE RA 10	126	89	10803	-1121.62	-300.27	13.19
775	SLE RA 11	130	57	10976	-1138.61	-303.34	12.41
775	SLE RA 12	129	76	10963	-1137.7	-303.81	12.97
775	SLE RA 13	128	88	10902	-1131.74	-302.88	13.28
775	SLE RA 14	131	57	11075	-1148.73	-305.95	12.5
775	SLE RA 15	131	76	11062	-1147.83	-306.41	13.06
775	SLE RA 16	130	57	11023	-1143.37	-304.7	12.43
775	SLE RA 17	130	76	11010	-1142.47	-305.17	13
775	SLE RA 18	129	59	11172	-1159.32	-308.79	12.41
775	SLE RA 19	128	78	11159	-1158.41	-309.26	12.97
775	SLE RA 20	130	59	11272	-1169.44	-311.4	12.5
775	SLE RA 21	130	78	11259	-1168.53	-311.86	13.06
775	SLE FR 1	123	51	10011	-1038.68	-277.79	11.88

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
775	SLE FR 2	123	57	10007	-1038.38	-277.95	12.07
775	SLE FR 3	124	51	10051	-1042.73	-278.83	11.92
775	SLE FR 4	125	60	10355	-1074.57	-287.25	12.23
775	SLE FR 5	126	53	10399	-1078.92	-288.13	12.08
775	SLE FR 6	126	55	10592	-1099	-293.29	12.15
775	SLE QP 1	123	51	10011	-1038.68	-277.79	11.88
775	SLE QP 2	125	54	10360	-1074.87	-287.09	12.04
775	SLD 1	1012	228	8984	-940.92	-259.87	110.98
775	SLD 2	984	388	8962	-939.34	-257.16	115.78
775	SLD 3	1032	-347	9469	-976.05	-245.96	93.86
775	SLD 4	1004	-187	9447	-974.47	-243.24	98.66
775	SLD 5	366	949	9215	-981.69	-300.52	66.83
775	SLD 6	347	1055	9201	-980.65	-298.73	70
775	SLD 7	433	-968	10832	-1098.79	-254.14	9.76
775	SLD 8	414	-862	10817	-1097.75	-252.35	12.92
775	SLD 9	-164	969	9902	-1052	-321.84	11.16
775	SLD 10	-183	1075	9887	-1050.96	-320.05	14.33
775	SLD 11	-97	-948	11518	-1169.1	-275.46	-45.91
775	SLD 12	-116	-842	11504	-1168.05	-273.67	-42.74
775	SLD 13	-754	294	11272	-1175.28	-330.94	-74.58
775	SLD 14	-782	454	11250	-1173.7	-328.23	-69.78
775	SLD 15	-734	-281	11757	-1210.41	-317.03	-91.7
775	SLD 16	-762	-121	11735	-1208.83	-314.31	-86.9
775	SLV 1	2199	506	7100	-758.42	-224.48	244.86
775	SLV 2	2133	881	7048	-754.71	-218.1	256.15
775	SLV 3	2249	-931	8317	-846.61	-189.88	202.05
775	SLV 4	2182	-556	8265	-842.9	-183.49	213.34
775	SLV 5	684	2298	7545	-846.87	-321.99	144.71
775	SLV 6	639	2551	7510	-844.37	-317.69	152.31
775	SLV 7	850	-2491	11602	-1140.85	-206.64	2.01
775	SLV 8	805	-2238	11568	-1138.35	-202.34	9.61
775	SLV 9	-556	2345	9152	-1011.4	-371.85	14.48
775	SLV 10	-600	2598	9117	-1008.9	-367.55	22.08
775	SLV 11	-389	-2444	13209	-1305.37	-256.5	-128.23
775	SLV 12	-434	-2191	13174	-1302.88	-252.2	-120.63
775	SLV 13	-1933	663	12454	-1306.84	-390.69	-189.25
775	SLV 14	-1999	1038	12403	-1303.14	-384.31	-177.97
775	SLV 15	-1883	-774	13671	-1395.04	-356.09	-232.06
775	SLV 16	-1949	-399	13620	-1391.33	-349.7	-220.78
775	CRTFP Ux+	0	0	0	0	0	0
775	CRTFP Ux-	0	0	0	0	0	0
775	CRTFP Uy+	0	0	0	0	0	0
775	CRTFP Uy-	0	0	0	0	0	0
777	SLU 1	-39	44	3421	-4.57	-629.13	10.92
777	SLU 2	-37	65	3410	-4.73	-629.71	16.24
777	SLU 3	-40	44	3497	-4.65	-642.49	10.98
777	SLU 4	-39	57	3490	-4.74	-642.84	14.17
777	SLU 5	-38	65	3457	-4.77	-638.04	16.28
777	SLU 6	-40	44	3544	-4.7	-650.82	11.02
777	SLU 7	-39	57	3538	-4.79	-651.17	14.21
777	SLU 8	-40	44	3516	-4.67	-645.79	11
777	SLU 9	-39	57	3509	-4.76	-646.14	14.19
777	SLU 10	-39	71	3824	-5.34	-705.65	17.75
777	SLU 11	-41	50	3911	-5.27	-718.43	12.49
777	SLU 12	-40	63	3904	-5.36	-718.78	15.68
777	SLU 13	-39	71	3871	-5.39	-713.98	17.79
777	SLU 14	-41	50	3958	-5.31	-726.76	12.53
777	SLU 15	-40	63	3952	-5.4	-727.11	15.72
777	SLU 16	-41	50	3930	-5.28	-721.73	12.51
777	SLU 17	-40	63	3923	-5.37	-722.08	15.7
777	SLU 18	-40	52	4012	-5.45	-737.62	13.08
777	SLU 19	-40	65	4006	-5.55	-737.96	16.27
777	SLU 20	-41	53	4060	-5.5	-745.95	13.12
777	SLU 21	-40	65	4053	-5.59	-746.29	16.31
777	SLU 22	-42	47	3939	-5.23	-722.55	11.79
777	SLU 23	-41	69	3928	-5.39	-723.13	17.11
777	SLU 24	-43	48	4015	-5.31	-735.91	11.85
777	SLU 25	-42	60	4009	-5.4	-736.26	15.04
777	SLU 26	-41	69	3976	-5.43	-731.46	17.15
777	SLU 27	-44	48	4063	-5.36	-744.24	11.89
777	SLU 28	-43	60	4056	-5.45	-744.59	15.08
777	SLU 29	-43	48	4034	-5.33	-739.21	11.87
777	SLU 30	-42	60	4028	-5.42	-739.56	15.06
777	SLU 31	-42	75	4342	-6	-799.07	18.62
777	SLU 32	-44	54	4429	-5.93	-811.85	13.36
777	SLU 33	-44	66	4423	-6.02	-812.2	16.55
777	SLU 34	-43	75	4390	-6.05	-807.4	18.66
777	SLU 35	-45	54	4477	-5.97	-820.18	13.4
777	SLU 36	-44	66	4470	-6.06	-820.53	16.59
777	SLU 37	-44	54	4448	-5.94	-815.15	13.38
777	SLU 38	-44	66	4441	-6.03	-815.5	16.57
777	SLU 39	-44	56	4531	-6.11	-831.04	13.94
777	SLU 40	-43	69	4524	-6.21	-831.39	17.14
777	SLU 41	-45	56	4578	-6.16	-839.37	13.98
777	SLU 42	-44	69	4571	-6.25	-839.72	17.18
777	SLU 43	-49	56	4270	-5.72	-785.84	13.9
777	SLU 44	-48	77	4258	-5.87	-786.42	19.22
777	SLU 45	-50	56	4346	-5.8	-799.2	13.96
777	SLU 46	-49	69	4339	-5.89	-799.55	17.15

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
777	SLU 47	-48	77	4306	-5.92	-794.75	19.26
777	SLU 48	-50	56	4393	-5.84	-807.53	14
777	SLU 49	-50	69	4386	-5.93	-807.88	17.19
777	SLU 50	-50	56	4365	-5.81	-802.5	13.98
777	SLU 51	-49	69	4358	-5.9	-802.85	17.17
777	SLU 52	-49	83	4672	-6.49	-862.36	20.73
777	SLU 53	-51	62	4760	-6.41	-875.14	15.47
777	SLU 54	-50	75	4753	-6.5	-875.49	18.66
777	SLU 55	-49	83	4720	-6.53	-870.69	20.77
777	SLU 56	-52	62	4807	-6.46	-883.47	15.51
777	SLU 57	-51	75	4800	-6.55	-883.82	18.7
777	SLU 58	-51	62	4779	-6.43	-878.44	15.49
777	SLU 59	-50	75	4772	-6.52	-878.79	18.68
777	SLU 60	-51	64	4861	-6.6	-894.32	16.06
777	SLU 61	-50	77	4854	-6.69	-894.67	19.25
777	SLU 62	-51	65	4908	-6.65	-902.65	16.1
777	SLU 63	-51	77	4902	-6.74	-903	19.29
777	SLU 64	-53	59	4788	-6.38	-879.26	14.77
777	SLU 65	-51	81	4777	-6.53	-879.84	20.09
777	SLU 66	-53	60	4864	-6.46	-892.62	14.83
777	SLU 67	-53	72	4857	-6.55	-892.97	18.02
777	SLU 68	-52	81	4824	-6.58	-888.17	20.13
777	SLU 69	-54	60	4911	-6.5	-900.95	14.87
777	SLU 70	-53	72	4905	-6.59	-901.3	18.06
777	SLU 71	-54	60	4883	-6.47	-895.92	14.85
777	SLU 72	-53	72	4876	-6.56	-896.27	18.04
777	SLU 73	-53	87	5191	-7.15	-955.78	21.6
777	SLU 74	-55	66	5278	-7.07	-968.56	16.33
777	SLU 75	-54	78	5271	-7.16	-968.91	19.53
777	SLU 76	-53	87	5238	-7.19	-964.11	21.64
777	SLU 77	-55	66	5325	-7.12	-976.89	16.37
777	SLU 78	-54	78	5319	-7.21	-977.24	19.57
777	SLU 79	-55	66	5297	-7.09	-971.86	16.36
777	SLU 80	-54	78	5290	-7.18	-972.21	19.55
777	SLU 81	-54	68	5379	-7.26	-987.75	16.92
777	SLU 82	-54	81	5373	-7.35	-988.09	20.12
777	SLU 83	-55	68	5427	-7.31	-996.08	16.96
777	SLU 84	-54	81	5420	-7.4	-996.42	20.16
777	SLE RA 1	-40	45	3569	-4.76	-655.82	11.17
777	SLE RA 2	-39	59	3562	-4.86	-656.21	14.72
777	SLE RA 3	-40	45	3620	-4.81	-664.73	11.21
777	SLE RA 4	-40	54	3615	-4.87	-664.96	13.34
777	SLE RA 5	-39	59	3593	-4.9	-661.76	14.74
777	SLE RA 6	-41	45	3651	-4.84	-670.28	11.23
777	SLE RA 7	-40	54	3647	-4.91	-670.51	13.36
777	SLE RA 8	-40	45	3632	-4.82	-666.93	11.22
777	SLE RA 9	-40	54	3628	-4.89	-667.16	13.35
777	SLE RA 10	-40	63	3838	-5.27	-706.83	15.72
777	SLE RA 11	-41	49	3896	-5.22	-715.36	12.21
777	SLE RA 12	-41	58	3891	-5.29	-715.59	14.34
777	SLE RA 13	-40	63	3869	-5.31	-712.39	15.75
777	SLE RA 14	-41	49	3927	-5.25	-720.91	12.24
777	SLE RA 15	-41	58	3923	-5.32	-721.14	14.37
777	SLE RA 16	-41	49	3908	-5.23	-717.55	12.23
777	SLE RA 17	-41	58	3904	-5.3	-717.79	14.36
777	SLE RA 18	-41	51	3963	-5.35	-728.14	12.61
777	SLE RA 19	-40	59	3959	-5.41	-728.38	14.73
777	SLE RA 20	-41	51	3995	-5.38	-733.7	12.63
777	SLE RA 21	-41	59	3991	-5.44	-733.93	14.76
777	SLE FR 1	-40	45	3569	-4.76	-655.82	11.17
777	SLE FR 2	-40	48	3568	-4.78	-655.9	11.88
777	SLE FR 3	-40	45	3582	-4.77	-658.04	11.18
777	SLE FR 4	-40	49	3686	-4.96	-677.59	12.31
777	SLE FR 5	-40	47	3700	-4.95	-679.74	11.61
777	SLE FR 6	-40	48	3766	-5.06	-691.98	11.89
777	SLE QP 1	-40	45	3569	-4.76	-655.82	11.17
777	SLE QP 2	-40	47	3687	-4.94	-677.52	11.6
777	SLD 1	250	253	4686	-7.59	-870.1	62.98
777	SLD 2	236	141	4695	-7.4	-868.11	35.12
777	SLD 3	235	6	4850	-5.53	-864.63	1.28
777	SLD 4	220	-106	4858	-5.34	-862.64	-26.57
777	SLD 5	73	503	3738	-8.9	-743.94	125.6
777	SLD 6	63	429	3743	-8.78	-742.63	107.22
777	SLD 7	22	-320	4282	-2.02	-725.71	-80.06
777	SLD 8	13	-394	4288	-1.89	-724.4	-98.44
777	SLD 9	-93	487	3087	-7.99	-630.63	121.64
777	SLD 10	-102	413	3092	-7.86	-629.32	103.26
777	SLD 11	-143	-336	3631	-1.1	-612.4	-84.02
777	SLD 12	-153	-410	3637	-0.98	-611.09	-102.4
777	SLD 13	-301	199	2517	-4.54	-492.39	49.77
777	SLD 14	-315	87	2525	-4.35	-490.4	21.92
777	SLD 15	-316	-48	2680	-2.47	-486.92	-11.92
777	SLD 16	-330	-160	2689	-2.29	-484.94	-39.78
777	SLV 1	640	548	6011	-11.32	-1128.56	136.45
777	SLV 2	606	285	6031	-10.87	-1123.89	70.98
777	SLV 3	603	-66	6421	-6.14	-1115.09	-16.76
777	SLV 4	568	-329	6440	-5.7	-1110.42	-82.24
777	SLV 5	227	1176	3760	-14.78	-834.12	293.65
777	SLV 6	204	999	3774	-14.48	-830.98	249.57

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
777	SLV 7	103	-868	5124	2.46	-789.24	-217.07
777	SLV 8	79	-1046	5137	2.76	-786.1	-261.15
777	SLV 9	-159	1139	2237	-12.64	-568.94	284.35
777	SLV 10	-183	961	2251	-12.34	-565.79	240.27
777	SLV 11	-284	-906	3601	4.6	-524.06	-226.37
777	SLV 12	-307	-1083	3614	4.9	-520.92	-270.45
777	SLV 13	-648	422	934	-4.18	-244.61	105.44
777	SLV 14	-683	159	954	-3.73	-239.94	39.96
777	SLV 15	-686	-192	1344	0.99	-231.15	-47.78
777	SLV 16	-720	-455	1363	1.44	-226.48	-113.25
777	CRTFP Ux+	0	0	0	0	0	0
777	CRTFP Ux-	0	0	0	0	0	0
777	CRTFP Uy+	0	0	0	0	0	0
777	CRTFP Uy-	0	0	0	0	0	0
780	SLU 1	55	22	4231	-7.57	1077.16	-7.67
780	SLU 2	54	46	4213	-7.8	1077.96	-16.09
780	SLU 3	56	23	4332	-7.7	1100.95	-7.87
780	SLU 4	56	37	4321	-7.84	1101.44	-12.92
780	SLU 5	55	47	4279	-7.88	1093.4	-16.4
780	SLU 6	57	23	4398	-7.78	1116.39	-8.18
780	SLU 7	57	38	4387	-7.92	1116.88	-13.23
780	SLU 8	57	24	4363	-7.73	1108.03	-8.29
780	SLU 9	56	38	4352	-7.87	1108.52	-13.34
780	SLU 10	56	49	4720	-8.83	1205.5	-17.06
780	SLU 11	59	25	4839	-8.73	1228.5	-8.83
780	SLU 12	58	40	4828	-8.87	1228.98	-13.89
780	SLU 13	57	50	4786	-8.91	1220.94	-17.37
780	SLU 14	60	26	4905	-8.8	1243.94	-9.14
780	SLU 15	59	41	4894	-8.94	1244.42	-14.19
780	SLU 16	59	26	4870	-8.75	1235.58	-9.25
780	SLU 17	59	41	4860	-8.89	1236.06	-14.31
780	SLU 18	58	26	4956	-9.03	1259.36	-9.05
780	SLU 19	58	40	4945	-9.17	1259.84	-14.1
780	SLU 20	59	27	5022	-9.11	1274.8	-9.36
780	SLU 21	59	41	5011	-9.25	1275.28	-14.41
780	SLU 22	60	22	4869	-8.68	1234.1	-7.67
780	SLU 23	59	46	4851	-8.92	1234.91	-16.09
780	SLU 24	62	23	4970	-8.81	1257.9	-7.87
780	SLU 25	61	37	4959	-8.96	1258.38	-12.92
780	SLU 26	60	47	4917	-9	1250.35	-16.4
780	SLU 27	63	23	5036	-8.89	1273.34	-8.17
780	SLU 28	62	38	5025	-9.03	1273.82	-13.23
780	SLU 29	62	24	5001	-8.84	1264.98	-8.29
780	SLU 30	62	38	4990	-8.98	1265.46	-13.34
780	SLU 31	62	49	5358	-9.94	1362.45	-17.06
780	SLU 32	64	25	5477	-9.84	1385.45	-8.83
780	SLU 33	64	40	5466	-9.98	1385.93	-13.88
780	SLU 34	63	50	5424	-10.02	1377.89	-17.36
780	SLU 35	65	26	5543	-9.92	1400.89	-9.14
780	SLU 36	65	41	5532	-10.06	1401.37	-14.19
780	SLU 37	65	26	5508	-9.86	1392.53	-9.25
780	SLU 38	64	41	5497	-10	1393.01	-14.3
780	SLU 39	64	26	5593	-10.14	1416.31	-9.04
780	SLU 40	63	40	5582	-10.28	1416.79	-14.1
780	SLU 41	65	27	5659	-10.22	1431.75	-9.35
780	SLU 42	64	41	5648	-10.36	1432.23	-14.41
780	SLU 43	69	29	5282	-9.46	1346.49	-9.97
780	SLU 44	69	53	5264	-9.69	1347.29	-18.4
780	SLU 45	71	29	5383	-9.59	1370.29	-10.17
780	SLU 46	70	44	5372	-9.73	1370.77	-15.22
780	SLU 47	69	54	5330	-9.77	1362.73	-18.71
780	SLU 48	72	30	5449	-9.67	1385.73	-10.48
780	SLU 49	71	45	5438	-9.81	1386.21	-15.53
780	SLU 50	71	30	5414	-9.62	1377.37	-10.59
780	SLU 51	71	45	5403	-9.76	1377.85	-15.64
780	SLU 52	71	55	5771	-10.72	1474.84	-19.36
780	SLU 53	73	32	5890	-10.61	1497.84	-11.13
780	SLU 54	73	46	5879	-10.76	1498.32	-16.19
780	SLU 55	72	56	5837	-10.8	1490.28	-19.67
780	SLU 56	74	33	5956	-10.69	1513.27	-11.44
780	SLU 57	74	47	5945	-10.83	1513.76	-16.5
780	SLU 58	74	33	5921	-10.64	1504.92	-11.55
780	SLU 59	73	48	5910	-10.78	1505.4	-16.61
780	SLU 60	73	33	6006	-10.92	1528.7	-11.35
780	SLU 61	73	47	5995	-11.06	1529.18	-16.4
780	SLU 62	74	33	6072	-11	1544.14	-11.66
780	SLU 63	73	48	6062	-11.14	1544.62	-16.71
780	SLU 64	75	29	5919	-10.57	1503.44	-9.97
780	SLU 65	74	53	5901	-10.81	1504.24	-18.39
780	SLU 66	76	29	6020	-10.7	1527.24	-10.17
780	SLU 67	76	44	6010	-10.84	1527.72	-15.22
780	SLU 68	75	54	5967	-10.88	1519.68	-18.7
780	SLU 69	77	30	6086	-10.78	1542.68	-10.48
780	SLU 70	77	45	6076	-10.92	1543.16	-15.53
780	SLU 71	77	30	6052	-10.73	1534.32	-10.59
780	SLU 72	76	45	6041	-10.87	1534.8	-15.64
780	SLU 73	76	55	6408	-11.83	1631.79	-19.36
780	SLU 74	79	32	6528	-11.73	1654.78	-11.13
780	SLU 75	78	46	6517	-11.87	1655.26	-16.19

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
780	SLU 76	77	56	6475	-11.91	1647.23	-19.67
780	SLU 77	80	33	6594	-11.81	1670.22	-11.44
780	SLU 78	79	47	6583	-11.95	1670.7	-16.49
780	SLU 79	79	33	6559	-11.75	1661.86	-11.55
780	SLU 80	79	48	6548	-11.89	1662.34	-16.61
780	SLU 81	78	33	6644	-12.03	1685.65	-11.35
780	SLU 82	78	47	6633	-12.17	1686.13	-16.4
780	SLU 83	79	33	6710	-12.11	1701.09	-11.66
780	SLU 84	79	48	6699	-12.25	1701.57	-16.71
780	SLE RA 1	56	22	4413	-7.89	1122	-7.67
780	SLE RA 2	56	38	4401	-8.04	1122.53	-13.29
780	SLE RA 3	57	22	4481	-7.98	1137.86	-7.8
780	SLE RA 4	57	32	4473	-8.07	1138.19	-11.17
780	SLE RA 5	56	39	4445	-8.1	1132.83	-13.49
780	SLE RA 6	58	23	4525	-8.03	1148.16	-8.01
780	SLE RA 7	58	33	4517	-8.12	1148.48	-11.38
780	SLE RA 8	58	23	4501	-7.99	1142.58	-8.08
780	SLE RA 9	57	33	4494	-8.09	1142.91	-11.45
780	SLE RA 10	57	40	4739	-8.73	1207.56	-13.93
780	SLE RA 11	59	24	4819	-8.66	1222.89	-8.44
780	SLE RA 12	59	34	4811	-8.75	1223.21	-11.81
780	SLE RA 13	58	40	4783	-8.78	1217.86	-14.13
780	SLE RA 14	60	25	4863	-8.71	1233.19	-8.65
780	SLE RA 15	59	34	4856	-8.8	1233.51	-12.02
780	SLE RA 16	59	25	4839	-8.67	1227.61	-8.72
780	SLE RA 17	59	35	4832	-8.77	1227.93	-12.09
780	SLE RA 18	59	25	4896	-8.86	1243.47	-8.59
780	SLE RA 19	58	34	4889	-8.96	1243.79	-11.96
780	SLE RA 20	59	25	4940	-8.91	1253.76	-8.79
780	SLE RA 21	59	35	4933	-9.01	1254.08	-12.16
780	SLE FR 1	56	22	4413	-7.89	1122	-7.67
780	SLE FR 2	56	25	4411	-7.92	1122.11	-8.79
780	SLE FR 3	57	22	4431	-7.91	1126.12	-7.75
780	SLE FR 4	57	26	4556	-8.21	1158.55	-9.07
780	SLE FR 5	57	23	4576	-8.2	1162.56	-8.03
780	SLE FR 6	58	23	4655	-8.37	1182.73	-8.13
780	SLE QP 1	56	22	4413	-7.89	1122	-7.67
780	SLE QP 2	57	23	4558	-8.18	1158.44	-7.95
780	SLD 1	417	132	3168	-7.23	859.24	-46.06
780	SLD 2	397	264	3140	-7.54	859.87	-92.07
780	SLD 3	429	-149	3428	-4.08	851.89	51.98
780	SLD 4	409	-17	3400	-4.38	852.51	5.97
780	SLD 5	150	457	3751	-12.63	1079.72	-159.79
780	SLD 6	137	544	3733	-12.82	1080.13	-190.15
780	SLD 7	191	-478	4619	-2.11	1055.21	167
780	SLD 8	177	-391	4601	-2.31	1055.62	136.64
780	SLD 9	-63	436	4516	-14.05	1261.26	-152.53
780	SLD 10	-77	524	4497	-14.25	1261.67	-182.89
780	SLD 11	-23	-499	5384	-3.54	1236.75	174.26
780	SLD 12	-36	-412	5365	-3.73	1237.16	143.9
780	SLD 13	-294	62	5716	-11.98	1464.37	-21.86
780	SLD 14	-315	194	5688	-12.28	1464.99	-67.87
780	SLD 15	-282	-218	5977	-8.82	1457.01	76.18
780	SLD 16	-303	-86	5949	-9.13	1457.64	30.16
780	SLV 1	898	299	1282	-6.23	458.6	-104.71
780	SLV 2	850	610	1217	-6.94	460.07	-212.87
780	SLV 3	928	-401	1936	1.68	440.64	140.16
780	SLV 4	881	-91	1870	0.97	442.11	32.01
780	SLV 5	272	1111	2596	-19.46	975.45	-388.19
780	SLV 6	240	1320	2552	-19.94	976.44	-461.01
780	SLV 7	374	-1225	4775	6.91	915.59	428.07
780	SLV 8	341	-1016	4731	6.43	916.58	355.25
780	SLV 9	-227	1062	4386	-22.79	1400.3	-371.14
780	SLV 10	-260	1271	4341	-23.27	1401.29	-443.96
780	SLV 11	-126	-1274	6564	3.58	1340.44	445.12
780	SLV 12	-158	-1065	6520	3.1	1341.43	372.3
780	SLV 13	-766	136	7246	-17.33	1874.77	-47.9
780	SLV 14	-814	447	7180	-18.04	1876.24	-156.06
780	SLV 15	-736	-564	7900	-9.42	1856.81	196.98
780	SLV 16	-784	-254	7834	-10.13	1858.28	88.82
780	CRTFP Ux+	0	0	0	0	0	0
780	CRTFP Ux-	0	0	0	0	0	0
780	CRTFP Uy+	0	0	0	0	0	0
780	CRTFP Uy-	0	0	0	0	0	0
782	SLU 1	87	36	6291	0.99	5.34	-1.66
782	SLU 2	86	67	6257	0.63	4.01	-1.49
782	SLU 3	90	36	6444	1.12	5.83	-1.76
782	SLU 4	89	55	6424	0.9	5.04	-1.65
782	SLU 5	88	67	6358	0.72	4.23	-1.56
782	SLU 6	92	36	6545	1.21	6.06	-1.83
782	SLU 7	91	55	6525	0.99	5.26	-1.73
782	SLU 8	91	36	6493	1.18	5.78	-1.81
782	SLU 9	90	55	6473	0.96	4.98	-1.71
782	SLU 10	91	73	7056	0.72	5.85	-1.7
782	SLU 11	95	42	7243	1.21	7.68	-1.97
782	SLU 12	94	61	7223	0.99	6.88	-1.87
782	SLU 13	93	73	7157	0.81	6.07	-1.78
782	SLU 14	97	42	7344	1.3	7.9	-2.04
782	SLU 15	96	61	7324	1.08	7.1	-1.94

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
782	SLU 16	96	42	7292	1.27	7.62	-2.02
782	SLU 17	95	61	7272	1.05	6.82	-1.92
782	SLU 18	95	44	7432	1.12	7.97	-1.96
782	SLU 19	93	63	7412	0.91	7.17	-1.86
782	SLU 20	97	44	7533	1.22	8.19	-2.04
782	SLU 21	95	63	7513	1	7.39	-1.94
782	SLU 22	99	40	7287	1.4	8.05	-1.98
782	SLU 23	97	72	7253	1.03	6.72	-1.81
782	SLU 24	101	41	7441	1.52	8.54	-2.08
782	SLU 25	100	60	7420	1.3	7.75	-1.98
782	SLU 26	99	72	7354	1.13	6.94	-1.89
782	SLU 27	103	41	7541	1.61	8.77	-2.15
782	SLU 28	102	59	7521	1.39	7.97	-2.05
782	SLU 29	103	40	7489	1.58	8.49	-2.13
782	SLU 30	101	59	7469	1.36	7.69	-2.03
782	SLU 31	102	78	8052	1.12	8.56	-2.03
782	SLU 32	106	47	8239	1.61	10.39	-2.29
782	SLU 33	105	65	8219	1.39	9.59	-2.19
782	SLU 34	104	78	8153	1.22	8.78	-2.1
782	SLU 35	108	46	8340	1.7	10.61	-2.37
782	SLU 36	107	65	8320	1.49	9.81	-2.26
782	SLU 37	108	46	8288	1.67	10.33	-2.34
782	SLU 38	106	65	8268	1.45	9.53	-2.24
782	SLU 39	106	49	8429	1.53	10.68	-2.29
782	SLU 40	105	68	8408	1.31	9.88	-2.18
782	SLU 41	108	49	8530	1.62	10.9	-2.36
782	SLU 42	107	68	8509	1.4	10.1	-2.26
782	SLU 43	110	45	7837	1.15	6.01	-2.05
782	SLU 44	108	77	7803	0.79	4.68	-1.88
782	SLU 45	113	45	7990	1.28	6.51	-2.14
782	SLU 46	112	64	7970	1.06	5.71	-2.04
782	SLU 47	110	77	7904	0.88	4.9	-1.95
782	SLU 48	115	45	8091	1.37	6.73	-2.22
782	SLU 49	114	64	8071	1.15	5.93	-2.12
782	SLU 50	114	45	8039	1.34	6.45	-2.2
782	SLU 51	113	64	8018	1.12	5.65	-2.09
782	SLU 52	113	82	8602	0.88	6.52	-2.09
782	SLU 53	118	51	8789	1.37	8.35	-2.36
782	SLU 54	117	70	8768	1.15	7.55	-2.25
782	SLU 55	115	82	8703	0.97	6.74	-2.16
782	SLU 56	120	51	8890	1.46	8.57	-2.43
782	SLU 57	119	70	8869	1.24	7.77	-2.33
782	SLU 58	119	51	8838	1.43	8.29	-2.41
782	SLU 59	118	70	8817	1.21	7.49	-2.31
782	SLU 60	117	54	8978	1.28	8.64	-2.35
782	SLU 61	116	72	8958	1.07	7.84	-2.25
782	SLU 62	119	54	9079	1.38	8.86	-2.43
782	SLU 63	118	72	9059	1.16	8.06	-2.32
782	SLU 64	121	50	8833	1.56	8.72	-2.37
782	SLU 65	119	81	8799	1.19	7.39	-2.2
782	SLU 66	124	50	8986	1.68	9.22	-2.47
782	SLU 67	123	69	8966	1.46	8.42	-2.36
782	SLU 68	121	81	8900	1.28	7.61	-2.27
782	SLU 69	126	50	9087	1.77	9.44	-2.54
782	SLU 70	125	69	9067	1.55	8.64	-2.44
782	SLU 71	125	50	9035	1.74	9.16	-2.52
782	SLU 72	124	68	9015	1.52	8.36	-2.42
782	SLU 73	124	87	9598	1.28	9.23	-2.41
782	SLU 74	129	56	9785	1.77	11.06	-2.68
782	SLU 75	128	75	9765	1.55	10.26	-2.58
782	SLU 76	126	87	9699	1.38	9.45	-2.49
782	SLU 77	131	56	9886	1.86	11.28	-2.75
782	SLU 78	130	75	9866	1.65	10.48	-2.65
782	SLU 79	130	55	9834	1.83	11	-2.73
782	SLU 80	129	74	9814	1.61	10.2	-2.63
782	SLU 81	128	58	9974	1.69	11.35	-2.68
782	SLU 82	127	77	9954	1.47	10.55	-2.57
782	SLU 83	130	58	10075	1.78	11.57	-2.75
782	SLU 84	129	77	10055	1.56	10.77	-2.65
782	SLE RA 1	91	37	6576	1.11	6.11	-1.75
782	SLE RA 2	89	58	6553	0.87	5.22	-1.64
782	SLE RA 3	93	37	6678	1.19	6.44	-1.82
782	SLE RA 4	92	50	6664	1.05	5.91	-1.75
782	SLE RA 5	91	58	6620	0.93	5.37	-1.69
782	SLE RA 6	94	37	6745	1.25	6.59	-1.87
782	SLE RA 7	93	50	6732	1.11	6.06	-1.8
782	SLE RA 8	93	37	6710	1.23	6.4	-1.85
782	SLE RA 9	93	50	6697	1.09	5.87	-1.78
782	SLE RA 10	93	62	7086	0.93	6.45	-1.78
782	SLE RA 11	96	41	7210	1.25	7.67	-1.96
782	SLE RA 12	95	54	7197	1.11	7.14	-1.89
782	SLE RA 13	94	62	7153	0.99	6.6	-1.83
782	SLE RA 14	97	41	7278	1.31	7.82	-2.01
782	SLE RA 15	96	54	7264	1.17	7.29	-1.94
782	SLE RA 16	97	41	7243	1.29	7.63	-1.99
782	SLE RA 17	96	54	7229	1.15	7.1	-1.93
782	SLE RA 18	95	43	7337	1.2	7.87	-1.96
782	SLE RA 19	95	55	7323	1.05	7.33	-1.89
782	SLE RA 20	97	43	7404	1.26	8.01	-2

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
782	SLE RA 21	96	55	7390	1.11	7.48	-1.94
782	SLE FR 1	91	37	6576	1.11	6.11	-1.75
782	SLE FR 2	90	41	6571	1.06	5.93	-1.73
782	SLE FR 3	91	37	6603	1.13	6.17	-1.77
782	SLE FR 4	92	43	6799	1.09	6.46	-1.79
782	SLE FR 5	93	39	6831	1.16	6.7	-1.83
782	SLE FR 6	93	40	6956	1.15	6.99	-1.85
782	SLE QP 1	91	37	6576	1.11	6.11	-1.75
782	SLE QP 2	92	39	6804	1.13	6.64	-1.81
782	SLD 1	668	154	5797	-1.85	-0.47	-1.05
782	SLD 2	637	258	5773	-2.17	1.5	1.07
782	SLD 3	695	-224	6292	3.11	16.96	-3.46
782	SLD 4	664	-120	6267	2.79	18.93	-1.34
782	SLD 5	230	628	5757	-7.22	-22.29	1.7
782	SLD 6	209	696	5741	-7.43	-20.98	3.09
782	SLD 7	319	-632	7404	9.3	35.81	-6.35
782	SLD 8	299	-563	7388	9.09	37.12	-4.95
782	SLD 9	-115	641	6220	-6.82	-23.84	1.32
782	SLD 10	-135	709	6204	-7.03	-22.54	2.72
782	SLD 11	-25	-619	7867	9.7	34.26	-6.72
782	SLD 12	-46	-550	7851	9.48	35.56	-5.32
782	SLD 13	-480	197	7341	-0.52	-5.66	-2.29
782	SLD 14	-511	302	7316	-0.84	-3.68	-0.17
782	SLD 15	-453	-180	7835	4.44	11.77	-4.7
782	SLD 16	-484	-76	7811	4.12	13.75	-2.58
782	SLV 1	1438	337	4407	-6.26	-11.43	0.2
782	SLV 2	1364	582	4349	-7.01	-6.79	5.18
782	SLV 3	1506	-607	5647	6.17	32.13	-5.89
782	SLV 4	1432	-362	5589	5.41	36.77	-0.91
782	SLV 5	407	1514	4214	-19.79	-65.71	7.1
782	SLV 6	357	1679	4175	-20.3	-62.59	10.45
782	SLV 7	633	-1632	8349	21.63	79.48	-13.2
782	SLV 8	583	-1467	8310	21.12	82.61	-9.85
782	SLV 9	-399	1545	5298	-18.86	-69.33	6.22
782	SLV 10	-449	1710	5259	-19.37	-66.21	9.58
782	SLV 11	-173	-1601	9433	22.57	75.86	-14.08
782	SLV 12	-223	-1436	9394	22.06	78.99	-10.73
782	SLV 13	-1248	440	8019	-3.15	-23.5	-2.71
782	SLV 14	-1322	685	7961	-3.9	-18.85	2.27
782	SLV 15	-1180	-504	9259	9.28	20.06	-8.8
782	SLV 16	-1254	-259	9201	8.52	24.7	-3.82
782	CRTFP Ux+	0	0	0	0	0	0
782	CRTFP Ux-	0	0	0	0	0	0
782	CRTFP Uy+	0	0	0	0	0	0
782	CRTFP Uy-	0	0	0	0	0	0
785	SLU 1	-81	-39	6695	-1.55	-3.73	-0.03
785	SLU 2	-81	-9	6662	-1.96	-2.43	-0.1
785	SLU 3	-83	-40	6852	-1.49	-4.24	-0.02
785	SLU 4	-83	-22	6832	-1.74	-3.46	-0.06
785	SLU 5	-82	-9	6761	-1.92	-2.8	-0.1
785	SLU 6	-84	-41	6952	-1.45	-4.61	-0.02
785	SLU 7	-84	-23	6932	-1.7	-3.83	-0.06
785	SLU 8	-84	-40	6894	-1.47	-4.46	-0.02
785	SLU 9	-83	-22	6874	-1.71	-3.68	-0.07
785	SLU 10	-84	-12	7527	-2.19	-3.93	-0.1
785	SLU 11	-87	-44	7718	-1.72	-5.74	-0.02
785	SLU 12	-86	-25	7698	-1.97	-4.96	-0.07
785	SLU 13	-85	-13	7627	-2.15	-4.3	-0.1
785	SLU 14	-88	-44	7817	-1.68	-6.11	-0.02
785	SLU 15	-87	-26	7797	-1.93	-5.33	-0.06
785	SLU 16	-87	-44	7759	-1.7	-5.96	-0.02
785	SLU 17	-87	-26	7739	-1.94	-5.18	-0.07
785	SLU 18	-86	-44	7932	-1.88	-5.87	-0.03
785	SLU 19	-86	-26	7912	-2.13	-5.09	-0.08
785	SLU 20	-88	-45	8031	-1.84	-6.24	-0.03
785	SLU 21	-87	-26	8011	-2.08	-5.46	-0.07
785	SLU 22	-90	-45	7769	-1.52	-5.52	-0.01
785	SLU 23	-89	-15	7736	-1.93	-4.22	-0.08
785	SLU 24	-92	-46	7926	-1.46	-6.04	0
785	SLU 25	-92	-28	7906	-1.71	-5.26	-0.05
785	SLU 26	-91	-15	7835	-1.89	-4.59	-0.08
785	SLU 27	-93	-47	8025	-1.42	-6.4	0
785	SLU 28	-93	-28	8005	-1.67	-5.62	-0.04
785	SLU 29	-92	-46	7968	-1.44	-6.26	0
785	SLU 30	-92	-28	7948	-1.68	-5.48	-0.05
785	SLU 31	-93	-18	8601	-2.16	-5.72	-0.09
785	SLU 32	-96	-50	8792	-1.69	-7.53	0
785	SLU 33	-95	-31	8772	-1.94	-6.75	-0.05
785	SLU 34	-94	-19	8700	-2.12	-6.09	-0.08
785	SLU 35	-97	-50	8891	-1.65	-7.9	0
785	SLU 36	-96	-32	8871	-1.9	-7.12	-0.04
785	SLU 37	-96	-50	8833	-1.67	-7.76	-0.01
785	SLU 38	-95	-32	8813	-1.91	-6.98	-0.05
785	SLU 39	-95	-50	9005	-1.85	-7.67	-0.01
785	SLU 40	-95	-32	8985	-2.09	-6.89	-0.06
785	SLU 41	-96	-51	9105	-1.81	-8.03	-0.01
785	SLU 42	-96	-32	9085	-2.05	-7.25	-0.05
785	SLU 43	-103	-49	8336	-2.02	-4.23	-0.04
785	SLU 44	-102	-18	8302	-2.44	-2.93	-0.12

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
785	SLU 45	-105	-50	8493	-1.97	-4.75	-0.03
785	SLU 46	-104	-32	8473	-2.21	-3.97	-0.08
785	SLU 47	-103	-19	8402	-2.39	-3.3	-0.11
785	SLU 48	-106	-50	8592	-1.92	-5.11	-0.03
785	SLU 49	-105	-32	8572	-2.17	-4.33	-0.08
785	SLU 50	-105	-50	8534	-1.94	-4.97	-0.04
785	SLU 51	-104	-32	8514	-2.19	-4.19	-0.08
785	SLU 52	-106	-22	9168	-2.67	-4.43	-0.12
785	SLU 53	-108	-53	9358	-2.2	-6.24	-0.04
785	SLU 54	-108	-35	9338	-2.44	-5.46	-0.08
785	SLU 55	-107	-22	9267	-2.63	-4.8	-0.11
785	SLU 56	-109	-54	9457	-2.16	-6.61	-0.03
785	SLU 57	-109	-36	9437	-2.4	-5.83	-0.08
785	SLU 58	-108	-54	9400	-2.17	-6.47	-0.04
785	SLU 59	-108	-35	9380	-2.42	-5.69	-0.08
785	SLU 60	-108	-54	9572	-2.35	-6.38	-0.05
785	SLU 61	-107	-35	9552	-2.6	-5.6	-0.09
785	SLU 62	-109	-54	9671	-2.31	-6.74	-0.04
785	SLU 63	-108	-36	9651	-2.56	-5.96	-0.09
785	SLU 64	-112	-55	9409	-1.99	-6.03	-0.03
785	SLU 65	-111	-24	9376	-2.41	-4.73	-0.1
785	SLU 66	-113	-56	9567	-1.93	-6.54	-0.02
785	SLU 67	-113	-37	9547	-2.18	-5.76	-0.06
785	SLU 68	-112	-25	9475	-2.36	-5.09	-0.1
785	SLU 69	-115	-56	9666	-1.89	-6.91	-0.01
785	SLU 70	-114	-38	9646	-2.14	-6.13	-0.06
785	SLU 71	-114	-56	9608	-1.91	-6.76	-0.02
785	SLU 72	-113	-38	9588	-2.16	-5.98	-0.06
785	SLU 73	-114	-28	10242	-2.64	-6.23	-0.1
785	SLU 74	-117	-59	10432	-2.17	-8.04	-0.02
785	SLU 75	-117	-41	10412	-2.41	-7.26	-0.06
785	SLU 76	-115	-28	10341	-2.59	-6.59	-0.1
785	SLU 77	-118	-60	10531	-2.12	-8.4	-0.02
785	SLU 78	-118	-42	10511	-2.37	-7.62	-0.06
785	SLU 79	-117	-59	10473	-2.14	-8.26	-0.02
785	SLU 80	-117	-41	10453	-2.39	-7.48	-0.06
785	SLU 81	-117	-60	10646	-2.32	-8.17	-0.03
785	SLU 82	-116	-41	10626	-2.57	-7.39	-0.07
785	SLU 83	-118	-60	10745	-2.28	-8.54	-0.02
785	SLU 84	-117	-42	10725	-2.53	-7.76	-0.07
785	SLE RA 1	-84	-41	7002	-1.54	-4.24	-0.02
785	SLE RA 2	-83	-20	6980	-1.81	-3.38	-0.07
785	SLE RA 3	-85	-41	7107	-1.5	-4.58	-0.02
785	SLE RA 4	-85	-29	7093	-1.67	-4.06	-0.05
785	SLE RA 5	-84	-21	7046	-1.79	-3.62	-0.07
785	SLE RA 6	-86	-42	7173	-1.47	-4.83	-0.02
785	SLE RA 7	-86	-30	7160	-1.64	-4.31	-0.04
785	SLE RA 8	-85	-42	7134	-1.48	-4.73	-0.02
785	SLE RA 9	-85	-29	7121	-1.65	-4.21	-0.05
785	SLE RA 10	-86	-23	7557	-1.97	-4.38	-0.07
785	SLE RA 11	-87	-44	7684	-1.65	-5.58	-0.02
785	SLE RA 12	-87	-32	7670	-1.82	-5.06	-0.05
785	SLE RA 13	-86	-23	7623	-1.94	-4.62	-0.07
785	SLE RA 14	-88	-44	7750	-1.63	-5.83	-0.02
785	SLE RA 15	-88	-32	7737	-1.79	-5.31	-0.05
785	SLE RA 16	-88	-44	7711	-1.64	-5.73	-0.02
785	SLE RA 17	-87	-32	7698	-1.8	-5.21	-0.05
785	SLE RA 18	-87	-44	7826	-1.76	-5.67	-0.03
785	SLE RA 19	-87	-32	7813	-1.92	-5.15	-0.05
785	SLE RA 20	-88	-44	7892	-1.73	-5.91	-0.02
785	SLE RA 21	-88	-32	7879	-1.9	-5.39	-0.05
785	SLE FR 1	-84	-41	7002	-1.54	-4.24	-0.02
785	SLE FR 2	-84	-37	6998	-1.59	-4.07	-0.03
785	SLE FR 3	-84	-41	7029	-1.53	-4.34	-0.02
785	SLE FR 4	-85	-38	7245	-1.66	-4.5	-0.03
785	SLE FR 5	-85	-42	7276	-1.59	-4.77	-0.02
785	SLE FR 6	-86	-42	7414	-1.65	-4.96	-0.02
785	SLE QP 1	-84	-41	7002	-1.54	-4.24	-0.02
785	SLE QP 2	-85	-42	7249	-1.6	-4.67	-0.02
785	SLD 1	539	145	7957	-4.96	18.17	-0.99
785	SLD 2	510	44	7973	-4.53	17.72	1.02
785	SLD 3	527	-218	8444	0.63	1.66	0.13
785	SLD 4	498	-318	8460	1.05	1.2	2.14
785	SLD 5	125	583	6719	-11.16	27.31	-2.38
785	SLD 6	106	516	6730	-10.88	27.01	-1.05
785	SLD 7	86	-627	8345	7.46	-27.74	1.36
785	SLD 8	67	-693	8355	7.74	-28.04	2.69
785	SLD 9	-237	610	6144	-10.95	18.7	-2.74
785	SLD 10	-256	543	6154	-10.67	18.4	-1.41
785	SLD 11	-276	-600	7769	7.67	-36.36	1
785	SLD 12	-295	-666	7779	7.95	-36.65	2.33
785	SLD 13	-668	235	6038	-4.26	-10.55	-2.19
785	SLD 14	-697	135	6054	-3.84	-11	-0.18
785	SLD 15	-680	-128	6526	1.32	-27.06	-1.07
785	SLD 16	-708	-228	6542	1.75	-27.51	0.94
785	SLV 1	1375	422	8865	-9.91	50.09	-2.36
785	SLV 2	1308	186	8902	-8.91	49.03	2.37
785	SLV 3	1346	-480	10087	4.07	8.78	0.4
785	SLV 4	1279	-717	10124	5.08	7.72	5.14

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
785	SLV 5	409	1511	5874	-25.5	74.61	-5.8
785	SLV 6	364	1352	5899	-24.82	73.89	-2.62
785	SLV 7	313	-1498	9947	21.12	-63.09	3.42
785	SLV 8	268	-1658	9972	21.8	-63.8	6.6
785	SLV 9	-438	1574	4527	-25.01	54.46	-6.65
785	SLV 10	-483	1415	4552	-24.33	53.75	-3.46
785	SLV 11	-534	-1435	8600	21.61	-83.23	2.57
785	SLV 12	-579	-1594	8625	22.29	-83.95	5.75
785	SLV 13	-1449	634	4375	-8.29	-17.06	-5.19
785	SLV 14	-1516	397	4412	-7.28	-18.12	-0.45
785	SLV 15	-1477	-269	5597	5.7	-58.37	-2.42
785	SLV 16	-1544	-506	5634	6.7	-59.43	2.31
785	CRTFP Ux+	0	0	0	0	0	0
785	CRTFP Ux-	0	0	0	0	0	0
785	CRTFP Uy+	0	0	0	0	0	0
785	CRTFP Uy-	0	0	0	0	0	0
788	SLU 1	-2	15	3120	-2.33	730.63	-3.89
788	SLU 2	-2	31	3114	-2.44	727.6	-8.04
788	SLU 3	-2	15	3190	-2.37	747.38	-3.95
788	SLU 4	-2	25	3186	-2.43	745.56	-6.44
788	SLU 5	-2	31	3158	-2.47	738.2	-8.05
788	SLU 6	-2	15	3234	-2.39	757.98	-3.96
788	SLU 7	-2	25	3231	-2.46	756.16	-6.45
788	SLU 8	-2	15	3208	-2.38	751.83	-3.91
788	SLU 9	-2	25	3205	-2.45	750.01	-6.4
788	SLU 10	-2	31	3525	-2.83	823.61	-8.03
788	SLU 11	-1	15	3602	-2.75	843.39	-3.94
788	SLU 12	-2	25	3598	-2.82	841.57	-6.43
788	SLU 13	-2	31	3570	-2.85	834.21	-8.05
788	SLU 14	-2	15	3646	-2.78	853.99	-3.96
788	SLU 15	-2	25	3642	-2.85	852.17	-6.45
788	SLU 16	-1	15	3620	-2.77	847.84	-3.91
788	SLU 17	-2	25	3616	-2.83	846.02	-6.4
788	SLU 18	-1	14	3708	-2.88	867.79	-3.88
788	SLU 19	-1	24	3704	-2.95	865.97	-6.37
788	SLU 20	-1	14	3752	-2.91	878.39	-3.89
788	SLU 21	-1	24	3748	-2.97	876.57	-6.38
788	SLU 22	-2	16	3615	-2.61	846.58	-4.24
788	SLU 23	-3	32	3609	-2.73	843.54	-8.39
788	SLU 24	-2	16	3685	-2.65	863.32	-4.3
788	SLU 25	-3	26	3681	-2.72	861.5	-6.79
788	SLU 26	-3	32	3653	-2.75	854.14	-8.4
788	SLU 27	-2	16	3729	-2.68	873.92	-4.31
788	SLU 28	-3	26	3726	-2.75	872.1	-6.8
788	SLU 29	-2	16	3703	-2.66	867.78	-4.27
788	SLU 30	-3	26	3700	-2.73	865.95	-6.76
788	SLU 31	-2	32	4020	-3.12	939.55	-8.39
788	SLU 32	-2	16	4096	-3.04	959.33	-4.29
788	SLU 33	-2	26	4093	-3.11	957.51	-6.79
788	SLU 34	-2	32	4064	-3.14	950.15	-8.4
788	SLU 35	-2	16	4141	-3.06	969.93	-4.31
788	SLU 36	-2	26	4137	-3.13	968.11	-6.8
788	SLU 37	-2	16	4115	-3.05	963.79	-4.26
788	SLU 38	-2	26	4111	-3.12	961.96	-6.75
788	SLU 39	-2	16	4202	-3.17	983.73	-4.23
788	SLU 40	-2	26	4199	-3.24	981.91	-6.72
788	SLU 41	-2	16	4247	-3.19	994.33	-4.25
788	SLU 42	-2	26	4243	-3.26	992.51	-6.74
788	SLU 43	-2	18	3886	-2.93	910.07	-4.93
788	SLU 44	-2	35	3880	-3.04	907.03	-9.08
788	SLU 45	-2	19	3956	-2.97	926.82	-4.99
788	SLU 46	-2	29	3953	-3.03	924.99	-7.48
788	SLU 47	-2	35	3924	-3.07	917.63	-9.1
788	SLU 48	-2	19	4001	-2.99	937.42	-5
788	SLU 49	-2	29	3997	-3.06	935.59	-7.49
788	SLU 50	-2	19	3975	-2.98	931.27	-4.96
788	SLU 51	-2	28	3971	-3.05	929.45	-7.45
788	SLU 52	-2	35	4292	-3.43	1003.04	-9.08
788	SLU 53	-2	19	4368	-3.35	1022.83	-4.99
788	SLU 54	-2	29	4364	-3.42	1021	-7.48
788	SLU 55	-2	35	4336	-3.45	1013.64	-9.09
788	SLU 56	-2	19	4412	-3.38	1033.43	-5
788	SLU 57	-2	29	4409	-3.45	1031.6	-7.49
788	SLU 58	-2	18	4386	-3.37	1027.28	-4.95
788	SLU 59	-2	28	4383	-3.43	1025.46	-7.44
788	SLU 60	-1	18	4474	-3.48	1047.23	-4.92
788	SLU 61	-2	28	4470	-3.55	1045.41	-7.42
788	SLU 62	-2	18	4518	-3.51	1057.83	-4.94
788	SLU 63	-2	28	4515	-3.57	1056.01	-7.43
788	SLU 64	-2	20	4381	-3.21	1026.01	-5.28
788	SLU 65	-3	36	4375	-3.33	1022.98	-9.43
788	SLU 66	-3	20	4451	-3.25	1042.76	-5.34
788	SLU 67	-3	30	4448	-3.32	1040.94	-7.83
788	SLU 68	-3	36	4419	-3.35	1033.58	-9.45
788	SLU 69	-3	20	4495	-3.28	1053.36	-5.36
788	SLU 70	-3	30	4492	-3.35	1051.54	-7.85
788	SLU 71	-3	20	4470	-3.26	1047.22	-5.31
788	SLU 72	-3	30	4466	-3.33	1045.39	-7.8
788	SLU 73	-3	36	4786	-3.72	1118.99	-9.43

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
788	SLU 74	-2	20	4863	-3.64	1138.77	-5.34
788	SLU 75	-3	30	4859	-3.71	1136.95	-7.83
788	SLU 76	-3	36	4831	-3.74	1129.59	-9.44
788	SLU 77	-2	20	4907	-3.66	1149.37	-5.35
788	SLU 78	-3	30	4903	-3.73	1147.55	-7.84
788	SLU 79	-2	20	4881	-3.65	1143.23	-5.31
788	SLU 80	-3	30	4877	-3.72	1141.4	-7.8
788	SLU 81	-2	20	4969	-3.77	1163.17	-5.28
788	SLU 82	-2	30	4965	-3.84	1161.35	-7.77
788	SLU 83	-2	20	5013	-3.79	1173.77	-5.29
788	SLU 84	-2	30	5010	-3.86	1171.95	-7.78
788	SLE RA 1	-2	15	3261	-2.41	763.76	-3.99
788	SLE RA 2	-2	26	3257	-2.49	761.73	-6.75
788	SLE RA 3	-2	15	3308	-2.44	774.92	-4.03
788	SLE RA 4	-2	22	3306	-2.48	773.71	-5.69
788	SLE RA 5	-2	26	3287	-2.5	768.8	-6.76
788	SLE RA 6	-2	15	3338	-2.45	781.99	-4.04
788	SLE RA 7	-2	22	3335	-2.5	780.78	-5.7
788	SLE RA 8	-2	15	3320	-2.44	777.89	-4
788	SLE RA 9	-2	22	3318	-2.49	776.68	-5.67
788	SLE RA 10	-2	26	3532	-2.74	825.74	-6.75
788	SLE RA 11	-2	15	3582	-2.69	838.93	-4.02
788	SLE RA 12	-2	22	3580	-2.74	837.71	-5.68
788	SLE RA 13	-2	26	3561	-2.76	832.81	-6.76
788	SLE RA 14	-2	15	3612	-2.71	846	-4.03
788	SLE RA 15	-2	22	3610	-2.76	844.78	-5.69
788	SLE RA 16	-2	15	3595	-2.7	841.9	-4
788	SLE RA 17	-2	22	3592	-2.75	840.69	-5.66
788	SLE RA 18	-2	15	3653	-2.78	855.2	-3.98
788	SLE RA 19	-2	21	3651	-2.82	853.98	-5.64
788	SLE RA 20	-2	15	3683	-2.8	862.26	-3.99
788	SLE RA 21	-2	22	3680	-2.84	861.05	-5.65
788	SLE FR 1	-2	15	3261	-2.41	763.76	-3.99
788	SLE FR 2	-2	17	3260	-2.43	763.35	-4.54
788	SLE FR 3	-2	15	3273	-2.42	766.59	-3.99
788	SLE FR 4	-2	17	3378	-2.54	790.79	-4.54
788	SLE FR 5	-2	15	3391	-2.53	794.02	-3.99
788	SLE FR 6	-2	15	3457	-2.59	809.48	-3.98
788	SLE QP 1	-2	15	3261	-2.41	763.76	-3.99
788	SLE QP 2	-2	15	3379	-2.52	791.19	-3.99
788	SLD 1	323	140	3468	-2.24	799.68	-35.33
788	SLD 2	309	117	3462	-2.22	799.57	-29.54
788	SLD 3	329	-66	3569	-0.69	843.95	16.03
788	SLD 4	315	-88	3563	-0.66	843.84	21.81
788	SLD 5	89	368	3254	-4.8	726.61	-92.31
788	SLD 6	80	353	3249	-4.78	726.54	-88.5
788	SLD 7	109	-317	3590	0.38	874.18	78.86
788	SLD 8	100	-332	3586	0.4	874.11	82.68
788	SLD 9	-103	361	3172	-5.44	708.27	-90.65
788	SLD 10	-112	347	3167	-5.42	708.2	-86.83
788	SLD 11	-84	-323	3508	-0.26	855.84	80.53
788	SLD 12	-93	-338	3504	-0.24	855.77	84.34
788	SLD 13	-319	118	3195	-4.38	738.54	-29.78
788	SLD 14	-332	96	3188	-4.35	738.43	-24
788	SLD 15	-313	-88	3296	-2.82	782.81	21.57
788	SLD 16	-326	-110	3289	-2.8	782.7	27.36
788	SLV 1	757	323	3580	-2	807.36	-81.27
788	SLV 2	726	270	3564	-1.94	807.11	-67.68
788	SLV 3	772	-189	3833	1.89	918.35	46.72
788	SLV 4	740	-242	3817	1.95	918.1	60.31
788	SLV 5	210	894	3058	-8.28	627.75	-223.82
788	SLV 6	189	858	3047	-8.24	627.59	-214.67
788	SLV 7	258	-813	3902	4.7	997.72	202.8
788	SLV 8	237	-849	3891	4.74	997.55	211.96
788	SLV 9	-240	878	2866	-9.78	584.83	-219.93
788	SLV 10	-261	843	2856	-9.74	584.66	-210.77
788	SLV 11	-192	-828	3710	3.2	954.8	206.7
788	SLV 12	-214	-864	3700	3.24	954.63	215.85
788	SLV 13	-743	272	2940	-6.99	664.28	-68.28
788	SLV 14	-775	219	2925	-6.93	664.03	-54.69
788	SLV 15	-729	-240	3193	-3.1	775.27	59.71
788	SLV 16	-761	-293	3178	-3.04	775.02	73.3
788	CRTFP Ux+	0	0	0	0	0	0
788	CRTFP Ux-	0	0	0	0	0	0
788	CRTFP Uy+	0	0	0	0	0	0
788	CRTFP Uy-	0	0	0	0	0	0
790	SLU 1	8	94	5492	-7.68	-24.67	0.2
790	SLU 2	9	128	5488	-7.78	-24.87	0.25
790	SLU 3	9	95	5606	-7.86	-25.39	0.2
790	SLU 4	9	116	5604	-7.92	-25.5	0.23
790	SLU 5	10	128	5559	-7.91	-25.29	0.25
790	SLU 6	9	96	5677	-7.99	-25.81	0.19
790	SLU 7	9	116	5675	-8.05	-25.92	0.22
790	SLU 8	9	94	5634	-7.94	-25.51	0.19
790	SLU 9	9	115	5632	-8	-25.63	0.22
790	SLU 10	9	135	6203	-8.83	-27.31	0.19
790	SLU 11	8	103	6321	-8.91	-27.84	0.14
790	SLU 12	8	123	6319	-8.97	-27.95	0.17
790	SLU 13	9	136	6274	-8.96	-27.73	0.19

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
790	SLU 14	8	103	6392	-9.04	-28.26	0.13
790	SLU 15	9	124	6390	-9.1	-28.37	0.16
790	SLU 16	8	102	6349	-8.98	-27.96	0.13
790	SLU 17	9	123	6347	-9.05	-28.08	0.16
790	SLU 18	7	105	6513	-9.17	-28.17	0.11
790	SLU 19	8	125	6511	-9.24	-28.29	0.14
790	SLU 20	8	105	6584	-9.3	-28.59	0.11
790	SLU 21	8	126	6582	-9.37	-28.71	0.14
790	SLU 22	9	105	6342	-8.6	-28.38	0.21
790	SLU 23	10	139	6338	-8.71	-28.58	0.27
790	SLU 24	9	107	6456	-8.78	-29.1	0.21
790	SLU 25	10	127	6454	-8.85	-29.21	0.24
790	SLU 26	10	140	6409	-8.84	-29	0.26
790	SLU 27	9	107	6527	-8.91	-29.52	0.21
790	SLU 28	10	128	6525	-8.98	-29.63	0.24
790	SLU 29	9	106	6484	-8.86	-29.22	0.21
790	SLU 30	10	126	6482	-8.92	-29.34	0.24
790	SLU 31	9	147	7053	-9.75	-31.02	0.2
790	SLU 32	8	114	7171	-9.83	-31.55	0.15
790	SLU 33	9	135	7169	-9.89	-31.66	0.18
790	SLU 34	9	147	7124	-9.88	-31.44	0.2
790	SLU 35	9	115	7242	-9.96	-31.97	0.15
790	SLU 36	9	135	7240	-10.02	-32.08	0.18
790	SLU 37	9	114	7199	-9.9	-31.67	0.15
790	SLU 38	9	134	7197	-9.97	-31.79	0.18
790	SLU 39	8	116	7363	-10.1	-31.88	0.13
790	SLU 40	8	137	7361	-10.16	-32	0.16
790	SLU 41	8	117	7434	-10.22	-32.3	0.12
790	SLU 42	9	137	7432	-10.29	-32.42	0.16
790	SLU 43	11	118	6848	-9.66	-30.8	0.25
790	SLU 44	12	152	6844	-9.77	-30.99	0.3
790	SLU 45	11	119	6962	-9.85	-31.52	0.25
790	SLU 46	12	140	6960	-9.91	-31.63	0.28
790	SLU 47	12	152	6915	-9.9	-31.41	0.3
790	SLU 48	11	120	7033	-9.98	-31.94	0.25
790	SLU 49	12	140	7031	-10.04	-32.05	0.28
790	SLU 50	11	119	6990	-9.92	-31.64	0.25
790	SLU 51	12	139	6988	-9.99	-31.76	0.28
790	SLU 52	11	160	7559	-10.82	-33.44	0.24
790	SLU 53	10	127	7677	-10.89	-33.96	0.19
790	SLU 54	11	147	7675	-10.96	-34.08	0.22
790	SLU 55	11	160	7630	-10.95	-33.86	0.24
790	SLU 56	10	127	7748	-11.02	-34.39	0.19
790	SLU 57	11	148	7746	-11.09	-34.5	0.22
790	SLU 58	10	126	7705	-10.97	-34.09	0.19
790	SLU 59	11	147	7703	-11.03	-34.21	0.22
790	SLU 60	10	129	7869	-11.16	-34.3	0.17
790	SLU 61	10	149	7867	-11.22	-34.41	0.2
790	SLU 62	10	129	7941	-11.29	-34.72	0.16
790	SLU 63	10	150	7938	-11.35	-34.84	0.19
790	SLU 64	11	129	7698	-10.59	-34.51	0.27
790	SLU 65	12	163	7694	-10.69	-34.7	0.32
790	SLU 66	12	131	7812	-10.77	-35.23	0.27
790	SLU 67	12	151	7810	-10.83	-35.34	0.3
790	SLU 68	12	164	7765	-10.82	-35.12	0.32
790	SLU 69	12	131	7883	-10.9	-35.65	0.26
790	SLU 70	12	152	7881	-10.96	-35.76	0.29
790	SLU 71	12	130	7840	-10.84	-35.35	0.26
790	SLU 72	12	151	7838	-10.91	-35.47	0.29
790	SLU 73	11	171	8409	-11.74	-37.15	0.26
790	SLU 74	11	139	8527	-11.82	-37.67	0.21
790	SLU 75	11	159	8525	-11.88	-37.79	0.24
790	SLU 76	12	172	8480	-11.87	-37.57	0.26
790	SLU 77	11	139	8598	-11.95	-38.1	0.2
790	SLU 78	12	159	8596	-12.01	-38.21	0.23
790	SLU 79	11	138	8555	-11.89	-37.8	0.2
790	SLU 80	11	158	8553	-11.96	-37.92	0.23
790	SLU 81	10	140	8719	-12.08	-38.01	0.18
790	SLU 82	11	161	8717	-12.15	-38.12	0.21
790	SLU 83	10	141	8790	-12.21	-38.43	0.18
790	SLU 84	11	161	8788	-12.28	-38.55	0.21
790	SLE RA 1	9	97	5735	-7.94	-25.73	0.2
790	SLE RA 2	9	120	5732	-8.01	-25.86	0.24
790	SLE RA 3	9	98	5811	-8.06	-26.21	0.2
790	SLE RA 4	9	112	5809	-8.11	-26.29	0.22
790	SLE RA 5	9	120	5780	-8.1	-26.14	0.24
790	SLE RA 6	9	98	5858	-8.15	-26.49	0.2
790	SLE RA 7	9	112	5857	-8.19	-26.57	0.22
790	SLE RA 8	9	98	5830	-8.11	-26.29	0.2
790	SLE RA 9	9	111	5828	-8.16	-26.37	0.22
790	SLE RA 10	9	125	6209	-8.71	-27.49	0.2
790	SLE RA 11	8	103	6287	-8.76	-27.84	0.16
790	SLE RA 12	9	117	6286	-8.8	-27.92	0.18
790	SLE RA 13	9	125	6256	-8.8	-27.77	0.19
790	SLE RA 14	8	103	6335	-8.85	-28.12	0.16
790	SLE RA 15	9	117	6333	-8.89	-28.2	0.18
790	SLE RA 16	8	103	6306	-8.81	-27.92	0.16
790	SLE RA 17	9	116	6305	-8.85	-28	0.18
790	SLE RA 18	8	104	6416	-8.94	-28.06	0.15

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
790	SLE RA 19	8	118	6414	-8.98	-28.14	0.17
790	SLE RA 20	8	105	6463	-9.02	-28.34	0.14
790	SLE RA 21	8	118	6462	-9.07	-28.42	0.16
790	SLE FR 1	9	97	5735	-7.94	-25.73	0.2
790	SLE FR 2	9	102	5734	-7.96	-25.76	0.21
790	SLE FR 3	9	97	5754	-7.98	-25.84	0.2
790	SLE FR 4	8	104	5939	-8.25	-26.46	0.19
790	SLE FR 5	8	99	5958	-8.27	-26.54	0.19
790	SLE FR 6	8	101	6075	-8.44	-26.9	0.17
790	SLE QP 1	9	97	5735	-7.94	-25.73	0.2
790	SLE QP 2	8	99	5939	-8.24	-26.43	0.19
790	SLD 1	678	269	5424	-11.47	10.91	-1.16
790	SLD 2	649	311	5456	-11.33	10.35	0.74
790	SLD 3	665	-153	5505	-9.99	13.17	-1.9
790	SLD 4	636	-110	5537	-9.84	12.61	0
790	SLD 5	234	783	5656	-11.49	-18.56	0.56
790	SLD 6	215	810	5677	-11.39	-18.92	1.81
790	SLD 7	191	-624	5926	-6.54	-11.02	-1.9
790	SLD 8	172	-596	5947	-6.44	-11.39	-0.64
790	SLD 9	-155	794	5931	-10.04	-41.47	1.02
790	SLD 10	-174	822	5952	-9.94	-41.84	2.27
790	SLD 11	-198	-612	6201	-5.09	-33.93	-1.44
790	SLD 12	-217	-584	6222	-4.99	-34.3	-0.19
790	SLD 13	-620	309	6341	-6.64	-65.47	0.37
790	SLD 14	-648	351	6373	-6.49	-66.03	2.27
790	SLD 15	-632	-113	6422	-5.15	-63.21	-0.37
790	SLD 16	-661	-71	6454	-5.01	-63.77	1.53
790	SLV 1	1576	530	4728	-15.93	60.81	-2.9
790	SLV 2	1508	629	4803	-15.58	59.5	1.57
790	SLV 3	1544	-524	4930	-12.21	66.38	-4.78
790	SLV 4	1477	-424	5004	-11.87	65.07	-0.31
790	SLV 5	539	1808	5256	-16.25	-8.47	1.27
790	SLV 6	493	1875	5306	-16.02	-9.35	4.28
790	SLV 7	434	-1704	5928	-3.86	10.11	-4.98
790	SLV 8	389	-1637	5978	-3.63	9.23	-1.98
790	SLV 9	-372	1836	5900	-12.85	-62.09	2.35
790	SLV 10	-418	1902	5950	-12.62	-62.97	5.36
790	SLV 11	-476	-1676	6572	-0.46	-43.51	-3.91
790	SLV 12	-522	-1609	6622	-0.23	-44.39	-0.9
790	SLV 13	-1460	623	6874	-4.61	-117.93	0.68
790	SLV 14	-1528	722	6948	-4.27	-119.24	5.15
790	SLV 15	-1491	-431	7075	-0.89	-112.36	-1.19
790	SLV 16	-1559	-332	7150	-0.55	-113.67	3.27
790	CRTFP Ux+	0	0	0	0	0	0
790	CRTFP Ux-	0	0	0	0	0	0
790	CRTFP Uy+	0	0	0	0	0	0
790	CRTFP Uy-	0	0	0	0	0	0
792	SLU 1	-38	44	3273	-4.32	-533.07	10.93
792	SLU 2	-37	65	3256	-4.48	-533.32	16.26
792	SLU 3	-39	44	3346	-4.39	-544.31	10.99
792	SLU 4	-38	57	3336	-4.49	-544.45	14.19
792	SLU 5	-37	65	3302	-4.52	-540.33	16.3
792	SLU 6	-40	44	3392	-4.43	-551.31	11.03
792	SLU 7	-39	57	3382	-4.53	-551.46	14.23
792	SLU 8	-39	44	3365	-4.4	-547.09	11.01
792	SLU 9	-38	57	3355	-4.5	-547.23	14.21
792	SLU 10	-38	71	3650	-5.07	-596.73	17.77
792	SLU 11	-41	50	3740	-4.97	-607.72	12.5
792	SLU 12	-40	63	3730	-5.07	-607.86	15.7
792	SLU 13	-39	71	3696	-5.11	-603.74	17.81
792	SLU 14	-41	50	3786	-5.02	-614.72	12.54
792	SLU 15	-40	63	3776	-5.11	-614.87	15.74
792	SLU 16	-41	50	3759	-4.99	-610.5	12.53
792	SLU 17	-40	63	3749	-5.09	-610.64	15.72
792	SLU 18	-40	52	3835	-5.15	-623.66	13.1
792	SLU 19	-40	65	3826	-5.25	-623.81	16.29
792	SLU 20	-41	52	3881	-5.2	-630.66	13.14
792	SLU 21	-40	65	3872	-5.29	-630.81	16.33
792	SLU 22	-42	47	3769	-4.94	-611.29	11.8
792	SLU 23	-41	68	3753	-5.1	-611.53	17.12
792	SLU 24	-43	47	3843	-5.01	-622.52	11.85
792	SLU 25	-42	60	3833	-5.11	-622.67	15.05
792	SLU 26	-41	69	3799	-5.14	-618.54	17.16
792	SLU 27	-43	47	3889	-5.05	-629.53	11.89
792	SLU 28	-43	60	3879	-5.15	-629.68	15.09
792	SLU 29	-43	47	3861	-5.02	-625.3	11.88
792	SLU 30	-42	60	3852	-5.12	-625.45	15.07
792	SLU 31	-42	74	4147	-5.68	-674.94	18.64
792	SLU 32	-45	53	4237	-5.59	-685.93	13.37
792	SLU 33	-44	66	4227	-5.69	-686.08	16.57
792	SLU 34	-43	75	4193	-5.73	-681.95	18.68
792	SLU 35	-45	53	4283	-5.63	-692.94	13.41
792	SLU 36	-44	66	4273	-5.73	-693.09	16.6
792	SLU 37	-45	53	4255	-5.61	-688.71	13.39
792	SLU 38	-44	66	4246	-5.7	-688.86	16.59
792	SLU 39	-44	56	4332	-5.77	-701.87	13.96
792	SLU 40	-44	68	4322	-5.87	-702.02	17.16
792	SLU 41	-45	56	4378	-5.81	-708.88	14
792	SLU 42	-44	69	4368	-5.91	-709.03	17.2

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
792	SLU 43	-48	56	4084	-5.4	-666.18	13.92
792	SLU 44	-47	77	4068	-5.57	-666.42	19.24
792	SLU 45	-49	56	4158	-5.47	-677.41	13.97
792	SLU 46	-48	69	4148	-5.57	-677.56	17.17
792	SLU 47	-47	77	4114	-5.61	-673.43	19.28
792	SLU 48	-50	56	4204	-5.52	-684.42	14.01
792	SLU 49	-49	69	4194	-5.61	-684.57	17.21
792	SLU 50	-49	56	4176	-5.49	-680.19	13.99
792	SLU 51	-48	69	4166	-5.59	-680.34	17.19
792	SLU 52	-49	83	4462	-6.15	-729.83	20.76
792	SLU 53	-51	62	4551	-6.06	-740.82	15.49
792	SLU 54	-50	75	4542	-6.15	-740.97	18.68
792	SLU 55	-49	83	4508	-6.19	-736.84	20.8
792	SLU 56	-51	62	4597	-6.1	-747.83	15.53
792	SLU 57	-50	75	4588	-6.2	-747.98	18.72
792	SLU 58	-51	62	4570	-6.07	-743.6	15.51
792	SLU 59	-50	75	4560	-6.17	-743.75	18.71
792	SLU 60	-51	64	4647	-6.24	-756.76	16.08
792	SLU 61	-50	77	4637	-6.34	-756.91	19.28
792	SLU 62	-51	64	4693	-6.28	-763.77	16.12
792	SLU 63	-50	77	4683	-6.38	-763.92	19.32
792	SLU 64	-52	59	4581	-6.02	-744.39	14.78
792	SLU 65	-51	80	4565	-6.18	-744.64	20.11
792	SLU 66	-53	59	4654	-6.09	-755.63	14.84
792	SLU 67	-52	72	4645	-6.19	-755.77	18.03
792	SLU 68	-51	81	4611	-6.23	-751.64	20.15
792	SLU 69	-54	59	4700	-6.13	-762.63	14.88
792	SLU 70	-53	72	4691	-6.23	-762.78	18.07
792	SLU 71	-53	59	4673	-6.11	-758.41	14.86
792	SLU 72	-52	72	4663	-6.2	-758.55	18.06
792	SLU 73	-52	86	4958	-6.77	-808.05	21.62
792	SLU 74	-55	65	5048	-6.68	-819.04	16.35
792	SLU 75	-54	78	5039	-6.77	-819.18	19.55
792	SLU 76	-53	87	5004	-6.81	-815.06	21.66
792	SLU 77	-55	65	5094	-6.72	-826.04	16.39
792	SLU 78	-54	78	5085	-6.81	-826.19	19.59
792	SLU 79	-55	65	5067	-6.69	-821.82	16.37
792	SLU 80	-54	78	5057	-6.79	-821.96	19.57
792	SLU 81	-54	68	5144	-6.86	-834.98	16.95
792	SLU 82	-54	80	5134	-6.95	-835.12	20.14
792	SLU 83	-55	68	5190	-6.9	-841.98	16.98
792	SLU 84	-54	81	5180	-7	-842.13	20.18
792	SLE RA 1	-39	45	3415	-4.5	-555.42	11.18
792	SLE RA 2	-38	59	3404	-4.61	-555.58	14.73
792	SLE RA 3	-40	45	3464	-4.54	-562.91	11.22
792	SLE RA 4	-39	53	3457	-4.61	-563.01	13.35
792	SLE RA 5	-39	59	3434	-4.63	-560.25	14.76
792	SLE RA 6	-40	45	3494	-4.57	-567.58	11.24
792	SLE RA 7	-40	53	3488	-4.64	-567.68	13.37
792	SLE RA 8	-40	45	3476	-4.55	-564.76	11.23
792	SLE RA 9	-39	53	3469	-4.62	-564.86	13.36
792	SLE RA 10	-39	63	3666	-4.99	-597.86	15.74
792	SLE RA 11	-41	49	3726	-4.93	-605.18	12.23
792	SLE RA 12	-40	57	3720	-5	-605.28	14.36
792	SLE RA 13	-40	63	3697	-5.02	-602.53	15.77
792	SLE RA 14	-41	49	3757	-4.96	-609.85	12.25
792	SLE RA 15	-41	57	3750	-5.03	-609.95	14.38
792	SLE RA 16	-41	49	3738	-4.94	-607.04	12.24
792	SLE RA 17	-40	57	3732	-5.01	-607.13	14.37
792	SLE RA 18	-41	50	3790	-5.05	-615.81	12.62
792	SLE RA 19	-40	59	3783	-5.12	-615.91	14.75
792	SLE RA 20	-41	50	3820	-5.08	-620.48	12.65
792	SLE RA 21	-41	59	3814	-5.15	-620.58	14.78
792	SLE FR 1	-39	45	3415	-4.5	-555.42	11.18
792	SLE FR 2	-39	48	3412	-4.52	-555.45	11.89
792	SLE FR 3	-39	45	3427	-4.51	-557.29	11.19
792	SLE FR 4	-40	49	3525	-4.69	-573.57	12.32
792	SLE FR 5	-40	46	3539	-4.68	-575.4	11.62
792	SLE FR 6	-40	48	3602	-4.77	-585.61	11.9
792	SLE QP 1	-39	45	3415	-4.5	-555.42	11.18
792	SLE QP 2	-40	46	3527	-4.66	-573.54	11.61
792	SLD 1	248	253	4438	-7.3	-733.77	63.05
792	SLD 2	229	141	4453	-7.1	-732.29	35.15
792	SLD 3	231	5	4672	-5.12	-731.45	1.21
792	SLD 4	213	-107	4686	-4.91	-729.98	-26.69
792	SLD 5	74	504	3444	-8.81	-625.38	125.84
792	SLD 6	62	430	3453	-8.67	-624.41	107.44
792	SLD 7	20	-321	4222	-1.52	-617.67	-80.27
792	SLD 8	8	-395	4232	-1.39	-616.69	-98.68
792	SLD 9	-88	488	2823	-7.94	-530.38	121.9
792	SLD 10	-100	414	2832	-7.81	-529.41	103.5
792	SLD 11	-142	-337	3601	-0.66	-522.66	-84.21
792	SLD 12	-154	-411	3610	-0.52	-521.69	-102.62
792	SLD 13	-292	200	2368	-4.41	-417.09	49.91
792	SLD 14	-311	87	2383	-4.21	-415.62	22.01
792	SLD 15	-308	-48	2601	-2.23	-414.78	-11.92
792	SLD 16	-327	-160	2616	-2.03	-413.3	-39.82
792	SLV 1	634	548	5640	-11.02	-948.5	136.61
792	SLV 2	590	284	5675	-10.54	-945.03	71.03

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
792	SLV 3	594	-67	6225	-5.55	-943.14	-16.94
792	SLV 4	550	-330	6260	-5.07	-939.66	-82.52
792	SLV 5	231	1178	3268	-14.96	-694.81	294.25
792	SLV 6	202	1000	3291	-14.63	-692.47	250.1
792	SLV 7	98	-870	5216	3.28	-676.93	-217.61
792	SLV 8	68	-1047	5240	3.6	-674.59	-261.76
792	SLV 9	-148	1140	1814	-12.93	-472.48	284.99
792	SLV 10	-177	963	1838	-12.61	-470.14	240.84
792	SLV 11	-281	-908	3763	5.31	-454.6	-226.87
792	SLV 12	-311	-1085	3786	5.63	-452.26	-271.02
792	SLV 13	-629	423	795	-4.26	-207.41	105.75
792	SLV 14	-673	159	829	-3.78	-203.93	40.17
792	SLV 15	-669	-192	1379	1.21	-202.04	-47.81
792	SLV 16	-713	-455	1414	1.69	-198.57	-113.39
792	CRTFP Ux+	0	0	0	0	0	0
792	CRTFP Ux-	0	0	0	0	0	0
792	CRTFP Uy+	0	0	0	0	0	0
792	CRTFP Uy-	0	0	0	0	0	0
795	SLU 1	55	21	4013	-6.8	904.33	-7.49
795	SLU 2	53	45	3987	-7.06	904.49	-15.92
795	SLU 3	56	22	4110	-6.91	923.99	-7.68
795	SLU 4	55	36	4095	-7.07	924.09	-12.74
795	SLU 5	54	46	4051	-7.13	917.27	-16.22
795	SLU 6	57	23	4174	-6.98	936.76	-7.99
795	SLU 7	56	37	4159	-7.13	936.86	-13.04
795	SLU 8	57	23	4141	-6.93	929.88	-8.1
795	SLU 9	56	38	4125	-7.09	929.98	-13.16
795	SLU 10	56	48	4465	-7.99	1009.29	-16.86
795	SLU 11	59	25	4588	-7.84	1028.79	-8.63
795	SLU 12	58	39	4572	-7.99	1028.88	-13.68
795	SLU 13	57	49	4529	-8.05	1022.07	-17.17
795	SLU 14	60	25	4652	-7.9	1041.56	-8.93
795	SLU 15	59	40	4636	-8.06	1041.66	-13.98
795	SLU 16	60	26	4618	-7.85	1034.68	-9.05
795	SLU 17	59	40	4603	-8.01	1034.78	-14.1
795	SLU 18	59	25	4695	-8.12	1054.04	-8.84
795	SLU 19	58	40	4680	-8.28	1054.14	-13.9
795	SLU 20	60	26	4759	-8.18	1066.82	-9.15
795	SLU 21	59	40	4744	-8.34	1066.91	-14.2
795	SLU 22	60	21	4619	-7.78	1033.64	-7.46
795	SLU 23	59	45	4593	-8.04	1033.8	-15.88
795	SLU 24	62	22	4716	-7.89	1053.3	-7.64
795	SLU 25	61	36	4701	-8.05	1053.4	-12.7
795	SLU 26	60	46	4657	-8.11	1046.58	-16.18
795	SLU 27	63	23	4780	-7.96	1066.07	-7.95
795	SLU 28	62	37	4764	-8.11	1066.17	-13
795	SLU 29	62	23	4746	-7.91	1059.19	-8.06
795	SLU 30	62	37	4731	-8.06	1059.29	-13.12
795	SLU 31	62	48	5071	-8.96	1138.6	-16.82
795	SLU 32	65	24	5193	-8.81	1158.1	-8.59
795	SLU 33	64	39	5178	-8.97	1158.19	-13.64
795	SLU 34	63	49	5135	-9.03	1151.38	-17.13
795	SLU 35	66	25	5257	-8.88	1170.87	-8.89
795	SLU 36	65	40	5242	-9.03	1170.97	-13.95
795	SLU 37	65	26	5224	-8.83	1163.99	-9.01
795	SLU 38	65	40	5209	-8.99	1164.09	-14.06
795	SLU 39	65	25	5301	-9.1	1183.35	-8.8
795	SLU 40	64	39	5286	-9.26	1183.45	-13.86
795	SLU 41	66	26	5365	-9.16	1196.13	-9.11
795	SLU 42	65	40	5349	-9.32	1196.22	-14.16
795	SLU 43	69	28	5009	-8.51	1131.29	-9.76
795	SLU 44	68	52	4983	-8.77	1131.45	-18.18
795	SLU 45	70	28	5106	-8.62	1150.95	-9.94
795	SLU 46	70	43	5091	-8.77	1151.05	-15
795	SLU 47	69	53	5047	-8.83	1144.23	-18.49
795	SLU 48	71	29	5170	-8.68	1163.73	-10.25
795	SLU 49	71	44	5155	-8.84	1163.83	-15.3
795	SLU 50	71	30	5137	-8.64	1156.84	-10.36
795	SLU 51	70	44	5121	-8.79	1156.94	-15.42
795	SLU 52	71	55	5461	-9.69	1236.25	-19.12
795	SLU 53	73	31	5584	-9.54	1255.75	-10.89
795	SLU 54	73	45	5568	-9.7	1255.85	-15.94
795	SLU 55	72	55	5525	-9.75	1249.03	-19.43
795	SLU 56	74	32	5648	-9.6	1268.53	-11.19
795	SLU 57	74	46	5632	-9.76	1268.62	-16.25
795	SLU 58	74	32	5614	-9.56	1261.64	-11.31
795	SLU 59	73	47	5599	-9.71	1261.74	-16.36
795	SLU 60	73	32	5691	-9.83	1281	-11.1
795	SLU 61	72	46	5676	-9.98	1281.1	-16.16
795	SLU 62	74	32	5755	-9.89	1293.78	-11.41
795	SLU 63	73	47	5740	-10.05	1293.88	-16.46
795	SLU 64	75	28	5615	-9.49	1260.6	-9.72
795	SLU 65	74	52	5589	-9.75	1260.76	-18.14
795	SLU 66	76	28	5712	-9.6	1280.26	-9.91
795	SLU 67	76	43	5697	-9.75	1280.36	-14.96
795	SLU 68	75	53	5653	-9.81	1273.54	-18.45
795	SLU 69	77	29	5776	-9.66	1293.04	-10.21
795	SLU 70	77	43	5761	-9.82	1293.14	-15.26
795	SLU 71	77	29	5743	-9.61	1286.15	-10.33

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
795	SLU 72	76	44	5727	-9.77	1286.25	-15.38
795	SLU 73	76	54	6067	-10.67	1365.56	-19.08
795	SLU 74	79	31	6190	-10.52	1385.06	-10.85
795	SLU 75	78	45	6174	-10.68	1385.16	-15.9
795	SLU 76	77	55	6131	-10.73	1378.34	-19.39
795	SLU 77	80	32	6254	-10.58	1397.84	-11.15
795	SLU 78	79	46	6238	-10.74	1397.93	-16.21
795	SLU 79	80	32	6220	-10.54	1390.95	-11.27
795	SLU 80	79	46	6205	-10.69	1391.05	-16.32
795	SLU 81	79	31	6297	-10.8	1410.31	-11.06
795	SLU 82	78	46	6282	-10.96	1410.41	-16.12
795	SLU 83	80	32	6361	-10.87	1423.09	-11.37
795	SLU 84	79	47	6346	-11.02	1423.19	-16.42
795	SLE RA 1	56	21	4186	-7.08	941.27	-7.48
795	SLE RA 2	55	37	4169	-7.26	941.38	-13.1
795	SLE RA 3	57	22	4251	-7.16	954.38	-7.61
795	SLE RA 4	57	31	4240	-7.26	954.44	-10.98
795	SLE RA 5	56	38	4211	-7.3	949.9	-13.3
795	SLE RA 6	58	22	4293	-7.2	962.9	-7.81
795	SLE RA 7	57	32	4283	-7.3	962.96	-11.18
795	SLE RA 8	58	22	4271	-7.17	958.31	-7.89
795	SLE RA 9	57	32	4261	-7.27	958.37	-11.26
795	SLE RA 10	57	39	4487	-7.87	1011.25	-13.73
795	SLE RA 11	59	23	4569	-7.77	1024.24	-8.24
795	SLE RA 12	59	33	4559	-7.88	1024.31	-11.61
795	SLE RA 13	58	40	4530	-7.91	1019.77	-13.93
795	SLE RA 14	60	24	4612	-7.81	1032.76	-8.44
795	SLE RA 15	59	34	4602	-7.92	1032.83	-11.81
795	SLE RA 16	60	24	4589	-7.78	1028.17	-8.52
795	SLE RA 17	59	34	4579	-7.89	1028.24	-11.89
795	SLE RA 18	59	24	4641	-7.96	1041.08	-8.38
795	SLE RA 19	59	33	4631	-8.07	1041.15	-11.75
795	SLE RA 20	60	24	4683	-8	1049.6	-8.58
795	SLE RA 21	59	34	4673	-8.11	1049.66	-11.95
795	SLE FR 1	56	21	4186	-7.08	941.27	-7.48
795	SLE FR 2	56	25	4182	-7.12	941.29	-8.61
795	SLE FR 3	57	22	4203	-7.1	944.68	-7.56
795	SLE FR 4	57	25	4319	-7.38	971.24	-8.88
795	SLE FR 5	57	22	4339	-7.36	974.62	-7.83
795	SLE FR 6	58	23	4413	-7.52	991.18	-7.93
795	SLE QP 1	56	21	4186	-7.08	941.27	-7.48
795	SLE QP 2	57	22	4322	-7.35	971.21	-7.75
795	SLD 1	418	131	2956	-6.77	718.67	-45.94
795	SLD 2	391	263	2918	-7.11	718.58	-91.98
795	SLD 3	434	-150	3315	-3.29	722.49	52.21
795	SLD 4	407	-18	3278	-3.63	722.41	6.16
795	SLD 5	145	457	3374	-12.39	889.66	-159.77
795	SLD 6	127	544	3349	-12.62	889.6	-190.15
795	SLD 7	201	-479	4572	-0.79	902.42	167.36
795	SLD 8	183	-392	4548	-1.01	902.36	136.99
795	SLD 9	-68	436	4097	-13.68	1040.07	-152.49
795	SLD 10	-86	523	4072	-13.9	1040.01	-182.87
795	SLD 11	-13	-500	5296	-2.07	1052.82	174.65
795	SLD 12	-31	-413	5271	-2.3	1052.77	144.27
795	SLD 13	-293	62	5367	-11.06	1220.02	-21.66
795	SLD 14	-320	194	5329	-11.4	1219.93	-67.71
795	SLD 15	-276	-219	5727	-7.58	1223.85	76.48
795	SLD 16	-304	-87	5689	-7.92	1223.76	30.43
795	SLV 1	899	299	1093	-6.29	380.1	-104.7
795	SLV 2	836	610	1005	-7.09	379.9	-212.94
795	SLV 3	942	-403	1996	2.44	389.22	140.44
795	SLV 4	878	-92	1908	1.64	389.03	32.2
795	SLV 5	258	1111	2001	-20.12	780.07	-388.43
795	SLV 6	215	1320	1942	-20.66	779.94	-461.3
795	SLV 7	398	-1227	5010	8.98	810.5	428.7
795	SLV 8	355	-1018	4951	8.45	810.36	355.83
795	SLV 9	-241	1062	3694	-23.14	1132.06	-371.33
795	SLV 10	-284	1271	3635	-23.68	1131.93	-444.2
795	SLV 11	-101	-1276	6703	5.97	1162.49	445.8
795	SLV 12	-144	-1067	6644	5.43	1162.36	372.92
795	SLV 13	-764	136	6737	-16.33	1553.4	-47.7
795	SLV 14	-828	447	6648	-17.13	1553.2	-155.94
795	SLV 15	-721	-566	7639	-7.6	1562.53	197.44
795	SLV 16	-785	-255	7551	-8.4	1562.33	89.2
795	CRTFP Ux+	0	0	0	0	0	0
795	CRTFP Ux-	0	0	0	0	0	0
795	CRTFP Uy+	0	0	0	0	0	0
795	CRTFP Uy-	0	0	0	0	0	0
797	SLU 1	97	38	6329	1.36	11.35	-1.97
797	SLU 2	94	70	6283	0.93	9.97	-1.79
797	SLU 3	100	38	6487	1.49	12.02	-2.07
797	SLU 4	99	57	6459	1.24	11.19	-1.96
797	SLU 5	97	70	6387	1.03	10.29	-1.87
797	SLU 6	103	38	6591	1.59	12.34	-2.16
797	SLU 7	101	57	6563	1.33	11.51	-2.05
797	SLU 8	102	38	6538	1.55	12	-2.13
797	SLU 9	100	57	6510	1.29	11.17	-2.02
797	SLU 10	100	76	7086	1.07	12.66	-2.04
797	SLU 11	107	45	7290	1.64	14.71	-2.33

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
797	SLU 12	105	63	7262	1.38	13.88	-2.22
797	SLU 13	103	76	7190	1.17	12.99	-2.12
797	SLU 14	109	45	7394	1.73	15.04	-2.41
797	SLU 15	107	63	7366	1.48	14.21	-2.3
797	SLU 16	108	44	7340	1.69	14.69	-2.39
797	SLU 17	106	63	7312	1.44	13.86	-2.28
797	SLU 18	106	47	7476	1.56	15.2	-2.33
797	SLU 19	104	66	7448	1.31	14.37	-2.22
797	SLU 20	108	47	7580	1.66	15.52	-2.41
797	SLU 21	107	66	7552	1.4	14.69	-2.3
797	SLU 22	110	43	7340	1.84	15.18	-2.33
797	SLU 23	107	74	7293	1.41	13.8	-2.15
797	SLU 24	113	43	7497	1.97	15.85	-2.44
797	SLU 25	112	62	7469	1.72	15.02	-2.33
797	SLU 26	110	74	7397	1.51	14.13	-2.23
797	SLU 27	116	43	7601	2.07	16.18	-2.52
797	SLU 28	114	62	7573	1.81	15.35	-2.41
797	SLU 29	115	43	7548	2.03	15.83	-2.5
797	SLU 30	113	62	7520	1.78	15.01	-2.39
797	SLU 31	113	80	8096	1.55	16.5	-2.4
797	SLU 32	120	49	8300	2.12	18.55	-2.69
797	SLU 33	118	68	8272	1.86	17.72	-2.58
797	SLU 34	116	80	8200	1.65	16.82	-2.48
797	SLU 35	122	49	8404	2.21	18.87	-2.77
797	SLU 36	120	68	8376	1.96	18.04	-2.66
797	SLU 37	121	49	8351	2.18	18.53	-2.75
797	SLU 38	119	68	8323	1.92	17.7	-2.64
797	SLU 39	119	52	8487	2.04	19.03	-2.69
797	SLU 40	117	70	8459	1.79	18.2	-2.58
797	SLU 41	121	52	8591	2.14	19.36	-2.78
797	SLU 42	120	70	8563	1.88	18.53	-2.67
797	SLU 43	122	48	7882	1.6	13.43	-2.44
797	SLU 44	119	80	7835	1.17	12.05	-2.25
797	SLU 45	125	48	8039	1.73	14.1	-2.54
797	SLU 46	123	67	8011	1.48	13.28	-2.43
797	SLU 47	121	79	7939	1.27	12.38	-2.33
797	SLU 48	128	48	8143	1.83	14.43	-2.62
797	SLU 49	126	67	8115	1.57	13.6	-2.51
797	SLU 50	127	48	8090	1.79	14.09	-2.6
797	SLU 51	125	67	8062	1.54	13.26	-2.49
797	SLU 52	125	86	8638	1.31	14.75	-2.5
797	SLU 53	131	54	8842	1.88	16.8	-2.79
797	SLU 54	130	73	8814	1.62	15.97	-2.68
797	SLU 55	128	86	8742	1.41	15.07	-2.59
797	SLU 56	134	54	8946	1.97	17.12	-2.88
797	SLU 57	132	73	8918	1.72	16.3	-2.76
797	SLU 58	133	54	8893	1.94	16.78	-2.85
797	SLU 59	131	73	8865	1.68	15.95	-2.74
797	SLU 60	131	57	9029	1.8	17.28	-2.8
797	SLU 61	129	76	9001	1.55	16.46	-2.68
797	SLU 62	133	57	9133	1.9	17.61	-2.88
797	SLU 63	131	76	9105	1.64	16.78	-2.77
797	SLU 64	135	53	8892	2.08	17.27	-2.8
797	SLU 65	132	84	8846	1.65	15.89	-2.62
797	SLU 66	138	53	9050	2.22	17.94	-2.91
797	SLU 67	136	72	9022	1.96	17.11	-2.8
797	SLU 68	134	84	8950	1.75	16.22	-2.7
797	SLU 69	140	53	9154	2.31	18.27	-2.99
797	SLU 70	139	72	9126	2.06	17.44	-2.88
797	SLU 71	139	53	9101	2.28	17.92	-2.96
797	SLU 72	138	72	9073	2.02	17.09	-2.85
797	SLU 73	138	90	9649	1.8	18.59	-2.87
797	SLU 74	144	59	9853	2.36	20.64	-3.16
797	SLU 75	143	78	9825	2.1	19.81	-3.05
797	SLU 76	140	90	9753	1.89	18.91	-2.95
797	SLU 77	147	59	9957	2.46	20.96	-3.24
797	SLU 78	145	78	9929	2.2	20.13	-3.13
797	SLU 79	146	59	9903	2.42	20.62	-3.22
797	SLU 80	144	78	9875	2.16	19.79	-3.11
797	SLU 81	144	61	10039	2.29	21.12	-3.16
797	SLU 82	142	80	10011	2.03	20.29	-3.05
797	SLU 83	146	61	10143	2.38	21.45	-3.24
797	SLU 84	144	80	10115	2.13	20.62	-3.13
797	SLE RA 1	101	40	6618	1.5	12.44	-2.07
797	SLE RA 2	99	61	6587	1.21	11.52	-1.95
797	SLE RA 3	103	40	6723	1.59	12.89	-2.14
797	SLE RA 4	102	52	6704	1.41	12.34	-2.07
797	SLE RA 5	100	60	6656	1.27	11.74	-2.01
797	SLE RA 6	105	40	6792	1.65	13.11	-2.2
797	SLE RA 7	104	52	6774	1.48	12.55	-2.13
797	SLE RA 8	104	39	6757	1.62	12.88	-2.18
797	SLE RA 9	103	52	6738	1.45	12.32	-2.11
797	SLE RA 10	103	65	7122	1.31	13.32	-2.12
797	SLE RA 11	107	44	7258	1.68	14.69	-2.31
797	SLE RA 12	106	56	7240	1.51	14.13	-2.24
797	SLE RA 13	105	65	7192	1.37	13.54	-2.17
797	SLE RA 14	109	44	7328	1.75	14.9	-2.37
797	SLE RA 15	108	56	7309	1.57	14.35	-2.29
797	SLE RA 16	108	44	7292	1.72	14.67	-2.35

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
797	SLE RA 17	107	56	7273	1.55	14.12	-2.28
797	SLE RA 18	107	45	7383	1.63	15.01	-2.31
797	SLE RA 19	106	58	7364	1.46	14.46	-2.24
797	SLE RA 20	108	45	7452	1.7	15.23	-2.37
797	SLE RA 21	107	58	7433	1.53	14.67	-2.3
797	SLE FR 1	101	40	6618	1.5	12.44	-2.07
797	SLE FR 2	100	44	6612	1.44	12.26	-2.05
797	SLE FR 3	101	40	6646	1.52	12.53	-2.1
797	SLE FR 4	102	45	6841	1.48	13.03	-2.12
797	SLE FR 5	103	41	6875	1.56	13.3	-2.17
797	SLE FR 6	104	42	7000	1.56	13.73	-2.19
797	SLE QP 1	101	40	6618	1.5	12.44	-2.07
797	SLE QP 2	103	41	6848	1.54	13.21	-2.15
797	SLD 1	677	156	5739	-1.84	0	-2.46
797	SLD 2	634	261	5703	-2.24	2.15	-0.17
797	SLD 3	717	-222	6405	3.92	18.18	-5.07
797	SLD 4	674	-118	6369	3.52	20.33	-2.78
797	SLD 5	222	631	5512	-8.14	-18.71	1.31
797	SLD 6	194	700	5488	-8.4	-17.29	2.82
797	SLD 7	355	-631	7732	11.06	41.88	-7.4
797	SLD 8	327	-562	7708	10.79	43.31	-5.89
797	SLD 9	-122	645	5988	-7.72	-16.88	1.59
797	SLD 10	-150	713	5964	-7.99	-15.46	3.1
797	SLD 11	11	-618	8208	11.48	43.71	-7.11
797	SLD 12	-17	-549	8184	11.21	45.13	-5.6
797	SLD 13	-469	200	7326	-0.45	6.09	-1.51
797	SLD 14	-512	305	7290	-0.85	8.25	0.78
797	SLD 15	-429	-178	7992	5.31	24.27	-4.12
797	SLD 16	-472	-74	7956	4.91	26.42	-1.83
797	SLV 1	1442	340	4198	-6.83	-19.15	-2.65
797	SLV 2	1341	585	4113	-7.78	-14.09	2.73
797	SLV 3	1543	-606	5870	7.61	26.28	-9.24
797	SLV 4	1442	-361	5784	6.66	31.34	-3.87
797	SLV 5	371	1520	3534	-22.7	-66.34	6.69
797	SLV 6	303	1685	3476	-23.34	-62.94	10.32
797	SLV 7	706	-1634	9105	25.44	85.09	-15.27
797	SLV 8	638	-1468	9047	24.8	88.5	-11.65
797	SLV 9	-433	1551	4648	-21.73	-62.07	7.36
797	SLV 10	-501	1716	4590	-22.37	-58.66	10.98
797	SLV 11	-98	-1603	10219	26.42	89.36	-14.61
797	SLV 12	-166	-1437	10161	25.78	92.77	-10.98
797	SLV 13	-1237	444	7911	-3.59	-4.91	-0.43
797	SLV 14	-1338	689	7826	-4.54	0.15	4.95
797	SLV 15	-1136	-503	9582	10.86	40.52	-7.02
797	SLV 16	-1237	-257	9497	9.91	45.58	-1.64
797	CRTFP Ux+	0	0	0	0	0	0
797	CRTFP Ux-	0	0	0	0	0	0
797	CRTFP Uy+	0	0	0	0	0	0
797	CRTFP Uy-	0	0	0	0	0	0
800	SLU 1	-82	-38	6645	-1.71	-7.13	0.26
800	SLU 2	-81	-8	6598	-2.18	-5.8	0.18
800	SLU 3	-84	-39	6804	-1.65	-7.74	0.27
800	SLU 4	-83	-21	6776	-1.94	-6.94	0.22
800	SLU 5	-82	-9	6699	-2.14	-6.23	0.18
800	SLU 6	-85	-40	6905	-1.61	-8.16	0.28
800	SLU 7	-84	-22	6877	-1.9	-7.36	0.23
800	SLU 8	-84	-40	6847	-1.63	-7.98	0.27
800	SLU 9	-84	-22	6818	-1.91	-7.18	0.22
800	SLU 10	-85	-12	7456	-2.44	-7.76	0.21
800	SLU 11	-88	-43	7662	-1.91	-9.69	0.3
800	SLU 12	-87	-25	7634	-2.19	-8.89	0.25
800	SLU 13	-86	-12	7557	-2.4	-8.18	0.21
800	SLU 14	-89	-44	7763	-1.87	-10.11	0.31
800	SLU 15	-88	-26	7735	-2.15	-9.32	0.26
800	SLU 16	-88	-43	7705	-1.88	-9.93	0.3
800	SLU 17	-87	-25	7676	-2.17	-9.14	0.25
800	SLU 18	-87	-43	7871	-2.07	-9.92	0.3
800	SLU 19	-87	-25	7843	-2.36	-9.13	0.25
800	SLU 20	-88	-44	7972	-2.03	-10.35	0.31
800	SLU 21	-88	-26	7944	-2.32	-9.55	0.26
800	SLU 22	-91	-44	7720	-1.69	-9.54	0.3
800	SLU 23	-90	-14	7673	-2.17	-8.21	0.22
800	SLU 24	-93	-45	7879	-1.64	-10.14	0.32
800	SLU 25	-92	-27	7851	-1.92	-9.35	0.27
800	SLU 26	-91	-15	7774	-2.13	-8.64	0.23
800	SLU 27	-94	-46	7979	-1.6	-10.57	0.32
800	SLU 28	-93	-28	7951	-1.88	-9.77	0.28
800	SLU 29	-93	-46	7921	-1.61	-10.39	0.32
800	SLU 30	-93	-28	7893	-1.9	-9.59	0.27
800	SLU 31	-94	-17	8531	-2.42	-10.17	0.25
800	SLU 32	-97	-49	8737	-1.89	-12.1	0.35
800	SLU 33	-96	-31	8709	-2.18	-11.3	0.3
800	SLU 34	-95	-18	8632	-2.38	-10.59	0.26
800	SLU 35	-98	-50	8837	-1.85	-12.52	0.36
800	SLU 36	-97	-31	8809	-2.14	-11.72	0.31
800	SLU 37	-97	-49	8779	-1.87	-12.34	0.35
800	SLU 38	-96	-31	8751	-2.15	-11.54	0.3
800	SLU 39	-96	-49	8946	-2.06	-12.33	0.35
800	SLU 40	-96	-31	8918	-2.34	-11.53	0.3

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
800	SLU 41	-97	-50	9046	-2.02	-12.75	0.36
800	SLU 42	-97	-32	9018	-2.3	-11.96	0.31
800	SLU 43	-104	-48	8271	-2.22	-8.45	0.32
800	SLU 44	-103	-17	8224	-2.7	-7.12	0.24
800	SLU 45	-106	-49	8430	-2.17	-9.05	0.33
800	SLU 46	-105	-31	8401	-2.45	-8.25	0.28
800	SLU 47	-104	-18	8324	-2.66	-7.54	0.24
800	SLU 48	-107	-50	8530	-2.13	-9.47	0.34
800	SLU 49	-106	-31	8502	-2.41	-8.68	0.29
800	SLU 50	-106	-49	8472	-2.14	-9.29	0.33
800	SLU 51	-105	-31	8444	-2.43	-8.5	0.28
800	SLU 52	-106	-21	9082	-2.95	-9.07	0.27
800	SLU 53	-109	-52	9288	-2.42	-11	0.36
800	SLU 54	-109	-34	9259	-2.71	-10.21	0.31
800	SLU 55	-107	-22	9182	-2.91	-9.5	0.27
800	SLU 56	-110	-53	9388	-2.38	-11.43	0.37
800	SLU 57	-110	-35	9360	-2.67	-10.63	0.32
800	SLU 58	-110	-53	9330	-2.4	-11.25	0.36
800	SLU 59	-109	-35	9302	-2.68	-10.45	0.31
800	SLU 60	-109	-53	9496	-2.59	-11.24	0.36
800	SLU 61	-108	-35	9468	-2.87	-10.44	0.31
800	SLU 62	-110	-54	9597	-2.55	-11.66	0.37
800	SLU 63	-109	-35	9569	-2.83	-10.86	0.32
800	SLU 64	-113	-54	9345	-2.21	-10.85	0.37
800	SLU 65	-112	-23	9298	-2.69	-9.53	0.28
800	SLU 66	-115	-55	9504	-2.15	-11.46	0.38
800	SLU 67	-114	-37	9476	-2.44	-10.66	0.33
800	SLU 68	-113	-24	9399	-2.65	-9.95	0.29
800	SLU 69	-116	-56	9605	-2.12	-11.88	0.39
800	SLU 70	-115	-37	9576	-2.4	-11.08	0.34
800	SLU 71	-115	-55	9546	-2.13	-11.7	0.38
800	SLU 72	-114	-37	9518	-2.42	-10.9	0.33
800	SLU 73	-115	-27	10156	-2.94	-11.48	0.31
800	SLU 74	-118	-58	10362	-2.41	-13.41	0.41
800	SLU 75	-118	-40	10334	-2.69	-12.61	0.36
800	SLU 76	-116	-28	10257	-2.9	-11.9	0.32
800	SLU 77	-119	-59	10463	-2.37	-13.83	0.42
800	SLU 78	-119	-41	10434	-2.65	-13.04	0.37
800	SLU 79	-119	-59	10404	-2.39	-13.65	0.41
800	SLU 80	-118	-41	10376	-2.67	-12.86	0.36
800	SLU 81	-118	-59	10571	-2.57	-13.65	0.41
800	SLU 82	-117	-41	10543	-2.86	-12.85	0.36
800	SLU 83	-119	-60	10672	-2.53	-14.07	0.42
800	SLU 84	-118	-41	10643	-2.82	-13.27	0.37
800	SLE RA 1	-85	-40	6953	-1.7	-7.82	0.27
800	SLE RA 2	-84	-20	6921	-2.02	-6.93	0.22
800	SLE RA 3	-86	-41	7058	-1.67	-8.22	0.28
800	SLE RA 4	-86	-29	7040	-1.86	-7.69	0.25
800	SLE RA 5	-85	-20	6988	-1.99	-7.22	0.22
800	SLE RA 6	-87	-41	7125	-1.64	-8.5	0.28
800	SLE RA 7	-86	-29	7107	-1.83	-7.97	0.25
800	SLE RA 8	-86	-41	7087	-1.65	-8.38	0.28
800	SLE RA 9	-86	-29	7068	-1.84	-7.85	0.25
800	SLE RA 10	-86	-22	7493	-2.19	-8.24	0.24
800	SLE RA 11	-88	-43	7630	-1.84	-9.52	0.3
800	SLE RA 12	-88	-31	7612	-2.03	-8.99	0.27
800	SLE RA 13	-87	-23	7560	-2.16	-8.52	0.24
800	SLE RA 14	-89	-44	7697	-1.81	-9.81	0.31
800	SLE RA 15	-89	-32	7679	-2	-9.28	0.27
800	SLE RA 16	-89	-43	7659	-1.82	-9.69	0.3
800	SLE RA 17	-88	-31	7640	-2.01	-9.16	0.27
800	SLE RA 18	-88	-43	7770	-1.95	-9.68	0.3
800	SLE RA 19	-88	-31	7751	-2.14	-9.15	0.27
800	SLE RA 20	-89	-44	7837	-1.92	-9.96	0.31
800	SLE RA 21	-88	-32	7818	-2.11	-9.43	0.27
800	SLE FR 1	-85	-40	6953	-1.7	-7.82	0.27
800	SLE FR 2	-85	-36	6946	-1.77	-7.64	0.26
800	SLE FR 3	-85	-40	6979	-1.69	-7.93	0.27
800	SLE FR 4	-86	-37	7191	-1.84	-8.2	0.27
800	SLE FR 5	-86	-41	7224	-1.77	-8.49	0.28
800	SLE FR 6	-86	-42	7361	-1.82	-8.75	0.29
800	SLE QP 1	-85	-40	6953	-1.7	-7.82	0.27
800	SLE QP 2	-86	-41	7198	-1.78	-8.38	0.28
800	SLD 1	545	146	7794	-5.69	13.73	-1.87
800	SLD 2	505	45	7825	-5.15	13.35	0.34
800	SLD 3	527	-217	8467	0.66	-3.18	-0.6
800	SLD 4	488	-317	8498	1.2	-3.56	1.6
800	SLD 5	137	583	6351	-12.68	23.97	-2.68
800	SLD 6	111	517	6371	-12.32	23.72	-1.22
800	SLD 7	78	-626	8593	8.49	-32.4	1.54
800	SLD 8	52	-692	8613	8.85	-32.65	2.99
800	SLD 9	-224	610	5782	-12.4	15.9	-2.43
800	SLD 10	-250	544	5802	-12.04	15.65	-0.98
800	SLD 11	-283	-599	8024	8.77	-40.48	1.78
800	SLD 12	-309	-665	8044	9.13	-40.73	3.24
800	SLD 13	-659	235	5898	-4.76	-13.19	-1.04
800	SLD 14	-699	135	5929	-4.21	-13.57	1.16
800	SLD 15	-677	-128	6570	1.59	-30.11	0.22
800	SLD 16	-716	-228	6601	2.14	-30.49	2.43

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
800	SLV 1	1391	423	8538	-11.46	44.7	-4.85
800	SLV 2	1298	188	8610	-10.18	43.8	0.34
800	SLV 3	1348	-479	10223	4.44	2.39	-1.72
800	SLV 4	1254	-715	10295	5.72	1.49	3.47
800	SLV 5	440	1511	5030	-29.03	71.88	-6.96
800	SLV 6	377	1353	5079	-28.17	71.27	-3.47
800	SLV 7	296	-1498	10648	23.96	-69.14	3.45
800	SLV 8	233	-1657	10696	24.82	-69.75	6.94
800	SLV 9	-405	1574	3699	-28.37	52.99	-6.38
800	SLV 10	-468	1416	3748	-27.52	52.39	-2.89
800	SLV 11	-549	-1435	9316	24.62	-88.03	4.03
800	SLV 12	-612	-1594	9365	25.48	-88.63	7.52
800	SLV 13	-1426	633	4100	-9.27	-18.25	-2.9
800	SLV 14	-1519	397	4172	-8	-19.15	2.28
800	SLV 15	-1469	-270	5785	6.63	-60.56	0.22
800	SLV 16	-1562	-506	5858	7.9	-61.45	5.41
800	CRTFP Ux+	0	0	0	0	0	0
800	CRTFP Ux-	0	0	0	0	0	0
800	CRTFP Uy+	0	0	0	0	0	0
800	CRTFP Uy-	0	0	0	0	0	0
803	SLU 1	3	15	2792	-52.76	658.63	-3.89
803	SLU 2	3	31	2782	-52.72	655.51	-7.68
803	SLU 3	3	16	2855	-53.93	673.82	-3.96
803	SLU 4	3	25	2850	-53.91	671.94	-6.23
803	SLU 5	3	31	2822	-53.46	665.11	-7.69
803	SLU 6	3	16	2895	-54.67	683.42	-3.97
803	SLU 7	3	25	2890	-54.65	681.55	-6.24
803	SLU 8	3	16	2872	-54.24	677.84	-3.93
803	SLU 9	3	25	2866	-54.22	675.96	-6.2
803	SLU 10	4	31	3149	-59.7	741.43	-7.71
803	SLU 11	4	16	3222	-60.9	759.74	-3.99
803	SLU 12	4	25	3216	-60.88	757.87	-6.26
803	SLU 13	4	31	3189	-60.44	751.03	-7.73
803	SLU 14	4	16	3262	-61.65	769.34	-4
803	SLU 15	4	25	3256	-61.63	767.47	-6.27
803	SLU 16	4	16	3238	-61.21	763.76	-3.96
803	SLU 17	4	25	3233	-61.19	761.89	-6.23
803	SLU 18	4	16	3315	-62.72	781.38	-3.94
803	SLU 19	4	25	3309	-62.7	779.5	-6.21
803	SLU 20	4	16	3355	-63.46	790.98	-3.96
803	SLU 21	4	25	3349	-63.44	789.11	-6.23
803	SLU 22	3	17	3237	-61.08	763.46	-4.26
803	SLU 23	3	32	3228	-61.05	760.33	-8.04
803	SLU 24	3	17	3301	-62.26	778.64	-4.32
803	SLU 25	3	26	3295	-62.24	776.77	-6.59
803	SLU 26	3	32	3268	-61.79	769.93	-8.05
803	SLU 27	3	17	3341	-63	788.25	-4.33
803	SLU 28	3	26	3335	-62.98	786.37	-6.6
803	SLU 29	3	17	3317	-62.57	782.66	-4.29
803	SLU 30	3	26	3312	-62.55	780.79	-6.56
803	SLU 31	4	32	3594	-68.03	846.25	-8.07
803	SLU 32	4	17	3667	-69.23	864.57	-4.35
803	SLU 33	4	26	3661	-69.21	862.69	-6.62
803	SLU 34	4	32	3634	-68.77	855.86	-8.09
803	SLU 35	4	17	3707	-69.97	874.17	-4.37
803	SLU 36	4	26	3701	-69.96	872.29	-6.64
803	SLU 37	4	17	3683	-69.54	868.59	-4.32
803	SLU 38	4	26	3678	-69.52	866.71	-6.59
803	SLU 39	4	17	3760	-71.05	886.2	-4.3
803	SLU 40	4	26	3755	-71.03	884.33	-6.57
803	SLU 41	4	17	3800	-71.79	895.81	-4.32
803	SLU 42	4	26	3795	-71.77	893.93	-6.59
803	SLU 43	4	20	3477	-65.73	820.28	-4.94
803	SLU 44	4	35	3467	-65.69	817.15	-8.72
803	SLU 45	4	20	3540	-66.9	835.47	-5
803	SLU 46	4	29	3535	-66.88	833.59	-7.27
803	SLU 47	4	35	3507	-66.44	826.76	-8.74
803	SLU 48	4	20	3580	-67.64	845.07	-5.02
803	SLU 49	4	29	3575	-67.62	843.19	-7.29
803	SLU 50	4	20	3557	-67.21	839.49	-4.97
803	SLU 51	4	29	3551	-67.19	837.61	-7.24
803	SLU 52	5	35	3834	-72.67	903.08	-8.75
803	SLU 53	5	20	3906	-73.88	921.39	-5.03
803	SLU 54	5	29	3901	-73.86	919.51	-7.3
803	SLU 55	5	35	3874	-73.41	912.68	-8.77
803	SLU 56	5	20	3946	-74.62	930.99	-5.05
803	SLU 57	5	29	3941	-74.6	929.12	-7.32
803	SLU 58	5	20	3923	-74.18	925.41	-5
803	SLU 59	5	29	3917	-74.16	923.53	-7.27
803	SLU 60	5	20	4000	-75.69	943.03	-4.98
803	SLU 61	5	29	3994	-75.67	941.15	-7.25
803	SLU 62	5	20	4040	-76.43	952.63	-5
803	SLU 63	5	29	4034	-76.41	950.76	-7.27
803	SLU 64	4	21	3922	-74.06	925.1	-5.3
803	SLU 65	4	36	3913	-74.02	921.98	-9.08
803	SLU 66	4	21	3985	-75.23	940.29	-5.36
803	SLU 67	4	30	3980	-75.21	938.42	-7.63
803	SLU 68	4	36	3953	-74.76	931.58	-9.1
803	SLU 69	4	21	4025	-75.97	949.9	-5.38

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
803	SLU 70	4	30	4020	-75.95	948.02	-7.65
803	SLU 71	4	21	4002	-75.54	944.31	-5.33
803	SLU 72	4	30	3996	-75.52	942.44	-7.6
803	SLU 73	5	36	4279	-81	1007.9	-9.11
803	SLU 74	5	21	4352	-82.2	1026.21	-5.39
803	SLU 75	5	31	4346	-82.18	1024.34	-7.66
803	SLU 76	5	36	4319	-81.74	1017.51	-9.13
803	SLU 77	5	22	4392	-82.95	1035.82	-5.41
803	SLU 78	5	31	4386	-82.93	1033.94	-7.68
803	SLU 79	5	21	4368	-82.51	1030.23	-5.36
803	SLU 80	5	30	4363	-82.49	1028.36	-7.63
803	SLU 81	5	21	4445	-84.02	1047.85	-5.34
803	SLU 82	5	30	4440	-84	1045.98	-7.61
803	SLU 83	5	21	4485	-84.76	1057.46	-5.36
803	SLU 84	5	30	4480	-84.74	1055.58	-7.63
803	SLE RA 1	3	16	2919	-55.13	688.58	-4
803	SLE RA 2	3	26	2913	-55.11	686.5	-6.52
803	SLE RA 3	3	16	2961	-55.92	698.71	-4.04
803	SLE RA 4	3	22	2958	-55.91	697.46	-5.55
803	SLE RA 5	3	26	2939	-55.61	692.9	-6.53
803	SLE RA 6	3	16	2988	-56.41	705.11	-4.05
803	SLE RA 7	3	22	2984	-56.4	703.86	-5.56
803	SLE RA 8	3	16	2972	-56.12	701.39	-4.02
803	SLE RA 9	3	22	2969	-56.11	700.14	-5.53
803	SLE RA 10	4	26	3157	-59.76	743.78	-6.54
803	SLE RA 11	4	16	3205	-60.57	755.99	-4.06
803	SLE RA 12	4	22	3202	-60.55	754.74	-5.57
803	SLE RA 13	4	26	3184	-60.26	750.18	-6.55
803	SLE RA 14	4	16	3232	-61.06	762.39	-4.07
803	SLE RA 15	4	22	3228	-61.05	761.14	-5.58
803	SLE RA 16	4	16	3217	-60.77	758.67	-4.04
803	SLE RA 17	4	22	3213	-60.76	757.42	-5.55
803	SLE RA 18	4	16	3268	-61.78	770.41	-4.03
803	SLE RA 19	4	22	3264	-61.76	769.16	-5.54
803	SLE RA 20	4	16	3295	-62.27	776.81	-4.04
803	SLE RA 21	4	22	3291	-62.26	775.56	-5.55
803	SLE FR 1	3	16	2919	-55.13	688.58	-4
803	SLE FR 2	3	18	2918	-55.13	688.16	-4.5
803	SLE FR 3	3	16	2930	-55.33	691.14	-4
803	SLE FR 4	4	18	3022	-57.12	712.71	-4.51
803	SLE FR 5	4	16	3034	-57.33	715.69	-4.01
803	SLE FR 6	4	16	3093	-58.46	729.5	-4.01
803	SLE QP 1	3	16	2919	-55.13	688.58	-4
803	SLE QP 2	4	16	3024	-57.13	713.13	-4.01
803	SLD 1	303	130	3102	-58.99	724.51	-25.81
803	SLD 2	286	109	3097	-58.85	724.19	-20.86
803	SLD 3	308	-57	3246	-59.82	770.21	21
803	SLD 4	291	-78	3241	-59.68	769.89	25.95
803	SLD 5	89	337	2830	-56.45	647.28	-82.43
803	SLD 6	77	324	2827	-56.37	647.07	-79.16
803	SLD 7	106	-286	3309	-59.21	799.63	73.59
803	SLD 8	95	-299	3306	-59.13	799.42	76.86
803	SLD 9	-88	331	2742	-55.13	626.84	-84.87
803	SLD 10	-99	317	2738	-55.04	626.62	-81.6
803	SLD 11	-70	-292	3220	-57.89	779.19	71.15
803	SLD 12	-82	-305	3217	-57.8	778.98	74.41
803	SLD 13	-284	109	2807	-54.57	656.37	-33.96
803	SLD 14	-301	89	2802	-54.44	656.05	-29.01
803	SLD 15	-279	-77	2950	-55.4	702.07	12.84
803	SLD 16	-296	-98	2945	-55.27	701.75	17.8
803	SLV 1	705	297	3195	-61.42	735.95	-58.62
803	SLV 2	664	249	3183	-61.1	735.19	-46.98
803	SLV 3	718	-169	3555	-63.49	850.55	58.04
803	SLV 4	677	-217	3543	-63.17	849.79	69.68
803	SLV 5	202	815	2531	-55.33	546.3	-199.5
803	SLV 6	175	783	2523	-55.12	545.79	-191.66
803	SLV 7	245	-737	3731	-62.23	928.31	189.37
803	SLV 8	218	-769	3724	-62.02	927.8	197.21
803	SLV 9	-211	801	2324	-52.23	498.46	-205.22
803	SLV 10	-238	769	2316	-52.02	497.94	-197.38
803	SLV 11	-168	-751	3524	-59.13	880.47	183.65
803	SLV 12	-195	-783	3516	-58.92	879.96	191.49
803	SLV 13	-670	249	2504	-51.08	576.47	-77.69
803	SLV 14	-710	201	2492	-50.77	575.71	-66.05
803	SLV 15	-657	-217	2864	-53.15	691.07	38.97
803	SLV 16	-698	-265	2852	-52.84	690.31	50.61
803	CRTFP Ux+	0	0	0	0	0	0
803	CRTFP Ux-	0	0	0	0	0	0
803	CRTFP Uy+	0	0	0	0	0	0
803	CRTFP Uy-	0	0	0	0	0	0
805	SLU 1	8	90	4850	-92.86	-24.44	-0.02
805	SLU 2	9	121	4841	-92.92	-24.54	0.06
805	SLU 3	9	91	4951	-94.77	-25.17	-0.03
805	SLU 4	9	110	4945	-94.8	-25.23	0.02
805	SLU 5	9	121	4904	-94.11	-24.98	0.05
805	SLU 6	9	92	5013	-95.96	-25.61	-0.03
805	SLU 7	9	110	5008	-95.99	-25.67	0.02
805	SLU 8	9	91	4975	-95.24	-25.31	-0.03
805	SLU 9	9	109	4970	-95.28	-25.37	0.02

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
805	SLU 10	9	128	5471	-105.04	-27.07	-0.03
805	SLU 11	8	99	5580	-106.88	-27.7	-0.12
805	SLU 12	9	117	5575	-106.92	-27.76	-0.07
805	SLU 13	9	129	5534	-106.23	-27.51	-0.03
805	SLU 14	9	99	5643	-108.07	-28.14	-0.12
805	SLU 15	9	118	5638	-108.11	-28.2	-0.07
805	SLU 16	9	98	5605	-107.35	-27.84	-0.12
805	SLU 17	9	117	5600	-107.39	-27.9	-0.07
805	SLU 18	8	101	5750	-110.17	-28.06	-0.15
805	SLU 19	8	119	5745	-110.2	-28.12	-0.1
805	SLU 20	8	101	5812	-111.36	-28.49	-0.15
805	SLU 21	8	120	5807	-111.39	-28.55	-0.1
805	SLU 22	9	101	5608	-107.15	-28.16	-0.05
805	SLU 23	9	132	5599	-107.21	-28.26	0.04
805	SLU 24	9	102	5708	-109.05	-28.89	-0.05
805	SLU 25	10	121	5703	-109.09	-28.95	0
805	SLU 26	10	132	5662	-108.4	-28.69	0.03
805	SLU 27	9	103	5771	-110.24	-29.32	-0.05
805	SLU 28	10	121	5766	-110.28	-29.38	0
805	SLU 29	9	102	5733	-109.53	-29.03	-0.05
805	SLU 30	10	120	5728	-109.57	-29.09	0
805	SLU 31	9	139	6229	-119.32	-30.79	-0.05
805	SLU 32	9	110	6338	-121.17	-31.42	-0.14
805	SLU 33	9	128	6333	-121.2	-31.48	-0.09
805	SLU 34	9	140	6292	-120.51	-31.22	-0.05
805	SLU 35	9	110	6401	-122.36	-31.85	-0.14
805	SLU 36	10	129	6396	-122.39	-31.91	-0.09
805	SLU 37	9	109	6363	-121.64	-31.56	-0.14
805	SLU 38	9	128	6358	-121.68	-31.62	-0.09
805	SLU 39	9	112	6508	-124.45	-31.77	-0.17
805	SLU 40	9	130	6502	-124.49	-31.83	-0.12
805	SLU 41	9	112	6570	-125.64	-32.21	-0.17
805	SLU 42	9	131	6565	-125.68	-32.27	-0.12
805	SLU 43	11	113	6045	-115.82	-30.5	-0.02
805	SLU 44	11	144	6036	-115.88	-30.6	0.06
805	SLU 45	11	114	6146	-117.73	-31.23	-0.03
805	SLU 46	11	133	6141	-117.76	-31.29	0.02
805	SLU 47	11	144	6099	-117.07	-31.04	0.05
805	SLU 48	11	115	6208	-118.92	-31.67	-0.03
805	SLU 49	11	133	6203	-118.95	-31.73	0.02
805	SLU 50	11	114	6170	-118.2	-31.37	-0.03
805	SLU 51	11	132	6165	-118.24	-31.43	0.02
805	SLU 52	11	151	6666	-128	-33.13	-0.03
805	SLU 53	11	122	6776	-129.84	-33.76	-0.12
805	SLU 54	11	140	6771	-129.88	-33.82	-0.07
805	SLU 55	11	152	6729	-129.19	-33.57	-0.03
805	SLU 56	11	122	6838	-131.03	-34.2	-0.12
805	SLU 57	11	141	6833	-131.07	-34.26	-0.07
805	SLU 58	11	121	6800	-130.32	-33.9	-0.12
805	SLU 59	11	140	6795	-130.35	-33.96	-0.07
805	SLU 60	10	124	6945	-133.13	-34.12	-0.15
805	SLU 61	11	142	6940	-133.16	-34.18	-0.1
805	SLU 62	11	124	7007	-134.32	-34.55	-0.15
805	SLU 63	11	143	7002	-134.35	-34.61	-0.1
805	SLU 64	11	124	6803	-130.11	-34.22	-0.05
805	SLU 65	12	155	6794	-130.17	-34.32	0.04
805	SLU 66	12	125	6904	-132.01	-34.95	-0.05
805	SLU 67	12	144	6898	-132.05	-35.01	0
805	SLU 68	12	155	6857	-131.36	-34.75	0.03
805	SLU 69	12	126	6966	-133.2	-35.38	-0.05
805	SLU 70	12	144	6961	-133.24	-35.44	0
805	SLU 71	12	125	6928	-132.49	-35.09	-0.05
805	SLU 72	12	143	6923	-132.53	-35.15	0
805	SLU 73	11	163	7424	-142.29	-36.85	-0.05
805	SLU 74	11	133	7533	-144.13	-37.48	-0.14
805	SLU 75	12	152	7528	-144.16	-37.54	-0.09
805	SLU 76	12	163	7487	-143.47	-37.28	-0.05
805	SLU 77	12	133	7596	-145.32	-37.91	-0.14
805	SLU 78	12	152	7591	-145.35	-37.97	-0.09
805	SLU 79	11	132	7558	-144.6	-37.62	-0.14
805	SLU 80	12	151	7553	-144.64	-37.68	-0.09
805	SLU 81	11	135	7703	-147.42	-37.83	-0.17
805	SLU 82	11	153	7698	-147.45	-37.89	-0.12
805	SLU 83	11	135	7765	-148.6	-38.27	-0.17
805	SLU 84	11	154	7760	-148.64	-38.33	-0.13
805	SLE RA 1	9	93	5066	-96.95	-25.5	-0.03
805	SLE RA 2	9	114	5061	-96.99	-25.57	0.03
805	SLE RA 3	9	94	5134	-98.21	-25.99	-0.03
805	SLE RA 4	9	106	5130	-98.24	-26.03	0
805	SLE RA 5	9	114	5102	-97.78	-25.86	0.02
805	SLE RA 6	9	94	5175	-99.01	-26.28	-0.04
805	SLE RA 7	9	107	5172	-99.03	-26.32	0
805	SLE RA 8	9	94	5150	-98.53	-26.08	-0.04
805	SLE RA 9	9	106	5146	-98.56	-26.13	0
805	SLE RA 10	9	119	5481	-105.06	-27.26	-0.03
805	SLE RA 11	9	99	5553	-106.29	-27.68	-0.09
805	SLE RA 12	9	111	5550	-106.31	-27.72	-0.06
805	SLE RA 13	9	119	5522	-105.85	-27.55	-0.04
805	SLE RA 14	9	99	5595	-107.08	-27.97	-0.09

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
805	SLE RA 15	9	112	5592	-107.11	-28.01	-0.06
805	SLE RA 16	9	99	5570	-106.61	-27.77	-0.09
805	SLE RA 17	9	111	5566	-106.63	-27.81	-0.06
805	SLE RA 18	8	100	5666	-108.48	-27.91	-0.11
805	SLE RA 19	8	113	5663	-108.51	-27.95	-0.08
805	SLE RA 20	8	100	5708	-109.27	-28.2	-0.12
805	SLE RA 21	9	113	5705	-109.3	-28.24	-0.08
805	SLE FR 1	9	93	5066	-96.95	-25.5	-0.03
805	SLE FR 2	9	97	5065	-96.95	-25.52	-0.02
805	SLE FR 3	9	93	5083	-97.26	-25.62	-0.03
805	SLE FR 4	9	99	5245	-100.41	-26.24	-0.04
805	SLE FR 5	9	95	5263	-100.72	-26.34	-0.06
805	SLE FR 6	8	97	5366	-102.71	-26.71	-0.07
805	SLE QP 1	9	93	5066	-96.95	-25.5	-0.03
805	SLE QP 2	8	95	5246	-100.41	-26.23	-0.06
805	SLD 1	625	249	4690	-92.91	7.44	10.07
805	SLD 2	589	288	4721	-93.47	6.94	11.15
805	SLD 3	615	-134	4832	-92.38	8.61	8.98
805	SLD 4	580	-96	4863	-92.94	8.11	10.06
805	SLD 5	214	716	4858	-98.86	-17.81	4.44
805	SLD 6	190	741	4879	-99.23	-18.14	5.16
805	SLD 7	183	-562	5332	-97.09	-13.91	0.81
805	SLD 8	160	-537	5352	-97.46	-14.24	1.52
805	SLD 9	-143	727	5140	-103.35	-38.21	-1.63
805	SLD 10	-166	752	5161	-103.72	-38.54	-0.92
805	SLD 11	-174	-551	5614	-101.58	-34.31	-5.27
805	SLD 12	-197	-526	5634	-101.95	-34.64	-4.55
805	SLD 13	-563	286	5630	-107.88	-60.56	-10.17
805	SLD 14	-599	324	5661	-108.43	-61.06	-9.09
805	SLD 15	-572	-98	5772	-107.34	-59.39	-11.26
805	SLD 16	-608	-59	5803	-107.9	-59.89	-10.18
805	SLV 1	1451	486	3932	-82.87	52.52	23.73
805	SLV 2	1368	576	4005	-84.18	51.34	26.27
805	SLV 3	1429	-471	4288	-81.62	55.34	20.98
805	SLV 4	1346	-381	4361	-82.92	54.16	23.52
805	SLV 5	490	1647	4300	-96.81	-6.66	10.78
805	SLV 6	434	1708	4349	-97.69	-7.46	12.48
805	SLV 7	416	-1544	5484	-92.62	2.75	1.61
805	SLV 8	361	-1483	5533	-93.5	1.95	3.32
805	SLV 9	-344	1673	4960	-107.31	-54.41	-3.43
805	SLV 10	-400	1734	5009	-108.19	-55.2	-1.72
805	SLV 11	-417	-1518	6144	-103.12	-44.99	-12.6
805	SLV 12	-473	-1457	6193	-104	-45.79	-10.89
805	SLV 13	-1329	571	6132	-117.89	-106.62	-23.63
805	SLV 14	-1412	662	6205	-119.2	-107.8	-21.09
805	SLV 15	-1351	-386	6487	-116.63	-103.79	-26.38
805	SLV 16	-1434	-296	6560	-117.94	-104.97	-23.84
805	CRTFP Ux+	0	0	0	0	0	0
805	CRTFP Ux-	0	0	0	0	0	0
805	CRTFP Uy+	0	0	0	0	0	0
805	CRTFP Uy-	0	0	0	0	0	0
807	SLU 1	-39	44	3141	-3.58	-450.41	10.92
807	SLU 2	-38	65	3119	-3.75	-450.13	16.25
807	SLU 3	-40	44	3213	-3.63	-459.84	10.98
807	SLU 4	-39	57	3200	-3.73	-459.67	14.18
807	SLU 5	-38	65	3164	-3.78	-456.02	16.29
807	SLU 6	-40	44	3257	-3.66	-465.73	11.02
807	SLU 7	-40	57	3244	-3.76	-465.56	14.22
807	SLU 8	-40	44	3231	-3.64	-462.18	11
807	SLU 9	-39	57	3218	-3.74	-462.02	14.2
807	SLU 10	-40	71	3495	-4.24	-502.69	17.77
807	SLU 11	-42	50	3589	-4.11	-512.39	12.5
807	SLU 12	-41	63	3576	-4.22	-512.23	15.69
807	SLU 13	-40	71	3540	-4.27	-508.57	17.81
807	SLU 14	-43	50	3634	-4.15	-518.28	12.54
807	SLU 15	-42	63	3620	-4.25	-518.12	15.73
807	SLU 16	-42	50	3607	-4.12	-514.74	12.52
807	SLU 17	-41	63	3594	-4.23	-514.57	15.72
807	SLU 18	-42	52	3678	-4.27	-525.48	13.09
807	SLU 19	-41	65	3665	-4.37	-525.32	16.29
807	SLU 20	-43	52	3723	-4.3	-531.37	13.13
807	SLU 21	-42	65	3710	-4.41	-531.21	16.33
807	SLU 22	-43	47	3619	-4.07	-515.56	11.79
807	SLU 23	-42	68	3598	-4.24	-515.29	17.11
807	SLU 24	-44	47	3691	-4.12	-524.99	11.84
807	SLU 25	-43	60	3678	-4.23	-524.83	15.04
807	SLU 26	-43	68	3642	-4.27	-521.18	17.15
807	SLU 27	-45	47	3736	-4.15	-530.88	11.88
807	SLU 28	-44	60	3723	-4.26	-530.72	15.08
807	SLU 29	-44	47	3709	-4.13	-527.34	11.86
807	SLU 30	-44	60	3696	-4.24	-527.17	15.06
807	SLU 31	-44	74	3974	-4.73	-567.84	18.63
807	SLU 32	-46	53	4067	-4.61	-577.55	13.36
807	SLU 33	-46	66	4054	-4.71	-577.39	16.56
807	SLU 34	-45	74	4019	-4.76	-573.73	18.67
807	SLU 35	-47	53	4112	-4.64	-583.44	13.4
807	SLU 36	-46	66	4099	-4.74	-583.27	16.59
807	SLU 37	-47	53	4085	-4.62	-579.89	13.38
807	SLU 38	-46	66	4072	-4.72	-579.73	16.58

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
807	SLU 39	-46	55	4157	-4.76	-590.64	13.95
807	SLU 40	-46	68	4144	-4.87	-590.47	17.15
807	SLU 41	-47	56	4202	-4.79	-596.53	13.99
807	SLU 42	-46	68	4188	-4.9	-596.36	17.19
807	SLU 43	-49	55	3919	-4.48	-563.19	13.91
807	SLU 44	-48	77	3898	-4.66	-562.91	19.24
807	SLU 45	-50	56	3991	-4.53	-572.62	13.96
807	SLU 46	-49	68	3978	-4.64	-572.46	17.16
807	SLU 47	-48	77	3942	-4.69	-568.8	19.27
807	SLU 48	-51	56	4036	-4.56	-578.51	14
807	SLU 49	-50	69	4023	-4.67	-578.34	17.2
807	SLU 50	-50	56	4009	-4.54	-574.96	13.98
807	SLU 51	-50	69	3996	-4.65	-574.8	17.18
807	SLU 52	-50	83	4274	-5.14	-615.47	20.75
807	SLU 53	-52	62	4367	-5.02	-625.17	15.48
807	SLU 54	-51	74	4354	-5.12	-625.01	18.68
807	SLU 55	-51	83	4319	-5.17	-621.36	20.79
807	SLU 56	-53	62	4412	-5.05	-631.06	15.52
807	SLU 57	-52	75	4399	-5.15	-630.9	18.72
807	SLU 58	-52	62	4385	-5.03	-627.52	15.5
807	SLU 59	-52	75	4372	-5.13	-627.35	18.7
807	SLU 60	-52	64	4457	-5.18	-638.26	16.08
807	SLU 61	-51	77	4444	-5.28	-638.1	19.27
807	SLU 62	-53	64	4502	-5.21	-644.15	16.11
807	SLU 63	-52	77	4488	-5.31	-643.99	19.31
807	SLU 64	-54	59	4398	-4.98	-628.34	14.77
807	SLU 65	-52	80	4376	-5.15	-628.07	20.1
807	SLU 66	-54	59	4469	-5.03	-637.78	14.82
807	SLU 67	-54	72	4456	-5.13	-637.61	18.02
807	SLU 68	-53	80	4421	-5.18	-633.96	20.13
807	SLU 69	-55	59	4514	-5.06	-643.67	14.86
807	SLU 70	-54	72	4501	-5.16	-643.5	18.06
807	SLU 71	-55	59	4487	-5.04	-640.12	14.84
807	SLU 72	-54	72	4474	-5.14	-639.96	18.04
807	SLU 73	-54	86	4752	-5.63	-680.62	21.61
807	SLU 74	-57	65	4845	-5.51	-690.33	16.34
807	SLU 75	-56	78	4832	-5.62	-690.17	19.54
807	SLU 76	-55	86	4797	-5.66	-686.51	21.65
807	SLU 77	-57	65	4890	-5.54	-696.22	16.38
807	SLU 78	-56	78	4877	-5.65	-696.06	19.58
807	SLU 79	-57	65	4863	-5.52	-692.67	16.36
807	SLU 80	-56	78	4850	-5.63	-692.51	19.56
807	SLU 81	-57	67	4935	-5.67	-703.42	16.94
807	SLU 82	-56	80	4922	-5.77	-703.26	20.13
807	SLU 83	-57	68	4980	-5.7	-709.31	16.97
807	SLU 84	-56	80	4967	-5.8	-709.15	20.17
807	SLE RA 1	-40	45	3278	-3.72	-469.02	11.17
807	SLE RA 2	-39	59	3263	-3.83	-468.84	14.72
807	SLE RA 3	-41	45	3325	-3.75	-475.31	11.21
807	SLE RA 4	-40	53	3317	-3.82	-475.2	13.34
807	SLE RA 5	-40	59	3293	-3.85	-472.76	14.75
807	SLE RA 6	-41	45	3355	-3.77	-479.24	11.23
807	SLE RA 7	-41	53	3347	-3.84	-479.13	13.36
807	SLE RA 8	-41	45	3337	-3.76	-476.87	11.22
807	SLE RA 9	-40	53	3329	-3.83	-476.76	13.35
807	SLE RA 10	-41	63	3514	-4.16	-503.88	15.74
807	SLE RA 11	-42	49	3576	-4.08	-510.35	12.22
807	SLE RA 12	-42	57	3567	-4.15	-510.24	14.35
807	SLE RA 13	-41	63	3544	-4.18	-507.8	15.76
807	SLE RA 14	-43	49	3606	-4.1	-514.27	12.24
807	SLE RA 15	-42	57	3597	-4.17	-514.16	14.38
807	SLE RA 16	-42	49	3588	-4.08	-511.91	12.23
807	SLE RA 17	-42	57	3580	-4.15	-511.8	14.36
807	SLE RA 18	-42	50	3636	-4.18	-519.07	12.62
807	SLE RA 19	-42	59	3627	-4.25	-518.96	14.75
807	SLE RA 20	-43	50	3666	-4.2	-523	12.64
807	SLE RA 21	-42	59	3657	-4.27	-522.89	14.77
807	SLE FR 1	-40	45	3278	-3.72	-469.02	11.17
807	SLE FR 2	-40	47	3275	-3.74	-468.98	11.88
807	SLE FR 3	-40	45	3290	-3.73	-470.59	11.18
807	SLE FR 4	-41	49	3382	-3.88	-484	12.31
807	SLE FR 5	-41	46	3397	-3.87	-485.61	11.61
807	SLE FR 6	-41	47	3457	-3.95	-494.05	11.89
807	SLE QP 1	-40	45	3278	-3.72	-469.02	11.17
807	SLE QP 2	-41	46	3385	-3.86	-484.04	11.6
807	SLD 1	245	252	4212	-6.31	-612.97	63.07
807	SLD 2	222	140	4234	-6.09	-612.25	35.14
807	SLD 3	229	5	4520	-3.99	-619.49	1.14
807	SLD 4	206	-107	4542	-3.77	-618.78	-26.78
807	SLD 5	73	504	3163	-8.16	-512.95	125.98
807	SLD 6	58	430	3177	-8.01	-512.48	107.56
807	SLD 7	20	-322	4188	-0.41	-534.69	-80.43
807	SLD 8	5	-396	4203	-0.27	-534.22	-98.85
807	SLD 9	-87	488	2568	-7.45	-433.85	122.06
807	SLD 10	-101	414	2582	-7.3	-433.38	103.64
807	SLD 11	-140	-337	3593	0.3	-455.59	-84.36
807	SLD 12	-155	-411	3608	0.44	-455.12	-102.78
807	SLD 13	-288	200	2229	-3.94	-349.3	49.99
807	SLD 14	-310	88	2251	-3.73	-348.59	22.07

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
807	SLD 15	-304	-48	2537	-1.62	-355.82	-11.94
807	SLD 16	-327	-160	2558	-1.41	-355.11	-39.86
807	SLV 1	629	547	5295	-9.79	-785.26	136.68
807	SLV 2	575	284	5346	-9.28	-783.59	71.04
807	SLV 3	589	-67	6066	-3.97	-801.5	-17.1
807	SLV 4	536	-331	6117	-3.46	-799.83	-82.74
807	SLV 5	230	1178	2780	-14.55	-550.08	294.61
807	SLV 6	194	1001	2814	-14.21	-548.96	250.42
807	SLV 7	98	-871	5349	4.84	-604.22	-217.99
807	SLV 8	62	-1049	5383	5.18	-603.09	-262.18
807	SLV 9	-144	1141	1387	-12.89	-364.98	285.39
807	SLV 10	-180	964	1422	-12.55	-363.85	241.2
807	SLV 11	-276	-908	3956	6.5	-419.12	-227.21
807	SLV 12	-312	-1086	3991	6.84	-417.99	-271.4
807	SLV 13	-618	424	654	-4.25	-168.25	105.95
807	SLV 14	-671	160	705	-3.75	-166.57	40.31
807	SLV 15	-657	-191	1424	1.56	-184.49	-47.83
807	SLV 16	-710	-455	1475	2.07	-182.82	-113.47
807	CRTFP Ux+	0	0	0	0	0	0
807	CRTFP Ux-	0	0	0	0	0	0
807	CRTFP Uy+	0	0	0	0	0	0
807	CRTFP Uy-	0	0	0	0	0	0
822	SLU 1	56	21	3833	-5.08	764.58	-7.28
822	SLU 2	55	45	3799	-5.37	763.5	-15.7
822	SLU 3	58	21	3927	-5.14	781.03	-7.46
822	SLU 4	57	35	3907	-5.32	780.38	-12.51
822	SLU 5	56	45	3861	-5.4	774.22	-16
822	SLU 6	59	22	3990	-5.18	791.76	-7.75
822	SLU 7	58	36	3969	-5.35	791.11	-12.81
822	SLU 8	59	22	3958	-5.14	786.04	-7.87
822	SLU 9	58	37	3937	-5.32	785.39	-12.93
822	SLU 10	58	47	4252	-6.07	849.79	-16.62
822	SLU 11	61	24	4380	-5.84	867.32	-8.37
822	SLU 12	60	38	4360	-6.01	866.67	-13.43
822	SLU 13	59	48	4314	-6.1	860.52	-16.92
822	SLU 14	63	24	4443	-5.87	878.05	-8.67
822	SLU 15	62	39	4423	-6.05	877.4	-13.73
822	SLU 16	62	25	4411	-5.84	872.33	-8.79
822	SLU 17	61	39	4390	-6.01	871.68	-13.85
822	SLU 18	61	24	4480	-6.07	887.86	-8.59
822	SLU 19	60	39	4460	-6.25	887.2	-13.64
822	SLU 20	62	25	4542	-6.11	898.58	-8.89
822	SLU 21	61	39	4522	-6.28	897.93	-13.94
822	SLU 22	63	20	4413	-5.76	871.79	-7.2
822	SLU 23	61	44	4379	-6.06	870.7	-15.62
822	SLU 24	64	21	4508	-5.83	888.24	-7.37
822	SLU 25	63	35	4487	-6	887.58	-12.43
822	SLU 26	62	45	4442	-6.09	881.43	-15.92
822	SLU 27	65	22	4570	-5.86	898.96	-7.67
822	SLU 28	65	36	4550	-6.03	898.31	-12.73
822	SLU 29	65	22	4538	-5.83	893.24	-7.79
822	SLU 30	64	36	4518	-6	892.59	-12.85
822	SLU 31	65	47	4832	-6.75	956.99	-16.54
822	SLU 32	68	23	4961	-6.52	974.53	-8.29
822	SLU 33	67	38	4941	-6.7	973.88	-13.35
822	SLU 34	66	48	4895	-6.78	967.72	-16.84
822	SLU 35	69	24	5023	-6.56	985.25	-8.59
822	SLU 36	68	39	5003	-6.73	984.6	-13.65
822	SLU 37	68	24	4991	-6.52	979.54	-8.71
822	SLU 38	68	39	4971	-6.7	978.88	-13.77
822	SLU 39	68	24	5060	-6.76	995.06	-8.51
822	SLU 40	67	38	5040	-6.93	994.41	-13.56
822	SLU 41	69	25	5123	-6.79	1005.79	-8.81
822	SLU 42	68	39	5103	-6.97	1005.14	-13.86
822	SLU 43	71	27	4783	-6.37	957.2	-9.49
822	SLU 44	69	51	4750	-6.66	956.12	-17.91
822	SLU 45	73	27	4878	-6.43	973.65	-9.67
822	SLU 46	72	42	4858	-6.61	973	-14.72
822	SLU 47	71	52	4812	-6.69	966.84	-18.21
822	SLU 48	74	28	4940	-6.46	984.38	-9.96
822	SLU 49	73	43	4920	-6.64	983.72	-15.02
822	SLU 50	73	28	4908	-6.43	978.66	-10.08
822	SLU 51	72	43	4888	-6.61	978.01	-15.14
822	SLU 52	73	53	5203	-7.36	1042.41	-18.83
822	SLU 53	76	30	5331	-7.13	1059.94	-10.58
822	SLU 54	75	44	5311	-7.3	1059.29	-15.64
822	SLU 55	74	54	5265	-7.39	1053.13	-19.13
822	SLU 56	77	31	5394	-7.16	1070.67	-10.88
822	SLU 57	76	45	5373	-7.33	1070.02	-15.94
822	SLU 58	77	31	5361	-7.13	1064.95	-11
822	SLU 59	76	46	5341	-7.3	1064.3	-16.06
822	SLU 60	76	30	5431	-7.36	1080.47	-10.8
822	SLU 61	75	45	5410	-7.54	1079.82	-15.85
822	SLU 62	77	31	5493	-7.39	1091.2	-11.1
822	SLU 63	76	46	5473	-7.57	1090.55	-16.15
822	SLU 64	77	27	5364	-7.05	1064.41	-9.41
822	SLU 65	76	51	5330	-7.35	1063.32	-17.83
822	SLU 66	79	27	5459	-7.12	1080.85	-9.59
822	SLU 67	78	41	5438	-7.29	1080.2	-14.64

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
822	SLU 68	77	51	5393	-7.38	1074.05	-18.13
822	SLU 69	80	28	5521	-7.15	1091.58	-9.88
822	SLU 70	79	42	5501	-7.32	1090.93	-14.94
822	SLU 71	80	28	5489	-7.12	1085.86	-10
822	SLU 72	79	43	5469	-7.29	1085.21	-15.06
822	SLU 73	79	53	5783	-8.04	1149.61	-18.75
822	SLU 74	82	30	5912	-7.81	1167.15	-10.5
822	SLU 75	82	44	5891	-7.99	1166.49	-15.56
822	SLU 76	80	54	5846	-8.07	1160.34	-19.05
822	SLU 77	84	30	5974	-7.84	1177.87	-10.8
822	SLU 78	83	45	5954	-8.02	1177.22	-15.86
822	SLU 79	83	31	5942	-7.81	1172.15	-10.92
822	SLU 80	82	45	5922	-7.99	1171.5	-15.98
822	SLU 81	82	30	6011	-8.05	1187.68	-10.72
822	SLU 82	81	45	5991	-8.22	1187.03	-15.77
822	SLU 83	83	31	6074	-8.08	1198.41	-11.02
822	SLU 84	83	45	6053	-8.25	1197.76	-16.07
822	SLE RA 1	58	20	3999	-5.28	795.21	-7.25
822	SLE RA 2	57	37	3976	-5.47	794.49	-12.87
822	SLE RA 3	59	21	4062	-5.32	806.18	-7.37
822	SLE RA 4	59	30	4048	-5.43	805.74	-10.74
822	SLE RA 5	58	37	4018	-5.49	801.64	-13.07
822	SLE RA 6	60	21	4103	-5.34	813.33	-7.57
822	SLE RA 7	59	31	4090	-5.46	812.9	-10.94
822	SLE RA 8	60	22	4082	-5.32	809.52	-7.65
822	SLE RA 9	59	31	4068	-5.44	809.08	-11.02
822	SLE RA 10	59	38	4278	-5.93	852.02	-13.48
822	SLE RA 11	61	22	4364	-5.78	863.71	-7.98
822	SLE RA 12	61	32	4350	-5.9	863.27	-11.35
822	SLE RA 13	60	39	4320	-5.96	859.17	-13.68
822	SLE RA 14	62	23	4405	-5.8	870.86	-8.18
822	SLE RA 15	62	33	4392	-5.92	870.42	-11.55
822	SLE RA 16	62	23	4384	-5.78	867.04	-8.26
822	SLE RA 17	61	33	4370	-5.9	866.61	-11.63
822	SLE RA 18	61	23	4430	-5.94	877.4	-8.13
822	SLE RA 19	61	33	4416	-6.05	876.96	-11.5
822	SLE RA 20	62	23	4472	-5.96	884.55	-8.33
822	SLE RA 21	62	33	4458	-6.08	884.11	-11.7
822	SLE FR 1	58	20	3999	-5.28	795.21	-7.25
822	SLE FR 2	58	24	3994	-5.31	795.07	-8.38
822	SLE FR 3	58	21	4015	-5.28	798.07	-7.33
822	SLE FR 4	59	24	4123	-5.51	819.72	-8.64
822	SLE FR 5	59	21	4145	-5.48	822.73	-7.6
822	SLE FR 6	60	22	4214	-5.61	836.3	-7.69
822	SLE QP 1	58	20	3999	-5.28	795.21	-7.25
822	SLE QP 2	59	21	4128	-5.47	819.87	-7.52
822	SLD 1	423	130	2768	-5.63	603.45	-45.78
822	SLD 2	389	263	2720	-6.01	601.73	-91.84
822	SLD 3	444	-151	3238	-1.72	621.57	52.44
822	SLD 4	410	-18	3190	-2.11	619.85	6.38
822	SLD 5	141	457	3016	-11.37	727.78	-159.68
822	SLD 6	119	544	2984	-11.62	726.65	-190.06
822	SLD 7	214	-481	4583	1.64	788.16	167.72
822	SLD 8	191	-393	4551	1.38	787.02	137.33
822	SLD 9	-73	436	3705	-12.33	852.71	-152.36
822	SLD 10	-96	523	3673	-12.59	851.58	-182.75
822	SLD 11	-1	-501	5272	0.68	913.09	175.03
822	SLD 12	-23	-414	5240	0.42	911.95	144.64
822	SLD 13	-292	61	5066	-8.84	1019.89	-21.41
822	SLD 14	-326	193	5018	-9.22	1018.17	-67.47
822	SLD 15	-270	-220	5536	-4.93	1038	76.81
822	SLD 16	-305	-88	5488	-5.32	1036.28	30.75
822	SLV 1	908	298	906	-6.16	311.89	-104.65
822	SLV 2	828	609	792	-7.07	307.84	-212.94
822	SLV 3	963	-404	2086	3.63	357.34	140.68
822	SLV 4	883	-93	1972	2.72	353.29	32.4
822	SLV 5	245	1111	1393	-20.35	599.31	-388.53
822	SLV 6	191	1321	1316	-20.97	596.58	-461.44
822	SLV 7	429	-1229	5326	12.27	750.79	429.24
822	SLV 8	375	-1020	5250	11.66	748.06	356.33
822	SLV 9	-257	1062	3006	-22.61	891.67	-371.37
822	SLV 10	-311	1272	2930	-23.22	888.95	-444.27
822	SLV 11	-73	-1278	6940	10.02	1043.15	446.4
822	SLV 12	-127	-1069	6863	9.41	1040.43	373.5
822	SLV 13	-765	135	6284	-13.67	1286.45	-47.43
822	SLV 14	-845	446	6170	-14.58	1282.4	-155.71
822	SLV 15	-710	-567	7464	-3.88	1331.89	197.9
822	SLV 16	-790	-256	7350	-4.79	1327.85	89.62
822	CRTFP Ux+	0	0	0	0	0	0
822	CRTFP Ux-	0	0	0	0	0	0
822	CRTFP Uy+	0	0	0	0	0	0
822	CRTFP Uy-	0	0	0	0	0	0
824	SLU 1	108	40	6375	1.44	17.37	-2.13
824	SLU 2	104	72	6314	0.97	15.94	-1.95
824	SLU 3	112	40	6536	1.57	18.21	-2.24
824	SLU 4	110	59	6500	1.29	17.35	-2.13
824	SLU 5	107	72	6421	1.06	16.37	-2.03
824	SLU 6	115	40	6643	1.67	18.64	-2.33
824	SLU 7	112	59	6607	1.39	17.78	-2.21

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
824	SLU 8	114	40	6589	1.63	18.23	-2.3
824	SLU 9	111	59	6552	1.35	17.37	-2.19
824	SLU 10	112	78	7121	1.12	19.48	-2.22
824	SLU 11	119	47	7344	1.73	21.76	-2.52
824	SLU 12	117	66	7307	1.45	20.9	-2.4
824	SLU 13	115	78	7228	1.22	19.92	-2.31
824	SLU 14	122	47	7451	1.82	22.19	-2.6
824	SLU 15	120	66	7414	1.54	21.33	-2.49
824	SLU 16	121	46	7396	1.78	21.78	-2.58
824	SLU 17	119	65	7360	1.5	20.92	-2.47
824	SLU 18	119	49	7528	1.66	22.44	-2.52
824	SLU 19	117	68	7492	1.38	21.58	-2.41
824	SLU 20	122	49	7635	1.75	22.87	-2.61
824	SLU 21	119	68	7599	1.47	22.01	-2.5
824	SLU 22	123	45	7401	1.94	22.34	-2.52
824	SLU 23	119	77	7340	1.47	20.91	-2.33
824	SLU 24	127	45	7563	2.08	23.18	-2.62
824	SLU 25	125	64	7526	1.79	22.32	-2.51
824	SLU 26	122	76	7447	1.56	21.34	-2.41
824	SLU 27	130	45	7670	2.17	23.61	-2.71
824	SLU 28	127	64	7633	1.89	22.75	-2.6
824	SLU 29	129	45	7615	2.13	23.2	-2.69
824	SLU 30	126	64	7579	1.85	22.34	-2.57
824	SLU 31	127	83	8147	1.62	24.45	-2.61
824	SLU 32	134	52	8370	2.23	26.73	-2.9
824	SLU 33	132	71	8334	1.95	25.87	-2.79
824	SLU 34	130	83	8255	1.72	24.89	-2.69
824	SLU 35	137	52	8477	2.33	27.16	-2.98
824	SLU 36	135	70	8441	2.04	26.3	-2.87
824	SLU 37	136	51	8423	2.28	26.75	-2.96
824	SLU 38	134	70	8386	2	25.89	-2.85
824	SLU 39	134	54	8555	2.16	27.41	-2.91
824	SLU 40	131	73	8518	1.88	26.55	-2.8
824	SLU 41	137	54	8662	2.25	27.84	-2.99
824	SLU 42	134	73	8625	1.97	26.98	-2.88
824	SLU 43	135	51	7935	1.7	20.88	-2.64
824	SLU 44	131	82	7874	1.23	19.44	-2.45
824	SLU 45	139	51	8097	1.83	21.72	-2.75
824	SLU 46	137	70	8060	1.55	20.86	-2.64
824	SLU 47	134	82	7981	1.32	19.87	-2.54
824	SLU 48	142	51	8204	1.93	22.15	-2.83
824	SLU 49	140	70	8167	1.65	21.29	-2.72
824	SLU 50	141	50	8149	1.89	21.74	-2.81
824	SLU 51	139	69	8113	1.61	20.88	-2.7
824	SLU 52	139	88	8682	1.38	22.99	-2.73
824	SLU 53	147	57	8904	1.99	25.27	-3.02
824	SLU 54	144	76	8868	1.71	24.41	-2.91
824	SLU 55	142	88	8789	1.48	23.42	-2.81
824	SLU 56	150	57	9011	2.08	25.7	-3.11
824	SLU 57	147	76	8975	1.8	24.84	-3
824	SLU 58	148	57	8957	2.04	25.29	-3.08
824	SLU 59	146	76	8920	1.76	24.43	-2.97
824	SLU 60	146	59	9089	1.92	25.95	-3.03
824	SLU 61	144	78	9052	1.64	25.09	-2.92
824	SLU 62	149	59	9196	2.01	26.38	-3.12
824	SLU 63	147	78	9159	1.73	25.52	-3.01
824	SLU 64	150	55	8961	2.2	25.85	-3.02
824	SLU 65	146	87	8900	1.73	24.41	-2.84
824	SLU 66	154	56	9123	2.34	26.69	-3.13
824	SLU 67	152	75	9087	2.05	25.83	-3.02
824	SLU 68	149	87	9008	1.82	24.84	-2.92
824	SLU 69	157	56	9230	2.43	27.12	-3.22
824	SLU 70	155	75	9194	2.15	26.26	-3.11
824	SLU 71	156	55	9176	2.39	26.71	-3.19
824	SLU 72	154	74	9139	2.11	25.85	-3.08
824	SLU 73	154	93	9708	1.88	27.96	-3.11
824	SLU 74	162	62	9931	2.49	30.24	-3.41
824	SLU 75	159	81	9894	2.21	29.38	-3.3
824	SLU 76	157	93	9815	1.98	28.39	-3.2
824	SLU 77	165	62	10038	2.58	30.67	-3.49
824	SLU 78	162	81	10001	2.3	29.81	-3.38
824	SLU 79	163	62	9983	2.54	30.26	-3.47
824	SLU 80	161	80	9947	2.26	29.4	-3.36
824	SLU 81	161	64	10115	2.42	30.92	-3.42
824	SLU 82	159	83	10078	2.14	30.06	-3.3
824	SLU 83	164	64	10222	2.51	31.35	-3.5
824	SLU 84	162	83	10186	2.23	30.49	-3.39
824	SLE RA 1	112	42	6668	1.58	18.79	-2.24
824	SLE RA 2	110	63	6627	1.27	17.83	-2.12
824	SLE RA 3	115	42	6776	1.67	19.35	-2.31
824	SLE RA 4	113	54	6751	1.48	18.78	-2.24
824	SLE RA 5	112	63	6699	1.33	18.12	-2.17
824	SLE RA 6	117	42	6847	1.74	19.64	-2.37
824	SLE RA 7	115	54	6823	1.55	19.07	-2.3
824	SLE RA 8	116	41	6811	1.71	19.36	-2.35
824	SLE RA 9	114	54	6786	1.52	18.79	-2.28
824	SLE RA 10	115	67	7166	1.37	20.2	-2.3
824	SLE RA 11	120	46	7314	1.78	21.72	-2.5
824	SLE RA 12	118	59	7290	1.59	21.14	-2.42

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
824	SLE RA 13	117	67	7237	1.43	20.49	-2.36
824	SLE RA 14	122	46	7385	1.84	22	-2.55
824	SLE RA 15	120	58	7361	1.65	21.43	-2.48
824	SLE RA 16	121	46	7349	1.81	21.73	-2.54
824	SLE RA 17	120	58	7325	1.62	21.16	-2.46
824	SLE RA 18	119	48	7437	1.73	22.17	-2.5
824	SLE RA 19	118	60	7413	1.54	21.6	-2.43
824	SLE RA 20	121	47	7508	1.79	22.46	-2.56
824	SLE RA 21	120	60	7484	1.6	21.88	-2.49
824	SLE FR 1	112	42	6668	1.58	18.79	-2.24
824	SLE FR 2	112	46	6660	1.52	18.6	-2.22
824	SLE FR 3	113	42	6696	1.61	18.91	-2.26
824	SLE FR 4	114	48	6890	1.56	19.61	-2.29
824	SLE FR 5	115	43	6927	1.65	19.92	-2.34
824	SLE FR 6	116	45	7052	1.66	20.48	-2.37
824	SLE QP 1	112	42	6668	1.58	18.79	-2.24
824	SLE QP 2	114	43	6899	1.63	19.8	-2.32
824	SLD 1	689	158	5679	-1.98	4.97	-3.01
824	SLD 2	634	263	5629	-2.44	7.31	-0.6
824	SLD 3	743	-221	6538	4.3	23.92	-5.67
824	SLD 4	688	-116	6488	3.84	26.26	-3.25
824	SLD 5	215	634	5239	-8.9	-13.8	1.07
824	SLD 6	179	703	5206	-9.2	-12.26	2.66
824	SLD 7	394	-630	8102	12.03	49.36	-7.79
824	SLD 8	358	-561	8069	11.73	50.9	-6.19
824	SLD 9	-129	648	5728	-8.48	-11.29	1.55
824	SLD 10	-166	717	5695	-8.78	-9.75	3.15
824	SLD 11	50	-617	8591	12.45	51.87	-7.3
824	SLD 12	13	-548	8558	12.15	53.41	-5.71
824	SLD 13	-459	203	7309	-0.59	13.35	-1.39
824	SLD 14	-514	308	7259	-1.04	15.69	1.03
824	SLD 15	-405	-176	8168	5.69	32.3	-4.04
824	SLD 16	-461	-72	8118	5.23	34.64	-1.63
824	SLV 1	1455	342	3972	-7.34	-16.44	-3.72
824	SLV 2	1325	587	3854	-8.41	-10.95	1.97
824	SLV 3	1590	-606	6127	8.4	30.92	-10.42
824	SLV 4	1460	-360	6009	7.33	36.41	-4.74
824	SLV 5	335	1525	2774	-24.74	-63.92	6.37
824	SLV 6	248	1690	2695	-25.46	-60.23	10.2
824	SLV 7	787	-1635	9958	27.74	93.94	-15.98
824	SLV 8	699	-1470	9878	27.01	97.64	-12.15
824	SLV 9	-471	1556	3919	-23.76	-58.03	7.51
824	SLV 10	-558	1722	3840	-24.48	-54.34	11.34
824	SLV 11	-19	-1603	11102	28.71	99.83	-14.83
824	SLV 12	-107	-1438	11023	27.99	103.53	-11.01
824	SLV 13	-1232	447	7788	-4.08	3.2	0.1
824	SLV 14	-1361	693	7670	-5.15	8.69	5.78
824	SLV 15	-1096	-501	9943	11.66	50.56	-6.61
824	SLV 16	-1226	-255	9825	10.59	56.05	-0.92
824	CRTFP Ux+	0	0	0	0	0	0
824	CRTFP Ux-	0	0	0	0	0	0
824	CRTFP Uy+	0	0	0	0	0	0
824	CRTFP Uy-	0	0	0	0	0	0
827	SLU 1	-84	-38	6588	-2.03	-10.54	0.45
827	SLU 2	-83	-8	6525	-2.54	-9.19	0.36
827	SLU 3	-86	-39	6748	-1.99	-11.24	0.47
827	SLU 4	-85	-21	6711	-2.29	-10.43	0.41
827	SLU 5	-84	-9	6627	-2.51	-9.67	0.37
827	SLU 6	-87	-40	6850	-1.95	-11.72	0.47
827	SLU 7	-86	-22	6813	-2.26	-10.91	0.42
827	SLU 8	-87	-40	6791	-1.97	-11.51	0.47
827	SLU 9	-86	-21	6754	-2.27	-10.69	0.42
827	SLU 10	-86	-11	7375	-2.85	-11.6	0.42
827	SLU 11	-90	-43	7598	-2.29	-13.65	0.52
827	SLU 12	-89	-25	7560	-2.6	-12.84	0.47
827	SLU 13	-88	-12	7477	-2.81	-12.08	0.43
827	SLU 14	-91	-44	7699	-2.26	-14.13	0.53
827	SLU 15	-90	-25	7662	-2.56	-13.32	0.48
827	SLU 16	-90	-43	7641	-2.27	-13.92	0.52
827	SLU 17	-89	-25	7603	-2.58	-13.1	0.47
827	SLU 18	-90	-43	7801	-2.47	-13.99	0.53
827	SLU 19	-89	-25	7764	-2.78	-13.18	0.48
827	SLU 20	-91	-44	7903	-2.44	-14.47	0.54
827	SLU 21	-90	-26	7865	-2.74	-13.66	0.49
827	SLU 22	-94	-44	7662	-2.08	-13.57	0.52
827	SLU 23	-92	-14	7600	-2.59	-12.21	0.43
827	SLU 24	-96	-45	7822	-2.03	-14.26	0.53
827	SLU 25	-95	-27	7785	-2.34	-13.45	0.48
827	SLU 26	-93	-15	7701	-2.56	-12.69	0.44
827	SLU 27	-97	-46	7924	-2	-14.75	0.54
827	SLU 28	-96	-28	7887	-2.31	-13.93	0.49
827	SLU 29	-96	-46	7865	-2.01	-14.53	0.54
827	SLU 30	-95	-27	7828	-2.32	-13.72	0.48
827	SLU 31	-96	-17	8449	-2.9	-14.62	0.49
827	SLU 32	-99	-49	8672	-2.34	-16.68	0.59
827	SLU 33	-98	-31	8634	-2.65	-15.86	0.54
827	SLU 34	-97	-18	8551	-2.86	-15.1	0.5
827	SLU 35	-101	-50	8773	-2.31	-17.16	0.6
827	SLU 36	-100	-31	8736	-2.61	-16.34	0.55

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
827	SLU 37	-100	-49	8715	-2.32	-16.94	0.59
827	SLU 38	-99	-31	8677	-2.62	-16.13	0.54
827	SLU 39	-99	-49	8875	-2.52	-17.01	0.6
827	SLU 40	-98	-31	8838	-2.82	-16.2	0.55
827	SLU 41	-100	-50	8977	-2.48	-17.5	0.61
827	SLU 42	-99	-32	8940	-2.79	-16.68	0.55
827	SLU 43	-106	-48	8196	-2.63	-12.67	0.56
827	SLU 44	-105	-17	8134	-3.13	-11.31	0.48
827	SLU 45	-108	-49	8356	-2.58	-13.37	0.58
827	SLU 46	-107	-30	8319	-2.88	-12.55	0.53
827	SLU 47	-106	-18	8235	-3.1	-11.79	0.48
827	SLU 48	-109	-49	8458	-2.55	-13.85	0.59
827	SLU 49	-108	-31	8421	-2.85	-13.03	0.53
827	SLU 50	-109	-49	8399	-2.56	-13.63	0.58
827	SLU 51	-108	-31	8362	-2.86	-12.82	0.53
827	SLU 52	-109	-21	8983	-3.44	-13.73	0.53
827	SLU 53	-112	-52	9206	-2.89	-15.78	0.63
827	SLU 54	-111	-34	9168	-3.19	-14.96	0.58
827	SLU 55	-110	-22	9085	-3.41	-14.21	0.54
827	SLU 56	-113	-53	9307	-2.85	-16.26	0.64
827	SLU 57	-112	-35	9270	-3.16	-15.44	0.59
827	SLU 58	-112	-53	9249	-2.86	-16.04	0.63
827	SLU 59	-111	-34	9211	-3.17	-15.23	0.58
827	SLU 60	-112	-53	9409	-3.06	-16.12	0.64
827	SLU 61	-111	-34	9372	-3.37	-15.3	0.59
827	SLU 62	-113	-53	9511	-3.03	-16.6	0.65
827	SLU 63	-112	-35	9474	-3.33	-15.78	0.6
827	SLU 64	-116	-54	9270	-2.67	-15.7	0.63
827	SLU 65	-114	-23	9208	-3.18	-14.34	0.54
827	SLU 66	-118	-55	9430	-2.63	-16.39	0.65
827	SLU 67	-117	-37	9393	-2.93	-15.58	0.59
827	SLU 68	-115	-24	9309	-3.15	-14.82	0.55
827	SLU 69	-119	-55	9532	-2.59	-16.87	0.65
827	SLU 70	-118	-37	9495	-2.9	-16.06	0.6
827	SLU 71	-118	-55	9473	-2.61	-16.66	0.65
827	SLU 72	-117	-37	9436	-2.91	-15.84	0.59
827	SLU 73	-118	-27	10057	-3.49	-16.75	0.6
827	SLU 74	-121	-58	10280	-2.93	-18.8	0.7
827	SLU 75	-120	-40	10242	-3.24	-17.99	0.65
827	SLU 76	-119	-28	10159	-3.46	-17.23	0.61
827	SLU 77	-123	-59	10382	-2.9	-19.28	0.71
827	SLU 78	-122	-41	10344	-3.21	-18.47	0.66
827	SLU 79	-122	-59	10323	-2.91	-19.07	0.7
827	SLU 80	-121	-40	10285	-3.22	-18.25	0.65
827	SLU 81	-121	-59	10483	-3.11	-19.14	0.71
827	SLU 82	-120	-40	10446	-3.42	-18.33	0.66
827	SLU 83	-122	-59	10585	-3.08	-19.62	0.72
827	SLU 84	-121	-41	10548	-3.38	-18.81	0.67
827	SLE RA 1	-87	-40	6895	-2.05	-11.41	0.47
827	SLE RA 2	-86	-20	6853	-2.39	-10.5	0.41
827	SLE RA 3	-88	-41	7002	-2.02	-11.87	0.48
827	SLE RA 4	-88	-29	6977	-2.22	-11.33	0.45
827	SLE RA 5	-87	-20	6921	-2.36	-10.82	0.42
827	SLE RA 6	-89	-41	7069	-1.99	-12.19	0.49
827	SLE RA 7	-88	-29	7045	-2.2	-11.65	0.45
827	SLE RA 8	-88	-41	7030	-2	-12.05	0.48
827	SLE RA 9	-88	-29	7005	-2.2	-11.51	0.45
827	SLE RA 10	-88	-22	7419	-2.59	-12.11	0.45
827	SLE RA 11	-91	-43	7568	-2.22	-13.48	0.52
827	SLE RA 12	-90	-31	7543	-2.42	-12.94	0.48
827	SLE RA 13	-89	-23	7487	-2.57	-12.43	0.45
827	SLE RA 14	-92	-44	7636	-2.2	-13.8	0.52
827	SLE RA 15	-91	-31	7611	-2.4	-13.26	0.49
827	SLE RA 16	-91	-43	7597	-2.21	-13.66	0.52
827	SLE RA 17	-90	-31	7572	-2.41	-13.11	0.48
827	SLE RA 18	-91	-43	7704	-2.34	-13.71	0.52
827	SLE RA 19	-90	-31	7679	-2.54	-13.16	0.49
827	SLE RA 20	-91	-44	7771	-2.32	-14.03	0.53
827	SLE RA 21	-91	-32	7746	-2.52	-13.48	0.49
827	SLE FR 1	-87	-40	6895	-2.05	-11.41	0.47
827	SLE FR 2	-87	-36	6886	-2.11	-11.23	0.46
827	SLE FR 3	-87	-40	6922	-2.04	-11.54	0.47
827	SLE FR 4	-88	-37	7129	-2.2	-11.92	0.47
827	SLE FR 5	-88	-41	7165	-2.13	-12.23	0.49
827	SLE FR 6	-89	-42	7299	-2.19	-12.56	0.5
827	SLE QP 1	-87	-40	6895	-2.05	-11.41	0.47
827	SLE QP 2	-88	-41	7137	-2.13	-12.1	0.49
827	SLD 1	554	146	7609	-6.36	9.29	-2.26
827	SLD 2	502	46	7658	-5.76	8.98	0.1
827	SLD 3	530	-217	8485	0.38	-8.04	-0.94
827	SLD 4	478	-317	8533	0.99	-8.35	1.42
827	SLD 5	151	583	5942	-13.74	20.67	-2.76
827	SLD 6	117	517	5974	-13.34	20.46	-1.2
827	SLD 7	70	-626	8861	8.74	-37.12	1.63
827	SLD 8	36	-692	8893	9.14	-37.32	3.19
827	SLD 9	-212	610	5382	-13.41	13.13	-2.22
827	SLD 10	-246	544	5414	-13.01	12.92	-0.66
827	SLD 11	-293	-599	8301	9.07	-44.66	2.17
827	SLD 12	-327	-665	8333	9.47	-44.86	3.73

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
827	SLD 13	-654	235	5741	-5.25	-15.84	-0.45
827	SLD 14	-706	135	5790	-4.65	-16.15	1.92
827	SLD 15	-678	-128	6617	1.49	-33.18	0.87
827	SLD 16	-730	-228	6666	2.1	-33.49	3.23
827	SLV 1	1416	424	8169	-12.58	39.33	-6.04
827	SLV 2	1294	188	8283	-11.16	38.6	-0.48
827	SLV 3	1356	-479	10362	4.29	-4.04	-2.79
827	SLV 4	1235	-714	10477	5.72	-4.77	2.77
827	SLV 5	476	1511	4099	-31.14	69.24	-7.44
827	SLV 6	395	1353	4176	-30.18	68.75	-3.69
827	SLV 7	277	-1497	11410	25.13	-75.32	3.39
827	SLV 8	196	-1655	11487	26.09	-75.81	7.14
827	SLV 9	-371	1573	2787	-30.36	51.61	-6.16
827	SLV 10	-453	1415	2865	-29.4	51.12	-2.42
827	SLV 11	-570	-1434	10099	25.91	-92.94	4.67
827	SLV 12	-652	-1593	10176	26.87	-93.44	8.41
827	SLV 13	-1410	632	3798	-9.99	-19.43	-1.8
827	SLV 14	-1532	397	3913	-8.56	-20.16	3.76
827	SLV 15	-1470	-270	5991	6.89	-62.79	1.45
827	SLV 16	-1592	-506	6106	8.32	-63.52	7.01
827	CRTFP Ux+	0	0	0	0	0	0
827	CRTFP Ux-	0	0	0	0	0	0
827	CRTFP Uy+	0	0	0	0	0	0
827	CRTFP Uy-	0	0	0	0	0	0
829	SLU 1	-41	43	3040	-2.52	-388.07	10.9
829	SLU 2	-39	65	3012	-2.71	-387.05	16.22
829	SLU 3	-42	44	3110	-2.54	-396.2	10.95
829	SLU 4	-41	56	3093	-2.66	-395.58	14.14
829	SLU 5	-40	65	3056	-2.72	-392.13	16.26
829	SLU 6	-42	44	3154	-2.56	-401.27	10.98
829	SLU 7	-41	56	3137	-2.67	-400.66	14.18
829	SLU 8	-42	44	3128	-2.55	-398.23	10.97
829	SLU 9	-41	56	3111	-2.66	-397.61	14.17
829	SLU 10	-42	71	3374	-3.05	-431.35	17.74
829	SLU 11	-44	50	3472	-2.89	-440.49	12.47
829	SLU 12	-44	62	3456	-3	-439.88	15.66
829	SLU 13	-43	71	3418	-3.06	-436.42	17.78
829	SLU 14	-45	50	3516	-2.9	-445.57	12.5
829	SLU 15	-44	63	3500	-3.01	-444.96	15.7
829	SLU 16	-44	50	3490	-2.89	-442.53	12.49
829	SLU 17	-44	62	3474	-3	-441.91	15.68
829	SLU 18	-44	52	3557	-3.01	-451.35	13.06
829	SLU 19	-44	65	3541	-3.12	-450.74	16.26
829	SLU 20	-45	52	3601	-3.03	-456.43	13.1
829	SLU 21	-44	65	3585	-3.14	-455.82	16.3
829	SLU 22	-45	47	3505	-2.83	-443.49	11.75
829	SLU 23	-44	68	3477	-3.02	-442.47	17.08
829	SLU 24	-46	47	3575	-2.86	-451.61	11.8
829	SLU 25	-46	60	3558	-2.97	-451	15
829	SLU 26	-45	68	3521	-3.03	-447.54	17.12
829	SLU 27	-47	47	3619	-2.87	-456.69	11.84
829	SLU 28	-46	60	3602	-2.98	-456.08	15.04
829	SLU 29	-47	47	3593	-2.86	-453.65	11.82
829	SLU 30	-46	60	3576	-2.97	-453.03	15.02
829	SLU 31	-47	74	3839	-3.36	-486.76	18.6
829	SLU 32	-49	53	3937	-3.2	-495.91	13.32
829	SLU 33	-48	66	3921	-3.31	-495.3	16.52
829	SLU 34	-48	74	3883	-3.38	-491.84	18.63
829	SLU 35	-50	53	3981	-3.22	-500.99	13.36
829	SLU 36	-49	66	3965	-3.33	-500.38	16.56
829	SLU 37	-49	53	3955	-3.21	-497.94	13.34
829	SLU 38	-49	66	3938	-3.32	-497.33	16.54
829	SLU 39	-49	55	4022	-3.33	-506.77	13.92
829	SLU 40	-49	68	4006	-3.44	-506.16	17.12
829	SLU 41	-50	55	4066	-3.34	-511.85	13.96
829	SLU 42	-49	68	4050	-3.45	-511.24	17.15
829	SLU 43	-51	55	3792	-3.17	-485.49	13.87
829	SLU 44	-50	77	3764	-3.35	-484.47	19.2
829	SLU 45	-52	55	3862	-3.19	-493.62	13.92
829	SLU 46	-51	68	3846	-3.3	-493	17.12
829	SLU 47	-51	77	3808	-3.37	-489.55	19.24
829	SLU 48	-53	56	3906	-3.21	-498.7	13.96
829	SLU 49	-52	68	3890	-3.32	-498.08	17.16
829	SLU 50	-52	56	3880	-3.2	-495.65	13.94
829	SLU 51	-52	68	3864	-3.31	-495.04	17.14
829	SLU 52	-53	83	4127	-3.7	-528.77	20.72
829	SLU 53	-55	61	4225	-3.54	-537.91	15.44
829	SLU 54	-54	74	4208	-3.65	-537.3	18.64
829	SLU 55	-53	83	4171	-3.71	-533.84	20.75
829	SLU 56	-55	62	4269	-3.55	-542.99	15.48
829	SLU 57	-55	74	4252	-3.66	-542.38	18.68
829	SLU 58	-55	62	4243	-3.54	-539.95	15.46
829	SLU 59	-54	74	4226	-3.65	-539.33	18.66
829	SLU 60	-55	64	4310	-3.66	-548.77	16.04
829	SLU 61	-54	77	4293	-3.77	-548.16	19.24
829	SLU 62	-55	64	4354	-3.67	-553.85	16.08
829	SLU 63	-55	77	4337	-3.78	-553.24	19.27
829	SLU 64	-56	59	4257	-3.48	-540.91	14.73
829	SLU 65	-55	80	4229	-3.67	-539.89	20.05

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
829	SLU 66	-57	59	4327	-3.51	-549.03	14.78
829	SLU 67	-56	72	4311	-3.62	-548.42	17.98
829	SLU 68	-55	80	4273	-3.68	-544.97	20.09
829	SLU 69	-57	59	4371	-3.52	-554.11	14.82
829	SLU 70	-57	72	4355	-3.63	-553.5	18.01
829	SLU 71	-57	59	4345	-3.51	-551.07	14.8
829	SLU 72	-56	72	4329	-3.62	-550.45	18
829	SLU 73	-57	86	4592	-4.01	-584.18	21.57
829	SLU 74	-60	65	4690	-3.85	-593.33	16.3
829	SLU 75	-59	78	4673	-3.96	-592.72	19.49
829	SLU 76	-58	86	4636	-4.03	-589.26	21.61
829	SLU 77	-60	65	4734	-3.87	-598.41	16.33
829	SLU 78	-59	78	4717	-3.98	-597.8	19.53
829	SLU 79	-60	65	4708	-3.85	-595.36	16.32
829	SLU 80	-59	78	4691	-3.97	-594.75	19.52
829	SLU 81	-60	67	4775	-3.97	-604.19	16.89
829	SLU 82	-59	80	4758	-4.09	-603.58	20.09
829	SLU 83	-60	67	4819	-3.99	-609.27	16.93
829	SLU 84	-60	80	4802	-4.1	-608.66	20.13
829	SLE RA 1	-42	44	3172	-2.61	-403.9	11.14
829	SLE RA 2	-41	59	3154	-2.73	-403.22	14.69
829	SLE RA 3	-43	44	3219	-2.63	-409.32	11.17
829	SLE RA 4	-42	53	3208	-2.7	-408.91	13.31
829	SLE RA 5	-42	59	3183	-2.74	-406.61	14.72
829	SLE RA 6	-43	45	3249	-2.64	-412.71	11.2
829	SLE RA 7	-43	53	3238	-2.71	-412.3	13.33
829	SLE RA 8	-43	45	3231	-2.63	-410.68	11.19
829	SLE RA 9	-42	53	3220	-2.7	-410.27	13.32
829	SLE RA 10	-43	63	3396	-2.96	-432.75	15.7
829	SLE RA 11	-44	48	3461	-2.86	-438.85	12.19
829	SLE RA 12	-44	57	3450	-2.93	-438.44	14.32
829	SLE RA 13	-43	63	3425	-2.97	-436.14	15.73
829	SLE RA 14	-45	49	3490	-2.87	-442.24	12.21
829	SLE RA 15	-44	57	3479	-2.94	-441.83	14.34
829	SLE RA 16	-44	49	3473	-2.86	-440.21	12.2
829	SLE RA 17	-44	57	3462	-2.93	-439.8	14.33
829	SLE RA 18	-45	50	3518	-2.94	-446.09	12.59
829	SLE RA 19	-44	59	3507	-3.01	-445.68	14.72
829	SLE RA 20	-45	50	3547	-2.95	-449.48	12.61
829	SLE RA 21	-44	59	3536	-3.02	-449.07	14.74
829	SLE FR 1	-42	44	3172	-2.61	-403.9	11.14
829	SLE FR 2	-42	47	3169	-2.63	-403.77	11.85
829	SLE FR 3	-42	44	3184	-2.61	-405.26	11.15
829	SLE FR 4	-43	49	3272	-2.73	-416.42	12.28
829	SLE FR 5	-43	46	3288	-2.71	-417.91	11.58
829	SLE FR 6	-43	47	3345	-2.77	-425	11.86
829	SLE QP 1	-42	44	3172	-2.61	-403.9	11.14
829	SLE QP 2	-43	46	3276	-2.71	-416.56	11.57
829	SLD 1	244	252	4027	-4.88	-520.14	63.03
829	SLD 2	217	140	4056	-4.65	-520.47	35.11
829	SLD 3	229	4	4414	-2.38	-536.32	1.07
829	SLD 4	202	-108	4443	-2.15	-536.65	-26.86
829	SLD 5	71	504	2909	-7.19	-423.04	126.02
829	SLD 6	54	430	2928	-7.04	-423.26	107.59
829	SLD 7	20	-322	4199	1.14	-476.96	-80.54
829	SLD 8	3	-396	4219	1.29	-477.18	-98.96
829	SLD 9	-88	488	2333	-6.71	-355.94	122.11
829	SLD 10	-106	414	2353	-6.56	-356.16	103.69
829	SLD 11	-139	-338	3624	1.62	-409.86	-84.45
829	SLD 12	-157	-412	3643	1.77	-410.08	-102.87
829	SLD 13	-288	200	2109	-3.27	-296.47	50.01
829	SLD 14	-314	88	2138	-3.04	-296.8	22.08
829	SLD 15	-303	-48	2496	-0.77	-312.65	-11.96
829	SLD 16	-330	-160	2525	-0.54	-312.98	-39.89
829	SLV 1	629	547	5001	-7.99	-657.61	136.64
829	SLV 2	567	283	5069	-7.45	-658.39	70.99
829	SLV 3	592	-68	5971	-1.73	-698.1	-17.24
829	SLV 4	529	-332	6039	-1.19	-698.89	-82.89
829	SLV 5	227	1179	2310	-13.88	-427.31	294.74
829	SLV 6	185	1001	2356	-13.52	-427.84	250.54
829	SLV 7	102	-872	5542	6.97	-562.29	-218.21
829	SLV 8	60	-1050	5588	7.34	-562.82	-262.41
829	SLV 9	-146	1142	964	-12.75	-270.3	285.56
829	SLV 10	-188	964	1010	-12.39	-270.83	241.36
829	SLV 11	-271	-909	4196	8.1	-405.28	-227.39
829	SLV 12	-313	-1087	4242	8.46	-405.81	-271.59
829	SLV 13	-615	424	513	-4.22	-134.24	106.04
829	SLV 14	-677	160	582	-3.68	-135.02	40.39
829	SLV 15	-652	-191	1483	2.03	-174.73	-47.85
829	SLV 16	-715	-455	1551	2.57	-175.51	-113.5
829	CRTFP Ux+	0	0	0	0	0	0
829	CRTFP Ux-	0	0	0	0	0	0
829	CRTFP Uy+	0	0	0	0	0	0
829	CRTFP Uy-	0	0	0	0	0	0
832	SLU 1	15	101	12908	162.65	-1636.44	18.18
832	SLU 2	14	173	12838	154.47	-1628.23	27.81
832	SLU 3	15	103	13201	167.81	-1672.04	18.5
832	SLU 4	15	146	13159	162.9	-1667.11	24.28
832	SLU 5	15	174	13023	157.71	-1650.55	27.93

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
832	SLU 6	15	103	13386	171.06	-1694.37	18.62
832	SLU 7	15	147	13344	166.15	-1689.44	24.4
832	SLU 8	15	102	13278	169.14	-1681.09	18.43
832	SLU 9	15	145	13235	164.23	-1676.16	24.2
832	SLU 10	15	177	14525	173.98	-1842.6	28.92
832	SLU 11	16	107	14888	187.33	-1886.42	19.62
832	SLU 12	15	150	14846	182.42	-1881.49	25.39
832	SLU 13	15	178	14709	177.23	-1864.93	29.04
832	SLU 14	16	107	15073	190.57	-1908.74	19.74
832	SLU 15	16	151	15031	185.66	-1903.81	25.51
832	SLU 16	16	106	14964	188.65	-1895.46	19.54
832	SLU 17	15	149	14922	183.74	-1890.53	25.31
832	SLU 18	16	107	15318	190.53	-1942.69	19.78
832	SLU 19	16	150	15276	185.62	-1937.76	25.55
832	SLU 20	16	107	15503	193.77	-1965.02	19.9
832	SLU 21	16	150	15460	188.86	-1960.09	25.67
832	SLU 22	15	111	14980	193.01	-1898.22	20.1
832	SLU 23	15	183	14910	184.83	-1890.01	29.72
832	SLU 24	15	113	15274	198.17	-1933.82	20.41
832	SLU 25	15	156	15232	193.26	-1928.89	26.19
832	SLU 26	15	184	15095	188.07	-1912.33	29.84
832	SLU 27	15	113	15459	201.42	-1956.15	20.53
832	SLU 28	15	157	15416	196.51	-1951.22	26.31
832	SLU 29	15	112	15350	199.5	-1942.87	20.34
832	SLU 30	15	155	15308	194.59	-1937.94	26.11
832	SLU 31	15	187	16597	204.34	-2104.38	30.83
832	SLU 32	16	117	16961	217.69	-2148.2	21.53
832	SLU 33	16	160	16919	212.78	-2143.27	27.3
832	SLU 34	15	187	16782	207.59	-2126.71	30.96
832	SLU 35	16	117	17145	220.93	-2170.52	21.65
832	SLU 36	16	160	17103	216.02	-2165.59	27.42
832	SLU 37	16	116	17037	219.02	-2157.24	21.45
832	SLU 38	16	159	16995	214.11	-2152.32	27.23
832	SLU 39	16	117	17390	220.89	-2204.47	21.69
832	SLU 40	16	160	17348	215.98	-2199.55	27.46
832	SLU 41	16	117	17575	224.13	-2226.8	21.81
832	SLU 42	16	160	17533	219.22	-2221.87	27.58
832	SLU 43	19	128	16070	201.04	-2037.62	22.98
832	SLU 44	19	200	16000	192.85	-2029.41	32.61
832	SLU 45	19	130	16363	206.2	-2073.22	23.3
832	SLU 46	19	173	16321	201.29	-2068.29	29.08
832	SLU 47	19	201	16184	196.1	-2051.73	32.73
832	SLU 48	19	130	16548	209.44	-2095.54	23.42
832	SLU 49	19	174	16506	204.53	-2090.62	29.2
832	SLU 50	19	129	16439	207.53	-2082.27	23.23
832	SLU 51	19	172	16397	202.62	-2077.34	29
832	SLU 52	19	204	17687	212.37	-2243.78	33.72
832	SLU 53	20	134	18050	225.71	-2287.6	24.42
832	SLU 54	20	177	18008	220.8	-2282.67	30.19
832	SLU 55	20	205	17871	215.61	-2266.11	33.84
832	SLU 56	20	134	18235	228.96	-2309.92	24.54
832	SLU 57	20	177	18193	224.05	-2304.99	30.31
832	SLU 58	20	133	18126	227.04	-2296.64	24.34
832	SLU 59	20	176	18084	222.13	-2291.71	30.11
832	SLU 60	20	134	18480	228.92	-2343.87	24.58
832	SLU 61	20	177	18438	224.01	-2338.94	30.35
832	SLU 62	20	134	18664	232.16	-2366.19	24.7
832	SLU 63	20	177	18622	227.25	-2361.27	30.47
832	SLU 64	19	138	18142	231.4	-2299.4	24.9
832	SLU 65	19	210	18072	223.21	-2291.19	34.52
832	SLU 66	19	140	18436	236.56	-2335	25.21
832	SLU 67	19	183	18394	231.65	-2330.07	30.99
832	SLU 68	19	211	18257	226.46	-2313.51	34.64
832	SLU 69	20	140	18620	239.8	-2357.32	25.33
832	SLU 70	19	183	18578	234.89	-2352.4	31.11
832	SLU 71	19	139	18512	237.89	-2344.05	25.14
832	SLU 72	19	182	18470	232.98	-2339.12	30.91
832	SLU 73	20	214	19759	242.73	-2505.56	35.63
832	SLU 74	20	144	20123	256.07	-2549.38	26.33
832	SLU 75	20	187	20080	251.16	-2544.45	32.1
832	SLU 76	20	214	19944	245.97	-2527.89	35.75
832	SLU 77	20	144	20307	259.32	-2571.7	26.45
832	SLU 78	20	187	20265	254.41	-2566.77	32.22
832	SLU 79	20	143	20199	257.4	-2558.42	26.25
832	SLU 80	20	186	20156	252.49	-2553.49	32.03
832	SLU 81	20	144	20552	259.28	-2605.65	26.49
832	SLU 82	20	187	20510	254.37	-2600.72	32.26
832	SLU 83	20	144	20737	262.52	-2627.98	26.61
832	SLU 84	20	187	20695	257.61	-2623.05	32.38
832	SLE RA 1	15	104	13500	171.33	-1711.24	18.73
832	SLE RA 2	15	152	13453	165.87	-1705.76	25.15
832	SLE RA 3	15	105	13696	174.77	-1734.97	18.94
832	SLE RA 4	15	134	13668	171.49	-1731.68	22.79
832	SLE RA 5	15	152	13577	168.03	-1720.64	25.23
832	SLE RA 6	15	106	13819	176.93	-1749.85	19.02
832	SLE RA 7	15	134	13791	173.66	-1746.57	22.87
832	SLE RA 8	15	105	13746	175.65	-1741	18.89
832	SLE RA 9	15	134	13718	172.38	-1737.71	22.74
832	SLE RA 10	15	155	14578	178.88	-1848.68	25.89

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
832	SLE RA 11	15	108	14820	187.78	-1877.89	19.69
832	SLE RA 12	15	137	14792	184.5	-1874.6	23.53
832	SLE RA 13	15	155	14701	181.04	-1863.56	25.97
832	SLE RA 14	15	108	14943	189.94	-1892.77	19.77
832	SLE RA 15	15	137	14915	186.67	-1889.48	23.61
832	SLE RA 16	15	107	14871	188.66	-1883.92	19.63
832	SLE RA 17	15	136	14843	185.39	-1880.63	23.48
832	SLE RA 18	15	108	15107	189.91	-1915.4	19.79
832	SLE RA 19	15	137	15079	186.64	-1912.12	23.64
832	SLE RA 20	16	108	15230	192.07	-1930.29	19.87
832	SLE RA 21	15	137	15202	188.8	-1927	23.72
832	SLE FR 1	15	104	13500	171.33	-1711.24	18.73
832	SLE FR 2	15	114	13491	170.23	-1710.14	20.01
832	SLE FR 3	15	104	13549	172.19	-1717.19	18.76
832	SLE FR 4	15	115	13973	175.81	-1771.39	20.33
832	SLE FR 5	15	105	14031	177.77	-1778.44	19.08
832	SLE FR 6	15	106	14303	180.62	-1813.32	19.26
832	SLE QP 1	15	104	13500	171.33	-1711.24	18.73
832	SLE QP 2	15	105	13982	176.9	-1772.49	19.05
832	SLD 1	1505	626	14290	136.53	-1835.27	60.04
832	SLD 2	1396	548	14275	138.5	-1832.81	56.86
832	SLD 3	1527	-263	15310	245.84	-1954.67	-58.77
832	SLD 4	1417	-341	15295	247.82	-1952.21	-61.94
832	SLD 5	450	1624	12531	-1.36	-1610.67	212.1
832	SLD 6	377	1573	12520	-0.06	-1609.05	210.01
832	SLD 7	520	-1340	15930	363.03	-2008.68	-183.91
832	SLD 8	448	-1391	15920	364.33	-2007.06	-186
832	SLD 9	-418	1601	12044	-10.53	-1537.92	224.1
832	SLD 10	-490	1550	12034	-9.22	-1536.29	222.01
832	SLD 11	-347	-1362	15444	353.86	-1935.92	-171.91
832	SLD 12	-420	-1414	15434	355.17	-1934.3	-174
832	SLD 13	-1387	551	12670	105.98	-1592.76	100.04
832	SLD 14	-1497	473	12654	107.96	-1590.3	96.87
832	SLD 15	-1366	-338	13689	215.3	-1712.16	-18.77
832	SLD 16	-1476	-416	13674	217.28	-1709.7	-21.94
832	SLV 1	3502	1392	14618	73.41	-1909.47	124.13
832	SLV 2	3244	1209	14582	78.05	-1903.69	116.67
832	SLV 3	3554	-824	17175	347.25	-2208.85	-172.16
832	SLV 4	3295	-1007	17139	351.89	-2203.07	-179.61
832	SLV 5	1031	3887	10301	-270.34	-1360.6	501.33
832	SLV 6	857	3764	10277	-267.22	-1356.7	496.31
832	SLV 7	1203	-3501	18825	642.47	-2358.54	-486.29
832	SLV 8	1029	-3624	18801	645.59	-2354.64	-491.31
832	SLV 9	-999	3834	9163	-291.79	-1190.33	529.41
832	SLV 10	-1173	3711	9139	-288.67	-1186.43	524.39
832	SLV 11	-827	-3554	17687	621.02	-2188.27	-458.21
832	SLV 12	-1001	-3677	17663	624.15	-2184.38	-463.23
832	SLV 13	-3265	1217	10825	1.91	-1341.9	217.71
832	SLV 14	-3524	1034	10789	6.55	-1336.12	210.26
832	SLV 15	-3214	-999	13382	275.76	-1641.29	-78.57
832	SLV 16	-3472	-1182	13346	280.4	-1635.5	-86.03
832	CRTFP Ux+	0	0	0	0	0	0
832	CRTFP Ux-	0	0	0	0	0	0
832	CRTFP Uy+	0	0	0	0	0	0
832	CRTFP Uy-	0	0	0	0	0	0
834	SLU 1	-3	-2	4830	-1582.95	-28.43	-0.92
834	SLU 2	-3	25	4813	-1577.85	-29.06	-1.02
834	SLU 3	-3	-2	4940	-1618.92	-29.31	-1.02
834	SLU 4	-3	14	4930	-1615.85	-29.69	-1.08
834	SLU 5	-3	25	4883	-1600.54	-29.63	-1.08
834	SLU 6	-3	-2	5009	-1641.61	-29.87	-1.08
834	SLU 7	-4	14	4999	-1638.54	-30.25	-1.14
834	SLU 8	-3	-2	4969	-1628.33	-29.56	-1.05
834	SLU 9	-3	14	4959	-1625.27	-29.94	-1.11
834	SLU 10	-3	23	5446	-1785.7	-32.48	-1.07
834	SLU 11	-4	-4	5573	-1826.77	-32.73	-1.07
834	SLU 12	-4	12	5563	-1823.7	-33.11	-1.13
834	SLU 13	-4	22	5516	-1808.38	-33.05	-1.13
834	SLU 14	-4	-4	5643	-1849.46	-33.29	-1.13
834	SLU 15	-4	12	5632	-1846.39	-33.67	-1.19
834	SLU 16	-4	-4	5602	-1836.18	-32.98	-1.1
834	SLU 17	-4	12	5592	-1833.12	-33.36	-1.16
834	SLU 18	-3	-5	5735	-1879.88	-33.31	-0.99
834	SLU 19	-4	11	5724	-1876.82	-33.69	-1.05
834	SLU 20	-4	-5	5804	-1902.57	-33.88	-1.06
834	SLU 21	-4	11	5794	-1899.5	-34.26	-1.11
834	SLU 22	-5	-2	5599	-1834.52	-32.4	-1.47
834	SLU 23	-5	24	5582	-1829.41	-33.04	-1.57
834	SLU 24	-5	-2	5709	-1870.49	-33.28	-1.57
834	SLU 25	-5	14	5699	-1867.42	-33.66	-1.63
834	SLU 26	-5	24	5651	-1852.1	-33.6	-1.64
834	SLU 27	-5	-2	5778	-1893.17	-33.85	-1.64
834	SLU 28	-5	13	5768	-1890.11	-34.23	-1.7
834	SLU 29	-5	-3	5738	-1879.9	-33.53	-1.6
834	SLU 30	-5	13	5728	-1876.83	-33.91	-1.66
834	SLU 31	-5	22	6215	-2037.26	-36.46	-1.62
834	SLU 32	-5	-5	6342	-2078.33	-36.7	-1.62
834	SLU 33	-6	11	6332	-2075.27	-37.08	-1.68
834	SLU 34	-6	22	6285	-2059.95	-37.02	-1.69

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
834	SLU 35	-6	-5	6411	-2101.02	-37.27	-1.69
834	SLU 36	-6	11	6401	-2097.96	-37.65	-1.75
834	SLU 37	-6	-5	6371	-2087.75	-36.95	-1.65
834	SLU 38	-6	11	6361	-2084.68	-37.33	-1.71
834	SLU 39	-5	-5	6503	-2131.45	-37.29	-1.54
834	SLU 40	-5	11	6493	-2128.38	-37.67	-1.6
834	SLU 41	-5	-6	6573	-2154.14	-37.85	-1.61
834	SLU 42	-6	10	6563	-2151.07	-38.23	-1.67
834	SLU 43	-3	-2	6016	-1971.59	-35.59	-1
834	SLU 44	-3	25	5999	-1966.48	-36.23	-1.1
834	SLU 45	-3	-2	6126	-2007.55	-36.47	-1.1
834	SLU 46	-4	14	6115	-2004.49	-36.85	-1.16
834	SLU 47	-4	24	6068	-1989.17	-36.79	-1.17
834	SLU 48	-4	-2	6195	-2030.24	-37.04	-1.17
834	SLU 49	-4	14	6185	-2027.18	-37.42	-1.23
834	SLU 50	-4	-2	6154	-2016.97	-36.72	-1.14
834	SLU 51	-4	14	6144	-2013.9	-37.1	-1.2
834	SLU 52	-4	22	6632	-2174.33	-39.65	-1.15
834	SLU 53	-4	-4	6759	-2215.4	-39.89	-1.15
834	SLU 54	-4	12	6748	-2212.34	-40.27	-1.21
834	SLU 55	-4	22	6701	-2197.02	-40.21	-1.22
834	SLU 56	-4	-5	6828	-2238.09	-40.46	-1.22
834	SLU 57	-4	11	6818	-2235.03	-40.84	-1.28
834	SLU 58	-4	-5	6787	-2224.81	-40.14	-1.19
834	SLU 59	-4	11	6777	-2221.75	-40.52	-1.25
834	SLU 60	-4	-5	6920	-2268.51	-40.48	-1.07
834	SLU 61	-4	11	6910	-2265.45	-40.86	-1.13
834	SLU 62	-4	-5	6989	-2291.2	-41.04	-1.14
834	SLU 63	-4	11	6979	-2288.14	-41.43	-1.2
834	SLU 64	-5	-2	6784	-2223.15	-39.57	-1.56
834	SLU 65	-5	24	6768	-2218.05	-40.2	-1.65
834	SLU 66	-5	-3	6894	-2259.12	-40.45	-1.66
834	SLU 67	-5	13	6884	-2256.06	-40.83	-1.72
834	SLU 68	-5	24	6837	-2240.74	-40.77	-1.72
834	SLU 69	-6	-3	6964	-2281.81	-41.01	-1.72
834	SLU 70	-6	13	6954	-2278.74	-41.39	-1.78
834	SLU 71	-5	-3	6923	-2268.53	-40.7	-1.69
834	SLU 72	-6	13	6913	-2265.47	-41.08	-1.75
834	SLU 73	-6	22	7401	-2425.9	-43.62	-1.7
834	SLU 74	-6	-5	7528	-2466.97	-43.87	-1.71
834	SLU 75	-6	11	7517	-2463.9	-44.25	-1.77
834	SLU 76	-6	22	7470	-2448.58	-44.19	-1.77
834	SLU 77	-6	-5	7597	-2489.66	-44.43	-1.77
834	SLU 78	-6	11	7587	-2486.59	-44.81	-1.83
834	SLU 79	-6	-5	7556	-2476.38	-44.12	-1.74
834	SLU 80	-6	11	7546	-2473.32	-44.5	-1.8
834	SLU 81	-5	-6	7689	-2520.08	-44.45	-1.63
834	SLU 82	-6	10	7679	-2517.02	-44.83	-1.69
834	SLU 83	-6	-6	7758	-2542.77	-45.02	-1.69
834	SLU 84	-6	10	7748	-2539.71	-45.4	-1.75
834	SLE RA 1	-3	-2	5050	-1654.83	-29.56	-1.08
834	SLE RA 2	-4	16	5039	-1651.42	-29.99	-1.14
834	SLE RA 3	-4	-2	5123	-1678.81	-30.15	-1.14
834	SLE RA 4	-4	9	5116	-1676.76	-30.4	-1.18
834	SLE RA 5	-4	16	5085	-1666.55	-30.36	-1.19
834	SLE RA 6	-4	-2	5169	-1693.93	-30.53	-1.19
834	SLE RA 7	-4	9	5163	-1691.89	-30.78	-1.23
834	SLE RA 8	-4	-2	5142	-1685.08	-30.32	-1.16
834	SLE RA 9	-4	9	5136	-1683.04	-30.57	-1.2
834	SLE RA 10	-4	14	5461	-1789.99	-32.27	-1.17
834	SLE RA 11	-4	-3	5545	-1817.37	-32.43	-1.18
834	SLE RA 12	-4	7	5538	-1815.33	-32.68	-1.22
834	SLE RA 13	-4	14	5507	-1805.12	-32.64	-1.22
834	SLE RA 14	-4	-3	5591	-1832.5	-32.81	-1.22
834	SLE RA 15	-4	7	5585	-1830.46	-33.06	-1.26
834	SLE RA 16	-4	-4	5564	-1823.65	-32.6	-1.2
834	SLE RA 17	-4	7	5558	-1821.6	-32.85	-1.24
834	SLE RA 18	-4	-4	5653	-1852.78	-32.82	-1.12
834	SLE RA 19	-4	7	5646	-1850.74	-33.07	-1.16
834	SLE RA 20	-4	-4	5699	-1867.91	-33.2	-1.17
834	SLE RA 21	-4	7	5692	-1865.86	-33.45	-1.21
834	SLE FR 1	-3	-2	5050	-1654.83	-29.56	-1.08
834	SLE FR 2	-3	2	5048	-1654.15	-29.65	-1.09
834	SLE FR 3	-3	-2	5068	-1660.88	-29.71	-1.09
834	SLE FR 4	-4	1	5228	-1713.53	-30.62	-1.1
834	SLE FR 5	-4	-2	5249	-1720.27	-30.69	-1.11
834	SLE FR 6	-4	-3	5351	-1753.81	-31.19	-1.1
834	SLE QP 1	-3	-2	5050	-1654.83	-29.56	-1.08
834	SLE QP 2	-4	-2	5231	-1714.21	-30.54	-1.09
834	SLD 1	517	191	5277	-1729.7	-9.65	168.6
834	SLD 2	487	164	5268	-1726.74	-9.62	159.39
834	SLD 3	525	-136	5537	-1808.84	-2.03	171.17
834	SLD 4	495	-164	5528	-1805.88	-2.01	161.96
834	SLD 5	147	557	4852	-1599.37	-35.83	47.58
834	SLD 6	127	539	4847	-1597.42	-35.81	41.5
834	SLD 7	172	-535	5718	-1863.16	-10.44	56.14
834	SLD 8	152	-552	5712	-1861.2	-10.42	50.07
834	SLD 9	-159	548	4749	-1567.23	-50.66	-52.25
834	SLD 10	-179	530	4743	-1565.27	-50.64	-58.32

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
834	SLD 11	-134	-544	5615	-1831.01	-25.27	-43.68
834	SLD 12	-154	-562	5609	-1829.06	-25.25	-49.76
834	SLD 13	-502	159	4933	-1622.55	-59.07	-164.14
834	SLD 14	-532	132	4925	-1619.59	-59.05	-173.35
834	SLD 15	-494	-169	5193	-1701.69	-51.46	-161.57
834	SLD 16	-524	-196	5184	-1698.72	-51.43	-170.78
834	SLV 1	1215	476	5318	-1743.86	17.77	395.86
834	SLV 2	1144	412	5297	-1736.89	17.83	374.21
834	SLV 3	1233	-341	5969	-1942.33	36.75	402.16
834	SLV 4	1162	-405	5949	-1935.37	36.81	380.51
834	SLV 5	347	1391	4273	-1423.39	-44.85	112.48
834	SLV 6	299	1348	4259	-1418.7	-44.81	97.91
834	SLV 7	409	-1330	6444	-2084.97	18.43	133.48
834	SLV 8	361	-1373	6430	-2080.28	18.47	118.9
834	SLV 9	-368	1368	4031	-1348.15	-79.55	-121.08
834	SLV 10	-416	1326	4018	-1343.46	-79.51	-135.66
834	SLV 11	-306	-1353	6202	-2009.73	-16.27	-100.09
834	SLV 12	-354	-1396	6189	-2005.04	-16.23	-114.66
834	SLV 13	-1169	400	4513	-1493.06	-97.89	-382.69
834	SLV 14	-1240	336	4492	-1486.1	-97.83	-404.33
834	SLV 15	-1151	-417	5164	-1691.54	-78.91	-376.39
834	SLV 16	-1222	-480	5144	-1684.57	-78.85	-398.04
834	CRTFP Ux+	0	0	0	0	0	0
834	CRTFP Ux-	0	0	0	0	0	0
834	CRTFP Uy+	0	0	0	0	0	0
834	CRTFP Uy-	0	0	0	0	0	0
835	SLU 1	12	98	8954	6.46	1260.97	-10.71
835	SLU 2	12	151	8911	-1.4	1254.61	-18.15
835	SLU 3	12	100	9148	8.16	1288.75	-10.89
835	SLU 4	12	132	9122	3.45	1284.93	-15.35
835	SLU 5	12	152	9032	-0.38	1272.05	-18.21
835	SLU 6	12	101	9269	9.19	1306.2	-10.95
835	SLU 7	12	132	9243	4.47	1302.38	-15.42
835	SLU 8	12	100	9197	8.51	1295.86	-10.83
835	SLU 9	12	131	9171	3.8	1292.04	-15.3
835	SLU 10	12	157	10085	-2.31	1419.68	-18.58
835	SLU 11	13	106	10321	7.25	1453.82	-11.32
835	SLU 12	13	138	10295	2.54	1450	-15.78
835	SLU 13	13	158	10206	-1.28	1437.12	-18.64
835	SLU 14	13	107	10442	8.28	1471.27	-11.38
835	SLU 15	13	138	10416	3.57	1467.45	-15.84
835	SLU 16	13	106	10370	7.61	1460.93	-11.26
835	SLU 17	13	137	10344	2.89	1457.11	-15.73
835	SLU 18	13	107	10631	5.16	1496.78	-11.32
835	SLU 19	13	139	10605	0.44	1492.96	-15.79
835	SLU 20	13	108	10752	6.19	1514.23	-11.38
835	SLU 21	13	139	10726	1.47	1510.41	-15.85
835	SLU 22	12	109	10385	12.49	1462.78	-11.75
835	SLU 23	12	161	10342	4.63	1456.42	-19.19
835	SLU 24	13	110	10578	14.19	1490.56	-11.93
835	SLU 25	12	142	10552	9.48	1486.74	-16.39
835	SLU 26	12	162	10463	5.65	1473.86	-19.25
835	SLU 27	13	111	10699	15.22	1508.01	-11.99
835	SLU 28	13	143	10673	10.5	1504.19	-16.45
835	SLU 29	13	110	10627	14.54	1497.67	-11.87
835	SLU 30	13	142	10601	9.83	1493.85	-16.34
835	SLU 31	13	167	11515	3.72	1621.48	-19.62
835	SLU 32	13	116	11752	13.28	1655.63	-12.36
835	SLU 33	13	148	11726	8.57	1651.81	-16.82
835	SLU 34	13	168	11636	4.75	1638.93	-19.68
835	SLU 35	13	117	11873	14.31	1673.07	-12.42
835	SLU 36	13	149	11847	9.6	1669.26	-16.88
835	SLU 37	13	116	11801	13.64	1662.74	-12.3
835	SLU 38	13	148	11775	8.92	1658.92	-16.77
835	SLU 39	13	117	12062	11.19	1698.59	-12.36
835	SLU 40	13	149	12036	6.47	1694.77	-16.82
835	SLU 41	13	118	12183	12.22	1716.04	-12.42
835	SLU 42	13	150	12157	7.5	1712.22	-16.89
835	SLU 43	16	124	11150	6.33	1570.07	-13.57
835	SLU 44	16	177	11107	-1.53	1563.71	-21.01
835	SLU 45	16	126	11344	8.03	1597.85	-13.74
835	SLU 46	16	158	11318	3.32	1594.03	-18.21
835	SLU 47	16	178	11228	-0.51	1581.15	-21.07
835	SLU 48	16	127	11465	9.06	1615.3	-13.81
835	SLU 49	16	158	11439	4.34	1611.48	-18.27
835	SLU 50	16	126	11393	8.38	1604.96	-13.69
835	SLU 51	16	157	11367	3.67	1601.14	-18.15
835	SLU 52	16	183	12280	-2.44	1728.77	-21.43
835	SLU 53	16	132	12517	7.13	1762.92	-14.17
835	SLU 54	16	164	12491	2.41	1759.1	-18.64
835	SLU 55	16	184	12402	-1.41	1746.22	-21.5
835	SLU 56	17	133	12638	8.15	1780.37	-14.23
835	SLU 57	16	164	12612	3.44	1776.55	-18.7
835	SLU 58	17	132	12566	7.48	1770.03	-14.12
835	SLU 59	16	163	12540	2.76	1766.21	-18.58
835	SLU 60	16	133	12827	5.03	1805.88	-14.18
835	SLU 61	16	164	12801	0.31	1802.06	-18.64
835	SLU 62	17	134	12948	6.06	1823.33	-14.24
835	SLU 63	16	165	12922	1.34	1819.51	-18.7

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
835	SLU 64	16	135	12581	12.36	1771.88	-14.61
835	SLU 65	16	187	12538	4.5	1765.51	-22.05
835	SLU 66	16	136	12774	14.06	1799.66	-14.78
835	SLU 67	16	168	12748	9.35	1795.84	-19.25
835	SLU 68	16	188	12659	5.52	1782.96	-22.11
835	SLU 69	16	137	12895	15.09	1817.11	-14.85
835	SLU 70	16	169	12869	10.37	1813.29	-19.31
835	SLU 71	16	136	12823	14.41	1806.77	-14.73
835	SLU 72	16	168	12797	9.7	1802.95	-19.19
835	SLU 73	16	193	13711	3.59	1930.58	-22.47
835	SLU 74	17	142	13948	13.15	1964.73	-15.21
835	SLU 75	17	174	13922	8.44	1960.91	-19.68
835	SLU 76	16	194	13832	4.62	1948.03	-22.54
835	SLU 77	17	143	14069	14.18	1982.17	-15.27
835	SLU 78	17	175	14043	9.47	1978.36	-19.74
835	SLU 79	17	142	13997	13.51	1971.84	-15.16
835	SLU 80	17	174	13971	8.79	1968.02	-19.62
835	SLU 81	17	143	14257	11.06	2007.69	-15.22
835	SLU 82	17	175	14231	6.34	2003.87	-19.68
835	SLU 83	17	144	14379	12.09	2025.14	-15.28
835	SLU 84	17	176	14353	7.37	2021.32	-19.74
835	SLE RA 1	12	101	9363	8.18	1318.63	-11.01
835	SLE RA 2	12	136	9334	2.94	1314.39	-15.97
835	SLE RA 3	12	102	9492	9.32	1337.15	-11.13
835	SLE RA 4	12	124	9475	6.17	1334.61	-14.1
835	SLE RA 5	12	137	9415	3.63	1326.02	-16.01
835	SLE RA 6	12	103	9573	10	1348.78	-11.17
835	SLE RA 7	12	124	9555	6.86	1346.24	-14.14
835	SLE RA 8	12	102	9525	9.55	1341.89	-11.09
835	SLE RA 9	12	123	9507	6.41	1339.35	-14.07
835	SLE RA 10	12	140	10117	2.33	1424.43	-16.25
835	SLE RA 11	13	106	10274	8.71	1447.2	-11.41
835	SLE RA 12	13	128	10257	5.57	1444.65	-14.39
835	SLE RA 13	13	141	10197	3.02	1436.06	-16.29
835	SLE RA 14	13	107	10355	9.4	1458.83	-11.45
835	SLE RA 15	13	128	10338	6.25	1456.28	-14.43
835	SLE RA 16	13	106	10307	8.95	1451.94	-11.37
835	SLE RA 17	13	127	10290	5.8	1449.39	-14.35
835	SLE RA 18	13	107	10481	7.32	1475.84	-11.41
835	SLE RA 19	13	128	10464	4.17	1473.29	-14.39
835	SLE RA 20	13	107	10562	8	1487.47	-11.46
835	SLE RA 21	13	129	10544	4.86	1484.92	-14.43
835	SLE FR 1	12	101	9363	8.18	1318.63	-11.01
835	SLE FR 2	12	108	9357	7.13	1317.78	-12
835	SLE FR 3	12	102	9395	8.46	1323.28	-11.02
835	SLE FR 4	12	110	9693	6.87	1364.94	-12.12
835	SLE FR 5	12	103	9731	8.2	1370.44	-11.15
835	SLE FR 6	12	104	9922	7.75	1397.23	-11.21
835	SLE QP 1	12	101	9363	8.18	1318.63	-11.01
835	SLE QP 2	12	103	9698	7.92	1365.79	-11.13
835	SLD 1	1161	466	10059	-49.22	1410.52	-64.36
835	SLD 2	1077	434	10048	-48.1	1408.84	-56.87
835	SLD 3	1177	-185	10691	54.99	1503.19	27.6
835	SLD 4	1093	-218	10680	56.1	1501.52	35.09
835	SLD 5	348	1206	8850	-167.46	1238.96	-167.92
835	SLD 6	292	1184	8843	-166.73	1237.85	-162.98
835	SLD 7	401	-965	10957	179.88	1547.87	138.61
835	SLD 8	346	-987	10950	180.62	1546.76	143.56
835	SLD 9	-321	1193	8447	-164.78	1184.82	-165.82
835	SLD 10	-377	1171	8440	-164.04	1183.72	-160.87
835	SLD 11	-268	-978	10554	182.57	1493.73	140.72
835	SLD 12	-323	-999	10547	183.31	1492.63	145.66
835	SLD 13	-1069	424	8717	-40.26	1230.07	-57.35
835	SLD 14	-1153	391	8706	-39.14	1228.39	-49.85
835	SLD 15	-1053	-227	9349	63.94	1322.74	34.61
835	SLD 16	-1136	-260	9338	65.06	1321.07	42.11
835	SLV 1	2700	1004	10489	-134.36	1462.74	-142.77
835	SLV 2	2503	926	10464	-131.73	1458.8	-125.15
835	SLV 3	2739	-620	12073	126.63	1695.11	86.48
835	SLV 4	2542	-697	12048	129.25	1691.17	104.1
835	SLV 5	796	2850	7537	-431.08	1043.19	-401.6
835	SLV 6	663	2798	7520	-429.32	1040.54	-389.74
835	SLV 7	927	-2562	12819	438.87	1817.74	362.56
835	SLV 8	794	-2614	12802	440.64	1815.09	374.43
835	SLV 9	-769	2820	6595	-424.8	916.49	-396.68
835	SLV 10	-902	2768	6578	-423.03	913.84	-384.82
835	SLV 11	-639	-2592	11877	445.16	1691.05	367.48
835	SLV 12	-771	-2644	11860	446.93	1688.39	379.35
835	SLV 13	-2517	904	7349	-113.41	1040.42	-126.36
835	SLV 14	-2714	826	7324	-110.78	1036.48	-108.74
835	SLV 15	-2478	-720	8933	147.58	1272.78	102.89
835	SLV 16	-2675	-797	8908	150.2	1268.84	120.51
835	CRTFP Ux+	0	0	0	0	0	0
835	CRTFP Ux-	0	0	0	0	0	0
835	CRTFP Uy+	0	0	0	0	0	0
835	CRTFP Uy-	0	0	0	0	0	0
836	SLU 1	8	69	5139	2.94	6.32	1.16
836	SLU 2	8	100	5116	-2.08	6.25	1.07
836	SLU 3	8	70	5245	4	6.54	1.19

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
836	SLU 4	8	89	5232	0.99	6.5	1.13
836	SLU 5	8	100	5182	-1.45	6.39	1.08
836	SLU 6	8	70	5312	4.62	6.69	1.2
836	SLU 7	8	89	5298	1.61	6.64	1.14
836	SLU 8	8	70	5272	4.2	6.61	1.18
836	SLU 9	8	88	5258	1.18	6.57	1.13
836	SLU 10	8	105	5791	-2.79	7.04	1.24
836	SLU 11	8	75	5920	3.29	7.34	1.36
836	SLU 12	8	93	5907	0.27	7.3	1.3
836	SLU 13	8	105	5857	-2.16	7.19	1.25
836	SLU 14	8	75	5987	3.91	7.49	1.37
836	SLU 15	8	94	5973	0.9	7.44	1.31
836	SLU 16	8	74	5947	3.48	7.41	1.35
836	SLU 17	8	93	5933	0.47	7.37	1.3
836	SLU 18	8	76	6103	1.93	7.46	1.41
836	SLU 19	8	94	6089	-1.08	7.42	1.35
836	SLU 20	8	76	6170	2.55	7.61	1.42
836	SLU 21	8	95	6156	-0.46	7.56	1.36
836	SLU 22	8	76	5957	6.7	7.38	1.34
836	SLU 23	8	107	5934	1.68	7.31	1.24
836	SLU 24	8	77	6064	7.75	7.61	1.36
836	SLU 25	8	96	6050	4.74	7.56	1.3
836	SLU 26	8	108	6001	2.3	7.45	1.25
836	SLU 27	8	78	6131	8.38	7.75	1.37
836	SLU 28	8	97	6117	5.37	7.71	1.31
836	SLU 29	8	77	6090	7.95	7.67	1.36
836	SLU 30	8	96	6077	4.94	7.63	1.3
836	SLU 31	8	112	6609	0.97	8.11	1.41
836	SLU 32	9	82	6739	7.04	8.41	1.53
836	SLU 33	8	101	6725	4.03	8.36	1.47
836	SLU 34	8	113	6676	1.59	8.25	1.42
836	SLU 35	9	83	6805	7.67	8.55	1.54
836	SLU 36	9	102	6792	4.65	8.51	1.48
836	SLU 37	9	82	6765	7.24	8.47	1.53
836	SLU 38	9	101	6752	4.23	8.43	1.47
836	SLU 39	9	83	6921	5.68	8.52	1.58
836	SLU 40	8	102	6908	2.67	8.48	1.52
836	SLU 41	9	84	6988	6.31	8.67	1.59
836	SLU 42	9	102	6974	3.3	8.63	1.53
836	SLU 43	10	87	6400	2.54	7.85	1.45
836	SLU 44	10	118	6377	-2.48	7.78	1.36
836	SLU 45	10	88	6506	3.59	8.07	1.48
836	SLU 46	10	107	6493	0.58	8.03	1.42
836	SLU 47	10	118	6443	-1.85	7.92	1.37
836	SLU 48	10	88	6573	4.22	8.22	1.49
836	SLU 49	10	107	6559	1.21	8.18	1.43
836	SLU 50	10	88	6533	3.79	8.14	1.47
836	SLU 51	10	106	6519	0.78	8.1	1.42
836	SLU 52	10	123	7052	-3.19	8.58	1.53
836	SLU 53	11	93	7181	2.88	8.87	1.65
836	SLU 54	11	111	7168	-0.13	8.83	1.59
836	SLU 55	10	123	7118	-2.57	8.72	1.54
836	SLU 56	11	93	7248	3.51	9.02	1.66
836	SLU 57	11	112	7234	0.5	8.97	1.6
836	SLU 58	11	92	7208	3.08	8.94	1.64
836	SLU 59	11	111	7194	0.07	8.9	1.59
836	SLU 60	11	94	7364	1.53	8.99	1.7
836	SLU 61	11	112	7350	-1.49	8.95	1.64
836	SLU 62	11	94	7431	2.15	9.14	1.71
836	SLU 63	11	113	7417	-0.86	9.09	1.65
836	SLU 64	10	94	7218	6.29	8.91	1.63
836	SLU 65	10	125	7195	1.27	8.84	1.53
836	SLU 66	11	95	7325	7.35	9.14	1.65
836	SLU 67	10	114	7311	4.34	9.09	1.59
836	SLU 68	10	126	7262	1.9	8.99	1.54
836	SLU 69	11	96	7392	7.97	9.28	1.66
836	SLU 70	11	115	7378	4.96	9.24	1.6
836	SLU 71	11	95	7351	7.55	9.2	1.65
836	SLU 72	11	114	7338	4.53	9.16	1.59
836	SLU 73	11	130	7870	0.56	9.64	1.7
836	SLU 74	11	100	8000	6.64	9.94	1.82
836	SLU 75	11	119	7986	3.63	9.89	1.76
836	SLU 76	11	131	7937	1.19	9.78	1.71
836	SLU 77	11	101	8066	7.26	10.08	1.83
836	SLU 78	11	120	8053	4.25	10.04	1.77
836	SLU 79	11	100	8026	6.83	10	1.82
836	SLU 80	11	119	8013	3.82	9.96	1.76
836	SLU 81	11	101	8182	5.28	10.06	1.87
836	SLU 82	11	120	8169	2.27	10.01	1.81
836	SLU 83	11	102	8249	5.9	10.2	1.88
836	SLU 84	11	120	8235	2.89	10.16	1.82
836	SLE RA 1	8	71	5373	4.02	6.62	1.21
836	SLE RA 2	8	92	5357	0.67	6.57	1.15
836	SLE RA 3	8	72	5444	4.72	6.77	1.23
836	SLE RA 4	8	84	5435	2.71	6.74	1.19
836	SLE RA 5	8	92	5402	1.09	6.67	1.16
836	SLE RA 6	8	72	5488	5.14	6.87	1.23
836	SLE RA 7	8	84	5479	3.13	6.84	1.2
836	SLE RA 8	8	71	5461	4.85	6.82	1.23

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
836	SLE RA 9	8	84	5452	2.84	6.79	1.19
836	SLE RA 10	8	95	5807	0.2	7.11	1.26
836	SLE RA 11	8	75	5894	4.25	7.3	1.34
836	SLE RA 12	8	87	5885	2.24	7.28	1.3
836	SLE RA 13	8	95	5852	0.61	7.2	1.27
836	SLE RA 14	8	75	5938	4.66	7.4	1.35
836	SLE RA 15	8	88	5929	2.65	7.37	1.31
836	SLE RA 16	8	75	5911	4.38	7.35	1.34
836	SLE RA 17	8	87	5902	2.37	7.32	1.3
836	SLE RA 18	8	75	6015	3.34	7.38	1.37
836	SLE RA 19	8	88	6006	1.33	7.35	1.34
836	SLE RA 20	8	76	6060	3.76	7.48	1.38
836	SLE RA 21	8	88	6051	1.75	7.45	1.34
836	SLE FR 1	8	71	5373	4.02	6.62	1.21
836	SLE FR 2	8	75	5370	3.35	6.61	1.2
836	SLE FR 3	8	71	5390	4.18	6.66	1.22
836	SLE FR 4	8	76	5562	3.14	6.84	1.25
836	SLE FR 5	8	72	5583	3.98	6.89	1.26
836	SLE FR 6	8	73	5694	3.68	7	1.29
836	SLE QP 1	8	71	5373	4.02	6.62	1.21
836	SLE QP 2	8	72	5565	3.81	6.85	1.26
836	SLD 1	720	258	5789	-34.28	7.87	-0.22
836	SLD 2	669	247	5785	-33.82	7.76	0.84
836	SLD 3	711	-128	6124	32.29	8.92	0.99
836	SLD 4	659	-139	6120	32.75	8.82	2.05
836	SLD 5	246	715	5125	-108.67	5.58	-1.22
836	SLD 6	212	708	5123	-108.37	5.5	-0.52
836	SLD 7	213	-571	6241	113.25	9.09	2.83
836	SLD 8	179	-578	6239	113.55	9.02	3.53
836	SLD 9	-163	723	4892	-105.92	4.68	-1.01
836	SLD 10	-197	715	4890	-105.62	4.61	-0.31
836	SLD 11	-196	-563	6008	115.99	8.2	3.04
836	SLD 12	-230	-571	6005	116.3	8.13	3.74
836	SLD 13	-643	284	5011	-25.13	4.89	0.47
836	SLD 14	-695	272	5007	-24.66	4.78	1.53
836	SLD 15	-653	-102	5345	41.45	5.94	1.68
836	SLD 16	-704	-114	5342	41.91	5.83	2.75
836	SLV 1	1676	537	6061	-90.81	9.14	-2.3
836	SLV 2	1555	510	6052	-89.73	8.89	0.19
836	SLV 3	1652	-426	6900	75.93	11.79	0.71
836	SLV 4	1532	-452	6891	77.02	11.54	3.2
836	SLV 5	567	1676	4443	-277.67	3.57	-4.84
836	SLV 6	486	1658	4437	-276.94	3.4	-3.16
836	SLV 7	488	-1532	7240	278.14	12.4	5.19
836	SLV 8	407	-1550	7234	278.87	12.23	6.87
836	SLV 9	-391	1694	3897	-271.24	1.48	-4.35
836	SLV 10	-472	1676	3891	-270.51	1.31	-2.67
836	SLV 11	-470	-1514	6694	284.57	10.3	5.68
836	SLV 12	-551	-1532	6688	285.3	10.13	7.36
836	SLV 13	-1515	597	4240	-69.39	2.16	-0.68
836	SLV 14	-1636	570	4231	-68.3	1.91	1.82
836	SLV 15	-1539	-366	5079	97.35	4.81	2.33
836	SLV 16	-1659	-392	5070	98.44	4.56	4.83
836	CRTFP Ux+	0	0	0	0	0	0
836	CRTFP Ux-	0	0	0	0	0	0
836	CRTFP Uy+	0	0	0	0	0	0
836	CRTFP Uy-	0	0	0	0	0	0
837	SLU 1	9	75	5001	2.43	3.35	1.13
837	SLU 2	9	106	4980	-2.55	3.3	1.08
837	SLU 3	9	76	5103	3.46	3.47	1.15
837	SLU 4	9	95	5090	0.47	3.45	1.12
837	SLU 5	9	106	5043	-1.94	3.39	1.09
837	SLU 6	9	77	5166	4.07	3.56	1.16
837	SLU 7	9	95	5154	1.08	3.53	1.13
837	SLU 8	9	76	5128	3.65	3.51	1.15
837	SLU 9	9	95	5115	0.66	3.49	1.12
837	SLU 10	9	112	5637	-3.31	3.74	1.24
837	SLU 11	9	82	5760	2.7	3.91	1.32
837	SLU 12	9	101	5748	-0.29	3.88	1.28
837	SLU 13	9	112	5701	-2.7	3.82	1.25
837	SLU 14	9	83	5824	3.31	3.99	1.33
837	SLU 15	9	101	5811	0.32	3.96	1.29
837	SLU 16	9	82	5786	2.89	3.95	1.31
837	SLU 17	9	100	5773	-0.1	3.92	1.28
837	SLU 18	9	83	5940	1.35	3.97	1.37
837	SLU 19	9	102	5928	-1.64	3.94	1.33
837	SLU 20	9	84	6004	1.95	4.05	1.38
837	SLU 21	9	102	5991	-1.04	4.02	1.34
837	SLU 22	9	84	5796	6.12	3.92	1.31
837	SLU 23	9	114	5775	1.13	3.88	1.25
837	SLU 24	9	85	5898	7.15	4.05	1.33
837	SLU 25	9	103	5885	4.16	4.02	1.29
837	SLU 26	9	115	5839	1.74	3.96	1.26
837	SLU 27	9	85	5962	7.76	4.13	1.34
837	SLU 28	9	104	5949	4.77	4.1	1.3
837	SLU 29	9	85	5923	7.33	4.09	1.33
837	SLU 30	9	103	5910	4.34	4.06	1.29
837	SLU 31	9	120	6433	0.37	4.31	1.41
837	SLU 32	9	91	6556	6.39	4.48	1.49

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
837	SLU 33	9	109	6543	3.4	4.45	1.46
837	SLU 34	9	121	6496	0.98	4.39	1.42
837	SLU 35	9	91	6619	7	4.56	1.5
837	SLU 36	9	110	6606	4.01	4.54	1.47
837	SLU 37	9	90	6581	6.57	4.52	1.49
837	SLU 38	9	109	6568	3.58	4.49	1.45
837	SLU 39	9	92	6736	5.03	4.54	1.54
837	SLU 40	9	110	6723	2.04	4.52	1.5
837	SLU 41	9	92	6799	5.64	4.63	1.55
837	SLU 42	9	111	6786	2.65	4.6	1.51
837	SLU 43	11	94	6229	1.9	4.16	1.41
837	SLU 44	11	125	6208	-3.09	4.11	1.36
837	SLU 45	11	96	6331	2.93	4.28	1.43
837	SLU 46	11	114	6318	-0.06	4.25	1.4
837	SLU 47	11	126	6271	-2.48	4.19	1.37
837	SLU 48	11	96	6394	3.54	4.36	1.44
837	SLU 49	11	115	6382	0.55	4.33	1.41
837	SLU 50	11	96	6356	3.11	4.32	1.43
837	SLU 51	11	114	6343	0.12	4.29	1.4
837	SLU 52	11	131	6865	-3.85	4.54	1.52
837	SLU 53	12	102	6988	2.17	4.71	1.6
837	SLU 54	11	120	6976	-0.82	4.69	1.56
837	SLU 55	11	132	6929	-3.24	4.62	1.53
837	SLU 56	12	102	7052	2.78	4.8	1.61
837	SLU 57	12	121	7039	-0.21	4.77	1.57
837	SLU 58	12	101	7013	2.35	4.75	1.6
837	SLU 59	12	120	7001	-0.64	4.73	1.56
837	SLU 60	11	103	7168	0.81	4.77	1.65
837	SLU 61	11	121	7156	-2.18	4.75	1.61
837	SLU 62	12	103	7232	1.42	4.86	1.66
837	SLU 63	12	122	7219	-1.57	4.83	1.62
837	SLU 64	11	103	7024	5.58	4.73	1.59
837	SLU 65	11	134	7003	0.6	4.69	1.53
837	SLU 66	12	104	7126	6.61	4.86	1.61
837	SLU 67	12	123	7113	3.62	4.83	1.57
837	SLU 68	11	134	7066	1.21	4.77	1.54
837	SLU 69	12	105	7189	7.22	4.94	1.62
837	SLU 70	12	123	7177	4.23	4.91	1.58
837	SLU 71	12	104	7151	6.8	4.9	1.61
837	SLU 72	12	123	7138	3.81	4.87	1.57
837	SLU 73	12	140	7660	-0.16	5.12	1.69
837	SLU 74	12	110	7783	5.85	5.29	1.77
837	SLU 75	12	129	7771	2.86	5.26	1.74
837	SLU 76	12	140	7724	0.45	5.2	1.7
837	SLU 77	12	111	7847	6.46	5.37	1.78
837	SLU 78	12	129	7834	3.47	5.34	1.75
837	SLU 79	12	110	7808	6.04	5.33	1.77
837	SLU 80	12	128	7796	3.05	5.3	1.73
837	SLU 81	12	111	7963	4.5	5.35	1.82
837	SLU 82	12	130	7951	1.51	5.32	1.79
837	SLU 83	12	112	8027	5.11	5.43	1.83
837	SLU 84	12	130	8014	2.12	5.4	1.79
837	SLE RA 1	9	77	5228	3.48	3.51	1.18
837	SLE RA 2	9	98	5214	0.16	3.48	1.14
837	SLE RA 3	9	78	5296	4.17	3.6	1.2
837	SLE RA 4	9	91	5288	2.18	3.58	1.17
837	SLE RA 5	9	98	5257	0.57	3.54	1.15
837	SLE RA 6	9	79	5339	4.58	3.65	1.2
837	SLE RA 7	9	91	5330	2.58	3.63	1.18
837	SLE RA 8	9	78	5313	4.29	3.62	1.2
837	SLE RA 9	9	90	5305	2.3	3.6	1.17
837	SLE RA 10	9	102	5653	-0.34	3.77	1.25
837	SLE RA 11	9	82	5735	3.67	3.88	1.31
837	SLE RA 12	9	95	5726	1.67	3.87	1.28
837	SLE RA 13	9	102	5695	0.06	3.83	1.26
837	SLE RA 14	9	83	5777	4.07	3.94	1.31
837	SLE RA 15	9	95	5768	2.08	3.92	1.29
837	SLE RA 16	9	82	5751	3.79	3.91	1.3
837	SLE RA 17	9	94	5743	1.8	3.89	1.28
837	SLE RA 18	9	83	5855	2.76	3.93	1.34
837	SLE RA 19	9	95	5846	0.77	3.91	1.31
837	SLE RA 20	9	83	5897	3.17	3.98	1.34
837	SLE RA 21	9	96	5888	1.17	3.96	1.32
837	SLE FR 1	9	77	5228	3.48	3.51	1.18
837	SLE FR 2	9	82	5226	2.82	3.51	1.17
837	SLE FR 3	9	78	5245	3.65	3.54	1.18
837	SLE FR 4	9	83	5413	2.6	3.63	1.22
837	SLE FR 5	9	79	5433	3.43	3.66	1.23
837	SLE FR 6	9	80	5542	3.12	3.72	1.26
837	SLE QP 1	9	77	5228	3.48	3.51	1.18
837	SLE QP 2	9	79	5416	3.27	3.64	1.23
837	SLD 1	722	260	5589	-35.25	6.1	0.23
837	SLD 2	671	254	5589	-34.89	5.96	1.12
837	SLD 3	712	-121	5900	30.82	6.76	0.95
837	SLD 4	661	-127	5900	31.18	6.62	1.83
837	SLD 5	247	711	4998	-108.56	3.4	-0.31
837	SLD 6	213	707	4998	-108.32	3.31	0.27
837	SLD 7	214	-557	6032	111.68	5.6	2.07
837	SLD 8	181	-561	6032	111.91	5.51	2.65

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
837	SLD 9	-163	719	4801	-105.38	1.77	-0.2
837	SLD 10	-197	715	4801	-105.14	1.67	0.39
837	SLD 11	-195	-549	5835	114.86	3.97	2.19
837	SLD 12	-229	-553	5835	115.09	3.87	2.77
837	SLD 13	-644	285	4933	-24.64	0.65	0.62
837	SLD 14	-695	279	4933	-24.29	0.51	1.51
837	SLD 15	-653	-95	5243	41.42	1.31	1.34
837	SLD 16	-705	-102	5243	41.78	1.17	2.23
837	SLV 1	1679	531	5795	-92.29	9.35	-1.16
837	SLV 2	1558	517	5795	-91.46	9.02	0.93
837	SLV 3	1655	-418	6573	73.19	11.01	0.61
837	SLV 4	1535	-432	6573	74.02	10.68	2.69
837	SLV 5	568	1656	4350	-276.53	2.9	-2.55
837	SLV 6	487	1646	4350	-275.97	2.68	-1.15
837	SLV 7	489	-1506	6943	275.06	8.42	3.33
837	SLV 8	408	-1515	6943	275.62	8.2	4.73
837	SLV 9	-391	1674	3890	-269.09	-0.93	-2.28
837	SLV 10	-472	1664	3890	-268.53	-1.15	-0.87
837	SLV 11	-469	-1488	6482	282.5	4.6	3.61
837	SLV 12	-550	-1498	6482	283.06	4.37	5.01
837	SLV 13	-1517	590	4259	-67.49	-3.41	-0.23
837	SLV 14	-1637	576	4260	-66.65	-3.74	1.85
837	SLV 15	-1541	-359	5037	97.99	-1.75	1.53
837	SLV 16	-1661	-373	5037	98.82	-2.08	3.61
837	CRTFP Ux+	0	0	0	0	0	0
837	CRTFP Ux-	0	0	0	0	0	0
837	CRTFP Uy+	0	0	0	0	0	0
837	CRTFP Uy-	0	0	0	0	0	0
838	SLU 1	10	81	4940	1.92	1.04	1.1
838	SLU 2	9	112	4919	-3.03	1.01	1.09
838	SLU 3	10	83	5039	2.93	1.08	1.12
838	SLU 4	10	101	5027	-0.04	1.07	1.12
838	SLU 5	10	112	4981	-2.44	1.05	1.1
838	SLU 6	10	83	5101	3.53	1.12	1.13
838	SLU 7	10	102	5089	0.55	1.1	1.12
838	SLU 8	10	82	5063	3.11	1.1	1.12
838	SLU 9	10	101	5051	0.13	1.09	1.11
838	SLU 10	10	118	5569	-3.84	1.17	1.25
838	SLU 11	10	89	5688	2.12	1.24	1.27
838	SLU 12	10	108	5676	-0.85	1.22	1.27
838	SLU 13	10	119	5630	-3.25	1.2	1.25
838	SLU 14	10	90	5750	2.72	1.27	1.28
838	SLU 15	10	108	5738	-0.26	1.25	1.28
838	SLU 16	10	89	5712	2.3	1.25	1.27
838	SLU 17	10	107	5700	-0.68	1.24	1.27
838	SLU 18	10	91	5867	0.77	1.26	1.32
838	SLU 19	10	109	5855	-2.21	1.24	1.31
838	SLU 20	10	91	5929	1.36	1.29	1.33
838	SLU 21	10	110	5917	-1.62	1.27	1.32
838	SLU 22	10	91	5724	5.55	1.24	1.27
838	SLU 23	10	121	5704	0.59	1.21	1.26
838	SLU 24	10	92	5823	6.56	1.28	1.29
838	SLU 25	10	110	5811	3.59	1.27	1.29
838	SLU 26	10	122	5765	1.18	1.25	1.27
838	SLU 27	10	93	5885	7.15	1.32	1.3
838	SLU 28	10	111	5873	4.18	1.3	1.3
838	SLU 29	10	92	5847	6.73	1.3	1.29
838	SLU 30	10	110	5835	3.76	1.29	1.28
838	SLU 31	10	128	6353	-0.22	1.37	1.42
838	SLU 32	11	99	6472	5.75	1.44	1.45
838	SLU 33	10	117	6460	2.78	1.42	1.44
838	SLU 34	10	129	6415	0.37	1.4	1.42
838	SLU 35	11	99	6534	6.34	1.47	1.45
838	SLU 36	11	118	6522	3.37	1.45	1.45
838	SLU 37	11	99	6497	5.92	1.45	1.44
838	SLU 38	11	117	6484	2.95	1.44	1.44
838	SLU 39	10	100	6651	4.39	1.46	1.49
838	SLU 40	10	119	6639	1.42	1.44	1.49
838	SLU 41	11	101	6713	4.98	1.49	1.5
838	SLU 42	11	119	6701	2.01	1.47	1.49
838	SLU 43	12	102	6153	1.26	1.28	1.37
838	SLU 44	12	133	6132	-3.7	1.26	1.36
838	SLU 45	12	104	6252	2.27	1.33	1.39
838	SLU 46	12	122	6240	-0.7	1.31	1.39
838	SLU 47	12	133	6194	-3.1	1.29	1.37
838	SLU 48	13	104	6314	2.86	1.36	1.4
838	SLU 49	13	123	6302	-0.11	1.34	1.4
838	SLU 50	13	103	6276	2.44	1.35	1.39
838	SLU 51	12	122	6264	-0.53	1.33	1.38
838	SLU 52	12	140	6782	-4.51	1.41	1.52
838	SLU 53	13	110	6901	1.46	1.48	1.55
838	SLU 54	13	129	6889	-1.51	1.46	1.54
838	SLU 55	13	140	6843	-3.91	1.44	1.53
838	SLU 56	13	111	6963	2.05	1.51	1.55
838	SLU 57	13	129	6951	-0.92	1.5	1.55
838	SLU 58	13	110	6925	1.63	1.5	1.54
838	SLU 59	13	128	6913	-1.34	1.48	1.54
838	SLU 60	13	112	7080	0.1	1.5	1.59
838	SLU 61	13	130	7068	-2.87	1.48	1.59

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
838	SLU 62	13	112	7142	0.69	1.53	1.6
838	SLU 63	13	131	7130	-2.28	1.52	1.59
838	SLU 64	13	112	6937	4.88	1.48	1.54
838	SLU 65	13	142	6917	-0.07	1.46	1.54
838	SLU 66	13	113	7036	5.89	1.53	1.56
838	SLU 67	13	132	7024	2.92	1.51	1.56
838	SLU 68	13	143	6978	0.52	1.49	1.54
838	SLU 69	13	114	7098	6.48	1.56	1.57
838	SLU 70	13	132	7086	3.51	1.54	1.57
838	SLU 71	13	113	7060	6.06	1.55	1.56
838	SLU 72	13	131	7048	3.09	1.53	1.56
838	SLU 73	13	149	7566	-0.88	1.61	1.69
838	SLU 74	13	120	7685	5.08	1.68	1.72
838	SLU 75	13	138	7673	2.11	1.66	1.71
838	SLU 76	13	150	7628	-0.29	1.64	1.7
838	SLU 77	13	121	7747	5.67	1.71	1.73
838	SLU 78	13	139	7735	2.7	1.7	1.72
838	SLU 79	13	120	7710	5.25	1.7	1.71
838	SLU 80	13	138	7697	2.28	1.68	1.71
838	SLU 81	13	121	7864	3.72	1.7	1.76
838	SLU 82	13	140	7852	0.75	1.68	1.76
838	SLU 83	13	122	7926	4.32	1.73	1.77
838	SLU 84	13	140	7914	1.34	1.72	1.77
838	SLE RA 1	10	84	5164	2.96	1.1	1.15
838	SLE RA 2	10	104	5150	-0.34	1.08	1.14
838	SLE RA 3	10	85	5230	3.63	1.13	1.16
838	SLE RA 4	10	97	5222	1.65	1.12	1.16
838	SLE RA 5	10	105	5191	0.05	1.1	1.15
838	SLE RA 6	10	85	5271	4.03	1.15	1.17
838	SLE RA 7	10	97	5263	2.05	1.14	1.17
838	SLE RA 8	10	85	5246	3.75	1.14	1.16
838	SLE RA 9	10	97	5238	1.77	1.13	1.16
838	SLE RA 10	10	109	5583	-0.88	1.18	1.25
838	SLE RA 11	10	89	5663	3.09	1.23	1.27
838	SLE RA 12	10	102	5655	1.11	1.22	1.26
838	SLE RA 13	10	109	5624	-0.49	1.2	1.25
838	SLE RA 14	10	90	5704	3.49	1.25	1.27
838	SLE RA 15	10	102	5696	1.51	1.24	1.27
838	SLE RA 16	10	89	5679	3.21	1.24	1.26
838	SLE RA 17	10	101	5671	1.23	1.23	1.26
838	SLE RA 18	10	90	5782	2.19	1.24	1.3
838	SLE RA 19	10	103	5774	0.21	1.23	1.29
838	SLE RA 20	10	91	5823	2.58	1.26	1.3
838	SLE RA 21	10	103	5815	0.6	1.25	1.3
838	SLE FR 1	10	84	5164	2.96	1.1	1.15
838	SLE FR 2	10	88	5161	2.3	1.09	1.15
838	SLE FR 3	10	84	5180	3.12	1.1	1.15
838	SLE FR 4	10	90	5346	2.07	1.14	1.19
838	SLE FR 5	10	86	5366	2.88	1.15	1.2
838	SLE FR 6	10	87	5473	2.57	1.17	1.22
838	SLE QP 1	10	84	5164	2.96	1.1	1.15
838	SLE QP 2	10	86	5349	2.73	1.14	1.19
838	SLD 1	724	264	5436	-36.28	4.6	0.51
838	SLD 2	673	262	5441	-36.03	4.44	1.3
838	SLD 3	714	-114	5732	29.4	4.96	0.67
838	SLD 4	663	-116	5737	29.65	4.79	1.45
838	SLD 5	248	713	4926	-108.64	1.67	0.61
838	SLD 6	214	712	4929	-108.48	1.57	1.13
838	SLD 7	216	-547	5912	110.3	2.85	1.13
838	SLD 8	182	-548	5915	110.47	2.74	1.65
838	SLD 9	-162	720	4783	-105.01	-0.46	0.74
838	SLD 10	-196	719	4786	-104.85	-0.57	1.26
838	SLD 11	-195	-540	5770	113.93	0.71	1.26
838	SLD 12	-228	-541	5773	114.09	0.61	1.78
838	SLD 13	-643	288	4961	-24.19	-2.52	0.94
838	SLD 14	-695	286	4966	-23.95	-2.68	1.72
838	SLD 15	-653	-90	5257	41.49	-2.16	1.09
838	SLD 16	-704	-92	5262	41.74	-2.33	1.88
838	SLV 1	1681	531	5529	-93.96	9.22	-0.42
838	SLV 2	1561	527	5539	-93.38	8.84	1.43
838	SLV 3	1658	-412	6271	70.55	10.1	-0.04
838	SLV 4	1537	-416	6281	71.13	9.72	1.81
838	SLV 5	570	1650	4276	-275.9	2.29	-0.21
838	SLV 6	488	1647	4283	-275.51	2.03	1.04
838	SLV 7	491	-1493	6749	272.47	5.24	1.05
838	SLV 8	410	-1495	6756	272.87	4.99	2.29
838	SLV 9	-390	1667	3943	-267.41	-2.71	0.09
838	SLV 10	-471	1664	3950	-267.02	-2.96	1.34
838	SLV 11	-469	-1476	6415	280.96	0.24	1.35
838	SLV 12	-550	-1478	6422	281.35	-0.01	2.59
838	SLV 13	-1518	587	4417	-65.68	-7.45	0.58
838	SLV 14	-1638	583	4428	-65.1	-7.83	2.43
838	SLV 15	-1541	-356	5159	98.83	-6.56	0.96
838	SLV 16	-1662	-359	5169	99.41	-6.94	2.81
838	CRTFP Ux+	0	0	0	0	0	0
838	CRTFP Ux-	0	0	0	0	0	0
838	CRTFP Uy+	0	0	0	0	0	0
838	CRTFP Uy-	0	0	0	0	0	0
839	SLU 1	11	87	4936	1.42	-0.7	1.06

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
839	SLU 2	11	118	4916	-3.52	-0.7	1.1
839	SLU 3	11	89	5035	2.41	-0.71	1.07
839	SLU 4	11	107	5023	-0.55	-0.72	1.1
839	SLU 5	11	118	4977	-2.94	-0.71	1.1
839	SLU 6	11	89	5096	2.99	-0.72	1.08
839	SLU 7	11	108	5084	0.03	-0.72	1.11
839	SLU 8	11	88	5059	2.57	-0.71	1.07
839	SLU 9	11	107	5047	-0.39	-0.71	1.09
839	SLU 10	11	125	5564	-4.38	-0.76	1.24
839	SLU 11	11	96	5683	1.55	-0.77	1.21
839	SLU 12	11	115	5671	-1.41	-0.77	1.24
839	SLU 13	11	126	5625	-3.8	-0.77	1.24
839	SLU 14	11	97	5744	2.12	-0.77	1.22
839	SLU 15	11	115	5732	-0.84	-0.78	1.25
839	SLU 16	11	96	5706	1.71	-0.77	1.21
839	SLU 17	11	114	5695	-1.25	-0.77	1.23
839	SLU 18	11	98	5861	0.19	-0.78	1.25
839	SLU 19	11	116	5849	-2.77	-0.78	1.28
839	SLU 20	11	99	5923	0.76	-0.79	1.26
839	SLU 21	11	117	5911	-2.2	-0.79	1.29
839	SLU 22	11	98	5718	4.99	-0.78	1.22
839	SLU 23	11	128	5698	0.05	-0.79	1.26
839	SLU 24	11	99	5817	5.98	-0.79	1.24
839	SLU 25	11	118	5805	3.02	-0.8	1.26
839	SLU 26	11	129	5760	0.63	-0.79	1.27
839	SLU 27	12	100	5879	6.56	-0.8	1.25
839	SLU 28	12	118	5867	3.6	-0.8	1.27
839	SLU 29	12	99	5841	6.14	-0.79	1.23
839	SLU 30	12	117	5829	3.18	-0.79	1.26
839	SLU 31	12	136	6346	-0.81	-0.84	1.4
839	SLU 32	12	107	6465	5.12	-0.85	1.38
839	SLU 33	12	125	6453	2.16	-0.85	1.4
839	SLU 34	12	136	6408	-0.23	-0.85	1.41
839	SLU 35	12	107	6527	5.69	-0.86	1.38
839	SLU 36	12	126	6515	2.73	-0.86	1.41
839	SLU 37	12	106	6489	5.28	-0.85	1.37
839	SLU 38	12	125	6477	2.32	-0.85	1.4
839	SLU 39	12	108	6644	3.76	-0.86	1.42
839	SLU 40	12	127	6632	0.8	-0.86	1.44
839	SLU 41	12	109	6705	4.33	-0.87	1.43
839	SLU 42	12	127	6693	1.37	-0.87	1.45
839	SLU 43	14	110	6148	0.62	-0.88	1.32
839	SLU 44	13	140	6128	-4.31	-0.89	1.36
839	SLU 45	14	111	6247	1.61	-0.89	1.34
839	SLU 46	14	130	6235	-1.35	-0.9	1.36
839	SLU 47	14	141	6190	-3.74	-0.89	1.37
839	SLU 48	14	112	6308	2.19	-0.9	1.34
839	SLU 49	14	130	6297	-0.77	-0.9	1.37
839	SLU 50	14	111	6271	1.77	-0.89	1.33
839	SLU 51	14	129	6259	-1.19	-0.9	1.36
839	SLU 52	14	148	6776	-5.18	-0.94	1.5
839	SLU 53	14	119	6895	0.75	-0.95	1.47
839	SLU 54	14	137	6883	-2.21	-0.95	1.5
839	SLU 55	14	149	6838	-4.6	-0.95	1.5
839	SLU 56	14	119	6956	1.33	-0.96	1.48
839	SLU 57	14	138	6944	-1.63	-0.96	1.51
839	SLU 58	14	119	6919	0.91	-0.95	1.47
839	SLU 59	14	137	6907	-2.05	-0.95	1.49
839	SLU 60	14	120	7074	-0.61	-0.96	1.52
839	SLU 61	14	139	7062	-3.57	-0.96	1.54
839	SLU 62	14	121	7135	-0.04	-0.97	1.52
839	SLU 63	14	140	7123	-3	-0.97	1.55
839	SLU 64	14	120	6931	4.19	-0.96	1.48
839	SLU 65	14	151	6911	-0.75	-0.97	1.52
839	SLU 66	14	122	7030	5.18	-0.97	1.5
839	SLU 67	14	140	7018	2.22	-0.98	1.52
839	SLU 68	14	151	6972	-0.17	-0.97	1.53
839	SLU 69	15	122	7091	5.76	-0.98	1.51
839	SLU 70	15	141	7079	2.8	-0.98	1.53
839	SLU 71	15	121	7054	5.34	-0.97	1.5
839	SLU 72	15	140	7042	2.38	-0.98	1.52
839	SLU 73	15	158	7559	-1.61	-1.02	1.66
839	SLU 74	15	129	7678	4.32	-1.03	1.64
839	SLU 75	15	148	7666	1.36	-1.04	1.66
839	SLU 76	15	159	7620	-1.03	-1.03	1.67
839	SLU 77	15	130	7739	4.9	-1.04	1.65
839	SLU 78	15	148	7727	1.94	-1.04	1.67
839	SLU 79	15	129	7701	4.48	-1.03	1.63
839	SLU 80	15	147	7690	1.52	-1.03	1.66
839	SLU 81	15	131	7856	2.96	-1.04	1.68
839	SLU 82	15	149	7844	0	-1.05	1.7
839	SLU 83	15	132	7918	3.53	-1.05	1.69
839	SLU 84	15	150	7906	0.57	-1.05	1.71
839	SLE RA 1	11	90	5159	2.44	-0.72	1.1
839	SLE RA 2	11	111	5146	-0.85	-0.72	1.13
839	SLE RA 3	11	91	5225	3.1	-0.73	1.12
839	SLE RA 4	11	103	5217	1.13	-0.73	1.13
839	SLE RA 5	11	111	5187	-0.47	-0.73	1.14
839	SLE RA 6	11	92	5266	3.48	-0.73	1.12

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
839	SLE RA 7	11	104	5258	1.51	-0.74	1.14
839	SLE RA 8	11	91	5241	3.21	-0.73	1.11
839	SLE RA 9	11	103	5233	1.23	-0.73	1.13
839	SLE RA 10	11	116	5578	-1.43	-0.76	1.22
839	SLE RA 11	11	96	5657	2.52	-0.77	1.21
839	SLE RA 12	11	108	5649	0.55	-0.77	1.22
839	SLE RA 13	11	116	5619	-1.04	-0.77	1.23
839	SLE RA 14	11	97	5698	2.91	-0.77	1.21
839	SLE RA 15	11	109	5690	0.94	-0.77	1.23
839	SLE RA 16	11	96	5673	2.63	-0.77	1.21
839	SLE RA 17	11	108	5665	0.66	-0.77	1.22
839	SLE RA 18	11	97	5776	1.62	-0.77	1.24
839	SLE RA 19	11	110	5768	-0.36	-0.78	1.25
839	SLE RA 20	11	98	5817	2	-0.78	1.24
839	SLE RA 21	11	110	5809	0.03	-0.78	1.26
839	SLE FR 1	11	90	5159	2.44	-0.72	1.1
839	SLE FR 2	11	94	5157	1.78	-0.72	1.11
839	SLE FR 3	11	90	5176	2.59	-0.72	1.11
839	SLE FR 4	11	96	5342	1.53	-0.74	1.15
839	SLE FR 5	11	92	5361	2.35	-0.74	1.15
839	SLE FR 6	11	94	5468	2.03	-0.75	1.17
839	SLE QP 1	11	90	5159	2.44	-0.72	1.1
839	SLE QP 2	11	92	5344	2.19	-0.74	1.14
839	SLD 1	726	269	5324	-37.39	3.31	1.27
839	SLD 2	674	272	5333	-37.25	3.14	2.03
839	SLD 3	716	-110	5613	28.02	3.44	0.73
839	SLD 4	665	-107	5623	28.16	3.27	1.49
839	SLD 5	249	720	4898	-108.92	0.32	1.86
839	SLD 6	215	722	4904	-108.83	0.2	2.37
839	SLD 7	217	-544	5862	109.13	0.74	0.06
839	SLD 8	183	-542	5868	109.22	0.63	0.57
839	SLD 9	-161	727	4820	-104.84	-2.1	1.72
839	SLD 10	-195	728	4826	-104.75	-2.21	2.23
839	SLD 11	-194	-537	5785	113.21	-1.67	-0.08
839	SLD 12	-228	-535	5791	113.31	-1.79	0.42
839	SLD 13	-643	292	5066	-23.78	-4.74	0.79
839	SLD 14	-694	295	5075	-23.64	-4.91	1.56
839	SLD 15	-653	-87	5356	41.64	-4.61	0.25
839	SLD 16	-704	-85	5365	41.78	-4.78	1.02
839	SLV 1	1684	535	5272	-95.82	8.73	1.48
839	SLV 2	1563	541	5294	-95.49	8.32	3.28
839	SLV 3	1660	-410	5998	68.02	9.05	0.12
839	SLV 4	1540	-404	6019	68.35	8.64	1.92
839	SLV 5	571	1658	4219	-275.77	1.69	2.98
839	SLV 6	490	1663	4233	-275.55	1.42	4.19
839	SLV 7	492	-1494	6636	270.38	2.76	-1.57
839	SLV 8	411	-1490	6651	270.6	2.49	-0.36
839	SLV 9	-389	1675	4038	-266.22	-3.96	2.65
839	SLV 10	-471	1679	4053	-265.99	-4.23	3.86
839	SLV 11	-468	-1478	6455	279.93	-2.89	-1.91
839	SLV 12	-549	-1474	6470	280.15	-3.17	-0.7
839	SLV 13	-1518	589	4669	-63.97	-10.11	0.37
839	SLV 14	-1639	595	4691	-63.64	-10.52	2.17
839	SLV 15	-1542	-357	5395	99.87	-9.79	-1
839	SLV 16	-1662	-351	5416	100.2	-10.2	0.8
839	CRTFP Ux+	0	0	0	0	0	0
839	CRTFP Ux-	0	0	0	0	0	0
839	CRTFP Uy+	0	0	0	0	0	0
839	CRTFP Uy-	0	0	0	0	0	0
840	SLU 1	12	93	4975	0.92	-2.03	0.98
840	SLU 2	12	124	4956	-4.01	-2.02	1.07
840	SLU 3	12	95	5075	1.89	-2.09	1
840	SLU 4	12	113	5064	-1.06	-2.09	1.05
840	SLU 5	12	125	5018	-3.45	-2.06	1.08
840	SLU 6	12	95	5137	2.45	-2.12	1
840	SLU 7	12	114	5126	-0.5	-2.12	1.06
840	SLU 8	12	94	5099	2.04	-2.1	0.99
840	SLU 9	12	113	5088	-0.91	-2.1	1.05
840	SLU 10	12	132	5608	-4.92	-2.24	1.19
840	SLU 11	12	103	5727	0.98	-2.31	1.12
840	SLU 12	12	121	5716	-1.98	-2.3	1.17
840	SLU 13	12	133	5670	-4.36	-2.28	1.2
840	SLU 14	13	103	5789	1.54	-2.34	1.12
840	SLU 15	13	122	5778	-1.42	-2.34	1.18
840	SLU 16	12	102	5751	1.13	-2.32	1.11
840	SLU 17	12	121	5740	-1.83	-2.32	1.17
840	SLU 18	12	105	5907	-0.39	-2.34	1.15
840	SLU 19	12	123	5895	-3.35	-2.34	1.21
840	SLU 20	12	105	5969	0.17	-2.38	1.16
840	SLU 21	12	124	5957	-2.78	-2.37	1.21
840	SLU 22	12	104	5763	4.44	-2.33	1.14
840	SLU 23	12	135	5744	-0.49	-2.32	1.23
840	SLU 24	13	106	5863	5.41	-2.39	1.15
840	SLU 25	13	125	5852	2.46	-2.38	1.21
840	SLU 26	13	136	5806	0.07	-2.36	1.23
840	SLU 27	13	107	5926	5.98	-2.42	1.16
840	SLU 28	13	125	5914	3.02	-2.42	1.21
840	SLU 29	13	106	5888	5.56	-2.4	1.15
840	SLU 30	13	124	5876	2.61	-2.39	1.2

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
840	SLU 31	13	144	6396	-1.4	-2.54	1.35
840	SLU 32	13	114	6515	4.5	-2.6	1.27
840	SLU 33	13	133	6504	1.54	-2.6	1.32
840	SLU 34	13	144	6458	-0.84	-2.58	1.35
840	SLU 35	13	115	6578	5.06	-2.64	1.28
840	SLU 36	13	133	6566	2.11	-2.64	1.33
840	SLU 37	13	114	6540	4.65	-2.62	1.26
840	SLU 38	13	132	6528	1.69	-2.61	1.32
840	SLU 39	13	116	6695	3.13	-2.64	1.31
840	SLU 40	13	135	6683	0.17	-2.64	1.36
840	SLU 41	13	117	6757	3.69	-2.67	1.31
840	SLU 42	13	135	6745	0.74	-2.67	1.37
840	SLU 43	15	117	6198	-0.02	-2.54	1.23
840	SLU 44	15	148	6178	-4.94	-2.53	1.32
840	SLU 45	15	118	6298	0.96	-2.6	1.24
840	SLU 46	15	137	6286	-2	-2.59	1.3
840	SLU 47	15	149	6240	-4.38	-2.57	1.32
840	SLU 48	15	119	6360	1.52	-2.63	1.25
840	SLU 49	15	138	6348	-1.43	-2.63	1.3
840	SLU 50	15	118	6322	1.11	-2.61	1.24
840	SLU 51	15	137	6310	-1.85	-2.6	1.29
840	SLU 52	15	156	6830	-5.86	-2.75	1.44
840	SLU 53	16	127	6950	0.04	-2.81	1.36
840	SLU 54	15	145	6938	-2.91	-2.81	1.42
840	SLU 55	15	157	6892	-5.29	-2.79	1.44
840	SLU 56	16	127	7012	0.61	-2.85	1.37
840	SLU 57	16	146	7000	-2.35	-2.85	1.42
840	SLU 58	16	126	6974	0.19	-2.82	1.36
840	SLU 59	16	145	6962	-2.76	-2.82	1.41
840	SLU 60	15	129	7129	-1.32	-2.85	1.4
840	SLU 61	15	147	7117	-4.28	-2.85	1.45
840	SLU 62	16	129	7191	-0.76	-2.88	1.4
840	SLU 63	16	148	7179	-3.72	-2.88	1.46
840	SLU 64	16	128	6986	3.51	-2.83	1.38
840	SLU 65	16	159	6966	-1.42	-2.83	1.47
840	SLU 66	16	130	7086	4.48	-2.89	1.39
840	SLU 67	16	148	7074	1.53	-2.89	1.45
840	SLU 68	16	160	7028	-0.86	-2.86	1.47
840	SLU 69	16	130	7148	5.04	-2.93	1.4
840	SLU 70	16	149	7136	2.09	-2.93	1.45
840	SLU 71	16	129	7110	4.63	-2.9	1.39
840	SLU 72	16	148	7098	1.67	-2.9	1.44
840	SLU 73	16	168	7618	-2.34	-3.05	1.59
840	SLU 74	16	138	7738	3.57	-3.11	1.51
840	SLU 75	16	157	7726	0.61	-3.11	1.57
840	SLU 76	16	168	7680	-1.77	-3.08	1.59
840	SLU 77	17	139	7800	4.13	-3.15	1.52
840	SLU 78	17	157	7788	1.17	-3.14	1.57
840	SLU 79	16	138	7762	3.71	-3.12	1.51
840	SLU 80	16	156	7750	0.76	-3.12	1.56
840	SLU 81	16	140	7917	2.2	-3.14	1.55
840	SLU 82	16	159	7905	-0.76	-3.14	1.6
840	SLU 83	16	141	7979	2.76	-3.18	1.55
840	SLU 84	16	159	7968	-0.2	-3.18	1.61
840	SLE RA 1	12	96	5201	1.92	-2.11	1.03
840	SLE RA 2	12	117	5187	-1.36	-2.11	1.09
840	SLE RA 3	12	97	5267	2.57	-2.15	1.04
840	SLE RA 4	12	110	5259	0.6	-2.15	1.07
840	SLE RA 5	12	117	5229	-0.99	-2.13	1.09
840	SLE RA 6	12	98	5309	2.95	-2.18	1.04
840	SLE RA 7	12	110	5301	0.98	-2.18	1.08
840	SLE RA 8	12	97	5283	2.67	-2.16	1.03
840	SLE RA 9	12	109	5275	0.7	-2.16	1.07
840	SLE RA 10	12	122	5622	-1.97	-2.26	1.17
840	SLE RA 11	12	103	5702	1.96	-2.3	1.12
840	SLE RA 12	12	115	5694	-0.01	-2.3	1.15
840	SLE RA 13	12	123	5663	-1.6	-2.28	1.17
840	SLE RA 14	12	103	5743	2.34	-2.32	1.12
840	SLE RA 15	12	116	5735	0.37	-2.32	1.16
840	SLE RA 16	12	102	5718	2.06	-2.31	1.11
840	SLE RA 17	12	115	5710	0.09	-2.3	1.15
840	SLE RA 18	12	104	5821	1.05	-2.32	1.14
840	SLE RA 19	12	116	5814	-0.92	-2.32	1.18
840	SLE RA 20	12	104	5863	1.43	-2.35	1.14
840	SLE RA 21	12	117	5855	-0.54	-2.34	1.18
840	SLE FR 1	12	96	5201	1.92	-2.11	1.03
840	SLE FR 2	12	100	5198	1.27	-2.11	1.04
840	SLE FR 3	12	96	5217	2.07	-2.12	1.03
840	SLE FR 4	12	103	5384	1	-2.18	1.07
840	SLE FR 5	12	99	5403	1.81	-2.19	1.06
840	SLE FR 6	12	100	5511	1.49	-2.22	1.08
840	SLE QP 1	12	96	5201	1.92	-2.11	1.03
840	SLE QP 2	12	98	5387	1.66	-2.18	1.06
840	SLD 1	727	276	5214	-38.58	2.19	1.01
840	SLD 2	676	283	5228	-38.55	2.01	1.83
840	SLD 3	717	-108	5502	26.69	2.11	-0.13
840	SLD 4	666	-101	5516	26.72	1.93	0.7
840	SLD 5	251	733	4895	-109.41	-0.72	2.62
840	SLD 6	217	737	4904	-109.38	-0.84	3.17

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
840	SLD 7	218	-547	5857	108.15	-0.97	-1.17
840	SLD 8	184	-542	5866	108.17	-1.09	-0.63
840	SLD 9	-160	739	4908	-104.85	-3.26	2.75
840	SLD 10	-194	744	4917	-104.83	-3.38	3.29
840	SLD 11	-193	-540	5870	112.71	-3.51	-1.04
840	SLD 12	-227	-536	5879	112.73	-3.63	-0.5
840	SLD 13	-642	298	5257	-23.4	-6.29	1.43
840	SLD 14	-693	305	5271	-23.37	-6.46	2.25
840	SLD 15	-652	-86	5546	41.87	-6.36	0.29
840	SLD 16	-703	-79	5560	41.9	-6.54	1.11
840	SLV 1	1686	543	4958	-97.87	8.04	1.04
840	SLV 2	1565	559	4992	-97.79	7.62	2.97
840	SLV 3	1662	-414	5681	65.6	7.86	-1.82
840	SLV 4	1542	-398	5715	65.68	7.44	0.11
840	SLV 5	573	1681	4155	-276.15	1.24	5.03
840	SLV 6	491	1692	4178	-276.1	0.96	6.33
840	SLV 7	494	-1511	6566	268.77	0.64	-4.5
840	SLV 8	412	-1500	6588	268.82	0.35	-3.2
840	SLV 9	-389	1697	4185	-265.5	-4.7	5.32
840	SLV 10	-470	1708	4208	-265.44	-4.99	6.62
840	SLV 11	-467	-1495	6596	279.42	-5.31	-4.21
840	SLV 12	-549	-1484	6618	279.47	-5.6	-2.91
840	SLV 13	-1518	595	5059	-62.36	-11.79	2.01
840	SLV 14	-1638	611	5092	-62.28	-12.21	3.94
840	SLV 15	-1541	-362	5782	101.12	-11.97	-0.85
840	SLV 16	-1662	-346	5816	101.19	-12.39	1.08
840	CRTFP Ux+	0	0	0	0	0	0
840	CRTFP Ux-	0	0	0	0	0	0
840	CRTFP Uy+	0	0	0	0	0	0
840	CRTFP Uy-	0	0	0	0	0	0
841	SLU 1	12	98	5049	0.42	-3.07	0.87
841	SLU 2	12	130	5029	-4.51	-3.05	1
841	SLU 3	13	100	5151	1.38	-3.16	0.88
841	SLU 4	13	119	5139	-1.58	-3.16	0.96
841	SLU 5	13	130	5092	-3.96	-3.11	1
841	SLU 6	13	100	5215	1.93	-3.22	0.88
841	SLU 7	13	120	5203	-1.03	-3.21	0.96
841	SLU 8	13	99	5176	1.51	-3.18	0.87
841	SLU 9	13	118	5164	-1.44	-3.18	0.95
841	SLU 10	13	139	5689	-5.48	-3.4	1.09
841	SLU 11	13	109	5811	0.41	-3.51	0.97
841	SLU 12	13	128	5799	-2.55	-3.5	1.05
841	SLU 13	13	139	5753	-4.93	-3.46	1.09
841	SLU 14	13	109	5875	0.96	-3.57	0.97
841	SLU 15	13	128	5863	-2	-3.56	1.05
841	SLU 16	13	108	5836	0.54	-3.53	0.96
841	SLU 17	13	127	5824	-2.41	-3.52	1.04
841	SLU 18	13	111	5992	-0.97	-3.56	1
841	SLU 19	13	130	5980	-3.93	-3.55	1.08
841	SLU 20	13	111	6055	-0.42	-3.62	1
841	SLU 21	13	130	6043	-3.38	-3.61	1.08
841	SLU 22	13	110	5848	3.9	-3.53	1
841	SLU 23	13	142	5828	-1.03	-3.52	1.13
841	SLU 24	14	112	5950	4.86	-3.63	1.01
841	SLU 25	14	131	5938	1.9	-3.62	1.09
841	SLU 26	14	143	5892	-0.48	-3.58	1.13
841	SLU 27	14	113	6014	5.41	-3.69	1.01
841	SLU 28	14	132	6002	2.45	-3.68	1.09
841	SLU 29	14	112	5975	5	-3.65	1
841	SLU 30	14	131	5963	2.04	-3.64	1.08
841	SLU 31	14	151	6488	-2	-3.87	1.22
841	SLU 32	14	121	6611	3.89	-3.98	1.11
841	SLU 33	14	140	6599	0.93	-3.97	1.18
841	SLU 34	14	151	6552	-1.45	-3.92	1.23
841	SLU 35	14	122	6674	4.44	-4.03	1.11
841	SLU 36	14	141	6662	1.48	-4.03	1.19
841	SLU 37	14	120	6635	4.02	-4	1.1
841	SLU 38	14	139	6623	1.07	-3.99	1.18
841	SLU 39	14	123	6791	2.51	-4.03	1.13
841	SLU 40	14	142	6779	-0.45	-4.02	1.21
841	SLU 41	14	124	6855	3.06	-4.09	1.14
841	SLU 42	14	143	6843	0.1	-4.08	1.21
841	SLU 43	16	123	6290	-0.65	-3.83	1.08
841	SLU 44	16	155	6270	-5.58	-3.81	1.21
841	SLU 45	16	125	6392	0.31	-3.92	1.09
841	SLU 46	16	144	6380	-2.65	-3.92	1.17
841	SLU 47	16	156	6333	-5.03	-3.87	1.21
841	SLU 48	16	126	6455	0.86	-3.98	1.1
841	SLU 49	16	145	6443	-2.1	-3.97	1.17
841	SLU 50	16	125	6416	0.45	-3.94	1.09
841	SLU 51	16	144	6404	-2.51	-3.94	1.16
841	SLU 52	16	164	6930	-6.55	-4.16	1.31
841	SLU 53	17	134	7052	-0.66	-4.27	1.19
841	SLU 54	17	153	7040	-3.62	-4.26	1.27
841	SLU 55	16	165	6993	-6	-4.22	1.31
841	SLU 56	17	135	7115	-0.11	-4.33	1.19
841	SLU 57	17	154	7103	-3.07	-4.32	1.27
841	SLU 58	17	134	7077	-0.52	-4.29	1.18
841	SLU 59	17	153	7065	-3.48	-4.28	1.26

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
841	SLU 60	16	136	7233	-2.04	-4.32	1.22
841	SLU 61	16	155	7221	-4.99	-4.31	1.29
841	SLU 62	17	137	7296	-1.49	-4.38	1.22
841	SLU 63	17	156	7284	-4.45	-4.37	1.3
841	SLU 64	17	135	7089	2.83	-4.29	1.21
841	SLU 65	17	167	7069	-2.1	-4.28	1.34
841	SLU 66	17	137	7191	3.79	-4.39	1.23
841	SLU 67	17	156	7179	0.83	-4.38	1.3
841	SLU 68	17	168	7132	-1.55	-4.34	1.35
841	SLU 69	17	138	7254	4.34	-4.45	1.23
841	SLU 70	17	157	7242	1.38	-4.44	1.31
841	SLU 71	17	137	7216	3.93	-4.41	1.22
841	SLU 72	17	156	7204	0.97	-4.4	1.3
841	SLU 73	17	176	7729	-3.07	-4.63	1.44
841	SLU 74	18	146	7851	2.82	-4.74	1.32
841	SLU 75	18	165	7839	-0.14	-4.73	1.4
841	SLU 76	17	177	7792	-2.52	-4.68	1.44
841	SLU 77	18	147	7915	3.37	-4.79	1.32
841	SLU 78	18	166	7903	0.41	-4.79	1.4
841	SLU 79	18	146	7876	2.96	-4.76	1.31
841	SLU 80	18	165	7864	0	-4.75	1.39
841	SLU 81	17	148	8032	1.44	-4.79	1.35
841	SLU 82	17	167	8020	-1.51	-4.78	1.43
841	SLU 83	18	149	8095	1.99	-4.85	1.35
841	SLU 84	18	168	8083	-0.96	-4.84	1.43
841	SLE RA 1	13	102	5277	1.41	-3.2	0.9
841	SLE RA 2	13	123	5264	-1.87	-3.19	0.99
841	SLE RA 3	13	103	5345	2.05	-3.26	0.91
841	SLE RA 4	13	115	5337	0.08	-3.26	0.96
841	SLE RA 5	13	123	5306	-1.51	-3.23	0.99
841	SLE RA 6	13	103	5388	2.42	-3.3	0.91
841	SLE RA 7	13	116	5380	0.45	-3.3	0.97
841	SLE RA 8	13	102	5362	2.14	-3.28	0.91
841	SLE RA 9	13	115	5354	0.17	-3.27	0.96
841	SLE RA 10	13	129	5704	-2.52	-3.42	1.05
841	SLE RA 11	13	109	5786	1.4	-3.5	0.98
841	SLE RA 12	13	121	5778	-0.57	-3.49	1.03
841	SLE RA 13	13	129	5746	-2.15	-3.46	1.06
841	SLE RA 14	13	109	5828	1.77	-3.53	0.98
841	SLE RA 15	13	122	5820	-0.2	-3.53	1.03
841	SLE RA 16	13	108	5802	1.5	-3.51	0.97
841	SLE RA 17	13	121	5794	-0.47	-3.5	1.02
841	SLE RA 18	13	110	5906	0.49	-3.53	0.99
841	SLE RA 19	13	123	5898	-1.48	-3.53	1.05
841	SLE RA 20	13	110	5948	0.85	-3.57	1
841	SLE RA 21	13	123	5940	-1.12	-3.56	1.05
841	SLE FR 1	13	102	5277	1.41	-3.2	0.9
841	SLE FR 2	13	106	5275	0.75	-3.2	0.92
841	SLE FR 3	13	102	5294	1.56	-3.22	0.91
841	SLE FR 4	13	108	5463	0.48	-3.3	0.95
841	SLE FR 5	13	104	5483	1.28	-3.32	0.93
841	SLE FR 6	13	106	5592	0.95	-3.37	0.95
841	SLE QP 1	13	102	5277	1.41	-3.2	0.9
841	SLE QP 2	13	104	5466	1.13	-3.3	0.93
841	SLD 1	728	283	5194	-39.84	1.18	1.09
841	SLD 2	677	295	5214	-39.91	1	2.05
841	SLD 3	718	-109	5487	25.4	0.98	-0.55
841	SLD 4	667	-97	5506	25.32	0.8	0.4
841	SLD 5	251	750	4938	-110.09	-1.62	3.3
841	SLD 6	218	757	4950	-110.14	-1.74	3.93
841	SLD 7	219	-556	5912	107.37	-2.29	-2.18
841	SLD 8	185	-548	5925	107.32	-2.41	-1.55
841	SLD 9	-159	756	5007	-105.06	-4.19	3.42
841	SLD 10	-193	764	5020	-105.1	-4.31	4.04
841	SLD 11	-192	-549	5981	112.41	-4.86	-2.07
841	SLD 12	-226	-542	5994	112.36	-4.98	-1.44
841	SLD 13	-641	305	5426	-23.06	-7.4	1.46
841	SLD 14	-693	317	5445	-23.13	-7.58	2.42
841	SLD 15	-651	-87	5718	42.18	-7.6	-0.18
841	SLD 16	-703	-75	5738	42.11	-7.78	0.77
841	SLV 1	1687	553	4806	-100.12	7.19	1.44
841	SLV 2	1566	581	4852	-100.29	6.77	3.68
841	SLV 3	1664	-424	5538	63.29	6.7	-2.69
841	SLV 4	1543	-397	5584	63.12	6.28	-0.45
841	SLV 5	574	1716	4149	-277.04	0.68	6.93
841	SLV 6	492	1735	4180	-277.16	0.4	8.44
841	SLV 7	495	-1542	6590	267.64	-0.98	-6.84
841	SLV 8	413	-1524	6620	267.53	-1.26	-5.33
841	SLV 9	-388	1732	4311	-265.26	-5.34	7.19
841	SLV 10	-469	1750	4342	-265.38	-5.62	8.7
841	SLV 11	-467	-1526	6752	279.43	-7	-6.58
841	SLV 12	-548	-1508	6783	279.31	-7.28	-5.07
841	SLV 13	-1517	605	5348	-60.85	-12.88	2.31
841	SLV 14	-1638	632	5394	-61.02	-13.3	4.55
841	SLV 15	-1541	-372	6080	102.56	-13.37	-1.82
841	SLV 16	-1662	-345	6126	102.39	-13.79	0.42
841	CRTFP Ux+	0	0	0	0	0	0
841	CRTFP Ux-	0	0	0	0	0	0
841	CRTFP Uy+	0	0	0	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
841	CRTFP Uy-	0	0	0	0	0	0
842	SLU 1	13	103	5148	-0.08	-3.81	0.69
842	SLU 2	13	135	5128	-5.02	-3.79	0.85
842	SLU 3	13	104	5254	0.87	-3.93	0.7
842	SLU 4	13	124	5241	-2.1	-3.92	0.79
842	SLU 5	13	136	5193	-4.48	-3.87	0.85
842	SLU 6	14	105	5319	1.4	-4.01	0.7
842	SLU 7	13	124	5307	-1.56	-3.99	0.79
842	SLU 8	13	104	5279	0.99	-3.96	0.69
842	SLU 9	13	123	5267	-1.97	-3.95	0.78
842	SLU 10	13	144	5799	-6.05	-4.23	0.91
842	SLU 11	14	114	5925	-0.16	-4.37	0.76
842	SLU 12	14	133	5913	-3.12	-4.36	0.85
842	SLU 13	14	145	5865	-5.51	-4.3	0.91
842	SLU 14	14	114	5990	0.37	-4.44	0.76
842	SLU 15	14	134	5978	-2.59	-4.43	0.85
842	SLU 16	14	113	5950	-0.04	-4.4	0.75
842	SLU 17	14	133	5938	-3	-4.39	0.84
842	SLU 18	14	116	6108	-1.55	-4.44	0.78
842	SLU 19	14	135	6095	-4.51	-4.43	0.87
842	SLU 20	14	117	6173	-1.01	-4.51	0.78
842	SLU 21	14	136	6161	-3.98	-4.5	0.87
842	SLU 22	14	115	5963	3.36	-4.4	0.79
842	SLU 23	14	148	5942	-1.57	-4.38	0.95
842	SLU 24	14	117	6068	4.31	-4.52	0.8
842	SLU 25	14	137	6056	1.35	-4.51	0.9
842	SLU 26	14	149	6008	-1.03	-4.46	0.95
842	SLU 27	15	118	6133	4.85	-4.6	0.8
842	SLU 28	15	137	6121	1.89	-4.58	0.89
842	SLU 29	14	117	6093	4.44	-4.55	0.79
842	SLU 30	14	136	6081	1.48	-4.54	0.89
842	SLU 31	14	157	6614	-2.6	-4.82	1.01
842	SLU 32	15	126	6740	3.28	-4.96	0.86
842	SLU 33	15	146	6727	0.32	-4.95	0.96
842	SLU 34	15	158	6679	-2.06	-4.89	1.01
842	SLU 35	15	127	6805	3.82	-5.03	0.86
842	SLU 36	15	147	6793	0.86	-5.02	0.95
842	SLU 37	15	126	6765	3.41	-4.99	0.85
842	SLU 38	15	146	6753	0.45	-4.98	0.95
842	SLU 39	15	129	6922	1.89	-5.03	0.88
842	SLU 40	15	148	6910	-1.07	-5.02	0.97
842	SLU 41	15	129	6987	2.43	-5.1	0.88
842	SLU 42	15	149	6975	-0.53	-5.09	0.97
842	SLU 43	16	129	6414	-1.29	-4.75	0.86
842	SLU 44	16	161	6393	-6.22	-4.73	1.02
842	SLU 45	17	131	6519	-0.34	-4.87	0.87
842	SLU 46	17	150	6507	-3.3	-4.86	0.96
842	SLU 47	17	162	6458	-5.69	-4.81	1.02
842	SLU 48	17	131	6584	0.2	-4.95	0.87
842	SLU 49	17	151	6572	-2.76	-4.94	0.96
842	SLU 50	17	130	6544	-0.21	-4.9	0.86
842	SLU 51	17	150	6532	-3.18	-4.89	0.95
842	SLU 52	17	171	7065	-7.25	-5.17	1.08
842	SLU 53	17	140	7190	-1.37	-5.31	0.93
842	SLU 54	17	159	7178	-4.33	-5.3	1.02
842	SLU 55	17	171	7130	-6.72	-5.25	1.08
842	SLU 56	17	141	7256	-0.83	-5.39	0.93
842	SLU 57	17	160	7243	-3.79	-5.37	1.02
842	SLU 58	17	140	7216	-1.24	-5.34	0.92
842	SLU 59	17	159	7203	-4.2	-5.33	1.01
842	SLU 60	17	142	7373	-2.76	-5.38	0.95
842	SLU 61	17	162	7360	-5.72	-5.37	1.04
842	SLU 62	17	143	7438	-2.22	-5.45	0.95
842	SLU 63	17	162	7426	-5.18	-5.44	1.04
842	SLU 64	17	142	7228	2.16	-5.34	0.96
842	SLU 65	17	174	7207	-2.78	-5.32	1.12
842	SLU 66	18	143	7333	3.11	-5.46	0.97
842	SLU 67	18	163	7321	0.15	-5.45	1.07
842	SLU 68	18	175	7273	-2.24	-5.4	1.12
842	SLU 69	18	144	7399	3.64	-5.54	0.97
842	SLU 70	18	164	7386	0.68	-5.53	1.07
842	SLU 71	18	143	7359	3.23	-5.49	0.96
842	SLU 72	18	163	7346	0.27	-5.48	1.06
842	SLU 73	18	184	7879	-3.81	-5.76	1.18
842	SLU 74	18	153	8005	2.08	-5.9	1.03
842	SLU 75	18	172	7993	-0.88	-5.89	1.13
842	SLU 76	18	184	7944	-3.27	-5.84	1.18
842	SLU 77	19	153	8070	2.61	-5.98	1.03
842	SLU 78	19	173	8058	-0.35	-5.96	1.13
842	SLU 79	18	152	8030	2.2	-5.93	1.02
842	SLU 80	18	172	8018	-0.76	-5.92	1.12
842	SLU 81	18	155	8187	0.69	-5.97	1.05
842	SLU 82	18	175	8175	-2.27	-5.96	1.15
842	SLU 83	18	156	8253	1.23	-6.04	1.05
842	SLU 84	18	175	8240	-1.74	-6.03	1.14
842	SLE RA 1	13	106	5381	0.9	-3.98	0.72
842	SLE RA 2	13	128	5367	-2.39	-3.97	0.82
842	SLE RA 3	13	107	5451	1.53	-4.06	0.72
842	SLE RA 4	13	120	5443	-0.44	-4.05	0.79

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
842	SLE RA 5	13	128	5411	-2.03	-4.02	0.82
842	SLE RA 6	14	108	5495	1.89	-4.11	0.72
842	SLE RA 7	14	121	5487	-0.08	-4.1	0.79
842	SLE RA 8	14	107	5468	1.62	-4.08	0.72
842	SLE RA 9	13	120	5460	-0.36	-4.07	0.78
842	SLE RA 10	13	134	5815	-3.07	-4.26	0.87
842	SLE RA 11	14	114	5899	0.85	-4.35	0.76
842	SLE RA 12	14	127	5891	-1.13	-4.34	0.83
842	SLE RA 13	14	135	5859	-2.72	-4.31	0.86
842	SLE RA 14	14	114	5942	1.21	-4.4	0.76
842	SLE RA 15	14	127	5934	-0.77	-4.39	0.83
842	SLE RA 16	14	113	5916	0.93	-4.37	0.76
842	SLE RA 17	14	126	5908	-1.04	-4.36	0.82
842	SLE RA 18	14	115	6020	-0.08	-4.4	0.78
842	SLE RA 19	14	128	6012	-2.05	-4.39	0.84
842	SLE RA 20	14	116	6064	0.28	-4.45	0.78
842	SLE RA 21	14	129	6056	-1.69	-4.44	0.84
842	SLE FR 1	13	106	5381	0.9	-3.98	0.72
842	SLE FR 2	13	111	5378	0.24	-3.98	0.74
842	SLE FR 3	13	106	5398	1.05	-4	0.72
842	SLE FR 4	13	113	5570	-0.05	-4.1	0.76
842	SLE FR 5	13	109	5590	0.75	-4.13	0.74
842	SLE FR 6	13	111	5701	0.41	-4.19	0.75
842	SLE QP 1	13	106	5381	0.9	-3.98	0.72
842	SLE QP 2	13	109	5573	0.61	-4.11	0.74
842	SLD 1	729	290	5174	-41.18	0.36	0.82
842	SLD 2	677	307	5198	-41.36	0.19	1.98
842	SLD 3	719	-112	5473	24.15	0.07	-1.18
842	SLD 4	667	-95	5497	23.97	-0.1	-0.02
842	SLD 5	252	770	4995	-110.98	-2.3	3.58
842	SLD 6	218	781	5011	-111.1	-2.41	4.35
842	SLD 7	219	-570	5992	106.79	-3.26	-3.08
842	SLD 8	185	-559	6008	106.67	-3.37	-2.31
842	SLD 9	-159	777	5137	-105.45	-4.84	3.78
842	SLD 10	-193	788	5153	-105.57	-4.95	4.55
842	SLD 11	-191	-564	6135	112.31	-5.8	-2.87
842	SLD 12	-225	-552	6151	112.2	-5.91	-2.11
842	SLD 13	-641	313	5648	-22.75	-8.11	1.49
842	SLD 14	-692	330	5673	-22.93	-8.28	2.65
842	SLD 15	-651	-89	5948	42.58	-8.4	-0.51
842	SLD 16	-702	-72	5972	42.4	-8.57	0.66
842	SLV 1	1688	564	4614	-102.56	6.36	1.09
842	SLV 2	1567	604	4671	-102.98	5.96	3.81
842	SLV 3	1664	-440	5364	61.08	5.65	-3.93
842	SLV 4	1543	-399	5421	60.65	5.25	-1.2
842	SLV 5	574	1760	4137	-278.45	0.2	7.94
842	SLV 6	493	1787	4176	-278.73	-0.07	9.77
842	SLV 7	495	-1585	6636	267.01	-2.19	-8.77
842	SLV 8	414	-1558	6675	266.73	-2.46	-6.94
842	SLV 9	-387	1776	4471	-265.51	-5.75	8.41
842	SLV 10	-469	1803	4509	-265.8	-6.02	10.25
842	SLV 11	-466	-1569	6970	279.95	-8.14	-8.3
842	SLV 12	-548	-1542	7008	279.67	-8.41	-6.46
842	SLV 13	-1516	617	5725	-59.44	-13.46	2.67
842	SLV 14	-1638	657	5782	-59.86	-13.86	5.4
842	SLV 15	-1540	-387	6474	104.2	-14.18	-2.34
842	SLV 16	-1661	-346	6532	103.78	-14.58	0.39
842	CRTFP Ux+	0	0	0	0	0	0
842	CRTFP Ux-	0	0	0	0	0	0
842	CRTFP Uy+	0	0	0	0	0	0
842	CRTFP Uy-	0	0	0	0	0	0
843	SLU 1	13	106	5263	-0.58	-4.13	0.44
843	SLU 2	13	139	5242	-5.54	-4.11	0.6
843	SLU 3	13	108	5372	0.36	-4.26	0.44
843	SLU 4	13	128	5360	-2.62	-4.25	0.54
843	SLU 5	13	140	5310	-5.01	-4.19	0.6
843	SLU 6	14	108	5440	0.88	-4.34	0.43
843	SLU 7	13	128	5427	-2.09	-4.33	0.53
843	SLU 8	13	107	5398	0.47	-4.29	0.43
843	SLU 9	13	127	5386	-2.5	-4.27	0.53
843	SLU 10	13	149	5927	-6.62	-4.58	0.62
843	SLU 11	14	117	6057	-0.73	-4.73	0.45
843	SLU 12	14	137	6044	-3.7	-4.72	0.56
843	SLU 13	14	149	5994	-6.1	-4.66	0.62
843	SLU 14	14	118	6124	-0.21	-4.81	0.45
843	SLU 15	14	138	6112	-3.18	-4.8	0.55
843	SLU 16	14	117	6083	-0.62	-4.76	0.44
843	SLU 17	14	137	6070	-3.59	-4.75	0.54
843	SLU 18	13	119	6241	-2.14	-4.81	0.46
843	SLU 19	13	140	6229	-5.11	-4.79	0.56
843	SLU 20	14	120	6309	-1.61	-4.89	0.46
843	SLU 21	14	140	6296	-4.58	-4.87	0.56
843	SLU 22	14	119	6095	2.84	-4.77	0.5
843	SLU 23	14	153	6074	-2.12	-4.75	0.67
843	SLU 24	14	121	6204	3.77	-4.9	0.5
843	SLU 25	14	141	6192	0.8	-4.89	0.6
843	SLU 26	14	153	6142	-1.59	-4.83	0.66
843	SLU 27	15	122	6272	4.3	-4.98	0.49
843	SLU 28	15	142	6259	1.33	-4.97	0.59

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
843	SLU 29	15	120	6231	3.89	-4.93	0.49
843	SLU 30	14	141	6218	0.92	-4.92	0.59
843	SLU 31	14	162	6759	-3.2	-5.22	0.68
843	SLU 32	15	130	6889	2.69	-5.38	0.52
843	SLU 33	15	151	6877	-0.29	-5.36	0.62
843	SLU 34	15	163	6827	-2.68	-5.31	0.68
843	SLU 35	15	131	6957	3.21	-5.46	0.51
843	SLU 36	15	151	6944	0.24	-5.44	0.61
843	SLU 37	15	130	6915	2.8	-5.41	0.5
843	SLU 38	15	150	6903	-0.17	-5.39	0.61
843	SLU 39	15	133	7074	1.28	-5.45	0.52
843	SLU 40	15	153	7061	-1.69	-5.44	0.62
843	SLU 41	15	133	7141	1.81	-5.53	0.52
843	SLU 42	15	154	7128	-1.16	-5.52	0.62
843	SLU 43	16	133	6557	-1.93	-5.14	0.55
843	SLU 44	16	166	6536	-6.88	-5.12	0.71
843	SLU 45	17	135	6666	-0.99	-5.27	0.55
843	SLU 46	17	155	6653	-3.96	-5.26	0.65
843	SLU 47	16	167	6603	-6.36	-5.2	0.71
843	SLU 48	17	135	6733	-0.47	-5.35	0.54
843	SLU 49	17	156	6721	-3.44	-5.34	0.64
843	SLU 50	17	134	6692	-0.88	-5.3	0.54
843	SLU 51	17	154	6679	-3.85	-5.29	0.64
843	SLU 52	17	176	7220	-7.97	-5.6	0.73
843	SLU 53	17	144	7350	-2.08	-5.75	0.56
843	SLU 54	17	164	7338	-5.05	-5.74	0.67
843	SLU 55	17	177	7288	-7.44	-5.68	0.73
843	SLU 56	17	145	7418	-1.55	-5.83	0.56
843	SLU 57	17	165	7405	-4.53	-5.82	0.66
843	SLU 58	17	144	7377	-1.96	-5.78	0.55
843	SLU 59	17	164	7364	-4.94	-5.77	0.65
843	SLU 60	17	147	7535	-3.48	-5.82	0.57
843	SLU 61	17	167	7522	-6.45	-5.81	0.67
843	SLU 62	17	147	7602	-2.96	-5.9	0.57
843	SLU 63	17	167	7590	-5.93	-5.89	0.67
843	SLU 64	17	146	7389	1.49	-5.79	0.61
843	SLU 65	17	180	7368	-3.46	-5.77	0.78
843	SLU 66	18	148	7498	2.43	-5.92	0.61
843	SLU 67	18	168	7485	-0.54	-5.91	0.71
843	SLU 68	18	180	7436	-2.94	-5.85	0.77
843	SLU 69	18	149	7566	2.95	-6	0.6
843	SLU 70	18	169	7553	-0.02	-5.99	0.7
843	SLU 71	18	148	7524	2.54	-5.95	0.6
843	SLU 72	18	168	7511	-0.43	-5.94	0.7
843	SLU 73	18	189	8053	-4.55	-6.24	0.79
843	SLU 74	18	158	8183	1.34	-6.39	0.63
843	SLU 75	18	178	8170	-1.63	-6.38	0.73
843	SLU 76	18	190	8120	-4.02	-6.32	0.79
843	SLU 77	19	158	8250	1.87	-6.47	0.62
843	SLU 78	19	178	8238	-1.11	-6.46	0.72
843	SLU 79	18	157	8209	1.46	-6.42	0.61
843	SLU 80	18	177	8196	-1.52	-6.41	0.72
843	SLU 81	18	160	8367	-0.06	-6.47	0.63
843	SLU 82	18	180	8355	-3.04	-6.45	0.73
843	SLU 83	18	161	8435	0.46	-6.55	0.63
843	SLU 84	18	181	8422	-2.51	-6.53	0.73
843	SLE RA 1	13	110	5501	0.4	-4.31	0.45
843	SLE RA 2	13	132	5487	-2.91	-4.3	0.57
843	SLE RA 3	13	111	5574	1.02	-4.4	0.45
843	SLE RA 4	13	124	5565	-0.96	-4.39	0.52
843	SLE RA 5	13	132	5532	-2.56	-4.35	0.56
843	SLE RA 6	14	111	5619	1.37	-4.45	0.45
843	SLE RA 7	14	125	5610	-0.61	-4.44	0.52
843	SLE RA 8	14	110	5591	1.1	-4.42	0.45
843	SLE RA 9	14	124	5583	-0.88	-4.41	0.51
843	SLE RA 10	13	138	5943	-3.63	-4.61	0.58
843	SLE RA 11	14	117	6030	0.29	-4.71	0.47
843	SLE RA 12	14	131	6022	-1.69	-4.71	0.53
843	SLE RA 13	14	139	5988	-3.28	-4.67	0.57
843	SLE RA 14	14	118	6075	0.65	-4.77	0.46
843	SLE RA 15	14	131	6067	-1.34	-4.76	0.53
843	SLE RA 16	14	117	6047	0.37	-4.73	0.46
843	SLE RA 17	14	130	6039	-1.61	-4.73	0.53
843	SLE RA 18	14	119	6153	-0.64	-4.76	0.47
843	SLE RA 19	14	132	6145	-2.62	-4.75	0.54
843	SLE RA 20	14	119	6198	-0.29	-4.82	0.47
843	SLE RA 21	14	133	6190	-2.27	-4.81	0.53
843	SLE FR 1	13	110	5501	0.4	-4.31	0.45
843	SLE FR 2	13	114	5498	-0.27	-4.31	0.48
843	SLE FR 3	13	110	5519	0.54	-4.33	0.45
843	SLE FR 4	13	117	5694	-0.58	-4.44	0.48
843	SLE FR 5	13	113	5715	0.22	-4.47	0.46
843	SLE FR 6	13	114	5827	-0.12	-4.54	0.46
843	SLE QP 1	13	110	5501	0.4	-4.31	0.45
843	SLE QP 2	13	112	5697	0.08	-4.45	0.46
843	SLD 1	729	295	5172	-42.61	-0.13	0.15
843	SLD 2	677	319	5201	-42.89	-0.28	1.59
843	SLD 3	719	-119	5479	22.94	-0.43	-1.97
843	SLD 4	667	-95	5508	22.65	-0.58	-0.53

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
843	SLD 5	252	791	5067	-112.08	-2.67	3.33
843	SLD 6	218	807	5086	-112.27	-2.77	4.28
843	SLD 7	219	-589	6093	106.4	-3.67	-3.75
843	SLD 8	185	-573	6112	106.21	-3.76	-2.8
843	SLD 9	-159	798	5281	-106.04	-5.13	3.72
843	SLD 10	-193	814	5300	-106.23	-5.22	4.67
843	SLD 11	-191	-582	6307	112.43	-6.12	-3.36
843	SLD 12	-226	-566	6326	112.25	-6.22	-2.41
843	SLD 13	-641	320	5885	-22.48	-8.31	1.45
843	SLD 14	-692	344	5914	-22.77	-8.46	2.89
843	SLD 15	-650	-94	6193	43.06	-8.61	-0.67
843	SLD 16	-702	-70	6222	42.77	-8.76	0.77
843	SLV 1	1688	571	4442	-105.21	5.68	-0.09
843	SLV 2	1566	628	4511	-105.88	5.33	3.3
843	SLV 3	1664	-462	5213	58.97	4.93	-5.43
843	SLV 4	1542	-405	5281	58.29	4.58	-2.04
843	SLV 5	574	1806	4138	-280.38	-0.21	7.76
843	SLV 6	493	1845	4184	-280.83	-0.45	10.04
843	SLV 7	495	-1638	6708	266.87	-2.7	-10.04
843	SLV 8	413	-1599	6754	266.42	-2.93	-7.76
843	SLV 9	-387	1824	4639	-266.25	-5.96	8.67
843	SLV 10	-468	1862	4685	-266.71	-6.2	10.95
843	SLV 11	-466	-1620	7209	281	-8.44	-9.12
843	SLV 12	-548	-1582	7255	280.55	-8.68	-6.84
843	SLV 13	-1516	630	6112	-58.12	-13.47	2.96
843	SLV 14	-1637	687	6180	-58.8	-13.82	6.34
843	SLV 15	-1540	-404	6883	106.05	-14.22	-2.38
843	SLV 16	-1661	-347	6951	105.38	-14.57	1
843	CRTFP Ux+	0	0	0	0	0	0
843	CRTFP Ux-	0	0	0	0	0	0
843	CRTFP Uy+	0	0	0	0	0	0
843	CRTFP Uy-	0	0	0	0	0	0
844	SLU 1	11	98	4903	-0.96	88.35	-1.73
844	SLU 2	11	129	4883	-5.53	87.99	-2.18
844	SLU 3	12	100	5005	-0.11	90.17	-1.77
844	SLU 4	12	118	4993	-2.85	89.95	-2.04
844	SLU 5	11	130	4946	-5.05	89.12	-2.2
844	SLU 6	12	100	5069	0.36	91.3	-1.79
844	SLU 7	12	119	5057	-2.38	91.08	-2.05
844	SLU 8	12	99	5030	-0.02	90.6	-1.77
844	SLU 9	12	118	5018	-2.75	90.39	-2.04
844	SLU 10	12	138	5519	-6.58	99.51	-2.37
844	SLU 11	12	108	5641	-1.16	101.68	-1.96
844	SLU 12	12	127	5630	-3.9	101.47	-2.23
844	SLU 13	12	139	5583	-6.1	100.63	-2.39
844	SLU 14	12	109	5705	-0.69	102.81	-1.98
844	SLU 15	12	128	5693	-3.43	102.6	-2.25
844	SLU 16	12	108	5666	-1.07	102.12	-1.96
844	SLU 17	12	127	5654	-3.8	101.9	-2.23
844	SLU 18	12	110	5811	-2.46	104.8	-2
844	SLU 19	12	129	5800	-5.2	104.58	-2.27
844	SLU 20	12	111	5875	-1.99	105.92	-2.02
844	SLU 21	12	130	5863	-4.73	105.71	-2.29
844	SLU 22	12	110	5678	2.15	102.32	-1.95
844	SLU 23	12	142	5658	-2.41	101.97	-2.4
844	SLU 24	13	112	5780	3	104.14	-1.99
844	SLU 25	13	131	5768	0.27	103.93	-2.26
844	SLU 26	12	142	5721	-1.94	103.09	-2.42
844	SLU 27	13	113	5844	3.48	105.27	-2.01
844	SLU 28	13	131	5832	0.74	105.06	-2.28
844	SLU 29	13	112	5805	3.1	104.58	-1.99
844	SLU 30	13	130	5793	0.36	104.36	-2.26
844	SLU 31	12	150	6294	-3.46	113.48	-2.59
844	SLU 32	13	121	6416	1.95	115.66	-2.18
844	SLU 33	13	140	6405	-0.78	115.44	-2.45
844	SLU 34	13	151	6358	-2.99	114.61	-2.61
844	SLU 35	13	121	6480	2.43	116.78	-2.2
844	SLU 36	13	140	6468	-0.31	116.57	-2.47
844	SLU 37	13	120	6441	2.05	116.09	-2.18
844	SLU 38	13	139	6429	-0.69	115.88	-2.45
844	SLU 39	13	123	6586	0.65	118.77	-2.23
844	SLU 40	13	142	6575	-2.08	118.56	-2.49
844	SLU 41	13	123	6650	1.13	119.9	-2.25
844	SLU 42	13	142	6638	-1.61	119.68	-2.51
844	SLU 43	14	123	6108	-2.32	110.06	-2.17
844	SLU 44	14	155	6088	-6.88	109.71	-2.62
844	SLU 45	15	125	6210	-1.47	111.88	-2.21
844	SLU 46	15	144	6198	-4.21	111.67	-2.48
844	SLU 47	14	155	6152	-6.41	110.83	-2.64
844	SLU 48	15	125	6274	-1	113.01	-2.23
844	SLU 49	15	144	6262	-3.73	112.8	-2.5
844	SLU 50	15	124	6235	-1.37	112.32	-2.21
844	SLU 51	15	143	6223	-4.11	112.1	-2.48
844	SLU 52	15	163	6724	-7.93	121.22	-2.81
844	SLU 53	15	134	6846	-2.52	123.4	-2.4
844	SLU 54	15	152	6835	-5.26	123.18	-2.67
844	SLU 55	15	164	6788	-7.46	122.35	-2.83
844	SLU 56	15	134	6910	-2.04	124.52	-2.42
844	SLU 57	15	153	6898	-4.78	124.31	-2.69

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
844	SLU 58	15	133	6871	-2.42	123.83	-2.4
844	SLU 59	15	152	6859	-5.16	123.62	-2.67
844	SLU 60	15	136	7016	-3.82	126.51	-2.45
844	SLU 61	15	154	7005	-6.56	126.3	-2.72
844	SLU 62	15	136	7080	-3.35	127.64	-2.47
844	SLU 63	15	155	7068	-6.08	127.42	-2.74
844	SLU 64	15	136	6883	0.8	124.04	-2.4
844	SLU 65	15	167	6863	-3.77	123.68	-2.84
844	SLU 66	16	137	6985	1.65	125.86	-2.43
844	SLU 67	16	156	6973	-1.09	125.64	-2.7
844	SLU 68	15	167	6927	-3.29	124.81	-2.86
844	SLU 69	16	138	7049	2.12	126.98	-2.45
844	SLU 70	16	157	7037	-0.62	126.77	-2.72
844	SLU 71	16	137	7010	1.74	126.29	-2.43
844	SLU 72	16	156	6998	-1	126.08	-2.7
844	SLU 73	16	176	7499	-4.82	135.19	-3.03
844	SLU 74	16	146	7621	0.6	137.37	-2.62
844	SLU 75	16	165	7610	-2.14	137.15	-2.89
844	SLU 76	16	176	7563	-4.34	136.32	-3.05
844	SLU 77	16	146	7685	1.07	138.5	-2.64
844	SLU 78	16	165	7673	-1.67	138.28	-2.91
844	SLU 79	16	145	7646	0.69	137.8	-2.63
844	SLU 80	16	164	7634	-2.04	137.59	-2.89
844	SLU 81	16	148	7791	-0.7	140.48	-2.67
844	SLU 82	16	167	7780	-3.44	140.27	-2.94
844	SLU 83	16	149	7855	-0.23	141.61	-2.69
844	SLU 84	16	167	7843	-2.97	141.4	-2.96
844	SLE RA 1	11	102	5124	-0.07	92.34	-1.79
844	SLE RA 2	11	122	5111	-3.12	92.1	-2.09
844	SLE RA 3	12	103	5192	0.49	93.55	-1.82
844	SLE RA 4	12	115	5185	-1.33	93.41	-2
844	SLE RA 5	12	123	5153	-2.8	92.86	-2.11
844	SLE RA 6	12	103	5235	0.81	94.31	-1.83
844	SLE RA 7	12	116	5227	-1.02	94.16	-2.01
844	SLE RA 8	12	102	5209	0.56	93.85	-1.82
844	SLE RA 9	12	115	5201	-1.27	93.7	-2
844	SLE RA 10	12	128	5535	-3.81	99.78	-2.22
844	SLE RA 11	12	108	5617	-0.2	101.23	-1.95
844	SLE RA 12	12	121	5609	-2.03	101.09	-2.13
844	SLE RA 13	12	129	5577	-3.5	100.53	-2.23
844	SLE RA 14	12	109	5659	0.11	101.98	-1.96
844	SLE RA 15	12	121	5651	-1.71	101.84	-2.14
844	SLE RA 16	12	108	5633	-0.14	101.52	-1.95
844	SLE RA 17	12	121	5625	-1.97	101.38	-2.13
844	SLE RA 18	12	110	5730	-1.07	103.31	-1.98
844	SLE RA 19	12	122	5722	-2.9	103.16	-2.16
844	SLE RA 20	12	110	5772	-0.76	104.06	-1.99
844	SLE RA 21	12	123	5764	-2.58	103.92	-2.17
844	SLE FR 1	11	102	5124	-0.07	92.34	-1.79
844	SLE FR 2	11	106	5121	-0.68	92.29	-1.85
844	SLE FR 3	12	102	5141	0.05	92.64	-1.8
844	SLE FR 4	12	108	5303	-0.98	95.58	-1.91
844	SLE FR 5	12	104	5323	-0.25	95.93	-1.85
844	SLE FR 6	12	106	5427	-0.57	97.82	-1.89
844	SLE QP 1	11	102	5124	-0.07	92.34	-1.79
844	SLE QP 2	12	104	5306	-0.37	95.63	-1.85
844	SLD 1	664	269	4722	-40.34	87.81	-5.88
844	SLD 2	617	299	4752	-40.69	88.29	-4.87
844	SLD 3	655	-119	5009	20.01	93.01	-0.38
844	SLD 4	608	-89	5039	19.66	93.48	0.63
844	SLD 5	229	737	4690	-103.83	85.32	-11.57
844	SLD 6	198	757	4710	-104.06	85.63	-10.91
844	SLD 7	200	-557	5647	97.34	102.64	6.74
844	SLD 8	168	-537	5667	97.1	102.95	7.41
844	SLD 9	-145	745	4945	-97.85	88.31	-11.11
844	SLD 10	-176	765	4965	-98.08	88.62	-10.44
844	SLD 11	-175	-548	5902	103.32	105.63	7.21
844	SLD 12	-206	-529	5922	103.08	105.94	7.87
844	SLD 13	-585	297	5572	-20.4	97.78	-4.33
844	SLD 14	-632	327	5602	-20.76	98.25	-3.32
844	SLD 15	-594	-91	5859	39.95	102.98	1.17
844	SLD 16	-641	-61	5889	39.59	103.45	2.18
844	SLV 1	1539	521	3917	-98.87	76.91	-11.69
844	SLV 2	1428	591	3986	-99.7	78.01	-9.32
844	SLV 3	1517	-448	4636	52.31	89.93	1.99
844	SLV 4	1406	-378	4706	51.47	91.03	4.36
844	SLV 5	523	1686	3785	-259.05	70.06	-25.99
844	SLV 6	449	1733	3832	-259.61	70.81	-24.4
844	SLV 7	451	-1544	6182	244.87	113.46	19.61
844	SLV 8	376	-1497	6229	244.31	114.2	21.21
844	SLV 9	-353	1705	4382	-245.05	77.06	-24.91
844	SLV 10	-428	1752	4429	-245.61	77.8	-23.31
844	SLV 11	-426	-1525	6779	258.86	120.46	20.7
844	SLV 12	-500	-1477	6826	258.3	121.2	22.3
844	SLV 13	-1383	586	5906	-52.22	100.23	-8.06
844	SLV 14	-1494	656	5976	-53.05	101.33	-5.69
844	SLV 15	-1404	-383	6625	98.96	113.25	5.62
844	SLV 16	-1516	-313	6695	98.12	114.35	7.99
844	CRTFP Ux+	0	0	0	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
844	CRTFP Ux-	0	0	0	0	0	0
844	CRTFP Uy+	0	0	0	0	0	0
844	CRTFP Uy-	0	0	0	0	0	0
846	SLU 1	19	176	8962	-109.35	369.31	-8.1
846	SLU 2	19	233	8927	-112.48	367.65	-10.48
846	SLU 3	19	178	9151	-110.99	376.8	-8.24
846	SLU 4	19	213	9130	-112.86	375.8	-9.67
846	SLU 5	19	234	9045	-113.53	372.3	-10.54
846	SLU 6	20	179	9268	-112.04	381.45	-8.3
846	SLU 7	20	214	9247	-113.92	380.46	-9.73
846	SLU 8	20	177	9196	-111.46	378.61	-8.22
846	SLU 9	20	212	9175	-113.34	377.62	-9.65
846	SLU 10	19	248	10088	-127.35	416.23	-11.3
846	SLU 11	20	194	10312	-125.86	425.38	-9.06
846	SLU 12	20	228	10291	-127.73	424.39	-10.5
846	SLU 13	20	249	10205	-128.4	420.89	-11.36
846	SLU 14	20	194	10429	-126.91	430.04	-9.12
846	SLU 15	20	229	10408	-128.79	429.04	-10.56
846	SLU 16	20	193	10357	-126.33	427.2	-9.04
846	SLU 17	20	227	10336	-128.21	426.21	-10.47
846	SLU 18	19	197	10620	-130.6	438.71	-9.27
846	SLU 19	19	232	10599	-132.47	437.72	-10.7
846	SLU 20	20	198	10737	-131.65	443.37	-9.33
846	SLU 21	20	233	10716	-133.52	442.37	-10.76
846	SLU 22	20	198	10378	-124.07	427.84	-9.15
846	SLU 23	20	255	10343	-127.2	426.18	-11.53
846	SLU 24	21	200	10567	-125.71	435.33	-9.29
846	SLU 25	21	235	10546	-127.58	434.33	-10.72
846	SLU 26	21	256	10460	-128.25	430.83	-11.59
846	SLU 27	22	201	10684	-126.76	439.98	-9.35
846	SLU 28	22	236	10663	-128.64	438.99	-10.78
846	SLU 29	21	199	10612	-126.18	437.14	-9.27
846	SLU 30	21	234	10591	-128.06	436.15	-10.7
846	SLU 31	21	270	11504	-142.07	474.76	-12.35
846	SLU 32	22	216	11728	-140.58	483.91	-10.12
846	SLU 33	21	250	11707	-142.45	482.92	-11.55
846	SLU 34	21	271	11621	-143.12	479.42	-12.41
846	SLU 35	22	216	11845	-141.63	488.57	-10.18
846	SLU 36	22	251	11824	-143.51	487.57	-11.61
846	SLU 37	22	215	11773	-141.05	485.73	-10.09
846	SLU 38	22	249	11752	-142.93	484.74	-11.52
846	SLU 39	21	219	12036	-145.32	497.24	-10.32
846	SLU 40	21	254	12015	-147.19	496.25	-11.75
846	SLU 41	22	220	12153	-146.37	501.9	-10.38
846	SLU 42	22	255	12132	-148.24	500.9	-11.81
846	SLU 43	24	221	11166	-137.11	460.03	-10.17
846	SLU 44	24	278	11131	-140.24	458.37	-12.55
846	SLU 45	25	224	11355	-138.75	467.52	-10.31
846	SLU 46	24	258	11334	-140.62	466.53	-11.74
846	SLU 47	24	279	11248	-141.29	463.03	-12.61
846	SLU 48	25	224	11472	-139.8	472.17	-10.37
846	SLU 49	25	259	11451	-141.68	471.18	-11.8
846	SLU 50	25	223	11400	-139.22	469.34	-10.29
846	SLU 51	25	257	11379	-141.1	468.34	-11.72
846	SLU 52	24	293	12291	-155.11	506.96	-13.37
846	SLU 53	25	239	12515	-153.62	516.11	-11.13
846	SLU 54	25	273	12494	-155.49	515.11	-12.56
846	SLU 55	25	294	12408	-156.16	511.61	-13.43
846	SLU 56	25	240	12632	-154.67	520.76	-11.19
846	SLU 57	25	274	12611	-156.55	519.77	-12.62
846	SLU 58	25	238	12560	-154.09	517.92	-11.11
846	SLU 59	25	272	12539	-155.97	516.93	-12.54
846	SLU 60	24	242	12823	-158.36	529.44	-11.34
846	SLU 61	24	277	12802	-160.23	528.44	-12.77
846	SLU 62	25	243	12940	-159.41	534.09	-11.4
846	SLU 63	25	278	12919	-161.28	533.1	-12.83
846	SLU 64	25	243	12581	-151.83	518.56	-11.22
846	SLU 65	25	300	12547	-154.96	516.9	-13.6
846	SLU 66	26	246	12770	-153.47	526.05	-11.36
846	SLU 67	26	280	12750	-155.34	525.06	-12.79
846	SLU 68	26	301	12664	-156.01	521.56	-13.66
846	SLU 69	27	246	12888	-154.52	530.7	-11.42
846	SLU 70	27	281	12867	-156.4	529.71	-12.85
846	SLU 71	27	245	12816	-153.94	527.87	-11.34
846	SLU 72	26	279	12795	-155.82	526.87	-12.77
846	SLU 73	26	315	13707	-169.83	565.49	-14.42
846	SLU 74	27	261	13931	-168.34	574.64	-12.18
846	SLU 75	27	295	13910	-170.21	573.64	-13.62
846	SLU 76	26	316	13824	-170.88	570.14	-14.48
846	SLU 77	27	262	14048	-169.39	579.29	-12.24
846	SLU 78	27	296	14027	-171.27	578.3	-13.68
846	SLU 79	27	260	13976	-168.81	576.45	-12.16
846	SLU 80	27	294	13955	-170.69	575.46	-13.59
846	SLU 81	26	264	14239	-173.08	587.97	-12.39
846	SLU 82	26	299	14218	-174.95	586.97	-13.82
846	SLU 83	27	265	14356	-174.13	592.62	-12.45
846	SLU 84	27	300	14335	-176	591.63	-13.88
846	SLE RA 1	19	182	9367	-113.56	386.03	-8.4
846	SLE RA 2	19	220	9344	-115.64	384.92	-9.99

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
846	SLE RA 3	20	184	9493	-114.65	391.02	-8.5
846	SLE RA 4	20	207	9479	-115.9	390.36	-9.45
846	SLE RA 5	20	221	9422	-116.35	388.03	-10.03
846	SLE RA 6	20	184	9571	-115.35	394.13	-8.54
846	SLE RA 7	20	207	9557	-116.6	393.46	-9.49
846	SLE RA 8	20	183	9523	-114.97	392.23	-8.48
846	SLE RA 9	20	206	9509	-116.22	391.57	-9.43
846	SLE RA 10	19	230	10117	-125.55	417.31	-10.54
846	SLE RA 11	20	194	10266	-124.56	423.41	-9.04
846	SLE RA 12	20	217	10253	-125.81	422.75	-10
846	SLE RA 13	20	231	10195	-126.26	420.42	-10.58
846	SLE RA 14	20	194	10344	-125.27	426.52	-9.08
846	SLE RA 15	20	217	10331	-126.51	425.85	-10.04
846	SLE RA 16	20	193	10296	-124.88	424.62	-9.03
846	SLE RA 17	20	216	10283	-126.13	423.96	-9.98
846	SLE RA 18	20	196	10472	-127.72	432.3	-9.18
846	SLE RA 19	20	219	10458	-128.97	431.64	-10.13
846	SLE RA 20	20	197	10550	-128.42	435.4	-9.22
846	SLE RA 21	20	220	10536	-129.67	434.74	-10.17
846	SLE FR 1	19	182	9367	-113.56	386.03	-8.4
846	SLE FR 2	19	190	9362	-113.98	385.81	-8.72
846	SLE FR 3	19	182	9398	-113.84	387.27	-8.41
846	SLE FR 4	19	194	9694	-118.22	399.69	-8.95
846	SLE FR 5	19	186	9730	-118.09	401.15	-8.65
846	SLE FR 6	19	189	9919	-120.64	409.16	-8.79
846	SLE QP 1	19	182	9367	-113.56	386.03	-8.4
846	SLE QP 2	19	186	9698	-117.81	399.91	-8.63
846	SLD 1	1191	475	8487	-134.15	389	-10.71
846	SLD 2	1106	545	8544	-135.15	390.93	-11.35
846	SLD 3	1175	-239	9000	-93.47	412.67	18.73
846	SLD 4	1090	-169	9057	-94.48	414.6	18.09
846	SLD 5	410	1342	8547	-184.22	360.39	-53.79
846	SLD 6	355	1388	8585	-184.88	361.66	-54.21
846	SLD 7	357	-1036	10256	-48.64	439.3	44.34
846	SLD 8	301	-990	10294	-49.3	440.57	43.92
846	SLD 9	-262	1362	9103	-186.32	359.25	-61.18
846	SLD 10	-318	1408	9140	-186.98	360.52	-61.61
846	SLD 11	-316	-1016	10812	-50.73	438.16	36.95
846	SLD 12	-372	-970	10850	-51.4	439.44	36.52
846	SLD 13	-1052	541	10340	-141.14	385.22	-35.35
846	SLD 14	-1136	611	10397	-142.15	387.15	-35.99
846	SLD 15	-1068	-173	10853	-100.46	408.9	-5.91
846	SLD 16	-1152	-103	10910	-101.47	410.82	-6.56
846	SLV 1	2762	917	6821	-159.38	372.39	-15.78
846	SLV 2	2563	1082	6956	-161.75	376.92	-17.28
846	SLV 3	2723	-864	8106	-57.5	431.68	57.68
846	SLV 4	2524	-700	8240	-59.87	436.21	56.17
846	SLV 5	938	3077	6862	-284.35	300.88	-121.9
846	SLV 6	804	3188	6953	-285.95	303.93	-122.91
846	SLV 7	809	-2862	11143	55.25	498.52	122.94
846	SLV 8	675	-2751	11234	53.65	501.57	121.93
846	SLV 9	-636	3123	8163	-289.27	298.25	-139.2
846	SLV 10	-770	3234	8253	-290.86	301.3	-140.21
846	SLV 11	-766	-2815	12444	50.33	495.89	105.65
846	SLV 12	-899	-2705	12535	48.74	498.94	104.63
846	SLV 13	-2485	1072	11157	-175.75	363.61	-73.44
846	SLV 14	-2684	1237	11291	-178.12	368.14	-74.94
846	SLV 15	-2524	-710	12441	-73.87	422.9	0.02
846	SLV 16	-2723	-545	12576	-76.24	427.43	-1.49
846	CRTFP Ux+	0	0	0	0	0	0
846	CRTFP Ux-	0	0	0	0	0	0
846	CRTFP Uy+	0	0	0	0	0	0
846	CRTFP Uy-	0	0	0	0	0	0
849	SLU 1	60	20	3715	-2.71	673.63	-7.03
849	SLU 2	58	44	3671	-3.04	670.51	-15.45
849	SLU 3	62	20	3808	-2.71	688.22	-7.19
849	SLU 4	61	35	3782	-2.91	686.35	-12.25
849	SLU 5	59	45	3733	-3.03	680.09	-15.74
849	SLU 6	63	21	3870	-2.7	697.8	-7.48
849	SLU 7	62	35	3844	-2.89	695.93	-12.54
849	SLU 8	63	21	3839	-2.69	692.79	-7.61
849	SLU 9	62	36	3813	-2.89	690.91	-12.66
849	SLU 10	62	46	4108	-3.42	744.6	-16.34
849	SLU 11	66	23	4245	-3.09	762.31	-8.08
849	SLU 12	65	37	4219	-3.29	760.44	-13.14
849	SLU 13	64	47	4170	-3.41	754.18	-16.63
849	SLU 14	67	23	4307	-3.08	771.89	-8.37
849	SLU 15	66	38	4281	-3.28	770.02	-13.43
849	SLU 16	67	24	4275	-3.07	766.88	-8.5
849	SLU 17	66	38	4250	-3.27	765.01	-13.55
849	SLU 18	66	23	4338	-3.26	779.48	-8.3
849	SLU 19	65	38	4313	-3.45	777.6	-13.35
849	SLU 20	67	24	4401	-3.24	789.06	-8.59
849	SLU 21	66	38	4375	-3.44	787.18	-13.64
849	SLU 22	67	19	4280	-2.99	766.94	-6.9
849	SLU 23	65	43	4237	-3.32	763.81	-15.32
849	SLU 24	69	20	4374	-2.99	781.53	-7.07
849	SLU 25	68	34	4348	-3.19	779.66	-12.12
849	SLU 26	67	44	4299	-3.31	773.4	-15.61

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
849	SLU 27	71	20	4436	-2.97	791.11	-7.36
849	SLU 28	69	35	4410	-3.17	789.24	-12.41
849	SLU 29	70	21	4405	-2.97	786.1	-7.48
849	SLU 30	69	35	4379	-3.16	784.22	-12.54
849	SLU 31	69	46	4674	-3.7	837.91	-16.21
849	SLU 32	73	22	4811	-3.37	855.62	-7.96
849	SLU 33	72	37	4785	-3.57	853.75	-13.01
849	SLU 34	71	47	4736	-3.69	847.49	-16.5
849	SLU 35	75	23	4873	-3.36	865.2	-8.25
849	SLU 36	74	37	4847	-3.56	863.33	-13.3
849	SLU 37	74	23	4841	-3.35	860.19	-8.37
849	SLU 38	73	38	4815	-3.55	858.32	-13.43
849	SLU 39	73	23	4904	-3.53	872.79	-8.17
849	SLU 40	72	37	4878	-3.73	870.91	-13.23
849	SLU 41	75	24	4966	-3.52	882.37	-8.46
849	SLU 42	73	38	4941	-3.72	880.49	-13.52
849	SLU 43	75	26	4635	-3.43	843.72	-9.18
849	SLU 44	73	50	4592	-3.76	840.6	-17.6
849	SLU 45	77	26	4729	-3.42	858.31	-9.34
849	SLU 46	76	41	4703	-3.62	856.44	-14.4
849	SLU 47	75	51	4654	-3.75	850.18	-17.89
849	SLU 48	79	27	4791	-3.41	867.9	-9.63
849	SLU 49	77	41	4765	-3.61	866.02	-14.69
849	SLU 50	78	27	4759	-3.4	862.88	-9.76
849	SLU 51	77	42	4733	-3.6	861.01	-14.81
849	SLU 52	78	52	5028	-4.14	914.7	-18.49
849	SLU 53	81	29	5165	-3.81	932.41	-10.23
849	SLU 54	80	43	5139	-4.01	930.54	-15.29
849	SLU 55	79	53	5091	-4.13	924.28	-18.78
849	SLU 56	83	29	5227	-3.79	941.99	-10.53
849	SLU 57	82	44	5202	-3.99	940.12	-15.58
849	SLU 58	82	30	5196	-3.79	936.98	-10.65
849	SLU 59	81	44	5170	-3.99	935.1	-15.7
849	SLU 60	81	29	5259	-3.97	949.57	-10.45
849	SLU 61	80	44	5233	-4.17	947.7	-15.5
849	SLU 62	83	30	5321	-3.96	959.15	-10.74
849	SLU 63	82	44	5295	-4.16	957.28	-15.79
849	SLU 64	83	25	5201	-3.71	937.03	-9.05
849	SLU 65	81	49	5158	-4.04	933.91	-17.47
849	SLU 66	85	26	5294	-3.7	951.62	-9.22
849	SLU 67	83	40	5268	-3.9	949.75	-14.27
849	SLU 68	82	50	5220	-4.03	943.49	-17.76
849	SLU 69	86	26	5356	-3.69	961.2	-9.51
849	SLU 70	85	41	5331	-3.89	959.33	-14.56
849	SLU 71	85	27	5325	-3.68	956.19	-9.63
849	SLU 72	84	41	5299	-3.88	954.32	-14.69
849	SLU 73	85	52	5594	-4.42	1008	-18.36
849	SLU 74	89	28	5731	-4.09	1025.72	-10.11
849	SLU 75	88	43	5705	-4.28	1023.85	-15.16
849	SLU 76	86	53	5656	-4.41	1017.59	-18.66
849	SLU 77	90	29	5793	-4.07	1035.3	-10.4
849	SLU 78	89	43	5767	-4.27	1033.43	-15.45
849	SLU 79	90	29	5762	-4.07	1030.29	-10.52
849	SLU 80	88	44	5736	-4.26	1028.41	-15.58
849	SLU 81	89	29	5825	-4.25	1042.88	-10.32
849	SLU 82	87	43	5799	-4.45	1041.01	-15.38
849	SLU 83	90	30	5887	-4.24	1052.46	-10.62
849	SLU 84	89	44	5861	-4.44	1050.59	-15.67
849	SLE RA 1	62	20	3876	-2.79	700.29	-6.99
849	SLE RA 2	61	36	3847	-3.01	698.21	-12.61
849	SLE RA 3	63	20	3939	-2.79	710.01	-7.1
849	SLE RA 4	62	29	3921	-2.92	708.77	-10.47
849	SLE RA 5	62	36	3889	-3	704.59	-12.8
849	SLE RA 6	64	20	3980	-2.78	716.4	-7.3
849	SLE RA 7	63	30	3963	-2.91	715.15	-10.66
849	SLE RA 8	64	21	3959	-2.77	713.06	-7.38
849	SLE RA 9	63	30	3942	-2.91	711.81	-10.75
849	SLE RA 10	63	37	4139	-3.27	747.6	-13.2
849	SLE RA 11	66	21	4230	-3.04	759.41	-7.7
849	SLE RA 12	65	31	4213	-3.18	758.16	-11.06
849	SLE RA 13	64	38	4180	-3.26	753.99	-13.39
849	SLE RA 14	67	22	4271	-3.03	765.8	-7.89
849	SLE RA 15	66	32	4254	-3.17	764.55	-11.26
849	SLE RA 16	67	22	4250	-3.03	762.46	-7.97
849	SLE RA 17	66	32	4233	-3.16	761.21	-11.34
849	SLE RA 18	66	22	4292	-3.15	770.85	-7.84
849	SLE RA 19	65	31	4275	-3.29	769.6	-11.21
849	SLE RA 20	67	22	4334	-3.15	777.24	-8.03
849	SLE RA 21	66	32	4316	-3.28	775.99	-11.4
849	SLE FR 1	62	20	3876	-2.79	700.29	-6.99
849	SLE FR 2	62	23	3870	-2.83	699.87	-8.11
849	SLE FR 3	62	20	3893	-2.79	702.84	-7.07
849	SLE FR 4	63	23	3995	-2.94	721.04	-8.37
849	SLE FR 5	63	20	4018	-2.9	724.01	-7.32
849	SLE FR 6	64	21	4084	-2.97	735.57	-7.42
849	SLE QP 1	62	20	3876	-2.79	700.29	-6.99
849	SLE QP 2	63	20	4001	-2.9	721.46	-7.25
849	SLD 1	432	129	2622	-4.04	521.04	-45.57
849	SLD 2	391	262	2561	-4.49	516.55	-91.64

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
849	SLD 3	460	-152	3217	0.4	565.82	52.7
849	SLD 4	418	-20	3156	-0.05	561.33	6.63
849	SLD 5	139	456	2696	-9.9	594.23	-159.5
849	SLD 6	112	543	2655	-10.19	591.27	-189.89
849	SLD 7	231	-482	4679	4.9	743.48	168.07
849	SLD 8	204	-395	4639	4.61	740.52	137.67
849	SLD 9	-78	435	3363	-10.41	702.39	-152.16
849	SLD 10	-105	522	3323	-10.7	699.43	-182.56
849	SLD 11	14	-503	5347	4.39	851.64	175.4
849	SLD 12	-13	-415	5306	4.1	848.68	145.01
849	SLD 13	-292	60	4846	-5.75	881.58	-21.12
849	SLD 14	-333	192	4785	-6.2	877.09	-67.19
849	SLD 15	-264	-221	5441	-1.31	926.36	77.15
849	SLD 16	-306	-89	5380	-1.76	921.87	31.08
849	SLV 1	924	298	724	-5.94	248.69	-104.54
849	SLV 2	827	609	581	-6.99	238.14	-212.83
849	SLV 3	994	-405	2217	5.19	361.05	140.92
849	SLV 4	897	-94	2074	4.15	350.5	32.63
849	SLV 5	234	1111	779	-20.51	411.19	-388.51
849	SLV 6	168	1321	683	-21.21	404.09	-461.42
849	SLV 7	466	-1231	5758	16.61	785.71	429.7
849	SLV 8	401	-1022	5661	15.91	778.61	356.79
849	SLV 9	-275	1062	2341	-21.71	664.31	-371.28
849	SLV 10	-340	1272	2244	-22.41	657.2	-444.19
849	SLV 11	-42	-1280	7319	15.41	1038.83	446.93
849	SLV 12	-107	-1071	7222	14.71	1031.72	374.02
849	SLV 13	-770	135	5928	-9.95	1092.42	-47.12
849	SLV 14	-868	446	5785	-10.99	1081.86	-155.41
849	SLV 15	-701	-568	7421	1.19	1204.77	198.34
849	SLV 16	-798	-257	7278	0.15	1194.22	90.05
849	CRTFP Ux+	0	0	0	0	0	0
849	CRTFP Ux-	0	0	0	0	0	0
849	CRTFP Uy+	0	0	0	0	0	0
849	CRTFP Uy-	0	0	0	0	0	0
863	SLU 1	119	42	6420	1.41	23.42	-2.13
863	SLU 2	114	73	6344	0.92	21.93	-1.96
863	SLU 3	124	42	6586	1.54	24.43	-2.24
863	SLU 4	121	61	6540	1.25	23.54	-2.13
863	SLU 5	118	73	6454	1.01	22.46	-2.04
863	SLU 6	127	42	6696	1.63	24.97	-2.32
863	SLU 7	124	61	6650	1.34	24.08	-2.22
863	SLU 8	126	42	6640	1.59	24.49	-2.3
863	SLU 9	123	61	6594	1.29	23.6	-2.19
863	SLU 10	124	80	7156	1.06	26.34	-2.24
863	SLU 11	133	49	7399	1.69	28.84	-2.52
863	SLU 12	130	68	7353	1.39	27.95	-2.41
863	SLU 13	127	80	7266	1.15	26.87	-2.32
863	SLU 14	136	49	7509	1.78	29.38	-2.6
863	SLU 15	133	67	7463	1.48	28.48	-2.5
863	SLU 16	135	48	7453	1.74	28.9	-2.58
863	SLU 17	132	67	7407	1.44	28	-2.47
863	SLU 18	132	51	7581	1.62	29.71	-2.54
863	SLU 19	129	70	7535	1.32	28.82	-2.43
863	SLU 20	135	51	7691	1.71	30.25	-2.62
863	SLU 21	133	70	7645	1.41	29.36	-2.51
863	SLU 22	136	47	7463	1.9	29.52	-2.51
863	SLU 23	131	78	7386	1.41	28.04	-2.34
863	SLU 24	141	47	7629	2.04	30.54	-2.62
863	SLU 25	138	66	7583	1.74	29.65	-2.51
863	SLU 26	135	78	7496	1.5	28.57	-2.42
863	SLU 27	144	47	7739	2.13	31.08	-2.7
863	SLU 28	141	66	7693	1.83	30.18	-2.59
863	SLU 29	143	47	7683	2.08	30.6	-2.68
863	SLU 30	140	66	7637	1.79	29.7	-2.57
863	SLU 31	140	85	8198	1.56	32.44	-2.62
863	SLU 32	150	54	8441	2.18	34.95	-2.9
863	SLU 33	147	73	8395	1.88	34.05	-2.79
863	SLU 34	144	85	8309	1.65	32.98	-2.7
863	SLU 35	153	54	8551	2.27	35.48	-2.98
863	SLU 36	150	73	8505	1.98	34.59	-2.88
863	SLU 37	152	53	8495	2.23	35.01	-2.96
863	SLU 38	149	72	8449	1.93	34.11	-2.85
863	SLU 39	149	56	8623	2.11	35.82	-2.92
863	SLU 40	146	75	8577	1.82	34.93	-2.81
863	SLU 41	152	56	8733	2.2	36.36	-3
863	SLU 42	150	75	8687	1.91	35.46	-2.89
863	SLU 43	149	53	7989	1.66	28.35	-2.64
863	SLU 44	144	84	7912	1.17	26.86	-2.47
863	SLU 45	154	53	8155	1.8	29.36	-2.75
863	SLU 46	151	72	8109	1.5	28.47	-2.64
863	SLU 47	148	84	8022	1.26	27.4	-2.55
863	SLU 48	157	53	8265	1.89	29.9	-2.83
863	SLU 49	154	72	8219	1.59	29.01	-2.73
863	SLU 50	156	53	8209	1.84	29.42	-2.81
863	SLU 51	153	72	8163	1.55	28.53	-2.7
863	SLU 52	154	91	8725	1.32	31.27	-2.75
863	SLU 53	163	59	8967	1.94	33.77	-3.03
863	SLU 54	160	78	8921	1.65	32.88	-2.92
863	SLU 55	157	91	8835	1.41	31.8	-2.83

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
863	SLU 56	166	59	9077	2.03	34.31	-3.11
863	SLU 57	163	78	9031	1.74	33.41	-3.01
863	SLU 58	165	59	9021	1.99	33.83	-3.09
863	SLU 59	162	78	8976	1.69	32.94	-2.98
863	SLU 60	162	62	9149	1.87	34.64	-3.05
863	SLU 61	159	81	9104	1.58	33.75	-2.94
863	SLU 62	165	62	9260	1.96	35.18	-3.13
863	SLU 63	163	81	9214	1.67	34.29	-3.02
863	SLU 64	166	58	9031	2.16	34.46	-3.02
863	SLU 65	161	89	8955	1.66	32.97	-2.85
863	SLU 66	171	58	9197	2.29	35.47	-3.13
863	SLU 67	168	77	9151	1.99	34.58	-3.02
863	SLU 68	165	89	9065	1.75	33.5	-2.93
863	SLU 69	174	58	9307	2.38	36.01	-3.21
863	SLU 70	171	77	9261	2.08	35.11	-3.1
863	SLU 71	173	58	9251	2.34	35.53	-3.19
863	SLU 72	170	77	9206	2.04	34.64	-3.08
863	SLU 73	170	96	9767	1.81	37.37	-3.13
863	SLU 74	180	64	10010	2.44	39.88	-3.41
863	SLU 75	177	83	9964	2.14	38.99	-3.3
863	SLU 76	174	96	9877	1.9	37.91	-3.21
863	SLU 77	183	64	10120	2.53	40.42	-3.49
863	SLU 78	180	83	10074	2.23	39.52	-3.39
863	SLU 79	182	64	10064	2.48	39.94	-3.47
863	SLU 80	179	83	10018	2.19	39.04	-3.36
863	SLU 81	179	67	10192	2.37	40.75	-3.43
863	SLU 82	176	86	10146	2.07	39.86	-3.32
863	SLU 83	182	67	10302	2.46	41.29	-3.51
863	SLU 84	180	86	10256	2.16	40.4	-3.4
863	SLE RA 1	124	43	6718	1.55	25.16	-2.24
863	SLE RA 2	121	64	6667	1.22	24.17	-2.12
863	SLE RA 3	127	44	6829	1.64	25.84	-2.31
863	SLE RA 4	125	56	6798	1.44	25.24	-2.24
863	SLE RA 5	123	64	6740	1.28	24.53	-2.18
863	SLE RA 6	129	43	6902	1.7	26.2	-2.37
863	SLE RA 7	127	56	6872	1.5	25.6	-2.3
863	SLE RA 8	128	43	6865	1.67	25.88	-2.35
863	SLE RA 9	127	56	6834	1.47	25.28	-2.28
863	SLE RA 10	127	69	7209	1.32	27.11	-2.31
863	SLE RA 11	133	48	7370	1.74	28.78	-2.5
863	SLE RA 12	131	60	7340	1.54	28.18	-2.43
863	SLE RA 13	129	69	7282	1.38	27.47	-2.37
863	SLE RA 14	135	48	7444	1.8	29.14	-2.56
863	SLE RA 15	133	60	7413	1.6	28.54	-2.48
863	SLE RA 16	134	48	7406	1.77	28.82	-2.54
863	SLE RA 17	133	60	7376	1.57	28.22	-2.47
863	SLE RA 18	133	49	7492	1.69	29.36	-2.51
863	SLE RA 19	131	62	7461	1.49	28.76	-2.44
863	SLE RA 20	135	49	7565	1.75	29.72	-2.57
863	SLE RA 21	133	62	7535	1.55	29.12	-2.5
863	SLE FR 1	124	43	6718	1.55	25.16	-2.24
863	SLE FR 2	123	48	6708	1.48	24.96	-2.22
863	SLE FR 3	125	43	6747	1.57	25.31	-2.26
863	SLE FR 4	126	49	6940	1.53	26.22	-2.3
863	SLE FR 5	128	45	6980	1.62	26.56	-2.35
863	SLE FR 6	128	46	7105	1.62	27.26	-2.38
863	SLE QP 1	124	43	6718	1.55	25.16	-2.24
863	SLE QP 2	127	45	6950	1.59	26.42	-2.32
863	SLD 1	706	160	5613	-2.15	9.65	-3.74
863	SLD 2	638	265	5548	-2.63	12.17	-1.24
863	SLD 3	773	-220	6678	4.41	29.4	-6.29
863	SLD 4	706	-115	6612	3.92	31.92	-3.79
863	SLD 5	211	637	4947	-9.39	-9.01	0.66
863	SLD 6	166	706	4904	-9.7	-7.35	2.31
863	SLD 7	435	-629	8494	12.47	56.81	-7.82
863	SLD 8	390	-560	8451	12.15	58.47	-6.17
863	SLD 9	-137	651	5449	-8.96	-5.63	1.52
863	SLD 10	-182	720	5406	-9.28	-3.96	3.17
863	SLD 11	87	-616	8997	12.89	60.19	-6.95
863	SLD 12	43	-547	8954	12.57	61.85	-5.3
863	SLD 13	-452	206	7288	-0.74	20.93	-0.86
863	SLD 14	-520	310	7223	-1.22	23.45	1.64
863	SLD 15	-385	-174	8352	5.82	40.67	-3.4
863	SLD 16	-453	-70	8287	5.33	43.19	-0.9
863	SLV 1	1477	343	3733	-7.71	-14.43	-5.43
863	SLV 2	1317	589	3579	-8.84	-8.5	0.45
863	SLV 3	1647	-606	6403	8.73	34.92	-11.85
863	SLV 4	1487	-360	6249	7.6	40.85	-5.97
863	SLV 5	304	1529	1964	-25.91	-61.79	5.38
863	SLV 6	196	1694	1860	-26.68	-57.8	9.34
863	SLV 7	870	-1636	10864	28.87	102.71	-16.01
863	SLV 8	762	-1471	10761	28.11	106.7	-12.06
863	SLV 9	-509	1561	3139	-24.93	-53.86	7.41
863	SLV 10	-617	1726	3036	-25.69	-49.87	11.37
863	SLV 11	57	-1604	12040	29.86	110.64	-13.99
863	SLV 12	-51	-1438	11937	29.1	114.63	-10.03
863	SLV 13	-1234	451	7651	-4.41	12	1.33
863	SLV 14	-1393	697	7498	-5.54	17.92	7.2
863	SLV 15	-1064	-499	10321	12.03	61.35	-5.09

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
863	SLV 16	-1223	-253	10168	10.89	67.27	0.78
863	CRTFP Ux+	0	0	0	0	0	0
863	CRTFP Ux-	0	0	0	0	0	0
863	CRTFP Uy+	0	0	0	0	0	0
863	CRTFP Uy-	0	0	0	0	0	0
865	SLU 1	-42	43	2977	-1.25	-350.59	10.85
865	SLU 2	-41	64	2943	-1.46	-348.53	16.17
865	SLU 3	-43	43	3047	-1.25	-358.02	10.9
865	SLU 4	-43	56	3026	-1.37	-356.78	14.09
865	SLU 5	-42	65	2987	-1.45	-353.18	16.2
865	SLU 6	-44	44	3091	-1.24	-362.67	10.93
865	SLU 7	-43	56	3070	-1.36	-361.44	14.13
865	SLU 8	-43	43	3065	-1.24	-359.9	10.92
865	SLU 9	-43	56	3044	-1.36	-358.66	14.11
865	SLU 10	-44	70	3296	-1.63	-387.77	17.69
865	SLU 11	-46	49	3401	-1.42	-397.26	12.41
865	SLU 12	-46	62	3380	-1.55	-396.02	15.61
865	SLU 13	-45	71	3340	-1.63	-392.42	17.72
865	SLU 14	-47	50	3444	-1.42	-401.91	12.45
865	SLU 15	-46	62	3424	-1.54	-400.67	15.64
865	SLU 16	-47	49	3418	-1.42	-399.14	12.43
865	SLU 17	-46	62	3398	-1.54	-397.9	15.63
865	SLU 18	-47	52	3482	-1.51	-406.65	13.01
865	SLU 19	-46	65	3462	-1.63	-405.41	16.21
865	SLU 20	-47	52	3526	-1.5	-411.3	13.05
865	SLU 21	-47	65	3506	-1.62	-410.06	16.24
865	SLU 22	-48	47	3435	-1.35	-400.37	11.69
865	SLU 23	-47	68	3401	-1.56	-398.31	17.02
865	SLU 24	-49	47	3505	-1.35	-407.8	11.74
865	SLU 25	-48	60	3484	-1.47	-406.56	14.94
865	SLU 26	-47	68	3445	-1.55	-402.96	17.05
865	SLU 27	-49	47	3549	-1.34	-412.45	11.78
865	SLU 28	-49	60	3528	-1.46	-411.21	14.97
865	SLU 29	-49	47	3523	-1.34	-409.68	11.77
865	SLU 30	-48	60	3502	-1.46	-408.44	14.96
865	SLU 31	-50	74	3754	-1.73	-437.55	18.53
865	SLU 32	-52	53	3859	-1.52	-447.04	13.26
865	SLU 33	-51	66	3838	-1.65	-445.8	16.46
865	SLU 34	-50	74	3798	-1.73	-442.2	18.57
865	SLU 35	-52	53	3902	-1.52	-451.69	13.3
865	SLU 36	-52	66	3882	-1.64	-450.45	16.49
865	SLU 37	-52	53	3876	-1.52	-448.92	13.28
865	SLU 38	-51	66	3856	-1.64	-447.68	16.48
865	SLU 39	-52	55	3940	-1.61	-456.43	13.86
865	SLU 40	-51	68	3920	-1.73	-455.19	17.06
865	SLU 41	-53	55	3984	-1.6	-461.08	13.9
865	SLU 42	-52	68	3964	-1.72	-459.84	17.09
865	SLU 43	-53	55	3713	-1.6	-438.7	13.81
865	SLU 44	-52	76	3679	-1.8	-436.64	19.13
865	SLU 45	-54	55	3783	-1.59	-446.13	13.86
865	SLU 46	-54	68	3762	-1.71	-444.89	17.05
865	SLU 47	-53	76	3723	-1.79	-441.29	19.17
865	SLU 48	-55	55	3827	-1.58	-450.78	13.89
865	SLU 49	-54	68	3806	-1.71	-449.55	17.09
865	SLU 50	-54	55	3801	-1.59	-448.01	13.88
865	SLU 51	-54	68	3780	-1.71	-446.77	17.07
865	SLU 52	-55	82	4033	-1.98	-475.88	20.65
865	SLU 53	-57	61	4137	-1.77	-485.37	15.38
865	SLU 54	-57	74	4116	-1.89	-484.13	18.57
865	SLU 55	-56	82	4076	-1.97	-480.53	20.68
865	SLU 56	-58	61	4181	-1.76	-490.02	15.41
865	SLU 57	-57	74	4160	-1.88	-488.79	18.61
865	SLU 58	-57	61	4154	-1.76	-487.25	15.4
865	SLU 59	-57	74	4134	-1.88	-486.01	18.59
865	SLU 60	-58	64	4218	-1.85	-494.76	15.98
865	SLU 61	-57	76	4198	-1.97	-493.52	19.17
865	SLU 62	-58	64	4262	-1.84	-499.41	16.01
865	SLU 63	-58	77	4242	-1.96	-498.17	19.21
865	SLU 64	-58	58	4171	-1.7	-488.48	14.66
865	SLU 65	-57	80	4137	-1.9	-486.42	19.98
865	SLU 66	-59	59	4241	-1.69	-495.91	14.71
865	SLU 67	-59	71	4220	-1.81	-494.67	17.9
865	SLU 68	-58	80	4181	-1.89	-491.07	20.02
865	SLU 69	-60	59	4285	-1.68	-500.56	14.74
865	SLU 70	-59	71	4264	-1.81	-499.32	17.94
865	SLU 71	-60	59	4259	-1.69	-497.79	14.73
865	SLU 72	-59	71	4238	-1.81	-496.55	17.92
865	SLU 73	-61	86	4490	-2.07	-525.66	21.5
865	SLU 74	-63	65	4595	-1.87	-535.15	16.22
865	SLU 75	-62	77	4574	-1.99	-533.91	19.42
865	SLU 76	-61	86	4534	-2.07	-530.31	21.53
865	SLU 77	-63	65	4638	-1.86	-539.8	16.26
865	SLU 78	-63	77	4618	-1.98	-538.56	19.45
865	SLU 79	-63	65	4612	-1.86	-537.03	16.25
865	SLU 80	-62	77	4592	-1.98	-535.79	19.44
865	SLU 81	-63	67	4676	-1.95	-544.54	16.82
865	SLU 82	-62	80	4656	-2.07	-543.3	20.02
865	SLU 83	-63	67	4720	-1.94	-549.19	16.86
865	SLU 84	-63	80	4700	-2.06	-547.95	20.05

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
865	SLE RA 1	-44	44	3108	-1.28	-364.81	11.09
865	SLE RA 2	-43	58	3085	-1.42	-363.44	14.64
865	SLE RA 3	-44	44	3154	-1.28	-369.77	11.12
865	SLE RA 4	-44	53	3141	-1.36	-368.94	13.25
865	SLE RA 5	-44	58	3114	-1.41	-366.54	14.66
865	SLE RA 6	-45	44	3184	-1.28	-372.87	11.15
865	SLE RA 7	-44	53	3170	-1.36	-372.04	13.27
865	SLE RA 8	-45	44	3166	-1.28	-371.02	11.14
865	SLE RA 9	-44	53	3153	-1.36	-370.19	13.27
865	SLE RA 10	-45	62	3321	-1.54	-389.6	15.65
865	SLE RA 11	-47	48	3390	-1.4	-395.93	12.13
865	SLE RA 12	-46	57	3377	-1.48	-395.1	14.26
865	SLE RA 13	-46	62	3350	-1.53	-392.7	15.67
865	SLE RA 14	-47	48	3419	-1.39	-399.03	12.16
865	SLE RA 15	-47	57	3406	-1.47	-398.2	14.29
865	SLE RA 16	-47	48	3402	-1.39	-397.18	12.15
865	SLE RA 17	-46	57	3388	-1.47	-396.35	14.28
865	SLE RA 18	-47	50	3445	-1.45	-402.19	12.53
865	SLE RA 19	-46	58	3431	-1.53	-401.36	14.66
865	SLE RA 20	-47	50	3474	-1.45	-405.29	12.56
865	SLE RA 21	-47	58	3460	-1.53	-404.46	14.69
865	SLE FR 1	-44	44	3108	-1.28	-364.81	11.09
865	SLE FR 2	-44	47	3103	-1.31	-364.54	11.8
865	SLE FR 3	-44	44	3119	-1.28	-366.06	11.1
865	SLE FR 4	-45	49	3204	-1.36	-375.75	12.23
865	SLE FR 5	-45	46	3220	-1.33	-377.27	11.53
865	SLE FR 6	-45	47	3276	-1.37	-383.5	11.81
865	SLE QP 1	-44	44	3108	-1.28	-364.81	11.09
865	SLE QP 2	-45	46	3209	-1.33	-376.03	11.52
865	SLD 1	247	252	3893	-3.17	-460.06	62.95
865	SLD 2	216	140	3930	-2.93	-461.77	35.03
865	SLD 3	233	4	4367	-0.45	-490.04	0.98
865	SLD 4	202	-108	4404	-0.2	-491.75	-26.93
865	SLD 5	70	504	2690	-6.06	-355.46	125.95
865	SLD 6	50	430	2714	-5.9	-356.59	107.53
865	SLD 7	22	-322	4267	3.01	-455.39	-80.6
865	SLD 8	2	-396	4292	3.18	-456.52	-99.02
865	SLD 9	-91	488	2126	-5.85	-295.54	122.06
865	SLD 10	-112	414	2150	-5.68	-296.66	103.64
865	SLD 11	-139	-338	3704	3.23	-395.46	-84.49
865	SLD 12	-160	-412	3728	3.39	-396.59	-102.91
865	SLD 13	-291	200	2014	-2.46	-260.3	49.98
865	SLD 14	-322	88	2051	-2.22	-262.01	22.06
865	SLD 15	-306	-48	2487	0.26	-290.28	-11.99
865	SLD 16	-336	-160	2524	0.51	-291.99	-39.91
865	SLV 1	639	546	4772	-5.86	-570.18	136.51
865	SLV 2	566	282	4859	-5.28	-574.2	70.89
865	SLV 3	603	-69	5957	0.95	-645.25	-17.37
865	SLV 4	531	-333	6044	1.53	-649.27	-82.99
865	SLV 5	227	1178	1864	-13.14	-319.67	294.65
865	SLV 6	178	1001	1923	-12.75	-322.38	250.46
865	SLV 7	110	-872	5815	9.58	-569.89	-218.28
865	SLV 8	61	-1050	5873	9.97	-572.6	-262.46
865	SLV 9	-150	1142	544	-12.64	-179.45	285.5
865	SLV 10	-199	964	603	-12.25	-182.16	241.32
865	SLV 11	-268	-909	4495	10.08	-429.67	-227.42
865	SLV 12	-317	-1087	4554	10.47	-432.38	-271.61
865	SLV 13	-620	424	373	-4.2	-102.78	106.03
865	SLV 14	-693	161	460	-3.62	-106.81	40.41
865	SLV 15	-656	-191	1559	2.61	-177.85	-47.84
865	SLV 16	-728	-454	1645	3.2	-181.87	-113.47
865	CRTFP Ux+	0	0	0	0	0	0
865	CRTFP Ux-	0	0	0	0	0	0
865	CRTFP Uy+	0	0	0	0	0	0
865	CRTFP Uy-	0	0	0	0	0	0
868	SLU 1	9	78	3852	72.32	-20.2	-0.45
868	SLU 2	9	102	3828	71.69	-20.24	-0.37
868	SLU 3	10	79	3935	73.92	-20.82	-0.47
868	SLU 4	9	94	3920	73.54	-20.84	-0.42
868	SLU 5	9	103	3879	72.68	-20.61	-0.39
868	SLU 6	10	79	3986	74.91	-21.19	-0.49
868	SLU 7	10	94	3972	74.53	-21.21	-0.44
868	SLU 8	10	79	3954	74.3	-20.94	-0.49
868	SLU 9	9	93	3940	73.92	-20.96	-0.44
868	SLU 10	9	109	4325	80.98	-22.37	-0.45
868	SLU 11	10	86	4431	83.21	-22.95	-0.54
868	SLU 12	10	101	4417	82.83	-22.97	-0.5
868	SLU 13	10	110	4376	81.97	-22.74	-0.47
868	SLU 14	10	86	4483	84.2	-23.32	-0.56
868	SLU 15	10	101	4469	83.82	-23.34	-0.52
868	SLU 16	10	85	4451	83.59	-23.08	-0.56
868	SLU 17	10	100	4437	83.21	-23.1	-0.52
868	SLU 18	10	87	4561	85.59	-23.25	-0.56
868	SLU 19	10	102	4547	85.22	-23.27	-0.51
868	SLU 20	10	88	4613	86.58	-23.62	-0.57
868	SLU 21	10	103	4598	86.2	-23.64	-0.53
868	SLU 22	10	87	4466	83.98	-23.29	-0.52
868	SLU 23	10	112	4442	83.35	-23.32	-0.44
868	SLU 24	10	89	4549	85.58	-23.9	-0.54

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
868	SLU 25	10	104	4535	85.2	-23.92	-0.5
868	SLU 26	10	113	4494	84.33	-23.69	-0.46
868	SLU 27	11	89	4600	86.57	-24.27	-0.56
868	SLU 28	10	104	4586	86.19	-24.29	-0.51
868	SLU 29	11	88	4569	85.95	-24.03	-0.56
868	SLU 30	10	103	4554	85.58	-24.05	-0.51
868	SLU 31	10	119	4939	92.64	-25.46	-0.52
868	SLU 32	11	96	5046	94.87	-26.04	-0.62
868	SLU 33	11	110	5032	94.49	-26.06	-0.57
868	SLU 34	10	119	4990	93.63	-25.83	-0.54
868	SLU 35	11	96	5097	95.86	-26.41	-0.63
868	SLU 36	11	111	5083	95.48	-26.43	-0.59
868	SLU 37	11	95	5065	95.25	-26.16	-0.63
868	SLU 38	11	110	5051	94.87	-26.18	-0.59
868	SLU 39	11	97	5176	97.25	-26.34	-0.63
868	SLU 40	11	112	5162	96.87	-26.36	-0.58
868	SLU 41	11	98	5227	98.24	-26.71	-0.65
868	SLU 42	11	112	5213	97.86	-26.73	-0.6
868	SLU 43	12	98	4796	90.02	-25.2	-0.56
868	SLU 44	11	122	4773	89.39	-25.24	-0.48
868	SLU 45	12	99	4879	91.62	-25.82	-0.58
868	SLU 46	12	114	4865	91.24	-25.84	-0.54
868	SLU 47	11	123	4824	90.38	-25.61	-0.5
868	SLU 48	12	99	4931	92.61	-26.19	-0.6
868	SLU 49	12	114	4917	92.23	-26.21	-0.55
868	SLU 50	12	98	4899	92	-25.95	-0.6
868	SLU 51	12	113	4885	91.62	-25.97	-0.55
868	SLU 52	12	129	5270	98.68	-27.37	-0.56
868	SLU 53	12	106	5376	100.91	-27.95	-0.66
868	SLU 54	12	120	5362	100.53	-27.97	-0.61
868	SLU 55	12	129	5321	99.67	-27.75	-0.58
868	SLU 56	13	106	5428	101.9	-28.32	-0.67
868	SLU 57	12	121	5413	101.52	-28.35	-0.63
868	SLU 58	13	105	5396	101.29	-28.08	-0.67
868	SLU 59	12	120	5382	100.91	-28.1	-0.63
868	SLU 60	12	107	5506	103.29	-28.25	-0.67
868	SLU 61	12	122	5492	102.91	-28.28	-0.62
868	SLU 62	13	108	5557	104.28	-28.63	-0.68
868	SLU 63	12	123	5543	103.9	-28.65	-0.64
868	SLU 64	13	107	5411	101.68	-28.29	-0.63
868	SLU 65	12	132	5387	101.05	-28.32	-0.55
868	SLU 66	13	109	5494	103.28	-28.9	-0.65
868	SLU 67	13	124	5480	102.9	-28.92	-0.61
868	SLU 68	12	133	5439	102.03	-28.7	-0.57
868	SLU 69	13	109	5545	104.27	-29.27	-0.67
868	SLU 70	13	124	5531	103.89	-29.3	-0.62
868	SLU 71	13	108	5514	103.65	-29.03	-0.67
868	SLU 72	13	123	5499	103.27	-29.05	-0.62
868	SLU 73	13	139	5884	110.34	-30.46	-0.63
868	SLU 74	13	115	5991	112.57	-31.04	-0.73
868	SLU 75	13	130	5976	112.19	-31.06	-0.68
868	SLU 76	13	139	5935	111.33	-30.83	-0.65
868	SLU 77	14	116	6042	113.56	-31.41	-0.74
868	SLU 78	13	131	6028	113.18	-31.43	-0.7
868	SLU 79	14	115	6010	112.95	-31.17	-0.74
868	SLU 80	13	130	5996	112.57	-31.19	-0.7
868	SLU 81	13	117	6121	114.95	-31.34	-0.74
868	SLU 82	13	132	6106	114.57	-31.36	-0.69
868	SLU 83	14	118	6172	115.94	-31.71	-0.76
868	SLU 84	13	132	6158	115.56	-31.73	-0.71
868	SLE RA 1	9	80	4027	75.65	-21.08	-0.47
868	SLE RA 2	9	97	4011	75.23	-21.11	-0.42
868	SLE RA 3	10	81	4083	76.72	-21.49	-0.48
868	SLE RA 4	9	91	4073	76.47	-21.51	-0.45
868	SLE RA 5	9	97	4046	75.89	-21.35	-0.43
868	SLE RA 6	10	82	4117	77.38	-21.74	-0.5
868	SLE RA 7	10	92	4107	77.12	-21.75	-0.47
868	SLE RA 8	10	81	4096	76.97	-21.58	-0.49
868	SLE RA 9	10	91	4086	76.72	-21.59	-0.46
868	SLE RA 10	9	101	4343	81.42	-22.53	-0.47
868	SLE RA 11	10	86	4414	82.91	-22.92	-0.53
868	SLE RA 12	10	96	4404	82.66	-22.93	-0.5
868	SLE RA 13	10	102	4377	82.08	-22.78	-0.48
868	SLE RA 14	10	86	4448	83.57	-23.16	-0.55
868	SLE RA 15	10	96	4438	83.32	-23.18	-0.52
868	SLE RA 16	10	86	4427	83.16	-23	-0.54
868	SLE RA 17	10	95	4417	82.91	-23.01	-0.51
868	SLE RA 18	10	87	4500	84.5	-23.12	-0.54
868	SLE RA 19	10	97	4491	84.25	-23.13	-0.51
868	SLE RA 20	10	87	4534	85.16	-23.36	-0.55
868	SLE RA 21	10	97	4525	84.91	-23.38	-0.52
868	SLE FR 1	9	80	4027	75.65	-21.08	-0.47
868	SLE FR 2	9	84	4024	75.57	-21.09	-0.46
868	SLE FR 3	9	81	4041	75.91	-21.18	-0.47
868	SLE FR 4	10	86	4166	78.22	-21.7	-0.48
868	SLE FR 5	10	83	4183	78.57	-21.79	-0.5
868	SLE FR 6	10	84	4264	80.08	-22.1	-0.51
868	SLE QP 1	9	80	4027	75.65	-21.08	-0.47
868	SLE QP 2	10	82	4169	78.31	-21.69	-0.49

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
868	SLD 1	512	205	3570	65.68	4.77	-11.45
868	SLD 2	468	236	3594	66.08	4.41	-9.12
868	SLD 3	521	-100	3905	74.42	5.33	-12.52
868	SLD 4	478	-70	3928	74.82	4.98	-10.18
868	SLD 5	153	577	3478	61.19	-14.54	-2.58
868	SLD 6	125	598	3493	61.45	-14.78	-1.04
868	SLD 7	186	-441	4593	90.32	-12.67	-6.13
868	SLD 8	157	-421	4609	90.59	-12.91	-4.59
868	SLD 9	-138	586	3730	66.02	-30.48	3.61
868	SLD 10	-167	606	3745	66.29	-30.72	5.15
868	SLD 11	-105	-433	4845	95.16	-28.61	0.06
868	SLD 12	-134	-412	4860	95.42	-28.85	1.6
868	SLD 13	-459	234	4410	81.79	-48.36	9.2
868	SLD 14	-502	265	4433	82.19	-48.72	11.54
868	SLD 15	-449	-71	4744	90.53	-47.8	8.14
868	SLD 16	-493	-41	4768	90.93	-48.16	10.47
868	SLV 1	1184	394	2740	48.03	40.25	-26.05
868	SLV 2	1081	466	2795	48.97	39.41	-20.56
868	SLV 3	1208	-369	3578	69.92	41.55	-28.75
868	SLV 4	1106	-297	3633	70.87	40.71	-23.26
868	SLV 5	344	1320	2459	35.84	-4.92	-5.08
868	SLV 6	275	1369	2496	36.47	-5.48	-1.38
868	SLV 7	425	-1224	5253	108.82	-0.6	-14.1
868	SLV 8	356	-1176	5290	109.46	-1.16	-10.4
868	SLV 9	-337	1340	3048	47.15	-42.22	9.42
868	SLV 10	-406	1389	3085	47.79	-42.79	13.12
868	SLV 11	-256	-1204	5842	120.14	-37.9	0.4
868	SLV 12	-325	-1155	5880	120.77	-38.47	4.1
868	SLV 13	-1086	462	4705	85.74	-84.1	22.28
868	SLV 14	-1189	534	4760	86.69	-84.93	27.77
868	SLV 15	-1062	-301	5543	107.64	-82.8	19.58
868	SLV 16	-1165	-229	5598	108.58	-83.64	25.07
868	CRTFP Ux+	0	0	0	0	0	0
868	CRTFP Ux-	0	0	0	0	0	0
868	CRTFP Uy+	0	0	0	0	0	0
868	CRTFP Uy-	0	0	0	0	0	0
871	SLU 1	-87	-38	6521	-2.29	-13.97	0.54
871	SLU 2	-85	-8	6442	-2.81	-12.58	0.45
871	SLU 3	-89	-39	6682	-2.26	-14.76	0.55
871	SLU 4	-88	-21	6635	-2.57	-13.93	0.5
871	SLU 5	-86	-9	6545	-2.78	-13.12	0.46
871	SLU 6	-90	-40	6785	-2.23	-15.3	0.56
871	SLU 7	-89	-22	6738	-2.54	-14.47	0.51
871	SLU 8	-89	-40	6726	-2.24	-15.05	0.55
871	SLU 9	-88	-22	6679	-2.55	-14.22	0.5
871	SLU 10	-89	-12	7281	-3.17	-15.46	0.53
871	SLU 11	-93	-43	7521	-2.62	-17.63	0.63
871	SLU 12	-92	-25	7474	-2.93	-16.8	0.58
871	SLU 13	-90	-12	7384	-3.14	-16	0.54
871	SLU 14	-95	-44	7624	-2.59	-18.17	0.64
871	SLU 15	-93	-26	7577	-2.9	-17.34	0.59
871	SLU 16	-94	-43	7565	-2.6	-17.92	0.63
871	SLU 17	-92	-25	7518	-2.91	-17.09	0.58
871	SLU 18	-93	-43	7719	-2.81	-18.08	0.64
871	SLU 19	-92	-25	7672	-3.11	-17.24	0.59
871	SLU 20	-94	-44	7822	-2.78	-18.62	0.65
871	SLU 21	-93	-26	7775	-3.09	-17.78	0.6
871	SLU 22	-97	-44	7592	-2.42	-17.62	0.62
871	SLU 23	-95	-14	7514	-2.93	-16.23	0.53
871	SLU 24	-99	-46	7754	-2.38	-18.41	0.63
871	SLU 25	-98	-27	7707	-2.69	-17.57	0.58
871	SLU 26	-96	-15	7616	-2.9	-16.77	0.54
871	SLU 27	-100	-46	7856	-2.35	-18.95	0.64
871	SLU 28	-99	-28	7809	-2.66	-18.11	0.59
871	SLU 29	-99	-46	7797	-2.36	-18.7	0.63
871	SLU 30	-98	-28	7750	-2.67	-17.86	0.58
871	SLU 31	-99	-18	8353	-3.29	-19.1	0.61
871	SLU 32	-103	-49	8593	-2.74	-21.28	0.71
871	SLU 33	-102	-31	8546	-3.05	-20.45	0.66
871	SLU 34	-100	-18	8456	-3.26	-19.64	0.62
871	SLU 35	-104	-50	8695	-2.71	-21.82	0.72
871	SLU 36	-103	-32	8648	-3.02	-20.99	0.67
871	SLU 37	-103	-50	8636	-2.72	-21.57	0.71
871	SLU 38	-102	-31	8589	-3.03	-20.74	0.66
871	SLU 39	-103	-50	8791	-2.93	-21.72	0.72
871	SLU 40	-102	-31	8744	-3.24	-20.89	0.67
871	SLU 41	-104	-50	8893	-2.9	-22.26	0.73
871	SLU 42	-103	-32	8846	-3.21	-21.43	0.68
871	SLU 43	-110	-48	8109	-2.94	-16.91	0.67
871	SLU 44	-108	-17	8031	-3.45	-15.53	0.59
871	SLU 45	-112	-49	8271	-2.91	-17.7	0.69
871	SLU 46	-111	-31	8224	-3.21	-16.87	0.64
871	SLU 47	-109	-18	8134	-3.43	-16.06	0.6
871	SLU 48	-113	-49	8374	-2.88	-18.24	0.7
871	SLU 49	-112	-31	8327	-3.19	-17.41	0.65
871	SLU 50	-112	-49	8315	-2.89	-17.99	0.69
871	SLU 51	-111	-31	8268	-3.2	-17.16	0.64
871	SLU 52	-112	-21	8870	-3.81	-18.4	0.66
871	SLU 53	-116	-52	9110	-3.27	-20.58	0.76

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
871	SLU 54	-115	-34	9063	-3.57	-19.74	0.71
871	SLU 55	-113	-22	8973	-3.79	-18.94	0.67
871	SLU 56	-117	-53	9213	-3.24	-21.11	0.77
871	SLU 57	-116	-35	9166	-3.55	-20.28	0.72
871	SLU 58	-116	-53	9154	-3.25	-20.86	0.76
871	SLU 59	-115	-35	9107	-3.56	-20.03	0.71
871	SLU 60	-116	-53	9308	-3.45	-21.02	0.77
871	SLU 61	-115	-35	9261	-3.76	-20.19	0.72
871	SLU 62	-117	-54	9411	-3.43	-21.56	0.78
871	SLU 63	-116	-35	9364	-3.74	-20.72	0.73
871	SLU 64	-119	-54	9181	-3.06	-20.56	0.75
871	SLU 65	-117	-23	9103	-3.58	-19.17	0.67
871	SLU 66	-122	-55	9343	-3.03	-21.35	0.77
871	SLU 67	-120	-37	9296	-3.33	-20.52	0.72
871	SLU 68	-119	-24	9205	-3.55	-19.71	0.68
871	SLU 69	-123	-56	9445	-3	-21.89	0.78
871	SLU 70	-122	-37	9398	-3.31	-21.05	0.73
871	SLU 71	-122	-55	9386	-3.01	-21.64	0.77
871	SLU 72	-121	-37	9339	-3.32	-20.8	0.72
871	SLU 73	-122	-27	9942	-3.93	-22.04	0.74
871	SLU 74	-126	-59	10182	-3.39	-24.22	0.84
871	SLU 75	-125	-40	10135	-3.69	-23.39	0.79
871	SLU 76	-123	-28	10044	-3.91	-22.58	0.75
871	SLU 77	-127	-59	10284	-3.36	-24.76	0.85
871	SLU 78	-126	-41	10237	-3.67	-23.93	0.8
871	SLU 79	-126	-59	10225	-3.37	-24.51	0.84
871	SLU 80	-125	-41	10178	-3.68	-23.68	0.79
871	SLU 81	-126	-59	10379	-3.57	-24.66	0.85
871	SLU 82	-124	-41	10333	-3.88	-23.83	0.8
871	SLU 83	-127	-60	10482	-3.55	-25.2	0.86
871	SLU 84	-126	-42	10435	-3.86	-24.37	0.81
871	SLE RA 1	-90	-40	6827	-2.33	-15.01	0.56
871	SLE RA 2	-88	-20	6775	-2.67	-14.09	0.5
871	SLE RA 3	-91	-41	6934	-2.31	-15.54	0.57
871	SLE RA 4	-90	-29	6903	-2.51	-14.98	0.54
871	SLE RA 5	-89	-20	6843	-2.65	-14.45	0.51
871	SLE RA 6	-92	-41	7003	-2.29	-15.9	0.58
871	SLE RA 7	-91	-29	6972	-2.49	-15.34	0.54
871	SLE RA 8	-91	-41	6963	-2.29	-15.73	0.57
871	SLE RA 9	-91	-29	6932	-2.5	-15.18	0.54
871	SLE RA 10	-91	-22	7334	-2.91	-16	0.55
871	SLE RA 11	-94	-43	7494	-2.54	-17.46	0.62
871	SLE RA 12	-93	-31	7463	-2.75	-16.9	0.59
871	SLE RA 13	-92	-23	7402	-2.89	-16.36	0.56
871	SLE RA 14	-95	-44	7562	-2.53	-17.81	0.63
871	SLE RA 15	-94	-32	7531	-2.73	-17.26	0.59
871	SLE RA 16	-94	-43	7523	-2.53	-17.65	0.62
871	SLE RA 17	-93	-31	7492	-2.74	-17.09	0.59
871	SLE RA 18	-94	-43	7626	-2.67	-17.75	0.63
871	SLE RA 19	-93	-31	7594	-2.88	-17.19	0.6
871	SLE RA 20	-95	-44	7694	-2.65	-18.11	0.63
871	SLE RA 21	-94	-32	7663	-2.86	-17.55	0.6
871	SLE FR 1	-90	-40	6827	-2.33	-15.01	0.56
871	SLE FR 2	-89	-36	6816	-2.4	-14.83	0.55
871	SLE FR 3	-90	-40	6854	-2.32	-15.16	0.56
871	SLE FR 4	-91	-37	7056	-2.5	-15.65	0.57
871	SLE FR 5	-91	-41	7094	-2.42	-15.98	0.58
871	SLE FR 6	-92	-42	7226	-2.5	-16.38	0.59
871	SLE QP 1	-90	-40	6827	-2.33	-15.01	0.56
871	SLE QP 2	-91	-41	7066	-2.43	-15.83	0.58
871	SLD 1	567	146	7408	-6.68	4.85	-2.97
871	SLD 2	503	46	7476	-6.07	4.61	-0.48
871	SLD 3	536	-216	8493	0.09	-12.94	-1.69
871	SLD 4	471	-316	8561	0.7	-13.18	0.79
871	SLD 5	165	582	5511	-14.08	17.38	-2.86
871	SLD 6	123	517	5556	-13.68	17.23	-1.22
871	SLD 7	61	-625	9128	8.48	-41.89	1.38
871	SLD 8	19	-691	9172	8.88	-42.05	3.02
871	SLD 9	-201	609	4960	-13.75	10.38	-1.86
871	SLD 10	-243	543	5005	-13.34	10.22	-0.22
871	SLD 11	-305	-599	8577	8.82	-48.89	2.38
871	SLD 12	-347	-665	8622	9.22	-49.05	4.02
871	SLD 13	-653	234	5572	-5.56	-18.49	0.37
871	SLD 14	-718	134	5640	-4.95	-18.73	2.85
871	SLD 15	-685	-128	6657	1.21	-36.28	1.64
871	SLD 16	-749	-228	6725	1.82	-36.52	4.13
871	SLV 1	1451	423	7776	-12.93	33.97	-7.82
871	SLV 2	1299	189	7935	-11.5	33.41	-1.98
871	SLV 3	1374	-478	10494	4.01	-10.52	-4.68
871	SLV 4	1223	-713	10653	5.44	-11.08	1.16
871	SLV 5	516	1509	3128	-31.54	66.69	-7.79
871	SLV 6	414	1351	3235	-30.58	66.31	-3.86
871	SLV 7	261	-1495	12187	24.93	-81.61	2.67
871	SLV 8	159	-1653	12294	25.89	-81.99	6.6
871	SLV 9	-341	1571	1839	-30.76	50.33	-5.44
871	SLV 10	-443	1413	1946	-29.79	49.94	-1.51
871	SLV 11	-596	-1433	10898	25.72	-97.98	5.02
871	SLV 12	-698	-1591	11005	26.68	-98.36	8.95
871	SLV 13	-1405	631	3480	-10.31	-20.59	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
871	SLV 14	-1556	396	3639	-8.88	-21.15	5.84
871	SLV 15	-1481	-271	6197	6.64	-65.08	3.14
871	SLV 16	-1633	-505	6357	8.07	-65.64	8.98
871	CRTFP Ux+	0	0	0	0	0	0
871	CRTFP Ux-	0	0	0	0	0	0
871	CRTFP Uy+	0	0	0	0	0	0
871	CRTFP Uy-	0	0	0	0	0	0
874	SLU 1	0	38	4963	93.41	87.83	0.98
874	SLU 2	0	66	4924	92.37	86.94	0.91
874	SLU 3	0	39	5080	95.66	90.7	1
874	SLU 4	0	55	5056	95.03	90.16	0.96
874	SLU 5	0	66	4997	93.79	88.79	0.92
874	SLU 6	0	39	5153	97.08	92.55	1.01
874	SLU 7	0	56	5129	96.45	92.01	0.97
874	SLU 8	0	39	5110	96.25	91.54	1
874	SLU 9	0	55	5086	95.62	91	0.96
874	SLU 10	0	67	5570	104.45	98.13	1.03
874	SLU 11	0	40	5725	107.74	101.89	1.12
874	SLU 12	0	57	5702	107.12	101.35	1.08
874	SLU 13	0	67	5643	105.87	99.98	1.04
874	SLU 14	0	41	5798	109.16	103.74	1.13
874	SLU 15	0	57	5775	108.54	103.21	1.09
874	SLU 16	0	40	5755	108.33	102.73	1.12
874	SLU 17	0	57	5732	107.7	102.19	1.08
874	SLU 18	0	40	5886	110.67	103.82	1.15
874	SLU 19	0	57	5862	110.04	103.29	1.11
874	SLU 20	0	41	5959	112.09	105.67	1.16
874	SLU 21	0	57	5935	111.46	105.14	1.12
874	SLU 22	0	42	5767	108.7	102.51	1.1
874	SLU 23	0	69	5728	107.66	101.62	1.04
874	SLU 24	-1	43	5884	110.96	105.37	1.12
874	SLU 25	0	59	5860	110.33	104.84	1.08
874	SLU 26	0	70	5801	109.08	103.47	1.05
874	SLU 27	-1	43	5957	112.38	107.23	1.13
874	SLU 28	0	59	5933	111.75	106.69	1.1
874	SLU 29	0	43	5914	111.54	106.22	1.12
874	SLU 30	0	59	5890	110.92	105.68	1.08
874	SLU 31	-1	71	6374	119.75	112.81	1.16
874	SLU 32	-1	44	6529	123.04	116.57	1.24
874	SLU 33	-1	61	6506	122.41	116.03	1.21
874	SLU 34	-1	71	6447	121.17	114.66	1.17
874	SLU 35	-1	44	6602	124.46	118.42	1.25
874	SLU 36	-1	61	6579	123.83	117.88	1.22
874	SLU 37	-1	44	6559	123.63	117.41	1.24
874	SLU 38	-1	60	6536	123	116.87	1.2
874	SLU 39	-1	44	6690	125.97	118.5	1.27
874	SLU 40	-1	61	6666	125.34	117.96	1.24
874	SLU 41	-1	44	6763	127.38	120.35	1.29
874	SLU 42	-1	61	6739	126.76	119.82	1.25
874	SLU 43	0	49	6177	116.18	109.15	1.22
874	SLU 44	1	76	6138	115.14	108.26	1.16
874	SLU 45	0	49	6293	118.43	112.02	1.25
874	SLU 46	0	66	6269	117.81	111.48	1.21
874	SLU 47	1	76	6211	116.56	110.11	1.17
874	SLU 48	0	49	6366	119.85	113.87	1.26
874	SLU 49	0	66	6343	119.23	113.33	1.22
874	SLU 50	0	49	6323	119.02	112.86	1.25
874	SLU 51	0	65	6300	118.4	112.32	1.21
874	SLU 52	0	77	6783	127.23	119.45	1.28
874	SLU 53	0	51	6938	130.52	123.21	1.37
874	SLU 54	0	67	6915	129.89	122.67	1.33
874	SLU 55	0	77	6856	128.65	121.3	1.29
874	SLU 56	0	51	7012	131.94	125.06	1.38
874	SLU 57	0	67	6988	131.31	124.52	1.34
874	SLU 58	0	50	6969	131.1	124.05	1.37
874	SLU 59	0	67	6945	130.48	123.51	1.33
874	SLU 60	0	51	7099	133.44	125.14	1.4
874	SLU 61	0	67	7076	132.82	124.6	1.36
874	SLU 62	0	51	7172	134.86	126.99	1.41
874	SLU 63	0	67	7149	134.24	126.46	1.37
874	SLU 64	0	52	6981	131.48	123.83	1.35
874	SLU 65	0	80	6942	130.44	122.93	1.29
874	SLU 66	0	53	7097	133.73	126.69	1.37
874	SLU 67	0	69	7073	133.11	126.16	1.33
874	SLU 68	0	80	7015	131.86	124.79	1.3
874	SLU 69	0	53	7170	135.15	128.54	1.38
874	SLU 70	0	70	7147	134.53	128.01	1.34
874	SLU 71	0	53	7127	134.32	127.53	1.37
874	SLU 72	0	69	7104	133.7	127	1.33
874	SLU 73	0	81	7587	142.52	134.13	1.41
874	SLU 74	-1	54	7743	145.82	137.88	1.49
874	SLU 75	-1	71	7719	145.19	137.35	1.45
874	SLU 76	0	81	7660	143.94	135.98	1.42
874	SLU 77	-1	55	7816	147.23	139.74	1.5
874	SLU 78	-1	71	7792	146.61	139.2	1.46
874	SLU 79	-1	54	7773	146.4	138.73	1.49
874	SLU 80	0	71	7749	145.78	138.19	1.45
874	SLU 81	-1	54	7903	148.74	139.82	1.52
874	SLU 82	-1	71	7880	148.12	139.28	1.48

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
874	SLU 83	-1	55	7976	150.16	141.67	1.53
874	SLU 84	-1	71	7953	149.54	141.13	1.49
874	SLE RA 1	0	39	5193	97.78	92.03	1.01
874	SLE RA 2	0	58	5167	97.08	91.43	0.97
874	SLE RA 3	0	40	5271	99.28	93.94	1.03
874	SLE RA 4	0	51	5255	98.86	93.58	1
874	SLE RA 5	0	58	5216	98.03	92.67	0.98
874	SLE RA 6	0	40	5319	100.22	95.17	1.03
874	SLE RA 7	0	51	5304	99.81	94.81	1.01
874	SLE RA 8	0	40	5291	99.67	94.5	1.03
874	SLE RA 9	0	51	5275	99.25	94.14	1
874	SLE RA 10	0	59	5597	105.14	98.89	1.05
874	SLE RA 11	0	41	5701	107.33	101.4	1.11
874	SLE RA 12	0	52	5685	106.92	101.04	1.08
874	SLE RA 13	0	59	5646	106.09	100.13	1.06
874	SLE RA 14	0	41	5750	108.28	102.63	1.11
874	SLE RA 15	0	52	5734	107.86	102.27	1.09
874	SLE RA 16	0	41	5721	107.72	101.96	1.11
874	SLE RA 17	0	52	5705	107.31	101.6	1.08
874	SLE RA 18	0	41	5808	109.28	102.69	1.13
874	SLE RA 19	0	52	5792	108.87	102.33	1.1
874	SLE RA 20	0	41	5857	110.23	103.92	1.13
874	SLE RA 21	0	52	5841	109.81	103.56	1.11
874	SLE FR 1	0	39	5193	97.78	92.03	1.01
874	SLE FR 2	0	43	5188	97.64	91.91	1
874	SLE FR 3	0	39	5213	98.16	92.52	1.01
874	SLE FR 4	0	43	5372	101.09	95.11	1.04
874	SLE FR 5	0	40	5397	101.61	95.72	1.05
874	SLE FR 6	0	40	5501	103.53	97.36	1.07
874	SLE QP 1	0	39	5193	97.78	92.03	1.01
874	SLE QP 2	0	40	5378	101.23	95.22	1.05
874	SLD 1	580	240	5409	99.82	84.7	-12.78
874	SLD 2	530	208	5408	99.9	84.94	-10.03
874	SLD 3	571	-97	5962	114.21	97.64	-11.84
874	SLD 4	521	-129	5960	114.29	97.88	-9.08
874	SLD 5	197	616	4549	78.96	72.4	-5.03
874	SLD 6	164	595	4548	79.02	72.56	-3.21
874	SLD 7	166	-506	6392	126.94	115.53	-1.88
874	SLD 8	133	-527	6391	126.99	115.69	-0.07
874	SLD 9	-134	607	4364	75.47	74.76	2.16
874	SLD 10	-167	586	4363	75.52	74.92	3.98
874	SLD 11	-164	-515	6207	123.44	117.89	5.3
874	SLD 12	-197	-536	6206	123.5	118.05	7.12
874	SLD 13	-521	209	4795	88.16	92.57	11.18
874	SLD 14	-572	177	4793	88.25	92.81	13.93
874	SLD 15	-530	-128	5348	102.56	105.51	12.12
874	SLD 16	-581	-160	5346	102.64	105.75	14.87
874	SLV 1	1359	533	5405	96.73	69.56	-31.37
874	SLV 2	1240	458	5402	96.93	70.12	-24.89
874	SLV 3	1337	-306	6791	132.8	102.01	-29.07
874	SLV 4	1218	-381	6788	133	102.57	-22.59
874	SLV 5	463	1474	3285	45.13	38.21	-13.38
874	SLV 6	383	1424	3282	45.27	38.59	-9.02
874	SLV 7	390	-1322	7904	165.37	146.37	-5.71
874	SLV 8	310	-1373	7902	165.51	146.75	-1.35
874	SLV 9	-310	1453	2853	36.95	43.7	3.44
874	SLV 10	-390	1402	2851	37.08	44.08	7.8
874	SLV 11	-383	-1344	7473	157.19	151.86	11.11
874	SLV 12	-463	-1395	7471	157.32	152.24	15.47
874	SLV 13	-1219	461	3967	69.46	87.88	24.69
874	SLV 14	-1337	385	3964	69.65	88.44	31.16
874	SLV 15	-1240	-378	5353	105.53	120.33	26.99
874	SLV 16	-1359	-454	5350	105.73	120.89	33.46
874	CRTFP Ux+	0	0	0	0	0	0
874	CRTFP Ux-	0	0	0	0	0	0
874	CRTFP Uy+	0	0	0	0	0	0
874	CRTFP Uy-	0	0	0	0	0	0
877	SLU 1	65	19	3675	0.1	642.44	-6.75
877	SLU 2	63	43	3621	-0.28	636.3	-15.17
877	SLU 3	68	19	3770	0.19	656.86	-6.9
877	SLU 4	66	34	3737	-0.04	653.17	-11.95
877	SLU 5	65	44	3684	-0.21	645.85	-15.45
877	SLU 6	69	20	3833	0.25	666.42	-7.18
877	SLU 7	68	34	3800	0.02	662.73	-12.23
877	SLU 8	69	20	3801	0.23	661.55	-7.31
877	SLU 9	67	35	3769	0	657.86	-12.36
877	SLU 10	68	45	4052	-0.29	705.94	-16.03
877	SLU 11	73	21	4200	0.17	726.51	-7.76
877	SLU 12	71	36	4168	-0.05	722.82	-12.81
877	SLU 13	70	46	4115	-0.22	715.49	-16.31
877	SLU 14	74	22	4264	0.24	736.06	-8.04
877	SLU 15	73	37	4231	0.01	732.37	-13.09
877	SLU 16	74	23	4232	0.22	731.19	-8.17
877	SLU 17	72	37	4200	-0.01	727.51	-13.22
877	SLU 18	73	22	4290	0.09	741.94	-7.98
877	SLU 19	71	37	4258	-0.14	738.25	-13.03
877	SLU 20	74	23	4353	0.15	751.49	-8.26
877	SLU 21	73	37	4321	-0.08	747.8	-13.31
877	SLU 22	74	18	4239	0.31	731.98	-6.58

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
877	SLU 23	72	42	4185	-0.07	725.83	-14.99
877	SLU 24	76	18	4334	0.39	746.4	-6.73
877	SLU 25	75	33	4302	0.16	742.71	-11.78
877	SLU 26	73	43	4249	-0.01	735.38	-15.28
877	SLU 27	78	19	4397	0.45	755.95	-7.01
877	SLU 28	76	34	4365	0.22	752.26	-12.06
877	SLU 29	77	20	4366	0.44	751.08	-7.14
877	SLU 30	76	34	4333	0.21	747.39	-12.19
877	SLU 31	77	45	4616	-0.08	795.47	-15.85
877	SLU 32	81	21	4765	0.38	816.04	-7.59
877	SLU 33	80	35	4733	0.15	812.35	-12.64
877	SLU 34	78	45	4679	-0.02	805.03	-16.14
877	SLU 35	83	22	4828	0.44	825.59	-7.87
877	SLU 36	82	36	4796	0.21	821.9	-12.92
877	SLU 37	82	22	4796	0.42	820.73	-8
877	SLU 38	81	36	4764	0.2	817.04	-13.05
877	SLU 39	81	21	4855	0.29	831.47	-7.81
877	SLU 40	80	36	4822	0.06	827.78	-12.86
877	SLU 41	83	22	4918	0.36	841.02	-8.09
877	SLU 42	81	37	4886	0.13	837.33	-13.14
877	SLU 43	82	24	4583	0.07	804.48	-8.83
877	SLU 44	80	49	4530	-0.32	798.33	-17.25
877	SLU 45	84	25	4678	0.15	818.9	-8.98
877	SLU 46	83	39	4646	-0.08	815.21	-14.04
877	SLU 47	81	49	4593	-0.25	807.88	-17.53
877	SLU 48	86	26	4742	0.21	828.45	-9.27
877	SLU 49	85	40	4709	-0.02	824.76	-14.32
877	SLU 50	85	26	4710	0.19	823.59	-9.4
877	SLU 51	84	40	4678	-0.04	819.9	-14.45
877	SLU 52	85	51	4960	-0.33	867.98	-18.11
877	SLU 53	89	27	5109	0.14	888.54	-9.85
877	SLU 54	88	42	5077	-0.09	884.86	-14.9
877	SLU 55	86	52	5024	-0.26	877.53	-18.39
877	SLU 56	91	28	5172	0.2	898.1	-10.13
877	SLU 57	90	42	5140	-0.03	894.41	-15.18
877	SLU 58	90	28	5141	0.18	893.23	-10.26
877	SLU 59	89	43	5108	-0.05	889.54	-15.31
877	SLU 60	89	28	5199	0.05	903.97	-10.06
877	SLU 61	88	42	5166	-0.18	900.28	-15.11
877	SLU 62	91	29	5262	0.11	913.52	-10.34
877	SLU 63	90	43	5230	-0.12	909.84	-15.39
877	SLU 64	91	24	5148	0.27	894.01	-8.66
877	SLU 65	88	48	5094	-0.11	887.86	-17.08
877	SLU 66	93	24	5243	0.35	908.43	-8.81
877	SLU 67	91	39	5211	0.12	904.74	-13.86
877	SLU 68	90	49	5157	-0.05	897.42	-17.36
877	SLU 69	95	25	5306	0.41	917.98	-9.09
877	SLU 70	93	40	5274	0.19	914.3	-14.15
877	SLU 71	94	25	5274	0.4	913.12	-9.22
877	SLU 72	93	40	5242	0.17	909.43	-14.27
877	SLU 73	93	50	5525	-0.12	957.51	-17.94
877	SLU 74	98	27	5674	0.34	978.08	-9.67
877	SLU 75	96	41	5641	0.11	974.39	-14.72
877	SLU 76	95	51	5588	-0.06	967.06	-18.22
877	SLU 77	100	27	5737	0.4	987.63	-9.96
877	SLU 78	98	42	5705	0.17	983.94	-15.01
877	SLU 79	99	28	5705	0.39	982.76	-10.08
877	SLU 80	98	42	5673	0.16	979.07	-15.13
877	SLU 81	98	27	5763	0.25	993.5	-9.89
877	SLU 82	96	42	5731	0.02	989.82	-14.94
877	SLU 83	99	28	5827	0.32	1003.06	-10.17
877	SLU 84	98	42	5794	0.09	999.37	-15.22
877	SLE RA 1	68	18	3836	0.16	668.02	-6.7
877	SLE RA 2	66	35	3800	-0.09	663.93	-12.31
877	SLE RA 3	69	19	3899	0.22	677.64	-6.8
877	SLE RA 4	68	28	3878	0.06	675.18	-10.17
877	SLE RA 5	67	35	3842	-0.05	670.29	-12.5
877	SLE RA 6	70	19	3941	0.26	684.01	-6.99
877	SLE RA 7	69	29	3920	0.11	681.55	-10.36
877	SLE RA 8	70	20	3920	0.25	680.76	-7.07
877	SLE RA 9	69	29	3899	0.1	678.3	-10.44
877	SLE RA 10	70	36	4087	-0.1	710.36	-12.88
877	SLE RA 11	73	20	4186	0.21	724.07	-7.37
877	SLE RA 12	72	30	4165	0.06	721.61	-10.74
877	SLE RA 13	71	37	4129	-0.06	716.72	-13.07
877	SLE RA 14	74	21	4229	0.25	730.44	-7.56
877	SLE RA 15	73	30	4207	0.1	727.98	-10.93
877	SLE RA 16	73	21	4207	0.24	727.19	-7.65
877	SLE RA 17	72	31	4186	0.09	724.73	-11.02
877	SLE RA 18	73	21	4246	0.15	734.35	-7.52
877	SLE RA 19	72	30	4225	0	731.89	-10.89
877	SLE RA 20	74	21	4288	0.19	740.72	-7.71
877	SLE RA 21	73	31	4267	0.04	738.26	-11.07
877	SLE FR 1	68	18	3836	0.16	668.02	-6.7
877	SLE FR 2	67	22	3829	0.11	667.2	-7.82
877	SLE FR 3	68	19	3853	0.18	670.57	-6.77
877	SLE FR 4	69	22	3952	0.11	687.1	-8.07
877	SLE FR 5	70	19	3976	0.18	690.47	-7.02
877	SLE FR 6	70	20	4041	0.16	701.19	-7.11

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
877	SLE QP 1	68	18	3836	0.16	668.02	-6.7
877	SLE QP 2	69	19	3959	0.16	687.92	-6.94
877	SLD 1	446	128	2528	-2.28	479.37	-45.32
877	SLD 2	397	261	2452	-2.79	470.72	-91.38
877	SLD 3	480	-153	3266	2.84	564.47	52.98
877	SLD 4	431	-21	3191	2.32	555.82	6.92
877	SLD 5	139	455	2423	-8.23	497.85	-159.26
877	SLD 6	106	542	2374	-8.57	492.15	-189.64
877	SLD 7	253	-483	4884	8.81	781.5	168.4
877	SLD 8	221	-396	4835	8.47	775.79	138.01
877	SLD 9	-83	434	3083	-8.15	600.05	-151.9
877	SLD 10	-115	522	3034	-8.49	594.35	-182.29
877	SLD 11	32	-504	5544	8.89	883.7	175.75
877	SLD 12	0	-417	5495	8.55	877.99	145.37
877	SLD 13	-293	59	4727	-2	820.03	-20.81
877	SLD 14	-342	191	4652	-2.52	811.38	-66.87
877	SLD 15	-258	-222	5466	3.11	905.12	77.49
877	SLD 16	-307	-90	5390	2.59	896.47	31.43
877	SLV 1	947	297	548	-5.97	192.76	-104.35
877	SLV 2	832	608	371	-7.17	172.43	-212.62
877	SLV 3	1034	-407	2400	6.85	406.24	141.18
877	SLV 4	919	-95	2223	5.65	385.92	32.91
877	SLV 5	222	1111	159	-20.9	219.38	-388.35
877	SLV 6	144	1320	40	-21.71	205.69	-461.25
877	SLV 7	512	-1233	6334	21.84	931	430.09
877	SLV 8	435	-1024	6215	21.03	917.32	357.19
877	SLV 9	-296	1062	1703	-20.71	458.53	-371.08
877	SLV 10	-374	1272	1584	-21.52	444.84	-443.98
877	SLV 11	-6	-1282	7878	22.03	1170.15	447.36
877	SLV 12	-84	-1073	7759	21.22	1156.47	374.46
877	SLV 13	-780	134	5695	-5.33	989.93	-46.8
877	SLV 14	-895	445	5518	-6.54	969.6	-155.07
877	SLV 15	-693	-569	7547	7.49	1203.42	198.73
877	SLV 16	-808	-258	7370	6.28	1183.09	90.46
877	CRTFP Ux+	0	0	0	0	0	0
877	CRTFP Ux-	0	0	0	0	0	0
877	CRTFP Uy+	0	0	0	0	0	0
877	CRTFP Uy-	0	0	0	0	0	0
879	SLU 1	12	90	4378	1.68	-21.67	-0.45
879	SLU 2	11	118	4342	1.37	-21.69	-0.38
879	SLU 3	13	92	4475	1.79	-22.33	-0.47
879	SLU 4	12	109	4453	1.6	-22.34	-0.43
879	SLU 5	12	119	4401	1.44	-22.09	-0.4
879	SLU 6	13	93	4535	1.85	-22.73	-0.49
879	SLU 7	12	109	4513	1.67	-22.74	-0.45
879	SLU 8	13	92	4498	1.81	-22.47	-0.49
879	SLU 9	12	108	4476	1.63	-22.48	-0.44
879	SLU 10	12	126	4905	1.54	-23.97	-0.46
879	SLU 11	13	100	5038	1.95	-24.61	-0.55
879	SLU 12	13	117	5016	1.76	-24.62	-0.51
879	SLU 13	13	127	4964	1.6	-24.38	-0.48
879	SLU 14	14	101	5098	2.01	-25.01	-0.57
879	SLU 15	13	117	5076	1.83	-25.03	-0.53
879	SLU 16	14	100	5061	1.97	-24.75	-0.57
879	SLU 17	13	116	5039	1.79	-24.76	-0.53
879	SLU 18	13	102	5182	1.91	-24.92	-0.56
879	SLU 19	13	118	5160	1.73	-24.94	-0.52
879	SLU 20	14	102	5242	1.97	-25.32	-0.58
879	SLU 21	13	119	5220	1.79	-25.34	-0.54
879	SLU 22	13	102	5083	2.12	-24.97	-0.53
879	SLU 23	13	130	5046	1.82	-25	-0.46
879	SLU 24	14	103	5179	2.23	-25.63	-0.55
879	SLU 25	13	120	5157	2.05	-25.65	-0.51
879	SLU 26	13	130	5106	1.88	-25.4	-0.48
879	SLU 27	14	104	5239	2.29	-26.03	-0.57
879	SLU 28	14	121	5217	2.11	-26.05	-0.53
879	SLU 29	14	103	5202	2.25	-25.77	-0.57
879	SLU 30	14	120	5180	2.07	-25.79	-0.53
879	SLU 31	14	138	5609	1.98	-27.28	-0.54
879	SLU 32	15	111	5742	2.39	-27.91	-0.64
879	SLU 33	14	128	5720	2.21	-27.93	-0.59
879	SLU 34	14	138	5669	2.04	-27.68	-0.56
879	SLU 35	15	112	5802	2.45	-28.31	-0.66
879	SLU 36	15	129	5780	2.27	-28.33	-0.61
879	SLU 37	15	111	5765	2.41	-28.05	-0.65
879	SLU 38	15	128	5743	2.23	-28.07	-0.61
879	SLU 39	15	113	5887	2.35	-28.23	-0.65
879	SLU 40	14	130	5865	2.17	-28.24	-0.61
879	SLU 41	15	114	5946	2.42	-28.63	-0.67
879	SLU 42	15	131	5925	2.23	-28.64	-0.63
879	SLU 43	15	114	5450	2.03	-27.03	-0.55
879	SLU 44	14	141	5414	1.73	-27.06	-0.48
879	SLU 45	16	115	5547	2.14	-27.7	-0.57
879	SLU 46	15	132	5525	1.96	-27.71	-0.53
879	SLU 47	15	142	5473	1.79	-27.46	-0.5
879	SLU 48	16	116	5607	2.2	-28.1	-0.59
879	SLU 49	16	132	5585	2.02	-28.11	-0.55
879	SLU 50	16	115	5570	2.16	-27.84	-0.59
879	SLU 51	16	131	5548	1.98	-27.85	-0.55

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
879	SLU 52	15	149	5977	1.89	-29.34	-0.56
879	SLU 53	17	123	6110	2.3	-29.98	-0.65
879	SLU 54	16	140	6088	2.12	-29.99	-0.61
879	SLU 55	16	150	6036	1.95	-29.74	-0.58
879	SLU 56	17	124	6170	2.36	-30.38	-0.67
879	SLU 57	17	140	6148	2.18	-30.39	-0.63
879	SLU 58	17	123	6133	2.32	-30.12	-0.67
879	SLU 59	16	139	6111	2.14	-30.13	-0.63
879	SLU 60	17	125	6254	2.26	-30.29	-0.67
879	SLU 61	16	142	6232	2.08	-30.31	-0.63
879	SLU 62	17	126	6314	2.33	-30.69	-0.69
879	SLU 63	16	142	6292	2.14	-30.71	-0.65
879	SLU 64	17	125	6155	2.47	-30.34	-0.64
879	SLU 65	16	153	6118	2.17	-30.36	-0.57
879	SLU 66	17	127	6251	2.58	-31	-0.66
879	SLU 67	17	143	6229	2.4	-31.01	-0.62
879	SLU 68	16	153	6178	2.23	-30.76	-0.59
879	SLU 69	17	127	6311	2.65	-31.4	-0.68
879	SLU 70	17	144	6289	2.46	-31.41	-0.64
879	SLU 71	17	126	6274	2.6	-31.14	-0.68
879	SLU 72	17	143	6252	2.42	-31.15	-0.63
879	SLU 73	17	161	6681	2.33	-32.64	-0.65
879	SLU 74	18	135	6814	2.74	-33.28	-0.74
879	SLU 75	18	151	6792	2.56	-33.29	-0.7
879	SLU 76	17	161	6741	2.4	-33.05	-0.67
879	SLU 77	18	135	6874	2.81	-33.68	-0.76
879	SLU 78	18	152	6852	2.62	-33.7	-0.72
879	SLU 79	18	134	6837	2.77	-33.42	-0.76
879	SLU 80	18	151	6815	2.58	-33.43	-0.72
879	SLU 81	18	137	6959	2.7	-33.59	-0.75
879	SLU 82	17	153	6937	2.52	-33.61	-0.71
879	SLU 83	18	137	7018	2.77	-33.99	-0.77
879	SLU 84	18	154	6997	2.59	-34.01	-0.73
879	SLE RA 1	12	94	4580	1.8	-22.61	-0.47
879	SLE RA 2	12	112	4555	1.6	-22.63	-0.42
879	SLE RA 3	13	95	4644	1.88	-23.05	-0.48
879	SLE RA 4	12	106	4629	1.75	-23.06	-0.46
879	SLE RA 5	12	113	4595	1.65	-22.9	-0.44
879	SLE RA 6	13	95	4684	1.92	-23.32	-0.5
879	SLE RA 7	13	106	4669	1.8	-23.33	-0.47
879	SLE RA 8	13	94	4659	1.89	-23.14	-0.5
879	SLE RA 9	13	106	4645	1.77	-23.16	-0.47
879	SLE RA 10	13	118	4930	1.71	-24.15	-0.48
879	SLE RA 11	13	100	5019	1.98	-24.57	-0.54
879	SLE RA 12	13	111	5005	1.86	-24.58	-0.51
879	SLE RA 13	13	118	4970	1.75	-24.42	-0.49
879	SLE RA 14	14	100	5059	2.03	-24.84	-0.55
879	SLE RA 15	13	112	5044	1.91	-24.85	-0.53
879	SLE RA 16	14	100	5034	2	-24.66	-0.55
879	SLE RA 17	13	111	5020	1.88	-24.68	-0.52
879	SLE RA 18	13	101	5116	1.96	-24.78	-0.55
879	SLE RA 19	13	112	5101	1.84	-24.79	-0.52
879	SLE RA 20	14	102	5155	2	-25.05	-0.56
879	SLE RA 21	13	113	5141	1.88	-25.06	-0.53
879	SLE FR 1	12	94	4580	1.8	-22.61	-0.47
879	SLE FR 2	12	97	4575	1.76	-22.61	-0.46
879	SLE FR 3	13	94	4595	1.82	-22.72	-0.48
879	SLE FR 4	13	100	4735	1.81	-23.27	-0.48
879	SLE FR 5	13	96	4756	1.87	-23.37	-0.5
879	SLE FR 6	13	98	4848	1.88	-23.7	-0.51
879	SLE QP 1	12	94	4580	1.8	-22.61	-0.47
879	SLE QP 2	13	96	4740	1.85	-23.26	-0.49
879	SLD 1	588	234	3993	-0.33	6.24	-3.01
879	SLD 2	530	269	4018	-0.4	5.93	-1.05
879	SLD 3	602	-109	4500	3.67	5.65	-3.98
879	SLD 4	545	-75	4525	3.6	5.34	-2.02
879	SLD 5	173	652	3743	-4.86	-13.46	-0.13
879	SLD 6	135	675	3759	-4.91	-13.67	1.16
879	SLD 7	222	-493	5433	8.48	-15.42	-3.37
879	SLD 8	184	-470	5449	8.43	-15.63	-2.07
879	SLD 9	-159	662	4032	-4.73	-30.89	1.09
879	SLD 10	-197	685	4048	-4.78	-31.1	2.38
879	SLD 11	-110	-483	5722	8.61	-32.85	-2.15
879	SLD 12	-148	-460	5738	8.57	-33.06	-0.86
879	SLD 13	-519	267	4956	0.1	-51.86	1.04
879	SLD 14	-577	301	4980	0.03	-52.18	3
879	SLD 15	-505	-77	5463	4.11	-52.45	0.07
879	SLD 16	-562	-42	5487	4.04	-52.77	2.03
879	SLV 1	1357	446	2950	-3.59	45.78	-6.3
879	SLV 2	1222	527	3007	-3.76	45.03	-1.7
879	SLV 3	1394	-411	4220	6.44	44.42	-8.77
879	SLV 4	1259	-330	4277	6.27	43.67	-4.17
879	SLV 5	385	1487	2266	-14.96	-0.35	0.65
879	SLV 6	294	1541	2305	-15.07	-0.85	3.75
879	SLV 7	508	-1372	6500	18.47	-4.88	-7.58
879	SLV 8	417	-1317	6539	18.36	-5.38	-4.48
879	SLV 9	-392	1509	2942	-14.65	-41.15	3.49
879	SLV 10	-483	1564	2981	-14.76	-41.65	6.6
879	SLV 11	-269	-1349	7176	18.77	-45.67	-4.74

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
879	SLV 12	-360	-1294	7215	18.66	-46.17	-1.64
879	SLV 13	-1233	522	5203	-2.57	-90.2	3.18
879	SLV 14	-1369	603	5261	-2.73	-90.94	7.78
879	SLV 15	-1197	-335	6474	7.46	-91.55	0.71
879	SLV 16	-1332	-254	6531	7.29	-92.3	5.32
879	CRTFP Ux+	0	0	0	0	0	0
879	CRTFP Ux-	0	0	0	0	0	0
879	CRTFP Uy+	0	0	0	0	0	0
879	CRTFP Uy-	0	0	0	0	0	0
882	SLU 1	130	43	6465	1.39	29.49	-1.96
882	SLU 2	124	75	6372	0.88	27.95	-1.81
882	SLU 3	135	44	6635	1.51	30.68	-2.06
882	SLU 4	132	63	6580	1.21	29.76	-1.96
882	SLU 5	128	75	6485	0.97	28.59	-1.88
882	SLU 6	139	44	6748	1.6	31.33	-2.13
882	SLU 7	136	63	6692	1.3	30.4	-2.04
882	SLU 8	138	43	6691	1.56	30.78	-2.11
882	SLU 9	134	62	6635	1.25	29.85	-2.02
882	SLU 10	135	82	7189	1.02	33.22	-2.08
882	SLU 11	146	50	7452	1.65	35.96	-2.33
882	SLU 12	142	69	7396	1.35	35.03	-2.23
882	SLU 13	139	81	7302	1.11	33.86	-2.15
882	SLU 14	149	50	7565	1.73	36.6	-2.4
882	SLU 15	146	69	7509	1.43	35.67	-2.31
882	SLU 16	148	50	7507	1.69	36.05	-2.38
882	SLU 17	145	69	7452	1.39	35.12	-2.29
882	SLU 18	145	53	7632	1.58	37.03	-2.35
882	SLU 19	142	72	7576	1.28	36.1	-2.26
882	SLU 20	149	53	7745	1.67	37.67	-2.43
882	SLU 21	146	72	7689	1.36	36.74	-2.33
882	SLU 22	149	49	7523	1.86	36.75	-2.31
882	SLU 23	143	80	7430	1.36	35.2	-2.16
882	SLU 24	154	49	7693	1.99	37.94	-2.41
882	SLU 25	151	68	7637	1.69	37.01	-2.31
882	SLU 26	147	80	7543	1.45	35.84	-2.23
882	SLU 27	158	49	7806	2.08	38.58	-2.48
882	SLU 28	154	68	7750	1.77	37.65	-2.39
882	SLU 29	156	48	7748	2.03	38.03	-2.46
882	SLU 30	153	67	7693	1.73	37.11	-2.37
882	SLU 31	154	87	8247	1.5	40.47	-2.43
882	SLU 32	165	55	8510	2.13	43.21	-2.68
882	SLU 33	161	74	8454	1.83	42.28	-2.58
882	SLU 34	158	87	8360	1.58	41.12	-2.5
882	SLU 35	168	55	8623	2.21	43.85	-2.75
882	SLU 36	165	74	8567	1.91	42.92	-2.66
882	SLU 37	167	55	8565	2.17	43.31	-2.73
882	SLU 38	164	74	8510	1.87	42.38	-2.64
882	SLU 39	164	58	8690	2.06	44.28	-2.7
882	SLU 40	161	77	8634	1.76	43.35	-2.61
882	SLU 41	168	58	8803	2.14	44.92	-2.77
882	SLU 42	164	77	8747	1.84	43.99	-2.68
882	SLU 43	163	55	8042	1.64	35.85	-2.43
882	SLU 44	157	86	7949	1.14	34.31	-2.28
882	SLU 45	168	55	8212	1.77	37.04	-2.53
882	SLU 46	164	74	8156	1.47	36.12	-2.43
882	SLU 47	161	86	8062	1.22	34.95	-2.35
882	SLU 48	171	55	8325	1.85	37.69	-2.6
882	SLU 49	168	74	8269	1.55	36.76	-2.51
882	SLU 50	170	55	8267	1.81	37.14	-2.58
882	SLU 51	167	73	8212	1.51	36.21	-2.49
882	SLU 52	168	93	8766	1.27	39.58	-2.55
882	SLU 53	178	62	9029	1.9	42.32	-2.8
882	SLU 54	175	80	8973	1.6	41.39	-2.7
882	SLU 55	171	93	8879	1.36	40.22	-2.62
882	SLU 56	182	61	9142	1.99	42.96	-2.87
882	SLU 57	179	80	9086	1.69	42.03	-2.78
882	SLU 58	181	61	9084	1.95	42.41	-2.85
882	SLU 59	177	80	9029	1.64	41.49	-2.76
882	SLU 60	178	64	9209	1.84	43.39	-2.82
882	SLU 61	174	83	9153	1.53	42.46	-2.73
882	SLU 62	181	64	9321	1.92	44.03	-2.9
882	SLU 63	178	83	9266	1.62	43.1	-2.8
882	SLU 64	182	60	9099	2.12	43.11	-2.78
882	SLU 65	176	91	9007	1.61	41.56	-2.63
882	SLU 66	187	60	9270	2.24	44.3	-2.88
882	SLU 67	183	79	9214	1.94	43.37	-2.78
882	SLU 68	180	91	9120	1.7	42.21	-2.7
882	SLU 69	190	60	9383	2.33	44.94	-2.95
882	SLU 70	187	79	9327	2.03	44.01	-2.86
882	SLU 71	189	60	9325	2.29	44.4	-2.93
882	SLU 72	186	79	9270	1.98	43.47	-2.84
882	SLU 73	186	98	9824	1.75	46.83	-2.9
882	SLU 74	197	67	10087	2.38	49.57	-3.15
882	SLU 75	194	86	10031	2.08	48.64	-3.05
882	SLU 76	190	98	9937	1.83	47.48	-2.97
882	SLU 77	201	67	10199	2.46	50.21	-3.22
882	SLU 78	197	86	10144	2.16	49.29	-3.13
882	SLU 79	199	66	10142	2.42	49.67	-3.2
882	SLU 80	196	85	10087	2.12	48.74	-3.11

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
882	SLU 81	197	69	10266	2.31	50.64	-3.17
882	SLU 82	193	88	10211	2.01	49.71	-3.08
882	SLU 83	200	69	10379	2.4	51.28	-3.24
882	SLU 84	197	88	10324	2.09	50.36	-3.15
882	SLE RA 1	135	45	6767	1.52	31.57	-2.06
882	SLE RA 2	132	66	6705	1.19	30.53	-1.96
882	SLE RA 3	139	45	6881	1.61	32.36	-2.13
882	SLE RA 4	137	58	6844	1.41	31.74	-2.06
882	SLE RA 5	134	66	6781	1.24	30.96	-2.01
882	SLE RA 6	141	45	6956	1.66	32.79	-2.18
882	SLE RA 7	139	58	6919	1.46	32.17	-2.11
882	SLE RA 8	140	45	6918	1.64	32.42	-2.16
882	SLE RA 9	138	57	6881	1.44	31.81	-2.1
882	SLE RA 10	139	70	7250	1.28	34.05	-2.14
882	SLE RA 11	146	49	7425	1.7	35.87	-2.31
882	SLE RA 12	144	62	7388	1.5	35.26	-2.24
882	SLE RA 13	141	70	7325	1.34	34.48	-2.19
882	SLE RA 14	148	49	7500	1.76	36.3	-2.36
882	SLE RA 15	146	62	7463	1.55	35.68	-2.29
882	SLE RA 16	147	49	7462	1.73	35.94	-2.34
882	SLE RA 17	145	62	7425	1.53	35.32	-2.28
882	SLE RA 18	146	51	7545	1.65	36.59	-2.32
882	SLE RA 19	143	64	7508	1.45	35.97	-2.26
882	SLE RA 20	148	51	7620	1.71	37.02	-2.37
882	SLE RA 21	146	64	7583	1.51	36.4	-2.31
882	SLE FR 1	135	45	6767	1.52	31.57	-2.06
882	SLE FR 2	135	49	6755	1.46	31.36	-2.04
882	SLE FR 3	136	45	6797	1.55	31.74	-2.08
882	SLE FR 4	138	51	6988	1.5	32.87	-2.12
882	SLE FR 5	140	47	7031	1.59	33.24	-2.16
882	SLE FR 6	141	48	7156	1.59	34.08	-2.19
882	SLE QP 1	135	45	6767	1.52	31.57	-2.06
882	SLE QP 2	139	47	7001	1.56	33.07	-2.14
882	SLD 1	727	161	5543	-2.27	14.21	-4.41
882	SLD 2	646	266	5462	-2.75	16.92	-1.89
882	SLD 3	807	-219	6819	4.39	34.78	-6.68
882	SLD 4	726	-114	6738	3.91	37.48	-4.15
882	SLD 5	208	639	4643	-9.6	-4.26	0.15
882	SLD 6	155	708	4590	-9.92	-2.48	1.82
882	SLD 7	475	-629	8895	12.6	64.29	-7.39
882	SLD 8	422	-560	8842	12.28	66.07	-5.72
882	SLD 9	-144	653	5159	-9.16	0.07	1.44
882	SLD 10	-198	722	5106	-9.48	1.86	3.1
882	SLD 11	122	-615	9411	13.05	68.62	-6.1
882	SLD 12	69	-546	9358	12.73	70.41	-4.44
882	SLD 13	-449	208	7263	-0.78	28.66	-0.14
882	SLD 14	-530	313	7182	-1.27	31.37	2.39
882	SLD 15	-369	-172	8539	5.88	49.23	-2.4
882	SLD 16	-450	-68	8458	5.39	51.93	0.13
882	SLV 1	1509	344	3483	-7.96	-12.74	-7.26
882	SLV 2	1318	590	3293	-9.1	-6.38	-1.32
882	SLV 3	1711	-607	6683	8.75	38.66	-12.98
882	SLV 4	1520	-360	6494	7.6	45.03	-7.04
882	SLV 5	279	1531	1127	-26.41	-59.82	3.89
882	SLV 6	151	1697	999	-27.18	-55.54	7.89
882	SLV 7	952	-1637	11795	29.26	111.53	-15.18
882	SLV 8	824	-1471	11667	28.49	115.81	-11.18
882	SLV 9	-547	1564	2334	-25.37	-49.66	6.89
882	SLV 10	-675	1730	2206	-26.14	-45.38	10.89
882	SLV 11	126	-1604	13002	30.31	121.68	-12.17
882	SLV 12	-2	-1438	12874	29.54	125.97	-8.17
882	SLV 13	-1243	454	7507	-4.48	21.12	2.75
882	SLV 14	-1434	700	7318	-5.62	27.48	8.7
882	SLV 15	-1041	-496	10708	12.22	72.52	-2.97
882	SLV 16	-1232	-250	10518	11.08	78.88	2.98
882	CRTFP Ux+	0	0	0	0	0	0
882	CRTFP Ux-	0	0	0	0	0	0
882	CRTFP Uy+	0	0	0	0	0	0
882	CRTFP Uy-	0	0	0	0	0	0
884	SLU 1	-44	43	2959	0.17	-341.65	10.77
884	SLU 2	-43	64	2917	-0.05	-338.16	16.09
884	SLU 3	-45	43	3029	0.21	-349.1	10.82
884	SLU 4	-44	56	3005	0.08	-347	14.01
884	SLU 5	-44	64	2962	-0.03	-342.83	16.12
884	SLU 6	-45	43	3074	0.24	-353.77	10.85
884	SLU 7	-45	56	3049	0.11	-351.68	14.04
884	SLU 8	-45	43	3048	0.23	-351	10.84
884	SLU 9	-44	56	3023	0.09	-348.91	14.03
884	SLU 10	-46	70	3268	-0.04	-376.02	17.6
884	SLU 11	-48	49	3380	0.23	-386.96	12.33
884	SLU 12	-48	62	3356	0.09	-384.86	15.52
884	SLU 13	-47	70	3313	-0.01	-380.7	17.63
884	SLU 14	-49	49	3425	0.25	-391.63	12.37
884	SLU 15	-48	62	3400	0.12	-389.54	15.56
884	SLU 16	-48	49	3399	0.24	-388.86	12.35
884	SLU 17	-48	62	3374	0.11	-386.77	15.54
884	SLU 18	-49	52	3460	0.19	-395.74	12.93
884	SLU 19	-48	64	3435	0.05	-393.64	16.12
884	SLU 20	-49	52	3505	0.22	-400.41	12.97

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
884	SLU 21	-49	64	3480	0.08	-398.32	16.16
884	SLU 22	-49	46	3417	0.31	-390.54	11.61
884	SLU 23	-48	68	3376	0.09	-387.05	16.93
884	SLU 24	-50	46	3488	0.36	-397.99	11.66
884	SLU 25	-50	59	3463	0.22	-395.89	14.85
884	SLU 26	-49	68	3421	0.12	-391.73	16.96
884	SLU 27	-51	47	3532	0.38	-402.66	11.69
884	SLU 28	-50	59	3508	0.25	-400.57	14.88
884	SLU 29	-50	47	3506	0.37	-399.89	11.68
884	SLU 30	-50	59	3482	0.24	-397.8	14.87
884	SLU 31	-52	74	3727	0.1	-424.91	18.44
884	SLU 32	-54	53	3839	0.37	-435.85	13.17
884	SLU 33	-53	65	3814	0.23	-433.76	16.36
884	SLU 34	-52	74	3772	0.13	-429.59	18.47
884	SLU 35	-54	53	3883	0.4	-440.53	13.21
884	SLU 36	-54	65	3859	0.26	-438.43	16.4
884	SLU 37	-54	53	3857	0.38	-437.76	13.19
884	SLU 38	-53	65	3833	0.25	-435.66	16.38
884	SLU 39	-54	55	3919	0.33	-444.63	13.77
884	SLU 40	-53	68	3894	0.2	-442.54	16.96
884	SLU 41	-55	55	3963	0.36	-449.31	13.81
884	SLU 42	-54	68	3938	0.23	-447.21	17
884	SLU 43	-55	55	3689	0.17	-427.38	13.71
884	SLU 44	-54	76	3648	-0.05	-423.89	19.03
884	SLU 45	-56	55	3760	0.21	-434.83	13.76
884	SLU 46	-56	68	3735	0.08	-432.73	16.95
884	SLU 47	-55	76	3692	-0.02	-428.57	19.06
884	SLU 48	-57	55	3804	0.24	-439.5	13.8
884	SLU 49	-56	68	3779	0.11	-437.41	16.99
884	SLU 50	-56	55	3778	0.23	-436.73	13.78
884	SLU 51	-56	68	3753	0.09	-434.64	16.97
884	SLU 52	-58	82	3999	-0.04	-461.75	20.54
884	SLU 53	-59	61	4111	0.23	-472.69	15.27
884	SLU 54	-59	74	4086	0.09	-470.6	18.46
884	SLU 55	-58	82	4043	-0.01	-466.43	20.58
884	SLU 56	-60	61	4155	0.26	-477.37	15.31
884	SLU 57	-59	74	4130	0.12	-475.27	18.5
884	SLU 58	-60	61	4129	0.24	-474.6	15.3
884	SLU 59	-59	74	4104	0.11	-472.5	18.49
884	SLU 60	-60	63	4190	0.19	-481.47	15.88
884	SLU 61	-59	76	4166	0.06	-479.38	19.06
884	SLU 62	-60	63	4235	0.22	-486.15	15.91
884	SLU 63	-60	76	4210	0.08	-484.05	19.1
884	SLU 64	-61	58	4148	0.31	-476.27	14.55
884	SLU 65	-60	79	4106	0.09	-472.78	19.87
884	SLU 66	-62	58	4218	0.36	-483.72	14.6
884	SLU 67	-61	71	4194	0.22	-481.63	17.79
884	SLU 68	-60	79	4151	0.12	-477.46	19.91
884	SLU 69	-62	58	4263	0.39	-488.4	14.64
884	SLU 70	-62	71	4238	0.25	-486.3	17.83
884	SLU 71	-62	58	4237	0.37	-485.63	14.62
884	SLU 72	-61	71	4212	0.24	-483.53	17.81
884	SLU 73	-63	85	4457	0.1	-510.65	21.38
884	SLU 74	-65	64	4569	0.37	-521.58	16.12
884	SLU 75	-64	77	4545	0.24	-519.49	19.3
884	SLU 76	-64	85	4502	0.13	-515.32	21.42
884	SLU 77	-65	64	4614	0.4	-526.26	16.15
884	SLU 78	-65	77	4589	0.26	-524.16	19.34
884	SLU 79	-65	64	4588	0.38	-523.49	16.14
884	SLU 80	-64	77	4563	0.25	-521.39	19.33
884	SLU 81	-65	67	4649	0.33	-530.36	16.72
884	SLU 82	-65	79	4624	0.2	-528.27	19.91
884	SLU 83	-66	67	4694	0.36	-535.04	16.75
884	SLU 84	-65	80	4669	0.23	-532.94	19.94
884	SLE RA 1	-45	44	3090	0.21	-355.62	11.01
884	SLE RA 2	-45	58	3062	0.06	-353.29	14.56
884	SLE RA 3	-46	44	3137	0.24	-360.58	11.04
884	SLE RA 4	-46	53	3120	0.15	-359.19	13.17
884	SLE RA 5	-45	58	3092	0.08	-356.41	14.58
884	SLE RA 6	-46	44	3166	0.26	-363.7	11.07
884	SLE RA 7	-46	53	3150	0.17	-362.3	13.19
884	SLE RA 8	-46	44	3149	0.25	-361.85	11.06
884	SLE RA 9	-46	53	3132	0.16	-360.46	13.18
884	SLE RA 10	-47	62	3296	0.07	-378.53	15.56
884	SLE RA 11	-48	48	3371	0.25	-385.82	12.05
884	SLE RA 12	-48	57	3354	0.16	-384.43	14.18
884	SLE RA 13	-47	62	3326	0.09	-381.65	15.59
884	SLE RA 14	-49	48	3400	0.27	-388.94	12.07
884	SLE RA 15	-48	57	3384	0.18	-387.55	14.2
884	SLE RA 16	-48	48	3383	0.26	-387.1	12.07
884	SLE RA 17	-48	57	3366	0.17	-385.7	14.19
884	SLE RA 18	-49	50	3424	0.22	-391.68	12.45
884	SLE RA 19	-48	58	3407	0.13	-390.28	14.58
884	SLE RA 20	-49	50	3454	0.24	-394.8	12.47
884	SLE RA 21	-49	58	3437	0.15	-393.4	14.6
884	SLE FR 1	-45	44	3090	0.21	-355.62	11.01
884	SLE FR 2	-45	47	3084	0.18	-355.15	11.72
884	SLE FR 3	-46	44	3102	0.22	-356.87	11.02
884	SLE FR 4	-46	48	3184	0.18	-365.97	12.15

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
884	SLE FR 5	-46	46	3202	0.22	-367.68	11.45
884	SLE FR 6	-47	47	3257	0.22	-373.65	11.73
884	SLE QP 1	-45	44	3090	0.21	-355.62	11.01
884	SLE QP 2	-46	46	3190	0.21	-366.44	11.44
884	SLD 1	254	251	3820	-1.24	-437.28	62.8
884	SLD 2	219	139	3866	-0.97	-440.8	34.91
884	SLD 3	240	4	4388	1.77	-486.37	0.89
884	SLD 4	205	-109	4433	2.04	-489.89	-27.01
884	SLD 5	71	503	2510	-4.84	-312.61	125.77
884	SLD 6	48	429	2540	-4.66	-314.93	107.37
884	SLD 7	25	-322	4402	5.2	-476.23	-80.61
884	SLD 8	1	-396	4432	5.38	-478.55	-99.01
884	SLD 9	-94	488	1948	-4.95	-254.32	121.9
884	SLD 10	-118	414	1978	-4.77	-256.64	103.5
884	SLD 11	-141	-338	3840	5.09	-417.94	-84.49
884	SLD 12	-164	-412	3870	5.26	-420.26	-102.89
884	SLD 13	-297	200	1947	-1.61	-242.99	49.89
884	SLD 14	-333	88	1992	-1.34	-246.5	22
884	SLD 15	-311	-48	2514	1.4	-292.07	-12.02
884	SLD 16	-347	-160	2560	1.67	-295.59	-39.92
884	SLV 1	658	545	4618	-3.44	-528.16	136.28
884	SLV 2	575	282	4725	-2.8	-536.42	70.71
884	SLV 3	624	-70	6039	4.1	-651.07	-17.48
884	SLV 4	540	-333	6147	4.73	-659.33	-83.05
884	SLV 5	232	1177	1442	-12.43	-226.99	294.33
884	SLV 6	176	1000	1514	-12	-232.55	250.19
884	SLV 7	119	-872	6181	12.69	-636.71	-218.2
884	SLV 8	62	-1050	6253	13.12	-642.27	-262.34
884	SLV 9	-155	1141	127	-12.69	-90.6	285.23
884	SLV 10	-211	964	199	-12.26	-96.16	241.09
884	SLV 11	-269	-909	4866	12.43	-500.32	-227.3
884	SLV 12	-325	-1086	4938	12.86	-505.89	-271.45
884	SLV 13	-633	425	233	-4.3	-73.54	105.94
884	SLV 14	-717	161	340	-3.67	-81.8	40.37
884	SLV 15	-667	-190	1655	3.23	-196.46	-47.82
884	SLV 16	-751	-454	1762	3.87	-204.72	-113.39
884	CRTFP Ux+	0	0	0	0	0	0
884	CRTFP Ux-	0	0	0	0	0	0
884	CRTFP Uy+	0	0	0	0	0	0
884	CRTFP Uy-	0	0	0	0	0	0
887	SLU 1	-90	-38	6450	-2.17	-17.42	0.5
887	SLU 2	-87	-8	6357	-2.67	-16	0.43
887	SLU 3	-92	-40	6613	-2.14	-18.3	0.52
887	SLU 4	-91	-21	6557	-2.44	-17.45	0.48
887	SLU 5	-89	-9	6460	-2.64	-16.6	0.44
887	SLU 6	-93	-40	6716	-2.12	-18.9	0.53
887	SLU 7	-92	-22	6660	-2.42	-18.05	0.48
887	SLU 8	-92	-40	6657	-2.13	-18.61	0.52
887	SLU 9	-91	-22	6601	-2.43	-17.76	0.48
887	SLU 10	-92	-12	7184	-3.04	-19.34	0.51
887	SLU 11	-97	-43	7441	-2.51	-21.64	0.6
887	SLU 12	-95	-25	7384	-2.81	-20.79	0.56
887	SLU 13	-93	-13	7288	-3.02	-19.94	0.52
887	SLU 14	-98	-44	7544	-2.49	-22.24	0.61
887	SLU 15	-97	-26	7488	-2.79	-21.39	0.57
887	SLU 16	-97	-44	7485	-2.5	-21.95	0.6
887	SLU 17	-96	-26	7428	-2.8	-21.1	0.56
887	SLU 18	-97	-44	7633	-2.7	-22.19	0.62
887	SLU 19	-95	-26	7576	-3	-21.34	0.58
887	SLU 20	-98	-44	7736	-2.68	-22.79	0.63
887	SLU 21	-96	-26	7680	-2.98	-21.93	0.59
887	SLU 22	-100	-45	7517	-2.32	-21.69	0.59
887	SLU 23	-98	-14	7424	-2.82	-20.27	0.51
887	SLU 24	-102	-46	7680	-2.29	-22.58	0.6
887	SLU 25	-101	-28	7624	-2.59	-21.72	0.56
887	SLU 26	-99	-15	7527	-2.79	-20.87	0.52
887	SLU 27	-104	-47	7784	-2.27	-23.17	0.61
887	SLU 28	-102	-28	7727	-2.57	-22.32	0.57
887	SLU 29	-103	-46	7724	-2.28	-22.89	0.6
887	SLU 30	-101	-28	7668	-2.57	-22.03	0.56
887	SLU 31	-102	-18	8251	-3.19	-23.61	0.6
887	SLU 32	-107	-50	8508	-2.66	-25.91	0.68
887	SLU 33	-106	-31	8452	-2.96	-25.06	0.64
887	SLU 34	-104	-19	8355	-3.16	-24.21	0.6
887	SLU 35	-108	-50	8611	-2.64	-26.51	0.69
887	SLU 36	-107	-32	8555	-2.94	-25.66	0.65
887	SLU 37	-107	-50	8552	-2.65	-26.23	0.69
887	SLU 38	-106	-32	8496	-2.95	-25.37	0.64
887	SLU 39	-107	-50	8700	-2.85	-26.46	0.71
887	SLU 40	-105	-32	8644	-3.15	-25.61	0.66
887	SLU 41	-108	-51	8803	-2.83	-27.06	0.71
887	SLU 42	-107	-33	8747	-3.13	-26.21	0.67
887	SLU 43	-113	-48	8019	-2.78	-21.18	0.63
887	SLU 44	-111	-18	7926	-3.27	-19.76	0.55
887	SLU 45	-116	-49	8182	-2.75	-22.06	0.64
887	SLU 46	-114	-31	8126	-3.04	-21.21	0.6
887	SLU 47	-112	-18	8029	-3.25	-20.36	0.56
887	SLU 48	-117	-50	8286	-2.72	-22.66	0.65
887	SLU 49	-115	-32	8229	-3.02	-21.81	0.61

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
887	SLU 50	-116	-49	8226	-2.73	-22.38	0.64
887	SLU 51	-114	-31	8170	-3.03	-21.52	0.6
887	SLU 52	-116	-21	8753	-3.64	-23.1	0.64
887	SLU 53	-120	-53	9010	-3.12	-25.4	0.73
887	SLU 54	-119	-35	8954	-3.41	-24.55	0.68
887	SLU 55	-117	-22	8857	-3.62	-23.7	0.65
887	SLU 56	-122	-53	9113	-3.09	-26	0.74
887	SLU 57	-120	-35	9057	-3.39	-25.15	0.69
887	SLU 58	-121	-53	9054	-3.1	-25.71	0.73
887	SLU 59	-119	-35	8998	-3.4	-24.86	0.68
887	SLU 60	-120	-53	9202	-3.31	-25.95	0.75
887	SLU 61	-119	-35	9146	-3.6	-25.1	0.7
887	SLU 62	-121	-54	9305	-3.28	-26.55	0.76
887	SLU 63	-120	-36	9249	-3.58	-25.7	0.71
887	SLU 64	-124	-54	9087	-2.92	-25.45	0.71
887	SLU 65	-121	-24	8993	-3.42	-24.03	0.64
887	SLU 66	-126	-55	9249	-2.89	-26.34	0.73
887	SLU 67	-124	-37	9193	-3.19	-25.48	0.68
887	SLU 68	-122	-25	9096	-3.39	-24.63	0.64
887	SLU 69	-127	-56	9353	-2.87	-26.93	0.73
887	SLU 70	-126	-38	9296	-3.17	-26.08	0.69
887	SLU 71	-126	-56	9293	-2.88	-26.65	0.73
887	SLU 72	-125	-37	9237	-3.18	-25.8	0.68
887	SLU 73	-126	-28	9821	-3.79	-27.37	0.72
887	SLU 74	-131	-59	10077	-3.26	-29.68	0.81
887	SLU 75	-129	-41	10021	-3.56	-28.82	0.76
887	SLU 76	-127	-28	9924	-3.77	-27.97	0.73
887	SLU 77	-132	-60	10180	-3.24	-30.27	0.82
887	SLU 78	-130	-42	10124	-3.54	-29.42	0.77
887	SLU 79	-131	-59	10121	-3.25	-29.99	0.81
887	SLU 80	-129	-41	10065	-3.55	-29.13	0.77
887	SLU 81	-130	-59	10269	-3.45	-30.22	0.83
887	SLU 82	-129	-41	10213	-3.75	-29.37	0.78
887	SLU 83	-132	-60	10372	-3.43	-30.82	0.84
887	SLU 84	-130	-42	10316	-3.73	-29.97	0.79
887	SLE RA 1	-93	-40	6755	-2.22	-18.64	0.53
887	SLE RA 2	-91	-20	6693	-2.55	-17.69	0.48
887	SLE RA 3	-94	-41	6864	-2.2	-19.23	0.54
887	SLE RA 4	-93	-29	6826	-2.39	-18.66	0.51
887	SLE RA 5	-92	-21	6762	-2.53	-18.09	0.48
887	SLE RA 6	-95	-41	6933	-2.18	-19.63	0.54
887	SLE RA 7	-94	-29	6895	-2.38	-19.06	0.51
887	SLE RA 8	-95	-41	6893	-2.19	-19.44	0.54
887	SLE RA 9	-94	-29	6855	-2.38	-18.87	0.51
887	SLE RA 10	-94	-23	7244	-2.79	-19.92	0.53
887	SLE RA 11	-97	-43	7415	-2.44	-21.46	0.59
887	SLE RA 12	-96	-31	7378	-2.64	-20.89	0.56
887	SLE RA 13	-95	-23	7313	-2.78	-20.32	0.54
887	SLE RA 14	-98	-44	7484	-2.43	-21.85	0.6
887	SLE RA 15	-97	-32	7447	-2.63	-21.29	0.57
887	SLE RA 16	-98	-44	7445	-2.43	-21.66	0.59
887	SLE RA 17	-97	-32	7407	-2.63	-21.09	0.57
887	SLE RA 18	-97	-44	7543	-2.57	-21.82	0.61
887	SLE RA 19	-96	-32	7506	-2.77	-21.25	0.58
887	SLE RA 20	-98	-44	7612	-2.56	-22.22	0.61
887	SLE RA 21	-97	-32	7575	-2.75	-21.65	0.58
887	SLE FR 1	-93	-40	6755	-2.22	-18.64	0.53
887	SLE FR 2	-93	-36	6743	-2.28	-18.45	0.52
887	SLE FR 3	-93	-40	6783	-2.21	-18.8	0.53
887	SLE FR 4	-94	-37	6979	-2.39	-19.4	0.54
887	SLE FR 5	-95	-41	7019	-2.32	-19.75	0.55
887	SLE FR 6	-95	-42	7149	-2.39	-20.23	0.57
887	SLE QP 1	-93	-40	6755	-2.22	-18.64	0.53
887	SLE QP 2	-94	-41	6992	-2.32	-19.59	0.55
887	SLD 1	585	145	7208	-6.25	0.39	-3.77
887	SLD 2	507	46	7293	-5.71	0.22	-1.22
887	SLD 3	547	-216	8498	0.25	-17.87	-2.63
887	SLD 4	469	-316	8584	0.79	-18.04	-0.08
887	SLD 5	180	581	5084	-13.45	14.12	-2.92
887	SLD 6	129	516	5140	-13.09	14.01	-1.24
887	SLD 7	55	-625	9385	8.2	-46.73	0.85
887	SLD 8	4	-690	9442	8.56	-46.85	2.54
887	SLD 9	-192	608	4541	-13.21	7.66	-1.43
887	SLD 10	-244	542	4598	-12.85	7.55	0.25
887	SLD 11	-317	-598	8843	8.45	-53.2	2.34
887	SLD 12	-369	-664	8899	8.81	-53.31	4.02
887	SLD 13	-657	233	5399	-5.44	-21.15	1.19
887	SLD 14	-735	134	5485	-4.89	-21.32	3.74
887	SLD 15	-695	-128	6690	1.06	-39.41	2.32
887	SLD 16	-773	-228	6775	1.61	-39.58	4.87
887	SLV 1	1497	423	7391	-12.05	28.63	-9.64
887	SLV 2	1313	189	7592	-10.77	28.22	-3.64
887	SLV 3	1404	-477	10623	4.22	-17.06	-6.85
887	SLV 4	1221	-711	10824	5.5	-17.46	-0.86
887	SLV 5	557	1507	2172	-30.15	64.23	-7.85
887	SLV 6	434	1349	2308	-29.29	63.96	-3.81
887	SLV 7	249	-1493	12945	24.07	-88.04	1.43
887	SLV 8	126	-1651	13081	24.93	-88.31	5.47
887	SLV 9	-314	1568	903	-29.58	49.12	-4.37

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
887	SLV 10	-438	1411	1038	-28.71	48.85	-0.33
887	SLV 11	-622	-1432	11676	24.64	-103.15	4.91
887	SLV 12	-746	-1589	11811	25.5	-103.42	8.95
887	SLV 13	-1409	629	3159	-10.14	-21.73	1.96
887	SLV 14	-1593	395	3360	-8.86	-22.13	7.96
887	SLV 15	-1502	-271	6391	6.12	-67.41	4.75
887	SLV 16	-1685	-505	6592	7.4	-67.81	10.74
887	CRTFP Ux+	0	0	0	0	0	0
887	CRTFP Ux-	0	0	0	0	0	0
887	CRTFP Uy+	0	0	0	0	0	0
887	CRTFP Uy-	0	0	0	0	0	0
890	SLU 1	-5	45	5557	1.78	91.03	1.06
890	SLU 2	-5	75	5500	1.32	90.09	1.01
890	SLU 3	-5	46	5690	1.92	94	1.08
890	SLU 4	-5	64	5656	1.64	93.44	1.05
890	SLU 5	-5	76	5584	1.41	92.02	1.02
890	SLU 6	-5	46	5774	2.01	95.92	1.09
890	SLU 7	-5	64	5739	1.73	95.36	1.07
890	SLU 8	-5	46	5725	1.96	94.88	1.08
890	SLU 9	-5	64	5690	1.68	94.31	1.05
890	SLU 10	-6	77	6220	1.46	101.67	1.11
890	SLU 11	-6	48	6410	2.05	105.58	1.18
890	SLU 12	-6	66	6376	1.78	105.02	1.16
890	SLU 13	-6	78	6304	1.55	103.59	1.13
890	SLU 14	-6	48	6494	2.14	107.5	1.2
890	SLU 15	-6	66	6459	1.87	106.94	1.17
890	SLU 16	-6	48	6445	2.09	106.45	1.18
890	SLU 17	-6	66	6410	1.82	105.89	1.16
890	SLU 18	-7	48	6585	1.97	107.57	1.2
890	SLU 19	-6	66	6551	1.7	107.01	1.18
890	SLU 20	-7	48	6669	2.06	109.49	1.22
890	SLU 21	-6	66	6635	1.79	108.93	1.19
890	SLU 22	-6	50	6464	2.29	106.23	1.18
890	SLU 23	-6	80	6407	1.84	105.29	1.13
890	SLU 24	-7	50	6597	2.43	109.2	1.2
890	SLU 25	-6	69	6563	2.16	108.63	1.18
890	SLU 26	-6	80	6491	1.93	107.21	1.15
890	SLU 27	-7	51	6681	2.52	111.12	1.22
890	SLU 28	-6	69	6647	2.25	110.56	1.19
890	SLU 29	-7	50	6632	2.47	110.07	1.21
890	SLU 30	-6	68	6598	2.2	109.51	1.18
890	SLU 31	-7	82	7127	1.98	116.87	1.24
890	SLU 32	-8	52	7317	2.57	120.77	1.31
890	SLU 33	-7	70	7283	2.3	120.21	1.28
890	SLU 34	-7	82	7211	2.07	118.79	1.25
890	SLU 35	-8	53	7401	2.66	122.7	1.32
890	SLU 36	-7	71	7367	2.39	122.13	1.29
890	SLU 37	-7	52	7352	2.61	121.65	1.31
890	SLU 38	-7	70	7318	2.34	121.09	1.28
890	SLU 39	-8	52	7493	2.49	122.76	1.33
890	SLU 40	-7	70	7459	2.22	122.2	1.3
890	SLU 41	-8	53	7577	2.58	124.69	1.34
890	SLU 42	-8	71	7542	2.31	124.13	1.31
890	SLU 43	-6	57	6913	2.13	113.13	1.33
890	SLU 44	-6	87	6856	1.68	112.19	1.29
890	SLU 45	-6	58	7046	2.27	116.1	1.36
890	SLU 46	-6	76	7012	2	115.54	1.33
890	SLU 47	-6	88	6940	1.77	114.12	1.3
890	SLU 48	-6	58	7130	2.36	118.02	1.37
890	SLU 49	-6	76	7095	2.09	117.46	1.34
890	SLU 50	-6	58	7081	2.31	116.98	1.36
890	SLU 51	-6	76	7046	2.04	116.41	1.33
890	SLU 52	-7	89	7576	1.82	123.77	1.39
890	SLU 53	-7	60	7766	2.41	127.68	1.46
890	SLU 54	-7	78	7732	2.14	127.12	1.43
890	SLU 55	-7	90	7660	1.91	125.69	1.4
890	SLU 56	-7	60	7850	2.5	129.6	1.47
890	SLU 57	-7	78	7815	2.23	129.04	1.44
890	SLU 58	-7	60	7801	2.45	128.55	1.46
890	SLU 59	-7	78	7766	2.18	127.99	1.43
890	SLU 60	-8	60	7941	2.33	129.67	1.48
890	SLU 61	-7	78	7907	2.06	129.11	1.45
890	SLU 62	-8	60	8025	2.42	131.59	1.49
890	SLU 63	-7	78	7991	2.15	131.03	1.46
890	SLU 64	-7	62	7820	2.65	128.33	1.46
890	SLU 65	-7	92	7763	2.2	127.39	1.41
890	SLU 66	-8	62	7953	2.79	131.29	1.48
890	SLU 67	-7	81	7919	2.52	130.73	1.45
890	SLU 68	-7	92	7847	2.29	129.31	1.42
890	SLU 69	-8	63	8037	2.88	133.22	1.49
890	SLU 70	-7	81	8003	2.61	132.66	1.46
890	SLU 71	-8	62	7988	2.83	132.17	1.48
890	SLU 72	-7	80	7954	2.56	131.61	1.45
890	SLU 73	-8	94	8483	2.33	138.97	1.51
890	SLU 74	-9	64	8673	2.93	142.87	1.58
890	SLU 75	-8	82	8639	2.65	142.31	1.55
890	SLU 76	-8	94	8567	2.42	140.89	1.52
890	SLU 77	-9	65	8757	3.02	144.79	1.59
890	SLU 78	-8	83	8723	2.74	144.23	1.57

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
890	SLU 79	-9	64	8708	2.97	143.75	1.58
890	SLU 80	-8	82	8674	2.69	143.19	1.55
890	SLU 81	-9	64	8849	2.85	144.86	1.6
890	SLU 82	-9	82	8815	2.57	144.3	1.57
890	SLU 83	-9	65	8933	2.94	146.79	1.61
890	SLU 84	-9	83	8898	2.66	146.23	1.59
890	SLE RA 1	-5	46	5816	1.93	95.37	1.09
890	SLE RA 2	-5	67	5778	1.62	94.75	1.06
890	SLE RA 3	-6	47	5905	2.02	97.35	1.11
890	SLE RA 4	-5	59	5882	1.84	96.98	1.09
890	SLE RA 5	-5	67	5834	1.68	96.03	1.07
890	SLE RA 6	-6	47	5961	2.08	98.63	1.12
890	SLE RA 7	-5	59	5938	1.9	98.26	1.1
890	SLE RA 8	-6	47	5928	2.04	97.94	1.11
890	SLE RA 9	-5	59	5905	1.86	97.56	1.09
890	SLE RA 10	-6	68	6258	1.71	102.47	1.13
890	SLE RA 11	-6	48	6385	2.11	105.07	1.18
890	SLE RA 12	-6	60	6362	1.93	104.7	1.16
890	SLE RA 13	-6	68	6314	1.77	103.75	1.14
890	SLE RA 14	-6	48	6441	2.17	106.35	1.19
890	SLE RA 15	-6	60	6418	1.99	105.98	1.17
890	SLE RA 16	-6	48	6408	2.14	105.65	1.18
890	SLE RA 17	-6	60	6385	1.95	105.28	1.16
890	SLE RA 18	-6	48	6502	2.06	106.4	1.19
890	SLE RA 19	-6	60	6479	1.87	106.02	1.17
890	SLE RA 20	-6	48	6558	2.12	107.68	1.2
890	SLE RA 21	-6	60	6535	1.93	107.31	1.18
890	SLE FR 1	-5	46	5816	1.93	95.37	1.09
890	SLE FR 2	-5	50	5809	1.86	95.25	1.09
890	SLE FR 3	-5	46	5838	1.95	95.89	1.1
890	SLE FR 4	-6	51	6014	1.9	98.56	1.12
890	SLE FR 5	-6	47	6044	1.99	99.19	1.13
890	SLE FR 6	-6	47	6159	1.99	100.89	1.14
890	SLE QP 1	-5	46	5816	1.93	95.37	1.09
890	SLE QP 2	-6	47	6022	1.96	98.68	1.12
890	SLD 1	656	269	5967	-0.97	88.58	-2.96
890	SLD 2	589	233	5971	-0.79	88.89	-0.66
890	SLD 3	643	-105	6759	5.02	102.16	-2.24
890	SLD 4	576	-140	6763	5.2	102.47	0.07
890	SLD 5	224	686	4804	-8.04	75	-1.62
890	SLD 6	180	663	4806	-7.92	75.21	-0.1
890	SLD 7	181	-559	7444	11.94	120.26	0.8
890	SLD 8	137	-582	7446	12.06	120.47	2.32
890	SLD 9	-149	676	4598	-8.13	76.89	-0.08
890	SLD 10	-193	652	4600	-8.01	77.1	1.44
890	SLD 11	-192	-569	7238	11.85	122.15	2.35
890	SLD 12	-236	-592	7240	11.97	122.36	3.87
890	SLD 13	-588	234	5281	-1.27	94.89	2.18
890	SLD 14	-655	199	5284	-1.09	95.2	4.48
890	SLD 15	-601	-139	6073	4.72	108.47	2.91
890	SLD 16	-668	-175	6076	4.9	108.78	5.21
890	SLV 1	1544	595	5829	-5.4	73.98	-8.49
890	SLV 2	1387	511	5837	-4.98	74.72	-3.07
890	SLV 3	1513	-336	7814	9.61	108.02	-6.72
890	SLV 4	1356	-420	7822	10.03	108.76	-1.3
890	SLV 5	535	1639	2952	-23.09	39.49	-5.46
890	SLV 6	429	1583	2957	-22.8	39.99	-1.81
890	SLV 7	432	-1464	9569	26.94	152.98	0.45
890	SLV 8	327	-1520	9574	27.22	153.48	4.1
890	SLV 9	-338	1614	2470	-23.29	43.88	-1.85
890	SLV 10	-444	1558	2475	-23.01	44.38	1.8
890	SLV 11	-441	-1489	9087	26.73	157.37	4.06
890	SLV 12	-547	-1545	9092	27.01	157.87	7.71
890	SLV 13	-1367	514	4222	-6.1	88.6	3.54
890	SLV 14	-1524	430	4230	-5.68	89.34	8.96
890	SLV 15	-1398	-417	6207	8.91	122.64	5.32
890	SLV 16	-1555	-501	6215	9.33	123.38	10.74
890	CRTFP Ux+	0	0	0	0	0	0
890	CRTFP Ux-	0	0	0	0	0	0
890	CRTFP Uy+	0	0	0	0	0	0
890	CRTFP Uy-	0	0	0	0	0	0
893	SLU 1	73	18	3724	3.23	678.99	-6.44
893	SLU 2	70	42	3658	2.79	668.59	-14.85
893	SLU 3	75	18	3823	3.4	695.18	-6.58
893	SLU 4	74	32	3783	3.13	688.94	-11.63
893	SLU 5	72	42	3724	2.91	679.41	-15.12
893	SLU 6	77	19	3889	3.52	706	-6.85
893	SLU 7	76	33	3849	3.26	699.76	-11.9
893	SLU 8	77	19	3856	3.47	700.63	-6.98
893	SLU 9	75	34	3817	3.21	694.39	-12.03
893	SLU 10	76	44	4095	3.19	742.56	-15.68
893	SLU 11	81	20	4259	3.8	769.15	-7.41
893	SLU 12	80	35	4220	3.53	762.91	-12.45
893	SLU 13	78	45	4161	3.31	753.38	-15.95
893	SLU 14	83	21	4325	3.92	779.97	-7.68
893	SLU 15	82	35	4286	3.66	773.73	-12.73
893	SLU 16	83	21	4293	3.87	774.6	-7.81
893	SLU 17	81	36	4253	3.61	768.36	-12.86
893	SLU 18	81	21	4348	3.8	784.67	-7.62

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
893	SLU 19	79	35	4308	3.53	778.42	-12.67
893	SLU 20	83	22	4414	3.92	795.49	-7.89
893	SLU 21	82	36	4374	3.66	789.24	-12.94
893	SLU 22	83	17	4303	3.97	776.29	-6.22
893	SLU 23	80	41	4237	3.53	765.89	-14.63
893	SLU 24	85	17	4402	4.14	792.47	-6.36
893	SLU 25	84	32	4362	3.88	786.23	-11.4
893	SLU 26	82	42	4303	3.65	776.71	-14.9
893	SLU 27	87	18	4468	4.26	803.29	-6.63
893	SLU 28	86	32	4428	4	797.05	-11.68
893	SLU 29	87	18	4435	4.22	797.93	-6.76
893	SLU 30	85	33	4395	3.95	791.69	-11.81
893	SLU 31	86	43	4673	3.93	839.86	-15.46
893	SLU 32	91	19	4838	4.54	866.44	-7.18
893	SLU 33	90	34	4798	4.27	860.2	-12.23
893	SLU 34	88	44	4739	4.05	850.68	-15.73
893	SLU 35	93	20	4904	4.66	877.26	-7.46
893	SLU 36	92	35	4864	4.4	871.02	-12.5
893	SLU 37	93	21	4871	4.61	871.9	-7.59
893	SLU 38	91	35	4832	4.35	865.66	-12.64
893	SLU 39	91	20	4927	4.54	881.96	-7.4
893	SLU 40	89	35	4887	4.27	875.72	-12.45
893	SLU 41	93	21	4993	4.66	892.78	-7.67
893	SLU 42	92	35	4953	4.4	886.54	-12.72
893	SLU 43	91	23	4643	3.94	849.33	-8.45
893	SLU 44	88	47	4577	3.5	838.93	-16.86
893	SLU 45	94	24	4742	4.11	865.52	-8.59
893	SLU 46	92	38	4702	3.85	859.28	-13.63
893	SLU 47	90	48	4643	3.62	849.75	-17.13
893	SLU 48	96	24	4808	4.23	876.34	-8.86
893	SLU 49	94	39	4768	3.97	870.1	-13.91
893	SLU 50	95	25	4775	4.19	870.97	-8.99
893	SLU 51	93	39	4735	3.92	864.73	-14.04
893	SLU 52	94	50	5013	3.9	912.9	-17.69
893	SLU 53	100	26	5178	4.51	939.49	-9.41
893	SLU 54	98	40	5139	4.25	933.25	-14.46
893	SLU 55	96	50	5079	4.02	923.72	-17.96
893	SLU 56	102	27	5244	4.63	950.31	-9.69
893	SLU 57	100	41	5205	4.37	944.07	-14.73
893	SLU 58	101	27	5212	4.59	944.94	-9.82
893	SLU 59	99	41	5172	4.32	938.7	-14.87
893	SLU 60	100	26	5267	4.51	955.01	-9.63
893	SLU 61	98	41	5227	4.25	948.76	-14.68
893	SLU 62	102	27	5333	4.63	965.83	-9.9
893	SLU 63	100	42	5293	4.37	959.58	-14.95
893	SLU 64	101	22	5222	4.68	946.63	-8.22
893	SLU 65	98	46	5156	4.24	936.23	-16.64
893	SLU 66	104	23	5320	4.85	962.81	-8.36
893	SLU 67	102	37	5281	4.59	956.57	-13.41
893	SLU 68	100	47	5222	4.37	947.04	-16.91
893	SLU 69	106	24	5386	4.98	973.63	-8.64
893	SLU 70	104	38	5347	4.71	967.39	-13.68
893	SLU 71	105	24	5354	4.93	968.27	-8.77
893	SLU 72	103	38	5314	4.66	962.03	-13.82
893	SLU 73	104	49	5592	4.64	1010.2	-17.46
893	SLU 74	110	25	5757	5.25	1036.78	-9.19
893	SLU 75	108	39	5717	4.99	1030.54	-14.24
893	SLU 76	106	50	5658	4.76	1021.02	-17.74
893	SLU 77	112	26	5823	5.38	1047.6	-9.46
893	SLU 78	110	40	5783	5.11	1041.36	-14.51
893	SLU 79	111	26	5790	5.33	1042.24	-9.6
893	SLU 80	109	41	5751	5.06	1036	-14.64
893	SLU 81	110	26	5845	5.25	1052.3	-9.41
893	SLU 82	108	40	5806	4.99	1046.06	-14.45
893	SLU 83	112	26	5911	5.38	1063.12	-9.68
893	SLU 84	110	41	5872	5.11	1056.88	-14.73
893	SLE RA 1	75	17	3890	3.44	706.79	-6.38
893	SLE RA 2	74	33	3845	3.15	699.86	-11.98
893	SLE RA 3	77	18	3955	3.55	717.58	-6.47
893	SLE RA 4	76	27	3929	3.38	713.42	-9.83
893	SLE RA 5	75	34	3889	3.23	707.07	-12.17
893	SLE RA 6	79	18	3999	3.63	724.8	-6.65
893	SLE RA 7	77	28	3973	3.46	720.63	-10.01
893	SLE RA 8	78	18	3978	3.6	721.22	-6.74
893	SLE RA 9	77	28	3951	3.43	717.06	-10.1
893	SLE RA 10	78	35	4136	3.41	749.17	-12.54
893	SLE RA 11	81	19	4246	3.82	766.9	-7.02
893	SLE RA 12	80	29	4220	3.64	762.73	-10.39
893	SLE RA 13	79	35	4180	3.49	756.38	-12.72
893	SLE RA 14	83	20	4290	3.9	774.11	-7.2
893	SLE RA 15	81	29	4264	3.72	769.95	-10.57
893	SLE RA 16	82	20	4269	3.87	770.53	-7.29
893	SLE RA 17	81	30	4242	3.69	766.37	-10.65
893	SLE RA 18	81	20	4305	3.82	777.24	-7.16
893	SLE RA 19	80	29	4279	3.64	773.08	-10.53
893	SLE RA 20	83	20	4349	3.9	784.45	-7.34
893	SLE RA 21	81	30	4323	3.73	780.29	-10.71
893	SLE FR 1	75	17	3890	3.44	706.79	-6.38
893	SLE FR 2	75	21	3881	3.38	705.4	-7.5

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
893	SLE FR 3	76	18	3907	3.47	709.68	-6.45
893	SLE FR 4	77	21	4005	3.49	726.54	-7.73
893	SLE FR 5	78	18	4032	3.59	730.81	-6.68
893	SLE FR 6	78	18	4097	3.63	742.02	-6.77
893	SLE QP 1	75	17	3890	3.44	706.79	-6.38
893	SLE QP 2	77	18	4014	3.55	727.93	-6.61
893	SLD 1	462	127	2492	-0.16	483.15	-44.99
893	SLD 2	405	260	2400	-0.76	468.65	-91.04
893	SLD 3	505	-154	3396	5.77	625.39	53.31
893	SLD 4	448	-22	3304	5.17	610.89	7.26
893	SLD 5	139	454	2204	-6.44	441.37	-158.94
893	SLD 6	101	542	2143	-6.84	431.8	-189.31
893	SLD 7	280	-485	5216	13.31	915.51	168.74
893	SLD 8	242	-397	5155	12.92	905.94	138.36
893	SLD 9	-88	433	2873	-5.81	549.91	-151.58
893	SLD 10	-126	521	2812	-6.21	540.35	-181.96
893	SLD 11	53	-505	5886	13.94	1024.05	176.09
893	SLD 12	16	-418	5825	13.55	1014.49	145.71
893	SLD 13	-293	58	4724	1.94	844.96	-20.49
893	SLD 14	-350	190	4632	1.34	830.46	-66.53
893	SLD 15	-251	-224	5628	7.86	987.2	77.82
893	SLD 16	-308	-91	5536	7.27	972.71	31.77
893	SLV 1	975	296	377	-5.63	143.21	-104.04
893	SLV 2	841	607	161	-7.04	109.13	-212.28
893	SLV 3	1082	-408	2644	9.23	500.05	141.51
893	SLV 4	948	-97	2428	7.83	465.97	33.27
893	SLV 5	209	1110	-476	-21.49	17.66	-388.06
893	SLV 6	118	1320	-621	-22.43	-5.28	-460.93
893	SLV 7	566	-1235	7082	28.07	1207.13	430.44
893	SLV 8	476	-1026	6937	27.12	1184.19	357.57
893	SLV 9	-322	1062	1091	-20.01	271.66	-370.79
893	SLV 10	-412	1271	946	-20.96	248.72	-443.66
893	SLV 11	36	-1284	8649	29.54	1461.14	447.7
893	SLV 12	-54	-1074	8504	28.59	1438.19	374.83
893	SLV 13	-794	133	5600	-0.72	989.88	-46.5
893	SLV 14	-928	444	5384	-2.13	955.81	-154.73
893	SLV 15	-686	-571	7868	14.14	1346.72	199.05
893	SLV 16	-820	-259	7652	12.74	1312.65	90.82
893	CRTFP Ux+	0	0	0	0	0	0
893	CRTFP Ux-	0	0	0	0	0	0
893	CRTFP Uy+	0	0	0	0	0	0
893	CRTFP Uy-	0	0	0	0	0	0
895	SLU 1	14	93	4449	2.18	-20.62	-0.56
895	SLU 2	13	121	4401	1.85	-20.63	-0.49
895	SLU 3	15	95	4550	2.31	-21.25	-0.58
895	SLU 4	14	112	4521	2.11	-21.26	-0.55
895	SLU 5	14	122	4463	1.93	-21.02	-0.52
895	SLU 6	16	96	4612	2.38	-21.64	-0.61
895	SLU 7	15	112	4583	2.19	-21.65	-0.57
895	SLU 8	15	95	4574	2.34	-21.39	-0.6
895	SLU 9	15	111	4545	2.14	-21.4	-0.57
895	SLU 10	15	129	4971	2.07	-22.79	-0.58
895	SLU 11	16	103	5120	2.53	-23.41	-0.67
895	SLU 12	16	120	5091	2.33	-23.42	-0.63
895	SLU 13	15	130	5033	2.15	-23.18	-0.61
895	SLU 14	17	104	5182	2.61	-23.8	-0.69
895	SLU 15	16	121	5153	2.41	-23.81	-0.66
895	SLU 16	17	103	5144	2.56	-23.55	-0.69
895	SLU 17	16	120	5115	2.36	-23.56	-0.65
895	SLU 18	16	105	5263	2.5	-23.7	-0.68
895	SLU 19	16	122	5234	2.3	-23.71	-0.64
895	SLU 20	17	106	5326	2.58	-24.09	-0.71
895	SLU 21	16	122	5297	2.38	-24.1	-0.67
895	SLU 22	16	105	5171	2.7	-23.75	-0.66
895	SLU 23	15	133	5123	2.38	-23.77	-0.6
895	SLU 24	17	107	5272	2.83	-24.39	-0.69
895	SLU 25	16	123	5243	2.63	-24.4	-0.65
895	SLU 26	16	134	5185	2.45	-24.15	-0.63
895	SLU 27	17	107	5334	2.91	-24.77	-0.71
895	SLU 28	17	124	5305	2.71	-24.78	-0.68
895	SLU 29	17	106	5296	2.86	-24.52	-0.71
895	SLU 30	17	123	5267	2.66	-24.53	-0.67
895	SLU 31	17	141	5693	2.6	-25.93	-0.69
895	SLU 32	18	115	5842	3.05	-26.55	-0.78
895	SLU 33	18	132	5813	2.86	-26.56	-0.74
895	SLU 34	17	142	5755	2.68	-26.31	-0.71
895	SLU 35	19	116	5904	3.13	-26.93	-0.8
895	SLU 36	18	132	5875	2.93	-26.94	-0.76
895	SLU 37	19	115	5866	3.08	-26.68	-0.8
895	SLU 38	18	131	5837	2.89	-26.69	-0.76
895	SLU 39	18	117	5985	3.02	-26.84	-0.79
895	SLU 40	18	134	5956	2.83	-26.85	-0.75
895	SLU 41	19	118	6048	3.1	-27.22	-0.81
895	SLU 42	18	134	6019	2.9	-27.23	-0.78
895	SLU 43	18	117	5536	2.65	-25.73	-0.69
895	SLU 44	17	145	5488	2.33	-25.75	-0.62
895	SLU 45	19	119	5637	2.78	-26.36	-0.71
895	SLU 46	18	135	5608	2.58	-26.37	-0.68
895	SLU 47	18	146	5550	2.4	-26.13	-0.65

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
895	SLU 48	19	119	5699	2.86	-26.75	-0.74
895	SLU 49	19	136	5671	2.66	-26.76	-0.7
895	SLU 50	19	118	5661	2.81	-26.5	-0.73
895	SLU 51	18	135	5632	2.61	-26.51	-0.7
895	SLU 52	18	153	6058	2.55	-27.91	-0.71
895	SLU 53	20	127	6207	3	-28.52	-0.8
895	SLU 54	19	144	6178	2.81	-28.53	-0.76
895	SLU 55	19	154	6120	2.63	-28.29	-0.74
895	SLU 56	21	128	6269	3.08	-28.91	-0.82
895	SLU 57	20	144	6241	2.88	-28.92	-0.79
895	SLU 58	20	127	6231	3.03	-28.66	-0.82
895	SLU 59	20	143	6202	2.84	-28.67	-0.79
895	SLU 60	20	129	6350	2.97	-28.82	-0.81
895	SLU 61	19	146	6321	2.78	-28.83	-0.77
895	SLU 62	21	130	6413	3.05	-29.2	-0.84
895	SLU 63	20	146	6384	2.85	-29.21	-0.8
895	SLU 64	20	129	6258	3.18	-28.87	-0.79
895	SLU 65	19	157	6210	2.85	-28.88	-0.73
895	SLU 66	21	131	6359	3.3	-29.5	-0.82
895	SLU 67	20	147	6330	3.11	-29.51	-0.78
895	SLU 68	19	157	6272	2.93	-29.26	-0.76
895	SLU 69	21	131	6421	3.38	-29.88	-0.84
895	SLU 70	20	148	6393	3.19	-29.89	-0.81
895	SLU 71	21	130	6383	3.33	-29.63	-0.84
895	SLU 72	20	147	6354	3.14	-29.64	-0.8
895	SLU 73	20	165	6780	3.07	-31.04	-0.82
895	SLU 74	22	139	6929	3.53	-31.66	-0.91
895	SLU 75	21	156	6900	3.33	-31.67	-0.87
895	SLU 76	21	166	6842	3.15	-31.42	-0.84
895	SLU 77	22	140	6991	3.6	-32.04	-0.93
895	SLU 78	22	156	6963	3.41	-32.05	-0.89
895	SLU 79	22	139	6953	3.56	-31.79	-0.93
895	SLU 80	22	155	6924	3.36	-31.8	-0.89
895	SLU 81	22	141	7072	3.5	-31.95	-0.92
895	SLU 82	21	158	7044	3.3	-31.96	-0.88
895	SLU 83	22	142	7135	3.57	-32.34	-0.94
895	SLU 84	22	158	7106	3.38	-32.34	-0.91
895	SLE RA 1	15	97	4655	2.33	-21.51	-0.59
895	SLE RA 2	14	115	4623	2.11	-21.53	-0.55
895	SLE RA 3	15	98	4723	2.41	-21.94	-0.6
895	SLE RA 4	15	109	4703	2.28	-21.94	-0.58
895	SLE RA 5	15	116	4665	2.16	-21.78	-0.56
895	SLE RA 6	16	98	4764	2.47	-22.19	-0.62
895	SLE RA 7	15	109	4745	2.33	-22.2	-0.6
895	SLE RA 8	16	98	4738	2.43	-22.03	-0.62
895	SLE RA 9	15	109	4719	2.3	-22.03	-0.59
895	SLE RA 10	15	121	5003	2.26	-22.97	-0.6
895	SLE RA 11	16	103	5103	2.56	-23.38	-0.66
895	SLE RA 12	16	114	5083	2.43	-23.38	-0.64
895	SLE RA 13	15	121	5045	2.31	-23.22	-0.62
895	SLE RA 14	17	104	5144	2.61	-23.63	-0.68
895	SLE RA 15	16	115	5125	2.48	-23.64	-0.65
895	SLE RA 16	17	103	5118	2.58	-23.47	-0.68
895	SLE RA 17	16	114	5099	2.45	-23.47	-0.65
895	SLE RA 18	16	105	5198	2.54	-23.57	-0.67
895	SLE RA 19	16	116	5179	2.41	-23.58	-0.65
895	SLE RA 20	17	105	5240	2.59	-23.83	-0.69
895	SLE RA 21	16	116	5220	2.46	-23.83	-0.66
895	SLE FR 1	15	97	4655	2.33	-21.51	-0.59
895	SLE FR 2	15	100	4649	2.28	-21.52	-0.58
895	SLE FR 3	15	97	4672	2.35	-21.62	-0.59
895	SLE FR 4	15	103	4812	2.35	-22.13	-0.6
895	SLE FR 5	15	99	4835	2.41	-22.23	-0.62
895	SLE FR 6	16	101	4927	2.43	-22.54	-0.63
895	SLE QP 1	15	97	4655	2.33	-21.51	-0.59
895	SLE QP 2	15	99	4818	2.39	-22.13	-0.61
895	SLD 1	604	237	3992	0.14	6.55	-3.74
895	SLD 2	537	272	4013	0.05	6.33	-1.62
895	SLD 3	623	-106	4650	4.45	5.97	-4.63
895	SLD 4	555	-71	4671	4.36	5.74	-2.51
895	SLD 5	176	654	3568	-4.8	-12.6	-0.59
895	SLD 6	131	677	3582	-4.86	-12.75	0.81
895	SLD 7	238	-488	5762	9.56	-14.54	-3.54
895	SLD 8	193	-466	5776	9.5	-14.69	-2.14
895	SLD 9	-163	664	3860	-4.72	-29.57	0.92
895	SLD 10	-207	687	3874	-4.77	-29.72	2.32
895	SLD 11	-101	-479	6054	9.64	-31.51	-2.03
895	SLD 12	-145	-456	6068	9.59	-31.66	-0.63
895	SLD 13	-525	269	4965	0.42	-50.01	1.28
895	SLD 14	-592	304	4986	0.34	-50.23	3.41
895	SLD 15	-506	-73	5623	4.73	-50.59	0.4
895	SLD 16	-573	-39	5645	4.64	-50.82	2.52
895	SLV 1	1391	449	2829	-3.23	44.99	-7.86
895	SLV 2	1233	530	2880	-3.43	44.46	-2.87
895	SLV 3	1438	-407	4478	7.56	43.64	-10.12
895	SLV 4	1280	-326	4529	7.36	43.1	-5.13
895	SLV 5	386	1487	1711	-15.62	0.16	-0.3
895	SLV 6	279	1542	1745	-15.76	-0.2	3.06
895	SLV 7	543	-1366	7208	20.35	-4.36	-7.82

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
895	SLV 8	437	-1312	7242	20.21	-4.72	-4.46
895	SLV 9	-406	1510	2395	-15.43	-39.54	3.23
895	SLV 10	-513	1565	2429	-15.56	-39.9	6.59
895	SLV 11	-249	-1344	7891	20.54	-44.07	-4.28
895	SLV 12	-355	-1289	7925	20.41	-44.43	-0.93
895	SLV 13	-1249	524	5107	-2.57	-87.37	3.91
895	SLV 14	-1408	605	5158	-2.78	-87.9	8.9
895	SLV 15	-1202	-332	6756	8.22	-88.72	1.65
895	SLV 16	-1360	-251	6807	8.01	-89.26	6.64
895	CRTFP Ux+	0	0	0	0	0	0
895	CRTFP Ux-	0	0	0	0	0	0
895	CRTFP Uy+	0	0	0	0	0	0
895	CRTFP Uy-	0	0	0	0	0	0
898	SLU 1	140	45	6510	1.46	35.61	-1.61
898	SLU 2	133	76	6402	0.95	34	-1.48
898	SLU 3	145	45	6684	1.58	36.97	-1.68
898	SLU 4	141	64	6619	1.28	36.01	-1.61
898	SLU 5	137	76	6517	1.03	34.75	-1.54
898	SLU 6	149	45	6800	1.66	37.72	-1.74
898	SLU 7	145	64	6735	1.36	36.76	-1.67
898	SLU 8	148	45	6741	1.62	37.11	-1.73
898	SLU 9	144	64	6676	1.31	36.15	-1.65
898	SLU 10	145	83	7223	1.09	40.14	-1.72
898	SLU 11	157	52	7505	1.72	43.12	-1.92
898	SLU 12	153	71	7440	1.41	42.15	-1.85
898	SLU 13	149	83	7338	1.17	40.9	-1.78
898	SLU 14	161	52	7621	1.8	43.87	-1.98
898	SLU 15	157	71	7556	1.49	42.9	-1.91
898	SLU 16	160	51	7562	1.75	43.25	-1.97
898	SLU 17	156	70	7497	1.45	42.29	-1.89
898	SLU 18	157	54	7683	1.65	44.38	-1.95
898	SLU 19	153	73	7618	1.35	43.42	-1.88
898	SLU 20	161	54	7799	1.73	45.13	-2.01
898	SLU 21	157	73	7734	1.43	44.17	-1.94
898	SLU 22	160	50	7583	1.93	44.02	-1.9
898	SLU 23	154	82	7474	1.42	42.41	-1.77
898	SLU 24	166	51	7757	2.05	45.38	-1.97
898	SLU 25	162	69	7692	1.75	44.42	-1.9
898	SLU 26	158	82	7590	1.5	43.16	-1.83
898	SLU 27	170	50	7873	2.13	46.13	-2.03
898	SLU 28	166	69	7807	1.83	45.17	-1.96
898	SLU 29	168	50	7814	2.09	45.52	-2.02
898	SLU 30	165	69	7749	1.78	44.56	-1.94
898	SLU 31	166	88	8296	1.56	48.55	-2.02
898	SLU 32	178	57	8578	2.19	51.53	-2.21
898	SLU 33	174	76	8513	1.88	50.56	-2.14
898	SLU 34	170	88	8411	1.64	49.31	-2.07
898	SLU 35	182	57	8694	2.27	52.28	-2.27
898	SLU 36	178	76	8629	1.96	51.31	-2.2
898	SLU 37	180	57	8635	2.22	51.66	-2.26
898	SLU 38	176	76	8570	1.92	50.7	-2.18
898	SLU 39	177	60	8756	2.12	52.79	-2.24
898	SLU 40	173	79	8691	1.82	51.83	-2.17
898	SLU 41	181	60	8872	2.2	53.54	-2.3
898	SLU 42	177	79	8806	1.9	52.58	-2.23
898	SLU 43	175	56	8095	1.74	43.41	-1.99
898	SLU 44	168	88	7987	1.23	41.8	-1.87
898	SLU 45	180	57	8269	1.86	44.77	-2.07
898	SLU 46	176	76	8204	1.55	43.81	-1.99
898	SLU 47	172	88	8102	1.31	42.55	-1.93
898	SLU 48	184	57	8385	1.94	45.52	-2.12
898	SLU 49	180	76	8320	1.63	44.56	-2.05
898	SLU 50	183	56	8326	1.89	44.91	-2.11
898	SLU 51	179	75	8261	1.59	43.94	-2.03
898	SLU 52	180	95	8808	1.37	47.94	-2.11
898	SLU 53	192	63	9091	1.99	50.92	-2.31
898	SLU 54	188	82	9025	1.69	49.95	-2.23
898	SLU 55	184	95	8923	1.45	48.69	-2.17
898	SLU 56	196	63	9206	2.07	51.67	-2.36
898	SLU 57	192	82	9141	1.77	50.7	-2.29
898	SLU 58	195	63	9147	2.03	51.05	-2.35
898	SLU 59	191	82	9082	1.73	50.09	-2.27
898	SLU 60	192	66	9268	1.93	52.18	-2.34
898	SLU 61	188	85	9203	1.63	51.22	-2.26
898	SLU 62	196	66	9384	2.01	52.93	-2.39
898	SLU 63	192	85	9319	1.71	51.97	-2.32
898	SLU 64	195	62	9168	2.21	51.82	-2.28
898	SLU 65	189	93	9060	1.7	50.21	-2.16
898	SLU 66	201	62	9342	2.33	53.18	-2.36
898	SLU 67	197	81	9277	2.02	52.22	-2.28
898	SLU 68	193	93	9175	1.78	50.96	-2.22
898	SLU 69	205	62	9458	2.41	53.93	-2.41
898	SLU 70	201	81	9393	2.1	52.97	-2.34
898	SLU 71	203	62	9399	2.36	53.32	-2.4
898	SLU 72	199	81	9334	2.06	52.35	-2.33
898	SLU 73	201	100	9881	1.84	56.35	-2.4
898	SLU 74	213	69	10164	2.46	59.33	-2.6
898	SLU 75	209	88	10098	2.16	58.36	-2.52
898	SLU 76	205	100	9996	1.92	57.1	-2.46

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
898	SLU 77	217	69	10279	2.54	60.08	-2.65
898	SLU 78	213	88	10214	2.24	59.11	-2.58
898	SLU 79	215	68	10220	2.5	59.46	-2.64
898	SLU 80	211	87	10155	2.2	58.5	-2.57
898	SLU 81	212	71	10341	2.4	60.59	-2.63
898	SLU 82	208	90	10276	2.1	59.63	-2.55
898	SLU 83	216	71	10457	2.48	61.34	-2.68
898	SLU 84	212	90	10392	2.18	60.38	-2.61
898	SLE RA 1	146	46	6817	1.59	38.01	-1.69
898	SLE RA 2	141	67	6744	1.26	36.94	-1.61
898	SLE RA 3	149	47	6933	1.67	38.92	-1.74
898	SLE RA 4	147	59	6889	1.47	38.28	-1.69
898	SLE RA 5	144	67	6821	1.31	37.44	-1.65
898	SLE RA 6	152	47	7010	1.73	39.42	-1.78
898	SLE RA 7	149	59	6966	1.53	38.78	-1.73
898	SLE RA 8	151	46	6971	1.7	39.01	-1.77
898	SLE RA 9	148	59	6927	1.5	38.37	-1.72
898	SLE RA 10	149	72	7292	1.35	41.04	-1.77
898	SLE RA 11	157	51	7480	1.76	43.02	-1.9
898	SLE RA 12	155	64	7437	1.56	42.37	-1.85
898	SLE RA 13	152	72	7369	1.4	41.54	-1.81
898	SLE RA 14	160	51	7557	1.82	43.52	-1.94
898	SLE RA 15	157	64	7514	1.62	42.87	-1.89
898	SLE RA 16	159	51	7518	1.79	43.11	-1.93
898	SLE RA 17	156	63	7475	1.59	42.46	-1.88
898	SLE RA 18	157	53	7599	1.72	43.86	-1.92
898	SLE RA 19	154	65	7555	1.52	43.22	-1.87
898	SLE RA 20	160	53	7676	1.78	44.36	-1.96
898	SLE RA 21	157	65	7632	1.57	43.72	-1.91
898	SLE FR 1	146	46	6817	1.59	38.01	-1.69
898	SLE FR 2	145	51	6802	1.53	37.8	-1.68
898	SLE FR 3	147	46	6847	1.61	38.21	-1.71
898	SLE FR 4	148	52	7037	1.57	39.55	-1.74
898	SLE FR 5	150	48	7082	1.65	39.97	-1.78
898	SLE FR 6	151	50	7208	1.66	40.94	-1.81
898	SLE QP 1	146	46	6817	1.59	38.01	-1.69
898	SLE QP 2	149	48	7051	1.63	39.77	-1.76
898	SLD 1	751	162	5470	-2.3	18.72	-4.91
898	SLD 2	657	267	5374	-2.78	21.62	-2.41
898	SLD 3	842	-218	6959	4.36	40.13	-6.72
898	SLD 4	748	-114	6863	3.89	43.03	-4.22
898	SLD 5	209	641	4336	-9.58	0.45	-0.41
898	SLD 6	147	710	4273	-9.89	2.36	1.24
898	SLD 7	512	-628	9299	12.65	71.83	-6.44
898	SLD 8	449	-559	9236	12.34	73.74	-4.8
898	SLD 9	-152	655	4867	-9.07	5.79	1.27
898	SLD 10	-214	724	4803	-9.39	7.7	2.92
898	SLD 11	151	-613	9830	13.15	77.17	-4.76
898	SLD 12	89	-544	9767	12.84	79.08	-3.11
898	SLD 13	-450	210	7240	-0.63	36.5	0.7
898	SLD 14	-544	315	7144	-1.1	39.4	3.2
898	SLD 15	-359	-171	8729	6.04	57.92	-1.11
898	SLD 16	-454	-66	8632	5.57	60.81	1.39
898	SLV 1	1551	344	3227	-8.13	-11.23	-8.96
898	SLV 2	1330	590	3001	-9.24	-4.42	-3.1
898	SLV 3	1780	-607	6961	8.58	42.29	-13.55
898	SLV 4	1559	-360	6735	7.47	49.1	-7.69
898	SLV 5	263	1533	282	-26.44	-57.98	1.94
898	SLV 6	114	1699	130	-27.19	-53.4	5.89
898	SLV 7	1027	-1636	12731	29.27	120.43	-13.35
898	SLV 8	878	-1471	12579	28.52	125.01	-9.4
898	SLV 9	-580	1567	1524	-25.26	-45.48	5.88
898	SLV 10	-729	1733	1372	-26.01	-40.9	9.83
898	SLV 11	184	-1603	13973	30.45	132.93	-9.41
898	SLV 12	35	-1437	13821	29.7	137.51	-5.46
898	SLV 13	-1261	457	7367	-4.2	30.43	4.16
898	SLV 14	-1482	703	7141	-5.32	37.24	10.03
898	SLV 15	-1032	-494	11102	12.51	83.95	-0.42
898	SLV 16	-1253	-248	10876	11.39	90.77	5.44
898	CRTFP Ux+	0	0	0	0	0	0
898	CRTFP Ux-	0	0	0	0	0	0
898	CRTFP Uy+	0	0	0	0	0	0
898	CRTFP Uy-	0	0	0	0	0	0
900	SLU 1	-45	43	2990	1.72	-364.17	10.67
900	SLU 2	-44	64	2941	1.47	-358.76	15.98
900	SLU 3	-46	43	3062	1.8	-372.43	10.72
900	SLU 4	-45	56	3033	1.65	-369.19	13.9
900	SLU 5	-44	64	2986	1.52	-363.96	16.01
900	SLU 6	-46	43	3108	1.85	-377.64	10.75
900	SLU 7	-46	56	3079	1.7	-374.39	13.93
900	SLU 8	-46	43	3081	1.82	-374.58	10.74
900	SLU 9	-45	56	3052	1.68	-371.33	13.92
900	SLU 10	-47	70	3295	1.69	-399.3	17.48
900	SLU 11	-49	49	3417	2.02	-412.98	12.22
900	SLU 12	-49	62	3388	1.87	-409.73	15.41
900	SLU 13	-48	70	3341	1.74	-404.5	17.52
900	SLU 14	-50	49	3463	2.07	-418.18	12.26
900	SLU 15	-49	62	3434	1.92	-414.94	15.44
900	SLU 16	-49	49	3436	2.04	-415.12	12.24

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
900	SLU 17	-49	62	3407	1.89	-411.87	15.43
900	SLU 18	-49	51	3496	2.03	-422.08	12.82
900	SLU 19	-49	64	3467	1.88	-418.84	16.01
900	SLU 20	-50	51	3542	2.08	-427.29	12.86
900	SLU 21	-49	64	3513	1.93	-424.04	16.04
900	SLU 22	-50	46	3457	2.13	-417.46	11.5
900	SLU 23	-49	67	3408	1.88	-412.05	16.81
900	SLU 24	-51	46	3530	2.21	-425.73	11.55
900	SLU 25	-51	59	3501	2.06	-422.48	14.73
900	SLU 26	-50	67	3454	1.93	-417.25	16.84
900	SLU 27	-52	46	3576	2.26	-430.93	11.58
900	SLU 28	-51	59	3547	2.11	-427.69	14.76
900	SLU 29	-51	46	3549	2.23	-427.87	11.57
900	SLU 30	-51	59	3520	2.08	-424.62	14.75
900	SLU 31	-53	73	3763	2.09	-452.59	18.31
900	SLU 32	-54	52	3885	2.43	-466.27	13.05
900	SLU 33	-54	65	3856	2.28	-463.02	16.24
900	SLU 34	-53	73	3809	2.15	-457.8	18.35
900	SLU 35	-55	52	3931	2.48	-471.47	13.09
900	SLU 36	-55	65	3901	2.33	-468.23	16.27
900	SLU 37	-55	52	3904	2.45	-468.41	13.07
900	SLU 38	-54	65	3874	2.3	-465.17	16.26
900	SLU 39	-55	55	3964	2.44	-475.38	13.65
900	SLU 40	-54	67	3935	2.29	-472.13	16.84
900	SLU 41	-55	55	4010	2.49	-480.58	13.69
900	SLU 42	-55	67	3981	2.34	-477.34	16.87
900	SLU 43	-56	54	3726	2.09	-455.14	13.59
900	SLU 44	-55	76	3677	1.84	-449.74	18.9
900	SLU 45	-57	54	3799	2.17	-463.41	13.64
900	SLU 46	-57	67	3770	2.03	-460.17	16.82
900	SLU 47	-56	76	3723	1.9	-454.94	18.93
900	SLU 48	-58	55	3845	2.23	-468.62	13.67
900	SLU 49	-57	67	3815	2.08	-465.37	16.85
900	SLU 50	-57	55	3818	2.2	-465.55	13.66
900	SLU 51	-57	67	3788	2.05	-462.31	16.84
900	SLU 52	-59	82	4032	2.06	-490.28	20.4
900	SLU 53	-61	61	4154	2.39	-503.96	15.14
900	SLU 54	-60	73	4124	2.24	-500.71	18.32
900	SLU 55	-59	82	4078	2.11	-495.48	20.43
900	SLU 56	-61	61	4199	2.45	-509.16	15.17
900	SLU 57	-61	73	4170	2.3	-505.92	18.36
900	SLU 58	-61	61	4172	2.42	-506.1	15.16
900	SLU 59	-60	73	4143	2.27	-502.85	18.35
900	SLU 60	-61	63	4233	2.4	-513.06	15.74
900	SLU 61	-60	76	4204	2.25	-509.82	18.92
900	SLU 62	-62	63	4279	2.46	-518.27	15.77
900	SLU 63	-61	76	4249	2.31	-515.02	18.96
900	SLU 64	-62	58	4194	2.5	-508.44	14.42
900	SLU 65	-61	79	4145	2.25	-503.03	19.73
900	SLU 66	-63	58	4267	2.58	-516.7	14.47
900	SLU 67	-62	71	4237	2.43	-513.46	17.65
900	SLU 68	-61	79	4191	2.31	-508.23	19.76
900	SLU 69	-63	58	4312	2.64	-521.91	14.5
900	SLU 70	-63	71	4283	2.49	-518.66	17.68
900	SLU 71	-63	58	4285	2.61	-518.85	14.49
900	SLU 72	-62	71	4256	2.46	-515.6	17.67
900	SLU 73	-64	85	4500	2.47	-543.57	21.23
900	SLU 74	-66	64	4621	2.8	-557.25	15.97
900	SLU 75	-65	77	4592	2.65	-554	19.15
900	SLU 76	-65	85	4545	2.52	-548.77	21.26
900	SLU 77	-67	64	4667	2.85	-562.45	16
900	SLU 78	-66	77	4638	2.71	-559.21	19.19
900	SLU 79	-66	64	4640	2.83	-559.39	15.99
900	SLU 80	-66	77	4611	2.68	-556.14	19.18
900	SLU 81	-66	66	4701	2.81	-566.35	16.57
900	SLU 82	-66	79	4671	2.66	-563.11	19.75
900	SLU 83	-67	66	4746	2.87	-571.56	16.6
900	SLU 84	-66	79	4717	2.72	-568.31	19.79
900	SLE RA 1	-46	44	3123	1.83	-379.39	10.91
900	SLE RA 2	-46	58	3091	1.67	-375.79	14.45
900	SLE RA 3	-47	44	3172	1.89	-384.9	10.94
900	SLE RA 4	-47	52	3152	1.79	-382.74	13.06
900	SLE RA 5	-46	58	3121	1.7	-379.26	14.47
900	SLE RA 6	-47	44	3202	1.92	-388.37	10.96
900	SLE RA 7	-47	52	3183	1.83	-386.21	13.08
900	SLE RA 8	-47	44	3184	1.91	-386.33	10.95
900	SLE RA 9	-47	52	3165	1.81	-384.17	13.08
900	SLE RA 10	-48	62	3327	1.81	-402.81	15.45
900	SLE RA 11	-49	48	3408	2.03	-411.93	11.94
900	SLE RA 12	-49	56	3389	1.93	-409.77	14.07
900	SLE RA 13	-48	62	3358	1.85	-406.28	15.47
900	SLE RA 14	-50	48	3439	2.07	-415.4	11.97
900	SLE RA 15	-49	56	3419	1.97	-413.24	14.09
900	SLE RA 16	-49	48	3421	2.05	-413.36	11.96
900	SLE RA 17	-49	56	3401	1.95	-411.2	14.08
900	SLE RA 18	-49	49	3461	2.04	-418	12.34
900	SLE RA 19	-49	58	3442	1.94	-415.84	14.47
900	SLE RA 20	-50	49	3492	2.08	-421.47	12.37
900	SLE RA 21	-49	58	3472	1.98	-419.31	14.49

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
900	SLE FR 1	-46	44	3123	1.83	-379.39	10.91
900	SLE FR 2	-46	46	3117	1.8	-378.67	11.62
900	SLE FR 3	-46	44	3135	1.85	-380.78	10.92
900	SLE FR 4	-47	48	3218	1.86	-390.25	12.05
900	SLE FR 5	-47	45	3237	1.91	-392.36	11.35
900	SLE FR 6	-48	46	3292	1.94	-398.7	11.63
900	SLE QP 1	-46	44	3123	1.83	-379.39	10.91
900	SLE QP 2	-47	45	3225	1.9	-390.98	11.34
900	SLD 1	266	251	3812	0.78	-455.18	62.6
900	SLD 2	226	138	3867	1.08	-461.04	34.74
900	SLD 3	252	3	4485	4.14	-530.12	0.78
900	SLD 4	211	-109	4540	4.44	-535.98	-27.08
900	SLD 5	76	502	2370	-3.6	-295.53	125.49
900	SLD 6	49	428	2406	-3.4	-299.4	107.12
900	SLD 7	28	-322	4613	7.62	-545.32	-80.59
900	SLD 8	1	-396	4650	7.82	-549.18	-98.96
900	SLD 9	-95	487	1799	-4.03	-232.77	121.64
900	SLD 10	-122	413	1836	-3.83	-236.64	103.27
900	SLD 11	-144	-338	4043	7.19	-482.55	-84.44
900	SLD 12	-171	-412	4079	7.39	-486.42	-102.81
900	SLD 13	-305	200	1910	-0.65	-245.97	49.76
900	SLD 14	-346	88	1965	-0.35	-251.83	21.91
900	SLD 15	-320	-48	2583	2.72	-320.91	-12.06
900	SLD 16	-361	-160	2638	3.02	-326.77	-39.92
900	SLV 1	688	544	4543	-1	-535.05	135.93
900	SLV 2	592	281	4672	-0.3	-548.82	70.44
900	SLV 3	652	-70	6228	7.42	-722.68	-17.6
900	SLV 4	556	-334	6357	8.13	-736.46	-83.09
900	SLV 5	245	1176	1040	-11.88	-147.04	293.79
900	SLV 6	181	999	1127	-11.41	-156.32	249.71
900	SLV 7	126	-872	6657	16.2	-772.5	-217.98
900	SLV 8	62	-1050	6744	16.67	-781.77	-262.07
900	SLV 9	-156	1140	-295	-12.88	-0.18	284.75
900	SLV 10	-221	963	-208	-12.41	-9.45	240.66
900	SLV 11	-275	-908	5322	15.2	-625.63	-227.02
900	SLV 12	-340	-1085	5409	15.68	-634.91	-271.11
900	SLV 13	-650	425	92	-4.34	-45.49	105.77
900	SLV 14	-746	161	221	-3.63	-59.27	40.28
900	SLV 15	-686	-190	1777	4.09	-233.13	-47.76
900	SLV 16	-782	-453	1906	4.8	-246.9	-113.25
900	CRTFP Ux+	0	0	0	0	0	0
900	CRTFP Ux-	0	0	0	0	0	0
900	CRTFP Uy+	0	0	0	0	0	0
900	CRTFP Uy-	0	0	0	0	0	0
903	SLU 1	-10	48	5616	1.89	84.65	1.02
903	SLU 2	-10	78	5544	1.41	83.76	1
903	SLU 3	-11	48	5754	2.03	87.41	1.05
903	SLU 4	-10	66	5711	1.75	86.88	1.03
903	SLU 5	-10	78	5631	1.51	85.56	1.01
903	SLU 6	-11	49	5841	2.13	89.2	1.06
903	SLU 7	-10	67	5797	1.84	88.67	1.04
903	SLU 8	-11	48	5790	2.07	88.23	1.05
903	SLU 9	-10	66	5747	1.79	87.7	1.03
903	SLU 10	-11	80	6269	1.56	94.5	1.07
903	SLU 11	-12	50	6479	2.18	98.15	1.13
903	SLU 12	-12	69	6435	1.9	97.62	1.11
903	SLU 13	-11	80	6356	1.66	96.3	1.09
903	SLU 14	-12	51	6565	2.27	99.94	1.14
903	SLU 15	-12	69	6522	1.99	99.41	1.12
903	SLU 16	-12	50	6515	2.22	98.97	1.13
903	SLU 17	-12	68	6471	1.94	98.44	1.11
903	SLU 18	-12	51	6652	2.1	99.99	1.14
903	SLU 19	-12	69	6608	1.82	99.46	1.12
903	SLU 20	-13	51	6738	2.19	101.78	1.15
903	SLU 21	-12	69	6695	1.91	101.25	1.13
903	SLU 22	-12	52	6541	2.42	98.76	1.14
903	SLU 23	-12	82	6469	1.95	97.87	1.11
903	SLU 24	-13	53	6678	2.56	101.52	1.16
903	SLU 25	-12	71	6635	2.28	100.99	1.15
903	SLU 26	-12	83	6555	2.04	99.67	1.12
903	SLU 27	-13	53	6765	2.66	103.31	1.18
903	SLU 28	-12	72	6722	2.37	102.78	1.16
903	SLU 29	-13	53	6714	2.61	102.34	1.16
903	SLU 30	-12	71	6671	2.32	101.81	1.15
903	SLU 31	-13	85	7193	2.1	108.61	1.19
903	SLU 32	-14	55	7403	2.71	112.26	1.24
903	SLU 33	-14	73	7360	2.43	111.73	1.22
903	SLU 34	-13	85	7280	2.19	110.41	1.2
903	SLU 35	-14	56	7490	2.81	114.05	1.25
903	SLU 36	-14	74	7446	2.52	113.52	1.24
903	SLU 37	-14	55	7439	2.75	113.08	1.24
903	SLU 38	-14	73	7396	2.47	112.55	1.23
903	SLU 39	-14	55	7576	2.63	114.1	1.25
903	SLU 40	-14	73	7533	2.35	113.57	1.23
903	SLU 41	-14	56	7663	2.72	115.89	1.26
903	SLU 42	-14	74	7619	2.44	115.36	1.25
903	SLU 43	-13	60	6984	2.27	105.2	1.29
903	SLU 44	-12	90	6912	1.8	104.32	1.26
903	SLU 45	-13	61	7122	2.42	107.97	1.32

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
903	SLU 46	-13	79	7079	2.13	107.44	1.3
903	SLU 47	-12	91	6999	1.89	106.11	1.28
903	SLU 48	-13	61	7209	2.51	109.76	1.33
903	SLU 49	-13	79	7165	2.23	109.23	1.31
903	SLU 50	-13	61	7158	2.46	108.79	1.32
903	SLU 51	-13	79	7115	2.17	108.26	1.3
903	SLU 52	-14	92	7637	1.95	115.06	1.34
903	SLU 53	-15	63	7847	2.56	118.71	1.39
903	SLU 54	-14	81	7803	2.28	118.18	1.38
903	SLU 55	-14	93	7724	2.04	116.85	1.35
903	SLU 56	-15	63	7933	2.66	120.5	1.41
903	SLU 57	-14	82	7890	2.37	119.97	1.39
903	SLU 58	-15	63	7883	2.61	119.53	1.4
903	SLU 59	-14	81	7839	2.32	119	1.38
903	SLU 60	-15	63	8020	2.48	120.55	1.4
903	SLU 61	-14	81	7976	2.2	120.02	1.39
903	SLU 62	-15	63	8106	2.58	122.34	1.42
903	SLU 63	-15	82	8063	2.29	121.81	1.4
903	SLU 64	-15	65	7909	2.8	119.31	1.41
903	SLU 65	-14	95	7837	2.33	118.43	1.38
903	SLU 66	-15	66	8046	2.95	122.08	1.43
903	SLU 67	-15	84	8003	2.66	121.55	1.41
903	SLU 68	-14	95	7923	2.42	120.22	1.39
903	SLU 69	-15	66	8133	3.04	123.87	1.44
903	SLU 70	-15	84	8090	2.76	123.34	1.43
903	SLU 71	-15	66	8082	2.99	122.9	1.43
903	SLU 72	-15	84	8039	2.71	122.37	1.41
903	SLU 73	-15	97	8561	2.48	129.17	1.46
903	SLU 74	-16	68	8771	3.1	132.82	1.51
903	SLU 75	-16	86	8728	2.81	132.29	1.49
903	SLU 76	-16	98	8648	2.57	130.96	1.47
903	SLU 77	-17	68	8858	3.19	134.61	1.52
903	SLU 78	-16	86	8814	2.91	134.08	1.5
903	SLU 79	-16	68	8807	3.14	133.64	1.51
903	SLU 80	-16	86	8764	2.85	133.11	1.49
903	SLU 81	-17	68	8944	3.01	134.66	1.52
903	SLU 82	-16	86	8901	2.73	134.13	1.5
903	SLU 83	-17	68	9031	3.11	136.45	1.53
903	SLU 84	-16	86	8987	2.82	135.92	1.51
903	SLE RA 1	-11	49	5880	2.04	88.68	1.06
903	SLE RA 2	-10	69	5832	1.72	88.09	1.04
903	SLE RA 3	-11	49	5972	2.14	90.52	1.07
903	SLE RA 4	-11	62	5943	1.95	90.17	1.06
903	SLE RA 5	-11	69	5890	1.79	89.28	1.05
903	SLE RA 6	-11	50	6030	2.2	91.72	1.08
903	SLE RA 7	-11	62	6001	2.01	91.36	1.07
903	SLE RA 8	-11	49	5996	2.16	91.07	1.07
903	SLE RA 9	-11	61	5967	1.97	90.71	1.06
903	SLE RA 10	-11	70	6316	1.82	95.25	1.09
903	SLE RA 11	-12	51	6455	2.23	97.68	1.13
903	SLE RA 12	-12	63	6426	2.05	97.33	1.11
903	SLE RA 13	-11	71	6373	1.89	96.44	1.1
903	SLE RA 14	-12	51	6513	2.3	98.88	1.13
903	SLE RA 15	-12	63	6484	2.11	98.52	1.12
903	SLE RA 16	-12	51	6479	2.26	98.23	1.13
903	SLE RA 17	-12	63	6450	2.07	97.87	1.11
903	SLE RA 18	-12	51	6571	2.18	98.91	1.13
903	SLE RA 19	-12	63	6542	1.99	98.55	1.12
903	SLE RA 20	-12	51	6628	2.24	100.1	1.14
903	SLE RA 21	-12	63	6600	2.05	99.75	1.13
903	SLE FR 1	-11	49	5880	2.04	88.68	1.06
903	SLE FR 2	-11	53	5871	1.98	88.56	1.05
903	SLE FR 3	-11	49	5904	2.06	89.16	1.06
903	SLE FR 4	-11	54	6078	2.02	91.63	1.08
903	SLE FR 5	-11	50	6111	2.11	92.23	1.08
903	SLE FR 6	-12	50	6226	2.11	93.79	1.09
903	SLE QP 1	-11	49	5880	2.04	88.68	1.06
903	SLE QP 2	-11	49	6087	2.08	91.75	1.08
903	SLD 1	673	271	5931	-1.29	87.42	-3.54
903	SLD 2	594	236	5941	-1.09	87.79	-1.06
903	SLD 3	657	-102	6920	4.94	100.24	-3
903	SLD 4	578	-138	6930	5.13	100.61	-0.52
903	SLD 5	232	688	4538	-8.4	70.94	-1.58
903	SLD 6	180	665	4545	-8.27	71.19	0.06
903	SLD 7	180	-556	7836	12.34	113.67	0.24
903	SLD 8	127	-579	7842	12.47	113.91	1.87
903	SLD 9	-150	678	4332	-8.3	69.58	0.29
903	SLD 10	-202	655	4339	-8.18	69.83	1.92
903	SLD 11	-202	-566	7630	12.43	112.31	2.1
903	SLD 12	-254	-590	7637	12.56	112.55	3.74
903	SLD 13	-601	236	5245	-0.97	82.89	2.68
903	SLD 14	-680	201	5254	-0.77	83.26	5.15
903	SLD 15	-616	-137	6234	5.25	95.71	3.22
903	SLD 16	-695	-172	6244	5.45	96.08	5.7
903	SLV 1	1590	597	5640	-6.31	80.46	-9.77
903	SLV 2	1404	514	5662	-5.85	81.33	-3.95
903	SLV 3	1552	-334	8119	9.27	112.6	-8.45
903	SLV 4	1366	-417	8141	9.73	113.47	-2.63
903	SLV 5	561	1640	2188	-24.15	39.45	-5.26

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
903	SLV 6	436	1584	2203	-23.84	40.04	-1.34
903	SLV 7	435	-1461	10453	27.78	146.59	-0.86
903	SLV 8	310	-1517	10468	28.09	147.17	3.05
903	SLV 9	-333	1616	1707	-23.93	36.32	-0.89
903	SLV 10	-458	1560	1722	-23.62	36.91	3.02
903	SLV 11	-458	-1485	9971	28.01	143.46	3.5
903	SLV 12	-583	-1541	9986	28.31	144.04	7.42
903	SLV 13	-1389	516	4034	-5.56	70.03	4.79
903	SLV 14	-1575	433	4056	-5.11	70.9	10.61
903	SLV 15	-1427	-415	6513	10.02	102.17	6.1
903	SLV 16	-1613	-498	6535	10.47	103.04	11.93
903	CRTFP Ux+	0	0	0	0	0	0
903	CRTFP Ux-	0	0	0	0	0	0
903	CRTFP Uy+	0	0	0	0	0	0
903	CRTFP Uy-	0	0	0	0	0	0
906	SLU 1	-92	-39	6395	-1.24	-20.89	0.34
906	SLU 2	-90	-8	6287	-1.7	-19.44	0.29
906	SLU 3	-95	-40	6559	-1.19	-21.87	0.36
906	SLU 4	-93	-22	6494	-1.47	-21	0.32
906	SLU 5	-91	-9	6391	-1.67	-20.09	0.29
906	SLU 6	-96	-41	6663	-1.16	-22.53	0.36
906	SLU 7	-94	-22	6598	-1.44	-21.66	0.33
906	SLU 8	-95	-40	6604	-1.18	-22.21	0.36
906	SLU 9	-93	-22	6538	-1.46	-21.33	0.32
906	SLU 10	-95	-12	7104	-1.99	-23.24	0.37
906	SLU 11	-100	-44	7376	-1.48	-25.68	0.44
906	SLU 12	-98	-25	7311	-1.76	-24.81	0.41
906	SLU 13	-96	-13	7208	-1.96	-23.9	0.38
906	SLU 14	-101	-44	7480	-1.45	-26.34	0.45
906	SLU 15	-99	-26	7415	-1.73	-25.46	0.41
906	SLU 16	-100	-44	7421	-1.47	-26.02	0.44
906	SLU 17	-98	-26	7356	-1.74	-25.14	0.41
906	SLU 18	-100	-44	7563	-1.65	-26.33	0.47
906	SLU 19	-98	-26	7498	-1.93	-25.46	0.43
906	SLU 20	-101	-45	7667	-1.62	-26.99	0.47
906	SLU 21	-99	-27	7602	-1.9	-26.12	0.44
906	SLU 22	-103	-45	7459	-1.29	-25.8	0.42
906	SLU 23	-100	-15	7351	-1.75	-24.34	0.36
906	SLU 24	-105	-46	7623	-1.25	-26.78	0.43
906	SLU 25	-104	-28	7558	-1.53	-25.9	0.39
906	SLU 26	-102	-16	7455	-1.72	-25	0.37
906	SLU 27	-107	-47	7727	-1.22	-27.43	0.43
906	SLU 28	-105	-29	7662	-1.5	-26.56	0.4
906	SLU 29	-106	-46	7667	-1.23	-27.11	0.43
906	SLU 30	-104	-28	7602	-1.51	-26.24	0.39
906	SLU 31	-105	-19	8168	-2.04	-28.15	0.44
906	SLU 32	-110	-50	8440	-1.54	-30.59	0.51
906	SLU 33	-109	-32	8375	-1.81	-29.71	0.48
906	SLU 34	-107	-19	8272	-2.01	-28.81	0.45
906	SLU 35	-112	-51	8544	-1.51	-31.24	0.52
906	SLU 36	-110	-33	8479	-1.78	-30.37	0.48
906	SLU 37	-111	-50	8484	-1.52	-30.92	0.51
906	SLU 38	-109	-32	8419	-1.8	-30.05	0.48
906	SLU 39	-110	-50	8626	-1.71	-31.24	0.54
906	SLU 40	-109	-32	8561	-1.98	-30.36	0.5
906	SLU 41	-112	-51	8731	-1.67	-31.9	0.54
906	SLU 42	-110	-33	8665	-1.95	-31.02	0.51
906	SLU 43	-117	-48	7949	-1.59	-25.48	0.42
906	SLU 44	-114	-18	7841	-2.05	-24.02	0.37
906	SLU 45	-119	-49	8113	-1.55	-26.46	0.43
906	SLU 46	-117	-31	8048	-1.82	-25.58	0.4
906	SLU 47	-115	-19	7945	-2.02	-24.68	0.37
906	SLU 48	-120	-50	8217	-1.52	-27.11	0.44
906	SLU 49	-118	-32	8152	-1.79	-26.24	0.41
906	SLU 50	-119	-50	8157	-1.53	-26.79	0.44
906	SLU 51	-117	-31	8092	-1.81	-25.92	0.4
906	SLU 52	-119	-22	8658	-2.34	-27.83	0.45
906	SLU 53	-124	-53	8930	-1.83	-30.27	0.52
906	SLU 54	-122	-35	8865	-2.11	-29.39	0.49
906	SLU 55	-120	-22	8762	-2.31	-28.49	0.46
906	SLU 56	-125	-54	9034	-1.8	-30.92	0.53
906	SLU 57	-124	-36	8969	-2.08	-30.05	0.49
906	SLU 58	-124	-53	8975	-1.82	-30.6	0.52
906	SLU 59	-123	-35	8910	-2.1	-29.73	0.49
906	SLU 60	-124	-53	9117	-2	-30.92	0.54
906	SLU 61	-122	-35	9052	-2.28	-30.05	0.51
906	SLU 62	-125	-54	9221	-1.97	-31.58	0.55
906	SLU 63	-123	-36	9156	-2.25	-30.7	0.52
906	SLU 64	-127	-54	9013	-1.65	-30.38	0.49
906	SLU 65	-124	-24	8904	-2.11	-28.93	0.44
906	SLU 66	-129	-56	9177	-1.6	-31.36	0.51
906	SLU 67	-128	-37	9112	-1.88	-30.49	0.47
906	SLU 68	-126	-25	9009	-2.08	-29.58	0.44
906	SLU 69	-131	-56	9281	-1.57	-32.02	0.51
906	SLU 70	-129	-38	9216	-1.85	-31.15	0.48
906	SLU 71	-130	-56	9221	-1.59	-31.7	0.51
906	SLU 72	-128	-38	9156	-1.86	-30.82	0.47
906	SLU 73	-129	-28	9722	-2.39	-32.74	0.52
906	SLU 74	-135	-59	9994	-1.89	-35.17	0.59

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
906	SLU 75	-133	-41	9929	-2.17	-34.3	0.56
906	SLU 76	-131	-29	9826	-2.36	-33.39	0.53
906	SLU 77	-136	-60	10098	-1.86	-35.83	0.6
906	SLU 78	-134	-42	10033	-2.14	-34.96	0.56
906	SLU 79	-135	-60	10038	-1.87	-35.51	0.59
906	SLU 80	-133	-42	9973	-2.15	-34.63	0.56
906	SLU 81	-135	-60	10180	-2.06	-35.82	0.62
906	SLU 82	-133	-42	10115	-2.33	-34.95	0.58
906	SLU 83	-136	-61	10284	-2.03	-36.48	0.62
906	SLU 84	-134	-42	10219	-2.3	-35.61	0.59
906	SLE RA 1	-96	-40	6699	-1.26	-22.29	0.36
906	SLE RA 2	-94	-20	6627	-1.56	-21.32	0.33
906	SLE RA 3	-97	-41	6808	-1.23	-22.95	0.37
906	SLE RA 4	-96	-29	6765	-1.41	-22.36	0.35
906	SLE RA 5	-94	-21	6696	-1.54	-21.76	0.33
906	SLE RA 6	-98	-42	6878	-1.21	-23.38	0.38
906	SLE RA 7	-97	-30	6834	-1.39	-22.8	0.35
906	SLE RA 8	-97	-41	6838	-1.22	-23.17	0.37
906	SLE RA 9	-96	-29	6795	-1.4	-22.59	0.35
906	SLE RA 10	-97	-23	7172	-1.75	-23.86	0.38
906	SLE RA 11	-100	-44	7353	-1.42	-25.49	0.43
906	SLE RA 12	-99	-32	7310	-1.6	-24.9	0.41
906	SLE RA 13	-98	-23	7241	-1.73	-24.3	0.39
906	SLE RA 14	-101	-44	7423	-1.4	-25.92	0.43
906	SLE RA 15	-100	-32	7379	-1.58	-25.34	0.41
906	SLE RA 16	-101	-44	7383	-1.41	-25.71	0.43
906	SLE RA 17	-100	-32	7339	-1.59	-25.13	0.41
906	SLE RA 18	-100	-44	7478	-1.53	-25.92	0.45
906	SLE RA 19	-99	-32	7434	-1.71	-25.34	0.42
906	SLE RA 20	-101	-45	7547	-1.51	-26.36	0.45
906	SLE RA 21	-100	-32	7504	-1.69	-25.78	0.43
906	SLE FR 1	-96	-40	6699	-1.26	-22.29	0.36
906	SLE FR 2	-95	-36	6685	-1.32	-22.1	0.36
906	SLE FR 3	-96	-41	6727	-1.25	-22.47	0.37
906	SLE FR 4	-97	-37	6918	-1.4	-23.19	0.38
906	SLE FR 5	-97	-42	6960	-1.33	-23.56	0.39
906	SLE FR 6	-98	-42	7088	-1.39	-24.11	0.41
906	SLE QP 1	-96	-40	6699	-1.26	-22.29	0.36
906	SLE QP 2	-97	-41	6933	-1.34	-23.38	0.39
906	SLD 1	606	145	7039	-4.4	-4.08	-4.57
906	SLD 2	515	46	7140	-3.99	-4.18	-2.01
906	SLD 3	563	-216	8524	1.67	-22.84	-3.67
906	SLD 4	472	-315	8625	2.08	-22.94	-1.11
906	SLD 5	196	580	4695	-11.54	10.87	-2.91
906	SLD 6	135	514	4761	-11.27	10.81	-1.22
906	SLD 7	52	-623	9644	8.7	-51.65	0.07
906	SLD 8	-8	-689	9710	8.97	-51.72	1.75
906	SLD 9	-186	606	4155	-11.65	4.95	-0.98
906	SLD 10	-246	540	4221	-11.38	4.89	0.71
906	SLD 11	-329	-597	9104	8.59	-57.57	2
906	SLD 12	-390	-663	9171	8.87	-57.64	3.69
906	SLD 13	-666	232	5241	-4.76	-23.82	1.89
906	SLD 14	-757	133	5341	-4.34	-23.92	4.45
906	SLD 15	-709	-129	6725	1.31	-42.58	2.78
906	SLD 16	-800	-228	6826	1.73	-42.68	5.34
906	SLV 1	1552	422	7060	-9.01	23.28	-11.27
906	SLV 2	1336	188	7297	-8.04	23.04	-5.25
906	SLV 3	1446	-476	10779	6.19	-23.66	-9.08
906	SLV 4	1231	-710	11015	7.17	-23.9	-3.07
906	SLV 5	598	1503	1287	-26.88	61.85	-7.55
906	SLV 6	454	1346	1446	-26.23	61.69	-3.5
906	SLV 7	245	-1490	13682	23.8	-94.61	-0.26
906	SLV 8	100	-1647	13841	24.46	-94.77	3.8
906	SLV 9	-294	1564	24	-27.13	48.01	-3.02
906	SLV 10	-439	1407	183	-26.48	47.85	1.03
906	SLV 11	-647	-1429	12419	23.55	-108.45	4.28
906	SLV 12	-792	-1586	12578	24.21	-108.61	8.33
906	SLV 13	-1424	627	2850	-9.84	-22.86	3.84
906	SLV 14	-1640	393	3087	-8.87	-23.1	9.86
906	SLV 15	-1530	-271	6569	5.36	-69.8	6.03
906	SLV 16	-1746	-505	6805	6.34	-70.04	12.05
906	CRTFP Ux+	0	0	0	0	0	0
906	CRTFP Ux-	0	0	0	0	0	0
906	CRTFP Uy+	0	0	0	0	0	0
906	CRTFP Uy-	0	0	0	0	0	0
909	SLU 1	17	96	4534	2.52	-19.59	-0.64
909	SLU 2	16	123	4474	2.17	-19.59	-0.59
909	SLU 3	18	98	4640	2.65	-20.19	-0.68
909	SLU 4	17	114	4604	2.45	-20.19	-0.64
909	SLU 5	17	124	4540	2.26	-19.96	-0.62
909	SLU 6	19	98	4706	2.74	-20.56	-0.7
909	SLU 7	18	115	4670	2.54	-20.56	-0.67
909	SLU 8	19	97	4665	2.69	-20.33	-0.7
909	SLU 9	18	114	4629	2.48	-20.33	-0.67
909	SLU 10	18	132	5053	2.44	-21.63	-0.68
909	SLU 11	20	106	5219	2.92	-22.23	-0.76
909	SLU 12	19	123	5183	2.71	-22.23	-0.73
909	SLU 13	18	133	5119	2.52	-22	-0.71
909	SLU 14	20	107	5284	3.01	-22.6	-0.79

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
909	SLU 15	20	123	5248	2.8	-22.6	-0.76
909	SLU 16	20	106	5244	2.96	-22.37	-0.79
909	SLU 17	19	122	5208	2.75	-22.37	-0.76
909	SLU 18	20	108	5361	2.89	-22.5	-0.77
909	SLU 19	19	125	5325	2.69	-22.51	-0.74
909	SLU 20	20	109	5427	2.98	-22.87	-0.8
909	SLU 21	20	125	5391	2.78	-22.87	-0.77
909	SLU 22	20	108	5277	3.09	-22.56	-0.77
909	SLU 23	18	136	5216	2.75	-22.56	-0.71
909	SLU 24	20	110	5382	3.23	-23.16	-0.8
909	SLU 25	20	126	5346	3.03	-23.16	-0.76
909	SLU 26	19	136	5282	2.84	-22.93	-0.74
909	SLU 27	21	111	5448	3.32	-23.53	-0.82
909	SLU 28	20	127	5412	3.11	-23.53	-0.79
909	SLU 29	21	109	5407	3.27	-23.3	-0.82
909	SLU 30	20	126	5371	3.06	-23.3	-0.79
909	SLU 31	20	144	5795	3.02	-24.6	-0.8
909	SLU 32	22	118	5961	3.5	-25.2	-0.89
909	SLU 33	21	135	5925	3.29	-25.2	-0.85
909	SLU 34	21	145	5861	3.1	-24.97	-0.83
909	SLU 35	23	119	6027	3.59	-25.57	-0.91
909	SLU 36	22	136	5990	3.38	-25.57	-0.88
909	SLU 37	23	118	5986	3.53	-25.34	-0.91
909	SLU 38	22	135	5950	3.33	-25.34	-0.88
909	SLU 39	22	120	6104	3.47	-25.47	-0.89
909	SLU 40	21	137	6067	3.27	-25.48	-0.86
909	SLU 41	23	121	6169	3.56	-25.84	-0.92
909	SLU 42	22	138	6133	3.35	-25.84	-0.89
909	SLU 43	22	120	5640	3.07	-24.45	-0.8
909	SLU 44	20	148	5580	2.73	-24.45	-0.74
909	SLU 45	22	122	5746	3.21	-25.05	-0.83
909	SLU 46	22	139	5710	3	-25.05	-0.79
909	SLU 47	21	149	5646	2.82	-24.82	-0.77
909	SLU 48	23	123	5812	3.3	-25.42	-0.85
909	SLU 49	22	139	5775	3.09	-25.42	-0.82
909	SLU 50	23	122	5771	3.25	-25.18	-0.85
909	SLU 51	22	138	5735	3.04	-25.19	-0.82
909	SLU 52	22	157	6159	2.99	-26.49	-0.83
909	SLU 53	24	131	6325	3.48	-27.09	-0.92
909	SLU 54	23	147	6289	3.27	-27.09	-0.88
909	SLU 55	23	157	6224	3.08	-26.86	-0.86
909	SLU 56	25	131	6390	3.56	-27.46	-0.94
909	SLU 57	24	148	6354	3.36	-27.46	-0.91
909	SLU 58	25	130	6350	3.51	-27.22	-0.94
909	SLU 59	24	147	6314	3.31	-27.23	-0.91
909	SLU 60	24	133	6467	3.45	-27.36	-0.92
909	SLU 61	23	149	6431	3.24	-27.36	-0.89
909	SLU 62	25	133	6533	3.54	-27.73	-0.95
909	SLU 63	24	150	6497	3.33	-27.73	-0.92
909	SLU 64	24	133	6382	3.65	-27.42	-0.92
909	SLU 65	23	160	6322	3.31	-27.42	-0.86
909	SLU 66	25	134	6488	3.79	-28.02	-0.95
909	SLU 67	24	151	6452	3.58	-28.02	-0.92
909	SLU 68	23	161	6388	3.39	-27.79	-0.89
909	SLU 69	25	135	6554	3.88	-28.39	-0.98
909	SLU 70	25	152	6518	3.67	-28.39	-0.94
909	SLU 71	25	134	6513	3.83	-28.15	-0.97
909	SLU 72	24	151	6477	3.62	-28.16	-0.94
909	SLU 73	24	169	6901	3.57	-29.46	-0.95
909	SLU 74	27	143	7067	4.06	-30.06	-1.04
909	SLU 75	26	160	7031	3.85	-30.06	-1.01
909	SLU 76	25	170	6967	3.66	-29.83	-0.98
909	SLU 77	27	144	7133	4.14	-30.43	-1.06
909	SLU 78	26	160	7096	3.94	-30.43	-1.03
909	SLU 79	27	143	7092	4.09	-30.19	-1.06
909	SLU 80	26	159	7056	3.88	-30.2	-1.03
909	SLU 81	27	145	7209	4.03	-30.33	-1.05
909	SLU 82	26	162	7173	3.82	-30.33	-1.01
909	SLU 83	27	146	7275	4.12	-30.7	-1.07
909	SLU 84	26	162	7239	3.91	-30.7	-1.04
909	SLE RA 1	18	99	4747	2.68	-20.44	-0.68
909	SLE RA 2	17	118	4706	2.45	-20.44	-0.64
909	SLE RA 3	18	100	4817	2.77	-20.84	-0.7
909	SLE RA 4	18	112	4793	2.64	-20.84	-0.68
909	SLE RA 5	17	118	4750	2.51	-20.68	-0.66
909	SLE RA 6	19	101	4861	2.83	-21.08	-0.72
909	SLE RA 7	18	112	4837	2.69	-21.09	-0.7
909	SLE RA 8	19	100	4834	2.8	-20.93	-0.72
909	SLE RA 9	18	111	4810	2.66	-20.93	-0.69
909	SLE RA 10	18	124	5092	2.63	-21.8	-0.7
909	SLE RA 11	20	106	5203	2.95	-22.2	-0.76
909	SLE RA 12	19	117	5179	2.81	-22.2	-0.74
909	SLE RA 13	19	124	5136	2.69	-22.04	-0.72
909	SLE RA 14	20	107	5247	3.01	-22.45	-0.78
909	SLE RA 15	20	118	5222	2.87	-22.45	-0.76
909	SLE RA 16	20	106	5220	2.97	-22.29	-0.77
909	SLE RA 17	19	117	5196	2.84	-22.29	-0.75
909	SLE RA 18	20	108	5298	2.93	-22.38	-0.76
909	SLE RA 19	19	119	5274	2.8	-22.38	-0.74

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
909	SLE RA 20	20	108	5341	2.99	-22.63	-0.78
909	SLE RA 21	20	119	5317	2.85	-22.63	-0.76
909	SLE FR 1	18	99	4747	2.68	-20.44	-0.68
909	SLE FR 2	18	103	4738	2.63	-20.44	-0.67
909	SLE FR 3	18	100	4764	2.7	-20.53	-0.69
909	SLE FR 4	18	106	4904	2.71	-21.02	-0.7
909	SLE FR 5	19	102	4929	2.78	-21.12	-0.71
909	SLE FR 6	19	103	5022	2.81	-21.41	-0.72
909	SLE QP 1	18	99	4747	2.68	-20.44	-0.68
909	SLE QP 2	18	102	4912	2.76	-21.02	-0.7
909	SLD 1	623	240	4004	0.42	6.89	-4.34
909	SLD 2	546	274	4022	0.32	6.75	-2.11
909	SLD 3	646	-102	4823	4.95	6.27	-5.15
909	SLD 4	568	-68	4841	4.85	6.13	-2.92
909	SLD 5	180	656	3395	-4.79	-11.69	-0.97
909	SLD 6	129	679	3406	-4.86	-11.78	0.51
909	SLD 7	255	-484	6124	10.3	-13.74	-3.67
909	SLD 8	203	-462	6136	10.24	-13.83	-2.2
909	SLD 9	-166	665	3688	-4.72	-28.21	0.79
909	SLD 10	-218	688	3700	-4.79	-28.3	2.26
909	SLD 11	-92	-475	6417	10.37	-30.26	-1.92
909	SLD 12	-143	-452	6429	10.31	-30.35	-0.44
909	SLD 13	-531	272	4983	0.66	-48.17	1.51
909	SLD 14	-609	306	5001	0.56	-48.31	3.74
909	SLD 15	-509	-71	5801	5.19	-48.79	0.7
909	SLD 16	-586	-36	5819	5.09	-48.92	2.93
909	SLV 1	1431	451	2720	-3.08	44.3	-9.13
909	SLV 2	1249	532	2763	-3.31	43.98	-3.89
909	SLV 3	1488	-403	4772	8.27	42.83	-11.21
909	SLV 4	1306	-322	4814	8.03	42.51	-5.96
909	SLV 5	390	1487	1135	-16.16	0.86	-1.07
909	SLV 6	267	1542	1164	-16.31	0.64	2.46
909	SLV 7	580	-1360	7973	21.66	-4.02	-7.98
909	SLV 8	457	-1306	8002	21.5	-4.24	-4.45
909	SLV 9	-420	1510	1822	-15.99	-37.8	3.04
909	SLV 10	-543	1564	1851	-16.15	-38.01	6.57
909	SLV 11	-230	-1338	8660	21.83	-42.68	-3.87
909	SLV 12	-353	-1283	8688	21.67	-42.89	-0.34
909	SLV 13	-1269	526	5009	-2.52	-84.55	4.55
909	SLV 14	-1451	607	5052	-2.76	-84.87	9.8
909	SLV 15	-1212	-328	7061	8.82	-86.01	2.48
909	SLV 16	-1394	-247	7103	8.59	-86.34	7.72
909	CRTFP Ux+	0	0	0	0	0	0
909	CRTFP Ux-	0	0	0	0	0	0
909	CRTFP Uy+	0	0	0	0	0	0
909	CRTFP Uy-	0	0	0	0	0	0
912	SLU 1	81	17	3871	6.53	788.49	-6.1
912	SLU 2	78	41	3790	6.02	772.37	-14.51
912	SLU 3	84	17	3976	6.8	808.57	-6.22
912	SLU 4	82	31	3928	6.49	798.89	-11.27
912	SLU 5	80	41	3861	6.21	785.88	-14.77
912	SLU 6	87	18	4047	6.99	822.07	-6.49
912	SLU 7	85	32	3998	6.68	812.4	-11.53
912	SLU 8	86	18	4012	6.91	815.51	-6.62
912	SLU 9	84	32	3964	6.6	805.84	-11.67
912	SLU 10	85	43	4245	6.86	860.11	-15.3
912	SLU 11	92	19	4431	7.63	896.3	-7.01
912	SLU 12	89	33	4383	7.33	886.63	-12.06
912	SLU 13	87	43	4316	7.04	873.62	-15.56
912	SLU 14	94	20	4502	7.82	909.81	-7.28
912	SLU 15	92	34	4453	7.51	900.14	-12.32
912	SLU 16	93	20	4467	7.74	903.24	-7.41
912	SLU 17	91	35	4419	7.44	893.57	-12.46
912	SLU 18	91	20	4521	7.72	913.83	-7.23
912	SLU 19	89	34	4472	7.42	904.16	-12.27
912	SLU 20	94	20	4591	7.91	927.33	-7.49
912	SLU 21	92	35	4543	7.6	917.66	-12.53
912	SLU 22	93	16	4480	7.85	906.05	-5.82
912	SLU 23	89	40	4400	7.34	889.94	-14.23
912	SLU 24	96	16	4585	8.12	926.13	-5.95
912	SLU 25	94	30	4537	7.81	916.46	-10.99
912	SLU 26	92	40	4470	7.53	903.44	-14.49
912	SLU 27	98	17	4656	8.3	939.63	-6.21
912	SLU 28	96	31	4608	8	929.96	-11.25
912	SLU 29	98	17	4622	8.22	933.07	-6.35
912	SLU 30	96	31	4573	7.92	923.4	-11.39
912	SLU 31	97	42	4855	8.17	977.67	-15.02
912	SLU 32	103	18	5040	8.95	1013.86	-6.74
912	SLU 33	101	32	4992	8.64	1004.19	-11.78
912	SLU 34	99	43	4925	8.36	991.18	-15.28
912	SLU 35	106	19	5111	9.13	1027.37	-7
912	SLU 36	103	33	5063	8.83	1017.7	-12.04
912	SLU 37	105	19	5077	9.06	1020.8	-7.13
912	SLU 38	103	34	5028	8.75	1011.13	-12.18
912	SLU 39	103	19	5130	9.04	1031.39	-6.95
912	SLU 40	101	33	5082	8.73	1021.72	-11.99
912	SLU 41	105	19	5201	9.23	1044.9	-7.21
912	SLU 42	103	34	5153	8.92	1035.23	-12.26
912	SLU 43	102	22	4823	8.04	984.73	-8.02

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
912	SLU 44	98	46	4742	7.53	968.61	-16.43
912	SLU 45	105	22	4928	8.31	1004.81	-8.15
912	SLU 46	103	37	4880	8	995.14	-13.19
912	SLU 47	101	47	4813	7.72	982.12	-16.69
912	SLU 48	107	23	4999	8.5	1018.31	-8.41
912	SLU 49	105	37	4951	8.19	1008.64	-13.45
912	SLU 50	106	23	4964	8.42	1011.75	-8.55
912	SLU 51	104	38	4916	8.11	1002.08	-13.59
912	SLU 52	105	48	5197	8.37	1056.35	-17.22
912	SLU 53	112	24	5383	9.14	1092.54	-8.94
912	SLU 54	110	39	5335	8.84	1082.87	-13.98
912	SLU 55	108	49	5268	8.55	1069.86	-17.48
912	SLU 56	114	25	5454	9.33	1106.05	-9.2
912	SLU 57	112	39	5406	9.02	1096.38	-14.24
912	SLU 58	114	25	5419	9.25	1099.48	-9.34
912	SLU 59	111	40	5371	8.95	1089.81	-14.38
912	SLU 60	112	25	5473	9.23	1110.07	-9.15
912	SLU 61	110	39	5425	8.93	1100.4	-14.2
912	SLU 62	114	26	5544	9.42	1123.58	-9.41
912	SLU 63	112	40	5495	9.11	1113.9	-14.46
912	SLU 64	113	21	5432	9.36	1102.3	-7.75
912	SLU 65	110	45	5352	8.85	1086.18	-16.15
912	SLU 66	117	21	5538	9.62	1122.37	-7.87
912	SLU 67	114	36	5489	9.32	1112.7	-12.92
912	SLU 68	112	46	5423	9.04	1099.68	-16.42
912	SLU 69	119	22	5608	9.81	1135.88	-8.13
912	SLU 70	117	36	5560	9.51	1126.2	-13.18
912	SLU 71	118	22	5574	9.73	1129.31	-8.27
912	SLU 72	116	37	5526	9.43	1119.64	-13.31
912	SLU 73	117	47	5807	9.68	1173.91	-16.94
912	SLU 74	124	23	5993	10.46	1210.1	-8.66
912	SLU 75	121	38	5944	10.15	1200.43	-13.71
912	SLU 76	119	48	5878	9.87	1187.42	-17.2
912	SLU 77	126	24	6063	10.64	1223.61	-8.92
912	SLU 78	124	38	6015	10.34	1213.94	-13.97
912	SLU 79	125	24	6029	10.57	1217.04	-9.06
912	SLU 80	123	39	5981	10.26	1207.37	-14.1
912	SLU 81	123	24	6082	10.55	1227.63	-8.88
912	SLU 82	121	38	6034	10.24	1217.96	-13.92
912	SLU 83	126	25	6153	10.73	1241.14	-9.14
912	SLU 84	124	39	6105	10.43	1231.47	-14.18
912	SLE RA 1	85	16	4045	6.91	822.08	-6.02
912	SLE RA 2	82	32	3991	6.57	811.34	-11.62
912	SLE RA 3	87	16	4115	7.09	835.46	-6.1
912	SLE RA 4	85	26	4083	6.88	829.02	-9.47
912	SLE RA 5	84	33	4038	6.7	820.34	-11.8
912	SLE RA 6	88	17	4162	7.21	844.47	-6.28
912	SLE RA 7	87	27	4130	7.01	838.02	-9.64
912	SLE RA 8	88	17	4139	7.16	840.09	-6.37
912	SLE RA 9	86	27	4107	6.96	833.64	-9.73
912	SLE RA 10	87	34	4295	7.12	869.83	-12.15
912	SLE RA 11	91	18	4418	7.64	893.95	-6.63
912	SLE RA 12	90	28	4386	7.44	887.51	-9.99
912	SLE RA 13	89	34	4342	7.25	878.83	-12.33
912	SLE RA 14	93	18	4465	7.77	902.96	-6.8
912	SLE RA 15	92	28	4433	7.56	896.51	-10.17
912	SLE RA 16	93	19	4442	7.71	898.58	-6.9
912	SLE RA 17	91	28	4410	7.51	892.13	-10.26
912	SLE RA 18	91	18	4478	7.7	905.64	-6.77
912	SLE RA 19	90	28	4446	7.5	899.19	-10.14
912	SLE RA 20	93	19	4525	7.83	914.64	-6.95
912	SLE RA 21	92	28	4493	7.62	908.2	-10.31
912	SLE FR 1	85	16	4045	6.91	822.08	-6.02
912	SLE FR 2	84	19	4034	6.84	819.93	-7.14
912	SLE FR 3	85	16	4064	6.96	825.68	-6.09
912	SLE FR 4	86	20	4164	7.08	845	-7.37
912	SLE FR 5	87	17	4194	7.2	850.75	-6.32
912	SLE FR 6	88	17	4261	7.31	863.86	-6.4
912	SLE QP 1	85	16	4045	6.91	822.08	-6.02
912	SLE QP 2	87	17	4175	7.15	847.15	-6.25
912	SLD 1	481	126	2520	1.97	534.88	-44.59
912	SLD 2	415	258	2408	1.28	512.57	-90.62
912	SLD 3	533	-156	3615	8.84	754.24	53.69
912	SLD 4	467	-23	3504	8.15	731.92	7.67
912	SLD 5	138	453	2036	-4.7	424.8	-158.54
912	SLD 6	95	540	1963	-5.16	410.08	-188.9
912	SLD 7	311	-486	5689	18.2	1155.97	169.08
912	SLD 8	268	-399	5615	17.74	1141.25	138.72
912	SLD 9	-94	432	2734	-3.45	553.05	-151.21
912	SLD 10	-138	520	2661	-3.9	538.32	-181.57
912	SLD 11	78	-507	6386	19.45	1284.22	176.41
912	SLD 12	35	-419	6313	18.99	1269.5	146.05
912	SLD 13	-294	57	4845	6.15	962.38	-20.16
912	SLD 14	-359	189	4734	5.46	940.06	-66.19
912	SLD 15	-242	-225	5941	13.02	1181.73	78.12
912	SLD 16	-307	-92	5830	12.32	1159.41	32.1
912	SLV 1	1004	294	210	-5.54	98.06	-103.59
912	SLV 2	850	605	-52	-7.17	45.6	-211.78
912	SLV 3	1135	-410	2959	11.69	648.34	141.92

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
912	SLV 4	981	-99	2697	10.06	595.88	33.74
912	SLV 5	192	1110	-1135	-22.49	-202.38	-387.63
912	SLV 6	88	1319	-1311	-23.58	-237.7	-460.46
912	SLV 7	629	-1237	8028	34.95	1631.89	430.76
912	SLV 8	525	-1027	7852	33.85	1596.57	357.92
912	SLV 9	-352	1061	498	-19.56	97.73	-370.42
912	SLV 10	-456	1270	322	-20.65	62.41	-443.25
912	SLV 11	85	-1285	9661	37.88	1931.99	447.97
912	SLV 12	-18	-1076	9485	36.78	1896.68	375.13
912	SLV 13	-808	132	5652	4.23	1098.41	-46.23
912	SLV 14	-962	443	5391	2.6	1045.96	-154.42
912	SLV 15	-677	-572	8401	21.46	1648.69	199.28
912	SLV 16	-831	-261	8140	19.83	1596.24	91.1
912	CRTFP Ux+	0	0	0	0	0	0
912	CRTFP Ux-	0	0	0	0	0	0
912	CRTFP Uy+	0	0	0	0	0	0
912	CRTFP Uy-	0	0	0	0	0	0
914	SLU 1	147	46	6560	1.7	41.77	-1.05
914	SLU 2	140	78	6436	1.2	40.1	-0.97
914	SLU 3	153	46	6738	1.82	43.31	-1.09
914	SLU 4	149	65	6663	1.52	42.31	-1.05
914	SLU 5	144	78	6553	1.28	40.96	-1.01
914	SLU 6	157	46	6856	1.9	44.17	-1.13
914	SLU 7	153	65	6781	1.6	43.17	-1.08
914	SLU 8	156	46	6796	1.85	43.49	-1.12
914	SLU 9	151	65	6721	1.55	42.49	-1.08
914	SLU 10	153	84	7261	1.36	47.12	-1.16
914	SLU 11	166	53	7564	1.98	50.33	-1.28
914	SLU 12	162	72	7489	1.68	49.33	-1.24
914	SLU 13	157	84	7379	1.43	47.98	-1.2
914	SLU 14	170	53	7682	2.05	51.19	-1.32
914	SLU 15	166	72	7607	1.75	50.19	-1.27
914	SLU 16	169	53	7622	2.01	50.51	-1.31
914	SLU 17	164	72	7547	1.71	49.51	-1.27
914	SLU 18	166	56	7740	1.92	51.8	-1.32
914	SLU 19	161	75	7665	1.62	50.8	-1.27
914	SLU 20	170	56	7858	2	52.66	-1.36
914	SLU 21	166	75	7783	1.7	51.66	-1.31
914	SLU 22	169	52	7648	2.19	51.34	-1.25
914	SLU 23	162	83	7524	1.69	49.68	-1.17
914	SLU 24	175	52	7826	2.31	52.89	-1.3
914	SLU 25	170	71	7752	2.01	51.89	-1.25
914	SLU 26	166	83	7642	1.76	50.53	-1.21
914	SLU 27	179	52	7944	2.39	53.75	-1.33
914	SLU 28	175	71	7869	2.08	52.75	-1.28
914	SLU 29	177	51	7884	2.34	53.06	-1.33
914	SLU 30	173	70	7809	2.04	52.06	-1.28
914	SLU 31	175	90	8349	1.84	56.7	-1.36
914	SLU 32	188	59	8652	2.47	59.91	-1.49
914	SLU 33	184	78	8577	2.16	58.91	-1.44
914	SLU 34	179	90	8467	1.92	57.56	-1.4
914	SLU 35	192	59	8770	2.54	60.77	-1.52
914	SLU 36	188	78	8695	2.24	59.77	-1.47
914	SLU 37	191	58	8710	2.5	60.08	-1.52
914	SLU 38	186	77	8635	2.19	59.08	-1.47
914	SLU 39	187	61	8828	2.41	61.37	-1.52
914	SLU 40	183	80	8753	2.11	60.37	-1.47
914	SLU 41	192	61	8946	2.49	62.23	-1.56
914	SLU 42	188	80	8871	2.19	61.23	-1.51
914	SLU 43	184	58	8155	2.05	51.01	-1.3
914	SLU 44	177	90	8031	1.54	49.35	-1.22
914	SLU 45	189	58	8333	2.17	52.56	-1.34
914	SLU 46	185	77	8258	1.86	51.56	-1.29
914	SLU 47	181	90	8148	1.62	50.21	-1.25
914	SLU 48	194	58	8451	2.24	53.42	-1.38
914	SLU 49	190	77	8376	1.94	52.42	-1.33
914	SLU 50	192	58	8391	2.2	52.73	-1.37
914	SLU 51	188	77	8316	1.9	51.73	-1.32
914	SLU 52	190	96	8856	1.7	56.37	-1.41
914	SLU 53	202	65	9159	2.32	59.58	-1.53
914	SLU 54	198	84	9084	2.02	58.58	-1.48
914	SLU 55	194	96	8974	1.77	57.23	-1.44
914	SLU 56	207	65	9277	2.4	60.44	-1.57
914	SLU 57	203	84	9202	2.09	59.44	-1.52
914	SLU 58	205	65	9217	2.35	59.76	-1.56
914	SLU 59	201	84	9142	2.05	58.75	-1.51
914	SLU 60	202	68	9335	2.27	61.05	-1.57
914	SLU 61	198	87	9260	1.97	60.05	-1.52
914	SLU 62	206	68	9453	2.34	61.91	-1.6
914	SLU 63	202	87	9378	2.04	60.91	-1.56
914	SLU 64	205	64	9243	2.53	60.59	-1.5
914	SLU 65	198	95	9119	2.03	58.92	-1.42
914	SLU 66	211	64	9421	2.65	62.13	-1.54
914	SLU 67	207	83	9347	2.35	61.13	-1.49
914	SLU 68	203	95	9237	2.11	59.78	-1.45
914	SLU 69	216	64	9539	2.73	62.99	-1.58
914	SLU 70	211	83	9464	2.43	61.99	-1.53
914	SLU 71	214	63	9479	2.68	62.31	-1.57
914	SLU 72	210	82	9404	2.38	61.31	-1.52

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
914	SLU 73	212	102	9944	2.19	65.95	-1.61
914	SLU 74	224	71	10247	2.81	69.16	-1.73
914	SLU 75	220	90	10172	2.51	68.16	-1.68
914	SLU 76	216	102	10062	2.26	66.8	-1.64
914	SLU 77	229	71	10365	2.88	70.02	-1.77
914	SLU 78	224	90	10290	2.58	69.02	-1.72
914	SLU 79	227	70	10305	2.84	69.33	-1.76
914	SLU 80	223	89	10230	2.54	68.33	-1.71
914	SLU 81	224	73	10423	2.76	70.62	-1.77
914	SLU 82	220	92	10348	2.45	69.62	-1.72
914	SLU 83	228	73	10541	2.83	71.48	-1.81
914	SLU 84	224	92	10466	2.53	70.48	-1.76
914	SLE RA 1	153	48	6871	1.84	44.5	-1.11
914	SLE RA 2	149	69	6788	1.51	43.39	-1.05
914	SLE RA 3	157	48	6990	1.92	45.53	-1.14
914	SLE RA 4	154	61	6940	1.72	44.87	-1.11
914	SLE RA 5	151	69	6867	1.56	43.96	-1.08
914	SLE RA 6	160	48	7068	1.97	46.11	-1.16
914	SLE RA 7	157	60	7019	1.77	45.44	-1.13
914	SLE RA 8	159	48	7028	1.94	45.65	-1.16
914	SLE RA 9	156	60	6979	1.74	44.98	-1.12
914	SLE RA 10	157	73	7339	1.61	48.07	-1.18
914	SLE RA 11	166	52	7540	2.03	50.21	-1.26
914	SLE RA 12	163	65	7490	1.82	49.55	-1.23
914	SLE RA 13	160	73	7417	1.66	48.65	-1.21
914	SLE RA 14	169	52	7619	2.08	50.79	-1.29
914	SLE RA 15	166	65	7569	1.87	50.12	-1.26
914	SLE RA 16	168	52	7579	2.05	50.33	-1.28
914	SLE RA 17	165	65	7529	1.84	49.66	-1.25
914	SLE RA 18	166	54	7658	1.99	51.19	-1.29
914	SLE RA 19	163	67	7608	1.79	50.52	-1.26
914	SLE RA 20	168	54	7736	2.04	51.76	-1.31
914	SLE RA 21	166	67	7686	1.84	51.1	-1.28
914	SLE FR 1	153	48	6871	1.84	44.5	-1.11
914	SLE FR 2	152	52	6855	1.77	44.28	-1.1
914	SLE FR 3	154	48	6903	1.86	44.73	-1.12
914	SLE FR 4	156	54	7090	1.82	46.29	-1.15
914	SLE FR 5	158	50	7139	1.91	46.74	-1.17
914	SLE FR 6	159	51	7264	1.92	47.85	-1.2
914	SLE QP 1	153	48	6871	1.84	44.5	-1.11
914	SLE QP 2	157	50	7107	1.89	46.51	-1.16
914	SLD 1	778	163	5398	-2.24	23.2	-5.13
914	SLD 2	671	268	5287	-2.68	26.29	-2.74
914	SLD 3	877	-218	7099	4.38	45.49	-6.31
914	SLD 4	770	-113	6988	3.94	48.58	-3.92
914	SLD 5	213	642	4034	-9.31	5.16	-0.99
914	SLD 6	142	711	3961	-9.61	7.2	0.59
914	SLD 7	542	-627	9705	12.76	79.45	-4.93
914	SLD 8	471	-557	9632	12.46	81.49	-3.35
914	SLD 9	-158	657	4582	-8.69	11.53	1.03
914	SLD 10	-228	726	4509	-8.98	13.57	2.6
914	SLD 11	172	-612	10253	13.38	85.82	-2.91
914	SLD 12	101	-543	10180	13.08	87.86	-1.34
914	SLD 13	-456	212	7226	-0.17	44.44	1.6
914	SLD 14	-563	317	7115	-0.61	47.53	3.98
914	SLD 15	-357	-169	8927	6.45	66.72	0.42
914	SLD 16	-464	-64	8816	6.01	69.82	2.8
914	SLV 1	1601	344	2965	-8.31	-9.85	-10.33
914	SLV 2	1350	590	2704	-9.35	-2.58	-4.72
914	SLV 3	1850	-607	7232	8.29	45.86	-13.34
914	SLV 4	1599	-360	6971	7.24	53.13	-7.73
914	SLV 5	259	1534	-559	-26.14	-56.25	-0.4
914	SLV 6	90	1700	-734	-26.85	-51.36	3.38
914	SLV 7	1090	-1635	13665	29.17	129.45	-10.42
914	SLV 8	921	-1470	13490	28.46	134.35	-6.65
914	SLV 9	-607	1569	725	-24.69	-41.33	4.32
914	SLV 10	-776	1735	549	-25.4	-36.43	8.1
914	SLV 11	224	-1601	14948	30.62	144.38	-5.7
914	SLV 12	55	-1435	14773	29.92	149.27	-1.92
914	SLV 13	-1286	460	7243	-3.47	39.89	5.41
914	SLV 14	-1537	706	6982	-4.51	47.16	11.02
914	SLV 15	-1036	-491	11510	13.13	95.6	2.4
914	SLV 16	-1287	-245	11249	12.08	102.87	8.01
914	CRTFP Ux+	0	0	0	0	0	0
914	CRTFP Ux-	0	0	0	0	0	0
914	CRTFP Uy+	0	0	0	0	0	0
914	CRTFP Uy-	0	0	0	0	0	0
916	SLU 1	-45	42	3074	3.38	-421.44	10.55
916	SLU 2	-44	63	3016	3.1	-413.49	15.84
916	SLU 3	-46	42	3150	3.51	-431.44	10.59
916	SLU 4	-45	55	3115	3.34	-426.67	13.76
916	SLU 5	-44	64	3064	3.18	-419.8	15.87
916	SLU 6	-46	43	3198	3.59	-437.75	10.62
916	SLU 7	-46	55	3163	3.42	-432.98	13.8
916	SLU 8	-46	42	3170	3.54	-434.05	10.61
916	SLU 9	-45	55	3135	3.37	-429.28	13.79
916	SLU 10	-47	69	3382	3.54	-461.19	17.33
916	SLU 11	-49	48	3515	3.94	-479.14	12.08
916	SLU 12	-48	61	3481	3.77	-474.37	15.26

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
916	SLU 13	-47	70	3430	3.62	-467.5	17.36
916	SLU 14	-49	49	3564	4.02	-485.45	12.12
916	SLU 15	-49	61	3529	3.86	-480.68	15.29
916	SLU 16	-49	49	3535	3.98	-481.76	12.11
916	SLU 17	-48	61	3501	3.81	-476.99	15.28
916	SLU 18	-49	51	3596	4	-489.59	12.68
916	SLU 19	-49	64	3561	3.83	-484.82	15.86
916	SLU 20	-50	51	3644	4.08	-495.9	12.71
916	SLU 21	-49	64	3609	3.92	-491.13	15.89
916	SLU 22	-50	46	3560	4.08	-485.02	11.36
916	SLU 23	-49	67	3502	3.8	-477.08	16.65
916	SLU 24	-51	46	3636	4.2	-495.02	11.41
916	SLU 25	-50	58	3601	4.03	-490.26	14.58
916	SLU 26	-50	67	3550	3.88	-483.38	16.69
916	SLU 27	-52	46	3684	4.28	-501.33	11.44
916	SLU 28	-51	59	3649	4.12	-496.56	14.61
916	SLU 29	-51	46	3656	4.24	-497.64	11.43
916	SLU 30	-51	59	3621	4.07	-492.87	14.6
916	SLU 31	-52	73	3868	4.23	-524.78	18.15
916	SLU 32	-54	52	4001	4.64	-542.73	12.9
916	SLU 33	-54	64	3967	4.47	-537.96	16.08
916	SLU 34	-53	73	3916	4.31	-531.09	18.18
916	SLU 35	-55	52	4050	4.72	-549.04	12.93
916	SLU 36	-54	65	4015	4.55	-544.27	16.11
916	SLU 37	-54	52	4021	4.68	-545.34	12.92
916	SLU 38	-54	65	3987	4.51	-540.58	16.1
916	SLU 39	-54	54	4082	4.7	-553.17	13.5
916	SLU 40	-54	67	4047	4.53	-548.41	16.67
916	SLU 41	-55	54	4130	4.78	-559.48	13.53
916	SLU 42	-54	67	4095	4.61	-554.71	16.71
916	SLU 43	-56	54	3829	4.16	-526.07	13.43
916	SLU 44	-55	75	3771	3.88	-518.12	18.72
916	SLU 45	-57	54	3905	4.28	-536.07	13.47
916	SLU 46	-57	67	3871	4.11	-531.3	16.65
916	SLU 47	-56	75	3820	3.96	-524.43	18.75
916	SLU 48	-58	54	3953	4.36	-542.38	13.51
916	SLU 49	-57	67	3919	4.2	-537.61	16.68
916	SLU 50	-57	54	3925	4.32	-538.68	13.5
916	SLU 51	-57	67	3891	4.15	-533.91	16.67
916	SLU 52	-58	81	4137	4.31	-565.83	20.22
916	SLU 53	-60	60	4271	4.72	-583.77	14.97
916	SLU 54	-60	73	4236	4.55	-579	18.14
916	SLU 55	-59	81	4185	4.39	-572.13	20.25
916	SLU 56	-61	60	4319	4.8	-590.08	15
916	SLU 57	-60	73	4284	4.63	-585.31	18.17
916	SLU 58	-61	60	4291	4.75	-586.39	14.99
916	SLU 59	-60	73	4256	4.59	-581.62	18.16
916	SLU 60	-61	62	4351	4.78	-594.22	15.57
916	SLU 61	-60	75	4317	4.61	-589.45	18.74
916	SLU 62	-61	63	4399	4.86	-600.53	15.6
916	SLU 63	-61	75	4365	4.69	-595.76	18.77
916	SLU 64	-62	57	4315	4.85	-589.65	14.25
916	SLU 65	-61	78	4257	4.57	-581.71	19.54
916	SLU 66	-63	57	4391	4.98	-599.65	14.29
916	SLU 67	-62	70	4357	4.81	-594.89	17.47
916	SLU 68	-61	78	4305	4.65	-588.01	19.57
916	SLU 69	-63	57	4439	5.06	-605.96	14.32
916	SLU 70	-63	70	4405	4.89	-601.19	17.5
916	SLU 71	-63	57	4411	5.01	-602.27	14.31
916	SLU 72	-62	70	4377	4.85	-597.5	17.49
916	SLU 73	-64	84	4623	5.01	-629.41	21.03
916	SLU 74	-66	63	4757	5.41	-647.36	15.79
916	SLU 75	-65	76	4722	5.25	-642.59	18.96
916	SLU 76	-64	84	4671	5.09	-635.72	21.07
916	SLU 77	-66	63	4805	5.5	-653.67	15.82
916	SLU 78	-66	76	4770	5.33	-648.9	18.99
916	SLU 79	-66	63	4777	5.45	-649.97	15.81
916	SLU 80	-65	76	4742	5.28	-645.21	18.98
916	SLU 81	-66	66	4837	5.47	-657.8	16.38
916	SLU 82	-65	78	4803	5.31	-653.04	19.56
916	SLU 83	-67	66	4885	5.56	-664.11	16.42
916	SLU 84	-66	79	4851	5.39	-659.34	19.59
916	SLE RA 1	-46	43	3213	3.58	-439.61	10.78
916	SLE RA 2	-46	57	3174	3.39	-434.31	14.31
916	SLE RA 3	-47	43	3263	3.66	-446.27	10.81
916	SLE RA 4	-46	52	3240	3.55	-443.09	12.93
916	SLE RA 5	-46	57	3206	3.45	-438.51	14.33
916	SLE RA 6	-47	43	3295	3.72	-450.48	10.83
916	SLE RA 7	-47	52	3272	3.61	-447.3	12.95
916	SLE RA 8	-47	43	3277	3.69	-448.02	10.82
916	SLE RA 9	-47	52	3254	3.58	-444.84	12.94
916	SLE RA 10	-48	61	3418	3.68	-466.11	15.3
916	SLE RA 11	-49	47	3507	3.95	-478.08	11.81
916	SLE RA 12	-49	56	3484	3.84	-474.9	13.92
916	SLE RA 13	-48	61	3450	3.74	-470.32	15.33
916	SLE RA 14	-49	47	3539	4.01	-482.28	11.83
916	SLE RA 15	-49	56	3516	3.9	-479.1	13.94
916	SLE RA 16	-49	47	3520	3.98	-479.82	11.82
916	SLE RA 17	-49	56	3497	3.87	-476.64	13.94

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
916	SLE RA 18	-49	49	3561	3.99	-485.04	12.2
916	SLE RA 19	-49	57	3538	3.88	-481.86	14.32
916	SLE RA 20	-50	49	3593	4.05	-489.24	12.23
916	SLE RA 21	-49	57	3570	3.94	-486.06	14.34
916	SLE FR 1	-46	43	3213	3.58	-439.61	10.78
916	SLE FR 2	-46	46	3205	3.54	-438.55	11.49
916	SLE FR 3	-46	43	3225	3.6	-441.29	10.79
916	SLE FR 4	-47	48	3309	3.67	-452.18	11.91
916	SLE FR 5	-47	45	3330	3.73	-454.92	11.22
916	SLE FR 6	-48	46	3387	3.79	-462.32	11.49
916	SLE QP 1	-46	43	3213	3.58	-439.61	10.78
916	SLE QP 2	-47	45	3317	3.7	-453.24	11.21
916	SLD 1	283	250	3872	2.92	-517.57	62.33
916	SLD 2	236	138	3938	3.25	-526.46	34.52
916	SLD 3	266	3	4663	6.71	-626.88	0.64
916	SLD 4	219	-109	4729	7.05	-635.77	-27.18
916	SLD 5	86	501	2272	-2.35	-305.15	125.11
916	SLD 6	55	427	2315	-2.13	-311.01	106.76
916	SLD 7	30	-323	4909	10.3	-669.52	-80.52
916	SLD 8	-1	-396	4952	10.52	-675.38	-98.87
916	SLD 9	-93	486	1682	-3.11	-231.09	121.29
916	SLD 10	-124	412	1725	-2.89	-236.95	102.94
916	SLD 11	-149	-338	4319	9.53	-595.46	-84.35
916	SLD 12	-180	-412	4362	9.75	-601.32	-102.7
916	SLD 13	-313	199	1905	0.36	-270.7	49.59
916	SLD 14	-360	87	1970	0.69	-279.59	21.78
916	SLD 15	-330	-48	2696	4.15	-380.01	-12.1
916	SLD 16	-377	-160	2762	4.49	-388.9	-39.91
916	SLV 1	725	543	4552	1.55	-594.8	135.47
916	SLV 2	615	279	4706	2.34	-615.69	70.08
916	SLV 3	684	-71	6532	11.05	-868.5	-17.73
916	SLV 4	574	-334	6686	11.84	-889.4	-83.12
916	SLV 5	268	1174	654	-11.5	-76.68	293.04
916	SLV 6	193	997	758	-10.96	-90.75	249.02
916	SLV 7	131	-872	7257	20.17	-989.04	-217.63
916	SLV 8	57	-1049	7361	20.7	-1003.11	-261.65
916	SLV 9	-151	1139	-727	-13.29	96.63	284.06
916	SLV 10	-225	961	-623	-12.76	82.57	240.04
916	SLV 11	-288	-907	5876	18.37	-815.72	-226.61
916	SLV 12	-362	-1084	5979	18.9	-829.79	-270.63
916	SLV 13	-668	424	-53	-4.43	-17.07	105.53
916	SLV 14	-779	161	101	-3.65	-37.97	40.15
916	SLV 15	-710	-190	1928	5.06	-290.78	-47.67
916	SLV 16	-820	-453	2082	5.85	-311.67	-113.05
916	CRTFP Ux+	0	0	0	0	0	0
916	CRTFP Ux-	0	0	0	0	0	0
916	CRTFP Uy+	0	0	0	0	0	0
916	CRTFP Uy-	0	0	0	0	0	0
919	SLU 1	-16	50	5679	2.02	78.37	1.02
919	SLU 2	-15	80	5592	1.54	77.54	1
919	SLU 3	-16	50	5821	2.17	80.93	1.04
919	SLU 4	-15	69	5769	1.88	80.43	1.03
919	SLU 5	-15	80	5681	1.63	79.2	1.01
919	SLU 6	-16	51	5911	2.26	82.59	1.05
919	SLU 7	-16	69	5859	1.97	82.09	1.05
919	SLU 8	-16	50	5859	2.21	81.69	1.04
919	SLU 9	-15	68	5806	1.92	81.19	1.03
919	SLU 10	-17	82	6321	1.7	87.45	1.06
919	SLU 11	-18	53	6551	2.33	90.85	1.1
919	SLU 12	-17	71	6499	2.04	90.35	1.09
919	SLU 13	-17	82	6411	1.79	89.12	1.08
919	SLU 14	-18	53	6641	2.43	92.51	1.12
919	SLU 15	-17	71	6588	2.14	92.01	1.11
919	SLU 16	-18	53	6588	2.37	91.61	1.1
919	SLU 17	-17	71	6536	2.08	91.11	1.1
919	SLU 18	-18	53	6721	2.25	92.54	1.1
919	SLU 19	-18	71	6669	1.96	92.04	1.1
919	SLU 20	-18	53	6811	2.35	94.2	1.12
919	SLU 21	-18	71	6759	2.06	93.7	1.11
919	SLU 22	-18	55	6621	2.57	91.41	1.13
919	SLU 23	-17	85	6533	2.08	90.58	1.11
919	SLU 24	-18	55	6763	2.72	93.97	1.15
919	SLU 25	-18	74	6711	2.43	93.47	1.14
919	SLU 26	-17	85	6623	2.18	92.24	1.13
919	SLU 27	-19	56	6853	2.81	95.64	1.17
919	SLU 28	-18	74	6800	2.52	95.14	1.16
919	SLU 29	-18	55	6800	2.76	94.74	1.15
919	SLU 30	-18	73	6748	2.47	94.24	1.14
919	SLU 31	-19	87	7263	2.25	100.5	1.18
919	SLU 32	-20	58	7493	2.88	103.89	1.21
919	SLU 33	-20	76	7440	2.59	103.39	1.21
919	SLU 34	-19	87	7353	2.34	102.16	1.19
919	SLU 35	-20	58	7583	2.97	105.55	1.23
919	SLU 36	-20	76	7530	2.68	105.05	1.22
919	SLU 37	-20	58	7530	2.92	104.65	1.22
919	SLU 38	-20	76	7478	2.63	104.15	1.21
919	SLU 39	-21	58	7663	2.8	105.58	1.22
919	SLU 40	-20	76	7611	2.51	105.08	1.21
919	SLU 41	-21	58	7753	2.89	107.24	1.23

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
919	SLU 42	-20	76	7700	2.6	106.74	1.22
919	SLU 43	-19	63	7060	2.44	97.41	1.28
919	SLU 44	-19	93	6973	1.95	96.58	1.27
919	SLU 45	-20	64	7202	2.59	99.97	1.31
919	SLU 46	-19	82	7150	2.3	99.47	1.3
919	SLU 47	-19	93	7062	2.05	98.24	1.28
919	SLU 48	-20	64	7292	2.68	101.63	1.32
919	SLU 49	-19	82	7240	2.39	101.13	1.31
919	SLU 50	-20	63	7240	2.63	100.73	1.31
919	SLU 51	-19	81	7187	2.34	100.23	1.3
919	SLU 52	-20	95	7702	2.11	106.49	1.33
919	SLU 53	-22	66	7932	2.75	109.89	1.37
919	SLU 54	-21	84	7879	2.46	109.39	1.36
919	SLU 55	-21	96	7792	2.21	108.15	1.34
919	SLU 56	-22	66	8022	2.84	111.55	1.38
919	SLU 57	-21	84	7969	2.55	111.05	1.37
919	SLU 58	-22	66	7969	2.79	110.65	1.37
919	SLU 59	-21	84	7917	2.5	110.15	1.36
919	SLU 60	-22	66	8102	2.67	111.58	1.37
919	SLU 61	-21	84	8050	2.38	111.08	1.36
919	SLU 62	-22	66	8192	2.76	113.24	1.38
919	SLU 63	-22	85	8140	2.47	112.74	1.38
919	SLU 64	-22	68	8002	2.99	110.45	1.39
919	SLU 65	-21	98	7914	2.5	109.62	1.38
919	SLU 66	-22	69	8144	3.14	113.01	1.42
919	SLU 67	-22	87	8092	2.84	112.51	1.41
919	SLU 68	-21	98	8004	2.6	111.28	1.39
919	SLU 69	-22	69	8234	3.23	114.67	1.43
919	SLU 70	-22	87	8181	2.94	114.18	1.42
919	SLU 71	-22	68	8181	3.18	113.78	1.42
919	SLU 72	-22	87	8129	2.89	113.28	1.41
919	SLU 73	-23	100	8644	2.66	119.54	1.44
919	SLU 74	-24	71	8874	3.3	122.93	1.48
919	SLU 75	-24	89	8821	3.01	122.43	1.47
919	SLU 76	-23	101	8734	2.76	121.2	1.45
919	SLU 77	-24	71	8963	3.39	124.59	1.49
919	SLU 78	-24	89	8911	3.1	124.09	1.49
919	SLU 79	-24	71	8911	3.34	123.69	1.48
919	SLU 80	-23	89	8858	3.05	123.19	1.47
919	SLU 81	-24	71	9044	3.22	124.62	1.48
919	SLU 82	-24	89	8992	2.93	124.12	1.47
919	SLU 83	-25	71	9134	3.31	126.28	1.5
919	SLU 84	-24	90	9081	3.02	125.78	1.49
919	SLE RA 1	-16	51	5948	2.18	82.1	1.05
919	SLE RA 2	-16	71	5890	1.85	81.54	1.04
919	SLE RA 3	-17	52	6043	2.28	83.8	1.06
919	SLE RA 4	-16	64	6008	2.08	83.47	1.06
919	SLE RA 5	-16	71	5950	1.92	82.65	1.05
919	SLE RA 6	-17	52	6103	2.34	84.91	1.07
919	SLE RA 7	-16	64	6068	2.15	84.58	1.07
919	SLE RA 8	-17	51	6068	2.3	84.31	1.07
919	SLE RA 9	-16	64	6033	2.11	83.98	1.06
919	SLE RA 10	-17	73	6376	1.96	88.15	1.08
919	SLE RA 11	-18	53	6529	2.38	90.41	1.11
919	SLE RA 12	-17	65	6494	2.19	90.08	1.1
919	SLE RA 13	-17	73	6436	2.02	89.26	1.09
919	SLE RA 14	-18	53	6589	2.45	91.52	1.11
919	SLE RA 15	-18	65	6554	2.25	91.19	1.11
919	SLE RA 16	-18	53	6554	2.41	90.92	1.11
919	SLE RA 17	-17	65	6519	2.22	90.59	1.1
919	SLE RA 18	-18	53	6643	2.33	91.54	1.11
919	SLE RA 19	-18	65	6608	2.14	91.21	1.1
919	SLE RA 20	-18	53	6703	2.39	92.65	1.12
919	SLE RA 21	-18	66	6668	2.2	92.32	1.11
919	SLE FR 1	-16	51	5948	2.18	82.1	1.05
919	SLE FR 2	-16	55	5937	2.11	81.99	1.05
919	SLE FR 3	-16	51	5972	2.2	82.54	1.05
919	SLE FR 4	-17	56	6145	2.16	84.82	1.06
919	SLE FR 5	-17	52	6181	2.25	85.37	1.07
919	SLE FR 6	-17	52	6296	2.25	86.82	1.08
919	SLE QP 1	-16	51	5948	2.18	82.1	1.05
919	SLE QP 2	-17	52	6157	2.22	84.93	1.07
919	SLD 1	692	273	5895	-1.23	80.98	-3.96
919	SLD 2	600	238	5911	-1.03	81.4	-1.39
919	SLD 3	674	-100	7088	5.15	93.05	-3.53
919	SLD 4	582	-135	7104	5.35	93.47	-0.96
919	SLD 5	240	690	4266	-8.52	65.36	-1.55
919	SLD 6	179	667	4277	-8.39	65.64	0.14
919	SLD 7	180	-553	8242	12.74	105.6	-0.13
919	SLD 8	119	-576	8253	12.87	105.88	1.57
919	SLD 9	-153	680	4061	-8.43	63.98	0.56
919	SLD 10	-213	656	4071	-8.29	64.26	2.26
919	SLD 11	-212	-563	8037	12.83	104.22	1.99
919	SLD 12	-273	-587	8047	12.97	104.5	3.68
919	SLD 13	-615	238	5210	-0.91	76.39	3.09
919	SLD 14	-708	203	5226	-0.7	76.81	5.66
919	SLD 15	-633	-134	6403	5.47	88.46	3.52
919	SLD 16	-726	-170	6418	5.68	88.88	6.09
919	SLV 1	1643	599	5445	-6.38	74.59	-10.72

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
919	SLV 2	1426	516	5483	-5.9	75.59	-4.68
919	SLV 3	1600	-331	8434	9.59	104.86	-9.69
919	SLV 4	1383	-414	8472	10.07	105.86	-3.65
919	SLV 5	587	1641	1403	-24.67	35.73	-5.17
919	SLV 6	441	1585	1428	-24.34	36.4	-1.1
919	SLV 7	443	-1457	11366	28.56	136.64	-1.72
919	SLV 8	297	-1513	11391	28.88	137.31	2.35
919	SLV 9	-331	1617	922	-24.44	32.55	-0.22
919	SLV 10	-477	1561	947	-24.12	33.23	3.85
919	SLV 11	-475	-1482	10885	28.79	133.46	3.23
919	SLV 12	-621	-1538	10910	29.11	134.13	7.3
919	SLV 13	-1416	517	3842	-5.62	64	5.78
919	SLV 14	-1633	434	3879	-5.14	65	11.82
919	SLV 15	-1460	-412	6831	10.35	94.27	6.81
919	SLV 16	-1676	-495	6868	10.83	95.27	12.85
919	CRTFP Ux+	0	0	0	0	0	0
919	CRTFP Ux-	0	0	0	0	0	0
919	CRTFP Uy+	0	0	0	0	0	0
919	CRTFP Uy-	0	0	0	0	0	0
922	SLU 1	-155	-64	10571	1361.02	-46.09	19.66
922	SLU 2	-150	-14	10362	1332.35	-43.69	18.94
922	SLU 3	-159	-66	10847	1396.81	-47.99	20.15
922	SLU 4	-156	-36	10722	1379.61	-46.55	19.72
922	SLU 5	-152	-15	10538	1355.1	-44.95	19.22
922	SLU 6	-161	-67	11022	1419.56	-49.25	20.43
922	SLU 7	-158	-37	10897	1402.36	-47.81	20
922	SLU 8	-159	-66	10922	1406.52	-48.6	20.22
922	SLU 9	-156	-36	10796	1389.32	-47.16	19.79
922	SLU 10	-159	-20	11703	1504.2	-51.45	20.3
922	SLU 11	-168	-72	12187	1568.66	-55.75	21.51
922	SLU 12	-165	-42	12062	1551.46	-54.31	21.08
922	SLU 13	-161	-22	11878	1526.95	-52.71	20.58
922	SLU 14	-170	-73	12363	1591.41	-57.01	21.79
922	SLU 15	-167	-43	12237	1574.21	-55.57	21.36
922	SLU 16	-169	-72	12262	1578.37	-56.37	21.58
922	SLU 17	-166	-43	12137	1561.17	-54.93	21.15
922	SLU 18	-168	-73	12486	1606.52	-57.18	21.6
922	SLU 19	-165	-43	12361	1589.32	-55.74	21.17
922	SLU 20	-171	-74	12662	1629.27	-58.44	21.88
922	SLU 21	-167	-44	12536	1612.07	-57	21.45
922	SLU 22	-173	-74	12337	1588.72	-56.19	22.07
922	SLU 23	-168	-25	12128	1560.06	-53.79	21.36
922	SLU 24	-177	-76	12613	1624.52	-58.09	22.56
922	SLU 25	-174	-46	12487	1607.32	-56.65	22.13
922	SLU 26	-170	-26	12303	1582.81	-55.05	21.64
922	SLU 27	-179	-77	12788	1647.27	-59.35	22.84
922	SLU 28	-176	-48	12663	1630.07	-57.91	22.41
922	SLU 29	-177	-77	12687	1634.23	-58.71	22.63
922	SLU 30	-174	-47	12562	1617.03	-57.27	22.2
922	SLU 31	-177	-31	13469	1731.91	-61.56	22.72
922	SLU 32	-186	-82	13953	1796.37	-65.86	23.92
922	SLU 33	-183	-53	13828	1779.17	-64.42	23.49
922	SLU 34	-180	-32	13644	1754.66	-62.81	23
922	SLU 35	-189	-84	14128	1819.12	-67.11	24.2
922	SLU 36	-185	-54	14003	1801.92	-65.67	23.78
922	SLU 37	-187	-83	14028	1806.08	-66.47	23.99
922	SLU 38	-184	-53	13903	1788.88	-65.03	23.57
922	SLU 39	-187	-83	14252	1834.22	-67.29	24.01
922	SLU 40	-183	-53	14127	1817.02	-65.85	23.59
922	SLU 41	-189	-84	14427	1856.98	-68.54	24.3
922	SLU 42	-186	-55	14302	1839.78	-67.1	23.87
922	SLU 43	-195	-79	13137	1691.25	-56.45	24.72
922	SLU 44	-190	-30	12928	1662.58	-54.05	24.01
922	SLU 45	-199	-81	13413	1727.04	-58.35	25.22
922	SLU 46	-196	-51	13287	1709.84	-56.91	24.79
922	SLU 47	-192	-31	13104	1685.34	-55.31	24.29
922	SLU 48	-201	-82	13588	1749.8	-59.61	25.5
922	SLU 49	-198	-53	13463	1732.6	-58.17	25.07
922	SLU 50	-199	-82	13488	1736.76	-58.97	25.29
922	SLU 51	-196	-52	13362	1719.56	-57.53	24.86
922	SLU 52	-199	-36	14269	1834.43	-61.82	25.37
922	SLU 53	-208	-87	14753	1898.89	-66.12	26.58
922	SLU 54	-205	-58	14628	1881.69	-64.68	26.15
922	SLU 55	-201	-37	14444	1857.19	-63.07	25.65
922	SLU 56	-210	-89	14929	1921.65	-67.37	26.86
922	SLU 57	-207	-59	14803	1904.45	-65.93	26.43
922	SLU 58	-209	-88	14828	1908.61	-66.73	26.65
922	SLU 59	-206	-58	14703	1891.41	-65.29	26.22
922	SLU 60	-209	-88	15052	1936.75	-67.55	26.67
922	SLU 61	-205	-58	14927	1919.55	-66.11	26.24
922	SLU 62	-211	-89	15227	1959.5	-68.8	26.95
922	SLU 63	-208	-60	15102	1942.3	-67.36	26.52
922	SLU 64	-213	-90	14903	1918.96	-66.56	27.14
922	SLU 65	-208	-40	14694	1890.29	-64.16	26.42
922	SLU 66	-217	-92	15179	1954.75	-68.46	27.63
922	SLU 67	-214	-62	15053	1937.55	-67.02	27.2
922	SLU 68	-210	-41	14869	1913.04	-65.41	26.71
922	SLU 69	-219	-93	15354	1977.5	-69.71	27.91
922	SLU 70	-216	-63	15228	1960.3	-68.27	27.48

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
922	SLU 71	-218	-92	15253	1964.47	-69.07	27.7
922	SLU 72	-215	-62	15128	1947.27	-67.63	27.27
922	SLU 73	-218	-46	16035	2062.14	-71.92	27.79
922	SLU 74	-227	-98	16519	2126.6	-76.22	28.99
922	SLU 75	-223	-68	16394	2109.4	-74.78	28.56
922	SLU 76	-220	-48	16210	2084.89	-73.18	28.07
922	SLU 77	-229	-99	16694	2149.35	-77.48	29.27
922	SLU 78	-226	-69	16569	2132.15	-76.04	28.84
922	SLU 79	-227	-98	16594	2136.32	-76.83	29.06
922	SLU 80	-224	-69	16469	2119.12	-75.39	28.63
922	SLU 81	-227	-99	16818	2164.46	-77.65	29.08
922	SLU 82	-224	-69	16693	2147.26	-76.21	28.65
922	SLU 83	-229	-100	16993	2187.21	-78.91	29.36
922	SLU 84	-226	-70	16868	2170.01	-77.46	28.94
922	SLE RA 1	-160	-67	11076	1426.08	-48.98	20.35
922	SLE RA 2	-157	-34	10936	1406.96	-47.38	19.87
922	SLE RA 3	-163	-68	11259	1449.94	-50.24	20.67
922	SLE RA 4	-161	-48	11176	1438.47	-49.28	20.39
922	SLE RA 5	-158	-34	11053	1422.13	-48.21	20.06
922	SLE RA 6	-164	-69	11376	1465.11	-51.08	20.86
922	SLE RA 7	-162	-49	11293	1453.64	-50.12	20.58
922	SLE RA 8	-163	-68	11309	1456.41	-50.65	20.72
922	SLE RA 9	-161	-48	11226	1444.95	-49.69	20.44
922	SLE RA 10	-163	-38	11830	1521.53	-52.55	20.78
922	SLE RA 11	-169	-72	12153	1564.5	-55.42	21.58
922	SLE RA 12	-167	-52	12070	1553.04	-54.46	21.3
922	SLE RA 13	-164	-39	11947	1536.7	-53.39	20.96
922	SLE RA 14	-170	-73	12270	1579.67	-56.26	21.77
922	SLE RA 15	-168	-53	12186	1568.21	-55.3	21.48
922	SLE RA 16	-169	-72	12203	1570.98	-55.83	21.63
922	SLE RA 17	-167	-53	12120	1559.51	-54.87	21.34
922	SLE RA 18	-169	-73	12352	1589.74	-56.37	21.64
922	SLE RA 19	-167	-53	12269	1578.28	-55.41	21.36
922	SLE RA 20	-170	-73	12469	1604.91	-57.21	21.83
922	SLE RA 21	-168	-54	12386	1593.44	-56.25	21.54
922	SLE FR 1	-160	-67	11076	1426.08	-48.98	20.35
922	SLE FR 2	-159	-60	11048	1422.25	-48.66	20.25
922	SLE FR 3	-161	-67	11122	1432.14	-49.31	20.42
922	SLE FR 4	-162	-62	11431	1471.35	-50.88	20.64
922	SLE FR 5	-163	-69	11505	1481.24	-51.53	20.81
922	SLE FR 6	-165	-70	11714	1507.91	-52.67	20.99
922	SLE QP 1	-160	-67	11076	1426.08	-48.98	20.35
922	SLE QP 2	-163	-68	11459	1475.18	-51.2	20.73
922	SLD 1	1059	238	11473	1469.35	-23.98	-147.09
922	SLD 2	878	75	11659	1493.93	-23.86	-118.74
922	SLD 3	980	-355	14319	1859.38	-55.08	-136.08
922	SLD 4	799	-518	14504	1883.96	-54.96	-107.74
922	SLD 5	356	952	7114	877.46	4.12	-51.4
922	SLD 6	237	844	7236	893.68	4.2	-32.7
922	SLD 7	93	-1024	16599	2177.56	-99.55	-14.72
922	SLD 8	-26	-1131	16722	2193.78	-99.48	3.98
922	SLD 9	-299	995	6196	756.58	-2.92	37.49
922	SLD 10	-418	887	6318	772.79	-2.84	56.19
922	SLD 11	-563	-981	15681	2056.68	-106.59	74.17
922	SLD 12	-682	-1089	15804	2072.89	-106.51	92.86
922	SLD 13	-1125	381	8413	1066.4	-47.43	149.21
922	SLD 14	-1305	218	8599	1090.98	-47.31	177.55
922	SLD 15	-1204	-212	11259	1456.43	-78.53	160.21
922	SLD 16	-1384	-375	11444	1481.01	-78.41	188.56
922	SLV 1	2701	693	11258	1429.37	14.99	-372.7
922	SLV 2	2277	310	11694	1487.15	15.26	-306.07
922	SLV 3	2507	-782	18385	2406.17	-62.86	-345.73
922	SLV 4	2083	-1165	18821	2463.95	-62.58	-279.1
922	SLV 5	1070	2468	508	-30.84	86.68	-150.63
922	SLV 6	784	2210	802	8.07	86.86	-105.77
922	SLV 7	423	-2448	24264	3225.18	-172.81	-60.74
922	SLV 8	137	-2705	24558	3264.08	-172.63	-15.88
922	SLV 9	-463	2569	-1640	-313.73	70.24	57.35
922	SLV 10	-749	2311	-1347	-274.82	70.42	102.21
922	SLV 11	-1110	-2347	22116	2942.29	-189.25	147.24
922	SLV 12	-1395	-2605	22410	2981.19	-189.07	192.1
922	SLV 13	-2409	1028	4097	486.4	-39.81	320.57
922	SLV 14	-2833	645	4533	544.18	-39.53	387.2
922	SLV 15	-2603	-447	11223	1463.2	-117.65	347.54
922	SLV 16	-3027	-830	11660	1520.99	-117.38	414.17
922	CRTFP Ux+	0	0	0	0	0	0
922	CRTFP Ux-	0	0	0	0	0	0
922	CRTFP Uy+	0	0	0	0.01	0	0
922	CRTFP Uy-	0	0	0	-0.01	0	0
925	SLU 1	21	98	4632	2.85	-18.57	-0.71
925	SLU 2	19	125	4559	2.49	-18.56	-0.66
925	SLU 3	21	100	4743	3	-19.15	-0.74
925	SLU 4	20	116	4699	2.78	-19.14	-0.72
925	SLU 5	20	126	4628	2.58	-18.92	-0.69
925	SLU 6	22	100	4812	3.09	-19.5	-0.77
925	SLU 7	21	117	4768	2.88	-19.49	-0.74
925	SLU 8	22	99	4769	3.04	-19.28	-0.77
925	SLU 9	21	116	4725	2.82	-19.27	-0.74
925	SLU 10	21	134	5148	2.8	-20.49	-0.75

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
925	SLU 11	24	109	5332	3.31	-21.07	-0.83
925	SLU 12	23	125	5288	3.09	-21.07	-0.8
925	SLU 13	22	135	5217	2.89	-20.84	-0.78
925	SLU 14	24	109	5401	3.4	-21.42	-0.86
925	SLU 15	23	126	5357	3.19	-21.42	-0.83
925	SLU 16	24	108	5358	3.35	-21.2	-0.86
925	SLU 17	23	125	5315	3.13	-21.2	-0.83
925	SLU 18	24	111	5474	3.29	-21.32	-0.83
925	SLU 19	23	127	5430	3.07	-21.31	-0.81
925	SLU 20	24	111	5542	3.38	-21.67	-0.86
925	SLU 21	23	128	5498	3.17	-21.67	-0.84
925	SLU 22	24	111	5396	3.48	-21.38	-0.84
925	SLU 23	22	138	5323	3.12	-21.37	-0.79
925	SLU 24	24	112	5507	3.63	-21.95	-0.87
925	SLU 25	23	129	5463	3.42	-21.95	-0.85
925	SLU 26	23	139	5392	3.22	-21.72	-0.82
925	SLU 27	25	113	5576	3.73	-22.31	-0.9
925	SLU 28	24	130	5532	3.51	-22.3	-0.88
925	SLU 29	25	112	5533	3.67	-22.09	-0.9
925	SLU 30	24	129	5490	3.46	-22.08	-0.87
925	SLU 31	24	147	5912	3.43	-23.29	-0.88
925	SLU 32	27	121	6096	3.94	-23.88	-0.96
925	SLU 33	26	138	6052	3.73	-23.87	-0.93
925	SLU 34	25	148	5981	3.53	-23.65	-0.91
925	SLU 35	27	122	6165	4.04	-24.23	-0.99
925	SLU 36	26	139	6121	3.82	-24.23	-0.96
925	SLU 37	27	121	6123	3.98	-24.01	-0.99
925	SLU 38	26	137	6079	3.77	-24	-0.96
925	SLU 39	27	123	6238	3.92	-24.13	-0.96
925	SLU 40	26	140	6194	3.71	-24.12	-0.94
925	SLU 41	27	124	6306	4.02	-24.48	-0.99
925	SLU 42	26	141	6263	3.8	-24.47	-0.97
925	SLU 43	26	123	5759	3.48	-23.18	-0.88
925	SLU 44	24	151	5686	3.12	-23.17	-0.83
925	SLU 45	27	125	5870	3.63	-23.76	-0.91
925	SLU 46	26	141	5827	3.42	-23.75	-0.88
925	SLU 47	25	151	5755	3.22	-23.52	-0.86
925	SLU 48	27	125	5939	3.73	-24.11	-0.94
925	SLU 49	26	142	5895	3.52	-24.1	-0.91
925	SLU 50	27	124	5897	3.67	-23.89	-0.94
925	SLU 51	26	141	5853	3.46	-23.88	-0.91
925	SLU 52	26	159	6276	3.43	-25.09	-0.92
925	SLU 53	29	134	6460	3.94	-25.68	-1
925	SLU 54	28	150	6416	3.73	-25.67	-0.97
925	SLU 55	27	160	6344	3.53	-25.45	-0.95
925	SLU 56	30	134	6528	4.04	-26.03	-1.03
925	SLU 57	29	151	6485	3.82	-26.03	-1
925	SLU 58	29	133	6486	3.98	-25.81	-1.02
925	SLU 59	28	150	6442	3.77	-25.8	-1
925	SLU 60	29	136	6601	3.92	-25.93	-1
925	SLU 61	28	152	6557	3.71	-25.92	-0.97
925	SLU 62	30	136	6670	4.02	-26.28	-1.03
925	SLU 63	29	153	6626	3.8	-26.28	-1
925	SLU 64	29	136	6523	4.12	-25.99	-1.01
925	SLU 65	27	163	6450	3.76	-25.98	-0.96
925	SLU 66	30	137	6634	4.27	-26.56	-1.04
925	SLU 67	29	154	6591	4.05	-26.56	-1.01
925	SLU 68	28	164	6519	3.85	-26.33	-0.99
925	SLU 69	30	138	6703	4.36	-26.92	-1.07
925	SLU 70	29	155	6659	4.15	-26.91	-1.04
925	SLU 71	30	137	6661	4.31	-26.69	-1.07
925	SLU 72	29	154	6617	4.09	-26.69	-1.04
925	SLU 73	29	172	7040	4.07	-27.9	-1.05
925	SLU 74	32	146	7224	4.58	-28.49	-1.13
925	SLU 75	31	163	7180	4.36	-28.48	-1.1
925	SLU 76	30	173	7108	4.16	-28.26	-1.08
925	SLU 77	32	147	7292	4.67	-28.84	-1.16
925	SLU 78	32	164	7249	4.46	-28.83	-1.13
925	SLU 79	32	146	7250	4.62	-28.62	-1.15
925	SLU 80	31	162	7206	4.4	-28.61	-1.13
925	SLU 81	32	148	7365	4.56	-28.74	-1.13
925	SLU 82	31	165	7321	4.34	-28.73	-1.11
925	SLU 83	33	149	7434	4.65	-29.09	-1.16
925	SLU 84	32	166	7390	4.44	-29.08	-1.13
925	SLE RA 1	21	102	4850	3.03	-19.37	-0.75
925	SLE RA 2	20	120	4801	2.79	-19.37	-0.72
925	SLE RA 3	22	103	4924	3.13	-19.76	-0.77
925	SLE RA 4	21	114	4895	2.99	-19.75	-0.75
925	SLE RA 5	21	120	4847	2.85	-19.6	-0.74
925	SLE RA 6	22	103	4970	3.19	-19.99	-0.79
925	SLE RA 7	22	114	4941	3.05	-19.99	-0.77
925	SLE RA 8	22	102	4942	3.16	-19.84	-0.79
925	SLE RA 9	22	114	4913	3.01	-19.84	-0.77
925	SLE RA 10	22	126	5194	2.99	-20.65	-0.77
925	SLE RA 11	23	109	5317	3.33	-21.04	-0.83
925	SLE RA 12	23	120	5288	3.19	-21.04	-0.81
925	SLE RA 13	22	126	5240	3.06	-20.89	-0.79
925	SLE RA 14	24	109	5363	3.4	-21.28	-0.85
925	SLE RA 15	23	120	5334	3.25	-21.27	-0.83

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
925	SLE RA 16	24	108	5335	3.36	-21.13	-0.84
925	SLE RA 17	23	119	5305	3.22	-21.12	-0.83
925	SLE RA 18	23	110	5411	3.32	-21.21	-0.83
925	SLE RA 19	23	121	5382	3.18	-21.2	-0.81
925	SLE RA 20	24	111	5457	3.39	-21.44	-0.85
925	SLE RA 21	23	122	5428	3.24	-21.44	-0.83
925	SLE FR 1	21	102	4850	3.03	-19.37	-0.75
925	SLE FR 2	21	105	4840	2.98	-19.37	-0.74
925	SLE FR 3	22	102	4868	3.05	-19.47	-0.76
925	SLE FR 4	22	108	5009	3.07	-19.92	-0.77
925	SLE FR 5	22	104	5037	3.14	-20.02	-0.78
925	SLE FR 6	22	106	5131	3.17	-20.29	-0.79
925	SLE QP 1	21	102	4850	3.03	-19.37	-0.75
925	SLE QP 2	22	104	5018	3.12	-19.92	-0.77
925	SLD 1	645	242	4027	0.69	7.24	-4.75
925	SLD 2	557	276	4042	0.58	7.19	-2.47
925	SLD 3	671	-100	5014	5.41	6.56	-5.5
925	SLD 4	582	-65	5029	5.3	6.51	-3.22
925	SLD 5	185	657	3222	-4.76	-10.73	-1.24
925	SLD 6	127	679	3231	-4.83	-10.76	0.26
925	SLD 7	272	-481	6511	10.99	-13.01	-3.73
925	SLD 8	214	-458	6521	10.92	-13.04	-2.23
925	SLD 9	-170	666	3516	-4.69	-26.81	0.69
925	SLD 10	-228	689	3525	-4.76	-26.84	2.19
925	SLD 11	-83	-471	6806	11.06	-29.09	-1.81
925	SLD 12	-141	-449	6815	10.99	-29.12	-0.31
925	SLD 13	-538	273	5008	0.93	-46.36	1.67
925	SLD 14	-627	308	5023	0.82	-46.4	3.95
925	SLD 15	-513	-68	5995	5.65	-47.04	0.93
925	SLD 16	-601	-34	6009	5.54	-47.09	3.2
925	SLV 1	1477	453	2618	-2.96	43.68	-10.01
925	SLV 2	1270	533	2651	-3.21	43.57	-4.65
925	SLV 3	1543	-399	5090	8.88	42.02	-11.92
925	SLV 4	1336	-319	5124	8.62	41.91	-6.57
925	SLV 5	397	1486	542	-16.61	1.69	-1.64
925	SLV 6	257	1540	565	-16.78	1.62	1.96
925	SLV 7	617	-1354	8784	22.84	-3.83	-8.02
925	SLV 8	478	-1300	8806	22.67	-3.91	-4.41
925	SLV 9	-434	1508	1231	-16.44	-35.94	2.87
925	SLV 10	-573	1563	1253	-16.61	-36.01	6.47
925	SLV 11	-213	-1332	9472	23.01	-41.46	-3.51
925	SLV 12	-353	-1278	9495	22.84	-41.54	0.09
925	SLV 13	-1292	527	4913	-2.39	-81.76	5.02
925	SLV 14	-1499	608	4947	-2.65	-81.87	10.37
925	SLV 15	-1225	-325	7385	9.44	-83.41	3.11
925	SLV 16	-1433	-244	7419	9.19	-83.52	8.46
925	CRTFP Ux+	0	0	0	0	0	0
925	CRTFP Ux-	0	0	0	0	0	0
925	CRTFP Uy+	0	0	0	0	0	0
925	CRTFP Uy-	0	0	0	0	0	0
927	SLU 1	-44	42	3214	5.11	-516.61	10.4
927	SLU 2	-42	63	3146	4.8	-505.37	15.67
927	SLU 3	-45	42	3295	5.28	-529.36	10.44
927	SLU 4	-44	55	3255	5.09	-522.61	13.6
927	SLU 5	-43	63	3198	4.91	-513.42	15.7
927	SLU 6	-45	42	3346	5.39	-537.4	10.47
927	SLU 7	-45	55	3306	5.2	-530.66	13.63
927	SLU 8	-45	42	3316	5.33	-532.71	10.46
927	SLU 9	-44	55	3276	5.14	-525.96	13.62
927	SLU 10	-45	69	3530	5.46	-565.12	17.15
927	SLU 11	-47	48	3679	5.95	-589.11	11.92
927	SLU 12	-47	61	3638	5.76	-582.36	15.08
927	SLU 13	-46	69	3581	5.57	-573.17	17.18
927	SLU 14	-48	48	3730	6.06	-597.15	11.95
927	SLU 15	-47	61	3690	5.87	-590.41	15.11
927	SLU 16	-48	48	3700	5.99	-592.46	11.94
927	SLU 17	-47	61	3660	5.81	-585.71	15.1
927	SLU 18	-47	50	3762	6.06	-601.97	12.51
927	SLU 19	-47	63	3722	5.87	-595.23	15.68
927	SLU 20	-48	50	3813	6.17	-610.02	12.54
927	SLU 21	-47	63	3773	5.98	-603.27	15.71
927	SLU 22	-49	45	3728	6.11	-596.97	11.2
927	SLU 23	-47	66	3660	5.79	-585.73	16.47
927	SLU 24	-50	45	3809	6.28	-609.71	11.24
927	SLU 25	-49	58	3769	6.09	-602.97	14.4
927	SLU 26	-48	66	3712	5.9	-593.77	16.5
927	SLU 27	-50	45	3860	6.39	-617.76	11.27
927	SLU 28	-49	58	3820	6.2	-611.01	14.43
927	SLU 29	-50	45	3830	6.33	-613.06	11.26
927	SLU 30	-49	58	3790	6.14	-606.32	14.42
927	SLU 31	-50	72	4044	6.45	-645.48	17.95
927	SLU 32	-52	51	4193	6.94	-669.46	12.72
927	SLU 33	-52	64	4152	6.75	-662.72	15.88
927	SLU 34	-51	72	4095	6.56	-653.53	17.98
927	SLU 35	-53	51	4244	7.05	-677.51	12.75
927	SLU 36	-52	64	4204	6.86	-670.76	15.91
927	SLU 37	-52	51	4214	6.99	-672.81	12.74
927	SLU 38	-52	64	4174	6.8	-666.07	15.9
927	SLU 39	-52	54	4276	7.05	-682.33	13.32

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
927	SLU 40	-52	66	4236	6.86	-675.58	16.48
927	SLU 41	-53	54	4327	7.16	-690.37	13.35
927	SLU 42	-52	66	4287	6.97	-683.63	16.51
927	SLU 43	-55	53	4002	6.3	-644.05	13.24
927	SLU 44	-54	74	3934	5.99	-632.81	18.52
927	SLU 45	-56	53	4083	6.48	-656.79	13.28
927	SLU 46	-55	66	4043	6.29	-650.04	16.45
927	SLU 47	-54	74	3986	6.1	-640.85	18.55
927	SLU 48	-57	53	4134	6.59	-664.84	13.31
927	SLU 49	-56	66	4094	6.4	-658.09	16.48
927	SLU 50	-56	53	4104	6.52	-660.14	13.3
927	SLU 51	-56	66	4064	6.33	-653.4	16.47
927	SLU 52	-56	80	4318	6.65	-692.56	20
927	SLU 53	-59	59	4467	7.14	-716.54	14.76
927	SLU 54	-58	72	4426	6.95	-709.8	17.93
927	SLU 55	-57	80	4369	6.76	-700.6	20.03
927	SLU 56	-59	59	4518	7.25	-724.59	14.79
927	SLU 57	-59	72	4478	7.06	-717.84	17.96
927	SLU 58	-59	59	4488	7.19	-719.89	14.78
927	SLU 59	-58	72	4448	7	-713.15	17.95
927	SLU 60	-59	62	4550	7.25	-729.41	15.36
927	SLU 61	-58	74	4510	7.06	-722.66	18.52
927	SLU 62	-59	62	4601	7.36	-737.45	15.39
927	SLU 63	-59	75	4561	7.17	-730.71	18.55
927	SLU 64	-60	56	4516	7.3	-724.4	14.05
927	SLU 65	-59	78	4448	6.98	-713.16	19.32
927	SLU 66	-61	57	4597	7.47	-737.15	14.09
927	SLU 67	-60	69	4557	7.28	-730.4	17.25
927	SLU 68	-59	78	4500	7.09	-721.21	19.35
927	SLU 69	-62	57	4648	7.58	-745.19	14.12
927	SLU 70	-61	69	4608	7.39	-738.45	17.28
927	SLU 71	-61	57	4618	7.52	-740.5	14.11
927	SLU 72	-60	69	4578	7.33	-733.75	17.27
927	SLU 73	-61	84	4832	7.65	-772.91	20.8
927	SLU 74	-64	63	4981	8.13	-796.9	15.57
927	SLU 75	-63	75	4940	7.94	-790.15	18.73
927	SLU 76	-62	84	4883	7.76	-780.96	20.83
927	SLU 77	-64	63	5032	8.24	-804.94	15.6
927	SLU 78	-64	75	4992	8.05	-798.2	18.76
927	SLU 79	-64	63	5002	8.18	-800.25	15.59
927	SLU 80	-63	75	4962	7.99	-793.5	18.75
927	SLU 81	-64	65	5064	8.25	-809.76	16.16
927	SLU 82	-63	78	5024	8.06	-803.02	19.32
927	SLU 83	-64	65	5115	8.36	-817.81	16.19
927	SLU 84	-64	78	5075	8.17	-811.06	19.35
927	SLE RA 1	-45	43	3361	5.4	-539.57	10.63
927	SLE RA 2	-44	57	3316	5.18	-532.08	14.14
927	SLE RA 3	-46	43	3415	5.51	-548.07	10.65
927	SLE RA 4	-45	51	3388	5.38	-543.57	12.76
927	SLE RA 5	-45	57	3350	5.26	-537.44	14.16
927	SLE RA 6	-46	43	3449	5.58	-553.43	10.67
927	SLE RA 7	-46	51	3422	5.46	-548.94	12.78
927	SLE RA 8	-46	43	3429	5.54	-550.3	10.67
927	SLE RA 9	-45	51	3402	5.42	-545.81	12.78
927	SLE RA 10	-46	61	3572	5.63	-571.91	15.13
927	SLE RA 11	-48	47	3671	5.95	-587.9	11.64
927	SLE RA 12	-47	55	3644	5.83	-583.4	13.75
927	SLE RA 13	-46	61	3606	5.7	-577.28	15.15
927	SLE RA 14	-48	47	3705	6.03	-593.27	11.66
927	SLE RA 15	-47	55	3678	5.9	-588.77	13.77
927	SLE RA 16	-48	47	3685	5.98	-590.14	11.66
927	SLE RA 17	-47	55	3658	5.86	-585.64	13.76
927	SLE RA 18	-48	48	3726	6.03	-596.48	12.04
927	SLE RA 19	-47	57	3699	5.9	-591.98	14.15
927	SLE RA 20	-48	49	3760	6.1	-601.84	12.06
927	SLE RA 21	-47	57	3733	5.97	-597.35	14.17
927	SLE FR 1	-45	43	3361	5.4	-539.57	10.63
927	SLE FR 2	-45	46	3352	5.35	-538.07	11.33
927	SLE FR 3	-45	43	3374	5.42	-541.72	10.64
927	SLE FR 4	-46	47	3461	5.54	-555.15	11.75
927	SLE FR 5	-46	44	3484	5.61	-558.79	11.06
927	SLE FR 6	-46	46	3544	5.71	-568.03	11.33
927	SLE QP 1	-45	43	3361	5.4	-539.57	10.63
927	SLE QP 2	-46	44	3470	5.58	-556.64	11.05
927	SLD 1	302	249	4005	5.11	-628.01	62
927	SLD 2	248	137	4082	5.49	-640.76	34.24
927	SLD 3	280	2	4929	9.39	-782.04	0.49
927	SLD 4	227	-110	5007	9.77	-794.79	-27.28
927	SLD 5	100	500	2215	-1.12	-342.15	124.63
927	SLD 6	65	426	2266	-0.87	-350.55	106.31
927	SLD 7	29	-322	5296	13.15	-855.59	-80.42
927	SLD 8	-6	-396	5347	13.4	-863.99	-98.74
927	SLD 9	-86	485	1594	-2.23	-249.29	120.84
927	SLD 10	-121	411	1645	-1.98	-257.7	102.53
927	SLD 11	-157	-337	4675	12.04	-762.73	-84.21
927	SLD 12	-192	-411	4726	12.29	-771.14	-102.53
927	SLD 13	-319	199	1934	1.4	-318.5	49.38
927	SLD 14	-372	87	2011	1.78	-331.25	21.62
927	SLD 15	-340	-48	2859	5.68	-472.53	-12.13

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
927	SLD 16	-393	-160	2936	6.06	-485.28	-39.9
927	SLV 1	769	541	4646	4.13	-710.99	134.9
927	SLV 2	643	278	4827	5.01	-740.95	69.63
927	SLV 3	717	-72	6960	14.84	-1096.67	-17.87
927	SLV 4	591	-335	7142	15.73	-1126.63	-83.14
927	SLV 5	301	1172	279	-11.27	-12.41	292.09
927	SLV 6	216	995	401	-10.67	-32.58	248.14
927	SLV 7	127	-871	7994	24.45	-1298	-217.14
927	SLV 8	43	-1048	8116	25.04	-1318.17	-261.09
927	SLV 9	-134	1137	-1175	-13.88	204.89	283.19
927	SLV 10	-219	960	-1053	-13.28	184.72	239.24
927	SLV 11	-308	-906	6540	21.84	-1080.7	-226.04
927	SLV 12	-393	-1083	6662	22.44	-1100.87	-269.98
927	SLV 13	-683	424	-201	-4.56	13.34	105.24
927	SLV 14	-808	161	-19	-3.67	-16.62	39.97
927	SLV 15	-735	-189	2114	6.16	-372.33	-47.53
927	SLV 16	-860	-452	2295	7.04	-402.29	-112.8
927	CRTFP Ux+	0	0	0	0	0	0
927	CRTFP Ux-	0	0	0	0	0	0
927	CRTFP Uy+	0	0	0	0	0	0
927	CRTFP Uy-	0	0	0	0	0	0
930	SLU 1	76	13	3449	-104.42	822.95	-2.33
930	SLU 2	73	33	3368	-102.2	803.36	-9.53
930	SLU 3	79	13	3545	-107.27	845.05	-2.32
930	SLU 4	77	25	3496	-105.94	833.3	-6.64
930	SLU 5	75	34	3433	-104.11	818.28	-9.67
930	SLU 6	82	14	3609	-109.19	859.97	-2.46
930	SLU 7	79	26	3561	-107.85	848.22	-6.78
930	SLU 8	81	14	3578	-108.25	852.79	-2.6
930	SLU 9	79	26	3530	-106.92	841.04	-6.92
930	SLU 10	79	35	3776	-114.47	897.43	-9.94
930	SLU 11	86	15	3952	-119.55	939.13	-2.73
930	SLU 12	84	27	3904	-118.21	927.37	-7.05
930	SLU 13	82	36	3840	-116.39	912.35	-10.07
930	SLU 14	88	16	4017	-121.46	954.05	-2.87
930	SLU 15	86	28	3968	-120.13	942.29	-7.18
930	SLU 16	88	16	3985	-120.53	946.87	-3.01
930	SLU 17	85	28	3937	-119.19	935.11	-7.33
930	SLU 18	86	15	4031	-121.96	957.34	-2.91
930	SLU 19	84	28	3982	-120.62	945.59	-7.23
930	SLU 20	88	16	4095	-123.87	972.26	-3.05
930	SLU 21	86	28	4047	-122.54	960.51	-7.37
930	SLU 22	87	12	3999	-120.9	950.37	-1.68
930	SLU 23	84	32	3919	-118.67	930.77	-8.88
930	SLU 24	90	12	4095	-123.75	972.47	-1.67
930	SLU 25	88	24	4047	-122.41	960.71	-5.99
930	SLU 26	86	33	3983	-120.59	945.7	-9.01
930	SLU 27	93	13	4160	-125.66	987.39	-1.81
930	SLU 28	91	25	4111	-124.33	975.63	-6.13
930	SLU 29	92	13	4128	-124.73	980.21	-1.95
930	SLU 30	90	25	4080	-123.39	968.45	-6.27
930	SLU 31	91	34	4326	-130.95	1024.85	-9.28
930	SLU 32	97	14	4502	-136.02	1066.54	-2.08
930	SLU 33	95	26	4454	-134.69	1054.79	-6.4
930	SLU 34	93	35	4391	-132.86	1039.77	-9.42
930	SLU 35	100	15	4567	-137.94	1081.46	-2.21
930	SLU 36	97	27	4519	-136.6	1069.71	-6.53
930	SLU 37	99	15	4536	-137	1074.28	-2.36
930	SLU 38	97	27	4487	-135.67	1062.53	-6.67
930	SLU 39	97	15	4581	-138.43	1084.76	-2.26
930	SLU 40	95	27	4533	-137.1	1073	-6.58
930	SLU 41	99	15	4646	-140.35	1099.68	-2.39
930	SLU 42	97	27	4597	-139.01	1087.92	-6.71
930	SLU 43	95	17	4295	-130.1	1026.15	-3.26
930	SLU 44	92	38	4214	-127.88	1006.56	-10.46
930	SLU 45	98	17	4391	-132.95	1048.25	-3.25
930	SLU 46	96	30	4342	-131.62	1036.49	-7.57
930	SLU 47	94	38	4279	-129.79	1021.48	-10.59
930	SLU 48	101	18	4455	-134.87	1063.17	-3.38
930	SLU 49	98	30	4407	-133.53	1051.42	-7.7
930	SLU 50	100	18	4424	-133.93	1055.99	-3.53
930	SLU 51	98	31	4376	-132.6	1044.24	-7.85
930	SLU 52	98	39	4622	-140.15	1100.63	-10.86
930	SLU 53	105	19	4798	-145.22	1142.33	-3.65
930	SLU 54	103	31	4750	-143.89	1130.57	-7.97
930	SLU 55	101	40	4686	-142.07	1115.55	-11
930	SLU 56	107	20	4863	-147.14	1157.25	-3.79
930	SLU 57	105	32	4814	-145.81	1145.49	-8.11
930	SLU 58	107	20	4831	-146.21	1150.07	-3.93
930	SLU 59	104	32	4783	-144.87	1138.31	-8.25
930	SLU 60	105	20	4877	-147.64	1160.54	-3.84
930	SLU 61	103	32	4828	-146.3	1148.79	-8.16
930	SLU 62	107	20	4941	-149.55	1175.46	-3.97
930	SLU 63	105	32	4893	-148.22	1163.71	-8.29
930	SLU 64	106	16	4845	-146.57	1153.57	-2.6
930	SLU 65	103	37	4765	-144.35	1133.97	-9.8
930	SLU 66	109	17	4941	-149.42	1175.67	-2.6
930	SLU 67	107	29	4893	-148.09	1163.91	-6.91
930	SLU 68	105	37	4829	-146.27	1148.89	-9.94

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
930	SLU 69	112	17	5005	-151.34	1190.59	-2.73
930	SLU 70	110	29	4957	-150.01	1178.83	-7.05
930	SLU 71	111	17	4974	-150.41	1183.41	-2.87
930	SLU 72	109	30	4926	-149.07	1171.65	-7.19
930	SLU 73	110	38	5172	-156.63	1228.05	-10.21
930	SLU 74	116	18	5348	-161.7	1269.74	-3
930	SLU 75	114	30	5300	-160.37	1257.99	-7.32
930	SLU 76	112	39	5237	-158.54	1242.97	-10.34
930	SLU 77	119	19	5413	-163.62	1284.66	-3.14
930	SLU 78	116	31	5365	-162.28	1272.91	-7.46
930	SLU 79	118	19	5382	-162.68	1277.48	-3.28
930	SLU 80	116	31	5333	-161.35	1265.73	-7.6
930	SLU 81	116	19	5427	-164.11	1287.96	-3.18
930	SLU 82	114	31	5379	-162.78	1276.2	-7.5
930	SLU 83	118	19	5492	-166.03	1302.88	-3.32
930	SLU 84	116	32	5443	-164.69	1291.12	-7.64
930	SLE RA 1	79	13	3606	-109.13	859.36	-2.15
930	SLE RA 2	77	26	3552	-107.65	846.29	-6.95
930	SLE RA 3	81	13	3670	-111.03	874.09	-2.14
930	SLE RA 4	80	21	3638	-110.14	866.25	-5.02
930	SLE RA 5	79	27	3595	-108.92	856.24	-7.04
930	SLE RA 6	83	13	3713	-112.31	884.04	-2.23
930	SLE RA 7	82	21	3681	-111.42	876.2	-5.11
930	SLE RA 8	82	14	3692	-111.68	879.25	-2.33
930	SLE RA 9	81	22	3660	-110.79	871.41	-5.21
930	SLE RA 10	82	27	3824	-115.83	909.01	-7.22
930	SLE RA 11	86	14	3941	-119.21	936.81	-2.41
930	SLE RA 12	85	22	3909	-118.32	928.97	-5.29
930	SLE RA 13	83	28	3867	-117.11	918.96	-7.31
930	SLE RA 14	87	14	3985	-120.49	946.75	-2.5
930	SLE RA 15	86	23	3952	-119.6	938.92	-5.38
930	SLE RA 16	87	15	3964	-119.87	941.97	-2.6
930	SLE RA 17	86	23	3931	-118.98	934.13	-5.48
930	SLE RA 18	86	14	3994	-120.82	948.95	-2.53
930	SLE RA 19	84	23	3962	-119.93	941.11	-5.41
930	SLE RA 20	87	15	4037	-122.1	958.9	-2.62
930	SLE RA 21	86	23	4005	-121.21	951.06	-5.5
930	SLE FR 1	79	13	3606	-109.13	859.36	-2.15
930	SLE FR 2	79	15	3595	-108.83	856.74	-3.11
930	SLE FR 3	80	13	3623	-109.64	863.34	-2.18
930	SLE FR 4	81	16	3712	-112.34	883.62	-3.22
930	SLE FR 5	82	13	3740	-113.15	890.21	-2.3
930	SLE FR 6	83	14	3800	-114.97	904.15	-2.34
930	SLE QP 1	79	13	3606	-109.13	859.36	-2.15
930	SLE QP 2	81	13	3722	-112.64	886.24	-2.26
930	SLD 1	419	105	2191	-67.65	538.63	-14.28
930	SLD 2	357	217	2081	-64.58	511.68	-55.08
930	SLD 3	471	-132	3285	-97.93	804.82	70.21
930	SLD 4	409	-21	3175	-94.86	777.86	29.4
930	SLD 5	115	381	1624	-53.77	383.09	-126.66
930	SLD 6	74	454	1551	-51.74	365.31	-153.58
930	SLD 7	289	-411	5271	-154.7	1270.37	154.95
930	SLD 8	248	-337	5197	-152.68	1252.59	128.03
930	SLD 9	-85	364	2247	-72.6	519.88	-132.55
930	SLD 10	-126	437	2174	-70.57	502.1	-159.47
930	SLD 11	89	-428	5894	-173.53	1407.16	149.05
930	SLD 12	48	-354	5821	-171.5	1389.38	122.13
930	SLD 13	-247	47	4270	-130.41	994.61	-33.93
930	SLD 14	-309	159	4159	-127.34	967.65	-74.73
930	SLD 15	-195	-190	5364	-160.69	1260.79	50.56
930	SLD 16	-256	-79	5253	-157.62	1233.84	9.75
930	SLV 1	867	247	48	-4.83	50.53	-36.73
930	SLV 2	721	509	-213	2.39	-12.82	-132.65
930	SLV 3	999	-346	2793	-80.8	718.3	174.38
930	SLV 4	853	-84	2532	-73.57	654.94	78.46
930	SLV 5	144	934	-1494	33.58	-365.43	-314.89
930	SLV 6	46	1110	-1670	38.44	-408.08	-379.47
930	SLV 7	584	-1043	7655	-219.65	1860.46	388.81
930	SLV 8	486	-867	7479	-214.79	1817.8	324.23
930	SLV 9	-323	893	-35	-10.49	-45.33	-328.76
930	SLV 10	-421	1070	-210	-5.62	-87.99	-393.34
930	SLV 11	117	-1084	9114	-263.71	2180.56	374.94
930	SLV 12	19	-908	8939	-258.85	2137.9	310.36
930	SLV 13	-691	111	4913	-151.7	1117.53	-82.98
930	SLV 14	-836	373	4652	-144.47	1054.17	-178.9
930	SLV 15	-559	-482	7657	-227.67	1785.29	128.13
930	SLV 16	-704	-220	7396	-220.44	1721.94	32.21
930	CRTFP Ux+	0	0	0	0	0	0
930	CRTFP Ux-	0	0	0	0	0	0
930	CRTFP Uy+	0	0	0	0	0	0
930	CRTFP Uy-	0	0	0	0	0	0
932	SLU 1	129	40	5647	-156.29	40.66	3.31
932	SLU 2	122	67	5528	-153.27	39.18	3.16
932	SLU 3	134	41	5802	-160.54	42.12	3.45
932	SLU 4	130	57	5731	-158.73	41.23	3.36
932	SLU 5	126	67	5631	-156.09	40	3.26
932	SLU 6	138	41	5905	-163.35	42.94	3.55
932	SLU 7	134	57	5833	-161.54	42.06	3.46
932	SLU 8	136	40	5852	-161.92	42.3	3.51

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
932	SLU 9	133	56	5781	-160.11	41.41	3.42
932	SLU 10	134	73	6237	-172.94	45.89	3.39
932	SLU 11	146	46	6512	-180.21	48.84	3.68
932	SLU 12	142	63	6440	-178.4	47.95	3.59
932	SLU 13	138	73	6340	-175.76	46.71	3.49
932	SLU 14	149	46	6614	-183.02	49.66	3.78
932	SLU 15	146	63	6543	-181.21	48.77	3.69
932	SLU 16	148	46	6562	-181.59	49.02	3.74
932	SLU 17	144	62	6490	-179.78	48.13	3.65
932	SLU 18	145	49	6661	-184.39	50.25	3.64
932	SLU 19	142	65	6589	-182.58	49.36	3.55
932	SLU 20	149	49	6763	-187.2	51.07	3.74
932	SLU 21	146	65	6692	-185.4	50.18	3.65
932	SLU 22	148	45	6589	-182.24	49.79	3.78
932	SLU 23	142	72	6470	-179.22	48.31	3.63
932	SLU 24	153	45	6744	-186.48	51.25	3.91
932	SLU 25	149	62	6673	-184.68	50.36	3.83
932	SLU 26	146	72	6572	-182.04	49.13	3.73
932	SLU 27	157	45	6847	-189.3	52.07	4.01
932	SLU 28	153	61	6775	-187.49	51.19	3.92
932	SLU 29	156	45	6794	-187.87	51.43	3.98
932	SLU 30	152	61	6723	-186.06	50.54	3.89
932	SLU 31	154	78	7179	-198.89	55.02	3.86
932	SLU 32	165	51	7453	-206.16	57.97	4.14
932	SLU 33	161	67	7382	-204.35	57.08	4.05
932	SLU 34	157	78	7282	-201.71	55.85	3.96
932	SLU 35	169	51	7556	-208.97	58.79	4.24
932	SLU 36	165	67	7484	-207.16	57.9	4.15
932	SLU 37	167	51	7503	-207.54	58.15	4.2
932	SLU 38	164	67	7432	-205.73	57.26	4.11
932	SLU 39	165	53	7602	-210.34	59.38	4.11
932	SLU 40	161	70	7531	-208.53	58.49	4.02
932	SLU 41	169	53	7705	-213.15	60.2	4.2
932	SLU 42	165	70	7633	-211.34	59.31	4.11
932	SLU 43	161	51	7019	-194.28	49.72	4.15
932	SLU 44	154	78	6900	-191.26	48.25	4
932	SLU 45	166	51	7174	-198.53	51.19	4.28
932	SLU 46	162	67	7102	-196.72	50.3	4.19
932	SLU 47	158	78	7002	-194.08	49.07	4.1
932	SLU 48	169	51	7276	-201.34	52.01	4.38
932	SLU 49	166	67	7205	-199.53	51.12	4.29
932	SLU 50	168	51	7224	-199.91	51.37	4.34
932	SLU 51	164	67	7152	-198.1	50.48	4.25
932	SLU 52	166	84	7609	-210.93	54.96	4.23
932	SLU 53	177	57	7883	-218.2	57.9	4.51
932	SLU 54	174	73	7811	-216.39	57.02	4.42
932	SLU 55	170	83	7711	-213.75	55.78	4.32
932	SLU 56	181	57	7985	-221.01	58.73	4.61
932	SLU 57	178	73	7914	-219.2	57.84	4.52
932	SLU 58	180	56	7933	-219.58	58.08	4.57
932	SLU 59	176	73	7862	-217.77	57.2	4.48
932	SLU 60	177	59	8032	-222.38	59.32	4.47
932	SLU 61	174	75	7960	-220.57	58.43	4.39
932	SLU 62	181	59	8134	-225.2	60.14	4.57
932	SLU 63	178	75	8063	-223.39	59.25	4.48
932	SLU 64	180	55	7960	-220.23	58.86	4.61
932	SLU 65	174	82	7841	-217.21	57.38	4.46
932	SLU 66	185	56	8115	-224.48	60.32	4.75
932	SLU 67	181	72	8044	-222.67	59.43	4.66
932	SLU 68	178	82	7944	-220.03	58.2	4.56
932	SLU 69	189	56	8218	-227.29	61.14	4.85
932	SLU 70	185	72	8146	-225.48	60.25	4.76
932	SLU 71	187	55	8166	-225.86	60.5	4.81
932	SLU 72	184	72	8094	-224.05	59.61	4.72
932	SLU 73	186	88	8551	-236.88	64.09	4.69
932	SLU 74	197	62	8825	-244.15	67.03	4.98
932	SLU 75	193	78	8753	-242.34	66.15	4.89
932	SLU 76	189	88	8653	-239.7	64.91	4.79
932	SLU 77	201	62	8927	-246.96	67.86	5.08
932	SLU 78	197	78	8856	-245.15	66.97	4.99
932	SLU 79	199	61	8875	-245.53	67.21	5.04
932	SLU 80	196	77	8803	-243.72	66.33	4.95
932	SLU 81	197	64	8974	-248.33	68.45	4.94
932	SLU 82	193	80	8902	-246.52	67.56	4.85
932	SLU 83	201	64	9076	-251.14	69.27	5.04
932	SLU 84	197	80	9005	-249.33	68.38	4.95
932	SLE RA 1	134	42	5916	-163.7	43.27	3.45
932	SLE RA 2	130	60	5837	-161.69	42.28	3.35
932	SLE RA 3	138	42	6020	-166.53	44.24	3.54
932	SLE RA 4	135	53	5972	-165.33	43.65	3.48
932	SLE RA 5	133	60	5905	-163.57	42.83	3.41
932	SLE RA 6	140	42	6088	-168.41	44.79	3.6
932	SLE RA 7	138	53	6040	-167.21	44.2	3.54
932	SLE RA 8	139	42	6053	-167.46	44.36	3.58
932	SLE RA 9	137	52	6006	-166.25	43.77	3.52
932	SLE RA 10	138	64	6310	-174.81	46.76	3.5
932	SLE RA 11	145	46	6493	-179.65	48.72	3.69
932	SLE RA 12	143	57	6445	-178.44	48.13	3.63
932	SLE RA 13	140	63	6378	-176.68	47.3	3.56

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
932	SLE RA 14	148	46	6561	-181.53	49.27	3.75
932	SLE RA 15	145	57	6513	-180.32	48.68	3.69
932	SLE RA 16	147	45	6526	-180.57	48.84	3.73
932	SLE RA 17	145	56	6478	-179.36	48.25	3.67
932	SLE RA 18	145	47	6592	-182.44	49.66	3.66
932	SLE RA 19	143	58	6544	-181.23	49.07	3.6
932	SLE RA 20	148	47	6660	-184.31	50.21	3.73
932	SLE RA 21	145	58	6613	-183.11	49.62	3.67
932	SLE FR 1	134	42	5916	-163.7	43.27	3.45
932	SLE FR 2	133	45	5901	-163.3	43.07	3.43
932	SLE FR 3	135	42	5944	-164.45	43.49	3.47
932	SLE FR 4	137	47	6103	-168.92	44.99	3.49
932	SLE FR 5	139	43	6146	-170.07	45.4	3.54
932	SLE FR 6	140	44	6254	-173.07	46.46	3.56
932	SLE QP 1	134	42	5916	-163.7	43.27	3.45
932	SLE QP 2	138	43	6119	-169.32	45.18	3.51
932	SLD 1	685	139	4552	-128.35	23.39	15.03
932	SLD 2	584	229	4447	-125.66	26.19	14.02
932	SLD 3	773	-185	6171	-169.46	43.21	17.16
932	SLD 4	672	-96	6066	-166.76	46.02	16.16
932	SLD 5	187	548	3213	-95.17	8.08	3.92
932	SLD 6	120	607	3143	-93.39	9.93	3.25
932	SLD 7	479	-534	8609	-232.19	74.15	11.02
932	SLD 8	413	-475	8539	-230.42	76	10.36
932	SLD 9	-138	561	3699	-108.23	14.37	-3.33
932	SLD 10	-204	620	3629	-106.45	16.22	-3.99
932	SLD 11	155	-521	9095	-245.25	80.44	3.77
932	SLD 12	88	-462	9025	-243.48	82.29	3.11
932	SLD 13	-397	182	6172	-171.88	44.35	-9.13
932	SLD 14	-498	272	6067	-169.19	47.16	-10.14
932	SLD 15	-309	-142	7791	-212.99	64.18	-7
932	SLD 16	-410	-53	7686	-210.29	66.98	-8
932	SLV 1	1411	293	2318	-70.01	-7.45	30.27
932	SLV 2	1174	504	2070	-63.68	-0.85	27.91
932	SLV 3	1633	-518	6378	-173.11	42.1	35.63
932	SLV 4	1396	-308	6130	-166.78	48.7	33.27
932	SLV 5	227	1309	-1133	15.66	-46.99	3.86
932	SLV 6	68	1451	-1300	19.92	-42.54	2.27
932	SLV 7	967	-1395	12401	-328.01	118.18	21.71
932	SLV 8	808	-1253	12234	-323.75	122.62	20.12
932	SLV 9	-533	1340	4	-14.9	-32.25	-13.1
932	SLV 10	-692	1481	-162	-10.63	-27.81	-14.69
932	SLV 11	207	-1364	13538	-358.57	132.91	4.75
932	SLV 12	48	-1223	13371	-354.31	137.36	3.17
932	SLV 13	-1121	394	6108	-171.87	41.67	-26.25
932	SLV 14	-1358	604	5860	-165.54	48.27	-28.61
932	SLV 15	-899	-417	10168	-274.97	91.22	-20.89
932	SLV 16	-1136	-207	9920	-268.64	97.82	-23.25
932	CRTFP Ux+	0	0	0	0	0	0
932	CRTFP Ux-	0	0	0	0	0	0
932	CRTFP Uy+	0	0	0	0	0	0
932	CRTFP Uy-	0	0	0	0	0	0
935	SLU 1	-21	51	5750	2.45	72.19	1.03
935	SLU 2	-20	81	5647	1.95	71.41	1.03
935	SLU 3	-21	52	5898	2.61	74.55	1.06
935	SLU 4	-21	70	5836	2.31	74.08	1.06
935	SLU 5	-20	82	5740	2.05	72.94	1.04
935	SLU 6	-22	53	5991	2.71	76.08	1.07
935	SLU 7	-21	71	5929	2.41	75.62	1.07
935	SLU 8	-21	52	5936	2.66	75.26	1.06
935	SLU 9	-21	70	5874	2.36	74.79	1.06
935	SLU 10	-22	84	6383	2.17	80.51	1.08
935	SLU 11	-23	55	6633	2.82	83.65	1.11
935	SLU 12	-23	73	6571	2.53	83.19	1.11
935	SLU 13	-22	84	6476	2.27	82.05	1.09
935	SLU 14	-24	55	6726	2.93	85.19	1.12
935	SLU 15	-23	73	6664	2.63	84.72	1.12
935	SLU 16	-23	55	6672	2.87	84.36	1.11
935	SLU 17	-23	73	6610	2.57	83.89	1.11
935	SLU 18	-24	55	6801	2.76	85.2	1.11
935	SLU 19	-23	73	6739	2.46	84.73	1.1
935	SLU 20	-24	55	6894	2.86	86.73	1.12
935	SLU 21	-23	73	6832	2.56	86.26	1.12
935	SLU 22	-24	57	6711	3.07	84.18	1.14
935	SLU 23	-23	87	6607	2.57	83.4	1.14
935	SLU 24	-24	57	6858	3.23	86.54	1.17
935	SLU 25	-24	76	6796	2.93	86.07	1.17
935	SLU 26	-23	87	6700	2.67	84.94	1.15
935	SLU 27	-25	58	6951	3.33	88.08	1.19
935	SLU 28	-24	76	6889	3.03	87.61	1.18
935	SLU 29	-24	57	6897	3.27	87.25	1.17
935	SLU 30	-24	75	6835	2.97	86.78	1.17
935	SLU 31	-25	89	7343	2.78	92.51	1.19
935	SLU 32	-26	60	7594	3.44	95.65	1.22
935	SLU 33	-26	78	7532	3.14	95.18	1.22
935	SLU 34	-25	90	7436	2.88	94.04	1.21
935	SLU 35	-27	60	7687	3.54	97.18	1.24
935	SLU 36	-26	78	7625	3.24	96.71	1.23
935	SLU 37	-26	60	7632	3.49	96.36	1.22

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
935	SLU 38	-26	78	7570	3.19	95.89	1.22
935	SLU 39	-27	60	7762	3.37	97.19	1.22
935	SLU 40	-26	78	7700	3.07	96.72	1.21
935	SLU 41	-27	61	7855	3.48	98.72	1.23
935	SLU 42	-26	79	7793	3.18	98.26	1.23
935	SLU 43	-26	65	7146	2.97	89.73	1.31
935	SLU 44	-25	95	7043	2.48	88.95	1.3
935	SLU 45	-27	66	7294	3.13	92.1	1.33
935	SLU 46	-26	84	7232	2.84	91.63	1.33
935	SLU 47	-25	95	7136	2.58	90.49	1.31
935	SLU 48	-27	66	7387	3.24	93.63	1.35
935	SLU 49	-26	84	7325	2.94	93.16	1.34
935	SLU 50	-26	66	7332	3.18	92.8	1.33
935	SLU 51	-26	84	7270	2.88	92.33	1.33
935	SLU 52	-27	98	7779	2.69	98.06	1.35
935	SLU 53	-29	68	8029	3.35	101.2	1.38
935	SLU 54	-28	86	7967	3.05	100.73	1.38
935	SLU 55	-27	98	7872	2.79	99.59	1.37
935	SLU 56	-29	69	8122	3.45	102.73	1.4
935	SLU 57	-28	87	8060	3.15	102.27	1.39
935	SLU 58	-29	68	8068	3.39	101.91	1.38
935	SLU 59	-28	86	8006	3.09	101.44	1.38
935	SLU 60	-29	69	8197	3.28	102.74	1.38
935	SLU 61	-28	87	8135	2.98	102.27	1.38
935	SLU 62	-29	69	8290	3.38	104.28	1.39
935	SLU 63	-29	87	8228	3.08	103.81	1.39
935	SLU 64	-29	70	8107	3.59	101.73	1.42
935	SLU 65	-28	100	8003	3.09	100.95	1.41
935	SLU 66	-30	71	8254	3.75	104.09	1.44
935	SLU 67	-29	89	8192	3.45	103.62	1.44
935	SLU 68	-28	101	8096	3.19	102.48	1.43
935	SLU 69	-30	71	8347	3.85	105.62	1.46
935	SLU 70	-29	89	8285	3.55	105.15	1.45
935	SLU 71	-29	71	8293	3.8	104.8	1.44
935	SLU 72	-29	89	8231	3.5	104.33	1.44
935	SLU 73	-30	103	8739	3.31	110.05	1.46
935	SLU 74	-32	74	8989	3.97	113.19	1.49
935	SLU 75	-31	92	8927	3.67	112.72	1.49
935	SLU 76	-30	103	8832	3.41	111.59	1.48
935	SLU 77	-32	74	9082	4.07	114.73	1.51
935	SLU 78	-31	92	9020	3.77	114.26	1.51
935	SLU 79	-32	73	9028	4.01	113.9	1.5
935	SLU 80	-31	91	8966	3.71	113.43	1.49
935	SLU 81	-32	74	9157	3.9	114.73	1.49
935	SLU 82	-31	92	9095	3.6	114.27	1.49
935	SLU 83	-32	74	9250	4	116.27	1.5
935	SLU 84	-32	92	9188	3.7	115.8	1.5
935	SLE RA 1	-22	53	6025	2.63	75.62	1.07
935	SLE RA 2	-21	73	5956	2.29	75.1	1.06
935	SLE RA 3	-22	53	6123	2.73	77.19	1.08
935	SLE RA 4	-22	65	6082	2.53	76.88	1.08
935	SLE RA 5	-21	73	6018	2.36	76.12	1.07
935	SLE RA 6	-22	54	6185	2.8	78.21	1.09
935	SLE RA 7	-22	66	6144	2.6	77.9	1.09
935	SLE RA 8	-22	53	6149	2.76	77.66	1.08
935	SLE RA 9	-22	65	6107	2.56	77.35	1.08
935	SLE RA 10	-22	75	6446	2.44	81.17	1.1
935	SLE RA 11	-23	55	6613	2.88	83.26	1.12
935	SLE RA 12	-23	67	6572	2.68	82.95	1.12
935	SLE RA 13	-23	75	6508	2.51	82.19	1.11
935	SLE RA 14	-24	55	6675	2.94	84.28	1.13
935	SLE RA 15	-23	67	6634	2.75	83.97	1.12
935	SLE RA 16	-23	55	6639	2.91	83.73	1.12
935	SLE RA 17	-23	67	6598	2.71	83.42	1.12
935	SLE RA 18	-24	55	6725	2.83	84.29	1.11
935	SLE RA 19	-23	67	6684	2.63	83.98	1.11
935	SLE RA 20	-24	55	6787	2.9	85.31	1.12
935	SLE RA 21	-23	68	6746	2.7	85	1.12
935	SLE FR 1	-22	53	6025	2.63	75.62	1.07
935	SLE FR 2	-22	57	6011	2.56	75.51	1.06
935	SLE FR 3	-22	53	6050	2.65	76.03	1.07
935	SLE FR 4	-22	58	6221	2.62	78.11	1.08
935	SLE FR 5	-22	54	6260	2.71	78.63	1.08
935	SLE FR 6	-23	54	6375	2.73	79.95	1.09
935	SLE QP 1	-22	53	6025	2.63	75.62	1.07
935	SLE QP 2	-22	54	6235	2.69	78.22	1.08
935	SLD 1	713	275	5866	-0.52	75.52	-4.14
935	SLD 2	608	239	5889	-0.31	76	-1.56
935	SLD 3	693	-98	7268	6.04	86.86	-3.77
935	SLD 4	588	-133	7291	6.25	87.34	-1.2
935	SLD 5	247	691	3995	-8.27	60.12	-1.5
935	SLD 6	178	668	4010	-8.13	60.44	0.2
935	SLD 7	181	-550	8666	13.61	97.93	-0.28
935	SLD 8	112	-573	8681	13.75	98.25	1.41
935	SLD 9	-156	681	3789	-8.37	58.19	0.75
935	SLD 10	-226	657	3803	-8.23	58.51	2.44
935	SLD 11	-222	-561	8460	13.5	96	1.96
935	SLD 12	-292	-584	8475	13.64	96.32	3.66
935	SLD 13	-632	240	5179	-0.87	69.09	3.36

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
935	SLD 14	-738	205	5202	-0.66	69.57	5.93
935	SLD 15	-652	-132	6581	5.69	80.43	3.72
935	SLD 16	-758	-168	6604	5.9	80.92	6.3
935	SLV 1	1699	600	5257	-5.37	70.9	-11.16
935	SLV 2	1451	517	5310	-4.87	72.04	-5.11
935	SLV 3	1652	-328	8768	11.06	99.35	-10.27
935	SLV 4	1404	-411	8821	11.56	100.48	-4.22
935	SLV 5	613	1641	606	-24.74	32.68	-5.07
935	SLV 6	446	1585	641	-24.41	33.44	-1
935	SLV 7	454	-1453	12311	30.03	127.48	-2.1
935	SLV 8	287	-1509	12347	30.36	128.24	1.97
935	SLV 9	-331	1616	123	-24.98	28.19	0.19
935	SLV 10	-498	1560	159	-24.65	28.95	4.26
935	SLV 11	-490	-1478	11828	29.78	123	3.16
935	SLV 12	-657	-1534	11864	30.12	123.76	7.23
935	SLV 13	-1448	518	3649	-6.18	55.96	6.38
935	SLV 14	-1696	435	3702	-5.69	57.09	12.43
935	SLV 15	-1496	-410	7160	10.25	84.4	7.27
935	SLV 16	-1744	-493	7213	10.74	85.53	13.32
935	CRTFP Ux+	0	0	0	0	0	0
935	CRTFP Ux-	0	0	0	0	0	0
935	CRTFP Uy+	0	0	0	0	0	0
935	CRTFP Uy-	0	0	0	0	0	0
938	SLU 1	24	100	4744	3.34	-17.57	-0.75
938	SLU 2	22	127	4657	2.96	-17.55	-0.71
938	SLU 3	25	101	4860	3.5	-18.12	-0.79
938	SLU 4	24	118	4809	3.28	-18.1	-0.76
938	SLU 5	23	128	4730	3.07	-17.89	-0.74
938	SLU 6	26	102	4933	3.61	-18.46	-0.82
938	SLU 7	25	119	4881	3.39	-18.44	-0.79
938	SLU 8	26	101	4888	3.55	-18.25	-0.81
938	SLU 9	25	118	4837	3.33	-18.23	-0.79
938	SLU 10	25	136	5259	3.34	-19.36	-0.79
938	SLU 11	28	111	5462	3.88	-19.93	-0.87
938	SLU 12	27	127	5410	3.65	-19.91	-0.84
938	SLU 13	26	137	5331	3.44	-19.69	-0.82
938	SLU 14	29	111	5534	3.98	-20.26	-0.9
938	SLU 15	27	128	5483	3.76	-20.25	-0.87
938	SLU 16	28	110	5490	3.92	-20.05	-0.89
938	SLU 17	27	127	5438	3.7	-20.04	-0.87
938	SLU 18	28	113	5603	3.87	-20.15	-0.87
938	SLU 19	27	129	5551	3.65	-20.14	-0.84
938	SLU 20	29	113	5675	3.98	-20.49	-0.9
938	SLU 21	28	130	5624	3.75	-20.48	-0.87
938	SLU 22	28	113	5532	4.06	-20.22	-0.89
938	SLU 23	26	140	5446	3.68	-20.2	-0.84
938	SLU 24	29	114	5649	4.22	-20.77	-0.92
938	SLU 25	28	131	5597	4	-20.75	-0.9
938	SLU 26	27	141	5518	3.79	-20.53	-0.87
938	SLU 27	30	115	5721	4.33	-21.1	-0.95
938	SLU 28	29	132	5670	4.11	-21.09	-0.93
938	SLU 29	29	114	5677	4.27	-20.89	-0.95
938	SLU 30	28	131	5625	4.04	-20.88	-0.92
938	SLU 31	28	149	6047	4.06	-22	-0.92
938	SLU 32	31	124	6251	4.6	-22.57	-1
938	SLU 33	30	140	6199	4.37	-22.56	-0.98
938	SLU 34	29	150	6120	4.16	-22.34	-0.95
938	SLU 35	32	124	6323	4.7	-22.91	-1.03
938	SLU 36	31	141	6271	4.48	-22.9	-1.01
938	SLU 37	32	123	6279	4.64	-22.7	-1.03
938	SLU 38	31	140	6227	4.42	-22.69	-1
938	SLU 39	31	126	6392	4.59	-22.8	-1
938	SLU 40	30	142	6340	4.37	-22.79	-0.98
938	SLU 41	32	126	6464	4.7	-23.14	-1.03
938	SLU 42	31	143	6412	4.47	-23.12	-1.01
938	SLU 43	30	125	5896	4.09	-21.93	-0.93
938	SLU 44	28	153	5810	3.72	-21.91	-0.89
938	SLU 45	31	127	6013	4.26	-22.48	-0.97
938	SLU 46	30	143	5961	4.03	-22.47	-0.94
938	SLU 47	29	153	5882	3.82	-22.25	-0.92
938	SLU 48	32	128	6085	4.37	-22.82	-1
938	SLU 49	31	144	6034	4.14	-22.81	-0.97
938	SLU 50	32	127	6041	4.31	-22.61	-0.99
938	SLU 51	31	143	5989	4.08	-22.6	-0.97
938	SLU 52	31	162	6412	4.09	-23.72	-0.97
938	SLU 53	34	136	6615	4.63	-24.29	-1.05
938	SLU 54	33	153	6563	4.41	-24.28	-1.02
938	SLU 55	32	162	6484	4.2	-24.06	-1
938	SLU 56	35	137	6687	4.74	-24.63	-1.08
938	SLU 57	33	153	6635	4.51	-24.61	-1.05
938	SLU 58	34	136	6643	4.68	-24.42	-1.07
938	SLU 59	33	152	6591	4.45	-24.4	-1.05
938	SLU 60	34	138	6756	4.63	-24.52	-1.05
938	SLU 61	33	155	6704	4.4	-24.5	-1.02
938	SLU 62	35	139	6828	4.73	-24.85	-1.08
938	SLU 63	33	155	6776	4.51	-24.84	-1.05
938	SLU 64	34	138	6685	4.81	-24.58	-1.07
938	SLU 65	32	166	6599	4.44	-24.56	-1.02
938	SLU 66	35	140	6802	4.98	-25.13	-1.1

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
938	SLU 67	34	156	6750	4.75	-25.12	-1.08
938	SLU 68	33	166	6671	4.54	-24.9	-1.05
938	SLU 69	36	141	6874	5.08	-25.47	-1.13
938	SLU 70	34	157	6822	4.86	-25.45	-1.11
938	SLU 71	35	140	6830	5.02	-25.26	-1.13
938	SLU 72	34	156	6778	4.8	-25.24	-1.1
938	SLU 73	34	175	7200	4.81	-26.37	-1.1
938	SLU 74	37	149	7403	5.35	-26.94	-1.18
938	SLU 75	36	165	7351	5.13	-26.92	-1.16
938	SLU 76	35	175	7273	4.92	-26.7	-1.13
938	SLU 77	38	150	7476	5.46	-27.27	-1.21
938	SLU 78	37	166	7424	5.23	-27.26	-1.19
938	SLU 79	38	149	7431	5.4	-27.06	-1.21
938	SLU 80	37	165	7379	5.17	-27.05	-1.18
938	SLU 81	37	151	7544	5.35	-27.16	-1.18
938	SLU 82	36	168	7492	5.12	-27.15	-1.16
938	SLU 83	38	152	7617	5.45	-27.5	-1.21
938	SLU 84	37	168	7565	5.23	-27.49	-1.19
938	SLE RA 1	25	103	4969	3.54	-18.33	-0.79
938	SLE RA 2	24	122	4911	3.29	-18.31	-0.76
938	SLE RA 3	26	105	5047	3.65	-18.69	-0.81
938	SLE RA 4	25	116	5012	3.5	-18.68	-0.8
938	SLE RA 5	24	122	4960	3.36	-18.54	-0.78
938	SLE RA 6	26	105	5095	3.73	-18.92	-0.83
938	SLE RA 7	26	116	5060	3.58	-18.91	-0.82
938	SLE RA 8	26	104	5065	3.69	-18.78	-0.83
938	SLE RA 9	26	115	5031	3.54	-18.77	-0.81
938	SLE RA 10	26	128	5312	3.54	-19.52	-0.82
938	SLE RA 11	27	111	5448	3.9	-19.9	-0.87
938	SLE RA 12	27	122	5413	3.75	-19.89	-0.85
938	SLE RA 13	26	128	5361	3.61	-19.74	-0.84
938	SLE RA 14	28	111	5496	3.97	-20.12	-0.89
938	SLE RA 15	27	122	5462	3.82	-20.11	-0.87
938	SLE RA 16	28	110	5466	3.93	-19.98	-0.88
938	SLE RA 17	27	121	5432	3.78	-19.97	-0.87
938	SLE RA 18	28	112	5542	3.9	-20.05	-0.87
938	SLE RA 19	27	123	5507	3.75	-20.04	-0.85
938	SLE RA 20	28	113	5590	3.97	-20.27	-0.89
938	SLE RA 21	27	124	5556	3.82	-20.26	-0.87
938	SLE FR 1	25	103	4969	3.54	-18.33	-0.79
938	SLE FR 2	25	107	4957	3.49	-18.32	-0.79
938	SLE FR 3	25	104	4988	3.57	-18.42	-0.8
938	SLE FR 4	26	110	5129	3.6	-18.84	-0.81
938	SLE FR 5	26	106	5160	3.68	-18.93	-0.82
938	SLE FR 6	26	108	5255	3.72	-19.19	-0.83
938	SLE QP 1	25	103	4969	3.54	-18.33	-0.79
938	SLE QP 2	26	106	5141	3.65	-18.84	-0.81
938	SLD 1	668	243	4062	1.1	7.61	-4.93
938	SLD 2	569	278	4073	0.98	7.66	-2.67
938	SLD 3	697	-97	5225	6.04	6.84	-5.62
938	SLD 4	598	-63	5235	5.93	6.88	-3.36
938	SLD 5	192	657	3052	-4.59	-9.73	-1.41
938	SLD 6	126	680	3059	-4.67	-9.71	0.08
938	SLD 7	289	-477	6927	11.89	-12.33	-3.71
938	SLD 8	224	-455	6934	11.81	-12.3	-2.22
938	SLD 9	-173	667	3348	-4.51	-25.39	0.59
938	SLD 10	-238	689	3354	-4.59	-25.36	2.08
938	SLD 11	-75	-468	7222	11.97	-27.98	-1.71
938	SLD 12	-140	-445	7229	11.89	-27.95	-0.22
938	SLD 13	-547	275	5046	1.37	-44.57	1.73
938	SLD 14	-646	309	5057	1.26	-44.52	3.99
938	SLD 15	-517	-66	6209	6.31	-45.34	1.04
938	SLD 16	-616	-31	6219	6.2	-45.3	3.3
938	SLV 1	1526	454	2521	-2.73	43.12	-10.37
938	SLV 2	1293	534	2545	-2.99	43.22	-5.07
938	SLV 3	1600	-396	5433	9.66	41.21	-12.14
938	SLV 4	1368	-316	5457	9.39	41.31	-6.84
938	SLV 5	406	1484	-67	-17	2.62	-1.99
938	SLV 6	249	1538	-50	-17.18	2.69	1.58
938	SLV 7	655	-1349	9641	24.29	-3.74	-7.88
938	SLV 8	498	-1294	9657	24.11	-3.68	-4.31
938	SLV 9	-447	1506	624	-16.81	-34.01	2.68
938	SLV 10	-603	1561	641	-16.99	-33.94	6.25
938	SLV 11	-198	-1327	10332	24.48	-40.38	-3.21
938	SLV 12	-354	-1272	10348	24.3	-40.31	0.36
938	SLV 13	-1316	527	4824	-2.09	-78.99	5.21
938	SLV 14	-1549	608	4848	-2.36	-78.89	10.51
938	SLV 15	-1241	-322	7736	10.29	-80.9	3.44
938	SLV 16	-1474	-242	7760	10.03	-80.8	8.74
938	CRTFP Ux+	0	0	0	0	0	0
938	CRTFP Ux-	0	0	0	0	0	0
938	CRTFP Uy+	0	0	0	0	0	0
938	CRTFP Uy-	0	0	0	0	0	0
940	SLU 1	-35	35	2881	-76.3	-546.7	7.73
940	SLU 2	-34	53	2815	-74.67	-533.85	12.23
940	SLU 3	-36	35	2955	-78.23	-560.58	7.73
940	SLU 4	-35	46	2915	-77.26	-552.87	10.44
940	SLU 5	-34	53	2861	-75.89	-542.62	12.24
940	SLU 6	-37	35	3001	-79.45	-569.34	7.74

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
940	SLU 7	-36	46	2962	-78.47	-561.64	10.45
940	SLU 8	-36	35	2974	-78.74	-564.24	7.75
940	SLU 9	-35	46	2934	-77.76	-556.53	10.45
940	SLU 10	-35	58	3160	-83.78	-598.34	13.44
940	SLU 11	-38	40	3300	-87.34	-625.06	8.93
940	SLU 12	-37	51	3260	-86.37	-617.36	11.64
940	SLU 13	-36	58	3207	-85	-607.11	13.45
940	SLU 14	-38	40	3347	-88.56	-633.83	8.94
940	SLU 15	-38	51	3307	-87.59	-626.12	11.65
940	SLU 16	-38	40	3319	-87.85	-628.72	8.95
940	SLU 17	-37	51	3280	-86.87	-621.02	11.65
940	SLU 18	-38	42	3374	-89.31	-638.82	9.44
940	SLU 19	-37	53	3335	-88.34	-631.12	12.15
940	SLU 20	-38	42	3421	-90.53	-647.59	9.45
940	SLU 21	-37	53	3381	-89.56	-639.89	12.16
940	SLU 22	-39	38	3346	-88.51	-633.83	8.29
940	SLU 23	-38	56	3280	-86.89	-620.98	12.8
940	SLU 24	-40	38	3420	-90.45	-647.7	8.3
940	SLU 25	-39	49	3380	-89.47	-640	11
940	SLU 26	-38	56	3327	-88.11	-629.75	12.81
940	SLU 27	-41	38	3467	-91.66	-656.47	8.31
940	SLU 28	-40	49	3427	-90.69	-648.76	11.01
940	SLU 29	-40	38	3439	-90.95	-651.36	8.31
940	SLU 30	-39	49	3400	-89.98	-643.66	11.01
940	SLU 31	-39	61	3626	-96	-685.47	14
940	SLU 32	-42	43	3766	-99.56	-712.19	9.5
940	SLU 33	-41	54	3726	-98.58	-704.48	12.2
940	SLU 34	-40	61	3672	-97.22	-694.24	14.01
940	SLU 35	-42	43	3812	-100.78	-720.96	9.51
940	SLU 36	-41	54	3773	-99.8	-713.25	12.21
940	SLU 37	-42	43	3785	-100.06	-715.85	9.51
940	SLU 38	-41	54	3745	-99.09	-708.14	12.22
940	SLU 39	-42	45	3840	-101.53	-725.95	10.01
940	SLU 40	-41	56	3800	-100.55	-718.24	12.71
940	SLU 41	-42	45	3886	-102.75	-734.72	10.02
940	SLU 42	-41	56	3847	-101.77	-727.01	12.72
940	SLU 43	-45	45	3585	-95	-680.84	9.85
940	SLU 44	-43	63	3519	-93.37	-667.99	14.36
940	SLU 45	-46	45	3659	-96.93	-694.71	9.86
940	SLU 46	-45	56	3620	-95.96	-687.01	12.56
940	SLU 47	-44	63	3566	-94.59	-676.76	14.37
940	SLU 48	-46	45	3706	-98.15	-703.48	9.87
940	SLU 49	-45	56	3666	-97.18	-695.77	12.57
940	SLU 50	-46	45	3679	-97.44	-698.37	9.87
940	SLU 51	-45	56	3639	-96.46	-690.67	12.58
940	SLU 52	-45	68	3865	-102.49	-732.48	15.56
940	SLU 53	-47	50	4005	-106.04	-759.2	11.06
940	SLU 54	-46	61	3965	-105.07	-751.49	13.76
940	SLU 55	-45	68	3911	-103.7	-741.25	15.57
940	SLU 56	-48	50	4051	-107.26	-767.97	11.07
940	SLU 57	-47	61	4012	-106.29	-760.26	13.77
940	SLU 58	-47	50	4024	-106.55	-762.86	11.07
940	SLU 59	-46	61	3984	-105.57	-755.15	13.78
940	SLU 60	-47	52	4079	-108.02	-772.96	11.57
940	SLU 61	-46	63	4039	-107.04	-765.25	14.27
940	SLU 62	-48	52	4125	-109.24	-781.73	11.58
940	SLU 63	-47	63	4086	-108.26	-774.02	14.28
940	SLU 64	-48	47	4051	-107.21	-767.96	10.41
940	SLU 65	-47	65	3985	-105.59	-755.12	14.92
940	SLU 66	-49	47	4125	-109.15	-781.84	10.42
940	SLU 67	-48	58	4085	-108.17	-774.13	13.13
940	SLU 68	-47	65	4031	-106.81	-763.89	14.93
940	SLU 69	-50	48	4171	-110.37	-790.61	10.43
940	SLU 70	-49	58	4132	-109.39	-782.9	13.14
940	SLU 71	-49	48	4144	-109.65	-785.5	10.43
940	SLU 72	-49	58	4104	-108.68	-777.79	13.14
940	SLU 73	-49	70	4330	-114.7	-819.61	16.12
940	SLU 74	-51	53	4470	-118.26	-846.33	11.62
940	SLU 75	-50	63	4431	-117.28	-838.62	14.33
940	SLU 76	-49	70	4377	-115.92	-828.37	16.13
940	SLU 77	-52	53	4517	-119.48	-855.1	11.63
940	SLU 78	-51	63	4477	-118.5	-847.39	14.34
940	SLU 79	-51	53	4490	-118.76	-849.99	11.63
940	SLU 80	-50	63	4450	-117.79	-842.28	14.34
940	SLU 81	-51	55	4544	-120.23	-860.09	12.13
940	SLU 82	-50	65	4505	-119.25	-852.38	14.83
940	SLU 83	-51	55	4591	-121.45	-868.86	12.14
940	SLU 84	-50	65	4551	-120.47	-861.15	14.84
940	SLE RA 1	-36	36	3014	-79.79	-571.59	7.89
940	SLE RA 2	-35	48	2970	-78.7	-563.03	10.89
940	SLE RA 3	-37	36	3063	-81.08	-580.84	7.89
940	SLE RA 4	-36	43	3036	-80.43	-575.71	9.69
940	SLE RA 5	-36	48	3001	-79.52	-568.87	10.9
940	SLE RA 6	-37	36	3094	-81.89	-586.69	7.9
940	SLE RA 7	-37	43	3068	-81.24	-581.55	9.7
940	SLE RA 8	-37	36	3076	-81.41	-583.28	7.9
940	SLE RA 9	-36	43	3049	-80.76	-578.15	9.7
940	SLE RA 10	-37	51	3200	-84.78	-606.02	11.69
940	SLE RA 11	-38	39	3293	-87.15	-623.84	8.69

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
940	SLE RA 12	-38	46	3267	-86.5	-618.7	10.5
940	SLE RA 13	-37	51	3231	-85.59	-611.87	11.7
940	SLE RA 14	-39	39	3324	-87.96	-629.68	8.7
940	SLE RA 15	-38	47	3298	-87.31	-624.54	10.5
940	SLE RA 16	-38	39	3306	-87.49	-626.28	8.7
940	SLE RA 17	-38	47	3280	-86.84	-621.14	10.5
940	SLE RA 18	-38	41	3343	-88.47	-633.01	9.03
940	SLE RA 19	-37	48	3316	-87.82	-627.87	10.83
940	SLE RA 20	-38	41	3374	-89.28	-638.85	9.04
940	SLE RA 21	-38	48	3347	-88.63	-633.72	10.84
940	SLE FR 1	-36	36	3014	-79.79	-571.59	7.89
940	SLE FR 2	-36	38	3005	-79.57	-569.88	8.49
940	SLE FR 3	-37	36	3026	-80.11	-573.93	7.89
940	SLE FR 4	-37	40	3103	-82.17	-588.3	8.83
940	SLE FR 5	-37	37	3125	-82.72	-592.36	8.23
940	SLE FR 6	-37	38	3178	-84.13	-602.3	8.46
940	SLE QP 1	-36	36	3014	-79.79	-571.59	7.89
940	SLE QP 2	-37	37	3112	-82.39	-590.02	8.23
940	SLD 1	272	210	3557	-94.94	-661.89	55.85
940	SLD 2	221	116	3633	-96.8	-676.5	30.85
940	SLD 3	248	1	4459	-117.19	-837.55	3.11
940	SLD 4	197	-94	4534	-119.05	-852.17	-21.89
940	SLD 5	101	423	1865	-52.06	-342.53	107
940	SLD 6	67	361	1915	-53.29	-352.17	90.51
940	SLD 7	22	-274	4870	-126.25	-928.07	-68.8
940	SLD 8	-12	-336	4920	-127.48	-937.71	-85.29
940	SLD 9	-62	411	1305	-37.3	-242.32	101.75
940	SLD 10	-95	348	1355	-38.53	-251.96	85.26
940	SLD 11	-141	-286	4310	-111.49	-827.86	-74.05
940	SLD 12	-175	-349	4360	-112.72	-837.5	-90.54
940	SLD 13	-271	168	1690	-45.73	-327.87	38.35
940	SLD 14	-322	73	1766	-47.59	-342.48	13.35
940	SLD 15	-295	-41	2592	-67.99	-503.53	-14.39
940	SLD 16	-346	-136	2668	-69.85	-518.14	-39.39
940	SLV 1	687	458	4079	-109.92	-743.78	123.62
940	SLV 2	567	235	4257	-114.29	-778.13	64.85
940	SLV 3	628	-61	6336	-165.64	-1183.61	-7.34
940	SLV 4	509	-284	6514	-170.02	-1217.96	-66.11
940	SLV 5	291	993	-55	-5.31	37.35	252.44
940	SLV 6	211	843	65	-8.26	14.22	212.88
940	SLV 7	96	-738	7470	-191.07	-1428.77	-184.1
940	SLV 8	16	-888	7590	-194.02	-1451.89	-223.67
940	SLV 9	-90	963	-1365	29.23	271.86	240.13
940	SLV 10	-170	813	-1245	26.29	248.73	200.56
940	SLV 11	-285	-768	6159	-156.52	-1194.26	-196.42
940	SLV 12	-365	-918	6279	-159.47	-1217.38	-235.98
940	SLV 13	-582	359	-290	5.24	37.93	82.57
940	SLV 14	-702	136	-112	0.86	3.58	23.8
940	SLV 15	-641	-160	1967	-50.49	-401.91	-48.39
940	SLV 16	-761	-383	2146	-54.87	-436.26	-107.16
940	CRTFP Ux+	0	0	0	0	0	0
940	CRTFP Ux-	0	0	0	0	0	0
940	CRTFP Uy+	0	0	0	0	0	0
940	CRTFP Uy-	0	0	0	0	0	0
957	SLU 1	204	65	9151	10.5	197.98	0.38
957	SLU 2	194	108	8937	7.73	192.13	-0.35
957	SLU 3	212	66	9405	11.15	203.97	0.45
957	SLU 4	206	92	9277	9.49	200.46	0.01
957	SLU 5	200	108	9105	8.09	195.83	-0.3
957	SLU 6	218	66	9572	11.52	207.67	0.5
957	SLU 7	212	92	9444	9.85	204.16	0.06
957	SLU 8	216	65	9486	11.24	205.38	0.48
957	SLU 9	210	91	9358	9.57	201.87	0.04
957	SLU 10	214	118	10083	8.89	219.09	-0.52
957	SLU 11	232	75	10551	12.31	230.93	0.27
957	SLU 12	226	101	10423	10.65	227.42	-0.17
957	SLU 13	220	118	10251	9.25	222.79	-0.47
957	SLU 14	238	75	10719	12.68	234.63	0.32
957	SLU 15	232	101	10590	11.01	231.12	-0.12
957	SLU 16	236	75	10632	12.4	232.35	0.31
957	SLU 17	230	100	10504	10.73	228.83	-0.13
957	SLU 18	232	79	10788	12.16	236.5	0.13
957	SLU 19	226	105	10660	10.5	232.99	-0.3
957	SLU 20	238	79	10956	12.53	240.2	0.18
957	SLU 21	232	105	10828	10.86	236.69	-0.25
957	SLU 22	235	73	10685	13.53	234.61	0.41
957	SLU 23	225	116	10472	10.75	228.75	-0.32
957	SLU 24	243	74	10939	14.18	240.59	0.47
957	SLU 25	237	99	10811	12.51	237.08	0.03
957	SLU 26	231	116	10639	11.12	232.45	-0.27
957	SLU 27	249	74	11107	14.55	244.29	0.52
957	SLU 28	243	99	10979	12.88	240.78	0.08
957	SLU 29	247	73	11021	14.26	242.01	0.51
957	SLU 30	241	99	10892	12.6	238.5	0.07
957	SLU 31	245	126	11618	11.91	255.71	-0.5
957	SLU 32	263	83	12086	15.34	267.55	0.3
957	SLU 33	257	109	11957	13.67	264.04	-0.14
957	SLU 34	251	126	11785	12.28	259.41	-0.45
957	SLU 35	269	83	12253	15.71	271.25	0.35

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
957	SLU 36	263	109	12125	14.04	267.74	-0.09
957	SLU 37	267	82	12167	15.42	268.97	0.33
957	SLU 38	261	108	12039	13.76	265.46	-0.1
957	SLU 39	263	87	12323	15.19	273.12	0.16
957	SLU 40	257	113	12194	13.52	269.61	-0.28
957	SLU 41	269	87	12490	15.55	276.82	0.21
957	SLU 42	263	112	12362	13.89	273.31	-0.23
957	SLU 43	255	82	11370	12.62	244.82	0.49
957	SLU 44	245	125	11156	9.84	238.97	-0.24
957	SLU 45	263	83	11624	13.27	250.81	0.55
957	SLU 46	257	109	11496	11.6	247.3	0.11
957	SLU 47	251	125	11324	10.21	242.67	-0.19
957	SLU 48	269	83	11792	13.63	254.51	0.6
957	SLU 49	263	108	11663	11.97	251	0.16
957	SLU 50	267	82	11705	13.35	252.22	0.59
957	SLU 51	261	108	11577	11.68	248.71	0.15
957	SLU 52	265	135	12302	11	265.93	-0.42
957	SLU 53	282	92	12770	14.43	277.77	0.38
957	SLU 54	276	118	12642	12.76	274.26	-0.06
957	SLU 55	271	135	12470	11.37	269.63	-0.37
957	SLU 56	288	92	12938	14.79	281.47	0.43
957	SLU 57	282	118	12810	13.13	277.96	-0.01
957	SLU 58	286	92	12852	14.51	279.18	0.41
957	SLU 59	280	117	12723	12.84	275.67	-0.02
957	SLU 60	283	96	13007	14.27	283.34	0.24
957	SLU 61	277	122	12879	12.61	279.83	-0.2
957	SLU 62	289	96	13175	14.64	287.04	0.29
957	SLU 63	283	122	13047	12.98	283.53	-0.15
957	SLU 64	286	90	12905	15.64	281.44	0.51
957	SLU 65	276	133	12691	12.87	275.59	-0.22
957	SLU 66	294	91	13159	16.29	287.43	0.58
957	SLU 67	288	116	13030	14.63	283.92	0.14
957	SLU 68	282	133	12858	13.23	279.29	-0.17
957	SLU 69	300	90	13326	16.66	291.13	0.63
957	SLU 70	294	116	13198	14.99	287.62	0.19
957	SLU 71	298	90	13240	16.38	288.85	0.61
957	SLU 72	292	116	13112	14.71	285.33	0.18
957	SLU 73	296	143	13837	14.03	302.55	-0.39
957	SLU 74	313	100	14305	17.45	314.39	0.4
957	SLU 75	307	126	14176	15.79	310.88	-0.03
957	SLU 76	302	142	14005	14.39	306.25	-0.34
957	SLU 77	319	100	14472	17.82	318.09	0.45
957	SLU 78	313	126	14344	16.15	314.58	0.02
957	SLU 79	317	99	14386	17.54	315.81	0.44
957	SLU 80	311	125	14258	15.87	312.3	0
957	SLU 81	314	104	14542	17.3	319.96	0.26
957	SLU 82	308	129	14414	15.64	316.45	-0.17
957	SLU 83	320	104	14710	17.67	323.66	0.32
957	SLU 84	314	129	14581	16	320.15	-0.12
957	SLE RA 1	213	68	9589	11.37	208.45	0.39
957	SLE RA 2	207	96	9447	9.52	204.55	-0.1
957	SLE RA 3	218	68	9759	11.8	212.44	0.43
957	SLE RA 4	215	85	9673	10.69	210.1	0.14
957	SLE RA 5	211	96	9559	9.76	207.01	-0.06
957	SLE RA 6	222	68	9870	12.05	214.9	0.47
957	SLE RA 7	219	85	9785	10.93	212.56	0.17
957	SLE RA 8	221	67	9813	11.86	213.38	0.46
957	SLE RA 9	217	85	9727	10.75	211.04	0.16
957	SLE RA 10	220	103	10211	10.29	222.52	-0.21
957	SLE RA 11	231	74	10523	12.57	230.41	0.32
957	SLE RA 12	227	91	10437	11.46	228.07	0.02
957	SLE RA 13	224	103	10323	10.53	224.99	-0.18
957	SLE RA 14	235	74	10635	12.82	232.88	0.35
957	SLE RA 15	231	91	10549	11.71	230.54	0.06
957	SLE RA 16	234	74	10577	12.63	231.35	0.34
957	SLE RA 17	230	91	10491	11.52	229.01	0.05
957	SLE RA 18	232	77	10681	12.47	234.12	0.22
957	SLE RA 19	228	94	10595	11.36	231.78	-0.07
957	SLE RA 20	236	77	10793	12.72	236.59	0.26
957	SLE RA 21	232	94	10707	11.61	234.25	-0.04
957	SLE FR 1	213	68	9589	11.37	208.45	0.39
957	SLE FR 2	212	73	9561	11	207.67	0.29
957	SLE FR 3	215	68	9634	11.47	209.43	0.4
957	SLE FR 4	217	76	9888	11.33	215.37	0.24
957	SLE FR 5	220	70	9962	11.8	217.14	0.35
957	SLE FR 6	222	72	10135	11.92	221.29	0.31
957	SLE QP 1	213	68	9589	11.37	208.45	0.39
957	SLE QP 2	219	70	9917	11.7	216.15	0.34
957	SLD 1	1131	224	7189	-14.67	136.93	-8.99
957	SLD 2	955	367	7004	-16.35	138.55	-8.09
957	SLD 3	1271	-295	10084	21.75	215.45	0.01
957	SLD 4	1095	-152	9900	20.07	217.06	0.91
957	SLD 5	312	877	4740	-51.15	73.01	-16.28
957	SLD 6	195	971	4618	-52.26	74.07	-15.69
957	SLD 7	778	-851	14392	70.26	334.74	13.74
957	SLD 8	662	-757	14270	69.15	335.8	14.34
957	SLD 9	-225	898	5564	-45.75	96.5	-13.66
957	SLD 10	-341	992	5442	-46.86	97.56	-13.06
957	SLD 11	242	-831	15216	75.66	358.23	16.37

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
957	SLD 12	125	-737	15094	74.55	359.29	16.96
957	SLD 13	-657	293	9934	3.33	215.23	-0.23
957	SLD 14	-834	435	9749	1.65	216.85	0.67
957	SLD 15	-517	-226	12830	39.75	293.75	8.77
957	SLD 16	-694	-84	12645	38.07	295.37	9.67
957	SLV 1	2342	470	3291	-53.01	24.27	-22.2
957	SLV 2	1927	805	2857	-56.95	28.06	-20.09
957	SLV 3	2696	-826	10553	38.24	220.93	0.26
957	SLV 4	2280	-491	10118	34.29	224.73	2.38
957	SLV 5	396	2093	-3003	-145.36	-140.39	-40.88
957	SLV 6	117	2319	-3295	-148.02	-137.84	-39.46
957	SLV 7	1576	-2227	21202	158.78	515.15	33.99
957	SLV 8	1296	-2001	20909	156.13	517.7	35.41
957	SLV 9	-859	2142	-1076	-132.73	-85.4	-34.73
957	SLV 10	-1139	2367	-1368	-135.38	-82.85	-33.31
957	SLV 11	321	-2178	23129	171.42	570.14	40.14
957	SLV 12	41	-1953	22837	168.76	572.69	41.56
957	SLV 13	-1843	632	9715	-10.89	207.57	-1.7
957	SLV 14	-2258	966	9281	-14.84	211.37	0.42
957	SLV 15	-1489	-664	16977	80.35	404.24	20.77
957	SLV 16	-1904	-330	16542	76.4	408.03	22.88
957	CRTFP Ux+	0	0	0	0	0	0
957	CRTFP Ux-	0	0	0	0	0	0
957	CRTFP Uy+	0	0	0	0	0	0
957	CRTFP Uy-	0	0	0	0	0	0
975	SLU 1	-26	53	5845	3.48	66.1	1.07
975	SLU 2	-25	83	5725	2.96	65.37	1.08
975	SLU 3	-27	54	5998	3.67	68.26	1.1
975	SLU 4	-26	72	5926	3.36	67.82	1.1
975	SLU 5	-26	83	5821	3.08	66.78	1.09
975	SLU 6	-27	54	6094	3.79	69.67	1.12
975	SLU 7	-27	72	6022	3.48	69.23	1.12
975	SLU 8	-27	53	6038	3.72	68.92	1.1
975	SLU 9	-26	71	5966	3.41	68.48	1.11
975	SLU 10	-28	85	6469	3.31	73.67	1.12
975	SLU 11	-29	56	6742	4.02	76.57	1.15
975	SLU 12	-29	74	6670	3.71	76.13	1.15
975	SLU 13	-28	86	6566	3.43	75.08	1.14
975	SLU 14	-29	57	6838	4.14	77.98	1.16
975	SLU 15	-29	75	6767	3.83	77.54	1.16
975	SLU 16	-29	56	6782	4.07	77.22	1.15
975	SLU 17	-29	74	6710	3.76	76.78	1.15
975	SLU 18	-29	57	6908	3.98	77.96	1.14
975	SLU 19	-29	75	6836	3.67	77.52	1.14
975	SLU 20	-30	57	7005	4.1	79.37	1.15
975	SLU 21	-29	75	6933	3.79	78.93	1.15
975	SLU 22	-30	58	6827	4.28	77.06	1.19
975	SLU 23	-29	88	6708	3.75	76.32	1.19
975	SLU 24	-30	59	6980	4.47	79.22	1.22
975	SLU 25	-30	77	6908	4.15	78.78	1.22
975	SLU 26	-29	89	6804	3.87	77.73	1.21
975	SLU 27	-31	59	7077	4.58	80.63	1.23
975	SLU 28	-30	77	7005	4.27	80.19	1.23
975	SLU 29	-30	59	7021	4.52	79.87	1.22
975	SLU 30	-30	77	6949	4.2	79.43	1.22
975	SLU 31	-31	91	7452	4.1	84.63	1.24
975	SLU 32	-33	62	7725	4.81	87.52	1.26
975	SLU 33	-32	80	7653	4.5	87.09	1.26
975	SLU 34	-31	91	7549	4.22	86.04	1.25
975	SLU 35	-33	62	7821	4.93	88.93	1.28
975	SLU 36	-32	80	7749	4.62	88.49	1.28
975	SLU 37	-33	62	7765	4.86	88.18	1.26
975	SLU 38	-32	80	7693	4.55	87.74	1.27
975	SLU 39	-33	62	7891	4.77	88.92	1.25
975	SLU 40	-32	80	7819	4.46	88.48	1.25
975	SLU 41	-33	62	7987	4.89	90.33	1.27
975	SLU 42	-33	80	7916	4.58	89.89	1.27
975	SLU 43	-33	67	7261	4.26	82.17	1.36
975	SLU 44	-32	97	7141	3.74	81.44	1.36
975	SLU 45	-33	68	7414	4.45	84.33	1.39
975	SLU 46	-33	86	7342	4.13	83.9	1.39
975	SLU 47	-32	97	7238	3.85	82.85	1.37
975	SLU 48	-34	68	7511	4.57	85.74	1.4
975	SLU 49	-33	86	7439	4.25	85.3	1.4
975	SLU 50	-33	67	7454	4.5	84.99	1.39
975	SLU 51	-33	85	7382	4.18	84.55	1.39
975	SLU 52	-34	99	7886	4.08	89.74	1.4
975	SLU 53	-36	70	8158	4.79	92.64	1.43
975	SLU 54	-35	88	8087	4.48	92.2	1.43
975	SLU 55	-34	100	7982	4.2	91.15	1.42
975	SLU 56	-36	71	8255	4.91	94.05	1.45
975	SLU 57	-36	89	8183	4.6	93.61	1.45
975	SLU 58	-36	70	8199	4.84	93.29	1.43
975	SLU 59	-35	88	8127	4.53	92.85	1.43
975	SLU 60	-36	70	8325	4.75	94.03	1.42
975	SLU 61	-35	88	8253	4.44	93.6	1.42
975	SLU 62	-36	71	8421	4.87	95.44	1.44
975	SLU 63	-36	89	8349	4.56	95	1.44
975	SLU 64	-36	72	8244	5.05	93.13	1.47

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
975	SLU 65	-35	102	8124	4.53	92.4	1.47
975	SLU 66	-37	73	8397	5.24	95.29	1.5
975	SLU 67	-36	91	8325	4.93	94.85	1.5
975	SLU 68	-36	102	8221	4.65	93.81	1.49
975	SLU 69	-37	73	8493	5.36	96.7	1.52
975	SLU 70	-37	91	8421	5.04	96.26	1.52
975	SLU 71	-37	73	8437	5.29	95.95	1.5
975	SLU 72	-36	91	8365	4.98	95.51	1.5
975	SLU 73	-38	105	8869	4.88	100.7	1.52
975	SLU 74	-39	76	9141	5.59	103.6	1.55
975	SLU 75	-39	94	9069	5.27	103.16	1.55
975	SLU 76	-38	105	8965	5	102.11	1.53
975	SLU 77	-40	76	9238	5.71	105.01	1.56
975	SLU 78	-39	94	9166	5.39	104.57	1.56
975	SLU 79	-39	75	9181	5.64	104.25	1.55
975	SLU 80	-39	94	9110	5.32	103.81	1.55
975	SLU 81	-40	76	9307	5.55	104.99	1.54
975	SLU 82	-39	94	9235	5.23	104.55	1.54
975	SLU 83	-40	76	9404	5.67	106.4	1.55
975	SLU 84	-39	94	9332	5.35	105.96	1.55
975	SLE RA 1	-27	54	6125	3.71	69.23	1.11
975	SLE RA 2	-27	74	6046	3.36	68.74	1.11
975	SLE RA 3	-28	55	6227	3.84	70.67	1.13
975	SLE RA 4	-27	67	6179	3.63	70.38	1.13
975	SLE RA 5	-27	74	6110	3.44	69.68	1.12
975	SLE RA 6	-28	55	6292	3.92	71.61	1.14
975	SLE RA 7	-27	67	6244	3.71	71.32	1.14
975	SLE RA 8	-28	55	6254	3.87	71.11	1.13
975	SLE RA 9	-27	67	6206	3.66	70.81	1.13
975	SLE RA 10	-28	76	6542	3.59	74.28	1.14
975	SLE RA 11	-29	57	6724	4.07	76.21	1.16
975	SLE RA 12	-29	69	6676	3.86	75.92	1.16
975	SLE RA 13	-28	76	6606	3.67	75.22	1.15
975	SLE RA 14	-29	57	6788	4.15	77.15	1.17
975	SLE RA 15	-29	69	6740	3.94	76.85	1.17
975	SLE RA 16	-29	57	6750	4.1	76.64	1.16
975	SLE RA 17	-29	69	6703	3.89	76.35	1.16
975	SLE RA 18	-29	57	6834	4.04	77.14	1.15
975	SLE RA 19	-29	69	6787	3.83	76.85	1.15
975	SLE RA 20	-30	57	6899	4.12	78.08	1.16
975	SLE RA 21	-29	69	6851	3.91	77.78	1.16
975	SLE FR 1	-27	54	6125	3.71	69.23	1.11
975	SLE FR 2	-27	58	6109	3.64	69.13	1.11
975	SLE FR 3	-27	54	6151	3.74	69.6	1.11
975	SLE FR 4	-28	59	6322	3.74	71.5	1.12
975	SLE FR 5	-28	55	6364	3.84	71.98	1.12
975	SLE FR 6	-28	55	6480	3.88	73.18	1.13
975	SLE QP 1	-27	54	6125	3.71	69.23	1.11
975	SLE QP 2	-28	55	6338	3.81	71.6	1.12
975	SLD 1	734	276	5862	0.5	70.53	-3.98
975	SLD 2	616	241	5891	0.72	71.07	-1.51
975	SLD 3	713	-96	7480	7.38	81.16	-3.65
975	SLD 4	594	-131	7509	7.6	81.69	-1.18
975	SLD 5	255	691	3736	-7.66	55.06	-1.36
975	SLD 6	176	668	3755	-7.52	55.42	0.28
975	SLD 7	183	-548	9130	15.28	90.49	-0.26
975	SLD 8	105	-571	9149	15.42	90.84	1.38
975	SLD 9	-161	681	3527	-7.8	52.36	0.86
975	SLD 10	-239	658	3547	-7.66	52.71	2.5
975	SLD 11	-232	-558	8921	15.14	87.78	1.96
975	SLD 12	-310	-581	8941	15.28	88.14	3.6
975	SLD 13	-650	241	5167	0.02	61.51	3.42
975	SLD 14	-769	206	5196	0.24	62.05	5.89
975	SLD 15	-671	-131	6785	6.9	72.14	3.75
975	SLD 16	-790	-166	6815	7.12	72.68	6.22
975	SLV 1	1757	600	5090	-4.5	68.17	-10.85
975	SLV 2	1478	518	5159	-3.99	69.43	-5.03
975	SLV 3	1705	-326	9144	12.73	94.81	-10.04
975	SLV 4	1427	-409	9213	13.24	96.08	-4.22
975	SLV 5	638	1639	-198	-24.91	29.92	-4.79
975	SLV 6	450	1583	-151	-24.57	30.77	-0.87
975	SLV 7	466	-1449	13316	32.53	118.74	-2.08
975	SLV 8	279	-1505	13362	32.87	119.59	1.84
975	SLV 9	-334	1615	-686	-25.25	23.61	0.4
975	SLV 10	-522	1559	-639	-24.91	24.46	4.32
975	SLV 11	-505	-1473	12828	32.19	112.43	3.11
975	SLV 12	-693	-1529	12874	32.53	113.28	7.03
975	SLV 13	-1482	519	3463	-5.62	47.12	6.46
975	SLV 14	-1761	436	3533	-5.11	48.39	12.28
975	SLV 15	-1534	-408	7517	11.61	73.77	7.27
975	SLV 16	-1812	-490	7587	12.12	75.04	13.09
975	CRTFP Ux+	0	0	0	0	0	0
975	CRTFP Ux-	0	0	0	0	0	0
975	CRTFP Uy+	0	0	0	0	0	0
975	CRTFP Uy-	0	0	0	0	0	0
979	SLU 1	28	101	4879	4.17	-16.58	-0.77
979	SLU 2	26	128	4779	3.77	-16.55	-0.73
979	SLU 3	29	103	5002	4.36	-17.1	-0.81
979	SLU 4	28	119	4942	4.12	-17.08	-0.78

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
979	SLU 5	27	129	4855	3.89	-16.87	-0.76
979	SLU 6	30	104	5079	4.48	-17.43	-0.84
979	SLU 7	29	120	5019	4.24	-17.4	-0.81
979	SLU 8	30	102	5032	4.41	-17.23	-0.83
979	SLU 9	29	119	4972	4.17	-17.21	-0.81
979	SLU 10	29	138	5396	4.26	-18.24	-0.8
979	SLU 11	32	112	5619	4.84	-18.8	-0.88
979	SLU 12	31	129	5559	4.61	-18.77	-0.85
979	SLU 13	30	138	5472	4.38	-18.56	-0.83
979	SLU 14	33	113	5696	4.97	-19.12	-0.91
979	SLU 15	32	129	5636	4.73	-19.1	-0.88
979	SLU 16	33	112	5649	4.9	-18.92	-0.9
979	SLU 17	31	128	5589	4.66	-18.9	-0.88
979	SLU 18	32	114	5760	4.86	-19	-0.87
979	SLU 19	31	131	5700	4.62	-18.98	-0.85
979	SLU 20	33	115	5837	4.98	-19.32	-0.9
979	SLU 21	32	131	5777	4.74	-19.3	-0.88
979	SLU 22	32	114	5696	5.03	-19.07	-0.9
979	SLU 23	30	141	5596	4.64	-19.04	-0.86
979	SLU 24	33	116	5819	5.22	-19.59	-0.93
979	SLU 25	32	132	5759	4.99	-19.57	-0.91
979	SLU 26	31	142	5672	4.76	-19.36	-0.89
979	SLU 27	34	117	5896	5.35	-19.91	-0.96
979	SLU 28	33	133	5836	5.11	-19.89	-0.94
979	SLU 29	34	116	5849	5.28	-19.72	-0.96
979	SLU 30	33	132	5789	5.04	-19.7	-0.94
979	SLU 31	33	151	6213	5.12	-20.73	-0.93
979	SLU 32	36	125	6436	5.71	-21.28	-1
979	SLU 33	35	142	6376	5.47	-21.26	-0.98
979	SLU 34	34	152	6289	5.24	-21.05	-0.96
979	SLU 35	37	126	6513	5.83	-21.61	-1.03
979	SLU 36	36	142	6453	5.59	-21.59	-1.01
979	SLU 37	37	125	6466	5.76	-21.41	-1.03
979	SLU 38	36	141	6406	5.52	-21.39	-1.01
979	SLU 39	36	127	6578	5.73	-21.49	-1
979	SLU 40	35	144	6517	5.49	-21.47	-0.98
979	SLU 41	37	128	6654	5.85	-21.81	-1.03
979	SLU 42	36	145	6594	5.61	-21.79	-1.01
979	SLU 43	34	127	6062	5.12	-20.7	-0.96
979	SLU 44	32	154	5962	4.72	-20.67	-0.92
979	SLU 45	36	129	6186	5.31	-21.22	-0.99
979	SLU 46	35	145	6126	5.07	-21.2	-0.97
979	SLU 47	34	155	6039	4.85	-20.99	-0.95
979	SLU 48	37	129	6262	5.43	-21.55	-1.02
979	SLU 49	36	146	6202	5.2	-21.53	-1
979	SLU 50	37	128	6215	5.37	-21.35	-1.02
979	SLU 51	35	145	6155	5.13	-21.33	-0.99
979	SLU 52	35	163	6579	5.21	-22.36	-0.99
979	SLU 53	39	138	6803	5.8	-22.92	-1.06
979	SLU 54	37	154	6743	5.56	-22.9	-1.04
979	SLU 55	36	164	6656	5.33	-22.68	-1.02
979	SLU 56	40	139	6879	5.92	-23.24	-1.09
979	SLU 57	39	155	6819	5.68	-23.22	-1.07
979	SLU 58	40	138	6833	5.85	-23.04	-1.09
979	SLU 59	38	154	6772	5.61	-23.02	-1.06
979	SLU 60	39	140	6944	5.81	-23.12	-1.06
979	SLU 61	37	156	6884	5.58	-23.1	-1.03
979	SLU 62	40	141	7020	5.94	-23.44	-1.09
979	SLU 63	39	157	6960	5.7	-23.42	-1.06
979	SLU 64	39	140	6880	5.99	-23.19	-1.09
979	SLU 65	37	167	6779	5.59	-23.16	-1.05
979	SLU 66	40	142	7003	6.18	-23.71	-1.12
979	SLU 67	39	158	6943	5.94	-23.69	-1.1
979	SLU 68	38	168	6856	5.71	-23.48	-1.08
979	SLU 69	41	142	7079	6.3	-24.04	-1.15
979	SLU 70	40	159	7019	6.06	-24.01	-1.13
979	SLU 71	41	141	7033	6.23	-23.84	-1.15
979	SLU 72	40	158	6973	5.99	-23.82	-1.12
979	SLU 73	40	177	7396	6.07	-24.85	-1.12
979	SLU 74	43	151	7620	6.66	-25.41	-1.19
979	SLU 75	42	167	7560	6.42	-25.38	-1.17
979	SLU 76	41	177	7473	6.2	-25.17	-1.15
979	SLU 77	44	152	7696	6.79	-25.73	-1.22
979	SLU 78	43	168	7636	6.55	-25.71	-1.2
979	SLU 79	44	151	7650	6.72	-25.53	-1.22
979	SLU 80	43	167	7590	6.48	-25.51	-1.19
979	SLU 81	43	153	7761	6.68	-25.61	-1.19
979	SLU 82	42	170	7701	6.44	-25.59	-1.16
979	SLU 83	44	154	7838	6.8	-25.93	-1.22
979	SLU 84	43	170	7777	6.56	-25.91	-1.19
979	SLE RA 1	29	105	5112	4.41	-17.29	-0.81
979	SLE RA 2	28	123	5046	4.15	-17.27	-0.78
979	SLE RA 3	30	106	5195	4.54	-17.64	-0.83
979	SLE RA 4	29	117	5155	4.38	-17.63	-0.81
979	SLE RA 5	28	123	5097	4.23	-17.48	-0.8
979	SLE RA 6	30	106	5246	4.62	-17.86	-0.85
979	SLE RA 7	30	117	5206	4.47	-17.84	-0.83
979	SLE RA 8	30	106	5214	4.58	-17.72	-0.85
979	SLE RA 9	29	117	5174	4.42	-17.71	-0.83

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
979	SLE RA 10	29	129	5457	4.47	-18.4	-0.83
979	SLE RA 11	32	112	5606	4.87	-18.77	-0.88
979	SLE RA 12	31	123	5566	4.71	-18.75	-0.86
979	SLE RA 13	30	130	5508	4.56	-18.61	-0.85
979	SLE RA 14	32	113	5657	4.95	-18.98	-0.9
979	SLE RA 15	32	124	5617	4.79	-18.97	-0.88
979	SLE RA 16	32	112	5626	4.9	-18.85	-0.89
979	SLE RA 17	31	123	5586	4.74	-18.84	-0.88
979	SLE RA 18	32	114	5700	4.88	-18.91	-0.87
979	SLE RA 19	31	125	5660	4.72	-18.89	-0.86
979	SLE RA 20	32	114	5751	4.96	-19.12	-0.89
979	SLE RA 21	32	125	5711	4.8	-19.11	-0.88
979	SLE FR 1	29	105	5112	4.41	-17.29	-0.81
979	SLE FR 2	29	108	5099	4.36	-17.29	-0.8
979	SLE FR 3	29	105	5133	4.45	-17.38	-0.81
979	SLE FR 4	29	111	5275	4.5	-17.77	-0.82
979	SLE FR 5	30	108	5309	4.59	-17.86	-0.83
979	SLE FR 6	30	109	5406	4.65	-18.1	-0.84
979	SLE QP 1	29	105	5112	4.41	-17.29	-0.81
979	SLE QP 2	30	107	5289	4.55	-17.78	-0.83
979	SLD 1	691	244	4116	1.8	8	-4.82
979	SLD 2	582	278	4122	1.69	8.13	-2.66
979	SLD 3	724	-95	5464	7.05	7.11	-5.46
979	SLD 4	614	-61	5470	6.93	7.25	-3.3
979	SLD 5	199	657	2893	-4.2	-8.72	-1.45
979	SLD 6	127	680	2897	-4.28	-8.63	-0.03
979	SLD 7	307	-474	7383	13.28	-11.68	-3.57
979	SLD 8	234	-452	7387	13.2	-11.59	-2.14
979	SLD 9	-175	666	3190	-4.09	-23.96	0.49
979	SLD 10	-247	689	3194	-4.17	-23.87	1.91
979	SLD 11	-67	-465	7681	13.39	-26.92	-1.63
979	SLD 12	-139	-442	7685	13.31	-26.83	-0.2
979	SLD 13	-555	276	5108	2.18	-42.8	1.64
979	SLD 14	-664	310	5114	2.06	-42.67	3.8
979	SLD 15	-522	-64	6455	7.42	-43.69	1.01
979	SLD 16	-632	-30	6461	7.3	-43.55	3.17
979	SLV 1	1575	454	2434	-2.31	42.61	-10.12
979	SLV 2	1317	535	2448	-2.59	42.92	-5.04
979	SLV 3	1658	-393	5809	10.82	40.41	-11.74
979	SLV 4	1400	-313	5824	10.55	40.72	-6.66
979	SLV 5	416	1482	-690	-17.38	3.62	-2.09
979	SLV 6	243	1536	-680	-17.57	3.83	1.33
979	SLV 7	691	-1343	10562	26.41	-3.72	-7.52
979	SLV 8	518	-1289	10571	26.22	-3.51	-4.1
979	SLV 9	-458	1504	6	-17.12	-32.04	2.44
979	SLV 10	-632	1558	16	-17.31	-31.83	5.86
979	SLV 11	-183	-1321	11258	26.67	-39.39	-2.98
979	SLV 12	-357	-1267	11267	26.49	-39.18	0.44
979	SLV 13	-1340	528	4754	-1.44	-76.27	5.01
979	SLV 14	-1598	608	4768	-1.72	-75.96	10.09
979	SLV 15	-1258	-320	8129	11.7	-78.48	3.38
979	SLV 16	-1516	-239	8143	11.42	-78.16	8.46
979	CRTFP Ux+	0	0	0	0	0	0
979	CRTFP Ux-	0	0	0	0	0	0
979	CRTFP Uy+	0	0	0	0	0	0
979	CRTFP Uy-	0	0	0	0	0	0
981	SLU 1	-58	60	5095	-1153.53	-861.74	-3.87
981	SLU 2	-55	91	4974	-1128.41	-841.17	2.35
981	SLU 3	-60	61	5227	-1182.84	-884	-4.21
981	SLU 4	-58	79	5154	-1167.77	-871.66	-0.47
981	SLU 5	-56	91	5057	-1146.9	-855.23	2.17
981	SLU 6	-61	61	5310	-1201.32	-898.06	-4.39
981	SLU 7	-59	79	5238	-1186.25	-885.72	-0.66
981	SLU 8	-60	61	5261	-1190.51	-889.86	-4.23
981	SLU 9	-58	79	5189	-1175.44	-877.52	-0.5
981	SLU 10	-58	100	5587	-1266.12	-944.56	3.25
981	SLU 11	-62	69	5839	-1320.54	-987.38	-3.31
981	SLU 12	-61	88	5767	-1305.47	-975.04	0.42
981	SLU 13	-59	100	5670	-1284.61	-958.62	3.07
981	SLU 14	-63	69	5923	-1339.03	-1001.44	-3.49
981	SLU 15	-61	88	5850	-1323.96	-989.1	0.24
981	SLU 16	-63	69	5874	-1328.21	-993.25	-3.33
981	SLU 17	-61	88	5802	-1313.14	-980.91	0.4
981	SLU 18	-62	73	5970	-1350.26	-1009.43	-2.58
981	SLU 19	-60	91	5898	-1335.19	-997.09	1.15
981	SLU 20	-63	73	6054	-1368.74	-1023.49	-2.77
981	SLU 21	-61	91	5981	-1353.67	-1011.15	0.97
981	SLU 22	-65	65	5922	-1338.46	-1001.44	-4.59
981	SLU 23	-61	96	5802	-1313.34	-980.88	1.63
981	SLU 24	-66	65	6054	-1367.77	-1023.7	-4.93
981	SLU 25	-64	84	5982	-1352.7	-1011.36	-1.19
981	SLU 26	-62	96	5885	-1331.83	-994.94	1.45
981	SLU 27	-67	65	6137	-1386.25	-1037.77	-5.11
981	SLU 28	-65	84	6065	-1371.18	-1025.43	-1.38
981	SLU 29	-66	65	6089	-1375.44	-1029.57	-4.95
981	SLU 30	-64	84	6017	-1360.37	-1017.23	-1.22
981	SLU 31	-64	104	6415	-1451.05	-1084.26	2.53
981	SLU 32	-69	74	6667	-1505.48	-1127.09	-4.03
981	SLU 33	-67	92	6595	-1490.41	-1114.75	-0.3

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
981	SLU 34	-65	105	6498	-1469.54	-1098.33	2.35
981	SLU 35	-69	74	6750	-1523.96	-1141.15	-4.21
981	SLU 36	-68	93	6678	-1508.89	-1128.81	-0.48
981	SLU 37	-69	74	6702	-1513.15	-1132.95	-4.05
981	SLU 38	-67	93	6629	-1498.08	-1120.61	-0.32
981	SLU 39	-68	78	6798	-1535.19	-1149.14	-3.31
981	SLU 40	-66	96	6726	-1520.12	-1136.8	0.43
981	SLU 41	-69	78	6881	-1553.68	-1163.2	-3.49
981	SLU 42	-67	96	6809	-1538.61	-1150.86	0.25
981	SLU 43	-74	77	6340	-1436.18	-1072.36	-4.78
981	SLU 44	-71	107	6219	-1411.07	-1051.79	1.44
981	SLU 45	-75	77	6471	-1465.49	-1094.62	-5.12
981	SLU 46	-73	95	6399	-1450.42	-1082.28	-1.39
981	SLU 47	-71	108	6302	-1429.55	-1065.86	1.26
981	SLU 48	-76	77	6555	-1483.98	-1108.68	-5.3
981	SLU 49	-74	96	6482	-1468.91	-1096.34	-1.57
981	SLU 50	-75	77	6506	-1473.16	-1100.48	-5.14
981	SLU 51	-74	95	6434	-1458.09	-1088.14	-1.41
981	SLU 52	-73	116	6832	-1548.77	-1155.18	2.34
981	SLU 53	-78	86	7084	-1603.2	-1198	-4.22
981	SLU 54	-76	104	7012	-1588.13	-1185.66	-0.49
981	SLU 55	-74	116	6915	-1567.26	-1169.24	2.16
981	SLU 56	-79	86	7167	-1621.69	-1212.07	-4.4
981	SLU 57	-77	104	7095	-1606.62	-1199.73	-0.67
981	SLU 58	-78	86	7119	-1610.87	-1203.87	-4.25
981	SLU 59	-76	104	7046	-1595.8	-1191.53	-0.51
981	SLU 60	-77	89	7215	-1632.91	-1220.05	-3.5
981	SLU 61	-75	108	7143	-1617.84	-1207.71	0.23
981	SLU 62	-78	90	7298	-1651.4	-1234.11	-3.68
981	SLU 63	-76	108	7226	-1636.33	-1221.77	0.05
981	SLU 64	-80	82	7167	-1621.11	-1212.07	-5.5
981	SLU 65	-77	112	7047	-1596	-1191.5	0.72
981	SLU 66	-81	82	7299	-1650.42	-1234.33	-5.84
981	SLU 67	-80	100	7227	-1635.35	-1221.99	-2.11
981	SLU 68	-78	112	7130	-1614.49	-1205.56	0.54
981	SLU 69	-82	82	7382	-1668.91	-1248.39	-6.02
981	SLU 70	-80	100	7310	-1653.84	-1236.05	-2.29
981	SLU 71	-82	82	7334	-1658.09	-1240.19	-5.86
981	SLU 72	-80	100	7261	-1643.02	-1227.85	-2.13
981	SLU 73	-79	121	7659	-1733.71	-1294.89	1.62
981	SLU 74	-84	91	7912	-1788.13	-1337.71	-4.94
981	SLU 75	-82	109	7839	-1773.06	-1325.37	-1.21
981	SLU 76	-80	121	7743	-1752.19	-1308.95	1.44
981	SLU 77	-85	91	7995	-1806.62	-1351.77	-5.12
981	SLU 78	-83	109	7923	-1791.55	-1339.43	-1.39
981	SLU 79	-84	91	7946	-1795.8	-1343.58	-4.97
981	SLU 80	-82	109	7874	-1780.73	-1331.24	-1.23
981	SLU 81	-83	94	8043	-1817.84	-1359.76	-4.22
981	SLU 82	-82	112	7970	-1802.77	-1347.42	-0.49
981	SLU 83	-84	94	8126	-1836.33	-1373.82	-4.4
981	SLU 84	-82	113	8053	-1821.26	-1361.48	-0.67
981	SLE RA 1	-60	62	5331	-1206.37	-901.65	-4.07
981	SLE RA 2	-58	82	5251	-1189.62	-887.94	0.07
981	SLE RA 3	-61	62	5419	-1225.9	-916.49	-4.3
981	SLE RA 4	-60	74	5371	-1215.86	-908.27	-1.81
981	SLE RA 5	-59	82	5306	-1201.95	-897.32	-0.05
981	SLE RA 6	-62	62	5475	-1238.23	-925.87	-4.42
981	SLE RA 7	-60	74	5426	-1228.18	-917.64	-1.93
981	SLE RA 8	-61	62	5442	-1231.02	-920.4	-4.32
981	SLE RA 9	-60	74	5394	-1220.97	-912.18	-1.83
981	SLE RA 10	-60	88	5659	-1281.43	-956.87	0.67
981	SLE RA 11	-63	68	5828	-1317.71	-985.42	-3.7
981	SLE RA 12	-62	80	5779	-1307.66	-977.19	-1.21
981	SLE RA 13	-60	88	5715	-1293.75	-966.24	0.55
981	SLE RA 14	-63	68	5883	-1330.04	-994.79	-3.82
981	SLE RA 15	-62	80	5835	-1319.99	-986.56	-1.33
981	SLE RA 16	-63	68	5851	-1322.82	-989.33	-3.72
981	SLE RA 17	-62	80	5803	-1312.78	-981.1	-1.23
981	SLE RA 18	-63	70	5915	-1337.52	-1000.12	-3.22
981	SLE RA 19	-61	82	5867	-1327.47	-991.89	-0.73
981	SLE RA 20	-63	70	5970	-1349.84	-1009.49	-3.34
981	SLE RA 21	-62	82	5922	-1339.8	-1001.26	-0.85
981	SLE FR 1	-60	62	5331	-1206.37	-901.65	-4.07
981	SLE FR 2	-60	66	5315	-1203.02	-898.91	-3.24
981	SLE FR 3	-60	62	5354	-1211.3	-905.4	-4.12
981	SLE FR 4	-60	68	5490	-1242.36	-928.45	-2.99
981	SLE FR 5	-61	64	5529	-1250.64	-934.94	-3.87
981	SLE FR 6	-61	66	5623	-1271.94	-950.89	-3.65
981	SLE QP 1	-60	62	5331	-1206.37	-901.65	-4.07
981	SLE QP 2	-61	64	5506	-1245.71	-931.19	-3.82
981	SLD 1	473	360	6279	-1436.46	-1052.31	173.36
981	SLD 2	382	197	6418	-1465.43	-1075.81	122.16
981	SLD 3	427	2	7928	-1780.17	-1333.34	98.81
981	SLD 4	336	-160	8067	-1809.14	-1356.84	47.61
981	SLD 5	185	725	3213	-776.43	-537.07	171.61
981	SLD 6	125	617	3305	-795.54	-552.58	137.84
981	SLD 7	33	-468	8708	-1922.14	-1473.84	-76.89
981	SLD 8	-27	-575	8800	-1941.25	-1489.34	-110.66
981	SLD 9	-94	703	2213	-550.17	-373.04	103.03

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
981	SLD 10	-154	596	2305	-569.29	-388.55	69.25
981	SLD 11	-247	-489	7708	-1695.88	-1309.81	-145.47
981	SLD 12	-307	-597	7800	-1715	-1325.31	-179.24
981	SLD 13	-458	289	2946	-682.28	-505.54	-55.25
981	SLD 14	-549	126	3085	-711.25	-529.05	-106.44
981	SLD 15	-504	-69	4595	-1025.99	-786.57	-129.8
981	SLD 16	-595	-232	4734	-1054.97	-810.08	-180.99
981	SLV 1	1192	784	7179	-1663.85	-1191.52	416.3
981	SLV 2	978	401	7506	-1731.96	-1246.77	295.97
981	SLV 3	1079	-105	11307	-2524.43	-1895.18	231.35
981	SLV 4	866	-487	11634	-2592.54	-1950.42	111.02
981	SLV 5	525	1699	-314	-53.23	68.22	425.19
981	SLV 6	382	1441	-93	-99.09	31.03	344.17
981	SLV 7	150	-1262	13446	-2921.82	-2277.28	-191.32
981	SLV 8	7	-1520	13666	-2967.68	-2314.48	-272.33
981	SLV 9	-128	1649	-2654	476.26	452.09	264.7
981	SLV 10	-272	1391	-2433	430.4	414.9	183.68
981	SLV 11	-503	-1313	11106	-2392.33	-1893.41	-351.8
981	SLV 12	-647	-1571	11326	-2438.19	-1930.61	-432.82
981	SLV 13	-987	616	-621	101.11	88.04	-118.65
981	SLV 14	-1201	233	-294	33	32.79	-238.99
981	SLV 15	-1100	-273	3506	-759.46	-615.61	-303.6
981	SLV 16	-1313	-656	3834	-827.57	-670.86	-423.94
981	CRTFP Ux+	0	0	0	0	0	0
981	CRTFP Ux-	0	0	0	0	0	0
981	CRTFP Uy+	0	0	0	0	0	0
981	CRTFP Uy-	0	0	0	0	0	0
983	SLU 1	-44	40	3436	-958.82	-89.77	-14.33
983	SLU 2	-42	62	3357	-938.95	-87.71	-13.08
983	SLU 3	-45	41	3525	-982.66	-92.07	-14.71
983	SLU 4	-44	53	3477	-970.74	-90.83	-13.96
983	SLU 5	-42	62	3413	-953.98	-89.16	-13.29
983	SLU 6	-46	41	3580	-997.69	-93.52	-14.93
983	SLU 7	-44	53	3533	-985.77	-92.28	-14.18
983	SLU 8	-45	41	3548	-988.89	-92.67	-14.76
983	SLU 9	-44	53	3500	-976.97	-91.44	-14.01
983	SLU 10	-44	68	3769	-1051.24	-98.44	-13.68
983	SLU 11	-47	46	3937	-1094.94	-102.8	-15.31
983	SLU 12	-46	59	3889	-1083.02	-101.56	-14.56
983	SLU 13	-45	68	3825	-1066.27	-99.89	-13.89
983	SLU 14	-48	46	3992	-1109.98	-104.25	-15.53
983	SLU 15	-46	59	3945	-1098.06	-103.01	-14.78
983	SLU 16	-47	46	3960	-1101.17	-103.4	-15.36
983	SLU 17	-46	59	3912	-1089.25	-102.17	-14.61
983	SLU 18	-47	49	4025	-1119.23	-105.1	-15.19
983	SLU 19	-46	61	3977	-1107.31	-103.86	-14.44
983	SLU 20	-47	49	4081	-1134.26	-106.55	-15.4
983	SLU 21	-46	62	4033	-1122.34	-105.32	-14.65
983	SLU 22	-49	43	3992	-1109.35	-104.23	-15.9
983	SLU 23	-47	65	3912	-1089.48	-102.17	-14.65
983	SLU 24	-50	44	4080	-1133.19	-106.53	-16.29
983	SLU 25	-48	56	4032	-1121.27	-105.29	-15.54
983	SLU 26	-47	65	3968	-1104.52	-103.62	-14.87
983	SLU 27	-50	44	4136	-1148.23	-107.98	-16.5
983	SLU 28	-49	56	4088	-1136.3	-106.74	-15.75
983	SLU 29	-50	44	4103	-1139.42	-107.13	-16.33
983	SLU 30	-49	56	4055	-1127.5	-105.89	-15.58
983	SLU 31	-49	71	4324	-1201.77	-112.9	-15.26
983	SLU 32	-52	49	4492	-1245.48	-117.25	-16.89
983	SLU 33	-51	62	4444	-1233.56	-116.02	-16.14
983	SLU 34	-49	71	4380	-1216.8	-114.35	-15.47
983	SLU 35	-52	49	4547	-1260.51	-118.71	-17.11
983	SLU 36	-51	62	4500	-1248.59	-117.47	-16.36
983	SLU 37	-52	49	4515	-1251.71	-117.86	-16.94
983	SLU 38	-51	62	4467	-1239.79	-116.62	-16.19
983	SLU 39	-52	52	4580	-1269.76	-119.56	-16.76
983	SLU 40	-50	64	4532	-1257.84	-118.32	-16.01
983	SLU 41	-52	52	4636	-1284.8	-121.01	-16.98
983	SLU 42	-51	65	4588	-1272.87	-119.77	-16.23
983	SLU 43	-55	51	4277	-1194.85	-111.75	-18.08
983	SLU 44	-53	73	4198	-1174.98	-109.69	-16.83
983	SLU 45	-56	52	4365	-1218.69	-114.04	-18.47
983	SLU 46	-55	64	4318	-1206.77	-112.81	-17.72
983	SLU 47	-54	73	4253	-1190.02	-111.14	-17.05
983	SLU 48	-57	52	4421	-1233.73	-115.49	-18.68
983	SLU 49	-56	65	4373	-1221.8	-114.26	-17.93
983	SLU 50	-57	52	4388	-1224.92	-114.65	-18.51
983	SLU 51	-55	65	4341	-1213	-113.41	-17.76
983	SLU 52	-55	79	4610	-1287.27	-120.42	-17.44
983	SLU 53	-59	57	4777	-1330.98	-124.77	-19.07
983	SLU 54	-57	70	4730	-1319.06	-123.54	-18.32
983	SLU 55	-56	79	4665	-1302.3	-121.87	-17.65
983	SLU 56	-59	57	4833	-1346.01	-126.22	-19.29
983	SLU 57	-58	70	4785	-1334.09	-124.99	-18.54
983	SLU 58	-59	57	4800	-1337.21	-125.38	-19.12
983	SLU 59	-58	70	4753	-1325.29	-124.14	-18.37
983	SLU 60	-58	60	4865	-1355.26	-127.08	-18.94
983	SLU 61	-57	73	4818	-1343.34	-125.84	-18.19
983	SLU 62	-59	60	4921	-1370.3	-128.53	-19.16

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
983	SLU 63	-58	73	4874	-1358.37	-127.29	-18.41
983	SLU 64	-60	54	4832	-1345.39	-126.2	-19.66
983	SLU 65	-58	76	4753	-1325.52	-124.14	-18.41
983	SLU 66	-61	55	4920	-1369.23	-128.5	-20.05
983	SLU 67	-60	67	4873	-1357.3	-127.26	-19.3
983	SLU 68	-59	76	4809	-1340.55	-125.6	-18.63
983	SLU 69	-62	55	4976	-1384.26	-129.95	-20.26
983	SLU 70	-61	68	4929	-1372.34	-128.72	-19.51
983	SLU 71	-61	55	4944	-1375.46	-129.11	-20.09
983	SLU 72	-60	68	4896	-1363.53	-127.87	-19.34
983	SLU 73	-60	82	5165	-1437.8	-134.87	-19.01
983	SLU 74	-63	60	5332	-1481.51	-139.23	-20.65
983	SLU 75	-62	73	5285	-1469.59	-137.99	-19.9
983	SLU 76	-61	82	5220	-1452.84	-136.32	-19.23
983	SLU 77	-64	60	5388	-1496.55	-140.68	-20.86
983	SLU 78	-63	73	5340	-1484.62	-139.45	-20.11
983	SLU 79	-63	60	5355	-1487.74	-139.84	-20.69
983	SLU 80	-62	73	5308	-1475.82	-138.6	-19.94
983	SLU 81	-63	63	5421	-1505.8	-141.53	-20.52
983	SLU 82	-62	76	5373	-1493.87	-140.3	-19.77
983	SLU 83	-64	63	5476	-1520.83	-142.98	-20.74
983	SLU 84	-63	76	5429	-1508.91	-141.75	-19.99
983	SLE RA 1	-45	41	3595	-1001.83	-93.9	-14.78
983	SLE RA 2	-44	56	3542	-988.58	-92.53	-13.94
983	SLE RA 3	-46	41	3654	-1017.72	-95.43	-15.03
983	SLE RA 4	-45	50	3622	-1009.77	-94.61	-14.53
983	SLE RA 5	-44	56	3579	-998.61	-93.5	-14.09
983	SLE RA 6	-46	41	3691	-1027.74	-96.4	-15.18
983	SLE RA 7	-46	50	3659	-1019.8	-95.58	-14.68
983	SLE RA 8	-46	41	3669	-1021.87	-95.84	-15.06
983	SLE RA 9	-45	50	3638	-1013.93	-95.01	-14.56
983	SLE RA 10	-45	59	3817	-1063.44	-99.68	-14.35
983	SLE RA 11	-47	45	3928	-1092.58	-102.59	-15.43
983	SLE RA 12	-47	54	3897	-1084.63	-101.76	-14.93
983	SLE RA 13	-46	59	3854	-1073.46	-100.65	-14.49
983	SLE RA 14	-48	45	3966	-1102.6	-103.55	-15.58
983	SLE RA 15	-47	54	3934	-1094.65	-102.73	-15.08
983	SLE RA 16	-47	45	3944	-1096.73	-102.99	-15.47
983	SLE RA 17	-47	54	3912	-1088.78	-102.17	-14.97
983	SLE RA 18	-47	47	3987	-1108.77	-104.12	-15.35
983	SLE RA 19	-46	55	3956	-1100.82	-103.3	-14.85
983	SLE RA 20	-48	47	4024	-1118.79	-105.09	-15.49
983	SLE RA 21	-47	55	3993	-1110.84	-104.26	-14.99
983	SLE FR 1	-45	41	3595	-1001.83	-93.9	-14.78
983	SLE FR 2	-45	44	3584	-999.18	-93.63	-14.61
983	SLE FR 3	-45	41	3610	-1005.84	-94.29	-14.83
983	SLE FR 4	-45	46	3702	-1031.26	-96.69	-14.78
983	SLE FR 5	-46	43	3728	-1037.92	-97.35	-15.01
983	SLE FR 6	-46	44	3791	-1055.3	-99.01	-15.06
983	SLE QP 1	-45	41	3595	-1001.83	-93.9	-14.78
983	SLE QP 2	-46	43	3713	-1033.91	-96.97	-14.95
983	SLD 1	337	250	4220	-1192.84	-109.25	123.45
983	SLD 2	273	137	4311	-1215.86	-111.56	98.28
983	SLD 3	307	0	5304	-1465.1	-137.39	106.7
983	SLD 4	244	-113	5395	-1488.11	-139.71	81.53
983	SLD 5	125	504	2204	-664.53	-57.55	56.5
983	SLD 6	83	430	2264	-679.71	-59.07	39.9
983	SLD 7	27	-329	5818	-1572.05	-151.37	0.67
983	SLD 8	-15	-403	5878	-1587.23	-152.89	-15.94
983	SLD 9	-77	489	1547	-480.59	-41.04	-13.96
983	SLD 10	-118	415	1607	-495.77	-42.57	-30.57
983	SLD 11	-175	-344	5161	-1388.11	-134.86	-69.8
983	SLD 12	-216	-418	5221	-1403.29	-136.39	-86.4
983	SLD 13	-335	199	2030	-579.71	-54.23	-111.43
983	SLD 14	-399	86	2121	-602.72	-56.54	-136.6
983	SLD 15	-365	-51	3115	-851.96	-82.37	-128.18
983	SLD 16	-428	-164	3205	-874.98	-84.69	-153.35
983	SLV 1	851	546	4811	-1383.47	-123.39	310.1
983	SLV 2	702	281	5024	-1437.58	-128.83	250.94
983	SLV 3	779	-75	7526	-2065.14	-193.86	268.72
983	SLV 4	629	-340	7739	-2119.24	-199.3	209.56
983	SLV 5	361	1184	-114	-94.82	3.01	156.36
983	SLV 6	260	1006	29	-131.24	-0.66	116.53
983	SLV 7	120	-884	8934	-2367.05	-231.9	18.44
983	SLV 8	19	-1063	9077	-2403.47	-235.57	-21.39
983	SLV 9	-111	1148	-1652	335.65	41.63	-8.51
983	SLV 10	-211	970	-1508	299.22	37.97	-48.34
983	SLV 11	-352	-920	7397	-1936.58	-193.28	-146.42
983	SLV 12	-452	-1099	7540	-1973.01	-196.94	-186.25
983	SLV 13	-721	426	-313	51.42	5.37	-239.46
983	SLV 14	-870	161	-100	-2.68	-0.08	-298.62
983	SLV 15	-793	-195	2401	-630.25	-65.11	-280.84
983	SLV 16	-942	-460	2614	-684.35	-70.55	-340
983	CRTFP Ux+	0	0	0	0	0	0
983	CRTFP Ux-	0	0	0	0	0	0
983	CRTFP Uy+	0	0	0	0	0	0
983	CRTFP Uy-	0	0	0	0	0	0
984	SLU 1	-52	42	3754	-917.34	8.45	-18.34
984	SLU 2	-50	65	3668	-898.76	8.24	-17.6

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
984	SLU 3	-53	42	3850	-939.7	8.68	-18.8
984	SLU 4	-52	56	3799	-928.56	8.55	-18.36
984	SLU 5	-50	65	3729	-912.87	8.38	-17.86
984	SLU 6	-54	42	3911	-953.81	8.82	-19.06
984	SLU 7	-53	56	3860	-942.66	8.69	-18.61
984	SLU 8	-53	42	3876	-945.55	8.74	-18.86
984	SLU 9	-52	56	3824	-934.41	8.61	-18.41
984	SLU 10	-52	71	4117	-1003.91	9.28	-18.53
984	SLU 11	-56	47	4299	-1044.85	9.73	-19.73
984	SLU 12	-54	61	4248	-1033.7	9.6	-19.28
984	SLU 13	-53	71	4178	-1018.02	9.42	-18.79
984	SLU 14	-56	47	4360	-1058.96	9.87	-19.99
984	SLU 15	-55	62	4308	-1047.81	9.74	-19.54
984	SLU 16	-56	47	4325	-1050.7	9.78	-19.79
984	SLU 17	-55	62	4273	-1039.56	9.65	-19.34
984	SLU 18	-55	49	4396	-1067.55	9.95	-19.67
984	SLU 19	-54	64	4344	-1056.4	9.82	-19.22
984	SLU 20	-56	50	4456	-1081.66	10.09	-19.93
984	SLU 21	-55	64	4405	-1070.51	9.96	-19.48
984	SLU 22	-57	44	4359	-1058.36	9.88	-20.33
984	SLU 23	-55	68	4273	-1039.78	9.66	-19.58
984	SLU 24	-59	44	4455	-1080.72	10.1	-20.79
984	SLU 25	-57	59	4403	-1069.58	9.97	-20.34
984	SLU 26	-56	68	4334	-1053.89	9.8	-19.84
984	SLU 27	-59	45	4516	-1094.83	10.25	-21.04
984	SLU 28	-58	59	4464	-1083.68	10.12	-20.6
984	SLU 29	-59	45	4480	-1086.57	10.16	-20.84
984	SLU 30	-58	59	4429	-1075.43	10.03	-20.39
984	SLU 31	-58	74	4722	-1144.93	10.7	-20.51
984	SLU 32	-61	50	4904	-1185.87	11.15	-21.71
984	SLU 33	-60	64	4852	-1174.72	11.02	-21.27
984	SLU 34	-58	74	4782	-1159.04	10.85	-20.77
984	SLU 35	-62	50	4965	-1199.98	11.29	-21.97
984	SLU 36	-61	64	4913	-1188.83	11.16	-21.52
984	SLU 37	-61	50	4929	-1191.72	11.21	-21.77
984	SLU 38	-60	64	4878	-1180.58	11.08	-21.32
984	SLU 39	-61	52	5000	-1208.57	11.37	-21.65
984	SLU 40	-60	66	4948	-1197.42	11.24	-21.21
984	SLU 41	-62	52	5061	-1222.68	11.51	-21.91
984	SLU 42	-60	67	5009	-1211.53	11.38	-21.46
984	SLU 43	-65	53	4673	-1144.19	10.5	-23.17
984	SLU 44	-63	77	4587	-1125.62	10.28	-22.42
984	SLU 45	-67	53	4770	-1166.55	10.73	-23.63
984	SLU 46	-65	67	4718	-1155.41	10.6	-23.18
984	SLU 47	-64	77	4648	-1139.72	10.43	-22.68
984	SLU 48	-68	53	4830	-1180.66	10.87	-23.88
984	SLU 49	-66	68	4779	-1169.52	10.74	-23.44
984	SLU 50	-67	53	4795	-1172.41	10.79	-23.68
984	SLU 51	-66	67	4743	-1161.26	10.66	-23.24
984	SLU 52	-66	82	5036	-1230.76	11.33	-23.35
984	SLU 53	-69	59	5218	-1271.7	11.77	-24.56
984	SLU 54	-68	73	5167	-1260.56	11.64	-24.11
984	SLU 55	-67	82	5097	-1244.87	11.47	-23.61
984	SLU 56	-70	59	5279	-1285.81	11.92	-24.81
984	SLU 57	-69	73	5227	-1274.66	11.79	-24.37
984	SLU 58	-70	59	5244	-1277.55	11.83	-24.61
984	SLU 59	-68	73	5192	-1266.41	11.7	-24.17
984	SLU 60	-69	61	5315	-1294.4	11.99	-24.5
984	SLU 61	-68	75	5263	-1283.26	11.86	-24.05
984	SLU 62	-70	61	5375	-1308.51	12.14	-24.75
984	SLU 63	-69	75	5324	-1297.36	12.01	-24.31
984	SLU 64	-71	56	5278	-1285.21	11.92	-25.15
984	SLU 65	-69	80	5192	-1266.64	11.71	-24.4
984	SLU 66	-72	56	5374	-1307.57	12.15	-25.61
984	SLU 67	-71	70	5322	-1296.43	12.02	-25.16
984	SLU 68	-70	80	5253	-1280.74	11.85	-24.66
984	SLU 69	-73	56	5435	-1321.68	12.3	-25.87
984	SLU 70	-72	70	5383	-1310.54	12.17	-25.42
984	SLU 71	-73	56	5399	-1313.43	12.21	-25.67
984	SLU 72	-71	70	5348	-1302.28	12.08	-25.22
984	SLU 73	-71	85	5641	-1371.78	12.75	-25.33
984	SLU 74	-75	62	5823	-1412.72	13.2	-26.54
984	SLU 75	-74	76	5771	-1401.58	13.07	-26.09
984	SLU 76	-72	85	5701	-1385.89	12.9	-25.59
984	SLU 77	-76	62	5884	-1426.83	13.34	-26.8
984	SLU 78	-74	76	5832	-1415.68	13.21	-26.35
984	SLU 79	-75	62	5848	-1418.57	13.26	-26.6
984	SLU 80	-74	76	5797	-1407.43	13.13	-26.15
984	SLU 81	-75	64	5919	-1435.42	13.42	-26.48
984	SLU 82	-73	78	5868	-1424.28	13.29	-26.03
984	SLU 83	-75	64	5980	-1449.53	13.56	-26.74
984	SLU 84	-74	78	5928	-1438.38	13.43	-26.29
984	SLE RA 1	-53	42	3927	-957.63	8.86	-18.91
984	SLE RA 2	-52	58	3870	-945.25	8.71	-18.41
984	SLE RA 3	-54	42	3991	-972.54	9.01	-19.22
984	SLE RA 4	-53	52	3957	-965.11	8.92	-18.92
984	SLE RA 5	-52	58	3910	-954.65	8.81	-18.59
984	SLE RA 6	-55	42	4032	-981.94	9.11	-19.39
984	SLE RA 7	-54	52	3997	-974.51	9.02	-19.09

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
984	SLE RA 8	-54	42	4008	-976.44	9.05	-19.25
984	SLE RA 9	-54	52	3974	-969.01	8.96	-18.96
984	SLE RA 10	-54	62	4169	-1015.35	9.41	-19.03
984	SLE RA 11	-56	46	4290	-1042.64	9.71	-19.84
984	SLE RA 12	-55	56	4256	-1035.21	9.62	-19.54
984	SLE RA 13	-54	62	4209	-1024.75	9.51	-19.2
984	SLE RA 14	-57	46	4331	-1052.04	9.8	-20.01
984	SLE RA 15	-56	56	4296	-1044.61	9.72	-19.71
984	SLE RA 16	-56	46	4307	-1046.54	9.75	-19.87
984	SLE RA 17	-55	56	4273	-1039.11	9.66	-19.58
984	SLE RA 18	-56	48	4355	-1057.77	9.85	-19.8
984	SLE RA 19	-55	57	4320	-1050.34	9.77	-19.5
984	SLE RA 20	-56	48	4395	-1067.18	9.95	-19.97
984	SLE RA 21	-55	57	4361	-1059.75	9.86	-19.67
984	SLE FR 1	-53	42	3927	-957.63	8.86	-18.91
984	SLE FR 2	-53	45	3916	-955.15	8.83	-18.81
984	SLE FR 3	-54	42	3943	-961.39	8.9	-18.98
984	SLE FR 4	-54	47	4044	-985.2	9.13	-19.08
984	SLE FR 5	-54	44	4072	-991.44	9.2	-19.25
984	SLE FR 6	-55	45	4141	-1007.7	9.36	-19.35
984	SLE QP 1	-53	42	3927	-957.63	8.86	-18.91
984	SLE QP 2	-54	44	4055	-987.67	9.16	-19.18
984	SLD 1	394	273	4564	-1130.66	11.95	137.35
984	SLD 2	320	150	4660	-1152.16	12.26	111.62
984	SLD 3	360	-4	5739	-1385.39	14.92	125.88
984	SLD 4	286	-127	5836	-1406.89	15.23	100.14
984	SLD 5	146	554	2407	-640.36	5.44	49.81
984	SLD 6	97	473	2471	-654.55	5.65	32.84
984	SLD 7	31	-368	6327	-1489.46	15.33	11.56
984	SLD 8	-18	-449	6390	-1503.65	15.53	-5.41
984	SLD 9	-91	537	1721	-471.7	2.78	-32.94
984	SLD 10	-140	456	1784	-485.88	2.99	-49.92
984	SLD 11	-205	-385	5640	-1320.8	12.67	-71.19
984	SLD 12	-254	-466	5704	-1334.98	12.87	-88.17
984	SLD 13	-394	215	2275	-568.45	3.09	-138.49
984	SLD 14	-468	91	2371	-589.95	3.4	-164.23
984	SLD 15	-428	-62	3451	-823.18	6.05	-149.97
984	SLD 16	-503	-185	3547	-844.68	6.36	-175.71
984	SLV 1	997	601	5148	-1301.36	15.46	347.88
984	SLV 2	823	311	5375	-1351.9	16.18	287.38
984	SLV 3	913	-86	8092	-1939.16	22.88	319.68
984	SLV 4	738	-376	8319	-1989.7	23.6	259.18
984	SLV 5	422	1307	-124	-105.02	-0.34	145
984	SLV 6	304	1112	28	-139.05	0.14	104.27
984	SLV 7	141	-983	9689	-2231.01	24.4	51
984	SLV 8	23	-1178	9842	-2265.04	24.88	10.27
984	SLV 9	-131	1266	-1731	289.69	-6.57	-48.63
984	SLV 10	-249	1071	-1579	255.66	-6.08	-89.36
984	SLV 11	-412	-1024	8083	-1836.29	18.17	-142.62
984	SLV 12	-530	-1219	8235	-1870.32	18.66	-183.35
984	SLV 13	-847	464	-208	14.35	-5.29	-297.54
984	SLV 14	-1021	174	19	-36.19	-4.57	-358.03
984	SLV 15	-931	-223	2736	-623.44	2.13	-325.73
984	SLV 16	-1106	-513	2963	-673.98	2.86	-386.23
984	CRTFP Ux+	0	0	0	0	0	0
984	CRTFP Ux-	0	0	0	0	0	0
984	CRTFP Uy+	0	0	0	0	0	0
984	CRTFP Uy-	0	0	0	0	0	0
985	SLU 1	-52	35	3512	-744.48	6.65	-18.52
985	SLU 2	-50	58	3432	-729.91	6.48	-17.78
985	SLU 3	-54	35	3602	-762.19	6.83	-18.99
985	SLU 4	-52	49	3554	-753.44	6.73	-18.54
985	SLU 5	-51	58	3489	-741.08	6.59	-18.04
985	SLU 6	-54	36	3658	-773.36	6.94	-19.25
985	SLU 7	-53	49	3610	-764.62	6.84	-18.8
985	SLU 8	-54	36	3625	-766.83	6.88	-19.04
985	SLU 9	-53	49	3577	-758.08	6.77	-18.6
985	SLU 10	-53	62	3851	-812.99	7.29	-18.74
985	SLU 11	-56	40	4021	-845.27	7.64	-19.94
985	SLU 12	-55	53	3973	-836.53	7.54	-19.5
985	SLU 13	-54	62	3908	-824.17	7.4	-19
985	SLU 14	-57	40	4077	-856.45	7.75	-20.2
985	SLU 15	-56	53	4029	-847.7	7.65	-19.76
985	SLU 16	-56	40	4044	-849.92	7.69	-20
985	SLU 17	-55	53	3996	-841.17	7.58	-19.56
985	SLU 18	-56	42	4111	-863.18	7.81	-19.89
985	SLU 19	-55	55	4063	-854.43	7.7	-19.45
985	SLU 20	-57	42	4167	-874.35	7.92	-20.15
985	SLU 21	-56	55	4119	-865.6	7.82	-19.71
985	SLU 22	-58	37	4076	-855.94	7.76	-20.54
985	SLU 23	-56	60	3996	-841.36	7.59	-19.79
985	SLU 24	-59	38	4166	-873.64	7.94	-21
985	SLU 25	-58	51	4118	-864.9	7.83	-20.55
985	SLU 26	-57	60	4053	-852.53	7.7	-20.05
985	SLU 27	-60	38	4222	-884.82	8.05	-21.26
985	SLU 28	-59	51	4174	-876.07	7.95	-20.81
985	SLU 29	-60	38	4189	-878.28	7.99	-21.06
985	SLU 30	-58	51	4141	-869.54	7.88	-20.61
985	SLU 31	-58	64	4415	-924.45	8.4	-20.75

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
985	SLU 32	-62	42	4585	-956.73	8.75	-21.96
985	SLU 33	-61	55	4537	-947.98	8.64	-21.51
985	SLU 34	-59	64	4472	-935.62	8.51	-21.01
985	SLU 35	-63	42	4641	-967.9	8.86	-22.22
985	SLU 36	-61	55	4593	-959.16	8.76	-21.77
985	SLU 37	-62	42	4608	-961.37	8.8	-22.02
985	SLU 38	-61	55	4560	-952.62	8.69	-21.57
985	SLU 39	-62	44	4675	-974.63	8.92	-21.91
985	SLU 40	-60	57	4627	-965.89	8.81	-21.46
985	SLU 41	-63	44	4731	-985.8	9.03	-22.17
985	SLU 42	-61	57	4683	-977.06	8.93	-21.72
985	SLU 43	-66	45	4372	-929.61	8.27	-23.39
985	SLU 44	-64	67	4293	-915.04	8.09	-22.65
985	SLU 45	-67	45	4462	-947.32	8.45	-23.85
985	SLU 46	-66	59	4414	-938.57	8.34	-23.41
985	SLU 47	-65	67	4349	-926.21	8.2	-22.91
985	SLU 48	-68	45	4518	-958.49	8.56	-24.11
985	SLU 49	-67	59	4471	-949.75	8.45	-23.67
985	SLU 50	-68	45	4486	-951.96	8.49	-23.91
985	SLU 51	-66	59	4438	-943.22	8.39	-23.47
985	SLU 52	-67	72	4712	-998.12	8.9	-23.61
985	SLU 53	-70	50	4881	-1030.4	9.26	-24.81
985	SLU 54	-69	63	4833	-1021.66	9.15	-24.37
985	SLU 55	-67	72	4768	-1009.3	9.01	-23.87
985	SLU 56	-71	50	4938	-1041.58	9.37	-25.07
985	SLU 57	-69	63	4890	-1032.83	9.26	-24.63
985	SLU 58	-70	50	4905	-1035.05	9.3	-24.87
985	SLU 59	-69	63	4857	-1026.3	9.2	-24.42
985	SLU 60	-70	51	4971	-1048.31	9.43	-24.76
985	SLU 61	-69	65	4923	-1039.56	9.32	-24.31
985	SLU 62	-71	52	5028	-1059.48	9.54	-25.02
985	SLU 63	-69	65	4980	-1050.74	9.43	-24.57
985	SLU 64	-72	47	4936	-1041.07	9.38	-25.4
985	SLU 65	-70	69	4857	-1026.49	9.2	-24.66
985	SLU 66	-73	47	5026	-1058.77	9.56	-25.87
985	SLU 67	-72	61	4978	-1050.03	9.45	-25.42
985	SLU 68	-70	70	4913	-1037.67	9.31	-24.92
985	SLU 69	-74	48	5082	-1069.95	9.67	-26.13
985	SLU 70	-73	61	5035	-1061.2	9.56	-25.68
985	SLU 71	-73	47	5050	-1063.42	9.6	-25.92
985	SLU 72	-72	61	5002	-1054.67	9.5	-25.48
985	SLU 73	-72	74	5276	-1109.58	10.01	-25.62
985	SLU 74	-76	52	5445	-1141.86	10.37	-26.82
985	SLU 75	-74	65	5397	-1133.11	10.26	-26.38
985	SLU 76	-73	74	5332	-1120.75	10.12	-25.88
985	SLU 77	-77	52	5501	-1153.03	10.48	-27.08
985	SLU 78	-75	65	5454	-1144.29	10.37	-26.64
985	SLU 79	-76	52	5469	-1146.5	10.41	-26.88
985	SLU 80	-75	65	5421	-1137.76	10.31	-26.44
985	SLU 81	-76	54	5535	-1159.76	10.53	-26.77
985	SLU 82	-74	67	5487	-1151.02	10.43	-26.33
985	SLU 83	-76	54	5592	-1170.94	10.65	-27.03
985	SLU 84	-75	67	5544	-1162.19	10.54	-26.59
985	SLE RA 1	-54	36	3673	-776.33	6.97	-19.1
985	SLE RA 2	-52	51	3620	-766.61	6.85	-18.6
985	SLE RA 3	-55	36	3733	-788.13	7.09	-19.41
985	SLE RA 4	-54	45	3701	-782.3	7.02	-19.11
985	SLE RA 5	-53	51	3658	-774.06	6.93	-18.78
985	SLE RA 6	-55	36	3771	-795.58	7.16	-19.58
985	SLE RA 7	-54	45	3739	-789.75	7.09	-19.28
985	SLE RA 8	-55	36	3749	-791.22	7.12	-19.45
985	SLE RA 9	-54	45	3717	-785.39	7.05	-19.15
985	SLE RA 10	-54	54	3899	-822	7.39	-19.24
985	SLE RA 11	-57	39	4012	-843.52	7.63	-20.05
985	SLE RA 12	-56	48	3980	-837.69	7.56	-19.75
985	SLE RA 13	-55	54	3937	-829.45	7.47	-19.42
985	SLE RA 14	-57	39	4050	-850.97	7.7	-20.22
985	SLE RA 15	-56	48	4018	-845.14	7.63	-19.92
985	SLE RA 16	-57	39	4028	-846.62	7.66	-20.08
985	SLE RA 17	-56	48	3996	-840.78	7.59	-19.79
985	SLE RA 18	-57	40	4072	-855.46	7.74	-20.01
985	SLE RA 19	-56	49	4040	-849.63	7.67	-19.71
985	SLE RA 20	-57	40	4110	-862.9	7.82	-20.19
985	SLE RA 21	-56	49	4078	-857.07	7.75	-19.89
985	SLE FR 1	-54	36	3673	-776.33	6.97	-19.1
985	SLE FR 2	-54	39	3663	-774.38	6.95	-19
985	SLE FR 3	-54	36	3688	-779.31	7	-19.17
985	SLE FR 4	-54	40	3782	-798.12	7.18	-19.27
985	SLE FR 5	-55	37	3808	-803.04	7.23	-19.44
985	SLE FR 6	-55	38	3873	-815.89	7.35	-19.56
985	SLE QP 1	-54	36	3673	-776.33	6.97	-19.1
985	SLE QP 2	-55	37	3793	-800.06	7.2	-19.37
985	SLD 1	394	252	4216	-904.39	9.71	137.38
985	SLD 2	320	138	4304	-921.15	9.97	111.62
985	SLD 3	360	-8	5306	-1104.52	12.11	125.95
985	SLD 4	286	-121	5393	-1121.29	12.37	100.19
985	SLD 5	145	515	2251	-524.81	4.27	49.62
985	SLD 6	96	440	2309	-535.87	4.44	32.63
985	SLD 7	31	-349	5884	-1191.93	12.27	11.52

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
985	SLD 8	-18	-424	5942	-1202.99	12.44	-5.47
985	SLD 9	-92	498	1644	-397.14	1.96	-33.28
985	SLD 10	-141	423	1702	-408.2	2.13	-50.27
985	SLD 11	-205	-366	5277	-1064.26	9.96	-71.37
985	SLD 12	-255	-441	5335	-1075.32	10.13	-88.36
985	SLD 13	-395	196	2193	-478.84	2.03	-138.94
985	SLD 14	-470	82	2280	-495.61	2.29	-164.7
985	SLD 15	-429	-63	3282	-678.97	4.43	-150.37
985	SLD 16	-504	-177	3370	-695.74	4.69	-176.12
985	SLV 1	998	558	4694	-1027.75	12.88	348.2
985	SLV 2	823	291	4899	-1067.17	13.49	287.65
985	SLV 3	914	-85	7423	-1528.85	18.88	320.11
985	SLV 4	739	-353	7628	-1568.27	19.49	259.57
985	SLV 5	421	1220	-114	-101.01	-0.32	144.79
985	SLV 6	303	1039	24	-127.55	0.09	104.02
985	SLV 7	141	-926	8982	-1771.35	19.7	51.18
985	SLV 8	24	-1106	9121	-1797.89	20.11	10.42
985	SLV 9	-133	1180	-1535	197.76	-5.71	-49.17
985	SLV 10	-251	1000	-1396	171.22	-5.3	-89.93
985	SLV 11	-413	-965	7561	-1472.58	14.31	-142.77
985	SLV 12	-530	-1145	7700	-1499.12	14.72	-183.53
985	SLV 13	-849	427	-42	-31.86	-5.09	-298.32
985	SLV 14	-1024	160	163	-71.28	-4.48	-358.86
985	SLV 15	-933	-216	2687	-532.96	0.92	-326.4
985	SLV 16	-1107	-484	2892	-572.38	1.52	-386.94
985	CRTFP Ux+	0	0	0	0	0	0
985	CRTFP Ux-	0	0	0	0	0	0
985	CRTFP Uy+	0	0	0	0	0	0
985	CRTFP Uy-	0	0	0	0	0	0
986	SLU 1	-53	29	3329	-619.36	4.76	-18.68
986	SLU 2	-51	50	3254	-607.71	4.63	-17.94
986	SLU 3	-54	29	3414	-633.71	4.88	-19.15
986	SLU 4	-53	42	3369	-626.72	4.8	-18.7
986	SLU 5	-51	50	3308	-616.77	4.7	-18.2
986	SLU 6	-55	29	3467	-642.77	4.96	-19.41
986	SLU 7	-54	42	3423	-635.78	4.88	-18.96
986	SLU 8	-54	29	3436	-637.48	4.91	-19.21
986	SLU 9	-53	42	3391	-630.49	4.84	-18.76
986	SLU 10	-53	53	3652	-674.96	5.19	-18.93
986	SLU 11	-57	33	3811	-700.95	5.44	-20.13
986	SLU 12	-56	45	3766	-693.97	5.37	-19.69
986	SLU 13	-54	53	3705	-684.02	5.27	-19.19
986	SLU 14	-58	33	3864	-710.02	5.52	-20.4
986	SLU 15	-56	45	3820	-703.03	5.45	-19.95
986	SLU 16	-57	33	3833	-704.73	5.48	-20.19
986	SLU 17	-56	45	3788	-697.74	5.4	-19.75
986	SLU 18	-57	34	3897	-715.43	5.56	-20.09
986	SLU 19	-55	46	3852	-708.44	5.48	-19.65
986	SLU 20	-57	34	3950	-724.49	5.64	-20.36
986	SLU 21	-56	46	3905	-717.5	5.56	-19.91
986	SLU 22	-59	31	3863	-709.55	5.53	-20.73
986	SLU 23	-56	51	3788	-697.9	5.4	-19.99
986	SLU 24	-60	31	3948	-723.9	5.66	-21.19
986	SLU 25	-59	43	3903	-716.91	5.58	-20.75
986	SLU 26	-57	51	3842	-706.97	5.48	-20.25
986	SLU 27	-61	31	4001	-732.96	5.74	-21.45
986	SLU 28	-59	43	3956	-725.97	5.66	-21.01
986	SLU 29	-60	31	3970	-727.68	5.69	-21.25
986	SLU 30	-59	43	3925	-720.69	5.61	-20.81
986	SLU 31	-59	55	4185	-765.15	5.96	-20.97
986	SLU 32	-63	34	4345	-791.15	6.22	-22.18
986	SLU 33	-61	47	4300	-784.16	6.14	-21.74
986	SLU 34	-60	55	4239	-774.21	6.04	-21.24
986	SLU 35	-63	34	4398	-800.21	6.3	-22.44
986	SLU 36	-62	47	4353	-793.22	6.22	-22
986	SLU 37	-63	34	4367	-794.92	6.25	-22.24
986	SLU 38	-61	47	4322	-787.94	6.17	-21.79
986	SLU 39	-63	35	4430	-805.62	6.34	-22.14
986	SLU 40	-61	48	4385	-798.63	6.26	-21.69
986	SLU 41	-63	35	4484	-814.68	6.41	-22.4
986	SLU 42	-62	48	4439	-807.69	6.34	-21.96
986	SLU 43	-67	37	4145	-774.24	5.92	-23.59
986	SLU 44	-64	58	4070	-762.59	5.79	-22.84
986	SLU 45	-68	38	4230	-788.59	6.04	-24.05
986	SLU 46	-67	50	4185	-781.6	5.97	-23.61
986	SLU 47	-65	58	4124	-771.66	5.87	-23.11
986	SLU 48	-69	38	4283	-797.65	6.12	-24.31
986	SLU 49	-67	50	4238	-790.66	6.04	-23.87
986	SLU 50	-68	38	4252	-792.37	6.07	-24.11
986	SLU 51	-67	50	4207	-785.38	6	-23.66
986	SLU 52	-67	62	4467	-829.84	6.35	-23.83
986	SLU 53	-71	41	4627	-855.84	6.61	-25.04
986	SLU 54	-69	53	4582	-848.85	6.53	-24.59
986	SLU 55	-68	62	4521	-838.9	6.43	-24.09
986	SLU 56	-71	41	4680	-864.9	6.68	-25.3
986	SLU 57	-70	53	4635	-857.91	6.61	-24.86
986	SLU 58	-71	41	4649	-859.61	6.64	-25.1
986	SLU 59	-70	53	4604	-852.63	6.56	-24.65
986	SLU 60	-71	42	4712	-870.31	6.72	-25

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
986	SLU 61	-69	55	4667	-863.32	6.64	-24.55
986	SLU 62	-71	42	4766	-879.37	6.8	-25.26
986	SLU 63	-70	55	4721	-872.38	6.72	-24.81
986	SLU 64	-72	39	4679	-864.43	6.69	-25.63
986	SLU 65	-70	60	4604	-852.79	6.56	-24.89
986	SLU 66	-74	39	4763	-878.78	6.82	-26.09
986	SLU 67	-72	51	4719	-871.8	6.74	-25.65
986	SLU 68	-71	60	4658	-861.85	6.64	-25.15
986	SLU 69	-75	39	4817	-887.85	6.9	-26.36
986	SLU 70	-73	52	4772	-880.86	6.82	-25.91
986	SLU 71	-74	39	4786	-882.56	6.85	-26.15
986	SLU 72	-73	51	4741	-875.57	6.77	-25.71
986	SLU 73	-73	63	5001	-920.04	7.12	-25.88
986	SLU 74	-77	42	5161	-946.03	7.38	-27.08
986	SLU 75	-75	55	5116	-939.04	7.3	-26.64
986	SLU 76	-74	63	5055	-929.1	7.2	-26.14
986	SLU 77	-77	42	5214	-955.09	7.46	-27.34
986	SLU 78	-76	55	5169	-948.11	7.38	-26.9
986	SLU 79	-77	42	5183	-949.81	7.41	-27.14
986	SLU 80	-75	55	5138	-942.82	7.33	-26.7
986	SLU 81	-76	44	5246	-960.5	7.5	-27.04
986	SLU 82	-75	56	5201	-953.52	7.42	-26.6
986	SLU 83	-77	44	5300	-969.57	7.57	-27.3
986	SLU 84	-76	56	5255	-962.58	7.5	-26.86
986	SLE RA 1	-54	30	3482	-645.13	4.98	-19.27
986	SLE RA 2	-53	43	3432	-637.36	4.89	-18.77
986	SLE RA 3	-55	30	3538	-654.69	5.06	-19.58
986	SLE RA 4	-54	38	3508	-650.03	5.01	-19.28
986	SLE RA 5	-53	43	3468	-643.4	4.94	-18.95
986	SLE RA 6	-56	30	3574	-660.73	5.11	-19.75
986	SLE RA 7	-55	38	3544	-656.08	5.06	-19.45
986	SLE RA 8	-55	30	3553	-657.21	5.08	-19.61
986	SLE RA 9	-55	38	3523	-652.55	5.03	-19.32
986	SLE RA 10	-55	46	3697	-682.19	5.27	-19.43
986	SLE RA 11	-57	32	3803	-699.53	5.44	-20.23
986	SLE RA 12	-56	40	3773	-694.87	5.38	-19.94
986	SLE RA 13	-55	46	3732	-688.24	5.32	-19.61
986	SLE RA 14	-58	32	3839	-705.57	5.49	-20.41
986	SLE RA 15	-57	40	3809	-700.91	5.44	-20.11
986	SLE RA 16	-57	32	3818	-702.04	5.46	-20.27
986	SLE RA 17	-56	40	3788	-697.38	5.41	-19.98
986	SLE RA 18	-57	33	3860	-709.17	5.51	-20.21
986	SLE RA 19	-56	41	3830	-704.51	5.46	-19.91
986	SLE RA 20	-58	33	3896	-715.21	5.57	-20.38
986	SLE RA 21	-57	41	3866	-710.56	5.51	-20.09
986	SLE FR 1	-54	30	3482	-645.13	4.98	-19.27
986	SLE FR 2	-54	32	3472	-643.57	4.96	-19.17
986	SLE FR 3	-55	30	3496	-647.54	5	-19.34
986	SLE FR 4	-55	33	3585	-662.79	5.12	-19.45
986	SLE FR 5	-55	30	3610	-666.76	5.16	-19.62
986	SLE FR 6	-56	31	3671	-677.15	5.25	-19.74
986	SLE QP 1	-54	30	3482	-645.13	4.98	-19.27
986	SLE QP 2	-55	30	3595	-664.34	5.14	-19.55
986	SLD 1	394	231	3943	-736.92	7.37	137.41
986	SLD 2	320	126	4023	-750.19	7.57	111.63
986	SLD 3	360	-12	4965	-897.13	9.16	126.01
986	SLD 4	286	-117	5045	-910.39	9.36	100.23
986	SLD 5	144	478	2134	-440.75	3.05	49.45
986	SLD 6	95	408	2187	-449.5	3.19	32.44
986	SLD 7	31	-332	5543	-974.77	9.02	11.48
986	SLD 8	-18	-401	5596	-983.52	9.16	-5.53
986	SLD 9	-93	462	1595	-345.16	1.12	-33.57
986	SLD 10	-142	393	1648	-353.91	1.25	-50.58
986	SLD 11	-206	-348	5004	-879.18	7.09	-71.54
986	SLD 12	-255	-417	5056	-887.94	7.22	-88.55
986	SLD 13	-396	178	2145	-418.29	0.91	-139.33
986	SLD 14	-471	73	2225	-431.56	1.12	-165.11
986	SLD 15	-430	-65	3168	-578.5	2.7	-150.72
986	SLD 16	-505	-170	3248	-591.76	2.91	-176.5
986	SLV 1	998	518	4324	-821.03	10.21	348.49
986	SLV 2	823	270	4512	-852.21	10.69	287.89
986	SLV 3	915	-86	6885	-1222.14	14.69	320.5
986	SLV 4	740	-333	7073	-1253.32	15.17	259.9
986	SLV 5	420	1138	-105	-97.18	-0.23	144.63
986	SLV 6	302	971	21	-118.17	0.1	103.83
986	SLV 7	142	-873	8431	-1434.21	14.71	51.33
986	SLV 8	24	-1039	8558	-1455.21	15.04	10.53
986	SLV 9	-135	1100	-1367	126.52	-4.76	-49.62
986	SLV 10	-253	934	-1241	105.53	-4.43	-90.42
986	SLV 11	-413	-910	7169	-1210.51	10.18	-142.92
986	SLV 12	-530	-1077	7296	-1231.51	10.51	-183.72
986	SLV 13	-851	394	118	-75.36	-4.9	-299
986	SLV 14	-1026	147	305	-106.55	-4.41	-359.6
986	SLV 15	-934	-209	2678	-476.47	-0.41	-326.99
986	SLV 16	-1109	-457	2866	-507.66	0.07	-387.59
986	CRTFP Ux+	0	0	0	0	0	0
986	CRTFP Ux-	0	0	0	0	0	0
986	CRTFP Uy+	0	0	0	0	0	0
986	CRTFP Uy-	0	0	0	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
987	SLU 1	-53	23	3207	-540.99	2.89	-18.8
987	SLU 2	-51	42	3136	-531.21	2.8	-18.06
987	SLU 3	-54	23	3288	-553.27	2.96	-19.27
987	SLU 4	-53	35	3246	-547.4	2.91	-18.82
987	SLU 5	-52	43	3187	-538.97	2.85	-18.33
987	SLU 6	-55	23	3340	-561.03	3.01	-19.53
987	SLU 7	-54	35	3297	-555.16	2.95	-19.09
987	SLU 8	-55	23	3310	-556.51	2.98	-19.33
987	SLU 9	-53	35	3267	-550.64	2.93	-18.88
987	SLU 10	-54	45	3519	-588.75	3.12	-19.08
987	SLU 11	-57	25	3671	-610.8	3.28	-20.29
987	SLU 12	-56	37	3629	-604.93	3.22	-19.84
987	SLU 13	-55	45	3570	-596.51	3.16	-19.34
987	SLU 14	-58	25	3723	-618.56	3.32	-20.55
987	SLU 15	-57	37	3680	-612.69	3.27	-20.11
987	SLU 16	-57	25	3693	-614.05	3.29	-20.35
987	SLU 17	-56	37	3650	-608.18	3.24	-19.9
987	SLU 18	-57	26	3754	-623.19	3.34	-20.26
987	SLU 19	-56	38	3711	-617.32	3.29	-19.81
987	SLU 20	-58	26	3806	-630.95	3.38	-20.52
987	SLU 21	-57	38	3763	-625.08	3.33	-20.08
987	SLU 22	-59	24	3721	-618.1	3.33	-20.87
987	SLU 23	-57	43	3650	-608.32	3.25	-20.14
987	SLU 24	-60	24	3803	-630.37	3.41	-21.34
987	SLU 25	-59	36	3760	-624.5	3.35	-20.9
987	SLU 26	-58	43	3701	-616.08	3.29	-20.4
987	SLU 27	-61	24	3854	-638.13	3.45	-21.6
987	SLU 28	-60	36	3811	-632.26	3.4	-21.16
987	SLU 29	-61	24	3824	-633.62	3.42	-21.4
987	SLU 30	-59	36	3781	-627.75	3.37	-20.96
987	SLU 31	-60	46	4033	-665.85	3.56	-21.15
987	SLU 32	-63	26	4186	-687.91	3.72	-22.36
987	SLU 33	-62	38	4143	-682.04	3.67	-21.92
987	SLU 34	-60	46	4084	-673.61	3.61	-21.42
987	SLU 35	-64	26	4237	-695.67	3.77	-22.62
987	SLU 36	-63	38	4194	-689.8	3.72	-22.18
987	SLU 37	-63	26	4207	-691.15	3.74	-22.42
987	SLU 38	-62	38	4164	-685.28	3.69	-21.97
987	SLU 39	-63	27	4268	-700.29	3.78	-22.33
987	SLU 40	-62	39	4226	-694.42	3.73	-21.89
987	SLU 41	-64	27	4320	-708.05	3.83	-22.59
987	SLU 42	-62	39	4277	-702.18	3.78	-22.15
987	SLU 43	-67	30	3993	-676.85	3.6	-23.73
987	SLU 44	-65	49	3921	-667.07	3.51	-22.99
987	SLU 45	-68	30	4074	-689.13	3.67	-24.2
987	SLU 46	-67	41	4031	-683.26	3.62	-23.75
987	SLU 47	-66	49	3973	-674.83	3.56	-23.26
987	SLU 48	-69	30	4126	-696.89	3.72	-24.46
987	SLU 49	-68	41	4083	-691.02	3.67	-24.02
987	SLU 50	-69	30	4096	-692.37	3.69	-24.26
987	SLU 51	-67	41	4053	-686.51	3.64	-23.81
987	SLU 52	-68	51	4304	-724.61	3.83	-24.01
987	SLU 53	-71	32	4457	-746.66	3.99	-25.22
987	SLU 54	-70	44	4414	-740.8	3.94	-24.77
987	SLU 55	-68	51	4356	-732.37	3.87	-24.27
987	SLU 56	-72	32	4509	-754.42	4.03	-25.48
987	SLU 57	-71	44	4466	-748.56	3.98	-25.03
987	SLU 58	-71	32	4479	-749.91	4.01	-25.27
987	SLU 59	-70	44	4436	-744.04	3.95	-24.83
987	SLU 60	-71	33	4540	-759.05	4.05	-25.19
987	SLU 61	-70	45	4497	-753.18	4	-24.74
987	SLU 62	-72	33	4592	-766.81	4.1	-25.45
987	SLU 63	-71	45	4549	-760.94	4.04	-25.01
987	SLU 64	-73	30	4507	-753.96	4.04	-25.8
987	SLU 65	-71	50	4436	-744.18	3.96	-25.07
987	SLU 66	-74	30	4588	-766.23	4.12	-26.27
987	SLU 67	-73	42	4546	-760.37	4.07	-25.83
987	SLU 68	-71	50	4487	-751.94	4	-25.33
987	SLU 69	-75	30	4640	-773.99	4.16	-26.53
987	SLU 70	-74	42	4597	-768.13	4.11	-26.09
987	SLU 71	-74	30	4610	-769.48	4.14	-26.33
987	SLU 72	-73	42	4567	-763.61	4.09	-25.89
987	SLU 73	-74	52	4819	-801.71	4.28	-26.08
987	SLU 74	-77	33	4971	-823.77	4.43	-27.29
987	SLU 75	-76	44	4929	-817.9	4.38	-26.84
987	SLU 76	-74	52	4870	-809.47	4.32	-26.35
987	SLU 77	-78	33	5023	-831.53	4.48	-27.55
987	SLU 78	-77	45	4980	-825.66	4.43	-27.11
987	SLU 79	-77	33	4993	-827.01	4.45	-27.35
987	SLU 80	-76	44	4950	-821.15	4.4	-26.9
987	SLU 81	-77	34	5054	-836.15	4.5	-27.26
987	SLU 82	-76	45	5011	-830.28	4.44	-26.82
987	SLU 83	-78	34	5106	-843.91	4.54	-27.52
987	SLU 84	-76	45	5063	-838.04	4.49	-27.08
987	SLE RA 1	-55	23	3354	-563.02	3.01	-19.39
987	SLE RA 2	-53	36	3306	-556.5	2.96	-18.9
987	SLE RA 3	-56	23	3408	-571.21	3.06	-19.7
987	SLE RA 4	-55	31	3380	-567.29	3.03	-19.41
987	SLE RA 5	-54	36	3341	-561.67	2.99	-19.08

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
987	SLE RA 6	-56	23	3443	-576.38	3.09	-19.88
987	SLE RA 7	-55	31	3414	-572.47	3.06	-19.58
987	SLE RA 8	-56	23	3423	-573.37	3.07	-19.74
987	SLE RA 9	-55	31	3394	-569.46	3.04	-19.45
987	SLE RA 10	-55	38	3562	-594.86	3.17	-19.58
987	SLE RA 11	-58	25	3664	-609.56	3.27	-20.38
987	SLE RA 12	-57	33	3635	-605.65	3.24	-20.09
987	SLE RA 13	-56	38	3596	-600.03	3.2	-19.76
987	SLE RA 14	-58	25	3698	-614.74	3.3	-20.56
987	SLE RA 15	-57	33	3669	-610.82	3.27	-20.26
987	SLE RA 16	-58	25	3678	-611.73	3.29	-20.42
987	SLE RA 17	-57	33	3649	-607.81	3.25	-20.13
987	SLE RA 18	-58	25	3719	-617.82	3.31	-20.36
987	SLE RA 19	-57	33	3690	-613.91	3.28	-20.07
987	SLE RA 20	-58	25	3753	-622.99	3.34	-20.54
987	SLE RA 21	-57	33	3724	-619.08	3.31	-20.24
987	SLE FR 1	-55	23	3354	-563.02	3.01	-19.39
987	SLE FR 2	-55	26	3344	-561.72	3	-19.3
987	SLE FR 3	-55	23	3368	-565.09	3.03	-19.46
987	SLE FR 4	-55	26	3454	-578.16	3.09	-19.59
987	SLE FR 5	-56	24	3477	-581.53	3.12	-19.75
987	SLE FR 6	-56	24	3536	-590.42	3.16	-19.88
987	SLE QP 1	-55	23	3354	-563.02	3.01	-19.39
987	SLE QP 2	-56	24	3463	-579.46	3.1	-19.68
987	SLD 1	394	212	3744	-626.57	5.07	137.44
987	SLD 2	320	114	3818	-637.56	5.23	111.64
987	SLD 3	360	-17	4719	-761.37	6.25	126.09
987	SLD 4	286	-114	4793	-772.35	6.41	100.29
987	SLD 5	144	444	2055	-387.17	1.88	49.31
987	SLD 6	94	380	2104	-394.42	1.98	32.29
987	SLD 7	32	-318	5306	-836.5	5.81	11.47
987	SLD 8	-17	-382	5355	-843.75	5.91	-5.55
987	SLD 9	-94	429	1572	-315.17	0.3	-33.82
987	SLD 10	-143	365	1621	-322.42	0.4	-50.84
987	SLD 11	-206	-332	4823	-764.5	4.23	-71.66
987	SLD 12	-255	-397	4872	-771.75	4.33	-88.68
987	SLD 13	-397	162	2134	-386.57	-0.2	-139.66
987	SLD 14	-472	64	2208	-397.55	-0.05	-165.46
987	SLD 15	-431	-67	3109	-521.37	0.98	-151.01
987	SLD 16	-505	-164	3183	-532.35	1.13	-176.81
987	SLV 1	999	481	4039	-678.64	7.62	348.76
987	SLV 2	824	252	4214	-704.47	7.98	288.12
987	SLV 3	916	-87	6481	-1016.11	10.57	320.87
987	SLV 4	741	-316	6656	-1041.93	10.93	260.22
987	SLV 5	418	1064	-100	-92.58	-0.09	144.47
987	SLV 6	301	910	17	-109.96	0.16	103.64
987	SLV 7	143	-828	8040	-1217.45	9.75	51.5
987	SLV 8	26	-982	8157	-1234.84	10	10.67
987	SLV 9	-137	1029	-1230	75.92	-3.79	-50.04
987	SLV 10	-255	875	-1113	58.53	-3.54	-90.87
987	SLV 11	-412	-863	6909	-1048.96	6.05	-143.01
987	SLV 12	-530	-1017	7027	-1066.34	6.29	-183.84
987	SLV 13	-853	364	271	-116.99	-4.72	-299.59
987	SLV 14	-1028	135	445	-142.82	-4.36	-360.24
987	SLV 15	-935	-204	2713	-454.46	-1.77	-327.49
987	SLV 16	-1110	-433	2887	-480.28	-1.41	-388.13
987	CRTFP Ux+	0	0	0	0	0	0
987	CRTFP Ux-	0	0	0	0	0	0
987	CRTFP Uy+	0	0	0	0	0	0
987	CRTFP Uy-	0	0	0	0	0	0
988	SLU 1	-53	16	3143	-506.57	1.1	-18.89
988	SLU 2	-51	35	3074	-497.65	1.06	-18.16
988	SLU 3	-55	17	3223	-517.98	1.12	-19.36
988	SLU 4	-53	28	3182	-512.63	1.1	-18.92
988	SLU 5	-52	35	3125	-504.87	1.07	-18.42
988	SLU 6	-55	17	3274	-525.2	1.14	-19.62
988	SLU 7	-54	28	3232	-519.85	1.11	-19.18
988	SLU 8	-55	17	3245	-521.01	1.13	-19.42
988	SLU 9	-54	28	3203	-515.66	1.1	-18.98
988	SLU 10	-54	36	3451	-551.26	1.14	-19.2
988	SLU 11	-58	18	3600	-571.58	1.2	-20.41
988	SLU 12	-56	29	3558	-566.23	1.18	-19.96
988	SLU 13	-55	36	3501	-558.48	1.15	-19.47
988	SLU 14	-58	18	3651	-578.8	1.22	-20.67
988	SLU 15	-57	29	3609	-573.45	1.19	-20.23
988	SLU 16	-58	18	3621	-574.62	1.21	-20.47
988	SLU 17	-56	29	3580	-569.26	1.18	-20.03
988	SLU 18	-58	18	3682	-583.15	1.21	-20.39
988	SLU 19	-56	29	3640	-577.8	1.19	-19.95
988	SLU 20	-58	18	3732	-590.37	1.23	-20.65
988	SLU 21	-57	30	3691	-585.02	1.2	-20.21
988	SLU 22	-59	17	3648	-578.3	1.23	-20.99
988	SLU 23	-57	35	3579	-569.37	1.19	-20.26
988	SLU 24	-61	17	3728	-589.7	1.25	-21.46
988	SLU 25	-59	28	3687	-584.35	1.23	-21.02
988	SLU 26	-58	35	3630	-576.59	1.2	-20.52
988	SLU 27	-61	17	3779	-596.92	1.27	-21.72
988	SLU 28	-60	28	3737	-591.57	1.24	-21.28
988	SLU 29	-61	17	3750	-592.74	1.26	-21.52

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
988	SLU 30	-60	28	3708	-587.38	1.23	-21.08
988	SLU 31	-60	36	3956	-622.98	1.27	-21.3
988	SLU 32	-64	18	4105	-643.31	1.33	-22.51
988	SLU 33	-62	29	4063	-637.95	1.31	-22.07
988	SLU 34	-61	36	4006	-630.2	1.28	-21.57
988	SLU 35	-64	18	4156	-650.53	1.35	-22.77
988	SLU 36	-63	29	4114	-645.17	1.32	-22.33
988	SLU 37	-64	18	4126	-646.34	1.34	-22.57
988	SLU 38	-62	29	4085	-640.99	1.31	-22.13
988	SLU 39	-63	18	4187	-654.87	1.34	-22.49
988	SLU 40	-62	30	4145	-649.52	1.32	-22.05
988	SLU 41	-64	18	4237	-662.09	1.36	-22.75
988	SLU 42	-63	30	4196	-656.74	1.33	-22.31
988	SLU 43	-67	21	3913	-633.96	1.38	-23.84
988	SLU 44	-65	40	3844	-625.03	1.34	-23.1
988	SLU 45	-69	21	3993	-645.36	1.41	-24.31
988	SLU 46	-67	33	3952	-640.01	1.38	-23.87
988	SLU 47	-66	40	3895	-632.25	1.36	-23.37
988	SLU 48	-69	21	4044	-652.58	1.42	-24.57
988	SLU 49	-68	33	4002	-647.23	1.4	-24.13
988	SLU 50	-69	21	4015	-648.4	1.41	-24.37
988	SLU 51	-68	33	3973	-643.04	1.39	-23.93
988	SLU 52	-68	41	4221	-678.64	1.42	-24.15
988	SLU 53	-72	23	4370	-698.97	1.49	-25.35
988	SLU 54	-70	34	4328	-693.61	1.46	-24.91
988	SLU 55	-69	41	4271	-685.86	1.44	-24.41
988	SLU 56	-72	23	4420	-706.19	1.5	-25.62
988	SLU 57	-71	34	4379	-700.83	1.48	-25.18
988	SLU 58	-72	23	4391	-702	1.49	-25.42
988	SLU 59	-70	34	4350	-696.65	1.47	-24.97
988	SLU 60	-72	23	4451	-710.53	1.5	-25.34
988	SLU 61	-70	34	4410	-705.18	1.47	-24.89
988	SLU 62	-72	23	4502	-717.75	1.51	-25.6
988	SLU 63	-71	34	4460	-712.4	1.49	-25.16
988	SLU 64	-73	21	4418	-705.68	1.51	-25.94
988	SLU 65	-71	40	4349	-696.76	1.47	-25.2
988	SLU 66	-75	22	4498	-717.09	1.54	-26.41
988	SLU 67	-73	33	4457	-711.73	1.51	-25.97
988	SLU 68	-72	40	4400	-703.98	1.49	-25.47
988	SLU 69	-75	22	4549	-724.31	1.55	-26.67
988	SLU 70	-74	33	4507	-718.95	1.53	-26.23
988	SLU 71	-75	22	4520	-720.12	1.54	-26.47
988	SLU 72	-74	33	4478	-714.76	1.52	-26.03
988	SLU 73	-74	41	4726	-750.36	1.55	-26.25
988	SLU 74	-78	23	4875	-770.69	1.62	-27.45
988	SLU 75	-76	34	4833	-765.34	1.59	-27.01
988	SLU 76	-75	41	4776	-757.58	1.57	-26.51
988	SLU 77	-78	23	4925	-777.91	1.63	-27.72
988	SLU 78	-77	34	4884	-772.56	1.61	-27.28
988	SLU 79	-78	23	4896	-773.72	1.62	-27.52
988	SLU 80	-76	34	4855	-768.37	1.6	-27.07
988	SLU 81	-77	23	4956	-782.26	1.63	-27.44
988	SLU 82	-76	34	4915	-776.9	1.6	-26.99
988	SLU 83	-78	23	5007	-789.47	1.64	-27.7
988	SLU 84	-77	34	4965	-784.12	1.62	-27.26
988	SLE RA 1	-55	16	3288	-527.07	1.14	-19.49
988	SLE RA 2	-54	29	3242	-521.12	1.11	-19
988	SLE RA 3	-56	17	3341	-534.67	1.15	-19.8
988	SLE RA 4	-55	24	3313	-531.1	1.13	-19.51
988	SLE RA 5	-54	29	3275	-525.93	1.12	-19.18
988	SLE RA 6	-56	17	3375	-539.48	1.16	-19.98
988	SLE RA 7	-56	24	3347	-535.92	1.14	-19.69
988	SLE RA 8	-56	17	3355	-536.69	1.15	-19.84
988	SLE RA 9	-55	24	3327	-533.12	1.14	-19.55
988	SLE RA 10	-56	30	3493	-556.85	1.16	-19.7
988	SLE RA 11	-58	17	3592	-570.41	1.2	-20.5
988	SLE RA 12	-57	25	3564	-566.84	1.19	-20.21
988	SLE RA 13	-56	30	3526	-561.67	1.17	-19.88
988	SLE RA 14	-58	17	3626	-575.22	1.21	-20.68
988	SLE RA 15	-58	25	3598	-571.65	1.2	-20.38
988	SLE RA 16	-58	17	3606	-572.43	1.21	-20.54
988	SLE RA 17	-57	25	3579	-568.86	1.19	-20.25
988	SLE RA 18	-58	18	3646	-578.12	1.21	-20.49
988	SLE RA 19	-57	25	3619	-574.55	1.2	-20.2
988	SLE RA 20	-58	18	3680	-582.93	1.22	-20.67
988	SLE RA 21	-57	25	3652	-579.36	1.2	-20.37
988	SLE FR 1	-55	16	3288	-527.07	1.14	-19.49
988	SLE FR 2	-55	19	3279	-525.88	1.13	-19.39
988	SLE FR 3	-55	16	3301	-528.99	1.14	-19.56
988	SLE FR 4	-56	19	3386	-541.19	1.15	-19.69
988	SLE FR 5	-56	17	3409	-544.31	1.16	-19.86
988	SLE FR 6	-56	17	3467	-552.59	1.17	-19.99
988	SLE QP 1	-55	16	3288	-527.07	1.14	-19.49
988	SLE QP 2	-56	17	3395	-542.38	1.16	-19.79
988	SLD 1	394	194	3617	-569.57	2.9	137.47
988	SLD 2	320	104	3687	-579.4	3	111.66
988	SLD 3	361	-23	4564	-692.66	3.48	126.17
988	SLD 4	286	-113	4634	-702.5	3.59	100.35
988	SLD 5	143	415	2013	-362.07	0.77	49.18

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
988	SLD 6	94	355	2059	-368.56	0.84	32.15
988	SLD 7	32	-307	5169	-772.39	2.72	11.49
988	SLD 8	-17	-367	5216	-778.88	2.79	-5.54
988	SLD 9	-95	401	1575	-305.88	-0.48	-34.05
988	SLD 10	-144	341	1621	-312.37	-0.41	-51.07
988	SLD 11	-206	-322	4732	-716.2	1.47	-71.73
988	SLD 12	-255	-381	4778	-722.69	1.54	-88.76
988	SLD 13	-398	147	2157	-382.26	-1.27	-139.94
988	SLD 14	-473	56	2227	-392.1	-1.17	-165.75
988	SLD 15	-431	-70	3104	-505.36	-0.69	-151.24
988	SLD 16	-506	-160	3174	-515.2	-0.58	-177.06
988	SLV 1	999	448	3835	-595.9	5.18	348.97
988	SLV 2	824	235	4000	-619.02	5.43	288.29
988	SLV 3	917	-90	6207	-904.04	6.65	321.19
988	SLV 4	743	-303	6371	-927.16	6.89	260.52
988	SLV 5	417	1003	-100	-86.77	0.1	144.28
988	SLV 6	299	859	11	-102.33	0.27	103.43
988	SLV 7	145	-792	7805	-1113.92	4.98	51.7
988	SLV 8	27	-936	7916	-1129.49	5.14	10.85
988	SLV 9	-139	969	-1125	44.72	-2.83	-50.44
988	SLV 10	-257	826	-1014	29.16	-2.66	-91.29
988	SLV 11	-411	-826	6780	-982.43	2.05	-143.02
988	SLV 12	-529	-969	6891	-998	2.22	-183.87
988	SLV 13	-855	337	420	-157.6	-4.58	-300.1
988	SLV 14	-1029	124	584	-180.72	-4.33	-360.78
988	SLV 15	-936	-202	2791	-465.74	-3.11	-327.87
988	SLV 16	-1111	-414	2956	-488.87	-2.87	-388.55
988	CRTFP Ux+	0	0	0	0	0	0
988	CRTFP Ux-	0	0	0	0	0	0
988	CRTFP Uy+	0	0	0	0	0	0
988	CRTFP Uy-	0	0	0	0	0	0
989	SLU 1	-54	10	3135	-513.23	-0.55	-18.96
989	SLU 2	-51	28	3066	-504.22	-0.55	-18.22
989	SLU 3	-55	10	3215	-524.91	-0.57	-19.42
989	SLU 4	-54	20	3174	-519.5	-0.57	-18.98
989	SLU 5	-52	27	3117	-511.61	-0.56	-18.49
989	SLU 6	-56	10	3265	-532.3	-0.59	-19.69
989	SLU 7	-54	20	3224	-526.89	-0.59	-19.25
989	SLU 8	-55	10	3236	-528.03	-0.58	-19.49
989	SLU 9	-54	20	3195	-522.62	-0.58	-19.05
989	SLU 10	-54	28	3444	-559.33	-0.69	-19.3
989	SLU 11	-58	10	3593	-580.02	-0.71	-20.5
989	SLU 12	-57	21	3551	-574.61	-0.71	-20.06
989	SLU 13	-55	28	3495	-566.72	-0.7	-19.56
989	SLU 14	-59	10	3643	-587.42	-0.72	-20.77
989	SLU 15	-57	21	3602	-582.01	-0.72	-20.33
989	SLU 16	-58	10	3614	-583.14	-0.72	-20.56
989	SLU 17	-57	21	3573	-577.73	-0.72	-20.12
989	SLU 18	-58	10	3675	-591.96	-0.74	-20.5
989	SLU 19	-57	21	3633	-586.55	-0.75	-20.05
989	SLU 20	-59	10	3725	-599.36	-0.76	-20.76
989	SLU 21	-57	21	3684	-593.95	-0.76	-20.32
989	SLU 22	-60	9	3641	-586.82	-0.71	-21.08
989	SLU 23	-57	27	3572	-577.81	-0.71	-20.35
989	SLU 24	-61	9	3720	-598.5	-0.73	-21.55
989	SLU 25	-60	20	3679	-593.09	-0.73	-21.11
989	SLU 26	-58	27	3623	-585.2	-0.73	-20.61
989	SLU 27	-62	9	3771	-605.9	-0.75	-21.82
989	SLU 28	-60	20	3730	-600.49	-0.75	-21.38
989	SLU 29	-61	9	3742	-601.62	-0.74	-21.61
989	SLU 30	-60	20	3701	-596.21	-0.74	-21.17
989	SLU 31	-60	27	3950	-632.92	-0.85	-21.43
989	SLU 32	-64	9	4098	-653.61	-0.87	-22.63
989	SLU 33	-63	20	4057	-648.2	-0.87	-22.19
989	SLU 34	-61	27	4000	-640.32	-0.86	-21.69
989	SLU 35	-65	9	4149	-661.01	-0.89	-22.89
989	SLU 36	-63	20	4107	-655.6	-0.89	-22.45
989	SLU 37	-64	9	4119	-656.73	-0.88	-22.69
989	SLU 38	-63	20	4078	-651.32	-0.88	-22.25
989	SLU 39	-64	10	4180	-665.55	-0.91	-22.62
989	SLU 40	-63	20	4139	-660.14	-0.91	-22.18
989	SLU 41	-65	10	4231	-672.95	-0.92	-22.89
989	SLU 42	-63	20	4189	-667.54	-0.92	-22.45
989	SLU 43	-68	13	3902	-641.97	-0.66	-23.91
989	SLU 44	-65	31	3834	-632.95	-0.66	-23.18
989	SLU 45	-69	13	3982	-653.65	-0.68	-24.38
989	SLU 46	-68	24	3941	-648.24	-0.68	-23.94
989	SLU 47	-66	31	3884	-640.35	-0.67	-23.44
989	SLU 48	-70	13	4033	-661.04	-0.69	-24.65
989	SLU 49	-68	24	3991	-655.63	-0.7	-24.21
989	SLU 50	-69	13	4003	-656.77	-0.69	-24.44
989	SLU 51	-68	24	3962	-651.36	-0.69	-24
989	SLU 52	-68	31	4211	-688.06	-0.8	-24.26
989	SLU 53	-72	13	4360	-708.76	-0.82	-25.46
989	SLU 54	-71	24	4318	-703.35	-0.82	-25.02
989	SLU 55	-69	31	4262	-695.46	-0.81	-24.52
989	SLU 56	-73	13	4410	-716.15	-0.83	-25.72
989	SLU 57	-71	24	4369	-710.74	-0.83	-25.28
989	SLU 58	-72	13	4381	-711.88	-0.83	-25.52

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
989	SLU 59	-71	24	4340	-706.47	-0.83	-25.08
989	SLU 60	-72	13	4442	-720.7	-0.85	-25.45
989	SLU 61	-71	24	4400	-715.29	-0.85	-25.01
989	SLU 62	-73	13	4492	-728.1	-0.87	-25.72
989	SLU 63	-71	24	4451	-722.69	-0.87	-25.28
989	SLU 64	-74	12	4408	-715.56	-0.82	-26.04
989	SLU 65	-71	30	4339	-706.54	-0.82	-25.31
989	SLU 66	-75	12	4488	-727.24	-0.84	-26.51
989	SLU 67	-74	23	4446	-721.83	-0.84	-26.07
989	SLU 68	-72	30	4390	-713.94	-0.84	-25.57
989	SLU 69	-76	12	4538	-734.63	-0.86	-26.77
989	SLU 70	-74	23	4497	-729.22	-0.86	-26.33
989	SLU 71	-75	12	4509	-730.36	-0.85	-26.57
989	SLU 72	-74	23	4468	-724.95	-0.85	-26.13
989	SLU 73	-74	30	4717	-761.66	-0.96	-26.38
989	SLU 74	-78	13	4865	-782.35	-0.98	-27.59
989	SLU 75	-77	23	4824	-776.94	-0.98	-27.15
989	SLU 76	-75	30	4767	-769.05	-0.97	-26.65
989	SLU 77	-79	13	4916	-789.74	-1	-27.85
989	SLU 78	-77	23	4875	-784.33	-1	-27.41
989	SLU 79	-78	13	4887	-785.47	-0.99	-27.65
989	SLU 80	-77	23	4845	-780.06	-0.99	-27.21
989	SLU 81	-78	13	4947	-794.29	-1.02	-27.58
989	SLU 82	-77	23	4906	-788.88	-1.02	-27.14
989	SLU 83	-79	13	4998	-801.69	-1.03	-27.84
989	SLU 84	-77	23	4957	-796.28	-1.03	-27.4
989	SLE RA 1	-55	10	3279	-534.26	-0.59	-19.56
989	SLE RA 2	-54	21	3234	-528.25	-0.59	-19.08
989	SLE RA 3	-56	10	3333	-542.04	-0.61	-19.88
989	SLE RA 4	-55	17	3305	-538.43	-0.61	-19.58
989	SLE RA 5	-54	21	3267	-533.18	-0.61	-19.25
989	SLE RA 6	-57	10	3366	-546.97	-0.62	-20.05
989	SLE RA 7	-56	17	3339	-543.37	-0.62	-19.76
989	SLE RA 8	-56	10	3347	-544.12	-0.62	-19.92
989	SLE RA 9	-55	17	3319	-540.52	-0.62	-19.62
989	SLE RA 10	-56	22	3485	-564.99	-0.69	-19.79
989	SLE RA 11	-58	10	3584	-578.78	-0.7	-20.59
989	SLE RA 12	-57	17	3557	-575.17	-0.7	-20.3
989	SLE RA 13	-56	22	3519	-569.92	-0.7	-19.97
989	SLE RA 14	-59	10	3618	-583.71	-0.71	-20.77
989	SLE RA 15	-58	17	3591	-580.11	-0.71	-20.48
989	SLE RA 16	-58	10	3599	-580.86	-0.71	-20.64
989	SLE RA 17	-57	17	3571	-577.26	-0.71	-20.34
989	SLE RA 18	-58	10	3639	-586.74	-0.73	-20.59
989	SLE RA 19	-57	17	3612	-583.14	-0.73	-20.3
989	SLE RA 20	-59	10	3673	-591.68	-0.74	-20.77
989	SLE RA 21	-58	17	3645	-588.07	-0.74	-20.47
989	SLE FR 1	-55	10	3279	-534.26	-0.59	-19.56
989	SLE FR 2	-55	12	3270	-533.06	-0.59	-19.47
989	SLE FR 3	-55	10	3293	-536.23	-0.6	-19.64
989	SLE FR 4	-56	12	3378	-548.8	-0.63	-19.77
989	SLE FR 5	-56	10	3401	-551.98	-0.64	-19.94
989	SLE FR 6	-57	10	3459	-560.5	-0.66	-20.08
989	SLE QP 1	-55	10	3279	-534.26	-0.59	-19.56
989	SLE QP 2	-56	10	3387	-550	-0.63	-19.87
989	SLD 1	394	179	3556	-562.32	0.9	137.48
989	SLD 2	320	94	3624	-572	0.96	111.66
989	SLD 3	361	-29	4494	-686.62	0.94	126.23
989	SLD 4	287	-114	4561	-696.3	1	100.42
989	SLD 5	142	391	2004	-363.45	-0.24	49.03
989	SLD 6	93	335	2049	-369.83	-0.2	32
989	SLD 7	33	-302	5129	-777.76	-0.12	11.55
989	SLD 8	-16	-358	5173	-784.15	-0.08	-5.48
989	SLD 9	-96	377	1602	-315.86	-1.19	-34.27
989	SLD 10	-145	322	1646	-322.25	-1.15	-51.3
989	SLD 11	-205	-316	4726	-730.18	-1.07	-71.74
989	SLD 12	-254	-372	4770	-736.56	-1.03	-88.77
989	SLD 13	-399	133	2214	-403.71	-2.26	-140.16
989	SLD 14	-473	49	2281	-413.39	-2.2	-165.98
989	SLD 15	-432	-75	3151	-528.01	-2.23	-151.41
989	SLD 16	-506	-159	3218	-537.68	-2.17	-177.22
989	SLV 1	999	420	3705	-568.63	2.96	349.08
989	SLV 2	825	222	3864	-591.38	3.1	288.4
989	SLV 3	919	-96	6053	-879.78	3.04	321.47
989	SLV 4	744	-295	6211	-902.53	3.18	260.79
989	SLV 5	415	953	-107	-79.43	0.29	144.02
989	SLV 6	298	820	0	-94.75	0.39	103.17
989	SLV 7	147	-769	7718	-1116.61	0.57	51.97
989	SLV 8	29	-902	7824	-1131.92	0.66	11.12
989	SLV 9	-142	922	-1049	31.91	-1.93	-50.86
989	SLV 10	-259	788	-943	16.6	-1.84	-91.71
989	SLV 11	-410	-800	6775	-1005.26	-1.65	-142.91
989	SLV 12	-527	-934	6882	-1020.58	-1.56	-183.77
989	SLV 13	-856	314	564	-197.48	-4.45	-300.53
989	SLV 14	-1031	116	722	-220.23	-4.31	-361.21
989	SLV 15	-937	-202	2911	-508.63	-4.37	-328.15
989	SLV 16	-1111	-401	3069	-531.38	-4.23	-388.83
989	CRTFP Ux+	0	0	0	0	0	0
989	CRTFP Ux-	0	0	0	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
989	CRTFP Uy+	0	0	0	0	0	0
989	CRTFP Uy-	0	0	0	0	0	0
990	SLU 1	-54	3	3176	-557.06	-2.01	-19.01
990	SLU 2	-52	20	3107	-547.08	-1.97	-18.28
990	SLU 3	-55	3	3258	-570.04	-2.07	-19.48
990	SLU 4	-54	13	3216	-564.05	-2.05	-19.04
990	SLU 5	-52	20	3159	-555.31	-2.01	-18.54
990	SLU 6	-56	3	3309	-578.27	-2.11	-19.74
990	SLU 7	-55	13	3268	-572.28	-2.09	-19.3
990	SLU 8	-55	3	3280	-573.53	-2.09	-19.54
990	SLU 9	-54	13	3238	-567.54	-2.07	-19.1
990	SLU 10	-55	20	3492	-608.67	-2.3	-19.39
990	SLU 11	-58	2	3643	-631.63	-2.4	-20.58
990	SLU 12	-57	13	3601	-625.64	-2.38	-20.15
990	SLU 13	-55	20	3544	-616.9	-2.34	-19.65
990	SLU 14	-59	2	3694	-639.86	-2.44	-20.85
990	SLU 15	-58	13	3653	-633.87	-2.42	-20.41
990	SLU 16	-58	2	3665	-635.11	-2.42	-20.65
990	SLU 17	-57	13	3623	-629.12	-2.4	-20.21
990	SLU 18	-58	2	3727	-645.04	-2.48	-20.59
990	SLU 19	-57	13	3685	-639.05	-2.46	-20.15
990	SLU 20	-59	2	3778	-653.27	-2.52	-20.86
990	SLU 21	-58	12	3737	-647.28	-2.5	-20.42
990	SLU 22	-60	1	3691	-639.13	-2.43	-21.16
990	SLU 23	-58	19	3622	-629.15	-2.39	-20.43
990	SLU 24	-61	1	3773	-652.11	-2.49	-21.63
990	SLU 25	-60	12	3731	-646.12	-2.47	-21.19
990	SLU 26	-58	19	3674	-637.38	-2.44	-20.7
990	SLU 27	-62	1	3824	-660.34	-2.54	-21.9
990	SLU 28	-61	12	3783	-654.35	-2.51	-21.46
990	SLU 29	-61	1	3795	-655.59	-2.51	-21.69
990	SLU 30	-60	12	3753	-649.6	-2.49	-21.26
990	SLU 31	-61	18	4007	-690.73	-2.72	-21.54
990	SLU 32	-64	1	4158	-713.69	-2.83	-22.74
990	SLU 33	-63	11	4116	-707.7	-2.8	-22.3
990	SLU 34	-62	18	4059	-698.96	-2.77	-21.81
990	SLU 35	-65	1	4210	-721.92	-2.87	-23.01
990	SLU 36	-64	11	4168	-715.93	-2.85	-22.57
990	SLU 37	-64	1	4180	-717.18	-2.85	-22.8
990	SLU 38	-63	11	4138	-711.19	-2.82	-22.37
990	SLU 39	-64	1	4242	-727.11	-2.9	-22.75
990	SLU 40	-63	11	4200	-721.12	-2.88	-22.31
990	SLU 41	-65	1	4293	-735.34	-2.95	-23.01
990	SLU 42	-64	11	4252	-729.35	-2.92	-22.58
990	SLU 43	-68	4	3953	-696.05	-2.46	-23.97
990	SLU 44	-66	22	3884	-686.07	-2.43	-23.24
990	SLU 45	-69	4	4034	-709.02	-2.53	-24.44
990	SLU 46	-68	15	3993	-703.04	-2.51	-24
990	SLU 47	-66	21	3935	-694.3	-2.47	-23.51
990	SLU 48	-70	4	4086	-717.26	-2.57	-24.7
990	SLU 49	-69	14	4044	-711.27	-2.55	-24.27
990	SLU 50	-69	4	4056	-712.51	-2.55	-24.5
990	SLU 51	-68	14	4014	-706.52	-2.53	-24.06
990	SLU 52	-69	21	4269	-747.65	-2.76	-24.35
990	SLU 53	-72	4	4419	-770.61	-2.86	-25.55
990	SLU 54	-71	14	4378	-764.62	-2.84	-25.11
990	SLU 55	-69	21	4320	-755.88	-2.8	-24.62
990	SLU 56	-73	4	4471	-778.84	-2.9	-25.81
990	SLU 57	-72	14	4429	-772.85	-2.88	-25.38
990	SLU 58	-72	4	4441	-774.09	-2.88	-25.61
990	SLU 59	-71	14	4400	-768.11	-2.86	-25.17
990	SLU 60	-72	4	4503	-784.02	-2.94	-25.56
990	SLU 61	-71	14	4462	-778.04	-2.91	-25.12
990	SLU 62	-73	4	4555	-792.26	-2.98	-25.82
990	SLU 63	-72	14	4513	-786.27	-2.96	-25.38
990	SLU 64	-74	3	4468	-778.11	-2.89	-26.13
990	SLU 65	-72	20	4399	-768.13	-2.85	-25.4
990	SLU 66	-75	3	4549	-791.09	-2.95	-26.6
990	SLU 67	-74	13	4508	-785.1	-2.93	-26.16
990	SLU 68	-72	20	4450	-776.36	-2.89	-25.66
990	SLU 69	-76	3	4601	-799.32	-2.99	-26.86
990	SLU 70	-75	13	4559	-793.33	-2.97	-26.42
990	SLU 71	-75	3	4571	-794.58	-2.97	-26.66
990	SLU 72	-74	13	4529	-788.59	-2.95	-26.22
990	SLU 73	-75	20	4784	-829.71	-3.18	-26.51
990	SLU 74	-78	2	4934	-852.67	-3.28	-27.7
990	SLU 75	-77	13	4893	-846.68	-3.26	-27.27
990	SLU 76	-76	19	4835	-837.95	-3.22	-26.77
990	SLU 77	-79	2	4986	-860.9	-3.33	-27.97
990	SLU 78	-78	12	4944	-854.92	-3.3	-27.53
990	SLU 79	-78	2	4956	-856.16	-3.3	-27.77
990	SLU 80	-77	12	4915	-850.17	-3.28	-27.33
990	SLU 81	-78	2	5018	-866.09	-3.36	-27.71
990	SLU 82	-77	12	4977	-860.1	-3.34	-27.27
990	SLU 83	-79	2	5070	-874.32	-3.4	-27.98
990	SLU 84	-78	12	5028	-868.33	-3.38	-27.54
990	SLE RA 1	-55	3	3324	-580.51	-2.13	-19.62
990	SLE RA 2	-54	14	3277	-573.86	-2.1	-19.14
990	SLE RA 3	-56	2	3378	-589.16	-2.17	-19.94

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
990	SLE RA 4	-55	9	3350	-585.17	-2.16	-19.64
990	SLE RA 5	-55	14	3312	-579.34	-2.13	-19.31
990	SLE RA 6	-57	2	3412	-594.65	-2.2	-20.11
990	SLE RA 7	-56	9	3384	-590.66	-2.18	-19.82
990	SLE RA 8	-56	2	3392	-591.49	-2.18	-19.98
990	SLE RA 9	-56	9	3365	-587.49	-2.17	-19.69
990	SLE RA 10	-56	14	3534	-614.91	-2.32	-19.88
990	SLE RA 11	-58	2	3635	-630.22	-2.39	-20.68
990	SLE RA 12	-58	9	3607	-626.23	-2.38	-20.38
990	SLE RA 13	-57	14	3569	-620.4	-2.35	-20.05
990	SLE RA 14	-59	2	3669	-635.71	-2.42	-20.85
990	SLE RA 15	-58	9	3641	-631.71	-2.41	-20.56
990	SLE RA 16	-59	2	3649	-632.54	-2.4	-20.72
990	SLE RA 17	-58	9	3621	-628.55	-2.39	-20.42
990	SLE RA 18	-58	2	3690	-639.16	-2.44	-20.68
990	SLE RA 19	-58	9	3663	-635.17	-2.43	-20.39
990	SLE RA 20	-59	2	3725	-644.65	-2.47	-20.86
990	SLE RA 21	-58	9	3697	-640.66	-2.46	-20.56
990	SLE FR 1	-55	3	3324	-580.51	-2.13	-19.62
990	SLE FR 2	-55	5	3314	-579.18	-2.12	-19.53
990	SLE FR 3	-56	3	3337	-582.71	-2.14	-19.69
990	SLE FR 4	-56	5	3424	-596.78	-2.22	-19.84
990	SLE FR 5	-57	2	3447	-600.3	-2.23	-20.01
990	SLE FR 6	-57	2	3507	-609.84	-2.29	-20.15
990	SLE QP 1	-55	3	3324	-580.51	-2.13	-19.62
990	SLE QP 2	-56	2	3434	-598.11	-2.22	-19.94
990	SLD 1	394	165	3556	-600.17	-0.86	137.44
990	SLD 2	320	85	3622	-610.49	-0.84	111.64
990	SLD 3	361	-38	4501	-737.42	-1.34	126.28
990	SLD 4	287	-117	4567	-747.74	-1.32	100.48
990	SLD 5	141	372	2026	-388.7	-1.08	48.84
990	SLD 6	92	320	2069	-395.51	-1.07	31.82
990	SLD 7	33	-302	5175	-846.21	-2.7	11.64
990	SLD 8	-15	-354	5219	-853.02	-2.68	-5.38
990	SLD 9	-97	359	1649	-343.19	-1.76	-34.5
990	SLD 10	-146	307	1692	-350	-1.75	-51.52
990	SLD 11	-205	-315	4798	-800.7	-3.38	-71.7
990	SLD 12	-254	-367	4842	-807.51	-3.36	-88.72
990	SLD 13	-400	122	2300	-448.47	-3.12	-140.36
990	SLD 14	-474	42	2366	-458.8	-3.1	-166.16
990	SLD 15	-432	-81	3245	-585.72	-3.61	-151.52
990	SLD 16	-506	-160	3311	-596.05	-3.59	-177.32
990	SLV 1	999	397	3643	-591.63	1.01	349.08
990	SLV 2	825	211	3798	-615.89	1.06	288.43
990	SLV 3	920	-105	6009	-935.26	-0.2	321.67
990	SLV 4	745	-291	6164	-959.53	-0.15	261.02
990	SLV 5	413	917	-121	-70.46	0.58	143.65
990	SLV 6	296	792	-17	-86.8	0.61	102.83
990	SLV 7	149	-757	7766	-1215.9	-3.47	52.29
990	SLV 8	31	-882	7870	-1232.24	-3.43	11.46
990	SLV 9	-144	887	-1003	36.02	-1.01	-51.34
990	SLV 10	-261	762	-899	19.69	-0.98	-92.17
990	SLV 11	-408	-787	6884	-1109.42	-5.06	-142.71
990	SLV 12	-526	-913	6989	-1125.76	-5.02	-183.54
990	SLV 13	-858	296	703	-236.69	-4.29	-300.9
990	SLV 14	-1032	110	859	-260.96	-4.24	-361.55
990	SLV 15	-937	-206	3069	-580.32	-5.5	-328.32
990	SLV 16	-1112	-392	3225	-604.59	-5.45	-388.96
990	CRTFP Ux+	0	0	0	0	0	0
990	CRTFP Ux-	0	0	0	0	0	0
990	CRTFP Uy+	0	0	0	0	0	0
990	CRTFP Uy-	0	0	0	0	0	0
991	SLU 1	-54	-4	3261	-634.28	-3.2	-19.05
991	SLU 2	-52	13	3190	-622.54	-3.13	-18.33
991	SLU 3	-55	-4	3344	-649.5	-3.3	-19.52
991	SLU 4	-54	6	3302	-642.46	-3.26	-19.09
991	SLU 5	-53	13	3243	-632.2	-3.2	-18.59
991	SLU 6	-56	-4	3398	-659.16	-3.37	-19.79
991	SLU 7	-55	6	3355	-652.12	-3.32	-19.35
991	SLU 8	-55	-4	3367	-653.61	-3.33	-19.58
991	SLU 9	-54	6	3324	-646.56	-3.29	-19.15
991	SLU 10	-55	12	3588	-695.09	-3.62	-19.47
991	SLU 11	-58	-5	3743	-722.06	-3.79	-20.67
991	SLU 12	-57	5	3700	-715.01	-3.75	-20.23
991	SLU 13	-56	12	3641	-704.76	-3.69	-19.74
991	SLU 14	-59	-5	3796	-731.72	-3.86	-20.93
991	SLU 15	-58	5	3754	-724.67	-3.81	-20.5
991	SLU 16	-59	-5	3766	-726.16	-3.82	-20.73
991	SLU 17	-57	5	3723	-719.12	-3.78	-20.29
991	SLU 18	-58	-6	3830	-737.93	-3.9	-20.69
991	SLU 19	-57	5	3787	-730.89	-3.86	-20.25
991	SLU 20	-59	-6	3883	-747.6	-3.97	-20.95
991	SLU 21	-58	4	3840	-740.55	-3.92	-20.52
991	SLU 22	-60	-6	3793	-730.8	-3.84	-21.24
991	SLU 23	-58	11	3722	-719.06	-3.77	-20.52
991	SLU 24	-61	-6	3877	-746.02	-3.94	-21.71
991	SLU 25	-60	4	3834	-738.97	-3.9	-21.28
991	SLU 26	-59	11	3775	-728.72	-3.83	-20.78
991	SLU 27	-62	-6	3930	-755.68	-4	-21.98

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
991	SLU 28	-61	4	3887	-748.64	-3.96	-21.54
991	SLU 29	-62	-6	3899	-750.12	-3.97	-21.77
991	SLU 30	-60	4	3857	-743.08	-3.93	-21.34
991	SLU 31	-61	10	4120	-791.61	-4.26	-21.66
991	SLU 32	-65	-7	4275	-818.58	-4.43	-22.85
991	SLU 33	-63	3	4233	-811.53	-4.39	-22.42
991	SLU 34	-62	9	4173	-801.27	-4.32	-21.93
991	SLU 35	-65	-8	4328	-828.24	-4.49	-23.12
991	SLU 36	-64	2	4286	-821.19	-4.45	-22.69
991	SLU 37	-65	-8	4298	-822.68	-4.46	-22.92
991	SLU 38	-64	3	4255	-815.63	-4.42	-22.48
991	SLU 39	-65	-8	4362	-834.45	-4.54	-22.87
991	SLU 40	-63	2	4319	-827.41	-4.5	-22.44
991	SLU 41	-65	-8	4415	-844.12	-4.6	-23.14
991	SLU 42	-64	2	4373	-837.07	-4.56	-22.71
991	SLU 43	-68	-4	4056	-791.47	-3.94	-24.02
991	SLU 44	-66	13	3985	-779.73	-3.87	-23.29
991	SLU 45	-69	-4	4140	-806.69	-4.04	-24.49
991	SLU 46	-68	6	4098	-799.65	-4	-24.05
991	SLU 47	-67	13	4039	-789.39	-3.94	-23.56
991	SLU 48	-70	-5	4193	-816.36	-4.11	-24.75
991	SLU 49	-69	6	4151	-809.31	-4.07	-24.32
991	SLU 50	-69	-4	4163	-810.8	-4.07	-24.55
991	SLU 51	-68	6	4120	-803.75	-4.03	-24.12
991	SLU 52	-69	12	4384	-852.29	-4.36	-24.44
991	SLU 53	-72	-6	4539	-879.25	-4.53	-25.63
991	SLU 54	-71	5	4496	-872.2	-4.49	-25.2
991	SLU 55	-70	11	4437	-861.95	-4.43	-24.7
991	SLU 56	-73	-6	4592	-888.91	-4.6	-25.9
991	SLU 57	-72	4	4549	-881.87	-4.56	-25.46
991	SLU 58	-73	-6	4561	-883.35	-4.56	-25.69
991	SLU 59	-71	4	4519	-876.31	-4.52	-25.26
991	SLU 60	-72	-6	4625	-895.13	-4.64	-25.65
991	SLU 61	-71	4	4583	-888.08	-4.6	-25.22
991	SLU 62	-73	-6	4679	-904.79	-4.71	-25.92
991	SLU 63	-72	4	4636	-897.74	-4.67	-25.48
991	SLU 64	-74	-6	4588	-887.99	-4.58	-26.21
991	SLU 65	-72	11	4517	-876.25	-4.51	-25.48
991	SLU 66	-75	-7	4672	-903.21	-4.68	-26.68
991	SLU 67	-74	4	4630	-896.17	-4.64	-26.24
991	SLU 68	-73	10	4571	-885.91	-4.58	-25.75
991	SLU 69	-76	-7	4726	-912.88	-4.74	-26.94
991	SLU 70	-75	3	4683	-905.83	-4.7	-26.51
991	SLU 71	-76	-7	4695	-907.32	-4.71	-26.74
991	SLU 72	-74	3	4652	-900.27	-4.67	-26.3
991	SLU 73	-75	9	4916	-948.8	-5	-26.63
991	SLU 74	-79	-8	5071	-975.77	-5.17	-27.82
991	SLU 75	-77	2	5028	-968.72	-5.13	-27.38
991	SLU 76	-76	9	4969	-958.47	-5.07	-26.89
991	SLU 77	-79	-8	5124	-985.43	-5.23	-28.09
991	SLU 78	-78	2	5081	-978.39	-5.19	-27.65
991	SLU 79	-79	-8	5093	-979.87	-5.2	-27.88
991	SLU 80	-78	2	5051	-972.83	-5.16	-27.45
991	SLU 81	-79	-8	5158	-991.65	-5.28	-27.84
991	SLU 82	-77	2	5115	-984.6	-5.24	-27.41
991	SLU 83	-79	-8	5211	-1001.31	-5.35	-28.11
991	SLU 84	-78	2	5168	-994.26	-5.3	-27.67
991	SLE RA 1	-56	-4	3413	-661.86	-3.38	-19.68
991	SLE RA 2	-54	7	3365	-654.03	-3.34	-19.2
991	SLE RA 3	-57	-5	3469	-672.01	-3.45	-19.99
991	SLE RA 4	-56	2	3440	-667.31	-3.42	-19.7
991	SLE RA 5	-55	7	3401	-660.47	-3.38	-19.37
991	SLE RA 6	-57	-5	3504	-678.45	-3.49	-20.17
991	SLE RA 7	-56	2	3476	-673.75	-3.47	-19.88
991	SLE RA 8	-57	-5	3484	-674.74	-3.47	-20.03
991	SLE RA 9	-56	2	3455	-670.04	-3.44	-19.74
991	SLE RA 10	-56	6	3631	-702.4	-3.66	-19.96
991	SLE RA 11	-59	-5	3734	-720.38	-3.78	-20.75
991	SLE RA 12	-58	1	3706	-715.68	-3.75	-20.46
991	SLE RA 13	-57	6	3666	-708.84	-3.71	-20.14
991	SLE RA 14	-59	-5	3770	-726.82	-3.82	-20.93
991	SLE RA 15	-58	1	3741	-722.12	-3.79	-20.64
991	SLE RA 16	-59	-5	3749	-723.11	-3.8	-20.8
991	SLE RA 17	-58	1	3721	-718.41	-3.77	-20.51
991	SLE RA 18	-59	-6	3792	-730.96	-3.85	-20.77
991	SLE RA 19	-58	1	3764	-726.26	-3.82	-20.48
991	SLE RA 20	-59	-6	3828	-737.4	-3.89	-20.94
991	SLE RA 21	-58	1	3799	-732.7	-3.87	-20.66
991	SLE FR 1	-56	-4	3413	-661.86	-3.38	-19.68
991	SLE FR 2	-55	-2	3403	-660.29	-3.37	-19.58
991	SLE FR 3	-56	-4	3427	-664.43	-3.4	-19.75
991	SLE FR 4	-56	-2	3517	-681.02	-3.51	-19.91
991	SLE FR 5	-57	-5	3541	-685.17	-3.54	-20.08
991	SLE FR 6	-57	-5	3602	-696.41	-3.62	-20.22
991	SLE QP 1	-56	-4	3413	-661.86	-3.38	-19.68
991	SLE QP 2	-57	-5	3526	-682.59	-3.52	-20
991	SLD 1	393	152	3608	-678.64	-2.33	137.35
991	SLD 2	319	78	3674	-690.24	-2.34	111.58
991	SLD 3	362	-47	4576	-839.61	-3.25	126.29

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
991	SLD 4	288	-122	4642	-851.21	-3.25	100.53
991	SLD 5	140	358	2072	-435.19	-1.77	48.6
991	SLD 6	91	309	2115	-442.85	-1.77	31.6
991	SLD 7	34	-306	5297	-971.73	-4.83	11.75
991	SLD 8	-15	-355	5340	-979.38	-4.84	-5.24
991	SLD 9	-98	346	1713	-385.79	-2.21	-34.77
991	SLD 10	-147	297	1756	-393.45	-2.21	-51.76
991	SLD 11	-204	-318	4937	-922.33	-5.27	-71.61
991	SLD 12	-253	-367	4981	-929.98	-5.28	-88.61
991	SLD 13	-401	112	2411	-513.97	-3.79	-140.54
991	SLD 14	-475	37	2477	-525.57	-3.8	-166.3
991	SLD 15	-433	-87	3379	-674.93	-4.71	-151.59
991	SLD 16	-507	-162	3445	-686.53	-4.72	-177.36
991	SLV 1	999	378	3638	-660.09	-0.65	348.94
991	SLV 2	825	202	3793	-687.36	-0.67	288.37
991	SLV 3	921	-117	6061	-1063.13	-2.95	321.8
991	SLV 4	747	-293	6216	-1090.4	-2.97	261.23
991	SLV 5	411	893	-144	-59.47	0.83	143.15
991	SLV 6	293	775	-39	-77.82	0.82	102.37
991	SLV 7	151	-756	7933	-1402.95	-6.84	52.67
991	SLV 8	34	-874	8037	-1421.3	-6.85	11.89
991	SLV 9	-147	865	-984	56.13	-0.19	-51.9
991	SLV 10	-264	747	-880	37.77	-0.21	-92.68
991	SLV 11	-407	-784	7092	-1287.35	-7.87	-142.38
991	SLV 12	-524	-903	7197	-1305.71	-7.88	-183.16
991	SLV 13	-860	283	837	-274.78	-4.08	-301.24
991	SLV 14	-1034	108	992	-302.05	-4.09	-361.81
991	SLV 15	-938	-212	3260	-677.82	-6.38	-328.38
991	SLV 16	-1112	-387	3415	-705.09	-6.4	-388.95
991	CRTFP Ux+	0	0	0	0	0	0
991	CRTFP Ux-	0	0	0	0	0	0
991	CRTFP Uy+	0	0	0	0	0	0
991	CRTFP Uy-	0	0	0	0	0	0
992	SLU 1	-54	-10	3377	-740.08	-4.03	-19.09
992	SLU 2	-52	7	3304	-725.88	-3.93	-18.38
992	SLU 3	-55	-10	3465	-758.36	-4.15	-19.57
992	SLU 4	-54	0	3421	-749.84	-4.1	-19.14
992	SLU 5	-53	7	3359	-737.49	-4.01	-18.65
992	SLU 6	-56	-10	3520	-769.97	-4.23	-19.83
992	SLU 7	-55	0	3476	-761.45	-4.17	-19.4
992	SLU 8	-56	-10	3488	-763.3	-4.19	-19.63
992	SLU 9	-54	0	3444	-754.78	-4.13	-19.2
992	SLU 10	-55	5	3720	-813.29	-4.53	-19.56
992	SLU 11	-59	-12	3881	-845.77	-4.75	-20.75
992	SLU 12	-57	-2	3837	-837.25	-4.69	-20.32
992	SLU 13	-56	5	3775	-824.9	-4.61	-19.83
992	SLU 14	-59	-12	3936	-857.38	-4.83	-21.01
992	SLU 15	-58	-2	3892	-848.86	-4.77	-20.59
992	SLU 16	-59	-12	3904	-850.72	-4.79	-20.81
992	SLU 17	-58	-2	3860	-842.19	-4.73	-20.38
992	SLU 18	-59	-12	3972	-864.96	-4.88	-20.78
992	SLU 19	-58	-2	3928	-856.44	-4.83	-20.35
992	SLU 20	-60	-13	4027	-876.57	-4.96	-21.05
992	SLU 21	-58	-3	3983	-868.05	-4.91	-20.62
992	SLU 22	-60	-13	3932	-856.2	-4.81	-21.32
992	SLU 23	-58	4	3859	-842	-4.72	-20.6
992	SLU 24	-62	-13	4020	-874.48	-4.94	-21.79
992	SLU 25	-60	-3	3976	-865.96	-4.88	-21.36
992	SLU 26	-59	4	3914	-853.61	-4.8	-20.87
992	SLU 27	-62	-13	4076	-886.09	-5.02	-22.06
992	SLU 28	-61	-3	4031	-877.57	-4.96	-21.63
992	SLU 29	-62	-13	4044	-879.43	-4.97	-21.85
992	SLU 30	-61	-3	3999	-870.9	-4.92	-21.42
992	SLU 31	-62	2	4275	-929.42	-5.32	-21.78
992	SLU 32	-65	-15	4436	-961.9	-5.54	-22.97
992	SLU 33	-64	-5	4392	-953.38	-5.48	-22.54
992	SLU 34	-62	2	4331	-941.03	-5.4	-22.05
992	SLU 35	-66	-15	4492	-973.51	-5.62	-23.24
992	SLU 36	-65	-5	4447	-964.99	-5.56	-22.81
992	SLU 37	-65	-15	4460	-966.84	-5.57	-23.04
992	SLU 38	-64	-5	4416	-958.32	-5.52	-22.61
992	SLU 39	-65	-15	4527	-981.08	-5.67	-23.01
992	SLU 40	-64	-5	4483	-972.56	-5.61	-22.58
992	SLU 41	-66	-15	4582	-992.69	-5.75	-23.27
992	SLU 42	-65	-5	4538	-984.17	-5.69	-22.85
992	SLU 43	-68	-12	4200	-922.29	-4.96	-24.06
992	SLU 44	-66	5	4127	-908.09	-4.87	-23.34
992	SLU 45	-69	-12	4288	-940.57	-5.09	-24.53
992	SLU 46	-68	-2	4244	-932.05	-5.03	-24.1
992	SLU 47	-67	5	4182	-919.7	-4.95	-23.61
992	SLU 48	-70	-12	4343	-952.18	-5.17	-24.8
992	SLU 49	-69	-2	4299	-943.66	-5.11	-24.37
992	SLU 50	-70	-12	4311	-945.51	-5.12	-24.6
992	SLU 51	-68	-2	4267	-936.99	-5.07	-24.17
992	SLU 52	-69	3	4543	-995.5	-5.47	-24.53
992	SLU 53	-73	-14	4704	-1027.98	-5.69	-25.71
992	SLU 54	-72	-4	4660	-1019.46	-5.63	-25.28
992	SLU 55	-70	3	4598	-1007.11	-5.55	-24.79
992	SLU 56	-74	-14	4759	-1039.59	-5.77	-25.98

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
992	SLU 57	-72	-4	4715	-1031.07	-5.71	-25.55
992	SLU 58	-73	-14	4727	-1032.92	-5.72	-25.78
992	SLU 59	-72	-4	4683	-1024.4	-5.67	-25.35
992	SLU 60	-73	-14	4795	-1047.17	-5.82	-25.75
992	SLU 61	-72	-4	4750	-1038.65	-5.76	-25.32
992	SLU 62	-74	-15	4850	-1058.78	-5.9	-26.02
992	SLU 63	-72	-5	4806	-1050.26	-5.84	-25.59
992	SLU 64	-74	-15	4755	-1038.41	-5.75	-26.28
992	SLU 65	-72	2	4682	-1024.21	-5.66	-25.57
992	SLU 66	-76	-15	4843	-1056.69	-5.88	-26.75
992	SLU 67	-75	-5	4799	-1048.17	-5.82	-26.33
992	SLU 68	-73	2	4737	-1035.82	-5.74	-25.84
992	SLU 69	-77	-15	4898	-1068.3	-5.96	-27.02
992	SLU 70	-75	-5	4854	-1059.78	-5.9	-26.59
992	SLU 71	-76	-15	4866	-1061.63	-5.91	-26.82
992	SLU 72	-75	-5	4822	-1053.11	-5.85	-26.39
992	SLU 73	-76	0	5098	-1111.63	-6.26	-26.75
992	SLU 74	-79	-17	5259	-1144.11	-6.47	-27.94
992	SLU 75	-78	-7	5215	-1135.59	-6.42	-27.51
992	SLU 76	-76	0	5153	-1123.24	-6.34	-27.02
992	SLU 77	-80	-17	5314	-1155.72	-6.55	-28.2
992	SLU 78	-79	-7	5270	-1147.2	-6.5	-27.77
992	SLU 79	-79	-17	5282	-1149.05	-6.51	-28
992	SLU 80	-78	-7	5238	-1140.53	-6.45	-27.57
992	SLU 81	-79	-17	5350	-1163.29	-6.61	-27.97
992	SLU 82	-78	-7	5306	-1154.77	-6.55	-27.54
992	SLU 83	-80	-17	5405	-1174.9	-6.69	-28.24
992	SLU 84	-79	-7	5361	-1166.38	-6.63	-27.81
992	SLE RA 1	-56	-11	3536	-773.26	-4.25	-19.73
992	SLE RA 2	-54	1	3487	-763.79	-4.19	-19.25
992	SLE RA 3	-57	-11	3594	-785.44	-4.33	-20.04
992	SLE RA 4	-56	-4	3565	-779.76	-4.3	-19.76
992	SLE RA 5	-55	0	3524	-771.53	-4.24	-19.43
992	SLE RA 6	-57	-11	3631	-793.18	-4.39	-20.22
992	SLE RA 7	-56	-4	3602	-787.5	-4.35	-19.94
992	SLE RA 8	-57	-11	3610	-788.74	-4.36	-20.09
992	SLE RA 9	-56	-4	3581	-783.06	-4.32	-19.8
992	SLE RA 10	-57	-1	3764	-822.07	-4.59	-20.04
992	SLE RA 11	-59	-12	3872	-843.72	-4.73	-20.83
992	SLE RA 12	-58	-5	3842	-838.04	-4.7	-20.55
992	SLE RA 13	-57	-1	3801	-829.81	-4.64	-20.22
992	SLE RA 14	-59	-12	3909	-851.46	-4.79	-21.01
992	SLE RA 15	-59	-6	3879	-845.78	-4.75	-20.72
992	SLE RA 16	-59	-12	3887	-847.02	-4.76	-20.87
992	SLE RA 17	-58	-5	3858	-841.33	-4.72	-20.59
992	SLE RA 18	-59	-12	3932	-856.51	-4.82	-20.86
992	SLE RA 19	-58	-6	3903	-850.83	-4.78	-20.57
992	SLE RA 20	-60	-12	3969	-864.25	-4.87	-21.03
992	SLE RA 21	-59	-6	3940	-858.57	-4.84	-20.75
992	SLE FR 1	-56	-11	3536	-773.26	-4.25	-19.73
992	SLE FR 2	-56	-8	3526	-771.36	-4.24	-19.63
992	SLE FR 3	-56	-11	3551	-776.35	-4.27	-19.8
992	SLE FR 4	-57	-9	3645	-796.34	-4.41	-19.97
992	SLE FR 5	-57	-11	3670	-801.33	-4.44	-20.14
992	SLE FR 6	-57	-11	3734	-814.88	-4.54	-20.29
992	SLE QP 1	-56	-11	3536	-773.26	-4.25	-19.73
992	SLE QP 2	-57	-11	3655	-798.23	-4.42	-20.07
992	SLD 1	393	142	3701	-792.2	-3.4	137.2
992	SLD 2	319	71	3768	-805.53	-3.42	111.48
992	SLD 3	362	-57	4704	-986.27	-4.65	126.28
992	SLD 4	288	-127	4770	-999.6	-4.67	100.57
992	SLD 5	139	348	2137	-499.68	-2.22	48.29
992	SLD 6	90	302	2180	-508.48	-2.24	31.33
992	SLD 7	35	-313	5478	-1146.59	-6.38	11.9
992	SLD 8	-14	-360	5522	-1155.38	-6.39	-5.06
992	SLD 9	-100	337	1788	-441.08	-2.45	-35.08
992	SLD 10	-148	291	1832	-449.88	-2.47	-52.04
992	SLD 11	-204	-324	5129	-1087.99	-6.61	-71.47
992	SLD 12	-252	-371	5173	-1096.78	-6.62	-88.43
992	SLD 13	-402	105	2539	-596.87	-4.17	-140.7
992	SLD 14	-475	35	2606	-610.2	-4.2	-166.42
992	SLD 15	-433	-93	3542	-790.94	-5.42	-151.62
992	SLD 16	-507	-164	3608	-804.27	-5.44	-177.33
992	SLV 1	998	361	3681	-768.1	-1.93	348.67
992	SLV 2	824	196	3837	-799.43	-1.98	288.22
992	SLV 3	921	-132	6192	-1254.1	-5.05	321.86
992	SLV 4	748	-297	6348	-1285.43	-5.1	261.42
992	SLV 5	408	880	-174	-46.25	1.07	142.49
992	SLV 6	291	768	-69	-67.35	1.04	101.79
992	SLV 7	153	-765	8194	-1666.24	-9.34	53.14
992	SLV 8	36	-876	8299	-1687.33	-9.37	12.44
992	SLV 9	-150	854	-990	90.87	0.53	-52.58
992	SLV 10	-267	743	-885	69.77	0.49	-93.27
992	SLV 11	-405	-790	7378	-1529.12	-9.88	-141.93
992	SLV 12	-522	-902	7484	-1550.21	-9.92	-182.62
992	SLV 13	-861	275	962	-311.04	-3.74	-301.55
992	SLV 14	-1035	110	1118	-342.37	-3.8	-362
992	SLV 15	-938	-218	3472	-797.03	-6.86	-328.36
992	SLV 16	-1111	-384	3628	-828.37	-6.92	-388.8

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
992	CRTFP Ux+	0	0	0	0	0	0
992	CRTFP Ux-	0	0	0	0	0	0
992	CRTFP Uy+	0	0	0	0	0	0
992	CRTFP Uy-	0	0	0	0	0	0
993	SLU 1	-54	-15	3512	-870.01	-4.32	-19.12
993	SLU 2	-52	2	3436	-852.76	-4.21	-18.42
993	SLU 3	-56	-15	3604	-892.04	-4.46	-19.59
993	SLU 4	-54	-5	3558	-881.69	-4.39	-19.17
993	SLU 5	-53	2	3494	-866.76	-4.3	-18.69
993	SLU 6	-56	-16	3662	-906.04	-4.54	-19.86
993	SLU 7	-55	-5	3616	-895.69	-4.48	-19.44
993	SLU 8	-56	-15	3629	-898.01	-4.49	-19.66
993	SLU 9	-55	-5	3583	-887.66	-4.43	-19.24
993	SLU 10	-56	0	3872	-958.32	-4.85	-19.64
993	SLU 11	-59	-17	4040	-997.61	-5.09	-20.81
993	SLU 12	-58	-7	3994	-987.26	-5.03	-20.39
993	SLU 13	-56	0	3930	-972.32	-4.94	-19.91
993	SLU 14	-60	-18	4098	-1011.61	-5.18	-21.08
993	SLU 15	-59	-8	4052	-1001.26	-5.12	-20.66
993	SLU 16	-59	-18	4065	-1003.58	-5.13	-20.88
993	SLU 17	-58	-7	4019	-993.23	-5.07	-20.46
993	SLU 18	-59	-18	4135	-1020.82	-5.23	-20.86
993	SLU 19	-58	-8	4089	-1010.47	-5.17	-20.44
993	SLU 20	-60	-18	4194	-1034.82	-5.32	-21.13
993	SLU 21	-59	-8	4148	-1024.47	-5.25	-20.71
993	SLU 22	-61	-18	4094	-1010.09	-5.16	-21.38
993	SLU 23	-59	-1	4017	-992.83	-5.05	-20.68
993	SLU 24	-62	-18	4186	-1032.12	-5.29	-21.85
993	SLU 25	-61	-8	4140	-1021.76	-5.23	-21.43
993	SLU 26	-59	-2	4075	-1006.83	-5.14	-20.95
993	SLU 27	-63	-19	4244	-1046.12	-5.38	-22.12
993	SLU 28	-62	-9	4198	-1035.77	-5.32	-21.7
993	SLU 29	-62	-19	4210	-1038.09	-5.33	-21.92
993	SLU 30	-61	-9	4164	-1027.74	-5.27	-21.5
993	SLU 31	-62	-3	4453	-1098.4	-5.69	-21.9
993	SLU 32	-65	-21	4622	-1137.68	-5.93	-23.07
993	SLU 33	-64	-11	4576	-1127.33	-5.87	-22.65
993	SLU 34	-63	-4	4511	-1112.4	-5.78	-22.17
993	SLU 35	-66	-21	4680	-1151.68	-6.02	-23.34
993	SLU 36	-65	-11	4634	-1141.33	-5.95	-22.92
993	SLU 37	-66	-21	4646	-1143.65	-5.97	-23.14
993	SLU 38	-64	-11	4600	-1133.3	-5.91	-22.72
993	SLU 39	-66	-21	4717	-1160.89	-6.07	-23.12
993	SLU 40	-64	-11	4671	-1150.54	-6.01	-22.7
993	SLU 41	-66	-21	4775	-1174.89	-6.16	-23.39
993	SLU 42	-65	-11	4729	-1164.54	-6.09	-22.97
993	SLU 43	-68	-18	4367	-1082.99	-5.33	-24.08
993	SLU 44	-66	-1	4290	-1065.74	-5.22	-23.38
993	SLU 45	-70	-18	4459	-1105.02	-5.46	-24.55
993	SLU 46	-68	-8	4412	-1094.67	-5.4	-24.13
993	SLU 47	-67	-2	4348	-1079.74	-5.31	-23.65
993	SLU 48	-70	-19	4517	-1119.02	-5.55	-24.82
993	SLU 49	-69	-9	4471	-1108.67	-5.49	-24.4
993	SLU 50	-70	-19	4483	-1110.99	-5.5	-24.62
993	SLU 51	-69	-9	4437	-1100.64	-5.44	-24.2
993	SLU 52	-70	-3	4726	-1171.3	-5.86	-24.6
993	SLU 53	-73	-21	4895	-1210.59	-6.1	-25.77
993	SLU 54	-72	-11	4848	-1200.23	-6.04	-25.35
993	SLU 55	-71	-4	4784	-1185.3	-5.95	-24.87
993	SLU 56	-74	-21	4953	-1224.59	-6.19	-26.04
993	SLU 57	-73	-11	4907	-1214.23	-6.12	-25.62
993	SLU 58	-73	-21	4919	-1216.56	-6.14	-25.84
993	SLU 59	-72	-11	4873	-1206.2	-6.08	-25.42
993	SLU 60	-73	-21	4990	-1233.8	-6.24	-25.83
993	SLU 61	-72	-11	4944	-1223.44	-6.18	-25.4
993	SLU 62	-74	-21	5048	-1247.8	-6.33	-26.1
993	SLU 63	-73	-11	5002	-1237.45	-6.26	-25.67
993	SLU 64	-75	-21	4948	-1223.06	-6.17	-26.34
993	SLU 65	-73	-4	4871	-1205.81	-6.06	-25.64
993	SLU 66	-76	-22	5040	-1245.1	-6.3	-26.81
993	SLU 67	-75	-12	4994	-1234.74	-6.24	-26.39
993	SLU 68	-74	-5	4930	-1219.81	-6.15	-25.91
993	SLU 69	-77	-22	5098	-1259.1	-6.39	-27.08
993	SLU 70	-76	-12	5052	-1248.74	-6.33	-26.66
993	SLU 71	-76	-22	5065	-1251.07	-6.34	-26.88
993	SLU 72	-75	-12	5019	-1240.71	-6.28	-26.46
993	SLU 73	-76	-7	5307	-1311.37	-6.7	-26.86
993	SLU 74	-80	-24	5476	-1350.66	-6.94	-28.03
993	SLU 75	-78	-14	5430	-1340.31	-6.88	-27.61
993	SLU 76	-77	-7	5366	-1325.38	-6.79	-27.13
993	SLU 77	-80	-24	5534	-1364.66	-7.03	-28.3
993	SLU 78	-79	-14	5488	-1354.31	-6.96	-27.88
993	SLU 79	-80	-24	5501	-1356.63	-6.98	-28.1
993	SLU 80	-79	-14	5455	-1346.28	-6.91	-27.68
993	SLU 81	-80	-24	5571	-1373.87	-7.08	-28.09
993	SLU 82	-79	-14	5525	-1363.52	-7.01	-27.66
993	SLU 83	-80	-25	5629	-1387.87	-7.16	-28.35
993	SLU 84	-79	-15	5583	-1377.52	-7.1	-27.93
993	SLE RA 1	-56	-16	3679	-910.03	-4.56	-19.77

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
993	SLE RA 2	-55	-4	3627	-898.53	-4.49	-19.3
993	SLE RA 3	-57	-16	3740	-924.72	-4.65	-20.08
993	SLE RA 4	-56	-9	3709	-917.82	-4.61	-19.8
993	SLE RA 5	-55	-5	3666	-907.86	-4.55	-19.48
993	SLE RA 6	-57	-16	3779	-934.05	-4.71	-20.26
993	SLE RA 7	-57	-9	3748	-927.15	-4.67	-19.98
993	SLE RA 8	-57	-16	3756	-928.7	-4.68	-20.13
993	SLE RA 9	-56	-9	3725	-921.8	-4.63	-19.84
993	SLE RA 10	-57	-6	3918	-968.91	-4.91	-20.11
993	SLE RA 11	-59	-17	4030	-995.1	-5.07	-20.89
993	SLE RA 12	-58	-11	4000	-988.2	-5.03	-20.61
993	SLE RA 13	-58	-6	3957	-978.24	-4.97	-20.29
993	SLE RA 14	-60	-18	4069	-1004.43	-5.13	-21.07
993	SLE RA 15	-59	-11	4039	-997.53	-5.09	-20.79
993	SLE RA 16	-59	-18	4047	-999.08	-5.1	-20.94
993	SLE RA 17	-59	-11	4016	-992.18	-5.06	-20.66
993	SLE RA 18	-59	-18	4094	-1010.57	-5.17	-20.93
993	SLE RA 19	-59	-11	4063	-1003.67	-5.12	-20.65
993	SLE RA 20	-60	-18	4133	-1019.9	-5.22	-21.11
993	SLE RA 21	-59	-11	4102	-1013	-5.18	-20.83
993	SLE FR 1	-56	-16	3679	-910.03	-4.56	-19.77
993	SLE FR 2	-56	-13	3668	-907.73	-4.55	-19.67
993	SLE FR 3	-56	-16	3694	-913.77	-4.58	-19.84
993	SLE FR 4	-57	-14	3793	-937.89	-4.73	-20.02
993	SLE FR 5	-57	-16	3819	-943.93	-4.77	-20.19
993	SLE FR 6	-58	-17	3886	-960.3	-4.86	-20.35
993	SLE QP 1	-56	-16	3679	-910.03	-4.56	-19.77
993	SLE QP 2	-57	-16	3803	-940.19	-4.74	-20.11
993	SLD 1	393	134	3820	-935.27	-3.9	137.01
993	SLD 2	319	67	3887	-950.7	-3.92	111.37
993	SLD 3	362	-66	4866	-1170.51	-5.32	126.27
993	SLD 4	288	-132	4933	-1185.94	-5.34	100.63
993	SLD 5	137	343	2211	-579.16	-2.34	47.92
993	SLD 6	89	300	2255	-589.34	-2.35	31.01
993	SLD 7	36	-322	5695	-1363.3	-7.06	12.12
993	SLD 8	-13	-365	5740	-1373.47	-7.08	-4.79
993	SLD 9	-101	333	1866	-506.92	-2.41	-35.44
993	SLD 10	-150	289	1911	-517.09	-2.42	-52.35
993	SLD 11	-203	-332	5351	-1291.05	-7.13	-71.24
993	SLD 12	-252	-376	5396	-1301.23	-7.15	-88.15
993	SLD 13	-402	100	2673	-694.45	-4.14	-140.86
993	SLD 14	-476	34	2740	-709.88	-4.16	-166.5
993	SLD 15	-433	-100	3719	-929.69	-5.56	-151.6
993	SLD 16	-507	-166	3786	-945.12	-5.58	-177.24
993	SLV 1	997	349	3757	-909.27	-2.66	348.27
993	SLV 2	824	194	3915	-945.54	-2.71	288.01
993	SLV 3	922	-147	6375	-1498.39	-6.21	321.91
993	SLV 4	749	-302	6533	-1534.65	-6.26	261.64
993	SLV 5	405	875	-211	-30.66	1.28	141.64
993	SLV 6	289	770	-105	-55.07	1.24	101.06
993	SLV 7	155	-779	8516	-1994.38	-10.56	53.75
993	SLV 8	39	-884	8623	-2018.79	-10.59	13.17
993	SLV 9	-153	851	-1017	138.4	1.11	-53.4
993	SLV 10	-269	746	-910	113.99	1.07	-93.98
993	SLV 11	-403	-803	7711	-1825.32	-10.73	-141.29
993	SLV 12	-519	-907	7818	-1849.73	-10.76	-181.87
993	SLV 13	-863	270	1073	-345.74	-3.22	-301.87
993	SLV 14	-1036	114	1231	-382	-3.27	-362.14
993	SLV 15	-938	-226	3691	-934.85	-6.77	-328.24
993	SLV 16	-1111	-382	3849	-971.11	-6.82	-388.5
993	CRTFP Ux+	0	0	0	0	0	0
993	CRTFP Ux-	0	0	0	0	0	0
993	CRTFP Uy+	0	0	0	0	0	0
993	CRTFP Uy-	0	0	0	0	0	0
994	SLU 1	-49	-16	3284	-919.38	58.23	-16.89
994	SLU 2	-47	-1	3212	-900.69	56.97	-16.56
994	SLU 3	-50	-17	3370	-943.1	59.75	-17.31
994	SLU 4	-49	-8	3327	-931.89	58.99	-17.11
994	SLU 5	-48	-2	3266	-915.77	57.93	-16.79
994	SLU 6	-51	-17	3425	-958.19	60.71	-17.55
994	SLU 7	-50	-8	3382	-946.97	59.95	-17.34
994	SLU 8	-50	-17	3394	-949.55	60.16	-17.37
994	SLU 9	-49	-8	3350	-938.33	59.4	-17.17
994	SLU 10	-50	-3	3622	-1014.62	64.18	-17.65
994	SLU 11	-53	-19	3780	-1057.03	66.96	-18.4
994	SLU 12	-52	-10	3737	-1045.82	66.2	-18.2
994	SLU 13	-51	-4	3677	-1029.7	65.14	-17.89
994	SLU 14	-54	-19	3835	-1072.12	67.92	-18.64
994	SLU 15	-53	-10	3792	-1060.9	67.16	-18.44
994	SLU 16	-54	-19	3804	-1063.48	67.37	-18.46
994	SLU 17	-52	-10	3761	-1052.26	66.61	-18.26
994	SLU 18	-54	-19	3870	-1082.14	68.53	-18.45
994	SLU 19	-52	-10	3827	-1070.92	67.77	-18.25
994	SLU 20	-54	-20	3925	-1097.22	69.5	-18.69
994	SLU 21	-53	-11	3881	-1086	68.74	-18.49
994	SLU 22	-55	-20	3831	-1070.35	67.85	-18.9
994	SLU 23	-53	-4	3758	-1051.65	66.58	-18.56
994	SLU 24	-56	-20	3917	-1094.07	69.36	-19.31
994	SLU 25	-55	-11	3874	-1082.86	68.6	-19.11

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
994	SLU 26	-54	-5	3813	-1066.74	67.54	-18.8
994	SLU 27	-57	-20	3972	-1109.16	70.33	-19.55
994	SLU 28	-56	-11	3929	-1097.94	69.57	-19.35
994	SLU 29	-56	-20	3940	-1100.52	69.77	-19.37
994	SLU 30	-55	-11	3897	-1089.3	69.01	-19.17
994	SLU 31	-56	-6	4169	-1165.58	73.79	-19.65
994	SLU 32	-59	-22	4327	-1208	76.58	-20.41
994	SLU 33	-58	-13	4284	-1196.79	75.82	-20.2
994	SLU 34	-57	-7	4224	-1180.67	74.76	-19.89
994	SLU 35	-60	-22	4382	-1223.09	77.54	-20.64
994	SLU 36	-59	-13	4339	-1211.87	76.78	-20.44
994	SLU 37	-59	-22	4351	-1214.45	76.98	-20.46
994	SLU 38	-58	-13	4307	-1203.23	76.22	-20.26
994	SLU 39	-59	-22	4417	-1233.1	78.15	-20.46
994	SLU 40	-58	-13	4374	-1221.89	77.39	-20.26
994	SLU 41	-60	-23	4472	-1248.19	79.11	-20.69
994	SLU 42	-59	-14	4428	-1236.97	78.35	-20.49
994	SLU 43	-62	-20	4081	-1143.43	72.41	-21.28
994	SLU 44	-60	-5	4009	-1124.74	71.14	-20.94
994	SLU 45	-63	-21	4168	-1167.16	73.92	-21.69
994	SLU 46	-62	-12	4124	-1155.94	73.16	-21.49
994	SLU 47	-61	-5	4064	-1139.82	72.1	-21.18
994	SLU 48	-64	-21	4223	-1182.24	74.88	-21.93
994	SLU 49	-62	-12	4179	-1171.03	74.12	-21.73
994	SLU 50	-63	-21	4191	-1173.6	74.33	-21.75
994	SLU 51	-62	-12	4148	-1162.39	73.57	-21.55
994	SLU 52	-63	-7	4420	-1238.67	78.35	-22.03
994	SLU 53	-66	-23	4578	-1281.09	81.13	-22.78
994	SLU 54	-65	-14	4535	-1269.87	80.37	-22.58
994	SLU 55	-64	-7	4474	-1253.75	79.31	-22.27
994	SLU 56	-67	-23	4633	-1296.17	82.09	-23.02
994	SLU 57	-66	-14	4590	-1284.96	81.33	-22.82
994	SLU 58	-66	-23	4601	-1287.53	81.54	-22.84
994	SLU 59	-65	-14	4558	-1276.32	80.78	-22.64
994	SLU 60	-66	-23	4668	-1306.19	82.71	-22.84
994	SLU 61	-65	-14	4624	-1294.97	81.95	-22.63
994	SLU 62	-67	-24	4722	-1321.27	83.67	-23.07
994	SLU 63	-66	-14	4679	-1310.06	82.91	-22.87
994	SLU 64	-67	-23	4628	-1294.4	82.02	-23.28
994	SLU 65	-66	-8	4556	-1275.71	80.75	-22.94
994	SLU 66	-69	-24	4715	-1318.13	83.54	-23.69
994	SLU 67	-68	-15	4671	-1306.91	82.78	-23.49
994	SLU 68	-66	-9	4611	-1290.79	81.72	-23.18
994	SLU 69	-69	-24	4770	-1333.21	84.5	-23.93
994	SLU 70	-68	-15	4726	-1321.99	83.74	-23.73
994	SLU 71	-69	-24	4738	-1324.57	83.95	-23.75
994	SLU 72	-68	-15	4695	-1313.35	83.19	-23.55
994	SLU 73	-69	-10	4966	-1389.64	87.97	-24.03
994	SLU 74	-72	-26	5125	-1432.06	90.75	-24.79
994	SLU 75	-71	-17	5082	-1420.84	89.99	-24.58
994	SLU 76	-70	-11	5021	-1404.72	88.93	-24.27
994	SLU 77	-73	-26	5180	-1447.14	91.71	-25.02
994	SLU 78	-72	-17	5137	-1435.92	90.95	-24.82
994	SLU 79	-72	-26	5148	-1438.5	91.16	-24.84
994	SLU 80	-71	-17	5105	-1427.28	90.4	-24.64
994	SLU 81	-72	-26	5214	-1457.16	92.32	-24.84
994	SLU 82	-71	-17	5171	-1445.94	91.56	-24.64
994	SLU 83	-73	-27	5269	-1472.24	93.29	-25.08
994	SLU 84	-72	-18	5226	-1461.03	92.53	-24.87
994	SLE RA 1	-51	-17	3440	-962.51	60.98	-17.47
994	SLE RA 2	-49	-7	3392	-950.05	60.14	-17.24
994	SLE RA 3	-51	-18	3498	-978.33	61.99	-17.74
994	SLE RA 4	-51	-12	3469	-970.85	61.48	-17.61
994	SLE RA 5	-50	-7	3428	-960.11	60.78	-17.4
994	SLE RA 6	-52	-18	3534	-988.39	62.63	-17.9
994	SLE RA 7	-51	-12	3505	-980.91	62.13	-17.77
994	SLE RA 8	-52	-18	3513	-982.62	62.26	-17.78
994	SLE RA 9	-51	-12	3484	-975.15	61.76	-17.65
994	SLE RA 10	-52	-9	3665	-1026	64.94	-17.97
994	SLE RA 11	-54	-19	3771	-1054.28	66.8	-18.47
994	SLE RA 12	-53	-13	3742	-1046.81	66.29	-18.34
994	SLE RA 13	-52	-9	3702	-1036.06	65.58	-18.13
994	SLE RA 14	-54	-19	3808	-1064.34	67.44	-18.63
994	SLE RA 15	-53	-13	3779	-1056.86	66.93	-18.49
994	SLE RA 16	-54	-19	3787	-1058.58	67.07	-18.51
994	SLE RA 17	-53	-13	3758	-1051.1	66.56	-18.38
994	SLE RA 18	-54	-19	3831	-1071.02	67.85	-18.51
994	SLE RA 19	-53	-13	3802	-1063.54	67.34	-18.37
994	SLE RA 20	-54	-19	3867	-1081.07	68.49	-18.66
994	SLE RA 21	-53	-13	3839	-1073.6	67.98	-18.53
994	SLE FR 1	-51	-17	3440	-962.51	60.98	-17.47
994	SLE FR 2	-50	-15	3430	-960.02	60.81	-17.42
994	SLE FR 3	-51	-17	3455	-966.53	61.24	-17.53
994	SLE FR 4	-51	-16	3548	-992.57	62.87	-17.73
994	SLE FR 5	-52	-18	3572	-999.09	63.3	-17.84
994	SLE FR 6	-52	-18	3635	-1016.76	64.41	-17.99
994	SLE QP 1	-51	-17	3440	-962.51	60.98	-17.47
994	SLE QP 2	-52	-18	3557	-995.06	63.04	-17.78
994	SLD 1	354	85	3553	-992.41	63.42	121.95

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
994	SLD 2	288	29	3614	-1008.71	64.55	99.91
994	SLD 3	327	-97	4535	-1246.92	80.68	115.54
994	SLD 4	261	-153	4596	-1263.23	81.82	93.5
994	SLD 5	123	298	2056	-605.32	36.76	37.82
994	SLD 6	79	262	2096	-616.07	37.51	23.28
994	SLD 7	33	-307	5329	-1453.7	94.32	16.47
994	SLD 8	-11	-344	5369	-1464.46	95.07	1.93
994	SLD 9	-92	308	1745	-525.67	31.01	-37.49
994	SLD 10	-136	271	1786	-536.42	31.76	-52.02
994	SLD 11	-182	-298	5019	-1374.05	88.57	-58.83
994	SLD 12	-226	-334	5059	-1384.81	89.32	-73.37
994	SLD 13	-364	117	2519	-726.9	44.26	-129.06
994	SLD 14	-430	61	2580	-743.2	45.4	-151.1
994	SLD 15	-391	-65	3501	-981.42	61.53	-135.47
994	SLD 16	-457	-121	3562	-997.72	62.67	-157.5
994	SLV 1	899	236	3466	-967.87	62.49	309.56
994	SLV 2	743	105	3609	-1006.19	65.16	257.76
994	SLV 3	833	-216	5925	-1605.27	105.74	293.98
994	SLV 4	677	-347	6069	-1643.58	108.41	242.18
994	SLV 5	363	768	-227	-13.04	-3.21	113.73
994	SLV 6	258	680	-131	-38.84	-1.42	78.85
994	SLV 7	142	-738	7971	-2137.69	140.94	61.78
994	SLV 8	38	-826	8068	-2163.49	142.74	26.9
994	SLV 9	-141	791	-953	173.36	-16.66	-62.46
994	SLV 10	-246	702	-857	147.56	-14.86	-97.34
994	SLV 11	-361	-716	7245	-1951.29	127.5	-114.41
994	SLV 12	-466	-804	7342	-1977.09	129.29	-149.28
994	SLV 13	-780	311	1046	-346.54	17.67	-277.73
994	SLV 14	-936	180	1189	-384.86	20.34	-329.53
994	SLV 15	-846	-141	3505	-983.94	60.92	-293.32
994	SLV 16	-1002	-272	3649	-1022.26	63.59	-345.12
994	CRTFP Ux+	0	0	0	0	0	0
994	CRTFP Ux-	0	0	0	0	0	0
994	CRTFP Uy+	0	0	0	0	0	0
994	CRTFP Uy-	0	0	0	0	0	0
996	SLU 1	-189	-79	13807	-3156.77	-338.44	-48.89
996	SLU 2	-182	-18	13495	-3088.75	-329.24	-46.21
996	SLU 3	-194	-82	14174	-3239.99	-348.34	-50.11
996	SLU 4	-190	-45	13987	-3199.17	-342.83	-48.5
996	SLU 5	-185	-19	13729	-3141.64	-335.57	-46.91
996	SLU 6	-197	-83	14408	-3292.88	-354.67	-50.81
996	SLU 7	-193	-46	14221	-3252.07	-349.15	-49.2
996	SLU 8	-195	-83	14274	-3262.56	-351.09	-50.29
996	SLU 9	-191	-46	14087	-3221.75	-345.57	-48.68
996	SLU 10	-196	-26	15228	-3486.04	-373.88	-49.36
996	SLU 11	-207	-90	15907	-3637.27	-392.98	-53.26
996	SLU 12	-203	-53	15720	-3596.46	-387.46	-51.65
996	SLU 13	-198	-27	15462	-3538.93	-380.21	-50.06
996	SLU 14	-210	-91	16141	-3690.17	-399.31	-53.96
996	SLU 15	-206	-54	15954	-3649.35	-393.79	-52.35
996	SLU 16	-208	-90	16007	-3659.85	-395.73	-53.44
996	SLU 17	-204	-53	15820	-3619.03	-390.21	-51.83
996	SLU 18	-208	-91	16282	-3724.33	-402.21	-53.39
996	SLU 19	-204	-54	16096	-3683.51	-396.69	-51.78
996	SLU 20	-210	-92	16516	-3777.22	-408.53	-54.09
996	SLU 21	-206	-55	16329	-3736.41	-403.02	-52.48
996	SLU 22	-212	-93	16121	-3684.59	-398.46	-54.75
996	SLU 23	-206	-31	15810	-3616.56	-389.26	-52.07
996	SLU 24	-217	-95	16489	-3767.8	-408.36	-55.97
996	SLU 25	-213	-58	16302	-3726.98	-402.85	-54.36
996	SLU 26	-208	-32	16043	-3669.46	-395.59	-52.77
996	SLU 27	-220	-97	16722	-3820.69	-414.69	-56.67
996	SLU 28	-216	-60	16535	-3779.88	-409.17	-55.05
996	SLU 29	-218	-96	16588	-3790.38	-411.11	-56.15
996	SLU 30	-214	-59	16401	-3749.56	-405.59	-54.54
996	SLU 31	-219	-39	17543	-4013.85	-433.9	-55.22
996	SLU 32	-230	-103	18222	-4165.09	-453	-59.12
996	SLU 33	-226	-66	18035	-4124.27	-447.48	-57.51
996	SLU 34	-222	-40	17776	-4066.74	-440.23	-55.92
996	SLU 35	-233	-104	18455	-4217.98	-459.33	-59.82
996	SLU 36	-229	-67	18268	-4177.17	-453.81	-58.2
996	SLU 37	-231	-104	18321	-4187.66	-455.75	-59.3
996	SLU 38	-227	-67	18134	-4146.85	-450.23	-57.69
996	SLU 39	-231	-104	18597	-4252.14	-462.23	-59.25
996	SLU 40	-227	-67	18410	-4211.33	-456.71	-57.64
996	SLU 41	-234	-105	18830	-4305.04	-468.55	-59.95
996	SLU 42	-230	-68	18644	-4264.22	-463.03	-58.34
996	SLU 43	-238	-99	17155	-3922.84	-419.39	-61.55
996	SLU 44	-231	-37	16844	-3854.81	-410.19	-58.87
996	SLU 45	-243	-101	17523	-4006.05	-429.3	-62.77
996	SLU 46	-239	-64	17336	-3965.24	-423.78	-61.16
996	SLU 47	-234	-39	17077	-3907.71	-416.52	-59.57
996	SLU 48	-245	-103	17756	-4058.95	-435.63	-63.47
996	SLU 49	-241	-66	17569	-4018.13	-430.11	-61.86
996	SLU 50	-243	-102	17622	-4028.63	-432.05	-62.95
996	SLU 51	-239	-65	17435	-3987.81	-426.53	-61.34
996	SLU 52	-244	-45	18577	-4252.1	-454.83	-62.02
996	SLU 53	-256	-109	19256	-4403.34	-473.94	-65.92
996	SLU 54	-252	-72	19069	-4362.53	-468.42	-64.31

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
996	SLU 55	-247	-46	18810	-4305	-461.16	-62.72
996	SLU 56	-258	-111	19489	-4456.24	-480.26	-66.62
996	SLU 57	-254	-74	19302	-4415.42	-474.75	-65.01
996	SLU 58	-256	-110	19355	-4425.92	-476.68	-66.1
996	SLU 59	-252	-73	19168	-4385.1	-471.17	-64.49
996	SLU 60	-257	-110	19631	-4490.39	-483.16	-66.05
996	SLU 61	-253	-73	19444	-4449.58	-477.64	-64.44
996	SLU 62	-259	-112	19864	-4543.29	-489.49	-66.75
996	SLU 63	-255	-75	19678	-4502.47	-483.97	-65.14
996	SLU 64	-261	-112	19470	-4450.65	-479.41	-67.41
996	SLU 65	-254	-50	19158	-4382.63	-470.21	-64.73
996	SLU 66	-266	-114	19837	-4533.87	-489.32	-68.63
996	SLU 67	-262	-77	19650	-4493.05	-483.8	-67.02
996	SLU 68	-257	-52	19392	-4435.52	-476.54	-65.43
996	SLU 69	-269	-116	20071	-4586.76	-495.64	-69.33
996	SLU 70	-265	-79	19884	-4545.95	-490.13	-67.71
996	SLU 71	-267	-115	19937	-4556.44	-492.06	-68.81
996	SLU 72	-263	-78	19750	-4515.63	-486.55	-67.2
996	SLU 73	-268	-58	20891	-4779.92	-514.85	-67.88
996	SLU 74	-279	-122	21570	-4931.16	-533.96	-71.78
996	SLU 75	-275	-85	21383	-4890.34	-528.44	-70.17
996	SLU 76	-270	-60	21125	-4832.81	-521.18	-68.58
996	SLU 77	-282	-124	21804	-4984.05	-540.28	-72.48
996	SLU 78	-278	-87	21617	-4943.24	-534.76	-70.86
996	SLU 79	-280	-123	21670	-4953.73	-536.7	-71.96
996	SLU 80	-276	-86	21483	-4912.92	-531.18	-70.35
996	SLU 81	-280	-123	21945	-5018.21	-543.18	-71.91
996	SLU 82	-276	-86	21758	-4977.39	-537.66	-70.3
996	SLU 83	-282	-125	22179	-5071.1	-549.51	-72.61
996	SLU 84	-279	-88	21992	-5030.29	-543.99	-71
996	SLE RA 1	-196	-83	14468	-3307.58	-355.59	-50.57
996	SLE RA 2	-191	-42	14260	-3262.23	-349.45	-48.78
996	SLE RA 3	-199	-85	14713	-3363.05	-362.19	-51.38
996	SLE RA 4	-196	-60	14588	-3335.84	-358.51	-50.3
996	SLE RA 5	-193	-43	14416	-3297.49	-353.67	-49.24
996	SLE RA 6	-201	-86	14869	-3398.31	-366.41	-51.84
996	SLE RA 7	-198	-61	14744	-3371.1	-362.73	-50.77
996	SLE RA 8	-199	-85	14779	-3378.1	-364.02	-51.5
996	SLE RA 9	-197	-61	14655	-3350.89	-360.34	-50.43
996	SLE RA 10	-200	-47	15416	-3527.08	-379.21	-50.88
996	SLE RA 11	-208	-90	15868	-3627.91	-391.95	-53.48
996	SLE RA 12	-205	-65	15744	-3600.7	-388.27	-52.4
996	SLE RA 13	-202	-48	15571	-3562.35	-383.43	-51.34
996	SLE RA 14	-209	-91	16024	-3663.17	-396.17	-53.94
996	SLE RA 15	-207	-66	15899	-3635.96	-392.49	-52.87
996	SLE RA 16	-208	-91	15935	-3642.96	-393.78	-53.6
996	SLE RA 17	-205	-66	15810	-3615.75	-390.1	-52.53
996	SLE RA 18	-208	-91	16118	-3685.95	-398.1	-53.57
996	SLE RA 19	-206	-66	15994	-3658.74	-394.42	-52.49
996	SLE RA 20	-210	-92	16274	-3721.21	-402.32	-54.03
996	SLE RA 21	-207	-67	16150	-3694	-398.64	-52.96
996	SLE FR 1	-196	-83	14468	-3307.58	-355.59	-50.57
996	SLE FR 2	-195	-75	14426	-3298.51	-354.36	-50.21
996	SLE FR 3	-196	-84	14530	-3321.68	-357.27	-50.75
996	SLE FR 4	-199	-77	14922	-3412.02	-367.11	-51.11
996	SLE FR 5	-200	-86	15025	-3435.19	-370.03	-51.65
996	SLE FR 6	-202	-87	15293	-3496.76	-376.84	-52.07
996	SLE QP 1	-196	-83	14468	-3307.58	-355.59	-50.57
996	SLE QP 2	-199	-85	14963	-3421.09	-368.34	-51.47
996	SLD 1	1438	295	14901	-3403.82	-350.47	331.01
996	SLD 2	1168	93	15141	-3460.97	-352.78	268.91
996	SLD 3	1336	-444	19133	-4328.94	-473.75	293.87
996	SLD 4	1065	-646	19372	-4386.1	-476.06	231.77
996	SLD 5	495	1185	8484	-2002.52	-175.59	130.76
996	SLD 6	317	1052	8642	-2040.23	-177.12	89.8
996	SLD 7	155	-1276	22589	-5086.27	-586.52	6.98
996	SLD 8	-24	-1410	22747	-5123.98	-588.05	-33.98
996	SLD 9	-375	1239	7179	-1718.2	-148.63	-68.95
996	SLD 10	-554	1106	7337	-1755.9	-150.16	-109.92
996	SLD 11	-716	-1222	21284	-4801.95	-559.56	-192.73
996	SLD 12	-894	-1356	21442	-4839.65	-561.09	-233.7
996	SLD 13	-1464	475	10554	-2456.07	-260.62	-334.71
996	SLD 14	-1735	273	10793	-2513.23	-262.93	-396.81
996	SLD 15	-1567	-263	14785	-3381.2	-383.9	-371.84
996	SLD 16	-1837	-465	15025	-3438.36	-386.21	-433.94
996	SLV 1	3639	860	14470	-3304.37	-316.39	846.15
996	SLV 2	3003	385	15033	-3438.72	-321.83	700.17
996	SLV 3	3389	-978	25068	-5621.32	-625.17	754.51
996	SLV 4	2753	-1452	25631	-5755.68	-630.62	608.53
996	SLV 5	1450	3073	-1364	153.05	116.59	384.05
996	SLV 6	1022	2753	-985	62.59	112.93	285.77
996	SLV 7	616	-3051	33963	-7570.13	-912.7	78.58
996	SLV 8	188	-3370	34342	-7660.59	-916.37	-19.7
996	SLV 9	-587	3200	-4416	818.41	179.69	-83.23
996	SLV 10	-1015	2880	-4037	727.96	176.02	-181.52
996	SLV 11	-1421	-2924	30911	-6904.77	-849.61	-388.7
996	SLV 12	-1849	-3244	31290	-6995.22	-853.27	-486.98
996	SLV 13	-3152	1281	4295	-1086.49	-106.06	-711.46
996	SLV 14	-3788	807	4858	-1220.85	-111.51	-857.44

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
996	SLV 15	-3402	-556	14893	-3403.45	-414.85	-803.1
996	SLV 16	-4038	-1030	15456	-3537.8	-420.3	-949.08
996	CRTFP Ux+	0	0	0	0	0	0
996	CRTFP Ux-	0	0	0	0	0	0
996	CRTFP Uy+	0	0	0	-0.01	0	0
996	CRTFP Uy-	0	0	0	0.01	0	0
999	SLU 1	68	23	2883	-867.34	-123.69	24.63
999	SLU 2	64	36	2817	-849.45	-120.84	24.09
999	SLU 3	70	23	2963	-890.99	-127.08	25.57
999	SLU 4	68	31	2923	-880.26	-125.38	25.25
999	SLU 5	66	36	2869	-865.06	-123.1	24.79
999	SLU 6	72	23	3015	-906.6	-129.34	26.27
999	SLU 7	70	31	2975	-895.87	-127.63	25.95
999	SLU 8	72	23	2989	-898.55	-128.2	26.03
999	SLU 9	70	31	2949	-887.82	-126.49	25.7
999	SLU 10	71	39	3175	-957.03	-136.15	26.46
999	SLU 11	77	26	3321	-998.57	-142.39	27.94
999	SLU 12	75	34	3281	-987.84	-140.68	27.62
999	SLU 13	73	39	3227	-972.63	-138.4	27.16
999	SLU 14	79	26	3373	-1014.18	-144.65	28.64
999	SLU 15	77	34	3333	-1003.44	-142.94	28.32
999	SLU 16	78	26	3346	-1006.12	-143.51	28.39
999	SLU 17	76	34	3307	-995.39	-141.8	28.07
999	SLU 18	77	27	3394	-1021.01	-145.56	28.01
999	SLU 19	75	35	3355	-1010.28	-143.85	27.69
999	SLU 20	79	27	3447	-1036.62	-147.81	28.71
999	SLU 21	77	35	3407	-1025.89	-146.1	28.39
999	SLU 22	78	25	3362	-1010.62	-144.17	28.33
999	SLU 23	75	39	3296	-992.74	-141.32	27.79
999	SLU 24	80	25	3442	-1034.28	-147.57	29.27
999	SLU 25	78	34	3402	-1023.55	-145.86	28.95
999	SLU 26	77	39	3348	-1008.34	-143.58	28.49
999	SLU 27	82	25	3494	-1049.89	-149.83	29.97
999	SLU 28	80	34	3454	-1039.15	-148.12	29.65
999	SLU 29	82	25	3468	-1041.83	-148.69	29.72
999	SLU 30	80	34	3428	-1031.1	-146.98	29.4
999	SLU 31	81	42	3653	-1100.31	-156.63	30.16
999	SLU 32	87	28	3799	-1141.85	-162.88	31.64
999	SLU 33	85	37	3759	-1131.12	-161.17	31.32
999	SLU 34	83	42	3706	-1115.92	-158.89	30.86
999	SLU 35	89	28	3852	-1157.46	-165.14	32.34
999	SLU 36	87	37	3812	-1146.73	-163.43	32.02
999	SLU 37	88	28	3825	-1149.41	-164	32.09
999	SLU 38	86	36	3785	-1138.68	-162.29	31.77
999	SLU 39	87	29	3873	-1164.3	-166.04	31.71
999	SLU 40	85	38	3833	-1153.57	-164.33	31.39
999	SLU 41	89	29	3926	-1179.91	-168.3	32.41
999	SLU 42	87	38	3886	-1169.17	-166.59	32.09
999	SLU 43	84	28	3584	-1078.41	-153.77	30.75
999	SLU 44	81	42	3517	-1060.53	-150.92	30.21
999	SLU 45	87	29	3663	-1102.07	-157.17	31.69
999	SLU 46	85	37	3623	-1091.34	-155.46	31.37
999	SLU 47	83	42	3570	-1076.13	-153.18	30.91
999	SLU 48	89	29	3716	-1117.68	-159.43	32.39
999	SLU 49	87	37	3676	-1106.94	-157.72	32.07
999	SLU 50	88	28	3689	-1109.62	-158.29	32.15
999	SLU 51	86	37	3649	-1098.89	-156.58	31.83
999	SLU 52	87	45	3875	-1168.1	-166.23	32.58
999	SLU 53	93	32	4021	-1209.64	-172.47	34.06
999	SLU 54	91	40	3981	-1198.91	-170.77	33.74
999	SLU 55	89	45	3928	-1183.71	-168.49	33.28
999	SLU 56	95	32	4074	-1225.25	-174.73	34.76
999	SLU 57	93	40	4034	-1214.52	-173.02	34.44
999	SLU 58	95	31	4047	-1217.2	-173.59	34.52
999	SLU 59	93	40	4007	-1206.47	-171.88	34.19
999	SLU 60	93	33	4095	-1232.09	-175.64	34.13
999	SLU 61	92	41	4055	-1221.36	-173.93	33.81
999	SLU 62	95	33	4148	-1247.7	-177.9	34.83
999	SLU 63	93	41	4108	-1236.96	-176.19	34.51
999	SLU 64	95	31	4063	-1221.69	-174.26	34.45
999	SLU 65	91	45	3996	-1203.81	-171.41	33.91
999	SLU 66	97	31	4142	-1245.35	-177.65	35.39
999	SLU 67	95	40	4102	-1234.62	-175.94	35.07
999	SLU 68	93	45	4049	-1219.42	-173.66	34.61
999	SLU 69	99	31	4195	-1260.96	-179.91	36.09
999	SLU 70	97	40	4155	-1250.23	-178.2	35.77
999	SLU 71	99	31	4168	-1252.91	-178.77	35.85
999	SLU 72	97	39	4128	-1242.18	-177.06	35.52
999	SLU 73	98	48	4354	-1311.38	-186.71	36.28
999	SLU 74	104	34	4500	-1352.93	-192.96	37.76
999	SLU 75	102	43	4460	-1342.2	-191.25	37.44
999	SLU 76	100	48	4407	-1326.99	-188.97	36.98
999	SLU 77	106	34	4553	-1368.53	-195.22	38.46
999	SLU 78	104	43	4513	-1357.8	-193.51	38.14
999	SLU 79	105	34	4526	-1360.48	-194.08	38.21
999	SLU 80	103	42	4486	-1349.75	-192.37	37.89
999	SLU 81	104	35	4574	-1375.37	-196.12	37.83
999	SLU 82	102	43	4534	-1364.64	-194.41	37.51
999	SLU 83	106	35	4627	-1390.98	-198.38	38.53

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
999	SLU 84	104	44	4587	-1380.25	-196.67	38.21
999	SLE RA 1	70	23	3020	-908.27	-129.54	25.68
999	SLE RA 2	68	33	2976	-896.35	-127.64	25.33
999	SLE RA 3	72	23	3073	-924.05	-131.81	26.31
999	SLE RA 4	71	29	3046	-916.89	-130.67	26.1
999	SLE RA 5	70	33	3011	-906.76	-129.15	25.79
999	SLE RA 6	74	23	3108	-934.45	-133.31	26.78
999	SLE RA 7	72	29	3082	-927.3	-132.17	26.57
999	SLE RA 8	73	23	3090	-929.08	-132.55	26.62
999	SLE RA 9	72	29	3064	-921.93	-131.41	26.4
999	SLE RA 10	73	34	3214	-968.07	-137.85	26.91
999	SLE RA 11	77	25	3312	-995.76	-142.01	27.89
999	SLE RA 12	75	31	3285	-988.61	-140.87	27.68
999	SLE RA 13	74	34	3249	-978.47	-139.35	27.37
999	SLE RA 14	78	25	3347	-1006.17	-143.52	28.36
999	SLE RA 15	77	31	3320	-999.01	-142.38	28.15
999	SLE RA 16	77	25	3329	-1000.8	-142.76	28.2
999	SLE RA 17	76	31	3302	-993.65	-141.62	27.98
999	SLE RA 18	77	26	3361	-1010.73	-144.12	27.94
999	SLE RA 19	75	32	3334	-1003.57	-142.98	27.73
999	SLE RA 20	78	26	3396	-1021.13	-145.62	28.41
999	SLE RA 21	77	32	3369	-1013.98	-144.48	28.19
999	SLE FR 1	70	23	3020	-908.27	-129.54	25.68
999	SLE FR 2	70	25	3011	-905.89	-129.16	25.61
999	SLE FR 3	71	23	3034	-912.44	-130.14	25.87
999	SLE FR 4	72	26	3113	-936.63	-133.53	26.29
999	SLE FR 5	73	24	3136	-943.17	-134.52	26.55
999	SLE FR 6	74	25	3191	-959.5	-136.83	26.81
999	SLE QP 1	70	23	3020	-908.27	-129.54	25.68
999	SLE QP 2	72	24	3122	-939.01	-133.91	26.36
999	SLD 1	368	60	2278	-690.08	-97.77	131.26
999	SLD 2	311	113	2213	-676.17	-94.89	113.46
999	SLD 3	415	-107	3180	-933.73	-136.38	140.7
999	SLD 4	357	-54	3115	-919.83	-133.5	122.9
999	SLD 5	101	279	1513	-497.29	-65.04	46.71
999	SLD 6	63	314	1470	-488.12	-63.13	34.97
999	SLD 7	256	-278	4519	-1309.46	-193.73	78.18
999	SLD 8	218	-243	4476	-1300.29	-191.83	66.44
999	SLD 9	-73	291	1768	-577.73	-76	-13.72
999	SLD 10	-111	326	1725	-568.56	-74.1	-25.46
999	SLD 11	81	-265	4775	-1389.9	-204.69	17.75
999	SLD 12	43	-230	4732	-1380.73	-202.79	6.01
999	SLD 13	-212	102	3130	-958.19	-134.33	-70.18
999	SLD 14	-270	155	3065	-944.29	-131.45	-87.97
999	SLD 15	-166	-65	4032	-1201.85	-172.94	-60.74
999	SLD 16	-224	-12	3967	-1187.94	-170.05	-78.53
999	SLV 1	761	121	1072	-336.15	-46.12	270.95
999	SLV 2	625	246	918	-303.47	-39.35	229.11
999	SLV 3	878	-296	3334	-947.17	-142.96	294.9
999	SLV 4	743	-171	3180	-914.49	-136.18	253.06
999	SLV 5	126	663	-895	162.46	38.02	71.22
999	SLV 6	35	747	-998	184.47	42.58	43.05
999	SLV 7	517	-728	6645	-1874.27	-284.75	151.06
999	SLV 8	426	-644	6542	-1852.27	-280.19	122.89
999	SLV 9	-281	692	-297	-25.75	12.36	-70.16
999	SLV 10	-373	776	-401	-3.75	16.92	-98.33
999	SLV 11	110	-699	7243	-2062.49	-310.41	9.67
999	SLV 12	18	-615	7140	-2040.48	-305.85	-18.5
999	SLV 13	-598	220	3065	-963.53	-131.65	-200.34
999	SLV 14	-733	344	2911	-930.85	-124.87	-242.18
999	SLV 15	-481	-198	5327	-1574.55	-228.48	-176.39
999	SLV 16	-616	-73	5173	-1541.87	-221.7	-218.23
999	CRTFP Ux+	0	0	0	0	0	0
999	CRTFP Ux-	0	0	0	0	0	0
999	CRTFP Uy+	0	0	0	0	0	0
999	CRTFP Uy-	0	0	0	0	0	0
1000	SLU 1	89	30	3646	-1004.8	4.29	31.23
1000	SLU 2	85	48	3562	-984.59	4.19	29.72
1000	SLU 3	93	31	3746	-1031.86	4.42	32.47
1000	SLU 4	90	42	3695	-1019.74	4.36	31.56
1000	SLU 5	87	48	3628	-1002.47	4.27	30.64
1000	SLU 6	95	31	3812	-1049.73	4.5	33.4
1000	SLU 7	93	42	3762	-1037.61	4.44	32.49
1000	SLU 8	94	31	3779	-1040.55	4.45	33.08
1000	SLU 9	92	41	3728	-1028.42	4.39	32.17
1000	SLU 10	93	52	4011	-1107.49	4.82	32.66
1000	SLU 11	101	34	4195	-1154.76	5.06	35.42
1000	SLU 12	98	45	4145	-1142.63	5	34.51
1000	SLU 13	96	52	4078	-1125.36	4.9	33.59
1000	SLU 14	104	35	4262	-1172.63	5.14	36.34
1000	SLU 15	101	45	4211	-1160.51	5.08	35.43
1000	SLU 16	103	34	4228	-1163.44	5.09	36.03
1000	SLU 17	100	45	4178	-1151.32	5.03	35.12
1000	SLU 18	101	36	4288	-1180.36	5.2	35.44
1000	SLU 19	99	46	4237	-1168.24	5.14	34.53
1000	SLU 20	104	36	4354	-1198.24	5.28	36.37
1000	SLU 21	101	46	4304	-1186.12	5.22	35.46
1000	SLU 22	103	34	4247	-1168.56	5.13	35.96
1000	SLU 23	98	52	4163	-1148.35	5.03	34.45

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1000	SLU 24	106	34	4347	-1195.62	5.26	37.2
1000	SLU 25	104	45	4297	-1183.5	5.2	36.29
1000	SLU 26	101	52	4230	-1166.23	5.11	35.37
1000	SLU 27	109	34	4414	-1213.5	5.34	38.13
1000	SLU 28	106	45	4363	-1201.37	5.28	37.22
1000	SLU 29	108	34	4380	-1204.31	5.29	37.81
1000	SLU 30	105	45	4330	-1192.19	5.23	36.9
1000	SLU 31	107	55	4613	-1271.25	5.67	37.39
1000	SLU 32	115	38	4797	-1318.52	5.9	40.15
1000	SLU 33	112	49	4746	-1306.4	5.84	39.24
1000	SLU 34	109	56	4679	-1289.13	5.75	38.32
1000	SLU 35	117	38	4863	-1336.39	5.98	41.07
1000	SLU 36	115	49	4813	-1324.27	5.92	40.16
1000	SLU 37	116	38	4830	-1327.21	5.93	40.76
1000	SLU 38	114	48	4780	-1315.08	5.87	39.85
1000	SLU 39	115	39	4890	-1344.13	6.04	40.17
1000	SLU 40	112	50	4839	-1332	5.98	39.26
1000	SLU 41	117	39	4956	-1362	6.12	41.1
1000	SLU 42	115	50	4906	-1349.88	6.06	40.19
1000	SLU 43	111	38	4533	-1250.09	5.28	38.98
1000	SLU 44	107	56	4449	-1229.88	5.18	37.46
1000	SLU 45	115	39	4633	-1277.15	5.42	40.22
1000	SLU 46	112	49	4583	-1265.03	5.36	39.31
1000	SLU 47	110	56	4516	-1247.76	5.26	38.39
1000	SLU 48	117	39	4699	-1295.03	5.5	41.14
1000	SLU 49	115	50	4649	-1282.9	5.44	40.23
1000	SLU 50	117	38	4666	-1285.84	5.45	40.83
1000	SLU 51	114	49	4616	-1273.71	5.39	39.92
1000	SLU 52	115	60	4899	-1352.78	5.82	40.41
1000	SLU 53	123	42	5082	-1400.05	6.05	43.16
1000	SLU 54	121	53	5032	-1387.93	5.99	42.25
1000	SLU 55	118	60	4965	-1370.65	5.9	41.34
1000	SLU 56	126	42	5149	-1417.92	6.13	44.09
1000	SLU 57	123	53	5099	-1405.8	6.07	43.18
1000	SLU 58	125	42	5116	-1408.74	6.08	43.78
1000	SLU 59	122	53	5065	-1396.61	6.02	42.87
1000	SLU 60	123	43	5175	-1425.66	6.19	43.19
1000	SLU 61	121	54	5125	-1413.53	6.13	42.28
1000	SLU 62	126	44	5242	-1443.53	6.28	44.11
1000	SLU 63	123	54	5191	-1431.41	6.21	43.2
1000	SLU 64	125	42	5135	-1413.85	6.13	43.71
1000	SLU 65	120	60	5051	-1393.64	6.03	42.19
1000	SLU 66	128	42	5235	-1440.91	6.26	44.95
1000	SLU 67	126	53	5184	-1428.79	6.2	44.04
1000	SLU 68	123	60	5117	-1411.52	6.11	43.12
1000	SLU 69	131	42	5301	-1458.79	6.34	45.87
1000	SLU 70	128	53	5251	-1446.66	6.28	44.96
1000	SLU 71	130	42	5268	-1449.6	6.29	45.56
1000	SLU 72	127	53	5217	-1437.48	6.23	44.65
1000	SLU 73	129	63	5500	-1516.54	6.66	45.14
1000	SLU 74	137	46	5684	-1563.81	6.9	47.9
1000	SLU 75	134	57	5634	-1551.69	6.84	46.99
1000	SLU 76	131	63	5567	-1534.42	6.74	46.07
1000	SLU 77	139	46	5751	-1581.69	6.98	48.82
1000	SLU 78	137	57	5700	-1569.56	6.92	47.91
1000	SLU 79	138	46	5717	-1572.5	6.93	48.51
1000	SLU 80	136	56	5667	-1560.37	6.87	47.6
1000	SLU 81	137	47	5777	-1589.42	7.04	47.92
1000	SLU 82	134	58	5727	-1577.3	6.98	47.01
1000	SLU 83	139	47	5843	-1607.29	7.12	48.85
1000	SLU 84	137	58	5793	-1595.17	7.06	47.94
1000	SLE RA 1	93	31	3818	-1051.59	4.53	32.58
1000	SLE RA 2	90	43	3762	-1038.11	4.46	31.57
1000	SLE RA 3	95	32	3884	-1069.63	4.62	33.41
1000	SLE RA 4	94	39	3851	-1061.55	4.58	32.8
1000	SLE RA 5	92	43	3806	-1050.03	4.52	32.19
1000	SLE RA 6	97	32	3929	-1081.54	4.67	34.03
1000	SLE RA 7	95	39	3895	-1073.46	4.63	33.42
1000	SLE RA 8	96	31	3906	-1075.42	4.64	33.82
1000	SLE RA 9	95	39	3873	-1067.34	4.6	33.21
1000	SLE RA 10	96	46	4061	-1120.05	4.89	33.54
1000	SLE RA 11	101	34	4184	-1151.56	5.04	35.37
1000	SLE RA 12	99	41	4150	-1143.48	5	34.77
1000	SLE RA 13	97	46	4106	-1131.96	4.94	34.15
1000	SLE RA 14	103	34	4228	-1163.48	5.1	35.99
1000	SLE RA 15	101	41	4195	-1155.39	5.05	35.38
1000	SLE RA 16	102	34	4206	-1157.35	5.06	35.78
1000	SLE RA 17	100	41	4172	-1149.27	5.02	35.18
1000	SLE RA 18	101	35	4246	-1168.63	5.14	35.39
1000	SLE RA 19	99	42	4212	-1160.55	5.09	34.78
1000	SLE RA 20	103	35	4290	-1180.55	5.19	36.01
1000	SLE RA 21	101	42	4256	-1172.47	5.15	35.4
1000	SLE FR 1	93	31	3818	-1051.59	4.53	32.58
1000	SLE FR 2	92	34	3806	-1048.89	4.52	32.38
1000	SLE FR 3	94	31	3835	-1056.35	4.55	32.83
1000	SLE FR 4	95	35	3935	-1084	4.7	33.22
1000	SLE FR 5	96	32	3964	-1091.47	4.73	33.67
1000	SLE FR 6	97	33	4032	-1110.11	4.83	33.99
1000	SLE QP 1	93	31	3818	-1051.59	4.53	32.58

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1000	SLE QP 2	95	32	3946	-1086.7	4.71	33.43
1000	SLD 1	480	72	2877	-809.9	3.7	167.79
1000	SLD 2	405	144	2790	-793.55	3.76	141.55
1000	SLD 3	542	-144	4015	-1085.56	5.07	189.47
1000	SLD 4	466	-71	3927	-1069.22	5.13	163.23
1000	SLD 5	131	357	1916	-588.5	2.32	45.59
1000	SLD 6	81	405	1858	-577.72	2.36	28.27
1000	SLD 7	336	-360	5708	-1507.4	6.88	117.83
1000	SLD 8	287	-312	5650	-1496.61	6.92	100.52
1000	SLD 9	-96	376	2242	-676.79	2.5	-33.67
1000	SLD 10	-146	425	2185	-666	2.54	-50.98
1000	SLD 11	110	-341	6034	-1595.68	7.06	38.58
1000	SLD 12	60	-293	5976	-1584.9	7.1	21.27
1000	SLD 13	-275	135	3965	-1104.18	4.29	-96.38
1000	SLD 14	-351	208	3877	-1087.83	4.35	-122.62
1000	SLD 15	-214	-80	5102	-1379.85	5.66	-74.7
1000	SLD 16	-289	-7	5015	-1363.5	5.72	-100.94
1000	SLV 1	990	141	1350	-415.95	2.23	345.91
1000	SLV 2	813	312	1144	-377.53	2.37	284.23
1000	SLV 3	1146	-397	4203	-1107.29	5.66	400.71
1000	SLV 4	969	-226	3997	-1068.86	5.8	339.03
1000	SLV 5	160	849	-1122	155.88	-1.26	55.57
1000	SLV 6	41	964	-1260	181.75	-1.17	14.04
1000	SLV 7	680	-944	8388	-2148.57	10.17	238.23
1000	SLV 8	561	-829	8250	-2122.7	10.26	196.7
1000	SLV 9	-370	894	-358	-50.7	-0.84	-129.85
1000	SLV 10	-489	1009	-496	-24.83	-0.75	-171.38
1000	SLV 11	150	-899	9152	-2355.14	10.59	52.81
1000	SLV 12	31	-784	9014	-2329.27	10.68	11.28
1000	SLV 13	-778	290	3895	-1104.54	3.62	-272.18
1000	SLV 14	-955	462	3689	-1066.11	3.76	-333.86
1000	SLV 15	-622	-247	6748	-1795.87	7.05	-217.38
1000	SLV 16	-799	-76	6542	-1757.45	7.19	-279.06
1000	CRTFP Ux+	0	0	0	0	0	0
1000	CRTFP Ux-	0	0	0	0	0	0
1000	CRTFP Uy+	0	0	0	0	0	0
1000	CRTFP Uy-	0	0	0	0	0	0
1001	SLU 1	90	32	3502	-872.11	4.4	31.61
1001	SLU 2	86	49	3421	-855.08	4.31	30.06
1001	SLU 3	94	32	3597	-895.17	4.54	32.87
1001	SLU 4	91	43	3549	-884.95	4.48	31.94
1001	SLU 5	88	50	3485	-870.35	4.39	31
1001	SLU 6	96	33	3661	-910.45	4.62	33.81
1001	SLU 7	94	43	3613	-900.23	4.56	32.88
1001	SLU 8	96	32	3629	-902.66	4.57	33.49
1001	SLU 9	93	43	3581	-892.44	4.51	32.56
1001	SLU 10	94	53	3849	-959.56	4.96	33.03
1001	SLU 11	102	36	4025	-999.65	5.19	35.84
1001	SLU 12	100	47	3977	-989.43	5.13	34.91
1001	SLU 13	97	53	3913	-974.83	5.04	33.97
1001	SLU 14	105	36	4089	-1014.93	5.27	36.78
1001	SLU 15	102	47	4041	-1004.71	5.21	35.85
1001	SLU 16	104	36	4057	-1007.14	5.22	36.46
1001	SLU 17	101	47	4009	-996.92	5.16	35.53
1001	SLU 18	102	37	4113	-1021.37	5.33	35.85
1001	SLU 19	100	48	4065	-1011.15	5.28	34.92
1001	SLU 20	105	37	4177	-1036.64	5.42	36.79
1001	SLU 21	102	48	4129	-1026.42	5.36	35.86
1001	SLU 22	104	35	4075	-1011.36	5.26	36.39
1001	SLU 23	99	53	3995	-994.33	5.17	34.84
1001	SLU 24	107	36	4171	-1034.42	5.39	37.65
1001	SLU 25	105	47	4122	-1024.2	5.33	36.72
1001	SLU 26	102	53	4058	-1009.6	5.25	35.78
1001	SLU 27	110	36	4235	-1049.7	5.47	38.59
1001	SLU 28	107	47	4186	-1039.48	5.42	37.66
1001	SLU 29	109	36	4203	-1041.91	5.42	38.27
1001	SLU 30	107	47	4154	-1031.69	5.37	37.34
1001	SLU 31	108	57	4423	-1098.8	5.82	37.81
1001	SLU 32	116	40	4599	-1138.9	6.04	40.62
1001	SLU 33	113	50	4551	-1128.68	5.98	39.69
1001	SLU 34	111	57	4487	-1114.08	5.9	38.75
1001	SLU 35	119	40	4663	-1154.17	6.12	41.56
1001	SLU 36	116	51	4614	-1143.95	6.07	40.63
1001	SLU 37	118	40	4631	-1146.39	6.07	41.24
1001	SLU 38	115	50	4583	-1136.17	6.02	40.31
1001	SLU 39	116	41	4687	-1160.61	6.19	40.63
1001	SLU 40	113	51	4639	-1150.39	6.13	39.7
1001	SLU 41	119	41	4751	-1175.89	6.27	41.57
1001	SLU 42	116	52	4702	-1165.67	6.21	40.65
1001	SLU 43	113	40	4355	-1086	5.43	39.45
1001	SLU 44	108	58	4275	-1068.97	5.34	37.9
1001	SLU 45	116	41	4451	-1109.06	5.56	40.71
1001	SLU 46	113	51	4403	-1098.84	5.51	39.78
1001	SLU 47	111	58	4339	-1084.24	5.42	38.84
1001	SLU 48	119	41	4515	-1124.34	5.65	41.65
1001	SLU 49	116	52	4466	-1114.12	5.59	40.72
1001	SLU 50	118	41	4483	-1116.55	5.6	41.33
1001	SLU 51	115	51	4435	-1106.33	5.54	40.4
1001	SLU 52	117	61	4703	-1173.45	5.99	40.87

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1001	SLU 53	125	44	4879	-1213.54	6.21	43.68
1001	SLU 54	122	55	4831	-1203.32	6.16	42.75
1001	SLU 55	119	62	4767	-1188.72	6.07	41.81
1001	SLU 56	127	45	4943	-1228.82	6.3	44.62
1001	SLU 57	125	55	4895	-1218.6	6.24	43.69
1001	SLU 58	126	44	4911	-1221.03	6.25	44.3
1001	SLU 59	124	55	4863	-1210.81	6.19	43.37
1001	SLU 60	125	45	4967	-1235.26	6.36	43.69
1001	SLU 61	122	56	4919	-1225.04	6.31	42.76
1001	SLU 62	127	46	5031	-1250.53	6.44	44.63
1001	SLU 63	125	56	4983	-1240.31	6.39	43.7
1001	SLU 64	126	44	4929	-1225.25	6.29	44.23
1001	SLU 65	122	61	4848	-1208.22	6.19	42.69
1001	SLU 66	130	44	5025	-1248.31	6.42	45.49
1001	SLU 67	127	55	4976	-1238.09	6.36	44.56
1001	SLU 68	124	62	4912	-1223.49	6.28	43.63
1001	SLU 69	132	45	5088	-1263.59	6.5	46.43
1001	SLU 70	130	55	5040	-1253.37	6.44	45.5
1001	SLU 71	132	44	5057	-1255.8	6.45	46.11
1001	SLU 72	129	55	5008	-1245.58	6.4	45.19
1001	SLU 73	130	65	5277	-1312.69	6.84	45.66
1001	SLU 74	138	48	5453	-1352.79	7.07	48.46
1001	SLU 75	136	59	5404	-1342.57	7.01	47.53
1001	SLU 76	133	65	5340	-1327.97	6.93	46.6
1001	SLU 77	141	48	5517	-1368.06	7.15	49.4
1001	SLU 78	138	59	5468	-1357.84	7.09	48.47
1001	SLU 79	140	48	5485	-1360.28	7.1	49.08
1001	SLU 80	137	59	5436	-1350.06	7.05	48.16
1001	SLU 81	138	49	5541	-1374.5	7.22	48.47
1001	SLU 82	136	60	5492	-1364.28	7.16	47.55
1001	SLU 83	141	49	5605	-1389.78	7.3	49.42
1001	SLU 84	138	60	5556	-1379.56	7.24	48.49
1001	SLE RA 1	94	33	3666	-911.9	4.65	32.97
1001	SLE RA 2	91	45	3612	-900.54	4.59	31.94
1001	SLE RA 3	96	33	3729	-927.27	4.74	33.81
1001	SLE RA 4	95	40	3697	-920.46	4.7	33.19
1001	SLE RA 5	93	45	3654	-910.72	4.64	32.57
1001	SLE RA 6	98	33	3772	-937.45	4.79	34.44
1001	SLE RA 7	96	40	3739	-930.64	4.75	33.82
1001	SLE RA 8	98	33	3751	-932.26	4.76	34.23
1001	SLE RA 9	96	40	3718	-925.45	4.72	33.61
1001	SLE RA 10	97	47	3897	-970.19	5.02	33.92
1001	SLE RA 11	102	36	4015	-996.92	5.17	35.79
1001	SLE RA 12	100	43	3982	-990.11	5.13	35.17
1001	SLE RA 13	99	47	3940	-980.38	5.07	34.55
1001	SLE RA 14	104	36	4057	-1007.11	5.22	36.42
1001	SLE RA 15	102	43	4025	-1000.29	5.19	35.8
1001	SLE RA 16	103	36	4036	-1001.92	5.19	36.21
1001	SLE RA 17	102	43	4004	-995.1	5.15	35.59
1001	SLE RA 18	102	36	4073	-1011.4	5.27	35.8
1001	SLE RA 19	100	43	4041	-1004.59	5.23	35.18
1001	SLE RA 20	104	36	4116	-1021.58	5.32	36.43
1001	SLE RA 21	102	44	4084	-1014.77	5.29	35.81
1001	SLE FR 1	94	33	3666	-911.9	4.65	32.97
1001	SLE FR 2	93	35	3655	-909.62	4.64	32.77
1001	SLE FR 3	95	33	3683	-915.97	4.67	33.22
1001	SLE FR 4	96	36	3777	-939.48	4.82	33.62
1001	SLE FR 5	97	34	3805	-945.82	4.86	34.07
1001	SLE FR 6	98	35	3869	-961.65	4.96	34.39
1001	SLE QP 1	94	33	3666	-911.9	4.65	32.97
1001	SLE QP 2	96	34	3788	-941.75	4.83	33.82
1001	SLD 1	480	68	2746	-714.45	4.25	167.84
1001	SLD 2	404	144	2657	-699.35	4.28	141.51
1001	SLD 3	543	-144	3840	-947.24	5.5	189.95
1001	SLD 4	467	-68	3751	-932.14	5.54	163.62
1001	SLD 5	130	352	1832	-523.21	2.75	45.23
1001	SLD 6	80	402	1773	-513.25	2.77	27.86
1001	SLD 7	339	-355	5479	-1299.17	6.93	118.93
1001	SLD 8	289	-304	5420	-1289.21	6.96	101.56
1001	SLD 9	-96	372	2156	-594.29	2.71	-33.92
1001	SLD 10	-146	423	2097	-584.32	2.74	-51.29
1001	SLD 11	113	-335	5803	-1370.24	6.9	39.78
1001	SLD 12	63	-284	5744	-1360.28	6.92	22.42
1001	SLD 13	-274	135	3825	-951.36	4.13	-95.98
1001	SLD 14	-350	212	3736	-936.26	4.17	-122.31
1001	SLD 15	-211	-77	4919	-1184.14	5.39	-73.87
1001	SLD 16	-287	0	4830	-1169.04	5.42	-100.2
1001	SLV 1	987	130	1258	-390.43	3.35	345.45
1001	SLV 2	810	310	1049	-354.94	3.44	283.56
1001	SLV 3	1147	-400	4002	-974.26	6.5	401.35
1001	SLV 4	969	-220	3793	-938.77	6.59	339.46
1001	SLV 5	156	833	-1094	102.5	-0.4	54.08
1001	SLV 6	36	954	-1235	126.4	-0.34	12.41
1001	SLV 7	686	-934	8053	-1843.6	10.09	240.41
1001	SLV 8	566	-813	7913	-1819.7	10.15	198.74
1001	SLV 9	-373	880	-337	-63.79	-0.48	-131.1
1001	SLV 10	-493	1001	-478	-39.89	-0.42	-172.77
1001	SLV 11	157	-886	8811	-2009.89	10.01	55.23
1001	SLV 12	37	-765	8670	-1985.99	10.07	13.56

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1001	SLV 13	-776	288	3783	-944.73	3.08	-271.81
1001	SLV 14	-954	468	3574	-909.23	3.17	-333.71
1001	SLV 15	-617	-242	6527	-1528.56	6.23	-215.92
1001	SLV 16	-795	-62	6318	-1493.06	6.31	-277.81
1001	CRTFP Ux+	0	0	0	0	0	0
1001	CRTFP Ux-	0	0	0	0	0	0
1001	CRTFP Uy+	0	0	0	0	0	0
1001	CRTFP Uy-	0	0	0	0	0	0
1002	SLU 1	91	33	3366	-753.1	3.79	31.93
1002	SLU 2	87	51	3288	-738.77	3.72	30.36
1002	SLU 3	95	34	3458	-772.59	3.9	33.21
1002	SLU 4	92	45	3411	-764	3.85	32.27
1002	SLU 5	89	51	3350	-751.73	3.78	31.32
1002	SLU 6	97	35	3519	-785.55	3.96	34.17
1002	SLU 7	95	45	3472	-776.95	3.92	33.23
1002	SLU 8	97	34	3489	-779.01	3.92	33.84
1002	SLU 9	94	45	3442	-770.42	3.88	32.9
1002	SLU 10	95	55	3697	-826.67	4.28	33.35
1002	SLU 11	103	38	3866	-860.49	4.46	36.2
1002	SLU 12	101	48	3819	-851.9	4.42	35.26
1002	SLU 13	98	55	3758	-839.63	4.35	34.31
1002	SLU 14	106	38	3927	-873.45	4.53	37.16
1002	SLU 15	103	49	3881	-864.85	4.49	36.21
1002	SLU 16	105	38	3897	-866.91	4.49	36.83
1002	SLU 17	102	49	3850	-858.32	4.45	35.89
1002	SLU 18	103	39	3950	-878.67	4.6	36.2
1002	SLU 19	101	49	3903	-870.08	4.55	35.26
1002	SLU 20	106	39	4011	-891.63	4.66	37.16
1002	SLU 21	103	50	3964	-883.03	4.62	36.21
1002	SLU 22	105	37	3914	-870.32	4.52	36.77
1002	SLU 23	100	55	3836	-856	4.45	35.19
1002	SLU 24	109	38	4005	-889.82	4.63	38.04
1002	SLU 25	106	48	3959	-881.22	4.59	37.1
1002	SLU 26	103	55	3897	-868.96	4.52	36.15
1002	SLU 27	111	38	4067	-902.77	4.7	39
1002	SLU 28	109	49	4020	-894.18	4.66	38.06
1002	SLU 29	110	38	4036	-896.24	4.66	38.67
1002	SLU 30	108	49	3990	-887.65	4.62	37.73
1002	SLU 31	109	58	4244	-943.9	5.02	38.18
1002	SLU 32	117	42	4414	-977.72	5.2	41.03
1002	SLU 33	114	52	4367	-969.12	5.15	40.09
1002	SLU 34	112	59	4305	-956.86	5.09	39.14
1002	SLU 35	120	42	4475	-990.67	5.26	41.99
1002	SLU 36	117	53	4428	-982.08	5.22	41.04
1002	SLU 37	119	42	4445	-984.14	5.22	41.66
1002	SLU 38	116	52	4398	-975.55	5.18	40.72
1002	SLU 39	117	42	4497	-995.9	5.33	41.03
1002	SLU 40	114	53	4450	-987.3	5.29	40.09
1002	SLU 41	120	43	4558	-1008.85	5.4	41.99
1002	SLU 42	117	53	4511	-1000.26	5.36	41.05
1002	SLU 43	114	42	4189	-938.84	4.67	39.86
1002	SLU 44	109	60	4111	-924.51	4.6	38.29
1002	SLU 45	117	43	4280	-958.33	4.78	41.14
1002	SLU 46	115	53	4233	-949.73	4.74	40.19
1002	SLU 47	112	60	4172	-937.47	4.67	39.24
1002	SLU 48	120	43	4342	-971.29	4.85	42.09
1002	SLU 49	117	54	4295	-962.69	4.81	41.15
1002	SLU 50	119	43	4311	-964.75	4.81	41.77
1002	SLU 51	116	54	4264	-956.16	4.76	40.82
1002	SLU 52	118	63	4519	-1012.41	5.17	41.27
1002	SLU 53	126	47	4688	-1046.23	5.35	44.13
1002	SLU 54	123	57	4642	-1037.63	5.3	43.18
1002	SLU 55	120	64	4580	-1025.37	5.23	42.23
1002	SLU 56	129	47	4750	-1059.19	5.41	45.08
1002	SLU 57	126	58	4703	-1050.59	5.37	44.14
1002	SLU 58	128	47	4719	-1052.65	5.37	44.76
1002	SLU 59	125	57	4673	-1044.06	5.33	43.81
1002	SLU 60	126	47	4772	-1064.41	5.48	44.13
1002	SLU 61	123	58	4725	-1055.81	5.44	43.18
1002	SLU 62	129	48	4833	-1077.36	5.55	45.08
1002	SLU 63	126	58	4786	-1068.77	5.51	44.14
1002	SLU 64	127	46	4736	-1056.06	5.41	44.69
1002	SLU 65	123	63	4658	-1041.74	5.34	43.12
1002	SLU 66	131	47	4828	-1075.55	5.51	45.97
1002	SLU 67	128	57	4781	-1066.96	5.47	45.03
1002	SLU 68	126	64	4719	-1054.7	5.4	44.07
1002	SLU 69	134	47	4889	-1088.51	5.58	46.92
1002	SLU 70	131	58	4842	-1079.92	5.54	45.98
1002	SLU 71	133	47	4859	-1081.98	5.54	46.6
1002	SLU 72	130	57	4812	-1073.38	5.5	45.66
1002	SLU 73	132	67	5066	-1129.64	5.9	46.11
1002	SLU 74	140	50	5236	-1163.45	6.08	48.96
1002	SLU 75	137	61	5189	-1154.86	6.04	48.01
1002	SLU 76	134	68	5128	-1142.6	5.97	47.06
1002	SLU 77	142	51	5297	-1176.41	6.15	49.91
1002	SLU 78	140	61	5250	-1167.82	6.11	48.97
1002	SLU 79	141	50	5267	-1169.88	6.11	49.59
1002	SLU 80	139	61	5220	-1161.28	6.07	48.64
1002	SLU 81	140	51	5319	-1181.63	6.21	48.96

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1002	SLU 82	137	62	5272	-1173.04	6.17	48.02
1002	SLU 83	142	52	5380	-1194.59	6.28	49.91
1002	SLU 84	140	62	5334	-1186	6.24	48.97
1002	SLE RA 1	95	34	3523	-786.59	4	33.31
1002	SLE RA 2	92	46	3471	-777.04	3.95	32.27
1002	SLE RA 3	97	35	3584	-799.59	4.07	34.17
1002	SLE RA 4	96	42	3553	-793.86	4.04	33.54
1002	SLE RA 5	94	46	3512	-785.68	4	32.9
1002	SLE RA 6	99	35	3625	-808.22	4.11	34.8
1002	SLE RA 7	97	42	3594	-802.5	4.09	34.18
1002	SLE RA 8	99	35	3605	-803.87	4.09	34.59
1002	SLE RA 9	97	42	3573	-798.14	4.06	33.96
1002	SLE RA 10	98	49	3743	-835.64	4.33	34.26
1002	SLE RA 11	103	37	3856	-858.19	4.45	36.16
1002	SLE RA 12	101	44	3825	-852.46	4.42	35.53
1002	SLE RA 13	100	49	3784	-844.28	4.37	34.9
1002	SLE RA 14	105	38	3897	-866.82	4.49	36.8
1002	SLE RA 15	103	45	3866	-861.1	4.46	36.17
1002	SLE RA 16	104	38	3877	-862.47	4.46	36.58
1002	SLE RA 17	103	45	3845	-856.74	4.44	35.95
1002	SLE RA 18	103	38	3912	-870.31	4.54	36.16
1002	SLE RA 19	101	45	3880	-864.58	4.51	35.53
1002	SLE RA 20	105	38	3952	-878.94	4.58	36.8
1002	SLE RA 21	103	45	3921	-873.21	4.55	36.17
1002	SLE FR 1	95	34	3523	-786.59	4	33.31
1002	SLE FR 2	94	37	3512	-784.68	3.99	33.11
1002	SLE FR 3	96	35	3539	-790.05	4.01	33.57
1002	SLE FR 4	97	38	3629	-809.8	4.15	33.96
1002	SLE FR 5	98	36	3656	-815.16	4.18	34.42
1002	SLE FR 6	99	36	3717	-828.45	4.27	34.74
1002	SLE QP 1	95	34	3523	-786.59	4	33.31
1002	SLE QP 2	97	36	3639	-811.71	4.16	34.17
1002	SLD 1	479	68	2608	-624.14	4.13	167.84
1002	SLD 2	404	148	2518	-610.07	4.16	141.44
1002	SLD 3	543	-141	3666	-820.25	5.07	190.32
1002	SLD 4	468	-62	3576	-806.17	5.1	163.93
1002	SLD 5	129	349	1742	-460.54	2.72	44.92
1002	SLD 6	79	401	1682	-451.26	2.74	27.5
1002	SLD 7	342	-350	5268	-1114.22	5.85	119.86
1002	SLD 8	292	-297	5209	-1104.94	5.87	102.45
1002	SLD 9	-97	368	2070	-518.47	2.44	-34.11
1002	SLD 10	-147	421	2011	-509.19	2.47	-51.53
1002	SLD 11	116	-330	5596	-1172.15	5.58	40.84
1002	SLD 12	66	-278	5537	-1162.87	5.6	23.42
1002	SLD 13	-273	133	3703	-817.24	3.21	-95.59
1002	SLD 14	-348	212	3613	-803.16	3.25	-121.99
1002	SLD 15	-209	-77	4761	-1013.34	4.15	-73.1
1002	SLD 16	-284	3	4671	-999.27	4.19	-99.5
1002	SLV 1	985	127	1138	-356.44	4.01	344.95
1002	SLV 2	807	315	926	-323.36	4.09	282.9
1002	SLV 3	1147	-396	3791	-848.3	6.36	401.79
1002	SLV 4	969	-209	3579	-815.22	6.45	339.74
1002	SLV 5	151	822	-1096	64.69	0.53	52.78
1002	SLV 6	32	948	-1239	86.96	0.58	11.01
1002	SLV 7	691	-923	7749	-1574.85	8.37	242.24
1002	SLV 8	571	-797	7606	-1552.57	8.43	200.46
1002	SLV 9	-376	868	-327	-70.84	-0.12	-132.12
1002	SLV 10	-496	994	-470	-48.57	-0.06	-173.9
1002	SLV 11	163	-877	8517	-1710.37	7.73	57.33
1002	SLV 12	44	-751	8375	-1688.1	7.79	15.55
1002	SLV 13	-774	280	3699	-808.2	1.87	-271.4
1002	SLV 14	-952	467	3488	-775.11	1.96	-333.45
1002	SLV 15	-612	-244	6353	-1300.06	4.22	-214.56
1002	SLV 16	-790	-56	6141	-1266.97	4.31	-276.61
1002	CRTFP Ux+	0	0	0	0	0	0
1002	CRTFP Ux-	0	0	0	0	0	0
1002	CRTFP Uy+	0	0	0	0	0	0
1002	CRTFP Uy-	0	0	0	0	0	0
1003	SLU 1	92	35	3260	-657.79	2.66	32.22
1003	SLU 2	87	52	3184	-645.51	2.62	30.63
1003	SLU 3	96	36	3349	-674.45	2.73	33.52
1003	SLU 4	93	46	3303	-667.08	2.71	32.56
1003	SLU 5	90	53	3243	-656.63	2.66	31.59
1003	SLU 6	98	36	3408	-685.57	2.77	34.48
1003	SLU 7	96	47	3362	-678.2	2.75	33.53
1003	SLU 8	97	36	3379	-680.03	2.74	34.15
1003	SLU 9	95	46	3333	-672.66	2.72	33.2
1003	SLU 10	96	56	3576	-720.04	3.03	33.63
1003	SLU 11	104	39	3741	-748.98	3.14	36.52
1003	SLU 12	102	50	3695	-741.61	3.12	35.57
1003	SLU 13	99	57	3635	-731.16	3.08	34.6
1003	SLU 14	107	40	3800	-760.1	3.19	37.49
1003	SLU 15	104	51	3755	-752.73	3.16	36.53
1003	SLU 16	106	40	3771	-754.56	3.16	37.16
1003	SLU 17	103	50	3725	-747.19	3.14	36.2
1003	SLU 18	104	40	3820	-764.26	3.25	36.51
1003	SLU 19	101	51	3774	-756.89	3.23	35.56
1003	SLU 20	107	41	3880	-775.38	3.29	37.48
1003	SLU 21	104	51	3834	-768.01	3.27	36.52

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1003	SLU 22	106	39	3787	-757.32	3.18	37.09
1003	SLU 23	101	56	3711	-745.04	3.15	35.5
1003	SLU 24	110	39	3875	-773.98	3.25	38.39
1003	SLU 25	107	50	3830	-766.61	3.23	37.43
1003	SLU 26	104	57	3770	-756.16	3.19	36.47
1003	SLU 27	112	40	3935	-785.1	3.3	39.36
1003	SLU 28	110	51	3889	-777.73	3.28	38.4
1003	SLU 29	111	40	3906	-779.56	3.27	39.03
1003	SLU 30	109	50	3860	-772.19	3.25	38.07
1003	SLU 31	110	60	4103	-819.57	3.56	38.5
1003	SLU 32	118	43	4267	-848.51	3.67	41.39
1003	SLU 33	115	54	4222	-841.14	3.65	40.44
1003	SLU 34	113	61	4162	-830.69	3.6	39.47
1003	SLU 35	121	44	4327	-859.63	3.71	42.36
1003	SLU 36	118	54	4281	-852.26	3.69	41.4
1003	SLU 37	120	44	4298	-854.09	3.69	42.03
1003	SLU 38	117	54	4252	-846.72	3.66	41.07
1003	SLU 39	118	44	4347	-863.8	3.77	41.38
1003	SLU 40	115	55	4301	-856.43	3.75	40.43
1003	SLU 41	121	45	4406	-874.91	3.82	42.35
1003	SLU 42	118	55	4361	-867.55	3.8	41.4
1003	SLU 43	115	44	4058	-821	3.27	40.22
1003	SLU 44	110	61	3981	-808.72	3.24	38.62
1003	SLU 45	118	45	4146	-837.66	3.34	41.51
1003	SLU 46	116	55	4100	-830.29	3.32	40.56
1003	SLU 47	113	62	4041	-819.84	3.28	39.59
1003	SLU 48	121	45	4206	-848.78	3.39	42.48
1003	SLU 49	119	56	4160	-841.41	3.37	41.52
1003	SLU 50	120	45	4177	-843.24	3.36	42.15
1003	SLU 51	118	56	4131	-835.87	3.34	41.19
1003	SLU 52	119	65	4373	-883.25	3.65	41.63
1003	SLU 53	127	49	4538	-912.19	3.76	44.52
1003	SLU 54	124	59	4493	-904.82	3.74	43.56
1003	SLU 55	122	66	4433	-894.37	3.69	42.59
1003	SLU 56	130	49	4598	-923.31	3.8	45.48
1003	SLU 57	127	60	4552	-915.94	3.78	44.53
1003	SLU 58	129	49	4569	-917.77	3.77	45.15
1003	SLU 59	126	59	4523	-910.4	3.75	44.2
1003	SLU 60	127	49	4618	-927.47	3.86	44.51
1003	SLU 61	124	60	4572	-920.1	3.84	43.55
1003	SLU 62	130	50	4677	-938.59	3.91	45.47
1003	SLU 63	127	60	4631	-931.22	3.89	44.52
1003	SLU 64	129	48	4584	-920.53	3.8	45.09
1003	SLU 65	124	65	4508	-908.25	3.76	43.5
1003	SLU 66	132	49	4673	-937.19	3.87	46.39
1003	SLU 67	130	59	4627	-929.82	3.85	45.43
1003	SLU 68	127	66	4567	-919.37	3.81	44.46
1003	SLU 69	135	49	4732	-948.31	3.91	47.35
1003	SLU 70	132	60	4687	-940.94	3.89	46.4
1003	SLU 71	134	49	4703	-942.77	3.89	47.02
1003	SLU 72	131	59	4657	-935.4	3.87	46.07
1003	SLU 73	133	69	4900	-982.78	4.18	46.5
1003	SLU 74	141	52	5065	-1011.72	4.28	49.39
1003	SLU 75	138	63	5019	-1004.35	4.26	48.43
1003	SLU 76	135	70	4959	-993.9	4.22	47.47
1003	SLU 77	144	53	5124	-1022.84	4.33	50.36
1003	SLU 78	141	64	5079	-1015.47	4.31	49.4
1003	SLU 79	143	53	5095	-1017.3	4.3	50.03
1003	SLU 80	140	63	5049	-1009.93	4.28	49.07
1003	SLU 81	141	53	5144	-1027	4.39	49.38
1003	SLU 82	138	64	5099	-1019.64	4.37	48.42
1003	SLU 83	144	54	5204	-1038.12	4.43	50.35
1003	SLU 84	141	64	5158	-1030.76	4.41	49.39
1003	SLE RA 1	96	36	3411	-686.23	2.81	33.61
1003	SLE RA 2	93	47	3360	-678.04	2.78	32.55
1003	SLE RA 3	98	36	3470	-697.33	2.85	34.48
1003	SLE RA 4	97	43	3439	-692.42	2.84	33.84
1003	SLE RA 5	95	48	3399	-685.45	2.81	33.2
1003	SLE RA 6	100	37	3509	-704.75	2.88	35.12
1003	SLE RA 7	98	44	3479	-699.83	2.87	34.48
1003	SLE RA 8	100	37	3490	-701.05	2.87	34.9
1003	SLE RA 9	98	44	3459	-696.14	2.85	34.26
1003	SLE RA 10	99	50	3621	-727.73	3.06	34.55
1003	SLE RA 11	104	39	3731	-747.02	3.13	36.48
1003	SLE RA 12	102	46	3701	-742.11	3.12	35.84
1003	SLE RA 13	100	50	3661	-735.14	3.09	35.2
1003	SLE RA 14	106	39	3771	-754.43	3.16	37.12
1003	SLE RA 15	104	46	3740	-749.52	3.15	36.49
1003	SLE RA 16	105	39	3751	-750.74	3.14	36.9
1003	SLE RA 17	104	46	3721	-745.83	3.13	36.27
1003	SLE RA 18	104	39	3784	-757.21	3.2	36.47
1003	SLE RA 19	102	46	3753	-752.3	3.19	35.84
1003	SLE RA 20	106	40	3824	-764.62	3.23	37.12
1003	SLE RA 21	104	47	3793	-759.71	3.22	36.48
1003	SLE FR 1	96	36	3411	-686.23	2.81	33.61
1003	SLE FR 2	95	38	3400	-684.59	2.8	33.4
1003	SLE FR 3	97	36	3426	-689.19	2.82	33.87
1003	SLE FR 4	98	39	3512	-705.88	2.92	34.26
1003	SLE FR 5	99	37	3538	-710.49	2.94	34.73

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1003	SLE FR 6	100	38	3597	-721.72	3	35.04
1003	SLE QP 1	96	36	3411	-686.23	2.81	33.61
1003	SLE QP 2	98	37	3523	-707.52	2.92	34.47
1003	SLD 1	479	70	2482	-546	3.58	167.79
1003	SLD 2	403	153	2390	-532.64	3.63	141.34
1003	SLD 3	544	-138	3516	-714.4	4.06	190.59
1003	SLD 4	468	-55	3424	-701.05	4.12	164.14
1003	SLD 5	127	348	1658	-406.05	2.38	44.64
1003	SLD 6	77	403	1598	-397.24	2.41	27.2
1003	SLD 7	344	-346	5106	-967.4	3.99	120.64
1003	SLD 8	294	-292	5045	-958.59	4.03	103.2
1003	SLD 9	-98	365	2000	-456.45	1.82	-34.25
1003	SLD 10	-148	420	1939	-447.64	1.86	-51.7
1003	SLD 11	119	-329	5448	-1017.8	3.44	41.75
1003	SLD 12	69	-274	5387	-1008.99	3.47	24.3
1003	SLD 13	-271	129	3621	-713.99	1.73	-95.2
1003	SLD 14	-347	212	3529	-700.64	1.79	-121.64
1003	SLD 15	-206	-80	4655	-882.4	2.22	-72.4
1003	SLD 16	-282	3	4564	-869.05	2.27	-98.84
1003	SLV 1	983	131	1000	-315.49	4.41	344.39
1003	SLV 2	805	326	785	-284.1	4.54	282.23
1003	SLV 3	1148	-389	3595	-737.91	5.62	402.02
1003	SLV 4	969	-194	3379	-706.52	5.75	339.86
1003	SLV 5	148	818	-1129	44.89	1.51	51.65
1003	SLV 6	27	949	-1274	66.02	1.6	9.8
1003	SLV 7	696	-917	7520	-1363.16	5.54	243.74
1003	SLV 8	576	-786	7375	-1342.02	5.63	201.89
1003	SLV 9	-379	859	-329	-73.02	0.21	-132.95
1003	SLV 10	-499	990	-474	-51.89	0.3	-174.8
1003	SLV 11	169	-876	8319	-1481.06	4.25	59.15
1003	SLV 12	49	-744	8174	-1459.93	4.34	17.3
1003	SLV 13	-773	268	3666	-708.52	0.09	-270.92
1003	SLV 14	-951	463	3451	-677.14	0.23	-333.08
1003	SLV 15	-608	-252	6261	-1130.94	1.31	-213.29
1003	SLV 16	-786	-57	6045	-1099.55	1.44	-275.45
1003	CRTFP Ux+	0	0	0	0	0	0
1003	CRTFP Ux-	0	0	0	0	0	0
1003	CRTFP Uy+	0	0	0	0	0	0
1003	CRTFP Uy-	0	0	0	0	0	0
1004	SLU 1	93	35	3197	-594.44	1.17	32.46
1004	SLU 2	88	53	3121	-583.37	1.18	30.85
1004	SLU 3	96	36	3284	-609.24	1.2	33.77
1004	SLU 4	94	47	3239	-602.6	1.2	32.81
1004	SLU 5	91	54	3180	-593.29	1.19	31.83
1004	SLU 6	99	37	3342	-619.16	1.21	34.75
1004	SLU 7	96	48	3297	-612.52	1.21	33.78
1004	SLU 8	98	37	3314	-614.28	1.2	34.41
1004	SLU 9	96	47	3268	-607.64	1.2	33.45
1004	SLU 10	97	57	3503	-648.82	1.39	33.86
1004	SLU 11	105	40	3666	-674.69	1.41	36.79
1004	SLU 12	102	51	3620	-668.05	1.42	35.82
1004	SLU 13	100	58	3561	-658.74	1.41	34.84
1004	SLU 14	108	41	3724	-684.61	1.43	37.76
1004	SLU 15	105	52	3679	-677.97	1.43	36.8
1004	SLU 16	107	41	3696	-679.73	1.41	37.43
1004	SLU 17	104	51	3650	-673.09	1.42	36.46
1004	SLU 18	105	41	3742	-687.94	1.48	36.77
1004	SLU 19	102	51	3697	-681.3	1.48	35.8
1004	SLU 20	108	42	3801	-697.86	1.49	37.74
1004	SLU 21	105	52	3755	-691.22	1.5	36.78
1004	SLU 22	107	39	3711	-682.06	1.43	37.37
1004	SLU 23	102	57	3635	-670.99	1.43	35.76
1004	SLU 24	111	40	3798	-696.86	1.45	38.68
1004	SLU 25	108	51	3752	-690.22	1.46	37.71
1004	SLU 26	105	58	3693	-680.91	1.45	36.73
1004	SLU 27	113	41	3856	-706.78	1.47	39.65
1004	SLU 28	111	51	3811	-700.14	1.47	38.69
1004	SLU 29	112	41	3828	-701.9	1.46	39.32
1004	SLU 30	110	51	3782	-695.26	1.46	38.35
1004	SLU 31	111	61	4017	-736.44	1.65	38.77
1004	SLU 32	119	44	4179	-762.32	1.67	41.69
1004	SLU 33	116	55	4134	-755.67	1.67	40.73
1004	SLU 34	114	61	4075	-746.36	1.66	39.75
1004	SLU 35	122	45	4238	-772.24	1.68	42.67
1004	SLU 36	119	55	4192	-765.59	1.69	41.7
1004	SLU 37	121	44	4209	-767.36	1.67	42.33
1004	SLU 38	118	55	4164	-760.71	1.68	41.37
1004	SLU 39	119	45	4256	-775.57	1.74	41.67
1004	SLU 40	116	55	4210	-768.92	1.74	40.71
1004	SLU 41	122	45	4314	-785.49	1.75	42.65
1004	SLU 42	119	56	4269	-778.84	1.75	41.68
1004	SLU 43	116	45	3980	-742.73	1.43	40.51
1004	SLU 44	111	62	3904	-731.66	1.44	38.9
1004	SLU 45	119	46	4067	-757.53	1.46	41.83
1004	SLU 46	117	56	4021	-750.89	1.46	40.86
1004	SLU 47	114	63	3963	-741.58	1.45	39.88
1004	SLU 48	122	46	4125	-767.45	1.47	42.8
1004	SLU 49	119	57	4080	-760.81	1.48	41.84
1004	SLU 50	121	46	4097	-762.57	1.46	42.47

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1004	SLU 51	119	57	4051	-755.93	1.46	41.5
1004	SLU 52	120	66	4286	-797.11	1.65	41.92
1004	SLU 53	128	49	4449	-822.99	1.68	44.84
1004	SLU 54	125	60	4403	-816.34	1.68	43.88
1004	SLU 55	123	67	4344	-807.03	1.67	42.9
1004	SLU 56	131	50	4507	-832.91	1.69	45.82
1004	SLU 57	128	61	4462	-826.26	1.69	44.85
1004	SLU 58	130	50	4479	-828.02	1.68	45.48
1004	SLU 59	127	61	4433	-821.38	1.68	44.52
1004	SLU 60	128	50	4525	-836.24	1.74	44.82
1004	SLU 61	125	61	4480	-829.59	1.75	43.86
1004	SLU 62	131	51	4584	-846.16	1.76	45.8
1004	SLU 63	128	61	4538	-839.51	1.76	44.83
1004	SLU 64	130	48	4494	-830.35	1.69	45.42
1004	SLU 65	125	66	4418	-819.28	1.7	43.81
1004	SLU 66	134	49	4581	-845.15	1.72	46.73
1004	SLU 67	131	60	4535	-838.51	1.72	45.77
1004	SLU 68	128	67	4476	-829.2	1.71	44.79
1004	SLU 69	136	50	4639	-855.07	1.73	47.71
1004	SLU 70	134	61	4594	-848.43	1.73	46.74
1004	SLU 71	135	50	4611	-850.19	1.72	47.37
1004	SLU 72	133	60	4565	-843.55	1.72	46.41
1004	SLU 73	134	70	4800	-884.73	1.91	46.83
1004	SLU 74	142	53	4962	-910.61	1.93	49.75
1004	SLU 75	139	64	4917	-903.96	1.94	48.78
1004	SLU 76	137	71	4858	-894.65	1.93	47.8
1004	SLU 77	145	54	5021	-920.53	1.95	50.73
1004	SLU 78	142	65	4975	-913.88	1.95	49.76
1004	SLU 79	144	54	4992	-915.65	1.94	50.39
1004	SLU 80	141	64	4947	-909	1.94	49.42
1004	SLU 81	142	54	5039	-923.86	2	49.73
1004	SLU 82	139	65	4993	-917.21	2	48.76
1004	SLU 83	145	55	5097	-933.78	2.01	50.71
1004	SLU 84	142	65	5052	-927.13	2.02	49.74
1004	SLE RA 1	97	36	3344	-619.48	1.24	33.86
1004	SLE RA 2	94	48	3293	-612.09	1.25	32.79
1004	SLE RA 3	99	37	3402	-629.34	1.26	34.74
1004	SLE RA 4	97	44	3371	-624.91	1.26	34.09
1004	SLE RA 5	96	49	3332	-618.71	1.26	33.44
1004	SLE RA 6	101	38	3441	-635.96	1.27	35.39
1004	SLE RA 7	99	45	3410	-631.53	1.27	34.74
1004	SLE RA 8	100	37	3422	-632.7	1.26	35.16
1004	SLE RA 9	99	44	3391	-628.27	1.26	34.52
1004	SLE RA 10	99	51	3548	-655.73	1.39	34.8
1004	SLE RA 11	105	40	3656	-672.98	1.41	36.75
1004	SLE RA 12	103	47	3626	-668.55	1.41	36.1
1004	SLE RA 13	101	51	3587	-662.34	1.4	35.45
1004	SLE RA 14	107	40	3695	-679.59	1.41	37.4
1004	SLE RA 15	105	47	3665	-675.16	1.42	36.75
1004	SLE RA 16	106	40	3676	-676.34	1.41	37.17
1004	SLE RA 17	104	47	3646	-671.91	1.41	36.53
1004	SLE RA 18	105	40	3707	-681.81	1.45	36.73
1004	SLE RA 19	103	47	3677	-677.38	1.45	36.09
1004	SLE RA 20	107	41	3746	-688.42	1.46	37.38
1004	SLE RA 21	105	48	3716	-684	1.46	36.74
1004	SLE FR 1	97	36	3344	-619.48	1.24	33.86
1004	SLE FR 2	96	39	3334	-618	1.24	33.65
1004	SLE FR 3	97	37	3359	-622.12	1.25	34.12
1004	SLE FR 4	99	40	3443	-636.7	1.31	34.51
1004	SLE FR 5	100	38	3468	-640.82	1.31	34.98
1004	SLE FR 6	101	38	3525	-650.64	1.35	35.3
1004	SLE QP 1	97	36	3344	-619.48	1.24	33.86
1004	SLE QP 2	99	37	3453	-638.18	1.31	34.72
1004	SLD 1	479	74	2378	-486.55	2.73	167.67
1004	SLD 2	403	160	2284	-473.36	2.82	141.2
1004	SLD 3	545	-135	3406	-638.51	2.65	190.73
1004	SLD 4	469	-49	3312	-625.33	2.74	164.26
1004	SLD 5	127	350	1589	-364.57	1.83	44.39
1004	SLD 6	76	407	1527	-355.87	1.89	26.93
1004	SLD 7	347	-347	5014	-871.14	1.58	121.26
1004	SLD 8	297	-290	4952	-862.44	1.64	103.8
1004	SLD 9	-98	365	1954	-413.92	0.97	-34.35
1004	SLD 10	-148	422	1892	-405.22	1.03	-51.82
1004	SLD 11	122	-332	5378	-920.48	0.72	42.52
1004	SLD 12	72	-275	5316	-911.78	0.78	25.05
1004	SLD 13	-270	124	3594	-651.03	-0.13	-94.81
1004	SLD 14	-346	210	3500	-637.84	-0.04	-121.28
1004	SLD 15	-204	-85	4621	-803	-0.21	-71.75
1004	SLD 16	-280	1	4527	-789.81	-0.12	-98.22
1004	SLV 1	981	138	852	-270.67	4.64	343.76
1004	SLV 2	802	342	631	-239.66	4.85	281.54
1004	SLV 3	1148	-384	3430	-651.87	4.45	402.04
1004	SLV 4	969	-181	3209	-620.87	4.66	339.82
1004	SLV 5	144	822	-1195	44.45	2.56	50.66
1004	SLV 6	24	959	-1344	65.33	2.7	8.76
1004	SLV 7	700	-919	7396	-1226.23	1.92	244.92
1004	SLV 8	580	-783	7247	-1205.36	2.06	203.03
1004	SLV 9	-382	858	-342	-70.99	0.55	-133.58
1004	SLV 10	-502	994	-490	-50.12	0.69	-175.48

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1004	SLV 11	175	-884	8249	-1341.68	-0.09	60.68
1004	SLV 12	54	-747	8101	-1320.8	0.06	18.79
1004	SLV 13	-771	256	3697	-655.48	-2.05	-270.37
1004	SLV 14	-949	459	3476	-624.48	-1.83	-332.6
1004	SLV 15	-604	-267	6274	-1036.69	-2.24	-212.09
1004	SLV 16	-783	-64	6053	-1005.68	-2.03	-274.32
1004	CRTFP Ux+	0	0	0	0	0	0
1004	CRTFP Ux-	0	0	0	0	0	0
1004	CRTFP Uy+	0	0	0	0	0	0
1004	CRTFP Uy-	0	0	0	0	0	0
1005	SLU 1	93	35	3186	-569.37	-0.56	32.64
1005	SLU 2	89	53	3110	-558.54	-0.51	31.01
1005	SLU 3	97	36	3274	-583.47	-0.58	33.96
1005	SLU 4	94	47	3228	-576.97	-0.55	32.99
1005	SLU 5	91	54	3168	-568.02	-0.53	32
1005	SLU 6	100	37	3332	-592.95	-0.61	34.95
1005	SLU 7	97	48	3286	-586.45	-0.58	33.97
1005	SLU 8	99	36	3304	-588.34	-0.6	34.61
1005	SLU 9	96	47	3258	-581.84	-0.57	33.63
1005	SLU 10	97	57	3488	-620	-0.52	34.04
1005	SLU 11	106	40	3652	-644.93	-0.6	36.98
1005	SLU 12	103	51	3606	-638.43	-0.57	36.01
1005	SLU 13	100	58	3547	-629.48	-0.54	35.02
1005	SLU 14	109	41	3710	-654.42	-0.62	37.97
1005	SLU 15	106	51	3664	-647.92	-0.59	36.99
1005	SLU 16	108	40	3682	-649.8	-0.61	37.63
1005	SLU 17	105	51	3636	-643.3	-0.58	36.65
1005	SLU 18	106	40	3727	-657.18	-0.57	36.96
1005	SLU 19	103	51	3681	-650.68	-0.54	35.98
1005	SLU 20	109	41	3785	-666.66	-0.6	37.94
1005	SLU 21	106	52	3739	-660.16	-0.57	36.97
1005	SLU 22	107	38	3697	-651.92	-0.61	37.57
1005	SLU 23	103	56	3620	-641.09	-0.56	35.95
1005	SLU 24	111	39	3784	-666.02	-0.64	38.89
1005	SLU 25	108	50	3738	-659.52	-0.61	37.92
1005	SLU 26	106	57	3679	-650.57	-0.58	36.93
1005	SLU 27	114	40	3842	-675.51	-0.66	39.88
1005	SLU 28	111	51	3796	-669.01	-0.63	38.9
1005	SLU 29	113	40	3814	-670.89	-0.65	39.54
1005	SLU 30	110	51	3768	-664.39	-0.62	38.56
1005	SLU 31	111	60	3998	-702.55	-0.57	38.97
1005	SLU 32	120	43	4162	-727.49	-0.65	41.92
1005	SLU 33	117	54	4116	-720.99	-0.62	40.94
1005	SLU 34	114	61	4057	-712.04	-0.59	39.95
1005	SLU 35	123	44	4221	-736.97	-0.67	42.9
1005	SLU 36	120	55	4175	-730.47	-0.64	41.93
1005	SLU 37	122	44	4192	-732.35	-0.66	42.56
1005	SLU 38	119	55	4146	-725.85	-0.63	41.59
1005	SLU 39	120	44	4237	-739.73	-0.63	41.89
1005	SLU 40	117	55	4191	-733.23	-0.6	40.91
1005	SLU 41	123	45	4296	-749.21	-0.65	42.87
1005	SLU 42	120	56	4250	-742.71	-0.62	41.9
1005	SLU 43	117	44	3967	-711.88	-0.71	40.74
1005	SLU 44	112	62	3891	-701.04	-0.66	39.11
1005	SLU 45	120	45	4054	-725.98	-0.73	42.06
1005	SLU 46	117	56	4009	-719.48	-0.7	41.09
1005	SLU 47	115	63	3949	-710.53	-0.68	40.1
1005	SLU 48	123	46	4113	-735.46	-0.76	43.05
1005	SLU 49	120	57	4067	-728.96	-0.73	42.07
1005	SLU 50	122	46	4085	-730.84	-0.75	42.71
1005	SLU 51	119	57	4039	-724.34	-0.72	41.73
1005	SLU 52	120	66	4269	-762.51	-0.67	42.14
1005	SLU 53	129	49	4433	-787.44	-0.75	45.08
1005	SLU 54	126	60	4387	-780.94	-0.72	44.11
1005	SLU 55	123	67	4328	-771.99	-0.69	43.12
1005	SLU 56	132	50	4491	-796.93	-0.77	46.07
1005	SLU 57	129	61	4445	-790.43	-0.74	45.09
1005	SLU 58	131	50	4463	-792.31	-0.76	45.73
1005	SLU 59	128	60	4417	-785.81	-0.73	44.75
1005	SLU 60	129	49	4508	-799.68	-0.72	45.06
1005	SLU 61	126	60	4462	-793.18	-0.69	44.08
1005	SLU 62	132	50	4566	-809.17	-0.74	46.04
1005	SLU 63	129	61	4520	-802.67	-0.71	45.07
1005	SLU 64	131	48	4478	-794.43	-0.76	45.67
1005	SLU 65	126	66	4401	-783.6	-0.71	44.05
1005	SLU 66	134	49	4565	-808.53	-0.79	46.99
1005	SLU 67	132	59	4519	-802.03	-0.76	46.02
1005	SLU 68	129	66	4460	-793.08	-0.73	45.03
1005	SLU 69	137	49	4623	-818.01	-0.81	47.98
1005	SLU 70	134	60	4577	-811.51	-0.78	47
1005	SLU 71	136	49	4595	-813.4	-0.8	47.64
1005	SLU 72	133	60	4549	-806.9	-0.77	46.66
1005	SLU 73	135	69	4779	-845.06	-0.72	47.07
1005	SLU 74	143	52	4943	-869.99	-0.8	50.02
1005	SLU 75	140	63	4897	-863.49	-0.77	49.04
1005	SLU 76	137	70	4838	-854.54	-0.74	48.05
1005	SLU 77	146	53	5002	-879.48	-0.82	51
1005	SLU 78	143	64	4956	-872.98	-0.79	50.03
1005	SLU 79	145	53	4973	-874.86	-0.81	50.66

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1005	SLU 80	142	64	4927	-868.36	-0.78	49.69
1005	SLU 81	143	53	5018	-882.23	-0.78	49.99
1005	SLU 82	140	64	4972	-875.73	-0.75	49.01
1005	SLU 83	146	54	5077	-891.72	-0.8	50.97
1005	SLU 84	143	65	5031	-885.22	-0.77	50
1005	SLE RA 1	97	36	3332	-592.96	-0.57	34.05
1005	SLE RA 2	94	48	3281	-585.73	-0.54	32.97
1005	SLE RA 3	100	36	3390	-602.36	-0.59	34.93
1005	SLE RA 4	98	44	3360	-598.02	-0.57	34.28
1005	SLE RA 5	96	48	3320	-592.06	-0.55	33.62
1005	SLE RA 6	102	37	3429	-608.68	-0.6	35.59
1005	SLE RA 7	100	44	3399	-604.35	-0.58	34.94
1005	SLE RA 8	101	37	3410	-605.6	-0.6	35.36
1005	SLE RA 9	99	44	3380	-601.27	-0.58	34.71
1005	SLE RA 10	100	50	3533	-626.71	-0.55	34.98
1005	SLE RA 11	106	39	3642	-643.33	-0.6	36.94
1005	SLE RA 12	104	46	3612	-639	-0.58	36.3
1005	SLE RA 13	102	51	3572	-633.03	-0.56	35.64
1005	SLE RA 14	108	40	3682	-649.65	-0.61	37.6
1005	SLE RA 15	106	47	3651	-645.32	-0.59	36.95
1005	SLE RA 16	107	39	3663	-646.58	-0.61	37.37
1005	SLE RA 17	105	47	3632	-642.24	-0.59	36.73
1005	SLE RA 18	106	39	3692	-651.49	-0.58	36.93
1005	SLE RA 19	104	47	3662	-647.16	-0.56	36.28
1005	SLE RA 20	107	40	3732	-657.82	-0.6	37.58
1005	SLE RA 21	106	47	3701	-653.48	-0.58	36.93
1005	SLE FR 1	97	36	3332	-592.96	-0.57	34.05
1005	SLE FR 2	97	38	3322	-591.51	-0.57	33.83
1005	SLE FR 3	98	36	3348	-595.49	-0.58	34.31
1005	SLE FR 4	99	39	3430	-609.07	-0.57	34.69
1005	SLE FR 5	101	37	3456	-613.05	-0.58	35.17
1005	SLE FR 6	102	38	3512	-622.22	-0.58	35.49
1005	SLE QP 1	97	36	3332	-592.96	-0.57	34.05
1005	SLE QP 2	100	37	3440	-610.52	-0.58	34.91
1005	SLD 1	478	77	2306	-450.88	1.67	167.48
1005	SLD 2	402	167	2208	-437	1.81	141
1005	SLD 3	545	-136	3346	-599.48	0.98	190.75
1005	SLD 4	469	-45	3248	-585.6	1.12	164.27
1005	SLD 5	126	355	1541	-339.74	1.12	44.15
1005	SLD 6	75	414	1476	-330.59	1.21	26.68
1005	SLD 7	348	-353	5006	-835.08	-1.18	121.71
1005	SLD 8	298	-294	4942	-825.93	-1.09	104.25
1005	SLD 9	-99	367	1939	-395.11	-0.06	-34.42
1005	SLD 10	-149	427	1874	-385.96	0.03	-51.89
1005	SLD 11	124	-341	5404	-890.45	-2.36	43.14
1005	SLD 12	74	-281	5340	-881.29	-2.27	25.67
1005	SLD 13	-269	119	3633	-635.43	-2.27	-94.44
1005	SLD 14	-345	210	3535	-621.56	-2.13	-120.92
1005	SLD 15	-202	-93	4672	-784.03	-2.96	-71.17
1005	SLD 16	-278	-3	4575	-770.16	-2.82	-97.65
1005	SLV 1	979	146	699	-224.53	4.75	343.04
1005	SLV 2	800	358	470	-191.92	5.07	280.8
1005	SLV 3	1148	-385	3307	-597.32	3.01	401.84
1005	SLV 4	969	-172	3078	-564.7	3.33	339.6
1005	SLV 5	141	834	-1295	64.57	3.59	49.79
1005	SLV 6	20	977	-1450	86.53	3.81	7.88
1005	SLV 7	704	-934	7399	-1178.03	-2.19	245.79
1005	SLV 8	583	-791	7245	-1156.07	-1.97	203.88
1005	SLV 9	-384	864	-364	-64.97	0.82	-134.06
1005	SLV 10	-504	1008	-518	-43.01	1.04	-175.97
1005	SLV 11	179	-904	8330	-1307.57	-4.96	61.94
1005	SLV 12	59	-761	8176	-1285.61	-4.74	20.04
1005	SLV 13	-769	246	3803	-656.34	-4.49	-269.77
1005	SLV 14	-948	459	3573	-623.72	-4.16	-332.02
1005	SLV 15	-600	-284	6411	-1029.12	-6.22	-210.97
1005	SLV 16	-779	-72	6182	-996.5	-5.9	-273.22
1005	CRTFP Ux+	0	0	0	0	0	0
1005	CRTFP Ux-	0	0	0	0	0	0
1005	CRTFP Uy+	0	0	0	0	0	0
1005	CRTFP Uy-	0	0	0	0	0	0
1006	SLU 1	94	33	3235	-587.44	-2.45	32.75
1006	SLU 2	89	52	3156	-575.77	-2.35	31.11
1006	SLU 3	98	34	3324	-602.14	-2.53	34.08
1006	SLU 4	95	45	3277	-595.14	-2.48	33.1
1006	SLU 5	92	53	3216	-585.68	-2.41	32.1
1006	SLU 6	100	35	3384	-612.05	-2.59	35.07
1006	SLU 7	98	46	3337	-605.05	-2.54	34.09
1006	SLU 8	99	35	3355	-607.26	-2.57	34.72
1006	SLU 9	97	46	3308	-600.26	-2.51	33.74
1006	SLU 10	98	55	3539	-638.94	-2.61	34.14
1006	SLU 11	106	38	3707	-665.3	-2.8	37.1
1006	SLU 12	103	49	3659	-658.3	-2.74	36.12
1006	SLU 13	101	56	3599	-648.84	-2.67	35.12
1006	SLU 14	109	39	3767	-675.21	-2.86	38.09
1006	SLU 15	106	50	3719	-668.21	-2.8	37.11
1006	SLU 16	108	39	3738	-670.42	-2.83	37.75
1006	SLU 17	105	50	3690	-663.42	-2.77	36.77
1006	SLU 18	106	38	3782	-677.67	-2.82	37.06
1006	SLU 19	103	49	3735	-670.67	-2.76	36.08

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1006	SLU 20	109	39	3842	-687.58	-2.88	38.05
1006	SLU 21	106	50	3794	-680.58	-2.82	37.07
1006	SLU 22	108	36	3753	-672.57	-2.84	37.69
1006	SLU 23	103	55	3674	-660.9	-2.74	36.06
1006	SLU 24	112	37	3842	-687.27	-2.92	39.03
1006	SLU 25	109	48	3794	-680.27	-2.86	38.05
1006	SLU 26	106	56	3734	-670.81	-2.8	37.05
1006	SLU 27	115	38	3902	-697.18	-2.98	40.02
1006	SLU 28	112	49	3854	-690.18	-2.92	39.04
1006	SLU 29	114	38	3873	-692.39	-2.96	39.67
1006	SLU 30	111	49	3825	-685.39	-2.9	38.69
1006	SLU 31	112	58	4056	-724.07	-3	39.08
1006	SLU 32	120	41	4224	-750.43	-3.19	42.05
1006	SLU 33	118	52	4177	-743.43	-3.13	41.07
1006	SLU 34	115	59	4116	-733.97	-3.06	40.07
1006	SLU 35	123	42	4284	-760.34	-3.25	43.04
1006	SLU 36	120	53	4237	-753.34	-3.19	42.06
1006	SLU 37	122	42	4255	-755.55	-3.22	42.7
1006	SLU 38	119	53	4208	-748.55	-3.16	41.72
1006	SLU 39	120	41	4299	-762.8	-3.21	42.01
1006	SLU 40	117	53	4252	-755.8	-3.15	41.03
1006	SLU 41	123	42	4359	-772.71	-3.27	43
1006	SLU 42	120	53	4312	-765.71	-3.21	42.02
1006	SLU 43	117	42	4028	-734.49	-3.05	40.87
1006	SLU 44	112	60	3949	-722.82	-2.95	39.24
1006	SLU 45	121	43	4117	-749.18	-3.14	42.21
1006	SLU 46	118	54	4070	-742.18	-3.08	41.23
1006	SLU 47	115	61	4009	-732.73	-3.01	40.23
1006	SLU 48	124	44	4177	-759.09	-3.2	43.19
1006	SLU 49	121	55	4130	-752.09	-3.14	42.21
1006	SLU 50	123	44	4148	-754.3	-3.17	42.85
1006	SLU 51	120	55	4101	-747.3	-3.11	41.87
1006	SLU 52	121	64	4332	-785.98	-3.21	42.26
1006	SLU 53	130	47	4500	-812.35	-3.4	45.23
1006	SLU 54	127	58	4453	-805.35	-3.34	44.25
1006	SLU 55	124	65	4392	-795.89	-3.27	43.25
1006	SLU 56	132	48	4560	-822.26	-3.46	46.22
1006	SLU 57	129	59	4513	-815.25	-3.4	45.24
1006	SLU 58	131	47	4531	-817.47	-3.43	45.87
1006	SLU 59	129	59	4484	-810.47	-3.37	44.89
1006	SLU 60	129	47	4575	-824.72	-3.42	45.19
1006	SLU 61	127	58	4528	-817.72	-3.36	44.21
1006	SLU 62	132	48	4635	-834.63	-3.48	46.18
1006	SLU 63	129	59	4588	-827.63	-3.42	45.2
1006	SLU 64	131	45	4546	-819.62	-3.44	45.82
1006	SLU 65	127	64	4467	-807.95	-3.34	44.19
1006	SLU 66	135	46	4635	-834.31	-3.53	47.15
1006	SLU 67	132	57	4587	-827.31	-3.47	46.17
1006	SLU 68	129	64	4527	-817.86	-3.4	45.18
1006	SLU 69	138	47	4695	-844.22	-3.59	48.14
1006	SLU 70	135	58	4647	-837.22	-3.53	47.16
1006	SLU 71	137	47	4666	-839.43	-3.56	47.8
1006	SLU 72	134	58	4618	-832.43	-3.5	46.82
1006	SLU 73	135	67	4850	-871.11	-3.6	47.21
1006	SLU 74	144	50	5017	-897.48	-3.79	50.18
1006	SLU 75	141	61	4970	-890.48	-3.73	49.2
1006	SLU 76	138	68	4909	-881.02	-3.66	48.2
1006	SLU 77	147	51	5077	-907.38	-3.85	51.17
1006	SLU 78	144	62	5030	-900.38	-3.79	50.19
1006	SLU 79	146	50	5048	-902.6	-3.82	50.82
1006	SLU 80	143	62	5001	-895.6	-3.76	49.84
1006	SLU 81	144	50	5093	-909.85	-3.81	50.14
1006	SLU 82	141	61	5045	-902.85	-3.75	49.16
1006	SLU 83	146	51	5153	-919.76	-3.87	51.13
1006	SLU 84	144	62	5105	-912.76	-3.81	50.15
1006	SLE RA 1	98	34	3383	-611.76	-2.56	34.16
1006	SLE RA 2	95	46	3330	-603.99	-2.49	33.07
1006	SLE RA 3	100	35	3442	-621.56	-2.62	35.05
1006	SLE RA 4	98	42	3411	-616.9	-2.58	34.39
1006	SLE RA 5	97	47	3370	-610.59	-2.53	33.73
1006	SLE RA 6	102	35	3482	-628.17	-2.66	35.71
1006	SLE RA 7	100	43	3451	-623.5	-2.62	35.05
1006	SLE RA 8	102	35	3463	-624.98	-2.64	35.48
1006	SLE RA 9	100	43	3431	-620.31	-2.6	34.83
1006	SLE RA 10	100	49	3586	-646.09	-2.67	35.09
1006	SLE RA 11	106	37	3698	-663.67	-2.79	37.06
1006	SLE RA 12	104	45	3666	-659	-2.75	36.41
1006	SLE RA 13	102	49	3625	-652.7	-2.71	35.75
1006	SLE RA 14	108	38	3737	-670.28	-2.83	37.72
1006	SLE RA 15	106	45	3706	-665.61	-2.79	37.07
1006	SLE RA 16	107	38	3718	-667.08	-2.81	37.49
1006	SLE RA 17	105	45	3687	-662.42	-2.77	36.84
1006	SLE RA 18	106	37	3748	-671.92	-2.81	37.04
1006	SLE RA 19	104	45	3716	-667.25	-2.77	36.39
1006	SLE RA 20	108	38	3788	-678.52	-2.85	37.7
1006	SLE RA 21	106	45	3756	-673.86	-2.81	37.04
1006	SLE FR 1	98	34	3383	-611.76	-2.56	34.16
1006	SLE FR 2	97	36	3373	-610.21	-2.55	33.94
1006	SLE FR 3	99	34	3399	-614.41	-2.58	34.42

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1006	SLE FR 4	100	37	3482	-628.25	-2.62	34.81
1006	SLE FR 5	101	35	3508	-632.45	-2.65	35.29
1006	SLE FR 6	102	36	3565	-641.84	-2.68	35.6
1006	SLE QP 1	98	34	3383	-611.76	-2.56	34.16
1006	SLE QP 2	100	35	3492	-629.81	-2.63	35.02
1006	SLD 1	477	76	2271	-442.79	0.5	167.2
1006	SLD 2	401	172	2167	-427.1	0.69	140.72
1006	SLD 3	545	-142	3344	-602.58	-0.86	190.63
1006	SLD 4	469	-46	3241	-586.88	-0.67	164.15
1006	SLD 5	125	361	1517	-334.19	0.33	43.91
1006	SLD 6	74	424	1449	-323.84	0.45	26.44
1006	SLD 7	350	-366	5094	-866.8	-4.19	122
1006	SLD 8	299	-303	5026	-856.45	-4.07	104.53
1006	SLD 9	-99	373	1959	-403.17	-1.2	-34.48
1006	SLD 10	-149	436	1891	-392.82	-1.08	-51.95
1006	SLD 11	126	-354	5536	-935.78	-5.72	43.61
1006	SLD 12	76	-291	5468	-925.43	-5.6	26.14
1006	SLD 13	-268	116	3744	-672.74	-4.6	-94.1
1006	SLD 14	-344	212	3641	-657.04	-4.41	-120.58
1006	SLD 15	-201	-102	4817	-832.52	-5.96	-70.68
1006	SLD 16	-277	-6	4714	-816.83	-5.77	-97.15
1006	SLV 1	976	148	543	-178.81	4.81	342.23
1006	SLV 2	797	372	301	-141.92	5.26	279.99
1006	SLV 3	1147	-396	3235	-579.66	1.41	401.42
1006	SLV 4	968	-173	2993	-542.78	1.86	339.19
1006	SLV 5	138	853	-1430	106.57	4.67	49.02
1006	SLV 6	17	1004	-1593	131.41	4.98	7.12
1006	SLV 7	706	-962	7543	-1229.62	-6.67	246.34
1006	SLV 8	586	-811	7380	-1204.78	-6.36	204.44
1006	SLV 9	-385	881	-395	-54.84	1.09	-134.39
1006	SLV 10	-506	1032	-558	-30	1.4	-176.29
1006	SLV 11	183	-934	8578	-1391.03	-10.25	62.93
1006	SLV 12	63	-783	8415	-1366.19	-9.94	21.03
1006	SLV 13	-767	242	3992	-716.84	-7.13	-269.14
1006	SLV 14	-946	466	3750	-679.96	-6.68	-331.38
1006	SLV 15	-597	-302	6684	-1117.7	-10.53	-209.95
1006	SLV 16	-776	-78	6442	-1080.81	-10.08	-272.18
1006	CRTFP Ux+	0	0	0	0	0	0
1006	CRTFP Ux-	0	0	0	0	0	0
1006	CRTFP Uy+	0	0	0	0	0	0
1006	CRTFP Uy-	0	0	0	0	0	0
1007	SLU 1	94	30	3348	-652.41	-4.44	32.78
1007	SLU 2	89	49	3265	-638.75	-4.29	31.13
1007	SLU 3	98	31	3440	-669.11	-4.58	34.11
1007	SLU 4	95	43	3390	-660.92	-4.49	33.13
1007	SLU 5	92	50	3327	-650.02	-4.39	32.13
1007	SLU 6	101	32	3503	-680.38	-4.68	35.1
1007	SLU 7	98	43	3453	-672.19	-4.59	34.12
1007	SLU 8	100	32	3473	-674.95	-4.64	34.76
1007	SLU 9	97	43	3423	-666.76	-4.55	33.77
1007	SLU 10	98	53	3660	-709.75	-4.81	34.15
1007	SLU 11	106	34	3836	-740.12	-5.1	37.13
1007	SLU 12	104	46	3786	-731.92	-5.01	36.14
1007	SLU 13	101	54	3723	-721.02	-4.91	35.14
1007	SLU 14	109	35	3898	-751.39	-5.2	38.12
1007	SLU 15	106	47	3848	-743.19	-5.11	37.14
1007	SLU 16	108	35	3868	-745.96	-5.16	37.78
1007	SLU 17	105	47	3818	-737.76	-5.07	36.79
1007	SLU 18	106	35	3913	-753.84	-5.18	37.09
1007	SLU 19	103	46	3863	-745.64	-5.09	36.1
1007	SLU 20	109	36	3975	-765.11	-5.28	38.08
1007	SLU 21	106	47	3925	-756.92	-5.19	37.09
1007	SLU 22	108	32	3884	-748.37	-5.18	37.73
1007	SLU 23	103	52	3800	-734.71	-5.03	36.09
1007	SLU 24	112	33	3976	-765.08	-5.32	39.07
1007	SLU 25	109	45	3926	-756.88	-5.23	38.08
1007	SLU 26	106	53	3863	-745.99	-5.13	37.08
1007	SLU 27	115	34	4039	-776.35	-5.42	40.06
1007	SLU 28	112	46	3989	-768.15	-5.33	39.07
1007	SLU 29	114	34	4009	-770.92	-5.38	39.71
1007	SLU 30	111	46	3959	-762.72	-5.29	38.73
1007	SLU 31	112	55	4196	-805.72	-5.55	39.1
1007	SLU 32	121	37	4372	-836.08	-5.85	42.08
1007	SLU 33	118	48	4322	-827.88	-5.76	41.1
1007	SLU 34	115	56	4258	-816.99	-5.65	40.09
1007	SLU 35	124	38	4434	-847.35	-5.95	43.07
1007	SLU 36	121	49	4384	-839.16	-5.86	42.09
1007	SLU 37	123	38	4404	-841.92	-5.9	42.73
1007	SLU 38	120	49	4354	-833.73	-5.81	41.74
1007	SLU 39	121	37	4449	-849.81	-5.92	42.04
1007	SLU 40	118	49	4399	-841.61	-5.83	41.05
1007	SLU 41	123	38	4511	-861.08	-6.02	43.03
1007	SLU 42	121	50	4461	-852.88	-5.93	42.04
1007	SLU 43	117	38	4168	-815.23	-5.51	40.91
1007	SLU 44	113	58	4085	-801.57	-5.36	39.27
1007	SLU 45	121	39	4261	-831.93	-5.66	42.25
1007	SLU 46	118	51	4211	-823.73	-5.57	41.26
1007	SLU 47	115	58	4148	-812.84	-5.46	40.26
1007	SLU 48	124	40	4323	-843.2	-5.76	43.24

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1007	SLU 49	121	52	4274	-835.01	-5.67	42.25
1007	SLU 50	123	40	4293	-837.77	-5.71	42.89
1007	SLU 51	120	52	4243	-829.58	-5.62	41.91
1007	SLU 52	121	61	4481	-872.57	-5.88	42.29
1007	SLU 53	130	43	4656	-902.93	-6.18	45.26
1007	SLU 54	127	54	4607	-894.74	-6.09	44.28
1007	SLU 55	124	62	4543	-883.84	-5.98	43.28
1007	SLU 56	133	44	4719	-914.21	-6.28	46.26
1007	SLU 57	130	55	4669	-906.01	-6.19	45.27
1007	SLU 58	132	43	4689	-908.78	-6.23	45.91
1007	SLU 59	129	55	4639	-900.58	-6.15	44.93
1007	SLU 60	130	43	4733	-916.66	-6.26	45.22
1007	SLU 61	127	55	4683	-908.46	-6.17	44.24
1007	SLU 62	132	44	4796	-927.93	-6.36	46.21
1007	SLU 63	130	56	4746	-919.74	-6.27	45.23
1007	SLU 64	132	41	4704	-911.19	-6.25	45.86
1007	SLU 65	127	60	4621	-897.53	-6.1	44.22
1007	SLU 66	135	42	4797	-927.9	-6.4	47.2
1007	SLU 67	132	53	4747	-919.7	-6.31	46.22
1007	SLU 68	130	61	4684	-908.81	-6.2	45.21
1007	SLU 69	138	42	4859	-939.17	-6.5	48.19
1007	SLU 70	135	54	4810	-930.97	-6.41	47.21
1007	SLU 71	137	42	4829	-933.74	-6.45	47.85
1007	SLU 72	134	54	4779	-925.54	-6.36	46.86
1007	SLU 73	135	63	5016	-968.54	-6.63	47.24
1007	SLU 74	144	45	5192	-998.9	-6.92	50.22
1007	SLU 75	141	57	5142	-990.7	-6.83	49.23
1007	SLU 76	138	64	5079	-979.81	-6.73	48.23
1007	SLU 77	147	46	5255	-1010.17	-7.02	51.21
1007	SLU 78	144	57	5205	-1001.98	-6.93	50.22
1007	SLU 79	146	46	5225	-1004.74	-6.98	50.86
1007	SLU 80	143	57	5175	-996.55	-6.89	49.88
1007	SLU 81	144	45	5269	-1012.63	-7	50.17
1007	SLU 82	141	57	5219	-1004.43	-6.91	49.19
1007	SLU 83	147	46	5332	-1023.9	-7.1	51.16
1007	SLU 84	144	58	5282	-1015.7	-7.01	50.18
1007	SLE RA 1	98	31	3501	-679.83	-4.65	34.19
1007	SLE RA 2	95	44	3445	-670.72	-4.55	33.1
1007	SLE RA 3	101	31	3563	-690.96	-4.75	35.08
1007	SLE RA 4	99	39	3529	-685.5	-4.69	34.43
1007	SLE RA 5	97	44	3487	-678.23	-4.61	33.76
1007	SLE RA 6	102	32	3604	-698.48	-4.81	35.74
1007	SLE RA 7	101	40	3571	-693.01	-4.75	35.09
1007	SLE RA 8	102	32	3584	-694.86	-4.78	35.51
1007	SLE RA 9	100	40	3551	-689.39	-4.72	34.86
1007	SLE RA 10	101	46	3709	-718.06	-4.9	35.11
1007	SLE RA 11	106	34	3826	-738.3	-5.09	37.09
1007	SLE RA 12	104	41	3793	-732.83	-5.03	36.44
1007	SLE RA 13	103	46	3751	-725.57	-4.96	35.77
1007	SLE RA 14	108	34	3868	-745.81	-5.16	37.75
1007	SLE RA 15	106	42	3835	-740.35	-5.1	37.1
1007	SLE RA 16	108	34	3848	-742.19	-5.13	37.52
1007	SLE RA 17	106	42	3815	-736.73	-5.07	36.87
1007	SLE RA 18	106	34	3877	-747.45	-5.14	37.06
1007	SLE RA 19	104	42	3844	-741.98	-5.08	36.41
1007	SLE RA 20	108	35	3919	-754.96	-5.21	37.72
1007	SLE RA 21	106	42	3886	-749.5	-5.15	37.07
1007	SLE FR 1	98	31	3501	-679.83	-4.65	34.19
1007	SLE FR 2	97	33	3490	-678.01	-4.63	33.97
1007	SLE FR 3	99	31	3517	-682.83	-4.67	34.46
1007	SLE FR 4	100	34	3603	-698.29	-4.78	34.83
1007	SLE FR 5	101	32	3630	-703.12	-4.82	35.32
1007	SLE FR 6	102	32	3689	-713.64	-4.9	35.63
1007	SLE QP 1	98	31	3501	-679.83	-4.65	34.19
1007	SLE QP 2	101	32	3614	-700.11	-4.8	35.05
1007	SLD 1	476	73	2275	-465.04	-0.75	166.83
1007	SLD 2	400	173	2164	-446.16	-0.49	140.37
1007	SLD 3	544	-153	3403	-651.75	-2.79	190.37
1007	SLD 4	468	-53	3293	-632.87	-2.54	163.91
1007	SLD 5	124	368	1520	-349.81	-0.53	43.64
1007	SLD 6	74	435	1447	-337.35	-0.36	26.18
1007	SLD 7	350	-385	5282	-972.18	-7.34	122.11
1007	SLD 8	300	-318	5209	-959.72	-7.17	104.66
1007	SLD 9	-99	381	2018	-440.5	-2.42	-34.55
1007	SLD 10	-149	448	1945	-428.05	-2.25	-52.01
1007	SLD 11	127	-371	5780	-1062.88	-9.23	43.92
1007	SLD 12	77	-305	5707	-1050.42	-9.06	26.47
1007	SLD 13	-267	116	3935	-767.36	-7.06	-93.81
1007	SLD 14	-343	217	3824	-748.48	-6.8	-120.27
1007	SLD 15	-199	-110	5063	-954.07	-9.1	-70.26
1007	SLD 16	-275	-9	4953	-935.19	-8.84	-96.72
1007	SLV 1	974	144	386	-134.38	4.85	341.31
1007	SLV 2	795	381	126	-90	5.44	279.12
1007	SLV 3	1146	-420	3217	-602.82	-0.28	400.8
1007	SLV 4	967	-183	2958	-558.43	0.32	338.6
1007	SLV 5	135	877	-1600	171.78	5.76	48.32
1007	SLV 6	15	1036	-1775	201.66	6.16	6.45
1007	SLV 7	708	-1004	7837	-1389.67	-11.33	246.6
1007	SLV 8	588	-844	7662	-1359.78	-10.93	204.73

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1007	SLV 9	-387	908	-435	-40.44	1.33	-134.62
1007	SLV 10	-507	1067	-610	-10.56	1.73	-176.5
1007	SLV 11	186	-973	9002	-1601.89	-15.75	63.66
1007	SLV 12	66	-813	8828	-1572.01	-15.35	21.78
1007	SLV 13	-766	247	4270	-841.8	-9.91	-268.49
1007	SLV 14	-945	483	4011	-797.41	-9.32	-330.69
1007	SLV 15	-594	-317	7101	-1310.23	-15.04	-209.01
1007	SLV 16	-773	-81	6842	-1265.85	-14.44	-271.21
1007	CRTFP Ux+	0	0	0	0	0	0
1007	CRTFP Ux-	0	0	0	0	0	0
1007	CRTFP Uy+	0	0	0	0	0	0
1007	CRTFP Uy-	0	0	0	0	0	0
1008	SLU 1	94	26	3525	-766.68	-6.44	32.73
1008	SLU 2	89	46	3437	-749.81	-6.24	31.08
1008	SLU 3	98	27	3624	-786.87	-6.65	34.06
1008	SLU 4	95	39	3571	-776.75	-6.53	33.08
1008	SLU 5	92	47	3503	-763.44	-6.38	32.07
1008	SLU 6	101	27	3690	-800.49	-6.79	35.06
1008	SLU 7	98	40	3637	-790.37	-6.67	34.07
1008	SLU 8	100	28	3658	-793.93	-6.72	34.71
1008	SLU 9	97	40	3605	-783.81	-6.6	33.72
1008	SLU 10	98	49	3853	-835.08	-7.02	34.08
1008	SLU 11	106	30	4041	-872.14	-7.43	37.07
1008	SLU 12	104	42	3987	-862.02	-7.31	36.08
1008	SLU 13	101	50	3920	-848.71	-7.16	35.07
1008	SLU 14	109	30	4107	-885.77	-7.57	38.06
1008	SLU 15	106	43	4054	-875.65	-7.45	37.07
1008	SLU 16	108	31	4075	-879.21	-7.5	37.71
1008	SLU 17	105	43	4022	-869.09	-7.38	36.72
1008	SLU 18	106	30	4121	-888.5	-7.56	37.01
1008	SLU 19	103	42	4068	-878.38	-7.44	36.03
1008	SLU 20	109	31	4187	-902.13	-7.7	38.01
1008	SLU 21	106	43	4134	-892	-7.58	37.02
1008	SLU 22	108	27	4091	-882.12	-7.53	37.67
1008	SLU 23	103	47	4003	-865.25	-7.33	36.02
1008	SLU 24	112	28	4190	-902.31	-7.74	39.01
1008	SLU 25	109	40	4137	-892.19	-7.62	38.02
1008	SLU 26	106	48	4069	-878.88	-7.47	37.01
1008	SLU 27	115	29	4256	-915.94	-7.88	40
1008	SLU 28	112	41	4203	-905.82	-7.76	39.01
1008	SLU 29	114	29	4224	-909.38	-7.81	39.65
1008	SLU 30	111	41	4171	-899.26	-7.69	38.66
1008	SLU 31	112	50	4419	-950.53	-8.11	39.02
1008	SLU 32	121	31	4607	-987.59	-8.52	42.01
1008	SLU 33	118	43	4553	-977.47	-8.4	41.02
1008	SLU 34	115	51	4486	-964.16	-8.26	40.01
1008	SLU 35	123	32	4673	-1001.21	-8.66	43
1008	SLU 36	121	44	4620	-991.09	-8.54	42.01
1008	SLU 37	122	32	4641	-994.65	-8.6	42.65
1008	SLU 38	120	44	4588	-984.53	-8.48	41.66
1008	SLU 39	120	31	4687	-1003.94	-8.65	41.96
1008	SLU 40	118	44	4633	-993.82	-8.53	40.97
1008	SLU 41	123	32	4753	-1017.57	-8.79	42.95
1008	SLU 42	120	44	4700	-1007.45	-8.67	41.96
1008	SLU 43	117	33	4389	-957.1	-7.99	40.85
1008	SLU 44	112	53	4300	-940.23	-7.79	39.2
1008	SLU 45	121	34	4488	-977.29	-8.2	42.19
1008	SLU 46	118	46	4434	-967.17	-8.08	41.2
1008	SLU 47	115	54	4367	-953.86	-7.94	40.19
1008	SLU 48	124	35	4554	-990.91	-8.34	43.18
1008	SLU 49	121	47	4501	-980.79	-8.22	42.19
1008	SLU 50	123	35	4522	-984.35	-8.28	42.83
1008	SLU 51	120	47	4469	-974.23	-8.16	41.84
1008	SLU 52	121	56	4717	-1025.51	-8.58	42.2
1008	SLU 53	130	37	4904	-1062.56	-8.99	45.19
1008	SLU 54	127	49	4851	-1052.44	-8.87	44.2
1008	SLU 55	124	57	4784	-1039.13	-8.72	43.19
1008	SLU 56	133	38	4971	-1076.19	-9.13	46.18
1008	SLU 57	130	50	4918	-1066.07	-9.01	45.19
1008	SLU 58	132	38	4939	-1069.63	-9.06	45.83
1008	SLU 59	129	50	4886	-1059.51	-8.94	44.84
1008	SLU 60	130	37	4985	-1078.92	-9.11	45.14
1008	SLU 61	127	49	4931	-1068.8	-8.99	44.15
1008	SLU 62	132	38	5051	-1092.55	-9.25	46.13
1008	SLU 63	130	50	4998	-1082.43	-9.13	45.14
1008	SLU 64	131	34	4955	-1072.54	-9.09	45.79
1008	SLU 65	127	55	4866	-1055.68	-8.89	44.14
1008	SLU 66	135	35	5053	-1092.73	-9.3	47.13
1008	SLU 67	132	47	5000	-1082.61	-9.18	46.14
1008	SLU 68	129	55	4933	-1069.3	-9.03	45.14
1008	SLU 69	138	36	5120	-1106.36	-9.44	48.12
1008	SLU 70	135	48	5067	-1096.24	-9.32	47.13
1008	SLU 71	137	36	5088	-1099.8	-9.37	47.77
1008	SLU 72	134	48	5035	-1089.68	-9.25	46.79
1008	SLU 73	135	58	5283	-1140.95	-9.67	47.15
1008	SLU 74	144	38	5470	-1178.01	-10.08	50.13
1008	SLU 75	141	50	5417	-1167.89	-9.96	49.14
1008	SLU 76	138	58	5349	-1154.58	-9.81	48.14
1008	SLU 77	147	39	5537	-1191.64	-10.22	51.12

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1008	SLU 78	144	51	5483	-1181.51	-10.1	50.13
1008	SLU 79	146	39	5505	-1185.07	-10.15	50.78
1008	SLU 80	143	51	5451	-1174.95	-10.03	49.79
1008	SLU 81	144	39	5550	-1194.36	-10.21	50.08
1008	SLU 82	141	51	5497	-1184.24	-10.09	49.09
1008	SLU 83	147	40	5617	-1207.99	-10.35	51.07
1008	SLU 84	144	52	5564	-1197.87	-10.23	50.08
1008	SLE RA 1	98	26	3687	-799.66	-6.75	34.14
1008	SLE RA 2	95	40	3628	-788.42	-6.62	33.04
1008	SLE RA 3	101	27	3753	-813.12	-6.89	35.03
1008	SLE RA 4	99	35	3717	-806.37	-6.81	34.37
1008	SLE RA 5	97	40	3672	-797.5	-6.71	33.7
1008	SLE RA 6	102	27	3797	-822.21	-6.98	35.69
1008	SLE RA 7	101	35	3762	-815.46	-6.9	35.03
1008	SLE RA 8	102	27	3776	-817.83	-6.94	35.46
1008	SLE RA 9	100	35	3740	-811.08	-6.86	34.8
1008	SLE RA 10	101	42	3906	-845.27	-7.14	35.04
1008	SLE RA 11	106	29	4031	-869.97	-7.41	37.03
1008	SLE RA 12	104	37	3995	-863.22	-7.33	36.37
1008	SLE RA 13	102	42	3950	-854.35	-7.23	35.7
1008	SLE RA 14	108	29	4075	-879.06	-7.5	37.69
1008	SLE RA 15	106	37	4039	-872.31	-7.42	37.03
1008	SLE RA 16	108	29	4054	-874.68	-7.46	37.46
1008	SLE RA 17	106	37	4018	-867.93	-7.38	36.8
1008	SLE RA 18	106	29	4084	-880.87	-7.5	37
1008	SLE RA 19	104	37	4049	-874.13	-7.42	36.34
1008	SLE RA 20	108	30	4128	-889.96	-7.59	37.66
1008	SLE RA 21	106	38	4093	-883.21	-7.51	37
1008	SLE FR 1	98	26	3687	-799.66	-6.75	34.14
1008	SLE FR 2	97	29	3675	-797.41	-6.72	33.92
1008	SLE FR 3	99	26	3705	-803.29	-6.79	34.4
1008	SLE FR 4	100	30	3794	-821.78	-6.95	34.78
1008	SLE FR 5	101	27	3824	-827.66	-7.01	35.26
1008	SLE FR 6	102	28	3886	-840.27	-7.12	35.57
1008	SLE QP 1	98	26	3687	-799.66	-6.75	34.14
1008	SLE QP 2	100	27	3806	-824.03	-6.97	35
1008	SLD 1	475	117	2320	-519.17	-2	166.37
1008	SLD 2	399	224	2200	-495.57	-1.69	139.93
1008	SLD 3	544	-119	3526	-749.31	-4.73	189.99
1008	SLD 4	467	-12	3407	-725.71	-4.41	163.55
1008	SLD 5	123	392	1552	-387.77	-1.4	43.34
1008	SLD 6	73	463	1473	-372.2	-1.2	25.9
1008	SLD 7	351	-393	5574	-1154.9	-10.49	122.08
1008	SLD 8	301	-323	5495	-1139.33	-10.28	104.63
1008	SLD 9	-100	377	2118	-508.72	-3.66	-34.64
1008	SLD 10	-150	447	2039	-493.15	-3.45	-52.08
1008	SLD 11	128	-409	6140	-1275.85	-12.75	44.1
1008	SLD 12	78	-338	6061	-1260.28	-12.54	26.66
1008	SLD 13	-267	66	4206	-922.34	-9.53	-93.56
1008	SLD 14	-343	173	4086	-898.74	-9.22	-120
1008	SLD 15	-198	-170	5412	-1152.48	-12.26	-69.94
1008	SLD 16	-274	-63	5293	-1128.88	-11.94	-96.38
1008	SLV 1	971	255	227	-91.34	4.88	340.31
1008	SLV 2	792	506	-54	-35.87	5.63	278.16
1008	SLV 3	1144	-333	3254	-668.74	-1.96	399.99
1008	SLV 4	965	-82	2972	-613.27	-1.21	337.84
1008	SLV 5	133	941	-1806	261.14	6.82	47.67
1008	SLV 6	13	1110	-1995	298.49	7.32	5.83
1008	SLV 7	709	-1020	8284	-1663.51	-15.98	246.61
1008	SLV 8	588	-851	8094	-1626.16	-15.48	204.77
1008	SLV 9	-388	905	-482	-21.89	1.53	-134.78
1008	SLV 10	-508	1075	-671	15.46	2.04	-176.62
1008	SLV 11	188	-1056	9608	-1946.54	-21.27	64.16
1008	SLV 12	68	-887	9418	-1909.19	-20.77	22.32
1008	SLV 13	-764	136	4640	-1034.78	-12.74	-267.85
1008	SLV 14	-943	387	4359	-979.31	-11.99	-330
1008	SLV 15	-591	-452	7667	-1612.18	-19.58	-208.17
1008	SLV 16	-770	-201	7386	-1556.71	-18.83	-270.32
1008	CRTFP Ux+	0	0	0	0	0	0
1008	CRTFP Ux-	0	0	0	0	0	0
1008	CRTFP Uy+	0	0	0	0	0	0
1008	CRTFP Uy-	0	0	0	0	0	0
1009	SLU 1	94	20	3767	-931.47	-8.34	32.6
1009	SLU 2	89	41	3671	-910.16	-8.09	30.95
1009	SLU 3	98	21	3874	-956.66	-8.61	33.93
1009	SLU 4	95	34	3816	-943.87	-8.46	32.94
1009	SLU 5	92	42	3743	-927.16	-8.27	31.93
1009	SLU 6	100	22	3945	-973.66	-8.79	34.92
1009	SLU 7	97	34	3888	-960.87	-8.64	33.93
1009	SLU 8	99	22	3911	-965.47	-8.7	34.57
1009	SLU 9	96	35	3853	-952.68	-8.55	33.58
1009	SLU 10	97	44	4118	-1016.27	-9.13	33.93
1009	SLU 11	106	23	4320	-1062.77	-9.64	36.91
1009	SLU 12	103	36	4262	-1049.99	-9.49	35.92
1009	SLU 13	100	45	4189	-1033.27	-9.3	34.91
1009	SLU 14	109	24	4392	-1079.77	-9.82	37.9
1009	SLU 15	106	37	4334	-1066.98	-9.67	36.91
1009	SLU 16	108	24	4357	-1071.58	-9.73	37.55
1009	SLU 17	105	37	4300	-1058.79	-9.58	36.56

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1009	SLU 18	106	24	4405	-1083.06	-9.81	36.86
1009	SLU 19	103	37	4348	-1070.27	-9.67	35.86
1009	SLU 20	109	25	4477	-1100.05	-9.99	37.84
1009	SLU 21	106	37	4419	-1087.27	-9.85	36.85
1009	SLU 22	108	21	4375	-1075.22	-9.77	37.52
1009	SLU 23	103	42	4278	-1053.91	-9.52	35.87
1009	SLU 24	112	21	4481	-1100.41	-10.03	38.86
1009	SLU 25	109	34	4423	-1087.62	-9.88	37.87
1009	SLU 26	106	42	4350	-1070.91	-9.7	36.86
1009	SLU 27	115	22	4553	-1117.4	-10.21	39.84
1009	SLU 28	112	35	4495	-1104.62	-10.06	38.85
1009	SLU 29	114	22	4518	-1109.21	-10.13	39.5
1009	SLU 30	111	35	4460	-1096.43	-9.98	38.51
1009	SLU 31	112	44	4725	-1160.02	-10.55	38.85
1009	SLU 32	120	24	4927	-1206.52	-11.06	41.84
1009	SLU 33	117	36	4870	-1193.73	-10.92	40.85
1009	SLU 34	114	45	4797	-1177.02	-10.73	39.84
1009	SLU 35	123	24	4999	-1223.52	-11.24	42.82
1009	SLU 36	120	37	4941	-1210.73	-11.09	41.83
1009	SLU 37	122	25	4965	-1215.33	-11.16	42.48
1009	SLU 38	119	37	4907	-1202.54	-11.01	41.49
1009	SLU 39	120	24	5012	-1226.8	-11.24	41.78
1009	SLU 40	117	37	4955	-1214.02	-11.09	40.79
1009	SLU 41	123	25	5084	-1243.8	-11.42	42.77
1009	SLU 42	120	38	5026	-1231.02	-11.27	41.78
1009	SLU 43	117	26	4690	-1161.62	-10.36	40.69
1009	SLU 44	112	47	4593	-1140.32	-10.11	39.04
1009	SLU 45	121	27	4796	-1186.81	-10.62	42.03
1009	SLU 46	118	40	4738	-1174.03	-10.47	41.04
1009	SLU 47	115	48	4665	-1157.32	-10.29	40.03
1009	SLU 48	124	28	4867	-1203.81	-10.8	43.01
1009	SLU 49	121	40	4810	-1191.03	-10.65	42.02
1009	SLU 50	123	28	4833	-1195.62	-10.71	42.67
1009	SLU 51	120	41	4775	-1182.84	-10.57	41.68
1009	SLU 52	121	50	5040	-1246.43	-11.14	42.02
1009	SLU 53	129	29	5242	-1292.92	-11.65	45.01
1009	SLU 54	126	42	5184	-1280.14	-11.5	44.02
1009	SLU 55	124	51	5112	-1263.43	-11.32	43.01
1009	SLU 56	132	30	5314	-1309.92	-11.83	45.99
1009	SLU 57	129	43	5256	-1297.14	-11.68	45
1009	SLU 58	131	30	5279	-1301.73	-11.74	45.65
1009	SLU 59	128	43	5222	-1288.95	-11.6	44.66
1009	SLU 60	129	30	5327	-1313.21	-11.83	44.95
1009	SLU 61	126	43	5270	-1300.43	-11.68	43.96
1009	SLU 62	132	31	5399	-1330.21	-12.01	45.94
1009	SLU 63	129	43	5341	-1317.43	-11.86	44.94
1009	SLU 64	131	27	5297	-1305.37	-11.78	45.61
1009	SLU 65	126	48	5200	-1284.06	-11.53	43.96
1009	SLU 66	135	27	5403	-1330.56	-12.05	46.95
1009	SLU 67	132	40	5345	-1317.78	-11.9	45.96
1009	SLU 68	129	48	5272	-1301.06	-11.71	44.95
1009	SLU 69	138	28	5475	-1347.56	-12.23	47.94
1009	SLU 70	135	41	5417	-1334.78	-12.08	46.95
1009	SLU 71	137	28	5440	-1339.37	-12.14	47.59
1009	SLU 72	134	41	5382	-1326.59	-11.99	46.6
1009	SLU 73	135	50	5647	-1390.18	-12.57	46.94
1009	SLU 74	143	30	5849	-1436.67	-13.08	49.93
1009	SLU 75	141	42	5792	-1423.89	-12.93	48.94
1009	SLU 76	138	51	5719	-1407.18	-12.74	47.93
1009	SLU 77	146	30	5921	-1453.67	-13.26	50.92
1009	SLU 78	143	43	5863	-1440.89	-13.11	49.93
1009	SLU 79	145	31	5887	-1445.48	-13.17	50.57
1009	SLU 80	142	43	5829	-1432.7	-13.02	49.58
1009	SLU 81	143	30	5934	-1456.96	-13.25	49.87
1009	SLU 82	140	43	5877	-1444.18	-13.11	48.88
1009	SLU 83	146	31	6006	-1473.96	-13.43	50.86
1009	SLU 84	143	44	5949	-1461.17	-13.29	49.87
1009	SLE RA 1	98	20	3941	-972.54	-8.75	34.01
1009	SLE RA 2	95	34	3877	-958.33	-8.58	32.9
1009	SLE RA 3	100	21	4012	-989.33	-8.93	34.9
1009	SLE RA 4	98	29	3973	-980.81	-8.83	34.23
1009	SLE RA 5	96	35	3925	-969.67	-8.7	33.56
1009	SLE RA 6	102	21	4060	-1000.66	-9.05	35.55
1009	SLE RA 7	100	30	4021	-992.14	-8.95	34.89
1009	SLE RA 8	101	21	4037	-995.2	-8.99	35.32
1009	SLE RA 9	100	30	3998	-986.68	-8.89	34.66
1009	SLE RA 10	100	36	4174	-1029.08	-9.27	34.89
1009	SLE RA 11	106	22	4309	-1060.07	-9.61	36.88
1009	SLE RA 12	104	31	4271	-1051.55	-9.51	36.22
1009	SLE RA 13	102	37	4222	-1040.41	-9.39	35.55
1009	SLE RA 14	108	23	4357	-1071.41	-9.73	37.54
1009	SLE RA 15	106	31	4319	-1062.88	-9.63	36.88
1009	SLE RA 16	107	23	4334	-1065.94	-9.68	37.31
1009	SLE RA 17	105	32	4296	-1057.42	-9.58	36.65
1009	SLE RA 18	106	23	4366	-1073.6	-9.73	36.84
1009	SLE RA 19	104	31	4328	-1065.07	-9.63	36.18
1009	SLE RA 20	108	23	4414	-1084.93	-9.85	37.5
1009	SLE RA 21	106	32	4375	-1076.41	-9.75	36.84
1009	SLE FR 1	98	20	3941	-972.54	-8.75	34.01

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1009	SLE FR 2	97	23	3928	-969.7	-8.72	33.79
1009	SLE FR 3	98	21	3960	-977.07	-8.8	34.27
1009	SLE FR 4	100	24	4056	-1000.02	-9.01	34.64
1009	SLE FR 5	101	21	4088	-1007.39	-9.09	35.12
1009	SLE FR 6	102	22	4154	-1023.07	-9.24	35.43
1009	SLE QP 1	98	20	3941	-972.54	-8.75	34.01
1009	SLE QP 2	100	21	4068	-1002.86	-9.04	34.86
1009	SLD 1	474	116	2405	-605.7	-3.2	165.83
1009	SLD 2	398	230	2274	-575.8	-2.82	139.41
1009	SLD 3	543	-130	3711	-896.05	-6.56	189.51
1009	SLD 4	466	-17	3580	-866.15	-6.19	163.09
1009	SLD 5	122	403	1612	-448.73	-2.25	42.99
1009	SLD 6	72	478	1525	-429	-2	25.57
1009	SLD 7	351	-419	5966	-1416.55	-13.47	121.91
1009	SLD 8	300	-344	5880	-1396.83	-13.22	104.48
1009	SLD 9	-100	386	2257	-608.89	-4.86	-34.77
1009	SLD 10	-150	461	2171	-589.16	-4.61	-52.19
1009	SLD 11	129	-436	6612	-1576.71	-16.08	44.15
1009	SLD 12	78	-361	6525	-1556.98	-15.83	26.72
1009	SLD 13	-266	59	4557	-1139.56	-11.9	-93.37
1009	SLD 14	-342	173	4426	-1109.66	-11.52	-119.79
1009	SLD 15	-198	-188	5863	-1429.91	-15.27	-69.7
1009	SLD 16	-274	-74	5732	-1400.01	-14.89	-96.12
1009	SLV 1	969	263	67	-49.16	4.92	339.23
1009	SLV 2	790	530	-241	21.14	5.81	277.13
1009	SLV 3	1142	-353	3344	-777.59	-3.53	399.04
1009	SLV 4	963	-86	3036	-707.3	-2.64	336.95
1009	SLV 5	131	978	-2045	374.93	7.78	47.04
1009	SLV 6	11	1158	-2252	422.26	8.38	5.24
1009	SLV 7	709	-1075	8879	-2053.2	-20.36	246.42
1009	SLV 8	589	-895	8671	-2005.87	-19.76	204.61
1009	SLV 9	-388	937	-534	0.16	1.67	-134.89
1009	SLV 10	-509	1117	-742	47.48	2.27	-176.7
1009	SLV 11	190	-1116	10389	-2427.97	-26.47	64.48
1009	SLV 12	69	-936	10182	-2380.65	-25.87	22.67
1009	SLV 13	-763	128	5101	-1298.41	-15.45	-267.23
1009	SLV 14	-942	395	4793	-1228.12	-14.56	-329.33
1009	SLV 15	-589	-488	8378	-2026.85	-23.9	-207.42
1009	SLV 16	-768	-221	8070	-1956.56	-23	-269.51
1009	CRTFP Ux+	0	0	0	0	0	0
1009	CRTFP Ux-	0	0	0	0	0	0
1009	CRTFP Uy+	0	0	0	0	0	0
1009	CRTFP Uy-	0	0	0	0	0	0
1010	SLU 1	79	12	3438	-962.25	89.9	27.29
1010	SLU 2	75	31	3349	-939.68	87.6	25.35
1010	SLU 3	83	12	3536	-988.81	92.43	28.42
1010	SLU 4	80	24	3482	-975.27	91.05	27.25
1010	SLU 5	78	31	3415	-957.59	89.31	26.17
1010	SLU 6	85	13	3602	-1006.72	94.15	29.24
1010	SLU 7	83	24	3548	-993.18	92.77	28.08
1010	SLU 8	84	13	3570	-998.08	93.32	28.93
1010	SLU 9	82	24	3517	-984.54	91.94	27.77
1010	SLU 10	82	32	3758	-1051.55	98.25	27.83
1010	SLU 11	90	14	3944	-1100.68	103.09	30.89
1010	SLU 12	87	25	3891	-1087.14	101.71	29.73
1010	SLU 13	85	33	3824	-1069.47	99.96	28.65
1010	SLU 14	92	14	4010	-1118.6	104.8	31.71
1010	SLU 15	90	26	3957	-1105.06	103.42	30.55
1010	SLU 16	91	15	3979	-1109.96	103.98	31.41
1010	SLU 17	89	26	3925	-1096.41	102.6	30.25
1010	SLU 18	90	14	4022	-1122.07	105.12	30.82
1010	SLU 19	87	26	3969	-1108.53	103.74	29.66
1010	SLU 20	92	15	4088	-1139.99	106.83	31.65
1010	SLU 21	90	26	4035	-1126.44	105.45	30.48
1010	SLU 22	91	11	3994	-1113.79	104.39	31.49
1010	SLU 23	87	30	3906	-1091.22	102.09	29.55
1010	SLU 24	95	11	4092	-1140.35	106.92	32.61
1010	SLU 25	92	23	4039	-1126.81	105.55	31.45
1010	SLU 26	90	30	3972	-1109.14	103.8	30.37
1010	SLU 27	97	12	4158	-1158.27	108.64	33.44
1010	SLU 28	95	23	4105	-1144.73	107.26	32.27
1010	SLU 29	96	12	4126	-1149.63	107.82	33.13
1010	SLU 30	94	23	4073	-1136.08	106.44	31.97
1010	SLU 31	94	32	4314	-1203.1	112.74	32.02
1010	SLU 32	102	13	4501	-1252.23	117.58	35.09
1010	SLU 33	99	24	4447	-1238.69	116.2	33.93
1010	SLU 34	97	32	4380	-1221.01	114.46	32.85
1010	SLU 35	104	14	4567	-1270.15	119.29	35.91
1010	SLU 36	102	25	4513	-1256.6	117.91	34.75
1010	SLU 37	103	14	4535	-1261.5	118.47	35.61
1010	SLU 38	101	25	4482	-1247.96	117.09	34.44
1010	SLU 39	102	13	4578	-1273.61	119.61	35.02
1010	SLU 40	99	25	4525	-1260.07	118.23	33.86
1010	SLU 41	104	14	4644	-1291.53	121.32	35.84
1010	SLU 42	102	25	4591	-1277.99	119.94	34.68
1010	SLU 43	99	16	4278	-1198.96	111.9	34.04
1010	SLU 44	95	35	4190	-1176.39	109.6	32.1
1010	SLU 45	102	16	4376	-1225.52	114.43	35.16
1010	SLU 46	100	27	4323	-1211.98	113.05	34

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1010	SLU 47	97	35	4256	-1194.31	111.31	32.92
1010	SLU 48	105	17	4442	-1243.44	116.15	35.99
1010	SLU 49	102	28	4389	-1229.9	114.77	34.82
1010	SLU 50	104	17	4410	-1234.8	115.32	35.68
1010	SLU 51	101	28	4357	-1221.25	113.94	34.52
1010	SLU 52	102	36	4598	-1288.27	120.25	34.57
1010	SLU 53	110	18	4785	-1337.4	125.09	37.64
1010	SLU 54	107	29	4732	-1323.86	123.71	36.48
1010	SLU 55	105	37	4665	-1306.19	121.97	35.4
1010	SLU 56	112	18	4851	-1355.32	126.8	38.46
1010	SLU 57	109	30	4798	-1341.77	125.42	37.3
1010	SLU 58	111	19	4819	-1346.67	125.98	38.16
1010	SLU 59	109	30	4766	-1333.13	124.6	36.99
1010	SLU 60	109	18	4862	-1358.79	127.12	37.57
1010	SLU 61	107	29	4809	-1345.24	125.74	36.41
1010	SLU 62	112	19	4928	-1376.7	128.83	38.39
1010	SLU 63	109	30	4875	-1363.16	127.45	37.23
1010	SLU 64	111	15	4835	-1350.51	126.39	38.23
1010	SLU 65	107	34	4746	-1327.94	124.09	36.3
1010	SLU 66	114	15	4933	-1377.07	128.93	39.36
1010	SLU 67	112	27	4879	-1363.53	127.55	38.2
1010	SLU 68	109	34	4812	-1345.85	125.8	37.12
1010	SLU 69	117	16	4999	-1394.99	130.64	40.18
1010	SLU 70	114	27	4945	-1381.44	129.26	39.02
1010	SLU 71	116	16	4967	-1386.34	129.82	39.88
1010	SLU 72	113	27	4914	-1372.8	128.44	38.72
1010	SLU 73	114	35	5155	-1439.81	134.74	38.77
1010	SLU 74	122	17	5341	-1488.95	139.58	41.84
1010	SLU 75	119	28	5288	-1475.4	138.2	40.67
1010	SLU 76	117	36	5221	-1457.73	136.46	39.59
1010	SLU 77	124	17	5407	-1506.86	141.29	42.66
1010	SLU 78	121	29	5354	-1493.32	139.91	41.5
1010	SLU 79	123	18	5376	-1498.22	140.47	42.35
1010	SLU 80	121	29	5322	-1484.68	139.09	41.19
1010	SLU 81	121	17	5419	-1510.33	141.61	41.77
1010	SLU 82	119	29	5366	-1496.79	140.23	40.61
1010	SLU 83	124	18	5485	-1528.25	143.32	42.59
1010	SLU 84	121	29	5432	-1514.71	141.94	41.43
1010	SLE RA 1	83	12	3597	-1005.55	94.04	28.49
1010	SLE RA 2	80	24	3538	-990.5	92.5	27.2
1010	SLE RA 3	85	12	3662	-1023.25	95.73	29.24
1010	SLE RA 4	83	19	3626	-1014.23	94.81	28.47
1010	SLE RA 5	82	25	3582	-1002.44	93.65	27.75
1010	SLE RA 6	87	12	3706	-1035.2	96.87	29.79
1010	SLE RA 7	85	20	3670	-1026.17	95.95	29.01
1010	SLE RA 8	86	13	3685	-1029.43	96.32	29.59
1010	SLE RA 9	84	20	3649	-1020.41	95.4	28.81
1010	SLE RA 10	85	25	3810	-1065.08	99.61	28.85
1010	SLE RA 11	90	13	3934	-1097.84	102.83	30.89
1010	SLE RA 12	88	21	3899	-1088.81	101.91	30.11
1010	SLE RA 13	86	26	3854	-1077.03	100.75	29.39
1010	SLE RA 14	91	13	3978	-1109.78	103.97	31.44
1010	SLE RA 15	90	21	3943	-1100.75	103.05	30.66
1010	SLE RA 16	91	14	3957	-1104.02	103.42	31.23
1010	SLE RA 17	89	21	3922	-1094.99	102.5	30.46
1010	SLE RA 18	90	13	3986	-1112.09	104.18	30.85
1010	SLE RA 19	88	21	3951	-1103.07	103.26	30.07
1010	SLE RA 20	91	14	4030	-1124.04	105.33	31.39
1010	SLE RA 21	90	21	3995	-1115.01	104.41	30.62
1010	SLE FR 1	83	12	3597	-1005.55	94.04	28.49
1010	SLE FR 2	82	14	3585	-1002.54	93.73	28.23
1010	SLE FR 3	83	12	3614	-1010.32	94.49	28.71
1010	SLE FR 4	84	15	3702	-1034.5	96.77	28.94
1010	SLE FR 5	85	12	3731	-1042.29	97.54	29.41
1010	SLE FR 6	86	13	3791	-1058.82	99.11	29.67
1010	SLE QP 1	83	12	3597	-1005.55	94.04	28.49
1010	SLE QP 2	85	12	3714	-1037.51	97.08	29.2
1010	SLD 1	402	97	2140	-608.96	57.17	138.31
1010	SLD 2	337	199	2018	-577.34	54.04	112.95
1010	SLD 3	460	-122	3344	-916.27	88.4	164.51
1010	SLD 4	396	-20	3222	-884.65	85.26	139.15
1010	SLD 5	103	351	1438	-448.55	38.31	26.76
1010	SLD 6	60	418	1357	-427.69	36.24	10.03
1010	SLD 7	298	-378	5450	-1472.91	142.4	114.08
1010	SLD 8	255	-311	5370	-1452.05	140.33	97.35
1010	SLD 9	-85	335	2057	-622.97	53.83	-38.96
1010	SLD 10	-128	403	1977	-602.11	51.76	-55.69
1010	SLD 11	109	-394	6070	-1647.33	157.92	48.36
1010	SLD 12	67	-326	5989	-1626.47	155.85	31.63
1010	SLD 13	-226	44	4205	-1190.37	108.9	-80.76
1010	SLD 14	-291	147	4083	-1158.75	105.76	-106.12
1010	SLD 15	-168	-174	5409	-1497.68	140.13	-54.56
1010	SLD 16	-232	-72	5287	-1466.06	136.99	-79.92
1010	SLV 1	822	226	-70	-8.93	1.08	282.26
1010	SLV 2	670	467	-356	65.4	-6.29	222.64
1010	SLV 3	969	-320	2950	-779.9	79.42	348.31
1010	SLV 4	817	-79	2664	-705.57	72.05	288.7
1010	SLV 5	110	860	-1948	426.5	-49.16	16.06
1010	SLV 6	8	1022	-2141	476.54	-54.12	-24.08

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1010	SLV 7	603	-961	8118	-2143.4	211.98	236.24
1010	SLV 8	500	-799	7925	-2093.36	207.01	196.1
1010	SLV 9	-331	823	-498	18.34	-12.85	-137.71
1010	SLV 10	-433	986	-691	68.38	-17.81	-177.85
1010	SLV 11	162	-998	9568	-2551.56	248.29	82.47
1010	SLV 12	59	-836	9375	-2501.52	243.32	42.33
1010	SLV 13	-648	104	4763	-1369.45	122.12	-230.31
1010	SLV 14	-800	344	4477	-1295.12	114.74	-289.92
1010	SLV 15	-500	-443	7783	-2140.42	200.46	-164.25
1010	SLV 16	-652	-202	7497	-2066.1	193.08	-223.87
1010	CRTFP Ux+	0	0	0	0	0	0
1010	CRTFP Ux-	0	0	0	0	0	0
1010	CRTFP Uy+	0	0	0	0	0	0
1010	CRTFP Uy-	0	0	0	0	0	0
1011	SLU 1	121	15	5465	-2157.98	1155.67	45.92
1011	SLU 2	115	44	5326	-2105.07	1126.49	36.39
1011	SLU 3	126	15	5621	-2218.73	1188.15	47.91
1011	SLU 4	122	32	5537	-2186.99	1170.64	42.19
1011	SLU 5	118	45	5431	-2146.06	1148.42	37.72
1011	SLU 6	130	15	5726	-2259.72	1210.08	49.24
1011	SLU 7	126	33	5642	-2227.98	1192.57	43.52
1011	SLU 8	128	16	5675	-2239.95	1199.53	48.58
1011	SLU 9	125	34	5591	-2208.21	1182.03	42.86
1011	SLU 10	126	46	5976	-2360.79	1263.02	40.39
1011	SLU 11	137	17	6271	-2474.45	1324.68	51.9
1011	SLU 12	133	34	6187	-2442.71	1307.17	46.19
1011	SLU 13	129	47	6081	-2401.78	1284.96	41.72
1011	SLU 14	140	17	6376	-2515.44	1346.62	53.23
1011	SLU 15	137	35	6292	-2483.7	1329.11	47.52
1011	SLU 16	139	18	6325	-2495.67	1336.07	52.57
1011	SLU 17	135	36	6242	-2463.93	1318.56	46.86
1011	SLU 18	137	17	6394	-2523.29	1350.72	51.63
1011	SLU 19	133	35	6310	-2491.55	1333.21	45.91
1011	SLU 20	140	18	6499	-2564.28	1372.65	52.96
1011	SLU 21	137	36	6415	-2532.54	1355.14	47.24
1011	SLU 22	139	12	6350	-2504.82	1341.25	53.85
1011	SLU 23	133	42	6210	-2451.92	1312.06	44.32
1011	SLU 24	144	13	6505	-2565.58	1373.72	55.83
1011	SLU 25	140	30	6421	-2533.84	1356.21	50.12
1011	SLU 26	137	43	6315	-2492.91	1334	45.65
1011	SLU 27	148	13	6610	-2606.57	1395.66	57.16
1011	SLU 28	144	31	6526	-2574.82	1378.15	51.45
1011	SLU 29	146	14	6560	-2586.8	1385.11	56.5
1011	SLU 30	143	32	6476	-2555.06	1367.6	50.79
1011	SLU 31	144	44	6860	-2707.64	1448.6	48.31
1011	SLU 32	155	15	7155	-2821.3	1510.26	59.83
1011	SLU 33	151	32	7072	-2789.56	1492.75	54.11
1011	SLU 34	148	45	6965	-2748.63	1470.53	49.64
1011	SLU 35	159	15	7260	-2862.29	1532.19	61.16
1011	SLU 36	155	33	7177	-2830.55	1514.68	55.44
1011	SLU 37	157	16	7210	-2842.52	1521.65	60.5
1011	SLU 38	154	34	7126	-2810.78	1504.14	54.78
1011	SLU 39	155	15	7279	-2870.14	1536.3	59.55
1011	SLU 40	151	33	7195	-2838.4	1518.79	53.84
1011	SLU 41	158	16	7384	-2911.13	1558.23	60.88
1011	SLU 42	155	34	7300	-2879.39	1540.72	55.16
1011	SLU 43	151	20	6802	-2686.45	1438.74	56.98
1011	SLU 44	145	49	6662	-2633.55	1409.56	47.45
1011	SLU 45	156	20	6957	-2747.2	1471.22	58.97
1011	SLU 46	152	38	6873	-2715.46	1453.71	53.25
1011	SLU 47	148	50	6767	-2674.53	1431.49	48.78
1011	SLU 48	160	20	7062	-2788.19	1493.15	60.3
1011	SLU 49	156	38	6978	-2756.45	1475.64	54.58
1011	SLU 50	158	21	7011	-2768.43	1482.61	59.64
1011	SLU 51	155	39	6928	-2736.68	1465.1	53.92
1011	SLU 52	156	51	7312	-2889.27	1546.1	51.45
1011	SLU 53	167	22	7607	-3002.93	1607.76	62.96
1011	SLU 54	163	40	7523	-2971.18	1590.25	57.25
1011	SLU 55	159	52	7417	-2930.26	1568.03	52.77
1011	SLU 56	171	23	7712	-3043.91	1629.69	64.29
1011	SLU 57	167	40	7628	-3012.17	1612.18	58.57
1011	SLU 58	169	23	7662	-3024.15	1619.15	63.63
1011	SLU 59	166	41	7578	-2992.41	1601.64	57.92
1011	SLU 60	167	23	7730	-3051.77	1633.79	62.69
1011	SLU 61	163	40	7647	-3020.02	1616.29	56.97
1011	SLU 62	170	23	7835	-3092.76	1655.73	64.02
1011	SLU 63	167	41	7752	-3061.01	1638.22	58.3
1011	SLU 64	169	18	7686	-3033.3	1624.32	64.91
1011	SLU 65	163	47	7547	-2980.39	1595.14	55.38
1011	SLU 66	174	18	7841	-3094.05	1656.8	66.89
1011	SLU 67	170	35	7758	-3062.31	1639.29	61.18
1011	SLU 68	167	48	7651	-3021.38	1617.07	56.7
1011	SLU 69	178	18	7946	-3135.04	1678.73	68.22
1011	SLU 70	174	36	7863	-3103.3	1661.22	62.5
1011	SLU 71	176	19	7896	-3115.27	1668.19	67.56
1011	SLU 72	173	37	7812	-3083.53	1650.68	61.85
1011	SLU 73	174	49	8197	-3236.12	1731.67	59.37
1011	SLU 74	185	20	8492	-3349.77	1793.33	70.89
1011	SLU 75	181	37	8408	-3318.03	1775.82	65.17

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1011	SLU 76	178	50	8302	-3277.1	1753.61	60.7
1011	SLU 77	189	20	8597	-3390.76	1815.27	72.22
1011	SLU 78	185	38	8513	-3359.02	1797.76	66.5
1011	SLU 79	187	21	8546	-3371	1804.72	71.56
1011	SLU 80	184	39	8462	-3339.25	1787.21	65.84
1011	SLU 81	185	20	8615	-3398.62	1819.37	70.61
1011	SLU 82	181	38	8531	-3366.87	1801.86	64.89
1011	SLU 83	188	21	8720	-3439.6	1841.31	71.94
1011	SLU 84	185	39	8636	-3407.86	1823.8	66.22
1011	SLE RA 1	126	14	5718	-2257.08	1208.69	48.19
1011	SLE RA 2	122	34	5625	-2221.81	1189.24	41.83
1011	SLE RA 3	129	14	5822	-2297.58	1230.34	49.51
1011	SLE RA 4	127	26	5766	-2276.42	1218.67	45.7
1011	SLE RA 5	124	34	5695	-2249.13	1203.86	42.72
1011	SLE RA 6	132	14	5892	-2324.9	1244.96	50.4
1011	SLE RA 7	129	26	5836	-2303.74	1233.29	46.59
1011	SLE RA 8	131	15	5858	-2311.73	1237.93	49.96
1011	SLE RA 9	129	27	5802	-2290.57	1226.26	46.15
1011	SLE RA 10	129	35	6058	-2392.29	1280.26	44.5
1011	SLE RA 11	137	15	6255	-2468.06	1321.37	52.17
1011	SLE RA 12	134	27	6199	-2446.9	1309.69	48.36
1011	SLE RA 13	132	35	6128	-2419.61	1294.88	45.38
1011	SLE RA 14	139	16	6325	-2495.39	1335.99	53.06
1011	SLE RA 15	137	28	6269	-2474.22	1324.32	49.25
1011	SLE RA 16	138	16	6291	-2482.21	1328.96	52.62
1011	SLE RA 17	136	28	6236	-2461.05	1317.29	48.81
1011	SLE RA 18	137	16	6337	-2500.62	1338.73	51.99
1011	SLE RA 19	134	28	6281	-2479.46	1327.05	48.18
1011	SLE RA 20	139	16	6407	-2527.95	1353.35	52.88
1011	SLE RA 21	137	28	6351	-2506.78	1341.67	49.06
1011	SLE FR 1	126	14	5718	-2257.08	1208.69	48.19
1011	SLE FR 2	125	18	5699	-2250.02	1204.8	46.91
1011	SLE FR 3	127	14	5746	-2268.01	1214.54	48.54
1011	SLE FR 4	128	18	5885	-2323.09	1243.81	48.06
1011	SLE FR 5	130	15	5932	-2341.07	1253.55	49.68
1011	SLE FR 6	131	15	6028	-2378.85	1273.71	50.09
1011	SLE QP 1	126	14	5718	-2257.08	1208.69	48.19
1011	SLE QP 2	129	15	5904	-2330.14	1247.7	49.33
1011	SLD 1	621	147	3376	-1347.04	732.83	226.63
1011	SLD 2	522	311	3183	-1273.91	692.86	147.38
1011	SLD 3	709	-199	5272	-2066.32	1129.22	344.03
1011	SLD 4	611	-36	5079	-1993.19	1089.25	264.78
1011	SLD 5	160	551	2304	-957.46	499.23	-61.29
1011	SLD 6	95	659	2177	-909.21	472.87	-113.56
1011	SLD 7	455	-605	8625	-3355.05	1820.54	330.04
1011	SLD 8	390	-497	8498	-3306.81	1794.17	277.76
1011	SLD 9	-132	526	3309	-1353.47	701.23	-179.11
1011	SLD 10	-197	634	3182	-1305.23	674.86	-231.39
1011	SLD 11	163	-630	9631	-3751.07	2022.54	212.22
1011	SLD 12	98	-522	9504	-3702.82	1996.17	159.94
1011	SLD 13	-352	65	6728	-2667.09	1406.15	-166.12
1011	SLD 14	-451	228	6535	-2593.96	1366.18	-245.37
1011	SLD 15	-264	-282	8624	-3386.37	1802.54	-48.73
1011	SLD 16	-363	-118	8432	-3313.23	1762.57	-127.97
1011	SLV 1	1272	352	-171	30.64	9.66	454.69
1011	SLV 2	1040	737	-624	202.56	-84.29	268.41
1011	SLV 3	1496	-514	4587	-1773.84	1004.09	749.26
1011	SLV 4	1263	-129	4134	-1601.92	910.14	562.98
1011	SLV 5	176	1358	-3050	1082.8	-614.4	-241.06
1011	SLV 6	20	1617	-3355	1198.54	-677.65	-366.47
1011	SLV 7	921	-1529	12809	-4932.12	2700.37	740.83
1011	SLV 8	765	-1270	12504	-4816.38	2637.12	615.42
1011	SLV 9	-507	1299	-696	156.1	-141.72	-516.76
1011	SLV 10	-663	1558	-1001	271.84	-204.97	-642.18
1011	SLV 11	238	-1587	15162	-5858.82	3173.05	465.13
1011	SLV 12	82	-1329	14857	-5743.08	3109.8	339.71
1011	SLV 13	-1005	158	7674	-3058.36	1585.26	-464.32
1011	SLV 14	-1237	543	7221	-2886.44	1491.31	-650.6
1011	SLV 15	-781	-708	12431	-4862.83	2579.69	-169.76
1011	SLV 16	-1014	-323	11978	-4690.92	2485.74	-356.04
1011	CRTFP Ux+	0	0	0	-0.01	0	0
1011	CRTFP Ux-	0	0	0	0.01	0	0
1011	CRTFP Uy+	0	0	0	-0.01	0.01	0
1011	CRTFP Uy-	0	0	0	0.01	-0.01	0
1014	SLU 1	-37	62	6889	200.87	67.24	2.41
1014	SLU 2	-36	96	6730	195.57	66.47	2.38
1014	SLU 3	-38	63	7074	206.39	69.44	2.47
1014	SLU 4	-37	83	6978	203.21	68.98	2.46
1014	SLU 5	-36	97	6847	199.05	67.91	2.42
1014	SLU 6	-38	63	7190	209.87	70.88	2.51
1014	SLU 7	-38	84	7094	206.69	70.42	2.49
1014	SLU 8	-38	63	7122	207.84	70.12	2.48
1014	SLU 9	-37	83	7027	204.66	69.66	2.46
1014	SLU 10	-39	99	7604	220.93	74.87	2.52
1014	SLU 11	-41	66	7948	231.75	77.84	2.61
1014	SLU 12	-40	87	7852	228.57	77.38	2.59
1014	SLU 13	-39	100	7721	224.41	76.31	2.55
1014	SLU 14	-41	66	8064	235.24	79.28	2.64
1014	SLU 15	-41	87	7968	232.05	78.82	2.63

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1014	SLU 16	-41	66	7996	233.21	78.52	2.61
1014	SLU 17	-40	87	7901	230.02	78.06	2.59
1014	SLU 18	-41	66	8138	237.1	79.24	2.6
1014	SLU 19	-40	87	8042	233.92	78.78	2.59
1014	SLU 20	-42	67	8254	240.59	80.68	2.63
1014	SLU 21	-41	87	8159	237.41	80.22	2.62
1014	SLU 22	-42	68	8057	235.23	78.35	2.69
1014	SLU 23	-41	103	7897	229.93	77.58	2.67
1014	SLU 24	-43	69	8241	240.75	80.56	2.75
1014	SLU 25	-42	90	8145	237.56	80.1	2.74
1014	SLU 26	-41	103	8014	233.41	79.02	2.7
1014	SLU 27	-43	70	8357	244.23	81.99	2.79
1014	SLU 28	-43	90	8261	241.05	81.53	2.77
1014	SLU 29	-43	69	8289	242.2	81.23	2.76
1014	SLU 30	-42	90	8194	239.02	80.77	2.74
1014	SLU 31	-44	106	8771	255.29	85.99	2.8
1014	SLU 32	-46	72	9115	266.11	88.96	2.89
1014	SLU 33	-45	93	9019	262.92	88.5	2.87
1014	SLU 34	-44	106	8888	258.77	87.42	2.83
1014	SLU 35	-46	73	9231	269.59	90.4	2.92
1014	SLU 36	-46	94	9135	266.41	89.94	2.91
1014	SLU 37	-46	72	9163	267.56	89.63	2.89
1014	SLU 38	-45	93	9068	264.38	89.17	2.88
1014	SLU 39	-46	73	9305	271.46	90.35	2.88
1014	SLU 40	-45	93	9209	268.28	89.89	2.87
1014	SLU 41	-46	73	9421	274.95	91.79	2.92
1014	SLU 42	-46	94	9326	271.76	91.33	2.9
1014	SLU 43	-46	78	8556	249.36	83.6	3.03
1014	SLU 44	-45	112	8397	244.05	82.83	3.01
1014	SLU 45	-47	79	8740	254.87	85.8	3.1
1014	SLU 46	-47	100	8645	251.69	85.34	3.08
1014	SLU 47	-46	113	8513	247.54	84.27	3.04
1014	SLU 48	-48	80	8857	258.36	87.24	3.13
1014	SLU 49	-47	100	8761	255.17	86.78	3.12
1014	SLU 50	-47	79	8789	256.33	86.48	3.1
1014	SLU 51	-47	100	8693	253.14	86.02	3.09
1014	SLU 52	-48	116	9271	269.41	91.23	3.14
1014	SLU 53	-50	82	9614	280.23	94.21	3.23
1014	SLU 54	-50	103	9519	277.05	93.75	3.22
1014	SLU 55	-49	116	9387	272.9	92.67	3.18
1014	SLU 56	-51	83	9731	283.72	95.64	3.27
1014	SLU 57	-50	103	9635	280.53	95.18	3.25
1014	SLU 58	-50	82	9663	281.69	94.88	3.24
1014	SLU 59	-50	103	9567	278.5	94.42	3.22
1014	SLU 60	-51	83	9805	285.59	95.6	3.23
1014	SLU 61	-50	103	9709	282.4	95.14	3.21
1014	SLU 62	-51	83	9921	289.07	97.04	3.26
1014	SLU 63	-50	104	9825	285.89	96.58	3.25
1014	SLU 64	-51	84	9723	283.71	94.71	3.32
1014	SLU 65	-50	119	9564	278.41	93.95	3.29
1014	SLU 66	-52	85	9907	289.23	96.92	3.38
1014	SLU 67	-52	106	9812	286.05	96.46	3.37
1014	SLU 68	-51	119	9680	281.89	95.38	3.32
1014	SLU 69	-53	86	10024	292.71	98.36	3.41
1014	SLU 70	-52	107	9928	289.53	97.9	3.4
1014	SLU 71	-52	85	9956	290.68	97.59	3.38
1014	SLU 72	-52	106	9860	287.5	97.13	3.37
1014	SLU 73	-53	122	10438	303.77	102.35	3.43
1014	SLU 74	-55	89	10781	314.59	105.32	3.52
1014	SLU 75	-54	109	10686	311.41	104.86	3.5
1014	SLU 76	-54	123	10554	307.25	103.79	3.46
1014	SLU 77	-56	89	10898	318.07	106.76	3.55
1014	SLU 78	-55	110	10802	314.89	106.3	3.53
1014	SLU 79	-55	89	10830	316.04	105.99	3.52
1014	SLU 80	-54	109	10734	312.86	105.53	3.5
1014	SLU 81	-55	89	10972	319.94	106.71	3.51
1014	SLU 82	-55	110	10876	316.76	106.25	3.49
1014	SLU 83	-56	90	11088	323.43	108.15	3.54
1014	SLU 84	-55	110	10993	320.25	107.69	3.53
1014	SLE RA 1	-38	64	7223	210.69	70.41	2.49
1014	SLE RA 2	-38	86	7117	207.15	69.9	2.47
1014	SLE RA 3	-39	64	7346	214.37	71.88	2.53
1014	SLE RA 4	-39	78	7282	212.24	71.58	2.52
1014	SLE RA 5	-38	87	7194	209.48	70.86	2.49
1014	SLE RA 6	-39	65	7423	216.69	72.84	2.55
1014	SLE RA 7	-39	78	7360	214.57	72.54	2.54
1014	SLE RA 8	-39	64	7378	215.34	72.33	2.53
1014	SLE RA 9	-39	78	7314	213.21	72.02	2.52
1014	SLE RA 10	-40	89	7699	224.06	75.5	2.56
1014	SLE RA 11	-41	66	7928	231.27	77.48	2.62
1014	SLE RA 12	-41	80	7865	229.15	77.18	2.61
1014	SLE RA 13	-40	89	7777	226.38	76.46	2.58
1014	SLE RA 14	-41	67	8006	233.6	78.44	2.64
1014	SLE RA 15	-41	80	7942	231.48	78.14	2.63
1014	SLE RA 16	-41	66	7961	232.24	77.93	2.62
1014	SLE RA 17	-40	80	7897	230.12	77.63	2.61
1014	SLE RA 18	-41	67	8055	234.84	78.41	2.62
1014	SLE RA 19	-41	80	7992	232.72	78.11	2.61
1014	SLE RA 20	-41	67	8133	237.17	79.37	2.64

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1014	SLE RA 21	-41	81	8069	235.04	79.07	2.63
1014	SLE FR 1	-38	64	7223	210.69	70.41	2.49
1014	SLE FR 2	-38	68	7202	209.98	70.31	2.49
1014	SLE FR 3	-38	64	7254	211.62	70.8	2.5
1014	SLE FR 4	-39	69	7451	217.23	72.71	2.52
1014	SLE FR 5	-39	65	7504	218.87	73.2	2.54
1014	SLE FR 6	-40	65	7639	222.77	74.41	2.55
1014	SLE QP 1	-38	64	7223	210.69	70.41	2.49
1014	SLE QP 2	-39	64	7473	217.94	72.81	2.53
1014	SLD 1	867	317	6789	193.55	73.93	-28.18
1014	SLD 2	716	277	6832	195.09	74.62	-21.24
1014	SLD 3	841	-108	8933	264.77	85.09	-27.14
1014	SLD 4	689	-149	8976	266.31	85.78	-20.21
1014	SLD 5	299	793	4008	102.33	56.1	-9.5
1014	SLD 6	200	766	4037	103.34	56.55	-4.92
1014	SLD 7	213	-626	11154	339.73	93.3	-6.05
1014	SLD 8	113	-652	11183	340.74	93.75	-1.48
1014	SLD 9	-191	781	3763	95.13	51.87	6.53
1014	SLD 10	-291	754	3791	96.15	52.33	11.11
1014	SLD 11	-278	-638	10909	332.53	89.08	9.98
1014	SLD 12	-378	-664	10937	333.54	89.53	14.55
1014	SLD 13	-768	277	5970	169.57	59.85	25.26
1014	SLD 14	-919	237	6012	171.1	60.54	32.2
1014	SLD 15	-794	-148	8114	240.79	71.01	26.29
1014	SLD 16	-945	-189	8156	242.32	71.7	33.23
1014	SLV 1	2083	689	5696	155	74.46	-69.39
1014	SLV 2	1727	594	5796	158.61	76.08	-53.09
1014	SLV 3	2020	-372	11066	333.4	102.45	-66.89
1014	SLV 4	1664	-467	11167	337.01	104.06	-50.59
1014	SLV 5	759	1879	-1224	-72.19	30.57	-25.89
1014	SLV 6	520	1815	-1157	-69.76	31.66	-14.91
1014	SLV 7	550	-1658	16677	522.47	123.84	-17.54
1014	SLV 8	310	-1722	16745	524.9	124.93	-6.57
1014	SLV 9	-388	1850	-1799	-89.03	20.7	11.62
1014	SLV 10	-628	1787	-1732	-86.6	21.79	22.6
1014	SLV 11	-598	-1686	16102	505.63	113.97	19.97
1014	SLV 12	-837	-1750	16169	508.06	115.06	30.94
1014	SLV 13	-1742	595	3778	98.86	41.56	55.64
1014	SLV 14	-2098	501	3879	102.47	43.18	71.94
1014	SLV 15	-1805	-465	9149	277.26	69.55	58.15
1014	SLV 16	-2161	-560	9249	280.87	71.16	74.45
1014	CRTFP Ux+	0	0	0	0	0	0
1014	CRTFP Ux-	0	0	0	0	0	0
1014	CRTFP Uy+	0	0	0	0	0	0
1014	CRTFP Uy-	0	0	0	0	0	0
1017	SLU 1	37	119	5916	174.11	-17.83	-1.95
1017	SLU 2	34	151	5780	169.63	-17.78	-1.84
1017	SLU 3	39	121	6069	178.77	-18.4	-2.04
1017	SLU 4	37	140	5988	176.08	-18.36	-1.97
1017	SLU 5	36	152	5875	172.54	-18.13	-1.91
1017	SLU 6	40	122	6165	181.68	-18.75	-2.11
1017	SLU 7	38	141	6083	178.99	-18.72	-2.05
1017	SLU 8	40	121	6107	179.92	-18.54	-2.1
1017	SLU 9	38	140	6025	177.23	-18.51	-2.03
1017	SLU 10	38	162	6526	191.56	-19.58	-2.01
1017	SLU 11	42	132	6816	200.7	-20.2	-2.21
1017	SLU 12	41	151	6734	198.01	-20.17	-2.14
1017	SLU 13	40	163	6622	194.47	-19.93	-2.08
1017	SLU 14	44	133	6911	203.61	-20.55	-2.29
1017	SLU 15	42	152	6830	200.92	-20.52	-2.22
1017	SLU 16	43	132	6853	201.85	-20.34	-2.27
1017	SLU 17	42	151	6772	199.16	-20.31	-2.2
1017	SLU 18	42	135	6982	205.44	-20.41	-2.2
1017	SLU 19	41	154	6901	202.75	-20.37	-2.13
1017	SLU 20	44	135	7078	208.35	-20.76	-2.27
1017	SLU 21	42	155	6996	205.66	-20.73	-2.2
1017	SLU 22	43	134	6915	203.8	-20.5	-2.25
1017	SLU 23	40	166	6779	199.31	-20.44	-2.14
1017	SLU 24	44	137	7068	208.46	-21.06	-2.34
1017	SLU 25	43	156	6987	205.77	-21.03	-2.27
1017	SLU 26	41	167	6874	202.22	-20.79	-2.21
1017	SLU 27	46	137	7164	211.36	-21.42	-2.42
1017	SLU 28	44	157	7082	208.67	-21.38	-2.35
1017	SLU 29	45	136	7106	209.6	-21.2	-2.4
1017	SLU 30	44	155	7024	206.91	-21.17	-2.33
1017	SLU 31	44	177	7525	221.24	-22.24	-2.31
1017	SLU 32	48	148	7815	230.38	-22.86	-2.51
1017	SLU 33	46	167	7733	227.7	-22.83	-2.45
1017	SLU 34	45	178	7621	224.15	-22.6	-2.39
1017	SLU 35	49	148	7910	233.29	-23.22	-2.59
1017	SLU 36	48	168	7829	230.6	-23.18	-2.52
1017	SLU 37	49	147	7852	231.53	-23.01	-2.57
1017	SLU 38	48	166	7771	228.84	-22.97	-2.5
1017	SLU 39	48	150	7981	235.12	-23.07	-2.5
1017	SLU 40	46	169	7900	232.43	-23.04	-2.43
1017	SLU 41	49	151	8077	238.03	-23.42	-2.57
1017	SLU 42	48	170	7995	235.34	-23.39	-2.51
1017	SLU 43	46	149	7348	216.17	-22.27	-2.43
1017	SLU 44	43	181	7212	211.69	-22.21	-2.32

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1017	SLU 45	48	151	7502	220.83	-22.84	-2.52
1017	SLU 46	46	171	7420	218.14	-22.8	-2.45
1017	SLU 47	45	182	7308	214.59	-22.57	-2.39
1017	SLU 48	49	152	7597	223.73	-23.19	-2.6
1017	SLU 49	47	171	7516	221.05	-23.15	-2.53
1017	SLU 50	49	151	7539	221.98	-22.98	-2.58
1017	SLU 51	47	170	7457	219.29	-22.94	-2.51
1017	SLU 52	47	192	7959	233.62	-24.02	-2.49
1017	SLU 53	51	162	8248	242.76	-24.64	-2.69
1017	SLU 54	50	182	8167	240.07	-24.6	-2.63
1017	SLU 55	49	193	8054	236.52	-24.37	-2.57
1017	SLU 56	53	163	8344	245.66	-24.99	-2.77
1017	SLU 57	51	182	8262	242.97	-24.96	-2.7
1017	SLU 58	53	162	8286	243.91	-24.78	-2.75
1017	SLU 59	51	181	8204	241.22	-24.74	-2.68
1017	SLU 60	51	165	8414	247.5	-24.84	-2.68
1017	SLU 61	50	184	8333	244.81	-24.81	-2.61
1017	SLU 62	53	166	8510	250.4	-25.2	-2.75
1017	SLU 63	51	185	8428	247.71	-25.16	-2.68
1017	SLU 64	52	165	8347	245.85	-24.93	-2.74
1017	SLU 65	49	197	8211	241.37	-24.88	-2.62
1017	SLU 66	53	167	8501	250.51	-25.5	-2.82
1017	SLU 67	52	186	8419	247.82	-25.46	-2.76
1017	SLU 68	50	197	8306	244.28	-25.23	-2.69
1017	SLU 69	55	168	8596	253.42	-25.85	-2.9
1017	SLU 70	53	187	8514	250.73	-25.82	-2.83
1017	SLU 71	54	166	8538	251.66	-25.64	-2.88
1017	SLU 72	53	186	8456	248.97	-25.61	-2.81
1017	SLU 73	53	208	8957	263.3	-26.68	-2.79
1017	SLU 74	57	178	9247	272.44	-27.3	-3
1017	SLU 75	56	197	9165	269.75	-27.27	-2.93
1017	SLU 76	54	208	9053	266.21	-27.03	-2.87
1017	SLU 77	59	179	9343	275.35	-27.65	-3.07
1017	SLU 78	57	198	9261	272.66	-27.62	-3
1017	SLU 79	58	177	9284	273.59	-27.44	-3.06
1017	SLU 80	57	197	9203	270.9	-27.41	-2.99
1017	SLU 81	57	180	9413	277.18	-27.51	-2.98
1017	SLU 82	56	199	9332	274.49	-27.47	-2.91
1017	SLU 83	59	181	9509	280.08	-27.86	-3.06
1017	SLU 84	57	200	9427	277.4	-27.83	-2.99
1017	SLE RA 1	38	123	6201	182.59	-18.59	-2.04
1017	SLE RA 2	37	144	6111	179.61	-18.56	-1.96
1017	SLE RA 3	40	125	6304	185.7	-18.97	-2.1
1017	SLE RA 4	39	137	6249	183.91	-18.95	-2.05
1017	SLE RA 5	38	145	6174	181.54	-18.79	-2.01
1017	SLE RA 6	41	125	6367	187.64	-19.21	-2.15
1017	SLE RA 7	39	138	6313	185.84	-19.18	-2.1
1017	SLE RA 8	40	124	6329	186.47	-19.07	-2.14
1017	SLE RA 9	39	137	6274	184.67	-19.04	-2.09
1017	SLE RA 10	39	152	6608	194.23	-19.76	-2.08
1017	SLE RA 11	42	132	6801	200.32	-20.17	-2.21
1017	SLE RA 12	41	145	6747	198.53	-20.15	-2.17
1017	SLE RA 13	40	152	6672	196.16	-19.99	-2.13
1017	SLE RA 14	43	133	6865	202.26	-20.41	-2.26
1017	SLE RA 15	42	145	6811	200.46	-20.39	-2.22
1017	SLE RA 16	43	132	6826	201.09	-20.27	-2.25
1017	SLE RA 17	42	145	6772	199.29	-20.24	-2.21
1017	SLE RA 18	42	134	6912	203.48	-20.31	-2.2
1017	SLE RA 19	41	146	6858	201.69	-20.29	-2.16
1017	SLE RA 20	43	134	6976	205.42	-20.55	-2.25
1017	SLE RA 21	42	147	6921	203.62	-20.52	-2.21
1017	SLE FR 1	38	123	6201	182.59	-18.59	-2.04
1017	SLE FR 2	38	127	6183	182	-18.59	-2.02
1017	SLE FR 3	39	123	6227	183.37	-18.69	-2.06
1017	SLE FR 4	39	131	6396	188.26	-19.1	-2.07
1017	SLE FR 5	40	127	6440	189.63	-19.2	-2.11
1017	SLE FR 6	40	128	6557	193.04	-19.45	-2.12
1017	SLE QP 1	38	123	6201	182.59	-18.59	-2.04
1017	SLE QP 2	40	126	6414	188.86	-19.11	-2.09
1017	SLD 1	834	286	4914	142.07	9.81	-28.55
1017	SLD 2	694	325	4916	141.92	10.09	-22.24
1017	SLD 3	876	-109	6737	202.04	8.61	-30.4
1017	SLD 4	735	-69	6739	201.89	8.89	-24.08
1017	SLD 5	241	765	3199	83.89	-8.67	-8.36
1017	SLD 6	148	792	3200	83.79	-8.48	-4.2
1017	SLD 7	378	-550	9276	283.8	-12.66	-14.51
1017	SLD 8	286	-524	9277	283.7	-12.48	-10.35
1017	SLD 9	-207	776	3552	94.02	-25.74	6.17
1017	SLD 10	-299	803	3553	93.92	-25.56	10.34
1017	SLD 11	-69	-539	9629	293.93	-29.74	0.02
1017	SLD 12	-161	-513	9630	293.83	-29.55	4.19
1017	SLD 13	-656	322	6090	175.83	-47.11	19.91
1017	SLD 14	-797	362	6092	175.68	-46.83	26.22
1017	SLD 15	-615	-73	7913	235.8	-48.31	18.06
1017	SLD 16	-755	-33	7915	235.65	-48.03	24.38
1017	SLV 1	1896	530	2753	74.42	48.66	-63.84
1017	SLV 2	1566	623	2757	74.07	49.31	-49
1017	SLV 3	2001	-456	7320	224.66	45.66	-68.56
1017	SLV 4	1671	-362	7324	224.32	46.32	-53.72

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1017	SLV 5	498	1724	-1612	-73.28	5.64	-16.22
1017	SLV 6	276	1787	-1609	-73.52	6.08	-6.23
1017	SLV 7	849	-1560	13613	427.54	-4.34	-31.96
1017	SLV 8	627	-1497	13615	427.31	-3.9	-21.97
1017	SLV 9	-548	1750	-786	-49.59	-34.32	17.79
1017	SLV 10	-770	1813	-784	-49.82	-33.88	27.79
1017	SLV 11	-197	-1535	14438	451.24	-44.3	2.06
1017	SLV 12	-419	-1472	14441	451	-43.86	12.05
1017	SLV 13	-1592	615	5505	153.4	-84.54	49.55
1017	SLV 14	-1922	708	5509	153.06	-83.88	64.39
1017	SLV 15	-1487	-371	10072	303.65	-87.53	44.83
1017	SLV 16	-1817	-277	10076	303.3	-86.88	59.67
1017	CRTFP Ux+	0	0	0	0	0	0
1017	CRTFP Ux-	0	0	0	0	0	0
1017	CRTFP Uy+	0	0	0	0	0	0
1017	CRTFP Uy-	0	0	0	0	0	0
1021	SLU 1	60	22	3310	-152.89	775.91	-2.36
1021	SLU 2	57	38	3223	-149.07	756.57	-6.31
1021	SLU 3	62	23	3403	-157.18	797.26	-2.26
1021	SLU 4	60	32	3351	-154.88	785.66	-4.63
1021	SLU 5	59	38	3284	-151.88	770.45	-6.2
1021	SLU 6	64	23	3464	-160	811.14	-2.15
1021	SLU 7	62	32	3412	-157.7	799.54	-4.52
1021	SLU 8	63	22	3432	-158.53	803.66	-2.13
1021	SLU 9	62	31	3380	-156.23	792.06	-4.5
1021	SLU 10	63	41	3638	-168.24	852.87	-6.85
1021	SLU 11	68	26	3818	-176.35	893.56	-2.8
1021	SLU 12	66	35	3766	-174.06	881.96	-5.17
1021	SLU 13	64	41	3699	-171.06	866.75	-6.74
1021	SLU 14	70	26	3879	-179.17	907.44	-2.69
1021	SLU 15	68	35	3827	-176.87	895.84	-5.06
1021	SLU 16	69	26	3847	-177.7	899.96	-2.67
1021	SLU 17	68	35	3795	-175.41	888.36	-5.04
1021	SLU 18	68	27	3902	-180.28	913.48	-3.13
1021	SLU 19	66	37	3850	-177.99	901.88	-5.5
1021	SLU 20	70	27	3963	-183.1	927.36	-3.01
1021	SLU 21	68	36	3911	-180.81	915.75	-5.39
1021	SLU 22	69	25	3871	-178.71	905.73	-2.53
1021	SLU 23	66	40	3784	-174.88	886.39	-6.48
1021	SLU 24	71	25	3964	-183	927.09	-2.44
1021	SLU 25	70	34	3912	-180.7	915.48	-4.81
1021	SLU 26	68	40	3845	-177.7	900.27	-6.37
1021	SLU 27	73	25	4025	-185.82	940.96	-2.32
1021	SLU 28	71	34	3973	-183.52	929.36	-4.7
1021	SLU 29	73	25	3993	-184.35	933.49	-2.3
1021	SLU 30	71	34	3941	-182.05	921.89	-4.68
1021	SLU 31	72	44	4199	-194.06	982.69	-7.03
1021	SLU 32	77	29	4379	-202.17	1023.39	-2.98
1021	SLU 33	76	38	4327	-199.87	1011.78	-5.35
1021	SLU 34	74	44	4260	-196.88	996.57	-6.91
1021	SLU 35	79	29	4440	-204.99	1037.26	-2.86
1021	SLU 36	77	38	4388	-202.69	1025.66	-5.24
1021	SLU 37	79	28	4408	-203.52	1029.79	-2.84
1021	SLU 38	77	38	4356	-201.23	1018.19	-5.22
1021	SLU 39	78	30	4463	-206.1	1043.3	-3.3
1021	SLU 40	76	39	4411	-203.81	1031.7	-5.68
1021	SLU 41	79	30	4524	-208.92	1057.18	-3.19
1021	SLU 42	77	39	4472	-206.62	1045.58	-5.56
1021	SLU 43	75	28	4110	-189.91	964.17	-3
1021	SLU 44	71	43	4024	-186.08	944.83	-6.96
1021	SLU 45	77	28	4204	-194.2	985.52	-2.91
1021	SLU 46	75	38	4152	-191.9	973.92	-5.28
1021	SLU 47	73	43	4085	-188.9	958.71	-6.84
1021	SLU 48	79	28	4265	-197.01	999.4	-2.79
1021	SLU 49	77	37	4213	-194.72	987.8	-5.17
1021	SLU 50	78	28	4233	-195.55	991.92	-2.77
1021	SLU 51	76	37	4181	-193.25	980.32	-5.15
1021	SLU 52	77	47	4438	-205.26	1041.13	-7.5
1021	SLU 53	83	32	4618	-213.37	1081.82	-3.45
1021	SLU 54	81	41	4566	-211.07	1070.22	-5.82
1021	SLU 55	79	47	4499	-208.07	1055.01	-7.38
1021	SLU 56	85	32	4680	-216.19	1095.7	-3.34
1021	SLU 57	83	41	4627	-213.89	1084.1	-5.71
1021	SLU 58	84	32	4647	-214.72	1088.22	-3.32
1021	SLU 59	82	41	4595	-212.42	1076.62	-5.69
1021	SLU 60	83	33	4703	-217.3	1101.74	-3.77
1021	SLU 61	81	42	4651	-215	1090.14	-6.15
1021	SLU 62	85	33	4764	-220.12	1115.62	-3.66
1021	SLU 63	83	42	4712	-217.82	1104.01	-6.03
1021	SLU 64	84	31	4671	-215.73	1093.99	-3.18
1021	SLU 65	81	46	4585	-211.9	1074.65	-7.13
1021	SLU 66	86	31	4765	-220.01	1115.35	-3.08
1021	SLU 67	84	40	4713	-217.72	1103.74	-5.46
1021	SLU 68	83	46	4646	-214.72	1088.53	-7.02
1021	SLU 69	88	31	4826	-222.83	1129.23	-2.97
1021	SLU 70	86	40	4774	-220.54	1117.62	-5.34
1021	SLU 71	87	31	4794	-221.37	1121.75	-2.95
1021	SLU 72	86	40	4742	-219.07	1110.15	-5.32
1021	SLU 73	87	50	4999	-231.07	1170.95	-7.67

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1021	SLU 74	92	35	5179	-239.19	1211.65	-3.62
1021	SLU 75	90	44	5127	-236.89	1200.04	-6
1021	SLU 76	88	50	5060	-233.89	1184.83	-7.56
1021	SLU 77	94	34	5241	-242.01	1225.53	-3.51
1021	SLU 78	92	44	5188	-239.71	1213.92	-5.88
1021	SLU 79	93	34	5208	-240.54	1218.05	-3.49
1021	SLU 80	92	43	5156	-238.24	1206.45	-5.86
1021	SLU 81	92	36	5264	-243.12	1231.56	-3.95
1021	SLU 82	90	45	5212	-240.82	1219.96	-6.32
1021	SLU 83	94	36	5325	-245.94	1245.44	-3.84
1021	SLU 84	92	45	5273	-243.64	1233.84	-6.21
1021	SLE RA 1	62	23	3470	-160.27	813	-2.41
1021	SLE RA 2	60	33	3412	-157.72	800.11	-5.04
1021	SLE RA 3	64	23	3532	-163.13	827.24	-2.34
1021	SLE RA 4	63	29	3498	-161.6	819.5	-3.92
1021	SLE RA 5	62	33	3453	-159.6	809.36	-4.97
1021	SLE RA 6	65	23	3573	-165.01	836.49	-2.27
1021	SLE RA 7	64	29	3538	-163.48	828.75	-3.85
1021	SLE RA 8	65	23	3552	-164.03	831.5	-2.25
1021	SLE RA 9	64	29	3517	-162.5	823.77	-3.84
1021	SLE RA 10	64	36	3689	-170.5	864.31	-5.4
1021	SLE RA 11	68	26	3809	-175.91	891.44	-2.7
1021	SLE RA 12	67	32	3774	-174.38	883.7	-4.29
1021	SLE RA 13	66	36	3729	-172.38	873.56	-5.33
1021	SLE RA 14	69	26	3850	-177.79	900.69	-2.63
1021	SLE RA 15	68	32	3815	-176.26	892.95	-4.21
1021	SLE RA 16	69	25	3828	-176.81	895.7	-2.61
1021	SLE RA 17	68	32	3793	-175.28	887.97	-4.2
1021	SLE RA 18	68	27	3865	-178.53	904.71	-2.92
1021	SLE RA 19	67	33	3830	-177	896.98	-4.5
1021	SLE RA 20	69	26	3906	-180.41	913.97	-2.84
1021	SLE RA 21	68	33	3871	-178.88	906.23	-4.43
1021	SLE FR 1	62	23	3470	-160.27	813	-2.41
1021	SLE FR 2	62	25	3459	-159.76	810.42	-2.93
1021	SLE FR 3	63	23	3486	-161.02	816.7	-2.38
1021	SLE FR 4	64	26	3577	-165.24	837.94	-3.09
1021	SLE FR 5	65	24	3605	-166.5	844.22	-2.53
1021	SLE FR 6	65	25	3668	-169.4	858.86	-2.66
1021	SLE QP 1	62	23	3470	-160.27	813	-2.41
1021	SLE QP 2	64	24	3589	-165.75	840.51	-2.56
1021	SLD 1	411	82	2488	-117.59	584.56	-3.47
1021	SLD 2	342	130	2421	-114.49	572.32	-18.36
1021	SLD 3	455	-101	3659	-169.3	845.19	44.53
1021	SLD 4	386	-54	3593	-166.21	832.94	29.64
1021	SLD 5	114	311	1493	-73.43	370.66	-72.96
1021	SLD 6	69	342	1450	-71.38	362.58	-82.78
1021	SLD 7	260	-300	5399	-245.8	1239.39	87.05
1021	SLD 8	215	-269	5355	-243.76	1231.32	77.22
1021	SLD 9	-87	317	1822	-87.74	449.71	-82.34
1021	SLD 10	-132	349	1779	-85.69	441.63	-92.17
1021	SLD 11	60	-294	5728	-260.11	1318.45	77.66
1021	SLD 12	14	-263	5684	-258.07	1310.37	67.84
1021	SLD 13	-258	102	3584	-165.29	848.09	-34.76
1021	SLD 14	-327	150	3518	-162.19	835.84	-49.65
1021	SLD 15	-214	-81	4756	-217	1108.71	13.24
1021	SLD 16	-283	-34	4690	-213.91	1096.46	-1.65
1021	SLV 1	872	174	915	-48.75	219.89	-8.44
1021	SLV 2	710	285	759	-41.46	191.1	-43.45
1021	SLV 3	983	-284	3852	-178.42	873.28	111.58
1021	SLV 4	822	-173	3697	-171.14	844.5	76.58
1021	SLV 5	168	743	-1640	64.66	-331.28	-179.82
1021	SLV 6	59	818	-1745	69.56	-350.66	-203.39
1021	SLV 7	539	-784	8152	-367.58	1846.69	220.25
1021	SLV 8	430	-709	8048	-362.67	1827.31	196.68
1021	SLV 9	-302	758	-870	31.18	-146.29	-201.8
1021	SLV 10	-411	833	-975	36.08	-165.66	-225.37
1021	SLV 11	69	-770	8922	-401.06	2031.69	198.27
1021	SLV 12	-39	-695	8817	-396.16	2012.31	174.7
1021	SLV 13	-693	222	3480	-160.36	836.53	-81.7
1021	SLV 14	-855	333	3325	-153.08	807.75	-116.7
1021	SLV 15	-582	-237	6418	-290.03	1489.92	38.33
1021	SLV 16	-744	-126	6263	-282.75	1461.14	3.32
1021	CRTFP Ux+	0	0	0	0	0	0
1021	CRTFP Ux-	0	0	0	0	0	0
1021	CRTFP Uy+	0	0	0	0	0	0
1021	CRTFP Uy-	0	0	0	0	0	0
1022	SLU 1	-24	-13	2166	1.21	-459.77	-3.19
1022	SLU 2	-23	-4	2113	1.15	-448.42	-0.95
1022	SLU 3	-25	-13	2225	1.25	-471.92	-3.29
1022	SLU 4	-24	-8	2193	1.22	-465.11	-1.94
1022	SLU 5	-24	-4	2150	1.18	-456.13	-1.01
1022	SLU 6	-25	-13	2262	1.28	-479.63	-3.35
1022	SLU 7	-25	-8	2230	1.24	-472.82	-2
1022	SLU 8	-25	-13	2241	1.26	-475.18	-3.31
1022	SLU 9	-24	-8	2209	1.23	-468.37	-1.97
1022	SLU 10	-25	-5	2383	1.29	-504.72	-1.23
1022	SLU 11	-27	-14	2495	1.39	-528.22	-3.57
1022	SLU 12	-26	-9	2463	1.35	-521.41	-2.22
1022	SLU 13	-26	-5	2421	1.31	-512.43	-1.29

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1022	SLU 14	-27	-14	2533	1.41	-535.93	-3.63
1022	SLU 15	-27	-9	2501	1.38	-529.12	-2.28
1022	SLU 16	-27	-14	2511	1.4	-531.48	-3.59
1022	SLU 17	-26	-9	2479	1.36	-524.67	-2.25
1022	SLU 18	-27	-14	2552	1.41	-540.2	-3.59
1022	SLU 19	-26	-9	2520	1.37	-533.39	-2.25
1022	SLU 20	-27	-14	2590	1.43	-547.9	-3.65
1022	SLU 21	-27	-9	2558	1.4	-541.1	-2.31
1022	SLU 22	-27	-15	2531	1.43	-535.7	-3.68
1022	SLU 23	-27	-6	2478	1.37	-524.35	-1.44
1022	SLU 24	-28	-15	2590	1.47	-547.85	-3.78
1022	SLU 25	-28	-10	2558	1.43	-541.04	-2.43
1022	SLU 26	-27	-6	2515	1.39	-532.06	-1.5
1022	SLU 27	-28	-15	2627	1.49	-555.56	-3.84
1022	SLU 28	-28	-10	2595	1.46	-548.75	-2.5
1022	SLU 29	-28	-15	2606	1.48	-551.11	-3.81
1022	SLU 30	-28	-10	2574	1.44	-544.3	-2.46
1022	SLU 31	-29	-7	2748	1.5	-580.65	-1.72
1022	SLU 32	-30	-16	2860	1.6	-604.15	-4.06
1022	SLU 33	-29	-11	2829	1.57	-597.34	-2.71
1022	SLU 34	-29	-7	2786	1.53	-588.36	-1.78
1022	SLU 35	-30	-16	2898	1.63	-611.86	-4.12
1022	SLU 36	-30	-11	2866	1.59	-605.05	-2.78
1022	SLU 37	-30	-16	2876	1.61	-607.41	-4.09
1022	SLU 38	-30	-11	2844	1.58	-600.6	-2.74
1022	SLU 39	-30	-16	2918	1.62	-616.12	-4.08
1022	SLU 40	-30	-11	2886	1.58	-609.32	-2.74
1022	SLU 41	-31	-16	2955	1.65	-623.83	-4.15
1022	SLU 42	-30	-11	2923	1.61	-617.02	-2.8
1022	SLU 43	-30	-16	2690	1.5	-571.66	-3.98
1022	SLU 44	-30	-7	2637	1.44	-560.32	-1.74
1022	SLU 45	-31	-16	2749	1.54	-583.82	-4.08
1022	SLU 46	-31	-11	2717	1.51	-577.01	-2.73
1022	SLU 47	-30	-7	2675	1.47	-568.02	-1.8
1022	SLU 48	-31	-16	2787	1.57	-591.52	-4.14
1022	SLU 49	-31	-11	2755	1.53	-584.72	-2.79
1022	SLU 50	-31	-16	2765	1.55	-587.08	-4.1
1022	SLU 51	-31	-11	2733	1.52	-580.27	-2.76
1022	SLU 52	-32	-8	2908	1.58	-616.62	-2.02
1022	SLU 53	-33	-17	3020	1.68	-640.12	-4.36
1022	SLU 54	-32	-12	2988	1.64	-633.31	-3.01
1022	SLU 55	-32	-8	2945	1.6	-624.32	-2.08
1022	SLU 56	-33	-17	3057	1.7	-647.82	-4.42
1022	SLU 57	-33	-12	3025	1.67	-641.02	-3.07
1022	SLU 58	-33	-17	3036	1.69	-643.38	-4.38
1022	SLU 59	-33	-12	3004	1.65	-636.57	-3.04
1022	SLU 60	-33	-17	3077	1.7	-652.09	-4.38
1022	SLU 61	-33	-12	3045	1.66	-645.28	-3.04
1022	SLU 62	-34	-18	3114	1.72	-659.8	-4.44
1022	SLU 63	-33	-12	3082	1.69	-652.99	-3.1
1022	SLU 64	-34	-18	3056	1.72	-647.59	-4.47
1022	SLU 65	-33	-9	3002	1.66	-636.25	-2.23
1022	SLU 66	-34	-18	3115	1.76	-659.74	-4.57
1022	SLU 67	-34	-13	3083	1.72	-652.94	-3.22
1022	SLU 68	-33	-9	3040	1.68	-643.95	-2.29
1022	SLU 69	-35	-18	3152	1.78	-667.45	-4.63
1022	SLU 70	-34	-13	3120	1.75	-660.64	-3.28
1022	SLU 71	-34	-18	3130	1.77	-663.01	-4.59
1022	SLU 72	-34	-13	3098	1.73	-656.2	-3.25
1022	SLU 73	-35	-10	3273	1.79	-692.55	-2.51
1022	SLU 74	-36	-19	3385	1.89	-716.05	-4.85
1022	SLU 75	-36	-14	3353	1.86	-709.24	-3.5
1022	SLU 76	-35	-10	3310	1.82	-700.25	-2.57
1022	SLU 77	-37	-19	3422	1.92	-723.75	-4.91
1022	SLU 78	-36	-14	3390	1.88	-716.95	-3.56
1022	SLU 79	-36	-19	3401	1.9	-719.31	-4.87
1022	SLU 80	-36	-14	3369	1.87	-712.5	-3.53
1022	SLU 81	-36	-19	3442	1.91	-728.02	-4.87
1022	SLU 82	-36	-14	3410	1.87	-721.21	-3.53
1022	SLU 83	-37	-20	3479	1.94	-735.73	-4.93
1022	SLU 84	-36	-14	3448	1.9	-728.92	-3.59
1022	SLE RA 1	-25	-13	2270	1.27	-481.46	-3.33
1022	SLE RA 2	-25	-7	2235	1.23	-473.9	-1.84
1022	SLE RA 3	-26	-13	2309	1.3	-489.56	-3.4
1022	SLE RA 4	-25	-10	2288	1.28	-485.02	-2.5
1022	SLE RA 5	-25	-7	2260	1.25	-479.03	-1.88
1022	SLE RA 6	-26	-14	2334	1.32	-494.7	-3.44
1022	SLE RA 7	-25	-10	2313	1.29	-490.16	-2.54
1022	SLE RA 8	-26	-14	2320	1.31	-491.74	-3.41
1022	SLE RA 9	-25	-10	2299	1.28	-487.2	-2.52
1022	SLE RA 10	-26	-8	2415	1.32	-511.43	-2.02
1022	SLE RA 11	-27	-14	2490	1.39	-527.1	-3.58
1022	SLE RA 12	-27	-11	2469	1.37	-522.56	-2.69
1022	SLE RA 13	-26	-8	2440	1.34	-516.57	-2.06
1022	SLE RA 14	-27	-14	2515	1.41	-532.23	-3.62
1022	SLE RA 15	-27	-11	2493	1.38	-527.7	-2.73
1022	SLE RA 16	-27	-14	2500	1.4	-529.27	-3.6
1022	SLE RA 17	-27	-11	2479	1.37	-524.73	-2.7
1022	SLE RA 18	-27	-14	2528	1.4	-535.08	-3.6

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1022	SLE RA 19	-27	-11	2507	1.38	-530.54	-2.7
1022	SLE RA 20	-27	-14	2553	1.42	-540.22	-3.64
1022	SLE RA 21	-27	-11	2531	1.4	-535.68	-2.74
1022	SLE FR 1	-25	-13	2270	1.27	-481.46	-3.33
1022	SLE FR 2	-25	-12	2263	1.26	-479.95	-3.03
1022	SLE FR 3	-25	-13	2280	1.28	-483.52	-3.35
1022	SLE FR 4	-26	-12	2340	1.3	-496.03	-3.11
1022	SLE FR 5	-26	-14	2357	1.32	-499.6	-3.43
1022	SLE FR 6	-26	-14	2399	1.34	-508.27	-3.47
1022	SLE QP 1	-25	-13	2270	1.27	-481.46	-3.33
1022	SLE QP 2	-26	-14	2348	1.31	-497.55	-3.41
1022	SLD 1	223	38	2345	1.49	-496.56	9.37
1022	SLD 2	179	11	2378	1.46	-503.05	2.57
1022	SLD 3	210	-70	3068	2.29	-649.61	-17.51
1022	SLD 4	166	-97	3100	2.27	-656.1	-24.31
1022	SLD 5	77	170	1245	0.15	-263.96	42.41
1022	SLD 6	48	152	1267	0.14	-268.24	37.93
1022	SLD 7	33	-188	3653	2.83	-774.12	-47.18
1022	SLD 8	4	-206	3675	2.81	-778.4	-51.67
1022	SLD 9	-55	179	1020	-0.19	-216.69	44.85
1022	SLD 10	-84	161	1042	-0.2	-220.97	40.36
1022	SLD 11	-99	-179	3428	2.49	-726.85	-44.75
1022	SLD 12	-128	-197	3450	2.47	-731.13	-49.24
1022	SLD 13	-217	70	1595	0.36	-338.99	17.49
1022	SLD 14	-261	43	1627	0.33	-345.48	10.68
1022	SLD 15	-230	-38	2317	1.16	-492.04	-9.39
1022	SLD 16	-274	-65	2350	1.14	-498.53	-16.2
1022	SLV 1	557	115	2282	1.65	-482.63	28.54
1022	SLV 2	454	51	2360	1.6	-497.88	12.54
1022	SLV 3	524	-153	4092	3.67	-865.96	-38.36
1022	SLV 4	421	-217	4169	3.61	-881.21	-54.35
1022	SLV 5	217	442	-431	-1.63	91.16	110.61
1022	SLV 6	148	399	-379	-1.66	80.89	99.84
1022	SLV 7	109	-449	5601	5.08	-1186.61	-112.36
1022	SLV 8	40	-492	5653	5.04	-1196.88	-123.13
1022	SLV 9	-92	465	-958	-2.42	201.78	116.31
1022	SLV 10	-161	422	-906	-2.46	191.52	105.54
1022	SLV 11	-199	-426	5074	4.29	-1075.98	-106.67
1022	SLV 12	-269	-470	5126	4.25	-1086.25	-117.43
1022	SLV 13	-473	190	526	-0.99	-113.88	47.53
1022	SLV 14	-576	126	603	-1.04	-129.13	31.53
1022	SLV 15	-505	-78	2335	1.02	-497.21	-19.37
1022	SLV 16	-608	-142	2413	0.97	-512.46	-35.36
1022	CRTFP Ux+	0	0	0	0	0	0
1022	CRTFP Ux-	0	0	0	0	0	0
1022	CRTFP Uy+	0	0	0	0	0	0
1022	CRTFP Uy-	0	0	0	0	0	0
1066	SLU 1	30	14	2156	-39.65	496.92	-2.95
1066	SLU 2	28	24	2096	-38.6	483.94	-5.43
1066	SLU 3	31	15	2217	-40.77	510.63	-2.94
1066	SLU 4	30	20	2181	-40.14	502.84	-4.43
1066	SLU 5	29	24	2136	-39.33	492.78	-5.4
1066	SLU 6	32	15	2257	-41.5	519.47	-2.91
1066	SLU 7	31	20	2221	-40.87	511.68	-4.4
1066	SLU 8	32	14	2236	-41.12	514.59	-2.88
1066	SLU 9	31	20	2200	-40.49	506.81	-4.37
1066	SLU 10	32	26	2366	-43.56	545.39	-5.91
1066	SLU 11	35	17	2487	-45.73	572.08	-3.43
1066	SLU 12	33	23	2451	-45.1	564.3	-4.91
1066	SLU 13	33	26	2405	-44.3	554.23	-5.88
1066	SLU 14	36	17	2527	-46.47	580.92	-3.39
1066	SLU 15	34	23	2491	-45.84	573.13	-4.88
1066	SLU 16	35	17	2505	-46.08	576.05	-3.36
1066	SLU 17	34	22	2469	-45.45	568.26	-4.85
1066	SLU 18	35	18	2541	-46.74	584.71	-3.64
1066	SLU 19	34	23	2505	-46.11	576.92	-5.13
1066	SLU 20	36	18	2581	-47.47	593.55	-3.61
1066	SLU 21	35	23	2545	-46.84	585.76	-5.1
1066	SLU 22	35	16	2523	-46.37	580.27	-3.28
1066	SLU 23	33	26	2463	-45.32	567.29	-5.76
1066	SLU 24	36	16	2584	-47.49	593.98	-3.27
1066	SLU 25	35	22	2548	-46.86	586.2	-4.76
1066	SLU 26	34	26	2503	-46.06	576.13	-5.72
1066	SLU 27	37	16	2624	-48.23	602.82	-3.23
1066	SLU 28	36	22	2588	-47.6	595.03	-4.72
1066	SLU 29	37	16	2603	-47.84	597.95	-3.21
1066	SLU 30	36	22	2567	-47.21	590.16	-4.7
1066	SLU 31	36	28	2733	-50.29	628.75	-6.24
1066	SLU 32	39	18	2854	-52.46	655.44	-3.75
1066	SLU 33	38	24	2818	-51.83	647.65	-5.24
1066	SLU 34	37	28	2773	-51.02	637.59	-6.21
1066	SLU 35	40	18	2894	-53.19	664.28	-3.72
1066	SLU 36	39	24	2858	-52.56	656.49	-5.21
1066	SLU 37	40	18	2872	-52.8	659.4	-3.69
1066	SLU 38	39	24	2837	-52.17	651.62	-5.18
1066	SLU 39	39	19	2908	-53.47	668.06	-3.97
1066	SLU 40	38	25	2872	-52.83	660.28	-5.46
1066	SLU 41	40	19	2948	-54.2	676.9	-3.93
1066	SLU 42	39	25	2912	-53.57	669.12	-5.42

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1066	SLU 43	38	18	2676	-49.24	617.41	-3.72
1066	SLU 44	36	28	2617	-48.19	604.44	-6.2
1066	SLU 45	39	18	2738	-50.36	631.13	-3.71
1066	SLU 46	38	24	2702	-49.73	623.34	-5.2
1066	SLU 47	37	28	2657	-48.92	613.27	-6.17
1066	SLU 48	40	18	2778	-51.09	639.96	-3.68
1066	SLU 49	39	24	2742	-50.46	632.18	-5.17
1066	SLU 50	40	18	2756	-50.71	635.09	-3.65
1066	SLU 51	39	24	2720	-50.07	627.3	-5.14
1066	SLU 52	39	30	2886	-53.15	665.89	-6.69
1066	SLU 53	42	21	3007	-55.32	692.58	-4.2
1066	SLU 54	41	26	2971	-54.69	684.79	-5.69
1066	SLU 55	40	30	2926	-53.88	674.73	-6.65
1066	SLU 56	43	20	3047	-56.06	701.42	-4.16
1066	SLU 57	42	26	3011	-55.42	693.63	-5.65
1066	SLU 58	43	20	3026	-55.67	696.55	-4.14
1066	SLU 59	42	26	2990	-55.04	688.76	-5.63
1066	SLU 60	42	21	3062	-56.33	705.21	-4.41
1066	SLU 61	41	27	3026	-55.7	697.42	-5.9
1066	SLU 62	43	21	3102	-57.06	714.04	-4.38
1066	SLU 63	42	27	3066	-56.43	706.26	-5.87
1066	SLU 64	42	20	3044	-55.96	700.77	-4.05
1066	SLU 65	41	30	2984	-54.91	687.79	-6.53
1066	SLU 66	44	20	3105	-57.08	714.48	-4.04
1066	SLU 67	43	26	3069	-56.45	706.69	-5.53
1066	SLU 68	42	30	3024	-55.65	696.63	-6.5
1066	SLU 69	45	20	3145	-57.82	723.32	-4.01
1066	SLU 70	44	26	3109	-57.19	715.53	-5.5
1066	SLU 71	44	20	3124	-57.43	718.45	-3.98
1066	SLU 72	43	26	3088	-56.8	710.66	-5.47
1066	SLU 73	44	32	3254	-59.88	749.24	-7.01
1066	SLU 74	47	22	3375	-62.05	775.93	-4.53
1066	SLU 75	46	28	3339	-61.42	768.15	-6.01
1066	SLU 76	45	32	3293	-60.61	758.08	-6.98
1066	SLU 77	48	22	3415	-62.78	784.77	-4.49
1066	SLU 78	47	28	3379	-62.15	776.99	-5.98
1066	SLU 79	48	22	3393	-62.39	779.9	-4.46
1066	SLU 80	46	28	3357	-61.76	772.11	-5.95
1066	SLU 81	47	23	3429	-63.05	788.56	-4.74
1066	SLU 82	46	29	3393	-62.42	780.77	-6.23
1066	SLU 83	48	23	3469	-63.79	797.4	-4.71
1066	SLU 84	47	29	3433	-63.16	789.61	-6.19
1066	SLE RA 1	32	15	2261	-41.57	520.73	-3.04
1066	SLE RA 2	30	21	2221	-40.87	512.08	-4.7
1066	SLE RA 3	32	15	2301	-42.32	529.87	-3.04
1066	SLE RA 4	32	19	2277	-41.9	524.68	-4.03
1066	SLE RA 5	31	21	2247	-41.36	517.97	-4.67
1066	SLE RA 6	33	15	2328	-42.81	535.77	-3.02
1066	SLE RA 7	32	19	2304	-42.39	530.57	-4.01
1066	SLE RA 8	33	15	2314	-42.55	532.52	-3
1066	SLE RA 9	32	19	2290	-42.13	527.33	-3.99
1066	SLE RA 10	32	23	2400	-44.18	553.05	-5.02
1066	SLE RA 11	34	16	2481	-45.63	570.84	-3.36
1066	SLE RA 12	34	20	2457	-45.21	565.65	-4.35
1066	SLE RA 13	33	23	2427	-44.67	558.94	-5
1066	SLE RA 14	35	16	2508	-46.12	576.74	-3.34
1066	SLE RA 15	34	20	2484	-45.69	571.54	-4.33
1066	SLE RA 16	35	16	2494	-45.86	573.49	-3.32
1066	SLE RA 17	34	20	2470	-45.44	568.3	-4.31
1066	SLE RA 18	35	17	2517	-46.3	579.26	-3.5
1066	SLE RA 19	34	21	2493	-45.88	574.07	-4.5
1066	SLE RA 20	35	17	2544	-46.79	585.15	-3.48
1066	SLE RA 21	34	21	2520	-46.37	579.96	-4.47
1066	SLE FR 1	32	15	2261	-41.57	520.73	-3.04
1066	SLE FR 2	31	16	2253	-41.43	519	-3.37
1066	SLE FR 3	32	15	2271	-41.77	523.09	-3.03
1066	SLE FR 4	32	17	2330	-42.85	536.56	-3.51
1066	SLE FR 5	33	16	2348	-43.18	540.65	-3.17
1066	SLE FR 6	33	16	2389	-43.93	550	-3.27
1066	SLE QP 1	32	15	2261	-41.57	520.73	-3.04
1066	SLE QP 2	32	16	2338	-42.99	538.29	-3.18
1066	SLD 1	267	53	1570	-29.66	361.31	-9.22
1066	SLD 2	221	83	1528	-28.87	354.51	-17.69
1066	SLD 3	293	-65	2375	-43.85	535.9	20.8
1066	SLD 4	246	-35	2334	-43.05	529.11	12.34
1066	SLD 5	72	201	893	-17.62	221.62	-49.01
1066	SLD 6	42	221	866	-17.1	217.14	-54.59
1066	SLD 7	158	-193	3578	-64.9	803.6	51.08
1066	SLD 8	127	-173	3551	-64.37	799.11	45.49
1066	SLD 9	-62	204	1125	-21.6	277.47	-51.85
1066	SLD 10	-93	225	1097	-21.08	272.99	-57.44
1066	SLD 11	23	-189	3810	-68.88	859.45	48.23
1066	SLD 12	-8	-169	3782	-68.35	854.96	42.65
1066	SLD 13	-181	66	2342	-42.93	547.48	-18.7
1066	SLD 14	-228	97	2300	-42.13	540.68	-27.16
1066	SLD 15	-156	-52	3147	-57.11	722.07	11.33
1066	SLD 16	-202	-22	3105	-56.32	715.27	2.86
1066	SLV 1	579	112	474	-10.62	109.64	-19.64
1066	SLV 2	470	184	376	-8.76	93.66	-39.54

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1066	SLV 3	644	-183	2494	-46.18	547.3	55.4
1066	SLV 4	535	-112	2395	-44.31	531.31	35.5
1066	SLV 5	118	479	-1266	20.3	-251.1	-118.22
1066	SLV 6	45	527	-1332	21.56	-261.87	-131.62
1066	SLV 7	335	-505	5466	-98.23	1207.76	131.93
1066	SLV 8	261	-457	5399	-96.97	1197	118.52
1066	SLV 9	-196	488	-724	10.99	-120.41	-124.88
1066	SLV 10	-270	537	-790	12.25	-131.18	-138.29
1066	SLV 11	20	-496	6007	-107.54	1338.45	125.26
1066	SLV 12	-54	-448	5941	-106.28	1327.69	111.86
1066	SLV 13	-470	143	2280	-41.66	545.27	-41.86
1066	SLV 14	-579	215	2181	-39.8	529.29	-61.76
1066	SLV 15	-405	-152	4299	-77.22	982.93	33.18
1066	SLV 16	-514	-81	4201	-75.35	966.94	13.28
1066	CRTFP Ux+	0	0	0	0	0	0
1066	CRTFP Ux-	0	0	0	0	0	0
1066	CRTFP Uy+	0	0	0	0	0	0
1066	CRTFP Uy-	0	0	0	0	0	0
1067	SLU 1	-49	-26	4676	-1063.91	-781.11	-16.5
1067	SLU 2	-47	-7	4559	-1038.58	-761.56	-12.78
1067	SLU 3	-50	-27	4803	-1092.6	-802.35	-16.95
1067	SLU 4	-49	-16	4733	-1077.4	-790.62	-14.71
1067	SLU 5	-48	-8	4640	-1056.81	-775.04	-13.04
1067	SLU 6	-51	-28	4884	-1110.83	-815.83	-17.21
1067	SLU 7	-50	-16	4814	-1095.63	-804.1	-14.98
1067	SLU 8	-50	-27	4838	-1100.37	-808.08	-17.03
1067	SLU 9	-49	-16	4768	-1085.17	-796.35	-14.8
1067	SLU 10	-51	-10	5143	-1171.92	-858.54	-14.14
1067	SLU 11	-54	-29	5387	-1225.93	-899.33	-18.31
1067	SLU 12	-53	-18	5317	-1210.73	-887.6	-16.08
1067	SLU 13	-52	-10	5224	-1190.15	-872.02	-14.4
1067	SLU 14	-55	-30	5468	-1244.16	-912.81	-18.58
1067	SLU 15	-54	-19	5398	-1228.96	-901.08	-16.34
1067	SLU 16	-54	-30	5421	-1233.7	-905.06	-18.39
1067	SLU 17	-53	-18	5351	-1218.51	-893.33	-16.16
1067	SLU 18	-54	-30	5509	-1254.39	-919.65	-18.45
1067	SLU 19	-53	-18	5439	-1239.19	-907.92	-16.21
1067	SLU 20	-55	-30	5590	-1272.62	-933.14	-18.71
1067	SLU 21	-54	-19	5521	-1257.42	-921.41	-16.48
1067	SLU 22	-55	-30	5465	-1243.01	-912.37	-18.8
1067	SLU 23	-54	-12	5348	-1217.68	-892.82	-15.07
1067	SLU 24	-57	-31	5593	-1271.7	-933.61	-19.24
1067	SLU 25	-56	-20	5523	-1256.5	-921.88	-17.01
1067	SLU 26	-54	-12	5429	-1235.91	-906.31	-15.33
1067	SLU 27	-57	-32	5674	-1289.93	-947.09	-19.51
1067	SLU 28	-56	-20	5604	-1274.73	-935.36	-17.27
1067	SLU 29	-57	-31	5627	-1279.47	-939.34	-19.32
1067	SLU 30	-56	-20	5557	-1264.27	-927.61	-17.09
1067	SLU 31	-58	-14	5932	-1351.02	-989.8	-16.43
1067	SLU 32	-61	-34	6176	-1405.03	-1030.59	-20.6
1067	SLU 33	-60	-22	6106	-1389.83	-1018.86	-18.37
1067	SLU 34	-58	-14	6013	-1369.25	-1003.29	-16.7
1067	SLU 35	-61	-34	6257	-1423.26	-1044.07	-20.87
1067	SLU 36	-60	-23	6187	-1408.06	-1032.34	-18.63
1067	SLU 37	-61	-34	6211	-1412.8	-1036.32	-20.69
1067	SLU 38	-60	-23	6141	-1397.61	-1024.59	-18.45
1067	SLU 39	-61	-34	6299	-1433.49	-1050.92	-20.74
1067	SLU 40	-60	-23	6229	-1418.29	-1039.19	-18.51
1067	SLU 41	-62	-34	6380	-1451.72	-1064.4	-21.01
1067	SLU 42	-61	-23	6310	-1436.52	-1052.67	-18.77
1067	SLU 43	-61	-33	5808	-1321.68	-970.44	-20.67
1067	SLU 44	-60	-14	5691	-1296.35	-950.89	-16.94
1067	SLU 45	-63	-34	5935	-1350.36	-991.68	-21.11
1067	SLU 46	-62	-22	5865	-1335.17	-979.95	-18.88
1067	SLU 47	-60	-14	5772	-1314.58	-964.37	-17.21
1067	SLU 48	-63	-34	6016	-1368.59	-1005.16	-21.38
1067	SLU 49	-62	-23	5946	-1353.4	-993.43	-19.14
1067	SLU 50	-63	-34	5970	-1358.14	-997.41	-21.2
1067	SLU 51	-62	-22	5900	-1342.94	-985.68	-18.96
1067	SLU 52	-64	-16	6275	-1429.68	-1047.87	-18.3
1067	SLU 53	-66	-36	6519	-1483.7	-1088.66	-22.48
1067	SLU 54	-65	-25	6449	-1468.5	-1076.93	-20.24
1067	SLU 55	-64	-17	6356	-1447.91	-1061.35	-18.57
1067	SLU 56	-67	-36	6600	-1501.92	-1102.14	-22.74
1067	SLU 57	-66	-25	6530	-1486.73	-1090.41	-20.51
1067	SLU 58	-67	-36	6553	-1491.47	-1094.39	-22.56
1067	SLU 59	-66	-25	6484	-1476.27	-1082.66	-20.32
1067	SLU 60	-67	-36	6641	-1512.15	-1108.98	-22.61
1067	SLU 61	-66	-25	6572	-1496.96	-1097.25	-20.38
1067	SLU 62	-68	-37	6723	-1530.38	-1122.47	-22.88
1067	SLU 63	-67	-25	6653	-1515.19	-1110.74	-20.64
1067	SLU 64	-68	-37	6597	-1500.78	-1101.7	-22.96
1067	SLU 65	-66	-18	6480	-1475.45	-1082.15	-19.23
1067	SLU 66	-69	-38	6725	-1529.46	-1122.94	-23.41
1067	SLU 67	-68	-26	6655	-1514.27	-1111.21	-21.17
1067	SLU 68	-67	-19	6561	-1493.68	-1095.64	-19.5
1067	SLU 69	-70	-38	6806	-1547.69	-1136.42	-23.67
1067	SLU 70	-69	-27	6736	-1532.5	-1124.69	-21.44
1067	SLU 71	-69	-38	6759	-1537.24	-1128.67	-23.49

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1067	SLU 72	-68	-27	6689	-1522.04	-1116.94	-21.25
1067	SLU 73	-70	-20	7064	-1608.78	-1179.13	-20.6
1067	SLU 74	-73	-40	7308	-1662.8	-1219.92	-24.77
1067	SLU 75	-72	-29	7238	-1647.6	-1208.19	-22.53
1067	SLU 76	-71	-21	7145	-1627.01	-1192.62	-20.86
1067	SLU 77	-74	-41	7389	-1681.02	-1233.4	-25.03
1067	SLU 78	-73	-29	7319	-1665.83	-1221.67	-22.8
1067	SLU 79	-73	-40	7343	-1670.57	-1225.65	-24.85
1067	SLU 80	-72	-29	7273	-1655.37	-1213.92	-22.62
1067	SLU 81	-73	-40	7431	-1691.25	-1240.24	-24.91
1067	SLU 82	-72	-29	7361	-1676.06	-1228.51	-22.67
1067	SLU 83	-74	-41	7512	-1709.48	-1253.73	-25.17
1067	SLU 84	-73	-29	7442	-1694.29	-1242	-22.93
1067	SLE RA 1	-51	-27	4901	-1115.08	-818.61	-17.16
1067	SLE RA 2	-50	-15	4823	-1098.2	-805.58	-14.67
1067	SLE RA 3	-52	-28	4986	-1134.21	-832.77	-17.46
1067	SLE RA 4	-51	-20	4940	-1124.07	-824.95	-15.97
1067	SLE RA 5	-50	-15	4877	-1110.35	-814.57	-14.85
1067	SLE RA 6	-52	-28	5040	-1146.36	-841.76	-17.63
1067	SLE RA 7	-51	-21	4994	-1136.23	-833.94	-16.14
1067	SLE RA 8	-52	-28	5009	-1139.39	-836.59	-17.51
1067	SLE RA 9	-51	-21	4963	-1129.26	-828.77	-16.02
1067	SLE RA 10	-52	-16	5213	-1187.09	-870.23	-15.58
1067	SLE RA 11	-54	-30	5375	-1223.09	-897.42	-18.36
1067	SLE RA 12	-53	-22	5329	-1212.96	-889.6	-16.87
1067	SLE RA 13	-53	-17	5267	-1199.24	-879.22	-15.76
1067	SLE RA 14	-55	-30	5429	-1235.25	-906.41	-18.54
1067	SLE RA 15	-54	-22	5383	-1225.12	-898.59	-17.05
1067	SLE RA 16	-54	-30	5398	-1228.28	-901.25	-18.42
1067	SLE RA 17	-54	-22	5352	-1218.15	-893.43	-16.93
1067	SLE RA 18	-54	-30	5457	-1242.07	-910.98	-18.45
1067	SLE RA 19	-54	-22	5410	-1231.93	-903.16	-16.96
1067	SLE RA 20	-55	-30	5511	-1254.22	-919.97	-18.63
1067	SLE RA 21	-54	-23	5464	-1244.09	-912.15	-17.14
1067	SLE FR 1	-51	-27	4901	-1115.08	-818.61	-17.16
1067	SLE FR 2	-50	-25	4886	-1111.71	-816.01	-16.66
1067	SLE FR 3	-51	-28	4923	-1119.94	-822.21	-17.23
1067	SLE FR 4	-52	-26	5052	-1149.8	-843.72	-17.05
1067	SLE FR 5	-52	-28	5090	-1158.04	-849.92	-17.62
1067	SLE FR 6	-53	-29	5179	-1178.57	-864.8	-17.81
1067	SLE QP 1	-51	-27	4901	-1115.08	-818.61	-17.16
1067	SLE QP 2	-52	-28	5068	-1153.18	-846.32	-17.55
1067	SLD 1	476	81	5082	-1147.58	-843.21	129.28
1067	SLD 2	382	23	5151	-1165.57	-854.33	96.53
1067	SLD 3	449	-145	6662	-1491.31	-1107.99	83.61
1067	SLD 4	355	-203	6731	-1509.3	-1119.12	50.86
1067	SLD 5	164	358	2663	-626.93	-441.8	101.65
1067	SLD 6	102	319	2708	-638.79	-449.14	80.05
1067	SLD 7	75	-395	7931	-1772.72	-1324.41	-50.57
1067	SLD 8	13	-434	7976	-1784.59	-1331.75	-72.18
1067	SLD 9	-116	378	2159	-521.77	-360.89	37.08
1067	SLD 10	-178	339	2205	-533.64	-368.23	15.48
1067	SLD 11	-206	-376	7428	-1667.56	-1243.51	-115.14
1067	SLD 12	-268	-414	7473	-1679.43	-1250.85	-136.75
1067	SLD 13	-459	147	3404	-797.05	-573.53	-85.95
1067	SLD 14	-553	88	3473	-815.04	-584.65	-118.7
1067	SLD 15	-485	-79	4985	-1140.79	-838.31	-131.62
1067	SLD 16	-579	-137	5054	-1158.78	-849.44	-164.37
1067	SLV 1	1184	245	4970	-1111.71	-817.18	329.42
1067	SLV 2	963	107	5133	-1153.99	-843.33	252.44
1067	SLV 3	1119	-318	8929	-1972.67	-1480.44	216.09
1067	SLV 4	898	-455	9091	-2014.96	-1506.59	139.11
1067	SLV 5	459	932	-996	172.95	173.25	272.8
1067	SLV 6	311	839	-887	144.48	155.65	220.97
1067	SLV 7	242	-942	12200	-2696.93	-2037.63	-104.97
1067	SLV 8	93	-1034	12310	-2725.4	-2055.23	-156.8
1067	SLV 9	-197	978	-2174	419.05	362.59	121.71
1067	SLV 10	-345	886	-2064	390.57	344.98	69.88
1067	SLV 11	-414	-896	11022	-2450.84	-1848.29	-256.06
1067	SLV 12	-563	-988	11132	-2479.31	-1865.89	-307.89
1067	SLV 13	-1002	399	1044	-291.4	-186.06	-174.2
1067	SLV 14	-1223	261	1207	-333.69	-212.2	-251.19
1067	SLV 15	-1067	-163	5003	-1152.36	-849.32	-287.53
1067	SLV 16	-1288	-301	5166	-1194.65	-875.46	-364.52
1067	CRTFP Ux+	0	0	0	0	0	0
1067	CRTFP Ux-	0	0	0	0	0	0
1067	CRTFP Uy+	0	0	0	0	0	0
1067	CRTFP Uy-	0	0	0	0	0	0
1069	SLU 1	-39	-21	3590	-1071.94	-61.07	-13.99
1069	SLU 2	-38	-6	3502	-1047.13	-59.58	-13.26
1069	SLU 3	-40	-22	3688	-1100.38	-62.72	-14.36
1069	SLU 4	-39	-13	3635	-1085.49	-61.83	-13.92
1069	SLU 5	-38	-7	3564	-1065.21	-60.63	-13.47
1069	SLU 6	-40	-22	3750	-1118.46	-63.77	-14.57
1069	SLU 7	-40	-13	3697	-1103.57	-62.88	-14.13
1069	SLU 8	-40	-22	3714	-1108.11	-63.17	-14.41
1069	SLU 9	-39	-13	3661	-1093.22	-62.27	-13.97
1069	SLU 10	-41	-8	3950	-1180.57	-67.15	-14.38
1069	SLU 11	-43	-24	4136	-1233.82	-70.29	-15.47

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1069	SLU 12	-42	-15	4083	-1218.93	-69.4	-15.03
1069	SLU 13	-41	-8	4012	-1198.65	-68.2	-14.59
1069	SLU 14	-44	-24	4197	-1251.9	-71.34	-15.68
1069	SLU 15	-43	-15	4145	-1237.02	-70.44	-15.24
1069	SLU 16	-43	-24	4162	-1241.55	-70.73	-15.52
1069	SLU 17	-42	-15	4109	-1226.66	-69.84	-15.09
1069	SLU 18	-43	-24	4230	-1262.57	-71.88	-15.58
1069	SLU 19	-43	-15	4177	-1247.69	-70.99	-15.15
1069	SLU 20	-44	-24	4292	-1280.66	-72.93	-15.79
1069	SLU 21	-43	-15	4239	-1265.77	-72.04	-15.36
1069	SLU 22	-44	-25	4195	-1250.51	-71.29	-15.84
1069	SLU 23	-43	-9	4107	-1225.7	-69.8	-15.12
1069	SLU 24	-45	-25	4292	-1278.95	-72.94	-16.21
1069	SLU 25	-44	-16	4239	-1264.06	-72.04	-15.77
1069	SLU 26	-43	-10	4168	-1243.78	-70.84	-15.32
1069	SLU 27	-46	-26	4354	-1297.04	-73.98	-16.42
1069	SLU 28	-45	-17	4301	-1282.15	-73.09	-15.98
1069	SLU 29	-45	-25	4319	-1286.68	-73.38	-16.26
1069	SLU 30	-44	-16	4266	-1271.79	-72.49	-15.83
1069	SLU 31	-46	-11	4554	-1359.14	-77.36	-16.23
1069	SLU 32	-48	-27	4740	-1412.4	-80.5	-17.32
1069	SLU 33	-47	-18	4687	-1397.51	-79.61	-16.89
1069	SLU 34	-46	-12	4616	-1377.23	-78.41	-16.44
1069	SLU 35	-49	-28	4802	-1430.48	-81.55	-17.53
1069	SLU 36	-48	-18	4749	-1415.59	-80.65	-17.1
1069	SLU 37	-48	-27	4766	-1420.12	-80.95	-17.38
1069	SLU 38	-47	-18	4713	-1405.24	-80.05	-16.94
1069	SLU 39	-48	-27	4834	-1441.15	-82.1	-17.44
1069	SLU 40	-48	-18	4781	-1426.26	-81.2	-17
1069	SLU 41	-49	-28	4896	-1459.23	-83.14	-17.65
1069	SLU 42	-48	-19	4843	-1444.34	-82.25	-17.21
1069	SLU 43	-49	-27	4460	-1332.3	-75.89	-17.55
1069	SLU 44	-47	-11	4372	-1307.48	-74.41	-16.82
1069	SLU 45	-50	-27	4558	-1360.73	-77.54	-17.92
1069	SLU 46	-49	-18	4505	-1345.85	-76.65	-17.48
1069	SLU 47	-48	-12	4434	-1325.57	-75.45	-17.03
1069	SLU 48	-50	-28	4620	-1378.82	-78.59	-18.13
1069	SLU 49	-50	-19	4567	-1363.93	-77.7	-17.69
1069	SLU 50	-50	-27	4584	-1368.46	-77.99	-17.97
1069	SLU 51	-49	-18	4531	-1353.57	-77.09	-17.53
1069	SLU 52	-51	-13	4820	-1440.93	-81.97	-17.94
1069	SLU 53	-53	-29	5006	-1494.18	-85.11	-19.03
1069	SLU 54	-52	-20	4953	-1479.29	-84.22	-18.6
1069	SLU 55	-51	-14	4882	-1459.01	-83.02	-18.15
1069	SLU 56	-53	-30	5067	-1512.26	-86.16	-19.24
1069	SLU 57	-53	-20	5015	-1497.37	-85.26	-18.81
1069	SLU 58	-53	-29	5032	-1501.91	-85.55	-19.09
1069	SLU 59	-52	-20	4979	-1487.02	-84.66	-18.65
1069	SLU 60	-53	-29	5100	-1522.93	-86.7	-19.15
1069	SLU 61	-52	-20	5047	-1508.04	-85.81	-18.71
1069	SLU 62	-54	-30	5162	-1541.01	-87.75	-19.36
1069	SLU 63	-53	-21	5109	-1526.13	-86.86	-18.92
1069	SLU 64	-54	-30	5065	-1510.87	-86.11	-19.4
1069	SLU 65	-53	-15	4977	-1486.06	-84.62	-18.68
1069	SLU 66	-55	-31	5162	-1539.31	-87.76	-19.77
1069	SLU 67	-54	-21	5109	-1524.42	-86.86	-19.33
1069	SLU 68	-53	-15	5038	-1504.14	-85.67	-18.89
1069	SLU 69	-55	-31	5224	-1557.39	-88.8	-19.98
1069	SLU 70	-55	-22	5171	-1542.5	-87.91	-19.54
1069	SLU 71	-55	-31	5189	-1547.04	-88.2	-19.82
1069	SLU 72	-54	-22	5136	-1532.15	-87.31	-19.39
1069	SLU 73	-56	-17	5424	-1619.5	-92.18	-19.79
1069	SLU 74	-58	-32	5610	-1672.75	-95.32	-20.89
1069	SLU 75	-57	-23	5557	-1657.86	-94.43	-20.45
1069	SLU 76	-56	-17	5486	-1637.58	-93.23	-20
1069	SLU 77	-59	-33	5672	-1690.84	-96.37	-21.1
1069	SLU 78	-58	-24	5619	-1675.95	-95.48	-20.66
1069	SLU 79	-58	-33	5636	-1680.48	-95.77	-20.94
1069	SLU 80	-57	-23	5583	-1665.59	-94.87	-20.5
1069	SLU 81	-58	-33	5704	-1701.51	-96.92	-21
1069	SLU 82	-58	-23	5651	-1686.62	-96.02	-20.56
1069	SLU 83	-59	-33	5766	-1719.59	-97.96	-21.21
1069	SLU 84	-58	-24	5713	-1704.7	-97.07	-20.77
1069	SLE RA 1	-40	-22	3763	-1122.96	-63.99	-14.52
1069	SLE RA 2	-39	-12	3704	-1106.42	-63	-14.03
1069	SLE RA 3	-41	-23	3828	-1141.92	-65.09	-14.76
1069	SLE RA 4	-40	-17	3793	-1131.99	-64.5	-14.47
1069	SLE RA 5	-40	-12	3746	-1118.47	-63.7	-14.17
1069	SLE RA 6	-41	-23	3869	-1153.98	-65.79	-14.9
1069	SLE RA 7	-41	-17	3834	-1144.05	-65.19	-14.61
1069	SLE RA 8	-41	-23	3846	-1147.07	-65.39	-14.8
1069	SLE RA 9	-41	-17	3810	-1137.15	-64.79	-14.51
1069	SLE RA 10	-42	-13	4003	-1195.38	-68.04	-14.78
1069	SLE RA 11	-43	-24	4127	-1230.88	-70.14	-15.51
1069	SLE RA 12	-43	-18	4091	-1220.96	-69.54	-15.22
1069	SLE RA 13	-42	-14	4044	-1207.44	-68.74	-14.92
1069	SLE RA 14	-43	-24	4168	-1242.94	-70.83	-15.65
1069	SLE RA 15	-43	-18	4133	-1233.01	-70.24	-15.36
1069	SLE RA 16	-43	-24	4144	-1236.03	-70.43	-15.54

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1069	SLE RA 17	-43	-18	4109	-1226.11	-69.84	-15.25
1069	SLE RA 18	-43	-24	4189	-1250.05	-71.2	-15.58
1069	SLE RA 19	-43	-18	4154	-1240.13	-70.6	-15.29
1069	SLE RA 20	-44	-24	4231	-1262.11	-71.9	-15.72
1069	SLE RA 21	-43	-18	4195	-1252.18	-71.3	-15.43
1069	SLE FR 1	-40	-22	3763	-1122.96	-63.99	-14.52
1069	SLE FR 2	-40	-20	3751	-1119.65	-63.79	-14.42
1069	SLE FR 3	-40	-22	3780	-1127.78	-64.27	-14.58
1069	SLE FR 4	-41	-21	3879	-1157.78	-65.96	-14.74
1069	SLE FR 5	-41	-23	3908	-1165.91	-66.43	-14.89
1069	SLE FR 6	-42	-23	3976	-1186.51	-67.59	-15.05
1069	SLE QP 1	-40	-22	3763	-1122.96	-63.99	-14.52
1069	SLE QP 2	-41	-23	3891	-1161.09	-66.15	-14.84
1069	SLD 1	385	65	3872	-1133.82	-64.9	135.96
1069	SLD 2	310	19	3926	-1154.57	-65.77	108.93
1069	SLD 3	364	-118	5067	-1470.88	-85.07	125.51
1069	SLD 4	289	-163	5121	-1491.63	-85.94	98.48
1069	SLD 5	132	289	2063	-637.96	-35.03	51.12
1069	SLD 6	83	259	2099	-651.65	-35.6	33.29
1069	SLD 7	62	-320	6047	-1761.51	-102.27	16.27
1069	SLD 8	12	-350	6082	-1775.2	-102.84	-1.56
1069	SLD 9	-95	304	1700	-546.98	-29.47	-28.11
1069	SLD 10	-144	274	1735	-560.67	-30.04	-45.94
1069	SLD 11	-165	-304	5683	-1670.53	-96.71	-62.97
1069	SLD 12	-215	-334	5719	-1684.22	-97.28	-80.8
1069	SLD 13	-372	118	2661	-830.54	-46.37	-128.15
1069	SLD 14	-447	72	2715	-851.3	-47.23	-155.18
1069	SLD 15	-393	-65	3856	-1167.61	-66.54	-138.61
1069	SLD 16	-468	-110	3910	-1188.36	-67.41	-165.64
1069	SLV 1	958	196	3748	-1069.45	-61.55	338.73
1069	SLV 2	782	89	3875	-1118.23	-63.59	275.2
1069	SLV 3	907	-258	6742	-1913.65	-112.09	313.11
1069	SLV 4	731	-365	6868	-1962.43	-114.12	249.58
1069	SLV 5	369	752	-716	155.88	12.25	141.94
1069	SLV 6	251	680	-630	123.04	10.88	99.17
1069	SLV 7	198	-763	9263	-2658.12	-156.19	56.55
1069	SLV 8	80	-834	9348	-2690.97	-157.56	13.77
1069	SLV 9	-162	789	-1566	368.79	25.26	-43.45
1069	SLV 10	-281	717	-1481	335.95	23.89	-86.23
1069	SLV 11	-333	-726	8412	-2445.21	-143.18	-128.85
1069	SLV 12	-452	-797	8498	-2478.06	-144.55	-171.62
1069	SLV 13	-813	319	914	-359.75	-18.19	-279.26
1069	SLV 14	-989	213	1040	-408.53	-20.22	-342.79
1069	SLV 15	-864	-135	3907	-1203.95	-68.72	-304.87
1069	SLV 16	-1041	-242	4034	-1252.73	-70.75	-368.41
1069	CRTFP Ux+	0	0	0	0	0	0
1069	CRTFP Ux-	0	0	0	0	0	0
1069	CRTFP Uy+	0	0	0	0	0	0
1069	CRTFP Uy-	0	0	0	0	0	0
1070	SLU 1	-42	-23	3757	-1023.45	6.82	-14.6
1070	SLU 2	-41	-6	3665	-1000.21	6.64	-14.13
1070	SLU 3	-43	-23	3859	-1050.21	7.02	-14.98
1070	SLU 4	-42	-13	3804	-1036.27	6.91	-14.7
1070	SLU 5	-41	-6	3730	-1017.23	6.77	-14.35
1070	SLU 6	-44	-24	3923	-1067.23	7.14	-15.2
1070	SLU 7	-43	-14	3868	-1053.29	7.03	-14.92
1070	SLU 8	-43	-24	3886	-1057.49	7.07	-15.03
1070	SLU 9	-42	-14	3831	-1043.54	6.96	-14.75
1070	SLU 10	-44	-8	4132	-1126.08	7.55	-15.3
1070	SLU 11	-46	-25	4325	-1176.08	7.92	-16.15
1070	SLU 12	-46	-15	4270	-1162.14	7.82	-15.87
1070	SLU 13	-45	-8	4197	-1143.1	7.67	-15.51
1070	SLU 14	-47	-26	4390	-1193.1	8.05	-16.37
1070	SLU 15	-46	-16	4335	-1179.16	7.94	-16.08
1070	SLU 16	-46	-25	4353	-1183.35	7.98	-16.2
1070	SLU 17	-46	-15	4298	-1169.41	7.87	-15.92
1070	SLU 18	-47	-25	4424	-1203.26	8.12	-16.27
1070	SLU 19	-46	-15	4369	-1189.32	8.01	-15.98
1070	SLU 20	-47	-26	4488	-1220.28	8.24	-16.48
1070	SLU 21	-46	-16	4433	-1206.34	8.13	-16.2
1070	SLU 22	-47	-26	4387	-1191.67	8.05	-16.53
1070	SLU 23	-46	-9	4295	-1168.43	7.86	-16.06
1070	SLU 24	-49	-27	4489	-1218.43	8.24	-16.91
1070	SLU 25	-48	-17	4434	-1204.49	8.13	-16.63
1070	SLU 26	-47	-10	4360	-1185.44	7.99	-16.28
1070	SLU 27	-49	-27	4553	-1235.45	8.37	-17.13
1070	SLU 28	-48	-17	4498	-1221.5	8.26	-16.85
1070	SLU 29	-49	-27	4516	-1225.7	8.3	-16.96
1070	SLU 30	-48	-17	4461	-1211.76	8.19	-16.68
1070	SLU 31	-49	-11	4762	-1294.29	8.77	-17.23
1070	SLU 32	-52	-29	4955	-1344.3	9.15	-18.08
1070	SLU 33	-51	-19	4900	-1330.35	9.04	-17.8
1070	SLU 34	-50	-12	4826	-1311.31	8.9	-17.44
1070	SLU 35	-53	-29	5020	-1361.32	9.27	-18.3
1070	SLU 36	-52	-19	4965	-1347.37	9.16	-18.01
1070	SLU 37	-52	-29	4983	-1351.57	9.2	-18.13
1070	SLU 38	-51	-19	4928	-1337.63	9.09	-17.85
1070	SLU 39	-52	-29	5054	-1371.48	9.34	-18.2
1070	SLU 40	-51	-19	4998	-1357.53	9.23	-17.91

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1070	SLU 41	-53	-29	5118	-1388.5	9.46	-18.41
1070	SLU 42	-52	-19	5063	-1374.55	9.36	-18.13
1070	SLU 43	-53	-28	4669	-1272.81	8.45	-18.32
1070	SLU 44	-51	-12	4577	-1249.57	8.27	-17.85
1070	SLU 45	-54	-29	4770	-1299.58	8.65	-18.7
1070	SLU 46	-53	-19	4715	-1285.63	8.54	-18.42
1070	SLU 47	-52	-12	4641	-1266.59	8.39	-18.06
1070	SLU 48	-54	-30	4835	-1316.59	8.77	-18.92
1070	SLU 49	-53	-19	4780	-1302.65	8.66	-18.63
1070	SLU 50	-54	-29	4798	-1306.85	8.7	-18.75
1070	SLU 51	-53	-19	4743	-1292.9	8.59	-18.47
1070	SLU 52	-55	-13	5043	-1375.44	9.18	-19.01
1070	SLU 53	-57	-31	5237	-1425.44	9.55	-19.87
1070	SLU 54	-56	-21	5182	-1411.5	9.44	-19.58
1070	SLU 55	-55	-14	5108	-1392.46	9.3	-19.23
1070	SLU 56	-58	-31	5301	-1442.46	9.68	-20.08
1070	SLU 57	-57	-21	5246	-1428.52	9.57	-19.8
1070	SLU 58	-57	-31	5264	-1432.72	9.61	-19.92
1070	SLU 59	-56	-21	5209	-1418.77	9.5	-19.64
1070	SLU 60	-57	-31	5335	-1452.62	9.75	-19.98
1070	SLU 61	-57	-21	5280	-1438.68	9.64	-19.7
1070	SLU 62	-58	-31	5400	-1469.64	9.87	-20.2
1070	SLU 63	-57	-21	5344	-1455.7	9.76	-19.92
1070	SLU 64	-58	-32	5298	-1441.03	9.67	-20.25
1070	SLU 65	-57	-15	5206	-1417.79	9.49	-19.78
1070	SLU 66	-59	-32	5400	-1467.79	9.87	-20.63
1070	SLU 67	-58	-22	5345	-1453.85	9.76	-20.35
1070	SLU 68	-57	-15	5271	-1434.81	9.62	-19.99
1070	SLU 69	-60	-33	5464	-1484.81	9.99	-20.85
1070	SLU 70	-59	-23	5409	-1470.87	9.88	-20.56
1070	SLU 71	-59	-33	5427	-1475.06	9.92	-20.68
1070	SLU 72	-59	-23	5372	-1461.12	9.81	-20.4
1070	SLU 73	-60	-17	5673	-1543.66	10.4	-20.94
1070	SLU 74	-63	-34	5866	-1593.66	10.78	-21.8
1070	SLU 75	-62	-24	5811	-1579.72	10.67	-21.51
1070	SLU 76	-61	-17	5738	-1560.67	10.52	-21.16
1070	SLU 77	-63	-35	5931	-1610.68	10.9	-22.01
1070	SLU 78	-62	-25	5876	-1596.73	10.79	-21.73
1070	SLU 79	-63	-34	5894	-1600.93	10.83	-21.85
1070	SLU 80	-62	-24	5839	-1586.99	10.72	-21.57
1070	SLU 81	-63	-34	5965	-1620.84	10.97	-21.91
1070	SLU 82	-62	-24	5910	-1606.89	10.86	-21.63
1070	SLU 83	-64	-35	6029	-1637.86	11.09	-22.13
1070	SLU 84	-63	-25	5974	-1623.91	10.98	-21.85
1070	SLE RA 1	-43	-24	3937	-1071.51	7.17	-15.15
1070	SLE RA 2	-43	-12	3876	-1056.02	7.05	-14.84
1070	SLE RA 3	-44	-24	4005	-1089.35	7.3	-15.4
1070	SLE RA 4	-44	-17	3968	-1080.06	7.23	-15.22
1070	SLE RA 5	-43	-13	3919	-1067.36	7.13	-14.98
1070	SLE RA 6	-45	-24	4048	-1100.7	7.39	-15.55
1070	SLE RA 7	-44	-18	4011	-1091.4	7.31	-15.36
1070	SLE RA 8	-44	-24	4023	-1094.2	7.34	-15.44
1070	SLE RA 9	-44	-18	3987	-1084.91	7.27	-15.25
1070	SLE RA 10	-45	-14	4187	-1139.93	7.66	-15.61
1070	SLE RA 11	-46	-25	4316	-1173.27	7.91	-16.18
1070	SLE RA 12	-46	-19	4279	-1163.97	7.83	-15.99
1070	SLE RA 13	-45	-14	4230	-1151.28	7.74	-15.76
1070	SLE RA 14	-47	-26	4359	-1184.61	7.99	-16.33
1070	SLE RA 15	-46	-19	4322	-1175.32	7.92	-16.14
1070	SLE RA 16	-47	-25	4334	-1178.11	7.94	-16.22
1070	SLE RA 17	-46	-19	4298	-1168.82	7.87	-16.03
1070	SLE RA 18	-47	-25	4382	-1191.39	8.04	-16.26
1070	SLE RA 19	-46	-19	4345	-1182.09	7.96	-16.07
1070	SLE RA 20	-47	-26	4425	-1202.73	8.12	-16.41
1070	SLE RA 21	-47	-19	4388	-1193.44	8.05	-16.22
1070	SLE FR 1	-43	-24	3937	-1071.51	7.17	-15.15
1070	SLE FR 2	-43	-21	3925	-1068.41	7.15	-15.09
1070	SLE FR 3	-44	-24	3954	-1076.05	7.21	-15.21
1070	SLE FR 4	-44	-22	4058	-1104.38	7.41	-15.42
1070	SLE FR 5	-45	-24	4088	-1112.01	7.46	-15.54
1070	SLE FR 6	-45	-25	4159	-1131.45	7.6	-15.71
1070	SLE QP 1	-43	-24	3937	-1071.51	7.17	-15.15
1070	SLE QP 2	-44	-24	4070	-1107.47	7.43	-15.48
1070	SLD 1	430	73	4014	-1067.56	8.54	150.5
1070	SLD 2	346	26	4068	-1087.39	8.74	121.45
1070	SLD 3	407	-129	5258	-1383.2	11.03	142.61
1070	SLD 4	324	-176	5312	-1403.04	11.22	113.56
1070	SLD 5	147	320	2157	-613.2	3.96	51.5
1070	SLD 6	92	288	2193	-626.28	4.09	32.34
1070	SLD 7	72	-353	6304	-1665.36	12.24	25.21
1070	SLD 8	17	-384	6339	-1678.44	12.37	6.04
1070	SLD 9	-106	336	1802	-536.5	2.49	-37.01
1070	SLD 10	-161	305	1837	-549.59	2.62	-56.17
1070	SLD 11	-181	-337	5948	-1588.66	10.77	-63.3
1070	SLD 12	-236	-368	5984	-1601.75	10.9	-82.46
1070	SLD 13	-413	127	2829	-811.91	3.64	-144.53
1070	SLD 14	-496	80	2883	-831.74	3.84	-173.58
1070	SLD 15	-435	-74	4073	-1127.56	6.13	-152.42
1070	SLD 16	-519	-122	4127	-1147.39	6.32	-181.46

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1070	SLV 1	1066	219	3835	-988.01	9.83	373.4
1070	SLV 2	871	108	3962	-1034.63	10.28	305.12
1070	SLV 3	1011	-283	6951	-1778.56	16.05	354.23
1070	SLV 4	816	-394	7078	-1825.19	16.5	285.95
1070	SLV 5	409	831	-750	136.08	-1.36	143.01
1070	SLV 6	277	756	-665	104.69	-1.06	97.03
1070	SLV 7	225	-843	9637	-2499.11	19.36	79.09
1070	SLV 8	94	-918	9723	-2530.5	19.67	33.12
1070	SLV 9	-183	869	-1582	315.55	-4.8	-64.09
1070	SLV 10	-314	794	-1496	284.16	-4.5	-110.06
1070	SLV 11	-366	-805	8806	-2319.64	15.92	-128
1070	SLV 12	-498	-880	8891	-2351.03	16.23	-173.97
1070	SLV 13	-905	346	1063	-389.76	-1.64	-316.91
1070	SLV 14	-1100	235	1190	-436.38	-1.19	-385.19
1070	SLV 15	-960	-156	4179	-1180.32	4.58	-336.09
1070	SLV 16	-1155	-267	4306	-1226.94	5.03	-404.37
1070	CRTFP Ux+	0	0	0	0	0	0
1070	CRTFP Ux-	0	0	0	0	0	0
1070	CRTFP Uy+	0	0	0	0	0	0
1070	CRTFP Uy-	0	0	0	0	0	0
1071	SLU 1	-41	-20	3561	-888.37	5.29	-14.07
1071	SLU 2	-39	-3	3474	-868.71	5.14	-13.63
1071	SLU 3	-42	-21	3657	-911.27	5.44	-14.44
1071	SLU 4	-41	-11	3605	-899.47	5.35	-14.17
1071	SLU 5	-40	-4	3535	-883.26	5.24	-13.84
1071	SLU 6	-42	-21	3718	-925.82	5.53	-14.65
1071	SLU 7	-41	-11	3666	-914.02	5.45	-14.39
1071	SLU 8	-42	-21	3683	-917.48	5.48	-14.49
1071	SLU 9	-41	-11	3631	-905.68	5.39	-14.23
1071	SLU 10	-42	-5	3915	-976.51	5.84	-14.76
1071	SLU 11	-45	-22	4097	-1019.07	6.13	-15.57
1071	SLU 12	-44	-12	4045	-1007.27	6.05	-15.3
1071	SLU 13	-43	-5	3976	-991.06	5.94	-14.97
1071	SLU 14	-45	-23	4158	-1033.62	6.23	-15.78
1071	SLU 15	-45	-13	4106	-1021.82	6.14	-15.52
1071	SLU 16	-45	-22	4123	-1025.28	6.17	-15.62
1071	SLU 17	-44	-12	4071	-1013.48	6.09	-15.36
1071	SLU 18	-45	-22	4190	-1042.37	6.28	-15.69
1071	SLU 19	-44	-12	4138	-1030.57	6.19	-15.42
1071	SLU 20	-46	-23	4251	-1056.93	6.38	-15.9
1071	SLU 21	-45	-13	4199	-1045.13	6.29	-15.63
1071	SLU 22	-46	-23	4155	-1032.23	6.23	-15.94
1071	SLU 23	-45	-6	4069	-1012.57	6.08	-15.49
1071	SLU 24	-47	-24	4251	-1055.13	6.38	-16.31
1071	SLU 25	-46	-14	4200	-1043.33	6.29	-16.04
1071	SLU 26	-45	-7	4130	-1027.12	6.18	-15.7
1071	SLU 27	-48	-24	4312	-1069.68	6.47	-16.52
1071	SLU 28	-47	-14	4260	-1057.88	6.39	-16.25
1071	SLU 29	-47	-24	4277	-1061.34	6.42	-16.36
1071	SLU 30	-46	-14	4225	-1049.54	6.33	-16.09
1071	SLU 31	-48	-8	4509	-1120.37	6.78	-16.62
1071	SLU 32	-50	-25	4692	-1162.93	7.07	-17.44
1071	SLU 33	-49	-15	4640	-1151.13	6.99	-17.17
1071	SLU 34	-48	-8	4570	-1134.92	6.88	-16.83
1071	SLU 35	-51	-25	4753	-1177.48	7.17	-17.65
1071	SLU 36	-50	-15	4701	-1165.68	7.08	-17.38
1071	SLU 37	-50	-25	4718	-1169.14	7.12	-17.49
1071	SLU 38	-50	-15	4666	-1157.34	7.03	-17.22
1071	SLU 39	-51	-25	4785	-1186.23	7.22	-17.55
1071	SLU 40	-50	-15	4733	-1174.43	7.14	-17.28
1071	SLU 41	-51	-25	4846	-1200.79	7.32	-17.76
1071	SLU 42	-50	-16	4794	-1188.99	7.23	-17.49
1071	SLU 43	-51	-25	4425	-1105.56	6.55	-17.65
1071	SLU 44	-50	-8	4339	-1085.9	6.41	-17.21
1071	SLU 45	-52	-26	4521	-1128.46	6.7	-18.02
1071	SLU 46	-51	-16	4469	-1116.66	6.61	-17.76
1071	SLU 47	-50	-9	4400	-1100.45	6.5	-17.42
1071	SLU 48	-52	-26	4582	-1143.01	6.8	-18.23
1071	SLU 49	-52	-16	4530	-1131.21	6.71	-17.97
1071	SLU 50	-52	-26	4547	-1134.67	6.74	-18.07
1071	SLU 51	-51	-16	4495	-1122.87	6.66	-17.81
1071	SLU 52	-53	-10	4779	-1193.7	7.1	-18.34
1071	SLU 53	-55	-27	4962	-1236.26	7.4	-19.15
1071	SLU 54	-54	-17	4910	-1224.46	7.31	-18.89
1071	SLU 55	-53	-10	4840	-1208.25	7.2	-18.55
1071	SLU 56	-56	-28	5023	-1250.81	7.49	-19.36
1071	SLU 57	-55	-18	4971	-1239.01	7.41	-19.1
1071	SLU 58	-55	-27	4988	-1242.47	7.44	-19.2
1071	SLU 59	-55	-17	4936	-1230.67	7.35	-18.94
1071	SLU 60	-55	-27	5054	-1259.56	7.54	-19.27
1071	SLU 61	-55	-17	5003	-1247.76	7.46	-19
1071	SLU 62	-56	-28	5115	-1274.12	7.64	-19.48
1071	SLU 63	-55	-18	5064	-1262.32	7.55	-19.21
1071	SLU 64	-56	-28	5020	-1249.42	7.49	-19.52
1071	SLU 65	-55	-11	4933	-1229.76	7.35	-19.07
1071	SLU 66	-57	-29	5116	-1272.32	7.64	-19.89
1071	SLU 67	-56	-19	5064	-1260.52	7.56	-19.62
1071	SLU 68	-56	-12	4994	-1244.31	7.44	-19.28
1071	SLU 69	-58	-29	5177	-1286.87	7.74	-20.1

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1071	SLU 70	-57	-19	5125	-1275.07	7.65	-19.83
1071	SLU 71	-57	-29	5142	-1278.53	7.68	-19.94
1071	SLU 72	-57	-19	5090	-1266.73	7.6	-19.67
1071	SLU 73	-58	-13	5374	-1337.56	8.04	-20.2
1071	SLU 74	-61	-30	5556	-1380.12	8.34	-21.02
1071	SLU 75	-60	-20	5504	-1368.32	8.25	-20.75
1071	SLU 76	-59	-13	5435	-1352.11	8.14	-20.41
1071	SLU 77	-61	-30	5617	-1394.67	8.43	-21.23
1071	SLU 78	-60	-21	5565	-1382.87	8.35	-20.96
1071	SLU 79	-61	-30	5582	-1386.33	8.38	-21.07
1071	SLU 80	-60	-20	5530	-1374.53	8.29	-20.8
1071	SLU 81	-61	-30	5649	-1403.42	8.48	-21.13
1071	SLU 82	-60	-20	5597	-1391.62	8.4	-20.86
1071	SLU 83	-61	-31	5710	-1417.98	8.58	-21.34
1071	SLU 84	-61	-21	5658	-1406.18	8.5	-21.08
1071	SLE RA 1	-42	-21	3731	-929.48	5.55	-14.6
1071	SLE RA 2	-41	-10	3673	-916.37	5.46	-14.31
1071	SLE RA 3	-43	-21	3795	-944.74	5.66	-14.85
1071	SLE RA 4	-42	-15	3760	-936.87	5.6	-14.67
1071	SLE RA 5	-42	-10	3714	-926.07	5.52	-14.45
1071	SLE RA 6	-43	-22	3835	-954.44	5.72	-14.99
1071	SLE RA 7	-43	-15	3801	-946.58	5.66	-14.81
1071	SLE RA 8	-43	-21	3812	-948.88	5.68	-14.89
1071	SLE RA 9	-42	-15	3777	-941.02	5.63	-14.71
1071	SLE RA 10	-43	-11	3967	-988.23	5.92	-15.06
1071	SLE RA 11	-45	-22	4088	-1016.61	6.12	-15.6
1071	SLE RA 12	-44	-16	4054	-1008.74	6.06	-15.43
1071	SLE RA 13	-44	-11	4007	-997.94	5.99	-15.2
1071	SLE RA 14	-45	-23	4129	-1026.31	6.18	-15.74
1071	SLE RA 15	-45	-16	4094	-1018.44	6.13	-15.57
1071	SLE RA 16	-45	-22	4106	-1020.75	6.15	-15.64
1071	SLE RA 17	-45	-16	4071	-1012.88	6.09	-15.46
1071	SLE RA 18	-45	-22	4150	-1032.14	6.22	-15.68
1071	SLE RA 19	-45	-16	4116	-1024.28	6.16	-15.5
1071	SLE RA 20	-46	-23	4191	-1041.85	6.28	-15.82
1071	SLE RA 21	-45	-16	4156	-1033.98	6.22	-15.64
1071	SLE FR 1	-42	-21	3731	-929.48	5.55	-14.6
1071	SLE FR 2	-42	-19	3719	-926.85	5.54	-14.54
1071	SLE FR 3	-42	-21	3747	-933.36	5.58	-14.66
1071	SLE FR 4	-43	-19	3845	-957.65	5.73	-14.87
1071	SLE FR 5	-43	-21	3873	-964.16	5.78	-14.98
1071	SLE FR 6	-44	-22	3940	-980.81	5.89	-15.14
1071	SLE QP 1	-42	-21	3731	-929.48	5.55	-14.6
1071	SLE QP 2	-43	-21	3857	-960.28	5.75	-14.93
1071	SLD 1	432	78	3765	-914.18	6.82	151.42
1071	SLD 2	349	34	3813	-930.45	7	122.35
1071	SLD 3	410	-122	4937	-1181.2	8.78	143.8
1071	SLD 4	327	-167	4985	-1197.47	8.96	114.74
1071	SLD 5	148	321	2043	-538.54	3.08	51.75
1071	SLD 6	93	292	2074	-549.27	3.2	32.57
1071	SLD 7	75	-348	5950	-1428.61	9.59	26.38
1071	SLD 8	20	-378	5981	-1439.34	9.71	7.2
1071	SLD 9	-106	335	1732	-481.21	1.8	-37.06
1071	SLD 10	-161	306	1763	-491.94	1.91	-56.23
1071	SLD 11	-179	-334	5639	-1371.28	8.31	-62.43
1071	SLD 12	-234	-364	5670	-1382.01	8.43	-81.6
1071	SLD 13	-413	124	2728	-723.08	2.55	-144.59
1071	SLD 14	-496	80	2776	-739.35	2.73	-173.66
1071	SLD 15	-435	-76	3900	-990.11	4.51	-152.2
1071	SLD 16	-518	-121	3948	-1006.37	4.69	-181.27
1071	SLV 1	1070	227	3545	-830.36	8.09	374.78
1071	SLV 2	874	122	3657	-868.6	8.52	306.46
1071	SLV 3	1017	-273	6481	-1499.14	12.99	356.3
1071	SLV 4	821	-377	6593	-1537.38	13.41	287.98
1071	SLV 5	408	831	-711	100.14	-1.05	142.77
1071	SLV 6	276	761	-635	74.4	-0.76	96.78
1071	SLV 7	231	-835	9076	-2129.11	15.27	81.16
1071	SLV 8	99	-906	9152	-2154.85	15.55	35.16
1071	SLV 9	-185	863	-1438	234.3	-4.05	-65.01
1071	SLV 10	-317	793	-1363	208.55	-3.76	-111.01
1071	SLV 11	-362	-803	8348	-1994.95	12.27	-126.63
1071	SLV 12	-494	-874	8424	-2020.7	12.55	-172.63
1071	SLV 13	-907	335	1120	-383.18	-1.9	-317.83
1071	SLV 14	-1103	230	1232	-421.42	-1.48	-386.15
1071	SLV 15	-960	-165	4056	-1051.95	2.99	-336.32
1071	SLV 16	-1156	-270	4168	-1090.19	3.42	-404.63
1071	CRTFP Ux+	0	0	0	0	0	0
1071	CRTFP Ux-	0	0	0	0	0	0
1071	CRTFP Uy+	0	0	0	0	0	0
1071	CRTFP Uy-	0	0	0	0	0	0
1072	SLU 1	-39	-16	3418	-796.32	3.51	-13.5
1072	SLU 2	-38	0	3336	-779.16	3.41	-13.08
1072	SLU 3	-40	-17	3510	-816.6	3.61	-13.86
1072	SLU 4	-39	-7	3461	-806.31	3.55	-13.61
1072	SLU 5	-38	0	3394	-792.05	3.48	-13.28
1072	SLU 6	-41	-17	3569	-829.49	3.67	-14.06
1072	SLU 7	-40	-7	3519	-819.2	3.61	-13.81
1072	SLU 8	-40	-17	3535	-822.1	3.64	-13.91
1072	SLU 9	-39	-7	3485	-811.8	3.58	-13.66

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1072	SLU 10	-41	-1	3758	-874.7	3.86	-14.17
1072	SLU 11	-43	-18	3932	-912.14	4.06	-14.95
1072	SLU 12	-42	-8	3883	-901.85	4	-14.7
1072	SLU 13	-42	-1	3816	-887.59	3.93	-14.37
1072	SLU 14	-44	-18	3991	-925.03	4.12	-15.15
1072	SLU 15	-43	-8	3941	-914.74	4.06	-14.9
1072	SLU 16	-43	-18	3957	-917.64	4.09	-15
1072	SLU 17	-43	-8	3907	-907.34	4.03	-14.74
1072	SLU 18	-43	-18	4021	-932.8	4.15	-15.06
1072	SLU 19	-43	-8	3972	-922.51	4.1	-14.8
1072	SLU 20	-44	-18	4080	-945.69	4.22	-15.26
1072	SLU 21	-43	-8	4030	-935.4	4.16	-15.01
1072	SLU 22	-44	-18	3988	-923.63	4.12	-15.3
1072	SLU 23	-43	-2	3905	-906.47	4.03	-14.87
1072	SLU 24	-45	-19	4080	-943.91	4.22	-15.65
1072	SLU 25	-44	-9	4030	-933.62	4.16	-15.4
1072	SLU 26	-44	-2	3963	-919.36	4.09	-15.08
1072	SLU 27	-46	-19	4138	-956.8	4.29	-15.86
1072	SLU 28	-45	-9	4089	-946.51	4.23	-15.6
1072	SLU 29	-45	-19	4105	-949.41	4.25	-15.7
1072	SLU 30	-45	-9	4055	-939.12	4.19	-15.45
1072	SLU 31	-46	-3	4327	-1002.01	4.48	-15.96
1072	SLU 32	-48	-20	4502	-1039.45	4.67	-16.74
1072	SLU 33	-48	-10	4452	-1029.16	4.62	-16.49
1072	SLU 34	-47	-3	4385	-1014.9	4.54	-16.16
1072	SLU 35	-49	-20	4560	-1052.34	4.74	-16.94
1072	SLU 36	-48	-10	4511	-1042.05	4.68	-16.69
1072	SLU 37	-48	-20	4527	-1044.95	4.7	-16.79
1072	SLU 38	-48	-10	4477	-1034.66	4.64	-16.54
1072	SLU 39	-49	-20	4591	-1060.12	4.77	-16.85
1072	SLU 40	-48	-10	4541	-1049.82	4.71	-16.6
1072	SLU 41	-49	-20	4649	-1073.01	4.83	-17.05
1072	SLU 42	-49	-10	4599	-1062.71	4.77	-16.8
1072	SLU 43	-49	-20	4249	-991.56	4.35	-16.94
1072	SLU 44	-48	-4	4166	-974.4	4.25	-16.52
1072	SLU 45	-50	-21	4341	-1011.85	4.45	-17.3
1072	SLU 46	-49	-11	4291	-1001.55	4.39	-17.04
1072	SLU 47	-48	-4	4224	-987.3	4.32	-16.72
1072	SLU 48	-51	-21	4399	-1024.74	4.51	-17.5
1072	SLU 49	-50	-11	4349	-1014.44	4.45	-17.25
1072	SLU 50	-50	-21	4365	-1017.34	4.48	-17.35
1072	SLU 51	-49	-11	4316	-1007.05	4.42	-17.09
1072	SLU 52	-51	-5	4588	-1069.95	4.71	-17.61
1072	SLU 53	-53	-22	4763	-1107.39	4.9	-18.38
1072	SLU 54	-52	-12	4713	-1097.09	4.84	-18.13
1072	SLU 55	-51	-5	4646	-1082.84	4.77	-17.81
1072	SLU 56	-54	-22	4821	-1120.28	4.96	-18.59
1072	SLU 57	-53	-12	4771	-1109.98	4.91	-18.33
1072	SLU 58	-53	-22	4787	-1112.88	4.93	-18.43
1072	SLU 59	-52	-12	4738	-1102.59	4.87	-18.18
1072	SLU 60	-53	-22	4851	-1128.05	5	-18.49
1072	SLU 61	-53	-12	4802	-1117.76	4.94	-18.24
1072	SLU 62	-54	-22	4910	-1140.94	5.06	-18.7
1072	SLU 63	-53	-12	4860	-1130.65	5	-18.44
1072	SLU 64	-54	-22	4818	-1118.87	4.97	-18.73
1072	SLU 65	-53	-6	4735	-1101.72	4.87	-18.31
1072	SLU 66	-55	-23	4910	-1139.16	5.06	-19.09
1072	SLU 67	-54	-13	4860	-1128.86	5.01	-18.84
1072	SLU 68	-53	-6	4794	-1114.61	4.93	-18.51
1072	SLU 69	-56	-23	4968	-1152.05	5.13	-19.29
1072	SLU 70	-55	-13	4919	-1141.75	5.07	-19.04
1072	SLU 71	-55	-23	4935	-1144.66	5.09	-19.14
1072	SLU 72	-55	-13	4885	-1134.36	5.03	-18.89
1072	SLU 73	-56	-7	5157	-1197.26	5.32	-19.4
1072	SLU 74	-58	-24	5332	-1234.7	5.52	-20.18
1072	SLU 75	-58	-14	5282	-1224.4	5.46	-19.92
1072	SLU 76	-57	-7	5216	-1210.15	5.38	-19.6
1072	SLU 77	-59	-24	5390	-1247.59	5.58	-20.38
1072	SLU 78	-58	-14	5341	-1237.29	5.52	-20.13
1072	SLU 79	-58	-24	5357	-1240.2	5.54	-20.23
1072	SLU 80	-58	-14	5307	-1229.9	5.49	-19.97
1072	SLU 81	-59	-24	5421	-1255.36	5.61	-20.29
1072	SLU 82	-58	-14	5371	-1245.07	5.55	-20.03
1072	SLU 83	-59	-24	5479	-1268.25	5.67	-20.49
1072	SLU 84	-58	-14	5430	-1257.96	5.62	-20.24
1072	SLE RA 1	-40	-17	3581	-832.69	3.68	-14.02
1072	SLE RA 2	-40	-6	3526	-821.25	3.62	-13.73
1072	SLE RA 3	-41	-17	3642	-846.21	3.75	-14.25
1072	SLE RA 4	-41	-10	3609	-839.35	3.71	-14.09
1072	SLE RA 5	-40	-6	3565	-829.85	3.66	-13.87
1072	SLE RA 6	-42	-17	3681	-854.81	3.79	-14.39
1072	SLE RA 7	-41	-11	3648	-847.94	3.75	-14.22
1072	SLE RA 8	-41	-17	3659	-849.88	3.77	-14.29
1072	SLE RA 9	-41	-11	3626	-843.02	3.73	-14.12
1072	SLE RA 10	-42	-6	3807	-884.95	3.92	-14.46
1072	SLE RA 11	-43	-18	3924	-909.91	4.05	-14.98
1072	SLE RA 12	-43	-11	3891	-903.04	4.01	-14.81
1072	SLE RA 13	-42	-7	3846	-893.54	3.96	-14.59
1072	SLE RA 14	-44	-18	3963	-918.5	4.09	-15.11

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1072	SLE RA 15	-43	-11	3930	-911.64	4.06	-14.95
1072	SLE RA 16	-43	-18	3940	-913.57	4.07	-15.01
1072	SLE RA 17	-43	-11	3907	-906.71	4.03	-14.84
1072	SLE RA 18	-43	-18	3983	-923.68	4.12	-15.05
1072	SLE RA 19	-43	-11	3950	-916.82	4.08	-14.88
1072	SLE RA 20	-44	-18	4022	-932.28	4.16	-15.19
1072	SLE RA 21	-43	-11	3989	-925.41	4.12	-15.02
1072	SLE FR 1	-40	-17	3581	-832.69	3.68	-14.02
1072	SLE FR 2	-40	-14	3570	-830.4	3.67	-13.96
1072	SLE FR 3	-41	-17	3597	-836.13	3.7	-14.07
1072	SLE FR 4	-41	-15	3691	-857.7	3.8	-14.27
1072	SLE FR 5	-42	-17	3717	-863.43	3.83	-14.38
1072	SLE FR 6	-42	-17	3782	-878.19	3.9	-14.53
1072	SLE QP 1	-40	-17	3581	-832.69	3.68	-14.02
1072	SLE QP 2	-41	-17	3702	-859.99	3.81	-14.33
1072	SLD 1	434	86	3575	-808.08	4.89	152.32
1072	SLD 2	351	44	3618	-821.16	5.05	123.25
1072	SLD 3	413	-114	4694	-1040.92	6.23	144.98
1072	SLD 4	330	-156	4736	-1054	6.39	115.91
1072	SLD 5	148	325	1959	-488.93	2.08	52.03
1072	SLD 6	93	298	1987	-497.56	2.19	32.85
1072	SLD 7	78	-342	5689	-1265.05	6.54	27.57
1072	SLD 8	23	-370	5716	-1273.68	6.64	8.39
1072	SLD 9	-106	336	1687	-446.3	0.99	-37.04
1072	SLD 10	-161	308	1715	-454.93	1.09	-56.22
1072	SLD 11	-176	-332	5416	-1222.42	5.44	-61.5
1072	SLD 12	-231	-359	5444	-1231.05	5.55	-80.68
1072	SLD 13	-413	122	2667	-665.98	1.24	-144.56
1072	SLD 14	-496	80	2709	-679.06	1.4	-173.63
1072	SLD 15	-434	-78	3786	-898.82	2.58	-151.9
1072	SLD 16	-517	-120	3828	-911.9	2.74	-180.97
1072	SLV 1	1073	240	3314	-719.3	6.23	376.07
1072	SLV 2	877	141	3413	-750.05	6.6	307.73
1072	SLV 3	1022	-259	6116	-1302.46	9.57	358.27
1072	SLV 4	826	-358	6216	-1333.21	9.95	289.93
1072	SLV 5	407	835	-684	72.42	-0.61	142.55
1072	SLV 6	275	768	-617	51.72	-0.36	96.54
1072	SLV 7	237	-828	8658	-1871.46	10.55	83.2
1072	SLV 8	105	-894	8725	-1892.16	10.8	37.19
1072	SLV 9	-188	860	-1322	172.18	-3.17	-65.84
1072	SLV 10	-320	794	-1255	151.48	-2.92	-111.85
1072	SLV 11	-358	-802	8020	-1771.7	7.98	-125.19
1072	SLV 12	-489	-869	8087	-1792.4	8.24	-171.21
1072	SLV 13	-909	324	1187	-386.77	-2.32	-318.58
1072	SLV 14	-1105	225	1287	-417.52	-1.95	-386.92
1072	SLV 15	-960	-175	3990	-969.93	1.03	-336.39
1072	SLV 16	-1156	-274	4089	-1000.68	1.4	-404.73
1072	CRTFP Ux+	0	0	0	0	0	0
1072	CRTFP Ux-	0	0	0	0	0	0
1072	CRTFP Uy+	0	0	0	0	0	0
1072	CRTFP Uy-	0	0	0	0	0	0
1073	SLU 1	-37	-11	3335	-748.97	1.68	-12.89
1073	SLU 2	-36	5	3254	-733.21	1.63	-12.49
1073	SLU 3	-38	-11	3424	-767.94	1.73	-13.23
1073	SLU 4	-38	-2	3376	-758.48	1.7	-12.99
1073	SLU 5	-37	5	3311	-745.26	1.66	-12.68
1073	SLU 6	-39	-12	3481	-779.99	1.76	-13.42
1073	SLU 7	-38	-2	3433	-770.53	1.73	-13.19
1073	SLU 8	-38	-12	3448	-773.07	1.74	-13.28
1073	SLU 9	-38	-2	3400	-763.61	1.71	-13.04
1073	SLU 10	-39	5	3666	-822.55	1.83	-13.53
1073	SLU 11	-41	-12	3836	-857.28	1.93	-14.27
1073	SLU 12	-41	-2	3787	-847.82	1.9	-14.03
1073	SLU 13	-40	4	3723	-834.6	1.86	-13.72
1073	SLU 14	-42	-12	3893	-869.33	1.96	-14.46
1073	SLU 15	-41	-3	3844	-859.87	1.93	-14.22
1073	SLU 16	-41	-12	3860	-862.42	1.94	-14.31
1073	SLU 17	-41	-2	3812	-852.96	1.91	-14.07
1073	SLU 18	-42	-12	3922	-876.61	1.97	-14.37
1073	SLU 19	-41	-2	3874	-867.15	1.94	-14.13
1073	SLU 20	-42	-12	3979	-888.66	2	-14.56
1073	SLU 21	-41	-2	3931	-879.2	1.97	-14.33
1073	SLU 22	-42	-12	3890	-867.86	1.96	-14.6
1073	SLU 23	-41	4	3809	-852.09	1.91	-14.2
1073	SLU 24	-43	-13	3979	-886.83	2	-14.94
1073	SLU 25	-43	-3	3931	-877.37	1.98	-14.7
1073	SLU 26	-42	4	3866	-864.14	1.94	-14.39
1073	SLU 27	-44	-13	4036	-898.88	2.03	-15.14
1073	SLU 28	-43	-3	3988	-889.42	2	-14.9
1073	SLU 29	-43	-13	4003	-891.96	2.02	-14.99
1073	SLU 30	-43	-3	3955	-882.5	1.99	-14.75
1073	SLU 31	-44	3	4221	-941.44	2.11	-15.24
1073	SLU 32	-46	-14	4391	-976.17	2.2	-15.98
1073	SLU 33	-46	-4	4342	-966.71	2.17	-15.74
1073	SLU 34	-45	3	4278	-953.49	2.14	-15.43
1073	SLU 35	-47	-14	4448	-988.22	2.23	-16.17
1073	SLU 36	-46	-4	4399	-978.76	2.2	-15.93
1073	SLU 37	-46	-14	4415	-981.3	2.22	-16.02
1073	SLU 38	-46	-4	4367	-971.84	2.19	-15.79

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1073	SLU 39	-47	-13	4477	-995.49	2.24	-16.08
1073	SLU 40	-46	-4	4429	-986.03	2.21	-15.84
1073	SLU 41	-47	-14	4534	-1007.54	2.27	-16.28
1073	SLU 42	-46	-4	4486	-998.08	2.24	-16.04
1073	SLU 43	-47	-14	4145	-932.9	2.09	-16.17
1073	SLU 44	-46	3	4064	-917.14	2.04	-15.77
1073	SLU 45	-48	-14	4234	-951.87	2.14	-16.51
1073	SLU 46	-47	-4	4186	-942.41	2.11	-16.27
1073	SLU 47	-46	2	4121	-929.19	2.07	-15.96
1073	SLU 48	-48	-14	4291	-963.92	2.17	-16.7
1073	SLU 49	-48	-5	4243	-954.46	2.14	-16.47
1073	SLU 50	-48	-14	4258	-957	2.15	-16.56
1073	SLU 51	-47	-4	4210	-947.54	2.12	-16.32
1073	SLU 52	-49	2	4476	-1006.48	2.24	-16.81
1073	SLU 53	-51	-15	4646	-1041.21	2.34	-17.55
1073	SLU 54	-50	-5	4597	-1031.76	2.31	-17.31
1073	SLU 55	-49	2	4533	-1018.53	2.27	-17
1073	SLU 56	-51	-15	4703	-1053.26	2.37	-17.74
1073	SLU 57	-51	-5	4654	-1043.8	2.34	-17.5
1073	SLU 58	-51	-15	4670	-1046.35	2.35	-17.59
1073	SLU 59	-50	-5	4622	-1036.89	2.32	-17.35
1073	SLU 60	-51	-15	4732	-1060.54	2.38	-17.65
1073	SLU 61	-50	-5	4684	-1051.08	2.35	-17.41
1073	SLU 62	-52	-15	4789	-1072.59	2.41	-17.84
1073	SLU 63	-51	-5	4741	-1063.13	2.38	-17.61
1073	SLU 64	-52	-15	4700	-1051.79	2.37	-17.88
1073	SLU 65	-51	1	4619	-1036.02	2.32	-17.48
1073	SLU 66	-53	-16	4789	-1070.76	2.41	-18.22
1073	SLU 67	-52	-6	4741	-1061.3	2.38	-17.98
1073	SLU 68	-51	1	4676	-1048.07	2.35	-17.67
1073	SLU 69	-53	-16	4846	-1082.81	2.44	-18.42
1073	SLU 70	-53	-6	4798	-1073.35	2.41	-18.18
1073	SLU 71	-53	-16	4813	-1075.89	2.43	-18.27
1073	SLU 72	-52	-6	4765	-1066.43	2.4	-18.03
1073	SLU 73	-54	1	5031	-1125.37	2.52	-18.52
1073	SLU 74	-56	-16	5201	-1160.1	2.61	-19.26
1073	SLU 75	-55	-6	5153	-1150.64	2.58	-19.02
1073	SLU 76	-54	0	5088	-1137.42	2.55	-18.71
1073	SLU 77	-56	-17	5258	-1172.15	2.64	-19.45
1073	SLU 78	-56	-7	5209	-1162.69	2.61	-19.21
1073	SLU 79	-56	-17	5225	-1165.23	2.63	-19.3
1073	SLU 80	-55	-7	5177	-1155.77	2.6	-19.07
1073	SLU 81	-56	-16	5287	-1179.42	2.65	-19.36
1073	SLU 82	-55	-6	5239	-1169.96	2.62	-19.12
1073	SLU 83	-57	-17	5344	-1191.47	2.68	-19.56
1073	SLU 84	-56	-7	5296	-1182.01	2.65	-19.32
1073	SLE RA 1	-39	-11	3493	-782.94	1.76	-13.38
1073	SLE RA 2	-38	0	3440	-772.43	1.73	-13.11
1073	SLE RA 3	-39	-12	3553	-795.59	1.79	-13.61
1073	SLE RA 4	-39	-5	3521	-789.28	1.77	-13.45
1073	SLE RA 5	-38	-1	3477	-780.46	1.75	-13.24
1073	SLE RA 6	-40	-12	3591	-803.62	1.81	-13.73
1073	SLE RA 7	-39	-5	3559	-797.31	1.79	-13.58
1073	SLE RA 8	-39	-12	3569	-799.01	1.8	-13.64
1073	SLE RA 9	-39	-5	3537	-792.7	1.78	-13.48
1073	SLE RA 10	-40	-1	3714	-831.99	1.86	-13.8
1073	SLE RA 11	-41	-12	3827	-855.15	1.92	-14.3
1073	SLE RA 12	-41	-6	3795	-848.84	1.9	-14.14
1073	SLE RA 13	-40	-1	3752	-840.02	1.88	-13.93
1073	SLE RA 14	-42	-12	3865	-863.18	1.94	-14.43
1073	SLE RA 15	-41	-6	3833	-856.87	1.92	-14.27
1073	SLE RA 16	-41	-12	3843	-858.57	1.93	-14.33
1073	SLE RA 17	-41	-6	3811	-852.26	1.91	-14.17
1073	SLE RA 18	-42	-12	3885	-868.03	1.95	-14.37
1073	SLE RA 19	-41	-5	3853	-861.72	1.93	-14.21
1073	SLE RA 20	-42	-12	3923	-876.06	1.97	-14.49
1073	SLE RA 21	-41	-6	3891	-869.76	1.95	-14.34
1073	SLE FR 1	-39	-11	3493	-782.94	1.76	-13.38
1073	SLE FR 2	-39	-9	3482	-780.84	1.75	-13.32
1073	SLE FR 3	-39	-11	3508	-786.15	1.77	-13.43
1073	SLE FR 4	-39	-9	3600	-806.36	1.81	-13.62
1073	SLE FR 5	-40	-12	3626	-811.68	1.83	-13.73
1073	SLE FR 6	-40	-12	3689	-825.48	1.86	-13.87
1073	SLE QP 1	-39	-11	3493	-782.94	1.76	-13.38
1073	SLE QP 2	-40	-12	3611	-808.47	1.82	-13.67
1073	SLD 1	437	96	3449	-749.52	2.94	153.21
1073	SLD 2	353	55	3487	-760.03	3.07	124.14
1073	SLD 3	417	-105	4535	-963.3	3.64	146.15
1073	SLD 4	333	-145	4573	-973.81	3.77	117.08
1073	SLD 5	149	332	1908	-464.66	1.08	52.33
1073	SLD 6	94	306	1933	-471.6	1.16	33.15
1073	SLD 7	82	-337	5528	-1177.25	3.39	28.79
1073	SLD 8	27	-363	5553	-1184.19	3.48	9.61
1073	SLD 9	-106	340	1668	-432.75	0.15	-36.96
1073	SLD 10	-161	314	1693	-439.68	0.24	-56.14
1073	SLD 11	-173	-329	5288	-1145.33	2.47	-60.5
1073	SLD 12	-228	-355	5313	-1152.27	2.56	-79.67
1073	SLD 13	-413	122	2649	-643.12	-0.13	-144.42
1073	SLD 14	-496	82	2686	-653.64	0	-173.49

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1073	SLD 15	-433	-79	3735	-856.9	0.56	-151.48
1073	SLD 16	-516	-119	3772	-867.42	0.69	-180.55
1073	SLV 1	1076	255	3142	-652.88	4.39	377.26
1073	SLV 2	881	160	3231	-677.6	4.7	308.92
1073	SLV 3	1027	-245	5863	-1188.33	6.13	360.14
1073	SLV 4	832	-340	5951	-1213.04	6.44	291.8
1073	SLV 5	406	844	-672	54.91	-0.11	142.32
1073	SLV 6	274	780	-613	38.27	0.1	96.31
1073	SLV 7	243	-822	8396	-1729.9	5.69	85.27
1073	SLV 8	111	-886	8455	-1746.54	5.9	39.26
1073	SLV 9	-191	863	-1234	129.6	-2.27	-66.61
1073	SLV 10	-322	799	-1175	112.96	-2.06	-112.62
1073	SLV 11	-353	-804	7834	-1655.2	3.54	-123.65
1073	SLV 12	-485	-867	7894	-1671.84	3.74	-169.66
1073	SLV 13	-911	317	1270	-403.89	-2.8	-319.15
1073	SLV 14	-1107	222	1358	-428.61	-2.49	-387.49
1073	SLV 15	-960	-183	3990	-939.34	-1.06	-336.27
1073	SLV 16	-1155	-278	4079	-964.05	-0.75	-404.6
1073	CRTFP Ux+	0	0	0	0	0	0
1073	CRTFP Ux-	0	0	0	0	0	0
1073	CRTFP Uy+	0	0	0	0	0	0
1073	CRTFP Uy-	0	0	0	0	0	0
1074	SLU 1	-35	-5	3308	-744.79	-0.04	-12.22
1074	SLU 2	-34	11	3229	-729.33	-0.05	-11.85
1074	SLU 3	-36	-6	3397	-763.68	-0.05	-12.55
1074	SLU 4	-36	4	3350	-754.4	-0.05	-12.33
1074	SLU 5	-35	11	3285	-741.32	-0.05	-12.03
1074	SLU 6	-37	-6	3454	-775.68	-0.05	-12.73
1074	SLU 7	-36	4	3406	-766.4	-0.05	-12.51
1074	SLU 8	-37	-6	3421	-768.78	-0.05	-12.59
1074	SLU 9	-36	4	3374	-759.5	-0.05	-12.37
1074	SLU 10	-37	11	3638	-818.33	-0.08	-12.83
1074	SLU 11	-39	-6	3806	-852.69	-0.08	-13.53
1074	SLU 12	-39	4	3759	-843.41	-0.09	-13.31
1074	SLU 13	-38	11	3694	-830.33	-0.09	-13.02
1074	SLU 14	-40	-6	3863	-864.68	-0.09	-13.72
1074	SLU 15	-39	4	3815	-855.41	-0.09	-13.49
1074	SLU 16	-39	-6	3830	-857.78	-0.08	-13.57
1074	SLU 17	-39	4	3783	-848.51	-0.09	-13.35
1074	SLU 18	-40	-6	3893	-871.94	-0.1	-13.63
1074	SLU 19	-39	4	3845	-862.66	-0.1	-13.4
1074	SLU 20	-40	-6	3949	-883.93	-0.1	-13.81
1074	SLU 21	-39	4	3901	-874.66	-0.1	-13.59
1074	SLU 22	-40	-6	3860	-863.09	-0.08	-13.85
1074	SLU 23	-39	10	3780	-847.63	-0.09	-13.47
1074	SLU 24	-41	-6	3949	-881.99	-0.09	-14.17
1074	SLU 25	-40	4	3901	-872.71	-0.09	-13.95
1074	SLU 26	-40	10	3837	-859.63	-0.09	-13.66
1074	SLU 27	-42	-7	4005	-893.98	-0.09	-14.35
1074	SLU 28	-41	3	3957	-884.71	-0.09	-14.13
1074	SLU 29	-41	-7	3973	-887.08	-0.09	-14.21
1074	SLU 30	-41	3	3925	-877.81	-0.09	-13.99
1074	SLU 31	-42	10	4189	-936.64	-0.12	-14.45
1074	SLU 32	-44	-7	4358	-970.99	-0.13	-15.15
1074	SLU 33	-43	3	4310	-961.72	-0.13	-14.93
1074	SLU 34	-42	10	4246	-948.63	-0.13	-14.64
1074	SLU 35	-44	-7	4414	-982.99	-0.13	-15.34
1074	SLU 36	-44	3	4366	-973.71	-0.13	-15.11
1074	SLU 37	-44	-7	4381	-976.09	-0.12	-15.19
1074	SLU 38	-43	3	4334	-966.81	-0.13	-14.97
1074	SLU 39	-44	-7	4444	-990.24	-0.14	-15.25
1074	SLU 40	-44	3	4396	-980.97	-0.14	-15.02
1074	SLU 41	-45	-7	4500	-1002.24	-0.14	-15.43
1074	SLU 42	-44	3	4453	-992.96	-0.14	-15.21
1074	SLU 43	-44	-7	4112	-927.66	-0.04	-15.34
1074	SLU 44	-43	10	4032	-912.2	-0.04	-14.96
1074	SLU 45	-45	-7	4201	-946.55	-0.05	-15.66
1074	SLU 46	-45	3	4153	-937.28	-0.05	-15.44
1074	SLU 47	-44	10	4089	-924.19	-0.05	-15.15
1074	SLU 48	-46	-7	4257	-958.55	-0.05	-15.85
1074	SLU 49	-45	3	4210	-949.27	-0.05	-15.62
1074	SLU 50	-46	-7	4225	-951.65	-0.04	-15.7
1074	SLU 51	-45	3	4177	-942.37	-0.05	-15.48
1074	SLU 52	-46	10	4441	-1001.2	-0.08	-15.95
1074	SLU 53	-48	-7	4610	-1035.56	-0.08	-16.64
1074	SLU 54	-48	3	4562	-1026.28	-0.09	-16.42
1074	SLU 55	-47	9	4498	-1013.2	-0.09	-16.13
1074	SLU 56	-49	-7	4666	-1047.56	-0.09	-16.83
1074	SLU 57	-48	2	4619	-1038.28	-0.09	-16.6
1074	SLU 58	-48	-7	4634	-1040.66	-0.08	-16.69
1074	SLU 59	-48	3	4586	-1031.38	-0.09	-16.46
1074	SLU 60	-49	-7	4696	-1054.81	-0.1	-16.74
1074	SLU 61	-48	3	4648	-1045.53	-0.1	-16.52
1074	SLU 62	-49	-7	4752	-1066.81	-0.1	-16.92
1074	SLU 63	-48	3	4705	-1057.53	-0.1	-16.7
1074	SLU 64	-49	-7	4663	-1045.96	-0.08	-16.96
1074	SLU 65	-48	9	4584	-1030.5	-0.09	-16.58
1074	SLU 66	-50	-8	4752	-1064.86	-0.09	-17.28
1074	SLU 67	-49	2	4705	-1055.58	-0.09	-17.06

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1074	SLU 68	-49	9	4640	-1042.5	-0.09	-16.77
1074	SLU 69	-51	-8	4809	-1076.86	-0.09	-17.47
1074	SLU 70	-50	2	4761	-1067.58	-0.09	-17.24
1074	SLU 71	-50	-8	4776	-1069.96	-0.08	-17.32
1074	SLU 72	-50	2	4728	-1060.68	-0.09	-17.1
1074	SLU 73	-51	9	4993	-1119.51	-0.12	-17.57
1074	SLU 74	-53	-8	5161	-1153.86	-0.12	-18.27
1074	SLU 75	-52	2	5113	-1144.59	-0.13	-18.04
1074	SLU 76	-51	9	5049	-1131.51	-0.13	-17.75
1074	SLU 77	-53	-8	5218	-1165.86	-0.13	-18.45
1074	SLU 78	-53	2	5170	-1156.58	-0.13	-18.22
1074	SLU 79	-53	-8	5185	-1158.96	-0.12	-18.31
1074	SLU 80	-52	2	5137	-1149.69	-0.13	-18.08
1074	SLU 81	-53	-8	5247	-1173.12	-0.14	-18.36
1074	SLU 82	-53	2	5200	-1163.84	-0.14	-18.14
1074	SLU 83	-54	-8	5304	-1185.11	-0.14	-18.54
1074	SLU 84	-53	2	5256	-1175.84	-0.14	-18.32
1074	SLE RA 1	-37	-5	3466	-778.59	-0.05	-12.69
1074	SLE RA 2	-36	6	3413	-768.28	-0.06	-12.44
1074	SLE RA 3	-37	-6	3525	-791.18	-0.06	-12.91
1074	SLE RA 4	-37	1	3493	-785	-0.06	-12.76
1074	SLE RA 5	-36	5	3451	-776.28	-0.06	-12.56
1074	SLE RA 6	-38	-6	3563	-799.18	-0.06	-13.03
1074	SLE RA 7	-37	1	3531	-793	-0.06	-12.88
1074	SLE RA 8	-38	-6	3541	-794.58	-0.06	-12.93
1074	SLE RA 9	-37	1	3509	-788.4	-0.06	-12.78
1074	SLE RA 10	-38	5	3686	-827.62	-0.08	-13.09
1074	SLE RA 11	-39	-6	3798	-850.52	-0.08	-13.56
1074	SLE RA 12	-39	1	3766	-844.34	-0.08	-13.41
1074	SLE RA 13	-38	5	3723	-835.61	-0.08	-13.22
1074	SLE RA 14	-40	-6	3835	-858.52	-0.08	-13.68
1074	SLE RA 15	-39	1	3804	-852.33	-0.08	-13.53
1074	SLE RA 16	-39	-6	3814	-853.92	-0.08	-13.59
1074	SLE RA 17	-39	1	3782	-847.73	-0.08	-13.44
1074	SLE RA 18	-40	-6	3855	-863.35	-0.09	-13.62
1074	SLE RA 19	-39	1	3824	-857.17	-0.09	-13.47
1074	SLE RA 20	-40	-6	3893	-871.35	-0.09	-13.75
1074	SLE RA 21	-39	1	3861	-865.17	-0.09	-13.6
1074	SLE FR 1	-37	-5	3466	-778.59	-0.05	-12.69
1074	SLE FR 2	-37	-3	3455	-776.53	-0.05	-12.64
1074	SLE FR 3	-37	-6	3481	-781.79	-0.05	-12.74
1074	SLE FR 4	-37	-3	3572	-801.96	-0.07	-12.92
1074	SLE FR 5	-38	-6	3598	-807.22	-0.07	-13.02
1074	SLE FR 6	-38	-6	3661	-820.97	-0.07	-13.16
1074	SLE QP 1	-37	-5	3466	-778.59	-0.05	-12.69
1074	SLE QP 2	-38	-6	3583	-804.02	-0.06	-12.97
1074	SLD 1	439	125	3384	-736.3	1.11	154.07
1074	SLD 2	356	87	3418	-744.93	1.22	125.01
1074	SLD 3	420	-77	4457	-945.69	1.2	147.29
1074	SLD 4	337	-115	4491	-954.31	1.31	118.24
1074	SLD 5	150	347	1889	-464.58	0.14	52.64
1074	SLD 6	95	322	1911	-470.28	0.21	33.47
1074	SLD 7	85	-327	5467	-1162.53	0.43	30.06
1074	SLD 8	31	-352	5490	-1168.23	0.5	10.9
1074	SLD 9	-106	341	1676	-439.81	-0.63	-36.83
1074	SLD 10	-161	316	1698	-445.5	-0.56	-56
1074	SLD 11	-170	-333	5254	-1137.76	-0.33	-59.41
1074	SLD 12	-225	-358	5277	-1143.45	-0.27	-78.58
1074	SLD 13	-412	104	2674	-653.72	-1.43	-144.17
1074	SLD 14	-495	66	2708	-662.35	-1.33	-173.23
1074	SLD 15	-431	-98	3748	-863.1	-1.35	-150.95
1074	SLD 16	-514	-136	3782	-871.73	-1.24	-180
1074	SLV 1	1079	316	3029	-628.28	2.69	378.3
1074	SLV 2	884	226	3108	-648.56	2.93	310
1074	SLV 3	1033	-188	5718	-1152.74	2.9	361.9
1074	SLV 4	837	-278	5798	-1173.02	3.15	293.6
1074	SLV 5	404	871	-677	47.92	0.39	142.03
1074	SLV 6	273	811	-624	34.27	0.55	96.05
1074	SLV 7	249	-807	8287	-1700.28	1.11	87.37
1074	SLV 8	118	-868	8341	-1713.94	1.27	41.38
1074	SLV 9	-193	857	-1175	105.9	-1.4	-67.32
1074	SLV 10	-325	796	-1122	92.25	-1.24	-113.31
1074	SLV 11	-348	-822	7789	-1642.3	-0.68	-121.98
1074	SLV 12	-480	-883	7843	-1655.96	-0.52	-167.97
1074	SLV 13	-912	267	1368	-435.01	-3.28	-319.54
1074	SLV 14	-1108	177	1447	-455.29	-3.03	-387.84
1074	SLV 15	-959	-237	4057	-959.47	-3.06	-335.94
1074	SLV 16	-1154	-327	4137	-979.76	-2.82	-404.24
1074	CRTFP Ux+	0	0	0	0	0	0
1074	CRTFP Ux-	0	0	0	0	0	0
1074	CRTFP Uy+	0	0	0	0	0	0
1074	CRTFP Uy-	0	0	0	0	0	0
1075	SLU 1	-33	1	3334	-779.25	-1.51	-11.52
1075	SLU 2	-32	18	3254	-763.12	-1.47	-11.17
1075	SLU 3	-34	1	3424	-799.17	-1.55	-11.82
1075	SLU 4	-34	11	3376	-789.49	-1.53	-11.62
1075	SLU 5	-33	17	3311	-775.76	-1.5	-11.34
1075	SLU 6	-35	1	3481	-811.81	-1.58	-11.99
1075	SLU 7	-34	11	3433	-802.13	-1.56	-11.79

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1075	SLU 8	-34	1	3448	-804.53	-1.56	-11.86
1075	SLU 9	-34	11	3400	-794.85	-1.54	-11.65
1075	SLU 10	-35	18	3668	-857.04	-1.71	-12.09
1075	SLU 11	-37	1	3838	-893.1	-1.8	-12.75
1075	SLU 12	-36	11	3790	-883.42	-1.77	-12.54
1075	SLU 13	-36	17	3725	-869.68	-1.74	-12.26
1075	SLU 14	-38	1	3895	-905.74	-1.82	-12.92
1075	SLU 15	-37	11	3847	-896.06	-1.8	-12.71
1075	SLU 16	-37	1	3862	-898.46	-1.81	-12.78
1075	SLU 17	-37	11	3814	-888.78	-1.78	-12.57
1075	SLU 18	-37	1	3925	-913.43	-1.85	-12.83
1075	SLU 19	-37	11	3877	-903.75	-1.83	-12.62
1075	SLU 20	-38	1	3982	-926.07	-1.88	-13
1075	SLU 21	-37	11	3934	-916.39	-1.86	-12.8
1075	SLU 22	-38	1	3891	-904.01	-1.82	-13.04
1075	SLU 23	-37	17	3811	-887.87	-1.78	-12.69
1075	SLU 24	-39	1	3981	-923.93	-1.86	-13.35
1075	SLU 25	-38	11	3933	-914.25	-1.84	-13.14
1075	SLU 26	-37	17	3868	-900.52	-1.81	-12.86
1075	SLU 27	-39	0	4038	-936.57	-1.89	-13.52
1075	SLU 28	-39	10	3990	-926.89	-1.87	-13.31
1075	SLU 29	-39	0	4005	-929.29	-1.88	-13.38
1075	SLU 30	-38	10	3957	-919.61	-1.85	-13.17
1075	SLU 31	-40	18	4225	-981.8	-2.03	-13.62
1075	SLU 32	-41	1	4395	-1017.86	-2.11	-14.27
1075	SLU 33	-41	11	4347	-1008.18	-2.09	-14.06
1075	SLU 34	-40	17	4282	-994.44	-2.05	-13.79
1075	SLU 35	-42	1	4452	-1030.5	-2.13	-14.44
1075	SLU 36	-41	11	4404	-1020.82	-2.11	-14.23
1075	SLU 37	-42	0	4419	-1023.22	-2.12	-14.3
1075	SLU 38	-41	10	4371	-1013.54	-2.1	-14.1
1075	SLU 39	-42	1	4482	-1038.19	-2.16	-14.36
1075	SLU 40	-41	11	4434	-1028.51	-2.14	-14.15
1075	SLU 41	-42	1	4539	-1050.83	-2.19	-14.53
1075	SLU 42	-42	11	4491	-1041.15	-2.17	-14.32
1075	SLU 43	-42	1	4143	-970.25	-1.85	-14.45
1075	SLU 44	-41	18	4063	-954.12	-1.82	-14.1
1075	SLU 45	-43	1	4233	-990.17	-1.9	-14.76
1075	SLU 46	-42	11	4185	-980.49	-1.88	-14.55
1075	SLU 47	-42	18	4120	-966.76	-1.85	-14.27
1075	SLU 48	-43	1	4290	-1002.81	-1.93	-14.93
1075	SLU 49	-43	11	4242	-993.13	-1.91	-14.72
1075	SLU 50	-43	1	4257	-995.53	-1.91	-14.79
1075	SLU 51	-42	11	4209	-985.85	-1.89	-14.58
1075	SLU 52	-44	18	4477	-1048.04	-2.06	-15.02
1075	SLU 53	-46	1	4647	-1084.1	-2.14	-15.68
1075	SLU 54	-45	11	4599	-1074.42	-2.12	-15.47
1075	SLU 55	-44	18	4534	-1060.69	-2.09	-15.19
1075	SLU 56	-46	1	4704	-1096.74	-2.17	-15.85
1075	SLU 57	-45	11	4656	-1087.06	-2.15	-15.64
1075	SLU 58	-46	1	4671	-1089.46	-2.15	-15.71
1075	SLU 59	-45	11	4623	-1079.78	-2.13	-15.5
1075	SLU 60	-46	1	4734	-1104.43	-2.2	-15.76
1075	SLU 61	-45	11	4686	-1094.75	-2.18	-15.56
1075	SLU 62	-46	1	4791	-1117.07	-2.23	-15.94
1075	SLU 63	-46	11	4743	-1107.39	-2.21	-15.73
1075	SLU 64	-46	1	4701	-1095.01	-2.16	-15.97
1075	SLU 65	-45	18	4621	-1078.87	-2.13	-15.63
1075	SLU 66	-47	1	4790	-1114.93	-2.21	-16.28
1075	SLU 67	-47	11	4742	-1105.25	-2.19	-16.07
1075	SLU 68	-46	18	4678	-1091.52	-2.16	-15.8
1075	SLU 69	-48	1	4847	-1127.57	-2.24	-16.45
1075	SLU 70	-47	11	4799	-1117.89	-2.22	-16.24
1075	SLU 71	-47	1	4814	-1120.29	-2.22	-16.31
1075	SLU 72	-47	11	4766	-1110.61	-2.2	-16.11
1075	SLU 73	-48	18	5034	-1172.8	-2.37	-16.55
1075	SLU 74	-50	1	5204	-1208.86	-2.45	-17.2
1075	SLU 75	-49	11	5156	-1199.18	-2.43	-16.99
1075	SLU 76	-49	18	5091	-1185.44	-2.4	-16.72
1075	SLU 77	-50	1	5261	-1221.5	-2.48	-17.37
1075	SLU 78	-50	11	5213	-1211.82	-2.46	-17.17
1075	SLU 79	-50	1	5228	-1214.22	-2.46	-17.24
1075	SLU 80	-49	11	5180	-1204.54	-2.44	-17.03
1075	SLU 81	-50	1	5291	-1229.19	-2.51	-17.29
1075	SLU 82	-50	11	5243	-1219.51	-2.49	-17.08
1075	SLU 83	-51	1	5348	-1241.83	-2.54	-17.46
1075	SLU 84	-50	11	5300	-1232.15	-2.52	-17.25
1075	SLE RA 1	-35	1	3493	-814.89	-1.6	-11.95
1075	SLE RA 2	-34	12	3440	-804.14	-1.57	-11.72
1075	SLE RA 3	-35	1	3553	-828.18	-1.63	-12.16
1075	SLE RA 4	-35	7	3521	-821.72	-1.61	-12.02
1075	SLE RA 5	-34	12	3478	-812.57	-1.59	-11.83
1075	SLE RA 6	-36	1	3591	-836.6	-1.65	-12.27
1075	SLE RA 7	-35	7	3559	-830.15	-1.63	-12.13
1075	SLE RA 8	-35	1	3569	-831.75	-1.63	-12.18
1075	SLE RA 9	-35	7	3537	-825.3	-1.62	-12.04
1075	SLE RA 10	-36	12	3716	-866.76	-1.73	-12.33
1075	SLE RA 11	-37	1	3829	-890.79	-1.79	-12.77
1075	SLE RA 12	-37	7	3797	-884.34	-1.77	-12.63

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1075	SLE RA 13	-36	12	3754	-875.18	-1.75	-12.45
1075	SLE RA 14	-37	1	3867	-899.22	-1.81	-12.89
1075	SLE RA 15	-37	7	3835	-892.77	-1.79	-12.75
1075	SLE RA 16	-37	1	3845	-894.37	-1.8	-12.79
1075	SLE RA 17	-37	7	3813	-887.91	-1.78	-12.66
1075	SLE RA 18	-37	1	3887	-904.35	-1.83	-12.83
1075	SLE RA 19	-37	8	3855	-897.9	-1.81	-12.69
1075	SLE RA 20	-38	1	3925	-912.78	-1.85	-12.94
1075	SLE RA 21	-37	7	3893	-906.32	-1.83	-12.8
1075	SLE FR 1	-35	1	3493	-814.89	-1.6	-11.95
1075	SLE FR 2	-35	3	3483	-812.74	-1.59	-11.9
1075	SLE FR 3	-35	1	3509	-818.26	-1.6	-12
1075	SLE FR 4	-35	3	3601	-839.58	-1.66	-12.17
1075	SLE FR 5	-36	1	3627	-845.1	-1.67	-12.26
1075	SLE FR 6	-36	1	3690	-859.62	-1.71	-12.39
1075	SLE QP 1	-35	1	3493	-814.89	-1.6	-11.95
1075	SLE QP 2	-35	1	3612	-841.73	-1.67	-12.21
1075	SLD 1	441	132	3374	-763.76	-0.44	154.89
1075	SLD 2	358	96	3405	-771.13	-0.36	125.86
1075	SLD 3	423	-72	4454	-981.97	-0.89	148.42
1075	SLD 4	340	-109	4484	-989.34	-0.81	119.39
1075	SLD 5	150	357	1897	-486.06	-0.63	52.95
1075	SLD 6	95	333	1917	-490.92	-0.58	33.8
1075	SLD 7	89	-325	5496	-1213.43	-2.13	31.38
1075	SLD 8	34	-349	5516	-1218.29	-2.08	12.23
1075	SLD 9	-105	351	1707	-465.17	-1.25	-36.66
1075	SLD 10	-160	327	1727	-470.03	-1.2	-55.81
1075	SLD 11	-166	-332	5306	-1192.54	-2.75	-58.23
1075	SLD 12	-221	-356	5326	-1197.4	-2.7	-77.38
1075	SLD 13	-411	111	2739	-694.12	-2.52	-143.82
1075	SLD 14	-494	74	2770	-701.49	-2.45	-172.85
1075	SLD 15	-429	-94	3818	-912.33	-2.97	-150.29
1075	SLD 16	-512	-131	3849	-919.7	-2.9	-179.32
1075	SLV 1	1082	324	2966	-641.26	1.25	379.19
1075	SLV 2	886	239	3039	-658.59	1.43	310.96
1075	SLV 3	1037	-186	5671	-1187.86	0.12	363.54
1075	SLV 4	842	-271	5743	-1205.18	0.3	295.31
1075	SLV 5	403	887	-698	50.65	0.88	141.68
1075	SLV 6	272	830	-649	38.98	1.01	95.75
1075	SLV 7	256	-813	8318	-1771.34	-2.87	89.5
1075	SLV 8	124	-870	8367	-1783.01	-2.75	43.57
1075	SLV 9	-195	872	-1144	99.54	-0.58	-67.99
1075	SLV 10	-327	814	-1095	87.88	-0.46	-113.93
1075	SLV 11	-343	-828	7872	-1722.44	-4.34	-120.17
1075	SLV 12	-474	-886	7921	-1734.11	-4.22	-166.11
1075	SLV 13	-913	273	1480	-478.28	-3.64	-319.73
1075	SLV 14	-1108	187	1552	-495.6	-3.45	-387.97
1075	SLV 15	-957	-237	4184	-1024.87	-4.76	-335.39
1075	SLV 16	-1153	-323	4257	-1042.2	-4.58	-403.62
1075	CRTFP Ux+	0	0	0	0	0	0
1075	CRTFP Ux-	0	0	0	0	0	0
1075	CRTFP Uy+	0	0	0	0	0	0
1075	CRTFP Uy-	0	0	0	0	0	0
1076	SLU 1	-31	7	3401	-844.77	-2.54	-10.77
1076	SLU 2	-30	24	3319	-827.16	-2.48	-10.45
1076	SLU 3	-32	7	3493	-866.59	-2.62	-11.05
1076	SLU 4	-32	17	3444	-856.03	-2.58	-10.86
1076	SLU 5	-31	24	3377	-841	-2.52	-10.61
1076	SLU 6	-33	7	3551	-880.43	-2.66	-11.21
1076	SLU 7	-32	17	3502	-869.87	-2.62	-11.02
1076	SLU 8	-32	7	3517	-872.44	-2.63	-11.08
1076	SLU 9	-32	17	3468	-861.88	-2.6	-10.89
1076	SLU 10	-33	25	3743	-930.24	-2.86	-11.31
1076	SLU 11	-35	8	3916	-969.67	-3	-11.91
1076	SLU 12	-34	18	3868	-959.11	-2.96	-11.72
1076	SLU 13	-33	24	3801	-944.08	-2.91	-11.46
1076	SLU 14	-35	8	3975	-983.51	-3.05	-12.07
1076	SLU 15	-35	18	3926	-972.95	-3.01	-11.88
1076	SLU 16	-35	7	3941	-975.53	-3.02	-11.94
1076	SLU 17	-34	18	3892	-964.96	-2.98	-11.75
1076	SLU 18	-35	8	4006	-992.03	-3.09	-11.99
1076	SLU 19	-34	18	3957	-981.46	-3.05	-11.8
1076	SLU 20	-35	8	4064	-1005.86	-3.14	-12.15
1076	SLU 21	-35	18	4015	-995.3	-3.1	-11.96
1076	SLU 22	-35	8	3971	-981.64	-3.04	-12.19
1076	SLU 23	-35	25	3890	-964.03	-2.98	-11.87
1076	SLU 24	-36	8	4063	-1003.46	-3.12	-12.48
1076	SLU 25	-36	18	4014	-992.9	-3.08	-12.28
1076	SLU 26	-35	25	3948	-977.87	-3.03	-12.03
1076	SLU 27	-37	8	4121	-1017.3	-3.17	-12.63
1076	SLU 28	-36	18	4072	-1006.74	-3.13	-12.44
1076	SLU 29	-36	8	4088	-1009.32	-3.14	-12.5
1076	SLU 30	-36	18	4039	-998.75	-3.1	-12.31
1076	SLU 31	-37	25	4313	-1067.11	-3.36	-12.73
1076	SLU 32	-39	8	4487	-1106.54	-3.5	-13.33
1076	SLU 33	-38	18	4438	-1095.98	-3.47	-13.14
1076	SLU 34	-38	25	4372	-1080.95	-3.41	-12.89
1076	SLU 35	-39	8	4545	-1120.38	-3.55	-13.49
1076	SLU 36	-39	18	4496	-1109.82	-3.51	-13.3

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1076	SLU 37	-39	8	4511	-1112.4	-3.52	-13.36
1076	SLU 38	-38	18	4462	-1101.83	-3.48	-13.17
1076	SLU 39	-39	8	4577	-1128.9	-3.59	-13.41
1076	SLU 40	-38	19	4528	-1118.33	-3.56	-13.22
1076	SLU 41	-39	8	4635	-1142.74	-3.64	-13.57
1076	SLU 42	-39	18	4586	-1132.17	-3.6	-13.38
1076	SLU 43	-39	9	4225	-1051.27	-3.13	-13.51
1076	SLU 44	-38	26	4144	-1033.66	-3.07	-13.19
1076	SLU 45	-40	9	4317	-1073.09	-3.21	-13.8
1076	SLU 46	-40	19	4268	-1062.53	-3.17	-13.6
1076	SLU 47	-39	26	4202	-1047.5	-3.11	-13.35
1076	SLU 48	-41	9	4376	-1086.93	-3.25	-13.95
1076	SLU 49	-40	19	4327	-1076.37	-3.21	-13.76
1076	SLU 50	-40	9	4342	-1078.95	-3.22	-13.82
1076	SLU 51	-40	19	4293	-1068.38	-3.19	-13.63
1076	SLU 52	-41	27	4568	-1136.74	-3.45	-14.05
1076	SLU 53	-43	10	4741	-1176.18	-3.59	-14.65
1076	SLU 54	-42	20	4692	-1165.61	-3.55	-14.46
1076	SLU 55	-41	26	4626	-1150.58	-3.5	-14.21
1076	SLU 56	-43	10	4799	-1190.01	-3.64	-14.81
1076	SLU 57	-43	20	4750	-1179.45	-3.6	-14.62
1076	SLU 58	-43	9	4766	-1182.03	-3.61	-14.68
1076	SLU 59	-42	20	4717	-1171.46	-3.57	-14.49
1076	SLU 60	-43	10	4831	-1198.53	-3.68	-14.73
1076	SLU 61	-42	20	4782	-1187.96	-3.64	-14.54
1076	SLU 62	-43	10	4889	-1212.37	-3.73	-14.89
1076	SLU 63	-43	20	4840	-1201.8	-3.69	-14.7
1076	SLU 64	-43	10	4796	-1188.14	-3.63	-14.93
1076	SLU 65	-43	27	4714	-1170.53	-3.57	-14.61
1076	SLU 66	-44	10	4888	-1209.97	-3.71	-15.22
1076	SLU 67	-44	20	4839	-1199.4	-3.67	-15.03
1076	SLU 68	-43	27	4772	-1184.37	-3.62	-14.77
1076	SLU 69	-45	10	4946	-1223.8	-3.76	-15.38
1076	SLU 70	-44	20	4897	-1213.24	-3.72	-15.19
1076	SLU 71	-44	10	4912	-1215.82	-3.73	-15.25
1076	SLU 72	-44	20	4863	-1205.25	-3.69	-15.06
1076	SLU 73	-45	27	5138	-1273.62	-3.95	-15.47
1076	SLU 74	-47	10	5312	-1313.05	-4.09	-16.08
1076	SLU 75	-46	20	5263	-1302.48	-4.06	-15.88
1076	SLU 76	-46	27	5196	-1287.46	-4	-15.63
1076	SLU 77	-47	10	5370	-1326.89	-4.14	-16.23
1076	SLU 78	-47	20	5321	-1316.32	-4.1	-16.04
1076	SLU 79	-47	10	5336	-1318.9	-4.11	-16.1
1076	SLU 80	-46	20	5287	-1308.34	-4.07	-15.91
1076	SLU 81	-47	10	5401	-1335.4	-4.18	-16.15
1076	SLU 82	-46	21	5352	-1324.84	-4.15	-15.96
1076	SLU 83	-47	10	5460	-1349.24	-4.23	-16.31
1076	SLU 84	-47	20	5411	-1338.68	-4.19	-16.12
1076	SLE RA 1	-33	7	3564	-883.87	-2.68	-11.17
1076	SLE RA 2	-32	19	3509	-872.14	-2.64	-10.96
1076	SLE RA 3	-33	7	3625	-898.42	-2.73	-11.36
1076	SLE RA 4	-33	14	3592	-891.38	-2.71	-11.24
1076	SLE RA 5	-32	19	3548	-881.36	-2.67	-11.07
1076	SLE RA 6	-33	7	3664	-907.65	-2.77	-11.47
1076	SLE RA 7	-33	14	3631	-900.61	-2.74	-11.34
1076	SLE RA 8	-33	7	3641	-902.32	-2.75	-11.38
1076	SLE RA 9	-33	14	3609	-895.28	-2.72	-11.26
1076	SLE RA 10	-34	19	3792	-940.86	-2.9	-11.53
1076	SLE RA 11	-35	8	3908	-967.14	-2.99	-11.94
1076	SLE RA 12	-34	14	3875	-960.1	-2.97	-11.81
1076	SLE RA 13	-34	19	3831	-950.08	-2.93	-11.64
1076	SLE RA 14	-35	8	3946	-976.37	-3.02	-12.04
1076	SLE RA 15	-35	14	3914	-969.33	-3	-11.91
1076	SLE RA 16	-35	8	3924	-971.05	-3	-11.95
1076	SLE RA 17	-34	14	3891	-964	-2.98	-11.83
1076	SLE RA 18	-35	8	3967	-982.04	-3.05	-11.99
1076	SLE RA 19	-35	15	3935	-975	-3.03	-11.86
1076	SLE RA 20	-35	8	4006	-991.27	-3.08	-12.09
1076	SLE RA 21	-35	15	3974	-984.23	-3.06	-11.97
1076	SLE FR 1	-33	7	3564	-883.87	-2.68	-11.17
1076	SLE FR 2	-32	10	3553	-881.52	-2.68	-11.13
1076	SLE FR 3	-33	7	3579	-887.56	-2.7	-11.21
1076	SLE FR 4	-33	10	3674	-910.98	-2.79	-11.37
1076	SLE FR 5	-33	8	3700	-917.01	-2.81	-11.46
1076	SLE FR 6	-34	8	3766	-932.96	-2.87	-11.58
1076	SLE QP 1	-33	7	3564	-883.87	-2.68	-11.17
1076	SLE QP 2	-33	8	3685	-913.32	-2.79	-11.42
1076	SLD 1	444	142	3407	-824.44	-1.56	155.66
1076	SLD 2	361	108	3436	-831.07	-1.5	126.68
1076	SLD 3	426	-66	4508	-1062.29	-2.4	149.5
1076	SLD 4	343	-101	4537	-1068.92	-2.34	120.52
1076	SLD 5	151	370	1927	-524.73	-1.15	53.26
1076	SLD 6	96	347	1946	-529.1	-1.12	34.14
1076	SLD 7	93	-324	5597	-1317.56	-3.97	32.73
1076	SLD 8	39	-347	5615	-1321.93	-3.93	13.62
1076	SLD 9	-105	362	1754	-504.71	-1.66	-36.45
1076	SLD 10	-160	339	1773	-509.09	-1.62	-55.57
1076	SLD 11	-163	-332	5424	-1297.55	-4.47	-56.97
1076	SLD 12	-218	-355	5443	-1301.92	-4.44	-76.09

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1076	SLD 13	-410	116	2833	-757.73	-3.24	-143.36
1076	SLD 14	-493	81	2861	-764.36	-3.19	-172.34
1076	SLD 15	-427	-92	3934	-995.58	-4.09	-149.51
1076	SLD 16	-510	-127	3962	-1002.21	-4.03	-178.5
1076	SLV 1	1084	338	2945	-685.69	0.17	379.91
1076	SLV 2	889	257	3012	-701.28	0.3	311.79
1076	SLV 3	1042	-180	5703	-1281.51	-1.94	365.04
1076	SLV 4	847	-261	5770	-1297.1	-1.81	296.91
1076	SLV 5	402	908	-733	61.53	1.28	141.26
1076	SLV 6	271	854	-687	51.04	1.36	95.39
1076	SLV 7	262	-820	8460	-1924.53	-5.77	91.67
1076	SLV 8	131	-875	8506	-1935.03	-5.68	45.81
1076	SLV 9	-197	890	-1136	108.38	0.09	-68.64
1076	SLV 10	-329	835	-1091	97.88	0.18	-114.51
1076	SLV 11	-337	-838	8057	-1877.69	-6.95	-118.23
1076	SLV 12	-468	-893	8103	-1888.18	-6.87	-164.09
1076	SLV 13	-913	276	1600	-529.55	-3.78	-319.75
1076	SLV 14	-1108	195	1667	-545.13	-3.65	-387.87
1076	SLV 15	-955	-242	4358	-1125.37	-5.89	-334.62
1076	SLV 16	-1150	-323	4425	-1140.95	-5.76	-402.75
1076	CRTFP Ux+	0	0	0	0	0	0
1076	CRTFP Ux-	0	0	0	0	0	0
1076	CRTFP Uy+	0	0	0	0	0	0
1076	CRTFP Uy-	0	0	0	0	0	0
1077	SLU 1	-29	14	3491	-930.38	-2.92	-9.97
1077	SLU 2	-28	31	3407	-910.76	-2.85	-9.69
1077	SLU 3	-30	14	3585	-954.66	-3.01	-10.24
1077	SLU 4	-29	24	3535	-942.89	-2.96	-10.07
1077	SLU 5	-29	31	3467	-926.14	-2.9	-9.83
1077	SLU 6	-30	14	3645	-970.05	-3.06	-10.38
1077	SLU 7	-30	24	3595	-958.27	-3.01	-10.21
1077	SLU 8	-30	14	3611	-961.15	-3.03	-10.26
1077	SLU 9	-29	24	3560	-949.38	-2.98	-10.09
1077	SLU 10	-31	32	3844	-1025.73	-3.28	-10.48
1077	SLU 11	-32	15	4023	-1069.64	-3.45	-11.03
1077	SLU 12	-32	25	3972	-1057.86	-3.4	-10.86
1077	SLU 13	-31	32	3904	-1041.12	-3.34	-10.62
1077	SLU 14	-33	15	4083	-1085.02	-3.5	-11.17
1077	SLU 15	-32	25	4032	-1073.25	-3.45	-11
1077	SLU 16	-32	15	4048	-1076.12	-3.47	-11.05
1077	SLU 17	-32	25	3997	-1064.35	-3.42	-10.88
1077	SLU 18	-32	15	4116	-1094.63	-3.55	-11.1
1077	SLU 19	-32	25	4065	-1082.85	-3.5	-10.93
1077	SLU 20	-33	15	4175	-1110.01	-3.6	-11.25
1077	SLU 21	-32	25	4125	-1098.24	-3.56	-11.07
1077	SLU 22	-33	15	4079	-1083.04	-3.5	-11.29
1077	SLU 23	-32	32	3995	-1063.42	-3.42	-11
1077	SLU 24	-34	15	4174	-1107.32	-3.58	-11.55
1077	SLU 25	-33	26	4123	-1095.55	-3.54	-11.38
1077	SLU 26	-33	32	4055	-1078.8	-3.47	-11.14
1077	SLU 27	-34	15	4233	-1122.71	-3.64	-11.7
1077	SLU 28	-34	26	4183	-1110.93	-3.59	-11.53
1077	SLU 29	-34	15	4199	-1113.81	-3.61	-11.58
1077	SLU 30	-33	26	4148	-1102.04	-3.56	-11.4
1077	SLU 31	-34	33	4432	-1178.39	-3.86	-11.79
1077	SLU 32	-36	16	4611	-1222.3	-4.02	-12.34
1077	SLU 33	-36	26	4561	-1210.52	-3.98	-12.17
1077	SLU 34	-35	33	4492	-1193.78	-3.91	-11.93
1077	SLU 35	-36	16	4671	-1237.68	-4.08	-12.49
1077	SLU 36	-36	26	4620	-1225.91	-4.03	-12.32
1077	SLU 37	-36	16	4636	-1228.78	-4.04	-12.37
1077	SLU 38	-36	26	4586	-1217.01	-4	-12.19
1077	SLU 39	-36	16	4704	-1247.29	-4.13	-12.41
1077	SLU 40	-36	27	4653	-1235.51	-4.08	-12.24
1077	SLU 41	-37	16	4764	-1262.67	-4.18	-12.56
1077	SLU 42	-36	27	4713	-1250.9	-4.13	-12.39
1077	SLU 43	-37	18	4336	-1157.15	-3.6	-12.51
1077	SLU 44	-36	35	4252	-1137.53	-3.53	-12.23
1077	SLU 45	-37	18	4431	-1181.44	-3.69	-12.78
1077	SLU 46	-37	28	4381	-1169.66	-3.64	-12.61
1077	SLU 47	-36	35	4312	-1152.92	-3.58	-12.37
1077	SLU 48	-38	18	4491	-1196.82	-3.74	-12.93
1077	SLU 49	-37	28	4440	-1185.05	-3.69	-12.75
1077	SLU 50	-37	18	4456	-1187.92	-3.71	-12.8
1077	SLU 51	-37	28	4406	-1176.15	-3.66	-12.63
1077	SLU 52	-38	36	4690	-1252.51	-3.96	-13.02
1077	SLU 53	-40	19	4868	-1296.41	-4.13	-13.57
1077	SLU 54	-39	29	4818	-1284.64	-4.08	-13.4
1077	SLU 55	-38	36	4750	-1267.89	-4.02	-13.16
1077	SLU 56	-40	19	4928	-1311.79	-4.18	-13.72
1077	SLU 57	-40	29	4878	-1300.02	-4.13	-13.54
1077	SLU 58	-40	18	4893	-1302.9	-4.15	-13.59
1077	SLU 59	-39	29	4843	-1291.13	-4.1	-13.42
1077	SLU 60	-40	19	4961	-1321.4	-4.23	-13.64
1077	SLU 61	-39	29	4911	-1309.63	-4.18	-13.47
1077	SLU 62	-40	19	5021	-1336.79	-4.28	-13.79
1077	SLU 63	-40	29	4971	-1325.01	-4.24	-13.61
1077	SLU 64	-40	19	4925	-1309.81	-4.18	-13.83
1077	SLU 65	-40	36	4841	-1290.19	-4.1	-13.54

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1077	SLU 66	-41	19	5019	-1334.1	-4.26	-14.09
1077	SLU 67	-41	29	4969	-1322.32	-4.22	-13.92
1077	SLU 68	-40	36	4901	-1305.58	-4.15	-13.69
1077	SLU 69	-42	19	5079	-1349.48	-4.32	-14.24
1077	SLU 70	-41	29	5029	-1337.71	-4.27	-14.07
1077	SLU 71	-41	19	5044	-1340.58	-4.29	-14.12
1077	SLU 72	-41	29	4994	-1328.81	-4.24	-13.95
1077	SLU 73	-42	37	5278	-1405.17	-4.54	-14.33
1077	SLU 74	-43	20	5456	-1449.07	-4.7	-14.88
1077	SLU 75	-43	30	5406	-1437.3	-4.66	-14.71
1077	SLU 76	-42	37	5338	-1420.55	-4.59	-14.48
1077	SLU 77	-44	20	5516	-1464.45	-4.76	-15.03
1077	SLU 78	-43	30	5466	-1452.68	-4.71	-14.86
1077	SLU 79	-43	20	5482	-1455.56	-4.72	-14.91
1077	SLU 80	-43	30	5431	-1443.79	-4.68	-14.73
1077	SLU 81	-44	20	5549	-1474.06	-4.81	-14.96
1077	SLU 82	-43	30	5499	-1462.29	-4.76	-14.78
1077	SLU 83	-44	20	5609	-1489.45	-4.86	-15.1
1077	SLU 84	-44	30	5559	-1477.67	-4.81	-14.93
1077	SLE RA 1	-30	14	3659	-974	-3.09	-10.35
1077	SLE RA 2	-30	26	3603	-960.92	-3.04	-10.16
1077	SLE RA 3	-31	14	3722	-990.18	-3.15	-10.53
1077	SLE RA 4	-30	21	3688	-982.34	-3.11	-10.41
1077	SLE RA 5	-30	26	3643	-971.17	-3.07	-10.25
1077	SLE RA 6	-31	14	3762	-1000.44	-3.18	-10.62
1077	SLE RA 7	-31	21	3728	-992.59	-3.15	-10.51
1077	SLE RA 8	-31	14	3739	-994.51	-3.16	-10.54
1077	SLE RA 9	-30	21	3705	-986.66	-3.13	-10.43
1077	SLE RA 10	-31	26	3895	-1037.56	-3.33	-10.68
1077	SLE RA 11	-32	15	4013	-1066.83	-3.44	-11.05
1077	SLE RA 12	-32	22	3980	-1058.99	-3.41	-10.94
1077	SLE RA 13	-31	26	3934	-1047.82	-3.36	-10.78
1077	SLE RA 14	-33	15	4053	-1077.09	-3.47	-11.15
1077	SLE RA 15	-32	22	4020	-1069.24	-3.44	-11.03
1077	SLE RA 16	-32	15	4030	-1071.16	-3.45	-11.07
1077	SLE RA 17	-32	22	3997	-1063.31	-3.42	-10.95
1077	SLE RA 18	-32	15	4075	-1083.5	-3.51	-11.1
1077	SLE RA 19	-32	22	4042	-1075.65	-3.47	-10.99
1077	SLE RA 20	-33	15	4115	-1093.75	-3.54	-11.2
1077	SLE RA 21	-32	22	4082	-1085.9	-3.51	-11.08
1077	SLE FR 1	-30	14	3659	-974	-3.09	-10.35
1077	SLE FR 2	-30	17	3648	-971.38	-3.08	-10.31
1077	SLE FR 3	-30	14	3675	-978.1	-3.1	-10.39
1077	SLE FR 4	-31	17	3773	-1004.23	-3.2	-10.54
1077	SLE FR 5	-31	15	3800	-1010.95	-3.23	-10.61
1077	SLE FR 6	-31	15	3867	-1028.75	-3.3	-10.72
1077	SLE QP 1	-30	14	3659	-974	-3.09	-10.35
1077	SLE QP 2	-31	15	3784	-1006.85	-3.21	-10.57
1077	SLD 1	446	152	3467	-907.71	-2.04	156.39
1077	SLD 2	363	120	3495	-913.99	-2	127.48
1077	SLD 3	430	-60	4599	-1172.56	-3.07	150.56
1077	SLD 4	347	-92	4626	-1178.84	-3.03	121.65
1077	SLD 5	152	383	1968	-574.29	-1.3	53.56
1077	SLD 6	97	362	1986	-578.44	-1.28	34.48
1077	SLD 7	97	-323	5740	-1457.11	-4.74	34.13
1077	SLD 8	43	-345	5758	-1461.26	-4.72	15.05
1077	SLD 9	-104	374	1810	-552.44	-1.71	-36.2
1077	SLD 10	-159	352	1828	-556.58	-1.69	-55.28
1077	SLD 11	-159	-332	5582	-1435.26	-5.15	-55.63
1077	SLD 12	-214	-354	5600	-1439.4	-5.12	-74.7
1077	SLD 13	-408	121	2941	-834.85	-3.39	-142.79
1077	SLD 14	-491	89	2969	-841.13	-3.36	-171.71
1077	SLD 15	-425	-91	4073	-1099.7	-4.43	-148.62
1077	SLD 16	-508	-123	4100	-1105.98	-4.39	-177.54
1077	SLV 1	1086	352	2950	-753.01	-0.38	380.47
1077	SLV 2	891	276	3014	-767.77	-0.29	312.5
1077	SLV 3	1046	-175	5785	-1416.48	-2.96	366.41
1077	SLV 4	852	-251	5849	-1431.24	-2.88	298.44
1077	SLV 5	401	931	-778	78.32	1.54	140.76
1077	SLV 6	270	880	-735	68.38	1.59	95
1077	SLV 7	268	-829	8672	-2133.24	-7.07	93.87
1077	SLV 8	137	-880	8715	-2143.17	-7.01	48.11
1077	SLV 9	-199	909	-1148	129.48	0.58	-69.26
1077	SLV 10	-330	858	-1104	119.54	0.64	-115.02
1077	SLV 11	-331	-850	8303	-2082.07	-8.02	-116.14
1077	SLV 12	-462	-902	8346	-2092.01	-7.96	-161.91
1077	SLV 13	-913	281	1719	-582.45	-3.55	-319.58
1077	SLV 14	-1108	205	1783	-597.22	-3.46	-387.55
1077	SLV 15	-953	-247	4554	-1245.92	-6.13	-333.65
1077	SLV 16	-1148	-323	4618	-1260.68	-6.05	-401.62
1077	CRTFP Ux+	0	0	0	0	0	0
1077	CRTFP Ux-	0	0	0	0	0	0
1077	CRTFP Uy+	0	0	0	0	0	0
1077	CRTFP Uy-	0	0	0	0	0	0
1078	SLU 1	-27	21	3579	-1021.52	-2.37	-9.12
1078	SLU 2	-26	38	3492	-999.68	-2.3	-8.87
1078	SLU 3	-27	21	3676	-1048.38	-2.44	-9.36
1078	SLU 4	-27	32	3624	-1035.28	-2.4	-9.21
1078	SLU 5	-26	38	3554	-1016.69	-2.35	-9

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1078	SLU 6	-28	21	3737	-1065.39	-2.48	-9.49
1078	SLU 7	-27	32	3685	-1052.29	-2.44	-9.34
1078	SLU 8	-27	21	3702	-1055.54	-2.46	-9.38
1078	SLU 9	-27	31	3650	-1042.43	-2.41	-9.23
1078	SLU 10	-28	39	3943	-1127.28	-2.67	-9.58
1078	SLU 11	-29	22	4127	-1175.99	-2.8	-10.08
1078	SLU 12	-29	33	4075	-1162.88	-2.76	-9.93
1078	SLU 13	-28	39	4004	-1144.29	-2.71	-9.71
1078	SLU 14	-30	22	4188	-1193	-2.84	-10.21
1078	SLU 15	-29	33	4136	-1179.89	-2.8	-10.06
1078	SLU 16	-29	22	4152	-1183.14	-2.82	-10.09
1078	SLU 17	-29	33	4100	-1170.03	-2.78	-9.94
1078	SLU 18	-30	22	4223	-1203.81	-2.89	-10.14
1078	SLU 19	-29	33	4171	-1190.71	-2.85	-9.99
1078	SLU 20	-30	22	4284	-1220.82	-2.93	-10.27
1078	SLU 21	-30	33	4232	-1207.71	-2.89	-10.12
1078	SLU 22	-30	23	4185	-1190.99	-2.85	-10.32
1078	SLU 23	-29	40	4098	-1169.15	-2.78	-10.07
1078	SLU 24	-31	23	4282	-1217.85	-2.92	-10.56
1078	SLU 25	-30	34	4230	-1204.75	-2.88	-10.41
1078	SLU 26	-30	40	4160	-1186.15	-2.82	-10.2
1078	SLU 27	-31	23	4343	-1234.86	-2.96	-10.69
1078	SLU 28	-31	34	4291	-1221.75	-2.92	-10.54
1078	SLU 29	-31	23	4307	-1225	-2.93	-10.58
1078	SLU 30	-30	34	4255	-1211.9	-2.89	-10.43
1078	SLU 31	-32	41	4549	-1296.75	-3.14	-10.78
1078	SLU 32	-33	24	4732	-1345.46	-3.28	-11.28
1078	SLU 33	-33	35	4680	-1332.35	-3.24	-11.13
1078	SLU 34	-32	42	4610	-1313.76	-3.18	-10.91
1078	SLU 35	-33	24	4794	-1362.46	-3.32	-11.41
1078	SLU 36	-33	35	4742	-1349.36	-3.28	-11.26
1078	SLU 37	-33	24	4758	-1352.61	-3.29	-11.29
1078	SLU 38	-33	35	4706	-1339.5	-3.25	-11.14
1078	SLU 39	-33	24	4828	-1373.28	-3.37	-11.34
1078	SLU 40	-33	35	4776	-1360.17	-3.33	-11.19
1078	SLU 41	-34	25	4890	-1390.29	-3.41	-11.47
1078	SLU 42	-33	35	4838	-1377.18	-3.37	-11.32
1078	SLU 43	-33	26	4445	-1269.87	-2.92	-11.44
1078	SLU 44	-33	44	4359	-1248.03	-2.85	-11.19
1078	SLU 45	-34	27	4542	-1296.74	-2.99	-11.69
1078	SLU 46	-34	37	4490	-1283.63	-2.95	-11.54
1078	SLU 47	-33	44	4420	-1265.04	-2.89	-11.32
1078	SLU 48	-35	27	4603	-1313.74	-3.03	-11.82
1078	SLU 49	-34	37	4551	-1300.64	-2.99	-11.67
1078	SLU 50	-34	27	4568	-1303.89	-3.01	-11.7
1078	SLU 51	-34	37	4516	-1290.78	-2.96	-11.55
1078	SLU 52	-35	45	4809	-1375.64	-3.22	-11.91
1078	SLU 53	-36	28	4993	-1424.34	-3.35	-12.41
1078	SLU 54	-36	38	4941	-1411.24	-3.31	-12.25
1078	SLU 55	-35	45	4870	-1392.64	-3.26	-12.04
1078	SLU 56	-37	28	5054	-1441.35	-3.39	-12.53
1078	SLU 57	-36	38	5002	-1428.24	-3.35	-12.38
1078	SLU 58	-36	28	5018	-1431.49	-3.37	-12.42
1078	SLU 59	-36	38	4966	-1418.39	-3.33	-12.27
1078	SLU 60	-36	28	5089	-1452.17	-3.44	-12.47
1078	SLU 61	-36	38	5037	-1439.06	-3.4	-12.32
1078	SLU 62	-37	28	5150	-1469.17	-3.48	-12.6
1078	SLU 63	-36	38	5098	-1456.07	-3.44	-12.45
1078	SLU 64	-37	28	5051	-1439.34	-3.4	-12.64
1078	SLU 65	-36	46	4964	-1417.5	-3.33	-12.39
1078	SLU 66	-38	29	5148	-1466.2	-3.47	-12.89
1078	SLU 67	-37	39	5096	-1453.1	-3.42	-12.74
1078	SLU 68	-37	46	5026	-1434.51	-3.37	-12.52
1078	SLU 69	-38	29	5209	-1483.21	-3.51	-13.02
1078	SLU 70	-38	39	5157	-1470.11	-3.47	-12.87
1078	SLU 71	-38	29	5173	-1473.36	-3.48	-12.9
1078	SLU 72	-37	39	5121	-1460.25	-3.44	-12.75
1078	SLU 73	-38	47	5415	-1545.1	-3.69	-13.11
1078	SLU 74	-40	30	5598	-1593.81	-3.83	-13.6
1078	SLU 75	-39	40	5546	-1580.7	-3.79	-13.45
1078	SLU 76	-39	47	5476	-1562.11	-3.73	-13.24
1078	SLU 77	-40	30	5660	-1610.82	-3.87	-13.73
1078	SLU 78	-40	40	5608	-1597.71	-3.83	-13.58
1078	SLU 79	-40	30	5624	-1600.96	-3.84	-13.62
1078	SLU 80	-39	40	5572	-1587.85	-3.8	-13.47
1078	SLU 81	-40	30	5694	-1621.63	-3.92	-13.67
1078	SLU 82	-40	40	5642	-1608.53	-3.87	-13.52
1078	SLU 83	-40	30	5756	-1638.64	-3.96	-13.8
1078	SLU 84	-40	41	5704	-1625.53	-3.92	-13.64
1078	SLE RA 1	-28	21	3752	-1069.94	-2.51	-9.46
1078	SLE RA 2	-27	33	3694	-1055.38	-2.46	-9.29
1078	SLE RA 3	-28	22	3817	-1087.85	-2.56	-9.62
1078	SLE RA 4	-28	29	3782	-1079.11	-2.53	-9.52
1078	SLE RA 5	-27	33	3735	-1066.72	-2.49	-9.38
1078	SLE RA 6	-28	22	3858	-1099.19	-2.58	-9.71
1078	SLE RA 7	-28	29	3823	-1090.45	-2.55	-9.61
1078	SLE RA 8	-28	22	3834	-1092.62	-2.57	-9.63
1078	SLE RA 9	-28	28	3799	-1083.88	-2.54	-9.53
1078	SLE RA 10	-29	34	3995	-1140.45	-2.7	-9.77

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1078	SLE RA 11	-30	22	4117	-1172.92	-2.8	-10.1
1078	SLE RA 12	-29	29	4082	-1164.18	-2.77	-10
1078	SLE RA 13	-29	34	4036	-1151.79	-2.73	-9.86
1078	SLE RA 14	-30	22	4158	-1184.26	-2.82	-10.19
1078	SLE RA 15	-29	29	4123	-1175.52	-2.8	-10.09
1078	SLE RA 16	-30	22	4134	-1177.69	-2.81	-10.11
1078	SLE RA 17	-29	29	4100	-1168.95	-2.78	-10.01
1078	SLE RA 18	-30	22	4181	-1191.47	-2.86	-10.14
1078	SLE RA 19	-29	29	4147	-1182.73	-2.83	-10.04
1078	SLE RA 20	-30	23	4222	-1202.81	-2.88	-10.23
1078	SLE RA 21	-30	29	4187	-1194.07	-2.85	-10.13
1078	SLE FR 1	-28	21	3752	-1069.94	-2.51	-9.46
1078	SLE FR 2	-28	24	3740	-1067.03	-2.5	-9.43
1078	SLE FR 3	-28	21	3768	-1074.48	-2.52	-9.5
1078	SLE FR 4	-28	24	3869	-1103.49	-2.6	-9.63
1078	SLE FR 5	-28	22	3897	-1110.93	-2.62	-9.7
1078	SLE FR 6	-29	22	3967	-1130.7	-2.68	-9.8
1078	SLE QP 1	-28	21	3752	-1069.94	-2.51	-9.46
1078	SLE QP 2	-28	22	3881	-1106.4	-2.61	-9.67
1078	SLD 1	448	160	3529	-999.52	-1.62	157.1
1078	SLD 2	366	131	3555	-1005.73	-1.6	128.27
1078	SLD 3	433	-55	4693	-1294.16	-2.55	151.62
1078	SLD 4	350	-85	4720	-1300.37	-2.52	122.78
1078	SLD 5	153	395	2005	-626.35	-0.92	53.87
1078	SLD 6	99	376	2022	-630.44	-0.91	34.85
1078	SLD 7	101	-323	5885	-1608.48	-4	35.59
1078	SLD 8	47	-342	5903	-1612.58	-3.98	16.57
1078	SLD 9	-103	386	1859	-600.22	-1.25	-35.9
1078	SLD 10	-158	366	1876	-604.31	-1.23	-54.92
1078	SLD 11	-155	-332	5739	-1582.35	-4.32	-54.18
1078	SLD 12	-210	-352	5756	-1586.45	-4.3	-73.2
1078	SLD 13	-407	128	3042	-912.43	-2.71	-142.12
1078	SLD 14	-489	99	3068	-918.64	-2.68	-170.95
1078	SLD 15	-422	-87	4206	-1207.07	-3.63	-147.6
1078	SLD 16	-505	-117	4232	-1213.28	-3.6	-176.44
1078	SLV 1	1088	362	2962	-831.98	-0.22	380.9
1078	SLV 2	894	293	3024	-846.58	-0.16	313.12
1078	SLV 3	1050	-175	5878	-1570.1	-2.53	367.68
1078	SLV 4	856	-244	5940	-1584.7	-2.46	299.9
1078	SLV 5	400	950	-829	98.13	1.59	140.21
1078	SLV 6	269	904	-787	88.3	1.64	94.58
1078	SLV 7	275	-838	8891	-2362.26	-6.1	96.13
1078	SLV 8	144	-885	8933	-2372.09	-6.06	50.5
1078	SLV 9	-201	928	-1171	159.3	0.83	-69.83
1078	SLV 10	-331	881	-1130	149.47	0.87	-115.46
1078	SLV 11	-325	-860	8549	-2301.1	-6.86	-113.91
1078	SLV 12	-456	-907	8590	-2310.93	-6.82	-159.54
1078	SLV 13	-913	287	1822	-628.1	-2.76	-319.23
1078	SLV 14	-1107	218	1883	-642.7	-2.7	-387.01
1078	SLV 15	-950	-249	4738	-1366.22	-5.07	-332.45
1078	SLV 16	-1144	-318	4799	-1380.82	-5.01	-400.23
1078	CRTFP Ux+	0	0	0	0	0	0
1078	CRTFP Ux-	0	0	0	0	0	0
1078	CRTFP Uy+	0	0	0	0	0	0
1078	CRTFP Uy-	0	0	0	0	0	0
1079	SLU 1	-22	24	3271	-991.28	60.38	-7.88
1079	SLU 2	-21	40	3191	-969.81	58.93	-7.99
1079	SLU 3	-22	25	3359	-1017.44	62.02	-8.09
1079	SLU 4	-22	34	3312	-1004.56	61.15	-8.15
1079	SLU 5	-21	40	3247	-986.36	59.96	-8.09
1079	SLU 6	-22	25	3415	-1033.99	63.06	-8.19
1079	SLU 7	-22	34	3368	-1021.11	62.18	-8.26
1079	SLU 8	-22	25	3383	-1024.38	62.45	-8.09
1079	SLU 9	-22	34	3335	-1011.49	61.58	-8.15
1079	SLU 10	-23	42	3605	-1094.58	66.53	-8.59
1079	SLU 11	-24	26	3773	-1142.21	69.62	-8.69
1079	SLU 12	-24	36	3725	-1129.33	68.75	-8.75
1079	SLU 13	-23	42	3661	-1111.13	67.56	-8.69
1079	SLU 14	-24	26	3829	-1158.76	70.66	-8.79
1079	SLU 15	-24	36	3781	-1145.88	69.78	-8.85
1079	SLU 16	-24	26	3796	-1149.15	70.05	-8.69
1079	SLU 17	-24	36	3749	-1136.27	69.18	-8.75
1079	SLU 18	-24	26	3861	-1169.52	71.24	-8.74
1079	SLU 19	-24	36	3814	-1156.64	70.36	-8.8
1079	SLU 20	-24	26	3917	-1186.07	72.27	-8.84
1079	SLU 21	-24	36	3870	-1173.19	71.4	-8.91
1079	SLU 22	-24	27	3826	-1157.04	70.59	-8.9
1079	SLU 23	-24	43	3747	-1135.57	69.14	-9
1079	SLU 24	-25	27	3915	-1183.2	72.23	-9.11
1079	SLU 25	-25	37	3867	-1170.32	71.36	-9.17
1079	SLU 26	-24	43	3803	-1152.12	70.18	-9.11
1079	SLU 27	-25	27	3971	-1199.75	73.27	-9.21
1079	SLU 28	-25	37	3923	-1186.87	72.4	-9.27
1079	SLU 29	-25	27	3938	-1190.14	72.67	-9.11
1079	SLU 30	-25	37	3891	-1177.26	71.8	-9.17
1079	SLU 31	-26	44	4160	-1260.34	76.74	-9.6
1079	SLU 32	-27	29	4328	-1307.97	79.83	-9.71
1079	SLU 33	-26	38	4280	-1295.09	78.96	-9.77
1079	SLU 34	-26	44	4216	-1276.89	77.78	-9.71

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1079	SLU 35	-27	29	4384	-1324.52	80.87	-9.81
1079	SLU 36	-27	38	4336	-1311.64	80	-9.87
1079	SLU 37	-27	29	4351	-1314.91	80.27	-9.71
1079	SLU 38	-26	38	4304	-1302.03	79.4	-9.77
1079	SLU 39	-27	29	4416	-1335.28	81.45	-9.76
1079	SLU 40	-26	38	4369	-1322.4	80.58	-9.82
1079	SLU 41	-27	29	4473	-1351.83	82.49	-9.86
1079	SLU 42	-27	38	4425	-1338.95	81.62	-9.92
1079	SLU 43	-27	31	4062	-1231.83	74.99	-9.9
1079	SLU 44	-27	47	3982	-1210.36	73.54	-10
1079	SLU 45	-28	31	4150	-1257.99	76.63	-10.1
1079	SLU 46	-27	41	4103	-1245.11	75.76	-10.17
1079	SLU 47	-27	47	4038	-1226.91	74.58	-10.11
1079	SLU 48	-28	31	4206	-1274.54	77.67	-10.21
1079	SLU 49	-28	41	4159	-1261.66	76.8	-10.27
1079	SLU 50	-28	31	4174	-1264.93	77.07	-10.11
1079	SLU 51	-27	41	4126	-1252.05	76.19	-10.17
1079	SLU 52	-28	48	4396	-1335.13	81.14	-10.6
1079	SLU 53	-29	33	4564	-1382.76	84.23	-10.7
1079	SLU 54	-29	42	4516	-1369.88	83.36	-10.77
1079	SLU 55	-29	48	4452	-1351.68	82.18	-10.71
1079	SLU 56	-30	33	4620	-1399.31	85.27	-10.81
1079	SLU 57	-29	42	4572	-1386.43	84.4	-10.87
1079	SLU 58	-29	32	4587	-1389.7	84.67	-10.71
1079	SLU 59	-29	42	4539	-1376.82	83.79	-10.77
1079	SLU 60	-30	33	4652	-1410.08	85.85	-10.76
1079	SLU 61	-29	42	4604	-1397.19	84.98	-10.82
1079	SLU 62	-30	33	4708	-1426.62	86.89	-10.86
1079	SLU 63	-29	42	4660	-1413.74	86.01	-10.92
1079	SLU 64	-30	33	4617	-1397.59	85.21	-10.92
1079	SLU 65	-29	49	4537	-1376.12	83.75	-11.02
1079	SLU 66	-31	34	4706	-1423.75	86.84	-11.12
1079	SLU 67	-30	43	4658	-1410.87	85.97	-11.18
1079	SLU 68	-30	49	4594	-1392.67	84.79	-11.12
1079	SLU 69	-31	34	4762	-1440.3	87.88	-11.23
1079	SLU 70	-31	43	4714	-1427.42	87.01	-11.29
1079	SLU 71	-31	34	4729	-1430.69	87.28	-11.13
1079	SLU 72	-30	43	4681	-1417.81	86.41	-11.19
1079	SLU 73	-31	51	4951	-1500.89	91.35	-11.62
1079	SLU 74	-32	35	5119	-1548.52	94.44	-11.72
1079	SLU 75	-32	45	5071	-1535.64	93.57	-11.78
1079	SLU 76	-31	51	5007	-1517.44	92.39	-11.72
1079	SLU 77	-32	35	5175	-1565.07	95.48	-11.83
1079	SLU 78	-32	45	5127	-1552.19	94.61	-11.89
1079	SLU 79	-32	35	5142	-1555.46	94.88	-11.73
1079	SLU 80	-32	44	5095	-1542.58	94.01	-11.79
1079	SLU 81	-32	35	5207	-1575.84	96.06	-11.77
1079	SLU 82	-32	45	5160	-1562.95	95.19	-11.83
1079	SLU 83	-33	35	5263	-1592.39	97.1	-11.88
1079	SLU 84	-32	45	5216	-1579.5	96.23	-11.94
1079	SLE RA 1	-22	25	3429	-1038.64	63.3	-8.17
1079	SLE RA 2	-22	36	3376	-1024.33	62.33	-8.24
1079	SLE RA 3	-23	25	3489	-1056.08	64.39	-8.31
1079	SLE RA 4	-23	32	3457	-1047.49	63.81	-8.35
1079	SLE RA 5	-22	36	3414	-1035.36	63.02	-8.31
1079	SLE RA 6	-23	25	3526	-1067.11	65.08	-8.38
1079	SLE RA 7	-23	32	3494	-1058.53	64.5	-8.42
1079	SLE RA 8	-23	25	3504	-1060.71	64.68	-8.31
1079	SLE RA 9	-23	32	3472	-1052.12	64.1	-8.35
1079	SLE RA 10	-23	37	3652	-1107.51	67.4	-8.64
1079	SLE RA 11	-24	26	3764	-1139.26	69.46	-8.71
1079	SLE RA 12	-24	33	3732	-1130.67	68.88	-8.75
1079	SLE RA 13	-23	37	3689	-1118.54	68.09	-8.71
1079	SLE RA 14	-24	26	3801	-1150.29	70.15	-8.78
1079	SLE RA 15	-24	33	3770	-1141.71	69.57	-8.82
1079	SLE RA 16	-24	26	3780	-1143.89	69.75	-8.71
1079	SLE RA 17	-24	33	3748	-1135.3	69.17	-8.75
1079	SLE RA 18	-24	26	3823	-1157.47	70.54	-8.74
1079	SLE RA 19	-24	33	3791	-1148.88	69.95	-8.79
1079	SLE RA 20	-24	26	3860	-1168.5	71.23	-8.81
1079	SLE RA 21	-24	33	3829	-1159.91	70.65	-8.86
1079	SLE FR 1	-22	25	3429	-1038.64	63.3	-8.17
1079	SLE FR 2	-22	27	3419	-1035.78	63.1	-8.19
1079	SLE FR 3	-23	25	3444	-1043.05	63.57	-8.2
1079	SLE FR 4	-23	28	3537	-1071.43	65.28	-8.36
1079	SLE FR 5	-23	26	3562	-1078.7	65.75	-8.37
1079	SLE FR 6	-23	26	3626	-1098.06	66.92	-8.46
1079	SLE QP 1	-22	25	3429	-1038.64	63.3	-8.17
1079	SLE QP 2	-23	25	3548	-1074.29	65.47	-8.35
1079	SLD 1	406	148	3208	-975.36	59.62	140.92
1079	SLD 2	332	125	3231	-981.08	60.07	115.42
1079	SLD 3	393	-48	4277	-1264.89	79.19	137.15
1079	SLD 4	319	-71	4300	-1270.61	79.64	111.65
1079	SLD 5	139	364	1820	-604.47	33.95	46.73
1079	SLD 6	90	349	1835	-608.24	34.25	29.91
1079	SLD 7	95	-290	5383	-1569.55	99.19	34.17
1079	SLD 8	46	-305	5399	-1573.33	99.48	17.36
1079	SLD 9	-92	356	1697	-575.25	31.46	-34.05
1079	SLD 10	-141	341	1712	-579.03	31.75	-50.86

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1079	SLD 11	-136	-298	5260	-1540.34	96.69	-46.61
1079	SLD 12	-185	-313	5275	-1544.11	96.98	-63.42
1079	SLD 13	-365	122	2795	-877.97	51.3	-128.35
1079	SLD 14	-439	99	2818	-883.69	51.75	-153.84
1079	SLD 15	-378	-74	3864	-1167.5	70.87	-132.11
1079	SLD 16	-452	-97	3887	-1173.22	71.32	-157.61
1079	SLV 1	982	328	2664	-818.9	50.17	341.31
1079	SLV 2	807	273	2718	-832.34	51.22	281.39
1079	SLV 3	950	-161	5342	-1544.21	99.2	331.96
1079	SLV 4	776	-216	5396	-1557.65	100.25	272.03
1079	SLV 5	360	868	-789	104.89	-13.67	121.93
1079	SLV 6	242	831	-753	95.84	-12.96	81.58
1079	SLV 7	253	-762	8137	-2312.81	149.74	90.74
1079	SLV 8	136	-799	8173	-2321.86	150.45	50.39
1079	SLV 9	-182	850	-1078	173.28	-19.51	-67.08
1079	SLV 10	-299	813	-1042	164.23	-18.81	-107.43
1079	SLV 11	-288	-780	7848	-2244.42	143.9	-98.27
1079	SLV 12	-405	-817	7884	-2253.47	144.61	-138.62
1079	SLV 13	-821	267	1699	-590.93	30.69	-288.72
1079	SLV 14	-996	212	1753	-604.37	31.74	-348.65
1079	SLV 15	-853	-222	4377	-1316.24	79.72	-298.08
1079	SLV 16	-1028	-277	4431	-1329.68	80.76	-358
1079	CRTFP Ux+	0	0	0	0	0	0
1079	CRTFP Ux-	0	0	0	0	0	0
1079	CRTFP Uy+	0	0	0	0	0	0
1079	CRTFP Uy-	0	0	0	0	0	0
1081	SLU 1	-61	89	10094	-2412.77	75.1	-13.98
1081	SLU 2	-59	137	9841	-2356.39	73.88	-13.76
1081	SLU 3	-62	90	10369	-2477.28	77.42	-14.35
1081	SLU 4	-62	119	10217	-2443.46	76.69	-14.21
1081	SLU 5	-60	138	10015	-2397.16	75.38	-13.94
1081	SLU 6	-63	91	10542	-2518.05	78.93	-14.53
1081	SLU 7	-62	120	10390	-2484.23	78.19	-14.39
1081	SLU 8	-62	90	10441	-2494.3	78.11	-14.34
1081	SLU 9	-62	119	10289	-2460.47	77.38	-14.21
1081	SLU 10	-64	142	11118	-2661.81	83.23	-14.83
1081	SLU 11	-67	95	11646	-2782.7	86.78	-15.42
1081	SLU 12	-66	124	11494	-2748.88	86.04	-15.28
1081	SLU 13	-65	143	11292	-2702.57	84.74	-15.01
1081	SLU 14	-68	96	11819	-2823.47	88.28	-15.6
1081	SLU 15	-67	125	11667	-2789.64	87.55	-15.46
1081	SLU 16	-67	95	11718	-2799.71	87.47	-15.41
1081	SLU 17	-66	124	11566	-2765.89	86.73	-15.28
1081	SLU 18	-67	95	11919	-2849.07	88.47	-15.51
1081	SLU 19	-66	125	11767	-2815.25	87.73	-15.37
1081	SLU 20	-68	96	12092	-2889.84	89.97	-15.69
1081	SLU 21	-67	125	11940	-2856.02	89.24	-15.55
1081	SLU 22	-69	98	11814	-2821.13	87.59	-15.79
1081	SLU 23	-67	147	11561	-2764.75	86.36	-15.57
1081	SLU 24	-70	99	12089	-2885.65	89.91	-16.16
1081	SLU 25	-69	129	11937	-2851.82	89.17	-16.03
1081	SLU 26	-68	147	11735	-2805.52	87.86	-15.75
1081	SLU 27	-71	100	12262	-2926.41	91.41	-16.34
1081	SLU 28	-70	129	12110	-2892.59	90.67	-16.21
1081	SLU 29	-70	99	12161	-2902.66	90.6	-16.15
1081	SLU 30	-69	128	12009	-2868.83	89.86	-16.02
1081	SLU 31	-72	151	12839	-3070.17	95.72	-16.64
1081	SLU 32	-75	104	13366	-3191.06	99.26	-17.23
1081	SLU 33	-74	133	13214	-3157.24	98.53	-17.1
1081	SLU 34	-72	152	13012	-3110.94	97.22	-16.82
1081	SLU 35	-75	105	13539	-3231.83	100.77	-17.41
1081	SLU 36	-75	134	13387	-3198	100.03	-17.28
1081	SLU 37	-75	104	13438	-3208.08	99.95	-17.22
1081	SLU 38	-74	133	13286	-3174.25	99.22	-17.09
1081	SLU 39	-75	105	13639	-3257.44	100.95	-17.32
1081	SLU 40	-74	134	13487	-3223.61	100.22	-17.19
1081	SLU 41	-76	105	13812	-3298.2	102.46	-17.5
1081	SLU 42	-75	135	13660	-3264.38	101.72	-17.37
1081	SLU 43	-76	112	12533	-2996.58	93.35	-17.55
1081	SLU 44	-75	161	12280	-2940.21	92.13	-17.33
1081	SLU 45	-78	114	12807	-3061.1	95.67	-17.92
1081	SLU 46	-77	143	12655	-3027.28	94.94	-17.79
1081	SLU 47	-76	161	12453	-2980.98	93.63	-17.51
1081	SLU 48	-79	114	12980	-3101.87	97.18	-18.1
1081	SLU 49	-78	143	12828	-3068.05	96.44	-17.97
1081	SLU 50	-78	113	12879	-3078.12	96.36	-17.91
1081	SLU 51	-77	143	12728	-3044.29	95.63	-17.78
1081	SLU 52	-79	166	13557	-3245.63	101.48	-18.4
1081	SLU 53	-82	118	14084	-3366.52	105.03	-18.99
1081	SLU 54	-82	148	13932	-3332.7	104.29	-18.85
1081	SLU 55	-80	166	13730	-3286.39	102.99	-18.58
1081	SLU 56	-83	119	14258	-3407.29	106.53	-19.17
1081	SLU 57	-82	148	14106	-3373.46	105.8	-19.04
1081	SLU 58	-82	118	14157	-3383.53	105.72	-18.98
1081	SLU 59	-82	147	14005	-3349.71	104.98	-18.85
1081	SLU 60	-83	119	14357	-3432.89	106.72	-19.08
1081	SLU 61	-82	148	14206	-3399.07	105.98	-18.95
1081	SLU 62	-84	119	14531	-3473.66	108.22	-19.26
1081	SLU 63	-83	149	14379	-3439.84	107.49	-19.13

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1081	SLU 64	-84	121	14253	-3404.95	105.84	-19.37
1081	SLU 65	-83	170	14000	-3348.57	104.61	-19.15
1081	SLU 66	-86	123	14527	-3469.47	108.16	-19.73
1081	SLU 67	-85	152	14375	-3435.64	107.42	-19.6
1081	SLU 68	-84	171	14173	-3389.34	106.12	-19.33
1081	SLU 69	-87	123	14700	-3510.23	109.66	-19.91
1081	SLU 70	-86	153	14549	-3476.41	108.93	-19.78
1081	SLU 71	-86	122	14600	-3486.48	108.85	-19.73
1081	SLU 72	-85	152	14448	-3452.65	108.11	-19.59
1081	SLU 73	-87	175	15277	-3653.99	113.97	-20.21
1081	SLU 74	-90	128	15804	-3774.88	117.51	-20.8
1081	SLU 75	-89	157	15653	-3741.06	116.78	-20.67
1081	SLU 76	-88	175	15450	-3694.76	115.47	-20.39
1081	SLU 77	-91	128	15978	-3815.65	119.02	-20.98
1081	SLU 78	-90	157	15826	-3781.82	118.28	-20.85
1081	SLU 79	-90	127	15877	-3791.9	118.2	-20.79
1081	SLU 80	-89	157	15725	-3758.07	117.47	-20.66
1081	SLU 81	-91	128	16078	-3841.26	119.2	-20.89
1081	SLU 82	-90	157	15926	-3807.43	118.47	-20.76
1081	SLU 83	-91	129	16251	-3882.02	120.71	-21.07
1081	SLU 84	-91	158	16099	-3848.2	119.97	-20.94
1081	SLE RA 1	-63	91	10586	-2529.44	78.67	-14.5
1081	SLE RA 2	-62	124	10417	-2491.86	77.85	-14.35
1081	SLE RA 3	-64	92	10769	-2572.45	80.22	-14.74
1081	SLE RA 4	-64	112	10667	-2549.9	79.73	-14.65
1081	SLE RA 5	-63	124	10533	-2519.03	78.85	-14.47
1081	SLE RA 6	-65	93	10884	-2599.63	81.22	-14.86
1081	SLE RA 7	-64	112	10783	-2577.08	80.73	-14.78
1081	SLE RA 8	-64	92	10817	-2583.79	80.68	-14.74
1081	SLE RA 9	-64	112	10716	-2561.25	80.18	-14.65
1081	SLE RA 10	-65	127	11269	-2695.47	84.09	-15.06
1081	SLE RA 11	-67	95	11620	-2776.06	86.45	-15.46
1081	SLE RA 12	-67	115	11519	-2753.51	85.96	-15.37
1081	SLE RA 13	-66	127	11384	-2722.65	85.09	-15.18
1081	SLE RA 14	-68	96	11736	-2803.24	87.46	-15.58
1081	SLE RA 15	-67	115	11634	-2780.69	86.97	-15.49
1081	SLE RA 16	-67	95	11668	-2787.41	86.91	-15.45
1081	SLE RA 17	-67	115	11567	-2764.86	86.42	-15.36
1081	SLE RA 18	-67	96	11802	-2820.31	87.58	-15.52
1081	SLE RA 19	-67	115	11701	-2797.76	87.09	-15.43
1081	SLE RA 20	-68	96	11918	-2847.49	88.58	-15.64
1081	SLE RA 21	-67	116	11816	-2824.94	88.09	-15.55
1081	SLE FR 1	-63	91	10586	-2529.44	78.67	-14.5
1081	SLE FR 2	-63	98	10552	-2521.92	78.51	-14.47
1081	SLE FR 3	-63	91	10632	-2540.31	79.07	-14.55
1081	SLE FR 4	-64	99	10917	-2609.19	81.18	-14.77
1081	SLE FR 5	-65	93	10997	-2627.57	81.74	-14.85
1081	SLE FR 6	-65	93	11194	-2674.88	83.13	-15.01
1081	SLE QP 1	-63	91	10586	-2529.44	78.67	-14.5
1081	SLE QP 2	-64	93	10951	-2616.7	81.34	-14.8
1081	SLD 1	1257	451	9817	-2372.35	82.73	312.11
1081	SLD 2	1025	394	9888	-2387.64	83.61	256.52
1081	SLD 3	1218	-152	13218	-3131.26	99.9	303.39
1081	SLD 4	987	-209	13289	-3146.54	100.78	247.8
1081	SLD 5	432	1126	5439	-1389.64	55.56	106.49
1081	SLD 6	280	1088	5486	-1399.72	56.14	69.82
1081	SLD 7	303	-886	16776	-3919.33	112.79	77.43
1081	SLD 8	151	-924	16823	-3929.41	113.38	40.75
1081	SLD 9	-279	1109	5078	-1303.99	49.31	-70.36
1081	SLD 10	-432	1071	5125	-1314.07	49.9	-107.04
1081	SLD 11	-408	-903	16415	-3833.68	106.54	-99.42
1081	SLD 12	-561	-941	16462	-3843.76	107.13	-136.1
1081	SLD 13	-1115	394	8612	-2086.86	61.9	-277.41
1081	SLD 14	-1347	337	8683	-2102.14	62.79	-333
1081	SLD 15	-1154	-209	12013	-2845.77	79.07	-286.12
1081	SLD 16	-1385	-266	12084	-2861.05	79.96	-341.72
1081	SLV 1	3029	979	8017	-1982.3	83.14	750.77
1081	SLV 2	2485	844	8185	-2018.22	85.23	620.08
1081	SLV 3	2936	-525	16537	-3883.43	126.17	729.7
1081	SLV 4	2392	-660	16704	-3919.35	128.26	599.01
1081	SLV 5	1107	2665	-2882	463.7	16.23	271.21
1081	SLV 6	741	2574	-2770	439.52	17.63	183.23
1081	SLV 7	796	-2349	25517	-5873.39	159.67	200.98
1081	SLV 8	430	-2440	25630	-5897.58	161.07	113
1081	SLV 9	-558	2625	-3728	664.18	1.61	-142.6
1081	SLV 10	-924	2534	-3616	639.99	3.02	-230.59
1081	SLV 11	-869	-2389	24671	-5672.92	145.05	-212.83
1081	SLV 12	-1235	-2480	24784	-5697.11	146.46	-300.82
1081	SLV 13	-2521	845	5197	-1314.06	34.43	-628.62
1081	SLV 14	-3065	711	5364	-1349.98	36.52	-759.31
1081	SLV 15	-2614	-659	13717	-3215.19	77.46	-649.69
1081	SLV 16	-3158	-794	13884	-3251.11	79.55	-780.38
1081	CRTFP Ux+	0	0	0	0	0	0
1081	CRTFP Ux-	0	0	0	0	0	0
1081	CRTFP Uy+	0	0	0	-0.01	0	0
1081	CRTFP Uy-	0	0	0	0.01	0	0
1083	SLU 1	-15	29	2942	-870.41	-52.74	-4.72
1083	SLU 2	-15	44	2869	-850.88	-51.43	-4.34
1083	SLU 3	-16	30	3021	-893.06	-54.15	-4.85

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1083	SLU 4	-15	39	2977	-881.34	-53.37	-4.62
1083	SLU 5	-15	44	2919	-865.18	-52.32	-4.4
1083	SLU 6	-16	30	3071	-907.37	-55.04	-4.91
1083	SLU 7	-16	39	3027	-895.65	-54.26	-4.68
1083	SLU 8	-16	30	3042	-899.02	-54.52	-4.84
1083	SLU 9	-15	39	2998	-887.3	-53.74	-4.61
1083	SLU 10	-16	46	3241	-960.15	-58.1	-4.69
1083	SLU 11	-17	31	3393	-1002.34	-60.81	-5.2
1083	SLU 12	-16	40	3349	-990.62	-60.03	-4.97
1083	SLU 13	-16	46	3291	-974.46	-58.98	-4.75
1083	SLU 14	-17	32	3443	-1016.64	-61.7	-5.26
1083	SLU 15	-17	40	3399	-1004.92	-60.92	-5.03
1083	SLU 16	-17	31	3414	-1008.29	-61.18	-5.19
1083	SLU 17	-16	40	3370	-996.58	-60.4	-4.96
1083	SLU 18	-17	31	3473	-1026.51	-62.26	-5.22
1083	SLU 19	-16	40	3430	-1014.79	-61.47	-4.99
1083	SLU 20	-17	32	3523	-1040.82	-63.15	-5.28
1083	SLU 21	-17	40	3480	-1029.1	-62.36	-5.05
1083	SLU 22	-17	32	3442	-1015.85	-61.69	-5.34
1083	SLU 23	-17	47	3369	-996.32	-60.39	-4.95
1083	SLU 24	-17	33	3521	-1038.5	-63.11	-5.46
1083	SLU 25	-17	42	3477	-1026.78	-62.32	-5.23
1083	SLU 26	-17	47	3419	-1010.62	-61.28	-5.01
1083	SLU 27	-18	33	3571	-1052.81	-63.99	-5.52
1083	SLU 28	-17	42	3527	-1041.09	-63.21	-5.29
1083	SLU 29	-17	33	3542	-1044.46	-63.47	-5.46
1083	SLU 30	-17	42	3498	-1032.74	-62.69	-5.22
1083	SLU 31	-18	49	3741	-1105.59	-67.05	-5.3
1083	SLU 32	-19	34	3893	-1147.77	-69.77	-5.81
1083	SLU 33	-18	43	3849	-1136.06	-68.98	-5.58
1083	SLU 34	-18	49	3791	-1119.9	-67.94	-5.36
1083	SLU 35	-19	35	3943	-1162.08	-70.66	-5.87
1083	SLU 36	-19	43	3899	-1150.36	-69.87	-5.64
1083	SLU 37	-19	34	3914	-1153.73	-70.13	-5.81
1083	SLU 38	-18	43	3870	-1142.01	-69.35	-5.57
1083	SLU 39	-19	34	3973	-1171.95	-71.21	-5.84
1083	SLU 40	-18	43	3930	-1160.23	-70.43	-5.61
1083	SLU 41	-19	35	4023	-1186.26	-72.1	-5.9
1083	SLU 42	-19	44	3980	-1174.54	-71.32	-5.66
1083	SLU 43	-19	37	3653	-1081.67	-65.49	-5.93
1083	SLU 44	-19	52	3580	-1062.14	-64.19	-5.54
1083	SLU 45	-19	38	3732	-1104.32	-66.9	-6.06
1083	SLU 46	-19	46	3688	-1092.6	-66.12	-5.83
1083	SLU 47	-19	52	3630	-1076.44	-65.08	-5.6
1083	SLU 48	-20	38	3782	-1118.63	-67.79	-6.12
1083	SLU 49	-19	47	3738	-1106.91	-67.01	-5.88
1083	SLU 50	-19	37	3753	-1110.28	-67.27	-6.05
1083	SLU 51	-19	46	3709	-1098.56	-66.49	-5.82
1083	SLU 52	-20	53	3952	-1171.41	-70.85	-5.89
1083	SLU 53	-21	39	4104	-1213.59	-73.57	-6.41
1083	SLU 54	-20	48	4060	-1201.88	-72.78	-6.18
1083	SLU 55	-20	53	4002	-1185.71	-71.74	-5.95
1083	SLU 56	-21	39	4154	-1227.9	-74.46	-6.47
1083	SLU 57	-21	48	4110	-1216.18	-73.67	-6.24
1083	SLU 58	-20	39	4125	-1219.55	-73.93	-6.4
1083	SLU 59	-20	48	4081	-1207.83	-73.15	-6.17
1083	SLU 60	-21	39	4184	-1237.77	-75.01	-6.43
1083	SLU 61	-20	48	4141	-1226.05	-74.23	-6.2
1083	SLU 62	-21	39	4234	-1252.08	-75.9	-6.49
1083	SLU 63	-21	48	4191	-1240.36	-75.12	-6.26
1083	SLU 64	-21	40	4153	-1227.1	-74.45	-6.54
1083	SLU 65	-21	55	4080	-1207.57	-73.14	-6.16
1083	SLU 66	-21	41	4232	-1249.76	-75.86	-6.67
1083	SLU 67	-21	49	4188	-1238.04	-75.07	-6.44
1083	SLU 68	-21	55	4130	-1221.88	-74.03	-6.22
1083	SLU 69	-22	41	4282	-1264.07	-76.75	-6.73
1083	SLU 70	-21	50	4238	-1252.35	-75.96	-6.5
1083	SLU 71	-21	41	4253	-1255.72	-76.23	-6.66
1083	SLU 72	-21	49	4209	-1244	-75.44	-6.43
1083	SLU 73	-22	56	4452	-1316.85	-79.8	-6.51
1083	SLU 74	-22	42	4604	-1359.03	-82.52	-7.02
1083	SLU 75	-22	51	4560	-1347.31	-81.73	-6.79
1083	SLU 76	-22	57	4502	-1331.15	-80.69	-6.57
1083	SLU 77	-23	42	4654	-1373.34	-83.41	-7.08
1083	SLU 78	-22	51	4610	-1361.62	-82.62	-6.85
1083	SLU 79	-22	42	4625	-1364.99	-82.89	-7.01
1083	SLU 80	-22	51	4581	-1353.27	-82.1	-6.78
1083	SLU 81	-23	42	4684	-1383.21	-83.96	-7.04
1083	SLU 82	-22	51	4641	-1371.49	-83.18	-6.81
1083	SLU 83	-23	42	4734	-1397.51	-84.85	-7.1
1083	SLU 84	-22	51	4691	-1385.8	-84.07	-6.87
1083	SLE RA 1	-16	30	3084	-911.96	-55.3	-4.9
1083	SLE RA 2	-15	40	3036	-898.94	-54.43	-4.64
1083	SLE RA 3	-16	31	3137	-927.06	-56.24	-4.98
1083	SLE RA 4	-16	36	3108	-919.25	-55.72	-4.83
1083	SLE RA 5	-16	40	3069	-908.48	-55.02	-4.68
1083	SLE RA 6	-16	31	3171	-936.6	-56.83	-5.02
1083	SLE RA 7	-16	37	3142	-928.79	-56.31	-4.87
1083	SLE RA 8	-16	30	3151	-931.04	-56.49	-4.98

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1083	SLE RA 9	-16	36	3122	-923.22	-55.96	-4.82
1083	SLE RA 10	-16	41	3284	-971.79	-58.87	-4.87
1083	SLE RA 11	-17	32	3385	-999.91	-60.68	-5.22
1083	SLE RA 12	-17	37	3356	-992.1	-60.16	-5.06
1083	SLE RA 13	-16	41	3318	-981.33	-59.46	-4.91
1083	SLE RA 14	-17	32	3419	-1009.45	-61.27	-5.26
1083	SLE RA 15	-17	38	3390	-1001.64	-60.75	-5.1
1083	SLE RA 16	-17	31	3399	-1003.89	-60.93	-5.21
1083	SLE RA 17	-17	37	3370	-996.07	-60.4	-5.06
1083	SLE RA 18	-17	32	3439	-1016.03	-61.64	-5.23
1083	SLE RA 19	-17	37	3410	-1008.22	-61.12	-5.08
1083	SLE RA 20	-17	32	3472	-1025.57	-62.24	-5.27
1083	SLE RA 21	-17	38	3443	-1017.76	-61.71	-5.12
1083	SLE FR 1	-16	30	3084	-911.96	-55.3	-4.9
1083	SLE FR 2	-16	32	3075	-909.36	-55.12	-4.85
1083	SLE FR 3	-16	30	3098	-915.78	-55.54	-4.91
1083	SLE FR 4	-16	33	3181	-940.58	-57.03	-4.95
1083	SLE FR 5	-16	31	3204	-947	-57.44	-5.01
1083	SLE FR 6	-16	31	3262	-964	-58.47	-5.07
1083	SLE QP 1	-16	30	3084	-911.96	-55.3	-4.9
1083	SLE QP 2	-16	31	3191	-943.18	-57.2	-5
1083	SLD 1	383	135	2859	-866.7	-50.92	135.7
1083	SLD 2	314	121	2878	-871.96	-51.25	111.38
1083	SLD 3	372	-47	3834	-1129.59	-68.48	129.56
1083	SLD 4	303	-61	3853	-1134.85	-68.81	105.24
1083	SLD 5	133	340	1609	-520.58	-28.63	50.9
1083	SLD 6	87	331	1622	-524.05	-28.84	34.86
1083	SLD 7	96	-266	4859	-1396.87	-87.16	30.43
1083	SLD 8	50	-275	4872	-1400.34	-87.38	14.38
1083	SLD 9	-82	336	1510	-486.02	-27.03	-24.38
1083	SLD 10	-128	328	1523	-489.5	-27.25	-40.43
1083	SLD 11	-119	-270	4760	-1362.32	-85.56	-44.86
1083	SLD 12	-165	-279	4772	-1365.79	-85.78	-60.9
1083	SLD 13	-335	122	2528	-751.52	-45.59	-115.24
1083	SLD 14	-404	109	2548	-756.78	-45.93	-139.56
1083	SLD 15	-346	-60	3503	-1014.41	-63.15	-121.38
1083	SLD 16	-415	-73	3523	-1019.67	-63.48	-145.7
1083	SLV 1	918	288	2334	-742.5	-41.05	324.61
1083	SLV 2	755	257	2379	-754.87	-41.83	267.45
1083	SLV 3	891	-166	4776	-1401.09	-85.04	309.73
1083	SLV 4	729	-197	4821	-1413.45	-85.82	252.56
1083	SLV 5	335	802	-779	118.19	14.5	127.13
1083	SLV 6	226	781	-748	109.86	13.98	88.65
1083	SLV 7	246	-711	7362	-2077.1	-132.12	77.51
1083	SLV 8	137	-731	7392	-2085.43	-132.65	39.02
1083	SLV 9	-169	793	-1011	199.07	18.24	-49.02
1083	SLV 10	-278	772	-980	190.74	17.72	-87.51
1083	SLV 11	-258	-720	7130	-1996.23	-128.38	-98.65
1083	SLV 12	-367	-740	7160	-2004.56	-128.91	-137.13
1083	SLV 13	-761	258	1560	-472.91	-28.58	-262.56
1083	SLV 14	-923	227	1606	-485.28	-29.36	-319.72
1083	SLV 15	-788	-196	4002	-1131.5	-72.57	-277.45
1083	SLV 16	-950	-227	4048	-1143.87	-73.35	-334.61
1083	CRTFP Ux+	0	0	0	0	0	0
1083	CRTFP Ux-	0	0	0	0	0	0
1083	CRTFP Uy+	0	0	0	0	0	0
1083	CRTFP Uy-	0	0	0	0	0	0
1084	SLU 1	-14	34	3185	-871.13	3.41	-4.97
1084	SLU 2	-14	50	3107	-851.36	3.33	-4.88
1084	SLU 3	-15	35	3271	-893.49	3.52	-5.1
1084	SLU 4	-15	45	3223	-881.62	3.46	-5.04
1084	SLU 5	-14	51	3160	-865.46	3.39	-4.94
1084	SLU 6	-15	35	3324	-907.6	3.58	-5.15
1084	SLU 7	-15	45	3277	-895.73	3.53	-5.1
1084	SLU 8	-15	35	3293	-899.35	3.55	-5.08
1084	SLU 9	-14	44	3246	-887.48	3.5	-5.02
1084	SLU 10	-15	52	3509	-959.61	3.79	-5.23
1084	SLU 11	-16	36	3673	-1001.74	3.98	-5.44
1084	SLU 12	-15	46	3626	-989.88	3.93	-5.39
1084	SLU 13	-15	52	3563	-973.72	3.86	-5.28
1084	SLU 14	-16	37	3727	-1015.85	4.04	-5.49
1084	SLU 15	-16	47	3680	-1003.99	3.99	-5.44
1084	SLU 16	-16	36	3695	-1007.6	4.01	-5.42
1084	SLU 17	-15	46	3648	-995.74	3.96	-5.37
1084	SLU 18	-16	36	3760	-1025.78	4.07	-5.46
1084	SLU 19	-16	46	3713	-1013.92	4.02	-5.41
1084	SLU 20	-16	37	3814	-1039.89	4.14	-5.51
1084	SLU 21	-16	47	3767	-1028.03	4.09	-5.46
1084	SLU 22	-16	38	3726	-1015.38	4.03	-5.59
1084	SLU 23	-16	54	3647	-995.6	3.95	-5.51
1084	SLU 24	-16	38	3811	-1037.73	4.13	-5.72
1084	SLU 25	-16	48	3764	-1025.87	4.08	-5.67
1084	SLU 26	-16	54	3701	-1009.71	4.01	-5.56
1084	SLU 27	-17	39	3865	-1051.84	4.2	-5.77
1084	SLU 28	-16	48	3818	-1039.98	4.15	-5.72
1084	SLU 29	-16	38	3834	-1043.59	4.16	-5.7
1084	SLU 30	-16	48	3786	-1031.73	4.11	-5.65
1084	SLU 31	-17	56	4049	-1103.86	4.41	-5.85
1084	SLU 32	-17	40	4213	-1145.99	4.59	-6.06

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1084	SLU 33	-17	50	4166	-1134.13	4.54	-6.01
1084	SLU 34	-17	56	4103	-1117.97	4.47	-5.9
1084	SLU 35	-18	40	4267	-1160.1	4.66	-6.11
1084	SLU 36	-17	50	4220	-1148.24	4.61	-6.06
1084	SLU 37	-17	40	4236	-1151.85	4.63	-6.04
1084	SLU 38	-17	50	4189	-1139.99	4.58	-5.99
1084	SLU 39	-17	40	4301	-1170.03	4.69	-6.08
1084	SLU 40	-17	50	4253	-1158.17	4.64	-6.03
1084	SLU 41	-18	40	4354	-1184.14	4.76	-6.13
1084	SLU 42	-17	50	4307	-1172.27	4.71	-6.08
1084	SLU 43	-18	43	3956	-1083.01	4.22	-6.25
1084	SLU 44	-18	59	3877	-1063.24	4.14	-6.16
1084	SLU 45	-18	44	4041	-1105.37	4.33	-6.37
1084	SLU 46	-18	54	3994	-1093.5	4.28	-6.32
1084	SLU 47	-18	60	3931	-1077.35	4.21	-6.21
1084	SLU 48	-19	44	4095	-1119.48	4.39	-6.43
1084	SLU 49	-18	54	4048	-1107.61	4.34	-6.37
1084	SLU 50	-18	44	4063	-1111.23	4.36	-6.35
1084	SLU 51	-18	53	4016	-1099.36	4.31	-6.3
1084	SLU 52	-19	61	4279	-1171.5	4.6	-6.5
1084	SLU 53	-19	45	4443	-1213.63	4.79	-6.72
1084	SLU 54	-19	55	4396	-1201.76	4.74	-6.66
1084	SLU 55	-19	61	4333	-1185.6	4.67	-6.56
1084	SLU 56	-19	46	4497	-1227.73	4.85	-6.77
1084	SLU 57	-19	56	4450	-1215.87	4.8	-6.72
1084	SLU 58	-19	45	4465	-1219.49	4.82	-6.69
1084	SLU 59	-19	55	4418	-1207.62	4.77	-6.64
1084	SLU 60	-19	46	4530	-1237.66	4.88	-6.74
1084	SLU 61	-19	55	4483	-1225.8	4.83	-6.68
1084	SLU 62	-20	46	4584	-1251.77	4.95	-6.79
1084	SLU 63	-19	56	4537	-1239.91	4.9	-6.74
1084	SLU 64	-20	47	4496	-1227.26	4.84	-6.87
1084	SLU 65	-20	63	4417	-1207.49	4.76	-6.78
1084	SLU 66	-20	47	4582	-1249.62	4.94	-7
1084	SLU 67	-20	57	4534	-1237.75	4.89	-6.94
1084	SLU 68	-20	63	4471	-1221.59	4.82	-6.84
1084	SLU 69	-20	48	4635	-1263.73	5.01	-7.05
1084	SLU 70	-20	57	4588	-1251.86	4.96	-7
1084	SLU 71	-20	47	4604	-1255.48	4.98	-6.98
1084	SLU 72	-20	57	4557	-1243.61	4.93	-6.92
1084	SLU 73	-20	65	4820	-1315.74	5.22	-7.13
1084	SLU 74	-21	49	4984	-1357.87	5.41	-7.34
1084	SLU 75	-21	59	4937	-1346.01	5.36	-7.29
1084	SLU 76	-21	65	4874	-1329.85	5.29	-7.18
1084	SLU 77	-21	49	5038	-1371.98	5.47	-7.39
1084	SLU 78	-21	59	4990	-1360.12	5.42	-7.34
1084	SLU 79	-21	49	5006	-1363.73	5.44	-7.32
1084	SLU 80	-21	59	4959	-1351.87	5.39	-7.27
1084	SLU 81	-21	49	5071	-1381.91	5.5	-7.36
1084	SLU 82	-21	59	5024	-1370.05	5.45	-7.31
1084	SLU 83	-21	49	5125	-1396.02	5.57	-7.41
1084	SLU 84	-21	59	5077	-1384.16	5.52	-7.36
1084	SLE RA 1	-15	35	3340	-912.34	3.59	-5.15
1084	SLE RA 2	-15	46	3287	-899.16	3.53	-5.09
1084	SLE RA 3	-15	36	3397	-927.25	3.66	-5.23
1084	SLE RA 4	-15	42	3365	-919.34	3.62	-5.2
1084	SLE RA 5	-15	46	3323	-908.57	3.58	-5.13
1084	SLE RA 6	-15	36	3433	-936.65	3.7	-5.27
1084	SLE RA 7	-15	42	3401	-928.74	3.67	-5.23
1084	SLE RA 8	-15	36	3412	-931.15	3.68	-5.22
1084	SLE RA 9	-15	42	3380	-923.24	3.64	-5.18
1084	SLE RA 10	-15	47	3555	-971.33	3.84	-5.32
1084	SLE RA 11	-16	37	3665	-999.42	3.96	-5.46
1084	SLE RA 12	-16	43	3633	-991.51	3.93	-5.43
1084	SLE RA 13	-15	47	3591	-980.74	3.88	-5.35
1084	SLE RA 14	-16	37	3701	-1008.82	4.01	-5.5
1084	SLE RA 15	-16	43	3669	-1000.92	3.98	-5.46
1084	SLE RA 16	-16	37	3680	-1003.33	3.98	-5.45
1084	SLE RA 17	-16	43	3648	-995.42	3.95	-5.41
1084	SLE RA 18	-16	37	3723	-1015.44	4.03	-5.47
1084	SLE RA 19	-16	43	3691	-1007.54	3.99	-5.44
1084	SLE RA 20	-16	37	3759	-1024.85	4.07	-5.51
1084	SLE RA 21	-16	43	3727	-1016.94	4.04	-5.47
1084	SLE FR 1	-15	35	3340	-912.34	3.59	-5.15
1084	SLE FR 2	-15	37	3329	-909.71	3.58	-5.14
1084	SLE FR 3	-15	35	3354	-916.1	3.61	-5.16
1084	SLE FR 4	-15	38	3444	-940.64	3.71	-5.23
1084	SLE FR 5	-15	36	3469	-947.04	3.74	-5.26
1084	SLE FR 6	-15	36	3531	-963.89	3.81	-5.31
1084	SLE QP 1	-15	35	3340	-912.34	3.59	-5.15
1084	SLE QP 2	-15	36	3455	-943.27	3.72	-5.25
1084	SLD 1	432	135	3078	-869.41	3.91	150.96
1084	SLD 2	354	123	3099	-874.73	3.96	123.98
1084	SLD 3	420	-67	4136	-1135.26	5.04	146.86
1084	SLD 4	342	-78	4156	-1140.58	5.09	119.88
1084	SLD 5	151	373	1735	-516.96	2.04	52.69
1084	SLD 6	100	365	1748	-520.47	2.08	34.9
1084	SLD 7	111	-298	5259	-1403.11	5.83	39.01
1084	SLD 8	60	-306	5272	-1406.62	5.86	21.21

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1084	SLD 9	-91	377	1637	-479.92	1.58	-31.7
1084	SLD 10	-142	370	1650	-483.43	1.61	-49.5
1084	SLD 11	-130	-294	5162	-1366.08	5.36	-45.39
1084	SLD 12	-181	-302	5175	-1369.59	5.4	-63.19
1084	SLD 13	-373	149	2754	-745.97	2.35	-130.37
1084	SLD 14	-450	138	2774	-751.29	2.4	-157.35
1084	SLD 15	-384	-52	3811	-1011.81	3.48	-134.47
1084	SLD 16	-462	-63	3831	-1017.13	3.53	-161.45
1084	SLV 1	1031	283	2487	-748.48	4.06	360.58
1084	SLV 2	849	257	2534	-760.98	4.18	297.16
1084	SLV 3	1002	-219	5135	-1414.5	6.91	350.62
1084	SLV 4	820	-245	5183	-1427	7.03	287.21
1084	SLV 5	376	876	-862	127.63	-0.52	131.43
1084	SLV 6	254	858	-830	119.21	-0.43	88.73
1084	SLV 7	281	-797	7967	-2092.43	8.97	98.26
1084	SLV 8	158	-815	7999	-2100.85	9.05	55.56
1084	SLV 9	-188	886	-1090	214.3	-1.61	-66.05
1084	SLV 10	-311	868	-1058	205.89	-1.53	-108.75
1084	SLV 11	-284	-787	7739	-2005.75	7.87	-99.22
1084	SLV 12	-406	-805	7771	-2014.17	7.95	-141.92
1084	SLV 13	-851	317	1727	-459.55	0.41	-297.7
1084	SLV 14	-1033	290	1774	-472.05	0.53	-361.12
1084	SLV 15	-879	-185	4375	-1125.57	3.26	-307.65
1084	SLV 16	-1061	-212	4423	-1138.07	3.38	-371.07
1084	CRTFP Ux+	0	0	0	0	0	0
1084	CRTFP Ux-	0	0	0	0	0	0
1084	CRTFP Uy+	0	0	0	0	0	0
1084	CRTFP Uy-	0	0	0	0	0	0
1085	SLU 1	-12	36	3065	-771.85	3.46	-4.07
1085	SLU 2	-12	52	2990	-754.29	3.37	-4.02
1085	SLU 3	-12	36	3147	-791.33	3.57	-4.17
1085	SLU 4	-12	46	3102	-780.79	3.51	-4.14
1085	SLU 5	-12	52	3041	-766.57	3.44	-4.06
1085	SLU 6	-12	37	3198	-803.61	3.63	-4.2
1085	SLU 7	-12	46	3153	-793.07	3.58	-4.17
1085	SLU 8	-12	36	3168	-796.41	3.6	-4.14
1085	SLU 9	-12	46	3123	-785.87	3.54	-4.11
1085	SLU 10	-12	53	3376	-848.92	3.84	-4.29
1085	SLU 11	-13	38	3533	-885.96	4.04	-4.43
1085	SLU 12	-13	48	3488	-875.42	3.99	-4.4
1085	SLU 13	-12	54	3427	-861.19	3.91	-4.32
1085	SLU 14	-13	38	3584	-898.23	4.11	-4.47
1085	SLU 15	-13	48	3539	-887.7	4.05	-4.44
1085	SLU 16	-13	38	3554	-891.03	4.07	-4.4
1085	SLU 17	-13	48	3509	-880.5	4.02	-4.37
1085	SLU 18	-13	38	3617	-907.03	4.14	-4.45
1085	SLU 19	-13	48	3571	-896.5	4.08	-4.42
1085	SLU 20	-13	38	3668	-919.31	4.21	-4.48
1085	SLU 21	-13	48	3623	-908.77	4.15	-4.45
1085	SLU 22	-13	39	3584	-898.05	4.1	-4.57
1085	SLU 23	-13	55	3508	-880.49	4.01	-4.52
1085	SLU 24	-13	40	3666	-917.53	4.2	-4.67
1085	SLU 25	-13	50	3620	-906.99	4.15	-4.64
1085	SLU 26	-13	56	3560	-892.77	4.07	-4.56
1085	SLU 27	-14	40	3717	-929.81	4.27	-4.7
1085	SLU 28	-14	50	3672	-919.27	4.22	-4.67
1085	SLU 29	-13	40	3687	-922.61	4.23	-4.64
1085	SLU 30	-13	50	3642	-912.07	4.18	-4.61
1085	SLU 31	-14	57	3894	-975.12	4.48	-4.79
1085	SLU 32	-14	42	4052	-1012.16	4.68	-4.93
1085	SLU 33	-14	51	4006	-1001.62	4.62	-4.91
1085	SLU 34	-14	57	3946	-987.39	4.55	-4.82
1085	SLU 35	-14	42	4103	-1024.43	4.74	-4.97
1085	SLU 36	-14	52	4058	-1013.9	4.69	-4.94
1085	SLU 37	-14	42	4073	-1017.23	4.71	-4.9
1085	SLU 38	-14	51	4027	-1006.7	4.65	-4.87
1085	SLU 39	-14	42	4135	-1033.23	4.77	-4.95
1085	SLU 40	-14	51	4090	-1022.7	4.72	-4.92
1085	SLU 41	-14	42	4187	-1045.51	4.84	-4.98
1085	SLU 42	-14	52	4141	-1034.97	4.79	-4.95
1085	SLU 43	-15	45	3807	-960.14	4.28	-5.12
1085	SLU 44	-15	61	3731	-942.58	4.19	-5.07
1085	SLU 45	-15	46	3889	-979.62	4.39	-5.22
1085	SLU 46	-15	55	3843	-969.08	4.33	-5.19
1085	SLU 47	-15	61	3783	-954.85	4.26	-5.1
1085	SLU 48	-15	46	3940	-991.89	4.46	-5.25
1085	SLU 49	-15	56	3895	-981.36	4.4	-5.22
1085	SLU 50	-15	46	3910	-984.7	4.42	-5.18
1085	SLU 51	-15	55	3865	-974.16	4.36	-5.16
1085	SLU 52	-15	63	4117	-1037.2	4.67	-5.34
1085	SLU 53	-16	47	4275	-1074.24	4.86	-5.48
1085	SLU 54	-16	57	4229	-1063.71	4.81	-5.45
1085	SLU 55	-15	63	4169	-1049.48	4.73	-5.37
1085	SLU 56	-16	48	4326	-1086.52	4.93	-5.51
1085	SLU 57	-16	57	4281	-1075.98	4.87	-5.49
1085	SLU 58	-16	47	4296	-1079.32	4.89	-5.45
1085	SLU 59	-16	57	4251	-1068.78	4.84	-5.42
1085	SLU 60	-16	47	4358	-1095.32	4.96	-5.5
1085	SLU 61	-16	57	4313	-1084.78	4.9	-5.47

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1085	SLU 62	-16	48	4410	-1107.6	5.03	-5.53
1085	SLU 63	-16	57	4364	-1097.06	4.97	-5.5
1085	SLU 64	-16	49	4326	-1086.34	4.92	-5.62
1085	SLU 65	-16	65	4250	-1068.78	4.83	-5.57
1085	SLU 66	-17	49	4407	-1105.82	5.02	-5.72
1085	SLU 67	-16	59	4362	-1095.28	4.97	-5.69
1085	SLU 68	-16	65	4302	-1081.05	4.9	-5.61
1085	SLU 69	-17	50	4459	-1118.09	5.09	-5.75
1085	SLU 70	-17	59	4414	-1107.56	5.04	-5.72
1085	SLU 71	-16	49	4429	-1110.89	5.05	-5.69
1085	SLU 72	-16	59	4383	-1100.36	5	-5.66
1085	SLU 73	-17	66	4636	-1163.4	5.3	-5.84
1085	SLU 74	-17	51	4793	-1200.44	5.5	-5.98
1085	SLU 75	-17	61	4748	-1189.91	5.44	-5.95
1085	SLU 76	-17	67	4687	-1175.68	5.37	-5.87
1085	SLU 77	-17	51	4845	-1212.72	5.56	-6.02
1085	SLU 78	-17	61	4799	-1202.18	5.51	-5.99
1085	SLU 79	-17	51	4815	-1205.52	5.53	-5.95
1085	SLU 80	-17	61	4769	-1194.98	5.47	-5.92
1085	SLU 81	-17	51	4877	-1221.52	5.59	-6
1085	SLU 82	-17	61	4832	-1210.98	5.54	-5.97
1085	SLU 83	-17	51	4929	-1233.8	5.66	-6.03
1085	SLU 84	-17	61	4883	-1223.26	5.61	-6
1085	SLE RA 1	-12	37	3214	-807.91	3.64	-4.21
1085	SLE RA 2	-12	47	3163	-796.2	3.58	-4.18
1085	SLE RA 3	-12	37	3268	-820.89	3.71	-4.28
1085	SLE RA 4	-12	44	3238	-813.87	3.68	-4.26
1085	SLE RA 5	-12	48	3197	-804.39	3.63	-4.2
1085	SLE RA 6	-12	37	3302	-829.08	3.76	-4.3
1085	SLE RA 7	-12	44	3272	-822.05	3.72	-4.28
1085	SLE RA 8	-12	37	3282	-824.28	3.73	-4.26
1085	SLE RA 9	-12	43	3252	-817.25	3.7	-4.24
1085	SLE RA 10	-13	48	3420	-859.29	3.9	-4.36
1085	SLE RA 11	-13	38	3525	-883.98	4.03	-4.45
1085	SLE RA 12	-13	45	3495	-876.95	3.99	-4.44
1085	SLE RA 13	-13	49	3455	-867.47	3.94	-4.38
1085	SLE RA 14	-13	38	3560	-892.16	4.07	-4.48
1085	SLE RA 15	-13	45	3529	-885.14	4.04	-4.46
1085	SLE RA 16	-13	38	3539	-887.36	4.05	-4.43
1085	SLE RA 17	-13	45	3509	-880.34	4.01	-4.41
1085	SLE RA 18	-13	38	3581	-898.03	4.09	-4.46
1085	SLE RA 19	-13	45	3551	-891.01	4.06	-4.45
1085	SLE RA 20	-13	38	3615	-906.22	4.14	-4.49
1085	SLE RA 21	-13	45	3585	-899.19	4.1	-4.47
1085	SLE FR 1	-12	37	3214	-807.91	3.64	-4.21
1085	SLE FR 2	-12	39	3203	-805.57	3.63	-4.21
1085	SLE FR 3	-12	37	3227	-811.18	3.66	-4.22
1085	SLE FR 4	-12	39	3314	-832.6	3.77	-4.28
1085	SLE FR 5	-12	37	3338	-838.22	3.8	-4.3
1085	SLE FR 6	-13	37	3397	-852.97	3.87	-4.34
1085	SLE QP 1	-12	37	3214	-807.91	3.64	-4.21
1085	SLE QP 2	-12	37	3324	-834.95	3.78	-4.29
1085	SLD 1	435	133	2940	-770.19	4.05	152.3
1085	SLD 2	358	125	2958	-774.75	4.11	125.23
1085	SLD 3	424	-65	3956	-1006.1	5.28	148.31
1085	SLD 4	346	-74	3974	-1010.66	5.34	121.24
1085	SLD 5	153	368	1664	-456.9	1.98	53.61
1085	SLD 6	102	362	1677	-459.91	2.02	35.75
1085	SLD 7	115	-293	5051	-1243.27	6.08	40.31
1085	SLD 8	64	-298	5063	-1246.28	6.12	22.45
1085	SLD 9	-89	372	1585	-423.62	1.44	-31.03
1085	SLD 10	-140	367	1597	-426.62	1.47	-48.88
1085	SLD 11	-127	-288	4971	-1209.98	5.53	-44.33
1085	SLD 12	-178	-294	4983	-1212.99	5.57	-62.18
1085	SLD 13	-371	148	2673	-659.23	2.22	-129.82
1085	SLD 14	-449	140	2692	-663.79	2.28	-156.88
1085	SLD 15	-382	-50	3689	-895.14	3.45	-133.81
1085	SLD 16	-460	-59	3708	-899.7	3.51	-160.88
1085	SLV 1	1036	276	2342	-663.92	4.31	362.45
1085	SLV 2	854	257	2385	-674.63	4.45	298.82
1085	SLV 3	1008	-218	4887	-1254.96	7.39	352.72
1085	SLV 4	826	-237	4930	-1265.67	7.53	289.1
1085	SLV 5	379	862	-839	114.77	-0.76	132.36
1085	SLV 6	256	849	-810	107.56	-0.67	89.53
1085	SLV 7	285	-785	7644	-1855.36	9.51	99.93
1085	SLV 8	163	-798	7673	-1862.57	9.6	57.1
1085	SLV 9	-187	873	-1026	192.68	-2.04	-65.68
1085	SLV 10	-310	860	-997	185.47	-1.95	-108.51
1085	SLV 11	-281	-775	7457	-1777.45	8.22	-98.1
1085	SLV 12	-403	-788	7486	-1784.66	8.31	-140.94
1085	SLV 13	-850	311	1718	-404.22	0.03	-297.67
1085	SLV 14	-1033	292	1761	-414.93	0.16	-361.29
1085	SLV 15	-878	-183	4263	-995.26	3.11	-307.4
1085	SLV 16	-1061	-202	4306	-1005.97	3.24	-371.02
1085	CRTFP Ux+	0	0	0	0	0	0
1085	CRTFP Ux-	0	0	0	0	0	0
1085	CRTFP Uy+	0	0	0	0	0	0
1085	CRTFP Uy-	0	0	0	0	0	0
1086	SLU 1	-9	37	2951	-684.32	3.08	-3.18

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1086	SLU 2	-9	53	2879	-668.83	3	-3.18
1086	SLU 3	-9	38	3030	-701.26	3.17	-3.25
1086	SLU 4	-9	48	2986	-691.97	3.12	-3.25
1086	SLU 5	-9	54	2928	-679.49	3.06	-3.19
1086	SLU 6	-10	39	3079	-711.93	3.23	-3.27
1086	SLU 7	-9	48	3035	-702.63	3.18	-3.26
1086	SLU 8	-9	38	3050	-705.65	3.2	-3.21
1086	SLU 9	-9	48	3006	-696.35	3.15	-3.21
1086	SLU 10	-10	55	3249	-751.39	3.42	-3.37
1086	SLU 11	-10	40	3400	-783.82	3.6	-3.44
1086	SLU 12	-10	50	3356	-774.53	3.55	-3.44
1086	SLU 13	-10	55	3298	-762.05	3.48	-3.38
1086	SLU 14	-10	40	3449	-794.49	3.66	-3.46
1086	SLU 15	-10	50	3406	-785.2	3.61	-3.45
1086	SLU 16	-10	40	3420	-788.21	3.62	-3.4
1086	SLU 17	-10	50	3377	-778.92	3.57	-3.4
1086	SLU 18	-10	40	3480	-802.26	3.68	-3.46
1086	SLU 19	-10	50	3437	-792.97	3.63	-3.45
1086	SLU 20	-10	40	3530	-812.93	3.75	-3.47
1086	SLU 21	-10	50	3486	-803.63	3.69	-3.46
1086	SLU 22	-10	41	3449	-794.5	3.65	-3.57
1086	SLU 23	-10	57	3377	-779.01	3.56	-3.56
1086	SLU 24	-11	42	3527	-811.45	3.74	-3.63
1086	SLU 25	-11	52	3484	-802.15	3.69	-3.63
1086	SLU 26	-10	58	3426	-789.68	3.63	-3.57
1086	SLU 27	-11	43	3577	-822.11	3.8	-3.65
1086	SLU 28	-11	52	3533	-812.82	3.75	-3.64
1086	SLU 29	-10	42	3548	-815.83	3.77	-3.59
1086	SLU 30	-10	52	3504	-806.54	3.72	-3.59
1086	SLU 31	-11	59	3747	-861.57	3.99	-3.75
1086	SLU 32	-11	44	3898	-894.01	4.17	-3.83
1086	SLU 33	-11	54	3854	-884.71	4.12	-3.82
1086	SLU 34	-11	59	3796	-872.24	4.05	-3.76
1086	SLU 35	-11	44	3947	-904.67	4.23	-3.84
1086	SLU 36	-11	54	3903	-895.38	4.18	-3.83
1086	SLU 37	-11	44	3918	-898.39	4.19	-3.78
1086	SLU 38	-11	54	3874	-889.1	4.14	-3.78
1086	SLU 39	-11	44	3978	-912.45	4.25	-3.84
1086	SLU 40	-11	54	3935	-903.15	4.2	-3.83
1086	SLU 41	-11	44	4027	-923.11	4.31	-3.85
1086	SLU 42	-11	54	3984	-913.82	4.26	-3.85
1086	SLU 43	-12	47	3666	-851.83	3.81	-4.01
1086	SLU 44	-12	63	3594	-836.34	3.72	-4
1086	SLU 45	-12	48	3744	-868.78	3.9	-4.08
1086	SLU 46	-12	58	3701	-859.49	3.85	-4.07
1086	SLU 47	-12	63	3643	-847.01	3.79	-4.01
1086	SLU 48	-12	48	3794	-879.45	3.96	-4.09
1086	SLU 49	-12	58	3750	-870.15	3.91	-4.09
1086	SLU 50	-12	48	3765	-873.17	3.93	-4.03
1086	SLU 51	-12	58	3721	-863.87	3.88	-4.03
1086	SLU 52	-12	65	3964	-918.9	4.15	-4.19
1086	SLU 53	-12	50	4115	-951.34	4.33	-4.27
1086	SLU 54	-12	59	4071	-942.05	4.28	-4.26
1086	SLU 55	-12	65	4013	-929.57	4.21	-4.2
1086	SLU 56	-12	50	4164	-962.01	4.39	-4.28
1086	SLU 57	-12	60	4120	-952.71	4.34	-4.28
1086	SLU 58	-12	50	4135	-955.73	4.35	-4.23
1086	SLU 59	-12	59	4091	-946.43	4.3	-4.22
1086	SLU 60	-12	50	4195	-969.78	4.41	-4.28
1086	SLU 61	-12	59	4152	-960.48	4.36	-4.28
1086	SLU 62	-13	50	4244	-980.44	4.47	-4.29
1086	SLU 63	-12	60	4201	-971.15	4.42	-4.29
1086	SLU 64	-13	51	4164	-962.02	4.38	-4.39
1086	SLU 65	-13	67	4091	-946.53	4.29	-4.38
1086	SLU 66	-13	52	4242	-978.96	4.47	-4.46
1086	SLU 67	-13	62	4199	-969.67	4.42	-4.45
1086	SLU 68	-13	67	4141	-957.19	4.35	-4.39
1086	SLU 69	-13	52	4291	-989.63	4.53	-4.47
1086	SLU 70	-13	62	4248	-980.34	4.48	-4.47
1086	SLU 71	-13	52	4262	-983.35	4.5	-4.42
1086	SLU 72	-13	62	4219	-974.06	4.45	-4.41
1086	SLU 73	-13	69	4462	-1029.09	4.72	-4.57
1086	SLU 74	-14	54	4612	-1061.53	4.89	-4.65
1086	SLU 75	-14	63	4569	-1052.23	4.84	-4.64
1086	SLU 76	-13	69	4511	-1039.75	4.78	-4.59
1086	SLU 77	-14	54	4662	-1072.19	4.96	-4.66
1086	SLU 78	-14	64	4618	-1062.9	4.9	-4.66
1086	SLU 79	-13	54	4633	-1065.91	4.92	-4.61
1086	SLU 80	-13	63	4589	-1056.62	4.87	-4.6
1086	SLU 81	-14	54	4693	-1079.96	4.98	-4.66
1086	SLU 82	-14	63	4649	-1070.67	4.93	-4.66
1086	SLU 83	-14	54	4742	-1090.63	5.04	-4.68
1086	SLU 84	-14	64	4699	-1081.33	4.99	-4.67
1086	SLE RA 1	-10	39	3094	-715.8	3.24	-3.29
1086	SLE RA 2	-10	49	3045	-705.47	3.19	-3.29
1086	SLE RA 3	-10	39	3146	-727.1	3.3	-3.34
1086	SLE RA 4	-10	45	3117	-720.9	3.27	-3.34
1086	SLE RA 5	-10	49	3078	-712.58	3.23	-3.3
1086	SLE RA 6	-10	39	3179	-734.21	3.35	-3.35

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1086	SLE RA 7	-10	46	3150	-728.01	3.31	-3.34
1086	SLE RA 8	-10	39	3159	-730.02	3.32	-3.31
1086	SLE RA 9	-10	45	3130	-723.82	3.29	-3.31
1086	SLE RA 10	-10	50	3292	-760.51	3.47	-3.41
1086	SLE RA 11	-10	40	3393	-782.14	3.59	-3.47
1086	SLE RA 12	-10	47	3364	-775.94	3.55	-3.46
1086	SLE RA 13	-10	51	3325	-767.62	3.51	-3.42
1086	SLE RA 14	-10	41	3425	-789.25	3.63	-3.48
1086	SLE RA 15	-10	47	3396	-783.05	3.59	-3.47
1086	SLE RA 16	-10	40	3406	-785.06	3.61	-3.44
1086	SLE RA 17	-10	47	3377	-778.86	3.57	-3.43
1086	SLE RA 18	-10	40	3446	-794.43	3.65	-3.47
1086	SLE RA 19	-10	47	3417	-788.23	3.61	-3.47
1086	SLE RA 20	-10	41	3479	-801.54	3.69	-3.48
1086	SLE RA 21	-10	47	3450	-795.34	3.65	-3.48
1086	SLE FR 1	-10	39	3094	-715.8	3.24	-3.29
1086	SLE FR 2	-10	41	3084	-713.73	3.23	-3.29
1086	SLE FR 3	-10	39	3107	-718.64	3.26	-3.3
1086	SLE FR 4	-10	41	3190	-737.32	3.35	-3.35
1086	SLE FR 5	-10	39	3213	-742.23	3.38	-3.35
1086	SLE FR 6	-10	39	3270	-755.11	3.44	-3.38
1086	SLE QP 1	-10	39	3094	-715.8	3.24	-3.29
1086	SLE QP 2	-10	39	3199	-739.39	3.36	-3.35
1086	SLD 1	439	132	2805	-680.15	3.76	153.59
1086	SLD 2	361	126	2821	-683.89	3.82	126.45
1086	SLD 3	427	-63	3779	-888.07	4.9	149.64
1086	SLD 4	350	-69	3795	-891.82	4.96	122.5
1086	SLD 5	156	363	1600	-405.59	1.74	54.61
1086	SLD 6	105	360	1611	-408.06	1.78	36.7
1086	SLD 7	118	-286	4849	-1098.67	5.55	41.44
1086	SLD 8	67	-290	4859	-1101.14	5.58	23.53
1086	SLD 9	-86	368	1539	-377.63	1.14	-30.23
1086	SLD 10	-138	364	1550	-380.1	1.18	-48.13
1086	SLD 11	-124	-281	4788	-1070.71	4.95	-43.4
1086	SLD 12	-175	-285	4799	-1073.19	4.99	-61.3
1086	SLD 13	-369	147	2603	-586.95	1.77	-129.2
1086	SLD 14	-447	141	2620	-590.7	1.83	-156.34
1086	SLD 15	-381	-48	3578	-794.88	2.91	-133.15
1086	SLD 16	-458	-54	3594	-798.63	2.97	-160.29
1086	SLV 1	1041	271	2195	-583.56	4.19	364.25
1086	SLV 2	858	258	2233	-592.37	4.33	300.45
1086	SLV 3	1013	-214	4637	-1104.51	7.05	354.55
1086	SLV 4	830	-228	4675	-1113.32	7.19	290.75
1086	SLV 5	382	848	-812	99.11	-0.75	133.55
1086	SLV 6	259	839	-786	93.18	-0.66	90.59
1086	SLV 7	289	-771	7326	-1637.38	8.78	101.22
1086	SLV 8	166	-780	7352	-1643.31	8.88	58.26
1086	SLV 9	-186	858	-953	164.54	-2.15	-64.96
1086	SLV 10	-309	849	-927	158.61	-2.06	-107.91
1086	SLV 11	-278	-760	7185	-1571.95	7.38	-97.29
1086	SLV 12	-401	-769	7211	-1577.88	7.48	-140.24
1086	SLV 13	-850	306	1724	-365.45	-0.47	-297.44
1086	SLV 14	-1032	293	1762	-374.26	-0.33	-361.24
1086	SLV 15	-878	-179	4166	-886.4	2.39	-307.14
1086	SLV 16	-1060	-193	4204	-895.21	2.53	-370.94
1086	CRTFP Ux+	0	0	0	0	0	0
1086	CRTFP Ux-	0	0	0	0	0	0
1086	CRTFP Uy+	0	0	0	0	0	0
1086	CRTFP Uy-	0	0	0	0	0	0
1087	SLU 1	-7	40	2856	-614.18	2.41	-2.29
1087	SLU 2	-7	55	2786	-600.43	2.34	-2.32
1087	SLU 3	-7	41	2931	-629.1	2.49	-2.33
1087	SLU 4	-7	50	2889	-620.85	2.45	-2.35
1087	SLU 5	-7	56	2833	-609.8	2.39	-2.32
1087	SLU 6	-7	41	2979	-638.47	2.54	-2.32
1087	SLU 7	-7	50	2937	-630.22	2.5	-2.34
1087	SLU 8	-7	41	2951	-632.93	2.51	-2.28
1087	SLU 9	-7	50	2909	-624.67	2.47	-2.3
1087	SLU 10	-7	57	3143	-673.3	2.68	-2.44
1087	SLU 11	-7	43	3288	-701.97	2.82	-2.45
1087	SLU 12	-7	52	3246	-693.72	2.78	-2.47
1087	SLU 13	-7	58	3190	-682.67	2.73	-2.43
1087	SLU 14	-7	43	3336	-711.35	2.87	-2.44
1087	SLU 15	-7	53	3294	-703.09	2.83	-2.46
1087	SLU 16	-7	43	3308	-705.8	2.84	-2.39
1087	SLU 17	-7	52	3266	-697.55	2.8	-2.41
1087	SLU 18	-7	43	3366	-718.29	2.89	-2.46
1087	SLU 19	-7	52	3324	-710.03	2.85	-2.48
1087	SLU 20	-7	43	3413	-727.66	2.94	-2.45
1087	SLU 21	-7	53	3372	-719.41	2.9	-2.47
1087	SLU 22	-8	44	3336	-711.48	2.86	-2.55
1087	SLU 23	-8	60	3266	-697.73	2.79	-2.58
1087	SLU 24	-8	45	3411	-726.4	2.94	-2.59
1087	SLU 25	-8	54	3369	-718.15	2.89	-2.61
1087	SLU 26	-8	60	3313	-707.1	2.84	-2.58
1087	SLU 27	-8	46	3459	-735.77	2.98	-2.58
1087	SLU 28	-8	55	3417	-727.52	2.94	-2.6
1087	SLU 29	-8	45	3431	-730.23	2.96	-2.54
1087	SLU 30	-8	54	3389	-721.97	2.92	-2.56

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1087	SLU 31	-8	62	3623	-770.6	3.13	-2.7
1087	SLU 32	-8	47	3768	-799.28	3.27	-2.71
1087	SLU 33	-8	57	3726	-791.02	3.23	-2.73
1087	SLU 34	-8	62	3670	-779.97	3.17	-2.69
1087	SLU 35	-8	48	3816	-808.65	3.32	-2.7
1087	SLU 36	-8	57	3774	-800.39	3.28	-2.72
1087	SLU 37	-8	47	3788	-803.1	3.29	-2.65
1087	SLU 38	-8	56	3746	-794.85	3.25	-2.67
1087	SLU 39	-8	47	3846	-815.59	3.34	-2.72
1087	SLU 40	-8	57	3804	-807.33	3.3	-2.74
1087	SLU 41	-8	48	3894	-824.96	3.39	-2.71
1087	SLU 42	-8	57	3852	-816.71	3.34	-2.73
1087	SLU 43	-9	50	3548	-765.08	2.98	-2.89
1087	SLU 44	-9	66	3478	-751.32	2.91	-2.92
1087	SLU 45	-9	51	3623	-780	3.06	-2.93
1087	SLU 46	-9	60	3582	-771.74	3.02	-2.95
1087	SLU 47	-9	66	3526	-760.69	2.96	-2.91
1087	SLU 48	-9	52	3671	-789.37	3.11	-2.92
1087	SLU 49	-9	61	3629	-781.11	3.07	-2.94
1087	SLU 50	-8	51	3643	-783.82	3.08	-2.88
1087	SLU 51	-9	60	3601	-775.57	3.04	-2.89
1087	SLU 52	-9	68	3835	-824.2	3.25	-3.04
1087	SLU 53	-9	53	3981	-852.87	3.39	-3.05
1087	SLU 54	-9	63	3939	-844.62	3.35	-3.07
1087	SLU 55	-9	68	3883	-833.57	3.3	-3.03
1087	SLU 56	-9	54	4028	-862.24	3.44	-3.04
1087	SLU 57	-9	63	3986	-853.99	3.4	-3.06
1087	SLU 58	-9	53	4000	-856.69	3.41	-2.99
1087	SLU 59	-9	63	3958	-848.44	3.37	-3.01
1087	SLU 60	-9	53	4058	-869.18	3.46	-3.06
1087	SLU 61	-9	63	4016	-860.93	3.42	-3.08
1087	SLU 62	-9	54	4106	-878.55	3.51	-3.05
1087	SLU 63	-9	63	4064	-870.3	3.47	-3.07
1087	SLU 64	-9	55	4028	-862.38	3.43	-3.15
1087	SLU 65	-9	70	3958	-848.62	3.36	-3.18
1087	SLU 66	-9	56	4104	-877.3	3.51	-3.19
1087	SLU 67	-9	65	4062	-869.04	3.46	-3.21
1087	SLU 68	-9	71	4006	-858	3.41	-3.17
1087	SLU 69	-9	56	4151	-886.67	3.55	-3.18
1087	SLU 70	-9	65	4109	-878.42	3.51	-3.2
1087	SLU 71	-9	55	4123	-881.12	3.53	-3.14
1087	SLU 72	-9	65	4081	-872.87	3.49	-3.15
1087	SLU 73	-10	72	4315	-921.5	3.7	-3.3
1087	SLU 74	-10	58	4461	-950.17	3.84	-3.31
1087	SLU 75	-10	67	4419	-941.92	3.8	-3.33
1087	SLU 76	-10	73	4363	-930.87	3.74	-3.29
1087	SLU 77	-10	58	4508	-959.54	3.89	-3.3
1087	SLU 78	-10	67	4466	-951.29	3.85	-3.32
1087	SLU 79	-10	58	4480	-954	3.86	-3.25
1087	SLU 80	-10	67	4438	-945.74	3.82	-3.27
1087	SLU 81	-10	58	4538	-966.48	3.91	-3.32
1087	SLU 82	-10	67	4496	-958.23	3.87	-3.34
1087	SLU 83	-10	58	4586	-975.85	3.96	-3.31
1087	SLU 84	-10	67	4544	-967.6	3.91	-3.33
1087	SLE RA 1	-7	41	2993	-641.98	2.54	-2.37
1087	SLE RA 2	-7	51	2946	-632.81	2.5	-2.39
1087	SLE RA 3	-7	42	3043	-651.93	2.59	-2.39
1087	SLE RA 4	-7	48	3015	-646.43	2.56	-2.41
1087	SLE RA 5	-7	52	2978	-639.06	2.53	-2.38
1087	SLE RA 6	-7	42	3075	-658.18	2.62	-2.39
1087	SLE RA 7	-7	48	3047	-652.67	2.6	-2.4
1087	SLE RA 8	-7	42	3056	-654.48	2.61	-2.36
1087	SLE RA 9	-7	48	3028	-648.98	2.58	-2.37
1087	SLE RA 10	-7	53	3185	-681.4	2.72	-2.46
1087	SLE RA 11	-7	43	3281	-700.51	2.81	-2.47
1087	SLE RA 12	-7	49	3253	-695.01	2.79	-2.48
1087	SLE RA 13	-7	53	3216	-687.64	2.75	-2.46
1087	SLE RA 14	-7	43	3313	-706.76	2.85	-2.47
1087	SLE RA 15	-7	50	3285	-701.26	2.82	-2.48
1087	SLE RA 16	-7	43	3294	-703.06	2.83	-2.43
1087	SLE RA 17	-7	49	3266	-697.56	2.8	-2.45
1087	SLE RA 18	-7	43	3333	-711.39	2.86	-2.48
1087	SLE RA 19	-7	49	3305	-705.88	2.83	-2.49
1087	SLE RA 20	-7	43	3365	-717.63	2.89	-2.47
1087	SLE RA 21	-7	50	3337	-712.13	2.86	-2.48
1087	SLE FR 1	-7	41	2993	-641.98	2.54	-2.37
1087	SLE FR 2	-7	43	2984	-640.15	2.53	-2.37
1087	SLE FR 3	-7	41	3006	-644.48	2.55	-2.37
1087	SLE FR 4	-7	44	3086	-660.97	2.63	-2.4
1087	SLE FR 5	-7	42	3108	-665.3	2.65	-2.4
1087	SLE FR 6	-7	42	3163	-676.69	2.7	-2.42
1087	SLE QP 1	-7	41	2993	-641.98	2.54	-2.37
1087	SLE QP 2	-7	42	3095	-662.8	2.64	-2.4
1087	SLD 1	442	132	2685	-604.85	3.18	154.87
1087	SLD 2	364	129	2699	-607.85	3.24	127.66
1087	SLD 3	431	-59	3624	-789.39	4.11	150.88
1087	SLD 4	353	-63	3638	-792.39	4.17	123.67
1087	SLD 5	159	360	1546	-364.99	1.38	55.72
1087	SLD 6	108	358	1555	-366.97	1.42	37.77

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1087	SLD 7	121	-279	4675	-980.13	4.48	42.43
1087	SLD 8	70	-281	4684	-982.11	4.52	24.48
1087	SLD 9	-84	364	1506	-343.5	0.75	-29.28
1087	SLD 10	-135	362	1516	-345.48	0.79	-47.23
1087	SLD 11	-122	-274	4635	-958.64	3.86	-42.57
1087	SLD 12	-173	-277	4644	-960.62	3.89	-60.52
1087	SLD 13	-367	146	2552	-533.22	1.1	-128.47
1087	SLD 14	-445	143	2567	-536.21	1.16	-155.68
1087	SLD 15	-379	-45	3491	-717.76	2.03	-132.46
1087	SLD 16	-456	-49	3505	-720.76	2.09	-159.67
1087	SLV 1	1045	268	2058	-511.92	3.84	366
1087	SLV 2	862	260	2092	-518.96	3.98	302.04
1087	SLV 3	1017	-209	4410	-974.3	6.17	356.13
1087	SLV 4	834	-218	4443	-981.34	6.31	292.18
1087	SLV 5	386	836	-788	85.04	-0.56	135.01
1087	SLV 6	262	830	-766	80.31	-0.47	91.95
1087	SLV 7	292	-757	7049	-1456.21	7.2	102.14
1087	SLV 8	168	-762	7072	-1460.95	7.3	59.08
1087	SLV 9	-183	846	-881	135.34	-2.03	-63.88
1087	SLV 10	-306	840	-859	130.6	-1.93	-106.94
1087	SLV 11	-276	-747	6956	-1405.91	5.74	-96.75
1087	SLV 12	-400	-752	6978	-1410.65	5.84	-139.81
1087	SLV 13	-848	301	1747	-344.27	-1.03	-296.98
1087	SLV 14	-1032	293	1781	-351.31	-0.9	-360.93
1087	SLV 15	-877	-176	4098	-806.65	1.3	-306.84
1087	SLV 16	-1060	-185	4132	-813.69	1.44	-370.8
1087	CRTFP Ux+	0	0	0	0	0	0
1087	CRTFP Ux-	0	0	0	0	0	0
1087	CRTFP Uy+	0	0	0	0	0	0
1087	CRTFP Uy-	0	0	0	0	0	0
1088	SLU 1	-4	43	2787	-565.43	1.58	-1.39
1088	SLU 2	-4	58	2719	-552.92	1.53	-1.46
1088	SLU 3	-4	44	2860	-578.93	1.63	-1.4
1088	SLU 4	-4	53	2819	-571.43	1.6	-1.44
1088	SLU 5	-4	58	2765	-561.39	1.56	-1.43
1088	SLU 6	-4	44	2906	-587.39	1.66	-1.37
1088	SLU 7	-4	53	2865	-579.89	1.63	-1.41
1088	SLU 8	-4	44	2878	-582.35	1.64	-1.33
1088	SLU 9	-4	53	2838	-574.85	1.61	-1.37
1088	SLU 10	-5	60	3066	-619.05	1.75	-1.5
1088	SLU 11	-4	46	3207	-645.06	1.84	-1.43
1088	SLU 12	-4	55	3167	-637.56	1.81	-1.48
1088	SLU 13	-4	61	3112	-627.52	1.78	-1.47
1088	SLU 14	-4	46	3253	-653.52	1.88	-1.4
1088	SLU 15	-4	56	3213	-646.02	1.85	-1.45
1088	SLU 16	-4	46	3226	-648.48	1.86	-1.37
1088	SLU 17	-4	55	3185	-640.98	1.83	-1.41
1088	SLU 18	-4	46	3283	-659.9	1.89	-1.44
1088	SLU 19	-5	55	3243	-652.39	1.86	-1.49
1088	SLU 20	-4	47	3329	-668.36	1.92	-1.41
1088	SLU 21	-4	56	3288	-660.86	1.89	-1.46
1088	SLU 22	-5	47	3254	-653.74	1.87	-1.52
1088	SLU 23	-5	63	3186	-641.24	1.82	-1.59
1088	SLU 24	-5	48	3327	-667.24	1.92	-1.53
1088	SLU 25	-5	58	3286	-659.74	1.89	-1.57
1088	SLU 26	-5	63	3232	-649.7	1.86	-1.56
1088	SLU 27	-5	49	3373	-675.71	1.95	-1.5
1088	SLU 28	-5	58	3332	-668.21	1.92	-1.54
1088	SLU 29	-4	48	3346	-670.67	1.94	-1.46
1088	SLU 30	-5	58	3305	-663.17	1.91	-1.5
1088	SLU 31	-5	65	3534	-707.37	2.04	-1.63
1088	SLU 32	-5	51	3675	-733.37	2.14	-1.57
1088	SLU 33	-5	60	3634	-725.87	2.11	-1.61
1088	SLU 34	-5	66	3579	-715.83	2.07	-1.6
1088	SLU 35	-5	51	3720	-741.84	2.17	-1.54
1088	SLU 36	-5	61	3680	-734.33	2.14	-1.58
1088	SLU 37	-5	51	3693	-736.8	2.15	-1.5
1088	SLU 38	-5	60	3652	-729.3	2.13	-1.54
1088	SLU 39	-5	51	3750	-748.21	2.18	-1.58
1088	SLU 40	-5	60	3710	-740.71	2.15	-1.62
1088	SLU 41	-5	51	3796	-756.67	2.21	-1.55
1088	SLU 42	-5	61	3756	-749.17	2.19	-1.59
1088	SLU 43	-5	54	3463	-704.77	1.95	-1.76
1088	SLU 44	-6	69	3395	-692.27	1.9	-1.83
1088	SLU 45	-5	55	3536	-718.28	2	-1.77
1088	SLU 46	-5	64	3495	-710.78	1.97	-1.81
1088	SLU 47	-5	69	3441	-700.74	1.93	-1.8
1088	SLU 48	-5	55	3582	-726.74	2.03	-1.74
1088	SLU 49	-5	64	3541	-719.24	2	-1.78
1088	SLU 50	-5	55	3554	-721.7	2.01	-1.7
1088	SLU 51	-5	64	3514	-714.2	1.99	-1.74
1088	SLU 52	-6	71	3742	-758.4	2.12	-1.87
1088	SLU 53	-5	57	3883	-784.4	2.21	-1.81
1088	SLU 54	-6	66	3843	-776.9	2.19	-1.85
1088	SLU 55	-6	72	3788	-766.86	2.15	-1.84
1088	SLU 56	-5	58	3929	-792.87	2.25	-1.78
1088	SLU 57	-6	67	3888	-785.37	2.22	-1.82
1088	SLU 58	-5	57	3902	-787.83	2.23	-1.74
1088	SLU 59	-5	66	3861	-780.33	2.2	-1.78

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1088	SLU 60	-6	57	3959	-799.24	2.26	-1.81
1088	SLU 61	-6	66	3918	-791.74	2.23	-1.86
1088	SLU 62	-5	58	4005	-807.71	2.29	-1.78
1088	SLU 63	-6	67	3964	-800.21	2.26	-1.83
1088	SLU 64	-6	59	3930	-793.09	2.24	-1.89
1088	SLU 65	-6	74	3862	-780.59	2.19	-1.96
1088	SLU 66	-6	60	4003	-806.59	2.29	-1.9
1088	SLU 67	-6	69	3962	-799.09	2.26	-1.94
1088	SLU 68	-6	74	3908	-789.05	2.23	-1.93
1088	SLU 69	-6	60	4049	-815.05	2.32	-1.87
1088	SLU 70	-6	69	4008	-807.55	2.3	-1.91
1088	SLU 71	-6	59	4021	-810.02	2.31	-1.83
1088	SLU 72	-6	69	3981	-802.51	2.28	-1.87
1088	SLU 73	-6	76	4209	-846.72	2.41	-2
1088	SLU 74	-6	62	4350	-872.72	2.51	-1.94
1088	SLU 75	-6	71	4310	-865.22	2.48	-1.98
1088	SLU 76	-6	77	4255	-855.18	2.44	-1.97
1088	SLU 77	-6	62	4396	-881.18	2.54	-1.91
1088	SLU 78	-6	72	4356	-873.68	2.51	-1.95
1088	SLU 79	-6	62	4369	-876.14	2.53	-1.87
1088	SLU 80	-6	71	4328	-868.64	2.5	-1.91
1088	SLU 81	-6	62	4426	-887.56	2.55	-1.95
1088	SLU 82	-6	71	4386	-880.06	2.52	-1.99
1088	SLU 83	-6	63	4472	-896.02	2.59	-1.92
1088	SLU 84	-6	72	4431	-888.52	2.56	-1.96
1088	SLE RA 1	-4	44	2920	-590.66	1.66	-1.43
1088	SLE RA 2	-4	54	2875	-582.32	1.63	-1.47
1088	SLE RA 3	-4	45	2969	-599.66	1.69	-1.43
1088	SLE RA 4	-4	51	2942	-594.66	1.67	-1.46
1088	SLE RA 5	-4	54	2906	-587.97	1.65	-1.45
1088	SLE RA 6	-4	45	3000	-605.3	1.71	-1.41
1088	SLE RA 7	-4	51	2972	-600.3	1.7	-1.44
1088	SLE RA 8	-4	45	2981	-601.94	1.7	-1.39
1088	SLE RA 9	-4	51	2954	-596.94	1.68	-1.41
1088	SLE RA 10	-5	56	3107	-626.41	1.77	-1.5
1088	SLE RA 11	-4	46	3201	-643.75	1.84	-1.46
1088	SLE RA 12	-5	52	3174	-638.75	1.82	-1.49
1088	SLE RA 13	-4	56	3137	-632.05	1.8	-1.48
1088	SLE RA 14	-4	47	3231	-649.39	1.86	-1.44
1088	SLE RA 15	-4	53	3204	-644.39	1.84	-1.47
1088	SLE RA 16	-4	46	3213	-646.03	1.85	-1.41
1088	SLE RA 17	-4	52	3186	-641.03	1.83	-1.44
1088	SLE RA 18	-4	46	3251	-653.64	1.87	-1.46
1088	SLE RA 19	-5	52	3224	-648.64	1.85	-1.49
1088	SLE RA 20	-4	47	3282	-659.28	1.89	-1.44
1088	SLE RA 21	-4	53	3255	-654.28	1.87	-1.47
1088	SLE FR 1	-4	44	2920	-590.66	1.66	-1.43
1088	SLE FR 2	-4	46	2911	-588.99	1.65	-1.44
1088	SLE FR 3	-4	44	2932	-592.92	1.67	-1.42
1088	SLE FR 4	-4	47	3010	-607.89	1.71	-1.45
1088	SLE FR 5	-4	45	3032	-611.81	1.73	-1.43
1088	SLE FR 6	-4	45	3086	-622.15	1.76	-1.44
1088	SLE QP 1	-4	44	2920	-590.66	1.66	-1.43
1088	SLE QP 2	-4	45	3020	-609.55	1.72	-1.44
1088	SLD 1	434	134	2592	-548.27	2.44	152.02
1088	SLD 2	356	132	2604	-550.62	2.49	124.76
1088	SLD 3	446	-55	3503	-715.92	3.08	156.12
1088	SLD 4	368	-57	3515	-718.26	3.14	128.86
1088	SLD 5	123	359	1507	-336.49	0.95	43.29
1088	SLD 6	72	358	1515	-338.03	0.99	25.31
1088	SLD 7	162	-272	4544	-895.3	3.09	56.95
1088	SLD 8	111	-273	4553	-896.85	3.13	38.96
1088	SLD 9	-120	363	1486	-322.26	0.31	-41.83
1088	SLD 10	-171	361	1495	-323.8	0.35	-59.82
1088	SLD 11	-81	-268	4524	-881.07	2.45	-28.18
1088	SLD 12	-132	-269	4532	-882.62	2.49	-46.17
1088	SLD 13	-376	147	2524	-500.84	0.31	-131.73
1088	SLD 14	-454	145	2536	-503.19	0.36	-158.99
1088	SLD 15	-365	-43	3435	-668.49	0.95	-127.63
1088	SLD 16	-443	-45	3447	-670.83	1.01	-154.9
1088	SLV 1	1021	268	1943	-452.27	3.34	357.47
1088	SLV 2	838	264	1972	-457.78	3.48	293.39
1088	SLV 3	1050	-204	4226	-872.32	4.95	367.69
1088	SLV 4	867	-208	4255	-877.83	5.08	303.6
1088	SLV 5	293	828	-771	75.74	-0.26	102.71
1088	SLV 6	170	825	-752	72.02	-0.16	59.56
1088	SLV 7	390	-745	6838	-1324.43	5.1	136.75
1088	SLV 8	267	-748	6858	-1328.14	5.19	93.6
1088	SLV 9	-276	837	-819	109.04	-1.75	-96.48
1088	SLV 10	-399	834	-799	105.32	-1.66	-139.63
1088	SLV 11	-179	-736	6791	-1291.13	3.61	-62.43
1088	SLV 12	-302	-739	6810	-1294.84	3.7	-105.58
1088	SLV 13	-875	298	1784	-341.27	-1.64	-306.47
1088	SLV 14	-1059	293	1813	-346.78	-1.51	-370.56
1088	SLV 15	-846	-174	4067	-761.32	-0.04	-296.26
1088	SLV 16	-1030	-179	4096	-766.83	0.1	-360.35
1088	CRTFP Ux+	0	0	0	0	0	0
1088	CRTFP Ux-	0	0	0	0	0	0
1088	CRTFP Uy+	0	0	0	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1088	CRTFP Uy-	0	0	0	0	0	0
1089	SLU 1	-2	46	2748	-540.16	0.65	-0.47
1089	SLU 2	-2	61	2681	-528.35	0.63	-0.58
1089	SLU 3	-2	47	2820	-552.91	0.67	-0.44
1089	SLU 4	-2	56	2780	-545.83	0.66	-0.51
1089	SLU 5	-2	61	2726	-536.33	0.64	-0.52
1089	SLU 6	-1	47	2865	-560.89	0.69	-0.39
1089	SLU 7	-2	56	2825	-553.8	0.68	-0.45
1089	SLU 8	-1	47	2838	-556.11	0.68	-0.36
1089	SLU 9	-1	56	2798	-549.02	0.67	-0.43
1089	SLU 10	-2	64	3024	-590.98	0.72	-0.54
1089	SLU 11	-1	49	3162	-615.54	0.76	-0.4
1089	SLU 12	-2	59	3122	-608.45	0.75	-0.47
1089	SLU 13	-2	64	3069	-598.95	0.73	-0.48
1089	SLU 14	-1	50	3207	-623.51	0.78	-0.35
1089	SLU 15	-1	59	3167	-616.43	0.77	-0.41
1089	SLU 16	-1	49	3180	-618.74	0.77	-0.32
1089	SLU 17	-1	59	3140	-611.65	0.76	-0.39
1089	SLU 18	-1	50	3237	-629.63	0.78	-0.41
1089	SLU 19	-2	59	3197	-622.54	0.77	-0.48
1089	SLU 20	-1	50	3282	-637.6	0.8	-0.36
1089	SLU 21	-2	59	3242	-630.52	0.78	-0.42
1089	SLU 22	-2	51	3208	-623.8	0.77	-0.47
1089	SLU 23	-2	66	3141	-611.99	0.75	-0.58
1089	SLU 24	-2	52	3280	-636.55	0.8	-0.45
1089	SLU 25	-2	61	3240	-629.46	0.78	-0.51
1089	SLU 26	-2	67	3186	-619.96	0.77	-0.53
1089	SLU 27	-1	53	3325	-644.52	0.81	-0.39
1089	SLU 28	-2	62	3285	-637.44	0.8	-0.46
1089	SLU 29	-1	52	3298	-639.74	0.81	-0.36
1089	SLU 30	-2	61	3258	-632.66	0.79	-0.43
1089	SLU 31	-2	69	3484	-674.61	0.84	-0.54
1089	SLU 32	-1	55	3622	-699.17	0.89	-0.41
1089	SLU 33	-2	64	3582	-692.09	0.87	-0.47
1089	SLU 34	-2	70	3529	-682.59	0.86	-0.49
1089	SLU 35	-1	55	3667	-707.15	0.9	-0.35
1089	SLU 36	-2	65	3627	-700.06	0.89	-0.42
1089	SLU 37	-1	55	3640	-702.37	0.9	-0.32
1089	SLU 38	-1	64	3600	-695.29	0.88	-0.39
1089	SLU 39	-2	55	3697	-713.26	0.9	-0.41
1089	SLU 40	-2	64	3657	-706.18	0.89	-0.48
1089	SLU 41	-1	56	3742	-721.24	0.92	-0.36
1089	SLU 42	-2	65	3702	-714.15	0.9	-0.43
1089	SLU 43	-2	57	3415	-673.54	0.8	-0.61
1089	SLU 44	-2	73	3348	-661.73	0.78	-0.72
1089	SLU 45	-2	58	3487	-686.29	0.83	-0.58
1089	SLU 46	-2	68	3447	-679.2	0.81	-0.65
1089	SLU 47	-2	73	3393	-669.7	0.8	-0.66
1089	SLU 48	-2	59	3532	-694.26	0.84	-0.53
1089	SLU 49	-2	68	3492	-687.18	0.83	-0.59
1089	SLU 50	-2	58	3505	-689.48	0.84	-0.5
1089	SLU 51	-2	68	3465	-682.4	0.82	-0.56
1089	SLU 52	-2	75	3690	-724.35	0.87	-0.68
1089	SLU 53	-2	61	3829	-748.91	0.92	-0.54
1089	SLU 54	-2	70	3789	-741.83	0.9	-0.61
1089	SLU 55	-2	76	3735	-732.33	0.89	-0.62
1089	SLU 56	-2	62	3874	-756.89	0.93	-0.49
1089	SLU 57	-2	71	3834	-749.8	0.92	-0.55
1089	SLU 58	-2	61	3847	-752.11	0.93	-0.46
1089	SLU 59	-2	70	3807	-745.02	0.91	-0.52
1089	SLU 60	-2	61	3904	-763	0.93	-0.55
1089	SLU 61	-2	71	3864	-755.92	0.92	-0.62
1089	SLU 62	-2	62	3949	-770.98	0.95	-0.5
1089	SLU 63	-2	71	3909	-763.89	0.93	-0.56
1089	SLU 64	-2	63	3875	-757.17	0.93	-0.61
1089	SLU 65	-2	78	3808	-745.36	0.9	-0.72
1089	SLU 66	-2	64	3947	-769.92	0.95	-0.59
1089	SLU 67	-2	73	3907	-762.84	0.93	-0.65
1089	SLU 68	-2	78	3853	-753.34	0.92	-0.67
1089	SLU 69	-2	64	3992	-777.9	0.97	-0.53
1089	SLU 70	-2	73	3952	-770.81	0.95	-0.6
1089	SLU 71	-2	64	3965	-773.12	0.96	-0.5
1089	SLU 72	-2	73	3925	-766.03	0.94	-0.57
1089	SLU 73	-2	81	4150	-807.99	0.99	-0.68
1089	SLU 74	-2	67	4289	-832.55	1.04	-0.55
1089	SLU 75	-2	76	4249	-825.46	1.03	-0.61
1089	SLU 76	-2	81	4195	-815.96	1.01	-0.63
1089	SLU 77	-2	67	4334	-840.52	1.06	-0.49
1089	SLU 78	-2	76	4294	-833.44	1.04	-0.56
1089	SLU 79	-2	67	4307	-835.74	1.05	-0.46
1089	SLU 80	-2	76	4267	-828.66	1.04	-0.53
1089	SLU 81	-2	67	4364	-846.64	1.05	-0.55
1089	SLU 82	-2	76	4324	-839.55	1.04	-0.62
1089	SLU 83	-2	67	4409	-854.61	1.07	-0.5
1089	SLU 84	-2	76	4369	-847.53	1.06	-0.57
1089	SLE RA 1	-2	47	2880	-564.06	0.68	-0.47
1089	SLE RA 2	-2	57	2835	-556.19	0.67	-0.54
1089	SLE RA 3	-2	48	2927	-572.56	0.7	-0.45
1089	SLE RA 4	-2	54	2901	-567.83	0.69	-0.5

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1089	SLE RA 5	-2	58	2865	-561.5	0.68	-0.51
1089	SLE RA 6	-1	48	2957	-577.87	0.71	-0.42
1089	SLE RA 7	-2	54	2931	-573.15	0.7	-0.46
1089	SLE RA 8	-1	48	2940	-574.69	0.71	-0.4
1089	SLE RA 9	-2	54	2913	-569.97	0.7	-0.44
1089	SLE RA 10	-2	59	3063	-597.94	0.73	-0.52
1089	SLE RA 11	-2	50	3156	-614.31	0.76	-0.43
1089	SLE RA 12	-2	56	3129	-609.59	0.75	-0.47
1089	SLE RA 13	-2	59	3093	-603.25	0.74	-0.48
1089	SLE RA 14	-1	50	3186	-619.63	0.77	-0.39
1089	SLE RA 15	-2	56	3159	-614.9	0.76	-0.43
1089	SLE RA 16	-1	50	3168	-616.44	0.77	-0.37
1089	SLE RA 17	-1	56	3141	-611.72	0.76	-0.41
1089	SLE RA 18	-2	50	3206	-623.7	0.77	-0.43
1089	SLE RA 19	-2	56	3179	-618.98	0.76	-0.47
1089	SLE RA 20	-1	50	3236	-629.02	0.78	-0.39
1089	SLE RA 21	-2	56	3209	-624.29	0.77	-0.44
1089	SLE FR 1	-2	47	2880	-564.06	0.68	-0.47
1089	SLE FR 2	-2	49	2871	-562.48	0.68	-0.48
1089	SLE FR 3	-2	47	2892	-566.18	0.69	-0.45
1089	SLE FR 4	-2	50	2968	-580.38	0.71	-0.47
1089	SLE FR 5	-2	48	2989	-584.08	0.71	-0.44
1089	SLE FR 6	-2	48	3043	-593.88	0.73	-0.45
1089	SLE QP 1	-2	47	2880	-564.06	0.68	-0.47
1089	SLE QP 2	-2	48	2977	-581.95	0.71	-0.46
1089	SLD 1	437	136	2501	-512.8	1.61	153.07
1089	SLD 2	359	136	2512	-514.61	1.66	125.76
1089	SLD 3	449	-52	3396	-671.1	1.92	157.35
1089	SLD 4	371	-52	3407	-672.91	1.98	130.04
1089	SLD 5	126	360	1476	-320.79	0.5	44.02
1089	SLD 6	74	359	1482	-321.98	0.53	26.01
1089	SLD 7	166	-267	4458	-848.46	1.54	58.29
1089	SLD 8	115	-267	4465	-849.66	1.57	40.27
1089	SLD 9	-118	363	1490	-314.25	-0.15	-41.19
1089	SLD 10	-169	363	1496	-315.44	-0.11	-59.2
1089	SLD 11	-77	-264	4472	-841.92	0.89	-26.92
1089	SLD 12	-129	-264	4479	-843.12	0.92	-44.94
1089	SLD 13	-374	148	2548	-490.99	-0.55	-130.96
1089	SLD 14	-452	148	2558	-492.8	-0.5	-158.27
1089	SLD 15	-362	-40	3443	-649.3	-0.24	-126.68
1089	SLD 16	-440	-40	3453	-651.11	-0.19	-153.99
1089	SLV 1	1024	269	1790	-407.02	2.79	358.56
1089	SLV 2	840	269	1814	-411.27	2.92	294.37
1089	SLV 3	1055	-200	4031	-803.66	3.57	369.31
1089	SLV 4	871	-200	4056	-807.92	3.7	305.12
1089	SLV 5	294	825	-783	72.9	0.13	102.92
1089	SLV 6	170	825	-767	70.04	0.22	59.71
1089	SLV 7	396	-737	6689	-1249.25	2.72	138.75
1089	SLV 8	272	-738	6705	-1252.11	2.81	95.54
1089	SLV 9	-276	833	-750	88.21	-1.39	-96.45
1089	SLV 10	-399	833	-734	85.35	-1.3	-139.67
1089	SLV 11	-173	-729	6721	-1233.94	1.21	-60.62
1089	SLV 12	-297	-730	6738	-1236.81	1.29	-103.84
1089	SLV 13	-874	296	1899	-355.99	-2.27	-306.03
1089	SLV 14	-1058	295	1923	-360.24	-2.15	-370.22
1089	SLV 15	-844	-173	4141	-752.63	-1.5	-295.29
1089	SLV 16	-1027	-173	4165	-756.89	-1.37	-359.47
1089	CRTFP Ux+	0	0	0	0	0	0
1089	CRTFP Ux-	0	0	0	0	0	0
1089	CRTFP Uy+	0	0	0	0	0	0
1089	CRTFP Uy-	0	0	0	0	0	0
1090	SLU 1	1	49	2742	-539.2	-0.3	0.46
1090	SLU 2	1	64	2676	-527.49	-0.29	0.31
1090	SLU 3	1	50	2814	-551.88	-0.3	0.52
1090	SLU 4	1	59	2774	-544.85	-0.3	0.43
1090	SLU 5	1	64	2720	-535.4	-0.29	0.39
1090	SLU 6	1	50	2858	-559.8	-0.3	0.6
1090	SLU 7	1	59	2818	-552.77	-0.3	0.51
1090	SLU 8	2	50	2832	-555.03	-0.3	0.62
1090	SLU 9	1	59	2792	-548	-0.3	0.53
1090	SLU 10	1	67	3017	-589.96	-0.33	0.43
1090	SLU 11	2	53	3155	-614.36	-0.34	0.65
1090	SLU 12	1	62	3115	-607.33	-0.34	0.55
1090	SLU 13	1	68	3062	-597.88	-0.33	0.51
1090	SLU 14	2	54	3200	-622.28	-0.34	0.72
1090	SLU 15	2	63	3160	-615.25	-0.34	0.63
1090	SLU 16	2	53	3173	-617.51	-0.34	0.74
1090	SLU 17	2	62	3133	-610.48	-0.34	0.65
1090	SLU 18	2	53	3230	-628.46	-0.35	0.64
1090	SLU 19	1	62	3190	-621.43	-0.35	0.55
1090	SLU 20	2	54	3274	-636.37	-0.35	0.72
1090	SLU 21	1	63	3235	-629.34	-0.35	0.63
1090	SLU 22	1	55	3201	-622.62	-0.35	0.59
1090	SLU 23	1	70	3134	-610.9	-0.35	0.44
1090	SLU 24	2	56	3272	-635.3	-0.35	0.65
1090	SLU 25	1	65	3232	-628.27	-0.35	0.56
1090	SLU 26	1	70	3179	-618.82	-0.35	0.52
1090	SLU 27	2	56	3317	-643.21	-0.35	0.73
1090	SLU 28	2	65	3277	-636.19	-0.35	0.64

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1090	SLU 29	2	56	3290	-638.45	-0.35	0.75
1090	SLU 30	2	65	3250	-631.42	-0.35	0.66
1090	SLU 31	1	73	3476	-673.38	-0.39	0.56
1090	SLU 32	2	59	3614	-697.78	-0.39	0.77
1090	SLU 33	2	68	3574	-690.75	-0.39	0.68
1090	SLU 34	1	74	3521	-681.29	-0.39	0.64
1090	SLU 35	2	60	3658	-705.69	-0.39	0.85
1090	SLU 36	2	69	3619	-698.66	-0.39	0.76
1090	SLU 37	2	59	3632	-700.92	-0.39	0.87
1090	SLU 38	2	68	3592	-693.9	-0.39	0.78
1090	SLU 39	2	59	3688	-711.87	-0.41	0.77
1090	SLU 40	2	68	3649	-704.84	-0.41	0.68
1090	SLU 41	2	60	3733	-719.79	-0.41	0.85
1090	SLU 42	2	69	3693	-712.76	-0.41	0.75
1090	SLU 43	1	61	3407	-672.36	-0.37	0.56
1090	SLU 44	1	76	3341	-660.65	-0.36	0.41
1090	SLU 45	1	62	3479	-685.04	-0.37	0.62
1090	SLU 46	1	71	3439	-678.02	-0.37	0.53
1090	SLU 47	1	77	3386	-668.56	-0.36	0.49
1090	SLU 48	2	63	3524	-692.96	-0.37	0.7
1090	SLU 49	1	72	3484	-685.93	-0.37	0.61
1090	SLU 50	2	62	3497	-688.19	-0.37	0.72
1090	SLU 51	1	71	3457	-681.16	-0.37	0.63
1090	SLU 52	1	80	3682	-723.12	-0.4	0.53
1090	SLU 53	2	66	3820	-747.52	-0.41	0.74
1090	SLU 54	1	75	3780	-740.49	-0.41	0.65
1090	SLU 55	1	80	3727	-731.04	-0.4	0.61
1090	SLU 56	2	66	3865	-755.44	-0.41	0.82
1090	SLU 57	2	75	3825	-748.41	-0.41	0.73
1090	SLU 58	2	66	3838	-750.67	-0.41	0.84
1090	SLU 59	2	75	3798	-743.64	-0.41	0.75
1090	SLU 60	2	66	3895	-761.62	-0.42	0.73
1090	SLU 61	1	75	3855	-754.59	-0.42	0.64
1090	SLU 62	2	66	3940	-769.53	-0.43	0.81
1090	SLU 63	2	76	3900	-762.5	-0.42	0.72
1090	SLU 64	2	67	3866	-755.78	-0.42	0.69
1090	SLU 65	1	82	3800	-744.06	-0.42	0.54
1090	SLU 66	2	68	3938	-768.46	-0.42	0.75
1090	SLU 67	2	77	3898	-761.43	-0.42	0.66
1090	SLU 68	1	83	3844	-751.98	-0.42	0.62
1090	SLU 69	2	69	3982	-776.37	-0.42	0.83
1090	SLU 70	2	78	3943	-769.35	-0.42	0.74
1090	SLU 71	2	68	3956	-771.61	-0.42	0.85
1090	SLU 72	2	77	3916	-764.58	-0.42	0.76
1090	SLU 73	1	86	4141	-806.54	-0.46	0.66
1090	SLU 74	2	72	4279	-830.94	-0.46	0.87
1090	SLU 75	2	81	4239	-823.91	-0.46	0.78
1090	SLU 76	2	86	4186	-814.45	-0.46	0.74
1090	SLU 77	2	72	4324	-838.85	-0.47	0.95
1090	SLU 78	2	81	4284	-831.82	-0.46	0.86
1090	SLU 79	2	71	4297	-834.08	-0.46	0.97
1090	SLU 80	2	81	4257	-827.06	-0.46	0.88
1090	SLU 81	2	72	4354	-845.03	-0.48	0.86
1090	SLU 82	2	81	4314	-838	-0.48	0.77
1090	SLU 83	2	72	4399	-852.95	-0.48	0.94
1090	SLU 84	2	81	4359	-845.92	-0.48	0.85
1090	SLE RA 1	1	50	2873	-563.03	-0.31	0.5
1090	SLE RA 2	1	60	2829	-555.22	-0.31	0.4
1090	SLE RA 3	1	51	2921	-571.49	-0.31	0.54
1090	SLE RA 4	1	57	2894	-566.8	-0.31	0.48
1090	SLE RA 5	1	61	2859	-560.5	-0.31	0.45
1090	SLE RA 6	1	51	2951	-576.77	-0.31	0.59
1090	SLE RA 7	1	58	2924	-572.08	-0.31	0.53
1090	SLE RA 8	1	51	2933	-573.59	-0.31	0.61
1090	SLE RA 9	1	57	2906	-568.9	-0.31	0.55
1090	SLE RA 10	1	63	3056	-596.88	-0.34	0.48
1090	SLE RA 11	1	53	3148	-613.14	-0.34	0.62
1090	SLE RA 12	1	59	3122	-608.46	-0.34	0.56
1090	SLE RA 13	1	63	3086	-602.15	-0.34	0.53
1090	SLE RA 14	2	54	3178	-618.42	-0.34	0.67
1090	SLE RA 15	1	60	3152	-613.73	-0.34	0.61
1090	SLE RA 16	2	53	3160	-615.24	-0.34	0.69
1090	SLE RA 17	1	59	3134	-610.55	-0.34	0.63
1090	SLE RA 18	1	53	3198	-622.54	-0.35	0.62
1090	SLE RA 19	1	60	3172	-617.85	-0.35	0.56
1090	SLE RA 20	2	54	3228	-627.81	-0.35	0.67
1090	SLE RA 21	1	60	3202	-623.13	-0.35	0.61
1090	SLE FR 1	1	50	2873	-563.03	-0.31	0.5
1090	SLE FR 2	1	52	2864	-561.47	-0.31	0.48
1090	SLE FR 3	1	50	2885	-565.14	-0.31	0.52
1090	SLE FR 4	1	53	2962	-579.32	-0.32	0.52
1090	SLE FR 5	1	51	2983	-583	-0.32	0.56
1090	SLE FR 6	1	52	3036	-592.79	-0.33	0.56
1090	SLE QP 1	1	50	2873	-563.03	-0.31	0.5
1090	SLE QP 2	1	51	2971	-580.88	-0.32	0.54
1090	SLD 1	440	139	2469	-496.75	0.77	154.02
1090	SLD 2	361	141	2477	-498.13	0.82	126.68
1090	SLD 3	453	-49	3359	-653.72	0.73	158.55
1090	SLD 4	374	-48	3367	-655.1	0.78	131.22

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1090	SLD 5	127	363	1469	-317.34	0.06	44.62
1090	SLD 6	76	364	1474	-318.24	0.09	26.58
1090	SLD 7	170	-264	4435	-840.55	-0.08	59.74
1090	SLD 8	119	-264	4441	-841.46	-0.04	41.7
1090	SLD 9	-116	366	1500	-320.31	-0.6	-40.63
1090	SLD 10	-168	367	1506	-321.22	-0.57	-58.66
1090	SLD 11	-73	-261	4467	-843.52	-0.74	-25.51
1090	SLD 12	-125	-260	4473	-844.43	-0.7	-43.55
1090	SLD 13	-372	150	2574	-506.67	-1.43	-130.14
1090	SLD 14	-450	151	2582	-508.05	-1.38	-157.48
1090	SLD 15	-359	-38	3464	-663.64	-1.47	-125.61
1090	SLD 16	-437	-37	3472	-665.02	-1.42	-152.94
1090	SLV 1	1026	272	1723	-371.03	2.24	359.38
1090	SLV 2	842	275	1743	-374.27	2.36	295.13
1090	SLV 3	1059	-198	3953	-764.32	2.14	370.84
1090	SLV 4	875	-194	3972	-767.56	2.26	306.59
1090	SLV 5	293	828	-789	79.18	0.57	102.8
1090	SLV 6	169	830	-775	76.99	0.66	59.54
1090	SLV 7	403	-736	6643	-1231.81	0.24	141
1090	SLV 8	279	-733	6656	-1233.99	0.32	97.74
1090	SLV 9	-276	836	-715	72.22	-0.97	-96.67
1090	SLV 10	-400	838	-702	70.04	-0.89	-139.93
1090	SLV 11	-167	-728	6717	-1238.76	-1.3	-58.47
1090	SLV 12	-291	-726	6730	-1240.94	-1.22	-101.73
1090	SLV 13	-873	297	1969	-394.21	-2.9	-305.51
1090	SLV 14	-1057	300	1989	-397.45	-2.78	-369.77
1090	SLV 15	-840	-172	4198	-787.5	-3	-294.06
1090	SLV 16	-1024	-169	4218	-790.74	-2.88	-358.31
1090	CRTFP Ux+	0	0	0	0	0	0
1090	CRTFP Ux-	0	0	0	0	0	0
1090	CRTFP Uy+	0	0	0	0	0	0
1090	CRTFP Uy-	0	0	0	0	0	0
1091	SLU 1	4	52	2768	-562.2	-1.2	1.4
1091	SLU 2	3	67	2701	-549.99	-1.17	1.21
1091	SLU 3	4	53	2840	-575.49	-1.23	1.5
1091	SLU 4	4	62	2800	-568.16	-1.21	1.38
1091	SLU 5	3	68	2746	-558.27	-1.19	1.31
1091	SLU 6	4	53	2885	-583.77	-1.25	1.6
1091	SLU 7	4	63	2845	-576.44	-1.23	1.49
1091	SLU 8	4	53	2858	-578.76	-1.24	1.61
1091	SLU 9	4	62	2818	-571.43	-1.22	1.5
1091	SLU 10	4	71	3046	-615.63	-1.34	1.41
1091	SLU 11	5	57	3185	-641.13	-1.4	1.7
1091	SLU 12	4	66	3145	-633.8	-1.38	1.59
1091	SLU 13	4	71	3091	-623.91	-1.36	1.52
1091	SLU 14	5	57	3230	-649.41	-1.41	1.81
1091	SLU 15	5	66	3190	-642.08	-1.4	1.69
1091	SLU 16	5	57	3203	-644.39	-1.4	1.82
1091	SLU 17	5	66	3163	-637.07	-1.38	1.7
1091	SLU 18	5	57	3261	-655.97	-1.44	1.7
1091	SLU 19	4	66	3221	-648.65	-1.42	1.58
1091	SLU 20	5	58	3306	-664.25	-1.45	1.8
1091	SLU 21	4	67	3266	-656.92	-1.44	1.68
1091	SLU 22	4	58	3232	-649.8	-1.42	1.67
1091	SLU 23	4	73	3165	-637.59	-1.39	1.47
1091	SLU 24	5	59	3304	-663.09	-1.45	1.76
1091	SLU 25	4	68	3264	-655.76	-1.44	1.65
1091	SLU 26	4	74	3210	-645.87	-1.41	1.58
1091	SLU 27	5	60	3349	-671.36	-1.47	1.87
1091	SLU 28	5	69	3309	-664.04	-1.45	1.75
1091	SLU 29	5	59	3322	-666.35	-1.46	1.88
1091	SLU 30	5	68	3282	-659.03	-1.44	1.76
1091	SLU 31	4	77	3510	-703.23	-1.56	1.68
1091	SLU 32	5	63	3649	-728.73	-1.62	1.97
1091	SLU 33	5	72	3609	-721.4	-1.6	1.85
1091	SLU 34	5	78	3555	-711.51	-1.58	1.78
1091	SLU 35	6	64	3694	-737	-1.64	2.07
1091	SLU 36	5	73	3654	-729.68	-1.62	1.95
1091	SLU 37	6	63	3667	-731.99	-1.62	2.08
1091	SLU 38	5	72	3627	-724.67	-1.61	1.96
1091	SLU 39	5	63	3724	-743.57	-1.66	1.96
1091	SLU 40	5	73	3684	-736.25	-1.64	1.84
1091	SLU 41	6	64	3769	-751.85	-1.68	2.06
1091	SLU 42	5	73	3729	-744.52	-1.66	1.95
1091	SLU 43	5	65	3440	-700.83	-1.49	1.74
1091	SLU 44	4	80	3373	-688.62	-1.46	1.54
1091	SLU 45	5	66	3512	-714.12	-1.52	1.83
1091	SLU 46	5	75	3472	-706.79	-1.5	1.71
1091	SLU 47	4	81	3418	-696.89	-1.47	1.65
1091	SLU 48	5	67	3557	-722.39	-1.53	1.94
1091	SLU 49	5	76	3517	-715.07	-1.52	1.82
1091	SLU 50	5	66	3530	-717.38	-1.52	1.94
1091	SLU 51	5	75	3490	-710.06	-1.5	1.83
1091	SLU 52	5	84	3718	-754.26	-1.62	1.74
1091	SLU 53	5	70	3857	-779.76	-1.68	2.03
1091	SLU 54	5	79	3817	-772.43	-1.66	1.92
1091	SLU 55	5	85	3763	-762.53	-1.64	1.85
1091	SLU 56	6	71	3902	-788.03	-1.7	2.14
1091	SLU 57	5	80	3862	-780.71	-1.68	2.02

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1091	SLU 58	6	70	3875	-783.02	-1.69	2.15
1091	SLU 59	5	79	3835	-775.69	-1.67	2.03
1091	SLU 60	5	70	3932	-794.6	-1.72	2.03
1091	SLU 61	5	80	3892	-787.27	-1.7	1.91
1091	SLU 62	6	71	3977	-802.88	-1.74	2.13
1091	SLU 63	5	80	3937	-795.55	-1.72	2.01
1091	SLU 64	5	71	3903	-788.43	-1.71	2
1091	SLU 65	5	87	3836	-776.22	-1.68	1.8
1091	SLU 66	6	73	3975	-801.72	-1.74	2.09
1091	SLU 67	5	82	3935	-794.39	-1.72	1.98
1091	SLU 68	5	87	3881	-784.49	-1.7	1.91
1091	SLU 69	6	73	4020	-809.99	-1.75	2.2
1091	SLU 70	6	82	3980	-802.66	-1.74	2.08
1091	SLU 71	6	73	3993	-804.98	-1.74	2.21
1091	SLU 72	6	82	3953	-797.65	-1.72	2.09
1091	SLU 73	5	90	4181	-841.86	-1.84	2.01
1091	SLU 74	6	76	4320	-867.36	-1.9	2.3
1091	SLU 75	6	86	4280	-860.03	-1.89	2.18
1091	SLU 76	6	91	4226	-850.13	-1.86	2.11
1091	SLU 77	6	77	4365	-875.63	-1.92	2.4
1091	SLU 78	6	86	4325	-868.3	-1.9	2.29
1091	SLU 79	6	76	4338	-870.62	-1.91	2.41
1091	SLU 80	6	86	4298	-863.29	-1.89	2.29
1091	SLU 81	6	77	4396	-882.2	-1.94	2.29
1091	SLU 82	6	86	4356	-874.87	-1.93	2.17
1091	SLU 83	6	77	4441	-890.48	-1.96	2.39
1091	SLU 84	6	87	4401	-883.15	-1.94	2.28
1091	SLE RA 1	4	54	2901	-587.23	-1.26	1.48
1091	SLE RA 2	4	64	2856	-579.09	-1.25	1.35
1091	SLE RA 3	4	54	2949	-596.09	-1.28	1.54
1091	SLE RA 4	4	60	2922	-591.2	-1.27	1.47
1091	SLE RA 5	4	64	2886	-584.61	-1.26	1.42
1091	SLE RA 6	4	55	2979	-601.61	-1.3	1.61
1091	SLE RA 7	4	61	2952	-596.72	-1.28	1.54
1091	SLE RA 8	4	54	2961	-598.27	-1.29	1.62
1091	SLE RA 9	4	60	2934	-593.38	-1.28	1.54
1091	SLE RA 10	4	66	3086	-622.85	-1.36	1.49
1091	SLE RA 11	5	57	3179	-639.85	-1.39	1.68
1091	SLE RA 12	4	63	3152	-634.96	-1.38	1.6
1091	SLE RA 13	4	67	3116	-628.37	-1.37	1.56
1091	SLE RA 14	5	57	3209	-645.37	-1.41	1.75
1091	SLE RA 15	4	63	3182	-640.48	-1.39	1.67
1091	SLE RA 16	5	57	3191	-642.03	-1.4	1.75
1091	SLE RA 17	4	63	3164	-637.14	-1.39	1.68
1091	SLE RA 18	4	57	3229	-649.75	-1.42	1.67
1091	SLE RA 19	4	63	3202	-644.86	-1.41	1.6
1091	SLE RA 20	5	57	3259	-655.26	-1.43	1.74
1091	SLE RA 21	4	64	3232	-650.38	-1.42	1.67
1091	SLE FR 1	4	54	2901	-587.23	-1.26	1.48
1091	SLE FR 2	4	56	2892	-585.6	-1.26	1.45
1091	SLE FR 3	4	54	2913	-589.44	-1.27	1.51
1091	SLE FR 4	4	57	2990	-604.36	-1.31	1.51
1091	SLE FR 5	4	55	3011	-608.19	-1.32	1.57
1091	SLE FR 6	4	55	3065	-618.49	-1.34	1.58
1091	SLE QP 1	4	54	2901	-587.23	-1.26	1.48
1091	SLE QP 2	4	55	2999	-605.99	-1.31	1.54
1091	SLD 1	442	153	2458	-505.84	-0.04	154.86
1091	SLD 2	364	156	2465	-506.85	0.01	127.5
1091	SLD 3	456	-36	3355	-669.37	-0.4	159.72
1091	SLD 4	378	-33	3362	-670.39	-0.35	132.36
1091	SLD 5	128	371	1475	-327.73	-0.38	45.08
1091	SLD 6	77	373	1480	-328.4	-0.35	27.04
1091	SLD 7	175	-261	4465	-872.84	-1.6	61.28
1091	SLD 8	123	-259	4470	-873.51	-1.57	43.24
1091	SLD 9	-115	368	1529	-338.46	-1.05	-40.16
1091	SLD 10	-167	370	1533	-339.13	-1.02	-58.2
1091	SLD 11	-68	-264	4519	-883.57	-2.27	-23.96
1091	SLD 12	-120	-262	4523	-884.24	-2.24	-42.01
1091	SLD 13	-370	142	2636	-541.59	-2.27	-129.29
1091	SLD 14	-448	145	2643	-542.6	-2.22	-156.64
1091	SLD 15	-356	-47	3533	-705.12	-2.64	-124.43
1091	SLD 16	-434	-44	3540	-706.13	-2.59	-151.78
1091	SLV 1	1028	301	1659	-358.1	1.7	359.95
1091	SLV 2	844	308	1675	-360.48	1.82	295.65
1091	SLV 3	1063	-173	3906	-767.86	0.79	372.28
1091	SLV 4	879	-165	3922	-770.24	0.9	307.99
1091	SLV 5	292	845	-814	90.3	0.96	102.36
1091	SLV 6	168	849	-803	88.69	1.04	59.07
1091	SLV 7	410	-732	6676	-1275.57	-2.1	143.46
1091	SLV 8	286	-728	6687	-1277.18	-2.02	100.18
1091	SLV 9	-278	837	-689	65.21	-0.6	-97.1
1091	SLV 10	-402	842	-678	63.6	-0.53	-140.39
1091	SLV 11	-160	-740	6801	-1300.66	-3.66	-55.99
1091	SLV 12	-283	-735	6812	-1302.27	-3.59	-99.28
1091	SLV 13	-871	275	2076	-441.73	-3.52	-304.91
1091	SLV 14	-1055	282	2092	-444.11	-3.41	-369.2
1091	SLV 15	-836	-198	4323	-851.49	-4.44	-292.58
1091	SLV 16	-1020	-191	4339	-853.87	-4.33	-356.87
1091	CRTFP Ux+	0	0	0	0	0	0

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1091	CRTFP Ux-	0	0	0	0	0	0
1091	CRTFP Uy+	0	0	0	0	0	0
1091	CRTFP Uy-	0	0	0	0	0	0
1092	SLU 1	6	55	2824	-607.71	-2	2.35
1092	SLU 2	6	70	2755	-594.46	-1.95	2.11
1092	SLU 3	7	56	2897	-622.23	-2.05	2.48
1092	SLU 4	6	65	2856	-614.28	-2.02	2.34
1092	SLU 5	6	71	2801	-603.49	-1.98	2.24
1092	SLU 6	7	57	2943	-631.26	-2.08	2.61
1092	SLU 7	7	66	2902	-623.31	-2.05	2.47
1092	SLU 8	7	56	2916	-625.77	-2.06	2.61
1092	SLU 9	7	65	2875	-617.82	-2.03	2.47
1092	SLU 10	7	74	3108	-666.36	-2.22	2.39
1092	SLU 11	8	60	3250	-694.13	-2.32	2.77
1092	SLU 12	7	69	3209	-686.18	-2.29	2.62
1092	SLU 13	7	75	3154	-675.4	-2.25	2.53
1092	SLU 14	8	61	3296	-703.17	-2.36	2.9
1092	SLU 15	8	70	3255	-695.21	-2.33	2.75
1092	SLU 16	8	60	3268	-697.68	-2.33	2.9
1092	SLU 17	8	69	3227	-689.73	-2.3	2.75
1092	SLU 18	8	61	3327	-710.43	-2.39	2.76
1092	SLU 19	7	70	3287	-702.48	-2.36	2.61
1092	SLU 20	8	61	3373	-719.47	-2.42	2.89
1092	SLU 21	8	71	3332	-711.51	-2.39	2.74
1092	SLU 22	8	62	3298	-703.63	-2.36	2.75
1092	SLU 23	7	77	3229	-690.37	-2.31	2.51
1092	SLU 24	8	63	3371	-718.14	-2.42	2.88
1092	SLU 25	8	72	3330	-710.19	-2.39	2.73
1092	SLU 26	7	78	3275	-699.4	-2.35	2.64
1092	SLU 27	8	63	3417	-727.17	-2.45	3.01
1092	SLU 28	8	73	3376	-719.22	-2.42	2.87
1092	SLU 29	8	63	3389	-721.69	-2.43	3.01
1092	SLU 30	8	72	3348	-713.73	-2.4	2.87
1092	SLU 31	8	81	3582	-762.28	-2.59	2.79
1092	SLU 32	9	67	3724	-790.05	-2.69	3.16
1092	SLU 33	8	76	3683	-782.1	-2.66	3.02
1092	SLU 34	8	82	3628	-771.31	-2.62	2.92
1092	SLU 35	9	68	3770	-799.08	-2.72	3.3
1092	SLU 36	9	77	3729	-791.13	-2.69	3.15
1092	SLU 37	9	67	3742	-793.59	-2.7	3.3
1092	SLU 38	9	76	3701	-785.64	-2.67	3.15
1092	SLU 39	9	68	3801	-806.35	-2.76	3.16
1092	SLU 40	8	77	3760	-798.4	-2.73	3.01
1092	SLU 41	9	68	3847	-815.38	-2.79	3.29
1092	SLU 42	9	77	3806	-807.43	-2.76	3.14
1092	SLU 43	8	69	3508	-757.14	-2.47	2.91
1092	SLU 44	7	84	3440	-743.89	-2.42	2.68
1092	SLU 45	8	70	3582	-771.66	-2.52	3.05
1092	SLU 46	8	79	3541	-763.71	-2.49	2.9
1092	SLU 47	8	85	3486	-752.92	-2.45	2.81
1092	SLU 48	9	71	3628	-780.69	-2.55	3.18
1092	SLU 49	8	80	3587	-772.74	-2.52	3.03
1092	SLU 50	9	70	3600	-775.2	-2.53	3.18
1092	SLU 51	8	79	3559	-767.25	-2.5	3.03
1092	SLU 52	8	89	3793	-815.79	-2.69	2.96
1092	SLU 53	9	74	3935	-843.56	-2.8	3.33
1092	SLU 54	9	84	3894	-835.61	-2.77	3.19
1092	SLU 55	8	89	3839	-824.82	-2.72	3.09
1092	SLU 56	10	75	3981	-852.59	-2.83	3.46
1092	SLU 57	9	84	3940	-844.64	-2.8	3.32
1092	SLU 58	10	74	3953	-847.11	-2.81	3.46
1092	SLU 59	9	84	3912	-839.16	-2.78	3.32
1092	SLU 60	9	75	4012	-859.86	-2.86	3.32
1092	SLU 61	9	84	3971	-851.91	-2.83	3.18
1092	SLU 62	10	75	4058	-868.89	-2.89	3.45
1092	SLU 63	9	85	4017	-860.94	-2.86	3.31
1092	SLU 64	9	76	3982	-853.05	-2.84	3.31
1092	SLU 65	8	91	3914	-839.8	-2.79	3.07
1092	SLU 66	9	77	4056	-867.57	-2.89	3.45
1092	SLU 67	9	86	4015	-859.62	-2.86	3.3
1092	SLU 68	9	92	3960	-848.83	-2.82	3.21
1092	SLU 69	10	78	4102	-876.6	-2.92	3.58
1092	SLU 70	9	87	4061	-868.65	-2.89	3.43
1092	SLU 71	10	77	4074	-871.11	-2.9	3.58
1092	SLU 72	9	86	4033	-863.16	-2.87	3.43
1092	SLU 73	9	95	4267	-911.71	-3.06	3.36
1092	SLU 74	10	81	4408	-939.48	-3.16	3.73
1092	SLU 75	10	90	4367	-931.53	-3.13	3.59
1092	SLU 76	10	96	4312	-920.74	-3.09	3.49
1092	SLU 77	11	82	4454	-948.51	-3.2	3.86
1092	SLU 78	10	91	4413	-940.56	-3.17	3.72
1092	SLU 79	11	81	4427	-943.02	-3.17	3.86
1092	SLU 80	10	90	4386	-935.07	-3.14	3.72
1092	SLU 81	10	82	4486	-955.78	-3.23	3.72
1092	SLU 82	10	91	4445	-947.83	-3.2	3.58
1092	SLU 83	11	82	4532	-964.81	-3.26	3.85
1092	SLU 84	10	92	4491	-956.86	-3.23	3.71
1092	SLE RA 1	7	57	2959	-635.12	-2.1	2.46
1092	SLE RA 2	6	67	2914	-626.28	-2.07	2.3

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1092	SLE RA 3	7	58	3008	-644.79	-2.14	2.55
1092	SLE RA 4	7	64	2981	-639.49	-2.12	2.45
1092	SLE RA 5	7	67	2944	-632.3	-2.09	2.39
1092	SLE RA 6	7	58	3039	-650.81	-2.16	2.64
1092	SLE RA 7	7	64	3011	-645.51	-2.14	2.54
1092	SLE RA 8	7	58	3020	-647.16	-2.14	2.64
1092	SLE RA 9	7	64	2993	-641.85	-2.12	2.54
1092	SLE RA 10	7	70	3149	-674.22	-2.25	2.49
1092	SLE RA 11	8	60	3243	-692.73	-2.32	2.74
1092	SLE RA 12	7	67	3216	-687.43	-2.3	2.64
1092	SLE RA 13	7	70	3179	-680.24	-2.27	2.58
1092	SLE RA 14	8	61	3274	-698.75	-2.34	2.83
1092	SLE RA 15	8	67	3247	-693.45	-2.32	2.73
1092	SLE RA 16	8	60	3255	-695.09	-2.33	2.83
1092	SLE RA 17	8	67	3228	-689.79	-2.31	2.73
1092	SLE RA 18	8	61	3295	-703.6	-2.36	2.73
1092	SLE RA 19	7	67	3268	-698.3	-2.34	2.64
1092	SLE RA 20	8	61	3326	-709.62	-2.38	2.82
1092	SLE RA 21	7	67	3298	-704.32	-2.36	2.73
1092	SLE FR 1	7	57	2959	-635.12	-2.1	2.46
1092	SLE FR 2	7	59	2950	-633.35	-2.09	2.43
1092	SLE FR 3	7	57	2971	-637.52	-2.11	2.5
1092	SLE FR 4	7	60	3051	-653.89	-2.17	2.51
1092	SLE FR 5	7	58	3072	-658.07	-2.19	2.58
1092	SLE FR 6	7	59	3127	-669.36	-2.23	2.6
1092	SLE QP 1	7	57	2959	-635.12	-2.1	2.46
1092	SLE QP 2	7	58	3060	-655.66	-2.18	2.54
1092	SLD 1	444	158	2473	-534.74	-0.74	155.59
1092	SLD 2	366	162	2478	-535.44	-0.69	128.24
1092	SLD 3	459	-35	3387	-712.15	-1.39	160.84
1092	SLD 4	381	-30	3393	-712.85	-1.35	133.48
1092	SLD 5	129	379	1495	-350.18	-0.76	45.42
1092	SLD 6	78	382	1499	-350.64	-0.73	27.37
1092	SLD 7	180	-263	4545	-941.56	-2.95	62.91
1092	SLD 8	128	-260	4548	-942.02	-2.92	44.86
1092	SLD 9	-114	375	1572	-369.3	-1.44	-39.78
1092	SLD 10	-166	378	1575	-369.76	-1.41	-57.82
1092	SLD 11	-64	-266	4621	-960.68	-3.63	-22.29
1092	SLD 12	-115	-263	4624	-961.14	-3.6	-40.33
1092	SLD 13	-367	146	2727	-598.47	-3.01	-128.4
1092	SLD 14	-445	151	2732	-599.17	-2.97	-155.75
1092	SLD 15	-352	-47	3642	-775.88	-3.67	-123.15
1092	SLD 16	-430	-42	3647	-776.58	-3.62	-150.51
1092	SLV 1	1029	306	1610	-358.02	1.25	360.27
1092	SLV 2	845	317	1622	-359.65	1.36	295.96
1092	SLV 3	1068	-174	3902	-802.55	-0.39	373.62
1092	SLV 4	883	-163	3914	-804.19	-0.29	309.32
1092	SLV 5	289	858	-853	108.15	1.32	101.6
1092	SLV 6	165	866	-845	107.05	1.39	58.31
1092	SLV 7	418	-742	6786	-1373.64	-4.15	146.13
1092	SLV 8	294	-734	6794	-1374.74	-4.08	102.83
1092	SLV 9	-280	850	-674	63.42	-0.27	-97.75
1092	SLV 10	-404	858	-666	62.32	-0.2	-141.04
1092	SLV 11	-151	-750	6964	-1418.37	-5.75	-53.22
1092	SLV 12	-275	-743	6972	-1419.47	-5.68	-96.51
1092	SLV 13	-869	278	2206	-507.13	-4.07	-304.23
1092	SLV 14	-1054	290	2218	-508.77	-3.96	-368.54
1092	SLV 15	-831	-202	4497	-951.67	-5.71	-290.87
1092	SLV 16	-1015	-190	4509	-953.3	-5.61	-355.18
1092	CRTFP Ux+	0	0	0	0	0	0
1092	CRTFP Ux-	0	0	0	0	0	0
1092	CRTFP Uy+	0	0	0	0	0	0
1092	CRTFP Uy-	0	0	0	0	0	0
1093	SLU 1	9	58	2904	-672.92	-2.59	3.29
1093	SLU 2	8	74	2833	-658.17	-2.52	3.01
1093	SLU 3	10	59	2979	-689.22	-2.66	3.46
1093	SLU 4	9	69	2937	-680.37	-2.62	3.29
1093	SLU 5	9	74	2881	-668.3	-2.57	3.17
1093	SLU 6	10	60	3027	-699.34	-2.7	3.62
1093	SLU 7	10	69	2984	-690.49	-2.66	3.45
1093	SLU 8	10	59	2998	-693.18	-2.68	3.61
1093	SLU 9	10	68	2956	-684.32	-2.64	3.44
1093	SLU 10	9	78	3197	-739.06	-2.88	3.38
1093	SLU 11	11	64	3343	-770.11	-3.02	3.83
1093	SLU 12	10	73	3301	-761.25	-2.98	3.66
1093	SLU 13	10	79	3244	-749.19	-2.92	3.54
1093	SLU 14	11	64	3390	-780.23	-3.06	3.99
1093	SLU 15	11	74	3348	-771.38	-3.02	3.82
1093	SLU 16	11	64	3362	-774.06	-3.03	3.98
1093	SLU 17	11	73	3319	-765.21	-2.99	3.81
1093	SLU 18	11	64	3423	-788.48	-3.1	3.82
1093	SLU 19	10	74	3381	-779.62	-3.06	3.65
1093	SLU 20	11	65	3470	-798.6	-3.14	3.98
1093	SLU 21	11	74	3428	-789.75	-3.1	3.81
1093	SLU 22	11	65	3392	-780.76	-3.07	3.83
1093	SLU 23	10	81	3322	-766.01	-3	3.54
1093	SLU 24	11	66	3468	-797.05	-3.14	4
1093	SLU 25	11	76	3426	-788.2	-3.1	3.83
1093	SLU 26	10	82	3369	-776.13	-3.04	3.7

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1093	SLU 27	12	67	3515	-807.18	-3.18	4.16
1093	SLU 28	11	76	3473	-798.33	-3.14	3.99
1093	SLU 29	12	66	3487	-801.01	-3.15	4.15
1093	SLU 30	11	76	3444	-792.16	-3.11	3.98
1093	SLU 31	11	86	3685	-846.89	-3.36	3.91
1093	SLU 32	12	71	3831	-877.94	-3.49	4.37
1093	SLU 33	12	80	3789	-869.09	-3.45	4.2
1093	SLU 34	11	86	3733	-857.02	-3.4	4.07
1093	SLU 35	13	72	3879	-888.07	-3.54	4.53
1093	SLU 36	12	81	3836	-879.22	-3.5	4.35
1093	SLU 37	13	71	3850	-881.9	-3.51	4.52
1093	SLU 38	12	80	3808	-873.05	-3.47	4.35
1093	SLU 39	12	72	3912	-896.31	-3.57	4.36
1093	SLU 40	12	81	3869	-887.46	-3.54	4.19
1093	SLU 41	13	72	3959	-906.44	-3.62	4.52
1093	SLU 42	12	82	3917	-897.59	-3.58	4.34
1093	SLU 43	11	73	3607	-837.82	-3.2	4.1
1093	SLU 44	11	88	3537	-823.07	-3.14	3.81
1093	SLU 45	12	74	3683	-854.12	-3.27	4.27
1093	SLU 46	11	83	3641	-845.27	-3.23	4.09
1093	SLU 47	11	89	3584	-833.2	-3.18	3.97
1093	SLU 48	12	74	3730	-864.25	-3.32	4.43
1093	SLU 49	12	84	3688	-855.4	-3.28	4.25
1093	SLU 50	12	74	3702	-858.08	-3.29	4.42
1093	SLU 51	12	83	3659	-849.23	-3.25	4.24
1093	SLU 52	12	93	3900	-903.96	-3.49	4.18
1093	SLU 53	13	78	4047	-935.01	-3.63	4.64
1093	SLU 54	12	88	4004	-926.16	-3.59	4.46
1093	SLU 55	12	94	3948	-914.09	-3.54	4.34
1093	SLU 56	13	79	4094	-945.14	-3.67	4.8
1093	SLU 57	13	89	4052	-936.29	-3.63	4.62
1093	SLU 58	13	78	4065	-938.97	-3.64	4.79
1093	SLU 59	13	88	4023	-930.12	-3.6	4.61
1093	SLU 60	13	79	4127	-953.38	-3.71	4.63
1093	SLU 61	12	89	4084	-944.53	-3.67	4.45
1093	SLU 62	13	80	4174	-963.51	-3.75	4.78
1093	SLU 63	13	89	4132	-954.66	-3.71	4.61
1093	SLU 64	13	80	4096	-945.66	-3.68	4.63
1093	SLU 65	12	96	4025	-930.91	-3.61	4.35
1093	SLU 66	13	81	4171	-961.96	-3.75	4.8
1093	SLU 67	13	91	4129	-953.11	-3.71	4.63
1093	SLU 68	13	96	4073	-941.04	-3.66	4.51
1093	SLU 69	14	82	4219	-972.08	-3.79	4.96
1093	SLU 70	13	91	4176	-963.23	-3.75	4.79
1093	SLU 71	14	81	4190	-965.92	-3.77	4.95
1093	SLU 72	13	91	4148	-957.07	-3.73	4.78
1093	SLU 73	13	100	4389	-1011.8	-3.97	4.72
1093	SLU 74	14	86	4535	-1042.85	-4.11	5.17
1093	SLU 75	14	95	4493	-1033.99	-4.07	5
1093	SLU 76	14	101	4436	-1021.93	-4.01	4.88
1093	SLU 77	15	86	4582	-1052.97	-4.15	5.33
1093	SLU 78	14	96	4540	-1044.12	-4.11	5.16
1093	SLU 79	15	86	4554	-1046.81	-4.12	5.32
1093	SLU 80	14	95	4512	-1037.95	-4.08	5.15
1093	SLU 81	14	86	4615	-1061.22	-4.19	5.16
1093	SLU 82	14	96	4573	-1052.36	-4.15	4.99
1093	SLU 83	15	87	4662	-1071.34	-4.23	5.32
1093	SLU 84	14	97	4620	-1062.49	-4.19	5.15
1093	SLE RA 1	10	60	3043	-703.73	-2.73	3.45
1093	SLE RA 2	9	70	2996	-693.9	-2.68	3.26
1093	SLE RA 3	10	61	3094	-714.59	-2.77	3.56
1093	SLE RA 4	10	67	3066	-708.69	-2.75	3.44
1093	SLE RA 5	9	71	3028	-700.65	-2.71	3.36
1093	SLE RA 6	10	61	3125	-721.35	-2.8	3.67
1093	SLE RA 7	10	67	3097	-715.45	-2.78	3.55
1093	SLE RA 8	10	61	3106	-717.23	-2.78	3.66
1093	SLE RA 9	10	67	3078	-711.33	-2.76	3.54
1093	SLE RA 10	10	73	3239	-747.82	-2.92	3.5
1093	SLE RA 11	11	64	3336	-768.52	-3.01	3.81
1093	SLE RA 12	10	70	3308	-762.62	-2.98	3.69
1093	SLE RA 13	10	74	3270	-754.57	-2.95	3.61
1093	SLE RA 14	11	64	3368	-775.27	-3.04	3.91
1093	SLE RA 15	11	70	3339	-769.37	-3.01	3.8
1093	SLE RA 16	11	64	3348	-771.16	-3.02	3.9
1093	SLE RA 17	11	70	3320	-765.26	-2.99	3.79
1093	SLE RA 18	11	64	3389	-780.77	-3.06	3.8
1093	SLE RA 19	10	71	3361	-774.87	-3.04	3.68
1093	SLE RA 20	11	65	3421	-787.52	-3.09	3.9
1093	SLE RA 21	11	71	3393	-781.62	-3.07	3.79
1093	SLE FR 1	10	60	3043	-703.73	-2.73	3.45
1093	SLE FR 2	9	62	3034	-701.76	-2.72	3.41
1093	SLE FR 3	10	60	3056	-706.43	-2.74	3.49
1093	SLE FR 4	10	63	3138	-724.87	-2.82	3.51
1093	SLE FR 5	10	61	3160	-729.54	-2.84	3.59
1093	SLE FR 6	10	62	3216	-742.25	-2.89	3.62
1093	SLE QP 1	10	60	3043	-703.73	-2.73	3.45
1093	SLE QP 2	10	61	3147	-726.84	-2.83	3.55
1093	SLD 1	446	162	2508	-581.93	-1.26	156.23
1093	SLD 2	368	169	2512	-582.36	-1.22	128.88

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1093	SLD 3	463	-34	3449	-779.37	-2.13	161.93
1093	SLD 4	384	-27	3453	-779.8	-2.09	134.58
1093	SLD 5	130	388	1527	-383.84	-1.05	45.64
1093	SLD 6	78	392	1530	-384.12	-1.02	27.6
1093	SLD 7	185	-266	4665	-1041.97	-3.94	64.62
1093	SLD 8	133	-262	4667	-1042.25	-3.91	46.58
1093	SLD 9	-113	384	1627	-411.43	-1.74	-39.47
1093	SLD 10	-165	389	1629	-411.71	-1.71	-57.52
1093	SLD 11	-58	-270	4765	-1069.56	-4.63	-20.49
1093	SLD 12	-110	-265	4767	-1069.84	-4.6	-38.53
1093	SLD 13	-364	150	2841	-673.89	-3.56	-127.47
1093	SLD 14	-443	157	2845	-674.31	-3.52	-154.82
1093	SLD 15	-348	-47	3782	-871.33	-4.43	-121.78
1093	SLD 16	-426	-40	3786	-871.75	-4.39	-149.13
1093	SLV 1	1029	312	1574	-371.4	0.9	360.34
1093	SLV 2	845	328	1583	-372.4	1	296.06
1093	SLV 3	1071	-177	3932	-866.11	-1.27	374.87
1093	SLV 4	887	-161	3941	-867.11	-1.17	310.58
1093	SLV 5	286	876	-903	130.29	1.57	100.55
1093	SLV 6	162	887	-897	129.61	1.64	57.27
1093	SLV 7	427	-756	6957	-1518.75	-5.67	148.98
1093	SLV 8	303	-745	6963	-1519.42	-5.61	105.7
1093	SLV 9	-283	867	-669	65.74	-0.05	-98.59
1093	SLV 10	-407	878	-663	65.06	0.02	-141.88
1093	SLV 11	-142	-764	7191	-1583.29	-7.29	-50.17
1093	SLV 12	-266	-753	7197	-1583.97	-7.22	-93.45
1093	SLV 13	-867	283	2353	-586.57	-4.48	-303.48
1093	SLV 14	-1052	300	2362	-587.57	-4.38	-367.77
1093	SLV 15	-825	-206	4711	-1081.28	-6.65	-288.95
1093	SLV 16	-1009	-190	4720	-1082.28	-6.56	-353.24
1093	CRTFP Ux+	0	0	0	0	0	0
1093	CRTFP Ux-	0	0	0	0	0	0
1093	CRTFP Uy+	0	0	0	0	0	0
1093	CRTFP Uy-	0	0	0	0	0	0
1094	SLU 1	12	61	2999	-752.98	-2.86	4.25
1094	SLU 2	11	77	2926	-736.42	-2.79	3.92
1094	SLU 3	13	62	3077	-771.47	-2.94	4.46
1094	SLU 4	12	72	3034	-761.54	-2.9	4.26
1094	SLU 5	11	77	2975	-747.91	-2.84	4.1
1094	SLU 6	13	63	3126	-782.96	-2.99	4.65
1094	SLU 7	12	72	3082	-773.02	-2.95	4.44
1094	SLU 8	13	62	3096	-775.95	-2.96	4.63
1094	SLU 9	12	72	3053	-766.02	-2.92	4.42
1094	SLU 10	12	82	3303	-828.33	-3.18	4.37
1094	SLU 11	14	67	3454	-863.38	-3.33	4.91
1094	SLU 12	13	77	3410	-853.45	-3.29	4.71
1094	SLU 13	13	82	3352	-839.81	-3.23	4.56
1094	SLU 14	14	68	3503	-874.87	-3.38	5.1
1094	SLU 15	14	77	3459	-864.93	-3.34	4.9
1094	SLU 16	14	67	3473	-867.86	-3.35	5.08
1094	SLU 17	14	77	3429	-857.92	-3.31	4.88
1094	SLU 18	14	68	3537	-884.27	-3.42	4.9
1094	SLU 19	13	78	3493	-874.34	-3.38	4.7
1094	SLU 20	14	68	3586	-895.76	-3.47	5.09
1094	SLU 21	14	78	3542	-885.83	-3.43	4.89
1094	SLU 22	14	68	3505	-875.44	-3.39	4.93
1094	SLU 23	13	85	3432	-858.88	-3.32	4.59
1094	SLU 24	14	70	3583	-893.93	-3.47	5.13
1094	SLU 25	14	79	3540	-884	-3.43	4.93
1094	SLU 26	13	85	3481	-870.37	-3.37	4.78
1094	SLU 27	15	70	3632	-905.42	-3.52	5.32
1094	SLU 28	14	80	3588	-895.48	-3.47	5.12
1094	SLU 29	15	70	3602	-898.41	-3.49	5.3
1094	SLU 30	14	79	3559	-888.48	-3.44	5.1
1094	SLU 31	14	90	3809	-950.79	-3.71	5.05
1094	SLU 32	16	75	3960	-985.84	-3.86	5.59
1094	SLU 33	15	84	3916	-975.91	-3.82	5.39
1094	SLU 34	15	90	3858	-962.27	-3.76	5.23
1094	SLU 35	16	75	4009	-997.33	-3.91	5.78
1094	SLU 36	16	85	3965	-987.39	-3.87	5.57
1094	SLU 37	16	75	3979	-990.32	-3.88	5.76
1094	SLU 38	16	84	3935	-980.39	-3.83	5.55
1094	SLU 39	16	76	4043	-1006.73	-3.95	5.58
1094	SLU 40	15	85	3999	-996.8	-3.9	5.37
1094	SLU 41	16	76	4092	-1018.22	-4	5.76
1094	SLU 42	16	86	4048	-1008.29	-3.95	5.56
1094	SLU 43	15	76	3725	-936.88	-3.54	5.3
1094	SLU 44	14	92	3652	-920.33	-3.47	4.96
1094	SLU 45	15	77	3803	-955.38	-3.62	5.5
1094	SLU 46	15	87	3760	-945.44	-3.58	5.3
1094	SLU 47	14	93	3701	-931.81	-3.52	5.15
1094	SLU 48	16	78	3852	-966.87	-3.67	5.69
1094	SLU 49	15	88	3808	-956.93	-3.63	5.49
1094	SLU 50	16	77	3822	-959.86	-3.64	5.67
1094	SLU 51	15	87	3779	-949.92	-3.6	5.47
1094	SLU 52	15	97	4029	-1012.23	-3.86	5.41
1094	SLU 53	17	83	4180	-1047.29	-4.01	5.96
1094	SLU 54	16	92	4136	-1037.35	-3.97	5.76
1094	SLU 55	16	98	4078	-1023.72	-3.91	5.6

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1094	SLU 56	17	83	4229	-1058.77	-4.06	6.14
1094	SLU 57	17	93	4185	-1048.84	-4.02	5.94
1094	SLU 58	17	82	4199	-1051.77	-4.03	6.13
1094	SLU 59	17	92	4156	-1041.83	-3.99	5.92
1094	SLU 60	17	83	4263	-1068.18	-4.1	5.95
1094	SLU 61	16	93	4219	-1058.25	-4.06	5.74
1094	SLU 62	17	84	4312	-1079.67	-4.15	6.13
1094	SLU 63	17	94	4268	-1069.73	-4.11	5.93
1094	SLU 64	17	84	4231	-1059.34	-4.07	5.97
1094	SLU 65	16	100	4158	-1042.79	-4	5.63
1094	SLU 66	17	85	4309	-1077.84	-4.15	6.18
1094	SLU 67	17	95	4266	-1067.9	-4.1	5.98
1094	SLU 68	16	101	4207	-1054.27	-4.04	5.82
1094	SLU 69	18	86	4358	-1089.33	-4.2	6.36
1094	SLU 70	17	95	4314	-1079.39	-4.15	6.16
1094	SLU 71	18	85	4329	-1082.32	-4.17	6.34
1094	SLU 72	17	95	4285	-1072.38	-4.12	6.14
1094	SLU 73	17	105	4535	-1134.69	-4.39	6.09
1094	SLU 74	19	90	4686	-1169.75	-4.54	6.63
1094	SLU 75	18	100	4642	-1159.81	-4.5	6.43
1094	SLU 76	18	106	4584	-1146.18	-4.44	6.28
1094	SLU 77	19	91	4735	-1181.23	-4.59	6.82
1094	SLU 78	19	101	4691	-1171.3	-4.54	6.62
1094	SLU 79	19	90	4705	-1174.23	-4.56	6.8
1094	SLU 80	18	100	4662	-1164.29	-4.51	6.6
1094	SLU 81	19	91	4769	-1190.64	-4.63	6.62
1094	SLU 82	18	101	4725	-1180.71	-4.58	6.42
1094	SLU 83	19	92	4818	-1202.13	-4.67	6.81
1094	SLU 84	18	101	4774	-1192.19	-4.63	6.61
1094	SLE RA 1	12	63	3143	-787.97	-3.01	4.44
1094	SLE RA 2	12	74	3095	-776.93	-2.97	4.22
1094	SLE RA 3	13	64	3196	-800.3	-3.07	4.58
1094	SLE RA 4	12	70	3167	-793.67	-3.04	4.45
1094	SLE RA 5	12	74	3127	-784.59	-3	4.35
1094	SLE RA 6	13	64	3228	-807.95	-3.1	4.71
1094	SLE RA 7	13	71	3199	-801.33	-3.07	4.57
1094	SLE RA 8	13	64	3208	-803.28	-3.08	4.69
1094	SLE RA 9	13	70	3179	-796.66	-3.05	4.56
1094	SLE RA 10	13	77	3346	-838.2	-3.23	4.52
1094	SLE RA 11	14	67	3447	-861.57	-3.33	4.89
1094	SLE RA 12	13	74	3418	-854.94	-3.3	4.75
1094	SLE RA 13	13	77	3379	-845.86	-3.26	4.65
1094	SLE RA 14	14	67	3479	-869.23	-3.36	5.01
1094	SLE RA 15	14	74	3450	-862.6	-3.33	4.88
1094	SLE RA 16	14	67	3459	-864.55	-3.34	5
1094	SLE RA 17	14	73	3430	-857.93	-3.31	4.86
1094	SLE RA 18	14	68	3502	-875.5	-3.39	4.88
1094	SLE RA 19	13	74	3473	-868.87	-3.36	4.74
1094	SLE RA 20	14	68	3535	-883.16	-3.42	5
1094	SLE RA 21	14	75	3505	-876.53	-3.39	4.87
1094	SLE FR 1	12	63	3143	-787.97	-3.01	4.44
1094	SLE FR 2	12	65	3134	-785.76	-3	4.4
1094	SLE FR 3	13	63	3156	-791.03	-3.03	4.49
1094	SLE FR 4	13	66	3241	-812.02	-3.12	4.53
1094	SLE FR 5	13	64	3264	-817.29	-3.14	4.62
1094	SLE FR 6	13	65	3323	-831.73	-3.2	4.66
1094	SLE QP 1	12	63	3143	-787.97	-3.01	4.44
1094	SLE QP 2	13	64	3251	-814.23	-3.12	4.57
1094	SLD 1	448	166	2557	-643.24	-1.52	156.79
1094	SLD 2	369	175	2559	-643.48	-1.48	129.45
1094	SLD 3	466	-35	3530	-864.9	-2.47	162.99
1094	SLD 4	387	-25	3533	-865.14	-2.44	135.65
1094	SLD 5	130	397	1567	-426.71	-1.2	45.75
1094	SLD 6	78	403	1568	-426.86	-1.17	27.72
1094	SLD 7	190	-271	4810	-1165.57	-4.39	66.42
1094	SLD 8	138	-265	4812	-1165.72	-4.36	48.39
1094	SLD 9	-113	393	1690	-462.73	-1.89	-39.24
1094	SLD 10	-164	400	1692	-462.88	-1.86	-57.27
1094	SLD 11	-53	-275	4934	-1201.59	-5.08	-18.57
1094	SLD 12	-104	-268	4935	-1201.74	-5.05	-36.6
1094	SLD 13	-362	154	2969	-763.31	-3.81	-126.51
1094	SLD 14	-440	163	2972	-763.55	-3.78	-153.84
1094	SLD 15	-344	-47	3942	-984.97	-4.77	-120.31
1094	SLD 16	-422	-37	3945	-985.21	-4.73	-147.64
1094	SLV 1	1029	317	1547	-395.79	0.72	360.21
1094	SLV 2	845	340	1553	-396.33	0.81	295.96
1094	SLV 3	1075	-183	3985	-951.16	-1.68	376.05
1094	SLV 4	891	-160	3990	-951.71	-1.59	311.8
1094	SLV 5	282	894	-958	153.73	1.65	99.23
1094	SLV 6	158	909	-955	153.36	1.71	55.97
1094	SLV 7	436	-772	7168	-1697.53	-6.34	152.03
1094	SLV 8	312	-757	7171	-1697.89	-6.28	108.78
1094	SLV 9	-286	886	-669	69.44	0.03	-99.63
1094	SLV 10	-410	901	-666	69.08	0.09	-142.89
1094	SLV 11	-133	-781	7457	-1781.81	-7.96	-46.83
1094	SLV 12	-257	-766	7460	-1782.18	-7.9	-90.08
1094	SLV 13	-865	289	2511	-676.74	-4.66	-302.66
1094	SLV 14	-1049	311	2517	-677.29	-4.57	-366.91
1094	SLV 15	-819	-211	4949	-1232.12	-7.06	-286.82

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1094	SLV 16	-1003	-189	4954	-1232.66	-6.97	-351.07
1094	CRTFP Ux+	0	0	0	0	0	0
1094	CRTFP Ux-	0	0	0	0	0	0
1094	CRTFP Uy+	0	0	0	0	0	0
1094	CRTFP Uy-	0	0	0	0	0	0
1095	SLU 1	15	63	3096	-841.19	-2.66	5.24
1095	SLU 2	14	80	3020	-822.72	-2.6	4.85
1095	SLU 3	16	64	3177	-862.12	-2.73	5.49
1095	SLU 4	15	74	3132	-851.04	-2.7	5.25
1095	SLU 5	14	80	3071	-835.71	-2.64	5.07
1095	SLU 6	16	65	3227	-875.12	-2.78	5.7
1095	SLU 7	15	75	3182	-864.03	-2.74	5.47
1095	SLU 8	16	64	3196	-867.18	-2.75	5.68
1095	SLU 9	15	74	3151	-856.1	-2.71	5.44
1095	SLU 10	15	85	3410	-926.73	-2.95	5.4
1095	SLU 11	17	70	3566	-966.13	-3.09	6.03
1095	SLU 12	16	80	3521	-955.05	-3.06	5.8
1095	SLU 13	16	86	3461	-939.73	-3	5.62
1095	SLU 14	18	71	3617	-979.13	-3.14	6.25
1095	SLU 15	17	80	3572	-968.04	-3.1	6.02
1095	SLU 16	18	70	3586	-971.19	-3.11	6.22
1095	SLU 17	17	80	3541	-960.11	-3.07	5.99
1095	SLU 18	17	71	3652	-989.78	-3.17	6.02
1095	SLU 19	16	81	3607	-978.7	-3.13	5.79
1095	SLU 20	18	72	3703	-1002.78	-3.22	6.24
1095	SLU 21	17	81	3658	-991.69	-3.18	6.01
1095	SLU 22	17	71	3619	-979.71	-3.14	6.06
1095	SLU 23	16	88	3544	-961.24	-3.08	5.67
1095	SLU 24	18	73	3700	-1000.64	-3.22	6.31
1095	SLU 25	17	82	3655	-989.55	-3.18	6.07
1095	SLU 26	17	88	3595	-974.23	-3.13	5.89
1095	SLU 27	18	73	3751	-1013.63	-3.27	6.52
1095	SLU 28	18	83	3706	-1002.55	-3.23	6.29
1095	SLU 29	18	72	3720	-1005.7	-3.24	6.5
1095	SLU 30	18	82	3675	-994.61	-3.2	6.26
1095	SLU 31	18	93	3934	-1065.25	-3.44	6.22
1095	SLU 32	19	78	4090	-1104.65	-3.58	6.85
1095	SLU 33	19	88	4045	-1093.56	-3.54	6.62
1095	SLU 34	18	94	3984	-1078.24	-3.49	6.44
1095	SLU 35	20	79	4141	-1117.64	-3.63	7.07
1095	SLU 36	19	89	4096	-1106.56	-3.59	6.84
1095	SLU 37	20	78	4110	-1109.71	-3.6	7.04
1095	SLU 38	19	88	4065	-1098.62	-3.56	6.81
1095	SLU 39	19	79	4176	-1128.3	-3.66	6.84
1095	SLU 40	19	89	4131	-1117.21	-3.62	6.61
1095	SLU 41	20	80	4227	-1141.29	-3.7	7.06
1095	SLU 42	19	90	4182	-1130.21	-3.67	6.83
1095	SLU 43	18	79	3845	-1046.06	-3.29	6.53
1095	SLU 44	17	96	3770	-1027.59	-3.23	6.14
1095	SLU 45	19	81	3926	-1066.99	-3.37	6.78
1095	SLU 46	18	90	3881	-1055.91	-3.33	6.55
1095	SLU 47	18	96	3820	-1040.58	-3.27	6.36
1095	SLU 48	20	81	3976	-1079.98	-3.41	7
1095	SLU 49	19	91	3931	-1068.9	-3.37	6.76
1095	SLU 50	20	80	3946	-1072.05	-3.38	6.97
1095	SLU 51	19	90	3901	-1060.97	-3.35	6.73
1095	SLU 52	19	101	4159	-1131.6	-3.59	6.69
1095	SLU 53	21	86	4315	-1171	-3.73	7.32
1095	SLU 54	20	96	4270	-1159.92	-3.69	7.09
1095	SLU 55	19	102	4210	-1144.59	-3.63	6.91
1095	SLU 56	21	87	4366	-1184	-3.77	7.54
1095	SLU 57	21	97	4321	-1172.91	-3.73	7.31
1095	SLU 58	21	86	4335	-1176.06	-3.74	7.51
1095	SLU 59	21	96	4290	-1164.98	-3.7	7.28
1095	SLU 60	21	87	4401	-1194.65	-3.8	7.31
1095	SLU 61	20	97	4356	-1183.56	-3.77	7.08
1095	SLU 62	21	88	4452	-1207.64	-3.85	7.53
1095	SLU 63	21	98	4407	-1196.56	-3.81	7.3
1095	SLU 64	21	87	4368	-1184.58	-3.78	7.35
1095	SLU 65	20	104	4293	-1166.1	-3.71	6.96
1095	SLU 66	21	89	4449	-1205.5	-3.85	7.6
1095	SLU 67	21	99	4404	-1194.42	-3.81	7.37
1095	SLU 68	20	105	4344	-1179.1	-3.76	7.18
1095	SLU 69	22	89	4500	-1218.5	-3.9	7.82
1095	SLU 70	21	99	4455	-1207.42	-3.86	7.58
1095	SLU 71	22	89	4469	-1210.56	-3.87	7.79
1095	SLU 72	21	98	4424	-1199.48	-3.83	7.55
1095	SLU 73	21	109	4683	-1270.11	-4.07	7.51
1095	SLU 74	23	94	4839	-1309.52	-4.21	8.14
1095	SLU 75	22	104	4794	-1298.43	-4.17	7.91
1095	SLU 76	22	110	4734	-1283.11	-4.12	7.73
1095	SLU 77	24	95	4890	-1322.51	-4.26	8.36
1095	SLU 78	23	105	4845	-1311.43	-4.22	8.13
1095	SLU 79	24	94	4859	-1314.58	-4.23	8.33
1095	SLU 80	23	104	4814	-1303.49	-4.19	8.1
1095	SLU 81	23	95	4925	-1333.16	-4.29	8.13
1095	SLU 82	22	105	4880	-1322.08	-4.25	7.9
1095	SLU 83	24	96	4976	-1346.16	-4.34	8.35
1095	SLU 84	23	106	4931	-1335.07	-4.3	8.12

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1095	SLE RA 1	15	65	3245	-880.77	-2.8	5.48
1095	SLE RA 2	15	76	3195	-868.45	-2.76	5.22
1095	SLE RA 3	16	66	3299	-894.72	-2.85	5.64
1095	SLE RA 4	15	73	3269	-887.33	-2.82	5.48
1095	SLE RA 5	15	77	3229	-877.12	-2.79	5.36
1095	SLE RA 6	16	67	3333	-903.38	-2.88	5.78
1095	SLE RA 7	16	73	3303	-896	-2.85	5.63
1095	SLE RA 8	16	66	3312	-898.09	-2.86	5.76
1095	SLE RA 9	16	73	3282	-890.71	-2.83	5.61
1095	SLE RA 10	16	80	3455	-937.79	-2.99	5.58
1095	SLE RA 11	17	70	3559	-964.06	-3.09	6
1095	SLE RA 12	16	77	3529	-956.67	-3.06	5.85
1095	SLE RA 13	16	81	3489	-946.46	-3.03	5.73
1095	SLE RA 14	17	70	3593	-972.73	-3.12	6.15
1095	SLE RA 15	17	77	3563	-965.34	-3.09	5.99
1095	SLE RA 16	17	70	3572	-967.44	-3.1	6.13
1095	SLE RA 17	17	77	3542	-960.05	-3.07	5.97
1095	SLE RA 18	17	71	3616	-979.83	-3.14	6
1095	SLE RA 19	16	77	3586	-972.44	-3.11	5.84
1095	SLE RA 20	17	71	3650	-988.49	-3.17	6.14
1095	SLE RA 21	17	78	3620	-981.1	-3.15	5.98
1095	SLE FR 1	15	65	3245	-880.77	-2.8	5.48
1095	SLE FR 2	15	68	3235	-878.31	-2.79	5.42
1095	SLE FR 3	16	66	3259	-884.23	-2.81	5.53
1095	SLE FR 4	16	69	3347	-908.02	-2.89	5.58
1095	SLE FR 5	16	67	3370	-913.95	-2.91	5.69
1095	SLE FR 6	16	68	3431	-930.3	-2.97	5.74
1095	SLE QP 1	15	65	3245	-880.77	-2.8	5.48
1095	SLE QP 2	16	67	3357	-910.49	-2.9	5.63
1095	SLD 1	449	157	2608	-712.7	-1.37	157.28
1095	SLD 2	371	170	2609	-712.89	-1.34	129.98
1095	SLD 3	469	-47	3613	-960.12	-2.23	164.06
1095	SLD 4	391	-35	3615	-960.3	-2.2	136.75
1095	SLD 5	130	402	1608	-475.88	-1.13	45.77
1095	SLD 6	79	410	1608	-476	-1.11	27.75
1095	SLD 7	196	-280	4958	-1300.58	-4.02	68.34
1095	SLD 8	144	-271	4958	-1300.7	-4	50.33
1095	SLD 9	-112	405	1755	-520.27	-1.8	-39.06
1095	SLD 10	-164	414	1755	-520.39	-1.78	-57.08
1095	SLD 11	-47	-276	5105	-1344.98	-4.69	-16.49
1095	SLD 12	-98	-268	5106	-1345.1	-4.67	-34.51
1095	SLD 13	-359	169	3099	-860.67	-3.6	-125.49
1095	SLD 14	-437	181	3100	-860.86	-3.57	-152.79
1095	SLD 15	-339	-36	4104	-1108.09	-4.47	-118.71
1095	SLD 16	-418	-23	4105	-1108.27	-4.43	-146.02
1095	SLV 1	1029	294	1523	-427.21	0.76	359.9
1095	SLV 2	844	324	1525	-427.64	0.83	295.71
1095	SLV 3	1079	-216	4041	-1047.09	-1.41	377.2
1095	SLV 4	895	-186	4043	-1047.52	-1.34	313.01
1095	SLV 5	278	903	-1013	174.73	1.47	97.65
1095	SLV 6	154	923	-1011	174.44	1.52	54.43
1095	SLV 7	445	-797	7380	-1891.54	-5.76	155.32
1095	SLV 8	321	-777	7382	-1891.83	-5.71	112.11
1095	SLV 9	-289	911	-669	70.85	-0.09	-100.84
1095	SLV 10	-413	931	-667	70.57	-0.04	-144.06
1095	SLV 11	-122	-789	7724	-1995.41	-7.33	-43.17
1095	SLV 12	-246	-769	7726	-1995.7	-7.28	-86.39
1095	SLV 13	-863	320	2670	-773.45	-4.47	-301.75
1095	SLV 14	-1047	350	2672	-773.88	-4.39	-365.94
1095	SLV 15	-813	-190	5188	-1393.33	-6.64	-284.44
1095	SLV 16	-997	-160	5190	-1393.76	-6.56	-348.63
1095	CRTFP Ux+	0	0	0	0	0	0
1095	CRTFP Ux-	0	0	0	0	0	0
1095	CRTFP Uy+	0	0	0	0	0	0
1095	CRTFP Uy-	0	0	0	0	0	0
1096	SLU 1	16	58	2837	-829.92	51.46	4.52
1096	SLU 2	15	73	2768	-811.84	50.21	3.84
1096	SLU 3	17	59	2911	-850.79	52.81	4.75
1096	SLU 4	16	68	2870	-839.94	52.06	4.35
1096	SLU 5	15	73	2814	-824.79	51.05	4.05
1096	SLU 6	17	59	2957	-863.75	53.65	4.96
1096	SLU 7	17	68	2916	-852.9	52.9	4.56
1096	SLU 8	17	59	2929	-855.84	53.14	4.94
1096	SLU 9	17	68	2888	-844.98	52.39	4.53
1096	SLU 10	16	78	3126	-915.44	56.69	4.32
1096	SLU 11	18	64	3269	-954.4	59.29	5.23
1096	SLU 12	18	73	3227	-943.55	58.54	4.82
1096	SLU 13	17	78	3172	-928.4	57.53	4.53
1096	SLU 14	19	65	3315	-967.35	60.13	5.44
1096	SLU 15	18	74	3274	-956.5	59.38	5.03
1096	SLU 16	19	64	3287	-959.44	59.62	5.41
1096	SLU 17	18	73	3246	-948.59	58.87	5.01
1096	SLU 18	18	65	3348	-977.93	60.72	5.2
1096	SLU 19	18	74	3306	-967.08	59.97	4.79
1096	SLU 20	19	66	3394	-990.88	61.56	5.41
1096	SLU 21	18	75	3353	-980.03	60.81	5
1096	SLU 22	18	65	3317	-967.82	60.17	5.24
1096	SLU 23	17	80	3249	-949.74	58.92	4.57
1096	SLU 24	19	66	3392	-988.69	61.52	5.48

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1096	SLU 25	18	75	3351	-977.84	60.77	5.07
1096	SLU 26	18	81	3295	-962.69	59.76	4.78
1096	SLU 27	20	67	3438	-1001.65	62.36	5.69
1096	SLU 28	19	76	3397	-990.8	61.61	5.28
1096	SLU 29	20	66	3410	-993.73	61.85	5.67
1096	SLU 30	19	75	3369	-982.88	61.1	5.26
1096	SLU 31	19	85	3606	-1053.34	65.4	5.04
1096	SLU 32	21	72	3749	-1092.29	68	5.95
1096	SLU 33	20	81	3708	-1081.44	67.25	5.55
1096	SLU 34	20	86	3653	-1066.29	66.24	5.26
1096	SLU 35	21	72	3796	-1105.25	68.84	6.17
1096	SLU 36	21	81	3755	-1094.4	68.09	5.76
1096	SLU 37	21	71	3768	-1097.33	68.33	6.14
1096	SLU 38	21	80	3726	-1086.48	67.58	5.74
1096	SLU 39	21	73	3828	-1115.82	69.43	5.92
1096	SLU 40	20	82	3787	-1104.97	68.68	5.52
1096	SLU 41	21	73	3875	-1128.78	70.27	6.14
1096	SLU 42	21	82	3833	-1117.93	69.52	5.73
1096	SLU 43	20	72	3523	-1031.62	63.91	5.62
1096	SLU 44	19	87	3454	-1013.54	62.66	4.94
1096	SLU 45	21	74	3597	-1052.49	65.26	5.86
1096	SLU 46	20	83	3556	-1041.64	64.51	5.45
1096	SLU 47	19	88	3500	-1026.49	63.5	5.16
1096	SLU 48	21	74	3643	-1065.45	66.1	6.07
1096	SLU 49	21	83	3602	-1054.6	65.35	5.66
1096	SLU 50	21	73	3615	-1057.53	65.59	6.04
1096	SLU 51	20	82	3574	-1046.68	64.84	5.64
1096	SLU 52	20	93	3812	-1117.14	69.14	5.42
1096	SLU 53	22	79	3955	-1156.09	71.74	6.33
1096	SLU 54	22	88	3914	-1145.24	70.99	5.93
1096	SLU 55	21	93	3858	-1130.09	69.98	5.63
1096	SLU 56	23	79	4001	-1169.05	72.58	6.54
1096	SLU 57	22	88	3960	-1158.2	71.83	6.14
1096	SLU 58	23	79	3973	-1161.14	72.07	6.52
1096	SLU 59	22	88	3932	-1150.28	71.32	6.11
1096	SLU 60	22	80	4034	-1179.63	73.17	6.3
1096	SLU 61	21	89	3992	-1168.77	72.42	5.9
1096	SLU 62	23	80	4080	-1192.58	74.01	6.51
1096	SLU 63	22	89	4039	-1181.73	73.26	6.11
1096	SLU 64	22	80	4003	-1169.52	72.62	6.35
1096	SLU 65	21	95	3935	-1151.43	71.37	5.67
1096	SLU 66	23	81	4078	-1190.39	73.97	6.58
1096	SLU 67	22	90	4037	-1179.54	73.22	6.18
1096	SLU 68	22	95	3981	-1164.39	72.21	5.88
1096	SLU 69	24	82	4124	-1203.34	74.81	6.79
1096	SLU 70	23	91	4083	-1192.49	74.06	6.39
1096	SLU 71	24	81	4096	-1195.43	74.3	6.77
1096	SLU 72	23	90	4055	-1184.58	73.55	6.37
1096	SLU 73	23	100	4292	-1255.04	77.85	6.15
1096	SLU 74	25	86	4436	-1293.99	80.45	7.06
1096	SLU 75	24	95	4394	-1283.14	79.7	6.65
1096	SLU 76	23	101	4339	-1267.99	78.69	6.36
1096	SLU 77	25	87	4482	-1306.95	81.29	7.27
1096	SLU 78	25	96	4441	-1296.1	80.54	6.87
1096	SLU 79	25	86	4454	-1299.03	80.78	7.25
1096	SLU 80	25	95	4413	-1288.18	80.03	6.84
1096	SLU 81	25	87	4514	-1317.52	81.88	7.03
1096	SLU 82	24	96	4473	-1306.67	81.13	6.62
1096	SLU 83	25	88	4561	-1330.48	82.72	7.24
1096	SLU 84	25	97	4520	-1319.63	81.97	6.84
1096	SLE RA 1	17	60	2974	-869.32	53.95	4.72
1096	SLE RA 2	16	70	2928	-857.27	53.12	4.27
1096	SLE RA 3	17	61	3024	-883.24	54.85	4.88
1096	SLE RA 4	17	67	2996	-876	54.35	4.61
1096	SLE RA 5	16	70	2959	-865.9	53.67	4.41
1096	SLE RA 6	18	61	3054	-891.87	55.41	5.02
1096	SLE RA 7	17	67	3027	-884.64	54.91	4.75
1096	SLE RA 8	17	61	3036	-886.6	55.07	5.01
1096	SLE RA 9	17	67	3008	-879.36	54.57	4.74
1096	SLE RA 10	17	73	3167	-926.33	57.44	4.59
1096	SLE RA 11	18	64	3262	-952.3	59.17	5.2
1096	SLE RA 12	18	70	3235	-945.07	58.67	4.93
1096	SLE RA 13	17	74	3197	-934.97	58	4.73
1096	SLE RA 14	19	64	3293	-960.94	59.73	5.34
1096	SLE RA 15	18	70	3265	-953.71	59.23	5.07
1096	SLE RA 16	19	64	3274	-955.67	59.39	5.32
1096	SLE RA 17	18	70	3247	-948.43	58.89	5.05
1096	SLE RA 18	18	65	3315	-967.99	60.12	5.18
1096	SLE RA 19	18	71	3287	-960.76	59.62	4.91
1096	SLE RA 20	19	65	3345	-976.63	60.68	5.32
1096	SLE RA 21	18	71	3318	-969.39	60.18	5.05
1096	SLE FR 1	17	60	2974	-869.32	53.95	4.72
1096	SLE FR 2	16	62	2965	-866.91	53.78	4.63
1096	SLE FR 3	17	60	2986	-872.78	54.17	4.78
1096	SLE FR 4	17	63	3067	-896.51	55.63	4.77
1096	SLE FR 5	17	61	3088	-902.38	56.02	4.92
1096	SLE FR 6	17	62	3144	-918.66	57.04	4.95
1096	SLE QP 1	17	60	2974	-869.32	53.95	4.72
1096	SLE QP 2	17	61	3076	-898.92	55.8	4.86

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1096	SLD 1	403	141	2365	-699.53	43.5	138.64
1096	SLD 2	333	156	2365	-699.87	43.52	113.95
1096	SLD 3	422	-44	3285	-941.94	60.23	148.28
1096	SLD 4	352	-30	3285	-942.28	60.25	123.59
1096	SLD 5	117	364	1467	-471.39	26.73	34.81
1096	SLD 6	71	374	1467	-471.62	26.74	18.53
1096	SLD 7	180	-254	4535	-1279.42	82.5	66.94
1096	SLD 8	134	-245	4535	-1279.64	82.52	50.66
1096	SLD 9	-100	368	1617	-518.2	29.08	-40.94
1096	SLD 10	-146	377	1617	-518.43	29.1	-57.22
1096	SLD 11	-36	-251	4685	-1326.23	84.86	-8.81
1096	SLD 12	-83	-242	4685	-1326.45	84.87	-25.1
1096	SLD 13	-318	152	2867	-855.57	51.35	-113.87
1096	SLD 14	-388	167	2867	-855.91	51.37	-138.56
1096	SLD 15	-299	-33	3787	-1097.98	68.08	-104.23
1096	SLD 16	-369	-19	3787	-1098.31	68.1	-128.92
1096	SLV 1	919	263	1336	-412.31	25.63	317.03
1096	SLV 2	755	297	1336	-413.1	25.68	258.99
1096	SLV 3	968	-200	3642	-1019.63	67.55	341.56
1096	SLV 4	804	-166	3642	-1020.42	67.6	283.52
1096	SLV 5	245	818	-943	168.31	-16.83	72.14
1096	SLV 6	134	841	-943	167.78	-16.8	33.06
1096	SLV 7	407	-726	6743	-1856.09	122.89	153.9
1096	SLV 8	296	-703	6743	-1856.63	122.92	114.83
1096	SLV 9	-262	826	-591	58.78	-11.32	-105.11
1096	SLV 10	-373	849	-591	58.24	-11.29	-144.19
1096	SLV 11	-100	-719	7095	-1965.63	128.4	-23.34
1096	SLV 12	-211	-696	7095	-1966.16	128.43	-62.42
1096	SLV 13	-769	289	2510	-777.43	44	-273.8
1096	SLV 14	-934	323	2510	-778.22	44.05	-331.84
1096	SLV 15	-721	-175	4816	-1384.75	85.92	-249.27
1096	SLV 16	-885	-140	4816	-1385.54	85.97	-307.31
1096	CRTFP Ux+	0	0	0	0	0	0
1096	CRTFP Ux-	0	0	0	0	0	0
1096	CRTFP Uy+	0	0	0	0	0	0
1096	CRTFP Uy-	0	0	0	0	0	0
1098	SLU 1	63	184	9496	-2222.43	-76.89	15.88
1098	SLU 2	58	234	9261	-2171.6	-75.31	15.21
1098	SLU 3	66	188	9747	-2279.93	-79	16.56
1098	SLU 4	63	217	9606	-2249.43	-78.05	16.16
1098	SLU 5	61	235	9417	-2207.34	-76.63	15.77
1098	SLU 6	68	189	9904	-2315.68	-80.32	17.13
1098	SLU 7	65	219	9763	-2285.18	-79.37	16.72
1098	SLU 8	67	187	9809	-2293.93	-79.53	17.02
1098	SLU 9	65	217	9668	-2263.42	-78.58	16.61
1098	SLU 10	65	251	10458	-2451.46	-84.6	16.85
1098	SLU 11	72	205	10944	-2559.79	-88.29	18.2
1098	SLU 12	69	235	10803	-2529.29	-87.35	17.8
1098	SLU 13	67	252	10614	-2487.2	-85.92	17.41
1098	SLU 14	74	207	11101	-2595.54	-89.61	18.77
1098	SLU 15	72	236	10960	-2565.04	-88.66	18.36
1098	SLU 16	74	205	11006	-2573.79	-88.82	18.66
1098	SLU 17	71	234	10865	-2543.28	-87.87	18.25
1098	SLU 18	72	209	11206	-2622.23	-90.17	18.23
1098	SLU 19	69	238	11065	-2591.73	-89.22	17.82
1098	SLU 20	74	210	11362	-2657.98	-91.48	18.79
1098	SLU 21	72	240	11221	-2627.48	-90.54	18.39
1098	SLU 22	72	209	11109	-2596.84	-89.6	18.32
1098	SLU 23	68	258	10874	-2546	-88.02	17.65
1098	SLU 24	75	212	11361	-2654.33	-91.71	19
1098	SLU 25	73	242	11220	-2623.83	-90.76	18.6
1098	SLU 26	71	259	11031	-2581.75	-89.34	18.21
1098	SLU 27	78	213	11517	-2690.08	-93.03	19.57
1098	SLU 28	75	243	11376	-2659.58	-92.08	19.16
1098	SLU 29	77	211	11422	-2668.33	-92.24	19.46
1098	SLU 30	75	241	11281	-2637.83	-91.29	19.05
1098	SLU 31	74	275	12071	-2825.86	-97.32	19.29
1098	SLU 32	81	229	12558	-2934.19	-101	20.64
1098	SLU 33	79	259	12417	-2903.69	-100.06	20.24
1098	SLU 34	77	276	12228	-2861.6	-98.63	19.85
1098	SLU 35	84	231	12714	-2969.94	-102.32	21.21
1098	SLU 36	81	260	12573	-2939.44	-101.38	20.8
1098	SLU 37	83	229	12619	-2948.19	-101.53	21.1
1098	SLU 38	81	258	12478	-2917.69	-100.58	20.69
1098	SLU 39	81	233	12819	-2996.63	-102.88	20.67
1098	SLU 40	79	263	12678	-2966.13	-101.93	20.26
1098	SLU 41	84	234	12976	-3032.38	-104.2	21.23
1098	SLU 42	81	264	12835	-3001.88	-103.25	20.83
1098	SLU 43	78	232	11791	-2760.8	-95.6	19.81
1098	SLU 44	74	281	11556	-2709.96	-94.02	19.14
1098	SLU 45	81	235	12043	-2818.3	-97.71	20.49
1098	SLU 46	78	265	11902	-2787.79	-96.76	20.09
1098	SLU 47	76	282	11713	-2745.71	-95.34	19.7
1098	SLU 48	83	236	12199	-2854.04	-99.03	21.06
1098	SLU 49	81	266	12058	-2823.54	-98.08	20.65
1098	SLU 50	83	234	12104	-2832.29	-98.24	20.95
1098	SLU 51	80	264	11963	-2801.79	-97.29	20.54
1098	SLU 52	80	298	12753	-2989.82	-103.31	20.78
1098	SLU 53	87	252	13240	-3098.16	-107	22.13

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1098	SLU 54	85	282	13099	-3067.65	-106.05	21.73
1098	SLU 55	83	299	12910	-3025.57	-104.63	21.34
1098	SLU 56	90	254	13396	-3133.9	-108.32	22.7
1098	SLU 57	87	283	13255	-3103.4	-107.37	22.29
1098	SLU 58	89	252	13301	-3112.15	-107.53	22.59
1098	SLU 59	87	281	13160	-3081.65	-106.58	22.18
1098	SLU 60	87	256	13501	-3160.6	-108.87	22.16
1098	SLU 61	85	286	13360	-3130.09	-107.93	21.75
1098	SLU 62	90	258	13658	-3196.34	-110.19	22.72
1098	SLU 63	87	287	13517	-3165.84	-109.25	22.32
1098	SLU 64	88	256	13405	-3135.2	-108.31	22.25
1098	SLU 65	84	305	13170	-3084.36	-106.73	21.58
1098	SLU 66	91	259	13656	-3192.7	-110.42	22.93
1098	SLU 67	88	289	13515	-3162.2	-109.47	22.53
1098	SLU 68	86	306	13326	-3120.11	-108.05	22.14
1098	SLU 69	93	261	13813	-3228.45	-111.74	23.5
1098	SLU 70	91	290	13672	-3197.94	-110.79	23.09
1098	SLU 71	93	259	13718	-3206.69	-110.95	23.39
1098	SLU 72	90	288	13577	-3176.19	-110	22.98
1098	SLU 73	90	322	14367	-3364.22	-116.02	23.22
1098	SLU 74	97	276	14853	-3472.56	-119.71	24.57
1098	SLU 75	94	306	14712	-3442.06	-118.77	24.17
1098	SLU 76	92	323	14523	-3399.97	-117.34	23.78
1098	SLU 77	99	278	15010	-3508.3	-121.03	25.14
1098	SLU 78	97	307	14869	-3477.8	-120.08	24.73
1098	SLU 79	99	276	14915	-3486.55	-120.24	25.03
1098	SLU 80	96	305	14774	-3456.05	-119.29	24.62
1098	SLU 81	97	280	15115	-3535	-121.59	24.6
1098	SLU 82	94	310	14974	-3504.5	-120.64	24.19
1098	SLU 83	99	282	15271	-3570.74	-122.9	25.16
1098	SLU 84	97	311	15130	-3540.24	-121.96	24.76
1098	SLE RA 1	65	191	9957	-2329.41	-80.52	16.58
1098	SLE RA 2	63	224	9800	-2295.51	-79.47	16.13
1098	SLE RA 3	67	194	10124	-2367.74	-81.93	17.03
1098	SLE RA 4	66	213	10030	-2347.4	-81.3	16.76
1098	SLE RA 5	64	225	9904	-2319.35	-80.35	16.51
1098	SLE RA 6	69	195	10229	-2391.57	-82.81	17.41
1098	SLE RA 7	67	214	10135	-2371.23	-82.18	17.14
1098	SLE RA 8	69	193	10165	-2377.07	-82.28	17.34
1098	SLE RA 9	67	213	10071	-2356.73	-81.65	17.07
1098	SLE RA 10	67	236	10598	-2482.09	-85.66	17.22
1098	SLE RA 11	72	205	10922	-2554.31	-88.12	18.13
1098	SLE RA 12	70	225	10828	-2533.98	-87.49	17.86
1098	SLE RA 13	68	237	10702	-2505.92	-86.54	17.6
1098	SLE RA 14	73	206	11027	-2578.14	-89	18.5
1098	SLE RA 15	71	226	10933	-2557.81	-88.37	18.23
1098	SLE RA 16	73	205	10963	-2563.64	-88.48	18.43
1098	SLE RA 17	71	224	10869	-2543.31	-87.84	18.16
1098	SLE RA 18	71	208	11097	-2595.94	-89.37	18.14
1098	SLE RA 19	70	227	11003	-2575.6	-88.74	17.87
1098	SLE RA 20	73	209	11201	-2619.77	-90.25	18.52
1098	SLE RA 21	71	228	11107	-2599.43	-89.62	18.25
1098	SLE FR 1	65	191	9957	-2329.41	-80.52	16.58
1098	SLE FR 2	65	198	9925	-2322.63	-80.31	16.49
1098	SLE FR 3	66	192	9998	-2338.94	-80.87	16.73
1098	SLE FR 4	67	203	10267	-2402.59	-82.97	16.96
1098	SLE FR 5	68	197	10340	-2418.9	-83.53	17.2
1098	SLE FR 6	68	199	10527	-2462.67	-84.95	17.36
1098	SLE QP 1	65	191	9957	-2329.41	-80.52	16.58
1098	SLE QP 2	67	196	10299	-2409.37	-83.18	17.05
1098	SLD 1	1323	442	7797	-1847.09	-41.24	327.8
1098	SLD 2	1092	503	7793	-1847.78	-40.78	272.86
1098	SLD 3	1391	-167	10944	-2528.63	-62.65	340.81
1098	SLD 4	1160	-105	10939	-2529.32	-62.19	285.86
1098	SLD 5	383	1182	4776	-1206.9	-38.2	100.43
1098	SLD 6	230	1222	4773	-1207.35	-37.89	64.19
1098	SLD 7	609	-847	15266	-3478.68	-109.58	143.78
1098	SLD 8	456	-806	15263	-3479.14	-109.28	107.54
1098	SLD 9	-322	1199	5334	-1339.59	-57.08	-73.44
1098	SLD 10	-474	1239	5332	-1340.05	-56.77	-109.68
1098	SLD 11	-95	-830	15824	-3611.38	-128.46	-30.09
1098	SLD 12	-248	-789	15821	-3611.83	-128.16	-66.33
1098	SLD 13	-1025	498	9658	-2289.42	-104.16	-251.76
1098	SLD 14	-1256	559	9654	-2290.1	-103.7	-306.7
1098	SLD 15	-957	-111	12805	-2970.95	-125.58	-238.76
1098	SLD 16	-1188	-49	12800	-2971.64	-125.12	-293.7
1098	SLV 1	2999	818	4184	-1037.32	16.76	743.06
1098	SLV 2	2456	963	4174	-1038.93	17.84	613.91
1098	SLV 3	3173	-702	12068	-2744.76	-36.93	776.29
1098	SLV 4	2629	-557	12058	-2746.37	-35.85	647.14
1098	SLV 5	785	2661	-3491	592.17	28.03	208.56
1098	SLV 6	419	2758	-3498	591.09	28.76	121.61
1098	SLV 7	1363	-2405	22789	-5099.31	-150.94	319.32
1098	SLV 8	997	-2308	22782	-5100.39	-150.21	232.37
1098	SLV 9	-863	2700	-2185	281.66	-16.15	-198.27
1098	SLV 10	-1229	2798	-2191	280.58	-15.42	-285.22
1098	SLV 11	-285	-2366	24095	-5409.82	-195.11	-87.51
1098	SLV 12	-651	-2268	24088	-5410.91	-194.39	-174.46
1098	SLV 13	-2495	950	8539	-2072.36	-130.5	-613.04

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1098	SLV 14	-3038	1094	8529	-2073.97	-129.42	-742.19
1098	SLV 15	-2321	-570	16423	-3779.8	-184.19	-579.81
1098	SLV 16	-2865	-425	16413	-3781.42	-183.11	-708.96
1098	CRTFP Ux+	0	0	0	0	0	0
1098	CRTFP Ux-	0	0	0	0	0	0
1098	CRTFP Uy+	0	0	0	-0.01	0	0
1098	CRTFP Uy-	0	0	0	0.01	0	0
1100	SLU 1	26	63	3403	-995.5	-61.84	10.21
1100	SLU 2	25	81	3321	-974.44	-60.36	9.95
1100	SLU 3	27	64	3492	-1020.55	-63.47	10.63
1100	SLU 4	26	75	3443	-1007.91	-62.58	10.47
1100	SLU 5	26	82	3377	-989.97	-61.37	10.29
1100	SLU 6	28	65	3548	-1036.08	-64.48	10.97
1100	SLU 7	27	76	3499	-1023.44	-63.59	10.81
1100	SLU 8	28	64	3514	-1026.56	-63.87	10.89
1100	SLU 9	27	75	3465	-1013.92	-62.98	10.74
1100	SLU 10	27	87	3749	-1098.42	-68.08	11
1100	SLU 11	30	70	3920	-1144.53	-71.19	11.67
1100	SLU 12	29	81	3871	-1131.9	-70.31	11.52
1100	SLU 13	28	88	3804	-1113.95	-69.1	11.34
1100	SLU 14	31	71	3976	-1160.06	-72.21	12.01
1100	SLU 15	30	82	3927	-1147.42	-71.32	11.86
1100	SLU 16	31	70	3942	-1150.54	-71.6	11.94
1100	SLU 17	30	81	3893	-1137.91	-70.71	11.78
1100	SLU 18	30	72	4014	-1172.62	-72.88	11.7
1100	SLU 19	29	83	3965	-1159.99	-71.99	11.55
1100	SLU 20	31	72	4069	-1188.15	-73.89	12.04
1100	SLU 21	30	83	4020	-1175.51	-73.01	11.89
1100	SLU 22	30	71	3978	-1160.56	-72.25	11.77
1100	SLU 23	29	89	3896	-1139.49	-70.77	11.51
1100	SLU 24	32	72	4068	-1185.6	-73.88	12.19
1100	SLU 25	31	83	4019	-1172.96	-72.99	12.04
1100	SLU 26	30	90	3952	-1155.02	-71.78	11.85
1100	SLU 27	33	73	4124	-1201.13	-74.89	12.53
1100	SLU 28	31	84	4074	-1188.49	-74.01	12.37
1100	SLU 29	32	72	4090	-1191.61	-74.28	12.45
1100	SLU 30	31	83	4041	-1178.98	-73.39	12.3
1100	SLU 31	31	95	4324	-1263.48	-78.5	12.56
1100	SLU 32	34	79	4496	-1309.59	-81.61	13.24
1100	SLU 33	33	89	4446	-1296.95	-80.72	13.08
1100	SLU 34	32	96	4380	-1279.01	-79.51	12.9
1100	SLU 35	35	79	4551	-1325.12	-82.62	13.58
1100	SLU 36	34	90	4502	-1312.48	-81.73	13.42
1100	SLU 37	35	78	4518	-1315.6	-82.01	13.5
1100	SLU 38	34	89	4468	-1302.96	-81.12	13.34
1100	SLU 39	34	80	4589	-1337.68	-83.29	13.27
1100	SLU 40	33	91	4540	-1325.04	-82.4	13.11
1100	SLU 41	35	80	4645	-1353.21	-84.31	13.61
1100	SLU 42	34	91	4596	-1340.57	-83.42	13.45
1100	SLU 43	33	79	4226	-1237.56	-76.82	12.74
1100	SLU 44	31	97	4144	-1216.49	-75.34	12.48
1100	SLU 45	34	80	4316	-1262.6	-78.45	13.15
1100	SLU 46	33	91	4267	-1249.97	-77.56	13
1100	SLU 47	32	98	4200	-1232.02	-76.35	12.82
1100	SLU 48	35	81	4371	-1278.13	-79.46	13.49
1100	SLU 49	34	92	4322	-1265.5	-78.58	13.34
1100	SLU 50	35	80	4338	-1268.62	-78.85	13.42
1100	SLU 51	34	91	4289	-1255.98	-77.96	13.26
1100	SLU 52	34	103	4572	-1340.48	-83.07	13.53
1100	SLU 53	37	86	4743	-1386.59	-86.18	14.2
1100	SLU 54	36	97	4694	-1373.95	-85.29	14.05
1100	SLU 55	35	104	4628	-1356.01	-84.08	13.87
1100	SLU 56	38	87	4799	-1402.12	-87.19	14.54
1100	SLU 57	37	98	4750	-1389.48	-86.3	14.39
1100	SLU 58	37	86	4765	-1392.6	-86.58	14.46
1100	SLU 59	36	97	4716	-1379.97	-85.69	14.31
1100	SLU 60	37	88	4837	-1414.68	-87.86	14.23
1100	SLU 61	36	99	4788	-1402.04	-86.97	14.08
1100	SLU 62	38	88	4893	-1430.21	-88.88	14.57
1100	SLU 63	37	99	4844	-1417.57	-87.99	14.42
1100	SLU 64	37	87	4802	-1402.61	-87.23	14.3
1100	SLU 65	35	106	4720	-1381.55	-85.75	14.04
1100	SLU 66	38	89	4891	-1427.66	-88.86	14.72
1100	SLU 67	37	99	4842	-1415.02	-87.97	14.56
1100	SLU 68	36	106	4776	-1397.08	-86.77	14.38
1100	SLU 69	39	89	4947	-1443.19	-89.88	15.06
1100	SLU 70	38	100	4898	-1430.55	-88.99	14.9
1100	SLU 71	39	88	4913	-1433.67	-89.26	14.98
1100	SLU 72	38	99	4864	-1421.04	-88.37	14.82
1100	SLU 73	38	112	5148	-1505.54	-93.48	15.09
1100	SLU 74	41	95	5319	-1551.65	-96.59	15.76
1100	SLU 75	40	105	5270	-1539.01	-95.7	15.61
1100	SLU 76	39	112	5203	-1521.07	-94.49	15.43
1100	SLU 77	42	95	5375	-1567.18	-97.6	16.1
1100	SLU 78	41	106	5326	-1554.54	-96.72	15.95
1100	SLU 79	42	94	5341	-1557.66	-96.99	16.02
1100	SLU 80	40	105	5292	-1545.02	-96.1	15.87
1100	SLU 81	41	96	5413	-1579.74	-98.27	15.79
1100	SLU 82	40	107	5364	-1567.1	-97.38	15.64

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1100	SLU 83	42	97	5469	-1595.27	-99.29	16.13
1100	SLU 84	41	107	5419	-1582.63	-98.4	15.98
1100	SLE RA 1	27	65	3567	-1042.66	-64.81	10.65
1100	SLE RA 2	26	78	3513	-1028.62	-63.82	10.48
1100	SLE RA 3	28	66	3627	-1059.36	-65.9	10.93
1100	SLE RA 4	28	73	3594	-1050.93	-65.31	10.83
1100	SLE RA 5	27	78	3550	-1038.97	-64.5	10.71
1100	SLE RA 6	29	67	3664	-1069.71	-66.58	11.16
1100	SLE RA 7	28	74	3631	-1061.28	-65.98	11.06
1100	SLE RA 8	29	66	3641	-1063.36	-66.17	11.11
1100	SLE RA 9	28	73	3609	-1054.94	-65.57	11.01
1100	SLE RA 10	28	82	3798	-1111.27	-68.98	11.18
1100	SLE RA 11	30	70	3912	-1142.01	-71.05	11.63
1100	SLE RA 12	29	77	3879	-1133.59	-70.46	11.53
1100	SLE RA 13	29	82	3835	-1121.63	-69.65	11.41
1100	SLE RA 14	31	71	3949	-1152.37	-71.73	11.86
1100	SLE RA 15	30	78	3916	-1143.94	-71.14	11.76
1100	SLE RA 16	31	70	3927	-1146.02	-71.32	11.81
1100	SLE RA 17	30	77	3894	-1137.6	-70.73	11.7
1100	SLE RA 18	30	71	3974	-1160.74	-72.17	11.65
1100	SLE RA 19	29	78	3942	-1152.32	-71.58	11.55
1100	SLE RA 20	31	72	4012	-1171.09	-72.85	11.88
1100	SLE RA 21	30	79	3979	-1162.67	-72.26	11.78
1100	SLE FR 1	27	65	3567	-1042.66	-64.81	10.65
1100	SLE FR 2	27	68	3556	-1039.85	-64.61	10.62
1100	SLE FR 3	28	66	3582	-1046.8	-65.08	10.75
1100	SLE FR 4	28	70	3678	-1075.27	-66.82	10.92
1100	SLE FR 5	28	67	3704	-1082.22	-67.29	11.04
1100	SLE FR 6	29	68	3771	-1101.7	-68.49	11.15
1100	SLE QP 1	27	65	3567	-1042.66	-64.81	10.65
1100	SLE QP 2	28	67	3689	-1078.08	-67.02	10.95
1100	SLD 1	485	149	2771	-830.18	-49.5	171.93
1100	SLD 2	402	178	2769	-831.4	-49.42	143.32
1100	SLD 3	512	-74	3868	-1112.65	-69.36	177.99
1100	SLD 4	428	-46	3866	-1113.87	-69.28	149.38
1100	SLD 5	140	425	1751	-575.08	-31.66	55.2
1100	SLD 6	85	444	1750	-575.88	-31.6	36.33
1100	SLD 7	229	-319	5406	-1516.65	-97.86	75.4
1100	SLD 8	174	-300	5405	-1517.45	-97.8	56.53
1100	SLD 9	-117	435	1974	-638.72	-36.24	-34.62
1100	SLD 10	-172	453	1972	-639.52	-36.18	-53.5
1100	SLD 11	-29	-310	5629	-1580.28	-102.44	-14.42
1100	SLD 12	-84	-291	5627	-1581.08	-102.38	-33.29
1100	SLD 13	-372	180	3513	-1042.3	-64.76	-127.48
1100	SLD 14	-456	208	3511	-1043.51	-64.68	-156.09
1100	SLD 15	-345	-43	4609	-1324.77	-84.62	-121.41
1100	SLD 16	-429	-15	4607	-1325.98	-84.54	-150.02
1100	SLV 1	1096	277	1451	-474.65	-24.38	387.14
1100	SLV 2	899	343	1446	-477.5	-24.18	319.89
1100	SLV 3	1164	-281	4198	-1182.3	-74.14	402.59
1100	SLV 4	967	-214	4193	-1185.15	-73.94	335.34
1100	SLV 5	282	964	-1148	176.76	21.2	112.92
1100	SLV 6	150	1008	-1151	174.84	21.33	67.64
1100	SLV 7	508	-895	8009	-2182.09	-144.66	164.44
1100	SLV 8	376	-851	8006	-2184.01	-144.52	119.16
1100	SLV 9	-320	985	-627	27.85	10.49	-97.25
1100	SLV 10	-452	1030	-630	25.93	10.62	-142.53
1100	SLV 11	-93	-874	8529	-2331	-155.37	-45.73
1100	SLV 12	-226	-829	8526	-2332.92	-155.24	-91.01
1100	SLV 13	-911	349	3185	-971.01	-60.1	-313.44
1100	SLV 14	-1107	415	3181	-973.86	-59.9	-380.69
1100	SLV 15	-843	-209	5932	-1678.67	-109.86	-297.98
1100	SLV 16	-1039	-143	5928	-1681.52	-109.66	-365.23
1100	CRTFP Ux+	0	0	0	0	0	0
1100	CRTFP Ux-	0	0	0	0	0	0
1100	CRTFP Uy+	0	0	0	0	0	0
1100	CRTFP Uy-	0	0	0	0	0	0
1101	SLU 1	33	62	3662	-995.28	3.35	11.29
1101	SLU 2	31	82	3574	-974.52	3.27	10.57
1101	SLU 3	34	63	3758	-1020.07	3.44	11.78
1101	SLU 4	33	75	3705	-1007.62	3.39	11.35
1101	SLU 5	32	82	3634	-989.9	3.32	10.97
1101	SLU 6	36	64	3818	-1035.45	3.48	12.19
1101	SLU 7	34	75	3765	-1023	3.44	11.75
1101	SLU 8	35	63	3782	-1026.04	3.45	12.1
1101	SLU 9	34	75	3729	-1013.58	3.4	11.67
1101	SLU 10	34	88	4032	-1097.05	3.77	11.74
1101	SLU 11	38	69	4216	-1142.6	3.94	12.95
1101	SLU 12	37	81	4163	-1130.15	3.89	12.52
1101	SLU 13	36	88	4092	-1112.43	3.82	12.15
1101	SLU 14	39	70	4276	-1157.98	3.99	13.36
1101	SLU 15	38	82	4224	-1145.53	3.94	12.93
1101	SLU 16	39	69	4240	-1148.57	3.95	13.28
1101	SLU 17	38	81	4187	-1136.11	3.9	12.84
1101	SLU 18	38	71	4316	-1170.32	4.07	12.96
1101	SLU 19	37	83	4263	-1157.87	4.02	12.53
1101	SLU 20	39	71	4376	-1185.7	4.11	13.37
1101	SLU 21	38	83	4324	-1173.25	4.07	12.94
1101	SLU 22	38	70	4279	-1158.45	4.01	13.06

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1101	SLU 23	36	90	4191	-1137.69	3.93	12.33
1101	SLU 24	40	71	4375	-1183.24	4.09	13.55
1101	SLU 25	38	83	4322	-1170.79	4.04	13.11
1101	SLU 26	37	90	4251	-1153.07	3.97	12.74
1101	SLU 27	41	72	4435	-1198.62	4.14	13.95
1101	SLU 28	40	83	4383	-1186.17	4.09	13.52
1101	SLU 29	41	71	4399	-1189.21	4.1	13.87
1101	SLU 30	39	83	4346	-1176.75	4.05	13.44
1101	SLU 31	40	96	4649	-1260.22	4.43	13.5
1101	SLU 32	43	77	4833	-1305.77	4.59	14.72
1101	SLU 33	42	89	4781	-1293.32	4.54	14.29
1101	SLU 34	41	96	4709	-1275.6	4.47	13.91
1101	SLU 35	44	78	4894	-1321.15	4.64	15.13
1101	SLU 36	43	90	4841	-1308.7	4.59	14.69
1101	SLU 37	44	77	4857	-1311.74	4.6	15.04
1101	SLU 38	43	89	4805	-1299.28	4.56	14.61
1101	SLU 39	43	79	4933	-1333.49	4.72	14.73
1101	SLU 40	42	91	4881	-1321.04	4.67	14.3
1101	SLU 41	44	79	4994	-1348.87	4.77	15.14
1101	SLU 42	43	91	4941	-1336.42	4.72	14.7
1101	SLU 43	41	78	4548	-1237.91	4.13	14.07
1101	SLU 44	39	98	4460	-1217.16	4.05	13.35
1101	SLU 45	43	79	4645	-1262.71	4.22	14.56
1101	SLU 46	41	91	4592	-1250.26	4.17	14.13
1101	SLU 47	40	98	4521	-1232.54	4.1	13.75
1101	SLU 48	44	79	4705	-1278.09	4.27	14.97
1101	SLU 49	43	91	4652	-1265.63	4.22	14.54
1101	SLU 50	44	79	4669	-1268.67	4.23	14.88
1101	SLU 51	42	91	4616	-1256.22	4.18	14.45
1101	SLU 52	43	104	4919	-1339.69	4.55	14.52
1101	SLU 53	46	85	5103	-1385.24	4.72	15.74
1101	SLU 54	45	97	5050	-1372.79	4.67	15.3
1101	SLU 55	44	104	4979	-1355.07	4.6	14.93
1101	SLU 56	47	86	5163	-1400.62	4.77	16.14
1101	SLU 57	46	97	5111	-1388.17	4.72	15.71
1101	SLU 58	47	85	5127	-1391.2	4.73	16.06
1101	SLU 59	46	97	5074	-1378.75	4.68	15.62
1101	SLU 60	46	87	5203	-1412.96	4.85	15.75
1101	SLU 61	45	99	5150	-1400.5	4.8	15.31
1101	SLU 62	47	87	5263	-1428.34	4.9	16.15
1101	SLU 63	46	99	5210	-1415.88	4.85	15.72
1101	SLU 64	46	86	5166	-1401.09	4.79	15.84
1101	SLU 65	44	106	5078	-1380.33	4.71	15.11
1101	SLU 66	48	87	5262	-1425.88	4.87	16.33
1101	SLU 67	47	99	5209	-1413.43	4.82	15.89
1101	SLU 68	45	106	5138	-1395.71	4.76	15.52
1101	SLU 69	49	88	5322	-1441.26	4.92	16.74
1101	SLU 70	48	99	5269	-1428.81	4.87	16.3
1101	SLU 71	49	87	5286	-1431.85	4.88	16.65
1101	SLU 72	47	99	5233	-1419.39	4.84	16.22
1101	SLU 73	48	112	5536	-1502.86	5.21	16.29
1101	SLU 74	51	93	5720	-1548.41	5.37	17.5
1101	SLU 75	50	105	5668	-1535.96	5.32	17.07
1101	SLU 76	49	112	5596	-1518.24	5.26	16.69
1101	SLU 77	52	94	5780	-1563.79	5.42	17.91
1101	SLU 78	51	105	5728	-1551.34	5.37	17.47
1101	SLU 79	52	93	5744	-1554.38	5.38	17.82
1101	SLU 80	51	105	5691	-1541.92	5.34	17.39
1101	SLU 81	51	95	5820	-1576.13	5.5	17.51
1101	SLU 82	50	107	5767	-1563.68	5.45	17.08
1101	SLU 83	52	95	5880	-1591.51	5.55	17.92
1101	SLU 84	51	107	5828	-1579.06	5.5	17.49
1101	SLE RA 1	35	64	3838	-1041.9	3.54	11.79
1101	SLE RA 2	33	78	3779	-1028.06	3.48	11.31
1101	SLE RA 3	35	65	3902	-1058.43	3.59	12.12
1101	SLE RA 4	35	73	3867	-1050.12	3.56	11.83
1101	SLE RA 5	34	78	3819	-1038.31	3.52	11.58
1101	SLE RA 6	36	65	3942	-1068.68	3.63	12.39
1101	SLE RA 7	35	73	3907	-1060.38	3.6	12.1
1101	SLE RA 8	36	65	3918	-1062.4	3.6	12.34
1101	SLE RA 9	35	73	3883	-1054.1	3.57	12.05
1101	SLE RA 10	35	82	4085	-1109.75	3.82	12.09
1101	SLE RA 11	38	69	4208	-1140.11	3.93	12.9
1101	SLE RA 12	37	77	4173	-1131.81	3.9	12.61
1101	SLE RA 13	36	82	4125	-1120	3.85	12.36
1101	SLE RA 14	39	70	4248	-1150.37	3.96	13.18
1101	SLE RA 15	38	77	4213	-1142.06	3.93	12.89
1101	SLE RA 16	38	69	4224	-1144.09	3.94	13.12
1101	SLE RA 17	38	77	4188	-1135.79	3.9	12.83
1101	SLE RA 18	38	70	4274	-1158.59	4.01	12.91
1101	SLE RA 19	37	78	4239	-1150.29	3.98	12.62
1101	SLE RA 20	39	71	4314	-1168.85	4.05	13.18
1101	SLE RA 21	38	78	4279	-1160.54	4.02	12.89
1101	SLE FR 1	35	64	3838	-1041.9	3.54	11.79
1101	SLE FR 2	34	67	3826	-1039.13	3.53	11.7
1101	SLE FR 3	35	65	3854	-1046	3.55	11.9
1101	SLE FR 4	35	69	3957	-1074.14	3.67	12.03
1101	SLE FR 5	36	66	3985	-1081.01	3.69	12.24
1101	SLE FR 6	36	67	4056	-1100.24	3.78	12.35

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1101	SLE QP 1	35	64	3838	-1041.9	3.54	11.79
1101	SLE QP 2	35	66	3969	-1076.91	3.68	12.13
1101	SLD 1	537	152	2951	-828.03	3.79	187.7
1101	SLD 2	445	187	2947	-828.93	3.89	155.51
1101	SLD 3	569	-92	4130	-1106.29	4.84	198.87
1101	SLD 4	477	-57	4126	-1107.2	4.94	166.68
1101	SLD 5	155	455	1876	-580.05	2.1	53.65
1101	SLD 6	94	478	1873	-580.64	2.17	32.41
1101	SLD 7	260	-357	5806	-1507.59	5.6	90.88
1101	SLD 8	199	-334	5803	-1508.19	5.67	69.64
1101	SLD 9	-128	466	2134	-645.62	1.69	-45.39
1101	SLD 10	-189	489	2131	-646.22	1.76	-66.62
1101	SLD 11	-23	-346	6064	-1573.17	5.19	-8.16
1101	SLD 12	-84	-322	6062	-1573.77	5.26	-29.39
1101	SLD 13	-406	189	3812	-1046.61	2.42	-142.42
1101	SLD 14	-498	224	3807	-1047.52	2.52	-174.61
1101	SLD 15	-374	-54	4991	-1324.88	3.47	-131.25
1101	SLD 16	-466	-19	4986	-1325.78	3.57	-163.45
1101	SLV 1	1207	285	1490	-471.52	3.85	421.94
1101	SLV 2	990	368	1480	-473.65	4.09	346.27
1101	SLV 3	1288	-323	4444	-1168.65	6.47	450.44
1101	SLV 4	1071	-240	4434	-1170.78	6.72	374.76
1101	SLV 5	305	1039	-1253	162.42	-0.3	105.99
1101	SLV 6	159	1095	-1260	160.99	-0.14	55.04
1101	SLV 7	574	-989	8594	-2161.35	8.46	200.96
1101	SLV 8	428	-933	8587	-2162.78	8.62	150.01
1101	SLV 9	-357	1065	-649	8.97	-1.26	-125.75
1101	SLV 10	-503	1121	-656	7.54	-1.1	-176.7
1101	SLV 11	-88	-962	9198	-2314.8	7.5	-30.78
1101	SLV 12	-234	-907	9191	-2316.23	7.66	-81.73
1101	SLV 13	-1000	373	3504	-983.03	0.65	-350.5
1101	SLV 14	-1217	456	3493	-985.16	0.89	-426.18
1101	SLV 15	-919	-235	6458	-1680.16	3.27	-322.01
1101	SLV 16	-1136	-153	6447	-1682.29	3.51	-397.69
1101	CRTFP Ux+	0	0	0	0	0	0
1101	CRTFP Ux-	0	0	0	0	0	0
1101	CRTFP Uy+	0	0	0	0	0	0
1101	CRTFP Uy-	0	0	0	0	0	0
1102	SLU 1	37	54	3561	-895.92	3.27	12.65
1102	SLU 2	35	73	3475	-877.48	3.2	11.86
1102	SLU 3	39	55	3655	-918.02	3.34	13.2
1102	SLU 4	37	66	3604	-906.96	3.3	12.73
1102	SLU 5	36	74	3534	-891.23	3.24	12.31
1102	SLU 6	40	55	3714	-931.77	3.39	13.65
1102	SLU 7	38	67	3662	-920.71	3.35	13.18
1102	SLU 8	40	54	3679	-923.42	3.35	13.55
1102	SLU 9	38	66	3627	-912.35	3.31	13.08
1102	SLU 10	39	79	3919	-986.16	3.69	13.18
1102	SLU 11	42	60	4098	-1026.71	3.83	14.52
1102	SLU 12	41	72	4047	-1015.64	3.79	14.04
1102	SLU 13	40	79	3977	-999.91	3.73	13.63
1102	SLU 14	44	61	4157	-1040.45	3.88	14.97
1102	SLU 15	42	72	4106	-1029.39	3.84	14.49
1102	SLU 16	43	60	4122	-1032.1	3.84	14.87
1102	SLU 17	42	72	4070	-1021.04	3.8	14.4
1102	SLU 18	42	62	4194	-1051.18	3.96	14.54
1102	SLU 19	41	74	4143	-1040.12	3.92	14.06
1102	SLU 20	44	62	4253	-1064.93	4.01	14.99
1102	SLU 21	42	74	4202	-1053.87	3.97	14.51
1102	SLU 22	43	61	4159	-1040.7	3.9	14.64
1102	SLU 23	40	80	4073	-1022.26	3.84	13.85
1102	SLU 24	44	62	4253	-1062.8	3.98	15.19
1102	SLU 25	43	73	4201	-1051.73	3.94	14.71
1102	SLU 26	42	81	4132	-1036	3.88	14.3
1102	SLU 27	46	62	4311	-1076.55	4.02	15.64
1102	SLU 28	44	74	4260	-1065.48	3.98	15.16
1102	SLU 29	45	61	4276	-1068.19	3.99	15.54
1102	SLU 30	44	73	4225	-1057.13	3.95	15.06
1102	SLU 31	44	86	4516	-1130.94	4.33	15.16
1102	SLU 32	48	67	4696	-1171.48	4.47	16.5
1102	SLU 33	47	79	4644	-1160.41	4.43	16.03
1102	SLU 34	46	86	4575	-1144.68	4.37	15.61
1102	SLU 35	49	68	4755	-1185.23	4.51	16.95
1102	SLU 36	48	79	4703	-1174.16	4.47	16.48
1102	SLU 37	49	67	4719	-1176.87	4.48	16.86
1102	SLU 38	48	79	4668	-1165.81	4.44	16.38
1102	SLU 39	48	69	4792	-1195.96	4.6	16.52
1102	SLU 40	47	81	4740	-1184.89	4.56	16.04
1102	SLU 41	49	69	4851	-1209.7	4.65	16.97
1102	SLU 42	48	81	4799	-1198.64	4.61	16.49
1102	SLU 43	46	68	4425	-1115.07	4.03	15.77
1102	SLU 44	44	87	4339	-1096.62	3.96	14.98
1102	SLU 45	48	68	4518	-1137.16	4.1	16.32
1102	SLU 46	46	80	4467	-1126.1	4.06	15.84
1102	SLU 47	45	87	4398	-1110.37	4	15.43
1102	SLU 48	49	69	4577	-1150.91	4.15	16.77
1102	SLU 49	48	80	4526	-1139.85	4.11	16.29
1102	SLU 50	49	68	4542	-1142.56	4.11	16.67
1102	SLU 51	47	80	4491	-1131.5	4.07	16.2

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1102	SLU 52	48	93	4782	-1205.3	4.45	16.29
1102	SLU 53	51	74	4962	-1245.85	4.59	17.64
1102	SLU 54	50	86	4910	-1234.78	4.55	17.16
1102	SLU 55	49	93	4841	-1219.05	4.49	16.74
1102	SLU 56	53	74	5021	-1259.59	4.64	18.08
1102	SLU 57	51	86	4969	-1248.53	4.6	17.61
1102	SLU 58	52	74	4985	-1251.24	4.6	17.99
1102	SLU 59	51	85	4934	-1240.18	4.56	17.51
1102	SLU 60	52	76	5058	-1270.32	4.73	17.65
1102	SLU 61	50	87	5006	-1259.26	4.68	17.18
1102	SLU 62	53	76	5117	-1284.07	4.77	18.1
1102	SLU 63	51	88	5065	-1273.01	4.73	17.63
1102	SLU 64	52	75	5022	-1259.84	4.66	17.76
1102	SLU 65	50	94	4936	-1241.4	4.6	16.96
1102	SLU 66	53	76	5116	-1281.94	4.74	18.3
1102	SLU 67	52	87	5065	-1270.87	4.7	17.83
1102	SLU 68	51	94	4995	-1255.14	4.64	17.41
1102	SLU 69	55	76	5175	-1295.69	4.79	18.75
1102	SLU 70	53	87	5123	-1284.62	4.75	18.28
1102	SLU 71	54	75	5140	-1287.33	4.75	18.65
1102	SLU 72	53	87	5088	-1276.27	4.71	18.18
1102	SLU 73	53	100	5380	-1350.08	5.09	18.28
1102	SLU 74	57	81	5559	-1390.62	5.23	19.62
1102	SLU 75	56	93	5508	-1379.55	5.19	19.14
1102	SLU 76	55	100	5438	-1363.82	5.13	18.73
1102	SLU 77	59	81	5618	-1404.37	5.28	20.07
1102	SLU 78	57	93	5567	-1393.3	5.23	19.59
1102	SLU 79	58	81	5583	-1396.02	5.24	19.97
1102	SLU 80	57	92	5531	-1384.95	5.2	19.5
1102	SLU 81	57	83	5655	-1415.1	5.36	19.64
1102	SLU 82	56	94	5604	-1404.03	5.32	19.16
1102	SLU 83	59	83	5714	-1428.85	5.41	20.09
1102	SLU 84	57	95	5663	-1417.78	5.37	19.61
1102	SLE RA 1	39	56	3732	-937.29	3.45	13.22
1102	SLE RA 2	37	69	3675	-924.99	3.4	12.69
1102	SLE RA 3	40	56	3794	-952.02	3.5	13.59
1102	SLE RA 4	39	64	3760	-944.64	3.47	13.27
1102	SLE RA 5	38	69	3714	-934.16	3.43	12.99
1102	SLE RA 6	41	57	3834	-961.19	3.53	13.89
1102	SLE RA 7	40	64	3799	-953.81	3.5	13.57
1102	SLE RA 8	40	56	3810	-955.62	3.5	13.82
1102	SLE RA 9	39	64	3776	-948.24	3.48	13.5
1102	SLE RA 10	40	73	3970	-997.45	3.73	13.57
1102	SLE RA 11	42	60	4090	-1024.48	3.83	14.46
1102	SLE RA 12	41	68	4056	-1017.1	3.8	14.15
1102	SLE RA 13	41	73	4009	-1006.61	3.76	13.87
1102	SLE RA 14	43	60	4129	-1033.64	3.86	14.76
1102	SLE RA 15	42	68	4095	-1026.26	3.83	14.45
1102	SLE RA 16	43	60	4106	-1028.07	3.83	14.7
1102	SLE RA 17	42	68	4071	-1020.7	3.8	14.38
1102	SLE RA 18	42	61	4154	-1040.79	3.91	14.48
1102	SLE RA 19	41	69	4120	-1033.42	3.89	14.16
1102	SLE RA 20	43	61	4193	-1049.96	3.94	14.78
1102	SLE RA 21	42	69	4159	-1042.58	3.92	14.46
1102	SLE FR 1	39	56	3732	-937.29	3.45	13.22
1102	SLE FR 2	38	59	3720	-934.83	3.44	13.12
1102	SLE FR 3	39	56	3747	-940.95	3.46	13.34
1102	SLE FR 4	39	60	3847	-965.88	3.58	13.49
1102	SLE FR 5	40	58	3874	-972.01	3.6	13.72
1102	SLE FR 6	40	59	3943	-989.04	3.68	13.85
1102	SLE QP 1	39	56	3732	-937.29	3.45	13.22
1102	SLE QP 2	40	58	3858	-968.34	3.59	13.6
1102	SLD 1	541	140	2839	-744.36	3.68	188.97
1102	SLD 2	448	179	2831	-744.13	3.82	156.59
1102	SLD 3	575	-100	3989	-991.6	4.56	201.03
1102	SLD 4	482	-61	3980	-991.37	4.71	168.66
1102	SLD 5	155	440	1811	-526.2	2.24	53.73
1102	SLD 6	94	465	1805	-526.06	2.34	32.38
1102	SLD 7	269	-361	5643	-1350.34	5.2	93.95
1102	SLD 8	208	-336	5637	-1350.19	5.3	72.59
1102	SLD 9	-128	451	2080	-586.49	1.88	-45.4
1102	SLD 10	-189	476	2074	-586.34	1.97	-66.75
1102	SLD 11	-14	-350	5912	-1410.63	4.84	-5.18
1102	SLD 12	-76	-325	5906	-1410.48	4.93	-26.54
1102	SLD 13	-403	176	3736	-945.31	2.47	-141.46
1102	SLD 14	-496	215	3728	-945.08	2.61	-173.84
1102	SLD 15	-369	-64	4886	-1192.55	3.35	-129.4
1102	SLD 16	-461	-25	4878	-1192.32	3.5	-161.77
1102	SLV 1	1209	270	1378	-423.76	3.72	422.85
1102	SLV 2	991	360	1359	-423.23	4.07	346.75
1102	SLV 3	1296	-330	4258	-1043.2	5.94	453.6
1102	SLV 4	1078	-240	4239	-1042.67	6.28	377.51
1102	SLV 5	299	1015	-1251	134.43	0.2	103.93
1102	SLV 6	152	1076	-1264	134.79	0.43	52.69
1102	SLV 7	590	-986	8351	-1930.39	7.59	206.45
1102	SLV 8	443	-925	8338	-1930.04	7.82	155.21
1102	SLV 9	-363	1040	-621	-6.65	-0.65	-128.02
1102	SLV 10	-510	1101	-634	-6.29	-0.42	-179.25
1102	SLV 11	-73	-961	8981	-2071.47	6.74	-25.5

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1102	SLV 12	-220	-899	8968	-2071.11	6.97	-76.73
1102	SLV 13	-999	355	3478	-894.01	0.89	-350.31
1102	SLV 14	-1217	445	3459	-893.48	1.24	-426.41
1102	SLV 15	-912	-245	6358	-1513.45	3.11	-319.55
1102	SLV 16	-1130	-155	6339	-1512.92	3.45	-395.65
1102	CRTFP Ux+	0	0	0	0	0	0
1102	CRTFP Ux-	0	0	0	0	0	0
1102	CRTFP Uy+	0	0	0	0	0	0
1102	CRTFP Uy-	0	0	0	0	0	0
1103	SLU 1	41	46	3480	-817.46	2.1	13.97
1103	SLU 2	38	65	3396	-800.7	2.07	13.11
1103	SLU 3	42	46	3572	-837.51	2.14	14.57
1103	SLU 4	41	58	3522	-827.45	2.12	14.06
1103	SLU 5	40	65	3454	-813.25	2.08	13.6
1103	SLU 6	44	46	3630	-850.06	2.15	15.06
1103	SLU 7	42	58	3579	-840	2.14	14.55
1103	SLU 8	43	46	3596	-842.56	2.13	14.95
1103	SLU 9	42	58	3545	-832.51	2.11	14.44
1103	SLU 10	42	70	3827	-898.36	2.4	14.57
1103	SLU 11	47	52	4003	-935.17	2.47	16.02
1103	SLU 12	45	63	3953	-925.11	2.45	15.51
1103	SLU 13	44	70	3885	-910.91	2.41	15.06
1103	SLU 14	48	52	4061	-947.72	2.48	16.51
1103	SLU 15	47	63	4010	-937.66	2.47	16
1103	SLU 16	48	51	4027	-940.22	2.46	16.4
1103	SLU 17	46	63	3976	-930.17	2.44	15.89
1103	SLU 18	47	53	4096	-956.97	2.57	16.05
1103	SLU 19	45	65	4045	-946.92	2.55	15.53
1103	SLU 20	48	53	4153	-969.52	2.58	16.54
1103	SLU 21	47	65	4103	-959.47	2.57	16.02
1103	SLU 22	47	52	4062	-947.63	2.52	16.16
1103	SLU 23	45	71	3977	-930.87	2.49	15.31
1103	SLU 24	49	53	4154	-967.68	2.56	16.76
1103	SLU 25	47	64	4103	-957.62	2.54	16.25
1103	SLU 26	46	71	4035	-943.42	2.51	15.8
1103	SLU 27	50	53	4212	-980.23	2.58	17.25
1103	SLU 28	49	64	4161	-970.17	2.56	16.74
1103	SLU 29	50	52	4177	-972.73	2.55	17.14
1103	SLU 30	48	64	4127	-962.68	2.53	16.63
1103	SLU 31	49	76	4408	-1028.53	2.82	16.76
1103	SLU 32	53	58	4585	-1065.33	2.89	18.22
1103	SLU 33	52	69	4534	-1055.28	2.87	17.7
1103	SLU 34	50	76	4466	-1041.08	2.83	17.25
1103	SLU 35	54	58	4643	-1077.89	2.9	18.71
1103	SLU 36	53	69	4592	-1067.83	2.89	18.19
1103	SLU 37	54	57	4608	-1070.39	2.88	18.6
1103	SLU 38	53	69	4558	-1060.34	2.86	18.08
1103	SLU 39	53	59	4677	-1087.14	2.99	18.24
1103	SLU 40	52	71	4627	-1077.09	2.97	17.73
1103	SLU 41	54	59	4735	-1099.69	3	18.73
1103	SLU 42	53	71	4685	-1089.64	2.99	18.22
1103	SLU 43	51	57	4325	-1018.07	2.58	17.41
1103	SLU 44	48	77	4240	-1001.31	2.55	16.55
1103	SLU 45	52	58	4417	-1038.11	2.62	18.01
1103	SLU 46	51	69	4366	-1028.06	2.6	17.49
1103	SLU 47	50	77	4298	-1013.86	2.57	17.04
1103	SLU 48	54	58	4475	-1050.67	2.64	18.5
1103	SLU 49	52	70	4424	-1040.61	2.62	17.98
1103	SLU 50	54	58	4440	-1043.17	2.61	18.39
1103	SLU 51	52	69	4390	-1033.12	2.6	17.87
1103	SLU 52	52	82	4671	-1098.97	2.88	18.01
1103	SLU 53	57	63	4848	-1135.77	2.95	19.46
1103	SLU 54	55	75	4797	-1125.72	2.93	18.95
1103	SLU 55	54	82	4729	-1111.52	2.9	18.5
1103	SLU 56	58	63	4906	-1148.33	2.97	19.95
1103	SLU 57	57	75	4855	-1138.27	2.95	19.44
1103	SLU 58	58	63	4871	-1140.83	2.94	19.84
1103	SLU 59	56	74	4821	-1130.78	2.93	19.33
1103	SLU 60	57	65	4940	-1157.58	3.05	19.48
1103	SLU 61	55	76	4890	-1147.53	3.03	18.97
1103	SLU 62	58	65	4998	-1170.13	3.07	19.97
1103	SLU 63	57	76	4948	-1160.08	3.05	19.46
1103	SLU 64	57	64	4906	-1148.24	3	19.6
1103	SLU 65	55	83	4822	-1131.48	2.97	18.75
1103	SLU 66	59	64	4998	-1168.28	3.04	20.2
1103	SLU 67	57	76	4948	-1158.23	3.03	19.69
1103	SLU 68	56	83	4880	-1144.03	2.99	19.24
1103	SLU 69	60	64	5056	-1180.83	3.06	20.69
1103	SLU 70	59	76	5006	-1170.78	3.04	20.18
1103	SLU 71	60	64	5022	-1173.34	3.04	20.58
1103	SLU 72	58	75	4971	-1163.28	3.02	20.07
1103	SLU 73	59	88	5253	-1229.14	3.3	20.2
1103	SLU 74	63	69	5429	-1265.94	3.37	21.66
1103	SLU 75	62	81	5379	-1255.89	3.35	21.14
1103	SLU 76	60	88	5311	-1241.69	3.32	20.69
1103	SLU 77	64	69	5487	-1278.49	3.39	22.15
1103	SLU 78	63	81	5437	-1268.44	3.37	21.63
1103	SLU 79	64	69	5453	-1271	3.36	22.04
1103	SLU 80	63	80	5402	-1260.94	3.35	21.52

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1103	SLU 81	63	71	5522	-1287.75	3.47	21.68
1103	SLU 82	62	82	5471	-1277.69	3.45	21.16
1103	SLU 83	64	71	5580	-1300.3	3.49	22.17
1103	SLU 84	63	83	5529	-1290.25	3.47	21.66
1103	SLE RA 1	42	48	3646	-854.65	2.22	14.6
1103	SLE RA 2	41	60	3590	-843.48	2.2	14.02
1103	SLE RA 3	44	48	3708	-868.01	2.24	15
1103	SLE RA 4	43	56	3674	-861.31	2.23	14.65
1103	SLE RA 5	42	60	3629	-851.85	2.21	14.35
1103	SLE RA 6	45	48	3746	-876.38	2.26	15.32
1103	SLE RA 7	44	56	3712	-869.68	2.24	14.98
1103	SLE RA 8	44	48	3723	-871.39	2.24	15.25
1103	SLE RA 9	43	55	3690	-864.68	2.23	14.91
1103	SLE RA 10	44	64	3877	-908.58	2.42	14.99
1103	SLE RA 11	46	51	3995	-933.12	2.46	15.97
1103	SLE RA 12	45	59	3961	-926.42	2.45	15.62
1103	SLE RA 13	45	64	3916	-916.95	2.43	15.32
1103	SLE RA 14	47	51	4033	-941.49	2.47	16.29
1103	SLE RA 15	46	59	4000	-934.79	2.46	15.95
1103	SLE RA 16	47	51	4011	-936.49	2.46	16.22
1103	SLE RA 17	46	59	3977	-929.79	2.45	15.88
1103	SLE RA 18	46	52	4057	-947.66	2.53	15.98
1103	SLE RA 19	46	60	4023	-940.96	2.52	15.64
1103	SLE RA 20	47	53	4095	-956.03	2.54	16.31
1103	SLE RA 21	46	60	4061	-949.32	2.53	15.96
1103	SLE FR 1	42	48	3646	-854.65	2.22	14.6
1103	SLE FR 2	42	50	3635	-852.41	2.21	14.48
1103	SLE FR 3	43	48	3662	-858	2.22	14.73
1103	SLE FR 4	43	52	3758	-880.32	2.31	14.9
1103	SLE FR 5	44	49	3785	-885.9	2.31	15.14
1103	SLE FR 6	44	50	3851	-901.15	2.37	15.29
1103	SLE QP 1	42	48	3646	-854.65	2.22	14.6
1103	SLE QP 2	44	49	3769	-882.55	2.31	15.01
1103	SLD 1	544	131	2743	-677.89	2.72	190.06
1103	SLD 2	451	172	2730	-675.82	2.91	157.54
1103	SLD 3	580	-106	3874	-902.61	3.08	202.96
1103	SLD 4	487	-65	3861	-900.54	3.28	170.43
1103	SLD 5	155	425	1749	-480.7	1.85	53.82
1103	SLD 6	94	453	1740	-479.34	1.98	32.37
1103	SLD 7	277	-364	5518	-1229.77	3.06	96.8
1103	SLD 8	215	-337	5509	-1228.4	3.19	75.34
1103	SLD 9	-128	435	2029	-536.7	1.43	-45.32
1103	SLD 10	-190	462	2021	-535.34	1.56	-66.78
1103	SLD 11	-6	-355	5798	-1285.77	2.64	-2.35
1103	SLD 12	-68	-327	5790	-1284.41	2.77	-23.8
1103	SLD 13	-400	163	3678	-864.56	1.34	-140.41
1103	SLD 14	-493	204	3665	-862.49	1.54	-172.93
1103	SLD 15	-363	-74	4809	-1089.28	1.7	-127.52
1103	SLD 16	-456	-33	4795	-1087.22	1.9	-160.04
1103	SLV 1	1210	259	1275	-385.02	3.24	423.45
1103	SLV 2	991	356	1244	-380.17	3.7	347
1103	SLV 3	1304	-333	4108	-948.11	4.14	456.29
1103	SLV 4	1085	-236	4077	-943.26	4.6	379.84
1103	SLV 5	293	991	-1270	119.82	1.14	101.99
1103	SLV 6	146	1057	-1291	123.09	1.45	50.52
1103	SLV 7	604	-981	8174	-1757.15	4.14	211.48
1103	SLV 8	456	-916	8153	-1753.88	4.45	160.01
1103	SLV 9	-369	1014	-614	-11.23	0.17	-129.99
1103	SLV 10	-516	1079	-635	-7.96	0.48	-181.46
1103	SLV 11	-58	-959	8830	-1888.19	3.17	-20.5
1103	SLV 12	-206	-893	8809	-1884.93	3.48	-71.97
1103	SLV 13	-997	334	3462	-821.85	0.02	-349.82
1103	SLV 14	-1216	431	3431	-816.99	0.48	-426.27
1103	SLV 15	-904	-258	6295	-1384.94	0.92	-316.98
1103	SLV 16	-1123	-161	6264	-1380.08	1.38	-393.43
1103	CRTFP Ux+	0	0	0	0	0	0
1103	CRTFP Ux-	0	0	0	0	0	0
1103	CRTFP Uy+	0	0	0	0	0	0
1103	CRTFP Uy-	0	0	0	0	0	0
1104	SLU 1	44	38	3445	-774.67	0.22	15.24
1104	SLU 2	42	57	3360	-758.59	0.25	14.33
1104	SLU 3	46	39	3536	-793.74	0.21	15.89
1104	SLU 4	45	50	3486	-784.09	0.22	15.34
1104	SLU 5	43	57	3418	-770.65	0.23	14.86
1104	SLU 6	48	39	3594	-805.8	0.18	16.42
1104	SLU 7	46	50	3544	-796.15	0.2	15.87
1104	SLU 8	47	38	3560	-798.8	0.18	16.3
1104	SLU 9	46	50	3510	-789.15	0.2	15.75
1104	SLU 10	46	62	3785	-850.08	0.32	15.92
1104	SLU 11	51	43	3961	-885.22	0.28	17.48
1104	SLU 12	49	55	3911	-875.57	0.29	16.93
1104	SLU 13	48	62	3843	-862.14	0.3	16.44
1104	SLU 14	52	43	4019	-897.28	0.25	18.01
1104	SLU 15	51	55	3969	-887.63	0.27	17.46
1104	SLU 16	52	43	3985	-890.28	0.25	17.89
1104	SLU 17	50	54	3935	-880.63	0.27	17.34
1104	SLU 18	51	45	4052	-905.37	0.32	17.51
1104	SLU 19	49	56	4001	-895.72	0.34	16.96
1104	SLU 20	52	45	4109	-917.43	0.3	18.04

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1104	SLU 21	51	57	4059	-907.78	0.32	17.49
1104	SLU 22	51	43	4019	-896.75	0.29	17.64
1104	SLU 23	49	63	3935	-880.67	0.32	16.73
1104	SLU 24	53	44	4110	-915.82	0.28	18.29
1104	SLU 25	51	55	4060	-906.17	0.3	17.74
1104	SLU 26	50	63	3992	-892.73	0.3	17.25
1104	SLU 27	55	44	4168	-927.88	0.26	18.82
1104	SLU 28	53	55	4118	-918.23	0.27	18.27
1104	SLU 29	54	44	4135	-920.88	0.25	18.7
1104	SLU 30	53	55	4084	-911.23	0.27	18.15
1104	SLU 31	53	67	4359	-972.16	0.39	18.31
1104	SLU 32	58	49	4535	-1007.3	0.35	19.88
1104	SLU 33	56	60	4485	-997.65	0.37	19.33
1104	SLU 34	55	67	4417	-984.22	0.37	18.84
1104	SLU 35	59	49	4593	-1019.36	0.33	20.41
1104	SLU 36	58	60	4543	-1009.72	0.34	19.86
1104	SLU 37	59	48	4559	-1012.36	0.32	20.28
1104	SLU 38	57	60	4509	-1002.71	0.34	19.74
1104	SLU 39	58	50	4626	-1027.45	0.39	19.91
1104	SLU 40	56	62	4575	-1017.8	0.41	19.36
1104	SLU 41	59	50	4684	-1039.51	0.37	20.43
1104	SLU 42	58	62	4633	-1029.86	0.39	19.89
1104	SLU 43	55	48	4281	-965.22	0.26	18.99
1104	SLU 44	53	67	4197	-949.13	0.29	18.08
1104	SLU 45	57	48	4373	-984.28	0.25	19.64
1104	SLU 46	55	60	4322	-974.63	0.26	19.09
1104	SLU 47	54	67	4255	-961.2	0.27	18.61
1104	SLU 48	59	48	4431	-996.34	0.23	20.17
1104	SLU 49	57	60	4380	-986.69	0.24	19.62
1104	SLU 50	58	48	4397	-989.34	0.22	20.05
1104	SLU 51	57	59	4346	-979.69	0.24	19.5
1104	SLU 52	57	72	4622	-1040.62	0.36	19.67
1104	SLU 53	62	53	4798	-1075.77	0.32	21.23
1104	SLU 54	60	65	4747	-1066.12	0.33	20.68
1104	SLU 55	59	72	4680	-1052.68	0.34	20.19
1104	SLU 56	63	53	4856	-1087.83	0.3	21.76
1104	SLU 57	62	65	4805	-1078.18	0.31	21.21
1104	SLU 58	63	53	4822	-1080.83	0.29	21.64
1104	SLU 59	61	64	4771	-1071.18	0.31	21.09
1104	SLU 60	62	55	4888	-1095.91	0.36	21.26
1104	SLU 61	60	66	4838	-1086.26	0.38	20.71
1104	SLU 62	63	55	4946	-1107.97	0.34	21.79
1104	SLU 63	62	66	4896	-1098.32	0.36	21.24
1104	SLU 64	62	53	4855	-1087.3	0.33	21.39
1104	SLU 65	59	72	4771	-1071.22	0.36	20.48
1104	SLU 66	64	54	4947	-1106.36	0.32	22.04
1104	SLU 67	62	65	4896	-1096.71	0.34	21.49
1104	SLU 68	61	72	4829	-1083.28	0.34	21
1104	SLU 69	65	54	5005	-1118.42	0.3	22.57
1104	SLU 70	64	65	4954	-1108.77	0.32	22.02
1104	SLU 71	65	53	4971	-1111.42	0.29	22.45
1104	SLU 72	64	65	4921	-1101.77	0.31	21.9
1104	SLU 73	64	77	5196	-1162.7	0.43	22.06
1104	SLU 74	69	58	5372	-1197.85	0.39	23.63
1104	SLU 75	67	70	5321	-1188.2	0.41	23.08
1104	SLU 76	66	77	5254	-1174.76	0.41	22.59
1104	SLU 77	70	58	5430	-1209.91	0.37	24.16
1104	SLU 78	68	70	5379	-1200.26	0.39	23.61
1104	SLU 79	70	58	5396	-1202.91	0.36	24.03
1104	SLU 80	68	69	5345	-1193.26	0.38	23.49
1104	SLU 81	69	60	5462	-1217.99	0.43	23.66
1104	SLU 82	67	71	5412	-1208.34	0.45	23.11
1104	SLU 83	70	60	5520	-1230.05	0.41	24.19
1104	SLU 84	69	71	5470	-1220.4	0.43	23.64
1104	SLE RA 1	46	40	3609	-809.55	0.24	15.93
1104	SLE RA 2	44	52	3553	-798.83	0.26	15.32
1104	SLE RA 3	47	40	3670	-822.26	0.23	16.36
1104	SLE RA 4	46	48	3636	-815.83	0.24	15.99
1104	SLE RA 5	45	52	3591	-806.87	0.25	15.67
1104	SLE RA 6	48	40	3708	-830.3	0.22	16.71
1104	SLE RA 7	47	48	3675	-823.87	0.23	16.35
1104	SLE RA 8	48	40	3686	-825.63	0.21	16.63
1104	SLE RA 9	47	47	3652	-819.2	0.23	16.27
1104	SLE RA 10	48	56	3836	-859.82	0.31	16.38
1104	SLE RA 11	51	43	3953	-883.25	0.28	17.42
1104	SLE RA 12	49	51	3919	-876.82	0.29	17.05
1104	SLE RA 13	49	56	3874	-867.86	0.29	16.73
1104	SLE RA 14	52	43	3992	-891.29	0.26	17.77
1104	SLE RA 15	50	51	3958	-884.86	0.28	17.41
1104	SLE RA 16	51	43	3969	-886.63	0.26	17.69
1104	SLE RA 17	50	51	3935	-880.19	0.27	17.32
1104	SLE RA 18	51	44	4013	-896.68	0.31	17.44
1104	SLE RA 19	50	52	3980	-890.25	0.32	17.07
1104	SLE RA 20	52	44	4052	-904.72	0.29	17.79
1104	SLE RA 21	51	52	4018	-898.29	0.31	17.42
1104	SLE FR 1	46	40	3609	-809.55	0.24	15.93
1104	SLE FR 2	46	42	3597	-807.41	0.25	15.8
1104	SLE FR 3	47	40	3624	-812.77	0.24	16.07
1104	SLE FR 4	47	44	3719	-833.55	0.27	16.26

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1104	SLE FR 5	48	41	3746	-838.91	0.26	16.52
1104	SLE FR 6	48	42	3811	-853.12	0.27	16.68
1104	SLE QP 1	46	40	3609	-809.55	0.24	15.93
1104	SLE QP 2	48	41	3730	-835.69	0.26	16.38
1104	SLD 1	546	123	2684	-640.05	1.24	191
1104	SLD 2	453	167	2664	-635.29	1.49	158.35
1104	SLD 3	585	-111	3815	-855.91	0.81	204.66
1104	SLD 4	492	-68	3795	-851.15	1.06	172.01
1104	SLD 5	155	413	1704	-450.48	1.16	53.92
1104	SLD 6	93	442	1691	-447.34	1.32	32.39
1104	SLD 7	285	-368	5475	-1169.99	-0.27	99.45
1104	SLD 8	223	-339	5462	-1166.85	-0.1	77.91
1104	SLD 9	-128	421	1998	-504.53	0.62	-45.16
1104	SLD 10	-189	450	1985	-501.39	0.79	-66.69
1104	SLD 11	2	-360	5769	-1224.04	-0.8	0.37
1104	SLD 12	-60	-331	5756	-1220.9	-0.63	-21.16
1104	SLD 13	-397	150	3665	-820.24	-0.54	-139.25
1104	SLD 14	-490	194	3645	-815.47	-0.29	-171.9
1104	SLD 15	-358	-84	4796	-1036.09	-0.96	-125.6
1104	SLD 16	-451	-41	4776	-1031.33	-0.71	-158.24
1104	SLV 1	1211	251	1188	-359.99	2.58	423.73
1104	SLV 2	991	354	1142	-348.8	3.17	347
1104	SLV 3	1310	-335	4023	-900.96	1.5	458.51
1104	SLV 4	1090	-232	3977	-889.76	2.09	381.78
1104	SLV 5	287	973	-1323	125.4	2.48	100.16
1104	SLV 6	139	1042	-1355	132.93	2.88	48.5
1104	SLV 7	617	-979	8126	-1677.82	-1.11	216.09
1104	SLV 8	469	-909	8095	-1670.29	-0.71	164.43
1104	SLV 9	-374	992	-635	-1.09	1.23	-131.67
1104	SLV 10	-522	1061	-666	6.44	1.63	-183.33
1104	SLV 11	-44	-960	8815	-1804.31	-2.35	-15.74
1104	SLV 12	-192	-890	8783	-1796.78	-1.96	-67.4
1104	SLV 13	-995	314	3483	-781.62	-1.57	-349.02
1104	SLV 14	-1215	417	3437	-770.43	-0.98	-425.75
1104	SLV 15	-896	-271	6318	-1322.59	-2.65	-314.24
1104	SLV 16	-1116	-168	6272	-1311.39	-2.06	-390.97
1104	CRTFP Ux+	0	0	0	0	0	0
1104	CRTFP Ux-	0	0	0	0	0	0
1104	CRTFP Uy+	0	0	0	0	0	0
1104	CRTFP Uy-	0	0	0	0	0	0
1105	SLU 1	48	32	3472	-778.1	-2.08	16.47
1105	SLU 2	45	51	3385	-761.39	-1.98	15.5
1105	SLU 3	50	32	3565	-797.56	-2.17	17.17
1105	SLU 4	48	43	3513	-787.53	-2.11	16.59
1105	SLU 5	46	51	3445	-773.87	-2.05	16.07
1105	SLU 6	51	32	3624	-810.04	-2.24	17.73
1105	SLU 7	50	43	3572	-800.01	-2.18	17.15
1105	SLU 8	51	32	3590	-803.06	-2.22	17.6
1105	SLU 9	49	43	3538	-793.03	-2.16	17.02
1105	SLU 10	50	55	3813	-852.98	-2.23	17.22
1105	SLU 11	55	36	3992	-889.15	-2.42	18.88
1105	SLU 12	53	48	3940	-879.12	-2.36	18.3
1105	SLU 13	51	55	3872	-865.46	-2.3	17.78
1105	SLU 14	56	36	4051	-901.63	-2.48	19.45
1105	SLU 15	55	48	4000	-891.6	-2.42	18.87
1105	SLU 16	56	36	4017	-894.65	-2.47	19.31
1105	SLU 17	54	47	3966	-884.62	-2.41	18.73
1105	SLU 18	55	38	4082	-908.94	-2.44	18.92
1105	SLU 19	53	49	4030	-898.92	-2.38	18.34
1105	SLU 20	56	38	4141	-921.42	-2.5	19.48
1105	SLU 21	55	49	4090	-911.4	-2.44	18.9
1105	SLU 22	55	36	4050	-900.54	-2.44	19.06
1105	SLU 23	52	55	3964	-883.83	-2.34	18.1
1105	SLU 24	57	36	4143	-920	-2.52	19.76
1105	SLU 25	55	48	4091	-909.97	-2.47	19.18
1105	SLU 26	54	55	4023	-896.31	-2.41	18.66
1105	SLU 27	59	36	4202	-932.48	-2.59	20.33
1105	SLU 28	57	48	4150	-922.45	-2.53	19.75
1105	SLU 29	58	36	4168	-925.5	-2.57	20.19
1105	SLU 30	57	47	4116	-915.48	-2.51	19.61
1105	SLU 31	57	60	4391	-975.42	-2.59	19.81
1105	SLU 32	62	41	4570	-1011.59	-2.77	21.48
1105	SLU 33	60	52	4519	-1001.57	-2.71	20.9
1105	SLU 34	59	60	4450	-987.9	-2.66	20.37
1105	SLU 35	64	41	4629	-1024.07	-2.84	22.04
1105	SLU 36	62	52	4578	-1014.05	-2.78	21.46
1105	SLU 37	63	40	4595	-1017.09	-2.82	21.91
1105	SLU 38	62	52	4544	-1007.07	-2.76	21.33
1105	SLU 39	62	42	4660	-1031.39	-2.79	21.51
1105	SLU 40	60	54	4609	-1021.36	-2.73	20.93
1105	SLU 41	64	42	4719	-1043.87	-2.86	22.08
1105	SLU 42	62	54	4668	-1033.84	-2.8	21.5
1105	SLU 43	59	40	4315	-969.55	-2.59	20.52
1105	SLU 44	57	59	4229	-952.84	-2.49	19.55
1105	SLU 45	61	40	4408	-989	-2.67	21.22
1105	SLU 46	60	51	4356	-978.98	-2.61	20.64
1105	SLU 47	58	59	4288	-965.32	-2.55	20.12
1105	SLU 48	63	40	4467	-1001.48	-2.74	21.79
1105	SLU 49	61	51	4415	-991.46	-2.68	21.21

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1105	SLU 50	63	40	4433	-994.51	-2.72	21.65
1105	SLU 51	61	51	4382	-984.48	-2.66	21.07
1105	SLU 52	62	63	4656	-1044.43	-2.73	21.27
1105	SLU 53	66	44	4835	-1080.6	-2.92	22.93
1105	SLU 54	65	56	4784	-1070.57	-2.86	22.35
1105	SLU 55	63	63	4715	-1056.91	-2.8	21.83
1105	SLU 56	68	44	4895	-1093.08	-2.99	23.5
1105	SLU 57	66	56	4843	-1083.05	-2.93	22.92
1105	SLU 58	68	44	4861	-1086.1	-2.97	23.36
1105	SLU 59	66	55	4809	-1076.07	-2.91	22.78
1105	SLU 60	66	46	4925	-1100.39	-2.94	22.97
1105	SLU 61	65	57	4874	-1090.37	-2.88	22.39
1105	SLU 62	68	46	4985	-1112.87	-3.01	23.53
1105	SLU 63	66	57	4933	-1102.85	-2.95	22.95
1105	SLU 64	67	44	4893	-1091.99	-2.94	23.11
1105	SLU 65	64	63	4807	-1075.28	-2.84	22.15
1105	SLU 66	69	44	4986	-1111.45	-3.03	23.81
1105	SLU 67	67	56	4934	-1101.42	-2.97	23.23
1105	SLU 68	66	63	4866	-1087.76	-2.91	22.71
1105	SLU 69	70	44	5045	-1123.93	-3.1	24.38
1105	SLU 70	69	56	4994	-1113.9	-3.04	23.8
1105	SLU 71	70	44	5011	-1116.95	-3.08	24.24
1105	SLU 72	68	55	4960	-1106.93	-3.02	23.66
1105	SLU 73	69	68	5234	-1166.87	-3.09	23.86
1105	SLU 74	74	49	5414	-1203.04	-3.27	25.53
1105	SLU 75	72	60	5362	-1193.01	-3.22	24.95
1105	SLU 76	71	68	5293	-1179.35	-3.16	24.43
1105	SLU 77	75	49	5473	-1215.52	-3.34	26.09
1105	SLU 78	74	60	5421	-1205.49	-3.28	25.51
1105	SLU 79	75	48	5439	-1208.54	-3.32	25.96
1105	SLU 80	73	60	5387	-1198.52	-3.27	25.38
1105	SLU 81	74	50	5504	-1222.84	-3.3	25.56
1105	SLU 82	72	62	5452	-1212.81	-3.24	24.98
1105	SLU 83	75	50	5563	-1235.32	-3.36	26.13
1105	SLU 84	74	62	5511	-1225.29	-3.3	25.55
1105	SLE RA 1	50	33	3637	-813.08	-2.18	17.21
1105	SLE RA 2	48	46	3579	-801.94	-2.12	16.57
1105	SLE RA 3	51	33	3699	-826.05	-2.24	17.68
1105	SLE RA 4	50	41	3664	-819.37	-2.2	17.29
1105	SLE RA 5	49	46	3619	-810.26	-2.16	16.94
1105	SLE RA 6	52	33	3738	-834.37	-2.29	18.05
1105	SLE RA 7	51	41	3704	-827.69	-2.25	17.67
1105	SLE RA 8	52	33	3716	-829.72	-2.28	17.96
1105	SLE RA 9	51	41	3681	-823.04	-2.24	17.58
1105	SLE RA 10	51	49	3864	-863	-2.28	17.71
1105	SLE RA 11	54	36	3984	-887.11	-2.41	18.82
1105	SLE RA 12	53	44	3949	-880.43	-2.37	18.43
1105	SLE RA 13	52	49	3904	-871.32	-2.33	18.09
1105	SLE RA 14	55	36	4023	-895.43	-2.45	19.2
1105	SLE RA 15	54	44	3989	-888.75	-2.41	18.81
1105	SLE RA 16	55	36	4001	-890.78	-2.44	19.11
1105	SLE RA 17	54	43	3966	-884.1	-2.4	18.72
1105	SLE RA 18	54	37	4044	-900.31	-2.42	18.84
1105	SLE RA 19	53	45	4009	-893.63	-2.38	18.46
1105	SLE RA 20	56	37	4083	-908.63	-2.47	19.22
1105	SLE RA 21	54	45	4049	-901.95	-2.43	18.83
1105	SLE FR 1	50	33	3637	-813.08	-2.18	17.21
1105	SLE FR 2	49	36	3625	-810.85	-2.17	17.08
1105	SLE FR 3	50	33	3653	-816.41	-2.2	17.36
1105	SLE FR 4	51	37	3747	-837.02	-2.24	17.57
1105	SLE FR 5	52	34	3775	-842.58	-2.27	17.85
1105	SLE FR 6	52	35	3840	-856.7	-2.3	18.03
1105	SLE QP 1	50	33	3637	-813.08	-2.18	17.21
1105	SLE QP 2	51	34	3759	-839.25	-2.26	17.7
1105	SLD 1	548	116	2674	-639.22	-0.58	191.76
1105	SLD 2	454	162	2646	-630.69	-0.26	159.02
1105	SLD 3	589	-117	3831	-863.76	-1.93	206.13
1105	SLD 4	495	-71	3803	-855.22	-1.62	173.39
1105	SLD 5	155	404	1683	-440.24	0.25	54.01
1105	SLD 6	93	435	1665	-434.61	0.46	32.42
1105	SLD 7	292	-373	5541	-1188.68	-4.28	101.91
1105	SLD 8	230	-343	5522	-1183.05	-4.07	80.32
1105	SLD 9	-127	411	1996	-495.45	-0.44	-44.92
1105	SLD 10	-189	442	1977	-489.82	-0.24	-66.51
1105	SLD 11	9	-366	5853	-1243.9	-4.97	2.98
1105	SLD 12	-53	-336	5834	-1238.26	-4.76	-18.61
1105	SLD 13	-393	139	3715	-823.28	-2.89	-137.99
1105	SLD 14	-487	186	3687	-814.75	-2.58	-170.73
1105	SLD 15	-352	-94	4872	-1047.81	-4.25	-123.62
1105	SLD 16	-446	-47	4844	-1039.28	-3.94	-156.36
1105	SLV 1	1210	244	1124	-352.52	1.79	423.67
1105	SLV 2	990	352	1058	-332.45	2.53	346.73
1105	SLV 3	1315	-339	4024	-915.36	-1.62	460.25
1105	SLV 4	1094	-230	3959	-895.29	-0.89	383.3
1105	SLV 5	282	960	-1418	156.66	4	98.38
1105	SLV 6	133	1034	-1463	170.17	4.49	46.58
1105	SLV 7	630	-982	8250	-1719.47	-7.38	220.29
1105	SLV 8	481	-908	8205	-1705.96	-6.88	168.49
1105	SLV 9	-379	977	-688	27.46	2.37	-133.09

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1105	SLV 10	-527	1050	-732	40.97	2.87	-184.89
1105	SLV 11	-31	-965	8980	-1848.68	-9	-11.18
1105	SLV 12	-179	-892	8936	-1835.17	-8.51	-62.98
1105	SLV 13	-992	299	3559	-783.21	-3.62	-347.9
1105	SLV 14	-1213	408	3493	-763.14	-2.89	-424.85
1105	SLV 15	-888	-284	6460	-1346.05	-7.04	-311.33
1105	SLV 16	-1108	-175	6394	-1325.98	-6.3	-388.27
1105	CRTFP Ux+	0	0	0	0	0	0
1105	CRTFP Ux-	0	0	0	0	0	0
1105	CRTFP Uy+	0	0	0	0	0	0
1105	CRTFP Uy-	0	0	0	0	0	0
1106	SLU 1	51	27	3570	-834.46	-4.59	17.64
1106	SLU 2	48	46	3480	-815.62	-4.41	16.63
1106	SLU 3	53	27	3667	-855.89	-4.75	18.39
1106	SLU 4	51	38	3613	-844.59	-4.65	17.78
1106	SLU 5	50	46	3542	-829.57	-4.53	17.23
1106	SLU 6	55	27	3729	-869.84	-4.87	18.99
1106	SLU 7	53	38	3675	-858.54	-4.76	18.38
1106	SLU 8	54	27	3694	-862.34	-4.83	18.84
1106	SLU 9	52	38	3640	-851.04	-4.72	18.23
1106	SLU 10	53	50	3920	-914.51	-5.01	18.46
1106	SLU 11	58	31	4107	-954.78	-5.34	20.22
1106	SLU 12	56	43	4053	-943.48	-5.24	19.61
1106	SLU 13	55	50	3982	-928.45	-5.12	19.06
1106	SLU 14	60	31	4169	-968.72	-5.46	20.82
1106	SLU 15	58	42	4114	-957.42	-5.36	20.21
1106	SLU 16	59	31	4134	-961.23	-5.42	20.68
1106	SLU 17	58	42	4080	-949.93	-5.31	20.07
1106	SLU 18	58	33	4198	-975.72	-5.44	20.26
1106	SLU 19	57	44	4144	-964.42	-5.33	19.66
1106	SLU 20	60	33	4260	-989.67	-5.55	20.86
1106	SLU 21	58	44	4206	-978.37	-5.45	20.25
1106	SLU 22	59	31	4166	-966.96	-5.41	20.42
1106	SLU 23	56	50	4075	-948.12	-5.24	19.41
1106	SLU 24	61	31	4262	-988.39	-5.57	21.17
1106	SLU 25	59	42	4208	-977.09	-5.47	20.56
1106	SLU 26	58	50	4137	-962.07	-5.35	20.01
1106	SLU 27	63	31	4324	-1002.34	-5.69	21.77
1106	SLU 28	61	42	4270	-991.04	-5.59	21.16
1106	SLU 29	62	30	4289	-994.84	-5.65	21.62
1106	SLU 30	60	42	4235	-983.54	-5.54	21.01
1106	SLU 31	61	54	4515	-1047.01	-5.83	21.24
1106	SLU 32	66	35	4702	-1087.28	-6.17	23
1106	SLU 33	64	46	4648	-1075.98	-6.06	22.39
1106	SLU 34	63	54	4577	-1060.95	-5.95	21.84
1106	SLU 35	68	35	4764	-1101.22	-6.28	23.6
1106	SLU 36	66	46	4710	-1089.92	-6.18	22.99
1106	SLU 37	67	34	4729	-1093.73	-6.24	23.46
1106	SLU 38	66	46	4675	-1082.43	-6.14	22.85
1106	SLU 39	66	36	4794	-1108.22	-6.26	23.04
1106	SLU 40	65	48	4740	-1096.92	-6.15	22.43
1106	SLU 41	68	36	4856	-1122.17	-6.38	23.64
1106	SLU 42	66	48	4802	-1110.87	-6.27	23.03
1106	SLU 43	63	34	4437	-1039.36	-5.68	21.99
1106	SLU 44	60	53	4347	-1020.53	-5.51	20.97
1106	SLU 45	65	34	4534	-1060.8	-5.84	22.73
1106	SLU 46	64	45	4480	-1049.5	-5.74	22.12
1106	SLU 47	62	53	4409	-1034.48	-5.63	21.57
1106	SLU 48	67	34	4596	-1074.75	-5.96	23.33
1106	SLU 49	65	45	4542	-1063.45	-5.86	22.72
1106	SLU 50	67	33	4561	-1067.25	-5.92	23.18
1106	SLU 51	65	45	4507	-1055.95	-5.81	22.57
1106	SLU 52	66	57	4787	-1119.42	-6.1	22.8
1106	SLU 53	71	38	4973	-1159.69	-6.44	24.56
1106	SLU 54	69	49	4919	-1148.39	-6.33	23.95
1106	SLU 55	67	57	4848	-1133.36	-6.22	23.4
1106	SLU 56	72	38	5035	-1173.63	-6.56	25.16
1106	SLU 57	71	49	4981	-1162.33	-6.45	24.55
1106	SLU 58	72	38	5000	-1166.14	-6.51	25.02
1106	SLU 59	70	49	4946	-1154.84	-6.41	24.41
1106	SLU 60	71	40	5065	-1180.63	-6.53	24.61
1106	SLU 61	69	51	5011	-1169.33	-6.43	24
1106	SLU 62	73	39	5127	-1194.57	-6.65	25.2
1106	SLU 63	71	51	5073	-1183.28	-6.54	24.59
1106	SLU 64	71	37	5032	-1171.86	-6.51	24.76
1106	SLU 65	68	56	4942	-1153.03	-6.33	23.75
1106	SLU 66	73	37	5129	-1193.3	-6.67	25.51
1106	SLU 67	72	49	5075	-1182	-6.56	24.9
1106	SLU 68	70	56	5004	-1166.97	-6.45	24.35
1106	SLU 69	75	37	5191	-1207.25	-6.79	26.11
1106	SLU 70	73	49	5137	-1195.95	-6.68	25.5
1106	SLU 71	75	37	5156	-1199.75	-6.74	25.96
1106	SLU 72	73	49	5102	-1188.45	-6.64	25.35
1106	SLU 73	74	61	5382	-1251.92	-6.92	25.58
1106	SLU 74	79	42	5569	-1292.19	-7.26	27.34
1106	SLU 75	77	53	5515	-1280.89	-7.16	26.73
1106	SLU 76	75	60	5444	-1265.86	-7.04	26.18
1106	SLU 77	80	41	5631	-1306.13	-7.38	27.94
1106	SLU 78	79	53	5577	-1294.83	-7.27	27.33

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1106	SLU 79	80	41	5596	-1298.64	-7.33	27.8
1106	SLU 80	78	53	5542	-1287.34	-7.23	27.19
1106	SLU 81	79	43	5661	-1313.13	-7.35	27.38
1106	SLU 82	77	55	5607	-1301.83	-7.25	26.77
1106	SLU 83	81	43	5723	-1327.07	-7.47	27.98
1106	SLU 84	79	55	5669	-1315.77	-7.37	27.37
1106	SLE RA 1	53	28	3740	-872.31	-4.82	18.44
1106	SLE RA 2	51	41	3680	-859.76	-4.71	17.76
1106	SLE RA 3	55	28	3805	-886.61	-4.93	18.94
1106	SLE RA 4	53	36	3769	-879.07	-4.86	18.53
1106	SLE RA 5	52	41	3721	-869.05	-4.79	18.16
1106	SLE RA 6	56	28	3846	-895.9	-5.01	19.33
1106	SLE RA 7	54	36	3810	-888.37	-4.94	18.93
1106	SLE RA 8	55	28	3823	-890.9	-4.98	19.24
1106	SLE RA 9	54	35	3787	-883.37	-4.91	18.83
1106	SLE RA 10	55	43	3973	-925.68	-5.1	18.98
1106	SLE RA 11	58	31	4098	-952.53	-5.33	20.16
1106	SLE RA 12	57	38	4062	-945	-5.26	19.75
1106	SLE RA 13	56	43	4015	-934.98	-5.18	19.38
1106	SLE RA 14	59	31	4139	-961.83	-5.41	20.56
1106	SLE RA 15	58	38	4103	-954.29	-5.34	20.15
1106	SLE RA 16	59	30	4116	-956.83	-5.38	20.46
1106	SLE RA 17	58	38	4080	-949.3	-5.31	20.05
1106	SLE RA 18	58	32	4159	-966.49	-5.39	20.19
1106	SLE RA 19	57	39	4123	-958.96	-5.32	19.78
1106	SLE RA 20	59	32	4200	-975.79	-5.47	20.58
1106	SLE RA 21	58	39	4164	-968.25	-5.4	20.18
1106	SLE FR 1	53	28	3740	-872.31	-4.82	18.44
1106	SLE FR 2	53	30	3728	-869.8	-4.8	18.3
1106	SLE FR 3	54	28	3757	-876.03	-4.85	18.6
1106	SLE FR 4	54	32	3854	-898.06	-4.97	18.83
1106	SLE FR 5	55	29	3882	-904.29	-5.02	19.12
1106	SLE FR 6	56	30	3950	-919.4	-5.11	19.31
1106	SLE QP 1	53	28	3740	-872.31	-4.82	18.44
1106	SLE QP 2	55	29	3866	-900.57	-4.99	18.96
1106	SLD 1	550	110	2720	-680.82	-2.52	192.34
1106	SLD 2	456	159	2682	-667.2	-2.14	159.54
1106	SLD 3	593	-124	3932	-934.23	-4.9	207.37
1106	SLD 4	499	-75	3894	-920.62	-4.52	174.58
1106	SLD 5	155	399	1690	-452.74	-0.71	54.07
1106	SLD 6	93	431	1665	-443.76	-0.46	32.43
1106	SLD 7	298	-380	5731	-1297.46	-8.64	104.19
1106	SLD 8	236	-348	5706	-1288.48	-8.39	82.55
1106	SLD 9	-127	406	2026	-512.65	-1.6	-44.63
1106	SLD 10	-189	438	2000	-503.67	-1.35	-66.26
1106	SLD 11	17	-373	6067	-1357.37	-9.52	5.49
1106	SLD 12	-46	-341	6041	-1348.39	-9.27	-16.14
1106	SLD 13	-390	133	3838	-880.51	-5.47	-136.65
1106	SLD 14	-484	182	3800	-866.9	-5.09	-169.45
1106	SLD 15	-347	-101	5050	-1133.93	-7.85	-121.61
1106	SLD 16	-441	-52	5012	-1120.32	-7.46	-154.41
1106	SLV 1	1209	236	1083	-365.24	0.99	423.28
1106	SLV 2	988	352	993	-333.25	1.89	346.18
1106	SLV 3	1319	-348	4122	-1000.62	-4.98	461.53
1106	SLV 4	1098	-232	4032	-968.63	-4.08	384.43
1106	SLV 5	276	956	-1561	217.72	5.69	96.63
1106	SLV 6	127	1033	-1621	239.26	6.29	44.73
1106	SLV 7	641	-991	8568	-1900.21	-14.21	224.13
1106	SLV 8	493	-914	8508	-1878.67	-13.61	172.23
1106	SLV 9	-383	972	-776	77.54	3.62	-134.3
1106	SLV 10	-532	1050	-837	99.08	4.23	-186.21
1106	SLV 11	-18	-975	9353	-2040.39	-16.28	-6.8
1106	SLV 12	-167	-897	9293	-2018.85	-15.68	-58.71
1106	SLV 13	-989	291	3700	-832.51	-5.9	-346.51
1106	SLV 14	-1210	406	3610	-800.51	-5.01	-423.6
1106	SLV 15	-879	-293	6738	-1467.89	-11.87	-308.26
1106	SLV 16	-1100	-178	6648	-1435.89	-10.98	-385.35
1106	CRTFP Ux+	0	0	0	0	0	0
1106	CRTFP Ux-	0	0	0	0	0	0
1106	CRTFP Uy+	0	0	0	0	0	0
1106	CRTFP Uy-	0	0	0	0	0	0
1107	SLU 1	54	24	3743	-946.6	-7.06	18.77
1107	SLU 2	51	44	3646	-924.06	-6.81	17.7
1107	SLU 3	56	24	3845	-971.7	-7.3	19.56
1107	SLU 4	54	36	3787	-958.17	-7.15	18.92
1107	SLU 5	52	43	3712	-940.57	-6.98	18.33
1107	SLU 6	58	24	3912	-988.21	-7.47	20.19
1107	SLU 7	56	36	3854	-974.69	-7.32	19.55
1107	SLU 8	57	24	3875	-979.62	-7.4	20.03
1107	SLU 9	56	35	3817	-966.1	-7.25	19.39
1107	SLU 10	56	47	4109	-1037.82	-7.74	19.65
1107	SLU 11	62	28	4308	-1085.46	-8.23	21.5
1107	SLU 12	60	40	4250	-1071.94	-8.08	20.86
1107	SLU 13	58	47	4175	-1054.34	-7.91	20.28
1107	SLU 14	63	28	4374	-1101.98	-8.4	22.13
1107	SLU 15	62	40	4316	-1088.45	-8.25	21.49
1107	SLU 16	63	28	4337	-1093.39	-8.33	21.97
1107	SLU 17	61	39	4280	-1079.87	-8.18	21.33
1107	SLU 18	62	30	4403	-1109.12	-8.4	21.55

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1107	SLU 19	60	41	4345	-1095.6	-8.25	20.91
1107	SLU 20	64	30	4469	-1125.63	-8.56	22.18
1107	SLU 21	62	41	4412	-1112.11	-8.41	21.54
1107	SLU 22	62	27	4369	-1099.39	-8.35	21.72
1107	SLU 23	59	47	4273	-1076.85	-8.09	20.66
1107	SLU 24	64	27	4472	-1124.49	-8.58	22.51
1107	SLU 25	63	39	4414	-1110.97	-8.43	21.87
1107	SLU 26	61	47	4339	-1093.36	-8.26	21.29
1107	SLU 27	66	27	4538	-1141	-8.75	23.14
1107	SLU 28	64	39	4480	-1127.48	-8.6	22.5
1107	SLU 29	66	27	4502	-1132.42	-8.68	22.98
1107	SLU 30	64	39	4444	-1118.89	-8.53	22.34
1107	SLU 31	65	51	4735	-1190.62	-9.03	22.6
1107	SLU 32	70	31	4935	-1238.26	-9.52	24.46
1107	SLU 33	68	43	4877	-1224.73	-9.37	23.82
1107	SLU 34	67	51	4802	-1207.13	-9.2	23.23
1107	SLU 35	72	31	5001	-1254.77	-9.69	25.09
1107	SLU 36	70	43	4943	-1241.24	-9.54	24.45
1107	SLU 37	71	31	4964	-1246.18	-9.62	24.93
1107	SLU 38	70	43	4906	-1232.66	-9.47	24.29
1107	SLU 39	70	33	5030	-1261.91	-9.68	24.5
1107	SLU 40	68	45	4972	-1248.39	-9.53	23.86
1107	SLU 41	72	33	5096	-1278.42	-9.85	25.13
1107	SLU 42	70	44	5038	-1264.9	-9.7	24.49
1107	SLU 43	67	30	4651	-1178.19	-8.74	23.38
1107	SLU 44	64	50	4554	-1155.65	-8.49	22.32
1107	SLU 45	69	30	4753	-1203.29	-8.98	24.17
1107	SLU 46	67	42	4695	-1189.77	-8.83	23.53
1107	SLU 47	66	49	4620	-1172.17	-8.66	22.95
1107	SLU 48	71	30	4819	-1219.8	-9.15	24.8
1107	SLU 49	69	42	4762	-1206.28	-9	24.16
1107	SLU 50	71	30	4783	-1211.22	-9.08	24.64
1107	SLU 51	69	42	4725	-1197.69	-8.93	24.01
1107	SLU 52	69	54	5017	-1269.42	-9.42	24.27
1107	SLU 53	75	34	5216	-1317.06	-9.91	26.12
1107	SLU 54	73	46	5158	-1303.53	-9.76	25.48
1107	SLU 55	71	53	5083	-1285.93	-9.59	24.9
1107	SLU 56	77	34	5282	-1333.57	-10.08	26.75
1107	SLU 57	75	46	5224	-1320.05	-9.93	26.11
1107	SLU 58	76	34	5245	-1324.98	-10.01	26.59
1107	SLU 59	74	46	5187	-1311.46	-9.86	25.95
1107	SLU 60	75	36	5311	-1340.71	-10.07	26.16
1107	SLU 61	73	48	5253	-1327.19	-9.92	25.52
1107	SLU 62	77	36	5377	-1357.23	-10.24	26.79
1107	SLU 63	75	47	5319	-1343.7	-10.09	26.16
1107	SLU 64	75	34	5277	-1330.98	-10.02	26.34
1107	SLU 65	72	53	5181	-1308.45	-9.77	25.28
1107	SLU 66	78	34	5380	-1356.08	-10.26	27.13
1107	SLU 67	76	45	5322	-1342.56	-10.11	26.49
1107	SLU 68	74	53	5247	-1324.96	-9.94	25.91
1107	SLU 69	80	33	5446	-1372.6	-10.43	27.76
1107	SLU 70	78	45	5388	-1359.07	-10.28	27.12
1107	SLU 71	79	33	5410	-1364.01	-10.36	27.6
1107	SLU 72	77	45	5352	-1350.49	-10.21	26.96
1107	SLU 73	78	57	5643	-1422.21	-10.71	27.22
1107	SLU 74	83	38	5842	-1469.85	-11.2	29.07
1107	SLU 75	81	49	5785	-1456.33	-11.05	28.43
1107	SLU 76	80	57	5709	-1438.72	-10.88	27.85
1107	SLU 77	85	37	5909	-1486.36	-11.36	29.7
1107	SLU 78	83	49	5851	-1472.84	-11.21	29.06
1107	SLU 79	85	37	5872	-1477.77	-11.3	29.54
1107	SLU 80	83	49	5814	-1464.25	-11.15	28.91
1107	SLU 81	83	39	5938	-1493.51	-11.36	29.12
1107	SLU 82	82	51	5880	-1479.98	-11.21	28.48
1107	SLU 83	85	39	6004	-1510.02	-11.53	29.75
1107	SLU 84	83	51	5946	-1496.49	-11.38	29.11
1107	SLE RA 1	56	25	3922	-990.25	-7.43	19.61
1107	SLE RA 2	54	38	3857	-975.23	-7.26	18.9
1107	SLE RA 3	58	25	3990	-1006.99	-7.59	20.14
1107	SLE RA 4	56	33	3952	-997.97	-7.49	19.71
1107	SLE RA 5	55	38	3902	-986.24	-7.37	19.32
1107	SLE RA 6	59	25	4034	-1018	-7.7	20.56
1107	SLE RA 7	58	33	3996	-1008.98	-7.6	20.13
1107	SLE RA 8	59	25	4010	-1012.27	-7.65	20.45
1107	SLE RA 9	57	33	3971	-1003.25	-7.55	20.03
1107	SLE RA 10	58	41	4166	-1051.07	-7.88	20.2
1107	SLE RA 11	61	28	4298	-1082.83	-8.21	21.43
1107	SLE RA 12	60	35	4260	-1073.81	-8.11	21.01
1107	SLE RA 13	59	41	4210	-1062.08	-8	20.62
1107	SLE RA 14	63	28	4343	-1093.84	-8.32	21.85
1107	SLE RA 15	61	35	4304	-1084.82	-8.22	21.43
1107	SLE RA 16	62	27	4318	-1088.11	-8.28	21.75
1107	SLE RA 17	61	35	4280	-1079.1	-8.18	21.32
1107	SLE RA 18	61	29	4362	-1098.6	-8.32	21.46
1107	SLE RA 19	60	37	4324	-1089.58	-8.22	21.04
1107	SLE RA 20	63	29	4406	-1109.61	-8.43	21.88
1107	SLE RA 21	61	36	4368	-1100.59	-8.33	21.46
1107	SLE FR 1	56	25	3922	-990.25	-7.43	19.61
1107	SLE FR 2	56	28	3909	-987.25	-7.39	19.47

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1107	SLE FR 3	57	25	3939	-994.66	-7.47	19.78
1107	SLE FR 4	57	29	4041	-1019.75	-7.66	20.03
1107	SLE FR 5	58	26	4071	-1027.16	-7.74	20.34
1107	SLE FR 6	59	27	4142	-1044.43	-7.87	20.54
1107	SLE QP 1	56	25	3922	-990.25	-7.43	19.61
1107	SLE QP 2	58	26	4054	-1022.76	-7.7	20.17
1107	SLD 1	551	106	2823	-766.56	-4.41	192.74
1107	SLD 2	457	158	2772	-746.52	-3.96	159.9
1107	SLD 3	596	-130	4121	-1070.22	-7.81	208.41
1107	SLD 4	502	-78	4070	-1050.19	-7.36	175.57
1107	SLD 5	154	398	1725	-488.93	-1.64	54.08
1107	SLD 6	92	433	1692	-475.72	-1.34	32.42
1107	SLD 7	304	-388	6051	-1501.17	-12.97	106.31
1107	SLD 8	242	-353	6018	-1487.95	-12.67	84.64
1107	SLD 9	-127	406	2090	-557.56	-2.72	-44.31
1107	SLD 10	-189	440	2056	-544.35	-2.42	-65.97
1107	SLD 11	23	-381	6416	-1569.8	-14.05	7.92
1107	SLD 12	-39	-346	6382	-1556.58	-13.75	-13.75
1107	SLD 13	-386	130	4038	-995.32	-8.03	-135.24
1107	SLD 14	-480	183	3987	-975.29	-7.58	-168.08
1107	SLD 15	-341	-106	5335	-1298.99	-11.43	-119.57
1107	SLD 16	-435	-53	5285	-1278.96	-10.98	-152.41
1107	SLV 1	1207	230	1065	-397.92	0.27	422.56
1107	SLV 2	986	353	946	-350.82	1.33	345.36
1107	SLV 3	1322	-359	4319	-1159.41	-8.26	462.4
1107	SLV 4	1100	-236	4200	-1112.32	-7.2	385.2
1107	SLV 5	270	958	-1755	310.84	7.44	94.87
1107	SLV 6	121	1041	-1835	342.54	8.15	42.89
1107	SLV 7	652	-1006	9090	-2227.47	-21	227.67
1107	SLV 8	503	-923	9010	-2195.77	-20.29	175.69
1107	SLV 9	-387	976	-902	150.25	4.9	-135.36
1107	SLV 10	-536	1059	-982	181.96	5.61	-187.33
1107	SLV 11	-6	-989	9942	-2388.06	-23.54	-2.56
1107	SLV 12	-155	-906	9862	-2356.35	-22.83	-54.53
1107	SLV 13	-985	288	3908	-933.2	-8.19	-344.87
1107	SLV 14	-1206	412	3789	-886.11	-7.13	-422.06
1107	SLV 15	-870	-301	7161	-1694.69	-16.72	-305.03
1107	SLV 16	-1092	-178	7042	-1647.6	-15.66	-382.22
1107	CRTFP Ux+	0	0	0	0	0	0
1107	CRTFP Ux-	0	0	0	0	0	0
1107	CRTFP Uy+	0	0	0	0	0	0
1107	CRTFP Uy-	0	0	0	0	0	0
1108	SLU 1	57	24	3984	-1112.76	-9.2	19.84
1108	SLU 2	53	44	3879	-1085.02	-8.89	18.73
1108	SLU 3	59	24	4095	-1143.15	-9.51	20.67
1108	SLU 4	57	36	4032	-1126.51	-9.32	20.01
1108	SLU 5	55	44	3951	-1105.16	-9.1	19.39
1108	SLU 6	61	24	4167	-1163.29	-9.72	21.33
1108	SLU 7	59	36	4104	-1146.65	-9.53	20.67
1108	SLU 8	60	24	4128	-1153.04	-9.63	21.16
1108	SLU 9	58	36	4065	-1136.4	-9.44	20.5
1108	SLU 10	59	48	4374	-1221.02	-10.12	20.78
1108	SLU 11	65	28	4590	-1279.14	-10.74	22.72
1108	SLU 12	63	40	4527	-1262.5	-10.55	22.05
1108	SLU 13	61	48	4446	-1241.16	-10.33	21.44
1108	SLU 14	67	28	4661	-1299.28	-10.95	23.38
1108	SLU 15	65	40	4598	-1282.64	-10.76	22.71
1108	SLU 16	66	28	4622	-1289.03	-10.86	23.21
1108	SLU 17	64	40	4559	-1272.39	-10.67	22.54
1108	SLU 18	65	30	4691	-1307.03	-10.96	22.77
1108	SLU 19	63	42	4628	-1290.39	-10.77	22.1
1108	SLU 20	67	30	4763	-1327.18	-11.18	23.43
1108	SLU 21	65	42	4700	-1310.53	-10.99	22.76
1108	SLU 22	65	27	4655	-1295.77	-10.89	22.96
1108	SLU 23	62	47	4550	-1268.04	-10.57	21.85
1108	SLU 24	68	27	4766	-1326.17	-11.2	23.79
1108	SLU 25	66	39	4703	-1309.52	-11.01	23.13
1108	SLU 26	64	47	4622	-1288.18	-10.79	22.51
1108	SLU 27	70	27	4838	-1346.31	-11.41	24.45
1108	SLU 28	68	39	4775	-1329.67	-11.22	23.79
1108	SLU 29	69	27	4799	-1336.06	-11.32	24.28
1108	SLU 30	67	39	4736	-1319.42	-11.13	23.62
1108	SLU 31	68	51	5045	-1404.03	-11.8	23.9
1108	SLU 32	74	31	5260	-1462.16	-12.43	25.84
1108	SLU 33	72	43	5197	-1445.52	-12.24	25.17
1108	SLU 34	70	51	5117	-1424.17	-12.02	24.56
1108	SLU 35	76	31	5332	-1482.3	-12.64	26.5
1108	SLU 36	74	43	5269	-1465.66	-12.45	25.83
1108	SLU 37	75	31	5293	-1472.05	-12.55	26.33
1108	SLU 38	73	43	5230	-1455.41	-12.36	25.67
1108	SLU 39	74	33	5362	-1490.05	-12.65	25.89
1108	SLU 40	72	45	5299	-1473.41	-12.46	25.22
1108	SLU 41	76	33	5433	-1510.19	-12.86	26.55
1108	SLU 42	74	45	5370	-1493.55	-12.67	25.88
1108	SLU 43	70	31	4949	-1383.84	-11.39	24.72
1108	SLU 44	67	50	4845	-1356.1	-11.07	23.62
1108	SLU 45	73	31	5060	-1414.23	-11.69	25.55
1108	SLU 46	71	42	4997	-1397.59	-11.5	24.89
1108	SLU 47	69	50	4916	-1376.24	-11.28	24.28

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1108	SLU 48	75	30	5132	-1434.37	-11.91	26.21
1108	SLU 49	73	42	5069	-1417.73	-11.72	25.55
1108	SLU 50	74	30	5093	-1424.12	-11.81	26.04
1108	SLU 51	72	42	5030	-1407.48	-11.62	25.38
1108	SLU 52	73	54	5339	-1492.1	-12.3	25.66
1108	SLU 53	79	35	5555	-1550.22	-12.92	27.6
1108	SLU 54	77	46	5492	-1533.58	-12.73	26.94
1108	SLU 55	75	54	5411	-1512.24	-12.51	26.32
1108	SLU 56	81	34	5627	-1570.36	-13.14	28.26
1108	SLU 57	79	46	5564	-1553.72	-12.95	27.6
1108	SLU 58	80	34	5588	-1560.11	-13.04	28.09
1108	SLU 59	78	46	5525	-1543.47	-12.85	27.43
1108	SLU 60	79	36	5656	-1578.11	-13.15	27.65
1108	SLU 61	77	48	5593	-1561.47	-12.96	26.99
1108	SLU 62	81	36	5728	-1598.25	-13.36	28.31
1108	SLU 63	79	48	5665	-1581.61	-13.17	27.65
1108	SLU 64	79	34	5620	-1566.85	-13.07	27.85
1108	SLU 65	76	53	5515	-1539.12	-12.76	26.74
1108	SLU 66	82	34	5731	-1597.25	-13.38	28.67
1108	SLU 67	80	45	5668	-1580.6	-13.19	28.01
1108	SLU 68	78	53	5587	-1559.26	-12.97	27.4
1108	SLU 69	84	33	5803	-1617.39	-13.59	29.33
1108	SLU 70	82	45	5740	-1600.75	-13.4	28.67
1108	SLU 71	83	33	5764	-1607.14	-13.5	29.17
1108	SLU 72	81	45	5701	-1590.49	-13.31	28.5
1108	SLU 73	82	57	6010	-1675.11	-13.99	28.78
1108	SLU 74	88	38	6226	-1733.24	-14.61	30.72
1108	SLU 75	86	49	6163	-1716.6	-14.42	30.06
1108	SLU 76	84	57	6082	-1695.25	-14.2	29.44
1108	SLU 77	89	37	6297	-1753.38	-14.82	31.38
1108	SLU 78	88	49	6235	-1736.74	-14.63	30.72
1108	SLU 79	89	37	6259	-1743.13	-14.73	31.21
1108	SLU 80	87	49	6196	-1726.49	-14.54	30.55
1108	SLU 81	88	39	6327	-1761.13	-14.83	30.77
1108	SLU 82	86	51	6264	-1744.49	-14.64	30.11
1108	SLU 83	90	39	6399	-1781.27	-15.05	31.43
1108	SLU 84	88	51	6336	-1764.63	-14.86	30.77
1108	SLE RA 1	59	25	4176	-1165.05	-9.69	20.73
1108	SLE RA 2	57	38	4106	-1146.56	-9.47	19.99
1108	SLE RA 3	61	25	4250	-1185.31	-9.89	21.29
1108	SLE RA 4	59	33	4208	-1174.22	-9.76	20.84
1108	SLE RA 5	58	38	4154	-1159.99	-9.62	20.43
1108	SLE RA 6	62	25	4298	-1198.74	-10.03	21.73
1108	SLE RA 7	61	33	4256	-1187.64	-9.91	21.28
1108	SLE RA 8	62	25	4272	-1191.9	-9.97	21.61
1108	SLE RA 9	60	33	4230	-1180.81	-9.84	21.17
1108	SLE RA 10	61	41	4436	-1237.22	-10.3	21.36
1108	SLE RA 11	65	28	4579	-1275.97	-10.71	22.65
1108	SLE RA 12	63	36	4537	-1264.88	-10.58	22.21
1108	SLE RA 13	62	41	4484	-1250.65	-10.44	21.8
1108	SLE RA 14	66	28	4627	-1289.4	-10.85	23.09
1108	SLE RA 15	65	36	4585	-1278.3	-10.73	22.65
1108	SLE RA 16	65	28	4601	-1282.57	-10.79	22.98
1108	SLE RA 17	64	35	4559	-1271.47	-10.66	22.54
1108	SLE RA 18	65	29	4647	-1294.57	-10.86	22.68
1108	SLE RA 19	63	37	4605	-1283.47	-10.73	22.24
1108	SLE RA 20	66	29	4695	-1307.99	-11	23.12
1108	SLE RA 21	65	37	4653	-1296.9	-10.87	22.68
1108	SLE FR 1	59	25	4176	-1165.05	-9.69	20.73
1108	SLE FR 2	59	28	4162	-1161.35	-9.64	20.59
1108	SLE FR 3	60	25	4195	-1170.42	-9.74	20.91
1108	SLE FR 4	60	29	4303	-1200.21	-10	21.17
1108	SLE FR 5	61	26	4336	-1209.28	-10.1	21.5
1108	SLE FR 6	62	27	4411	-1229.81	-10.27	21.71
1108	SLE QP 1	59	25	4176	-1165.05	-9.69	20.73
1108	SLE QP 2	61	26	4317	-1203.9	-10.04	21.32
1108	SLD 1	551	105	2978	-893.1	-6.01	192.99
1108	SLD 2	457	161	2913	-865.7	-5.5	160.12
1108	SLD 3	598	-134	4390	-1267.2	-10.31	209.27
1108	SLD 4	504	-78	4325	-1239.8	-9.8	176.4
1108	SLD 5	154	402	1785	-548.21	-2.39	54.04
1108	SLD 6	92	440	1743	-530.14	-2.05	32.36
1108	SLD 7	310	-395	6492	-1795.2	-16.75	108.31
1108	SLD 8	248	-358	6450	-1777.13	-16.41	86.63
1108	SLD 9	-126	410	2185	-630.68	-3.67	-43.99
1108	SLD 10	-189	447	2142	-612.61	-3.33	-65.67
1108	SLD 11	30	-387	6892	-1877.67	-18.03	10.28
1108	SLD 12	-32	-350	6849	-1859.6	-17.69	-11.4
1108	SLD 13	-382	131	4309	-1168.01	-10.27	-133.77
1108	SLD 14	-477	187	4244	-1140.61	-9.76	-166.63
1108	SLD 15	-336	-109	5721	-1542.11	-14.58	-117.48
1108	SLD 16	-430	-52	5656	-1514.71	-14.07	-150.35
1108	SLV 1	1205	229	1066	-445.41	-0.24	421.54
1108	SLV 2	983	361	913	-381	0.96	344.28
1108	SLV 3	1324	-369	4606	-1383.59	-11.05	462.92
1108	SLV 4	1102	-236	4454	-1319.18	-9.85	385.66
1108	SLV 5	265	969	-1999	434.53	9.07	93.04
1108	SLV 6	115	1058	-2102	477.9	9.87	41.02
1108	SLV 7	662	-1023	9801	-2692.74	-26.96	230.98

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1108	SLV 8	512	-934	9699	-2649.38	-26.15	178.97
1108	SLV 9	-391	987	-1064	241.57	6.07	-136.33
1108	SLV 10	-540	1076	-1167	284.93	6.88	-188.35
1108	SLV 11	6	-1005	10736	-2885.7	-29.95	1.62
1108	SLV 12	-143	-916	10633	-2842.34	-29.14	-50.4
1108	SLV 13	-981	289	4181	-1088.63	-10.23	-343.02
1108	SLV 14	-1202	422	4028	-1024.22	-9.03	-420.28
1108	SLV 15	-861	-308	7721	-2026.81	-21.03	-301.64
1108	SLV 16	-1083	-176	7568	-1962.4	-19.83	-378.9
1108	CRTFP Ux+	0	0	0	0	0	0
1108	CRTFP Ux-	0	0	0	0	0	0
1108	CRTFP Uy+	0	0	0	-0.01	0	0
1108	CRTFP Uy-	0	0	0	0.01	0	0
1109	SLU 1	41	19	2959	-905.82	179.96	13.27
1109	SLU 2	39	33	2879	-882.65	175.17	11.6
1109	SLU 3	43	19	3042	-931.06	185.01	13.87
1109	SLU 4	41	27	2994	-917.16	182.13	12.86
1109	SLU 5	40	33	2934	-899.42	178.45	12.08
1109	SLU 6	44	19	3096	-947.83	188.29	14.35
1109	SLU 7	43	27	3049	-933.94	185.41	13.35
1109	SLU 8	44	19	3067	-939.36	186.53	14.24
1109	SLU 9	42	27	3020	-925.46	183.65	13.23
1109	SLU 10	43	36	3248	-994.89	197.58	12.9
1109	SLU 11	47	22	3411	-1043.3	207.41	15.17
1109	SLU 12	46	30	3363	-1029.4	204.54	14.16
1109	SLU 13	44	36	3303	-1011.66	200.86	13.38
1109	SLU 14	48	22	3465	-1060.07	210.7	15.65
1109	SLU 15	47	30	3418	-1046.17	207.82	14.65
1109	SLU 16	48	22	3436	-1051.59	208.93	15.54
1109	SLU 17	47	30	3389	-1037.7	206.06	14.53
1109	SLU 18	47	23	3486	-1066.15	211.98	15.13
1109	SLU 19	46	32	3438	-1052.25	209.1	14.12
1109	SLU 20	49	23	3540	-1082.92	215.26	15.61
1109	SLU 21	47	31	3492	-1069.02	212.38	14.61
1109	SLU 22	48	21	3460	-1057.04	210.37	15.4
1109	SLU 23	45	35	3380	-1033.87	205.58	13.73
1109	SLU 24	49	21	3543	-1082.28	215.42	16
1109	SLU 25	48	30	3495	-1068.38	212.54	14.99
1109	SLU 26	47	35	3434	-1050.64	208.86	14.21
1109	SLU 27	51	21	3597	-1099.05	218.7	16.48
1109	SLU 28	49	29	3549	-1085.16	215.82	15.48
1109	SLU 29	50	21	3568	-1090.58	216.94	16.37
1109	SLU 30	49	29	3520	-1076.68	214.06	15.36
1109	SLU 31	49	38	3749	-1146.11	227.99	15.03
1109	SLU 32	54	24	3912	-1194.52	237.82	17.3
1109	SLU 33	52	33	3864	-1180.62	234.95	16.29
1109	SLU 34	51	38	3803	-1162.88	231.27	15.51
1109	SLU 35	55	24	3966	-1211.29	241.11	17.78
1109	SLU 36	53	32	3918	-1197.39	238.23	16.78
1109	SLU 37	55	24	3937	-1202.81	239.35	17.67
1109	SLU 38	53	32	3889	-1188.92	236.47	16.66
1109	SLU 39	54	25	3987	-1217.37	242.39	17.26
1109	SLU 40	52	34	3939	-1203.47	239.51	16.25
1109	SLU 41	55	25	4041	-1234.14	245.67	17.74
1109	SLU 42	54	34	3993	-1220.24	242.79	16.74
1109	SLU 43	51	24	3675	-1125.72	223.53	16.52
1109	SLU 44	49	38	3595	-1102.55	218.73	14.85
1109	SLU 45	53	24	3758	-1150.96	228.57	17.12
1109	SLU 46	52	32	3710	-1137.06	225.69	16.11
1109	SLU 47	50	38	3650	-1119.32	222.01	15.33
1109	SLU 48	54	24	3812	-1167.73	231.85	17.6
1109	SLU 49	53	32	3764	-1153.83	228.97	16.6
1109	SLU 50	54	23	3783	-1159.26	230.09	17.49
1109	SLU 51	53	32	3735	-1145.36	227.21	16.48
1109	SLU 52	53	41	3964	-1214.78	241.14	16.15
1109	SLU 53	57	27	4127	-1263.19	250.98	18.42
1109	SLU 54	56	35	4079	-1249.3	248.1	17.41
1109	SLU 55	54	41	4019	-1231.56	244.42	16.63
1109	SLU 56	59	27	4181	-1279.97	254.26	18.9
1109	SLU 57	57	35	4133	-1266.07	251.38	17.9
1109	SLU 58	58	26	4152	-1271.49	252.5	18.79
1109	SLU 59	57	35	4104	-1257.59	249.62	17.78
1109	SLU 60	57	28	4202	-1286.05	255.54	18.38
1109	SLU 61	56	36	4154	-1272.15	252.66	17.37
1109	SLU 62	59	28	4256	-1302.82	258.82	18.86
1109	SLU 63	57	36	4208	-1288.92	255.94	17.86
1109	SLU 64	58	26	4175	-1276.94	253.94	18.65
1109	SLU 65	55	40	4096	-1253.77	249.14	16.98
1109	SLU 66	59	26	4259	-1302.18	258.98	19.25
1109	SLU 67	58	34	4211	-1288.28	256.1	18.24
1109	SLU 68	57	40	4150	-1270.54	252.42	17.46
1109	SLU 69	61	26	4313	-1318.95	262.26	19.73
1109	SLU 70	59	34	4265	-1305.05	259.38	18.73
1109	SLU 71	60	26	4284	-1310.48	260.5	19.62
1109	SLU 72	59	34	4236	-1296.58	257.62	18.61
1109	SLU 73	60	43	4465	-1366	271.55	18.28
1109	SLU 74	64	29	4628	-1414.41	281.39	20.55
1109	SLU 75	62	37	4580	-1400.52	278.51	19.55
1109	SLU 76	61	43	4519	-1382.78	274.83	18.76

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1109	SLU 77	65	29	4682	-1431.19	284.67	21.03
1109	SLU 78	64	37	4634	-1417.29	281.79	20.03
1109	SLU 79	65	29	4653	-1422.71	282.91	20.92
1109	SLU 80	63	37	4605	-1408.81	280.03	19.91
1109	SLU 81	64	30	4703	-1437.27	285.95	20.51
1109	SLU 82	62	39	4655	-1423.37	283.07	19.5
1109	SLU 83	65	30	4757	-1454.04	289.23	20.99
1109	SLU 84	64	39	4709	-1440.14	286.35	19.99
1109	SLE RA 1	43	19	3102	-949.02	188.65	13.88
1109	SLE RA 2	41	29	3049	-933.58	185.45	12.76
1109	SLE RA 3	44	20	3157	-965.85	192.01	14.28
1109	SLE RA 4	43	25	3126	-956.59	190.1	13.61
1109	SLE RA 5	42	29	3085	-944.76	187.64	13.09
1109	SLE RA 6	45	19	3193	-977.03	194.2	14.6
1109	SLE RA 7	44	25	3162	-967.77	192.28	13.93
1109	SLE RA 8	45	19	3174	-971.39	193.03	14.53
1109	SLE RA 9	44	25	3142	-962.12	191.11	13.85
1109	SLE RA 10	44	31	3295	-1008.4	200.39	13.63
1109	SLE RA 11	47	22	3403	-1040.68	206.95	15.15
1109	SLE RA 12	46	27	3372	-1031.41	205.03	14.47
1109	SLE RA 13	45	31	3331	-1019.58	202.58	13.95
1109	SLE RA 14	48	21	3439	-1051.86	209.14	15.47
1109	SLE RA 15	47	27	3408	-1042.59	207.22	14.8
1109	SLE RA 16	48	21	3420	-1046.21	207.97	15.39
1109	SLE RA 17	47	27	3388	-1036.94	206.05	14.72
1109	SLE RA 18	47	22	3453	-1055.91	209.99	15.12
1109	SLE RA 19	46	28	3422	-1046.65	208.08	14.45
1109	SLE RA 20	48	22	3489	-1067.09	212.18	15.44
1109	SLE RA 21	47	28	3458	-1057.83	210.26	14.77
1109	SLE FR 1	43	19	3102	-949.02	188.65	13.88
1109	SLE FR 2	43	21	3091	-945.93	188.01	13.66
1109	SLE FR 3	43	19	3116	-953.5	189.53	14.01
1109	SLE FR 4	44	22	3197	-978	194.41	14.03
1109	SLE FR 5	45	20	3222	-985.56	195.93	14.38
1109	SLE FR 6	45	21	3278	-1002.47	199.32	14.5
1109	SLE QP 1	43	19	3102	-949.02	188.65	13.88
1109	SLE QP 2	44	20	3207	-981.09	195.05	14.25
1109	SLD 1	386	75	2196	-719.58	133.86	129.98
1109	SLD 2	320	117	2141	-696.15	130.65	104.32
1109	SLD 3	420	-95	3264	-1032.27	198.44	151.95
1109	SLD 4	354	-52	3209	-1008.84	195.24	126.29
1109	SLD 5	107	286	1294	-432.6	79.31	20.26
1109	SLD 6	64	314	1258	-417.15	77.2	3.33
1109	SLD 7	220	-279	4854	-1474.9	294.61	93.5
1109	SLD 8	176	-251	4818	-1459.45	292.49	76.57
1109	SLD 9	-88	291	1597	-502.73	97.62	-48.07
1109	SLD 10	-132	319	1561	-487.28	95.5	-65
1109	SLD 11	25	-273	5157	-1545.03	312.91	25.17
1109	SLD 12	-19	-245	5121	-1529.58	310.8	8.24
1109	SLD 13	-265	93	3205	-953.34	194.87	-97.78
1109	SLD 14	-331	135	3151	-929.91	191.66	-123.45
1109	SLD 15	-231	-76	4273	-1266.03	259.46	-75.81
1109	SLD 16	-297	-34	4219	-1242.6	256.25	-101.48
1109	SLV 1	841	161	751	-343.05	46.47	283.16
1109	SLV 2	685	260	623	-287.99	38.94	222.83
1109	SLV 3	926	-262	3429	-1127.25	208.4	338.62
1109	SLV 4	771	-163	3300	-1072.18	200.87	278.29
1109	SLV 5	182	686	-1566	389.41	-93.7	22.07
1109	SLV 6	77	753	-1653	426.48	-98.78	-18.55
1109	SLV 7	468	-725	7359	-2224.57	446.05	206.94
1109	SLV 8	364	-658	7272	-2187.5	440.98	166.32
1109	SLV 9	-275	699	-858	225.32	-50.87	-137.81
1109	SLV 10	-380	766	-944	262.4	-55.95	-178.43
1109	SLV 11	11	-712	8067	-2388.66	488.88	47.05
1109	SLV 12	-93	-645	7981	-2351.59	483.81	6.43
1109	SLV 13	-683	204	3114	-890	189.24	-249.79
1109	SLV 14	-838	303	2986	-834.93	181.71	-310.12
1109	SLV 15	-597	-220	5792	-1674.19	351.17	-194.33
1109	SLV 16	-752	-120	5663	-1619.13	343.64	-254.66
1109	CRTFP Ux+	0	0	0	0	0	0
1109	CRTFP Ux-	0	0	0	0	0	0
1109	CRTFP Uy+	0	0	0	0	0	0
1109	CRTFP Uy-	0	0	0	0	0	0
1111	SLU 1	23	12	1787	-334.94	465.98	1.53
1111	SLU 2	22	20	1737	-326.36	453.22	-0.95
1111	SLU 3	24	12	1837	-344.33	479.12	1.71
1111	SLU 4	23	17	1808	-339.18	471.46	0.22
1111	SLU 5	23	20	1770	-332.54	461.75	-0.78
1111	SLU 6	25	12	1870	-350.52	487.65	1.88
1111	SLU 7	24	17	1841	-345.37	479.99	0.4
1111	SLU 8	25	12	1853	-347.32	483.05	1.87
1111	SLU 9	24	17	1823	-342.17	475.39	0.38
1111	SLU 10	24	22	1960	-368.19	511.29	-0.95
1111	SLU 11	27	14	2061	-386.17	537.19	1.7
1111	SLU 12	26	19	2031	-381.02	529.53	0.22
1111	SLU 13	25	22	1993	-374.38	519.83	-0.78
1111	SLU 14	27	14	2094	-392.36	545.73	1.88
1111	SLU 15	27	19	2064	-387.21	538.07	0.39
1111	SLU 16	27	14	2076	-389.16	541.13	1.86

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1111	SLU 17	26	19	2046	-384.01	533.47	0.38
1111	SLU 18	27	15	2106	-394.71	548.95	1.52
1111	SLU 19	26	19	2076	-389.56	541.29	0.04
1111	SLU 20	28	14	2139	-400.9	557.48	1.69
1111	SLU 21	27	19	2109	-395.75	549.83	0.21
1111	SLU 22	27	13	2091	-391.39	545.02	1.89
1111	SLU 23	26	21	2041	-382.81	532.25	-0.58
1111	SLU 24	28	13	2142	-400.79	558.15	2.08
1111	SLU 25	27	18	2112	-395.64	550.49	0.59
1111	SLU 26	26	21	2074	-389	540.79	-0.41
1111	SLU 27	29	13	2175	-406.98	566.69	2.25
1111	SLU 28	28	18	2145	-401.83	559.03	0.76
1111	SLU 29	29	13	2157	-403.77	562.09	2.23
1111	SLU 30	28	18	2127	-398.62	554.43	0.75
1111	SLU 31	28	23	2265	-424.65	590.33	-0.58
1111	SLU 32	30	15	2365	-442.63	616.23	2.07
1111	SLU 33	30	20	2335	-437.48	608.57	0.59
1111	SLU 34	29	23	2298	-430.84	598.86	-0.41
1111	SLU 35	31	15	2398	-448.82	624.76	2.24
1111	SLU 36	30	20	2368	-443.66	617.1	0.76
1111	SLU 37	31	15	2381	-445.61	620.16	2.23
1111	SLU 38	30	20	2351	-440.46	612.51	0.75
1111	SLU 39	30	16	2410	-451.16	627.99	1.89
1111	SLU 40	30	21	2380	-446.01	620.33	0.41
1111	SLU 41	31	16	2443	-457.35	636.52	2.06
1111	SLU 42	30	21	2413	-452.2	628.86	0.58
1111	SLU 43	29	15	2218	-416.07	578.68	1.86
1111	SLU 44	28	23	2169	-407.48	565.91	-0.61
1111	SLU 45	30	15	2269	-425.46	591.81	2.04
1111	SLU 46	29	20	2239	-420.31	584.15	0.56
1111	SLU 47	28	23	2202	-413.67	574.45	-0.44
1111	SLU 48	31	15	2302	-431.65	600.35	2.21
1111	SLU 49	30	20	2272	-426.5	592.69	0.73
1111	SLU 50	31	15	2284	-428.44	595.75	2.2
1111	SLU 51	30	20	2255	-423.29	588.09	0.72
1111	SLU 52	30	25	2392	-449.32	623.99	-0.62
1111	SLU 53	32	17	2492	-467.3	649.89	2.04
1111	SLU 54	32	22	2463	-462.15	642.23	0.55
1111	SLU 55	31	25	2425	-455.51	632.53	-0.45
1111	SLU 56	33	17	2526	-473.49	658.42	2.21
1111	SLU 57	32	22	2496	-468.34	650.77	0.72
1111	SLU 58	33	17	2508	-470.28	653.83	2.2
1111	SLU 59	32	22	2478	-465.13	646.17	0.71
1111	SLU 60	32	18	2537	-475.84	661.65	1.85
1111	SLU 61	32	23	2508	-470.69	653.99	0.37
1111	SLU 62	33	18	2571	-482.03	670.18	2.02
1111	SLU 63	32	22	2541	-476.87	662.52	0.54
1111	SLU 64	33	16	2523	-472.52	657.71	2.23
1111	SLU 65	31	25	2473	-463.93	644.95	-0.25
1111	SLU 66	34	17	2573	-481.91	670.85	2.41
1111	SLU 67	33	21	2544	-476.76	663.19	0.92
1111	SLU 68	32	25	2506	-470.12	653.48	-0.08
1111	SLU 69	35	16	2606	-488.1	679.38	2.58
1111	SLU 70	34	21	2577	-482.95	671.72	1.09
1111	SLU 71	34	16	2589	-484.9	674.78	2.57
1111	SLU 72	33	21	2559	-479.75	667.12	1.08
1111	SLU 73	34	26	2696	-505.77	703.03	-0.25
1111	SLU 74	36	18	2797	-523.75	728.93	2.4
1111	SLU 75	35	23	2767	-518.6	721.27	0.92
1111	SLU 76	35	26	2729	-511.96	711.56	-0.08
1111	SLU 77	37	18	2830	-529.94	737.46	2.57
1111	SLU 78	36	23	2800	-524.79	729.8	1.09
1111	SLU 79	37	18	2812	-526.74	732.86	2.56
1111	SLU 80	36	23	2782	-521.58	725.2	1.08
1111	SLU 81	36	19	2842	-532.29	740.68	2.22
1111	SLU 82	35	24	2812	-527.14	733.02	0.74
1111	SLU 83	37	19	2875	-538.48	749.22	2.39
1111	SLU 84	36	24	2845	-533.33	741.56	0.91
1111	SLE RA 1	24	12	1874	-351.07	488.56	1.63
1111	SLE RA 2	23	18	1840	-345.35	480.05	-0.02
1111	SLE RA 3	25	12	1907	-357.33	497.32	1.75
1111	SLE RA 4	24	16	1888	-353.9	492.21	0.76
1111	SLE RA 5	24	18	1862	-349.47	485.74	0.1
1111	SLE RA 6	26	12	1929	-361.46	503.01	1.87
1111	SLE RA 7	25	16	1910	-358.02	497.9	0.88
1111	SLE RA 8	25	12	1918	-359.32	499.94	1.86
1111	SLE RA 9	25	16	1898	-355.89	494.84	0.87
1111	SLE RA 10	25	19	1989	-373.24	518.77	-0.02
1111	SLE RA 11	27	14	2056	-385.23	536.04	1.75
1111	SLE RA 12	26	17	2036	-381.79	530.93	0.76
1111	SLE RA 13	26	19	2011	-377.36	524.46	0.09
1111	SLE RA 14	27	14	2078	-389.35	541.73	1.86
1111	SLE RA 15	27	17	2059	-385.92	536.62	0.87
1111	SLE RA 16	27	13	2067	-387.21	538.66	1.86
1111	SLE RA 17	26	17	2047	-383.78	533.56	0.87
1111	SLE RA 18	27	14	2086	-390.92	543.88	1.63
1111	SLE RA 19	26	17	2066	-387.48	538.77	0.64
1111	SLE RA 20	27	14	2108	-395.04	549.57	1.74
1111	SLE RA 21	27	17	2089	-391.61	544.46	0.75

Nodo	Cont.	Reazione a traslazione			Reazione a rotazione		
Ind.	N.br.	x	y	z	x	y	z
1111	SLE FR 1	24	12	1874	-351.07	488.56	1.63
1111	SLE FR 2	24	13	1867	-349.92	486.86	1.3
1111	SLE FR 3	25	12	1882	-352.72	490.84	1.68
1111	SLE FR 4	25	14	1931	-361.88	503.46	1.3
1111	SLE FR 5	25	13	1946	-364.67	507.43	1.68
1111	SLE FR 6	26	13	1980	-370.99	516.22	1.63
1111	SLE QP 1	24	12	1874	-351.07	488.56	1.63
1111	SLE QP 2	25	13	1937	-363.02	505.16	1.63
1111	SLD 1	223	44	1299	-257.58	339.92	31.24
1111	SLD 2	184	69	1264	-250.31	331.64	16.81
1111	SLD 3	243	-54	1968	-373.46	511.75	61.57
1111	SLD 4	204	-29	1934	-366.18	503.48	47.14
1111	SLD 5	61	167	737	-156.96	196.45	-32.89
1111	SLD 6	35	183	714	-152.16	190.99	-42.41
1111	SLD 7	128	-161	2968	-543.2	769.24	68.21
1111	SLD 8	103	-144	2945	-538.4	763.78	58.69
1111	SLD 9	-53	170	930	-187.64	246.53	-55.43
1111	SLD 10	-78	187	907	-182.84	241.07	-64.95
1111	SLD 11	15	-158	3161	-573.89	819.32	45.67
1111	SLD 12	-10	-141	3138	-569.09	813.86	36.15
1111	SLD 13	-154	55	1941	-359.86	506.84	-43.88
1111	SLD 14	-193	80	1907	-352.59	498.56	-58.31
1111	SLD 15	-134	-43	2611	-475.74	678.68	-13.55
1111	SLD 16	-173	-18	2576	-468.46	670.4	-27.98
1111	SLV 1	486	93	387	-106.63	104.19	68.5
1111	SLV 2	394	153	306	-89.53	84.73	34.58
1111	SLV 3	537	-153	2065	-397.19	534.99	144.48
1111	SLV 4	446	-93	1984	-380.09	515.53	110.56
1111	SLV 5	102	398	-1058	151.38	-264.87	-87.22
1111	SLV 6	40	439	-1112	162.89	-277.97	-110.06
1111	SLV 7	274	-421	4536	-817.14	1171.11	166.06
1111	SLV 8	213	-380	4481	-805.62	1158.01	143.22
1111	SLV 9	-163	406	-606	79.58	-147.69	-139.96
1111	SLV 10	-224	446	-661	91.09	-160.79	-162.8
1111	SLV 11	10	-413	4987	-888.94	1288.29	113.32
1111	SLV 12	-52	-373	4932	-877.42	1275.19	90.48
1111	SLV 13	-396	119	1891	-345.96	494.79	-107.3
1111	SLV 14	-487	178	1810	-328.86	475.33	-141.22
1111	SLV 15	-344	-127	3569	-636.51	925.58	-31.32
1111	SLV 16	-436	-67	3488	-619.41	906.12	-65.23
1111	CRTFP Ux+	0	0	0	0	0	0
1111	CRTFP Ux-	0	0	0	0	0	0
1111	CRTFP Uy+	0	0	0	0	0	0
1111	CRTFP Uy-	0	0	0	0	0	0

1.3 Pressioni massime sul terreno

Nodo: *Nodo che interagisce col terreno.*
Ind.: *indice del nodo.*
Pressione minima: *situazione in cui si verifica la pressione minima nel nodo.*
Cont.: *nome breve della condizione o combinazione di carico a cui si riferisce la pressione minima.*
uz: *spostamento massimo verticale del nodo. [m]*
Valore: *pressione minima sul terreno del nodo. [daN/m²]*
Pressione massima: *situazione in cui si verifica la pressione massima nel nodo.*
Cont.: *nome breve della condizione o combinazione di carico a cui si riferisce la pressione massima.*
uz: *spostamento minimo verticale del nodo. [m]*
Valore: *pressione massima sul terreno del nodo. [daN/m²]*

Compressione estrema massima -28098.8 al nodo di indice 170, di coordinate x = -17.05, y = -4.78, z = -1.3, nel contesto SLV 5.
Spostamento estremo minimo -0.0093663 al nodo di indice 170, di coordinate x = -17.05, y = -4.78, z = -1.3, nel contesto SLV 5.
Spostamento estremo massimo 0.0022293 al nodo di indice 196, di coordinate x = -7.72, y = -4.78, z = -1.3, nel contesto SLV 7.

Nodo	Pressione minima			Pressione massima		
Ind.	Cont.	uz	Valore	Cont.	uz	Valore
10	SLU 84	-0.0041306	-12391.9	SLV 11	-0.0015868	-4760.5
11	SLU 84	-0.0041901	-12570.4	SLV 11	-0.0016765	-5029.4
12	SLU 84	-0.0042307	-12692.1	SLV 11	-0.0017447	-5234.2
13	SLU 84	-0.0042666	-12799.8	SLV 7	-0.0017838	-5351.5
14	SLU 84	-0.0042982	-12894.7	SLV 7	-0.0018035	-5410.5
15	SLU 84	-0.0043213	-12963.8	SLV 7	-0.0018172	-5451.5
16	SLU 84	-0.0043362	-13008.7	SLV 7	-0.0018249	-5474.7
17	SLU 84	-0.0041236	-12370.8	SLV 11	-0.0018419	-5525.8
18	SLU 84	-0.0041818	-12545.4	SLV 11	-0.0019293	-5787.9
19	SLU 84	-0.0042168	-12650.4	SLV 11	-0.0019933	-5980
20	SLU 84	-0.0042485	-12745.6	SLV 7	-0.0020302	-6090.7
21	SLU 84	-0.0042799	-12839.7	SLV 7	-0.0020477	-6143
22	SLU 84	-0.0043055	-12916.5	SLV 7	-0.0020609	-6182.8
23	SLU 84	-0.0043183	-12954.9	SLV 7	-0.0020657	-6197.1
24	SLU 84	-0.0042969	-12890.6	SLV 7	-0.0022254	-6676.1
25	SLU 84	-0.0041702	-12510.6	SLV 11	-0.0021107	-6332.2
26	SLU 84	-0.004199	-12597	SLV 11	-0.0021708	-6512.3
27	SLU 84	-0.0042267	-12680.2	SLV 7	-0.0022055	-6616.5
28	SLU 84	-0.0042577	-12773.1	SLV 7	-0.0022216	-6664.8
29	SLU 84	-0.0042842	-12852.5	SLV 7	-0.0022476	-6742.7

Nodo	Pressione minima			Pressione massima		
Ind.	Cont.	uz	Valore	Cont.	uz	Valore
30	SLU 84	-0.0041152	-12345.7	SLV 11	-0.0020703	-6211
31	SLU 84	-0.0041468	-12440.5	SLV 11	-0.0021261	-6378.4
32	SLU 84	-0.0042955	-12886.5	SLV 8	-0.0022878	-6863.4
33	SLU 84	-0.0041552	-12465.7	SLV 11	-0.0021658	-6497.5
34	SLU 84	-0.0042781	-12834.2	SLV 7	-0.002372	-7116.1
35	SLU 84	-0.0041478	-12443.3	SLV 11	-0.0022678	-6803.5
36	SLU 84	-0.0041557	-12467.2	SLV 11	-0.0022919	-6875.7
37	SLU 84	-0.0041788	-12536.5	SLV 11	-0.0023475	-7042.5
38	SLU 84	-0.0042025	-12607.6	SLV 7	-0.0023796	-7138.8
39	SLU 84	-0.0042329	-12698.6	SLV 7	-0.002394	-7182
40	SLU 84	-0.0042589	-12776.8	SLV 7	-0.0024317	-7295.1
41	SLU 84	-0.0041313	-12394	SLV 11	-0.0023454	-7036.2
42	SLU 84	-0.0041035	-12310.4	SLV 11	-0.002299	-6897
43	SLU 84	-0.0042667	-12800.1	SLV 8	-0.0025048	-7514.3
44	SLU 84	-0.0042513	-12753.9	SLV 8	-0.0025639	-7691.6
45	SLU 84	-0.0041412	-12423.5	SLV 11	-0.002473	-7418.9
46	SLU 84	-0.00416	-12480.1	SLV 11	-0.0025242	-7572.7
47	SLU 84	-0.0041806	-12541.9	SLV 7	-0.0025541	-7662.4
48	SLU 84	-0.0042097	-12629	SLV 7	-0.0025663	-7699
49	SLU 84	-0.0042388	-12716.3	SLV 7	-0.0025788	-7736.3
51	SLU 84	-0.0040898	-12269.4	SLV 15	-0.0024794	-7438.2
52	SLU 84	-0.0041122	-12336.6	SLV 15	-0.0025554	-7666.3
53	SLU 84	-0.0042358	-12707.5	SLV 4	-0.0025609	-7682.8
54	SLU 84	-0.0041271	-12381.3	SLU 1	-0.0025826	-7747.9
55	SLU 84	-0.0041443	-12432.8	SLU 1	-0.0025966	-7789.8
56	SLU 84	-0.004163	-12489	SLU 1	-0.0026115	-7834.5
57	SLU 84	-0.0041898	-12569.5	SLU 1	-0.0026314	-7894.2
58	SLU 84	-0.0042165	-12649.5	SLU 1	-0.0026512	-7953.5
59	SLU 84	-0.00422	-12659.9	SLV 4	-0.0026247	-7874.1
61	SLU 83	-0.0040979	-12293.6	SLV 13	-0.0025583	-7675
62	SLU 83	-0.0040759	-12227.8	SLV 13	-0.0024901	-7470.3
63	SLU 83	-0.0042034	-12610.1	SLV 2	-0.0026046	-7813.9
64	SLU 83	-0.0041509	-12452.8	SLU 2	-0.0025991	-7797.2
65	SLU 83	-0.0041328	-12398.4	SLU 2	-0.0025848	-7754.4
66	SLU 83	-0.0041151	-12345.3	SLU 2	-0.0025707	-7712.2
67	SLU 83	-0.0041749	-12524.7	SLU 2	-0.0026167	-7850.2
68	SLU 83	-0.0041972	-12591.5	SLV 2	-0.0026152	-7845.7
69	SLU 83	-0.0042068	-12620.5	SLV 2	-0.0025134	-7540.2
70	SLU 83	-0.0041977	-12593.1	SLV 2	-0.0025573	-7671.8
72	SLU 83	-0.0041933	-12579.9	SLV 6	-0.0025609	-7682.8
73	SLU 83	-0.004143	-12428.9	SLV 6	-0.0025089	-7526.7
74	SLU 83	-0.0041638	-12491.5	SLV 6	-0.0024969	-7490.7
75	SLU 83	-0.0041248	-12374.3	SLV 9	-0.0024822	-7446.5
76	SLU 83	-0.0040868	-12260.3	SLV 9	-0.0024158	-7247.4
77	SLU 83	-0.0041052	-12315.6	SLV 9	-0.0024378	-7313.4
78	SLU 83	-0.0041797	-12539.1	SLV 6	-0.0024474	-7342.2
79	SLU 83	-0.0040629	-12188.8	SLV 9	-0.0023484	-7045.1
83	SLU 83	-0.0041561	-12468.2	SLV 6	-0.0023758	-7127.4
85	SLU 83	-0.0041723	-12516.8	SLV 6	-0.0023617	-7085
86	SLU 83	-0.0041798	-12539.4	SLV 6	-0.0023335	-7000.4
87	SLU 83	-0.0041345	-12403.5	SLV 6	-0.0023397	-7019.1
88	SLU 83	-0.0040779	-12233.8	SLV 9	-0.0022514	-6754.2
89	SLU 83	-0.0041159	-12347.8	SLV 10	-0.0022948	-6884.5
90	SLU 83	-0.0040946	-12283.8	SLV 10	-0.0022368	-6710.3
92	SLU 83	-0.004049	-12146.9	SLV 10	-0.002099	-6297
93	SLU 83	-0.0040895	-12268.6	SLV 10	-0.0021504	-6451.2
94	SLU 83	-0.0041095	-12328.4	SLV 10	-0.0021854	-6556.2
95	SLU 83	-0.0041259	-12377.7	SLV 6	-0.0022089	-6626.6
96	SLU 83	-0.0041426	-12427.9	SLV 6	-0.0021996	-6598.9
97	SLU 83	-0.0041558	-12467.4	SLV 6	-0.0021847	-6554.1
98	SLU 83	-0.0041622	-12486.7	SLV 6	-0.0021569	-6470.6
170	SLV 5	-0.0093663	-28098.8	SLV 12	0.0020828	6248.3
171	SLV 5	-0.0092134	-27640.2	SLV 12	0.002028	6084.1
172	SLV 5	-0.0090851	-27255.2	SLV 12	0.0019776	5932.7
173	SLV 5	-0.008987	-26960.9	SLV 12	0.0019338	5801.4
174	SLV 5	-0.0089205	-26761.6	SLV 12	0.0018973	5692
175	SLV 5	-0.0088868	-26660.3	SLV 12	0.0018678	5603.5
176	SLV 5	-0.008885	-26654.9	SLV 12	0.0018447	5534
177	SLV 5	-0.0089117	-26735.2	SLV 12	0.0018274	5482.3
178	SLV 5	-0.0089598	-26879.4	SLV 12	0.001816	5447.9
179	SLV 5	-0.0089884	-26965.1	SLV 12	0.0018094	5428.3
186	SLV 10	-0.0086299	-25889.7	SLV 7	0.0018775	5632.6
187	SLV 10	-0.0086523	-25956.9	SLV 7	0.0019047	5714
188	SLV 10	-0.0086762	-26028.6	SLV 7	0.0019296	5788.7
189	SLV 10	-0.0086957	-26087.1	SLV 7	0.0019513	5853.8
190	SLV 10	-0.0087173	-26152	SLV 7	0.0019742	5922.6
191	SLV 10	-0.0087495	-26248.5	SLV 7	0.0020008	6002.3
192	SLV 10	-0.0087993	-26397.8	SLV 7	0.0020327	6098.2
193	SLV 10	-0.0088713	-26613.9	SLV 7	0.0020714	6214.3
194	SLV 10	-0.0089675	-26902.6	SLV 7	0.0021177	6353.1
195	SLV 10	-0.0090879	-27263.6	SLV 7	0.0021711	6513.3
196	SLV 10	-0.0092274	-27682.1	SLV 7	0.0022293	6687.8
205	SLV 5	-0.008264	-24792	SLV 12	0.0014055	4216.5
206	SLV 5	-0.0082044	-24613.3	SLV 12	0.0013987	4196.1
207	SLV 9	-0.0081349	-24404.8	SLV 8	0.0013979	4193.6
208	SLV 9	-0.0080735	-24220.4	SLV 8	0.0014043	4212.9
209	SLV 10	-0.008036	-24108	SLV 7	0.0014243	4273
210	SLV 10	-0.0080205	-24061.4	SLV 7	0.0014508	4352.5
211	SLV 10	-0.0080247	-24074.2	SLV 7	0.0014799	4439.6

Nodo	Pressione minima			Pressione massima		
Ind.	Cont.	uz	Valore	Cont.	uz	Valore
212	SLV 10	-0.0080454	-24136.2	SLV 7	0.00151	4530.1
213	SLV 5	-0.0086591	-25977.4	SLV 12	0.0016422	4926.7
214	SLV 5	-0.0084796	-25438.7	SLV 12	0.0015917	4775
215	SLV 5	-0.0083126	-24937.9	SLV 12	0.0015444	4633.2
216	SLV 5	-0.0081732	-24519.6	SLV 12	0.0015029	4508.8
217	SLV 5	-0.0080743	-24223	SLV 12	0.0014687	4406.1
218	SLV 5	-0.0080254	-24076.2	SLV 12	0.0014417	4325.2
219	SLV 5	-0.0080303	-24090.8	SLV 12	0.0014214	4264.1
220	SLV 5	-0.0080857	-24257.2	SLV 12	0.0014068	4220.3
221	SLV 5	-0.0081765	-24529.6	SLV 12	0.0013971	4191.4
222	SLV 5	-0.0082775	-24832.5	SLV 12	0.0013918	4175.4
223	SLV 10	-0.0085845	-25753.4	SLV 7	0.0017794	5338.2
224	SLV 10	-0.0079849	-23954.6	SLV 7	0.0014561	4368.3
225	SLV 10	-0.0079958	-23987.3	SLV 7	0.0014771	4431.2
226	SLV 10	-0.0079982	-23994.6	SLV 7	0.0014977	4493
227	SLV 10	-0.0079936	-23980.8	SLV 7	0.0015165	4549.4
228	SLV 10	-0.0079968	-23990.3	SLV 7	0.0015367	4610
229	SLV 10	-0.0080211	-24063.2	SLV 7	0.0015609	4682.6
230	SLV 10	-0.0080761	-24228.2	SLV 7	0.0015911	4773.2
231	SLV 10	-0.0081653	-24495.8	SLV 7	0.0016285	4885.6
232	SLV 10	-0.0082857	-24857.2	SLV 7	0.0016734	5020.3
233	SLV 10	-0.0084291	-25287.2	SLV 7	0.0017245	5173.5
234	SLV 5	-0.0079645	-23893.4	SLV 12	0.0012083	3624.8
235	SLV 5	-0.007756	-23268.1	SLV 12	0.0011617	3485.1
236	SLV 5	-0.0075533	-22660	SLV 12	0.0011175	3352.4
237	SLV 5	-0.0073713	-22113.8	SLV 12	0.0010781	3234.3
238	SLV 5	-0.0072359	-21707.8	SLV 12	0.0010462	3138.5
239	SLV 5	-0.007167	-21501	SLV 12	0.0010222	3066.5
240	SLV 5	-0.0071736	-21520.7	SLV 12	0.0010053	3015.8
241	SLV 5	-0.007255	-21764.9	SLV 12	0.000994	2982.1
242	SLV 5	-0.0074	-22200.1	SLV 12	0.0009878	2963.4
243	SLV 9	-0.0075896	-22768.7	SLV 8	0.0009896	2968.7
244	SLV 10	-0.0079524	-23857.3	SLV 7	0.001336	4008
245	SLV 10	-0.0073611	-22083.2	SLV 7	0.0010432	3129.5
246	SLV 10	-0.0073551	-22065.3	SLV 7	0.0010574	3172.2
248	SLV 10	-0.0073342	-22002.5	SLV 7	0.0010734	3220.1
249	SLV 10	-0.0073034	-21910.2	SLV 7	0.0010886	3265.9
250	SLV 10	-0.0072864	-21859.2	SLV 7	0.0011056	3316.8
251	SLV 10	-0.0073026	-21907.9	SLV 7	0.0011271	3381.2
252	SLV 10	-0.007364	-22091.9	SLV 7	0.0011554	3466.1
253	SLV 10	-0.0074721	-22416.2	SLV 7	0.0011917	3575
254	SLV 10	-0.0076171	-22851.2	SLV 7	0.0012355	3706.6
255	SLV 10	-0.0077809	-23342.7	SLV 7	0.0012843	3853
256	SLV 5	-0.0072581	-21774.2	SLV 12	0.0007875	2362.6
257	SLV 5	-0.0070348	-21104.5	SLV 12	0.0007438	2231.3
258	SLV 5	-0.006808	-20424	SLV 12	0.0007021	2106.4
259	SLV 5	-0.0065796	-19738.8	SLV 12	0.0006637	1991.1
260	SLV 5	-0.0064043	-19212.8	SLV 12	0.0006337	1901.1
261	SLV 5	-0.0063111	-18933.2	SLV 12	0.000613	1839
262	SLV 5	-0.0063126	-18937.8	SLV 12	0.0006006	1801.9
263	SLV 5	-0.0064114	-19234.1	SLV 12	0.0005946	1783.7
264	SLV 5	-0.006603	-19809	SLV 12	0.0005937	1781
265	SLV 9	-0.006871	-20613.1	SLV 8	0.0006035	1810.5
266	SLV 10	-0.0073154	-21946.1	SLV 7	0.0009046	2713.9
267	SLV 10	-0.0067519	-20255.8	SLV 7	0.0006446	1933.8
268	SLV 10	-0.0067286	-20185.8	SLV 7	0.0006501	1950.4
269	SLV 10	-0.0066845	-20053.6	SLV 7	0.0006607	1982.1
270	SLV 10	-0.0066267	-19880.2	SLV 7	0.0006715	2014.5
271	SLV 10	-0.0065881	-19764.3	SLV 7	0.0006841	2052.4
272	SLV 10	-0.006596	-19788	SLV 7	0.0007024	2107.2
273	SLV 10	-0.0066636	-19990.7	SLV 7	0.0007289	2186.6
274	SLV 10	-0.0067914	-20374.1	SLV 7	0.0007646	2293.8
275	SLV 10	-0.0069629	-20888.6	SLV 7	0.0008087	2426
276	SLV 10	-0.0071383	-21415	SLV 7	0.0008554	2566.2
278	SLV 5	-0.0080902	-24270.5	SLV 12	0.0014431	4329.4
294	SLV 5	-0.0068017	-20405.1	SLV 12	0.0006677	2003.1
296	SLV 5	-0.0068267	-20480.2	SLV 12	0.0005853	1755.8
300	SLV 5	-0.0064837	-19451	SLV 12	0.0003864	1159.3
301	SLV 5	-0.0062811	-18843.3	SLV 12	0.0003425	1027.5
302	SLV 5	-0.0060755	-18226.6	SLV 12	0.0003048	914.5
303	SLV 5	-0.0057905	-17371.6	SLV 12	0.0002614	784.3
304	SLV 5	-0.0055753	-16725.8	SLV 12	0.0002314	694.1
305	SLV 5	-0.0054556	-16366.8	SLV 12	0.0002139	641.6
306	SLV 5	-0.0054452	-16335.7	SLV 12	0.0002072	621.5
307	SLV 5	-0.0055477	-16643.1	SLV 12	0.0002093	627.8
309	SLV 9	-0.0057626	-17287.7	SLV 8	0.000222	665.9
310	SLV 9	-0.0057698	-17309.4	SLV 8	0.0002143	642.9
312	SLV 9	-0.0060782	-18234.7	SLV 8	0.000244	732
313	SLV 10	-0.0060373	-18111.8	SLV 7	0.000261	783
314	SLV 10	-0.0063191	-18957.2	SLV 7	0.0003992	1197.5
315	SLV 10	-0.0064756	-19426.7	SLV 7	0.0004418	1325.3
316	SLV 10	-0.0066328	-19898.5	SLV 7	0.0004902	1470.5
320	SLV 10	-0.0069294	-20788.1	SLV 7	0.0007181	2154.2
322	SLV 10	-0.0068897	-20669.2	SLV 7	0.0008146	2443.9
338	SLV 10	-0.0080364	-24109.3	SLV 7	0.0016857	5057.2
340	SLV 6	-0.0061407	-18422	SLV 11	0.0002633	790
341	SLV 10	-0.0060966	-18289.9	SLV 7	0.0002548	764.3
342	SLV 10	-0.0059526	-17857.7	SLV 7	0.0002641	792.2
343	SLV 10	-0.0058962	-17688.5	SLV 7	0.0002716	814.7

Nodo	Pressione minima			Pressione massima		
Ind.	Cont.	uz	Valore	Cont.	uz	Valore
344	SLV 10	-0.0058967	-17690	SLV 7	0.0002865	859.6
345	SLV 10	-0.0059692	-17907.5	SLV 7	0.0003118	935.3
346	SLV 10	-0.0061142	-18342.7	SLV 7	0.000349	1047.1
347	SLV 6	-0.0055852	-16755.5	SLV 11	-0.000079	-236.9
349	SLV 5	-0.0077248	-23174.3	SLV 12	0.0011547	3464.1
350	SLV 5	-0.0070561	-21168.4	SLV 12	0.0010249	3074.7
351	SLV 5	-0.0064572	-19371.7	SLV 12	0.0009042	2712.7
352	SLV 5	-0.0059491	-17847.3	SLV 12	0.0007965	2389.4
353	SLV 5	-0.0055405	-16621.5	SLV 12	0.0007036	2110.7
354	SLV 5	-0.0052326	-15697.8	SLV 12	0.0006261	1878.3
355	SLV 5	-0.0050224	-15067.3	SLV 12	0.0005637	1691.2
356	SLV 5	-0.0049051	-14715.4	SLV 12	0.0005155	1546.5
357	SLV 5	-0.0048749	-14624.7	SLV 12	0.0004801	1440.3
358	SLV 5	-0.0049256	-14776.7	SLV 12	0.0004558	1367.3
359	SLV 5	-0.0050498	-15149.3	SLV 12	0.0004404	1321.3
360	SLV 5	-0.0052378	-15713.4	SLV 12	0.0004314	1294.1
361	SLV 5	-0.0054752	-16425.7	SLV 12	0.0004251	1275.4
362	SLV 5	-0.0057398	-17219.5	SLV 12	0.0004172	1251.6
363	SLV 5	-0.0059976	-17992.7	SLV 12	0.0004018	1205.3
364	SLV 5	-0.0061978	-18593.4	SLV 12	0.0003713	1114
365	SLV 5	-0.0062735	-18820.6	SLV 12	0.0003175	952.4
366	SLV 5	-0.0062534	-18760.1	SLV 12	0.000253	758.9
367	SLV 5	-0.0061355	-18406.6	SLV 12	0.0001735	520.5
368	SLV 5	-0.0059477	-17843	SLV 12	0.0000919	275.8
369	SLV 5	-0.0057076	-17122.9	SLV 12	0.0000203	61
370	SLV 5	-0.0055132	-16539.5	SLV 12	-0.0000292	-87.5
371	SLV 5	-0.0053079	-15923.8	SLV 12	-0.0000695	-208.4
372	SLV 5	-0.0050152	-15045.5	SLV 12	-0.0001142	-342.6
373	SLV 5	-0.0047846	-14353.8	SLV 12	-0.0001423	-426.8
374	SLV 5	-0.0046522	-13956.7	SLV 12	-0.0001554	-466.3
375	SLV 5	-0.0046357	-13907.1	SLV 12	-0.0001555	-466.6
376	SLV 5	-0.0047404	-14221.3	SLV 12	-0.0001426	-427.9
377	SLV 9	-0.0049683	-14905	SLV 8	-0.0001094	-328.1
378	SLV 9	-0.0052917	-15875.1	SLV 8	-0.0000704	-211.3
379	SLV 6	-0.0055208	-16562.3	SLV 11	-0.0000991	-297.3
380	SLV 10	-0.0054315	-16294.5	SLV 7	-0.0001091	-327.2
381	SLV 10	-0.0053301	-15990.3	SLV 7	-0.0001126	-337.7
382	SLV 10	-0.0052555	-15766.6	SLV 7	-0.0001106	-331.7
383	SLV 10	-0.0052435	-15730.6	SLV 7	-0.0000996	-298.9
384	SLV 10	-0.0053104	-15931.1	SLV 7	-0.000077	-230.9
385	SLV 10	-0.0054546	-16363.7	SLV 7	-0.0000405	-121.4
386	SLV 10	-0.0056557	-16967.2	SLV 7	0.0000113	33.8
387	SLV 10	-0.0058089	-17426.8	SLV 7	0.0000564	169.2
388	SLV 10	-0.0059577	-17873.1	SLV 7	0.00011	330
389	SLV 10	-0.0061486	-18445.9	SLV 7	0.0001899	569.6
390	SLV 10	-0.0062909	-18872.6	SLV 7	0.0002785	835.5
391	SLV 10	-0.0063559	-19067.7	SLV 7	0.0003627	1088
392	SLV 10	-0.0063535	-19060.4	SLV 7	0.0003857	1157.2
393	SLV 10	-0.0063138	-18941.5	SLV 7	0.0004823	1446.8
394	SLV 10	-0.0062922	-18876.6	SLV 7	0.0005057	1517.1
395	SLV 10	-0.0061321	-18396.4	SLV 7	0.0005502	1650.6
396	SLV 10	-0.0058878	-17663.3	SLV 7	0.0005713	1714
397	SLV 10	-0.0056189	-16856.6	SLV 7	0.0005799	1739.6
398	SLV 10	-0.0053673	-16102	SLV 7	0.0005842	1752.6
399	SLV 10	-0.0051603	-15480.9	SLV 7	0.0005907	1772
400	SLV 10	-0.0050143	-15042.9	SLV 7	0.0006037	1811.2
401	SLV 10	-0.0049415	-14824.6	SLV 7	0.000627	1881.1
402	SLV 10	-0.0049521	-14856.4	SLV 7	0.0006635	1990.5
403	SLV 10	-0.0050545	-15163.5	SLV 7	0.0007155	2146.4
404	SLV 10	-0.0052562	-15768.7	SLV 7	0.0007848	2354.5
405	SLV 10	-0.0055646	-16693.8	SLV 7	0.000873	2618.9
406	SLV 10	-0.0059859	-17957.8	SLV 7	0.0009808	2942.3
407	SLV 10	-0.0065236	-19570.7	SLV 7	0.0011083	3324.8
408	SLV 10	-0.0071733	-21519.9	SLV 7	0.0012541	3762.2
409	SLV 10	-0.007918	-23754.1	SLV 7	0.0014145	4243.4
412	SLV 5	-0.0072139	-21641.7	SLV 12	0.0010268	3080.5
413	SLV 5	-0.0062259	-18677.7	SLV 12	0.0003242	972.6
415	SLV 5	-0.006248	-18744	SLV 12	0.0002419	725.6
416	SLV 10	-0.0063104	-18931.3	SLV 7	0.0003489	1046.6
418	SLV 10	-0.0062745	-18823.6	SLV 7	0.0004464	1339.1
419	SLV 10	-0.0071438	-21431.4	SLV 7	0.001217	3651
422	SLV 6	-0.0050908	-15272.5	SLV 11	-0.0004012	-1203.6
426	SLV 5	-0.0064694	-19408.2	SLV 12	0.0006259	1877.7
427	SLV 5	-0.0057461	-17238.4	SLV 12	-0.0000085	-25.4
429	SLV 5	-0.0057602	-17280.6	SLV 12	-0.0000908	-272.3
430	SLV 10	-0.0057847	-17354.1	SLV 7	-0.000006	-17.9
432	SLV 10	-0.005759	-17276.9	SLV 7	0.0000942	282.6
433	SLV 10	-0.0063623	-19087	SLV 7	0.0007642	2292.6
436	SLV 6	-0.0046668	-14000.4	SLV 11	-0.0007093	-2128
440	SLV 5	-0.0058615	-17584.6	SLV 12	0.0002381	714.2
441	SLV 5	-0.0053293	-15988	SLV 12	-0.0003366	-1009.9
443	SLV 5	-0.0053354	-16006.2	SLV 12	-0.000419	-1256.9
444	SLV 10	-0.0053283	-15984.8	SLV 7	-0.0003511	-1053.3
446	SLV 10	-0.0053127	-15938	SLV 7	-0.0002481	-744.2
447	SLV 10	-0.0057099	-17129.8	SLV 7	0.0003272	981.6
449	SLV 6	-0.0043123	-12936.8	SLV 11	-0.0010087	-3026
452	SLV 9	-0.0030066	-9019.8	SLV 8	-0.000895	-2685
455	SLV 5	-0.0053824	-16147.2	SLV 12	-0.0001412	-423.7
456	SLV 5	-0.0049504	-14851.2	SLV 12	-0.0006649	-1994.6

Nodo	Pressione minima			Pressione massima		
Ind.	Cont.	uz	Valore	Cont.	uz	Valore
458	SLV 5	-0.0049485	-14845.4	SLV 12	-0.0007474	-2242.1
459	SLV 10	-0.0049162	-14748.5	SLV 7	-0.0006913	-2073.8
461	SLV 10	-0.0049107	-14732	SLV 7	-0.0005853	-1755.8
462	SLV 10	-0.0051886	-15565.8	SLV 7	-0.0000971	-291.4
464	SLV 6	-0.0040184	-12055.3	SLV 11	-0.0013026	-3907.7
469	SLV 1	-0.0051857	-15557.2	SLV 16	-0.0003498	-1049.3
470	SLV 5	-0.0045936	-13780.9	SLV 12	-0.0009956	-2986.9
472	SLV 5	-0.0045837	-13751	SLV 12	-0.0010784	-3235.1
473	SLV 10	-0.0045309	-13592.6	SLV 7	-0.0010299	-3089.7
475	SLV 10	-0.0045354	-13606.3	SLV 7	-0.0009208	-2762.3
476	SLV 14	-0.004906	-14717.9	SLV 3	-0.0003973	-1191.9
478	SLU 84	-0.0039716	-11914.7	SLV 11	-0.0015918	-4775.5
483	SLV 1	-0.0051724	-15517.3	SLV 16	-0.0004735	-1420.6
484	SLV 5	-0.0042511	-12753.2	SLV 12	-0.0013289	-3986.6
486	SLV 5	-0.0042331	-12699.4	SLV 12	-0.001412	-4235.9
487	SLV 10	-0.0041613	-12483.8	SLV 7	-0.0013695	-4108.5
489	SLV 10	-0.0041759	-12527.6	SLV 7	-0.0012571	-3771.4
490	SLV 14	-0.0048829	-14648.7	SLV 3	-0.0005406	-1621.9
492	SLU 84	-0.0040116	-12034.7	SLV 11	-0.0018739	-5621.7
500	SLU 84	-0.0047949	-14384.6	SLV 8	-0.0021591	-6477.4
501	SLU 84	-0.0044192	-13257.6	SLV 8	-0.0021274	-6382.3
502	SLU 84	-0.0041604	-12481.3	SLV 8	-0.0020831	-6249.4
503	SLU 84	-0.0040265	-12079.4	SLV 11	-0.0019813	-5943.8
504	SLU 84	-0.0041515	-12454.5	SLV 11	-0.0020062	-6018.5
506	SLV 1	-0.0052394	-15718.2	SLV 16	-0.0005965	-1789.5
507	SLU 84	-0.0041338	-12401.3	SLV 12	-0.0016613	-4984
509	SLU 84	-0.0041779	-12533.8	SLV 12	-0.0017449	-5234.6
510	SLU 84	-0.0040784	-12235.1	SLV 7	-0.001712	-5136.1
512	SLU 84	-0.0040102	-12030.5	SLV 7	-0.0015963	-4788.9
513	SLV 14	-0.0049433	-14829.9	SLV 3	-0.0006822	-2046.6
516	SLU 84	-0.0040531	-12159.2	SLV 11	-0.0022087	-6626.2
519	SLU 84	-0.0030153	-9046	SLV 4	-0.0018738	-5621.3
523	SLV 1	-0.0053599	-16079.6	SLV 16	-0.0007164	-2149.2
524	SLU 84	-0.0041429	-12428.8	SLV 16	-0.0018983	-5695
526	SLU 84	-0.0041816	-12544.7	SLV 16	-0.0020052	-6015.5
527	SLU 84	-0.004074	-12221.9	SLV 3	-0.0019983	-5995
529	SLU 84	-0.0040107	-12032	SLV 3	-0.0019153	-5745.9
530	SLV 14	-0.0050583	-15174.8	SLV 3	-0.0008185	-2455.4
532	SLU 84	-0.004073	-12219.1	SLV 11	-0.0024308	-7292.5
537	SLU 84	-0.0040867	-12260.1	SLU 1	-0.0025549	-7664.8
542	SLV 1	-0.0054941	-16482.3	SLV 16	-0.0008281	-2484.4
543	SLU 84	-0.0041561	-12468.2	SLV 16	-0.0019889	-5966.8
545	SLU 84	-0.0041892	-12567.7	SLV 16	-0.0020942	-6282.5
546	SLU 84	-0.0040801	-12240.2	SLV 3	-0.0021018	-6305.5
548	SLU 84	-0.0040216	-12064.7	SLV 3	-0.0020233	-6069.9
549	SLV 14	-0.0051863	-15558.8	SLV 3	-0.0009426	-2827.9
553	SLU 83	-0.0040927	-12278	SLU 2	-0.0025534	-7660.1
558	SLV 1	-0.0055826	-16747.9	SLV 16	-0.0009225	-2767.5
559	SLU 84	-0.0041679	-12503.7	SLV 16	-0.0020624	-6187.3
561	SLU 84	-0.0041957	-12587	SLV 16	-0.0021605	-6481.6
562	SLU 83	-0.0041027	-12308.1	SLV 2	-0.0020881	-6264.4
564	SLU 83	-0.004048	-12144	SLV 2	-0.002069	-6207.1
565	SLV 14	-0.005269	-15807.1	SLV 3	-0.0010433	-3129.9
569	SLU 83	-0.0040821	-12246.2	SLV 10	-0.0023605	-7081.6
572	SLV 1	-0.0057554	-17266.2	SLV 16	-0.0008901	-2670.2
573	SLV 1	-0.0055347	-16604.2	SLV 16	-0.0009885	-2965.5
574	SLV 1	-0.0053623	-16087	SLV 16	-0.0010943	-3282.9
575	SLV 1	-0.0052149	-15644.8	SLV 16	-0.0012015	-3604.4
576	SLV 1	-0.005077	-15231	SLV 16	-0.0013068	-3920.5
577	SLV 1	-0.0049401	-14820.4	SLV 16	-0.0014086	-4225.9
578	SLV 1	-0.0048	-14399.9	SLV 16	-0.0015059	-4517.6
579	SLV 1	-0.0046546	-13963.7	SLV 16	-0.0015978	-4793.5
580	SLU 84	-0.0045767	-13730.1	SLV 16	-0.0016836	-5050.8
581	SLU 84	-0.0045203	-13560.9	SLV 16	-0.0017618	-5285.4
582	SLU 84	-0.0044543	-13362.9	SLV 16	-0.0018305	-5491.6
583	SLU 84	-0.0043818	-13145.5	SLV 16	-0.0018879	-5663.8
584	SLU 84	-0.0043118	-12935.3	SLV 16	-0.0019337	-5801.2
585	SLU 84	-0.0042531	-12759.3	SLV 16	-0.0019717	-5915.1
586	SLU 83	-0.0041845	-12553.4	SLV 14	-0.0021026	-6307.9
587	SLU 83	-0.0042087	-12626	SLV 14	-0.0021711	-6513.4
588	SLU 83	-0.0042302	-12690.5	SLV 14	-0.0022592	-6777.5
589	SLU 83	-0.0042363	-12709	SLV 14	-0.0023513	-7053.9
590	SLU 83	-0.004222	-12666.1	SLV 14	-0.0024386	-7315.9
591	SLU 83	-0.0041847	-12554.1	SLV 14	-0.0025141	-7542.2
592	SLU 83	-0.0041246	-12373.7	SLU 2	-0.002565	-7695.1
593	SLU 83	-0.0040473	-12141.9	SLU 2	-0.0025168	-7550.3
594	SLU 83	-0.0039667	-11900	SLU 2	-0.0024658	-7397.3
595	SLU 83	-0.0039087	-11726.2	SLU 2	-0.0024284	-7285.1
596	SLU 83	-0.0037873	-11361.9	SLV 6	-0.0022112	-6633.7
597	SLU 83	-0.003831	-11492.9	SLV 6	-0.0021419	-6425.8
598	SLU 83	-0.0043539	-13061.7	SLV 6	-0.0024234	-7270.3
599	SLU 83	-0.0043522	-13056.6	SLV 6	-0.0023873	-7162
600	SLU 83	-0.0043411	-13023.2	SLV 6	-0.0023459	-7037.8
601	SLU 83	-0.0043163	-12948.8	SLV 2	-0.0022554	-6766.2
602	SLU 83	-0.0042767	-12830.1	SLV 2	-0.0021713	-6514
603	SLU 83	-0.004227	-12681	SLV 2	-0.0021078	-6323.3
604	SLU 83	-0.0041147	-12344.1	SLV 2	-0.0020465	-6139.6
605	SLU 83	-0.0040617	-12185	SLV 2	-0.0020309	-6092.7
606	SLU 83	-0.0040778	-12233.4	SLV 2	-0.0020692	-6207.6

Nodo	Pressione minima			Pressione massima		
Ind.	Cont.	uz	Valore	Cont.	uz	Valore
607	SLU 84	-0.0041657	-12497	SLV 2	-0.0020871	-6261.2
608	SLU 84	-0.004256	-12768	SLV 4	-0.0020625	-6187.5
609	SLU 84	-0.0043378	-13013.4	SLV 4	-0.0020078	-6023.3
610	SLU 84	-0.0044058	-13217.5	SLV 4	-0.0019331	-5799.2
611	SLU 84	-0.0044597	-13379.1	SLV 4	-0.0018447	-5534.1
612	SLU 84	-0.0045009	-13502.8	SLV 4	-0.0017471	-5241.3
613	SLU 84	-0.0045315	-13594.5	SLV 4	-0.001643	-4929
614	SLV 13	-0.0046338	-13901.5	SLV 4	-0.001534	-4602.1
615	SLV 13	-0.0047736	-14320.9	SLV 4	-0.0014213	-4263.9
616	SLV 13	-0.0049181	-14754.3	SLV 4	-0.0013065	-3919.4
617	SLV 13	-0.0050813	-15243.9	SLV 4	-0.0011925	-3577.5
618	SLV 13	-0.005289	-15867.1	SLV 4	-0.0010851	-3255.3
619	SLV 13	-0.0055787	-16736.1	SLV 4	-0.000994	-2982.1
626	SLV 1	-0.0055508	-16652.3	SLV 16	-0.0009857	-2957.2
639	SLU 84	-0.0042616	-12784.9	SLV 16	-0.0019648	-5894.5
642	SLU 83	-0.0041695	-12508.4	SLV 14	-0.0020238	-6071.5
645	SLU 83	-0.0041958	-12587.4	SLV 14	-0.0020991	-6297.2
654	SLU 83	-0.0039449	-11834.8	SLU 2	-0.0024509	-7352.7
656	SLU 83	-0.0038924	-11677.1	SLV 6	-0.0024044	-7213.3
658	SLU 83	-0.0038743	-11623	SLV 6	-0.0022319	-6695.7
664	SLU 83	-0.0040443	-12133	SLV 10	-0.0021559	-6467.7
671	SLU 83	-0.0041163	-12348.9	SLV 6	-0.0022963	-6889
674	SLU 83	-0.0041122	-12336.7	SLV 6	-0.0023305	-6991.6
682	SLU 83	-0.0041481	-12444.4	SLV 2	-0.0019798	-5939.4
684	SLU 83	-0.0040951	-12285.3	SLV 2	-0.0019642	-5892.6
686	SLU 83	-0.0040936	-12280.7	SLV 2	-0.0020343	-6103
699	SLV 15	-0.0052606	-15781.9	SLV 2	-0.0010817	-3245.1
701	SLV 3	-0.0056853	-17055.8	SLV 14	-0.0009292	-2787.7
702	SLV 3	-0.0054667	-16400.1	SLV 14	-0.0010247	-3074
703	SLV 3	-0.0052956	-15886.7	SLV 14	-0.0011265	-3379.6
704	SLV 3	-0.0051491	-15447.2	SLV 14	-0.0012302	-3690.5
705	SLV 3	-0.0050116	-15034.9	SLV 14	-0.0013323	-3997
706	SLV 3	-0.0048748	-14624.5	SLV 14	-0.0014313	-4293.8
707	SLV 3	-0.0047343	-14203	SLV 14	-0.0015261	-4578.2
708	SLV 3	-0.0045882	-13764.6	SLV 14	-0.0016159	-4847.7
709	SLU 84	-0.0045376	-13612.8	SLV 14	-0.0016996	-5098.7
710	SLU 84	-0.004479	-13437	SLV 14	-0.0017751	-5325.2
711	SLU 84	-0.0044107	-13232.2	SLV 14	-0.0018391	-5517.3
712	SLU 83	-0.0043361	-13008.3	SLV 14	-0.0018873	-5662
713	SLU 83	-0.004264	-12791.9	SLV 14	-0.0019156	-5746.9
714	SLU 83	-0.0042412	-12723.6	SLV 14	-0.0019207	-5762
715	SLU 83	-0.0041776	-12532.8	SLV 14	-0.0019301	-5790.4
716	SLU 83	-0.0041676	-12502.9	SLV 14	-0.0019819	-5945.6
717	SLU 83	-0.0041809	-12542.7	SLV 14	-0.0020214	-6064.3
718	SLU 83	-0.0042046	-12613.9	SLV 13	-0.0020975	-6292.4
719	SLU 83	-0.0042227	-12668.1	SLV 14	-0.0021852	-6555.5
720	SLU 83	-0.0042255	-12676.4	SLV 14	-0.0022767	-6830
721	SLU 83	-0.0042077	-12623.2	SLV 14	-0.0023633	-7089.8
722	SLU 83	-0.0041669	-12500.8	SLV 14	-0.0024379	-7313.8
723	SLU 83	-0.0041033	-12310	SLV 14	-0.0024948	-7484.3
724	SLU 83	-0.0040225	-12067.5	SLU 2	-0.0024984	-7495.2
725	SLU 83	-0.0039449	-11834.6	SLU 2	-0.00245	-7350
726	SLU 83	-0.0038923	-11676.9	SLV 6	-0.0023836	-7150.8
727	SLU 83	-0.0039535	-11860.6	SLV 6	-0.0022727	-6818.2
728	SLU 83	-0.0039939	-11981.8	SLV 6	-0.0022016	-6604.9
729	SLU 83	-0.0040114	-12034.3	SLV 6	-0.0021721	-6516.4
730	SLU 83	-0.0040096	-12028.7	SLV 6	-0.002048	-6144.1
731	SLU 83	-0.0039977	-11993.1	SLV 10	-0.0020116	-6034.7
732	SLU 83	-0.0040074	-12022.1	SLV 10	-0.0020068	-6020.4
733	SLU 83	-0.0040106	-12031.9	SLV 10	-0.0020388	-6116.3
734	SLU 83	-0.0039216	-11764.8	SLV 5	-0.0022354	-6706.1
735	SLU 83	-0.0039244	-11773.3	SLV 5	-0.0022236	-6670.8
736	SLU 83	-0.0039244	-11773.3	SLV 1	-0.0021659	-6497.8
737	SLU 83	-0.0039145	-11743.6	SLV 1	-0.0020729	-6218.7
738	SLU 83	-0.0038905	-11671.5	SLV 1	-0.001981	-5943
739	SLU 83	-0.0038512	-11553.7	SLV 2	-0.0018979	-5693.8
740	SLU 83	-0.0038013	-11404	SLV 2	-0.0018343	-5503
741	SLU 83	-0.0037546	-11263.9	SLV 2	-0.0018105	-5431.4
742	SLU 83	-0.0039662	-11898.7	SLV 2	-0.0019422	-5826.5
743	SLU 83	-0.0040715	-12214.4	SLV 2	-0.0019839	-5951.7
744	SLU 83	-0.0041176	-12352.8	SLV 2	-0.0019943	-5982.9
745	SLU 83	-0.00421	-12630.1	SLV 2	-0.0019821	-5946.3
746	SLU 83	-0.0042941	-12882.3	SLV 2	-0.0019369	-5810.7
747	SLU 83	-0.0043644	-13093.1	SLV 2	-0.0018682	-5604.5
748	SLU 83	-0.0044205	-13261.5	SLV 2	-0.0017841	-5352.4
749	SLU 83	-0.0044639	-13391.8	SLV 2	-0.0016904	-5071.1
750	SLV 15	-0.0044973	-13491.9	SLV 2	-0.0015902	-4770.6
751	SLV 15	-0.0046385	-13915.4	SLV 2	-0.0014853	-4455.8
752	SLV 15	-0.0047769	-14330.7	SLV 2	-0.0013768	-4130.3
753	SLV 15	-0.0049199	-14759.7	SLV 2	-0.0012662	-3798.5
754	SLV 15	-0.0050817	-15245	SLV 2	-0.0011564	-3469.2
755	SLV 15	-0.0052882	-15864.5	SLV 2	-0.0010529	-3158.8
756	SLV 15	-0.0055764	-16729.2	SLV 2	-0.0009642	-2892.7
758	SLV 3	-0.0055045	-16513.6	SLV 14	-0.0009646	-2893.9
759	SLV 15	-0.0052565	-15769.6	SLV 2	-0.0010019	-3005.8
762	SLV 4	-0.0054003	-16200.9	SLV 13	-0.0008721	-2616.3
763	SLV 15	-0.0051309	-15392.7	SLV 2	-0.0008902	-2670.6
765	SLU 83	-0.0041258	-12377.3	SLV 13	-0.0017536	-5260.7
767	SLU 83	-0.0041294	-12388.2	SLV 13	-0.0017724	-5317.2

Nodo	Pressione minima			Pressione massima		
Ind.	Cont.	uz	Valore	Cont.	uz	Valore
768	SLU 83	-0.0037702	-11310.6	SLV 10	-0.0022744	-6823.1
770	SLU 83	-0.0037374	-11212.1	SLV 10	-0.0022088	-6626.3
771	SLU 83	-0.0033735	-10120.5	SLV 1	-0.0019612	-5883.5
773	SLU 83	-0.0034137	-10241.1	SLV 1	-0.0018864	-5659.1
774	SLU 83	-0.0039627	-11888	SLV 2	-0.0017917	-5375.1
776	SLU 83	-0.0039605	-11881.6	SLV 2	-0.0018093	-5427.8
778	SLV 4	-0.0052527	-15758.2	SLV 13	-0.0007623	-2286.9
779	SLV 15	-0.0049551	-14865.3	SLV 2	-0.0007634	-2290.1
781	SLU 83	-0.0039833	-11949.9	SLV 6	-0.0016102	-4830.5
783	SLU 83	-0.003969	-11906.9	SLV 6	-0.001689	-5067.1
784	SLU 83	-0.0040943	-12282.9	SLV 13	-0.0016595	-4978.5
786	SLU 83	-0.0041045	-12313.6	SLV 13	-0.0016797	-5039
787	SLU 83	-0.0036738	-11021.4	SLV 10	-0.002096	-6288
789	SLU 83	-0.0031968	-9590.4	SLV 1	-0.0017671	-5301.2
791	SLU 83	-0.0032412	-9723.7	SLV 1	-0.0016962	-5088.7
793	SLV 4	-0.0051041	-15312.2	SLV 13	-0.0006481	-1944.3
794	SLV 15	-0.0047901	-14370.2	SLV 2	-0.0006306	-1891.7
796	SLV 11	-0.0040861	-12258.2	SLV 6	-0.0013354	-4006.3
798	SLU 83	-0.00399	-11969.9	SLV 6	-0.0014114	-4234.3
799	SLU 83	-0.0040632	-12189.5	SLV 9	-0.0014441	-4332.4
801	SLV 8	-0.0041216	-12364.8	SLV 9	-0.0013808	-4142.4
802	SLU 83	-0.0036128	-10838.5	SLV 10	-0.0018568	-5570.5
804	SLU 83	-0.0031012	-9303.5	SLV 1	-0.0016113	-4833.8
806	SLU 83	-0.0031499	-9449.7	SLV 1	-0.0015446	-4633.8
808	SLV 4	-0.0049868	-14960.4	SLV 13	-0.000533	-1599.1
809	SLU 83	-0.003496	-10488.1	SLV 10	-0.0017205	-5161.4
810	SLU 83	-0.0030448	-9134.3	SLV 10	-0.001556	-4668
811	SLU 83	-0.0029148	-8744.3	SLV 10	-0.0015271	-4581.2
812	SLU 83	-0.002837	-8510.9	SLV 10	-0.0015257	-4577.2
813	SLU 83	-0.0028022	-8406.6	SLV 9	-0.0015441	-4632.3
814	SLU 83	-0.0028	-8400	SLV 9	-0.0015775	-4732.4
815	SLU 83	-0.0028225	-8467.4	SLV 9	-0.00162	-4860.1
816	SLU 83	-0.0028641	-8592.3	SLV 5	-0.0016227	-4868.2
817	SLU 83	-0.0029204	-8761.3	SLV 5	-0.0016196	-4858.7
818	SLU 83	-0.0029857	-8957.1	SLV 5	-0.001621	-4863.1
819	SLU 83	-0.003051	-9153.1	SLV 1	-0.0015774	-4732.1
820	SLU 83	-0.0031029	-9308.6	SLV 1	-0.0015241	-4572.2
821	SLV 15	-0.0046787	-14036.1	SLV 2	-0.0004968	-1490.4
823	SLV 11	-0.0044423	-13326.8	SLV 6	-0.0010279	-3083.7
825	SLV 11	-0.00432	-12959.9	SLV 6	-0.0011011	-3303.2
826	SLV 8	-0.004337	-13011	SLV 9	-0.0010949	-3284.7
828	SLV 8	-0.0044278	-13283.5	SLV 9	-0.0010331	-3099.4
830	SLV 4	-0.0049227	-14768	SLV 13	-0.0004185	-1255.5
831	SLU 83	-0.0036072	-10821.6	SLV 10	-0.0015784	-4735.2
833	SLU 83	-0.0034033	-10210	SLV 10	-0.0015144	-4543.3
834	SLU 83	-0.0035479	-10643.6	SLV 10	-0.0017198	-5159.5
845	SLU 83	-0.0030769	-9230.7	SLV 5	-0.0014712	-4413.5
847	SLU 83	-0.003128	-9384	SLV 1	-0.0014308	-4292.3
848	SLV 15	-0.0046512	-13953.6	SLV 2	-0.0003641	-1092.3
850	SLU 83	-0.0035145	-10543.5	SLV 10	-0.0013721	-4116.4
851	SLU 83	-0.0030523	-9156.9	SLV 10	-0.0012513	-3753.8
852	SLU 83	-0.0029214	-8764.1	SLV 10	-0.0012252	-3675.6
853	SLU 83	-0.0028427	-8528	SLV 9	-0.0012258	-3677.3
854	SLU 83	-0.002807	-8421	SLV 9	-0.0012457	-3737.2
855	SLU 83	-0.002804	-8411.9	SLV 9	-0.0012803	-3841
856	SLU 83	-0.0028255	-8476.6	SLV 5	-0.0013196	-3958.8
857	SLU 83	-0.0028663	-8599	SLV 5	-0.0013139	-3941.8
858	SLU 83	-0.0029218	-8765.4	SLV 5	-0.0013091	-3927.4
859	SLU 83	-0.0029862	-8958.7	SLV 5	-0.0013085	-3925.4
860	SLU 83	-0.0030507	-9152.1	SLV 5	-0.001311	-3933.1
861	SLU 83	-0.003102	-9306.1	SLV 5	-0.0013154	-3946.3
862	SLV 11	-0.0048196	-14458.9	SLV 6	-0.0006995	-2098.4
864	SLV 11	-0.0046836	-14050.9	SLV 6	-0.00077	-2309.9
866	SLV 4	-0.0049265	-14779.5	SLV 13	-0.0003045	-913.5
867	SLU 83	-0.003087	-9261.1	SLV 5	-0.0012511	-3753.4
869	SLU 83	-0.003137	-9411.1	SLV 5	-0.0012563	-3769
870	SLV 8	-0.0046415	-13924.4	SLV 9	-0.0007316	-2194.7
872	SLV 8	-0.0047398	-14219.5	SLV 9	-0.0006713	-2013.8
873	SLU 83	-0.0036251	-10875.4	SLV 10	-0.0013058	-3917.4
875	SLU 83	-0.0034282	-10284.7	SLV 10	-0.001245	-3735
876	SLV 11	-0.0049364	-14809.2	SLV 6	-0.0000256	-76.8
878	SLV 12	-0.0032041	-9612.2	SLV 5	-0.0010151	-3045.4
880	SLV 12	-0.0032656	-9796.9	SLV 5	-0.0010188	-3056.4
881	SLV 11	-0.0052066	-15619.7	SLV 6	-0.0003605	-1081.4
883	SLV 11	-0.0050567	-15170.2	SLV 6	-0.0004283	-1284.9
885	SLV 8	-0.0050966	-15289.8	SLV 9	-0.0001034	-310.1
886	SLV 8	-0.004938	-14814.1	SLV 9	-0.0003729	-1118.7
888	SLV 8	-0.005044	-15132	SLV 9	-0.000314	-941.9
889	SLV 8	-0.0039132	-11739.5	SLV 9	-0.0010123	-3036.9
891	SLV 8	-0.0037202	-11160.6	SLV 9	-0.0009582	-2874.6
892	SLV 11	-0.0054197	-16259.1	SLV 6	0.0003888	1166.4
894	SLV 12	-0.003524	-10571.9	SLV 5	-0.0007669	-2300.8
896	SLV 12	-0.0035839	-10751.8	SLV 5	-0.000769	-2307
897	SLV 11	-0.0055969	-16790.6	SLV 6	-0.0000184	-55.3
899	SLV 11	-0.005433	-16299	SLV 6	-0.0000837	-251.1
901	SLV 8	-0.0054964	-16489.3	SLV 9	0.0002403	720.8
902	SLV 8	-0.0042644	-12793.3	SLV 9	-0.0007048	-2114.5
904	SLV 8	-0.0040827	-12248.1	SLV 9	-0.0006569	-1970.6
905	SLV 8	-0.0052237	-15671.1	SLV 9	-0.0000366	-109.8

Nodo	Pressione minima			Pressione massima		
Ind.	Cont.	uz	Valore	Cont.	uz	Valore
907	SLV 8	-0.0053375	-16012.4	SLV 9	0.000021	63.1
908	SLV 12	-0.0038674	-11602.3	SLV 5	-0.0005093	-1528
910	SLV 12	-0.0039258	-11777.5	SLV 5	-0.0005098	-1529.4
911	SLV 11	-0.0060535	-18160.6	SLV 6	0.0008214	2464.2
913	SLV 11	-0.0059889	-17966.6	SLV 6	0.0003214	964.3
915	SLV 11	-0.0058108	-17432.3	SLV 6	0.0002586	775.9
917	SLV 8	-0.0059989	-17996.6	SLV 9	0.0005923	1776.8
918	SLV 8	-0.0046269	-13880.7	SLV 9	-0.0003888	-1166.5
920	SLV 8	-0.0044562	-13368.5	SLV 9	-0.0003469	-1040.8
921	SLV 8	-0.0055134	-16540.1	SLV 9	0.0002649	794.8
923	SLV 8	-0.0056351	-16905.3	SLV 9	0.0003214	964.1
924	SLV 12	-0.0042298	-12689.3	SLV 5	-0.000244	-731.9
926	SLV 12	-0.0042867	-12860.1	SLV 5	-0.0002429	-728.6
928	SLV 8	-0.0066146	-19843.9	SLV 9	0.0009577	2873.2
929	SLV 11	-0.0068496	-20548.8	SLV 6	0.001279	3837
931	SLV 11	-0.006385	-19155.1	SLV 6	0.0006556	1966.7
933	SLV 11	-0.0061924	-18577.3	SLV 6	0.0005952	1785.5
934	SLV 8	-0.005002	-15006	SLV 9	-0.0000672	-201.7
936	SLV 8	-0.0048421	-14526.2	SLV 9	-0.0000313	-94
937	SLV 12	-0.0046129	-13838.6	SLV 5	0.0000282	84.7
939	SLV 12	-0.0046684	-14005.1	SLV 5	0.0000309	92.8
941	SLV 8	-0.0073506	-22051.9	SLV 9	0.001341	4023
942	SLV 8	-0.0078072	-23421.7	SLV 9	0.0014655	4396.5
943	SLV 8	-0.0071558	-21467.5	SLV 9	0.0013053	3916
944	SLV 8	-0.0065771	-19731.4	SLV 9	0.0011569	3470.7
945	SLV 8	-0.0060943	-18282.9	SLV 9	0.0010253	3076
946	SLV 8	-0.0057178	-17153.4	SLV 9	0.0009133	2739.9
947	SLV 8	-0.0054502	-16350.5	SLV 9	0.0008219	2465.7
948	SLV 8	-0.0052888	-15866.5	SLV 9	0.0007513	2253.9
949	SLV 8	-0.0052281	-15684.3	SLV 9	0.000701	2102.9
950	SLV 8	-0.0052595	-15778.5	SLV 9	0.00067	2010.1
951	SLV 8	-0.0053715	-16114.5	SLV 9	0.0006574	1972.1
952	SLV 8	-0.0055479	-16643.6	SLV 9	0.0006613	1983.8
953	SLV 8	-0.0057654	-17296.3	SLV 9	0.0006793	2037.9
954	SLV 8	-0.0059909	-17972.6	SLV 9	0.0007077	2123.1
955	SLV 8	-0.0061815	-18544.5	SLV 9	0.0007408	2222.3
956	SLV 11	-0.0067877	-20363	SLV 6	0.0009835	2950.6
958	SLV 11	-0.0065899	-19769.6	SLV 6	0.0009239	2771.8
959	SLV 11	-0.0064674	-19402.1	SLV 6	0.0008924	2677.1
960	SLV 11	-0.0062454	-18736.2	SLV 6	0.0008591	2577.2
961	SLV 11	-0.0060107	-18032.2	SLV 6	0.0008419	2525.7
962	SLV 11	-0.0058093	-17427.8	SLV 6	0.0008443	2532.8
963	SLV 11	-0.0056732	-17019.6	SLV 6	0.0008684	2605.3
964	SLV 11	-0.0056248	-16874.5	SLV 6	0.000916	2747.9
965	SLV 11	-0.0056796	-17038.8	SLV 6	0.0009881	2964.3
966	SLV 11	-0.0058483	-17544.9	SLV 6	0.0010859	3257.7
967	SLV 11	-0.0061379	-18413.6	SLV 6	0.00121	3630
968	SLV 11	-0.006551	-19653	SLV 6	0.0013604	4081.2
969	SLV 11	-0.0070846	-21253.8	SLV 6	0.0015358	4607.5
970	SLV 11	-0.0077267	-23180	SLV 6	0.0017329	5198.7
971	SLV 11	-0.00776	-23280	SLV 6	0.0017448	5234.4
972	SLV 11	-0.0084512	-25353.6	SLV 6	0.0019449	5834.7
974	SLV 8	-0.0054008	-16202.4	SLV 9	0.0002584	775.2
976	SLV 8	-0.0052515	-15754.5	SLV 9	0.0002884	865.1
978	SLV 12	-0.0050252	-15075.6	SLV 5	0.000307	920.9
980	SLV 12	-0.0050793	-15237.9	SLV 5	0.0003112	933.7
982	SLV 8	-0.0082027	-24608	SLV 9	0.0017436	5230.7
995	SLV 8	-0.0065246	-19573.9	SLV 9	0.0009477	2843.2
997	SLV 8	-0.006746	-20238	SLV 9	0.000991	2973
1013	SLV 8	-0.0058451	-17535.2	SLV 9	0.0005883	1765
1015	SLV 8	-0.0057062	-17118.6	SLV 9	0.0006124	1837.1
1016	SLV 12	-0.0054823	-16447	SLV 5	0.0005924	1777.2
1018	SLV 12	-0.0055351	-16605.2	SLV 5	0.0005983	1794.9
1020	SLV 11	-0.0073788	-22136.5	SLV 6	0.0014735	4420.6
1023	SLV 8	-0.0075257	-22577	SLV 9	0.0012967	3890
1024	SLV 8	-0.007211	-21633.1	SLV 9	0.0012216	3664.8
1025	SLV 8	-0.0070209	-21062.8	SLV 9	0.0011778	3533.4
1026	SLV 8	-0.0065573	-19672	SLV 9	0.0010667	3200.1
1027	SLV 8	-0.0061711	-18513.4	SLV 9	0.0009699	2909.7
1028	SLV 8	-0.005883	-17648.9	SLV 9	0.0008911	2673.4
1029	SLV 8	-0.0057011	-17103.3	SLV 9	0.0008319	2495.8
1030	SLV 8	-0.0056242	-16872.6	SLV 9	0.0007923	2377
1031	SLV 8	-0.0056425	-16927.6	SLV 9	0.0007712	2313.5
1032	SLV 8	-0.0057376	-17212.8	SLV 9	0.0007662	2298.5
1033	SLV 8	-0.0058806	-17641.7	SLV 9	0.0007741	2322.2
1034	SLV 8	-0.0060295	-18088.6	SLV 9	0.0007902	2370.6
1035	SLV 8	-0.0061255	-18376.4	SLV 9	0.0008083	2424.9
1036	SLV 8	-0.0060946	-18283.8	SLV 9	0.0008205	2461.4
1037	SLV 8	-0.0059754	-17926.1	SLV 9	0.0008174	2452.1
1038	SLV 8	-0.0057735	-17320.6	SLV 9	0.0007869	2360.7
1039	SLV 8	-0.005537	-16611	SLV 9	0.0007405	2221.5
1040	SLV 8	-0.005304	-15912.1	SLV 9	0.0006878	2063.4
1041	SLV 8	-0.0051011	-15303.4	SLV 9	0.0006358	1907.5
1042	SLV 8	-0.0049462	-14838.7	SLV 9	0.0005904	1771.2
1043	SLV 12	-0.0048594	-14578.3	SLV 5	0.0005646	1693.8
1044	SLV 12	-0.004854	-14562	SLV 5	0.0005688	1706.3
1045	SLV 12	-0.0049132	-14739.7	SLV 5	0.0005868	1760.3
1046	SLV 12	-0.0050295	-15088.4	SLV 5	0.000615	1845
1047	SLV 12	-0.005192	-15576	SLV 5	0.0006512	1953.5

Nodo	Pressione minima			Pressione massima		
Ind.	Cont.	uz	Valore	Cont.	uz	Valore
1048	SLV 12	-0.0053833	-16149.9	SLV 5	0.0006917	2075
1049	SLV 12	-0.0055765	-16729.6	SLV 5	0.0007312	2193.6
1050	SLV 12	-0.0057332	-17199.6	SLV 5	0.0007625	2287.5
1051	SLV 11	-0.0058061	-17418.4	SLV 6	0.0007774	2332.3
1052	SLV 11	-0.0057936	-17380.7	SLV 6	0.0007811	2343.3
1053	SLV 11	-0.0056776	-17032.8	SLV 6	0.0007777	2333
1054	SLV 11	-0.005541	-16623	SLV 6	0.0007794	2338.2
1055	SLV 11	-0.0054462	-16338.6	SLV 6	0.000796	2388.1
1056	SLV 11	-0.0054357	-16307.1	SLV 6	0.0008349	2504.6
1057	SLV 11	-0.0055372	-16611.6	SLV 6	0.0009014	2704.1
1058	SLV 11	-0.0057671	-17301.3	SLV 6	0.0009994	2998.1
1059	SLV 11	-0.0061311	-18393.2	SLV 6	0.0011311	3393.2
1060	SLV 11	-0.0066218	-19865.3	SLV 6	0.0012959	3887.7
1061	SLV 11	-0.0072136	-21640.9	SLV 6	0.0014891	4467.2
1062	SLV 11	-0.007467	-22400.9	SLV 6	0.0015715	4714.6
1065	SLV 11	-0.0076853	-23055.8	SLV 6	0.0017159	5147.7
1068	SLV 8	-0.0077364	-23209.1	SLV 9	0.0014631	4389.3
1080	SLV 8	-0.0067275	-20182.4	SLV 9	0.0011329	3398.6
1082	SLV 8	-0.0066108	-19832.5	SLV 9	0.0011441	3432.4
1097	SLV 11	-0.0064061	-19218.4	SLV 6	0.0010904	3271.3
1099	SLV 11	-0.0064567	-19370.2	SLV 6	0.0011011	3303.2
1110	SLV 11	-0.0079384	-23815.3	SLV 6	0.0018993	5697.9

1.4 Cedimenti fondazioni superficiali

Nodo: *nodo che interagisce col terreno.*
Ind.: *indice del nodo.*
spostamento nodale massimo: *situazione in cui si verifica lo spostamento massimo verticale nel nodo calcolato dal solutore ad elementi finiti. Lo spostamento massimo con segno è quello con valore massimo lungo l'asse Z, dove valori positivi rappresentano spostamenti verso l'alto.*
Cont.: *nome breve della condizione o combinazione di carico a cui si riferisce lo spostamento.*
uz: *spostamento verticale del nodo calcolato dal solutore ad elementi finiti. Lo spostamento è dotato di segno. [m]*
Press.: *pressione sul terreno corrispondente allo spostamento. Valori positivi indicano trazione, valori negativi indicano compressione. [daN/m²]*
spostamento nodale minimo: *situazione in cui si verifica lo spostamento minimo verticale del nodo calcolato dal solutore ad elementi finiti. Lo spostamento minimo con segno è quello con valore minimo lungo l'asse Z, dove valori negativi rappresentano spostamenti verso il basso.*
Cont.: *nome breve della condizione o combinazione di carico a cui si riferisce lo spostamento.*
uz: *spostamento verticale del nodo calcolato dal solutore ad elementi finiti. Lo spostamento è dotato di segno. [m]*
Press.: *pressione sul terreno corrispondente allo spostamento. Valori positivi indicano trazione, valori negativi indicano compressione. [daN/m²]*
Cedimento elastico: *cedimento teorico elastico massimo.*
Cont.: *nome breve della combinazione di carico in cui è stato calcolato il cedimento teorico elastico massimo.*
v.: *valore del cedimento teorico elastico massimo. [m]*
Cedimento edometrico: *cedimento teorico edometrico massimo.*
Cont.: *nome breve della combinazione di carico in cui è stato calcolato il cedimento teorico edometrico massimo.*
v.: *valore del cedimento teorico edometrico massimo. [m]*
Cedimento di consolidazione: *cedimento teorico di consolidazione massimo.*
Cont.: *nome breve della combinazione di carico in cui è stato calcolato il cedimento teorico di consolidazione massimo.*
v.: *valore del cedimento teorico di consolidazione massimo. [m]*

Spostamento estremo minimo -0.0059338 al nodo di indice 170, di coordinate x = -17.05, y = -4.78, z = -1.3, nel contesto SLD 5.
Spostamento estremo massimo -0.0009869 al nodo di indice 967, di coordinate x = -1.63, y = 5.53, z = -1.3, nel contesto SLD 6.
Cedimento elastico estremo massimo 0.0033213 al nodo di indice 553, di coordinate x = -11.36, y = 0.46, z = -1.3, nel contesto SLE rara 21.

Nodo	spostamento nodale massimo			spostamento nodale minimo			Cedimento elastico		Cedimento edometrico		Cedimento di consolidazione	
Ind.	Cont.	uz	Press.	Cont.	uz	Press.	Cont.	v.	Cont.	v.	Cont.	v.
10	SLD 11	-2.3E-03	-6926.9	SLD 6	-3.3E-03	-9820.4	SLE RA 21	2.05E-03				
11	SLD 11	-2.4E-03	-7115.4	SLD 6	-3.3E-03	-9893.4	SLE RA 21	2.08E-03				
12	SLD 11	-2.4E-03	-7253.6	SLD 6	-3.3E-03	-9936.6	SLE RA 21	2.08E-03				
13	SLD 7	-2.4E-03	-7349	SLD 10	-3.3E-03	-10004.7	SLE RA 21	2.05E-03				
14	SLD 7	-2.5E-03	-7414.6	SLD 10	-3.4E-03	-10085.8	SLE RA 21	2.01E-03				
15	SLD 7	-2.5E-03	-7462.3	SLD 10	-3.4E-03	-10149.2	SLE RA 21	1.94E-03				
16	SLD 7	-2.5E-03	-7493.8	SLD 10	-3.4E-03	-10200.5	SLE RA 21	0.00182				
17	SLD 11	-2.4E-03	-7221.6	SLD 6	-3.2E-03	-9490.3	SLE RA 21	0.002169				
18	SLD 11	-2.5E-03	-7405.6	SLD 6	-3.2E-03	-9561.8	SLE RA 21	2.18E-03				
19	SLD 11	-2.5E-03	-7531.8	SLD 6	-3.2E-03	-9594.1	SLE RA 21	2.18E-03				
20	SLD 7	-2.5E-03	-7619.6	SLD 10	-3.2E-03	-9652.5	SLE RA 21	2.16E-03				
21	SLD 7	-2.6E-03	-7682	SLD 10	-3.2E-03	-9734.9	SLE RA 21	0.002117				
22	SLD 7	-2.6E-03	-7732.1	SLD 10	-3.3E-03	-9805.8	SLE RA 21	2.07E-03				
23	SLD 7	-2.6E-03	-7757.2	SLD 10	-3.3E-03	-9854	SLE RA 21	1.96E-03				
24	SLD 7	-2.6E-03	-7918.3	SLD 10	-3.2E-03	-9588.1	SLE RA 21	2.09E-03				
25	SLD 11	-2.5E-03	-7607.1	SLD 6	-3.1E-03	-9308.3	SLE RA 21	2.24E-03				
26	SLD 11	-2.6E-03	-7720.9	SLD 6	-3.1E-03	-9327.6	SLE RA 21	2.25E-03				
27	SLD 7	-2.6E-03	-7801.1	SLD 10	-3.1E-03	-9376.7	SLE RA 21	2.23E-03				
28	SLD 7	-2.6E-03	-7861.2	SLD 10	-3.2E-03	-9458.9	SLE RA 21	2.19E-03				
29	SLD 7	-2.6E-03	-7927.3	SLD 10	-3.2E-03	-9516.1	SLE RA 21	2.13E-03				
30	SLD 11	-2.5E-03	-7483.1	SLD 6	-3.1E-03	-9189.4	SLE RA 21	2.23E-03				
31	SLD 11	-2.5E-03	-7593.3	SLD 6	-3.1E-03	-9218.4	SLE RA 21	2.25E-03				
32	SLD 8	-2.7E-03	-7992.3	SLD 9	-3.2E-03	-9516	SLE RA 21	2.06E-03				
33	SLD 11	-2.6E-03	-7652.5	SLD 6	-3.1E-03	-9196.4	SLE RA 21	2.26E-03				
34	SLD 7	-2.7E-03	-8068.9	SLE RA 21	-3.2E-03	-9462.4	SLE RA 21	2.15E-03				
35	SLD 11	-2.6E-03	-7764.7	SLE RA 21	-3.1E-03	-9164.7	SLE RA 21	2.29E-03				
36	SLD 11	-2.6E-03	-7805	SLE RA 21	-3.1E-03	-9182.7	SLE RA 21	2.30E-03				
37	SLD 11	-2.6E-03	-7906.3	SLE RA 21	-3.1E-03	-9235.6	SLE RA 21	2.30E-03				

Nodo	spostamento nodale massimo			spostamento nodale minimo			Cedimento elastico		Cedimento edometrico		Cedimento di consolidazione	
Ind.	Cont.	uz	Press.	Cont.	uz	Press.	Cont.	v.	Cont.	v.	Cont.	v.
38	SLD 7	-2.7E-03	-7978.4	SLE RA 21	-3.1E-03	-9289.9	SLE RA 21	2.28E-03				
39	SLD 7	-2.7E-03	-8035.4	SLE RA 21	-3.1E-03	-9358.8	SLE RA 21	0.002242				
40	SLD 7	-2.7E-03	-8114.6	SLE RA 21	-3.1E-03	-9417.8	SLE RA 21	2.19E-03				
41	SLD 11	-2.6E-03	-7835.2	SLE RA 21	-3.0E-03	-9126.6	SLE RA 21	2.31E-03				
42	SLD 11	-2.6E-03	-7741	SLE RA 21	-3.0E-03	-9063.8	SLE RA 21	2.28E-03				
43	SLD 4	-2.7E-03	-8196.6	SLE RA 21	-3.1E-03	-9435.8	SLE RA 21	2.12E-03				
44	SLD 4	-2.7E-03	-8249.3	SLE RA 21	-3.1E-03	-9399.4	SLE RA 21	2.17E-03				
45	SLD 11	-2.7E-03	-8002.6	SLE RA 21	-3.0E-03	-9147.9	SLE RA 21	2.33E-03				
46	SLD 11	-2.7E-03	-8093.3	SLE RA 21	-3.1E-03	-9191.3	SLE RA 21	2.34E-03				
47	SLD 7	-2.7E-03	-8158.8	SLE RA 21	-3.1E-03	-9238.5	SLE RA 21	2.32E-03				
48	SLD 7	-2.7E-03	-8211.3	SLE RA 21	-3.1E-03	-9304.4	SLE RA 21	2.28E-03				
49	SLD 7	-2.8E-03	-8264	SLE RA 21	-3.1E-03	-9370.3	SLE RA 21	2.22E-03				
51	SLD 15	-2.6E-03	-7924.7	SLE RA 21	-3.0E-03	-9030.4	SLE RA 21	2.31E-03				
52	SLE RA 1	-2.7E-03	-8038.8	SLE RA 21	-3.0E-03	-9080.7	SLE RA 21	2.34E-03				
53	SLD 4	-2.7E-03	-8222.1	SLE RA 21	-3.1E-03	-9363.1	SLE RA 21	0.002159				
54	SLE RA 1	-2.7E-03	-8072.7	SLE RA 21	-3.0E-03	-9114	SLE RA 21	2.35E-03				
55	SLE RA 1	-2.7E-03	-8115.3	SLE RA 21	-3.1E-03	-9153.6	SLE RA 21	0.002354				
56	SLE RA 1	-2.7E-03	-8160.9	SLE RA 21	-3.1E-03	-9196.5	SLE RA 21	2.34E-03				
57	SLE RA 1	-2.7E-03	-8222.2	SLE RA 21	-3.1E-03	-9257.3	SLE RA 21	2.30E-03				
58	SLE RA 1	-2.8E-03	-8283.1	SLE RA 21	-3.1E-03	-9317.7	SLE RA 21	2.24E-03				
59	SLD 4	-2.8E-03	-8279.7	SLE RA 21	-3.1E-03	-9325.6	SLE RA 21	2.20E-03				
61	SLE RA 2	-2.7E-03	-8003.3	SLE RA 20	-3.0E-03	-9045.9	SLE RA 21	2.34E-03				
62	SLD 13	-2.6E-03	-7917.3	SLE RA 20	-3.0E-03	-8996.4	SLE RA 21	2.32E-03				
63	SLD 2	-2.7E-03	-8233.5	SLE RA 20	-3.1E-03	-9286	SLE RA 21	2.22E-03				
64	SLE RA 2	-2.7E-03	-8127.8	SLE RA 20	-3.1E-03	-9166.7	SLE RA 21	2.34E-03				
65	SLE RA 2	-2.7E-03	-8084.1	SLE RA 20	-3.0E-03	-9125.2	SLE RA 21	2.35E-03				
66	SLE RA 2	-2.7E-03	-8041.1	SLE RA 20	-3.0E-03	-9084.6	SLE RA 21	0.002351				
67	SLE RA 2	-2.7E-03	-8182.4	SLE RA 20	-3.1E-03	-9220.9	SLE RA 21	2.30E-03				
68	SLE RA 2	-2.7E-03	-8233	SLE RA 20	-3.1E-03	-9271.3	SLE RA 21	2.24E-03				
69	SLD 2	-2.7E-03	-8124.7	SLE RA 20	-3.1E-03	-9294.3	SLE RA 21	2.16E-03				
70	SLD 2	-2.7E-03	-8167.2	SLE RA 20	-3.1E-03	-9272.2	SLE RA 21	2.20E-03				
72	SLD 2	-2.7E-03	-8176.4	SLE RA 20	-3.1E-03	-9261.7	SLE RA 21	2.22E-03				
73	SLD 6	-2.7E-03	-8048.5	SLE RA 20	-3.0E-03	-9145.8	SLE RA 21	2.32E-03				
74	SLD 6	-2.7E-03	-8061.4	SLE RA 20	-3.1E-03	-9193.2	SLE RA 21	2.29E-03				
75	SLD 9	-2.7E-03	-7989.8	SLE RA 20	-3.0E-03	-9104.1	SLE RA 21	2.34E-03				
76	SLD 9	-2.6E-03	-7854.6	SLE RA 20	-3.0E-03	-9017.9	SLE RA 21	2.32E-03				
77	SLD 9	-2.6E-03	-7907	SLE RA 20	-3.0E-03	-9059.4	SLE RA 21	2.33E-03				
78	SLD 6	-2.7E-03	-8022.4	SLE RA 20	-3.1E-03	-9229	SLE RA 21	0.002225				
79	SLD 9	-2.6E-03	-7740.3	SLE RA 20	-3.0E-03	-8963.8	SLE RA 21	0.002303				
83	SLD 6	-2.6E-03	-7904.1	SLE RA 20	-3.1E-03	-9173.8	SLE RA 21	2.27E-03				
85	SLD 6	-2.6E-03	-7908.7	SLE RA 20	-3.1E-03	-9210.9	SLE RA 21	2.21E-03				
86	SLD 6	-2.6E-03	-7886.8	SLE RA 20	-3.1E-03	-9229.6	SLE RA 21	0.002139				
87	SLD 6	-2.6E-03	-7831.8	SLE RA 20	-3.0E-03	-9124	SLE RA 21	2.30E-03				
88	SLD 9	-2.5E-03	-7643.8	SLE RA 20	-3.0E-03	-8995.8	SLE RA 21	2.30E-03				
89	SLD 10	-2.6E-03	-7750.8	SLE RA 20	-3.0E-03	-9081.5	SLE RA 21	2.31E-03				
90	SLD 10	-2.5E-03	-7649.4	SLE RA 20	-3.0E-03	-9032.7	SLE RA 21	2.30E-03				
92	SLD 10	-2.5E-03	-7420	SLD 7	-3.0E-03	-8935.6	SLE RA 21	2.26E-03				
93	SLD 10	-2.5E-03	-7538	SLE RA 20	-3.0E-03	-9020.2	SLE RA 21	2.29E-03				
94	SLD 10	-2.5E-03	-7609.5	SLE RA 20	-3.0E-03	-9065.4	SLE RA 21	2.29E-03				
95	SLD 6	-2.6E-03	-7661.9	SLE RA 20	-3.0E-03	-9102.8	SLE RA 21	2.27E-03				
96	SLD 6	-2.6E-03	-7672.8	SLE RA 20	-3.0E-03	-9140.9	SLE RA 21	2.23E-03				
97	SLD 6	-2.6E-03	-7672.6	SLD 11	-3.1E-03	-9174.3	SLE RA 21	2.18E-03				
98	SLD 6	-2.5E-03	-7649.7	SLD 11	-0.00308	-9239.9	SLE RA 21	2.11E-03				
170	SLD 12	-1.3E-03	-4049.1	SLD 5	-5.9E-03	-17801.4	SLE RA 21	3.61E-05				
171	SLD 12	-1.3E-03	-4028.6	SLD 5	-5.8E-03	-17527.4	SLE RA 21	1.01E-04				
172	SLD 12	-1.3E-03	-4021.3	SLD 5	-5.8E-03	-17301.2	SLE RA 21	1.60E-04				
173	SLD 12	-1.3E-03	-4027.1	SLD 5	-5.7E-03	-17132.4	SLE RA 21	2.12E-04				
174	SLD 12	-1.3E-03	-4046	SLD 5	-5.7E-03	-17023.6	SLE RA 21	2.56E-04				
175	SLD 12	-1.4E-03	-4079.7	SLD 5	-5.7E-03	-16977.1	SLE RA 21	2.93E-04				
176	SLD 12	-1.4E-03	-4128.8	SLD 5	-5.7E-03	-16992.1	SLE RA 21	3.26E-04				
177	SLD 12	-1.4E-03	-4191	SLD 5	-5.7E-03	-17061.9	SLE RA 21	3.58E-04				
178	SLD 12	-0.00142	-4260	SLD 5	-5.7E-03	-17171.5	SLE RA 21	3.94E-04				
179	SLD 12	-1.4E-03	-4300.7	SLD 5	-5.7E-03	-17236.1	SLE RA 21	4.25E-04				
186	SLD 7	-1.3E-03	-3836	SLD 10	-5.5E-03	-16421.1	SLE RA 21	9.62E-04				
187	SLD 7	-1.3E-03	-3798.5	SLD 10	-5.5E-03	-16444.4	SLE RA 21	6.15E-04				
188	SLD 7	-1.3E-03	-3766.9	SLD 10	-5.5E-03	-16473.1	SLE RA 21	0.000557				
189	SLD 7	-1.2E-03	-3737.6	SLD 10	-5.5E-03	-16495.7	SLE RA 21	4.98E-04				
190	SLD 7	-1.2E-03	-3707.4	SLD 10	-5.5E-03	-16522	SLE RA 21	4.39E-04				
191	SLD 7	-1.2E-03	-3678.9	SLD 10	-5.5E-03	-16567.2	SLE RA 21	3.77E-04				
192	SLD 7	-1.2E-03	-3654.9	SLD 10	-5.5E-03	-16644.8	SLE RA 21	3.16E-04				
193	SLD 7	-1.2E-03	-3636.6	SLD 10	-5.6E-03	-16762.9	SLE RA 21	2.54E-04				
194	SLD 7	-1.2E-03	-3624.3	SLD 10	-5.6E-03	-16925.2	SLE RA 21	1.85E-04				
195	SLD 7	-1.2E-03	-3618.7	SLD 10	-5.7E-03	-17131.6	SLE RA 21	1.04E-04				
196	SLD 7	-1.2E-03	-3620.3	SLD 10	-5.8E-03	-17374	SLE RA 21	2.78E-05				
205	SLD 12	-1.5E-03	-4496.1	SLD 5	-5.4E-03	-16079.4	SLE RA 21	1.06E-03				
206	SLD 12	-1.5E-03	-4457.5	SLD 5	-5.3E-03	-15959.7	SLE RA 21	1.09E-03				
207	SLD 8	-1.5E-03	-4397.3	SLD 9	-5.3E-03	-15813.9	SLE RA 21	1.12E-03				
208	SLD 8	-1.4E-03	-4328.9	SLD 9	-5.2E-03	-15678.6	SLE RA 21	1.15E-03				
209	SLD 7	-1.4E-03	-4253.1	SLD 10	-5.2E-03	-15582	SLE RA 21	1.19E-03				
210	SLD 7	-1.4E-03	-4183.2	SLD 10	-5.2E-03	-15525.7	SLE RA 21	1.23E-03				
211	SLD 7	-1.4E-03	-4125.7	SLD 10	-5.2E-03	-15509	SLE RA 21	1.25E-03				
212	SLD 7	-1.4E-03	-4080.3	SLD 10	-5.2E-03	-15525.7	SLE RA 21	1.25E-03				
213	SLD 12	-1.4E-03	-4338.2	SLD 5	-5.6E-03	-16712.6	SLE RA 21	2.40E-04				
214	SLD 12	-1.4E-03	-4284.7	SLD 5	-5.5E-03	-16378.9	SLE RA 21	3.32E-04				
215	SLD 12	-1.4E-03	-4235.8	SLD 5	-5.4E-03	-16069	SLE RA 21	4.00E-04				
216	SLD 12	-1.4E-03	-4199.4	SLD 5	-5.3E-03	-15811.4	SLE RA 21	4.61E-04				
217	SLD 12	-1.4E-03	-4184.3	SLD 5	-5.2E-03	-15632.6	SLE RA 21	5.18E-04				
218	SLD 12	-1.4E-03	-4198.9	SLD 5	-5.2E-03	-15552.2	SLE RA 21	5.68E-04				
219	SLD 12	-1.4E-03	-4247.9	SLD 5	-5.2E-03	-15578.7	SLE RA 21	6.12E-04				

Nodo	spostamento nodale massimo			spostamento nodale minimo			Cedimento elastico		Cedimento edometrico		Cedimento di consolidazione	
Ind.	Cont.	uz	Press.	Cont.	uz	Press.	Cont.	v.	Cont.	v.	Cont.	v.
220	SLD 12	-1.4E-03	-4330.3	SLD 5	-5.2E-03	-15706.5	SLE RA 21	0.000652				
221	SLD 12	-1.5E-03	-4433.9	SLD 5	-5.3E-03	-15904.3	SLE RA 21	6.88E-04				
222	SLD 12	-1.5E-03	-4537.2	SLD 5	-5.4E-03	-16119.9	SLE RA 21	7.15E-04				
223	SLD 7	-1.3E-03	-3986.6	SLD 10	-5.5E-03	-16428.5	SLE RA 21	2.32E-04				
224	SLD 7	-1.4E-03	-4139.7	SLD 10	-5.1E-03	-15446.6	SLE RA 21	1.27E-03				
225	SLD 7	-1.4E-03	-4104.9	SLD 10	-5.2E-03	-15451.2	SLE RA 21	0.000866				
226	SLD 7	-1.4E-03	-4062.9	SLD 10	-5.1E-03	-15438.7	SLE RA 21	8.42E-04				
227	SLD 7	-1.3E-03	-4018.1	SLD 10	-5.1E-03	-15413.4	SLE RA 21	8.11E-04				
228	SLD 7	-1.3E-03	-3977.1	SLD 10	-5.1E-03	-15403.2	SLE RA 21	7.48E-04				
229	SLD 7	-1.3E-03	-3946.6	SLD 10	-5.1E-03	-15434	SLE RA 21	6.81E-04				
230	SLD 7	-1.3E-03	-3931.1	SLD 10	-5.2E-03	-15523.9	SLE RA 21	6.08E-04				
231	SLD 7	-1.3E-03	-3931.1	SLD 10	-5.2E-03	-15679.2	SLE RA 21	5.30E-04				
232	SLD 7	-1.3E-03	-3943.5	SLD 10	-5.3E-03	-15893.3	SLE RA 21	4.42E-04				
233	SLD 7	-1.3E-03	-3963.7	SLD 10	-5.4E-03	-16150	SLE RA 21	3.41E-04				
234	SLD 12	-1.5E-03	-4624.6	SLD 5	-5.2E-03	-15643.9	SLE RA 21	4.65E-04				
235	SLD 12	-1.5E-03	-4536.7	SLD 5	-5.1E-03	-15246.3	SLE RA 21	5.63E-04				
236	SLD 12	-1.5E-03	-4449	SLD 5	-5.0E-03	-14858.6	SLE RA 21	6.39E-04				
237	SLD 12	-1.5E-03	-4369.6	SLD 5	-4.8E-03	-14509.8	SLE RA 21	7.01E-04				
238	SLD 12	-1.4E-03	-4316.8	SLD 5	-4.8E-03	-14252.5	SLE RA 21	0.000756				
239	SLD 12	-1.4E-03	-4307	SLD 5	-4.7E-03	-14127.5	SLE RA 21	0.000786				
240	SLD 12	-1.5E-03	-4350.3	SLD 5	-4.7E-03	-14154.7	SLE RA 21	8.31E-04				
241	SLD 12	-1.5E-03	-4448.8	SLD 5	-4.8E-03	-14334	SLE RA 21	8.69E-04				
242	SLD 12	-1.5E-03	-4594	SLD 5	-4.9E-03	-14642.7	SLE RA 21	8.97E-04				
243	SLD 8	-1.6E-03	-4761.9	SLD 9	-5.0E-03	-15038.1	SLE RA 21	9.30E-04				
244	SLD 7	-1.4E-03	-4349.2	SLD 10	-5.2E-03	-15500.1	SLE RA 21	4.73E-04				
245	SLD 7	-1.5E-03	-4444.7	SLD 10	-4.8E-03	-14508.9	SLE RA 21	1.55E-03				
246	SLD 7	-1.5E-03	-4408.9	SLD 10	-4.8E-03	-14484.2	SLE RA 21	1.12E-03				
248	SLD 7	-1.5E-03	-4355.6	SLD 10	-4.8E-03	-14426.9	SLE RA 21	1.10E-03				
249	SLD 7	-1.4E-03	-4294.6	SLD 10	-4.8E-03	-14349.6	SLE RA 21	1.05E-03				
250	SLD 7	-1.4E-03	-4242.4	SLD 10	-4.8E-03	-14300	SLE RA 21	9.93E-04				
251	SLD 7	-1.4E-03	-4210.5	SLD 10	-4.8E-03	-14316.2	SLE RA 21	9.22E-04				
252	SLD 7	-1.4E-03	-4204.8	SLD 10	-4.8E-03	-14421	SLE RA 21	8.61E-04				
253	SLD 7	-1.4E-03	-4224.4	SLD 10	-4.9E-03	-14616.8	SLE RA 21	7.79E-04				
254	SLD 7	-1.4E-03	-4261.2	SLD 10	-5.0E-03	-14883.3	SLE RA 21	6.92E-04				
255	SLD 7	-1.4E-03	-4304.7	SLD 10	-5.1E-03	-15185	SLE RA 21	5.93E-04				
256	SLD 12	-1.6E-03	-4872.8	SLD 5	-4.8E-03	-14538.9	SLE RA 21	0.000704				
257	SLD 12	-1.6E-03	-4765.3	SLD 5	-4.7E-03	-14107.9	SLE RA 21	0.00078				
258	SLD 12	-1.6E-03	-4650.2	SLD 5	-4.6E-03	-13667.3	SLE RA 21	8.19E-04				
259	SLD 12	-1.5E-03	-4527.2	SLD 5	-4.4E-03	-13220.5	SLE RA 21	8.76E-04				
260	SLD 12	-1.5E-03	-4434.1	SLD 5	-4.3E-03	-12877.5	SLE RA 21	9.32E-04				
261	SLD 12	-1.5E-03	-4395.5	SLD 5	-4.2E-03	-12698.7	SLE RA 21	9.84E-04				
262	SLD 12	-1.5E-03	-4424.6	SLD 5	-4.2E-03	-12711.3	SLE RA 21	0.00103				
263	SLD 12	-1.5E-03	-4527.9	SLD 5	-4.3E-03	-12922.5	SLE RA 21	1.07E-03				
264	SLD 12	-1.6E-03	-4703.6	SLD 5	-4.4E-03	-13324.3	SLE RA 21	1.09E-03				
265	SLD 8	-1.6E-03	-4924.7	SLD 9	-4.6E-03	-13877.9	SLE RA 21	0.001121				
266	SLD 7	-1.6E-03	-4681.8	SLD 10	-4.9E-03	-14550.3	SLE RA 21	7.14E-04				
267	SLD 7	-1.6E-03	-4732.7	SLD 10	-4.5E-03	-13589.4	SLE RA 21	1.78E-03				
268	SLD 7	-1.6E-03	-4699.6	SLD 10	-4.5E-03	-13535.8	SLE RA 21	1.34E-03				
269	SLD 7	-1.5E-03	-4636.8	SLD 10	-4.5E-03	-13434.7	SLE RA 21	1.32E-03				
270	SLD 7	-1.5E-03	-4561	SLD 10	-4.4E-03	-13304.7	SLE RA 21	1.27E-03				
271	SLD 7	-1.5E-03	-4498.5	SLD 10	-4.4E-03	-13213.5	SLE RA 21	1.21E-03				
272	SLD 7	-1.5E-03	-4465.9	SLD 10	-4.4E-03	-13214.9	SLE RA 21	0.001139				
273	SLD 7	-1.5E-03	-4469.7	SLD 10	-4.4E-03	-13334.4	SLE RA 21	0.001059				
274	SLD 7	-1.5E-03	-4508.2	SLD 10	-4.5E-03	-13572	SLE RA 21	9.74E-04				
275	SLD 7	-1.5E-03	-4568.7	SLD 10	-4.6E-03	-13893.9	SLE RA 21	8.86E-04				
276	SLD 7	-1.5E-03	-4627.2	SLD 10	-4.7E-03	-14221.6	SLE RA 21	8.18E-04				
278	SLD 12	-1.4E-03	-4197.2	SLD 5	-5.2E-03	-15743.9	SLE RA 21	7.81E-05				
294	SLD 12	-1.6E-03	-4705.9	SLD 5	-4.6E-03	-13696.1	SLE RA 21	9.66E-04				
296	SLD 12	-1.6E-03	-4903.3	SLD 5	-4.6E-03	-13821.1	SLE RA 21	1.11E-03				
300	SLD 12	-1.7E-03	-5018.2	SLD 5	-4.4E-03	-13273.5	SLE RA 21	9.35E-04				
301	SLD 12	-1.6E-03	-4929.6	SLD 5	-4.3E-03	-12886.2	SLE RA 21	9.53E-04				
302	SLD 12	-1.6E-03	-4825	SLD 5	-4.2E-03	-12487.1	SLE RA 21	9.88E-04				
303	SLD 12	-1.6E-03	-4661.5	SLD 5	-4.0E-03	-11925.7	SLE RA 21	1.04E-03				
304	SLD 12	-1.5E-03	-4532.6	SLD 5	-3.8E-03	-11499	SLE RA 21	1.09E-03				
305	SLD 12	-1.5E-03	-4463.4	SLD 5	-3.8E-03	-11261.8	SLE RA 21	1.14E-03				
306	SLD 12	-1.5E-03	-4469.8	SLD 5	-3.7E-03	-11244.4	SLE RA 21	1.19E-03				
307	SLD 12	-1.5E-03	-4559.1	SLD 5	-3.8E-03	-11456.2	SLE RA 21	1.23E-03				
309	SLD 8	-1.6E-03	-4726.8	SLD 9	-4.0E-03	-11895	SLE RA 21	1.26E-03				
310	SLD 8	-1.6E-03	-4749.4	SLD 9	-4.0E-03	-11917.1	SLE RA 21	1.72E-03				
312	SLD 8	-1.7E-03	-4964.5	SLD 9	-4.2E-03	-12538.2	SLE RA 21	1.28E-03				
313	SLD 7	-1.6E-03	-4892.9	SLD 10	-4.1E-03	-12435.9	SLE RA 21	1.51E-03				
314	SLD 7	-1.6E-03	-4848.8	SLD 10	-4.3E-03	-12910.9	SLE RA 21	1.06E-03				
315	SLD 7	-1.6E-03	-4899.1	SLD 10	-4.4E-03	-13202.2	SLE RA 21	1.00E-03				
316	SLD 7	-1.6E-03	-4937.9	SLD 10	-4.5E-03	-13490	SLE RA 21	9.59E-04				
320	SLD 7	-1.6E-03	-4721.8	SLD 10	-4.6E-03	-13912.1	SLE RA 21	1.03E-03				
322	SLD 7	-1.5E-03	-4482.3	SLD 10	-4.6E-03	-13743.1	SLE RA 21	8.77E-04				
338	SLD 7	-1.2E-03	-3651.8	SLD 10	-5.1E-03	-15400.3	SLE RA 21	8.11E-05				
340	SLD 11	-1.7E-03	-4981.9	SLD 6	-4.2E-03	-12650.1	SLE RA 21	1.98E-03				
341	SLD 7	-1.7E-03	-4960.3	SLD 10	-4.2E-03	-12565.3	SLE RA 21	1.53E-03				
342	SLD 7	-1.6E-03	-4809.1	SLD 10	-4.1E-03	-12256.3	SLE RA 21	1.47E-03				
343	SLD 7	-1.6E-03	-4741.5	SLD 10	-4.0E-03	-12132.3	SLE RA 21	1.40E-03				
344	SLD 7	-1.6E-03	-4709.3	SLD 10	-4.0E-03	-12121.1	SLE RA 21	1.33E-03				
345	SLD 7	-1.6E-03	-4720.3	SLD 10	-4.1E-03	-12251.9	SLE RA 21	1.24E-03				
346	SLD 7	-1.6E-03	-4771.2	SLD 10	-4.2E-03	-12524.4	SLE RA 21	1.15E-03				
347	SLD 11	-1.7E-03	-5199.3	SLD 6	-3.9E-03	-11793.1	SLE RA 21	2.14E-03				
349	SLD 12	-1.5E-03	-4473.3	SLD 5	-5.1E-03	-15236.9	SLE RA 21	8.16E-05				
350	SLD 12	-1.4E-03	-4150.5	SLD 5	-4.6E-03	-13943.2	SLE RA 21	0.000088				
351	SLD 12	-1.3E-03	-3870.8	SLD 5	-4.3E-03	-12788.3	SLE RA 21	1.01E-04				
352	SLD 12	-1.2E-03	-3644.9	SLD 5	-3.9E-03	-11813	SLE RA 21	1.05E-04				

Nodo	spostamento nodale massimo			spostamento nodale minimo			Cedimento elastico		Cedimento edometrico		Cedimento di consolidazione	
Ind.	Cont.	uz	Press.	Cont.	uz	Press.	Cont.	v.	Cont.	v.	Cont.	v.
353	SLD 12	-1.2E-03	-3476.7	SLD 5	-3.7E-03	-11034	SLE RA 21	1.00E-04				
354	SLD 12	-1.1E-03	-3366.1	SLD 5	-3.5E-03	-10453.4	SLE RA 21	9.55E-05				
355	SLD 12	-1.1E-03	-3311.1	SLD 5	-3.4E-03	-10065.1	SLE RA 21	1.11E-04				
356	SLD 12	-1.1E-03	-3309.3	SLD 5	-3.3E-03	-9859.6	SLE RA 21	1.46E-04				
357	SLD 12	-1.1E-03	-3358.5	SLD 5	-3.3E-03	-9825.9	SLE RA 21	2.01E-04				
358	SLD 12	-1.2E-03	-3456.8	SLD 5	-3.3E-03	-9952.5	SLE RA 21	2.80E-04				
359	SLD 12	-1.2E-03	-3602.2	SLD 5	-3.4E-03	-10225.9	SLE RA 21	3.93E-04				
360	SLD 12	-1.3E-03	-3791.5	SLD 5	-3.5E-03	-10627.9	SLE RA 21	5.22E-04				
361	SLD 12	-1.3E-03	-4019.1	SLD 5	-3.7E-03	-11131.2	SLE RA 21	6.69E-04				
362	SLD 12	-1.4E-03	-4274.6	SLD 5	-3.9E-03	-11693.3	SLE RA 21	8.31E-04				
363	SLD 12	-1.5E-03	-4539.7	SLD 5	-4.1E-03	-12247.7	SLE RA 21	9.92E-04				
364	SLD 12	-1.6E-03	-4784.7	SLD 5	-4.2E-03	-12694.7	SLE RA 21	1.14E-03				
365	SLD 12	-1.7E-03	-4967.2	SLD 5	-4.3E-03	-12901	SLE RA 21	1.27E-03				
366	SLD 12	-1.7E-03	-5085.9	SLD 5	-4.3E-03	-12915.3	SLE RA 21	0.001351				
367	SLD 12	-1.7E-03	-5148.5	SLD 5	-4.2E-03	-12737.7	SLE RA 21	1.41E-03				
368	SLD 12	-1.7E-03	-5152.5	SLD 5	-4.1E-03	-12414.7	SLE RA 21	1.46E-03				
369	SLD 12	-1.7E-03	-5088.7	SLD 5	-4.0E-03	-11973.2	SLE RA 21	1.50E-03				
370	SLD 12	-1.7E-03	-5019	SLD 5	-3.9E-03	-11608	SLE RA 21	1.53E-03				
371	SLD 12	-1.6E-03	-4920.2	SLD 5	-3.7E-03	-11212	SLE RA 21	1.56E-03				
372	SLD 12	-1.6E-03	-4752.5	SLD 5	-3.5E-03	-10635.6	SLE RA 21	1.61E-03				
373	SLD 12	-1.5E-03	-4605.6	SLD 5	-3.4E-03	-10175	SLE RA 21	1.66E-03				
374	SLD 12	-1.5E-03	-4515.7	SLD 5	-3.3E-03	-9907.4	SLE RA 21	1.72E-03				
375	SLD 12	-1.5E-03	-4502.5	SLD 5	-3.3E-03	-9871.2	SLE RA 21	1.77E-03				
376	SLD 12	-1.5E-03	-4570.9	SLD 5	-3.4E-03	-10078.3	SLE RA 21	1.82E-03				
377	SLD 8	-1.6E-03	-4706.2	SLD 9	-3.5E-03	-10526.9	SLE RA 21	1.85E-03				
378	SLD 8	-1.6E-03	-4915.1	SLD 9	-3.7E-03	-11171.3	SLE RA 21	1.87E-03				
379	SLD 11	-1.7E-03	-5184.1	SLD 6	-3.9E-03	-11675.6	SLE RA 21	0.00216				
380	SLD 7	-1.7E-03	-5124.2	SLD 10	-3.8E-03	-11497.5	SLE RA 21	2.14E-03				
381	SLD 7	-1.7E-03	-5039.4	SLD 10	-3.8E-03	-11288.6	SLE RA 21	2.09E-03				
382	SLD 7	-1.7E-03	-4967	SLD 10	-3.7E-03	-11131.3	SLE RA 21	2.02E-03				
383	SLD 7	-1.6E-03	-4932.1	SLD 10	-3.7E-03	-11097.4	SLE RA 21	1.94E-03				
384	SLD 7	-1.6E-03	-4943.4	SLD 10	-3.7E-03	-11218.6	SLE RA 21	1.85E-03				
385	SLD 7	-1.7E-03	-4995.3	SLD 10	-3.8E-03	-11489.8	SLE RA 21	1.76E-03				
386	SLD 7	-1.7E-03	-5066.4	SLD 10	-4.0E-03	-11867.1	SLE RA 21	1.66E-03				
387	SLD 7	-1.7E-03	-5108.4	SLD 10	-4.0E-03	-12149.3	SLE RA 21	1.60E-03				
388	SLD 7	-1.7E-03	-5128.6	SLD 10	-4.1E-03	-12414.5	SLE RA 21	0.001542				
389	SLD 7	-1.7E-03	-5131.2	SLD 10	-4.2E-03	-12745.2	SLE RA 21	0.001461				
390	SLD 7	-1.7E-03	-5071.7	SLD 10	-4.3E-03	-12965.5	SLE RA 21	1.38E-03				
391	SLD 7	-1.7E-03	-4952.2	SLD 10	-4.3E-03	-13027.5	SLE RA 21	0.001288				
392	SLD 7	-1.6E-03	-4901.3	SLD 10	-4.3E-03	-13001.8	SLE RA 21	1.26E-03				
393	SLD 7	-1.6E-03	-4661.8	SLD 10	-4.3E-03	-12832.8	SLE RA 21	1.10E-03				
394	SLD 7	-1.5E-03	-4592.9	SLD 10	-4.3E-03	-12766.6	SLE RA 21	1.05E-03				
395	SLD 7	-1.5E-03	-4354.6	SLD 10	-4.1E-03	-12391.2	SLE RA 21	8.99E-04				
396	SLD 7	-1.4E-03	-4089.6	SLD 10	-4.0E-03	-11859.7	SLE RA 21	7.46E-04				
397	SLD 7	-1.3E-03	-3828.9	SLD 10	-3.8E-03	-11288.1	SLE RA 21	5.95E-04				
398	SLD 7	-1.2E-03	-3592.5	SLD 10	-3.6E-03	-10756.9	SLE RA 21	4.60E-04				
399	SLD 7	-1.1E-03	-3391.5	SLD 10	-3.4E-03	-10317.4	SLE RA 21	3.43E-04				
400	SLD 7	-1.1E-03	-3231.4	SLD 10	-3.3E-03	-10000.2	SLE RA 21	0.000242				
401	SLD 7	-1.0E-03	-3115.5	SLD 10	-3.3E-03	-9828	SLE RA 21	1.79E-04				
402	SLD 7	-1.0E-03	-3046.7	SLD 10	-3.3E-03	-9819.3	SLE RA 21	1.34E-04				
403	SLD 7	-1.0E-03	-3027.4	SLD 10	-3.3E-03	-9989.7	SLE RA 21	1.12E-04				
404	SLD 7	-1.0E-03	-3060.6	SLD 10	-3.5E-03	-10353.6	SLE RA 21	1.06E-04				
405	SLD 7	-1.0E-03	-3149.8	SLD 10	-3.6E-03	-10925	SLE RA 21	1.14E-04				
406	SLD 7	-1.1E-03	-3298.8	SLD 10	-3.9E-03	-11716.7	SLE RA 21	0.000123				
407	SLD 7	-1.2E-03	-3510.4	SLD 10	-4.2E-03	-12735.5	SLE RA 21	1.21E-04				
408	SLD 7	-1.3E-03	-3783.8	SLD 10	-4.7E-03	-13973.9	SLE RA 21	9.95E-05				
409	SLD 7	-1.4E-03	-4111.5	SLD 10	-5.1E-03	-15399.3	SLE RA 21	8.44E-05				
412	SLD 12	-1.4E-03	-4286.5	SLD 5	-4.8E-03	-14274.7	SLE RA 21	8.78E-05				
413	SLD 12	-1.6E-03	-4909.2	SLD 5	-4.3E-03	-12795.9	SLE RA 21	1.22E-03				
415	SLD 12	-1.7E-03	-5103.8	SLD 5	-4.3E-03	-12914.6	SLE RA 21	1.36E-03				
416	SLD 7	-1.6E-03	-4939.9	SLD 10	-4.3E-03	-12944.8	SLE RA 21	1.28E-03				
418	SLD 7	-1.6E-03	-4701.8	SLD 10	-4.3E-03	-12782.7	SLE RA 21	1.12E-03				
419	SLD 7	-1.3E-03	-3834.8	SLD 10	-4.6E-03	-13945.6	SLE RA 21	0.000102				
422	SLD 11	-1.8E-03	-5429.8	SLD 6	-3.7E-03	-11046.3	SLE RA 21	2.30E-03				
426	SLD 12	-1.5E-03	-4461.1	SLD 5	-4.4E-03	-13069.4	SLE RA 21	1.08E-04				
427	SLD 12	-1.7E-03	-5176	SLD 5	-4.0E-03	-12087.8	SLE RA 21	1.43E-03				
429	SLD 12	-1.8E-03	-5363.2	SLD 5	-4.1E-03	-12189.6	SLE RA 21	1.56E-03				
430	SLD 7	-1.7E-03	-5211.5	SLD 10	-4.1E-03	-12160.5	SLE RA 21	1.49E-03				
432	SLD 7	-1.7E-03	-4977	SLD 10	-4.0E-03	-12017.2	SLE RA 21	1.33E-03				
433	SLD 7	-1.4E-03	-4083.7	SLD 10	-4.2E-03	-12710.6	SLE RA 21	1.41E-04				
436	SLD 11	-1.9E-03	-5694	SLD 6	-3.5E-03	-10434.4	SLE RA 21	2.46E-03				
440	SLD 12	-1.6E-03	-4730.3	SLD 5	-4.0E-03	-12140.2	SLE RA 21	1.30E-04				
441	SLD 12	-1.8E-03	-5489.7	SLD 5	-3.8E-03	-11508.2	SLE RA 21	1.60E-03				
443	SLD 12	-0.00189	-5669.9	SLD 5	-3.9E-03	-11593.2	SLE RA 21	1.73E-03				
444	SLD 7	-1.8E-03	-5524.9	SLD 10	-3.8E-03	-11513.3	SLE RA 21	1.67E-03				
446	SLD 7	-1.8E-03	-5293.6	SLD 10	-3.8E-03	-11388.6	SLE RA 21	0.001512				
447	SLD 7	-1.5E-03	-4414.9	SLD 10	-3.9E-03	-11733.3	SLE RA 21	1.67E-04				
449	SLD 11	-2.0E-03	-6002.5	SLD 6	-3.3E-03	-9960.3	SLE RA 21	2.64E-03				
452	SLD 8	-1.5E-03	-4585.8	SLD 9	-2.4E-03	-7119	SLE RA 21	2.15E-03				
455	SLD 16	-1.7E-03	-5085.6	SLD 1	-3.8E-03	-11485.3	SLE RA 21	1.49E-04				
456	SLD 12	-1.9E-03	-5837.6	SLD 5	-3.7E-03	-11008.2	SLE RA 21	1.75E-03				
458	SLD 12	-2.0E-03	-6010.9	SLD 5	-3.7E-03	-11076.6	SLE RA 21	1.87E-03				
459	SLD 7	-2.0E-03	-5867.6	SLD 10	-3.7E-03	-10954.7	SLE RA 21	1.81E-03				
461	SLD 7	-1.9E-03	-5639.2	SLD 10	-3.6E-03	-10848.5	SLE RA 21	1.67E-03				
462	SLD 7	-1.6E-03	-4836.6	SLD 10	-3.7E-03	-11020.7	SLE RA 21	2.06E-04				
464	SLD 11	-2.1E-03	-6354.3	SLD 6	-3.2E-03	-9608.7	SLE RA 21	2.85E-03				
469	SLD 16	-1.7E-03	-5245.5	SLD 1	-3.8E-03	-11361	SLE RA 21	0.000196				
470	SLD 12	-2.1E-03	-6210.6	SLD 5	-3.5E-03	-10557.2	SLE RA 21	1.89E-03				
472	SLD 12	-2.1E-03	-6377.2	SLD 5	-3.5E-03	-10609	SLE RA 21	2.00E-03				

Nodo	spostamento nodale massimo			spostamento nodale minimo			Cedimento elastico		Cedimento edometrico		Cedimento di consolidazione	
Ind.	Cont.	uz	Press.	Cont.	uz	Press.	Cont.	v.	Cont.	v.	Cont.	v.
473	SLD 7	-2.1E-03	-6231.1	SLD 10	-3.5E-03	-10451.3	SLE RA 21	1.95E-03				
475	SLD 7	-2.0E-03	-6005.4	SLD 10	-3.5E-03	-10363.3	SLE RA 21	1.81E-03				
476	SLD 3	-1.7E-03	-5106.2	SLD 14	-3.6E-03	-10803.6	SLE RA 21	2.58E-04				
478	SLD 11	-2.2E-03	-6736.5	SLD 6	-3.1E-03	-9346.7	SLE RA 21	2.98E-03				
483	SLD 16	-1.8E-03	-5490.8	SLD 1	-3.8E-03	-11447.1	SLE RA 21	2.55E-04				
484	SLD 12	-2.2E-03	-6601.5	SLD 5	-3.4E-03	-10138.3	SLE RA 21	2.03E-03				
486	SLD 12	-2.3E-03	-6761.7	SLD 5	-3.4E-03	-10173.7	SLE RA 21	2.13E-03				
487	SLD 7	-2.2E-03	-6610.6	SLD 10	-3.3E-03	-9981.7	SLE RA 21	2.08E-03				
489	SLD 7	-2.1E-03	-6387.2	SLD 10	-3.3E-03	-9911.8	SLE RA 21	1.94E-03				
490	SLD 3	-1.8E-03	-5384.1	SLD 14	-3.6E-03	-10886.5	SLE RA 21	3.22E-04				
492	SLD 11	-2.4E-03	-7123.7	SLD 6	-3.0E-03	-9125.3	SLE RA 21	3.11E-03				
500	SLD 8	-2.8E-03	-8379	SLD 9	-3.6E-03	-10912.1	SLE RA 21	2.62E-03				
501	SLD 8	-2.6E-03	-7892.3	SLD 9	-3.3E-03	-9902	SLE RA 21	2.73E-03				
502	SLD 8	-2.5E-03	-7536.1	SLD 9	-3.1E-03	-9245.8	SLE RA 21	2.87E-03				
503	SLD 11	-2.4E-03	-7270.6	SLD 6	-3.0E-03	-9039.7	SLE RA 21	3.15E-03				
504	SLD 11	-2.5E-03	-7457.4	SLD 6	-3.1E-03	-9376.3	SLE RA 21	0.003218				
506	SLD 16	-1.9E-03	-5804.2	SLD 1	-3.9E-03	-11703.5	SLE RA 21	3.28E-04				
507	SLD 12	-2.3E-03	-7002.5	SLD 5	-3.2E-03	-9746.2	SLE RA 21	2.16E-03				
509	SLD 12	-2.4E-03	-7156.4	SLD 5	-3.3E-03	-9765.2	SLE RA 21	2.27E-03				
510	SLD 7	-2.3E-03	-7004.7	SLD 10	-3.2E-03	-9534.7	SLE RA 21	2.20E-03				
512	SLD 7	-2.3E-03	-6783.4	SLD 10	-3.2E-03	-9482.8	SLE RA 21	2.07E-03				
513	SLD 3	-1.9E-03	-5731	SLD 14	-3.7E-03	-11145.5	SLE RA 21	4.11E-04				
516	SLD 11	-2.5E-03	-7575.1	SLE RA 21	-3.0E-03	-8955.7	SLE RA 21	3.23E-03				
519	SLE RA 1	-2.0E-03	-5899.7	SLE RA 21	-2.2E-03	-6658.5	SLE RA 21	0.002453				
523	SLD 16	-2.1E-03	-6157.6	SLD 1	-4.0E-03	-12071.2	SLE RA 21	4.19E-04				
524	SLD 16	-2.4E-03	-7254.7	SLD 1	-3.2E-03	-9530	SLE RA 21	2.26E-03				
526	SLD 16	-2.5E-03	-7433.9	SLD 1	-3.2E-03	-9501.3	SLE RA 21	2.36E-03				
527	SLD 3	-2.4E-03	-7305.8	SLD 14	-3.1E-03	-9215.7	SLE RA 21	2.29E-03				
529	SLD 3	-2.4E-03	-7128.5	SLD 14	-3.0E-03	-9139.4	SLE RA 21	2.16E-03				
530	SLD 3	-2.0E-03	-6114.3	SLD 14	-3.8E-03	-11516	SLE RA 21	5.05E-04				
532	SLD 11	-2.6E-03	-7864.5	SLE RA 21	-3.0E-03	-8997.1	SLE RA 21	3.29E-03				
537	SLE RA 1	-2.7E-03	-7985.4	SLE RA 21	-3.0E-03	-9024.4	SLE RA 21	3.32E-03				
542	SLD 16	-2.2E-03	-6505.9	SLD 1	-4.2E-03	-12460.8	SLE RA 21	5.03E-04				
543	SLD 16	-2.5E-03	-7378.2	SLD 1	-3.2E-03	-9458	SLE RA 21	0.002358				
545	SLD 16	-2.5E-03	-7548.8	SLD 1	-3.1E-03	-9415.7	SLE RA 21	2.44E-03				
546	SLD 3	-2.5E-03	-7436.3	SLD 14	-3.0E-03	-9109.4	SLE RA 21	2.36E-03				
548	SLD 3	-2.4E-03	-7270.6	SLD 14	-3.0E-03	-9040.9	SLE RA 21	0.002245				
549	SLD 3	-2.2E-03	-6483.5	SLD 14	-4.0E-03	-11903.1	SLE RA 21	5.93E-04				
553	SLE RA 2	-2.7E-03	-7987.7	SLE RA 20	-3.0E-03	-9034.3	SLE RA 21	3.32E-03				
558	SLD 16	-2.3E-03	-6778.1	SLD 1	-4.2E-03	-12737.3	SLE RA 21	5.66E-04				
559	SLD 16	-2.5E-03	-7479	SLD 1	-3.1E-03	-9403	SLE RA 21	0.002416				
561	SLD 16	-2.5E-03	-7634.1	SLD 1	-3.1E-03	-9354.3	SLE RA 21	2.49E-03				
562	SLD 2	-2.5E-03	-7443.1	SLD 15	-3.1E-03	-9185.3	SLE RA 21	2.40E-03				
564	SLD 2	-2.5E-03	-7354.7	SLD 15	-3.0E-03	-9058.3	SLE RA 21	0.002293				
565	SLD 3	-2.3E-03	-6764.3	SLD 14	-4.1E-03	-12172.7	SLE RA 21	6.56E-04				
569	SLD 10	-2.6E-03	-7782.9	SLE RA 20	-3.0E-03	-9007.6	SLE RA 21	3.30E-03				
572	SLD 16	-2.3E-03	-6855.2	SLD 1	-4.4E-03	-13081.3	SLE RA 21	4.66E-04				
573	SLD 16	-2.3E-03	-6876.2	SLD 1	-4.2E-03	-12693.5	SLE RA 21	6.33E-04				
574	SLD 16	-2.3E-03	-6954.4	SLD 1	-4.1E-03	-12415.5	SLE RA 21	7.59E-04				
575	SLD 16	-2.4E-03	-7057.1	SLD 1	-4.1E-03	-12192.1	SLE RA 21	8.81E-04				
576	SLD 16	-2.4E-03	-7164.1	SLD 1	-4.0E-03	-11987.4	SLE RA 21	9.88E-04				
577	SLD 16	-2.4E-03	-7264.3	SLD 1	-3.9E-03	-11781.9	SLE RA 21	1.08E-03				
578	SLD 16	-2.5E-03	-7352	SLD 1	-3.9E-03	-11565.5	SLE RA 21	1.19E-03				
579	SLD 16	-2.5E-03	-7424	SLD 1	-3.8E-03	-11333.3	SLE RA 21	0.001307				
580	SLD 16	-2.5E-03	-7477.5	SLD 1	-3.7E-03	-11083	SLE RA 21	1.44E-03				
581	SLD 16	-2.5E-03	-7510.1	SLD 1	-3.6E-03	-10814.5	SLE RA 21	1.58E-03				
582	SLD 16	-2.5E-03	-7519.9	SLD 1	-3.5E-03	-10531.7	SLE RA 21	1.74E-03				
583	SLD 16	-2.5E-03	-7508	SLD 1	-3.4E-03	-10246.1	SLE RA 21	1.90E-03				
584	SLD 16	-2.5E-03	-7484	SLD 1	-3.3E-03	-9983.6	SLE RA 21	2.03E-03				
585	SLD 16	-2.5E-03	-7463	SLD 1	-3.3E-03	-9765.2	SLE RA 21	2.17E-03				
586	SLD 14	-2.5E-03	-7548.5	SLD 3	-3.1E-03	-9395.4	SLE RA 21	2.47E-03				
587	SLD 14	-2.6E-03	-7663.1	SLD 3	-3.1E-03	-9371.8	SLE RA 21	2.51E-03				
588	SLD 14	-2.6E-03	-7799	SLE RA 20	-3.1E-03	-9325.9	SLE RA 21	2.54E-03				
589	SLD 14	-2.6E-03	-7922.3	SLE RA 20	-3.1E-03	-9338.7	SLE RA 21	2.56E-03				
590	SLD 14	-2.7E-03	-8015.9	SLE RA 20	-3.1E-03	-9306.6	SLE RA 21	2.60E-03				
591	SLD 14	-2.7E-03	-8068	SLE RA 20	-3.1E-03	-9224.1	SLE RA 21	2.62E-03				
592	SLE RA 2	-2.7E-03	-8040.4	SLE RA 20	-3.0E-03	-9091.6	SLE RA 21	2.66E-03				
593	SLE RA 2	-2.6E-03	-7888.4	SLE RA 20	-3.0E-03	-8921.5	SLE RA 21	2.69E-03				
594	SLE RA 2	-2.6E-03	-7728.6	SLE RA 20	-2.9E-03	-8744.1	SLE RA 21	2.74E-03				
595	SLE RA 2	-2.5E-03	-7611.8	SLE RA 20	-2.9E-03	-8616.7	SLE RA 21	2.79E-03				
596	SLD 6	-2.4E-03	-7240.2	SLE RA 20	-2.8E-03	-8350.4	SLE RA 21	2.86E-03				
597	SLD 6	-2.4E-03	-7207.9	SLE RA 20	-2.8E-03	-8446.6	SLE RA 21	2.89E-03				
598	SLD 6	-2.7E-03	-8190.7	SLE RA 20	-3.2E-03	-9605	SLE RA 21	3.20E-03				
599	SLD 6	-2.7E-03	-8142.4	SLE RA 20	-3.2E-03	-9600.5	SLE RA 21	3.15E-03				
600	SLD 2	-2.7E-03	-8054.1	SLE RA 20	-3.2E-03	-9575.2	SLE RA 21	2.94E-03				
601	SLD 2	-2.6E-03	-7905.3	SLD 15	-3.2E-03	-9565.3	SLE RA 21	0.002784				
602	SLD 2	-2.6E-03	-7751.9	SLD 15	-3.2E-03	-9559.8	SLE RA 21	0.002666				
603	SLD 2	-2.5E-03	-7613.4	SLD 15	-3.2E-03	-9500.1	SLE RA 21	2.58E-03				
604	SLD 2	-2.5E-03	-7405.4	SLD 15	-3.1E-03	-9265.7	SLE RA 21	2.40E-03				
605	SLD 2	-2.4E-03	-7323.3	SLD 15	-3.0E-03	-9139.2	SLE RA 21	2.30E-03				
606	SLD 2	-2.5E-03	-7388.7	SLD 15	-3.0E-03	-9147.5	SLE RA 21	2.04E-03				
607	SLD 2	-2.5E-03	-7512.6	SLD 15	-3.1E-03	-9380.1	SLE RA 21	0.001908				
608	SLD 4	-2.5E-03	-7586.4	SLD 13	-3.2E-03	-9672.7	SLE RA 21	1.79E-03				
609	SLD 4	-2.5E-03	-7612.1	SLD 13	-3.3E-03	-9980.5	SLE RA 21	1.64E-03				
610	SLD 4	-2.5E-03	-7596.7	SLD 13	-3.4E-03	-10275.6	SLE RA 21	1.51E-03				
611	SLD 4	-2.5E-03	-7547.7	SLD 13	-3.5E-03	-10548.6	SLE RA 21	1.38E-03				
612	SLD 4	-2.5E-03	-7472.7	SLD 13	-3.6E-03	-10798.1	SLE RA 21	0.001272				
613	SLD 4	-2.5E-03	-7377.4	SLD 13	-3.7E-03	-11026.1	SLE RA 21	1.18E-03				
614	SLD 4	-2.4E-03	-7266.5	SLD 13	-3.7E-03	-11237	SLE RA 21	1.09E-03				

Nodo	spostamento nodale massimo			spostamento nodale minimo			Cedimento elastico		Cedimento edometrico		Cedimento di consolidazione	
Ind.	Cont.	uz	Press.	Cont.	uz	Press.	Cont.	v.	Cont.	v.	Cont.	v.
615	SLD 4	-2.4E-03	-7145.5	SLD 13	-3.8E-03	-11439.4	SLE RA 21	1.01E-03				
616	SLD 4	-2.3E-03	-7023.8	SLD 13	-3.9E-03	-11649.8	SLE RA 21	9.23E-04				
617	SLD 4	-2.3E-03	-6920.2	SLD 13	-4.0E-03	-11901.2	SLE RA 21	8.10E-04				
618	SLD 4	-2.3E-03	-6868.9	SLD 13	-4.1E-03	-12253.5	SLE RA 21	6.83E-04				
619	SLD 4	-2.3E-03	-6922.9	SLD 13	-4.3E-03	-12795.4	SLE RA 21	5.12E-04				
626	SLD 16	-2.3E-03	-6880.6	SLD 1	-4.2E-03	-12728.8	SLE RA 21	5.88E-04				
639	SLD 16	-2.5E-03	-7462.8	SLD 1	-3.3E-03	-9803.2	SLE RA 20	2.11E-03				
642	SLD 14	-2.5E-03	-7432.2	SLD 3	-3.1E-03	-9449.8	SLE RA 21	0.002424				
645	SLD 14	-2.5E-03	-7557.9	SLD 3	-3.1E-03	-9422.4	SLE RA 21	2.49E-03				
654	SLE RA 2	-2.6E-03	-7683.9	SLE RA 20	-2.9E-03	-8695.4	SLE RA 21	2.77E-03				
656	SLE RA 2	-2.5E-03	-7577.4	SLE RA 20	-2.9E-03	-8580.2	SLE RA 21	2.83E-03				
658	SLD 6	-2.5E-03	-7369.5	SLE RA 20	-2.8E-03	-8540.9	SLE RA 21	2.88E-03				
664	SLD 10	-2.5E-03	-7489.7	SLE RA 20	-3.0E-03	-8921.4	SLE RA 20	3.24E-03				
671	SLD 6	-2.6E-03	-7758.4	SLE RA 20	-3.0E-03	-9083.9	SLE RA 20	3.27E-03				
674	SLD 6	-2.6E-03	-7793.6	SLE RA 20	-3.0E-03	-9075.8	SLE RA 20	3.17E-03				
682	SLD 2	-2.5E-03	-7361.5	SLD 15	-3.1E-03	-9434.6	SLE RA 20	2.39E-03				
684	SLD 2	-2.4E-03	-7279.5	SLD 15	-3.1E-03	-9308.1	SLE RA 20	2.30E-03				
686	SLD 2	-2.5E-03	-7364	SLD 15	-3.1E-03	-9235.1	SLE RA 20	0.001996				
699	SLD 2	-2.3E-03	-6835.5	SLD 15	-4.1E-03	-12191.5	SLE RA 20	6.79E-04				
701	SLD 14	-2.3E-03	-6874.3	SLD 3	-4.3E-03	-12969.3	SLE RA 20	4.65E-04				
702	SLD 14	-2.3E-03	-6890.9	SLD 3	-4.2E-03	-12583.2	SLE RA 20	6.32E-04				
703	SLD 14	-2.3E-03	-6962.1	SLD 3	-4.1E-03	-12304.2	SLE RA 20	7.60E-04				
704	SLD 14	-2.4E-03	-7058.2	SLD 3	-4.0E-03	-12079.5	SLE RA 20	0.000886				
705	SLD 14	-2.4E-03	-7158.9	SLD 3	-4.0E-03	-11873	SLE RA 20	9.95E-04				
706	SLD 14	-2.4E-03	-7253.2	SLD 3	-3.9E-03	-11665.1	SLE RA 20	1.09E-03				
707	SLD 14	-2.4E-03	-7335.5	SLD 3	-3.8E-03	-11445.7	SLE RA 20	1.21E-03				
708	SLD 14	-2.5E-03	-7402.3	SLD 3	-3.7E-03	-11210	SLE RA 20	1.33E-03				
709	SLD 14	-2.5E-03	-7450.7	SLD 3	-3.7E-03	-10956.1	SLE RA 20	1.46E-03				
710	SLD 14	-2.5E-03	-7477.3	SLD 3	-3.6E-03	-10684.6	SLE RA 20	1.61E-03				
711	SLD 14	-2.5E-03	-7478.7	SLD 3	-3.5E-03	-10401	SLE RA 20	1.77E-03				
712	SLD 14	-2.5E-03	-7453	SLD 3	-3.4E-03	-10119.8	SLE RA 20	1.90E-03				
713	SLD 14	-2.5E-03	-7405.2	SLD 3	-3.3E-03	-9871.5	SLE RA 20	2.05E-03				
714	SLD 14	-2.5E-03	-7385.2	SLD 3	-3.3E-03	-9797.7	SLE RA 20	2.10E-03				
715	SLD 14	-2.4E-03	-7323.7	SLD 3	-3.2E-03	-9596.1	SLE RA 20	2.26E-03				
716	SLD 14	-2.5E-03	-7377.6	SLD 3	-3.2E-03	-9491.5	SLE RA 20	2.40E-03				
717	SLD 14	-2.5E-03	-7442.9	SLD 3	-3.2E-03	-9476	SLE RA 20	2.44E-03				
718	SLD 13	-2.5E-03	-7566.1	SLD 4	-3.1E-03	-9442.7	SLE RA 20	2.48E-03				
719	SLD 14	-2.6E-03	-7697.5	SLD 3	-3.1E-03	-9378	SLE RA 20	2.50E-03				
720	SLD 14	-2.6E-03	-7815.8	SLE RA 20	-3.1E-03	-9312.2	SLE RA 20	2.55E-03				
721	SLD 14	-2.6E-03	-7904.4	SLE RA 20	-3.1E-03	-9272.7	SLE RA 20	2.58E-03				
722	SLD 14	-2.7E-03	-7951.4	SLE RA 20	-3.1E-03	-9182.7	SLE RA 20	2.62E-03				
723	SLD 14	-2.6E-03	-7949.5	SLE RA 20	-3.0E-03	-9042.6	SLE RA 20	2.65E-03				
724	SLE RA 2	-2.6E-03	-7835.2	SLE RA 20	-3.0E-03	-8864.9	SLE RA 20	2.71E-03				
725	SLE RA 2	-2.6E-03	-7682.6	SLE RA 20	-2.9E-03	-8694.6	SLE RA 20	2.78E-03				
726	SLE RA 2	-2.5E-03	-7576.1	SLE RA 20	-2.9E-03	-8579.4	SLE RA 20	2.84E-03				
727	SLD 6	-2.5E-03	-7514.1	SLE RA 20	-2.9E-03	-8714.3	SLE RA 20	2.88E-03				
728	SLD 6	-2.5E-03	-7475.8	SLE RA 20	-2.9E-03	-8803.3	SLE RA 20	2.89E-03				
729	SLD 6	-2.5E-03	-7460.9	SLE RA 20	-2.9E-03	-8841.9	SLE RA 20	2.91E-03				
730	SLD 6	-2.4E-03	-7311.9	SLD 11	-3.0E-03	-8869	SLE RA 20	2.96E-03				
731	SLD 10	-2.4E-03	-7255.3	SLD 7	-3.0E-03	-8882.3	SLE RA 20	3.03E-03				
732	SLD 10	-2.4E-03	-7265.7	SLD 7	-3.0E-03	-8933.6	SLE RA 20	3.20E-03				
733	SLD 10	-2.4E-03	-7309.7	SLD 7	-3.0E-03	-8907.6	SLE RA 20	3.21E-03				
734	SLD 5	-2.5E-03	-7447.1	SLE RA 20	-2.9E-03	-8653.3	SLE RA 20	3.17E-03				
735	SLD 5	-2.5E-03	-7432.8	SLE RA 20	-2.9E-03	-8659.5	SLE RA 20	3.03E-03				
736	SLD 1	-2.4E-03	-7338.4	SLE RA 20	-2.9E-03	-8658.7	SLE RA 20	3.01E-03				
737	SLD 1	-2.4E-03	-7207.2	SLD 16	-2.9E-03	-8650.6	SLE RA 20	2.85E-03				
738	SLD 1	-2.4E-03	-7061.4	SLD 16	-2.9E-03	-8698.2	SLE RA 20	2.71E-03				
739	SLD 2	-2.3E-03	-6909.7	SLD 15	-2.9E-03	-8692	SLE RA 20	2.59E-03				
740	SLD 2	-2.3E-03	-6770.9	SLD 15	-2.9E-03	-8631.7	SLE RA 20	2.49E-03				
741	SLD 2	-2.2E-03	-6687.6	SLD 15	-2.8E-03	-8532.4	SLE RA 20	2.34E-03				
742	SLD 2	-2.4E-03	-7101	SLD 15	-3.0E-03	-8978.4	SLE RA 20	2.13E-03				
743	SLD 2	-2.4E-03	-7275.7	SLD 15	-3.1E-03	-9232.2	SLE RA 20	1.99E-03				
744	SLD 2	-2.4E-03	-7342.1	SLD 15	-3.1E-03	-9353.2	SLE RA 20	1.93E-03				
745	SLD 2	-2.5E-03	-7433.7	SLD 15	-3.2E-03	-9637.9	SLE RA 20	1.79E-03				
746	SLD 2	-2.5E-03	-7473.8	SLD 15	-3.3E-03	-9941.2	SLE RA 20	1.67E-03				
747	SLD 2	-2.5E-03	-7468.3	SLD 15	-3.4E-03	-10235.7	SLE RA 20	1.53E-03				
748	SLD 2	-2.5E-03	-7427.4	SLD 15	-3.5E-03	-10510	SLE RA 20	1.40E-03				
749	SLD 2	-2.5E-03	-7359.8	SLD 15	-3.6E-03	-10761.1	SLE RA 20	1.29E-03				
750	SLD 2	-2.4E-03	-7271.9	SLD 15	-3.7E-03	-10990.6	SLE RA 20	1.19E-03				
751	SLD 2	-2.4E-03	-7168.5	SLD 15	-3.7E-03	-11202.7	SLE RA 20	0.0011				
752	SLD 2	-2.4E-03	-7055.1	SLD 15	-3.8E-03	-11406	SLE RA 20	1.02E-03				
753	SLD 2	-2.3E-03	-6941.1	SLD 15	-3.9E-03	-11617.1	SLE RA 20	0.000925				
754	SLD 2	-2.3E-03	-6845	SLD 15	-4.0E-03	-11869.1	SLE RA 20	8.09E-04				
755	SLD 2	-2.3E-03	-6800.9	SLD 15	-4.1E-03	-12222.4	SLE RA 20	6.81E-04				
756	SLD 2	-2.3E-03	-6858.6	SLD 15	-4.3E-03	-12763.3	SLE RA 20	5.09E-04				
758	SLD 14	-2.3E-03	-6796.7	SLD 3	-4.2E-03	-12610.8	SLE RA 20	5.67E-04				
759	SLD 2	-2.2E-03	-6666.7	SLD 15	-4.0E-03	-12108.7	SLE RA 20	6.51E-04				
762	SLD 13	-2.2E-03	-6514.5	SLD 4	-4.1E-03	-12302.7	SLE RA 20	5.10E-04				
763	SLD 2	-2.1E-03	-6325.3	SLD 15	-3.9E-03	-11738	SLE RA 20	5.80E-04				
765	SLD 13	-2.3E-03	-7044.9	SLD 4	-3.2E-03	-9664.4	SLE RA 20	1.98E-03				
767	SLD 13	-2.4E-03	-7073.1	SLD 4	-3.2E-03	-9643.2	SLE RA 20	2.11E-03				
768	SLD 10	-2.4E-03	-7297.8	SLE RA 20	-2.8E-03	-8309.2	SLE RA 20	2.68E-03				
770	SLD 10	-2.4E-03	-7181	SLE RA 20	-2.7E-03	-8237.3	SLE RA 20	2.75E-03				
771	SLD 1	-2.1E-03	-6432	SLE RA 20	-2.5E-03	-7442.1	SLE RA 20	0.002669				
773	SLD 1	-2.1E-03	-6383.4	SLE RA 20	-2.5E-03	-7531.2	SLE RA 20	0.002742				
774	SLD 2	-2.3E-03	-6910.7	SLD 15	-3.0E-03	-9146	SLE RA 20	1.99E-03				
776	SLD 2	-2.3E-03	-6931	SLD 15	-3.0E-03	-9125.3	SLE RA 20	1.86E-03				
778	SLD 13	-2.1E-03	-6158.4	SLD 4	-4.0E-03	-11886.7	SLE RA 20	4.32E-04				
779	SLD 2	-2.0E-03	-5908.9	SLD 15	-3.7E-03	-11246.5	SLE RA 20	4.84E-04				

Nodo	spostamento nodale massimo			spostamento nodale minimo			Cedimento elastico		Cedimento edometrico		Cedimento di consolidazione	
Ind.	Cont.	uz	Press.	Cont.	uz	Press.	Cont.	v.	Cont.	v.	Cont.	v.
781	SLD 6	-2.3E-03	-6758.8	SLD 11	-3.1E-03	-9376.6	SLE RA 20	0.00189				
783	SLD 2	-2.3E-03	-6836.6	SLD 15	-3.1E-03	-9249.4	SLE RA 20	1.78E-03				
784	SLD 13	-2.3E-03	-6893	SLD 4	-3.2E-03	-9684.6	SLE RA 20	1.88E-03				
786	SLD 13	-2.3E-03	-6930.6	SLD 4	-3.2E-03	-9680.6	SLE RA 20	2.01E-03				
787	SLD 10	-2.3E-03	-6967.4	SLE RA 20	-2.7E-03	-8096.4	SLE RA 20	2.58E-03				
789	SLD 1	-2.0E-03	-5978.5	SLE RA 20	-2.4E-03	-7051	SLE RA 20	0.002494				
791	SLD 1	-0.00198	-5939.9	SLD 16	-2.4E-03	-7200.8	SLE RA 20	2.55E-03				
793	SLD 13	-1.9E-03	-5792.2	SLD 4	-3.8E-03	-11464.2	SLE RA 20	3.45E-04				
794	SLD 2	-1.8E-03	-5489.5	SLD 15	-3.6E-03	-10772.4	SLE RA 20	3.83E-04				
796	SLD 6	-2.2E-03	-6468.3	SLD 11	-3.3E-03	-9796.2	SLE RA 20	1.75E-03				
798	SLD 6	-2.2E-03	-6529.9	SLD 11	-3.2E-03	-9636.4	SLE RA 20	1.64E-03				
799	SLD 9	-2.2E-03	-6648	SLD 8	-3.3E-03	-9798.9	SLE RA 20	1.74E-03				
801	SLD 9	-2.2E-03	-6591.2	SLD 8	-3.3E-03	-9916	SLE RA 20	0.001858				
802	SLD 10	-2.2E-03	-6607	SLD 7	-2.7E-03	-8006.4	SLE RA 20	0.002444				
804	SLD 1	-1.9E-03	-5671.1	SLD 16	-2.3E-03	-6898.9	SLE RA 20	2.33E-03				
806	SLD 1	-1.9E-03	-5642.8	SLD 16	-2.4E-03	-7127.4	SLE RA 20	2.37E-03				
808	SLD 13	-1.8E-03	-5451.5	SLD 4	-3.7E-03	-11108	SLE RA 20	2.62E-04				
809	SLD 10	-2.1E-03	-6301.9	SLD 7	-2.6E-03	-7841	SLE RA 20	2.43E-03				
810	SLD 10	-1.9E-03	-5557.1	SLD 7	-2.3E-03	-6766.7	SLE RA 20	0.002252				
811	SLD 14	-1.8E-03	-5353.7	SLD 3	-2.1E-03	-6446.1	SLE RA 20	2.23E-03				
812	SLD 10	-1.8E-03	-5271	SLE RA 20	-2.1E-03	-6253.5	SLE RA 20	2.22E-03				
813	SLD 9	-1.8E-03	-5252.9	SLE RA 20	-2.1E-03	-6177.2	SLE RA 20	2.22E-03				
814	SLD 9	-1.8E-03	-5292.9	SLE RA 20	-2.1E-03	-6172.6	SLE RA 20	2.23E-03				
815	SLD 9	-1.8E-03	-5373.9	SLE RA 20	-2.1E-03	-6222.4	SLE RA 20	2.24E-03				
816	SLD 5	-1.8E-03	-5426.7	SLE RA 20	-2.1E-03	-6314.5	SLE RA 20	2.26E-03				
817	SLD 5	-1.8E-03	-5489.2	SLE RA 20	-2.1E-03	-6438.9	SLE RA 20	2.27E-03				
818	SLD 1	-1.9E-03	-5563.1	SLE RA 20	-2.2E-03	-6583	SLE RA 20	2.28E-03				
819	SLD 1	-1.9E-03	-5570.9	SLD 16	-2.3E-03	-6795	SLE RA 20	2.27E-03				
820	SLD 1	-1.9E-03	-5563.4	SLD 16	-2.3E-03	-7014.6	SLE RA 20	2.33E-03				
821	SLD 2	-1.7E-03	-5114.9	SLD 15	-3.5E-03	-10411.5	SLE RA 20	2.88E-04				
823	SLD 6	-2.0E-03	-6143.4	SLD 11	-3.4E-03	-10267	SLE RA 20	1.60E-03				
825	SLD 6	-2.1E-03	-6187.1	SLD 11	-3.4E-03	-10076	SLE RA 20	1.50E-03				
826	SLD 9	-2.1E-03	-6184.2	SLD 8	-3.4E-03	-10111.5	SLE RA 20	1.60E-03				
828	SLD 9	-2.0E-03	-6137.2	SLD 8	-3.4E-03	-10245.6	SLE RA 20	1.71E-03				
830	SLD 13	-1.7E-03	-5158	SLD 4	-3.6E-03	-10865.4	SLE RA 20	2.01E-04				
831	SLD 10	-2.1E-03	-6266.6	SLD 7	-2.8E-03	-8324.5	SLE RA 20	2.29E-03				
833	SLD 10	-2.0E-03	-5942.6	SLD 7	-2.6E-03	-7826.5	SLE RA 20	2.37E-03				
834	SLD 10	-2.1E-03	-6367.5	SLD 7	-2.7E-03	-7988.4	SLE RA 20	2.37E-03				
845	SLD 5	-1.8E-03	-5496.7	SLD 12	-2.3E-03	-6973.9	SLE RA 20	2.25E-03				
847	SLD 1	-1.8E-03	-5477.1	SLD 16	-2.4E-03	-7203.3	SLE RA 20	2.19E-03				
848	SLD 2	-1.6E-03	-4815.7	SLD 15	-3.4E-03	-10230.2	SLE RA 20	2.17E-04				
850	SLD 10	-2.0E-03	-5906.9	SLD 7	-2.8E-03	-8310.3	SLE RA 20	2.24E-03				
851	SLD 10	-1.7E-03	-5201.4	SLD 7	-2.4E-03	-7151.7	SLE RA 20	2.18E-03				
852	SLD 10	-1.7E-03	-5012	SLD 7	-2.3E-03	-6813.3	SLE RA 20	2.16E-03				
853	SLD 9	-1.6E-03	-4918.8	SLD 8	-2.2E-03	-6589.7	SLE RA 20	2.06E-03				
854	SLD 9	-1.6E-03	-4901.6	SLD 8	-2.2E-03	-6464.2	SLE RA 20	2.06E-03				
855	SLD 9	-1.6E-03	-4942	SLD 8	-2.1E-03	-6413.1	SLE RA 20	2.07E-03				
856	SLD 5	-1.7E-03	-5017.7	SLD 12	-2.1E-03	-6426.7	SLE RA 20	2.07E-03				
857	SLD 5	-1.7E-03	-5058.8	SLD 12	-2.2E-03	-6552.6	SLE RA 20	2.09E-03				
858	SLD 5	-1.7E-03	-5118.3	SLD 12	-2.2E-03	-6719.3	SLE RA 20	2.17E-03				
859	SLD 5	-1.7E-03	-5193.7	SLD 12	-2.3E-03	-6906.4	SLE RA 20	2.17E-03				
860	SLD 5	-1.8E-03	-5273.3	SLD 12	-2.4E-03	-7089.7	SLE RA 20	2.16E-03				
861	SLD 5	-1.8E-03	-5339.4	SLD 12	-2.4E-03	-7233.7	SLE RA 20	2.12E-03				
862	SLD 6	-1.9E-03	-5793.8	SLD 11	-3.6E-03	-10763.5	SLE RA 20	1.46E-03				
864	SLD 6	-1.9E-03	-5819.6	SLD 11	-3.5E-03	-10541.2	SLE RA 20	1.37E-03				
866	SLD 13	-1.6E-03	-4924.7	SLD 4	-3.6E-03	-10768.3	SLE RA 20	1.51E-04				
867	SLD 5	-1.7E-03	-5244.8	SLD 12	-2.4E-03	-7265.7	SLE RA 20	2.11E-03				
869	SLD 5	-1.8E-03	-5310.2	SLD 12	-2.5E-03	-7405.5	SLE RA 20	2.08E-03				
870	SLD 9	-1.9E-03	-5695.9	SLD 8	-3.5E-03	-10423.3	SLE RA 20	1.45E-03				
872	SLD 9	-1.9E-03	-5658.7	SLD 8	-3.5E-03	-10574.6	SLE RA 20	1.56E-03				
873	SLD 10	-2.0E-03	-5961.6	SLD 7	-2.9E-03	-8701.5	SLE RA 20	2.14E-03				
875	SLD 10	-1.9E-03	-5649.9	SLD 7	-2.7E-03	-8219.1	SLE RA 20	2.21E-03				
876	SLD 6	-1.5E-03	-4463.3	SLD 11	-3.5E-03	-10422.7	SLE RA 20	0.000164				
878	SLD 5	-1.7E-03	-5006.2	SLD 12	-2.6E-03	-7651.5	SLE RA 20	2.00E-03				
880	SLD 5	-1.7E-03	-5066.9	SLD 12	-2.6E-03	-7786.3	SLE RA 20	0.001917				
881	SLD 6	-1.8E-03	-5430.5	SLD 11	-3.8E-03	-11270.6	SLE RA 20	1.32E-03				
883	SLD 6	-1.8E-03	-5438.4	SLD 11	-3.7E-03	-11016.7	SLE RA 20	1.24E-03				
885	SLD 13	-1.6E-03	-4759.8	SLD 4	-3.6E-03	-10840	SLE RA 20	1.16E-04				
886	SLD 9	-1.7E-03	-5210.1	SLD 8	-3.6E-03	-10722.7	SLE RA 20	1.32E-03				
888	SLD 9	-1.7E-03	-5182.6	SLD 8	-3.6E-03	-10891.3	SLE RA 20	1.41E-03				
889	SLD 9	-1.9E-03	-5644	SLD 8	-3.0E-03	-9132.4	SLE RA 20	1.98E-03				
891	SLD 9	-1.8E-03	-5356.3	SLD 8	-2.9E-03	-8678.9	SLE RA 20	2.05E-03				
892	SLD 6	-1.3E-03	-4028.8	SLD 11	-3.7E-03	-11063.9	SLE RA 20	1.29E-04				
894	SLD 5	-1.6E-03	-4773.5	SLD 12	-2.7E-03	-8099.3	SLE RA 20	1.83E-03				
896	SLD 5	-1.6E-03	-4829.5	SLD 12	-2.7E-03	-8229.3	SLE RA 20	1.76E-03				
897	SLD 6	-1.7E-03	-5063.8	SLD 11	-3.9E-03	-11782.1	SLE RA 20	1.18E-03				
899	SLD 6	-1.7E-03	-5053.8	SLD 11	-3.8E-03	-11496.3	SLE RA 20	1.10E-03				
901	SLD 9	-1.5E-03	-4400	SLD 8	-3.8E-03	-11368.4	SLE RA 20	1.05E-04				
902	SLD 9	-1.8E-03	-5315	SLD 8	-3.2E-03	-9592.8	SLE RA 20	1.83E-03				
904	SLD 9	-1.7E-03	-5050.5	SLD 8	-3.1E-03	-9168.2	SLE RA 20	1.87E-03				
905	SLD 9	-1.6E-03	-4761.4	SLD 8	-3.7E-03	-11019.5	SLE RA 20	1.19E-03				
907	SLD 9	-1.6E-03	-4743.6	SLD 8	-3.7E-03	-11205.7	SLE RA 20	1.27E-03				
908	SLD 5	-1.5E-03	-4542.3	SLD 12	-2.9E-03	-8587.9	SLE RA 20	1.66E-03				
910	SLD 5	-1.5E-03	-4593.7	SLD 12	-2.9E-03	-8713.2	SLE RA 20	0.001594				
911	SLD 6	-1.2E-03	-3690.6	SLD 11	-4.0E-03	-12005.8	SLE RA 20	1.12E-04				
913	SLD 6	-1.6E-03	-4703.1	SLD 11	-4.1E-03	-12299.3	SLE RA 20	1.04E-03				
915	SLD 6	-1.6E-03	-4675.2	SLD 11	-4.0E-03	-11981.2	SLE RA 20	9.70E-04				
917	SLD 9	-1.4E-03	-4111.9	SLD 8	-4.0E-03	-12107.9	SLE RA 20	9.56E-05				
918	SLD 9	-1.7E-03	-4978.2	SLD 8	-3.4E-03	-10069	SLE RA 20	1.66E-03				

Nodo	spostamento nodale massimo			spostamento nodale minimo			Cedimento elastico		Cedimento edometrico		Cedimento di consolidazione	
Ind.	Cont.	uz	Press.	Cont.	uz	Press.	Cont.	v.	Cont.	v.	Cont.	v.
920	SLD 9	-1.6E-03	-4736.4	SLD 8	-3.2E-03	-9672.9	SLE RA 20	1.68E-03				
921	SLD 9	-1.5E-03	-4389	SLD 8	-3.8E-03	-11356.2	SLE RA 20	0.001054				
923	SLD 9	-1.5E-03	-4380.9	SLD 8	-3.9E-03	-11560.3	SLE RA 20	1.13E-03				
924	SLD 5	-1.4E-03	-4312	SLD 12	-3.0E-03	-9109.2	SLE RA 20	1.49E-03				
926	SLD 5	-1.5E-03	-4358.8	SLD 12	-3.1E-03	-9229.9	SLE RA 20	1.45E-03				
928	SLD 9	-1.3E-03	-3896.6	SLD 8	-4.4E-03	-13074.1	SLE RA 20	8.16E-05				
929	SLD 6	-1.1E-03	-3445	SLD 11	-4.4E-03	-13266.7	SLE RA 20	8.89E-05				
931	SLD 6	-1.5E-03	-4357.9	SLD 11	-4.3E-03	-12830.6	SLE RA 20	8.89E-04				
933	SLD 6	-1.4E-03	-4312	SLD 11	-4.2E-03	-12479.8	SLE RA 20	0.000824				
934	SLD 9	-1.5E-03	-4640.9	SLD 8	-3.5E-03	-10566.8	SLE RA 20	1.47E-03				
936	SLD 9	-1.5E-03	-4421.6	SLD 8	-3.4E-03	-10198.7	SLE RA 20	1.48E-03				
937	SLD 5	-1.4E-03	-4086	SLD 12	-3.2E-03	-9668	SLE RA 20	1.31E-03				
939	SLD 5	-1.4E-03	-4128.2	SLD 12	-3.3E-03	-9784.1	SLE RA 20	1.28E-03				
941	SLD 9	-1.3E-03	-3751.3	SLD 8	-4.8E-03	-14277.6	SLE RA 20	0.000081				
942	SLD 9	-1.3E-03	-3896.7	SLD 8	-5.0E-03	-15128.5	SLE RA 20	0.000075				
943	SLD 9	-1.2E-03	-3652.9	SLD 8	-4.6E-03	-13898.5	SLE RA 20	0.000082				
944	SLD 9	-1.1E-03	-3449.5	SLD 8	-4.3E-03	-12811.2	SLE RA 20	0.000088				
945	SLD 9	-1.1E-03	-3296.3	SLD 8	-4.0E-03	-11910.6	SLE RA 20	9.96E-05				
946	SLD 9	-1.1E-03	-3197.1	SLD 8	-3.7E-03	-11216.5	SLE RA 20	0.000106				
947	SLD 9	-1.1E-03	-3151.7	SLD 8	-3.6E-03	-10733.1	SLE RA 20	0.000125				
948	SLD 9	-1.1E-03	-3157.8	SLD 8	-3.5E-03	-10454.9	SLE RA 20	1.64E-04				
949	SLD 9	-1.1E-03	-3211.2	SLD 8	-3.5E-03	-10370.3	SLE RA 20	2.30E-04				
950	SLD 9	-1.1E-03	-3306.1	SLD 8	-3.5E-03	-10462.2	SLE RA 20	3.14E-04				
951	SLD 9	-1.1E-03	-3434.9	SLD 8	-3.6E-03	-10707.5	SLE RA 20	4.10E-04				
952	SLD 9	-1.2E-03	-3586.3	SLD 8	-3.7E-03	-11073.4	SLE RA 20	5.34E-04				
953	SLD 9	-1.2E-03	-3744.8	SLD 8	-3.8E-03	-11513.6	SLE RA 20	6.57E-04				
954	SLD 9	-1.3E-03	-3888.3	SLD 8	-4.0E-03	-11961.1	SLE RA 20	7.62E-04				
955	SLD 9	-1.3E-03	-3990.7	SLD 8	-4.1E-03	-12331.5	SLE RA 20	8.34E-04				
956	SLD 6	-1.3E-03	-4031.1	SLD 11	-4.5E-03	-13381.3	SLE RA 20	7.23E-04				
958	SLD 6	-1.3E-03	-3978.9	SLD 11	-4.3E-03	-13018.9	SLE RA 20	6.63E-04				
959	SLD 6	-1.3E-03	-3935.3	SLD 11	-4.3E-03	-12789.8	SLE RA 20	6.08E-04				
960	SLD 6	-1.3E-03	-3805.7	SLD 11	-4.1E-03	-12353.3	SLE RA 20	5.14E-04				
961	SLD 6	-1.2E-03	-3630.4	SLD 11	-4.0E-03	-11876.1	SLE RA 20	4.12E-04				
962	SLD 6	-1.1E-03	-3443.5	SLD 11	-3.8E-03	-11451.5	SLE RA 20	3.28E-04				
963	SLD 6	-1.1E-03	-3269.3	SLD 11	-3.7E-03	-11145.1	SLE RA 20	2.50E-04				
964	SLD 6	-1.0E-03	-3124.4	SLD 11	-3.7E-03	-11002.2	SLE RA 20	1.83E-04				
965	SLD 6	-1.0E-03	-3020.1	SLD 11	-3.7E-03	-11054.4	SLE RA 20	1.43E-04				
966	SLD 6	-9.9E-04	-2964	SLD 11	-3.8E-03	-11323.2	SLE RA 20	1.12E-04				
967	SLD 6	-9.9E-04	-2960.8	SLD 11	-3.9E-03	-11822.7	SLE RA 20	1.05E-04				
968	SLD 6	-1.0E-03	-3013.1	SLD 11	-4.2E-03	-12558.7	SLE RA 20	9.83E-05				
969	SLD 6	-1.0E-03	-3120.6	SLD 11	-4.5E-03	-13525.8	SLE RA 20	8.36E-05				
970	SLD 6	-1.1E-03	-3279.7	SLD 11	-4.9E-03	-14701.6	SLE RA 20	7.99E-05				
971	SLD 6	-1.1E-03	-3284.5	SLD 11	-4.9E-03	-14761.2	SLE RA 20	7.94E-05				
972	SLD 6	-1.2E-03	-3481.3	SLD 11	-5.3E-03	-16037.6	SLE RA 20	1.12E-04				
974	SLD 9	-1.4E-03	-4316.4	SLD 8	-3.7E-03	-11110.8	SLE RA 20	1.27E-03				
976	SLD 9	-1.4E-03	-4119.2	SLD 8	-0.00359	-10770.1	SLE RA 20	1.27E-03				
978	SLD 5	-1.3E-03	-3872.5	SLD 12	-3.4E-03	-10282.2	SLE RA 20	1.15E-03				
980	SLD 5	-1.3E-03	-3910.3	SLD 12	-3.5E-03	-10393.9	SLE RA 20	1.10E-03				
982	SLD 9	-1.2E-03	-3669.1	SLD 8	-5.2E-03	-15708.1	SLE RA 20	7.27E-05				
995	SLD 9	-1.3E-03	-3863.2	SLD 8	-4.3E-03	-12867.5	SLE RA 20	6.31E-04				
997	SLD 9	-1.3E-03	-3971.8	SLD 8	-4.4E-03	-13293.2	SLE RA 20	7.06E-04				
1013	SLD 9	-1.3E-03	-4023.8	SLD 8	-3.9E-03	-11746.4	SLE RA 20	1.05E-03				
1015	SLD 9	-1.3E-03	-3848.6	SLD 8	-3.8E-03	-11432.9	SLE RA 20	1.07E-03				
1016	SLD 5	-1.2E-03	-3685.3	SLD 12	-3.7E-03	-10984.5	SLE RA 20	9.42E-04				
1018	SLD 5	-1.2E-03	-3718.5	SLD 12	-3.7E-03	-11091.8	SLE RA 20	9.07E-04				
1020	SLD 6	-1.2E-03	-3532.3	SLD 11	-4.7E-03	-14183.7	SLE RA 20	4.45E-04				
1023	SLD 9	-1.3E-03	-4027.8	SLD 8	-4.9E-03	-14659.2	SLE RA 20	4.95E-04				
1024	SLD 9	-1.3E-03	-3904.4	SLD 8	-4.7E-03	-14064	SLE RA 20	5.25E-04				
1025	SLD 9	-1.3E-03	-3826.3	SLD 8	-4.6E-03	-13703	SLE RA 20	5.35E-04				
1026	SLD 9	-1.2E-03	-3645.4	SLD 8	-4.3E-03	-12826.6	SLE RA 20	5.48E-04				
1027	SLD 9	-1.2E-03	-3503.7	SLD 8	-4.0E-03	-12100	SLE RA 20	5.46E-04				
1028	SLD 9	-1.1E-03	-3412.1	SLD 8	-3.9E-03	-11563.4	SLE RA 20	5.43E-04				
1029	SLD 9	-1.1E-03	-3374.8	SLD 8	-3.7E-03	-11232.7	SLE RA 20	0.000551				
1030	SLD 9	-1.1E-03	-3390.6	SLD 8	-3.7E-03	-11105	SLE RA 20	5.76E-04				
1031	SLD 9	-1.2E-03	-3453.1	SLD 8	-3.7E-03	-11161	SLE RA 20	6.19E-04				
1032	SLD 9	-1.2E-03	-3550.5	SLD 8	-3.8E-03	-11363.7	SLE RA 20	6.76E-04				
1033	SLD 9	-1.2E-03	-3663.8	SLD 8	-3.9E-03	-11655.7	SLE RA 20	7.45E-04				
1034	SLD 9	-1.3E-03	-3765	SLD 8	-4.0E-03	-11953	SLE RA 20	8.16E-04				
1035	SLD 9	-1.3E-03	-3814.1	SLD 8	-4.0E-03	-12137.4	SLE RA 20	8.74E-04				
1036	SLD 9	-1.3E-03	-3761.2	SLD 8	-4.0E-03	-12061.1	SLE RA 20	9.04E-04				
1037	SLD 9	-1.2E-03	-3660.9	SLD 8	-3.9E-03	-11813.1	SLE RA 20	9.02E-04				
1038	SLD 9	-1.2E-03	-3544	SLD 8	-3.8E-03	-11415.9	SLE RA 20	8.76E-04				
1039	SLD 9	-1.1E-03	-3429.5	SLD 8	-3.7E-03	-10960	SLE RA 20	8.34E-04				
1040	SLD 9	-1.1E-03	-3331.7	SLD 8	-3.5E-03	-10517.1	SLE RA 20	7.87E-04				
1041	SLD 9	-1.1E-03	-3259.3	SLD 8	-3.4E-03	-10136.5	SLE RA 20	0.000745				
1042	SLD 9	-1.1E-03	-3216.6	SLD 8	-3.3E-03	-9850.9	SLE RA 20	7.12E-04				
1043	SLD 5	-1.1E-03	-3193.1	SLD 12	-3.2E-03	-9691.5	SLE RA 20	6.91E-04				
1044	SLD 5	-1.1E-03	-3178.3	SLD 12	-3.2E-03	-9677.5	SLE RA 20	6.83E-04				
1045	SLD 5	-1.1E-03	-3192.4	SLD 12	-3.3E-03	-9787	SLE RA 20	6.89E-04				
1046	SLD 5	-1.1E-03	-3236.3	SLD 12	-3.3E-03	-10007.1	SLE RA 20	7.06E-04				
1047	SLD 5	-1.1E-03	-3305.3	SLD 12	-3.4E-03	-10317.2	SLE RA 20	7.34E-04				
1048	SLD 5	-1.1E-03	-3391.1	SLD 12	-3.6E-03	-10683.8	SLE RA 20	7.65E-04				
1049	SLD 5	-1.2E-03	-3480.6	SLD 12	-3.7E-03	-11055.3	SLE RA 20	7.92E-04				
1050	SLD 5	-1.2E-03	-3554.6	SLD 12	-3.8E-03	-11357.4	SLE RA 20	8.06E-04				
1051	SLD 6	-1.2E-03	-3587.7	SLD 11	-3.8E-03	-11498.4	SLE RA 20	7.97E-04				
1052	SLD 6	-1.2E-03	-3567.4	SLD 11	-3.8E-03	-11470	SLE RA 20	7.53E-04				
1053	SLD 6	-1.2E-03	-3469.3	SLD 11	-3.7E-03	-11230.5	SLE RA 20	6.81E-04				
1054	SLD 6	-1.1E-03	-3342	SLD 11	-3.6E-03	-10942.8	SLE RA 20	6.02E-04				
1055	SLD 6	-1.1E-03	-3221.1	SLD 11	-3.6E-03	-10729.4	SLE RA 20	5.28E-04				

Nodo	spostamento nodale massimo			spostamento nodale minimo			Cedimento elastico		Cedimento edometrico		Cedimento di consolidazione	
Ind.	Cont.	uz	Press.	Cont.	uz	Press.	Cont.	v.	Cont.	v.	Cont.	v.
1056	SLD 6	-1.0E-03	-3129.4	SLD 11	-3.6E-03	-10673	SLE RA 20	4.69E-04				
1057	SLD 6	-1.0E-03	-3080.4	SLD 11	-3.6E-03	-10827.1	SLE RA 20	0.00043				
1058	SLD 6	-1.0E-03	-3080.7	SLD 11	-3.7E-03	-11222.5	SLE RA 20	0.000413				
1059	SLD 6	-1.0E-03	-3130.7	SLD 11	-4.0E-03	-11869.3	SLE RA 20	4.08E-04				
1060	SLD 6	-1.1E-03	-3225.1	SLD 11	-4.3E-03	-12752.5	SLE RA 20	0.000405				
1061	SLD 6	-1.1E-03	-3350.8	SLD 11	-4.6E-03	-13822.9	SLE RA 20	3.89E-04				
1062	SLD 6	-1.1E-03	-3405.1	SLD 11	-4.8E-03	-14281.2	SLE RA 20	3.83E-04				
1065	SLD 6	-1.1E-03	-3297.3	SLD 11	-4.9E-03	-14610.8	SLE RA 20	3.16E-04				
1068	SLD 9	-1.3E-03	-3867.7	SLD 8	-5.0E-03	-14952.1	SLE RA 20	0.000343				
1080	SLD 9	-1.2E-03	-3674.8	SLD 8	-4.4E-03	-13109	SLE RA 20	6.48E-04				
1082	SLD 9	-1.2E-03	-3546.7	SLD 8	-4.3E-03	-12853.4	SLE RA 20	6.59E-04				
1097	SLD 6	-1.2E-03	-3471.8	SLD 11	-4.2E-03	-12475.3	SLE RA 20	5.70E-04				
1099	SLD 6	-1.2E-03	-3493.2	SLD 11	-4.2E-03	-12573.8	SLE RA 20	5.46E-04				
1110	SLD 6	-1.0E-03	-3138.6	SLD 11	-5.0E-03	-14978.8	SLE RA 20	2.54E-04				

1.5 Baricentri delle rigidezze

Quota: *quota alla quale è stato valutato il baricentro delle rigidezze. esprimibile come livello, falda, piano orizzontale alla Z specificata. [m]*
Posizione: *posizione in pianta del baricentro delle rigidezze.*
X: *coordinata X. [m]*
Y: *coordinata Y. [m]*
Baricentro masse: *posizione in pianta del baricentro delle masse.*
X: *coordinata X. [m]*
Y: *coordinata Y. [m]*
Distanza: *distanza in pianta tra il baricentro delle rigidezze e il baricentro delle masse.*
X: *coordinata X. [m]*
Y: *coordinata Y. [m]*

Quota	Posizione		Baricentro masse		Distanza	
	X	Y	X	Y	X	Y
Rialzato	-12.199	1.09	-12.623	1.278	0.424	-0.188
Primo	-12.438	1.256	-12.446	1.338	0.008	-0.082
Secondo	-12.601	1.252	-12.406	1.346	-0.195	-0.094
Terzo	-12.828	1.088	-12.409	1.362	-0.419	-0.275
Sottotetto	-12.957	0.992	-12.291	1.66	-0.667	-0.668

1.6 Risposta modale

Modo: *identificativo del modo di vibrare.*
Periodo: *periodo. [s]*
Massa X: *massa partecipante in direzione globale X. Il valore è adimensionale.*
Massa Y: *massa partecipante in direzione globale Y. Il valore è adimensionale.*
Massa Z: *massa partecipante in direzione globale Z. Il valore è adimensionale.*
Massa rot. X: *massa rotazionale partecipante attorno la direzione globale X. Il valore è adimensionale.*
Massa rot. Y: *massa rotazionale partecipante attorno la direzione globale Y. Il valore è adimensionale.*
Massa rot. Z: *massa rotazionale partecipante attorno la direzione globale Z. Il valore è adimensionale.*
Massa sX: *massa partecipante in direzione Sisma X. Il valore è adimensionale.*
Massa sY: *massa partecipante in direzione Sisma Y. Il valore è adimensionale.*

Totale masse partecipanti:

Traslazione X: 0.997591
Traslazione Y: 0.997788
Traslazione Z: 0
Rotazione X: 0.973781
Rotazione Y: 0.964888
Rotazione Z: 0.703223

Modo	Periodo	Massa X	Massa Y	Massa Z	Massa rot. X	Massa rot. Y	Massa rot. Z	Massa sX	Massa sY
1	1.29663071	0.000055329	0	0	0	0.000126184	0.000006549	0.000055329	0
2	1.184766921	0.000069288	0.000000001	0	0.000000002	0.000159503	0.000007303	0.000069288	0.000000001
3	0.970957534	0.000013494	0.000000013	0	0.000000006	0.000279708	0.000000691	0.000013494	0.000000013
4	0.910237566	0.000013845	0.000000007	0	0.000000012	0.000366527	0.000000495	0.000013845	0.000000007
5	0.832542312	0.000000404	0.000000001	0	0.000000088	0.000034899	0.000000576	0.000000404	0.000000001
6	0.809083984	0.000004783	0.000000028	0	0	0.000009916	0.000002304	0.000004783	0.000000028
7	0.766870292	0.000703055	0.000000009	0	0.000000042	0.001799846	0.00006541	0.000703055	0.000000009
8	0.758501758	0.000146622	0.000000026	0	0.000000042	0.000551999	0.000008422	0.000146622	0.000000026
9	0.746952654	0.002030943	0.000000041	0	0.000000115	0.003483567	0.000213507	0.002030943	0.000000041
10	0.72244043	0.00359515	0.000000048	0	0.000000053	0.006359811	0.000338462	0.00359515	0.000000048
11	0.691674046	0.000037732	0.000000499	0	0.000000639	0.000268827	0.000002875	0.000037732	0.000000499
12	0.687500224	0.000038731	0.000003466	0	0.000008464	0.000101996	0.000000776	0.000038731	0.000003466
13	0.685722573	0.000038992	0.000000736	0	0.0000011	0.000157303	0.0000023	0.000038992	0.000000736
14	0.674727923	0.000031018	0.000000009	0	0.000002145	0.000102753	0.000009144	0.000031018	0.000000009
15	0.662953505	0.005458	0.000000558	0	0.000000908	0.004630025	0.000508044	0.005458	0.000000558
16	0.638878423	0.000000614	0.001647585	0	0.002696409	0.000000498	0.000996663	0.000000614	0.001647585
17	0.620346797	0.000188493	0.000027896	0	0.000038228	0.000284637	0.000000006	0.000188493	0.000027896
18	0.615436457	0.002515897	0.000004408	0	0.00001389	0.001461422	0.000314583	0.002515897	0.000004408

Modo	Periodo	Massa X	Massa Y	Massa Z	Massa rot. X	Massa rot. Y	Massa rot. Z	Massa sX	Massa sY
19	0.602965126	0.001914879	0.000278168	0	0.000513807	0.002908928	0.000031247	0.001914879	0.000278168
20	0.600347383	0.008100263	0.000028737	0	0.000040704	0.012636384	0.000850119	0.008100263	0.000028737
21	0.581528807	0.000241722	0.000011145	0	0.000001385	0.000597514	0.000002968	0.000241722	0.000011145
22	0.551914621	0.009810412	0.000008204	0	0.000009256	0.009832194	0.00022882	0.009810412	0.000008204
23	0.545157196	0.001019301	0.002034018	0	0.003789223	0.001391763	0.001090462	0.001019301	0.002034018
24	0.532745974	0.011935371	0.000055475	0	0.000119359	0.010177274	0.00081742	0.011935371	0.000055475
25	0.506675462	0.003025997	0.298864238	0	0.419970789	0.002260641	0.187993571	0.003025997	0.298864238
26	0.505621262	0.015328226	0.063541793	0	0.089431466	0.011848631	0.037032754	0.015328226	0.063541793
27	0.493208974	0.000020777	0.017061504	0	0.028518504	0.000010237	0.011885141	0.000020777	0.017061504
28	0.455526565	0.000010493	0.312249665	0	0.35137972	0.000018369	0.235366238	0.000010493	0.312249665
29	0.433747859	0.000331995	0.001108266	0	0.001203592	0.000518987	0.000361825	0.000331995	0.001108266
30	0.420881361	0.000022041	0.010394237	0	0.008299119	0.00005895	0.008153962	0.000022041	0.010394237
31	0.39178307	0.001509942	0.003647094	0	0.00276407	0.001897894	0.001234745	0.001509942	0.003647094
32	0.386046558	0.00094101	0.007795996	0	0.005740318	0.000986153	0.007168194	0.00094101	0.007795996
33	0.347409967	0.001533635	0.024865336	0	0.013776865	0.002036756	0.021162743	0.001533635	0.024865336
34	0.338507677	0.042144327	0.004440185	0	0.001100163	0.055616367	0.001446399	0.042144327	0.004440185
35	0.316474817	0.360184048	0.002831666	0	0.000821106	0.411365629	0.000015833	0.360184048	0.002831666
36	0.310661957	0.030311055	0.025020377	0	0.009619588	0.03109859	0.021669913	0.030311055	0.025020377
37	0.283203125	0.081391921	0.003643103	0	0.002438048	0.064362293	0.002326968	0.081391921	0.003643103
38	0.271660173	0.012810247	0.020766176	0	0.01394946	0.010589161	0.017855527	0.012810247	0.020766176
39	0.237745119	0.24581638	0.000018507	0	0.000011288	0.278642382	0.002390247	0.24581638	0.000018507
40	0.225891187	0.000694982	0.016478028	0	0.009732854	0.000982477	0.014113546	0.000694982	0.016478028
41	0.209195725	0.017676329	0.000018225	0	0.000000028	0.012174735	0.000035958	0.017676329	0.000018225
42	0.171382541	0.000025862	0.01601	0	0.000001041	0.000033304	0.016147897	0.000025862	0.01601
43	0.138433745	0.00000929	0.037138488	0	0.001020522	0.000000037	0.023502857	0.00000929	0.037138488
44	0.136415577	0.012623053	0.000000225	0	0.000014006	0.0006376	0.000009751	0.012623053	0.000000225
45	0.088855894	0.000355122	0.106635948	0	0.005625052	0.000005544	0.070936639	0.000355122	0.106635948
46	0.083565001	0.083900781	0.000368308	0	0.000008139	0.01513696	0.001964497	0.083900781	0.000368308
47	0.060580894	0.038888294	0.000069229	0	0.000001767	0.005940234	0.000000205	0.038888294	0.000069229
48	0.054310518	0.000062109	0.020718578	0	0.000835234	0.000011728	0.011919155	0.000062109	0.020718578
49	0.00412429	0.00000722	0.000000636	0	0.000160283	0.000751296	0.000041859	0.00000722	0.000000636
50	0.00350137	0.000001036	0.000001267	0	0.000121912	0.000179543	0.002987913	0.000001036	0.000001267

1.7 Equilibrio globale forze

Contributo: Nome attribuito al sistema risultante.
Fx: Componente X di forza del sistema risultante. [daN]
Fy: Componente Y di forza del sistema risultante. [daN]
Fz: Componente Z di forza del sistema risultante. [daN]
*Mx: Componente di momento attorno l'asse X del sistema risultante. [daN*m]*
*My: Componente di momento attorno l'asse Y del sistema risultante. [daN*m]*
*Mz: Componente di momento attorno l'asse Z del sistema risultante. [daN*m]*

Bilancio in condizione di carico: Pesi strutturali

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	4.405	-3.804	-1483811.416	-1478521.13	-18355343.92	66.31
Reazioni	-4.405	3.804	1483811.416	1478518.88	18355343.85	-66.31
P-Delta	0	0	0	0	0	0
Totale	0	0	0	-2.25	-0.07	0

Bilancio in condizione di carico: Permanenti portati

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	-385941.034	-505227.6	-4789740.75	0
Reazioni	0	0	385941.034	505226.84	4789740.71	0
P-Delta	0	0	0	0	0	0
Totale	0	0	0	-0.76	-0.05	0

Bilancio in condizione di carico: Variabile A

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	-217000.526	-222757.35	-2692364.48	0
Reazioni	0	0	217000.526	222756.69	2692364.47	0
P-Delta	0	0	0	0	0	0
Totale	0	0	0	-0.66	0	0

Bilancio in condizione di carico: Neve

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	-32655.923	-52616.68	-399053.66	0
Reazioni	0	0	32655.923	52616.58	399053.66	0
P-Delta	0	0	0	0	0	0
Totale	0	0	0	-0.1	0.01	0

Bilancio in condizione di carico: Variabile H

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	-25804.233	-40591.33	-317357.19	0
Reazioni	0	0	25804.233	40591.25	317357.19	0
P-Delta	0	0	0	0	0	0
Totale	0	0	0	-0.08	0.01	0

Bilancio in condizione di carico: Vento

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	-5938.723	0	50836.99	0	73357.2
Reazioni	0	5938.723	0	-50836.95	-0.01	-73357.2
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0.04	-0.01	0

Bilancio in condizione di carico: Sisma X SLV

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	625380.328	0	0	0	6704906.02	-704631.71
Reazioni	-625380.328	0	0	1.61	-6704913.08	704631.71
P-Delta	0	0	0	0	0	0
Totale	0	0	0	1.61	-7.06	0

Bilancio in condizione di carico: Sisma Y SLV

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	625380.328	0	-6704906.02	0	-7760071.88
Reazioni	0	-625380.328	0	6704905.39	-1.25	7760071.88
P-Delta	0	0	0	0	0	0
Totale	0	0	0	-0.63	-1.25	0

Bilancio in condizione di carico: Eccentricità Y per sisma X SLV

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	0	0	0	-298602.45
Reazioni	0	0	0	-0.08	0.2	298602.45
P-Delta	0	0	0	0	0	0
Totale	0	0	0	-0.08	0.2	0

Bilancio in condizione di carico: Eccentricità X per sisma Y SLV

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	0	0	0	139668.89
Reazioni	0	0	0	0.04	-0.09	-139668.89
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0.04	-0.09	0

Bilancio in condizione di carico: Sisma X SLD

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	267407.827	0	0	0	2866966.33	-301295.11
Reazioni	-267407.827	0	0	0.69	-2866969.35	301295.11
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0.69	-3.02	0

Bilancio in condizione di carico: Sisma Y SLD

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	256367.77	0	-2748602.3	0	-3181155.91
Reazioni	0	-256367.77	0	2748602.04	-0.51	3181155.91
P-Delta	0	0	0	0	0	0
Totale	0	0	0	-0.26	-0.51	0

Bilancio in condizione di carico: Eccentricità Y per sisma X SLD

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	0	0	0	-127680.12
Reazioni	0	0	0	-0.03	0.09	127680.12
P-Delta	0	0	0	0	0	0
Totale	0	0	0	-0.03	0.09	0

Bilancio in condizione di carico: Eccentricità X per sisma Y SLD

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	0	0	0	57255.72
Reazioni	0	0	0	0.01	-0.04	-57255.72
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0.01	-0.04	0

Bilancio in condizione di carico: Rig Ux

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	1	0	0	0	15.32	-1.66
Reazioni	-1	0	0	0	-15.32	1.66
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0	0	0

Bilancio in condizione di carico: Rig Uy

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	1	0	-15.32	0	-12.29
Reazioni	0	-1	0	15.32	0	12.29
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0	0	0

Bilancio in condizione di carico: Rig Rz

Contributo	Fx	Fy	Fz	Mx	My	Mz
Forze applicate	0	0	0	0	0	0.01
Reazioni	0	0	0	0	0	-0.01
P-Delta	0	0	0	0	0	0
Totale	0	0	0	0	0	0

1.8 Risposta di spettro

Spettro: condizione elementare corrispondente allo spettro.
N.b.: nome breve della condizione elementare.
Fx: componente della forza lungo l'asse X. [daN]
Fy: componente della forza lungo l'asse Y. [daN]

Fz: componente della forza lungo l'asse Z. [daN]
*Mx: componente della coppia attorno all'asse X. [daN*m]*
*My: componente della coppia attorno all'asse Y. [daN*m]*
*Mz: componente della coppia attorno all'asse Z. [daN*m]*
Max X: massima reazione lungo l'asse X.
Valore: valore massimo della reazione. [daN]
Angolo: angolo d'ingresso del sisma che provoca il valore massimo della reazione. [deg]
Max Y: massima reazione lungo l'asse Y.
Valore: valore massimo della reazione. [daN]
Angolo: angolo d'ingresso del sisma che provoca il valore massimo della reazione. [deg]
Max Z: massima reazione lungo l'asse Z.
Valore: valore massimo della reazione. [daN]
Angolo: angolo d'ingresso del sisma che provoca il valore massimo della reazione. [deg]

Spettro	Fx	Fy	Fz	Mx	My	Mz	Max X		Max Y		Max Z	
N.b.							Valore	Angolo	Valore	Angolo	Valore	Angolo
SLV X	422630.4	7595.47	0	4.935E04	3.974E06	4.508E05	422630.4	0	445362.4	90	0	0
SLV Y	7595.47	445362.4	0	4.449E06	6.594E04	5.490E06	422630.4	0	445362.4	90	0	0
X SLD	180646.22	3251.85	0	2.103E04	1.698E06	1.926E05	180646.22	0	178687.86	90	0	0
Y SLD	3251.85	178687.86	0	1.775E06	2.814E04	2.206E06	180646.22	0	178687.86	90	0	0

1.9 Annotazioni solutore

Informazioni: informazioni fornite dal solutore al termine del calcolo del modello.

Informazioni

1.10 Statistiche soluzione

Tipo di equazioni	Lineari
Tecnica di soluzione	Intel MKL PARDISO
Numero equazioni	104307
Elemento min. diagonale	902.24468951
Elemento max diagonale	167347882772087
Rapporto max/min	185479487679.208
Elementi non nulli	4433905

SIDEL
INGEGNERIA

TABULATI DI CALCOLO – VERIFICHE
CIVICO 31
STATO DI PROGETTO

Sommario

1 Verifiche

1.1 Verifica regolarità strutturale

Le unità di misura elencate nel capitolo sono in [m, daN] ove non espressamente specificato.

Livello:
Descr: *descrizione livello.*
Quota: *quota livello. [m]*
Q: *quota livello. [m]*
Qinf: *quota livello precedente. [m]*
Comb: *combinazione.*
A1: *a1 (Distribuzione masse).*
A1n: *a1 numeratore (distanza tra centro massa vs. centro rigidezza [se presente] o centro dell'ingombro del piano). [m]*
A1d: *a1 denominatore (ingombro del piano nella medesima direzione [x o y globale]). [m]*
A1r: *a1 rapporto (distanza centro massa/rigidezza su ingombro del piano).*
A2: *a2 (Distribuzione rigidezze).*
A2n: *a2 numeratore (rigidezza max [x o y globale]).*
A2d: *a2 denominatore (rigidezza min [x o y globale]).*
A2r: *a2 rapporto (rigidezza max/min).*
A3: *a3 (Forma compatta).*
A3n: *a3 numeratore (area convessa). [m²]*
A3d: *a3 denominatore (area piano). [m²]*
A3r: *a3 rapporto (area convessa/area piano).*
B: *b (Rapporto lati).*
Bn: *b numeratore (lato max [x o y globale]). [m]*
Bd: *b denominatore (lato min [x o y globale]). [m]*
Br: *b rapporto (lato max/min).*
C: *c (Rapporto rigidezze piano).*
Cn: *c numeratore (rigidezza elementi verticali).*
Cd: *c denominatore (rigidezza piano).*
Cr: *c rapporto (rigidezza elementi verticali/rigidezza piano).*
E1: *e1 (Variazione masse).*
E1n: *e1 numeratore (massa max). [daN]*
E1d: *e1 denominatore (massa min). [daN]*
E1r: *e1 rapporto (massa max/min).*
E2: *e2 (Riduzione rigidezze).*
E2n: *e2 numeratore (rigidezza relativa alla traslazione KUmax). [daN/m]*
E2d: *e2 denominatore (rigidezza relativa alla traslazione KUmin). [daN/m]*
E2r: *e2 rapporto (variazione massima in decremento Kmax/Kmin).*
E3: *e3 (Incremento rigidezze).*
E3n: *e3 numeratore (rigidezza relativa alla traslazione KUmax). [daN/m]*
E3d: *e3 denominatore (rigidezza relativa alla traslazione KUmin). [daN/m]*
E3r: *e3 rapporto (variazione massima in incremento Kmax/Kmin).*
F: *f (Rapporto Capacità/Domanda).*
Fn: *f numeratore (rapporto capacità/domanda massimo [c/d max]). [daN]*
Fd: *f denominatore (rapporto capacità/domanda minimo [c/d min]). [daN]*
Fr: *f rapporto (variazione massima [rapporto (c/d max)/(c/d min)]).*
G1: *g1 (Rastremazione di piano).*
G1n: *g1 numeratore (L1). [m]*
G1d: *g1 denominatore (L2). [m]*
G1r: *g1 rapporto (L1/L2).*
G2: *g2 (Rastremazione totale).*
G2n: *g2 numeratore (L0). [m]*
G2d: *g2 denominatore (Li). [m]*
G2r: *g2 rapporto (L0/Li).*
Capacità/Domanda in X:
VrdX: *taglio resistente complessivo in direzione X. [daN]*
VedX: *taglio agente complessivo in direzione X). [daN]*
|Rd/Ed|: *|Rd/Ed| (rapporto capacità/domanda in termini di resistenza a taglio).*
Capacità/Domanda in Y:
VrdY: *taglio resistente complessivo in direzione Y. [daN]*
VedY: *taglio agente complessivo in direzione Y). [daN]*

Verifica regolarità strutturale

Controllo regolarità edificio secondo D.M. 17-01-18 (N.T.C.) §7.2.1 - §C7.2.1

Avvertenze

La seguente procedura valuta la regolarità della costruzione secondo quanto indicato nelle NTC 2018 §7.2.1.
Tali valutazioni sono a carattere puramente informativo e vengono condotte sulla base del modello e delle verifiche presenti alla sua generazione, con le limitazioni indicate nella manualistica.
In ogni caso l'impostazione di regolarità della costruzione, in pianta ed elevazione, va indicata nelle preferenze di analisi dall'utente utilizzatore del software.

Sintesi dei risultati

Orizzontamenti considerati nella valutazione
Livelli di fondazione o di struttura scatolare non dissipativa: Fondazione ascensore(L1), Fondazione(L2),
Livelli di elevazione considerati: Rialzato(L4), Primo(L5), Secondo(L6), Terzo(L7), Sottotetto(L8), Colmo maggiore(L10),

Regolarità in pianta - NO
L'edificio risulta NON regolare in pianta, in base alle condizioni indicate in NTC 2018 §7.2.1
N.V. - Criterio A1 (Distribuzione masse) non valutabile al livello Colmo maggiore
N.V. - Criterio A2 (Distribuzione rigidezze) non valutabile al livello Rialzato
No - Criterio A3 (Forma compatta) NON rispettato, con rapporto massimo 2795071.1/2555954.2=1.1 (limite=1,05) al livello Rialzato
Ok - Criterio B (Rapporto lati) rispettato, con rapporto massimo 2,12 (limite=4) al livello Secondo
No - Criterio C (Rapporto rigidezze piano) NON rispettato, con rapporto massimo > 999 (limite=0) al livello Colmo maggiore

Regolarità in altezza - NO
L'edificio risulta NON regolare in altezza, in base alle condizioni indicate in NTC 2018 §7.2.1
Ok - Criterio D (Altezza elementi sismoresistenti) rispettato, con rapporto massimo 1 (limite=1,01)
No - Criterio E1 (Variazione masse) NON rispettato, con rapporto massimo 154753.4/66439.3=2.3 (limite=1,25) tra il livello Colmo maggiore ed il precedente
N.V. - Criterio E2 (Riduzione rigidezze) non valutabile tra il livello Primo ed il precedente
N.V. - Criterio E3 (Incremento rigidezze) non valutabile tra il livello Primo ed il precedente
N.V. - Criterio F (Rapporto Capacità/Domanda) non valutabile tra il livello Colmo maggiore ed il precedente
Ok - Criterio G1 (Rastremazione di piano) rispettato, con rapporto massimo 0,01 (limite=0,1) tra il livello Sottotetto ed il precedente
Ok - Criterio G2 (Rastremazione totale) rispettato, con rapporto massimo 0 (limite=0,3) tra il livello Primo ed il precedente

Valori per piano

Verifiche di regolarità in pianta

Livello		A1			A2			A3			B			C		
Descr	Quota	A1n	A1d	A1r	A2n	A2d	A2r	A3n	A3d	A3r	Bn	Bd	Br	Cn	Cd	Cr
Rialzato	1.67	0.42	24.93	0.02				279.5071	255.5954	1.09	24.93	11.81	2.11	0	+∞	0
Primo	5.07	0.08	11.74	0.01				277.0023	263.0059	1.05	24.84	11.74	2.12	0	+∞	0
Secondo	8.62	0.09	11.74	0.01				277.0023	259.2862	1.07	24.84	11.74	2.12	0	+∞	0
Terzo	12.17	0.27	11.74	0.02				277.0023	255.5748	1.08	24.84	11.74	2.12	0	+∞	0
Sottotetto	15.32	0.67	11.84	0.06				274.4062	256.1894	1.07	24.92	11.83	2.11	0	+∞	0
Colmo maggiore	17.8							274.4053	253.9617	1.08	24.92	11.83	2.11	9999	1	9999

Verifiche di regolarità in elevazione

Rapporto di regolarità per la condizione D (Altezza elementi sismoresistenti): 19.1/19.1=0.01.

Livello			E1			E2			E3			F			G1			G2		
Descr	Q	Qinf	E1n	E1d	E1r	E2n	E2d	E2r	E3n	E3d	E3r	Fn	Fd	Fr	G1n	G1d	G1r	G2n	G2d	G2r
Primo	5.07	1.67	183328	145095	1.26							2.2	1.9	1.18	0.09	24.93	0	0.09	24.93	0
Secondo	8.62	5.07	145143	145095	1							12.5	9.7	1.28	0	11.74	0	0.09	24.93	0
Terzo	12.17	8.62	145143	142947	1.02							29.3	18.3	1.6	0	11.74	0	0.09	24.93	0
Sottotetto	15.32	12.17	154753	142947	1.08							192.3	45.3	4.25	0.08	11.74	0.01	0.01	24.93	0
Colmo maggiore	17.8	15.32	154753	66439	2.33										0	11.84	0	0	0.01	0

Dettaglio delle resistenze di piano a taglio (per valutazione punto F)

Livello			Capacità/Domanda in X			Capacità/Domanda in Y		
Descr	Q	Comb	VrdX	VedX	|Rd/Ed|	VrdY	VedY	|Rd/Ed|
Rialzato	1.67	SLD 1	1349440	-168234	8	938425	-51364	18.3
Rialzato	1.67	SLD 2	1349687	-168237	8	937787	-51371	18.3
Rialzato	1.67	SLD 3	1350821	-167585	8.1	931750	52195	17.9
Rialzato	1.67	SLD 4	1350913	-167588	8.1	931036	52188	17.8
Rialzato	1.67	SLD 5	1357705	-51101	26.6	950073	-172553	5.5
Rialzato	1.67	SLD 6	1357814	-51103	26.6	947809	-172558	5.5
Rialzato	1.67	SLD 7	1356536	-48938	27.7	925356	172646	5.4
Rialzato	1.67	SLD 8	1356671	-48940	27.7	925184	172641	5.4
Rialzato	1.67	SLD 9	1359788	49948	27.2	951818	-172869	5.5
Rialzato	1.67	SLD 10	1359877	49946	27.2	951795	-172873	5.5
Rialzato	1.67	SLD 11	1357865	52111	26.1	929130	172331	5.4
Rialzato	1.67	SLD 12	1357980	52109	26.1	928958	172326	5.4
Rialzato	1.67	SLD 13	1351360	168596	8	947647	-52416	18.1
Rialzato	1.67	SLD 14	1351395	168593	8	947827	-52422	18.1
Rialzato	1.67	SLD 15	1351051	169245	8	941138	51144	18.4
Rialzato	1.67	SLD 16	1351371	169242	8	941306	51137	18.4
Rialzato	1.67	SLV 1	1332578	-394199	3.4	936670	-128140	7.3
Rialzato	1.67	SLV 2	1326528	-394206	3.4	935906	-128156	7.3
Rialzato	1.67	SLV 3	1311430	-392750	3.3	877298	130409	6.7
Rialzato	1.67	SLV 4	1320062	-392757	3.4	876993	130393	6.7

Livello			Capacità/Domanda in X			Capacità/Domanda in Y		
Descr	Q	Comb	VrdX	VedX	|Rd/Ed|	VrdY	VedY	|Rd/Ed|
Rialzato	1.67	SLV 5	1276475	-120103	10.6	943774	-430651	2.2
Rialzato	1.67	SLV 6	1276567	-120108	10.6	943119	-430662	2.2
Rialzato	1.67	SLV 7	1284260	-115273	11.1	832673	431179	1.9
Rialzato	1.67	SLV 8	1273969	-115278	11.1	832628	431168	1.9
Rialzato	1.67	SLV 9	1297861	116287	11.2	963167	-431395	2.2
Rialzato	1.67	SLV 10	1298029	116282	11.2	963327	-431406	2.2
Rialzato	1.67	SLV 11	1277737	121116	10.5	853903	430435	2
Rialzato	1.67	SLV 12	1277958	121111	10.6	850249	430424	2
Rialzato	1.67	SLV 13	1333417	393765	3.4	946366	-130620	7.2
Rialzato	1.67	SLV 14	1333400	393758	3.4	946589	-130636	7.2
Rialzato	1.67	SLV 15	1338714	395214	3.4	897936	127929	7
Rialzato	1.67	SLV 16	1338477	395207	3.4	898812	127913	7
Primo	5.07	SLD 1	1017576	-140857	7.2	737614	-44300	16.7
Primo	5.07	SLD 2	1017791	-140857	7.2	739688	-44300	16.7
Primo	5.07	SLD 3	1022879	-141043	7.3	739706	45229	16.4
Primo	5.07	SLD 4	1011885	-141043	7.2	739409	45229	16.3
Primo	5.07	SLD 5	1014252	-41975	24.2	739618	-149079	5
Primo	5.07	SLD 6	1014321	-41975	24.2	739529	-149079	5
Primo	5.07	SLD 7	1024258	-42596	24	740824	149352	5
Primo	5.07	SLD 8	1024258	-42596	24	740629	149352	5
Primo	5.07	SLD 9	1013195	42595	23.8	741071	-149360	5
Primo	5.07	SLD 10	1013263	42595	23.8	740951	-149360	5
Primo	5.07	SLD 11	1023526	41974	24.4	742055	149072	5
Primo	5.07	SLD 12	1023454	41974	24.4	741936	149072	5
Primo	5.07	SLD 13	1017471	141042	7.2	745667	-45237	16.5
Primo	5.07	SLD 14	1017575	141042	7.2	745486	-45237	16.5
Primo	5.07	SLD 15	1020686	140856	7.2	745290	44293	16.8
Primo	5.07	SLD 16	1020515	140856	7.2	745109	44293	16.8
Primo	5.07	SLV 1	984525	-329303	3	738801	-110967	6.7
Primo	5.07	SLV 2	985030	-329303	3	738334	-110967	6.7
Primo	5.07	SLV 3	989866	-329715	3	739516	113184	6.5
Primo	5.07	SLV 4	989277	-329715	3	738971	113184	6.5
Primo	5.07	SLV 5	977840	-98166	10	709754	-373255	1.9
Primo	5.07	SLV 6	978010	-98166	10	709593	-373255	1.9
Primo	5.07	SLV 7	970503	-99540	9.7	722699	373915	1.9
Primo	5.07	SLV 8	976433	-99540	9.8	722014	373915	1.9
Primo	5.07	SLV 9	976564	99539	9.8	705321	-373923	1.9
Primo	5.07	SLV 10	976559	99539	9.8	705240	-373923	1.9
Primo	5.07	SLV 11	988954	98165	10.1	735698	373248	2
Primo	5.07	SLV 12	982338	98165	10	735360	373248	2
Primo	5.07	SLV 13	1001252	329714	3	748229	-113192	6.6
Primo	5.07	SLV 14	1005695	329714	3.1	747502	-113192	6.6
Primo	5.07	SLV 15	1002330	329302	3	750416	110959	6.8
Primo	5.07	SLV 16	1001930	329302	3	749991	110959	6.8
Secondo	8.62	SLD 1	992427	-112414	8.8	661837	-35958	18.4
Secondo	8.62	SLD 2	992575	-112414	8.8	661802	-35958	18.4
Secondo	8.62	SLD 3	995330	-112525	8.8	661964	35844	18.5
Secondo	8.62	SLD 4	995526	-112525	8.8	661941	35844	18.5
Secondo	8.62	SLD 5	992438	-33552	29.6	661672	-119689	5.5
Secondo	8.62	SLD 6	992536	-33552	29.6	661611	-119689	5.5
Secondo	8.62	SLD 7	1002835	-33924	29.6	660762	119650	5.5
Secondo	8.62	SLD 8	1002932	-33924	29.6	660773	119650	5.5
Secondo	8.62	SLD 9	991270	33932	29.2	660868	-119658	5.5
Secondo	8.62	SLD 10	991367	33932	29.2	660807	-119658	5.5
Secondo	8.62	SLD 11	1001666	33561	29.8	660151	119682	5.5
Secondo	8.62	SLD 12	1001753	33561	29.8	657918	119682	5.5
Secondo	8.62	SLD 13	993520	112534	8.8	659371	-35852	18.4
Secondo	8.62	SLD 14	993667	112534	8.8	657073	-35852	18.3
Secondo	8.62	SLD 15	996639	112423	8.9	657275	35950	18.3
Secondo	8.62	SLD 16	996786	112423	8.9	657247	35950	18.3
Secondo	8.62	SLV 1	953443	-262670	3.6	664714	-90151	7.4
Secondo	8.62	SLV 2	960901	-262670	3.7	664597	-90151	7.4
Secondo	8.62	SLV 3	963575	-262933	3.7	664732	89909	7.4
Secondo	8.62	SLV 4	964212	-262933	3.7	664677	89909	7.4
Secondo	8.62	SLV 5	971454	-78398	12.4	657483	-300138	2.2
Secondo	8.62	SLV 6	971674	-78398	12.4	657879	-300138	2.2
Secondo	8.62	SLV 7	989620	-79277	12.5	656610	300061	2.2
Secondo	8.62	SLV 8	976628	-79277	12.3	654259	300061	2.2
Secondo	8.62	SLV 9	970045	79285	12.2	654676	-300068	2.2
Secondo	8.62	SLV 10	970124	79285	12.2	644863	-300068	2.1
Secondo	8.62	SLV 11	990322	78407	12.6	658798	300131	2.2
Secondo	8.62	SLV 12	990247	78407	12.6	658822	300131	2.2
Secondo	8.62	SLV 13	976701	262942	3.7	657645	-89917	7.3
Secondo	8.62	SLV 14	977104	262942	3.7	658114	-89917	7.3
Secondo	8.62	SLV 15	976676	262678	3.7	658311	90143	7.3
Secondo	8.62	SLV 16	976357	262678	3.7	658247	90143	7.3
Terzo	12.17	SLD 1	974288	-72814	13.4	655315	-22835	28.7
Terzo	12.17	SLD 2	974346	-72814	13.4	655251	-22835	28.7
Terzo	12.17	SLD 3	975075	-72750	13.4	650672	22196	29.3
Terzo	12.17	SLD 4	975116	-72750	13.4	650608	22196	29.3
Terzo	12.17	SLD 5	975793	-21939	44.5	655599	-75150	8.7
Terzo	12.17	SLD 6	975830	-21939	44.5	655557	-75150	8.7
Terzo	12.17	SLD 7	983841	-21725	45.3	655336	74953	8.7
Terzo	12.17	SLD 8	983921	-21725	45.3	655294	74953	8.7
Terzo	12.17	SLD 9	980182	21732	45.1	650008	-74960	8.7

Livello			Capacità/Domanda in X			Capacità/Domanda in Y		
Descr	Q	Comb	VrdX	VedX	|Rd/Ed|	VrdY	VedY	|Rd/Ed|
Terzo	12.17	SLD 10	980220	21732	45.1	654531	-74960	8.7
Terzo	12.17	SLD 11	983336	21946	44.8	655510	75142	8.7
Terzo	12.17	SLD 12	983416	21946	44.8	655468	75142	8.7
Terzo	12.17	SLD 13	976853	72758	13.4	651330	-22203	29.3
Terzo	12.17	SLD 14	980535	72758	13.5	651266	-22203	29.3
Terzo	12.17	SLD 15	977945	72822	13.4	651251	22828	28.5
Terzo	12.17	SLD 16	981627	72822	13.5	651187	22828	28.5
Terzo	12.17	SLV 1	939764	-169830	5.5	646040	-57319	11.3
Terzo	12.17	SLV 2	940815	-169830	5.5	645890	-57319	11.3
Terzo	12.17	SLV 3	941198	-169672	5.5	645848	55858	11.6
Terzo	12.17	SLV 4	940762	-169672	5.5	645698	55858	11.6
Terzo	12.17	SLV 5	960893	-51186	18.8	642713	-188850	3.4
Terzo	12.17	SLV 6	954132	-51186	18.6	638185	-188850	3.4
Terzo	12.17	SLV 7	971126	-50660	19.2	635384	188407	3.4
Terzo	12.17	SLV 8	964176	-50660	19	633447	188407	3.4
Terzo	12.17	SLV 9	976070	50667	19.3	638552	-188414	3.4
Terzo	12.17	SLV 10	969446	50667	19.1	638451	-188414	3.4
Terzo	12.17	SLV 11	973758	51193	19	641325	188843	3.4
Terzo	12.17	SLV 12	973949	51193	19	641224	188843	3.4
Terzo	12.17	SLV 13	963516	169679	5.7	650614	-55866	11.6
Terzo	12.17	SLV 14	963793	169679	5.7	650463	-55866	11.6
Terzo	12.17	SLV 15	960101	169837	5.7	651621	57311	11.4
Terzo	12.17	SLV 16	960386	169837	5.7	651471	57311	11.4
Sottotetto	15.32	SLD 1	870769	-21379	40.7	582436	-6871	84.8
Sottotetto	15.32	SLD 2	870647	-21185	41.1	582436	-6603	88.2
Sottotetto	15.32	SLD 3	877444	-20642	42.5	582097	7830	74.3
Sottotetto	15.32	SLD 4	874311	-20448	42.8	582097	8098	71.9
Sottotetto	15.32	SLD 5	889188	-7247	122.7	579739	-24850	23.3
Sottotetto	15.32	SLD 6	888733	-7119	124.8	579753	-24673	23.5
Sottotetto	15.32	SLD 7	899906	-4789	187.9	547705	24154	22.7
Sottotetto	15.32	SLD 8	896401	-4661	192.3	547670	24330	22.5
Sottotetto	15.32	SLD 9	882884	5575	158.4	579539	-25598	22.6
Sottotetto	15.32	SLD 10	884731	5703	155.1	579492	-25422	22.8
Sottotetto	15.32	SLD 11	898331	8034	111.8	559842	23405	23.9
Sottotetto	15.32	SLD 12	897631	8162	110	547747	23582	23.2
Sottotetto	15.32	SLD 13	892344	21362	41.8	581337	-9366	62.1
Sottotetto	15.32	SLD 14	894750	21556	41.5	581337	-9098	63.9
Sottotetto	15.32	SLD 15	897356	22099	40.6	582198	5335	109.1
Sottotetto	15.32	SLD 16	896659	22294	40.2	582198	5603	103.9
Sottotetto	15.32	SLV 1	827803	-50376	16.4	582625	-16580	35.1
Sottotetto	15.32	SLV 2	831942	-49920	16.7	582625	-15951	36.5
Sottotetto	15.32	SLV 3	836644	-48484	17.3	555357	20531	27
Sottotetto	15.32	SLV 4	833744	-48028	17.4	555316	21160	26.2
Sottotetto	15.32	SLV 5	829388	-17747	46.7	535564	-61821	8.7
Sottotetto	15.32	SLV 6	826834	-17440	47.4	549182	-61398	8.9
Sottotetto	15.32	SLV 7	871290	-11442	76.2	513302	61884	8.3
Sottotetto	15.32	SLV 8	869297	-11134	78.1	514416	62308	8.3
Sottotetto	15.32	SLV 9	852242	12049	70.7	547563	-63576	8.6
Sottotetto	15.32	SLV 10	859149	12356	69.5	548706	-63152	8.7
Sottotetto	15.32	SLV 11	876060	18354	47.7	517502	60130	8.6
Sottotetto	15.32	SLV 12	865998	18661	46.4	518054	60553	8.6
Sottotetto	15.32	SLV 13	857086	48942	17.5	566659	-22428	25.3
Sottotetto	15.32	SLV 14	852061	49399	17.2	566795	-21799	26
Sottotetto	15.32	SLV 15	871774	50834	17.1	547943	14683	37.3
Sottotetto	15.32	SLV 16	861397	51290	16.8	560024	15313	36.6

1.2 Verifiche travate C.A.

Le unità di misura elencate nel capitolo sono in [m, daN, deg] ove non espressamente specificato.

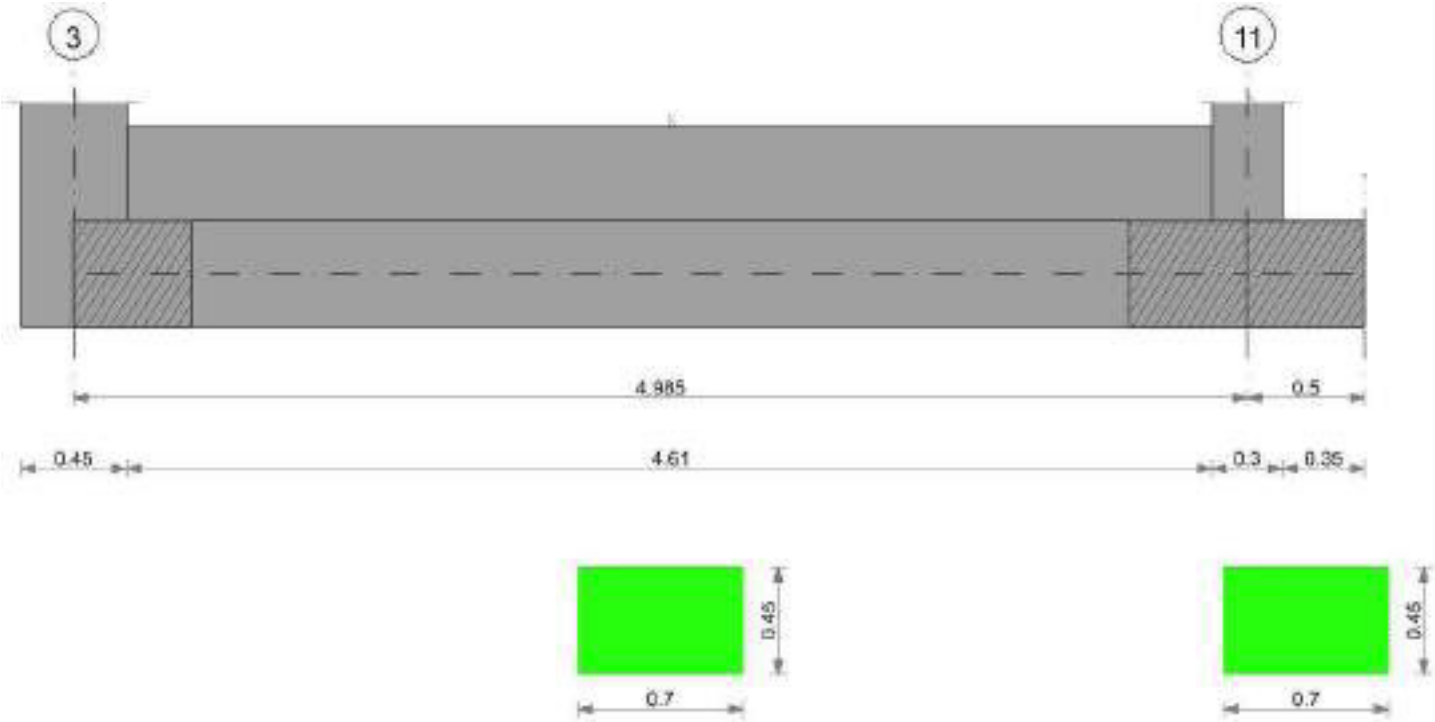
N°: *indice progressivo della sezione.*
Descrizione: *descrizione della sezione.*
Tipo: *tipo di sezione.*
Base: *base della sezione. [m]*
Altezza: *altezza della sezione. [m]*
Copriferro sup.: *distanza del bordo della staffa dalla superficie superiore del getto. [m]*
Copriferro inf.: *distanza del bordo della staffa dalla superficie inferiore del getto. [m]*
Copriferro lat.: *distanza del bordo della staffa dalle superfici laterali del getto. [m]*
x: *distanza da asse appoggio sinistro. [m]*
d: *altezza utile. [m]*
Af: *area di armatura inferiore per unità di lunghezza. [m]*
M: *momento flettente. [daN*m/m]*
Comb: *combinazione.*
x/d: *rapporto tra posizione asse neutro e altezza utile.*
Mult: *momento ultimo. [daN*m/m]*
V: *sforzo di taglio. [daN/m]*

***Vult**: sforzo di taglio ultimo. [daN/m]*
***Verifica**: stato di verifica.*
***Af**: area di armatura. [m²]*
***Rara**: famiglia di combinazione di verifica.*
***σ c**: tensione di compressione nel calcestruzzo. [daN/m²]*
***σ c limite**: tensione di compressione limite nel calcestruzzo. [daN/m²]*
***σ f**: tensione di trazione nell'acciaio. [daN/m²]*
***σ f limite**: tensione di trazione limite nell'acciaio. [daN/m²]*
***Quasi permanente**: famiglia di combinazione di verifica.*
***Tipo**: tipologia di cedimento considerato (E = elastico, D = edometrico, Z = consolidazione primaria).*
***Assoluto**: cedimento assoluto massimo.*
***Sa adm**: cedimento assoluto ammissibile. [m]*
***Sa**: cedimento assoluto massimo. [m]*
***Nodo**: nodo dove avviene il cedimento assoluto massimo.*
***Comb.**: combinazione.*
***Differenziale**: cedimento differenziale massimo.*
***Sd adm**: cedimento differenziale ammissibile. [m]*
***Sd**: cedimento differenziale massimo. [m]*
***Nodo I**: nodo dove avviene il cedimento differenziale massimo.*
***Nodo j**: nodo dove avviene il cedimento differenziale massimo.*
***Relativo**: cedimento relativo massimo.*
***Sr adm**: cedimento relativo ammissibile. [m]*
***Sr**: cedimento relativo massimo. [m]*
***Nodo**: nodo dove avviene il cedimento relativo massimo.*
***Rapp. inflessione**: rapporto di inflessione (cedimento relativo max su lunghezza complessiva tratta).*
***RI adm**: rapporto di inflessione ammissibile.*
***RI**: rapporto di inflessione (cedimento relativo max su lunghezza complessiva tratta).*
***Rotazione rigida**: rotazione rigida valutata tra primo ed ultimo punto.*
***RR adm**: rotazione rigida ammissibile. [deg]*
***RR**: rotazione rigida massima (tra primo ed ultimo punto). [deg]*
***Rotazione assoluta**: rotazione assoluta dei singoli tratti.*
***R Adm**: rotazione assoluta ammissibile. [deg]*
***R Max**: rotazione assoluta massima. [deg]*
***Nodo I**: dal nodo.*
***Nodo J**: al nodo.*
***Distorsione angolare positiva**: distorsione angolare positiva (concavità verso l'alto).*
***D+ adm**: distorsione angolare ammissibile. [deg]*
***D+**: distorsione angolare massima positiva (concavità verso l'alto). [deg]*
***Nodo**: nodo dove avviene la distorsione angolare massima positiva (concavità verso l'alto).*
***Distorsione angolare negativa**: distorsione angolare negativa (concavità verso il basso).*
***D- adm**: distorsione angolare ammissibile. [deg]*
***D-**: distorsione angolare massima negativa (concavità verso il basso). [deg]*
***Nodo**: nodo dove avviene la distorsione angolare massima negativa (concavità verso il basso).*
***Aste**: numero delle aste del tratto in verifica.*
***Size X**: misura dell'impronta al suolo lungo la direzione X locale. [m]*
***Size Y**: misura dell'impronta al suolo lungo la direzione Y locale. [m]*
***Type**: indicazione del tipo di combinazione statica o sismica.*
***Cond**: indicazione della condizione di carico (BT breve termine o LT lungo termine).*
***γR**: coefficiente parziale sulla resistenza di progetto.*
***Rd**: resistenza di progetto. [daN]*
***Ed**: azione di progetto. [daN]*
***Rd/Ed**: coefficiente di sicurezza alla capacità portante.*
***Fx**: componente orizzontale del carico lungo x. [daN]*
***Fy**: componente orizzontale del carico lungo y. [daN]*
***Fz**: componente verticale del carico. [daN]*
***Mx**: momento risultante agente attorno x. [daN*m]*
***My**: momento risultante agente attorno y. [daN*m]*
***Inc.x**: inclinazione del carico lungo x. [deg]*
***Inc.y**: inclinazione del carico lungo y. [deg]*
***Ecc.x**: eccentricità del carico lungo x. [m]*
***Ecc.y**: eccentricità del carico lungo y. [m]*
***B'**: larghezza efficace. [m]*
***L'**: lunghezza efficace. [m]*
***qd**: sovraccarico di progetto. [daN/m²]*
***γs**: peso specifico di progetto del suolo. [daN/m³]*
***Fi**: angolo di attrito di progetto. [deg]*
***Coes**: coesione di progetto. [daN/m²]*
***Amax**: accelerazione normalizzata max al suolo.*
***N**:*

Nq: fattore di capacità portante per il termine di sovraccarico.
Nc: fattore di capacità portante per il termine coesivo.
Ng: fattore di capacità portante per il termine attritivo.
S:
Sq: fattore correttivo di capacità portante per forma (shape), per il termine di sovraccarico.
Sc: fattore correttivo di capacità portante per forma (shape), per il termine coesivo.
Sg: fattore correttivo di capacità portante per forma (shape), per il termine attritivo.
D:
Dq: fattore correttivo di capacità portante per approfondimento (deep), per il termine di sovraccarico.
Dc: fattore correttivo di capacità portante per approfondimento (deep), per il termine coesivo.
Dg: fattore correttivo di capacità portante per approfondimento (deep), per il termine attritivo.
I:
Iq: fattore correttivo di capacità portante per inclinazione del carico, per il termine di sovraccarico.
Ic: fattore correttivo di capacità portante per inclinazione del carico, per il termine coesivo.
Ig: fattore correttivo di capacità portante per inclinazione del carico, per il termine attritivo.
B:
Bq: fattore correttivo di capacità portante per inclinazione della base, per il termine di sovraccarico.
Bc: fattore correttivo di capacità portante per inclinazione della base, per il termine coesivo.
Bg: fattore correttivo di capacità portante per inclinazione della base, per il termine attritivo.
G:
Gq: fattore correttivo di capacità portante per inclinazione del pendio, per il termine di sovraccarico.
Gc: fattore correttivo di capacità portante per inclinazione del pendio, per il termine coesivo.
Gg: fattore correttivo di capacità portante per inclinazione del pendio, per il termine attritivo.
P:
Pq: fattore correttivo di capacità portante per punzonamento, per il termine di sovraccarico.
Pc: fattore correttivo di capacità portante per punzonamento, per il termine coesivo.
Pg: fattore correttivo di capacità portante per punzonamento, per il termine attritivo.
E:
Eq: fattore correttivo di capacità portante per sisma (earthquake), per il termine di sovraccarico.
Ec: fattore correttivo di capacità portante per sisma (earthquake), per il termine coesivo.
Eg: fattore correttivo di capacità portante per sisma (earthquake), per il termine attritivo.
A sup.: area efficace di armatura longitudinale superiore. [m²]
C.b. sup.: distanza dal bordo del baricentro dell'armatura longitudinale superiore. [m]
A inf.: area efficace di armatura longitudinale inferiore. [m²]
C.b. inf.: distanza dal bordo del baricentro dell'armatura longitudinale inferiore. [m]
*M+ela: momento flettente desunto dal solutore che tende le fibre inferiori. [daN*m]*
*M+des: momento flettente di progetto che tende le fibre inferiori. [daN*m]*
*M+ult: momento ultimo per trazione delle fibre inferiori. [daN*m]*
coeff: coefficiente di sicurezza.
*M-ela: momento flettente desunto dal solutore che tende le fibre superiori. [daN*m]*
*M-des: momento flettente di progetto che tende le fibre superiori. [daN*m]*
*M-ult: momento ultimo per trazione delle fibre superiori. [daN*m]*
A st: area di staffe per unità di lunghezza. [m²]
A sl: area di armatura longitudinale tesa per valutazione resistenza taglio in assenza di armature a taglio. [m²]
A sag: area equivalente di barre piegate per unità di lunghezza. [m²]
Vela: taglio elastico. [daN]
Vdes: taglio di progetto. [daN]
Vrd: resistenza a taglio della sezione senza armature. [daN]
Vrcd: sforzo di taglio che produce il cedimento delle bielle. [daN]
Vrsd: resistenza a taglio per la presenza delle armature. [daN]
Vult: taglio ultimo. [daN]
cotgϑ: cotg dell'angolo di inclinazione dei puntoni in calcestruzzo.
Bordo: bordo interessato dalla fessura.
Rara: famiglia di combinazione per verifica inferiore.
Dmax: distanza massima tra le fessure. [m]
Esm: dilatazione media delle barre di armatura.
Wd: valore di calcolo di apertura delle fessure. [m]
Frequente: famiglia di combinazione per verifica inferiore.
Quasi permanente: famiglia di combinazione per verifica inferiore.
Frequente: famiglia di combinazione di verifica.

CORDOLO 1

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

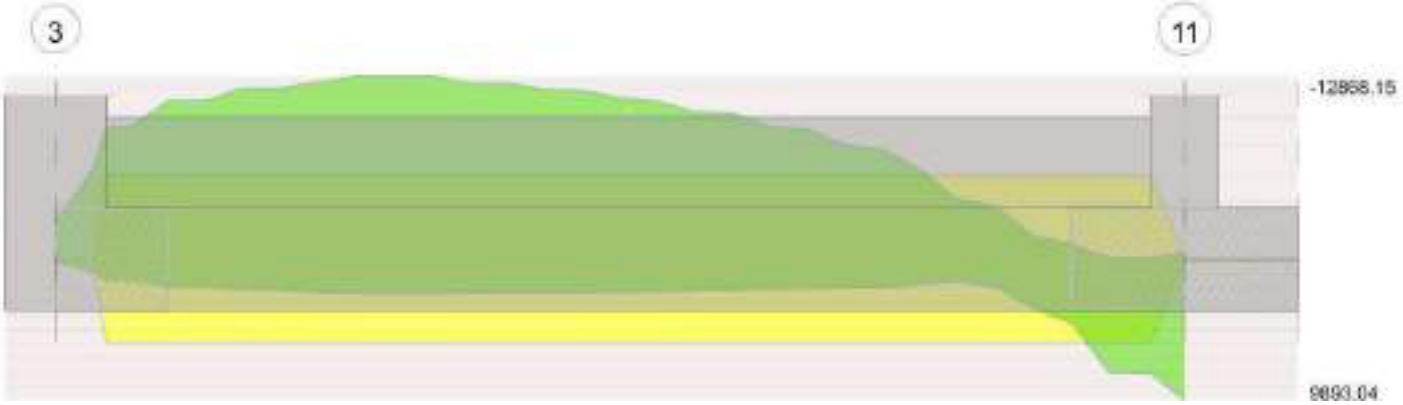


Diagramma verifica stato limite ultimo taglio

Output campate

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 3 - 11, sezione R 70x45, aste 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
2.49	0.41	0.0003	4389	SLV 8	0.119	5173	11326	SLV 8	15877	Si
4.83	0.41	0.0003	5170	SLV 8	0.119	5173	13342	SLV 8	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	4205	SLD 8	0.098	6001	10853	SLD 8	15877	Si
0.23	0.41	0.0003	3985	SLD 8	0.098	6001	10283	SLD 8	15877	Si
2.49	0.41	0.0003	2782	SLD 8	0.098	6001	7180	SLD 8	15877	Si
4.83	0.41	0.0003	3326	SLD 8	0.098	6001	8584	SLD 8	15877	Si
4.98	0.41	0.0003	3365	SLD 8	0.098	6001	8685	SLD 8	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000338	2760	SLE RA 20	78156	1494000	969140	36000000	2519	SLE QP 2	71342	1120500	Si
0.23	0.41	0.00000338	2616	SLE RA 20	74078	1494000	918573	36000000	2386	SLE QP 2	67591	1120500	Si
2.49	0.41	0.00000338	1871	SLE RA 20	52984	1494000	657005	36000000	1699	SLE QP 2	48134	1120500	Si
4.83	0.41	0.00000338	2301	SLE RA 20	65158	1494000	807961	36000000	2088	SLE QP 2	59145	1120500	Si
4.98	0.41	0.00000338	2328	SLE RA 20	65932	1494000	817561	36000000	2113	SLE QP 2	59846	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
239,240,241,242,243,244,245,246,247,248,249,250,251	5.21	1.3	SLU 83	ST	BT	2.3	228182	78631	2.9	Si
239,240,241,242,243,244,245,246,247,248,249,250,251	5.21	1.3	SLD 8	SIS	BT	2.3	210804	80209	2.63	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-252	-78631	-9145.34	-3076.36	0	0	-0.04	-0.12	1.07	5.13	1496	2060	0	14430	
0	-13650	-3176	4699.41	-1923.86	0	-77	-0.61	1.48	-1.66	4	1496	2060	0	14430	0.07
0	5110	-80209	-11328.45	-5590.41	0	4	-0.07	-0.14	1.02	5.07	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	5	0	0	0.04	0	0	0.23	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

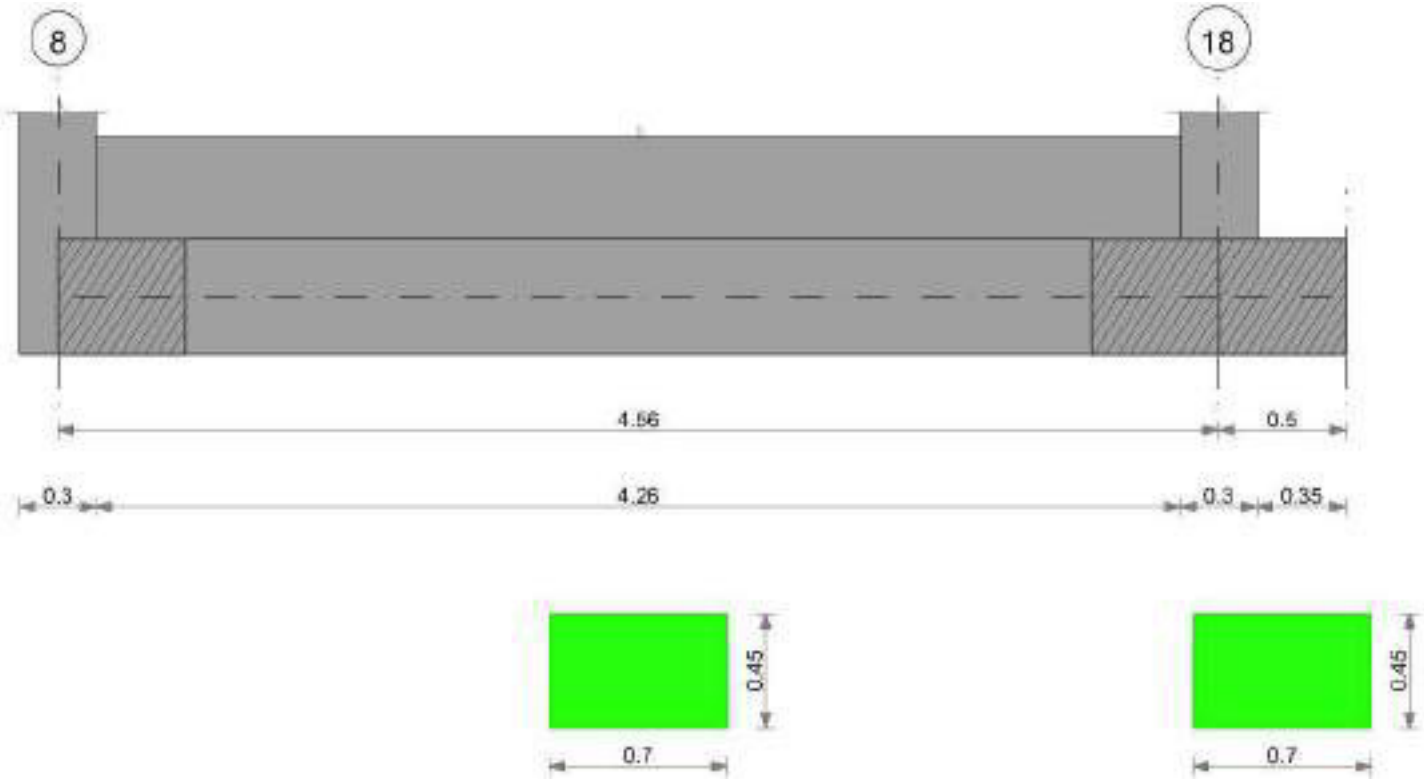
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.001	955	SLE RA 20	0.05	0.001	955	942	SLE RA 20	0.05	0	955	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	955	SLE RA 1	0.05	0	955	955	SLE RA 1	0.05	0	955	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	955	SLE RA 1	0.05	0	955	955	SLE RA 1	0.05	0	955	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 20	0.19	0.01	955	942	SLE RA 20	0.19	0	955	SLE RA 1	0.1	0	955	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	955	942	SLE RA 1	0.19	0	955	SLE RA 1	0.1	0	955	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	955	942	SLE RA 1	0.19	0	955	SLE RA 1	0.1	0	955	SLE RA 1	Si

CORDOLO 2

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

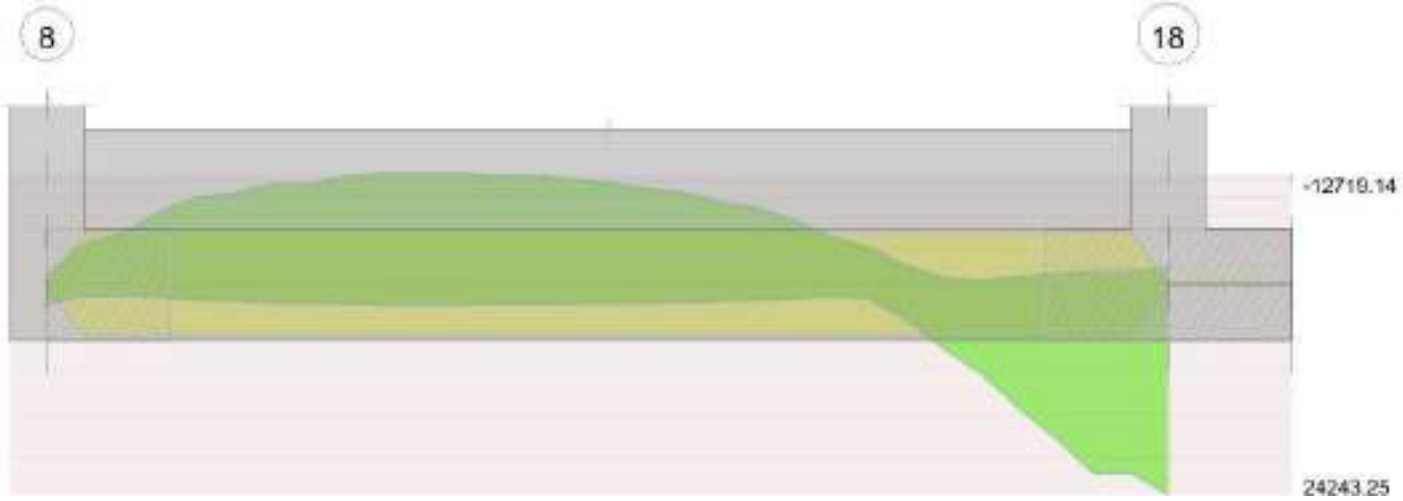
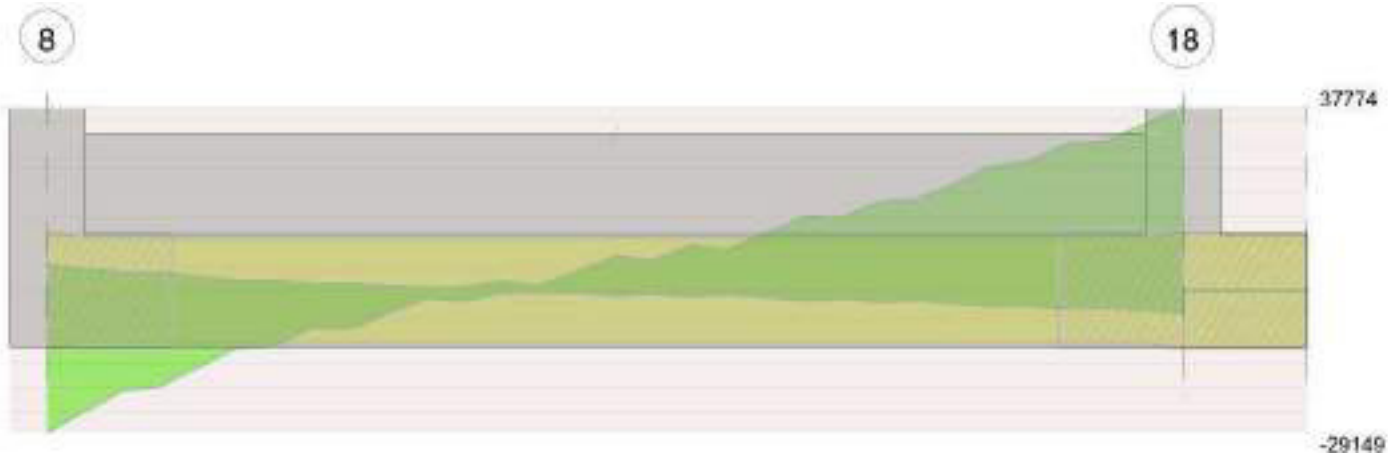


Diagramma verifica stato limite ultimo taglio



Output campate

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 8 - 18, sezione R 70x45, aste 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
2.28	0.41	0.0005	4729	SLV 8	0.145	7759	12204	SLV 8	15877	Si
4.41	0.41	0.0005	5181	SLV 8	0.145	7759	13370	SLV 8	15877	Si
4.56	0.41	0.0005	5153	SLV 8	0.145	7759	13298	SLV 8	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	4064	SLD 8	0.12	9019	10489	SLD 8	15877	Si
0.15	0.41	0.0005	3950	SLD 8	0.12	9019	10194	SLD 8	15877	Si
2.28	0.41	0.0005	2997	SLD 8	0.12	9019	7735	SLD 8	15877	Si
4.41	0.41	0.0005	3305	SLD 8	0.12	9019	8529	SLD 8	15877	Si
4.56	0.41	0.0005	3284	SLD 8	0.12	9019	8475	SLD 8	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000512	2714	SLE RA 20	75155	1494000	931917	36000000	2468	SLE QP 2	68345	1120500	Si
0.15	0.41	0.00000512	2638	SLE RA 20	73058	1494000	905923	36000000	2399	SLE QP 2	66426	1120500	Si
2.28	0.41	0.00000512	2027	SLE RA 20	56135	1494000	696076	36000000	1839	SLE QP 2	50917	1120500	Si
4.41	0.41	0.00000512	2265	SLE RA 20	62712	1494000	777630	36000000	2054	SLE QP 2	56866	1120500	Si
4.56	0.41	0.00000512	2248	SLE RA 20	62241	1494000	771790	36000000	2038	SLE QP 2	56433	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
511,512,513,514,515,516,517,518,519,520,521,522	4.71	1.3	SLU 83	ST	BT	2.3	222597	74548	2.99	Si
511,512,513,514,515,516,517,518,519,520,521,522	4.71	1.3	SLV 8	SIS	BT	2.3	195841	113000	1.73	Si
511,512,513,514,515,516,517,518,519,520,521,522	4.71	1.3	SLD 8	SIS	BT	2.3	208318	75778	2.75	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	45	-74548	-5835.41	-2524.04	0	0	-0.03	-0.08	1.14	4.64	1496	2060	0	14430	
0	10705	-113000	-13337.8	-6895.34	0	5	-0.06	-0.12	1.06	4.59	1496	2060	0	14430	0.07
0	4321	-75778	-7698.02	-3859.46	0	3	-0.05	-0.1	1.1	4.61	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.05	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.23	0	0	0.05	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.23	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

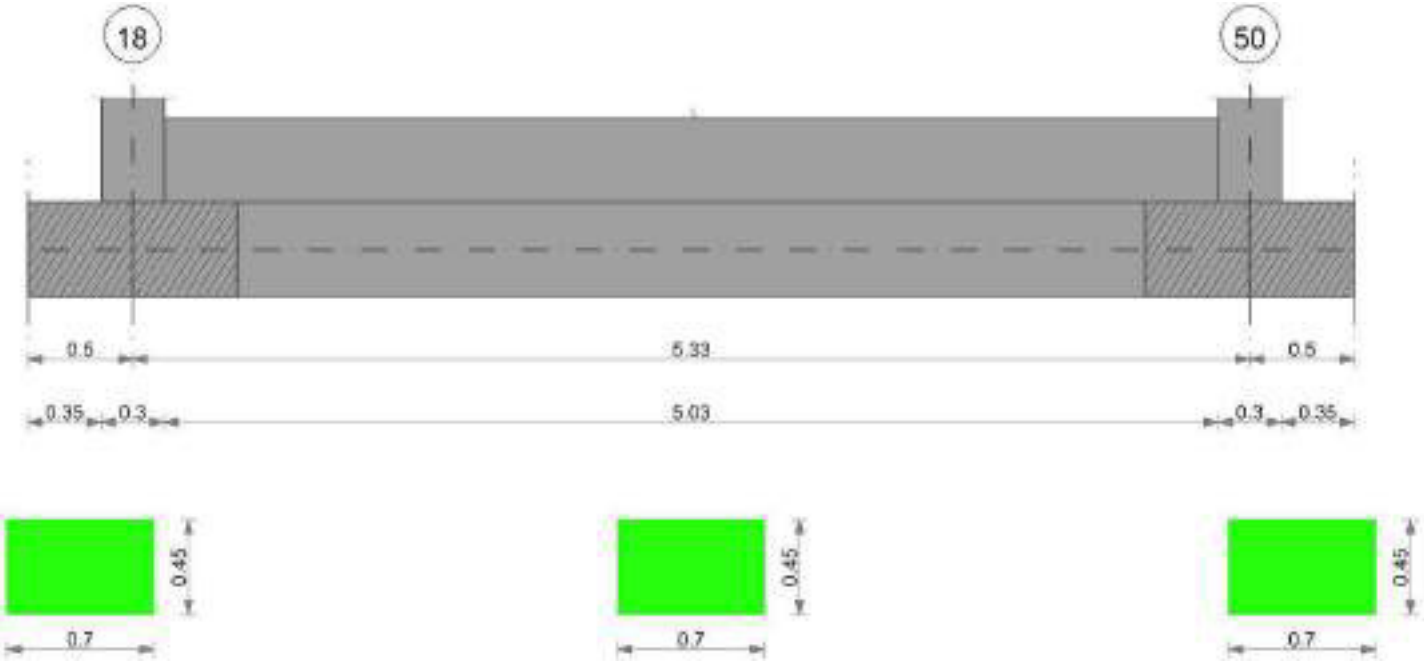
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.001	1036	SLE RA 20	0.05	0	1036	1023	SLE RA 20	0.05	0	1036	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	1036	SLE RA 1	0.05	0	1036	1036	SLE RA 1	0.05	0	1036	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	1036	SLE RA 1	0.05	0	1036	1036	SLE RA 1	0.05	0	1036	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 20	0.19	0.01	1036	1023	SLE RA 20	0.19	0	1036	SLE RA 1	0.1	0	1036	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	1036	1023	SLE RA 1	0.19	0	1036	SLE RA 1	0.1	0	1036	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	1036	1023	SLE RA 1	0.19	0	1036	SLE RA 1	0.1	0	1036	SLE RA 1	Si

CORDOLO 3

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

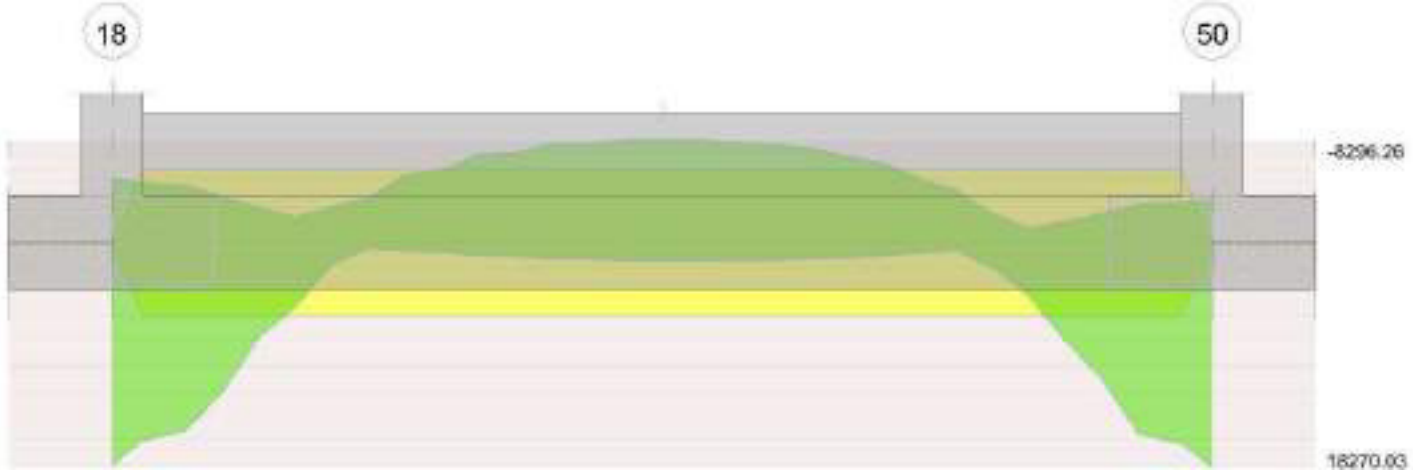
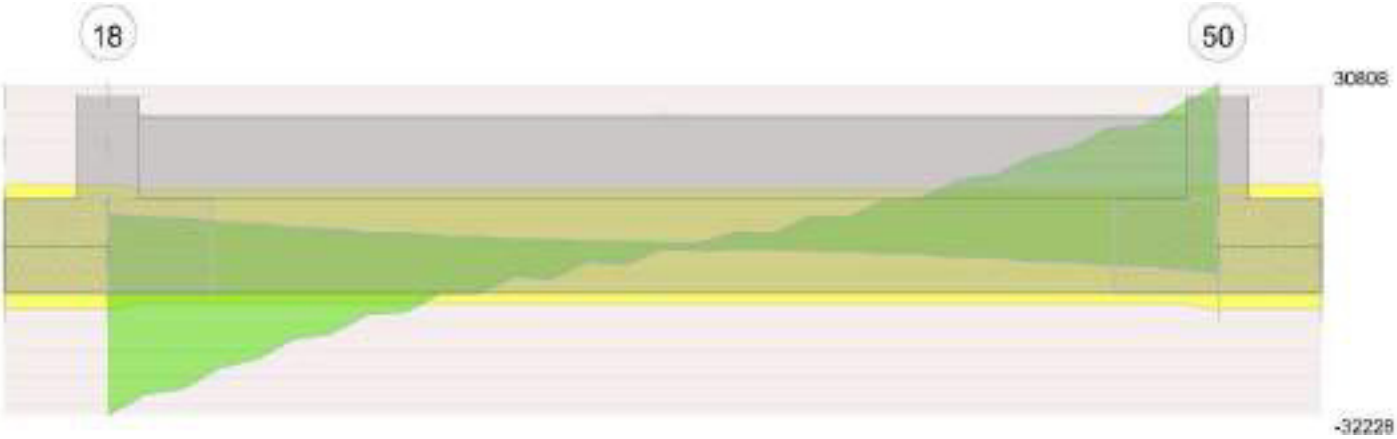


Diagramma verifica stato limite ultimo taglio



Output campate

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 18 - 50, sezione R 70x45, aste 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	3284	SLD 8	0.085	4549	8475	SLD 8	15877	Si
0.15	0.41	0.0003	3260	SLD 8	0.085	4549	8412	SLD 8	15877	Si
2.66	0.41	0.0003	2566	SLD 12	0.085	4549	6621	SLD 12	15877	Si
5.18	0.41	0.0003	3105	SLD 11	0.085	4549	8012	SLD 11	15877	Si
5.33	0.41	0.0003	3115	SLD 11	0.085	4549	8039	SLD 11	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000255	2248	SLE RA 20	64359	1494000	798052	36000000	2038	SLE QP 2	58353	1120500	Si
0.15	0.41	0.00000255	2228	SLE RA 20	63791	1494000	791003	36000000	2020	SLE QP 2	57832	1120500	Si
2.66	0.41	0.00000255	1759	SLE RA 20	50365	1494000	624530	36000000	1592	SLE QP 2	45577	1120500	Si
5.18	0.41	0.00000255	2119	SLE RA 20	60667	1494000	752269	36000000	1921	SLE QP 2	55003	1120500	Si
5.33	0.41	0.00000255	2126	SLE RA 20	60867	1494000	754750	36000000	1927	SLE QP 2	55188	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
564,565,566,567,568,569,570,571,572,573,574,575,576,577,578	5.33	1.3	SLU 83	ST	BT	2.3	245054	78527	3.12	Si
564,565,566,567,568,569,570,571,572,573,574,575,576,577,578	5.33	1.3	SLV 8	SIS	BT	2.3	215183	114339	1.88	Si
564,565,566,567,568,569,570,571,572,573,574,575,576,577,578	5.33	1.3	SLD 8	SIS	BT	2.3	230183	77852	2.96	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-1067	-78527	-7318.46	-1408.14	0	-1	-0.02	-0.09	1.11	5.29	1496	2060	0	14430	
0	11528	-114339	-15261.98	-6431.94	0	6	-0.06	-0.13	1.03	5.22	1496	2060	0	14430	0.07
0	4170	-77852	-9029.3	-3222.81	0	3	-0.04	-0.12	1.07	5.25	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.23	0	0	0.05	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.23	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

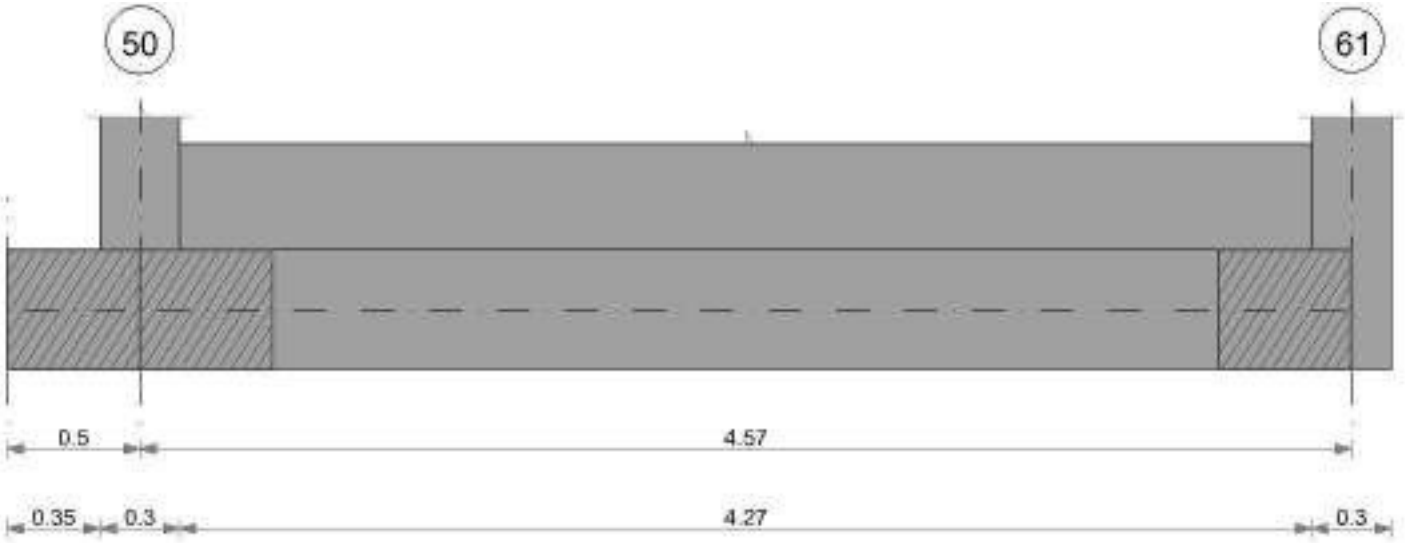
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.001	1036	SLE RA 20	0.05	0	1036	1051	SLE RA 20	0.05	0	1051	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	1051	SLE RA 1	0.05	0	1051	1051	SLE RA 1	0.05	0	1051	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	1051	SLE RA 1	0.05	0	1051	1051	SLE RA 1	0.05	0	1051	SLE RA 1	0.0033	0	SLE RA 1	Si

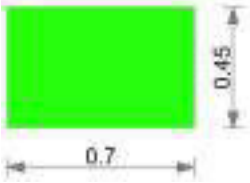
Verifiche geotecniche - Rotazioni assolute e differenziali

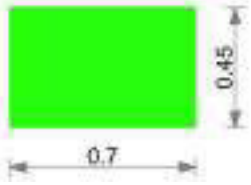
Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0	SLE RA 20	0.19	0	1051	1036	SLE RA 20	0.19	0	1051	SLE RA 1	0.1	0	1051	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	1051	1036	SLE RA 1	0.19	0	1051	SLE RA 1	0.1	0	1051	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	1051	1036	SLE RA 1	0.19	0	1051	SLE RA 1	0.1	0	1051	SLE RA 1	Si

CORDOLO 4

Geometria







Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

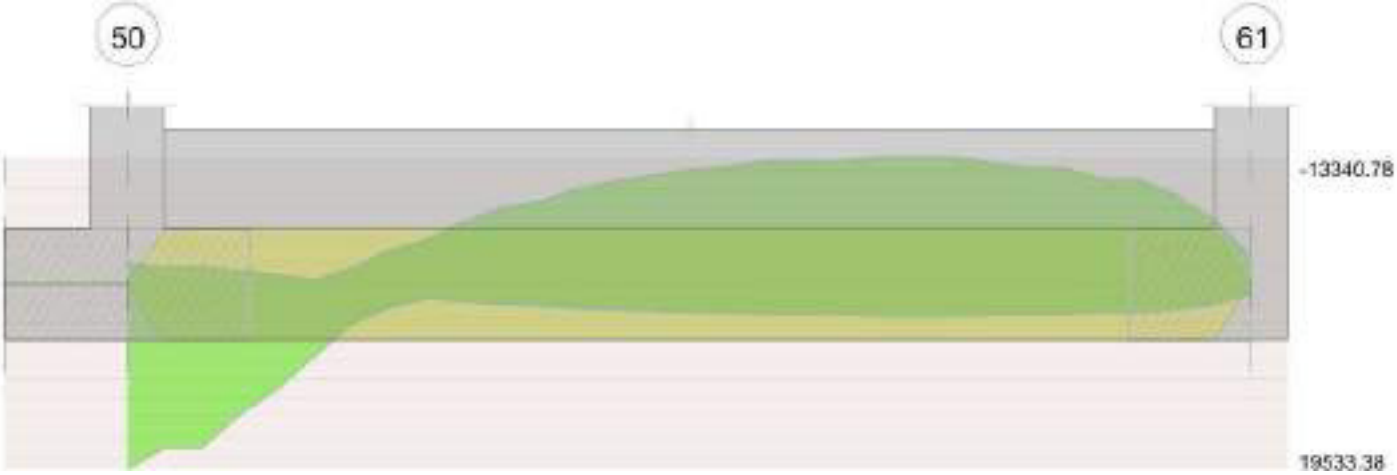


Diagramma verifica stato limite ultimo taglio

Output campate

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 50 - 61, sezione R 70x45, aste 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	4893	SLV 11	0.119	5219	12627	SLV 11	15877	Si
0.15	0.41	0.0003	4904	SLV 11	0.119	5219	12655	SLV 11	15877	Si
2.29	0.41	0.0003	4569	SLV 11	0.119	5219	11791	SLV 11	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	3115	SLD 11	0.098	6055	8039	SLD 11	15877	Si
0.15	0.41	0.0003	3122	SLD 11	0.098	6055	8057	SLD 11	15877	Si
2.29	0.41	0.0003	2871	SLD 11	0.098	6055	7410	SLD 11	15877	Si
4.42	0.41	0.0003	3833	SLD 11	0.098	6055	9891	SLD 11	15877	Si
4.57	0.41	0.0003	3951	SLD 11	0.098	6055	10196	SLD 11	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000341	2126	SLE RA 20	60182	1494000	746258	36000000	1927	SLE QP 2	54567	1120500	Si
0.15	0.41	0.00000341	2130	SLE RA 20	60306	1494000	747798	36000000	1932	SLE QP 2	54683	1120500	Si
2.29	0.41	0.00000341	1913	SLE RA 20	54168	1494000	671681	36000000	1735	SLE QP 2	49107	1120500	Si
4.42	0.41	0.00000341	2480	SLE RA 20	70207	1494000	870568	36000000	2252	SLE QP 2	63749	1120500	Si
4.57	0.41	0.00000341	2552	SLE RA 20	72259	1494000	896013	36000000	2318	SLE QP 2	65621	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
579,580,581,582,583,584,585,586,587,588,589	4.72	1.3	SLU 83	ST	BT	2.3	222295	67561	3.29	Si
579,580,581,582,583,584,585,586,587,588,589	4.72	1.3	SLV 11	SIS	BT	2.3	194071	103984	1.87	Si
579,580,581,582,583,584,585,586,587,588,589	4.72	1.3	SLD 11	SIS	BT	2.3	207526	69353	2.99	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-683	-67561	-5338.54	2261.09	0	-1	0.03	-0.08	1.14	4.65	1496	2060	0	14430	
0	10129	-103984	-12670.73	7722.77	0	6	0.07	-0.12	1.06	4.57	1496	2060	0	14430	0.07
0	3776	-69353	-7221.19	4040.82	0	3	0.06	-0.1	1.09	4.6	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.05	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.23	0	0	0.05	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.23	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.001	1051	SLE RA 20	0.05	0	1051	1062	SLE RA 20	0.05	0	1062	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	1062	SLE RA 1	0.05	0	1062	1062	SLE RA 1	0.05	0	1062	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	1062	SLE RA 1	0.05	0	1062	1062	SLE RA 1	0.05	0	1062	SLE RA 1	0.0033	0	SLE RA 1	Si

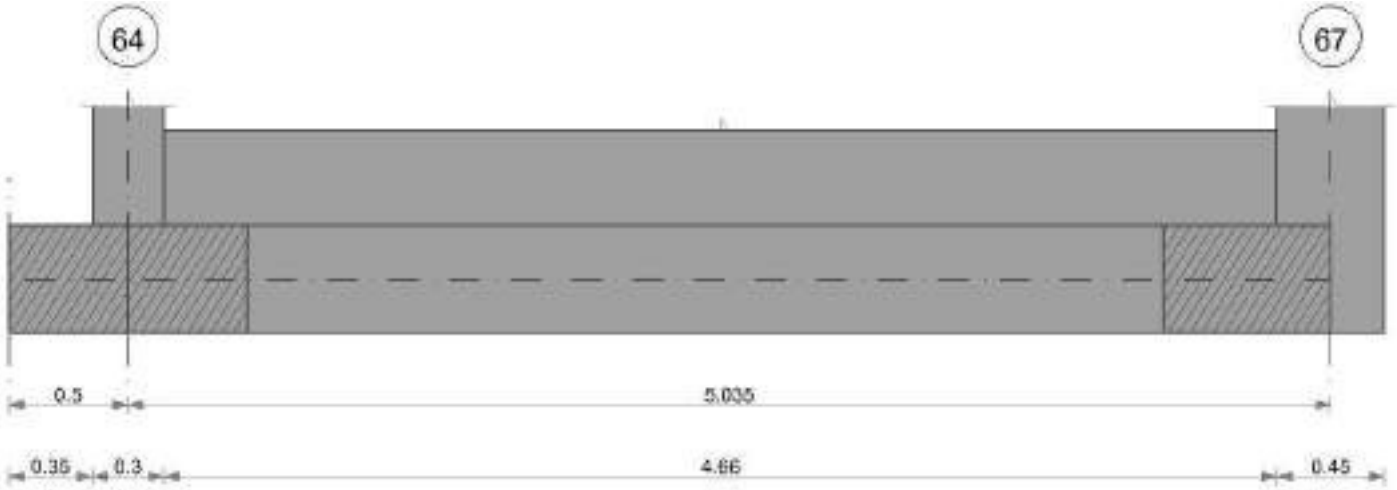
Verifiche geotecniche - Rotazioni assolute e differenziali

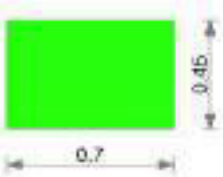
Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 20	0.19	0.01	1062	1051	SLE RA 20	0.19	0	1062	SLE RA 1	0.1	0	1062	SLE RA 1	Si

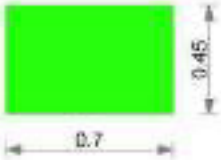
Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
D	0.19	0	SLE RA 1	0.19	0	1062	1051	SLE RA 1	0.19	0	1062	SLE RA 1	0.1	0	1062	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	1062	1051	SLE RA 1	0.19	0	1062	SLE RA 1	0.1	0	1062	SLE RA 1	Si

CORDOLO 5

Geometria







Caratteristiche dei materiali

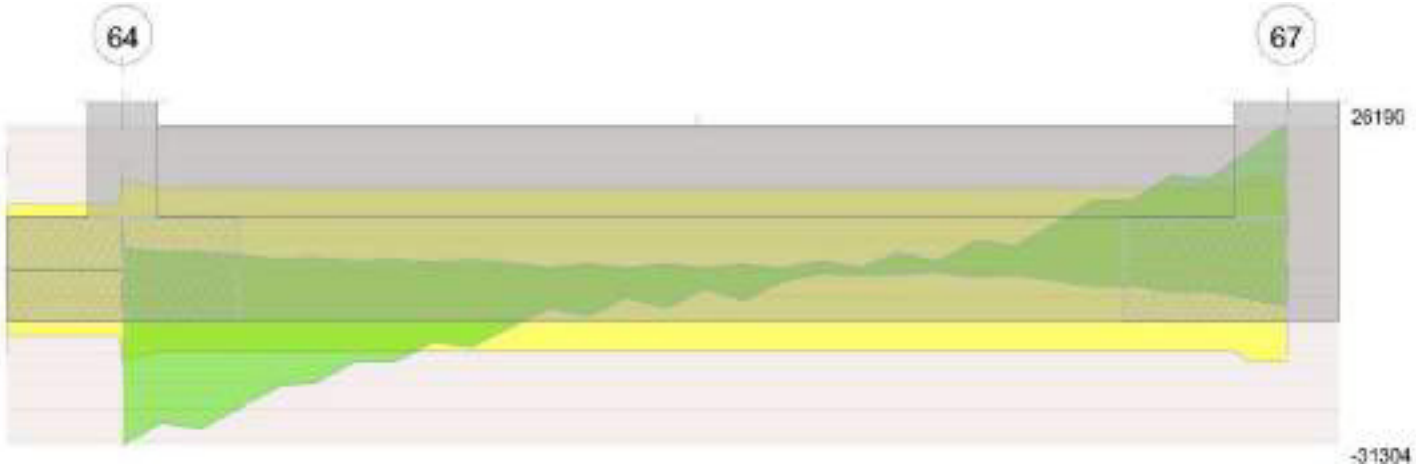
Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

Diagramma verifica stato limite ultimo taglio



Output campate

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 64 - 67, sezione R 70x45, aste 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
2.52	0.41	0.0003	4750	SLV 11	0.12	5267	12257	SLV 11	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	3572	SLD 11	0.099	6111	9218	SLD 11	15877	Si
0.15	0.41	0.0003	3540	SLD 11	0.099	6111	9135	SLD 11	15877	Si
2.52	0.41	0.0003	2969	SLD 11	0.099	6111	7662	SLD 11	15877	Si
4.81	0.41	0.0003	4246	SLD 11	0.099	6111	10956	SLD 11	15877	Si
5.04	0.41	0.0003	4478	SLD 11	0.099	6111	11557	SLD 11	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000344	2439	SLE RA 20	69026	1494000	855918	36000000	2214	SLE QP 2	62667	1120500	Si
0.15	0.41	0.00000344	2419	SLE RA 20	68443	1494000	848688	36000000	2196	SLE QP 2	62142	1120500	Si
2.52	0.41	0.00000344	1953	SLE RA 20	55266	1494000	685299	36000000	1774	SLE QP 2	50201	1120500	Si
4.81	0.41	0.00000344	2698	SLE RA 20	76339	1494000	946606	36000000	2459	SLE QP 2	69580	1120500	Si
5.04	0.41	0.00000344	2844	SLE RA 20	80480	1494000	997957	36000000	2593	SLE QP 2	73380	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
383,384,385,386,387,388,389,390,391,392,393,394,395	5.26	1.3	SLU 83	ST	BT	2.3	237723	78409	3.03	Si
383,384,385,386,387,388,389,390,391,392,393,394,395	5.26	1.3	SLV 11	SIS	BT	2.3	203446	123198	1.65	Si
383,384,385,386,387,388,389,390,391,392,393,394,395	5.26	1.3	SLD 11	SIS	BT	2.3	219467	81607	2.69	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-560	-78409	-8000.24	1947.7	0	0	0.02	-0.1	1.1	5.21	1496	2060	0	14430	
0	12322	-123198	-18105.05	10313.67	0	6	0.08	-0.15	1.01	5.09	1496	2060	0	14430	0.07
0	4715	-81607	-10479.87	5053.75	0	3	0.06	-0.13	1.04	5.14	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.23	0	0	0.06	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.23	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.001	958	SLE RA 20	0.05	0.001	958	972	SLE RA 20	0.05	0	972	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	972	SLE RA 1	0.05	0	972	972	SLE RA 1	0.05	0	972	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	972	SLE RA 1	0.05	0	972	972	SLE RA 1	0.05	0	972	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 20	0.19	0.01	972	958	SLE RA 20	0.19	0	972	SLE RA 1	0.1	0	972	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	972	958	SLE RA 1	0.19	0	972	SLE RA 1	0.1	0	972	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	972	958	SLE RA 1	0.19	0	972	SLE RA 1	0.1	0	972	SLE RA 1	Si

CORDOLO 6

Geometria

Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

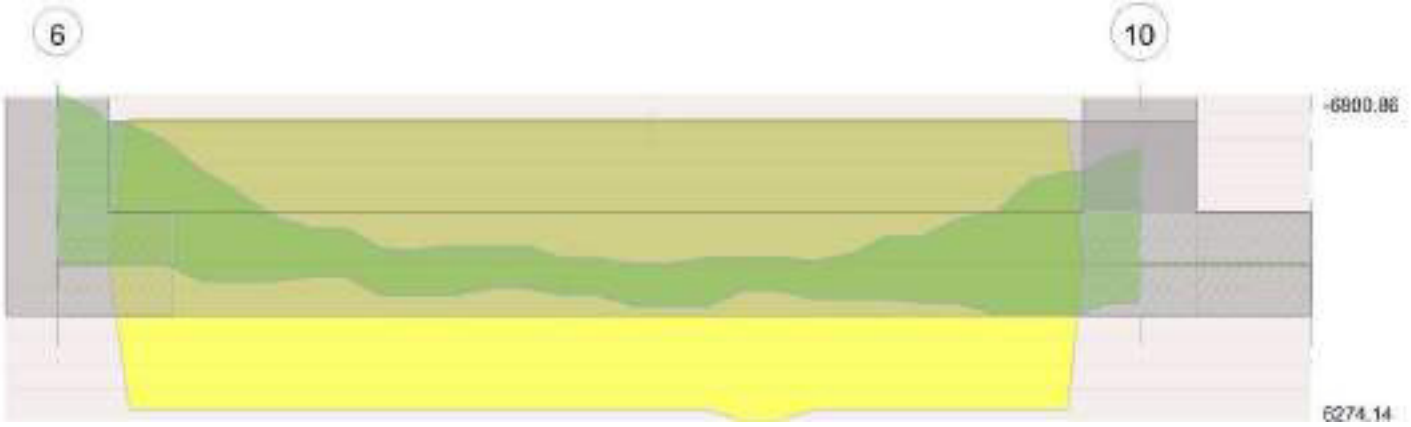
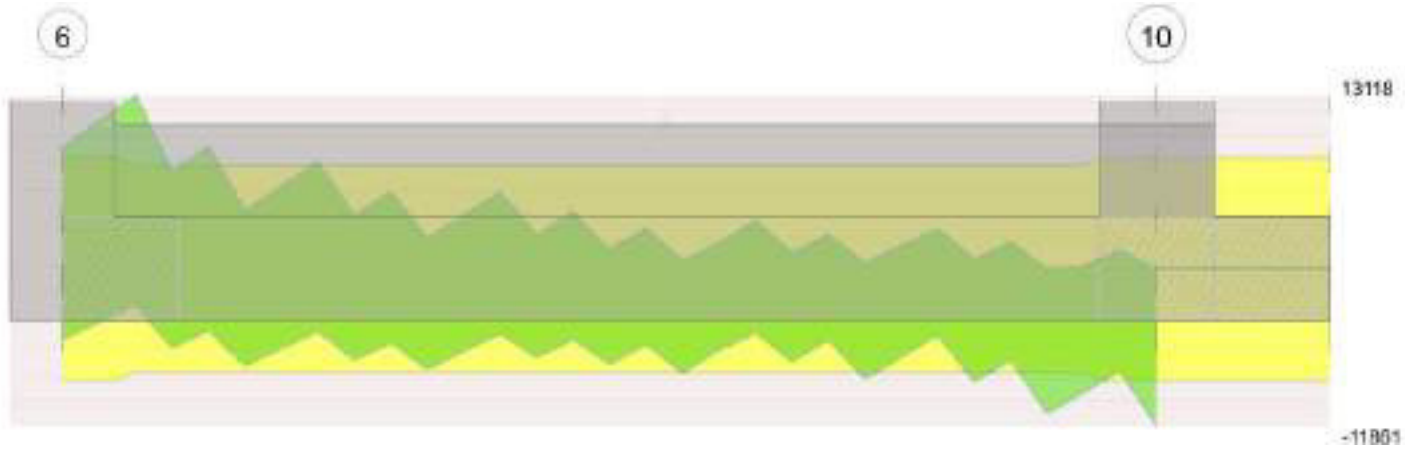


Diagramma verifica stato limite ultimo taglio



Output campate

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 6 - 10, sezione R 50x45, aste 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	2634	SLV 3	0.086	2676	9160	SLV 3	15877	Si
0.23	0.41	0.0002	2566	SLV 3	0.086	2676	8926	SLV 3	15877	Si
2.37	0.41	0.0002	2148	SLV 3	0.086	2676	7471	SLV 3	15877	Si
4.49	0.41	0.0002	1881	SLU 83	0.017	2751	6544	SLU 83	15877	Si
4.74	0.41	0.0002	1862	SLU 83	0.017	2751	6475	SLU 83	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1958	SLD 3	0.07	3097	6810	SLD 3	15877	Si
0.23	0.41	0.0002	1918	SLD 3	0.07	3097	6671	SLD 3	15877	Si
2.37	0.41	0.0002	1699	SLD 3	0.07	3097	5908	SLD 3	15877	Si
4.49	0.41	0.0002	1455	SLD 3	0.07	3097	5062	SLD 3	15877	Si
4.74	0.41	0.0002	1434	SLD 3	0.07	3097	4987	SLD 3	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000172	1591	SLE RA 20	46063	1494000	571181	36000000	1454	SLE QP 2	42097	1120500	Si
0.23	0.41	0.00000172	1570	SLE RA 20	45450	1494000	563584	36000000	1434	SLE QP 2	41519	1120500	Si
2.37	0.41	0.00000172	1498	SLE RA 21	43373	1494000	537822	36000000	1364	SLE QP 2	39482	1120500	Si
4.49	0.41	0.00000172	1375	SLE RA 20	39790	1494000	493398	36000000	1248	SLE QP 2	36125	1120500	Si
4.74	0.41	0.00000172	1360	SLE RA 20	39366	1494000	488140	36000000	1234	SLE QP 2	35730	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
290,291,292,293,294,295,296,297,298,299,300,301,302	4.96	1.1	SLU 84	ST	BT	2.3	230136	76881	2.99	Si
290,291,292,293,294,295,296,297,298,299,300,301,302	4.96	1.1	SLV 4	SIS	BT	2.3	210030	77295	2.72	Si
290,291,292,293,294,295,296,297,298,299,300,301,302	4.96	1.1	SLD 1	SIS	BT	2.3	219996	62936	3.5	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-387	-76881	194.74	-3191.82	0	0	-0.04	0	1.09	4.88	1496	2060	0	14430	
0	4443	-77295	-1162.07	-13148.99	0	3	-0.17	-0.02	1.07	4.62	1496	2060	0	14430	0.07
0	-1788	-62936	565.79	-6955.18	0	-2	-0.11	0.01	1.08	4.74	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.002	714	SLE RA 20	0.05	0.002	714	701	SLE RA 20	0.05	0	714	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	714	SLE RA 1	0.05	0	714	714	SLE RA 1	0.05	0	714	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	714	SLE RA 1	0.05	0	714	714	SLE RA 1	0.05	0	714	SLE RA 1	0.0033	0	SLE RA 1	Si

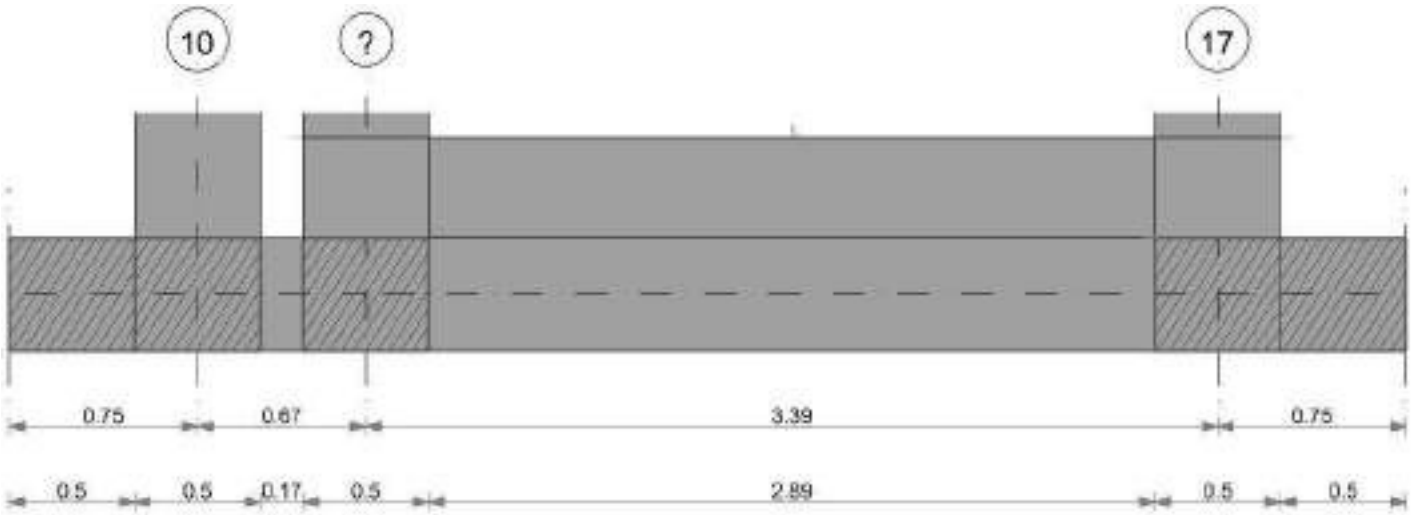
Verifiche geotecniche - Rotazioni assolute e differenziali

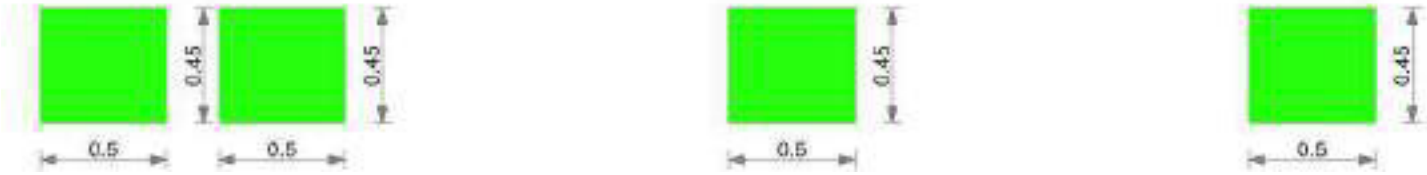
Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.02	SLE RA 20	0.19	0.02	714	701	SLE RA 20	0.19	0	714	SLE RA 1	0.1	0	714	SLE RA 1	Si

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
D	0.19	0	SLE RA 1	0.19	0	714	701	SLE RA 1	0.19	0	714	SLE RA 1	0.1	0	714	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	714	701	SLE RA 1	0.19	0	714	SLE RA 1	0.1	0	714	SLE RA 1	Si

CORDOLO 7

Geometria





Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

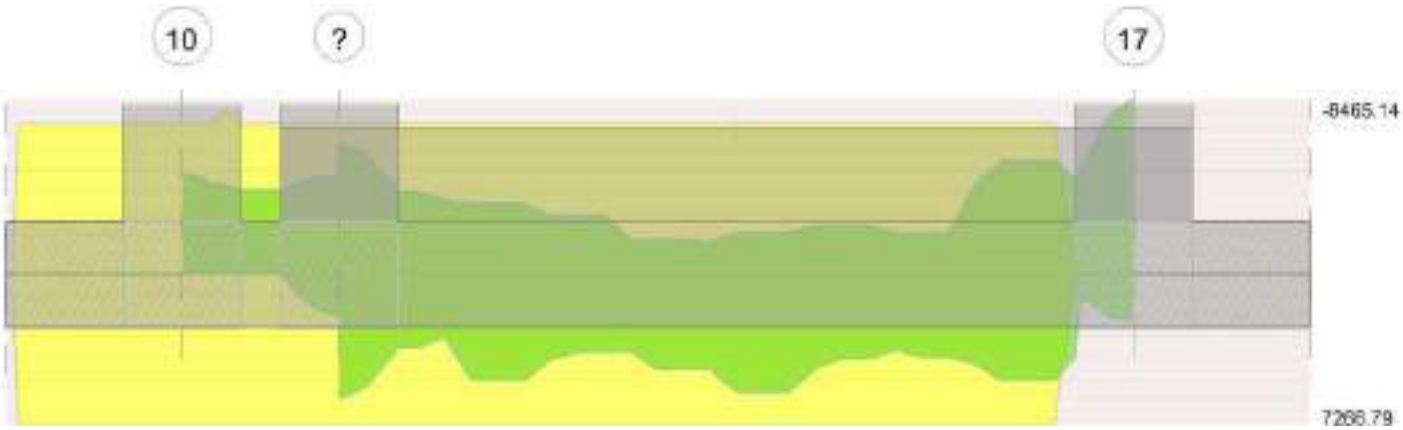


Diagramma verifica stato limite ultimo taglio

Output campate

Campata 2 tra i fili 10 - ?, sezione R 50x45, asta 622

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000509	0.052							-4894.4	SLU 83	-4675.7	-7755.45	0.113	1.66	Si
0.25	0.000509	0.052	0.000509	0.052							-4056.83	SLU 84	-4056.83	-7755.45	0.113	1.91	Si
0.34	0.000509	0.052	0.000509	0.052							-3593.64	SLU 84	-4056.83	-7755.45	0.113	1.91	Si
0.42	0.000509	0.052	0.000509	0.052							-3035.67	SLU 84	-4056.83	-7755.45	0.113	1.91	Si
0.67	0.000509	0.052	0.000509	0.052							-862.35	SLU 73	-862.35	-7755.45	0.113	8.99	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000509	0.052							-6227.7	SLV 4	-4838.16	-7266.79	0.197	1.5	Si
0.25	0.000509	0.052	0.000509	0.052							-3267.31	SLV 2	-4046.35	-7266.79	0.197	1.8	Si
0.34	0.000509	0.052	0.000509	0.052							-3509.79	SLV 10	-4046.35	-7266.79	0.197	1.8	Si
0.42	0.000509	0.052	0.000509	0.052							-4046.35	SLV 9	-4046.35	-7266.79	0.197	1.8	Si
0.67	0.000509	0.052	0.000509	0.052	4212.96	SLV 8	1942.66	7266.79	0.197	3.74	-5353.13	SLV 9	-4813.2	-7266.79	0.197	1.51	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000509	0.052	0.000509	0.052							-4513.93	SLD 4	-3849.38	-7266.79	0.197	1.89	Si
0.25	0.000509	0.052	0.000509	0.052							-2945.88	SLD 2	-2945.88	-7266.79	0.197	2.47	Si
0.34	0.000509	0.052	0.000509	0.052							-2847.64	SLD 10	-2945.88	-7266.79	0.197	2.47	Si
0.42	0.000509	0.052	0.000509	0.052							-2845.43	SLD 9	-2945.88	-7266.79	0.197	2.47	Si
0.67	0.000509	0.052	0.000509	0.052	1374.37	SLD 8	532.32	7266.79	0.197	13.65	-2514.54	SLD 9	-2514.54	-7266.79	0.197	2.89	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000107	0.000509	0	1743	SLU 83	1743	7764	63178	15030	15030	1	8.62	Si
0.25	0.0000105	0.000509	0	4997	SLU 83	4997	7764	63178	14722	14722	1	2.95	Si
0.34	0.0000105	0.000509	0	6101	SLU 83	6101	7764	63178	14722	14722	1	2.41	Si
0.42	0.0000105	0.000509	0	7205	SLU 83	7205	7764	63178	14722	14722	1	2.04	Si
0.67	0.0000105	0.000509	0	10455	SLU 83	10455	7764	63178	14722	14722	1	1.41	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000107	0.000509	0	11367	SLV 8	11367	7764	63178	15030	15030	1	1.32	Si
0	0.0000107	0.000509	0	-9183	SLV 9	-9183	-7764	-63178	-15030	-15030	1	1.64	Si
0.25	0.0000105	0.000509	0	14166	SLV 4	14166	7764	63178	14722	14722	1	1.04	Si
0.25	0.0000105	0.000509	0	-7623	SLV 13	-7623	-7764	-63178	-14722	-14722	1	1.93	Si
0.34	0.0000105	0.000509	0	-7123	SLV 13	-7123	-7764	-63178	-14722	-14722	1	2.07	Si
0.42	0.0000105	0.000509	0	-6622	SLV 13	-6622	-7764	-63178	-14722	-14722	1	2.22	Si
0.67	0.0000105	0.000509	0	18985	SLV 4	18985	7764	63178	14722	14722	1	0.78	Si
0.67	0.0000105	0.000509	0	-5135	SLV 13	-5135	-7764	-63178	-14722	-14722	1	2.87	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000107	0.000509	0	5383	SLD 4	5383	7764	63178	15030	15030	1	2.79	Si
0	0.0000107	0.000509	0	-3198	SLD 13	-3198	-7764	-63178	-15030	-15030	1	4.7	Si
0.25	0.0000105	0.000509	0	7865	SLD 4	7865	7764	63178	14722	14722	1	1.87	Si
0.25	0.0000105	0.000509	0	-1322	SLD 13	-1322	-7764	-63178	-14722	-14722	1	11.13	Si
0.34	0.0000105	0.000509	0	8706	SLD 4	8706	7764	63178	14722	14722	1	1.69	Si
0.34	0.0000105	0.000509	0	-685	SLD 13	-685	-7764	-63178	-14722	-14722	1	21.5	Si
0.42	0.0000105	0.000509	0	9546	SLD 4	9546	7764	63178	14722	14722	1	1.54	Si
0.42	0.0000105	0.000509	0	-47	SLD 13	-47	-7764	-63178	-14722	-14722	1	313.75	Si

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0.67	0.0000105	0.000509	0	12014	SLD 4	12014	7764	63178	14722	14722	1	1.23	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-3583.28	20	-3426.06	181216	1494000	2718242	36000000	-3256.7	2	-3119.6	165007	1120500			Si
0.25	-2975.16	21	-2975.16	157367	1494000	2360498	36000000	-2710.7	2	-2710.7	143378	1120500			Si
0.34	-2637.24	21	-2975.16	157367	1494000	2360498	36000000	-2401.56	2	-2710.7	143378	1120500			Si
0.42	-2229.84	21	-2975.16	157367	1494000	2360498	36000000	-2028.94	2	-2710.7	143378	1120500			Si
0.67	-640.9	10	-640.9	33899	1494000	508488	36000000	-570.08	2	-570.08	30154	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 10 - ?, sezione R 50x45, asta 622

Campata 3 tra i fili ? - 17, sezione R 50x45, aste 623, 624, 625, 626, 627, 628, 629, 630, 631

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	1825	SLU 83	0.044	8296	6348	SLU 83	20561	Si
0.25	0.41	0.0005	1832	SLU 83	0.044	8200	6371	SLU 83	20318	Si
1.69	0.41	0.0005	1848	SLU 83	0.044	8200	6429	SLU 83	20318	Si
3.14	0.41	0.0005	1734	SLU 83	0.044	8200	6032	SLU 83	20318	Si
3.39	0.41	0.0005	1715	SLU 83	0.044	8200	5964	SLU 83	20318	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	1383	SLD 3	0.122	9241	4811	SLD 3	23645	Si
0.25	0.41	0.0005	1380	SLD 3	0.121	9134	4802	SLD 3	23366	Si
1.69	0.41	0.0005	1326	SLD 3	0.121	9134	4613	SLD 3	23366	Si
3.14	0.41	0.0005	1182	SLD 7	0.121	9134	4112	SLD 7	23366	Si
3.39	0.41	0.0005	1169	SLD 7	0.121	9134	4066	SLD 7	23366	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000525	1333	SLE RA 20	36845	1494000	456875	36000000	1208	SLE QP 2	33405	1120500	Si
0.25	0.41	0.00000519	1338	SLE RA 20	37007	1494000	458889	36000000	1213	SLE QP 2	33547	1120500	Si
1.69	0.41	0.00000519	1349	SLE RA 20	37333	1494000	462928	36000000	1222	SLE QP 2	33806	1120500	Si
3.14	0.41	0.00000519	1266	SLE RA 20	35019	1494000	434234	36000000	1145	SLE QP 2	31667	1120500	Si
3.39	0.41	0.00000519	1251	SLE RA 20	34621	1494000	429302	36000000	1131	SLE QP 2	31300	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
622,623,624,625,626,627,628,629,630,631	4.06	1.1	SLU 83	ST	BT	2.3	192790	60005	3.21	Si
622,623,624,625,626,627,628,629,630,631	4.06	1.1	SLV 8	SIS	LT	2.3	161409	45728	3.53	Si
622,623,624,625,626,627,628,629,630,631	4.06	1.1	SLD 4	SIS	BT	2.3	184599	43939	4.2	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	135	-60005	39.01	-609.44	0	0	-0.01	0	1.1	4.04	1496	2060	0	14430	
0	8276	-45728	-2230.04	-2577.72	0	10	-0.06	-0.05	1	3.95	1496	2060	37	0	0.07
0	1303	-43939	-312.96	-2834.33	0	2	-0.06	-0.01	1.09	3.93	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
43	56	66	1.19	1.2	0.9	1.16	1.27	1	0.7	0.69	0.57	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
1	5	0	0	0.06	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

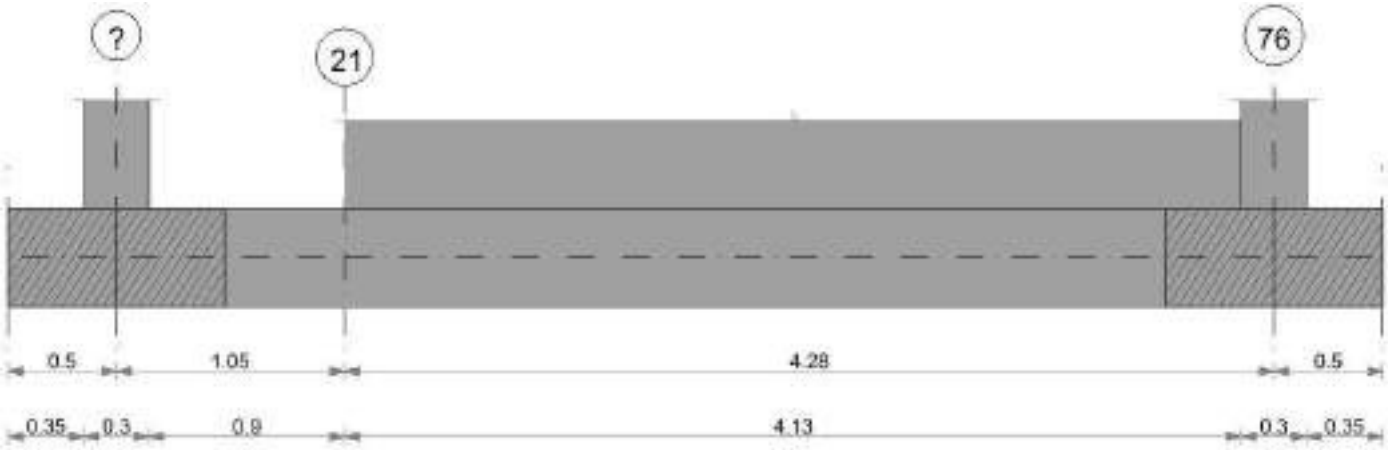
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.003	725	SLE RA 20	0.05	0.001	725	715	SLE RA 21	0.05	0	716	SLE RA 21	0.0033	0	SLE RA 1	Si
D	0.05	0	725	SLE RA 1	0.05	0	725	725	SLE RA 1	0.05	0	716	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	725	SLE RA 1	0.05	0	725	725	SLE RA 1	0.05	0	716	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	716	715	SLE RA 21	0.19	0.01	716	SLE RA 21	0.1	0	725	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	725	716	SLE RA 1	0.19	0	725	SLE RA 1	0.1	0	716	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	725	716	SLE RA 1	0.19	0	725	SLE RA 1	0.1	0	716	SLE RA 1	Si

CORDOLO 8

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

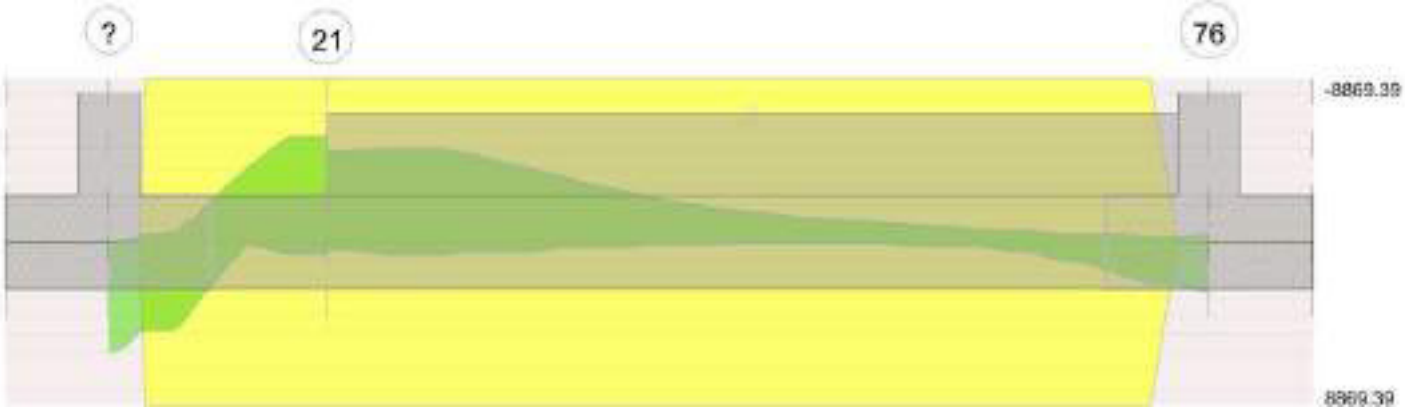
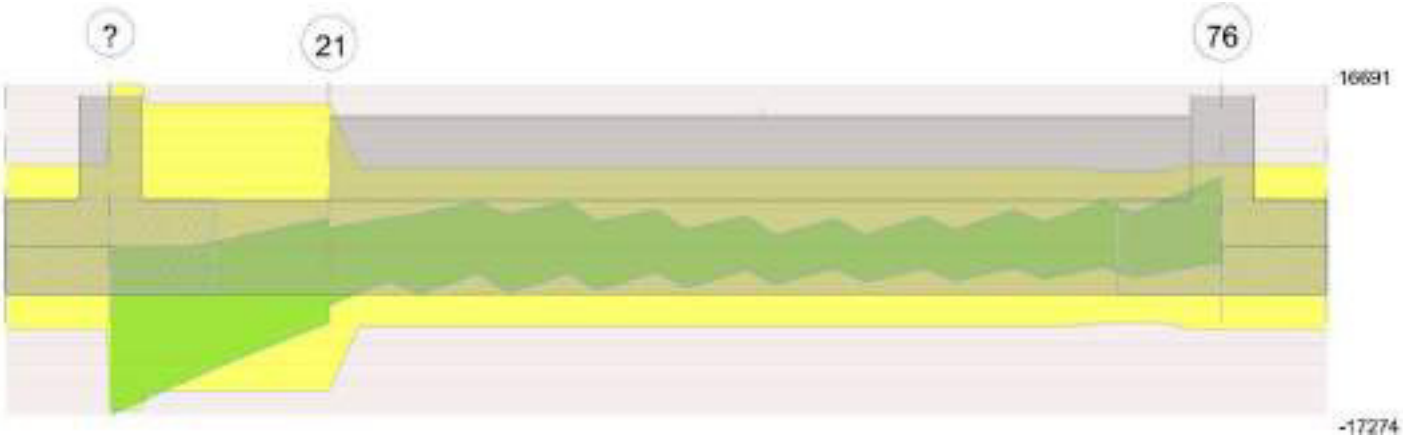


Diagramma verifica stato limite ultimo taglio



Output campate

Campata 2 tra i fili ? - 21, sezione R 50x45, asta 709

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.52	0.000628	0.053	0.000628	0.053	-351.01	SLU 1	1145.24	9384.5	0.124	8.19	-572.91	SLU 84	-1963.62	-9384.5	0.124	4.78	Si
1.05	0.000628	0.053	0.000628	0.053							-3759.11	SLU 83	-3759.11	-9384.5	0.124	2.5	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.52	0.000628	0.053	0.000628	0.053	-33.66	SLV 3	1936.22	8869.39	0.216	4.58	-732.31	SLV 14	-2533.73	-8869.39	0.216	3.5	Si
1.05	0.000628	0.053	0.000628	0.053	648.89	SLV 5	648.89	8869.39	0.216	13.67	-5713.32	SLV 12	-5713.32	-8869.39	0.216	1.55	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.52	0.000628	0.053	0.000628	0.053	-233.96	SLD 3	1236.71	8869.39	0.216	7.17	-532.01	SLD 14	-1809.54	-8869.39	0.216	4.9	Si
1.05	0.000628	0.053	0.000628	0.053							-3813.23	SLD 12	-3813.23	-8869.39	0.216	2.33	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000105	0	0	-14156	SLU 83	-14156	-8455	-71432	-16691	-16691	1	1.18	Si
0.15	0.0000105	0	0	-12541	SLU 83	-12541	-8455	-71432	-16691	-16691	1	1.33	Si
0.52	0.0000105	0	0	-8649	SLU 83	-8649	-7751	-63019	-14725	-14725	1	1.7	Si
1.05	0.0000105	0.000628	0	-3562	SLU 77	-3562	-8105	-63019	-14725	-14725	1	4.13	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000105	0	0	-17274	SLV 12	-17274	-8455	-71432	-16691	-16691	1	0.97	Si
0.15	0.0000105	0	0	-15801	SLV 12	-15801	-8455	-71432	-16691	-16691	1	1.06	Si
0.52	0.0000105	0	0	650	SLV 5	650	7751	63019	14725	14725	1	22.66	Si
0.52	0.0000105	0	0	-12280	SLV 12	-12280	-7751	-63019	-14725	-14725	1	1.2	Si
1.05	0.0000105	0.000628	0	2922	SLV 5	2922	8105	63019	14725	14725	1	5.04	Si
1.05	0.0000105	0.000628	0	-7756	SLV 12	-7756	-8105	-63019	-14725	-14725	1	1.9	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000105	0	0	-12606	SLD 12	-12606	-8455	-71432	-16691	-16691	1	1.32	Si
0.15	0.0000105	0	0	-11371	SLD 12	-11371	-8455	-71432	-16691	-16691	1	1.47	Si
0.17	0.0000105	0	0	-11168	SLD 12	-11168	-7751	-63019	-14725	-14725	1	1.32	Si
0.52	0.0000105	0	0	-8408	SLD 12	-8408	-7751	-63019	-14725	-14725	1	1.75	Si
1.05	0.0000105	0.000628	0	-4566	SLD 12	-4566	-8105	-63019	-14725	-14725	1	3.22	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	3956.01	20	3179.14	188393	1494000	0	36000000	3623.04	2	2912.24	172577	1120500			Si
0.15	2489.7	20	2489.7	147538	1494000	0	36000000	2281.22	2	2281.22	135183	1120500			Si
0.52	-419.59	21	-1439.9	74400	1494000	1116002	36000000	-382.99	2	-1319.08	68157	1120500			Si
1.05	-2758.78	20	-2758.78	142547	1494000	2138210	36000000	-2532.21	2	-2532.21	130841	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili ? - 21, sezione R 50x45, asta 709

Campata 3 tra i fili 21 - 76, sezione R 50x45, aste 710, 711, 712, 713, 714, 715, 716, 717, 718, 719

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	1579	SLV 7	0.147	7970	5001	SLU 83	18718	Si
2.14	0.41	0.0002	1482	SLU 83	0.018	2813	4559	SLU 83	15877	Si
4.13	0.41	0.0002	1647	SLU 83	0.018	2813	5068	SLU 83	15877	Si
4.28	0.41	0.0002	1657	SLU 83	0.018	2813	5098	SLU 83	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	1273	SLD 7	0.122	9265	3917	SLD 7	21526	Si
2.14	0.41	0.0002	1120	SLD 12	0.071	3165	3446	SLD 12	15877	Si
4.13	0.41	0.0002	1281	SLD 12	0.071	3165	3942	SLD 12	15877	Si
4.28	0.41	0.0002	1290	SLD 12	0.071	3165	3971	SLD 12	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000527	1183	SLE RA 20	32700	1494000	405483	36000000	1067	SLE QP 2	29496	1120500	Si
2.14	0.41	0.00000176	1078	SLE RA 20	31185	1494000	386698	36000000	971	SLE QP 2	28098	1120500	Si
4.13	0.41	0.00000176	1199	SLE RA 20	34704	1494000	430333	36000000	1084	SLE QP 2	31350	1120500	Si
4.28	0.41	0.00000176	1207	SLE RA 20	34917	1494000	432969	36000000	1090	SLE QP 2	31548	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
709,710,711,712,713,714,715,716,717,718,719	5.33	1.1	SLU 83	ST	BT	2.3	247178	58164	4.25	Si
709,710,711,712,713,714,715,716,717,718,719	5.33	1.1	SLV 10	SIS	LT	2.3	87083	28240	3.08	Si
709,710,711,712,713,714,715,716,717,718,719	5.33	1.1	SLD 7	SIS	BT	2.3	229965	44411	5.18	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-777	-58164	158.89	-2064.15	0	-1	-0.04	0	1.09	5.26	1496	2060	0	14430	
0	-10886	-28240	3445.39	3338.53	0	-21	0.12	0.12	0.86	5.09	1496	2060	37	0	0.07
0	3597	-44411	-1220.76	-3319.32	0	5	-0.07	-0.03	1.05	5.18	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
43	56	66	1.13	1.13	0.93	1.16	1.27	1	0.41	0.39	0.25	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
1	5	0	0	0.04	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.002	850	SLE RA 20	0.05	0	850	861	SLE RA 20	0.05	0	851	SLE RA 14	0.0033	0	SLE RA 14	Si
D	0.05	0	861	SLE RA 1	0.05	0	861	861	SLE RA 1	0.05	0	851	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	861	SLE RA 1	0.05	0	861	861	SLE RA 1	0.05	0	851	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0	SLE RA 20	0.19	0	851	850	SLE RA 14	0.19	0	861	SLE RA 1	0.1	0	851	SLE RA 14	Si
D	0.19	0	SLE RA 1	0.19	0	861	851	SLE RA 1	0.19	0	861	SLE RA 1	0.1	0	851	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	861	851	SLE RA 1	0.19	0	861	SLE RA 1	0.1	0	851	SLE RA 1	Si

CORDOLO 9

Geometria

Caratteristiche dei materiali

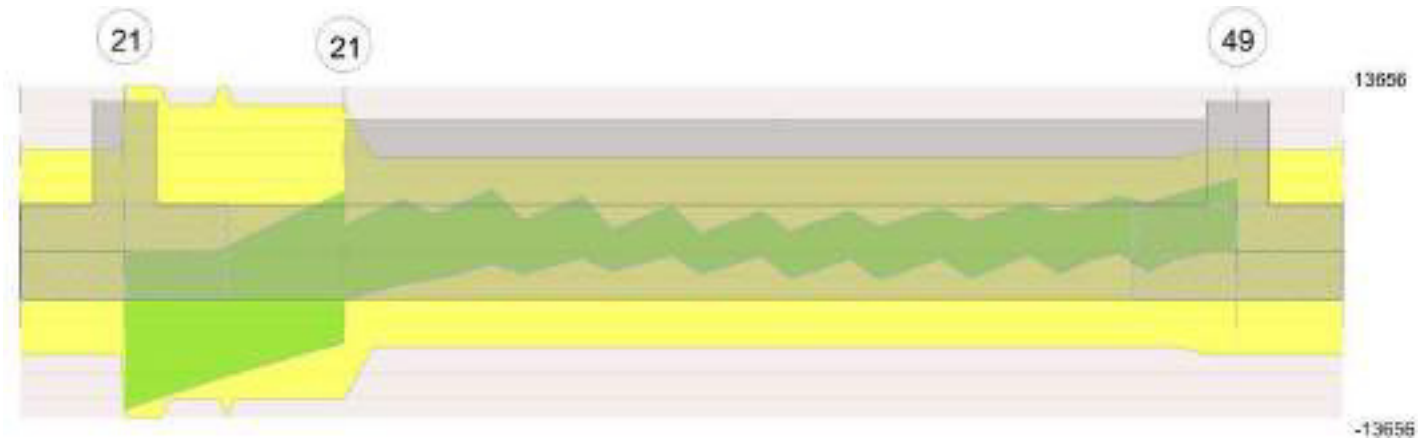
Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

Diagramma verifica stato limite ultimo taglio



Output campate

Campata 2 tra i fili 21 - 21, sezione R 50x45, asta 720

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.52	0.000164	0.051	0.000402	0.051	-387.14	SLU 2	782.51	6223.79	0.091	7.95	-634.37	SLU 83	-1722.49	-2966.69	0.088	1.72	Si
1.05	0.000402	0.051	0.000402	0.051							-2943.14	SLU 84	-2943.14	-6274.14	0.102	2.13	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.52	0.000164	0.051	0.000402	0.051	-146.39	SLV 5	1374.68	5814.52	0.181	4.23	-704.08	SLV 12	-2260.97	-2445.37	0.12	1.08	Si
1.05	0.000402	0.051	0.000402	0.051	1142	SLV 4	1142	5809.92	0.178	5.09	-5082.45	SLV 13	-5082.45	-5809.92	0.178	1.14	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.52	0.000164	0.051	0.000402	0.051	-307.82	SLD 1	882.56	5814.52	0.181	6.59	-542.64	SLD 16	-1626.97	-2445.37	0.12	1.5	Si
1.05	0.000402	0.051	0.000402	0.051							-3295.54	SLD 13	-3295.54	-5809.92	0.178	1.76	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000086	0	0	-12437	SLU 84	-12437	-8455	-71432	-13656	-13656	1	1.1	Si
0.15	0.0000086	0	0	-10834	SLU 84	-10834	-8455	-71432	-13656	-13656	1	1.26	Si
0.52	0.0000086	0	0	-6968	SLU 84	-6968	-7777	-63336	-12108	-12108	1	1.74	Si
1.05	0.0000086	0.000232	0	-1899	SLU 84	-1899	-7777	-63336	-12108	-12108	1	6.37	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000086	0	0	-12916	SLV 13	-12916	-8455	-71432	-13656	-13656	1	1.06	Si
0.15	0.0000086	0	0	-12051	SLV 13	-12051	-8455	-71432	-13656	-13656	1	1.13	Si
0.21	0.0000086	0	0	-11715	SLV 13	-11715	-7777	-63336	-12108	-12108	1	1.03	Si
0.52	0.0000086	0	0	706	SLV 4	706	7777	63336	12108	12108	1	17.15	Si
0.52	0.0000086	0	0	-10022	SLV 13	-10022	-7777	-63336	-12108	-12108	1	1.21	Si
1.05	0.0000086	0.000402	0	4894	SLV 4	4894	7777	63336	12108	12108	1	2.47	Si
1.05	0.0000086	0.000232	0	-7436	SLV 13	-7436	-7777	-63336	-12108	-12108	1	1.63	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000086	0	0	-10280	SLD 13	-10280	-8455	-71432	-13656	-13656	1	1.33	Si
0.15	0.0000086	0	0	-9294	SLD 13	-9294	-8455	-71432	-13656	-13656	1	1.47	Si
0.52	0.0000086	0	0	-6941	SLD 13	-6941	-7777	-63336	-12108	-12108	1	1.74	Si
1.05	0.0000086	0.000232	0	1348	SLD 4	1348	7777	63336	12108	12108	1	8.98	Si
1.05	0.0000086	0.000232	0	-3890	SLD 13	-3890	-7777	-63336	-12108	-12108	1	3.11	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	3255.57	21	2573.44	152500	1494000	0	36000000	2968.4	2	2345.85	139013	1120500			Si
0.15	1978.17	21	1978.17	117225	1494000	0	36000000	1802.63	2	1802.63	106822	1120500			Si
0.52	-464.9	20	-1262.55	69271	1494000	1063918	36000000	-425.23	2	-1154	63315	1120500			Si
1.05	-2157.92	21	-2157.92	116655	1494000	1749828	36000000	-1970.22	2	-1970.22	106508	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 21 - 21, sezione R 50x45, asta 720

Campata 3 tra i fili 21 - 49, sezione R 50x45, aste 721, 722, 723, 724, 725, 726, 727, 728, 729, 730

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1621	SLU 83	0.036	6828	4987	SLU 83	15877	Si
2.14	0.41	0.0002	1480	SLU 83	0.02	3373	4553	SLU 83	15877	Si
4.13	0.41	0.0002	1647	SLU 83	0.02	3373	5069	SLU 83	15877	Si
4.28	0.41	0.0002	1657	SLU 83	0.02	3373	5100	SLU 83	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1192	SLD 7	0.11	7617	3667	SLD 7	17612	Si
2.14	0.41	0.0002	1042	SLD 8	0.078	3788	3207	SLD 8	15877	Si
4.13	0.41	0.0002	1229	SLD 16	0.078	3788	3782	SLD 16	15877	Si
4.28	0.41	0.0002	1244	SLD 16	0.078	3788	3828	SLD 16	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000431	1180	SLE RA 20	33018	1494000	409423	36000000	1064	SLE QP 2	29774	1120500	Si
2.14	0.41	0.00000211	1077	SLE RA 20	31010	1494000	384527	36000000	970	SLE QP 2	27933	1120500	Si
4.13	0.41	0.00000211	1200	SLE RA 20	34565	1494000	428609	36000000	1084	SLE QP 2	31218	1120500	Si
4.28	0.41	0.00000211	1208	SLE RA 20	34778	1494000	431242	36000000	1091	SLE QP 2	31415	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
720,721,722,723,724,725,726,727,728,729,730	5.33	1.1	SLU 84	ST	BT	2.3	246960	58019	4.26	Si
720,721,722,723,724,725,726,727,728,729,730	5.33	1.1	SLV 10	SIS	LT	2.3	114896	33590	3.42	Si
720,721,722,723,724,725,726,727,728,729,730	5.33	1.1	SLD 7	SIS	BT	2.3	229426	42198	5.44	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-898	-58019	197.04	-1939.32	0	-1	-0.03	0	1.09	5.26	1496	2060	0	14430	
0	-10886	-33590	3445.39	3047.37	0	-18	0.09	0.1	0.89	5.15	1496	2060	37	0	0.07
0	3597	-42198	-1220.76	-3094.31	0	5	-0.07	-0.03	1.04	5.18	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
43	56	66	1.13	1.13	0.93	1.16	1.27	1	0.48	0.47	0.33	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
1	5	0	0	0.04	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

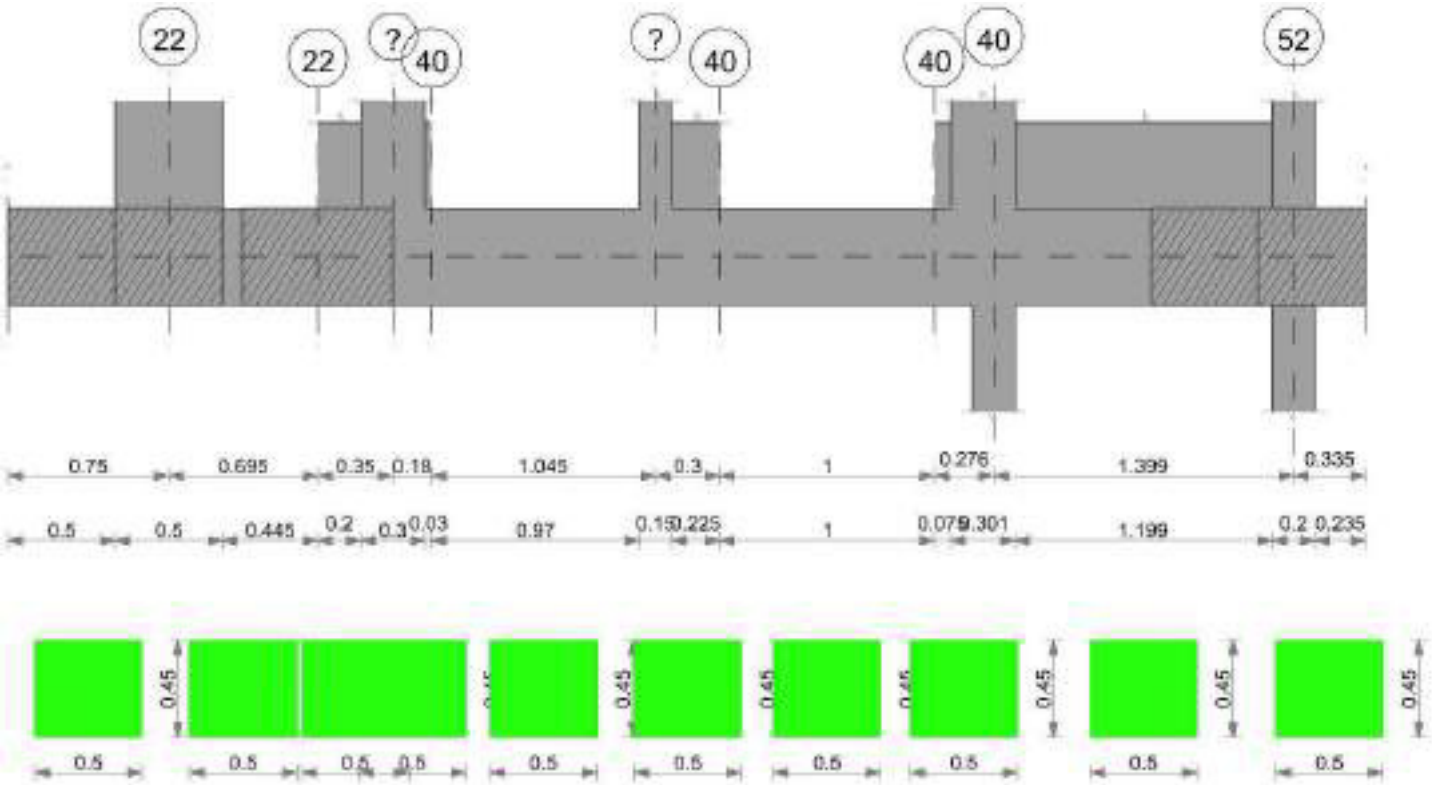
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.002	809	SLE RA 20	0.05	0	809	810	SLE RA 20	0.05	0	810	SLE RA 20	0.0033	0	SLE RA 20	Si
D	0.05	0	820	SLE RA 1	0.05	0	820	820	SLE RA 1	0.05	0	810	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	820	SLE RA 1	0.05	0	820	820	SLE RA 1	0.05	0	810	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0	SLE RA 20	0.19	0.01	810	809	SLE RA 20	0.19	0	820	SLE RA 1	0.1	0.01	810	SLE RA 20	Si
D	0.19	0	SLE RA 1	0.19	0	820	810	SLE RA 1	0.19	0	820	SLE RA 1	0.1	0	810	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	820	810	SLE RA 1	0.19	0	820	SLE RA 1	0.1	0	810	SLE RA 1	Si

CORDOLO 10

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

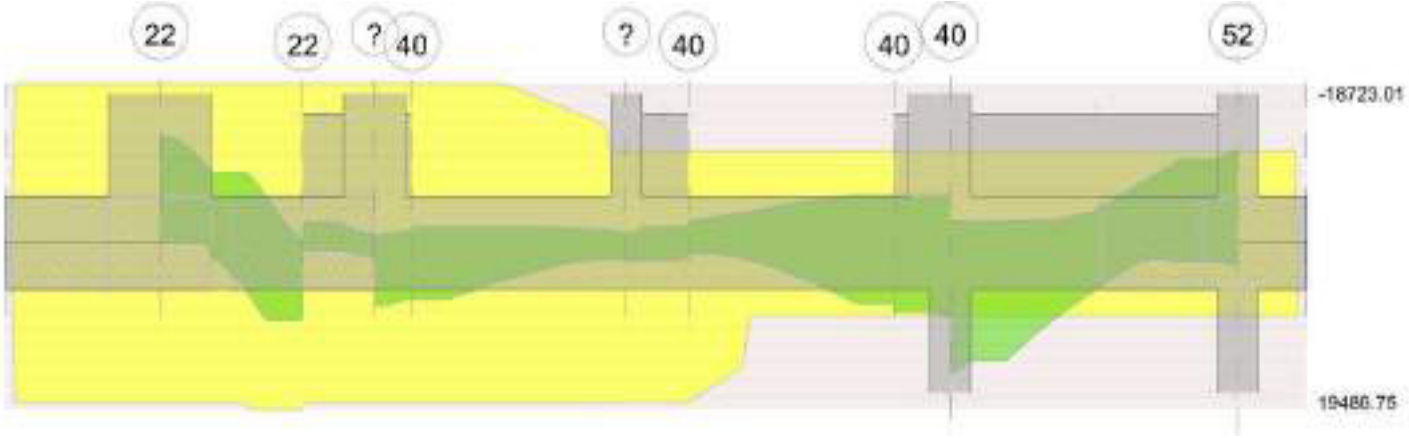
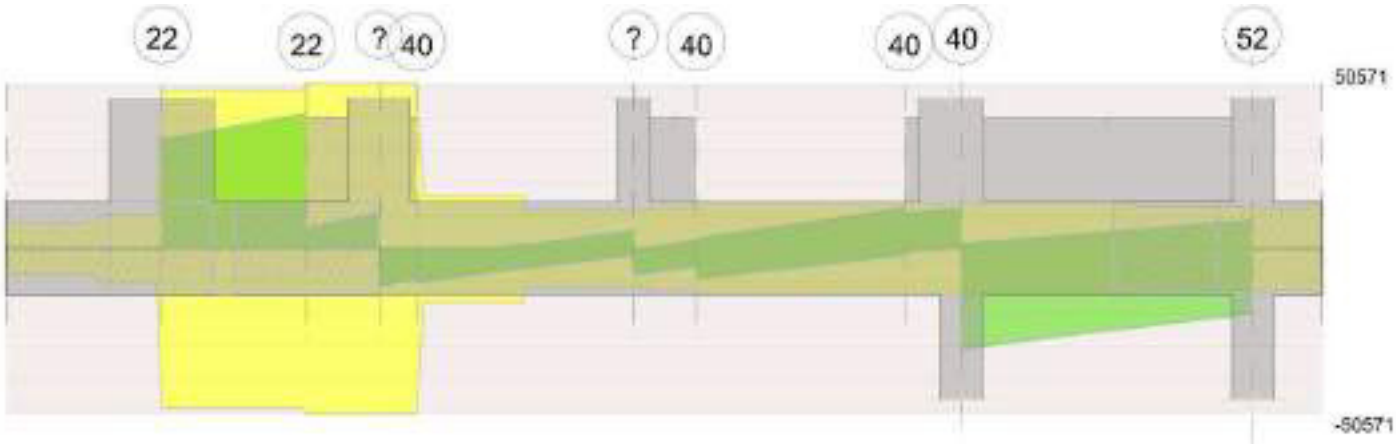


Diagramma verifica stato limite ultimo taglio



Output campate

Campata 2 tra i fili 22 - 22, sezione R 50x45, asta 632

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001367	0.052	0.001367	0.052							-15018.85	SLU 83	-11464.16	-19486.75	0.158	1.7	Si
0.25	0.001367	0.052	0.001367	0.052							-6931.93	SLU 83	-6931.93	-19486.75	0.158	2.81	Si
0.35	0.001367	0.052	0.001367	0.052	-2159.87	SLU 2	2797.7	19486.75	0.158	6.97	-3601.89	SLU 83	-6931.93	-19486.75	0.158	2.81	Si
0.7	0.001367	0.052	0.001367	0.052	9081.1	SLU 83	9081.1	19486.75	0.158	2.15							Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001367	0.052	0.001367	0.052							-15988.22	SLV 8	-12548.86	-18723.01	0.291	1.49	Si
0.25	0.001367	0.052	0.001367	0.052	-969.8	SLV 9	1446.58	18723.01	0.291	12.94	-8257.9	SLV 8	-8257.9	-18723.01	0.291	2.27	Si
0.35	0.001367	0.052	0.001367	0.052	316.2	SLV 9	3542.47	18723.01	0.291	5.29	-5115.34	SLV 8	-8257.9	-18723.01	0.291	2.27	Si
0.7	0.001367	0.052	0.001367	0.052	8042.38	SLV 15	8042.38	18723.01	0.291	2.33	4029.16	SLV 2	-142.92	-18723.01	0.291	131.01	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001367	0.052	0.001367	0.052							-12400.67	SLD 8	-9607.17	-18723.01	0.291	1.95	Si
0.25	0.001367	0.052	0.001367	0.052	-3144.99	SLD 9	317.77	18723.01	0.291	58.92	-6082.71	SLD 8	-6082.71	-18723.01	0.291	3.08	Si
0.35	0.001367	0.052	0.001367	0.052	-1301.94	SLD 9	2570.5	18723.01	0.291	7.28	-3497.19	SLD 8	-6082.71	-18723.01	0.291	3.08	Si
0.7	0.001367	0.052	0.001367	0.052	6884.4	SLD 15	6884.4	18723.01	0.291	2.72							Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000347	0.001367	0	33449	SLU 83	33449	10519	63248	48713	48713	1	1.46	Si
0.25	0.0000347	0.001367	0	36258	SLU 83	36258	10519	63248	48713	48713	1	1.34	Si
0.35	0.0000347	0.001367	0	37357	SLU 83	37357	10519	63248	48713	48713	1	1.3	Si
0.67	0.0000347	0.001367	0	41041	SLU 83	41041	10519	63248	48713	48713	1	1.19	Si
0.7	0.000036	0.001367	0	41306	SLU 83	41306	10519	63248	50571	50571	1	1.22	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000347	0.001367	0	32736	SLV 12	32736	10519	63248	48713	48713	1	1.49	Si
0.25	0.0000347	0.001367	0	34800	SLV 12	34800	10519	63248	48713	48713	1	1.4	Si
0.35	0.0000347	0.001367	0	35617	SLV 12	35617	10519	63248	48713	48713	1	1.37	Si
0.67	0.0000347	0.001367	0	38406	SLV 12	38406	10519	63248	48713	48713	1	1.27	Si
0.7	0.000036	0.001367	0	38609	SLV 12	38609	10519	63248	50571	50571	1	1.31	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000347	0.001367	0	26448	SLD 12	26448	10519	63248	48713	48713	1	1.84	Si
0.25	0.0000347	0.001367	0	28397	SLD 12	28397	10519	63248	48713	48713	1	1.72	Si
0.35	0.0000347	0.001367	0	29164	SLD 12	29164	10519	63248	48713	48713	1	1.67	Si
0.67	0.0000347	0.001367	0	31755	SLD 12	31755	10519	63248	48713	48713	1	1.53	Si
0.7	0.000036	0.001367	0	31942	SLD 12	31942	10519	63248	50571	50571	1	1.58	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-11001.07	20	-8397.28	541186	1494000	17413977	36000000	-9990.1	2	-7627.36	491566	1120500			Si
0.25	-5077.4	20	-5077.4	227112	1494000	3406682	36000000	-4613.85	2	-4613.85	206378	1120500			Si
0.35	-2638.12	20	-5077.4	227112	1494000	3406682	36000000	-2399.57	2	-4613.85	206378	1120500			Si
0.7	6652.4	20	6652.4	428732	1494000	13795503	36000000	6035.77	2	6035.77	388992	1120500			Si

Verifica di apertura delle fessure

x	Bordo	Rara				Frequente				Quasi permanente				Verifica
		Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	
0	superiore	0.26	0.00051	0.000132	20	0.26	0.00052	0.000135	6	0.26	0.0005	0.00013	2	Si
0.7	inferiore	0.26	0.0004	0.000105	20	0.26	0.00037	0.000097	6	0.26	0.00036	0.000095	2	Si

Campata 5 tra i fili 40 - ?, sezione R 50x45, asta 635

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001367	0.052	0.001367	0.052	3905.88	SLU 83	3905.88	19486.75	0.158	4.99							Si
0.07	0.001367	0.052	0.001367	0.052	3315.65	SLU 83	3905.88	19486.75	0.158	4.99							Si
0.52	0.001305	0.052	0.001367	0.052	756.37	SLU 83	1506.97	19487.56	0.159	12.93							Si
0.97	0.000763	0.052	0.001367	0.052	403.34	SLU 83	403.34	19474.17	0.175	48.28							Si
1.05	0.000763	0.052	0.001367	0.052	554.48	SLU 83	468.89	19474.17	0.175	41.53							Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001367	0.052	0.001367	0.052	6610.63	SLV 15	6610.63	18723.01	0.291	2.83	-1451.87	SLV 2	-1753.62	-18723.01	0.291	10.68	Si
0.17	0.001367	0.052	0.001367	0.052	5065.7	SLV 15	6610.63	18723.01	0.291	2.83	-1748.07	SLV 2	-1849.91	-18723.01	0.291	10.12	Si
0.52	0.001305	0.052	0.001367	0.052	2703.49	SLV 15	3800.47	18715.16	0.293	4.92	-1757.44	SLV 2	-1849.91	-17915.3	0.285	9.68	Si
0.97	0.000763	0.052	0.001367	0.052	1811.96	SLV 11	1811.96	18630.01	0.307	10.28	-1347.18	SLV 6	-1486.78	-10727.85	0.222	7.22	Si
1.05	0.000763	0.052	0.001367	0.052	1907.31	SLV 11	1847.15	18630.01	0.307	10.09	-1242.69	SLV 6	-1242.69	-10727.85	0.222	8.63	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001367	0.052	0.001367	0.052	4289.47	SLD 15	4289.47	18723.01	0.291	4.36							Si
0.17	0.001367	0.052	0.001367	0.052	3103.1	SLD 15	4289.47	18723.01	0.291	4.36	214.53	SLD 2	-241.65	-18723.01	0.291	77.48	Si
0.52	0.001305	0.052	0.001367	0.052	1415.46	SLD 15	2171.83	18715.16	0.293	8.62	-469.42	SLD 2	-511.91	-17915.3	0.285	35	Si
0.97	0.000763	0.052	0.001367	0.052	867.35	SLD 11	867.35	18630.01	0.307	21.48	-402.58	SLD 6	-508.96	-10727.85	0.222	21.08	Si
1.05	0.000763	0.052	0.001367	0.052	963.67	SLD 11	906.31	18630.01	0.307	20.56	-299.05	SLD 6	-299.05	-10727.85	0.222	35.87	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.000036	0.001367	0	-9532	SLU 83	-9532	-10519	-63248	-50571	-50571	1	5.31	Si
0.03	0.0000116	0.001367	0	-9127	SLU 83	-9127	-10519	-63248	-16282	-16282	1	1.78	Si
0.52	0.0000084	0.001367	0	-3454	SLU 83	-3454	-10519	-63248	-11755	-11755	1	3.4	Si
0.97	0.0000084	0.001367	0	1748	SLU 83	1748	10519	63248	11755	11755	1	6.73	Si
1.05	0.0000084	0.001367	0	2618	SLU 83	2618	10519	63248	11755	11755	1	4.49	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.000036	0.001367	0	-10306	SLV 15	-10306	-10519	-63248	-50571	-50571	1	4.91	Si
0.03	0.0000116	0.001367	0	-10008	SLV 15	-10008	-10519	-63248	-16282	-16282	1	1.63	Si
0.52	0.0000084	0.001027	0	1205	SLV 1	1205	9564	63243	11755	11755	1	9.75	Si
0.52	0.0000084	0.001367	0	-5837	SLV 16	-5837	-10519	-63248	-11755	-11755	1	2.01	Si
0.97	0.0000084	0.001367	0	4790	SLV 3	4790	10519	63248	11755	11755	1	2.45	Si
0.97	0.0000084	0.001367	0	-2484	SLV 14	-2484	-10519	-63248	-11755	-11755	1	4.73	Si
1.05	0.0000084	0.001367	0	5406	SLV 3	5406	10519	63248	11755	11755	1	2.17	Si
1.05	0.0000084	0.001367	0	-1938	SLV 14	-1938	-10519	-63248	-11755	-11755	1	6.06	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.000036	0.001367	0	-8044	SLD 15	-8044	-10519	-63248	-50571	-50571	1	6.29	Si
0.03	0.0000116	0.001367	0	-7762	SLD 15	-7762	-10519	-63248	-16282	-16282	1	2.1	Si
0.52	0.0000084	0.001367	0	-3820	SLD 16	-3820	-10519	-63248	-11755	-11755	1	3.08	Si
0.97	0.0000084	0.001367	0	2700	SLD 3	2700	10519	63248	11755	11755	1	4.35	Si
0.97	0.0000084	0.001367	0	-394	SLD 14	-394	-10519	-63248	-11755	-11755	1	29.82	Si
1.05	0.0000084	0.001367	0	3295	SLD 3	3295	10519	63248	11755	11755	1	3.57	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	2860.7	20	2860.7	127959	1494000	1919386	36000000	2579.38	2	2579.38	115376	1120500			Si
0.52	549.63	20	1100.77	49648	1494000	740707	36000000	473.02	2	975.66	44005	1120500			Si
0.97	288.1	20	288.1	14029	1494000	199271	36000000	232.39	2	232.39	11316	1120500			Si
1.05	398.37	20	335.87	16355	1494000	232314	36000000	332.31	2	275.63	13421	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Campata 7 tra i fili 40 - 40, sezione R 50x45, asta 637

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000763	0.052	0.001367	0.052							-451.13	SLU 65	-1068.56	-11251.54	0.13	10.53	Si
0.5	0.000763	0.052	0.000603	0.051							-1210.13	SLU 84	-1306.81	-11250.95	0.13	8.61	Si
0.83	0.000763	0.052	0.000603	0.051	38.02	SLU 79	1160.44	9083.44	0.122	7.83	-55.21	SLU 2	-825.14	-11250.95	0.13	13.64	Si
1	0.000763	0.052	0.000603	0.051	1160.44	SLU 83	1160.44	9083.44	0.122	7.83	635.1	SLU 2	-115.44	-11250.95	0.13	97.46	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000763	0.052	0.001367	0.052	1229.46	SLV 11	1229.46	18630.01	0.307	15.15	-1870.32	SLV 6	-2419.1	-10727.85	0.222	4.43	Si
0.5	0.000763	0.052	0.000603	0.051	2077.94	SLV 3	3602.59	8575.35	0.209	2.38	-3712.59	SLV 14	-4578.43	-10722.22	0.236	2.34	Si
0.83	0.000763	0.052	0.000603	0.051	5146.94	SLV 3	7073.8	8575.35	0.209	1.21	-5136.15	SLV 14	-5546.3	-10722.22	0.236	1.93	Si
1	0.000763	0.052	0.000603	0.051	7073.8	SLV 3	7073.8	8575.35	0.209	1.21	-5546.3	SLV 14	-5546.3	-10722.22	0.236	1.93	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000763	0.052	0.001367	0.052	304.76	SLD 11	304.76	18630.01	0.307	61.13	-945.61	SLD 6	-1412.36	-10727.85	0.222	7.6	Si
0.5	0.000763	0.052	0.000603	0.051	402.09	SLD 3	1238.68	8575.35	0.209	6.92	-2036.74	SLD 14	-2214.52	-10722.22	0.236	4.84	Si
0.83	0.000763	0.052	0.000603	0.051	2177.59	SLD 3	3430.96	8575.35	0.209	2.5	-2166.81	SLD 14	-2219.81	-10722.22	0.236	4.83	Si
1	0.000763	0.052	0.000603	0.051	3430.96	SLD 3	3430.96	8575.35	0.209	2.5	-1903.46	SLD 14	-2177	-10722.22	0.236	4.93	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000099	0.000763	0	-4658	SLU 84	-4658	-8659	-63178	-13925	-13925	1	2.99	Si
0.5	0.0000099	0.000763	0	1578	SLU 83	1578	8659	63178	13925	13925	1	8.83	Si
1	0.0000099	0.000603	0	7811	SLU 83	7811	8014	63336	13960	13960	1	1.79	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000099	0.000763	0	3052	SLV 4	3052	8659	63178	13925	13925	1	4.56	Si
0	0.0000099	0.000763	0	-9193	SLV 13	-9193	-8659	-63178	-13925	-13925	1	1.51	Si
0.5	0.0000099	0.000603	0	7648	SLV 3	7648	8014	63336	13960	13960	1	1.83	Si
0.5	0.0000099	0.000763	0	-5483	SLV 14	-5483	-8659	-63178	-13925	-13925	1	2.54	Si
1	0.0000099	0.000603	0	12348	SLV 3	12348	8014	63336	13960	13960	1	1.13	Si
1	0.0000099	0.000763	0	-1857	SLV 14	-1857	-8659	-63178	-13925	-13925	1	7.5	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000099	0.000763	0	-5678	SLD 13	-5678	-8659	-63178	-13925	-13925	1	2.45	Si
0.5	0.0000099	0.000603	0	3870	SLD 3	3870	8014	63336	13960	13960	1	3.61	Si
0.5	0.0000099	0.000763	0	-1705	SLD 14	-1705	-8659	-63178	-13925	-13925	1	8.17	Si
1	0.0000099	0.000603	0	8253	SLD 3	8253	8014	63336	13960	13960	1	1.69	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-338.32	2	-790.13	36434	1494000	577110	36000000	-321.35	1	-736.69	33970	1120500			Si
0.5	-890.52	21	-962.8	49452	1494000	730940	36000000	-817.32	2	-887.82	45601	1120500			Si
1	850.05	20	850.05	43023	1494000	654918	36000000	763.75	2	763.75	38655	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 22 - 22, sezione R 50x45, asta 632

Campata 3 tra i fili 22 - ?, sezione R 50x45, asta 633

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0018	1719	SLU 83	0.152	27218	5979	SLU 83	70550	Si
0.18	0.41	0.0018	1728	SLU 83	0.152	27218	6011	SLU 83	70550	Si
0.2	0.41	0.0018	1730	SLU 83	0.152	27218	6017	SLU 83	70550	Si
0.35	0.41	0.0018	1739	SLU 83	0.152	27218	6049	SLU 83	70550	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0018	1210	SLD 11	0.222	30372	4210	SLD 11	81133	Si
0.18	0.41	0.0018	1226	SLD 11	0.222	30372	4266	SLD 11	81133	Si
0.2	0.41	0.0018	1229	SLD 11	0.222	30372	4274	SLD 11	81133	Si
0.35	0.41	0.0018	1243	SLD 11	0.222	30372	4323	SLD 11	81133	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00001802	1255	SLE RA 20	29827	1494000	369861	36000000	1133	SLE QP 2	26943	1120500	Si
0.18	0.41	0.00001802	1261	SLE RA 20	29990	1494000	371875	36000000	1139	SLE QP 2	27087	1120500	Si
0.2	0.41	0.00001802	1263	SLE RA 20	30016	1494000	372202	36000000	1140	SLE QP 2	27111	1120500	Si
0.35	0.41	0.00001802	1269	SLE RA 20	30177	1494000	374198	36000000	1146	SLE QP 2	27254	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 4 tra i fili ? - 40, sezione R 50x45, asta 634

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0018	1739	SLU 83	0.152	27218	6049	SLU 83	70550	Si
0.09	0.41	0.0018	1744	SLU 83	0.152	27218	6065	SLU 83	70550	Si
0.15	0.41	0.0018	1747	SLU 83	0.152	27218	6075	SLU 83	70550	Si
0.18	0.41	0.0018	1748	SLU 83	0.152	27218	6079	SLU 83	70550	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0018	1243	SLD 11	0.222	30372	4323	SLD 11	81133	Si
0.09	0.41	0.0018	1250	SLD 11	0.222	30372	4349	SLD 11	81133	Si
0.15	0.41	0.0018	1255	SLD 11	0.222	30372	4364	SLD 11	81133	Si
0.18	0.41	0.0018	1257	SLD 11	0.222	30372	4371	SLD 11	81133	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00001802	1269	SLE RA 20	30177	1494000	374198	36000000	1146	SLE QP 2	27254	1120500	Si
0.09	0.41	0.00001802	1273	SLE RA 20	30261	1494000	375242	36000000	1150	SLE QP 2	27329	1120500	Si
0.15	0.41	0.00001802	1275	SLE RA 20	30309	1494000	375832	36000000	1151	SLE QP 2	27372	1120500	Si
0.18	0.41	0.00001802	1276	SLE RA 20	30329	1494000	376077	36000000	1152	SLE QP 2	27389	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 5 tra i fili 40 - ?, sezione R 50x45, asta 635

Campata 6 tra i fili ? - 40, sezione R 50x45, asta 636

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1747	SLU 83	0.035	6641	6076	SLU 83	16400	Si
0.08	0.41	0.0004	1745	SLU 83	0.038	7073	6071	SLU 83	17481	Si
0.15	0.41	0.0004	1744	SLU 83	0.038	7073	6065	SLU 83	17481	Si
0.3	0.41	0.0005	1741	SLU 83	0.042	7855	6055	SLU 83	19448	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1280	SLD 11	0.109	7410	4453	SLD 11	18860	Si
0.08	0.41	0.0004	1280	SLD 11	0.112	7887	4454	SLD 11	20103	Si
0.15	0.41	0.0004	1281	SLD 11	0.112	7887	4455	SLD 11	20103	Si
0.3	0.41	0.0005	1282	SLD 7	0.118	8753	4460	SLD 7	22365	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000419	1275	SLE RA 20	35736	1494000	443131	36000000	1151	SLE QP 2	32270	1120500	Si
0.08	0.41	0.00000446	1274	SLE RA 20	35582	1494000	441216	36000000	1151	SLE QP 2	32132	1120500	Si
0.15	0.41	0.00000446	1273	SLE RA 20	35551	1494000	440839	36000000	1150	SLE QP 2	32106	1120500	Si
0.3	0.41	0.00000497	1271	SLE RA 20	35264	1494000	437272	36000000	1148	SLE QP 2	31849	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 7 tra i fili 40 - 40, sezione R 50x45, asta 637

Campata 8 tra i fili 40 - 40, sezione R 50x45, asta 638

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	1746	SLU 83	0.042	7855	6072	SLU 83	19448	Si
0.14	0.41	0.0005	1747	SLU 83	0.042	7855	6075	SLU 83	19448	Si
0.18	0.41	0.0005	1747	SLU 83	0.042	7855	6076	SLU 83	19448	Si
0.28	0.41	0.0005	1747	SLU 83	0.042	7855	6077	SLU 83	19448	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	1291	SLD 7	0.118	8753	4490	SLD 7	22365	Si
0.14	0.41	0.0005	1289	SLD 7	0.118	8753	4484	SLD 7	22365	Si
0.18	0.41	0.0005	1288	SLD 7	0.118	8753	4481	SLD 7	22365	Si
0.28	0.41	0.0005	1287	SLD 7	0.118	8753	4475	SLD 7	22365	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000497	1275	SLE RA 20	35376	1494000	438667	36000000	1153	SLE QP 2	31991	1120500	Si
0.14	0.41	0.00000497	1276	SLE RA 20	35397	1494000	438927	36000000	1154	SLE QP 2	32014	1120500	Si
0.18	0.41	0.00000497	1276	SLE RA 20	35401	1494000	438978	36000000	1154	SLE QP 2	32019	1120500	Si
0.28	0.41	0.00000497	1276	SLE RA 20	35412	1494000	439109	36000000	1154	SLE QP 2	32032	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 9 tra i fili 40 - 52, sezione R 50x45, asta 639

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	1747	SLU 83	0.042	7855	6077	SLU 83	19448	Si
0.1	0.41	0.0005	1748	SLU 83	0.042	7855	6079	SLU 83	19448	Si
0.7	0.41	0.0005	1727	SLU 83	0.042	7855	6006	SLU 83	19448	Si
1.3	0.41	0.0005	1704	SLU 83	0.039	7236	5925	SLU 83	17891	Si
1.4	0.41	0.0005	1703	SLU 83	0.039	7236	5924	SLU 83	17891	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0005	1287	SLD 7	0.118	8753	4475	SLD 7	22365	Si
0.1	0.41	0.0005	1284	SLD 7	0.118	8753	4467	SLD 7	22365	Si
0.7	0.41	0.0005	1245	SLD 8	0.118	8753	4329	SLD 8	22365	Si
1.3	0.41	0.0005	1211	SLD 12	0.114	8068	4211	SLD 12	20574	Si
1.4	0.41	0.0005	1210	SLD 12	0.114	8068	4207	SLD 12	20574	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000497	1276	SLE RA 20	35412	1494000	439109	36000000	1154	SLE QP 2	32032	1120500	Si
0.1	0.41	0.00000497	1277	SLE RA 20	35424	1494000	439261	36000000	1155	SLE QP 2	32047	1120500	Si
0.7	0.41	0.00000497	1261	SLE RA 20	35001	1494000	434015	36000000	1142	SLE QP 2	31686	1120500	Si
1.3	0.41	0.00000457	1245	SLE RA 20	34715	1494000	430469	36000000	1128	SLE QP 2	31444	1120500	Si
1.4	0.41	0.00000457	1245	SLE RA 20	34707	1494000	430370	36000000	1127	SLE QP 2	31439	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
632,633,634,635,636,637,638,639	5.24	1.1	SLU 83	ST	BT	2.3	241508	69102	3.49	Si
632,633,634,635,636,637,638,639	5.24	1.1	SLV 12	SIS	LT	2.3	202510	55527	3.65	Si
632,633,634,635,636,637,638,639	5.24	1.1	SLD 7	SIS	BT	2.3	238553	50430	4.73	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	828	-69102	891.68	195.45	0	1	0	0.01	1.07	5.24	1496	2060	0	14430	
0	11146	-55527	-2069.12	1969.68	0	11	0.04	-0.04	1.03	5.17	1496	2060	37	0	0.07
0	4741	-50430	-528.15	688.56	0	5	0.01	-0.01	1.08	5.22	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
43	56	66	1.15	1.15	0.92	1.16	1.27	1	0.66	0.65	0.53	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
1	5	0	0	0.04	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

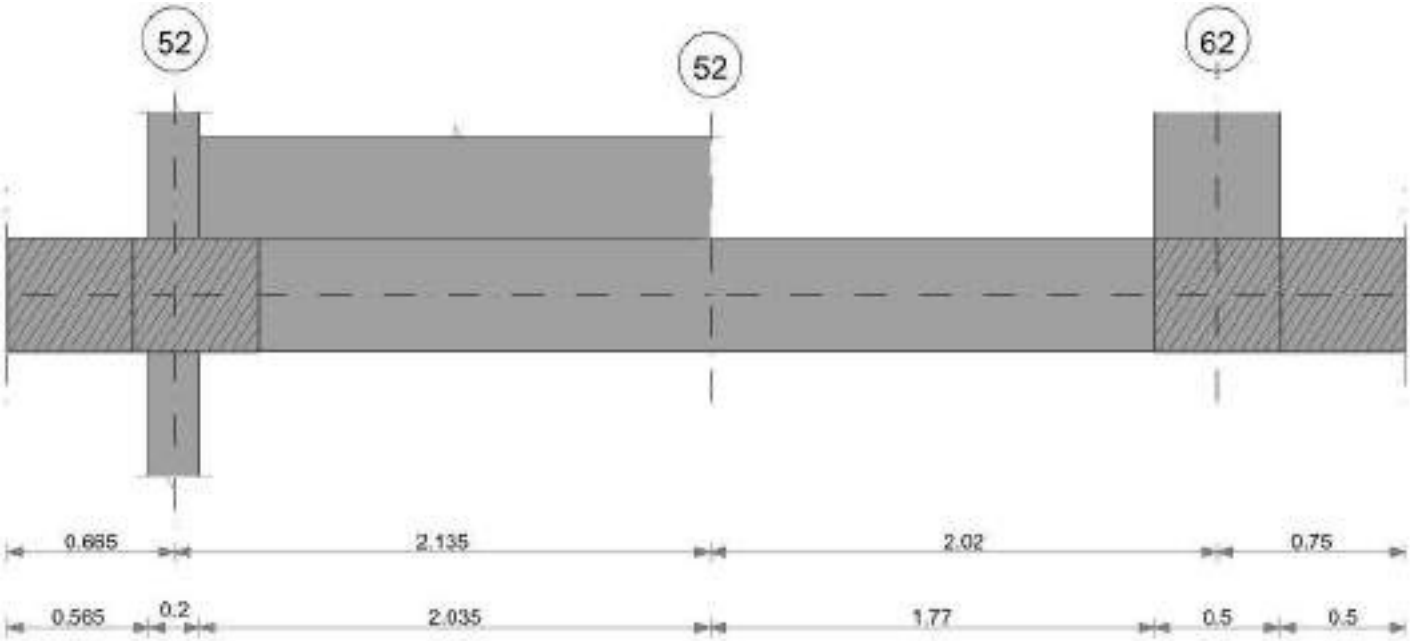
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.003	733	SLE RA 20	0.05	0	733	726	SLE RA 20	0.05	0	733	SLE RA 20	0.0033	0	SLE RA 20	Si
D	0.05	0	734	SLE RA 1	0.05	0	734	734	SLE RA 1	0.05	0	733	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	734	SLE RA 1	0.05	0	734	734	SLE RA 1	0.05	0	733	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0	SLE RA 21	0.19	0.01	731	730	SLE RA 21	0.19	0.01	733	SLE RA 20	0.1	0.01	730	SLE RA 20	Si
D	0.19	0	SLE RA 1	0.19	0	734	733	SLE RA 1	0.19	0	734	SLE RA 1	0.1	0	733	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	734	733	SLE RA 1	0.19	0	734	SLE RA 1	0.1	0	733	SLE RA 1	Si

CORDOLO 11

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

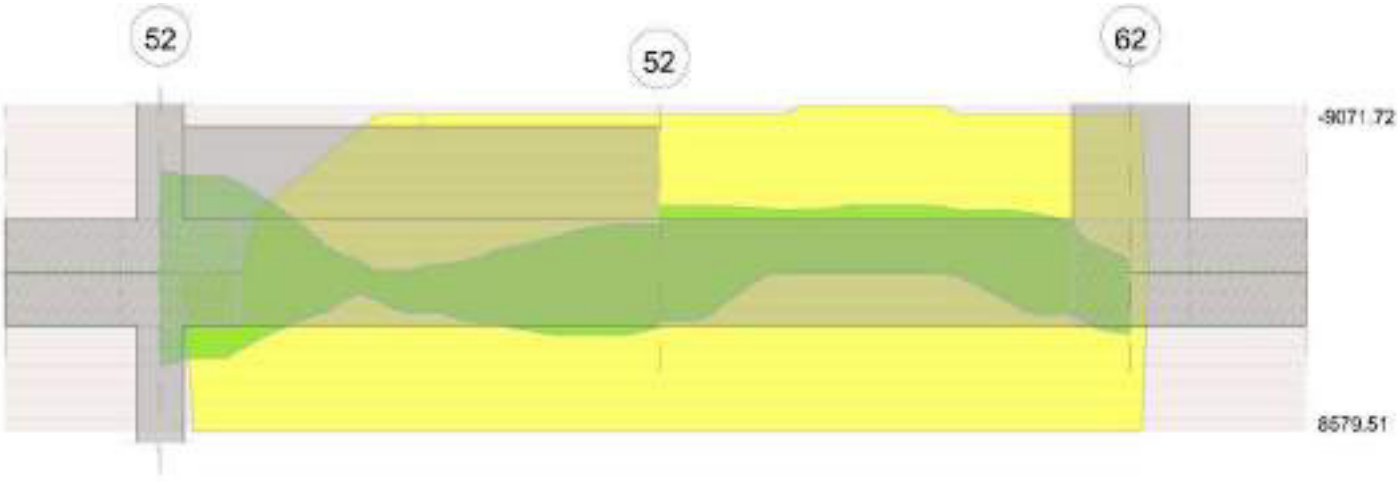
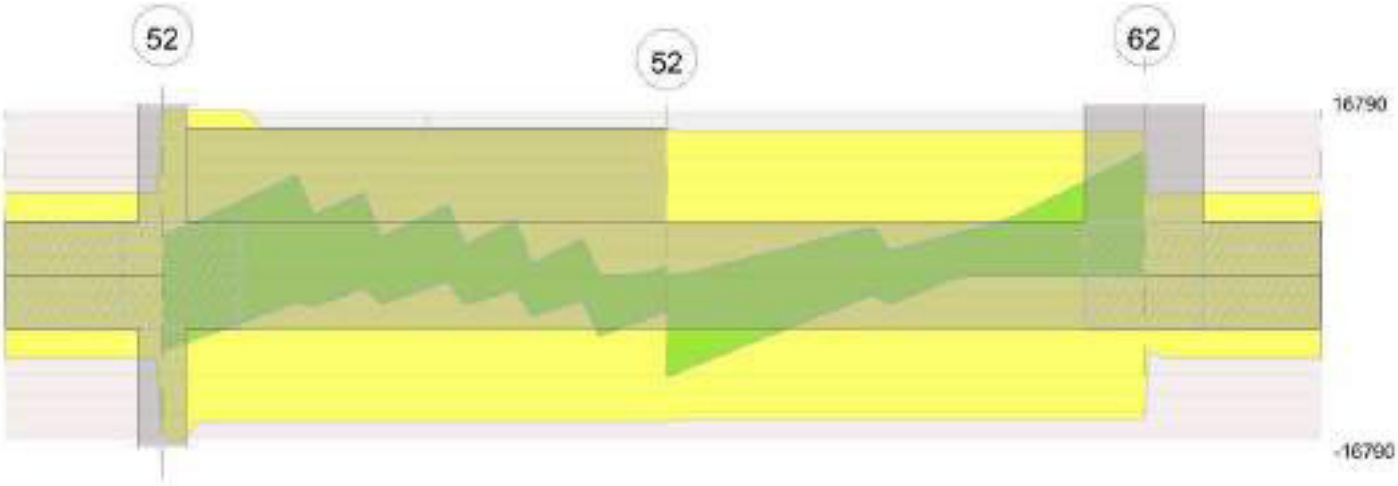


Diagramma verifica stato limite ultimo taglio



Output campate

Campata 3 tra i fili 52 - 62, sezione R 50x45, aste 499, 500

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000603	0.051	0.000603	0.051							-714.05	SLU 83	-1941.19	-9071.72	0.119	4.67	Si
0.81	0.000603	0.051	0.000603	0.051							-3301.84	SLU 84	-3614.55	-9071.72	0.119	2.51	Si
1.01	0.000603	0.051	0.000603	0.051							-3607.23	SLU 84	-3614.55	-9071.72	0.119	2.51	Si
1.77	0.000603	0.051	0.000603	0.051	228.02	SLU 77	228.02	9071.72	0.119	39.79	77.96	SLU 2	-1321.28	-9071.72	0.119	6.87	Si
2.02	0.000603	0.051	0.000603	0.051	2980.19	SLU 83	1404.51	9071.72	0.119	6.46							Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1
Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000603	0.051	0.000603	0.051	2638.13	SLV 13	2638.13	8578.86	0.211	3.25	-3585.83	SLV 4	-3597.59	-8578.86	0.211	2.38	Si
1.01	0.000603	0.051	0.000603	0.051							-3121.04	SLV 10	-3340.15	-8578.86	0.211	2.57	Si
1.77	0.000603	0.051	0.000603	0.051	2265.39	SLV 4	2265.39	8578.86	0.211	3.79	-2006.32	SLV 13	-2761.99	-8578.86	0.211	3.11	Si
2.02	0.000603	0.051	0.000603	0.051	4628.13	SLV 8	3307.43	8578.86	0.211	2.59	-659.92	SLV 9	-659.92	-8578.86	0.211	13	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1
Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000603	0.051	0.000603	0.051	847.18	SLD 13	847.18	8578.86	0.211	10.13	-1794.89	SLD 4	-2254.46	-8578.86	0.211	3.81	Si
0.94	0.000603	0.051	0.000603	0.051							-2664.75	SLD 10	-2736.81	-8578.86	0.211	3.13	Si
1.01	0.000603	0.051	0.000603	0.051							-2708.38	SLD 14	-2736.81	-8578.86	0.211	3.13	Si
1.77	0.000603	0.051	0.000603	0.051	1028.42	SLD 4	1028.42	8578.86	0.211	8.34	-769.35	SLD 13	-1675.6	-8578.86	0.211	5.12	Si
2.02	0.000603	0.051	0.000603	0.051	3053.61	SLD 8	1895.5	8578.86	0.211	4.53							Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000106	0.000603	0	-7945	SLU 84	-7945	-8014	-63336	-14887	-14887	1	1.87	Si
1.01	0.0000105	0.000603	0	531	SLU 77	531	8014	63336	14686	14686	1	27.67	Si
1.77	0.0000105	0.000603	0	9562	SLU 83	9562	8014	63336	14686	14686	1	1.54	Si
2.02	0.0000105	0.000603	0	12628	SLU 83	12628	8014	63336	14686	14686	1	1.16	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000106	0.000603	0	-10294	SLV 14	-10294	-8014	-63336	-14887	-14887	1	1.45	Si
1.01	0.0000105	0.000603	0	2944	SLV 4	2944	8014	63336	14686	14686	1	4.99	Si
1.01	0.0000105	0.000603	0	-2259	SLV 13	-2259	-8014	-63336	-14686	-14686	1	6.5	Si
1.77	0.0000105	0.000603	0	8465	SLV 8	8465	8014	63336	14686	14686	1	1.73	Si
2.02	0.0000105	0.000603	0	10620	SLV 8	10620	8014	63336	14686	14686	1	1.38	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000106	0.000603	0	-7437	SLD 14	-7437	-8014	-63336	-14887	-14887	1	2	Si
1.01	0.0000105	0.000603	0	1445	SLD 4	1445	8014	63336	14686	14686	1	10.16	Si
1.01	0.0000105	0.000603	0	-760	SLD 13	-760	-8014	-63336	-14686	-14686	1	19.32	Si
1.77	0.0000105	0.000603	0	7229	SLD 8	7229	8014	63336	14686	14686	1	2.03	Si
2.02	0.0000105	0.000603	0	9320	SLD 8	9320	8014	63336	14686	14686	1	1.58	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-520.23	20	-1421.48	73614	1494000	1104208	36000000	-473.85	2	-1297.43	67190	1120500			Si
1.01	-2648.96	21	-2653.94	137439	1494000	2061582	36000000	-2417.1	2	-2422.04	125430	1120500			Si
1.77	156.11	14	156.11	8085	1494000	121269	36000000	129.54	2	129.54	6708	1120500			Si
2.02	2173.45	20	1019.07	52774	1494000	791617	36000000	1984.1	2	929.37	48129	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 52 - 52, sezione R 50x45, aste 493, 494, 495, 496, 497, 498

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1703	SLU 83	0.03	5612	5924	SLU 83	15877	Si
0.1	0.41	0.0004	1703	SLU 83	0.03	5612	5922	SLU 83	15877	Si
1.07	0.41	0.0004	1703	SLU 83	0.03	5612	5922	SLU 83	15877	Si
2.14	0.41	0.0004	1643	SLU 83	0.03	5612	5716	SLU 83	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1210	SLD 12	0.1	6270	4207	SLD 12	15900	Si
0.1	0.41	0.0004	1208	SLD 12	0.1	6270	4202	SLD 12	15900	Si
1.07	0.41	0.0004	1238	SLD 16	0.1	6270	4305	SLD 16	15900	Si
2.14	0.41	0.0004	1241	SLD 15	0.1	6270	4316	SLD 15	15900	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000353	1245	SLE RA 20	35177	1494000	436195	36000000	1127	SLE QP 2	31865	1120500	Si
0.1	0.41	0.00000353	1244	SLE RA 20	35169	1494000	436095	36000000	1127	SLE QP 2	31861	1120500	Si
1.07	0.41	0.00000353	1244	SLE RA 20	35162	1494000	436004	36000000	1127	SLE QP 2	31853	1120500	Si
2.14	0.41	0.00000353	1200	SLE RA 20	33926	1494000	420679	36000000	1087	SLE QP 2	30728	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 3 tra i fili 52 - 62, sezione R 50x45, aste 499, 500

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
493,494,495,496,497,498,499,500	4.16	1.1	SLU 84	ST	BT	2.3	188137	62594	3.01	Si
493,494,495,496,497,498,499,500	4.16	1.1	SLV 6	SIS	LT	2.3	118083	35300	3.35	Si
493,494,495,496,497,498,499,500	4.16	1.1	SLD 16	SIS	BT	2.3	189123	46599	4.06	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-383	-62594	1471.44	-845.34	0	0	-0.01	0.02	1.05	4.13	1496	2060	0	14430	
0	-9529	-35300	2779.5	-1787.81	0	-15	-0.05	0.08	0.94	4.05	1496	2060	37	0	0.07
0	740	-46599	749.4	1412.42	0	1	0.03	0.02	1.07	4.09	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
43	56	66	1.18	1.18	0.91	1.16	1.27	1	0.57	0.56	0.41	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

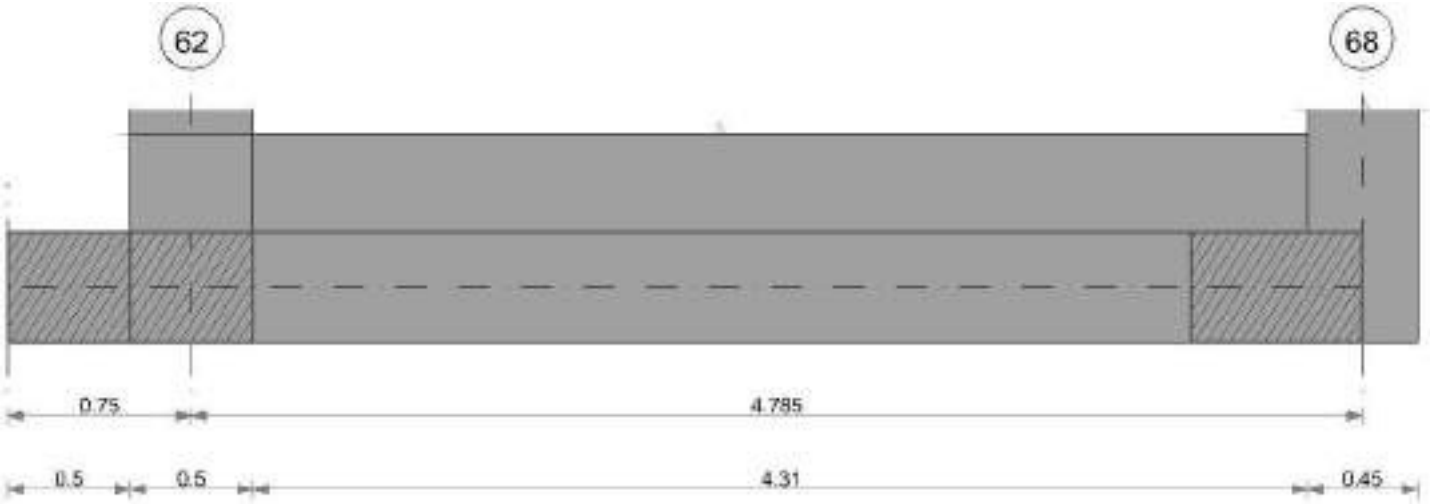
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.003	734	SLE RA 20	0.05	0.001	734	742	SLE RA 21	0.05	0	740	SLE RA 20	0.0033	0	SLE RA 20	Si
D	0.05	0	742	SLE RA 1	0.05	0	742	742	SLE RA 1	0.05	0	740	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	742	SLE RA 1	0.05	0	742	742	SLE RA 1	0.05	0	740	SLE RA 1	0.0033	0	SLE RA 1	Si

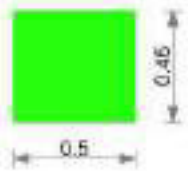
Verifiche geotecniche - Rotazioni assolute e differenziali

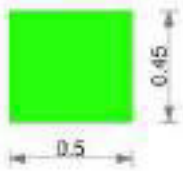
Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.02	740	734	SLE RA 21	0.19	0	742	SLE RA 1	0.1	0.01	740	SLE RA 20	Si
D	0.19	0	SLE RA 1	0.19	0	742	740	SLE RA 1	0.19	0	742	SLE RA 1	0.1	0	740	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	742	740	SLE RA 1	0.19	0	742	SLE RA 1	0.1	0	740	SLE RA 1	Si

CORDOLO 12

Geometria







Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

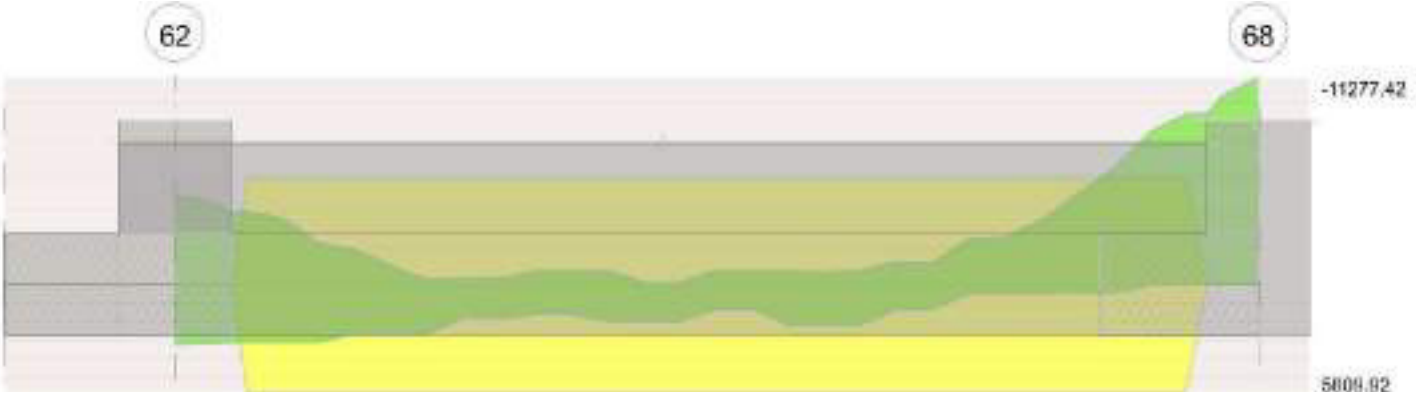
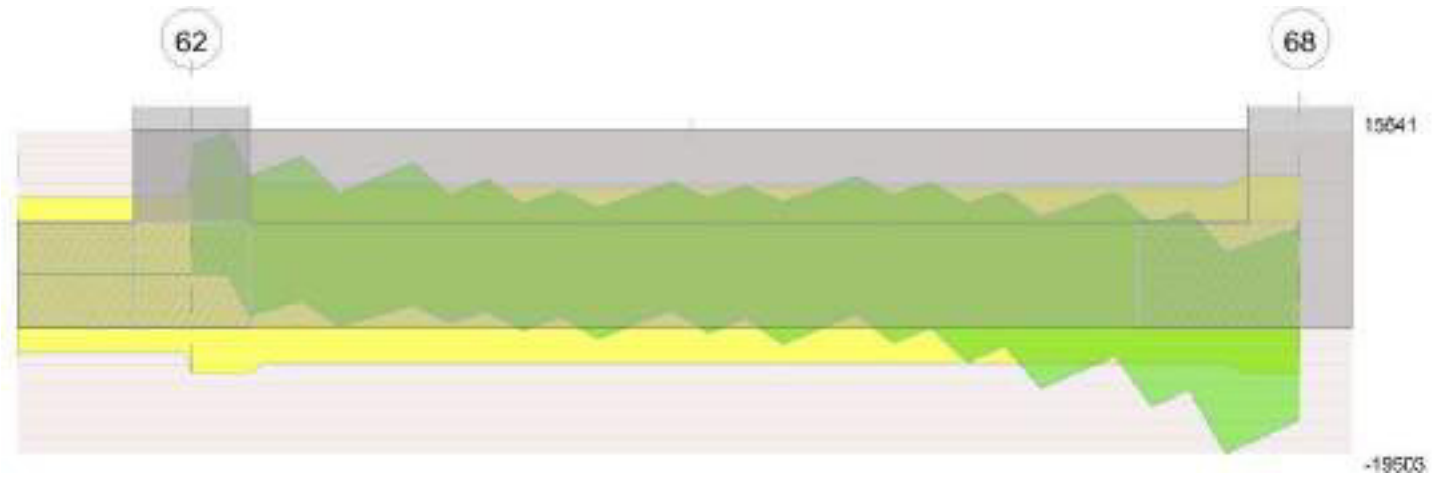


Diagramma verifica stato limite ultimo taglio



Output campate

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 62 - 68, sezione R 50x45, aste 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	1777	SLU 83	0.029	5423	6182	SLU 83	15877	Si
0.25	0.41	0.0003	1806	SLU 83	0.029	5423	6282	SLU 83	15877	Si
2.39	0.41	0.0003	2025	SLV 15	0.119	5224	7045	SLV 15	15877	Si
4.56	0.41	0.0003	2490	SLV 15	0.119	5224	8659	SLV 15	15877	Si
4.79	0.41	0.0003	2580	SLV 15	0.119	5224	8972	SLV 15	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	1340	SLD 15	0.098	6061	4662	SLD 15	15877	Si
0.25	0.41	0.0003	1366	SLD 15	0.098	6061	4750	SLD 15	15877	Si
2.39	0.41	0.0003	1621	SLD 15	0.098	6061	5639	SLD 15	15877	Si
4.56	0.41	0.0003	1867	SLD 15	0.098	6061	6493	SLD 15	15877	Si
4.79	0.41	0.0003	1924	SLD 15	0.098	6061	6692	SLD 15	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000341	1299	SLE RA 20	36762	1494000	455846	36000000	1178	SLE QP 2	33363	1120500	Si
0.25	0.41	0.00000341	1320	SLE RA 20	37357	1494000	463232	36000000	1198	SLE QP 2	33912	1120500	Si
2.39	0.41	0.00000341	1452	SLE RA 20	41092	1494000	509539	36000000	1321	SLE QP 2	37390	1120500	Si
4.56	0.41	0.00000341	1537	SLE RA 20	43520	1494000	539642	36000000	1403	SLE QP 2	39728	1120500	Si
4.79	0.41	0.00000341	1572	SLE RA 20	44511	1494000	551941	36000000	1436	SLE QP 2	40650	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
640,641,642,643,644,645,646,647,648,649,650,651,652	5.01	1.1	SLU 84	ST	BT	2.3	231927	75634	3.07	Si
640,641,642,643,644,645,646,647,648,649,650,651,652	5.01	1.1	SLV 15	SIS	BT	2.3	210520	74443	2.83	Si
640,641,642,643,644,645,646,647,648,649,650,651,652	5.01	1.1	SLD 15	SIS	BT	2.3	222561	61408	3.62	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-433	-75634	210.01	3428.89	0	0	0.05	0	1.09	4.92	1496	2060	0	14430	
0	4434	-74443	-1131.11	14065.85	0	3	0.19	-0.02	1.07	4.63	1496	2060	0	14430	0.07
0	1689	-61408	-389.18	7397.61	0	2	0.12	-0.01	1.09	4.77	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

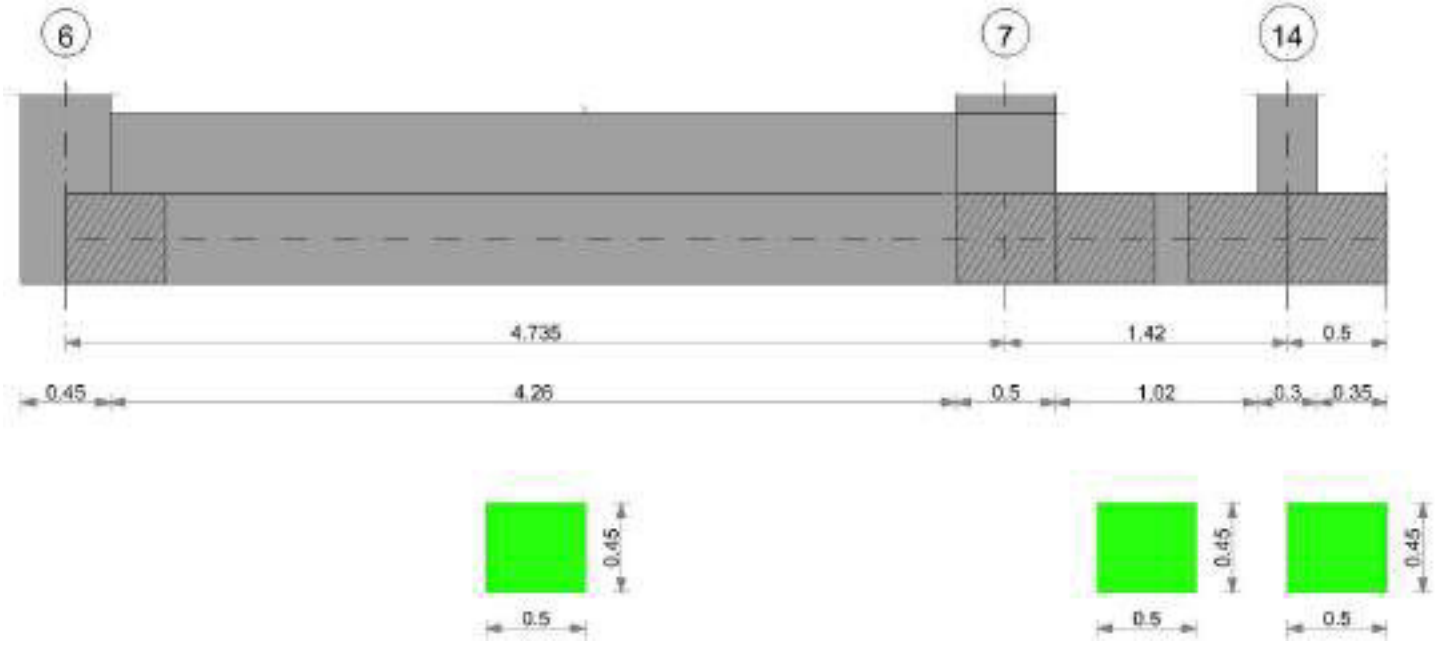
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.002	743	SLE RA 20	0.05	0.001	743	756	SLE RA 20	0.05	0	756	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	756	SLE RA 1	0.05	0	756	756	SLE RA 1	0.05	0	756	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	756	SLE RA 1	0.05	0	756	756	SLE RA 1	0.05	0	756	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.02	SLE RA 20	0.19	0.02	756	743	SLE RA 20	0.19	0	756	SLE RA 1	0.1	0	756	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	756	743	SLE RA 1	0.19	0	756	SLE RA 1	0.1	0	756	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	756	743	SLE RA 1	0.19	0	756	SLE RA 1	0.1	0	756	SLE RA 1	Si

CORDOLO 13

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

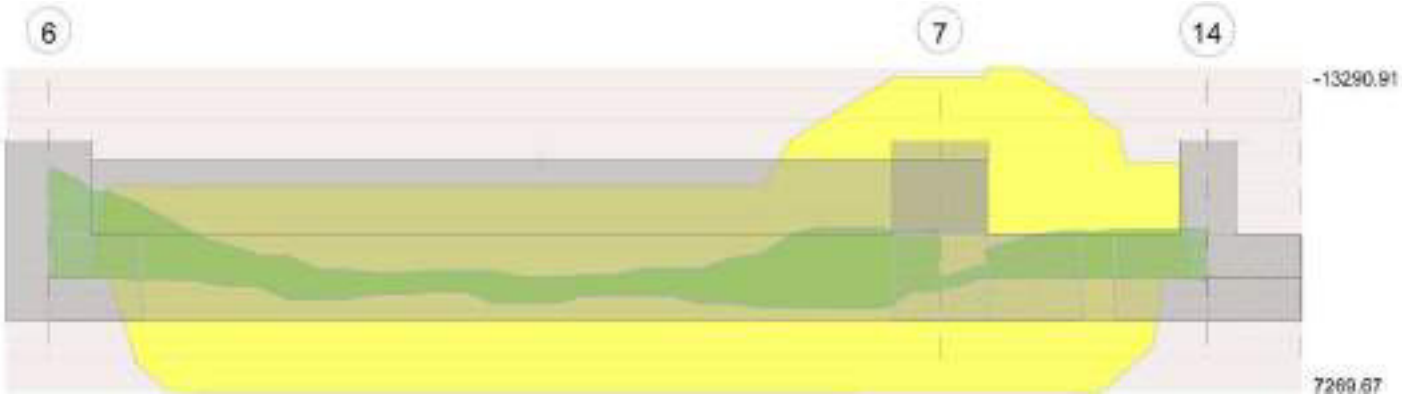
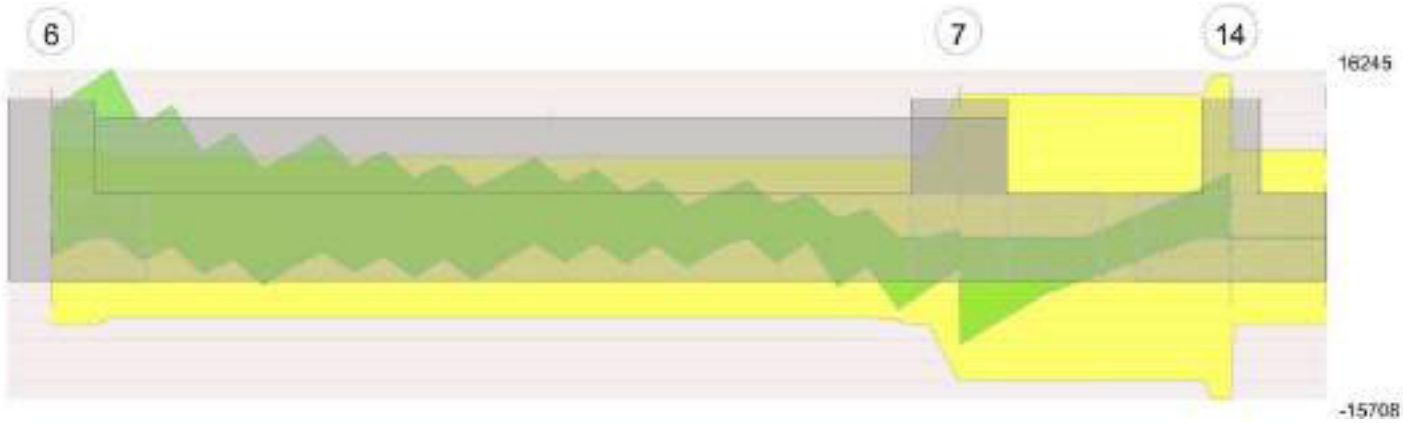


Diagramma verifica stato limite ultimo taglio



Output campate

Campata 2 tra i fili 7 - 14, sezione R 50x45, asta 316

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000911	0.052	0.000509	0.052	1149.5	SLU 84	215.44	7767.77	0.118	36.06							Si
0.25	0.000911	0.052	0.000509	0.052							-744.38	SLU 83	-1745.11	-13290.91	0.144	7.62	Si
0.71	0.000779	0.052	0.000509	0.052							-2715.39	SLU 84	-2954.94	-11484.44	0.133	3.89	Si
1.27	0.000509	0.052	0	0							-2490.08	SLU 84	-2875.88	-7645.09	0.089	2.66	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000911	0.052	0.000509	0.052	1418.85	SLV 5	632.47	7261.38	0.192	11.48							Si
0.25	0.000911	0.052	0.000509	0.052							-831.92	SLV 8	-1400.26	-12673.21	0.259	9.05	Si
0.71	0.000779	0.052	0.000509	0.052							-2307.46	SLV 6	-2723.78	-10918.39	0.24	4.01	Si
1.27	0.000509	0.052	0	0							-3077.67	SLV 9	-3077.67	-7274.26	0.206	2.36	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000911	0.052	0.000509	0.052	1007.39	SLD 5	320.67	7261.38	0.192	22.64							Si
0.25	0.000911	0.052	0.000509	0.052							-647.97	SLD 8	-1274.69	-12673.21	0.259	9.94	Si
0.71	0.000779	0.052	0.000509	0.052							-2011.6	SLD 6	-2267.43	-10918.39	0.24	4.82	Si
1.27	0.000509	0.052	0	0							-2210.24	SLD 9	-2341.87	-7274.26	0.206	3.11	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000099	0.000509	0	-10428	SLU 84	-10428	-7764	-63178	-13892	-13892	1	1.33	Si
0.25	0.0000099	0.000802	0	-7651	SLU 84	-7651	-8808	-63248	-13908	-13908	1	1.82	Si
0.71	0.0000099	0.000509	0	-2586	SLU 84	-2586	-7769	-63233	-13905	-13905	1	5.38	Si
1.27	0.0000099	0.000509	0	3561	SLU 83	3561	7764	63178	13892	13892	1	3.9	Si
1.42	0.0000099	0.000509	0	5204	SLU 83	5204	8455	71432	15708	15708	1	3.02	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000099	0.000509	0	-9143	SLV 5	-9143	-7764	-63178	-13892	-13892	1	1.52	Si
0.25	0.0000099	0.000802	0	-7068	SLV 5	-7068	-8808	-63248	-13908	-13908	1	1.97	Si
0.71	0.0000099	0.000509	0	363	SLV 8	363	7769	63233	13905	13905	1	38.33	Si
0.71	0.0000099	0.000509	0	-3669	SLV 9	-3669	-7769	-63233	-13905	-13905	1	3.79	Si
1.27	0.0000099	0.000509	0	4851	SLV 4	4851	7764	63178	13892	13892	1	2.86	Si
1.42	0.0000099	0.000509	0	6246	SLV 4	6246	8455	71432	15708	15708	1	2.51	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000099	0.000509	0	-7811	SLD 5	-7811	-7764	-63178	-13892	-13892	1	1.78	Si
0.25	0.0000099	0.000802	0	-5860	SLD 5	-5860	-8808	-63248	-13908	-13908	1	2.37	Si
0.71	0.0000099	0.000509	0	-2466	SLD 9	-2466	-7769	-63233	-13905	-13905	1	5.64	Si
1.27	0.0000099	0.000509	0	3461	SLD 4	3461	7764	63178	13892	13892	1	4.01	Si
1.42	0.0000099	0.000509	0	4687	SLD 4	4687	8455	71432	15708	15708	1	3.35	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	826.95	21	144.32	7188	1494000	111984	36000000	729.18	2	109.51	5454	1120500			Si
0.25	-555.81	20	-1285.67	66506	1494000	960508	36000000	-521.2	2	-1181.31	61108	1120500			Si
0.71	-1990.78	21	-2162.41	112647	1494000	1646853	36000000	-1812.65	2	-1961.21	102166	1120500			Si
1.27	-1813.14	21	-2099.98	120566	1494000	1719473	36000000	-1624.67	2	-1894.95	108795	1120500			Si
1.42	-1409.09	21	-1409.09	-83501	1494000	0	36000000	-1248.66	2	-1248.66	-73995	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 6 - 7, sezione R 50x45, aste 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	2668	SLV 1	0.086	2676	9281	SLV 1	15877	Si
0.23	0.41	0.0002	2597	SLV 1	0.086	2676	9034	SLV 1	15877	Si
2.37	0.41	0.0002	2159	SLV 1	0.086	2676	7509	SLV 1	15877	Si
4.49	0.41	0.0002	1887	SLU 84	0.017	2751	6562	SLU 84	15877	Si
4.74	0.41	0.0005	1867	SLU 84	0.042	7837	6496	SLU 84	19403	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1977	SLD 1	0.07	3097	6875	SLD 1	15877	Si
0.23	0.41	0.0002	1934	SLD 1	0.07	3097	6728	SLD 1	15877	Si
2.37	0.41	0.0002	1707	SLD 1	0.07	3097	5938	SLD 1	15877	Si
4.49	0.41	0.0002	1452	SLD 1	0.07	3097	5051	SLD 1	15877	Si
4.74	0.41	0.0005	1428	SLD 1	0.118	8733	4968	SLD 1	22313	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000172	1600	SLE RA 21	46325	1494000	574435	36000000	1462	SLE QP 2	42319	1120500	Si
0.23	0.41	0.00000172	1578	SLE RA 21	45690	1494000	566560	36000000	1441	SLE QP 2	41720	1120500	Si
2.37	0.41	0.00000172	1507	SLE RA 21	43635	1494000	541071	36000000	1371	SLE QP 2	39699	1120500	Si
4.49	0.41	0.00000172	1379	SLE RA 21	39908	1494000	494857	36000000	1251	SLE QP 2	36216	1120500	Si
4.74	0.41	0.00000496	1364	SLE RA 21	37864	1494000	469516	36000000	1238	SLE QP 2	34356	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 2 tra i fili 7 - 14, sezione R 50x45, asta 316

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
303,304,305,306,307,308,309,310,311,312,313,314,315,316	6.38	1.1	SLU 84	ST	BT	2.3	292197	98680	2.96	Si
303,304,305,306,307,308,309,310,311,312,313,314,315,316	6.38	1.1	SLV 1	SIS	BT	2.3	264033	96740	2.73	Si
303,304,305,306,307,308,309,310,311,312,313,314,315,316	6.38	1.1	SLD 1	SIS	BT	2.3	278256	79904	3.48	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-288	-98680	192.51	-7528.91	0	0	-0.08	0	1.1	6.23	1496	2060	0	14430	
0	-4865	-96740	1455.51	-26160.72	0	-3	-0.27	0.02	1.07	5.84	1496	2060	0	14430	0.07
0	-2026	-79904	650.23	-14190.84	0	-1	-0.18	0.01	1.08	6.02	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

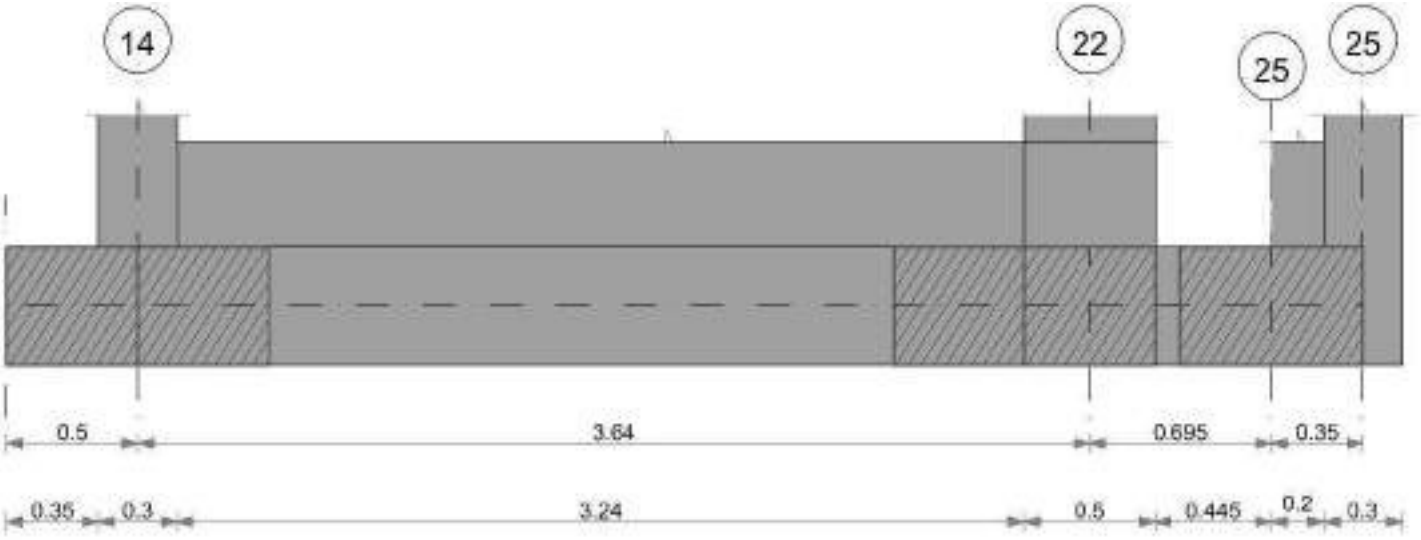
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.002	586	SLE RA 21	0.05	0.002	586	572	SLE RA 21	0.05	0	585	SLE RA 20	0.0033	0	SLE RA 1	Si
D	0.05	0	586	SLE RA 1	0.05	0	586	586	SLE RA 1	0.05	0	585	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	586	SLE RA 1	0.05	0	586	586	SLE RA 1	0.05	0	585	SLE RA 1	0.0033	0	SLE RA 1	Si

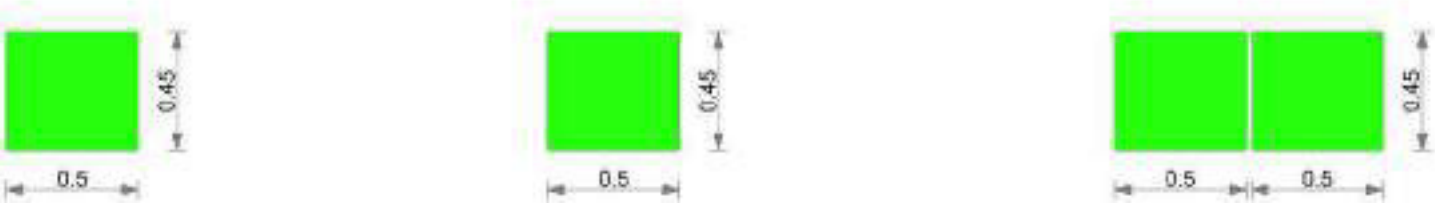
Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.02	SLE RA 21	0.19	0.02	585	572	SLE RA 21	0.19	0.01	585	SLE RA 20	0.1	0	586	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	586	585	SLE RA 1	0.19	0	586	SLE RA 1	0.1	0	585	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	586	585	SLE RA 1	0.19	0	586	SLE RA 1	0.1	0	585	SLE RA 1	Si

CORDOLO 14

Geometria





Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

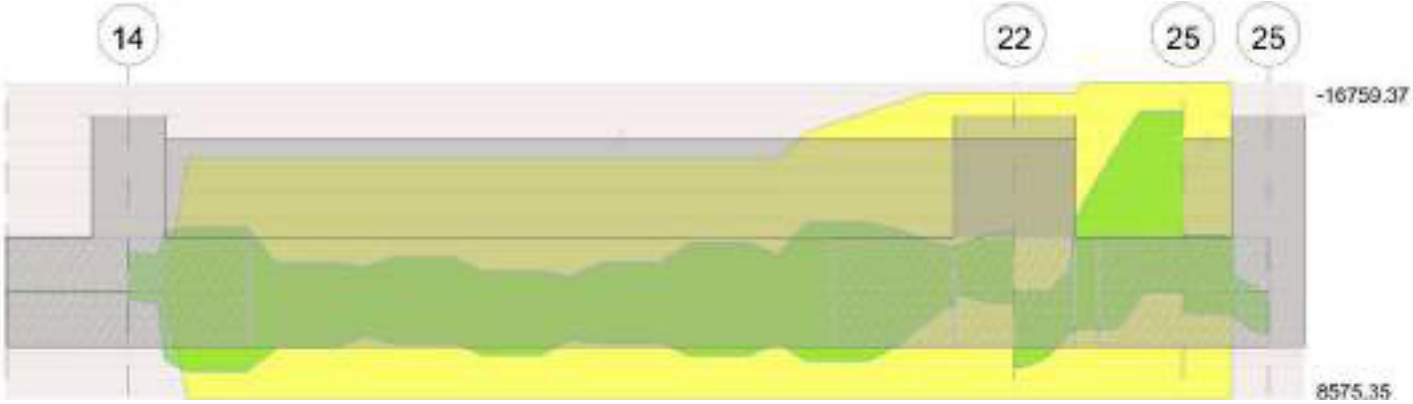
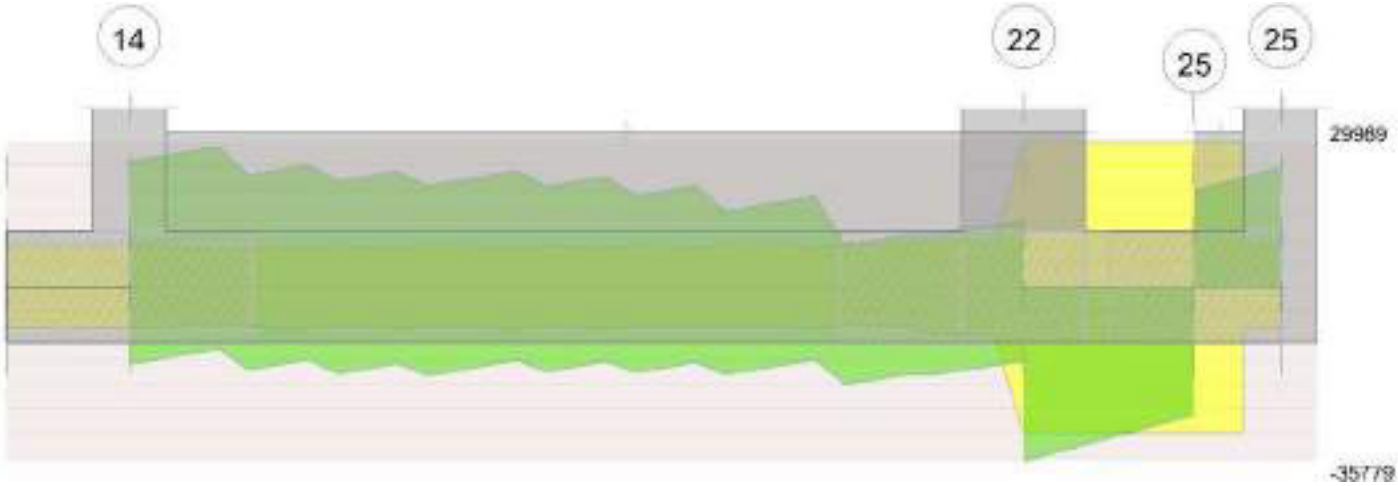


Diagramma verifica stato limite ultimo taglio



Output campate

Campata 3 tra i fili 22 - 25, sezione R 50x45, asta 701

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001166	0.052	0.000603	0.051	10313.53	SLU 84	4557.38	9086.71	0.123	1.99							Si
0.25	0.001166	0.052	0.000603	0.051	519.58	SLU 84	519.58	9086.71	0.123	17.49	303.33	SLU 1	-5919.69	-16759.37	0.162	2.83	Si
0.35	0.001166	0.052	0.000603	0.051	-1831.76	SLU 2	519.58	9086.71	0.123	17.49	-3051.54	SLU 83	-9192.13	-16759.37	0.162	1.82	Si
0.58	0.001166	0.052	0.000603	0.051							-10881.08	SLU 83	-14481.56	-16759.37	0.162	1.16	Si
0.7	0.001166	0.052	0.000603	0.051							-14481.56	SLU 83	-14481.56	-16759.37	0.162	1.16	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001166	0.052	0.000603	0.051	10570.25	SLV 13	6045.34	8572.71	0.203	1.42							Si
0.25	0.001166	0.052	0.000603	0.051	2914.58	SLV 9	2914.58	8572.71	0.203	2.94	-2251.82	SLV 8	-5806.39	-16008.95	0.288	2.76	Si
0.35	0.001166	0.052	0.000603	0.051	160.19	SLV 9	2914.58	8572.71	0.203	2.94	-4226.46	SLV 8	-7592.93	-16008.95	0.288	2.11	Si
0.7	0.001166	0.052	0.000603	0.051							-10796.26	SLV 11	-10796.26	-16008.95	0.288	1.48	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001166	0.052	0.000603	0.051	8419.93	SLD 13	4247.58	8572.71	0.203	2.02							Si
0.25	0.001166	0.052	0.000603	0.051	1377.17	SLD 9	1377.17	8572.71	0.203	6.22	-714.42	SLD 8	-4695.54	-16008.95	0.288	3.41	Si
0.35	0.001166	0.052	0.000603	0.051	-1146.73	SLD 9	1377.17	8572.71	0.203	6.22	-2919.54	SLD 8	-6715.67	-16008.95	0.288	2.38	Si
0.58	0.001166	0.052	0.000603	0.051							-7770.67	SLD 8	-10117.84	-16008.95	0.288	1.58	Si
0.7	0.001166	0.052	0.000603	0.051							-10117.84	SLD 11	-10117.84	-16008.95	0.288	1.58	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000213	0.000603	0	-35779	SLU 84	-35779	-8014	-63336	-29989	-29989	1	0.84	Si
0.7	0.0000213	0.001166	0	-26245	SLU 84	-26245	-9974	-63232	-29940	-29940	1	1.14	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000213	0.000603	0	-28973	SLV 13	-28973	-8014	-63336	-29989	-29989	1	1.04	Si
0.25	0.0000213	0.000603	0	-26617	SLV 13	-26617	-8014	-63336	-29989	-29989	1	1.13	Si
0.35	0.0000213	0.001166	0	-25705	SLV 13	-25705	-9974	-63232	-29940	-29940	1	1.16	Si
0.7	0.0000213	0.001166	0	-22489	SLV 13	-22489	-9974	-63232	-29940	-29940	1	1.33	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000213	0.000603	0	-26014	SLD 13	-26014	-8014	-63336	-29989	-29989	1	1.15	Si
0.25	0.0000213	0.000603	0	-23676	SLD 13	-23676	-8014	-63336	-29989	-29989	1	1.27	Si
0.35	0.0000213	0.001166	0	-22773	SLD 13	-22773	-9974	-63232	-29940	-29940	1	1.31	Si
0.7	0.0000213	0.001166	0	-19592	SLD 13	-19592	-9974	-63232	-29940	-29940	1	1.53	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	7552.27	21	3336.28	159414	1494000	2517523	36000000	6854.71	2	3020.4	144321	1120500			Si
0.25	379.01	21	379.01	18110	1494000	285995	36000000	331.38	2	331.38	15834	1120500			Si
0.35	-2235.1	20	-6732.54	509746	1494000	16325752	36000000	-2033.14	2	-6124.72	463726	1120500			Si
0.7	-10606.4	20	-10606.4	803051	1494000	25719475	36000000	-9648.68	2	-9648.68	730538	1120500			Si

Verifica di apertura delle fessure

x	Bordo	Rara				Frequente				Quasi permanente				Verifica
		Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	
0.35	superiore	0.282	0.00048	0.000134	20	0.282	0.00044	0.000125	6	0.282	0.00043	0.000122	2	Si

x	Bordo	Rara				Frequente				Quasi permanente				Verifica
		Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	
0.58	superiore	0.282	0.00079	0.000223	20	0.282	0.00086	0.000242	6	0.282	0.00083	0.000234	2	Si
0.7	superiore	0.282	0.00079	0.000223	20	0.282	0.00086	0.000242	6	0.282	0.00083	0.000234	2	Si

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 14 - 22, sezione R 50x45, aste 692, 693, 694, 695, 696, 697, 698, 699, 700

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1833	SLU 83	0.02	3305	6377	SLU 83	15877	Si
0.15	0.41	0.0002	1837	SLU 83	0.02	3305	6391	SLU 83	15877	Si
1.82	0.41	0.0002	1844	SLU 83	0.02	3305	6415	SLU 83	15877	Si
3.39	0.41	0.0002	1713	SLU 83	0.02	3305	5957	SLU 83	15877	Si
3.64	0.41	0.0011	1697	SLU 83	0.09	16544	5902	SLU 83	41778	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1367	SLD 3	0.077	3713	4755	SLD 3	15877	Si
0.15	0.41	0.0002	1366	SLD 3	0.077	3713	4751	SLD 3	15877	Si
1.82	0.41	0.0002	1294	SLD 3	0.077	3713	4502	SLD 3	15877	Si
3.39	0.41	0.0002	1156	SLD 11	0.077	3713	4021	SLD 11	15877	Si
3.64	0.41	0.0011	1154	SLD 11	0.172	18380	4013	SLD 11	48045	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000207	1339	SLE RA 20	38592	1494000	478537	36000000	1215	SLE QP 2	34996	1120500	Si
0.15	0.41	0.00000207	1342	SLE RA 20	38673	1494000	479550	36000000	1217	SLE QP 2	35066	1120500	Si
1.82	0.41	0.00000207	1347	SLE RA 20	38803	1494000	481163	36000000	1219	SLE QP 2	35136	1120500	Si
3.39	0.41	0.00000207	1250	SLE RA 20	36021	1494000	446659	36000000	1130	SLE QP 2	32563	1120500	Si
3.64	0.41	0.00001067	1238	SLE RA 20	32025	1494000	397109	36000000	1119	SLE QP 2	28943	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 3 tra i fili 22 - 25, sezione R 50x45, asta 701

Campata 4 tra i fili 25 - 25, sezione R 50x45, asta 702

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0011	1636	SLU 83	0.09	16544	5692	SLU 83	41778	Si
0.18	0.41	0.0011	1647	SLU 83	0.09	16544	5728	SLU 83	41778	Si
0.2	0.41	0.0011	1649	SLU 83	0.09	16544	5734	SLU 83	41778	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0011	1146	SLD 11	0.172	18380	3987	SLD 11	48045	Si
0.18	0.41	0.0011	1163	SLD 11	0.172	18380	4045	SLD 11	48045	Si
0.2	0.41	0.0011	1166	SLD 11	0.172	18380	4054	SLD 11	48045	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00001067	1194	SLE RA 20	30886	1494000	382991	36000000	1079	SLE QP 2	27890	1120500	Si
0.18	0.41	0.00001067	1202	SLE RA 20	31084	1494000	385437	36000000	1085	SLE QP 2	28065	1120500	Si
0.2	0.41	0.00001067	1203	SLE RA 20	31116	1494000	385837	36000000	1086	SLE QP 2	28094	1120500	Si
0.35	0.42	0	1210	SLE RA 20	35862	1494000	0	36000000	1093	SLE QP 2	32377	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
692,693,694,695,696,697,698,699,700,701,702	4.84	1.1	SLU 83	ST	BT	2.3	224357	67964	3.3	Si
692,693,694,695,696,697,698,699,700,701,702	4.84	1.1	SLV 8	SIS	LT	2.3	179175	49230	3.64	Si
692,693,694,695,696,697,698,699,700,701,702	4.84	1.1	SLD 8	SIS	BT	2.3	211572	47490	4.46	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	149	-67964	-154.78	-3094.93	0	0	-0.05	0	1.1	4.74	1496	2060	0	14430	
0	9686	-49230	-2634.39	-3119.98	0	11	-0.06	-0.05	0.99	4.71	1496	2060	37	0	0.07
0	3949	-47490	-1117.61	-2585.15	0	5	-0.05	-0.02	1.05	4.73	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
43	56	66	1.16	1.16	0.92	1.16	1.27	1	0.67	0.66	0.54	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
1	5	0	0	0.04	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

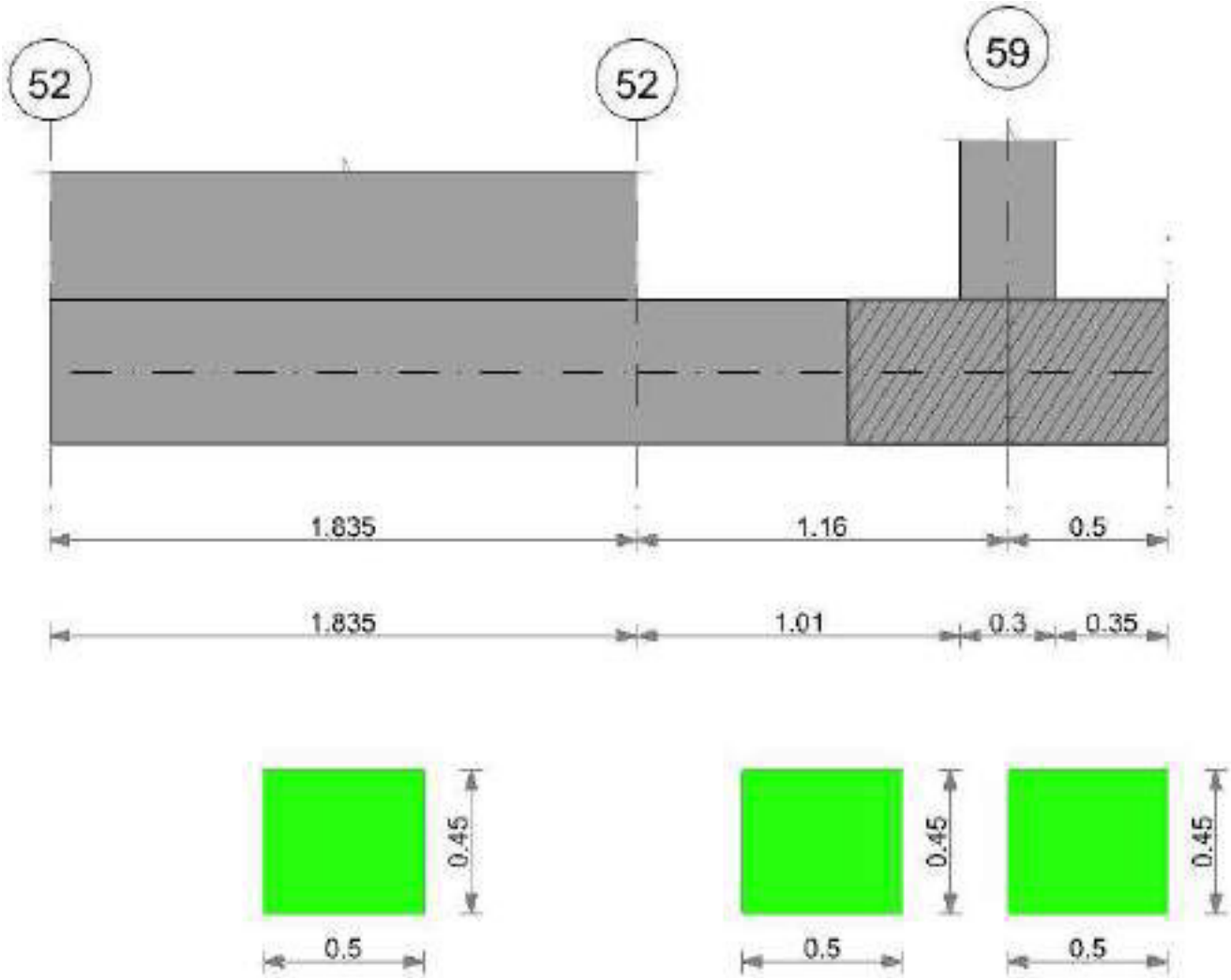
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.003	597	SLE RA 21	0.05	0	597	586	SLE RA 21	0.05	0	596	SLE RA 20	0.0033	0	SLE RA 1	Si
D	0.05	0	597	SLE RA 1	0.05	0	597	597	SLE RA 1	0.05	0	596	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	597	SLE RA 1	0.05	0	597	597	SLE RA 1	0.05	0	596	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	595	586	SLE RA 20	0.19	0	596	SLE RA 20	0.1	0	597	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	597	596	SLE RA 1	0.19	0	597	SLE RA 1	0.1	0	596	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	597	596	SLE RA 1	0.19	0	597	SLE RA 1	0.1	0	596	SLE RA 1	Si

CORDOLO 15

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

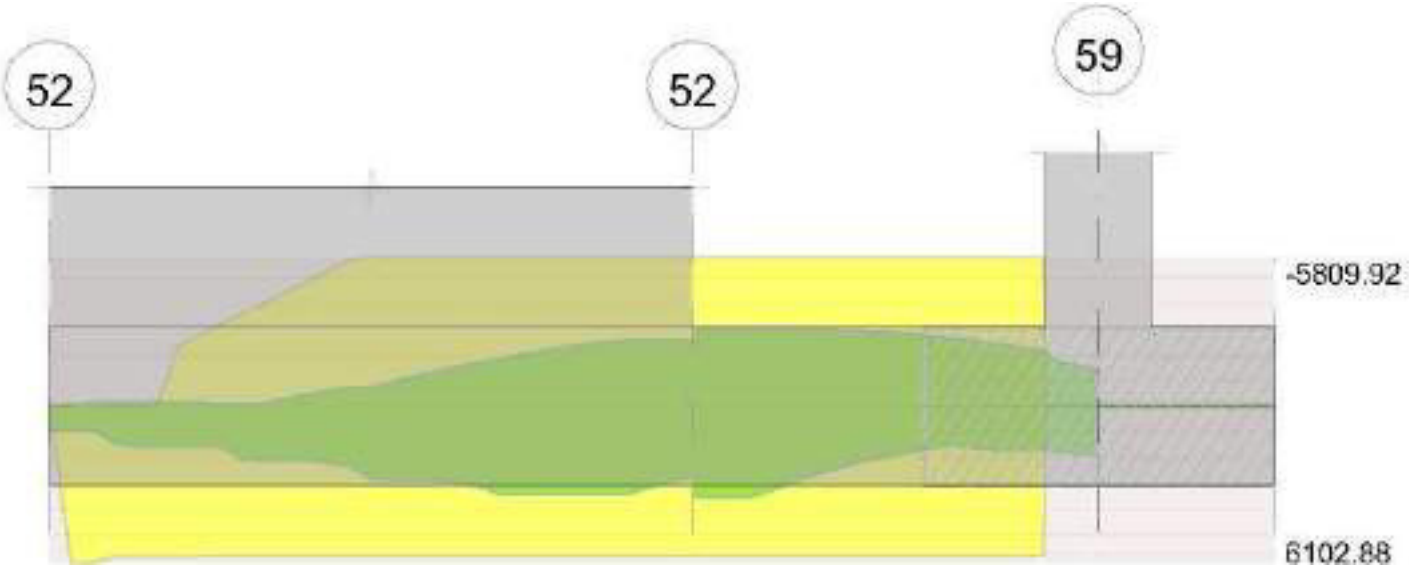
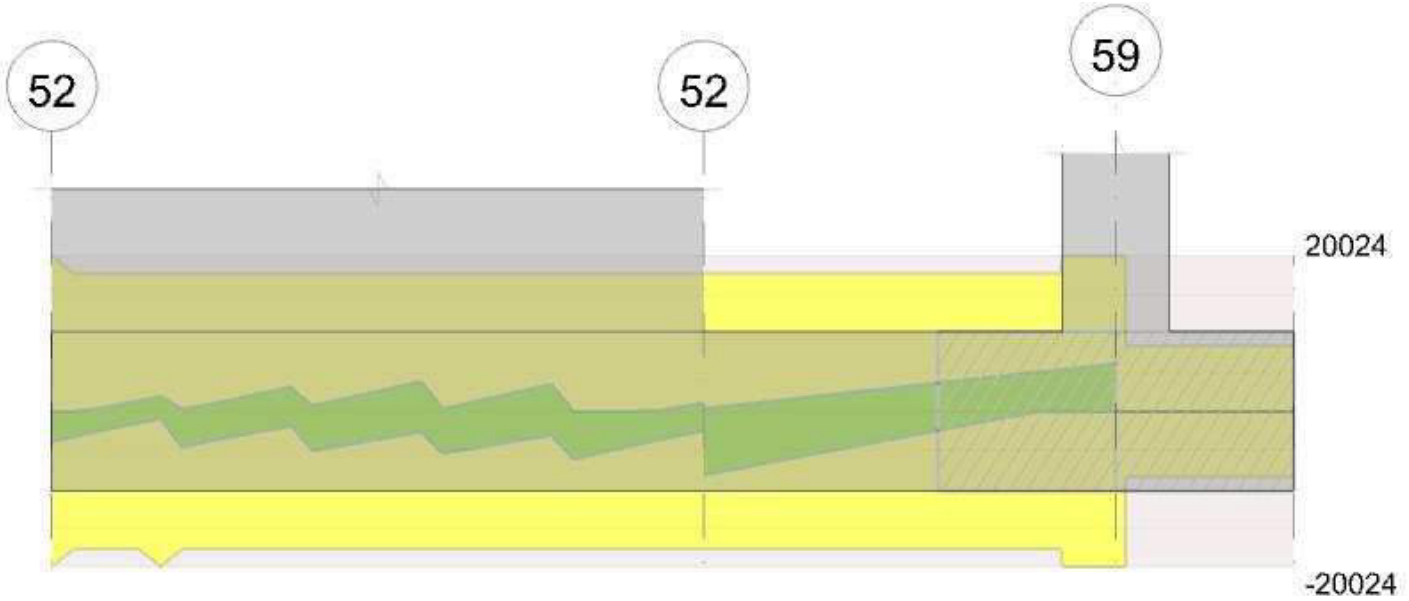


Diagramma verifica stato limite ultimo taglio



Output campate

Campata 2 tra i fili 52 - 59, sezione R 50x45, asta 482

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000402	0.051	0.000402	0.051	520.02	SLU 83	520.02	6274.14	0.102	12.07	220.52	SLU 2	-249.81	-6274.14	0.102	25.12	Si
0.58	0.000402	0.051	0.000402	0.051							-876.15	SLU 82	-876.15	-6274.14	0.102	7.16	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000402	0.051	0.000402	0.051	3519.9	SLV 11	3519.9	5809.92	0.178	1.65	-2899.76	SLV 6	-2962.21	-5809.92	0.178	1.96	Si
0.58	0.000402	0.051	0.000402	0.051	1478.07	SLV 11	1868.01	5809.92	0.178	3.11	-2632.96	SLV 6	-2859.73	-5809.92	0.178	2.03	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000402	0.051	0.000402	0.051	1605.38	SLD 11	1605.38	5809.92	0.178	3.62	-985.24	SLD 6	-1288.06	-5809.92	0.178	4.51	Si
0.58	0.000402	0.051	0.000402	0.051	248.09	SLD 11	454.82	5809.92	0.178	12.77	-1402.98	SLD 6	-1450.44	-5809.92	0.178	4.01	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000126	0.000402	0	-6013	SLU 83	-6013	-7777	-63336	-17755	-17755	1	2.95	Si

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0.58	0.0000126	0.000402	0	117	SLU 44	117	7777	63336	17755	17755	1	151.29	Si
0.58	0.0000126	0.000402	0	-72	SLU 41	-72	-7777	-63336	-17755	-17755	1	248.24	Si
1.01	0.0000126	0	0	4332	SLU 84	4332	8455	71432	20024	20024	1	4.62	Si
1.16	0.0000126	0	0	5845	SLU 84	5845	8455	71432	20024	20024	1	3.43	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000126	0.000402	0	310	SLV 1	310	7777	63336	17755	17755	1	57.29	Si
0	0.0000126	0.000402	0	-8217	SLV 16	-8217	-7777	-63336	-17755	-17755	1	2.16	Si
0.58	0.0000126	0.000402	0	3224	SLV 1	3224	7777	63336	17755	17755	1	5.51	Si
0.58	0.0000126	0.000402	0	-3140	SLV 16	-3140	-7777	-63336	-17755	-17755	1	5.66	Si
1.01	0.0000126	0	0	5369	SLV 1	5369	8455	71432	20024	20024	1	3.73	Si
1.16	0.0000126	0	0	6118	SLV 1	6118	8455	71432	20024	20024	1	3.27	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000126	0.000402	0	-5758	SLD 16	-5758	-7777	-63336	-17755	-17755	1	3.08	Si
0.58	0.0000126	0.000402	0	1391	SLD 1	1391	7777	63336	17755	17755	1	12.77	Si
0.58	0.0000126	0.000402	0	-1307	SLD 16	-1307	-7777	-63336	-17755	-17755	1	13.59	Si
1.01	0.0000126	0	0	3987	SLD 1	3987	8455	71432	20024	20024	1	5.02	Si
1.16	0.0000126	0	0	4890	SLD 1	4890	8455	71432	20024	20024	1	4.09	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	370.97	20	370.97	20054	1494000	300816	36000000	310.07	2	310.07	16762	1120500			Si
0.58	-644.88	19	-644.88	34862	1494000	522927	36000000	-577.44	2	-577.44	31216	1120500			Si
1.01	-108.89	19	-461.96	-27376	1494000	0	36000000	-68.58	2	-400.29	-23721	1120500			Si
1.16	352.13	6	168.29	9973	1494000	0	36000000	340.37	1	160.19	9493	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 52 - 52, sezione R 50x45, aste 477, 478, 479, 480, 481

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0006	1917	SLU 83	0.053	9944	6670	SLU 83	24735	Si
0.92	0.41	0.0006	1906	SLU 83	0.053	9944	6629	SLU 83	24735	Si
1.83	0.41	0.0006	1855	SLU 83	0.053	9944	6451	SLU 83	24735	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0006	1374	SLD 11	0.133	11063	4780	SLD 11	28445	Si
0.92	0.41	0.0006	1392	SLD 15	0.133	11063	4843	SLD 15	28445	Si
1.83	0.41	0.0006	1385	SLD 15	0.133	11063	4816	SLD 15	28445	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000632	1402	SLE RA 20	38235	1494000	474114	36000000	1271	SLE QP 2	34670	1120500	Si
0.92	0.41	0.00000632	1393	SLE RA 20	37994	1494000	471127	36000000	1263	SLE QP 2	34444	1120500	Si
1.83	0.41	0.00000632	1355	SLE RA 20	36963	1494000	458337	36000000	1229	SLE QP 2	33509	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 2 tra i fili 52 - 59, sezione R 50x45, asta 482

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
477,478,479,480,481,482	2.99	1.1	SLU 83	ST	BT	2.3	139794	41863	3.34	Si
477,478,479,480,481,482	2.99	1.1	SLV 11	SIS	BT	2.3	133892	33859	3.95	Si
477,478,479,480,481,482	2.99	1.1	SLD 16	SIS	BT	2.3	140607	30999	4.54	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
-171	-113	-41863	606.52	-591.09	0	0	-0.01	0.01	1.07	2.97	1496	2060	0	14430	
1507	5482	-33859	-852.38	42.05	3	9	0	-0.03	1.05	2.99	1496	2060	0	14430	0.07
2036	520	-30999	253.93	390.3	4	1	0.01	0.01	1.08	2.97	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.07	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.07	0	0	0.27	0	0	0.04	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.07	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

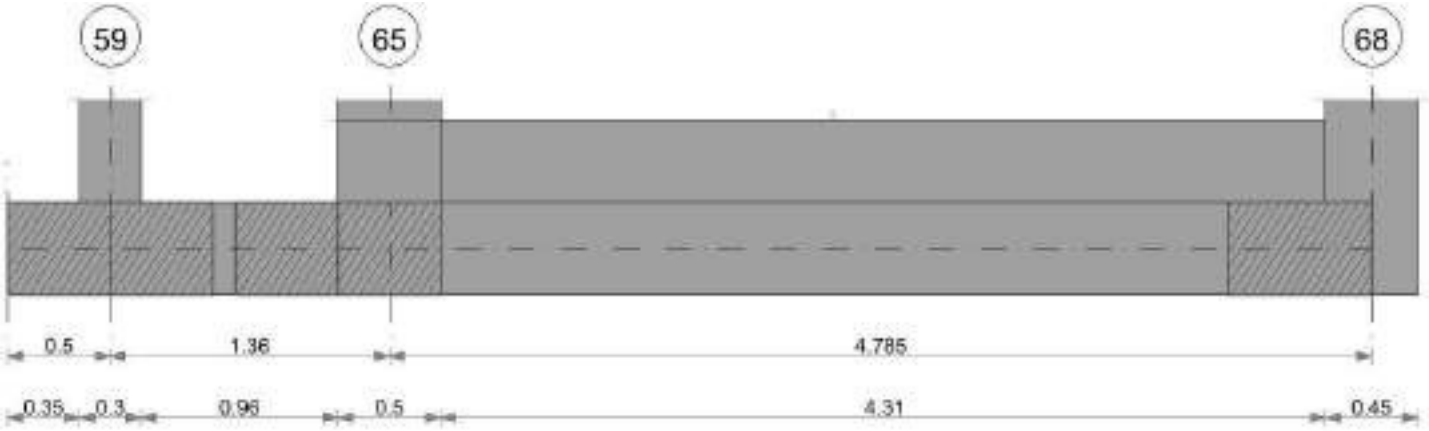
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.003	598	SLE RA 21	0.05	0.001	598	604	SLE RA 21	0.05	0	603	SLE RA 20	0.0033	0	SLE RA 20	Si
D	0.05	0	604	SLE RA 1	0.05	0	604	604	SLE RA 1	0.05	0	603	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	604	SLE RA 1	0.05	0	604	604	SLE RA 1	0.05	0	603	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.02	SLE RA 21	0.19	0.02	603	598	SLE RA 20	0.19	0	604	SLE RA 1	0.1	0.01	603	SLE RA 20	Si
D	0.19	0	SLE RA 1	0.19	0	604	603	SLE RA 1	0.19	0	604	SLE RA 1	0.1	0	603	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	604	603	SLE RA 1	0.19	0	604	SLE RA 1	0.1	0	603	SLE RA 1	Si

CORDOLO 16

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

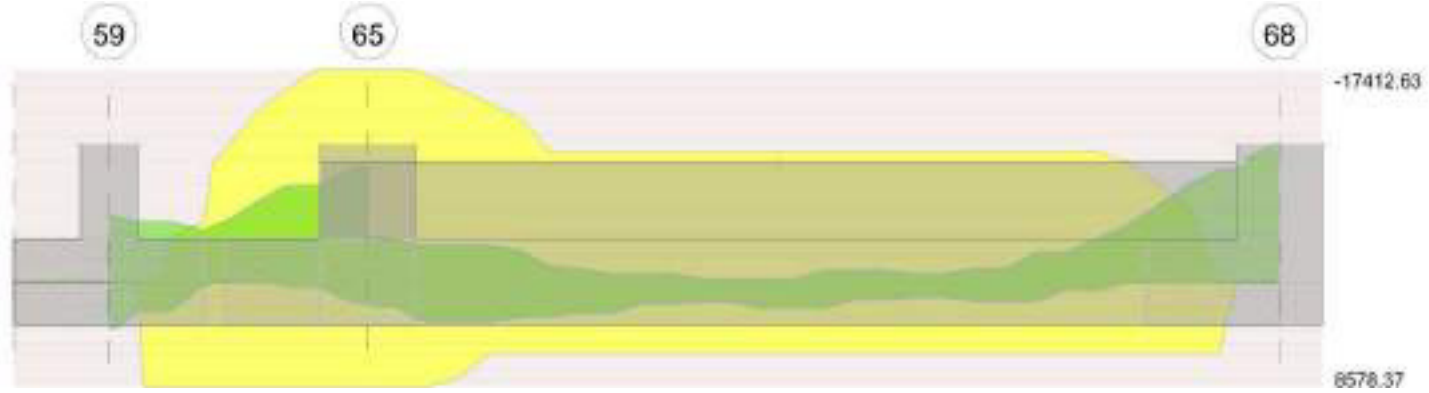
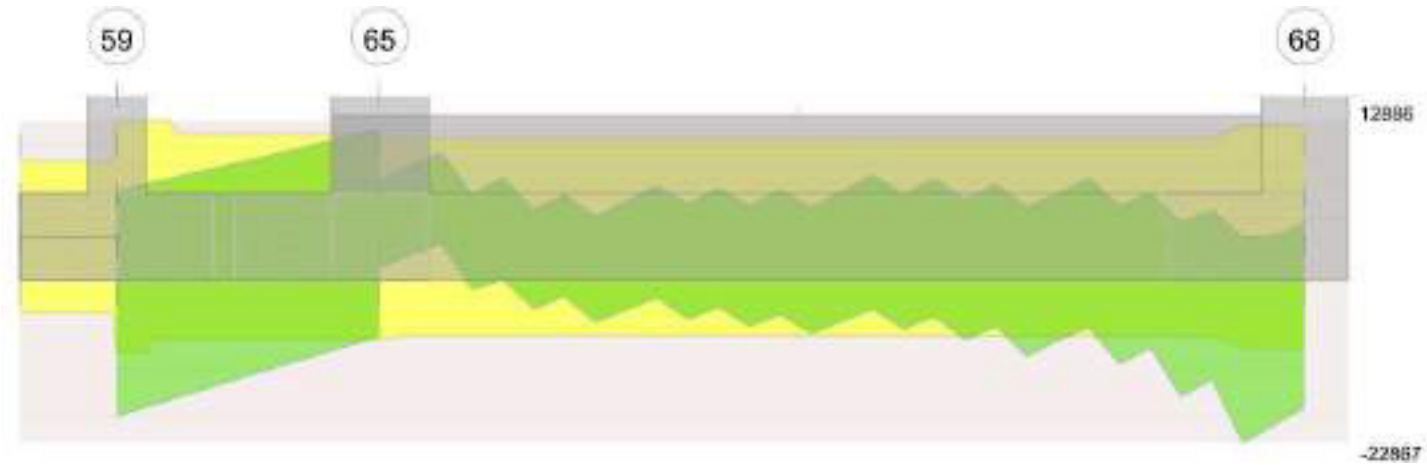


Diagramma verifica stato limite ultimo taglio



Output campate

Campata 2 tra i fili 59 - 65, sezione R 50x45, asta 653

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.68	0.000875	0.052	0.000603	0.051							-4618.53	SLU 83	-5160.36	-12775.02	0.138	2.48	Si
1.11	0.001272	0.052	0.000603	0.051							-5598.31	SLU 83	-5598.31	-18188.89	0.172	3.25	Si
1.36	0.001272	0.052	0.000603	0.051							-5668.7	SLU 83	-5668.7	-18188.89	0.172	3.21	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.68	0.000875	0.052	0.000603	0.051							-4244.02	SLV 15	-5653.13	-12206.74	0.252	2.16	Si
1.11	0.001272	0.052	0.000603	0.051	438.85	SLV 6	438.85	8570.09	0.202	19.53	-7953.71	SLV 11	-7953.71	-17412.63	0.301	2.19	Si
1.36	0.001272	0.052	0.000603	0.051	2366.26	SLV 6	1768.25	8570.09	0.202	4.85	-9979.89	SLV 11	-9535.2	-17412.63	0.301	1.83	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.68	0.000875	0.052	0.000603	0.051							-3583.18	SLD 15	-4349.06	-12206.74	0.252	2.81	Si
1.11	0.001272	0.052	0.000603	0.051							-5451.93	SLD 11	-5451.93	-17412.63	0.301	3.19	Si
1.36	0.001272	0.052	0.000603	0.051							-6296.75	SLD 11	-6163.83	-17412.63	0.301	2.82	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000081	0	0	-11048	SLU 83	-11048	-8455	-71432	-12886	-12886	1	1.17	Si
0.15	0.0000081	0	0	-9750	SLU 83	-9750	-8455	-71432	-12886	-12886	1	1.32	Si
0.68	0.0000081	0	0	-5186	SLU 83	-5186	-7764	-63178	-11397	-11397	1	2.2	Si
1.11	0.0000081	0.000936	0	-1514	SLU 77	-1514	-9268	-63178	-11397	-11397	1	7.53	Si
1.36	0.0000081	0.001163	0	861	SLU 73	861	9962	63178	11397	11397	1	13.24	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000081	0	0	5100	SLV 6	5100	8455	71432	12886	12886	1	2.53	Si
0	0.0000081	0	0	-19936	SLV 11	-19936	-8455	-71432	-12886	-12886	1	0.65	Si
0.15	0.0000081	0	0	5828	SLV 6	5828	8455	71432	12886	12886	1	2.21	Si
0.18	0.0000081	0	0	5980	SLV 6	5980	8455	71432	12886	12886	1	2.15	Si
0.68	0.0000081	0	0	8442	SLV 6	8442	7764	63178	11397	11397	1	1.35	Si
1.11	0.0000081	0.000603	0	10635	SLV 6	10635	8014	63336	11426	11426	1	1.07	Si
1.36	0.0000081	0.000603	0	11944	SLV 6	11944	8014	63336	11426	11426	1	0.96	Si
1.36	0.0000081	0.001163	0	-11055	SLV 11	-11055	-9962	-63178	-11397	-11397	1	1.03	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000081	0	0	-12468	SLD 11	-12468	-8455	-71432	-12886	-12886	1	1.03	Si
0.15	0.0000081	0	0	-11540	SLD 11	-11540	-8455	-71432	-12886	-12886	1	1.12	Si
0.68	0.0000081	0	0	1318	SLD 6	1318	7764	63178	11397	11397	1	8.65	Si
0.68	0.0000081	0	0	-8297	SLD 11	-8297	-7764	-63178	-11397	-11397	1	1.37	Si
1.11	0.0000081	0.000936	0	3678	SLD 6	3678	9268	63178	11397	11397	1	3.1	Si
1.11	0.0000081	0.000936	0	-5695	SLD 11	-5695	-9268	-63178	-11397	-11397	1	2	Si
1.36	0.0000081	0.001163	0	5071	SLD 6	5071	9962	63178	11397	11397	1	2.25	Si
1.36	0.0000081	0.001163	0	-4182	SLD 11	-4182	-9962	-63178	-11397	-11397	1	2.73	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-668.42	19	-668.42	-39610	1494000	0	36000000	-561.95	2	-561.95	-33301	1120500			Si
0.15	-1436.98	21	-2234.53	-132417	1494000	0	36000000	-1277.39	2	-2017.71	-119568	1120500			Si
0.68	-3392.7	20	-3789.7	193511	1494000	2830991	36000000	-3096.81	2	-3461.62	176758	1120500			Si
1.11	-4110.38	20	-4110.38	205797	1494000	2905219	36000000	-3757.43	2	-3757.43	188126	1120500			Si

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
1.36	-4161.52	20	-4161.52	208357	1494000	2941360	36000000	-3806.81	2	-3806.81	190598	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 59 - 65, sezione R 50x45, asta 653

Campata 3 tra i fili 65 - 68, sezione R 50x45, aste 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1781	SLU 83	0.034	6449	6193	SLU 83	15917	Si
0.25	0.41	0.0004	1810	SLU 84	0.033	6210	6294	SLU 84	15877	Si
2.39	0.41	0.0004	2005	SLV 13	0.128	5972	6974	SLV 13	15877	Si
4.56	0.41	0.0004	2487	SLV 13	0.128	5972	8651	SLV 13	15877	Si
4.79	0.41	0.0004	2581	SLV 13	0.128	5972	8976	SLV 13	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1326	SLD 15	0.107	7197	4613	SLD 15	18305	Si
0.25	0.41	0.0004	1351	SLD 15	0.105	6932	4699	SLD 15	17617	Si
2.39	0.41	0.0004	1618	SLD 13	0.105	6932	5629	SLD 13	17617	Si
4.56	0.41	0.0004	1870	SLD 13	0.105	6932	6505	SLD 13	17617	Si
4.79	0.41	0.0004	1929	SLD 13	0.105	6932	6710	SLD 13	17617	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000407	1301	SLE RA 20	36522	1494000	452869	36000000	1181	SLE QP 2	33146	1120500	Si
0.25	0.41	0.00000391	1322	SLE RA 21	37194	1494000	461212	36000000	1200	SLE QP 2	33764	1120500	Si
2.39	0.41	0.00000391	1462	SLE RA 21	41120	1494000	509887	36000000	1330	SLE QP 2	37409	1120500	Si
4.56	0.41	0.00000391	1545	SLE RA 21	43460	1494000	538902	36000000	1410	SLE QP 2	39666	1120500	Si
4.79	0.41	0.00000391	1581	SLE RA 21	44474	1494000	551476	36000000	1444	SLE QP 2	40609	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
653,654,655,656,657,658,659,660,661,662,663,664,665,666	6.37	1.1	SLU 84	ST	BT	2.3	291334	92513	3.15	Si
653,654,655,656,657,658,659,660,661,662,663,664,665,666	6.37	1.1	SLV 14	SIS	BT	2.3	262276	87703	2.99	Si
653,654,655,656,657,658,659,660,661,662,663,664,665,666	6.37	1.1	SLD 14	SIS	BT	2.3	277230	73698	3.76	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-489	-92513	221.01	7062.78	0	0	0.08	0	1.1	6.22	1496	2060	0	14430	
0	-4952	-87703	1443.7	24223.88	0	-3	0.28	0.02	1.07	5.82	1496	2060	0	14430	0.07
0	-2140	-73698	656.41	13150.13	0	-2	0.18	0.01	1.08	6.01	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

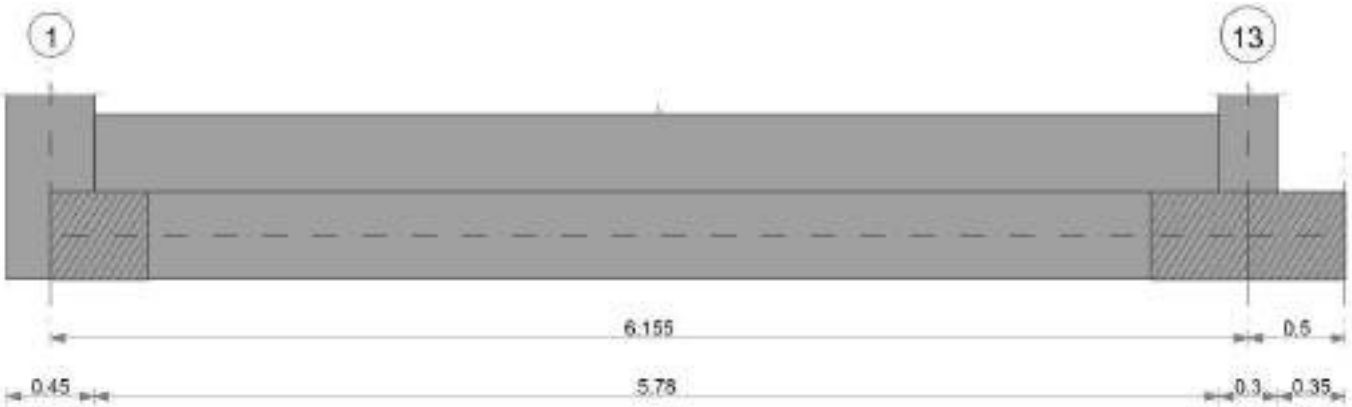
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.002	605	SLE RA 21	0.05	0.002	605	619	SLE RA 21	0.05	0	606	SLE RA 20	0.0033	0	SLE RA 2	Si
D	0.05	0	619	SLE RA 1	0.05	0	619	619	SLE RA 1	0.05	0	606	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	619	SLE RA 1	0.05	0	619	619	SLE RA 1	0.05	0	606	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.02	SLE RA 21	0.19	0.02	619	606	SLE RA 20	0.19	0	606	SLE RA 20	0.1	0	606	SLE RA 2	Si
D	0.19	0	SLE RA 1	0.19	0	619	606	SLE RA 1	0.19	0	619	SLE RA 1	0.1	0	606	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	619	606	SLE RA 1	0.19	0	619	SLE RA 1	0.1	0	606	SLE RA 1	Si

CORDOLO 17

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

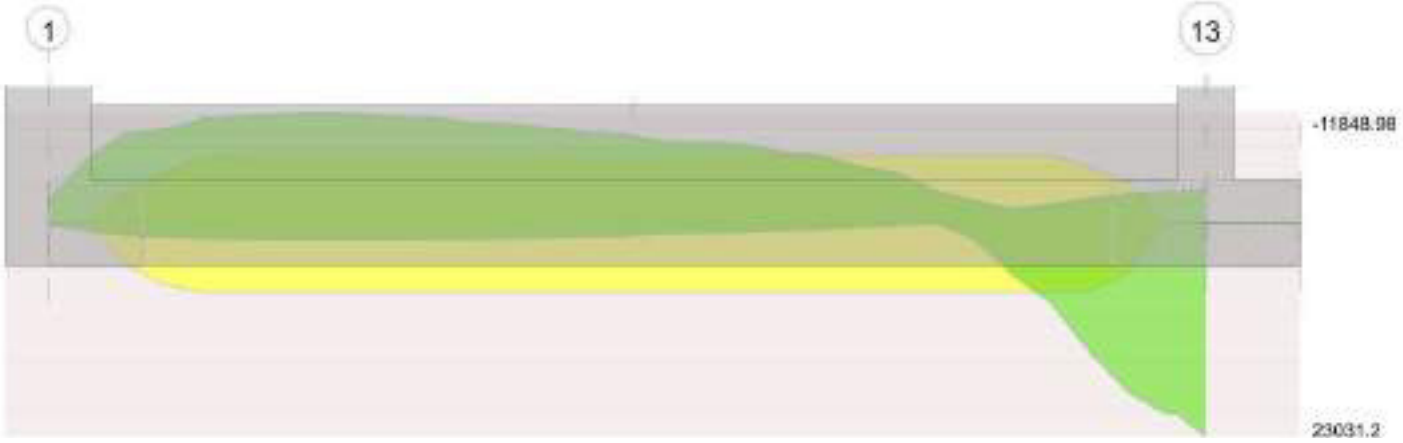


Diagramma verifica stato limite ultimo taglio

Output campate

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 1 - 13, sezione R 70x45, aste 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
3.08	0.41	0.0003	4054	SLV 5	0.119	5189	10462	SLV 5	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	4238	SLD 5	0.098	6020	10937	SLD 5	15877	Si
0.23	0.41	0.0003	4007	SLD 5	0.098	6020	10340	SLD 5	15877	Si
3.08	0.41	0.0003	2613	SLD 5	0.098	6020	6743	SLD 5	15877	Si
6.01	0.41	0.0003	3523	SLD 5	0.098	6020	9092	SLD 5	15877	Si
6.16	0.41	0.0003	3536	SLD 5	0.098	6020	9126	SLD 5	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000339	2885	SLE RA 21	81686	1494000	1012903	36000000	2622	SLE QP 2	74244	1120500	Si
0.23	0.41	0.00000339	2727	SLE RA 21	77212	1494000	957431	36000000	2477	SLE QP 2	70150	1120500	Si
3.08	0.41	0.00000339	1816	SLE RA 21	51427	1494000	637695	36000000	1642	SLE QP 2	46495	1120500	Si
6.01	0.41	0.00000339	2576	SLE RA 21	72939	1494000	904445	36000000	2329	SLE QP 2	65960	1120500	Si
6.16	0.41	0.00000339	2593	SLE RA 21	73439	1494000	910641	36000000	2345	SLE QP 2	66411	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
252,253,254,255,256,257,258,259,260,261,262,263,264,265,266,267	6.38	1.3	SLU 84	ST	BT	2.3	274930	98118	2.8	Si
252,253,254,255,256,257,258,259,260,261,262,263,264,265,266,267	6.38	1.3	SLD 5	SIS	BT	2.3	254439	97392	2.61	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-374	-98118	12606.17	367.41	0	0	0	0.13	1.04	6.37	1496	2060	0	14430	
0	13448	-10813	-4026.36	-3698.6	0	51	-0.34	-0.37	0.56	5.7	1496	2060	37	0	0.07
0	-6382	-97392	14832.69	-3692.97	0	-4	-0.04	0.15	1	6.3	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.03	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
43	56	66	1.07	1.08	0.96	1.14	1.23	1	0	0	0	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
1	5	0	0	0.03	0	0	0.23	0	0	0.03	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

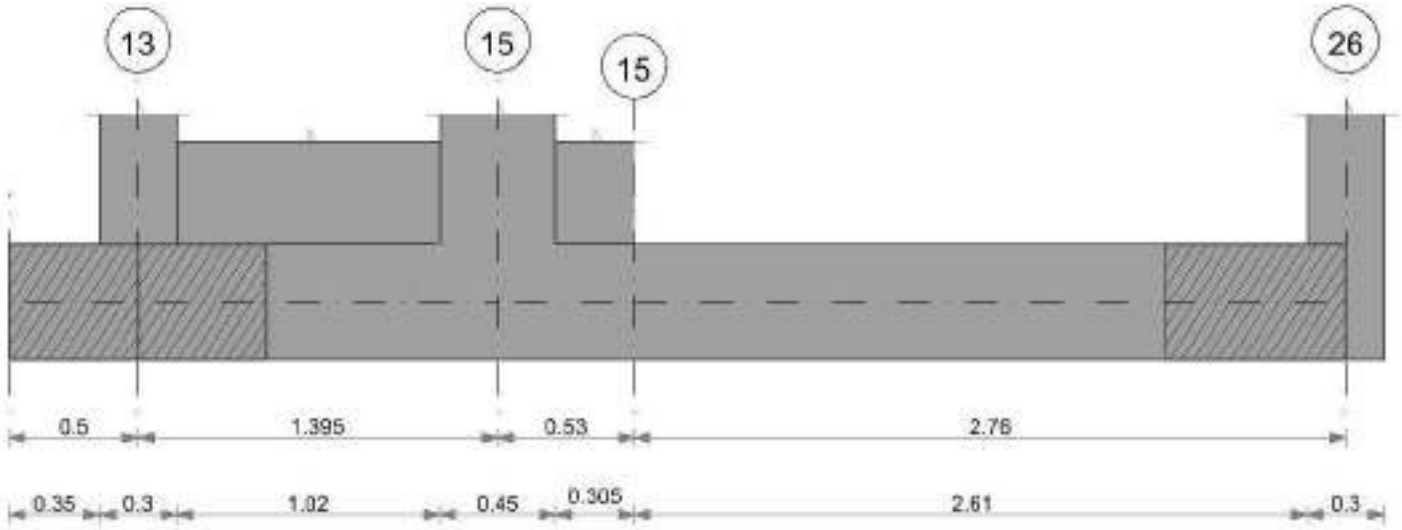
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.001	365	SLE RA 21	0.05	0.001	365	349	SLE RA 21	0.05	0	365	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	365	SLE RA 1	0.05	0	365	365	SLE RA 1	0.05	0	365	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	365	SLE RA 1	0.05	0	365	365	SLE RA 1	0.05	0	365	SLE RA 1	0.0033	0	SLE RA 1	Si

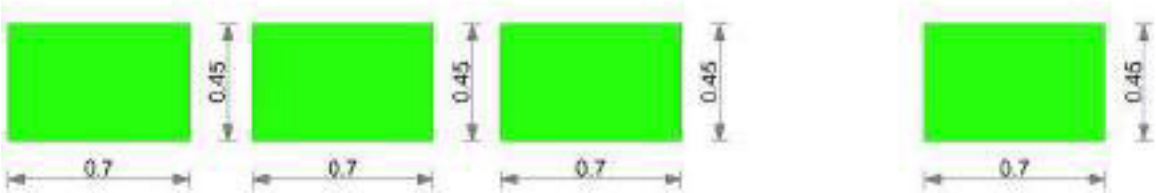
Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	365	349	SLE RA 21	0.19	0	365	SLE RA 1	0.1	0	365	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	365	349	SLE RA 1	0.19	0	365	SLE RA 1	0.1	0	365	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	365	349	SLE RA 1	0.19	0	365	SLE RA 1	0.1	0	365	SLE RA 1	Si

CORDOLO 18

Geometria





Caratteristiche dei materiali

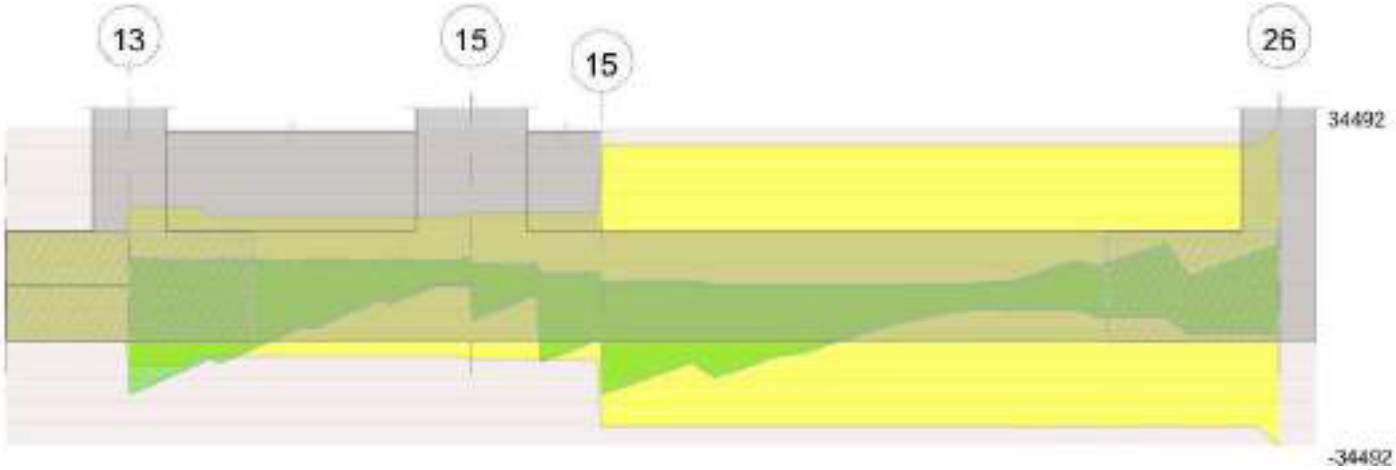
Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

Diagramma verifica stato limite ultimo taglio



Output campate

Campata 4 tra i fili 15 - 26, sezione R 70x45, aste 402, 403, 404, 405, 406, 407, 408

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000763	0.052	1153.73	SLU 83	1153.73	11583.13	0.12	10.04	719.61	SLU 2	-1651.29	-13985.55	0.125	8.47	Si
1.38	0.000942	0.053	0.000763	0.052							-8732.56	SLU 84	-9513.74	-13985.55	0.125	1.47	Si
2.61	0.000553	0.053	0.00053	0.052							-7420.8	SLU 84	-7420.8	-8616.81	0.103	1.16	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1
Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000763	0.052	2009.51	SLV 16	2009.51	10865.3	0.201	5.41	-430.86	SLV 1	-3964.36	-13269.6	0.224	3.35	Si
1.38	0.000942	0.053	0.000763	0.052	1176.02	SLV 12	1851.48	10865.3	0.201	5.87	-12778.59	SLV 5	-13147.05	-13269.6	0.224	1.01	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1
Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000763	0.052	1305.85	SLD 16	1305.85	10865.3	0.201	8.32	272.8	SLD 1	-2237.78	-13269.6	0.224	5.93	Si
1.38	0.000942	0.053	0.000763	0.052							-8592.5	SLD 5	-9050.22	-13269.6	0.224	1.47	Si
2.61	0.000553	0.053	0.00053	0.052							-6451.05	SLD 9	-6476.05	-7955.1	0.177	1.23	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000218	0.000763	0	-16887	SLU 84	-16887	-10870	-88449	-30506	-30506	1	1.81	Si
1.38	0.0000218	0.000942	0	-5513	SLU 84	-5513	-11611	-88226	-30430	-30430	1	5.52	Si
2.61	0.0000218	0.000553	0	-3265	SLU 83	-3265	-10851	-88226	-30430	-30430	1	9.32	Si
2.76	0.0000218	0.000553	0	-1130	SLU 83	-1130	-11837	-100005	-34492	-34492	1	30.53	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000218	0.000763	0	881	SLV 8	881	10870	88449	30506	30506	1	34.64	Si
0	0.0000218	0.000763	0	-23407	SLV 9	-23407	-10870	-88449	-30506	-30506	1	1.3	Si
1.38	0.0000218	0.000942	0	-6195	SLV 14	-6195	-11611	-88226	-30430	-30430	1	4.91	Si
2.61	0.0000218	0.000553	0	6147	SLV 5	6147	10851	88226	30430	30430	1	4.95	Si
2.61	0.0000218	0.000553	0	-10432	SLV 12	-10432	-10851	-88226	-30430	-30430	1	2.92	Si
2.76	0.0000218	0.000553	0	9056	SLV 5	9056	11837	100005	34492	34492	1	3.81	Si
2.76	0.0000218	0.000553	0	-10475	SLV 12	-10475	-11837	-100005	-34492	-34492	1	3.29	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000218	0.000763	0	-16119	SLD 9	-16119	-10870	-88449	-30506	-30506	1	1.89	Si
1.38	0.0000218	0.000942	0	-4756	SLD 14	-4756	-11611	-88226	-30430	-30430	1	6.4	Si
2.61	0.0000218	0.000553	0	1188	SLD 5	1188	10851	88226	30430	30430	1	25.61	Si
2.61	0.0000218	0.000553	0	-5473	SLD 12	-5473	-10851	-88226	-30430	-30430	1	5.56	Si
2.76	0.0000218	0.000553	0	3210	SLD 5	3210	11837	100005	34492	34492	1	10.75	Si
2.76	0.0000218	0.000553	0	-4629	SLD 12	-4629	-11837	-100005	-34492	-34492	1	7.45	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	848.75	20	848.75	31245	1494000	474223	36000000	789.33	2	789.33	29058	1120500			Si
1.38	-6413.59	21	-6986.29	470932	1494000	20551738	36000000	-5801.28	2	-6324.49	426321	1120500			Si
2.61	-5450.92	21	-5450.92	211645	1494000	3170232	36000000	-4945.08	2	-4945.08	192004	1120500			Si
2.76	-5681.54	21	-5625.18	-238103	1494000	0	36000000	-5159.6	2	-5105.76	-216117	1120500			Si

Verifica di apertura delle fessure

x	Bordo	Rara				Frequente				Quasi permanente				Verifica
		Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	
1.38	superiore	0.441	0.0006	0.000264	21	0.441	0.00056	0.000245	6	0.441	0.00054	0.000239	2	Si

x	Bordo	Rara				Frequente				Quasi permanente				Verifica
		Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	
1.66	superiore	0.441	0.0006	0.000264	21	0.441	0.00056	0.000245	6	0.441	0.00054	0.000239	2	Si

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 13 - 15, sezione R 70x45, aste 396, 397, 398, 399

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	5314	SLV 5	0.123	5511	13714	SLV 5	15877	Si
0.15	0.41	0.0004	5318	SLV 5	0.123	5511	13724	SLV 5	15877	Si
0.7	0.41	0.0004	5190	SLV 5	0.123	5511	13393	SLV 5	15877	Si
1.17	0.41	0.0004	4948	SLV 5	0.123	5511	12770	SLV 5	15877	Si
1.4	0.41	0.0004	4804	SLV 5	0.126	5794	12398	SLV 5	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	3536	SLD 5	0.101	6395	9126	SLD 5	15877	Si
0.15	0.41	0.0004	3546	SLD 5	0.101	6395	9151	SLD 5	15877	Si
0.7	0.41	0.0004	3487	SLD 5	0.101	6395	9000	SLD 5	15877	Si
1.17	0.41	0.0004	3347	SLD 5	0.101	6395	8637	SLD 5	15877	Si
1.4	0.41	0.0004	3258	SLD 5	0.104	6725	8407	SLD 5	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.0000036	2593	SLE RA 21	73233	1494000	908085	36000000	2345	SLE QP 2	66225	1120500	Si
0.15	0.41	0.0000036	2608	SLE RA 21	73652	1494000	913287	36000000	2359	SLE QP 2	66604	1120500	Si
0.7	0.41	0.0000036	2597	SLE RA 21	73326	1494000	909244	36000000	2348	SLE QP 2	66301	1120500	Si
1.17	0.41	0.0000036	2518	SLE RA 21	71097	1494000	881607	36000000	2276	SLE QP 2	64271	1120500	Si
1.4	0.41	0.00000379	2461	SLE RA 21	69317	1494000	859534	36000000	2224	SLE QP 2	62651	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 3 tra i fili 15 - 15, sezione R 70x45, aste 400, 401

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	4804	SLV 5	0.126	5794	12398	SLV 5	15877	Si
0.23	0.41	0.0004	4656	SLV 5	0.126	5794	12017	SLV 5	15877	Si
0.27	0.41	0.0004	4629	SLV 5	0.126	5794	11946	SLV 5	15877	Si
0.53	0.41	0.0007	4444	SLV 5	0.172	10865	11469	SLV 5	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	3258	SLD 5	0.104	6725	8407	SLD 5	15877	Si
0.23	0.41	0.0004	3165	SLD 5	0.104	6725	8169	SLD 5	15877	Si
0.27	0.41	0.0004	3148	SLD 5	0.104	6725	8124	SLD 5	15877	Si
0.53	0.41	0.0007	3029	SLD 5	0.142	12654	7817	SLD 5	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000379	2461	SLE RA 21	69317	1494000	859534	36000000	2224	SLE QP 2	62651	1120500	Si
0.23	0.41	0.00000379	2401	SLE RA 21	67624	1494000	838541	36000000	2169	SLE QP 2	61109	1120500	Si
0.27	0.41	0.00000379	2389	SLE RA 21	67298	1494000	834497	36000000	2159	SLE QP 2	60811	1120500	Si
0.53	0.41	0.00000725	2308	SLE RA 21	62205	1494000	771341	36000000	2084	SLE QP 2	56191	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 4 tra i fili 15 - 26, sezione R 70x45, aste 402, 403, 404, 405, 406, 407, 408

Verifiche geotecniche

Verifiche geotecniche - Cedimenti assoluti e differenziali

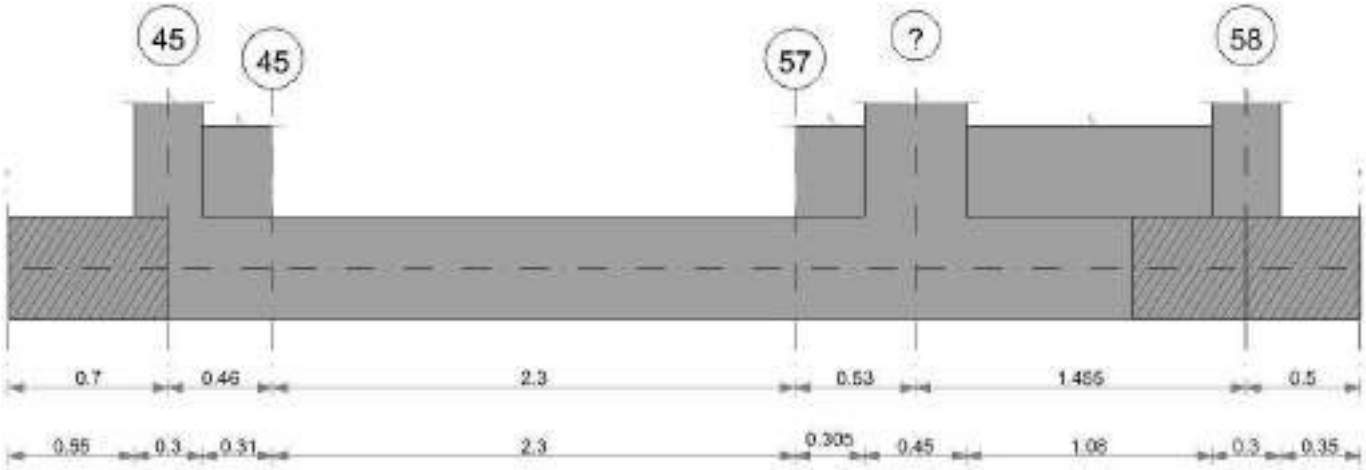
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.002	378	SLE RA 21	0.05	0.001	378	365	SLE RA 21	0.05	0	369	SLE RA 21	0.0033	0	SLE FR 5	Si
D	0.05	0	378	SLE RA 1	0.05	0	378	378	SLE RA 1	0.05	0	371	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	378	SLE RA 1	0.05	0	378	378	SLE RA 1	0.05	0	371	SLE RA 1	0.0033	0	SLE RA 1	Si

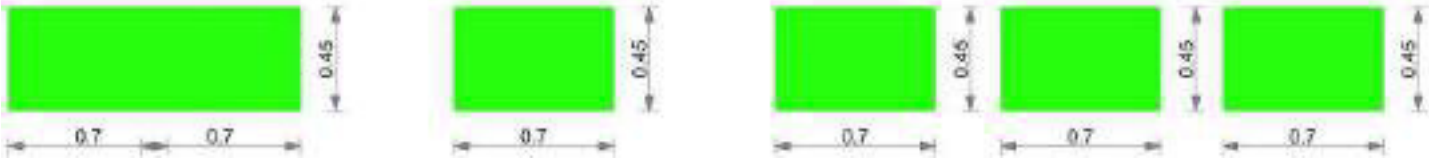
Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	369	365	SLE RA 21	0.19	0	369	SLE RA 21	0.1	0	371	SLE FR 5	Si
D	0.19	0	SLE RA 1	0.19	0	378	371	SLE RA 1	0.19	0	378	SLE RA 1	0.1	0	371	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	378	371	SLE RA 1	0.19	0	378	SLE RA 1	0.1	0	371	SLE RA 1	Si

CORDOLO 19

Geometria





Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

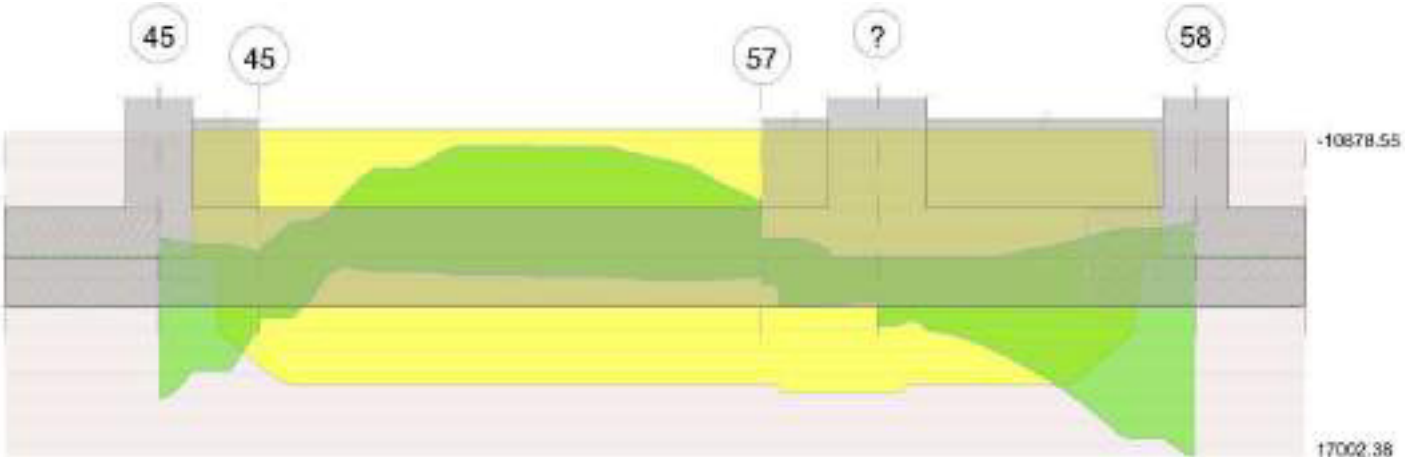
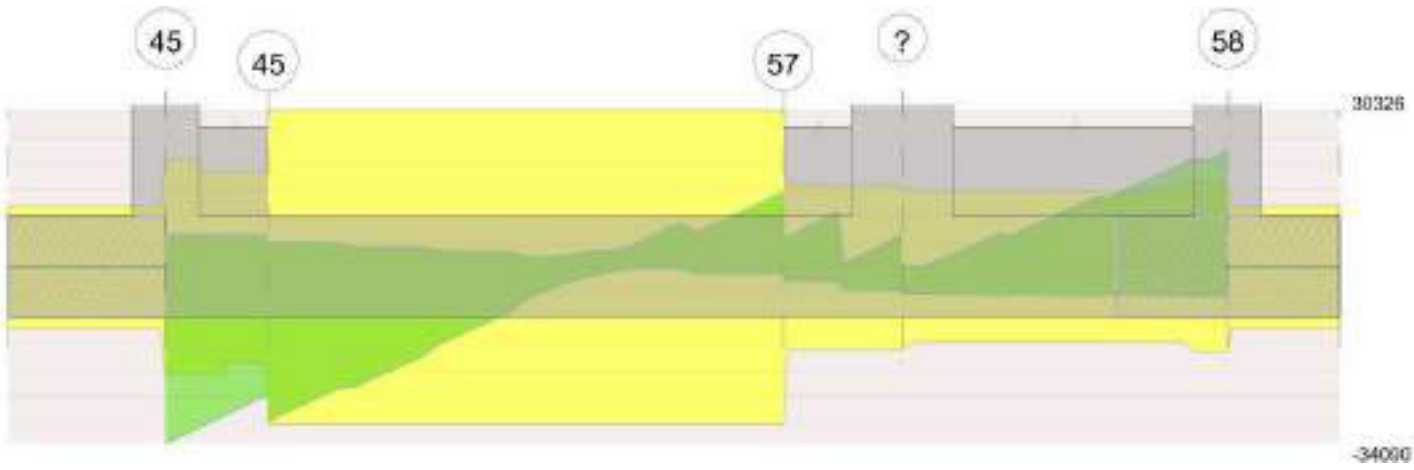


Diagramma verifica stato limite ultimo taglio



Output campate

Campata 3 tra i fili 45 - 57, sezione R 70x45, aste 742, 741, 740, 739, 738, 737

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000763	0.052	0.000644	0.052	3343.71	SLU 84	3343.71	9917.32	0.111	2.97							Si
1	0.000763	0.052	0.000763	0.052							-5651.65	SLU 84	-6036.03	-11561.07	0.116	1.92	Si
1.15	0.000763	0.052	0.000763	0.052							-5500.62	SLU 84	-6036.03	-11561.07	0.116	1.92	Si
2.3	0.000763	0.052	0.000763	0.052							-729.27	SLU 84	-2238.4	-11561.07	0.116	5.16	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000763	0.052	0.000644	0.052	5132.94	SLV 10	5132.94	9229.16	0.188	1.8	-708.9	SLV 7	-708.9	-10871.75	0.204	15.34	Si
1.15	0.000763	0.052	0.000763	0.052	1061.64	SLV 7	1479.63	10870.29	0.203	7.35	-8387.59	SLV 10	-9507.69	-10870.29	0.203	1.14	Si
1.23	0.000763	0.052	0.000763	0.052	1212.59	SLV 7	1557.44	10870.29	0.203	6.98	-8809.75	SLV 10	-9507.69	-10870.29	0.203	1.14	Si
2.3	0.000763	0.052	0.000763	0.052	1584.24	SLV 7	1728.16	10870.29	0.203	6.29	-2487.63	SLV 10	-4658.19	-10870.29	0.203	2.33	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000763	0.052	0.000644	0.052	3379.87	SLD 10	3379.87	9229.16	0.188	2.73							Si
1.15	0.000763	0.052	0.000763	0.052							-5551.85	SLD 10	-6215.24	-10870.29	0.203	1.75	Si
1.23	0.000763	0.052	0.000763	0.052							-5803.35	SLD 10	-6215.24	-10870.29	0.203	1.75	Si
2.3	0.000763	0.052	0.000763	0.052	370.59	SLD 7	370.59	10870.29	0.203	29.33	-1273.98	SLD 10	-2747.74	-10870.29	0.203	3.96	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000216	0.000644	0	-18673	SLU 84	-18673	-10870	-88449	-30326	-30326	1	1.62	Si
1.15	0.0000216	0.000763	0	-3269	SLU 84	-3269	-10870	-88449	-30326	-30326	1	9.28	Si
2.3	0.0000216	0.000763	0	9825	SLU 84	9825	10870	88449	30326	30326	1	3.09	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000216	0.000763	0	4796	SLV 7	4796	10870	88449	30326	30326	1	6.32	Si
0	0.0000216	0.000644	0	-29695	SLV 10	-29695	-10870	-88449	-30326	-30326	1	1.02	Si
1.15	0.0000216	0.000763	0	2003	SLV 7	2003	10870	88449	30326	30326	1	15.14	Si
1.15	0.0000216	0.000763	0	-6279	SLV 10	-6279	-10870	-88449	-30326	-30326	1	4.83	Si
2.3	0.0000216	0.000763	0	14410	SLV 6	14410	10870	88449	30326	30326	1	2.1	Si
2.3	0.0000216	0.000763	0	-1222	SLV 11	-1222	-10870	-88449	-30326	-30326	1	24.82	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000216	0.000644	0	-19355	SLD 10	-19355	-10870	-88449	-30326	-30326	1	1.57	Si
1.15	0.0000216	0.000763	0	-3812	SLD 10	-3812	-10870	-88449	-30326	-30326	1	7.96	Si
2.3	0.0000216	0.000763	0	9717	SLD 6	9717	10870	88449	30326	30326	1	3.12	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	2462.71	21	2462.71	92790	1494000	1403312	36000000	2212.02	2	2212.02	83345	1120500			Si
1.15	-4038.44	21	-4434.82	166276	1494000	2494146	36000000	-3662.98	2	-4014.03	150499	1120500			Si
2.3	-533.84	21	-1642.49	61582	1494000	923735	36000000	-451.69	2	-1465.01	54928	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 45 - 45, sezione R 70x45, asta 743

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	4636	SLV 6	0.135	6651	11964	SLV 6	15877	Si
0.15	0.41	0.0004	4617	SLV 10	0.135	6651	11916	SLV 10	15877	Si
0.23	0.41	0.0004	4604	SLV 10	0.135	6651	11881	SLV 10	15877	Si
0.46	0.41	0.0007	4556	SLV 10	0.172	10803	11756	SLV 10	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	3168	SLD 6	0.111	7725	8177	SLD 6	15877	Si
0.15	0.41	0.0004	3156	SLD 10	0.111	7725	8146	SLD 10	15877	Si
0.23	0.41	0.0004	3148	SLD 10	0.111	7725	8123	SLD 10	15877	Si
0.46	0.41	0.0007	3115	SLD 10	0.142	12581	8039	SLD 10	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000437	2435	SLE RA 21	68094	1494000	844367	36000000	2194	SLE QP 2	61335	1120500	Si
0.15	0.41	0.00000437	2427	SLE RA 21	67849	1494000	841332	36000000	2186	SLE QP 2	61123	1120500	Si
0.23	0.41	0.00000437	2420	SLE RA 21	67662	1494000	839013	36000000	2180	SLE QP 2	60959	1120500	Si
0.46	0.41	0.00000721	2395	SLE RA 21	64591	1494000	800927	36000000	2158	SLE QP 2	58203	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 3 tra i fili 45 - 57, sezione R 70x45, aste 742, 741, 740, 739, 738, 737

Campata 4 tra i fili 57 - ?, sezione R 70x45, aste 736, 735

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0007	4758	SLV 10	0.172	10803	12278	SLV 10	15877	Si
0.26	0.41	0.0004	4896	SLV 10	0.126	5794	12634	SLV 10	15877	Si
0.3	0.41	0.0004	4916	SLV 10	0.126	5794	12688	SLV 10	15877	Si
0.53	0.41	0.0004	5030	SLV 10	0.126	5794	12980	SLV 10	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0007	3226	SLD 10	0.142	12581	8325	SLD 10	15877	Si
0.26	0.41	0.0004	3311	SLD 10	0.104	6725	8544	SLD 10	15877	Si
0.3	0.41	0.0004	3323	SLD 10	0.104	6725	8576	SLD 10	15877	Si
0.53	0.41	0.0004	3390	SLD 10	0.104	6725	8749	SLD 10	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000721	2439	SLE RA 21	65781	1494000	815681	36000000	2205	SLE QP 2	59466	1120500	Si
0.26	0.41	0.00000379	2492	SLE RA 21	70198	1494000	870461	36000000	2253	SLE QP 2	63479	1120500	Si
0.3	0.41	0.00000379	2500	SLE RA 21	70414	1494000	873128	36000000	2260	SLE QP 2	63676	1120500	Si
0.53	0.41	0.00000379	2539	SLE RA 21	71518	1494000	886820	36000000	2296	SLE QP 2	64686	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 5 tra i fili ? - 58, sezione R 70x45, aste 734, 733, 732, 731

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	5030	SLV 10	0.126	5794	12980	SLV 10	15877	Si
0.23	0.41	0.0003	5122	SLV 10	0.12	5289	13218	SLV 10	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	3390	SLD 10	0.104	6725	8749	SLD 10	15877	Si
0.23	0.41	0.0003	3445	SLD 10	0.099	6136	8889	SLD 10	15877	Si
0.73	0.41	0.0003	3538	SLD 10	0.099	6136	9129	SLD 10	15877	Si
1.3	0.41	0.0003	3575	SLD 10	0.099	6136	9225	SLD 10	15877	Si
1.45	0.41	0.0003	3567	SLD 10	0.099	6136	9205	SLD 10	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000379	2539	SLE RA 21	71518	1494000	886820	36000000	2296	SLE QP 2	64686	1120500	Si
0.23	0.41	0.00000345	2570	SLE RA 21	72712	1494000	901623	36000000	2325	SLE QP 2	65775	1120500	Si
0.73	0.41	0.00000345	2614	SLE RA 21	73971	1494000	917237	36000000	2365	SLE QP 2	66927	1120500	Si
1.3	0.41	0.00000345	2611	SLE RA 21	73882	1494000	916142	36000000	2363	SLE QP 2	66850	1120500	Si
1.45	0.41	0.00000345	2598	SLE RA 21	73499	1494000	911385	36000000	2350	SLE QP 2	66502	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.002	379	SLE RA 21	0.05	0.001	379	392	SLE RA 21	0.05	0	380	SLE RA 21	0.0033	0	SLE RA 1	Si
D	0.05	0	392	SLE RA 1	0.05	0	392	392	SLE RA 1	0.05	0	388	SLE RA 1	0.0033	0	SLE RA 1	Si

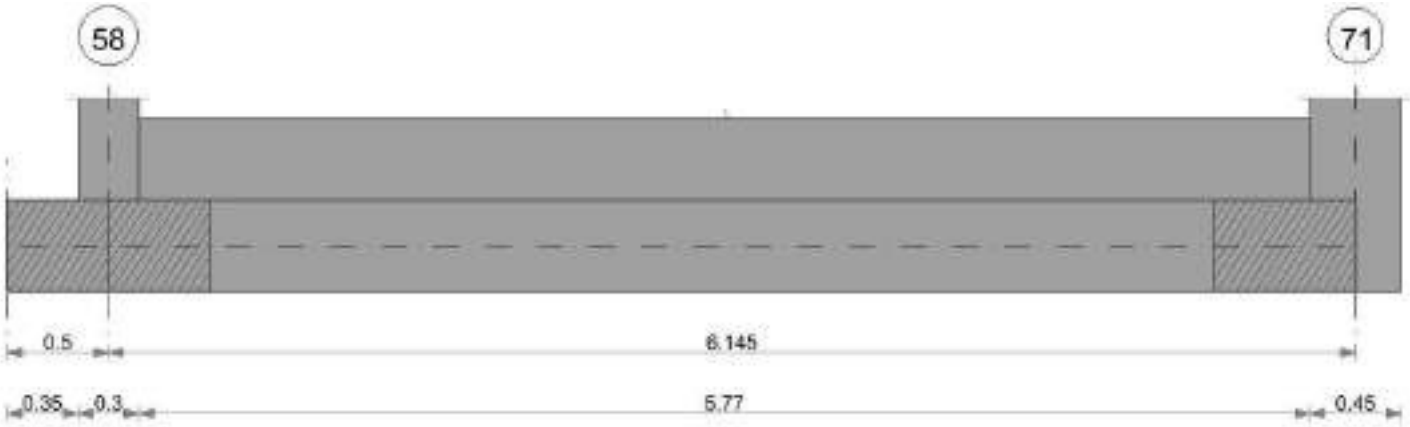
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
Z	0.05	0	392	SLE RA 1	0.05	0	392	392	SLE RA 1	0.05	0	388	SLE RA 1	0.0033	0	SLE RA 1	Si

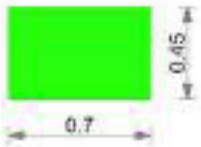
Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	392	388	SLE RA 21	0.19	0.01	380	SLE RA 21	0.1	0	388	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	392	388	SLE RA 1	0.19	0	392	SLE RA 1	0.1	0	388	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	392	388	SLE RA 1	0.19	0	392	SLE RA 1	0.1	0	388	SLE RA 1	Si

CORDOLO 20

Geometria





Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

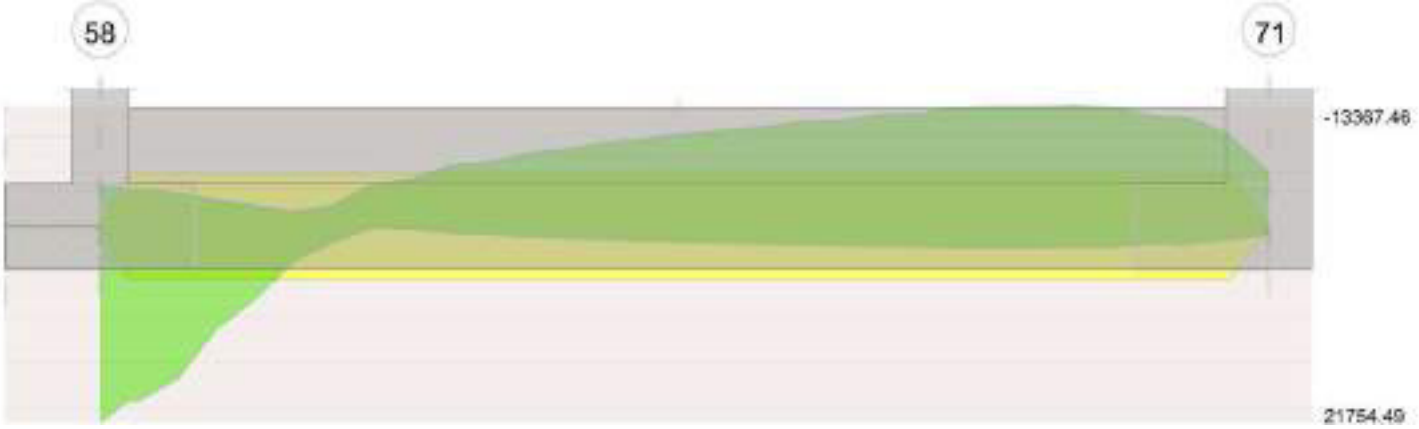
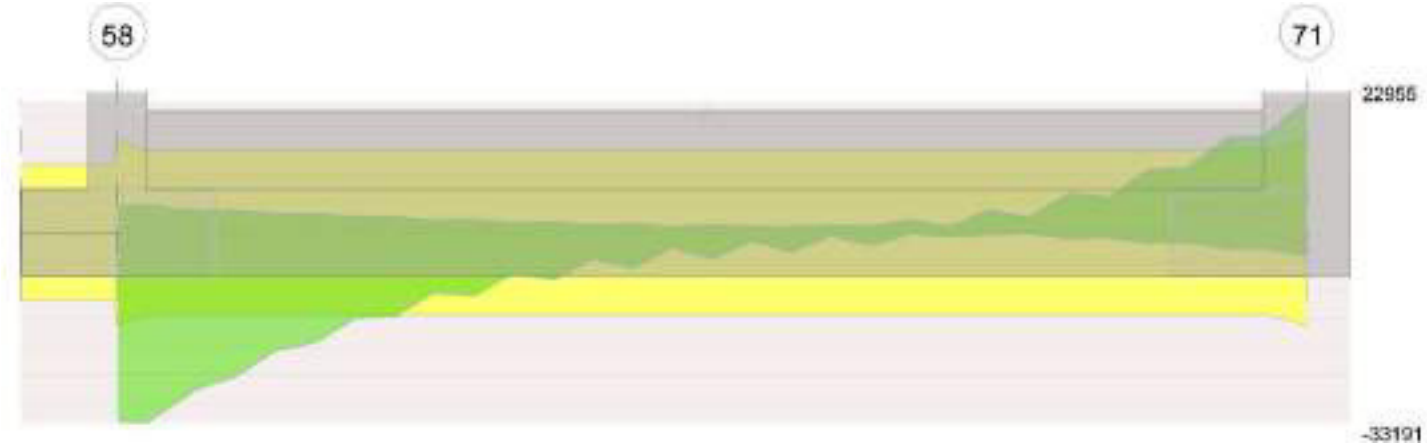


Diagramma verifica stato limite ultimo taglio



Output campate

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 58 - 71, sezione R 70x45, aste 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
3.07	0.41	0.0003	4109	SLV 10	0.119	5197	10603	SLV 10	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	3516	SLD 10	0.098	6029	9074	SLD 10	15877	Si
0.15	0.41	0.0003	3494	SLD 10	0.098	6029	9017	SLD 10	15877	Si
3.07	0.41	0.0003	2607	SLD 10	0.098	6029	6728	SLD 10	15877	Si
5.92	0.41	0.0003	4040	SLD 10	0.098	6029	10427	SLD 10	15877	Si
6.15	0.41	0.0003	4287	SLD 10	0.098	6029	11063	SLD 10	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000339	2530	SLE RA 21	71646	1494000	888404	36000000	2289	SLE QP 2	64819	1120500	Si
0.15	0.41	0.00000339	2506	SLE RA 21	70957	1494000	879872	36000000	2267	SLE QP 2	64194	1120500	Si
3.07	0.41	0.00000339	1768	SLE RA 21	50073	1494000	620902	36000000	1598	SLE QP 2	45258	1120500	Si
5.92	0.41	0.00000339	2688	SLE RA 21	76117	1494000	943856	36000000	2440	SLE QP 2	69097	1120500	Si
6.15	0.41	0.00000339	2854	SLE RA 21	80817	1494000	1002125	36000000	2592	SLE QP 2	73391	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
434,435,436,437,438,439,440,441,442,443,444,445,446,447,448,449	6.37	1.3	SLU 84	ST	BT	2.3	273599	92331	2.96	Si
434,435,436,437,438,439,440,441,442,443,444,445,446,447,448,449	6.37	1.3	SLD 10	SIS	BT	2.3	252977	93267	2.71	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-210	-92331	12018.97	486.46	0	0	0.01	0.13	1.04	6.36	1496	2060	0	14430	
0	14828	-4314	-5169.16	2506.48	0	74	0.58	-1.2	-1.1	5.21	1496	2060	0	14430	0.07
0	-5755	-93267	14359.9	4327.27	0	-4	0.05	0.15	0.99	6.28	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.03	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	5	0	0	0.03	0	0	0.23	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

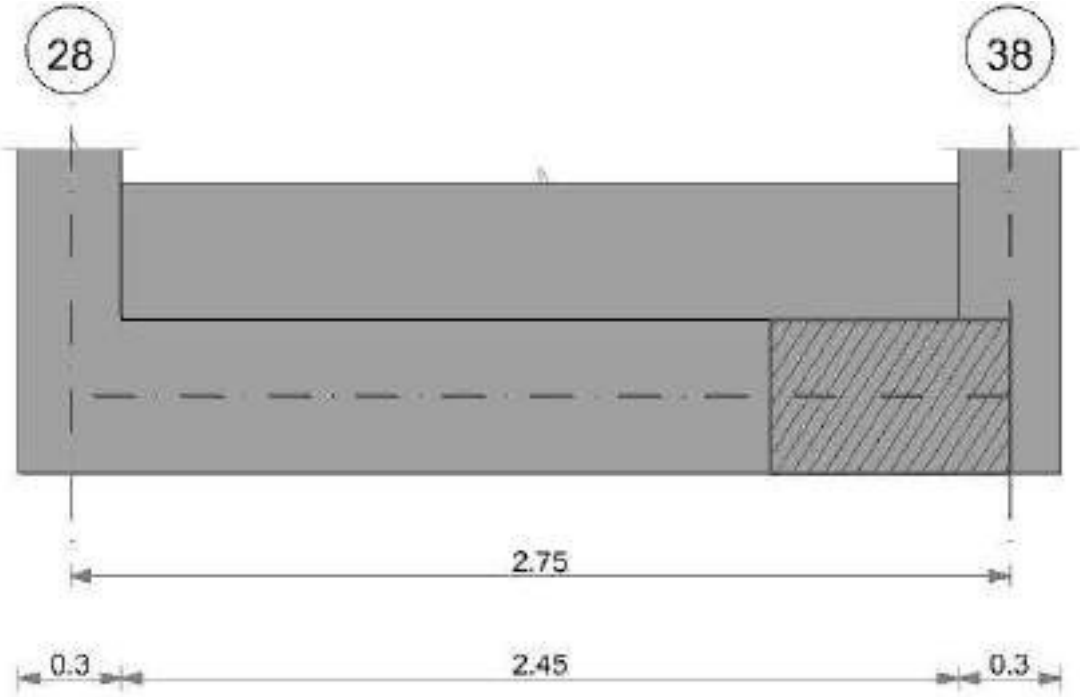
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.001	393	SLE RA 21	0.05	0.001	393	409	SLE RA 21	0.05	0	409	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	409	SLE RA 1	0.05	0	409	409	SLE RA 1	0.05	0	409	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	409	SLE RA 1	0.05	0	409	409	SLE RA 1	0.05	0	409	SLE RA 1	0.0033	0	SLE RA 1	Si

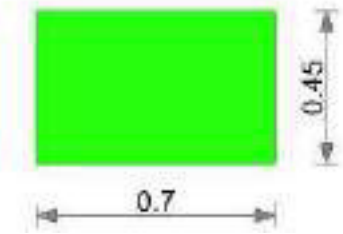
Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	409	393	SLE RA 21	0.19	0	409	SLE RA 1	0.1	0	409	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	409	393	SLE RA 1	0.19	0	409	SLE RA 1	0.1	0	409	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	409	393	SLE RA 1	0.19	0	409	SLE RA 1	0.1	0	409	SLE RA 1	Si

CORDOLO 21

Geometria





Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

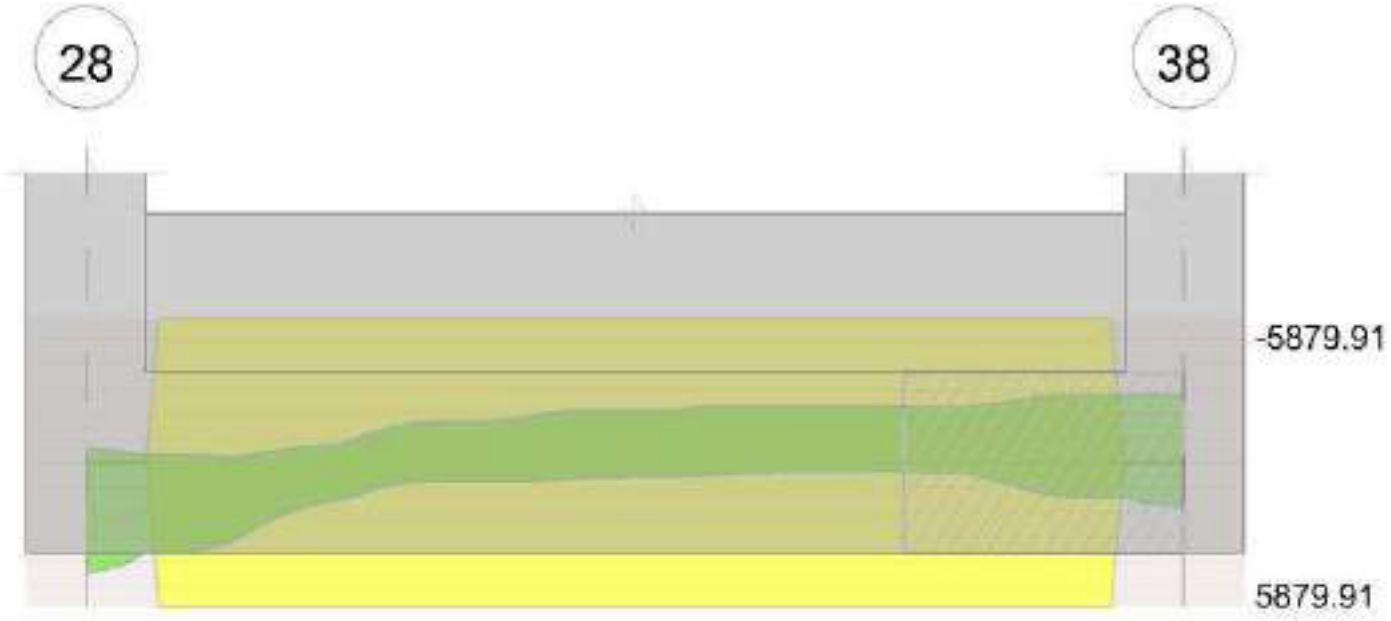
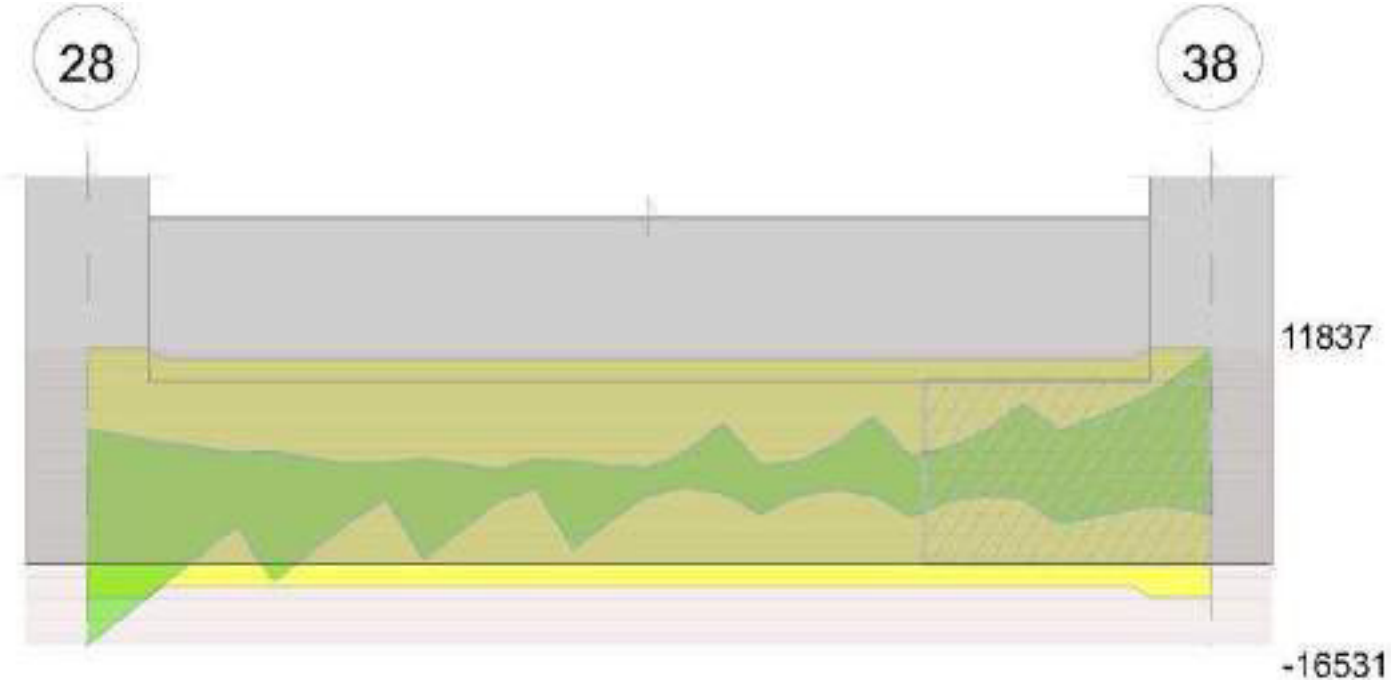


Diagramma verifica stato limite ultimo taglio



Output campate

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 28 - 38, sezione R 70x45, aste 691, 690, 689, 688, 687, 686, 685

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
1.38	0.41	0.0003	5246	SLV 10	0.12	5298	15544	SLV 10	15877	Si
2.6	0.41	0.0003	5236	SLV 10	0.12	5298	15513	SLV 10	15877	Si
2.75	0.41	0.0003	5242	SLV 10	0.12	5298	15533	SLV 10	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	3407	SLD 5	0.099	6147	10094	SLD 5	15877	Si
0.15	0.41	0.0003	3398	SLD 5	0.099	6147	10067	SLD 5	15877	Si
1.38	0.41	0.0003	3303	SLD 10	0.099	6147	9787	SLD 10	15877	Si
2.6	0.41	0.0003	3278	SLD 10	0.099	6147	9714	SLD 10	15877	Si
2.75	0.41	0.0003	3281	SLD 10	0.099	6147	9721	SLD 10	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000346	2319	SLE RA 21	65606	1494000	813519	36000000	2087	SLE QP 2	59055	1120500	Si
0.15	0.41	0.00000346	2313	SLE RA 21	65425	1494000	811270	36000000	2082	SLE QP 2	58889	1120500	Si
1.38	0.41	0.00000346	2235	SLE RA 21	63244	1494000	784228	36000000	2012	SLE QP 2	56930	1120500	Si
2.6	0.41	0.00000346	2196	SLE RA 21	62114	1494000	770219	36000000	1978	SLE QP 2	55953	1120500	Si
2.75	0.41	0.00000346	2194	SLE RA 21	62083	1494000	769830	36000000	1977	SLE QP 2	55931	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
691,690,689,688,687,686,685	3.05	1.3	SLU 84	ST	BT	2.3	165531	57045	2.9	Si
691,690,689,688,687,686,685	3.05	1.3	SLV 6	SIS	BT	2.3	150141	89331	1.68	Si
691,690,689,688,687,686,685	3.05	1.3	SLD 6	SIS	BT	2.3	157507	58900	2.67	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
-2	333	-57045	797.06	-677.26	0	0	-0.01	0.01	1.27	3.03	1496	2060	0	14430	
-3396	-6728	-89331	4438.2	-1467.64	-2	-4	-0.02	0.05	1.2	3.02	1496	2060	0	14430	0.07
-1430	-2526	-58900	2091.13	-869.99	-1	-2	-0.01	0.04	1.23	3.02	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.08	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.08	0	0	0.23	0	0	0.05	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.08	0	0	0.23	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.001	212	SLE RA 21	0.05	0	212	205	SLE RA 21	0.05	0	212	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	212	SLE RA 1	0.05	0	212	212	SLE RA 1	0.05	0	212	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	212	SLE RA 1	0.05	0	212	212	SLE RA 1	0.05	0	212	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0	SLE RA 21	0.19	0	212	205	SLE RA 21	0.19	0	212	SLE RA 1	0.1	0	212	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	212	205	SLE RA 1	0.19	0	212	SLE RA 1	0.1	0	212	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	212	205	SLE RA 1	0.19	0	212	SLE RA 1	0.1	0	212	SLE RA 1	Si

CORDOLO 22

Geometria

Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

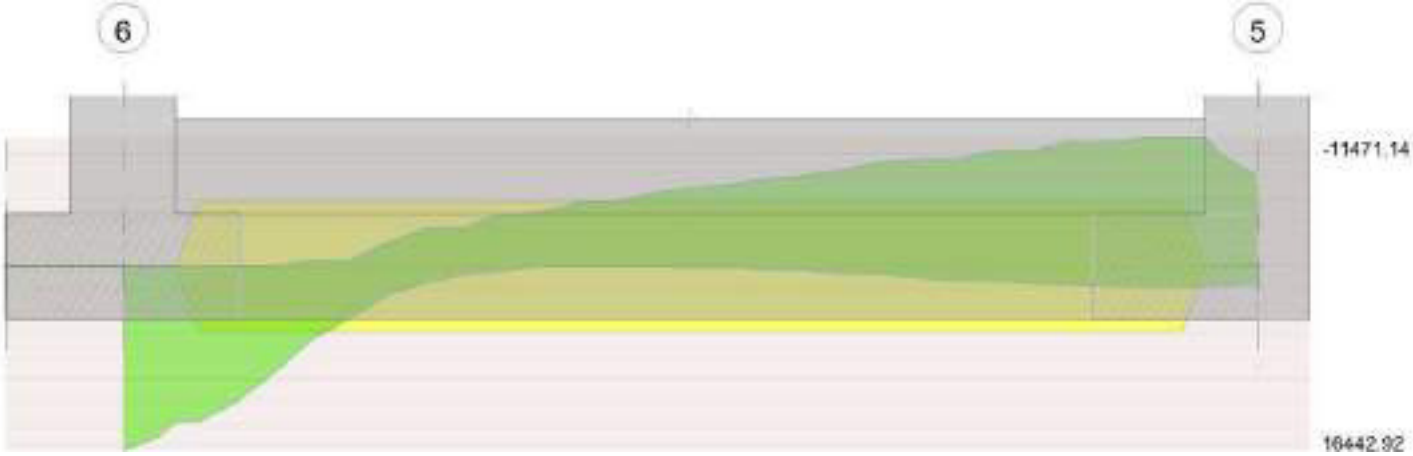
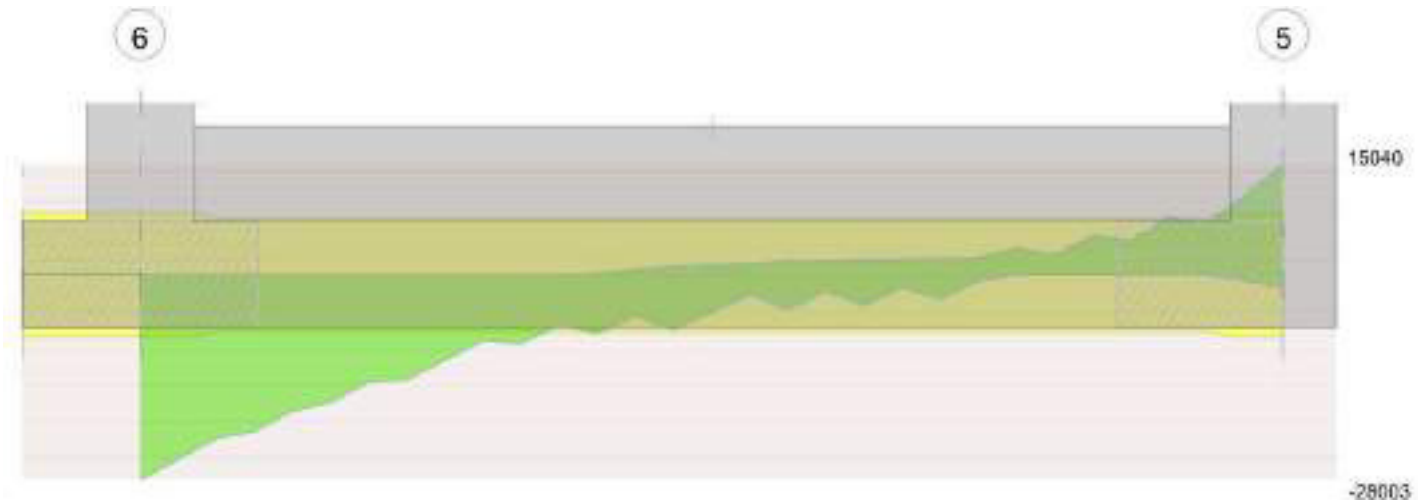


Diagramma verifica stato limite ultimo taglio



Output campate

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 6 - 5, sezione R 50x45, aste 552, 551, 550, 549, 548, 547, 546, 545, 544, 543, 542, 541, 540

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	2567	SLV 1	0.085	2626	8928	SLV 1	15877	Si
0.23	0.41	0.0002	2552	SLV 3	0.085	2626	8877	SLV 3	15877	Si
2.41	0.41	0.0002	2252	SLV 4	0.085	2626	7832	SLV 4	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1918	SLD 1	0.07	3039	6672	SLD 1	15877	Si
0.23	0.41	0.0002	1909	SLD 3	0.07	3039	6640	SLD 3	15877	Si
2.41	0.41	0.0002	1599	SLD 4	0.07	3039	5561	SLD 4	15877	Si
4.6	0.41	0.0002	2264	SLD 8	0.07	3039	7873	SLD 8	15877	Si
4.83	0.41	0.0002	2411	SLD 8	0.07	3039	8385	SLD 8	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000169	1571	SLE RA 21	45501	1494000	564209	36000000	1435	SLE QP 2	41555	1120500	Si
0.23	0.41	0.00000169	1565	SLE RA 21	45311	1494000	561855	36000000	1429	SLE QP 2	41389	1120500	Si
2.41	0.41	0.00000169	1231	SLE RA 20	35640	1494000	441935	36000000	1123	SLE QP 2	32508	1120500	Si
4.6	0.41	0.00000169	1475	SLE RA 20	42707	1494000	529572	36000000	1346	SLE QP 2	38970	1120500	Si
4.83	0.41	0.00000169	1551	SLE RA 20	44922	1494000	557034	36000000	1416	SLE QP 2	40999	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
552,551,550,549,548,547,546,545,544,543,542,541,540	5.05	1.1	SLU 83	ST	BT	2.3	201666	72743	2.77	Si
552,551,550,549,548,547,546,545,544,543,542,541,540	5.05	1.1	SLD 4	SIS	BT	2.3	194867	66799	2.92	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-798	-72743	-5473.91	-3387.93	0	-1	-0.05	-0.08	0.95	4.96	1496	2060	0	14430	
0	-8522	-9815	2189.55	-10779.84	0	-41	-1.1	0.22	0.65	2.86	1496	2060	37	0	0.07
0	2833	-66799	-6179.4	1016.03	0	2	0.02	-0.09	0.91	5.02	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Nγ	Sq	Sc	Sγ	Dq	Dc	Dγ	Iq	Ic	Iγ	Bq	Bc	Bγ	Gq	Gc	Gγ	Pq	Pc	Pγ	Eq	Ec	Eγ
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
43	56	66	1.17	1.18	0.91	1.16	1.27	1	0.03	0	0	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
1	5	0	0	0.04	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.001	626	SLE RA 21	0.05	0.001	626	982	SLE RA 21	0.05	0	626	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	626	SLE RA 1	0.05	0	626	626	SLE RA 1	0.05	0	626	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	626	SLE RA 1	0.05	0	626	626	SLE RA 1	0.05	0	626	SLE RA 1	0.0033	0	SLE RA 1	Si

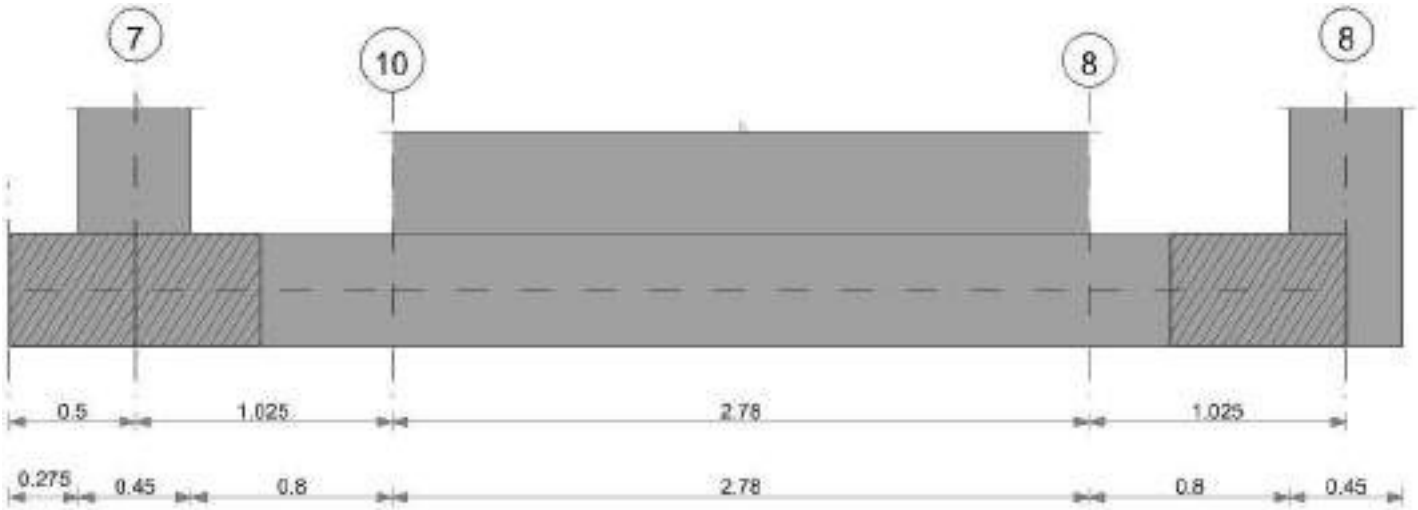
Verifiche geotecniche - Rotazioni assolute e differenziali

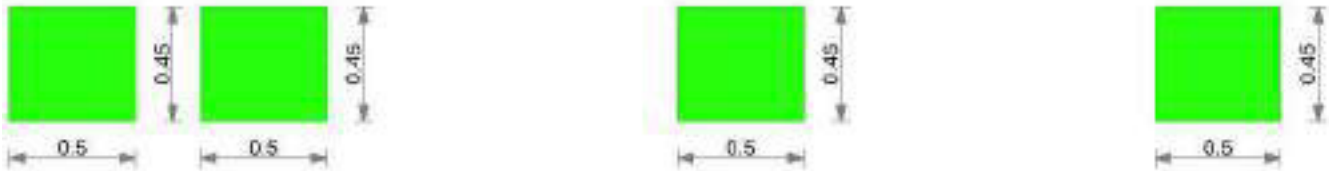
Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	626	982	SLE RA 21	0.19	0	626	SLE RA 1	0.1	0	626	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	626	982	SLE RA 1	0.19	0	626	SLE RA 1	0.1	0	626	SLE RA 1	Si

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
Z	0.19	0	SLE RA 1	0.19	0	626	982	SLE RA 1	0.19	0	626	SLE RA 1	0.1	0	626	SLE RA 1	Si

CORDOLO 23

Geometria





Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

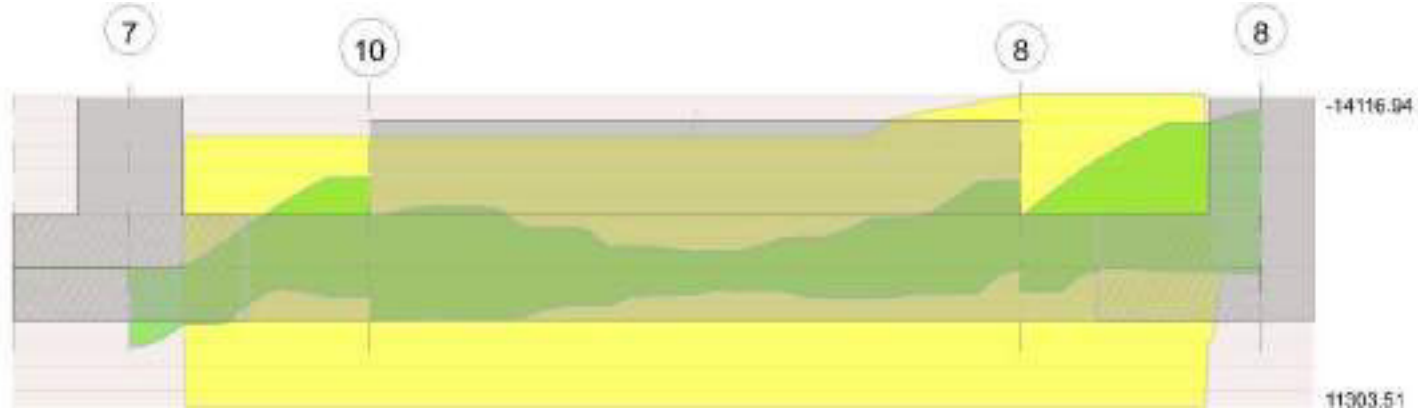


Diagramma verifica stato limite ultimo taglio

Output campate

Campata 2 tra i fili 7 - 10, sezione R 50x45, asta 539

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.51	0.000763	0.052	0.000804	0.051	148.81	SLU 73	2305.09	11843.28	0.134	5.14	76.18	SLU 6	-1614.79	-11250.14	0.13	6.97	Si
1.03	0.000763	0.052	0.000804	0.051							-3749.74	SLU 83	-3749.74	-11250.14	0.13	3	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.51	0.000763	0.052	0.000804	0.051	1415.86	SLV 5	2816.93	11299.2	0.239	4.01	-1240.97	SLV 12	-3503.3	-10726.1	0.232	3.06	Si
1.03	0.000763	0.052	0.000804	0.051	2320.88	SLV 9	2320.88	11299.2	0.239	4.87	-7335.72	SLV 8	-7335.72	-10726.1	0.232	1.46	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.51	0.000763	0.052	0.000804	0.051	623.32	SLD 5	2086.42	11299.2	0.239	5.42	-448.44	SLD 12	-2051.83	-10726.1	0.232	5.23	Si
1.03	0.000763	0.052	0.000804	0.051							-4448.93	SLD 8	-4448.93	-10726.1	0.232	2.41	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000177	0	0	-17698	SLU 83	-17698	-8455	-71432	-27978	-27978	1	1.58	Si
0.23	0.0000177	0	0	-14706	SLU 83	-14706	-8455	-71432	-27978	-27978	1	1.9	Si
0.51	0.0000177	0	0	-10913	SLU 83	-10913	-7777	-63336	-24807	-24807	1	2.27	Si
1.03	0.0000177	0.000763	0	-4257	SLU 83	-4257	-8659	-63178	-24745	-24745	1	5.81	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000177	0	0	-20385	SLV 8	-20385	-8455	-71432	-27978	-27978	1	1.37	Si
0.23	0.0000177	0	0	-18148	SLV 8	-18148	-8455	-71432	-27978	-27978	1	1.54	Si
0.51	0.0000177	0	0	604	SLV 9	604	7777	63336	24807	24807	1	41.1	Si
0.51	0.0000177	0	0	-15202	SLV 8	-15202	-7764	-63178	-24745	-24745	1	1.63	Si
1.03	0.0000177	0.000804	0	4028	SLV 9	4028	8820	63336	24807	24807	1	6.16	Si
1.03	0.0000177	0.000763	0	-9710	SLV 8	-9710	-8659	-63178	-24745	-24745	1	2.55	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000177	0	0	-15307	SLD 8	-15307	-8455	-71432	-27978	-27978	1	1.83	Si
0.23	0.0000177	0	0	-13203	SLD 8	-13203	-8455	-71432	-27978	-27978	1	2.12	Si
0.51	0.0000177	0	0	-10493	SLD 8	-10493	-7764	-63178	-24745	-24745	1	2.36	Si
1.03	0.0000177	0.000763	0	-5611	SLD 8	-5611	-8659	-63178	-24745	-24745	1	4.41	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	5460.66	20	4004.42	237299	1494000	0	36000000	4990.03	2	3658.85	216821	1120500			Si
0.23	2793.38	20	2793.38	165534	1494000	0	36000000	2551.81	2	2551.81	151218	1120500			Si
0.51	108.6	10	1687.63	84470	1494000	1261712	36000000	87.44	2	1540.98	77130	1120500			Si
1.03	-2740.64	20	-2740.64	136598	1494000	2057637	36000000	-2507.42	2	-2507.42	124973	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Campata 4 tra i fili 8 - 8, sezione R 50x45, asta 531

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001018	0.052	0.000804	0.051							-577.95	SLU 52	-3011.28	-14731.26	0.146	4.89	Si
0.51	0.001018	0.052	0.000804	0.051							-6576.01	SLU 83	-7932.3	-14731.26	0.146	1.86	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001018	0.052	0.000804	0.051	1888.62	SLV 12	1888.62	11303.51	0.234	5.99	-2701.64	SLV 5	-4147.64	-14116.94	0.266	3.4	Si
0.51	0.001018	0.052	0.000804	0.051	-26.88	SLV 14	102.9	11303.51	0.234	109.85	-8824.67	SLV 3	-10751.59	-14116.94	0.266	1.31	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001018	0.052	0.000804	0.051	524.58	SLD 12	524.58	11303.51	0.234	21.55	-1337.6	SLD 5	-2949.6	-14116.94	0.266	4.79	Si
0.51	0.001018	0.052	0.000804	0.051							-6279.34	SLD 3	-7608.01	-14116.94	0.266	1.86	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0.51	0.0000105	0	0	-8668	SLU 83	-8668	-7764	-63178	-14655	-14655	1	1.69	Si
0.8	0.0000105	0	0	-5101	SLU 83	-5101	-8455	-71432	-16569	-16569	1	3.25	Si
1.02	0.0000105	0	0	-2237	SLU 83	-2237	-8455	-71432	-16569	-16569	1	7.41	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000105	0.001018	0	3555	SLV 9	3555	9530	63178	14655	14655	1	4.12	Si
0.51	0.0000105	0	0	2592	SLV 10	2592	7764	63178	14655	14655	1	5.65	Si
0.51	0.0000105	0	0	-14093	SLV 7	-14093	-7764	-63178	-14655	-14655	1	1.04	Si
0.8	0.0000105	0.000402	0	1834	SLV 10	1834	7777	63336	14691	14691	1	8.01	Si
0.8	0.0000105	0	0	-8559	SLV 7	-8559	-8455	-71432	-16569	-16569	1	1.94	Si
1.02	0.0000105	0.000402	0	1728	SLV 14	1728	8455	71432	16569	16569	1	9.59	Si
1.02	0.0000105	0	0	-4619	SLV 3	-4619	-8455	-71432	-16569	-16569	1	3.59	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0.51	0.0000105	0	0	-9117	SLD 7	-9117	-7764	-63178	-14655	-14655	1	1.61	Si
0.8	0.0000105	0	0	-5467	SLD 7	-5467	-8455	-71432	-16569	-16569	1	3.03	Si
1.02	0.0000105	0	0	-2788	SLD 3	-2788	-8455	-71432	-16569	-16569	1	5.94	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-432.46	10	-2221.41	109268	1494000	1608008	36000000	-406.51	2	-2056.99	101181	1120500			Si
0.51	-4822.11	20	-5810.37	448959	1494000	16011589	36000000	-4425.77	2	-5324.35	411405	1120500			Si

Verifica di apertura delle fessure

x	Bordo	Rara				Frequente				Quasi permanente				Verifica
		Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	
0.51	superiore	0.313	0.00047	0.000146	20	0.313	0.00044	0.000137	6	0.313	0.00043	0.000134	2	Si

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 7 - 10, sezione R 50x45, asta 539

Campata 3 tra i fili 10 - 8, sezione R 50x45, aste 538, 537, 536, 535, 534, 533, 532

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0009	2306	SLU 83	0.074	13774	7095	SLU 83	31377	Si
1.39	0.41	0.0005	2608	SLV 8	0.145	7671	8023	SLV 8	17996	Si
2.78	0.41	0.0005	3256	SLV 8	0.147	7913	10020	SLV 8	18582	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0009	1804	SLD 4	0.157	15303	5551	SLD 4	36083	Si
1.39	0.41	0.0005	1932	SLD 8	0.119	8916	5943	SLD 8	20695	Si
2.78	0.41	0.0005	2161	SLD 8	0.121	9199	6650	SLD 8	21369	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000883	1683	SLE RA 20	44509	1494000	551917	36000000	1527	SLE QP 2	40381	1120500	Si
1.39	0.41	0.00000506	1626	SLE RA 20	45068	1494000	558847	36000000	1475	SLE QP 2	40862	1120500	Si
2.78	0.41	0.00000523	1572	SLE RA 20	43470	1494000	539031	36000000	1425	SLE QP 2	39419	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 4 tra i fili 8 - 8, sezione R 50x45, asta 531

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
539,538,537,536,535,534,533,532,531	5.05	1.1	SLU 83	ST	BT	2.3	234904	69743	3.37	Si
539,538,537,536,535,534,533,532,531	5.05	1.1	SLV 8	SIS	BT	2.3	210093	76842	2.73	Si
539,538,537,536,535,534,533,532,531	5.05	1.1	SLD 8	SIS	BT	2.3	225262	59376	3.79	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-782	-69743	259.92	-1922.02	0	-1	-0.03	0	1.09	5	1496	2060	0	14430	
0	1178	-76842	21.43	23939.29	0	1	0.31	0	1.1	4.43	1496	2060	0	14430	0.07
0	199	-59376	100.49	8783.59	0	0	0.15	0	1.1	4.76	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

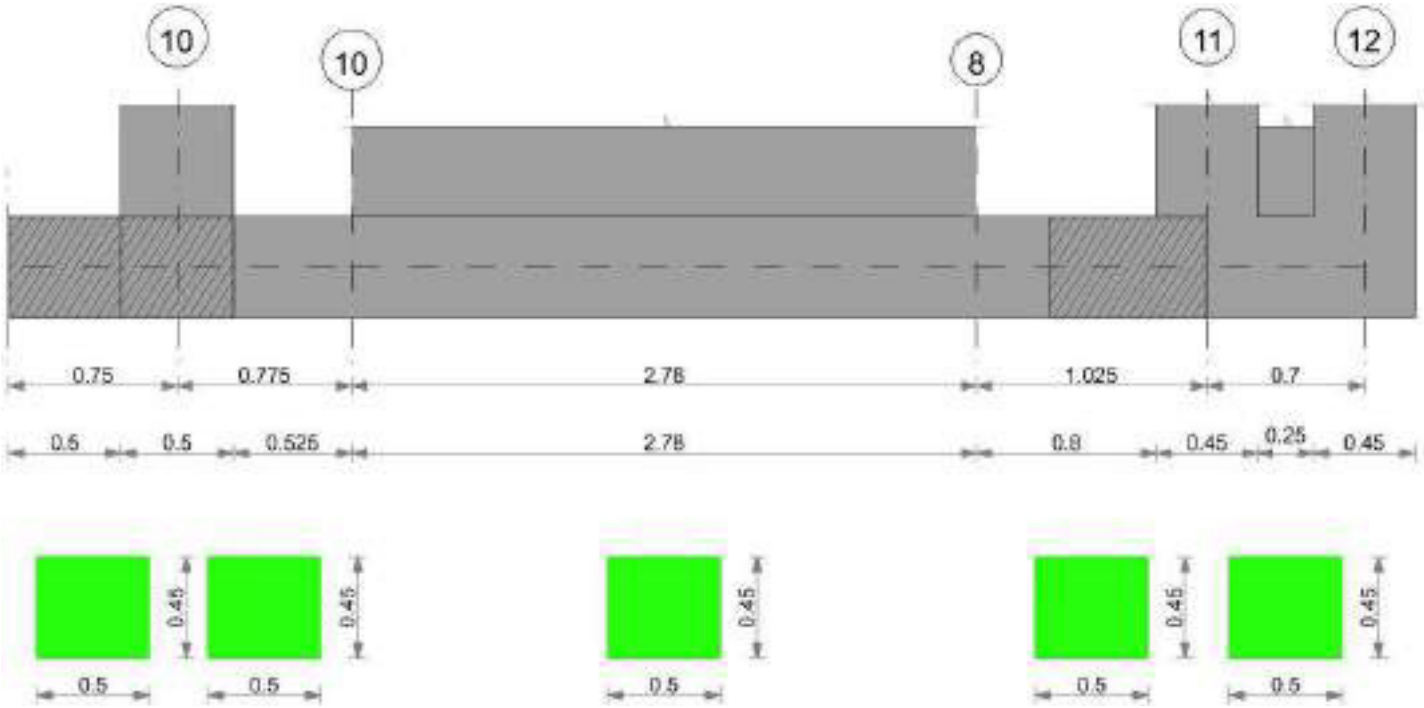
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.002	639	SLE RA 20	0.05	0.001	639	995	SLE RA 21	0.05	0	765	SLE RA 20	0.0033	0	SLE RA 1	Si
D	0.05	0	639	SLE RA 1	0.05	0	639	639	SLE RA 1	0.05	0	765	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	639	SLE RA 1	0.05	0	639	639	SLE RA 1	0.05	0	765	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.02	SLE RA 21	0.19	0.02	921	995	SLE RA 20	0.19	0.01	765	SLE RA 20	0.1	0	639	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	639	765	SLE RA 1	0.19	0	639	SLE RA 1	0.1	0	765	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	639	765	SLE RA 1	0.19	0	639	SLE RA 1	0.1	0	765	SLE RA 1	Si

CORDOLO 24

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

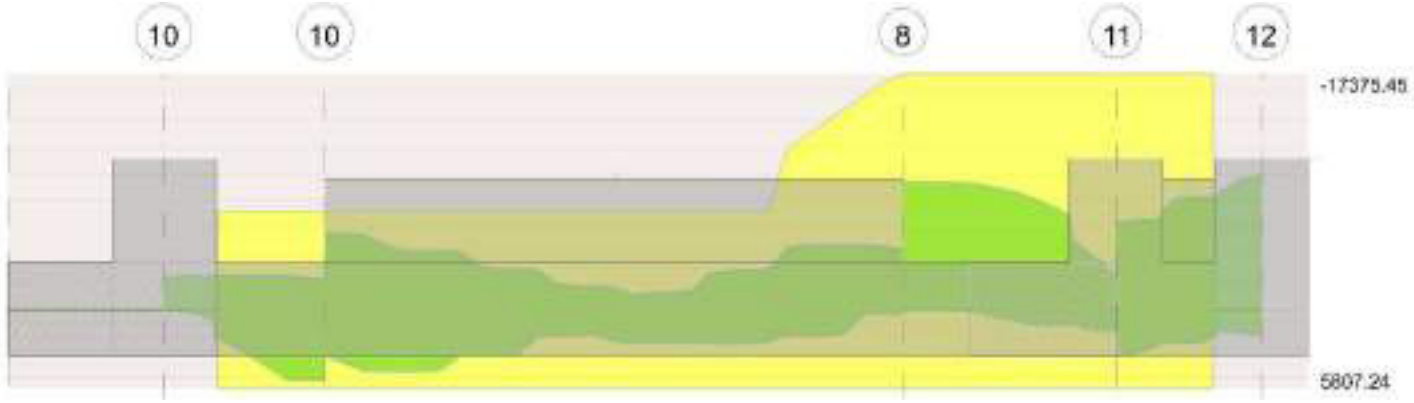
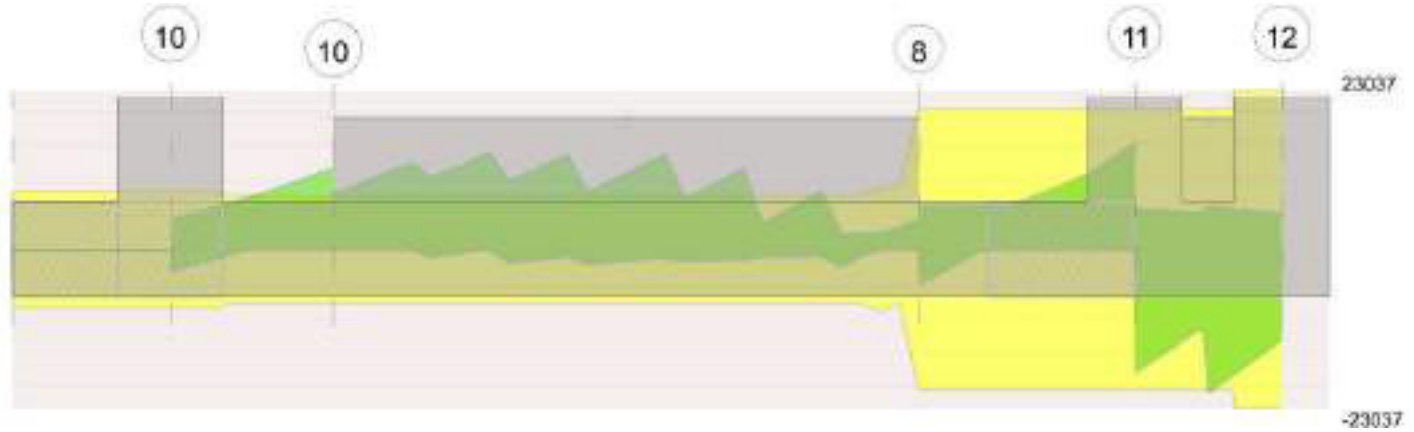


Diagramma verifica stato limite ultimo taglio



Output campate

Campata 2 tra i fili 10 - 10, sezione R 50x45, asta 327

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.39	0.000509	0.052	0.000402	0.051	-330.27	SLU 2	685.42	6299.4	0.106	9.19	-593.33	SLU 83	-1267.63	-7737.88	0.11	6.1	Si
0.78	0.000509	0.052	0.000402	0.051	2661.46	SLU 84	2661.46	6299.4	0.106	2.37							Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.39	0.000509	0.052	0.000402	0.051	1671.57	SLV 5	3156.79	5807.24	0.177	1.84	-2470.45	SLV 12	-2477.4	-7269.67	0.199	2.93	Si
0.78	0.000509	0.052	0.000402	0.051	5210.78	SLV 5	5210.78	5807.24	0.177	1.11	-1676.79	SLV 12	-2213.38	-7269.67	0.199	3.28	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.39	0.000509	0.052	0.000402	0.051	431.84	SLD 5	1537.56	5807.24	0.177	3.78	-1230.73	SLD 12	-1494.36	-7269.67	0.199	4.86	Si
0.78	0.000509	0.052	0.000402	0.051	3162.61	SLD 5	3162.61	5807.24	0.177	1.84	371.38	SLD 12	-534.61	-7269.67	0.199	13.6	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000039	0	0	816	SLU 76	816	8455	71432	6167	8455	1	10.36	Si
0.25	0.0000039	0	0	4054	SLU 84	4054	8455	71432	6167	8455	1	2.09	Si
0.39	0.0000039	0	0	5838	SLU 84	5838	7764	63178	5455	7764	1	1.33	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000039	0	0	4286	SLV 5	4286	8455	71432	6167	8455	1	1.97	Si
0	0.0000039	0	0	-3214	SLV 12	-3214	-8455	-71432	-6167	-8455	1	2.63	Si
0.25	0.0000039	0	0	6492	SLV 5	6492	8455	71432	6167	8455	1	1.3	Si
0.25	0.0000039	0	0	-1059	SLV 12	-1059	-8455	-71432	-6167	-8455	1	7.99	Si
0.39	0.0000039	0	0	7664	SLV 5	7664	7777	63336	5468	7777	1	1.01	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000039	0	0	2066	SLD 5	2066	8455	71432	6167	8455	1	4.09	Si
0	0.0000039	0	0	-994	SLD 12	-994	-8455	-71432	-6167	-8455	1	8.51	Si
0.25	0.0000039	0	0	4263	SLD 5	4263	8455	71432	6167	8455	1	1.98	Si

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0.39	0.0000039	0	0	5460	SLD 1	5460	7777	63336	5468	7777	1	1.42	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-1365.82	20	-1295.07	-76745	1494000	0	36000000	-1261.98	2	-1194.09	-70761	1120500			Si
0.25	-927	20	-927	-54933	1494000	0	36000000	-854.52	2	-854.52	-50638	1120500			Si
0.39	-432.86	20	-927	49821	1494000	739799	36000000	-399.44	2	-854.52	45925	1120500			Si
0.78	1950.02	21	1950.02	103748	1494000	1572020	36000000	1766.99	2	1766.99	94011	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Campata 4 tra i fili 8 - 11, sezione R 50x45, asta 319

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001272	0.052	0.000402	0.051							-7772.02	SLU 83	-7772.02	-18175.43	0.183	2.34	Si
0.51	0.001272	0.052	0.000402	0.051							-5691.57	SLU 83	-6790.14	-18175.43	0.183	2.68	Si
0.8	0.001272	0.052	0.000402	0.051							-3078.2	SLU 83	-4833.85	-18175.43	0.183	3.76	Si
1.02	0.001272	0.052	0.000402	0.051							-294.49	SLU 77	-294.49	-18175.43	0.183	61.72	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1
Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001272	0.052	0.000402	0.051							-9404.73	SLV 3	-9404.73	-17375.45	0.307	1.85	Si
0.51	0.001272	0.052	0.000402	0.051	116.55	SLV 14	719.63	5793.71	0.17	8.05	-7785.59	SLV 3	-8755.83	-17375.45	0.307	1.98	Si
0.8	0.001272	0.052	0.000402	0.051	1123.38	SLV 14	1123.38	5793.71	0.17	5.16	-5273.92	SLV 3	-6981.98	-17375.45	0.307	2.49	Si
1.02	0.001272	0.052	0.000402	0.051	2062.2	SLV 14	1553.63	5793.71	0.17	3.73	-2462.18	SLV 3	-2462.18	-17375.45	0.307	7.06	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1
Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001272	0.052	0.000402	0.051							-7013.62	SLD 3	-7013.62	-17375.45	0.307	2.48	Si
0.51	0.001272	0.052	0.000402	0.051							-5499.78	SLD 3	-6341.26	-17375.45	0.307	2.74	Si
0.8	0.001272	0.052	0.000402	0.051							-3421.72	SLD 3	-4825.57	-17375.45	0.307	3.6	Si
1.02	0.001272	0.052	0.000402	0.051	753.84	SLD 14	401.28	5793.71	0.17	14.44	-1153.82	SLD 3	-1153.82	-17375.45	0.307	15.06	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000145	0.001272	0	978	SLU 73	978	10266	63178	20375	20375	1	20.83	Si
0.51	0.0000145	0.001272	0	7261	SLU 84	7261	10266	63178	20375	20375	1	2.81	Si
0.8	0.0000145	0.001272	0	10933	SLU 83	10933	10266	63178	20375	20375	1	1.86	Si
1.02	0.0000145	0.001272	0	13896	SLU 83	13896	10266	63178	20375	20375	1	1.47	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000145	0.001272	0	6364	SLV 5	6364	10266	63178	20375	20375	1	3.2	Si
0	0.0000145	0.001272	0	-5083	SLV 12	-5083	-10266	-63178	-20375	-20375	1	4.01	Si
0.51	0.0000145	0.001272	0	7045	SLV 1	7045	10266	63178	20375	20375	1	2.89	Si
0.8	0.0000145	0.001272	0	10879	SLV 3	10879	10266	63178	20375	20375	1	1.87	Si
1.02	0.0000145	0.001272	0	15514	SLV 7	15514	10266	63178	20375	20375	1	1.31	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000145	0.001272	0	2938	SLD 5	2938	10266	63178	20375	20375	1	6.93	Si
0	0.0000145	0.001272	0	-1657	SLD 12	-1657	-10266	-63178	-20375	-20375	1	12.3	Si
0.51	0.0000145	0.001272	0	5810	SLD 1	5810	10266	63178	20375	20375	1	3.51	Si
0.8	0.0000145	0.001272	0	8837	SLD 3	8837	10266	63178	20375	20375	1	2.31	Si
1.02	0.0000145	0.001272	0	11829	SLD 7	11829	10266	63178	20375	20375	1	1.72	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-5705.54	20	-5705.54	432990	1494000	12719896	36000000	-5246.47	2	-5246.47	398151	1120500			Si
0.51	-4175.35	20	-4981.92	257325	1494000	3562824	36000000	-3834.52	2	-4576.37	236378	1120500			Si
0.8	-2258.8	20	-3546.12	183164	1494000	2536010	36000000	-2075.27	2	-3256.61	168210	1120500			Si
1.02	-218.14	14	-218.14	11268	1494000	156006	36000000	-199.99	2	-199.99	10330	1120500			Si

Verifica di apertura delle fessure

x	Bordo	Rara				Frequente				Quasi permanente				Verifica
		Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	
0	superiore	0.273	0.00037	0.000101	20	0.273	0.00035	0.000095	6	0.273	0.00034	0.000093	2	Si

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 10 - 10, sezione R 50x45, asta 327

Campata 3 tra i fili 10 - 8, sezione R 50x45, aste 326, 325, 324, 323, 322, 321, 320

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	2308	SLU 83	0.019	3106	7102	SLU 83	15877	Si
1.39	0.41	0.0002	2667	SLV 8	0.088	2806	8208	SLV 8	15877	Si

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
2.78	0.41	0.0007	3334	SLV 8	0.172	10884	10257	SLV 8	25835	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1799	SLD 4	0.075	3491	5537	SLD 4	15877	Si
1.39	0.41	0.0002	1962	SLD 8	0.072	3248	6036	SLD 8	15877	Si
2.78	0.41	0.0007	2204	SLD 8	0.142	12676	6783	SLD 8	29710	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000195	1685	SLE RA 20	48628	1494000	602991	36000000	1528	SLE QP 2	44101	1120500	Si
1.39	0.41	0.00000181	1639	SLE RA 20	47378	1494000	587489	36000000	1485	SLE QP 2	42943	1120500	Si
2.78	0.41	0.00000727	1595	SLE RA 20	42994	1494000	533121	36000000	1446	SLE QP 2	38976	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 4 tra i fili 8 - 11, sezione R 50x45, asta 319

Campata 5 tra i fili 11 - 12, sezione R 50x45, aste 318, 317

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0007	4038	SLV 8	0.172	10884	12423	SLV 8	25835	Si
0.23	0.41	0.0007	4224	SLV 8	0.172	10884	12997	SLV 8	25835	Si
0.35	0.41	0.0007	4332	SLV 8	0.172	10884	13330	SLV 8	25835	Si
0.48	0.41	0.0007	4446	SLV 8	0.172	10884	13680	SLV 8	25835	Si
0.7	0.41	0.0007	4665	SLV 8	0.172	10884	14355	SLV 8	25835	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0007	2571	SLD 8	0.142	12676	7909	SLD 8	29710	Si
0.23	0.41	0.0007	2673	SLD 8	0.142	12676	8225	SLD 8	29710	Si
0.35	0.41	0.0007	2733	SLD 8	0.142	12676	8410	SLD 8	29710	Si
0.48	0.41	0.0007	2797	SLD 8	0.142	12676	8606	SLD 8	29710	Si
0.7	0.41	0.0007	2921	SLD 8	0.142	12676	8988	SLD 8	29710	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000727	1746	SLE RA 20	47055	1494000	583485	36000000	1586	SLE QP 2	42745	1120500	Si
0.23	0.41	0.00000727	1796	SLE RA 20	48410	1494000	600283	36000000	1632	SLE QP 2	43998	1120500	Si
0.35	0.41	0.00000727	1826	SLE RA 20	49221	1494000	610340	36000000	1660	SLE QP 2	44748	1120500	Si
0.48	0.41	0.00000727	1859	SLE RA 20	50096	1494000	621187	36000000	1690	SLE QP 2	45556	1120500	Si
0.7	0.41	0.00000727	1924	SLE RA 20	51847	1494000	642897	36000000	1750	SLE QP 2	47171	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
327,326,325,324,323,322,321,320,319,318,317	5.51	1.1	SLU 83	ST	BT	2.3	257547	77500	3.32	Si
327,326,325,324,323,322,321,320,319,318,317	5.51	1.1	SLD 8	SIS	BT	2.3	239721	68930	3.48	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-848	-77500	68.54	1439.24	0	-1	0.02	0	1.1	5.47	1496	2060	0	14430	
0	-2395	-12814	430.16	-33660.43	0	-11	-2.63	0.03	0.25	1.03	1496	2060	37	0	0.07
0	179	-68930	-117.12	14818.94	0	0	0.21	0	1.1	5.08	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
43	56	66	1.18	1.19	0.9	1.16	1.27	1	0.78	0.78	0.63	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

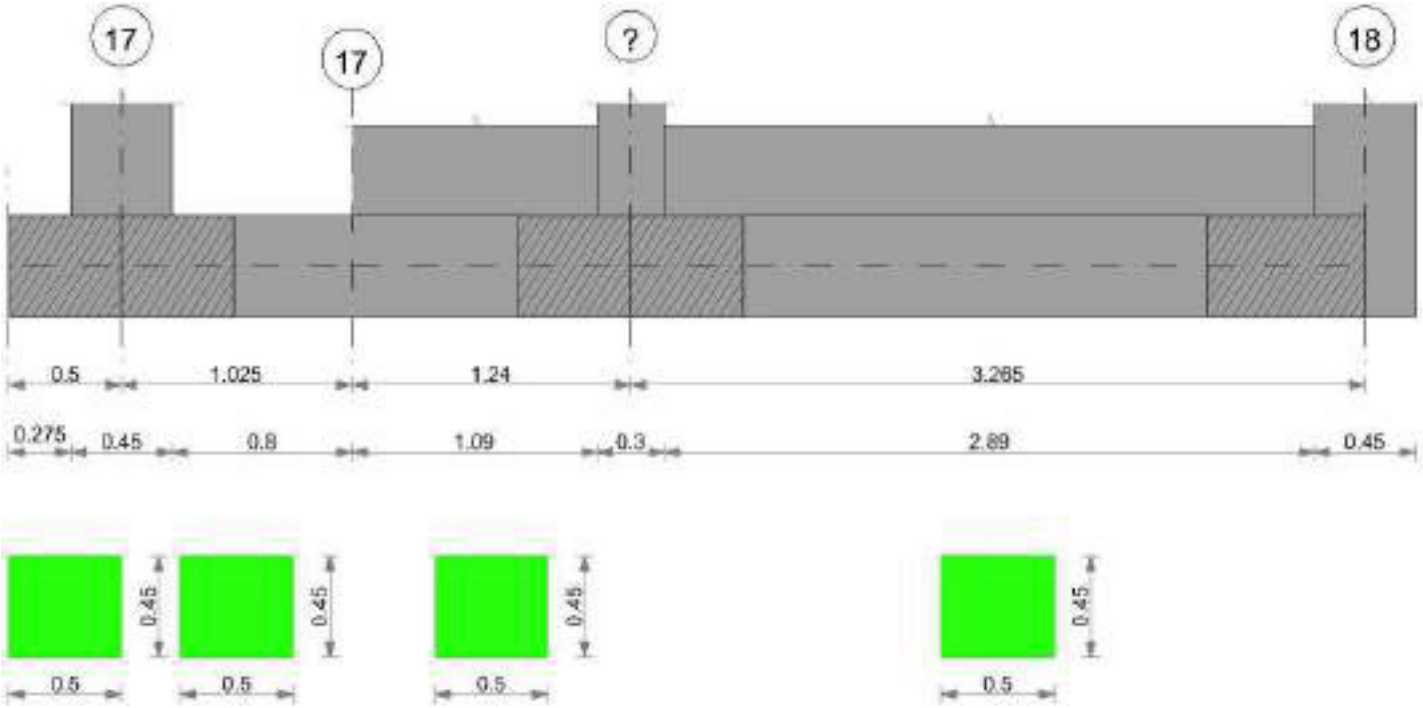
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.002	715	SLE RA 20	0.05	0.002	715	1068	SLE RA 21	0.05	0	923	SLE RA 20	0.0033	0	SLE RA 1	Si
D	0.05	0	715	SLE RA 1	0.05	0	715	715	SLE RA 1	0.05	0	767	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	715	SLE RA 1	0.05	0	715	715	SLE RA 1	0.05	0	767	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.02	SLE RA 21	0.19	0.03	997	1068	SLE RA 20	0.19	0.01	767	SLE RA 20	0.1	0	715	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	715	767	SLE RA 1	0.19	0	715	SLE RA 1	0.1	0	767	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	715	767	SLE RA 1	0.19	0	715	SLE RA 1	0.1	0	767	SLE RA 1	Si

CORDOLO 25

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

Diagramma verifica stato limite ultimo taglio

Output campate

Campata 2 tra i fili 17 - 17, sezione R 50x45, asta 347

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.51	0.000509	0.052	0.000804	0.051	3500.52	SLU 83	5883.28	11845.27	0.135	2.01							Si
1.03	0.000895	0.052	0.000804	0.051	-607.35	SLU 2	181.98	11841.92	0.133	65.07	-1166.9	SLU 77	-1166.9	-13072.53	0.138	11.2	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.51	0.000509	0.052	0.000804	0.051	3004.14	SLV 16	6797.25	11292.9	0.244	1.66	1618.28	SLV 1	-652.42	-7264.11	0.193	11.13	Si
1.03	0.000895	0.052	0.000804	0.051	5032.63	SLV 5	5032.63	11304.02	0.236	2.25	-6581.4	SLV 12	-6581.4	-12483.77	0.25	1.9	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.51	0.000509	0.052	0.000804	0.051	2603.7	SLD 16	5064.63	11292.9	0.244	2.23							Si
1.03	0.000895	0.052	0.000804	0.051	1559.72	SLD 5	1559.72	11304.02	0.236	7.25	-3108.48	SLD 12	-3108.48	-12483.77	0.25	4.02	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000177	0	0	-18445	SLU 83	-18445	-8455	-71432	-27978	-27978	1	1.52	Si
0.23	0.0000177	0	0	-15681	SLU 83	-15681	-8455	-71432	-27978	-27978	1	1.78	Si
0.51	0.0000177	0	0	-12171	SLU 83	-12171	-7777	-63336	-24807	-24807	1	2.04	Si
1.03	0.0000177	0.000697	0	-6060	SLU 83	-6060	-8405	-63246	-24772	-24772	1	4.09	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000177	0	0	647	SLV 5	647	8455	71432	27978	27978	1	43.22	Si
0	0.0000177	0	0	-25170	SLV 12	-25170	-8455	-71432	-27978	-27978	1	1.11	Si
0.23	0.0000177	0	0	2388	SLV 5	2388	8455	71432	27978	27978	1	11.71	Si
0.23	0.0000177	0	0	-23221	SLV 12	-23221	-8455	-71432	-27978	-27978	1	1.2	Si
0.24	0.0000177	0	0	2498	SLV 5	2498	7777	63336	24807	24807	1	9.93	Si
0.24	0.0000177	0	0	-23098	SLV 12	-23098	-7777	-63336	-24807	-24807	1	1.07	Si
0.51	0.0000177	0	0	4592	SLV 5	4592	7777	63336	24807	24807	1	5.4	Si
0.51	0.0000177	0	0	-20738	SLV 12	-20738	-7777	-63336	-24807	-24807	1	1.2	Si
1.03	0.0000177	0.000804	0	8434	SLV 5	8434	8820	63336	24807	24807	1	2.94	Si
1.03	0.0000177	0.000697	0	-16419	SLV 12	-16419	-8405	-63246	-24772	-24772	1	1.51	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000177	0	0	-17454	SLD 12	-17454	-8455	-71432	-27978	-27978	1	1.6	Si
0.23	0.0000177	0	0	-15567	SLD 12	-15567	-8455	-71432	-27978	-27978	1	1.8	Si
0.51	0.0000177	0	0	-13169	SLD 12	-13169	-7777	-63336	-24807	-24807	1	1.88	Si
1.03	0.0000177	0.000804	0	1011	SLD 5	1011	8820	63336	24807	24807	1	24.54	Si
1.03	0.0000177	0.000697	0	-8996	SLD 12	-8996	-8405	-63246	-24772	-24772	1	2.75	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0.51	2559.79	20	4301.67	223686	1494000	3261737	36000000	2311.21	2	3892.48	202408	1120500			Si
1.03	-848.73	14	-848.73	41995	1494000	624797	36000000	-774.38	2	-774.38	38316	1120500			Si

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 17 - 17, sezione R 50x45, asta 347

Campata 3 tra i fili 17 - ?, sezione R 50x45, aste 346, 345, 344

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0009	2080	SLU 83	0.074	13774	6401	SLU 83	31377	Si
0.62	0.41	0.0004	1996	SLU 83	0.031	5795	6142	SLU 83	15877	Si
1.09	0.41	0.0004	1974	SLU 83	0.031	5795	6075	SLU 83	15877	Si
1.24	0.41	0.0004	1977	SLU 83	0.031	5795	6083	SLU 83	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0009	1440	SLD 7	0.157	15303	4432	SLD 7	36083	Si
0.62	0.41	0.0004	1436	SLD 7	0.102	6473	4419	SLD 7	15877	Si
1.09	0.41	0.0004	1492	SLD 7	0.102	6473	4590	SLD 7	15877	Si
1.24	0.41	0.0004	1521	SLD 7	0.102	6473	4680	SLD 7	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000883	1518	SLE RA 20	40127	1494000	497572	36000000	1372	SLE QP 2	36279	1120500	Si
0.62	0.41	0.00000365	1456	SLE RA 20	41081	1494000	509410	36000000	1316	SLE QP 2	37146	1120500	Si
1.09	0.41	0.00000365	1439	SLE RA 20	40619	1494000	503670	36000000	1302	SLE QP 2	36735	1120500	Si
1.24	0.41	0.00000365	1441	SLE RA 20	40675	1494000	504364	36000000	1304	SLE QP 2	36789	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 4 tra i fili ? - 18, sezione R 50x45, aste 343, 342, 341, 340, 339, 338, 337, 336

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1977	SLU 83	0.031	5795	6083	SLU 83	15877	Si
0.15	0.41	0.0002	1981	SLU 83	0.019	3218	6094	SLU 83	15877	Si
1.63	0.41	0.0002	2764	SLV 8	0.092	3123	8505	SLV 8	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1521	SLD 7	0.102	6473	4680	SLD 7	15877	Si
0.15	0.41	0.0002	1551	SLD 7	0.076	3616	4772	SLD 7	15877	Si
1.63	0.41	0.0002	1920	SLD 8	0.076	3616	5908	SLD 8	15877	Si
3.04	0.41	0.0002	2410	SLD 8	0.076	3616	7415	SLD 8	15877	Si
3.27	0.41	0.0002	2532	SLD 8	0.076	3616	7790	SLD 8	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000365	1441	SLE RA 20	40675	1494000	504364	36000000	1304	SLE QP 2	36789	1120500	Si
0.15	0.41	0.00000202	1444	SLE RA 20	41628	1494000	516191	36000000	1306	SLE QP 2	37655	1120500	Si
1.63	0.41	0.00000202	1498	SLE RA 20	43196	1494000	535626	36000000	1357	SLE QP 2	39117	1120500	Si
3.04	0.41	0.00000202	1637	SLE RA 20	47214	1494000	585450	36000000	1485	SLE QP 2	42826	1120500	Si
3.27	0.41	0.00000202	1692	SLE RA 20	48782	1494000	604898	36000000	1535	SLE QP 2	44265	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
347,346,345,344,343,342,341,340,339,338,337,336	5.76	1.1	SLU 83	ST	BT	2.3	269563	74881	3.6	Si
347,346,345,344,343,342,341,340,339,338,337,336	5.76	1.1	SLV 7	SIS	BT	2.3	221053	78092	2.83	Si
347,346,345,344,343,342,341,340,339,338,337,336	5.76	1.1	SLD 7	SIS	BT	2.3	245050	61883	3.96	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-200	-74881	-167.81	788.56	0	0	0.01	0	1.1	5.73	1496	2060	0	14430	
0	3276	-78092	-1126.85	35705.21	0	2	0.46	-0.01	1.07	4.84	1496	2060	0	14430	0.07
0	1318	-61883	-538.71	14598.28	0	1	0.24	-0.01	1.08	5.28	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

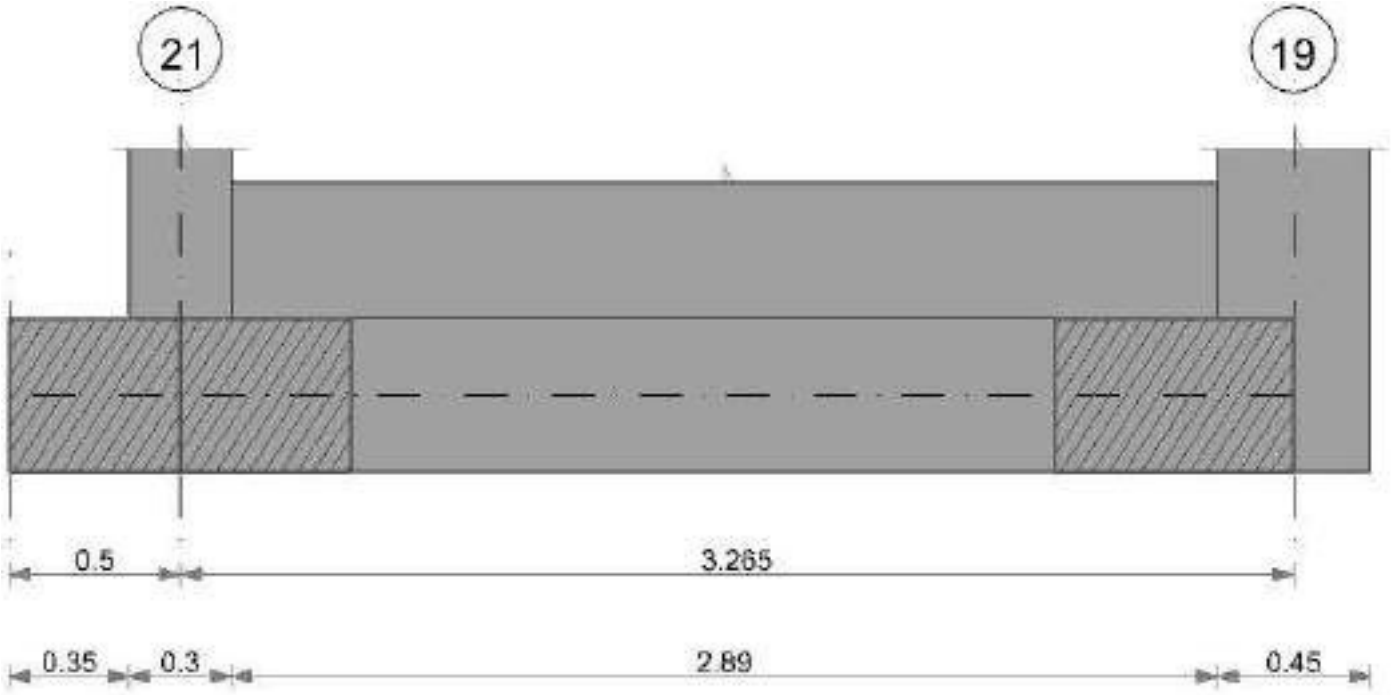
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.003	654	SLE RA 21	0.05	0.002	654	1080	SLE RA 21	0.05	0	831	SLE RA 20	0.0033	0	SLE RA 1	Si
D	0.05	0	654	SLE RA 1	0.05	0	654	654	SLE RA 1	0.05	0	768	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	654	SLE RA 1	0.05	0	654	654	SLE RA 1	0.05	0	768	SLE RA 1	0.0033	0	SLE RA 1	Si

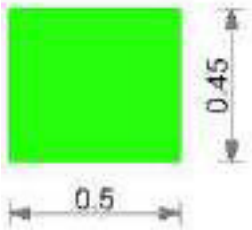
Verifiche geotecniche - Rotazioni assolute e differenziali

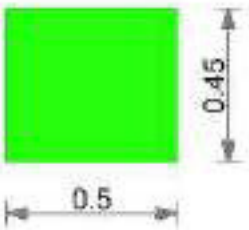
Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.02	SLE RA 21	0.19	0.03	831	1080	SLE RA 21	0.19	0.01	768	SLE RA 20	0.1	0	654	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	654	768	SLE RA 1	0.19	0	654	SLE RA 1	0.1	0	768	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	654	768	SLE RA 1	0.19	0	654	SLE RA 1	0.1	0	768	SLE RA 1	Si

CORDOLO 26

Geometria







Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

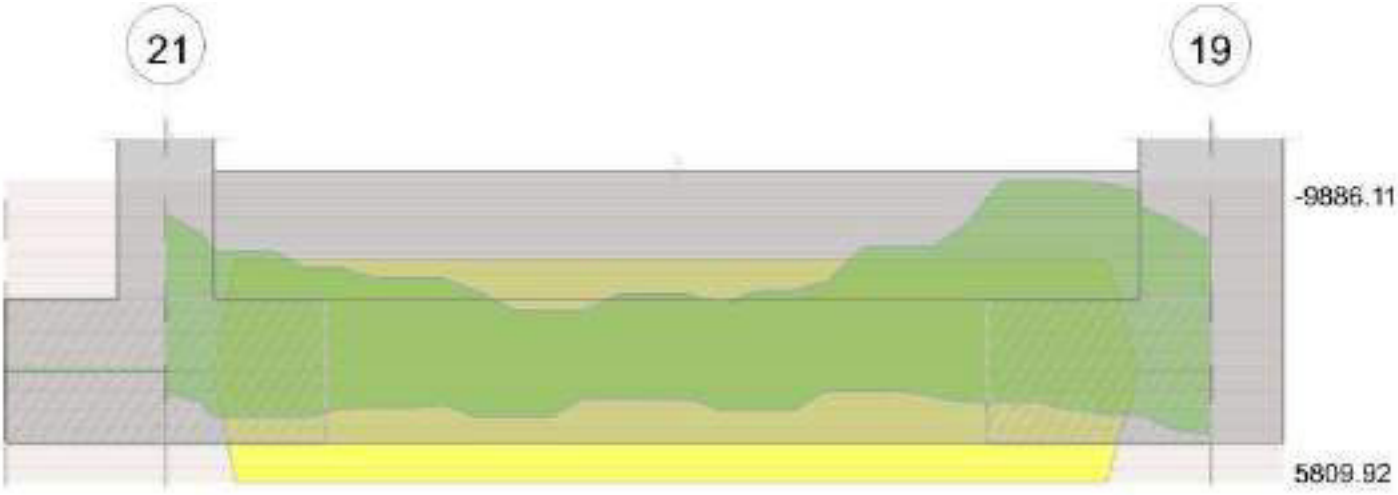
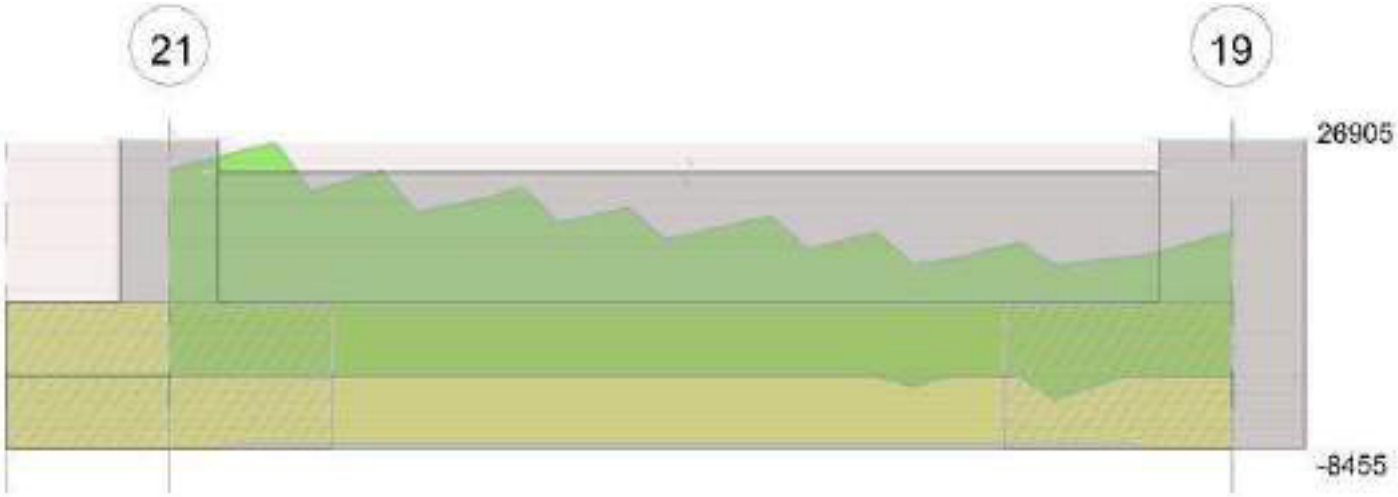


Diagramma verifica stato limite ultimo taglio



Output campate

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 21 - 19, sezione R 50x45, aste 335, 334, 333, 332, 331, 330, 329, 328

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1848	SLU 83	0.019	3218	5686	SLU 83	15877	Si
0.15	0.41	0.0002	1852	SLU 83	0.019	3218	5699	SLU 83	15877	Si
1.63	0.41	0.0002	2657	SLV 8	0.092	3123	8177	SLV 8	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1416	SLD 7	0.076	3616	4356	SLD 7	15877	Si
0.15	0.41	0.0002	1446	SLD 7	0.076	3616	4450	SLD 7	15877	Si
1.63	0.41	0.0002	1838	SLD 8	0.076	3616	5655	SLD 8	15877	Si
3.04	0.41	0.0002	2354	SLD 8	0.076	3616	7244	SLD 8	15877	Si
3.27	0.41	0.0002	2478	SLD 8	0.076	3616	7623	SLD 8	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000202	1346	SLE RA 20	38825	1494000	481430	36000000	1217	SLE QP 2	35084	1120500	Si
0.15	0.41	0.00000202	1349	SLE RA 20	38910	1494000	482484	36000000	1219	SLE QP 2	35164	1120500	Si
1.63	0.41	0.00000202	1426	SLE RA 20	41112	1494000	509786	36000000	1290	SLE QP 2	37206	1120500	Si
3.04	0.41	0.00000202	1592	SLE RA 20	45895	1494000	569092	36000000	1443	SLE QP 2	41615	1120500	Si
3.27	0.41	0.00000202	1648	SLE RA 20	47509	1494000	589117	36000000	1495	SLE QP 2	43097	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
335,334,333,332,331,330,329,328	3.49	1.1	SLU 83	ST	BT	2.3	162245	42707	3.8	Si
335,334,333,332,331,330,329,328	3.49	1.1	SLD 7	SIS	BT	2.3	151558	38596	3.93	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-115	-42707	-294.62	1592.6	0	0	0.04	-0.01	1.09	3.42	1496	2060	0	14430	
0	-1452	-5408	244.89	-9401.13	0	-15	-1.74	0.05	0.01	1.01	1496	2060	0	14430	0.07
0	787	-38596	-445.44	5187.82	0	1	0.13	-0.01	1.08	3.22	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.06	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0	0	0	0.27	0	0	1.49	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.07	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

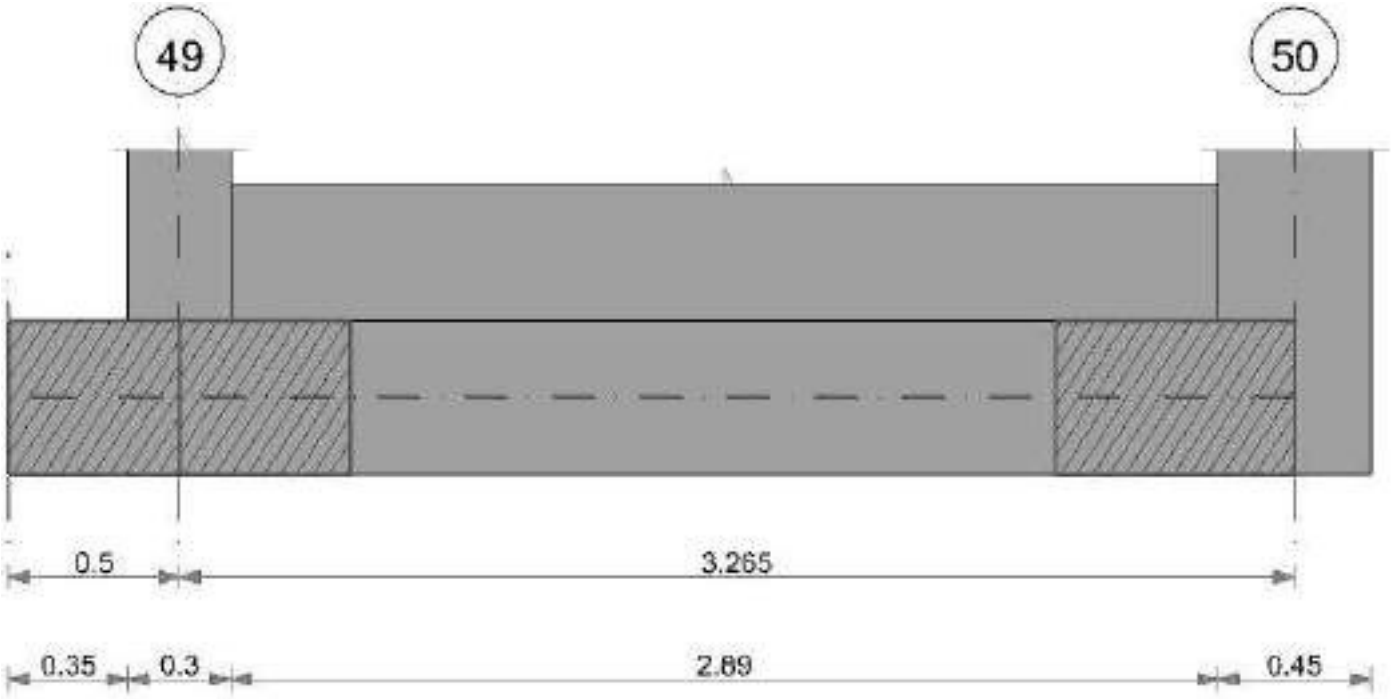
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.002	833	SLE RA 20	0.05	0.002	833	1082	SLE RA 21	0.05	0	833	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	833	SLE RA 1	0.05	0	833	833	SLE RA 1	0.05	0	833	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	833	SLE RA 1	0.05	0	833	833	SLE RA 1	0.05	0	833	SLE RA 1	0.0033	0	SLE RA 1	Si

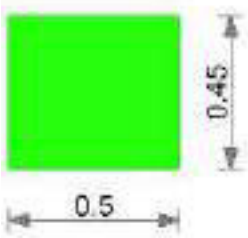
Verifiche geotecniche - Rotazioni assolute e differenziali

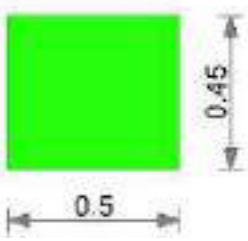
Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.03	SLE RA 21	0.19	0.03	833	1082	SLE RA 21	0.19	0	833	SLE RA 1	0.1	0	833	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	833	1082	SLE RA 1	0.19	0	833	SLE RA 1	0.1	0	833	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	833	1082	SLE RA 1	0.19	0	833	SLE RA 1	0.1	0	833	SLE RA 1	Si

CORDOLO 27

Geometria







Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

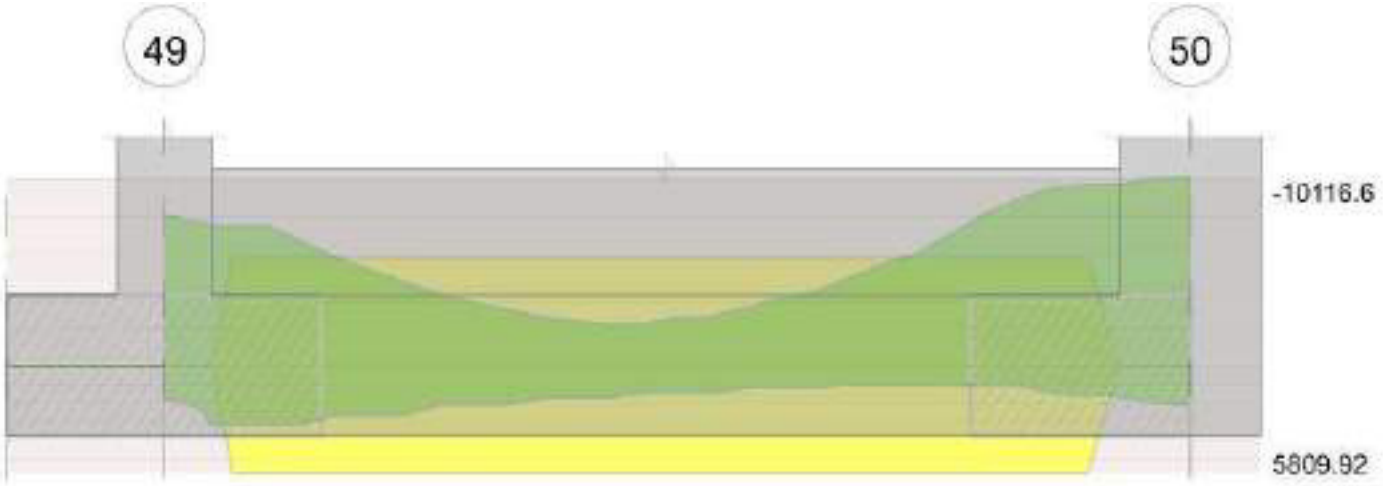
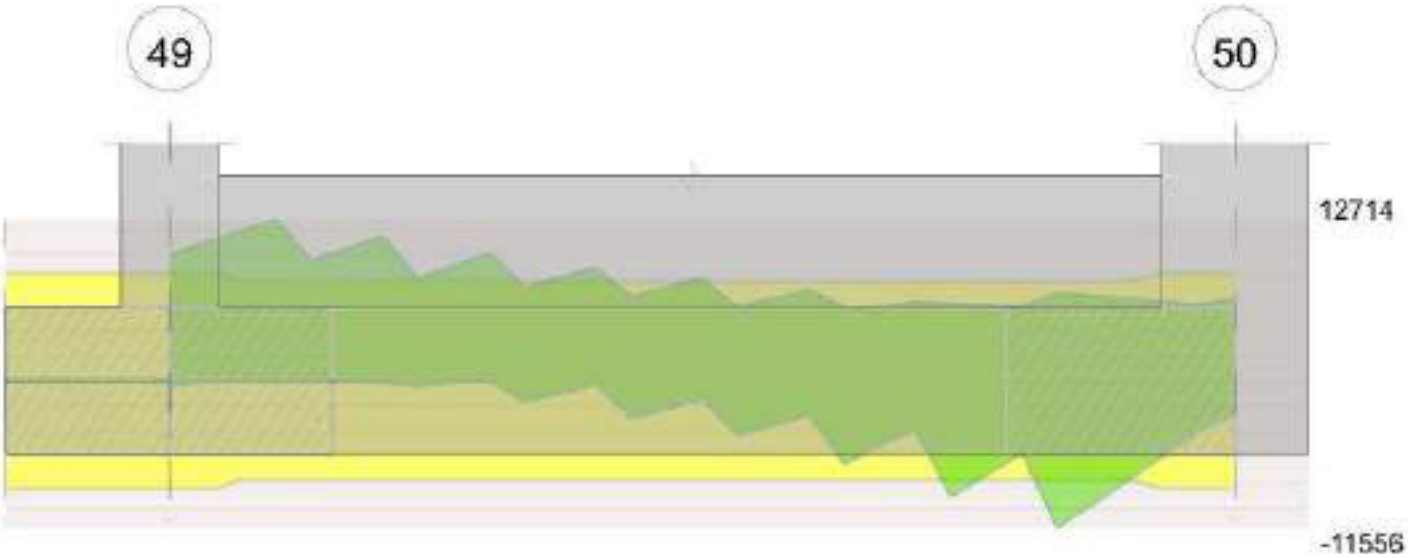


Diagramma verifica stato limite ultimo taglio



Output campate

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 49 - 50, sezione R 50x45, aste 369, 368, 367, 366, 365, 364, 363, 362, 361

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1641	SLU 83	0.019	3218	5049	SLU 83	15877	Si
0.15	0.41	0.0002	1642	SLU 83	0.019	3218	5051	SLU 83	15877	Si
1.63	0.41	0.0002	2404	SLV 12	0.092	3123	7396	SLV 12	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1236	SLD 12	0.076	3616	3802	SLD 12	15877	Si
0.15	0.41	0.0002	1260	SLD 12	0.076	3616	3878	SLD 12	15877	Si
1.63	0.41	0.0002	1668	SLD 12	0.076	3616	5132	SLD 12	15877	Si
3.04	0.41	0.0002	2261	SLD 11	0.076	3616	6956	SLD 11	15877	Si
3.27	0.41	0.0002	2398	SLD 11	0.076	3616	7378	SLD 11	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000202	1195	SLE RA 20	34466	1494000	427384	36000000	1080	SLE QP 2	31129	1120500	Si
0.15	0.41	0.00000202	1196	SLE RA 20	34473	1494000	427461	36000000	1080	SLE QP 2	31137	1120500	Si
1.63	0.41	0.00000202	1298	SLE RA 20	37432	1494000	464161	36000000	1175	SLE QP 2	33870	1120500	Si
3.04	0.41	0.00000202	1528	SLE RA 20	44058	1494000	546314	36000000	1386	SLE QP 2	39953	1120500	Si
3.27	0.41	0.00000202	1595	SLE RA 20	45984	1494000	570198	36000000	1447	SLE QP 2	41717	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
369,368,367,366,365,364,363,362,361	3.49	1.1	SLU 83	ST	BT	2.3	162308	39924	4.07	Si
369,368,367,366,365,364,363,362,361	3.49	1.1	SLV 5	SIS	LT	2.3	6253	5668	1.1	Si
369,368,367,366,365,364,363,362,361	3.49	1.1	SLD 12	SIS	BT	2.3	150826	35977	4.19	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	159	-39924	50.36	2216.59	0	0	0.06	0	1.1	3.38	1496	2060	0	14430	
0	1949	-5668	-442.76	-9148.91	0	19	-1.61	-0.08	0.26	0.94	1496	2060	37	0	0.07
0	-692	-35977	241.62	5723.95	0	-1	0.16	0.01	1.09	3.17	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.06	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
43	56	66	1.21	1.21	0.89	1.16	1.27	1	0.6	0.59	0.39	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
1	5	0	0	0.07	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

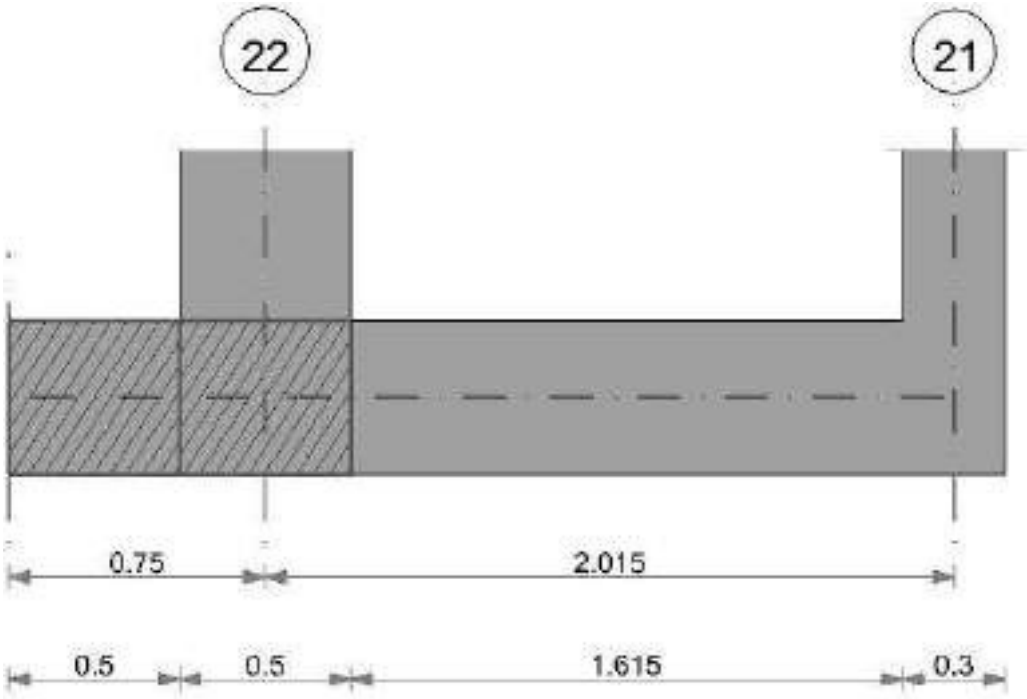
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.002	845	SLE RA 20	0.05	0.002	845	1097	SLE RA 21	0.05	0	845	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	845	SLE RA 1	0.05	0	845	845	SLE RA 1	0.05	0	845	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	845	SLE RA 1	0.05	0	845	845	SLE RA 1	0.05	0	845	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.03	SLE RA 21	0.19	0.03	845	1097	SLE RA 21	0.19	0	845	SLE RA 1	0.1	0	845	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	845	1097	SLE RA 1	0.19	0	845	SLE RA 1	0.1	0	845	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	845	1097	SLE RA 1	0.19	0	845	SLE RA 1	0.1	0	845	SLE RA 1	Si

CORDOLO 28

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

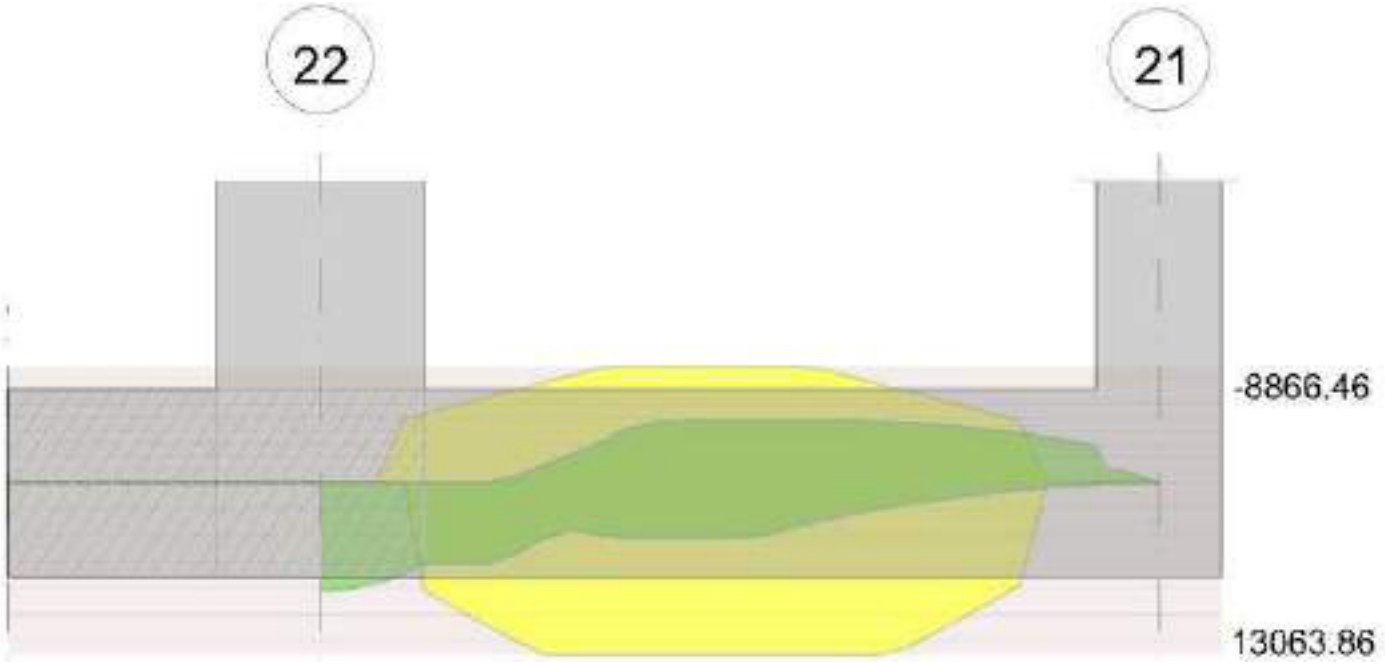
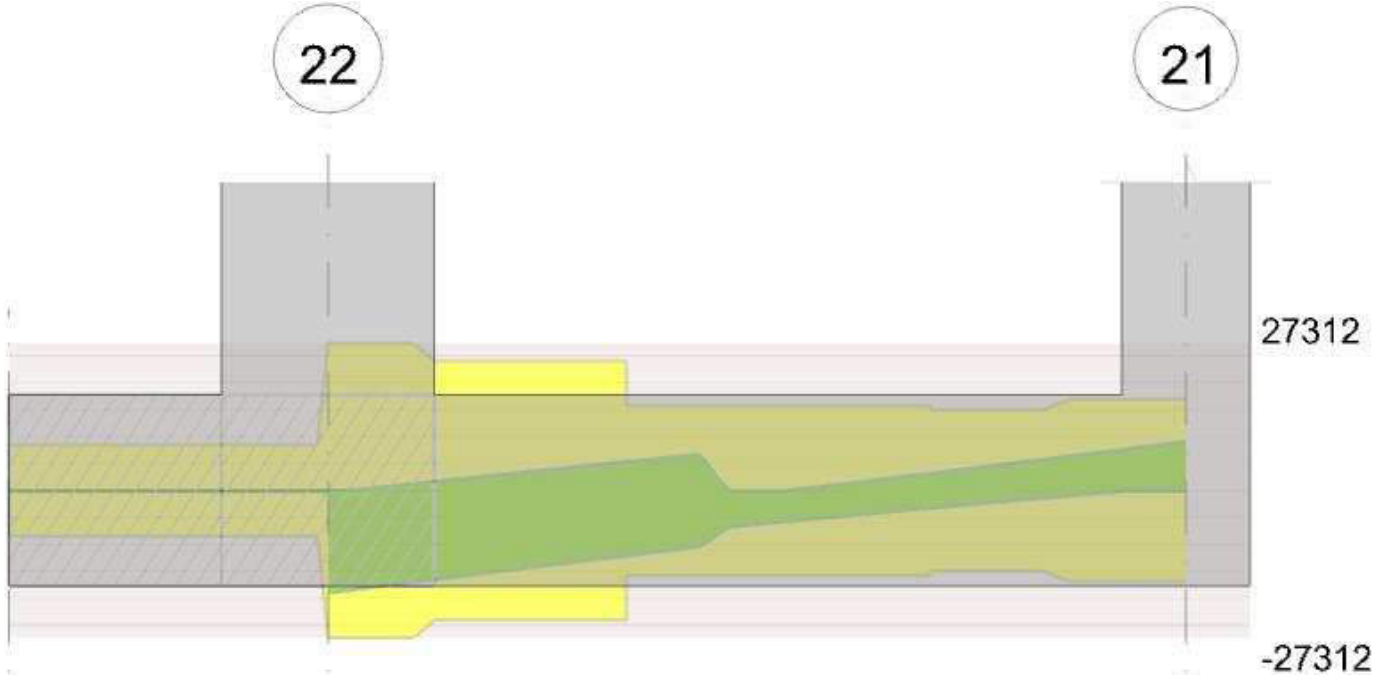


Diagramma verifica stato limite ultimo taglio



Output campate

Campata 2 tra i fili 22 - 21, sezione R 50x45, aste 708, 707

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.25	0.000366	0.053	0.00058	0.053	5574.06	SLU 83	5574.06	8706.48	0.117	1.56							Si
1.01	0.000628	0.053	0.000942	0.053	-709.17	SLU 2	849.95	13662.92	0.147	16.07	-1252.9	SLU 83	-2078.16	-9390.61	0.127	4.52	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.25	0.000366	0.053	0.00058	0.053	6167.3	SLV 12	6167.3	8212.34	0.212	1.33							Si
1.01	0.000628	0.053	0.000942	0.053	2993.93	SLV 5	4140.73	13063.86	0.261	3.15	-4677.32	SLV 12	-4709.5	-8866.46	0.211	1.88	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando

i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1
Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.25	0.000366	0.053	0.00058	0.053	4679.88	SLD 12	4679.88	8212.34	0.212	1.75							Si
1.01	0.000628	0.053	0.000942	0.053	703.58	SLD 5	1915.97	13063.86	0.261	6.82	-2386.96	SLD 12	-2703.69	-8866.46	0.211	3.28	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000172	0.00058	0	-14634	SLU 83	-14634	-8455	-71432	-27312	-27312	1	1.87	Si
0.25	0.0000172	0.00058	0	-11231	SLU 83	-11231	-7890	-63019	-24095	-24095	1	2.15	Si
1.01	0.0000112	0.000489	0	-5302	SLU 84	-5302	-7751	-63019	-15726	-15726	1	2.97	Si
1.86	0.0000107	0	0	5538	SLU 83	5538	8455	71432	16994	16994	1	3.07	Si
2.01	0.0000107	0	0	7392	SLU 83	7392	8455	71432	16994	16994	1	2.3	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000172	0.00058	0	-19004	SLV 12	-19004	-8455	-71432	-27312	-27312	1	1.44	Si
0.25	0.0000172	0.00058	0	1662	SLV 5	1662	7890	63019	24095	24095	1	14.5	Si
0.25	0.0000172	0.00058	0	-16530	SLV 12	-16530	-7890	-63019	-24095	-24095	1	1.46	Si
0.74	0.0000112	0.000691	0	5626	SLV 5	5626	8365	63019	15726	15726	1	2.8	Si
0.74	0.0000112	0.000418	0	-11733	SLV 12	-11733	-7751	-63019	-15726	-15726	1	1.34	Si
1.01	0.0000112	0.000902	0	-6291	SLV 5	-6291	-9145	-63019	-15726	-15726	1	2.5	Si
1.86	0.0000107	0	0	7597	SLV 12	7597	8455	71432	16994	16994	1	2.24	Si
1.86	0.0000107	0	0	-191	SLV 5	-191	-8455	-71432	-16994	-16994	1	88.78	Si
2.01	0.0000107	0	0	9120	SLV 12	9120	8455	71432	16994	16994	1	1.86	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000172	0.00058	0	-13430	SLD 12	-13430	-8455	-71432	-27312	-27312	1	2.03	Si
0.25	0.0000172	0.00058	0	-11078	SLD 12	-11078	-7890	-63019	-24095	-24095	1	2.18	Si
1.01	0.0000112	0.000902	0	-4641	SLD 5	-4641	-9145	-63019	-15726	-15726	1	3.39	Si
1.86	0.0000107	0	0	5267	SLD 12	5267	8455	71432	16994	16994	1	3.23	Si
2.01	0.0000107	0	0	6618	SLD 12	6618	8455	71432	16994	16994	1	2.57	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0.25	4075.07	20	4075.07	219754	1494000	3229389	36000000	3680.18	2	3680.18	198459	1120500			Si
1.01	-914.34	20	-1519.32	75010	1494000	1158248	36000000	-841.69	2	-1391.9	68719	1120500			Si
1.86	-797.17	20	-1448.23	-85821	1494000	0	36000000	-728.17	2	-1323.29	-78417	1120500			Si
2.01	0.23	2	0.23	14	1494000	0	36000000	0.18	1	0.18	11	1120500			Si

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
708,707	2.16	1.1	SLU 83	ST	BT	2.3	104986	30124	3.49	Si
708,707	2.16	1.1	SLV 14	SIS	LT	2.3	77787	19018	4.09	Si
708,707	2.16	1.1	SLD 7	SIS	BT	2.3	103661	21626	4.79	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
28	-103	-30124	44.4	-578.98	0	0	-0.02	0	1.1	2.13	1496	2060	0	14430	
-1156	-4281	-19018	1105.92	-1197.34	-3	-13	-0.06	0.06	0.98	2.04	1496	2060	37	0	0.07
1849	513	-21626	-112.83	295.69	5	1	0.01	-0.01	1.09	2.14	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.1	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
43	56	66	1.36	1.37	0.81	1.16	1.27	1	0.65	0.64	0.49	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
1	5	0	0	0.1	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

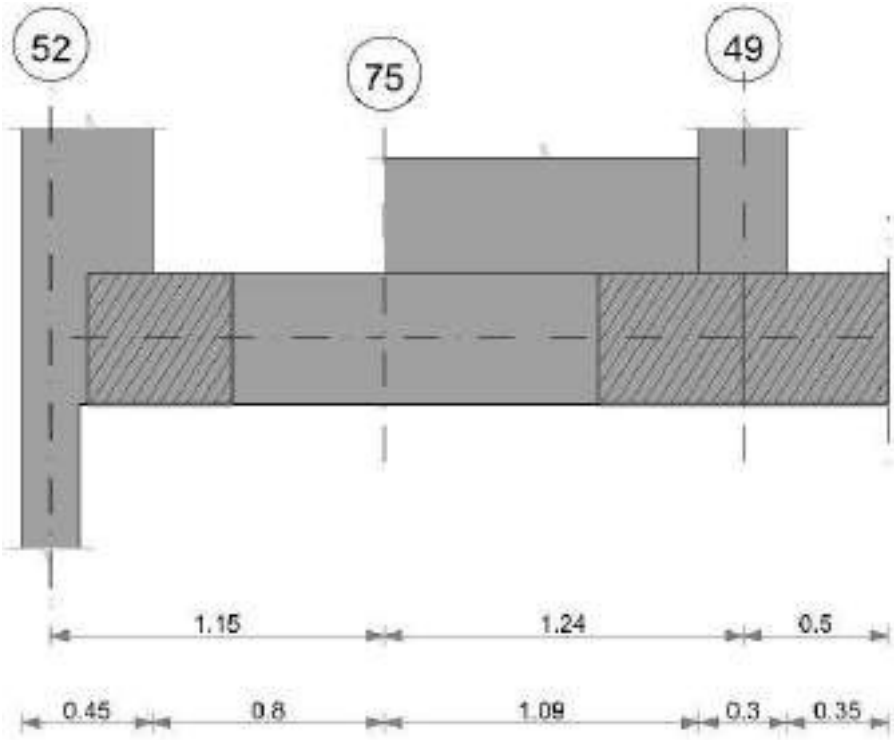
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.003	656	SLE RA 21	0.05	0	656	834	SLE RA 21	0.05	0	656	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	656	SLE RA 1	0.05	0	656	656	SLE RA 1	0.05	0	656	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	656	SLE RA 1	0.05	0	656	656	SLE RA 1	0.05	0	656	SLE RA 1	0.0033	0	SLE RA 1	Si

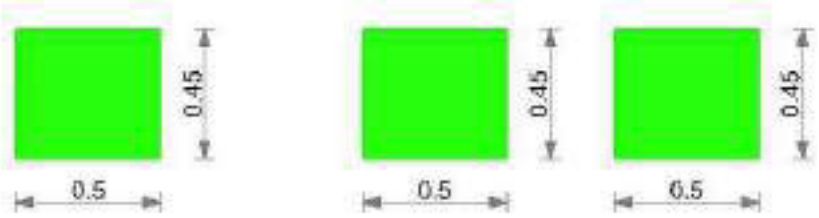
Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	656	834	SLE RA 21	0.19	0	656	SLE RA 1	0.1	0	656	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	656	834	SLE RA 1	0.19	0	656	SLE RA 1	0.1	0	656	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	656	834	SLE RA 1	0.19	0	656	SLE RA 1	0.1	0	656	SLE RA 1	Si

CORDOLO 29

Geometria





Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

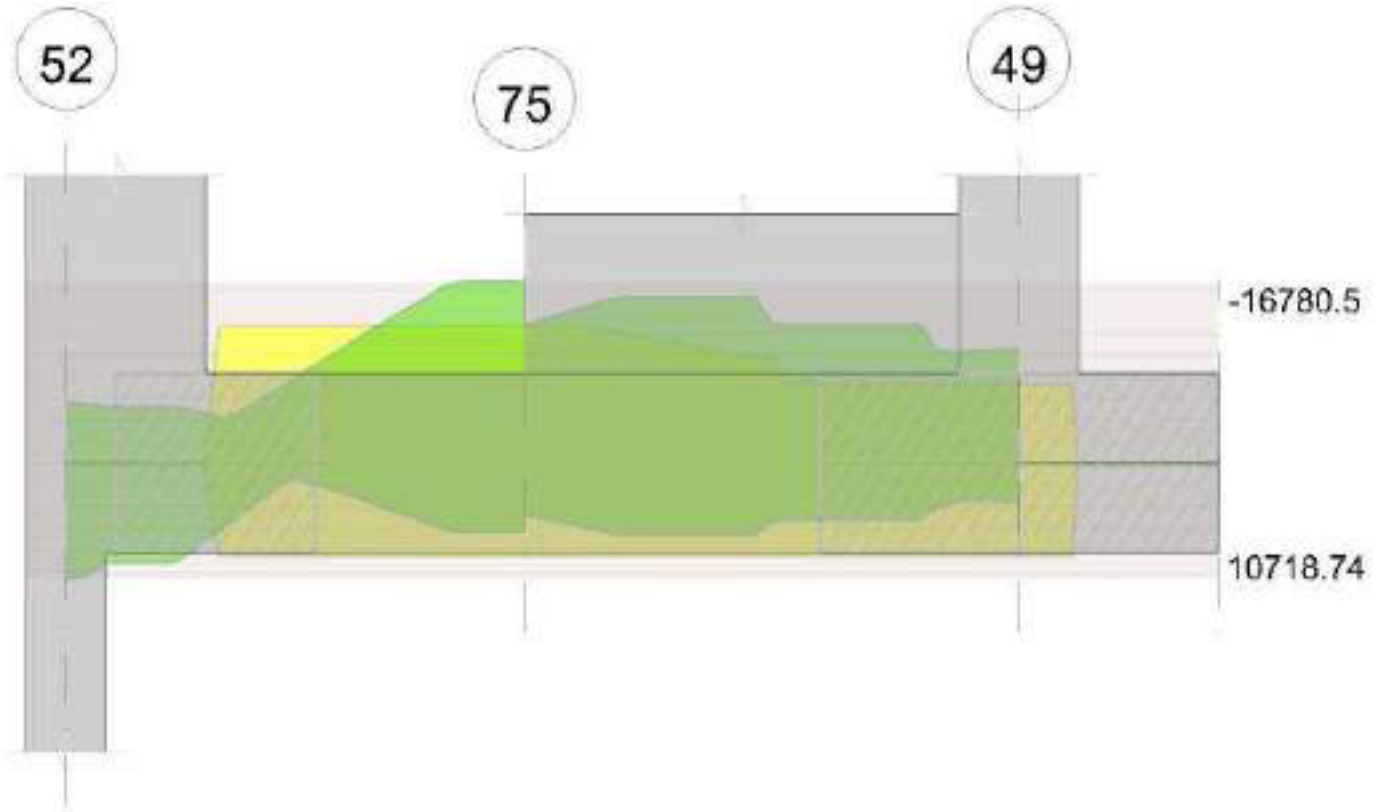
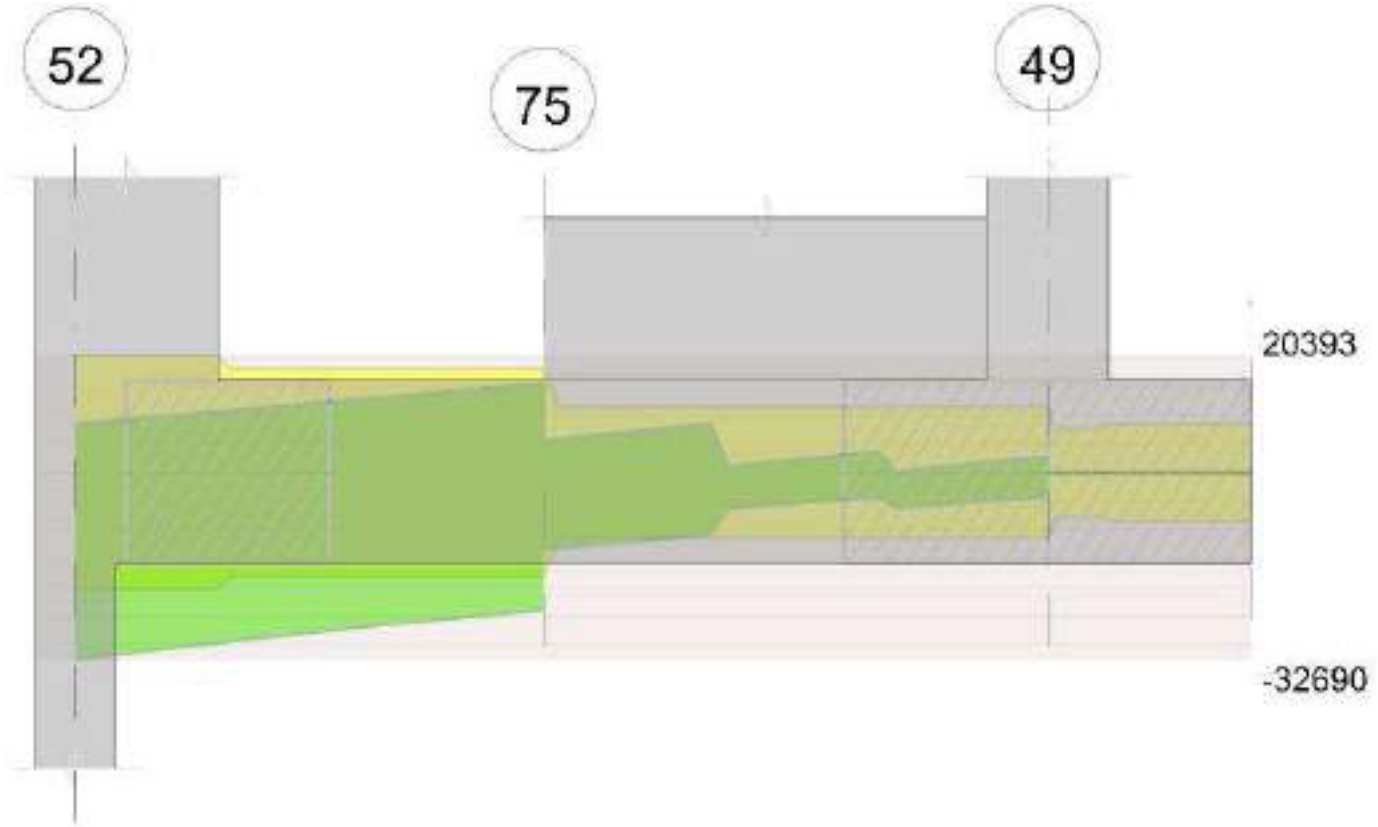


Diagramma verifica stato limite ultimo taglio



Output campate

Campata 1 tra i fili 52 - 75, sezione R 50x45, asta 706

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.58	0.000911	0.052	0.000603	0.051							-3062.94	SLU 83	-4837.74	-13290.66	0.141	2.75	Si
1.15	0.000911	0.052	0.000603	0.051							-7758.52	SLU 83	-7758.52	-13290.66	0.141	1.71	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.58	0.000911	0.052	0.000603	0.051	-278.55	SLV 6	1326.61	8575.42	0.206	6.46	-3910.2	SLV 11	-7867.35	-12682.89	0.256	1.61	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.58	0.000911	0.052	0.000603	0.051	-1363.05	SLD 6	109.98	8575.42	0.206	77.97	-2825.7	SLD 11	-5109.01	-12682.89	0.256	2.48	Si
1.15	0.000911	0.052	0.000603	0.051							-9845.38	SLD 7	-9845.38	-12682.89	0.256	1.29	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000129	0	0	-18256	SLU 83	-18256	-8455	-71432	-20393	-20393	1	1.12	Si
0.1	0.0000129	0	0	-17121	SLU 83	-17121	-8455	-71432	-20393	-20393	1	1.19	Si
0.58	0.0000129	0	0	-12010	SLU 83	-12010	-7770	-63248	-18056	-18056	1	1.5	Si
1.15	0.0000129	0.000911	0	-6410	SLU 83	-6410	-9189	-63248	-18056	-18056	1	2.82	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000129	0	0	8396	SLV 10	8396	8455	71432	20393	20393	1	2.43	Si
0	0.0000129	0	0	-32690	SLV 7	-32690	-8455	-71432	-20393	-20393	1	0.62	Si
0.1	0.0000129	0	0	9032	SLV 10	9032	8455	71432	20393	20393	1	2.26	Si
0.38	0.0000129	0	0	10815	SLV 10	10815	7770	63248	18056	18056	1	1.67	Si
0.58	0.0000129	0	0	12012	SLV 10	12012	7770	63248	18056	18056	1	1.5	Si
1.15	0.0000129	0.000603	0	15573	SLV 10	15573	8014	63336	18082	18082	1	1.16	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000129	0	0	-20399	SLD 7	-20399	-8455	-71432	-20393	-20393	1	1	Si
0.1	0.0000129	0	0	-19589	SLD 7	-19589	-8455	-71432	-20393	-20393	1	1.04	Si
0.58	0.0000129	0	0	63	SLD 10	63	7770	63248	18056	18056	1	284.58	Si
0.58	0.0000129	0	0	-15992	SLD 7	-15992	-7770	-63248	-18056	-18056	1	1.13	Si

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
1.15	0.0000129	0.000911	0	3739	SLD 10	3739	9189	63248	18056	18056	1	4.83	Si
1.15	0.0000129	0.000911	0	-12174	SLD 7	-12174	-9189	-63248	-18056	-18056	1	1.48	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	3397.71	20	2871.4	170157	1494000	0	36000000	3039.36	2	2561.2	151775	1120500			Si
0.1	2244.51	20	2244.51	133008	1494000	0	36000000	1991.87	2	1991.87	118036	1120500			Si
0.58	-2259.14	20	-3557.7	181257	1494000	2642300	36000000	-2094.38	2	-3270.37	166618	1120500			Si
1.15	-5693.27	20	-5693.27	470948	1494000	17477007	36000000	-5199.24	2	-5199.24	430082	1120500			Si

Verifica di apertura delle fessure

x	Bordo	Rara				Frequente				Quasi permanente				Verifica
		Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	
1	superiore	0.324	0.00051	0.000165	20	0.324	0.00048	0.000154	6	0.324	0.00046	0.000151	2	Si
1.15	superiore	0.324	0.00051	0.000165	20	0.324	0.00048	0.000154	6	0.324	0.00046	0.000151	2	Si

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 52 - 75, sezione R 50x45, asta 706

Campata 2 tra i fili 75 - 49, sezione R 50x45, aste 705, 704, 703

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0006	1829	SLU 83	0.054	10123	5628	SLU 83	22870	Si
0.62	0.41	0.0004	1681	SLU 83	0.034	6430	5171	SLU 83	15877	Si
1.09	0.41	0.0004	1642	SLU 83	0.034	6430	5052	SLU 83	15877	Si
1.24	0.41	0.0004	1641	SLU 83	0.034	6430	5049	SLU 83	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0006	1292	SLD 16	0.134	11261	3975	SLD 16	26301	Si
0.62	0.41	0.0004	1224	SLD 16	0.107	7176	3765	SLD 16	16571	Si
1.09	0.41	0.0004	1226	SLD 16	0.107	7176	3773	SLD 16	16571	Si
1.24	0.41	0.0004	1236	SLD 12	0.107	7176	3802	SLD 12	16571	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000643	1334	SLE RA 20	36345	1494000	450673	36000000	1206	SLE QP 2	32858	1120500	Si
0.62	0.41	0.00000405	1225	SLE RA 20	34389	1494000	426427	36000000	1106	SLE QP 2	31061	1120500	Si
1.09	0.41	0.00000405	1196	SLE RA 20	33580	1494000	416394	36000000	1080	SLE QP 2	30327	1120500	Si
1.24	0.41	0.00000405	1195	SLE RA 20	33557	1494000	416109	36000000	1080	SLE QP 2	30308	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
706,705,704,703	2.49	1.1	SLU 84	ST	BT	2.3	116335	28214	4.12	Si
706,705,704,703	2.49	1.1	SLV 1	SIS	LT	2.3	75086	16654	4.51	Si
706,705,704,703	2.49	1.1	SLD 16	SIS	BT	2.3	111864	20442	5.47	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
-409	55	-28214	33.39	-1598.46	-1	0	-0.06	0	1.1	2.38	1496	2060	0	14430	
-1456	4318	-16654	-1082.54	-1882.84	-5	15	-0.11	-0.07	0.97	2.26	1496	2060	37	0	0.07
229	-1786	-20442	494.7	-734.7	1	-5	-0.04	0.02	1.05	2.42	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.09	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
43	56	66	1.32	1.33	0.83	1.16	1.27	1	0.59	0.58	0.43	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
1	5	0	0	0.09	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

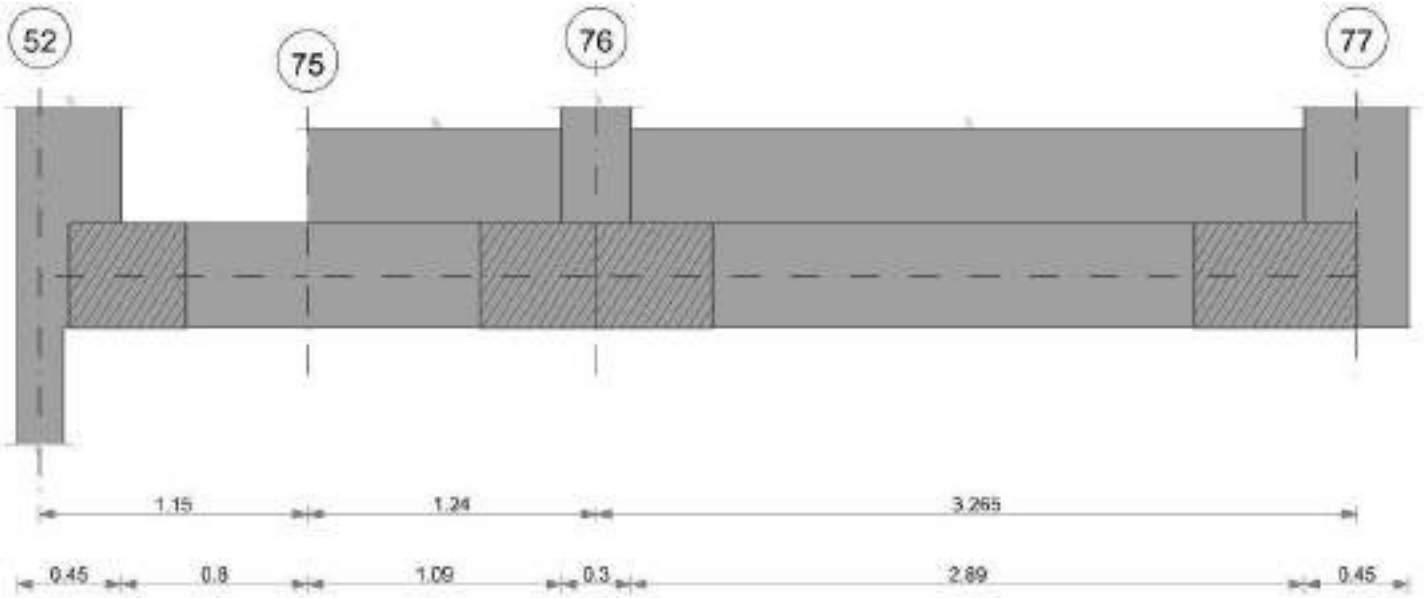
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.003	671	SLE RA 20	0.05	0.001	671	845	SLE RA 21	0.05	0	771	SLE RA 20	0.0033	0	SLE RA 20	Si
D	0.05	0	671	SLE RA 1	0.05	0	671	671	SLE RA 1	0.05	0	771	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	671	SLE RA 1	0.05	0	671	671	SLE RA 1	0.05	0	771	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.03	SLE RA 21	0.19	0.03	671	771	SLE RA 21	0.19	0	671	SLE RA 1	0.1	0.01	771	SLE RA 20	Si
D	0.19	0	SLE RA 1	0.19	0	671	771	SLE RA 1	0.19	0	671	SLE RA 1	0.1	0	771	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	671	771	SLE RA 1	0.19	0	671	SLE RA 1	0.1	0	771	SLE RA 1	Si

CORDOLO 30

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

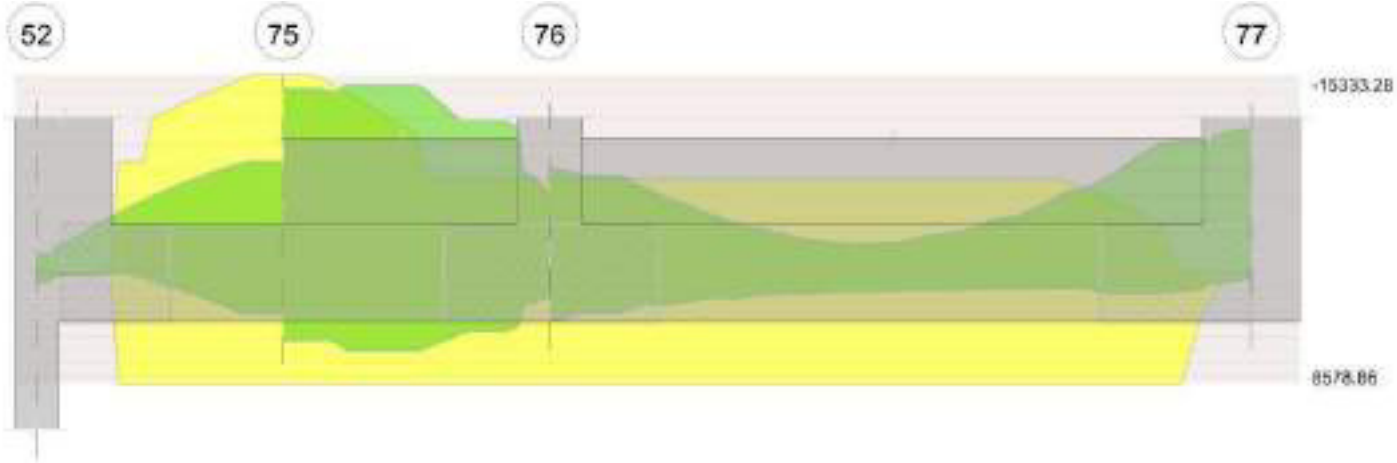


Diagramma verifica stato limite ultimo taglio

Output campate

Campata 1 tra i fili 52 - 75, sezione R 50x45, asta 360

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.58	0.00088	0.051	0.000603	0.051							-3534	SLU 83	-3973.96	-12872.75	0.138	3.24	Si
1.15	0.001112	0.051	0.000603	0.051							-3946.21	SLU 83	-4125.14	-16041.33	0.157	3.89	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.58	0.00088	0.051	0.000603	0.051	-52.7	SLV 6	775.3	8576.4	0.207	11.06	-4755.99	SLV 11	-6180.04	-12288.19	0.252	1.99	Si
1.15	0.001112	0.051	0.000603	0.051	3193.99	SLV 6	3193.99	8573.88	0.203	2.68	-8577.01	SLV 11	-8577.01	-15333.28	0.282	1.79	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.58	0.00088	0.051	0.000603	0.051							-3346.89	SLD 11	-4095.89	-12288.19	0.252	3	Si
1.15	0.001112	0.051	0.000603	0.051							-5048.78	SLD 11	-5048.78	-15333.28	0.282	3.04	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0	0	-9922	SLU 83	-9922	-8455	-71432	0	-8455	1	0.85	Si
0.58	0.0000176	0	0	-3674	SLU 83	-3674	-7773	-63286	-24702	-24702	1	6.72	Si
1.15	0.0000176	0.000984	0	2048	SLU 84	2048	9429	63264	24693	24693	1	12.06	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0	0	1079	SLV 6	1079	8455	71432	0	8455	1	7.84	Si
0	0	0	0	-14414	SLV 11	-14414	-8455	-71432	0	-8455	1	0.59	Si
0.1	0	0	0	1711	SLV 6	1711	8455	71432	0	8455	1	4.94	Si
0.58	0.0000176	0	0	4637	SLV 6	4637	7773	63286	24702	24702	1	5.33	Si
0.58	0.0000176	0	0	-9600	SLV 11	-9600	-7773	-63286	-24702	-24702	1	2.57	Si
1.15	0.0000176	0.000603	0	8018	SLV 6	8018	8014	63336	24721	24721	1	3.08	Si
1.15	0.0000176	0.000984	0	-5415	SLV 11	-5415	-9429	-63264	-24693	-24693	1	4.56	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0	0	-9774	SLD 11	-9774	-8455	-71432	0	-8455	1	0.87	Si
0.58	0.0000176	0	0	370	SLD 6	370	7773	63286	24702	24702	1	66.76	Si
0.58	0.0000176	0	0	-5333	SLD 11	-5333	-7773	-63286	-24702	-24702	1	4.63	Si
1.15	0.0000176	0.000984	0	3989	SLD 6	3989	9429	63264	24693	24693	1	6.19	Si
1.15	0.0000176	0.000984	0	-1386	SLD 11	-1386	-9429	-63264	-24693	-24693	1	17.82	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-96.38	2	-96.38	-5711	1494000	0	36000000	-80.68	1	-80.68	-4781	1120500			Si
0.1	-683.89	21	-1593.6	-94435	1494000	0	36000000	-637.85	2	-1476.42	-87491	1120500			Si
0.58	-2603.58	20	-2926.19	149296	1494000	2182359	36000000	-2404.35	2	-2702.37	137877	1120500			Si
1.15	-2905.86	20	-3037.03	153151	1494000	2192171	36000000	-2691.51	2	-2807.77	141590	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 52 - 75, sezione R 50x45, asta 360

Campata 2 tra i fili 75 - 76, sezione R 50x45, aste 359, 358, 357

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0009	1854	SLU 83	0.074	13727	5706	SLU 83	31268	Si
0.62	0.41	0.0002	1710	SLU 83	0.019	3235	5262	SLU 83	15877	Si
1.09	0.41	0.0002	1674	SLU 83	0.019	3235	5151	SLU 83	15877	Si
1.24	0.41	0.0002	1673	SLU 83	0.019	3235	5149	SLU 83	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0009	1337	SLD 16	0.156	15252	4115	SLD 16	35958	Si
0.62	0.41	0.0002	1271	SLD 16	0.076	3634	3912	SLD 16	15877	Si
1.09	0.41	0.0002	1275	SLD 16	0.076	3634	3924	SLD 16	15877	Si
1.24	0.41	0.0002	1284	SLD 16	0.076	3634	3951	SLD 16	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.0000088	1353	SLE RA 20	35794	1494000	443850	36000000	1224	SLE QP 2	32376	1120500	Si
0.62	0.41	0.00000203	1247	SLE RA 20	35944	1494000	445700	36000000	1127	SLE QP 2	32482	1120500	Si
1.09	0.41	0.00000203	1220	SLE RA 20	35169	1494000	436101	36000000	1102	SLE QP 2	31779	1120500	Si
1.24	0.41	0.00000203	1219	SLE RA 20	35150	1494000	435858	36000000	1102	SLE QP 2	31763	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 3 tra i fili 76 - 77, sezione R 50x45, aste 356, 355, 354, 353, 352, 351, 350, 349, 348

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1673	SLU 83	0.019	3235	5149	SLU 83	15877	Si
0.15	0.41	0.0002	1674	SLU 83	0.019	3218	5150	SLU 83	15877	Si
1.63	0.41	0.0002	2440	SLV 12	0.092	3123	7508	SLV 12	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	1284	SLD 16	0.076	3634	3951	SLD 16	15877	Si
0.15	0.41	0.0002	1294	SLD 16	0.076	3616	3980	SLD 16	15877	Si
1.63	0.41	0.0002	1693	SLD 12	0.076	3616	5210	SLD 12	15877	Si
3.04	0.41	0.0002	2282	SLD 11	0.076	3616	7020	SLD 11	15877	Si
3.27	0.41	0.0002	2419	SLD 11	0.076	3616	7442	SLD 11	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000203	1219	SLE RA 20	35150	1494000	435858	36000000	1102	SLE QP 2	31763	1120500	Si
0.15	0.41	0.00000202	1219	SLE RA 20	35158	1494000	435958	36000000	1102	SLE QP 2	31773	1120500	Si
1.63	0.41	0.00000202	1317	SLE RA 20	37984	1494000	470996	36000000	1192	SLE QP 2	34382	1120500	Si
3.04	0.41	0.00000202	1542	SLE RA 20	44461	1494000	551312	36000000	1399	SLE QP 2	40328	1120500	Si
3.27	0.41	0.00000202	1608	SLE RA 20	46376	1494000	575064	36000000	1459	SLE QP 2	42083	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
360,359,358,357,356,355,354,353,352,351,350,349,348	5.98	1.1	SLU 83	ST	BT	2.3	281335	68838	4.09	Si
360,359,358,357,356,355,354,353,352,351,350,349,348	5.98	1.1	SLV 12	SIS	BT	2.3	232459	71563	3.25	Si
360,359,358,357,356,355,354,353,352,351,350,349,348	5.98	1.1	SLD 12	SIS	BT	2.3	256716	56937	4.51	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	213	-68838	83.62	0.24	0	0	0	0	1.1	5.98	1496	2060	0	14430	
0	-3130	-71563	869.14	32545.3	0	-3	0.45	0.01	1.08	5.07	1496	2060	0	14430	0.07
0	-1263	-56937	407.29	12984.65	0	-1	0.23	0.01	1.09	5.52	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

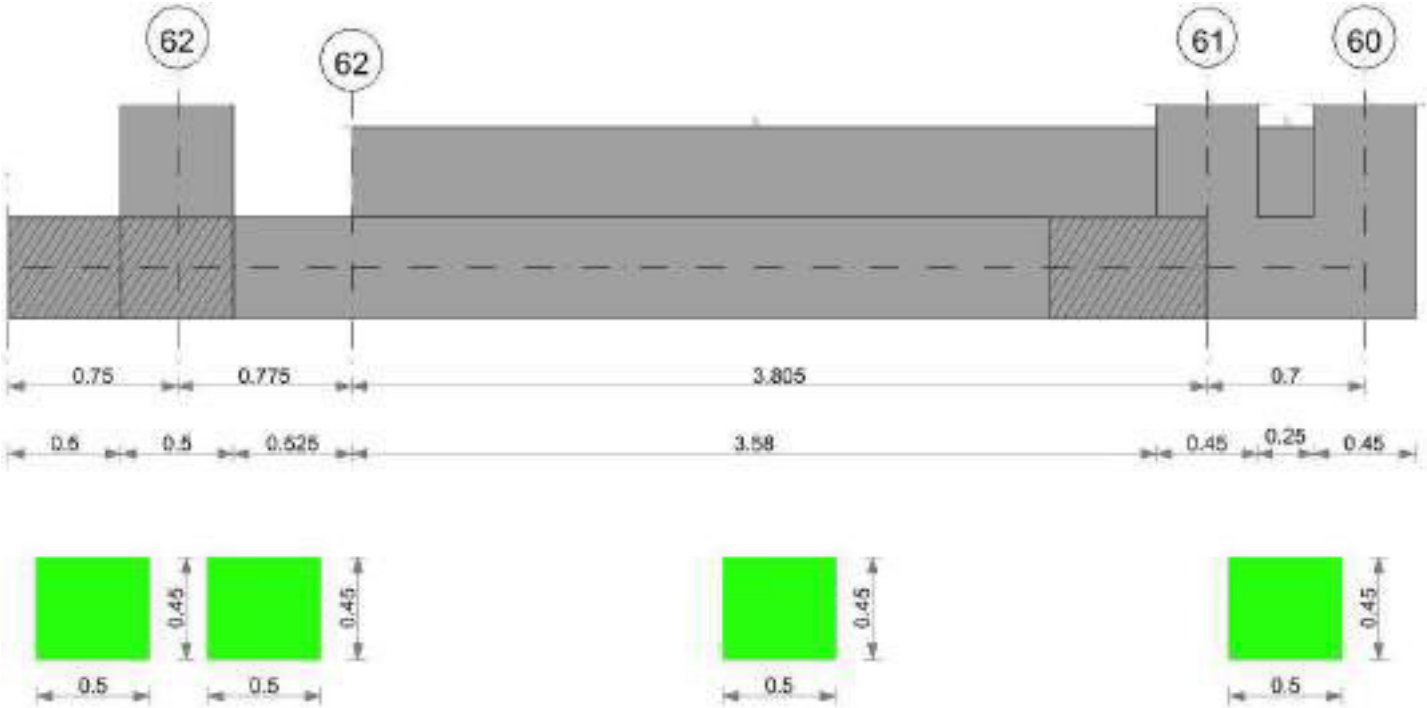
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.003	674	SLE RA 20	0.05	0.003	674	1099	SLE RA 21	0.05	0	847	SLE RA 20	0.0033	0	SLE RA 1	Si
D	0.05	0	674	SLE RA 1	0.05	0	674	674	SLE RA 1	0.05	0	773	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	674	SLE RA 1	0.05	0	674	674	SLE RA 1	0.05	0	773	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.03	SLE RA 21	0.19	0.03	847	1099	SLE RA 21	0.19	0	847	SLE RA 20	0.1	0	674	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	674	773	SLE RA 1	0.19	0	674	SLE RA 1	0.1	0	773	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	674	773	SLE RA 1	0.19	0	674	SLE RA 1	0.1	0	773	SLE RA 1	Si

CORDOLO 31

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

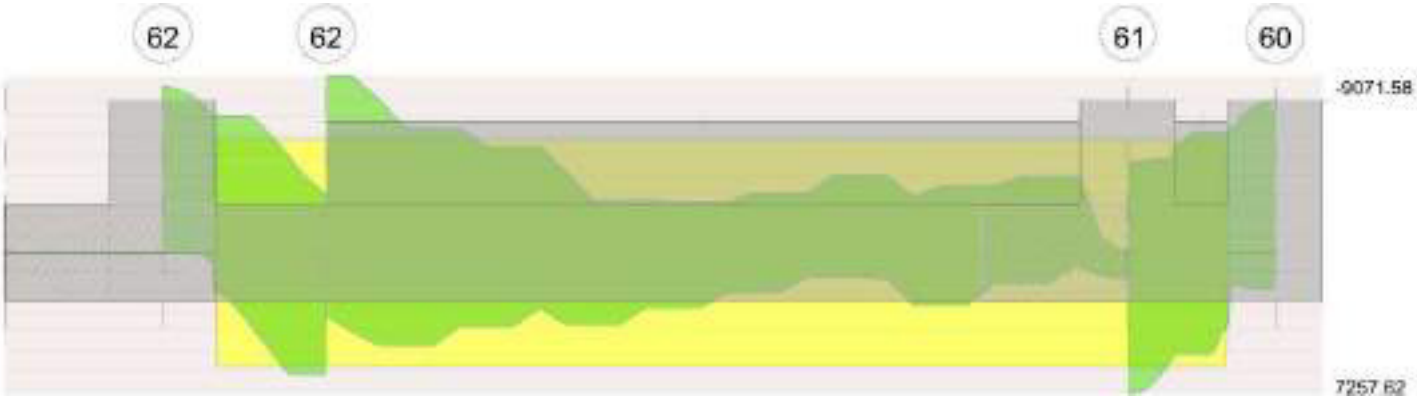
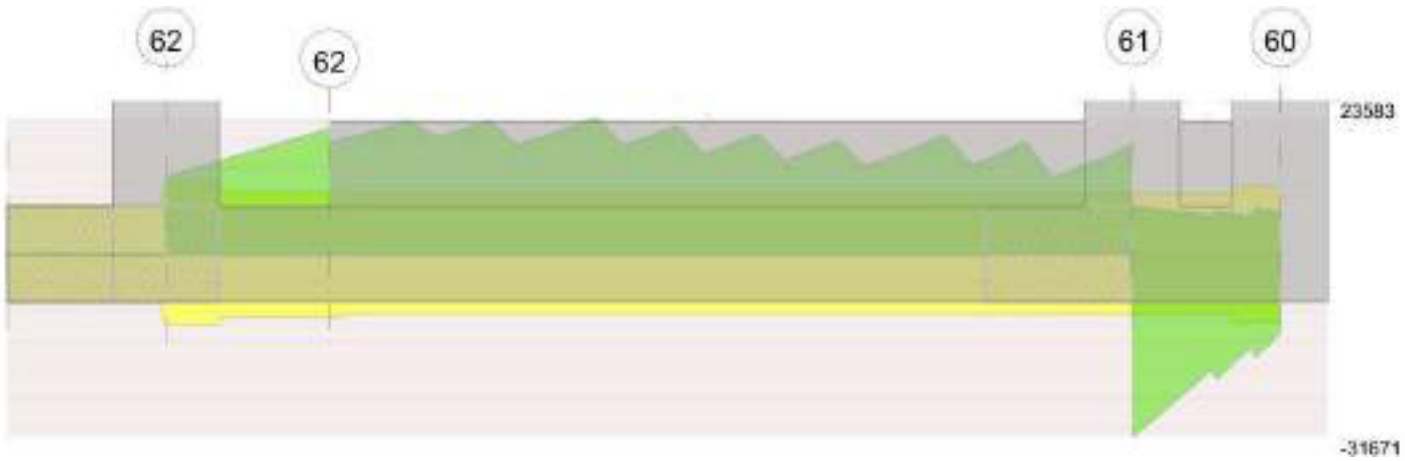


Diagramma verifica stato limite ultimo taglio



Output campate

Campata 2 tra i fili 62 - 62, sezione R 50x45, asta 382

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.39	0.000402	0.051	0.000402	0.051	-1704.59	SLU 2	122.28	6274.14	0.102	51.31	-2874.32	SLU 83	-4857.64	-6274.14	0.102	1.29	Si
0.78	0.000402	0.051	0.000402	0.051	4004.31	SLU 84	4004.31	6274.14	0.102	1.57							Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.39	0.000402	0.051	0.000402	0.051	-544.29	SLD 6	1357.31	5809.92	0.178	4.28	-3301.06	SLD 11	-4756.4	-5809.92	0.178	1.22	Si
0.78	0.000402	0.051	0.000402	0.051	4093.04	SLD 10	4093.04	5809.92	0.178	1.42	1194.94	SLD 7	-962.48	-5809.92	0.178	6.04	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000078	0	0	10508	SLU 84	10508	8455	71432	12334	12334	1	1.17	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000078	0	0	13419	SLV 16	13419	8455	71432	12334	12334	1	0.92	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000078	0	0	9735	SLD 16	9735	8455	71432	12334	12334	1	1.27	Si
0.25	0.0000078	0	0	12042	SLD 16	12042	8455	71432	12334	12334	1	1.02	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0.25	-3551.48	20	-3551.48	-210458	1494000	0	36000000	-3244.8	2	-3244.8	-192285	1120500			Si
0.39	-2102.29	20	-3551.48	191989	1494000	2879840	36000000	-1922.67	2	-3244.8	175411	1120500			Si
0.78	2924.54	21	2924.54	158098	1494000	2371467	36000000	2643.99	2	2643.99	142932	1120500			Si

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 62 - 62, sezione R 50x45, asta 382

Campata 3 tra i fili 62 - 61, sezione R 50x45, aste 381, 380, 379, 378, 377, 376, 375, 374, 373

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	2202	SLU 83	0.033	6176	6777	SLU 83	15877	Si
1.9	0.41	0.0004	2939	SLV 11	0.124	5653	9043	SLV 11	15877	Si
3.58	0.41	0.0004	3927	SLV 11	0.124	5653	12084	SLV 11	15877	Si
3.81	0.41	0.0004	4064	SLV 11	0.125	5692	12505	SLV 11	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	1694	SLD 15	0.105	6895	5214	SLD 15	15908	Si
1.9	0.41	0.0004	2089	SLD 11	0.102	6561	6429	SLD 11	15877	Si
3.58	0.41	0.0004	2527	SLD 11	0.102	6561	7774	SLD 11	15877	Si
3.81	0.41	0.0004	2589	SLD 11	0.103	6606	7967	SLD 11	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000389	1608	SLE RA 20	45239	1494000	560958	36000000	1458	SLE QP 2	41028	1120500	Si
1.9	0.41	0.0000037	1675	SLE RA 20	47232	1494000	585678	36000000	1519	SLE QP 2	42836	1120500	Si
3.58	0.41	0.0000037	1750	SLE RA 20	49362	1494000	612091	36000000	1588	SLE QP 2	44797	1120500	Si
3.81	0.41	0.00000372	1764	SLE RA 20	49746	1494000	616854	36000000	1602	SLE QP 2	45154	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 4 tra i fili 61 - 60, sezione R 50x45, aste 372, 371, 370

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	4064	SLV 11	0.125	5692	12505	SLV 11	15877	Si
0.23	0.41	0.0004	4285	SLV 11	0.125	5692	13184	SLV 11	15877	Si
0.35	0.41	0.0004	4406	SLV 11	0.125	5692	13556	SLV 11	15877	Si
0.48	0.41	0.0004	4533	SLV 11	0.125	5692	13947	SLV 11	15877	Si
0.7	0.41	0.0004	4793	SLV 11	0.125	5692	14749	SLV 11	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	2589	SLD 11	0.103	6606	7967	SLD 11	15877	Si
0.23	0.41	0.0004	2689	SLD 11	0.103	6606	8275	SLD 11	15877	Si
0.35	0.41	0.0004	2744	SLD 11	0.103	6606	8442	SLD 11	15877	Si
0.48	0.41	0.0004	2802	SLD 11	0.103	6606	8621	SLD 11	15877	Si
0.7	0.41	0.0004	2927	SLD 11	0.103	6606	9005	SLD 11	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000372	1764	SLE RA 20	49746	1494000	616854	36000000	1602	SLE QP 2	45154	1120500	Si
0.23	0.41	0.00000372	1786	SLE RA 20	50342	1494000	624237	36000000	1621	SLE QP 2	45707	1120500	Si
0.35	0.41	0.00000372	1796	SLE RA 20	50633	1494000	627853	36000000	1631	SLE QP 2	45977	1120500	Si
0.48	0.41	0.00000372	1809	SLE RA 20	50994	1494000	632327	36000000	1643	SLE QP 2	46311	1120500	Si
0.7	0.41	0.00000372	1845	SLE RA 20	52017	1494000	645016	36000000	1676	SLE QP 2	47253	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
382,381,380,379,378,377,376,375,374,373,372,371,370	5.51	1.1	SLU 83	ST	BT	2.3	253580	78103	3.25	Si
382,381,380,379,378,377,376,375,374,373,372,371,370	5.51	1.1	SLD 11	SIS	BT	2.3	236477	70414	3.36	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	1213	-78103	-193.53	3935.3	0	1	0.05	0	1.1	5.4	1496	2060	0	14430	
0	2376	-11295	-483.47	-34481.09	0	12	-3.05	-0.04	-0.6	1.01	1496	2060	0	14430	0.07
0	488	-70414	-41.17	17828.73	0	0	0.25	0	1.1	5	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

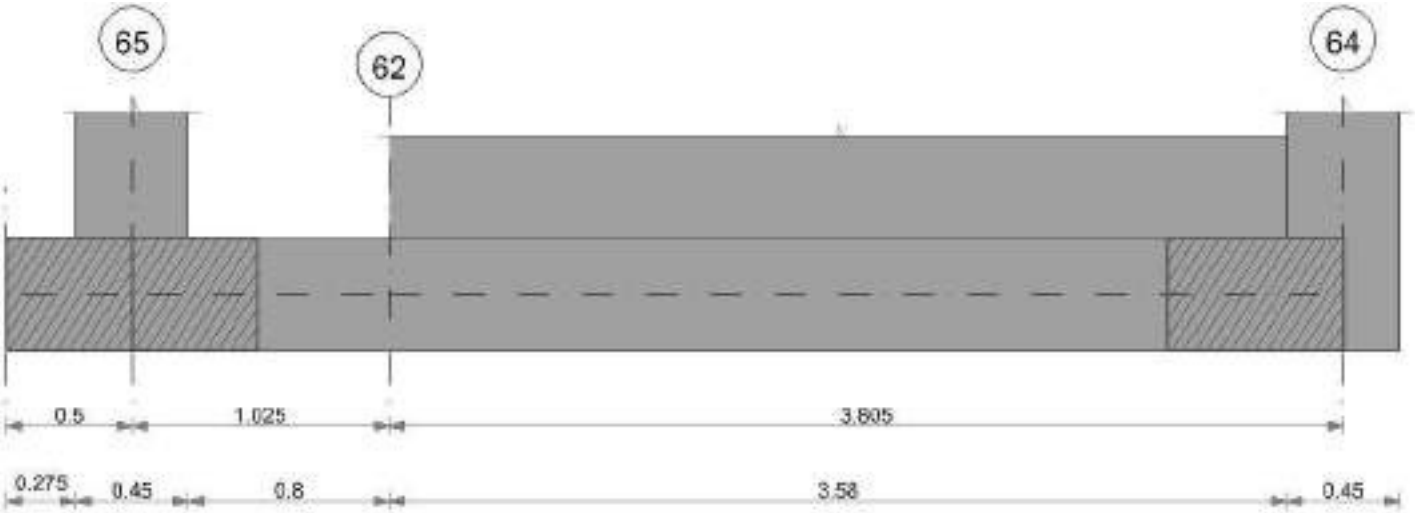
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.002	742	SLE RA 20	0.05	0.002	742	1110	SLE RA 21	0.05	0	774	SLE RA 20	0.0033	0	SLE RA 2	Si
D	0.05	0	742	SLE RA 1	0.05	0	742	742	SLE RA 1	0.05	0	774	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	742	SLE RA 1	0.05	0	742	742	SLE RA 1	0.05	0	774	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.02	SLE RA 21	0.19	0.03	956	1110	SLE RA 20	0.19	0.01	774	SLE RA 20	0.1	0	956	SLE RA 2	Si
D	0.19	0	SLE RA 1	0.19	0	742	774	SLE RA 1	0.19	0	742	SLE RA 1	0.1	0	774	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	742	774	SLE RA 1	0.19	0	742	SLE RA 1	0.1	0	774	SLE RA 1	Si

CORDOLO 32

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

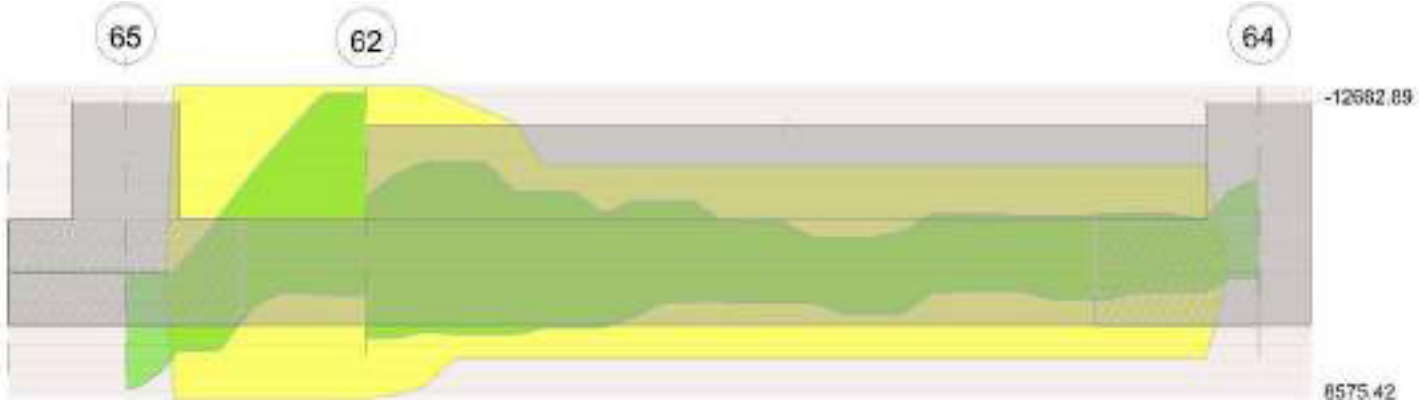


Diagramma verifica stato limite ultimo taglio

Output campate

Campata 2 tra i fili 65 - 62, sezione R 50x45, asta 610

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.23	0.000911	0.052	0.000603	0.051	4676.98	SLU 83	4676.98	9082.58	0.122	1.94							Si
0.51	0.000911	0.052	0.000603	0.051	-448.16	SLU 2	2512.39	9082.58	0.122	3.62	-774.55	SLU 83	-3650.22	-13290.66	0.141	3.64	Si
1.03	0.000911	0.052	0.000603	0.051							-7927.77	SLU 83	-7927.77	-13290.66	0.141	1.68	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.23	0.000911	0.052	0.000603	0.051	5271.2	SLV 16	5271.2	8575.42	0.206	1.63	950.28	SLV 1	-404.87	-12682.89	0.256	31.33	Si
0.51	0.000911	0.052	0.000603	0.051	1364.21	SLV 10	2994.1	8575.42	0.206	2.86	-2409.41	SLV 7	-6101.09	-12682.89	0.256	2.08	Si
1.03	0.000911	0.052	0.000603	0.051	1576.09	SLV 5	1576.09	8575.42	0.206	5.44	-12136.79	SLV 12	-12136.79	-12682.89	0.256	1.04	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.23	0.000911	0.052	0.000603	0.051	4028.22	SLD 16	4028.22	8575.42	0.206	2.13							Si
0.51	0.000911	0.052	0.000603	0.051	231.41	SLD 10	2229.48	8575.42	0.206	3.85	-1276.6	SLD 7	-3909.47	-12682.89	0.256	3.24	Si
1.03	0.000911	0.052	0.000603	0.051							-8043.49	SLD 12	-8043.49	-12682.89	0.256	1.58	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000206	0.000603	0	-23641	SLU 83	-23641	-8473	-71432	-32641	-32641	1	1.38	Si
0.21	0.0000206	0.000603	0	-21028	SLU 83	-21028	-8014	-63336	-28942	-28942	1	1.38	Si
0.23	0.0000206	0.000603	0	-20774	SLU 83	-20774	-8014	-63336	-28942	-28942	1	1.39	Si
0.51	0.0000206	0.000911	0	-17146	SLU 83	-17146	-9189	-63248	-28901	-28901	1	1.69	Si
1.03	0.0000206	0.000911	0	-10787	SLU 83	-10787	-9189	-63248	-28901	-28901	1	2.68	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000206	0.000603	0	-26903	SLV 12	-26903	-8473	-71432	-32641	-32641	1	1.21	Si
0.21	0.0000206	0.000603	0	-24906	SLV 12	-24906	-8014	-63336	-28942	-28942	1	1.16	Si
0.23	0.0000206	0.000603	0	-24709	SLV 12	-24709	-8014	-63336	-28942	-28942	1	1.17	Si
0.51	0.0000206	0.000911	0	-21842	SLV 12	-21842	-9189	-63248	-28901	-28901	1	1.32	Si
1.03	0.0000206	0.000603	0	2229	SLV 5	2229	8014	63336	28942	28942	1	12.98	Si
1.03	0.0000206	0.000911	0	-16546	SLV 12	-16546	-9189	-63248	-28901	-28901	1	1.75	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000206	0.000603	0	-20285	SLD 12	-20285	-8473	-71432	-32641	-32641	1	1.61	Si
0.21	0.0000206	0.000603	0	-18431	SLD 12	-18431	-8014	-63336	-28942	-28942	1	1.57	Si
0.23	0.0000206	0.000603	0	-18250	SLD 12	-18250	-8014	-63336	-28942	-28942	1	1.59	Si
0.51	0.0000206	0.000911	0	-15639	SLD 12	-15639	-9189	-63248	-28901	-28901	1	1.85	Si
1.03	0.0000206	0.000911	0	-10955	SLD 12	-10955	-9189	-63248	-28901	-28901	1	2.64	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0.23	3415.94	20	3415.94	169134	1494000	2610518	36000000	3110.74	2	3110.74	154023	1120500			Si
0.51	-568.19	20	-2668.56	135957	1494000	1981932	36000000	-522.6	2	-2437.15	124168	1120500			Si
1.03	-5789.95	20	-5789.95	478946	1494000	17773805	36000000	-5280.35	2	-5280.35	436791	1120500			Si

Verifica di apertura delle fessure

x	Bordo	Rara				Frequente				Quasi permanente				Verifica
		Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	
1.03	superiore	0.324	0.00052	0.000168	20	0.324	0.00048	0.000157	6	0.324	0.00047	0.000153	2	Si

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 65 - 62, sezione R 50x45, asta 610

Campata 3 tra i fili 62 - 64, sezione R 50x45, aste 609, 608, 607, 606, 605, 604, 603, 602, 601

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.001	2201	SLU 83	0.087	15987	6772	SLU 83	36606	Si
1.9	0.41	0.0003	2848	SLV 11	0.105	4036	8764	SLV 11	15877	Si
3.58	0.41	0.0003	3803	SLV 11	0.105	4036	11701	SLV 11	15877	Si
3.8	0.41	0.0003	3939	SLV 11	0.105	4036	12119	SLV 11	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.001	1690	SLD 15	0.169	17760	5200	SLD 15	42097	Si
1.9	0.41	0.0003	2039	SLD 11	0.086	4677	6274	SLD 11	15877	Si
3.58	0.41	0.0003	2451	SLD 11	0.086	4677	7540	SLD 11	15877	Si
3.8	0.41	0.0003	2513	SLD 11	0.086	4677	7731	SLD 11	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.0000103	1607	SLE RA 20	41749	1494000	517693	36000000	1458	SLE QP 2	37877	1120500	Si
1.9	0.41	0.00000262	1648	SLE RA 20	47155	1494000	584723	36000000	1495	SLE QP 2	42778	1120500	Si
3.58	0.41	0.00000262	1702	SLE RA 20	48690	1494000	603759	36000000	1545	SLE QP 2	44197	1120500	Si
3.8	0.41	0.00000262	1716	SLE RA 20	49081	1494000	608604	36000000	1558	SLE QP 2	44560	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
610,609,608,607,606,605,604,603,602,601	5.06	1.1	SLU 83	ST	BT	2.3	235582	65276	3.61	Si
610,609,608,607,606,605,604,603,602,601	5.06	1.1	SLV 11	SIS	BT	2.3	208777	71057	2.94	Si
610,609,608,607,606,605,604,603,602,601	5.06	1.1	SLD 11	SIS	BT	2.3	222195	55234	4.02	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	983	-65276	-314.85	846.99	0	1	0.01	0	1.09	5.03	1496	2060	0	14430	
0	-145	-71057	-298.48	22576.98	0	0	0.32	0	1.09	4.42	1496	2060	0	14430	0.07
0	286	-55234	-232.08	9342.02	0	0	0.17	0	1.09	4.72	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

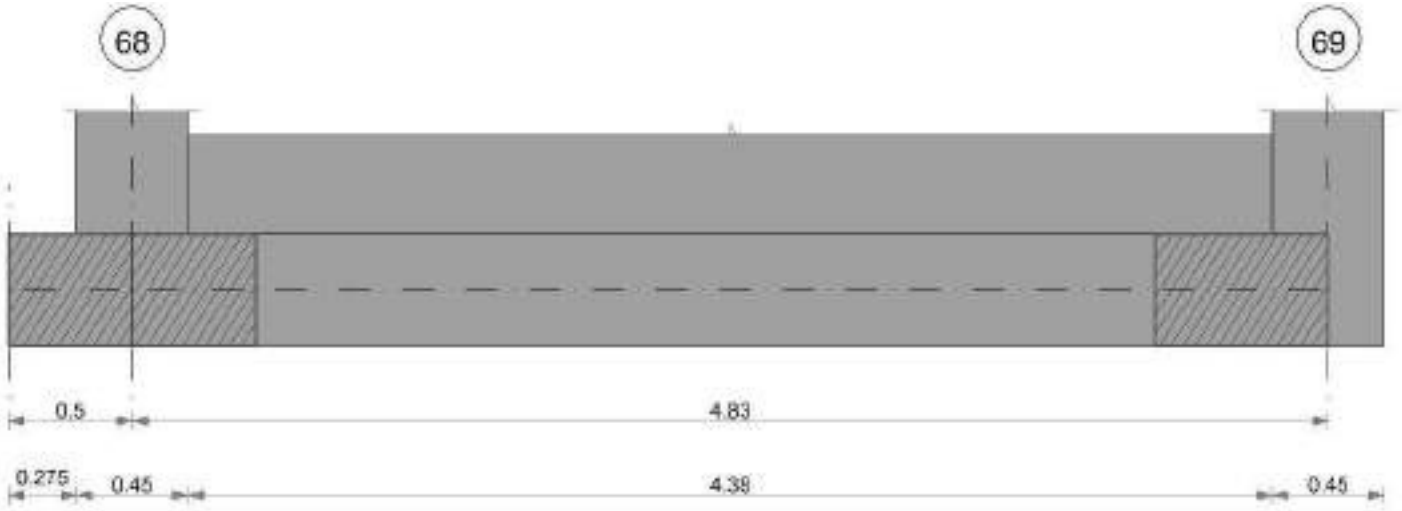
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.002	686	SLE RA 20	0.05	0.001	686	958	SLE RA 21	0.05	0	776	SLE RA 20	0.0033	0	SLE RA 1	Si
D	0.05	0	686	SLE RA 1	0.05	0	686	686	SLE RA 1	0.05	0	776	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	686	SLE RA 1	0.05	0	686	686	SLE RA 1	0.05	0	776	SLE RA 1	0.0033	0	SLE RA 1	Si

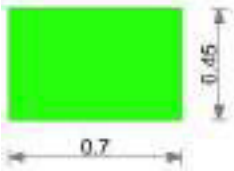
Verifiche geotecniche - Rotazioni assolute e differenziali

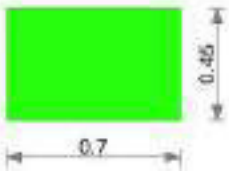
Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.02	SLE RA 21	0.19	0.02	776	958	SLE RA 21	0.19	0.01	776	SLE RA 20	0.1	0	686	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	686	776	SLE RA 1	0.19	0	686	SLE RA 1	0.1	0	776	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	686	776	SLE RA 1	0.19	0	686	SLE RA 1	0.1	0	776	SLE RA 1	Si

CORDOLO 33

Geometria







Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

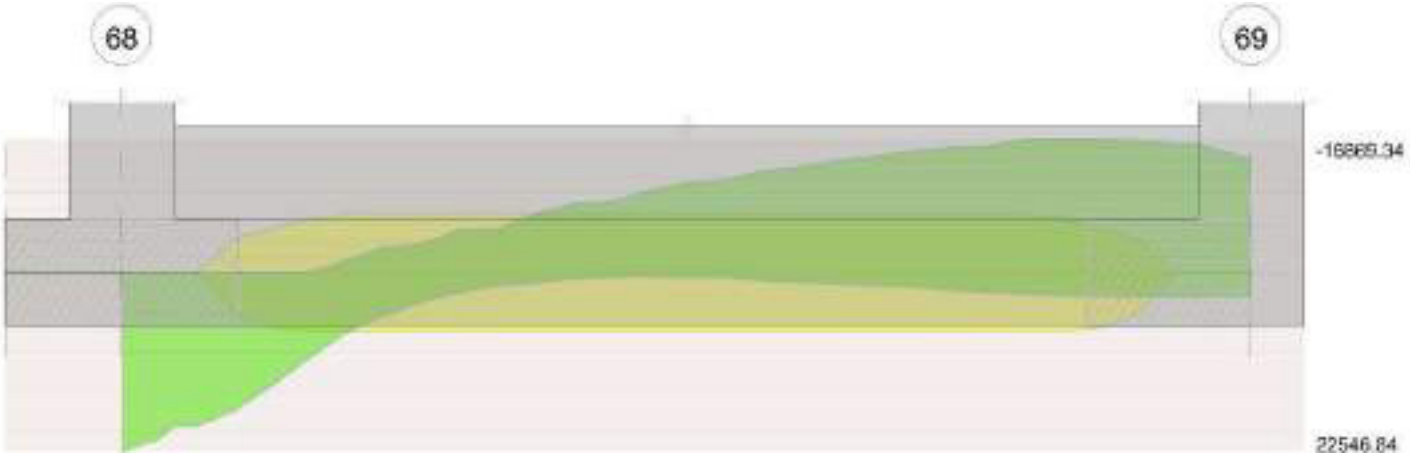
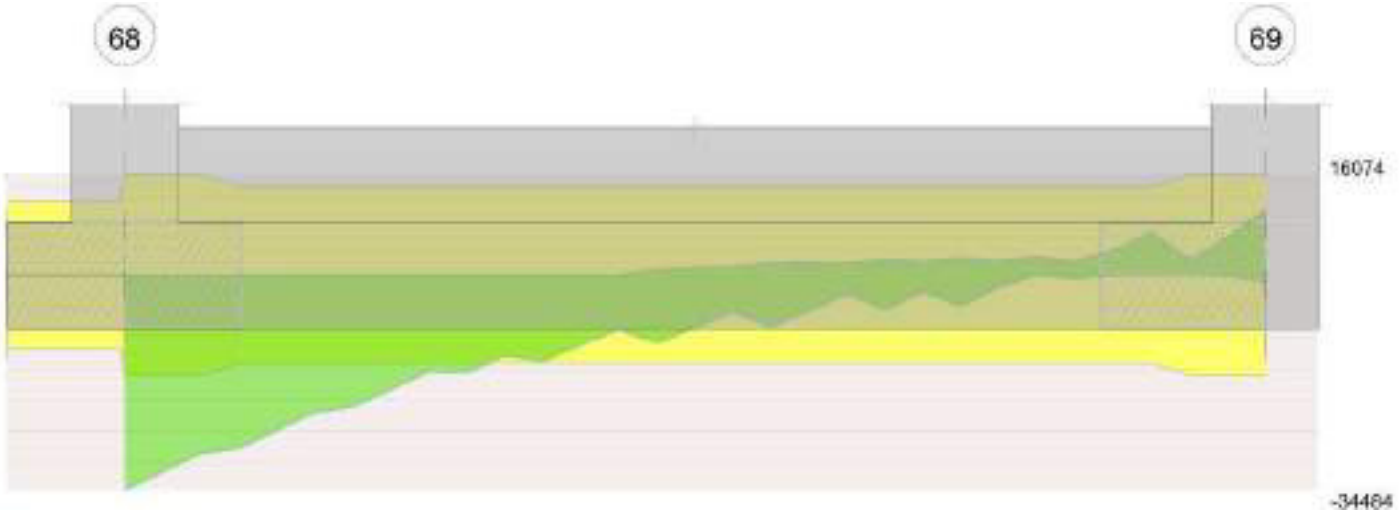


Diagramma verifica stato limite ultimo taglio



Output campate

Funzionamento trasversale della suola di fondazione

Campata 2 tra i fili 68 - 69, sezione R 70x45, aste 600, 599, 598, 597, 596, 595, 594, 593, 592, 591, 590

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	4402	SLV 15	0.119	5179	11359	SLV 15	15877	Si
0.23	0.41	0.0003	4415	SLV 15	0.119	5179	11394	SLV 15	15877	Si
2.41	0.41	0.0003	3855	SLV 15	0.119	5179	9948	SLV 15	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	3323	SLD 15	0.098	6008	8577	SLD 15	15877	Si
0.23	0.41	0.0003	3323	SLD 15	0.098	6008	8576	SLD 15	15877	Si
2.41	0.41	0.0003	2755	SLD 15	0.098	6008	7110	SLD 15	15877	Si
4.6	0.41	0.0003	3848	SLD 11	0.098	6008	9929	SLD 11	15877	Si
4.83	0.41	0.0003	4095	SLD 11	0.098	6008	10568	SLD 11	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000338	2760	SLE RA 21	78171	1494000	969321	36000000	2519	SLE QP 2	71345	1120500	Si
0.23	0.41	0.00000338	2750	SLE RA 20	77892	1494000	965864	36000000	2510	SLE QP 2	71088	1120500	Si
2.41	0.41	0.00000338	2144	SLE RA 20	60720	1494000	752925	36000000	1953	SLE QP 2	55323	1120500	Si
4.6	0.41	0.00000338	2480	SLE RA 20	70242	1494000	871000	36000000	2260	SLE QP 2	63997	1120500	Si
4.83	0.41	0.00000338	2603	SLE RA 20	73715	1494000	914067	36000000	2372	SLE QP 2	67172	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
600,599,598,597,596,595,594,593,592,591,590	5.05	1.3	SLU 83	ST	BT	2.3	226002	77205	2.93	Si
600,599,598,597,596,595,594,593,592,591,590	5.05	1.3	SLD 11	SIS	BT	2.3	213998	68423	3.13	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	1089	-77205	7730.24	-4581.76	0	1	-0.06	0.1	1.1	4.94	1496	2060	0	14430	
0	9332	-12397	-2604.48	-10802.19	0	37	-0.87	-0.21	0.88	3.31	1496	2060	37	0	0.07
0	212	-68423	8065.57	8147.22	0	0	0.12	0.12	1.06	4.82	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
43	56	66	1.2	1.2	0.89	1.14	1.23	1	0.08	0.06	0.02	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
1	5	0	0	0.04	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.001	699	SLE RA 20	0.05	0.001	699	971	SLE RA 21	0.05	0	699	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	699	SLE RA 1	0.05	0	699	699	SLE RA 1	0.05	0	699	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	699	SLE RA 1	0.05	0	699	699	SLE RA 1	0.05	0	699	SLE RA 1	0.0033	0	SLE RA 1	Si

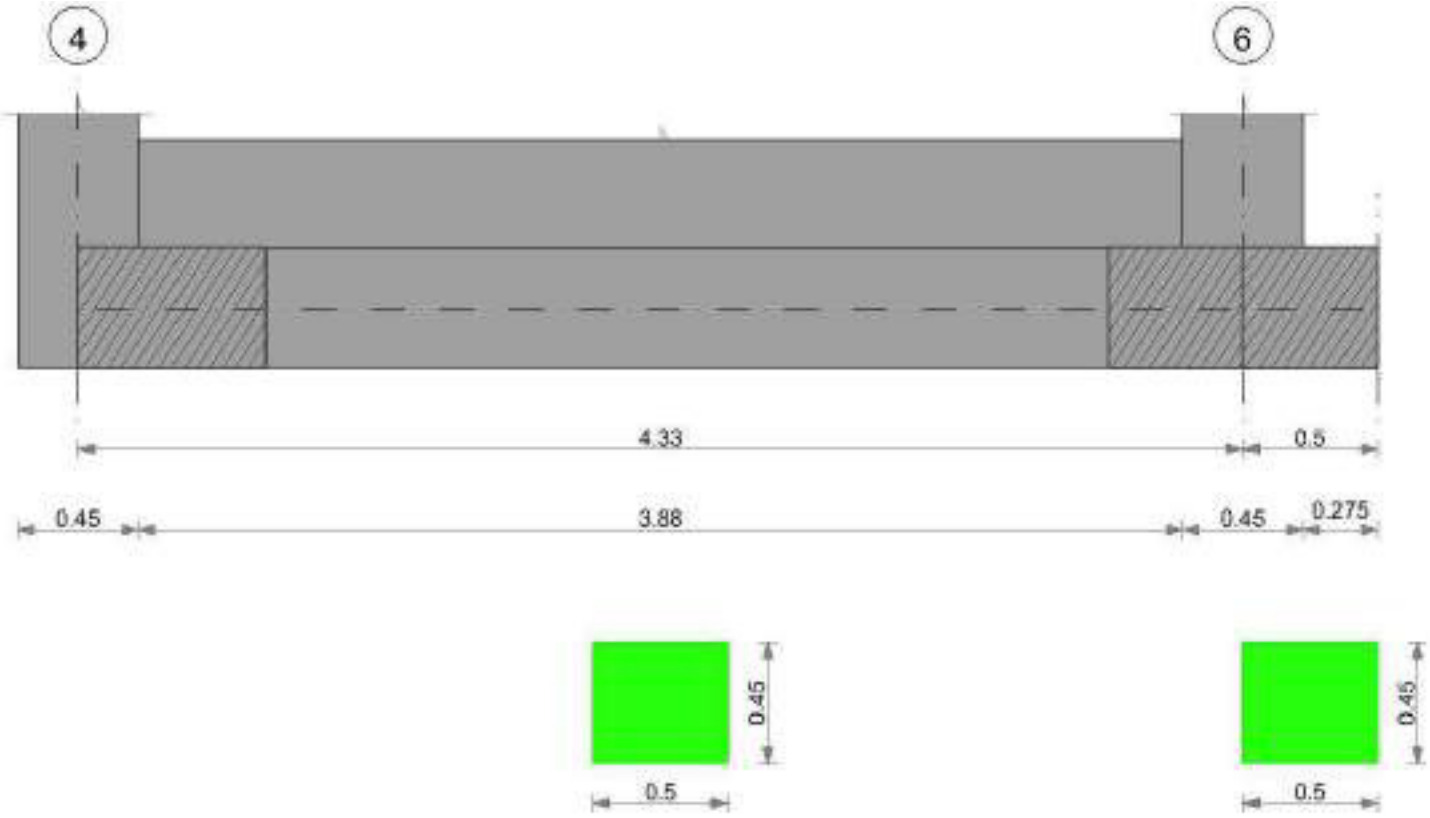
Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	699	971	SLE RA 21	0.19	0	699	SLE RA 1	0.1	0	699	SLE RA 1	Si

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
D	0.19	0	SLE RA 1	0.19	0	699	971	SLE RA 1	0.19	0	699	SLE RA 1	0.1	0	699	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	699	971	SLE RA 1	0.19	0	699	SLE RA 1	0.1	0	699	SLE RA 1	Si

CORDOLO 34

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

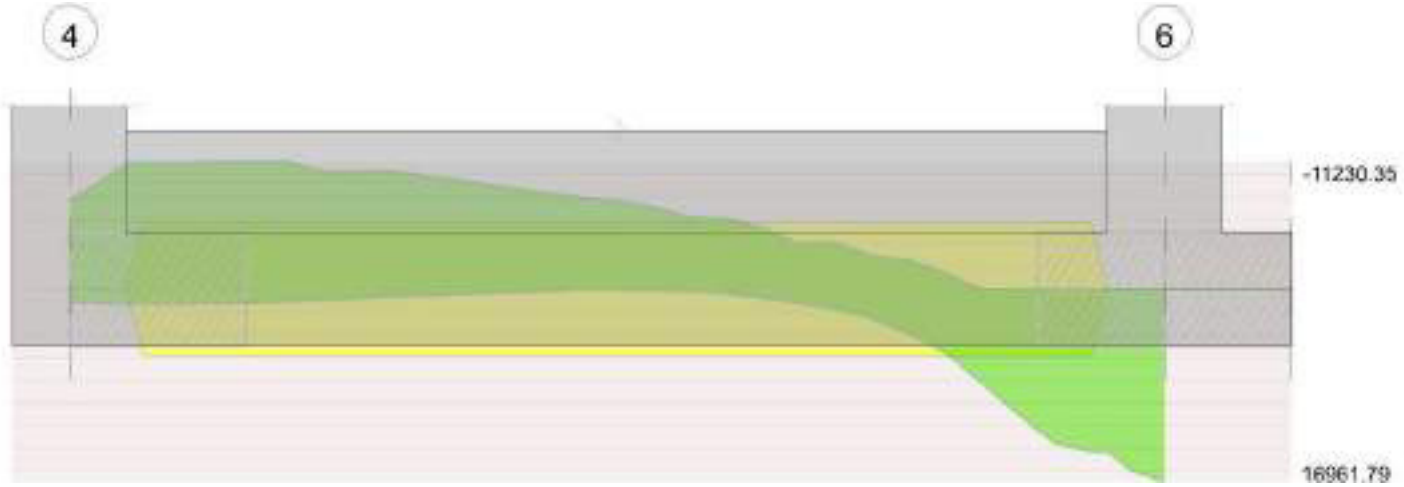


Diagramma verifica stato limite ultimo taglio

Output campate

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 4 - 6, sezione R 50x45, aste 563, 562, 561, 560, 559, 558, 557, 556, 555, 554, 553

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
2.16	0.41	0.0002	2377	SLV 1	0.087	2741	8267	SLV 1	15877	Si
4.1	0.41	0.0002	2585	SLV 1	0.087	2741	8990	SLV 1	15877	Si
4.33	0.41	0.0002	2567	SLV 1	0.087	2741	8928	SLV 1	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	2417	SLD 5	0.071	3173	8406	SLD 5	15877	Si
0.23	0.41	0.0002	2273	SLD 5	0.071	3173	7907	SLD 5	15877	Si
2.16	0.41	0.0002	1695	SLD 1	0.071	3173	5897	SLD 1	15877	Si
4.1	0.41	0.0002	1926	SLD 1	0.071	3173	6699	SLD 1	15877	Si
4.33	0.41	0.0002	1918	SLD 1	0.071	3173	6672	SLD 1	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000177	1610	SLE RA 21	46565	1494000	577410	36000000	1462	SLE QP 2	42306	1120500	Si
0.23	0.41	0.00000177	1534	SLE RA 21	44390	1494000	550441	36000000	1394	SLE QP 2	40329	1120500	Si
2.16	0.41	0.00000177	1316	SLE RA 21	38065	1494000	472000	36000000	1198	SLE QP 2	34646	1120500	Si
4.1	0.41	0.00000177	1573	SLE RA 21	45497	1494000	564160	36000000	1436	SLE QP 2	41542	1120500	Si
4.33	0.41	0.00000177	1571	SLE RA 21	45455	1494000	563643	36000000	1435	SLE QP 2	41513	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
563,562,561,560,559,558,557,556,555,554,553	4.55	1.1	SLU 84	ST	BT	2.3	188055	67696	2.78	Si
563,562,561,560,559,558,557,556,555,554,553	4.55	1.1	SLD 1	SIS	BT	2.3	179270	61977	2.89	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-826	-67696	-4369.41	1517.38	0	-1	0.02	-0.06	0.97	4.51	1496	2060	0	14430	
0	-8007	-9473	2120.51	7971.56	0	-40	0.84	0.22	0.65	2.87	1496	2060	37	0	0.07
0	2583	-61977	-5086.77	-1675.9	0	2	-0.03	-0.08	0.94	4.5	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.04	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
43	56	66	1.17	1.18	0.91	1.16	1.27	1	0.03	0.01	0.01	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
1	5	0	0	0.04	0	0	0.27	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

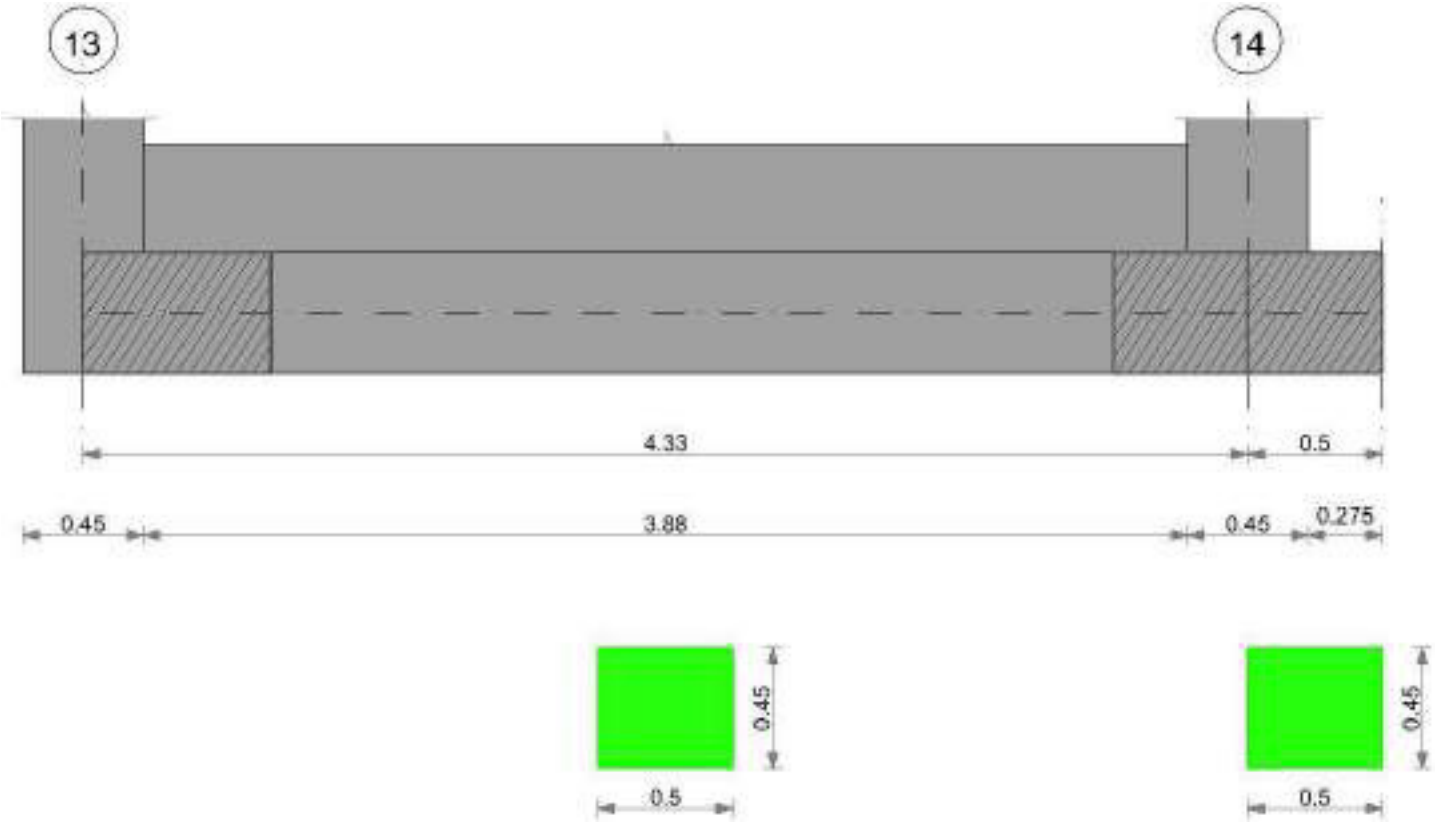
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.001	626	SLE RA 21	0.05	0.001	626	278	SLE RA 20	0.05	0	626	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	626	SLE RA 1	0.05	0	626	626	SLE RA 1	0.05	0	626	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	626	SLE RA 1	0.05	0	626	626	SLE RA 1	0.05	0	626	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 20	0.19	0.01	626	278	SLE RA 20	0.19	0	626	SLE RA 1	0.1	0	626	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	626	278	SLE RA 1	0.19	0	626	SLE RA 1	0.1	0	626	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	626	278	SLE RA 1	0.19	0	626	SLE RA 1	0.1	0	626	SLE RA 1	Si

CORDOLO 35

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

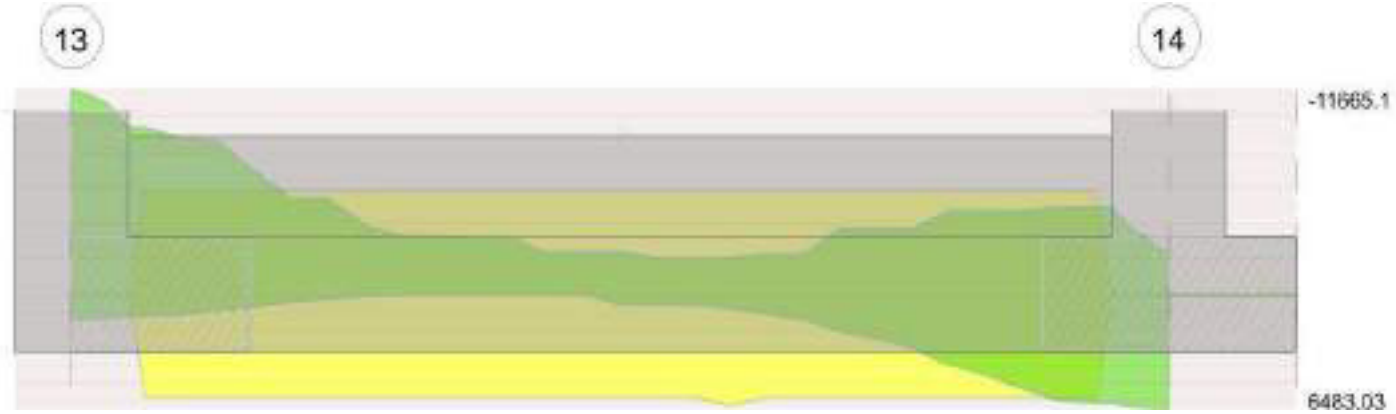
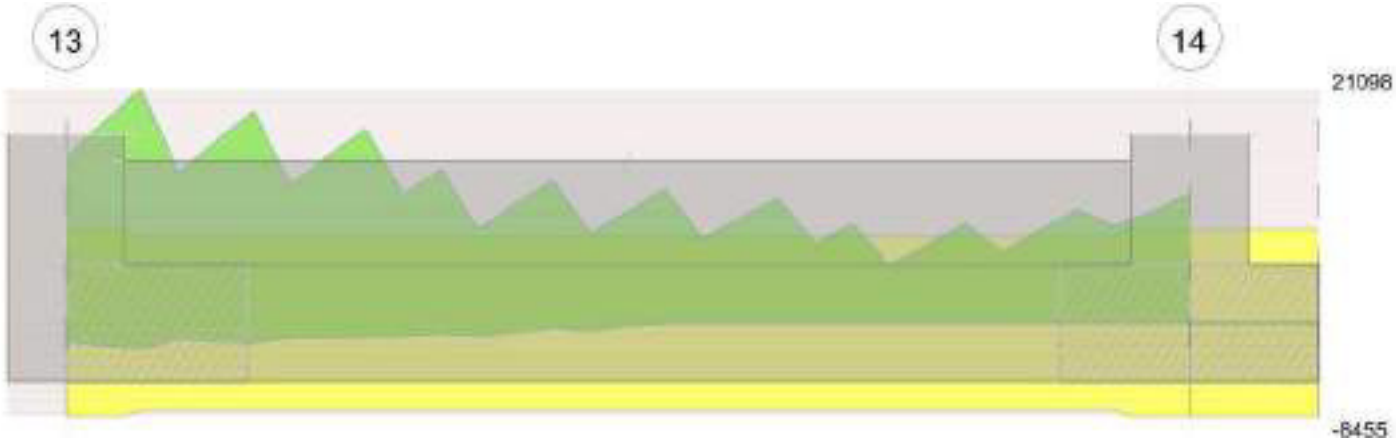


Diagramma verifica stato limite ultimo taglio



Output campate

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 13 - 14, sezione R 50x45, aste 278, 277, 276, 275, 274, 273, 272, 271, 270, 269, 268

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
2.16	0.41	0.0002	2564	SLV 5	0.087	2741	7889	SLV 5	15877	Si
4.1	0.41	0.0002	2334	SLU 83	0.018	2820	7181	SLU 83	15877	Si
4.33	0.41	0.0002	2333	SLU 83	0.018	2820	7180	SLU 83	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	2656	SLD 5	0.071	3173	8171	SLD 5	15877	Si
0.23	0.41	0.0002	2542	SLD 5	0.071	3173	7820	SLD 5	15877	Si
2.16	0.41	0.0002	1948	SLD 5	0.071	3173	5992	SLD 5	15877	Si
4.1	0.41	0.0002	1750	SLD 3	0.071	3173	5385	SLD 3	15877	Si
4.33	0.41	0.0002	1759	SLD 3	0.071	3173	5411	SLD 3	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000177	1887	SLE RA 21	54585	1494000	676852	36000000	1706	SLE QP 2	49359	1120500	Si
0.23	0.41	0.00000177	1836	SLE RA 21	53123	1494000	658730	36000000	1660	SLE QP 2	48040	1120500	Si
2.16	0.41	0.00000177	1691	SLE RA 21	48921	1494000	606618	36000000	1531	SLE QP 2	44305	1120500	Si
4.1	0.41	0.00000177	1705	SLE RA 20	49324	1494000	611622	36000000	1546	SLE QP 2	44736	1120500	Si
4.33	0.41	0.00000177	1704	SLE RA 20	49308	1494000	611420	36000000	1545	SLE QP 2	44713	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
278,277,276,275,274,273,272,271,270,269,268	4.55	1.1	SLU 84	ST	BT	2.3	212948	64899	3.28	Si
278,277,276,275,274,273,272,271,270,269,268	4.55	1.1	SLV 5	SIS	BT	2.3	185190	68510	2.7	Si
278,277,276,275,274,273,272,271,270,269,268	4.55	1.1	SLD 5	SIS	BT	2.3	200936	54042	3.72	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-606	-64899	283	-1119.21	0	-1	-0.02	0	1.09	4.52	1496	2060	0	14430	
0	1249	-68510	-322.09	-21611.68	0	1	-0.32	0	1.09	3.92	1496	2060	0	14430	0.07
0	298	-54042	-27.44	-9077.36	0	0	-0.17	0	1.1	4.22	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.06	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

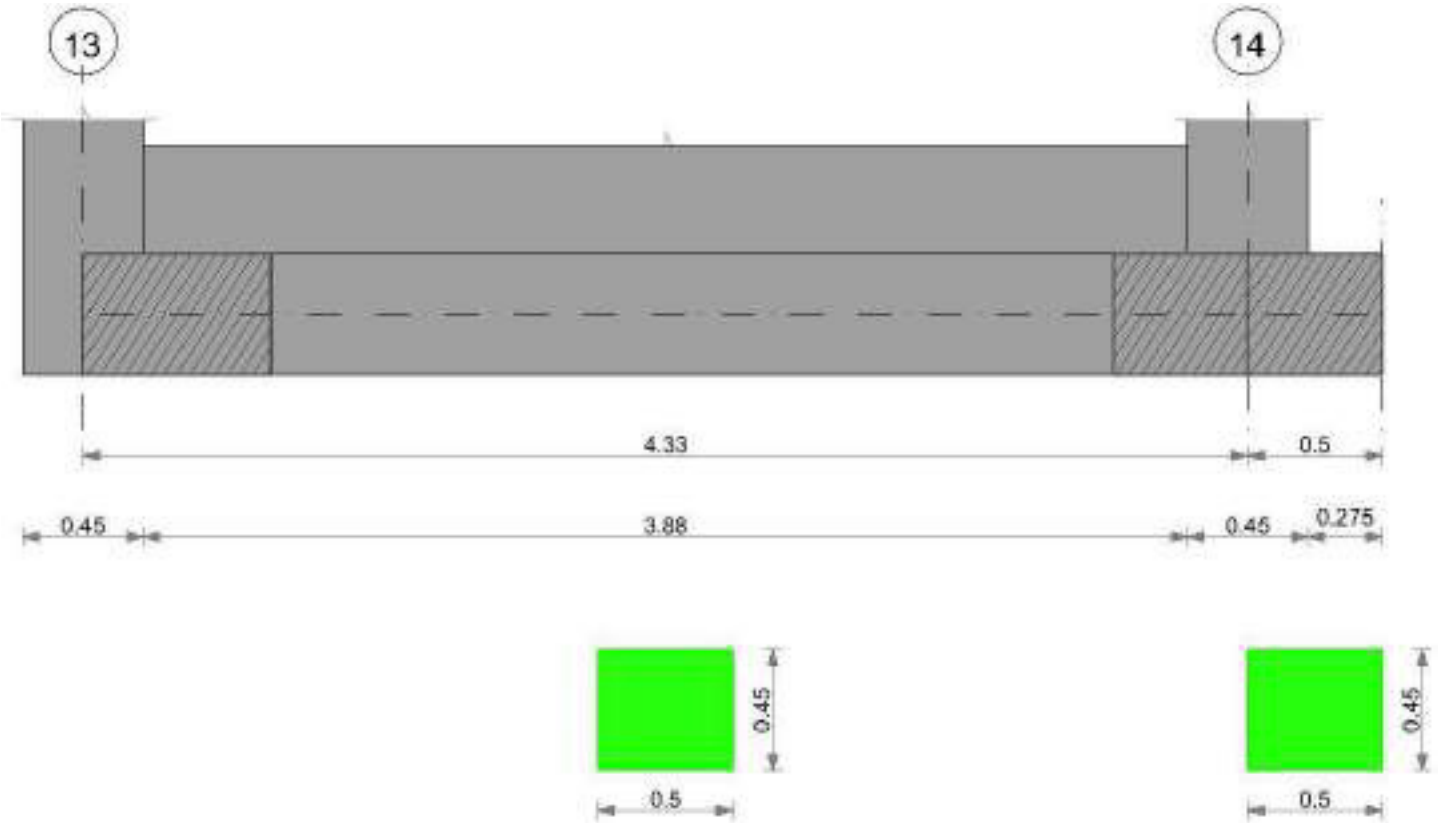
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.002	642	SLE RA 21	0.05	0.001	642	294	SLE RA 20	0.05	0	642	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	642	SLE RA 1	0.05	0	642	642	SLE RA 1	0.05	0	642	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	642	SLE RA 1	0.05	0	642	642	SLE RA 1	0.05	0	642	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.02	SLE RA 20	0.19	0.02	642	294	SLE RA 20	0.19	0	642	SLE RA 1	0.1	0	642	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	642	294	SLE RA 1	0.19	0	642	SLE RA 1	0.1	0	642	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	642	294	SLE RA 1	0.19	0	642	SLE RA 1	0.1	0	642	SLE RA 1	Si

CORDOLO 36

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

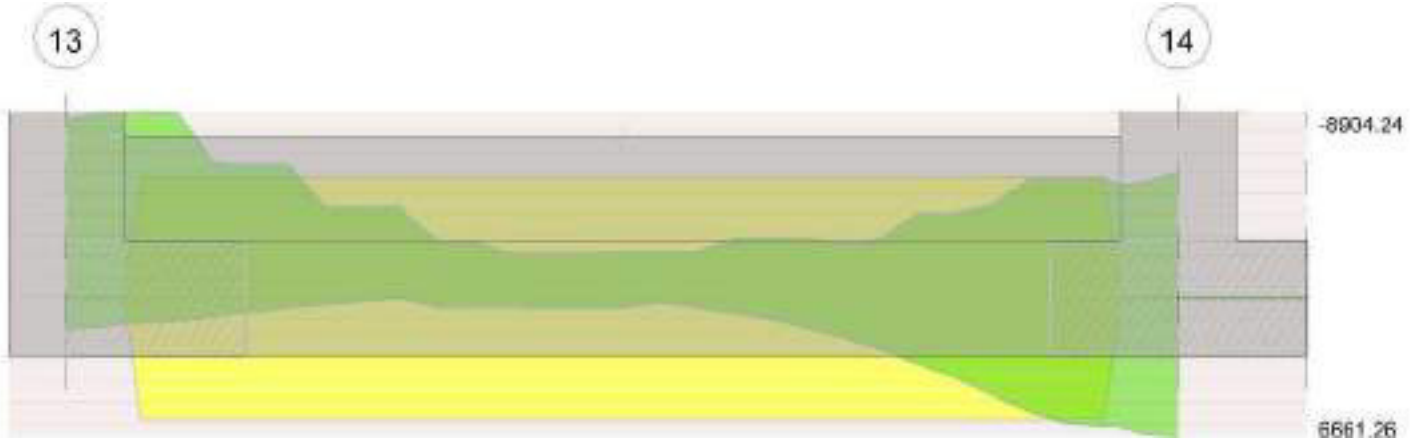
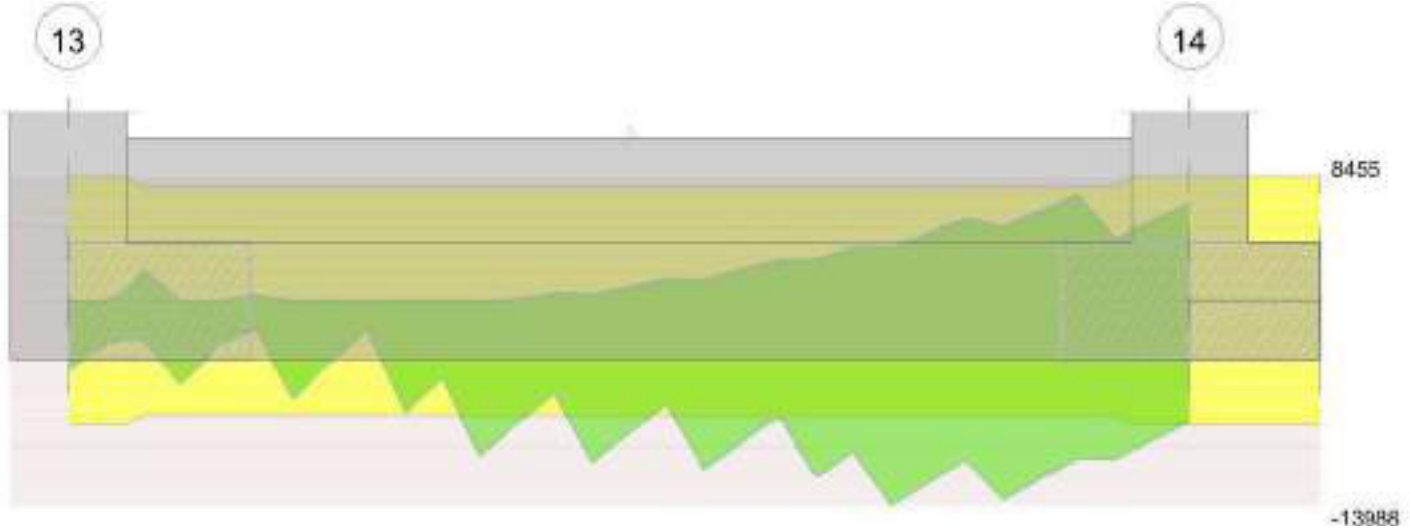


Diagramma verifica stato limite ultimo taglio



Output campate

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 13 - 14, sezione R 50x45, aste 289, 288, 287, 286, 285, 284, 283, 282, 281, 280, 279

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
2.16	0.41	0.0002	2555	SLV 5	0.087	2741	7862	SLV 5	15877	Si
4.1	0.41	0.0002	2351	SLU 83	0.018	2820	7234	SLU 83	15877	Si
4.33	0.41	0.0002	2350	SLU 83	0.018	2820	7231	SLU 83	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	2682	SLD 5	0.071	3173	8252	SLD 5	15877	Si
0.23	0.41	0.0002	2568	SLD 5	0.071	3173	7900	SLD 5	15877	Si
2.16	0.41	0.0002	1957	SLD 5	0.071	3173	6021	SLD 5	15877	Si
4.1	0.41	0.0002	1745	SLD 3	0.071	3173	5368	SLD 3	15877	Si
4.33	0.41	0.0002	1753	SLD 3	0.071	3173	5393	SLD 3	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000177	1924	SLE RA 21	55675	1494000	690376	36000000	1740	SLE QP 2	50344	1120500	Si
0.23	0.41	0.00000177	1874	SLE RA 21	54203	1494000	672121	36000000	1694	SLE QP 2	49015	1120500	Si
2.16	0.41	0.00000177	1715	SLE RA 21	49626	1494000	615360	36000000	1553	SLE QP 2	44937	1120500	Si
4.1	0.41	0.00000177	1717	SLE RA 20	49682	1494000	616062	36000000	1557	SLE QP 2	45045	1120500	Si
4.33	0.41	0.00000177	1716	SLE RA 20	49657	1494000	615745	36000000	1556	SLE QP 2	45014	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
289,288,287,286,285,284,283,282,281,280,279	4.55	1.1	SLU 84	ST	BT	2.3	212561	65656	3.24	Si
289,288,287,286,285,284,283,282,281,280,279	4.55	1.1	SLV 5	SIS	BT	2.3	184563	68311	2.7	Si
289,288,287,286,285,284,283,282,281,280,279	4.55	1.1	SLD 5	SIS	BT	2.3	200514	54251	3.7	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-606	-65656	283	-1425.48	0	-1	-0.02	0	1.09	4.51	1496	2060	0	14430	
0	1249	-68311	-322.09	-22016.01	0	1	-0.32	0	1.09	3.91	1496	2060	0	14430	0.07
0	298	-54251	-27.44	-9362.85	0	0	-0.17	0	1.1	4.21	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.06	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

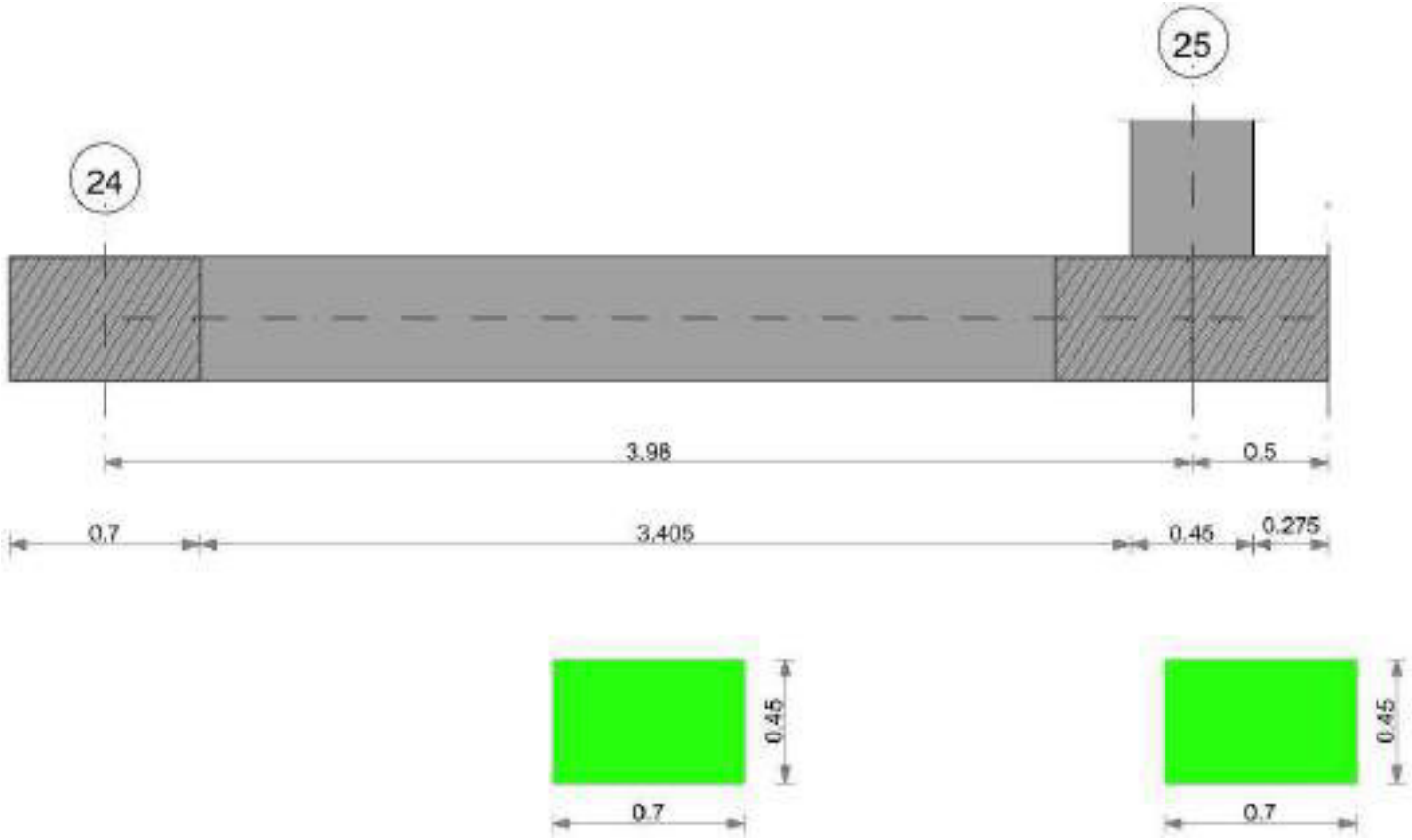
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.002	645	SLE RA 21	0.05	0.001	645	296	SLE RA 20	0.05	0	645	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	645	SLE RA 1	0.05	0	645	645	SLE RA 1	0.05	0	645	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	645	SLE RA 1	0.05	0	645	645	SLE RA 1	0.05	0	645	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.02	SLE RA 20	0.19	0.02	645	296	SLE RA 20	0.19	0	645	SLE RA 1	0.1	0	645	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	645	296	SLE RA 1	0.19	0	645	SLE RA 1	0.1	0	645	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	645	296	SLE RA 1	0.19	0	645	SLE RA 1	0.1	0	645	SLE RA 1	Si

CORDOLO 37

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

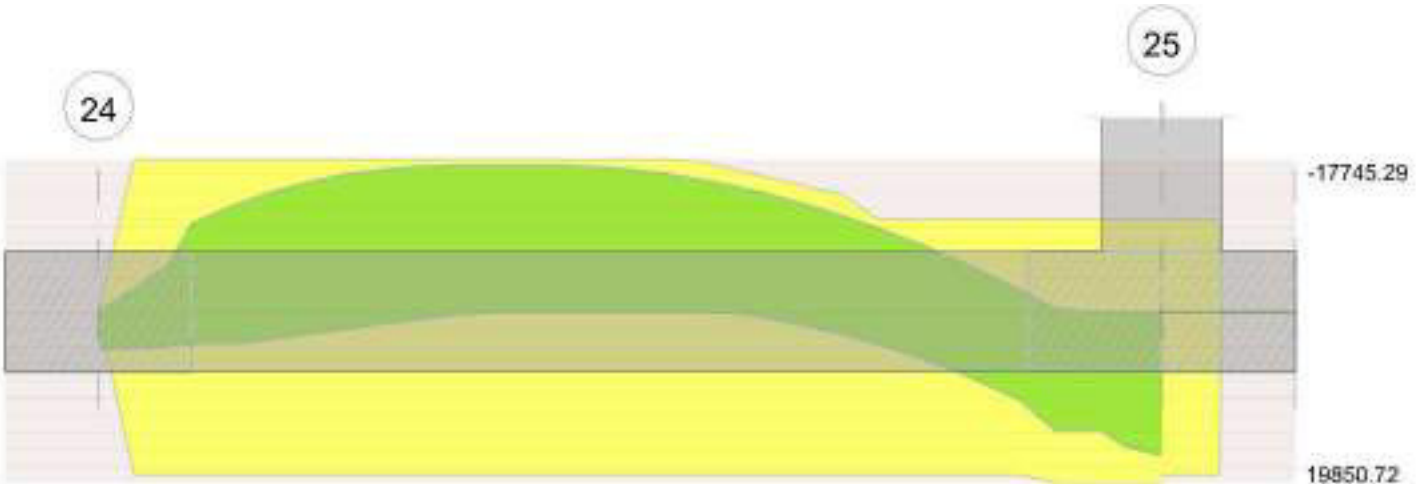
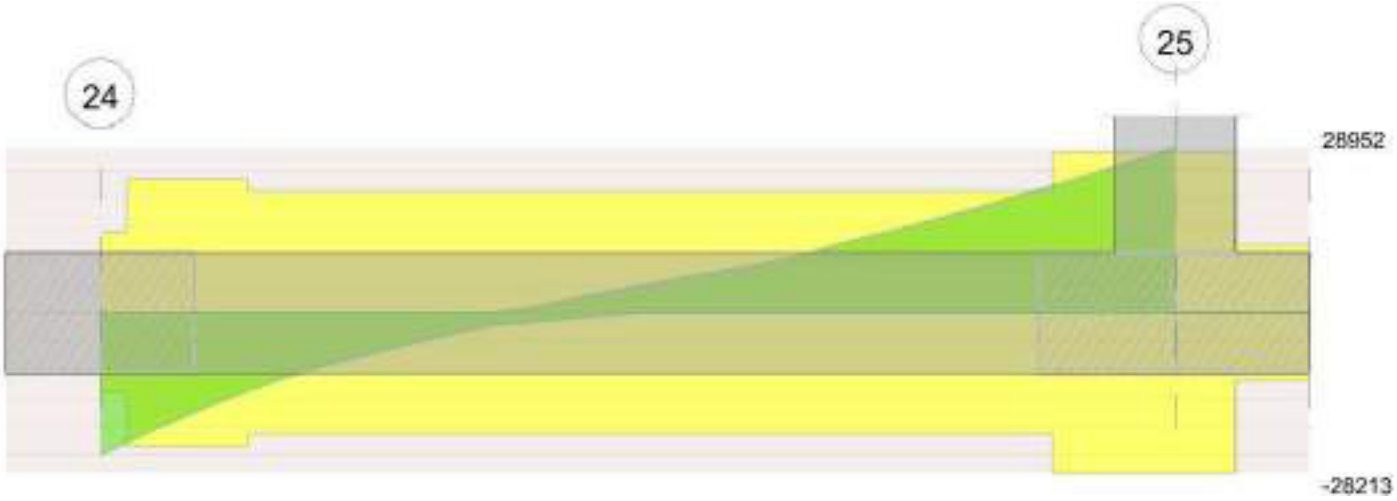


Diagramma verifica stato limite ultimo taglio



Output campate

Campata 1 tra i fili 24 - 25, sezione R 70x45, aste 411, 410, 409

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.35	0.001272	0.052	0.001367	0.052							-2748.44	SLU 84	-5615.98	-18533.96	0.138	3.3	Si
1.99	0.001272	0.052	0.001367	0.052							-12800.75	SLU 84	-13284.22	-18533.96	0.138	1.4	Si
3.76	0.000763	0.052	0.001367	0.052	13815.88	SLU 83	13815.88	19850.72	0.149	1.44							Si
3.98	0.000763	0.052	0.001367	0.052	20479.11	SLU 83	16687.76	19850.72	0.149	1.19							Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.35	0.001272	0.052	0.001367	0.052	3657.06	SLV 12	3657.06	18977.11	0.258	5.19	-7304.99	SLV 5	-10326.8	-17745.29	0.248	1.72	Si
1.99	0.001272	0.052	0.001367	0.052							-15883.55	SLV 5	-16584.32	-17745.29	0.248	1.07	Si
3.76	0.000763	0.052	0.001367	0.052	12270.35	SLV 11	12270.35	18946.56	0.267	1.54							Si
3.98	0.000763	0.052	0.001367	0.052	16435.39	SLV 15	14021.31	18946.56	0.267	1.35							Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.35	0.001272	0.052	0.001367	0.052	369.42	SLD 12	369.42	18977.11	0.258	51.37	-4017.35	SLD 5	-6371.63	-17745.29	0.248	2.79	Si
1.99	0.001272	0.052	0.001367	0.052							-11468.35	SLD 5	-11941.17	-17745.29	0.248	1.49	Si
3.76	0.000763	0.052	0.001367	0.052	10440.26	SLD 11	10440.26	18946.56	0.267	1.81							Si
3.98	0.000763	0.052	0.001367	0.052	14816.75	SLD 15	12291.67	18946.56	0.267	1.54							Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.001367	0	-21424	SLU 84	-21424	-13927	-100005	0	-13927	1	0.65	Si
0.35	0.0000168	0.001272	0	-15976	SLU 84	-15976	-12847	-88449	-23485	-23485	1	1.47	Si

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
1.99	0.0000152	0.001184	0	3542	SLU 84	3542	12542	88449	21278	21278	1	6.01	Si
3.76	0.0000201	0.001367	0	25548	SLU 84	25548	13164	88547	28213	28213	1	1.1	Si
3.98	0.0000201	0.001367	0	28952	SLU 84	28952	13164	88547	28213	28213	1	0.97	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.001367	0	-25059	SLV 9	-25059	-13927	-100005	0	-13927	1	0.56	Si
0.35	0.0000168	0.001272	0	-17430	SLV 9	-17430	-12847	-88449	-23485	-23485	1	1.35	Si
1.99	0.0000152	0.001184	0	4628	SLV 9	4628	12542	88449	21278	21278	1	4.6	Si
3.76	0.0000201	0.001367	0	19367	SLV 9	19367	13164	88547	28213	28213	1	1.46	Si
3.98	0.0000201	0.001367	0	21374	SLV 9	21374	13164	88547	28213	28213	1	1.32	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.001367	0	-18588	SLD 9	-18588	-13927	-100005	0	-13927	1	0.75	Si
0.35	0.0000168	0.001272	0	-13361	SLD 9	-13361	-12847	-88449	-23485	-23485	1	1.76	Si
1.99	0.0000152	0.001184	0	3267	SLD 9	3267	12542	88449	21278	21278	1	6.51	Si
3.76	0.0000201	0.001367	0	17975	SLD 9	17975	13164	88547	28213	28213	1	1.57	Si
3.98	0.0000201	0.001367	0	20142	SLD 9	20142	13164	88547	28213	28213	1	1.4	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	3207.76	20	61.72	2612	1494000	0	36000000	2910.37	2	40.28	1705	1120500			Si
0.35	-2023.51	21	-4129.43	142415	1494000	2149854	36000000	-1823.97	2	-3736.06	128849	1120500			Si
1.99	-9401.21	21	-9756.55	549275	1494000	21424795	36000000	-8529.77	2	-8851.66	498332	1120500			Si
3.76	10117.41	20	10117.41	588848	1494000	20772785	36000000	9192.64	2	9192.64	535025	1120500			Si
3.98	15001.99	20	12222.82	711385	1494000	25095546	36000000	13637.58	2	11108.62	646537	1120500			Si

Verifica di apertura delle fessure

x	Bordo	Rara				Frequente				Quasi permanente				Verifica
		Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	
1.99	superiore	0.337	0.00062	0.00021	21	0.337	0.00058	0.000197	6	0.337	0.00057	0.000191	2	Si
3.76	inferiore	0.31	0.00061	0.000188	20	0.31	0.00058	0.000181	6	0.31	0.00056	0.000174	2	Si
3.98	inferiore	0.31	0.00073	0.000227	20	0.31	0.00078	0.000242	6	0.31	0.00075	0.000233	2	Si

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
411,410,409	4.33	1.3	SLU 84	ST	BT	2.3	233517	60298	3.87	Si
411,410,409	4.33	1.3	SLV 9	SIS	BT	2.3	185058	54044	3.42	Si
411,410,409	4.33	1.3	SLD 9	SIS	BT	2.3	211363	46352	4.56	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	-1207	-60298	490.24	283.54	0	-1	0	0.01	1.28	4.32	1496	2060	0	14430	
0	-4670	-54044	1270.47	-21628.76	0	-5	-0.4	0.02	1.25	3.53	1496	2060	0	14430	0.07
0	-2462	-46352	728.79	-8505.37	0	-3	-0.18	0.02	1.27	3.96	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.06	0	0	0.23	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.07	0	0	0.23	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.06	0	0	0.23	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

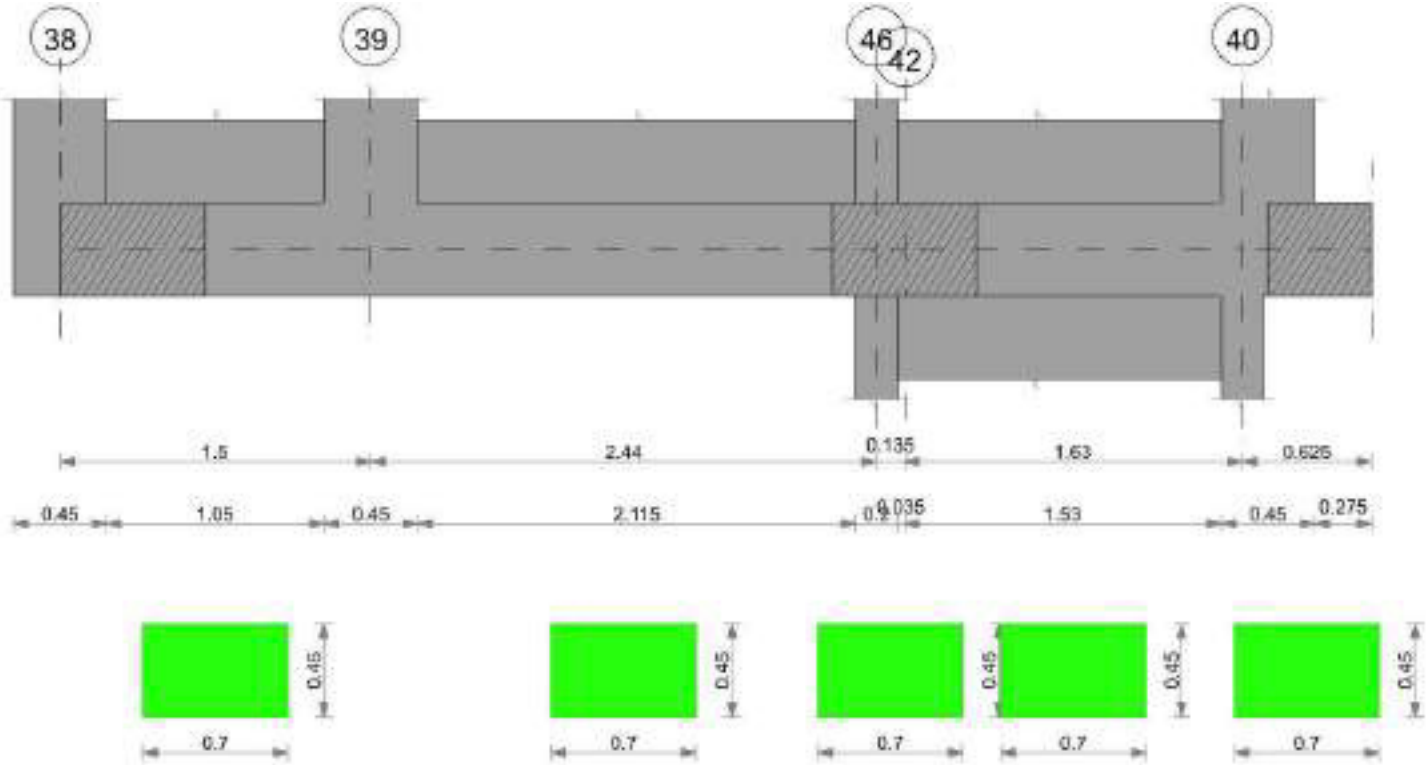
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.003	658	SLE RA 21	0.05	0.001	658	310	SLE RA 20	0.05	0	658	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	658	SLE RA 1	0.05	0	658	658	SLE RA 1	0.05	0	658	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	658	SLE RA 1	0.05	0	658	658	SLE RA 1	0.05	0	658	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.02	SLE RA 20	0.19	0.02	658	310	SLE RA 20	0.19	0	658	SLE RA 1	0.1	0	658	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	658	310	SLE RA 1	0.19	0	658	SLE RA 1	0.1	0	658	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	658	310	SLE RA 1	0.19	0	658	SLE RA 1	0.1	0	658	SLE RA 1	Si

CORDOLO 38

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

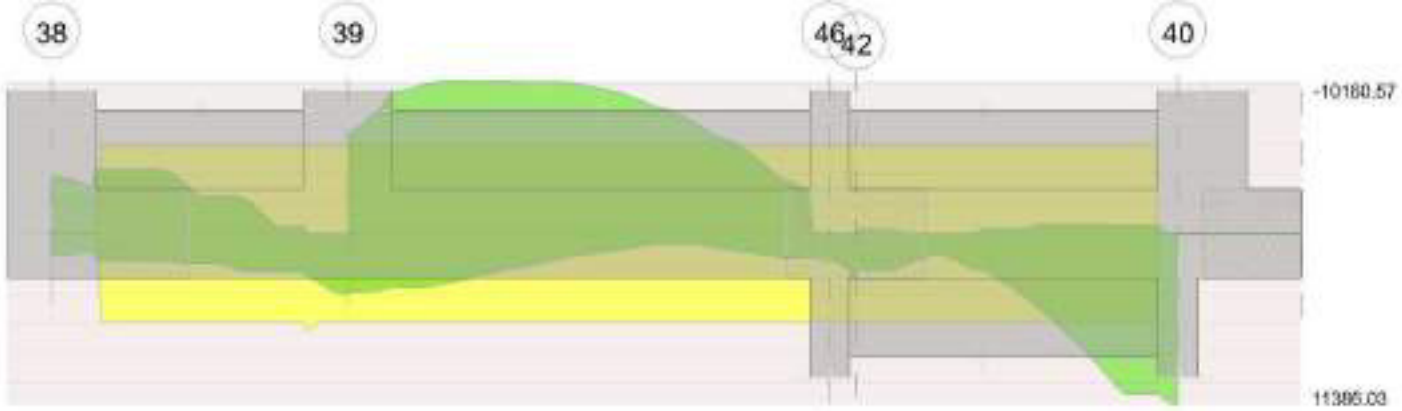
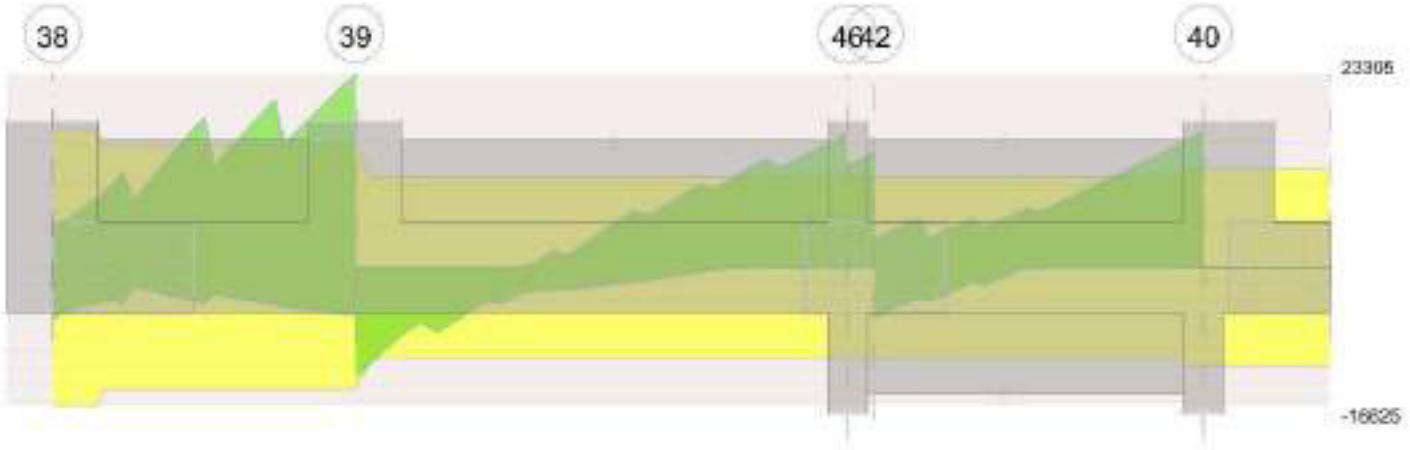


Diagramma verifica stato limite ultimo taglio



Output campate

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 38 - 39, sezione R 70x45, aste 684, 683, 682, 681

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0.75	0.41	0.0021	7571	SLV 10	0.285	29485	17814	SLV 10	19448	Si
1.27	0.41	0.0021	6647	SLV 10	0.285	29485	15640	SLV 10	19448	Si
1.5	0.41	0.0021	6249	SLV 6	0.285	29485	14702	SLV 6	19448	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0021	5526	SLD 10	0.237	34634	13002	SLD 10	19448	Si
0.23	0.41	0.0021	5313	SLD 10	0.237	34634	12501	SLD 10	19448	Si
0.75	0.41	0.0021	4835	SLD 10	0.237	34634	11376	SLD 10	19448	Si
1.27	0.41	0.0021	4368	SLD 10	0.237	34634	10279	SLD 10	19448	Si
1.5	0.41	0.0021	4163	SLD 6	0.237	34634	9796	SLD 6	19448	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00002069	3611	SLE RA 21	83406	1494000	1034233	36000000	3253	SLE QP 2	75128	1120500	Si
0.23	0.41	0.00002069	3530	SLE RA 21	81526	1494000	1010925	36000000	3179	SLE QP 2	73429	1120500	Si
0.75	0.41	0.00002069	3350	SLE RA 21	77388	1494000	959611	36000000	3017	SLE QP 2	69690	1120500	Si
1.27	0.41	0.00002069	3170	SLE RA 21	73232	1494000	908077	36000000	2855	SLE QP 2	65941	1120500	Si
1.5	0.41	0.00002069	3086	SLE RA 21	71270	1494000	883752	36000000	2778	SLE QP 2	64175	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 2 tra i fili 39 - 46, sezione R 70x45, aste 680, 679, 678, 677, 676, 675, 674

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0021	6249	SLV 6	0.285	29485	14702	SLV 6	19448	Si
1.22	0.41	0.0003	4450	SLV 6	0.118	5145	10471	SLV 6	15877	Si
2.34	0.41	0.0003	3807	SLU 84	0.023	4108	8957	SLU 84	15877	Si
2.44	0.41	0.0003	3819	SLU 84	0.023	4108	8986	SLU 84	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0021	4163	SLD 6	0.237	34634	9796	SLD 6	19448	Si
0.23	0.41	0.0003	3960	SLD 6	0.098	5969	9317	SLD 6	15877	Si
1.22	0.41	0.0003	3271	SLD 6	0.098	5969	7697	SLD 6	15877	Si
2.34	0.41	0.0003	2913	SLD 6	0.086	4604	6854	SLD 6	15877	Si
2.44	0.41	0.0003	2890	SLD 6	0.086	4604	6800	SLD 6	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00002069	3086	SLE RA 21	71270	1494000	883752	36000000	2778	SLE QP 2	64175	1120500	Si
0.23	0.41	0.00000336	3001	SLE RA 21	85003	1494000	1054034	36000000	2702	SLE QP 2	76543	1120500	Si
1.22	0.41	0.00000336	2759	SLE RA 21	78170	1494000	969306	36000000	2488	SLE QP 2	70477	1120500	Si
2.34	0.41	0.00000258	2788	SLE RA 21	79799	1494000	989507	36000000	2520	SLE QP 2	72128	1120500	Si
2.44	0.41	0.00000258	2797	SLE RA 21	80052	1494000	992650	36000000	2529	SLE QP 2	72371	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 3 tra i fili 46 - 42, sezione R 70x45, asta 673

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	3819	SLU 84	0.023	4108	8986	SLU 84	15877	Si

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0.07	0.41	0.0004	3827	SLU 84	0.03	5664	9006	SLU 84	15877	Si
0.1	0.41	0.0004	3831	SLU 84	0.03	5664	9015	SLU 84	15877	Si
0.13	0.41	0.0004	3835	SLU 84	0.03	5664	9024	SLU 84	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	2890	SLD 6	0.086	4604	6800	SLD 6	15877	Si
0.07	0.41	0.0004	2875	SLD 6	0.101	6328	6764	SLD 6	15877	Si
0.1	0.41	0.0004	2867	SLD 6	0.101	6328	6747	SLD 6	15877	Si
0.13	0.41	0.0004	2859	SLD 6	0.101	6328	6728	SLD 6	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000258	2797	SLE RA 21	80052	1494000	992650	36000000	2529	SLE QP 2	72371	1120500	Si
0.07	0.41	0.00000356	2803	SLE RA 21	79190	1494000	981950	36000000	2534	SLE QP 2	71600	1120500	Si
0.1	0.41	0.00000356	2806	SLE RA 21	79268	1494000	982919	36000000	2537	SLE QP 2	71675	1120500	Si
0.13	0.41	0.00000356	2808	SLE RA 21	79349	1494000	983922	36000000	2540	SLE QP 2	71752	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Campata 4 tra i fili 42 - 40, sezione R 70x45, aste 672, 671, 670, 669, 668, 667

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	3835	SLU 84	0.03	5664	9024	SLU 84	15877	Si
0.82	0.41	0.0004	3901	SLU 84	0.03	5664	9178	SLU 84	15877	Si
1.53	0.41	0.0004	3873	SLU 83	0.03	5664	9112	SLU 83	15877	Si
1.63	0.41	0.0004	3855	SLU 83	0.03	5664	9070	SLU 83	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0004	2859	SLD 6	0.101	6328	6728	SLD 6	15877	Si
0.82	0.41	0.0004	2664	SLD 2	0.101	6328	6268	SLD 2	15877	Si
1.53	0.41	0.0004	2781	SLD 7	0.101	6328	6543	SLD 7	15877	Si
1.63	0.41	0.0004	2795	SLD 7	0.101	6328	6578	SLD 7	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000356	2808	SLE RA 21	79349	1494000	983922	36000000	2540	SLE QP 2	71752	1120500	Si
0.82	0.41	0.00000356	2854	SLE RA 21	80625	1494000	999745	36000000	2583	SLE QP 2	72990	1120500	Si
1.53	0.41	0.00000356	2830	SLE RA 20	79954	1494000	991428	36000000	2560	SLE QP 2	72326	1120500	Si
1.63	0.41	0.00000356	2816	SLE RA 20	79573	1494000	986703	36000000	2547	SLE QP 2	71970	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche - Cedimenti assoluti e differenziali

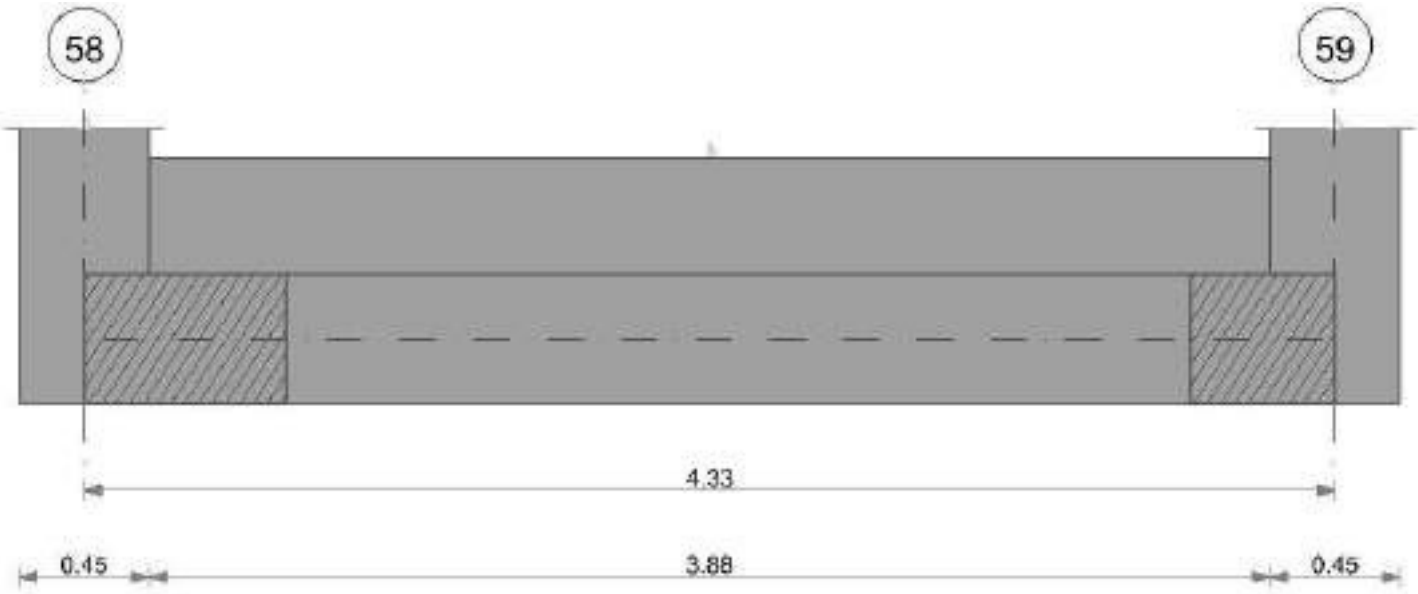
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.003	664	SLE RA 20	0.05	0.002	664	186	SLE RA 20	0.05	0.001	492	SLE RA 21	0.0033	0	SLE RA 1	Si
D	0.05	0	664	SLE RA 1	0.05	0	664	664	SLE RA 1	0.05	0	503	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	664	SLE RA 1	0.05	0	664	664	SLE RA 1	0.05	0	503	SLE RA 1	0.0033	0	SLE RA 1	Si

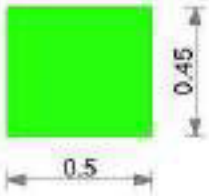
Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.02	SLE RA 20	0.19	0.04	340	186	SLE RA 21	0.19	0.02	503	SLE RA 21	0.1	0	664	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	664	503	SLE RA 1	0.19	0	664	SLE RA 1	0.1	0	503	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	664	503	SLE RA 1	0.19	0	664	SLE RA 1	0.1	0	503	SLE RA 1	Si

CORDOLO 39

Geometria





Caratteristiche dei materiali

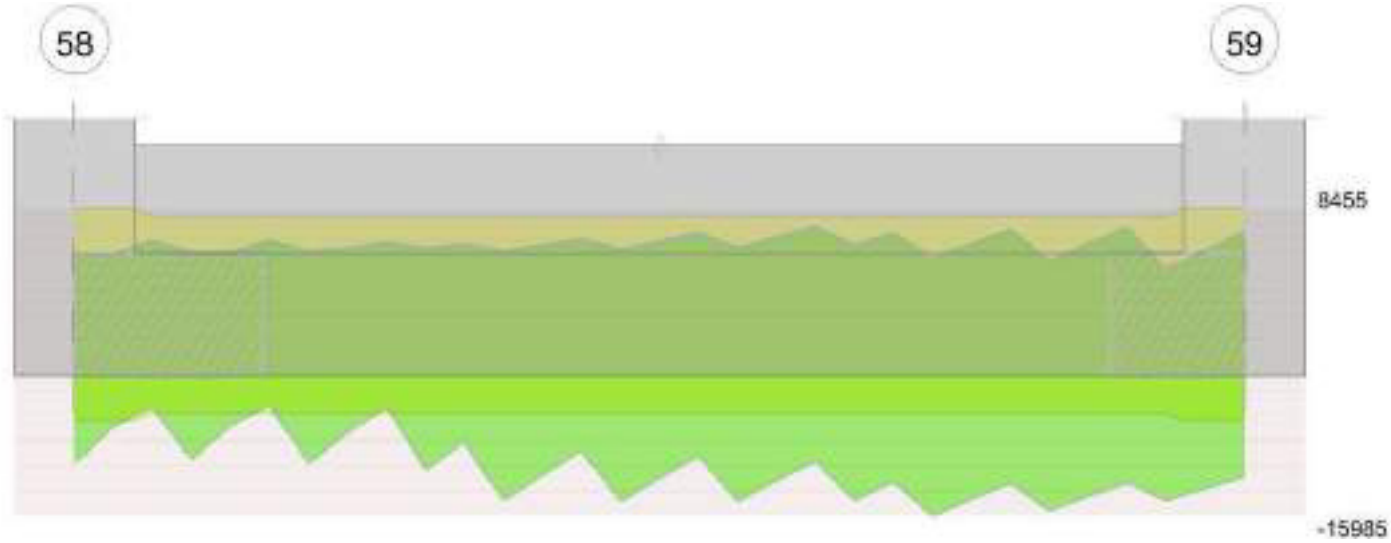
Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

Diagramma verifica stato limite ultimo taglio



Output campate

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 58 - 59, sezione R 50x45, aste 433, 432, 431, 430, 429, 428, 427, 426, 425, 424, 423

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
2.16	0.41	0.0002	2516	SLV 10	0.085	2614	7741	SLV 10	15877	Si
4.1	0.41	0.0002	2302	SLU 83	0.017	2687	7082	SLU 83	15877	Si
4.33	0.41	0.0002	2320	SLU 83	0.017	2687	7138	SLU 83	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	2701	SLD 10	0.07	3025	8312	SLD 10	15877	Si
0.23	0.41	0.0002	2580	SLD 10	0.07	3025	7937	SLD 10	15877	Si
2.16	0.41	0.0002	1920	SLD 10	0.07	3025	5907	SLD 10	15877	Si
4.1	0.41	0.0002	1724	SLD 15	0.07	3025	5304	SLD 15	15877	Si
4.33	0.41	0.0002	1755	SLD 15	0.07	3025	5401	SLD 15	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000168	1913	SLE RA 21	55400	1494000	686966	36000000	1731	SLE QP 2	50123	1120500	Si
0.23	0.41	0.00000168	1859	SLE RA 21	53848	1494000	667712	36000000	1682	SLE QP 2	48721	1120500	Si
2.16	0.41	0.00000168	1677	SLE RA 21	48562	1494000	602167	36000000	1519	SLE QP 2	43998	1120500	Si
4.1	0.41	0.00000168	1682	SLE RA 20	48709	1494000	603997	36000000	1525	SLE QP 2	44173	1120500	Si
4.33	0.41	0.00000168	1695	SLE RA 20	49083	1494000	608633	36000000	1536	SLE QP 2	44501	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
433,432,431,430,429,428,427,426,425,424,423	4.78	1.1	SLU 84	ST	BT	2.3	222259	64803	3.43	Si
433,432,431,430,429,428,427,426,425,424,423	4.78	1.1	SLV 10	SIS	BT	2.3	191863	67327	2.85	Si
433,432,431,430,429,428,427,426,425,424,423	4.78	1.1	SLD 10	SIS	BT	2.3	209008	53541	3.9	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	365	-64803	-293.55	-1861.31	0	0	-0.03	0	1.09	4.72	1496	2060	0	14430	
0	-1101	-67327	275.96	-24120.76	0	-1	-0.36	0	1.09	4.06	1496	2060	0	14430	0.07
0	-351	-53541	6.34	-10366.75	0	0	-0.19	0	1.1	4.39	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

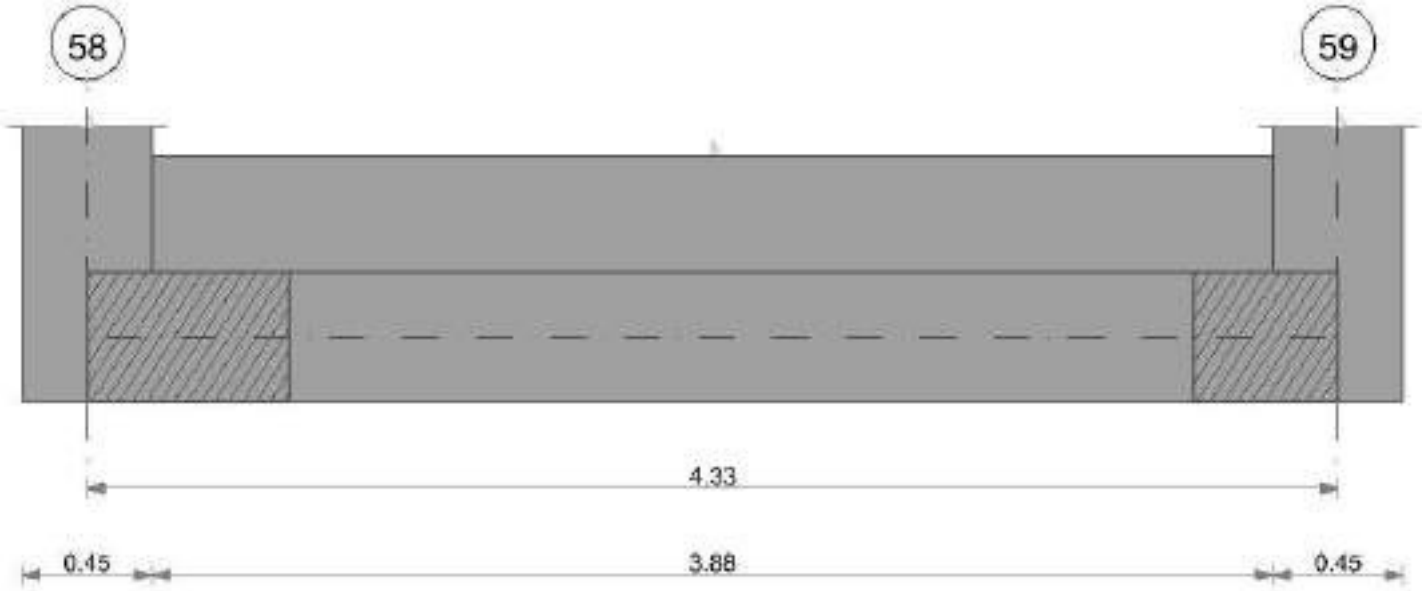
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.002	682	SLE RA 20	0.05	0.001	682	320	SLE RA 20	0.05	0	682	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	682	SLE RA 1	0.05	0	682	682	SLE RA 1	0.05	0	682	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	682	SLE RA 1	0.05	0	682	682	SLE RA 1	0.05	0	682	SLE RA 1	0.0033	0	SLE RA 1	Si

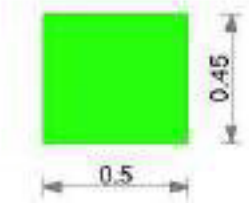
Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.02	SLE RA 20	0.19	0.02	682	320	SLE RA 20	0.19	0	682	SLE RA 1	0.1	0	682	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	682	320	SLE RA 1	0.19	0	682	SLE RA 1	0.1	0	682	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	682	320	SLE RA 1	0.19	0	682	SLE RA 1	0.1	0	682	SLE RA 1	Si

CORDOLO 40

Geometria





Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x45	Rettangolare	0.5	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

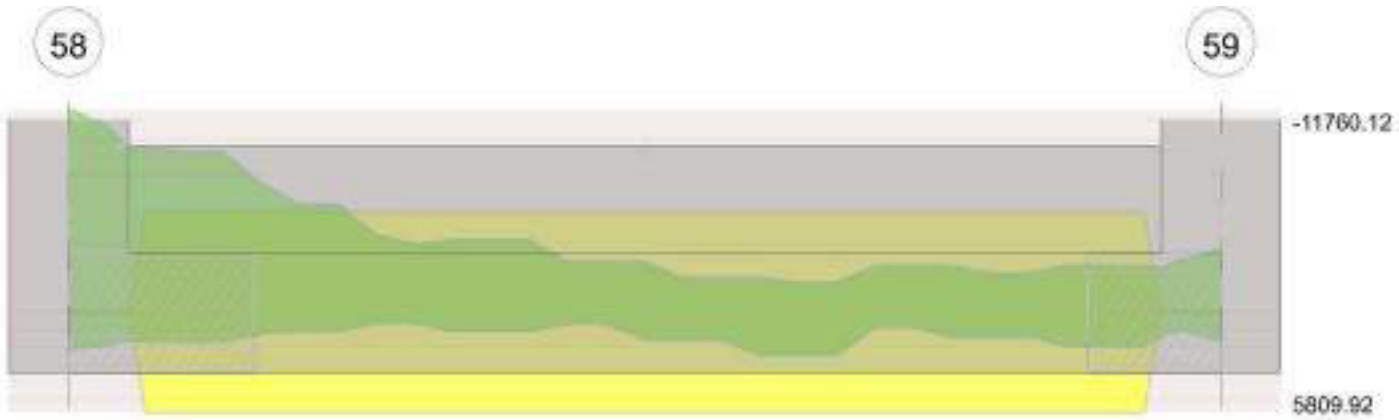
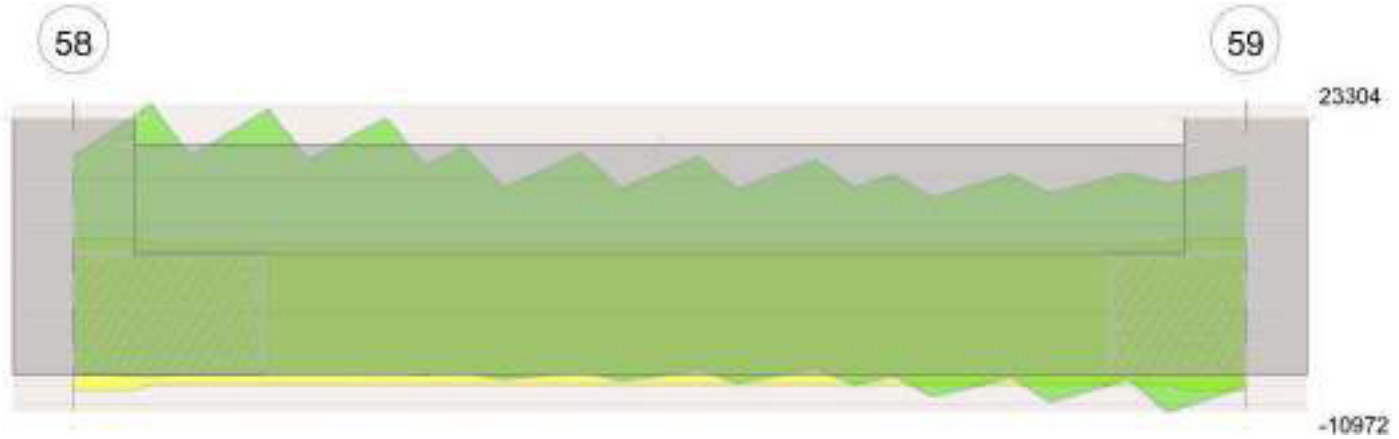


Diagramma verifica stato limite ultimo taglio



Output campate

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 58 - 59, sezione R 50x45, aste 422, 421, 420, 419, 418, 417, 416, 415, 414, 413, 412

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
2.16	0.41	0.0002	2522	SLV 10	0.085	2614	7759	SLV 10	15877	Si
4.1	0.41	0.0002	2268	SLU 83	0.017	2687	6978	SLU 83	15877	Si
4.33	0.41	0.0002	2286	SLU 83	0.017	2687	7035	SLU 83	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0002	2666	SLD 10	0.07	3025	8202	SLD 10	15877	Si
0.23	0.41	0.0002	2544	SLD 10	0.07	3025	7829	SLD 10	15877	Si
2.16	0.41	0.0002	1903	SLD 10	0.07	3025	5856	SLD 10	15877	Si
4.1	0.41	0.0002	1697	SLD 15	0.07	3025	5222	SLD 15	15877	Si
4.33	0.41	0.0002	1729	SLD 15	0.07	3025	5319	SLD 15	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000168	1865	SLE RA 21	54024	1494000	669904	36000000	1687	SLE QP 2	48873	1120500	Si
0.23	0.41	0.00000168	1812	SLE RA 21	52482	1494000	650773	36000000	1639	SLE QP 2	47480	1120500	Si
2.16	0.41	0.00000168	1641	SLE RA 21	47540	1494000	589499	36000000	1487	SLE QP 2	43070	1120500	Si
4.1	0.41	0.00000168	1657	SLE RA 20	47988	1494000	595057	36000000	1503	SLE QP 2	43528	1120500	Si
4.33	0.41	0.00000168	1670	SLE RA 20	48370	1494000	599791	36000000	1514	SLE QP 2	43863	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
422,421,420,419,418,417,416,415,414,413,412	4.78	1.1	SLU 84	ST	BT	2.3	222582	63713	3.49	Si
422,421,420,419,418,417,416,415,414,413,412	4.78	1.1	SLV 10	SIS	BT	2.3	192638	67467	2.86	Si
422,421,420,419,418,417,416,415,414,413,412	4.78	1.1	SLD 10	SIS	BT	2.3	209433	53164	3.94	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	365	-63713	-293.55	-1581.33	0	0	-0.02	0	1.09	4.73	1496	2060	0	14430	
0	-1101	-67467	275.96	-23598.67	0	-1	-0.35	0	1.09	4.08	1496	2060	0	14430	0.07
0	-351	-53164	6.34	-10047.11	0	0	-0.19	0	1.1	4.4	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.05	0	0	0.27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

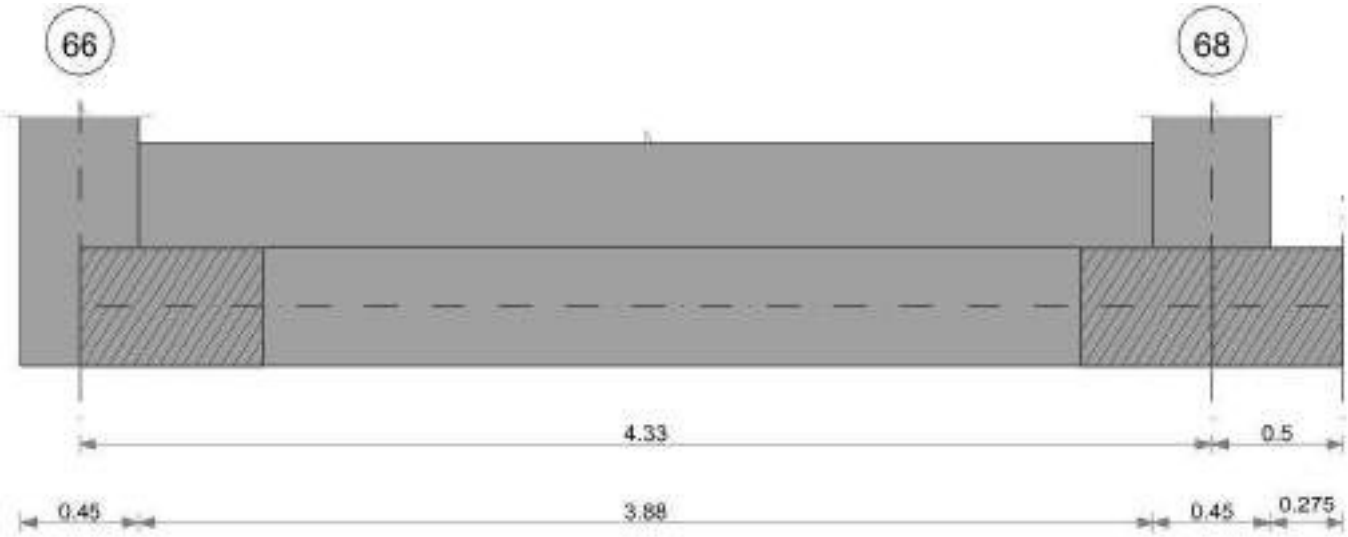
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.002	684	SLE RA 20	0.05	0.001	684	322	SLE RA 20	0.05	0	684	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	684	SLE RA 1	0.05	0	684	684	SLE RA 1	0.05	0	684	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	684	SLE RA 1	0.05	0	684	684	SLE RA 1	0.05	0	684	SLE RA 1	0.0033	0	SLE RA 1	Si

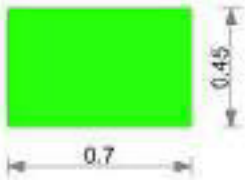
Verifiche geotecniche - Rotazioni assolute e differenziali

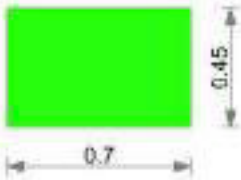
Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.02	SLE RA 20	0.19	0.02	684	322	SLE RA 20	0.19	0	684	SLE RA 1	0.1	0	684	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	684	322	SLE RA 1	0.19	0	684	SLE RA 1	0.1	0	684	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	684	322	SLE RA 1	0.19	0	684	SLE RA 1	0.1	0	684	SLE RA 1	Si

CORDOLO 41

Geometria







Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

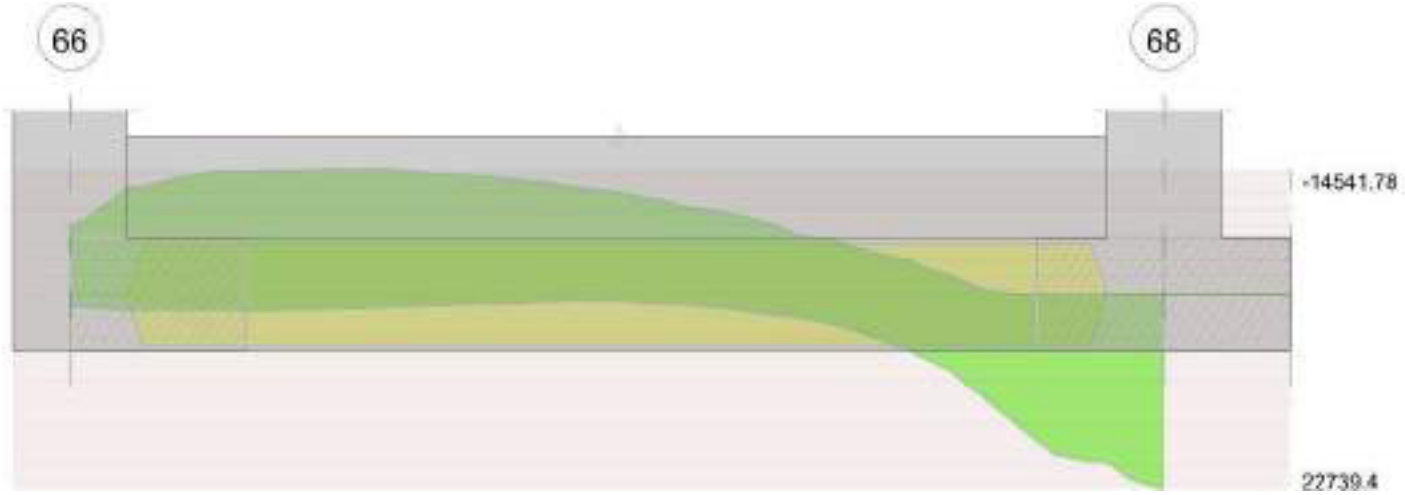


Diagramma verifica stato limite ultimo taglio

Output campate

Funzionamento trasversale della suola di fondazione

Campata 1 tra i fili 66 - 68, sezione R 70x45, aste 621, 620, 619, 618, 617, 616, 615, 614, 613, 612, 611

Verifiche di resistenza della suola di fondazione

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
2.16	0.41	0.0003	4061	SLV 14	0.12	5239	10480	SLV 14	15877	Si
4.1	0.41	0.0003	4415	SLV 13	0.12	5239	11392	SLV 13	15877	Si
4.33	0.41	0.0003	4402	SLV 15	0.12	5239	11359	SLV 15	15877	Si

Verifiche di resistenza della suola di fondazione in condizioni SLD

x	d	Af	M	Comb	x/d	Mult	V	Comb	Vult	Verifica
0	0.41	0.0003	4287	SLD 10	0.099	6078	11063	SLD 10	15877	Si
0.23	0.41	0.0003	4031	SLD 10	0.099	6078	10402	SLD 10	15877	Si
2.16	0.41	0.0003	2911	SLD 14	0.099	6078	7514	SLD 14	15877	Si
4.1	0.41	0.0003	3330	SLD 13	0.099	6078	8593	SLD 13	15877	Si
4.33	0.41	0.0003	3323	SLD 15	0.099	6078	8577	SLD 15	15877	Si

Verifiche delle tensioni di esercizio

			Rara						Quasi permanente				Verifica
x	d	Af	M	Comb	σ c	σ c limite	σ f	σ f limite	M	Comb	σ c	σ c limite	
0	0.41	0.00000342	2780	SLE RA 21	78696	1494000	975826	36000000	2523	SLE QP 2	71415	1120500	Si
0.23	0.41	0.00000342	2655	SLE RA 21	75154	1494000	931906	36000000	2409	SLE QP 2	68203	1120500	Si
2.16	0.41	0.00000342	2279	SLE RA 21	64509	1494000	799906	36000000	2073	SLE QP 2	58676	1120500	Si
4.1	0.41	0.00000342	2763	SLE RA 21	78212	1494000	969829	36000000	2521	SLE QP 2	71370	1120500	Si
4.33	0.41	0.00000342	2760	SLE RA 21	78130	1494000	968814	36000000	2519	SLE QP 2	71308	1120500	Si

Verifiche di apertura delle fessure

La campata non presenta apertura delle fessure nella suola

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
621,620,619,618,617,616,615,614,613,612,611	4.55	1.3	SLU 84	ST	BT	2.3	213848	77209	2.77	Si

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
621,620,619,618,617,616,615,614,613,612,611	4.55	1.3	SLD 14	SIS	BT	2.3	203972	70161	2.91	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
0	595	-77209	6342.9	2319.69	0	0	0.03	0.08	1.14	4.49	1496	2060	0	14430	
0	9438	-12066	-2712.11	10113.04	0	38	0.84	-0.22	0.85	2.88	1496	2060	37	0	0.07
0	-3422	-70161	7216.05	-1752.91	0	-3	-0.02	0.1	1.09	4.51	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.05	0	0	0.23	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
43	56	66	1.22	1.23	0.88	1.14	1.23	1	0.07	0.04	0.01	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
1	5	0	0	0.05	0	0	0.23	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

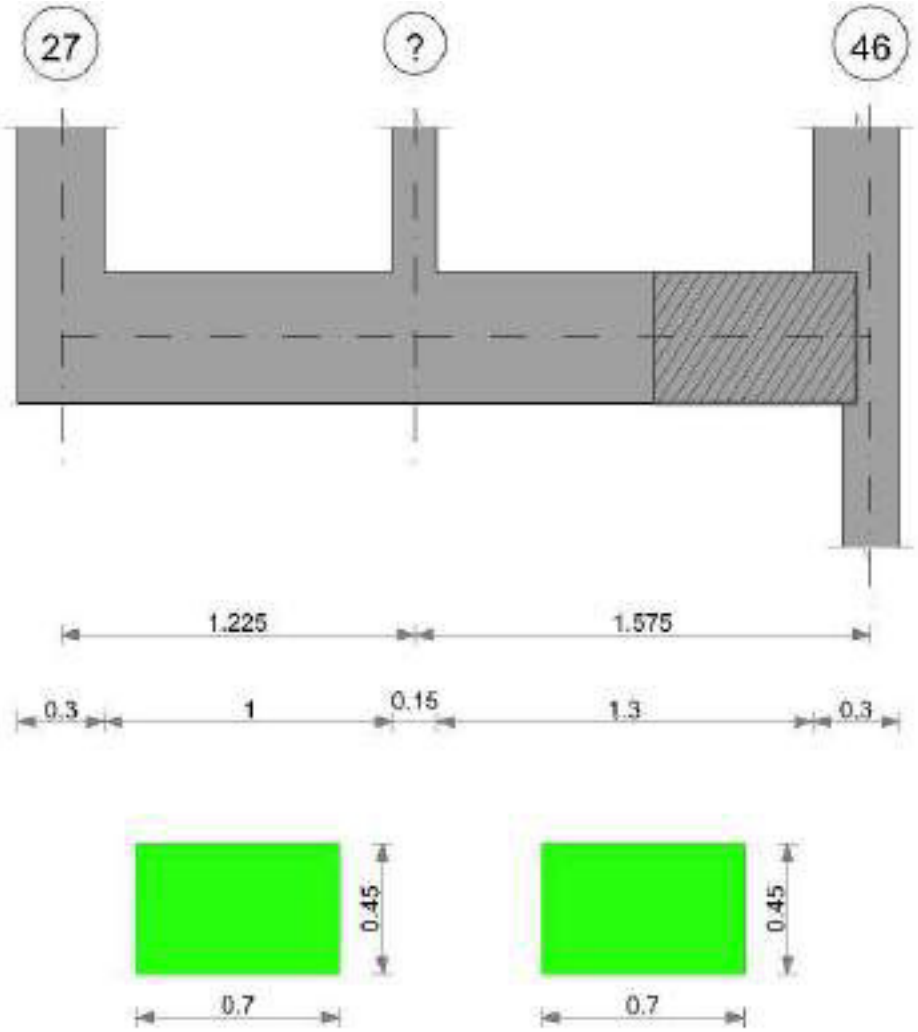
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.001	699	SLE RA 20	0.05	0.001	699	338	SLE RA 20	0.05	0	699	SLE RA 1	0.0033	0	SLE RA 1	Si
D	0.05	0	699	SLE RA 1	0.05	0	699	699	SLE RA 1	0.05	0	699	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	699	SLE RA 1	0.05	0	699	699	SLE RA 1	0.05	0	699	SLE RA 1	0.0033	0	SLE RA 1	Si

Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 20	0.19	0.01	699	338	SLE RA 20	0.19	0	699	SLE RA 1	0.1	0	699	SLE RA 1	Si
D	0.19	0	SLE RA 1	0.19	0	699	338	SLE RA 1	0.19	0	699	SLE RA 1	0.1	0	699	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	699	338	SLE RA 1	0.19	0	699	SLE RA 1	0.1	0	699	SLE RA 1	Si

CORDOLO 42

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000

Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 70x45	Rettangolare	0.7	0.45	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

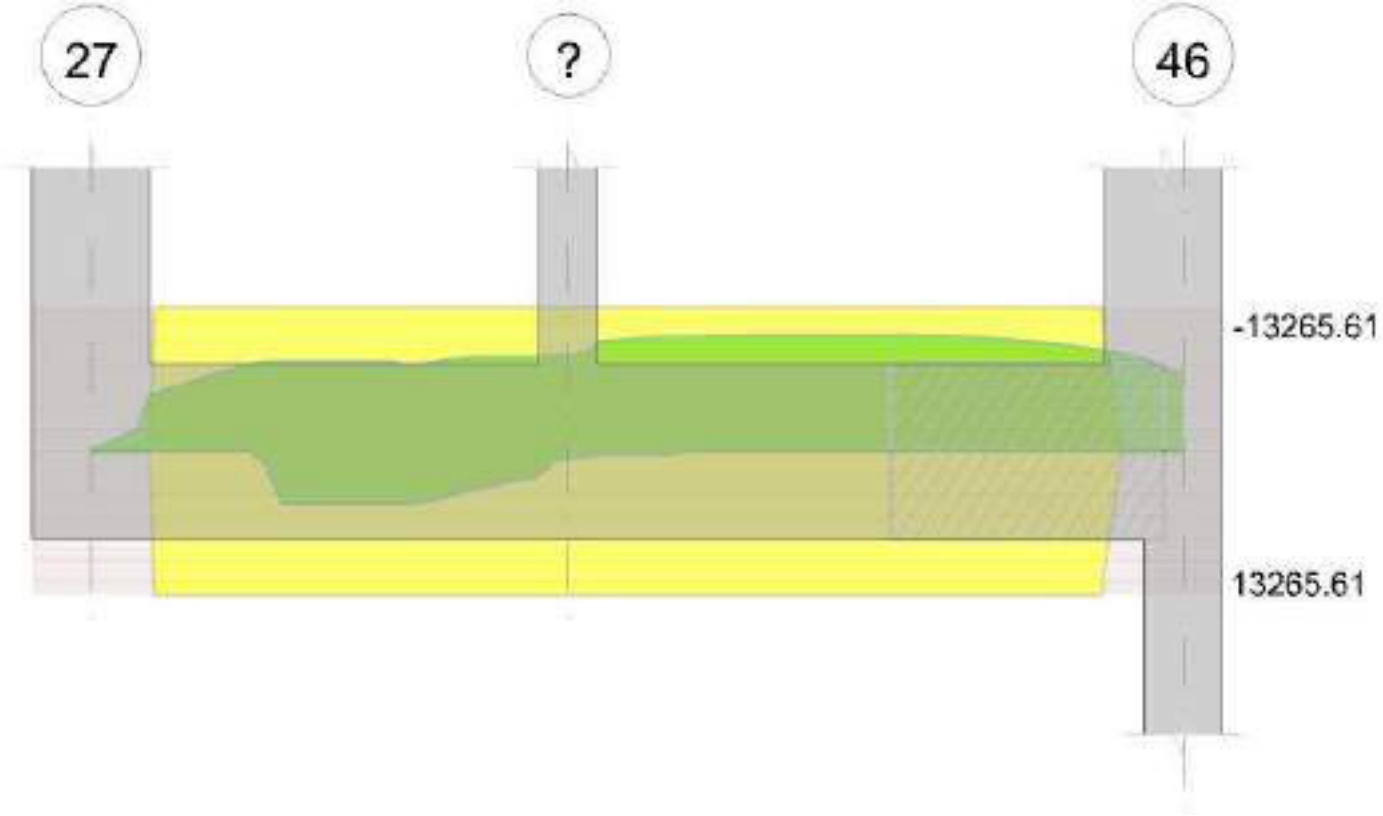
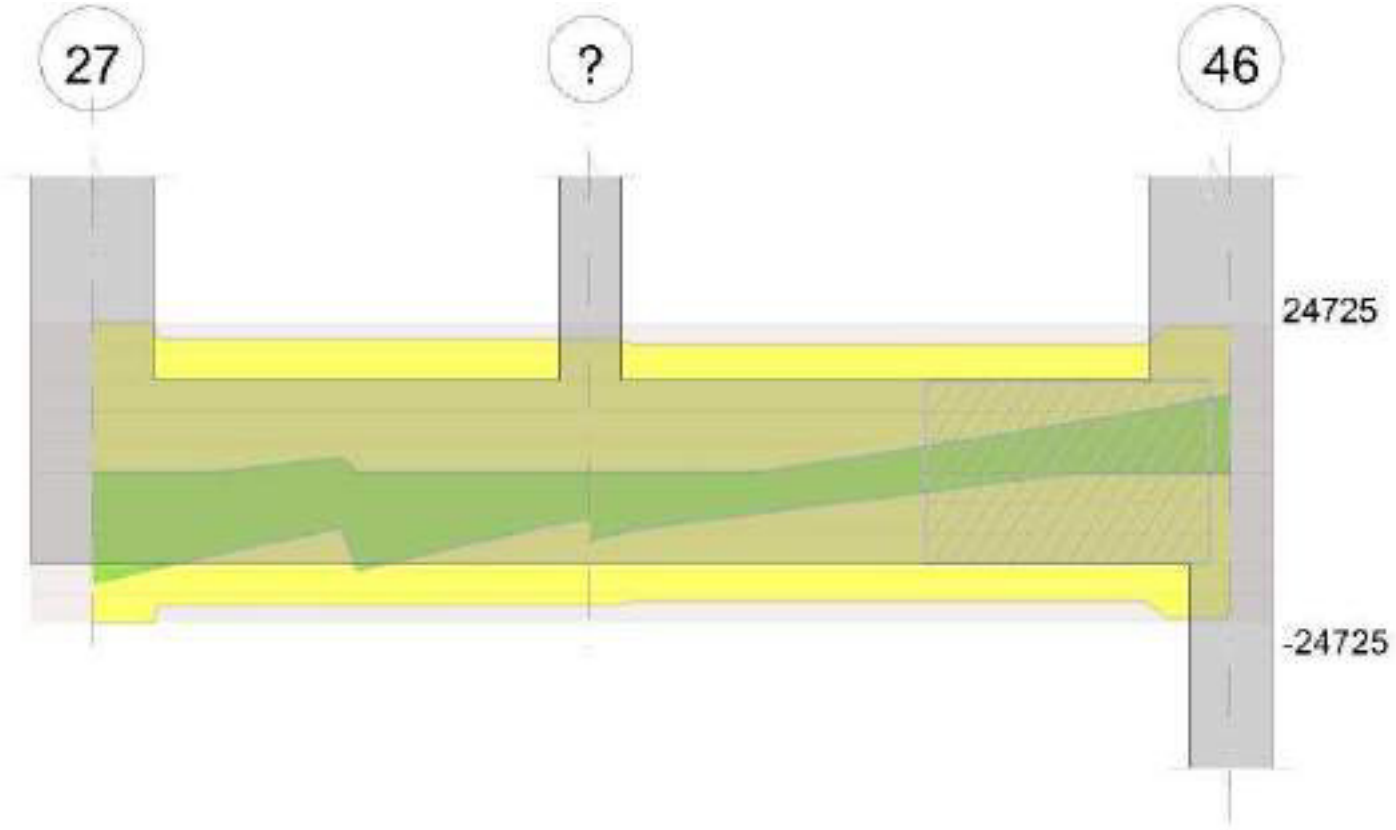


Diagramma verifica stato limite ultimo taglio



Output campate

Campata 1 tra i fili 27 - ?, sezione R 70x45, aste 525, 524

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.61	0.000942	0.053	0.000942	0.053	-3870.49	SLU 1	604.23	13996.86	0.128	23.16	-5986.74	SLU 78	-5986.74	-13996.86	0.128	2.34	Si
1.15	0.000942	0.053	0.000942	0.053							-5652.01	SLU 84	-5652.01	-13996.86	0.128	2.48	Si
1.23	0.000942	0.053	0.000942	0.053							-6232.87	SLU 84	-5963.81	-13996.86	0.128	2.35	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.61	0.000942	0.053	0.000942	0.053	-2.27	SLV 8	4877.87	13265.61	0.222	2.72	-8281.23	SLV 9	-8281.23	-13265.61	0.222	1.6	Si
1.15	0.000942	0.053	0.000942	0.053	1087.15	SLV 11	2239.33	13265.61	0.222	5.92	-8727.42	SLV 6	-8727.42	-13265.61	0.222	1.52	Si
1.23	0.000942	0.053	0.000942	0.053	678.66	SLV 11	678.66	13265.61	0.222	19.55	-9047.05	SLV 6	-8913.98	-13265.61	0.222	1.49	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0.61	0.000942	0.053	0.000942	0.053	-2474.24	SLD 8	2012.9	13265.61	0.222	6.59	-5809.26	SLD 9	-5809.26	-13265.61	0.222	2.28	Si
1.15	0.000942	0.053	0.000942	0.053							-5793.03	SLD 6	-5793.03	-13265.61	0.222	2.29	Si
1.23	0.000942	0.053	0.000942	0.053							-6137.16	SLD 6	-5984.93	-13265.61	0.222	2.22	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000156	0	0	-14975	SLU 84	-14975	-11837	-100005	-24725	-24725	1	1.65	Si
0.15	0.0000156	0	0	-12352	SLU 78	-12352	-11837	-100005	-24725	-24725	1	2	Si
0.61	0.0000156	0.000942	0	-4934	SLU 70	-4934	-11611	-88226	-21813	-21813	1	4.42	Si
0.65	0.0000156	0.000942	0	-16135	SLU 84	-16135	-11611	-88226	-21813	-21813	1	1.35	Si
1.15	0.0000156	0.000942	0	-8315	SLU 84	-8315	-11611	-88226	-21813	-21813	1	2.62	Si
1.23	0.0000156	0.000942	0	-7170	SLU 84	-7170	-11611	-88226	-21813	-21813	1	3.04	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000156	0	0	-18211	SLV 9	-18211	-11837	-100005	-24725	-24725	1	1.36	Si
0.15	0.0000156	0	0	-15866	SLV 9	-15866	-11837	-100005	-24725	-24725	1	1.56	Si
0.61	0.0000156	0.000942	0	2322	SLV 8	2322	11611	88226	21813	21813	1	9.4	Si
0.61	0.0000156	0.000942	0	-9051	SLV 9	-9051	-11611	-88226	-21813	-21813	1	2.41	Si
1.15	0.0000156	0.000942	0	-8395	SLV 13	-8395	-11611	-88226	-21813	-21813	1	2.6	Si
1.23	0.0000156	0.000942	0	-7587	SLV 13	-7587	-11611	-88226	-21813	-21813	1	2.87	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000156	0	0	-13464	SLD 9	-13464	-11837	-100005	-24725	-24725	1	1.84	Si
0.15	0.0000156	0	0	-11480	SLD 9	-11480	-11837	-100005	-24725	-24725	1	2.15	Si
0.61	0.0000156	0.000942	0	-5659	SLD 9	-5659	-11611	-88226	-21813	-21813	1	3.85	Si
0.65	0.0000156	0.000942	0	-11978	SLD 13	-11978	-11611	-88226	-21813	-21813	1	1.82	Si
1.15	0.0000156	0.000942	0	-6583	SLD 13	-6583	-11611	-88226	-21813	-21813	1	3.31	Si
1.23	0.0000156	0.000942	0	-5803	SLD 13	-5803	-11611	-88226	-21813	-21813	1	3.76	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	4.09	21	4.09	173	1494000	0	36000000	3.58	2	3.58	152	1120500			Si
0.15	-1500.22	21	-2927.06	-123897	1494000	0	36000000	-1405.14	2	-2750.98	-116443	1120500			Si
0.61	-4394.76	15	-4394.76	160729	1494000	2410937	36000000	-4141.75	2	-4141.75	151476	1120500			Si
1.15	-4126.83	21	-4126.83	150930	1494000	2263953	36000000	-3820.14	2	-3820.14	139714	1120500			Si
1.23	-4548.39	21	-4353.3	159213	1494000	2388191	36000000	-4184.19	2	-4016.39	146891	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Campata 2 tra i fili ? - 46, sezione R 70x45, asta 523

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000942	0.053							-5955.62	SLU 84	-5955.62	-13996.86	0.128	2.35	Si
0.08	0.000942	0.053	0.000942	0.053							-6710.06	SLU 84	-8207.35	-13996.86	0.128	1.71	Si
0.79	0.000942	0.053	0.000942	0.053							-10018.77	SLU 84	-10018.77	-13996.86	0.128	1.4	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000942	0.053	869.78	SLV 11	573.37	13265.61	0.222	23.14	-8880.96	SLV 6	-8880.96	-13265.61	0.222	1.49	Si
0.08	0.000942	0.053	0.000942	0.053	301.87	SLV 11	301.87	13265.61	0.222	43.94	-9319.3	SLV 6	-10109.41	-13265.61	0.222	1.31	Si
0.79	0.000942	0.053	0.000942	0.053							-10628.94	SLV 10	-10687.96	-13265.61	0.222	1.24	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000942	0.053	0.000942	0.053							-5967.87	SLD 6	-5967.87	-13265.61	0.222	2.22	Si
0.08	0.000942	0.053	0.000942	0.053							-6443.03	SLD 6	-7353.61	-13265.61	0.222	1.8	Si
0.79	0.000942	0.053	0.000942	0.053							-8284.83	SLD 10	-8299.29	-13265.61	0.222	1.6	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000156	0.000942	0	-11005	SLU 84	-11005	-11611	-88226	-21813	-21813	1	1.98	Si
0.08	0.0000156	0.000942	0	-9906	SLU 83	-9906	-11611	-88226	-21813	-21813	1	2.2	Si
0.79	0.0000151	0.000942	0	483	SLU 28	483	11611	88226	21081	21081	1	43.63	Si
0.79	0.0000151	0.000942	0	-37	SLU 60	-37	-11611	-88226	-21081	-21081	1	564.95	Si
1.48	0.0000151	0	0	10060	SLU 84	10060	11837	100005	23896	23896	1	2.38	Si
1.58	0.0000151	0	0	11521	SLU 84	11521	11837	100005	23896	23896	1	2.07	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000156	0.000942	0	-10509	SLV 13	-10509	-11611	-88226	-21813	-21813	1	2.08	Si
0.08	0.0000156	0.000942	0	-9755	SLV 13	-9755	-11611	-88226	-21813	-21813	1	2.24	Si
0.79	0.0000151	0.000942	0	3838	SLV 2	3838	11611	88226	21081	21081	1	5.49	Si
0.79	0.0000151	0.000942	0	-3492	SLV 15	-3492	-11611	-88226	-21081	-21081	1	6.04	Si
1.48	0.0000151	0	0	11404	SLV 6	11404	11837	100005	23896	23896	1	2.1	Si
1.58	0.0000151	0	0	12680	SLV 6	12680	11837	100005	23896	23896	1	1.88	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000156	0.000942	0	-8693	SLD 13	-8693	-11611	-88226	-21813	-21813	1	2.51	Si
0.08	0.0000156	0.000942	0	-7952	SLD 13	-7952	-11611	-88226	-21813	-21813	1	2.74	Si
0.79	0.0000151	0.000942	0	1724	SLD 2	1724	11611	88226	21081	21081	1	12.23	Si
0.79	0.0000151	0.000942	0	-1378	SLD 15	-1378	-11611	-88226	-21081	-21081	1	15.29	Si
1.48	0.0000151	0	0	8618	SLD 6	8618	11837	100005	23896	23896	1	2.77	Si
1.58	0.0000151	0	0	9716	SLD 6	9716	11837	100005	23896	23896	1	2.46	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-4346.26	21	-4346.26	158955	1494000	2384331	36000000	-4005.59	2	-4005.59	146496	1120500			Si
0.08	-4902.98	21	-6009.01	219767	1494000	3296505	36000000	-4508.72	2	-5507.51	201426	1120500			Si
0.79	-7358.77	21	-7358.77	488525	1494000	21662737	36000000	-6717.34	2	-6717.34	445942	1120500			Si
1.48	-4872.63	21	-5982.53	-253229	1494000	0	36000000	-4434.95	2	-5450.26	-230699	1120500			Si
1.58	-4110.23	21	-4110.23	-173978	1494000	0	36000000	-3738.08	2	-3738.08	-158226	1120500			Si

Verifica di apertura delle fessure

x	Bordo	Rara				Frequente				Quasi permanente				Verifica
		Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	
0.79	superiore	0.442	0.00063	0.000279	21	0.442	0.00059	0.000261	6	0.442	0.00058	0.000255	2	Si

Verifiche geotecniche

Verifiche geotecniche di capacità portante sul piano di posa

Aste	Size X	Size Y	Comb	Type	Cond	γR	Rd	Ed	Rd/Ed	Verifica
525,524,523	3.05	1.3	SLU 84	ST	BT	2.3	164402	49220	3.34	Si
525,524,523	3.05	1.3	SLV 5	SIS	BT	2.3	142033	41674	3.41	Si
525,524,523	3.05	1.3	SLD 5	SIS	BT	2.3	155346	36753	4.23	Si

Verifiche geotecniche di capacità portante - parametri utilizzati nel calcolo di Rd

Fx	Fy	Fz	Mx	My	Inc.x	Inc.y	Ecc.x	Ecc.y	B'	L'	qd	γs	Fi	Coes	Amax
-401	899	-49220	328.42	-1866.92	0	1	-0.04	0.01	1.29	2.97	1496	2060	0	14430	
-2345	-6966	-41674	2784.31	-2193.57	-3	-9	-0.05	0.07	1.17	2.94	1496	2060	0	14430	0.07
-1144	-2406	-36753	1230.55	-1600.48	-2	-4	-0.04	0.03	1.23	2.96	1496	2060	0	14430	0.03

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

N			S			D			I			B			G			P			E		
Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	5	0	0	0.09	0	0	0.23	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.08	0	0	0.23	0	0	0.05	0	0	0	0	0	0	0	1	1	1	0	0	0
1	5	0	0	0.08	0	0	0.23	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

Verifiche geotecniche - Cedimenti assoluti e differenziali

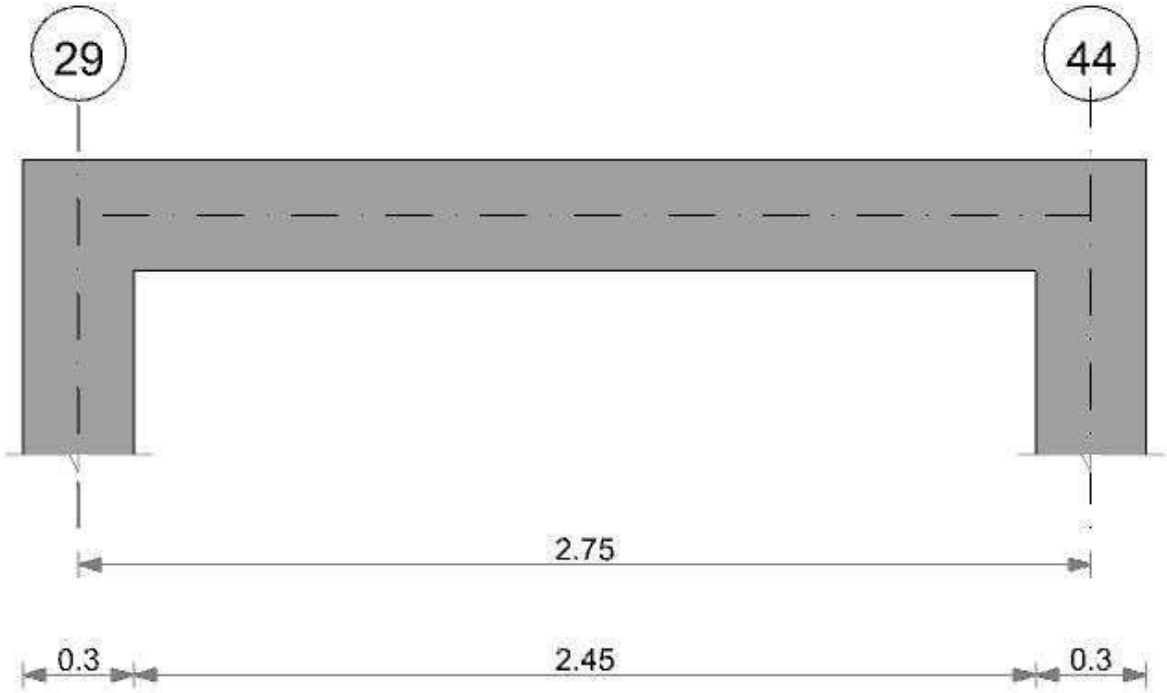
Tipo	Assoluto				Differenziale					Relativo				Rapp. inflessione			Verifica
	Sa adm	Sa	Nodo	Comb.	Sd adm	Sd	Nodo I	Nodo j	Comb.	Sr adm	Sr	Nodo	Comb.	RI adm	RI	Comb.	
E	0.05	0.003	504	SLE RA 21	0.05	0.001	504	500	SLE RA 21	0.05	0	502	SLE RA 14	0.0033	0	SLE RA 14	Si
D	0.05	0	504	SLE RA 1	0.05	0	504	504	SLE RA 1	0.05	0	502	SLE RA 1	0.0033	0	SLE RA 1	Si
Z	0.05	0	504	SLE RA 1	0.05	0	504	504	SLE RA 1	0.05	0	502	SLE RA 1	0.0033	0	SLE RA 1	Si

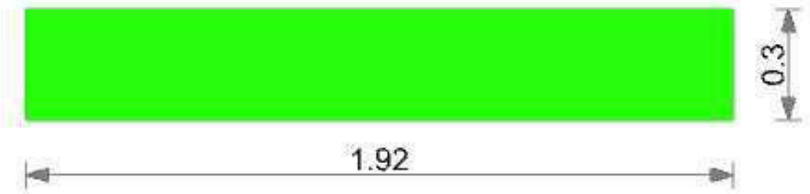
Verifiche geotecniche - Rotazioni assolute e differenziali

Tipo	Rotazione rigida			Rotazione assoluta					Distorsione angolare positiva				Distorsione angolare negativa				Verifica
	RR adm	RR	Comb.	R Adm	R Max	Nodo I	Nodo J	Comb.	D+ adm	D+	Nodo	Comb.	D- adm	D-	Nodo	Comb.	
E	0.19	0.01	SLE RA 21	0.19	0.01	504	502	SLE RA 21	0.19	0	504	SLE RA 1	0.1	0	502	SLE RA 14	Si
D	0.19	0	SLE RA 1	0.19	0	504	502	SLE RA 1	0.19	0	504	SLE RA 1	0.1	0	502	SLE RA 1	Si
Z	0.19	0	SLE RA 1	0.19	0	504	502	SLE RA 1	0.19	0	504	SLE RA 1	0.1	0	502	SLE RA 1	Si

PIANEROTTOLO

Geometria





Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 192x30	Rettangolare	1.92	0.3	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

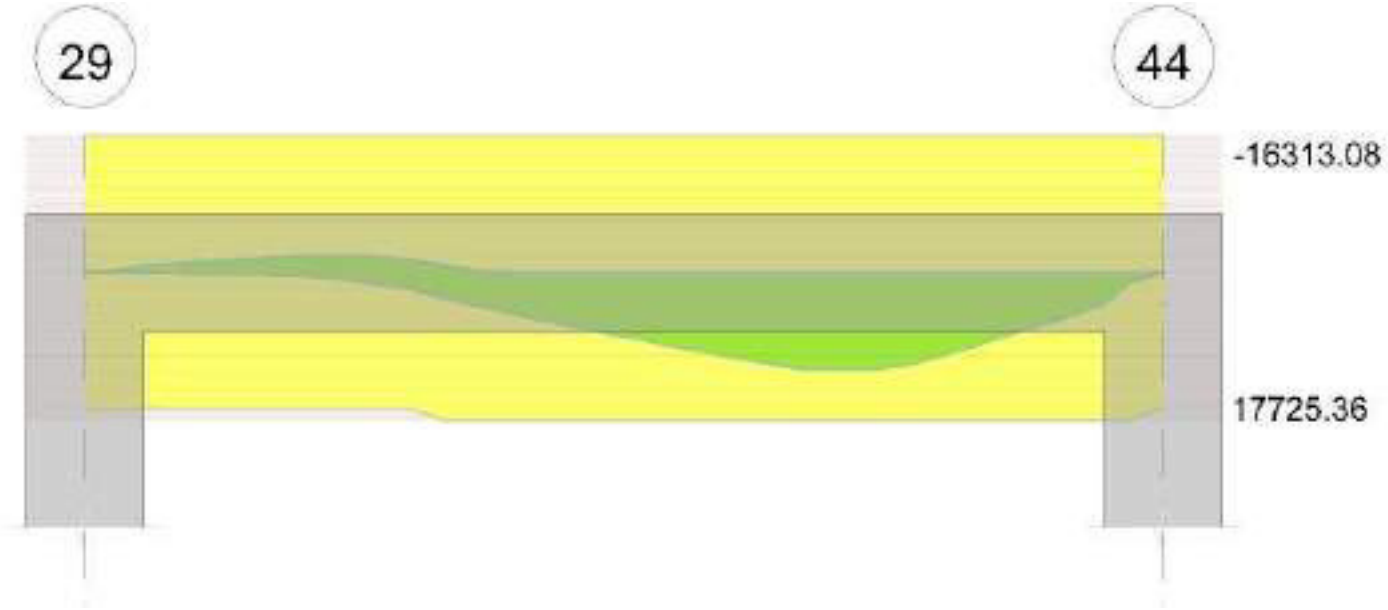


Diagramma verifica stato limite ultimo taglio

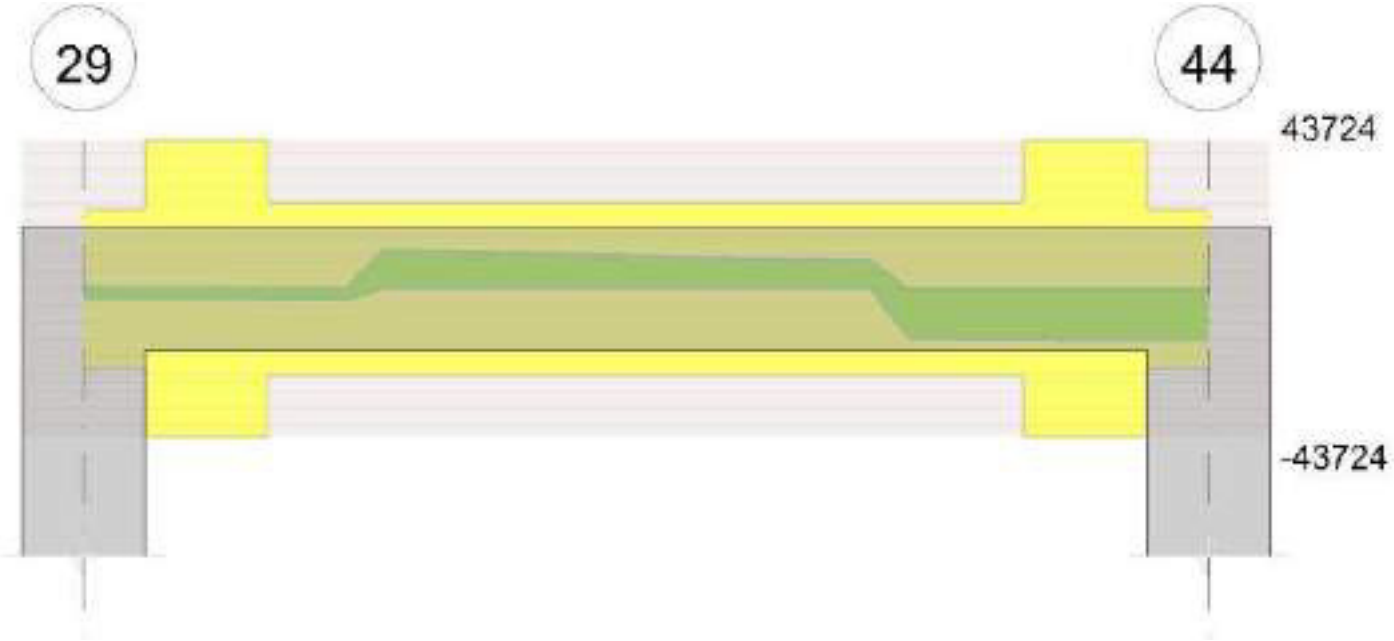
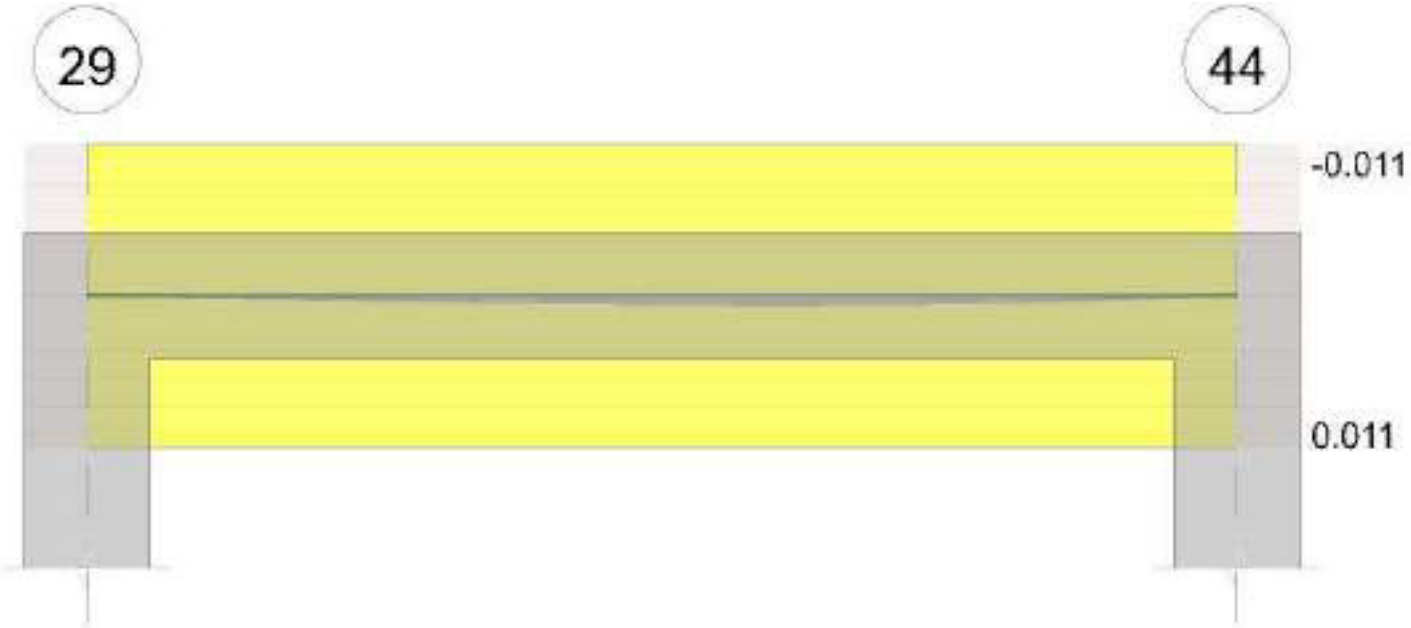


Diagramma verifica stato limite esercizio quasi permanente freccia



Output campate

Campata 1 tra i fili 29 - 44, sezione R 192x30, aste 747, 748, 749

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001885	0.053	0.001885	0.053							-6.24	SLU 82	-6.24	-17725.36	0.182	2838.72	Si
0.15	0.001885	0.053	0.001885	0.053							-279.23	SLU 70	-488.88	-17725.36	0.182	36.26	Si
1.38	0.001885	0.053	0.001885	0.053	6678.39	SLU 81	7733.74	17725.36	0.182	2.29							Si
1.93	0.001885	0.053	0.001885	0.053	11561.63	SLU 81	11561.63	17725.36	0.182	1.53							Si
2.6	0.001885	0.053	0.001885	0.053	2224.72	SLU 81	3900.8	17725.36	0.182	4.54							Si
2.75	0.001885	0.053	0.001885	0.053							-25.55	SLU 84	-25.55	-17725.36	0.182	693.82	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001885	0.053	0.001885	0.053	20.73	SLV 15	20.73	16313.08	0.248	787.01	-27.9	SLV 2	-25.99	-16313.08	0.248	627.71	Si
0.15	0.001885	0.053	0.001885	0.053	71.1	SLV 4	130.44	16313.08	0.248	125.07	-427.88	SLV 13	-755.36	-16313.08	0.248	21.6	Si
1.38	0.001885	0.053	0.001885	0.053	4971.39	SLV 8	5722.05	16313.08	0.248	2.85							Si
2.02	0.001885	0.053	0.001885	0.053	7972.34	SLV 11	8567.83	16313.08	0.248	1.9							Si
2.6	0.001885	0.053	0.001885	0.053	1638.26	SLV 11	2867.31	16313.08	0.248	5.69							Si
2.75	0.001885	0.053	0.001885	0.053	10.5	SLV 4	10.5	16313.08	0.248	1554.35	-42.3	SLV 13	-42.3	-16313.08	0.248	385.63	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001885	0.053	0.001885	0.053	6.94	SLD 15	6.94	16313.08	0.248	2351.43	-14.11	SLD 2	-14.11	-16313.08	0.248	1156.05	Si
0.15	0.001885	0.053	0.001885	0.053							-285.02	SLD 13	-501.76	-16313.08	0.248	32.51	Si
1.38	0.001885	0.053	0.001885	0.053	4269.29	SLD 8	4954.97	16313.08	0.248	3.29							Si
1.93	0.001885	0.053	0.001885	0.053	7500.87	SLD 11	7500.87	16313.08	0.248	2.17							Si
2.6	0.001885	0.053	0.001885	0.053	1438.49	SLD 11	2520.74	16313.08	0.248	6.47							Si
2.75	0.001885	0.053	0.001885	0.053							-27.15	SLD 13	-27.15	-16313.08	0.248	600.96	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.001885	0	-1827	SLU 70	-1827	-23213	-150559	0	-23213	1	12.71	Si
0.15	0.0000503	0.001885	0	-1848	SLU 70	-1848	-23213	-150559	-43724	-43724	1	23.66	Si
1.38	0.0000293	0.001885	0	9609	SLU 83	9609	23213	150559	25526	25526	1	2.66	Si
2.6	0.0000503	0.001885	0	-14984	SLU 81	-14984	-23213	-150559	-43724	-43724	1	2.92	Si
2.75	0	0.001885	0	-15009	SLU 81	-15009	-23213	-150559	0	-23213	1	1.55	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.001885	0	571	SLV 4	571	23213	150559	0	23213	1	40.66	Si
0	0	0.001885	0	-2889	SLV 13	-2889	-23213	-150559	0	-23213	1	8.03	Si
0.15	0.0000503	0.001885	0	553	SLV 4	553	23213	150559	43724	43724	1	79.13	Si
0.15	0.0000503	0.001885	0	-2908	SLV 13	-2908	-23213	-150559	-43724	-43724	1	15.04	Si
1.38	0.0000293	0.001885	0	7204	SLV 11	7204	23213	150559	25526	25526	1	3.54	Si
2.6	0.0000503	0.001885	0	-10985	SLV 11	-10985	-23213	-150559	-43724	-43724	1	3.98	Si
2.75	0	0.001885	0	-10999	SLV 11	-10999	-23213	-150559	0	-23213	1	2.11	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.001885	0	-1899	SLD 13	-1899	-23213	-150559	0	-23213	1	12.23	Si
0.15	0.0000503	0.001885	0	-1917	SLD 13	-1917	-23213	-150559	-43724	-43724	1	22.81	Si
1.38	0.0000293	0.001885	0	6399	SLD 11	6399	23213	150559	25526	25526	1	3.99	Si
2.6	0.0000503	0.001885	0	-9674	SLD 11	-9674	-23213	-150559	-43724	-43724	1	4.52	Si
2.75	0	0.001885	0	-9688	SLD 11	-9688	-23213	-150559	0	-23213	1	2.4	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-4.54	19	-4.54	140	1494000	2107	36000000	-3.59	2	-3.59	111	1120500			Si
0.15	-203.41	7	-356.12	11009	1494000	165141	36000000	-190.89	1	-334.21	10332	1120500			Si
1.38	4835.1	18	5603.61	173234	1494000	2598508	36000000	3789.53	2	4432.32	137024	1120500			Si
2.6	1614.91	18	2831.71	87541	1494000	1313119	36000000	1303.31	2	2286.09	70674	1120500			Si
2.75	-18.67	21	-18.67	577	1494000	8659	36000000	-15.9	2	-15.9	492	1120500			Si

Verifica di apertura delle fessure

x	Bordo	Rara				Frequente				Quasi permanente				Verifica
		Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	
1.83	inferiore	0.384	0.00059	0.000225	18	0.384	0.00051	0.000194	6	0.384	0.00047	0.000182	2	Si

Verifica di deformabilità

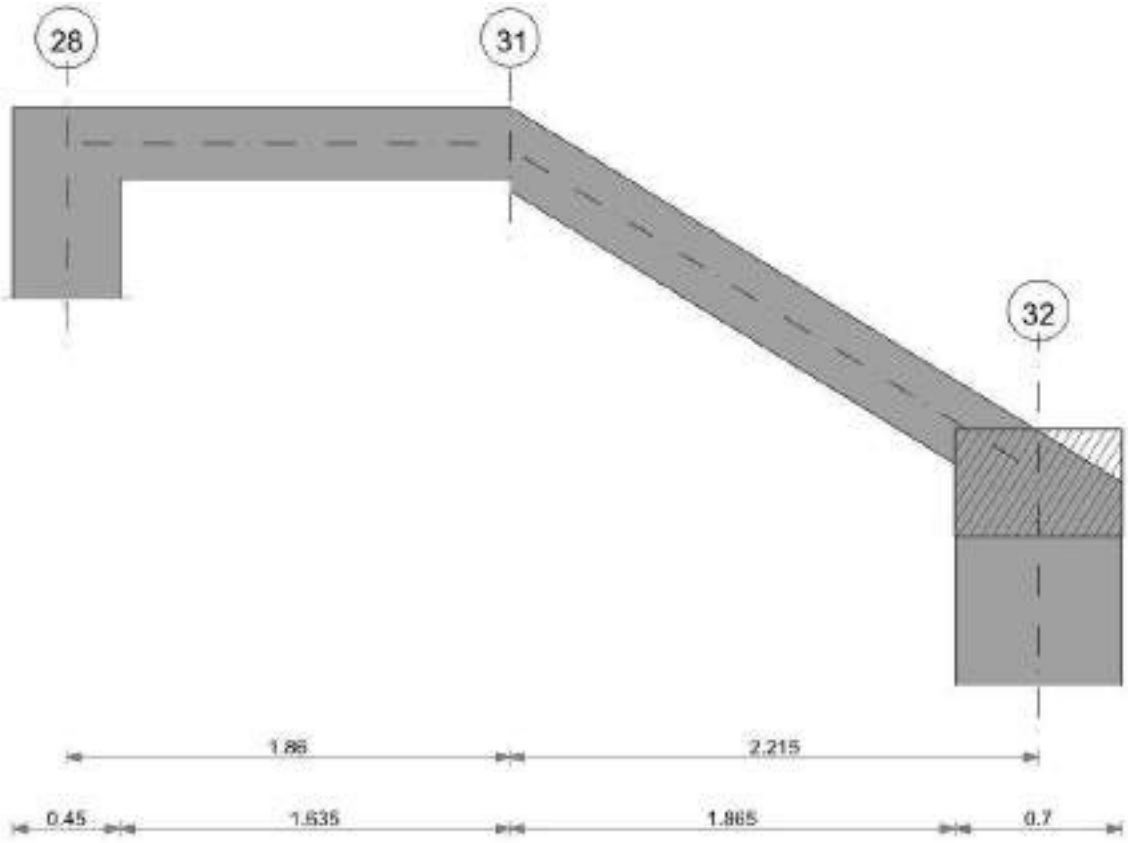
x	Rara				Frequente				Quasi permanente							Verifica
	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess. viscosa+	Comb.	Fess. viscosa-	Comb.	l/f	
0.15	0.00003	0.00002	0.00003	0.00002	0.00003	0.00002	0.00002	0.00002	0.00002	0.00002	0.00006	2	0.00005	2	9999	Si
1.38	0.00029	0.00019	0.00027	0.00018	0.00024	0.0002	0.00022	0.00018	0.00022	0.0002	0.00057	2	0.0005	2	4850	Si
1.65	0.00031	0.00021	0.00028	0.00019	0.00026	0.00021	0.00024	0.0002	0.00024	0.00021	0.0006	2	0.00053	2	4558	Si
2.6	0.00006	0.00004	0.00006	0.00004	0.00005	0.00005	0.00005	0.00004	0.00005	0.00005	0.00013	2	0.00012	2	9999	Si

Controllo diametro delle barre longitudinali nei nodi

Nessun nodo è da verificare

RAMPA 1

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 100x30	Rettangolare	1	0.3	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

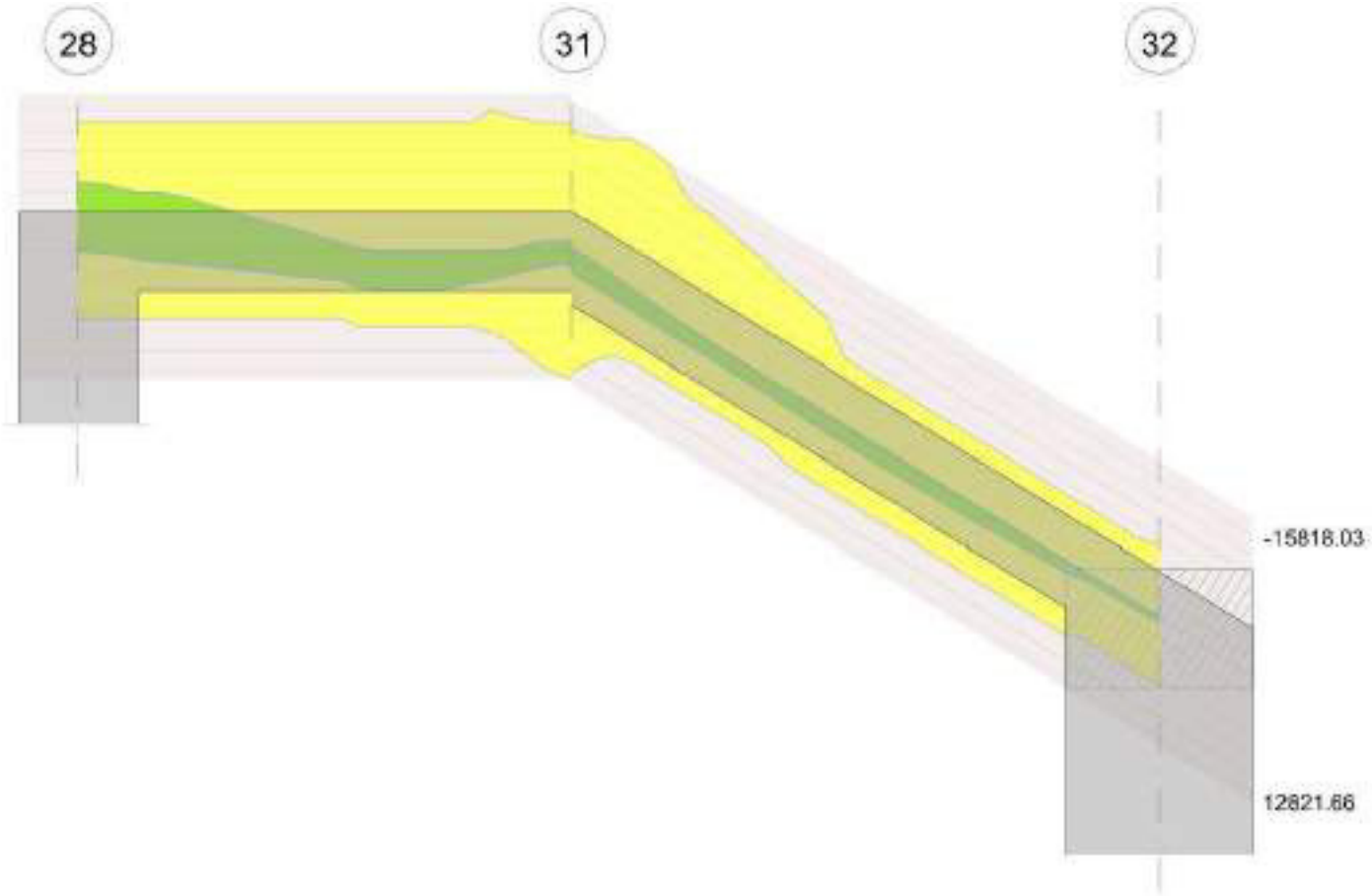


Diagramma verifica stato limite ultimo taglio

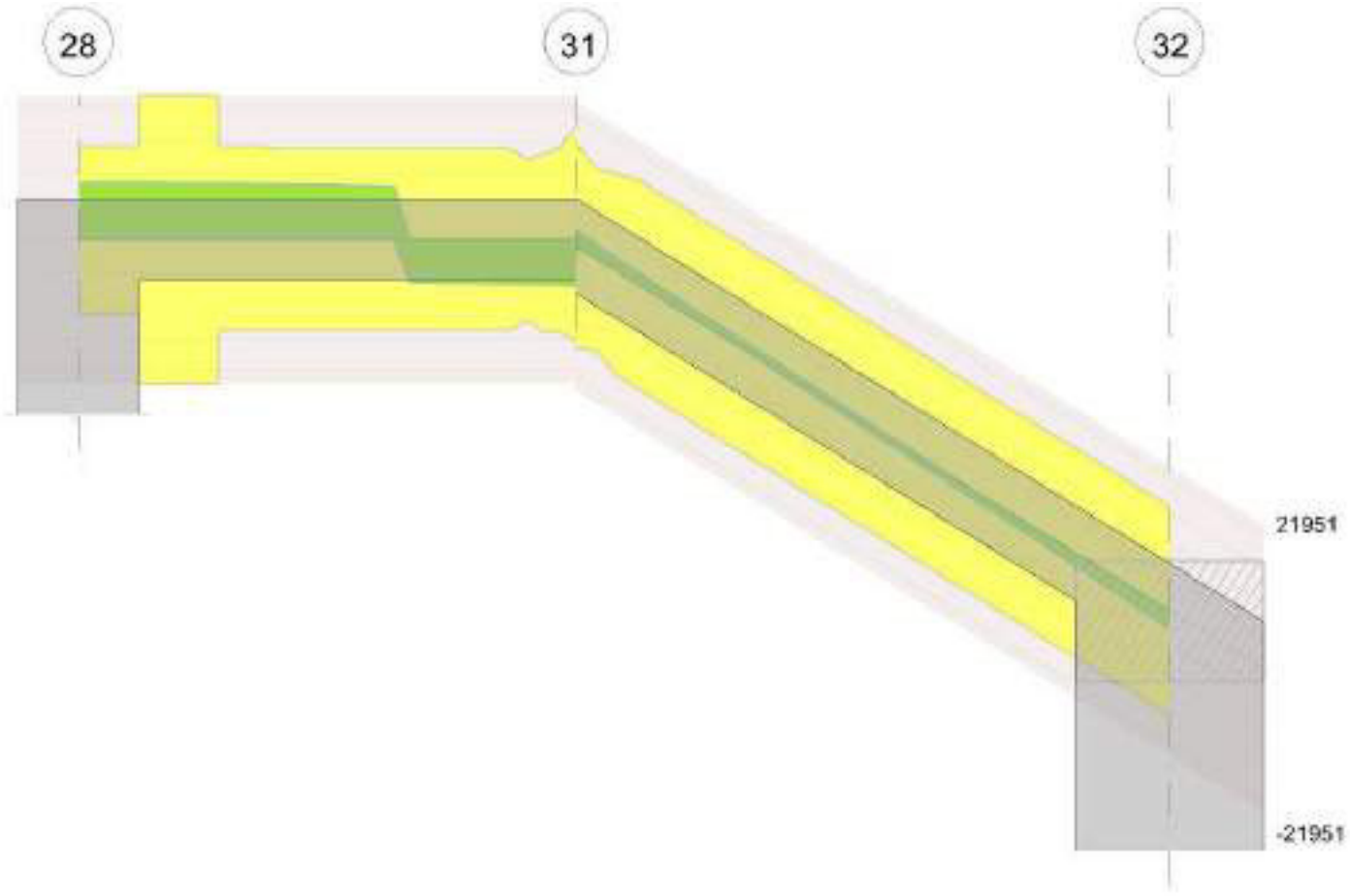
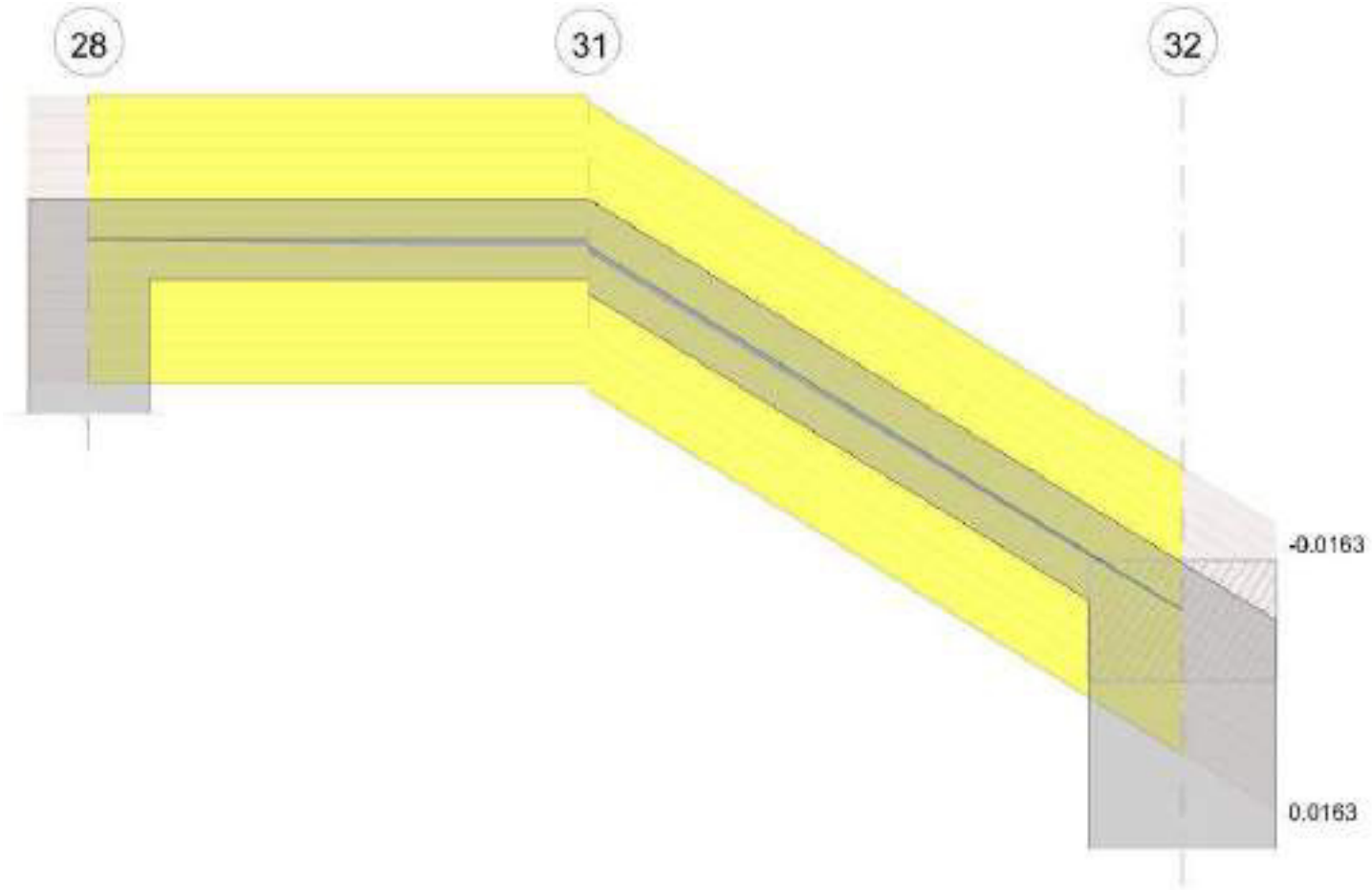


Diagramma verifica stato limite esercizio quasi permanente freccia



Output campate

Campata 1 tra i fili 28 - 31, sezione R 100x30, aste 746, 745

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001527	0.052	0.000763	0.052							-6070.92	SLU 84	-5146.2	-13547.07	0.212	2.63	Si
0.23	0.001527	0.052	0.000763	0.052							-4180.17	SLU 84	-4180.17	-13547.07	0.212	3.24	Si
0.93	0.001527	0.052	0.000763	0.052	1669.63	SLU 83	2570.95	7564.69	0.178	2.94							Si
1.18	0.001527	0.052	0.000763	0.052	3652.65	SLU 83	3867.32	7564.69	0.178	1.96							Si
1.86	0.001527	0.061	0.001527	0.031	358.8	SLU 82	1021.16	14928.05	0.215	14.62							Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001527	0.052	0.000763	0.052	3.14	SLV 8	3.14	6725.06	0.221	2141.27	-7673.27	SLV 9	-6808.57	-12930.62	0.303	1.9	Si
0.23	0.001527	0.052	0.000763	0.052	588.82	SLV 8	879.56	6725.06	0.221	7.65	-5900.53	SLV 9	-5900.53	-12930.62	0.303	2.19	Si
0.93	0.001527	0.052	0.000763	0.052	2393.41	SLV 8	2679.97	6725.06	0.221	2.51	-416.04	SLV 9	-1274.37	-12930.62	0.303	10.15	Si
1.86	0.001527	0.061	0.001527	0.031	1301.97	SLV 6	1384.84	12821.66	0.286	9.26	-949.78	SLV 11	-949.78	-12774.96	0.284	13.45	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001527	0.052	0.000763	0.052							-5385.35	SLD 9	-4692.23	-12930.62	0.303	2.76	Si
0.23	0.001527	0.052	0.000763	0.052							-3965.9	SLD 9	-3965.9	-12930.62	0.303	3.26	Si
0.93	0.001527	0.052	0.000763	0.052	1555.22	SLD 8	2008.76	6725.06	0.221	3.35	422.15	SLD 9	-264.48	-12930.62	0.303	48.89	Si
1.18	0.001527	0.052	0.000763	0.052	2573.32	SLD 12	2681.12	6725.06	0.221	2.51							Si
1.86	0.001527	0.061	0.001527	0.031	631.34	SLD 6	911.46	12821.66	0.286	14.07	-279.15	SLD 11	-279.15	-12774.96	0.284	45.76	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.001527	0	8605	SLU 84	8605	14032	78734	0	14032	1	1.63	Si
0.23	0.0000251	0.001527	0	8587	SLU 84	8587	14032	78734	21951	21951	1	2.56	Si
0.93	0.0000158	0.000763	0	8296	SLU 84	8296	11326	78734	13812	13812	1	1.66	Si
1.86	0.0000182	0.000763	0	-6181	SLU 83	-6181	-11952	-85542	-17294	-17294	1	2.8	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.001527	0	8082	SLV 9	8082	14032	78734	0	14032	1	1.74	Si
0.23	0.0000251	0.001527	0	8071	SLV 9	8071	14032	78734	21951	21951	1	2.72	Si
0.93	0.0000158	0.001527	0	7905	SLV 9	7905	14032	78734	13812	14032	1	1.78	Si
1.86	0.0000182	0.001527	0	-6895	SLV 11	-6895	-13811	-75879	-15340	-15340	1	2.22	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.001527	0	6467	SLD 9	6467	14032	78734	0	14032	1	2.17	Si
0.23	0.0000251	0.001527	0	6456	SLD 9	6456	14032	78734	21951	21951	1	3.4	Si
0.93	0.0000158	0.000763	0	6290	SLD 9	6290	11326	78734	13812	13812	1	2.2	Si
1.86	0.0000182	0.001527	0	-5067	SLD 11	-5067	-13811	-75879	-15340	-15340	1	3.03	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-4434.82	21	-3760.84	223879	1494000	3211195	36000000	-3835.07	2	-3258.41	193970	1120500			Si
0.23	-3056.74	21	-3056.74	181965	1494000	2609995	36000000	-2655.85	2	-2655.85	158100	1120500			Si
0.93	1206.85	20	1864.26	106120	1494000	1664667	36000000	988.68	2	1554.39	88481	1120500			Si
1.86	258.16	19	739.91	40645	1494000	593508	36000000	176.09	2	590.02	32411	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Verifica di deformabilità

x	Rara				Frequente				Quasi permanente							Verifica
	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess. viscosa+	Comb.	Fess. viscosa-	Comb.	l/f	
0.23	0.00003	0.00002	0.00003	0.00002	0.00003	0.00002	0.00002	0.00002	0.00003	0.00002	0.00005	2	0.00005	2	9999	Si
0.93	0.00022	0.00016	0.0002	0.00014	0.00019	0.00016	0.00017	0.00015	0.00018	0.00016	0.00044	2	0.00039	2	9333	Si
1.86	0.00034	0.00025	0.00032	0.00024	0.0003	0.00025	0.00028	0.00024	0.00028	0.00025	0.00071	2	0.00064	2	5760	Si

Campata 2 tra i fili 31 - 32, sezione R 100x30, asta 744

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001527	0.052	0.001457	0.059	358.8	SLU 82	656.74	12595.96	0.214	19.18							Si
1.11	0.000763	0.052	0.000763	0.052	1786.35	SLU 82	1797.51	7490.06	0.163	4.17							Si
1.86	0.000763	0.052	0.000763	0.052	797.31	SLU 83	1043.7	7490.06	0.163	7.18							Si
2.21	0.000763	0.052	0.000763	0.052							-203.99	SLU 82	-203.99	-7490.06	0.163	36.72	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001527	0.052	0.001457	0.059	1301.92	SLV 6	1399.66	11514.89	0.292	8.23	-949.73	SLV 11	-949.73	-12901.55	0.301	13.58	Si
0.52	0.001527	0.052	0.000763	0.052	1581.15	SLV 6	1584.24	6725.06	0.221	4.24	122.63	SLV 11	-72.36	-12930.62	0.303	178.69	Si
1.11	0.000763	0.052	0.000763	0.052	1352.82	SLV 6	1438.59	6732.7	0.223	4.68							Si
1.86	0.000763	0.052	0.000763	0.052	817.71	SLV 12	891.37	6732.7	0.223	7.55							Si
2.21	0.000763	0.052	0.000763	0.052	473.8	SLV 11	473.8	6732.7	0.223	14.21	-711.78	SLV 6	-173.04	-6732.7	0.223	38.91	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.001527	0.052	0.001457	0.059	631.32	SLD 6	780.53	11514.89	0.292	14.75	-279.13	SLD 11	-279.13	-12901.55	0.301	46.22	Si
0.74	0.001326	0.052	0.000763	0.052	1230.65	SLD 6	1240.01	6726.89	0.222	5.42							Si
1.11	0.000763	0.052	0.000763	0.052	1186.25	SLD 6	1222.43	6732.7	0.223	5.51							Si
1.86	0.000763	0.052	0.000763	0.052	615.26	SLD 12	734.01	6732.7	0.223	9.17							Si
2.21	0.000763	0.052	0.000763	0.052	117.98	SLD 11	117.98	6732.7	0.223	57.06	-355.97	SLD 6	-202.37	-6732.7	0.223	33.27	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000182	0.000763	0	2359	SLU 83	2359	11117	76492	15464	15464	1	6.55	Si
1.11	0.0000182	0.000763	0	-211	SLU 82	-211	-11326	-78734	-15917	-15917	1	75.46	Si
1.86	0.0000182	0.000763	0	-1963	SLU 82	-1963	-11326	-78734	-15917	-15917	1	8.11	Si
2.21	0.0000182	0.000763	0	-2773	SLU 82	-2773	-11326	-78734	-15917	-15917	1	5.74	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000182	0.001527	0	2090	SLV 11	2090	14032	78734	15917	15917	1	7.62	Si
1.11	0.0000182	0.000763	0	530	SLV 11	530	11326	78734	15917	15917	1	30.05	Si
1.11	0.0000182	0.000763	0	-751	SLV 6	-751	-11326	-78734	-15917	-15917	1	21.2	Si
1.86	0.0000182	0.000763	0	-1818	SLV 6	-1818	-11326	-78734	-15917	-15917	1	8.76	Si
2.21	0.0000182	0.000763	0	-2311	SLV 6	-2311	-11326	-78734	-15917	-15917	1	6.89	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000182	0.001527	0	1707	SLD 11	1707	14032	78734	15917	15917	1	9.32	Si
1.11	0.0000182	0.000763	0	147	SLD 11	147	11326	78734	15917	15917	1	108.27	Si
1.11	0.0000182	0.000763	0	-368	SLD 6	-368	-11326	-78734	-15917	-15917	1	43.23	Si
1.86	0.0000182	0.000763	0	-1435	SLD 6	-1435	-11326	-78734	-15917	-15917	1	11.09	Si
2.21	0.0000182	0.000763	0	-1928	SLD 6	-1928	-11326	-78734	-15917	-15917	1	8.25	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	258.16	19	475.65	26775	1494000	405640	36000000	176.09	2	359.94	20261	1120500			Si
1.11	1300.97	19	1309.02	79497	1494000	1192453	36000000	1069.22	2	1074.43	65250	1120500			Si
1.86	580.19	20	759.85	46145	1494000	692180	36000000	480.57	2	628.88	38192	1120500			Si
2.21	-149.53	19	-149.53	9081	1494000	136215	36000000	-118.99	2	-118.99	7226	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Verifica di deformabilità

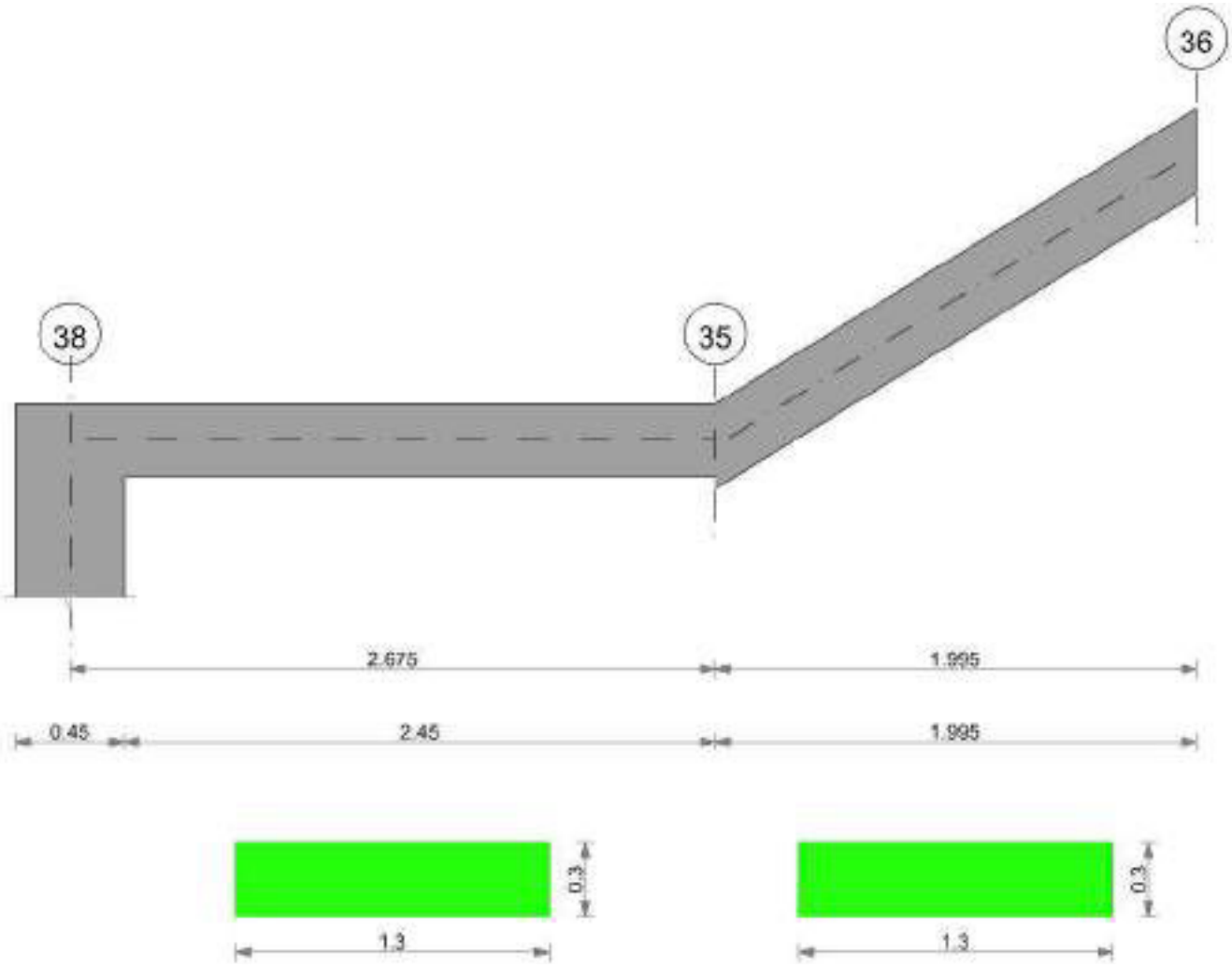
x	Rara				Frequente				Quasi permanente							Verifica
	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess. viscosa+	Comb.	Fess. viscosa-	Comb.	l/f	
0	0.00034	0.00025	0.00027	0.0002	0.0003	0.00025	0.00024	0.0002	0.00028	0.00025	0.0006	2	0.00054	2	6756	Si
0.44	0.00035	0.00026	0.00028	0.00021	0.0003	0.00026	0.00025	0.00021	0.00028	0.00026	0.00063	2	0.00057	2	6494	Si
1.11	0.00029	0.00021	0.00024	0.00018	0.00025	0.00021	0.00021	0.00018	0.00024	0.00021	0.00054	2	0.00049	2	7553	Si
1.86	0.00011	0.00008	0.00009	0.00007	0.0001	0.00008	0.00008	0.00007	0.00009	0.00008	0.00021	2	0.00019	2	9999	Si

Controllo diametro delle barre longitudinali nei nodi

Nessun nodo è da verificare

RAMPA 2

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 130x30	Rettangolare	1.3	0.3	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

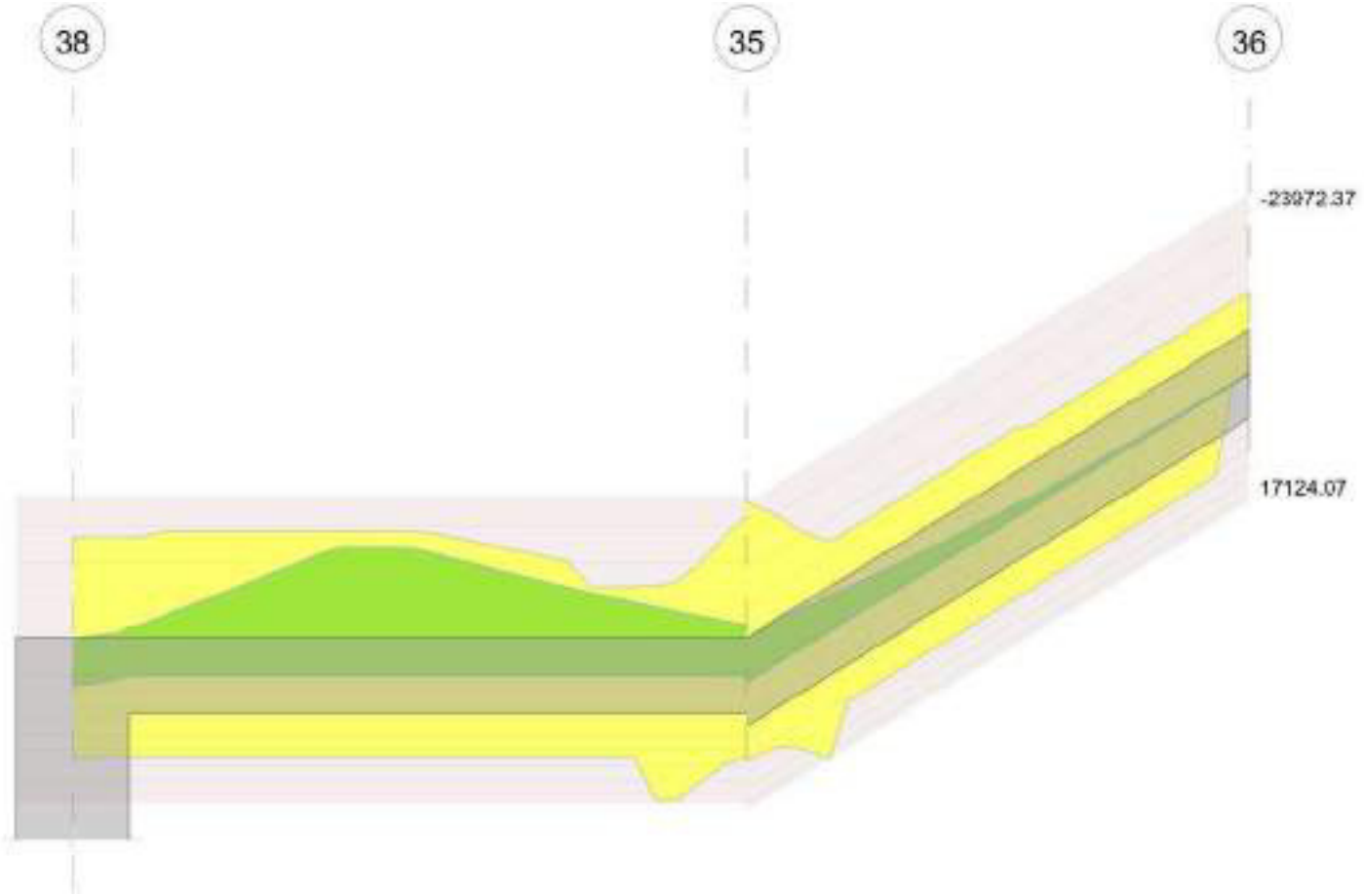


Diagramma verifica stato limite ultimo taglio

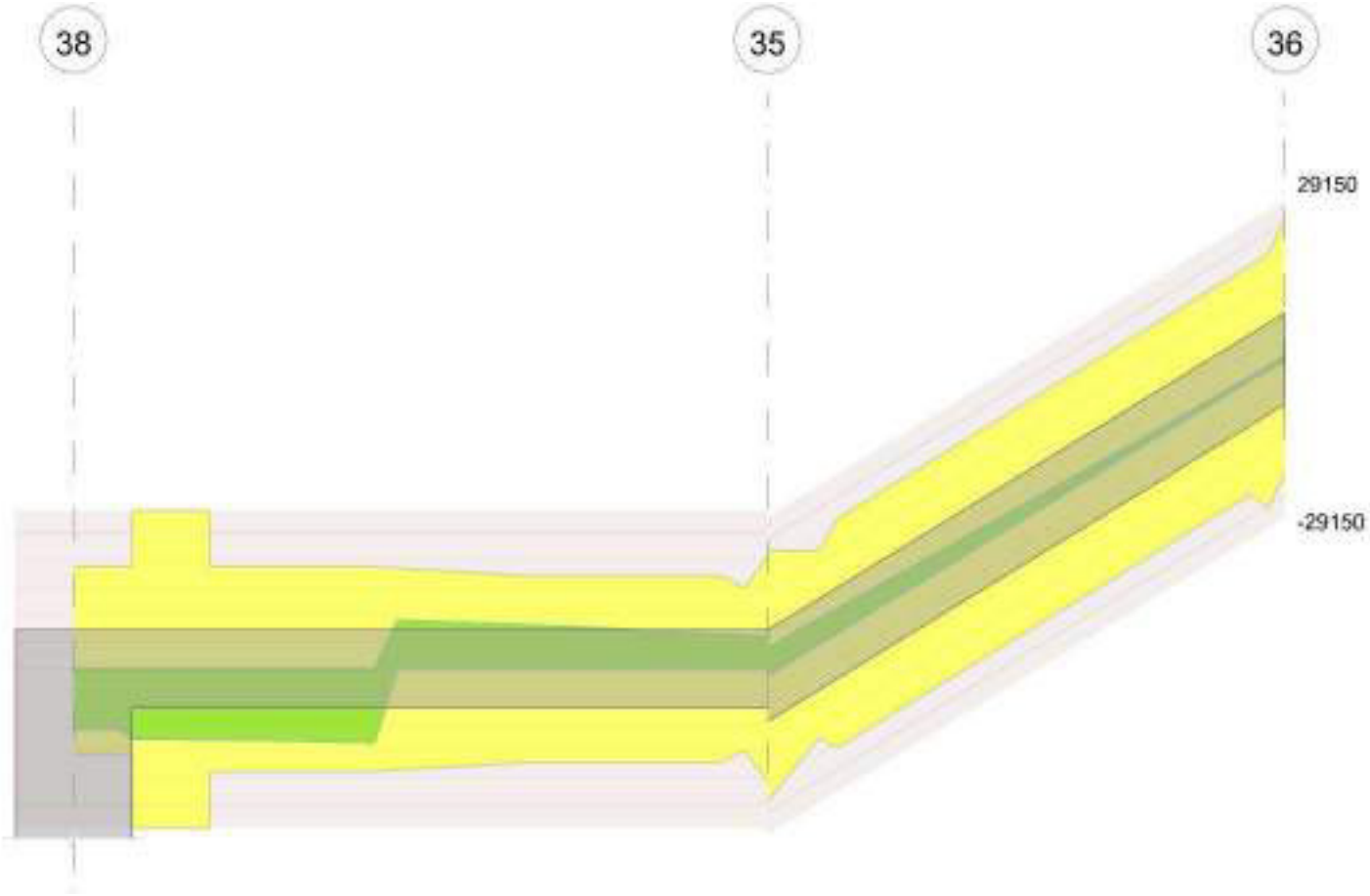
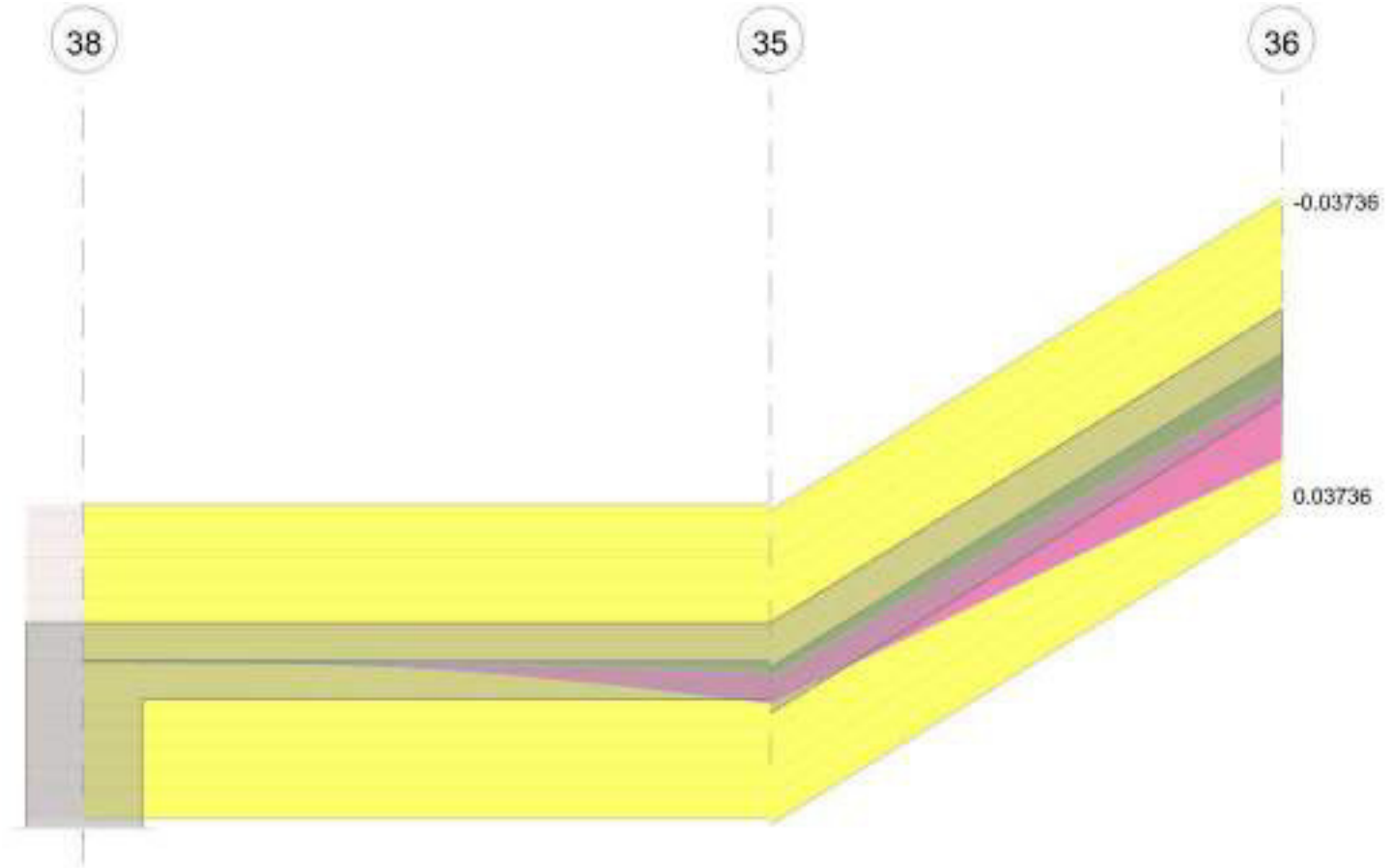


Diagramma verifica stato limite esercizio quasi permanente freccia



Output campate

Campata 1 tra i fili 38 - 35, sezione R 130x30, aste 750, 751

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.002199	0.053	0.001257	0.053							-1749.36	SLU 84	-1749.36	-19204.84	0.225	10.98	Si
0.23	0.002199	0.053	0.001257	0.053							-4660.07	SLU 84	-6113.8	-19204.84	0.225	3.14	Si
1.34	0.002199	0.053	0.001257	0.053							-16071.41	SLU 84	-16911.38	-19204.84	0.225	1.14	Si
2.05	0.001257	0.053	0.001257	0.053							-10159.32	SLU 84	-11022.33	-11845.8	0.181	1.07	Si
2.68	0.002513	0.058	0.001257	0.053							-5886.51	SLU 84	-6589.56	-21180.96	0.247	3.21	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.002199	0.053	0.001257	0.053	2529.71	SLV 11	1276.48	10864.86	0.244	8.51	-4892.48	SLV 6	-4892.48	-18404.51	0.316	3.76	Si
0.23	0.002199	0.053	0.001257	0.053	35.86	SLV 11	35.86	10864.86	0.244	302.97	-5888.52	SLV 6	-6392.58	-18404.51	0.316	2.88	Si
1.34	0.002199	0.053	0.001257	0.053							-10662.37	SLV 7	-11142.25	-18404.51	0.316	1.65	Si
2.05	0.001257	0.053	0.001257	0.053							-7105.88	SLV 7	-7627.06	-10885.66	0.247	1.43	Si
2.68	0.002513	0.058	0.001257	0.053							-4507.71	SLV 7	-4937.61	-19876.75	0.339	4.03	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.002199	0.053	0.001257	0.053	312.14	SLD 11	312.14	10864.86	0.244	34.81	-2674.9	SLD 6	-2674.9	-18404.51	0.316	6.88	Si
0.23	0.002199	0.053	0.001257	0.053							-4118.43	SLD 6	-4842.38	-18404.51	0.316	3.8	Si
1.34	0.002199	0.053	0.001257	0.053							-10151.84	SLD 7	-10631.72	-18404.51	0.316	1.73	Si
2.05	0.001257	0.053	0.001257	0.053							-6595.35	SLD 7	-7116.53	-10885.66	0.247	1.53	Si
2.68	0.002513	0.058	0.001257	0.053							-3997.18	SLD 7	-4427.08	-19876.75	0.339	4.49	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.002199	0	-12765	SLU 81	-12765	-18843	-101941	0	-18843	1	1.48	Si
0.23	0.0000335	0.002199	0	-12793	SLU 81	-12793	-18843	-101941	-29150	-29150	1	2.28	Si
1.16	0.0000196	0.002171	0	-13506	SLU 81	-13506	-18761	-101941	-17083	-18761	1	1.39	Si
1.34	0.0000196	0.002009	0	8778	SLU 83	8778	18283	101941	17083	18283	1	2.08	Si
2.68	0.0000242	0.001257	0	6029	SLU 83	6029	15511	100050	20650	20650	1	3.43	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.001257	0	-11012	SLV 11	-11012	-15636	-101941	0	-15636	1	1.42	Si
0.18	0	0.001257	0	-11022	SLV 11	-11022	-15636	-101941	0	-15636	1	1.42	Si
0.23	0.0000335	0.001257	0	-11028	SLV 11	-11028	-15636	-101941	-29150	-29150	1	2.64	Si
1.34	0.0000196	0.002009	0	5262	SLV 5	5262	18283	101941	17083	18283	1	3.47	Si
2.68	0.0000242	0.001257	0	3693	SLV 5	3693	15511	100050	20650	20650	1	5.59	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.001257	0	-8998	SLD 11	-8998	-15636	-101941	0	-15636	1	1.74	Si
0.23	0.0000335	0.002199	0	-9014	SLD 11	-9014	-18843	-101941	-29150	-29150	1	3.23	Si
1.34	0.0000196	0.002009	0	5261	SLD 5	5261	18283	101941	17083	18283	1	3.47	Si
2.68	0.0000242	0.001257	0	3693	SLD 5	3693	15511	100050	20650	20650	1	5.59	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-1286.64	21	-1286.64	57794	1494000	831763	36000000	-1181.38	2	-1181.38	53066	1120500			Si
0.23	-3406.64	21	-4465.43	200581	1494000	2886728	36000000	-2926.33	2	-3797.71	170588	1120500			Si
1.34	-11717.35	20	-12327.96	913242	1494000	25980402	36000000	-9760.01	2	-10263.19	760286	1120500			Si
2.68	-4299.31	21	-4812.62	216361	1494000	3088844	36000000	-3605.35	2	-4035.25	181412	1120500			Si

Verifica di apertura delle fessure

x	Bordo	Rara				Frequente				Quasi permanente				Verifica
		Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	Dmax	Esm	Wd	Comb	
1.34	superiore	0.29	0.00083	0.000242	21	0.29	0.00083	0.000239	6	0.29	0.00077	0.000222	2	Si
2.05	superiore	0.417	0.00084	0.000351	21	0.417	0.00077	0.000321	6	0.417	0.0007	0.000294	2	Si

Verifica di deformabilità

x	Rara				Frequente				Quasi permanente							Verifica
	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess. viscosa+	Comb.	Fess. viscosa-	Comb.	l/f	
0.23	0.00001	0	0.00001	0	0	0	0	0	0	0	0.00001	2	0.00001	2	9999	Si
1.34	0.00056	0.00036	0.00076	0.00047	0.00047	0.00038	0.0006	0.00047	0.00043	0.00038	0.00155	2	0.00135	2	6014	Si
2.68	0.00301	0.00218	0.00505	0.00287	0.00261	0.00221	0.00388	0.00287	0.00245	0.00221	0.00979	2	0.00845	2	954	Si

Campata 2 tra i fili 35 - 36, sezione R 130x30, asta 752

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.002513	0.029	0.001257	0.067							-5886.51	SLU 84	-5886.51	-23972.37	0.247	4.07	Si
0.33	0.001257	0.053	0.002054	0.054							-4087.86	SLU 84	-4658.87	-11926.05	0.192	2.56	Si
1	0.001257	0.053	0.001257	0.053							-1471.63	SLU 84	-1822.23	-11845.8	0.181	6.5	Si
1.99	0.001257	0.053	0	0	0	SLU 41	0	0	0	+∞	0	SLU 44	-19.98	-11486.6	0.136	574.88	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.002513	0.029	0.001257	0.067							-4507.72	SLV 11	-4507.72	-20640.51	0.323	4.58	Si
1	0.001257	0.053	0.001257	0.053							-1352.54	SLV 11	-1617.96	-10885.66	0.247	6.73	Si
1.93	0.001257	0.053	0	0	26.11	SLV 5	51.06	0	0	0	-34.13	SLV 12	-110.54	-10920.51	0.252	98.79	Si
1.99	0.001257	0.053	0	0	0.36	SLV 7	38.48	0	0	0	-0.36	SLV 10	-62.96	-10920.51	0.252	173.45	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.002513	0.029	0.001257	0.067							-3997.19	SLD 11	-3997.19	-20640.51	0.323	5.16	Si
1	0.001257	0.053	0.001257	0.053							-1097.26	SLD 11	-1334	-10885.66	0.247	8.16	Si
1.93	0.001257	0.053	0	0	9.07	SLD 5	10.11	0	0	0	-17.08	SLD 12	-64.83	-10920.51	0.252	168.46	Si
1.99	0.001257	0.053	0	0	0.15	SLD 7	9.79	0	0	0	-0.15	SLD 10	-34.26	-10920.51	0.252	318.74	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000242	0.001257	0	5140	SLU 84	5140	16266	111681	23051	23051	1	4.48	Si
0.2	0.0000242	0.001257	0	4626	SLU 84	4626	14353	83285	17190	17190	1	3.72	Si
1	0.0000242	0.001257	0	2570	SLU 84	2570	15636	101941	21040	21040	1	8.19	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000242	0.001257	0	3542	SLV 11	3542	16266	111681	23051	23051	1	6.51	Si
0.2	0.0000242	0.001257	0	3227	SLV 11	3227	14353	83285	17190	17190	1	5.33	Si
1	0.0000242	0.001257	0	1968	SLV 11	1968	15636	101941	21040	21040	1	10.69	Si
1.99	0.0000242	0	0	394	SLV 12	394	16676	123815	25555	25555	1	64.87	Si
1.99	0.0000242	0.001257	0	-394	SLV 5	-394	-15636	-101941	-21040	-21040	1	53.41	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0.0000242	0.001257	0	3319	SLD 11	3319	16266	111681	23051	23051	1	6.94	Si
0.2	0.0000242	0.001257	0	3005	SLD 11	3005	14353	83285	17190	17190	1	5.72	Si
1	0.0000242	0.001257	0	1745	SLD 11	1745	15636	101941	21040	21040	1	12.06	Si
1.99	0.0000242	0	0	171	SLD 12	171	16676	123815	25555	25555	1	149.38	Si
1.99	0.0000242	0.001257	0	-171	SLD 5	-171	-15636	-101941	-21040	-21040	1	122.99	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-4299.31	21	-4299.31	186814	1494000	2563838	36000000	-3605.35	2	-3605.35	156660	1120500			Si
1	-1074.83	21	-1330.89	60869	1494000	913041	36000000	-901.34	2	-1116.07	51044	1120500			Si
1.99	0	20	0	0	1494000	0	36000000	0	2	0	0	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Verifica di deformabilità

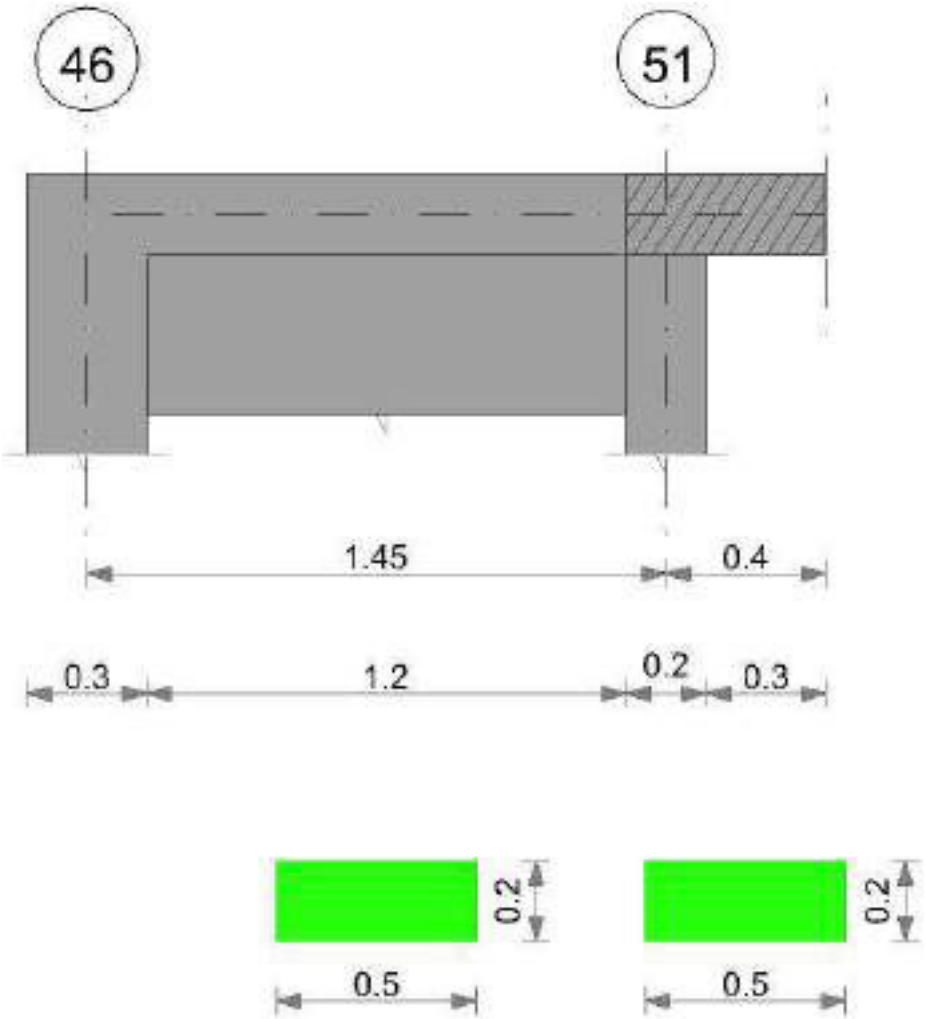
x	Rara				Frequente				Quasi permanente							Verifica
	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess. viscosa+	Comb.	Fess. viscosa-	Comb.	l/f	
0	0.00301	0.00218	0.00431	0.00245	0.00261	0.00221	0.00331	0.00245	0.00245	0.00221	0.00834	2	0.0072	2	1119	Si
1	0.00542	0.00398	0.00833	0.00477	0.00473	0.00402	0.00641	0.00477	0.00445	0.00403	0.0163	2	0.01406	2	573	Si
1.99	0.00798	0.0059	0.01251	0.0072	0.00697	0.00595	0.00965	0.0072	0.00657	0.00596	0.02459	2	0.02123	2	380	Si

Controllo diametro delle barre longitudinali nei nodi

Nessun nodo è da verificare

Trave a "Primo" 46-54

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

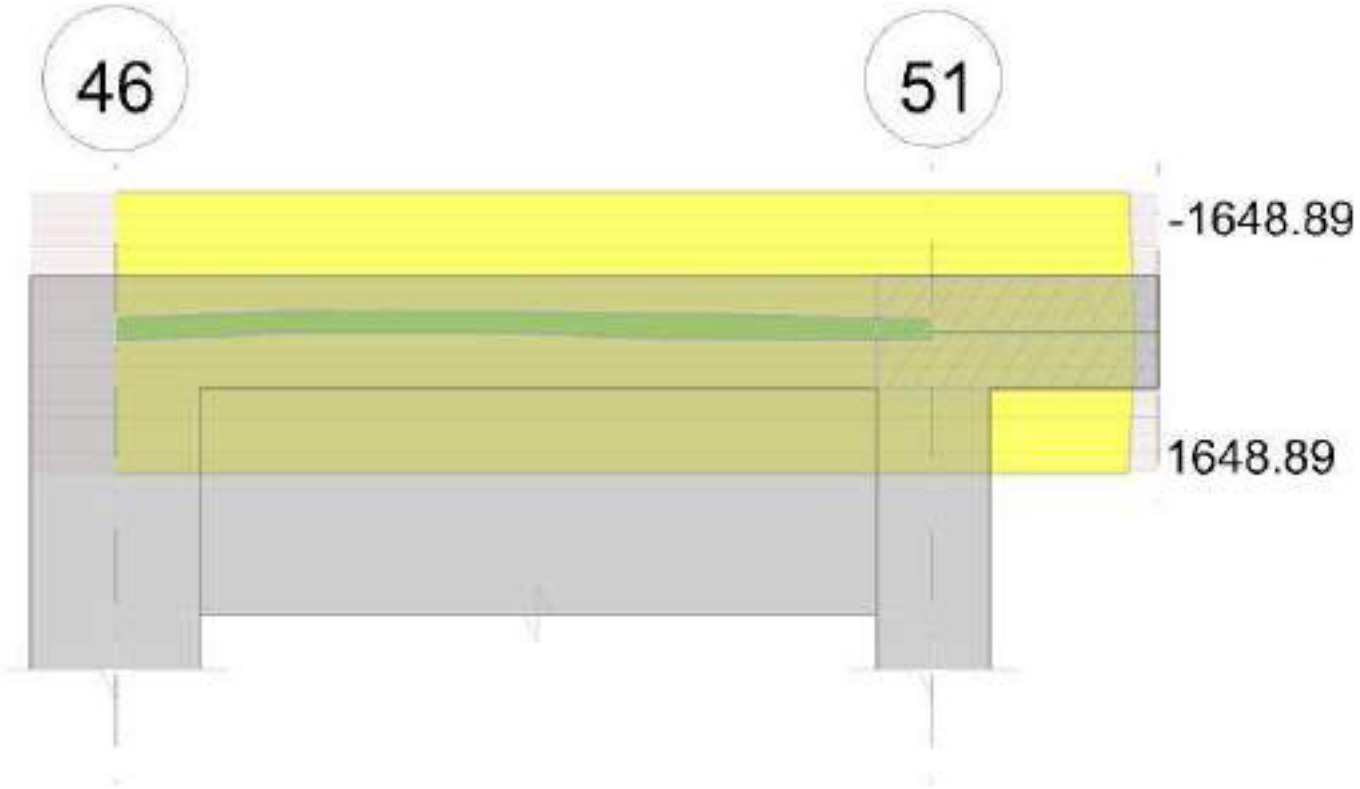


Diagramma verifica stato limite ultimo taglio

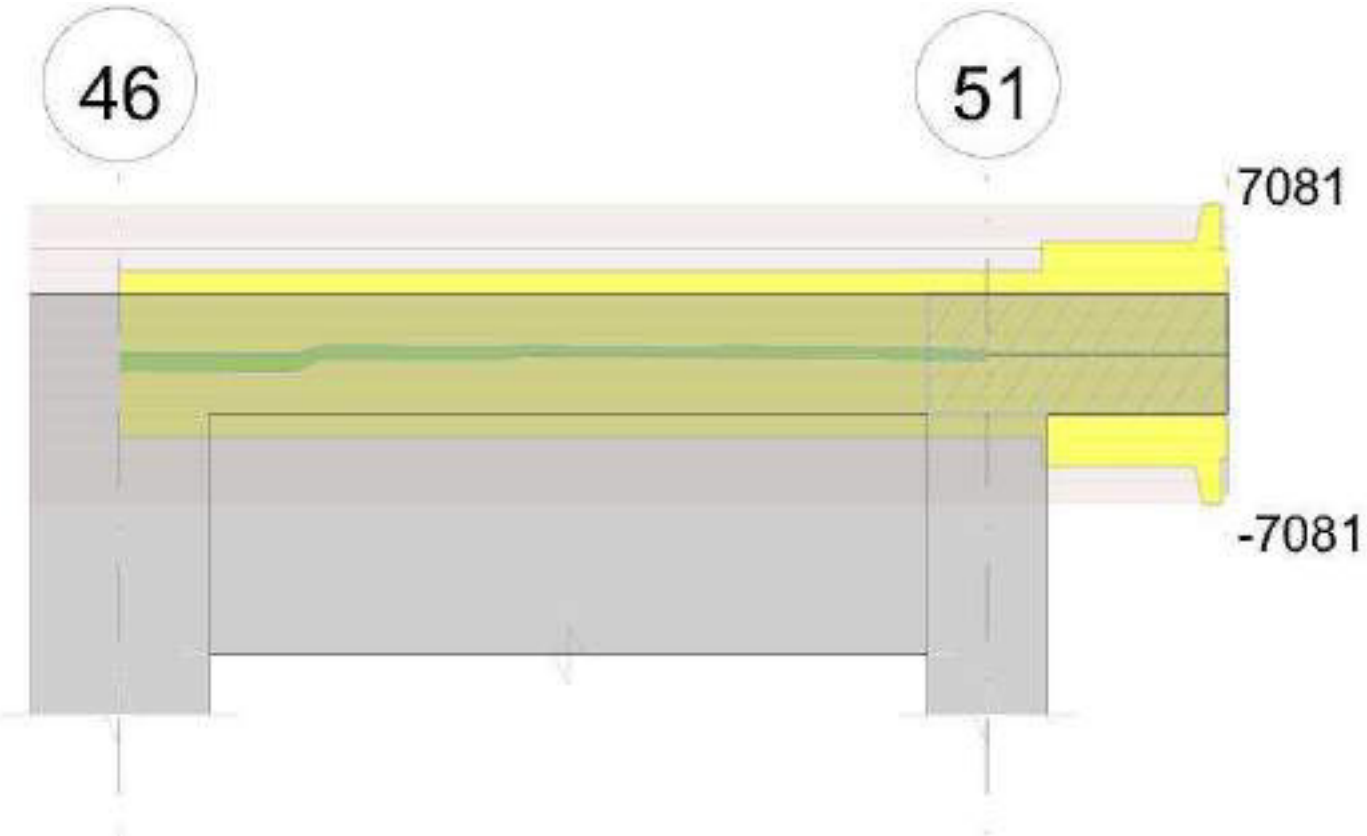
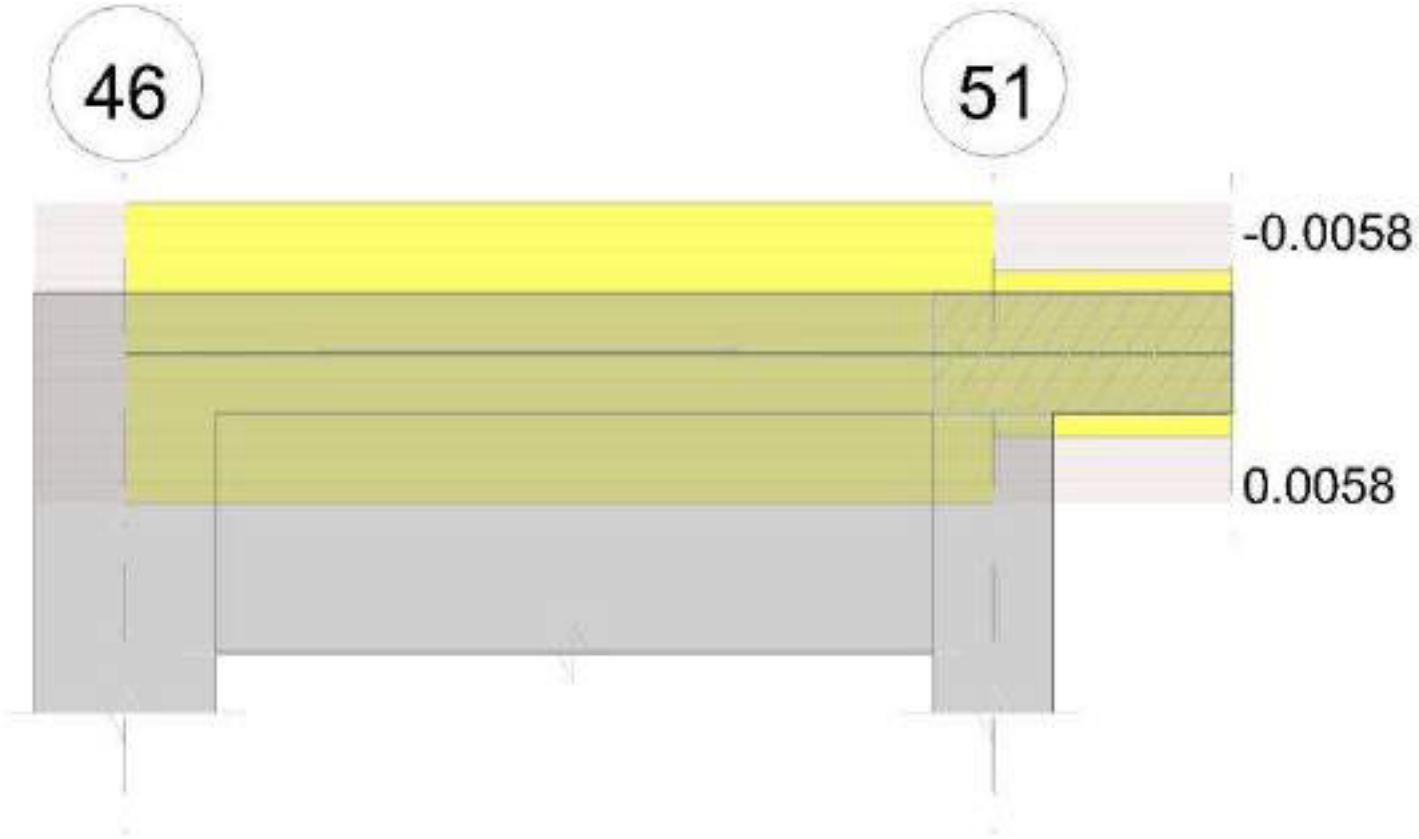


Diagramma verifica stato limite esercizio quasi permanente freccia



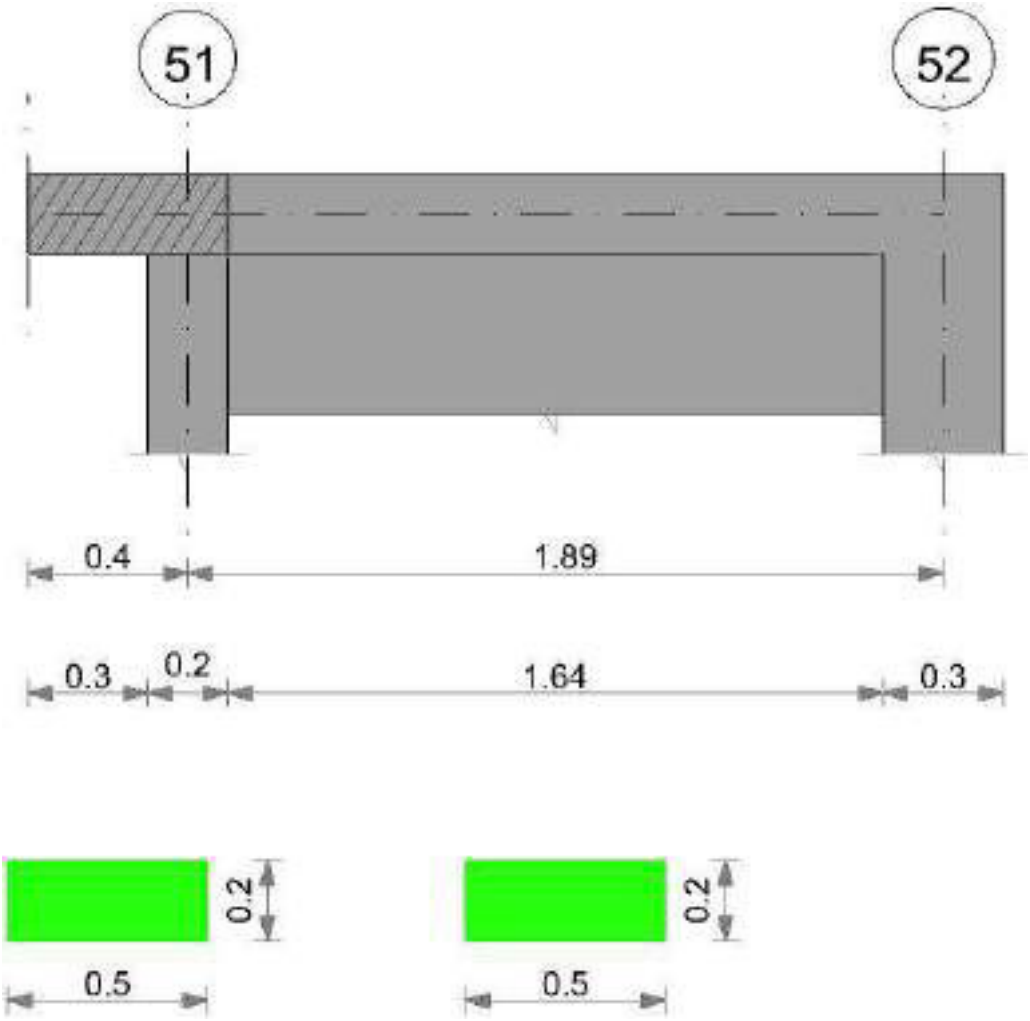
Output campate

Controllo diametro delle barre longitudinali nei nodi

Nessun nodo è da verificare

Trave a "Primo" 51-52

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

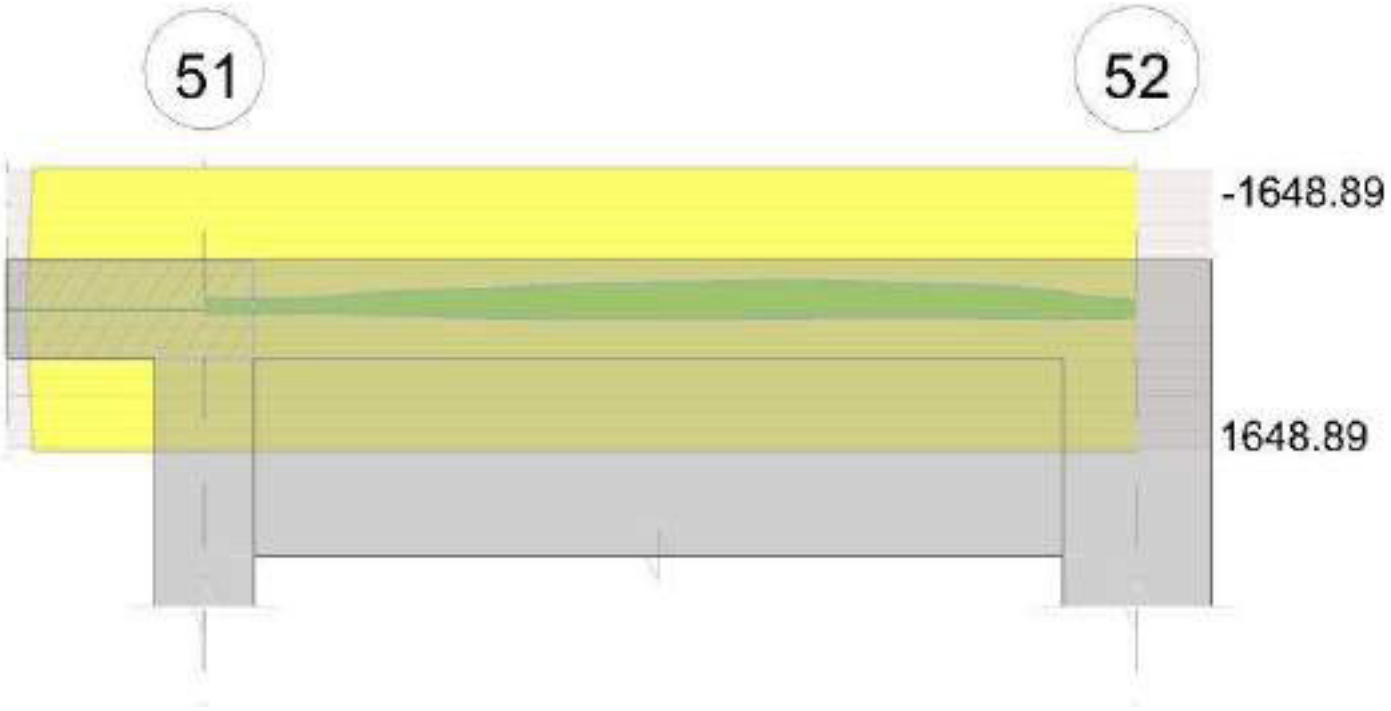


Diagramma verifica stato limite ultimo taglio

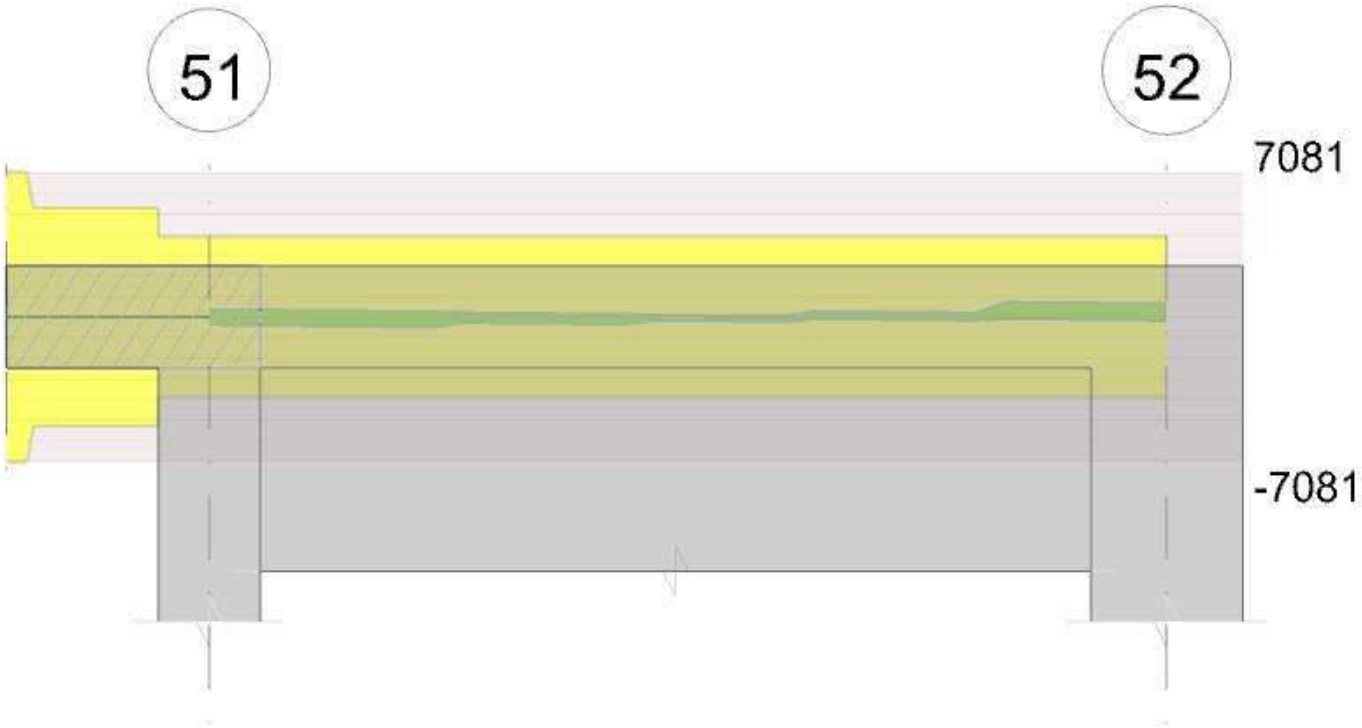
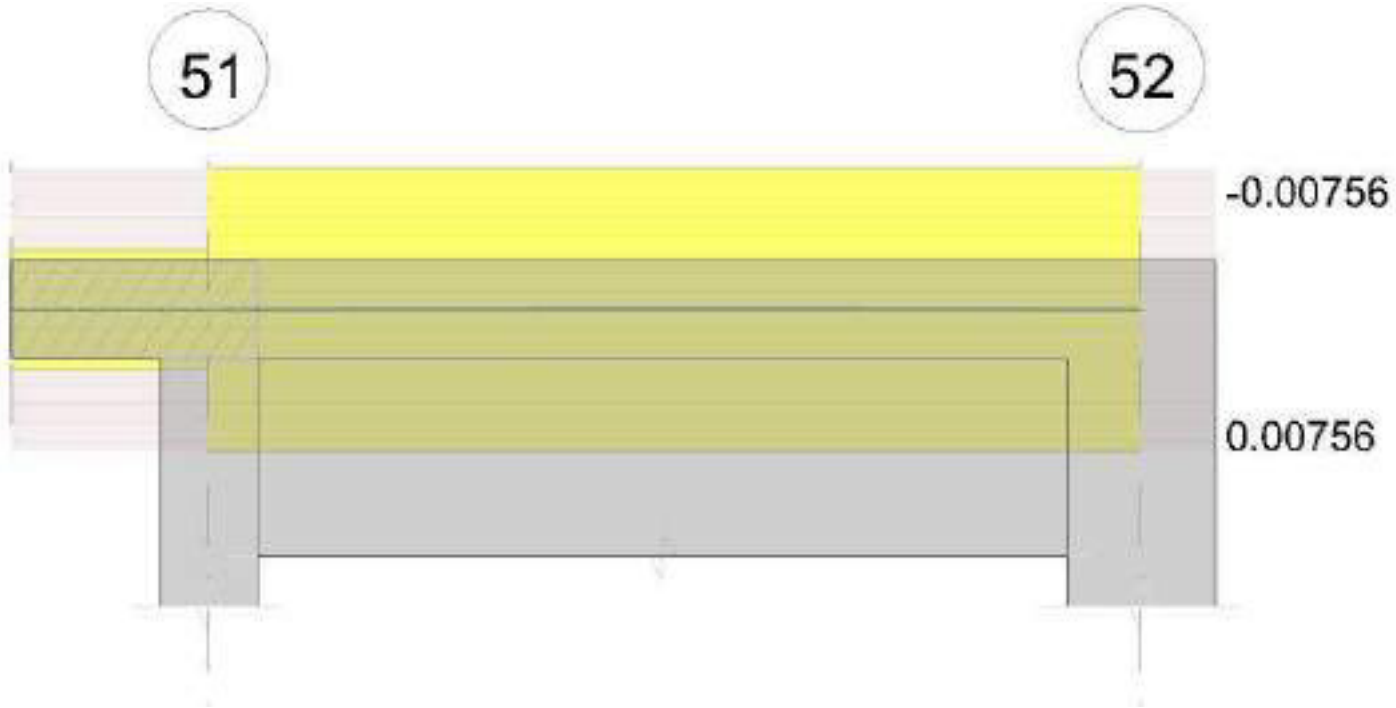


Diagramma verifica stato limite esercizio quasi permanente freccia



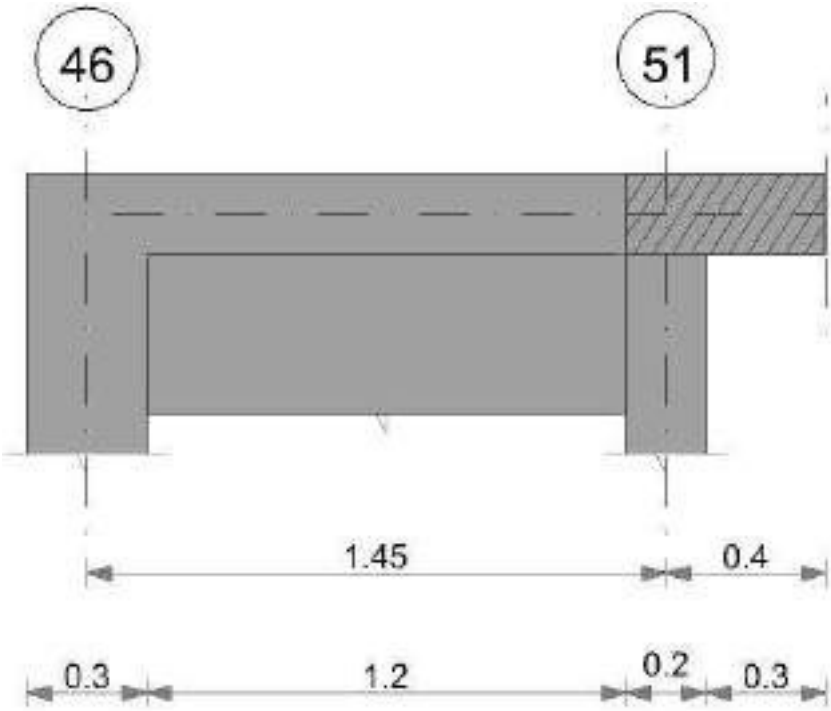
Output campate

Controllo diametro delle barre longitudinali nei nodi

Nessun nodo è da verificare

Trave a "Rialzato" 46-54

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

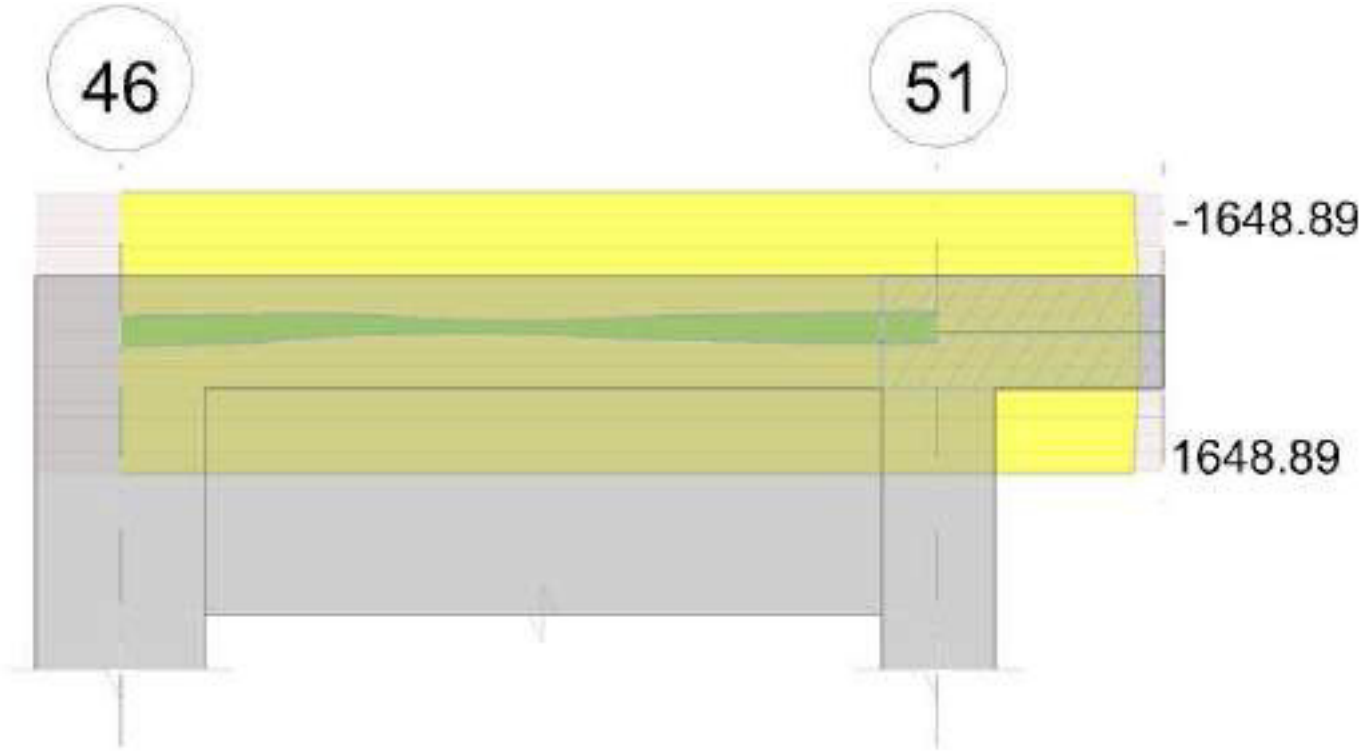


Diagramma verifica stato limite ultimo taglio

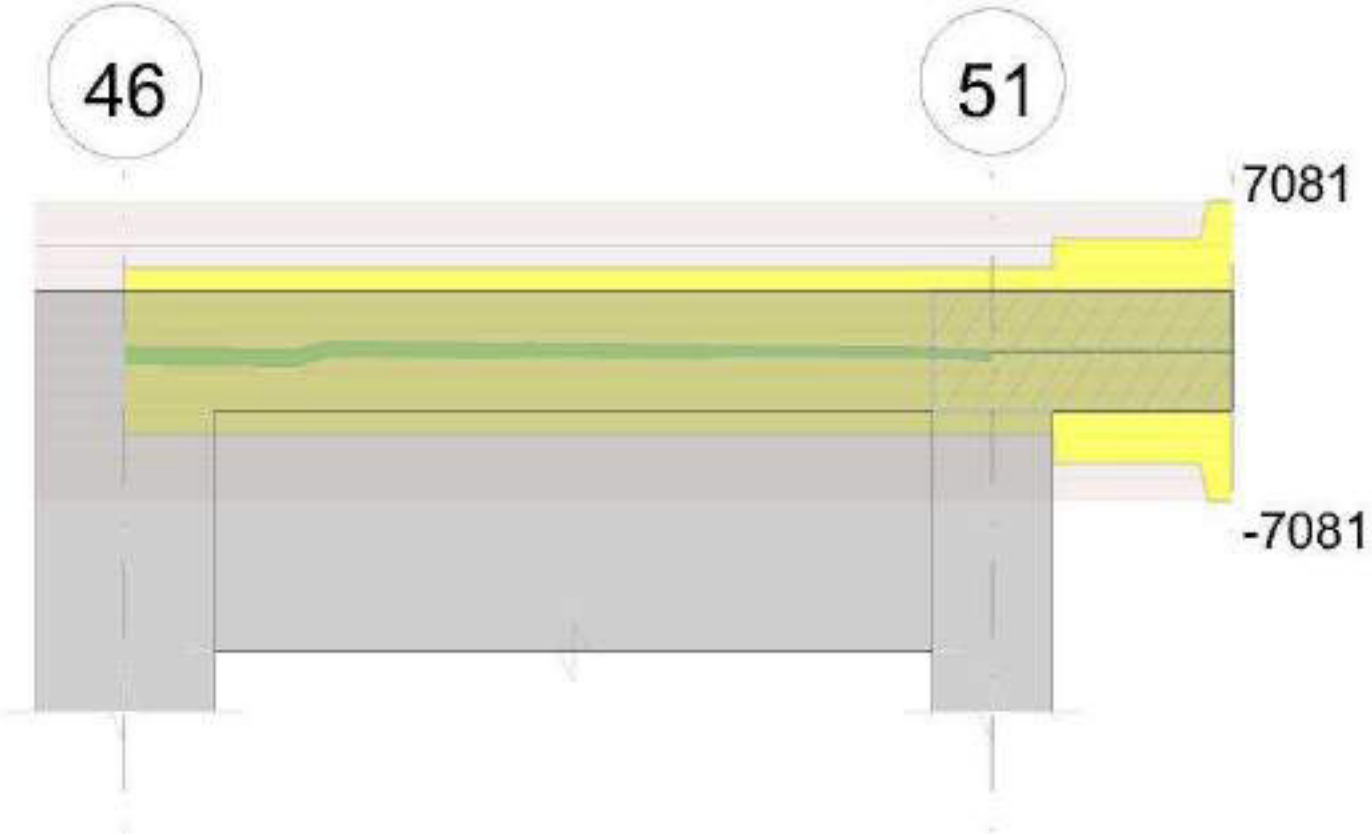
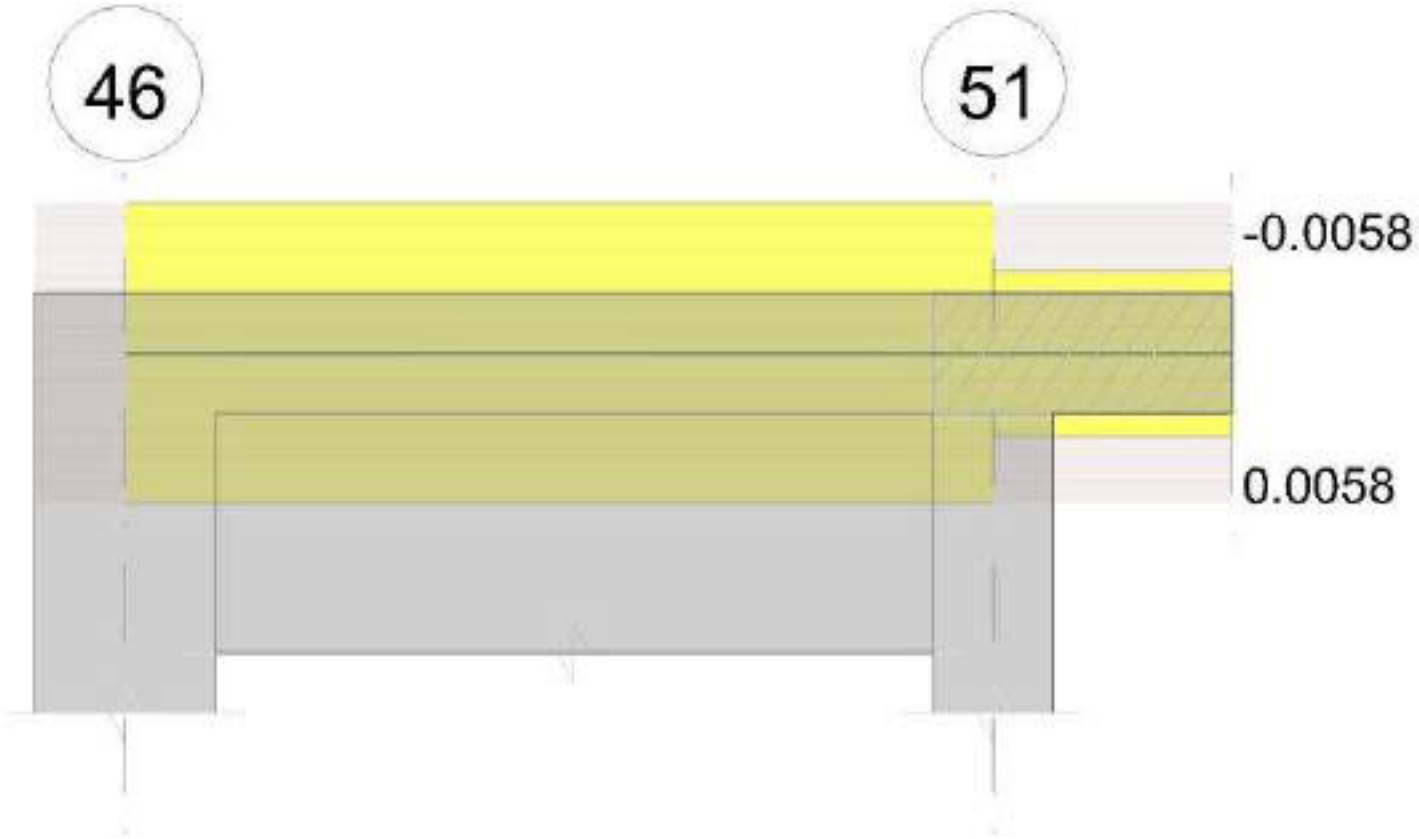


Diagramma verifica stato limite esercizio quasi permanente freccia



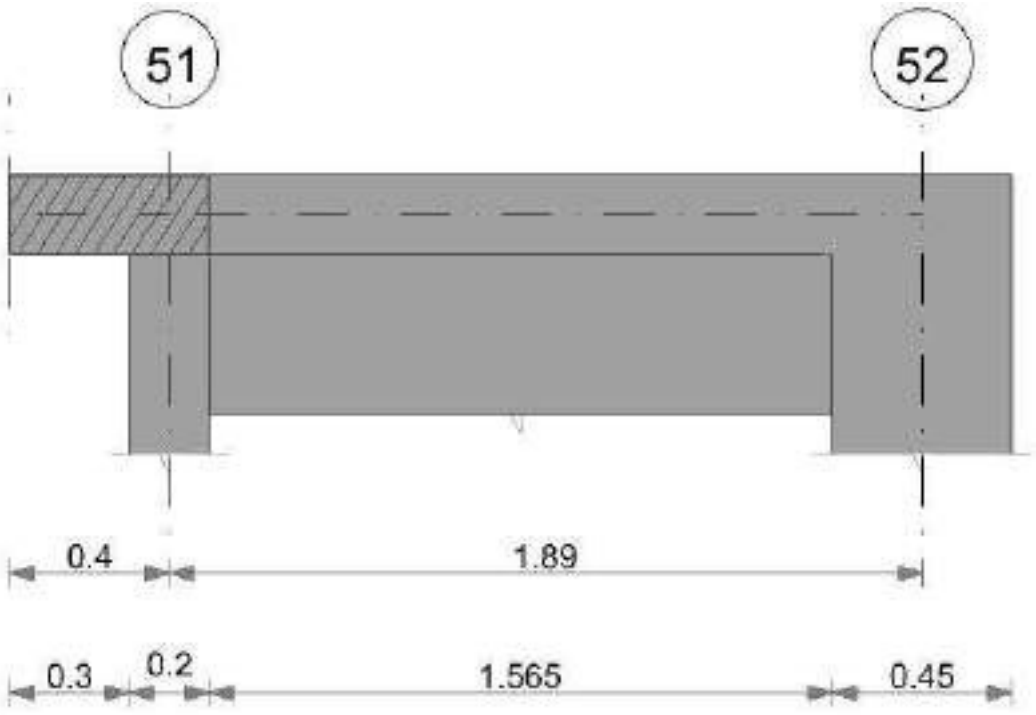
Output campate

Controllo diametro delle barre longitudinali nei nodi

Nessun nodo è da verificare

Trave a "Rialzato" 51-52

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

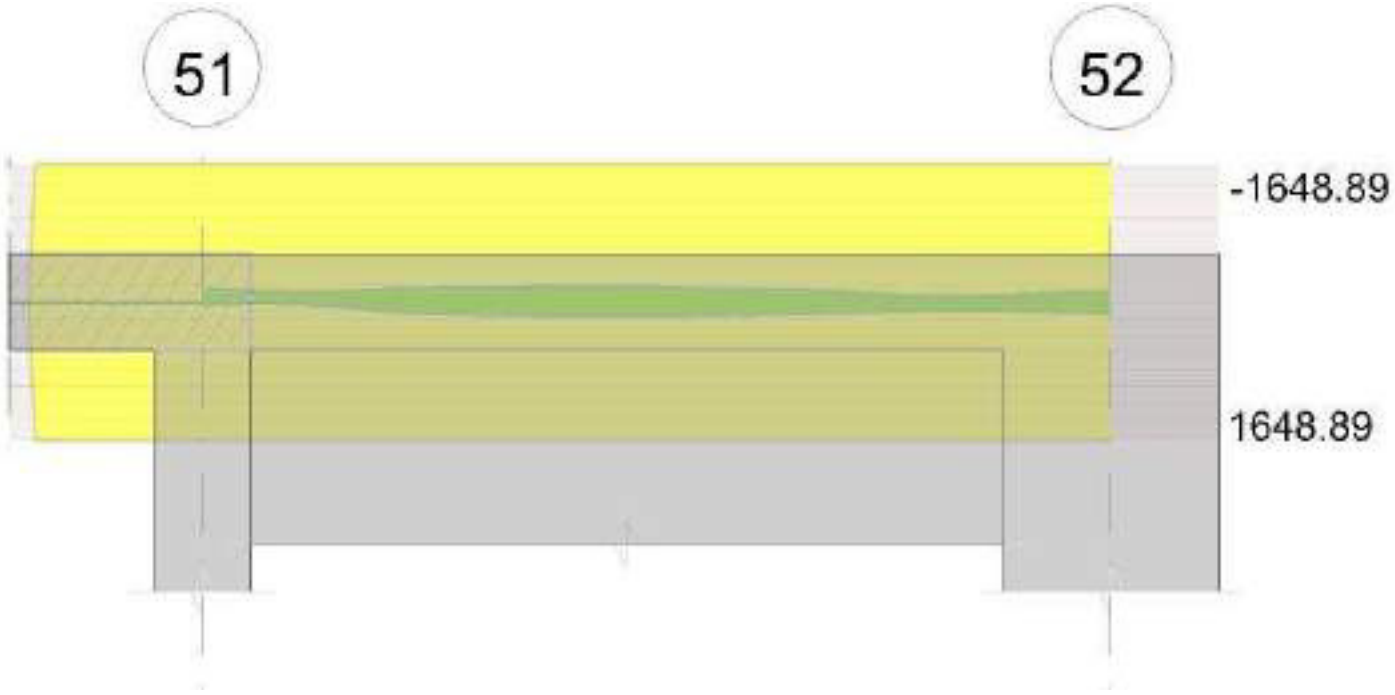


Diagramma verifica stato limite ultimo taglio

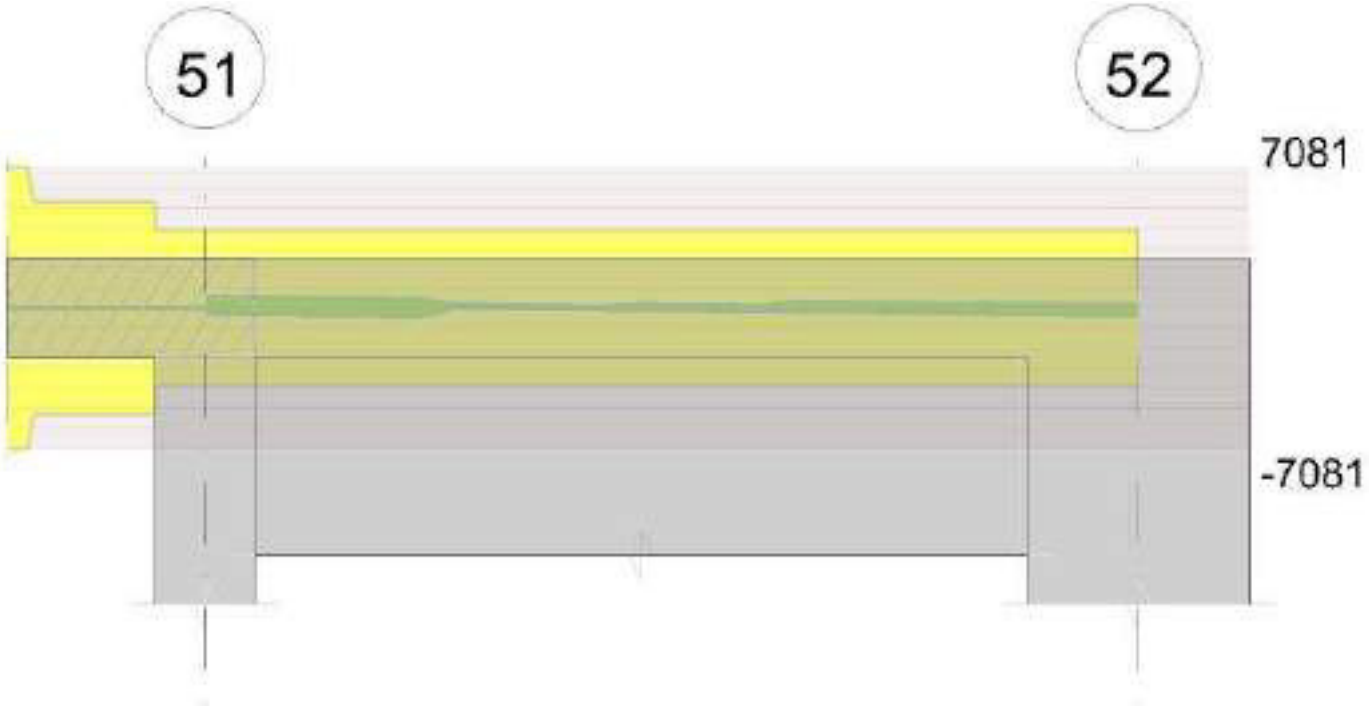
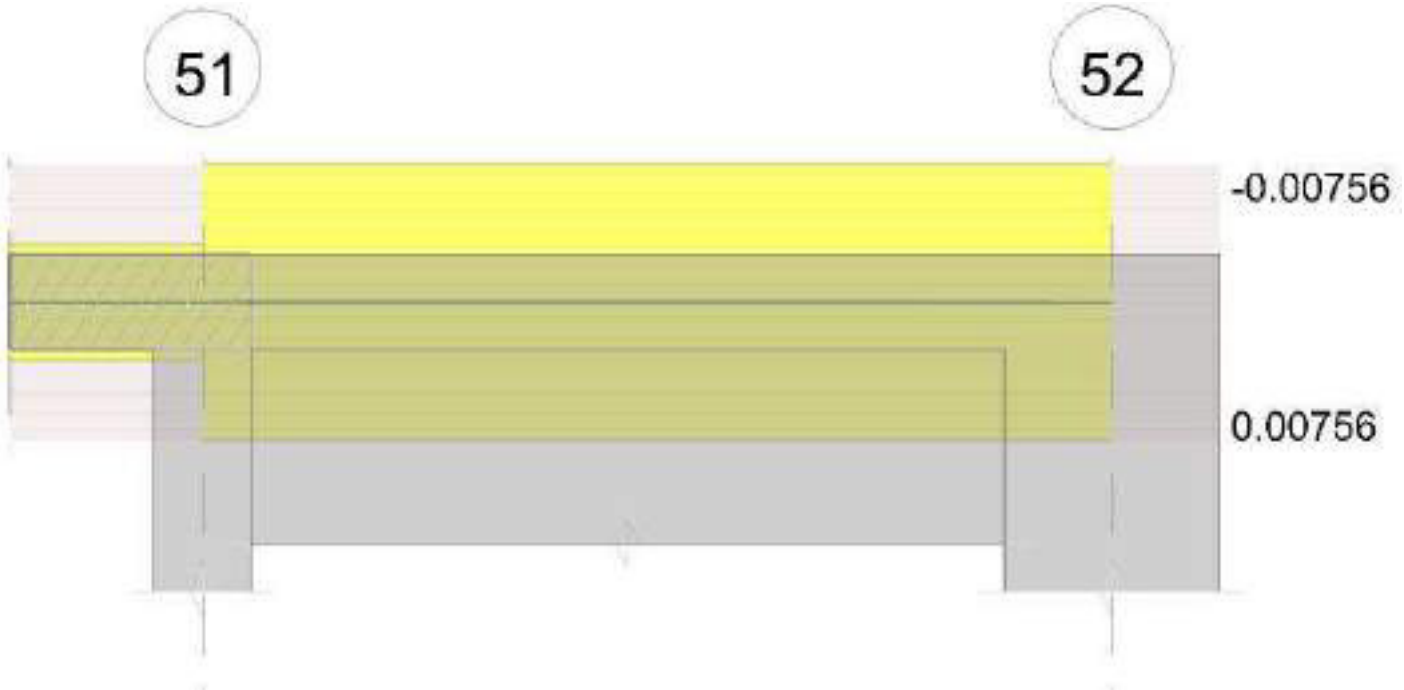


Diagramma verifica stato limite esercizio quasi permanente freccia



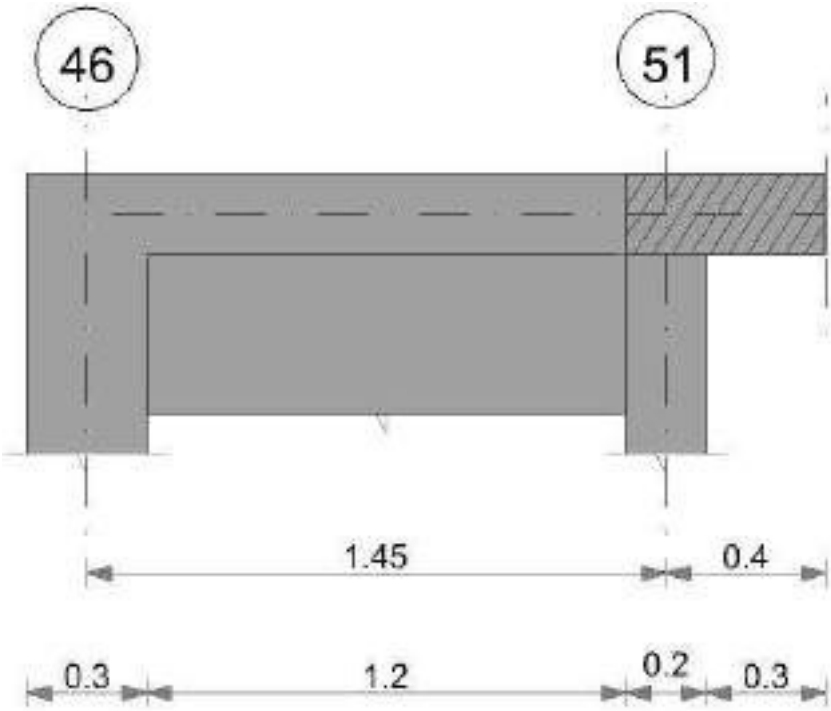
Output campate

Controllo diametro delle barre longitudinali nei nodi

Nessun nodo è da verificare

Trave a "Secondo" 46-54

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

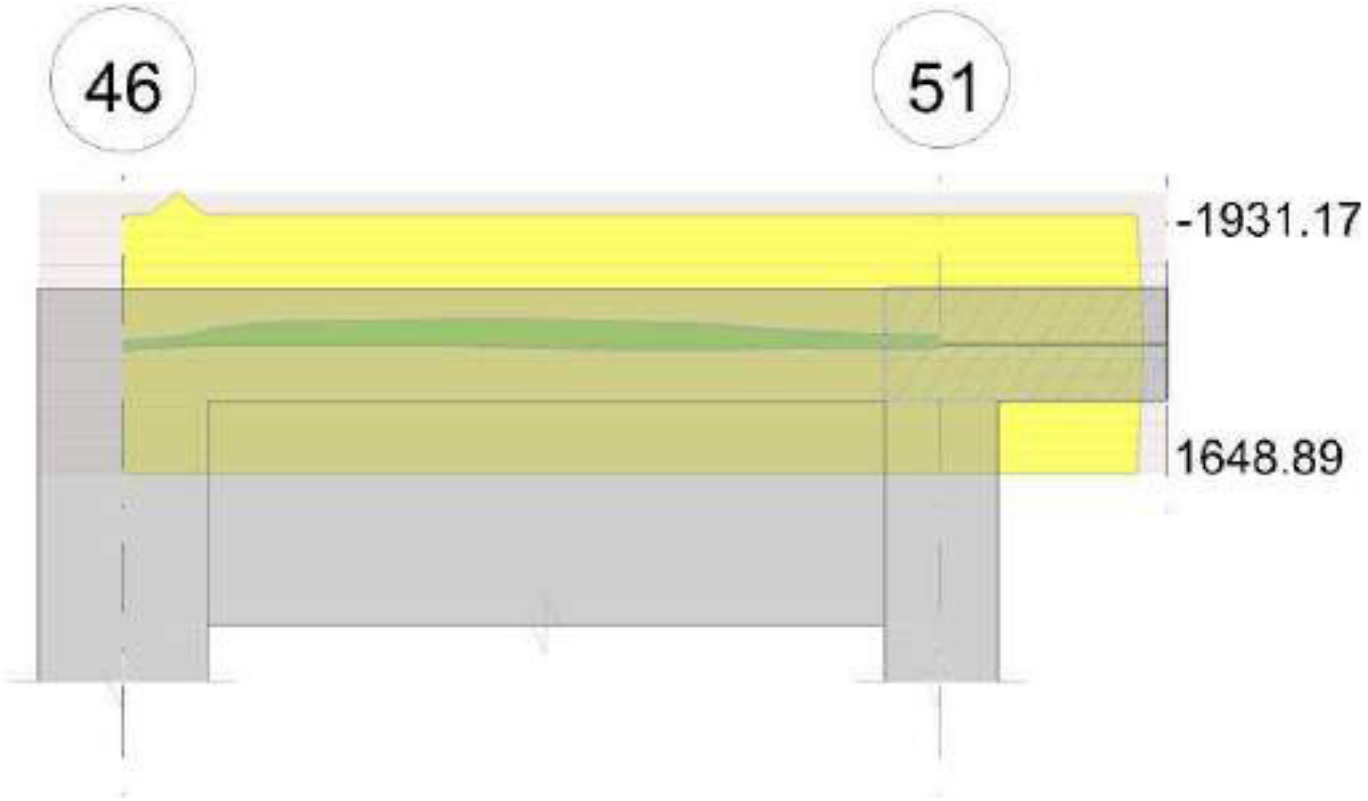


Diagramma verifica stato limite ultimo taglio

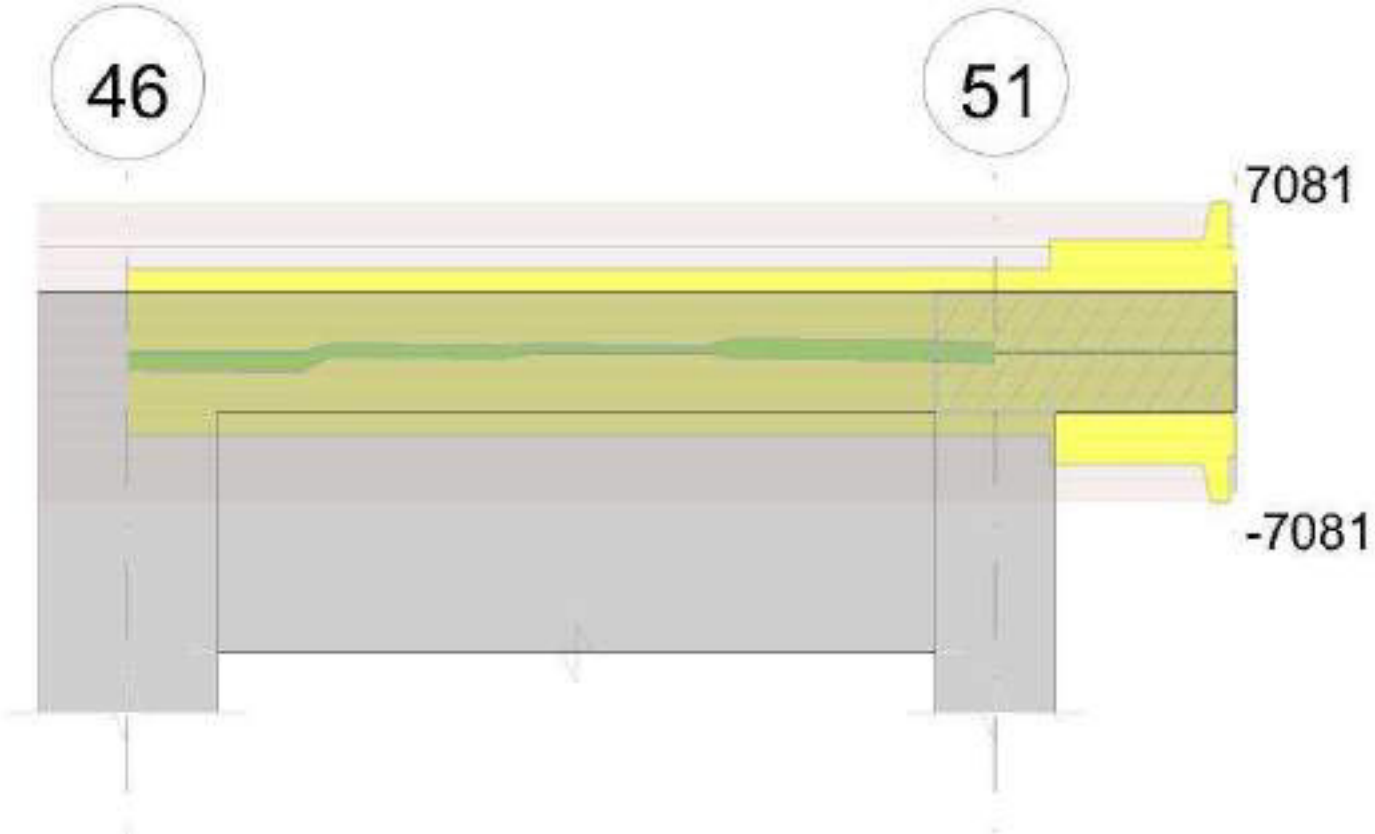
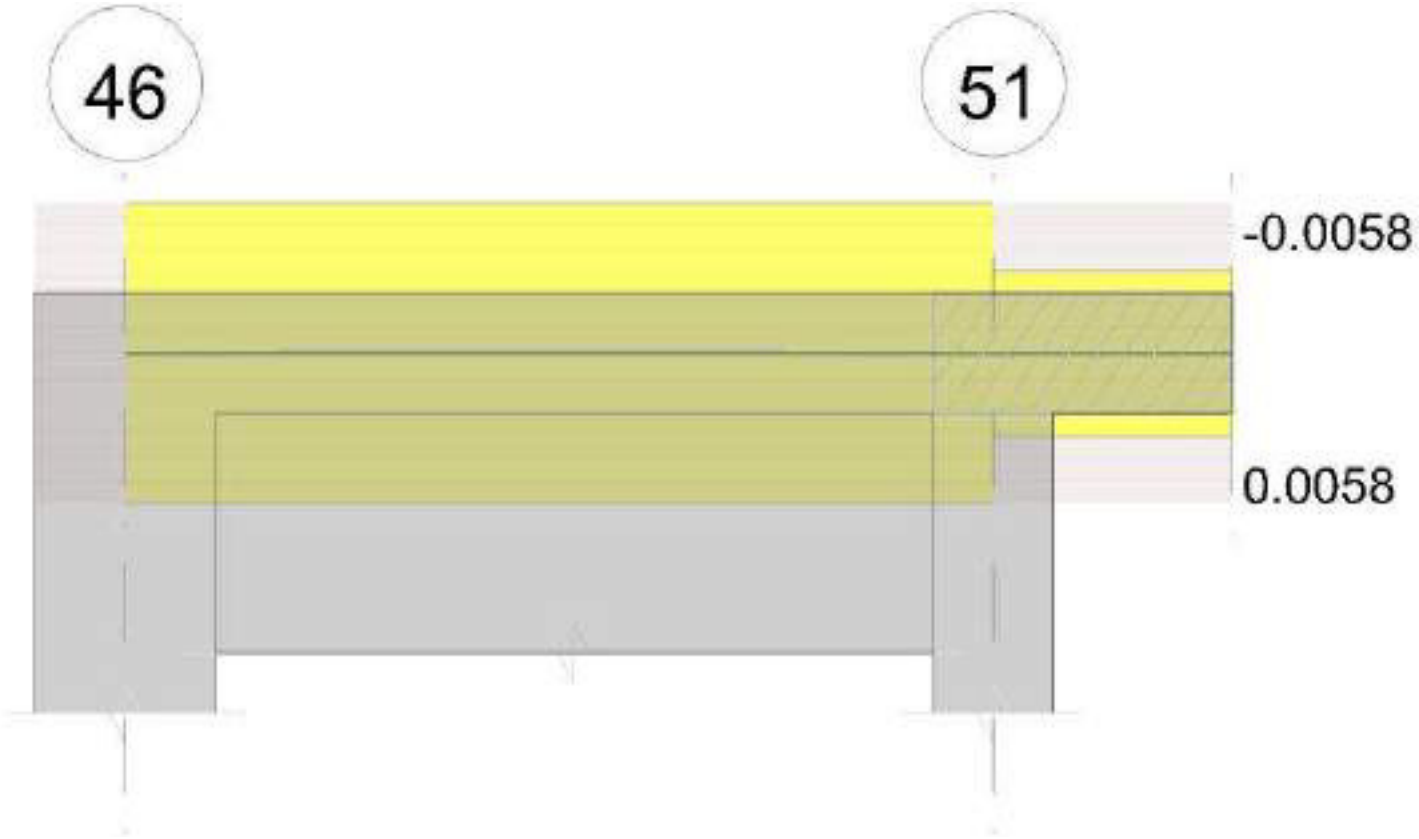


Diagramma verifica stato limite esercizio quasi permanente freccia



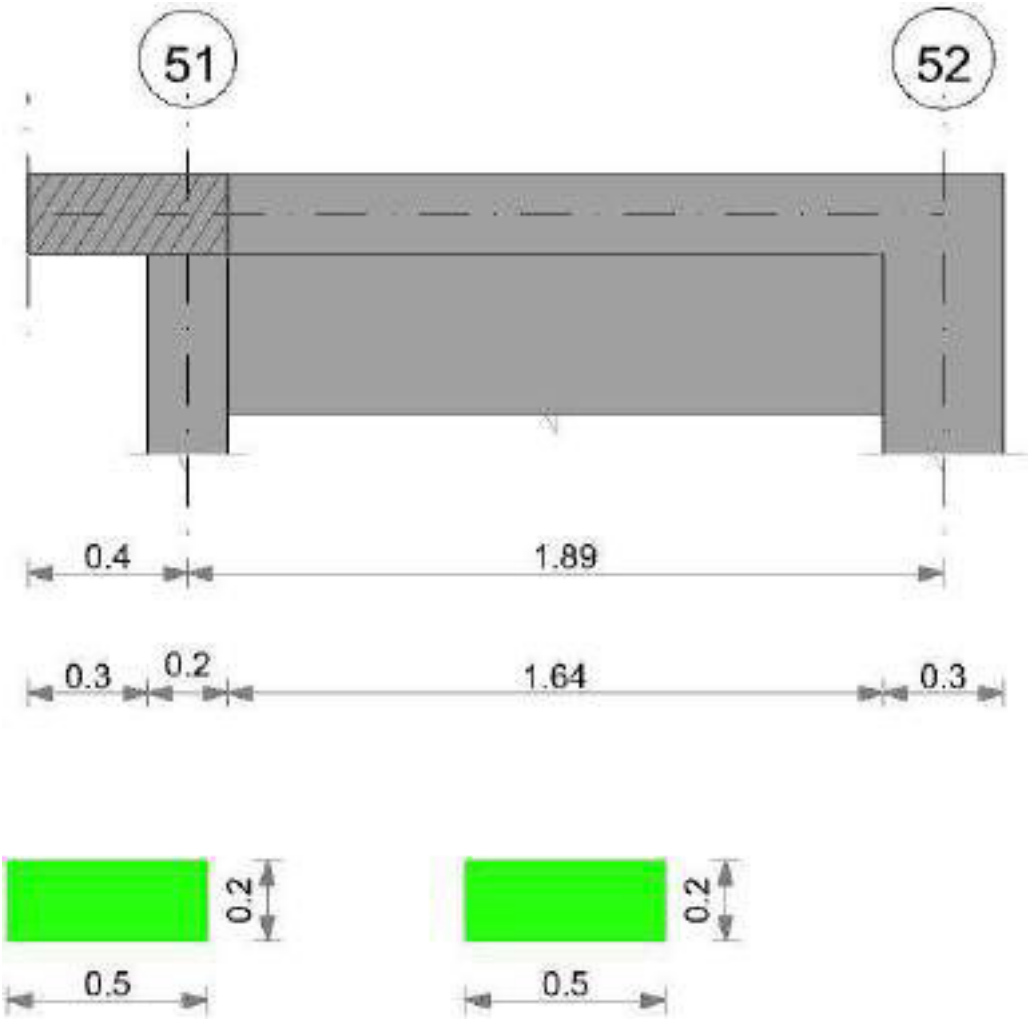
Output campate

Controllo diametro delle barre longitudinali nei nodi

Nessun nodo è da verificare

Trave a "Secondo" 51-52

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

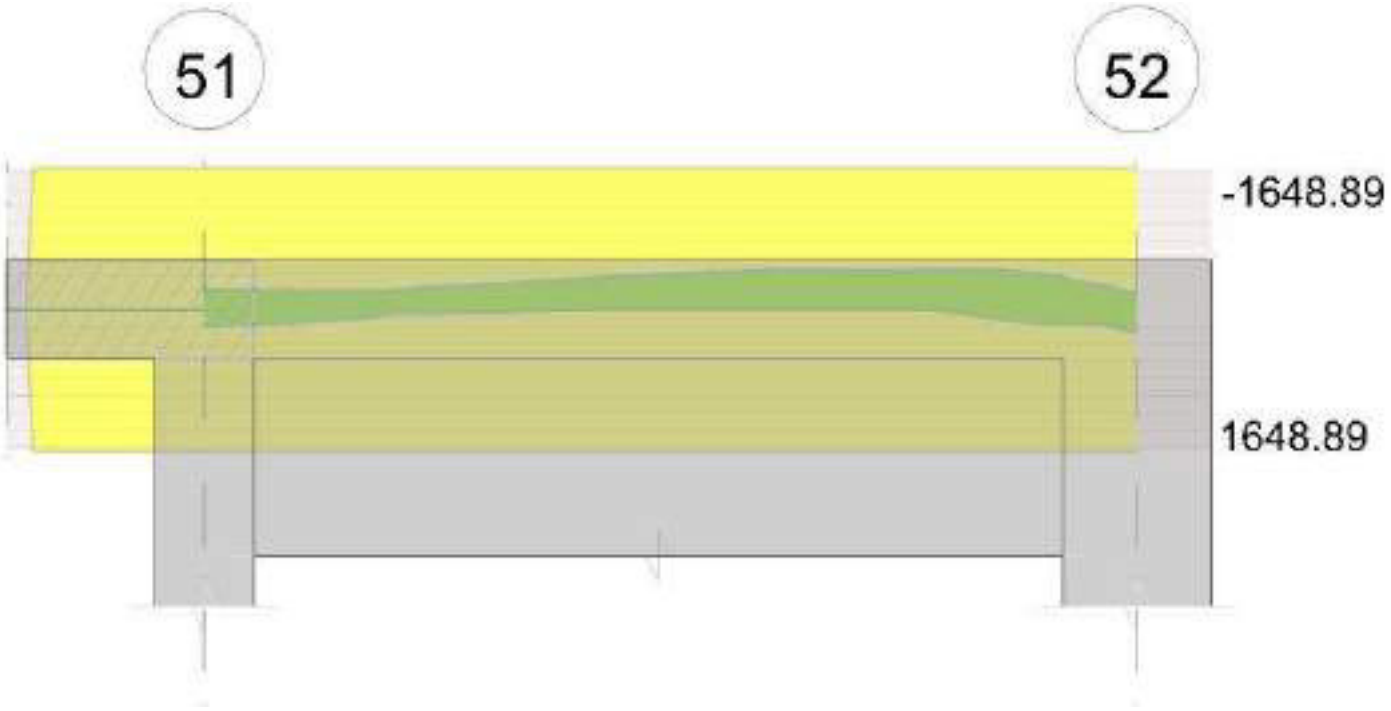


Diagramma verifica stato limite ultimo taglio

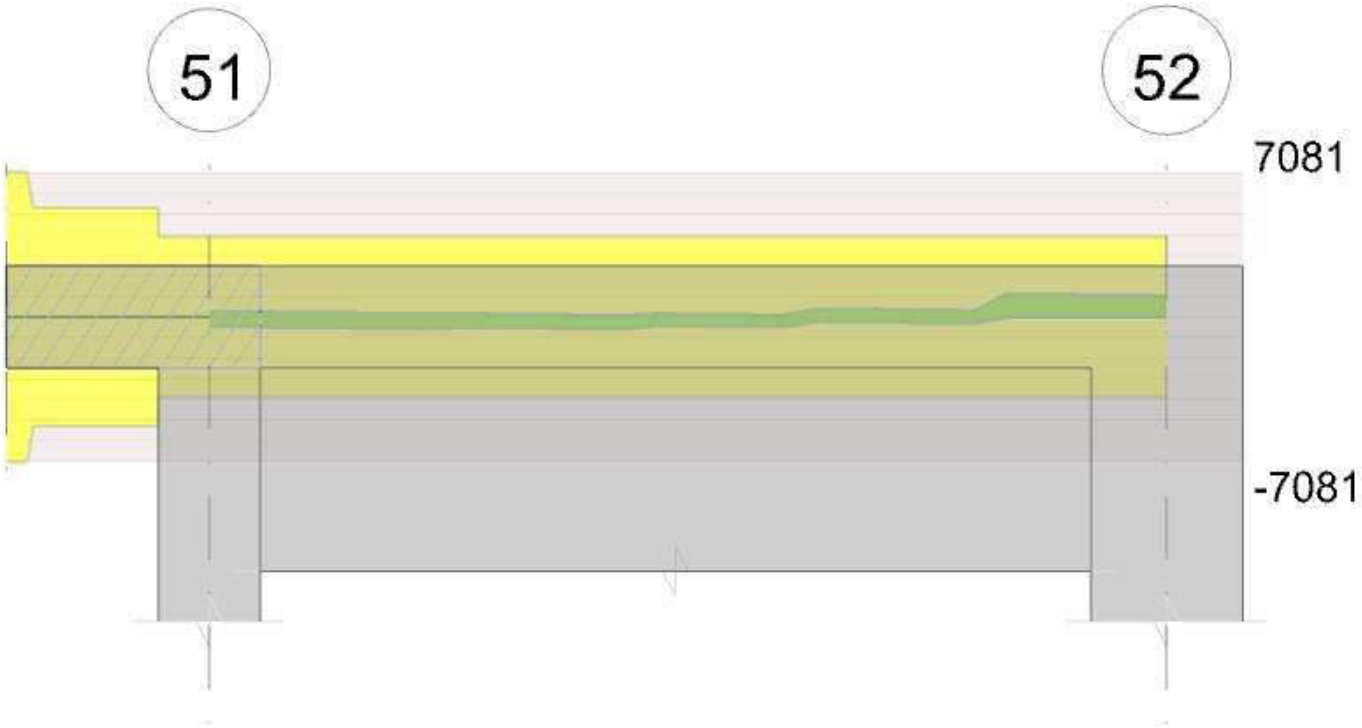
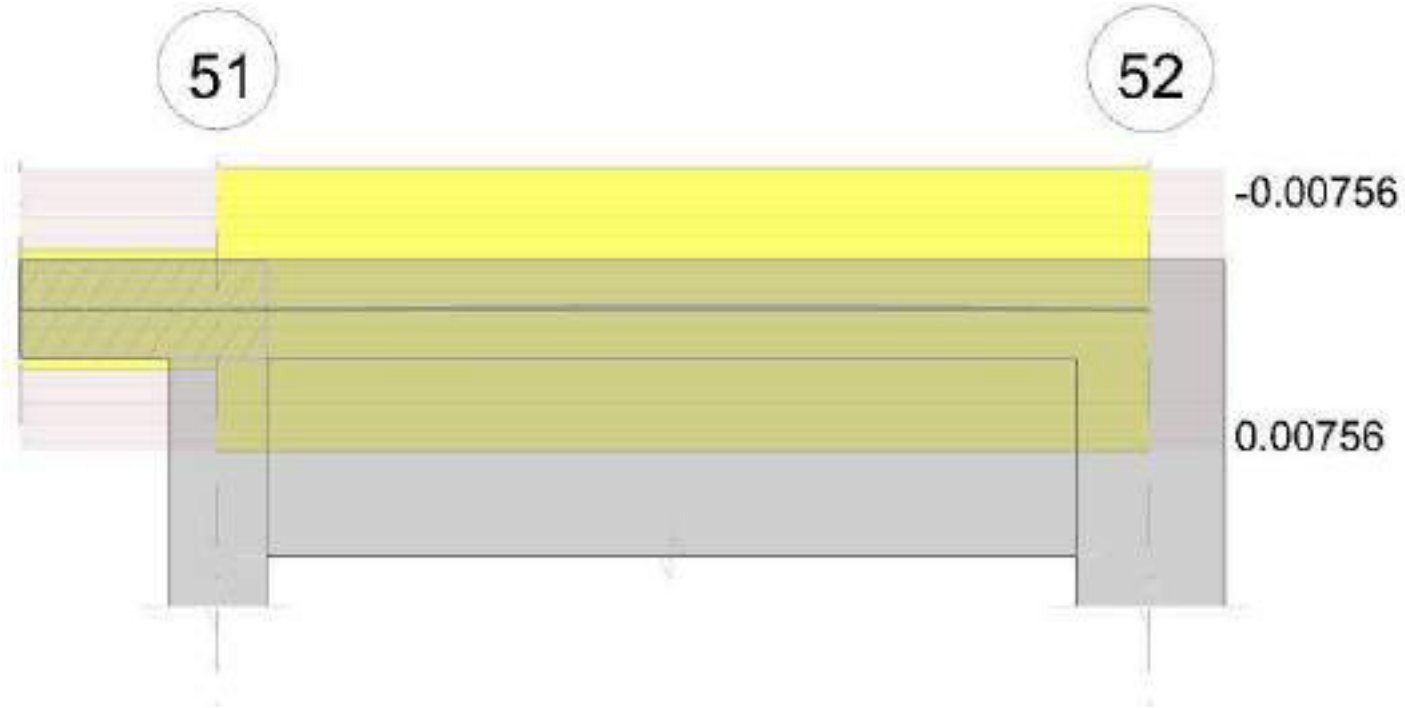


Diagramma verifica stato limite esercizio quasi permanente freccia



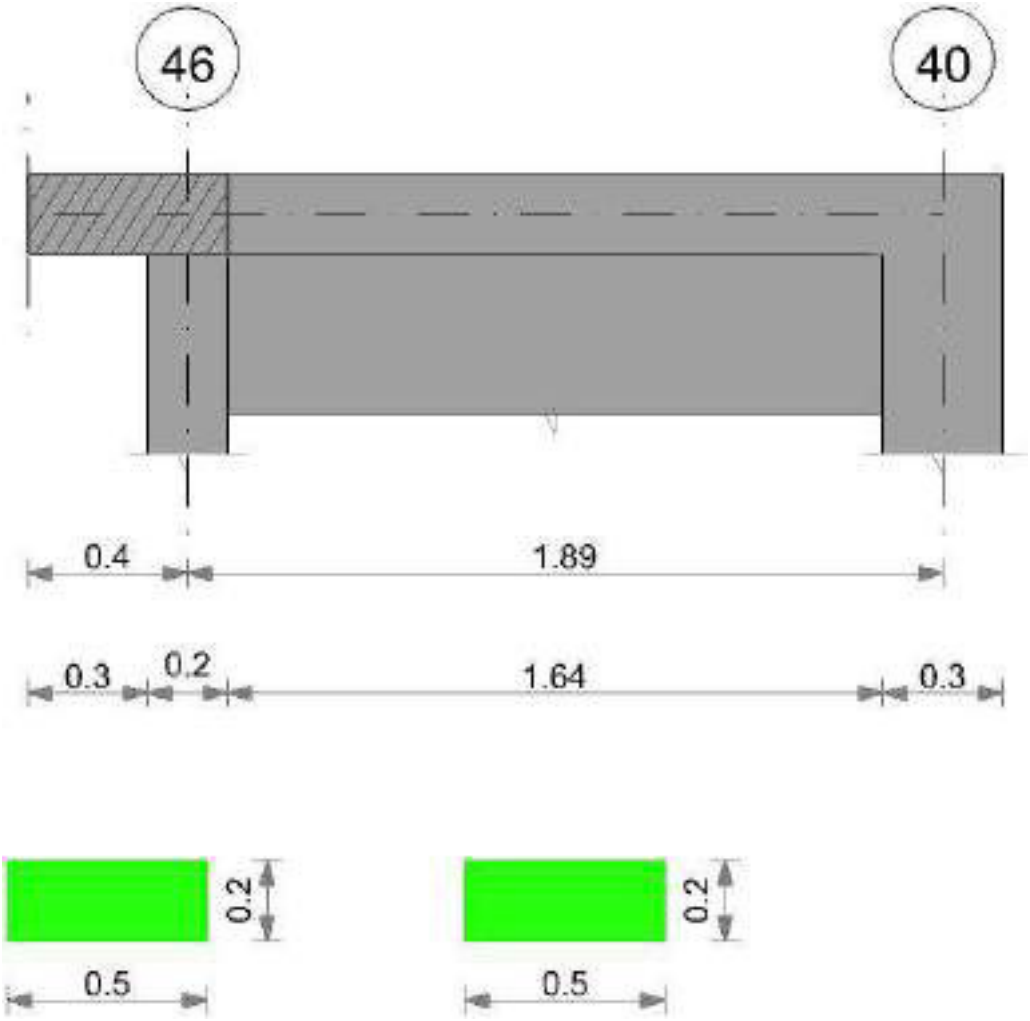
Output campate

Controllo diametro delle barre longitudinali nei nodi

Nessun nodo è da verificare

Trave a "Sottotetto" 37-40

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

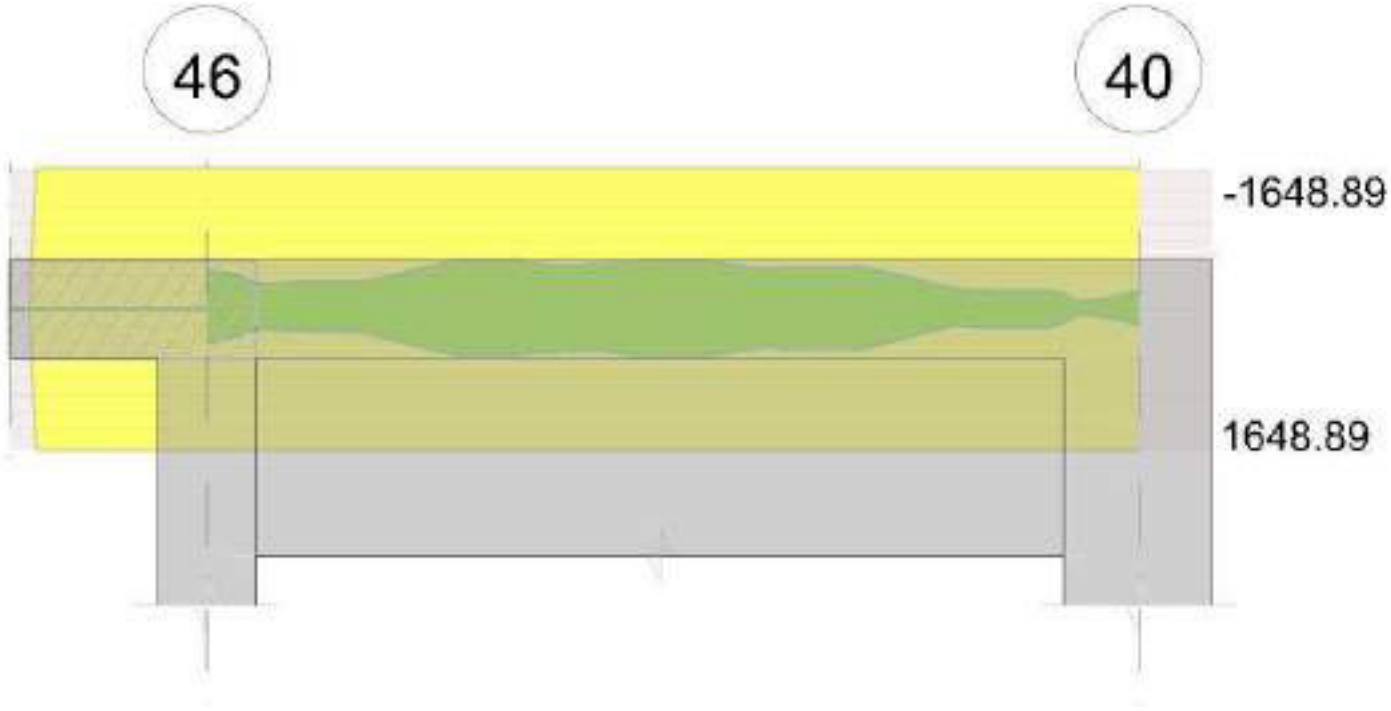


Diagramma verifica stato limite ultimo taglio

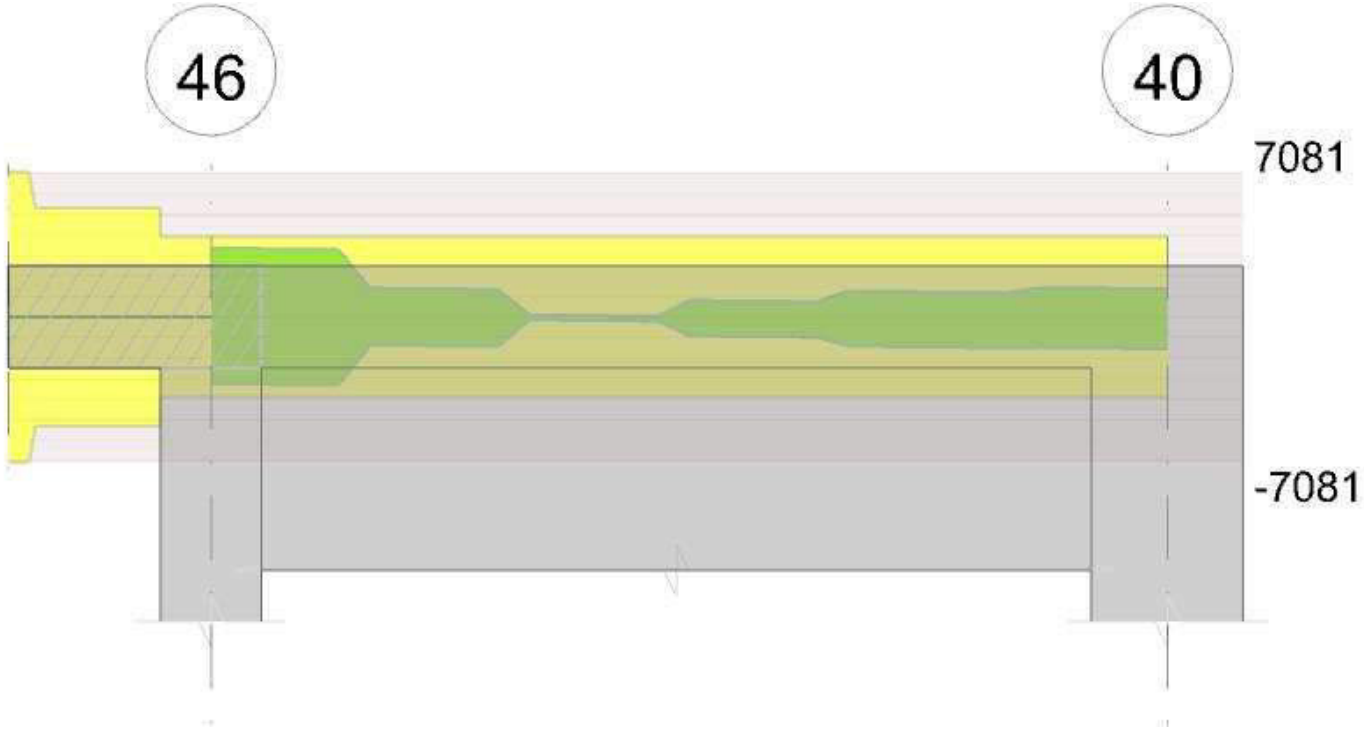
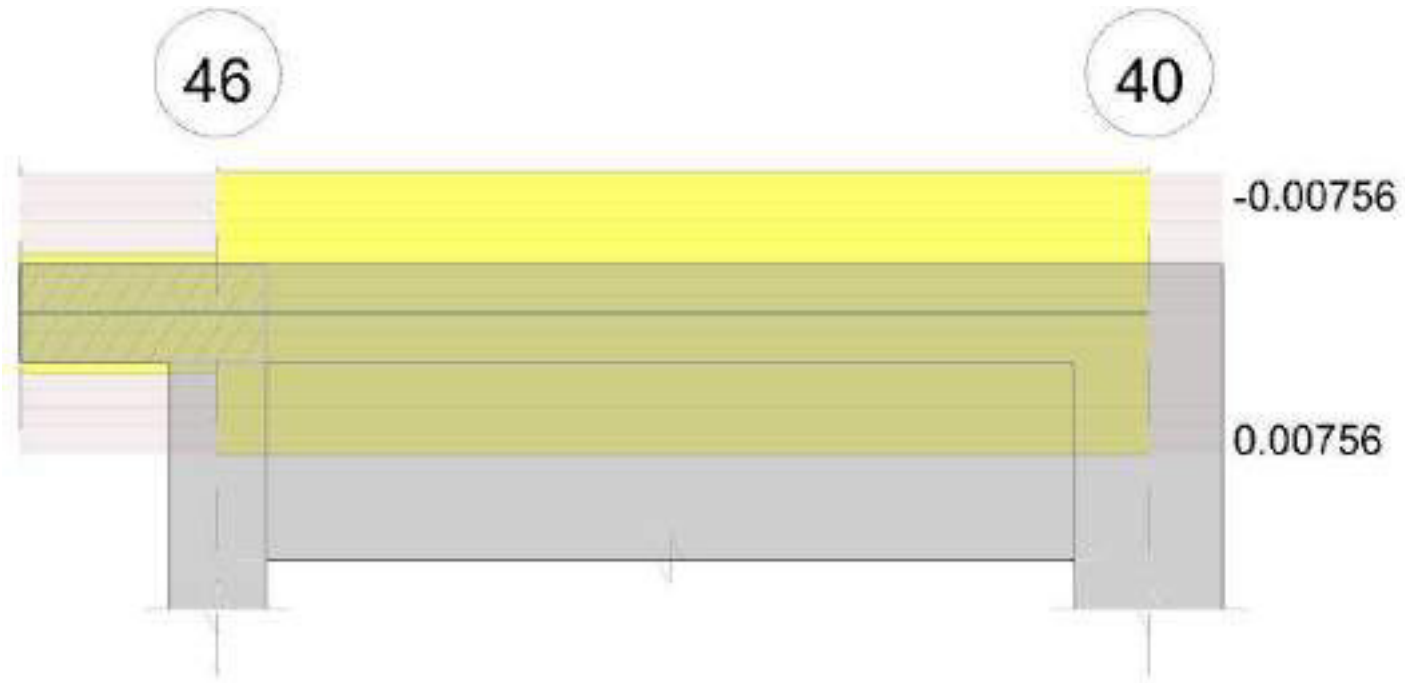


Diagramma verifica stato limite esercizio quasi permanente freccia



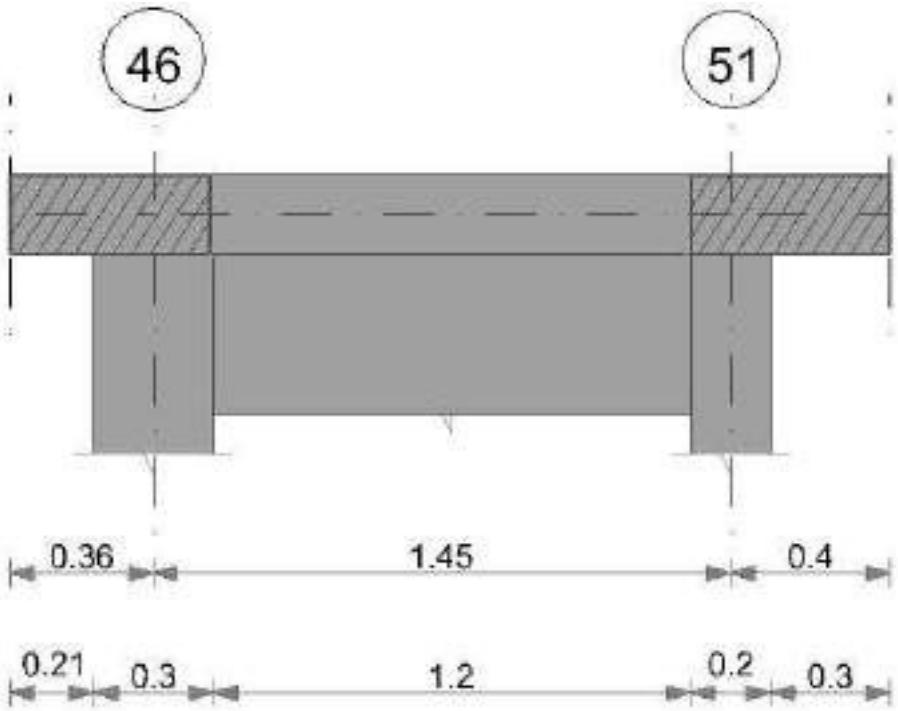
Output campate

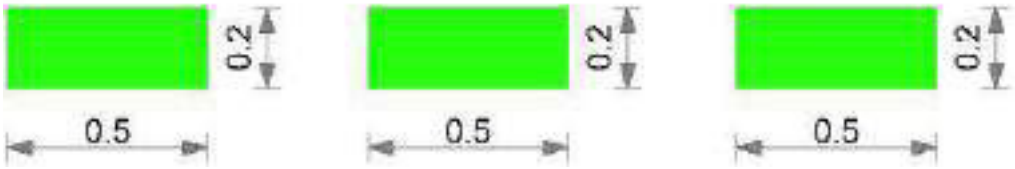
Controllo diametro delle barre longitudinali nei nodi

Nessun nodo è da verificare

Trave a "Sottotetto" 37-54

Geometria





Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

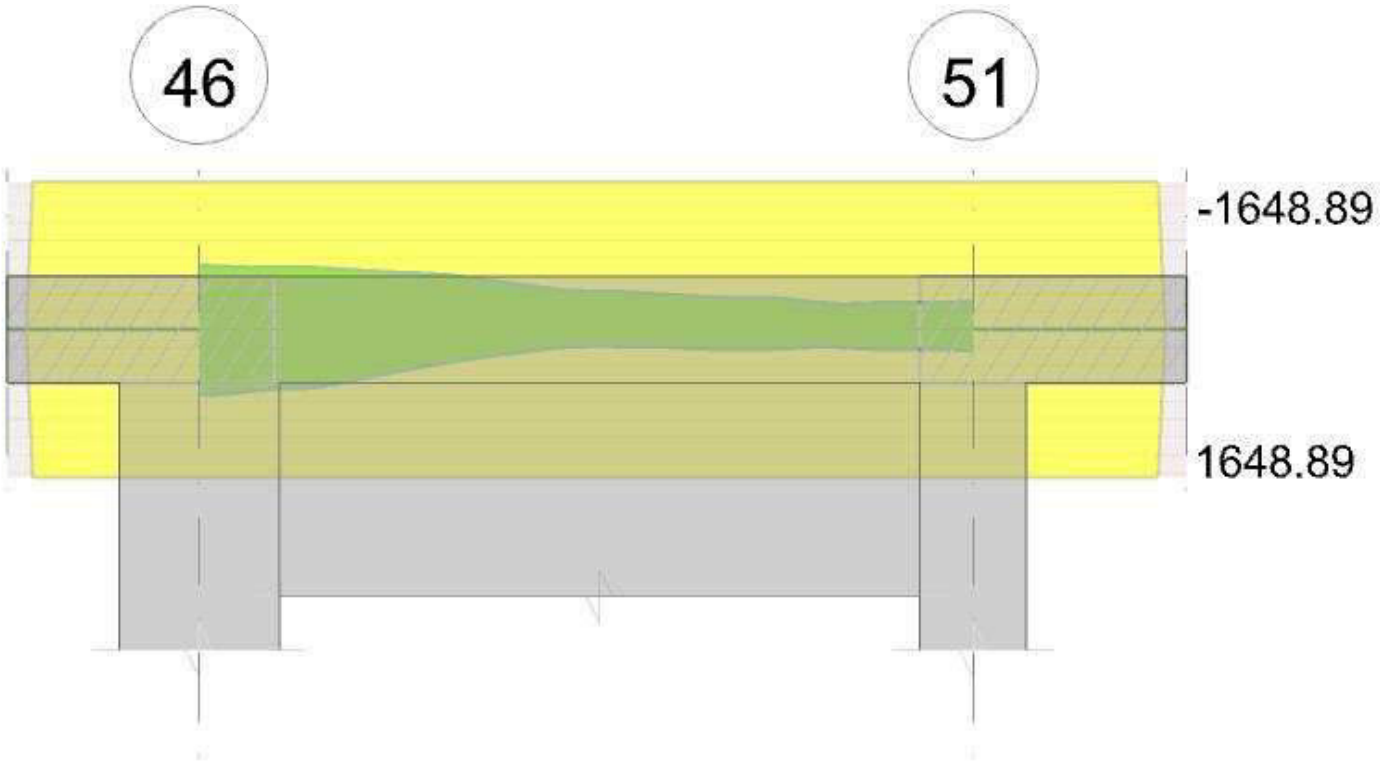


Diagramma verifica stato limite ultimo taglio

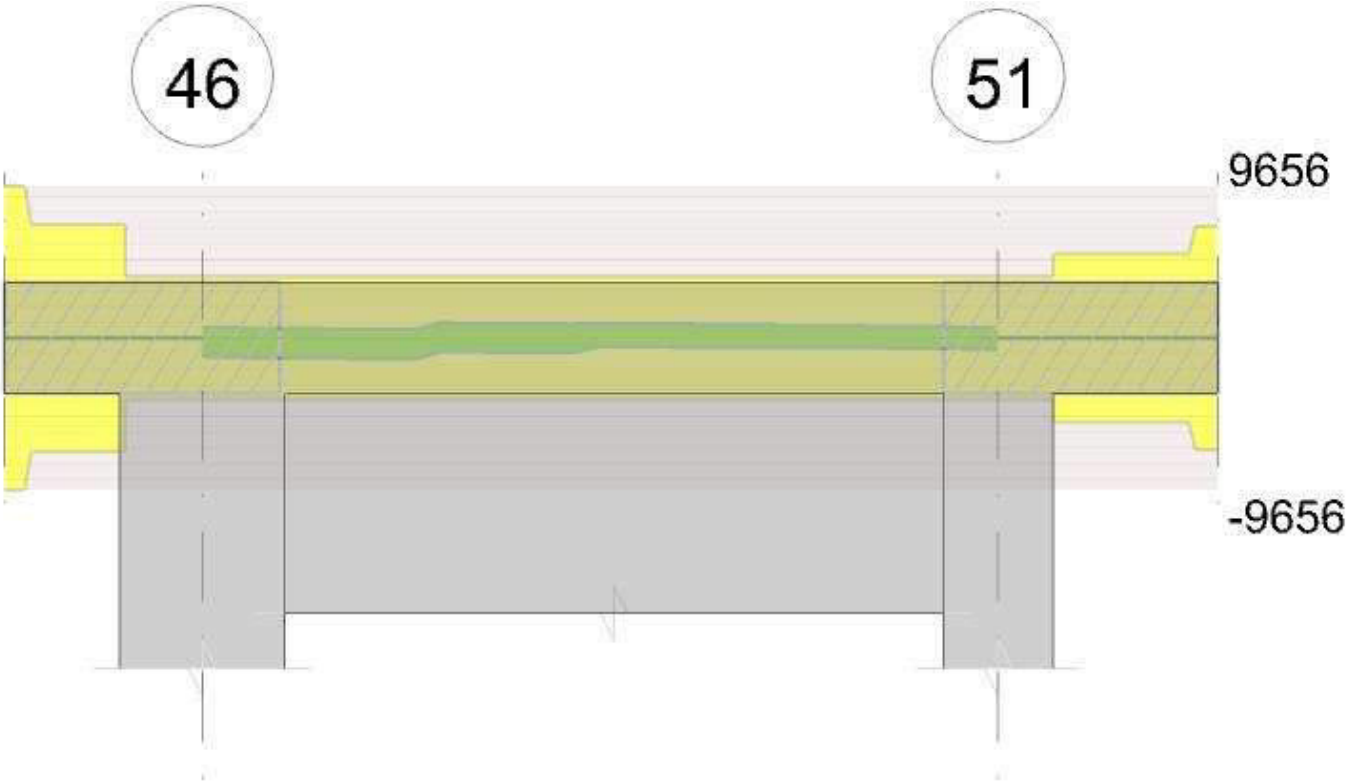
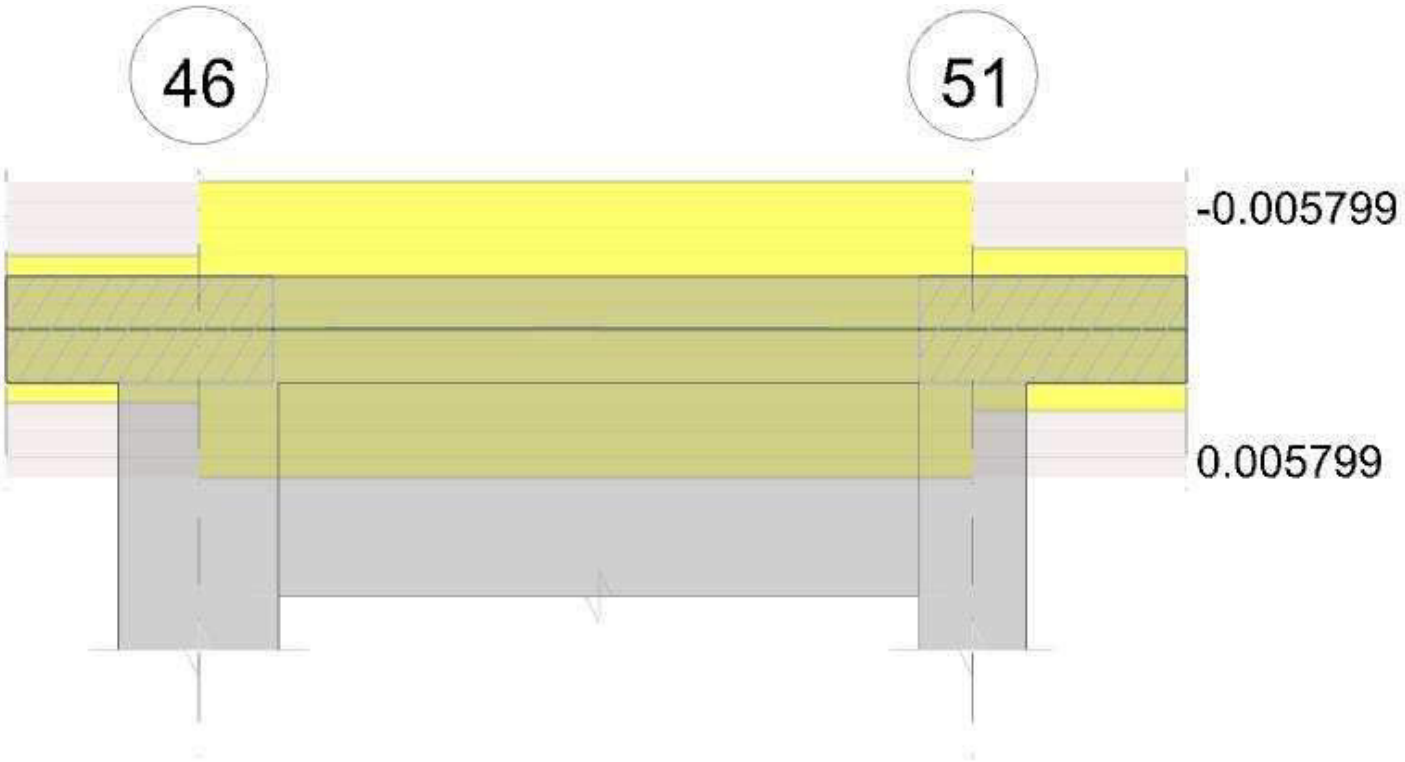


Diagramma verifica stato limite esercizio quasi permanente freccia



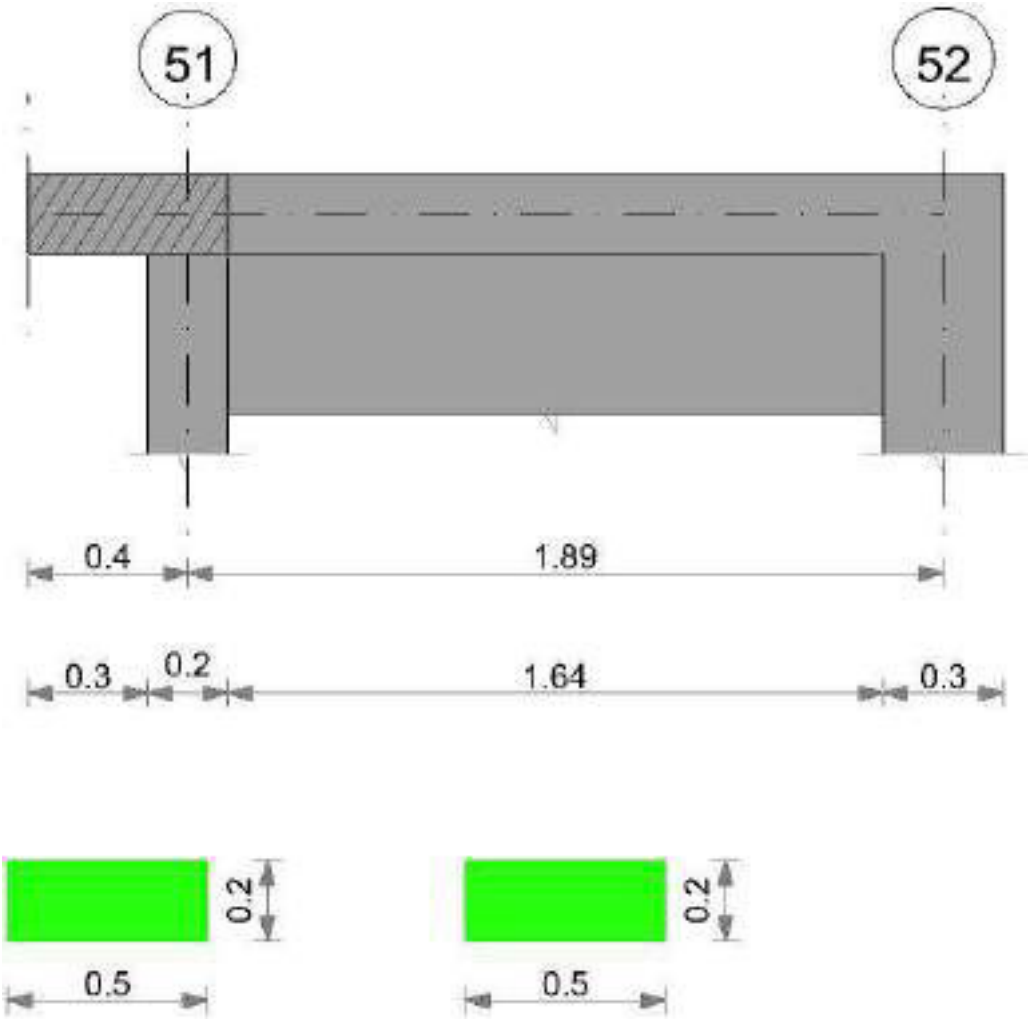
Output campate

Controllo diametro delle barre longitudinali nei nodi

Nessun nodo è da verificare

Trave a "Sottotetto" 51-52

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

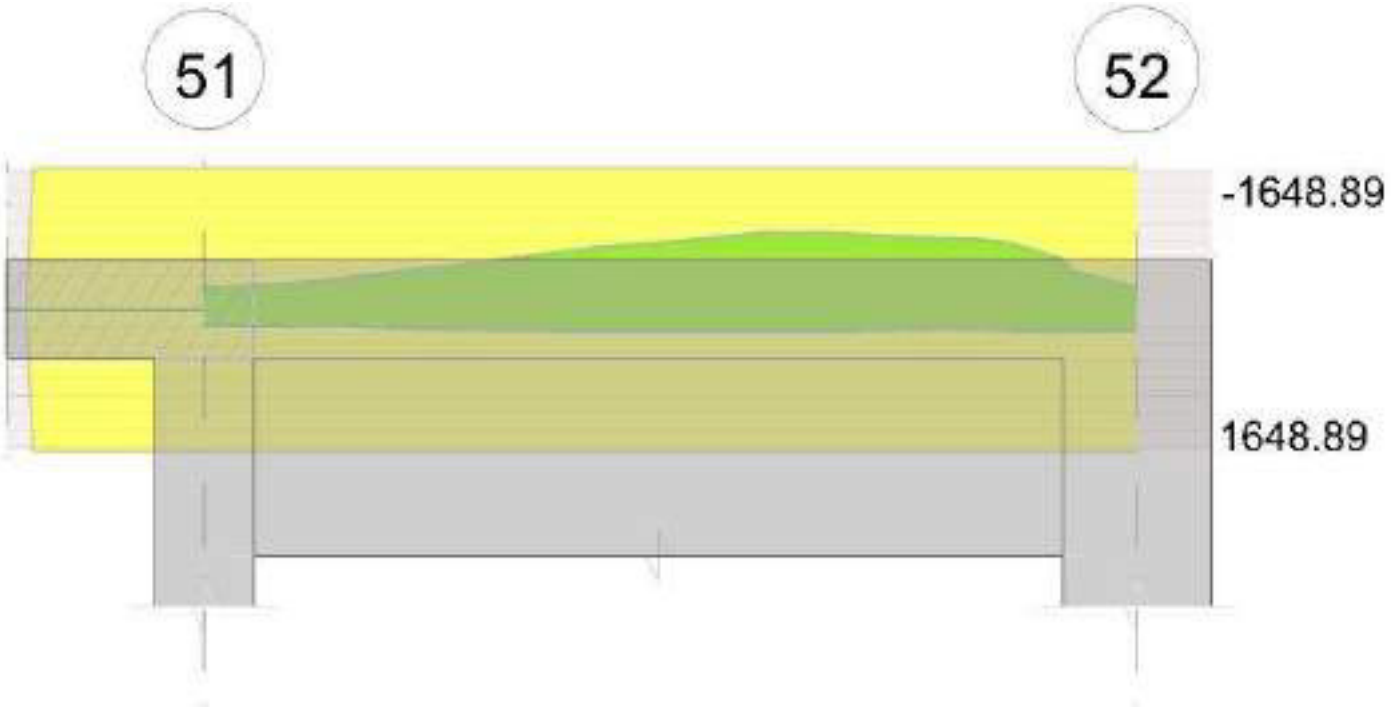


Diagramma verifica stato limite ultimo taglio

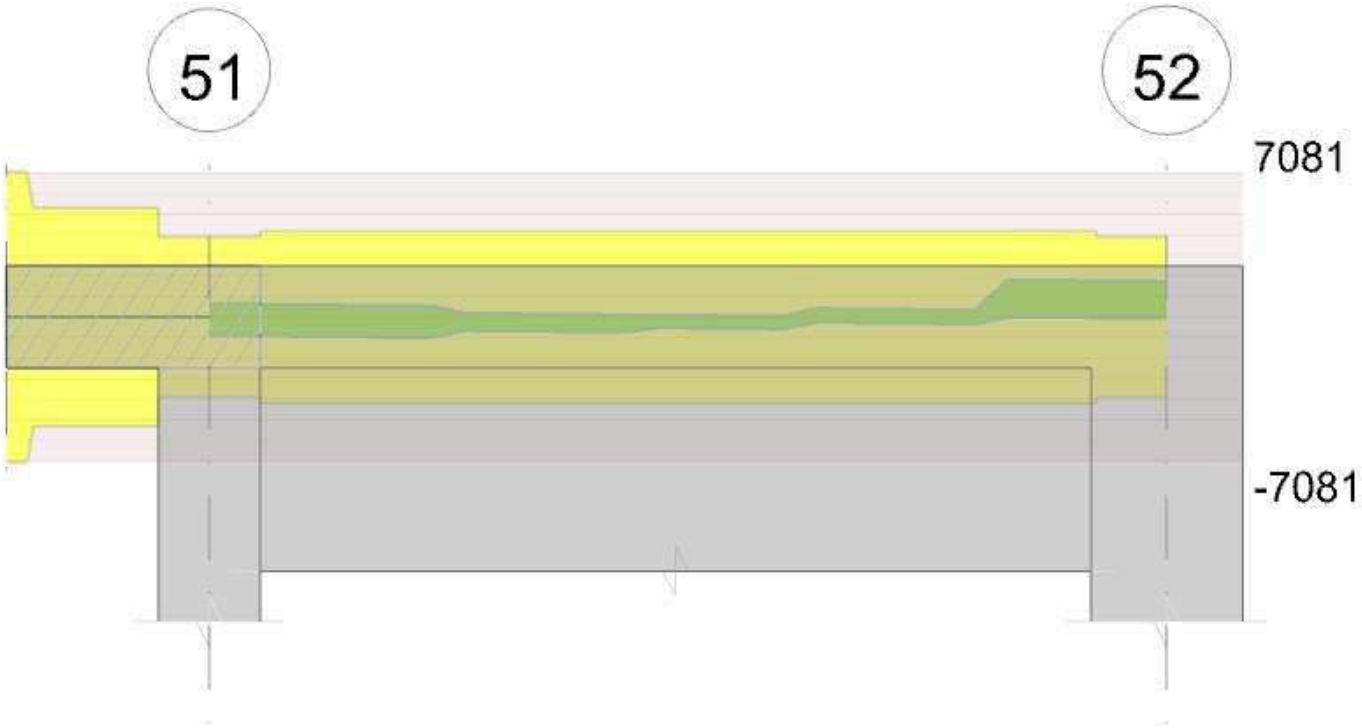
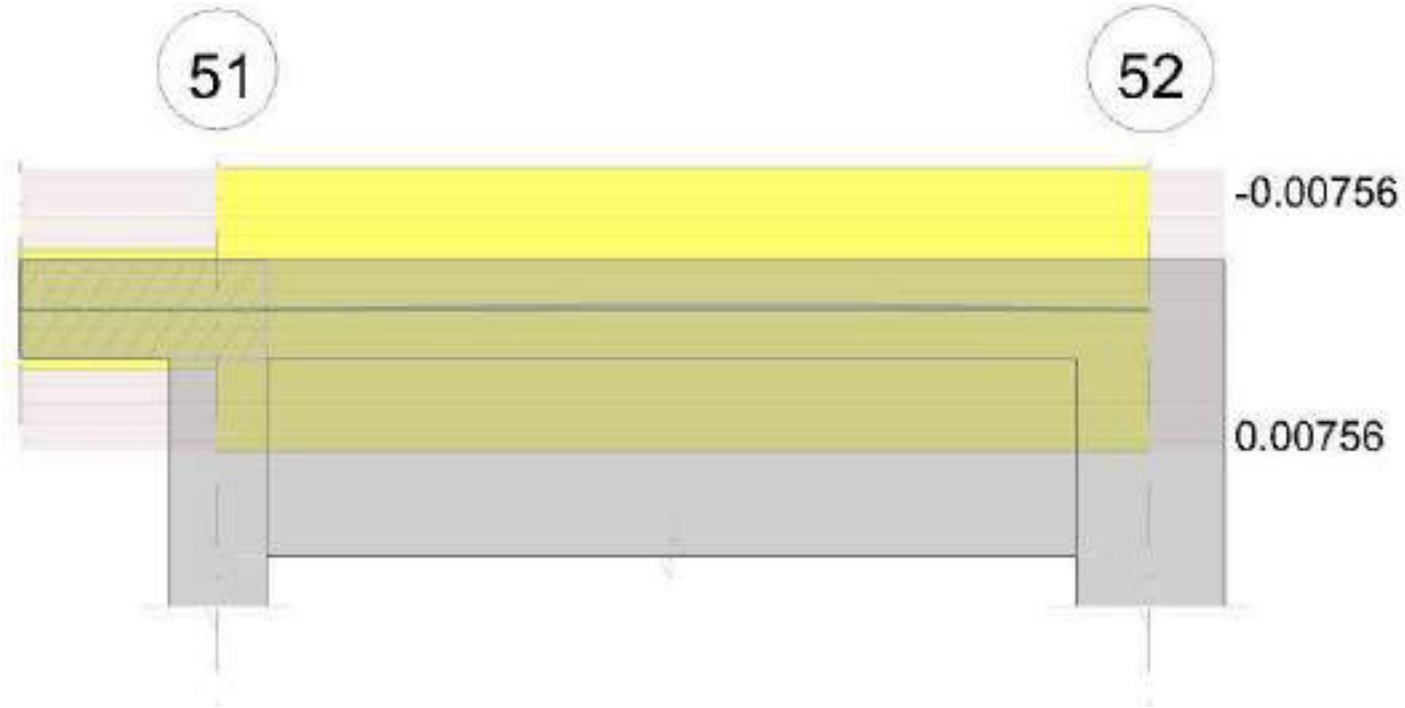


Diagramma verifica stato limite esercizio quasi permanente freccia



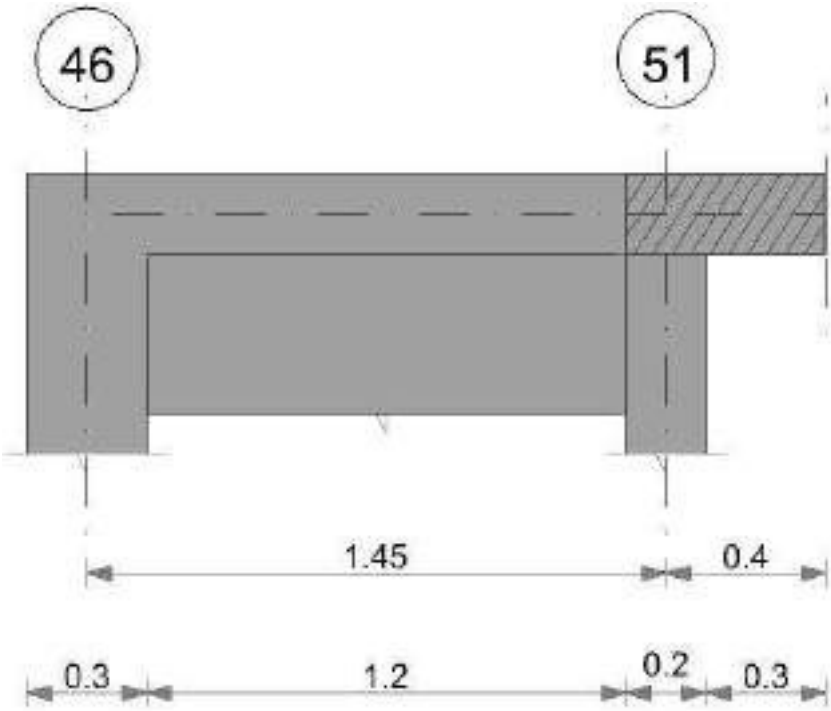
Output campate

Controllo diametro delle barre longitudinali nei nodi

Nessun nodo è da verificare

Trave a "Terzo" 46-54

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

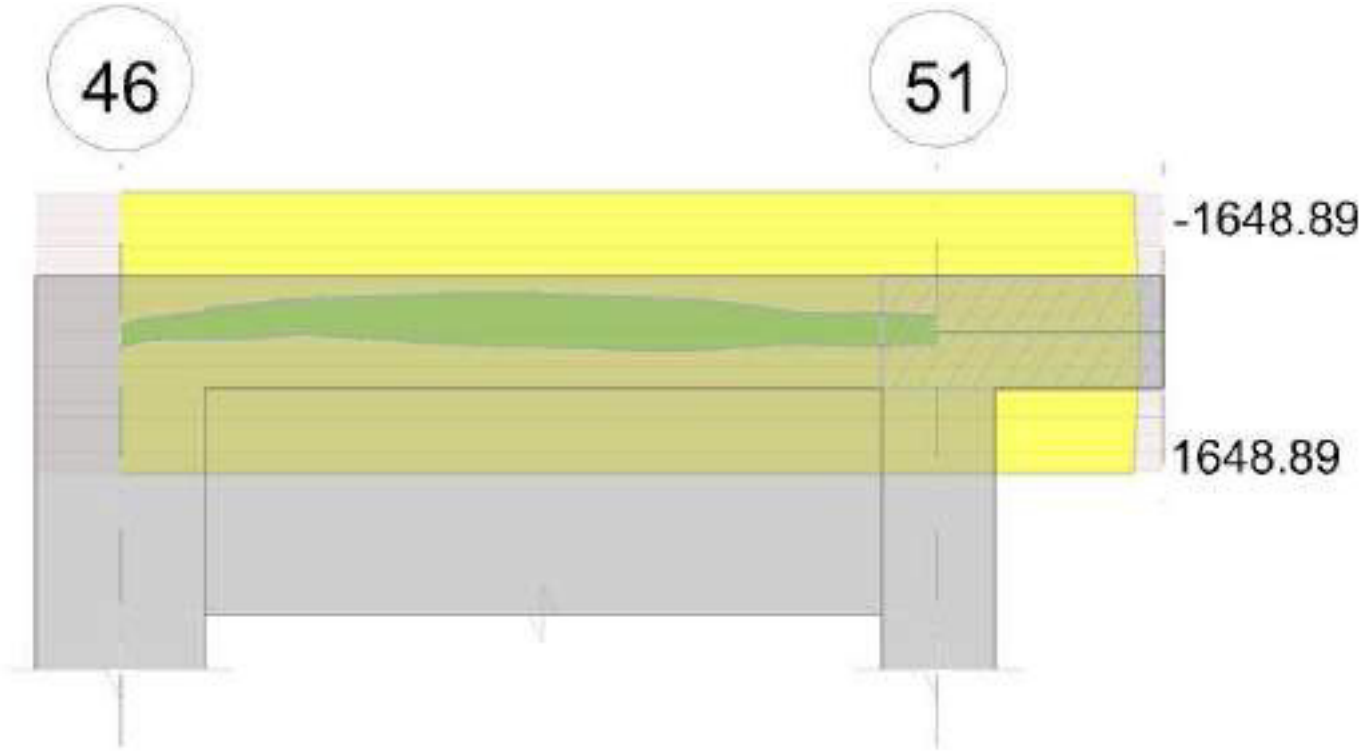


Diagramma verifica stato limite ultimo taglio

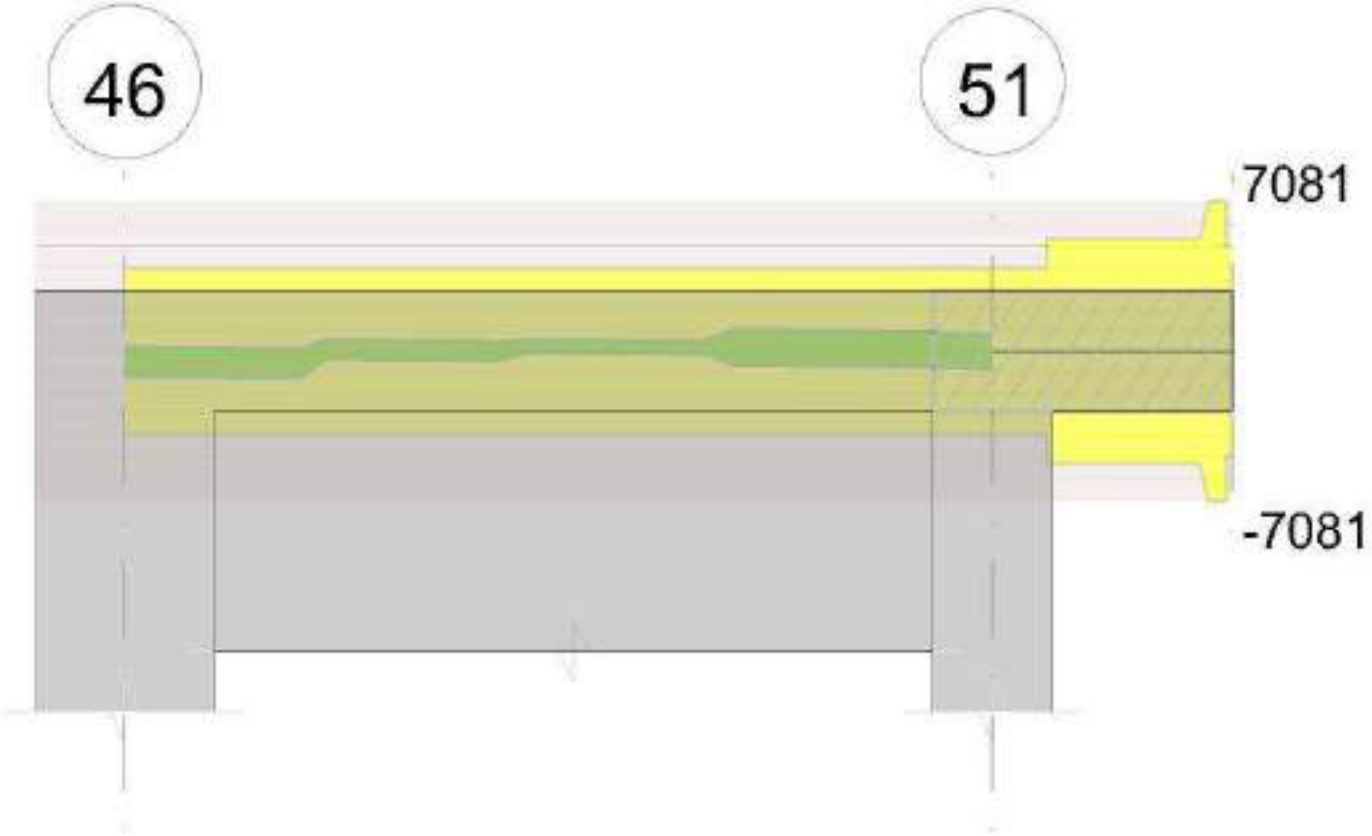
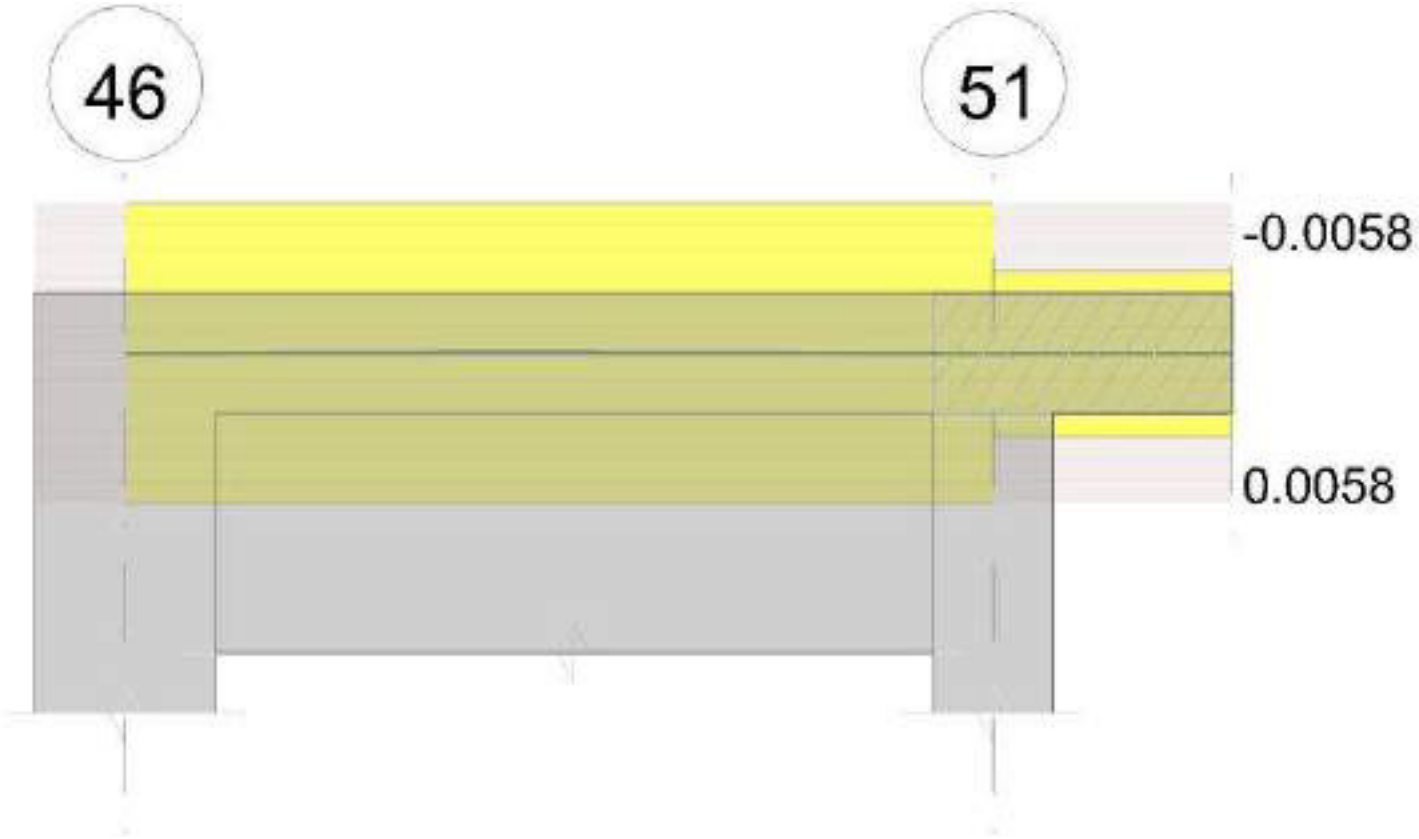


Diagramma verifica stato limite esercizio quasi permanente freccia



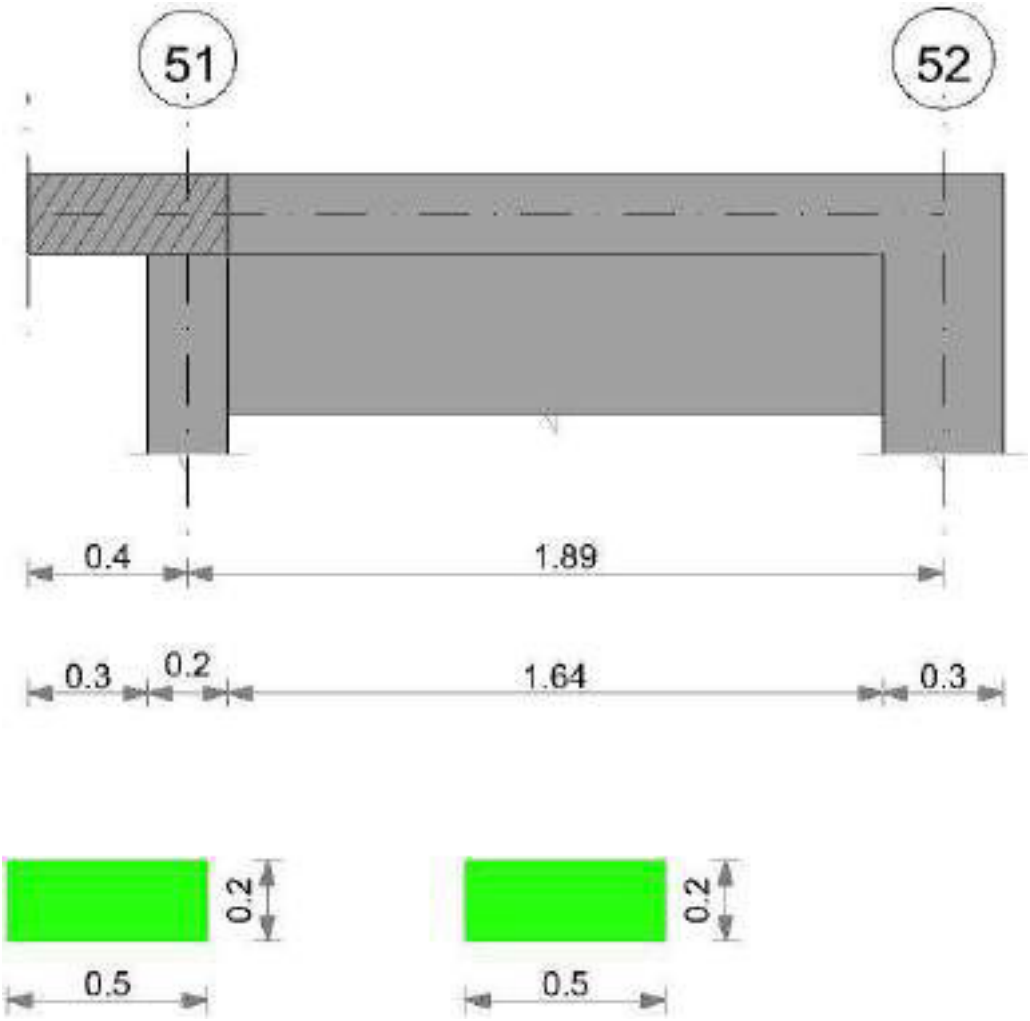
Output campate

Controllo diametro delle barre longitudinali nei nodi

Nessun nodo è da verificare

Trave a "Terzo" 51-52

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 50x20	Rettangolare	0.5	0.2	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

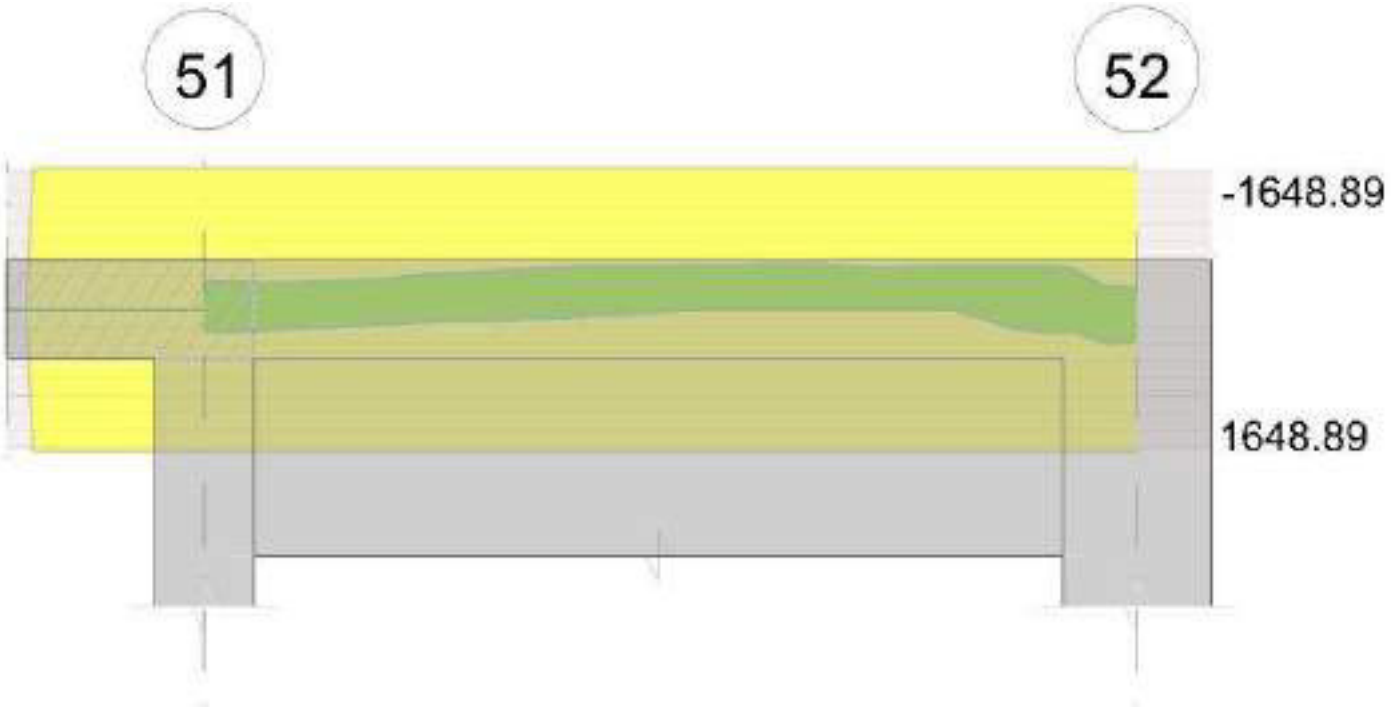


Diagramma verifica stato limite ultimo taglio

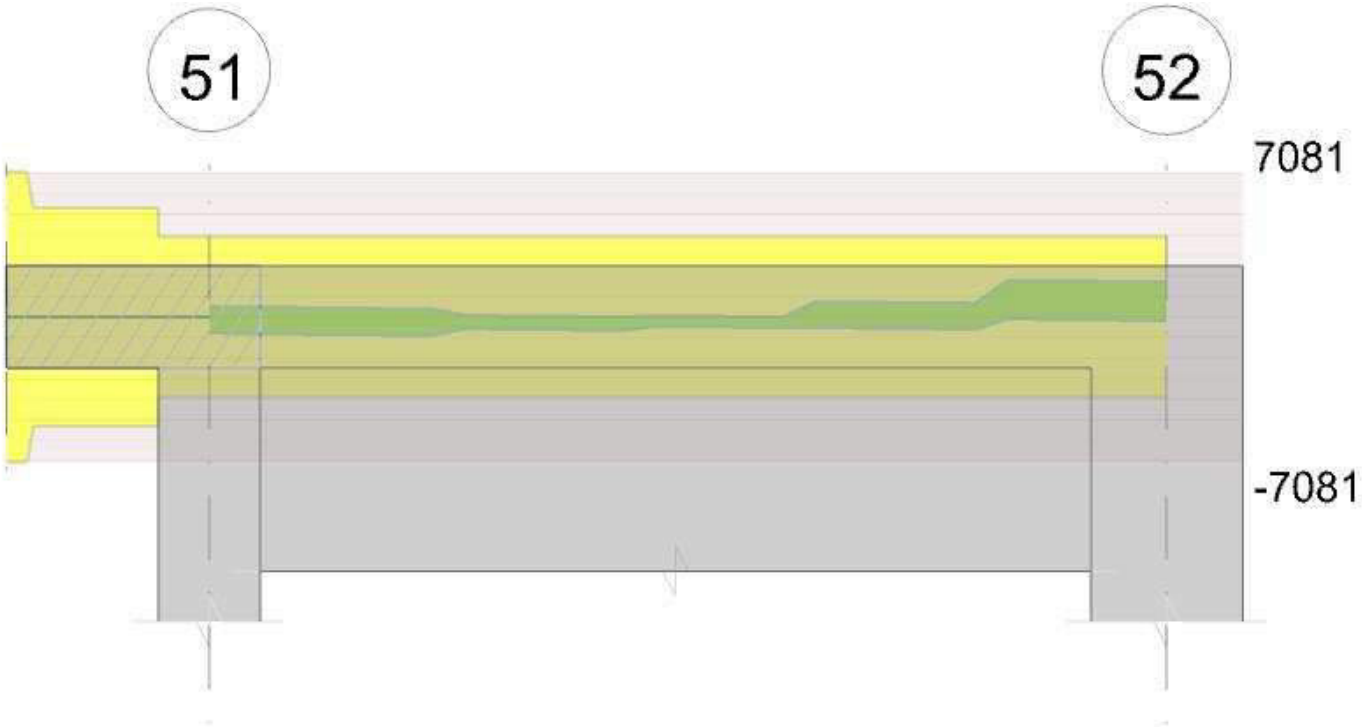
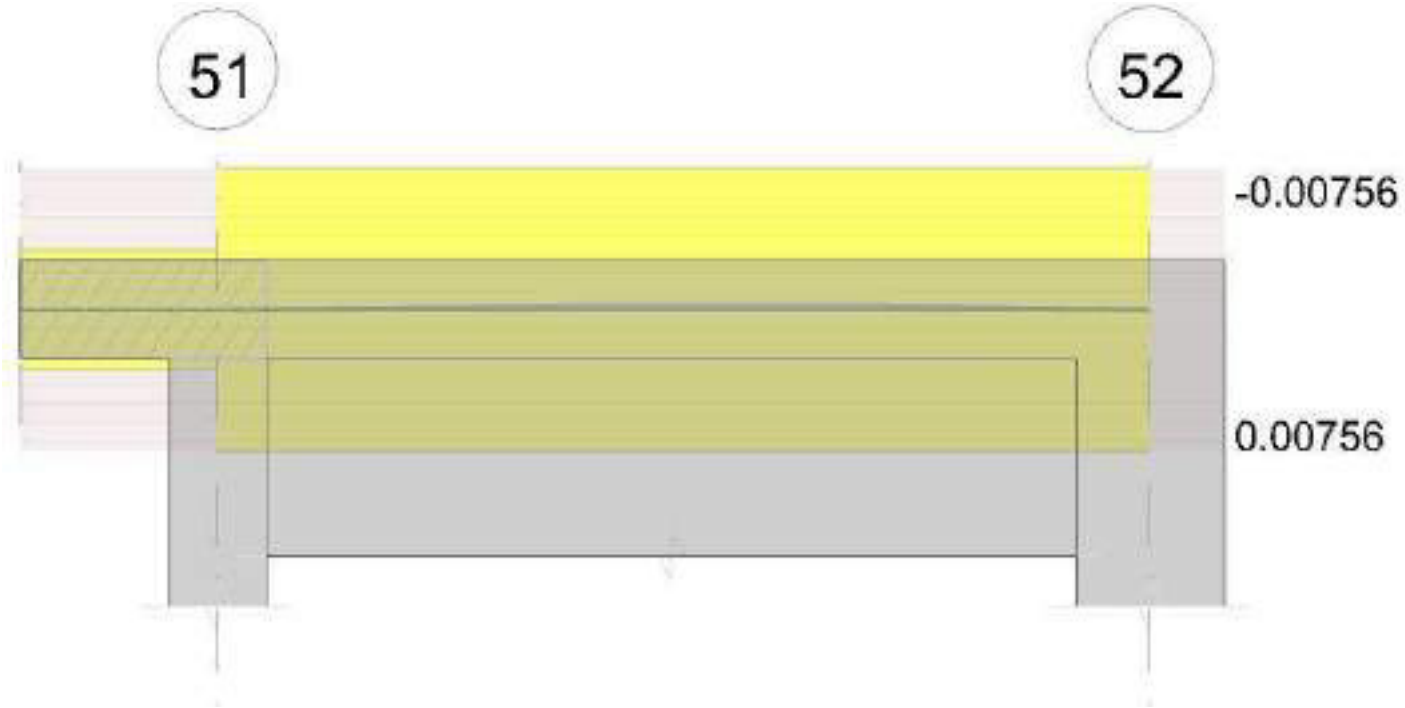


Diagramma verifica stato limite esercizio quasi permanente freccia



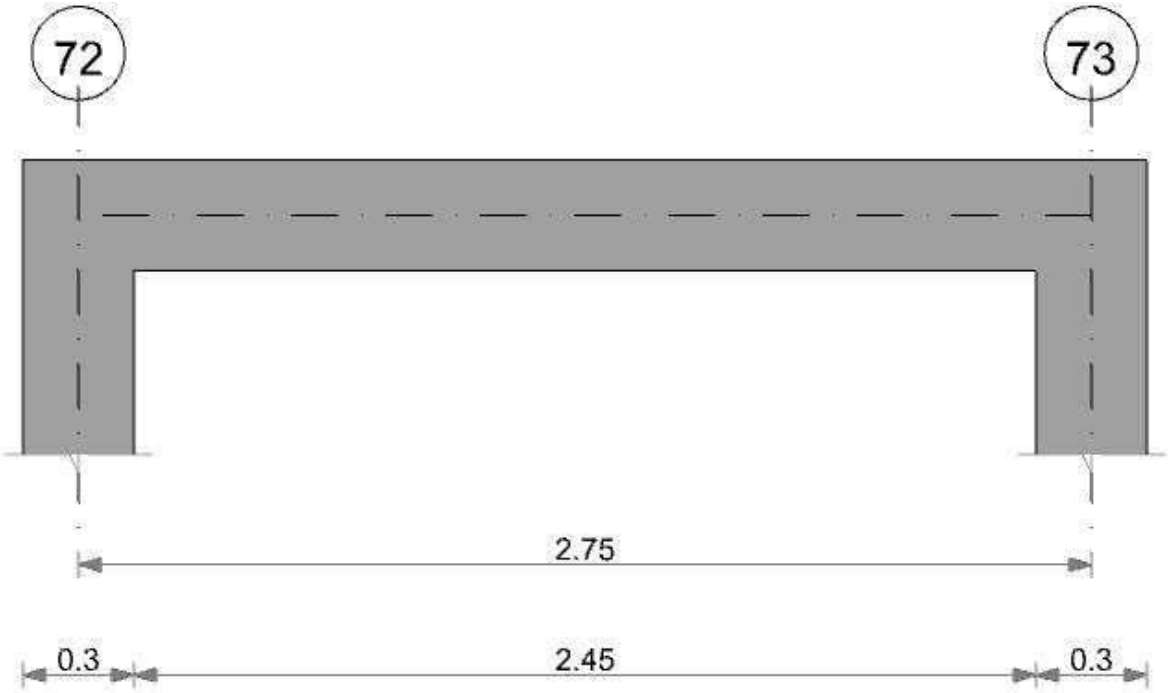
Output campate

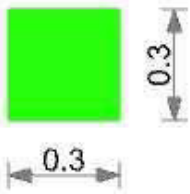
Controllo diametro delle barre longitudinali nei nodi

Nessun nodo è da verificare

TRAVE PIANO RIALZATO

Geometria





Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Elenco delle sezioni

N°	Descrizione	Tipo	Base	Altezza	Copriferro sup.	Copriferro inf.	Copriferro lat.
1	R 30x30	Rettangolare	0.3	0.3	0.035	0.035	0.035

Diagramma verifica stato limite ultimo flessione

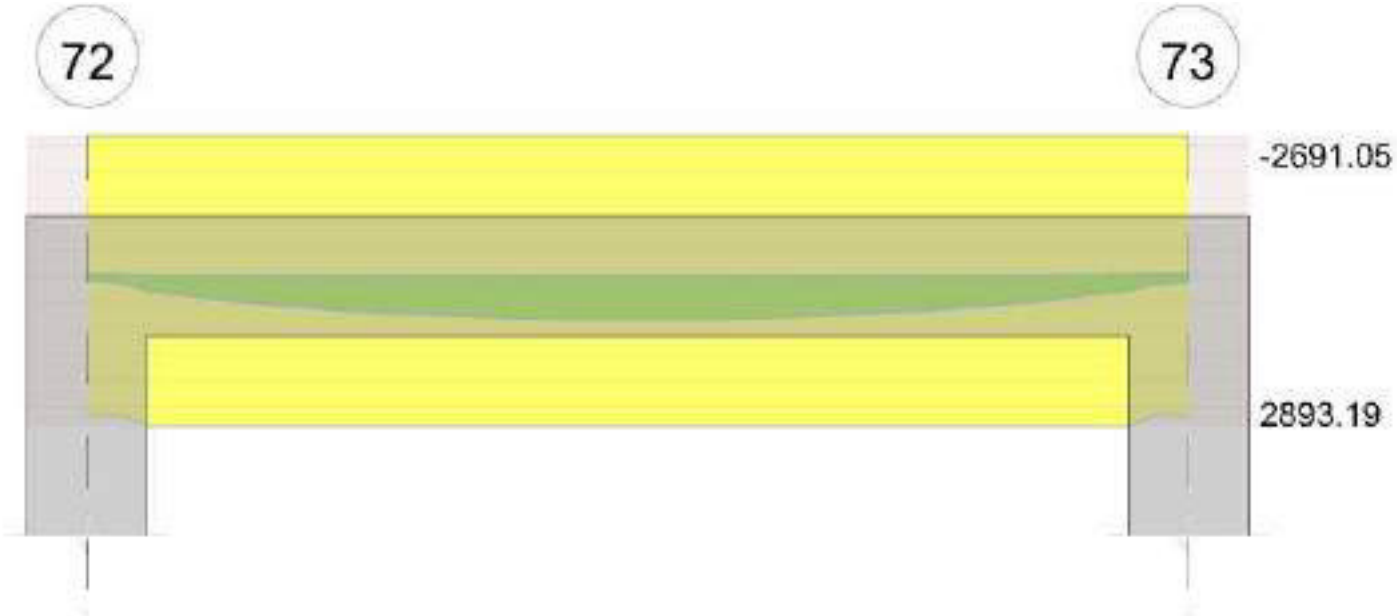


Diagramma verifica stato limite ultimo taglio

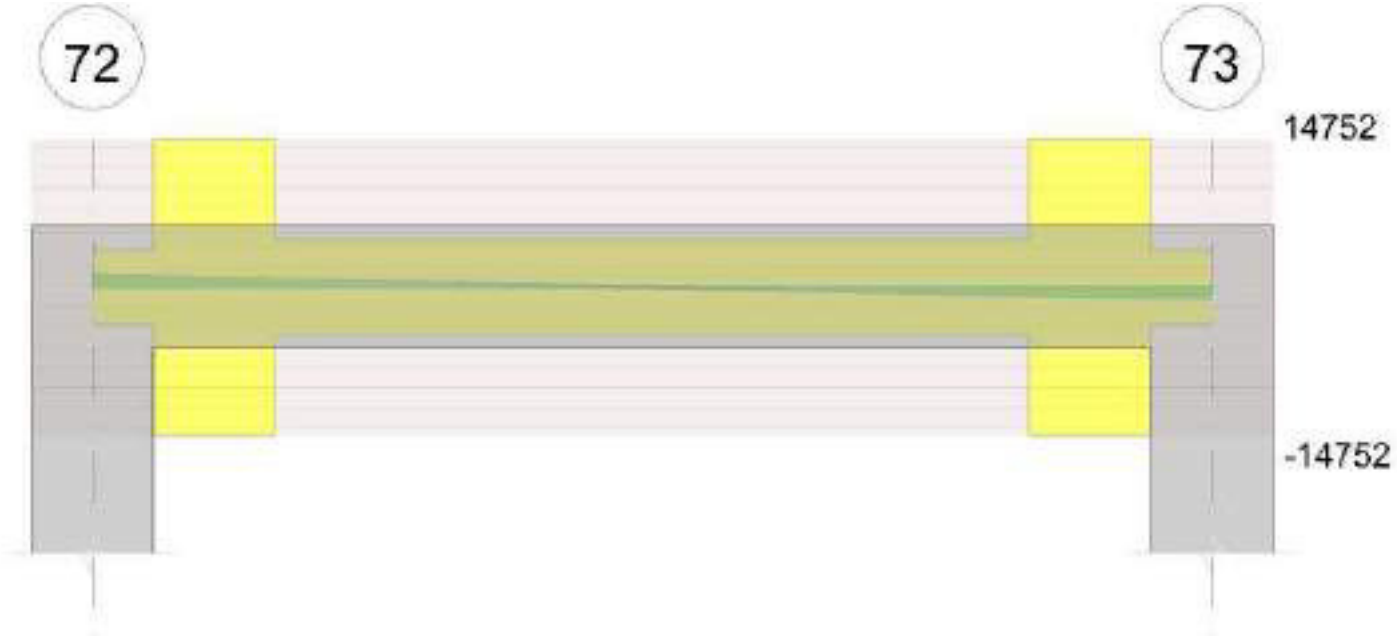
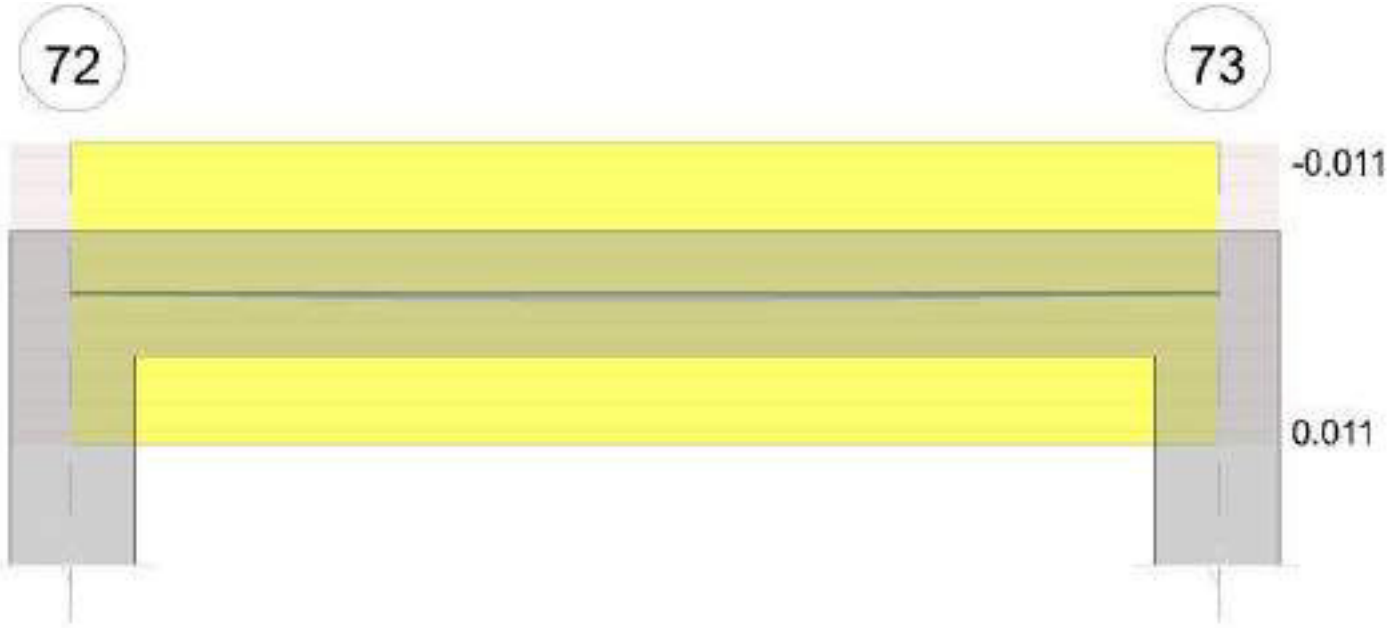


Diagramma verifica stato limite esercizio quasi permanente freccia



Output campate

Campata 1 tra i fili 72 - 73, sezione R 30x30, asta 483

Verifiche a flessione in famiglia SLU

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000308	0.05	0.000308	0.05							-3.99	SLU 82	-3.99	-2893.19	0.177	725.47	Si
0.15	0.000308	0.05	0.000308	0.05	166.32	SLU 83	281.66	2893.19	0.177	10.27							Si
1.28	0.000308	0.05	0.000308	0.05	820.33	SLU 83	823.75	2893.19	0.177	3.51							Si
1.38	0.000308	0.05	0.000308	0.05	823.75	SLU 83	823.75	2893.19	0.177	3.51							Si
2.6	0.000308	0.05	0.000308	0.05	159.02	SLU 83	274.88	2893.19	0.177	10.53							Si
2.75	0.000308	0.05	0.000308	0.05							-7.42	SLU 82	-7.42	-2893.19	0.177	389.98	Si

Verifiche a flessione in famiglia SLV (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000308	0.05	0.000308	0.05	83.89	SLV 15	83.89	2691.05	0.25	32.08	-87.36	SLV 2	-38.8	-2691.05	0.25	69.37	Si
0.15	0.000308	0.05	0.000308	0.05	160.8	SLV 15	212.49	2691.05	0.25	12.66							Si
1.38	0.000308	0.05	0.000308	0.05	453.78	SLV 4	454.05	2691.05	0.25	5.93							Si
1.47	0.000308	0.05	0.000308	0.05	454.05	SLV 4	454.05	2691.05	0.25	5.93							Si
2.6	0.000308	0.05	0.000308	0.05	181.08	SLV 4	232.41	2691.05	0.25	11.58	-20.2	SLV 13	-20.2	-2691.05	0.25	133.23	Si
2.75	0.000308	0.05	0.000308	0.05	106.2	SLV 4	106.2	2691.05	0.25	25.34	-113.37	SLV 13	-65.12	-2691.05	0.25	41.32	Si

Verifiche SLD Resistenza a flessione (domini sostanzialmente elastici)

La struttura oppure parte di essa, è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per tutte o solo alcune sezioni, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Le dilatazioni ultime utilizzate sono le seguenti: εc2= 0.002, εyd= 0.0019

x	A sup.	C.b. sup.	A inf.	C.b. inf.	M+ela	Comb.	M+des	M+ult	x/d	coeff	M-ela	Comb.	M-des	M-ult	x/d	coeff	Verifica
0	0.000308	0.05	0.000308	0.05	34.89	SLD 15	34.89	2691.05	0.25	77.14	-38.35	SLD 2	-15.56	-2691.05	0.25	172.98	Si
0.15	0.000308	0.05	0.000308	0.05	116.65	SLD 15	171.86	2691.05	0.25	15.66							Si
1.28	0.000308	0.05	0.000308	0.05	428.36	SLD 4	430.7	2691.05	0.25	6.25							Si
1.38	0.000308	0.05	0.000308	0.05	430.7	SLD 4	430.7	2691.05	0.25	6.25							Si
2.6	0.000308	0.05	0.000308	0.05	123.46	SLD 4	178.66	2691.05	0.25	15.06							Si
2.75	0.000308	0.05	0.000308	0.05	43.34	SLD 4	43.34	2691.05	0.25	62.09	-50.51	SLD 13	-18.71	-2691.05	0.25	143.85	Si

Verifiche a taglio in famiglia SLU

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.000308	0	1207	SLU 83	1207	3700	23811	0	3700	1	3.07	Si
0.15	0.0000168	0.000308	0	1075	SLU 83	1075	3700	23811	14752	14752	1	13.72	Si
1.38	0.0000054	0.000308	0	-3	SLU 82	-3	-3700	-23811	-4784	-4784	1	1567.43	Si
2.6	0.0000168	0.000308	0	-1073	SLU 82	-1073	-3700	-23811	-14752	-14752	1	13.75	Si
2.75	0	0.000308	0	-1137	SLU 82	-1137	-3700	-23811	0	-3700	1	3.26	Si

Verifiche a taglio in famiglia SLV

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.000308	0	671	SLV 2	671	3700	23811	0	3700	1	5.52	Si
0.15	0.0000168	0.000308	0	604	SLV 2	604	3700	23811	14752	14752	1	24.41	Si
1.38	0.0000054	0.000308	0	64	SLV 2	64	3700	23811	4784	4784	1	74.83	Si
1.38	0.0000054	0.000308	0	-67	SLV 15	-67	-3700	-23811	-4784	-4784	1	71.82	Si
2.6	0.0000168	0.000308	0	-604	SLV 15	-604	-3700	-23811	-14752	-14752	1	24.42	Si
2.75	0	0.000308	0	-645	SLV 15	-645	-3700	-23811	0	-3700	1	5.74	Si

Verifiche SLD Resistenza a taglio

x	A st	A sl	A sag	Vela	Comb.	Vdes	Vrd	Vrcd	Vrsd	Vult	cotgθ	coeff	Verifica
0	0	0.000308	0	633	SLD 2	633	3700	23811	0	3700	1	5.84	Si
0.15	0.0000168	0.000308	0	567	SLD 2	567	3700	23811	14752	14752	1	26.02	Si
1.38	0.0000054	0.000308	0	27	SLD 2	27	3700	23811	4784	4784	1	180.1	Si
1.38	0.0000054	0.000308	0	-29	SLD 15	-29	-3700	-23811	-4784	-4784	1	163.61	Si
2.6	0.0000168	0.000308	0	-567	SLD 15	-567	-3700	-23811	-14752	-14752	1	26.03	Si
2.75	0	0.000308	0	-608	SLD 15	-608	-3700	-23811	0	-3700	1	6.09	Si

Verifiche delle tensioni in esercizio

x	Rara							Quasi permanente							Verifica
	Mela	Comb.	Mdes	σ c	σ c lim.	σ f.	σ f lim.	Mela	Comb.	Mdes	σ c	σ c lim.	σ FRP	σ FRP lim.	
0	-2.78	19	-2.78	543	1494000	8149	36000000	-1.73	2	-1.73	338	1120500			Si
0.15	118.09	20	199.95	39085	1494000	586281	36000000	83.66	2	141.5	27660	1120500			Si
1.38	584.72	20	584.72	114297	1494000	1714455	36000000	413.45	2	413.45	80820	1120500			Si
2.6	113.01	20	195.24	38164	1494000	572464	36000000	80.44	2	138.52	27078	1120500			Si
2.75	-5.24	19	-5.24	1024	1494000	15367	36000000	-3.59	2	-3.59	701	1120500			Si

Verifica di apertura delle fessure

La campata non presenta apertura delle fessure

Verifica di deformabilità

x	Rara				Frequente				Quasi permanente							Verifica
	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess.+	Fess.-	Elastica+	Elastica-	Fess. viscosa+	Comb.	Fess. viscosa-	Comb.	l/f	
0.15	0.00004	0.00002	0.00004	0.00002	0.00003	0.00002	0.00003	0.00002	0.00003	0.00002	0.00007	2	0.00006	2	9999	Si
1.38	0.00022	0.00013	0.0002	0.00012	0.00017	0.00013	0.00016	0.00012	0.00016	0.00013	0.00039	2	0.00032	2	7064	Si
2.6	0.00004	0.00002	0.00004	0.00002	0.00003	0.00002	0.00003	0.00002	0.00003	0.00002	0.00007	2	0.00006	2	9999	Si

Controllo diametro delle barre longitudinali nei nodi

Nessun nodo è da verificare

1.3 Verifiche pareti C.A.

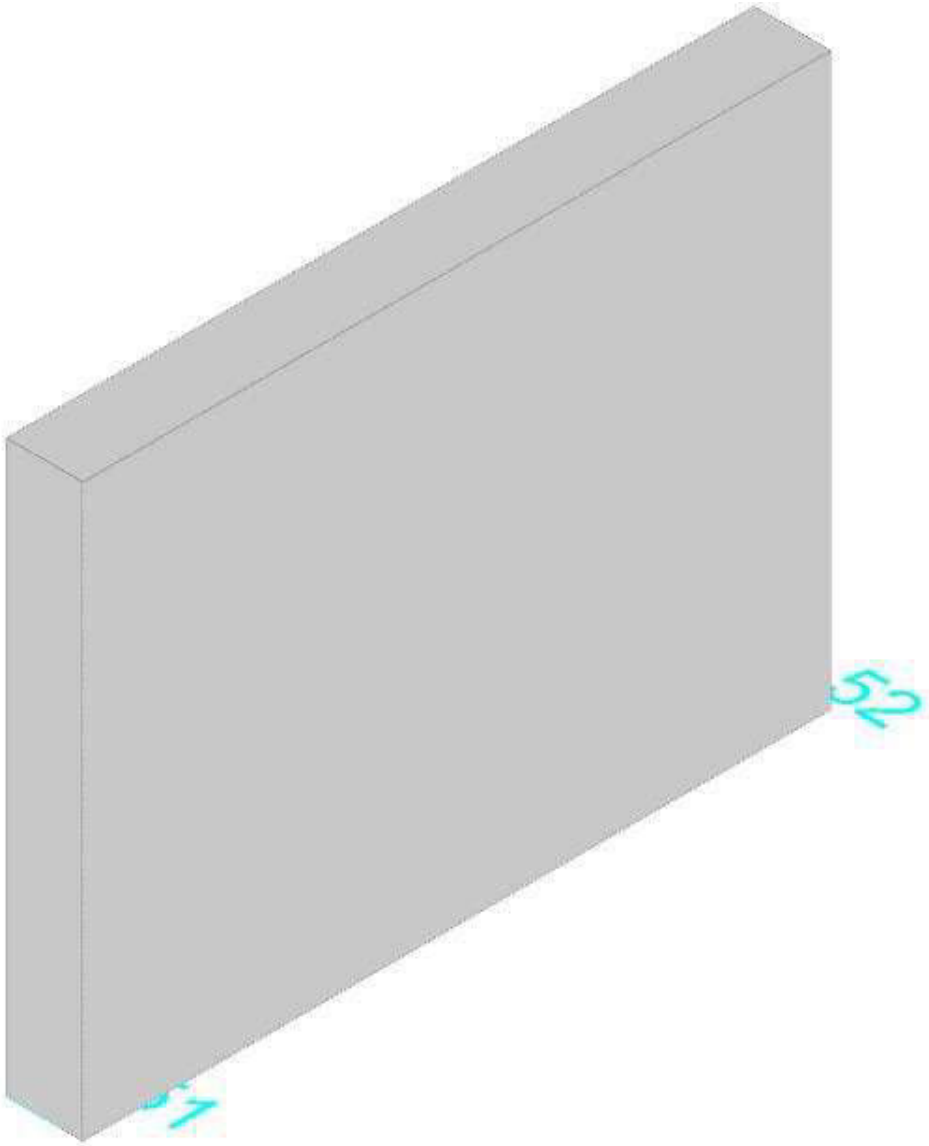
Le unità di misura elencate nel capitolo sono in [m, daN] ove non espressamente specificato.

Descrizione breve: *nome sintetico assegnato al livello.*
Descrizione: *nome assegnato al livello.*
Quota: *quota superiore espressa nel sistema di riferimento assoluto. [m]*
Spessore: *spessore del livello. [m]*
Descrizione: *descrizione della sezione di verifica.*
Dir.: *direzione della sezione di verifica.*
Base: *base della sezione. [m]*
Altezza: *altezza della sezione. [m]*
As,sup: *area di acciaio efficace superiore. [m²]*
As,inf: *area di acciaio efficace inferiore. [m²]*
c,sup: *copriferro medio superiore. [m]*
c,inf: *copriferro medio inferiore. [m]*
Comb.: *combinazione di verifica.*
MEd: *momento agente. [daN*m]*
NEd: *sforzo normale agente, positivo se di trazione. [daN]*
MRd: *momento resistente. [daN*m]*
NRd: *sforzo normale resistente, positivo se di trazione. [daN]*
c.s.: *coefficiente di sicurezza.*
Verifica: *stato di verifica.*
d: *altezza utile. [m]*
bw: *minima larghezza anima. [m]*
Armatura a taglio: *necessità di armatura a taglio.*
Asw/s: *rapporto tra l'area dell'armatura trasversale e l'interasse tra due armature consecutive.*
VEd: *taglio agente. [daN]*
Vrd,c: *resistenza di calcolo a taglio per elementi privi di armature trasversali. [daN]*
Vrcd: *valore resistente di calcolo a taglio compressione del calcestruzzo d'anima. [daN]*
Vrsd: *valore resistente di calcolo a taglio trazione dell'armatura trasversale. [daN]*
VRd: *resistenza a taglio. [daN]*
cotg(ϑ): *cotangente dell'angolo dei puntoni rispetto all'asse.*
Asl: *area armatura longitudinale. [m²]*
Sezione fessurata: *sezione fessurata.*
σc: *tensione del calcestruzzo. [daN/m²]*
σc limite: *tensione limite del calcestruzzo. [daN/m²]*
Es/Ec: *coefficiente di omogenizzazione.*
σf: *tensione dell'armatura. [daN/m²]*
σf limite: *tensione limite dell'armatura. [daN/m²]*

Parete Fondazione ascensore - Fondazione

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Livelli significativi

Descrizione breve	Descrizione	Quota	Spessore
L1	Fondazione ascensore	-2.8	0
L2	Fondazione	-1.3	0

Verifiche nei nodi

Sezioni rettangolari

Descrizione	Dir.	Base	Altezza	As,sup	As,inf	c,sup	c,inf
126 Prosp.A	Verticale	1	0.2	0.00111	0.00111	0.041	0.041
567 Prosp.A	Verticale	0.5	0.2	0.000556	0.000556	0.041	0.041
129 Prosp.A	Verticale	1	0.2	0.001118	0.001118	0.041	0.041
498 Prosp.A	Verticale	0.5	0.2	0.000331	0.000379	0.041	0.041
156 Prosp.A	Verticale	0.875	0.2	0.000588	0.000673	0.041	0.041
123 Prosp.A	Verticale	0.974	0.2	0.001131	0.001131	0.041	0.041
22 Prosp.A	Orizzontale	0.6	0.2	0.000679	0.000679	0.0439	0.0439
29 Prosp.A	Orizzontale	0.8942	0.2	0.001018	0.001018	0.0429	0.0429
40 Prosp.A	Orizzontale	1	0.2	0.001131	0.001131	0.041	0.041
50 Prosp.A	Orizzontale	1	0.2	0.001131	0.001131	0.041	0.041
151 Prosp.A	Orizzontale	1	0.2	0.001131	0.001131	0.041	0.041

Descrizione	Dir.	Base	Altezza	As,sup	As,inf	c,sup	c,inf
148 Prosp.A	Orizzontale	1	0.2	0.001131	0.001131	0.041	0.041
124 Prosp.A	Orizzontale	1	0.2	0.0011	0.0011	0.041	0.041
103 Prosp.A	Orizzontale	1	0.2	0.001697	0.001697	0.041	0.041

Verifiche a flessione SLU D.M. 17-01-18 §4.1.2.3.4.2

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per le combinazioni SLV, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Descrizione	Dir.	Comb.	MEd	NEd	MRd	NRd	c.s.	Verifica
126 Prosp.A	Verticale	SLV 7	187.27	11982	1073.57	68691	5.7327	Si
567 Prosp.A	Verticale	SLV 6	40.42	4203	360.05	37440	8.9085	Si
129 Prosp.A	Verticale	SLV 7	127.29	7493	1154.26	67944	9.0678	Si
498 Prosp.A	Verticale	SLV 15	-248.42	-599	-2479.07	-5973	9.9792	Si
567 Prosp.A	Verticale	SLV 10	-142.69	2055	-1446.35	20831	10.1363	Si

Verifiche a flessione SLD Resistenza D.M. 17-01-18 §4.1.2.3.4.2

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Descrizione	Dir.	Comb.	MEd	NEd	MRd	NRd	c.s.	Verifica
126 Prosp.A	Verticale	SLD 7	106.49	6737	1083.22	68527	10.1722	Si
498 Prosp.A	Verticale	SLD 15	-180.78	-431	-2474.69	-5906	13.689	Si
129 Prosp.A	Verticale	SLD 7	83.51	4197	1301.93	65440	15.5903	Si
156 Prosp.A	Verticale	SLD 15	-270.86	-524	-4237	-8195	15.6425	Si
123 Prosp.A	Verticale	SLD 11	85.51	3101	1663.34	60319	19.4519	Si

Verifiche a taglio SLU D.M. 17-01-18 §4.1.2.3.5

Descrizione	Dir.	d	bw	Armatura a taglio	Asw/s	Comb.	VEd	NEd	MEd	Vrd,c	Vrcd	Vrsd	VRd	cotg(θ)	Asl	c.s.	Verifica
22 Prosp.A	Orizzontale	0.156	0.6	Non necessaria	0	SLV 13	-550	-4315	212.21	6401	21032	0	6401	2.5	0.0006786	11.6377	Si
498 Prosp.A	Verticale	0.159	0.5	Non necessaria	0	SLV 11	372	-947	-254.88	4464	17523	0	4464	2.5	0.0003785	11.9996	Si
567 Prosp.A	Verticale	0.159	0.5	Non necessaria	0	SLV 9	404	4006	-112.94	4947	17406	0	4947	2.5	0.0005564	12.2524	Si
29 Prosp.A	Orizzontale	0.157	0.894	Non necessaria	0	SLV 13	-654	-6578	283.2	9617	31554	0	9617	2.5	0.0010179	14.7098	Si
156 Prosp.A	Verticale	0.159	0.875	Non necessaria	0	SLV 11	501	-982	-368.82	7771	30582	0	7771	2.5	0.0006729	15.5119	Si

Verifiche a taglio SLD Resistenza D.M. 17-01-18 §4.1.2.3.5

Descrizione	Dir.	d	bw	Armatura a taglio	Asw/s	Comb.	VEd	NEd	MEd	Vrd,c	Vrcd	Vrsd	VRd	cotg(θ)	Asl	c.s.	Verifica
22 Prosp.A	Orizzontale	0.156	0.6	Non necessaria	0	SLD 13	-439	-4093	168.14	6375	21005	0	6375	2.5	0.0006786	14.5155	Si
29 Prosp.A	Orizzontale	0.157	0.894	Non necessaria	0	SLD 13	-511	-6386	219.66	9594	31531	0	9594	2.5	0.0010179	18.7912	Si
498 Prosp.A	Verticale	0.159	0.5	Non necessaria	0	SLD 11	226	-569	-181.91	4418	17477	0	4418	2.5	0.0003785	19.5752	Si
156 Prosp.A	Verticale	0.159	0.875	Non necessaria	0	SLD 11	353	-639	-269.29	7730	30540	0	7730	2.5	0.0006729	21.8958	Si
104 Prosp.A	Orizzontale	0.157	0.916	Non necessaria	0	SLD 13	-495	-6892	44.97	11095	32333	0	11095	2.5	0.001527	22.4237	Si

Verifiche SLE tensione calcestruzzo D.M. 17-01-18 §4.1.2.2.5.1

Descrizione	Dir.	Comb.	MEd	NEd	Sezione fessurata	σc	σc limite	Es/Ec	c.s.	Verifica
22 Prosp.A	Orizzontale	SLE QP 2	135.82	-3934	No	-57237	1120500	15	19.5766	Si
29 Prosp.A	Orizzontale	SLE QP 2	172.64	-6246	No	-54621	1120500	15	20.5141	Si
40 Prosp.A	Orizzontale	SLE QP 2	164.29	-7672	No	-53729	1120500	15	20.8545	Si
22 Prosp.A	Orizzontale	SLE RA 21	149.39	-4259	No	-62477	1494000	15	23.9126	Si
50 Prosp.A	Orizzontale	SLE QP 2	108.28	-7585	No	-46222	1120500	15	24.2419	Si

Verifiche SLE tensione acciaio D.M. 17-01-18 §4.1.2.2.5.2

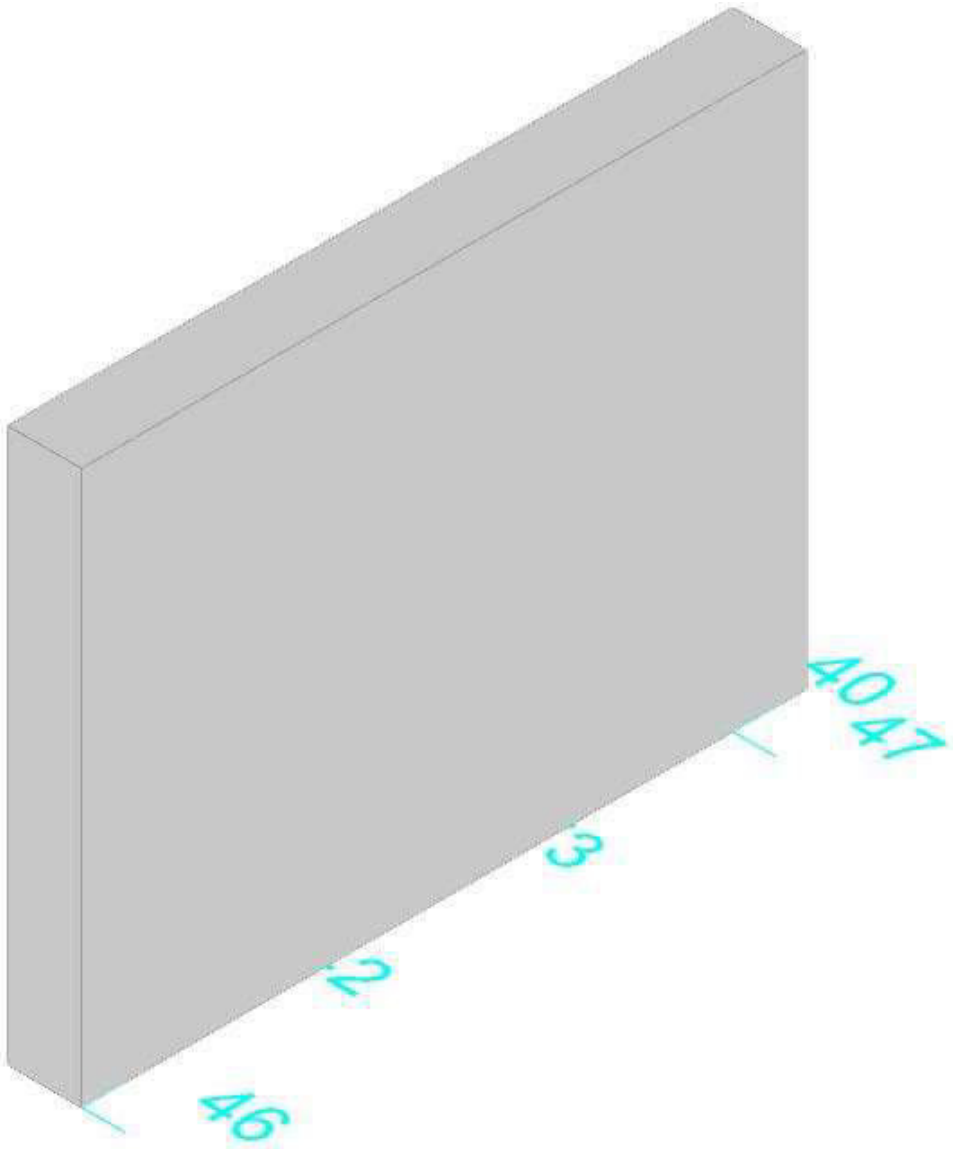
Descrizione	Dir.	Comb.	MEd	NEd	Sezione fessurata	σf	σf limite	Es/Ec	c.s.	Verifica
151 Prosp.A	Orizzontale	SLE RA 2	-27.99	-7532	No	-451378	36000000	15	79.7558	Si
148 Prosp.A	Orizzontale	SLE RA 2	-49.24	-7316	No	-413617	36000000	15	87.037	Si
124 Prosp.A	Orizzontale	SLE RA 2	58.81	-7010	No	-384650	36000000	15	93.5916	Si
103 Prosp.A	Orizzontale	SLE RA 2	80.62	-7439	No	-360172	36000000	15	99.9523	Si
50 Prosp.A	Orizzontale	SLE RA 1	104.65	-7313	No	-350921	36000000	15	102.5871	Si

Verifiche generali

Parete Fondazione ascensore - Fondazione

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Livelli significativi

Descrizione breve	Descrizione	Quota	Spessore
L1	Fondazione ascensore	-2.8	0
L2	Fondazione	-1.3	0

Verifiche nei nodi

Sezioni rettangolari

Descrizione	Dir.	Base	Altezza	As,sup	As,inf	c,sup	c,inf
494 Prosp.A	Verticale	0.5	0.2	0.000331	0.000379	0.041	0.041
157 Prosp.A	Verticale	0.875	0.2	0.000905	0.000905	0.041	0.041
152 Prosp.A	Verticale	0.875	0.2	0.000588	0.000673	0.041	0.041
152 Prosp.A	Orizzontale	0.6	0.2	0.000679	0.000679	0.0439	0.0439
160 Prosp.A	Orizzontale	1	0.2	0.00109	0.00109	0.041	0.041
159 Prosp.A	Orizzontale	1	0.2	0.001131	0.001131	0.041	0.041
499 Prosp.A	Verticale	0.5	0.2	0.000404	0.000404	0.041	0.041
130 Prosp.A	Verticale	1	0.2	0.000735	0.000841	0.041	0.041

Verifiche a flessione SLU D.M. 17-01-18 §4.1.2.3.4.2

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per le combinazioni SLV, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Descrizione	Dir.	Comb.	MEd	NEd	MRd	NRd	c.s.	Verifica
494 Prosp.A	Verticale	SLV 2	-336.93	3924	-1100.31	12813	3.2657	Si
157 Prosp.A	Verticale	SLV 2	592.21	8498	2358.79	33846	3.9831	Si
152 Prosp.A	Verticale	SLV 2	-666.28	3455	-2656.46	13775	3.987	Si

Descrizione	Dir.	Comb.	MEd	NEd	MRd	NRd	c.s.	Verifica
494 Prosp.A	Verticale	SLV 2	93.01	4869	373.52	19552	4.0157	Si
152 Prosp.A	Orizzontale	SLV 2	694.5	1185	3084.17	5262	4.4408	Si

Verifiche a flessione SLD Resistenza D.M. 17-01-18 §4.1.2.3.4.2

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Descrizione	Dir.	Comb.	MEd	NEd	MRd	NRd	c.s.	Verifica
494 Prosp.A	Verticale	SLD 2	95.44	3769	458.58	18111	4.8049	Si
494 Prosp.A	Verticale	SLD 2	-216.92	2414	-1124.31	12513	5.1831	Si
152 Prosp.A	Verticale	SLD 2	-449.06	1967	-2777.94	12170	6.1861	Si
152 Prosp.A	Orizzontale	SLD 2	395.32	1201	2852.69	8665	7.2161	Si
157 Prosp.A	Verticale	SLD 2	328.93	4646	2378.47	33591	7.2309	Si

Verifiche a taglio SLU D.M. 17-01-18 §4.1.2.3.5

Descrizione	Dir.	d	bw	Armatura a taglio	Asw/s	Comb.	VEd	NEd	MEd	Vrd,c	Vrcd	Vrsd	VRd	cotg(θ)	Asl	c.s.	Verifica
157 Prosp.A	Orizzontale	0.157	0.811	Non necessaria	0	SLV 2	7108	-1441	1003.33	8130	28038	0	8130	2.5	0.0009048	1.1437	Si
158 Prosp.A	Orizzontale	0.159	1	Non necessaria	0	SLV 2	7556	-4530	1334.88	10487	35372	0	10487	2.5	0.001131	1.3879	Si
152 Prosp.A	Verticale	0.159	0.875	Non necessaria	0	SLV 2	2905	700	-613.26	7654	30461	0	7654	2.5	0.000673	2.6347	Si
162 Prosp.A	Orizzontale	0.157	0.762	Non necessaria	0	SLV 11	-2889	-5097	-354.46	8232	26780	0	8232	2.5	0.0009048	2.8491	Si

Verifiche a taglio SLD Resistenza D.M. 17-01-18 §4.1.2.3.5

Descrizione	Dir.	d	bw	Armatura a taglio	Asw/s	Comb.	VEd	NEd	MEd	Vrd,c	Vrcd	Vrsd	VRd	cotg(θ)	Asl	c.s.	Verifica
152 Prosp.A	Orizzontale	0.156	0.6	Non necessaria	0	SLD 2	4009	1201	395.32	5896	20511	0	5896	2.5	0.0006786	1.4709	Si
157 Prosp.A	Orizzontale	0.157	0.811	Non necessaria	0	SLD 2	4530	-1556	575.35	8143	28052	0	8143	2.5	0.0009048	1.7975	Si
158 Prosp.A	Orizzontale	0.159	1	Non necessaria	0	SLD 2	4835	-4777	783.5	10517	35402	0	10517	2.5	0.001131	2.175	Si
152 Prosp.A	Verticale	0.159	0.875	Non necessaria	0	SLD 2	1897	414	-424.75	7654	30461	0	7654	2.5	0.000673	4.035	Si
159 Prosp.A	Orizzontale	0.159	1	Non necessaria	0	SLD 6	2409	-9961	783.1	11135	36042	0	11135	2.5	0.001131	4.6221	Si

Verifiche SLE tensione calcestruzzo D.M. 17-01-18 §4.1.2.2.5.1

Descrizione	Dir.	Comb.	MEd	NEd	Sezione fessurata	σc	σc limite	Es/Ec	c.s.	Verifica
160 Prosp.A	Orizzontale	SLE QP 2	396.4	-12727	No	-105481	1120500	15	10.6227	Si
159 Prosp.A	Orizzontale	SLE QP 2	420.25	-10432	No	-98145	1120500	15	11.4168	Si
499 Prosp.A	Verticale	SLE QP 2	184	-4383	No	-88096	1120500	15	12.719	Si
160 Prosp.A	Orizzontale	SLE RA 21	433.43	-13968	No	-115561	1494000	15	12.9282	Si
159 Prosp.A	Orizzontale	SLE RA 21	460.22	-11539	No	-107970	1494000	15	13.8372	Si

Verifiche SLE tensione acciaio D.M. 17-01-18 §4.1.2.2.5.2

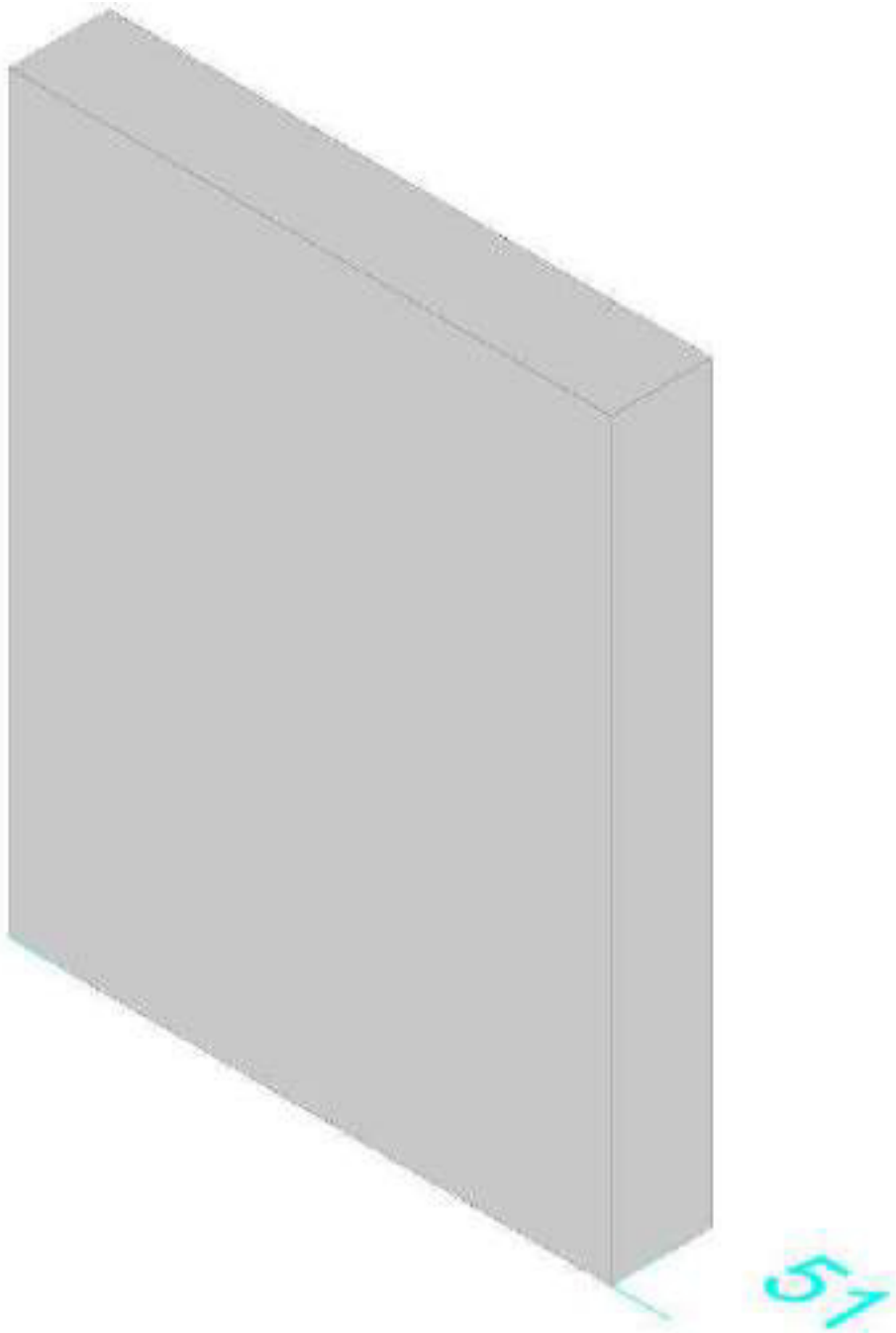
Descrizione	Dir.	Comb.	MEd	NEd	Sezione fessurata	σf	σf limite	Es/Ec	c.s.	Verifica
494 Prosp.A	Verticale	SLE RA 21	111.39	3083	No	688769	36000000	15	52.2672	Si
494 Prosp.A	Verticale	SLE RA 21	-142.26	1455	No	533646	36000000	15	67.4604	Si
152 Prosp.A	Orizzontale	SLE RA 21	207.86	1086	No	511636	36000000	15	70.3625	Si
152 Prosp.A	Verticale	SLE RA 21	-315.46	985	No	502938	36000000	15	71.5795	Si
130 Prosp.A	Verticale	SLE RA 21	-381.58	715	No	495289	36000000	15	72.6849	Si

Verifiche generali

Parete Fondazione ascensore - Fondazione

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Livelli significativi

Descrizione breve	Descrizione	Quota	Spessore
L1	Fondazione ascensore	-2.8	0
L2	Fondazione	-1.3	0

Verifiche nei nodi

Sezioni rettangolari

Descrizione	Dir.	Base	Altezza	As,sup	As,inf	c,sup	c,inf
131 Prosp.A	Verticale	1	0.2	0.000846	0.000846	0.041	0.041
495 Prosp.A	Verticale	0.5	0.2	0.000423	0.000423	0.041	0.041
153 Prosp.A	Verticale	0.875	0.2	0.000762	0.000762	0.041	0.041
106 Prosp.A	Verticale	0.875	0.2	0.000762	0.000762	0.041	0.041
153 Prosp.A	Orizzontale	0.75	0.2	0.000905	0.000905	0.0432	0.0432
154 Prosp.A	Orizzontale	1	0.2	0.001131	0.001131	0.041	0.041
133 Prosp.A	Orizzontale	0.75	0.2	0.000905	0.000905	0.0432	0.0432
132 Prosp.A	Orizzontale	1	0.2	0.001131	0.001131	0.041	0.041

Descrizione	Dir.	Base	Altezza	As,sup	As,inf	c,sup	c,inf
131 Prosp.A	Orizzontale	0.75	0.2	0.000905	0.000905	0.0432	0.0432

Verifiche a flessione SLU D.M. 17-01-18 §4.1.2.3.4.2

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per le combinazioni SLV, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Descrizione	Dir.	Comb.	MEd	NEd	MRd	NRd	c.s.	Verifica
131 Prosp.A	Verticale	SLV 6	141.5	5871	1133.29	47021	8.0092	Si
495 Prosp.A	Verticale	SLV 2	-8.91	3973	-71.58	31902	8.0305	Si
495 Prosp.A	Verticale	SLV 11	227.59	678	1886.7	5619	8.2899	Si
153 Prosp.A	Verticale	SLV 7	276.92	1087	3208.83	12591	11.5874	Si
153 Prosp.A	Verticale	SLV 2	-8.98	4280	-120.79	57559	13.4488	Si

Verifiche a flessione SLD Resistenza D.M. 17-01-18 §4.1.2.3.4.2

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Descrizione	Dir.	Comb.	MEd	NEd	MRd	NRd	c.s.	Verifica
131 Prosp.A	Verticale	SLD 2	127.94	4251	1319.92	43858	10.3163	Si
153 Prosp.A	Verticale	SLD 11	248.3	-714	5091.27	-14643	20.5049	Si
106 Prosp.A	Verticale	SLD 5	88.38	1427	1867.5	30144	21.13	Si
495 Prosp.A	Verticale	SLD 9	154.68	-4731	3346.42	-102350	21.635	Si
153 Prosp.A	Orizzontale	SLD 9	-38.93	-8457	-1105.33	-240134	28.3941	Si

Verifiche a taglio SLU D.M. 17-01-18 §4.1.2.3.5

Descrizione	Dir.	d	bw	Armatura a taglio	Asw/s	Comb.	VEd	NEd	MEd	Vrd,c	Vrcd	Vrsd	VRd	cotg(θ)	Asl	c.s.	Verifica
495 Prosp.A	Verticale	0.159	0.5	Non necessaria	0	SLV 15	-932	-1071	123.92	4643	17538	0	4643	2.5	0.0004231	4.9796	Si
153 Prosp.A	Orizzontale	0.157	0.75	Non necessaria	0	SLV 2	-895	-1049	85.73	7677	25884	0	7677	2.5	0.0009048	8.5767	Si
153 Prosp.A	Verticale	0.159	0.875	Non necessaria	0	SLV 15	-932	-1071	123.92	8104	30593	0	8104	2.5	0.0007616	8.6916	Si
497 Prosp.A	Verticale	0.159	0.5	Non necessaria	0	SLV 11	-462	-340	-163.52	4556	17448	0	4556	2.5	0.0004231	9.8649	Si
131 Prosp.A	Verticale	0.159	1	Non necessaria	0	SLV 2	-769	6151	57.73	9030	34813	0	9030	2.5	0.0008463	11.7401	Si

Verifiche a taglio SLD Resistenza D.M. 17-01-18 §4.1.2.3.5

Descrizione	Dir.	d	bw	Armatura a taglio	Asw/s	Comb.	VEd	NEd	MEd	Vrd,c	Vrcd	Vrsd	VRd	cotg(θ)	Asl	c.s.	Verifica
495 Prosp.A	Verticale	0.159	0.5	Non necessaria	0	SLD 15	-404	-3159	110.49	4892	17796	0	4892	2.5	0.0004231	12.099	Si
497 Prosp.A	Verticale	0.159	0.5	Non necessaria	0	SLD 11	-322	-626	-109.88	4590	17484	0	4590	2.5	0.0004231	14.2549	Si
153 Prosp.A	Orizzontale	0.157	0.75	Non necessaria	0	SLD 2	-525	-1921	43.73	7779	25990	0	7779	2.5	0.0009048	14.8125	Si
496 Prosp.A	Verticale	0.159	0.5	Non necessaria	0	SLD 11	-302	-1237	81.38	5121	17559	0	5121	2.5	0.0005655	16.9717	Si
155 Prosp.A	Verticale	0.159	0.875	Non necessaria	0	SLD 11	-453	-663	-168.45	8055	30543	0	8055	2.5	0.0007616	17.7734	Si

Verifiche SLE tensione calcestruzzo D.M. 17-01-18 §4.1.2.2.5.1

Descrizione	Dir.	Comb.	MEd	NEd	Sezione fessurata	σc	σc limite	Es/Ec	c.s.	Verifica
495 Prosp.A	Verticale	SLE QP 2	168.12	-3188	No	-72826	1120500	15	15.386	Si
495 Prosp.A	Verticale	SLE RA 21	177.36	-3661	No	-79469	1494000	15	18.7997	Si
154 Prosp.A	Orizzontale	SLE QP 2	-84.97	-9141	No	-49899	1120500	15	22.4553	Si
153 Prosp.A	Orizzontale	SLE QP 2	-54.67	-6982	No	-48704	1120500	15	23.0061	Si
153 Prosp.A	Verticale	SLE QP 2	223.1	-2128	No	-44414	1120500	15	25.2285	Si

Verifiche SLE tensione acciaio D.M. 17-01-18 §4.1.2.2.5.2

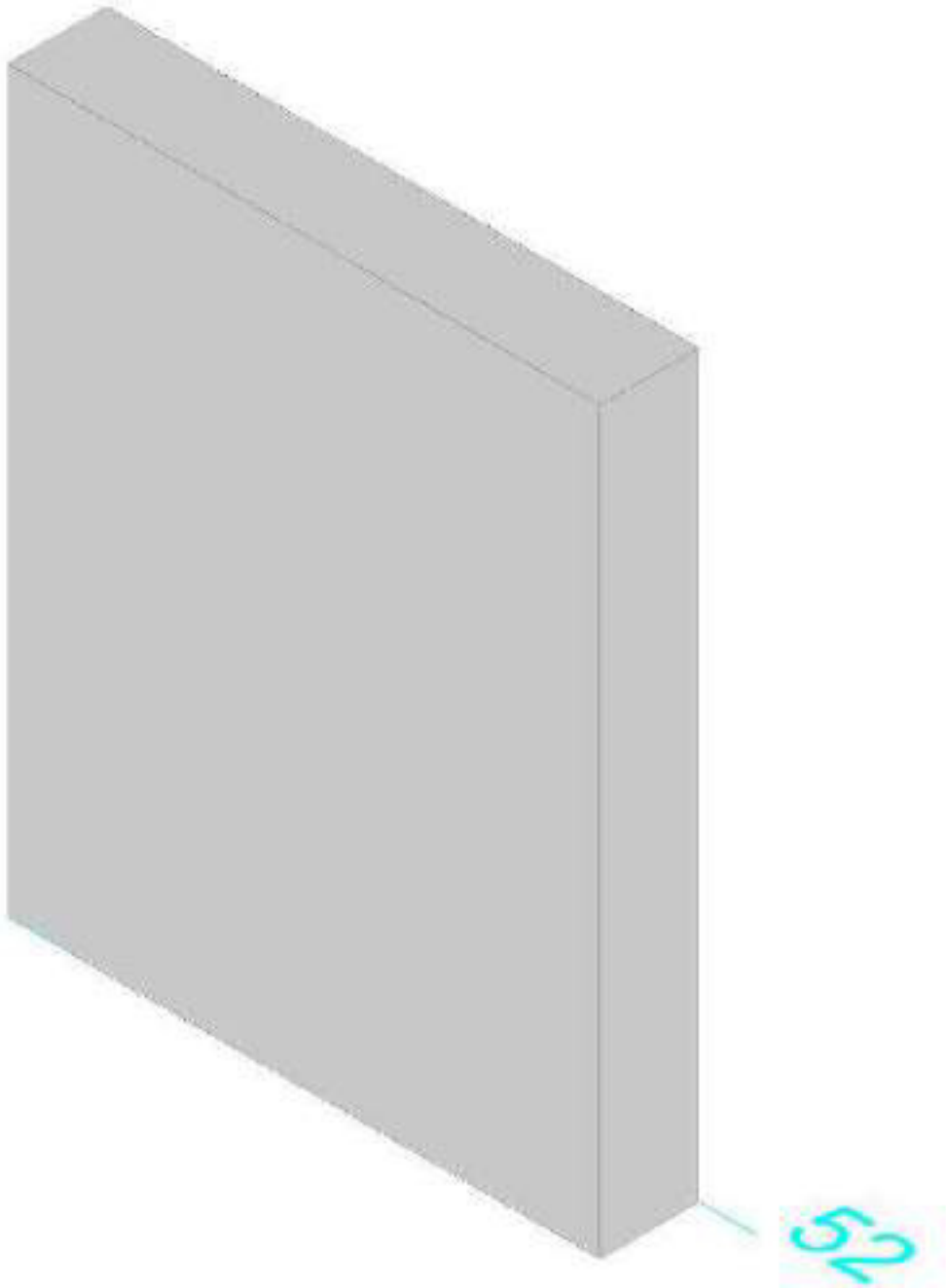
Descrizione	Dir.	Comb.	MEd	NEd	Sezione fessurata	σf	σf limite	Es/Ec	c.s.	Verifica
133 Prosp.A	Orizzontale	SLE RA 1	-59.09	-5692	No	-393126	36000000	15	91.5736	Si
131 Prosp.A	Verticale	SLE RA 21	157.09	2885	No	376124	36000000	15	95.7132	Si
154 Prosp.A	Orizzontale	SLE RA 1	-62.58	-6784	No	-364432	36000000	15	98.7838	Si
132 Prosp.A	Orizzontale	SLE RA 1	-54.71	-6581	No	-360251	36000000	15	99.9302	Si
131 Prosp.A	Orizzontale	SLE RA 1	-29.77	-4552	No	-340675	36000000	15	105.6724	Si

Verifiche generali

Parete Fondazione ascensore - Fondazione

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Livelli significativi

Descrizione breve	Descrizione	Quota	Spessore
L1	Fondazione ascensore	-2.8	0
L2	Fondazione	-1.3	0

Verifiche nei nodi

Sezioni rettangolari

Descrizione	Dir.	Base	Altezza	As,sup	As,inf	c,sup	c,inf
621 Prosp.A	Verticale	0.5	0.2	0.000423	0.000423	0.041	0.041
623 Prosp.A	Verticale	0.5	0.2	0.000424	0.000424	0.041	0.041
164 Prosp.A	Verticale	0.875	0.2	0.000761	0.000761	0.041	0.041
166 Prosp.A	Verticale	0.875	0.2	0.000763	0.000763	0.041	0.041
164 Prosp.A	Orizzontale	0.7498	0.2	0.000905	0.000905	0.0432	0.0432
142 Prosp.A	Verticale	1	0.2	0.000846	0.000846	0.041	0.041

Verifiche a flessione SLU D.M. 17-01-18 §4.1.2.3.4.2

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per le combinazioni SLV, viene eseguita calcolando i momenti resistenti in

campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Descrizione	Dir.	Comb.	MEd	NEd	MRd	NRd	c.s.	Verifica
621 Prosp.A	Verticale	SLV 16	366.02	9163	792.81	19847	2.166	Si
623 Prosp.A	Verticale	SLV 6	359.38	7004	931.02	18144	2.5906	Si
164 Prosp.A	Verticale	SLV 16	366.02	9163	1426.98	35723	3.8987	Si
623 Prosp.A	Verticale	SLV 16	-764.8	-3726	-3357.24	-16357	4.3897	Si
166 Prosp.A	Verticale	SLV 6	359.38	7004	1675.39	32650	4.6619	Si

Verifiche a flessione SLD Resistenza D.M. 17-01-18 §4.1.2.3.4.2

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Descrizione	Dir.	Comb.	MEd	NEd	MRd	NRd	c.s.	Verifica
623 Prosp.A	Verticale	SLD 3	638.7	-1485	2719.94	-6323	4.2585	Si
621 Prosp.A	Verticale	SLD 16	192.31	4299	852.96	19069	4.4353	Si
621 Prosp.A	Verticale	SLD 4	-437.02	-687	-2562.4	-4030	5.8633	Si
166 Prosp.A	Verticale	SLD 3	656.04	-1203	4700.33	-8620	7.1646	Si
164 Prosp.A	Verticale	SLD 4	-518.52	101	-4050.66	789	7.812	Si

Verifiche a taglio SLU D.M. 17-01-18 §4.1.2.3.5

Descrizione	Dir.	d	bw	Armatura a taglio	Asw/s	Comb.	VEd	NEd	MEd	Vrd,c	Vrcd	Vrsd	VRd	cotg(θ)	Asl	c.s.	Verifica
623 Prosp.A	Verticale	0.159	0.5	Non necessaria	0	SLV 11	4514	-8740	825.4	5560	18485	0	5560	2.5	0.0004238	1.2316	Si
165 Prosp.A	Orizzontale	0.159	1	Non necessaria	0	SLV 7	-7894	-11337	608.87	11318	36211	0	11318	2.5	0.0011375	1.4338	Si
166 Prosp.A	Orizzontale	0.157	0.751	Non necessaria	0	SLV 7	-4879	-5403	502.57	8192	26430	0	8192	2.5	0.0009048	1.6792	Si
164 Prosp.A	Orizzontale	0.157	0.75	Non necessaria	0	SLV 7	-4548	-10109	-3.35	8741	26979	0	8741	2.5	0.0009048	1.9221	Si
166 Prosp.A	Verticale	0.159	0.875	Non necessaria	0	SLV 11	4632	-7788	788.54	8909	31422	0	8909	2.5	0.0007628	1.9234	Si

Verifiche a taglio SLD Resistenza D.M. 17-01-18 §4.1.2.3.5

Descrizione	Dir.	d	bw	Armatura a taglio	Asw/s	Comb.	VEd	NEd	MEd	Vrd,c	Vrcd	Vrsd	VRd	cotg(θ)	Asl	c.s.	Verifica
165 Prosp.A	Orizzontale	0.159	1	Non necessaria	0	SLD 7	-5612	-10536	301.45	11223	36113	0	11223	2.5	0.0011375	1.9997	Si
623 Prosp.A	Verticale	0.159	0.5	Non necessaria	0	SLD 11	2443	-4098	519.51	5006	17912	0	5006	2.5	0.0004238	2.0491	Si
166 Prosp.A	Orizzontale	0.157	0.751	Non necessaria	0	SLD 7	-3441	-5822	231.89	8242	26481	0	8242	2.5	0.0009048	2.3949	Si
164 Prosp.A	Orizzontale	0.157	0.75	Non necessaria	0	SLD 7	-3405	-8171	-32.33	8513	26743	0	8513	2.5	0.0009048	2.5004	Si
166 Prosp.A	Verticale	0.159	0.875	Non necessaria	0	SLD 7	2579	-2845	427.44	8319	30812	0	8319	2.5	0.0007628	3.226	Si

Verifiche SLE tensione calcestruzzo D.M. 17-01-18 §4.1.2.2.5.1

Descrizione	Dir.	Comb.	MEd	NEd	Sezione fessurata	σc	σc limite	Es/Ec	c.s.	Verifica
623 Prosp.A	Verticale	SLE QP 2	388.39	-730	No	-109341	1120500	15	10.2478	Si
623 Prosp.A	Verticale	SLE RA 20	427.69	-807	No	-120430	1494000	15	12.4056	Si
164 Prosp.A	Orizzontale	SLE QP 2	-274.77	-7621	No	-89725	1120500	15	12.4882	Si
164 Prosp.A	Orizzontale	SLE RA 20	-303.51	-8337	No	-98653	1494000	15	15.1439	Si
623 Prosp.A	Verticale	SLE QP 2	-239.21	-990	No	-72132	1120500	15	15.534	Si

Verifiche SLE tensione acciaio D.M. 17-01-18 §4.1.2.2.5.2

Descrizione	Dir.	Comb.	MEd	NEd	Sezione fessurata	σf	σf limite	Es/Ec	c.s.	Verifica
623 Prosp.A	Verticale	SLE RA 20	427.69	-807	No	895064	36000000	15	40.2206	Si
166 Prosp.A	Verticale	SLE RA 20	431.89	-577	No	532808	36000000	15	67.5666	Si
623 Prosp.A	Verticale	SLE RA 21	-260.28	-1066	No	468156	36000000	15	76.8974	Si
142 Prosp.A	Verticale	SLE RA 20	-241.9	2533	No	452172	36000000	15	79.6157	Si
166 Prosp.A	Verticale	SLE RA 21	-322.29	48	No	433881	36000000	15	82.9721	Si

Verifiche generali

1.4 Verifiche piastre C.A.

Le unità di misura elencate nel capitolo sono in [m, daN, deg] ove non espressamente specificato.

***Nodo**: indice del nodo di verifica.*
***Dir.**: direzione della sezione di verifica.*
***B**: base della sezione rettangolare di verifica. [m]*
***H**: altezza della sezione rettangolare di verifica. [m]*
***A. sup.**: area barre armatura superiori. [m²]*
***C. sup.**: distanza media delle barre superiori dal bordo superiore della sezione. [m]*
***A. inf.**: area barre armatura inferiori. [m²]*
***C. inf.**: distanza media delle barre inferiori dal bordo inferiore della sezione. [m]*
***Comb.**: combinazione di verifica.*
***M**: momento flettente. [daN*m]*

N: sforzo normale. [daN]
*Mu: momento flettente ultimo. [daN*m]*
Nu: sforzo normale ultimo. [daN]
c.s.: coefficiente di sicurezza.
Verifica: stato di verifica.
σc: tensione nel calcestruzzo. [daN/m²]
σlim: tensione limite. [daN/m²]
Es/Ec: coefficiente di omogenizzazione.
σf: tensione nell'acciaio d'armatura. [daN/m²]
Comb.: combinazione.
Fh: componente orizzontale del carico. [daN]
Fv: componente verticale del carico. [daN]
Cnd: resistenza valutata a breve o lungo termine (BT - LT).
Ad: adesione di progetto. [daN/m²]
Phi: angolo di attrito di progetto. [deg]
RPl: resistenza passiva laterale unitaria di progetto. [daN/m²]
γR: coefficiente parziale sulla resistenza di progetto.
Rd: resistenza alla traslazione di progetto. [daN]
Ed: azione di progetto. [daN]
Rd/Ed: coefficiente di sicurezza allo scorrimento.
ID: indice della verifica di capacità portante.
Fx: componente lungo x del carico. [daN]
Fy: componente lungo y del carico. [daN]
Fz: componente verticale del carico. [daN]
*Mx: componente lungo x del momento. [daN*m]*
*My: componente lungo y del momento. [daN*m]*
ix: inclinazione del carico in x. [deg]
iy: inclinazione del carico in y. [deg]
ex: eccentricità del carico in x. [m]
ey: eccentricità del carico in y. [m]
B': larghezza efficace. [m]
L': lunghezza efficace. [m]
C: coesione di progetto. [daN/m²]
Qs: sovraccarico laterale da piano di posa. [daN/m²]
Rd: resistenza alla rottura del complesso di progetto. [daN]
Ed: azione di progetto (sforzo normale al piano di posa). [daN]
Rd/Ed: coefficiente di sicurezza alla capacità portante.
N:
Nq: fattore di capacità portante per il termine di sovraccarico.
Nc: fattore di capacità portante per il termine coesivo.
Ng: fattore di capacità portante per il termine attritivo.
S:
Sq: fattore correttivo di capacità portante per forma (shape), per il termine di sovraccarico.
Sc: fattore correttivo di capacità portante per forma (shape), per il termine coesivo.
Sg: fattore correttivo di capacità portante per forma (shape), per il termine attritivo.
D:
Dq: fattore correttivo di capacità portante per approfondimento (deep), per il termine di sovraccarico.
Dc: fattore correttivo di capacità portante per approfondimento (deep), per il termine coesivo.
Dg: fattore correttivo di capacità portante per approfondimento (deep), per il termine attritivo.
I:
Iq: fattore correttivo di capacità portante per inclinazione del carico, per il termine di sovraccarico.
Ic: fattore correttivo di capacità portante per inclinazione del carico, per il termine coesivo.
Ig: fattore correttivo di capacità portante per inclinazione del carico, per il termine attritivo.
B:
Bq: fattore correttivo di capacità portante per inclinazione della base, per il termine di sovraccarico.
Bc: fattore correttivo di capacità portante per inclinazione della base, per il termine coesivo.
Bg: fattore correttivo di capacità portante per inclinazione della base, per il termine attritivo.
G:
Gq: fattore correttivo di capacità portante per inclinazione del pendio, per il termine di sovraccarico.
Gc: fattore correttivo di capacità portante per inclinazione del pendio, per il termine coesivo.
Gg: fattore correttivo di capacità portante per inclinazione del pendio, per il termine attritivo.
P:
Pq: fattore correttivo di capacità portante per punzonamento, per il termine di sovraccarico.
Pc: fattore correttivo di capacità portante per punzonamento, per il termine coesivo.
Pg: fattore correttivo di capacità portante per punzonamento, per il termine attritivo.
E:
Eq: fattore correttivo di capacità portante per sisma (earthquake), per il termine di sovraccarico.
Ec: fattore correttivo di capacità portante per sisma (earthquake), per il termine coesivo.
Eg: fattore correttivo di capacità portante per sisma (earthquake), per il termine attritivo.

εsm: deformazione unitaria media delle barre di armatura.
Δmax: distanza massima tra le fessure. [m]
Wd: valore di calcolo di apertura delle fessure. [m]

Platea 1

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Geometria

Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Sistema di riferimento e direzioni di armatura

Le coordinate citate nel seguito sono espresse in un sistema di riferimento cartesiano con origine in (-17.056; -4.784; -1.3), direzione dell'asse X = (0.01; 0; 0), direzione dell'asse Y = (0; 0.01; 0).
Le direzioni X/Y di armatura e le sezioni X/Y di verifica sono individuate dagli assi del sistema di riferimento.

Verifiche nei nodi

Verifiche SLD Resistenza flessione nei nodi

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	Mu	Nu	c.s.	Verifica
300	X	0.503	0.45	0.000624	0.048	0.000592	0.048	SLD 9	7435.16	0	8183.26	0	1.1006	Si
260	Y	0.875	0.45	0.00106	0.049	0.001177	0.047	SLD 9	-11552.14	0	-14287.06	0	1.2367	Si
265	X	0.5	0.45	0.000622	0.048	0.000603	0.048	SLD 5	6601.65	0	8352.88	0	1.2653	Si
261	Y	0.875	0.45	0.00106	0.049	0.001177	0.047	SLD 9	-11034.78	0	-14287.06	0	1.2947	Si
259	Y	0.875	0.45	0.00106	0.049	0.001177	0.047	SLD 9	-10149.27	0	-14287.06	0	1.4077	Si

Verifiche SLE tensione calcestruzzo nei nodi

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	σc	σlim	Es/Ec	Verifica
300	X	0.503	0.45	0.000624	0.048	0.000592	0.048	SLE QP 2	5743.77	0	-546269	1120500	15	Si
265	X	0.5	0.45	0.000622	0.048	0.000603	0.048	SLE QP 2	5264.64	0	-498681	1120500	15	Si
300	X	0.503	0.45	0.000624	0.048	0.000592	0.048	SLE RA 21	6307.68	0	-599900	1494000	15	Si
301	X	0.768	0.45	0.000887	0.048	0.001006	0.048	SLE QP 2	7442.53	0	-447327	1120500	15	Si
260	Y	0.875	0.45	0.00106	0.049	0.001177	0.047	SLE QP 2	-8039.68	0	-429831	1120500	15	Si

Verifiche SLE tensione acciaio nei nodi

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	σf	σlim	Es/Ec	Verifica
300	X	0.503	0.45	0.000624	0.048	0.000592	0.048	SLE RA 21	6307.68	0	28961188	36000000	15	Si
265	X	0.5	0.45	0.000622	0.048	0.000603	0.048	SLE RA 21	5811.55	0	26229491	36000000	15	Si
260	Y	0.875	0.45	0.00106	0.049	0.001177	0.047	SLE RA 21	-8878.58	0	23726217	36000000	15	Si
301	X	0.768	0.45	0.000887	0.048	0.001006	0.048	SLE RA 21	8168.41	0	22171226	36000000	15	Si
261	Y	0.875	0.45	0.00106	0.049	0.001177	0.047	SLE RA 21	-8665.43	0	3202090	36000000	15	Si

Verifiche SLE fessurazione nei nodi

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	εsm	Δmax	Wd	Es/Ec	Verifica
300	X	0.503	0.45	0.000624	0.048	0.000592	0.048	SLE QP 2	5743.77	0	0.00077	0.337	0.000258	15	Si
265	X	0.5	0.45	0.000622	0.048	0.000603	0.048	SLE QP 2	5264.64	0	0.00069	0.333	0.000231	15	Si
300	X	0.503	0.45	0.000624	0.048	0.000592	0.048	SLE FR 6	5885.69	0	0.00079	0.337	0.000265	15	Si
301	X	0.768	0.45	0.000887	0.048	0.001006	0.048	SLE QP 2	7442.53	0	0.00059	0.318	0.000187	15	Si
260	Y	0.875	0.45	0.00106	0.049	0.001177	0.047	SLE QP 2	-8039.68	0	0.00063	0.296	0.000185	15	Si

Verifiche geotecniche

Dati geometrici dell'impronta di calcolo

Forma dell'impronta di calcolo: rettangolare di area equivalente
Centro impronta, nel sistema globale: -15.4; -4; -1.8

Lato minore B dell'impronta: 1.5
Lato maggiore L dell'impronta: 3.3
Area dell'impronta rettangolare di calcolo: 4.9

Verifica di scorrimento sul piano di posa

Coefficiente di sicurezza minimo per scorrimento 0

Comb.	Fh	Fv	Cnd	Ad	Phi	RPl	γR	Rd	Ed	Rd/Ed	Verifica
SLU 48	825	-55850	LT	0	19	0	1.1	16988	825	20.59	Si

Verifica di capacità portante sul piano di posa

Profondità massima del bulbo di rottura considerato (per condizione non drenata): 0.75 m
Accelerazione normalizzata massima attesa al suolo Amax per verifiche in SLD: 0.03
Accelerazione normalizzata massima attesa al suolo Amax per verifiche in SLV: 0.073

Coefficiente di sicurezza minimo per portanza 1.47

ID	Comb.	Fx	Fy	Fz	Mx	My	ix	iy	ex	ey	B'	L'	Cnd	C	Phi	Qs	γR	Rd	Ed	Rd/Ed	Verifica
1	SLU 84	448	742	-69649	2122.37	-165.34	0	1	0	0.03	1.44	3.29	BT	14430	0	878	2.3	185451	69649	2.66	Si
2	SLV 5	-1357	-8266	-109447	10442.89	-1997.22	-1	-4	-0.02	0.1	1.31	3.26	BT	14430	0	878	2.3	160443	109447	1.47	Si
3	SLD 5	-412	-2965	-71890	5003.03	-932.39	0	-2	-0.01	0.07	1.36	3.27	BT	14430	0	878	2.3	171984	71890	2.39	Si

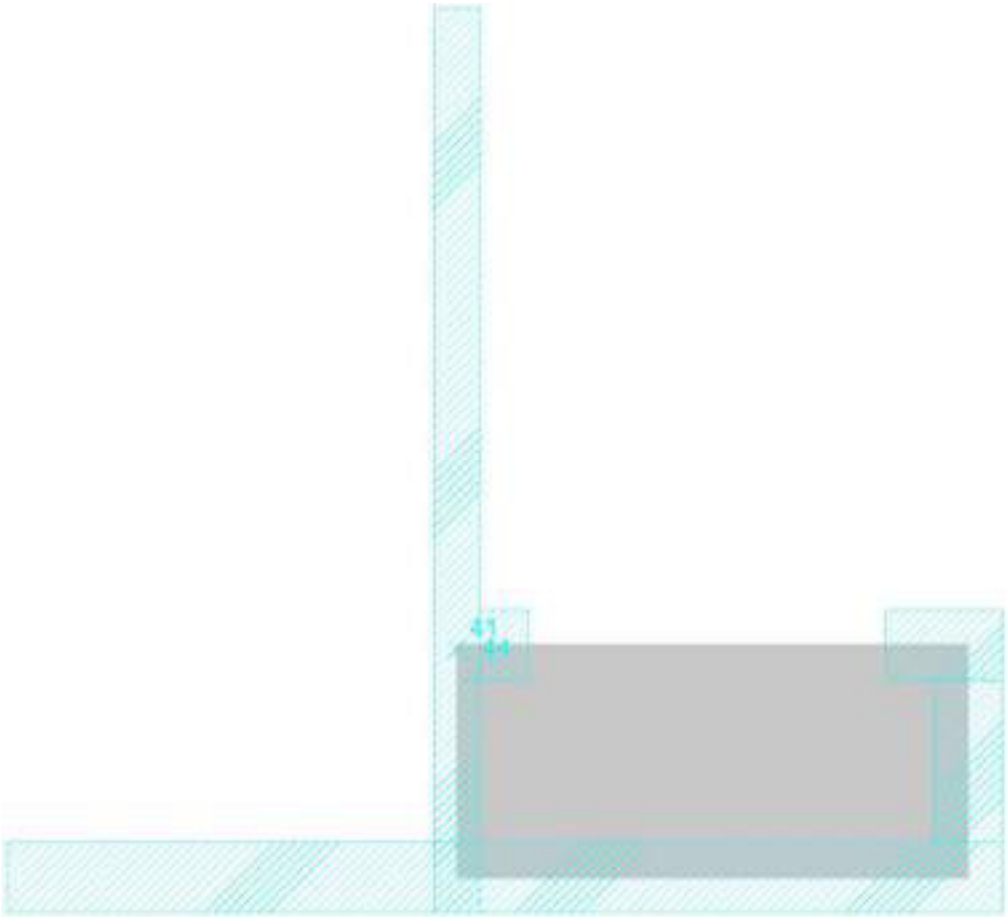
Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

ID	N			S			D			I			B			G			P			E		
	Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	1	5	0	0	0.09	0	0	0.12	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
2	1	5	0	0	0.08	0	0	0.12	0	0	0.05	0	0	0	0	0	0	0	1	1	1	0	0	0
3	1	5	0	0	0.08	0	0	0.12	0	0	0.02	0	0	0	0	0	0	0	1	1	1	0	0	0

Platea 2

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Sistema di riferimento e direzioni di armatura

Le coordinate citate nel seguito sono espresse in un sistema di riferimento cartesiano con origine in (-11.013; -4.784; -1.3), direzione dell'asse X = (0.01; 0; 0), direzione dell'asse Y = (0; 0.01; 0).
Le direzioni X/Y di armatura e le sezioni X/Y di verifica sono individuate dagli assi del sistema di riferimento.

Verifiche nei nodi

Verifiche SLU flessione nei nodi

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per le combinazioni SLV, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	Mu	Nu	c.s.	Verifica
343	Y	0.5	0.45	0.000622	0.049	0.000716	0.047	SLV 10	-7434.64	0	-8385.71	0	1.1279	Si
316	X	0.5	0.45	0.000622	0.048	0.000615	0.048	SLV 5	7252.12	0	8372.76	0	1.1545	Si
344	Y	0.5	0.45	0.000622	0.049	0.000716	0.047	SLV 10	-6975.29	0	-8385.71	0	1.2022	Si
345	Y	0.5	0.45	0.000622	0.049	0.000716	0.047	SLV 10	-6208.97	0	-8385.71	0	1.3506	Si
315	X	0.765	0.45	0.000885	0.048	0.000894	0.048	SLV 5	9055.36	0	12238.6	0	1.3515	Si

Verifiche SLD Resistenza flessione nei nodi

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	Mu	Nu	c.s.	Verifica
316	X	0.5	0.45	0.000622	0.048	0.000615	0.048	SLD 5	5547.47	0	8372.76	0	1.5093	Si
315	X	0.765	0.45	0.000885	0.048	0.000894	0.048	SLD 5	6946.39	0	12238.6	0	1.7619	Si
343	Y	0.5	0.45	0.000622	0.049	0.000716	0.047	SLD 10	-4758.17	0	-8385.71	0	1.7624	Si
316	Y	0.5	0.45	0.000283	0.036	0.000377	0.036	SLD 9	2890.88	0	5326.59	0	1.8426	Si
344	Y	0.5	0.45	0.000622	0.049	0.000716	0.047	SLD 10	-4456.57	0	-8385.71	0	1.8817	Si

Verifiche SLE tensione calcestruzzo nei nodi

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	σc	σlim	Es/Ec	Verifica
316	X	0.5	0.45	0.000622	0.048	0.000615	0.048	SLE QP 2	4420.04	0	-227078	1120500	15	Si
315	X	0.765	0.45	0.000885	0.048	0.000894	0.048	SLE QP 2	5549.7	0	-187963	1120500	15	Si
316	X	0.5	0.45	0.000622	0.048	0.000615	0.048	SLE RA 21	4838.03	0	-248552	1494000	15	Si
315	X	0.765	0.45	0.000885	0.048	0.000894	0.048	SLE RA 21	6071.71	0	-205643	1494000	15	Si
343	Y	0.5	0.45	0.000622	0.049	0.000716	0.047	SLE QP 2	-2959.05	0	-149657	1120500	15	Si

Verifiche SLE tensione acciaio nei nodi

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	σf	σlim	Es/Ec	Verifica
316	X	0.5	0.45	0.000622	0.048	0.000615	0.048	SLE RA 21	4838.03	0	2935317	36000000	15	Si
315	X	0.765	0.45	0.000885	0.048	0.000894	0.048	SLE RA 21	6071.71	0	2425079	36000000	15	Si
343	Y	0.5	0.45	0.000622	0.049	0.000716	0.047	SLE RA 21	-3278.8	0	2111722	36000000	15	Si
344	Y	0.5	0.45	0.000622	0.049	0.000716	0.047	SLE RA 21	-3075.91	0	1981053	36000000	15	Si
316	Y	0.5	0.45	0.000283	0.036	0.000377	0.036	SLE RA 21	2826.11	0	1918189	36000000	15	Si

Verifiche SLE fessurazione nei nodi

La piastra non presenta nodi con apertura delle fessure.

Verifiche geotecniche

Dati geometrici dell'impronta di calcolo

Forma dell'impronta di calcolo: rettangolare di area equivalente
Centro impronta, nel sistema globale: -9.4; -4; -1.8
Lato minore B dell'impronta: 1.5
Lato maggiore L dell'impronta: 3.3
Area dell'impronta rettangolare di calcolo: 4.9

Verifica di scorrimento sul piano di posa

Coefficiente di sicurezza minimo per scorrimento 0

Comb.	Fh	Fv	Cnd	Ad	Phi	RPl	γR	Rd	Ed	Rd/Ed	Verifica
SLU 48	884	-55517	LT	0	19	0	1.1	16887	884	19.1	Si

Verifica di capacità portante sul piano di posa

Profondità massima del bulbo di rottura considerato (per condizione non drenata): 0.75 m
Accelerazione normalizzata massima attesa al suolo Amax per verifiche in SLD: 0.03
Accelerazione normalizzata massima attesa al suolo Amax per verifiche in SLV: 0.073

Coefficiente di sicurezza minimo per portanza 1.48

ID	Comb.	Fx	Fy	Fz	Mx	My	ix	iy	ex	ey	B'	L'	Cnd	C	Phi	Qs	γR	Rd	Ed	Rd/Ed	Verifica
1	SLU 84	-236	911	-69089	1195.49	502.03	0	1	0.01	0.02	1.47	3.28	BT	14430	0	878	2.3	188416	69089	2.73	Si
2	SLV 10	1134	-8100	-110342	9361.02	2402.57	1	-4	0.02	0.08	1.33	3.25	BT	14430	0	878	2.3	163050	110342	1.48	Si
3	SLD 10	433	-2820	-72044	4196.55	1234.72	0	-2	0.02	0.06	1.38	3.26	BT	14430	0	878	2.3	174703	72044	2.42	Si

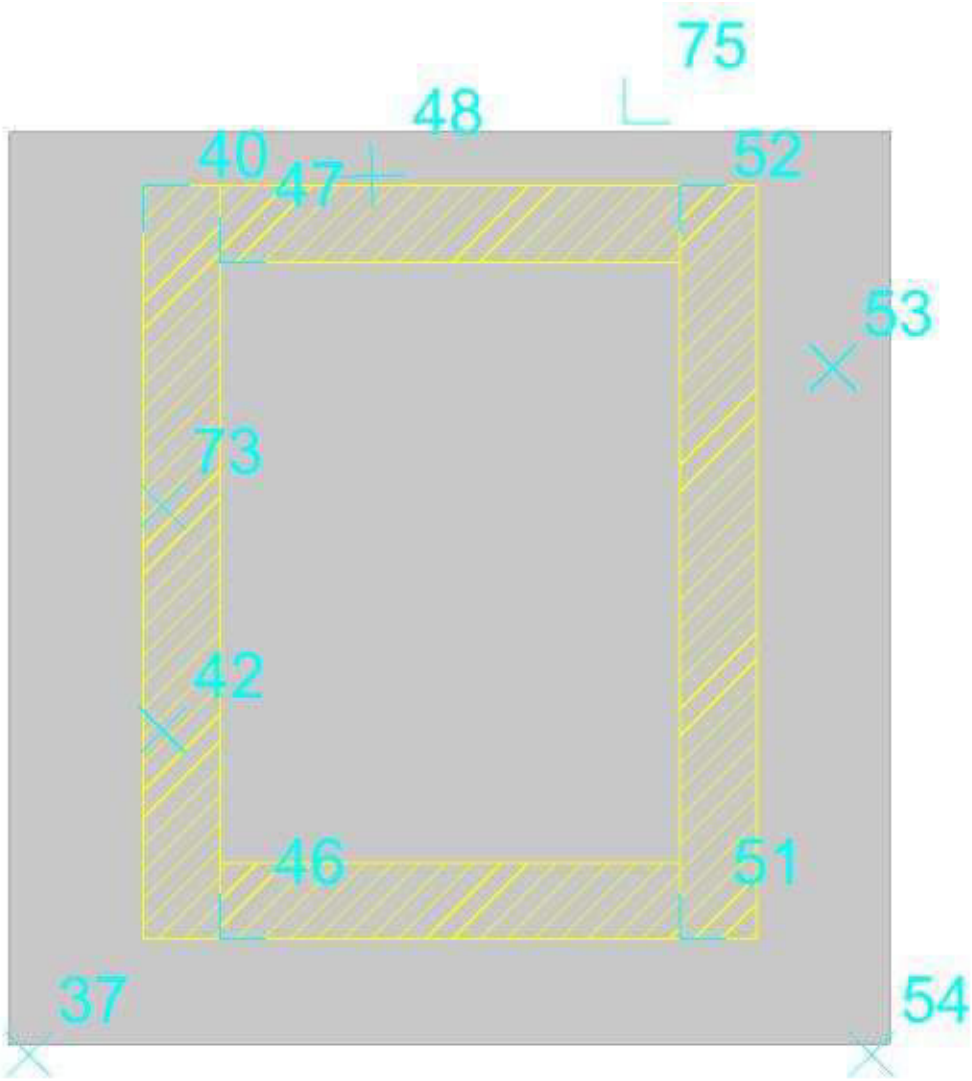
Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

ID	N			S			D			I			B			G			P			E		
	Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	1	5	0	0	0.09	0	0	0.12	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
2	1	5	0	0	0.08	0	0	0.12	0	0	0.04	0	0	0	0	0	0	0	1	1	1	0	0	0
3	1	5	0	0	0.08	0	0	0.12	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0

Platea a "Fondazione ascensore"

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Geometria



Caratteristiche dei materiali

Acciaio: B450C Fyk 45000000
Calcestruzzo: C25/30 Rck 3000000

Sistema di riferimento e direzioni di armatura

Le coordinate citate nel seguito sono espresse in un sistema di riferimento cartesiano con origine in (-11.413; -1.219; -2.8), direzione dell'asse X = (0.01; 0; 0), direzione dell'asse Y = (0; 0.01; 0).
Le direzioni X/Y di armatura e le sezioni X/Y di verifica sono individuate dagli assi del sistema di riferimento.

Verifiche nei nodi

Verifiche SLU flessione nei nodi

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione, per le combinazioni SLV, viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	Mu	Nu	c.s.	Verifica
36	Y	1	0.3	0.001131	0.036	0.001319	0.036	SLU 84	1648.01	0	12595.57	0	7.6429	Si
40	Y	1	0.3	0.001131	0.036	0.001319	0.036	SLU 84	1637.31	0	12571.52	0	7.6781	Si
45	Y	1	0.3	0.001131	0.036	0.001319	0.036	SLU 84	1616.45	0	12569.19	0	7.7758	Si
29	Y	1	0.3	0.001131	0.036	0.001319	0.036	SLU 84	1592.95	0	12618.14	0	7.9212	Si
49	Y	1	0.3	0.001131	0.036	0.001319	0.036	SLU 84	1565.25	0	12597.73	0	8.0484	Si

Verifiche SLD Resistenza flessione nei nodi

La struttura è stata dichiarata come non dissipativa pertanto la verifica a pressoflessione viene eseguita calcolando i momenti resistenti in campo sostanzialmente elastico secondo D.M. 17-01-2018 §7.4.1

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	Mu	Nu	c.s.	Verifica
36	Y	1	0.3	0.001131	0.036	0.001319	0.036	SLD 5	1198.39	0	11806.54	0	9.852	Si
40	Y	1	0.3	0.001131	0.036	0.001319	0.036	SLD 9	1174.03	0	11579.25	0	9.8629	Si
45	Y	1	0.3	0.001131	0.036	0.001319	0.036	SLD 5	1134.04	0	11505.21	0	10.1453	Si
29	Y	1	0.3	0.001131	0.036	0.001319	0.036	SLD 9	1173.09	0	12014.5	0	10.2418	Si
22	Y	0.875	0.3	0.000947	0.036	0.001112	0.036	SLD 9	946.88	0	10013.31	0	10.5751	Si

Verifiche SLE tensione calcestruzzo nei nodi

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	σc	σlim	Es/Ec	Verifica
36	Y	1	0.3	0.001131	0.036	0.001319	0.036	SLE QP 2	1103.52	0	-61078	1120500	15	Si
40	Y	1	0.3	0.001131	0.036	0.001319	0.036	SLE QP 2	1102.98	0	-61048	1120500	15	Si
45	Y	1	0.3	0.001131	0.036	0.001319	0.036	SLE QP 2	1086.47	0	-60135	1120500	15	Si
29	Y	1	0.3	0.001131	0.036	0.001319	0.036	SLE QP 2	1073.02	0	-59390	1120500	15	Si
49	Y	1	0.3	0.001131	0.036	0.001319	0.036	SLE QP 2	1053.33	0	-58300	1120500	15	Si

Verifiche SLE tensione acciaio nei nodi

Nodo	Dir.	B	H	A. sup.	C. sup.	A. inf.	C. inf.	Comb.	M	N	σf	σlim	Es/Ec	Verifica
36	Y	1	0.3	0.001131	0.036	0.001319	0.036	SLE RA 21	1210.05	0	752299	36000000	15	Si
40	Y	1	0.3	0.001131	0.036	0.001319	0.036	SLE RA 21	1203.9	0	748478	36000000	15	Si
45	Y	1	0.3	0.001131	0.036	0.001319	0.036	SLE RA 21	1187.86	0	738507	36000000	15	Si
29	Y	1	0.3	0.001131	0.036	0.001319	0.036	SLE RA 21	1171.5	0	728337	36000000	15	Si
49	Y	1	0.3	0.001131	0.036	0.001319	0.036	SLE RA 21	1150.33	0	715174	36000000	15	Si

Verifiche SLE fessurazione nei nodi

La piastra non presenta nodi con apertura delle fessure.

Verifiche geotecniche

Dati geometrici dell'impronta di calcolo

Forma dell'impronta di calcolo: rettangolare di area equivalente
Centro impronta, nel sistema globale: -10.3; 0; -3.1
Lato minore B dell'impronta: 2.3
Lato maggiore L dell'impronta: 2.4
Area dell'impronta rettangolare di calcolo: 5.5

Verifica di scorrimento sul piano di posa

Coefficiente di sicurezza minimo per scorrimento 1.82

Comb.	Fh	Fv	Cnd	Ad	Phi	RPI	γR	Rd	Ed	Rd/Ed	Verifica
SLU 43	1745	-54166	LT	0	19	0	1.1	16476	1745	9.44	Si
SLV 4	7489	-44840	LT	0	19	0	1.1	13639	7489	1.82	Si

Verifica di capacità portante sul piano di posa

Profondità massima del bulbo di rottura considerato: 2.31 m
Profondità massima del bulbo di rottura considerato (per condizione non drenata): 1.15 m
Peso specifico efficace del terreno di progetto γs: 2060 daN/m3
Accelerazione normalizzata massima attesa al suolo Amax per verifiche in SLD: 0.03
Accelerazione normalizzata massima attesa al suolo Amax per verifiche in SLV: 0.073

Coefficiente di sicurezza minimo per portanza 2.57

ID	Comb.	Fx	Fy	Fz	Mx	My	ix	iy	ex	ey	B'	L'	Cnd	C	Phi	Qs	γR	Rd	Ed	Rd/Ed	Verifica
1	SLU 84	-1602	903	-68977	228.45	155.44	-1	1	0	0	2.3	2.37	BT	14430	0	0	2.3	208536	68977	3.02	Si
2	SLV 2	-7593	-421	-47420	2074.85	-3617.53	-9	-1	-0.08	0.04	2.15	2.29	LT	0	37	0	2.3	121786	47420	2.57	Si
3	SLD 2	-3914	250	-46963	921.65	-1468.5	-5	0	-0.03	0.02	2.24	2.34	LT	0	37	0	2.3	169893	46963	3.62	Si

Verifiche geotecniche di capacità portante - fattori utilizzati nel calcolo di Rd

ID	N			S			D			I			B			G			P			E		
	Nq	Nc	Ng	Sq	Sc	Sg	Dq	Dc	Dg	Iq	Ic	Ig	Bq	Bc	Bg	Gq	Gc	Gg	Pq	Pc	Pg	Eq	Ec	Eg
1	1	5	0	0	0.19	0	0	0	0	0	0.01	0	0	0	0	0	0	0	1	1	1	0	0	0
2	43	56	66	1.71	1.72	0.63	1	1	1	0.77	0.76	0.64	1	1	1	1	1	1	1	1	1	0.96	0.98	0.96
3	43	56	66	1.72	1.74	0.62	1	1	1	0.88	0.87	0.8	1	1	1	1	1	1	1	1	1	0.99	0.99	0.99

1.5 Verifica sismica globale

Le unità di misura elencate nel capitolo sono in [m] ove non espressamente specificato.

***Desc.**: descrizione.*
***Stato limite**: (muratura) V=Taglio; PF=Pressoflessione; PFFP=Pressoflessione fuori piano; R=Ribaltamento.*
***Molt.**: moltiplicatore minimo della azione sismica che produce lo stato limite.*
***Comb.**: combinazione.*
***PGA**: accelerazione al suolo.*
***iPGA (ζE)**: indicatore di rischio sismico in termini di PGA ovvero rapporto tra l'azione sismica massima sopportabile dall'elemento e l'azione sismica massima che si utilizzerebbe nel progetto nuovo (§C8.3).*
***TR**: tempo di ritorno.*
***(TR/TRrif)^.41**: indicatore di rischio sismico in termini di periodo di ritorno.*
***fa**: fattore di accelerazione.*
***Stato limite**: (muratura) V=Taglio; PF=Presso flessione; PFFP=Pressoflessione fuori piano; R=Ribaltamento.*
***Coeff.s.**: coefficiente minimo prodotto dallo stato limite.*

***Verifica**: stato di verifica.*
***Trave**: titolo della trave.*
***Pressoflessione**: dati della verifica a pressoflessione.*
***Coeff.s.**: coefficiente di sicurezza a flessione.*
***iTR**: indicatore di rischio sismico in termini di tempo di ritorno.*
***campata**: campata di riferimento.*
***dist.**: ascissa relativa all'inizio della campata. [m]*
***Taglio**: dati della verifica a taglio.*
***Coeff.s.**: coefficiente di sicurezza a taglio.*
***Maschio**: maschio.*
***Stato limite**: (maschio muratura) V=Taglio; PF=Presso flessione; PFFP=Presso flessione fuori piano; R=Ribaltamento.*
***Trave**: trave di collegamento in muratura.*
***Stato limite**: (trave muratura) V=Taglio; F=Flessione.*
***S. L.**: stato limite di riferimento.*
***TR,C**: periodo di ritorno di capacità.*
***PGA,C**: accelerazione di aggancio di capacità.*
***TR,Rif**: periodo di ritorno di riferimento.*
***PGA,Rif**: accelerazione di aggancio di riferimento.*
***Tipo rottura**: tipo di rottura che fornisce il valore minimo degli elementi considerati.*
***PAM**: perdita media annua attesa.*
***Classe PAM**: classe di rischio PAM.*
***IS-V**: indice di sicurezza.*
***Classe IS-V**: classe di rischio IS-V.*
***λ,SLR**: frequenza media annua di superamento in Stato Limite di Ricostruzione.*
***λ,SLC**: frequenza media annua di superamento in Stato Limite di Collasso.*
***λ,SLV**: frequenza media annua di superamento in Stato Limite di salvaguardia della Vita.*
***λ,SLD**: frequenza media annua di superamento in Stato Limite di Danno.*
***λ,SLO**: frequenza media annua di superamento in Stato Limite di Operatività.*
***λ,SLID**: frequenza media annua di superamento in Stato Limite di Inizio Danno.*

Verifica di elementi dotati di indicatori di rischio sismico mediante analisi con fattore q

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.) § C8.7.1

Accelerazioni e tempi di ritorno

Accelerazione di aggancio SLO (ag/g_SLO*S*ST) PGA,SLOrif = 0.081
Accelerazione di aggancio SLD (ag/g_SLD*S*ST) PGA,SLDrif = 0.101
Accelerazione di aggancio SLV (ag/g_SLV*S*ST) PGA,SLVrif = 0.244
Tr,SLOrif = 30 anni
Tr,SLDrif = 50 anni
Tr,SLVrif = 475 anni

Moltiplicatori minimi delle condizioni sismiche

(Il valore di ζE corrisponde al valore di I.R. PGA secondo quanto riportato nella Circolare 7 21-01-19 §C8.3)

Indicatori minimi riferiti al solo materiale muratura

Desc.	Stato limite	Molt.	Comb.	PGA	iPGA (ζE)	TR	(TR/TRrif)^.41	fa
Maschio 276	PF	0.136	SLV 15	0.0309	0.1266	3	0.1254	0.1232
Maschio 101	V	0.625	SLV 6	0.1481	0.6062	134	0.5952	0.6057
Maschio 276	PFFP	0.156	SLV 15	0.0349	0.1428	4	0.1411	0.139
Maschio 55	R	0.984	SLV 12	0.2403	0.9836	454	0.9816	0.9831
Trave di accoppiamento 171	PF	0.139	SLV 7	0.0383	0.1569	5	0.1546	0.1526
Trave di accoppiamento 25	V	0.114	SLV 3	0.0261	0.1068	2	0.1062	0.1039

Coefficienti di sicurezza riferiti al solo materiale muratura

Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 1	PF SLU	58.407	SLU 2	Si
Maschio 1	V SLU	31.644	SLU 73	Si
Maschio 1	PF	0	SLV 13	No
Maschio 1	V	1.729	SLV 12	Si
Maschio 1	PFFP	7.208	SLV 13	Si
Maschio 1	R	1.986	SLV 4	Si
Maschio 2	PF SLU	6.805	SLU 48	Si
Maschio 2	V SLU	4.099	SLU 77	Si
Maschio 2	PF	0	SLV 5	No
Maschio 2	V	1.732	SLV 12	Si
Maschio 2	PFFP	0	SLV 13	No
Maschio 2	R	1.397	SLV 8	Si
Maschio 3	PF SLU	4.119	SLU 77	Si
Maschio 3	V SLU	6.747	SLU 81	Si
Maschio 3	PF	0	SLV 5	No
Maschio 3	V	2.412	SLV 14	Si
Maschio 3	PFFP	0	SLV 10	No

Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 3	R	1.592	SLV 7	Si
Maschio 4	PF SLU	6.911	SLU 47	Si
Maschio 4	V SLU	4.535	SLU 76	Si
Maschio 4	PF	0	SLV 7	No
Maschio 4	V	2.106	SLV 9	Si
Maschio 4	PFFP	0	SLV 12	No
Maschio 4	R	1.552	SLV 5	Si
Maschio 5	PF SLU	2.992	SLU 76	Si
Maschio 5	V SLU	3.978	SLU 83	Si
Maschio 5	PF	0	SLV 8	No
Maschio 5	V	1.103	SLV 15	Si
Maschio 5	PFFP	0	SLV 12	No
Maschio 5	R	1.932	SLV 5	Si
Maschio 7	PF SLU	5.657	SLU 84	Si
Maschio 7	V SLU	8.427	SLU 76	Si
Maschio 7	PF	0.455	SLV 9	No
Maschio 7	V	1.377	SLV 5	Si
Maschio 7	PFFP	14.883	SLV 9	Si
Maschio 7	R	1.231	SLV 4	Si
Maschio 10	PF SLU	7.159	SLU 84	Si
Maschio 10	V SLU	33.27	SLU 69	Si
Maschio 10	PF	0.871	SLV 12	No
Maschio 10	V	1.279	SLV 12	Si
Maschio 10	PFFP	10.037	SLV 12	Si
Maschio 10	R	1.374	SLV 5	Si
Maschio 11	PF SLU	56.738	SLU 41	Si
Maschio 11	V SLU	5.162	SLU 84	Si
Maschio 11	PF	2.944	SLV 14	Si
Maschio 11	V	2.921	SLV 14	Si
Maschio 11	PFFP	30.662	SLV 16	Si
Maschio 11	R	1.347	SLV 3	Si
Maschio 12	PF SLU	7.967	SLU 84	Si
Maschio 12	V SLU	119.672	SLU 70	Si
Maschio 12	PF	1.981	SLV 13	Si
Maschio 12	V	2.93	SLV 14	Si
Maschio 12	PFFP	51.964	SLV 14	Si
Maschio 12	R	1.494	SLV 1	Si
Maschio 15	PF SLU	3.841	SLU 83	Si
Maschio 15	V SLU	2.872	SLU 83	Si
Maschio 15	PF	0	SLV 5	No
Maschio 15	V	1.898	SLV 12	Si
Maschio 15	PFFP	0	SLV 10	No
Maschio 15	R	1.591	SLV 12	Si
Maschio 16	PF SLU	1.297	SLU 84	Si
Maschio 16	V SLU	1.43	SLU 83	Si
Maschio 16	PF	0	SLV 7	No
Maschio 16	V	0.89	SLV 4	No
Maschio 16	PFFP	0	SLV 12	No
Maschio 16	R	2.115	SLV 5	Si
Maschio 17	PF SLU	4.774	SLU 84	Si
Maschio 17	V SLU	5.282	SLU 84	Si
Maschio 17	PF	0	SLV 7	No
Maschio 17	V	1.378	SLV 15	Si
Maschio 17	PFFP	0	SLV 16	No
Maschio 17	R	2.237	SLV 6	Si
Maschio 18	PF SLU	1.113	SLU 84	Si
Maschio 18	V SLU	1.621	SLU 84	Si
Maschio 18	PF	0.686	SLV 8	No
Maschio 18	V	1.418	SLV 9	Si
Maschio 18	PFFP	8.292	SLV 12	Si
Maschio 18	R	1.345	SLV 5	Si
Maschio 20	PF SLU	5.733	SLU 83	Si
Maschio 20	V SLU	4.917	SLU 76	Si
Maschio 20	PF	0.755	SLV 9	No
Maschio 20	V	1.22	SLV 5	Si
Maschio 20	PFFP	14.413	SLV 9	Si
Maschio 20	R	1.4	SLV 8	Si
Maschio 21	PF SLU	4.337	SLU 84	Si
Maschio 21	V SLU	3.528	SLU 83	Si
Maschio 21	PF	0.68	SLV 8	No
Maschio 21	V	1.178	SLV 8	Si
Maschio 21	PFFP	11.429	SLV 8	Si
Maschio 21	R	1.709	SLV 9	Si
Maschio 23	PF SLU	4.915	SLU 69	Si
Maschio 23	V SLU	15.011	SLU 84	Si
Maschio 23	PF	1.992	SLV 14	Si
Maschio 23	V	2.812	SLV 1	Si
Maschio 23	PFFP	19.163	SLV 5	Si
Maschio 23	R	8.451	SLV 14	Si
Maschio 24	PF SLU	24.894	SLU 48	Si
Maschio 24	V SLU	7.691	SLU 77	Si
Maschio 24	PF	0	SLV 5	No
Maschio 24	V	1.47	SLV 16	Si
Maschio 24	PFFP	0	SLV 10	No
Maschio 24	R	1.471	SLV 8	Si
Maschio 25	PF SLU	15.401	SLU 84	Si

Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 25	V SLU	23.919	SLU 62	Si
Maschio 25	PF	2.275	SLV 14	Si
Maschio 25	V	2.276	SLV 16	Si
Maschio 25	PFFP	42.145	SLV 10	Si
Maschio 25	R	1.504	SLV 7	Si
Maschio 26	PF SLU	8.689	SLU 77	Si
Maschio 26	V SLU	7.806	SLU 83	Si
Maschio 26	PF	0.752	SLV 11	No
Maschio 26	V	1.15	SLV 11	Si
Maschio 26	PFFP	10.741	SLV 11	Si
Maschio 26	R	1.467	SLV 6	Si
Maschio 27	PF SLU	27.792	SLU 48	Si
Maschio 27	V SLU	15.828	SLU 69	Si
Maschio 27	PF	0	SLV 5	No
Maschio 27	V	1.442	SLV 1	Si
Maschio 27	PFFP	0	SLV 6	No
Maschio 27	R	1.613	SLV 12	Si
Maschio 28	PF SLU	3.637	SLU 83	Si
Maschio 28	V SLU	2.676	SLU 83	Si
Maschio 28	PF	0	SLV 5	No
Maschio 28	V	1.352	SLV 7	Si
Maschio 28	PFFP	0	SLV 6	No
Maschio 28	R	1.851	SLV 7	Si
Maschio 30	PF SLU	4.783	SLU 77	Si
Maschio 30	V SLU	2.977	SLU 84	Si
Maschio 30	PF	0.788	SLV 5	No
Maschio 30	V	1.028	SLV 10	Si
Maschio 30	PFFP	19.014	SLV 5	Si
Maschio 30	R	1.959	SLV 16	Si
Maschio 32	PF SLU	3.666	SLU 69	Si
Maschio 32	V SLU	11.146	SLU 84	Si
Maschio 32	PF	0	SLV 7	No
Maschio 32	V	1.216	SLV 4	Si
Maschio 32	PFFP	0	SLV 12	No
Maschio 32	R	2.142	SLV 9	Si
Maschio 33	PF SLU	5.122	SLU 78	Si
Maschio 33	V SLU	6.556	SLU 84	Si
Maschio 33	PF	0	SLV 7	No
Maschio 33	V	4.4	SLV 13	Si
Maschio 33	PFFP	0	SLV 11	No
Maschio 33	R	1.343	SLV 6	Si
Maschio 34	PF SLU	1.949	SLU 84	Si
Maschio 34	V SLU	2.328	SLU 84	Si
Maschio 34	PF	0	SLV 7	No
Maschio 34	V	1.855	SLV 6	Si
Maschio 34	PFFP	2.344	SLV 7	Si
Maschio 34	R	1.231	SLV 10	Si
Maschio 35	PF SLU	1.803	SLU 84	Si
Maschio 35	V SLU	1.789	SLU 83	Si
Maschio 35	PF	0	SLV 7	No
Maschio 35	V	0.922	SLV 15	No
Maschio 35	PFFP	0	SLV 12	No
Maschio 35	R	2.377	SLV 10	Si
Maschio 36	PF SLU	40.102	SLU 44	Si
Maschio 36	V SLU	12.142	SLU 83	Si
Maschio 36	PF	1.153	SLV 7	Si
Maschio 36	V	1.515	SLV 11	Si
Maschio 36	PFFP	14.668	SLV 7	Si
Maschio 36	R	1.462	SLV 10	Si
Maschio 37	PF SLU	8.15	SLU 73	Si
Maschio 37	V SLU	4.628	SLU 84	Si
Maschio 37	PF	0	SLV 5	No
Maschio 37	V	1.36	SLV 10	Si
Maschio 37	PFFP	0	SLV 5	No
Maschio 37	R	1.133	SLV 11	Si
Maschio 39	PF SLU	2.626	SLU 83	Si
Maschio 39	V SLU	16.532	SLU 83	Si
Maschio 39	PF	0.989	SLV 2	No
Maschio 39	V	5.233	SLV 15	Si
Maschio 39	PFFP	42.642	SLV 3	Si
Maschio 39	R	1.413	SLV 14	Si
Maschio 40	PF SLU	11.077	SLU 83	Si
Maschio 40	V SLU	4.17	SLU 84	Si
Maschio 40	PF	2.827	SLV 2	Si
Maschio 40	V	3.066	SLV 1	Si
Maschio 40	PFFP	31.556	SLV 2	Si
Maschio 40	R	1.562	SLV 16	Si
Maschio 42	PF SLU	3.088	SLU 76	Si
Maschio 42	V SLU	5.22	SLU 83	Si
Maschio 42	PF	0	SLV 7	No
Maschio 42	V	1.262	SLV 4	Si
Maschio 42	PFFP	0	SLV 12	No
Maschio 42	R	1.955	SLV 10	Si
Maschio 43	PF SLU	11.561	SLU 47	Si
Maschio 43	V SLU	3.859	SLU 76	Si
Maschio 43	PF	0	SLV 7	No

Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 43	V	1.843	SLV 6	Si
Maschio 43	PFFP	0	SLV 12	No
Maschio 43	R	1.954	SLV 10	Si
Maschio 44	PF SLU	6.432	SLU 83	Si
Maschio 44	V SLU	3.663	SLU 83	Si
Maschio 44	PF	0	SLV 5	No
Maschio 44	V	2.659	SLV 7	Si
Maschio 44	PFFP	0	SLV 10	No
Maschio 44	R	2.478	SLV 11	Si
Maschio 45	PF SLU	9.73	SLU 81	Si
Maschio 45	V SLU	2.8	SLU 77	Si
Maschio 45	PF	0	SLV 5	No
Maschio 45	V	1.388	SLV 7	Si
Maschio 45	PFFP	0	SLV 10	No
Maschio 45	R	2.015	SLV 11	Si
Maschio 46	PF SLU	15.612	SLU 44	Si
Maschio 46	V SLU	26.75	SLU 55	Si
Maschio 46	PF	0.987	SLV 6	No
Maschio 46	V	0.684	SLV 7	No
Maschio 46	PFFP	7.737	SLV 2	Si
Maschio 46	R	1.82	SLV 15	Si
Maschio 47	PF SLU	59.653	SLU 2	Si
Maschio 47	V SLU	37.74	SLU 83	Si
Maschio 47	PF	0.817	SLV 16	No
Maschio 47	V	1.451	SLV 9	Si
Maschio 47	PFFP	5.153	SLV 14	Si
Maschio 47	R	1.739	SLV 1	Si
Maschio 48	PF SLU	21.328	SLU 43	Si
Maschio 48	V SLU	44.408	SLU 43	Si
Maschio 48	PF	0	SLV 5	No
Maschio 48	V	2.635	SLV 5	Si
Maschio 48	PFFP	0	SLV 10	No
Maschio 48	R	1.596	SLV 7	Si
Maschio 49	PF SLU	3.304	SLU 77	Si
Maschio 49	V SLU	2.754	SLU 83	Si
Maschio 49	PF	0	SLV 5	No
Maschio 49	V	1.397	SLV 16	Si
Maschio 49	PFFP	0	SLV 10	No
Maschio 49	R	1.173	SLV 8	Si
Maschio 50	PF SLU	12.74	SLU 31	Si
Maschio 50	V SLU	13.364	SLU 84	Si
Maschio 50	PF	0	SLV 7	No
Maschio 50	V	2.418	SLV 8	Si
Maschio 50	PFFP	0	SLV 12	No
Maschio 50	R	1.609	SLV 2	Si
Maschio 51	PF SLU	3.105	SLU 84	Si
Maschio 51	V SLU	2.199	SLU 84	Si
Maschio 51	PF	0	SLV 8	No
Maschio 51	V	1.498	SLV 13	Si
Maschio 51	PFFP	0	SLV 12	No
Maschio 51	R	1.499	SLV 5	Si
Maschio 52	PF SLU	1.975	SLU 84	Si
Maschio 52	V SLU	2.834	SLU 84	Si
Maschio 52	PF	0	SLV 11	No
Maschio 52	V	1.353	SLV 13	Si
Maschio 52	PFFP	0	SLV 12	No
Maschio 52	R	1.089	SLV 2	Si
Maschio 54	PF SLU	7.275	SLU 84	Si
Maschio 54	V SLU	6.613	SLU 76	Si
Maschio 54	PF	0.677	SLV 9	No
Maschio 54	V	1.469	SLV 9	Si
Maschio 54	PFFP	3.247	SLV 9	Si
Maschio 54	R	1.129	SLV 4	Si
Maschio 55	PF SLU	2.103	SLU 84	Si
Maschio 55	V SLU	1.922	SLU 84	Si
Maschio 55	PF	0	SLV 5	No
Maschio 55	V	0.729	SLV 1	No
Maschio 55	PFFP	0	SLV 10	No
Maschio 55	R	0.978	SLV 12	No
Maschio 56	PF SLU	24.028	SLU 83	Si
Maschio 56	V SLU	4.823	SLU 83	Si
Maschio 56	PF	0.627	SLV 12	No
Maschio 56	V	1.774	SLV 8	Si
Maschio 56	PFFP	4.553	SLV 12	Si
Maschio 56	R	1.194	SLV 1	Si
Maschio 58	PF SLU	1.95	SLU 84	Si
Maschio 58	V SLU	3.311	SLU 83	Si
Maschio 58	PF	0	SLV 7	No
Maschio 58	V	1.348	SLV 4	Si
Maschio 58	PFFP	0	SLV 16	No
Maschio 58	R	1.181	SLV 9	Si
Maschio 59	PF SLU	3.184	SLU 39	Si
Maschio 59	V SLU	4.32	SLU 84	Si
Maschio 59	PF	0	SLV 4	No
Maschio 59	V	1.876	SLV 13	Si
Maschio 59	PFFP	0	SLV 8	No

Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 59	R	1.801	SLV 6	Si
Maschio 63	PF SLU	8.705	SLU 83	Si
Maschio 63	V SLU	4.07	SLU 84	Si
Maschio 63	PF	0	SLV 5	No
Maschio 63	V	1.296	SLV 5	Si
Maschio 63	PFFP	0	SLV 5	No
Maschio 63	R	1.126	SLV 12	Si
Maschio 64	PF SLU	14.958	SLU 41	Si
Maschio 64	V SLU	2.34	SLU 84	Si
Maschio 64	PF	0	SLV 7	No
Maschio 64	V	0.88	SLV 8	No
Maschio 64	PFFP	0	SLV 12	No
Maschio 64	R	1.948	SLV 10	Si
Maschio 65	PF SLU	5.535	SLU 82	Si
Maschio 65	V SLU	4.122	SLU 84	Si
Maschio 65	PF	0	SLV 7	No
Maschio 65	V	1.565	SLV 9	Si
Maschio 65	PFFP	0	SLV 12	No
Maschio 65	R	1.673	SLV 10	Si
Maschio 67	PF SLU	6.41	SLU 83	Si
Maschio 67	V SLU	3.372	SLU 83	Si
Maschio 67	PF	1.532	SLV 8	Si
Maschio 67	V	1.281	SLV 7	Si
Maschio 67	PFFP	9.004	SLV 8	Si
Maschio 67	R	1.999	SLV 9	Si
Maschio 70	PF SLU	10.704	SLU 84	Si
Maschio 70	V SLU	4.552	SLU 78	Si
Maschio 70	PF	2.729	SLV 13	Si
Maschio 70	V	3.368	SLV 13	Si
Maschio 70	PFFP	11.512	SLV 13	Si
Maschio 70	R	1.151	SLV 4	Si
Maschio 71	PF SLU	12.118	SLU 84	Si
Maschio 71	V SLU	30.189	SLU 83	Si
Maschio 71	PF	2.687	SLV 4	Si
Maschio 71	V	2.009	SLV 13	Si
Maschio 71	PFFP	21.261	SLV 16	Si
Maschio 71	R	1.271	SLV 3	Si
Maschio 72	PF SLU	13.795	SLU 83	Si
Maschio 72	V SLU	10.285	SLU 76	Si
Maschio 72	PF	2.376	SLV 3	Si
Maschio 72	V	1.618	SLV 2	Si
Maschio 72	PFFP	20.89	SLV 5	Si
Maschio 72	R	1.5	SLV 15	Si
Maschio 73	PF SLU	5.347	SLU 83	Si
Maschio 73	V SLU	6.053	SLU 70	Si
Maschio 73	PF	2.32	SLV 4	Si
Maschio 73	V	3.447	SLV 2	Si
Maschio 73	PFFP	11.608	SLV 2	Si
Maschio 73	R	1.27	SLV 15	Si
Maschio 74	PF SLU	35.905	SLU 43	Si
Maschio 74	V SLU	7.358	SLU 84	Si
Maschio 74	PF	0	SLV 5	No
Maschio 74	V	1.14	SLV 1	Si
Maschio 74	PFFP	0	SLV 10	No
Maschio 74	R	1.065	SLV 3	Si
Maschio 75	PF SLU	14.715	SLU 77	Si
Maschio 75	V SLU	46.905	SLU 50	Si
Maschio 75	PF	0.817	SLV 5	No
Maschio 75	V	1.993	SLV 1	Si
Maschio 75	PFFP	3.268	SLV 10	Si
Maschio 75	R	1.269	SLV 7	Si
Maschio 76	PF SLU	20.731	SLU 81	Si
Maschio 76	V SLU	76.748	SLU 42	Si
Maschio 76	PF	1.497	SLV 1	Si
Maschio 76	V	1.547	SLV 1	Si
Maschio 76	PFFP	4.624	SLV 5	Si
Maschio 76	R	1.228	SLV 12	Si
Maschio 77	PF SLU	12.002	SLU 50	Si
Maschio 77	V SLU	7.462	SLU 82	Si
Maschio 77	PF	0	SLV 1	No
Maschio 77	V	1.462	SLV 3	Si
Maschio 77	PFFP	0	SLV 3	No
Maschio 77	R	1.062	SLV 14	Si
Maschio 78	PF SLU	7.022	SLU 84	Si
Maschio 78	V SLU	6.712	SLU 84	Si
Maschio 78	PF	0	SLV 7	No
Maschio 78	V	0.756	SLV 11	No
Maschio 78	PFFP	0	SLV 12	No
Maschio 78	R	1.769	SLV 10	Si
Maschio 79	PF SLU	5.606	SLU 83	Si
Maschio 79	V SLU	4.85	SLU 83	Si
Maschio 79	PF	0	SLV 7	No
Maschio 79	V	1.57	SLV 11	Si
Maschio 79	PFFP	0	SLV 12	No
Maschio 79	R	1.588	SLV 6	Si
Maschio 80	PF SLU	9.896	SLU 83	Si

Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 80	V SLU	2.988	SLU 83	Si
Maschio 80	PF	1.087	SLV 11	Si
Maschio 80	V	1.017	SLV 11	Si
Maschio 80	PFFP	17.925	SLV 7	Si
Maschio 80	R	1.626	SLV 10	Si
Maschio 82	PF SLU	3.377	SLU 83	Si
Maschio 82	V SLU	2.119	SLU 83	Si
Maschio 82	PF	1.785	SLV 7	Si
Maschio 82	V	1.131	SLV 11	Si
Maschio 82	PFFP	11.525	SLV 2	Si
Maschio 82	R	1.337	SLV 16	Si
Maschio 84	PF SLU	7.791	SLU 73	Si
Maschio 84	V SLU	1.872	SLU 84	Si
Maschio 84	PF	1.831	SLV 5	Si
Maschio 84	V	2.586	SLV 10	Si
Maschio 84	PFFP	12.509	SLV 1	Si
Maschio 84	R	1.586	SLV 16	Si
Maschio 88	PF SLU	1.738	SLU 84	Si
Maschio 88	V SLU	3.067	SLU 84	Si
Maschio 88	PF	0	SLV 7	No
Maschio 88	V	1.936	SLV 4	Si
Maschio 88	PFFP	0	SLV 12	No
Maschio 88	R	1.483	SLV 10	Si
Maschio 89	PF SLU	2.908	SLU 84	Si
Maschio 89	V SLU	4.634	SLU 84	Si
Maschio 89	PF	0	SLV 3	No
Maschio 89	V	1.776	SLV 15	Si
Maschio 89	PFFP	0	SLV 8	No
Maschio 89	R	1.281	SLV 6	Si
Maschio 91	PF SLU	18.627	SLU 73	Si
Maschio 91	V SLU	5.385	SLU 83	Si
Maschio 91	PF	0.687	SLV 7	No
Maschio 91	V	1.887	SLV 11	Si
Maschio 91	PFFP	4.939	SLV 7	Si
Maschio 91	R	1.396	SLV 14	Si
Maschio 92	PF SLU	6.548	SLU 77	Si
Maschio 92	V SLU	5.136	SLU 78	Si
Maschio 92	PF	0	SLV 5	No
Maschio 92	V	1.32	SLV 6	Si
Maschio 92	PFFP	0	SLV 5	No
Maschio 92	R	1.215	SLV 11	Si
Maschio 95	PF SLU	2.259	SLU 84	Si
Maschio 95	V SLU	4.925	SLU 76	Si
Maschio 95	PF	0	SLV 7	No
Maschio 95	V	1.546	SLV 2	Si
Maschio 95	PFFP	0	SLV 12	No
Maschio 95	R	1.247	SLV 13	Si
Maschio 96	PF SLU	2.955	SLU 76	Si
Maschio 96	V SLU	2.441	SLU 84	Si
Maschio 96	PF	0	SLV 7	No
Maschio 96	V	1.432	SLV 2	Si
Maschio 96	PFFP	0	SLV 8	No
Maschio 96	R	1.584	SLV 10	Si
Maschio 97	PF SLU	16.194	SLU 34	Si
Maschio 97	V SLU	5.499	SLU 84	Si
Maschio 97	PF	0	SLV 3	No
Maschio 97	V	1.662	SLV 15	Si
Maschio 97	PFFP	0	SLV 12	No
Maschio 97	R	1.653	SLV 13	Si
Maschio 98	PF SLU	2.894	SLU 50	Si
Maschio 98	V SLU	2.565	SLU 83	Si
Maschio 98	PF	0	SLV 5	No
Maschio 98	V	1.593	SLV 7	Si
Maschio 98	PFFP	0	SLV 10	No
Maschio 98	R	1.052	SLV 7	Si
Maschio 99	PF SLU	18.309	SLU 43	Si
Maschio 99	V SLU	8.765	SLU 84	Si
Maschio 99	PF	0	SLV 5	No
Maschio 99	V	2.264	SLV 14	Si
Maschio 99	PFFP	0	SLV 10	No
Maschio 99	R	1.528	SLV 12	Si
Maschio 100	PF SLU	7.821	SLU 77	Si
Maschio 100	V SLU	4.171	SLU 83	Si
Maschio 100	PF	0	SLV 7	No
Maschio 100	V	1.022	SLV 7	Si
Maschio 100	PFFP	0	SLV 7	No
Maschio 100	R	1.382	SLV 14	Si
Maschio 101	PF SLU	8.59	SLU 82	Si
Maschio 101	V SLU	7.141	SLU 76	Si
Maschio 101	PF	0.716	SLV 6	No
Maschio 101	V	0.604	SLV 10	No
Maschio 101	PFFP	2.178	SLV 6	Si
Maschio 101	R	1.411	SLV 15	Si
Maschio 102	PF SLU	7.481	SLU 65	Si
Maschio 102	V SLU	15.678	SLU 83	Si
Maschio 102	PF	1.453	SLV 12	Si

Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 102	V	1.685	SLV 8	Si
Maschio 102	PFFP	3.689	SLV 16	Si
Maschio 102	R	1.91	SLV 1	Si
Maschio 103	PF SLU	8.154	SLU 44	Si
Maschio 103	V SLU	14.905	SLU 76	Si
Maschio 103	PF	0.677	SLV 9	No
Maschio 103	V	1.383	SLV 5	Si
Maschio 103	PFFP	1.511	SLV 9	Si
Maschio 103	R	2.061	SLV 4	Si
Maschio 104	PF SLU	7.816	SLU 43	Si
Maschio 104	V SLU	43.232	SLU 43	Si
Maschio 104	PF	0	SLV 5	No
Maschio 104	V	2.321	SLV 5	Si
Maschio 104	PFFP	1.292	SLV 10	Si
Maschio 104	R	2.275	SLV 3	Si
Maschio 105	PF SLU	8.999	SLU 81	Si
Maschio 105	V SLU	5.876	SLU 81	Si
Maschio 105	PF	0	SLV 5	No
Maschio 105	V	2.199	SLV 14	Si
Maschio 105	PFFP	0	SLV 10	No
Maschio 105	R	1.362	SLV 12	Si
Maschio 106	PF SLU	10.533	SLU 47	Si
Maschio 106	V SLU	30.243	SLU 41	Si
Maschio 106	PF	0	SLV 11	No
Maschio 106	V	2.869	SLV 8	Si
Maschio 106	PFFP	1.878	SLV 11	Si
Maschio 106	R	2.005	SLV 2	Si
Maschio 107	PF SLU	7.367	SLU 84	Si
Maschio 107	V SLU	4.74	SLU 78	Si
Maschio 107	PF	1.755	SLV 8	Si
Maschio 107	V	1.977	SLV 13	Si
Maschio 107	PFFP	1.083	SLV 12	Si
Maschio 107	R	1.745	SLV 5	Si
Maschio 108	PF SLU	3.004	SLU 70	Si
Maschio 108	V SLU	5.825	SLU 84	Si
Maschio 108	PF	0.107	SLV 15	No
Maschio 108	V	1.731	SLV 13	Si
Maschio 108	PFFP	0	SLV 11	No
Maschio 108	R	1.771	SLV 2	Si
Maschio 110	PF SLU	15.842	SLU 73	Si
Maschio 110	V SLU	8.213	SLU 68	Si
Maschio 110	PF	1.605	SLV 9	Si
Maschio 110	V	1.412	SLV 9	Si
Maschio 110	PFFP	2.75	SLV 9	Si
Maschio 110	R	1.416	SLV 3	Si
Maschio 111	PF SLU	4.219	SLU 42	Si
Maschio 111	V SLU	6.296	SLU 78	Si
Maschio 111	PF	0	SLD 5	No
Maschio 111	V	1.65	SLV 12	Si
Maschio 111	PFFP	0	SLV 10	No
Maschio 111	R	0.991	SLV 3	No
Maschio 112	PF SLU	13.254	SLU 77	Si
Maschio 112	V SLU	8.834	SLU 83	Si
Maschio 112	PF	1.756	SLV 12	Si
Maschio 112	V	2.066	SLV 12	Si
Maschio 112	PFFP	4.355	SLV 12	Si
Maschio 112	R	1.544	SLV 1	Si
Maschio 114	PF SLU	3.242	SLU 70	Si
Maschio 114	V SLU	12.732	SLU 78	Si
Maschio 114	PF	0	SLV 7	No
Maschio 114	V	1.64	SLV 4	Si
Maschio 114	PFFP	0	SLV 15	No
Maschio 114	R	1.629	SLV 9	Si
Maschio 115	PF SLU	7.106	SLU 78	Si
Maschio 115	V SLU	8.761	SLU 78	Si
Maschio 115	PF	0	SLV 7	No
Maschio 115	V	2.153	SLV 13	Si
Maschio 115	PFFP	0	SLV 8	No
Maschio 115	R	1.947	SLV 6	Si
Maschio 119	PF SLU	4.379	SLU 73	Si
Maschio 119	V SLU	15.864	SLU 73	Si
Maschio 119	PF	0	SLV 5	No
Maschio 119	V	1.561	SLV 5	Si
Maschio 119	PFFP	0	SLV 5	No
Maschio 119	R	1.517	SLV 11	Si
Maschio 120	PF SLU	15.311	SLU 84	Si
Maschio 120	V SLU	4.476	SLU 84	Si
Maschio 120	PF	0	SLV 7	No
Maschio 120	V	1.622	SLV 9	Si
Maschio 120	PFFP	0	SLV 7	No
Maschio 120	R	1.888	SLV 6	Si
Maschio 122	PF SLU	8.821	SLU 83	Si
Maschio 122	V SLU	10.753	SLU 81	Si
Maschio 122	PF	1.726	SLV 8	Si
Maschio 122	V	1.566	SLV 7	Si
Maschio 122	PFFP	1.882	SLV 8	Si

Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 122	R	2.055	SLV 5	Si
Maschio 124	PF SLU	2.879	SLU 83	Si
Maschio 124	V SLU	8.477	SLU 62	Si
Maschio 124	PF	0	SLV 5	No
Maschio 124	V	1.82	SLV 7	Si
Maschio 124	PFFP	0	SLV 10	No
Maschio 124	R	1.349	SLV 6	Si
Maschio 125	PF SLU	8.274	SLU 82	Si
Maschio 125	V SLU	10.267	SLU 46	Si
Maschio 125	PF	2.408	SLV 13	Si
Maschio 125	V	4.28	SLV 16	Si
Maschio 125	PFFP	5.718	SLV 16	Si
Maschio 125	R	1.443	SLV 1	Si
Maschio 126	PF SLU	31.517	SLU 58	Si
Maschio 126	V SLU	39.126	SLU 65	Si
Maschio 126	PF	3.893	SLV 3	Si
Maschio 126	V	2.218	SLV 13	Si
Maschio 126	PFFP	11.861	SLV 14	Si
Maschio 126	R	1.362	SLV 3	Si
Maschio 127	PF SLU	15.017	SLU 60	Si
Maschio 127	V SLU	38.464	SLU 60	Si
Maschio 127	PF	0.385	SLV 2	No
Maschio 127	V	3.42	SLV 15	Si
Maschio 127	PFFP	10.79	SLV 4	Si
Maschio 127	R	1.579	SLV 16	Si
Maschio 128	PF SLU	11.171	SLU 68	Si
Maschio 128	V SLU	12.301	SLU 78	Si
Maschio 128	PF	1.503	SLV 1	Si
Maschio 128	V	2.904	SLV 1	Si
Maschio 128	PFFP	15.447	SLV 14	Si
Maschio 128	R	1.325	SLV 15	Si
Maschio 129	PF SLU	7.191	SLU 65	Si
Maschio 129	V SLU	11.423	SLU 68	Si
Maschio 129	PF	1.25	SLV 2	Si
Maschio 129	V	1.971	SLV 2	Si
Maschio 129	PFFP	13.84	SLV 2	Si
Maschio 129	R	1.432	SLV 15	Si
Maschio 130	PF SLU	7.693	SLU 78	Si
Maschio 130	V SLU	12.835	SLU 47	Si
Maschio 130	PF	2.347	SLV 2	Si
Maschio 130	V	4.108	SLV 1	Si
Maschio 130	PFFP	6.122	SLV 2	Si
Maschio 130	R	1.549	SLV 15	Si
Maschio 131	PF SLU	7.343	SLU 45	Si
Maschio 131	V SLU	32.259	SLU 48	Si
Maschio 131	PF	0	SLV 14	No
Maschio 131	V	2.222	SLV 16	Si
Maschio 131	PFFP	0	SLV 14	No
Maschio 131	R	1.652	SLV 3	Si
Maschio 132	PF SLU	38.815	SLU 71	Si
Maschio 132	V SLU	39.556	SLU 79	Si
Maschio 132	PF	1.974	SLV 14	Si
Maschio 132	V	1.968	SLV 16	Si
Maschio 132	PFFP	5.387	SLV 10	Si
Maschio 132	R	1.586	SLV 7	Si
Maschio 133	PF SLU	36.011	SLU 82	Si
Maschio 133	V SLU	35.426	SLU 81	Si
Maschio 133	PF	1.599	SLV 1	Si
Maschio 133	V	2.099	SLV 1	Si
Maschio 133	PFFP	4.874	SLV 5	Si
Maschio 133	R	1.538	SLV 12	Si
Maschio 134	PF SLU	4.539	SLU 77	Si
Maschio 134	V SLU	11.708	SLU 77	Si
Maschio 134	PF	0	SLV 1	No
Maschio 134	V	2.913	SLV 3	Si
Maschio 134	PFFP	0	SLV 3	No
Maschio 134	R	1.499	SLV 14	Si
Maschio 136	PF SLU	9.31	SLU 69	Si
Maschio 136	V SLU	7.054	SLU 83	Si
Maschio 136	PF	1.794	SLV 11	Si
Maschio 136	V	1.373	SLV 8	Si
Maschio 136	PFFP	12.56	SLV 7	Si
Maschio 136	R	1.881	SLV 10	Si
Maschio 138	PF SLU	3.659	SLU 83	Si
Maschio 138	V SLU	3.844	SLU 83	Si
Maschio 138	PF	2.01	SLV 8	Si
Maschio 138	V	1.825	SLV 9	Si
Maschio 138	PFFP	5.662	SLV 4	Si
Maschio 138	R	1.545	SLV 14	Si
Maschio 140	PF SLU	2.243	SLU 84	Si
Maschio 140	V SLU	5.457	SLU 84	Si
Maschio 140	PF	1.966	SLV 10	Si
Maschio 140	V	6.577	SLV 10	Si
Maschio 140	PFFP	4.64	SLV 5	Si
Maschio 140	R	2.094	SLV 16	Si
Maschio 144	PF SLU	5.036	SLU 84	Si

Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 144	V SLU	5.941	SLU 78	Si
Maschio 144	PF	0	SLV 7	No
Maschio 144	V	1.944	SLV 4	Si
Maschio 144	PFFP	0	SLV 12	No
Maschio 144	R	1.746	SLV 13	Si
Maschio 145	PF SLU	3.295	SLU 78	Si
Maschio 145	V SLU	8.303	SLU 83	Si
Maschio 145	PF	0	SLV 2	No
Maschio 145	V	1.353	SLV 2	Si
Maschio 145	PFFP	0	SLV 8	No
Maschio 145	R	1.529	SLV 6	Si
Maschio 147	PF SLU	10.762	SLU 77	Si
Maschio 147	V SLU	10.558	SLU 83	Si
Maschio 147	PF	1.692	SLV 7	Si
Maschio 147	V	2.294	SLV 11	Si
Maschio 147	PFFP	4.404	SLV 7	Si
Maschio 147	R	1.72	SLV 14	Si
Maschio 148	PF SLU	25.757	SLU 39	Si
Maschio 148	V SLU	9.359	SLU 47	Si
Maschio 148	PF	0.748	SLV 6	No
Maschio 148	V	1.621	SLV 5	Si
Maschio 148	PFFP	2.015	SLV 6	Si
Maschio 148	R	1.437	SLV 16	Si
Maschio 151	PF SLU	2.572	SLU 68	Si
Maschio 151	V SLU	8.105	SLU 84	Si
Maschio 151	PF	0	SLV 4	No
Maschio 151	V	1.607	SLV 2	Si
Maschio 151	PFFP	0	SLV 7	No
Maschio 151	R	1.903	SLV 13	Si
Maschio 152	PF SLU	6.673	SLU 84	Si
Maschio 152	V SLU	5.48	SLU 76	Si
Maschio 152	PF	0.556	SLV 11	No
Maschio 152	V	1.826	SLV 2	Si
Maschio 152	PFFP	0	SLV 7	No
Maschio 152	R	1.811	SLV 10	Si
Maschio 153	PF SLU	13.335	SLU 41	Si
Maschio 153	V SLU	14.229	SLU 83	Si
Maschio 153	PF	0	SLV 7	No
Maschio 153	V	1.97	SLV 11	Si
Maschio 153	PFFP	0	SLV 8	No
Maschio 153	R	2.01	SLV 13	Si
Maschio 154	PF SLU	9.241	SLU 81	Si
Maschio 154	V SLU	5.929	SLU 83	Si
Maschio 154	PF	0	SLV 5	No
Maschio 154	V	2.983	SLV 3	Si
Maschio 154	PFFP	0	SLV 10	No
Maschio 154	R	1.364	SLV 7	Si
Maschio 155	PF SLU	7.312	SLU 43	Si
Maschio 155	V SLU	25.663	SLU 42	Si
Maschio 155	PF	0	SLV 5	No
Maschio 155	V	2.171	SLV 10	Si
Maschio 155	PFFP	0	SLV 6	No
Maschio 155	R	2.012	SLV 12	Si
Maschio 156	PF SLU	53.218	SLU 52	Si
Maschio 156	V SLU	45.832	SLU 44	Si
Maschio 156	PF	1.823	SLV 6	Si
Maschio 156	V	0.522	SLV 6	No
Maschio 156	PFFP	4.354	SLV 2	Si
Maschio 156	R	2.001	SLV 15	Si
Maschio 157	PF SLU	47.19	SLU 52	Si
Maschio 157	V SLU	31.869	SLU 44	Si
Maschio 157	PF	3.729	SLV 10	Si
Maschio 157	V	1.474	SLV 5	Si
Maschio 157	PFFP	3.107	SLV 13	Si
Maschio 157	R	3.799	SLV 4	Si
Maschio 158	PF SLU	10.235	SLU 43	Si
Maschio 158	V SLU	23.174	SLU 42	Si
Maschio 158	PF	0.508	SLV 5	No
Maschio 158	V	3.819	SLV 6	Si
Maschio 158	PFFP	2.348	SLV 10	Si
Maschio 158	R	3.302	SLV 1	Si
Maschio 159	PF SLU	7.635	SLU 50	Si
Maschio 159	V SLU	17.843	SLU 81	Si
Maschio 159	PF	0.922	SLV 5	No
Maschio 159	V	5.605	SLV 16	Si
Maschio 159	PFFP	1.154	SLV 5	Si
Maschio 159	R	2.38	SLV 8	Si
Maschio 160	PF SLU	9.538	SLU 44	Si
Maschio 160	V SLU	23.412	SLU 41	Si
Maschio 160	PF	0.795	SLV 13	No
Maschio 160	V	3.917	SLV 8	Si
Maschio 160	PFFP	2.249	SLV 15	Si
Maschio 160	R	3.045	SLV 4	Si
Maschio 161	PF SLU	11.139	SLU 73	Si
Maschio 161	V SLU	8.617	SLU 70	Si
Maschio 161	PF	2.087	SLV 15	Si

Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 161	V	2.879	SLV 13	Si
Maschio 161	PFFP	1.63	SLV 12	Si
Maschio 161	R	2.691	SLV 5	Si
Maschio 162	PF SLU	3.509	SLU 72	Si
Maschio 162	V SLU	11.121	SLU 78	Si
Maschio 162	PF	0	SLV 15	No
Maschio 162	V	2.304	SLV 13	Si
Maschio 162	PFFP	0	SLV 15	No
Maschio 162	R	2.717	SLV 4	Si
Maschio 164	PF SLU	12.431	SLU 73	Si
Maschio 164	V SLU	18.727	SLU 47	Si
Maschio 164	PF	1.768	SLV 10	Si
Maschio 164	V	2.175	SLV 9	Si
Maschio 164	PFFP	2.007	SLV 10	Si
Maschio 164	R	2.303	SLV 3	Si
Maschio 165	PF SLU	2.545	SLU 81	Si
Maschio 165	V SLU	8.335	SLU 77	Si
Maschio 165	PF	0	SLD 5	No
Maschio 165	V	3.25	SLV 12	Si
Maschio 165	PFFP	0	SLV 14	No
Maschio 165	R	1.668	SLV 1	Si
Maschio 166	PF SLU	12.083	SLU 69	Si
Maschio 166	V SLU	18.208	SLU 71	Si
Maschio 166	PF	2.576	SLV 11	Si
Maschio 166	V	2.872	SLV 11	Si
Maschio 166	PFFP	2.88	SLV 16	Si
Maschio 166	R	2.568	SLV 2	Si
Maschio 168	PF SLU	4.199	SLU 78	Si
Maschio 168	V SLU	18.708	SLU 78	Si
Maschio 168	PF	0	SLV 15	No
Maschio 168	V	2.268	SLV 4	Si
Maschio 168	PFFP	0	SLV 15	No
Maschio 168	R	2.627	SLV 13	Si
Maschio 169	PF SLU	4.033	SLU 42	Si
Maschio 169	V SLU	7.566	SLU 78	Si
Maschio 169	PF	0	SLV 4	No
Maschio 169	V	2.505	SLV 13	Si
Maschio 169	PFFP	0	SLV 8	No
Maschio 169	R	2.474	SLV 13	Si
Maschio 173	PF SLU	4.608	SLU 41	Si
Maschio 173	V SLU	17.69	SLU 77	Si
Maschio 173	PF	0	SLV 5	No
Maschio 173	V	2.536	SLV 6	Si
Maschio 173	PFFP	0	SLV 5	No
Maschio 173	R	2.63	SLV 11	Si
Maschio 174	PF SLU	4.668	SLU 42	Si
Maschio 174	V SLU	4.395	SLU 84	Si
Maschio 174	PF	1.376	SLV 8	Si
Maschio 174	V	1.469	SLV 8	Si
Maschio 174	PFFP	18.763	SLV 8	Si
Maschio 174	R	3.459	SLV 5	Si
Maschio 175	PF SLU	2.334	SLU 36	Si
Maschio 175	V SLU	6.446	SLU 84	Si
Maschio 175	PF	0.343	SLV 13	No
Maschio 175	V	2.187	SLV 13	Si
Maschio 175	PFFP	2.662	SLV 11	Si
Maschio 175	R	10.443	SLV 2	Si
Maschio 177	PF SLU	10.313	SLU 20	Si
Maschio 177	V SLU	36.998	SLU 60	Si
Maschio 177	PF	0.956	SLV 8	No
Maschio 177	V	1.735	SLV 7	Si
Maschio 177	PFFP	0	SLV 7	No
Maschio 177	R	2.708	SLV 9	Si
Maschio 179	PF SLU	5.301	SLU 60	Si
Maschio 179	V SLU	22.516	SLU 60	Si
Maschio 179	PF	0	SLV 5	No
Maschio 179	V	2.315	SLV 7	Si
Maschio 179	PFFP	0	SLV 10	No
Maschio 179	R	1.406	SLV 6	Si
Maschio 180	PF SLU	9.408	SLU 81	Si
Maschio 180	V SLU	21.696	SLU 44	Si
Maschio 180	PF	1.713	SLV 14	Si
Maschio 180	V	5.856	SLV 14	Si
Maschio 180	PFFP	3.139	SLV 14	Si
Maschio 180	R	2.277	SLV 1	Si
Maschio 181	PF SLU	56.764	SLU 48	Si
Maschio 181	V SLU	39.06	SLU 65	Si
Maschio 181	PF	2.619	SLV 14	Si
Maschio 181	V	2.645	SLV 14	Si
Maschio 181	PFFP	6.271	SLV 14	Si
Maschio 181	R	1.712	SLV 1	Si
Maschio 182	PF SLU	12.109	SLU 30	Si
Maschio 182	V SLU	38.738	SLU 78	Si
Maschio 182	PF	0	SLV 7	No
Maschio 182	V	3.912	SLV 1	Si
Maschio 182	PFFP	3.038	SLV 7	Si

Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 182	R	2.268	SLV 14	Si
Maschio 183	PF SLU	10.657	SLU 23	Si
Maschio 183	V SLU	16.136	SLU 70	Si
Maschio 183	PF	1.1	SLV 1	Si
Maschio 183	V	3.543	SLV 1	Si
Maschio 183	PFFP	7.594	SLV 4	Si
Maschio 183	R	1.423	SLV 13	Si
Maschio 184	PF SLU	8.246	SLU 44	Si
Maschio 184	V SLU	19.716	SLU 44	Si
Maschio 184	PF	0.955	SLV 1	No
Maschio 184	V	2.595	SLV 5	Si
Maschio 184	PFFP	6.608	SLV 2	Si
Maschio 184	R	1.962	SLV 15	Si
Maschio 185	PF SLU	9.17	SLU 44	Si
Maschio 185	V SLU	34.581	SLU 44	Si
Maschio 185	PF	2.703	SLV 1	Si
Maschio 185	V	6.179	SLV 1	Si
Maschio 185	PFFP	3.443	SLV 2	Si
Maschio 185	R	2.248	SLV 15	Si
Maschio 186	PF SLU	11.313	SLU 42	Si
Maschio 186	V SLU	85.725	SLU 42	Si
Maschio 186	PF	0.942	SLV 16	No
Maschio 186	V	3.641	SLV 16	Si
Maschio 186	PFFP	2.365	SLV 14	Si
Maschio 186	R	2.526	SLV 11	Si
Maschio 187	PF SLU	47.769	SLU 43	Si
Maschio 187	V SLU	57.595	SLU 79	Si
Maschio 187	PF	1.925	SLV 16	Si
Maschio 187	V	2.377	SLV 16	Si
Maschio 187	PFFP	4.47	SLV 10	Si
Maschio 187	R	2.455	SLV 3	Si
Maschio 188	PF SLU	37.854	SLU 50	Si
Maschio 188	V SLU	39.1	SLU 81	Si
Maschio 188	PF	1.447	SLV 1	Si
Maschio 188	V	2.707	SLV 1	Si
Maschio 188	PFFP	3.276	SLV 5	Si
Maschio 188	R	2.161	SLV 12	Si
Maschio 189	PF SLU	9.472	SLU 66	Si
Maschio 189	V SLU	39.106	SLU 64	Si
Maschio 189	PF	1.112	SLV 1	Si
Maschio 189	V	4.696	SLV 3	Si
Maschio 189	PFFP	2.456	SLV 5	Si
Maschio 189	R	2.474	SLV 7	Si
Maschio 190	PF SLU	10.314	SLU 40	Si
Maschio 190	V SLU	11.349	SLU 84	Si
Maschio 190	PF	0	SLV 2	No
Maschio 190	V	3.569	SLV 15	Si
Maschio 190	PFFP	0	SLV 4	No
Maschio 190	R	2.578	SLV 13	Si
Maschio 191	PF SLU	10.41	SLU 41	Si
Maschio 191	V SLU	25.302	SLU 43	Si
Maschio 191	PF	2.515	SLV 7	Si
Maschio 191	V	1.985	SLV 8	Si
Maschio 191	PFFP	7.387	SLV 7	Si
Maschio 191	R	2.12	SLV 9	Si
Maschio 193	PF SLU	6.778	SLU 62	Si
Maschio 193	V SLU	5.701	SLU 78	Si
Maschio 193	PF	1.487	SLV 7	Si
Maschio 193	V	2.322	SLV 9	Si
Maschio 193	PFFP	2.331	SLV 7	Si
Maschio 193	R	1.863	SLV 10	Si
Maschio 195	PF SLU	3.541	SLU 41	Si
Maschio 195	V SLU	24.411	SLU 83	Si
Maschio 195	PF	1.794	SLV 6	Si
Maschio 195	V	24.874	SLV 12	Si
Maschio 195	PFFP	2.271	SLV 8	Si
Maschio 195	R	5.87	SLV 2	Si
Maschio 199	PF SLU	3.971	SLU 40	Si
Maschio 199	V SLU	6.129	SLU 78	Si
Maschio 199	PF	0.099	SLV 4	No
Maschio 199	V	2.14	SLV 2	Si
Maschio 199	PFFP	0	SLV 11	No
Maschio 199	R	2.419	SLV 13	Si
Maschio 200	PF SLU	3.421	SLU 26	Si
Maschio 200	V SLU	10.584	SLU 78	Si
Maschio 200	PF	0	SLV 1	No
Maschio 200	V	1.607	SLV 2	Si
Maschio 200	PFFP	0	SLV 4	No
Maschio 200	R	2.732	SLV 2	Si
Maschio 202	PF SLU	11.076	SLU 48	Si
Maschio 202	V SLU	32.359	SLU 50	Si
Maschio 202	PF	2.985	SLV 7	Si
Maschio 202	V	3.248	SLV 11	Si
Maschio 202	PFFP	2.687	SLV 4	Si
Maschio 202	R	2.635	SLV 13	Si
Maschio 203	PF SLU	17.348	SLU 61	Si

Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 203	V SLU	19.513	SLU 51	Si
Maschio 203	PF	1.499	SLV 5	Si
Maschio 203	V	2.43	SLV 5	Si
Maschio 203	PFFP	1.944	SLV 5	Si
Maschio 203	R	2.232	SLV 16	Si
Maschio 206	PF SLU	3.362	SLU 65	Si
Maschio 206	V SLU	19.297	SLU 83	Si
Maschio 206	PF	0	SLV 1	No
Maschio 206	V	1.917	SLV 2	Si
Maschio 206	PFFP	0	SLV 4	No
Maschio 206	R	2.351	SLV 15	Si
Maschio 207	PF SLU	9.782	SLU 65	Si
Maschio 207	V SLU	9.34	SLU 65	Si
Maschio 207	PF	0.912	SLV 11	No
Maschio 207	V	2.495	SLV 2	Si
Maschio 207	PFFP	1.607	SLV 7	Si
Maschio 207	R	2.764	SLV 10	Si
Maschio 208	PF SLU	8.33	SLU 41	Si
Maschio 208	V SLU	16.763	SLU 41	Si
Maschio 208	PF	0.607	SLV 11	No
Maschio 208	V	2.337	SLV 11	Si
Maschio 208	PFFP	2.178	SLV 4	Si
Maschio 208	R	3.073	SLV 15	Si
Maschio 209	PF SLU	9.497	SLU 43	Si
Maschio 209	V SLU	20.383	SLU 81	Si
Maschio 209	PF	0.737	SLV 10	No
Maschio 209	V	5.951	SLV 3	Si
Maschio 209	PFFP	1.67	SLV 10	Si
Maschio 209	R	2.381	SLV 11	Si
Maschio 210	PF SLU	7.679	SLU 42	Si
Maschio 210	V SLU	18.494	SLU 42	Si
Maschio 210	PF	0.325	SLV 10	No
Maschio 210	V	2.703	SLV 10	Si
Maschio 210	PFFP	1.674	SLV 5	Si
Maschio 210	R	3.316	SLV 16	Si
Maschio 211	PF SLU	8.818	SLU 51	Si
Maschio 211	V SLU	13.433	SLU 77	Si
Maschio 211	PF	3.179	SLV 10	Si
Maschio 211	V	2.159	SLV 11	Si
Maschio 211	PFFP	3.152	SLV 4	Si
Maschio 211	R	3.496	SLV 13	Si
Maschio 212	PF SLU	13.333	SLU 82	Si
Maschio 212	V SLU	15.933	SLU 52	Si
Maschio 212	PF	3.156	SLV 10	Si
Maschio 212	V	1.612	SLV 10	Si
Maschio 212	PFFP	3.209	SLV 5	Si
Maschio 212	R	3.43	SLV 16	Si
Maschio 213	PF SLU	21.405	SLU 50	Si
Maschio 213	V SLU	42.324	SLU 60	Si
Maschio 213	PF	2.762	SLV 7	Si
Maschio 213	V	3.607	SLV 9	Si
Maschio 213	PFFP	1.359	SLV 1	Si
Maschio 213	R	11.366	SLV 13	Si
Maschio 214	PF SLU	4.895	SLU 36	Si
Maschio 214	V SLU	14.635	SLU 78	Si
Maschio 214	PF	0.648	SLV 5	No
Maschio 214	V	4.957	SLV 9	Si
Maschio 214	PFFP	1.372	SLV 5	Si
Maschio 214	R	7.027	SLV 15	Si
Maschio 215	PF SLU	9.536	SLU 77	Si
Maschio 215	V SLU	16.426	SLU 69	Si
Maschio 215	PF	0	SLV 10	No
Maschio 215	V	5.91	SLV 12	Si
Maschio 215	PFFP	0	SLV 14	No
Maschio 215	R	5.498	SLV 3	Si
Maschio 216	PF SLU	9.15	SLU 44	Si
Maschio 216	V SLU	20.784	SLU 35	Si
Maschio 216	PF	0.826	SLV 9	No
Maschio 216	V	5.059	SLV 8	Si
Maschio 216	PFFP	1.487	SLV 12	Si
Maschio 216	R	7.677	SLV 4	Si
Maschio 217	PF SLU	10.585	SLU 44	Si
Maschio 217	V SLU	10.677	SLU 70	Si
Maschio 217	PF	2.821	SLV 8	Si
Maschio 217	V	5.652	SLV 9	Si
Maschio 217	PFFP	1.56	SLV 15	Si
Maschio 217	R	7.536	SLV 13	Si
Maschio 218	PF SLU	2.586	SLU 44	Si
Maschio 218	V SLU	13.104	SLU 78	Si
Maschio 218	PF	0	SLV 13	No
Maschio 218	V	4.107	SLV 13	Si
Maschio 218	PFFP	0	SLV 12	No
Maschio 218	R	6.457	SLV 3	Si
Maschio 220	PF SLU	2.053	SLU 51	Si
Maschio 220	V SLU	21.591	SLU 51	Si
Maschio 220	PF	1.186	SLV 10	Si

Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 220	V	3.6	SLV 5	Si
Maschio 220	PFFP	1.787	SLV 10	Si
Maschio 220	R	8.363	SLV 16	Si
Maschio 222	PF SLU	8.21	SLU 69	Si
Maschio 222	V SLU	40.744	SLU 44	Si
Maschio 222	PF	1.826	SLV 10	Si
Maschio 222	V	5.234	SLV 11	Si
Maschio 222	PFFP	1.608	SLV 12	Si
Maschio 222	R	14.6	SLV 2	Si
Maschio 223	PF SLU	2.803	SLU 40	Si
Maschio 223	V SLU	23.78	SLU 70	Si
Maschio 223	PF	0	SLV 11	No
Maschio 223	V	3.85	SLV 13	Si
Maschio 223	PFFP	0	SLV 15	No
Maschio 223	R	7.78	SLV 6	Si
Maschio 224	PF SLU	3.006	SLU 40	Si
Maschio 224	V SLU	10.797	SLU 78	Si
Maschio 224	PF	0	SLV 4	No
Maschio 224	V	4.585	SLV 13	Si
Maschio 224	PFFP	0	SLV 3	No
Maschio 224	R	7.429	SLV 2	Si
Maschio 226	PF SLU	3.472	SLU 77	Si
Maschio 226	V SLU	10.753	SLU 77	Si
Maschio 226	PF	0	SLV 5	No
Maschio 226	V	3.885	SLV 11	Si
Maschio 226	PFFP	0	SLV 5	No
Maschio 226	R	16.327	SLV 15	Si
Maschio 227	PF SLU	9.268	SLU 42	Si
Maschio 227	V SLU	51.704	SLU 50	Si
Maschio 227	PF	0	SLV 7	No
Maschio 227	V	4.758	SLV 7	Si
Maschio 227	PFFP	0	SLV 12	No
Maschio 227	R	9.384	SLV 13	Si
Maschio 228	PF SLU	2.595	SLU 36	Si
Maschio 228	V SLU	20.849	SLU 36	Si
Maschio 228	PF	0	SLD 5	No
Maschio 228	V	3.01	SLV 10	Si
Maschio 228	PFFP	0	SLV 14	No
Maschio 228	R	4.128	SLV 2	Si
Maschio 229	PF SLU	8.699	SLU 27	Si
Maschio 229	V SLU	28.019	SLU 35	Si
Maschio 229	PF	0.864	SLV 14	No
Maschio 229	V	15.439	SLV 3	Si
Maschio 229	PFFP	0.991	SLV 14	No
Maschio 229	R	7.83	SLV 3	Si
Maschio 230	PF SLU	25.043	SLU 31	Si
Maschio 230	V SLU	73.661	SLU 65	Si
Maschio 230	PF	0.814	SLV 13	No
Maschio 230	V	3.572	SLV 14	Si
Maschio 230	PFFP	3.14	SLV 13	Si
Maschio 230	R	2.517	SLV 4	Si
Maschio 231	PF SLU	4.854	SLU 42	Si
Maschio 231	V SLU	19.867	SLU 78	Si
Maschio 231	PF	0	SLV 7	No
Maschio 231	V	5.128	SLV 1	Si
Maschio 231	PFFP	0	SLV 7	No
Maschio 231	R	1.214	SLV 9	Si
Maschio 232	PF SLU	7.623	SLU 31	Si
Maschio 232	V SLU	21.521	SLU 70	Si
Maschio 232	PF	0	SLV 1	No
Maschio 232	V	4.637	SLV 1	Si
Maschio 232	PFFP	2.026	SLV 4	Si
Maschio 232	R	2.382	SLV 13	Si
Maschio 233	PF SLU	9.541	SLU 44	Si
Maschio 233	V SLU	47.507	SLU 44	Si
Maschio 233	PF	0.667	SLV 1	No
Maschio 233	V	4.237	SLV 5	Si
Maschio 233	PFFP	3.09	SLV 2	Si
Maschio 233	R	2.565	SLV 15	Si
Maschio 234	PF SLU	8.708	SLU 35	Si
Maschio 234	V SLU	24.179	SLU 35	Si
Maschio 234	PF	2.158	SLV 1	Si
Maschio 234	V	13.763	SLV 16	Si
Maschio 234	PFFP	1.044	SLV 2	Si
Maschio 234	R	7.886	SLV 15	Si
Maschio 235	PF SLU	5.827	SLU 78	Si
Maschio 235	V SLU	11.279	SLU 78	Si
Maschio 235	PF	0	SLD 1	No
Maschio 235	V	1.903	SLV 5	Si
Maschio 235	PFFP	0	SLV 10	No
Maschio 235	R	3.872	SLV 12	Si
Maschio 236	PF SLU	20.188	SLU 50	Si
Maschio 236	V SLU	72.656	SLU 50	Si
Maschio 236	PF	1.717	SLV 16	Si
Maschio 236	V	3.421	SLV 16	Si
Maschio 236	PFFP	2.505	SLV 10	Si

Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 236	R	6.762	SLV 3	Si
Maschio 237	PF SLU	27.005	SLU 60	Si
Maschio 237	V SLU	72.866	SLU 81	Si
Maschio 237	PF	1.648	SLV 1	Si
Maschio 237	V	5.277	SLV 3	Si
Maschio 237	PFFP	2.086	SLV 5	Si
Maschio 237	R	7.013	SLV 16	Si
Maschio 238	PF SLU	5.227	SLU 80	Si
Maschio 238	V SLU	11.435	SLU 80	Si
Maschio 238	PF	0	SLD 9	No
Maschio 238	V	2.546	SLV 10	Si
Maschio 238	PFFP	0	SLV 14	No
Maschio 238	R	2.394	SLV 7	Si
Maschio 239	PF SLU	5.416	SLU 61	Si
Maschio 239	V SLU	9.421	SLU 78	Si
Maschio 239	PF	1.304	SLV 8	Si
Maschio 239	V	3.226	SLV 9	Si
Maschio 239	PFFP	0	SLV 7	No
Maschio 239	R	7.965	SLV 13	Si
Maschio 241	PF SLU	36.108	SLU 26	Si
Maschio 241	V SLU	598.068	SLU 68	Si
Maschio 241	PF	1.795	SLV 6	Si
Maschio 241	V	27.094	SLV 6	Si
Maschio 241	PFFP	0.844	SLV 5	No
Maschio 241	R	19.542	SLV 3	Si
Maschio 243	PF SLU	2.114	SLU 40	Si
Maschio 243	V SLU	8.394	SLU 78	Si
Maschio 243	PF	0	SLV 3	No
Maschio 243	V	2.642	SLV 2	Si
Maschio 243	PFFP	0	SLV 11	No
Maschio 243	R	10.135	SLV 13	Si
Maschio 244	PF SLU	7.094	SLU 78	Si
Maschio 244	V SLU	8.541	SLU 65	Si
Maschio 244	PF	0	SLD 2	No
Maschio 244	V	1.149	SLV 2	Si
Maschio 244	PFFP	0	SLV 8	No
Maschio 244	R	5.465	SLV 15	Si
Maschio 245	PF SLU	5.945	SLU 77	Si
Maschio 245	V SLU	70.846	SLU 36	Si
Maschio 245	PF	1.958	SLV 9	Si
Maschio 245	V	6.701	SLV 5	Si
Maschio 245	PFFP	0.986	SLV 3	No
Maschio 245	R	12.62	SLV 13	Si
Maschio 246	PF SLU	1.615	SLU 50	Si
Maschio 246	V SLU	10.261	SLU 50	Si
Maschio 246	PF	1.397	SLV 1	Si
Maschio 246	V	4.653	SLV 9	Si
Maschio 246	PFFP	1.88	SLV 1	Si
Maschio 246	R	5.681	SLV 3	Si
Maschio 249	PF SLU	2.264	SLU 44	Si
Maschio 249	V SLU	23.715	SLU 65	Si
Maschio 249	PF	0	SLV 1	No
Maschio 249	V	3.035	SLV 2	Si
Maschio 249	PFFP	0	SLV 16	No
Maschio 249	R	5.464	SLV 15	Si
Maschio 250	PF SLU	11.045	SLU 65	Si
Maschio 250	V SLU	13.197	SLU 70	Si
Maschio 250	PF	1.786	SLV 11	Si
Maschio 250	V	4.272	SLV 6	Si
Maschio 250	PFFP	1.774	SLV 8	Si
Maschio 250	R	6.974	SLV 2	Si
Maschio 251	PF SLU	4.934	SLU 35	Si
Maschio 251	V SLU	13.473	SLU 77	Si
Maschio 251	PF	0.511	SLV 11	No
Maschio 251	V	3.427	SLV 11	Si
Maschio 251	PFFP	1.274	SLV 11	Si
Maschio 251	R	7.647	SLV 1	Si
Maschio 252	PF SLU	2.57	SLU 60	Si
Maschio 252	V SLU	28.767	SLU 60	Si
Maschio 252	PF	0	SLV 1	No
Maschio 252	V	6.383	SLV 7	Si
Maschio 252	PFFP	0	SLV 3	No
Maschio 252	R	4.137	SLV 14	Si
Maschio 253	PF SLU	4.014	SLU 38	Si
Maschio 253	V SLU	13.868	SLU 78	Si
Maschio 253	PF	0.54	SLV 10	No
Maschio 253	V	4.378	SLV 10	Si
Maschio 253	PFFP	0	SLV 10	No
Maschio 253	R	6.585	SLV 4	Si
Maschio 254	PF SLU	41.506	SLU 30	Si
Maschio 254	V SLU	26.215	SLU 29	Si
Maschio 254	PF	3.442	SLV 12	Si
Maschio 254	V	2.806	SLV 7	Si
Maschio 254	PFFP	1.606	SLV 14	Si
Maschio 254	R	11.028	SLV 4	Si
Maschio 257	PF SLU	2.577	SLU 36	Si

Desc.	Stato limite	Coeff.s.	Comb.	Verifica
Maschio 257	V SLU	14.896	SLU 78	Si
Maschio 257	PF	1.429	SLV 2	Si
Maschio 257	V	2.472	SLV 2	Si
Maschio 257	PFFP	1.71	SLV 3	Si
Maschio 257	R	9.199	SLV 4	Si
Maschio 262	PF SLU	1.265	SLU 84	Si
Maschio 262	V SLU	1.85	SLU 84	Si
Maschio 262	PF	0	SLV 3	No
Maschio 262	V	1.029	SLV 13	Si
Maschio 262	PFFP	0	SLV 12	No
Maschio 262	R	1.1	SLV 6	Si
Maschio 263	PF SLU	4.508	SLU 84	Si
Maschio 263	V SLU	4.079	SLU 84	Si
Maschio 263	PF	0	SLV 4	No
Maschio 263	V	1.525	SLV 13	Si
Maschio 263	PFFP	0	SLV 16	No
Maschio 263	R	1.045	SLV 9	Si
Maschio 266	PF SLU	57.254	SLU 44	Si
Maschio 266	V SLU	10.223	SLU 67	Si
Maschio 266	PF	0	SLV 7	No
Maschio 266	V	0.769	SLV 15	No
Maschio 266	PFFP	0	SLV 12	No
Maschio 266	R	1.535	SLV 6	Si
Maschio 267	PF SLU	5.685	SLU 84	Si
Maschio 267	V SLU	2.285	SLU 84	Si
Maschio 267	PF	0	SLV 3	No
Maschio 267	V	0.857	SLV 13	No
Maschio 267	PFFP	0	SLV 12	No
Maschio 267	R	0.978	SLV 13	No
Maschio 272	PF SLU	4.651	SLU 84	Si
Maschio 272	V SLU	4.34	SLU 84	Si
Maschio 272	PF	0	SLD 13	No
Maschio 272	V	1.17	SLV 13	Si
Maschio 272	PFFP	0	SLV 7	No
Maschio 272	R	1.468	SLV 2	Si
Maschio 273	PF SLU	4.32	SLU 83	Si
Maschio 273	V SLU	26.712	SLU 83	Si
Maschio 273	PF	0	SLV 7	No
Maschio 273	V	2.751	SLV 15	Si
Maschio 273	PFFP	0	SLV 7	No
Maschio 273	R	1.554	SLV 2	Si
Maschio 276	PF SLU	5.11	SLU 83	Si
Maschio 276	V SLU	7.082	SLU 83	Si
Maschio 276	PF	0	SLD 11	No
Maschio 276	V	1.605	SLV 15	Si
Maschio 276	PFFP	0	SLV 16	No
Maschio 276	R	4.035	SLV 16	Si
Maschio 277	PF SLU	6.372	SLU 40	Si
Maschio 277	V SLU	13.982	SLU 81	Si
Maschio 277	PF	0	SLD 13	No
Maschio 277	V	2.069	SLV 15	Si
Maschio 277	PFFP	0	SLV 3	No
Maschio 277	R	3.297	SLV 2	Si
Maschio 281	PF SLU	9.953	SLU 42	Si
Maschio 281	V SLU	6.536	SLU 84	Si
Maschio 281	PF	0	SLV 7	No
Maschio 281	V	2.001	SLV 6	Si
Maschio 281	PFFP	0	SLV 12	No
Maschio 281	R	1.135	SLV 13	Si

Verifica maschi in muratura

Maschio	Stato limite	Molt.	Comb.	PGA	iPGA (ζE)	TR	(TR/TRrif)^.41	Verifica
1	PF	0.867	SLV 13	0.21	0.861	319	0.849	No
	V	1.698	SLV 12	0.362	1.483	1618	1.653	Si
	PFFP	1.312	SLV 13	0.315	1.289	1018	1.367	Si
	R	1.57	SLV 4	0.362	1.483	1618	1.653	Si
2	PF	0.651	SLV 9	0.155	0.635	149	0.622	No
	V	1.924	SLV 12	0.362	1.483	1618	1.653	Si
	PFFP	0.639	SLV 9	0.152	0.623	142	0.61	No
	R	1.24	SLV 8	0.299	1.222	865	1.279	Si
3	PF	0.685	SLV 9	0.164	0.671	169	0.655	No
	V	2.613	SLV 16	0.362	1.483	1618	1.653	Si
	PFFP	0.76	SLV 9	0.184	0.751	222	0.732	No
	R	1.364	SLV 7	0.327	1.337	1149	1.436	Si
4	PF	0.725	SLV 12	0.175	0.715	196	0.696	No
	V	2.161	SLV 8	0.362	1.483	1618	1.653	Si
	PFFP	0.7	SLV 12	0.168	0.687	178	0.669	No
	R	1.331	SLV 5	0.319	1.306	1065	1.392	Si
5	PF	0.821	SLV 12	0.199	0.815	276	0.8	No
	V	1.145	SLV 15	0.277	1.134	692	1.167	Si
	PFFP	0.762	SLV 12	0.184	0.754	224	0.735	No
	R	1.546	SLV 5	0.362	1.483	1618	1.653	Si
7	PF	0.724	SLV 9	0.174	0.713	194	0.693	No
	V	1.419	SLV 5	0.339	1.387	1298	1.51	Si
	PFFP	1.292	SLV 9	0.31	1.27	971	1.341	Si

Maschio	Stato limite	Molt.	Comb.	PGA	iPGA (ζE)	TR	(TR/TRrif)^.41	Verifica
	R	1.165	SLV 4	0.282	1.153	726	1.19	Si
10	PF	0.956	SLV 12	0.233	0.954	419	0.95	No
	V	1.286	SLV 12	0.309	1.265	958	1.333	Si
	PFFP	1.242	SLV 12	0.299	1.224	868	1.28	Si
	R	1.254	SLV 5	0.302	1.235	892	1.295	Si
11	PF	1.597	SLV 16	0.362	1.483	1618	1.653	Si
	V	2.721	SLV 14	0.362	1.483	1618	1.653	Si
	PFFP	1.899	SLV 16	0.362	1.483	1618	1.653	Si
	R	1.268	SLV 3	0.305	1.248	921	1.312	Si
12	PF	1.846	SLV 13	0.362	1.483	1618	1.653	Si
	V	2.355	SLV 14	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.414	SLV 1	0.338	1.383	1285	1.504	Si
15	PF	0.545	SLV 5	0.13	0.532	99	0.526	No
	V	2.297	SLV 12	0.362	1.483	1618	1.653	Si
	PFFP	0.566	SLV 9	0.135	0.551	107	0.543	No
	R	1.342	SLV 12	0.322	1.317	1092	1.407	Si
16	PF	0.851	SLV 12	0.207	0.845	304	0.833	No
	V	0.807	SLV 4	0.196	0.801	263	0.785	No
	PFFP	0.914	SLV 11	0.223	0.911	370	0.903	No
	R	1.665	SLV 5	0.362	1.483	1618	1.653	Si
17	PF	0.471	SLV 12	0.113	0.463	70	0.456	No
	V	1.006	SLV 15	0.246	1.006	483	1.007	Si
	PFFP	0.445	SLV 11	0.108	0.442	63	0.437	No
	R	1.673	SLV 6	0.362	1.483	1618	1.653	Si
18	PF	0.973	SLV 8	0.237	0.972	440	0.969	No
	V	1.729	SLV 9	0.362	1.483	1618	1.653	Si
	PFFP	1.085	SLV 12	0.264	1.079	596	1.098	Si
	R	1.226	SLV 5	0.295	1.209	838	1.262	Si
20	PF	0.88	SLV 9	0.214	0.876	334	0.866	No
	V	1.25	SLV 5	0.301	1.231	885	1.291	Si
	PFFP	1.389	SLV 9	0.332	1.36	1215	1.47	Si
	R	1.278	SLV 8	0.307	1.257	941	1.324	Si
21	PF	0.918	SLV 8	0.224	0.915	375	0.908	No
	V	1.182	SLV 8	0.286	1.169	757	1.211	Si
	PFFP	1.477	SLV 8	0.352	1.441	1470	1.589	Si
	R	1.481	SLV 9	0.353	1.444	1482	1.594	Si
23	PF	1.819	SLV 14	0.362	1.483	1618	1.653	Si
	V	2.607	SLV 16	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
24	PF	0.74	SLV 10	0.179	0.731	207	0.711	No
	V	1.477	SLV 5	0.352	1.441	1470	1.589	Si
	PFFP	0.766	SLV 9	0.185	0.758	228	0.74	No
	R	1.299	SLV 7	0.312	1.277	987	1.35	Si
25	PF	1.698	SLV 10	0.362	1.483	1618	1.653	Si
	V	2.129	SLV 14	0.362	1.483	1618	1.653	Si
	PFFP	3.531	SLV 10	0.362	1.483	1618	1.653	Si
	R	1.372	SLV 7	0.328	1.344	1170	1.447	Si
26	PF	0.893	SLV 11	0.217	0.889	347	0.879	No
	V	1.119	SLV 11	0.271	1.11	649	1.137	Si
	PFFP	1.378	SLV 11	0.33	1.35	1186	1.455	Si
	R	1.328	SLV 6	0.318	1.304	1057	1.388	Si
27	PF	0.955	SLV 5	0.233	0.953	418	0.949	No
	V	1.086	SLV 1	0.264	1.08	597	1.098	Si
	PFFP	0.899	SLV 5	0.219	0.895	353	0.885	No
	R	1.387	SLV 12	0.332	1.358	1210	1.467	Si
28	PF	0.621	SLV 10	0.148	0.604	133	0.593	No
	V	1.459	SLV 7	0.348	1.424	1415	1.564	Si
	PFFP	0.772	SLV 5	0.187	0.765	233	0.747	No
	R	1.499	SLV 7	0.357	1.461	1538	1.619	Si
30	PF	0.881	SLV 6	0.214	0.877	335	0.867	No
	V	1.034	SLV 10	0.252	1.032	521	1.039	Si
	PFFP	1.778	SLV 5	0.362	1.483	1618	1.653	Si
	R	1.737	SLV 16	0.362	1.483	1618	1.653	Si
32	PF	0.474	SLV 7	0.114	0.466	71	0.459	No
	V	1.196	SLV 4	0.289	1.182	782	1.227	Si
	PFFP	0.566	SLV 8	0.135	0.551	107	0.543	No
	R	1.622	SLV 9	0.362	1.483	1618	1.653	Si
33	PF	0.816	SLV 7	0.198	0.809	271	0.794	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.95	SLV 11	0.232	0.948	412	0.943	No
	R	1.224	SLV 6	0.295	1.207	834	1.26	Si
34	PF	0.899	SLV 11	0.219	0.895	353	0.885	No
	V	2.405	SLV 6	0.362	1.483	1618	1.653	Si
	PFFP	1.019	SLV 7	0.249	1.018	500	1.021	Si
	R	1.135	SLV 10	0.275	1.125	676	1.156	Si
35	PF	0.863	SLV 7	0.209	0.857	316	0.846	No
	V	0.877	SLV 15	0.213	0.872	330	0.861	No
	PFFP	0.845	SLV 7	0.205	0.84	299	0.827	No
	R	1.723	SLV 10	0.362	1.483	1618	1.653	Si
36	PF	1.062	SLV 7	0.258	1.058	561	1.071	Si
	V	1.561	SLV 11	0.362	1.483	1618	1.653	Si
	PFFP	1.423	SLV 7	0.34	1.391	1310	1.516	Si
	R	1.31	SLV 10	0.314	1.287	1013	1.364	Si
37	PF	0.745	SLV 6	0.18	0.736	211	0.717	No

Maschio	Stato limite	Molt.	Comb.	PGA	iPGA (ζE)	TR	(TR/TRrif)^.41	Verifica
	V	1.344	SLV 10	0.322	1.318	1097	1.409	Si
	PFFP	0.953	SLV 6	0.232	0.951	415	0.946	No
	R	1.09	SLV 11	0.265	1.084	603	1.103	Si
39	PF	0.995	SLV 2	0.243	0.995	468	0.994	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	2.518	SLV 3	0.362	1.483	1618	1.653	Si
	R	1.294	SLV 14	0.311	1.272	975	1.343	Si
40	PF	1.595	SLV 2	0.362	1.483	1618	1.653	Si
	V	3.633	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	2.032	SLV 2	0.362	1.483	1618	1.653	Si
	R	1.431	SLV 16	0.342	1.398	1333	1.527	Si
42	PF	0.771	SLV 7	0.186	0.763	232	0.745	No
	V	1.354	SLV 4	0.324	1.328	1123	1.423	Si
	PFFP	0.734	SLV 7	0.177	0.723	201	0.703	No
	R	1.54	SLV 10	0.362	1.483	1618	1.653	Si
43	PF	0.684	SLV 7	0.163	0.669	168	0.653	No
	V	1.924	SLV 11	0.362	1.483	1618	1.653	Si
	PFFP	0.68	SLV 7	0.163	0.665	166	0.65	No
	R	1.526	SLV 10	0.362	1.483	1618	1.653	Si
44	PF	0.793	SLV 6	0.192	0.785	250	0.769	No
	V	3.402	SLV 3	0.362	1.483	1618	1.653	Si
	PFFP	0.807	SLV 10	0.196	0.801	263	0.785	No
	R	1.775	SLV 11	0.362	1.483	1618	1.653	Si
45	PF	0.574	SLV 6	0.136	0.558	110	0.549	No
	V	1.509	SLV 7	0.359	1.47	1570	1.633	Si
	PFFP	0.584	SLV 6	0.139	0.567	115	0.559	No
	R	1.55	SLV 11	0.362	1.483	1618	1.653	Si
46	PF	0.99	SLV 6	0.242	0.99	462	0.989	No
	V	0.801	SLV 7	0.194	0.793	257	0.777	No
	PFFP	1.343	SLV 2	0.322	1.318	1095	1.408	Si
	R	1.519	SLV 15	0.362	1.48	1606	1.648	Si
47	PF	0.969	SLV 16	0.236	0.967	435	0.965	No
	V	1.439	SLV 9	0.343	1.406	1356	1.537	Si
	PFFP	1.394	SLV 14	0.333	1.364	1229	1.477	Si
	R	1.465	SLV 1	0.349	1.43	1433	1.573	Si
48	PF	0.629	SLV 9	0.15	0.612	137	0.601	No
	V	2.606	SLV 5	0.362	1.483	1618	1.653	Si
	PFFP	0.665	SLV 9	0.159	0.65	157	0.635	No
	R	1.354	SLV 7	0.324	1.328	1123	1.423	Si
49	PF	0.732	SLV 9	0.176	0.722	200	0.701	No
	V	1.579	SLV 16	0.362	1.483	1618	1.653	Si
	PFFP	0.723	SLV 9	0.174	0.711	193	0.691	No
	R	1.109	SLV 8	0.269	1.101	634	1.126	Si
50	PF	0.705	SLV 8	0.169	0.692	182	0.675	No
	V	2.313	SLV 13	0.362	1.483	1618	1.653	Si
	PFFP	0.737	SLV 12	0.178	0.728	205	0.709	No
	R	1.385	SLV 2	0.331	1.356	1204	1.464	Si
51	PF	0.889	SLV 8	0.216	0.885	343	0.875	No
	V	1.744	SLV 13	0.362	1.483	1618	1.653	Si
	PFFP	0.898	SLV 12	0.218	0.894	352	0.884	No
	R	1.302	SLV 5	0.313	1.28	994	1.354	Si
52	PF	0.667	SLV 15	0.159	0.652	158	0.637	No
	V	1.498	SLV 13	0.357	1.46	1535	1.618	Si
	PFFP	0.772	SLV 12	0.187	0.765	233	0.747	No
	R	1.065	SLV 1	0.259	1.061	566	1.075	Si
54	PF	0.957	SLV 9	0.233	0.955	420	0.951	No
	V	1.268	SLV 9	0.305	1.248	921	1.312	Si
	PFFP	1.13	SLV 9	0.274	1.121	668	1.15	Si
	R	1.092	SLV 4	0.265	1.085	607	1.106	Si
55	PF	0.261	SLV 5	0.067	0.275	20	0.273	No
	V	0.654	SLV 1	0.156	0.637	150	0.623	No
	PFFP	0.549	SLV 5	0.131	0.535	100	0.528	No
	R	0.984	SLV 12	0.24	0.984	454	0.982	No
56	PF	0.923	SLV 12	0.225	0.92	380	0.913	No
	V	1.956	SLV 8	0.362	1.483	1618	1.653	Si
	PFFP	1.232	SLV 12	0.297	1.214	849	1.269	Si
	R	1.143	SLV 1	0.277	1.133	689	1.165	Si
58	PF	0.619	SLV 15	0.147	0.602	132	0.592	No
	V	1.452	SLV 4	0.346	1.418	1394	1.555	Si
	PFFP	0.77	SLV 11	0.186	0.763	232	0.745	No
	R	1.118	SLV 9	0.271	1.11	648	1.136	Si
59	PF	0.218	SLV 8	0.057	0.234	13	0.229	No
	V	2.187	SLV 13	0.362	1.483	1618	1.653	Si
	PFFP	0.687	SLV 8	0.164	0.673	170	0.656	No
	R	1.481	SLV 6	0.353	1.444	1482	1.594	Si
63	PF	0.796	SLV 5	0.193	0.788	252	0.771	No
	V	1.368	SLV 5	0.327	1.34	1159	1.442	Si
	PFFP	0.884	SLV 5	0.215	0.88	338	0.87	No
	R	1.08	SLV 12	0.262	1.074	588	1.091	Si
64	PF	0.627	SLV 8	0.149	0.608	135	0.597	No
	V	0.914	SLV 8	0.223	0.911	370	0.903	No
	PFFP	0.709	SLV 8	0.17	0.698	185	0.679	No
	R	1.624	SLV 10	0.362	1.483	1618	1.653	Si
65	PF	0.646	SLV 7	0.154	0.629	145	0.615	No
	V	1.64	SLV 8	0.362	1.483	1618	1.653	Si
	PFFP	0.775	SLV 11	0.187	0.767	235	0.749	No

Maschio	Stato limite	Molt.	Comb.	PGA	iPGA (ζE)	TR	(TR/TRrif)^.41	Verifica
	R	1.417	SLV 10	0.339	1.386	1293	1.508	Si
67	PF	1.293	SLV 8	0.311	1.271	973	1.342	Si
	V	1.299	SLV 7	0.312	1.277	987	1.35	Si
	PFFP	1.67	SLV 8	0.362	1.483	1618	1.653	Si
	R	1.674	SLV 9	0.362	1.483	1618	1.653	Si
70	PF	1.551	SLV 13	0.362	1.483	1618	1.653	Si
	V	3.767	SLV 13	0.362	1.483	1618	1.653	Si
	PFFP	1.629	SLV 13	0.362	1.483	1618	1.653	Si
	R	1.115	SLV 4	0.27	1.107	643	1.132	Si
71	PF	2.281	SLV 16	0.362	1.483	1618	1.653	Si
	V	1.74	SLV 15	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.239	SLV 3	0.298	1.221	863	1.277	Si
72	PF	2.531	SLV 3	0.362	1.483	1618	1.653	Si
	V	1.671	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.437	SLV 15	0.343	1.404	1350	1.535	Si
73	PF	1.703	SLV 4	0.362	1.483	1618	1.653	Si
	V	3.567	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	1.754	SLV 2	0.362	1.483	1618	1.653	Si
	R	1.208	SLV 15	0.291	1.192	804	1.241	Si
74	PF	0.669	SLV 5	0.16	0.654	159	0.638	No
	V	1.151	SLV 1	0.279	1.14	702	1.174	Si
	PFFP	0.894	SLV 10	0.217	0.889	348	0.88	No
	R	1.043	SLV 3	0.254	1.04	534	1.049	Si
75	PF	0.96	SLV 5	0.234	0.959	424	0.954	No
	V	1.33	SLV 1	0.319	1.306	1062	1.391	Si
	PFFP	1.149	SLV 10	0.278	1.138	699	1.172	Si
	R	1.177	SLV 7	0.284	1.164	747	1.204	Si
76	PF	1.186	SLV 10	0.286	1.172	763	1.214	Si
	V	1.44	SLV 3	0.344	1.407	1359	1.539	Si
	PFFP	1.268	SLV 5	0.305	1.248	921	1.312	Si
	R	1.149	SLV 12	0.278	1.138	699	1.172	Si
77	PF	0.523	SLV 3	0.124	0.506	87	0.499	No
	V	1.427	SLV 3	0.341	1.395	1321	1.521	Si
	PFFP	0.799	SLV 3	0.193	0.792	255	0.775	No
	R	1.04	SLV 14	0.253	1.037	530	1.046	Si
78	PF	0.587	SLV 11	0.139	0.569	116	0.561	No
	V	0.779	SLV 11	0.188	0.771	238	0.753	No
	PFFP	0.705	SLV 7	0.169	0.692	182	0.675	No
	R	1.521	SLV 10	0.362	1.482	1612	1.65	Si
79	PF	0.616	SLV 7	0.146	0.598	129	0.586	No
	V	1.545	SLV 11	0.362	1.483	1618	1.653	Si
	PFFP	0.719	SLV 8	0.173	0.708	191	0.688	No
	R	1.369	SLV 6	0.328	1.341	1162	1.443	Si
80	PF	1.035	SLV 11	0.252	1.033	522	1.039	Si
	V	1.018	SLV 11	0.248	1.017	499	1.02	Si
	PFFP	1.51	SLV 7	0.359	1.471	1573	1.634	Si
	R	1.44	SLV 10	0.344	1.407	1359	1.539	Si
82	PF	1.499	SLV 9	0.357	1.461	1538	1.619	Si
	V	1.176	SLV 11	0.284	1.163	746	1.203	Si
	PFFP	2.242	SLV 2	0.362	1.483	1618	1.653	Si
	R	1.261	SLV 16	0.303	1.242	907	1.304	Si
84	PF	1.679	SLV 5	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	3.427	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.456	SLV 16	0.347	1.421	1406	1.56	Si
88	PF	0.469	SLV 4	0.11	0.451	66	0.445	No
	V	1.853	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	0.734	SLV 11	0.177	0.725	202	0.704	No
	R	1.3	SLV 10	0.312	1.278	990	1.351	Si
89	PF	0.47	SLV 4	0.11	0.451	66	0.445	No
	V	1.787	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	0.692	SLV 8	0.166	0.678	173	0.661	No
	R	1.18	SLV 6	0.285	1.167	753	1.208	Si
91	PF	0.937	SLV 7	0.228	0.934	396	0.928	No
	V	2.081	SLV 11	0.362	1.483	1618	1.653	Si
	PFFP	1.292	SLV 7	0.31	1.27	971	1.341	Si
	R	1.309	SLV 14	0.314	1.286	1011	1.363	Si
92	PF	0.711	SLV 6	0.171	0.699	186	0.681	No
	V	1.404	SLV 10	0.336	1.374	1256	1.49	Si
	PFFP	0.786	SLV 6	0.19	0.779	245	0.762	No
	R	1.138	SLV 11	0.276	1.128	681	1.159	Si
95	PF	0.61	SLV 2	0.145	0.593	127	0.582	No
	V	1.677	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	0.749	SLV 7	0.181	0.741	214	0.721	No
	R	1.18	SLV 13	0.285	1.167	753	1.208	Si
96	PF	0.761	SLV 11	0.184	0.753	223	0.733	No
	V	1.604	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	0.861	SLV 7	0.209	0.855	314	0.844	No
	R	1.347	SLV 10	0.323	1.321	1105	1.414	Si
97	PF	0.568	SLV 7	0.135	0.553	108	0.545	No
	V	1.79	SLV 15	0.362	1.483	1618	1.653	Si
	PFFP	0.676	SLV 7	0.162	0.661	164	0.647	No
	R	1.393	SLV 9	0.333	1.364	1226	1.475	Si
98	PF	0.407	SLV 10	0.1	0.41	52	0.404	No

Maschio	Stato limite	Molt.	Comb.	PGA	iPGA (ζE)	TR	(TR/TRrif)^.41	Verifica
	V	1.855	SLV 7	0.362	1.483	1618	1.653	Si
	PFFP	0.496	SLV 10	0.118	0.485	79	0.479	No
	R	1.032	SLV 7	0.252	1.03	518	1.036	Si
99	PF	0.489	SLV 6	0.117	0.479	77	0.474	No
	V	2.45	SLV 14	0.362	1.483	1618	1.653	Si
	PFFP	0.579	SLV 6	0.137	0.562	112	0.553	No
	R	1.31	SLV 12	0.314	1.287	1013	1.364	Si
100	PF	0.832	SLV 8	0.202	0.826	286	0.812	No
	V	1.026	SLV 7	0.25	1.024	510	1.03	Si
	PFFP	0.989	SLV 8	0.242	0.988	460	0.987	No
	R	1.242	SLV 14	0.299	1.224	868	1.28	Si
101	PF	0.881	SLV 6	0.214	0.877	335	0.867	No
	V	0.625	SLV 6	0.148	0.606	134	0.595	No
	PFFP	1.088	SLV 6	0.264	1.082	600	1.101	Si
	R	1.266	SLV 15	0.304	1.246	917	1.31	Si
102	PF	1.286	SLV 12	0.309	1.265	958	1.333	Si
	V	1.467	SLV 12	0.35	1.431	1439	1.575	Si
	PFFP	1.518	SLV 16	0.361	1.479	1602	1.646	Si
	R	1.589	SLV 1	0.362	1.483	1618	1.653	Si
103	PF	0.922	SLV 9	0.225	0.919	379	0.912	No
	V	1.409	SLV 5	0.337	1.378	1270	1.497	Si
	PFFP	1.072	SLV 9	0.261	1.067	577	1.083	Si
	R	1.652	SLV 4	0.362	1.483	1618	1.653	Si
104	PF	0.675	SLV 5	0.161	0.66	162	0.643	No
	V	2.296	SLV 5	0.362	1.483	1618	1.653	Si
	PFFP	1.041	SLV 10	0.254	1.038	531	1.047	Si
	R	1.777	SLV 7	0.362	1.483	1618	1.653	Si
105	PF	0.67	SLV 5	0.16	0.654	159	0.638	No
	V	2.166	SLV 16	0.362	1.483	1618	1.653	Si
	PFFP	0.748	SLV 5	0.181	0.74	213	0.72	No
	R	1.221	SLV 12	0.294	1.204	828	1.256	Si
106	PF	0.831	SLV 8	0.201	0.825	285	0.811	No
	V	2.303	SLV 8	0.362	1.483	1618	1.653	Si
	PFFP	1.143	SLV 11	0.277	1.133	689	1.165	Si
	R	1.631	SLV 2	0.362	1.483	1618	1.653	Si
107	PF	1.105	SLV 11	0.268	1.097	627	1.121	Si
	V	2.236	SLV 13	0.362	1.483	1618	1.653	Si
	PFFP	1.008	SLV 12	0.246	1.007	485	1.009	Si
	R	1.447	SLV 5	0.345	1.413	1379	1.548	Si
108	PF	0.646	SLV 15	0.154	0.629	145	0.615	No
	V	1.775	SLV 13	0.362	1.483	1618	1.653	Si
	PFFP	0.947	SLV 11	0.231	0.944	408	0.94	No
	R	1.54	SLV 2	0.362	1.483	1618	1.653	Si
110	PF	1.175	SLV 9	0.284	1.162	744	1.202	Si
	V	1.467	SLV 9	0.35	1.431	1439	1.575	Si
	PFFP	1.205	SLV 9	0.291	1.19	798	1.237	Si
	R	1.283	SLV 3	0.308	1.262	952	1.33	Si
111	PF	0.27	SLV 5	0.069	0.281	21	0.278	No
	V	1.644	SLV 5	0.362	1.483	1618	1.653	Si
	PFFP	0.609	SLV 9	0.144	0.591	126	0.58	No
	R	0.994	SLV 3	0.243	0.993	466	0.992	No
112	PF	1.242	SLV 12	0.299	1.224	868	1.28	Si
	V	2.084	SLV 12	0.362	1.483	1618	1.653	Si
	PFFP	1.594	SLV 12	0.362	1.483	1618	1.653	Si
	R	1.391	SLV 1	0.333	1.362	1221	1.473	Si
114	PF	0.521	SLV 15	0.123	0.503	86	0.496	No
	V	1.677	SLV 4	0.362	1.483	1618	1.653	Si
	PFFP	0.807	SLV 11	0.196	0.801	263	0.785	No
	R	1.389	SLV 9	0.332	1.36	1215	1.47	Si
115	PF	0.74	SLV 15	0.179	0.731	207	0.711	No
	V	2.329	SLV 13	0.362	1.483	1618	1.653	Si
	PFFP	0.796	SLV 8	0.193	0.788	252	0.771	No
	R	1.569	SLV 6	0.362	1.483	1618	1.653	Si
119	PF	0.463	SLV 5	0.112	0.457	68	0.451	No
	V	1.597	SLV 5	0.362	1.483	1618	1.653	Si
	PFFP	0.622	SLV 5	0.148	0.604	133	0.593	No
	R	1.313	SLV 11	0.315	1.29	1021	1.369	Si
120	PF	0.734	SLV 8	0.177	0.725	202	0.704	No
	V	1.722	SLV 8	0.362	1.483	1618	1.653	Si
	PFFP	0.905	SLV 11	0.22	0.901	360	0.893	No
	R	1.55	SLV 6	0.362	1.483	1618	1.653	Si
122	PF	1.143	SLV 8	0.277	1.133	689	1.165	Si
	V	1.411	SLV 8	0.337	1.38	1276	1.5	Si
	PFFP	1.087	SLV 8	0.264	1.081	599	1.1	Si
	R	1.637	SLV 5	0.362	1.483	1618	1.653	Si
124	PF	0.207	SLV 7	0.055	0.226	12	0.221	No
	V	1.94	SLV 7	0.362	1.483	1618	1.653	Si
	PFFP	0.742	SLV 10	0.179	0.733	208	0.713	No
	R	1.22	SLV 6	0.294	1.204	826	1.255	Si
125	PF	1.336	SLV 14	0.32	1.311	1077	1.399	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.499	SLV 16	0.357	1.461	1538	1.619	Si
	R	1.328	SLV 1	0.318	1.304	1057	1.388	Si
126	PF	2.586	SLV 14	0.362	1.483	1618	1.653	Si
	V	1.869	SLV 14	0.362	1.483	1618	1.653	Si
	PFFP	3.876	SLV 14	0.362	1.483	1618	1.653	Si

Maschio	Stato limite	Molt.	Comb.	PGA	iPGA (ζE)	TR	(TR/TRrif)^.41	Verifica
	R	1.305	SLV 3	0.313	1.282	1002	1.358	Si
127	PF	0.633	SLV 2	0.151	0.617	139	0.604	No
	V	3.555	SLV 15	0.362	1.483	1618	1.653	Si
	PFFP	2.49	SLV 4	0.362	1.483	1618	1.653	Si
	R	1.437	SLV 16	0.343	1.404	1350	1.535	Si
128	PF	1.597	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.779	SLV 16	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.278	SLV 15	0.307	1.257	941	1.324	Si
129	PF	1.277	SLV 2	0.307	1.256	940	1.323	Si
	V	2.004	SLV 6	0.362	1.483	1618	1.653	Si
	PFFP	1000	SLV 1	0.362	1.483	1618	1.653	Si
	R	1.369	SLV 15	0.328	1.341	1162	1.443	Si
130	PF	1.638	SLV 2	0.362	1.483	1618	1.653	Si
	V	3.983	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.642	SLV 2	0.362	1.483	1618	1.653	Si
	R	1.416	SLV 15	0.338	1.385	1290	1.506	Si
131	PF	0.598	SLV 16	0.142	0.58	121	0.571	No
	V	2.276	SLV 16	0.362	1.483	1618	1.653	Si
	PFFP	0.972	SLV 14	0.237	0.97	438	0.967	No
	R	1.43	SLV 3	0.341	1.398	1330	1.525	Si
132	PF	1.583	SLV 5	0.362	1.483	1618	1.653	Si
	V	1.369	SLV 16	0.328	1.341	1162	1.443	Si
	PFFP	1.694	SLV 10	0.362	1.483	1618	1.653	Si
	R	1.37	SLV 7	0.328	1.342	1164	1.444	Si
133	PF	1.288	SLV 1	0.309	1.267	963	1.336	Si
	V	1.449	SLV 3	0.346	1.415	1385	1.551	Si
	PFFP	1.536	SLV 5	0.362	1.483	1618	1.653	Si
	R	1.34	SLV 12	0.321	1.315	1087	1.404	Si
134	PF	0.578	SLV 3	0.137	0.56	111	0.551	No
	V	3.267	SLV 3	0.362	1.483	1618	1.653	Si
	PFFP	0.775	SLV 3	0.187	0.767	235	0.749	No
	R	1.321	SLV 14	0.317	1.297	1040	1.379	Si
136	PF	1.307	SLV 7	0.314	1.284	1006	1.36	Si
	V	1.337	SLV 8	0.321	1.312	1080	1.4	Si
	PFFP	1.72	SLV 7	0.362	1.483	1618	1.653	Si
	R	1.616	SLV 10	0.362	1.483	1618	1.653	Si
138	PF	2.466	SLV 7	0.362	1.483	1618	1.653	Si
	V	1.903	SLV 7	0.362	1.483	1618	1.653	Si
	PFFP	1.691	SLV 4	0.362	1.483	1618	1.653	Si
	R	1.424	SLV 14	0.34	1.392	1313	1.517	Si
140	PF	4.002	SLV 10	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	2.39	SLV 5	0.362	1.483	1618	1.653	Si
	R	1.828	SLV 16	0.362	1.483	1618	1.653	Si
144	PF	0.602	SLV 4	0.143	0.585	123	0.575	No
	V	1.976	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	0.835	SLV 11	0.202	0.828	288	0.815	No
	R	1.489	SLV 9	0.355	1.452	1507	1.605	Si
145	PF	0.349	SLV 4	0.082	0.337	33	0.335	No
	V	1.36	SLV 2	0.326	1.333	1138	1.431	Si
	PFFP	0.65	SLV 4	0.155	0.633	148	0.62	No
	R	1.328	SLV 6	0.318	1.304	1057	1.388	Si
147	PF	1.255	SLV 7	0.302	1.236	895	1.297	Si
	V	2.389	SLV 7	0.362	1.483	1618	1.653	Si
	PFFP	1.642	SLV 7	0.362	1.483	1618	1.653	Si
	R	1.541	SLV 13	0.362	1.483	1618	1.653	Si
148	PF	0.944	SLV 6	0.23	0.941	404	0.936	No
	V	1.702	SLV 5	0.362	1.483	1618	1.653	Si
	PFFP	1.085	SLV 6	0.264	1.079	596	1.098	Si
	R	1.299	SLV 16	0.312	1.277	987	1.35	Si
151	PF	0.522	SLV 4	0.123	0.503	86	0.496	No
	V	1.624	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	0.936	SLV 8	0.228	0.933	395	0.927	No
	R	1.597	SLV 13	0.362	1.483	1618	1.653	Si
152	PF	0.891	SLV 11	0.217	0.887	345	0.877	No
	V	1.925	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	0.978	SLV 7	0.239	0.977	446	0.975	No
	R	1.481	SLV 10	0.353	1.444	1482	1.594	Si
153	PF	0.723	SLV 11	0.174	0.711	193	0.691	No
	V	2.024	SLV 15	0.362	1.483	1618	1.653	Si
	PFFP	0.982	SLV 8	0.239	0.98	450	0.978	No
	R	1.649	SLV 13	0.362	1.483	1618	1.653	Si
154	PF	0.684	SLV 10	0.163	0.669	168	0.653	No
	V	3.191	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.71	SLV 10	0.17	0.698	185	0.679	No
	R	1.226	SLV 7	0.295	1.209	838	1.262	Si
155	PF	0.585	SLV 10	0.139	0.569	116	0.561	No
	V	2.187	SLV 10	0.362	1.483	1618	1.653	Si
	PFFP	0.809	SLV 5	0.196	0.803	265	0.787	No
	R	1.597	SLV 12	0.362	1.483	1618	1.653	Si
156	PF	1.562	SLV 3	0.362	1.483	1618	1.653	Si
	V	0.985	SLV 6	0.24	0.984	455	0.983	No
	PFFP	1.791	SLV 2	0.362	1.483	1618	1.653	Si
	R	1.668	SLV 15	0.362	1.483	1618	1.653	Si
157	PF	2.688	SLV 15	0.362	1.483	1618	1.653	Si

Maschio	Stato limite	Molt.	Comb.	PGA	iPGA (ζE)	TR	(TR/TRrif)^.41	Verifica
	V	1.428	SLV 9	0.341	1.396	1324	1.522	Si
	PFFP	2.261	SLV 13	0.362	1.483	1618	1.653	Si
	R	2.947	SLV 4	0.362	1.483	1618	1.653	Si
158	PF	0.839	SLV 5	0.203	0.833	292	0.819	No
	V	3.226	SLV 5	0.362	1.483	1618	1.653	Si
	PFFP	1.51	SLV 10	0.359	1.471	1573	1.634	Si
	R	2.521	SLV 1	0.362	1.483	1618	1.653	Si
159	PF	0.982	SLV 5	0.239	0.98	450	0.978	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.029	SLV 5	0.251	1.027	514	1.033	Si
	R	1.743	SLV 8	0.362	1.483	1618	1.653	Si
160	PF	0.91	SLV 13	0.221	0.906	365	0.898	No
	V	3.202	SLV 8	0.362	1.483	1618	1.653	Si
	PFFP	1.467	SLV 15	0.35	1.431	1439	1.575	Si
	R	2.278	SLV 4	0.362	1.483	1618	1.653	Si
161	PF	1.347	SLV 8	0.323	1.321	1105	1.414	Si
	V	2.986	SLV 4	0.362	1.483	1618	1.653	Si
	PFFP	1.152	SLV 12	0.279	1.141	704	1.175	Si
	R	1.926	SLV 5	0.362	1.483	1618	1.653	Si
162	PF	0.576	SLV 15	0.136	0.558	110	0.549	No
	V	2.353	SLV 13	0.362	1.483	1618	1.653	Si
	PFFP	0.988	SLV 15	0.241	0.988	459	0.986	No
	R	2.111	SLV 4	0.362	1.483	1618	1.653	Si
164	PF	1.265	SLV 10	0.304	1.245	915	1.308	Si
	V	2.257	SLV 9	0.362	1.483	1618	1.653	Si
	PFFP	1.155	SLV 10	0.279	1.144	709	1.178	Si
	R	1.821	SLV 3	0.362	1.483	1618	1.653	Si
165	PF	0.317	SLV 10	0.08	0.328	31	0.327	No
	V	3.405	SLV 5	0.362	1.483	1618	1.653	Si
	PFFP	0.633	SLV 10	0.151	0.617	139	0.604	No
	R	1.406	SLV 1	0.336	1.375	1262	1.493	Si
166	PF	1.656	SLV 12	0.362	1.483	1618	1.653	Si
	V	2.877	SLV 11	0.362	1.483	1618	1.653	Si
	PFFP	1.596	SLV 16	0.362	1.483	1618	1.653	Si
	R	2.037	SLV 2	0.362	1.483	1618	1.653	Si
168	PF	0.433	SLV 13	0.102	0.417	54	0.41	No
	V	2.281	SLV 4	0.362	1.483	1618	1.653	Si
	PFFP	0.782	SLV 15	0.189	0.775	242	0.758	No
	R	2.042	SLV 13	0.362	1.483	1618	1.653	Si
169	PF	0.69	SLV 4	0.165	0.676	172	0.659	No
	V	2.685	SLV 13	0.362	1.483	1618	1.653	Si
	PFFP	0.799	SLV 8	0.193	0.792	255	0.775	No
	R	1.918	SLV 9	0.362	1.483	1618	1.653	Si
173	PF	0.484	SLV 5	0.116	0.474	74	0.467	No
	V	2.424	SLV 5	0.362	1.483	1618	1.653	Si
	PFFP	0.488	SLV 5	0.117	0.479	77	0.474	No
	R	1.808	SLV 11	0.362	1.483	1618	1.653	Si
174	PF	1.074	SLV 8	0.261	1.069	579	1.085	Si
	V	1.317	SLV 8	0.316	1.294	1031	1.374	Si
	PFFP	1.389	SLV 8	0.332	1.36	1215	1.47	Si
	R	2.388	SLV 5	0.362	1.483	1618	1.653	Si
175	PF	0.309	SLV 13	0.073	0.298	24	0.294	No
	V	2.036	SLV 13	0.362	1.483	1618	1.653	Si
	PFFP	1.406	SLV 11	0.336	1.375	1262	1.493	Si
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
177	PF	0.994	SLV 8	0.243	0.993	466	0.992	No
	V	1.756	SLV 7	0.362	1.483	1618	1.653	Si
	PFFP	0.931	SLV 12	0.227	0.928	389	0.921	No
	R	1.865	SLV 13	0.362	1.483	1618	1.653	Si
179	PF	0.243	SLV 7	0.062	0.256	17	0.255	No
	V	2.388	SLV 7	0.362	1.483	1618	1.653	Si
	PFFP	0.576	SLV 10	0.137	0.56	111	0.551	No
	R	1.246	SLV 6	0.3	1.228	877	1.286	Si
180	PF	1.217	SLV 14	0.293	1.201	820	1.251	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.383	SLV 14	0.331	1.354	1199	1.462	Si
	R	1.894	SLV 3	0.362	1.483	1618	1.653	Si
181	PF	1.63	SLV 14	0.362	1.483	1618	1.653	Si
	V	2.055	SLV 14	0.362	1.483	1618	1.653	Si
	PFFP	2.548	SLV 14	0.362	1.483	1618	1.653	Si
	R	1.547	SLV 1	0.362	1.483	1618	1.653	Si
182	PF	0.468	SLV 1	0.11	0.451	66	0.445	No
	V	4.071	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.216	SLV 7	0.293	1.2	818	1.25	Si
	R	1.862	SLV 10	0.362	1.483	1618	1.653	Si
183	PF	1.057	SLV 1	0.257	1.053	554	1.065	Si
	V	3.319	SLV 16	0.362	1.483	1618	1.653	Si
	PFFP	3.193	SLV 4	0.362	1.483	1618	1.653	Si
	R	1.3	SLV 13	0.312	1.278	990	1.351	Si
184	PF	0.957	SLV 1	0.233	0.955	420	0.951	No
	V	2.66	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	2.607	SLV 2	0.362	1.483	1618	1.653	Si
	R	1.752	SLV 15	0.362	1.483	1618	1.653	Si
185	PF	1.514	SLV 2	0.36	1.475	1590	1.641	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.484	SLV 2	0.354	1.447	1491	1.598	Si

Maschio	Stato limite	Molt.	Comb.	PGA	iPGA (ζE)	TR	(TR/TRrif)^.41	Verifica
	R	1.868	SLV 15	0.362	1.483	1618	1.653	Si
186	PF	0.958	SLV 16	0.234	0.956	422	0.953	No
	V	3.638	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.39	SLV 14	0.332	1.361	1218	1.471	Si
	R	1.831	SLV 11	0.362	1.483	1618	1.653	Si
187	PF	1.714	SLV 14	0.362	1.483	1618	1.653	Si
	V	1.743	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	2.431	SLV 10	0.362	1.483	1618	1.653	Si
	R	1.951	SLV 7	0.362	1.483	1618	1.653	Si
188	PF	1.244	SLV 1	0.299	1.226	873	1.283	Si
	V	1.96	SLV 3	0.362	1.483	1618	1.653	Si
	PFFP	1.573	SLV 5	0.362	1.483	1618	1.653	Si
	R	1.683	SLV 12	0.362	1.483	1618	1.653	Si
189	PF	1.056	SLV 1	0.257	1.052	553	1.064	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.473	SLV 5	0.351	1.437	1457	1.583	Si
	R	1.78	SLV 7	0.362	1.483	1618	1.653	Si
190	PF	0.566	SLV 2	0.134	0.548	106	0.541	No
	V	3.119	SLV 15	0.362	1.483	1618	1.653	Si
	PFFP	0.9	SLV 4	0.219	0.896	354	0.886	No
	R	1.862	SLV 13	0.362	1.483	1618	1.653	Si
191	PF	1.37	SLV 8	0.328	1.342	1164	1.444	Si
	V	1.536	SLV 8	0.362	1.483	1618	1.653	Si
	PFFP	1.627	SLV 7	0.362	1.483	1618	1.653	Si
	R	1.699	SLV 9	0.362	1.483	1618	1.653	Si
193	PF	1.113	SLV 7	0.27	1.105	640	1.13	Si
	V	2.44	SLV 8	0.362	1.483	1618	1.653	Si
	PFFP	1.252	SLV 7	0.301	1.233	888	1.292	Si
	R	1.53	SLV 10	0.362	1.483	1618	1.653	Si
195	PF	1.811	SLV 6	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.675	SLV 7	0.362	1.483	1618	1.653	Si
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
199	PF	0.512	SLV 4	0.12	0.493	82	0.487	No
	V	2.445	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	0.959	SLV 11	0.234	0.957	422	0.953	No
	R	1.837	SLV 13	0.362	1.483	1618	1.653	Si
200	PF	0.249	SLV 2	0.057	0.234	13	0.229	No
	V	1.642	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	0.542	SLV 4	0.128	0.523	95	0.517	No
	R	2.132	SLV 6	0.362	1.483	1618	1.653	Si
202	PF	1.873	SLV 7	0.362	1.483	1618	1.653	Si
	V	3.227	SLV 11	0.362	1.483	1618	1.653	Si
	PFFP	1.475	SLV 4	0.351	1.439	1463	1.586	Si
	R	2.078	SLV 13	0.362	1.483	1618	1.653	Si
203	PF	1.144	SLV 5	0.277	1.134	691	1.166	Si
	V	2.517	SLV 5	0.362	1.483	1618	1.653	Si
	PFFP	1.129	SLV 5	0.274	1.12	666	1.149	Si
	R	1.784	SLV 16	0.362	1.483	1618	1.653	Si
206	PF	0.39	SLV 2	0.092	0.376	42	0.37	No
	V	1.944	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	0.936	SLV 4	0.228	0.933	395	0.927	No
	R	1.756	SLV 15	0.362	1.483	1618	1.653	Si
207	PF	0.966	SLV 11	0.236	0.964	431	0.961	No
	V	2.473	SLV 15	0.362	1.483	1618	1.653	Si
	PFFP	1.147	SLV 7	0.278	1.136	696	1.17	Si
	R	1.964	SLV 9	0.362	1.483	1618	1.653	Si
208	PF	0.847	SLV 11	0.206	0.842	301	0.829	No
	V	2.404	SLV 11	0.362	1.483	1618	1.653	Si
	PFFP	1.428	SLV 4	0.341	1.396	1324	1.522	Si
	R	2.288	SLV 15	0.362	1.483	1618	1.653	Si
209	PF	0.929	SLV 10	0.226	0.926	387	0.919	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.139	SLV 10	0.276	1.129	682	1.16	Si
	R	1.758	SLV 11	0.362	1.483	1618	1.653	Si
210	PF	0.77	SLV 10	0.186	0.763	232	0.745	No
	V	2.791	SLV 10	0.362	1.483	1618	1.653	Si
	PFFP	1.188	SLV 5	0.287	1.174	768	1.218	Si
	R	2.678	SLV 16	0.362	1.483	1618	1.653	Si
211	PF	2.14	SLV 7	0.362	1.483	1618	1.653	Si
	V	1.666	SLV 11	0.362	1.483	1618	1.653	Si
	PFFP	2.125	SLV 4	0.362	1.483	1618	1.653	Si
	R	2.606	SLV 13	0.362	1.483	1618	1.653	Si
212	PF	2.104	SLV 6	0.362	1.483	1618	1.653	Si
	V	1.54	SLV 5	0.362	1.483	1618	1.653	Si
	PFFP	2.09	SLV 5	0.362	1.483	1618	1.653	Si
	R	2.682	SLV 16	0.362	1.483	1618	1.653	Si
213	PF	2.415	SLV 7	0.362	1.483	1618	1.653	Si
	V	3.291	SLV 5	0.362	1.483	1618	1.653	Si
	PFFP	1.281	SLV 1	0.308	1.26	948	1.328	Si
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
214	PF	0.835	SLV 5	0.202	0.828	288	0.815	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.217	SLV 5	0.293	1.201	820	1.251	Si
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
215	PF	0.781	SLV 14	0.189	0.774	240	0.756	No

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	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.53	SLV 14	0.125	0.513	90	0.506	No
	R	2.615	SLV 3	0.362	1.483	1618	1.653	Si
216	PF	0.885	SLV 9	0.215	0.881	339	0.871	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.329	SLV 12	0.319	1.304	1060	1.39	Si
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
217	PF	1.53	SLV 8	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.365	SLV 15	0.327	1.338	1151	1.437	Si
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
218	PF	0.456	SLV 13	0.107	0.439	62	0.434	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.519	SLV 8	0.124	0.506	87	0.499	No
	R	3.804	SLV 7	0.362	1.483	1618	1.653	Si
220	PF	1.148	SLV 6	0.278	1.137	697	1.17	Si
	V	3.026	SLV 9	0.362	1.483	1618	1.653	Si
	PFFP	1.179	SLV 10	0.285	1.166	751	1.207	Si
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
222	PF	2.537	SLV 11	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.1	SLV 12	0.267	1.093	619	1.115	Si
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
223	PF	0.204	SLV 13	0.047	0.191	8	0.187	No
	V	4.021	SLV 13	0.362	1.483	1618	1.653	Si
	PFFP	0.616	SLV 15	0.146	0.598	129	0.586	No
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
224	PF	0.684	SLV 4	0.163	0.669	168	0.653	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.775	SLV 4	0.187	0.767	235	0.749	No
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
226	PF	0.46	SLV 6	0.111	0.454	67	0.448	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.525	SLV 6	0.125	0.513	90	0.506	No
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
227	PF	0.541	SLV 11	0.129	0.528	97	0.521	No
	V	4.074	SLV 7	0.362	1.483	1618	1.653	Si
	PFFP	0.673	SLV 12	0.161	0.658	161	0.642	No
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
228	PF	0.158	SLV 10	0.041	0.169	6	0.167	No
	V	3.125	SLV 10	0.362	1.483	1618	1.653	Si
	PFFP	0.412	SLV 10	0.101	0.414	53	0.407	No
	R	2.537	SLV 2	0.362	1.483	1618	1.653	Si
229	PF	0.955	SLV 14	0.233	0.953	418	0.949	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.994	SLV 14	0.243	0.993	466	0.992	No
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
230	PF	0.918	SLV 13	0.224	0.915	375	0.908	No
	V	2.764	SLV 14	0.362	1.483	1618	1.653	Si
	PFFP	1.487	SLV 13	0.354	1.45	1500	1.602	Si
	R	1.927	SLV 4	0.362	1.483	1618	1.653	Si
231	PF	0.345	SLV 3	0.081	0.332	31	0.327	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.742	SLV 8	0.179	0.733	208	0.713	No
	R	1.124	SLV 9	0.273	1.115	658	1.143	Si
232	PF	0.526	SLV 1	0.124	0.508	88	0.501	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.11	SLV 4	0.269	1.102	635	1.126	Si
	R	1.76	SLV 13	0.362	1.483	1618	1.653	Si
233	PF	0.719	SLV 1	0.173	0.708	191	0.688	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.476	SLV 2	0.352	1.44	1467	1.588	Si
	R	1.95	SLV 11	0.362	1.483	1618	1.653	Si
234	PF	1.496	SLV 1	0.356	1.458	1529	1.615	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.026	SLV 2	0.25	1.024	510	1.03	Si
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
235	PF	0.222	SLV 5	0.057	0.234	13	0.229	No
	V	2.001	SLV 5	0.362	1.483	1618	1.653	Si
	PFFP	0.22	SLV 5	0.057	0.234	13	0.229	No
	R	2.267	SLV 12	0.362	1.483	1618	1.653	Si
236	PF	1.671	SLV 16	0.362	1.483	1618	1.653	Si
	V	3.132	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	2.14	SLV 10	0.362	1.483	1618	1.653	Si
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
237	PF	1.409	SLV 1	0.337	1.378	1270	1.497	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.664	SLV 5	0.362	1.483	1618	1.653	Si
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
238	PF	0.282	SLV 10	0.071	0.292	23	0.289	No
	V	2.701	SLV 10	0.362	1.483	1618	1.653	Si
	PFFP	0.268	SLV 10	0.069	0.281	21	0.278	No
	R	1.582	SLV 7	0.362	1.483	1618	1.653	Si
239	PF	1.139	SLV 8	0.276	1.129	682	1.16	Si
	V	2.594	SLV 8	0.362	1.483	1618	1.653	Si
	PFFP	0.815	SLV 8	0.198	0.809	271	0.794	No

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	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
241	PF	1.811	SLV 6	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.843	SLV 1	0.205	0.837	296	0.824	No
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
243	PF	0.278	SLV 2	0.066	0.269	19	0.267	No
	V	2.994	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	0.725	SLV 11	0.175	0.715	196	0.696	No
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
244	PF	0.32	SLV 2	0.075	0.308	26	0.304	No
	V	1.166	SLV 2	0.282	1.154	729	1.192	Si
	PFFP	0.322	SLV 4	0.075	0.308	26	0.304	No
	R	2.857	SLV 15	0.362	1.483	1618	1.653	Si
245	PF	2.496	SLV 8	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.989	SLV 3	0.242	0.988	460	0.987	No
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
246	PF	1.171	SLV 9	0.283	1.158	737	1.197	Si
	V	3.877	SLV 9	0.362	1.483	1618	1.653	Si
	PFFP	1.216	SLV 1	0.293	1.2	818	1.25	Si
	R	2.921	SLV 3	0.362	1.483	1618	1.653	Si
249	PF	0.251	SLV 2	0.059	0.242	14	0.236	No
	V	3.197	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	0.423	SLV 11	0.104	0.424	56	0.416	No
	R	3.115	SLV 15	0.362	1.483	1618	1.653	Si
250	PF	1.289	SLV 11	0.31	1.268	965	1.337	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	1.543	SLV 8	0.362	1.483	1618	1.653	Si
	R	3.88	SLV 6	0.362	1.483	1618	1.653	Si
251	PF	0.734	SLV 11	0.177	0.725	202	0.704	No
	V	3.682	SLV 11	0.362	1.483	1618	1.653	Si
	PFFP	1.158	SLV 11	0.28	1.146	714	1.182	Si
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
252	PF	0.243	SLV 3	0.057	0.234	13	0.229	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.599	SLV 1	0.142	0.583	122	0.573	No
	R	2.282	SLV 14	0.362	1.483	1618	1.653	Si
253	PF	0.795	SLV 10	0.193	0.788	252	0.771	No
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
	PFFP	0.99	SLV 10	0.242	0.99	462	0.989	No
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
254	PF	3.904	SLV 12	0.362	1.483	1618	1.653	Si
	V	2.234	SLV 6	0.362	1.483	1618	1.653	Si
	PFFP	1.497	SLV 14	0.356	1.459	1532	1.616	Si
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
257	PF	1.254	SLV 2	0.302	1.235	892	1.295	Si
	V	2.59	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	1.455	SLV 3	0.347	1.42	1403	1.559	Si
	R	1000	SLV 1	0.362	1.483	1618	1.653	Si
262	PF	0.509	SLV 11	0.122	0.498	84	0.491	No
	V	1.038	SLV 13	0.253	1.035	526	1.043	Si
	PFFP	0.521	SLV 8	0.124	0.508	88	0.501	No
	R	1.066	SLV 6	0.259	1.062	567	1.075	Si
263	PF	0.433	SLV 11	0.106	0.433	59	0.425	No
	V	1.447	SLV 15	0.345	1.413	1379	1.548	Si
	PFFP	0.474	SLV 11	0.114	0.466	71	0.459	No
	R	1.03	SLV 9	0.251	1.028	515	1.034	Si
266	PF	0.438	SLV 11	0.107	0.436	61	0.431	No
	V	0.779	SLV 15	0.188	0.771	238	0.753	No
	PFFP	0.666	SLV 7	0.159	0.65	157	0.635	No
	R	1.326	SLV 6	0.318	1.302	1052	1.385	Si
267	PF	0.546	SLV 8	0.13	0.532	99	0.526	No
	V	0.826	SLV 13	0.2	0.82	280	0.805	No
	PFFP	0.667	SLV 8	0.159	0.652	158	0.637	No
	R	0.985	SLV 13	0.24	0.984	455	0.983	No
272	PF	0.216	SLV 15	0.049	0.201	9	0.197	No
	V	1.174	SLV 15	0.284	1.161	743	1.201	Si
	PFFP	0.922	SLV 8	0.225	0.919	379	0.912	No
	R	1.269	SLV 2	0.305	1.249	923	1.313	Si
273	PF	0.413	SLV 15	0.098	0.399	49	0.394	No
	V	2.855	SLV 15	0.362	1.483	1618	1.653	Si
	PFFP	0.946	SLV 8	0.23	0.943	406	0.938	No
	R	1.334	SLV 6	0.32	1.309	1072	1.396	Si
276	PF	0.136	SLV 15	0.031	0.127	3	0.125	No
	V	1.544	SLV 2	0.362	1.483	1618	1.653	Si
	PFFP	0.156	SLV 15	0.035	0.143	4	0.141	No
	R	3.215	SLV 12	0.362	1.483	1618	1.653	Si
277	PF	0.159	SLV 15	0.035	0.143	4	0.141	No
	V	2.094	SLV 15	0.362	1.483	1618	1.653	Si
	PFFP	0.702	SLV 8	0.168	0.689	180	0.672	No
	R	2.297	SLV 2	0.362	1.483	1618	1.653	Si
281	PF	0.609	SLV 11	0.144	0.591	126	0.58	No
	V	1.988	SLV 11	0.362	1.483	1618	1.653	Si
	PFFP	0.774	SLV 11	0.187	0.767	235	0.749	No
	R	1.1	SLV 13	0.267	1.093	619	1.115	Si

Verifica travi di collegamento in muratura

Trave	Stato limite	Molt.	Comb.	PGA	iPGA (ζE)	TR	(TR/TRrif)^.41	Verifica
1	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.588	SLV 12	0.14	0.571	117	0.563	No
2	F	0.487	SLV 12	0.116	0.477	75	0.469	No
	V	0.573	SLV 12	0.136	0.558	110	0.549	No
3	F	3.364	SLV 9	0.362	1.483	1618	1.653	Si
	V	0.848	SLV 9	0.206	0.843	302	0.831	No
4	F	0.828	SLV 9	0.201	0.821	281	0.806	No
	V	0.875	SLV 9	0.212	0.87	328	0.859	No
5	F	2.552	SLV 4	0.362	1.483	1618	1.653	Si
	V	0.383	SLV 4	0.09	0.368	40	0.363	No
6	F	0.775	SLV 9	0.187	0.767	235	0.749	No
	V	0.26	SLV 9	0.067	0.275	20	0.273	No
7	F	0.455	SLV 8	0.11	0.451	66	0.445	No
	V	0.34	SLV 8	0.085	0.346	35	0.343	No
11	F	1.83	SLV 13	0.362	1.483	1618	1.653	Si
	V	0.667	SLV 13	0.159	0.652	158	0.637	No
12	F	0.786	SLV 13	0.19	0.779	245	0.762	No
	V	0.318	SLV 13	0.074	0.303	25	0.299	No
13	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.516	SLV 16	0.122	0.498	84	0.491	No
14	F	0.502	SLV 16	0.118	0.485	79	0.479	No
	V	0.652	SLV 16	0.155	0.635	149	0.622	No
15	F	0.253	SLV 2	0.059	0.242	14	0.236	No
	V	0.702	SLV 6	0.168	0.689	180	0.672	No
16	F	0.161	SLV 12	0.044	0.181	7	0.177	No
	V	0.167	SLV 12	0.044	0.181	7	0.177	No
18	F	2.391	SLV 16	0.362	1.483	1618	1.653	Si
	V	0.659	SLV 16	0.157	0.642	153	0.628	No
19	F	0.551	SLV 16	0.13	0.532	99	0.526	No
	V	0.754	SLV 16	0.182	0.746	218	0.727	No
20	F	2.074	SLV 3	0.362	1.483	1618	1.653	Si
	V	0.403	SLV 3	0.095	0.388	45	0.381	No
21	F	0.303	SLV 7	0.077	0.313	27	0.309	No
	V	0.533	SLV 7	0.127	0.52	94	0.515	No
23	F	0.469	SLV 13	0.11	0.451	66	0.445	No
	V	0.788	SLV 13	0.191	0.78	246	0.764	No
25	F	0.656	SLV 1	0.156	0.639	151	0.625	No
	V	0.114	SLV 3	0.026	0.107	2	0.106	No
27	F	2.105	SLV 2	0.362	1.483	1618	1.653	Si
	V	0.338	SLV 15	0.079	0.323	30	0.322	No
28	F	0.536	SLV 15	0.127	0.518	93	0.512	No
	V	0.33	SLV 6	0.082	0.337	33	0.335	No
29	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.66	SLV 6	0.157	0.642	153	0.628	No
30	F	0.509	SLV 6	0.122	0.498	84	0.491	No
	V	0.764	SLV 6	0.185	0.755	225	0.736	No
31	F	2.538	SLV 7	0.362	1.483	1618	1.653	Si
	V	0.435	SLV 7	0.106	0.433	59	0.425	No
32	F	0.346	SLV 7	0.087	0.355	37	0.351	No
	V	0.52	SLV 7	0.124	0.508	88	0.501	No
33	F	0.921	SLV 12	0.224	0.918	378	0.911	No
	V	0.825	SLV 12	0.2	0.819	279	0.804	No
34	F	0.503	SLV 12	0.12	0.493	82	0.487	No
	V	0.448	SLV 12	0.109	0.445	64	0.44	No
35	F	0.978	SLV 13	0.239	0.977	446	0.975	No
	V	0.912	SLV 13	0.222	0.909	369	0.902	No
36	F	0.535	SLV 9	0.128	0.523	95	0.517	No
	V	0.507	SLV 9	0.121	0.495	83	0.489	No
38	F	0.604	SLV 13	0.143	0.587	124	0.577	No
	V	1.031	SLV 13	0.251	1.029	517	1.035	Si
39	F	1.155	SLV 4	0.279	1.144	709	1.178	Si
	V	0.636	SLV 4	0.151	0.619	140	0.606	No
40	F	0.773	SLV 4	0.187	0.766	234	0.748	No
	V	0.239	SLV 9	0.062	0.256	17	0.255	No
42	F	1.181	SLV 4	0.285	1.168	755	1.209	Si
	V	0.554	SLV 2	0.131	0.535	100	0.528	No
44	F	0.597	SLV 12	0.142	0.58	121	0.571	No
	V	0.199	SLV 12	0.051	0.21	10	0.205	No
45	F	0.521	SLV 7	0.124	0.508	88	0.501	No
	V	0.393	SLV 7	0.097	0.395	47	0.387	No
46	F	1.079	SLV 13	0.262	1.073	587	1.091	Si
	V	0.424	SLV 13	0.1	0.41	52	0.404	No
47	F	0.318	SLV 13	0.074	0.303	25	0.299	No
	V	0.35	SLV 13	0.082	0.337	33	0.335	No
48	F	1.022	SLV 4	0.249	1.021	505	1.025	Si
	V	0.398	SLV 4	0.094	0.384	44	0.377	No
49	F	0.605	SLV 16	0.143	0.587	124	0.577	No
	V	0.532	SLV 16	0.125	0.513	90	0.506	No
50	F	0.424	SLV 16	0.1	0.41	52	0.404	No
	V	0.381	SLV 16	0.09	0.368	40	0.363	No
51	F	0.718	SLV 16	0.173	0.706	190	0.687	No
	V	0.647	SLV 16	0.154	0.631	147	0.618	No
52	F	0.461	SLV 16	0.109	0.445	64	0.44	No
	V	0.418	SLV 16	0.098	0.403	50	0.397	No

Trave	Stato limite	Molt.	Comb.	PGA	iPGA (ζE)	TR	(TR/TRrif)^.41	Verifica
53	F	0.799	SLV 3	0.193	0.792	255	0.775	No
	V	0.609	SLV 3	0.144	0.591	126	0.58	No
54	F	0.376	SLV 3	0.088	0.359	38	0.355	No
	V	0.435	SLV 3	0.103	0.42	55	0.413	No
56	F	0.85	SLV 2	0.206	0.844	303	0.832	No
	V	0.554	SLV 2	0.131	0.535	100	0.528	No
58	F	1.777	SLV 14	0.362	1.483	1618	1.653	Si
	V	0.202	SLV 7	0.053	0.218	11	0.214	No
59	F	0.861	SLV 14	0.209	0.855	314	0.844	No
	V	0.99	SLV 14	0.242	0.99	462	0.989	No
60	F	1.059	SLV 2	0.258	1.055	557	1.067	Si
	V	0.539	SLV 15	0.127	0.52	94	0.515	No
61	F	0.936	SLV 15	0.228	0.933	395	0.927	No
	V	0.457	SLV 15	0.107	0.439	62	0.434	No
63	F	0.573	SLV 2	0.136	0.555	109	0.547	No
	V	1.092	SLV 2	0.265	1.085	607	1.106	Si
64	F	0.933	SLV 2	0.227	0.93	392	0.924	No
	V	0.881	SLV 2	0.214	0.877	335	0.867	No
65	F	0.482	SLV 2	0.113	0.463	70	0.456	No
	V	0.58	SLV 2	0.137	0.562	112	0.553	No
66	F	0.843	SLV 7	0.205	0.837	296	0.824	No
	V	0.931	SLV 7	0.227	0.928	389	0.921	No
67	F	0.437	SLV 7	0.107	0.436	61	0.431	No
	V	0.409	SLV 7	0.1	0.41	52	0.404	No
68	F	2.578	SLV 11	0.362	1.483	1618	1.653	Si
	V	0.177	SLV 11	0.047	0.191	8	0.187	No
69	F	0.552	SLV 11	0.131	0.537	101	0.53	No
	V	0.583	SLV 11	0.139	0.567	115	0.559	No
70	F	2.756	SLV 9	0.362	1.483	1618	1.653	Si
	V	0.54	SLV 5	0.129	0.528	97	0.521	No
71	F	1.142	SLV 16	0.276	1.132	687	1.163	Si
	V	0.817	SLV 12	0.198	0.81	272	0.796	No
72	F	1.116	SLV 16	0.271	1.108	645	1.134	Si
	V	0.805	SLV 12	0.195	0.798	261	0.782	No
73	F	1.097	SLV 13	0.266	1.09	615	1.112	Si
	V	0.836	SLV 13	0.203	0.829	289	0.816	No
74	F	0.951	SLV 13	0.232	0.949	413	0.944	No
	V	0.75	SLV 13	0.181	0.741	214	0.721	No
75	F	3.359	SLV 13	0.362	1.483	1618	1.653	Si
	V	0.462	SLV 13	0.109	0.445	64	0.44	No
76	F	1.999	SLV 13	0.362	1.483	1618	1.653	Si
	V	1.466	SLV 2	0.349	1.43	1436	1.574	Si
77	F	1.254	SLV 4	0.302	1.235	892	1.295	Si
	V	0.479	SLV 4	0.112	0.46	69	0.453	No
78	F	1.447	SLV 4	0.345	1.413	1379	1.548	Si
	V	0.692	SLV 4	0.166	0.678	173	0.661	No
80	F	1.356	SLV 13	0.325	1.33	1128	1.426	Si
	V	0.737	SLV 13	0.178	0.728	205	0.709	No
82	F	0.747	SLV 12	0.18	0.738	212	0.718	No
	V	0.282	SLV 12	0.071	0.292	23	0.289	No
83	F	0.637	SLV 7	0.152	0.621	141	0.608	No
	V	0.462	SLV 7	0.112	0.457	68	0.451	No
84	F	1.76	SLV 14	0.362	1.483	1618	1.653	Si
	V	0.511	SLV 14	0.12	0.493	82	0.487	No
85	F	0.472	SLV 4	0.111	0.454	67	0.448	No
	V	0.506	SLV 13	0.119	0.487	80	0.482	No
86	F	0.83	SLV 16	0.201	0.823	283	0.809	No
	V	1.04	SLV 1	0.253	1.037	530	1.046	Si
87	F	1.834	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.639	SLV 1	0.152	0.623	142	0.61	No
88	F	1.539	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.594	SLV 1	0.141	0.576	119	0.567	No
89	F	0.877	SLV 16	0.213	0.872	330	0.861	No
	V	0.642	SLV 16	0.153	0.625	143	0.611	No
90	F	1.033	SLV 16	0.252	1.031	520	1.038	Si
	V	0.504	SLV 16	0.118	0.485	79	0.479	No
91	F	0.752	SLV 16	0.182	0.744	217	0.725	No
	V	0.567	SLV 16	0.134	0.548	106	0.541	No
92	F	0.789	SLV 16	0.191	0.782	247	0.765	No
	V	0.516	SLV 16	0.122	0.498	84	0.491	No
93	F	0.909	SLV 3	0.221	0.905	364	0.897	No
	V	0.675	SLV 3	0.161	0.66	162	0.643	No
94	F	1.197	SLV 3	0.289	1.182	783	1.227	Si
	V	0.518	SLV 3	0.122	0.501	85	0.494	No
96	F	1.086	SLV 2	0.264	1.08	597	1.098	Si
	V	0.531	SLV 2	0.125	0.513	90	0.506	No
98	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.027	SLV 7	0.25	1.025	511	1.03	Si
99	F	1.931	SLV 7	0.362	1.483	1618	1.653	Si
	V	0.961	SLV 7	0.234	0.959	425	0.955	No
100	F	1.108	SLV 15	0.269	1.101	632	1.124	Si
	V	0.549	SLV 2	0.129	0.53	98	0.524	No
101	F	1.465	SLV 15	0.349	1.43	1433	1.573	Si
	V	0.665	SLV 15	0.159	0.65	157	0.635	No
102	F	2.969	SLV 2	0.362	1.483	1618	1.653	Si
	V	0.421	SLV 2	0.099	0.407	51	0.401	No

Trave	Stato limite	Molt.	Comb.	PGA	iPGA (ζE)	TR	(TR/TRrif)^.41	Verifica
103	F	1.271	SLV 2	0.306	1.251	927	1.315	Si
	V	1.457	SLV 2	0.348	1.422	1409	1.562	Si
104	F	0.998	SLV 2	0.244	0.997	471	0.997	No
	V	0.755	SLV 2	0.183	0.747	219	0.728	No
105	F	0.905	SLV 2	0.22	0.901	360	0.893	No
	V	0.731	SLV 2	0.176	0.72	199	0.7	No
106	F	1.146	SLV 3	0.277	1.136	694	1.168	Si
	V	0.737	SLV 7	0.178	0.728	205	0.709	No
107	F	1.317	SLV 7	0.316	1.294	1031	1.374	Si
	V	0.855	SLV 7	0.208	0.85	308	0.837	No
108	F	2.051	SLV 16	0.362	1.483	1618	1.653	Si
	V	1.192	SLV 12	0.288	1.178	774	1.222	Si
109	F	2.016	SLV 16	0.362	1.483	1618	1.653	Si
	V	1.519	SLV 12	0.362	1.48	1606	1.648	Si
110	F	2.006	SLV 13	0.362	1.483	1618	1.653	Si
	V	1.154	SLV 9	0.279	1.143	708	1.178	Si
111	F	2.495	SLV 13	0.362	1.483	1618	1.653	Si
	V	1.167	SLV 9	0.282	1.155	730	1.193	Si
112	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.776	SLV 13	0.188	0.769	236	0.751	No
113	F	2.447	SLV 13	0.362	1.483	1618	1.653	Si
	V	2.278	SLV 2	0.362	1.483	1618	1.653	Si
114	F	1.411	SLV 4	0.337	1.38	1276	1.5	Si
	V	0.835	SLV 9	0.202	0.828	288	0.815	No
115	F	1.966	SLV 4	0.362	1.483	1618	1.653	Si
	V	1.102	SLV 4	0.267	1.095	622	1.117	Si
117	F	1.897	SLV 13	0.362	1.483	1618	1.653	Si
	V	0.986	SLV 13	0.241	0.986	457	0.984	No
119	F	0.931	SLV 11	0.227	0.928	389	0.921	No
	V	0.362	SLV 11	0.09	0.368	40	0.363	No
120	F	1.052	SLV 7	0.256	1.049	547	1.06	Si
	V	0.71	SLV 10	0.17	0.698	185	0.679	No
121	F	2.643	SLV 14	0.362	1.483	1618	1.653	Si
	V	0.847	SLV 14	0.206	0.842	301	0.829	No
122	F	0.647	SLV 4	0.154	0.631	147	0.618	No
	V	0.633	SLV 13	0.151	0.617	139	0.604	No
123	F	1	SLV 1	0.244	1	475	1	Si
	V	1.099	SLV 1	0.267	1.092	618	1.114	Si
124	F	2.358	SLV 16	0.362	1.483	1618	1.653	Si
	V	0.897	SLV 1	0.218	0.893	351	0.883	No
125	F	2.175	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.003	SLV 1	0.245	1.003	479	1.003	Si
126	F	1.371	SLV 16	0.328	1.343	1167	1.446	Si
	V	0.919	SLV 1	0.224	0.916	376	0.909	No
127	F	1.338	SLV 16	0.321	1.313	1082	1.401	Si
	V	0.93	SLV 16	0.227	0.927	388	0.92	No
128	F	1.092	SLV 16	0.265	1.085	607	1.106	Si
	V	0.736	SLV 16	0.177	0.727	203	0.706	No
129	F	1.227	SLV 16	0.296	1.21	840	1.263	Si
	V	0.798	SLV 16	0.193	0.791	254	0.774	No
130	F	1.458	SLV 3	0.348	1.423	1412	1.563	Si
	V	1.109	SLV 3	0.269	1.101	634	1.126	Si
131	F	1.613	SLV 3	0.362	1.483	1618	1.653	Si
	V	1.12	SLV 3	0.272	1.112	651	1.138	Si
133	F	1.519	SLV 2	0.362	1.48	1606	1.648	Si
	V	0.749	SLV 2	0.181	0.741	214	0.721	No
135	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.815	SLV 7	0.362	1.483	1618	1.653	Si
136	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
137	F	1.354	SLV 2	0.324	1.328	1123	1.423	Si
	V	0.655	SLV 2	0.156	0.639	151	0.625	No
138	F	1.577	SLV 15	0.362	1.483	1618	1.653	Si
	V	0.982	SLV 15	0.239	0.98	450	0.978	No
139	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.738	SLV 2	0.178	0.728	205	0.709	No
140	F	1.684	SLV 2	0.362	1.483	1618	1.653	Si
	V	2.851	SLV 2	0.362	1.483	1618	1.653	Si
141	F	1.401	SLV 15	0.335	1.371	1248	1.486	Si
	V	0.948	SLV 6	0.231	0.946	409	0.941	No
142	F	1.249	SLV 6	0.301	1.23	883	1.289	Si
	V	1.02	SLV 6	0.249	1.019	501	1.022	Si
143	F	1.905	SLV 7	0.362	1.483	1618	1.653	Si
	V	1.141	SLV 7	0.276	1.131	686	1.163	Si
144	F	1.95	SLV 7	0.362	1.483	1618	1.653	Si
	V	1.398	SLV 7	0.334	1.368	1240	1.482	Si
145	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.597	SLV 11	0.142	0.58	121	0.571	No
146	F	1.63	SLV 11	0.362	1.483	1618	1.653	Si
	V	0.959	SLV 10	0.234	0.957	422	0.953	No
147	F	2.779	SLV 12	0.362	1.483	1618	1.653	Si
	V	2.135	SLV 12	0.362	1.483	1618	1.653	Si
148	F	1.382	SLV 8	0.331	1.353	1196	1.46	Si
	V	2.369	SLV 8	0.362	1.483	1618	1.653	Si
149	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.916	SLV 9	0.362	1.483	1618	1.653	Si

Trave	Stato limite	Molt.	Comb.	PGA	iPGA (ζE)	TR	(TR/TRrif)^.41	Verifica
150	F	1.977	SLV 9	0.362	1.483	1618	1.653	Si
	V	1.527	SLV 9	0.362	1.483	1618	1.653	Si
151	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.928	SLV 13	0.362	1.483	1618	1.653	Si
152	F	2.996	SLV 13	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
153	F	2.172	SLV 13	0.362	1.483	1618	1.653	Si
	V	1.315	SLV 9	0.316	1.292	1025	1.371	Si
154	F	1.925	SLV 8	0.362	1.483	1618	1.653	Si
	V	1.799	SLV 8	0.362	1.483	1618	1.653	Si
155	F	3.08	SLV 13	0.362	1.483	1618	1.653	Si
	V	2.28	SLV 13	0.362	1.483	1618	1.653	Si
156	F	1.018	SLV 11	0.248	1.017	499	1.02	Si
	V	0.663	SLV 11	0.158	0.646	155	0.632	No
157	F	1.59	SLV 6	0.362	1.483	1618	1.653	Si
	V	1.409	SLV 10	0.337	1.378	1270	1.497	Si
158	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	2.654	SLV 14	0.362	1.483	1618	1.653	Si
159	F	0.822	SLV 4	0.199	0.815	276	0.8	No
	V	0.864	SLV 9	0.21	0.858	316	0.846	No
160	F	1.244	SLV 16	0.299	1.226	873	1.283	Si
	V	1.465	SLV 1	0.349	1.43	1433	1.573	Si
161	F	3.099	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.766	SLV 16	0.362	1.483	1618	1.653	Si
162	F	3.825	SLV 16	0.362	1.483	1618	1.653	Si
	V	2.946	SLV 1	0.362	1.483	1618	1.653	Si
163	F	1.917	SLV 12	0.362	1.483	1618	1.653	Si
	V	1.332	SLV 12	0.319	1.307	1067	1.393	Si
164	F	1.064	SLV 12	0.259	1.06	564	1.073	Si
	V	1.803	SLV 12	0.362	1.483	1618	1.653	Si
165	F	2.034	SLV 16	0.362	1.483	1618	1.653	Si
	V	1.335	SLV 16	0.32	1.31	1074	1.397	Si
166	F	1.026	SLV 16	0.25	1.024	510	1.03	Si
	V	1.621	SLV 16	0.362	1.483	1618	1.653	Si
167	F	2.59	SLV 3	0.362	1.483	1618	1.653	Si
	V	1.752	SLV 3	0.362	1.483	1618	1.653	Si
168	F	1.639	SLV 3	0.362	1.483	1618	1.653	Si
	V	2.932	SLV 3	0.362	1.483	1618	1.653	Si
169	F	1.869	SLV 2	0.362	1.483	1618	1.653	Si
	V	1.386	SLV 2	0.332	1.357	1207	1.466	Si
170	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
171	F	0.139	SLV 7	0.038	0.157	5	0.155	No
	V	0.272	SLV 10	0.07	0.286	22	0.284	No
172	F	1.494	SLV 2	0.356	1.456	1522	1.612	Si
	V	0.927	SLV 2	0.226	0.924	385	0.917	No
173	F	1.331	SLV 15	0.319	1.306	1065	1.392	Si
	V	1.465	SLV 6	0.349	1.43	1433	1.573	Si
174	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	1.397	SLV 2	0.334	1.367	1237	1.481	Si
175	F	2.052	SLV 6	0.362	1.483	1618	1.653	Si
	V	1000	SLV 1	0.362	1.483	1618	1.653	Si
176	F	1.924	SLV 11	0.362	1.483	1618	1.653	Si
	V	1.429	SLV 6	0.341	1.397	1327	1.524	Si
177	F	0.882	SLV 6	0.214	0.878	336	0.868	No
	V	1.235	SLV 11	0.297	1.217	855	1.273	Si
178	F	2.492	SLV 7	0.362	1.483	1618	1.653	Si
	V	1.902	SLV 7	0.362	1.483	1618	1.653	Si
179	F	1.676	SLV 6	0.362	1.483	1618	1.653	Si
	V	2.066	SLV 11	0.362	1.483	1618	1.653	Si
184	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.584	SLV 2	0.139	0.567	115	0.559	No
185	F	0.357	SLV 13	0.083	0.342	34	0.339	No
	V	0.591	SLV 13	0.14	0.574	118	0.565	No
186	F	0.35	SLV 13	0.082	0.337	33	0.335	No
	V	0.393	SLV 13	0.093	0.38	43	0.373	No
187	F	1000	SLV 1	0.362	1.483	1618	1.653	Si
	V	0.288	SLV 13	0.067	0.275	20	0.273	No
188	F	0.647	SLV 13	0.154	0.631	147	0.618	No
	V	0.596	SLV 13	0.141	0.578	120	0.569	No
189	F	0.606	SLV 2	0.144	0.589	125	0.578	No
	V	0.695	SLV 2	0.167	0.682	175	0.664	No
190	F	0.923	SLV 15	0.225	0.92	380	0.913	No
	V	0.931	SLV 15	0.227	0.928	389	0.921	No
191	F	3.884	SLV 15	0.362	1.483	1618	1.653	Si
	V	1.689	SLV 15	0.362	1.483	1618	1.653	Si

Periodi di ritorno e accelerazioni di aggancio per gli Stati Limite

S. L.	TR,C	PGA,C	TR,Rif	PGA,Rif	Tipo rottura
Stato limite di salvaguardia della vita	2	0.026	475	0.244	taglio trave connessione in muratura

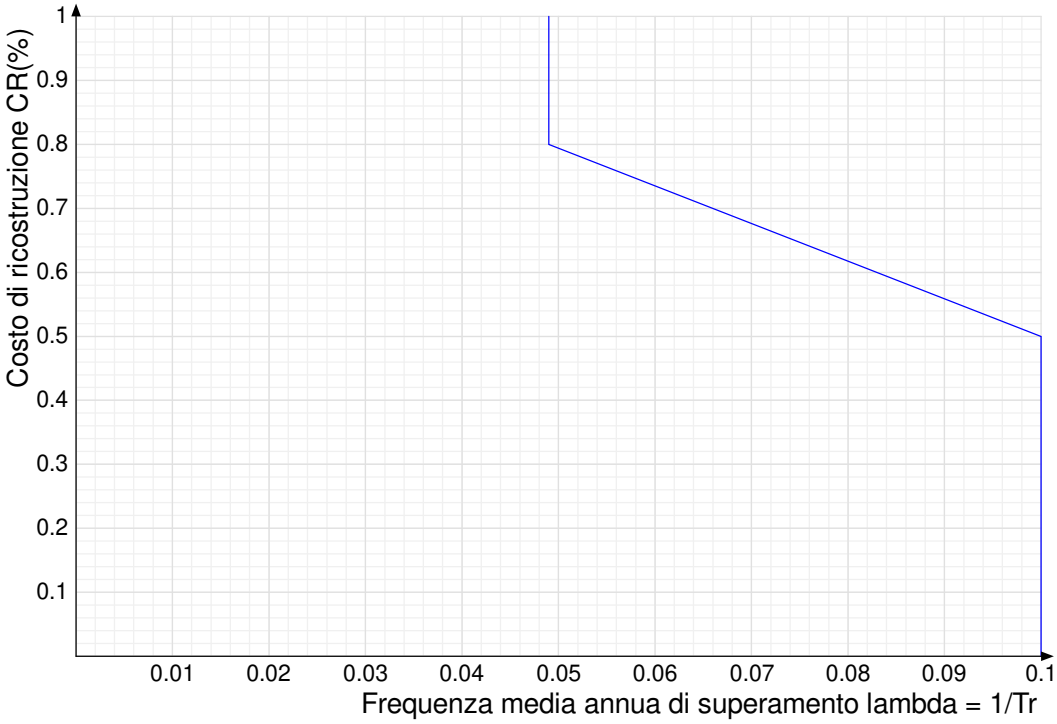
Coefficienti relativi alle Linee guida per la classificazione del rischio sismico delle costruzioni secondo il D.M. 24 09/01/2020

TR,C	TR,Rif	PAM	Classe PAM	IS-V	Classe IS-V	Tipo rottura
2	475	8.215	G	10.678	F	taglio trave connessione in muratura

Coefficienti λ relativi alle Linee guida per la classificazione del rischio sismico delle costruzioni secondo il D.M. 24 09/01/2020

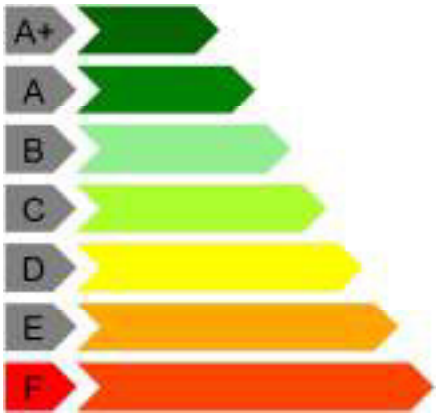
λ,SLR	λ,SLC	λ,SLV	λ,SLD	λ,SLO	λ,SLID
0.049	0.049	0.1	0.1	0.1	0.1

Andamento della curva che individua il PAM (Perdita Annuale Media Attesa)



Classe PAM

Classe IS-V



1.6 Verifiche maschi in muratura

Le unità di misura elencate nel capitolo sono in [m, daN, s] ove non espressamente specificato.

X ini.: *coordinate del punto iniziale del maschio. [m]*
Y ini.: *coordinate del punto iniziale del maschio. [m]*
X fin.: *coordinate del punto finale del maschio. [m]*
Y fin.: *coordinate del punto finale del maschio. [m]*
Quota i.: *livello o falda inferiore.*
Quota.s: *livello o falda superiore.*
l: *lunghezza del maschio. [m]*
Sp.: *spessore. [m]*
h netta: *altezza netta (a filo solai). [m]*
h ini.: *altezza nel modello al punto iniziale. [m]*
h fin.: *altezza nel modello al punto finale. [m]*
a: *distanza tra irrigidimenti laterali. [m]*
a.s.,sx: *lunghezza di appoggio del solaio di sinistra. [m]*
a.s.,dx: *lunghezza di appoggio del solaio di destra. [m]*
fb: *resistenza normalizzata a compressione verticale dei blocchi. [daN/m²]*
fk: *resistenza caratteristica a compressione della muratura utilizzata. [daN/m²]*
fvk0: *resistenza caratteristica a taglio in assenza di carichi verticali. [daN/m²]*
fmedio: *resistenza media a compressione della muratura utilizzata. [daN/m²]*
τ0: *resistenza media a taglio in assenza di azioni normali [C8.7.1.16]. [daN/m²]*
fv0: *resistenza media a taglio in assenza di azioni normali [C8.7.1.17]. [daN/m²]*
μ: *coefficiente di attrito [C8.7.1.17].*
φ: *coefficiente di ammorsamento o ingranamento secondo Circolare 7 21-01-19 §C8.7.1.3.1.1.*
fv,lim: *valore massimo della resistenza a taglio che può essere impiegata nel calcolo. [daN/m²]*
E: *modulo di elasticità longitudinale della muratura utilizzato. [daN/m²]*
G: *modulo di elasticità tangenziale della muratura utilizzato. [daN/m²]*
FC: *fattore di confidenza della muratura.*
Materiale: *descrizione del materiale.*
Fu Verticale: *carico di rottura a trazione per unità di lunghezza della maglia verticale. [daN/m]*
Fu Orizzontale: *carico di rottura a trazione per unità di lunghezza della maglia verticale. [daN/m]*
tfv: *spessore di calcolo equivalente verticale di uno strato di rinforzo.*
tfo: *spessore di calcolo equivalente orizzontale di uno strato di rinforzo.*
E: *modulo di elasticità longitudinale. [daN/m²]*
εu: *dilatazione a rottura.*
Tipo fibra: *natura della fibra.*
materiale: *materiale fibra del rinforzo.*
lato applicazione: *lato di applicazione del rinforzo.*
esposizione: *condizione di esposizione secondo CNR-DT 215 §3.2.*
ancoraggio verticale iniziale: *grado di ancoraggio iniziale dei rinforzi verticali.*
ancoraggio verticale finale: *grado di ancoraggio finale dei rinforzi verticali.*
ancoraggio orizzontale iniziale: *grado di ancoraggio iniziale dei rinforzi orizzontali.*
ancoraggio orizzontale finale: *grado di ancoraggio finale dei rinforzi orizzontali.*
strati: *numero strati del rinforzo.*
verifica taglio: *tipo di verifica a taglio.*
εlim,conv / ε,CNR DT-200: *dati relativi ai parametri per il calcolo della deformazione di progetto.*
αt: *coefficiente che tiene conto della ridotta capacità estensionale delle fibre sollecitate a tagliosecondo CNR-DT 215 §4.1.1.*
α: *coeffiicente amplificativo tensione di distacco secondo CNR-DT 215 §3.1 ovvero secondo CNR-DT 200 R1/2013 §5.3.3.*

εlim,conv: *deformazione limite convenzionale del rinforzo FRCM.*
ε,fd: *deformazione di progetto del rinforzo FRCM ovvero CRM.*
γF,d: *fattore parziali di sicurezza per stato limite di distacco secondo CNR-DT 200 R1/2013 §3.4.1.*
connettori: *presenza di connettori per la prevenzione del distacco del rinforzo.*
tipo di muratura: *tipo di muratura per stato limite di distacco di estremità secondo CNR-DT 200 R1/2013 §5.3.2.*
CRM / Fibrenet?: *dati relativi ai parametri per il calcolo secondo metodo Fibrenet? ovvero se il materiale è di tipo CRM.*
CRM: *stabilisce se il rinforzo è di tipo CRM secondo le Linee Guida del C.S.L.P. Ottobre 2019.*
intonaco: *materiale intonaco FRCM ovvero CRM.*
spessore intonaco: *spessore intonaco. [m]*
tipo blocco fibrenet: *tipo blocco muratura per verifica a tglio tipo Fibrenet.*
Comb.: *combinazione.*
Quota: *quota della sezione di verifica. [m]*
M: *momento flettente nel piano. [daN*m]*
N: *sforzo normale. [daN]*
εm: *deformazione della muratura.*
*εm_*: *deformazione elastica della muratura.*
εmu: *deformazione ultima della muratura.*
df: *distanza tra il lembo compresso e la fibra tesa più lontana. [m]*
M0d: *momento resistente della sezione non rinforzata. [daN*m]*
M1d: *momento resistente della sezione rinforzata. [daN*m]*
MRd: *momento resistente della sezione. [daN*m]*
c.s.: *coefficiente di sicurezza.*
incremento > 50%: *incremento resistenza superiore al 50% della resistenza non rinforzata in condizioni non sismiche.*
Verifica: *stato di verifica.*
Nmur: *aliquota di sforzo normale recepito dalla sola muratura. [daN]*
V: *taglio nel piano. [daN]*
df: *distanza tra lembo compresso e baricentro dell'armatura tesa. [m]*
l': *lunghezza della parte compressa della parete. [m]*
σN: *tensione media nella zona compressa. [daN/m²]*
fvd: *resistenza a taglio di calcolo. [daN/m²]*
Vt: *resistenza a taglio della muratura non rinforzata. [daN]*
Vt,f: *resistenza a taglio del rinforzo (CNR DT215 4.1a). [daN]*
Vt,c: *resistenza a taglio per schiacciamento delle bielle (CNR DT215 4.1b). [daN]*
Vt,c int.: *contributo di resistenza a taglio delle bielle dell'intonaco se considerato. [daN]*
Vt,R: *resistenza a taglio della sezione rinforzata. [daN]*
res. > 50%: *incremento resistenza superiore al 50% della resistenza non rinforzata in condizioni non sismiche.*
fd: *resistenza a compressione di calcolo. [daN/m²]*
Sa: *accelerazione massima, adimensionalizzata rispetto a g, che l'elemento strutturale subisce durante il sisma.*
σ0: *tensione media di compressione. [daN/m²]*
M: *momento flettente fuori piano. [daN*m]*
Mc: *momento di collasso per azioni perpendicolari al piano. [daN*m]*
Coeff.s.: *coefficiente di sicurezza.*
N top: *sforzo normale in sommità. [daN]*
N base: *sforzo normale al piede. [daN]*
V orto: *taglio fuori piano. [daN]*
α0: *moltiplicatore secondo [C8.7.1.1].*
*M**: *massa partecipante al cinematismo. [daN/(m/s²)]*
*e**: *frazione di massa partecipante della muratura [C8.7.1.5].*
*a0**: *accelerazione spettrale di attivazione del meccanismo [C8.7.1.8]. [m/s²]*
aLim: *accelerazione limite [C7.2.11]. [m/s²]*
Stato limite: *pF_SLU=Presso flessione per azioni non sismiche; V_SLU=Taglio per azioni non sismiche; PF_SLV=Presso flessione per azioni sismiche; V_SLV=Taglio per azioni sismiche; PFFP_SLV=Presso flessione fuori piano per azioni sismiche; R_SLV=Ribaltamento per azioni sismiche.*
Sa: *accelerazione massima adimensionalizzata rispetto a quella di gravità.*

Maschio 1

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-24.603	5.876	-24.603	-3.284	L2	L4	9.16	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 44	-1.3	4842.89	-83266	-0.0000311	0.0003743	0.0035	9.16	305692.81	336440.83	336440.83	69.47	No	Si
SLU 44	1.67	5010.11	-71611	-0.0000268	0.0003743	0.0035	9.16	272012.6	297861.78	297861.78	59.45	No	Si
SLU 2	-1.3	4002.43	-66783	-0.0000248	0.0003743	0.0035	9.16	257193.92	281882.38	281882.38	70.43	No	Si
SLU 2	1.67	4272.79	-57935	-0.0000216	0.0003743	0.0035	9.16	228710.75	249559.2	249559.2	58.41	No	Si
SLU 5	-1.3	3623.71	-67743	-0.0000251	0.0003743	0.0035	9.16	260180.66	285059.37	285059.37	78.67	No	Si
SLU 5	1.67	3924.37	-59088	-0.000022	0.0003743	0.0035	9.16	232518.38	253932.69	253932.69	64.71	No	Si
SLU 55	-1.3	4541.79	-92607	-0.0000346	0.0003743	0.0035	9.16	330546.87	367361.85	367361.85	80.88	No	Si
SLU 55	1.67	4835.68	-81025	-0.0000303	0.0003743	0.0035	9.16	299447.89	329023.87	329023.87	68.04	No	Si
SLU 47	-1.3	4464.17	-84226	-0.0000314	0.0003743	0.0035	9.16	308334.24	339617.82	339617.82	76.08	No	Si
SLU 47	1.67	4661.69	-72764	-0.0000272	0.0003743	0.0035	9.16	275476.11	301677.71	301677.71	64.71	No	Si
SLU 19	-1.3	2826.45	-78774	-0.000029	0.0003743	0.0035	9.16	293063.06	321571.83	321571.83	113.77	No	Si
SLU 19	1.67	3113.14	-69620	-0.0000256	0.0003743	0.0035	9.16	265963.27	291272.16	291272.16	93.56	No	Si
SLU 10	-1.3	4080.05	-75165	-0.0000279	0.0003743	0.0035	9.16	282597.56	309626.41	309626.41	75.89	No	Si
SLU 10	1.67	4446.78	-66196	-0.0000247	0.0003743	0.0035	9.16	255356.54	279938.51	279938.51	62.95	No	Si
SLU 52	-1.3	4920.51	-91648	-0.0000343	0.0003743	0.0035	9.16	328081.03	364184.86	364184.86	74.01	No	Si
SLU 52	1.67	5184.1	-79872	-0.00003	0.0003743	0.0035	9.16	296192.26	325207.94	325207.94	62.73	No	Si
SLU 61	-1.3	3666.91	-95256	-0.0000354	0.0003743	0.0035	9.16	337248.22	376130.28	376130.28	102.57	No	Si
SLU 61	1.67	3850.46	-83296	-0.0000309	0.0003743	0.0035	9.16	305776.89	336541.59	336541.59	87.4	No	Si
SLU 13	-1.3	3701.33	-76125	-0.0000282	0.0003743	0.0035	9.16	285408.7	312803.4	312803.4	84.51	No	Si
SLU 13	1.67	4098.36	-67349	-0.000025	0.0003743	0.0035	9.16	258956.3	283754.44	283754.44	69.24	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 16	-1.3	-60642.74	-21466	-0.0000263	0.0005615	0.0035	7.328		145572.89	145572.89	2.4		Si
SLV 16	1.67	-45218.26	378	-0.000195	0.0005615	0.0035	7.328		49913.75	49913.75	1.1		Si
SLV 14	-1.3	48263.97	-19610	-0.0000198	0.0005615	0.0035	9.16		95307.58	95307.58	1.97		Si
SLV 14	1.67	43117.83	2050	-0.004734	0.0005615	0.0035	9.16		0	0	0		No
SLV 11	-1.3	-178037.18	-59830	-0.0000836	0.0005615	0.0035	7.328		303681.51	303681.51	1.71		Si
SLV 11	1.67	-147417.64	-46450	-0.0000733	0.0005615	0.0035	7.328		249863.47	249863.47	1.69		Si
SLV 12	-1.3	-185118.68	-59772	-0.0000907	0.0005615	0.0035	7.328		303454.38	303454.38	1.64		Si
SLV 12	1.67	-147225.77	-46568	-0.0000728	0.0005615	0.0035	7.328		250350.66	250350.66	1.7		Si
SLV 10	-1.3	177903.7	-53586	-0.0000964	0.0005615	0.0035	9.16		237933.28	237933.28	1.34		Si
SLV 10	1.67	147227.87	-40993	-0.0000938	0.0005615	0.0035	9.16		186302.63	186302.63	1.27		Si
SLV 5	-1.3	185725.42	-84610	-0.0000794	0.0005615	0.0035	9.16		358976.74	358976.74	1.93		Si
SLV 5	1.67	147976.99	-79467	-0.0000648	0.0005615	0.0035	9.16		339489.36	339489.36	2.29		Si
SLV 15	-1.3	-50124.64	-21552	-0.0000205	0.0005615	0.0035	9.16		145943.15	145943.15	2.91		Si
SLV 15	1.67	-45503.24	554	-0.0001967	0.0005615	0.0035	7.328		49128.76	49128.76	1.08		Si
SLV 9	-1.3	184985.2	-53644	-0.0001084	0.0005615	0.0035	9.16		238169.61	238169.61	1.29		Si
SLV 9	1.67	147036	-40875	-0.0000941	0.0005615	0.0035	9.16		185812.81	185812.81	1.26		Si
SLV 13	-1.3	58782.08	-19696	-0.0000266	0.0005615	0.0035	9.16		95682.53	95682.53	1.63		Si
SLV 13	1.67	42832.86	2226	-0.0047765	0.0005615	0.0035	9.16		0	0	0		No
SLV 6	-1.3	178643.93	-84551	-0.0000766	0.0005615	0.0035	9.16		358756.52	358756.52	2.01		Si
SLV 6	1.67	148168.86	-79585	-0.0000648	0.0005615	0.0035	9.16		339938.14	339938.14	2.29		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 52	-1.3	4920.51	-91648	-73318	4401	9.16	9.16	-17787	9316	49169	95155	123431	46716	144324	No	32.79	Si
SLU 52	1.67	5184.1	-79872	-63898	4399	9.16	9.16	-15502	9011	45401	95155	123431	46716	140557	No	31.95	Si
SLU 65	-1.3	3078.65	-93664	-74931	4235	9.16	9.16	-18178	9368	49814	95155	123431	46716	144970	No	34.23	Si
SLU 65	1.67	3517.82	-82160	-65728	4211	9.16	9.16	-15946	9071	46133	95155	123431	46716	141288	No	33.55	Si
SLU 47	-1.3	4464.17	-84226	-67381	4062	9.16	9.16	-16347	9124	46794	95155	123431	46716	141950	No	34.95	Si
SLU 47	1.67	4661.69	-72764	-58211	4061	9.16	9.16	-14122	8827	43127	95155	123431	46716	138282	No	34.06	Si
SLU 55	-1.3	4541.79	-92607	-74086	4405	9.16	9.16	-17973	9341	49476	95155	123431	46716	144632	No	32.83	Si
SLU 55	1.67	4835.68	-81025	-64820	4398	9.16	9.16	-15725	9041	45770	95155	123431	46716	140925	No	32.05	Si
SLU 82	-1.3	1902.67	-105654	-84524	4281	9.16	9.16	-20505	9679	53651	95155	123431	46716	148806	No	34.76	Si
SLU 82	1.67	2358.17	-93845	-75076	4227	9.16	9.16	-18214	9373	49872	95155	123431	46716	145028	No	34.31	Si
SLU 84	-1.3	1523.95	-106614	-85291	4285	9.16	9.16	-20692	9703	53958	95155	123431	46716	149114	No	34.8	Si
SLU 84	1.67	2009.76	-94998	-75998	4226	9.16	9.16	-18437	9403	50241	95155	123431	46716	145396	No	34.4	Si
SLU 68	-1.3	2699.93	-94624	-75699	4239	9.16	9.16	-18365	9393	50122	95155	123431	46716	145277	No	34.27	Si
SLU 68	1.67	3169.41	-83312	-66650	4210	9.16	9.16	-16169	9100	46502	95155	123431	46716	141657	No	33.65	Si
SLU 44	-1.3	4842.89	-83266	-66613	4058	9.16	9.16	-16160	9099	46487	95155	123431	46716	141642	No	34.9	Si
SLU 44	1.67	5010.11	-71611	-57289	4062	9.16	9.16	-13898	8798	42758	95155	123431	46716	137913	No	33.96	Si
SLU 73	-1.3	3156.27	-102046	-81636	4578	9.16	9.16	-19805	9585	52496	95155	123431	46716	147652	No	32.25	Si
SLU 73	1.67	3691.81	-90421	-72337	4548	9.16	9.16	-17549	9284	48777	95155	123431	46716	143932	No	31.64	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 76	-1.3	2777.55	-103005	-82404	4582	9.16	9.16	-19991	9610	52804	95155	123431	46716	147959	No	32.29	Si
SLU 76	1.67	3343.4	-91574	-73259	4547	9.16	9.16	-17773	9314	49146	95155	123431	46716	144301	No	31.73	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	-1.3	177903.7	-53586	-42868	51614	9.16	3.78	-10400	12497	46911	95155	185146	46716	142067		2.75	Si
SLV 10	1.67	147227.87	-40993	-32795	52307	9.16	2.9655	-24914	15399	42882	95155	185146	46716	138037		2.64	Si
SLV 5	-1.3	185725.42	-84610	-67688	59246	9.16	7.1547	-16421	13701	56839	95155	185146	46716	151994		2.57	Si
SLV 5	1.67	147976.99	-79467	-63573	59855	9.16	8.1536	-15423	13501	55193	95155	185146	46716	150348		2.51	Si
SLV 8	-1.3	-184378.46	-90738	-72590	-54851	9.16	7.644	-21344	14686	58800	95155	185146	46716	153955		2.81	Si
SLV 8	1.67	-146284.78	-85160	-68128	-55690	9.16	8.5867	-17789	13974	57015	95155	185146	46716	152170		2.73	Si
SLV 6	-1.3	178643.93	-84551	-67641	51082	9.16	7.4015	-16410	13699	56820	95155	185146	46716	151975		2.98	Si
SLV 6	1.67	148168.86	-79585	-63668	51658	9.16	8.1547	-15446	13506	55231	95155	185146	46716	150386		2.91	Si
SLV 12	-1.3	-185118.68	-59772	-47818	-54319	7.328	4.4487	0	0	0	95155	148117	37373	95155		1.75	Si
SLV 12	1.67	-147225.77	-46568	-37254	-55041	7.328	4.2554	0	0	0	95155	148117	37373	95155		1.73	Si
SLV 7	-1.3	-177296.96	-90796	-72637	-46687	9.16	7.8819	-20707	14558	58818	95155	185146	46716	153974		3.3	Si
SLV 7	1.67	-146476.65	-85041	-68033	-47493	9.16	8.5728	-17793	13975	56977	95155	185146	46716	152132		3.2	Si
SLV 9	-1.3	184985.2	-53644	-42915	59778	9.16	3.3948	-10411	12499	46930	95155	185146	46716	142085		2.38	Si
SLV 9	1.67	147036	-40875	-32700	60504	9.16	2.9484	-24987	15414	42844	95155	185146	46716	137999		2.28	Si
SLV 16	-1.3	-60642.74	-21466	-17173	-18603	7.328	5.2647	0	0	0	95155	148117	37373	95155		5.11	Si
SLV 16	1.67	-45218.26	378	302	-18700	7.328	0	0	0	0	95155	148117	37373	95155		5.09	Si
SLV 11	-1.3	-178037.18	-59830	-47864	-46154	7.328	4.8128	0	0	0	95155	148117	37373	95155		2.06	Si
SLV 11	1.67	-147417.64	-46450	-37160	-46844	7.328	4.2189	0	0	0	95155	148117	37373	95155		2.03	Si
SLV 13	-1.3	58782.08	-19696	-15757	25304	9.16	4.7866	-3823	11181	36067	95155	185146	46716	131222		5.19	Si
SLV 13	1.67	42832.86	2226	1781	25679	9.16	0	17675	16250	29765	95155	185146	46716	124920		4.86	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 0.185 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 13	-17796	0.25	692.67	3890.9	6094.06	4992.48	7.21	Si
SLV 14	-17829	0.25	692.67	3897.87	6101.93	4999.9	7.22	Si
SLV 15	-19365	0.25	692.67	4223.08	6469.44	5346.26	7.72	Si
SLV 16	-19398	0.25	692.67	4230.01	6477.26	5353.64	7.73	Si
SLV 9	-54193	0.25	692.67	11143.72	14672.76	12908.24	18.64	Si
SLV 10	-54215	0.25	692.67	11147.84	14677.91	12912.88	18.64	Si
SLV 11	-59423	0.25	692.67	12108.08	15892.89	14000.48	20.21	Si
SLV 12	-59445	0.25	692.67	12112.11	15898.05	14005.08	20.22	Si
SLV 5	-86955	0.25	692.67	16862.31	22230.73	19546.52	28.22	Si
SLV 6	-86977	0.25	692.67	16865.91	22235.82	19550.87	28.23	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 4	-128261	-124685	7711	0.396	14782.4	0.965	5.96187	3.00264	Si
SLV 3	-128085	-124772	7699	0.396	14764.5	0.965	5.96948	3.00264	Si
SLV 2	-126589	-122829	7583	0.401	14612.2	0.964	6.03683	3.00264	Si
SLV 1	-126413	-122916	7571	0.401	14594.3	0.964	6.04464	3.00264	Si
SLV 8	-85160	-90738	5131	0.566	10399.8	0.952	8.64387	2.80694	Si
SLV 7	-85041	-90796	5123	0.567	10387.7	0.952	8.65481	2.80694	Si
SLV 6	-79585	-84551	4704	0.601	9833.7	0.949	9.20001	2.80694	Si
SLV 5	-79467	-84610	4696	0.602	9821.7	0.949	9.2124	2.80694	Si
SLV 12	-46568	-59772	2793	0.935	6491.1	0.928	14.64342	2.80694	Si
SLV 11	-46450	-59830	2785	0.937	6479.2	0.928	14.67497	2.80694	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	58.407	SLU 2	Si
V_SLU	31.644	SLU 73	Si
PF_SLV	0	SLV 13	No
V_SLV	1.729	SLV 12	Si
PFFP_SLV	7.208	SLV 13	Si
R_SLV	1.986	SLV 4	Si

Maschio 2

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-22.763	5.876	-24.603	5.876	L2	L4	1.84	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 45	0.7	-170.94	-21507	-0.0000426	0.0003743	0.0035	1.84	14738.48	16860.73	16860.73	98.63	No	Si
SLU 45	1.1	2248.58	-20669	-0.0000546	0.0003743	0.0035	1.84	14352.98	15499.72	15499.72	6.89	No	Si
SLU 48	0.7	-155.26	-21845	-0.0000432	0.0003743	0.0035	1.84	14889.38	17056.42	17056.42	109.86	No	Si
SLU 48	1.1	2303.64	-21002	-0.0000557	0.0003743	0.0035	1.84	14508.05	15676.87	15676.87	6.81	No	Si
SLU 43	0.7	-194.95	-20971	-0.0000417	0.0003743	0.0035	1.84	14493.64	16551.79	16551.79	84.9	No	Si
SLU 43	1.1	2160.76	-20140	-0.0000529	0.0003743	0.0035	1.84	14102.18	15220.05	15220.05	7.04	No	Si
SLU 51	0.7	-162.83	-21386	-0.0000423	0.0003743	0.0035	1.84	14683.53	16790.49	16790.49	103.12	No	Si
SLU 51	1.1	2228.22	-20572	-0.0000542	0.0003743	0.0035	1.84	14307.71	15448.62	15448.62	6.93	No	Si
SLU 69	0.7	-245.83	-25397	-0.0000513	0.0003743	0.0035	1.84	16326.11	18951.98	18951.98	77.09	No	Si
SLU 69	1.1	2513.03	-24594	-0.0000649	0.0003743	0.0035	1.84	16025.28	17614.56	17614.56	7.01	No	Si
SLU 46	0.7	-170.18	-21247	-0.0000421	0.0003743	0.0035	1.84	14620.38	16710.42	16710.42	98.19	No	Si
SLU 46	1.1	2205.92	-20434	-0.0000538	0.0003743	0.0035	1.84	14242.41	15375.4	15375.4	6.97	No	Si
SLU 70	0.7	-245.07	-25137	-0.0000507	0.0003743	0.0035	1.84	16230.13	18829.03	18829.03	76.83	No	Si
SLU 70	1.1	2470.37	-24359	-0.0000641	0.0003743	0.0035	1.84	15934.8	17486.02	17486.02	7.08	No	Si
SLU 49	0.7	-154.5	-21584	-0.0000427	0.0003743	0.0035	1.84	14773.19	16905.37	16905.37	109.42	No	Si
SLU 49	1.1	2260.98	-20767	-0.0000549	0.0003743	0.0035	1.84	14399.18	15552.15	15552.15	6.88	No	Si
SLU 71	0.7	-254.15	-25199	-0.0000509	0.0003743	0.0035	1.84	16253	18858.48	18858.48	74.2	No	Si
SLU 71	1.1	2480.27	-24399	-0.0000642	0.0003743	0.0035	1.84	15950.1	17507.62	17507.62	7.06	No	Si
SLU 50	0.7	-163.58	-21646	-0.0000429	0.0003743	0.0035	1.84	14800.85	16941.1	16941.1	103.56	No	Si
SLU 50	1.1	2270.87	-20807	-0.000055	0.0003743	0.0035	1.84	14417.58	15573.11	15573.11	6.86	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	0.7	472.62	-47017	-0.0000969	0.0005615	0.0035	1.84		30883.07	30883.07	65.34		Si
SLV 7	1.1	6516.64	-44229	-0.0001333	0.0005615	0.0035	1.84		29842.42	29842.42	4.58		Si
SLV 12	0.7	-823.15	-41475	-0.0000872	0.0005615	0.0035	1.84		29148.37	29148.37	35.41		Si
SLV 12	1.1	5947.45	-37580	-0.0001138	0.0005615	0.0035	1.84		26604.95	26604.95	4.47		Si
SLV 13	0.7	-1835.07	167	0.0218464	0.0005615	0.0035	1.472		0	0	0		No
SLV 13	1.1	-899.89	892	0.1300763	0.0005615	0.0035	1.472		0	0	0		No
SLV 9	0.7	-707.16	10180	1.4554781	0.0005615	0.0035	1.472		0	0	0		No
SLV 9	1.1	-3100.99	8211	1.1830225	0.0005615	0.0035	1.472		0	0	0		No
SLV 10	0.7	-948.41	9270	1.3265983	0.0005615	0.0035	1.472		0	0	0		No
SLV 10	1.1	-2929.45	7671	1.1053084	0.0005615	0.0035	1.472		0	0	0		No
SLV 8	0.7	231.38	-47926	-0.0000972	0.0005615	0.0035	1.84		31225.01	31225.01	134.95		Si
SLV 8	1.1	6688.18	-44769	-0.0001358	0.0005615	0.0035	1.84		30043.23	30043.23	4.49		Si
SLV 5	0.7	347.37	3729	0.5305537	0.0005615	0.0035	1.472		0	0	0		No
SLV 5	1.1	-2360.26	1022	0.1511958	0.0005615	0.0035	1.472		0	0	0		No
SLV 6	0.7	106.12	2819	0.4017717	0.0005615	0.0035	1.472		0	0	0		No
SLV 6	1.1	-2188.72	482	0.0727575	0.0005615	0.0035	1.472		0	0	0		No
SLV 11	0.7	-581.9	-40565	-0.0000836	0.0005615	0.0035	1.84		28767.15	28767.15	49.44		Si
SLV 11	1.1	5775.91	-37040	-0.0001114	0.0005615	0.0035	1.84		26309.05	26309.05	4.55		Si
SLV 14	0.7	-2193.39	-1184	-0.0005045	0.0005615	0.0035	1.472		1957.3	1957.3	0.89		No
SLV 14	1.1	-645.1	90	0.0134277	0.0005615	0.0035	1.472		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	0.7	-459.91	-28550	-25378	-6973	1.84	1.84	-30650	10833	9424	33304	24794	4692	29486	No	4.23	Si
SLU 84	1.1	2464.65	-27896	-24796	-6752	1.84	1.84	-29947	10833	9269	33304	24794	4692	29486	No	4.37	Si
SLU 78	0.7	-378.65	-27902	-24801	-7024	1.84	1.84	-29953	10833	9271	33304	24794	4692	29486	No	4.2	Si
SLU 78	1.1	2527.84	-27205	-24182	-6806	1.84	1.84	-29205	10833	9106	33304	24794	4692	29486	No	4.33	Si
SLU 74	0.7	-395.1	-27824	-24733	-7083	1.84	1.84	-29871	10833	9252	33304	24794	4692	29486	No	4.16	Si
SLU 74	1.1	2515.44	-27106	-24094	-6866	1.84	1.84	-29099	10824	9082	33304	24794	4692	29486	No	4.29	Si
SLU 69	0.7	-245.83	-25397	-22575	-6893	1.84	1.84	-27265	10580	8760	33304	24794	4692	29486	No	4.28	Si
SLU 69	1.1	2513.03	-24594	-21861	-6691	1.84	1.84	-26402	10465	8665	33304	24794	4692	29486	No	4.41	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	0.7	-386.98	-27703	-24625	-6954	1.84	1.84	-29740	10833	9224	33304	24794	4692	29486	No	4.24	Si
SLU 80	1.1	2495.08	-27010	-24009	-6737	1.84	1.84	-28996	10811	9059	33304	24794	4692	29486	No	4.38	Si
SLU 75	0.7	-394.34	-27564	-24501	-6914	1.84	1.84	-29591	10833	9191	33304	24794	4692	29486	No	4.26	Si
SLU 75	1.1	2472.79	-26871	-23886	-6699	1.84	1.84	-28848	10791	9027	33304	24794	4692	29486	No	4.4	Si
SLU 81	0.7	-476.35	-28473	-25309	-7032	1.84	1.84	-30567	10833	9406	33304	24794	4692	29486	No	4.19	Si
SLU 81	1.1	2452.25	-27797	-24709	-6812	1.84	1.84	-29841	10833	9246	33304	24794	4692	29486	No	4.33	Si
SLU 77	0.7	-379.41	-28162	-25033	-7193	1.84	1.84	-30233	10833	9333	33304	24794	4692	29486	No	4.1	Si
SLU 77	1.1	2570.5	-27439	-24391	-6973	1.84	1.84	-29457	10833	9161	33304	24794	4692	29486	No	4.23	Si
SLU 79	0.7	-387.74	-27963	-24856	-7123	1.84	1.84	-30020	10833	9285	33304	24794	4692	29486	No	4.14	Si
SLU 79	1.1	2537.73	-27244	-24217	-6904	1.84	1.84	-29248	10833	9115	33304	24794	4692	29486	No	4.27	Si
SLU 83	0.7	-460.67	-28811	-25609	-7141	1.84	1.84	-30929	10833	9486	33304	24794	4692	29486	No	4.13	Si
SLU 83	1.1	2507.31	-28130	-25005	-6919	1.84	1.84	-30199	10833	9325	33304	24794	4692	29486	No	4.26	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	0.7	-707.16	10180	9049	11929	1.472	1.84	0	0	0	33304	29753	3754	33304		2.79	Si
SLV 9	1.1	-3100.99	8211	7299	11842	1.472	1.627	0	0	0	33304	29753	3754	33304		2.81	Si
SLD 12	0.7	-505.55	-27864	-24768	-12753	1.84	1.84	-29913	16250	13455	33304	37191	4692	41883		3.28	Si
SLD 12	1.1	3427.5	-25926	-23045	-12486	1.84	1.84	-27832	15983	13234	33304	37191	4692	41883		3.35	Si
SLV 8	0.7	231.38	-47926	-42601	-21973	1.84	1.84	-51451	16250	15346	33304	37191	4692	41883		1.91	Si
SLV 8	1.1	6688.18	-44769	-39795	-21589	1.84	1.84	-48062	16250	14598	33304	37191	4692	41883		1.94	Si
SLV 10	0.7	-948.41	9270	8240	10047	1.472	1.84	0	0	0	33304	29753	3754	33304		3.31	Si
SLV 10	1.1	-2929.45	7671	6819	9963	1.472	1.6144	0	0	0	33304	29753	3754	33304		3.34	Si
SLV 11	0.7	-581.9	-40565	-36058	-22296	1.84	1.84	-43548	16250	13601	33304	37191	4692	41883		1.88	Si
SLV 11	1.1	5775.91	-37040	-32924	-21861	1.84	1.84	-39763	16250	13455	33304	37191	4692	41883		1.92	Si
SLV 12	0.7	-823.15	-41475	-36867	-24177	1.84	1.84	-44525	16250	13817	33304	37191	4692	41883		1.73	Si
SLV 12	1.1	5947.45	-37580	-33404	-23741	1.84	1.84	-40343	16250	13455	33304	37191	4692	41883		1.76	Si
SLV 16	0.7	-2155.81	-16408	-14585	-15228	1.84	1.84	-17614	13940	11542	33304	37191	4692	41883		2.75	Si
SLV 16	1.1	2017.97	-13485	-11987	-14911	1.84	1.84	-14477	13312	11022	33304	37191	4692	41883		2.81	Si
SLV 5	0.7	347.37	3729	3314	14134	1.472	1.84	0	0	0	33304	29753	3754	33304		2.36	Si
SLV 5	1.1	-2360.26	1022	908	13994	1.472	0	0	0	0	33304	29753	3754	33304		2.38	Si
SLV 6	0.7	106.12	2819	2506	12252	1.472	1.84	0	0	0	33304	29753	3754	33304		2.72	Si
SLV 6	1.1	-2188.72	482	428	12114	1.472	0	0	0	0	33304	29753	3754	33304		2.75	Si
SLV 7	0.7	472.62	-47017	-41793	-20091	1.84	1.84	-50474	16250	15130	33304	37191	4692	41883		2.08	Si
SLV 7	1.1	6516.64	-44229	-39315	-19710	1.84	1.84	-47482	16250	14470	33304	37191	4692	41883		2.12	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.185 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.25	0	8491	139.14	0	0	No, Trazione
SLV 5	179667	0.25	0	2361	139.14	0	0	No, Trazione
SLV 13	179667	0.25	0	928	139.14	0	0	No, Trazione
SLV 6	179667	0.25	0	1701	139.14	0	0	No, Trazione
SLV 14	179667	0.25	0	-52	139.14	0	0	No, e>t/2
SLV 10	179667	0.25	0	7831	139.14	0	0	No, Trazione
SLV 15	179667	0.25	14277	-11822	139.14	2411.22	17.33	Si
SLV 16	179667	0.25	15461	-12802	139.14	2588.78	18.61	Si
SLV 1	179667	0.25	23558	-19506	139.14	3711.87	26.68	Si
SLV 2	179667	0.25	24742	-20486	139.14	3862.63	27.76	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 8	-41903	-39679	2221	0.263	4612.8	0.977	3.92063	2.80694	Si
SLV 7	-41456	-39051	2194	0.266	4567.2	0.977	3.95939	2.80694	Si
SLV 4	-34692	-32985	1873	0.31	3878.3	0.973	4.62619	3.00264	Si
SLV 3	-34028	-32052	1833	0.315	3810.7	0.972	4.7091	3.00264	Si
SLV 12	-35315	-33354	1854	0.306	3941.7	0.973	4.57375	2.80694	Si
SLV 11	-34868	-32726	1827	0.31	3896.2	0.973	4.62764	2.80694	Si
SLV 2	-21830	-20792	1203	0.463	2569.1	0.96	7.00326	3.00264	Si
SLV 1	-21166	-19859	1163	0.475	2501.6	0.959	7.20317	3.00264	Si
SLV 16	-12731	-11903	652	0.735	1645.2	0.941	11.35488	3.00264	Si
SLV 15	-12067	-10970	612	0.768	1577.9	0.939	11.8992	3.00264	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	6.805	SLU 48	Si
V_SLU	4.099	SLU 77	Si
PF_SLV	0	SLV 5	No
V_SLV	1.732	SLV 12	Si
PFFP_SLV	0	SLV 13	No
R_SLV	1.397	SLV 8	Si

Maschio 3

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.618	5.876	-21.763	5.876	L2	L4	2.145	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 69	0.7	-6653.24	-33044	-0.0000901	0.0003743	0.0035	2.145	23523.31	27562.71	27562.71	4.14	No	Si
SLU 69	1.1	-4761.72	-32022	-0.0000782	0.0003743	0.0035	2.145	23152.99	27091.53	27091.53	5.69	No	Si
SLU 71	0.7	-6593.12	-32793	-0.0000893	0.0003743	0.0035	2.145	23434.19	27446.04	27446.04	4.16	No	Si
SLU 71	1.1	-4702.24	-31771	-0.0000774	0.0003743	0.0035	2.145	23058.26	26976.54	26976.54	5.74	No	Si
SLU 78	0.7	-7053.52	-36537	-0.0000995	0.0003743	0.0035	2.145	24616.85	29229.97	29229.97	4.14	No	Si
SLU 78	1.1	-5057.74	-35515	-0.0000867	0.0003743	0.0035	2.145	24324.43	28732.71	28732.71	5.68	No	Si
SLU 80	0.7	-6993.4	-36285	-0.0000986	0.0003743	0.0035	2.145	24546.93	29106.74	29106.74	4.16	No	Si
SLU 80	1.1	-4998.25	-35263	-0.0000859	0.0003743	0.0035	2.145	24248.89	28611.4	28611.4	5.72	No	Si
SLU 70	0.7	-6574.61	-32744	-0.0000891	0.0003743	0.0035	2.145	23416.99	27423.78	27423.78	4.17	No	Si
SLU 70	1.1	-4692.55	-31722	-0.0000773	0.0003743	0.0035	2.145	23039.98	26954.61	26954.61	5.74	No	Si
SLU 83	0.7	-7171.43	-37763	-0.0001027	0.0003743	0.0035	2.145	24937.73	29836.44	29836.44	4.16	No	Si
SLU 83	1.1	-5114.54	-36741	-0.0000896	0.0003743	0.0035	2.145	24672.65	29330.43	29330.43	5.73	No	Si
SLU 74	0.7	-7026.3	-36389	-0.000099	0.0003743	0.0035	2.145	24576.17	29157.92	29157.92	4.15	No	Si
SLU 74	1.1	-5017.51	-35368	-0.0000862	0.0003743	0.0035	2.145	24280.46	28661.78	28661.78	5.71	No	Si
SLU 75	0.7	-6947.67	-36090	-0.000098	0.0003743	0.0035	2.145	24491.75	29011.52	29011.52	4.18	No	Si
SLU 75	1.1	-4948.34	-35068	-0.0000853	0.0003743	0.0035	2.145	24189.36	28517.66	28517.66	5.76	No	Si
SLU 77	0.7	-7132.16	-36836	-0.0001006	0.0003743	0.0035	2.145	24698.35	29377.37	29377.37	4.12	No	Si
SLU 77	1.1	-5126.91	-35815	-0.0000877	0.0003743	0.0035	2.145	24412.61	28877.83	28877.83	5.63	No	Si
SLU 79	0.7	-7072.03	-36585	-0.0000997	0.0003743	0.0035	2.145	24630.07	29253.59	29253.59	4.14	No	Si
SLU 79	1.1	-5067.42	-35563	-0.0000869	0.0003743	0.0035	2.145	24338.71	28755.96	28755.96	5.67	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	0.7	-13212.07	-49932	-0.000153	0.0005615	0.0035	2.145		40532.26	40532.26	3.07		Si
SLV 12	1.1	-9546.48	-49350	-0.0001324	0.0005615	0.0035	2.145		40257.39	40257.39	4.22		Si
SLV 11	0.7	-12807.08	-49659	-0.0001503	0.0005615	0.0035	2.145		40402.98	40402.98	3.15		Si
SLV 11	1.1	-9689.7	-49077	-0.0001326	0.0005615	0.0035	2.145		40128.64	40128.64	4.14		Si
SLV 9	0.7	3027.15	7584	0.8479355	0.0005615	0.0035	1.716		0	0	0		No
SLV 9	1.1	4608.15	8378	0.9306933	0.0005615	0.0035	1.716		0	0	0		No
SLV 16	0.7	-8262.02	-22037	-0.0000741	0.0005615	0.0035	2.145		22111.39	22111.39	2.68		Si
SLV 16	1.1	-2299.56	-21605	-0.0000454	0.0005615	0.0035	2.145		21762.43	21762.43	9.46		Si
SLV 10	0.7	2622.17	7311	0.8187124	0.0005615	0.0035	1.716		0	0	0		No
SLV 10	1.1	4751.37	8105	0.8988725	0.0005615	0.0035	1.716		0	0	0		No
SLV 15	0.7	-7660.5	-21631	-0.0000705	0.0005615	0.0035	2.145		21783.19	21783.19	2.84		Si
SLV 15	1.1	-2512.29	-21200	-0.0000457	0.0005615	0.0035	2.145		21420.81	21420.81	8.53		Si
SLV 14	0.7	-3511.75	-4864	-0.0000315	0.0005615	0.0035	1.716		6341.48	6341.48	1.81		Si
SLV 14	1.1	1989.79	-4369	-0.0000159	0.0005615	0.0035	2.145		4813.02	4813.02	2.42		Si
SLV 13	0.7	-2910.23	-4458	-0.000024	0.0005615	0.0035	1.716		5931.09	5931.09	2.04		Si
SLV 13	1.1	1777.06	-3963	-0.0000142	0.0005615	0.0035	2.145		4398.39	4398.39	2.48		Si
SLV 6	0.7	3045.31	517	-0.0023522	0.0005615	0.0035	1.716		0	0	0		No
SLV 6	1.1	2858.87	1503	0.1506918	0.0005615	0.0035	1.716		0	0	0		No
SLV 5	0.7	3450.3	790	0.0318757	0.0005615	0.0035	1.716		0	0	0		No
SLV 5	1.1	2715.65	1776	0.1852103	0.0005615	0.0035	1.716		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	0.7	-7053.52	-36537	-32477	-4933	2.145	2.145	-33646	10833	12738	33304	28904	5470	34374	No	6.97	Si
SLU 78	1.1	-5057.74	-35515	-31569	-4933	2.145	2.145	-32705	10833	12475	33304	28904	5470	34374	No	6.97	Si
SLU 77	0.7	-7132.16	-36836	-32743	-4957	2.145	2.145	-33922	10833	12815	33304	28904	5470	34374	No	6.93	Si
SLU 77	1.1	-5126.91	-35815	-31835	-4957	2.145	2.145	-32981	10833	12552	33304	28904	5470	34374	No	6.93	Si
SLU 74	0.7	-7026.3	-36389	-32346	-4966	2.145	2.145	-33511	10833	12700	33304	28904	5470	34374	No	6.92	Si
SLU 74	1.1	-5017.51	-35368	-31438	-4966	2.145	2.145	-32570	10833	12438	33304	28904	5470	34374	No	6.92	Si
SLU 75	0.7	-6947.67	-36090	-32080	-4942	2.145	2.145	-33235	10833	12623	33304	28904	5470	34374	No	6.96	Si
SLU 75	1.1	-4948.34	-35068	-31171	-4942	2.145	2.145	-32293	10833	12361	33304	28904	5470	34374	No	6.96	Si
SLU 84	0.7	-7092.8	-37463	-33300	-5062	2.145	2.145	-34499	10833	12976	33304	28904	5470	34374	No	6.79	Si
SLU 84	1.1	-5045.36	-36441	-32392	-5062	2.145	2.145	-33558	10833	12713	33304	28904	5470	34374	No	6.79	Si
SLU 82	0.7	-6986.94	-37016	-32903	-5071	2.145	2.145	-34088	10833	12861	33304	28904	5470	34374	No	6.78	Si
SLU 82	1.1	-4935.96	-35994	-31995	-5071	2.145	2.145	-33147	10833	12599	33304	28904	5470	34374	No	6.78	Si
SLU 83	0.7	-7171.43	-37763	-33567	-5086	2.145	2.145	-34775	10833	13053	33304	28904	5470	34374	No	6.76	Si
SLU 83	1.1	-5114.54	-36741	-32659	-5086	2.145	2.145	-33834	10833	12790	33304	28904	5470	34374	No	6.76	Si
SLU 73	0.7	-6729.27	-35191	-31281	-4934	2.145	2.145	-32407	10833	12392	33304	28904	5470	34374	No	6.97	Si
SLU 73	1.1	-4733.34	-34169	-30373	-4934	2.145	2.145	-31466	10833	12130	33304	28904	5470	34374	No	6.97	Si
SLU 79	0.7	-7072.03	-36585	-32520	-4955	2.145	2.145	-33690	10833	12750	33304	28904	5470	34374	No	6.94	Si
SLU 79	1.1	-5067.42	-35563	-31611	-4955	2.145	2.145	-32749	10833	12488	33304	28904	5470	34374	No	6.94	Si
SLU 81	0.7	-7065.57	-37316	-33170	-5095	2.145	2.145	-34364	10833	12938	33304	28904	5470	34374	No	6.75	Si
SLU 81	1.1	-5005.14	-36294	-32261	-5095	2.145	2.145	-33423	10833	12676	33304	28904	5470	34374	No	6.75	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	0.7	-12807.08	-49659	-44141	-7813	2.145	2.145	-45730	16250	17785	33304	43356	5470	48826		6.25	Si
SLV 11	1.1	-9689.7	-49077	-43624	-7780	2.145	2.145	-45195	16250	17636	33304	43356	5470	48826		6.28	Si
SLV 12	0.7	-13212.07	-49932	-44384	-9183	2.145	2.145	-45982	16250	17855	33304	43356	5470	48826		5.32	Si
SLV 12	1.1	-9546.48	-49350	-43867	-9151	2.145	2.145	-45446	16250	17706	33304	43356	5470	48826		5.34	Si
SLV 15	0.7	-7660.5	-21631	-19228	-12943	2.145	2.145	-19920	14401	13900	33304	43356	5470	47205		3.65	Si
SLV 15	1.1	-2512.29	-21200	-18844	-12839	2.145	2.145	-19523	14321	13824	33304	43356	5470	47128		3.67	Si
SLV 14	0.7	-3511.75	-4864	-4323	-13808	1.716	1.0515	0	0	0	33304	34685	4376	33304		2.41	Si
SLV 14	1.1	1989.79	-4369	-3883	-13705	2.145	1.8511	-4023	11221	9347	33304	43356	5470	42652		3.11	Si
SLV 1	0.7	-1499.75	-27105	-24093	7738	2.145	2.145	-24961	15409	14873	33304	43356	5470	48178		6.23	Si
SLV 1	1.1	-4531.27	-25969	-23083	7634	2.145	2.145	-23914	15200	14671	33304	43356	5470	47976		6.28	Si
SLV 13	0.7	-2910.23	-4458	-3963	-11773	1.716	1.2591	0	0	0	33304	34685	4376	33304		2.83	Si
SLV 13	1.1	1777.06	-3963	-3523	-11670	2.145	1.8723	-3650	11147	9391	33304	43356	5470	42696		3.66	Si
SLD 14	0.7	-4369.44	-16380	-14560	-7989	2.145	2.145	-15084	13434	12967	33304	43356	5470	46271		5.79	Si
SLD 14	1.1	-1174.62	-15720	-13973	-7945	2.145	2.145	-14476	13312	12849	33304	43356	5470	46154		5.81	Si
SLV 16	0.7	-8262.02	-22037	-19588	-14979	2.145	2.0927	-21018	14620	13768	33304	43356	5470	47073		3.14	Si
SLV 16	1.1	-2299.56	-21605	-19205	-14875	2.145	2.145	-19896	14396	13896	33304	43356	5470	47200		3.17	Si
SLD 15	0.7	-5996.09	-23082	-20517	-7592	2.145	2.145	-21256	14668	14158	33304	43356	5470	47462		6.25	Si
SLD 15	1.1	-2963.56	-22451	-19957	-7548	2.145	2.145	-20675	14552	14046	33304	43356	5470	47350		6.27	Si
SLD 16	0.7	-6251.99	-23255	-20671	-8458	2.145	2.145	-21415	14700	14189	33304	43356	5470	47493		5.62	Si
SLD 16	1.1	-2873.06	-22624	-20110	-8414	2.145	2.145	-20834	14583	14077	33304	43356	5470	47381		5.63	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.185 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.25	0	7143	162.2	0	0	No, Trazione
SLV 5	179667	0.25	0	1458	162.2	0	0	No, Trazione
SLV 6	179667	0.25	0	844	162.2	0	0	No, Trazione
SLV 10	179667	0.25	0	6529	162.2	0	0	No, Trazione
SLV 13	179667	0.25	6582	-6354	162.2	1367.94	8.43	Si
SLV 14	179667	0.25	7527	-7266	162.2	1554.2	9.58	Si
SLV 15	179667	0.25	24589	-23735	162.2	4480.44	27.62	Si
SLV 16	179667	0.25	25534	-24647	162.2	4618.3	28.47	Si
SLV 1	179667	0.25	26214	-25303	162.2	4715.9	29.07	Si
SLV 2	179667	0.25	27159	-26215	162.2	4849.4	29.9	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-46280	-54468	1293	0.3	5115.8	0.976	4.46728	2.80694	Si
SLV 8	-46270	-55587	1274	0.3	5114.7	0.976	4.47395	2.80694	Si
SLV 3	-37448	-38459	1176	0.352	4216.2	0.971	5.27399	3.00264	Si
SLV 4	-37432	-40121	1147	0.353	4214.6	0.971	5.28648	3.00264	Si
SLV 11	-39679	-51167	1064	0.34	4443.4	0.972	5.08759	2.80694	Si
SLV 12	-39669	-52286	1045	0.341	4442.3	0.972	5.0955	2.80694	Si
SLV 1	-23274	-21669	842	0.517	2773.9	0.957	7.8476	3.00264	Si
SLV 2	-23258	-23331	813	0.518	2772.3	0.957	7.86886	3.00264	Si
SLV 15	-15444	-27456	413	0.732	1979	0.942	11.29351	3.00264	Si
SLV 16	-15428	-29118	384	0.734	1977.4	0.942	11.32763	3.00264	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.119	SLU 77	Si
V_SLU	6.747	SLU 81	Si
PF_SLV	0	SLV 5	No
V_SLV	2.412	SLV 14	Si
PFFP_SLV	0	SLV 10	No
R_SLV	1.592	SLV 7	Si

Maschio 4

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-22.543	-3.284	-24.603	-3.284	L2	L4	2.06	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 49	0.7	399.82	-23744	-0.000043	0.0003743	0.0035	2.06	18303.44	19818.8	19818.8	49.57	No	Si
SLU 49	1.1	2667.67	-22589	-0.0000527	0.0003743	0.0035	2.06	17697.81	19144.68	19144.68	7.18	No	Si
SLU 55	0.7	364.08	-26385	-0.0000477	0.0003743	0.0035	2.06	19579.15	21383.72	21383.72	58.73	No	Si
SLU 55	1.1	2817.52	-25239	-0.0000586	0.0003743	0.0035	2.06	19044.41	20701.87	20701.87	7.35	No	Si
SLU 5	0.7	392.57	-18996	-0.0000343	0.0003743	0.0035	2.06	15627.64	16585.46	16585.46	42.25	No	Si
SLU 5	1.1	2243.32	-18061	-0.0000421	0.0003743	0.0035	2.06	15042.87	15851.74	15851.74	7.07	No	Si
SLU 68	0.7	389.87	-26713	-0.0000485	0.0003743	0.0035	2.06	19726.87	21580.02	21580.02	55.35	No	Si
SLU 68	1.1	2900.29	-25544	-0.0000597	0.0003743	0.0035	2.06	19189.26	20882.44	20882.44	7.2	No	Si
SLU 47	0.7	465.14	-23419	-0.0000427	0.0003743	0.0035	2.06	18136.33	19628.84	19628.84	42.2	No	Si
SLU 47	1.1	2740.28	-22230	-0.0000524	0.0003743	0.0035	2.06	17503.84	18936.75	18936.75	6.91	No	Si
SLU 65	0.7	375.5	-26455	-0.0000479	0.0003743	0.0035	2.06	19610.49	21425.07	21425.07	57.06	No	Si
SLU 65	1.1	2856.47	-25289	-0.0000589	0.0003743	0.0035	2.06	19068.18	20731.38	20731.38	7.26	No	Si
SLU 51	0.7	390.58	-23587	-0.0000426	0.0003743	0.0035	2.06	18223.18	19727.17	19727.17	50.51	No	Si
SLU 51	1.1	2640.07	-22436	-0.0000523	0.0003743	0.0035	2.06	17615.6	19056.1	19056.1	7.22	No	Si
SLU 2	0.7	378.2	-18737	-0.0000338	0.0003743	0.0035	2.06	15467.68	16381.71	16381.71	43.31	No	Si
SLU 2	1.1	2199.49	-17806	-0.0000414	0.0003743	0.0035	2.06	14880.17	15652.86	15652.86	7.12	No	Si
SLU 46	0.7	385.45	-23485	-0.0000424	0.0003743	0.0035	2.06	18170.29	19667.18	19667.18	51.02	No	Si
SLU 46	1.1	2623.84	-22334	-0.000052	0.0003743	0.0035	2.06	17560.29	18996.88	18996.88	7.24	No	Si
SLU 44	0.7	450.78	-23161	-0.0000422	0.0003743	0.0035	2.06	18001.35	19477.65	19477.65	43.21	No	Si
SLU 44	1.1	2696.45	-21975	-0.0000517	0.0003743	0.0035	2.06	17364.32	18789.42	18789.42	6.97	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	0.7	-441.73	745	0.0957607	0.0005615	0.0035	1.648		0	0	0		No
SLV 7	1.1	-1876.9	-359	-0.0005277	0.0005615	0.0035	1.648		1482.68	1482.68	0.79		No
SLV 11	0.7	-1728.8	6867	0.8763888	0.0005615	0.0035	1.648		0	0	0		No
SLV 11	1.1	-2644.82	6105	0.7820365	0.0005615	0.0035	1.648		0	0	0		No
SLV 12	0.7	-1445.09	7751	0.9877368	0.0005615	0.0035	1.648		0	0	0		No
SLV 12	1.1	-2703.73	6669	0.8538988	0.0005615	0.0035	1.648		0	0	0		No
SLV 8	0.7	-158.01	1629	0.2071698	0.0005615	0.0035	1.648		0	0	0		No
SLV 8	1.1	-1935.81	205	0.0259991	0.0005615	0.0035	1.648		0	0	0		No
SLV 5	0.7	1656.09	-48348	-0.0000944	0.0005615	0.0035	2.06		36979.29	36979.29	22.33		Si
SLV 5	1.1	6518.12	-45651	-0.0001159	0.0005615	0.0035	2.06		35503.33	35503.33	5.45		Si
SLV 15	0.7	-2565	-3388	-0.000028	0.0005615	0.0035	1.648		4498.51	4498.51	1.75		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 15	1.1	-588.16	-2343	-0.0000066	0.0005615	0.0035	2.06		3467.24	3467.24	5.9		Si
SLV 16	0.7	-2143.6	-2076	-0.000096	0.0005615	0.0035	1.648		3202.05	3202.05	1.49		Si
SLV 16	1.1	-675.66	-1504	-0.0000058	0.0005615	0.0035	2.06		2633.07	2633.07	3.9		Si
SLV 9	0.7	369.01	-42226	-0.0000756	0.0005615	0.0035	2.06		33417.68	33417.68	90.56		Si
SLV 9	1.1	5750.21	-39187	-0.0000987	0.0005615	0.0035	2.06		31585.02	31585.02	5.49		Si
SLV 10	0.7	652.73	-41343	-0.0000754	0.0005615	0.0035	2.06		32882.72	32882.72	50.38		Si
SLV 10	1.1	5691.3	-38622	-0.0000973	0.0005615	0.0035	2.06		31246.85	31246.85	5.49		Si
SLV 6	0.7	1939.81	-47464	-0.0000942	0.0005615	0.0035	2.06		36583.12	36583.12	18.86		Si
SLV 6	1.1	6459.21	-45086	-0.0001144	0.0005615	0.0035	2.06		35157.9	35157.9	5.44		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	0.7	223.48	-30004	-26670	-7174	2.06	2.06	-28770	10780	10494	33304	27758	5253	33011	No	4.6	Si
SLU 78	1.1	2904.93	-28912	-25699	-6956	2.06	2.06	-27723	10641	10225	33304	27758	5253	33011	No	4.75	Si
SLU 80	0.7	214.24	-29847	-26531	-7118	2.06	2.06	-28620	10760	10456	33304	27758	5253	33011	No	4.64	Si
SLU 80	1.1	2877.33	-28759	-25564	-6901	2.06	2.06	-27577	10621	10187	33304	27758	5253	33011	No	4.78	Si
SLU 70	0.7	324.54	-27038	-24033	-6831	2.06	2.06	-25926	10401	9763	33304	27758	5253	33011	No	4.83	Si
SLU 70	1.1	2827.69	-25902	-23024	-6632	2.06	2.06	-24838	10256	9507	33304	27758	5253	33011	No	4.98	Si
SLU 75	0.7	209.12	-29745	-26440	-7089	2.06	2.06	-28522	10747	10430	33304	27758	5253	33011	No	4.66	Si
SLU 75	1.1	2861.11	-28657	-25473	-6873	2.06	2.06	-27479	10608	10162	33304	27758	5253	33011	No	4.8	Si
SLU 73	0.7	274.44	-29421	-26152	-7194	2.06	2.06	-28211	10706	10350	33304	27758	5253	33011	No	4.59	Si
SLU 73	1.1	2933.71	-28298	-25154	-6981	2.06	2.06	-27135	10562	10074	33304	27758	5253	33011	No	4.73	Si
SLU 68	0.7	389.87	-26713	-23745	-6937	2.06	2.06	-25615	10360	9683	33304	27758	5253	33011	No	4.76	Si
SLU 68	1.1	2900.29	-25544	-22706	-6739	2.06	2.06	-24494	10210	9465	33304	27758	5253	33011	No	4.9	Si
SLU 84	0.7	156.57	-30860	-27431	-7179	2.06	2.06	-29591	10833	10705	33304	27758	5253	33011	No	4.6	Si
SLU 84	1.1	2866.61	-29794	-26484	-6958	2.06	2.06	-28569	10754	10443	33304	27758	5253	33011	No	4.74	Si
SLU 65	0.7	375.5	-26455	-23515	-6852	2.06	2.06	-25367	10327	9619	33304	27758	5253	33011	No	4.82	Si
SLU 65	1.1	2856.47	-25289	-22479	-6657	2.06	2.06	-24249	10178	9435	33304	27758	5253	33011	No	4.96	Si
SLU 76	0.7	288.81	-29679	-26382	-7279	2.06	2.06	-28459	10739	10414	33304	27758	5253	33011	No	4.54	Si
SLU 76	1.1	2977.54	-28553	-25381	-7063	2.06	2.06	-27379	10595	10137	33304	27758	5253	33011	No	4.67	Si
SLU 82	0.7	142.2	-30601	-27201	-7095	2.06	2.06	-29343	10833	10642	33304	27758	5253	33011	No	4.65	Si
SLU 82	1.1	2822.79	-29539	-26257	-6875	2.06	2.06	-28325	10721	10380	33304	27758	5253	33011	No	4.8	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	0.7	369.01	-42226	-37535	-22260	2.06	2.06	-40490	16250	15064	33304	41638	5253	46891		2.11	Si
SLV 9	1.1	5750.21	-39187	-34833	-22178	2.06	2.06	-37576	16250	15064	33304	41638	5253	46891		2.11	Si
SLV 6	0.7	1939.81	-47464	-42190	-16419	2.06	2.06	-45513	16250	16348	33304	41638	5253	46891		2.86	Si
SLV 6	1.1	6459.21	-45086	-40076	-16795	2.06	2.06	-43232	16250	15761	33304	41638	5253	46891		2.79	Si
SLV 8	0.7	-158.01	1629	1448	12701	1.648	2.06	0	0	0	33304	33310	4202	33304		2.62	Si
SLV 8	1.1	-1935.81	205	182	12912	1.648	0	0	0	0	33304	33310	4202	33304		2.58	Si
SLV 13	0.7	-1935.66	-18116	-16103	-17332	2.06	2.06	-17372	13891	12877	33304	41638	5253	46181		2.66	Si
SLV 13	1.1	1930.35	-15930	-14160	-16511	2.06	2.06	-15275	13472	12488	33304	41638	5253	45793		2.77	Si
SLV 7	0.7	-441.73	745	663	11023	1.648	1.3123	0	0	0	33304	33310	4202	33304		3.02	Si
SLV 7	1.1	-1876.9	-359	-320	11235	1.648	0	0	0	0	33304	33310	4202	33304		2.96	Si
SLV 5	0.7	1656.09	-48348	-42976	-18097	2.06	2.06	-46360	16250	16566	33304	41638	5253	46891		2.59	Si
SLV 5	1.1	6518.12	-45651	-40578	-18472	2.06	2.06	-43774	16250	15901	33304	41638	5253	46891		2.54	Si
SLV 10	0.7	652.73	-41343	-36749	-20582	2.06	2.06	-39643	16250	15064	33304	41638	5253	46891		2.28	Si
SLV 10	1.1	5691.3	-38622	-34331	-20501	2.06	2.06	-37034	16250	15064	33304	41638	5253	46891		2.29	Si
SLV 14	0.7	-1514.25	-16804	-14937	-14839	2.06	2.06	-16113	13639	12644	33304	41638	5253	45948		3.1	Si
SLV 14	1.1	1842.85	-15092	-13415	-14021	2.06	2.06	-14471	13311	12339	33304	41638	5253	45644		3.26	Si
SLV 12	0.7	-1445.09	7751	6890	8538	1.648	2.06	0	0	0	33304	33310	4202	33304		3.9	Si
SLV 12	1.1	-2703.73	6669	5928	9206	1.648	1.8738	0	0	0	33304	33310	4202	33304		3.62	Si
SLV 15	0.7	-2565	-3388	-3012	-8596	1.648	0.819	0	0	0	33304	33310	4202	33304		3.87	Si
SLV 15	1.1	-588.16	-2343	-2083	-7599	2.06	2.06	-2247	10866	10073	33304	41638	5253	43377		5.71	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.185 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.25	0	6989	155.78	0	0	No, Trazione
SLV 7	179667	0.25	0	239	155.78	0	0	No, Trazione
SLV 11	179667	0.25	0	6314	155.78	0	0	No, Trazione
SLV 8	179667	0.25	0	914	155.78	0	0	No, Trazione
SLV 16	179667	0.25	939	-870	155.78	194.6	1.25	Si
SLV 15	179667	0.25	2019	-1872	155.78	415.65	2.67	Si
SLV 14	179667	0.25	14911	-13822	155.78	2806.34	18.02	Si
SLV 13	179667	0.25	15991	-14824	155.78	2986.14	19.17	Si
SLV 4	179667	0.25	22784	-21121	155.78	4043.2	25.96	Si
SLV 3	179667	0.25	23865	-22123	155.78	4199.75	26.96	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 5	-42373	-43255	-2053	0.292	4701.9	0.975	4.3567	2.80694	Si
SLV 6	-41930	-42530	-2030	0.295	4656.7	0.974	4.39778	2.80694	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 1	-34413	-36400	-1742	0.347	3891.2	0.97	5.20522	3.00264	Si
SLV 2	-33754	-35324	-1708	0.353	3824.2	0.969	5.29621	3.00264	Si
SLV 9	-36440	-36503	-1731	0.333	4097.6	0.971	4.99017	2.80694	Si
SLV 10	-35997	-35779	-1708	0.337	4052.5	0.971	5.04524	2.80694	Si
SLV 3	-21565	-23623	-1148	0.517	2584	0.956	7.86236	3.00264	Si
SLV 4	-20906	-22546	-1114	0.531	2517	0.955	8.08271	3.00264	Si
SLV 13	-14636	-13896	-667	0.724	1880.7	0.942	11.17132	3.00264	Si
SLV 14	-13977	-12820	-633	0.752	1813.9	0.94	11.62641	3.00264	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	6.911	SLU 47	Si
V_SLU	4.535	SLU 76	Si
PF_SLV	0	SLV 7	No
V_SLV	2.106	SLV 9	Si
PFFP_SLV	0	SLV 12	No
R_SLV	1.552	SLV 5	Si

Maschio 5

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-18.313	-3.284	-21.543	-3.284	L2	L4	3.23	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 47	0.7	-16224.33	-34740	-0.0000729	0.0003743	0.0035	3.23	42934	49041.02	49041.02	3.02	No	Si
SLU 47	1.1	-12229	-33249	-0.0000623	0.0003743	0.0035	3.23	41632.56	47461.69	47461.69	3.88	No	Si
SLU 68	0.7	-18094.52	-39926	-0.0000838	0.0003743	0.0035	3.23	47083.46	54313.83	54313.83	3	No	Si
SLU 68	1.1	-13588.89	-38419	-0.0000718	0.0003743	0.0035	3.23	45938.21	52812.31	52812.31	3.89	No	Si
SLU 76	0.7	-19635.38	-44665	-0.0000937	0.0003743	0.0035	3.23	50362.05	58754.48	58754.48	2.99	No	Si
SLU 76	1.1	-14751.14	-43158	-0.0000805	0.0003743	0.0035	3.23	49372.67	57357.82	57357.82	3.89	No	Si
SLU 73	0.7	-19446.98	-44282	-0.0000927	0.0003743	0.0035	3.23	50115.53	58398.17	58398.17	3	No	Si
SLU 73	1.1	-14595.92	-42775	-0.0000797	0.0003743	0.0035	3.23	49113.57	57006	57006	3.91	No	Si
SLU 75	0.7	-19467.3	-44869	-0.0000936	0.0003743	0.0035	3.23	50491.89	58944.49	58944.49	3.03	No	Si
SLU 75	1.1	-14501.95	-43362	-0.0000802	0.0003743	0.0035	3.23	49509.21	57545.43	57545.43	3.97	No	Si
SLU 78	0.7	-19655.7	-45251	-0.0000945	0.0003743	0.0035	3.23	50733.51	59302.55	59302.55	3.02	No	Si
SLU 78	1.1	-14657.17	-43744	-0.0000811	0.0003743	0.0035	3.23	49763.42	57899	57899	3.95	No	Si
SLU 80	0.7	-19545.94	-45026	-0.000094	0.0003743	0.0035	3.23	50591.7	59091.68	59091.68	3.02	No	Si
SLU 80	1.1	-14566.27	-43519	-0.0000806	0.0003743	0.0035	3.23	49614.2	57690.78	57690.78	3.96	No	Si
SLU 82	0.7	-19829.5	-46292	-0.0000964	0.0003743	0.0035	3.23	51374.45	60076.06	60076.06	3.03	No	Si
SLU 82	1.1	-14753.95	-44785	-0.0000827	0.0003743	0.0035	3.23	50438.58	58866.28	58866.28	3.99	No	Si
SLU 65	0.7	-17906.12	-39543	-0.0000829	0.0003743	0.0035	3.23	46797.36	53931.15	53931.15	3.01	No	Si
SLU 65	1.1	-13433.68	-38036	-0.000071	0.0003743	0.0035	3.23	45639.53	52433.94	52433.94	3.9	No	Si
SLU 84	0.7	-20017.91	-46674	-0.0000973	0.0003743	0.0035	3.23	51604.19	60335.48	60335.48	3.01	No	Si
SLU 84	1.1	-14909.16	-45167	-0.0000835	0.0003743	0.0035	3.23	50680.91	59224.09	59224.09	3.97	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 15	0.7	-15858.42	-14541	-0.0000645	0.0005615	0.0035	2.584		25046.41	25046.41	1.58		Si
SLV 15	1.1	-3206.87	-13618	-0.0000206	0.0005615	0.0035	3.23		23687.48	23687.48	7.39		Si
SLV 13	0.7	-25600.09	-33452	-0.0000938	0.0005615	0.0035	3.23		50438.13	50438.13	1.97		Si
SLV 13	1.1	-11803.99	-32649	-0.000059	0.0005615	0.0035	3.23		49458.87	49458.87	4.19		Si
SLV 7	0.7	4481.37	-1616	-0.0034057	0.0005615	0.0035	2.584		3120.96	3120.96	0.7		No
SLV 7	1.1	3822.31	-174	-0.0091981	0.0005615	0.0035	3.23		821.61	821.61	0.21		No
SLV 12	0.7	1453.18	3471	0	0.0005615	0.0035	2.584		0	0	0		No
SLV 12	1.1	5409.2	4738	0.34808	0.0005615	0.0035	2.584		0	0	0		No
SLV 11	0.7	451.47	2689	0	0.0005615	0.0035	2.584		0	0	0		No
SLV 11	1.1	5227.63	3956	0.2888105	0.0005615	0.0035	2.584		0	0	0		No
SLV 9	0.7	-32020.76	-60347	-0.0001374	0.0005615	0.0035	3.23		79896.11	79896.11	2.5		Si
SLV 9	1.1	-23429.46	-59479	-0.0001168	0.0005615	0.0035	3.23		79047.91	79047.91	3.37		Si
SLV 14	0.7	-24112.26	-32290	-0.0000883	0.0005615	0.0035	3.23		49015.81	49015.81	2.03		Si
SLV 14	1.1	-11534.32	-31487	-0.0000572	0.0005615	0.0035	3.23		48000.31	48000.31	4.16		Si
SLV 10	0.7	-31019.05	-59565	-0.0001341	0.0005615	0.0035	3.23		79132.06	79132.06	2.55		Si
SLV 10	1.1	-23247.9	-58696	-0.0001154	0.0005615	0.0035	3.23		78286.38	78286.38	3.37		Si
SLV 8	0.7	5483.08	-834	-0.0103053	0.0005615	0.0035	3.23		1877.71	1877.71	0.34		No
SLV 8	1.1	4003.88	609	0.0172501	0.0005615	0.0035	2.584		0	0	0		No
SLV 16	0.7	-14370.59	-13379	-0.0000572	0.0005615	0.0035	2.584		23335.28	23335.28	1.62		Si
SLV 16	1.1	-2937.19	-12456	-0.0000188	0.0005615	0.0035	3.23		21982.26	21982.26	7.48		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	0.7	-19238.94	-45219	-40194	-12736	3.23	3.23	-27654	10632	23074	33304	43524	8236	51761	No	4.06	Si
SLU 77	1.1	-14147.05	-43712	-38855	-12736	3.23	3.23	-26732	10509	22538	33304	43524	8236	51761	No	4.06	Si
SLU 82	0.7	-19829.5	-46292	-41148	-12695	3.23	3.23	-28310	10719	23456	33304	43524	8236	51761	No	4.08	Si
SLU 82	1.1	-14753.95	-44785	-39809	-12695	3.23	3.23	-27388	10596	22920	33304	43524	8236	51761	No	4.08	Si
SLU 80	0.7	-19545.94	-45026	-40023	-12455	3.23	3.23	-27536	10616	23006	33304	43524	8236	51761	No	4.16	Si
SLU 80	1.1	-14566.27	-43519	-38684	-12455	3.23	3.23	-26614	10493	22470	33304	43524	8236	51761	No	4.16	Si
SLU 74	0.7	-19050.54	-44836	-39854	-12653	3.23	3.23	-27420	10600	22938	33304	43524	8236	51761	No	4.09	Si
SLU 74	1.1	-13991.83	-43329	-38515	-12653	3.23	3.23	-26498	10478	22402	33304	43524	8236	51761	No	4.09	Si
SLU 84	0.7	-20017.91	-46674	-41488	-12778	3.23	3.23	-28544	10750	23592	33304	43524	8236	51761	No	4.05	Si
SLU 84	1.1	-14909.16	-45167	-40149	-12778	3.23	3.23	-27622	10627	23056	33304	43524	8236	51761	No	4.05	Si
SLU 79	0.7	-19129.18	-44994	-39994	-12689	3.23	3.23	-27516	10613	22994	33304	43524	8236	51761	No	4.08	Si
SLU 79	1.1	-14056.15	-43487	-38655	-12689	3.23	3.23	-26594	10490	22458	33304	43524	8236	51761	No	4.08	Si
SLU 78	0.7	-19655.7	-45251	-40223	-12502	3.23	3.23	-27673	10634	23086	33304	43524	8236	51761	No	4.14	Si
SLU 78	1.1	-14657.17	-43744	-38884	-12502	3.23	3.23	-26752	10511	22550	33304	43524	8236	51761	No	4.14	Si
SLU 83	0.7	-19601.15	-46642	-41459	-13011	3.23	3.23	-28524	10748	23580	33304	43524	8236	51761	No	3.98	Si
SLU 83	1.1	-14399.04	-45135	-40120	-13011	3.23	3.23	-27602	10625	23044	33304	43524	8236	51761	No	3.98	Si
SLU 81	0.7	-19412.74	-46259	-41119	-12928	3.23	3.23	-28290	10716	23444	33304	43524	8236	51761	No	4	Si
SLU 81	1.1	-14243.83	-44752	-39780	-12928	3.23	3.23	-27368	10594	22908	33304	43524	8236	51761	No	4	Si
SLU 75	0.7	-19467.3	-44869	-39883	-12419	3.23	3.23	-27439	10603	22950	33304	43524	8236	51761	No	4.17	Si
SLU 75	1.1	-14501.95	-43362	-38544	-12419	3.23	3.23	-26518	10480	22414	33304	43524	8236	51761	No	4.17	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	0.7	-15858.42	-14541	-12925	-30194	2.584	1.5732	0	0	0	33304	52229	6589	33304		1.1	Si
SLV 15	1.1	-3206.87	-13618	-12105	-29988	3.23	3.23	-8328	12082	17562	33304	65286	8236	50866		1.7	Si
SLD 15	0.7	-14528.1	-23975	-21311	-18025	3.23	3.0271	-15760	13569	19020	33304	65286	8236	52324		2.9	Si
SLD 15	1.1	-7070.8	-22918	-20372	-17936	3.23	3.23	-14016	13220	19215	33304	65286	8236	52519		2.93	Si
SLV 14	0.7	-24112.26	-32290	-28702	-29906	3.23	2.6048	-24798	15376	21976	33304	65286	8236	55280		1.85	Si
SLV 14	1.1	-11534.32	-31487	-27988	-29789	3.23	3.23	-19256	14268	21690	33304	65286	8236	54995		1.85	Si
SLV 16	0.7	-14370.59	-13379	-11892	-27148	2.584	1.6226	0	0	0	33304	52229	6589	33304		1.23	Si
SLV 16	1.1	-2937.19	-12456	-11072	-26943	3.23	3.23	-7618	11940	17355	33304	65286	8236	50659		1.88	Si
SLV 9	0.7	-32020.76	-60347	-53642	-20863	3.23	3.23	-36905	16250	31952	33304	65286	8236	65256		3.13	Si
SLV 9	1.1	-23429.46	-59479	-52870	-20962	3.23	3.23	-36374	16250	31643	33304	65286	8236	64947		3.1	Si
SLV 11	0.7	451.47	2689	2390	-11670	2.584	3.23	0	0	0	33304	52229	6589	33304		2.85	Si
SLV 11	1.1	5227.63	3956	3516	-11474	2.584	0.8805	0	0	0	33304	52229	6589	33304		2.9	Si
SLD 13	0.7	-18386.19	-31571	-28063	-19143	3.23	3.0979	-20332	14483	21720	33304	65286	8236	55025		2.87	Si
SLD 13	1.1	-10463.78	-30569	-27172	-19094	3.23	3.23	-18694	14156	21364	33304	65286	8236	54668		2.86	Si
SLV 13	0.7	-25600.09	-33452	-29735	-32952	3.23	2.5491	-26269	15671	22389	33304	65286	8236	55693		1.69	Si
SLV 13	1.1	-11803.99	-32649	-29021	-32834	3.23	3.23	-19966	14410	22104	33304	65286	8236	55408		1.69	Si
SLD 16	0.7	-13895.15	-23481	-20872	-16730	3.23	3.0697	-15219	13461	18844	33304	65286	8236	52148		3.12	Si
SLD 16	1.1	-6956.08	-22424	-19932	-16641	3.23	3.23	-13713	13159	19127	33304	65286	8236	52431		3.15	Si
SLD 14	0.7	-17753.24	-31077	-27624	-17847	3.23	3.1312	-19797	14376	21545	33304	65286	8236	54849		3.07	Si
SLD 14	1.1	-10349.06	-30074	-26733	-17799	3.23	3.23	-18392	14095	21188	33304	65286	8236	54493		3.06	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.185 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 8	179667	0.25	0	2088	244.25	0	0	No, Trazione
SLV 11	179667	0.25	0	5765	244.25	0	0	No, Trazione
SLV 12	179667	0.25	0	6532	244.25	0	0	No, Trazione
SLV 7	179667	0.25	0	1321	244.25	0	0	No, Trazione
SLV 16	179667	0.25	5494	-7985	244.25	1732	7.09	Si
SLV 15	179667	0.25	6277	-9124	244.25	1968.46	8.06	Si
SLV 4	179667	0.25	15686	-22799	244.25	4602.95	18.85	Si
SLV 3	179667	0.25	16469	-23938	244.25	4805.21	19.67	Si
SLV 14	179667	0.25	17222	-25032	244.25	4997.04	20.46	Si
SLV 13	179667	0.25	18005	-26171	244.25	5194.15	21.27	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.

- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 5	-53842	-56652	-1928	0.362	6089.5	0.97	5.42222	2.80694	Si
SLV 6	-53258	-55890	-1913	0.365	6030	0.969	5.47171	2.80694	Si
SLV 9	-50404	-51123	-1847	0.381	5739.4	0.968	5.72653	2.80694	Si
SLV 10	-49820	-50361	-1831	0.385	5680	0.968	5.78266	2.80694	Si
SLV 1	-39054	-43328	-1254	0.476	4584.5	0.96	7.20145	3.00264	Si
SLV 2	-38186	-42196	-1231	0.485	4496.2	0.96	7.34002	3.00264	Si
SLV 13	-27592	-24897	-981	0.63	3419.8	0.949	9.65619	3.00264	Si
SLV 14	-26725	-23766	-958	0.647	3331.7	0.948	9.92091	3.00264	Si
SLV 3	-22818	-26219	-591	0.744	2935.6	0.941	11.48607	3.00264	Si
SLV 4	-21950	-25088	-568	0.767	2847.7	0.94	11.86555	3.00264	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.992	SLU 76	Si
V_SLU	3.978	SLU 83	Si
PF_SLV	0	SLV 8	No
V_SLV	1.103	SLV 15	Si
PFFP_SLV	0	SLV 12	No
R_SLV	1.932	SLV 5	Si

Maschio 7

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.618	2.071	-19.618	4.851	L2	L4	2.78	0.3	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 75	-1.3	1481.02	-87028	-0.000181	0.0004492	0.0035	2.78	17659.32	66842.18	66842.18	45.13	No	Si
SLU 75	0.7	11528.51	-82783	-0.0002252	0.0004492	0.0035	2.78	21591.9	66068.91	66068.91	5.73	No	Si
SLU 84	-1.3	1567.21	-89760	-0.0001886	0.0004492	0.0035	2.78	14868.86	67006.09	67006.09	42.76	No	Si
SLU 84	0.7	11799.95	-85514	-0.0002349	0.0004492	0.0035	2.78	19117.86	66751.36	66751.36	5.66	No	Si
SLU 83	-1.3	2156.64	-90146	-0.0001929	0.0004492	0.0035	2.78	14458.63	67029.22	67029.22	31.08	No	Si
SLU 83	0.7	11715.61	-85900	-0.0002356	0.0004492	0.0035	2.78	18752.28	66774.49	66774.49	5.7	No	Si
SLU 82	-1.3	1460.88	-88808	-0.0001855	0.0004492	0.0035	2.78	15864.34	66948.97	66948.97	45.83	No	Si
SLU 82	0.7	11672.89	-84562	-0.0002313	0.0004492	0.0035	2.78	20003.07	66607.33	66607.33	5.71	No	Si
SLU 80	-1.3	1531.33	-87436	-0.0001823	0.0004492	0.0035	2.78	17255.54	66866.66	66866.66	43.67	No	Si
SLU 80	0.7	11580.11	-83190	-0.0002267	0.0004492	0.0035	2.78	21235.37	66192.32	66192.32	5.72	No	Si
SLU 73	-1.3	925.72	-85275	-0.0001735	0.0004492	0.0035	2.78	19342.66	66737.01	66737.01	72.09	No	Si
SLU 73	0.7	11382.23	-81030	-0.0002193	0.0004492	0.0035	2.78	23072.19	65538.64	65538.64	5.76	No	Si
SLU 78	-1.3	1587.34	-87980	-0.000184	0.0004492	0.0035	2.78	16710.07	66899.3	66899.3	42.15	No	Si
SLU 78	0.7	11655.57	-83734	-0.0002287	0.0004492	0.0035	2.78	20752.9	66356.87	66356.87	5.69	No	Si
SLU 76	-1.3	1032.05	-86227	-0.0001765	0.0004492	0.0035	2.78	18438.93	66794.12	66794.12	64.72	No	Si
SLU 76	0.7	11509.29	-81981	-0.0002227	0.0004492	0.0035	2.78	22278.73	65826.6	65826.6	5.72	No	Si
SLU 81	-1.3	2050.31	-89194	-0.0001898	0.0004492	0.0035	2.78	15464.12	66972.11	66972.11	32.66	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 81	0.7	11588.55	-84948	-0.000232	0.0004492	0.0035	2.78	19647.51	66717.38	66717.38	5.76	No	Si
SLU 77	-1.3	2176.77	-88366	-0.0001883	0.0004492	0.0035	2.78	16318.56	66922.43	66922.43	30.74	No	Si
SLU 77	0.7	11571.23	-84120	-0.0002294	0.0004492	0.0035	2.78	20406.05	66473.51	66473.51	5.74	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 11	-1.3	52486.48	-91605	-0.0004592	0.0006738	0.0035	2.78		81112.06	81112.06	1.55		Si
SLV 11	0.7	2155.42	-88329	-0.0001729	0.0006738	0.0035	2.78		80046.09	80046.09	37.14		Si
SLV 8	-1.3	55263.58	-105063	-0.0005226	0.0006738	0.0035	2.78		85490.73	85490.73	1.55		Si
SLV 8	0.7	2652.13	-101762	-0.0002049	0.0006738	0.0035	2.78		84416.68	84416.68	31.83		Si
SLV 13	-1.3	-16954.45	-26817	-0.0001151	0.0006738	0.0035	2.78		37076.22	37076.22	2.19		Si
SLV 13	0.7	7856.06	-23629	-0.0000695	0.0006738	0.0035	2.78		29909.9	29909.9	3.81		Si
SLV 5	-1.3	-52765.88	-28405	-0.0060971	0.0006738	0.0035	2.224		38758.09	38758.09	0.73		No
SLV 5	0.7	14967.32	-25195	-0.0001022	0.0006738	0.0035	2.78		31514.76	31514.76	2.11		Si
SLV 7	-1.3	52710.77	-104593	-0.0004976	0.0006738	0.0035	2.78		85337.66	85337.66	1.62		Si
SLV 7	0.7	3747.89	-101292	-0.0002091	0.0006738	0.0035	2.78		84263.61	84263.61	22.48		Si
SLV 12	-1.3	55039.29	-92076	-0.0004854	0.0006738	0.0035	2.78		81265.12	81265.12	1.48		Si
SLV 12	0.7	1059.67	-88799	-0.0001689	0.0006738	0.0035	2.78		80199.15	80199.15	75.68		Si
SLV 6	-1.3	-50213.07	-28875	-0.0054151	0.0006738	0.0035	2.224		39256.39	39256.39	0.78		No
SLV 6	0.7	13871.56	-25666	-0.0000972	0.0006738	0.0035	2.78		31996.82	31996.82	2.31		Si
SLV 9	-1.3	-52990.17	-15417	-0.0076521	0.0006738	0.0035	2.224		24135.76	24135.76	0.46		No
SLV 9	0.7	13374.85	-12232	-0.0001359	0.0006738	0.0035	2.78		16824.2	16824.2	1.26		Si
SLV 10	-1.3	-50437.36	-15887	-0.0071132	0.0006738	0.0035	2.224		24688.7	24688.7	0.49		No
SLV 10	0.7	12279.1	-12703	-0.0000965	0.0006738	0.0035	2.78		17407.42	17407.42	1.42		Si
SLD 9	-1.3	-20553.54	-42157	-0.0001558	0.0006738	0.0035	2.78		52291.04	52291.04	2.54		Si
SLD 9	0.7	10136.5	-38927	-0.0001068	0.0006738	0.0035	2.78		45585.38	45585.38	4.5		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	-1.3	1460.88	-88808	-64588	-5106	2.78	2.78	-77443	10833	28691	95155	29972	14178	44150	No	8.65	Si
SLU 82	0.7	11672.89	-84562	-61500	-5106	2.78	2.78	-73741	10833	27535	95155	29972	14178	44150	No	8.65	Si
SLU 75	-1.3	1481.02	-87028	-63293	-5024	2.78	2.78	-75891	10833	28206	95155	29972	14178	44150	No	8.79	Si
SLU 75	0.7	11528.51	-82783	-60205	-5024	2.78	2.78	-72189	10833	27050	95155	29972	14178	44150	No	8.79	Si
SLU 78	-1.3	1587.34	-87980	-63986	-5034	2.78	2.78	-76721	10833	28466	95155	29972	14178	44150	No	8.77	Si
SLU 78	0.7	11655.57	-83734	-60898	-5034	2.78	2.78	-73019	10833	27309	95155	29972	14178	44150	No	8.77	Si
SLU 80	-1.3	1531.33	-87436	-63590	-5025	2.78	2.78	-76247	10833	28317	95155	29972	14178	44150	No	8.79	Si
SLU 80	0.7	11580.11	-83190	-60502	-5025	2.78	2.78	-72545	10833	27161	95155	29972	14178	44150	No	8.79	Si
SLU 68	-1.3	700.23	-78583	-57152	-5000	2.78	2.78	-68527	10833	25907	95155	29972	14178	44150	No	8.83	Si
SLU 68	0.7	10699.87	-74338	-54064	-5000	2.78	2.78	-64825	10833	24751	95155	29972	14178	44150	No	8.83	Si
SLU 84	-1.3	1567.21	-89760	-65280	-5117	2.78	2.78	-78273	10833	28950	95155	29972	14178	44150	No	8.63	Si
SLU 84	0.7	11799.95	-85514	-62192	-5117	2.78	2.78	-74571	10833	27794	95155	29972	14178	44150	No	8.63	Si
SLU 55	-1.3	255.71	-76424	-55581	-5075	2.78	2.78	-66644	10833	25319	95155	29972	14178	44150	No	8.7	Si
SLU 55	0.7	10405.59	-72283	-52569	-5075	2.78	2.78	-63033	10833	24191	95155	29972	14178	44150	No	8.7	Si
SLU 73	-1.3	925.72	-85275	-62018	-5229	2.78	2.78	-74362	10833	27729	95155	29972	14178	44150	No	8.44	Si
SLU 73	0.7	11382.23	-81030	-58931	-5229	2.78	2.78	-70660	10833	26573	95155	29972	14178	44150	No	8.44	Si
SLU 52	-1.3	149.38	-75472	-54888	-5065	2.78	2.78	-65813	10833	25060	95155	29972	14178	44150	No	8.72	Si
SLU 52	0.7	10278.54	-71331	-51877	-5065	2.78	2.78	-62202	10833	23932	95155	29972	14178	44150	No	8.72	Si
SLU 76	-1.3	1032.05	-86227	-62711	-5239	2.78	2.78	-75193	10833	27988	95155	29972	14178	44150	No	8.43	Si
SLU 76	0.7	11509.29	-81981	-59623	-5239	2.78	2.78	-71490	10833	26832	95155	29972	14178	44150	No	8.43	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	-1.3	52710.77	-104593	-76067	24978	2.78	2.6581	-91208	16250	35244	95155	44958	14178	59136		2.37	Si
SLV 7	0.7	3747.89	-101292	-73667	25188	2.78	2.78	-88329	16250	34345	95155	44958	14178	59136		2.35	Si
SLV 8	-1.3	55263.58	-105063	-76410	26802	2.78	2.592	-91618	16250	35372	95155	44958	14178	59136		2.21	Si
SLV 8	0.7	2652.13	-101762	-74009	27012	2.78	2.78	-88740	16250	34473	95155	44958	14178	59136		2.19	Si
SLV 9	-1.3	-52990.17	-15417	-11212	-33679	2.224	0	0	0	0	95155	35966	11342	47309		1.4	Si
SLV 9	0.7	13374.85	-12232	-8896	-33889	2.78	0.8898	-33874	16250	10095	95155	44958	14178	59136		1.74	Si
SLV 6	-1.3	-50213.07	-28875	-21000	-32520	2.224	0	0	0	0	95155	35966	11342	47309		1.45	Si
SLV 6	0.7	13871.56	-25666	-18666	-32738	2.78	2.5486	-22381	16250	13753	95155	44958	14178	59136		1.81	Si
SLV 5	-1.3	-52765.88	-28405	-20658	-34344	2.224	0	0	0	0	95155	35966	11342	47309		1.38	Si
SLV 5	0.7	14967.32	-25195	-18324	-34562	2.78	2.3878	-21971	16250	13625	95155	44958	14178	59136		1.71	Si
SLV 10	-1.3	-50437.36	-15887	-11555	-31855	2.224	0	0	0	0	95155	35966	11342	47309		1.49	Si
SLV 10	0.7	12279.1	-12703	-9238	-32065	2.78	1.2701	-11077	14715	10223	95155	44958	14178	59136		1.84	Si
SLV 12	-1.3	55039.29	-92076	-66964	27467	2.78	2.3767	-80293	16250	31835	95155	44958	14178	59136		2.15	Si
SLV 12	0.7	1059.67	-88799	-64581	27685	2.78	2.78	-77436	16250	30943	95155	44958	14178	59136		2.14	Si
SLV 11	-1.3	52486.48	-91605	-66622	25642	2.78	2.4511	-79882	16250	31707	95155	44958	14178	59136		2.31	Si
SLV 11	0.7	2155.42	-88329	-64239	25861	2.78	2.78	-77025	16250	30815	95155	44958	14178	59136		2.29	Si
SLD 9	-1.3	-20553.54	-42157	-30660	-15577	2.78	2.7074	-38467	16250	18243	95155	44958	14178	59136		3.8	Si
SLD 9	0.7	10136.5	-38927	-28310	-15675	2.78	2.78	-33945	16250	17364	95155	44958	14178	59136		3.77	Si
SLD 5	-1.3	-20457.48	-47707	-34696	-15861	2.78	2.78	-41602	16250	19754	95155	44958	14178	59136		3.73	Si
SLD 5	0.7	10816.79	-44466	-32339	-15962	2.78	2.78	-38775	16250	18872	95155	44958	14178	59136		3.7	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 0.185 Ta 0.05 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 9	-13138	0.25	145.19	1801.35	2520.53	2160.94	14.88	Si
SLV 10	-13609	0.25	145.19	1859.57	2596.33	2227.95	15.34	Si

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 13	-24374	0.25	145.19	3073.07	4301.13	3687.1	25.39	Si
SLV 14	-25072	0.25	145.19	3143.98	4409.69	3776.83	26.01	Si
SLV 5	-26101	0.25	145.19	3246.58	4569.47	3908.02	26.92	Si
SLV 6	-26571	0.25	145.19	3292.83	4642.6	3967.71	27.33	Si
SLV 15	-47064	0.25	145.19	4885.98	7649.65	6267.82	43.17	Si
SLV 16	-47763	0.25	145.19	4925.77	7740.66	6333.22	43.62	Si
SLV 1	-67581	0.25	145.19	5655.32	10014.47	7834.9	53.96	Si
SLV 2	-68280	0.25	145.19	5666.97	10082	7874.48	54.23	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.05 Ta = 0.0491

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 4	-63108	-93664	-709	0.28	6775.8	0.984	4.14199	3.36438	Si
SLV 3	-62596	-92965	-709	0.282	6723.7	0.984	4.16931	3.36438	Si
SLV 8	-71381	-105063	-212	0.261	7618.9	0.986	3.85311	3.03106	Si
SLV 7	-71036	-104593	-212	0.262	7583.8	0.985	3.86798	3.03106	Si
SLV 12	-62353	-92076	215	0.291	6698.9	0.984	4.29549	3.03106	Si
SLV 11	-62008	-91605	215	0.292	6663.8	0.984	4.31488	3.03106	Si
SLV 2	-46916	-70807	-707	0.356	5126	0.979	5.28797	3.36438	Si
SLV 1	-46405	-70108	-707	0.359	5073.9	0.979	5.33684	3.36438	Si
SLV 16	-33014	-50372	714	0.477	3709.9	0.971	7.13049	3.36438	Si
SLV 15	-32502	-49673	714	0.483	3657.8	0.971	7.22721	3.36438	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.657	SLU 84	Si
V_SLU	8.427	SLU 76	Si
PF_SLV	0.455	SLV 9	No
V_SLV	1.377	SLV 5	Si
PFFP_SLV	14.883	SLV 9	Si
R_SLV	1.231	SLV 4	Si

Maschio 10

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-18.448	1.046	-18.448	-3.284	L2	L4	4.33	0.3	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 81	-1.3	20888.7	-118417	-0.0001905	0.0004492	0.0035	4.33	65101.48	155353.02	155353.02	7.44	No	Si
SLU 81	1.67	5088.79	-80812	-0.0001032	0.0004492	0.0035	4.33	85879.33	128403.17	128403.17	25.23	No	Si
SLU 82	-1.3	21725.09	-118954	-0.0001932	0.0004492	0.0035	4.33	64525.37	155598.66	155598.66	7.16	No	Si
SLU 82	1.67	5185.44	-81390	-0.0001042	0.0004492	0.0035	4.33	85851.9	128884.54	128884.54	24.86	No	Si
SLU 76	-1.3	21507.73	-116016	-0.0001878	0.0004492	0.0035	4.33	67580.46	154255.05	154255.05	7.17	No	Si
SLU 76	1.67	5183.93	-79490	-0.0001017	0.0004492	0.0035	4.33	85907.82	126980.29	126980.29	24.49	No	Si
SLU 73	-1.3	21436.03	-115035	-0.000186	0.0004492	0.0035	4.33	68548.78	153806.11	153806.11	7.18	No	Si
SLU 73	1.67	5146.82	-78650	-0.0001005	0.0004492	0.0035	4.33	85901.16	125968.27	125968.27	24.47	No	Si
SLU 80	-1.3	21021.83	-116640	-0.0001878	0.0004492	0.0035	4.33	66951.71	154540.22	154540.22	7.35	No	Si
SLU 80	1.67	5156.61	-79944	-0.0001022	0.0004492	0.0035	4.33	85903.41	127527.69	127527.69	24.73	No	Si
SLU 75	-1.3	21006.43	-116241	-0.0001871	0.0004492	0.0035	4.33	67355.68	154357.55	154357.55	7.35	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 75	1.67	5140.47	-79593	-0.0001017	0.0004492	0.0035	4.33	85907.31	127104.73	127104.73	24.73	No	Si
SLU 83	-1.3	20960.4	-119398	-0.0001923	0.0004492	0.0035	4.33	64042.61	155801.96	155801.96	7.43	No	Si
SLU 83	1.67	5125.9	-81651	-0.0001044	0.0004492	0.0035	4.33	85836.51	129102.17	129102.17	25.19	No	Si
SLU 52	-1.3	19783.8	-103572	-0.0001641	0.0004492	0.0035	4.33	77912.48	147360.61	147360.61	7.45	No	Si
SLU 52	1.67	4873.09	-70050	-0.0000888	0.0004492	0.0035	4.33	84725.51	115596.62	115596.62	23.72	No	Si
SLU 84	-1.3	21796.79	-119935	-0.0001951	0.0004492	0.0035	4.33	63452.12	156047.6	156047.6	7.16	No	Si
SLU 84	1.67	5222.55	-82229	-0.0001054	0.0004492	0.0035	4.33	85795.84	129583.54	129583.54	24.81	No	Si
SLU 78	-1.3	21078.13	-117222	-0.0001889	0.0004492	0.0035	4.33	66355.08	154806.49	154806.49	7.34	No	Si
SLU 78	1.67	5177.58	-80432	-0.0001029	0.0004492	0.0035	4.33	85892.39	128086.91	128086.91	24.74	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 5	-1.3	45251.15	-103963	-0.0002	0.0006738	0.0035	4.33		165905.64	165905.64	3.67		Si
SLD 5	1.67	3840.03	-73236	-0.000088	0.0006738	0.0035	4.33		128699.47	128699.47	33.52		Si
SLV 10	-1.3	85409.45	-124892	-0.0003109	0.0006738	0.0035	4.33		183923.82	183923.82	2.15		Si
SLV 10	1.67	7371.92	-92646	-0.0001177	0.0006738	0.0035	4.33		152505.14	152505.14	20.69		Si
SLD 9	-1.3	43772.04	-98509	-0.0001896	0.0006738	0.0035	4.33		159696.39	159696.39	3.65		Si
SLD 9	1.67	4864.17	-70140	-0.000086	0.0006738	0.0035	4.33		124903.22	124903.22	25.68		Si
SLV 9	-1.3	88342.75	-126043	-0.0003192	0.0006738	0.0035	4.33		184915.36	184915.36	2.09		Si
SLV 9	1.67	6704.63	-94145	-0.0001185	0.0006738	0.0035	4.33		154344.2	154344.2	23.02		Si
SLV 5	-1.3	91804.68	-138805	-0.0003494	0.0006738	0.0035	4.33		195015.42	195015.42	2.12		Si
SLV 5	1.67	4306.63	-101388	-0.0001235	0.0006738	0.0035	4.33		163226.91	163226.91	37.9		Si
SLV 11	-1.3	-60674.13	-23257	-0.0012712	0.0006738	0.0035	3.464		57624.13	57624.13	0.95		No
SLV 11	1.67	2343.57	-8799	-0.0000128	0.0006738	0.0035	4.33		20250.23	20250.23	8.64		Si
SLV 7	-1.3	-57212.2	-36019	-0.0002135	0.0006738	0.0035	3.464		80561.01	80561.01	1.41		Si
SLV 7	1.67	-54.42	-16042	-0.0000172	0.0006738	0.0035	4.33		43795.87	43795.87	804.72		Si
SLV 12	-1.3	-63607.43	-22106	-0.001621	0.0006738	0.0035	3.464		55416.85	55416.85	0.87		No
SLV 12	1.67	3010.86	-7300	-0.0000122	0.0006738	0.0035	4.33		17185.14	17185.14	5.71		Si
SLV 6	-1.3	88871.38	-137653	-0.0003409	0.0006738	0.0035	4.33		194447.26	194447.26	2.19		Si
SLV 6	1.67	4973.92	-99889	-0.0001227	0.0006738	0.0035	4.33		161387.86	161387.86	32.45		Si
SLV 8	-1.3	-60145.5	-34867	-0.0002757	0.0006738	0.0035	3.464		78565.81	78565.81	1.31		Si
SLV 8	1.67	612.86	-14543	-0.0000164	0.0006738	0.0035	4.33		31809.89	31809.89	51.9		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 71	-1.3	18209.91	-106123	-77181	-2063	4.33	4.33	-59415	10833	38375	95155	46683	22083	68766	No	33.34	Si
SLU 71	1.67	4819.49	-72075	-52418	-1351	4.33	4.33	-40353	10833	28470	95155	46683	22083	68766	No	50.9	Si
SLU 74	-1.3	20170.04	-115704	-84148	-1974	4.33	4.33	-64779	10833	41162	95155	46683	22083	68766	No	34.83	Si
SLU 74	1.67	5043.82	-79015	-57465	-1201	4.33	4.33	-44238	10833	30489	95155	46683	22083	68766	No	57.27	Si
SLU 48	-1.3	16613.97	-95242	-69267	-2003	4.33	4.33	-53323	10833	35210	95155	46683	22083	68766	No	34.33	Si
SLU 48	1.67	4566.73	-63963	-46518	-1368	4.33	4.33	-35811	10833	26111	95155	46683	22083	68766	No	50.28	Si
SLU 66	-1.3	18194.5	-105724	-76890	-2052	4.33	4.33	-59192	10833	38259	95155	46683	22083	68766	No	33.51	Si
SLU 66	1.67	4803.35	-71724	-52163	-1345	4.33	4.33	-40156	10833	28368	95155	46683	22083	68766	No	51.14	Si
SLU 69	-1.3	18266.2	-106706	-77604	-2067	4.33	4.33	-59741	10833	38544	95155	46683	22083	68766	No	33.27	Si
SLU 69	1.67	4840.46	-72563	-52773	-1349	4.33	4.33	-40626	10833	28613	95155	46683	22083	68766	No	50.96	Si
SLU 64	-1.3	18066.51	-104160	-75753	-2033	4.33	4.33	-58316	10833	37804	95155	46683	22083	68766	No	33.83	Si
SLU 64	1.67	4745.26	-70397	-51198	-1342	4.33	4.33	-39413	10833	27982	95155	46683	22083	68766	No	51.25	Si
SLU 79	-1.3	20185.44	-116103	-84438	-1985	4.33	4.33	-65003	10833	41278	95155	46683	22083	68766	No	34.64	Si
SLU 79	1.67	5059.95	-79366	-57720	-1207	4.33	4.33	-44435	10833	30591	95155	46683	22083	68766	No	56.97	Si
SLU 77	-1.3	20241.74	-116685	-84862	-1989	4.33	4.33	-65329	10833	41447	95155	46683	22083	68766	No	34.57	Si
SLU 77	1.67	5080.93	-79854	-58076	-1205	4.33	4.33	-44708	10833	30733	95155	46683	22083	68766	No	57.05	Si
SLU 50	-1.3	16557.68	-94660	-68844	-1998	4.33	4.33	-52998	10833	35040	95155	46683	22083	68766	No	34.41	Si
SLU 50	1.67	4545.76	-63474	-46163	-1369	4.33	4.33	-35537	10833	25969	95155	46683	22083	68766	No	50.22	Si
SLU 45	-1.3	16542.27	-94261	-68553	-1988	4.33	4.33	-52774	10833	34924	95155	46683	22083	68766	No	34.59	Si
SLU 45	1.67	4529.62	-63124	-45908	-1363	4.33	4.33	-35341	10833	25867	95155	46683	22083	68766	No	50.45	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	-1.3	88871.38	-137653	-100111	51433	4.33	4.33	-77068	16250	51299	95155	70024	22083	92107		1.79	Si
SLV 6	1.67	4973.92	-99889	-72646	52098	4.33	4.33	-55925	16250	40313	95155	70024	22083	92107		1.77	Si
SLV 5	-1.3	91804.68	-138805	-100949	54574	4.33	4.33	-77713	16250	51634	95155	70024	22083	92107		1.69	Si
SLV 5	1.67	4306.63	-101388	-73737	55266	4.33	4.33	-56764	16250	40750	95155	70024	22083	92107		1.67	Si
SLV 7	-1.3	-57212.2	-36019	-26196	-52464	3.464	1.7298	0	0	0	95155	56019	17666	73686		1.4	Si
SLV 7	1.67	-54.42	-16042	-11667	-51896	4.33	4.33	-8982	14296	18571	95155	70024	22083	92107		1.77	Si
SLV 10	-1.3	85409.45	-124892	-90830	49410	4.33	4.33	-69923	16250	47587	95155	70024	22083	92107		1.86	Si
SLV 10	1.67	7371.92	-92646	-67379	49906	4.33	4.33	-51870	16250	38206	95155	70024	22083	92107		1.85	Si
SLV 8	-1.3	-60145.5	-34867	-25358	-55605	3.464	1.32	0	0	0	95155	56019	17666	73686		1.33	Si
SLV 8	1.67	612.86	-14543	-10576	-55064	4.33	4.33	-8142	14128	18353	95155	70024	22083	92107		1.67	Si
SLV 9	-1.3	88342.75	-126043	-91668	52551	4.33	4.33	-70568	16250	47922	95155	70024	22083	92107		1.75	Si
SLV 9	1.67	6704.63	-94145	-68469	53074	4.33	4.33	-52709	16250	38643	95155	70024	22083	92107		1.74	Si
SLV 11	-1.3	-60674.13	-23257	-16915	-54487	3.464	0	0	0	0	95155	56019	17666	73686		1.35	Si
SLV 11	1.67	2343.57	-8799	-6400	-54088	4.33	4.33	-4927	13485	17517	95155	70024	22083	92107		1.7	Si
SLV 12	-1.3	-63607.43	-22106	-16077	-57629	3.464	0	0	0	0	95155	56019	17666	73686		1.28	Si
SLV 12	1.67	3010.86	-7300	-5309	-57256	4.33	4.33	-4087	13317	17299	95155	70024	22083	92107		1.61	Si
SLD 12	-1.3	-17053.9	-56948	-41417	-24092	4.33	4.33	-31884	16250	27822	95155	70024	22083	92107		3.82	Si
SLD 12	1.67	3477.46	-35452	-25784	-23595	4.33	4.33	-19849	16250	21569	95155	70024	22083	92107		3.9	Si
SLV 16	-1.3	-16202.21	-42913	-31209	-23288	4.33	4.33	-24026	16250	23739	95155	70024	22083	92107		3.96	Si
SLV 16	1.67	7496.81	-28357	-20624	-23075	4.33	4.33	-15877	15675	20362	95155	70024	22083	92107		3.99	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 0.185 Ta 0.05 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 12	-12891	0.25	226.14	1828.93	2710.52	2269.73	10.04	Si
SLV 11	-14333	0.25	226.14	2020.49	2945.23	2482.86	10.98	Si
SLV 8	-22615	0.25	226.14	3070.06	4281.39	3675.72	16.25	Si
SLV 7	-24057	0.25	226.14	3243.94	4511.2	3877.57	17.15	Si
SLV 16	-34264	0.25	226.14	4399.91	6121.46	5260.68	23.26	Si
SLV 15	-36405	0.25	226.14	4625.8	6455.55	5540.68	24.5	Si
SLV 14	-62608	0.25	226.14	6921.61	10430.62	8676.11	38.37	Si
SLV 13	-64749	0.25	226.14	7071.01	10743.59	8907.3	39.39	Si
SLV 4	-66678	0.25	226.14	7200.63	11009.53	9105.08	40.26	Si
SLV 3	-68820	0.25	226.14	7339.04	11304.2	9321.62	41.22	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.05 Ta = 0.0491

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 5	-101388	-138805	218	0.282	10869.1	0.984	4.16458	3.03106	Si
SLV 6	-99889	-137653	218	0.285	10716.3	0.984	4.21509	3.03106	Si
SLV 9	-94145	-126043	-206	0.299	10131	0.983	4.42511	3.03106	Si
SLV 1	-80331	-117998	713	0.334	8723.3	0.981	4.95524	3.36438	Si
SLV 10	-92646	-124892	-206	0.303	9978.2	0.983	4.48365	3.03106	Si
SLV 2	-78103	-116287	713	0.342	8496.4	0.98	5.07263	3.36438	Si
SLV 13	-56188	-75459	-701	0.449	6263.9	0.973	6.70971	3.36438	Si
SLV 3	-54727	-87162	712	0.459	6115	0.973	6.86064	3.36438	Si
SLV 14	-53961	-73749	-701	0.465	6037.1	0.972	6.94742	3.36438	Si
SLV 4	-52500	-85451	713	0.475	5888.2	0.972	7.11077	3.36438	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.159	SLU 84	Si
V_SLU	33.27	SLU 69	Si
PF_SLV	0.871	SLV 12	No
V_SLV	1.279	SLV 12	Si
PFFP_SLV	10.037	SLV 12	Si
R_SLV	1.374	SLV 5	Si

Maschio 11

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.638	1.046	-24.603	1.046	L2	L4	4.965	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 84	-1.3	-4.82	-186636	-0.0001395	0.0004492	0.0035	4.965	146570.59	276237.86	276237.86	57281.16	No	Si
SLU 84	0.8	-4459.44	-155817	-0.0001173	0.0004492	0.0035	4.965	166035.23	259088.84	259088.84	58.1	No	Si
SLU 82	-1.3	-30.7	-184980	-0.000138	0.0004492	0.0035	4.965	148055.48	275772.62	275772.62	8984.15	No	Si
SLU 82	0.8	-4415.4	-154328	-0.000116	0.0004492	0.0035	4.965	166538.4	258185.82	258185.82	58.47	No	Si
SLU 41	-1.3	-189.73	-158516	-0.0001152	0.0004492	0.0035	4.965	165021	260724.62	260724.62	1374.16	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 41	0.8	-4243.41	-133681	-0.0000988	0.0004492	0.0035	4.965	169356.85	240762.4	240762.4	56.74	No	Si
SLU 81	-1.3	21.15	-184929	-0.0001379	0.0004492	0.0035	4.965	148099.89	270827.31	270827.31	12803.29	No	Si
SLU 81	0.8	-4460.34	-154279	-0.000116	0.0004492	0.0035	4.965	166554.28	258156.1	258156.1	57.88	No	Si
SLU 39	-1.3	-215.61	-156860	-0.0001139	0.0004492	0.0035	4.965	165659.09	259720.81	259720.81	1204.6	No	Si
SLU 39	0.8	-4199.37	-132192	-0.0000976	0.0004492	0.0035	4.965	169260.36	239399.76	239399.76	57.01	No	Si
SLU 37	-1.3	-29.9	-153444	-0.0001108	0.0004492	0.0035	4.965	166818.04	257649.7	257649.7	8616.68	No	Si
SLU 37	0.8	-3826.97	-128861	-0.0000946	0.0004492	0.0035	4.965	168898.53	236352.4	236352.4	61.76	No	Si
SLU 42	-1.3	-241.58	-158566	-0.0001153	0.0004492	0.0035	4.965	165000.8	260755.17	260755.17	1079.36	No	Si
SLU 42	0.8	-4198.47	-133731	-0.0000988	0.0004492	0.0035	4.965	169359.34	240807.25	240807.25	57.36	No	Si
SLU 83	-1.3	47.03	-186585	-0.0001395	0.0004492	0.0035	4.965	146616.53	271694.99	271694.99	5777.56	No	Si
SLU 83	0.8	-4504.38	-155768	-0.0001173	0.0004492	0.0035	4.965	166052.43	259059.12	259059.12	57.51	No	Si
SLU 35	-1.3	-20.54	-154448	-0.0001117	0.0004492	0.0035	4.965	166499.37	258258.56	258258.56	12571.23	No	Si
SLU 35	0.8	-3819.94	-129772	-0.0000953	0.0004492	0.0035	4.965	169017.56	237186.03	237186.03	62.09	No	Si
SLU 40	-1.3	-267.46	-156910	-0.000114	0.0004492	0.0035	4.965	165640.4	259751.37	259751.37	971.19	No	Si
SLU 40	0.8	-4154.43	-132241	-0.0000976	0.0004492	0.0035	4.965	169264.18	239444.61	239444.61	57.64	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 13	-1.3	-22931.26	-100407	-0.000087	0.0006738	0.0035	4.965		219814.57	219814.57	9.59		Si
SLD 13	0.8	2155.12	-79078	-0.0000543	0.0006738	0.0035	4.965		169007.14	169007.14	78.42		Si
SLV 1	-1.3	52838.38	-185109	-0.0001808	0.0006738	0.0035	4.965		318548.79	318548.79	6.03		Si
SLV 1	0.8	-11886.79	-159059	-0.000121	0.0006738	0.0035	4.965		301659.23	301659.23	25.38		Si
SLV 16	-1.3	-52182.95	-65483	-0.0000865	0.0006738	0.0035	4.965		157592.13	157592.13	3.02		Si
SLV 16	0.8	7140.28	-46647	-0.0000362	0.0006738	0.0035	4.965		108509.97	108509.97	15.2		Si
SLV 2	-1.3	52716.66	-184739	-0.0001804	0.0006738	0.0035	4.965		318183.24	318183.24	6.04		Si
SLV 2	0.8	-11619.69	-158800	-0.0001206	0.0006738	0.0035	4.965		301408.82	301408.82	25.94		Si
SLV 14	-1.3	-54323.91	-66735	-0.0000892	0.0006738	0.0035	4.965		159950.58	159950.58	2.94		Si
SLV 14	0.8	8543.59	-46974	-0.0000376	0.0006738	0.0035	4.965		109194.77	109194.77	12.78		Si
SLV 3	-1.3	54979.33	-183857	-0.0001818	0.0006738	0.0035	4.965		317313.37	317313.37	5.77		Si
SLV 3	0.8	-13290.1	-158732	-0.000122	0.0006738	0.0035	4.965		301343.13	301343.13	22.67		Si
SLV 13	-1.3	-54202.2	-67105	-0.0000894	0.0006738	0.0035	4.965		160648.43	160648.43	2.96		Si
SLV 13	0.8	8276.49	-47234	-0.0000375	0.0006738	0.0035	4.965		109737.25	109737.25	13.26		Si
SLD 14	-1.3	-22983.04	-100249	-0.0000869	0.0006738	0.0035	4.965		219550.91	219550.91	9.55		Si
SLD 14	0.8	2268.75	-78968	-0.0000543	0.0006738	0.0035	4.965		168806.84	168806.84	74.41		Si
SLV 15	-1.3	-52061.24	-65853	-0.0000867	0.0006738	0.0035	4.965		158289.98	158289.98	3.04		Si
SLV 15	0.8	6873.18	-46906	-0.0000362	0.0006738	0.0035	4.965		109052.45	109052.45	15.87		Si
SLV 4	-1.3	54857.62	-183487	-0.0001814	0.0006738	0.0035	4.965		316947.82	316947.82	5.78		Si
SLV 4	0.8	-13023	-158472	-0.0001216	0.0006738	0.0035	4.965		301092.72	301092.72	23.12		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	-1.3	-30.7	-184980	-147984	-20050	4.965	4.965	-66234	10833	72098	95155	80293	25321	105615	No	5.27	Si
SLU 82	0.8	-4415.4	-154328	-123462	-20296	4.965	4.965	-55259	10833	62290	95155	80293	25321	105615	No	5.2	Si
SLU 84	-1.3	-4.82	-186636	-149309	-20211	4.965	4.965	-66827	10833	72628	95155	80293	25321	105615	No	5.23	Si
SLU 84	0.8	-4459.44	-155817	-124654	-20459	4.965	4.965	-55792	10833	62766	95155	80293	25321	105615	No	5.16	Si
SLU 80	-1.3	155.01	-181564	-145251	-20042	4.965	4.965	-65011	10833	71005	95155	80293	25321	105615	No	5.27	Si
SLU 80	0.8	-4043	-150997	-120797	-20284	4.965	4.965	-54066	10833	61224	95155	80293	25321	105615	No	5.21	Si
SLU 75	-1.3	138.5	-180912	-144730	-19988	4.965	4.965	-64778	10833	70796	95155	80293	25321	105615	No	5.28	Si
SLU 75	0.8	-3991.93	-150418	-120335	-20230	4.965	4.965	-53859	10833	61039	95155	80293	25321	105615	No	5.22	Si
SLU 77	-1.3	216.22	-182517	-146014	-20102	4.965	4.965	-65353	10833	71310	95155	80293	25321	105615	No	5.25	Si
SLU 77	0.8	-4080.91	-151859	-121487	-20345	4.965	4.965	-54375	10833	61500	95155	80293	25321	105615	No	5.19	Si
SLU 79	-1.3	206.86	-181513	-145211	-19994	4.965	4.965	-64993	10833	70989	95155	80293	25321	105615	No	5.28	Si
SLU 79	0.8	-4087.94	-150948	-120758	-20237	4.965	4.965	-54049	10833	61208	95155	80293	25321	105615	No	5.22	Si
SLU 83	-1.3	47.03	-186585	-149268	-20163	4.965	4.965	-66809	10833	72612	95155	80293	25321	105615	No	5.24	Si
SLU 83	0.8	-4504.38	-155768	-124615	-20411	4.965	4.965	-55775	10833	62751	95155	80293	25321	105615	No	5.17	Si
SLU 81	-1.3	21.15	-184929	-147944	-20002	4.965	4.965	-66216	10833	72082	95155	80293	25321	105615	No	5.28	Si
SLU 81	0.8	-4460.34	-154279	-123423	-20249	4.965	4.965	-55241	10833	62274	95155	80293	25321	105615	No	5.22	Si
SLU 74	-1.3	190.34	-180862	-144689	-19941	4.965	4.965	-64760	10833	70780	95155	80293	25321	105615	No	5.3	Si
SLU 74	0.8	-4036.87	-150369	-120296	-20183	4.965	4.965	-53842	10833	61023	95155	80293	25321	105615	No	5.23	Si
SLU 78	-1.3	164.37	-182568	-146054	-20149	4.965	4.965	-65371	10833	71326	95155	80293	25321	105615	No	5.24	Si
SLU 78	0.8	-4035.97	-151908	-121526	-20393	4.965	4.965	-54392	10833	61515	95155	80293	25321	105615	No	5.18	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	-1.3	-19255.66	-109807	-87846	-27745	4.965	4.965	-39318	16250	54497	95155	120440	25321	145762		5.25	Si
SLV 9	0.8	2900.18	-86712	-69370	-27991	4.965	4.965	-31048	16250	47107	95155	120440	25321	142262		5.08	Si
SLV 14	-1.3	-54323.91	-66735	-53388	-44120	4.965	4.965	-23895	16250	40714	95155	120440	25321	135870		3.08	Si
SLV 14	0.8	8543.59	-46974	-37579	-44716	4.965	4.965	-16820	15864	35444	95155	120440	25321	130599		2.92	Si
SLV 13	-1.3	-54202.2	-67105	-53684	-44065	4.965	4.965	-24028	16250	40833	95155	120440	25321	135988		3.09	Si
SLV 13	0.8	8276.49	-47234	-37787	-44663	4.965	4.965	-16913	15883	35485	95155	120440	25321	130641		2.93	Si
SLD 14	-1.3	-22983.04	-100249	-80199	-27110	4.965	4.965	-35895	16250	51438	95155	120440	25321	145762		5.38	Si
SLD 14	0.8	2268.75	-78968	-63174	-27469	4.965	4.965	-28275	16250	44629	95155	120440	25321	139784		5.09	Si
SLD 16	-1.3	-22134.43	-99746	-79797	-25946	4.965	4.965	-35715	16250	51277	95155	120440	25321	145762		5.62	Si
SLD 16	0.8	1710.66	-78836	-63069	-26321	4.965	4.965	-28228	16250	44587	95155	120440	25321	139742		5.31	Si
SLV 10	-1.3	-19337.61	-109558	-87646	-27782	4.965	4.965	-39228	16250	54417	95155	120440	25321	145762		5.25	Si
SLV 10	0.8	3080	-86538	-69230	-28027	4.965	4.965	-30986	16250	47051	95155	120440	25321	142206		5.07	Si
SLV 15	-1.3	-52061.24	-65853	-52683	-41164	4.965	4.965	-23580	16250	40432	95155	120440	25321	135588		3.29	Si
SLV 15	0.8	6873.18	-46906	-37525	-41798	4.965	4.965	-16795	15859	35433	95155	120440	25321	130588		3.12	Si
SLD 13	-1.3	-22931.26	-100407	-80325	-27086	4.965	4.965	-35952	16250	51489	95155	120440	25321	145762		5.38	Si
SLD 13	0.8	2155.12	-79078	-63262	-27446	4.965	4.965	-28315	16250	44664	95155	120440	25321	139819		5.09	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 15	-1.3	-22082.65	-99903	-79923	-25922	4.965	4.965	-35772	16250	51328	95155	120440	25321	145762		5.62	Si
SLD 15	0.8	1597.03	-78947	-63157	-26299	4.965	4.965	-28268	16250	44622	95155	120440	25321	139777		5.32	Si
SLV 16	-1.3	-52182.95	-65483	-52386	-41219	4.965	4.965	-23447	16250	40314	95155	120440	25321	135469		3.29	Si
SLV 16	0.8	7140.28	-46647	-37317	-41851	4.965	4.965	-16702	15840	35392	95155	120440	25321	130547		3.12	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 0.185 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 16	-52002	0.25	381.56	10214.53	13184.45	11699.49	30.66	Si
SLV 15	-52283	0.25	381.56	10261.75	13248.84	11755.3	30.81	Si
SLV 14	-52475	0.25	381.56	10293.83	13292.65	11793.24	30.91	Si
SLV 13	-52756	0.25	381.56	10340.91	13357.04	11848.98	31.05	Si
SLV 12	-90134	0.25	381.56	15816.24	21502.75	18659.5	48.9	Si
SLV 11	-90323	0.25	381.56	15840.1	21540.25	18690.18	48.98	Si
SLV 10	-91711	0.25	381.56	16013.54	21814.72	18914.13	49.57	Si
SLV 9	-91901	0.25	381.56	16037.07	21852.21	18944.64	49.65	Si
SLV 8	-123252	0.25	381.56	19384.88	27652.34	23518.61	61.64	Si
SLV 7	-123442	0.25	381.56	19401.84	27684.04	23542.94	61.7	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 3	-136236	-183857	323	0.273	14807.1	0.98	4.04408	3.00264	Si
SLV 1	-137356	-185109	64	0.273	14921.3	0.98	4.04746	3.00264	Si
SLV 4	-136035	-183487	318	0.273	14786.7	0.98	4.04884	3.00264	Si
SLV 2	-137155	-184739	59	0.273	14900.8	0.98	4.05219	3.00264	Si
SLV 5	-107585	-145208	-366	0.322	11888.3	0.976	4.79796	2.80694	Si
SLV 6	-107450	-144959	-369	0.322	11874.5	0.976	4.80201	2.80694	Si
SLV 7	-103851	-141035	498	0.329	11507.9	0.975	4.90858	2.80694	Si
SLV 8	-103716	-140785	495	0.33	11494.2	0.975	4.91384	2.80694	Si
SLV 9	-80975	-109807	-474	0.396	9178.3	0.969	5.94311	2.80694	Si
SLV 10	-80840	-109558	-478	0.397	9164.6	0.969	5.95026	2.80694	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	56.738	SLU 41	Si
V_SLU	5.162	SLU 84	Si
PF_SLV	2.944	SLV 14	Si
V_SLV	2.921	SLV 14	Si
PFFP_SLV	30.662	SLV 16	Si
R_SLV	1.347	SLV 3	Si

Maschio 12

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-14.963	1.046	-18.838	1.046	L2	L4	3.875	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 81	-1.3	-20732.09	-144372	-0.0001755	0.0004492	0.0035	3.875	90182.43	167641.9	167641.9	8.09	No	Si
SLU 81	0.8	-14643.35	-139080	-0.0001579	0.0004492	0.0035	3.875	93569.95	166005.82	166005.82	11.34	No	Si
SLU 75	-1.3	-20467.87	-140908	-0.0001707	0.0004492	0.0035	3.875	92457.16	166826.58	166826.58	8.15	No	Si
SLU 75	0.8	-13970.36	-135614	-0.0001525	0.0004492	0.0035	3.875	95512.38	164301.63	164301.63	11.76	No	Si
SLU 77	-1.3	-20549.91	-142521	-0.0001729	0.0004492	0.0035	3.875	91425.52	167206.08	167206.08	8.14	No	Si
SLU 77	0.8	-14276.65	-137098	-0.0001548	0.0004492	0.0035	3.875	94707.5	165031.26	165031.26	11.56	No	Si
SLU 76	-1.3	-20433.83	-139967	-0.0001694	0.0004492	0.0035	3.875	93037.59	166442.07	166442.07	8.15	No	Si
SLU 76	0.8	-13789.23	-134757	-0.0001511	0.0004492	0.0035	3.875	95958.98	163880.24	163880.24	11.88	No	Si
SLU 82	-1.3	-20863.88	-144185	-0.0001756	0.0004492	0.0035	3.875	90311.04	167597.81	167597.81	8.03	No	Si
SLU 82	0.8	-14484.53	-139037	-0.0001575	0.0004492	0.0035	3.875	93595.27	165984.77	165984.77	11.46	No	Si
SLU 83	-1.3	-20945.92	-145797	-0.0001778	0.0004492	0.0035	3.875	89183.33	167977.3	167977.3	8.02	No	Si
SLU 83	0.8	-14790.82	-140521	-0.0001599	0.0004492	0.0035	3.875	92698	166714.4	166714.4	11.27	No	Si
SLU 78	-1.3	-20681.7	-142333	-0.0001729	0.0004492	0.0035	3.875	91547.82	167161.98	167161.98	8.08	No	Si
SLU 78	0.8	-14117.83	-137055	-0.0001545	0.0004492	0.0035	3.875	94731.27	165010.21	165010.21	11.69	No	Si
SLU 79	-1.3	-20428.02	-141704	-0.0001716	0.0004492	0.0035	3.875	91953.8	167013.92	167013.92	8.18	No	Si
SLU 79	0.8	-14201.39	-136269	-0.0001537	0.0004492	0.0035	3.875	95161.8	164623.9	164623.9	11.59	No	Si
SLU 80	-1.3	-20559.81	-141517	-0.0001716	0.0004492	0.0035	3.875	92073.32	166969.82	166969.82	8.12	No	Si
SLU 80	0.8	-14042.58	-136226	-0.0001533	0.0004492	0.0035	3.875	95184.93	164602.86	164602.86	11.72	No	Si
SLU 84	-1.3	-21077.71	-145610	-0.0001778	0.0004492	0.0035	3.875	89316.79	167933.21	167933.21	7.97	No	Si
SLU 84	0.8	-14632	-140478	-0.0001595	0.0004492	0.0035	3.875	92724.44	166693.36	166693.36	11.39	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 14	-1.3	-36771.01	-89569	-0.0001306	0.0006738	0.0035	3.875		147441.89	147441.89	4.01		Si
SLD 14	0.8	2610.44	-85473	-0.0000775	0.0006738	0.0035	3.875		136014	136014	52.1		Si
SLV 9	-1.3	-40211.71	-74914	-0.0001211	0.0006738	0.0035	3.875		129022.38	129022.38	3.21		Si
SLV 9	0.8	11590.51	-82526	-0.0000875	0.0006738	0.0035	3.875		132338.85	132338.85	11.42		Si
SLV 10	-1.3	-40021.12	-75012	-0.0001209	0.0006738	0.0035	3.875		129151.23	129151.23	3.23		Si
SLV 10	0.8	11583.72	-82018	-0.000087	0.0006738	0.0035	3.875		131622.79	131622.79	11.36		Si
SLV 3	-1.3	39394.02	-115487	-0.0001611	0.0006738	0.0035	3.875		168790.29	168790.29	4.28		Si
SLV 3	0.8	-38327.81	-109998	-0.0001537	0.0006738	0.0035	3.875		170113.62	170113.62	4.44		Si
SLV 14	-1.3	-67449.55	-78957	-0.0001712	0.0006738	0.0035	3.875		134350.89	134350.89	1.99		Si
SLV 14	0.8	19187.51	-75555	-0.0000917	0.0006738	0.0035	3.875		122508.91	122508.91	6.38		Si
SLV 15	-1.3	-61126.26	-89861	-0.0001674	0.0006738	0.0035	3.875		147779.38	147779.38	2.42		Si
SLV 15	0.8	10937.06	-79904	-0.0000841	0.0006738	0.0035	3.875		128641.54	128641.54	11.76		Si
SLV 13	-1.3	-67732.62	-78812	-0.0001717	0.0006738	0.0035	3.875		134159.51	134159.51	1.98		Si
SLV 13	0.8	19197.58	-76309	-0.0000924	0.0006738	0.0035	3.875		123572.48	123572.48	6.44		Si
SLV 4	-1.3	39677.09	-115632	-0.0001616	0.0006738	0.0035	3.875		168948.88	168948.88	4.26		Si
SLV 4	0.8	-38337.89	-109244	-0.0001529	0.0006738	0.0035	3.875		169363.09	169363.09	4.42		Si
SLD 13	-1.3	-36891.44	-89508	-0.0001307	0.0006738	0.0035	3.875		147370.44	147370.44	3.99		Si
SLD 13	0.8	2614.72	-85794	-0.0000778	0.0006738	0.0035	3.875		136364.36	136364.36	52.15		Si
SLV 16	-1.3	-60843.19	-90006	-0.0001671	0.0006738	0.0035	3.875		147947.33	147947.33	2.43		Si
SLV 16	0.8	10926.99	-79150	-0.0000834	0.0006738	0.0035	3.875		127577.98	127577.98	11.68		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 28	-1.3	-15948.89	-107955	-86364	-672	3.875	3.875	-49528	10833	44617	95155	62666	19763	82429	No	122.67	Si
SLU 28	0.8	-10251.47	-103719	-82976	-654	3.875	3.875	-47585	10833	43262	95155	62666	19763	82429	No	126.02	Si
SLU 68	-1.3	-18726.45	-127092	-101674	-677	3.875	3.875	-58307	10833	50741	95155	62666	19763	82429	No	121.77	Si
SLU 68	0.8	-12069.82	-121474	-97179	-656	3.875	3.875	-55730	10833	48943	95155	62666	19763	82429	No	125.71	Si
SLU 72	-1.3	-18852.42	-128642	-102913	-675	3.875	3.875	-59018	10833	51237	95155	62666	19763	82429	No	122.03	Si
SLU 72	0.8	-12323.16	-122943	-98355	-654	3.875	3.875	-56404	10833	49413	95155	62666	19763	82429	No	126	Si
SLU 67	-1.3	-18760.48	-128033	-102427	-669	3.875	3.875	-58739	10833	51042	95155	62666	19763	82429	No	123.2	Si
SLU 67	0.8	-12250.95	-122331	-97864	-648	3.875	3.875	-56123	10833	49217	95155	62666	19763	82429	No	127.23	Si
SLU 26	-1.3	-15701.03	-105588	-84471	-660	3.875	3.875	-48442	10833	43860	95155	62666	19763	82429	No	124.88	Si
SLU 26	0.8	-9922.87	-101421	-81137	-642	3.875	3.875	-46530	10833	42527	95155	62666	19763	82429	No	128.32	Si
SLU 69	-1.3	-18842.52	-129646	-103716	-657	3.875	3.875	-59479	10833	51558	95155	62666	19763	82429	No	125.47	Si
SLU 69	0.8	-12557.23	-123815	-99052	-636	3.875	3.875	-56804	10833	49692	95155	62666	19763	82429	No	129.64	Si
SLU 25	-1.3	-15735.06	-106530	-85224	-652	3.875	3.875	-48874	10833	44161	95155	62666	19763	82429	No	126.39	Si
SLU 25	0.8	-10104	-102278	-81823	-635	3.875	3.875	-46923	10833	42801	95155	62666	19763	82429	No	129.91	Si
SLU 65	-1.3	-18512.61	-125667	-100534	-657	3.875	3.875	-57654	10833	50285	95155	62666	19763	82429	No	125.43	Si
SLU 65	0.8	-11922.35	-120032	-96026	-636	3.875	3.875	-55069	10833	48482	95155	62666	19763	82429	No	129.58	Si
SLU 70	-1.3	-18974.31	-129458	-103567	-689	3.875	3.875	-59393	10833	51498	95155	62666	19763	82429	No	119.67	Si
SLU 70	0.8	-12398.42	-123772	-99017	-667	3.875	3.875	-56784	10833	49679	95155	62666	19763	82429	No	123.51	Si
SLU 30	-1.3	-15827	-107138	-85711	-659	3.875	3.875	-49153	10833	44356	95155	62666	19763	82429	No	125.16	Si
SLU 30	0.8	-10176.21	-102891	-82313	-641	3.875	3.875	-47204	10833	42997	95155	62666	19763	82429	No	128.62	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	-1.3	-61126.26	-89861	-71889	-36797	3.875	3.7718	-43251	16250	43864	95155	93999	19763	113762		3.09	Si
SLV 15	0.8	10937.06	-79904	-63923	-36180	3.875	3.875	-36658	16250	40678	95155	93999	19763	113762		3.14	Si
SLV 14	-1.3	-67449.55	-78957	-63166	-38828	3.875	3.2497	-44121	16250	40375	95155	93999	19763	113762		2.93	Si
SLV 14	0.8	19187.51	-75555	-60444	-38225	3.875	3.875	-34663	16250	39287	95155	93999	19763	113762		2.98	Si
SLV 3	-1.3	39394.02	-115487	-92389	38182	3.875	3.875	-52983	16250	52064	95155	93999	19763	113762		2.98	Si
SLV 3	0.8	-38327.81	-109998	-87998	37611	3.875	3.875	-50465	16250	50308	95155	93999	19763	113762		3.02	Si
SLV 16	-1.3	-60843.19	-90006	-72005	-37320	3.875	3.7845	-43174	16250	43911	95155	93999	19763	113762		3.05	Si
SLV 16	0.8	10926.99	-79150	-63320	-36705	3.875	3.875	-36312	16250	40437	95155	93999	19763	113762		3.1	Si
SLV 1	-1.3	32787.66	-104438	-83550	36675	3.875	3.875	-47914	16250	48529	95155	93999	19763	113762		3.1	Si
SLV 1	0.8	-30067.29	-106403	-85123	36091	3.875	3.875	-48816	16250	49158	95155	93999	19763	113762		3.15	Si
SLD 13	-1.3	-36891.44	-89508	-71606	-16534	3.875	3.875	-41064	16250	43751	95155	93999	19763	113762		6.88	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 13	0.8	2614.72	-85794	-68635	-16266	3.875	3.875	-39361	16250	42563	95155	93999	19763	113762		6.99	Si
SLD 14	-1.3	-36771.01	-89569	-71656	-16757	3.875	3.875	-41093	16250	43771	95155	93999	19763	113762		6.79	Si
SLD 14	0.8	2610.44	-85473	-68378	-16490	3.875	3.875	-39213	16250	42460	95155	93999	19763	113762		6.9	Si
SLV 4	-1.3	39677.09	-115632	-92506	37659	3.875	3.875	-53050	16250	52111	95155	93999	19763	113762		3.02	Si
SLV 4	0.8	-38337.89	-109244	-87395	37087	3.875	3.875	-50119	16250	50066	95155	93999	19763	113762		3.07	Si
SLV 2	-1.3	33070.73	-104583	-83666	36151	3.875	3.875	-47981	16250	48575	95155	93999	19763	113762		3.15	Si
SLV 2	0.8	-30077.37	-105649	-84519	35567	3.875	3.875	-48470	16250	48916	95155	93999	19763	113762		3.2	Si
SLV 13	-1.3	-67732.62	-78812	-63050	-38304	3.875	3.2342	-44253	16250	40329	95155	93999	19763	113762		2.97	Si
SLV 13	0.8	19197.58	-76309	-61047	-37700	3.875	3.875	-35009	16250	39528	95155	93999	19763	113762		3.02	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 0.185 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 14	-76092	0.25	297.79	13044.51	17904.41	15474.46	51.96	Si
SLV 13	-76580	0.25	297.79	13101.8	18000.77	15551.29	52.22	Si
SLV 10	-79577	0.25	297.79	13446.71	18577.56	16012.13	53.77	Si
SLV 9	-79906	0.25	297.79	13483.71	18639.19	16061.45	53.93	Si
SLV 16	-81908	0.25	297.79	13706.19	19015.28	16360.73	54.94	Si
SLV 15	-82396	0.25	297.79	13759.49	19106.82	16433.16	55.18	Si
SLV 6	-88312	0.25	297.79	14379.64	20194.65	17287.15	58.05	Si
SLV 5	-88641	0.25	297.79	14412.61	20252.73	17332.67	58.2	Si
SLV 12	-98965	0.25	297.79	15371.94	22039.6	18705.77	62.81	Si
SLV 11	-99293	0.25	297.79	15399.98	22094.44	18747.21	62.95	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 1	-92894	-104438	69	0.302	10187.8	0.978	4.4857	3.00264	Si
SLV 3	-92322	-115487	128	0.303	10129.5	0.978	4.49704	3.00264	Si
SLV 2	-91995	-104583	59	0.304	10096.3	0.978	4.51934	3.00264	Si
SLV 4	-91423	-115632	118	0.305	10038	0.977	4.53099	3.00264	Si
SLV 5	-81782	-82602	-56	0.331	9055.9	0.975	4.93298	2.80694	Si
SLV 6	-81177	-82699	-63	0.333	8994.2	0.975	4.95948	2.80694	Si
SLV 7	-79875	-119432	140	0.336	8861.6	0.975	5.00668	2.80694	Si
SLV 8	-79270	-119530	134	0.338	8800	0.974	5.03667	2.80694	Si
SLV 9	-71811	-74914	-104	0.364	8040.4	0.972	5.43623	2.80694	Si
SLV 10	-71206	-75012	-110	0.366	7978.7	0.972	5.4704	2.80694	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.967	SLU 84	Si
V_SLU	119.672	SLU 70	Si
PF_SLV	1.981	SLV 13	Si
V_SLV	2.93	SLV 14	Si
PFFP_SLV	51.964	SLV 14	Si
R_SLV	1.494	SLV 1	Si

Maschio 15

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.618	6.576	-17.768	6.576	L2	L4	1.85	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	0.7	-405.13	-22664	-0.0000463	0.0003743	0.0035	1.85	15358.52	17641.65	17641.65	43.55	No	Si
SLU 79	1.1	-4421.77	-21779	-0.0000711	0.0003743	0.0035	1.85	14968.97	17129.7	17129.7	3.87	No	Si
SLU 82	0.7	-408.44	-22642	-0.0000463	0.0003743	0.0035	1.85	15348.81	17629.23	17629.23	43.16	No	Si
SLU 82	1.1	-4411.57	-21756	-0.0000709	0.0003743	0.0035	1.85	14958.82	17116.53	17116.53	3.88	No	Si
SLU 75	0.7	-384.06	-22250	-0.0000453	0.0003743	0.0035	1.85	15178.46	17405.81	17405.81	45.32	No	Si
SLU 75	1.1	-4322.75	-21365	-0.0000695	0.0003743	0.0035	1.85	14780.91	16888.63	16888.63	3.91	No	Si
SLU 80	0.7	-389.6	-22405	-0.0000456	0.0003743	0.0035	1.85	15246.13	17496.8	17496.8	44.91	No	Si
SLU 80	1.1	-4358.66	-21519	-0.00007	0.0003743	0.0035	1.85	14851.56	16978.47	16978.47	3.9	No	Si
SLU 78	0.7	-397.13	-22592	-0.0000461	0.0003743	0.0035	1.85	15327.25	17601.69	17601.69	44.32	No	Si
SLU 78	1.1	-4396	-21706	-0.0000707	0.0003743	0.0035	1.85	14936.3	17087.37	17087.37	3.89	No	Si
SLU 77	0.7	-412.65	-22851	-0.0000467	0.0003743	0.0035	1.85	15438.59	17744.24	17744.24	43	No	Si
SLU 77	1.1	-4459.11	-21966	-0.0000717	0.0003743	0.0035	1.85	15052.65	17239	17239	3.87	No	Si
SLU 84	0.7	-421.52	-22983	-0.0000471	0.0003743	0.0035	1.85	15494.68	17816.37	17816.37	42.27	No	Si
SLU 84	1.1	-4484.81	-22098	-0.0000722	0.0003743	0.0035	1.85	15111.3	17316.39	17316.39	3.86	No	Si
SLU 81	0.7	-423.97	-22901	-0.0000469	0.0003743	0.0035	1.85	15459.86	17771.57	17771.57	41.92	No	Si
SLU 81	1.1	-4474.68	-22016	-0.0000719	0.0003743	0.0035	1.85	15074.89	17268.27	17268.27	3.86	No	Si
SLU 74	0.7	-399.58	-22510	-0.0000459	0.0003743	0.0035	1.85	15291.73	17556.37	17556.37	43.94	No	Si
SLU 74	1.1	-4385.86	-21624	-0.0000705	0.0003743	0.0035	1.85	14899.19	17039.52	17039.52	3.89	No	Si
SLU 83	0.7	-437.04	-23243	-0.0000477	0.0003743	0.0035	1.85	15603.8	17957.25	17957.25	41.09	No	Si
SLU 83	1.1	-4547.92	-22357	-0.0000732	0.0003743	0.0035	1.85	15225.43	17468.87	17468.87	3.84	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 9	0.7	1763.86	10610	1.5072138	0.0005615	0.0035	1.48		0	0	0		No
SLV 9	1.1	2805.2	11520	1.6324154	0.0005615	0.0035	1.48		0	0	0		No
SLV 11	0.7	-1235.12	-39631	-0.0000855	0.0005615	0.0035	1.85		28586.49	28586.49	23.14		Si
SLV 11	1.1	-9393.98	-39225	-0.0001407	0.0005615	0.0035	1.85		28417.01	28417.01	3.03		Si
SLV 5	0.7	691.86	9923	1.4137084	0.0005615	0.0035	1.48		0	0	0		No
SLV 5	1.1	3932.27	10875	1.5346108	0.0005615	0.0035	1.48		0	0	0		No
SLV 15	0.7	1036.19	-21063	-0.000046	0.0005615	0.0035	1.85		16815.23	16815.23	16.23		Si
SLV 15	1.1	-6344.04	-20529	-0.0000785	0.0005615	0.0035	1.85		17441.46	17441.46	2.75		Si
SLV 10	0.7	1883.33	9862	1.3997888	0.0005615	0.0035	1.48		0	0	0		No
SLV 10	1.1	2413.13	10772	1.5273404	0.0005615	0.0035	1.48		0	0	0		No
SLV 6	0.7	811.34	9174	1.3063453	0.0005615	0.0035	1.48		0	0	0		No
SLV 6	1.1	3540.19	10126	1.4296036	0.0005615	0.0035	1.48		0	0	0		No
SLV 12	0.7	-1115.65	-40380	-0.0000863	0.0005615	0.0035	1.85		28899.82	28899.82	25.9		Si
SLV 12	1.1	-9786.06	-39973	-0.0001452	0.0005615	0.0035	1.85		28729.41	28729.41	2.94		Si
SLV 16	0.7	1213.64	-22175	-0.0000493	0.0005615	0.0035	1.85		17591.28	17591.28	14.49		Si
SLV 16	1.1	-6926.39	-21640	-0.0000847	0.0005615	0.0035	1.85		18208.02	18208.02	2.63		Si
SLV 13	0.7	1935.88	-5991	-0.0000225	0.0005615	0.0035	1.85		5510.21	5510.21	2.85		Si
SLV 13	1.1	-2684.29	-5305	-0.0000287	0.0005615	0.0035	1.85		5593.25	5593.25	2.08		Si
SLV 14	0.7	2113.34	-7102	-0.0000256	0.0005615	0.0035	1.85		6455	6455	3.05		Si
SLV 14	1.1	-3266.64	-6417	-0.0000351	0.0005615	0.0035	1.85		6534.22	6534.22	2		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	0.7	-437.04	-23243	-20660	10321	1.85	1.85	-24817	10253	8536	33304	24929	4717	29646	No	2.87	Si
SLU 83	1.1	-4547.92	-22357	-19873	10321	1.85	1.85	-23872	10127	8431	33304	24929	4717	29646	No	2.87	Si
SLU 82	0.7	-408.44	-22642	-20126	10052	1.85	1.85	-24175	10168	8465	33304	24929	4717	29646	No	2.95	Si
SLU 82	1.1	-4411.57	-21756	-19339	10052	1.85	1.85	-23230	10042	8360	33304	24929	4717	29646	No	2.95	Si
SLU 78	0.7	-397.13	-22592	-20081	10041	1.85	1.85	-24122	10161	8459	33304	24929	4717	29646	No	2.95	Si
SLU 78	1.1	-4396	-21706	-19294	10041	1.85	1.85	-23177	10035	8354	33304	24929	4717	29646	No	2.95	Si
SLU 75	0.7	-384.06	-22250	-19778	9891	1.85	1.85	-23757	10112	8418	33304	24929	4717	29646	No	3	Si
SLU 75	1.1	-4322.75	-21365	-18991	9891	1.85	1.85	-22812	9986	8313	33304	24929	4717	29646	No	3	Si
SLU 80	0.7	-389.6	-22405	-19915	9967	1.85	1.85	-23922	10134	8437	33304	24929	4717	29646	No	2.97	Si
SLU 80	1.1	-4358.66	-21519	-19128	9967	1.85	1.85	-22977	10008	8332	33304	24929	4717	29646	No	2.97	Si
SLU 74	0.7	-399.58	-22510	-20009	10010	1.85	1.85	-24034	10149	8449	33304	24929	4717	29646	No	2.96	Si
SLU 74	1.1	-4385.86	-21624	-19222	10010	1.85	1.85	-23089	10023	8344	33304	24929	4717	29646	No	2.96	Si
SLU 77	0.7	-412.65	-22851	-20312	10160	1.85	1.85	-24399	10198	8490	33304	24929	4717	29646	No	2.92	Si
SLU 77	1.1	-4459.11	-21966	-19525	10160	1.85	1.85	-23454	10072	8385	33304	24929	4717	29646	No	2.92	Si
SLU 81	0.7	-423.97	-22901	-20357	10171	1.85	1.85	-24452	10205	8495	33304	24929	4717	29646	No	2.91	Si
SLU 81	1.1	-4474.68	-22016	-19570	10171	1.85	1.85	-23507	10079	8391	33304	24929	4717	29646	No	2.91	Si
SLU 84	0.7	-421.52	-22983	-20430	10202	1.85	1.85	-24540	10216	8505	33304	24929	4717	29646	No	2.91	Si
SLU 84	1.1	-4484.81	-22098	-19643	10202	1.85	1.85	-23595	10090	8400	33304	24929	4717	29646	No	2.91	Si
SLU 79	0.7	-405.13	-22664	-20146	10086	1.85	1.85	-24199	10171	8467	33304	24929	4717	29646	No	2.94	Si
SLU 79	1.1	-4421.77	-21779	-19359	10086	1.85	1.85	-23254	10045	8362	33304	24929	4717	29646	No	2.94	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	0.7	-2307.12	-40319	-35839	15493	1.85	1.85	-43050	16250	13564	33304	37393	4717	42111		2.72	Si
SLV 7	1.1	-8266.91	-39870	-35440	15567	1.85	1.85	-42571	16250	13528	33304	37393	4717	42111		2.71	Si
SLD 11	0.7	-592.93	-24983	-22207	12510	1.85	1.85	-26675	15752	13113	33304	37393	4717	42111		3.37	Si
SLD 11	1.1	-5498.78	-24431	-21717	12523	1.85	1.85	-26086	15634	13015	33304	37393	4717	42111		3.36	Si
SLV 14	0.7	2113.34	-7102	-6313	13143	1.85	1.85	-7583	11933	9934	33304	37393	4717	42111		3.2	Si
SLV 14	1.1	-3266.64	-6417	-5704	13047	1.85	1.2478	-10206	12458	6995	33304	37393	4717	40300		3.09	Si
SLV 8	0.7	-2187.64	-41067	-36504	16771	1.85	1.85	-43849	16250	13742	33304	37393	4717	42111		2.51	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	1.1	-8658.99	-40619	-36106	16846	1.85	1.85	-43370	16250	13635	33304	37393	4717	42111		2.5	Si
SLV 16	0.7	1213.64	-22175	-19711	20345	1.85	1.85	-23677	15152	12614	33304	37393	4717	42111		2.07	Si
SLV 16	1.1	-6926.39	-21640	-19236	20279	1.85	1.8148	-23106	15038	12281	33304	37393	4717	42111		2.08	Si
SLV 15	0.7	1036.19	-21063	-18723	18445	1.85	1.85	-22490	14915	12416	33304	37393	4717	42111		2.28	Si
SLV 15	1.1	-6344.04	-20529	-18248	18379	1.85	1.8479	-21919	14801	12307	33304	37393	4717	42111		2.29	Si
SLV 11	0.7	-1235.12	-39631	-35228	20876	1.85	1.85	-42315	16250	13528	33304	37393	4717	42111		2.02	Si
SLV 11	1.1	-9393.98	-39225	-34866	20902	1.85	1.85	-41881	16250	13528	33304	37393	4717	42111		2.01	Si
SLD 12	0.7	-543.13	-25295	-22484	13043	1.85	1.85	-27008	15818	13169	33304	37393	4717	42111		3.23	Si
SLD 12	1.1	-5662.21	-24743	-21994	13056	1.85	1.85	-26419	15700	13071	33304	37393	4717	42111		3.23	Si
SLD 16	0.7	413.84	-17994	-15995	12502	1.85	1.85	-19213	14259	11871	33304	37393	4717	42111		3.37	Si
SLD 16	1.1	-4578.7	-17381	-15449	12475	1.85	1.85	-18558	14128	11762	33304	37393	4717	42111		3.38	Si
SLV 12	0.7	-1115.65	-40380	-35893	22155	1.85	1.85	-43115	16250	13579	33304	37393	4717	42111		1.9	Si
SLV 12	1.1	-9786.06	-39973	-35532	22181	1.85	1.85	-42681	16250	13528	33304	37393	4717	42111		1.9	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.185 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.25	0	9383	139.9	0	0	No, Trazione
SLV 10	179667	0.25	0	9040	139.9	0	0	No, Trazione
SLV 5	179667	0.25	0	6837	139.9	0	0	No, Trazione
SLV 6	179667	0.25	0	6494	139.9	0	0	No, Trazione
SLV 13	179667	0.25	2753	-2292	139.9	506.38	3.62	Si
SLV 14	179667	0.25	3365	-2802	139.9	616.51	4.41	Si
SLV 1	179667	0.25	12945	-10777	139.9	2219.23	15.86	Si
SLV 2	179667	0.25	13558	-11287	139.9	2314.05	16.54	Si
SLV 15	179667	0.25	17917	-14916	139.9	2962.29	21.18	Si
SLV 16	179667	0.25	18529	-15425	139.9	3049.63	21.8	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 12	-38189	-25261	-1521	0.299	4236.3	0.975	4.46469	2.80694	Si
SLV 8	-37706	-30562	-1427	0.304	4187.1	0.974	4.54149	2.80694	Si
SLV 11	-37298	-25572	-1474	0.306	4145.6	0.974	4.55991	2.80694	Si
SLV 7	-36815	-30873	-1380	0.311	4096.4	0.974	4.63971	2.80694	Si
SLV 16	-21893	-7872	-1034	0.471	2577.5	0.96	7.1277	3.00264	Si
SLV 15	-20570	-8334	-965	0.497	2442.9	0.958	7.53653	3.00264	Si
SLV 4	-20284	-25543	-720	0.513	2413.9	0.957	7.78633	3.00264	Si
SLV 3	-18961	-26005	-651	0.543	2279.4	0.955	8.26985	3.00264	Si
SLV 14	-7258	1667	-512	1.135	1095.2	0.918	17.98118	3.00264	Si, Trazione
SLV 13	-5935	1205	-443	1.316	963.1	0.91	21.0158	3.00264	Si, Trazione

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.841	SLU 83	Si
V_SLU	2.872	SLU 83	Si
PF_SLV	0	SLV 5	No
V_SLV	1.898	SLV 12	Si
PFFP_SLV	0	SLV 10	No
R_SLV	1.591	SLV 12	Si

Maschio 16

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-17.053	-4.784	-17.053	-3.284	L2	L4	1.5	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Esterna	100	100	100	100	1	CNR DT215	0.8			0.008				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 80	-1.3	13166.89	-14540	-0.0012268	0.0003743	0.0035	1.5	0	17461.15	17461.15	1.33	No	Si
SLU 80	1.67	2916.12	-16658	-0.0000684	0.0003743	0.0035	1.5	9465.3	18131.07	18131.07	6.22	No	Si
SLU 82	-1.3	13497.97	-14935	-0.0012951	0.0003743	0.0035	1.5	0	17589.64	17589.64	1.3	No	Si
SLU 82	1.67	2965.67	-17070	-0.00007	0.0003743	0.0035	1.5	9622.6	18253.99	18253.99	6.16	No	Si
SLU 78	-1.3	13222.96	-14600	-0.001239	0.0003743	0.0035	1.5	0	17480.71	17480.71	1.32	No	Si
SLU 78	1.67	2941.34	-16755	-0.0000689	0.0003743	0.0035	1.5	9502.53	18160.05	18160.05	6.17	No	Si
SLU 84	-1.3	13585.69	-15031	-0.001315	0.0003743	0.0035	1.5	0	17620.42	17620.42	1.3	No	Si
SLU 84	1.67	3014.08	-17229	-0.000071	0.0003743	0.0035	1.5	9682.28	18300.95	18300.95	6.07	No	Si
SLU 75	-1.3	13135.24	-14505	-0.0012202	0.0003743	0.0035	1.5	0	17449.52	17449.52	1.33	No	Si
SLU 75	1.67	2892.92	-16596	-0.000068	0.0003743	0.0035	1.5	9441.21	18112.34	18112.34	6.26	No	Si
SLU 83	-1.3	13526.37	-14917	-0.0013078	0.0003743	0.0035	1.5	0	17583.7	17583.7	1.3	No	Si
SLU 83	1.67	2946.9	-17068	-0.0000698	0.0003743	0.0035	1.5	9621.72	18253.3	18253.3	6.19	No	Si
SLU 77	-1.3	13163.64	-14486	-0.0012324	0.0003743	0.0035	1.5	0	17443.5	17443.5	1.33	No	Si
SLU 77	1.67	2874.15	-16594	-0.0000678	0.0003743	0.0035	1.5	9440.3	18111.64	18111.64	6.3	No	Si
SLU 79	-1.3	13107.57	-14427	-0.0012202	0.0003743	0.0035	1.5	0	17423.88	17423.88	1.33	No	Si
SLU 79	1.67	2848.93	-16497	-0.0000673	0.0003743	0.0035	1.5	9402.73	18082.41	18082.41	6.35	No	Si
SLU 76	-1.3	13118.72	-14521	-0.0012124	0.0003743	0.0035	1.5	0	17454.76	17454.76	1.33	No	Si
SLU 76	1.67	2912.5	-16607	-0.0000682	0.0003743	0.0035	1.5	9445.42	18115.61	18115.61	6.22	No	Si
SLU 81	-1.3	13438.65	-14822	-0.0012881	0.0003743	0.0035	1.5	0	17552.81	17552.81	1.31	No	Si
SLU 81	1.67	2898.48	-16909	-0.0000689	0.0003743	0.0035	1.5	9561.48	18206.09	18206.09	6.28	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	-1.3	3235.69	983	0.0017557	0.0005615	0.0035	1.2		0	0	0		No
SLV 12	1.67	-2603.37	2382	0.0064361	0.0005615	0.0035	1.2		0	0	0		No
SLV 2	-1.3	13309.4	-16203	-0.0006984	0.0005615	0.0035	1.5		20323.27	20323.27	1.53		Si
SLV 2	1.67	452.42	-16998	-0.0000436	0.0005615	0.0035	1.5		20623.73	20623.73	45.59		Si
SLV 5	-1.3	14997.56	-20965	-0.0006498	0.0005615	0.0035	1.5		22040.55	22040.55	1.47		Si
SLV 5	1.67	6307.86	-24815	-0.0001221	0.0005615	0.0035	1.5		23300.01	23300.01	3.69		Si
SLV 8	-1.3	4608.68	-905	-0.0006164	0.0005615	0.0035	1.5		10868.75	10868.75	2.36		Si
SLV 8	1.67	-4028.64	1152	0.0019363	0.0005615	0.0035	1.2		0	0	0		No
SLV 1	-1.3	12733.49	-16110	-0.0006015	0.0005615	0.0035	1.5		20287.97	20287.97	1.59		Si
SLV 1	1.67	1408.93	-17271	-0.0000534	0.0005615	0.0035	1.5		20725.67	20725.67	14.71		Si
SLV 6	-1.3	15385.31	-21027	-0.0007199	0.0005615	0.0035	1.5		22061.88	22061.88	1.43		Si
SLV 6	1.67	5663.87	-24631	-0.0001148	0.0005615	0.0035	1.5		23242.49	23242.49	4.1		Si
SLV 9	-1.3	13624.57	-19076	-0.0005471	0.0005615	0.0035	1.5		21381.39	21381.39	1.57		Si
SLV 9	1.67	7733.12	-23584	-0.0001378	0.0005615	0.0035	1.5		22910.03	22910.03	2.96		Si
SLV 7	-1.3	4220.94	-843	-0.0005497	0.0005615	0.0035	1.5		10764.42	10764.42	2.55		Si
SLV 7	1.67	-3384.65	968	0.0016416	0.0005615	0.0035	1.2		0	0	0		No
SLV 10	-1.3	14012.31	-19139	-0.0006044	0.0005615	0.0035	1.5		21403.56	21403.56	1.53		Si
SLV 10	1.67	7089.14	-23400	-0.0001282	0.0005615	0.0035	1.5		22850.89	22850.89	3.22		Si
SLV 11	-1.3	2847.94	1046	0.0021319	0.0005615	0.0035	1.2		0	0	0		No
SLV 11	1.67	-1959.38	2199	0.0061575	0.0005615	0.0035	1.2		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	-1.3	13135.24	-14505	-12893	11023	1.5	0	-83337	10833	5604	10573	20213	3825	16177	No	1.47	Si
SLU 75	1.67	2892.92	-16596	-14752	10395	1.5	1.5	-21855	9858	6654	10573	20213	3825	17227	No	1.66	Si
SLU 82	-1.3	13497.97	-14935	-13276	11332	1.5	0	-84415	10833	5706	10573	20213	3825	16279	No	1.44	Si
SLU 82	1.67	2965.67	-17070	-15174	10695	1.5	1.5	-22479	9942	6711	10573	20213	3825	17283	No	1.62	Si
SLU 74	-1.3	13075.92	-14391	-12792	11022	1.5	0	-83093	10833	5577	10573	20213	3825	16150	No	1.47	Si
SLU 74	1.67	2825.73	-16435	-14609	10424	1.5	1.5	-21643	9830	6635	10573	20213	3825	17208	No	1.65	Si
SLU 80	-1.3	13166.89	-14540	-12925	11034	1.5	0	-83431	10833	5613	10573	20213	3825	16186	No	1.47	Si
SLU 80	1.67	2916.12	-16658	-14807	10403	1.5	1.5	-21937	9869	6662	10573	20213	3825	17235	No	1.66	Si
SLU 81	-1.3	13438.65	-14822	-13175	11331	1.5	0	-84182	10833	5679	10573	20213	3825	16252	No	1.43	Si
SLU 81	1.67	2898.48	-16909	-15030	10724	1.5	1.5	-22267	9913	6692	10573	20213	3825	17264	No	1.61	Si
SLU 78	-1.3	13222.96	-14600	-12978	11075	1.5	0	-83591	10833	5627	10573	20213	3825	16200	No	1.46	Si
SLU 78	1.67	2941.34	-16755	-14893	10439	1.5	1.5	-22064	9886	6673	10573	20213	3825	17246	No	1.65	Si
SLU 84	-1.3	13585.69	-15031	-13360	11384	1.5	0	-84655	10833	5729	10573	20213	3825	16302	No	1.43	Si
SLU 84	1.67	3014.08	-17229	-15315	10739	1.5	1.5	-22689	9970	6729	10573	20213	3825	17302	No	1.61	Si
SLU 77	-1.3	13163.64	-14486	-12877	11074	1.5	0	-83349	10833	5600	10573	20213	3825	16173	No	1.46	Si
SLU 77	1.67	2874.15	-16594	-14750	10468	1.5	1.5	-21852	9858	6654	10573	20213	3825	17227	No	1.65	Si
SLU 79	-1.3	13107.57	-14427	-12824	11033	1.5	0	-83187	10833	5586	10573	20213	3825	16159	No	1.46	Si
SLU 79	1.67	2848.93	-16497	-14664	10432	1.5	1.5	-21725	9841	6643	10573	20213	3825	17216	No	1.65	Si
SLU 83	-1.3	13526.37	-14917	-13259	11383	1.5	0	-84422	10833	5702	10573	20213	3825	16275	No	1.43	Si
SLU 83	1.67	2946.9	-17068	-15172	10768	1.5	1.5	-22476	9941	6710	10573	20213	3825	17283	No	1.61	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	-1.3	12733.49	-16110	-14320	15356	1.5	0	-93241	16250	7068	10573	30319	3825	17641		1.15	Si
SLV 1	1.67	1408.93	-17271	-15352	14744	1.5	1.5	-22744	14965	10102	10573	30319	3825	20674		1.4	Si
SLV 4	-1.3	10076.42	-10166	-9037	18233	1.5	0	-77501	16250	5659	10573	30319	3825	16232		0.89	No
SLV 4	1.67	-2455.34	-9264	-8234	17782	1.5	1.4548	-12654	12947	8476	10573	30319	3825	19049		1.07	Si
SLD 1	-1.3	10616.12	-12521	-11130	11029	1.5	0	-80590	16250	6217	10573	30319	3825	16790		1.52	Si
SLD 1	1.67	1622.3	-13695	-12173	10537	1.5	1.5	-18035	14024	9466	10573	30319	3825	20039		1.9	Si
SLV 8	-1.3	4608.68	-905	-805	12049	1.5	0	0	0	3464	10573	30319	3825	14037		1.16	Si
SLV 8	1.67	-4028.64	1152	1024	11814	1.2	0	0	0	0	10573	24255	3060	10573		0.89	No
SLV 3	-1.3	9500.5	-10074	-8954	15798	1.5	0	-73708	16250	5637	10573	30319	3825	16210		1.03	Si
SLV 3	1.67	-1498.82	-9536	-8477	15305	1.5	1.5	-12558	12928	8727	10573	30319	3825	19299		1.26	Si
SLD 4	-1.3	9572.96	-10150	-9023	12249	1.5	0	-74210	16250	5655	10573	30319	3825	16228		1.32	Si
SLD 4	1.67	51.67	-10490	-9324	11815	1.5	1.5	-13814	13179	8896	10573	30319	3825	19469		1.65	Si
SLD 2	-1.3	10861.13	-12560	-11165	12064	1.5	0	-82517	16250	6227	10573	30319	3825	16799		1.39	Si
SLD 2	1.67	1215.38	-13579	-12070	11590	1.5	1.5	-17882	13993	9445	10573	30319	3825	20018		1.73	Si
SLD 3	-1.3	9327.95	-10111	-8988	11213	1.5	0	-72448	16250	5646	10573	30319	3825	16219		1.45	Si
SLD 3	1.67	458.59	-10606	-9427	10762	1.5	1.5	-13967	13210	8917	10573	30319	3825	19490		1.81	Si
SLV 7	-1.3	4220.94	-843	-749	10410	1.5	0	0	0	3449	10573	30319	3825	14022		1.35	Si
SLV 7	1.67	-3384.65	968	860	10146	1.2	0	0	0	0	10573	24255	3060	10573		1.04	Si
SLV 2	-1.3	13309.4	-16203	-14403	17790	1.5	0	-97663	16250	7090	10573	30319	3825	17663		0.99	No
SLV 2	1.67	452.42	-16998	-15110	17221	1.5	1.5	-22385	14894	10053	10573	30319	3825	20626		1.2	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.185 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.25	0	647	113.43	0	0	No, Trazione
SLV 11	179667	0.25	0	682	113.43	0	0	No, Trazione
SLV 7	179667	0.25	1993	-1345	113.43	298.73	2.63	Si
SLV 8	179667	0.25	2045	-1381	113.43	306.5	2.7	Si
SLV 15	179667	0.25	8407	-5675	113.43	1206.54	10.64	Si
SLV 16	179667	0.25	8485	-5727	113.43	1217.07	10.73	Si
SLV 3	179667	0.25	18420	-12434	113.43	2460.12	21.69	Si
SLV 4	179667	0.25	18498	-12486	113.43	2469.1	21.77	Si
SLV 13	179667	0.25	19494	-13159	113.43	2582.79	22.77	Si
SLV 14	179667	0.25	19572	-13211	113.43	2591.6	22.85	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 5	-24815	-20965	37	0.396	2808.6	0.969	5.93766	2.80694	Si
SLV 6	-24631	-21027	37	0.398	2789.9	0.969	5.97173	2.80694	Si
SLV 9	-23584	-19076	-8	0.413	2683.3	0.968	6.196	2.80694	Si
SLV 10	-23400	-19139	-7	0.415	2664.6	0.968	6.23471	2.80694	Si
SLV 1	-17271	-16110	82	0.52	2041	0.959	7.88584	3.00264	Si
SLV 2	-16998	-16203	83	0.527	2013.3	0.958	7.98687	3.00264	Si
SLV 13	-13169	-9815	-66	0.643	1624.1	0.95	9.84338	3.00264	Si
SLV 14	-12896	-9908	-65	0.654	1596.4	0.949	10.01389	3.00264	Si
SLV 3	-9536	-10074	77	0.824	1255.9	0.937	12.77651	3.00264	Si
SLV 4	-9264	-10166	78	0.842	1228.3	0.936	13.07705	3.00264	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.297	SLU 84	Si
V_SLU	1.43	SLU 83	Si
PF_SLV	0	SLV 7	No
V_SLV	0.89	SLV 4	No
PFFP_SLV	0	SLV 12	No
R_SLV	2.115	SLV 5	Si

Maschio 17

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	-4.784	-17.053	-4.784	L2	L4	3.29	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 84	-1.3	-4445.93	-18673	-0.0000281	0.0003743	0.0035	3.29	26911.68	30669.23	30669.23	6.9	No	Si
SLU 84	1.67	-9457.2	-30297	-0.0000514	0.0003743	0.0035	3.29	39821.26	45144.24	45144.24	4.77	No	Si
SLU 76	-1.3	-4380.81	-18180	-0.0000275	0.0003743	0.0035	3.29	26299.42	30001.95	30001.95	6.85	No	Si
SLU 76	1.67	-9054.23	-29083	-0.0000491	0.0003743	0.0035	3.29	38610.4	43748.39	43748.39	4.83	No	Si
SLU 83	-1.3	-4406.95	-18397	-0.0000278	0.0003743	0.0035	3.29	26569.05	30294.43	30294.43	6.87	No	Si
SLU 83	1.67	-9213.91	-30040	-0.0000506	0.0003743	0.0035	3.29	39567.03	44846.45	44846.45	4.87	No	Si
SLU 73	-1.3	-4345.13	-18072	-0.0000273	0.0003743	0.0035	3.29	26164.26	29855.94	29855.94	6.87	No	Si
SLU 73	1.67	-8943.61	-28883	-0.0000487	0.0003743	0.0035	3.29	38408.34	43520.44	43520.44	4.87	No	Si
SLU 63	-1.3	-3933.38	-17087	-0.0000254	0.0003743	0.0035	3.29	24921.34	28531.99	28531.99	7.25	No	Si
SLU 63	1.67	-8550.01	-27170	-0.0000459	0.0003743	0.0035	3.29	36638.34	41475.48	41475.48	4.85	No	Si
SLU 42	-1.3	-3760.73	-15758	-0.0000236	0.0003743	0.0035	3.29	23211.32	26726.45	26726.45	7.11	No	Si
SLU 42	1.67	-8239.79	-26024	-0.0000439	0.0003743	0.0035	3.29	35418.28	40067.2	40067.2	4.86	No	Si
SLU 78	-1.3	-4410.25	-18177	-0.0000275	0.0003743	0.0035	3.29	26295.13	29997.31	29997.31	6.8	No	Si
SLU 78	1.67	-9086.49	-29254	-0.0000494	0.0003743	0.0035	3.29	38782.99	43944.18	43944.18	4.84	No	Si
SLU 75	-1.3	-4374.58	-18069	-0.0000273	0.0003743	0.0035	3.29	26159.96	29851.31	29851.31	6.82	No	Si
SLU 75	1.67	-8975.88	-29054	-0.0000489	0.0003743	0.0035	3.29	38581.68	43715.9	43715.9	4.87	No	Si
SLU 80	-1.3	-4390.49	-18104	-0.0000274	0.0003743	0.0035	3.29	26204.54	29899.42	29899.42	6.81	No	Si
SLU 80	1.67	-9002.65	-29110	-0.000049	0.0003743	0.0035	3.29	38638.46	43780.15	43780.15	4.86	No	Si
SLU 82	-1.3	-4410.26	-18565	-0.000028	0.0003743	0.0035	3.29	26777.68	30522.21	30522.21	6.92	No	Si
SLU 82	1.67	-9346.59	-30098	-0.0000509	0.0003743	0.0035	3.29	39624.49	44913.51	44913.51	4.81	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 15	-1.3	-9555.49	-2878	-0.0007078	0.0005615	0.0035	2.632		7630.06	7630.06	0.8		No
SLV 15	1.67	8332.78	-5314	-0.0001619	0.0005615	0.0035	3.29		9104.5	9104.5	1.09		Si
SLV 4	-1.3	6086.8	-6461	-0.0000207	0.0005615	0.0035	3.29		10910.98	10910.98	1.79		Si
SLV 4	1.67	-7664.15	-18575	-0.0000338	0.0005615	0.0035	3.29		31360.82	31360.82	4.09		Si
SLV 7	-1.3	3307.1	12763	0.9627295	0.0005615	0.0035	2.632		0	0	0		No
SLV 7	1.67	13080.04	4818	0.3318712	0.0005615	0.0035	2.632		0	0	0		No
SLV 12	-1.3	-510.15	14137	1.0724787	0.0005615	0.0035	2.632		0	0	0		No
SLV 12	1.67	15892.43	7186	0.5089856	0.0005615	0.0035	2.632		0	0	0		No
SLV 8	-1.3	3912.69	12970	0.9774692	0.0005615	0.0035	2.632		0	0	0		No
SLV 8	1.67	11705.73	3704	0.2472837	0.0005615	0.0035	2.632		0	0	0		No
SLV 16	-1.3	-8656	-2571	-0.0006296	0.0005615	0.0035	2.632		7141.69	7141.69	0.83		No
SLV 16	1.67	6291.52	-6968	-0.0000212	0.0005615	0.0035	3.29		11702.04	11702.04	1.86		Si
SLV 3	-1.3	5187.31	-6769	-0.0000173	0.0005615	0.0035	3.29		11390.7	11390.7	2.2		Si
SLV 3	1.67	-5622.89	-16921	-0.0000282	0.0005615	0.0035	3.29		28988.32	28988.32	5.16		Si
SLV 6	-1.3	-5038.22	-38801	-0.000051	0.0005615	0.0035	3.29		58138.79	58138.79	11.54		Si
SLV 6	1.67	-28728.32	-47572	-0.0001104	0.0005615	0.0035	3.29		68331.71	68331.71	2.38		Si
SLV 11	-1.3	-1115.74	13930	1.0576293	0.0005615	0.0035	2.632		0	0	0		No
SLV 11	1.67	17266.74	8300	0.5915525	0.0005615	0.0035	2.632		0	0	0		No
SLV 5	-1.3	-5643.82	-39008	-0.0000524	0.0005615	0.0035	3.29		58383.34	58383.34	10.34		Si
SLV 5	1.67	-27354.01	-46458	-0.0001059	0.0005615	0.0035	3.29		67074.92	67074.92	2.45		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	-1.3	-4374.58	-18069	-16061	8460	3.29	3.29	-10848	8391	13551	33304	44333	8389	46856	No	5.54	Si
SLU 75	1.67	-8975.88	-29054	-25826	-3251	3.29	3.29	-17444	9270	17457	33304	44333	8389	50761	No	15.62	Si
SLU 82	-1.3	-4410.26	-18565	-16502	8844	3.29	3.29	-11146	8431	13728	33304	44333	8389	47032	No	5.32	Si
SLU 82	1.67	-9346.59	-30098	-26753	-3197	3.29	3.29	-18071	9354	17828	33304	44333	8389	51132	No	16	Si
SLU 76	-1.3	-4380.81	-18180	-16160	8464	3.29	3.29	-10915	8400	13591	33304	44333	8389	46895	No	5.54	Si
SLU 76	1.67	-9054.23	-29083	-25851	-3243	3.29	3.29	-17461	9273	17467	33304	44333	8389	50772	No	15.66	Si
SLU 77	-1.3	-4371.27	-17901	-15912	8442	3.29	3.29	-10747	8377	13491	33304	44333	8389	46796	No	5.54	Si
SLU 77	1.67	-8843.2	-28996	-25774	-3289	3.29	3.29	-17409	9266	17436	33304	44333	8389	50741	No	15.43	Si
SLU 78	-1.3	-4410.25	-18177	-16157	8528	3.29	3.29	-10913	8400	13590	33304	44333	8389	46894	No	5.5	Si
SLU 78	1.67	-9086.49	-29254	-26003	-3270	3.29	3.29	-17564	9286	17528	33304	44333	8389	50832	No	15.54	Si
SLU 79	-1.3	-4351.51	-17828	-15847	8389	3.29	3.29	-10704	8372	13466	33304	44333	8389	46770	No	5.58	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 79	1.67	-8759.36	-28853	-25647	-3294	3.29	3.29	-17323	9254	17385	33304	44333	8389	50690	No	15.39	Si
SLU 84	-1.3	-4445.93	-18673	-16598	8912	3.29	3.29	-11211	8439	13766	33304	44333	8389	47070	No	5.28	Si
SLU 84	1.67	-9457.2	-30297	-26931	-3216	3.29	3.29	-18190	9370	17899	33304	44333	8389	51203	No	15.92	Si
SLU 83	-1.3	-4406.95	-18397	-16353	8826	3.29	3.29	-11045	8417	13668	33304	44333	8389	46972	No	5.32	Si
SLU 83	1.67	-9213.91	-30040	-26702	-3235	3.29	3.29	-18036	9349	17807	33304	44333	8389	51112	No	15.8	Si
SLU 80	-1.3	-4390.49	-18104	-16093	8475	3.29	3.29	-10870	8394	13564	33304	44333	8389	46868	No	5.53	Si
SLU 80	1.67	-9002.65	-29110	-25876	-3275	3.29	3.29	-17478	9275	17477	33304	44333	8389	50781	No	15.5	Si
SLU 81	-1.3	-4371.28	-18289	-16256	8758	3.29	3.29	-10980	8408	13629	33304	44333	8389	46934	No	5.36	Si
SLU 81	1.67	-9103.3	-29840	-26524	-3216	3.29	3.29	-17916	9333	17736	33304	44333	8389	51041	No	15.87	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	-1.3	-11341.28	-18102	-16091	-2980	3.29	3.0554	-11764	12770	17557	33304	66499	8389	50862		17.07	Si
SLV 14	1.67	-5838.69	-22351	-19868	-28663	3.29	3.29	-13420	13101	19395	33304	66499	8389	52700		1.84	Si
SLV 11	-1.3	-1115.74	13930	12382	-5097	2.632	3.29	0	0	0	33304	53199	6712	33304		6.53	Si
SLV 11	1.67	17266.74	8300	7378	-10866	2.632	0	0	0	0	33304	53199	6712	33304		3.06	Si
SLV 3	-1.3	5187.31	-6769	-6017	14274	3.29	2.6359	-4064	11229	13320	33304	66499	8389	46624		3.27	Si
SLV 3	1.67	-5622.89	-16921	-15041	23809	3.29	3.29	-10159	12449	18430	33304	66499	8389	51734		2.17	Si
SLD 13	-1.3	-6958.46	-14768	-13127	621	3.29	3.29	-8867	12190	18047	33304	66499	8389	51352		82.64	Si
SLD 13	1.67	-4729.33	-19869	-17661	-16155	3.29	3.29	-11929	12802	18954	33304	66499	8389	52258		3.23	Si
SLV 16	-1.3	-8656	-2571	-2285	-6667	2.632	0	0	0	0	33304	53199	6712	33304		5	Si
SLV 16	1.67	6291.52	-6968	-6194	-27393	3.29	2.2264	-4184	11253	13168	33304	66499	8389	46473		1.7	Si
SLV 13	-1.3	-12240.77	-18409	-16364	-5974	3.29	2.9402	-12426	12902	17236	33304	66499	8389	50540		8.46	Si
SLV 13	1.67	-3797.44	-20697	-18397	-34573	3.29	3.29	-12426	12902	19101	33304	66499	8389	52406		1.52	Si
SLV 4	-1.3	6086.8	-6461	-5744	17269	3.29	2.1089	-3879	11193	12988	33304	66499	8389	46292		2.68	Si
SLV 4	1.67	-7664.15	-18575	-16512	29718	3.29	3.29	-11153	12647	18724	33304	66499	8389	52029		1.75	Si
SLV 15	-1.3	-9555.49	-2878	-2558	-9661	2.632	0	0	0	0	33304	53199	6712	33304		3.45	Si
SLV 15	1.67	8332.78	-5314	-4723	-33303	3.29	0.2306	-43331	16250	12580	33304	66499	8389	45884		1.38	Si
SLV 1	-1.3	2502.04	-22300	-19822	17962	3.29	3.29	-13389	13094	19386	33304	66499	8389	52691		2.93	Si
SLV 1	1.67	-17753.1	-32304	-28714	22539	3.29	3.2863	-19395	14296	22176	33304	66499	8389	55480		2.46	Si
SLV 2	-1.3	3401.53	-21993	-19549	20956	3.29	3.29	-13204	13058	19332	33304	66499	8389	52636		2.51	Si
SLV 2	1.67	-19794.36	-33958	-30185	28448	3.29	3.1863	-21275	14672	22764	33304	66499	8389	56068		1.97	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.185 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.25	0	13651	248.79	0	0	No, Trazione
SLV 8	179667	0.25	0	10008	248.79	0	0	No, Trazione
SLV 16	179667	0.25	0	602	248.79	0	0	No, Trazione
SLV 7	179667	0.25	0	10653	248.79	0	0	No, Trazione
SLV 11	179667	0.25	0	14297	248.79	0	0	No, Trazione
SLV 15	179667	0.25	0	1562	248.79	0	0	No, Trazione
SLV 3	179667	0.25	7149	-10584	248.79	2269.84	9.12	Si
SLV 4	179667	0.25	7797	-11543	248.79	2464.57	9.91	Si
SLV 13	179667	0.25	8870	-13132	248.79	2783.11	11.19	Si
SLV 14	179667	0.25	9518	-14091	248.79	2972.97	11.95	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-47572	-38801	-1181	0.417	5462.5	0.966	6.27949	2.80694	Si
SLV 5	-46458	-39008	-1181	0.425	5349.1	0.965	6.39763	2.80694	Si
SLV 10	-44090	-37634	-1193	0.442	5108.1	0.964	6.66316	2.80694	Si
SLV 9	-42976	-37840	-1193	0.45	4994.8	0.963	6.79969	2.80694	Si
SLV 2	-33958	-21993	-367	0.561	4077.8	0.955	8.53992	3.00264	Si
SLV 1	-32304	-22300	-367	0.584	3909.7	0.954	8.89321	3.00264	Si
SLV 14	-22351	-18102	-408	0.774	2899.9	0.94	11.96867	3.00264	Si
SLV 13	-20697	-18409	-407	0.821	2732.4	0.937	12.73528	3.00264	Si
SLV 4	-18575	-6461	318	0.895	2518	0.932	13.95026	3.00264	Si
SLV 3	-16921	-6769	319	0.96	2351.1	0.929	15.02332	3.00264	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.774	SLU 84	Si
V_SLU	5.282	SLU 84	Si
PF_SLV	0	SLV 7	No
V_SLV	1.378	SLV 15	Si
PFFP_SLV	0	SLV 16	No
R_SLV	2.237	SLV 6	Si

Maschio 18

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-16.523	-3.284	-17.053	-3.284	L2	L4	0.53	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	-1.3	-2220.07	-33987	-0.0015422	0.0004492	0.0035	0.53	0	2699.89	2699.89	1.22	No	Si
SLU 79	0.8	228.73	-16228	-0.0001299	0.0004492	0.0035	0.53	1905.67	2854.03	2854.03	12.48	No	Si
SLU 76	-1.3	-2233.68	-34110	-0.0015907	0.0004492	0.0035	0.53	0	2686.47	2686.47	1.2	No	Si
SLU 76	0.8	229.04	-16292	-0.0001304	0.0004492	0.0035	0.53	1903.7	2860.74	2860.74	12.49	No	Si
SLU 81	-1.3	-2262.88	-34803	-0.0018199	0.0004492	0.0035	0.53	0	2610.86	2610.86	1.15	No	Si
SLU 81	0.8	234.77	-16740	-0.0001346	0.0004492	0.0035	0.53	1887.85	2907.71	2907.71	12.39	No	Si
SLU 82	-1.3	-2281.58	-35027	-0.0019332	0.0004492	0.0035	0.53	0	2586.54	2586.54	1.13	No	Si
SLU 82	0.8	236.19	-16851	-0.0001357	0.0004492	0.0035	0.53	1883.37	2918.34	2918.34	12.36	No	Si
SLU 77	-1.3	-2230.58	-34138	-0.0015919	0.0004492	0.0035	0.53	0	2683.37	2683.37	1.2	No	Si
SLU 77	0.8	230.01	-16301	-0.0001306	0.0004492	0.0035	0.53	1903.41	2861.72	2861.72	12.44	No	Si
SLU 83	-1.3	-2280.43	-35052	-0.001939	0.0004492	0.0035	0.53	0	2583.75	2583.75	1.13	No	Si
SLU 83	0.8	236.84	-16861	-0.0001358	0.0004492	0.0035	0.53	1882.96	2918.91	2918.91	12.32	No	Si
SLU 75	-1.3	-2231.72	-34112	-0.0015881	0.0004492	0.0035	0.53	0	2686.17	2686.17	1.2	No	Si
SLU 75	0.8	229.36	-16292	-0.0001305	0.0004492	0.0035	0.53	1903.71	2860.7	2860.7	12.47	No	Si
SLU 78	-1.3	-2249.27	-34361	-0.001676	0.0004492	0.0035	0.53	0	2659.05	2659.05	1.18	No	Si
SLU 78	0.8	231.43	-16412	-0.0001316	0.0004492	0.0035	0.53	1899.81	2873.33	2873.33	12.42	No	Si
SLU 84	-1.3	-2299.13	-35275	-0.0020768	0.0004492	0.0035	0.53	0	2559.43	2559.43	1.11	No	Si
SLU 84	0.8	238.26	-16971	-0.0001369	0.0004492	0.0035	0.53	1878.24	2925.39	2925.39	12.28	No	Si
SLU 80	-1.3	-2238.77	-34210	-0.0016218	0.0004492	0.0035	0.53	0	2675.57	2675.57	1.2	No	Si
SLU 80	0.8	230.16	-16339	-0.0001309	0.0004492	0.0035	0.53	1902.22	2865.64	2865.64	12.45	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 9	-1.3	-3748.02	-45478	-0.0038671	0.0006738	0.0035	0.53		3687.54	3687.54	0.98		No
SLV 9	0.8	197.26	-19949	-0.000148	0.0006738	0.0035	0.53		3650.19	3650.19	18.5		Si
SLD 9	-1.3	-2430.68	-32321	-0.0005091	0.0006738	0.0035	0.53		4344.91	4344.91	1.79		Si
SLD 9	0.8	170.66	-14592	-0.0001068	0.0006738	0.0035	0.53		2979.77	2979.77	17.46		Si
SLV 8	-1.3	657.35	-1630	-0.0089101	0.0006738	0.0035	0.424		451.03	451.03	0.69		No
SLV 8	0.8	114.59	-2165	-0.000021	0.0006738	0.0035	0.53		583.34	583.34	5.09		Si
SLV 10	-1.3	-3680.43	-45217	-0.0035803	0.0006738	0.0035	0.53		3713.86	3713.86	1.01		Si
SLV 10	0.8	205.58	-19859	-0.000148	0.0006738	0.0035	0.53		3640.51	3640.51	17.71		Si
SLD 10	-1.3	-2402.51	-32213	-0.0005035	0.0006738	0.0035	0.53		4343.77	4343.77	1.81		Si
SLD 10	0.8	174.13	-14554	-0.0001068	0.0006738	0.0035	0.53		2974.05	2974.05	17.08		Si
SLV 7	-1.3	589.75	-1890	-0.0048483	0.0006738	0.0035	0.424		515.64	515.64	0.87		No
SLV 7	0.8	106.27	-2254	-0.000021	0.0006738	0.0035	0.53		605.23	605.23	5.7		Si
SLV 14	-1.3	-2696.11	-31617	-0.0005385	0.0006738	0.0035	0.53		4337.54	4337.54	1.61		Si
SLV 14	0.8	59.18	-11824	-0.0000792	0.0006738	0.0035	0.53		2555.79	2555.79	43.19		Si
SLV 13	-1.3	-2796.51	-32004	-0.0005626	0.0006738	0.0035	0.53		4341.59	4341.59	1.55		Si
SLV 13	0.8	46.83	-11957	-0.0000791	0.0006738	0.0035	0.53		2576.16	2576.16	55.01		Si
SLV 5	-1.3	-3385.18	-44345	-0.0016399	0.0006738	0.0035	0.53		3802.06	3802.06	1.12		Si
SLV 5	0.8	274.12	-21149	-0.0001637	0.0006738	0.0035	0.53		3780.05	3780.05	13.79		Si
SLV 6	-1.3	-3317.59	-44085	-0.0014923	0.0006738	0.0035	0.53		3828.38	3828.38	1.15		Si
SLV 6	0.8	282.44	-21059	-0.0001637	0.0006738	0.0035	0.53		3770.36	3770.36	13.35		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	-1.3	-2238.77	-34210	-27368	-6774	0.53	0.53	-132993	10833	8216	95155	8571	2703	11274	No	1.66	Si
SLU 80	0.8	230.16	-16339	-13071	1619	0.53	0.53	-54805	10833	4404	95155	8571	2703	11274	No	6.96	Si
SLU 83	-1.3	-2280.43	-35052	-28042	-6901	0.53	0.53	-137846	10833	8396	95155	8571	2703	11274	No	1.63	Si
SLU 83	0.8	236.84	-16861	-13488	1745	0.53	0.53	-56556	10833	4515	95155	8571	2703	11274	No	6.46	Si
SLU 84	-1.3	-2299.13	-35275	-28220	-6953	0.53	0.53	-139538	10833	8444	95155	8571	2703	11274	No	1.62	Si
SLU 84	0.8	238.26	-16971	-13577	1735	0.53	0.53	-56927	10833	4539	95155	8571	2703	11274	No	6.5	Si
SLU 81	-1.3	-2262.88	-34803	-27843	-6849	0.53	0.53	-136190	10833	8343	95155	8571	2703	11274	No	1.65	Si
SLU 81	0.8	234.77	-16740	-13392	1744	0.53	0.53	-56151	10833	4490	95155	8571	2703	11274	No	6.46	Si
SLU 76	-1.3	-2233.68	-34110	-27288	-6756	0.53	0.53	-132436	10833	8195	95155	8571	2703	11274	No	1.67	Si
SLU 76	0.8	229.04	-16292	-13034	1612	0.53	0.53	-54648	10833	4394	95155	8571	2703	11274	No	6.99	Si
SLU 79	-1.3	-2220.07	-33987	-27189	-6722	0.53	0.53	-131536	10833	8169	95155	8571	2703	11274	No	1.68	Si
SLU 79	0.8	228.73	-16228	-12982	1630	0.53	0.53	-54433	10833	4380	95155	8571	2703	11274	No	6.92	Si
SLU 78	-1.3	-2249.27	-34361	-27489	-6805	0.53	0.53	-133927	10833	8249	95155	8571	2703	11274	No	1.66	Si
SLU 78	0.8	231.43	-16412	-13130	1621	0.53	0.53	-55051	10833	4420	95155	8571	2703	11274	No	6.96	Si
SLU 77	-1.3	-2230.58	-34138	-27311	-6753	0.53	0.53	-132458	10833	8201	95155	8571	2703	11274	No	1.67	Si
SLU 77	0.8	230.01	-16301	-13041	1631	0.53	0.53	-54680	10833	4396	95155	8571	2703	11274	No	6.91	Si
SLU 75	-1.3	-2231.72	-34112	-27290	-6753	0.53	0.53	-132389	10833	8196	95155	8571	2703	11274	No	1.67	Si
SLU 75	0.8	229.36	-16292	-13033	1620	0.53	0.53	-54647	10833	4394	95155	8571	2703	11274	No	6.96	Si
SLU 82	-1.3	-2281.58	-35027	-28021	-6901	0.53	0.53	-137769	10833	8391	95155	8571	2703	11274	No	1.63	Si
SLU 82	0.8	236.19	-16851	-13481	1734	0.53	0.53	-56523	10833	4513	95155	8571	2703	11274	No	6.5	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	-1.3	-2696.11	-31617	-25294	-7653	0.53	0.53	-106053	16250	8122	95155	12857	2703	15560		2.03	Si
SLV 14	0.8	59.18	-11824	-9459	-1219	0.53	0.53	-39661	16250	3900	95155	12857	2703	15560		12.76	Si
SLV 10	-1.3	-3680.43	-45217	-36174	-10826	0.53	0.53	-201033	16250	11024	95155	12857	2703	15560		1.44	Si
SLV 10	0.8	205.58	-19859	-15887	-491	0.53	0.53	-66614	16250	5614	95155	12857	2703	15560		31.7	Si
SLV 6	-1.3	-3317.59	-44085	-35268	-10028	0.53	0.53	-173641	16250	10782	95155	12857	2703	15560		1.55	Si
SLV 6	0.8	282.44	-21059	-16848	797	0.53	0.53	-70640	16250	5870	95155	12857	2703	15560		19.53	Si
SLV 13	-1.3	-2796.51	-32004	-25603	-7873	0.53	0.53	-107350	16250	8205	95155	12857	2703	15560		1.98	Si
SLV 13	0.8	46.83	-11957	-9566	-1541	0.53	0.53	-40107	16250	3928	95155	12857	2703	15560		10.1	Si
SLD 6	-1.3	-2247.39	-31728	-25383	-6808	0.53	0.53	-106426	16250	8146	95155	12857	2703	15560		2.29	Si
SLD 6	0.8	206.96	-15067	-12054	987	0.53	0.53	-50540	16250	4592	95155	12857	2703	15560		15.76	Si
SLV 5	-1.3	-3385.18	-44345	-35476	-10176	0.53	0.53	-177680	16250	10838	95155	12857	2703	15560		1.53	Si
SLV 5	0.8	274.12	-21149	-16919	581	0.53	0.53	-70940	16250	5889	95155	12857	2703	15560		26.8	Si
SLD 10	-1.3	-2402.51	-32213	-25770	-7150	0.53	0.53	-108051	16250	8250	95155	12857	2703	15560		2.18	Si
SLD 10	0.8	174.13	-14554	-11643	437	0.53	0.53	-48819	16250	4483	95155	12857	2703	15560		35.63	Si
SLD 5	-1.3	-2275.57	-31837	-25469	-6870	0.53	0.53	-106790	16250	8169	95155	12857	2703	15560		2.26	Si
SLD 5	0.8	203.49	-15104	-12084	897	0.53	0.53	-50665	16250	4600	95155	12857	2703	15560		17.35	Si
SLD 9	-1.3	-2430.68	-32321	-25857	-7212	0.53	0.53	-108415	16250	8273	95155	12857	2703	15560		2.16	Si
SLD 9	0.8	170.66	-14592	-11673	347	0.53	0.53	-48944	16250	4490	95155	12857	2703	15560		44.9	Si
SLV 9	-1.3	-3748.02	-45478	-36382	-10974	0.53	0.53	-203530	16250	11079	95155	12857	2703	15560		1.42	Si
SLV 9	0.8	197.26	-19949	-15959	-707	0.53	0.53	-66914	16250	5633	95155	12857	2703	15560		22.01	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 0.185 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 12	-1265	0.25	40.08	276.39	388.29	332.34	8.29	Si
SLV 11	-1404	0.25	40.08	305.68	421.38	363.53	9.07	Si
SLV 8	-2162	0.25	40.08	462.37	601.05	531.71	13.27	Si
SLV 7	-2301	0.25	40.08	490.39	633.69	562.04	14.02	Si
SLV 16	-10036	0.25	40.08	1739.71	2366.5	2053.11	51.23	Si
SLV 15	-10242	0.25	40.08	1764.55	2407.26	2085.91	52.05	Si
SLV 4	-13026	0.25	40.08	2057.49	2923.1	2490.29	62.14	Si
SLV 3	-13232	0.25	40.08	2076	2957.82	2516.91	62.8	Si
SLV 14	-18481	0.25	40.08	2400.18	3730.1	3065.14	76.48	Si
SLV 13	-18686	0.25	40.08	2407.11	3755.98	3081.55	76.89	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 5	-13124	-44345	-569	0.254	1436	0.978	3.77648	2.80694	Si
SLV 6	-12990	-44085	-556	0.257	1422.4	0.978	3.81809	2.80694	Si
SLV 9	-12468	-45478	-575	0.263	1369.3	0.977	3.90613	2.80694	Si
SLV 10	-12335	-45217	-562	0.266	1355.7	0.977	3.95124	2.80694	Si
SLV 1	-9685	-28227	-334	0.336	1085.8	0.972	5.0315	3.00264	Si
SLV 2	-9487	-27840	-314	0.344	1065.6	0.971	5.14041	3.00264	Si
SLV 13	-7501	-32004	-355	0.404	863.4	0.965	6.08234	3.00264	Si
SLV 14	-7303	-31617	-334	0.415	843.3	0.964	6.24908	3.00264	Si
SLV 3	-6055	-15491	-136	0.508	716.3	0.959	7.69356	3.00264	Si
SLV 4	-5856	-15104	-116	0.524	696.1	0.958	7.94953	3.00264	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.113	SLU 84	Si
V_SLU	1.621	SLU 84	Si
PF_SLV	0.686	SLV 8	No
V_SLV	1.418	SLV 9	Si

Stato limite	Coeff.s.	Comb.	Verifica
PFFP_SLV	8.292	SLV 12	Si
R_SLV	1.345	SLV 5	Si

Maschio 20

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-15.058	2.071	-15.058	6.351	L2	L4	4.28	0.3	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 81	-1.3	25774.78	-113258	-0.0001959	0.0004492	0.0035	4.28	67403.76	150062.77	150062.77	5.82	No	Si
SLU 81	0.7	1565.82	-98197	-0.000122	0.0004492	0.0035	4.28	78613.36	140544.81	140544.81	89.76	No	Si
SLU 79	-1.3	25728.73	-111423	-0.0001926	0.0004492	0.0035	4.28	69100.75	149230.44	149230.44	5.8	No	Si
SLU 79	0.7	1787.88	-96513	-0.00012	0.0004492	0.0035	4.28	79482.39	139155.23	139155.23	77.83	No	Si
SLU 74	-1.3	25489.24	-110942	-0.0001913	0.0004492	0.0035	4.28	69530.5	149012.2	149012.2	5.85	No	Si
SLU 74	0.7	1744.16	-96045	-0.0001193	0.0004492	0.0035	4.28	79710.14	138769.07	138769.07	79.56	No	Si
SLU 35	-1.3	22655.21	-95327	-0.0001599	0.0004492	0.0035	4.28	80047.86	138176.75	138176.75	6.1	No	Si
SLU 35	0.7	1655.2	-83179	-0.0001015	0.0004492	0.0035	4.28	83629.77	128155.54	128155.54	77.43	No	Si
SLU 83	-1.3	26267.36	-114424	-0.000199	0.0004492	0.0035	4.28	66278.16	150591.44	150591.44	5.73	No	Si
SLU 83	0.7	1672.3	-99304	-0.0001237	0.0004492	0.0035	4.28	78000.05	141458.09	141458.09	84.59	No	Si
SLU 80	-1.3	24519.17	-110985	-0.0001892	0.0004492	0.0035	4.28	69492.37	149031.7	149031.7	6.08	No	Si
SLU 80	0.7	1681.35	-96006	-0.0001191	0.0004492	0.0035	4.28	79728.87	138736.86	138736.86	82.52	No	Si
SLU 78	-1.3	24772.27	-111669	-0.0001909	0.0004492	0.0035	4.28	68878.36	149342.13	149342.13	6.03	No	Si
SLU 78	0.7	1744.1	-96645	-0.0001201	0.0004492	0.0035	4.28	79417.17	139263.98	139263.98	79.85	No	Si
SLU 77	-1.3	25981.83	-112107	-0.0001944	0.0004492	0.0035	4.28	68478.56	149540.88	149540.88	5.76	No	Si
SLU 77	0.7	1850.64	-97152	-0.0001211	0.0004492	0.0035	4.28	79161.84	139682.35	139682.35	75.48	No	Si
SLU 82	-1.3	24565.21	-112820	-0.0001925	0.0004492	0.0035	4.28	67817.32	149864.02	149864.02	6.1	No	Si
SLU 82	0.7	1459.29	-97690	-0.000121	0.0004492	0.0035	4.28	78883.15	140126.44	140126.44	96.02	No	Si
SLU 84	-1.3	25057.8	-113985	-0.0001956	0.0004492	0.0035	4.28	66705.66	150392.69	150392.69	6	No	Si
SLU 84	0.7	1565.77	-98797	-0.0001228	0.0004492	0.0035	4.28	78285.16	141039.72	141039.72	90.08	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	-1.3	-89761.8	-30260	-0.0038017	0.0006738	0.0035	3.424		68989.94	68989.94	0.77		No
SLV 10	0.7	-11435.56	-15416	-0.0000342	0.0006738	0.0035	4.28		41461.56	41461.56	3.63		Si
SLV 9	-1.3	-91494.33	-30316	-0.0040079	0.0006738	0.0035	3.424		69092	69092	0.76		No
SLV 9	0.7	-11195.97	-15188	-0.0000336	0.0006738	0.0035	4.28		41027.88	41027.88	3.66		Si
SLV 11	-1.3	127049.33	-116373	-0.0004523	0.0006738	0.0035	4.28		173674.27	173674.27	1.37		Si
SLV 11	0.7	12006.96	-112788	-0.0001541	0.0006738	0.0035	4.28		170618.17	170618.17	14.21		Si
SLV 7	-1.3	123876.93	-122704	-0.0004375	0.0006738	0.0035	4.28		179072.29	179072.29	1.45		Si
SLV 7	0.7	13725.37	-115805	-0.0001614	0.0006738	0.0035	4.28		173190.14	173190.14	12.62		Si
SLV 8	-1.3	125609.45	-122648	-0.0004456	0.0006738	0.0035	4.28		179024.21	179024.21	1.43		Si
SLV 8	0.7	13485.77	-116033	-0.0001613	0.0006738	0.0035	4.28		173384.85	173384.85	12.86		Si
SLV 12	-1.3	128781.86	-116316	-0.0004623	0.0006738	0.0035	4.28		173626.19	173626.19	1.35		Si
SLV 12	0.7	11767.36	-113017	-0.000154	0.0006738	0.0035	4.28		170812.87	170812.87	14.52		Si
SLD 12	-1.3	61781.13	-92271	-0.0002176	0.0006738	0.0035	4.28		149861.91	149861.91	2.43		Si
SLD 12	0.7	5360.26	-84492	-0.0001056	0.0006738	0.0035	4.28		140419	140419	26.2		Si
SLV 5	-1.3	-94666.74	-36648	-0.0035154	0.0006738	0.0035	3.424		80053.7	80053.7	0.85		No
SLV 5	0.7	-9477.56	-18204	-0.0000343	0.0006738	0.0035	4.28		46756.66	46756.66	4.93		Si
SLV 6	-1.3	-92934.21	-36591	-0.0032555	0.0006738	0.0035	3.424		79956.68	79956.68	0.86		No

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	0.7	-9717.15	-18433	-0.0000349	0.0006738	0.0035	4.28		47190.34	47190.34	4.86		Si
SLV 16	-1.3	56413.11	-78796	-0.0001883	0.0006738	0.0035	4.28		133504.74	133504.74	2.37		Si
SLV 16	0.7	1583.39	-75392	-0.000088	0.0006738	0.0035	4.28		129372.94	129372.94	81.71		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 73	-1.3	22727.61	-108361	-78808	-13583	4.28	4.28	-61377	10833	38939	95155	46144	21828	67972	No	5	Si
SLU 73	0.7	1397.37	-93453	-67966	-13763	4.28	4.28	-52933	10833	34603	95155	46144	21828	67972	No	4.94	Si
SLU 76	-1.3	23220.2	-109527	-79656	-13642	4.28	4.28	-62037	10833	39278	95155	46144	21828	67972	No	4.98	Si
SLU 76	0.7	1503.85	-94560	-68771	-13824	4.28	4.28	-53560	10833	34925	95155	46144	21828	67972	No	4.92	Si
SLU 82	-1.3	24565.21	-112820	-82051	-13526	4.28	4.28	-63902	10833	40236	95155	46144	21828	67972	No	5.03	Si
SLU 82	0.7	1459.29	-97690	-71047	-13712	4.28	4.28	-55333	10833	35835	95155	46144	21828	67972	No	4.96	Si
SLU 78	-1.3	24772.27	-111669	-81214	-13391	4.28	4.28	-63251	10833	39902	95155	46144	21828	67972	No	5.08	Si
SLU 78	0.7	1744.1	-96645	-70287	-13575	4.28	4.28	-54741	10833	35531	95155	46144	21828	67972	No	5.01	Si
SLU 80	-1.3	24519.17	-110985	-80716	-13329	4.28	4.28	-62863	10833	39702	95155	46144	21828	67972	No	5.1	Si
SLU 80	0.7	1681.35	-96006	-69822	-13512	4.28	4.28	-54379	10833	35345	95155	46144	21828	67972	No	5.03	Si
SLU 84	-1.3	25057.8	-113985	-82898	-13586	4.28	4.28	-64563	10833	40575	95155	46144	21828	67972	No	5	Si
SLU 84	0.7	1565.77	-98797	-71853	-13773	4.28	4.28	-55960	10833	36157	95155	46144	21828	67972	No	4.94	Si
SLU 75	-1.3	24279.68	-110503	-80366	-13332	4.28	4.28	-62590	10833	39562	95155	46144	21828	67972	No	5.1	Si
SLU 75	0.7	1637.62	-95538	-69482	-13514	4.28	4.28	-54114	10833	35209	95155	46144	21828	67972	No	5.03	Si
SLU 81	-1.3	25774.78	-113258	-82369	-12966	4.28	4.28	-64151	10833	40364	95155	46144	21828	67972	No	5.24	Si
SLU 81	0.7	1565.82	-98197	-71416	-13153	4.28	4.28	-55620	10833	35983	95155	46144	21828	67972	No	5.17	Si
SLU 83	-1.3	26267.36	-114424	-83217	-13026	4.28	4.28	-64811	10833	40703	95155	46144	21828	67972	No	5.22	Si
SLU 83	0.7	1672.3	-99304	-72221	-13214	4.28	4.28	-56247	10833	36305	95155	46144	21828	67972	No	5.14	Si
SLU 68	-1.3	20814.02	-99805	-72585	-12903	4.28	4.28	-56531	10833	36450	95155	46144	21828	67972	No	5.27	Si
SLU 68	0.7	1525.08	-85463	-62155	-13072	4.28	4.28	-48407	10833	32278	95155	46144	21828	67972	No	5.2	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	-1.3	123876.93	-122704	-89240	37285	4.28	3.3913	-69501	16250	46820	95155	69216	21828	91044		2.44	Si
SLV 7	0.7	13725.37	-115805	-84222	37276	4.28	4.28	-65593	16250	44813	95155	69216	21828	91044		2.44	Si
SLV 12	-1.3	128781.86	-116316	-84594	41335	4.28	3.0985	-65883	16250	44962	95155	69216	21828	91044		2.2	Si
SLV 12	0.7	11767.36	-113017	-82194	41467	4.28	4.28	-64014	16250	44002	95155	69216	21828	91044		2.2	Si
SLV 8	-1.3	125609.45	-122648	-89199	38482	4.28	3.3476	-69469	16250	46804	95155	69216	21828	91044		2.37	Si
SLV 8	0.7	13485.77	-116033	-84388	38473	4.28	4.28	-65723	16250	44880	95155	69216	21828	91044		2.37	Si
SLD 5	-1.3	-27666.01	-60693	-44140	-29469	4.28	4.28	-34377	16250	28781	95155	69216	21828	91044		3.09	Si
SLD 5	0.7	-3070.45	-46729	-33985	-29724	4.28	4.28	-26468	16250	24719	95155	69216	21828	91044		3.06	Si
SLV 9	-1.3	-91494.33	-30316	-22048	-56872	3.424	0	0	0	0	95155	55372	17462	72835		1.28	Si
SLV 9	0.7	-11195.97	-15188	-11046	-57124	4.28	4.2085	-8602	14220	17954	95155	69216	21828	91044		1.59	Si
SLV 10	-1.3	-89761.8	-30260	-22007	-55675	3.424	0	0	0	0	95155	55372	17462	72835		1.31	Si
SLV 10	0.7	-11435.56	-15416	-11212	-55927	4.28	4.1946	-8732	14246	17927	95155	69216	21828	91044		1.63	Si
SLV 11	-1.3	127049.33	-116373	-84635	40138	4.28	3.1448	-65915	16250	44979	95155	69216	21828	91044		2.27	Si
SLV 11	0.7	12006.96	-112788	-82028	40269	4.28	4.28	-63885	16250	43936	95155	69216	21828	91044		2.26	Si
SLV 1	-1.3	-22297.99	-74168	-53940	-29390	4.28	4.28	-42010	16250	32701	95155	69216	21828	91044		3.1	Si
SLV 1	0.7	706.42	-55829	-40603	-29813	4.28	4.28	-31622	16250	27366	95155	69216	21828	91044		3.05	Si
SLV 5	-1.3	-94666.74	-36648	-26653	-59725	3.424	0	0	0	0	95155	55372	17462	72835		1.22	Si
SLV 5	0.7	-9477.56	-18204	-13240	-60118	4.28	4.28	-10311	14562	18698	95155	69216	21828	91044		1.51	Si
SLV 6	-1.3	-92934.21	-36591	-26612	-58528	3.424	0	0	0	0	95155	55372	17462	72835		1.24	Si
SLV 6	0.7	-9717.15	-18433	-13406	-58920	4.28	4.28	-10441	14588	18731	95155	69216	21828	91044		1.55	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 0.185 Ta 0.05 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 9	-19521	0.25	223.53	2685.21	3758.25	3221.73	14.41	Si
SLV 10	-19667	0.25	223.53	2703.53	3781.84	3242.68	14.51	Si
SLV 5	-23377	0.25	223.53	3158.28	4377.08	3767.68	16.86	Si
SLV 6	-23524	0.25	223.53	3175.87	4400.44	3788.16	16.95	Si
SLV 13	-47741	0.25	223.53	5708.37	8176.86	6942.62	31.06	Si
SLV 14	-47958	0.25	223.53	5727.74	8210.2	6968.97	31.18	Si
SLV 1	-60597	0.25	223.53	6749.02	10107.85	8428.43	37.71	Si
SLV 2	-60814	0.25	223.53	6764.82	10139.66	8452.24	37.81	Si
SLV 15	-75817	0.25	223.53	7708.65	12197.12	9952.88	44.53	Si
SLV 16	-76034	0.25	223.53	7720.23	12225.53	9972.88	44.61	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.05 Ta = 0.0491

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 8	-97570	-122648	-310	0.287	10473.8	0.984	4.24217	3.03106	Si
SLV 7	-97359	-122704	-310	0.288	10452.3	0.984	4.24953	3.03106	Si
SLV 12	-95697	-116316	340	0.291	10283	0.984	4.30501	3.03106	Si
SLV 11	-95487	-116373	339	0.292	10261.5	0.984	4.31281	3.03106	Si
SLV 4	-72334	-99901	-1085	0.356	7902.3	0.979	5.28251	3.36438	Si
SLV 3	-72021	-99985	-1085	0.357	7870.5	0.979	5.30157	3.36438	Si
SLV 16	-66093	-78796	1079	0.383	7266.5	0.977	5.70075	3.36438	Si
SLV 15	-65780	-78880	1079	0.385	7234.6	0.977	5.72386	3.36438	Si
SLV 2	-48787	-74084	-1100	0.493	5503.9	0.97	7.38715	3.36438	Si
SLV 1	-48474	-74168	-1100	0.496	5472.1	0.97	7.4281	3.36438	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.733	SLU 83	Si
V_SLU	4.917	SLU 76	Si
PF_SLV	0.755	SLV 9	No
V_SLV	1.22	SLV 5	Si
PFFP_SLV	14.413	SLV 9	Si
R_SLV	1.4	SLV 8	Si

Maschio 21

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	-4.784	-13.763	1.046	L2	L4	5.83	0.3	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 76	-1.3	-43540.38	-92591	-0.000134	0.0004492	0.0035	5.83	152963.77	192385.2	192385.2	4.42	No	Si
SLU 76	1.67	-32113	-94827	-0.0001241	0.0004492	0.0035	5.83	153765.62	194290.49	194290.49	6.05	No	Si
SLU 78	-1.3	-43186.16	-93509	-0.0001347	0.0004492	0.0035	5.83	153309.58	193162.99	193162.99	4.47	No	Si
SLU 78	1.67	-31992.85	-96121	-0.0001255	0.0004492	0.0035	5.83	154167.2	195410.27	195410.27	6.11	No	Si
SLU 81	-1.3	-43871.45	-94437	-0.0001366	0.0004492	0.0035	5.83	153635.37	193954.84	193954.84	4.42	No	Si
SLU 81	1.67	-32338.03	-97380	-0.0001273	0.0004492	0.0035	5.83	154514.18	196512.4	196512.4	6.08	No	Si
SLU 80	-1.3	-43075.53	-93030	-0.000134	0.0004492	0.0035	5.83	153131.91	192756.12	192756.12	4.47	No	Si
SLU 80	1.67	-31854.12	-95536	-0.0001246	0.0004492	0.0035	5.83	153991.19	194902.1	194902.1	6.12	No	Si
SLU 83	-1.3	-44035.93	-95229	-0.0001377	0.0004492	0.0035	5.83	153895.34	194637.18	194637.18	4.42	No	Si
SLU 83	1.67	-32502.27	-98359	-0.0001287	0.0004492	0.0035	5.83	154754.07	197377.71	197377.71	6.07	No	Si
SLU 75	-1.3	-43021.69	-92717	-0.0001336	0.0004492	0.0035	5.83	153012.41	192491.15	192491.15	4.47	No	Si
SLU 75	1.67	-31828.6	-95142	-0.0001241	0.0004492	0.0035	5.83	153867.55	194561.81	194561.81	6.11	No	Si
SLU 73	-1.3	-43375.9	-91798	-0.0001329	0.0004492	0.0035	5.83	152646.74	191716.72	191716.72	4.42	No	Si
SLU 73	1.67	-31948.76	-93849	-0.0001228	0.0004492	0.0035	5.83	153431.43	193451.78	193451.78	6.06	No	Si
SLU 82	-1.3	-44815.44	-94968	-0.0001383	0.0004492	0.0035	5.83	153811.33	194411.17	194411.17	4.34	No	Si
SLU 82	1.67	-32972.72	-97786	-0.0001285	0.0004492	0.0035	5.83	154616.76	196870.09	196870.09	5.97	No	Si
SLU 84	-1.3	-44979.92	-95760	-0.0001394	0.0004492	0.0035	5.83	154059.82	195096.74	195096.74	4.34	No	Si
SLU 84	1.67	-33136.96	-98765	-0.0001299	0.0004492	0.0035	5.83	154845.82	197738.45	197738.45	5.97	No	Si
SLU 61	-1.3	-41400.15	-85856	-0.0001237	0.0004492	0.0035	5.83	149724.34	184987.06	184987.06	4.47	No	Si
SLU 61	1.67	-30055.87	-87577	-0.0001135	0.0004492	0.0035	5.83	150669.76	187371.9	187371.9	6.23	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	-1.3	-115516.96	-112157	-0.000225	0.0006738	0.0035	5.83		248348.27	248348.27	2.15		Si
SLV 5	1.67	-80402.08	-100222	-0.0001724	0.0006738	0.0035	5.83		233289.94	233289.94	2.9		Si
SLV 10	-1.3	-113546.3	-114050	-0.0002246	0.0006738	0.0035	5.83		250798.9	250798.9	2.21		Si
SLV 10	1.67	-85637.61	-103991	-0.0001821	0.0006738	0.0035	5.83		237973.04	237973.04	2.78		Si
SLV 9	-1.3	-114839.91	-114822	-0.000227	0.0006738	0.0035	5.83		251802.32	251802.32	2.19		Si
SLV 9	1.67	-86293.68	-105171	-0.0001841	0.0006738	0.0035	5.83		239453.65	239453.65	2.77		Si
SLV 11	-1.3	56081.12	-16527	-0.009149	0.0006738	0.0035	5.83		47827.56	47827.56	0.85		No
SLV 11	1.67	36768.84	-30320	-0.0000603	0.0006738	0.0035	5.83		83565.68	83565.68	2.27		Si
SLV 12	-1.3	57374.73	-15756	-0.0117337	0.0006738	0.0035	5.83		45747.83	45747.83	0.8		No
SLV 12	1.67	37424.91	-29139	-0.0000605	0.0006738	0.0035	5.83		80593.02	80593.02	2.15		Si
SLD 5	-1.3	-63649.43	-83171	-0.0001368	0.0006738	0.0035	5.83		204628.29	204628.29	3.21		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 5	1.67	-44927.05	-78830	-0.0001138	0.0006738	0.0035	5.83		196633.79	196633.79	4.38		Si
SLV 6	-1.3	-114223.35	-111385	-0.0002225	0.0006738	0.0035	5.83		247354.46	247354.46	2.17		Si
SLV 6	1.67	-79746.01	-99041	-0.0001704	0.0006738	0.0035	5.83		231493.46	231493.46	2.9		Si
SLD 6	-1.3	-63110.2	-82849	-0.0001359	0.0006738	0.0035	5.83		204060.44	204060.44	3.23		Si
SLD 6	1.67	-44653.57	-78338	-0.000113	0.0006738	0.0035	5.83		195713.5	195713.5	4.38		Si
SLV 8	-1.3	56697.68	-13090	-0.0167434	0.0006738	0.0035	5.83		38527.37	38527.37	0.68		No
SLV 8	1.67	43316.51	-24190	-0.0000735	0.0006738	0.0035	5.83		67985.05	67985.05	1.57		Si
SLV 7	-1.3	55404.07	-13862	-0.0141075	0.0006738	0.0035	5.83		40634.28	40634.28	0.73		No
SLV 7	1.67	42660.44	-25370	-0.0000701	0.0006738	0.0035	5.83		71023.99	71023.99	1.66		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	-1.3	-44815.44	-94968	-79973	6169	5.83	5.83	-45725	10833	42091	33304	62855	14867	75396	No	12.22	Si
SLU 82	1.67	-32972.72	-97786	-82346	21115	5.83	5.83	-47082	10833	43041	33304	62855	14867	76345	No	3.62	Si
SLU 77	-1.3	-42242.18	-92979	-78298	6896	5.83	5.83	-44767	10833	41421	33304	62855	14867	74726	No	10.84	Si
SLU 77	1.67	-31358.16	-95715	-80602	21210	5.83	5.83	-46085	10833	42343	33304	62855	14867	75648	No	3.57	Si
SLU 83	-1.3	-44035.93	-95229	-80193	6611	5.83	5.83	-45851	10833	42180	33304	62855	14867	75484	No	11.42	Si
SLU 83	1.67	-32502.27	-98359	-82829	21696	5.83	5.83	-47358	10833	43234	33304	62855	14867	76538	No	3.53	Si
SLU 78	-1.3	-43186.16	-93509	-78745	6531	5.83	5.83	-45023	10833	41600	33304	62855	14867	74905	No	11.47	Si
SLU 78	1.67	-31992.85	-96121	-80944	20778	5.83	5.83	-46280	10833	42480	33304	62855	14867	75784	No	3.65	Si
SLU 84	-1.3	-44979.92	-95760	-80640	6246	5.83	5.83	-46107	10833	42358	33304	62855	14867	75663	No	12.11	Si
SLU 84	1.67	-33136.96	-98765	-83170	21264	5.83	5.83	-47553	10833	43370	33304	62855	14867	76675	No	3.61	Si
SLU 74	-1.3	-42077.7	-92186	-77630	6819	5.83	5.83	-44385	10833	41154	33304	62855	14867	74459	No	10.92	Si
SLU 74	1.67	-31193.91	-94737	-79778	21061	5.83	5.83	-45614	10833	42014	33304	62855	14867	75318	No	3.58	Si
SLU 79	-1.3	-42131.54	-92499	-77894	6838	5.83	5.83	-44536	10833	41260	33304	62855	14867	74564	No	10.9	Si
SLU 79	1.67	-31219.43	-95130	-80110	21109	5.83	5.83	-45803	10833	42146	33304	62855	14867	75450	No	3.57	Si
SLU 81	-1.3	-43871.45	-94437	-79526	6534	5.83	5.83	-45469	10833	41913	33304	62855	14867	75217	No	11.51	Si
SLU 81	1.67	-32338.03	-97380	-82004	21547	5.83	5.83	-46886	10833	42904	33304	62855	14867	76208	No	3.54	Si
SLU 80	-1.3	-43075.53	-93030	-78341	6474	5.83	5.83	-44792	10833	41439	33304	62855	14867	74743	No	11.55	Si
SLU 80	1.67	-31854.12	-95536	-80451	20677	5.83	5.83	-45998	10833	42283	33304	62855	14867	75587	No	3.66	Si
SLU 75	-1.3	-43021.69	-92717	-78077	6454	5.83	5.83	-44641	10833	41333	33304	62855	14867	74637	No	11.56	Si
SLU 75	1.67	-31828.6	-95142	-80120	20629	5.83	5.83	-45809	10833	42150	33304	62855	14867	75454	No	3.66	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	-1.3	56081.12	-16527	-13918	31619	5.83	0	-209814	16250	20722	33304	94282	14867	54027		1.71	Si
SLV 11	1.67	36768.84	-30320	-25532	45358	5.83	5.1069	-14598	15420	25368	33304	94282	14867	58672		1.29	Si
SLV 12	-1.3	57374.73	-15756	-13268	32599	5.83	0	-223402	16250	20462	33304	94282	14867	53767		1.65	Si
SLV 12	1.67	37424.91	-29139	-24538	45979	5.83	4.8919	-14030	15306	24970	33304	94282	14867	58275		1.27	Si
SLD 8	-1.3	5217.61	-43602	-36718	17778	5.83	5.83	-20994	16250	29842	33304	94282	14867	63146		3.55	Si
SLD 8	1.67	4466.97	-48415	-40771	28172	5.83	5.83	-23311	16250	31463	33304	94282	14867	64767		2.3	Si
SLV 3	-1.3	-5522.08	-45343	-38183	19544	5.83	5.83	-21831	16250	30428	33304	94282	14867	63732		3.26	Si
SLV 3	1.67	6302.9	-46080	-38804	27353	5.83	5.83	-22187	16250	30677	33304	94282	14867	63981		2.34	Si
SLV 7	-1.3	55404.07	-13862	-11673	35467	5.83	0	-223006	16250	19824	33304	94282	14867	53129		1.5	Si
SLV 7	1.67	42660.44	-25370	-21364	47424	5.83	3.7004	-12215	14943	23701	33304	94282	14867	57005		1.2	Si
SLD 12	-1.3	5507.2	-44741	-37677	16134	5.83	5.83	-21542	16250	30226	33304	94282	14867	63530		3.94	Si
SLD 12	1.67	1949.88	-50531	-42552	27289	5.83	5.83	-24329	16250	32176	33304	94282	14867	65480		2.4	Si
SLV 8	-1.3	56697.68	-13090	-11023	36447	5.83	0	-229382	16250	19564	33304	94282	14867	52869		1.45	Si
SLV 8	1.67	43316.51	-24190	-20370	48045	5.83	3.3729	-11647	14829	23303	33304	94282	14867	56607		1.18	Si
SLD 7	-1.3	4678.38	-43924	-36989	17369	5.83	5.83	-21148	16250	29950	33304	94282	14867	63255		3.64	Si
SLD 7	1.67	4193.5	-48907	-41185	27913	5.83	5.83	-23548	16250	31629	33304	94282	14867	64933		2.33	Si
SLV 4	-1.3	-3600.68	-44196	-37218	21000	5.83	5.83	-21280	16250	30042	33304	94282	14867	63346		3.02	Si
SLV 4	1.67	7277.35	-44327	-37328	28275	5.83	5.83	-21342	16250	30086	33304	94282	14867	63390		2.24	Si
SLD 11	-1.3	4967.97	-45063	-37948	15725	5.83	5.83	-21697	16250	30334	33304	94282	14867	63638		4.05	Si
SLD 11	1.67	1676.4	-51023	-42967	27030	5.83	5.83	-24566	16250	32341	33304	94282	14867	65646		2.43	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.185 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 8	215625	0.25	14396	-25178	304.49	3480.1	11.43	Si
SLV 7	215625	0.25	15086	-26385	304.49	3631.94	11.93	Si
SLV 12	215625	0.25	17301	-30260	304.49	4110.51	13.5	Si
SLV 11	215625	0.25	17991	-31466	304.49	4256.61	13.98	Si
SLV 4	215625	0.25	28150	-49234	304.49	6250.87	20.53	Si
SLV 3	215625	0.25	29174	-51026	304.49	6435.57	21.14	Si
SLV 16	215625	0.25	37835	-66173	304.49	7876.92	25.87	Si
SLV 15	215625	0.25	38859	-67965	304.49	8033.22	26.38	Si
SLV 2	215625	0.25	42988	-75186	304.49	8632.73	28.35	Si
SLV 1	215625	0.25	44013	-76978	304.49	8773.91	28.82	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.05 Ta = 0.0491

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 9	-105171	-114822	163	0.349	11440.8	0.98	5.17976	3.03106	Si
SLV 10	-103991	-114050	163	0.353	11320.5	0.98	5.22894	3.03106	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 5	-100222	-112157	-104	0.364	10936.6	0.979	5.40199	3.03106	Si
SLV 6	-99041	-111385	-104	0.368	10816.3	0.979	5.45622	3.03106	Si
SLV 13	-85034	-83716	450	0.413	9389.3	0.976	6.15279	3.36438	Si
SLV 14	-83280	-82570	451	0.42	9210.7	0.975	6.26323	3.36438	Si
SLV 1	-68536	-74831	-440	0.495	7709	0.971	7.40936	3.36438	Si
SLV 2	-66782	-73685	-439	0.506	7530.5	0.97	7.57773	3.36438	Si
SLV 15	-62578	-54227	430	0.535	7102.5	0.969	8.01995	3.36438	Si
SLV 16	-60825	-53081	430	0.547	6924	0.968	8.22063	3.36438	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.337	SLU 84	Si
V_SLU	3.528	SLU 83	Si
PF_SLV	0.68	SLV 8	No
V_SLV	1.178	SLV 8	Si
PFFP_SLV	11.429	SLV 8	Si
R_SLV	1.709	SLV 9	Si

Maschio 23

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-9.728	3.311	-14.008	3.311	L2	L4	4.28	0.3	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 69	-1.3	-9151.53	-55964	-0.0000795	0.0004492	0.0035	4.28	77042.05	105218.86	105218.86	11.5	No	Si
SLU 69	0.8	13178.21	-34359	-0.0000596	0.0004492	0.0035	4.28	57424.87	64777.06	64777.06	4.92	No	Si
SLU 77	-1.3	-9792.01	-61756	-0.0000881	0.0004492	0.0035	4.28	80136.44	112526.83	112526.83	11.49	No	Si
SLU 77	0.8	14628.5	-38971	-0.0000676	0.0004492	0.0035	4.28	62681.72	71906.27	71906.27	4.92	No	Si
SLU 74	-1.3	-9615.07	-61294	-0.0000872	0.0004492	0.0035	4.28	79923.22	111975.43	111975.43	11.65	No	Si
SLU 74	0.8	14438.15	-38696	-0.0000669	0.0004492	0.0035	4.28	62385.1	71481.97	71481.97	4.95	No	Si
SLU 79	-1.3	-9700.35	-61465	-0.0000875	0.0004492	0.0035	4.28	80003.22	112187.51	112187.51	11.57	No	Si
SLU 79	0.8	14541.26	-38799	-0.0000672	0.0004492	0.0035	4.28	62496.36	71640.79	71640.79	4.93	No	Si
SLU 66	-1.3	-8974.6	-55502	-0.0000786	0.0004492	0.0035	4.28	76755.84	104633.26	104633.26	11.66	No	Si
SLU 66	0.8	12987.86	-34084	-0.0000589	0.0004492	0.0035	4.28	57093.71	64352.76	64352.76	4.95	No	Si
SLU 78	-1.3	-9732.94	-61678	-0.0000879	0.0004492	0.0035	4.28	80100.98	112435.92	112435.92	11.55	No	Si
SLU 78	0.8	14492.89	-38957	-0.0000674	0.0004492	0.0035	4.28	62667.16	71885.38	71885.38	4.96	No	Si
SLU 71	-1.3	-9059.88	-55674	-0.000079	0.0004492	0.0035	4.28	76863	104851.11	104851.11	11.57	No	Si
SLU 71	0.8	13090.98	-34187	-0.0000592	0.0004492	0.0035	4.28	57217.91	64511.58	64511.58	4.93	No	Si
SLU 70	-1.3	-9092.46	-55886	-0.0000793	0.0004492	0.0035	4.28	76994.3	105120.33	105120.33	11.56	No	Si
SLU 70	0.8	13042.6	-34345	-0.0000593	0.0004492	0.0035	4.28	57408.61	64756.17	64756.17	4.96	No	Si
SLU 56	-1.3	-8824.83	-54884	-0.0000776	0.0004492	0.0035	4.28	76364.13	103850.38	103850.38	11.77	No	Si
SLU 56	0.8	12893.79	-33857	-0.0000585	0.0004492	0.0035	4.28	56818.69	64002.37	64002.37	4.96	No	Si
SLU 83	-1.3	-9797.9	-63486	-0.0000903	0.0004492	0.0035	4.28	80883.31	114550.58	114550.58	11.69	No	Si
SLU 83	0.8	14972.47	-40501	-0.0000701	0.0004492	0.0035	4.28	64297.8	74271.86	74271.86	4.96	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 14	-1.3	-37912.26	-34002	-0.0001074	0.0006738	0.0035	4.28		75503.26	75503.26	1.99		Si
SLV 14	0.8	11544.76	-29451	-0.0000502	0.0006738	0.0035	4.28		59480.23	59480.23	5.15		Si
SLV 11	-1.3	-22159.14	-48558	-0.0000898	0.0006738	0.0035	4.28		99624.24	99624.24	4.5		Si
SLV 11	0.8	24286.79	-29034	-0.0000706	0.0006738	0.0035	4.28		58727.89	58727.89	2.42		Si
SLV 2	-1.3	27611.37	-45745	-0.0000953	0.0006738	0.0035	4.28		85742.35	85742.35	3.11		Si
SLV 2	0.8	235.59	-21841	-0.000024	0.0006738	0.0035	4.28		45499.11	45499.11	193.13		Si
SLV 7	-1.3	-2502.05	-52080	-0.0000618	0.0006738	0.0035	4.28		105054.35	105054.35	41.99		Si
SLV 7	0.8	20894.04	-26751	-0.0000621	0.0006738	0.0035	4.28		54589.79	54589.79	2.61		Si
SLV 12	-1.3	-22466.35	-48611	-0.0000903	0.0006738	0.0035	4.28		99705.8	99705.8	4.44		Si
SLV 12	0.8	24141.64	-29242	-0.0000705	0.0006738	0.0035	4.28		59104.21	59104.21	2.45		Si
SLV 13	-1.3	-37455.97	-33924	-0.0001059	0.0006738	0.0035	4.28		75368.07	75368.07	2.01		Si
SLV 13	0.8	11760.36	-29141	-0.0000502	0.0006738	0.0035	4.28		58921.28	58921.28	5.01		Si
SLV 16	-1.3	-41402.37	-38854	-0.0001178	0.0006738	0.0035	4.28		83848.69	83848.69	2.03		Si
SLV 16	0.8	19169.32	-30607	-0.0000636	0.0006738	0.0035	4.28		61556.27	61556.27	3.21		Si
SLV 8	-1.3	-2809.26	-52133	-0.0000624	0.0006738	0.0035	4.28		105135.9	105135.9	37.42		Si
SLV 8	0.8	20748.89	-26959	-0.000062	0.0006738	0.0035	4.28		54972.55	54972.55	2.65		Si
SLV 15	-1.3	-40946.07	-38775	-0.0001164	0.0006738	0.0035	4.28		83713.5	83713.5	2.04		Si
SLV 15	0.8	19384.91	-30297	-0.0000636	0.0006738	0.0035	4.28		61006.91	61006.91	3.15		Si
SLV 1	-1.3	28067.66	-45666	-0.000096	0.0006738	0.0035	4.28		85619.59	85619.59	3.05		Si
SLV 1	0.8	451.19	-21531	-0.000024	0.0006738	0.0035	4.28		44919.07	44919.07	99.56		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	-1.3	-9732.94	-61678	-44857	4491	4.28	4.28	-34935	10833	25359	95155	46144	21828	67972	No	15.13	Si
SLU 78	0.8	14492.89	-38957	-28333	4481	4.28	4.28	-22066	10833	18750	95155	46144	21828	67972	No	15.17	Si
SLU 77	-1.3	-9792.01	-61756	-44913	4464	4.28	4.28	-34979	10833	25382	95155	46144	21828	67972	No	15.23	Si
SLU 77	0.8	14628.5	-38971	-28342	4454	4.28	4.28	-22073	10833	18754	95155	46144	21828	67972	No	15.26	Si
SLU 75	-1.3	-9556	-61216	-44521	4475	4.28	4.28	-34673	10833	25225	95155	46144	21828	67972	No	15.19	Si
SLU 75	0.8	14302.54	-38683	-28133	4465	4.28	4.28	-21910	10833	18670	95155	46144	21828	67972	No	15.22	Si
SLU 82	-1.3	-9561.9	-62946	-45779	4512	4.28	4.28	-35653	10833	25728	95155	46144	21828	67972	No	15.06	Si
SLU 82	0.8	14646.51	-40213	-29246	4502	4.28	4.28	-22777	10833	19115	95155	46144	21828	67972	No	15.1	Si
SLU 74	-1.3	-9615.07	-61294	-44577	4448	4.28	4.28	-34717	10833	25248	95155	46144	21828	67972	No	15.28	Si
SLU 74	0.8	14438.15	-38696	-28143	4438	4.28	4.28	-21918	10833	18674	95155	46144	21828	67972	No	15.32	Si
SLU 81	-1.3	-9620.97	-63024	-45835	4485	4.28	4.28	-35697	10833	25751	95155	46144	21828	67972	No	15.16	Si
SLU 81	0.8	14782.12	-40227	-29256	4475	4.28	4.28	-22785	10833	19119	95155	46144	21828	67972	No	15.19	Si
SLU 76	-1.3	-9424.97	-60874	-44272	4458	4.28	4.28	-34480	10833	25125	95155	46144	21828	67972	No	15.25	Si
SLU 76	0.8	14124.9	-38502	-28001	4448	4.28	4.28	-21808	10833	18617	95155	46144	21828	67972	No	15.28	Si
SLU 84	-1.3	-9738.83	-63408	-46115	4528	4.28	4.28	-35915	10833	25863	95155	46144	21828	67972	No	15.01	Si
SLU 84	0.8	14836.86	-40488	-29446	4518	4.28	4.28	-22933	10833	19195	95155	46144	21828	67972	No	15.05	Si
SLU 83	-1.3	-9797.9	-63486	-46171	4501	4.28	4.28	-35959	10833	25885	95155	46144	21828	67972	No	15.1	Si
SLU 83	0.8	14972.47	-40501	-29455	4491	4.28	4.28	-22940	10833	19199	95155	46144	21828	67972	No	15.14	Si
SLU 80	-1.3	-9641.28	-61388	-44646	4456	4.28	4.28	-34771	10833	25275	95155	46144	21828	67972	No	15.25	Si
SLU 80	0.8	14405.65	-38785	-28208	4446	4.28	4.28	-21969	10833	18700	95155	46144	21828	67972	No	15.29	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	-1.3	27611.37	-45745	-33269	32030	4.28	4.28	-25910	16250	24433	95155	69216	21828	91044		2.84	Si
SLV 2	0.8	235.59	-21841	-15884	31529	4.28	4.28	-12371	14974	19227	95155	69216	21828	91044		2.89	Si
SLV 16	-1.3	-41402.37	-38854	-28257	-25953	4.28	3.2232	-29625	16250	22429	95155	69216	21828	91044		3.51	Si
SLV 16	0.8	19169.32	-30607	-22260	-25466	4.28	4.28	-17336	15967	20502	95155	69216	21828	91044		3.58	Si
SLV 15	-1.3	-40946.07	-38775	-28200	-25604	4.28	3.252	-29299	16250	22406	95155	69216	21828	91044		3.56	Si
SLV 15	0.8	19384.91	-30297	-22034	-25116	4.28	4.28	-17161	15932	20457	95155	69216	21828	91044		3.62	Si
SLV 1	-1.3	28067.66	-45666	-33212	32380	4.28	4.28	-25866	16250	24410	95155	69216	21828	91044		2.81	Si
SLV 1	0.8	451.19	-21531	-15659	31879	4.28	4.28	-12196	14939	19182	95155	69216	21828	91044		2.86	Si
SLV 3	-1.3	24577.56	-50517	-36740	30862	4.28	4.28	-28614	16250	25821	95155	69216	21828	91044		2.95	Si
SLV 3	0.8	8075.74	-22688	-16500	30343	4.28	4.28	-12851	15070	19350	95155	69216	21828	91044		3	Si
SLV 14	-1.3	-37912.26	-34002	-24729	-24435	4.28	3.075	-27136	16250	21017	95155	69216	21828	91044		3.73	Si
SLV 14	0.8	11544.76	-29451	-21419	-23929	4.28	4.28	-16681	15836	20334	95155	69216	21828	91044		3.8	Si
SLV 4	-1.3	24121.26	-50596	-36797	30512	4.28	4.28	-28658	16250	25844	95155	69216	21828	91044		2.98	Si
SLV 4	0.8	7860.14	-22998	-16726	29992	4.28	4.28	-13026	15105	19395	95155	69216	21828	91044		3.04	Si
SLD 1	-1.3	8126.77	-43785	-31844	15656	4.28	4.28	-24800	16250	23863	95155	69216	21828	91044		5.82	Si
SLD 1	0.8	5918.87	-24147	-17562	15437	4.28	4.28	-13677	15235	19562	95155	69216	21828	91044		5.9	Si
SLV 13	-1.3	-37455.97	-33924	-24672	-24086	4.28	3.1076	-26785	16250	20994	95155	69216	21828	91044		3.78	Si
SLV 13	0.8	11760.36	-29141	-21193	-23579	4.28	4.28	-16506	15801	20289	95155	69216	21828	91044		3.86	Si
SLD 2	-1.3	7932.65	-43818	-31868	15507	4.28	4.28	-24819	16250	23873	95155	69216	21828	91044		5.87	Si
SLD 2	0.8	5827.15	-24279	-17658	15288	4.28	4.28	-13752	15250	19582	95155	69216	21828	91044		5.96	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 0.185 Ta 0.05 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 5	-27100	0.25	223.53	3596.91	4970.17	4283.54	19.16	Si
SLV 6	-27302	0.25	223.53	3620.14	5002.26	4311.2	19.29	Si
SLV 1	-27547	0.25	223.53	3648.4	5041.4	4344.9	19.44	Si
SLV 2	-27846	0.25	223.53	3682.72	5089.08	4385.9	19.62	Si
SLV 9	-28340	0.25	223.53	3739.07	5167.72	4453.4	19.92	Si
SLV 10	-28541	0.25	223.53	3761.99	5199.31	4480.65	20.04	Si
SLV 3	-29212	0.25	223.53	3837.91	5304.3	4571.11	20.45	Si
SLV 4	-29511	0.25	223.53	3871.6	5351.14	4611.37	20.63	Si
SLV 13	-31680	0.25	223.53	4112.31	5690.86	4901.58	21.93	Si
SLV 14	-31979	0.25	223.53	4145.05	5737.76	4941.4	22.11	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.05 Ta = 0.0491

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 14	-10314	-34002	-319	1.789	1601.1	0.914	28.43354	3.36438	Si
SLV 13	-10248	-33924	-319	1.797	1594.5	0.914	28.5729	3.36438	Si
SLV 16	-10236	-38854	130	1.813	1593.4	0.914	28.81952	3.36438	Si
SLV 15	-10171	-38775	129	1.821	1586.8	0.914	28.9632	3.36438	Si
SLV 4	-9728	-50596	326	1.866	1542.6	0.912	29.72848	3.36438	Si
SLV 2	-9805	-45745	-122	1.871	1550.4	0.912	29.79535	3.36438	Si
SLV 3	-9662	-50517	326	1.875	1536.1	0.912	29.8825	3.36438	Si
SLV 1	-9740	-45666	-123	1.88	1543.8	0.912	29.94721	3.36438	Si
SLV 10	-10215	-32439	-773	1.768	1591.3	0.914	28.115	3.03106	Si
SLV 9	-10171	-32387	-774	1.774	1586.9	0.914	28.20826	3.03106	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.915	SLU 69	Si
V_SLU	15.011	SLU 84	Si
PF_SLV	1.992	SLV 14	Si
V_SLV	2.812	SLV 1	Si
PFFP_SLV	19.163	SLV 5	Si
R_SLV	8.451	SLV 14	Si

Maschio 24

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-16.768	6.576	-12.888	6.576	L2	L4	3.88	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 50	0.7	382.47	-45529	-0.0000422	0.0003743	0.0035	3.88	65704.29	71133.98	71133.98	185.98	No	Si
SLU 50	1.1	-3068.08	-46897	-0.0000476	0.0003743	0.0035	3.88	66977.71	77091.4	77091.4	25.13	No	Si
SLU 49	0.7	379.62	-45489	-0.0000422	0.0003743	0.0035	3.88	65666.28	71089.08	71089.08	187.26	No	Si
SLU 49	1.1	-3047.35	-46896	-0.0000475	0.0003743	0.0035	3.88	66977.37	77090.96	77090.96	25.3	No	Si
SLU 69	0.7	617.21	-53771	-0.0000508	0.0003743	0.0035	3.88	72761.26	80501.66	80501.66	130.43	No	Si
SLU 69	1.1	-3232.47	-55492	-0.0000565	0.0003743	0.0035	3.88	74048.13	86581.94	86581.94	26.79	No	Si
SLU 48	0.7	361.67	-46001	-0.0000427	0.0003743	0.0035	3.88	66148.29	71662.16	71662.16	198.14	No	Si
SLU 48	1.1	-3120.67	-47391	-0.0000481	0.0003743	0.0035	3.88	67428.22	77684.8	77684.8	24.89	No	Si
SLU 46	0.7	395.69	-44665	-0.0000414	0.0003743	0.0035	3.88	64877.76	70168.69	70168.69	177.33	No	Si
SLU 46	1.1	-2938.18	-46037	-0.0000465	0.0003743	0.0035	3.88	66181.93	76065.83	76065.83	25.89	No	Si
SLU 47	0.7	428.47	-43851	-0.0000407	0.0003743	0.0035	3.88	64085.82	69264.67	69264.67	161.66	No	Si
SLU 47	1.1	-2836.71	-45213	-0.0000456	0.0003743	0.0035	3.88	65403.51	75088.22	75088.22	26.47	No	Si
SLU 45	0.7	377.74	-45177	-0.0000419	0.0003743	0.0035	3.88	65368.99	70739.62	70739.62	187.27	No	Si
SLU 45	1.1	-3011.5	-46532	-0.0000471	0.0003743	0.0035	3.88	66642.07	76655.38	76655.38	25.45	No	Si
SLU 43	0.7	414.62	-43880	-0.0000407	0.0003743	0.0035	3.88	64113.85	69296.33	69296.33	167.13	No	Si
SLU 43	1.1	-2849.74	-45178	-0.0000455	0.0003743	0.0035	3.88	65370.73	75047.58	75047.58	26.33	No	Si
SLU 51	0.7	400.43	-45018	-0.0000418	0.0003743	0.0035	3.88	65217.01	70562.13	70562.13	176.22	No	Si
SLU 51	1.1	-2994.76	-46402	-0.000047	0.0003743	0.0035	3.88	66521.51	76500.06	76500.06	25.54	No	Si
SLU 6	0.7	333.38	-37924	-0.0000348	0.0003743	0.0035	3.88	57876.71	62099.54	62099.54	186.27	No	Si
SLU 6	1.1	-2492.53	-39102	-0.0000391	0.0003743	0.0035	3.88	59171.61	67412.22	67412.22	27.05	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 15	0.7	13634.49	-51314	-0.0000659	0.0005615	0.0035	3.88		84384.95	84384.95	6.19		Si
SLV 15	1.1	-2426.33	-51959	-0.0000503	0.0005615	0.0035	3.88		89628.97	89628.97	36.94		Si
SLV 5	0.7	-3056.06	9003	0	0.0005615	0.0035	3.104		0	0	0		No
SLV 5	1.1	3812.27	6698	0.4179576	0.0005615	0.0035	3.104		0	0	0		No
SLV 13	0.7	14427.71	-21552	-0.0000388	0.0005615	0.0035	3.88		39862	39862	2.76		Si
SLV 13	1.1	1567.82	-22734	-0.0000221	0.0005615	0.0035	3.88		41854.58	41854.58	26.7		Si
SLV 1	0.7	-14362.97	-27902	-0.0000445	0.0005615	0.0035	3.88		53633.36	53633.36	3.73		Si
SLV 1	1.1	-2204.83	-29873	-0.0000294	0.0005615	0.0035	3.88		56835.24	56835.24	25.78		Si
SLV 6	0.7	-1800.11	8839	0	0.0005615	0.0035	3.104		0	0	0		No
SLV 6	1.1	3964.03	6598	0.4114388	0.0005615	0.0035	3.104		0	0	0		No
SLV 2	0.7	-12497.5	-28144	-0.0000422	0.0005615	0.0035	3.88		54026.53	54026.53	4.32		Si
SLV 2	1.1	-1979.42	-30022	-0.0000293	0.0005615	0.0035	3.88		57077.69	57077.69	28.84		Si
SLV 10	0.7	6837.1	10744	0.6695384	0.0005615	0.0035	3.104		0	0	0		No
SLV 10	1.1	5095.82	8740	0.545217	0.0005615	0.0035	3.104		0	0	0		No
SLV 9	0.7	5581.14	10908	0.6814554	0.0005615	0.0035	3.104		0	0	0		No
SLV 9	1.1	4944.07	8840	0.5517345	0.0005615	0.0035	3.104		0	0	0		No
SLV 14	0.7	16293.17	-21795	-0.0000419	0.0005615	0.0035	3.88		40272.99	40272.99	2.47		Si
SLV 14	1.1	1793.23	-22882	-0.0000225	0.0005615	0.0035	3.88		42105.64	42105.64	23.48		Si
SLV 16	0.7	15499.95	-51557	-0.0000688	0.0005615	0.0035	3.88		84743.46	84743.46	5.47		Si
SLV 16	1.1	-2200.93	-52108	-0.0000501	0.0005615	0.0035	3.88		89828.24	89828.24	40.81		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	0.7	999.23	-59743	-53105	8084	3.88	3.88	-30415	10833	29646	33304	52283	9894	62177	No	7.69	Si
SLU 77	1.1	-3055.18	-61747	-54886	8084	3.88	3.88	-31436	10833	30359	33304	52283	9894	62177	No	7.69	Si
SLU 69	0.7	617.21	-53771	-47796	7735	3.88	3.88	-27375	10594	27523	33304	52283	9894	60827	No	7.86	Si
SLU 69	1.1	-3232.47	-55492	-49326	7735	3.88	3.88	-28251	10711	28135	33304	52283	9894	61439	No	7.94	Si
SLU 84	0.7	1217.79	-60494	-53772	7806	3.88	3.88	-30797	10833	29913	33304	52283	9894	62177	No	7.97	Si
SLU 84	1.1	-2744.12	-62579	-55626	7806	3.88	3.88	-31859	10833	30655	33304	52283	9894	62177	No	7.96	Si
SLU 70	0.7	635.16	-53259	-47341	7586	3.88	3.88	-27114	10560	27341	33304	52283	9894	60645	No	7.99	Si
SLU 70	1.1	-3159.15	-54997	-48886	7587	3.88	3.88	-27999	10678	27959	33304	52283	9894	61263	No	8.07	Si
SLU 74	0.7	1015.3	-58918	-52372	7871	3.88	3.88	-29995	10833	29353	33304	52283	9894	62177	No	7.9	Si
SLU 74	1.1	-2946.01	-60888	-54123	7871	3.88	3.88	-30998	10833	30053	33304	52283	9894	62177	No	7.9	Si
SLU 79	0.7	1020.04	-59271	-52685	8017	3.88	3.88	-30175	10833	29478	33304	52283	9894	62177	No	7.76	Si
SLU 79	1.1	-3002.59	-61253	-54447	8018	3.88	3.88	-31184	10833	30183	33304	52283	9894	62177	No	7.75	Si
SLU 78	0.7	1017.18	-59231	-52650	7935	3.88	3.88	-30154	10833	29464	33304	52283	9894	62177	No	7.84	Si
SLU 78	1.1	-2981.86	-61252	-54447	7936	3.88	3.88	-31184	10833	30183	33304	52283	9894	62177	No	7.83	Si
SLU 71	0.7	638.01	-53299	-47377	7668	3.88	3.88	-27135	10562	27355	33304	52283	9894	60659	No	7.91	Si
SLU 71	1.1	-3179.88	-54998	-48887	7669	3.88	3.88	-27999	10678	27959	33304	52283	9894	61263	No	7.99	Si
SLU 80	0.7	1037.99	-58759	-52230	7869	3.88	3.88	-29914	10833	29296	33304	52283	9894	62177	No	7.9	Si
SLU 80	1.1	-2929.27	-60758	-54007	7870	3.88	3.88	-30932	10833	30007	33304	52283	9894	62177	No	7.9	Si
SLU 83	0.7	1199.84	-61006	-54227	7954	3.88	3.88	-31058	10833	30095	33304	52283	9894	62177	No	7.82	Si
SLU 83	1.1	-2817.44	-63074	-56066	7955	3.88	3.88	-32111	10833	30831	33304	52283	9894	62177	No	7.82	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	0.7	14427.71	-21552	-19158	30286	3.88	3.8117	-10972	12611	21631	33304	78424	9894	54936		1.81	Si
SLV 13	1.1	1567.82	-22734	-20208	30072	3.88	3.88	-11574	12731	22229	33304	78424	9894	55533		1.85	Si
SLV 6	0.7	-1800.11	8839	7857	-17965	3.104	3.88	0	0	0	33304	62740	7915	33304		1.85	Si
SLV 6	1.1	3964.03	6598	5865	-17788	3.104	3.88	0	0	0	33304	62740	7915	33304		1.87	Si
SLV 14	0.7	16293.17	-21795	-19373	34441	3.88	3.5773	-11096	12636	20357	33304	78424	9894	53661		1.56	Si
SLV 14	1.1	1793.23	-22882	-20340	34226	3.88	3.88	-11649	12747	22255	33304	78424	9894	55560		1.62	Si
SLV 15	0.7	13634.49	-51314	-45612	39546	3.88	3.88	-26124	15641	30852	33304	78424	9894	64156		1.62	Si
SLV 15	1.1	-2426.33	-51959	-46186	39270	3.88	3.88	-26453	15707	31081	33304	78424	9894	64386		1.64	Si
SLV 11	0.7	2937.09	-88297	-78487	28992	3.88	3.88	-44952	16250	44001	33304	78424	9894	77305		2.67	Si
SLV 11	1.1	-8369.79	-88579	-78737	28815	3.88	3.88	-45096	16250	44101	33304	78424	9894	77406		2.69	Si
SLV 2	0.7	-12497.5	-28144	-25017	-28519	3.88	3.88	-14328	13282	23191	33304	78424	9894	56495		1.98	Si
SLV 2	1.1	-1979.42	-30022	-26686	-28243	3.88	3.88	-15284	13474	23525	33304	78424	9894	56829		2.01	Si
SLV 16	0.7	15499.95	-51557	-45828	43701	3.88	3.88	-26247	15666	30938	33304	78424	9894	64243		1.47	Si
SLV 16	1.1	-2200.93	-52108	-46318	43424	3.88	3.88	-26528	15722	31134	33304	78424	9894	64439		1.48	Si
SLV 1	0.7	-14362.97	-27902	-24801	-32674	3.88	3.88	-14205	13258	23148	33304	78424	9894	56452		1.73	Si
SLV 1	1.1	-2204.83	-29873	-26554	-32397	3.88	3.88	-15209	13458	23498	33304	78424	9894	56803		1.75	Si
SLV 12	0.7	4193.05	-88461	-78632	31789	3.88	3.88	-45035	16250	44059	33304	78424	9894	77364		2.43	Si
SLV 12	1.1	-8218.03	-88679	-78826	31612	3.88	3.88	-45147	16250	44137	33304	78424	9894	77441		2.45	Si
SLV 5	0.7	-3056.06	9003	8002	-20762	3.104	3.88	0	0	0	33304	62740	7915	33304		1.6	Si
SLV 5	1.1	3812.27	6698	5954	-20585	3.104	3.88	0	0	0	33304	62740	7915	33304		1.62	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.185 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 10	179667	0.25	0	9883	293.4	0	0	No, Trazione
SLV 9	179667	0.25	0	10263	293.4	0	0	No, Trazione
SLV 5	179667	0.25	0	9364	293.4	0	0	No, Trazione
SLV 6	179667	0.25	0	8984	293.4	0	0	No, Trazione
SLV 13	179667	0.25	12491	-21809	293.4	4505.73	15.36	Si
SLV 14	179667	0.25	12815	-22374	293.4	4611.78	15.72	Si
SLV 1	179667	0.25	14208	-24807	293.4	5062.24	17.25	Si
SLV 2	179667	0.25	14531	-25372	293.4	5165.44	17.61	Si
SLV 15	179667	0.25	28796	-50278	293.4	9179.51	31.29	Si

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 16	179667	0.25	29120	-50843	293.4	9258.42	31.56	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 8	-87699	-78505	-3517	0.277	9659.5	0.977	4.1292	2.80694	Si
SLV 7	-87632	-78186	-3524	0.278	9652.7	0.977	4.13023	2.80694	Si
SLV 12	-86220	-75972	-3316	0.283	9508.9	0.976	4.2125	2.80694	Si
SLV 11	-86153	-75653	-3323	0.283	9502	0.976	4.21361	2.80694	Si
SLV 4	-56410	-51312	-2704	0.394	6473.3	0.966	5.92977	3.00264	Si
SLV 3	-56310	-50838	-2715	0.394	6463.1	0.966	5.93514	3.00264	Si
SLV 16	-51480	-42868	-2033	0.434	5971.7	0.963	6.54776	3.00264	Si
SLV 15	-51380	-42394	-2045	0.434	5961.5	0.963	6.55475	3.00264	Si
SLV 2	-28097	-25404	-1808	0.697	3596	0.942	10.74147	3.00264	Si
SLV 1	-27997	-24930	-1819	0.698	3585.9	0.942	10.76702	3.00264	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	24.894	SLU 48	Si
V_SLU	7.691	SLU 77	Si
PF_SLV	0	SLV 5	No
V_SLV	1.47	SLV 16	Si
PFFP_SLV	0	SLV 10	No
R_SLV	1.471	SLV 8	Si

Maschio 25

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.428	1.046	-11.238	1.046	L2	L4	3.81	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 82	-1.3	-10024.04	-124922	-0.0001362	0.0004492	0.0035	3.81	96068.01	154884.53	154884.53	15.45	No	Si
SLU 82	0.86	-3984.92	-106049	-0.0001049	0.0004492	0.0035	3.81	99754.37	144034.04	144034.04	36.14	No	Si
SLU 83	-1.3	-9920.42	-126616	-0.000138	0.0004492	0.0035	3.81	95420.05	155690.81	155690.81	15.69	No	Si
SLU 83	0.86	-4033.76	-107401	-0.0001065	0.0004492	0.0035	3.81	99705.7	144999.23	144999.23	35.95	No	Si
SLU 75	-1.3	-9653.54	-122050	-0.0001323	0.0004492	0.0035	3.81	97046.65	153518.41	153518.41	15.9	No	Si
SLU 75	0.86	-3957.43	-103387	-0.0001021	0.0004492	0.0035	3.81	99753.06	142133.17	142133.17	35.92	No	Si
SLU 76	-1.3	-9748.88	-121107	-0.0001314	0.0004492	0.0035	3.81	97335.57	153069.41	153069.41	15.7	No	Si
SLU 76	0.86	-3948.22	-102678	-0.0001013	0.0004492	0.0035	3.81	99730.96	141626.66	141626.66	35.87	No	Si
SLU 78	-1.3	-9727.7	-123383	-0.0001339	0.0004492	0.0035	3.81	96611.22	154152.27	154152.27	15.85	No	Si
SLU 78	0.86	-4014.94	-104612	-0.0001035	0.0004492	0.0035	3.81	99769.67	143007.59	143007.59	35.62	No	Si
SLU 73	-1.3	-9674.73	-119774	-0.0001297	0.0004492	0.0035	3.81	97715.86	152435.55	152435.55	15.76	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 73	0.86	-3890.7	-101453	-0.0000999	0.0004492	0.0035	3.81	99671.26	140752.24	140752.24	36.18	No	Si
SLU 84	-1.3	-10098.2	-126254	-0.0001379	0.0004492	0.0035	3.81	95563	155518.39	155518.39	15.4	No	Si
SLU 84	0.86	-4042.44	-107274	-0.0001063	0.0004492	0.0035	3.81	99711.69	144908.46	144908.46	35.85	No	Si
SLU 63	-1.3	-9301.83	-112848	-0.0001213	0.0004492	0.0035	3.81	99172.86	148888.08	148888.08	16.01	No	Si
SLU 63	0.86	-3425.8	-94948	-0.0000924	0.0004492	0.0035	3.81	98896.99	136107.81	136107.81	39.73	No	Si
SLU 80	-1.3	-9704.52	-122680	-0.0001331	0.0004492	0.0035	3.81	96844.73	153818.22	153818.22	15.85	No	Si
SLU 80	0.86	-3999.95	-103987	-0.0001028	0.0004492	0.0035	3.81	99764.61	142561.59	142561.59	35.64	No	Si
SLU 81	-1.3	-9846.27	-125284	-0.0001363	0.0004492	0.0035	3.81	95933.84	155056.94	155056.94	15.75	No	Si
SLU 81	0.86	-3976.24	-106176	-0.0001051	0.0004492	0.0035	3.81	99751.21	144124.81	144124.81	36.25	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	-1.3	-36401.23	-50911	-0.0000958	0.0006738	0.0035	3.81		93522.67	93522.67	2.57		Si
SLV 10	0.86	1203.84	-55032	-0.0000491	0.0006738	0.0035	3.81		91698.75	91698.75	76.17		Si
SLV 9	-1.3	-36007.04	-51080	-0.0000953	0.0006738	0.0035	3.81		93767.43	93767.43	2.6		Si
SLV 9	0.86	1079.14	-55105	-0.000049	0.0006738	0.0035	3.81		91800.05	91800.05	85.07		Si
SLV 2	-1.3	33789.15	-70012	-0.0001099	0.0006738	0.0035	3.81		112510.91	112510.91	3.33		Si
SLV 2	0.86	-21345.27	-70137	-0.0000918	0.0006738	0.0035	3.81		120334.25	120334.25	5.64		Si
SLV 4	-1.3	43430.35	-90553	-0.0001452	0.0006738	0.0035	3.81		138450.71	138450.71	3.19		Si
SLV 4	0.86	-20389.4	-78615	-0.0000986	0.0006738	0.0035	3.81		131251.15	131251.15	6.44		Si
SLV 1	-1.3	34374.65	-70263	-0.0001111	0.0006738	0.0035	3.81		112859.08	112859.08	3.28		Si
SLV 1	0.86	-21530.48	-70246	-0.0000922	0.0006738	0.0035	3.81		120474.03	120474.03	5.6		Si
SLV 3	-1.3	44015.84	-90804	-0.0001463	0.0006738	0.0035	3.81		138720.38	138720.38	3.15		Si
SLV 3	0.86	-20574.62	-78723	-0.000099	0.0006738	0.0035	3.81		131382.28	131382.28	6.39		Si
SLV 15	-1.3	-46811.81	-98223	-0.0001585	0.0006738	0.0035	3.81		154191.11	154191.11	3.29		Si
SLV 15	0.86	15878.52	-70672	-0.0000844	0.0006738	0.0035	3.81		113426.99	113426.99	7.14		Si
SLV 13	-1.3	-56453.01	-77682	-0.000153	0.0006738	0.0035	3.81		130072.04	130072.04	2.3		Si
SLV 13	0.86	14922.65	-62195	-0.0000751	0.0006738	0.0035	3.81		101649.87	101649.87	6.81		Si
SLV 16	-1.3	-47397.31	-97972	-0.0001591	0.0006738	0.0035	3.81		153910.26	153910.26	3.25		Si
SLV 16	0.86	16063.74	-70564	-0.0000846	0.0006738	0.0035	3.81		113276.53	113276.53	7.05		Si
SLV 14	-1.3	-57038.5	-77431	-0.0001539	0.0006738	0.0035	3.81		129748.57	129748.57	2.27		Si
SLV 14	0.86	15107.87	-62086	-0.0000753	0.0006738	0.0035	3.81		101499.41	101499.41	6.72		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	-1.3	-10024.04	-124922	-99937	-3193	3.81	3.81	-58289	10833	49878	95155	61615	19431	81046	No	25.38	Si
SLU 82	0.86	-3984.92	-106049	-84839	-1700	3.81	3.81	-49483	10833	43839	95155	61615	19431	81046	No	47.68	Si
SLU 83	-1.3	-9920.42	-126616	-101293	-3320	3.81	3.81	-59080	10833	50420	95155	61615	19431	81046	No	24.41	Si
SLU 83	0.86	-4033.76	-107401	-85921	-1834	3.81	3.81	-50114	10833	44271	95155	61615	19431	81046	No	44.19	Si
SLU 84	-1.3	-10098.2	-126254	-101003	-3202	3.81	3.81	-58911	10833	50304	95155	61615	19431	81046	No	25.31	Si
SLU 84	0.86	-4042.44	-107274	-85819	-1697	3.81	3.81	-50055	10833	44231	95155	61615	19431	81046	No	47.75	Si
SLU 53	-1.3	-8679.39	-109006	-87205	-3208	3.81	3.81	-50863	10833	44785	95155	61615	19431	81046	No	25.27	Si
SLU 53	0.86	-3332.11	-91188	-72951	-1981	3.81	3.81	-42549	10833	39083	95155	61615	19431	81046	No	40.92	Si
SLU 60	-1.3	-9049.89	-111878	-89502	-3379	3.81	3.81	-52203	10833	45704	95155	61615	19431	81046	No	23.98	Si
SLU 60	0.86	-3359.61	-93850	-75080	-2079	3.81	3.81	-43791	10833	39935	95155	61615	19431	81046	No	38.98	Si
SLU 81	-1.3	-9846.27	-125284	-100227	-3311	3.81	3.81	-58459	10833	49994	95155	61615	19431	81046	No	24.48	Si
SLU 81	0.86	-3976.24	-106176	-84941	-1837	3.81	3.81	-49543	10833	43879	95155	61615	19431	81046	No	44.13	Si
SLU 62	-1.3	-9124.05	-113210	-90568	-3388	3.81	3.81	-52825	10833	46130	95155	61615	19431	81046	No	23.92	Si
SLU 62	0.86	-3417.12	-95075	-76060	-2077	3.81	3.81	-44363	10833	40327	95155	61615	19431	81046	No	39.03	Si
SLU 63	-1.3	-9301.83	-112848	-90278	-3270	3.81	3.81	-52656	10833	46014	95155	61615	19431	81046	No	24.78	Si
SLU 63	0.86	-3425.8	-94948	-75958	-1940	3.81	3.81	-44304	10833	40286	95155	61615	19431	81046	No	41.78	Si
SLU 56	-1.3	-8753.55	-110339	-88271	-3217	3.81	3.81	-51485	10833	45211	95155	61615	19431	81046	No	25.19	Si
SLU 56	0.86	-3389.63	-92413	-73930	-1978	3.81	3.81	-43121	10833	39475	95155	61615	19431	81046	No	40.97	Si
SLU 61	-1.3	-9227.67	-111515	-89212	-3261	3.81	3.81	-52034	10833	45588	95155	61615	19431	81046	No	24.85	Si
SLU 61	0.86	-3368.28	-93723	-74979	-1942	3.81	3.81	-43732	10833	39895	95155	61615	19431	81046	No	41.73	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	-1.3	43430.35	-90553	-72443	38500	3.81	3.81	-42253	16250	43832	95155	92422	19431	111853		2.91	Si
SLV 4	0.86	-20389.4	-78615	-62892	22614	3.81	3.81	-36682	16250	40012	95155	92422	19431	111853		4.95	Si
SLV 11	-1.3	-3869.72	-119549	-95640	-25153	3.81	3.81	-55783	16250	53111	95155	92422	19431	111853		4.45	Si
SLV 11	0.86	4265.36	-83362	-66690	-21024	3.81	3.81	-38897	16250	41531	95155	92422	19431	111853		5.32	Si
SLV 1	-1.3	34374.65	-70263	-56210	44790	3.81	3.81	-32785	16250	37340	95155	92422	19431	111853		2.5	Si
SLV 1	0.86	-21530.48	-70246	-56197	29873	3.81	3.81	-32777	16250	37334	95155	92422	19431	111853		3.74	Si
SLV 13	-1.3	-56453.01	-77682	-62146	-42849	3.81	3.5348	-39819	16250	39714	95155	92422	19431	111853		2.61	Si
SLV 13	0.86	14922.65	-62195	-49756	-25136	3.81	3.81	-29021	16250	34758	95155	92422	19431	111853		4.45	Si
SLV 12	-1.3	-4263.92	-119381	-95505	-25371	3.81	3.81	-55704	16250	53057	95155	92422	19431	111853		4.41	Si
SLV 12	0.86	4390.06	-83289	-66631	-21221	3.81	3.81	-38863	16250	41508	95155	92422	19431	111853		5.27	Si
SLV 16	-1.3	-47397.31	-97972	-78378	-49139	3.81	3.81	-45715	16250	46206	95155	92422	19431	111853		2.28	Si
SLV 16	0.86	16063.74	-70564	-56451	-32396	3.81	3.81	-32926	16250	37436	95155	92422	19431	111853		3.45	Si
SLV 2	-1.3	33789.15	-70012	-56010	44466	3.81	3.81	-32668	16250	37259	95155	92422	19431	111853		2.52	Si
SLV 2	0.86	-21345.27	-70137	-56110	29580	3.81	3.81	-32727	16250	37299	95155	92422	19431	111853		3.78	Si
SLV 15	-1.3	-46811.81	-98223	-78578	-48815	3.81	3.81	-45832	16250	46286	95155	92422	19431	111853		2.29	Si
SLV 15	0.86	15878.52	-70672	-56538	-32102	3.81	3.81	-32976	16250	37470	95155	92422	19431	111853		3.48	Si
SLV 14	-1.3	-57038.5	-77431	-61945	-43173	3.81	3.5051	-40032	16250	39633	95155	92422	19431	111853		2.59	Si
SLV 14	0.86	15107.87	-62086	-49669	-25430	3.81	3.81	-28970	16250	34723	95155	92422	19431	111853		4.4	Si
SLV 3	-1.3	44015.84	-90804	-72643	38825	3.81	3.81	-42370	16250	43912	95155	92422	19431	111853		2.88	Si
SLV 3	0.86	-20574.62	-78723	-62978	22908	3.81	3.81	-36733	16250	40047	95155	92422	19431	111853		4.88	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 0.185 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 10	-57666	0.25	292.8	10593.76	14086.46	12340.11	42.15	Si
SLV 9	-57786	0.25	292.8	10610.87	14113	12361.93	42.22	Si
SLV 6	-58860	0.25	292.8	10762.8	14350.17	12556.48	42.88	Si
SLV 5	-58980	0.25	292.8	10779.7	14376.71	12578.2	42.96	Si
SLV 14	-70455	0.25	292.8	12298.11	16751.84	14524.97	49.61	Si
SLV 13	-70633	0.25	292.8	12320.23	16787.11	14553.67	49.71	Si
SLV 2	-74435	0.25	292.8	12780.72	17538.31	15159.52	51.77	Si
SLV 1	-74614	0.25	292.8	12801.83	17573.58	15187.71	51.87	Si
SLV 16	-82636	0.25	292.8	13703.63	19100.01	16401.82	56.02	Si
SLV 15	-82815	0.25	292.8	13722.64	19133.35	16427.99	56.11	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-89709	-117324	-2129	0.284	9851.2	0.977	4.2203	2.80694	Si
SLV 8	-89489	-117155	-2095	0.285	9828.8	0.977	4.23309	2.80694	Si
SLV 3	-80909	-90804	-1336	0.315	8954.8	0.975	4.6869	3.00264	Si
SLV 4	-80583	-90553	-1286	0.316	8921.5	0.975	4.70976	3.00264	Si
SLV 11	-84031	-119549	-1940	0.299	9272.8	0.976	4.45633	2.80694	Si
SLV 12	-83811	-119381	-1906	0.3	9250.4	0.976	4.47056	2.80694	Si
SLV 1	-67643	-70263	-461	0.37	7603.7	0.971	5.54446	3.00264	Si
SLV 2	-67316	-70012	-410	0.373	7570.4	0.971	5.57563	3.00264	Si
SLV 15	-61983	-98223	-706	0.392	7027.4	0.969	5.87759	3.00264	Si
SLV 16	-61656	-97972	-656	0.394	6994.1	0.969	5.91317	3.00264	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	15.401	SLU 84	Si
V_SLU	23.919	SLU 62	Si
PF_SLV	2.275	SLV 14	Si
V_SLV	2.276	SLV 16	Si
PFFP_SLV	42.145	SLV 10	Si
R_SLV	1.504	SLV 7	Si

Maschio 26

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.013	-4.784	-11.013	1.046	L2	L4	5.83	0.3	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 69	-1.3	22502.1	-108502	-0.0001296	0.0004492	0.0035	5.83	155701.13	202564.46	202564.46	9	No	Si
SLU 69	1.67	7198.6	-102585	-0.0001059	0.0004492	0.0035	5.83	155489.72	197824.43	197824.43	27.48	No	Si
SLU 81	-1.3	23479.9	-122197	-0.0001477	0.0004492	0.0035	5.83	152526.6	211019.63	211019.63	8.99	No	Si
SLU 81	1.67	8348.85	-115487	-0.000122	0.0004492	0.0035	5.83	154721.35	206812.12	206812.12	24.77	No	Si
SLU 79	-1.3	23888	-119397	-0.0001446	0.0004492	0.0035	5.83	153591.96	209248.42	209248.42	8.76	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	1.67	8367.14	-113143	-0.0001193	0.0004492	0.0035	5.83	155198.59	205371.51	205371.51	24.54	No	Si
SLU 78	-1.3	23281.53	-120545	-0.0001453	0.0004492	0.0035	5.83	153180.94	209972.15	209972.15	9.02	No	Si
SLU 78	1.67	7646.81	-114357	-0.0001199	0.0004492	0.0035	5.83	154970.12	206115.78	206115.78	26.95	No	Si
SLU 77	-1.3	24123.86	-119968	-0.0001456	0.0004492	0.0035	5.83	153392.05	209607.89	209607.89	8.69	No	Si
SLU 77	1.67	8425.06	-113837	-0.0001202	0.0004492	0.0035	5.83	155072.84	205796.72	205796.72	24.43	No	Si
SLU 74	-1.3	23572.29	-118911	-0.0001436	0.0004492	0.0035	5.83	153754.91	208943.52	208943.52	8.86	No	Si
SLU 74	1.67	8153.1	-112598	-0.0001184	0.0004492	0.0035	5.83	155287.97	205039.13	205039.13	25.15	No	Si
SLU 71	-1.3	22266.24	-107930	-0.0001287	0.0004492	0.0035	5.83	155722.37	202223.11	202223.11	9.08	No	Si
SLU 71	1.67	7140.69	-101890	-0.000105	0.0004492	0.0035	5.83	155402.27	197116.91	197116.91	27.6	No	Si
SLU 83	-1.3	24031.47	-123254	-0.0001497	0.0004492	0.0035	5.83	152069	211693.63	211693.63	8.81	No	Si
SLU 83	1.67	8620.81	-116726	-0.0001238	0.0004492	0.0035	5.83	154408.57	207579.63	207579.63	24.08	No	Si
SLU 84	-1.3	23189.14	-123831	-0.0001494	0.0004492	0.0035	5.83	151806.14	212063.15	212063.15	9.14	No	Si
SLU 84	1.67	7842.55	-117246	-0.0001235	0.0004492	0.0035	5.83	154264.9	207902.84	207902.84	26.51	No	Si
SLU 80	-1.3	23045.67	-119974	-0.0001443	0.0004492	0.0035	5.83	153389.85	209611.77	209611.77	9.1	No	Si
SLU 80	1.67	7588.89	-113662	-0.000119	0.0004492	0.0035	5.83	155105.73	205689.57	205689.57	27.1	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 8	-1.3	89190.52	-31642	-0.0056324	0.0006738	0.0035	5.83		86851.02	86851.02	0.97		No
SLV 8	1.67	79847.04	-29028	-0.0022081	0.0006738	0.0035	5.83		80314.46	80314.46	1.01		Si
SLV 11	-1.3	95051.88	-25545	-0.020861	0.0006738	0.0035	5.83		71470.81	71470.81	0.75		No
SLV 11	1.67	79644.49	-28467	-0.0041924	0.0006738	0.0035	5.83		78902.64	78902.64	0.99		No
SLD 7	-1.3	45748.05	-61616	-0.0000974	0.0006738	0.0035	5.83		153232.09	153232.09	3.35		Si
SLD 7	1.67	35232.52	-57477	-0.0000834	0.0006738	0.0035	5.83		143917.35	143917.35	4.08		Si
SLV 15	-1.3	47102.17	-56765	-0.0000939	0.0006738	0.0035	5.83		142322.54	142322.54	3.02		Si
SLV 15	1.67	26501.44	-62484	-0.0000799	0.0006738	0.0035	5.83		155194.39	155194.39	5.86		Si
SLV 16	-1.3	44741.44	-58214	-0.0000931	0.0006738	0.0035	5.83		145569.33	145569.33	3.25		Si
SLV 16	1.67	25423.76	-63871	-0.0000803	0.0006738	0.0035	5.83		158339.89	158339.89	6.23		Si
SLV 12	-1.3	93462.48	-26521	-0.0176865	0.0006738	0.0035	5.83		73960.91	73960.91	0.79		No
SLV 12	1.67	78918.92	-29401	-0.0006722	0.0006738	0.0035	5.83		81252.58	81252.58	1.03		Si
SLV 7	-1.3	90779.92	-30667	-0.0077437	0.0006738	0.0035	5.83		84436.97	84436.97	0.93		No
SLV 7	1.67	80572.61	-28094	-0.005532	0.0006738	0.0035	5.83		77966.35	77966.35	0.97		No
SLD 12	-1.3	46911.69	-59834	-0.0000967	0.0006738	0.0035	5.83		149211.98	149211.98	3.18		Si
SLD 12	1.67	34533.71	-58026	-0.0000832	0.0006738	0.0035	5.83		145146.77	145146.77	4.2		Si
SLD 11	-1.3	47574.22	-59428	-0.000097	0.0006738	0.0035	5.83		148296.73	148296.73	3.12		Si
SLD 11	1.67	34836.15	-57636	-0.0000831	0.0006738	0.0035	5.83		144273.4	144273.4	4.14		Si
SLD 8	-1.3	45085.53	-62023	-0.0000971	0.0006738	0.0035	5.83		154151.48	154151.48	3.42		Si
SLD 8	1.67	34930.08	-57867	-0.0000835	0.0006738	0.0035	5.83		144790.43	144790.43	4.15		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	-1.3	22637.57	-122775	-103389	8451	5.83	5.83	-59113	10833	51458	33304	62855	14866	77721	No	9.2	Si
SLU 82	1.67	7570.6	-116007	-97690	9372	5.83	5.83	-55855	10833	49178	33304	62855	14866	77721	No	8.29	Si
SLU 79	-1.3	23888	-119397	-100545	8936	5.83	5.83	-57487	10833	50320	33304	62855	14866	77721	No	8.7	Si
SLU 79	1.67	8367.14	-113143	-95278	9753	5.83	5.83	-54476	10833	48213	33304	62855	14866	77721	No	7.97	Si
SLU 75	-1.3	22729.96	-119488	-100622	8438	5.83	5.83	-57531	10833	50351	33304	62855	14866	77721	No	9.21	Si
SLU 75	1.67	7374.85	-113118	-95257	9234	5.83	5.83	-54464	10833	48205	33304	62855	14866	77721	No	8.42	Si
SLU 77	-1.3	24123.86	-119968	-101026	9007	5.83	5.83	-57762	10833	50512	33304	62855	14866	77721	No	8.63	Si
SLU 77	1.67	8425.06	-113837	-95863	9818	5.83	5.83	-54810	10833	48447	33304	62855	14866	77721	No	7.92	Si
SLU 81	-1.3	23479.9	-122197	-102903	8934	5.83	5.83	-58835	10833	51263	33304	62855	14866	77721	No	8.7	Si
SLU 81	1.67	8348.85	-115487	-97252	9885	5.83	5.83	-55604	10833	49003	33304	62855	14866	77721	No	7.86	Si
SLU 83	-1.3	24031.47	-123254	-103793	9021	5.83	5.83	-59344	10833	51619	33304	62855	14866	77721	No	8.62	Si
SLU 83	1.67	8620.81	-116726	-98296	9957	5.83	5.83	-56201	10833	49420	33304	62855	14866	77721	No	7.81	Si
SLU 84	-1.3	23189.14	-123831	-104279	8538	5.83	5.83	-59622	10833	51814	33304	62855	14866	77721	No	9.1	Si
SLU 84	1.67	7842.55	-117246	-98733	9445	5.83	5.83	-56451	10833	49595	33304	62855	14866	77721	No	8.23	Si
SLU 80	-1.3	23045.67	-119974	-101031	8454	5.83	5.83	-57765	10833	50514	33304	62855	14866	77721	No	9.19	Si
SLU 80	1.67	7588.89	-113662	-95716	9241	5.83	5.83	-54726	10833	48388	33304	62855	14866	77721	No	8.41	Si
SLU 78	-1.3	23281.53	-120545	-101512	8525	5.83	5.83	-58040	10833	50707	33304	62855	14866	77721	No	9.12	Si
SLU 78	1.67	7646.81	-114357	-96301	9306	5.83	5.83	-55060	10833	48622	33304	62855	14866	77721	No	8.35	Si
SLU 74	-1.3	23572.29	-118911	-100136	8920	5.83	5.83	-57253	10833	50156	33304	62855	14866	77721	No	8.71	Si
SLU 74	1.67	8153.1	-112598	-94820	9746	5.83	5.83	-54214	10833	48030	33304	62855	14866	77721	No	7.97	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 11	-1.3	47574.22	-59428	-50044	23801	5.83	5.83	-28613	16250	35172	33304	94282	14866	68477		2.88	Si
SLD 11	1.67	34836.15	-57636	-48536	24028	5.83	5.83	-27751	16250	34569	33304	94282	14866	67873		2.82	Si
SLV 7	-1.3	90779.92	-30667	-25824	44250	5.83	0	-247796	16250	25485	33304	94282	14866	58789		1.33	Si
SLV 7	1.67	80572.61	-28094	-23658	45274	5.83	0.1411	-205159	16250	24618	33304	94282	14866	57923		1.28	Si
SLV 6	-1.3	-63150.41	-138589	-116706	-36854	5.83	5.83	-66727	16250	61836	33304	94282	14866	95140		2.58	Si
SLV 6	1.67	-69399.52	-125624	-105789	-35639	5.83	5.83	-60485	16250	57469	33304	94282	14866	90774		2.55	Si
SLD 12	-1.3	46911.69	-59834	-50387	23563	5.83	5.83	-28809	16250	35309	33304	94282	14866	68614		2.91	Si
SLD 12	1.67	34533.71	-58026	-48864	23897	5.83	5.83	-27938	16250	34700	33304	94282	14866	68004		2.85	Si
SLV 15	-1.3	47102.17	-56765	-47802	27834	5.83	5.83	-27331	16250	34276	33304	94282	14866	67580		2.43	Si
SLV 15	1.67	26501.44	-62484	-52618	26206	5.83	5.83	-30085	16250	36202	33304	94282	14866	69506		2.65	Si
SLV 16	-1.3	44741.44	-58214	-49022	26986	5.83	5.83	-28029	16250	34764	33304	94282	14866	68068		2.52	Si
SLV 16	1.67	25423.76	-63871	-53786	25739	5.83	5.83	-30753	16250	36669	33304	94282	14866	69973		2.72	Si
SLV 12	-1.3	93462.48	-26521	-22333	49048	5.83	0	-340717	16250	24088	33304	94282	14866	57393		1.17	Si
SLV 12	1.67	78918.92	-29401	-24759	49144	5.83	0.6923	-128794	16250	25058	33304	94282	14866	58363		1.19	Si
SLV 5	-1.3	-61561.01	-137613	-115885	-36283	5.83	5.83	-66258	16250	61507	33304	94282	14866	94812		2.61	Si
SLV 5	1.67	-68673.95	-124690	-105002	-35325	5.83	5.83	-60036	16250	57155	33304	94282	14866	90459		2.56	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	-1.3	89190.52	-31642	-26646	43679	5.83	0.2888	-207344	16250	25813	33304	94282	14866	59118		1.35	Si
SLV 8	1.67	79847.04	-29028	-24445	44960	5.83	0.493	-177730	16250	24933	33304	94282	14866	58237		1.3	Si
SLV 11	-1.3	95051.88	-25545	-21512	49619	5.83	0	-358250	16250	23760	33304	94282	14866	57064		1.15	Si
SLV 11	1.67	79644.49	-28467	-23972	49458	5.83	0.3516	-188628	16250	24744	33304	94282	14866	58048		1.17	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.185 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 11	215625	0.25	13454	-23531	304.49	3270.5	10.74	Si
SLV 7	215625	0.25	13578	-23749	304.49	3298.4	10.83	Si
SLV 12	215625	0.25	14051	-24575	304.49	3403.62	11.18	Si
SLV 8	215625	0.25	14175	-24793	304.49	3431.3	11.27	Si
SLV 15	215625	0.25	34804	-60872	304.49	7396.96	24.29	Si
SLV 3	215625	0.25	35220	-61600	304.49	7464.37	24.51	Si
SLV 16	215625	0.25	35691	-62423	304.49	7540.11	24.76	Si
SLV 4	215625	0.25	36107	-63151	304.49	7606.47	24.98	Si
SLV 13	215625	0.25	53353	-93315	304.49	9922.64	32.59	Si
SLV 1	215625	0.25	53769	-94042	304.49	9967.96	32.74	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.05 Ta = 0.0491

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-125624	-138589	-373	0.301	13525	0.983	4.44686	3.03106	Si
SLV 10	-125997	-133468	103	0.302	13562.9	0.983	4.46672	3.03106	Si
SLV 5	-124690	-137613	-370	0.303	13429.7	0.983	4.47449	3.03106	Si
SLV 9	-125063	-132492	106	0.304	13467.7	0.983	4.49366	3.03106	Si
SLV 14	-92850	-90298	729	0.381	10185.5	0.978	5.66694	3.36438	Si
SLV 2	-91608	-107369	-857	0.384	10059	0.977	5.7123	3.36438	Si
SLV 13	-91462	-88849	734	0.386	10044.2	0.977	5.7389	3.36438	Si
SLV 1	-90220	-105920	-852	0.389	9917.6	0.977	5.78743	3.36438	Si
SLV 16	-63871	-58214	792	0.52	7234.1	0.969	7.79955	3.36438	Si
SLV 4	-62629	-75285	-795	0.529	7107.6	0.969	7.93306	3.36438	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.689	SLU 77	Si
V_SLU	7.806	SLU 83	Si
PF_SLV	0.752	SLV 11	No
V_SLV	1.15	SLV 11	Si
PFFP_SLV	10.741	SLV 11	Si
R_SLV	1.467	SLV 6	Si

Maschio 27

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.888	6.576	-8.008	6.576	L2	L4	3.88	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 45	0.7	448.93	-44995	-0.0000418	0.0003743	0.0035	3.88	65195.05	70536.55	70536.55	157.12	No	Si
SLU 45	1.1	2579.18	-46677	-0.0000466	0.0003743	0.0035	3.88	66775.49	72420.34	72420.34	28.08	No	Si
SLU 47	0.7	399.7	-43855	-0.0000406	0.0003743	0.0035	3.88	64089.39	69268.69	69268.69	173.3	No	Si
SLU 47	1.1	2471.75	-45512	-0.0000453	0.0003743	0.0035	3.88	65687.44	71114.07	71114.07	28.77	No	Si
SLU 51	0.7	429.77	-44792	-0.0000416	0.0003743	0.0035	3.88	65000.66	70310.78	70310.78	163.6	No	Si
SLU 51	1.1	2549.11	-46495	-0.0000464	0.0003743	0.0035	3.88	66607.49	72215.84	72215.84	28.33	No	Si
SLU 50	0.7	437.38	-45188	-0.000042	0.0003743	0.0035	3.88	65380.05	70752.56	70752.56	161.77	No	Si
SLU 50	1.1	2581.54	-46890	-0.0000468	0.0003743	0.0035	3.88	66971.67	72660.47	72660.47	28.15	No	Si
SLU 43	0.7	387.37	-43842	-0.0000406	0.0003743	0.0035	3.88	64076.66	69254.33	69254.33	178.78	No	Si
SLU 43	1.1	2470.07	-45451	-0.0000452	0.0003743	0.0035	3.88	65630.33	71046.66	71046.66	28.76	No	Si
SLU 48	0.7	473.93	-45668	-0.0000425	0.0003743	0.0035	3.88	65834.76	71288.47	71288.47	150.42	No	Si
SLU 48	1.1	2634.91	-47396	-0.0000474	0.0003743	0.0035	3.88	67432.57	73230.43	73230.43	27.79	No	Si
SLU 6	0.7	347.43	-37552	-0.0000345	0.0003743	0.0035	3.88	57461.45	61537.3	61537.3	177.12	No	Si
SLU 6	1.1	2069.84	-39009	-0.0000384	0.0003743	0.0035	3.88	59070.79	63745.46	63745.46	30.8	No	Si
SLU 49	0.7	466.33	-45272	-0.0000421	0.0003743	0.0035	3.88	65459.52	70845.72	70845.72	151.92	No	Si
SLU 49	1.1	2602.48	-47001	-0.000047	0.0003743	0.0035	3.88	67072.76	72784.78	72784.78	27.97	No	Si
SLU 46	0.7	441.33	-44599	-0.0000414	0.0003743	0.0035	3.88	64813.99	70095.15	70095.15	158.83	No	Si
SLU 46	1.1	2546.74	-46281	-0.0000462	0.0003743	0.0035	3.88	66409.47	71976.14	71976.14	28.26	No	Si
SLU 44	0.7	374.7	-43182	-0.0000399	0.0003743	0.0035	3.88	63423.05	68523	68523	182.88	No	Si
SLU 44	1.1	2416.01	-44792	-0.0000445	0.0003743	0.0035	3.88	65000.77	70310.91	70310.91	29.1	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	0.7	5545.06	-4650	-0.0000139	0.0005615	0.0035	3.88		9625.62	9625.62	1.74		Si
SLV 10	1.1	-664.28	-5412	-0.0000056	0.0005615	0.0035	3.88		14469.6	14469.6	21.78		Si
SLV 2	0.7	-14889.42	-20162	-0.0000383	0.0005615	0.0035	3.88		40757.52	40757.52	2.74		Si
SLV 2	1.1	-1327.75	-21569	-0.0000207	0.0005615	0.0035	3.88		43130.74	43130.74	32.48		Si
SLV 5	0.7	-5839.45	1120	0.0737703	0.0005615	0.0035	3.104		0	0	0		No
SLV 5	1.1	-2502.06	355	0.0235635	0.0005615	0.0035	3.104		0	0	0		No
SLV 3	0.7	-17202.85	-41900	-0.0000619	0.0005615	0.0035	3.88		75300.4	75300.4	4.38		Si
SLV 3	1.1	168.18	-43711	-0.0000393	0.0005615	0.0035	3.88		73255.35	73255.35	435.59		Si
SLV 14	0.7	17481.37	-37261	-0.0000578	0.0005615	0.0035	3.88		63957.79	63957.79	3.66		Si
SLV 14	1.1	3532.23	-38523	-0.0000392	0.0005615	0.0035	3.88		65767.33	65767.33	18.62		Si
SLV 4	0.7	-14717.54	-42851	-0.0000592	0.0005615	0.0035	3.88		76706.87	76706.87	5.21		Si
SLV 4	1.1	732.28	-44722	-0.0000411	0.0005615	0.0035	3.88		74725.33	74725.33	102.05		Si
SLV 13	0.7	14996.06	-36309	-0.0000534	0.0005615	0.0035	3.88		62597.68	62597.68	4.17		Si
SLV 13	1.1	2968.13	-37512	-0.0000375	0.0005615	0.0035	3.88		64317.28	64317.28	21.67		Si
SLV 1	0.7	-17374.73	-19211	-0.0000425	0.0005615	0.0035	3.88		39159.02	39159.02	2.25		Si
SLV 1	1.1	-1891.85	-20558	-0.0000206	0.0005615	0.0035	3.88		41423.84	41423.84	21.9		Si
SLV 9	0.7	3871.78	-4010	-0.0000092	0.0005615	0.0035	3.88		8421.72	8421.72	2.18		Si
SLV 9	1.1	-1044.07	-4731	-0.0000055	0.0005615	0.0035	3.88		13203.72	13203.72	12.65		Si
SLV 6	0.7	-4166.18	479	0.0319778	0.0005615	0.0035	3.104		0	0	0		No
SLV 6	1.1	-2122.27	-326	-0.0001208	0.0005615	0.0035	3.104		4900.59	4900.59	2.31		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 70	0.7	325.62	-52863	-46989	-3769	3.88	3.88	-26912	10533	27200	33304	52283	9894	60504	No	16.05	Si
SLU 70	1.1	2621.22	-54971	-48863	-3769	3.88	3.88	-27986	10676	27950	33304	52283	9894	61254	No	16.25	Si
SLU 50	0.7	437.38	-45188	-40167	-3624	3.88	3.88	-23005	10012	24471	33304	52283	9894	57776	No	15.94	Si
SLU 50	1.1	2581.54	-46890	-41680	-3624	3.88	3.88	-23872	10127	25077	33304	52283	9894	58381	No	16.11	Si
SLU 72	0.7	289.06	-52383	-46563	-3742	3.88	3.88	-26668	10500	27030	33304	52283	9894	60334	No	16.12	Si
SLU 72	1.1	2567.85	-54465	-48413	-3741	3.88	3.88	-27728	10642	27770	33304	52283	9894	61074	No	16.32	Si
SLU 48	0.7	473.93	-45668	-40593	-3652	3.88	3.88	-23249	10044	24642	33304	52283	9894	57946	No	15.87	Si
SLU 48	1.1	2634.91	-47396	-42130	-3651	3.88	3.88	-24129	10162	25256	33304	52283	9894	58561	No	16.04	Si
SLU 49	0.7	466.33	-45272	-40241	-3590	3.88	3.88	-23048	10017	24501	33304	52283	9894	57805	No	16.1	Si
SLU 49	1.1	2602.48	-47001	-41778	-3589	3.88	3.88	-23928	10135	25116	33304	52283	9894	58420	No	16.28	Si
SLU 51	0.7	429.77	-44792	-39815	-3562	3.88	3.88	-22804	9985	24331	33304	52283	9894	57635	No	16.18	Si
SLU 51	1.1	2549.11	-46495	-41329	-3562	3.88	3.88	-23670	10101	24936	33304	52283	9894	58240	No	16.35	Si
SLU 71	0.7	296.66	-52779	-46915	-3804	3.88	3.88	-26870	10527	27170	33304	52283	9894	60475	No	15.9	Si
SLU 71	1.1	2600.28	-54860	-48765	-3804	3.88	3.88	-27929	10668	27910	33304	52283	9894	61215	No	16.09	Si
SLU 66	0.7	308.22	-52586	-46743	-3780	3.88	3.88	-26771	10514	27102	33304	52283	9894	60406	No	15.98	Si
SLU 66	1.1	2597.92	-54647	-48575	-3780	3.88	3.88	-27821	10654	27834	33304	52283	9894	61139	No	16.18	Si
SLU 45	0.7	448.93	-44995	-39995	-3601	3.88	3.88	-22907	9999	24403	33304	52283	9894	57707	No	16.03	Si
SLU 45	1.1	2579.18	-46677	-41490	-3600	3.88	3.88	-23763	10113	25001	33304	52283	9894	58305	No	16.2	Si
SLU 69	0.7	333.22	-53259	-47341	-3831	3.88	3.88	-27114	10560	27341	33304	52283	9894	60645	No	15.83	Si
SLU 69	1.1	2653.66	-55366	-49214	-3831	3.88	3.88	-28187	10703	28090	33304	52283	9894	61394	No	16.03	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	0.7	-14717.54	-42851	-38090	-36215	3.88	3.88	-21815	14780	27843	33304	78425	9894	61147		1.69	Si
SLV 4	1.1	732.28	-44722	-39753	-35635	3.88	3.88	-22768	14970	28508	33304	78425	9894	61813		1.73	Si
SLV 13	0.7	14996.06	-36309	-32275	30593	3.88	3.88	-18485	14114	25517	33304	78425	9894	58822		1.92	Si
SLV 13	1.1	2968.13	-37512	-33344	30013	3.88	3.88	-19097	14236	25945	33304	78425	9894	59249		1.97	Si
SLV 10	0.7	5545.06	-4650	-4134	16352	3.88	2.2429	-2368	10890	14261	33304	78425	9894	47566		2.91	Si
SLV 10	1.1	-664.28	-5412	-4810	15152	3.88	3.88	-2755	10968	19150	33304	78425	9894	52454		3.46	Si
SLD 3	0.7	-7290.41	-40267	-35793	-19081	3.88	3.88	-20500	14517	26925	33304	78425	9894	60229		3.16	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 3	1.1	1084.93	-41925	-37267	-18828	3.88	3.88	-21344	14685	27514	33304	78425	9894	60818		3.23	Si
SLV 14	0.7	17481.37	-37261	-33121	35429	3.88	3.88	-18969	14211	25855	33304	78425	9894	59160		1.67	Si
SLV 14	1.1	3532.23	-38523	-34243	34848	3.88	3.88	-19612	14339	26304	33304	78425	9894	59609		1.71	Si
SLV 3	0.7	-17202.85	-41900	-37244	-41050	3.88	3.88	-21331	14683	27505	33304	78425	9894	60809		1.48	Si
SLV 3	1.1	168.18	-43711	-38854	-40469	3.88	3.88	-22253	14867	28149	33304	78425	9894	61453		1.52	Si
SLV 15	0.7	15167.93	-58998	-52443	26117	3.88	3.88	-30036	16250	33584	33304	78425	9894	66888		2.56	Si
SLV 15	1.1	5028.15	-60665	-53924	26213	3.88	3.88	-30885	16250	34177	33304	78425	9894	67481		2.57	Si
SLV 16	0.7	17653.24	-59949	-53288	30953	3.88	3.88	-30520	16250	33922	33304	78425	9894	67227		2.17	Si
SLV 16	1.1	5592.25	-61676	-54823	31048	3.88	3.88	-31399	16250	34536	33304	78425	9894	67841		2.19	Si
SLV 1	0.7	-17374.73	-19211	-17076	-36575	3.88	3.1067	-12285	12874	19438	33304	78425	9894	52742		1.44	Si
SLV 1	1.1	-1891.85	-20558	-18274	-36669	3.88	3.88	-10466	12510	21842	33304	78425	9894	55147		1.5	Si
SLV 2	0.7	-14889.42	-20162	-17922	-31739	3.88	3.6045	-11104	12637	20498	33304	78425	9894	53803		1.7	Si
SLV 2	1.1	-1327.75	-21569	-19172	-31835	3.88	3.88	-10981	12613	22022	33304	78425	9894	55326		1.74	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.185 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 5	179667	0.25	0	2909	293.4	0	0	No, Trazione
SLV 6	179667	0.25	0	2457	293.4	0	0	No, Trazione
SLV 9	179667	0.25	1025	-1790	293.4	400.05	1.36	Si
SLV 10	179667	0.25	1284	-2243	293.4	500.36	1.71	Si
SLV 1	179667	0.25	10340	-18053	293.4	3786.93	12.91	Si
SLV 2	179667	0.25	10725	-18725	293.4	3917.34	13.35	Si
SLV 13	179667	0.25	19311	-33718	293.4	6627.16	22.59	Si
SLV 14	179667	0.25	19697	-34390	293.4	6739.8	22.97	Si
SLV 3	179667	0.25	23376	-40814	293.4	7777.6	26.51	Si
SLV 4	179667	0.25	23761	-41487	293.4	7882.18	26.86	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 12	-75810	-77514	-3839	0.303	8448.5	0.973	4.5278	2.80694	Si
SLV 11	-74994	-77510	-3789	0.306	8365.5	0.973	4.57299	2.80694	Si
SLV 8	-70608	-73395	-3570	0.323	7918.8	0.972	4.82412	2.80694	Si
SLV 7	-69792	-73391	-3520	0.326	7835.7	0.971	4.87587	2.80694	Si
SLV 16	-57836	-52857	-3146	0.38	6618.5	0.967	5.70986	3.00264	Si
SLV 15	-56625	-52852	-3073	0.387	6495.2	0.966	5.8217	3.00264	Si
SLV 4	-40497	-39128	-2250	0.516	4854.7	0.956	7.85149	3.00264	Si
SLV 3	-39285	-39122	-2177	0.53	4731.6	0.955	8.07016	3.00264	Si
SLV 14	-37059	-27604	-2274	0.552	4505.4	0.953	8.42166	3.00264	Si
SLV 13	-35847	-27598	-2200	0.568	4382.3	0.952	8.67717	3.00264	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	27.792	SLU 48	Si
V_SLU	15.828	SLU 69	Si
PF_SLV	0	SLV 5	No
V_SLV	1.442	SLV 1	Si
PFFP_SLV	0	SLV 6	No
R_SLV	1.613	SLV 12	Si

Maschio 28

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.008	6.576	-5.158	6.576	L2	L4	1.85	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 84	0.7	-10.96	-22125	-0.0000426	0.0003743	0.0035	1.85	15123.48	17332.54	17332.54	1581.38	No	Si
SLU 84	1.1	4335.65	-21313	-0.0000694	0.0003743	0.0035	1.85	14757.34	15954.63	15954.63	3.68	No	Si
SLU 78	0.7	-33.28	-21693	-0.0000418	0.0003743	0.0035	1.85	14930.39	17079.73	17079.73	513.14	No	Si
SLU 78	1.1	4258.25	-20881	-0.000068	0.0003743	0.0035	1.85	14556.6	15723.97	15723.97	3.69	No	Si
SLU 81	0.7	-16.41	-22031	-0.0000424	0.0003743	0.0035	1.85	15081.47	17276.95	17276.95	1052.82	No	Si
SLU 81	1.1	4321.35	-21219	-0.0000691	0.0003743	0.0035	1.85	14713.66	15904.06	15904.06	3.68	No	Si
SLU 74	0.7	-38.73	-21598	-0.0000417	0.0003743	0.0035	1.85	14887.5	17024.49	17024.49	439.52	No	Si
SLU 74	1.1	4243.95	-20786	-0.0000677	0.0003743	0.0035	1.85	14512.02	15673.41	15673.41	3.69	No	Si
SLU 82	0.7	-19.19	-21829	-0.000042	0.0003743	0.0035	1.85	14991.43	17158.9	17158.9	894.24	No	Si
SLU 82	1.1	4240.73	-21017	-0.0000681	0.0003743	0.0035	1.85	14620.04	15796.39	15796.39	3.72	No	Si
SLU 80	0.7	-39.96	-21501	-0.0000415	0.0003743	0.0035	1.85	14843.36	16968	16968	424.6	No	Si
SLU 80	1.1	4223.17	-20689	-0.0000673	0.0003743	0.0035	1.85	14466.17	15621.68	15621.68	3.7	No	Si
SLU 77	0.7	-30.51	-21895	-0.0000423	0.0003743	0.0035	1.85	15021.04	17197.56	17197.56	563.74	No	Si
SLU 77	1.1	4338.86	-21083	-0.000069	0.0003743	0.0035	1.85	14650.82	15831.73	15831.73	3.65	No	Si
SLU 79	0.7	-37.18	-21703	-0.0000419	0.0003743	0.0035	1.85	14934.85	17085.5	17085.5	459.49	No	Si
SLU 79	1.1	4303.78	-20891	-0.0000683	0.0003743	0.0035	1.85	14561.23	15729.24	15729.24	3.65	No	Si
SLU 41	0.7	75.51	-19354	-0.0000374	0.0003743	0.0035	1.85	13814.72	14915.18	14915.18	197.54	No	Si
SLU 41	1.1	3898.58	-18725	-0.0000609	0.0003743	0.0035	1.85	13494.26	14568.51	14568.51	3.74	No	Si
SLU 83	0.7	-8.18	-22327	-0.000043	0.0003743	0.0035	1.85	15212.22	17451.09	17451.09	2132.78	No	Si
SLU 83	1.1	4416.26	-21515	-0.0000704	0.0003743	0.0035	1.85	14849.66	16062.4	16062.4	3.64	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 3	0.7	-2372.21	-17988	-0.0000482	0.0005615	0.0035	1.85		15641.9	15641.9	6.59		Si
SLV 3	1.1	8688.12	-17529	-0.0000976	0.0005615	0.0035	1.85		14375.07	14375.07	1.65		Si
SLV 9	0.7	290.83	4219	0.6011183	0.0005615	0.0035	1.48		0	0	0		No
SLV 9	1.1	-5392.38	5148	0.7509499	0.0005615	0.0035	1.48		0	0	0		No
SLV 4	0.7	-2100.19	-17751	-0.0000461	0.0005615	0.0035	1.85		15473.65	15473.65	7.37		Si
SLV 4	1.1	7772.77	-17292	-0.0000862	0.0005615	0.0035	1.85		14213.44	14213.44	1.83		Si
SLV 1	0.7	-2471.51	-6194	-0.0000267	0.0005615	0.0035	1.85		6347.05	6347.05	2.57		Si
SLV 1	1.1	4167.51	-5565	-0.0000742	0.0005615	0.0035	1.85		5144.91	5144.91	1.23		Si
SLV 2	0.7	-2199.48	-5958	-0.0000242	0.0005615	0.0035	1.85		6149.04	6149.04	2.8		Si
SLV 2	1.1	3252.16	-5329	-0.0000387	0.0005615	0.0035	1.85		4940.75	4940.75	1.52		Si
SLV 6	0.7	-833.91	5940	0.8512435	0.0005615	0.0035	1.48		0	0	0		No
SLV 6	1.1	-4099.59	6822	0.9876759	0.0005615	0.0035	1.48		0	0	0		No
SLV 8	0.7	-502.92	-33372	-0.0000674	0.0005615	0.0035	1.85		25486.72	25486.72	50.68		Si
SLV 8	1.1	10969.12	-33056	-0.0001376	0.0005615	0.0035	1.85		24309.88	24309.88	2.22		Si
SLV 10	0.7	473.98	4378	0.6230497	0.0005615	0.0035	1.48		0	0	0		No
SLV 10	1.1	-6008.65	5307	0.775098	0.0005615	0.0035	1.48		0	0	0		No
SLV 5	0.7	-1017.05	5781	0.8291951	0.0005615	0.0035	1.48		0	0	0		No
SLV 5	1.1	-3483.31	6663	0.9631658	0.0005615	0.0035	1.48		0	0	0		No
SLV 7	0.7	-686.07	-33531	-0.0000689	0.0005615	0.0035	1.85		25576.23	25576.23	37.28		Si
SLV 7	1.1	11585.39	-33215	-0.000143	0.0005615	0.0035	1.85		24396.12	24396.12	2.11		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	0.7	-38.73	-21598	-19199	-10724	1.85	1.85	-23061	10019	8341	33304	24929	4718	29646	No	2.76	Si
SLU 74	1.1	4243.95	-20786	-18477	-10724	1.85	1.85	-22194	9904	8245	33304	24929	4718	29646	No	2.76	Si
SLU 75	0.7	-41.51	-21397	-19019	-10530	1.85	1.85	-22846	9991	8317	33304	24929	4718	29646	No	2.82	Si
SLU 75	1.1	4163.34	-20585	-18298	-10530	1.85	1.85	-21979	9875	8221	33304	24929	4718	29646	No	2.82	Si
SLU 83	0.7	-8.18	-22327	-19846	-11079	1.85	1.85	-23839	10123	8427	33304	24929	4718	29646	No	2.68	Si
SLU 83	1.1	4416.26	-21515	-19125	-11079	1.85	1.85	-22972	10007	8331	33304	24929	4718	29646	No	2.68	Si
SLU 82	0.7	-19.19	-21829	-19403	-10667	1.85	1.85	-23307	10052	8368	33304	24929	4718	29646	No	2.78	Si
SLU 82	1.1	4240.73	-21017	-18682	-10667	1.85	1.85	-22440	9937	8272	33304	24929	4718	29646	No	2.78	Si
SLU 78	0.7	-33.28	-21693	-19283	-10746	1.85	1.85	-23163	10033	8352	33304	24929	4718	29646	No	2.76	Si
SLU 78	1.1	4258.25	-20881	-18561	-10746	1.85	1.85	-22296	9917	8256	33304	24929	4718	29646	No	2.76	Si
SLU 84	0.7	-10.96	-22125	-19667	-10884	1.85	1.85	-23624	10094	8404	33304	24929	4718	29646	No	2.72	Si
SLU 84	1.1	4335.65	-21313	-18945	-10884	1.85	1.85	-22757	9979	8307	33304	24929	4718	29646	No	2.72	Si
SLU 77	0.7	-30.51	-21895	-19462	-10941	1.85	1.85	-23378	10062	8376	33304	24929	4718	29646	No	2.71	Si
SLU 77	1.1	4338.86	-21083	-18740	-10941	1.85	1.85	-22511	9946	8280	33304	24929	4718	29646	No	2.71	Si
SLU 81	0.7	-16.41	-22031	-19583	-10862	1.85	1.85	-23523	10081	8392	33304	24929	4718	29646	No	2.73	Si
SLU 81	1.1	4321.35	-21219	-18861	-10862	1.85	1.85	-22656	9965	8296	33304	24929	4718	29646	No	2.73	Si
SLU 80	0.7	-39.96	-21501	-19112	-10675	1.85	1.85	-22958	10005	8330	33304	24929	4718	29646	No	2.78	Si
SLU 80	1.1	4223.17	-20689	-18391	-10675	1.85	1.85	-22091	9890	8233	33304	24929	4718	29646	No	2.78	Si
SLU 79	0.7	-37.18	-21703	-19292	-10870	1.85	1.85	-23173	10034	8353	33304	24929	4718	29646	No	2.73	Si
SLU 79	1.1	4303.78	-20891	-18570	-10870	1.85	1.85	-22306	9919	8257	33304	24929	4718	29646	No	2.73	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	0.7	-686.07	-33531	-29805	-31135	1.85	1.85	-35802	16250	13528	33304	37393	4718	42111		1.35	Si
SLV 7	1.1	11585.39	-33215	-29524	-31126	1.85	1.7286	-35464	16250	12640	33304	37393	4718	42111		1.35	Si
SLV 10	0.7	473.98	4378	3892	16638	1.48	1.85	0	0	0	33304	29915	3774	33304		2	Si
SLV 10	1.1	-6008.65	5307	4718	16628	1.48	0	0	0	0	33304	29915	3774	33304		2	Si
SLV 11	0.7	621.81	-35093	-31194	-23297	1.85	1.85	-37470	16250	13528	33304	37393	4718	42111		1.81	Si
SLV 11	1.1	9676.32	-34730	-30871	-23340	1.85	1.85	-37082	16250	13528	33304	37393	4718	42111		1.8	Si
SLV 4	0.7	-2100.19	-17751	-15779	-24519	1.85	1.85	-18954	14207	11828	33304	37393	4718	42111		1.72	Si
SLV 4	1.1	7772.77	-17292	-15371	-24437	1.85	1.4265	-18464	14109	9057	33304	37393	4718	42111		1.72	Si
SLV 3	0.7	-2372.21	-17988	-15989	-27488	1.85	1.85	-19206	14258	11870	33304	37393	4718	42111		1.53	Si
SLV 3	1.1	8688.12	-17529	-15581	-27405	1.85	1.288	-18716	14160	8207	33304	37393	4718	41512		1.51	Si
SLD 7	0.7	-366.06	-22118	-19660	-16888	1.85	1.85	-23616	15140	12604	33304	37393	4718	42111		2.49	Si
SLD 7	1.1	6306.36	-21631	-19227	-16884	1.85	1.85	-23096	15036	12517	33304	37393	4718	42111		2.49	Si
SLV 12	0.7	804.96	-34934	-31052	-21299	1.85	1.85	-37300	16250	13528	33304	37393	4718	42111		1.98	Si
SLV 12	1.1	9060.05	-34571	-30729	-21341	1.85	1.85	-36912	16250	13528	33304	37393	4718	42111		1.97	Si
SLV 1	0.7	-2471.51	-6194	-5506	-16107	1.85	1.5779	-7782	11973	8502	33304	37393	4718	41806		2.6	Si
SLV 1	1.1	4167.51	-5565	-4947	-16014	1.85	0.5285	-21026	14622	5327	33304	37393	4718	38631		2.41	Si
SLV 8	0.7	-502.92	-33372	-29664	-29137	1.85	1.85	-35632	16250	13528	33304	37393	4718	42111		1.45	Si
SLV 8	1.1	10969.12	-33056	-29383	-29127	1.85	1.7795	-35295	16250	13012	33304	37393	4718	42111		1.45	Si
SLV 9	0.7	290.83	4219	3750	14639	1.48	1.85	0	0	0	33304	29915	3774	33304		2.28	Si
SLV 9	1.1	-5392.38	5148	4576	14629	1.48	0	0	0	0	33304	29915	3774	33304		2.28	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.185 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.25	0	-17	139.9	0	0	No, e>t/2
SLV 10	179667	0.25	0	-286	139.9	0	0	No, e>t/2
SLV 6	179667	0.25	0	2934	139.9	0	0	No, Trazione
SLV 5	179667	0.25	0	3203	139.9	0	0	No, Trazione
SLV 1	179667	0.25	3716	-3094	139.9	679.2	4.86	Si
SLV 2	179667	0.25	4197	-3494	139.9	764.48	5.46	Si
SLV 3	179667	0.25	14135	-11768	139.9	2402.67	17.17	Si
SLV 4	179667	0.25	14616	-12167	139.9	2475.68	17.7	Si
SLV 13	179667	0.25	16610	-13828	139.9	2772.89	19.82	Si
SLV 14	179667	0.25	17090	-14228	139.9	2842.98	20.32	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-34807	-9932	-489	0.348	3891.9	0.973	5.19614	2.80694	Si
SLV 8	-34153	-11541	-491	0.353	3825.3	0.972	5.27074	2.80694	Si
SLV 11	-34073	-19216	-392	0.356	3817.2	0.972	5.32074	2.80694	Si
SLV 12	-33420	-20826	-394	0.361	3750.7	0.972	5.39924	2.80694	Si
SLV 3	-21372	4434	-392	0.507	2524.5	0.959	7.678	3.00264	Si, Trazione
SLV 4	-20402	2043	-395	0.525	2425.8	0.958	7.96851	3.00264	Si, Trazione
SLV 15	-18928	-26515	-70	0.572	2276	0.955	8.69923	3.00264	Si
SLV 16	-17958	-28906	-73	0.595	2177.4	0.953	9.07697	3.00264	Si
SLV 1	-8988	7127	-212	0.999	1268.9	0.926	15.66722	3.00264	Si, Trazione
SLV 2	-8017	4737	-215	1.086	1171.3	0.922	17.12101	3.00264	Si, Trazione

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.637	SLU 83	Si
V_SLU	2.676	SLU 83	Si
PF_SLV	0	SLV 5	No
V_SLV	1.352	SLV 7	Si
PFFP_SLV	0	SLV 6	No
R_SLV	1.851	SLV 7	Si

Maschio 30

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-9.728	2.071	-9.728	6.351	L2	L4	4.28	0.3	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 81	-1.3	28940.14	-99259	-0.0001791	0.0004492	0.0035	4.28	78025.69	141420.89	141420.89	4.89	No	Si
SLU 81	0.7	8891.36	-87339	-0.0001209	0.0004492	0.0035	4.28	82856.24	131587.93	131587.93	14.8	No	Si
SLU 74	-1.3	28777.27	-97041	-0.0001752	0.0004492	0.0035	4.28	79218.03	139591.27	139591.27	4.85	No	Si
SLU 74	0.7	8871.08	-85279	-0.000118	0.0004492	0.0035	4.28	83298.4	129887.91	129887.91	14.64	No	Si
SLU 80	-1.3	27756.33	-97080	-0.0001731	0.0004492	0.0035	4.28	79198.16	139623.54	139623.54	5.03	No	Si
SLU 80	0.7	8908.05	-85248	-0.000118	0.0004492	0.0035	4.28	83304.06	129862.79	129862.79	14.58	No	Si
SLU 71	-1.3	26696.73	-88743	-0.0001578	0.0004492	0.0035	4.28	82488.83	132745.62	132745.62	4.97	No	Si
SLU 71	0.7	8289.6	-77503	-0.0001062	0.0004492	0.0035	4.28	83923.39	122812.07	122812.07	14.82	No	Si
SLU 66	-1.3	26417.44	-88434	-0.0001568	0.0004492	0.0035	4.28	82574.23	132491.04	132491.04	5.02	No	Si
SLU 66	0.7	8310.49	-77229	-0.0001059	0.0004492	0.0035	4.28	83915.34	122485.4	122485.4	14.74	No	Si
SLU 69	-1.3	26981.33	-89324	-0.0001593	0.0004492	0.0035	4.28	82320.96	133224.99	133224.99	4.94	No	Si
SLU 69	0.7	8410.03	-78061	-0.0001072	0.0004492	0.0035	4.28	83933.47	123477.57	123477.57	14.68	No	Si
SLU 77	-1.3	29341.16	-97931	-0.0001778	0.0004492	0.0035	4.28	78755.84	140325.22	140325.22	4.78	No	Si
SLU 77	0.7	8970.62	-86110	-0.0001193	0.0004492	0.0035	4.28	83133.99	130573.64	130573.64	14.56	No	Si
SLU 83	-1.3	29504.03	-100149	-0.0001818	0.0004492	0.0035	4.28	77509.67	142154.85	142154.85	4.82	No	Si
SLU 83	0.7	8990.9	-88171	-0.0001223	0.0004492	0.0035	4.28	82645.1	132273.67	132273.67	14.71	No	Si
SLU 78	-1.3	28040.93	-97662	-0.0001746	0.0004492	0.0035	4.28	78898.12	140102.91	140102.91	5	No	Si
SLU 78	0.7	9028.48	-85806	-0.000119	0.0004492	0.0035	4.28	83196.33	130322.75	130322.75	14.43	No	Si
SLU 79	-1.3	29056.57	-97350	-0.0001762	0.0004492	0.0035	4.28	79060.16	139845.85	139845.85	4.81	No	Si
SLU 79	0.7	8850.18	-85552	-0.0001183	0.0004492	0.0035	4.28	83246.35	130113.68	130113.68	14.7	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	-1.3	-96895.34	-34611	-0.004122	0.0006738	0.0035	3.424		76550.82	76550.82	0.79		No
SLV 6	0.7	8117.34	-26891	-0.0000419	0.0006738	0.0035	4.28		54847.29	54847.29	6.76		Si
SLV 8	-1.3	138047.93	-88014	-0.0009452	0.0006738	0.0035	4.28		144694.33	144694.33	1.05		Si
SLV 8	0.7	289.12	-84948	-0.0000974	0.0006738	0.0035	4.28		140972.76	140972.76	487.6		Si
SLV 11	-1.3	135905.6	-99312	-0.0005779	0.0006738	0.0035	4.28		158408.16	158408.16	1.17		Si
SLV 11	0.7	4129.24	-89959	-0.0001103	0.0006738	0.0035	4.28		147055.41	147055.41	35.61		Si
SLV 5	-1.3	-95021.28	-33641	-0.0040177	0.0006738	0.0035	3.424		74881.15	74881.15	0.79		No
SLV 5	0.7	7352.96	-26262	-0.00004	0.0006738	0.0035	4.28		53692.95	53692.95	7.3		Si
SLV 10	-1.3	-100911.72	-46880	-0.0024905	0.0006738	0.0035	3.424		96979.08	96979.08	0.96		No
SLV 10	0.7	12721.84	-32531	-0.0000556	0.0006738	0.0035	4.28		64968.08	64968.08	5.11		Si
SLV 7	-1.3	139921.98	-87044	-0.0012488	0.0006738	0.0035	4.28		143516.15	143516.15	1.03		Si
SLV 7	0.7	-475.26	-84319	-0.000097	0.0006738	0.0035	4.28		148945.65	148945.65	313.4		Si
SLV 12	-1.3	134031.54	-100282	-0.0005465	0.0006738	0.0035	4.28		159586.34	159586.34	1.19		Si
SLV 12	0.7	4893.62	-90588	-0.0001124	0.0006738	0.0035	4.28		147819.03	147819.03	30.21		Si
SLV 3	-1.3	62832.36	-53804	-0.0001884	0.0006738	0.0035	4.28		98331.27	98331.27	1.56		Si
SLV 3	0.7	-3292.77	-57267	-0.0000692	0.0006738	0.0035	4.28		112913.45	112913.45	34.29		Si
SLV 9	-1.3	-99037.66	-45909	-0.0023882	0.0006738	0.0035	3.424		95396.17	95396.17	0.96		No
SLV 9	0.7	11957.47	-31902	-0.0000537	0.0006738	0.0035	4.28		63852.62	63852.62	5.34		Si
SLV 4	-1.3	60048.83	-55246	-0.0001773	0.0006738	0.0035	4.28		100583.1	100583.1	1.68		Si
SLV 4	0.7	-2157.45	-58201	-0.0000684	0.0006738	0.0035	4.28		114270.25	114270.25	52.97		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	-1.3	29341.16	-97931	-71223	-21698	4.28	4.28	-55469	10833	35905	95155	46144	21828	67972	No	3.13	Si
SLU 77	0.7	8970.62	-86110	-62625	-21783	4.28	4.28	-48774	10833	32466	95155	46144	21828	67972	No	3.12	Si
SLU 82	-1.3	27639.91	-98990	-71993	-22608	4.28	4.28	-56069	10833	36213	95155	46144	21828	67972	No	3.01	Si
SLU 82	0.7	8949.22	-87035	-63298	-22695	4.28	4.28	-49298	10833	32736	95155	46144	21828	67972	No	3	Si
SLU 80	-1.3	27756.33	-97080	-70604	-22179	4.28	4.28	-54988	10833	35658	95155	46144	21828	67972	No	3.06	Si
SLU 80	0.7	8908.05	-85248	-61999	-22265	4.28	4.28	-48286	10833	32216	95155	46144	21828	67972	No	3.05	Si
SLU 84	-1.3	28203.8	-99880	-72640	-22745	4.28	4.28	-56573	10833	36472	95155	46144	21828	67972	No	2.99	Si
SLU 84	0.7	9048.76	-87867	-63903	-22831	4.28	4.28	-49769	10833	32978	95155	46144	21828	67972	No	2.98	Si
SLU 78	-1.3	28040.93	-97662	-71027	-22315	4.28	4.28	-55317	10833	35827	95155	46144	21828	67972	No	3.05	Si
SLU 78	0.7	9028.48	-85806	-62404	-22400	4.28	4.28	-48601	10833	32378	95155	46144	21828	67972	No	3.03	Si
SLU 75	-1.3	27477.04	-96772	-70380	-22178	4.28	4.28	-54813	10833	35568	95155	46144	21828	67972	No	3.06	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	0.7	8928.94	-84974	-61800	-22263	4.28	4.28	-48131	10833	32136	95155	46144	21828	67972	No	3.05	Si
SLU 83	-1.3	29504.03	-100149	-72836	-22128	4.28	4.28	-56726	10833	36550	95155	46144	21828	67972	No	3.07	Si
SLU 83	0.7	8990.9	-88171	-64124	-22215	4.28	4.28	-49941	10833	33066	95155	46144	21828	67972	No	3.06	Si
SLU 81	-1.3	28940.14	-99259	-72189	-21991	4.28	4.28	-56222	10833	36292	95155	46144	21828	67972	No	3.09	Si
SLU 81	0.7	8891.36	-87339	-63520	-22079	4.28	4.28	-49470	10833	32824	95155	46144	21828	67972	No	3.08	Si
SLU 73	-1.3	25761.73	-95121	-69179	-22318	4.28	4.28	-53878	10833	35088	95155	46144	21828	67972	No	3.05	Si
SLU 73	0.7	8747.55	-83383	-60642	-22403	4.28	4.28	-47229	10833	31673	95155	46144	21828	67972	No	3.03	Si
SLU 76	-1.3	26325.62	-96011	-69826	-22455	4.28	4.28	-54382	10833	35347	95155	46144	21828	67972	No	3.03	Si
SLU 76	0.7	8847.09	-84214	-61247	-22539	4.28	4.28	-47700	10833	31915	95155	46144	21828	67972	No	3.02	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	-1.3	-95021.28	-33641	-24466	-66686	3.424	0	0	0	0	95155	55372	17462	72835		1.09	Si
SLV 5	0.7	7352.96	-26262	-19100	-66382	4.28	4.28	-14875	15475	19870	95155	69216	21828	91044		1.37	Si
SLV 10	-1.3	-100911.72	-46880	-34094	-70868	3.424	0	0	0	0	95155	55372	17462	72835		1.03	Si
SLV 10	0.7	12721.84	-32531	-23659	-70567	4.28	4.28	-18426	16185	20782	95155	69216	21828	91044		1.29	Si
SLV 8	-1.3	138047.93	-88014	-64010	39085	4.28	1.7146	-49852	16250	36729	95155	69216	21828	91044		2.33	Si
SLV 8	0.7	289.12	-84948	-61781	38659	4.28	4.28	-48116	16250	35837	95155	69216	21828	91044		2.36	Si
SLV 11	-1.3	135905.6	-99312	-72227	37831	4.28	2.3146	-56251	16250	40016	95155	69216	21828	91044		2.41	Si
SLV 11	0.7	4129.24	-89959	-65425	37395	4.28	4.28	-50954	16250	37295	95155	69216	21828	91044		2.43	Si
SLV 6	-1.3	-96895.34	-34611	-25172	-68150	3.424	0	0	0	0	95155	55372	17462	72835		1.07	Si
SLV 6	0.7	8117.34	-26891	-19557	-67843	4.28	4.28	-15231	15546	19961	95155	69216	21828	91044		1.34	Si
SLD 9	-1.3	-27874.77	-58716	-42702	-36863	4.28	4.28	-33257	16250	28206	95155	69216	21828	91044		2.47	Si
SLD 9	0.7	8511.99	-47904	-34839	-36777	4.28	4.28	-27133	16250	25061	95155	69216	21828	91044		2.48	Si
SLV 9	-1.3	-99037.66	-45909	-33388	-69404	3.424	0	0	0	0	95155	55372	17462	72835		1.05	Si
SLV 9	0.7	11957.47	-31902	-23202	-69107	4.28	4.28	-18070	16114	20690	95155	69216	21828	91044		1.32	Si
SLV 7	-1.3	139921.98	-87044	-63304	40549	4.28	1.5975	-161209	16250	36447	95155	69216	21828	91044		2.25	Si
SLV 7	0.7	-475.26	-84319	-61323	40119	4.28	4.28	-47759	16250	35654	95155	69216	21828	91044		2.27	Si
SLD 10	-1.3	-28655.94	-59120	-42997	-37473	4.28	4.28	-33487	16250	28324	95155	69216	21828	91044		2.43	Si
SLD 10	0.7	8830.61	-48166	-35030	-37386	4.28	4.28	-27282	16250	25137	95155	69216	21828	91044		2.44	Si
SLV 14	-1.3	-23822.09	-80119	-58268	-36862	4.28	4.28	-45380	16250	34433	95155	69216	21828	91044		2.47	Si
SLV 14	0.7	15539.36	-59584	-43334	-36824	4.28	4.28	-33749	16250	28459	95155	69216	21828	91044		2.47	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 0.185 Ta 0.05 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 5	-26858	0.25	223.53	3568.9	4931.56	4250.23	19.01	Si
SLV 6	-27535	0.25	223.53	3646.96	5039.4	4343.18	19.43	Si
SLV 9	-33664	0.25	223.53	4327.29	6001.96	5164.62	23.1	Si
SLV 10	-34341	0.25	223.53	4399.48	6108.14	5253.81	23.5	Si
SLV 1	-38922	0.25	223.53	4872.69	6821.51	5847.1	26.16	Si
SLV 2	-39927	0.25	223.53	4972.96	6978.04	5975.5	26.73	Si
SLV 3	-56210	0.25	223.53	6417.58	9466.8	7942.19	35.53	Si
SLV 4	-57215	0.25	223.53	6495.7	9613.66	8054.68	36.03	Si
SLV 13	-61610	0.25	223.53	6822.07	10255.95	8539.01	38.2	Si
SLV 14	-62615	0.25	223.53	6893.27	10402.93	8648.1	38.69	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.05 Ta = 0.0491

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 16	-57082	-96140	542	0.442	6348.7	0.974	6.59093	3.36438	Si
SLV 15	-55585	-94698	546	0.452	6196.2	0.973	6.74218	3.36438	Si
SLV 14	-54605	-80119	525	0.459	6096.4	0.973	6.85147	3.36438	Si
SLV 13	-53108	-78678	529	0.469	5943.9	0.972	7.01657	3.36438	Si
SLV 12	-53983	-100282	200	0.469	6033	0.973	7.004	3.03106	Si
SLV 11	-52975	-99312	203	0.476	5930.4	0.972	7.11822	3.03106	Si
SLV 8	-49058	-88014	-109	0.51	5531.6	0.97	7.63437	3.03106	Si
SLV 7	-48051	-87044	-107	0.519	5429	0.97	7.77391	3.03106	Si
SLV 4	-40668	-55246	-491	0.588	4677.4	0.965	8.85909	3.36438	Si
SLV 10	-45725	-46880	145	0.54	5192.2	0.969	8.10483	3.03106	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.783	SLU 77	Si
V_SLU	2.977	SLU 84	Si
PF_SLV	0.788	SLV 5	No
V_SLV	1.028	SLV 10	Si
PFFP_SLV	19.014	SLV 5	Si
R_SLV	1.959	SLV 16	Si

Maschio 32

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.723	-4.784	-11.013	-4.784	L2	L4	3.29	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 71	-1.3	8448.14	-21163	-0.0000388	0.0003743	0.0035	3.29	29925.52	30996.8	30996.8	3.67	No	Si
SLU 71	1.67	7397.77	-26083	-0.0000423	0.0003743	0.0035	3.29	35481.99	36994.25	36994.25	5	No	Si
SLU 79	-1.3	9124.69	-23286	-0.0000426	0.0003743	0.0035	3.29	32388.11	33563.99	33563.99	3.68	No	Si
SLU 79	1.67	8626.15	-29333	-0.0000485	0.0003743	0.0035	3.29	38862.29	41049.65	41049.65	4.76	No	Si
SLU 64	-1.3	8340.6	-20887	-0.0000383	0.0003743	0.0035	3.29	29597.81	30665.11	30665.11	3.68	No	Si
SLU 64	1.67	7134.1	-25636	-0.0000413	0.0003743	0.0035	3.29	34998.94	36442.1	36442.1	5.11	No	Si
SLU 77	-1.3	9161.42	-23380	-0.0000427	0.0003743	0.0035	3.29	32494.42	33677.86	33677.86	3.68	No	Si
SLU 77	1.67	8704.88	-29477	-0.0000489	0.0003743	0.0035	3.29	39007.38	41231.93	41231.93	4.74	No	Si
SLU 66	-1.3	8431.1	-21119	-0.0000387	0.0003743	0.0035	3.29	29872.8	30943.29	30943.29	3.67	No	Si
SLU 66	1.67	7344.67	-26004	-0.0000421	0.0003743	0.0035	3.29	35397.06	36896.7	36896.7	5.02	No	Si
SLU 67	-1.3	8528.2	-21443	-0.0000393	0.0003743	0.0035	3.29	30256.1	31333.7	31333.7	3.67	No	Si
SLU 67	1.67	7594.38	-26263	-0.0000429	0.0003743	0.0035	3.29	35675.04	37216.73	37216.73	4.9	No	Si
SLU 70	-1.3	8581.98	-21581	-0.0000395	0.0003743	0.0035	3.29	30418.48	31500.04	31500.04	3.67	No	Si
SLU 70	1.67	7726.22	-26486	-0.0000434	0.0003743	0.0035	3.29	35914.05	37493.66	37493.66	4.85	No	Si
SLU 72	-1.3	8545.24	-21488	-0.0000394	0.0003743	0.0035	3.29	30308.5	31387.32	31387.32	3.67	No	Si
SLU 72	1.67	7647.49	-26342	-0.0000431	0.0003743	0.0035	3.29	35759.52	37314.43	37314.43	4.88	No	Si
SLU 69	-1.3	8484.87	-21257	-0.000039	0.0003743	0.0035	3.29	30036.17	31109.31	31109.31	3.67	No	Si
SLU 69	1.67	7476.5	-26228	-0.0000426	0.0003743	0.0035	3.29	35637.34	37173.2	37173.2	4.97	No	Si
SLU 74	-1.3	9107.65	-23242	-0.0000425	0.0003743	0.0035	3.29	32337.46	33509.83	33509.83	3.68	No	Si
SLU 74	1.67	8573.04	-29254	-0.0000483	0.0003743	0.0035	3.29	38782.96	40950.28	40950.28	4.78	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 2	-1.3	17389.95	-23404	-0.0000603	0.0005615	0.0035	3.29		35905.97	35905.97	2.06		Si
SLV 2	1.67	-1780.53	-17094	-0.000021	0.0005615	0.0035	3.29		29236.39	29236.39	16.42		Si
SLV 12	-1.3	-5292.45	13459	1.0272838	0.0005615	0.0035	2.632		0	0	0		No
SLV 12	1.67	-11173.35	3843	0.3011279	0.0005615	0.0035	2.632		0	0	0		No
SLD 7	-1.3	3358.38	-3662	-0.0000113	0.0005615	0.0035	3.29		6482.59	6482.59	1.93		Si
SLD 7	1.67	-3498.62	-8417	-0.0000152	0.0005615	0.0035	3.29		16303.04	16303.04	4.66		Si
SLV 11	-1.3	-5948.66	13840	1.0569312	0.0005615	0.0035	2.632		0	0	0		No
SLV 11	1.67	-9673.18	2781	0.2186917	0.0005615	0.0035	2.632		0	0	0		No
SLV 4	-1.3	11527.1	-5072	-0.007939	0.0005615	0.0035	2.632		8720.7	8720.7	0.76		No
SLV 4	1.67	-13623.16	-1340	-0.0022853	0.0005615	0.0035	2.632		5173.66	5173.66	0.38		No
SLV 3	-1.3	10552.43	-4507	-0.0076338	0.0005615	0.0035	2.632		7825.37	7825.37	0.74		No
SLV 3	1.67	-11394.98	-2917	-0.0010332	0.0005615	0.0035	2.632		7692.6	7692.6	0.68		No
SLV 8	-1.3	-759.99	14820	1.1246343	0.0005615	0.0035	2.632		0	0	0		No
SLV 8	1.67	-18512.83	9815	0.7629133	0.0005615	0.0035	2.632		0	0	0		No
SLD 8	-1.3	3631.92	-3820	-0.0000123	0.0005615	0.0035	3.29		6735.01	6735.01	1.85		Si
SLD 8	1.67	-4123.94	-7974	-0.0000159	0.0005615	0.0035	3.29		15618.3	15618.3	3.79		Si
SLV 7	-1.3	-1416.2	15201	1.1543748	0.0005615	0.0035	2.632		0	0	0		No
SLV 7	1.67	-17012.66	8753	0.6807271	0.0005615	0.0035	2.632		0	0	0		No
SLV 1	-1.3	16415.28	-22839	-0.0000571	0.0005615	0.0035	3.29		35122.6	35122.6	2.14		Si
SLV 1	1.67	447.65	-18672	-0.0000202	0.0005615	0.0035	3.29		29238.27	29238.27	65.31		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	-1.3	9258.52	-23705	-21071	766	3.29	3.29	-14232	8842	15555	33304	44333	8389	48859	No	63.78	Si
SLU 78	1.67	8954.59	-29736	-26432	-4366	3.29	3.29	-17853	9325	17699	33304	44333	8389	51004	No	11.68	Si
SLU 83	-1.3	9360.86	-24058	-21385	766	3.29	3.29	-14444	8870	15681	33304	44333	8389	48985	No	63.93	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	1.67	9020.76	-30502	-27113	-4546	3.29	3.29	-18313	9386	17972	33304	44333	8389	51276	No	11.28	Si
SLU 62	-1.3	8487.02	-22014	-19568	583	3.29	3.29	-13217	8707	14954	33304	44333	8389	48258	No	82.75	Si
SLU 62	1.67	8137.95	-27365	-24325	-4250	3.29	3.29	-16430	9135	16857	33304	44333	8389	50161	No	11.8	Si
SLU 63	-1.3	8584.12	-22338	-19856	558	3.29	3.29	-13412	8733	15069	33304	44333	8389	48374	No	86.75	Si
SLU 63	1.67	8387.67	-27624	-24555	-4313	3.29	3.29	-16585	9156	16949	33304	44333	8389	50253	No	11.65	Si
SLU 80	-1.3	9221.79	-23611	-20988	786	3.29	3.29	-14176	8835	15522	33304	44333	8389	48826	No	62.16	Si
SLU 80	1.67	8875.86	-29591	-26303	-4322	3.29	3.29	-17767	9313	17648	33304	44333	8389	50952	No	11.79	Si
SLU 77	-1.3	9161.42	-23380	-20782	792	3.29	3.29	-14037	8816	15440	33304	44333	8389	48744	No	61.58	Si
SLU 77	1.67	8704.88	-29477	-26202	-4304	3.29	3.29	-17698	9304	17607	33304	44333	8389	50912	No	11.83	Si
SLU 84	-1.3	9457.96	-24383	-21674	741	3.29	3.29	-14639	8896	15796	33304	44333	8389	49100	No	66.29	Si
SLU 84	1.67	9270.47	-30761	-27343	-4609	3.29	3.29	-18469	9407	18064	33304	44333	8389	51368	No	11.15	Si
SLU 61	-1.3	8530.35	-22200	-19733	591	3.29	3.29	-13329	8722	15020	33304	44333	8389	48324	No	81.74	Si
SLU 61	1.67	8255.83	-27401	-24356	-4230	3.29	3.29	-16451	9138	16869	33304	44333	8389	50173	No	11.86	Si
SLU 81	-1.3	9307.09	-23920	-21262	800	3.29	3.29	-14361	8859	15632	33304	44333	8389	48936	No	61.18	Si
SLU 81	1.67	8888.92	-30278	-26914	-4463	3.29	3.29	-18179	9368	17892	33304	44333	8389	51197	No	11.47	Si
SLU 82	-1.3	9404.19	-24245	-21551	774	3.29	3.29	-14556	8885	15747	33304	44333	8389	49051	No	63.35	Si
SLU 82	1.67	9138.64	-30537	-27144	-4526	3.29	3.29	-18334	9389	17984	33304	44333	8389	51289	No	11.33	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	-1.3	17389.95	-23404	-20804	14511	3.29	2.7059	-14052	13227	19012	33304	66499	8389	52316		3.61	Si
SLV 2	1.67	-1780.53	-17094	-15195	26697	3.29	3.29	-10263	12469	18461	33304	66499	8389	51765		1.94	Si
SLV 11	-1.3	-5948.66	13840	12302	-4375	2.632	3.29	0	0	0	33304	53199	6712	33304		7.61	Si
SLV 11	1.67	-9673.18	2781	2472	-11391	2.632	0	0	0	0	33304	53199	6712	33304		2.92	Si
SLV 4	-1.3	11527.1	-5072	-4508	14173	2.632	0	0	0	0	33304	53199	6712	33304		2.35	Si
SLV 4	1.67	-13623.16	-1340	-1191	27383	2.632	0	0	0	0	33304	53199	6712	33304		1.22	Si
SLV 1	-1.3	16415.28	-22839	-20302	12101	3.29	2.7788	-13713	13159	18811	33304	66499	8389	52115		4.31	Si
SLV 1	1.67	447.65	-18672	-16597	21580	3.29	3.29	-11210	12659	18741	33304	66499	8389	52046		2.41	Si
SLV 15	-1.3	-4555.77	-9044	-8039	-13063	3.29	3.29	-5430	11503	17030	33304	66499	8389	50334		3.85	Si
SLV 15	1.67	13069.96	-22824	-20288	-32032	3.29	3.2171	-13703	13157	19048	33304	66499	8389	52352		1.63	Si
SLV 3	-1.3	10552.43	-4507	-4006	11763	2.632	0	0	0	0	33304	53199	6712	33304		2.83	Si
SLV 3	1.67	-11394.98	-2917	-2593	22266	2.632	0	0	0	0	33304	53199	6712	33304		1.5	Si
SLV 13	-1.3	1307.08	-27376	-24335	-12725	3.29	3.29	-16437	13704	20424	33304	66499	8389	53728		4.22	Si
SLV 13	1.67	24912.59	-38578	-34292	-32719	3.29	2.9977	-23162	15049	24407	33304	66499	8389	57711		1.76	Si
SLV 16	-1.3	-3581.1	-9609	-8541	-10653	3.29	3.29	-5769	11571	17130	33304	66499	8389	50434		4.73	Si
SLV 16	1.67	10841.77	-21247	-18886	-26915	3.29	3.29	-12756	12968	19199	33304	66499	8389	52503		1.95	Si
SLV 14	-1.3	2281.75	-27942	-24837	-10315	3.29	3.29	-16776	13772	20625	33304	66499	8389	53929		5.23	Si
SLV 14	1.67	22684.4	-37001	-32890	-27602	3.29	3.0958	-22215	14860	23846	33304	66499	8389	57150		2.07	Si
SLD 15	-1.3	1813.97	-13415	-11924	-5159	3.29	3.29	-8054	12027	17807	33304	66499	8389	51111		9.91	Si
SLD 15	1.67	8980.44	-21401	-19023	-15215	3.29	3.29	-12849	12987	19227	33304	66499	8389	52531		3.45	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.185 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.25	0	8193	248.79	0	0	No, Trazione
SLV 7	179667	0.25	0	12172	248.79	0	0	No, Trazione
SLV 8	179667	0.25	0	12735	248.79	0	0	No, Trazione
SLV 11	179667	0.25	0	7630	248.79	0	0	No, Trazione
SLV 4	179667	0.25	1104	-1634	248.79	365.02	1.47	Si
SLV 3	179667	0.25	1668	-2470	248.79	549.6	2.21	Si
SLV 16	179667	0.25	11330	-16773	248.79	3494.02	14.04	Si
SLV 15	179667	0.25	11894	-17609	248.79	3653.43	14.68	Si
SLV 2	179667	0.25	12569	-18609	248.79	3842.41	15.44	Si
SLV 1	179667	0.25	13134	-19445	248.79	3998.76	16.07	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 9	-49733	-47269	-1365	0.4	5682.5	0.967	6.01356	2.80694	Si
SLV 10	-48671	-47649	-1364	0.407	5574.4	0.966	6.11569	2.80694	Si
SLV 5	-43761	-45908	-1366	0.441	5074.7	0.963	6.6481	2.80694	Si
SLV 6	-42699	-46288	-1366	0.449	4966.7	0.963	6.77856	2.80694	Si
SLV 13	-38578	-27376	-442	0.507	4547.5	0.96	7.6772	3.00264	Si
SLV 14	-37001	-27942	-442	0.523	4387.1	0.958	7.93975	3.00264	Si
SLV 15	-22824	-9044	347	0.764	2947.8	0.941	11.8032	3.00264	Si
SLV 16	-21247	-9609	347	0.807	2788.1	0.938	12.50625	3.00264	Si
SLV 1	-18672	-22839	-447	0.886	2527.8	0.933	13.8037	3.00264	Si
SLV 2	-17094	-23404	-447	0.947	2368.6	0.929	14.80702	3.00264	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.666	SLU 69	Si
V_SLU	11.146	SLU 84	Si
PF_SLV	0	SLV 7	No

Stato limite	Coeff.s.	Comb.	Verifica
V_SLV	1.216	SLV 4	Si
PFFP_SLV	0	SLV 12	No
R_SLV	2.142	SLV 9	Si

Maschio 33

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.013	-3.284	-10.553	-3.284	L2	L4	0.46	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 76	-1.3	-200.27	-31257	-0.0003863	0.0004492	0.0035	0.46	0	1860.09	1860.09	9.29	No	Si
SLU 76	0.75	-400.27	-12887	-0.0001454	0.0004492	0.0035	0.46	1453.81	2062.17	2062.17	5.15	No	Si
SLU 80	-1.3	-202.66	-31319	-0.0003891	0.0004492	0.0035	0.46	0	1852.5	1852.5	9.14	No	Si
SLU 80	0.75	-401.72	-12931	-0.000146	0.0004492	0.0035	0.46	1453.6	2065.96	2065.96	5.14	No	Si
SLU 73	-1.3	-199.06	-31028	-0.000379	0.0004492	0.0035	0.46	0	1888.24	1888.24	9.49	No	Si
SLU 73	0.75	-395.72	-12778	-0.0001438	0.0004492	0.0035	0.46	1454.18	2052.76	2052.76	5.19	No	Si
SLU 82	-1.3	-202.45	-32173	-0.0004208	0.0004492	0.0035	0.46	0	1747.69	1747.69	8.63	No	Si
SLU 82	0.75	-403.67	-13227	-0.0001492	0.0004492	0.0035	0.46	1451.27	2091.49	2091.49	5.18	No	Si
SLU 75	-1.3	-201.96	-31229	-0.000386	0.0004492	0.0035	0.46	0	1863.55	1863.55	9.23	No	Si
SLU 75	0.75	-399.95	-12888	-0.0001454	0.0004492	0.0035	0.46	1453.8	2062.27	2062.27	5.16	No	Si
SLU 79	-1.3	-204.42	-31068	-0.0003819	0.0004492	0.0035	0.46	0	1883.35	1883.35	9.21	No	Si
SLU 79	0.75	-397.07	-12834	-0.0001445	0.0004492	0.0035	0.46	1454.02	2057.54	2057.54	5.18	No	Si
SLU 77	-1.3	-204.93	-31207	-0.0003863	0.0004492	0.0035	0.46	0	1866.24	1866.24	9.11	No	Si
SLU 77	0.75	-399.85	-12900	-0.0001455	0.0004492	0.0035	0.46	1453.75	2063.25	2063.25	5.16	No	Si
SLU 78	-1.3	-203.18	-31458	-0.0003938	0.0004492	0.0035	0.46	0	1835.39	1835.39	9.03	No	Si
SLU 78	0.75	-404.5	-12997	-0.000147	0.0004492	0.0035	0.46	1453.22	2071.68	2071.68	5.12	No	Si
SLU 84	-1.3	-203.66	-32403	-0.0004319	0.0004492	0.0035	0.46	0	1719.54	1719.54	8.44	No	Si
SLU 84	0.75	-408.22	-13336	-0.0001508	0.0004492	0.0035	0.46	1450.01	2100.9	2100.9	5.15	No	Si
SLU 83	-1.3	-205.42	-32151	-0.0004211	0.0004492	0.0035	0.46	0	1750.38	1750.38	8.52	No	Si
SLU 83	0.75	-403.57	-13238	-0.0001493	0.0004492	0.0035	0.46	1451.15	2092.48	2092.48	5.18	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	-1.3	750.32	-31741	-0.0003839	0.0006738	0.0035	0.46		3212.25	3212.25	4.28		Si
SLV 13	0.75	-519.48	-9482	-0.0001211	0.0006738	0.0035	0.46		1863.07	1863.07	3.59		Si
SLV 3	-1.3	-995.56	-10944	-0.0001867	0.0006738	0.0035	0.46		2070.16	2070.16	2.08		Si
SLV 3	0.75	-32.48	-7798	-0.0000591	0.0006738	0.0035	0.46		1595.5	1595.5	49.12		Si
SLV 7	-1.3	-505.79	2694	-0.0034027	0.0006738	0.0035	0.368		0	0	0		No
SLV 7	0.75	185.74	-46	-0.0061335	0.0006738	0.0035	0.368		33.88	33.88	0.18		No
SLV 2	-1.3	-964.29	-24953	-0.0003265	0.0006738	0.0035	0.46		3215.81	3215.81	3.33		Si
SLV 2	0.75	-291.41	-13709	-0.0001326	0.0006738	0.0035	0.46		2408.44	2408.44	8.26		Si
SLV 8	-1.3	-535.4	2561	-0.0039488	0.0006738	0.0035	0.368		0	0	0		No
SLV 8	0.75	184.12	-296	-0.0041744	0.0006738	0.0035	0.368		90.45	90.45	0.49		No
SLV 4	-1.3	-1039.53	-11140	-0.0001943	0.0006738	0.0035	0.46		2094.19	2094.19	2.01		Si
SLV 4	0.75	-34.89	-8169	-0.0000622	0.0006738	0.0035	0.46		1656.13	1656.13	47.47		Si
SLV 11	-1.3	-4.6	598	0	0.0006738	0.0035	0.368		0	0	0		No
SLV 11	0.75	116.59	1110	-0.0105736	0.0006738	0.0035	0.368		0	0	0		No
SLV 1	-1.3	-920.32	-24756	-0.0003181	0.0006738	0.0035	0.46		3211.46	3211.46	3.49		Si
SLV 1	0.75	-289.01	-13338	-0.0001293	0.0006738	0.0035	0.46		2363.07	2363.07	8.18		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	-1.3	-34.2	466	0	0.0006738	0.0035	0.368		0	0	0		No
SLV 12	0.75	114.98	861	-0.0089945	0.0006738	0.0035	0.368		0	0	0		No
SLV 15	-1.3	675.08	-17929	-0.0002137	0.0006738	0.0035	0.46		2810.13	2810.13	4.16		Si
SLV 15	0.75	-262.96	-3942	-0.0000525	0.0006738	0.0035	0.46		895.66	895.66	3.41		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	-1.3	-204.21	-31922	-25537	1464	0.46	0.46	-123369	10833	7607	95155	7439	2346	9785	No	6.68	Si
SLU 81	0.75	-399.01	-13129	-10504	840	0.46	0.46	-50742	10833	3598	95155	7439	2346	9785	No	11.65	Si
SLU 78	-1.3	-203.18	-31458	-25167	1439	0.46	0.46	-121578	10833	7508	95155	7439	2346	9785	No	6.8	Si
SLU 78	0.75	-404.5	-12997	-10398	842	0.46	0.46	-50232	10833	3570	95155	7439	2346	9785	No	11.62	Si
SLU 82	-1.3	-202.45	-32173	-25739	1482	0.46	0.46	-124341	10833	7661	95155	7439	2346	9785	No	6.6	Si
SLU 82	0.75	-403.67	-13227	-10582	851	0.46	0.46	-51119	10833	3619	95155	7439	2346	9785	No	11.5	Si
SLU 76	-1.3	-200.27	-31257	-25006	1434	0.46	0.46	-120801	10833	7465	95155	7439	2346	9785	No	6.82	Si
SLU 76	0.75	-400.27	-12887	-10310	837	0.46	0.46	-49806	10833	3546	95155	7439	2346	9785	No	11.7	Si
SLU 84	-1.3	-203.66	-32403	-25922	1493	0.46	0.46	-125228	10833	7709	95155	7439	2346	9785	No	6.56	Si
SLU 84	0.75	-408.22	-13336	-10669	859	0.46	0.46	-51540	10833	3642	95155	7439	2346	9785	No	11.39	Si
SLU 73	-1.3	-199.06	-31028	-24822	1423	0.46	0.46	-119914	10833	7416	95155	7439	2346	9785	No	6.87	Si
SLU 73	0.75	-395.72	-12778	-10223	829	0.46	0.46	-49385	10833	3523	95155	7439	2346	9785	No	11.81	Si
SLU 83	-1.3	-205.42	-32151	-25721	1474	0.46	0.46	-124256	10833	7656	95155	7439	2346	9785	No	6.64	Si
SLU 83	0.75	-403.57	-13238	-10591	848	0.46	0.46	-51163	10833	3621	95155	7439	2346	9785	No	11.54	Si
SLU 75	-1.3	-201.96	-31229	-24983	1429	0.46	0.46	-120692	10833	7459	95155	7439	2346	9785	No	6.85	Si
SLU 75	0.75	-399.95	-12888	-10311	834	0.46	0.46	-49811	10833	3547	95155	7439	2346	9785	No	11.73	Si
SLU 77	-1.3	-204.93	-31207	-24966	1421	0.46	0.46	-120607	10833	7454	95155	7439	2346	9785	No	6.89	Si
SLU 77	0.75	-399.85	-12900	-10320	831	0.46	0.46	-49855	10833	3549	95155	7439	2346	9785	No	11.77	Si
SLU 80	-1.3	-202.66	-31319	-25055	1433	0.46	0.46	-121040	10833	7478	95155	7439	2346	9785	No	6.83	Si
SLU 80	0.75	-401.72	-12931	-10345	837	0.46	0.46	-49976	10833	3556	95155	7439	2346	9785	No	11.69	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	-1.3	706.34	-31938	-25550	2999	0.46	0.46	-123430	16250	8009	95155	11159	2346	13505		4.5	Si
SLV 14	0.75	-521.89	-9852	-7882	988	0.46	0.46	-38077	16250	3364	95155	11159	2346	13505		13.66	Si
SLV 13	-1.3	750.32	-31741	-25393	3070	0.46	0.46	-122671	16250	7967	95155	11159	2346	13505		4.4	Si
SLV 13	0.75	-519.48	-9482	-7585	958	0.46	0.46	-36644	16250	3364	95155	11159	2346	13505		14.1	Si
SLV 5	-1.3	-255.01	-43347	-34678	2098	0.46	0.46	-167526	16250	10443	95155	11159	2346	13505		6.44	Si
SLV 5	0.75	-669.35	-18511	-14809	1629	0.46	0.46	-71542	16250	5145	95155	11159	2346	13505		8.29	Si
SLV 9	-1.3	246.18	-45443	-36354	3051	0.46	0.46	-175625	16250	10890	95155	11159	2346	13505		4.43	Si
SLV 9	0.75	-738.49	-17355	-13884	1671	0.46	0.46	-67071	16250	4898	95155	11159	2346	13505		8.08	Si
SLV 16	-1.3	631.11	-18125	-14500	2052	0.46	0.46	-70049	16250	5062	95155	11159	2346	13505		6.58	Si
SLV 16	0.75	-265.36	-4313	-3450	339	0.46	0.46	-16668	15834	3278	95155	11159	2346	13505		39.85	Si
SLD 13	-1.3	236.94	-25647	-20517	1856	0.46	0.46	-99117	16250	6667	95155	11159	2346	13505		7.28	Si
SLD 13	0.75	-377.01	-9026	-7221	731	0.46	0.46	-34885	16250	3364	95155	11159	2346	13505		18.46	Si
SLV 10	-1.3	216.58	-45575	-36460	3003	0.46	0.46	-176136	16250	10918	95155	11159	2346	13505		4.5	Si
SLV 10	0.75	-740.11	-17604	-14083	1692	0.46	0.46	-68036	16250	4951	95155	11159	2346	13505		7.98	Si
SLD 14	-1.3	218.23	-25730	-20584	1826	0.46	0.46	-99440	16250	6685	95155	11159	2346	13505		7.4	Si
SLD 14	0.75	-378.04	-9184	-7347	745	0.46	0.46	-35494	16250	3364	95155	11159	2346	13505		18.14	Si
SLV 6	-1.3	-284.61	-43480	-34784	2050	0.46	0.46	-168037	16250	10471	95155	11159	2346	13505		6.59	Si
SLV 6	0.75	-670.96	-18761	-15009	1650	0.46	0.46	-72507	16250	5198	95155	11159	2346	13505		8.18	Si
SLV 15	-1.3	675.08	-17929	-14343	2123	0.46	0.46	-69290	16250	5020	95155	11159	2346	13505		6.36	Si
SLV 15	0.75	-262.96	-3942	-3154	308	0.46	0.46	-15235	15547	3218	95155	11159	2346	13505		43.84	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 0.185 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 11	572	0.25	34.78	0	0	0	0	No
SLV 12	248	0.25	34.78	0	0	0	0	No
SLV 7	-1164	0.25	34.78	253.78	322.04	287.91	8.28	Si
SLV 8	-1488	0.25	34.78	321.69	399.14	360.41	10.36	Si
SLV 15	-6172	0.25	34.78	1162.81	1484.96	1323.88	38.06	Si
SLV 16	-6654	0.25	34.78	1234.59	1591.95	1413.27	40.63	Si
SLV 3	-11958	0.25	34.78	1842.49	2620.87	2231.68	64.16	Si
SLV 4	-12440	0.25	34.78	1881.2	2700.9	2291.05	65.86	Si
SLV 13	-13756	0.25	34.78	1972.88	2904.45	2438.67	70.11	Si
SLV 14	-14238	0.25	34.78	2001.31	2975.35	2488.33	71.54	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-11981	-43480	390	0.254	1306.6	0.979	3.77096	2.80694	Si
SLV 5	-11745	-43347	387	0.258	1282.5	0.979	3.82705	2.80694	Si
SLV 10	-11098	-45575	388	0.268	1216.6	0.978	3.98004	2.80694	Si
SLV 9	-10862	-45443	385	0.272	1192.5	0.977	4.04496	2.80694	Si
SLV 2	-8924	-24953	239	0.328	995.1	0.973	4.89252	3.00264	Si
SLV 1	-8573	-24756	234	0.338	959.4	0.972	5.04961	3.00264	Si
SLV 14	-5980	-31938	232	0.442	695.4	0.963	6.67522	3.00264	Si
SLV 13	-5629	-31741	227	0.464	659.7	0.961	7.01389	3.00264	Si
SLV 4	-5371	-11140	106	0.501	633.5	0.959	7.59045	3.00264	Si
SLV 3	-5020	-10944	101	0.529	597.8	0.957	8.02687	3.00264	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.122	SLU 78	Si
V_SLU	6.556	SLU 84	Si
PF_SLV	0	SLV 7	No
V_SLV	4.4	SLV 13	Si
PFFP_SLV	0	SLV 11	No
R_SLV	1.343	SLV 6	Si

Maschio 34

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-8.253	-3.284	-7.723	-3.284	L2	L4	0.53	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 81	-1.3	-1624.29	-25364	-0.0004083	0.0004492	0.0035	0.53	871.26	3225.32	3225.32	1.99	No	Si
SLU 81	0.75	366.02	-14160	-0.0001252	0.0004492	0.0035	0.53	1929.11	2637.29	2637.29	7.21	No	Si
SLU 84	-1.3	-1650.59	-25708	-0.0004212	0.0004492	0.0035	0.53	802.73	3217.49	3217.49	1.95	No	Si
SLU 84	0.75	371.1	-14369	-0.0001273	0.0004492	0.0035	0.53	1930.27	2659.15	2659.15	7.17	No	Si
SLU 78	-1.3	-1618.96	-25070	-0.0004009	0.0004492	0.0035	0.53	928.23	3223.94	3223.94	1.99	No	Si
SLU 78	0.75	359.23	-13897	-0.0001225	0.0004492	0.0035	0.53	1926.5	2609.63	2609.63	7.26	No	Si
SLU 82	-1.3	-1638.31	-25530	-0.0004147	0.0004492	0.0035	0.53	838.49	3223.36	3223.36	1.97	No	Si
SLU 82	0.75	368.12	-14266	-0.0001262	0.0004492	0.0035	0.53	1929.79	2648.32	2648.32	7.19	No	Si
SLU 75	-1.3	-1606.68	-24892	-0.000395	0.0004492	0.0035	0.53	961.93	3223.1	3223.1	2.01	No	Si
SLU 75	0.75	356.26	-13793	-0.0001214	0.0004492	0.0035	0.53	1925.14	2598.8	2598.8	7.29	No	Si
SLU 76	-1.3	-1608.5	-24893	-0.0003953	0.0004492	0.0035	0.53	961.82	3223.11	3223.11	2	No	Si
SLU 76	0.75	355.83	-13799	-0.0001214	0.0004492	0.0035	0.53	1925.22	2599.41	2599.41	7.31	No	Si
SLU 80	-1.3	-1611.43	-24960	-0.0003972	0.0004492	0.0035	0.53	949.11	3223.42	3223.42	2	No	Si
SLU 80	0.75	357.4	-13832	-0.0001218	0.0004492	0.0035	0.53	1925.68	2602.89	2602.89	7.28	No	Si
SLU 83	-1.3	-1636.57	-25542	-0.0004146	0.0004492	0.0035	0.53	836.04	3222.95	3222.95	1.97	No	Si
SLU 83	0.75	369	-14264	-0.0001263	0.0004492	0.0035	0.53	1929.78	2648.12	2648.12	7.18	No	Si
SLU 79	-1.3	-1597.42	-24794	-0.0003914	0.0004492	0.0035	0.53	980.17	3222.65	3222.65	2.02	No	Si
SLU 79	0.75	355.3	-13727	-0.0001208	0.0004492	0.0035	0.53	1924.16	2591.86	2591.86	7.29	No	Si
SLU 77	-1.3	-1604.94	-24904	-0.0003949	0.0004492	0.0035	0.53	959.62	3223.16	3223.16	2.01	No	Si
SLU 77	0.75	357.13	-13791	-0.0001215	0.0004492	0.0035	0.53	1925.11	2598.6	2598.6	7.28	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 2	-1.3	-2297.91	-24619	-0.0003919	0.0006738	0.0035	0.53		4103.99	4103.99	1.79		Si
SLV 2	0.75	-19.44	-9329	-0.0000596	0.0006738	0.0035	0.53		2226.51	2226.51	114.55		Si
SLV 10	-1.3	-2536.89	-32870	-0.0005336	0.0006738	0.0035	0.53		4350.65	4350.65	1.71		Si
SLV 10	0.75	452.31	-18880	-0.0001612	0.0006738	0.0035	0.53		3534.53	3534.53	7.81		Si
SLV 11	-1.3	698.67	-173	-0.0182923	0.0006738	0.0035	0.424		79.06	79.06	0.11		No
SLV 11	0.75	205.14	-1425	-0.0000253	0.0006738	0.0035	0.53		399.61	399.61	1.95		Si
SLV 7	-1.3	303.53	-1577	-0.0000473	0.0006738	0.0035	0.53		437.74	437.74	1.44		Si
SLV 7	0.75	31.77	185	-0.0007281	0.0006738	0.0035	0.424		0	0	0		No
SLV 1	-1.3	-2204.37	-24237	-0.0003761	0.0006738	0.0035	0.53		4083.87	4083.87	1.85		Si
SLV 1	0.75	4.62	-9212	-0.0000578	0.0006738	0.0035	0.53		2080.28	2080.28	450.6		Si
SLV 5	-1.3	-2869.05	-34016	-0.000614	0.0006738	0.0035	0.53		4349.75	4349.75	1.52		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	0.75	295.14	-17191	-0.0001355	0.0006738	0.0035	0.53		3351.87	3351.87	11.36		Si
SLV 8	-1.3	240.55	-1834	-0.0000295	0.0006738	0.0035	0.53		501.63	501.63	2.09		Si
SLV 8	0.75	15.57	106	-0.0003436	0.0006738	0.0035	0.424		5.96	5.96	0.38		No
SLV 9	-1.3	-2473.91	-32613	-0.00052	0.0006738	0.0035	0.53		4347.96	4347.96	1.76		Si
SLV 9	0.75	468.51	-18801	-0.000162	0.0006738	0.0035	0.53		3526.05	3526.05	7.53		Si
SLV 12	-1.3	635.69	-430	-0.0151289	0.0006738	0.0035	0.424		145.87	145.87	0.23		No
SLV 12	0.75	188.95	-1503	-0.0000231	0.0006738	0.0035	0.53		419.33	419.33	2.22		Si
SLV 6	-1.3	-2932.03	-34274	-0.0006334	0.0006738	0.0035	0.53		4342.91	4342.91	1.48		Si
SLV 6	0.75	278.94	-17270	-0.0001347	0.0006738	0.0035	0.53		3360.35	3360.35	12.05		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	-1.3	-1606.68	-24892	-19914	-4718	0.53	0.53	-83496	10833	6229	95155	8571	2703	11274	No	2.39	Si
SLU 75	0.75	356.26	-13793	-11035	2371	0.53	0.53	-46267	10833	3861	95155	8571	2703	11274	No	4.76	Si
SLU 84	-1.3	-1650.59	-25708	-20566	-4844	0.53	0.53	-86232	10833	6403	95155	8571	2703	11274	No	2.33	Si
SLU 84	0.75	371.1	-14369	-11495	2511	0.53	0.53	-48198	10833	3984	95155	8571	2703	11274	No	4.49	Si
SLU 76	-1.3	-1608.5	-24893	-19914	-4722	0.53	0.53	-83497	10833	6229	95155	8571	2703	11274	No	2.39	Si
SLU 76	0.75	355.83	-13799	-11039	2364	0.53	0.53	-46286	10833	3862	95155	8571	2703	11274	No	4.77	Si
SLU 78	-1.3	-1618.96	-25070	-20056	-4754	0.53	0.53	-84092	10833	6267	95155	8571	2703	11274	No	2.37	Si
SLU 78	0.75	359.23	-13897	-11117	2382	0.53	0.53	-46613	10833	3883	95155	8571	2703	11274	No	4.73	Si
SLU 77	-1.3	-1604.94	-24904	-19924	-4716	0.53	0.53	-83537	10833	6231	95155	8571	2703	11274	No	2.39	Si
SLU 77	0.75	357.13	-13791	-11033	2383	0.53	0.53	-46260	10833	3861	95155	8571	2703	11274	No	4.73	Si
SLU 82	-1.3	-1638.31	-25530	-20424	-4808	0.53	0.53	-85635	10833	6365	95155	8571	2703	11274	No	2.34	Si
SLU 82	0.75	368.12	-14266	-11413	2500	0.53	0.53	-47851	10833	3962	95155	8571	2703	11274	No	4.51	Si
SLU 80	-1.3	-1611.43	-24960	-19968	-4732	0.53	0.53	-83724	10833	6243	95155	8571	2703	11274	No	2.38	Si
SLU 80	0.75	357.4	-13832	-11066	2376	0.53	0.53	-46397	10833	3869	95155	8571	2703	11274	No	4.75	Si
SLU 81	-1.3	-1624.29	-25364	-20291	-4769	0.53	0.53	-85079	10833	6329	95155	8571	2703	11274	No	2.36	Si
SLU 81	0.75	366.02	-14160	-11328	2501	0.53	0.53	-47498	10833	3939	95155	8571	2703	11274	No	4.51	Si
SLU 83	-1.3	-1636.57	-25542	-20434	-4805	0.53	0.53	-85676	10833	6367	95155	8571	2703	11274	No	2.35	Si
SLU 83	0.75	369	-14264	-11411	2512	0.53	0.53	-47845	10833	3961	95155	8571	2703	11274	No	4.49	Si
SLU 79	-1.3	-1597.42	-24794	-19836	-4694	0.53	0.53	-83168	10833	6208	95155	8571	2703	11274	No	2.4	Si
SLU 79	0.75	355.3	-13727	-10982	2377	0.53	0.53	-46045	10833	3847	95155	8571	2703	11274	No	4.74	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	-1.3	-887.22	-19559	-15647	-2971	0.53	0.53	-65608	16250	5550	95155	12857	2703	15560		5.24	Si
SLV 13	0.75	582.53	-14579	-11663	5185	0.53	0.53	-48902	16250	4488	95155	12857	2703	15560		3	Si
SLD 6	-1.3	-1846.61	-24044	-19235	-5338	0.53	0.53	-80650	16250	6507	95155	12857	2703	15560		2.92	Si
SLD 6	0.75	254.35	-12485	-9988	922	0.53	0.53	-41878	16250	4041	95155	12857	2703	15560		16.88	Si
SLV 2	-1.3	-2297.91	-24619	-19695	-6339	0.53	0.515	-82581	16250	6630	95155	12857	2703	15560		2.45	Si
SLV 2	0.75	-19.44	-9329	-7463	-2258	0.53	0.53	-31292	16250	3876	95155	12857	2703	15560		6.89	Si
SLV 10	-1.3	-2536.89	-32870	-26296	-7446	0.53	0.53	-110256	16250	8390	95155	12857	2703	15560		2.09	Si
SLV 10	0.75	452.31	-18880	-15104	2105	0.53	0.53	-63328	16250	5405	95155	12857	2703	15560		7.39	Si
SLV 1	-1.3	-2204.37	-24237	-19390	-6117	0.53	0.5222	-81299	16250	6548	95155	12857	2703	15560		2.54	Si
SLV 1	0.75	4.62	-9212	-7370	-1882	0.53	0.53	-30901	16250	3876	95155	12857	2703	15560		8.27	Si
SLV 5	-1.3	-2869.05	-34016	-27213	-8240	0.53	0.53	-114101	16250	8634	95155	12857	2703	15560		1.89	Si
SLV 5	0.75	295.14	-17191	-13753	238	0.53	0.53	-57665	16250	5045	95155	12857	2703	15560		65.51	Si
SLV 9	-1.3	-2473.91	-32613	-26090	-7296	0.53	0.53	-109393	16250	8335	95155	12857	2703	15560		2.13	Si
SLV 9	0.75	468.51	-18801	-15041	2358	0.53	0.53	-63065	16250	5389	95155	12857	2703	15560		6.6	Si
SLV 15	-1.3	64.55	-9827	-7862	-238	0.53	0.53	-32964	16250	3876	95155	12857	2703	15560		65.25	Si
SLV 15	0.75	503.52	-9366	-7493	5436	0.53	0.53	-31416	16250	3876	95155	12857	2703	15560		2.86	Si
SLD 5	-1.3	-1820.36	-23937	-19149	-5275	0.53	0.53	-80291	16250	6484	95155	12857	2703	15560		2.95	Si
SLD 5	0.75	261.1	-12452	-9962	1027	0.53	0.53	-41768	16250	4034	95155	12857	2703	15560		15.15	Si
SLV 6	-1.3	-2932.03	-34274	-27419	-8390	0.53	0.53	-114964	16250	8689	95155	12857	2703	15560		1.85	Si
SLV 6	0.75	278.94	-17270	-13816	-15	0.53	0.53	-57928	16250	5062	95155	12857	2703	15560		1024.21	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 0.185 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 7	-222	0.25	40.08	49.68	138.19	93.94	2.34	Si
SLV 8	-306	0.25	40.08	68.42	158.52	113.47	2.83	Si
SLV 11	-1309	0.25	40.08	285.6	398.68	342.14	8.54	Si
SLV 12	-1393	0.25	40.08	303.4	418.8	361.1	9.01	Si
SLV 3	-6670	0.25	40.08	1271.68	1646.45	1459.06	36.41	Si
SLV 4	-6795	0.25	40.08	1291.17	1674.24	1482.71	37	Si
SLV 15	-10291	0.25	40.08	1770.41	2416.98	2093.7	52.24	Si
SLV 16	-10417	0.25	40.08	1785.24	2441.76	2113.5	52.73	Si
SLV 1	-13300	0.25	40.08	2082.02	2969.24	2525.63	63.02	Si
SLV 2	-13425	0.25	40.08	2092.96	2990.18	2541.57	63.42	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-10817	-32870	1240	0.232	1201	0.974	3.45492	2.80694	Si
SLV 9	-10640	-32613	1213	0.236	1183.1	0.974	3.52805	2.80694	Si
SLV 6	-10430	-34274	1221	0.239	1161.7	0.974	3.56479	2.80694	Si
SLV 5	-10254	-34016	1194	0.244	1143.7	0.973	3.6424	2.80694	Si
SLV 14	-7671	-19941	782	0.346	880.7	0.966	5.203	3.00264	Si
SLV 13	-7409	-19559	742	0.359	854.1	0.965	5.41521	3.00264	Si
SLV 2	-6383	-24619	718	0.404	749.7	0.96	6.1192	3.00264	Si
SLV 1	-6121	-24237	679	0.423	723	0.959	6.40987	3.00264	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 16	-4552	-10209	365	0.588	563.6	0.949	9.01266	3.00264	Si
SLV 15	-4290	-9827	325	0.624	537	0.947	9.57594	3.00264	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.949	SLU 84	Si
V_SLU	2.328	SLU 84	Si
PF_SLV	0	SLV 7	No
V_SLV	1.855	SLV 6	Si
PFFP_SLV	2.344	SLV 7	Si
R_SLV	1.231	SLV 10	Si

Maschio 35

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.723	-3.284	-7.723	-4.784	L2	L4	1.5	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Esterna	100	100	100	100	1	CNR DT215	0.8			0.008				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 80	-1.3	-9268.74	-13301	-0.0003549	0.0003743	0.0035	1.5	8044.99	17056.09	17056.09	1.84	No	Si
SLU 80	1.67	-1881.88	-12066	-0.0000461	0.0003743	0.0035	1.5	7460.66	16620.59	16620.59	8.83	No	Si
SLU 77	-1.3	-9272.33	-13246	-0.0003585	0.0003743	0.0035	1.5	8019.71	17037.06	17037.06	1.84	No	Si
SLU 77	1.67	-1846.84	-12027	-0.0000456	0.0003743	0.0035	1.5	7441.43	16606.41	16606.41	8.99	No	Si
SLU 75	-1.3	-9243.58	-13270	-0.0003531	0.0003743	0.0035	1.5	8030.78	17045.39	17045.39	1.84	No	Si
SLU 75	1.67	-1872.22	-12024	-0.0000459	0.0003743	0.0035	1.5	7440.34	16605.6	16605.6	8.87	No	Si
SLU 81	-1.3	-9443.72	-13555	-0.0003657	0.0003743	0.0035	1.5	8161.02	17143.67	17143.67	1.82	No	Si
SLU 81	1.67	-1871.2	-12262	-0.0000465	0.0003743	0.0035	1.5	7555.64	16690.79	16690.79	8.92	No	Si
SLU 82	-1.3	-9479.69	-13665	-0.0003647	0.0003743	0.0035	1.5	8210.71	17181.3	17181.3	1.81	No	Si
SLU 82	1.67	-1923.87	-12371	-0.0000473	0.0003743	0.0035	1.5	7607.83	16729.46	16729.46	8.7	No	Si
SLU 78	-1.3	-9308.29	-13356	-0.0003575	0.0003743	0.0035	1.5	8070.14	17075.05	17075.05	1.83	No	Si
SLU 78	1.67	-1899.51	-12135	-0.0000464	0.0003743	0.0035	1.5	7494.18	16645.34	16645.34	8.76	No	Si
SLU 79	-1.3	-9232.77	-13191	-0.000356	0.0003743	0.0035	1.5	7994.43	17018.05	17018.05	1.84	No	Si
SLU 79	1.67	-1829.21	-11958	-0.0000453	0.0003743	0.0035	1.5	7407.74	16581.58	16581.58	9.06	No	Si
SLU 84	-1.3	-9544.4	-13750	-0.0003692	0.0003743	0.0035	1.5	8249.34	17210.25	17210.25	1.8	No	Si
SLU 84	1.67	-1951.17	-12481	-0.0000478	0.0003743	0.0035	1.5	7660.84	16768.8	16768.8	8.59	No	Si
SLU 74	-1.3	-9207.61	-13160	-0.0003542	0.0003743	0.0035	1.5	7980.14	17007.31	17007.31	1.85	No	Si
SLU 74	1.67	-1819.55	-11916	-0.0000451	0.0003743	0.0035	1.5	7387.32	16566.54	16566.54	9.1	No	Si
SLU 83	-1.3	-9508.44	-13641	-0.0003703	0.0003743	0.0035	1.5	8199.85	17173.07	17173.07	1.81	No	Si
SLU 83	1.67	-1898.5	-12373	-0.000047	0.0003743	0.0035	1.5	7608.91	16730.25	16730.25	8.81	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	-1.3	-10224.43	-19700	-0.0002139	0.0005615	0.0035	1.5		21613.93	21613.93	2.11		Si
SLV 10	1.67	-4589.82	-18015	-0.0000862	0.0005615	0.0035	1.5		21011.81	21011.81	4.58		Si
SLV 12	-1.3	-3600.95	-399	-0.0005459	0.0005615	0.0035	1.5		9861.68	9861.68	2.74		Si
SLV 12	1.67	2969.71	330	0.0000493	0.0005615	0.0035	1.2		3089.65	3089.65	1.04		Si
SLV 13	-1.3	-9802.72	-15147	-0.0002864	0.0005615	0.0035	1.5		19929.45	19929.45	2.03		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	1.67	78.89	-13139	-0.0000309	0.0005615	0.0035	1.5		19119.39	19119.39	242.37		Si
SLV 9	-1.3	-10550.77	-19737	-0.00023	0.0005615	0.0035	1.5		21626.77	21626.77	2.05		Si
SLV 9	1.67	-4120.91	-17980	-0.0000815	0.0005615	0.0035	1.5		20999.37	20999.37	5.1		Si
SLV 14	-1.3	-9318.02	-15093	-0.000247	0.0005615	0.0035	1.5		19908.31	19908.31	2.14		Si
SLV 14	1.67	-617.58	-13190	-0.000036	0.0005615	0.0035	1.5		19152.81	19152.81	31.01		Si
SLV 8	-1.3	-2322.96	1450	0.0036487	0.0005615	0.0035	1.2		0	0	0		No
SLV 8	1.67	1735.27	1691	0.0046589	0.0005615	0.0035	1.2		0	0	0		No
SLV 5	-1.3	-9272.77	-17888	-0.0001903	0.0005615	0.0035	1.5		20965.77	20965.77	2.26		Si
SLV 5	1.67	-5355.35	-16620	-0.0000924	0.0005615	0.0035	1.5		20493.58	20493.58	3.83		Si
SLV 7	-1.3	-2649.29	1414	0.0033858	0.0005615	0.0035	1.2		0	0	0		No
SLV 7	1.67	2204.18	1725	0.0045523	0.0005615	0.0035	1.2		0	0	0		No
SLV 15	-1.3	-7815.68	-9357	-0.0003407	0.0005615	0.0035	1.5		17458.1	17458.1	2.23		Si
SLV 15	1.67	2346.75	-7636	-0.0000394	0.0005615	0.0035	1.5		16577.56	16577.56	7.06		Si
SLV 11	-1.3	-3927.29	-435	-0.0006058	0.0005615	0.0035	1.5		9947.57	9947.57	2.53		Si
SLV 11	1.67	3438.62	364	-0.0000239	0.0005615	0.0035	1.5		2027.89	2027.89	0.59		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	-1.3	-9443.72	-13555	-12049	-8871	1.5	0.1599	-64841	10833	5379	10573	20212	3825	15952	No	1.8	Si
SLU 81	1.67	-1871.2	-12262	-10900	-7200	1.5	1.5	-16148	9097	6141	10573	20212	3825	16714	No	2.32	Si
SLU 84	-1.3	-9544.4	-13750	-12223	-8910	1.5	0.1676	-65349	10833	5426	10573	20212	3825	15998	No	1.8	Si
SLU 84	1.67	-1951.17	-12481	-11094	-7175	1.5	1.5	-16436	9136	6167	10573	20212	3825	16740	No	2.33	Si
SLU 77	-1.3	-9272.33	-13246	-11774	-8731	1.5	0.15	-63911	10833	5306	10573	20212	3825	15879	No	1.82	Si
SLU 77	1.67	-1846.84	-12027	-10690	-7075	1.5	1.5	-15837	9056	6113	10573	20212	3825	16686	No	2.36	Si
SLU 79	-1.3	-9232.77	-13191	-11726	-8698	1.5	0.1503	-63650	10833	5293	10573	20212	3825	15866	No	1.82	Si
SLU 79	1.67	-1829.21	-11958	-10629	-7053	1.5	1.5	-15747	9044	6105	10573	20212	3825	16677	No	2.36	Si
SLU 78	-1.3	-9308.29	-13356	-11872	-8713	1.5	0.1592	-63981	10833	5332	10573	20212	3825	15905	No	1.83	Si
SLU 78	1.67	-1899.51	-12135	-10787	-7011	1.5	1.5	-15980	9075	6126	10573	20212	3825	16699	No	2.38	Si
SLU 75	-1.3	-9243.58	-13270	-11796	-8655	1.5	0.1603	-63542	10833	5312	10573	20212	3825	15884	No	1.84	Si
SLU 75	1.67	-1872.22	-12024	-10688	-6972	1.5	1.5	-15835	9056	6113	10573	20212	3825	16685	No	2.39	Si
SLU 74	-1.3	-9207.61	-13160	-11698	-8674	1.5	0.1511	-63473	10833	5286	10573	20212	3825	15858	No	1.83	Si
SLU 74	1.67	-1819.55	-11916	-10592	-7036	1.5	1.5	-15692	9037	6100	10573	20212	3825	16673	No	2.37	Si
SLU 83	-1.3	-9508.44	-13641	-12125	-8928	1.5	0.1588	-65277	10833	5399	10573	20212	3825	15972	No	1.79	Si
SLU 83	1.67	-1898.5	-12373	-10998	-7239	1.5	1.5	-16293	9117	6154	10573	20212	3825	16727	No	2.31	Si
SLU 80	-1.3	-9268.74	-13301	-11823	-8679	1.5	0.1595	-63719	10833	5319	10573	20212	3825	15892	No	1.83	Si
SLU 80	1.67	-1881.88	-12066	-10725	-6990	1.5	1.5	-15889	9063	6118	10573	20212	3825	16690	No	2.39	Si
SLU 82	-1.3	-9479.69	-13665	-12146	-8852	1.5	0.1688	-64911	10833	5405	10573	20212	3825	15978	No	1.81	Si
SLU 82	1.67	-1923.87	-12371	-10996	-7136	1.5	1.5	-16290	9117	6154	10573	20212	3825	16726	No	2.34	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 13	-1.3	-7848.05	-11626	-10334	-10361	1.5	0.2249	-53573	16250	6005	10573	30319	3825	16578		1.6	Si
SLD 13	1.67	-616.4	-10202	-9068	-9008	1.5	1.5	-13434	13103	8845	10573	30319	3825	19418		2.16	Si
SLD 15	-1.3	-7052.23	-9317	-8282	-10934	1.5	0	-52475	16250	5458	10573	30319	3825	16031		1.47	Si
SLD 15	1.67	285.74	-8004	-7115	-10016	1.5	1.5	-10541	12525	8454	10573	30319	3825	19027		1.9	Si
SLV 11	-1.3	-3927.29	-435	-387	-12129	1.5	0	0	0	3353	10573	30319	3825	13925		1.15	Si
SLV 11	1.67	3438.62	364	324	-12804	1.5	0	0	10282	3249	10573	30319	3825	13822		1.08	Si
SLD 16	-1.3	-6846.02	-9294	-8261	-10007	1.5	0.0402	-50133	16250	5452	10573	30319	3825	16025		1.6	Si
SLD 16	1.67	-10.55	-8026	-7134	-9049	1.5	1.5	-10569	12531	8458	10573	30319	3825	19031		2.1	Si
SLV 7	-1.3	-2649.29	1414	1257	-6465	1.2	0	0	0	0	10573	24255	3060	10573		1.64	Si
SLV 7	1.67	2204.18	1725	1533	-7182	1.2	0	0	0	0	10573	24255	3060	10573		1.47	Si
SLV 15	-1.3	-7815.68	-9357	-8317	-17403	1.5	0	-60417	16250	5467	10573	30319	3825	16040		0.92	No
SLV 15	1.67	2346.75	-7636	-6787	-16792	1.5	1.328	-11415	12700	7589	10573	30319	3825	18162		1.08	Si
SLV 16	-1.3	-7330.98	-9303	-8269	-15223	1.5	0	-55617	16250	5454	10573	30319	3825	16027		1.05	Si
SLV 16	1.67	1650.28	-7686	-6832	-14517	1.5	1.5	-10122	12441	8398	10573	30319	3825	18971		1.31	Si
SLV 12	-1.3	-3600.95	-399	-354	-10661	1.5	0	0	786	3344	10573	30319	3825	13917		1.31	Si
SLV 12	1.67	2969.71	330	293	-11273	1.2	0	0	0	0	10573	24255	3060	10573		0.94	No
SLV 13	-1.3	-9802.72	-15147	-13464	-15955	1.5	0.3085	-64271	16250	6840	10573	30319	3825	17413		1.09	Si
SLV 13	1.67	78.89	-13139	-11679	-14270	1.5	1.5	-17302	13877	9367	10573	30319	3825	19940		1.4	Si
SLV 14	-1.3	-9318.02	-15093	-13416	-13776	1.5	0.3979	-58401	16250	6827	10573	30319	3825	17400		1.26	Si
SLV 14	1.67	-617.58	-13190	-11724	-11995	1.5	1.5	-17369	13891	9376	10573	30319	3825	19949		1.66	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.185 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 11	179667	0.25	0	212	113.43	0	0	No, Trazione
SLV 12	179667	0.25	0	60	113.43	0	0	No, Trazione
SLV 7	179667	0.25	0	1465	113.43	0	0	No, Trazione
SLV 8	179667	0.25	0	1313	113.43	0	0	No, Trazione
SLV 3	179667	0.25	7616	-5141	113.43	1098.95	9.69	Si
SLV 4	179667	0.25	7950	-5366	113.43	1144.58	10.09	Si
SLV 15	179667	0.25	13805	-9319	113.43	1907.15	16.81	Si
SLV 16	179667	0.25	14140	-9544	113.43	1948.66	17.18	Si
SLV 1	179667	0.25	17908	-12088	113.43	2400.82	21.17	Si
SLV 2	179667	0.25	18242	-12314	113.43	2439.6	21.51	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-18015	-19700	-1327	0.441	2116.6	0.96	6.67188	2.80694	Si
SLV 9	-17980	-19737	-1305	0.443	2113.1	0.96	6.6984	2.80694	Si
SLV 6	-16654	-17851	-1285	0.47	1978.3	0.958	7.13167	2.80694	Si
SLV 5	-16620	-17888	-1264	0.472	1974.8	0.958	7.1611	2.80694	Si
SLV 14	-13190	-15093	-847	0.59	1626.3	0.95	9.03318	3.00264	Si
SLV 13	-13139	-15147	-815	0.594	1621.1	0.95	9.09421	3.00264	Si
SLV 2	-8654	-8930	-709	0.827	1166.8	0.933	12.87113	3.00264	Si
SLV 1	-8603	-8984	-677	0.833	1161.6	0.933	12.97966	3.00264	Si
SLV 16	-7686	-9303	-390	0.937	1069.1	0.929	14.66347	3.00264	Si
SLV 15	-7636	-9357	-358	0.945	1063.9	0.928	14.7937	3.00264	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.803	SLU 84	Si
V_SLU	1.789	SLU 83	Si
PF_SLV	0	SLV 7	No
V_SLV	0.922	SLV 15	No
PFFP_SLV	0	SLV 12	No
R_SLV	2.377	SLV 10	Si

Maschio 36

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-6.268	1.046	-6.268	-3.284	L2	L4	4.33	0.3	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 52	-1.3	2769.44	-105786	-0.0001334	0.0004492	0.0035	4.33	76383.43	149204.55	149204.55	53.88	No	Si
SLU 52	1.67	2554.87	-65721	-0.0000793	0.0004492	0.0035	4.33	83370.45	110376.72	110376.72	43.2	No	Si
SLU 2	-1.3	2105.79	-76830	-0.0000926	0.0004492	0.0035	4.33	85820.69	123773.21	123773.21	58.78	No	Si
SLU 2	1.67	2018.28	-47656	-0.0000563	0.0004492	0.0035	4.33	72197.27	86429.77	86429.77	42.82	No	Si
SLU 46	-1.3	1905.64	-96934	-0.0001192	0.0004492	0.0035	4.33	81695.51	141832.14	141832.14	74.43	No	Si
SLU 46	1.67	2441.5	-59816	-0.0000718	0.0004492	0.0035	4.33	80697.58	103255.7	103255.7	42.29	No	Si
SLU 55	-1.3	2671.22	-106826	-0.0001347	0.0004492	0.0035	4.33	75618.44	150051.37	150051.37	56.17	No	Si
SLU 55	1.67	2515.38	-66523	-0.0000802	0.0004492	0.0035	4.33	83659.88	111343.14	111343.14	44.26	No	Si
SLU 51	-1.3	1847.39	-97374	-0.0001197	0.0004492	0.0035	4.33	81482.22	142198.12	142198.12	76.97	No	Si
SLU 51	1.67	2376.17	-60160	-0.0000721	0.0004492	0.0035	4.33	80879.4	103670.56	103670.56	43.63	No	Si
SLU 44	-1.3	2507.76	-95600	-0.0001185	0.0004492	0.0035	4.33	82311.07	140720.47	140720.47	56.11	No	Si
SLU 44	1.67	2547.65	-58913	-0.0000708	0.0004492	0.0035	4.33	80204.63	102165.96	102165.96	40.1	No	Si
SLU 43	-1.3	1347.95	-94831	-0.0001152	0.0004492	0.0035	4.33	82643.37	140080.54	140080.54	103.92	No	Si
SLU 43	1.67	2316.36	-58025	-0.0000693	0.0004492	0.0035	4.33	79698.65	101095.39	101095.39	43.64	No	Si
SLU 65	-1.3	2163.06	-107409	-0.0001345	0.0004492	0.0035	4.33	75177.05	150318	150318	69.49	No	Si
SLU 65	1.67	2567.27	-67005	-0.0000809	0.0004492	0.0035	4.33	83825.5	111924.32	111924.32	43.6	No	Si
SLU 47	-1.3	2409.54	-96640	-0.0001197	0.0004492	0.0035	4.33	81835.26	141587.28	141587.28	58.76	No	Si
SLU 47	1.67	2508.16	-59714	-0.0000717	0.0004492	0.0035	4.33	80642.91	103132.37	103132.37	41.12	No	Si
SLU 49	-1.3	1807.41	-97975	-0.0001205	0.0004492	0.0035	4.33	81181.81	142698.95	142698.95	78.95	No	Si
SLU 49	1.67	2402.02	-60618	-0.0000727	0.0004492	0.0035	4.33	81116.11	104222.11	104222.11	43.39	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	-1.3	63060.59	-121494	-0.0002602	0.0006738	0.0035	4.33		180998.89	180998.89	2.87		Si
SLV 6	1.67	9475.59	-88725	-0.0001164	0.0006738	0.0035	4.33		147696.77	147696.77	15.59		Si
SLV 3	-1.3	-24105.13	-49826	-0.0000929	0.0006738	0.0035	4.33		103535.05	103535.05	4.3		Si
SLV 3	1.67	2891.93	-29416	-0.0000361	0.0006738	0.0035	4.33		60109.44	60109.44	20.79		Si
SLV 9	-1.3	63557.77	-131535	-0.0002774	0.0006738	0.0035	4.33		189643.38	189643.38	2.98		Si
SLV 9	1.67	7569.94	-92514	-0.0001179	0.0006738	0.0035	4.33		152342.79	152342.79	20.12		Si
SLV 10	-1.3	65833.39	-132587	-0.0002838	0.0006738	0.0035	4.33		190549.03	190549.03	2.89		Si
SLV 10	1.67	7595	-93932	-0.0001197	0.0006738	0.0035	4.33		154082.86	154082.86	20.29		Si
SLV 8	-1.3	-61713.26	-33157	-0.000375	0.0006738	0.0035	3.464		75603.46	75603.46	1.23		Si
SLV 8	1.67	-3980.63	-9538	-0.000016	0.0006738	0.0035	4.33		30924.89	30924.89	7.77		Si
SLV 5	-1.3	60784.97	-120442	-0.0002541	0.0006738	0.0035	4.33		180093.25	180093.25	2.96		Si
SLV 5	1.67	9450.53	-87307	-0.0001146	0.0006738	0.0035	4.33		145956.7	145956.7	15.44		Si
SLD 7	-1.3	-25080.12	-62150	-0.0001095	0.0006738	0.0035	4.33		122177.13	122177.13	4.87		Si
SLD 7	1.67	-487.12	-33819	-0.0000373	0.0006738	0.0035	4.33		76749.48	76749.48	157.56		Si
SLV 11	-1.3	-61216.08	-43198	-0.000197	0.0006738	0.0035	3.464		92746.04	92746.04	1.52		Si
SLV 11	1.67	-5886.27	-13327	-0.000023	0.0006738	0.0035	4.33		38486.43	38486.43	6.54		Si
SLV 7	-1.3	-63988.88	-32105	-0.0005447	0.0006738	0.0035	3.464		73781.09	73781.09	1.15		Si
SLV 7	1.67	-4005.68	-8120	-0.0000145	0.0006738	0.0035	4.33		28049.44	28049.44	7		Si
SLV 12	-1.3	-58940.46	-44250	-0.0001794	0.0006738	0.0035	3.464		94471.55	94471.55	1.6		Si
SLV 12	1.67	-5861.21	-14745	-0.0000245	0.0006738	0.0035	4.33		41291.38	41291.38	7.04		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	-1.3	1126.73	-118469	-86159	-5608	4.33	4.33	-66327	10833	41966	95155	46683	22083	68766	No	12.26	Si
SLU 74	1.67	2329.57	-74184	-53952	-4839	4.33	4.33	-41534	10833	29084	95155	46683	22083	68766	No	14.21	Si
SLU 79	-1.3	1068.48	-118908	-86479	-5571	4.33	4.33	-66573	10833	42094	95155	46683	22083	68766	No	12.34	Si
SLU 79	1.67	2264.24	-74528	-54202	-4799	4.33	4.33	-41726	10833	29184	95155	46683	22083	68766	No	14.33	Si
SLU 64	-1.3	1003.25	-106641	-77557	-5351	4.33	4.33	-59705	10833	38526	95155	46683	22083	68766	No	12.85	Si
SLU 64	1.67	2335.98	-66117	-48085	-4664	4.33	4.33	-37017	10833	26737	95155	46683	22083	68766	No	14.74	Si
SLU 81	-1.3	1377.08	-121192	-88140	-5662	4.33	4.33	-67852	10833	42759	95155	46683	22083	68766	No	12.14	Si
SLU 81	1.67	2346.3	-75844	-55159	-4881	4.33	4.33	-42463	10833	29567	95155	46683	22083	68766	No	14.09	Si
SLU 71	-1.3	806.8	-108722	-79071	-5354	4.33	4.33	-60870	10833	39131	95155	46683	22083	68766	No	12.84	Si
SLU 71	1.67	2257.02	-67720	-49251	-4647	4.33	4.33	-37914	10833	27203	95155	46683	22083	68766	No	14.8	Si
SLU 69	-1.3	766.83	-109324	-79508	-5392	4.33	4.33	-61207	10833	39306	95155	46683	22083	68766	No	12.75	Si
SLU 69	1.67	2282.87	-68177	-49583	-4679	4.33	4.33	-38170	10833	27337	95155	46683	22083	68766	No	14.7	Si
SLU 77	-1.3	1028.51	-119510	-86916	-5609	4.33	4.33	-66910	10833	42269	95155	46683	22083	68766	No	12.26	Si
SLU 77	1.67	2290.09	-74986	-54535	-4831	4.33	4.33	-41982	10833	29317	95155	46683	22083	68766	No	14.24	Si
SLU 83	-1.3	1278.86	-122233	-88897	-5663	4.33	4.33	-68435	10833	43061	95155	46683	22083	68766	No	12.14	Si
SLU 83	1.67	2306.81	-76645	-55742	-4873	4.33	4.33	-42911	10833	29800	95155	46683	22083	68766	No	14.11	Si
SLU 66	-1.3	865.05	-108283	-78751	-5390	4.33	4.33	-60624	10833	39003	95155	46683	22083	68766	No	12.76	Si
SLU 66	1.67	2322.35	-67376	-49000	-4687	4.33	4.33	-37722	10833	27103	95155	46683	22083	68766	No	14.67	Si
SLU 62	-1.3	1623.56	-110423	-80308	-5278	4.33	4.33	-61823	10833	39626	95155	46683	22083	68766	No	13.03	Si
SLU 62	1.67	2287.19	-68553	-49857	-4569	4.33	4.33	-38381	10833	27446	95155	46683	22083	68766	No	15.05	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	-1.3	60784.97	-120442	-87594	38280	4.33	4.33	-67432	16250	46292	95155	70024	22083	92107		2.41	Si
SLV 5	1.67	9450.53	-87307	-63496	38942	4.33	4.33	-48880	16250	36653	95155	70024	22083	92107		2.37	Si
SLV 9	-1.3	63557.77	-131535	-95662	37649	4.33	4.33	-73643	16250	49519	95155	70024	22083	92107		2.45	Si
SLV 9	1.67	7569.94	-92514	-67283	38230	4.33	4.33	-51796	16250	38168	95155	70024	22083	92107		2.41	Si
SLD 7	-1.3	-25080.12	-62150	-45200	-21708	4.33	4.33	-34796	16250	29335	95155	70024	22083	92107		4.24	Si
SLD 7	1.67	-487.12	-33819	-24595	-21184	4.33	4.33	-18934	16250	21109	95155	70024	22083	92107		4.35	Si
SLV 11	-1.3	-61216.08	-43198	-31417	-48642	3.464	2.2437	0	0	0	95155	56019	17666	73686		1.51	Si
SLV 11	1.67	-5886.27	-13327	-9692	-48285	4.33	4.33	-7461	13992	18176	95155	70024	22083	92107		1.91	Si
SLV 6	-1.3	63060.59	-121494	-88359	40454	4.33	4.33	-68021	16250	46598	95155	70024	22083	92107		2.28	Si
SLV 6	1.67	9475.59	-88725	-64528	41156	4.33	4.33	-49675	16250	37066	95155	70024	22083	92107		2.24	Si
SLV 12	-1.3	-58940.46	-44250	-32182	-46468	3.464	2.4991	0	0	0	95155	56019	17666	73686		1.59	Si
SLV 12	1.67	-5861.21	-14745	-10724	-46071	4.33	4.33	-8256	14151	18382	95155	70024	22083	92107		2	Si
SLD 11	-1.3	-23896.98	-66890	-48647	-21978	4.33	4.33	-37450	16250	30714	95155	70024	22083	92107		4.19	Si
SLD 11	1.67	-1290.18	-36043	-26213	-21490	4.33	4.33	-20180	16250	21741	95155	70024	22083	92107		4.29	Si
SLV 7	-1.3	-63988.88	-32105	-23349	-48011	3.464	0.5157	0	0	0	95155	56019	17666	73686		1.53	Si
SLV 7	1.67	-4005.68	-8120	-5905	-47573	4.33	4.33	-4546	13409	17419	95155	70024	22083	92107		1.94	Si
SLV 8	-1.3	-61713.26	-33157	-24114	-45837	3.464	0.9113	0	0	0	95155	56019	17666	73686		1.61	Si
SLV 8	1.67	-3980.63	-9538	-6937	-45359	4.33	4.33	-5340	13568	17625	95155	70024	22083	92107		2.03	Si
SLV 10	-1.3	65833.39	-132587	-96427	39823	4.33	4.33	-74232	16250	49825	95155	70024	22083	92107		2.31	Si
SLV 10	1.67	7595	-93932	-68314	40444	4.33	4.33	-52590	16250	38581	95155	70024	22083	92107		2.28	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 0.185 Ta 0.05 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 7	-20088	0.25	226.14	2759	3875.26	3317.13	14.67	Si
SLV 8	-21332	0.25	226.14	2913.15	4075.5	3494.32	15.45	Si
SLV 11	-28663	0.25	226.14	3781.81	5244.48	4513.14	19.96	Si
SLV 12	-29907	0.25	226.14	3922.51	5439.05	4680.78	20.7	Si
SLV 3	-38744	0.25	226.14	4865.86	6819.24	5842.55	25.84	Si
SLV 4	-40592	0.25	226.14	5050.67	7106.8	6078.73	26.88	Si
SLV 1	-63568	0.25	226.14	6989.29	10570.89	8780.09	38.83	Si
SLV 2	-65416	0.25	226.14	7116.3	10835.81	8976.05	39.69	Si

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 15	-67325	0.25	226.14	7243.05	11098.55	9170.8	40.55	Si
SLV 16	-69173	0.25	226.14	7361.31	11352.81	9357.06	41.38	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.05 Ta = 0.0491

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-93932	-132587	-225	0.3	10109.3	0.983	4.43038	3.03106	Si
SLV 9	-92514	-131535	-226	0.303	9964.7	0.983	4.48581	3.03106	Si
SLV 6	-88725	-121494	135	0.315	9578.7	0.982	4.65721	3.03106	Si
SLV 5	-87307	-120442	134	0.319	9434.1	0.982	4.71969	3.03106	Si
SLV 14	-72636	-114866	-610	0.364	7939.3	0.979	5.41072	3.36438	Si
SLV 13	-70529	-113304	-611	0.373	7724.6	0.978	5.54645	3.36438	Si
SLV 2	-55279	-77890	589	0.457	6171.3	0.973	6.83293	3.36438	Si
SLV 1	-53172	-76327	588	0.473	5956.7	0.972	7.06596	3.36438	Si
SLV 16	-48880	-88365	-580	0.507	5519.6	0.97	7.6019	3.36438	Si
SLV 15	-46773	-86803	-581	0.526	5305.1	0.969	7.89791	3.36438	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	40.102	SLU 44	Si
V_SLU	12.142	SLU 83	Si
PF_SLV	1.153	SLV 7	Si
V_SLV	1.515	SLV 11	Si
PFFP_SLV	14.668	SLV 7	Si
R_SLV	1.462	SLV 10	Si

Maschio 37

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-5.158	2.071	-5.158	6.101	L2	L4	4.03	0.3	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 61	-1.3	-15873.98	-99899	-0.000167	0.0004492	0.0035	4.03	65169.54	132688.93	132688.93	8.36	No	Si
SLU 61	0.8	-7587.19	-85789	-0.0001256	0.0004492	0.0035	4.03	72476.12	124292.99	124292.99	16.38	No	Si
SLU 55	-1.3	-15865.8	-96740	-0.0001617	0.0004492	0.0035	4.03	67277.35	131132.56	131132.56	8.27	No	Si
SLU 55	0.8	-7163.3	-82851	-0.0001203	0.0004492	0.0035	4.03	73314.2	122129.82	122129.82	17.05	No	Si
SLU 52	-1.3	-15811.58	-95384	-0.0001593	0.0004492	0.0035	4.03	68098.48	130464.59	130464.59	8.25	No	Si
SLU 52	0.8	-7128.05	-81524	-0.0001182	0.0004492	0.0035	4.03	73615.7	121152.25	121152.25	17	No	Si
SLU 75	-1.3	-16376.13	-110321	-0.0001864	0.0004492	0.0035	4.03	56285.3	137823.34	137823.34	8.42	No	Si
SLU 75	0.8	-8177.29	-95404	-0.0001418	0.0004492	0.0035	4.03	68086.48	130474.65	130474.65	15.96	No	Si
SLU 84	-1.3	-16878.74	-113747	-0.0001939	0.0004492	0.0035	4.03	52717.8	139059.57	139059.57	8.24	No	Si
SLU 84	0.8	-8554.97	-98592	-0.0001477	0.0004492	0.0035	4.03	66074.59	132045.04	132045.04	15.43	No	Si
SLU 73	-1.3	-16762.13	-107876	-0.000183	0.0004492	0.0035	4.03	58635.63	136618.78	136618.78	8.15	No	Si
SLU 73	0.8	-8060.58	-92999	-0.0001377	0.0004492	0.0035	4.03	69421	129289.77	129289.77	16.04	No	Si
SLU 82	-1.3	-16824.53	-112391	-0.0001913	0.0004492	0.0035	4.03	54168.01	138745.53	138745.53	8.25	No	Si
SLU 82	0.8	-8519.72	-97264	-0.0001455	0.0004492	0.0035	4.03	66946.16	131391.02	131391.02	15.42	No	Si
SLU 76	-1.3	-16816.35	-109232	-0.0001856	0.0004492	0.0035	4.03	57352.43	137286.76	137286.76	8.16	No	Si
SLU 76	0.8	-8095.83	-94327	-0.0001399	0.0004492	0.0035	4.03	68703.89	129943.79	129943.79	16.05	No	Si
SLU 63	-1.3	-15928.19	-101255	-0.0001695	0.0004492	0.0035	4.03	64181.4	133356.9	133356.9	8.37	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 63	0.8	-7622.44	-87116	-0.0001277	0.0004492	0.0035	4.03	72020.15	125270.55	125270.55	16.43	No	Si
SLU 80	-1.3	-16425.76	-110989	-0.0001877	0.0004492	0.0035	4.03	55614.35	138152.66	138152.66	8.41	No	Si
SLU 80	0.8	-8197.7	-96114	-0.0001429	0.0004492	0.0035	4.03	67662.55	130824.27	130824.27	15.96	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 9	-1.3	-71099.08	-26388	-0.0028107	0.0006738	0.0035	3.224		57679.53	57679.53	0.81		No
SLV 9	0.8	149.81	-5088	-0.000006	0.0006738	0.0035	4.03		11708.84	11708.84	78.16		Si
SLV 6	-1.3	-72362.27	-8723	-0.0046019	0.0006738	0.0035	3.224		26165.14	26165.14	0.36		No
SLV 6	0.8	1970.2	7844	-0.0075328	0.0006738	0.0035	3.224		0	0	0		No
SLD 10	-1.3	-35998.8	-56386	-0.0001349	0.0006738	0.0035	4.03		103567.96	103567.96	2.88		Si
SLD 10	0.8	-2873.76	-40674	-0.0000528	0.0006738	0.0035	4.03		80752.34	80752.34	28.1		Si
SLD 6	-1.3	-35687.64	-49153	-0.0001248	0.0006738	0.0035	4.03		93398.21	93398.21	2.62		Si
SLD 6	0.8	-2616.43	-36133	-0.0000468	0.0006738	0.0035	4.03		73700.43	73700.43	28.17		Si
SLD 9	-1.3	-35168.39	-56693	-0.0001337	0.0006738	0.0035	4.03		103987.81	103987.81	2.96		Si
SLD 9	0.8	-3381.72	-41635	-0.0000549	0.0006738	0.0035	4.03		82225.64	82225.64	24.31		Si
SLD 5	-1.3	-34857.24	-49461	-0.0001234	0.0006738	0.0035	4.03		93844.06	93844.06	2.69		Si
SLD 5	0.8	-3124.4	-37094	-0.0000489	0.0006738	0.0035	4.03		75254.93	75254.93	24.09		Si
SLV 1	-1.3	-26705.01	-31061	-0.000086	0.0006738	0.0035	4.03		65494.81	65494.81	2.45		Si
SLV 1	0.8	-3560.6	-29511	-0.0000405	0.0006738	0.0035	4.03		62985.84	62985.84	17.69		Si
SLV 5	-1.3	-70370.12	-9462	-0.0043607	0.0006738	0.0035	3.224		27544.69	27544.69	0.39		No
SLV 5	0.8	751.57	5539	-0.0043214	0.0006738	0.0035	3.224		0	0	0		No
SLV 10	-1.3	-73091.23	-25650	-0.0031976	0.0006738	0.0035	3.224		56422.74	56422.74	0.77		No
SLV 10	0.8	1368.43	-2783	-0.0000055	0.0006738	0.0035	4.03		7231.98	7231.98	5.28		Si
SLV 2	-1.3	-29663.94	-29965	-0.0000939	0.0006738	0.0035	4.03		63720.77	63720.77	2.15		Si
SLV 2	0.8	-1750.59	-26087	-0.0000332	0.0006738	0.0035	4.03		57166.93	57166.93	32.66		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	-1.3	-16157.33	-112994	-82177	-13350	4.03	4.03	-67971	10833	39854	95155	43448	20553	64001	No	4.79	Si
SLU 81	0.8	-8619.65	-97954	-71239	-11524	4.03	4.03	-58924	10833	35479	95155	43448	20553	64001	No	5.55	Si
SLU 73	-1.3	-16762.13	-107876	-78455	-13637	4.03	4.03	-64893	10833	38365	95155	43448	20553	64001	No	4.69	Si
SLU 73	0.8	-8060.58	-92999	-67636	-11954	4.03	4.03	-55944	10833	34037	95155	43448	20553	64001	No	5.35	Si
SLU 83	-1.3	-16211.54	-114349	-83163	-13413	4.03	4.03	-68787	10833	40248	95155	43448	20553	64001	No	4.77	Si
SLU 83	0.8	-8654.9	-99281	-72205	-11555	4.03	4.03	-59723	10833	35865	95155	43448	20553	64001	No	5.54	Si
SLU 82	-1.3	-16824.53	-112391	-81739	-13766	4.03	4.03	-67609	10833	39678	95155	43448	20553	64001	No	4.65	Si
SLU 82	0.8	-8519.72	-97264	-70738	-11979	4.03	4.03	-58509	10833	35278	95155	43448	20553	64001	No	5.34	Si
SLU 80	-1.3	-16425.76	-110989	-80720	-13486	4.03	4.03	-66766	10833	39271	95155	43448	20553	64001	No	4.75	Si
SLU 80	0.8	-8197.7	-96114	-69901	-11712	4.03	4.03	-57817	10833	34943	95155	43448	20553	64001	No	5.46	Si
SLU 77	-1.3	-15763.15	-112279	-81658	-13141	4.03	4.03	-67542	10833	39646	95155	43448	20553	64001	No	4.87	Si
SLU 77	0.8	-8312.47	-97421	-70852	-11315	4.03	4.03	-58604	10833	35324	95155	43448	20553	64001	No	5.66	Si
SLU 75	-1.3	-16376.13	-110321	-80233	-13494	4.03	4.03	-66363	10833	39076	95155	43448	20553	64001	No	4.74	Si
SLU 75	0.8	-8177.29	-95404	-69385	-11739	4.03	4.03	-57390	10833	34737	95155	43448	20553	64001	No	5.45	Si
SLU 84	-1.3	-16878.74	-113747	-82725	-13830	4.03	4.03	-68424	10833	40073	95155	43448	20553	64001	No	4.63	Si
SLU 84	0.8	-8554.97	-98592	-71703	-12010	4.03	4.03	-59308	10833	35664	95155	43448	20553	64001	No	5.33	Si
SLU 76	-1.3	-16816.35	-109232	-79441	-13700	4.03	4.03	-65708	10833	38759	95155	43448	20553	64001	No	4.67	Si
SLU 76	0.8	-8095.83	-94327	-68601	-11985	4.03	4.03	-56742	10833	34424	95155	43448	20553	64001	No	5.34	Si
SLU 78	-1.3	-16430.35	-111677	-81220	-13558	4.03	4.03	-67179	10833	39471	95155	43448	20553	64001	No	4.72	Si
SLU 78	0.8	-8212.54	-96732	-70350	-11770	4.03	4.03	-58189	10833	35123	95155	43448	20553	64001	No	5.44	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	-1.3	-72362.27	-8723	-6344	-44734	3.224	0	0	0	0	95155	52138	16442	68581		1.53	Si
SLV 6	0.8	1970.2	7844	5705	-47032	3.224	4.03	0	0	0	95155	52138	16442	68581		1.46	Si
SLV 12	-1.3	47855.26	-143274	-104199	23404	4.03	4.03	-86186	16250	52154	95155	65173	20553	85726		3.66	Si
SLV 12	0.8	-12113.1	-136752	-99456	27829	4.03	4.03	-82263	16250	50257	95155	65173	20553	85726		3.08	Si
SLV 7	-1.3	50576.37	-127086	-92426	31872	4.03	4.03	-76448	16250	47445	95155	65173	20553	85726		2.69	Si
SLV 7	0.8	-12729.96	-128429	-93403	36933	4.03	4.03	-77257	16250	47836	95155	65173	20553	85726		2.32	Si
SLV 14	-1.3	-32093.8	-86387	-62827	-31885	4.03	4.03	-51966	16250	35606	95155	65173	20553	85726		2.69	Si
SLV 14	0.8	-3756.46	-61511	-44736	-32550	4.03	4.03	-37002	16250	28370	95155	65173	20553	85726		2.63	Si
SLV 9	-1.3	-71099.08	-26388	-19192	-47630	3.224	0	0	0	0	95155	52138	16442	68581		1.44	Si
SLV 9	0.8	149.81	-5088	-3700	-50013	4.03	4.03	-3061	13112	15853	95155	65173	20553	85726		1.71	Si
SLV 10	-1.3	-73091.23	-25650	-18655	-50416	3.224	0	0	0	0	95155	52138	16442	68581		1.36	Si
SLV 10	0.8	1368.43	-2783	-2024	-53074	4.03	4.03	-1674	12835	15517	95155	65173	20553	85726		1.62	Si
SLV 11	-1.3	49847.41	-144012	-104736	26190	4.03	4.03	-86631	16250	52369	95155	65173	20553	85726		3.27	Si
SLV 11	0.8	-13331.72	-139057	-101132	30890	4.03	4.03	-83649	16250	50927	95155	65173	20553	85726		2.78	Si
SLV 8	-1.3	48584.22	-126348	-91889	29086	4.03	4.03	-76004	16250	47230	95155	65173	20553	85726		2.95	Si
SLV 8	0.8	-11511.34	-126124	-91727	33871	4.03	4.03	-75870	16250	47165	95155	65173	20553	85726		2.53	Si
SLV 13	-1.3	-29134.87	-87484	-63625	-27747	4.03	4.03	-52626	16250	35925	95155	65173	20553	85726		3.09	Si
SLV 13	0.8	-5566.47	-64935	-47225	-28003	4.03	4.03	-39061	16250	29366	95155	65173	20553	85726		3.06	Si
SLV 5	-1.3	-70370.12	-9462	-6881	-41948	3.224	0	0	0	0	95155	52138	16442	68581		1.63	Si
SLV 5	0.8	751.57	5539	4028	-43970	3.224	4.03	0	0	0	95155	52138	16442	68581		1.56	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 0.185 Ta 0.05 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 5	1946	0.25	210.48	0	0	0	0	No
SLV 6	3824	0.25	210.48	0	0	0	0	No

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 10	-8479	0.25	210.48	1223.14	1935.1	1579.12	7.5	Si
SLV 9	-10357	0.25	210.48	1480.94	2243.59	1862.27	8.85	Si
SLV 2	-26711	0.25	210.48	3523.67	4875.6	4199.63	19.95	Si
SLV 1	-29501	0.25	210.48	3835.99	5313.12	4574.55	21.73	Si
SLV 4	-65577	0.25	210.48	6925.52	10724.13	8824.83	41.93	Si
SLV 14	-67721	0.25	210.48	7053.61	11011.14	9032.37	42.91	Si
SLV 3	-68367	0.25	210.48	7091.04	11095.53	9093.29	43.2	Si
SLV 13	-70510	0.25	210.48	7211.03	11375.21	9293.12	44.15	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.05 Ta = 0.0491

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-120676	-144012	149	0.233	12797.6	0.987	3.4338	3.03106	Si
SLV 12	-117681	-143274	148	0.238	12492.4	0.987	3.50159	3.03106	Si
SLV 7	-116063	-127086	-59	0.241	12327.5	0.987	3.55067	3.03106	Si
SLV 8	-113069	-126348	-59	0.246	12022.3	0.987	3.62403	3.03106	Si
SLV 15	-83120	-122771	367	0.31	8970.3	0.982	4.59069	3.36438	Si
SLV 16	-78673	-121675	366	0.324	8517.1	0.981	4.80405	3.36438	Si
SLV 3	-67745	-66349	-325	0.367	7403.7	0.979	5.4519	3.36438	Si
SLV 4	-63297	-65252	-326	0.388	6950.6	0.977	5.77378	3.36438	Si
SLV 13	-45695	-87484	346	0.509	5157.7	0.97	7.63202	3.36438	Si
SLV 14	-41247	-86387	345	0.555	4704.9	0.967	8.34292	3.36438	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.15	SLU 73	Si
V_SLU	4.628	SLU 84	Si
PF_SLV	0	SLV 5	No
V_SLV	1.36	SLV 10	Si
PFFP_SLV	0	SLV 5	No
R_SLV	1.133	SLV 11	Si

Maschio 39

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-5.988	1.046	-6.528	1.046	L2	L4	0.54	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 80	-1.3	-1100.4	-15942	-0.0002018	0.0004492	0.0035	0.54	1993.26	2953.54	2953.54	2.68	No	Si
SLU 80	0.8	334.78	-21844	-0.000185	0.0004492	0.0035	0.54	1558.78	3291.59	3291.59	9.83	No	Si
SLU 82	-1.3	-1118.79	-16203	-0.0002061	0.0004492	0.0035	0.54	1987.43	2974.66	2974.66	2.66	No	Si
SLU 82	0.8	341.07	-22288	-0.0001899	0.0004492	0.0035	0.54	1500.47	3296.96	3296.96	9.67	No	Si
SLU 79	-1.3	-1109.22	-15995	-0.0002032	0.0004492	0.0035	0.54	1992.17	2957.86	2957.86	2.67	No	Si
SLU 79	0.8	344.53	-21776	-0.0001854	0.0004492	0.0035	0.54	1567.38	3290.77	3290.77	9.55	No	Si
SLU 75	-1.3	-1095.24	-15863	-0.0002006	0.0004492	0.0035	0.54	1994.78	2947.14	2947.14	2.69	No	Si
SLU 75	0.8	333.48	-21730	-0.0001838	0.0004492	0.0035	0.54	1573.27	3290.21	3290.21	9.87	No	Si
SLU 81	-1.3	-1127.61	-16256	-0.0002075	0.0004492	0.0035	0.54	1986.09	2978.97	2978.97	2.64	No	Si
SLU 81	0.8	350.82	-22221	-0.0001902	0.0004492	0.0035	0.54	1509.61	3296.14	3296.14	9.4	No	Si
SLU 84	-1.3	-1130.78	-16373	-0.0002089	0.0004492	0.0035	0.54	1982.98	2988.37	2988.37	2.64	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 84	0.8	345.29	-22524	-0.0001926	0.0004492	0.0035	0.54	1468.1	3299.8	3299.8	9.56	No	Si
SLU 83	-1.3	-1139.6	-16426	-0.0002103	0.0004492	0.0035	0.54	1981.48	2992.69	2992.69	2.63	No	Si
SLU 83	0.8	355.05	-22456	-0.0001929	0.0004492	0.0035	0.54	1477.53	3298.98	3298.98	9.29	No	Si
SLU 74	-1.3	-1104.06	-15916	-0.0002019	0.0004492	0.0035	0.54	1993.76	2951.46	2951.46	2.67	No	Si
SLU 74	0.8	343.23	-21662	-0.0001842	0.0004492	0.0035	0.54	1581.72	3289.39	3289.39	9.58	No	Si
SLU 78	-1.3	-1107.23	-16032	-0.0002033	0.0004492	0.0035	0.54	1991.38	2960.86	2960.86	2.67	No	Si
SLU 78	0.8	337.71	-21965	-0.0001865	0.0004492	0.0035	0.54	1543.29	3293.05	3293.05	9.75	No	Si
SLU 77	-1.3	-1116.05	-16086	-0.0002047	0.0004492	0.0035	0.54	1990.2	2965.17	2965.17	2.66	No	Si
SLU 77	0.8	347.46	-21897	-0.0001868	0.0004492	0.0035	0.54	1552.03	3292.23	3292.23	9.48	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	-1.3	1254.86	-5307	-0.0004494	0.0006738	0.0035	0.54		1343.08	1343.08	1.07		Si
SLV 1	0.8	-1756.03	-11609	-0.0002401	0.0006738	0.0035	0.432		2692.33	2692.33	1.53		Si
SLV 4	-1.3	822.53	-7831	-0.0001071	0.0006738	0.0035	0.54		1848.19	1848.19	2.25		Si
SLV 4	0.8	-1272.72	-8593	-0.0001648	0.0006738	0.0035	0.432		2132.28	2132.28	1.68		Si
SLV 13	-1.3	-2347.31	-14153	-0.0003634	0.0006738	0.0035	0.432		3108.54	3108.54	1.32		Si
SLV 13	0.8	1742.88	-21040	-0.0002846	0.0006738	0.0035	0.54		3867.62	3867.62	2.22		Si
SLV 12	-1.3	-2066.42	-16932	-0.0002909	0.0006738	0.0035	0.54		3470.86	3470.86	1.68		Si
SLV 12	0.8	1599.15	-10747	-0.0002141	0.0006738	0.0035	0.54		2431.47	2431.47	1.52		Si
SLV 2	-1.3	1287.31	-5001	-0.0043793	0.0006738	0.0035	0.432		1273.6	1273.6	0.99		No
SLV 2	0.8	-1781.38	-11953	-0.0002432	0.0006738	0.0035	0.432		2751.4	2751.4	1.54		Si
SLV 11	-1.3	-2088.27	-17138	-0.0002949	0.0006738	0.0035	0.54		3495.82	3495.82	1.67		Si
SLV 11	0.8	1616.22	-10516	-0.0002191	0.0006738	0.0035	0.54		2385.21	2385.21	1.48		Si
SLV 15	-1.3	-2812.09	-16983	-0.0004716	0.0006738	0.0035	0.432		3477.02	3477.02	1.24		Si
SLV 15	0.8	2251.54	-17680	-0.0003221	0.0006738	0.0035	0.54		3498.54	3498.54	1.55		Si
SLV 16	-1.3	-2779.64	-16677	-0.0004659	0.0006738	0.0035	0.432		3439.93	3439.93	1.24		Si
SLV 16	0.8	2226.19	-18023	-0.0003191	0.0006738	0.0035	0.54		3536.27	3536.27	1.59		Si
SLV 3	-1.3	790.08	-8137	-0.0001061	0.0006738	0.0035	0.54		1909.4	1909.4	2.42		Si
SLV 3	0.8	-1247.37	-8249	-0.0001621	0.0006738	0.0035	0.432		2062.75	2062.75	1.65		Si
SLV 14	-1.3	-2314.86	-13847	-0.0003589	0.0006738	0.0035	0.432		3062.12	3062.12	1.32		Si
SLV 14	0.8	1717.52	-21383	-0.0002856	0.0006738	0.0035	0.54		3905.36	3905.36	2.27		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	-1.3	-1095.24	-15863	-12690	-664	0.54	0.54	-52223	10833	4320	95155	8733	2754	11487	No	17.3	Si
SLU 75	0.8	333.48	-21730	-17384	-659	0.54	0.54	-71538	10833	5571	95155	8733	2754	11487	No	17.44	Si
SLU 79	-1.3	-1109.22	-15995	-12796	-676	0.54	0.54	-52659	10833	4348	95155	8733	2754	11487	No	16.99	Si
SLU 79	0.8	344.53	-21776	-17421	-671	0.54	0.54	-71692	10833	5581	95155	8733	2754	11487	No	17.12	Si
SLU 74	-1.3	-1104.06	-15916	-12733	-673	0.54	0.54	-52399	10833	4331	95155	8733	2754	11487	No	17.06	Si
SLU 74	0.8	343.23	-21662	-17329	-668	0.54	0.54	-71314	10833	5557	95155	8733	2754	11487	No	17.2	Si
SLU 82	-1.3	-1118.79	-16203	-12962	-678	0.54	0.54	-53343	10833	4392	95155	8733	2754	11487	No	16.94	Si
SLU 82	0.8	341.07	-22288	-17831	-673	0.54	0.54	-73377	10833	5690	95155	8733	2754	11487	No	17.07	Si
SLU 83	-1.3	-1139.6	-16426	-13141	-695	0.54	0.54	-54077	10833	4440	95155	8733	2754	11487	No	16.53	Si
SLU 83	0.8	355.05	-22456	-17965	-690	0.54	0.54	-73929	10833	5726	95155	8733	2754	11487	No	16.66	Si
SLU 77	-1.3	-1116.05	-16086	-12869	-681	0.54	0.54	-52957	10833	4367	95155	8733	2754	11487	No	16.88	Si
SLU 77	0.8	347.46	-21897	-17518	-675	0.54	0.54	-72089	10833	5607	95155	8733	2754	11487	No	17.01	Si
SLU 84	-1.3	-1130.78	-16373	-13098	-686	0.54	0.54	-53901	10833	4429	95155	8733	2754	11487	No	16.76	Si
SLU 84	0.8	345.29	-22524	-18019	-680	0.54	0.54	-74153	10833	5741	95155	8733	2754	11487	No	16.88	Si
SLU 78	-1.3	-1107.23	-16032	-12826	-671	0.54	0.54	-52781	10833	4356	95155	8733	2754	11487	No	17.11	Si
SLU 78	0.8	337.71	-21965	-17572	-666	0.54	0.54	-72313	10833	5622	95155	8733	2754	11487	No	17.24	Si
SLU 80	-1.3	-1100.4	-15942	-12754	-667	0.54	0.54	-52484	10833	4337	95155	8733	2754	11487	No	17.23	Si
SLU 80	0.8	334.78	-21844	-17475	-662	0.54	0.54	-71916	10833	5596	95155	8733	2754	11487	No	17.36	Si
SLU 81	-1.3	-1127.61	-16256	-13005	-687	0.54	0.54	-53519	10833	4404	95155	8733	2754	11487	No	16.71	Si
SLU 81	0.8	350.82	-22221	-17776	-682	0.54	0.54	-73154	10833	5676	95155	8733	2754	11487	No	16.84	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	-1.3	1254.86	-5307	-4246	1465	0.54	0.1007	-99383	16250	2536	95155	13099	2754	15853		10.82	Si
SLV 1	0.8	-1756.03	-11609	-9287	1302	0.432	0.3562	0	0	0	95155	10479	2203	12683		9.74	Si
SLD 15	-1.3	-1631.86	-13513	-10810	-1295	0.54	0.4477	-55168	16250	4286	95155	13099	2754	15853		12.24	Si
SLD 15	0.8	1089.68	-16084	-12867	-1219	0.54	0.54	-52951	16250	4835	95155	13099	2754	15853		13	Si
SLV 14	-1.3	-2314.86	-13847	-11078	-1901	0.432	0.3085	0	0	0	95155	10479	2203	12683		6.67	Si
SLV 14	0.8	1717.52	-21383	-17106	-1741	0.54	0.54	-70397	16250	5965	95155	13099	2754	15853		9.11	Si
SLV 12	-1.3	-2066.42	-16932	-13546	-1785	0.54	0.4439	-70431	16250	5016	95155	13099	2754	15853		8.88	Si
SLV 12	0.8	1599.15	-10747	-8598	-1715	0.54	0.3636	-35381	16250	3696	95155	13099	2754	15853		9.24	Si
SLV 2	-1.3	1287.31	-5001	-4001	1495	0.432	0.0378	0	0	0	95155	10479	2203	12683		8.48	Si
SLV 2	0.8	-1781.38	-11953	-9562	1332	0.432	0.3629	0	0	0	95155	10479	2203	12683		9.52	Si
SLV 13	-1.3	-2347.31	-14153	-11323	-1931	0.432	0.3125	0	0	0	95155	10479	2203	12683		6.57	Si
SLV 13	0.8	1742.88	-21040	-16832	-1771	0.54	0.54	-69266	16250	5892	95155	13099	2754	15853		8.95	Si
SLD 16	-1.3	-1618.06	-13382	-10706	-1282	0.54	0.4473	-54672	16250	4259	95155	13099	2754	15853		12.37	Si
SLD 16	0.8	1078.89	-16230	-12984	-1206	0.54	0.54	-53432	16250	4866	95155	13099	2754	15853		13.14	Si
SLV 16	-1.3	-2779.64	-16677	-13342	-2394	0.432	0.31	0	0	0	95155	10479	2203	12683		5.3	Si
SLV 16	0.8	2226.19	-18023	-14419	-2223	0.54	0.4395	-59336	16250	5249	95155	13099	2754	15853		7.13	Si
SLV 15	-1.3	-2812.09	-16983	-13586	-2423	0.432	0.3132	0	0	0	95155	10479	2203	12683		5.23	Si
SLV 15	0.8	2251.54	-17680	-14144	-2253	0.54	0.428	-58206	16250	5175	95155	13099	2754	15853		7.04	Si
SLV 11	-1.3	-2088.27	-17138	-13710	-1805	0.54	0.4445	-71238	16250	5060	95155	13099	2754	15853		8.78	Si
SLV 11	0.8	1616.22	-10516	-8413	-1735	0.54	0.3489	-34620	16250	3647	95155	13099	2754	15853		9.14	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 0.185 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 3	-8327	0.25	41.5	1523.26	2015.94	1769.6	42.64	Si
SLV 4	-8479	0.25	41.5	1544.6	2049.6	1797.1	43.3	Si
SLV 7	-9627	0.25	41.5	1697.88	2289.92	1993.9	48.05	Si
SLV 8	-9730	0.25	41.5	1710.92	2311.38	2011.15	48.46	Si
SLV 1	-9841	0.25	41.5	1725	2333.59	2029.3	48.9	Si
SLV 2	-9994	0.25	41.5	1744.01	2363.75	2053.88	49.49	Si
SLV 11	-12235	0.25	41.5	1996.59	2792.78	2394.68	57.7	Si
SLV 12	-12337	0.25	41.5	2006.93	2811.01	2408.97	58.05	Si
SLV 5	-14675	0.25	41.5	2213.92	3210.05	2711.99	65.35	Si
SLV 6	-14778	0.25	41.5	2221.74	3226.18	2723.96	65.64	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 14	-12104	-13847	412	0.285	1334.1	0.976	4.24356	3.00264	Si
SLV 13	-11867	-14153	410	0.289	1309.9	0.976	4.30781	3.00264	Si
SLV 10	-12585	-7500	244	0.29	1383	0.977	4.31656	2.80694	Si
SLV 9	-12426	-7706	242	0.293	1366.8	0.977	4.35885	2.80694	Si
SLV 16	-10220	-16677	349	0.327	1142.1	0.973	4.88929	3.00264	Si
SLV 15	-9983	-16983	346	0.333	1118	0.972	4.97993	3.00264	Si
SLV 6	-11146	-4846	36	0.334	1236.5	0.975	4.9805	2.80694	Si
SLV 5	-10987	-5052	34	0.338	1220.2	0.974	5.03744	2.80694	Si
SLV 2	-7308	-5001	-280	0.428	845.7	0.964	6.45239	3.00264	Si
SLV 1	-7071	-5307	-283	0.438	821.6	0.963	6.61646	3.00264	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.626	SLU 83	Si
V_SLU	16.532	SLU 83	Si
PF_SLV	0.989	SLV 2	No
V_SLV	5.233	SLV 15	Si
PFFP_SLV	42.642	SLV 3	Si
R_SLV	1.413	SLV 14	Si

Maschio 40

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	1.046	-5.088	1.046	L2	L4	4.965	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	-1.3	-7364.92	-187963	-0.0001487	0.0004492	0.0035	4.965	145344.63	276610.71	276610.71	37.56	No	Si
SLU 79	0.8	21507.4	-144240	-0.0001246	0.0004492	0.0035	4.965	168884.08	242712.7	242712.7	11.29	No	Si
SLU 83	-1.3	-7319.17	-193028	-0.0001534	0.0004492	0.0035	4.965	140370.23	278033.99	278033.99	37.99	No	Si
SLU 83	0.8	22299.78	-148744	-0.0001293	0.0004492	0.0035	4.965	168065.42	247012.34	247012.34	11.08	No	Si
SLU 81	-1.3	-7174.81	-191172	-0.0001515	0.0004492	0.0035	4.965	142247.25	277512.43	277512.43	38.68	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 81	0.8	22045.74	-147237	-0.0001277	0.0004492	0.0035	4.965	168380.39	245573.86	245573.86	11.14	No	Si
SLU 82	-1.3	-7128.6	-191172	-0.0001514	0.0004492	0.0035	4.965	142247.1	277512.48	277512.48	38.93	No	Si
SLU 82	0.8	21974.01	-147243	-0.0001277	0.0004492	0.0035	4.965	168379.32	245579.04	245579.04	11.18	No	Si
SLU 75	-1.3	-7235.15	-187129	-0.0001478	0.0004492	0.0035	4.965	146118.65	276376.44	276376.44	38.2	No	Si
SLU 75	0.8	21288.41	-143572	-0.0001238	0.0004492	0.0035	4.965	168974.05	242075.18	242075.18	11.37	No	Si
SLU 84	-1.3	-7272.96	-193028	-0.0001533	0.0004492	0.0035	4.965	140370.07	278034.03	278034.03	38.23	No	Si
SLU 84	0.8	22228.04	-148750	-0.0001292	0.0004492	0.0035	4.965	168064.21	247017.53	247017.53	11.11	No	Si
SLU 77	-1.3	-7425.72	-188985	-0.0001497	0.0004492	0.0035	4.965	144378.26	276897.96	276897.96	37.29	No	Si
SLU 77	0.8	21614.19	-145074	-0.0001254	0.0004492	0.0035	4.965	168760.39	243508.48	243508.48	11.27	No	Si
SLU 80	-1.3	-7318.72	-187963	-0.0001487	0.0004492	0.0035	4.965	145344.48	276610.75	276610.75	37.79	No	Si
SLU 80	0.8	21435.66	-144245	-0.0001245	0.0004492	0.0035	4.965	168883.32	242717.89	242717.89	11.32	No	Si
SLU 74	-1.3	-7281.36	-187129	-0.0001479	0.0004492	0.0035	4.965	146118.8	276376.4	276376.4	37.96	No	Si
SLU 74	0.8	21360.15	-143567	-0.0001239	0.0004492	0.0035	4.965	168974.75	242070	242070	11.33	No	Si
SLU 78	-1.3	-7379.51	-188985	-0.0001497	0.0004492	0.0035	4.965	144378.12	276898	276898	37.52	No	Si
SLU 78	0.8	21542.45	-145079	-0.0001253	0.0004492	0.0035	4.965	168759.54	243513.67	243513.67	11.3	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 4	-1.3	53502.6	-74241	-0.000094	0.0006738	0.0035	4.965		160226.27	160226.27	2.99		Si
SLV 4	0.8	3128.84	-50797	-0.0000358	0.0006738	0.0035	4.965		117108.96	117108.96	37.43		Si
SLV 2	-1.3	55703.83	-72734	-0.0000948	0.0006738	0.0035	4.965		157490.65	157490.65	2.83		Si
SLV 2	0.8	-1009.7	-49473	-0.0000332	0.0006738	0.0035	4.965		125780.93	125780.93	124.57		Si
SLV 16	-1.3	-66127.78	-186211	-0.0001948	0.0006738	0.0035	4.965		327874.26	327874.26	4.96		Si
SLV 16	0.8	29872.54	-146872	-0.0001281	0.0006738	0.0035	4.965		275638.72	275638.72	9.23		Si
SLV 3	-1.3	53502.44	-74513	-0.0000942	0.0006738	0.0035	4.965		160719.68	160719.68	3		Si
SLV 3	0.8	3022.59	-50846	-0.0000357	0.0006738	0.0035	4.965		117210.65	117210.65	38.78		Si
SLV 12	-1.3	-26825.27	-148824	-0.0001268	0.0006738	0.0035	4.965		289847.25	289847.25	10.81		Si
SLV 12	0.8	25323.19	-114799	-0.0000996	0.0006738	0.0035	4.965		230530.78	230530.78	9.1		Si
SLV 13	-1.3	-63926.71	-184976	-0.0001915	0.0006738	0.0035	4.965		326681.72	326681.72	5.11		Si
SLV 13	0.8	25627.74	-145598	-0.0001232	0.0006738	0.0035	4.965		273846.39	273846.39	10.69		Si
SLV 11	-1.3	-26825.37	-149007	-0.0001269	0.0006738	0.0035	4.965		290076.24	290076.24	10.81		Si
SLV 11	0.8	25251.65	-114832	-0.0000996	0.0006738	0.0035	4.965		230577.63	230577.63	9.13		Si
SLV 15	-1.3	-66127.93	-186483	-0.000195	0.0006738	0.0035	4.965		328136.68	328136.68	4.96		Si
SLV 15	0.8	29766.29	-146922	-0.000128	0.0006738	0.0035	4.965		275708.3	275708.3	9.26		Si
SLV 1	-1.3	55703.67	-73006	-0.000095	0.0006738	0.0035	4.965		157984.06	157984.06	2.84		Si
SLV 1	0.8	-1115.95	-49522	-0.0000333	0.0006738	0.0035	4.965		125884.55	125884.55	112.8		Si
SLV 14	-1.3	-63926.55	-184704	-0.0001913	0.0006738	0.0035	4.965		326419.29	326419.29	5.11		Si
SLV 14	0.8	25734	-145549	-0.0001233	0.0006738	0.0035	4.965		273776.8	273776.8	10.64		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	-1.3	-7174.81	-191172	-152937	24562	4.965	4.965	-68451	10833	74079	95155	80293	25321	105615	No	4.3	Si
SLU 81	0.8	22045.74	-147237	-117790	25056	4.965	4.965	-52720	10833	60021	95155	80293	25321	105615	No	4.22	Si
SLU 77	-1.3	-7425.72	-188985	-151188	24622	4.965	4.965	-67668	10833	73379	95155	80293	25321	105615	No	4.29	Si
SLU 77	0.8	21614.19	-145074	-116059	25113	4.965	4.965	-51945	10833	59328	95155	80293	25321	105615	No	4.21	Si
SLU 78	-1.3	-7379.51	-188985	-151188	24672	4.965	4.965	-67668	10833	73379	95155	80293	25321	105615	No	4.28	Si
SLU 78	0.8	21542.45	-145079	-116063	25163	4.965	4.965	-51947	10833	59330	95155	80293	25321	105615	No	4.2	Si
SLU 75	-1.3	-7235.15	-187129	-149703	24453	4.965	4.965	-67004	10833	72786	95155	80293	25321	105615	No	4.32	Si
SLU 75	0.8	21288.41	-143572	-114858	24938	4.965	4.965	-51408	10833	58848	95155	80293	25321	105615	No	4.24	Si
SLU 80	-1.3	-7318.72	-187963	-150370	24531	4.965	4.965	-67302	10833	73052	95155	80293	25321	105615	No	4.31	Si
SLU 80	0.8	21435.66	-144245	-115396	25019	4.965	4.965	-51649	10833	59063	95155	80293	25321	105615	No	4.22	Si
SLU 83	-1.3	-7319.17	-193028	-154422	24781	4.965	4.965	-69116	10833	74673	95155	80293	25321	105615	No	4.26	Si
SLU 83	0.8	22299.78	-148744	-118995	25280	4.965	4.965	-53260	10833	60503	95155	80293	25321	105615	No	4.18	Si
SLU 74	-1.3	-7281.36	-187129	-149703	24403	4.965	4.965	-67004	10833	72785	95155	80293	25321	105615	No	4.33	Si
SLU 74	0.8	21360.15	-143567	-114853	24888	4.965	4.965	-51406	10833	58846	95155	80293	25321	105615	No	4.24	Si
SLU 82	-1.3	-7128.6	-191172	-152938	24612	4.965	4.965	-68451	10833	74079	95155	80293	25321	105615	No	4.29	Si
SLU 82	0.8	21974.01	-147243	-117794	25106	4.965	4.965	-52722	10833	60023	95155	80293	25321	105615	No	4.21	Si
SLU 84	-1.3	-7272.96	-193028	-154423	24831	4.965	4.965	-69116	10833	74673	95155	80293	25321	105615	No	4.25	Si
SLU 84	0.8	22228.04	-148750	-119000	25330	4.965	4.965	-53262	10833	60505	95155	80293	25321	105615	No	4.17	Si
SLU 79	-1.3	-7364.92	-187963	-150370	24481	4.965	4.965	-67302	10833	73052	95155	80293	25321	105615	No	4.31	Si
SLU 79	0.8	21507.4	-144240	-115392	24969	4.965	4.965	-51647	10833	59062	95155	80293	25321	105615	No	4.23	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 4	-1.3	19912.4	-105933	-84746	27649	4.965	4.965	-37930	16250	53257	95155	120440	25321	145762		5.27	Si
SLD 4	0.8	9519.11	-77920	-62336	27218	4.965	4.965	-27900	16250	44294	95155	120440	25321	139449		5.12	Si
SLD 2	-1.3	20801.72	-105329	-84263	28777	4.965	4.965	-37714	16250	53064	95155	120440	25321	145762		5.07	Si
SLD 2	0.8	7863.53	-77393	-61914	28317	4.965	4.965	-27711	16250	44125	95155	120440	25321	139280		4.92	Si
SLD 1	-1.3	20801.65	-105444	-84355	28910	4.965	4.965	-37756	16250	53101	95155	120440	25321	145762		5.04	Si
SLD 1	0.8	7818.33	-77414	-61931	28451	4.965	4.965	-27719	16250	44132	95155	120440	25321	139287		4.9	Si
SLV 1	-1.3	55703.67	-73006	-58405	44228	4.965	4.965	-26141	16250	42721	95155	120440	25321	137876		3.12	Si
SLV 1	0.8	-1115.95	-49522	-39618	42725	4.965	4.965	-17732	16046	35852	95155	120440	25321	131007		3.07	Si
SLV 3	-1.3	53502.44	-74513	-59610	41410	4.965	4.965	-26680	16250	43203	95155	120440	25321	138358		3.34	Si
SLV 3	0.8	3022.59	-50846	-40677	39970	4.965	4.965	-18206	16141	36063	95155	120440	25321	131219		3.28	Si
SLD 3	-1.3	19912.33	-106048	-84839	27781	4.965	4.965	-37972	16250	53294	95155	120440	25321	145762		5.25	Si
SLD 3	0.8	9473.91	-77941	-62353	27351	4.965	4.965	-27908	16250	44300	95155	120440	25321	139455		5.1	Si
SLV 2	-1.3	55703.83	-72734	-58187	43916	4.965	4.965	-26043	16250	42634	95155	120440	25321	137789		3.14	Si
SLV 2	0.8	-1009.7	-49473	-39578	42411	4.965	4.965	-17714	16043	35844	95155	120440	25321	130999		3.09	Si
SLV 6	-1.3	16401.26	-110210	-88168	29667	4.965	4.965	-39462	16250	54626	95155	120440	25321	145762		4.91	Si
SLV 6	0.8	3504.93	-81563	-65250	29356	4.965	4.965	-29205	16250	45459	95155	120440	25321	140614		4.79	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	-1.3	16401.16	-110393	-88314	29876	4.965	4.965	-39527	16250	54684	95155	120440	25321	145762		4.88	Si
SLV 5	0.8	3433.4	-81596	-65277	29567	4.965	4.965	-29216	16250	45470	95155	120440	25321	140625		4.76	Si
SLV 4	-1.3	53502.6	-74241	-59393	41098	4.965	4.965	-26583	16250	43116	95155	120440	25321	138271		3.36	Si
SLV 4	0.8	3128.84	-50797	-40637	39656	4.965	4.965	-18188	16138	36056	95155	120440	25321	131211		3.31	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 0.185 Ta 0.03 Wa 0.08 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 2	-53726	0.25	381.56	10502.3	13578.7	12040.5	31.56	Si
SLV 1	-53818	0.25	381.56	10517.59	13599.78	12058.68	31.6	Si
SLV 4	-55002	0.25	381.56	10713.17	13869.66	12291.41	32.21	Si
SLV 3	-55094	0.25	381.56	10728.33	13890.55	12309.44	32.26	Si
SLV 6	-86564	0.25	381.56	15359.64	20770.34	18064.99	47.34	Si
SLV 5	-86626	0.25	381.56	15367.7	20783.29	18075.49	47.37	Si
SLV 8	-90817	0.25	381.56	15902.11	21638	18770.05	49.19	Si
SLV 7	-90879	0.25	381.56	15909.88	21650.27	18780.07	49.22	Si
SLV 10	-115974	0.25	381.56	18704.01	26380.16	22542.08	59.08	Si
SLV 9	-116036	0.25	381.56	18710.06	26391.15	22550.6	59.1	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 16	-110772	-186211	408	0.315	12212.9	0.976	4.68948	3.00264	Si
SLV 15	-110688	-186483	405	0.315	12204.4	0.976	4.69241	3.00264	Si
SLV 14	-111440	-184704	142	0.316	12280.9	0.976	4.70229	3.00264	Si
SLV 13	-111356	-184976	140	0.316	12272.4	0.976	4.70522	3.00264	Si
SLV 10	-90491	-143801	-354	0.366	10147.3	0.972	5.47195	2.80694	Si
SLV 9	-90435	-143984	-356	0.366	10141.5	0.972	5.47432	2.80694	Si
SLV 12	-88265	-148824	531	0.371	9920.6	0.971	5.54981	2.80694	Si
SLV 11	-88209	-149007	529	0.371	9914.9	0.971	5.5528	2.80694	Si
SLV 6	-71879	-110210	-514	0.433	8252.4	0.966	6.51873	2.80694	Si
SLV 5	-71823	-110393	-515	0.433	8246.7	0.966	6.52245	2.80694	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	11.077	SLU 83	Si
V_SLU	4.17	SLU 84	Si
PF_SLV	2.827	SLV 2	Si
V_SLV	3.066	SLV 1	Si
PFFP_SLV	31.556	SLV 2	Si
R_SLV	1.562	SLV 16	Si

Maschio 42

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-6.463	-3.284	-3.233	-3.284	L2	L4	3.23	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 70	0.7	-17356.03	-39856	-0.0000821	0.0003743	0.0035	3.23	47031.72	54244.42	54244.42	3.13	No	Si
SLU 70	1.1	-13748.77	-38249	-0.0000719	0.0003743	0.0035	3.23	45805.58	52643.65	52643.65	3.83	No	Si
SLU 80	0.7	-18666.33	-44269	-0.0000909	0.0003743	0.0035	3.23	50106.99	58385.93	58385.93	3.13	No	Si
SLU 80	1.1	-14804.83	-42661	-0.00008	0.0003743	0.0035	3.23	49035.72	56901.36	56901.36	3.84	No	Si
SLU 55	0.7	-17050.17	-38885	-0.0000801	0.0003743	0.0035	3.23	46297.32	53274.33	53274.33	3.12	No	Si
SLU 55	1.1	-13632.99	-37291	-0.0000705	0.0003743	0.0035	3.23	45048.39	51700.25	51700.25	3.79	No	Si
SLU 47	0.7	-15628.67	-34247	-0.000071	0.0003743	0.0035	3.23	42509.22	48516.7	48516.7	3.1	No	Si
SLU 47	1.1	-12481.92	-32654	-0.0000621	0.0003743	0.0035	3.23	41098.98	46833.99	46833.99	3.75	No	Si
SLU 44	0.7	-15464.76	-33894	-0.0000702	0.0003743	0.0035	3.23	42201.26	48142.08	48142.08	3.11	No	Si
SLU 44	1.1	-12329.49	-32300	-0.0000614	0.0003743	0.0035	3.23	40778.73	46449.13	46449.13	3.77	No	Si
SLU 78	0.7	-18777.52	-44494	-0.0000915	0.0003743	0.0035	3.23	50252.08	58594.82	58594.82	3.12	No	Si
SLU 78	1.1	-14899.84	-42886	-0.0000805	0.0003743	0.0035	3.23	49188.68	57107.43	57107.43	3.83	No	Si
SLU 76	0.7	-18812.14	-43956	-0.0000908	0.0003743	0.0035	3.23	49902.47	58094.79	58094.79	3.09	No	Si
SLU 76	1.1	-15018.38	-42348	-0.0000801	0.0003743	0.0035	3.23	48820.19	56614.15	56614.15	3.77	No	Si
SLU 65	0.7	-17226.73	-38965	-0.0000806	0.0003743	0.0035	3.23	46358.81	53354.24	53354.24	3.1	No	Si
SLU 65	1.1	-13714.88	-37357	-0.0000707	0.0003743	0.0035	3.23	45101.39	51765.23	51765.23	3.77	No	Si
SLU 73	0.7	-18648.23	-43602	-0.00009	0.0003743	0.0035	3.23	49669.41	57767.59	57767.59	3.1	No	Si
SLU 73	1.1	-14865.95	-41994	-0.0000793	0.0003743	0.0035	3.23	48574.72	56291.39	56291.39	3.79	No	Si
SLU 68	0.7	-17390.65	-39318	-0.0000814	0.0003743	0.0035	3.23	46627.65	53706.43	53706.43	3.09	No	Si
SLU 68	1.1	-13867.31	-37711	-0.0000715	0.0003743	0.0035	3.23	45382.63	52112.67	52112.67	3.76	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 11	0.7	8404.23	1547	0.0685128	0.0005615	0.0035	2.584		0	0	0		No
SLV 11	1.1	6020.95	3230	0.2306039	0.0005615	0.0035	2.584		0	0	0		No
SLV 6	0.7	-33753.4	-61760	-0.0001434	0.0005615	0.0035	3.23		81249.32	81249.32	2.41		Si
SLV 6	1.1	-25761.94	-60976	-0.000124	0.0005615	0.0035	3.23		80506.67	80506.67	3.13		Si
SLV 4	0.7	-15606.22	-14794	-0.0000613	0.0005615	0.0035	2.584		25420.89	25420.89	1.63		Si
SLV 4	1.1	-5085.67	-13494	-0.0000241	0.0005615	0.0035	3.23		23504.74	23504.74	4.62		Si
SLV 3	0.7	-13790.32	-13281	-0.0000531	0.0005615	0.0035	2.584		23191.33	23191.33	1.68		Si
SLV 3	1.1	-4484.5	-11981	-0.0000213	0.0005615	0.0035	3.23		21286.04	21286.04	4.75		Si
SLV 12	0.7	7181.64	527	-0.0193199	0.0005615	0.0035	3.23		0	0	0		No
SLV 12	1.1	5616.2	2210	0.152045	0.0005615	0.0035	2.584		0	0	0		No
SLV 1	0.7	-24722.66	-33078	-0.0000907	0.0005615	0.0035	3.23		49981.83	49981.83	2.02		Si
SLV 1	1.1	-13960.47	-32036	-0.0000628	0.0005615	0.0035	3.23		48695.87	48695.87	3.49		Si
SLV 5	0.7	-32530.82	-60741	-0.0001392	0.0005615	0.0035	3.23		80279.29	80279.29	2.47		Si
SLV 5	1.1	-25357.19	-59957	-0.0001218	0.0005615	0.0035	3.23		79514.41	79514.41	3.14		Si
SLV 2	0.7	-26538.56	-34591	-0.0000975	0.0005615	0.0035	3.23		51833.37	51833.37	1.95		Si
SLV 2	1.1	-14561.64	-33549	-0.0000658	0.0005615	0.0035	3.23		50557.58	50557.58	3.47		Si
SLV 7	0.7	3910.32	5249	0.3902495	0.0005615	0.0035	2.584		0	0	0		No
SLV 7	1.1	6229.41	6894	0.5102767	0.0005615	0.0035	2.584		0	0	0		No
SLV 8	0.7	2687.73	4230	0.3154079	0.0005615	0.0035	2.584		0	0	0		No
SLV 8	1.1	5824.66	5875	0.4336982	0.0005615	0.0035	2.584		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	0.7	-19111.63	-45903	-40803	-9705	3.23	3.23	-28072	10687	23318	33304	43524	8236	51761	No	5.33	Si
SLU 84	1.1	-15145.71	-44295	-39374	-9705	3.23	3.23	-27089	10556	22746	33304	43524	8236	51761	No	5.33	Si
SLU 83	0.7	-18647.03	-45843	-40750	-9916	3.23	3.23	-28036	10683	23296	33304	43524	8236	51761	No	5.22	Si
SLU 83	1.1	-14596.74	-44236	-39321	-9916	3.23	3.23	-27052	10551	22725	33304	43524	8236	51761	No	5.22	Si
SLU 74	0.7	-18149.01	-44081	-39183	-9667	3.23	3.23	-26957	10539	22670	33304	43524	8236	51761	No	5.35	Si
SLU 74	1.1	-14198.44	-42473	-37754	-9667	3.23	3.23	-25974	10408	22098	33304	43524	8236	51761	No	5.35	Si
SLU 79	0.7	-18201.73	-44209	-39297	-9655	3.23	3.23	-27036	10549	22715	33304	43524	8236	51761	No	5.36	Si
SLU 79	1.1	-14255.86	-42602	-37868	-9655	3.23	3.23	-26053	10418	22144	33304	43524	8236	51761	No	5.36	Si
SLU 82	0.7	-18947.71	-45550	-40489	-9676	3.23	3.23	-27856	10659	23192	33304	43524	8236	51761	No	5.35	Si
SLU 82	1.1	-14993.28	-43942	-39060	-9676	3.23	3.23	-26873	10527	22620	33304	43524	8236	51761	No	5.35	Si
SLU 75	0.7	-18613.61	-44140	-39236	-9456	3.23	3.23	-26994	10544	22691	33304	43524	8236	51761	No	5.47	Si
SLU 75	1.1	-14747.41	-42532	-37807	-9456	3.23	3.23	-26011	10413	22119	33304	43524	8236	51761	No	5.47	Si
SLU 81	0.7	-18483.11	-45490	-40436	-9887	3.23	3.23	-27819	10654	23171	33304	43524	8236	51761	No	5.24	Si
SLU 81	1.1	-14444.31	-43882	-39006	-9887	3.23	3.23	-26836	10523	22599	33304	43524	8236	51761	No	5.24	Si
SLU 78	0.7	-18777.52	-44494	-39550	-9484	3.23	3.23	-27210	10572	22816	33304	43524	8236	51761	No	5.46	Si
SLU 78	1.1	-14899.84	-42886	-38121	-9484	3.23	3.23	-26227	10441	22245	33304	43524	8236	51761	No	5.46	Si
SLU 80	0.7	-18666.33	-44269	-39350	-9444	3.23	3.23	-27073	10554	22737	33304	43524	8236	51761	No	5.48	Si
SLU 80	1.1	-14804.83	-42661	-37921	-9444	3.23	3.23	-26090	10423	22165	33304	43524	8236	51761	No	5.48	Si
SLU 77	0.7	-18312.93	-44434	-39497	-9695	3.23	3.23	-27174	10568	22795	33304	43524	8236	51761	No	5.34	Si
SLU 77	1.1	-14350.87	-42826	-38068	-9695	3.23	3.23	-26190	10436	22224	33304	43524	8236	51761	No	5.34	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	0.7	-24722.66	-33078	-29403	-27429	3.23	2.6028	-25432	15503	22256	33304	65286	8236	55561		2.03	Si
SLV 1	1.1	-13960.47	-32036	-28476	-27320	3.23	3.23	-19592	14335	21886	33304	65286	8236	55190		2.02	Si
SLD 4	0.7	-14106.16	-23825	-21178	-15257	3.23	3.0688	-15449	13506	18967	33304	65286	8236	52271		3.43	Si
SLD 4	1.1	-7978.39	-22560	-20053	-15272	3.23	3.23	-13796	13176	19151	33304	65286	8236	52456		3.43	Si
SLV 2	0.7	-26538.56	-34591	-30748	-30465	3.23	2.5434	-27240	15865	22794	33304	65286	8236	56099		1.84	Si
SLV 2	1.1	-14561.64	-33549	-29822	-30357	3.23	3.23	-20517	14520	22424	33304	65286	8236	55728		1.84	Si
SLD 1	0.7	-17647.66	-31114	-27657	-15587	3.23	3.1434	-19743	14365	21558	33304	65286	8236	54862		3.52	Si
SLD 1	1.1	-11468.99	-29966	-26636	-15540	3.23	3.23	-18326	14082	21150	33304	65286	8236	54454		3.5	Si
SLV 6	0.7	-33753.4	-61760	-54898	-20681	3.23	3.2054	-38893	16250	32454	33304	65286	8236	65758		3.18	Si
SLV 6	1.1	-25761.94	-60976	-54201	-20436	3.23	3.23	-37290	16250	32175	33304	65286	8236	65479		3.2	Si
SLD 2	0.7	-18420.18	-31758	-28229	-16879	3.23	3.1049	-20407	14498	21787	33304	65286	8236	55091		3.26	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 2	1.1	-11724.74	-30610	-27209	-16832	3.23	3.23	-18719	14161	21379	33304	65286	8236	54683		3.25	Si
SLV 3	0.7	-13790.32	-13281	-11805	-23353	2.584	1.7299	0	0	0	33304	52229	6589	33304		1.43	Si
SLV 3	1.1	-4484.5	-11981	-10649	-23385	3.23	3.23	-7327	11882	17270	33304	65286	8236	50575		2.16	Si
SLV 5	0.7	-32530.82	-60741	-53992	-18637	3.23	3.23	-37146	16250	32092	33304	65286	8236	65396		3.51	Si
SLV 5	1.1	-25357.19	-59957	-53295	-18391	3.23	3.23	-36667	16250	31813	33304	65286	8236	65117		3.54	Si
SLV 4	0.7	-15606.22	-14794	-13151	-26390	2.584	1.6804	0	0	0	33304	52229	6589	33304		1.26	Si
SLV 4	1.1	-5085.67	-13494	-11995	-26421	3.23	3.23	-8252	12067	17540	33304	65286	8236	50844		1.92	Si
SLV 15	0.7	1189.38	-25622	-22775	16770	3.23	3.23	-15669	13551	19696	33304	65286	8236	53000		3.16	Si
SLV 15	1.1	-5179.34	-24197	-21508	16661	3.23	3.23	-14798	13376	19442	33304	65286	8236	52747		3.17	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.185 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.25	0	2608	244.25	0	0	No, Trazione
SLV 11	179667	0.25	0	3464	244.25	0	0	No, Trazione
SLV 7	179667	0.25	0	7224	244.25	0	0	No, Trazione
SLV 8	179667	0.25	0	6368	244.25	0	0	No, Trazione
SLV 3	179667	0.25	5287	-7684	244.25	1669.1	6.83	Si
SLV 4	179667	0.25	6161	-8956	244.25	1933.7	7.92	Si
SLV 15	179667	0.25	13910	-20218	244.25	4134.67	16.93	Si
SLV 16	179667	0.25	14784	-21489	244.25	4366.96	17.88	Si
SLV 1	179667	0.25	16788	-24401	244.25	4886.67	20.01	Si
SLV 2	179667	0.25	17662	-25672	244.25	5108.18	20.91	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-51380	-55135	2412	0.366	5838.8	0.968	5.48897	2.80694	Si
SLV 9	-50615	-54329	2389	0.37	5761	0.968	5.55858	2.80694	Si
SLV 6	-48859	-49651	2251	0.383	5582.2	0.967	5.75076	2.80694	Si
SLV 5	-48095	-48844	2228	0.388	5504.4	0.967	5.82778	2.80694	Si
SLV 14	-35488	-41849	1588	0.504	4221.9	0.957	7.64594	3.00264	Si
SLV 13	-34353	-40651	1554	0.517	4106.5	0.956	7.86109	3.00264	Si
SLV 2	-27086	-23566	1051	0.637	3368.4	0.948	9.76735	3.00264	Si
SLV 1	-25951	-22368	1017	0.66	3253.2	0.946	10.12926	3.00264	Si
SLV 16	-19187	-24808	716	0.844	2568.1	0.935	13.12268	3.00264	Si
SLV 15	-18052	-23610	682	0.885	2453.4	0.932	13.80156	3.00264	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.088	SLU 76	Si
V_SLU	5.22	SLU 83	Si
PF_SLV	0	SLV 7	No
V_SLV	1.262	SLV 4	Si
PFFP_SLV	0	SLV 12	No
R_SLV	1.955	SLV 10	Si

Maschio 43

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-2.233	-3.284	-0.123	-3.284	L2	L4	2.11	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 44	0.7	-293.71	-20139	-0.0000349	0.0003743	0.0035	2.11	16820.4	19151.34	19151.34	65.21	No	Si
SLU 44	1.1	1400.98	-18037	-0.0000366	0.0003743	0.0035	2.11	15478.42	16309.27	16309.27	11.64	No	Si
SLU 2	0.7	-224.58	-16295	-0.0000279	0.0003743	0.0035	2.11	14293.2	16237.12	16237.12	72.3	No	Si
SLU 2	1.1	1151.31	-14618	-0.0000295	0.0003743	0.0035	2.11	13090.13	13525.04	13525.04	11.75	No	Si
SLU 49	0.7	-363.3	-20594	-0.0000361	0.0003743	0.0035	2.11	17098.41	19487.32	19487.32	53.64	No	Si
SLU 49	1.1	1322.28	-18491	-0.000037	0.0003743	0.0035	2.11	15776.57	16685.54	16685.54	12.62	No	Si
SLU 5	0.7	-220.13	-16490	-0.0000282	0.0003743	0.0035	2.11	14429.35	16388.7	16388.7	74.45	No	Si
SLU 5	1.1	1173.71	-14796	-0.0000299	0.0003743	0.0035	2.11	13220.29	13667.32	13667.32	11.64	No	Si
SLU 51	0.7	-364.45	-20460	-0.0000358	0.0003743	0.0035	2.11	17016.68	19388.26	19388.26	53.2	No	Si
SLU 51	1.1	1305.81	-18369	-0.0000367	0.0003743	0.0035	2.11	15696.98	16584.39	16584.39	12.7	No	Si
SLU 46	0.7	-367.74	-20399	-0.0000357	0.0003743	0.0035	2.11	16979.75	19343.54	19343.54	52.6	No	Si
SLU 46	1.1	1299.88	-18314	-0.0000366	0.0003743	0.0035	2.11	15660.71	16538.47	16538.47	12.72	No	Si
SLU 7	0.7	-294.16	-16750	-0.000029	0.0003743	0.0035	2.11	14609.41	16589.92	16589.92	56.4	No	Si
SLU 7	1.1	1072.61	-15073	-0.0000299	0.0003743	0.0035	2.11	13422.18	13889.98	13889.98	12.95	No	Si
SLU 4	0.7	-298.61	-16555	-0.0000287	0.0003743	0.0035	2.11	14474.37	16438.77	16438.77	55.05	No	Si
SLU 4	1.1	1050.21	-14895	-0.0000295	0.0003743	0.0035	2.11	13293.09	13747.33	13747.33	13.09	No	Si
SLU 47	0.7	-289.26	-20334	-0.0000352	0.0003743	0.0035	2.11	16940.17	19295.63	19295.63	66.71	No	Si
SLU 47	1.1	1423.38	-18214	-0.0000037	0.0003743	0.0035	2.11	15595.35	16455.98	16455.98	11.56	No	Si
SLU 9	0.7	-295.32	-16615	-0.0000288	0.0003743	0.0035	2.11	14516.39	16485.59	16485.59	55.82	No	Si
SLU 9	1.1	1056.14	-14951	-0.0000296	0.0003743	0.0035	2.11	13333.49	13791.86	13791.86	13.06	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 2	0.7	-3228.72	-17340	-0.0000434	0.0005615	0.0035	2.11		17798.09	17798.09	5.51		Si
SLV 2	1.1	1251.93	-13758	-0.0000281	0.0005615	0.0035	2.11		13660.08	13660.08	10.91		Si
SLV 3	0.7	-2900.2	-2365	-0.0002113	0.0005615	0.0035	1.688		3733.2	3733.2	1.29		Si
SLV 3	1.1	-1100.33	-1147	-0.0000238	0.0005615	0.0035	1.688		2491.09	2491.09	2.26		Si
SLV 5	0.7	-704	-37719	-0.0000671	0.0005615	0.0035	2.11		33047.37	33047.37	46.94		Si
SLV 5	1.1	4497.13	-32777	-0.000077	0.0005615	0.0035	2.11		28505.31	28505.31	6.34		Si
SLV 6	0.7	-1083	-38591	-0.0000705	0.0005615	0.0035	2.11		33595.22	33595.22	31.02		Si
SLV 6	1.1	4492.96	-33363	-0.0000781	0.0005615	0.0035	2.11		28870.3	28870.3	6.43		Si
SLV 4	0.7	-3463.13	-3659	-0.0000714	0.0005615	0.0035	1.688		5038.96	5038.96	1.46		Si
SLV 4	1.1	-1106.53	-2017	-0.0000089	0.0005615	0.0035	2.11		3379.62	3379.62	3.05		Si
SLV 7	0.7	-1485.39	7885	0.8977914	0.0005615	0.0035	1.688		0	0	0		No
SLV 7	1.1	-3364.41	6359	0.730774	0.0005615	0.0035	1.688		0	0	0		No
SLV 12	0.7	-338.45	2298	0.2613787	0.0005615	0.0035	1.688		0	0	0		No
SLV 12	1.1	-2949.9	588	0.070928	0.0005615	0.0035	1.688		0	0	0		No
SLV 8	0.7	-1864.39	7013	0.8003501	0.0005615	0.0035	1.688		0	0	0		No
SLV 8	1.1	-3368.59	5774	0.6643324	0.0005615	0.0035	1.688		0	0	0		No
SLV 11	0.7	40.55	3170	0.358646	0.0005615	0.0035	1.688		0	0	0		No
SLV 11	1.1	-2945.72	1174	0.1388689	0.0005615	0.0035	1.688		0	0	0		No
SLV 1	0.7	-2665.79	-16046	-0.0000386	0.0005615	0.0035	2.11		16668.09	16668.09	6.25		Si
SLV 1	1.1	1258.13	-12888	-0.0000267	0.0005615	0.0035	2.11		12870.94	12870.94	10.23		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	0.7	-784.21	-26975	-23978	-8687	2.11	2.11	-25253	10312	10061	33304	28432	5380	33813	No	3.89	Si
SLU 84	1.1	1156.18	-24665	-21924	-8672	2.11	2.11	-23091	10023	9517	33304	28432	5380	33813	No	3.9	Si
SLU 78	0.7	-704.74	-26160	-23253	-8650	2.11	2.11	-24490	10210	9855	33304	28432	5380	33813	No	3.91	Si
SLU 78	1.1	1225.12	-23854	-21203	-8634	2.11	2.11	-22331	9922	9421	33304	28432	5380	33813	No	3.92	Si
SLU 75	0.7	-709.18	-25964	-23079	-8558	2.11	2.11	-24307	10185	9806	33304	28432	5380	33813	No	3.95	Si
SLU 75	1.1	1202.72	-23676	-21046	-8542	2.11	2.11	-22165	9900	9400	33304	28432	5380	33813	No	3.96	Si
SLU 76	0.7	-630.7	-25899	-23022	-8762	2.11	2.11	-24246	10177	9789	33304	28432	5380	33813	No	3.86	Si
SLU 76	1.1	1326.22	-23577	-20957	-8747	2.11	2.11	-22072	9887	9388	33304	28432	5380	33813	No	3.87	Si
SLU 82	0.7	-788.66	-26780	-23804	-8595	2.11	2.11	-25070	10287	10012	33304	28432	5380	33813	No	3.93	Si
SLU 82	1.1	1133.78	-24488	-21767	-8580	2.11	2.11	-22925	10001	9496	33304	28432	5380	33813	No	3.94	Si
SLU 68	0.7	-458.34	-23227	-20646	-8291	2.11	2.11	-21744	9844	9347	33304	28432	5380	33813	No	4.08	Si
SLU 68	1.1	1396.38	-20985	-18654	-8278	2.11	2.11	-19646	9564	9081	33304	28432	5380	33813	No	4.08	Si
SLU 83	0.7	-903.67	-26870	-23885	-8274	2.11	2.11	-25155	10298	10034	33304	28432	5380	33813	No	4.09	Si
SLU 83	1.1	946.22	-24631	-21895	-8258	2.11	2.11	-23059	10019	9513	33304	28432	5380	33813	No	4.09	Si
SLU 73	0.7	-635.15	-25704	-22848	-8669	2.11	2.11	-24063	10153	9740	33304	28432	5380	33813	No	3.9	Si
SLU 73	1.1	1303.82	-23399	-20800	-8655	2.11	2.11	-21906	9865	9367	33304	28432	5380	33813	No	3.91	Si
SLU 80	0.7	-705.89	-26025	-23133	-8578	2.11	2.11	-24364	10193	9821	33304	28432	5380	33813	No	3.94	Si
SLU 80	1.1	1208.65	-23732	-21095	-8563	2.11	2.11	-22217	9907	9406	33304	28432	5380	33813	No	3.95	Si
SLU 77	0.7	-824.19	-26055	-23160	-8236	2.11	2.11	-24392	10197	9829	33304	28432	5380	33813	No	4.11	Si
SLU 77	1.1	1015.16	-23820	-21173	-8221	2.11	2.11	-22300	9918	9417	33304	28432	5380	33813	No	4.11	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	0.7	442.94	-43305	-38493	-23750	2.11	2.11	-40541	16250	15809	33304	42648	5380	48029		2.02	Si
SLV 10	1.1	4911.65	-38549	-34265	-23963	2.11	2.11	-36088	16250	15429	33304	42648	5380	48029		2	Si
SLV 6	0.7	-1083	-38591	-34303	-25860	2.11	2.11	-36127	16250	15429	33304	42648	5380	48029		1.86	Si
SLV 6	1.1	4492.96	-33363	-29656	-26055	2.11	2.11	-31233	16250	15429	33304	42648	5380	48029		1.84	Si
SLV 8	0.7	-1864.39	7013	6234	10521	1.688	2.11	0	0	0	33304	34119	4304	33304		3.17	Si
SLV 8	1.1	-3368.59	5774	5132	10756	1.688	1.4147	0	0	0	33304	34119	4304	33304		3.1	Si
SLV 11	0.7	40.55	3170	2818	14322	1.688	2.11	0	0	0	33304	34119	4304	33304		2.33	Si
SLV 11	1.1	-2945.72	1174	1044	14538	1.688	0	0	0	0	33304	34119	4304	33304		2.29	Si
SLV 2	0.7	-3228.72	-17340	-15414	-16000	2.11	2.11	-16233	13663	12973	33304	42648	5380	46278		2.89	Si
SLV 2	1.1	1251.93	-13758	-12229	-16022	2.11	2.11	-12879	12993	12336	33304	42648	5380	45641		2.85	Si
SLV 9	0.7	821.94	-42434	-37719	-22060	2.11	2.11	-39725	16250	15589	33304	42648	5380	48029		2.18	Si
SLV 9	1.1	4915.82	-37963	-33745	-22273	2.11	2.11	-35539	16250	15429	33304	42648	5380	48029		2.16	Si
SLV 7	0.7	-1485.39	7885	7009	12211	1.688	2.11	0	0	0	33304	34119	4304	33304		2.73	Si
SLV 7	1.1	-3364.41	6359	5653	12445	1.688	1.5779	0	0	0	33304	34119	4304	33304		2.68	Si
SLV 12	0.7	-338.45	2298	2043	12631	1.688	2.11	0	0	0	33304	34119	4304	33304		2.64	Si
SLV 12	1.1	-2949.9	588	523	12848	1.688	0	0	0	0	33304	34119	4304	33304		2.59	Si
SLV 5	0.7	-704	-37719	-33528	-24170	2.11	2.11	-35311	16250	15429	33304	42648	5380	48029		1.99	Si
SLV 5	1.1	4497.13	-32777	-29135	-24365	2.11	2.11	-30685	16250	15429	33304	42648	5380	48029		1.97	Si
SLV 1	0.7	-2665.79	-16046	-14263	-13489	2.11	2.11	-15021	13421	12743	33304	42648	5380	46048		3.41	Si
SLV 1	1.1	1258.13	-12888	-11456	-13513	2.11	2.11	-12065	12830	12182	33304	42648	5380	45486		3.37	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.185 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 8	179667	0.25	0	6526	159.56	0	0	No, Trazione
SLV 12	179667	0.25	0	1275	159.56	0	0	No, Trazione
SLV 11	179667	0.25	0	1986	159.56	0	0	No, Trazione
SLV 7	179667	0.25	0	7237	159.56	0	0	No, Trazione
SLV 3	179667	0.25	1370	-1301	159.56	290.02	1.82	Si
SLV 4	179667	0.25	2482	-2357	159.56	521.62	3.27	Si
SLV 1	179667	0.25	14762	-14017	159.56	2848.94	17.86	Si
SLV 2	179667	0.25	15875	-15073	159.56	3038.88	19.05	Si
SLV 15	179667	0.25	19802	-18802	159.56	3681.96	23.08	Si
SLV 16	179667	0.25	20914	-19858	159.56	3856.21	24.17	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-33961	-46999	1470	0.365	3854.6	0.969	5.48346	2.80694	Si
SLV 9	-33428	-46176	1443	0.371	3800.3	0.968	5.56138	2.80694	Si
SLV 6	-29926	-39811	1339	0.405	3443.9	0.965	6.1056	2.80694	Si
SLV 5	-29393	-38987	1313	0.412	3389.7	0.965	6.20432	2.80694	Si
SLV 14	-25842	-38784	985	0.465	3028.4	0.961	7.03957	3.00264	Si
SLV 13	-25050	-37560	946	0.478	2947.9	0.96	7.23767	3.00264	Si
SLV 16	-14738	-24381	435	0.748	1900.6	0.941	11.54875	3.00264	Si
SLV 15	-13946	-23158	395	0.782	1820.5	0.939	12.11226	3.00264	Si
SLV 2	-12394	-14821	551	0.845	1663.5	0.934	13.15424	3.00264	Si
SLV 1	-11602	-13598	511	0.891	1583.5	0.931	13.90827	3.00264	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	11.561	SLU 47	Si
V_SLU	3.859	SLU 76	Si
PF_SLV	0	SLV 7	No
V_SLV	1.843	SLV 6	Si
PFFP_SLV	0	SLV 12	No
R_SLV	1.954	SLV 10	Si

Maschio 44

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-5.008	5.876	-3.013	5.876	L2	L4	1.995	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 81	0.7	-605.73	-23317	-0.0000449	0.0003743	0.0035	1.995	17325.22	19857.88	19857.88	32.78	No	Si
SLU 81	1.1	2836.79	-22516	-0.0000559	0.0003743	0.0035	1.995	16926.93	18305.08	18305.08	6.45	No	Si
SLU 41	0.7	-385.85	-20476	-0.0000383	0.0003743	0.0035	1.995	15849.35	18028.09	18028.09	46.72	No	Si
SLU 41	1.1	2544.64	-19856	-0.0000491	0.0003743	0.0035	1.995	15503.59	16687.32	16687.32	6.56	No	Si
SLU 79	0.7	-679.72	-22869	-0.0000444	0.0003743	0.0035	1.995	17104.25	19582.73	19582.73	28.81	No	Si
SLU 79	1.1	2749.42	-22068	-0.0000545	0.0003743	0.0035	1.995	16698.13	18051.27	18051.27	6.57	No	Si
SLU 83	0.7	-615.76	-23610	-0.0000455	0.0003743	0.0035	1.995	17467.68	20039.13	20039.13	32.54	No	Si
SLU 83	1.1	2872.05	-22810	-0.0000567	0.0003743	0.0035	1.995	17074.52	18471.99	18471.99	6.43	No	Si
SLU 42	0.7	-379.48	-20290	-0.0000379	0.0003743	0.0035	1.995	15746.3	17905.55	17905.55	47.18	No	Si
SLU 42	1.1	2516.55	-19669	-0.0000485	0.0003743	0.0035	1.995	15398.01	16542.47	16542.47	6.57	No	Si
SLU 77	0.7	-681.32	-22990	-0.0000447	0.0003743	0.0035	1.995	17164.33	19656.84	19656.84	28.85	No	Si
SLU 77	1.1	2760.93	-22189	-0.0000548	0.0003743	0.0035	1.995	16760.33	18119.69	18119.69	6.56	No	Si
SLU 40	0.7	-369.45	-19996	-0.0000373	0.0003743	0.0035	1.995	15582.57	17713.3	17713.3	47.94	No	Si
SLU 40	1.1	2481.29	-19376	-0.0000478	0.0003743	0.0035	1.995	15230.31	16315	16315	6.58	No	Si
SLU 39	0.7	-375.82	-20183	-0.0000377	0.0003743	0.0035	1.995	15686.81	17835.35	17835.35	47.46	No	Si
SLU 39	1.1	2509.37	-19562	-0.0000483	0.0003743	0.0035	1.995	15337.07	16459.45	16459.45	6.56	No	Si
SLU 84	0.7	-609.39	-23424	-0.0000451	0.0003743	0.0035	1.995	17377.38	19923.89	19923.89	32.69	No	Si
SLU 84	1.1	2843.97	-22623	-0.0000561	0.0003743	0.0035	1.995	16980.96	18365.9	18365.9	6.46	No	Si
SLU 82	0.7	-599.37	-23130	-0.0000445	0.0003743	0.0035	1.995	17233.73	19743.09	19743.09	32.94	No	Si
SLU 82	1.1	2808.7	-22330	-0.0000554	0.0003743	0.0035	1.995	16832.18	18199.26	18199.26	6.48	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 9	0.7	1080.68	865	0.1032966	0.0005615	0.0035	1.596		0	0	0		No
SLV 9	1.1	-190.56	1498	0.1902195	0.0005615	0.0035	1.596		0	0	0		No
SLV 13	0.7	2670.09	-13608	-0.0000373	0.0005615	0.0035	1.995		12714.28	12714.28	4.76		Si
SLV 13	1.1	2024.8	-12857	-0.0000325	0.0005615	0.0035	1.995		12077.1	12077.1	5.96		Si
SLV 6	0.7	-502.24	3356	0.4263141	0.0005615	0.0035	1.596		0	0	0		No
SLV 6	1.1	-849.14	3902	0.4966016	0.0005615	0.0035	1.596		0	0	0		No
SLV 10	0.7	1468.19	1557	0.1895222	0.0005615	0.0035	1.596		0	0	0		No
SLV 10	1.1	-375.23	2190	0.2783649	0.0005615	0.0035	1.596		0	0	0		No
SLV 1	0.7	-3897.99	-7612	-0.0000357	0.0005615	0.0035	1.995		8275.24	8275.24	2.12		Si
SLV 1	1.1	445.12	-7149	-0.0000144	0.0005615	0.0035	1.995		7028.24	7028.24	15.79		Si
SLV 14	0.7	3245.65	-12581	-0.0000384	0.0005615	0.0035	1.995		11839.81	11839.81	3.65		Si
SLV 14	1.1	1750.51	-11829	-0.0000293	0.0005615	0.0035	1.995		11194.09	11194.09	6.39		Si
SLV 4	0.7	-3849.91	-17048	-0.0000498	0.0005615	0.0035	1.995		16364.53	16364.53	4.25		Si
SLV 4	1.1	1557.4	-16571	-0.0000367	0.0005615	0.0035	1.995		15038.67	15038.67	9.66		Si
SLV 2	0.7	-3322.43	-6585	-0.0000303	0.0005615	0.0035	1.995		7346.82	7346.82	2.21		Si
SLV 2	1.1	170.83	-6122	-0.0000112	0.0005615	0.0035	1.995		6082.35	6082.35	35.6		Si
SLV 3	0.7	-4425.47	-18075	-0.0000547	0.0005615	0.0035	1.995		17184.07	17184.07	3.88		Si
SLV 3	1.1	1831.69	-17598	-0.00004	0.0005615	0.0035	1.995		15784.65	15784.65	8.62		Si
SLV 5	0.7	-889.74	2664	0.3400161	0.0005615	0.0035	1.596		0	0	0		No
SLV 5	1.1	-664.47	3211	0.4084664	0.0005615	0.0035	1.596		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	0.7	-664.93	-22510	-20009	-8415	1.995	1.995	-22288	9916	8902	33304	26883	5087	31970	No	3.8	Si
SLU 75	1.1	2697.59	-21709	-19297	-8415	1.995	1.995	-21495	9810	8807	33304	26883	5087	31970	No	3.8	Si
SLU 80	0.7	-673.35	-22683	-20162	-8496	1.995	1.995	-22459	9939	8923	33304	26883	5087	31970	No	3.76	Si
SLU 80	1.1	2721.34	-21882	-19450	-8496	1.995	1.995	-21666	9833	8828	33304	26883	5087	31970	No	3.76	Si
SLU 74	0.7	-671.3	-22696	-20175	-8501	1.995	1.995	-22472	9941	8924	33304	26883	5087	31970	No	3.76	Si
SLU 74	1.1	2725.67	-21896	-19463	-8501	1.995	1.995	-21679	9835	8829	33304	26883	5087	31970	No	3.76	Si
SLU 81	0.7	-605.73	-23317	-20726	-8615	1.995	1.995	-23087	10023	8998	33304	26883	5087	31970	No	3.71	Si
SLU 81	1.1	2836.79	-22516	-20014	-8615	1.995	1.995	-22294	9917	8903	33304	26883	5087	31970	No	3.71	Si
SLU 77	0.7	-681.32	-22990	-20436	-8615	1.995	1.995	-22763	9980	8959	33304	26883	5087	31970	No	3.71	Si
SLU 77	1.1	2760.93	-22189	-19724	-8615	1.995	1.995	-21970	9874	8864	33304	26883	5087	31970	No	3.71	Si
SLU 84	0.7	-609.39	-23424	-20821	-8642	1.995	1.995	-23193	10037	9011	33304	26883	5087	31970	No	3.7	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	1.1	2843.97	-22623	-20109	-8642	1.995	1.995	-22400	9931	8916	33304	26883	5087	31970	No	3.7	Si
SLU 79	0.7	-679.72	-22869	-20328	-8582	1.995	1.995	-22643	9964	8945	33304	26883	5087	31970	No	3.73	Si
SLU 79	1.1	2749.42	-22068	-19616	-8582	1.995	1.995	-21850	9858	8850	33304	26883	5087	31970	No	3.73	Si
SLU 82	0.7	-599.37	-23130	-20560	-8529	1.995	1.995	-22902	9998	8976	33304	26883	5087	31970	No	3.75	Si
SLU 82	1.1	2808.7	-22330	-19848	-8529	1.995	1.995	-22109	9892	8881	33304	26883	5087	31970	No	3.75	Si
SLU 83	0.7	-615.76	-23610	-20987	-8729	1.995	1.995	-23377	10061	9033	33304	26883	5087	31970	No	3.66	Si
SLU 83	1.1	2872.05	-22810	-20275	-8729	1.995	1.995	-22584	9956	8938	33304	26883	5087	31970	No	3.66	Si
SLU 78	0.7	-674.95	-22804	-20270	-8529	1.995	1.995	-22578	9955	8937	33304	26883	5087	31970	No	3.75	Si
SLU 78	1.1	2732.85	-22003	-19558	-8529	1.995	1.995	-21785	9849	8842	33304	26883	5087	31970	No	3.75	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	0.7	-2260.5	-31521	-28019	-15647	1.995	1.995	-31210	16250	14588	33304	40324	5087	45411		2.9	Si
SLV 8	1.1	3772.76	-30926	-27490	-15626	1.995	1.995	-30620	16250	14588	33304	40324	5087	45411		2.91	Si
SLV 3	0.7	-4425.47	-18075	-16067	-16362	1.995	1.995	-17897	13996	12565	33304	40324	5087	45411		2.78	Si
SLV 3	1.1	1831.69	-17598	-15643	-16277	1.995	1.995	-17424	13901	12480	33304	40324	5087	45411		2.79	Si
SLV 12	0.7	-290.07	-33320	-29618	-11546	1.995	1.995	-32991	16250	14588	33304	40324	5087	45411		3.93	Si
SLV 12	1.1	4246.67	-32638	-29011	-11577	1.995	1.995	-32316	16250	14588	33304	40324	5087	45411		3.92	Si
SLV 11	0.7	-677.58	-34012	-30232	-12976	1.995	1.995	-33676	16250	14588	33304	40324	5087	45411		3.5	Si
SLV 11	1.1	4431.34	-33330	-29626	-13008	1.995	1.995	-33001	16250	14588	33304	40324	5087	45411		3.49	Si
SLV 4	0.7	-3849.91	-17048	-15154	-14238	1.995	1.995	-16879	13793	12382	33304	40324	5087	45411		3.19	Si
SLV 4	1.1	1557.4	-16571	-14729	-14152	1.995	1.995	-16407	13698	12297	33304	40324	5087	45411		3.21	Si
SLD 7	0.7	-1424.59	-22080	-19626	-10460	1.995	1.995	-21862	14789	13277	33304	40324	5087	45411		4.34	Si
SLD 7	1.1	2657.47	-21473	-19087	-10451	1.995	1.995	-21261	14669	13169	33304	40324	5087	45411		4.34	Si
SLV 2	0.7	-3322.43	-6585	-5853	-9227	1.995	1.4788	-8832	12183	8107	33304	40324	5087	41412		4.49	Si
SLV 2	1.1	170.83	-6122	-5442	-9138	1.995	1.995	-6062	11629	10440	33304	40324	5087	43744		4.79	Si
SLV 7	0.7	-2648	-32213	-28634	-17077	1.995	1.995	-31895	16250	14588	33304	40324	5087	45411		2.66	Si
SLV 7	1.1	3957.43	-31617	-28104	-17056	1.995	1.995	-31305	16250	14588	33304	40324	5087	45411		2.66	Si
SLD 3	0.7	-2215.78	-16361	-14543	-10331	1.995	1.995	-16200	13657	12260	33304	40324	5087	45411		4.4	Si
SLD 3	1.1	1790.08	-15805	-14049	-10294	1.995	1.995	-15649	13547	12161	33304	40324	5087	45411		4.41	Si
SLV 1	0.7	-3897.99	-7612	-6766	-11351	1.995	1.4562	-10376	12492	8186	33304	40324	5087	41490		3.66	Si
SLV 1	1.1	445.12	-7149	-6355	-11263	1.995	1.995	-7079	11832	10623	33304	40324	5087	43927		3.9	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.185 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.25	0	2030	150.86	0	0	No, Trazione
SLV 10	179667	0.25	0	3220	150.86	0	0	No, Trazione
SLV 6	179667	0.25	0	3067	150.86	0	0	No, Trazione
SLV 5	179667	0.25	0	1877	150.86	0	0	No, Trazione
SLV 14	179667	0.25	10645	-9557	150.86	2000.36	13.26	Si
SLV 2	179667	0.25	11214	-10068	150.86	2098.89	13.91	Si
SLV 13	179667	0.25	12614	-11324	150.86	2337.5	15.49	Si
SLV 1	179667	0.25	13183	-11835	150.86	2433.07	16.13	Si
SLV 16	179667	0.25	23291	-20909	150.86	3987.06	26.43	Si
SLV 4	179667	0.25	23860	-21420	150.86	4066.55	26.96	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-24681	-46039	-980	0.46	2888.5	0.961	6.9563	2.80694	Si
SLV 12	-24466	-43987	-980	0.463	2866.6	0.961	7.00486	2.80694	Si
SLV 7	-22289	-48141	-916	0.5	2645.3	0.958	7.58382	2.80694	Si
SLV 8	-22074	-46089	-916	0.504	2623.4	0.958	7.64297	2.80694	Si
SLV 15	-18454	-26652	-541	0.596	2255.5	0.952	9.10128	3.00264	Si
SLV 16	-18134	-23604	-541	0.604	2223.1	0.951	9.23106	3.00264	Si
SLV 3	-10481	-33659	-328	0.934	1447.9	0.93	14.60922	3.00264	Si
SLV 13	-10680	-11710	-100	0.939	1468	0.93	14.66484	3.00264	Si
SLV 4	-10162	-30611	-328	0.956	1415.7	0.928	14.97151	3.00264	Si
SLV 14	-10360	-8662	-100	0.96	1435.7	0.929	15.02287	3.00264	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	6.432	SLU 83	Si
V_SLU	3.663	SLU 83	Si
PF_SLV	0	SLV 5	No
V_SLV	2.659	SLV 7	Si
PFFP_SLV	0	SLV 10	No
R_SLV	2.478	SLV 11	Si

Maschio 45

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-2.013	5.876	-0.123	5.876	L2	L4	1.89	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 76	0.7	-1842.23	-23377	-0.0000557	0.0003743	0.0035	1.89	16127.43	18515.04	18515.04	10.05	No	Si
SLU 76	1.1	1028.94	-21360	-0.0000464	0.0003743	0.0035	1.89	15206.12	16433.21	16433.21	15.97	No	Si
SLU 74	0.7	-1877.16	-23974	-0.0000572	0.0003743	0.0035	1.89	16382.89	18845.08	18845.08	10.04	No	Si
SLU 74	1.1	1104.98	-21881	-0.000048	0.0003743	0.0035	1.89	15452.22	16715.61	16715.61	15.13	No	Si
SLU 41	0.7	-1735.34	-21528	-0.0000512	0.0003743	0.0035	1.89	15286.14	17427.46	17427.46	10.04	No	Si
SLU 41	1.1	825.61	-19821	-0.0000421	0.0003743	0.0035	1.89	14443.1	15602.61	15602.61	18.9	No	Si
SLU 39	0.7	-1722.99	-21172	-0.0000504	0.0003743	0.0035	1.89	15115.69	17215.98	17215.98	9.99	No	Si
SLU 39	1.1	780.04	-19498	-0.0000411	0.0003743	0.0035	1.89	14276.36	15429.7	15429.7	19.78	No	Si
SLU 81	0.7	-1966.97	-24500	-0.0000589	0.0003743	0.0035	1.89	16601.66	19138.13	19138.13	9.73	No	Si
SLU 81	1.1	1013.44	-22433	-0.0000485	0.0003743	0.0035	1.89	15707.06	17016.97	17016.97	16.79	No	Si
SLU 73	0.7	-1829.88	-23022	-0.0000549	0.0003743	0.0035	1.89	15971.34	18316.05	18316.05	10.01	No	Si
SLU 73	1.1	983.37	-21037	-0.0000455	0.0003743	0.0035	1.89	15050.24	16258.21	16258.21	16.53	No	Si
SLU 84	0.7	-1960.6	-24591	-0.000059	0.0003743	0.0035	1.89	16639.01	19189.2	19189.2	9.79	No	Si
SLU 84	1.1	1025.32	-22528	-0.0000488	0.0003743	0.0035	1.89	15750.23	17068.97	17068.97	16.65	No	Si
SLU 82	0.7	-1948.26	-24235	-0.0000582	0.0003743	0.0035	1.89	16492.35	18990.42	18990.42	9.75	No	Si
SLU 82	1.1	979.75	-22205	-0.0000478	0.0003743	0.0035	1.89	15602.59	16892.29	16892.29	17.24	No	Si
SLU 83	0.7	-1979.32	-24856	-0.0000597	0.0003743	0.0035	1.89	16746.27	19337.64	19337.64	9.77	No	Si
SLU 83	1.1	1059.02	-22756	-0.0000495	0.0003743	0.0035	1.89	15853.09	17194.03	17194.03	16.24	No	Si
SLU 40	0.7	-1704.28	-20908	-0.0000497	0.0003743	0.0035	1.89	14987.16	17059.41	17059.41	10.01	No	Si
SLU 40	1.1	746.34	-19269	-0.0000405	0.0003743	0.0035	1.89	14157.28	15290.85	15290.85	20.49	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	0.7	158.82	12095	1.7290061	0.0005615	0.0035	1.512		0	0	0		No
SLV 6	1.1	-3044	9589	1.3813763	0.0005615	0.0035	1.512		0	0	0		No
SLV 5	0.7	-224	11003	1.5742075	0.0005615	0.0035	1.512		0	0	0		No
SLV 5	1.1	-2923.61	8837	1.2734403	0.0005615	0.0035	1.512		0	0	0		No
SLV 11	0.7	-2668.86	-44492	-0.000103	0.0005615	0.0035	1.89		31546.65	31546.65	11.82		Si
SLV 11	1.1	4683.89	-38949	-0.0001042	0.0005615	0.0035	1.89		28261.31	28261.31	6.03		Si
SLV 7	0.7	-3280.2	-39978	-0.0000973	0.0005615	0.0035	1.89		29569.99	29569.99	9.01		Si
SLV 7	1.1	4281.51	-34756	-0.0000926	0.0005615	0.0035	1.89		25922.08	25922.08	6.05		Si
SLV 2	0.7	-1531.19	-217	-0.0006069	0.0005615	0.0035	1.512		1110.08	1110.08	0.72		No
SLV 2	1.1	-1020.87	-594	-0.0001919	0.0005615	0.0035	1.512		1460.1	1460.1	1.43		Si
SLV 1	0.7	-2099.8	-1839	-0.0002312	0.0005615	0.0035	1.512		2603.3	2603.3	1.24		Si
SLV 1	1.1	-842.05	-1710	-0.0000084	0.0005615	0.0035	1.89		2485.97	2485.97	2.95		Si
SLV 10	0.7	770.17	7581	1.0811295	0.0005615	0.0035	1.512		0	0	0		No
SLV 10	1.1	-2641.62	5395	0.7799076	0.0005615	0.0035	1.512		0	0	0		No
SLV 3	0.7	-3016.66	-17133	-0.0000491	0.0005615	0.0035	1.89		15371.74	15371.74	5.1		Si
SLV 3	1.1	1319.48	-14788	-0.0000345	0.0005615	0.0035	1.89		12852.64	12852.64	9.74		Si
SLV 9	0.7	387.35	6488	0.9263974	0.0005615	0.0035	1.512		0	0	0		No
SLV 9	1.1	-2521.23	4643	0.6719098	0.0005615	0.0035	1.512		0	0	0		No
SLV 4	0.7	-2448.06	-15511	-0.0000426	0.0005615	0.0035	1.89		14134.33	14134.33	5.77		Si
SLV 4	1.1	1140.66	-13672	-0.0000314	0.0005615	0.0035	1.89		12045.18	12045.18	10.56		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 79	0.7	-1885.76	-24174	-21488	-10721	1.89	1.89	-25265	10313	8771	33304	25468	4819	30287	No	2.82	Si
SLU 79	1.1	1130.68	-22064	-19612	-10716	1.89	1.89	-23060	10019	8521	33304	25468	4819	30287	No	2.83	Si
SLU 77	0.7	-1889.51	-24330	-21627	-10817	1.89	1.89	-25428	10335	8790	33304	25468	4819	30287	No	2.8	Si
SLU 77	1.1	1150.55	-22204	-19737	-10811	1.89	1.89	-23206	10039	8538	33304	25468	4819	30287	No	2.8	Si
SLU 82	0.7	-1948.26	-24235	-21542	-10312	1.89	1.89	-25329	10322	8779	33304	25468	4819	30287	No	2.94	Si
SLU 82	1.1	979.75	-22205	-19738	-10306	1.89	1.89	-23207	10039	8538	33304	25468	4819	30287	No	2.94	Si
SLU 75	0.7	-1858.45	-23709	-21075	-10378	1.89	1.89	-24780	10248	8716	33304	25468	4819	30287	No	2.92	Si
SLU 75	1.1	1071.28	-21652	-19247	-10373	1.89	1.89	-22630	9962	8472	33304	25468	4819	30287	No	2.92	Si
SLU 78	0.7	-1870.8	-24065	-21391	-10600	1.89	1.89	-25151	10298	8758	33304	25468	4819	30287	No	2.86	Si
SLU 78	1.1	1116.86	-21976	-19534	-10595	1.89	1.89	-22968	10007	8511	33304	25468	4819	30287	No	2.86	Si
SLU 83	0.7	-1979.32	-24856	-22094	-10751	1.89	1.89	-25978	10408	8852	33304	25468	4819	30287	No	2.82	Si
SLU 83	1.1	1059.02	-22756	-20228	-10745	1.89	1.89	-23783	10116	8603	33304	25468	4819	30287	No	2.82	Si
SLU 74	0.7	-1877.16	-23974	-21310	-10595	1.89	1.89	-25056	10285	8748	33304	25468	4819	30287	No	2.86	Si
SLU 74	1.1	1104.98	-21881	-19449	-10590	1.89	1.89	-22868	9994	8500	33304	25468	4819	30287	No	2.86	Si
SLU 81	0.7	-1966.97	-24500	-21778	-10529	1.89	1.89	-25606	10359	8810	33304	25468	4819	30287	No	2.88	Si
SLU 81	1.1	1013.44	-22433	-19940	-10523	1.89	1.89	-23445	10071	8565	33304	25468	4819	30287	No	2.88	Si
SLU 84	0.7	-1960.6	-24591	-21859	-10534	1.89	1.89	-25701	10371	8821	33304	25468	4819	30287	No	2.88	Si
SLU 84	1.1	1025.32	-22528	-20025	-10528	1.89	1.89	-23545	10084	8576	33304	25468	4819	30287	No	2.88	Si
SLU 80	0.7	-1867.05	-23910	-21253	-10504	1.89	1.89	-24989	10276	8740	33304	25468	4819	30287	No	2.88	Si
SLU 80	1.1	1096.98	-21836	-19409	-10499	1.89	1.89	-22821	9987	8494	33304	25468	4819	30287	No	2.88	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	0.7	770.17	7581	6738	16227	1.512	1.89	0	0	0	33304	30561	3856	33304		2.05	Si
SLV 10	1.1	-2641.62	5395	4796	16072	1.512	1.3661	0	0	0	33304	30561	3856	33304		2.07	Si
SLV 12	0.7	-2286.04	-43400	-38578	-27600	1.89	1.89	-45359	16250	14381	33304	38202	4819	43021		1.56	Si
SLV 12	1.1	4563.49	-38198	-33953	-27733	1.89	1.89	-39922	16250	13821	33304	38202	4819	43021		1.55	Si
SLV 3	0.7	-3016.66	-17133	-15230	-17734	1.89	1.89	-17907	13998	11905	33304	38202	4819	43021		2.43	Si
SLV 3	1.1	1319.48	-14788	-13145	-17236	1.89	1.89	-15456	13508	11488	33304	38202	4819	43021		2.5	Si
SLV 6	0.7	158.82	12095	10751	14883	1.512	1.89	0	0	0	33304	30561	3856	33304		2.24	Si
SLV 6	1.1	-3044	9589	8523	15023	1.512	1.8826	0	0	0	33304	30561	3856	33304		2.22	Si
SLV 11	0.7	-2668.86	-44492	-39549	-29662	1.89	1.89	-46500	16250	14640	33304	38202	4819	43021		1.45	Si
SLV 11	1.1	4683.89	-38949	-34622	-29794	1.89	1.89	-40707	16250	13821	33304	38202	4819	43021		1.44	Si
SLV 9	0.7	387.35	6488	5768	14165	1.512	1.89	0	0	0	33304	30561	3856	33304		2.35	Si
SLV 9	1.1	-2521.23	4643	4127	14011	1.512	1.206	0	0	0	33304	30561	3856	33304		2.38	Si
SLD 7	0.7	-2076.16	-25655	-22805	-16842	1.89	1.89	-26813	15779	13420	33304	38202	4819	43021		2.55	Si
SLD 7	1.1	2176.26	-22660	-20142	-16769	1.89	1.89	-23683	15153	12888	33304	38202	4819	43021		2.57	Si
SLV 5	0.7	-224	11003	9780	12822	1.512	1.89	0	0	0	33304	30561	3856	33304		2.6	Si
SLV 5	1.1	-2923.61	8837	7855	12962	1.512	1.8425	0	0	0	33304	30561	3856	33304		2.57	Si
SLV 7	0.7	-3280.2	-39978	-35536	-31005	1.89	1.89	-41782	16250	13821	33304	38202	4819	43021		1.39	Si
SLV 7	1.1	4281.51	-34756	-30894	-30843	1.89	1.89	-36324	16250	13821	33304	38202	4819	43021		1.39	Si
SLV 8	0.7	-2897.38	-38886	-34565	-28944	1.89	1.89	-40641	16250	13821	33304	38202	4819	43021		1.49	Si
SLV 8	1.1	4161.11	-34004	-30226	-28782	1.89	1.89	-35539	16250	13821	33304	38202	4819	43021		1.49	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.185 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 5	179667	0.25	0	8826	142.92	0	0	No, Trazione
SLV 2	179667	0.25	0	499	142.92	0	0	No, Trazione
SLV 10	179667	0.25	0	4786	142.92	0	0	No, Trazione
SLV 1	179667	0.25	0	-568	142.92	0	0	No, e>t/2
SLV 6	179667	0.25	0	9544	142.92	0	0	No, Trazione
SLV 9	179667	0.25	0	4068	142.92	0	0	No, Trazione
SLV 4	179667	0.25	14300	-12162	142.92	2480.28	17.35	Si
SLV 3	179667	0.25	15555	-13229	142.92	2673.4	18.71	Si
SLV 14	179667	0.25	18062	-15362	142.92	3047.61	21.32	Si
SLV 13	179667	0.25	19316	-16429	142.92	3228.9	22.59	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-29430	-46523	-1249	0.377	3351.9	0.968	5.65626	2.80694	Si
SLV 12	-28761	-45639	-1213	0.384	3283.9	0.967	5.7745	2.80694	Si
SLV 7	-26309	-39784	-1143	0.413	3034.2	0.965	6.22527	2.80694	Si
SLV 8	-25640	-38901	-1107	0.423	2966.2	0.964	6.37113	2.80694	Si
SLV 15	-21503	-37396	-842	0.494	2545.4	0.959	7.49095	3.00264	Si
SLV 16	-20510	-36084	-790	0.515	2444.4	0.957	7.81505	3.00264	Si
SLV 13	-11448	-22651	-381	0.834	1525.1	0.935	12.96223	3.00264	Si
SLV 3	-11099	-14935	-489	0.846	1489.8	0.934	13.16097	3.00264	Si
SLV 14	-10455	-21339	-328	0.898	1424.8	0.932	14.00122	3.00264	Si
SLV 4	-10107	-13623	-437	0.912	1389.6	0.93	14.2467	3.00264	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.73	SLU 81	Si
V_SLU	2.8	SLU 77	Si
PF_SLV	0	SLV 5	No
V_SLV	1.388	SLV 7	Si
PFFP_SLV	0	SLV 10	No
R_SLV	2.015	SLV 11	Si

Maschio 46

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	5.951	-0.123	-3.284	L2	L4	9.235	0.45	2.97	2.97	2.97			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 55	-1.3	21370.5	-88328	-0.000039	0.0003743	0.0035	9.235	322708.42	345120.52	345120.52	16.15	No	Si
SLU 55	1.67	10356.27	-117988	-0.0000484	0.0003743	0.0035	9.235	392882.07	428664.93	428664.93	41.39	No	Si
SLU 52	-1.3	21708.9	-87298	-0.0000387	0.0003743	0.0035	9.235	319927.21	341405.18	341405.18	15.73	No	Si
SLU 52	1.67	11585.99	-116099	-0.0000479	0.0003743	0.0035	9.235	388985.89	423521.96	423521.96	36.55	No	Si
SLU 47	-1.3	19688.98	-80290	-0.0000353	0.0003743	0.0035	9.235	300386.53	316319.47	316319.47	16.07	No	Si
SLU 47	1.67	9876.55	-105962	-0.0000433	0.0003743	0.0035	9.235	366743.77	396230.43	396230.43	40.12	No	Si
SLU 61	-1.3	21135.23	-90756	-0.0000399	0.0003743	0.0035	9.235	329176.44	353913.96	353913.96	16.75	No	Si
SLU 61	1.67	9455.38	-121158	-0.0000495	0.0003743	0.0035	9.235	399244.64	437335.52	437335.52	46.25	No	Si
SLU 2	-1.3	16208.05	-63591	-0.0000278	0.0003743	0.0035	9.235	249499.52	257945.55	257945.55	15.91	No	Si
SLU 2	1.67	9212.38	-84151	-0.0000342	0.0003743	0.0035	9.235	311284.96	330099.71	330099.71	35.83	No	Si
SLU 13	-1.3	17551.16	-72658	-0.0000318	0.0003743	0.0035	9.235	277884.35	289395.05	289395.05	16.49	No	Si
SLU 13	1.67	8462.38	-98066	-0.0000397	0.0003743	0.0035	9.235	347866.06	375314.42	375314.42	44.35	No	Si
SLU 10	-1.3	17889.56	-71628	-0.0000314	0.0003743	0.0035	9.235	274750.94	285795.18	285795.18	15.98	No	Si
SLU 10	1.67	9692.1	-96177	-0.0000392	0.0003743	0.0035	9.235	343148.55	370340.83	370340.83	38.21	No	Si
SLU 5	-1.3	15869.65	-64621	-0.0000282	0.0003743	0.0035	9.235	252813.58	261487.41	261487.41	16.48	No	Si
SLU 5	1.67	7982.66	-86040	-0.0000347	0.0003743	0.0035	9.235	316498.27	336876.98	336876.98	42.2	No	Si
SLU 73	-1.3	21919.89	-97268	-0.0000428	0.0003743	0.0035	9.235	345881.64	373210.05	373210.05	17.03	No	Si
SLU 73	1.67	9012.53	-131415	-0.0000537	0.0003743	0.0035	9.235	418334.95	465649.54	465649.54	51.67	No	Si
SLU 44	-1.3	20027.39	-79261	-0.000035	0.0003743	0.0035	9.235	297424.67	312661.68	312661.68	15.61	No	Si
SLU 44	1.67	11106.27	-104073	-0.0000428	0.0003743	0.0035	9.235	362351.79	391203.58	391203.58	35.22	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	-1.3	201214.38	-80081	-0.0000905	0.0005615	0.0035	9.235		332437.09	332437.09	1.65		Si
SLV 10	1.67	277543.84	-99194	-0.0001343	0.0005615	0.0035	9.235		398033.66	398033.66	1.43		Si
SLV 8	-1.3	-166707.11	-57178	-0.0000791	0.0005615	0.0035	7.388		269278.1	269278.1	1.62		Si
SLV 8	1.67	-268983.41	-83346	-0.0001489	0.0005615	0.0035	7.388		369167.9	369167.9	1.37		Si
SLV 2	-1.3	63318.32	-18883	-0.000034	0.0005615	0.0035	9.235		88955.77	88955.77	1.4		Si
SLV 2	1.67	77249.99	-25971	-0.000036	0.0005615	0.0035	9.235		119835.19	119835.19	1.55		Si
SLV 1	-1.3	52206.33	-19304	-0.0000228	0.0005615	0.0035	9.235		90804.61	90804.61	1.74		Si
SLV 1	1.67	72774.63	-27316	-0.0000318	0.0005615	0.0035	9.235		125629.67	125629.67	1.73		Si
SLV 5	-1.3	187711.65	-51128	-0.000133	0.0005615	0.0035	9.235		224932.5	224932.5	1.2		Si
SLV 5	1.67	269169.02	-62967	-0.001353	0.0005615	0.0035	9.235		272040.74	272040.74	1.01		Si
SLV 12	-1.3	-160685.72	-86414	-0.0000734	0.0005615	0.0035	9.235		380398.23	380398.23	2.37		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	1.67	-263621.7	-120478	-0.0001208	0.0005615	0.0035	9.235		498328.77	498328.77	1.89		Si
SLV 7	-1.3	-174188.45	-57461	-0.0000857	0.0005615	0.0035	7.388		270421.39	270421.39	1.55		Si
SLV 7	1.67	-271996.52	-84252	-0.0001509	0.0005615	0.0035	7.388		372476.93	372476.93	1.37		Si
SLV 6	-1.3	195192.99	-50844	-0.0001649	0.0005615	0.0035	9.235		223793.55	223793.55	1.15		Si
SLV 6	1.67	272182.13	-62062	-0.0049838	0.0005615	0.0035	9.235		268509.63	268509.63	0.99		No
SLV 9	-1.3	193733.05	-80364	-0.0000863	0.0005615	0.0035	9.235		333400.86	333400.86	1.72		Si
SLV 9	1.67	274530.73	-100100	-0.0001312	0.0005615	0.0035	9.235		401169.49	401169.49	1.46		Si
SLV 11	-1.3	-168167.06	-86698	-0.0000761	0.0005615	0.0035	9.235		381437.46	381437.46	2.27		Si
SLV 11	1.67	-266634.82	-121384	-0.0001223	0.0005615	0.0035	9.235		501326.54	501326.54	1.88		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 34	-1.3	17762.15	-82628	-73447	2858	9.235	9.235	-17674	9301	49383	33304	124442	23549	82688	No	28.94	Si
SLU 34	1.67	5888.93	-113382	-100784	2838	9.235	9.235	-24252	10178	60318	33304	124442	23549	93622	No	32.99	Si
SLU 44	-1.3	20027.39	-79261	-70454	2882	9.235	9.235	-16953	9205	48186	33304	124442	23549	81490	No	28.28	Si
SLU 44	1.67	11106.27	-104073	-92509	2877	9.235	9.235	-22261	9913	57008	33304	124442	23549	90312	No	31.39	Si
SLU 73	-1.3	21919.89	-97268	-86460	3184	9.235	9.235	-20805	9718	54588	33304	124442	23549	87893	No	27.61	Si
SLU 73	1.67	9012.53	-131415	-116814	3164	9.235	9.235	-28109	10692	66729	33304	124442	23549	100034	No	31.61	Si
SLU 65	-1.3	20238.38	-89231	-79316	2982	9.235	9.235	-19086	9489	51731	33304	124442	23549	85035	No	28.51	Si
SLU 65	1.67	8532.81	-119389	-106124	2966	9.235	9.235	-25537	10349	62453	33304	124442	23549	95758	No	32.29	Si
SLU 68	-1.3	19899.98	-90260	-80231	3066	9.235	9.235	-19306	9519	52097	33304	124442	23549	85401	No	27.85	Si
SLU 68	1.67	7303.1	-121278	-107802	3045	9.235	9.235	-25941	10403	63125	33304	124442	23549	96429	No	31.67	Si
SLU 55	-1.3	21370.5	-88328	-78513	3167	9.235	9.235	-18893	9463	51410	33304	124442	23549	84714	No	26.75	Si
SLU 55	1.67	10356.27	-117988	-104878	3155	9.235	9.235	-25237	10309	61955	33304	124442	23549	95260	No	30.19	Si
SLU 76	-1.3	21581.49	-98298	-87376	3268	9.235	9.235	-21025	9748	54955	33304	124442	23549	88259	No	27.01	Si
SLU 76	1.67	7782.81	-133304	-118493	3243	9.235	9.235	-28513	10746	67401	33304	124442	23549	100705	No	31.05	Si
SLU 47	-1.3	19688.98	-80290	-71369	2966	9.235	9.235	-17174	9234	48552	33304	124442	23549	81856	No	27.6	Si
SLU 47	1.67	9876.55	-105962	-94188	2956	9.235	9.235	-22665	9966	57680	33304	124442	23549	90984	No	30.78	Si
SLU 52	-1.3	21708.9	-87298	-77598	3083	9.235	9.235	-18672	9434	51044	33304	124442	23549	84348	No	27.36	Si
SLU 52	1.67	11585.99	-116099	-103200	3076	9.235	9.235	-24833	10256	61284	33304	124442	23549	94588	No	30.75	Si
SLU 13	-1.3	17551.16	-72658	-64585	2757	9.235	9.235	-15541	9017	45839	33304	124442	23549	79143	No	28.71	Si
SLU 13	1.67	8462.38	-98066	-87170	2750	9.235	9.235	-20976	9741	54872	33304	124442	23549	88177	No	32.06	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	-1.3	-166707.11	-57178	-50825	-40959	7.388	5.1057	0	0	0	33304	149330	18839	33304		0.81	No
SLV 8	1.67	-268983.41	-83346	-74086	-40222	7.388	4.1706	0	0	0	33304	149330	18839	33304		0.83	No
SLV 5	-1.3	187711.65	-51128	-45447	45666	9.235	2.8382	-36300	16250	48187	33304	186662	23549	81491		1.78	Si
SLV 5	1.67	269169.02	-62967	-55971	44774	9.235	1.0283	-146004	16250	52396	33304	186662	23549	85700		1.91	Si
SLV 3	-1.3	-56363.7	-21204	-18848	-15722	7.388	5.8779	0	0	0	33304	149330	18839	33304		2.12	Si
SLV 3	1.67	-89575.03	-33701	-29956	-15689	7.388	5.8787	0	0	0	33304	149330	18839	33304		2.12	Si
SLV 7	-1.3	-174188.45	-57461	-51076	-48707	7.388	4.7582	0	0	0	33304	149330	18839	33304		0.68	No
SLV 7	1.67	-271996.52	-84252	-74890	-48007	7.388	4.1673	0	0	0	33304	149330	18839	33304		0.69	No
SLV 12	-1.3	-160685.72	-86414	-76813	-42531	9.235	8.2741	-20813	14579	60732	33304	186662	23549	94037		2.21	Si
SLV 12	1.67	-263621.7	-120478	-107092	-41708	9.235	7.2881	-33228	16250	72844	33304	186662	23549	106148		2.55	Si
SLV 9	-1.3	193733.05	-80364	-71435	44095	9.235	6.6204	-17189	13855	58581	33304	186662	23549	91886		2.08	Si
SLV 9	1.67	274530.73	-100100	-88977	43288	9.235	5.6248	-21411	14699	65598	33304	186662	23549	98902		2.28	Si
SLV 2	-1.3	63318.32	-18883	-16785	24097	9.235	3.7929	-4039	11224	36722	33304	186662	23549	70026		2.91	Si
SLV 2	1.67	77249.99	-25971	-23085	23709	9.235	4.9291	-5555	11528	39242	33304	186662	23549	72547		3.06	Si
SLV 11	-1.3	-168167.06	-86698	-77064	-50279	9.235	8.0334	-21554	14727	60833	33304	186662	23549	94137		1.87	Si
SLV 11	1.67	-266634.82	-121384	-107897	-49493	9.235	7.2626	-33602	16250	73165	33304	186662	23549	106470		2.15	Si
SLV 6	-1.3	195192.99	-50844	-45195	53414	9.235	2.3354	-44094	16250	48086	33304	186662	23549	81390		1.52	Si
SLV 6	1.67	272182.13	-62062	-55166	52559	9.235	0.6956	-172081	16250	52074	33304	186662	23549	85378		1.62	Si
SLV 10	-1.3	201214.38	-80081	-71183	51842	9.235	6.3146	-17129	13842	58481	33304	186662	23549	91785		1.77	Si
SLV 10	1.67	277543.84	-99194	-88173	51073	9.235	5.4585	-21217	14660	65276	33304	186662	23549	98580		1.93	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 0.185 Wa 0.08 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 2	179667	0.25	6015	-24997	698.34	5402.81	7.74	Si
SLV 1	179667	0.25	6217	-25838	698.34	5576.88	7.99	Si
SLV 4	179667	0.25	6881	-28595	698.34	6143.96	8.8	Si
SLV 3	179667	0.25	7083	-29436	698.34	6315.88	9.04	Si
SLV 6	179667	0.25	14885	-61859	698.34	12561.6	17.99	Si
SLV 5	179667	0.25	15021	-62425	698.34	12664.05	18.13	Si
SLV 8	179667	0.25	17771	-73851	698.34	14682.95	21.03	Si
SLV 7	179667	0.25	17907	-74417	698.34	14780.59	21.17	Si
SLV 10	179667	0.25	23325	-96934	698.34	18479	26.46	Si
SLV 9	179667	0.25	23462	-97500	698.34	18567.37	26.59	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 0.185 Wa = 0.08 Ta = 0.0327

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-157475	-118659	-3995	0.365	17770.3	0.97	5.46421	3.00264	Si
SLV 16	-156130	-118238	-3996	0.367	17633.4	0.97	5.50016	3.00264	Si
SLV 13	-151090	-116759	-4041	0.376	17120.2	0.969	5.63655	3.00264	Si
SLV 14	-149745	-116338	-4042	0.378	16983.3	0.969	5.67544	3.00264	Si
SLV 11	-121384	-86698	-1234	0.464	14096.8	0.963	7.00716	2.80694	Si
SLV 12	-120478	-86414	-1235	0.467	14004.7	0.963	7.04907	2.80694	Si
SLV 9	-100100	-80364	-1387	0.537	11932.1	0.957	8.15991	2.80694	Si
SLV 10	-99194	-80081	-1387	0.541	11840.1	0.957	8.21993	2.80694	Si
SLV 7	-84252	-57461	1087	0.617	10321.9	0.951	9.43094	2.80694	Si
SLV 8	-83346	-57178	1086	0.622	10229.9	0.951	9.5142	2.80694	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	15.612	SLU 44	Si
V_SLU	26.75	SLU 55	Si
PF_SLV	0.987	SLV 6	No
V_SLV	0.684	SLV 7	No
PFFP_SLV	7.737	SLV 2	Si
R_SLV	1.82	SLV 15	Si

Maschio 47

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-24.678	-3.359	-24.678	5.951	L4	L5	9.311	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 2	1.67	-4837.2	-57813	-0.000031	0.0003743	0.0035	9.3107	214424.4	288555.16	288555.16	59.65	No	Si
SLU 2	5.07	-3634.11	-56033	-0.0000297	0.0003743	0.0035	9.3107	209456.72	282144.47	282144.47	77.64	No	Si
SLU 63	1.67	-3917.21	-83795	-0.0000447	0.0003743	0.0035	9.3107	275150.74	377214.67	377214.67	96.3	No	Si
SLU 63	5.07	-5187.97	-81825	-0.0000441	0.0003743	0.0035	9.3107	271319.01	371003.66	371003.66	71.51	No	Si
SLU 13	1.67	-4646.96	-66786	-0.0000357	0.0003743	0.0035	9.3107	237896.07	320639.06	320639.06	69	No	Si
SLU 13	5.07	-4253.33	-65337	-0.0000348	0.0003743	0.0035	9.3107	234284.37	315662.99	315662.99	74.22	No	Si
SLU 47	1.67	-5273.2	-72755	-0.0000391	0.0003743	0.0035	9.3107	252046.76	340793.17	340793.17	64.63	No	Si
SLU 47	5.07	-4344.1	-70641	-0.0000377	0.0003743	0.0035	9.3107	247169.44	333656.71	333656.71	76.81	No	Si
SLU 61	1.67	-4273.6	-82639	-0.0000442	0.0003743	0.0035	9.3107	272917.3	373569.4	373569.4	87.41	No	Si
SLU 61	5.07	-5406.03	-80379	-0.0000433	0.0003743	0.0035	9.3107	268426.97	366446.96	366446.96	67.78	No	Si
SLU 5	1.67	-4480.81	-58970	-0.0000315	0.0003743	0.0035	9.3107	217598.07	292722.46	292722.46	65.33	No	Si
SLU 5	5.07	-3416.06	-57479	-0.0000303	0.0003743	0.0035	9.3107	213501.3	287353.73	287353.73	84.12	No	Si
SLU 10	1.67	-5003.35	-65630	-0.0000352	0.0003743	0.0035	9.3107	235018.45	316716.03	316716.03	63.3	No	Si
SLU 10	5.07	-4471.38	-63891	-0.0000341	0.0003743	0.0035	9.3107	230611.8	310453.73	310453.73	69.43	No	Si
SLU 44	1.67	-5629.58	-71598	-0.0000386	0.0003743	0.0035	9.3107	249395.17	336886.88	336886.88	59.84	No	Si
SLU 44	5.07	-4562.15	-69195	-0.000037	0.0003743	0.0035	9.3107	243747.97	328773.72	328773.72	72.07	No	Si
SLU 52	1.67	-5795.73	-79415	-0.000043	0.0003743	0.0035	9.3107	266461.26	363283.95	363283.95	62.68	No	Si
SLU 52	5.07	-5399.42	-77053	-0.0000415	0.0003743	0.0035	9.3107	261516.8	355309.89	355309.89	65.81	No	Si
SLU 55	1.67	-5439.35	-80571	-0.0000435	0.0003743	0.0035	9.3107	268816.8	367054.94	367054.94	67.48	No	Si
SLU 55	5.07	-5181.36	-78499	-0.0000422	0.0003743	0.0035	9.3107	264566.25	360192.88	360192.88	69.52	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	1.67	163252.2	-48319	-0.0001258	0.0005615	0.0035	9.3107		216209.87	216209.87	1.32		Si
SLV 12	5.07	67440.29	-50556	-0.0000476	0.0005615	0.0035	9.3107		225169.76	225169.76	3.34		Si
SLV 11	1.67	160530.62	-48230	-0.0001203	0.0005615	0.0035	9.3107		215855.37	215855.37	1.34		Si
SLV 11	5.07	70639.71	-51112	-0.000049	0.0005615	0.0035	9.3107		227394.8	227394.8	3.22		Si
SLV 8	1.67	163815.24	-82208	-0.0001007	0.0005615	0.0035	9.3107		338890.76	338890.76	2.07		Si
SLV 8	5.07	60363.95	-70597	-0.000056	0.0005615	0.0035	9.3107		299385.05	299385.05	4.96		Si
SLV 7	1.67	161093.66	-82119	-0.0000994	0.0005615	0.0035	9.3107		338589.59	338589.59	2.1		Si
SLV 7	5.07	63563.37	-71153	-0.0000574	0.0005615	0.0035	9.3107		301275.34	301275.34	4.74		Si
SLV 13	1.67	-52202.24	-5290	-0.0002253	0.0005615	0.0035	7.4486		77309.66	77309.66	1.48		Si
SLV 13	5.07	-9260.76	-28296	-0.000017	0.0005615	0.0035	9.3107		176778.43	176778.43	19.09		Si
SLV 15	1.67	45374.19	-6851	-0.0012622	0.0005615	0.0035	9.3107		39790.56	39790.56	0.88		No
SLV 15	5.07	31785.03	-28097	-0.0000242	0.0005615	0.0035	9.3107		132802.1	132802.1	4.18		Si
SLV 9	1.67	-164724.14	-43028	-0.0001694	0.0005615	0.0035	7.4486		237567.94	237567.94	1.44		Si
SLV 9	5.07	-66179.57	-51774	-0.0000479	0.0005615	0.0035	9.3107		272262.19	272262.19	4.11		Si
SLV 14	1.67	-48159.89	-5422	-0.0001996	0.0005615	0.0035	7.4486		77897.41	77897.41	1.62		Si
SLV 14	5.07	-14012.85	-27470	-0.0000181	0.0005615	0.0035	9.3107		173332.33	173332.33	12.37		Si
SLV 16	1.67	49416.53	-6983	-0.0016706	0.0005615	0.0035	9.3107		40380.27	40380.27	0.82		No
SLV 16	5.07	27032.93	-27272	-0.0000223	0.0005615	0.0035	9.3107		129270.72	129270.72	4.78		Si
SLV 10	1.67	-162002.56	-43117	-0.0001569	0.0005615	0.0035	7.4486		237919.07	237919.07	1.47		Si
SLV 10	5.07	-69379	-51218	-0.0000486	0.0005615	0.0035	9.3107		270058.34	270058.34	3.89		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 35	1.67	1442.74	-78428	-57038	3139	9.3107	9.3107	-20420	9667	36261	108749	83641	47485	131126	No	41.78	Si
SLU 35	5.07	-2757.6	-78094	-56795	3115	9.3107	9.3107	-20333	9656	36164	108749	83641	47485	131126	No	42.1	Si
SLU 39	1.67	472.82	-78769	-57286	3145	9.3107	9.3107	-20509	9679	36360	108749	83641	47485	131126	No	41.7	Si
SLU 39	5.07	-3652.26	-77700	-56509	3125	9.3107	9.3107	-20231	9642	36049	108749	83641	47485	131126	No	41.96	Si
SLU 79	1.67	464.42	-91517	-66558	3341	9.3107	9.3107	-23828	10122	40069	108749	83641	47485	131126	No	39.25	Si
SLU 79	5.07	-3785.36	-90386	-65735	3318	9.3107	9.3107	-23534	10082	39739	108749	83641	47485	131126	No	39.52	Si
SLU 41	1.67	829.21	-79925	-58128	3215	9.3107	9.3107	-20810	9719	36697	108749	83641	47485	131126	No	40.79	Si
SLU 41	5.07	-3434.21	-79146	-57560	3193	9.3107	9.3107	-20607	9692	36470	108749	83641	47485	131126	No	41.06	Si
SLU 77	1.67	650.35	-92213	-67064	3398	9.3107	9.3107	-24010	10146	40271	108749	83641	47485	131126	No	38.59	Si
SLU 77	5.07	-3685.64	-91256	-66368	3374	9.3107	9.3107	-23760	10112	39992	108749	83641	47485	131126	No	38.86	Si
SLU 81	1.67	-319.56	-92554	-67312	3404	9.3107	9.3107	-24098	10158	40370	108749	83641	47485	131126	No	38.52	Si
SLU 81	5.07	-4580.3	-90862	-66081	3384	9.3107	9.3107	-23658	10099	39878	108749	83641	47485	131126	No	38.74	Si
SLU 83	1.67	36.82	-93710	-68153	3474	9.3107	9.3107	-24400	10198	40707	108749	83641	47485	131126	No	37.74	Si
SLU 83	5.07	-4362.24	-92308	-67133	3453	9.3107	9.3107	-24034	10149	40298	108749	83641	47485	131126	No	37.98	Si
SLU 74	1.67	293.97	-91056	-66223	3328	9.3107	9.3107	-23708	10106	39934	108749	83641	47485	131126	No	39.4	Si
SLU 74	5.07	-3903.69	-89810	-65316	3306	9.3107	9.3107	-23384	10062	39572	108749	83641	47485	131126	No	39.67	Si
SLU 37	1.67	1256.8	-77732	-56532	3081	9.3107	9.3107	-20239	9643	36058	108749	83641	47485	131126	No	42.55	Si
SLU 37	5.07	-2857.33	-77224	-56163	3058	9.3107	9.3107	-20107	9625	35911	108749	83641	47485	131126	No	42.87	Si
SLU 32	1.67	1086.36	-77271	-56197	3068	9.3107	9.3107	-20119	9627	35924	108749	83641	47485	131126	No	42.74	Si
SLU 32	5.07	-2975.66	-76648	-55744	3046	9.3107	9.3107	-19957	9605	35743	108749	83641	47485	131126	No	43.05	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	1.67	-164724.14	-43028	-31293	-74942	7.4486	2.4811	0	0	0	108749	100369	37988	108749		1.45	Si
SLV 9	5.07	-66179.57	-51774	-37654	-70587	9.3107	9.3107	-13480	13113	36627	108749	125462	47485	145375		2.06	Si
SLV 10	1.67	-162002.56	-43117	-31357	-65785	7.4486	2.6941	0	0	0	108749	100369	37988	108749		1.65	Si
SLV 10	5.07	-69379	-51218	-37250	-61441	9.3107	9.3107	-13336	13084	36546	108749	125462	47485	145295		2.36	Si
SLV 7	1.67	161093.66	-82119	-59723	69921	9.3107	8.0809	-21382	14693	44058	108749	125462	47485	152807		2.19	Si
SLV 7	5.07	63563.37	-71153	-51747	65552	9.3107	9.3107	-18526	14122	40868	108749	125462	47485	149617		2.28	Si
SLV 8	1.67	163815.24	-82208	-59788	79077	9.3107	7.9879	-21405	14698	44084	108749	125462	47485	152832		1.93	Si
SLV 8	5.07	60363.95	-70597	-51343	74697	9.3107	9.3107	-18382	14093	40706	108749	125462	47485	149455		2	Si
SLV 12	1.67	163252.2	-48319	-35141	71822	9.3107	3.8301	-12581	12933	34226	108749	125462	47485	142974		1.99	Si
SLV 12	5.07	67440.29	-50556	-36768	68868	9.3107	9.3107	-13163	13049	36450	108749	125462	47485	145198		2.11	Si
SLV 11	1.67	160530.62	-48230	-35077	62665	9.3107	3.9808	-12558	12928	34200	108749	125462	47485	142949		2.28	Si
SLV 11	5.07	70639.71	-51112	-37172	59722	9.3107	9.3107	-13308	13078	36530	108749	125462	47485	145279		2.43	Si
SLV 13	1.67	-52202.24	-5290	-3848	-37466	7.4486	0	0	0	0	108749	100369	37988	108749		2.9	Si
SLV 13	5.07	-9260.76	-28296	-20579	-33999	9.3107	9.3107	-7367	11890	33212	108749	125462	47485	141960		4.18	Si
SLV 5	1.67	-164161.09	-76917	-55940	-67686	9.3107	7.5632	-24995	15416	42545	108749	125462	47485	151293		2.24	Si
SLV 5	5.07	-73255.91	-71815	-52229	-64757	9.3107	9.3107	-18699	14156	41060	108749	125462	47485	149809		2.31	Si
SLV 6	1.67	-161439.51	-77005	-56004	-58530	9.3107	7.6766	-24651	15347	42570	108749	125462	47485	151319		2.59	Si
SLV 6	5.07	-76455.34	-71259	-51825	-55612	9.3107	9.3107	-18554	14127	40899	108749	125462	47485	149648		2.69	Si
SLV 4	1.67	51293.34	-119945	-87233	41602	9.3107	9.3107	-31230	16250	55061	108749	125462	47485	163810		3.94	Si
SLV 4	5.07	3445.13	-94076	-68419	38109	9.3107	9.3107	-24495	15316	47536	108749	125462	47485	156285		4.1	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 3.37 Ta 0.06 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 14	-22321	0.31	786.7	3172.98	4934.77	4053.88	5.15	Si
SLV 13	-22635	0.31	786.7	3215.14	4986.23	4100.69	5.21	Si
SLV 16	-23071	0.31	786.7	3273.44	5057.53	4165.48	5.29	Si
SLV 15	-23385	0.31	786.7	3315.43	5108.93	4212.18	5.35	Si

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 10	-50323	0.31	786.7	6657.96	9441.54	8049.75	10.23	Si
SLV 9	-50535	0.31	786.7	6682.18	9475.2	8078.69	10.27	Si
SLV 12	-52821	0.31	786.7	6942.08	9836.97	8389.52	10.66	Si
SLV 11	-53033	0.31	786.7	6965.93	9870.37	8418.15	10.7	Si
SLV 6	-75030	0.31	786.7	9274.94	13337.67	11306.3	14.37	Si
SLV 5	-75242	0.31	786.7	9295.49	13370.58	11333.03	14.41	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 1	-95099	-118253	-4427	0.51	11019.8	0.964	7.68675	4.41923	Si
SLV 3	-94901	-119814	-4366	0.511	10999.6	0.963	7.70961	4.41923	Si
SLV 2	-94274	-118385	-4427	0.513	10935.8	0.963	7.74522	4.41923	Si
SLV 4	-94076	-119945	-4366	0.515	10915.6	0.963	7.76839	4.41923	Si
SLV 5	-71815	-76917	-1454	0.681	8652	0.955	10.37514	3.83947	Si
SLV 6	-71259	-77005	-1454	0.686	8595.5	0.954	10.44564	3.83947	Si
SLV 7	-71153	-82119	-1251	0.689	8584.7	0.954	10.49806	3.83947	Si
SLV 8	-70597	-82208	-1250	0.694	8528.2	0.954	10.57007	3.83947	Si
SLV 9	-51774	-43028	1155	0.898	6617.8	0.943	13.84782	3.83947	Si
SLV 11	-51112	-48230	1359	0.904	6550.7	0.942	13.94886	3.83947	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	59.653	SLU 2	Si
V_SLU	37.74	SLU 83	Si
PF_SLV	0.817	SLV 16	No
V_SLV	1.451	SLV 9	Si
PFFP_SLV	5.153	SLV 14	Si
R_SLV	1.739	SLV 1	Si

Maschio 48

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-22.763	5.951	-24.678	5.951	L4	L5	1.915	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 45	2.57	-51.11	-17870	-0.0000499	0.0003743	0.0035	1.915	11882.86	14391.82	14391.82	281.61	No	Si
SLU 45	4.47	528.98	-14913	-0.0000454	0.0003743	0.0035	1.915	10638.69	11661.85	11661.85	22.05	No	Si
SLU 46	2.57	-30.7	-17647	-0.000049	0.0003743	0.0035	1.915	11799.11	14270.66	14270.66	464.84	No	Si
SLU 46	4.47	504.6	-14810	-0.0000449	0.0003743	0.0035	1.915	10590.04	11604.82	11604.82	23	No	Si
SLU 1	2.57	-32.43	-14049	-0.0000385	0.0003743	0.0035	1.915	10220.63	12141.41	12141.41	374.42	No	Si
SLU 1	4.47	380.86	-11808	-0.0000351	0.0003743	0.0035	1.915	9023.55	9669.33	9669.33	25.39	No	Si
SLU 48	2.57	-34.67	-18213	-0.0000508	0.0003743	0.0035	1.915	12008.82	14569.73	14569.73	420.19	No	Si
SLU 48	4.47	523.42	-15257	-0.0000464	0.0003743	0.0035	1.915	10797.97	11852.3	11852.3	22.64	No	Si
SLU 49	2.57	-14.27	-17991	-0.0000499	0.0003743	0.0035	1.915	11927.57	14455.59	14455.59	1013.13	No	Si
SLU 49	4.47	499.04	-15154	-0.0000458	0.0003743	0.0035	1.915	10750.49	11794.91	11794.91	23.63	No	Si
SLU 47	2.57	-19.47	-17292	-0.0000479	0.0003743	0.0035	1.915	11662.22	14071.62	14071.62	722.86	No	Si
SLU 47	4.47	486.67	-14545	-0.0000439	0.0003743	0.0035	1.915	10463.53	11458.89	11458.89	23.55	No	Si
SLU 43	2.57	-69.91	-17320	-0.0000484	0.0003743	0.0035	1.915	11673.08	14087.11	14087.11	201.51	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 43	4.47	532.86	-14373	-0.0000438	0.0003743	0.0035	1.915	10380.56	11365	11365	21.33	No	Si
SLU 51	2.57	-16.64	-17784	-0.0000493	0.0003743	0.0035	1.915	11850.74	14345.6	14345.6	862.18	No	Si
SLU 51	4.47	497.37	-14957	-0.0000452	0.0003743	0.0035	1.915	10659.25	11686.1	11686.1	23.5	No	Si
SLU 44	2.57	-35.9	-16949	-0.000047	0.0003743	0.0035	1.915	11525.91	13881.11	13881.11	386.68	No	Si
SLU 44	4.47	492.22	-14201	-0.000043	0.0003743	0.0035	1.915	10296.24	11270.98	11270.98	22.9	No	Si
SLU 50	2.57	-37.04	-18007	-0.0000502	0.0003743	0.0035	1.915	11933.49	14463.99	14463.99	390.45	No	Si
SLU 50	4.47	521.75	-15061	-0.0000458	0.0003743	0.0035	1.915	10707.4	11743.28	11743.28	22.51	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	2.57	3332.23	5088	0.4029754	0.0005615	0.0035	1.532		0	0	0		No
SLV 5	4.47	-3831.89	-3781	-0.0003393	0.0005615	0.0035	1.532		4517.9	4517.9	1.18		Si
SLV 6	2.57	2360.26	3965	0.3166974	0.0005615	0.0035	1.532		0	0	0		No
SLV 6	4.47	-3034.5	-3160	-0.0002059	0.0005615	0.0035	1.532		3962.84	3962.84	1.31		Si
SLV 15	2.57	-4461.78	-14822	-0.0000781	0.0005615	0.0035	1.915		13395.06	13395.06	3		Si
SLV 15	4.47	3475.51	-8665	-0.0000528	0.0005615	0.0035	1.915		7852.48	7852.48	2.26		Si
SLV 13	2.57	-3621.73	-1747	-0.0010384	0.0005615	0.0035	1.532		2681.18	2681.18	0.74		No
SLV 13	4.47	1750.12	-1233	-0.0035544	0.0005615	0.0035	1.915		1349.98	1349.98	0.77		No
SLV 10	2.57	-505.79	7725	0.656202	0.0005615	0.0035	1.532		0	0	0		No
SLV 10	4.47	-1297.94	2088	0.1819896	0.0005615	0.0035	1.532		0	0	0		No
SLV 9	2.57	466.19	8848	0.7457234	0.0005615	0.0035	1.532		0	0	0		No
SLV 9	4.47	-2095.33	1466	0.1304004	0.0005615	0.0035	1.532		0	0	0		No
SLV 1	2.57	5931.75	-14280	-0.0000922	0.0005615	0.0035	1.915		11911.52	11911.52	2.01		Si
SLV 1	4.47	-4038.41	-18725	-0.0000861	0.0005615	0.0035	1.915		16074.42	16074.42	3.98		Si
SLV 16	2.57	-5905.45	-16489	-0.0000966	0.0005615	0.0035	1.915		14565.52	14565.52	2.47		Si
SLV 16	4.47	4659.87	-7743	-0.0000752	0.0005615	0.0035	1.915		7090.57	7090.57	1.52		Si
SLV 2	2.57	4488.07	-15947	-0.0000817	0.0005615	0.0035	1.915		13119.56	13119.56	2.92		Si
SLV 2	4.47	-2854.05	-17802	-0.0000728	0.0005615	0.0035	1.915		15465.93	15465.93	5.42		Si
SLV 14	2.57	-5065.41	-3415	-0.0012039	0.0005615	0.0035	1.532		4192.18	4192.18	0.83		No
SLV 14	4.47	2934.48	-310	-0.0204722	0.0005615	0.0035	1.915		485.23	485.23	0.17		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 45	2.57	-51.11	-17870	-15048	-424	1.915	1.915	-26194	10437	5996	38062	17203	4883	22086	No	52.07	Si
SLU 45	4.47	528.98	-14913	-12559	-491	1.915	1.915	-21860	9859	5664	38062	17203	4883	22086	No	44.97	Si
SLU 43	2.57	-69.91	-17320	-14585	-432	1.915	1.915	-25388	10329	5934	38062	17203	4883	22086	No	51.08	Si
SLU 43	4.47	532.86	-14373	-12104	-497	1.915	1.915	-21069	9754	5603	38062	17203	4883	22086	No	44.41	Si
SLU 50	2.57	-37.04	-18007	-15163	-407	1.915	1.915	-26394	10464	6011	38062	17203	4883	22086	No	54.22	Si
SLU 50	4.47	521.75	-15061	-12683	-475	1.915	1.915	-22076	9888	5681	38062	17203	4883	22086	No	46.52	Si
SLU 44	2.57	-35.9	-16949	-14273	-294	1.915	1.915	-24844	10257	5893	38062	17203	4883	22086	No	75.22	Si
SLU 44	4.47	492.22	-14201	-11959	-358	1.915	1.915	-20816	9720	5584	38062	17203	4883	22086	No	61.78	Si
SLU 51	2.57	-16.64	-17784	-14976	-324	1.915	1.915	-26068	10420	5986	38062	17203	4883	22086	No	68.15	Si
SLU 51	4.47	497.37	-14957	-12596	-391	1.915	1.915	-21924	9868	5669	38062	17203	4883	22086	No	56.5	Si
SLU 1	2.57	-32.43	-14049	-11830	-285	1.915	1.915	-20592	9690	5567	38062	17203	4883	22086	No	77.45	Si
SLU 1	4.47	380.86	-11808	-9943	-338	1.915	1.915	-17308	9252	5315	38062	17203	4883	22086	No	65.39	Si
SLU 47	2.57	-19.47	-17292	-14562	-281	1.915	1.915	-25347	10324	5931	38062	17203	4883	22086	No	78.57	Si
SLU 47	4.47	486.67	-14545	-12248	-346	1.915	1.915	-21320	9787	5623	38062	17203	4883	22086	No	63.79	Si
SLU 46	2.57	-30.7	-17647	-14861	-341	1.915	1.915	-25867	10393	5971	38062	17203	4883	22086	No	64.79	Si
SLU 46	4.47	504.6	-14810	-12472	-407	1.915	1.915	-21709	9839	5652	38062	17203	4883	22086	No	54.24	Si
SLU 49	2.57	-14.27	-17991	-15150	-328	1.915	1.915	-26371	10461	6010	38062	17203	4883	22086	No	67.26	Si
SLU 49	4.47	499.04	-15154	-12761	-396	1.915	1.915	-22212	9906	5691	38062	17203	4883	22086	No	55.79	Si
SLU 48	2.57	-34.67	-18213	-15337	-412	1.915	1.915	-26697	10504	6035	38062	17203	4883	22086	No	53.65	Si
SLU 48	4.47	523.42	-15257	-12848	-480	1.915	1.915	-22364	9926	5703	38062	17203	4883	22086	No	46.03	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	2.57	2360.26	3965	3339	7507	1.532	1.0867	0	0	0	38062	20644	3907	24550		3.27	Si
SLV 6	4.47	-3034.5	-3160	-2661	7362	1.532	0	0	0	0	38062	20644	3907	24550		3.33	Si
SLV 11	2.57	-2333.96	-34734	-29250	-7845	1.915	1.915	-50914	16250	10565	38062	25805	4883	30688		3.91	Si
SLV 11	4.47	3655.97	-23307	-19627	-7815	1.915	1.915	-34164	16250	9336	38062	25805	4883	30688		3.93	Si
SLV 12	2.57	-3305.94	-35857	-30196	-9654	1.915	1.915	-52560	16250	10817	38062	25805	4883	30688		3.18	Si
SLV 12	4.47	4453.36	-22686	-19104	-9625	1.915	1.915	-33254	16250	9336	38062	25805	4883	30688		3.19	Si
SLV 15	2.57	-4461.78	-14822	-12482	-6629	1.915	1.915	-21726	14762	8481	38062	25805	4883	30688		4.63	Si
SLV 15	4.47	3475.51	-8665	-7297	-6050	1.915	1.6692	-12701	12957	6488	38062	25805	4883	30688		5.07	Si
SLV 1	2.57	5931.75	-14280	-12025	8978	1.915	1.6263	-20932	14603	7125	38062	25805	4883	30688		3.42	Si
SLV 1	4.47	-4038.41	-18725	-15768	8285	1.915	1.915	-27447	15906	9138	38062	25805	4883	30688		3.7	Si
SLV 14	2.57	-5065.41	-3415	-2876	-5202	1.532	0	0	0	0	38062	20644	3907	24550		4.72	Si
SLV 14	4.47	2934.48	-310	-261	-4556	1.915	0	0	0	2835	38062	25805	4883	30688		6.74	Si
SLV 9	2.57	466.19	8848	7451	5868	1.532	1.915	0	0	0	38062	20644	3907	24550		4.18	Si
SLV 9	4.47	-2095.33	1466	1235	6126	1.532	0	0	0	0	38062	20644	3907	24550		4.01	Si
SLV 8	2.57	-439.9	-39617	-33362	-6206	1.915	1.915	-58071	16250	11662	38062	25805	4883	30688		4.94	Si
SLV 8	4.47	2716.8	-27934	-23523	-6579	1.915	1.915	-40945	16250	9336	38062	25805	4883	30688		4.66	Si
SLV 16	2.57	-5905.45	-16489	-13886	-9316	1.915	1.7981	-26095	15636	8434	38062	25805	4883	30688		3.29	Si
SLV 16	4.47	4659.87	-7743	-6520	-8738	1.915	1.0669	-11349	12686	4504	38062	25805	4883	30688		3.51	Si
SLV 5	2.57	3332.23	5088	4284	9316	1.532	0.9076	0	0	0	38062	20644	3907	24550		2.64	Si
SLV 5	4.47	-3831.89	-3781	-3184	9172	1.532	0	0	0	0	38062	20644	3907	24550		2.68	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 6	179667	0.31	0	1622	161.81	0	0	No, Trazione
SLV 9	179667	0.31	0	6097	161.81	0	0	No, Trazione
SLV 5	179667	0.31	0	2052	161.81	0	0	No, Trazione
SLV 10	179667	0.31	0	5667	161.81	0	0	No, Trazione
SLV 13	179667	0.31	3124	-1795	161.81	263.74	1.63	Si
SLV 14	179667	0.31	4238	-2435	161.81	355.08	2.19	Si
SLV 15	179667	0.31	22096	-12694	161.81	1628.65	10.07	Si
SLV 16	179667	0.31	23210	-13334	161.81	1696.15	10.48	Si
SLV 1	179667	0.31	26594	-15278	161.81	1892.67	11.7	Si
SLV 2	179667	0.31	27708	-15918	161.81	1954.52	12.08	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-26614	-36551	464	0.41	2984.6	0.972	6.1261	3.83947	Si
SLV 8	-26324	-37054	464	0.413	2955.1	0.971	6.18444	3.83947	Si
SLV 3	-22382	-29587	-37	0.491	2553.8	0.967	7.38277	4.41923	Si
SLV 4	-21952	-30334	-37	0.499	2510	0.967	7.50827	4.41923	Si
SLV 11	-22871	-30596	583	0.46	2603.5	0.968	6.91215	3.83947	Si
SLV 12	-22581	-31099	582	0.465	2574	0.968	6.98931	3.83947	Si
SLV 1	-14953	-17767	-348	0.672	1798	0.955	10.22081	4.41923	Si
SLV 2	-14522	-18514	-348	0.688	1754.3	0.954	10.48332	4.41923	Si
SLV 15	-9907	-9737	358	0.942	1286	0.94	14.56964	4.41923	Si
SLV 16	-9477	-10484	357	0.977	1242.4	0.938	15.13085	4.41923	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	21.328	SLU 43	Si
V_SLU	44.408	SLU 43	Si
PF_SLV	0	SLV 5	No
V_SLV	2.635	SLV 5	Si
PFFP_SLV	0	SLV 10	No
R_SLV	1.596	SLV 7	Si

Maschio 49

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.618	5.951	-21.763	5.951	L4	L5	2.145	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 69	2.57	-5964.72	-23715	-0.0001051	0.0003743	0.0035	2.145	16227.76	19819.04	19819.04	3.32	No	Si
SLU 69	4.47	1740.17	-28222	-0.0000858	0.0003743	0.0035	2.145	17229.56	21020.4	21020.4	12.08	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 83	2.57	-6402.69	-26461	-0.0001175	0.0003743	0.0035	2.145	16917.33	21196.61	21196.61	3.31	No	Si
SLU 83	4.47	1964.14	-31576	-0.0000979	0.0003743	0.0035	2.145	17543.46	22583.86	22583.86	11.5	No	Si
SLU 81	2.57	-6324.64	-26026	-0.0001154	0.0003743	0.0035	2.145	16824.46	20970.81	20970.81	3.32	No	Si
SLU 81	4.47	1955.98	-31090	-0.0000963	0.0003743	0.0035	2.145	17520.81	22355.21	22355.21	11.43	No	Si
SLU 71	2.57	-5914.16	-23473	-0.000104	0.0003743	0.0035	2.145	16155.16	19702.95	19702.95	3.33	No	Si
SLU 71	4.47	1729.17	-27932	-0.0000848	0.0003743	0.0035	2.145	17185.18	20888.2	20888.2	12.08	No	Si
SLU 66	2.57	-5886.67	-23280	-0.0001032	0.0003743	0.0035	2.145	16095.75	19610.79	19610.79	3.33	No	Si
SLU 66	4.47	1732.01	-27736	-0.0000843	0.0003743	0.0035	2.145	17153.57	20799.02	20799.02	12.01	No	Si
SLU 75	2.57	-6209.97	-25479	-0.0001127	0.0003743	0.0035	2.145	16699.13	20691.35	20691.35	3.33	No	Si
SLU 75	4.47	1877.03	-30363	-0.0000934	0.0003743	0.0035	2.145	17472.46	22016.22	22016.22	11.73	No	Si
SLU 78	2.57	-6288.02	-25915	-0.0001148	0.0003743	0.0035	2.145	16799.78	20913.66	20913.66	3.33	No	Si
SLU 78	4.47	1885.19	-30849	-0.000095	0.0003743	0.0035	2.145	17506.68	22242.27	22242.27	11.8	No	Si
SLU 74	2.57	-6283.28	-25676	-0.000114	0.0003743	0.0035	2.145	16745.4	20791.5	20791.5	3.31	No	Si
SLU 74	4.47	1902.2	-30627	-0.0000945	0.0003743	0.0035	2.145	17491.99	22138.71	22138.71	11.64	No	Si
SLU 77	2.57	-6361.33	-26112	-0.000116	0.0003743	0.0035	2.145	16843.25	21015.07	21015.07	3.3	No	Si
SLU 77	4.47	1910.36	-31112	-0.000096	0.0003743	0.0035	2.145	17522.02	22365.7	22365.7	11.71	No	Si
SLU 79	2.57	-6310.77	-25870	-0.0001148	0.0003743	0.0035	2.145	16789.63	20890.47	20890.47	3.31	No	Si
SLU 79	4.47	1899.36	-30823	-0.000095	0.0003743	0.0035	2.145	17505.04	22230.15	22230.15	11.7	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 14	2.57	-4979.98	-193	-0.0026341	0.0005615	0.0035	1.716		1522.81	1522.81	0.31		No
SLV 14	4.47	3651.68	-14311	-0.0000587	0.0005615	0.0035	2.145		13565.66	13565.66	3.71		Si
SLV 6	2.57	3636.29	-937	-0.016315	0.0005615	0.0035	2.145		1246.71	1246.71	0.34		No
SLV 6	4.47	-1310.57	5397	0.4162876	0.0005615	0.0035	1.716		0	0	0		No
SLV 11	2.57	-12453.37	-33745	-0.0001803	0.0005615	0.0035	2.145		27991.67	27991.67	2.25		Si
SLV 11	4.47	3943.79	-46785	-0.0001531	0.0005615	0.0035	2.145		33020.31	33020.31	8.37		Si
SLV 13	2.57	-3473.7	-1008	-0.0009139	0.0005615	0.0035	1.716		2374.54	2374.54	0.68		No
SLV 13	4.47	2544.28	-11629	-0.0000444	0.0005615	0.0035	2.145		11409.49	11409.49	4.48		Si
SLV 15	2.57	-8211.17	-12652	-0.0001055	0.0005615	0.0035	1.716		13486.39	13486.39	1.64		Si
SLV 15	4.47	3901.47	-27763	-0.0000963	0.0005615	0.0035	2.145		23447.33	23447.33	6.01		Si
SLV 9	2.57	3338.2	5066	0.3645514	0.0005615	0.0035	1.716		0	0	0		No
SLV 9	4.47	-580.16	6997	0.5353334	0.0005615	0.0035	1.716		0	0	0		No
SLV 16	2.57	-9717.45	-11837	-0.0001737	0.0005615	0.0035	1.716		12788.99	12788.99	1.32		Si
SLV 16	4.47	5008.86	-30446	-0.0001121	0.0005615	0.0035	2.145		25220.42	25220.42	5.04		Si
SLV 12	2.57	-13467.5	-33197	-0.0001884	0.0005615	0.0035	2.145		27731.17	27731.17	2.06		Si
SLV 12	4.47	4689.36	-48591	-0.000165	0.0005615	0.0035	2.145		33455.82	33455.82	7.13		Si
SLV 10	2.57	2324.07	5615	0.4146097	0.0005615	0.0035	1.716		0	0	0		No
SLV 10	4.47	165.41	5191	0.3945256	0.0005615	0.0035	1.716		0	0	0		No
SLV 5	2.57	4650.42	-1485	-0.0190417	0.0005615	0.0035	2.145		1820.71	1820.71	0.39		No
SLV 5	4.47	-2056.14	7203	0.5566731	0.0005615	0.0035	1.716		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	2.57	-6402.69	-26461	-22283	-8982	2.145	2.145	-34628	10833	8007	38062	19269	5470	24739	No	2.75	Si
SLU 83	4.47	1964.14	-31576	-26590	-8980	2.145	2.145	-41321	10833	9156	38062	19269	5470	24739	No	2.75	Si
SLU 77	2.57	-6361.33	-26112	-21989	-8868	2.145	2.145	-34171	10833	7929	38062	19269	5470	24739	No	2.79	Si
SLU 77	4.47	1910.36	-31112	-26200	-8866	2.145	2.145	-40715	10833	9052	38062	19269	5470	24739	No	2.79	Si
SLU 78	2.57	-6288.02	-25915	-21823	-8778	2.145	2.145	-33913	10833	7884	38062	19269	5470	24739	No	2.82	Si
SLU 78	4.47	1885.19	-30849	-25978	-8777	2.145	2.145	-40370	10833	8992	38062	19269	5470	24739	No	2.82	Si
SLU 84	2.57	-6329.38	-26264	-22117	-8893	2.145	2.145	-34370	10833	7963	38062	19269	5470	24739	No	2.78	Si
SLU 84	4.47	1938.97	-31312	-26368	-8891	2.145	2.145	-40976	10833	9096	38062	19269	5470	24739	No	2.78	Si
SLU 82	2.57	-6251.33	-25829	-21751	-8819	2.145	2.145	-33801	10833	7865	38062	19269	5470	24739	No	2.81	Si
SLU 82	4.47	1930.81	-30826	-25959	-8817	2.145	2.145	-40341	10833	8987	38062	19269	5470	24739	No	2.81	Si
SLU 81	2.57	-6324.64	-26026	-21917	-8909	2.145	2.145	-34058	10833	7909	38062	19269	5470	24739	No	2.78	Si
SLU 81	4.47	1955.98	-31090	-26181	-8907	2.145	2.145	-40686	10833	9047	38062	19269	5470	24739	No	2.78	Si
SLU 74	2.57	-6283.28	-25676	-21622	-8794	2.145	2.145	-33601	10833	7831	38062	19269	5470	24739	No	2.81	Si
SLU 74	4.47	1902.2	-30627	-25791	-8793	2.145	2.145	-40079	10833	8942	38062	19269	5470	24739	No	2.81	Si
SLU 75	2.57	-6209.97	-25479	-21456	-8704	2.145	2.145	-33343	10833	7787	38062	19269	5470	24739	No	2.84	Si
SLU 75	4.47	1877.03	-30363	-25569	-8703	2.145	2.145	-39734	10833	8883	38062	19269	5470	24739	No	2.84	Si
SLU 80	2.57	-6237.46	-25673	-21619	-8719	2.145	2.145	-33596	10833	7830	38062	19269	5470	24739	No	2.84	Si
SLU 80	4.47	1874.19	-30559	-25734	-8718	2.145	2.145	-39991	10833	8927	38062	19269	5470	24739	No	2.84	Si
SLU 79	2.57	-6310.77	-25870	-21785	-8809	2.145	2.145	-33854	10833	7874	38062	19269	5470	24739	No	2.81	Si
SLU 79	4.47	1899.36	-30823	-25956	-8807	2.145	2.145	-40336	10833	8987	38062	19269	5470	24739	No	2.81	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 16	2.57	-6612.23	-14828	-12486	-11884	2.145	1.8797	-22330	14883	8392	38062	28904	5470	34374		2.89	Si
SLD 16	4.47	2877.66	-24638	-20748	-11634	2.145	2.145	-32242	16250	10457	38062	28904	5470	34374		2.95	Si
SLV 14	2.57	-4979.98	-193	-163	-13881	1.716	0	0	0	0	38062	23123	4376	27499		1.98	Si
SLV 14	4.47	3651.68	-14311	-12052	-13235	2.145	2.145	-18728	14162	9113	38062	28904	5470	34374		2.6	Si
SLV 8	2.57	-12155.28	-39748	-33472	-14325	2.145	2.145	-52016	16250	12023	38062	28904	5470	34374		2.4	Si
SLV 8	4.47	3213.38	-48384	-40745	-14610	2.145	2.145	-63317	16250	13963	38062	28904	5470	34374		2.35	Si
SLV 12	2.57	-13467.5	-33197	-27955	-19669	2.145	2.0004	-47908	16250	10552	38062	28904	5470	34374		1.75	Si
SLV 12	4.47	4689.36	-48591	-40918	-19586	2.145	2.145	-63587	16250	14009	38062	28904	5470	34374		1.75	Si
SLD 12	2.57	-8065.1	-23581	-19858	-11700	2.145	2.145	-30860	16250	10457	38062	28904	5470	34374		2.94	Si
SLD 12	4.47	2697.17	-31865	-26834	-11661	2.145	2.145	-41700	16250	10457	38062	28904	5470	34374		2.95	Si
SLV 13	2.57	-3473.7	-1008	-849	-10530	1.716	0	0	0	0	38062	23123	4376	27499		2.61	Si
SLV 13	4.47	2544.28	-11629	-9793	-9888	2.145	2.145	-15218	13460	8662	38062	28904	5470	34374		3.48	Si
SLV 11	2.57	-12453.37	-33745	-28417	-17412	2.145	2.1104	-46103	16250	10675	38062	28904	5470	34374		1.97	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	4.47	3943.79	-46785	-39398	-17333	2.145	2.145	-61224	16250	13603	38062	28904	5470	34374		1.98	Si
SLV 16	2.57	-9717.45	-11837	-9968	-19682	1.716	0.7546	0	0	0	38062	23123	4376	27499		1.4	Si
SLV 16	4.47	5008.86	-30446	-25639	-19098	2.145	2.145	-39843	16250	10457	38062	28904	5470	34374		1.8	Si
SLV 7	2.57	-11141.15	-40297	-33934	-12069	2.145	2.145	-52733	16250	12146	38062	28904	5470	34374		2.85	Si
SLV 7	4.47	2467.81	-46578	-39224	-12357	2.145	2.145	-60954	16250	13557	38062	28904	5470	34374		2.78	Si
SLV 15	2.57	-8211.17	-12652	-10654	-16331	1.716	1.2704	0	0	0	38062	23123	4376	27499		1.68	Si
SLV 15	4.47	3901.47	-27763	-23380	-15751	2.145	2.145	-36332	16250	10457	38062	28904	5470	34374		2.18	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 5	179667	0.31	0	2281	181.24	0	0	No, Trazione
SLV 10	179667	0.31	0	5682	181.24	0	0	No, Trazione
SLV 9	179667	0.31	0	6068	181.24	0	0	No, Trazione
SLV 6	179667	0.31	0	1895	181.24	0	0	No, Trazione
SLV 13	179667	0.31	8616	-5544	181.24	784.72	4.33	Si
SLV 14	179667	0.31	9507	-6118	181.24	860.52	4.75	Si
SLV 1	179667	0.31	28236	-18170	181.24	2221.59	12.26	Si
SLV 2	179667	0.31	29127	-18743	181.24	2275.28	12.55	Si
SLV 15	179667	0.31	30095	-19366	181.24	2332.46	12.87	Si
SLV 16	179667	0.31	30986	-19939	181.24	2384.06	13.15	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 8	-42157	-35307	690	0.303	4600.8	0.979	4.5047	3.83947	Si
SLV 12	-42252	-29533	602	0.305	4610.4	0.979	4.52593	3.83947	Si
SLV 7	-40651	-35553	691	0.313	4447.3	0.978	4.64358	3.83947	Si
SLV 11	-40746	-29779	603	0.314	4456.9	0.978	4.66526	3.83947	Si
SLV 4	-26018	-28980	353	0.465	2956.9	0.968	6.98095	4.41923	Si
SLV 16	-26333	-9734	58	0.471	2989	0.969	7.06448	4.41923	Si
SLV 3	-23781	-29345	354	0.502	2729.2	0.966	7.54788	4.41923	Si
SLV 15	-24095	-10099	60	0.507	2761.2	0.966	7.63179	4.41923	Si
SLV 14	-12280	1412	-319	0.873	1560.3	0.944	13.44907	4.41923	Si, Trazione
SLV 2	-11965	-17835	-25	0.913	1528.4	0.943	14.07797	4.41923	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.304	SLU 77	Si
V_SLU	2.754	SLU 83	Si
PF_SLV	0	SLV 5	No
V_SLV	1.397	SLV 16	Si
PFFP_SLV	0	SLV 10	No
R_SLV	1.173	SLV 8	Si

Maschio 50

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-22.543	-3.359	-24.678	-3.359	L4	L5	2.135	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 31	2.57	1244.2	-18796	-0.0000555	0.0003743	0.0035	2.135	14281.11	15851.23	15851.23	12.74	No	Si
SLU 31	4.47	145.15	-18197	-0.0000459	0.0003743	0.0035	2.135	14004.58	15461.25	15461.25	106.52	No	Si
SLU 73	2.57	1377.74	-22307	-0.0000662	0.0003743	0.0035	2.135	15666.91	18194.12	18194.12	13.21	No	Si
SLU 73	4.47	309.14	-21206	-0.0000552	0.0003743	0.0035	2.135	15275.72	17457.43	17457.43	56.47	No	Si
SLU 52	2.57	1215.28	-19925	-0.0000584	0.0003743	0.0035	2.135	14770.91	16596.36	16596.36	13.66	No	Si
SLU 52	4.47	448	-18500	-0.0000489	0.0003743	0.0035	2.135	14146.08	15658.5	15658.5	34.95	No	Si
SLU 10	2.57	1081.74	-16414	-0.0000479	0.0003743	0.0035	2.135	13111.25	14318.08	14318.08	13.24	No	Si
SLU 10	4.47	284.01	-15491	-0.0000398	0.0003743	0.0035	2.135	12608.41	13739.12	13739.12	48.38	No	Si
SLU 42	2.57	1235.35	-19905	-0.0000584	0.0003743	0.0035	2.135	14762.55	16582.97	16582.97	13.42	No	Si
SLU 42	4.47	30.69	-19494	-0.0000485	0.0003743	0.0035	2.135	14588.94	16310.45	16310.45	531.39	No	Si
SLU 13	2.57	1091.27	-16690	-0.0000487	0.0003743	0.0035	2.135	13256.67	14493.26	14493.26	13.28	No	Si
SLU 13	4.47	285.13	-15792	-0.0000405	0.0003743	0.0035	2.135	12775.37	13927.33	13927.33	48.85	No	Si
SLU 55	2.57	1224.8	-20202	-0.0000592	0.0003743	0.0035	2.135	14884.52	16780.93	16780.93	13.7	No	Si
SLU 55	4.47	449.12	-18801	-0.0000497	0.0003743	0.0035	2.135	14283.43	15854.57	15854.57	35.3	No	Si
SLU 76	2.57	1387.27	-22584	-0.0000671	0.0003743	0.0035	2.135	15758.94	18361.26	18361.26	13.24	No	Si
SLU 76	4.47	310.26	-21506	-0.000056	0.0003743	0.0035	2.135	15386.44	17661.75	17661.75	56.93	No	Si
SLU 40	2.57	1225.82	-19628	-0.0000576	0.0003743	0.0035	2.135	14646.25	16399.26	16399.26	13.38	No	Si
SLU 40	4.47	29.58	-19193	-0.0000477	0.0003743	0.0035	2.135	14458.41	16112.18	16112.18	544.79	No	Si
SLU 34	2.57	1253.73	-19072	-0.0000563	0.0003743	0.0035	2.135	14404.95	16032.52	16032.52	12.79	No	Si
SLU 34	4.47	146.27	-18498	-0.0000467	0.0003743	0.0035	2.135	14144.91	15656.85	15656.85	107.04	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 3	2.57	5954.13	-16085	-0.0000799	0.0005615	0.0035	2.135		14938.71	14938.71	2.51		Si
SLV 3	4.47	-3724.46	-21869	-0.0000795	0.0005615	0.0035	2.135		20712.63	20712.63	5.56		Si
SLV 16	2.57	-4231.14	-3220	-0.000459	0.0005615	0.0035	1.708		4620.42	4620.42	1.09		Si
SLV 16	4.47	2308.25	-451	-0.0113243	0.0005615	0.0035	2.135		731	731	0.32		No
SLV 12	2.57	-49.49	6604	0.5026795	0.0005615	0.0035	1.708		0	0	0		No
SLV 12	4.47	-2422.14	-225	-0.0008348	0.0005615	0.0035	1.708		1551.12	1551.12	0.64		No
SLV 14	2.57	-4487.98	-15253	-0.0000673	0.0005615	0.0035	2.135		15607.1	15607.1	3.48		Si
SLV 14	4.47	4312.63	-7261	-0.000052	0.0005615	0.0035	2.135		7544.6	7544.6	1.75		Si
SLV 7	2.57	2371.76	2168	0.1449098	0.0005615	0.0035	1.708		0	0	0		No
SLV 7	4.47	-3670.96	-6205	-0.0000439	0.0005615	0.0035	1.708		7545.86	7545.86	2.06		Si
SLV 8	2.57	3515.92	3208	0.2144219	0.0005615	0.0035	1.708		0	0	0		No
SLV 8	4.47	-4682.84	-7009	-0.0000598	0.0005615	0.0035	1.708		8323.26	8323.26	1.78		Si
SLV 4	2.57	7653.54	-14540	-0.0000942	0.0005615	0.0035	2.135		13676.96	13676.96	1.79		Si
SLV 4	4.47	-5227.39	-23062	-0.0000936	0.0005615	0.0035	2.135		21544.91	21544.91	4.12		Si
SLV 11	2.57	-1193.64	5563	0.4282797	0.0005615	0.0035	1.708		0	0	0		No
SLV 11	4.47	-1410.27	578	0.0467652	0.0005615	0.0035	1.708		0	0	0		No
SLV 13	2.57	-6187.39	-16799	-0.0000835	0.0005615	0.0035	2.135		16873.13	16873.13	2.73		Si
SLV 13	4.47	5815.57	-6068	-0.0002136	0.0005615	0.0035	2.135		6401.73	6401.73	1.1		Si
SLV 15	2.57	-5930.55	-4766	-0.0006166	0.0005615	0.0035	1.708		6153.18	6153.18	1.04		Si
SLV 15	4.47	3811.18	742	-0.0233078	0.0005615	0.0035	2.135		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	2.57	1368.89	-23416	-19719	1843	2.135	2.135	-30787	10833	7314	38062	19179	5444	24624	No	13.36	Si
SLU 84	4.47	194.69	-22503	-18950	1748	2.135	2.135	-29586	10833	7109	38062	19179	5444	24624	No	14.08	Si
SLU 41	2.57	1082.1	-19892	-16751	1700	2.135	2.135	-26153	10431	6681	38062	19179	5444	24624	No	14.48	Si
SLU 41	4.47	-20.74	-19480	-16404	1630	2.135	2.135	-25612	10359	6635	38062	19179	5444	24624	No	15.1	Si
SLU 73	2.57	1377.74	-22307	-18785	1683	2.135	2.135	-29329	10833	7065	38062	19179	5444	24624	No	14.63	Si
SLU 73	4.47	309.14	-21206	-17857	1585	2.135	2.135	-27880	10662	6829	38062	19179	5444	24624	No	15.54	Si
SLU 76	2.57	1387.27	-22584	-19018	1701	2.135	2.135	-29692	10833	7127	38062	19179	5444	24624	No	14.47	Si
SLU 76	4.47	310.26	-21506	-18111	1602	2.135	2.135	-28276	10715	6885	38062	19179	5444	24624	No	15.37	Si
SLU 82	2.57	1359.36	-23140	-19486	1824	2.135	2.135	-30423	10833	7252	38062	19179	5444	24624	No	13.5	Si
SLU 82	4.47	193.57	-22202	-18697	1731	2.135	2.135	-29191	10833	7041	38062	19179	5444	24624	No	14.23	Si
SLU 40	2.57	1225.82	-19628	-16529	1742	2.135	2.135	-25806	10385	6652	38062	19179	5444	24624	No	14.14	Si
SLU 40	4.47	29.58	-19193	-16163	1661	2.135	2.135	-25235	10309	6603	38062	19179	5444	24624	No	14.83	Si
SLU 42	2.57	1235.35	-19905	-16762	1760	2.135	2.135	-26170	10434	6683	38062	19179	5444	24624	No	13.99	Si
SLU 42	4.47	30.69	-19494	-16416	1679	2.135	2.135	-25630	10362	6637	38062	19179	5444	24624	No	14.67	Si
SLU 78	2.57	1304.27	-23010	-19377	1693	2.135	2.135	-30252	10833	7222	38062	19179	5444	24624	No	14.55	Si
SLU 78	4.47	275.04	-21967	-18498	1600	2.135	2.135	-28881	10795	6988	38062	19179	5444	24624	No	15.39	Si
SLU 83	2.57	1215.64	-23403	-19708	1783	2.135	2.135	-30769	10833	7311	38062	19179	5444	24624	No	13.81	Si
SLU 83	4.47	143.25	-22489	-18938	1700	2.135	2.135	-29568	10833	7106	38062	19179	5444	24624	No	14.48	Si
SLU 81	2.57	1206.11	-23126	-19475	1764	2.135	2.135	-30406	10833	7249	38062	19179	5444	24624	No	13.96	Si
SLU 81	4.47	142.13	-22188	-18685	1683	2.135	2.135	-29173	10833	7038	38062	19179	5444	24624	No	14.63	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	2.57	-4487.98	-15253	-12845	-8077	2.135	2.135	-20054	14428	9241	38062	28769	5444	34213		4.24	Si
SLV 14	4.47	4312.63	-7261	-6115	-7508	2.135	1.4207	-9547	12326	5253	38062	28769	5444	34213		4.56	Si
SLV 13	2.57	-6187.39	-16799	-14146	-11299	2.135	2.0975	-22744	14966	9417	38062	28769	5444	34213		3.03	Si
SLV 13	4.47	5815.57	-6068	-5110	-10731	2.135	0.3273	-53426	16250	4446	38062	28769	5444	34213		3.19	Si
SLV 2	2.57	7396.7	-26572	-22377	9129	2.135	2.135	-34937	16250	10408	38062	28769	5444	34213		3.75	Si
SLV 2	4.47	-3223.01	-29872	-25155	8332	2.135	2.135	-39275	16250	10408	38062	28769	5444	34213		4.11	Si
SLV 12	2.57	-49.49	6604	5561	6156	1.708	2.135	0	0	0	38062	23015	4355	27371		4.45	Si
SLV 12	4.47	-2422.14	-225	-190	6503	1.708	0	0	0	0	38062	23015	4355	27371		4.21	Si
SLV 3	2.57	5954.13	-16085	-13545	9939	2.135	2.092	-21148	14646	9192	38062	28769	5444	34213		3.44	Si
SLV 3	4.47	-3724.46	-21869	-18416	9260	2.135	2.135	-28753	16167	10355	38062	28769	5444	34213		3.69	Si
SLV 9	2.57	-2049.77	-34546	-29092	-9455	2.135	2.135	-45420	16250	10841	38062	28769	5444	34213		3.62	Si
SLV 9	4.47	5271.01	-22122	-18629	-9504	2.135	2.135	-29085	16234	10398	38062	28769	5444	34213		3.6	Si
SLV 4	2.57	7653.54	-14540	-12244	13161	2.135	1.6233	-19116	14240	6935	38062	28769	5444	34213		2.6	Si
SLV 4	4.47	-5227.39	-23062	-19421	12483	2.135	2.135	-30321	16250	10408	38062	28769	5444	34213		2.74	Si
SLV 15	2.57	-5930.55	-4766	-4013	-7267	1.708	0	0	0	0	38062	23015	4355	27371		3.77	Si
SLV 15	4.47	3811.18	742	625	-6580	2.135	0	0	10340	3083	38062	28769	5444	34213		5.2	Si
SLV 8	2.57	3515.92	3208	2701	11318	1.708	0	0	0	0	38062	23015	4355	27371		2.42	Si
SLV 8	4.47	-4682.84	-7009	-5902	11255	1.708	1.198	0	0	0	38062	23015	4355	27371		2.43	Si
SLV 7	2.57	2371.76	2168	1825	9148	1.708	0	0	0	0	38062	23015	4355	27371		2.99	Si
SLV 7	4.47	-3670.96	-6205	-5226	9085	1.708	1.4277	0	0	0	38062	23015	4355	27371		3.01	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 8	179667	0.31	0	-396	180.4	0	0	No, e>t/2
SLV 7	179667	0.31	0	-703	180.4	0	0	No, e>t/2
SLV 12	179667	0.31	0	4114	180.4	0	0	No, Trazione
SLV 11	179667	0.31	0	3806	180.4	0	0	No, Trazione
SLV 16	179667	0.31	3482	-2230	180.4	326.9	1.81	Si
SLV 15	179667	0.31	4195	-2687	180.4	391.94	2.17	Si
SLV 14	179667	0.31	19112	-12241	180.4	1606.4	8.9	Si
SLV 13	179667	0.31	19825	-12698	180.4	1657.43	9.19	Si
SLV 4	179667	0.31	26951	-17262	180.4	2132.34	11.82	Si
SLV 3	179667	0.31	27664	-17719	180.4	2176.34	12.06	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 2	-25817	-28857	-146	0.474	2935	0.968	7.11058	4.41923	Si
SLV 1	-25175	-29539	-145	0.484	2869.7	0.968	7.26853	4.41923	Si
SLV 6	-27236	-35856	-576	0.438	3079.5	0.97	6.56626	3.83947	Si
SLV 5	-26804	-36315	-576	0.444	3035.5	0.969	6.65804	3.83947	Si
SLV 10	-22024	-30489	-599	0.523	2549	0.964	7.88261	3.83947	Si
SLV 4	-19298	-17587	201	0.603	2271.7	0.96	9.12849	4.41923	Si
SLV 9	-21592	-30949	-598	0.532	2505	0.963	8.02018	3.83947	Si
SLV 3	-18656	-18269	202	0.62	2206.4	0.959	9.40195	4.41923	Si
SLV 14	-8443	-10969	-221	1.184	1170.7	0.929	18.5232	4.41923	Si
SLV 13	-7801	-11651	-220	1.259	1106	0.926	19.76633	4.41923	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	12.74	SLU 31	Si
V_SLU	13.364	SLU 84	Si
PF_SLV	0	SLV 7	No
V_SLV	2.418	SLV 8	Si
PFFP_SLV	0	SLV 12	No
R_SLV	1.609	SLV 2	Si

Maschio 51

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.368	-3.359	-21.543	-3.359	L4	L5	2.175	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 73	3.67	-7115.58	-27917	-0.0001253	0.0003743	0.0035	2.175	17601.54	22273.36	22273.36	3.13	No	Si
SLU 73	4.47	1750.63	-26579	-0.0000795	0.0003743	0.0035	2.175	17340.12	20684.21	20684.21	11.82	No	Si
SLU 80	3.67	-7190.17	-28723	-0.0001286	0.0003743	0.0035	2.175	17730.71	22531.5	22531.5	3.13	No	Si
SLU 80	4.47	1771.23	-27385	-0.000082	0.0003743	0.0035	2.175	17504.59	21047.81	21047.81	11.88	No	Si
SLU 76	3.67	-7203.76	-28304	-0.0001273	0.0003743	0.0035	2.175	17666.25	22396.49	22396.49	3.11	No	Si
SLU 76	4.47	1767.71	-26966	-0.0000808	0.0003743	0.0035	2.175	17421.79	20858.3	20858.3	11.8	No	Si
SLU 82	3.67	-7255.39	-29155	-0.0001306	0.0003743	0.0035	2.175	17791.2	22672.83	22672.83	3.12	No	Si
SLU 82	4.47	1741.53	-27817	-0.0000831	0.0003743	0.0035	2.175	17584.01	21244.71	21244.71	12.2	No	Si
SLU 84	3.67	-7343.57	-29542	-0.0001327	0.0003743	0.0035	2.175	17840.22	22801.22	22801.22	3.1	No	Si
SLU 84	4.47	1758.61	-28204	-0.0000844	0.0003743	0.0035	2.175	17649.99	21422.31	21422.31	12.18	No	Si
SLU 75	3.67	-7149.73	-28550	-0.0001277	0.0003743	0.0035	2.175	17704.81	22475.57	22475.57	3.14	No	Si
SLU 75	4.47	1756.82	-27212	-0.0000814	0.0003743	0.0035	2.175	17471.12	20969.47	20969.47	11.94	No	Si
SLU 83	3.67	-7190.92	-29590	-0.0001316	0.0003743	0.0035	2.175	17845.87	22817.01	22817.01	3.17	No	Si
SLU 83	4.47	1738.27	-28252	-0.0000843	0.0003743	0.0035	2.175	17657.71	21444.08	21444.08	12.34	No	Si
SLU 65	3.67	-6551.92	-25102	-0.0001117	0.0003743	0.0035	2.175	16983.53	20881.63	20881.63	3.19	No	Si
SLU 65	4.47	1740.2	-23764	-0.0000714	0.0003743	0.0035	2.175	16598.79	19440.29	19440.29	11.17	No	Si
SLU 78	3.67	-7237.9	-28938	-0.0001298	0.0003743	0.0035	2.175	17761.5	22601.39	22601.39	3.12	No	Si
SLU 78	4.47	1773.91	-27600	-0.0000827	0.0003743	0.0035	2.175	17544.77	21145.36	21145.36	11.92	No	Si
SLU 68	3.67	-6640.09	-25490	-0.0001136	0.0003743	0.0035	2.175	17083.91	21079.96	21079.96	3.17	No	Si
SLU 68	4.47	1757.29	-24152	-0.0000726	0.0003743	0.0035	2.175	16716.14	19609.23	19609.23	11.16	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	3.67	-9387.26	-23859	-0.0001233	0.0005615	0.0035	2.175		22592.53	22592.53	2.41		Si
SLV 13	4.47	9381.8	-23136	-0.0001215	0.0005615	0.0035	2.175		20836.29	20836.29	2.22		Si
SLV 4	3.67	-301.81	-15002	-0.0000371	0.0005615	0.0035	2.175		15720.34	15720.34	52.09		Si
SLV 4	4.47	-6798.93	-13677	-0.0000803	0.0005615	0.0035	2.175		14589.02	14589.02	2.15		Si
SLV 16	3.67	-5183.88	-10969	-0.0000609	0.0005615	0.0035	2.175		12184.67	12184.67	2.35		Si
SLV 16	4.47	5819.12	-10528	-0.0000676	0.0005615	0.0035	2.175		10730	10730	1.84		Si
SLV 7	3.67	1039.6	-1311	-0.0000147	0.0005615	0.0035	2.175		1668.07	1668.07	1.6		Si
SLV 7	4.47	-2343.51	-625	-0.0005629	0.0005615	0.0035	1.74		1998.31	1998.31	0.85		No
SLV 9	3.67	-11351.69	-38478	-0.0001822	0.0005615	0.0035	2.175		30888.7	30888.7	2.72		Si
SLV 9	4.47	6336.43	-37115	-0.0001391	0.0005615	0.0035	2.175		29312.34	29312.34	4.63		Si
SLV 8	3.67	1662.62	-383	-0.0068699	0.0005615	0.0035	2.175		680.34	680.34	0.41		No
SLV 8	4.47	-3753.55	302	0.0126302	0.0005615	0.0035	1.74		0	0	0		No
SLV 15	3.67	-6109.26	-12346	-0.0000717	0.0005615	0.0035	2.175		13423.03	13423.03	2.2		Si
SLV 15	4.47	7913.45	-11905	-0.0000991	0.0005615	0.0035	2.175		11832.48	11832.48	1.5		Si
SLV 11	3.67	-425.03	-101	-0.0000944	0.0005615	0.0035	1.74		1438.99	1438.99	3.39		Si
SLV 11	4.47	1441.91	319	-0.0056275	0.0005615	0.0035	1.74		0	0	0		No
SLV 12	3.67	198	827	0.0621004	0.0005615	0.0035	1.74		0	0	0		No
SLV 12	4.47	31.86	1247	0	0.0005615	0.0035	1.74		0	0	0		No
SLV 14	3.67	-8461.88	-22482	-0.0001124	0.0005615	0.0035	2.175		21612.5	21612.5	2.55		Si
SLV 14	4.47	7287.48	-21758	-0.0001019	0.0005615	0.0035	2.175		19955.93	19955.93	2.74		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	3.67	-7190.92	-29590	-24918	-11191	2.175	2.175	-38188	10833	8739	38062	19539	5546	25085	No	2.24	Si
SLU 83	4.47	1738.27	-28252	-23791	-11191	2.175	2.175	-36461	10833	8438	38062	19539	5546	25085	No	2.24	Si
SLU 73	3.67	-7115.58	-27917	-23509	-11113	2.175	2.175	-36030	10833	8363	38062	19539	5546	25085	No	2.26	Si
SLU 73	4.47	1750.63	-26579	-22383	-11113	2.175	2.175	-34303	10833	8063	38062	19539	5546	25085	No	2.26	Si
SLU 81	3.67	-7102.74	-29202	-24592	-11060	2.175	2.175	-37688	10833	8652	38062	19539	5546	25085	No	2.27	Si
SLU 81	4.47	1721.18	-27864	-23465	-11060	2.175	2.175	-35961	10833	8351	38062	19539	5546	25085	No	2.27	Si
SLU 84	3.67	-7343.57	-29542	-24878	-11408	2.175	2.175	-38127	10833	8728	38062	19539	5546	25085	No	2.2	Si
SLU 84	4.47	1758.61	-28204	-23751	-11408	2.175	2.175	-36400	10833	8427	38062	19539	5546	25085	No	2.2	Si
SLU 75	3.67	-7149.73	-28550	-24042	-11163	2.175	2.175	-36847	10833	8505	38062	19539	5546	25085	No	2.25	Si
SLU 75	4.47	1756.82	-27212	-22916	-11163	2.175	2.175	-35120	10833	8205	38062	19539	5546	25085	No	2.25	Si
SLU 77	3.67	-7085.25	-28985	-24408	-11078	2.175	2.175	-37407	10833	8603	38062	19539	5546	25085	No	2.26	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	4.47	1753.56	-27647	-23282	-11078	2.175	2.175	-35681	10833	8302	38062	19539	5546	25085	No	2.26	Si
SLU 80	3.67	-7190.17	-28723	-24188	-11232	2.175	2.175	-37070	10833	8544	38062	19539	5546	25085	No	2.23	Si
SLU 80	4.47	1771.23	-27385	-23061	-11232	2.175	2.175	-35343	10833	8243	38062	19539	5546	25085	No	2.23	Si
SLU 78	3.67	-7237.9	-28938	-24368	-11295	2.175	2.175	-37346	10833	8592	38062	19539	5546	25085	No	2.22	Si
SLU 78	4.47	1773.91	-27600	-23242	-11295	2.175	2.175	-35620	10833	8292	38062	19539	5546	25085	No	2.22	Si
SLU 76	3.67	-7203.76	-28304	-23835	-11244	2.175	2.175	-36529	10833	8450	38062	19539	5546	25085	No	2.23	Si
SLU 76	4.47	1767.71	-26966	-22709	-11244	2.175	2.175	-34802	10833	8149	38062	19539	5546	25085	No	2.23	Si
SLU 82	3.67	-7255.39	-29155	-24552	-11276	2.175	2.175	-37627	10833	8641	38062	19539	5546	25085	No	2.22	Si
SLU 82	4.47	1741.53	-27817	-23425	-11276	2.175	2.175	-35900	10833	8340	38062	19539	5546	25085	No	2.22	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	3.67	-9387.26	-23859	-20092	-23262	2.175	2.0822	-32740	16250	10151	38062	29308	5546	34854		1.5	Si
SLV 13	4.47	9381.8	-23136	-19483	-23059	2.175	2.046	-29859	16250	9974	38062	29308	5546	34854		1.51	Si
SLD 13	3.67	-6734.11	-21182	-17837	-14264	2.175	2.175	-27337	15884	10364	38062	29308	5546	34854		2.44	Si
SLD 13	4.47	4732.4	-20285	-17082	-14178	2.175	2.175	-26180	15653	10213	38062	29308	5546	34854		2.46	Si
SLV 14	3.67	-8461.88	-22482	-18932	-19488	2.175	2.1333	-30059	16250	10400	38062	29308	5546	34854		1.79	Si
SLV 14	4.47	7287.48	-21758	-18323	-19284	2.175	2.175	-28081	16033	10461	38062	29308	5546	34854		1.81	Si
SLV 15	3.67	-6109.26	-12346	-10397	-16902	2.175	1.778	-19682	14353	7656	38062	29308	5546	34854		2.06	Si
SLV 15	4.47	7913.45	-11905	-10026	-16615	2.175	1.2684	-15365	13490	5815	38062	29308	5546	34854		2.1	Si
SLV 10	3.67	-10728.66	-37551	-31622	-20174	2.175	2.175	-48463	16250	11573	38062	29308	5546	34854		1.73	Si
SLV 10	4.47	4926.38	-36187	-30474	-20238	2.175	2.175	-46703	16250	11267	38062	29308	5546	34854		1.72	Si
SLD 9	3.67	-7447.76	-27097	-22819	-13831	2.175	2.175	-34971	16250	10603	38062	29308	5546	34854		2.52	Si
SLD 9	4.47	3385.17	-25918	-21825	-13862	2.175	2.175	-33449	16250	10603	38062	29308	5546	34854		2.51	Si
SLV 5	3.67	-9887.07	-39688	-33422	-16414	2.175	2.175	-51221	16250	12053	38062	29308	5546	34854		2.12	Si
SLV 5	4.47	2551.01	-38059	-32050	-16625	2.175	2.175	-49119	16250	11687	38062	29308	5546	34854		2.1	Si
SLV 9	3.67	-11351.69	-38478	-32403	-22715	2.175	2.175	-49659	16250	11781	38062	29308	5546	34854		1.53	Si
SLV 9	4.47	6336.43	-37115	-31255	-22780	2.175	2.175	-47900	16250	11475	38062	29308	5546	34854		1.53	Si
SLV 16	3.67	-5183.88	-10969	-9237	-13127	2.175	1.8447	-16829	13783	7627	38062	29308	5546	34854		2.66	Si
SLV 16	4.47	5819.12	-10528	-8866	-12841	2.175	1.6043	-13587	13134	6321	38062	29308	5546	34854		2.71	Si
SLV 6	3.67	-9264.04	-38761	-32641	-13872	2.175	2.175	-50024	16250	11845	38062	29308	5546	34854		2.51	Si
SLV 6	4.47	1140.97	-37132	-31269	-14084	2.175	2.175	-47922	16250	11479	38062	29308	5546	34854		2.47	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 11	179667	0.31	0	177	183.78	0	0	No, Trazione
SLV 12	179667	0.31	0	589	183.78	0	0	No, Trazione
SLV 8	179667	0.31	2279	-1487	183.78	219.71	1.2	Si
SLV 7	179667	0.31	2909	-1898	183.78	279.3	1.52	Si
SLV 16	179667	0.31	11934	-7787	183.78	1076.77	5.86	Si
SLV 15	179667	0.31	12870	-8398	183.78	1153.52	6.28	Si
SLV 4	179667	0.31	22537	-14705	183.78	1880.29	10.23	Si
SLV 3	179667	0.31	23473	-15316	183.78	1944.32	10.58	Si
SLV 14	179667	0.31	26249	-17127	183.78	2127.51	11.58	Si
SLV 13	179667	0.31	27185	-17738	183.78	2187.08	11.9	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 5	-31368	-22340	-927	0.385	3506	0.973	5.75467	3.83947	Si
SLV 6	-30748	-22346	-927	0.392	3442.9	0.972	5.85426	3.83947	Si
SLV 9	-30128	-19105	-842	0.401	3379.7	0.972	5.99689	3.83947	Si
SLV 10	-29508	-19111	-842	0.408	3316.5	0.971	6.10539	3.83947	Si
SLV 1	-22712	-18495	-422	0.525	2624.7	0.964	7.914	4.41923	Si
SLV 2	-21790	-18505	-422	0.544	2531	0.963	8.20558	4.41923	Si
SLV 13	-18576	-7713	-139	0.635	2204.1	0.958	9.6404	4.41923	Si
SLV 14	-17655	-7722	-138	0.663	2110.4	0.956	10.07914	4.41923	Si
SLV 3	-13922	-11967	96	0.811	1731.2	0.948	12.43504	4.41923	Si
SLV 4	-13000	-11976	96	0.858	1637.8	0.945	13.19226	4.41923	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.105	SLU 84	Si
V_SLU	2.199	SLU 84	Si
PF_SLV	0	SLV 8	No
V_SLV	1.498	SLV 13	Si
PFFP_SLV	0	SLV 12	No
R_SLV	1.499	SLV 5	Si

Maschio 52

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-18.313	-3.359	-18.868	-3.359	L4	L5	0.555	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 75	3.67	-544.69	-11620	-0.0002052	0.0003743	0.0035	0.555	1014.19	1705.36	1705.36	3.13	No	Si
SLU 75	4.47	825.43	-14157	-0.0003177	0.0003743	0.0035	0.555	647.58	1669.41	1669.41	2.02	No	Si
SLU 78	3.67	-551.15	-11761	-0.0002088	0.0003743	0.0035	0.555	999.28	1705.43	1705.43	3.09	No	Si
SLU 78	4.47	838.02	-14329	-0.0003263	0.0003743	0.0035	0.555	615.1	1667.3	1667.3	1.99	No	Si
SLU 79	3.67	-531.45	-11621	-0.0002031	0.0003743	0.0035	0.555	1014.08	1705.37	1705.37	3.21	No	Si
SLU 79	4.47	808.63	-14155	-0.0003137	0.0003743	0.0035	0.555	647.96	1669.43	1669.43	2.06	No	Si
SLU 77	3.67	-533.99	-11706	-0.0002051	0.0003743	0.0035	0.555	1005.24	1705.39	1705.39	3.19	No	Si
SLU 77	4.47	813.92	-14256	-0.0003181	0.0003743	0.0035	0.555	629.05	1668.19	1668.19	2.05	No	Si
SLU 83	3.67	-534.47	-11984	-0.0002103	0.0003743	0.0035	0.555	974.56	1705.7	1705.7	3.19	No	Si
SLU 83	4.47	811.28	-14595	-0.0003286	0.0003743	0.0035	0.555	562.97	1656.27	1656.27	2.04	No	Si
SLU 76	3.67	-553.59	-11572	-0.0002057	0.0003743	0.0035	0.555	1019.04	1705.36	1705.36	3.08	No	Si
SLU 76	4.47	836.19	-14105	-0.0003186	0.0003743	0.0035	0.555	657.21	1670.05	1670.05	2	No	Si
SLU 82	3.67	-545.17	-11898	-0.0002104	0.0003743	0.0035	0.555	984.3	1705.57	1705.57	3.13	No	Si
SLU 82	4.47	822.78	-14497	-0.0003281	0.0003743	0.0035	0.555	582.6	1664.36	1664.36	2.02	No	Si
SLU 80	3.67	-548.61	-11677	-0.0002068	0.0003743	0.0035	0.555	1008.28	1705.38	1705.38	3.11	No	Si
SLU 80	4.47	832.72	-14229	-0.0003217	0.0003743	0.0035	0.555	634.25	1668.53	1668.53	2	No	Si
SLU 73	3.67	-547.13	-11431	-0.0002022	0.0003743	0.0035	0.555	1033.07	1705.42	1705.42	3.12	No	Si
SLU 73	4.47	823.6	-13933	-0.0003104	0.0003743	0.0035	0.555	688.43	1672.2	1672.2	2.03	No	Si
SLU 84	3.67	-551.64	-12040	-0.0002141	0.0003743	0.0035	0.555	968.1	1705.81	1705.81	3.09	No	Si
SLU 84	4.47	835.37	-14669	-0.0003374	0.0003743	0.0035	0.555	548.2	1650.26	1650.26	1.98	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 11	3.67	-390.64	662	0.2673798	0.0005615	0.0035	0.444		0	0	0		No
SLV 11	4.47	72.57	-1593	-0.0000214	0.0005615	0.0035	0.555		437.78	437.78	6.03		Si
SLV 15	3.67	-1246.32	-1912	-0.0115122	0.0005615	0.0035	0.444		565.65	565.65	0.45		No
SLV 15	4.47	1783.34	-4284	-0.055164	0.0005615	0.0035	0.444		1032.38	1032.38	0.58		No
SLV 7	3.67	113.36	-1496	-0.0000245	0.0005615	0.0035	0.555		413.17	413.17	3.64		Si
SLV 7	4.47	-721.62	-3488	-0.0001853	0.0005615	0.0035	0.444		933.79	933.79	1.29		Si
SLV 14	3.67	-1189.85	-6619	-0.000276	0.0005615	0.0035	0.444		1550.84	1550.84	1.3		Si
SLV 14	4.47	1999.44	-8558	-0.0084157	0.0005615	0.0035	0.555		1800.57	1800.57	0.9		No
SLV 10	3.67	-869.54	-14226	-0.0002616	0.0005615	0.0035	0.555		2366.73	2366.73	2.72		Si
SLV 10	4.47	1857.1	-15669	-0.0004994	0.0005615	0.0035	0.555		2433.66	2433.66	1.31		Si
SLV 8	3.67	282.22	-1698	-0.0000517	0.0005615	0.0035	0.555		463.97	463.97	1.64		Si
SLV 8	4.47	-990.97	-3531	-0.0026906	0.0005615	0.0035	0.444		943.33	943.33	0.95		No
SLV 12	3.67	-221.78	459	0.1847593	0.0005615	0.0035	0.444		0	0	0		No
SLV 12	4.47	-196.79	-1637	-0.0000348	0.0005615	0.0035	0.555		497.34	497.34	2.53		Si
SLV 16	3.67	-995.52	-2213	-0.0069663	0.0005615	0.0035	0.444		638.42	638.42	0.64		No
SLV 16	4.47	1383.27	-4349	-0.0233709	0.0005615	0.0035	0.444		1046.19	1046.19	0.76		No
SLV 9	3.67	-1038.39	-14024	-0.0002825	0.0005615	0.0035	0.555		2354.72	2354.72	2.27		Si
SLV 9	4.47	2126.46	-15625	-0.0006948	0.0005615	0.0035	0.555		2433.29	2433.29	1.14		Si
SLV 13	3.67	-1440.65	-6318	-0.0012392	0.0005615	0.0035	0.444		1498.03	1498.03	1.04		Si
SLV 13	4.47	2399.51	-8493	-0.0260818	0.0005615	0.0035	0.444		1791.01	1791.01	0.75		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 79	3.67	-531.45	-11621	-9786	-2183	0.555	0.555	-58775	10833	3144	38062	4986	1415	6401	No	2.93	Si
SLU 79	4.47	808.63	-14155	-11920	-2183	0.555	0.555	-71593	10833	3713	38062	4986	1415	6401	No	2.93	Si
SLU 82	3.67	-545.17	-11898	-10019	-2229	0.555	0.555	-60176	10833	3206	38062	4986	1415	6401	No	2.87	Si
SLU 82	4.47	822.78	-14497	-12208	-2229	0.555	0.555	-73319	10833	3790	38062	4986	1415	6401	No	2.87	Si
SLU 73	3.67	-547.13	-11431	-9626	-2216	0.555	0.555	-57813	10833	3101	38062	4986	1415	6401	No	2.89	Si
SLU 73	4.47	823.6	-13933	-11733	-2215	0.555	0.555	-70471	10833	3663	38062	4986	1415	6401	No	2.89	Si
SLU 75	3.67	-544.69	-11620	-9785	-2221	0.555	0.555	-58770	10833	3144	38062	4986	1415	6401	No	2.88	Si
SLU 75	4.47	825.43	-14157	-11922	-2221	0.555	0.555	-71603	10833	3713	38062	4986	1415	6401	No	2.88	Si
SLU 83	3.67	-534.47	-11984	-10092	-2204	0.555	0.555	-60610	10833	3225	38062	4986	1415	6401	No	2.9	Si
SLU 83	4.47	811.28	-14595	-12291	-2204	0.555	0.555	-73819	10833	3812	38062	4986	1415	6401	No	2.9	Si
SLU 84	3.67	-551.64	-12040	-10139	-2259	0.555	0.555	-60893	10833	3238	38062	4986	1415	6401	No	2.83	Si
SLU 84	4.47	835.37	-14669	-12352	-2258	0.555	0.555	-74189	10833	3828	38062	4986	1415	6401	No	2.83	Si
SLU 80	3.67	-548.61	-11677	-9833	-2238	0.555	0.555	-59058	10833	3156	38062	4986	1415	6401	No	2.86	Si
SLU 80	4.47	832.72	-14229	-11982	-2237	0.555	0.555	-71964	10833	3729	38062	4986	1415	6401	No	2.86	Si
SLU 78	3.67	-551.15	-11761	-9904	-2250	0.555	0.555	-59486	10833	3175	38062	4986	1415	6401	No	2.84	Si
SLU 78	4.47	838.02	-14329	-12067	-2250	0.555	0.555	-72473	10833	3752	38062	4986	1415	6401	No	2.85	Si
SLU 77	3.67	-533.99	-11706	-9857	-2196	0.555	0.555	-59204	10833	3163	38062	4986	1415	6401	No	2.92	Si
SLU 77	4.47	813.92	-14256	-12005	-2195	0.555	0.555	-72103	10833	3736	38062	4986	1415	6401	No	2.92	Si
SLU 76	3.67	-553.59	-11572	-9745	-2245	0.555	0.555	-58529	10833	3133	38062	4986	1415	6401	No	2.85	Si
SLU 76	4.47	836.19	-14105	-11878	-2244	0.555	0.555	-71341	10833	3702	38062	4986	1415	6401	No	2.85	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 13	3.67	-829.55	-7139	-6012	-3110	0.555	0.4839	-42422	16250	2405	38062	7479	1415	8894		2.86	Si
SLD 13	4.47	1342.89	-9054	-7624	-3112	0.555	0.3875	-45791	16250	2835	38062	7479	1415	8894		2.86	Si
SLV 16	3.67	-995.52	-2213	-1863	-3369	0.444	0	0	0	0	38062	5983	1132	7115		2.11	Si
SLV 16	4.47	1383.27	-4349	-3662	-3361	0.444	0	0	0	0	38062	5983	1132	7115		2.12	Si
SLV 9	3.67	-1038.39	-14024	-11810	-4369	0.555	0.555	-70929	16250	3951	38062	7479	1415	8894		2.04	Si
SLV 9	4.47	2126.46	-15625	-13158	-4389	0.555	0.4242	-79029	16250	4310	38062	7479	1415	8894		2.03	Si
SLV 13	3.67	-1440.65	-6318	-5320	-5254	0.444	0.1484	0	0	0	38062	5983	1132	7115		1.35	Si
SLV 13	4.47	2399.51	-8493	-7152	-5258	0.444	0	0	0	0	38062	5983	1132	7115		1.35	Si
SLD 9	3.67	-651.08	-10288	-8664	-2702	0.555	0.555	-52035	16250	3112	38062	7479	1415	8894		3.29	Si
SLD 9	4.47	1207.56	-11959	-10071	-2712	0.555	0.5296	-60484	16250	3487	38062	7479	1415	8894		3.28	Si
SLV 15	3.67	-1246.32	-1912	-1610	-4225	0.444	0	0	0	0	38062	5983	1132	7115		1.68	Si
SLV 15	4.47	1783.34	-4284	-3607	-4217	0.444	0	0	0	0	38062	5983	1132	7115		1.69	Si
SLD 14	3.67	-722.85	-7267	-6120	-2746	0.555	0.5341	-36755	16250	2604	38062	7479	1415	8894		3.24	Si
SLD 14	4.47	1172.69	-9081	-7647	-2748	0.555	0.4451	-45931	16250	2841	38062	7479	1415	8894		3.24	Si
SLV 10	3.67	-869.54	-14226	-11980	-3793	0.555	0.555	-71952	16250	3996	38062	7479	1415	8894		2.34	Si
SLV 10	4.47	1857.1	-15669	-13195	-3813	0.555	0.4769	-79249	16250	4320	38062	7479	1415	8894		2.33	Si
SLV 5	3.67	-534.4	-16181	-13626	-2701	0.555	0.555	-81840	16250	4435	38062	7479	1415	8894		3.29	Si
SLV 5	4.47	1332.27	-17520	-14754	-2722	0.555	0.555	-88610	16250	4736	38062	7479	1415	8894		3.27	Si
SLV 14	3.67	-1189.85	-6619	-5573	-4398	0.444	0.2932	0	0	0	38062	5983	1132	7115		1.62	Si
SLV 14	4.47	1999.44	-8558	-7207	-4403	0.555	0.1316	-220020	16250	2723	38062	7479	1415	8894		2.02	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.31	0	464	46.89	0	0	No, Trazione
SLV 11	179667	0.31	0	1425	46.89	0	0	No, Trazione
SLV 8	179667	0.31	0	524	46.89	0	0	No, Trazione
SLV 12	179667	0.31	0	1486	46.89	0	0	No, Trazione
SLV 16	179667	0.31	14172	-2360	46.89	321.1	6.85	Si
SLV 15	179667	0.31	14710	-2449	46.89	331.99	7.08	Si
SLV 4	179667	0.31	33428	-5566	46.89	652.12	13.91	Si
SLV 3	179667	0.31	33966	-5655	46.89	659.63	14.07	Si
SLV 14	179667	0.31	39820	-6630	46.89	735.19	15.68	Si
SLV 13	179667	0.31	40358	-6720	46.89	741.58	15.81	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 2	-10120	-8221	-169	0.324	1110.2	0.978	4.81039	4.41923	Si
SLV 1	-10112	-8732	-169	0.324	1109.4	0.978	4.81389	4.41923	Si
SLV 6	-11997	-14136	-110	0.286	1301.4	0.981	4.24306	3.83947	Si
SLV 5	-11992	-14480	-110	0.286	1300.9	0.981	4.24482	3.83947	Si
SLV 10	-10727	-14161	-41	0.32	1172	0.979	4.74958	3.83947	Si
SLV 9	-10722	-14505	-41	0.32	1171.5	0.979	4.75177	3.83947	Si
SLV 4	-7240	-3248	-150	0.43	816.8	0.97	6.43957	4.41923	Si
SLV 3	-7232	-3759	-150	0.43	816	0.97	6.44606	4.41923	Si
SLV 14	-5887	-8306	61	0.525	679.1	0.965	7.91659	4.41923	Si
SLV 13	-5879	-8817	61	0.526	678.3	0.965	7.92488	4.41923	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.975	SLU 84	Si
V_SLU	2.834	SLU 84	Si
PF_SLV	0	SLV 11	No
V_SLV	1.353	SLV 13	Si
PFFP_SLV	0	SLV 12	No
R_SLV	1.089	SLV 2	Si

Maschio 54

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.618	1.046	-19.618	5.811	L4	L5	4.765	0.16	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	1.67	16517.84	-75160	-0.0001865	0.0004492	0.0035	4.7652	34597.7	121716.66	121716.66	7.37	No	Si
SLU 79	5.07	-3334.34	-47792	-0.000092	0.0004492	0.0035	4.7652	55451.83	100892.25	100892.25	30.26	No	Si
SLU 80	1.67	16597.27	-74756	-0.0001857	0.0004492	0.0035	4.7652	35184.81	121343.52	121343.52	7.31	No	Si
SLU 80	5.07	-3355.19	-47582	-0.0000917	0.0004492	0.0035	4.7652	55463.72	100599.93	100599.93	29.98	No	Si
SLU 75	1.67	16497.77	-74306	-0.0001843	0.0004492	0.0035	4.7652	35827.28	120928.95	120928.95	7.33	No	Si
SLU 75	5.07	-3332.52	-47207	-0.0000909	0.0004492	0.0035	4.7652	55479.33	100078.75	100078.75	30.03	No	Si
SLU 83	1.67	16790.85	-76670	-0.000191	0.0004492	0.0035	4.7652	32332.17	123109.58	123109.58	7.33	No	Si
SLU 83	5.07	-3495.85	-48705	-0.0000942	0.0004492	0.0035	4.7652	55373.91	102152.63	102152.63	29.22	No	Si
SLU 78	1.67	16734.56	-75345	-0.0001876	0.0004492	0.0035	4.7652	34326.25	121887.42	121887.42	7.28	No	Si
SLU 78	5.07	-3372.11	-48011	-0.0000926	0.0004492	0.0035	4.7652	55437.03	101196.92	101196.92	30.01	No	Si
SLU 77	1.67	16655.13	-75750	-0.0001884	0.0004492	0.0035	4.7652	33726.94	122260.56	122260.56	7.34	No	Si
SLU 77	5.07	-3351.25	-48221	-0.0000929	0.0004492	0.0035	4.7652	55420.53	101489.24	101489.24	30.28	No	Si
SLU 76	1.67	16413.43	-73447	-0.000182	0.0004492	0.0035	4.7652	37026.94	120136.29	120136.29	7.32	No	Si
SLU 76	5.07	-3329.51	-46639	-0.0000898	0.0004492	0.0035	4.7652	55489.33	99286.88	99286.88	29.82	No	Si
SLU 84	1.67	16870.28	-76266	-0.0001903	0.0004492	0.0035	4.7652	32950.51	122736.44	122736.44	7.28	No	Si
SLU 84	5.07	-3516.7	-48495	-0.0000939	0.0004492	0.0035	4.7652	55395.61	101870.57	101870.57	28.97	No	Si
SLU 82	1.67	16633.49	-75227	-0.000187	0.0004492	0.0035	4.7652	34500.45	121777.97	121777.97	7.32	No	Si
SLU 82	5.07	-3477.12	-47691	-0.0000922	0.0004492	0.0035	4.7652	55457.8	100752.39	100752.39	28.98	No	Si
SLU 73	1.67	16176.65	-72408	-0.0001788	0.0004492	0.0035	4.7652	38427.11	119177.82	119177.82	7.37	No	Si
SLU 73	5.07	-3289.92	-45835	-0.0000881	0.0004492	0.0035	4.7652	55475.27	98168.7	98168.7	29.84	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	1.67	12813.2	-3758	-0.0019225	0.0006738	0.0035	4.7652		10960.85	10960.85	0.86		No
SLV 10	5.07	-4389.04	-7647	-0.0000216	0.0006738	0.0035	4.7652		30708.44	30708.44	7		Si
SLD 6	1.67	13151.16	-38484	-0.0000945	0.0006738	0.0035	4.7652		78978.04	78978.04	6.01		Si
SLD 6	5.07	-4465.68	-25196	-0.0000516	0.0006738	0.0035	4.7652		66661.3	66661.3	14.93		Si
SLV 6	1.67	15673.41	-18374	-0.000064	0.0006738	0.0035	4.7652		42570.46	42570.46	2.72		Si
SLV 6	5.07	-7769.58	-14144	-0.0000396	0.0006738	0.0035	4.7652		44559.59	44559.59	5.74		Si
SLV 5	1.67	17647.74	-17960	-0.0000685	0.0006738	0.0035	4.7652		41722.87	41722.87	2.36		Si
SLV 5	5.07	-8166.48	-13617	-0.0000396	0.0006738	0.0035	4.7652		43449.35	43449.35	5.32		Si
SLV 14	1.67	6310.29	-15282	-0.0000385	0.0006738	0.0035	4.7652		36171.31	36171.31	5.73		Si
SLV 14	5.07	2518.47	-15417	-0.0000307	0.0006738	0.0035	4.7652		36453.63	36453.63	14.47		Si
SLD 9	1.67	12751.9	-32066	-0.0000819	0.0006738	0.0035	4.7652		67836.64	67836.64	5.32		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 9	5.07	-3186.12	-22200	-0.0000436	0.0006738	0.0035	4.7652		60927.16	60927.16	19.12		Si
SLV 13	1.67	9242.75	-14666	-0.0000436	0.0006738	0.0035	4.7652		34870.61	34870.61	3.77		Si
SLV 13	5.07	1928.95	-14634	-0.0000281	0.0006738	0.0035	4.7652		34802.79	34802.79	18.04		Si
SLD 10	1.67	11928.92	-32239	-0.0000804	0.0006738	0.0035	4.7652		68136.63	68136.63	5.71		Si
SLD 10	5.07	-3020.68	-22419	-0.0000437	0.0006738	0.0035	4.7652		61367.74	61367.74	20.32		Si
SLV 9	1.67	14787.52	-3343	-0.0039557	0.0006738	0.0035	4.7652		10014.93	10014.93	0.68		No
SLV 9	5.07	-4785.95	-7120	-0.0000215	0.0006738	0.0035	4.7652		29547.95	29547.95	6.17		Si
SLD 5	1.67	13974.13	-38311	-0.000096	0.0006738	0.0035	4.7652		78678.04	78678.04	5.63		Si
SLD 5	5.07	-4631.12	-24976	-0.0000515	0.0006738	0.0035	4.7652		66242.94	66242.94	14.3		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	1.67	16734.56	-75345	-44239	-7586	4.7652	4.7652	-58025	10833	22099	108749	27400	24302	51702	No	6.82	Si
SLU 78	5.07	-3372.11	-48011	-28190	-6418	4.7652	4.7652	-36974	10833	15680	108749	27400	24302	51702	No	8.06	Si
SLU 76	1.67	16413.43	-73447	-43125	-7818	4.7652	4.7652	-56563	10833	21654	108749	27400	24302	51702	No	6.61	Si
SLU 76	5.07	-3329.51	-46639	-27384	-6680	4.7652	4.7652	-35917	10833	15358	108749	27400	24302	51702	No	7.74	Si
SLU 84	1.67	16870.28	-76266	-44780	-7643	4.7652	4.7652	-58733	10833	22316	108749	27400	24302	51702	No	6.76	Si
SLU 84	5.07	-3516.7	-48495	-28474	-6446	4.7652	4.7652	-37346	10833	15793	108749	27400	24302	51702	No	8.02	Si
SLU 55	1.67	14709.09	-65247	-38310	-7474	4.7652	4.7652	-50248	10833	19728	108749	27400	24302	51702	No	6.92	Si
SLU 55	5.07	-2895.41	-41118	-24143	-6506	4.7652	4.7652	-31666	10833	14061	108749	27400	24302	51702	No	7.95	Si
SLU 68	1.67	15223.92	-67500	-39633	-7534	4.7652	4.7652	-51983	10833	20257	108749	27400	24302	51702	No	6.86	Si
SLU 68	5.07	-2860.28	-42635	-25033	-6539	4.7652	4.7652	-32834	10833	14417	108749	27400	24302	51702	No	7.91	Si
SLU 75	1.67	16497.77	-74306	-43629	-7551	4.7652	4.7652	-57225	10833	21855	108749	27400	24302	51702	No	6.85	Si
SLU 75	5.07	-3332.52	-47207	-27718	-6407	4.7652	4.7652	-36355	10833	15491	108749	27400	24302	51702	No	8.07	Si
SLU 65	1.67	14987.13	-66461	-39023	-7499	4.7652	4.7652	-51183	10833	20013	108749	27400	24302	51702	No	6.89	Si
SLU 65	5.07	-2820.7	-41832	-24562	-6529	4.7652	4.7652	-32215	10833	14229	108749	27400	24302	51702	No	7.92	Si
SLU 80	1.67	16597.27	-74756	-43893	-7556	4.7652	4.7652	-57571	10833	21961	108749	27400	24302	51702	No	6.84	Si
SLU 80	5.07	-3355.19	-47582	-27938	-6396	4.7652	4.7652	-36644	10833	15579	108749	27400	24302	51702	No	8.08	Si
SLU 73	1.67	16176.65	-72408	-42515	-7783	4.7652	4.7652	-55763	10833	21410	108749	27400	24302	51702	No	6.64	Si
SLU 73	5.07	-3289.92	-45835	-26913	-6669	4.7652	4.7652	-35299	10833	15169	108749	27400	24302	51702	No	7.75	Si
SLU 82	1.67	16633.49	-75227	-44170	-7608	4.7652	4.7652	-57933	10833	22072	108749	27400	24302	51702	No	6.8	Si
SLU 82	5.07	-3477.12	-47691	-28002	-6436	4.7652	4.7652	-36728	10833	15605	108749	27400	24302	51702	No	8.03	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 9	1.67	12751.9	-32066	-18828	-20962	4.7652	4.7652	-24694	16250	14137	108749	41099	24302	65402		3.12	Si
SLD 9	5.07	-3186.12	-22200	-13035	-19568	4.7652	4.7652	-17096	15919	12137	108749	41099	24302	65402		3.34	Si
SLV 8	1.67	7996.5	-99736	-58561	34115	4.7652	4.7652	-76809	16250	30030	108749	41099	24302	65402		1.92	Si
SLV 8	5.07	422.56	-57636	-33842	33270	4.7652	4.7652	-44387	16250	20143	108749	41099	24302	65402		1.97	Si
SLV 11	1.67	7110.61	-84705	-49735	31842	4.7652	4.7652	-65233	16250	26500	108749	41099	24302	65402		2.05	Si
SLV 11	5.07	3406.19	-50612	-29717	31307	4.7652	4.7652	-38977	16250	18493	108749	41099	24302	65402		2.09	Si
SLV 6	1.67	15673.41	-18374	-10789	-42249	4.7652	4.5887	-14150	15330	11255	108749	41099	24302	65402		1.55	Si
SLV 6	5.07	-7769.58	-14144	-8305	-40226	4.7652	4.7652	-10892	14678	11191	108749	41099	24302	65402		1.63	Si
SLD 10	1.67	11928.92	-32239	-18929	-20511	4.7652	4.7652	-24827	16250	14178	108749	41099	24302	65402		3.19	Si
SLD 10	5.07	-3020.68	-22419	-13164	-19128	4.7652	4.7652	-17265	15953	12163	108749	41099	24302	65402		3.42	Si
SLV 5	1.67	17647.74	-17960	-10545	-43331	4.7652	4.1998	-13831	15266	10824	108749	41099	24302	65402		1.51	Si
SLV 5	5.07	-8166.48	-13617	-7995	-41282	4.7652	4.7652	-10487	14597	11129	108749	41099	24302	65402		1.58	Si
SLV 9	1.67	14787.52	-3343	-1963	-44523	4.7652	0	-67737	16250	7392	108749	41099	24302	65402		1.47	Si
SLV 9	5.07	-4785.95	-7120	-4180	-42189	4.7652	4.7652	-5483	13597	10366	108749	41099	24302	65402		1.55	Si
SLV 10	1.67	12813.2	-3758	-2206	-43441	4.7652	0	-87168	16250	7489	108749	41099	24302	65402		1.51	Si
SLV 10	5.07	-4389.04	-7647	-4490	-41132	4.7652	4.7652	-5889	13678	10428	108749	41099	24302	65402		1.59	Si
SLV 12	1.67	5136.29	-85120	-49978	32923	4.7652	4.7652	-65552	16250	26597	108749	41099	24302	65402		1.99	Si
SLV 12	5.07	3803.09	-51139	-30027	32364	4.7652	4.7652	-39383	16250	18617	108749	41099	24302	65402		2.02	Si
SLV 7	1.67	9970.83	-99322	-58317	33033	4.7652	4.7652	-76489	16250	29933	108749	41099	24302	65402		1.98	Si
SLV 7	5.07	25.66	-57109	-33532	32213	4.7652	4.7652	-43981	16250	20019	108749	41099	24302	65402		2.03	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 3.37 Ta 0.12 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 9	-6659	0.31	230.91	507.32	992.17	749.74	3.25	Si
SLV 10	-7167	0.31	230.91	543.99	1041.27	792.63	3.43	Si
SLV 5	-16656	0.31	230.91	1173.66	1937.52	1555.59	6.74	Si
SLV 13	-16796	0.31	230.91	1182.18	1950.34	1566.26	6.78	Si
SLV 6	-17165	0.31	230.91	1204.5	1984.05	1594.27	6.9	Si
SLV 14	-17552	0.31	230.91	1227.76	2019.45	1623.61	7.03	Si
SLV 15	-35588	0.31	230.91	2121.97	3642.91	2882.44	12.48	Si
SLV 16	-36344	0.31	230.91	2151.3	3709.62	2930.46	12.69	Si
SLV 1	-50120	0.31	230.91	2571.48	4884.02	3727.75	16.14	Si
SLV 2	-50876	0.31	230.91	2588.23	4946.16	3767.2	16.31	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.03 Ta = 0.1207

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 4	-50122	-88413	-913	0.517	5468.7	0.979	7.67981	6.79984	Si
SLV 3	-49339	-87797	-913	0.525	5389	0.979	7.79325	6.79984	Si
SLV 8	-57636	-99736	-307	0.466	6234.4	0.982	6.89395	5.10876	Si
SLV 7	-57109	-99322	-307	0.47	6180.7	0.981	6.9531	5.10876	Si
SLV 2	-37074	-64005	-892	0.682	4139.6	0.973	10.18034	6.79984	Si
SLV 12	-51139	-85120	234	0.521	5572.4	0.98	7.72604	5.10876	Si
SLV 11	-50612	-84705	234	0.526	5518.7	0.979	7.80094	5.10876	Si
SLV 1	-36292	-63389	-892	0.695	4059.9	0.972	10.38494	6.79984	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 16	-28464	-39690	889	0.866	3263	0.966	13.01947	6.79984	Si
SLV 15	-27682	-39075	889	0.887	3183.3	0.965	13.36045	6.79984	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.275	SLU 84	Si
V_SLU	6.613	SLU 76	Si
PF_SLV	0.677	SLV 9	No
V_SLV	1.469	SLV 9	Si
PFFP_SLV	3.247	SLV 9	Si
R_SLV	1.129	SLV 4	Si

Maschio 55

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.618	5.951	-19.618	6.651	L4	L5	0.7	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 80	1.67	-1220.36	-18107	-0.0003101	0.0003743	0.0035	0.7	970.37	2652.22	2652.22	2.17	No	Si
SLU 80	5.07	964.16	-9345	-0.0001472	0.0003743	0.0035	0.7	1841.15	2258.92	2258.92	2.34	No	Si
SLU 75	1.67	-1212.82	-17970	-0.0003057	0.0003743	0.0035	0.7	1003.31	2663.06	2663.06	2.2	No	Si
SLU 75	5.07	954.74	-9273	-0.0001457	0.0003743	0.0035	0.7	1837.89	2248.6	2248.6	2.36	No	Si
SLU 78	1.67	-1231.53	-18275	-0.0003159	0.0003743	0.0035	0.7	929.01	2638.33	2638.33	2.14	No	Si
SLU 78	5.07	972.4	-9444	-0.000149	0.0003743	0.0035	0.7	1845.35	2273.14	2273.14	2.34	No	Si
SLU 77	1.67	-1221.18	-18493	-0.0003199	0.0003743	0.0035	0.7	874.07	2619.75	2619.75	2.15	No	Si
SLU 77	5.07	958.01	-9548	-0.000149	0.0003743	0.0035	0.7	1849.41	2288.01	2288.01	2.39	No	Si
SLU 82	1.67	-1226.3	-18198	-0.0003132	0.0003743	0.0035	0.7	948.04	2644.91	2644.91	2.16	No	Si
SLU 82	5.07	971.87	-9342	-0.0001478	0.0003743	0.0035	0.7	1841.01	2258.47	2258.47	2.32	No	Si
SLU 84	1.67	-1245.02	-18503	-0.0003239	0.0003743	0.0035	0.7	871.46	2618.88	2618.88	2.1	No	Si
SLU 84	5.07	989.53	-9513	-0.0001512	0.0003743	0.0035	0.7	1848.08	2283.03	2283.03	2.31	No	Si
SLU 74	1.67	-1202.47	-18188	-0.0003095	0.0003743	0.0035	0.7	950.55	2645.78	2645.78	2.2	No	Si
SLU 74	5.07	940.35	-9377	-0.0001456	0.0003743	0.0035	0.7	1842.54	2263.49	2263.49	2.41	No	Si
SLU 81	1.67	-1215.96	-18416	-0.0003171	0.0003743	0.0035	0.7	893.65	2626.3	2626.3	2.16	No	Si
SLU 81	5.07	957.49	-9446	-0.0001478	0.0003743	0.0035	0.7	1845.42	2273.42	2273.42	2.37	No	Si
SLU 79	1.67	-1210.01	-18325	-0.0003139	0.0003743	0.0035	0.7	916.63	2634.09	2634.09	2.18	No	Si
SLU 79	5.07	949.78	-9449	-0.0001472	0.0003743	0.0035	0.7	1845.55	2273.87	2273.87	2.39	No	Si
SLU 83	1.67	-1234.67	-18721	-0.0003281	0.0003743	0.0035	0.7	814.89	2600.37	2600.37	2.11	No	Si
SLU 83	5.07	975.15	-9617	-0.0001512	0.0003743	0.0035	0.7	1851.91	2297.83	2297.83	2.36	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	1.67	-834.62	9838	0	0.0005615	0.0035	0.56		0	0	0		No
SLV 10	5.07	1287.86	3530	0.8419631	0.0005615	0.0035	0.56		0	0	0		No
SLV 2	1.67	-3234.44	-9315	-0.0082365	0.0005615	0.0035	0.56		2681.67	2681.67	0.83		No
SLV 2	5.07	2215.18	-1880	-0.0725381	0.0005615	0.0035	0.56		656.53	656.53	0.3		No
SLV 1	1.67	-3688.71	-8533	-0.0117545	0.0005615	0.0035	0.56		2521.3	2521.3	0.68		No

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	5.07	2599.01	-675	-0.1116507	0.0005615	0.0035	0.56		261.52	261.52	0.1		No
SLV 14	1.67	1515.89	-3209	-0.0220896	0.0005615	0.0035	0.56		1066.91	1066.91	0.7		No
SLV 14	5.07	-614.95	-5547	-0.0000804	0.0005615	0.0035	0.7		1809.82	1809.82	2.94		Si
SLV 5	1.67	-2565.56	8533	2.2542151	0.0005615	0.0035	0.56		0	0	0		No
SLV 5	5.07	2395.31	5442	1.2603867	0.0005615	0.0035	0.56		0	0	0		No
SLV 6	1.67	-2259.72	8006	2.1126889	0.0005615	0.0035	0.56		0	0	0		No
SLV 6	5.07	2136.9	4630	1.0621719	0.0005615	0.0035	0.56		0	0	0		No
SLD 9	1.67	-935.01	-3229	-0.0001974	0.0005615	0.0035	0.56		1163.01	1163.01	1.24		Si
SLD 9	5.07	988.75	-2098	-0.0142017	0.0005615	0.0035	0.56		725.88	725.88	0.73		No
SLD 6	1.67	-1416.42	-4231	-0.0011058	0.0005615	0.0035	0.56		1452.58	1452.58	1.03		Si
SLD 6	5.07	1243.8	-1967	-0.0271993	0.0005615	0.0035	0.56		684.05	684.05	0.55		No
SLV 9	1.67	-1140.47	10365	0	0.0005615	0.0035	0.56		0	0	0		No
SLV 9	5.07	1546.27	4341	1.0385305	0.0005615	0.0035	0.56		0	0	0		No
SLD 5	1.67	-1543.9	-4011	-0.002799	0.0005615	0.0035	0.56		1390.81	1390.81	0.9		No
SLD 5	5.07	1351.52	-1629	-0.0368596	0.0005615	0.0035	0.56		575.97	575.97	0.43		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	1.67	-1212.82	-17970	-15132	-2288	0.7	0.7	-72059	10833	4709	38062	6288	1785	8073	No	3.53	Si
SLU 75	5.07	954.74	-9273	-7809	-4055	0.7	0.7	-37184	10833	2756	38062	6288	1785	8073	No	1.99	Si
SLU 81	1.67	-1215.96	-18416	-15508	-2252	0.7	0.7	-73849	10833	4809	38062	6288	1785	8073	No	3.58	Si
SLU 81	5.07	957.49	-9446	-7954	-4058	0.7	0.7	-37877	10833	2795	38062	6288	1785	8073	No	1.99	Si
SLU 78	1.67	-1231.53	-18275	-15389	-2324	0.7	0.7	-73283	10833	4778	38062	6288	1785	8073	No	3.47	Si
SLU 78	5.07	972.4	-9444	-7953	-4127	0.7	0.7	-37870	10833	2795	38062	6288	1785	8073	No	1.96	Si
SLU 79	1.67	-1210.01	-18325	-15431	-2231	0.7	0.7	-73482	10833	4789	38062	6288	1785	8073	No	3.62	Si
SLU 79	5.07	949.78	-9449	-7957	-4021	0.7	0.7	-37890	10833	2796	38062	6288	1785	8073	No	2.01	Si
SLU 83	1.67	-1234.67	-18721	-15765	-2288	0.7	0.7	-75073	10833	4878	38062	6288	1785	8073	No	3.53	Si
SLU 83	5.07	975.15	-9617	-8098	-4130	0.7	0.7	-38563	10833	2833	38062	6288	1785	8073	No	1.95	Si
SLU 82	1.67	-1226.3	-18198	-15325	-2325	0.7	0.7	-72974	10833	4760	38062	6288	1785	8073	No	3.47	Si
SLU 82	5.07	971.87	-9342	-7867	-4129	0.7	0.7	-37460	10833	2772	38062	6288	1785	8073	No	1.96	Si
SLU 76	1.67	-1208.55	-17656	-14868	-2315	0.7	0.7	-70800	10833	4639	38062	6288	1785	8073	No	3.49	Si
SLU 76	5.07	956.09	-9105	-7667	-4067	0.7	0.7	-36509	10833	2718	38062	6288	1785	8073	No	1.99	Si
SLU 84	1.67	-1245.02	-18503	-15582	-2360	0.7	0.7	-74199	10833	4829	38062	6288	1785	8073	No	3.42	Si
SLU 84	5.07	989.53	-9513	-8011	-4200	0.7	0.7	-38146	10833	2810	38062	6288	1785	8073	No	1.92	Si
SLU 77	1.67	-1221.18	-18493	-15573	-2252	0.7	0.7	-74158	10833	4827	38062	6288	1785	8073	No	3.59	Si
SLU 77	5.07	958.01	-9548	-8040	-4057	0.7	0.7	-38286	10833	2818	38062	6288	1785	8073	No	1.99	Si
SLU 80	1.67	-1220.36	-18107	-15248	-2303	0.7	0.7	-72608	10833	4740	38062	6288	1785	8073	No	3.51	Si
SLU 80	5.07	964.16	-9345	-7869	-4091	0.7	0.7	-37473	10833	2772	38062	6288	1785	8073	No	1.97	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	1.67	-1140.47	10365	8728	-6482	0.56	0.7	0	0	0	38062	7546	1428	8974		1.38	Si
SLV 9	5.07	1546.27	4341	3656	-7510	0.56	0	0	0	0	38062	7546	1428	8974		1.19	Si
SLV 5	1.67	-2565.56	8533	7185	-10869	0.56	0.148	0	0	0	38062	7546	1428	8974		0.83	No
SLV 5	5.07	2395.31	5442	4582	-11608	0.56	0	0	0	0	38062	7546	1428	8974		0.77	No
SLD 5	1.67	-1543.9	-4011	-3378	-5329	0.56	0	0	0	0	38062	7546	1428	8974		1.68	Si
SLD 5	5.07	1351.52	-1629	-1371	-6326	0.56	0	0	0	0	38062	7546	1428	8974		1.42	Si
SLV 12	1.67	918.76	-33179	-27940	7870	0.7	0.7	-133049	16250	8461	38062	9433	1785	11218		1.43	Si
SLV 12	5.07	-1139.45	-18176	-15306	6266	0.7	0.7	-72887	16250	5092	38062	9433	1785	11218		1.79	Si
SLV 3	1.67	-3162.7	-21438	-18053	-7757	0.7	0.6074	-110647	16250	5825	38062	9433	1785	11218		1.45	Si
SLV 3	5.07	1870.82	-7187	-6052	-8545	0.7	0.2691	-79364	16250	2625	38062	9433	1785	11218		1.31	Si
SLV 1	1.67	-3688.71	-8533	-7185	-11693	0.56	0	0	0	0	38062	7546	1428	8974		0.77	No
SLV 1	5.07	2599.01	-675	-569	-12305	0.56	0	0	0	0	38062	7546	1428	8974		0.73	No
SLV 2	1.67	-3234.44	-9315	-7844	-9864	0.56	0.0083	0	0	0	38062	7546	1428	8974		0.91	No
SLV 2	5.07	2215.18	-1880	-1584	-10455	0.56	0	0	0	0	38062	7546	1428	8974		0.86	No
SLV 16	1.67	2041.91	-16114	-13569	8694	0.7	0.6698	-64617	16250	4629	38062	9433	1785	11218		1.29	Si
SLV 16	5.07	-1343.14	-12059	-10155	6963	0.7	0.7	-48358	16250	3719	38062	9433	1785	11218		1.61	Si
SLV 6	1.67	-2259.72	8006	6742	-9637	0.56	0.2032	0	0	0	38062	7546	1428	8974		0.93	No
SLV 6	5.07	2136.9	4630	3899	-10362	0.56	0	0	0	0	38062	7546	1428	8974		0.87	No
SLD 1	1.67	-2040.55	-10882	-9164	-5803	0.7	0.4875	-65357	16250	3455	38062	9433	1785	11218		1.93	Si
SLD 1	5.07	1460.69	-4027	-3392	-6738	0.56	0	0	0	0	38062	7546	1428	8974		1.33	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 6	179667	0.31	0	4675	59.15	0	0	No, Trazione
SLV 9	179667	0.31	0	5201	59.15	0	0	No, Trazione
SLV 5	179667	0.31	0	5234	59.15	0	0	No, Trazione
SLV 10	179667	0.31	0	4643	59.15	0	0	No, Trazione
SLV 1	179667	0.31	13619	-2860	59.15	390.74	6.61	Si
SLV 13	179667	0.31	14136	-2969	59.15	404.07	6.83	Si
SLV 2	179667	0.31	17569	-3689	59.15	489.75	8.28	Si
SLV 14	179667	0.31	18086	-3798	59.15	502.25	8.49	Si
SLV 3	179667	0.31	47362	-9946	59.15	1029.22	17.4	Si
SLV 15	179667	0.31	47880	-10055	59.15	1035.35	17.51	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 12	-18176	-33179	9	0.254	1951.7	0.984	3.75355	3.83947	No
SLV 11	-17365	-32652	8	0.264	1869	0.983	3.89652	3.83947	Si
SLV 8	-17076	-35011	16	0.267	1839.5	0.983	3.94434	3.83947	Si
SLV 7	-16265	-34484	15	0.277	1756.9	0.982	4.10607	3.83947	Si
SLV 16	-12059	-16114	-9	0.355	1328.4	0.977	5.28595	4.41923	Si
SLV 15	-10854	-15331	-10	0.388	1205.6	0.974	5.78343	4.41923	Si
SLV 4	-8392	-22220	13	0.481	955	0.968	7.22104	4.41923	Si
SLV 3	-7187	-21438	12	0.548	832.3	0.964	8.26906	4.41923	Si
SLV 14	-5547	-3209	-18	0.681	665.5	0.956	10.35733	4.41923	Si
SLV 13	-4342	-2426	-19	0.835	543.2	0.947	12.81309	4.41923	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.103	SLU 84	Si
V_SLU	1.922	SLU 84	Si
PF_SLV	0	SLV 5	No
V_SLV	0.729	SLV 1	No
PFFP_SLV	0	SLV 10	No
R_SLV	0.978	SLV 12	No

Maschio 56

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-18.448	-3.359	-18.448	1.046	L4	L5	4.406	0.16	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 80	1.67	-2988.12	-74756	-0.0001626	0.0004492	0.0035	4.4057	21748.33	112655.51	112655.51	37.7	No	Si
SLU 80	5.07	3243.94	-45369	-0.0000957	0.0004492	0.0035	4.4057	47297.84	78700	78700	24.26	No	Si
SLU 78	1.67	-3004.26	-75231	-0.0001639	0.0004492	0.0035	4.4057	20973.45	112898.05	112898.05	37.58	No	Si
SLU 78	5.07	3280.66	-45734	-0.0000966	0.0004492	0.0035	4.4057	47251.46	79146.18	79146.18	24.13	No	Si
SLU 81	1.67	-2556.26	-75399	-0.0001628	0.0004492	0.0035	4.4057	20695.35	112984.23	112984.23	44.2	No	Si
SLU 81	5.07	3255.72	-45682	-0.0000964	0.0004492	0.0035	4.4057	47258.43	79083.17	79083.17	24.29	No	Si
SLU 79	1.67	-2557.86	-74180	-0.0001598	0.0004492	0.0035	4.4057	22674.27	112360.84	112360.84	43.93	No	Si
SLU 79	5.07	3239.99	-45182	-0.0000953	0.0004492	0.0035	4.4057	47318.92	78472.02	78472.02	24.22	No	Si
SLU 83	1.67	-2580.13	-76219	-0.000165	0.0004492	0.0035	4.4057	19322.89	113403.11	113403.11	43.95	No	Si
SLU 83	5.07	3323.82	-46321	-0.0000979	0.0004492	0.0035	4.4057	47162.45	79864.75	79864.75	24.03	No	Si
SLU 35	1.67	-2067.44	-63400	-0.0001322	0.0004492	0.0035	4.4057	36858.52	104881.91	104881.91	50.73	No	Si
SLU 35	5.07	2908.16	-38899	-0.0000812	0.0004492	0.0035	4.4057	46989.53	70729.04	70729.04	24.32	No	Si
SLU 84	1.67	-3010.39	-76795	-0.0001679	0.0004492	0.0035	4.4057	18336.83	113697.78	113697.78	37.77	No	Si
SLU 84	5.07	3327.77	-46507	-0.0000983	0.0004492	0.0035	4.4057	47130.52	80092.73	80092.73	24.07	No	Si
SLU 42	1.67	-2503.83	-65541	-0.0001386	0.0004492	0.0035	4.4057	34514.44	106512.71	106512.71	42.54	No	Si
SLU 42	5.07	2959.22	-39860	-0.0000833	0.0004492	0.0035	4.4057	47170.61	71962.39	71962.39	24.32	No	Si
SLU 41	1.67	-2073.57	-64964	-0.0001359	0.0004492	0.0035	4.4057	35168.65	106073.61	106073.61	51.16	No	Si
SLU 41	5.07	2955.27	-39673	-0.0000829	0.0004492	0.0035	4.4057	47139.15	71734.41	71734.41	24.27	No	Si
SLU 77	1.67	-2574	-74654	-0.000161	0.0004492	0.0035	4.4057	21913.39	112603.38	112603.38	43.75	No	Si
SLU 77	5.07	3276.71	-45547	-0.0000961	0.0004492	0.0035	4.4057	47276.01	78918.19	78918.19	24.08	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 8	1.67	9081.68	-35515	-0.0000886	0.0006738	0.0035	4.4057		67422	67422	7.42		Si
SLD 8	5.07	2909.8	-24810	-0.0000521	0.0006738	0.0035	4.4057		50340.25	50340.25	17.3		Si
SLV 6	1.67	-27132.26	-93978	-0.0002743	0.0006738	0.0035	4.4057		138393.8	138393.8	5.1		Si
SLV 6	5.07	-22.22	-49653	-0.0000925	0.0006738	0.0035	4.4057		97827.1	97827.1	4402.16		Si
SLV 7	1.67	24939.73	-13828	-0.0001991	0.0006738	0.0035	4.4057		30323.65	30323.65	1.22		Si
SLV 7	5.07	4330.9	-16327	-0.0000399	0.0006738	0.0035	4.4057		35131.81	35131.81	8.11		Si
SLV 12	1.67	23943.55	-6187	-0.0085663	0.0006738	0.0035	4.4057		15021.08	15021.08	0.63		No
SLV 12	5.07	4013.31	-11202	-0.0000297	0.0006738	0.0035	4.4057		25168.29	25168.29	6.27		Si
SLV 8	1.67	25466.1	-12351	-0.0005869	0.0006738	0.0035	4.4057		27439.67	27439.67	1.08		Si
SLV 8	5.07	4126.11	-15894	-0.0000386	0.0006738	0.0035	4.4057		34304.3	34304.3	8.31		Si
SLV 5	1.67	-27658.62	-95456	-0.00028	0.0006738	0.0035	4.4057		139216.25	139216.25	5.03		Si
SLV 5	5.07	182.56	-50085	-0.0000938	0.0006738	0.0035	4.4057		89584.92	89584.92	490.7		Si
SLV 9	1.67	-29181.17	-89293	-0.0002686	0.0006738	0.0035	4.4057		135785.71	135785.71	4.65		Si
SLV 9	5.07	69.76	-45393	-0.0000842	0.0006738	0.0035	4.4057		83182.95	83182.95	1192.42		Si
SLV 10	1.67	-28654.81	-87815	-0.000263	0.0006738	0.0035	4.4057		134963.26	134963.26	4.71		Si
SLV 10	5.07	-135.03	-44961	-0.0000835	0.0006738	0.0035	4.4057		91322.2	91322.2	676.33		Si
SLD 12	1.67	8431.2	-32882	-0.0000818	0.0006738	0.0035	4.4057		63219.72	63219.72	7.5		Si
SLD 12	5.07	2861.65	-22805	-0.0000482	0.0006738	0.0035	4.4057		47137.65	47137.65	16.47		Si
SLV 11	1.67	23417.18	-7665	-0.0063916	0.0006738	0.0035	4.4057		18048.86	18048.86	0.77		No
SLV 11	5.07	4218.09	-11635	-0.000031	0.0006738	0.0035	4.4057		26023.57	26023.57	6.17		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	1.67	-2550.13	-73835	-43353	9210	4.4057	4.4057	-61501	10833	21412	108749	25333	22469	47802	No	5.19	Si
SLU 74	5.07	3208.6	-44908	-26368	9703	4.4057	4.4057	-37406	10833	14619	108749	25333	22469	47802	No	4.93	Si
SLU 84	1.67	-3010.39	-76795	-45091	9074	4.4057	4.4057	-63967	10833	22108	108749	25333	22469	47802	No	5.27	Si
SLU 84	5.07	3327.77	-46507	-27307	9674	4.4057	4.4057	-38738	10833	14995	108749	25333	22469	47802	No	4.94	Si
SLU 78	1.67	-3004.26	-75231	-44172	8992	4.4057	4.4057	-62663	10833	21740	108749	25333	22469	47802	No	5.32	Si
SLU 78	5.07	3280.66	-45734	-26853	9583	4.4057	4.4057	-38094	10833	14813	108749	25333	22469	47802	No	4.99	Si
SLU 77	1.67	-2574	-74654	-43834	9322	4.4057	4.4057	-62183	10833	21605	108749	25333	22469	47802	No	5.13	Si
SLU 77	5.07	3276.71	-45547	-26743	9820	4.4057	4.4057	-37938	10833	14769	108749	25333	22469	47802	No	4.87	Si
SLU 79	1.67	-2557.86	-74180	-43555	9268	4.4057	4.4057	-61788	10833	21493	108749	25333	22469	47802	No	5.16	Si
SLU 79	5.07	3239.99	-45182	-26529	9762	4.4057	4.4057	-37635	10833	14683	108749	25333	22469	47802	No	4.9	Si
SLU 83	1.67	-2580.13	-76219	-44752	9404	4.4057	4.4057	-63486	10833	21972	108749	25333	22469	47802	No	5.08	Si
SLU 83	5.07	3323.82	-46321	-27198	9910	4.4057	4.4057	-38583	10833	14951	108749	25333	22469	47802	No	4.82	Si
SLU 82	1.67	-2986.51	-75976	-44610	8962	4.4057	4.4057	-63284	10833	21915	108749	25333	22469	47802	No	5.33	Si
SLU 82	5.07	3259.67	-45868	-26932	9557	4.4057	4.4057	-38206	10833	14844	108749	25333	22469	47802	No	5	Si
SLU 75	1.67	-2980.39	-74411	-43691	8881	4.4057	4.4057	-61981	10833	21548	108749	25333	22469	47802	No	5.38	Si
SLU 75	5.07	3212.55	-45094	-26477	9466	4.4057	4.4057	-37561	10833	14663	108749	25333	22469	47802	No	5.05	Si
SLU 80	1.67	-2988.12	-74756	-43894	8938	4.4057	4.4057	-62268	10833	21629	108749	25333	22469	47802	No	5.35	Si
SLU 80	5.07	3243.94	-45369	-26639	9526	4.4057	4.4057	-37790	10833	14727	108749	25333	22469	47802	No	5.02	Si
SLU 81	1.67	-2556.26	-75399	-44271	9292	4.4057	4.4057	-62804	10833	21780	108749	25333	22469	47802	No	5.14	Si
SLU 81	5.07	3255.72	-45682	-26822	9793	4.4057	4.4057	-38051	10833	14801	108749	25333	22469	47802	No	4.88	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	1.67	-29181.17	-89293	-52429	-21069	4.4057	4.4057	-74376	16250	27079	108749	37999	22469	60468		2.87	Si
SLV 9	5.07	69.76	-45393	-26653	-18846	4.4057	4.4057	-37810	16250	16769	108749	37999	22469	60468		3.21	Si
SLD 8	1.67	9081.68	-35515	-20853	17563	4.4057	4.4057	-29583	16250	14449	108749	37999	22469	60468		3.44	Si
SLD 8	5.07	2909.8	-24810	-14567	17135	4.4057	4.4057	-20665	16250	11935	108749	37999	22469	60468		3.53	Si
SLV 10	1.67	-28654.81	-87815	-51561	-20750	4.4057	4.4057	-73145	16250	26732	108749	37999	22469	60468		2.91	Si
SLV 10	5.07	-135.03	-44961	-26399	-18540	4.4057	4.4057	-37450	16250	16667	108749	37999	22469	60468		3.26	Si
SLV 12	1.67	23943.55	-6187	-3633	33822	4.4057	0	-113273	16250	7561	108749	37999	22469	60468		1.79	Si
SLV 12	5.07	4013.31	-11202	-6578	32315	4.4057	4.4057	-9331	14366	10127	108749	37999	22469	60468		1.87	Si
SLV 6	1.67	-27132.26	-93978	-55180	-20482	4.4057	4.4057	-78279	16250	28179	108749	37999	22469	60468		2.95	Si
SLV 6	5.07	-22.22	-49653	-29154	-18307	4.4057	4.4057	-41358	16250	17769	108749	37999	22469	60468		3.3	Si
SLV 5	1.67	-27658.62	-95456	-56048	-20801	4.4057	4.4057	-79510	16250	28526	108749	37999	22469	60468		2.91	Si
SLV 5	5.07	182.56	-50085	-29408	-18614	4.4057	4.4057	-41718	16250	17871	108749	37999	22469	60468		3.25	Si
SLV 11	1.67	23417.18	-7665	-4500	33502	4.4057	0	-129837	16250	7908	108749	37999	22469	60468		1.8	Si
SLV 11	5.07	4218.09	-11635	-6831	32008	4.4057	4.4057	-9691	14438	10178	108749	37999	22469	60468		1.89	Si
SLD 12	1.67	8431.2	-32882	-19307	17448	4.4057	4.4057	-27389	16250	13831	108749	37999	22469	60468		3.47	Si
SLD 12	5.07	2861.65	-22805	-13390	17036	4.4057	4.4057	-18995	16250	11464	108749	37999	22469	60468		3.55	Si
SLV 7	1.67	24939.73	-13828	-8119	33771	4.4057	1.198	-43317	16250	9356	108749	37999	22469	60468		1.79	Si
SLV 7	5.07	4330.9	-16327	-9586	32240	4.4057	4.4057	-13599	15220	10729	108749	37999	22469	60468		1.88	Si
SLV 8	1.67	25466.1	-12351	-7252	34090	4.4057	0.4228	-102786	16250	9009	108749	37999	22469	60468		1.77	Si
SLV 8	5.07	4126.11	-15894	-9332	32547	4.4057	4.4057	-13239	15148	10678	108749	37999	22469	60468		1.86	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 3.37 Ta 0.12 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 12	-9528	0.31	213.49	706.02	1238.04	972.03	4.55	Si
SLV 11	-10506	0.31	213.49	772.15	1330.97	1051.56	4.93	Si
SLV 8	-14911	0.31	213.49	1055.21	1745.6	1400.41	6.56	Si
SLV 7	-15889	0.31	213.49	1114.81	1835.49	1475.15	6.91	Si
SLV 16	-22794	0.31	213.49	1501.79	2466.59	1984.19	9.29	Si
SLV 15	-24247	0.31	213.49	1575.7	2596.43	2086.07	9.77	Si
SLV 14	-39751	0.31	213.49	2201.64	3955.54	3078.59	14.42	Si
SLV 4	-40738	0.31	213.49	2231.4	4039.36	3135.38	14.69	Si

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 13	-41204	0.31	213.49	2245.05	4079.02	3162.03	14.81	Si
SLV 3	-42191	0.31	213.49	2273.03	4162.9	3217.96	15.07	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.03 Ta = 0.1207

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 1	-43848	-74436	-736	0.547	4802.2	0.978	8.12051	6.79984	Si
SLV 2	-43206	-72241	-736	0.554	4736.8	0.978	8.23294	6.79984	Si
SLV 5	-50085	-95456	-337	0.492	5437.6	0.981	7.28809	5.10876	Si
SLV 6	-49653	-93978	-337	0.496	5393.6	0.98	7.34714	5.10876	Si
SLV 3	-33721	-49947	-660	0.696	3770.6	0.973	10.40527	6.79984	Si
SLV 4	-33079	-47753	-661	0.709	3705.2	0.972	10.59345	6.79984	Si
SLV 9	-45393	-89293	81	0.543	4959.6	0.979	8.06742	5.10876	Si
SLV 10	-44961	-87815	81	0.548	4915.6	0.979	8.13975	5.10876	Si
SLV 13	-28209	-53891	657	0.819	3209.4	0.968	12.28836	6.79984	Si
SLV 14	-27567	-51696	657	0.836	3144	0.967	12.5542	6.79984	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	24.028	SLU 83	Si
V_SLU	4.823	SLU 83	Si
PF_SLV	0.627	SLV 12	No
V_SLV	1.774	SLV 8	Si
PFFP_SLV	4.553	SLV 12	Si
R_SLV	1.194	SLV 1	Si

Maschio 58

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-16.383	-3.359	-17.053	-3.359	L4	L5	0.67	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 81	1.67	1160.98	-9381	-0.0001718	0.0004492	0.0035	0.67	1942.29	2283.72	2283.72	1.97	No	Si
SLU 81	3.77	-1072.25	-15329	-0.0002368	0.0004492	0.0035	0.67	1930.07	2900.01	2900.01	2.7	No	Si
SLU 75	1.67	1141.96	-9292	-0.000169	0.0004492	0.0035	0.67	1935.11	2271.85	2271.85	1.99	No	Si
SLU 75	3.77	-1014.33	-14999	-0.0002262	0.0004492	0.0035	0.67	1956	2894.5	2894.5	2.85	No	Si
SLU 83	1.67	1172.3	-9488	-0.000174	0.0004492	0.0035	0.67	1950.57	2297.95	2297.95	1.96	No	Si
SLU 83	3.77	-1076.36	-15484	-0.0002395	0.0004492	0.0035	0.67	1916.82	2901.76	2901.76	2.7	No	Si
SLU 82	1.67	1173.2	-9471	-0.000174	0.0004492	0.0035	0.67	1949.26	2295.66	2295.66	1.96	No	Si
SLU 82	3.77	-1069.66	-15461	-0.0002385	0.0004492	0.0035	0.67	1918.87	2901.49	2901.49	2.71	No	Si
SLU 78	1.67	1153.28	-9399	-0.0001712	0.0004492	0.0035	0.67	1943.65	2286.03	2286.03	1.98	No	Si
SLU 78	3.77	-1018.44	-15155	-0.0002288	0.0004492	0.0035	0.67	1944.15	2897.75	2897.75	2.85	No	Si
SLU 73	1.67	1131.75	-9183	-0.0001669	0.0004492	0.0035	0.67	1926.07	2257.43	2257.43	1.99	No	Si
SLU 73	3.77	-1003.18	-14831	-0.0002228	0.0004492	0.0035	0.67	1968.12	2885.68	2885.68	2.88	No	Si
SLU 80	1.67	1146.24	-9337	-0.0001699	0.0004492	0.0035	0.67	1938.73	2277.79	2277.79	1.99	No	Si
SLU 80	3.77	-1013.13	-15053	-0.0002269	0.0004492	0.0035	0.67	1951.95	2895.77	2895.77	2.86	No	Si
SLU 77	1.67	1141.06	-9309	-0.0001691	0.0004492	0.0035	0.67	1936.51	2274.12	2274.12	1.99	No	Si
SLU 77	3.77	-1021.02	-15023	-0.0002272	0.0004492	0.0035	0.67	1954.25	2895.07	2895.07	2.84	No	Si
SLU 76	1.67	1143.07	-9290	-0.0001691	0.0004492	0.0035	0.67	1934.93	2271.55	2271.55	1.99	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 76	3.77	-1007.29	-14986	-0.0002253	0.0004492	0.0035	0.67	1956.99	2894.16	2894.16	2.87	No	Si
SLU 84	1.67	1184.52	-9578	-0.0001762	0.0004492	0.0035	0.67	1957.28	2309.93	2309.93	1.95	No	Si
SLU 84	3.77	-1073.77	-15616	-0.0002411	0.0004492	0.0035	0.67	1905.06	2903.31	2903.31	2.7	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	1.67	-317.61	1090	0.4346998	0.0006738	0.0035	0.536		0	0	0		No
SLV 12	3.77	-158.64	2085	0	0.0006738	0.0035	0.536		0	0	0		No
SLV 13	1.67	690.36	-8758	-0.0001183	0.0006738	0.0035	0.67		2412.35	2412.35	3.49		Si
SLV 13	3.77	1811.11	-4080	-0.026562	0.0006738	0.0035	0.536		1277.71	1277.71	0.71		No
SLV 11	1.67	-313.76	714	0.2865066	0.0006738	0.0035	0.536		0	0	0		No
SLV 11	3.77	156.43	2808	0	0.0006738	0.0035	0.536		0	0	0		No
SLV 4	1.67	854.92	-3936	-0.0001174	0.0006738	0.0035	0.67		1237.07	1237.07	1.45		Si
SLV 4	3.77	-3175.49	-16066	-0.0005857	0.0006738	0.0035	0.536		3678.09	3678.09	1.16		Si
SLV 8	1.67	-91.02	1066	0.4211538	0.0006738	0.0035	0.536		0	0	0		No
SLV 8	3.77	-1514.77	-2986	-0.0077274	0.0006738	0.0035	0.536		1011.37	1011.37	0.67		No
SLV 3	1.67	860.65	-4495	-0.0001095	0.0006738	0.0035	0.67		1379.58	1379.58	1.6		Si
SLV 3	3.77	-2707.52	-14992	-0.0004262	0.0006738	0.0035	0.536		3533.12	3533.12	1.3		Si
SLV 15	1.67	105.35	-4416	-0.0000405	0.0006738	0.0035	0.67		1360.51	1360.51	12.91		Si
SLV 15	3.77	1812.92	1910	0.5315459	0.0006738	0.0035	0.536		0	0	0		No
SLV 7	1.67	-87.17	690	0.2731908	0.0006738	0.0035	0.536		0	0	0		No
SLV 7	3.77	-1199.7	-2263	-0.0061317	0.0006738	0.0035	0.536		795.32	795.32	0.66		No
SLV 14	1.67	684.64	-8200	-0.0001129	0.0006738	0.0035	0.67		2302.76	2302.76	3.36		Si
SLV 14	3.77	1343.14	-5154	-0.0002704	0.0006738	0.0035	0.67		1540.69	1540.69	1.15		Si
SLV 16	1.67	99.62	-3858	-0.0000357	0.0006738	0.0035	0.67		1214.82	1214.82	12.19		Si
SLV 16	3.77	1344.95	836	-0.0127224	0.0006738	0.0035	0.536		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	1.67	1141.96	-9292	-7825	2496	0.67	0.6363	-38930	10833	2861	38062	7223	1708	8932	No	3.58	Si
SLU 75	3.77	-1014.33	-14999	-12631	2547	0.67	0.67	-62841	10833	4142	38062	7223	1708	8932	No	3.51	Si
SLU 74	1.67	1129.74	-9203	-7750	2453	0.67	0.6367	-38555	10833	2841	38062	7223	1708	8932	No	3.64	Si
SLU 74	3.77	-1016.91	-14868	-12520	2555	0.67	0.67	-62289	10833	4113	38062	7223	1708	8932	No	3.5	Si
SLU 83	1.67	1172.3	-9488	-7990	2536	0.67	0.6343	-39751	10833	2905	38062	7223	1708	8932	No	3.52	Si
SLU 83	3.77	-1076.36	-15484	-13039	2698	0.67	0.67	-64872	10833	4251	38062	7223	1708	8932	No	3.31	Si
SLU 77	1.67	1141.06	-9309	-7839	2481	0.67	0.6373	-39002	10833	2865	38062	7223	1708	8932	No	3.6	Si
SLU 77	3.77	-1021.02	-15023	-12651	2567	0.67	0.67	-62939	10833	4147	38062	7223	1708	8932	No	3.48	Si
SLU 80	1.67	1146.24	-9337	-7863	2508	0.67	0.6367	-39117	10833	2871	38062	7223	1708	8932	No	3.56	Si
SLU 80	3.77	-1013.13	-15053	-12677	2545	0.67	0.67	-63067	10833	4154	38062	7223	1708	8932	No	3.51	Si
SLU 81	1.67	1160.98	-9381	-7900	2507	0.67	0.6337	-39304	10833	2881	38062	7223	1708	8932	No	3.56	Si
SLU 81	3.77	-1072.25	-15329	-12909	2686	0.67	0.67	-64221	10833	4216	38062	7223	1708	8932	No	3.33	Si
SLU 84	1.67	1184.52	-9578	-8065	2579	0.67	0.634	-40126	10833	2925	38062	7223	1708	8932	No	3.46	Si
SLU 84	3.77	-1073.77	-15616	-13150	2690	0.67	0.67	-65424	10833	4281	38062	7223	1708	8932	No	3.32	Si
SLU 79	1.67	1134.02	-9247	-7787	2465	0.67	0.6371	-38742	10833	2851	38062	7223	1708	8932	No	3.62	Si
SLU 79	3.77	-1015.72	-14922	-12566	2553	0.67	0.67	-62515	10833	4125	38062	7223	1708	8932	No	3.5	Si
SLU 78	1.67	1153.28	-9399	-7915	2525	0.67	0.6369	-39377	10833	2885	38062	7223	1708	8932	No	3.54	Si
SLU 78	3.77	-1018.44	-15155	-12762	2559	0.67	0.67	-63491	10833	4177	38062	7223	1708	8932	No	3.49	Si
SLU 82	1.67	1173.2	-9471	-7976	2551	0.67	0.6334	-39680	10833	2901	38062	7223	1708	8932	No	3.5	Si
SLU 82	3.77	-1069.66	-15461	-13019	2678	0.67	0.67	-64774	10833	4246	38062	7223	1708	8932	No	3.34	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	1.67	-91.02	1066	898	-1431	0.536	0.67	0	0	0	38062	8668	1367	10035		7.01	Si
SLV 8	3.77	-1514.77	-2986	-2515	3834	0.536	0	0	0	0	38062	8668	1367	10035		2.62	Si
SLV 4	1.67	854.92	-3936	-3315	306	0.67	0.3534	-16491	15798	2045	38062	10835	1708	12544		40.95	Si
SLV 4	3.77	-3175.49	-16066	-13529	7446	0.536	0.412	0	0	0	38062	8668	1367	10035		1.35	Si
SLV 9	1.67	1636.3	-13761	-11588	4790	0.67	0.6483	-57652	16250	4251	38062	10835	1708	12544		2.62	Si
SLV 9	3.77	150.39	-17160	-14451	-402	0.67	0.67	-71893	16250	5014	38062	10835	1708	12544		31.23	Si
SLV 3	1.67	860.65	-4495	-3785	585	0.67	0.4306	-18831	16250	2170	38062	10835	1708	12544		21.44	Si
SLV 3	3.77	-2707.52	-14992	-12625	6353	0.536	0.4632	0	0	0	38062	8668	1367	10035		1.58	Si
SLV 10	1.67	1632.45	-13385	-11271	4603	0.67	0.6391	-56077	16250	4167	38062	10835	1708	12544		2.73	Si
SLV 10	3.77	-164.68	-17883	-15060	334	0.67	0.67	-74923	16250	5177	38062	10835	1708	12544		37.55	Si
SLV 1	1.67	1445.66	-8837	-7442	2330	0.67	0.5142	-37024	16250	3146	38062	10835	1708	12544		5.38	Si
SLV 1	3.77	-2709.34	-20982	-17669	6225	0.67	0.6176	-87906	16250	5873	38062	10835	1708	12544		2.02	Si
SLV 5	1.67	1862.89	-13784	-11608	4573	0.67	0.5996	-57751	16250	4256	38062	10835	1708	12544		2.74	Si
SLV 5	3.77	-1205.75	-22231	-18720	2670	0.67	0.67	-93137	16250	6153	38062	10835	1708	12544		4.7	Si
SLV 2	1.67	1439.93	-8279	-6971	2051	0.67	0.4832	-34684	16250	3020	38062	10835	1708	12544		6.11	Si
SLV 2	3.77	-3177.3	-22056	-18574	7317	0.67	0.5728	-117504	16250	6114	38062	10835	1708	12544		1.71	Si
SLV 13	1.67	690.36	-8758	-7376	3053	0.67	0.67	-36694	16250	3266	38062	10835	1708	12544		4.11	Si
SLV 13	3.77	1811.11	-4080	-3436	-4014	0.536	0	0	0	0	38062	8668	1367	10035		2.5	Si
SLV 15	1.67	105.35	-4416	-3719	1308	0.67	0.67	-18502	16200	3256	38062	10835	1708	12544		9.59	Si
SLV 15	3.77	1812.92	1910	1609	-3885	0.536	0	0	0	0	38062	8668	1367	10035		2.58	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	215625	0.31	0	1925	56.61	0	0	No, Trazione
SLV 15	215625	0.31	0	1756	56.61	0	0	No, Trazione
SLV 11	215625	0.31	0	2648	56.61	0	0	No, Trazione

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 16	215625	0.31	0	682	56.61	0	0	No, Trazione
SLV 7	215625	0.31	12043	-2421	56.61	339.25	5.99	Si
SLV 8	215625	0.31	15641	-3144	56.61	431.34	7.62	Si
SLV 13	215625	0.31	21034	-4228	56.61	561.4	9.92	Si
SLV 14	215625	0.31	26378	-5302	56.61	680.84	12.03	Si
SLV 6	215625	0.31	114882	-23091	56.61	1292.63	22.83	Si
SLV 5	215625	0.31	111284	-22368	56.61	1318.01	23.28	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 9	-13555	-13761	-85	0.306	1476.5	0.98	4.53452	3.83947	Si
SLV 10	-13123	-13385	-84	0.314	1432.4	0.979	4.66014	3.83947	Si
SLV 5	-12847	-13784	-96	0.319	1404.4	0.979	4.73008	3.83947	Si
SLV 6	-12415	-13408	-96	0.328	1360.4	0.978	4.86926	3.83947	Si
SLV 13	-9778	-8758	-9	0.408	1091.7	0.973	6.09475	4.41923	Si
SLV 14	-9136	-8200	-8	0.432	1026.4	0.971	6.4648	4.41923	Si
SLV 1	-7421	-8837	-48	0.51	851.7	0.966	7.67142	4.41923	Si
SLV 2	-6779	-8279	-47	0.55	786.4	0.963	8.30407	4.41923	Si
SLV 15	-5744	-4416	45	0.633	681.2	0.958	9.60388	4.41923	Si
SLV 16	-5102	-3858	46	0.699	615.9	0.954	10.64808	4.41923	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.95	SLU 84	Si
V_SLU	3.311	SLU 83	Si
PF_SLV	0	SLV 7	No
V_SLV	1.348	SLV 4	Si
PFFP_SLV	0	SLV 16	No
R_SLV	1.181	SLV 9	Si

Maschio 59

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	-3.359	-15.483	-3.359	L4	L5	1.72	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 40	1.67	839.82	-3132	-0.0000175	0.0004492	0.0035	1.72	2560.06	2739.98	2739.98	3.26	No	Si
SLU 40	3.77	-256.07	-12735	-0.0000409	0.0004492	0.0035	1.72	8739.82	10134.9	10134.9	39.58	No	Si
SLU 61	1.67	918.44	-3539	-0.0000195	0.0004492	0.0035	1.72	2872.49	3060.67	3060.67	3.33	No	Si
SLU 61	3.77	-517.52	-12955	-0.0000444	0.0004492	0.0035	1.72	8852.28	10267.81	10267.81	19.84	No	Si
SLU 60	1.67	923.83	-3477	-0.0000194	0.0004492	0.0035	1.72	2825.54	3012.22	3012.22	3.26	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 60	3.77	-522.33	-12840	-0.0000441	0.0004492	0.0035	1.72	8793.82	10198.41	10198.41	19.52	No	Si
SLU 83	1.67	976.16	-3794	-0.0000209	0.0004492	0.0035	1.72	3066.59	3261.6	3261.6	3.34	No	Si
SLU 83	3.77	-392	-14881	-0.0000493	0.0004492	0.0035	1.72	9777.15	11398.41	11398.41	29.08	No	Si
SLU 19	1.67	770.81	-2892	-0.0000161	0.0004492	0.0035	1.72	2372.66	2548.36	2548.36	3.31	No	Si
SLU 19	3.77	-375.71	-10897	-0.0000364	0.0004492	0.0035	1.72	7751.81	8983.46	8983.46	23.91	No	Si
SLU 18	1.67	776.19	-2830	-0.000016	0.0004492	0.0035	1.72	2324.62	2498.89	2498.89	3.22	No	Si
SLU 18	3.77	-380.52	-10782	-0.0000361	0.0004492	0.0035	1.72	7686.9	8910.51	8910.51	23.42	No	Si
SLU 41	1.67	828.53	-3147	-0.0000175	0.0004492	0.0035	1.72	2571.26	2751.41	2751.41	3.32	No	Si
SLU 41	3.77	-250.2	-12823	-0.0000411	0.0004492	0.0035	1.72	8784.81	10187.78	10187.78	40.72	No	Si
SLU 81	1.67	992.84	-3718	-0.0000208	0.0004492	0.0035	1.72	3009.09	3202.18	3202.18	3.23	No	Si
SLU 81	3.77	-402.69	-14678	-0.0000487	0.0004492	0.0035	1.72	9684.41	11282.79	11282.79	28.02	No	Si
SLU 82	1.67	987.45	-3780	-0.000021	0.0004492	0.0035	1.72	3055.64	3250.31	3250.31	3.29	No	Si
SLU 82	3.77	-397.87	-14793	-0.000049	0.0004492	0.0035	1.72	9737.1	11348.24	11348.24	28.52	No	Si
SLU 39	1.67	845.21	-3071	-0.0000174	0.0004492	0.0035	1.72	2512.42	2691.33	2691.33	3.18	No	Si
SLU 39	3.77	-260.88	-12620	-0.0000406	0.0004492	0.0035	1.72	8680.66	10065.92	10065.92	38.58	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 4	1.67	5820.06	-1360	-0.044108	0.0006738	0.0035	1.72		1307.2	1307.2	0.22		No
SLV 4	3.77	-7188.57	1422	0.1436107	0.0006738	0.0035	1.376		0	0	0		No
SLV 3	1.67	5175.73	-1219	-0.0391225	0.0006738	0.0035	1.72		1188.9	1188.9	0.23		No
SLV 3	3.77	-5895.68	-203	-0.0065283	0.0006738	0.0035	1.376		1018.4	1018.4	0.17		No
SLV 7	1.67	2945.94	3491	0.2956499	0.0006738	0.0035	1.376		0	0	0		No
SLV 7	3.77	-1899.79	2277	0.2254461	0.0006738	0.0035	1.376		0	0	0		No
SLD 7	1.67	1606.55	-108	-0.0144061	0.0006738	0.0035	1.72		251.48	251.48	0.16		No
SLD 7	3.77	-1001.78	-4943	-0.0000244	0.0006738	0.0035	1.72		4875.41	4875.41	4.87		Si
SLV 12	1.67	671.95	3736	0.3503128	0.0006738	0.0035	1.376		0	0	0		No
SLV 12	3.77	937.97	-1018	-0.0004102	0.0006738	0.0035	1.376		1020.81	1020.81	1.09		Si
SLD 12	1.67	629.73	-2	-0.005348	0.0006738	0.0035	1.72		160.5	160.5	0.25		No
SLD 12	3.77	220.26	-6363	-0.0000207	0.0006738	0.0035	1.72		5330.59	5330.59	24.2		Si
SLV 8	1.67	3379.74	3395	0.2761318	0.0006738	0.0035	1.376		0	0	0		No
SLV 8	3.77	-2770.25	3371	0.3336246	0.0006738	0.0035	1.376		0	0	0		No
SLV 11	1.67	238.14	3831	0.3628937	0.0006738	0.0035	1.376		0	0	0		No
SLV 11	3.77	1808.44	-2112	-0.0003942	0.0006738	0.0035	1.72		1932.37	1932.37	1.07		Si
SLD 8	1.67	1787.38	-148	-0.0158288	0.0006738	0.0035	1.72		285.25	285.25	0.16		No
SLD 8	3.77	-1364.62	-4487	-0.0000268	0.0006738	0.0035	1.72		4517.56	4517.56	3.31		Si
SLV 15	1.67	-3850.25	-86	-0.0037154	0.0006738	0.0035	1.376		918.82	918.82	0.24		No
SLV 15	3.77	6465.06	-14835	-0.0001234	0.0006738	0.0035	1.72		11135.74	11135.74	1.72		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	1.67	987.45	-3780	-3183	-5241	1.72	1.72	-6168	9156	4724	38062	18544	4386	22930	No	4.37	Si
SLU 82	3.77	-397.87	-14793	-12457	-4194	1.72	1.72	-24142	10833	5590	38062	18544	4386	22930	No	5.47	Si
SLU 79	1.67	897.93	-3751	-3159	-5217	1.72	1.72	-6121	9150	4721	38062	18544	4386	22930	No	4.4	Si
SLU 79	3.77	-367.95	-14538	-12242	-4203	1.72	1.72	-23726	10833	5590	38062	18544	4386	22930	No	5.46	Si
SLU 80	1.67	892.54	-3812	-3210	-5242	1.72	1.72	-6222	9163	4728	38062	18544	4386	22930	No	4.37	Si
SLU 80	3.77	-363.14	-14653	-12339	-4234	1.72	1.72	-23913	10833	5590	38062	18544	4386	22930	No	5.42	Si
SLU 76	1.67	905.62	-3777	-3181	-5192	1.72	1.72	-6165	9155	4724	38062	18544	4386	22930	No	4.42	Si
SLU 76	3.77	-370.62	-14527	-12233	-4191	1.72	1.72	-23707	10833	5590	38062	18544	4386	22930	No	5.47	Si
SLU 84	1.67	970.78	-3856	-3247	-5308	1.72	1.72	-6292	9172	4733	38062	18544	4386	22930	No	4.32	Si
SLU 84	3.77	-387.19	-14996	-12628	-4257	1.72	1.72	-24474	10833	5590	38062	18544	4386	22930	No	5.39	Si
SLU 77	1.67	891.34	-3799	-3199	-5249	1.72	1.72	-6200	9160	4727	38062	18544	4386	22930	No	4.37	Si
SLU 77	3.77	-370.18	-14655	-12341	-4232	1.72	1.72	-23916	10833	5590	38062	18544	4386	22930	No	5.42	Si
SLU 83	1.67	976.16	-3794	-3195	-5282	1.72	1.72	-6192	9159	4726	38062	18544	4386	22930	No	4.34	Si
SLU 83	3.77	-392	-14881	-12531	-4227	1.72	1.72	-24286	10833	5590	38062	18544	4386	22930	No	5.43	Si
SLU 75	1.67	902.62	-3785	-3187	-5207	1.72	1.72	-6176	9157	4725	38062	18544	4386	22930	No	4.4	Si
SLU 75	3.77	-376.05	-14567	-12267	-4199	1.72	1.72	-23773	10833	5590	38062	18544	4386	22930	No	5.46	Si
SLU 78	1.67	885.95	-3860	-3251	-5274	1.72	1.72	-6300	9173	4733	38062	18544	4386	22930	No	4.35	Si
SLU 78	3.77	-365.37	-14770	-12438	-4263	1.72	1.72	-24104	10833	5590	38062	18544	4386	22930	No	5.38	Si
SLU 81	1.67	992.84	-3718	-3131	-5216	1.72	1.72	-6068	9142	4717	38062	18544	4386	22930	No	4.4	Si
SLU 81	3.77	-402.69	-14678	-12360	-4163	1.72	1.72	-23954	10833	5590	38062	18544	4386	22930	No	5.51	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	1.67	-3205.92	-227	-191	-10505	1.376	0	0	0	0	38062	22252	3509	25761		2.45	Si
SLV 16	3.77	5172.17	-13210	-11124	-8605	1.72	1.4054	-21559	16250	6851	38062	27816	4386	32202		3.74	Si
SLD 16	1.67	-1014.69	-1611	-1357	-6578	1.376	0.6903	0	0	0	38062	22252	3509	25761		3.92	Si
SLD 16	3.77	2031.74	-11372	-9577	-5352	1.72	1.72	-18559	16212	8365	38062	27816	4386	32202		6.02	Si
SLV 4	1.67	5820.06	-1360	-1145	6511	1.72	0	0	16250	3286	38062	27816	4386	32202		4.95	Si
SLV 4	3.77	-7188.57	1422	1197	6209	1.376	0	0	0	0	38062	22252	3509	25761		4.15	Si
SLV 13	1.67	-4556.57	-3802	-3202	-13734	1.376	0	0	0	0	38062	22252	3509	25761		1.88	Si
SLV 13	3.77	6567.19	-21123	-17788	-11987	1.72	1.6473	-34472	16250	8030	38062	27816	4386	32202		2.69	Si
SLD 15	1.67	-1288.8	-1551	-1306	-7266	1.376	0.0869	0	0	0	38062	22252	3509	25761		3.55	Si
SLD 15	3.77	2581.77	-12063	-10159	-6065	1.72	1.72	-19687	16250	8385	38062	27816	4386	32202		5.31	Si
SLD 13	1.67	-1580.64	-3066	-2582	-7918	1.376	1.0336	0	0	0	38062	22252	3509	25761		3.25	Si
SLD 13	3.77	2629.81	-14582	-12280	-6756	1.72	1.72	-23798	16250	8385	38062	27816	4386	32202		4.77	Si
SLV 14	1.67	-3912.23	-3943	-3320	-12116	1.376	0	0	0	0	38062	22252	3509	25761		2.13	Si
SLV 14	3.77	5274.3	-19498	-16419	-10311	1.72	1.72	-31820	16250	8385	38062	27816	4386	32202		3.12	Si
SLV 10	1.67	-1682.44	-8653	-7286	-8305	1.72	1.72	-14121	15324	7907	38062	27816	4386	32202		3.88	Si
SLV 10	3.77	1278.41	-21978	-18508	-7390	1.72	1.72	-35868	16250	8385	38062	27816	4386	32202		4.36	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	1.67	-3850.25	-86	-72	-12122	1.376	0	0	0	0	38062	22252	3509	25761		2.13	Si
SLV 15	3.77	6465.06	-14835	-12492	-10281	1.72	1.2726	-24210	16250	6312	38062	27816	4386	32202		3.13	Si
SLV 9	1.67	-2116.25	-8558	-7206	-9394	1.72	1.72	-13966	15293	7891	38062	27816	4386	32202		3.43	Si
SLV 9	3.77	2148.87	-23072	-19429	-8519	1.72	1.72	-37653	16250	8385	38062	27816	4386	32202		3.78	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 7	215625	0.31	0	2250	145.33	0	0	No, Trazione
SLV 12	215625	0.31	0	-399	145.33	0	0	No, e>t/2
SLV 8	215625	0.31	0	3162	145.33	0	0	No, Trazione
SLV 3	215625	0.31	0	-831	145.33	0	0	No, e>t/2
SLV 4	215625	0.31	0	524	145.33	0	0	No, Trazione
SLV 11	215625	0.31	2541	-1311	145.33	193.96	1.33	Si
SLV 2	215625	0.31	10635	-5488	145.33	775.41	5.34	Si
SLV 1	215625	0.31	13261	-6843	145.33	952.17	6.55	Si
SLV 16	215625	0.31	21988	-11346	145.33	1497.72	10.31	Si
SLV 15	215625	0.31	24614	-12701	145.33	1649.3	11.35	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-21050	-8993	-299	0.461	2390.2	0.969	6.9157	3.83947	Si
SLV 5	-20937	-8898	-299	0.463	2378.7	0.968	6.94844	3.83947	Si
SLV 10	-20012	-8653	-233	0.484	2284.4	0.967	7.27291	3.83947	Si
SLV 9	-19899	-8558	-233	0.486	2272.9	0.967	7.30921	3.83947	Si
SLV 2	-15486	-5077	-191	0.603	1823.9	0.96	9.13418	4.41923	Si
SLV 1	-15318	-4935	-190	0.609	1806.9	0.959	9.22228	4.41923	Si
SLV 14	-12023	-3943	31	0.757	1472	0.951	11.56979	4.41923	Si
SLV 13	-11855	-3802	32	0.766	1454.9	0.951	11.71131	4.41923	Si
SLV 4	-9654	-1360	-31	0.908	1231.6	0.943	13.98805	4.41923	Si
SLV 3	-9486	-1219	-30	0.921	1214.6	0.942	14.20125	4.41923	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.184	SLU 39	Si
V_SLU	4.32	SLU 84	Si
PF_SLV	0	SLV 4	No
V_SLV	1.876	SLV 13	Si
PFFP_SLV	0	SLV 8	No
R_SLV	1.801	SLV 6	Si

Maschio 63

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-15.058	2.206	-15.058	6.651	L4	L5	4.445	0.16	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 82	1.67	2943.37	-85800	-0.0001891	0.0004492	0.0035	4.445	2414.06	116415.99	116415.99	39.55	No	Si
SLU 82	3.77	-11971.37	-64282	-0.0001638	0.0004492	0.0035	4.445	37184.98	106894.11	106894.11	8.93	No	Si
SLU 81	1.67	3257.72	-86269	-0.0001915	0.0004492	0.0035	4.445	1392.27	116634.74	116634.74	35.8	No	Si
SLU 81	3.77	-12256.9	-64795	-0.000166	0.0004492	0.0035	4.445	36631.21	107291.66	107291.66	8.75	No	Si
SLU 75	1.67	2746.01	-84694	-0.0001854	0.0004492	0.0035	4.445	4777.9	115900.4	115900.4	42.21	No	Si
SLU 75	3.77	-11822.54	-63492	-0.0001614	0.0004492	0.0035	4.445	38010.12	106282.87	106282.87	8.99	No	Si
SLU 77	1.67	3205.29	-86355	-0.0001915	0.0004492	0.0035	4.445	1202.4	116675.12	116675.12	36.4	No	Si
SLU 77	3.77	-12263.26	-64975	-0.0001665	0.0004492	0.0035	4.445	36433.59	107431.23	107431.23	8.76	No	Si
SLU 80	1.67	2824.99	-85203	-0.0001871	0.0004492	0.0035	4.445	3698.17	116137.6	116137.6	41.11	No	Si
SLU 80	3.77	-11901.89	-63927	-0.0001627	0.0004492	0.0035	4.445	37559.06	106619.92	106619.92	8.96	No	Si
SLU 83	1.67	3402.66	-87461	-0.0001952	0.0004492	0.0035	4.445	0	117190.71	117190.71	34.44	No	Si
SLU 83	3.77	-12412.1	-65764	-0.0001689	0.0004492	0.0035	4.445	35548.58	108042.47	108042.47	8.7	No	Si
SLU 78	1.67	2890.95	-85886	-0.0001891	0.0004492	0.0035	4.445	2226.27	116456.37	116456.37	40.28	No	Si
SLU 78	3.77	-11977.74	-64462	-0.0001643	0.0004492	0.0035	4.445	36992.09	107033.69	107033.69	8.94	No	Si
SLU 74	1.67	3060.35	-85163	-0.0001878	0.0004492	0.0035	4.445	3782.64	116119.15	116119.15	37.94	No	Si
SLU 74	3.77	-12108.06	-64006	-0.0001635	0.0004492	0.0035	4.445	37477.07	106680.42	106680.42	8.81	No	Si
SLU 84	1.67	3088.32	-86992	-0.0001928	0.0004492	0.0035	4.445	0	116971.96	116971.96	37.88	No	Si
SLU 84	3.77	-12126.58	-65251	-0.0001667	0.0004492	0.0035	4.445	36127.82	107644.92	107644.92	8.88	No	Si
SLU 79	1.67	3139.33	-85672	-0.0001894	0.0004492	0.0035	4.445	2690.71	116356.35	116356.35	37.06	No	Si
SLU 79	3.77	-12187.42	-64441	-0.0001649	0.0004492	0.0035	4.445	37014.58	107017.47	107017.47	8.78	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 8	1.67	32495.15	-105527	-0.0003201	0.0006738	0.0035	4.445		142986.22	142986.22	4.4		Si
SLV 8	3.77	-31023.7	-92671	-0.0002797	0.0006738	0.0035	4.445		139572.41	139572.41	4.5		Si
SLV 16	1.67	6595.28	-71527	-0.0001548	0.0006738	0.0035	4.445		117321.97	117321.97	17.79		Si
SLV 16	3.77	-20381.58	-59813	-0.0001684	0.0006738	0.0035	4.445		111824.8	111824.8	5.49		Si
SLV 11	1.67	30672.87	-104648	-0.0003113	0.0006738	0.0035	4.445		142544.03	142544.03	4.65		Si
SLV 11	3.77	-33296.44	-93119	-0.0002883	0.0006738	0.0035	4.445		139826.07	139826.07	4.2		Si
SLV 7	1.67	32859.55	-105337	-0.0003208	0.0006738	0.0035	4.445		142890.62	142890.62	4.35		Si
SLV 7	3.77	-30600.47	-92466	-0.0002777	0.0006738	0.0035	4.445		139456.03	139456.03	4.56		Si
SLV 6	1.67	-27715.21	-12515	-0.0003878	0.0006738	0.0035	3.556		37128.01	37128.01	1.34		Si
SLV 6	3.77	16365.09	5397	-0.0155058	0.0006738	0.0035	4.445		0	0	0		No
SLV 9	1.67	-29537.49	-11636	-0.0005723	0.0006738	0.0035	3.556		35398.74	35398.74	1.2		Si
SLV 9	3.77	14092.35	4949	-0.0135768	0.0006738	0.0035	4.445		0	0	0		No
SLV 15	1.67	7136.53	-71244	-0.0001557	0.0006738	0.0035	4.445		117073.66	117073.66	16.4		Si
SLV 15	3.77	-19752.96	-59508	-0.0001659	0.0006738	0.0035	4.445		111452.14	111452.14	5.64		Si
SLV 12	1.67	30308.46	-104838	-0.0003106	0.0006738	0.0035	4.445		142639.63	142639.63	4.71		Si
SLV 12	3.77	-33719.67	-93324	-0.0002902	0.0006738	0.0035	4.445		139942.46	139942.46	4.15		Si
SLV 10	1.67	-29901.9	-11826	-0.0005773	0.0006738	0.0035	3.556		35772.61	35772.61	1.2		Si
SLV 10	3.77	13669.12	4743	-0.0130904	0.0006738	0.0035	4.445		0	0	0		No
SLV 5	1.67	-27350.8	-12325	-0.000384	0.0006738	0.0035	3.556		36754.14	36754.14	1.34		Si
SLV 5	3.77	16788.32	5602	-0.0159879	0.0006738	0.0035	4.445		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	1.67	3205.29	-86355	-50704	-10651	4.445	4.445	-71294	10833	24389	108749	25559	22670	48228	No	4.53	Si
SLU 77	3.77	-12263.26	-64975	-38151	-11345	4.445	4.445	-53643	10833	19368	108749	25559	22670	48228	No	4.25	Si
SLU 82	1.67	2943.37	-85800	-50378	-11063	4.445	4.445	-70835	10833	24259	108749	25559	22670	48228	No	4.36	Si
SLU 82	3.77	-11971.37	-64282	-37743	-11753	4.445	4.445	-53070	10833	19205	108749	25559	22670	48228	No	4.1	Si
SLU 78	1.67	2890.95	-85886	-50429	-10986	4.445	4.445	-70906	10833	24279	108749	25559	22670	48228	No	4.39	Si
SLU 78	3.77	-11977.74	-64462	-37849	-11676	4.445	4.445	-53219	10833	19247	108749	25559	22670	48228	No	4.13	Si
SLU 75	1.67	2746.01	-84694	-49729	-10901	4.445	4.445	-69922	10833	23999	108749	25559	22670	48228	No	4.42	Si
SLU 75	3.77	-11822.54	-63492	-37280	-11580	4.445	4.445	-52418	10833	19020	108749	25559	22670	48228	No	4.16	Si
SLU 83	1.67	3402.66	-87461	-51353	-10812	4.445	4.445	-72206	10833	24649	108749	25559	22670	48228	No	4.46	Si
SLU 83	3.77	-12412.1	-65764	-38614	-11518	4.445	4.445	-54294	10833	19553	108749	25559	22670	48228	No	4.19	Si
SLU 76	1.67	2470.48	-83698	-49144	-11039	4.445	4.445	-69100	10833	23765	108749	25559	22670	48228	No	4.37	Si
SLU 76	3.77	-11556.34	-62616	-36765	-11708	4.445	4.445	-51695	10833	18814	108749	25559	22670	48228	No	4.12	Si
SLU 80	1.67	2824.99	-85203	-50027	-10900	4.445	4.445	-70342	10833	24119	108749	25559	22670	48228	No	4.42	Si
SLU 80	3.77	-11901.89	-63927	-37535	-11584	4.445	4.445	-52778	10833	19122	108749	25559	22670	48228	No	4.16	Si
SLU 84	1.67	3088.32	-86992	-51078	-11148	4.445	4.445	-71819	10833	24539	108749	25559	22670	48228	No	4.33	Si
SLU 84	3.77	-12126.58	-65251	-38313	-11849	4.445	4.445	-53870	10833	19433	108749	25559	22670	48228	No	4.07	Si
SLU 73	1.67	2325.54	-82505	-48444	-10954	4.445	4.445	-68115	10833	23485	108749	25559	22670	48228	No	4.4	Si
SLU 73	3.77	-11401.14	-61646	-36196	-11612	4.445	4.445	-50894	10833	18586	108749	25559	22670	48228	No	4.15	Si
SLU 81	1.67	3257.72	-86269	-50653	-10727	4.445	4.445	-71222	10833	24369	108749	25559	22670	48228	No	4.5	Si
SLU 81	3.77	-12256.9	-64795	-38045	-11422	4.445	4.445	-53494	10833	19326	108749	25559	22670	48228	No	4.22	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	1.67	30672.87	-104648	-61445	22846	4.445	4.445	-86396	16250	30740	108749	38338	22670	61008		2.67	Si
SLV 11	3.77	-33296.44	-93119	-54675	21342	4.445	4.445	-76878	16250	28032	108749	38338	22670	61008		2.86	Si
SLV 6	1.67	-27715.21	-12515	-7348	-37623	3.556	0.0236	0	0	0	108749	30671	18136	48806		1.3	Si
SLV 6	3.77	16365.09	5397	3169	-37041	4.445	0	126353	3969	6163	108749	38338	22670	61008		1.65	Si
SLV 8	1.67	32495.15	-105527	-61961	21255	4.445	4.445	-87121	16250	30946	108749	38338	22670	61008		2.87	Si
SLV 8	3.77	-31023.7	-92671	-54412	19737	4.445	4.445	-76508	16250	27927	108749	38338	22670	61008		3.09	Si
SLD 6	1.67	-10108.5	-40194	-23600	-19491	4.445	4.445	-33183	16250	15602	108749	38338	22670	61008		3.13	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 6	3.77	1500.25	-24188	-14202	-19536	4.445	4.445	-19969	16250	11843	108749	38338	22670	61008		3.12	Si
SLV 12	1.67	30308.46	-104838	-61556	22890	4.445	4.445	-86553	16250	30784	108749	38338	22670	61008		2.67	Si
SLV 12	3.77	-33719.67	-93324	-54796	21386	4.445	4.445	-77047	16250	28080	108749	38338	22670	61008		2.85	Si
SLV 9	1.67	-29537.49	-11636	-6832	-36032	3.556	0	0	0	0	108749	30671	18136	48806		1.35	Si
SLV 9	3.77	14092.35	4949	2906	-35436	4.445	0	116886	5948	6163	108749	38338	22670	61008		1.72	Si
SLV 5	1.67	-27350.8	-12325	-7236	-37667	3.556	0.0099	0	0	0	108749	30671	18136	48806		1.3	Si
SLV 5	3.77	16788.32	5602	3289	-37085	4.445	0	131133	3028	6163	108749	38338	22670	61008		1.65	Si
SLD 5	1.67	-9956.6	-40115	-23554	-19509	4.445	4.445	-33118	16250	15584	108749	38338	22670	61008		3.13	Si
SLD 5	3.77	1676.66	-24103	-14152	-19554	4.445	4.445	-19899	16250	11823	108749	38338	22670	61008		3.12	Si
SLV 7	1.67	32859.55	-105337	-61849	21211	4.445	4.445	-86965	16250	30901	108749	38338	22670	61008		2.88	Si
SLV 7	3.77	-30600.47	-92466	-54292	19693	4.445	4.445	-76338	16250	27878	108749	38338	22670	61008		3.1	Si
SLV 10	1.67	-29901.9	-11826	-6944	-35988	3.556	0	0	0	0	108749	30671	18136	48806		1.36	Si
SLV 10	3.77	13669.12	4743	2785	-35392	4.445	0	112132	6896	6163	108749	38338	22670	61008		1.72	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 3.37 Ta 0.12 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 9	4257	0.31	215.39	0	0	0	0	No
SLV 6	4701	0.31	215.39	0	0	0	0	No
SLV 5	4906	0.31	215.39	0	0	0	0	No
SLV 10	4052	0.31	215.39	0	0	0	0	No
SLV 1	-28505	0.31	215.39	1781.73	2977.41	2379.57	11.05	Si
SLV 2	-28810	0.31	215.39	1795.41	3004.62	2400.01	11.14	Si
SLV 13	-30669	0.31	215.39	1876.26	3170.46	2523.36	11.72	Si
SLV 14	-30974	0.31	215.39	1889.13	3197.69	2543.41	11.81	Si
SLV 3	-57836	0.31	215.39	2573.93	5458.89	4016.41	18.65	Si
SLV 4	-58141	0.31	215.39	2576.63	5482.75	4029.69	18.71	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.03 Ta = 0.1207

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 12	-65398	-104838	277	0.39	7001.1	0.985	5.75137	5.10876	Si
SLV 11	-65333	-104648	277	0.39	6994.4	0.985	5.75667	5.10876	Si
SLV 8	-64702	-105527	-284	0.393	6930.1	0.985	5.80703	5.10876	Si
SLV 7	-64637	-105337	-284	0.394	6923.4	0.984	5.81246	5.10876	Si
SLV 16	-41288	-71527	935	0.578	4544.4	0.977	8.59462	6.79984	Si
SLV 15	-41191	-71244	935	0.579	4534.5	0.977	8.61347	6.79984	Si
SLV 4	-38966	-73822	-937	0.609	4307.9	0.976	9.07024	6.79984	Si
SLV 3	-38869	-73540	-937	0.61	4298	0.976	9.09137	6.79984	Si
SLV 14	-19912	-43623	937	1.114	2368.3	0.957	16.90588	6.79984	Si
SLV 13	-19815	-43341	937	1.119	2358.4	0.957	16.9817	6.79984	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.705	SLU 83	Si
V_SLU	4.07	SLU 84	Si
PF_SLV	0	SLV 5	No
V_SLV	1.296	SLV 5	Si
PFFP_SLV	0	SLV 5	No
R_SLV	1.126	SLV 12	Si

Maschio 64

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	-4.784	-13.763	-3.314	L4	Z medio 275 cm	1.47	0.3	1.08	1.08	1.08			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 21	1.67	-439.75	-21223	-0.0000878	0.0003743	0.0035	1.47	8225.5	10654.56	10654.56	24.23	No	Si
SLU 21	2.75	572.31	-17548	-0.000074	0.0003743	0.0035	1.47	7856.84	9355.51	9355.51	16.35	No	Si
SLU 42	1.67	-495.54	-23992	-0.0001014	0.0003743	0.0035	1.47	8211.19	11289.73	11289.73	22.78	No	Si
SLU 42	2.75	669.77	-19840	-0.0000855	0.0003743	0.0035	1.47	8138.68	10022.74	10022.74	14.96	No	Si
SLU 20	1.67	-399.3	-20971	-0.000086	0.0003743	0.0035	1.47	8214.34	10588.53	10588.53	26.52	No	Si
SLU 20	2.75	568.41	-17338	-0.0000731	0.0003743	0.0035	1.47	7822.42	9295.57	9295.57	16.35	No	Si
SLU 84	1.67	-556.08	-28028	-0.0001222	0.0003743	0.0035	1.47	7740.7	11829.4	11829.4	21.27	No	Si
SLU 84	2.75	666.78	-23092	-0.0001002	0.0003743	0.0035	1.47	8243.37	10965.25	10965.25	16.45	No	Si
SLU 41	1.67	-455.1	-23740	-0.0000995	0.0003743	0.0035	1.47	8222.88	11259.06	11259.06	24.74	No	Si
SLU 41	2.75	665.88	-19630	-0.0000845	0.0003743	0.0035	1.47	8120.01	9960.26	9960.26	14.96	No	Si
SLU 83	1.67	-515.63	-27776	-0.0001202	0.0003743	0.0035	1.47	7785.69	11792.88	11792.88	22.87	No	Si
SLU 83	2.75	662.88	-22882	-0.0000992	0.0003743	0.0035	1.47	8247.07	10925.19	10925.19	16.48	No	Si
SLU 40	1.67	-493.78	-23748	-0.0001002	0.0003743	0.0035	1.47	8222.54	11260.04	11260.04	22.8	No	Si
SLU 40	2.75	662.56	-19628	-0.0000845	0.0003743	0.0035	1.47	8119.79	9959.55	9959.55	15.03	No	Si
SLU 18	1.67	-397.54	-20727	-0.0000849	0.0003743	0.0035	1.47	8201.56	10525.28	10525.28	26.48	No	Si
SLU 18	2.75	561.2	-17125	-0.0000721	0.0003743	0.0035	1.47	7786.13	9235.28	9235.28	16.46	No	Si
SLU 19	1.67	-437.98	-20979	-0.0000867	0.0003743	0.0035	1.47	8214.74	10590.65	10590.65	24.18	No	Si
SLU 19	2.75	565.09	-17335	-0.000073	0.0003743	0.0035	1.47	7822.02	9294.9	9294.9	16.45	No	Si
SLU 39	1.67	-453.33	-23496	-0.0000983	0.0003743	0.0035	1.47	8232.21	11227.92	11227.92	24.77	No	Si
SLU 39	2.75	658.66	-19418	-0.0000835	0.0003743	0.0035	1.47	8099.67	9897.4	9897.4	15.03	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 9	1.67	-4072.01	-42962	-0.0002517	0.0005615	0.0035	1.47		17203.47	17203.47	4.22		Si
SLV 9	2.75	797.38	-35018	-0.0001483	0.0005615	0.0035	1.47		16025.87	16025.87	20.1		Si
SLV 7	1.67	3533.87	6262	0.7746822	0.0005615	0.0035	1.176		0	0	0		No
SLV 7	2.75	-238.35	5363	0	0.0005615	0.0035	1.176		0	0	0		No
SLV 10	1.67	-4149.63	-42725	-0.0002519	0.0005615	0.0035	1.47		17200.24	17200.24	4.15		Si
SLV 10	2.75	680.76	-35059	-0.0001465	0.0005615	0.0035	1.47		16032.13	16032.13	23.55		Si
SLD 7	1.67	1227.2	-8423	-0.0000465	0.0005615	0.0035	1.47		5681.73	5681.73	4.63		Si
SLD 7	2.75	31.62	-6772	-0.0000236	0.0005615	0.0035	1.47		4714.52	4714.52	149.08		Si
SLV 5	1.67	-3910.48	-41102	-0.0002376	0.0005615	0.0035	1.47		17118.07	17118.07	4.38		Si
SLV 5	2.75	235.42	-34659	-0.0001369	0.0005615	0.0035	1.47		15970.49	15970.49	67.84		Si
SLV 11	1.67	3372.34	4402	0.5304374	0.0005615	0.0035	1.176		0	0	0		No
SLV 11	2.75	323.61	5004	0	0.0005615	0.0035	1.176		0	0	0		No
SLV 8	1.67	3456.24	6500	0.8068829	0.0005615	0.0035	1.176		0	0	0		No
SLV 8	2.75	-354.97	5323	0	0.0005615	0.0035	1.176		0	0	0		No
SLV 12	1.67	3294.72	4639	0.5635924	0.0005615	0.0035	1.176		0	0	0		No
SLV 12	2.75	206.99	4963	0	0.0005615	0.0035	1.176		0	0	0		No
SLD 8	1.67	1194.85	-8324	-0.0000457	0.0005615	0.0035	1.47		5629.8	5629.8	4.71		Si
SLD 8	2.75	-16.99	-6789	-0.0000235	0.0005615	0.0035	1.47		5099.04	5099.04	300.17		Si
SLV 6	1.67	-3988.11	-40864	-0.0002378	0.0005615	0.0035	1.47		17082.08	17082.08	4.28		Si
SLV 6	2.75	118.8	-34699	-0.0001351	0.0005615	0.0035	1.47		15976.72	15976.72	134.49		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	1.67	-518.24	-27039	-22770	-6862	1.47	1.47	-51632	10833	11231	9516	13206	3749	16954	No	2.47	Si
SLU 80	2.75	536.05	-22205	-18699	-4671	1.47	1.47	-42401	10833	9602	9516	13206	3749	16954	No	3.63	Si
SLU 78	1.67	-521.46	-27196	-22902	-6902	1.47	1.47	-51931	10833	11283	9516	13206	3749	16954	No	2.46	Si
SLU 78	2.75	538.31	-22344	-18816	-4696	1.47	1.47	-42667	10833	9649	9516	13206	3749	16954	No	3.61	Si
SLU 77	1.67	-481.02	-26944	-22689	-6749	1.47	1.47	-51450	10833	11198	9516	13206	3749	16954	No	2.51	Si
SLU 77	2.75	534.41	-22134	-18639	-4575	1.47	1.47	-42266	10833	9578	9516	13206	3749	16954	No	3.71	Si
SLU 76	1.67	-543.44	-26963	-22706	-6897	1.47	1.47	-51487	10833	11205	9516	13206	3749	16954	No	2.46	Si
SLU 76	2.75	531.43	-22132	-18638	-4707	1.47	1.47	-42263	10833	9578	9516	13206	3749	16954	No	3.6	Si
SLU 73	1.67	-541.67	-26719	-22501	-6830	1.47	1.47	-51022	10833	11123	9516	13206	3749	16954	No	2.48	Si
SLU 73	2.75	524.22	-21920	-18459	-4663	1.47	1.47	-41857	10833	9506	9516	13206	3749	16954	No	3.64	Si
SLU 82	1.67	-554.31	-27784	-23397	-7179	1.47	1.47	-53054	10833	11481	9516	13206	3749	16954	No	2.36	Si
SLU 82	2.75	659.56	-22880	-19267	-4974	1.47	1.47	-43689	10833	9829	9516	13206	3749	16954	No	3.41	Si
SLU 81	1.67	-513.87	-27532	-23185	-7026	1.47	1.47	-52573	10833	11396	9516	13206	3749	16954	No	2.41	Si
SLU 81	2.75	655.66	-22670	-19090	-4853	1.47	1.47	-43288	10833	9759	9516	13206	3749	16954	No	3.49	Si
SLU 83	1.67	-515.63	-27776	-23390	-7092	1.47	1.47	-53039	10833	11479	9516	13206	3749	16954	No	2.39	Si
SLU 83	2.75	662.88	-22882	-19269	-4897	1.47	1.47	-43694	10833	9830	9516	13206	3749	16954	No	3.46	Si
SLU 75	1.67	-519.7	-26952	-22696	-6835	1.47	1.47	-51465	10833	11201	9516	13206	3749	16954	No	2.48	Si
SLU 75	2.75	531.1	-22132	-18637	-4652	1.47	1.47	-42261	10833	9578	9516	13206	3749	16954	No	3.64	Si
SLU 84	1.67	-556.08	-28028	-23602	-7245	1.47	1.47	-53520	10833	11564	9516	13206	3749	16954	No	2.34	Si
SLU 84	2.75	666.78	-23092	-19446	-5018	1.47	1.47	-44095	10833	9901	9516	13206	3749	16954	No	3.38	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	1.67	3533.87	6262	5274	10505	1.176	0.5121	0	0	0	9516	15847	2999	9516		0.91	No
SLV 7	2.75	-238.35	5363	4516	9747	1.176	1.47	0	0	0	9516	15847	2999	9516		0.98	No
SLV 9	1.67	-4072.01	-42962	-36178	-19540	1.47	1.47	-82037	16250	17655	9516	19808	3749	23557		1.21	Si
SLV 9	2.75	797.38	-35018	-29489	-15781	1.47	1.47	-66869	16250	14980	9516	19808	3749	23557		1.49	Si
SLV 5	1.67	-3910.48	-41102	-34612	-16679	1.47	1.47	-78485	16250	17029	9516	19808	3749	23557		1.41	Si
SLV 5	2.75	235.42	-34659	-29186	-12987	1.47	1.47	-66182	16250	14858	9516	19808	3749	23557		1.81	Si
SLV 6	1.67	-3988.11	-40864	-34412	-16373	1.47	1.47	-78032	16250	16949	9516	19808	3749	23557		1.44	Si
SLV 6	2.75	118.8	-34699	-29220	-12662	1.47	1.47	-66259	16250	14872	9516	19808	3749	23557		1.86	Si
SLV 11	1.67	3372.34	4402	3707	7644	1.176	0	0	0	0	9516	15847	2999	9516		1.24	Si
SLV 11	2.75	323.61	5004	4213	6953	1.176	1.47	0	0	0	9516	15847	2999	9516		1.37	Si
SLV 13	1.67	-1636.1	-28612	-24095	-13438	1.47	1.47	-54636	16250	12822	9516	19808	3749	22337		1.66	Si
SLV 13	2.75	1315.48	-21420	-18038	-11162	1.47	1.47	-40903	16250	10399	9516	19808	3749	19915		1.78	Si
SLV 8	1.67	3456.24	6500	5473	10812	1.176	0.6097	0	0	0	9516	15847	2999	9516		0.88	No
SLV 8	2.75	-354.97	5323	4482	10072	1.176	1.47	0	0	0	9516	15847	2999	9516		0.94	No
SLV 12	1.67	3294.72	4639	3907	7950	1.176	0.0745	0	0	0	9516	15847	2999	9516		1.2	Si
SLV 12	2.75	206.99	4963	4179	7278	1.176	1.47	0	0	0	9516	15847	2999	9516		1.31	Si
SLV 10	1.67	-4149.63	-42725	-35979	-19234	1.47	1.47	-81584	16250	17575	9516	19808	3749	23557		1.22	Si
SLV 10	2.75	680.76	-35059	-29523	-15456	1.47	1.47	-66946	16250	14993	9516	19808	3749	23557		1.52	Si
SLV 14	1.67	-1751.39	-28260	-23798	-12983	1.47	1.47	-53963	16250	12703	9516	19808	3749	22219		1.71	Si
SLV 14	2.75	1142.26	-21481	-18089	-10679	1.47	1.47	-41018	16250	10420	9516	19808	3749	19935		1.87	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.21 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 8	179667	0.29	0	6421	11.58	0	0	No, Trazione
SLV 7	179667	0.29	0	6369	11.58	0	0	No, Trazione
SLV 11	179667	0.29	0	5529	11.58	0	0	No, Trazione
SLV 12	179667	0.29	0	5581	11.58	0	0	No, Trazione
SLV 4	179667	0.29	17944	-7913	11.58	1047.53	90.47	Si
SLV 3	179667	0.29	18120	-7991	11.58	1056.42	91.24	Si
SLV 16	179667	0.29	24294	-10714	11.58	1351.4	116.72	Si
SLV 15	179667	0.29	24470	-10791	11.58	1359.33	117.4	Si
SLV 2	179667	0.29	47734	-21051	11.58	2170.66	187.48	Si
SLV 1	179667	0.29	47910	-21129	11.58	2175.01	187.85	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 2.21 Wa = 0.05 Ta = 0.0065

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-35059	-42725	138	0.369	3639.5	0.994	5.39988	2.77265	Si
SLV 9	-35018	-42962	133	0.37	3635.3	0.994	5.40608	2.77265	Si
SLV 6	-34699	-40864	179	0.371	3602.8	0.994	5.41773	2.77265	Si
SLV 5	-34659	-41102	173	0.371	3598.7	0.994	5.42401	2.77265	Si
SLV 14	-21481	-28260	63	0.516	2255.4	0.991	7.5656	2.80805	Si
SLV 13	-21420	-28612	54	0.517	2249.3	0.99	7.5866	2.80805	Si
SLV 2	-20282	-22059	198	0.531	2133.2	0.99	7.79349	2.80805	Si
SLV 1	-20221	-22412	190	0.532	2127.1	0.99	7.8164	2.80805	Si
SLV 16	-9474	-14051	37	0.975	1031.8	0.98	14.46245	2.80805	Si
SLV 15	-9414	-14403	29	0.981	1025.7	0.98	14.55254	2.80805	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	14.958	SLU 41	Si
V_SLU	2.34	SLU 84	Si
PF_SLV	0	SLV 7	No
V_SLV	0.88	SLV 8	No
PFFP_SLV	0	SLV 12	No
R_SLV	1.948	SLV 10	Si

Maschio 65

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	-4.784	-13.763	-3.314	Z medio 275 cm	L5	1.47	0.3	2.32	2.32	2.32			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 41	2.75	-1712.96	-17500	-0.0000926	0.0003743	0.0035	1.47	7849.12	9686.42	9686.42	5.65	No	Si
SLU 41	5.07	-10.75	-15104	-0.0000551	0.0003743	0.0035	1.47	7366.99	8810.95	8810.95	819.25	No	Si
SLU 42	2.75	-1747.85	-17704	-0.0000941	0.0003743	0.0035	1.47	7881.48	9755.68	9755.68	5.58	No	Si
SLU 42	5.07	5.11	-15237	-0.0000555	0.0003743	0.0035	1.47	7398.54	8532.61	8532.61	1669.43	No	Si
SLU 39	2.75	-1708.78	-17288	-0.0000916	0.0003743	0.0035	1.47	7814.01	9605.56	9605.56	5.62	No	Si
SLU 39	5.07	-16.73	-14901	-0.0000544	0.0003743	0.0035	1.47	7317.45	8740.51	8740.51	522.36	No	Si
SLU 83	2.75	-1868.76	-20689	-0.0001099	0.0003743	0.0035	1.47	8199.44	10515.67	10515.67	5.63	No	Si
SLU 83	5.07	-53.33	-17659	-0.0000661	0.0003743	0.0035	1.47	7874.45	9741.37	9741.37	182.66	No	Si
SLU 82	2.75	-1899.46	-20681	-0.0001104	0.0003743	0.0035	1.47	8198.97	10513.57	10513.57	5.54	No	Si
SLU 82	5.07	-43.44	-17588	-0.0000657	0.0003743	0.0035	1.47	7863.26	9718.51	9718.51	223.72	No	Si
SLU 21	2.75	-1554.77	-15652	-0.0000819	0.0003743	0.0035	1.47	7493.75	9003.69	9003.69	5.79	No	Si
SLU 21	5.07	-25.98	-13377	-0.0000485	0.0003743	0.0035	1.47	6902.87	8231.58	8231.58	316.87	No	Si
SLU 19	2.75	-1550.59	-15440	-0.0000809	0.0003743	0.0035	1.47	7445.81	8928.51	8928.51	5.76	No	Si
SLU 19	5.07	-31.96	-13174	-0.0000478	0.0003743	0.0035	1.47	6841.83	8154.12	8154.12	255.17	No	Si
SLU 84	2.75	-1903.64	-20893	-0.0001115	0.0003743	0.0035	1.47	8210.51	10568.43	10568.43	5.55	No	Si
SLU 84	5.07	-37.46	-17791	-0.0000664	0.0003743	0.0035	1.47	7894.93	9782.95	9782.95	261.13	No	Si
SLU 40	2.75	-1743.67	-17492	-0.0000931	0.0003743	0.0035	1.47	7847.8	9683.3	9683.3	5.55	No	Si
SLU 40	5.07	-0.87	-15034	-0.0000546	0.0003743	0.0035	1.47	7349.88	8786.33	8786.33	10138.6	No	Si
SLU 81	2.75	-1864.58	-20477	-0.0001088	0.0003743	0.0035	1.47	8186.48	10461.29	10461.29	5.61	No	Si
SLU 81	5.07	-59.31	-17456	-0.0000654	0.0003743	0.0035	1.47	7841.9	9669.47	9669.47	163.04	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	2.75	2198.66	5597	0.7041976	0.0005615	0.0035	1.176		0	0	0		No
SLV 7	5.07	-1024.19	2031	0.2675755	0.0005615	0.0035	1.176		0	0	0		No
SLV 4	2.75	940.43	-8732	-0.0000435	0.0005615	0.0035	1.47		5844.18	5844.18	6.21		Si
SLV 4	5.07	-1767.89	-7409	-0.0000506	0.0005615	0.0035	1.47		5487.83	5487.83	3.1		Si
SLV 13	2.75	-2841	-19298	-0.0001132	0.0005615	0.0035	1.47		11687.81	11687.81	4.11		Si
SLV 13	5.07	1596.31	-15894	-0.0000802	0.0005615	0.0035	1.47		9692.96	9692.96	6.07		Si
SLV 9	2.75	-4141.59	-33469	-0.0002008	0.0005615	0.0035	1.47		16013.87	16013.87	3.87		Si
SLV 9	5.07	1007.9	-25308	-0.0001091	0.0005615	0.0035	1.47		13496.75	13496.75	13.39		Si
SLV 10	2.75	-4099.23	-33628	-0.0002008	0.0005615	0.0035	1.47		16048.52	16048.52	3.92		Si
SLV 10	5.07	852.61	-25334	-0.0001067	0.0005615	0.0035	1.47		13504.24	13504.24	15.84		Si
SLV 12	2.75	1642.19	5741	0.7285444	0.0005615	0.0035	1.176		0	0	0		No
SLV 12	5.07	-347.42	1900	0.2474977	0.0005615	0.0035	1.176		0	0	0		No
SLV 11	2.75	1599.83	5900	0.7495	0.0005615	0.0035	1.176		0	0	0		No
SLV 11	5.07	-192.13	1925	0.2499115	0.0005615	0.0035	1.176		0	0	0		No
SLV 3	2.75	877.51	-8496	-0.0000418	0.0005615	0.0035	1.47		5720.12	5720.12	6.52		Si
SLV 3	5.07	-1537.23	-7371	-0.0000471	0.0005615	0.0035	1.47		5464.21	5464.21	3.55		Si
SLV 8	2.75	2241.02	5439	0.6830822	0.0005615	0.0035	1.176		0	0	0		No
SLV 8	5.07	-1179.48	2006	0.2648325	0.0005615	0.0035	1.176		0	0	0		No
SLV 14	2.75	-2778.09	-19534	-0.0001132	0.0005615	0.0035	1.47		11781.44	11781.44	4.24		Si
SLV 14	5.07	1365.65	-15932	-0.0000768	0.0005615	0.0035	1.47		9708.74	9708.74	7.11		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	2.75	-1674.49	-20356	-17142	-3769	1.47	1.47	-38871	10833	5986	26168	13206	3749	16954	No	4.5	Si
SLU 75	5.07	-54.06	-17205	-14488	856	1.47	1.47	-32854	10833	5279	26168	13206	3749	16954	No	19.81	Si
SLU 73	2.75	-1690	-20140	-16960	-3804	1.47	1.47	-38457	10833	5938	26168	13206	3749	16954	No	4.46	Si
SLU 73	5.07	-50.43	-16956	-14278	776	1.47	1.47	-32377	10833	5223	26168	13206	3749	16954	No	21.84	Si
SLU 83	2.75	-1868.76	-20689	-17423	-3970	1.47	1.47	-39507	10833	6061	26168	13206	3749	16954	No	4.27	Si
SLU 83	5.07	-53.33	-17659	-14871	881	1.47	1.47	-33720	10833	5381	26168	13206	3749	16954	No	19.24	Si
SLU 81	2.75	-1864.58	-20477	-17244	-3932	1.47	1.47	-39102	10833	6014	26168	13206	3749	16954	No	4.31	Si
SLU 81	5.07	-59.31	-17456	-14699	872	1.47	1.47	-33332	10833	5335	26168	13206	3749	16954	No	19.43	Si
SLU 84	2.75	-1903.64	-20893	-17594	-4113	1.47	1.47	-39897	10833	6107	26168	13206	3749	16954	No	4.12	Si
SLU 84	5.07	-37.46	-17791	-14982	788	1.47	1.47	-33973	10833	5410	26168	13206	3749	16954	No	21.51	Si
SLU 76	2.75	-1694.18	-20352	-17138	-3843	1.47	1.47	-38862	10833	5985	26168	13206	3749	16954	No	4.41	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 76	5.07	-44.45	-17159	-14450	785	1.47	1.47	-32765	10833	5268	26168	13206	3749	16954	No	21.6	Si
SLU 80	2.75	-1675.11	-20428	-17202	-3786	1.47	1.47	-39008	10833	6002	26168	13206	3749	16954	No	4.48	Si
SLU 80	5.07	-49.05	-17274	-14546	856	1.47	1.47	-32985	10833	5294	26168	13206	3749	16954	No	19.82	Si
SLU 42	2.75	-1747.85	-17704	-14909	-3744	1.47	1.47	-33806	10833	5391	26168	13206	3749	16954	No	4.53	Si
SLU 42	5.07	5.11	-15237	-12831	554	1.47	1.47	-29095	10824	4837	26168	13206	3749	16954	No	30.6	Si
SLU 82	2.75	-1899.46	-20681	-17416	-4075	1.47	1.47	-39492	10833	6059	26168	13206	3749	16954	No	4.16	Si
SLU 82	5.07	-43.44	-17588	-14811	780	1.47	1.47	-33585	10833	5365	26168	13206	3749	16954	No	21.75	Si
SLU 78	2.75	-1678.68	-20568	-17321	-3807	1.47	1.47	-39276	10833	6034	26168	13206	3749	16954	No	4.45	Si
SLU 78	5.07	-48.08	-17408	-14660	865	1.47	1.47	-33242	10833	5324	26168	13206	3749	16954	No	19.61	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	2.75	2198.66	5597	4714	10231	1.176	1.0266	0	0	0	26168	15847	2999	18845		1.84	Si
SLV 7	5.07	-1024.19	2031	1710	7952	1.176	0.6923	0	0	0	26168	15847	2999	18845		2.37	Si
SLV 6	2.75	-3500.4	-33930	-28573	-11689	1.47	1.47	-64791	16250	9742	26168	19808	3749	23557		2.02	Si
SLV 6	5.07	20.55	-25228	-21245	-3668	1.47	1.47	-48174	16250	7788	26168	19808	3749	23557		6.42	Si
SLV 11	2.75	1599.83	5900	4968	7256	1.176	1.3915	0	0	0	26168	15847	2999	18845		2.6	Si
SLV 11	5.07	-192.13	1925	1621	5222	1.176	1.47	0	0	0	26168	15847	2999	18845		3.61	Si
SLV 5	2.75	-3542.76	-33771	-28439	-12080	1.47	1.47	-64488	16250	9706	26168	19808	3749	23557		1.95	Si
SLV 5	5.07	175.84	-25203	-21223	-4094	1.47	1.47	-48125	16250	7782	26168	19808	3749	23557		5.75	Si
SLV 9	2.75	-4141.59	-33469	-28184	-15056	1.47	1.47	-63910	16250	9638	26168	19808	3749	23557		1.56	Si
SLV 9	5.07	1007.9	-25308	-21312	-6824	1.47	1.47	-48327	16250	7806	26168	19808	3749	23557		3.45	Si
SLV 13	2.75	-2841	-19298	-16251	-10813	1.47	1.47	-36851	16250	7166	26168	19808	3749	23557		2.18	Si
SLV 13	5.07	1596.31	-15894	-13384	-5897	1.47	1.47	-30350	16250	7166	26168	19808	3749	23557		3.99	Si
SLV 8	2.75	2241.02	5439	4580	10623	1.176	0.9689	0	0	0	26168	15847	2999	18845		1.77	Si
SLV 8	5.07	-1179.48	2006	1689	8378	1.176	0.4408	0	0	0	26168	15847	2999	18845		2.25	Si
SLV 14	2.75	-2778.09	-19534	-16450	-10231	1.47	1.47	-37301	16250	7166	26168	19808	3749	23557		2.3	Si
SLV 14	5.07	1365.65	-15932	-13416	-5263	1.47	1.47	-30422	16250	7166	26168	19808	3749	23557		4.48	Si
SLV 10	2.75	-4099.23	-33628	-28318	-14664	1.47	1.47	-64213	16250	9674	26168	19808	3749	23557		1.61	Si
SLV 10	5.07	852.61	-25334	-21334	-6398	1.47	1.47	-48376	16250	7812	26168	19808	3749	23557		3.68	Si
SLV 12	2.75	1642.19	5741	4835	7647	1.176	1.3469	0	0	0	26168	15847	2999	18845		2.46	Si
SLV 12	5.07	-347.42	1900	1600	5648	1.176	1.47	0	0	0	26168	15847	2999	18845		3.34	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.91 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 11	179667	0.32	0	3260	59.88	0	0	No, Trazione
SLV 7	179667	0.32	0	2545	59.88	0	0	No, Trazione
SLV 8	179667	0.32	0	2319	59.88	0	0	No, Trazione
SLV 12	179667	0.32	0	3034	59.88	0	0	No, Trazione
SLV 15	179667	0.32	15115	-6665	59.88	900.87	15.04	Si
SLV 16	179667	0.32	15875	-7001	59.88	940.97	15.71	Si
SLV 3	179667	0.32	20517	-9048	59.88	1174.85	19.62	Si
SLV 4	179667	0.32	21277	-9383	59.88	1211.4	20.23	Si
SLV 13	179667	0.32	36133	-15934	59.88	1824.66	30.47	Si
SLV 14	179667	0.32	36893	-16270	59.88	1850.91	30.91	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.91 Wa = 0.05 Ta = 0.03

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-25334	-33628	74	0.379	2724.1	0.983	5.59535	3.34516	Si
SLV 9	-25308	-33469	74	0.379	2721.5	0.983	5.59989	3.34516	Si
SLV 6	-25228	-33930	35	0.381	2713.3	0.983	5.63653	3.34516	Si
SLV 5	-25203	-33771	35	0.382	2710.7	0.983	5.64114	3.34516	Si
SLV 14	-15932	-19534	83	0.553	1766.1	0.975	8.24791	3.55682	Si
SLV 13	-15894	-19298	83	0.554	1762.3	0.975	8.26463	3.55682	Si
SLV 2	-15579	-20542	-47	0.566	1730.2	0.974	8.44004	3.55682	Si
SLV 1	-15541	-20307	-47	0.567	1726.4	0.974	8.45782	3.55682	Si
SLV 16	-7762	-7723	51	1.017	934.6	0.955	15.4751	3.55682	Si
SLV 15	-7724	-7488	51	1.021	930.8	0.955	15.54104	3.55682	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.535	SLU 82	Si
V_SLU	4.122	SLU 84	Si
PF_SLV	0	SLV 7	No
V_SLV	1.565	SLV 9	Si
PFFP_SLV	0	SLV 12	No
R_SLV	1.673	SLV 10	Si

Maschio 67

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	-3.314	-13.763	-0.354	Z medio 221 cm	L5	2.96	0.3	2.86	0	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	2.75	6526.05	-45979	-0.0001157	0.0003743	0.0035	2.96	33441.22	44169.33	44169.33	6.77	No	Si
SLU 79	5.07	1020.41	-36310	-0.0000709	0.0003743	0.0035	2.96	32156.2	38418.18	38418.18	37.65	No	Si
SLU 74	2.75	6484.33	-45747	-0.0001149	0.0003743	0.0035	2.96	33446.24	44087.65	44087.65	6.8	No	Si
SLU 74	5.07	999.49	-36095	-0.0000703	0.0003743	0.0035	2.96	32092.84	38287.86	38287.86	38.31	No	Si
SLU 77	2.75	6564.94	-46312	-0.0001166	0.0003743	0.0035	2.96	33430.96	44278.21	44278.21	6.74	No	Si
SLU 77	5.07	1025.35	-36614	-0.0000715	0.0003743	0.0035	2.96	32243.03	38602.65	38602.65	37.65	No	Si
SLU 83	2.75	6947.88	-47181	-0.0001205	0.0003743	0.0035	2.96	33387.06	44533.99	44533.99	6.41	No	Si
SLU 83	5.07	1192.88	-37356	-0.0000738	0.0003743	0.0035	2.96	32442.78	39056.81	39056.81	32.74	No	Si
SLU 82	2.75	6754.04	-46774	-0.0001186	0.0003743	0.0035	2.96	33410.7	44413.77	44413.77	6.58	No	Si
SLU 82	5.07	1128.97	-36979	-0.0000727	0.0003743	0.0035	2.96	32343.59	38825.68	38825.68	34.39	No	Si
SLU 41	2.75	6125	-40236	-0.0001004	0.0003743	0.0035	2.96	33046.99	40817.67	40817.67	6.66	No	Si
SLU 41	5.07	1110.94	-32044	-0.0000625	0.0003743	0.0035	2.96	30615.92	35872.33	35872.33	32.29	No	Si
SLU 81	2.75	6867.27	-46616	-0.0001187	0.0003743	0.0035	2.96	33418.43	44367.2	44367.2	6.46	No	Si
SLU 81	5.07	1167.02	-36838	-0.0000726	0.0003743	0.0035	2.96	32305.19	38739.26	38739.26	33.19	No	Si
SLU 84	2.75	6834.65	-47340	-0.0001203	0.0003743	0.0035	2.96	33376.39	44580.95	44580.95	6.52	No	Si
SLU 84	5.07	1154.83	-37497	-0.0000739	0.0003743	0.0035	2.96	32478.78	39141.83	39141.83	33.89	No	Si
SLU 62	2.75	6188.78	-42222	-0.0001053	0.0003743	0.0035	2.96	33305.5	42067.54	42067.54	6.8	No	Si
SLU 62	5.07	1122.5	-33340	-0.0000651	0.0003743	0.0035	2.96	31146.87	36647.48	36647.48	32.65	No	Si
SLU 39	2.75	6044.39	-39670	-0.0000988	0.0003743	0.0035	2.96	32949.76	40467.07	40467.07	6.69	No	Si
SLU 39	5.07	1085.08	-31526	-0.0000613	0.0003743	0.0035	2.96	30388.19	35441.18	35441.18	32.66	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 4	2.75	7677.02	-25120	-0.0000714	0.0005615	0.0035	2.96		31897.21	31897.21	4.15		Si
SLV 4	5.07	3162.09	-19433	-0.0000445	0.0005615	0.0035	2.96		25505.38	25505.38	8.07		Si
SLV 7	2.75	15054.85	-17518	-0.0000993	0.0005615	0.0035	2.96		23401.38	23401.38	1.55		Si
SLV 7	5.07	6590.85	-13278	-0.0000455	0.0005615	0.0035	2.96		18613.95	18613.95	2.82		Si
SLV 3	2.75	7802.49	-25746	-0.0000731	0.0005615	0.0035	2.96		32613.1	32613.1	4.18		Si
SLV 3	5.07	3107.68	-19873	-0.0000452	0.0005615	0.0035	2.96		25992.98	25992.98	8.36		Si
SLD 12	2.75	8383.23	-26174	-0.000076	0.0005615	0.0035	2.96		33104.53	33104.53	3.95		Si
SLD 12	5.07	2745.02	-20275	-0.0000446	0.0005615	0.0035	2.96		26438.62	26438.62	9.63		Si
SLD 11	2.75	8418.45	-26350	-0.0000765	0.0005615	0.0035	2.96		33306.42	33306.42	3.96		Si
SLD 11	5.07	2729.75	-20399	-0.0000448	0.0005615	0.0035	2.96		26576.03	26576.03	9.74		Si
SLD 7	2.75	8509.58	-25856	-0.0000759	0.0005615	0.0035	2.96		32739.9	32739.9	3.85		Si
SLD 7	5.07	2955.35	-19995	-0.0000448	0.0005615	0.0035	2.96		26127.5	26127.5	8.84		Si
SLV 8	2.75	14970.37	-17097	-0.0000996	0.0005615	0.0035	2.96		22941.71	22941.71	1.53		Si
SLV 8	5.07	6627.49	-12981	-0.0000452	0.0005615	0.0035	2.96		18239.68	18239.68	2.75		Si
SLV 11	2.75	14842.32	-18671	-0.0000956	0.0005615	0.0035	2.96		24666.04	24666.04	1.66		Si
SLV 11	5.07	6064.7	-14219	-0.0000454	0.0005615	0.0035	2.96		19788.33	19788.33	3.26		Si
SLD 8	2.75	8474.36	-25681	-0.0000754	0.0005615	0.0035	2.96		32538.59	32538.59	3.84		Si
SLD 8	5.07	2970.62	-19871	-0.0000447	0.0005615	0.0035	2.96		25990.42	25990.42	8.75		Si
SLV 12	2.75	14757.84	-18250	-0.0000953	0.0005615	0.0035	2.96		24203.33	24203.33	1.64		Si
SLV 12	5.07	6101.33	-13922	-0.000045	0.0005615	0.0035	2.96		19423.71	19423.71	3.18		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	2.75	6867.27	-46616	-39255	10054	2.96	2.96	-44207	10833	19976	30925	26591	7548	34139	No	3.4	Si
SLU 81	5.07	1167.02	-36838	-31021	2026	2.96	2.96	-34934	10833	16683	30925	26591	7548	34139	No	16.85	Si
SLU 78	2.75	6451.71	-46471	-39133	9465	2.96	2.96	-44069	10833	19927	30925	26591	7548	34139	No	3.61	Si
SLU 78	5.07	987.3	-36755	-30952	1965	2.96	2.96	-34855	10833	16655	30925	26591	7548	34139	No	17.37	Si
SLU 83	2.75	6947.88	-47181	-39732	10123	2.96	2.96	-44743	10833	20167	30925	26591	7548	34139	No	3.37	Si
SLU 83	5.07	1192.88	-37356	-31458	2041	2.96	2.96	-35425	10833	16857	30925	26591	7548	34139	No	16.73	Si
SLU 74	2.75	6484.33	-45747	-38523	9709	2.96	2.96	-43382	10833	19684	30925	26591	7548	34139	No	3.52	Si
SLU 74	5.07	999.49	-36095	-30396	2107	2.96	2.96	-34230	10833	16433	30925	26591	7548	34139	No	16.2	Si
SLU 82	2.75	6754.04	-46774	-39389	9742	2.96	2.96	-44357	10833	20030	30925	26591	7548	34139	No	3.5	Si
SLU 82	5.07	1128.97	-36979	-31140	1869	2.96	2.96	-35068	10833	16730	30925	26591	7548	34139	No	18.27	Si
SLU 75	2.75	6371.1	-45905	-38657	9396	2.96	2.96	-43532	10833	19737	30925	26591	7548	34139	No	3.63	Si
SLU 75	5.07	961.44	-36237	-30515	1950	2.96	2.96	-34364	10833	16480	30925	26591	7548	34139	No	17.51	Si
SLU 80	2.75	6412.82	-46138	-38853	9428	2.96	2.96	-43753	10833	19815	30925	26591	7548	34139	No	3.62	Si
SLU 80	5.07	982.36	-36452	-30696	1956	2.96	2.96	-34568	10833	16553	30925	26591	7548	34139	No	17.46	Si
SLU 79	2.75	6526.05	-45979	-38719	9740	2.96	2.96	-43603	10833	19762	30925	26591	7548	34139	No	3.51	Si
SLU 79	5.07	1020.41	-36310	-30577	2113	2.96	2.96	-34434	10833	16505	30925	26591	7548	34139	No	16.16	Si
SLU 84	2.75	6834.65	-47340	-39865	9811	2.96	2.96	-44893	10833	20220	30925	26591	7548	34139	No	3.48	Si
SLU 84	5.07	1154.83	-37497	-31577	1884	2.96	2.96	-35559	10833	16905	30925	26591	7548	34139	No	18.12	Si
SLU 77	2.75	6564.94	-46312	-39000	9778	2.96	2.96	-43919	10833	19874	30925	26591	7548	34139	No	3.49	Si
SLU 77	5.07	1025.35	-36614	-30833	2122	2.96	2.96	-34721	10833	16607	30925	26591	7548	34139	No	16.09	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 3	2.75	7802.49	-25746	-21681	17776	2.96	2.96	-24415	15300	15084	30925	39886	7548	46010		2.59	Si
SLV 3	5.07	3107.68	-19873	-16735	5639	2.96	2.96	-18846	14186	13106	30925	39886	7548	44032		7.81	Si
SLV 7	2.75	15054.85	-17518	-14752	33741	2.96	1.8618	-16613	13739	12313	30925	39886	7548	43238		1.28	Si
SLV 7	5.07	6590.85	-13278	-11181	12893	2.96	2.9509	-12592	12935	11451	30925	39886	7548	42376		3.29	Si
SLV 6	2.75	-6517.65	-44157	-37185	-18461	2.96	2.96	-41875	16250	21286	30925	39886	7548	47434		2.57	Si
SLV 6	5.07	-5052.87	-34754	-29267	-9326	2.96	2.96	-32958	16250	18119	30925	39886	7548	47434		5.09	Si
SLV 12	2.75	14757.84	-18250	-15369	31654	2.96	2.0141	-17307	13878	12559	30925	39886	7548	43485		1.37	Si
SLV 12	5.07	6101.33	-13922	-11724	12361	2.96	2.96	-13202	13057	11595	30925	39886	7548	42520		3.44	Si
SLV 11	2.75	14842.32	-18671	-15723	31879	2.96	2.0552	-17706	13958	12701	30925	39886	7548	43627		1.37	Si
SLV 11	5.07	6064.7	-14219	-11974	12531	2.96	2.96	-13484	13113	11645	30925	39886	7548	42570		3.4	Si
SLV 8	2.75	14970.37	-17097	-14397	33516	2.96	1.8132	-16213	13659	12171	30925	39886	7548	43096		1.29	Si
SLV 8	5.07	6627.49	-12981	-10932	12723	2.96	2.9084	-12310	12879	11237	30925	39886	7548	42162		3.31	Si
SLV 10	2.75	-6730.18	-45311	-38156	-20323	2.96	2.96	-42969	16250	21674	30925	39886	7548	47434		2.33	Si
SLV 10	5.07	-5579.02	-35695	-30059	-9688	2.96	2.96	-33850	16250	18435	30925	39886	7548	47434		4.9	Si
SLD 7	2.75	8509.58	-25856	-21774	17555	2.96	2.96	-24520	15321	15121	30925	39886	7548	46047		2.62	Si
SLD 7	5.07	2955.35	-19995	-16838	6126	2.96	2.96	-18961	14209	13147	30925	39886	7548	44072		7.19	Si
SLV 9	2.75	-6645.7	-45732	-38511	-20099	2.96	2.96	-43368	16250	21816	30925	39886	7548	47434		2.36	Si
SLV 9	5.07	-5615.65	-35992	-30309	-9518	2.96	2.96	-34131	16250	18535	30925	39886	7548	47434		4.98	Si
SLV 5	2.75	-6433.17	-44578	-37540	-18237	2.96	2.96	-42275	16250	21428	30925	39886	7548	47434		2.6	Si
SLV 5	5.07	-5089.5	-35051	-29517	-9156	2.96	2.96	-33240	16250	18218	30925	39886	7548	47434		5.18	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.91 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 8	179667	0.32	13962	-12398	187.66	1689.66	9	Si
SLV 7	179667	0.32	14276	-12677	187.66	1723.84	9.19	Si
SLV 12	179667	0.32	14876	-13210	187.66	1788.46	9.53	Si
SLV 11	179667	0.32	15191	-13489	187.66	1822.13	9.71	Si
SLV 4	179667	0.32	24473	-21732	187.66	2737.39	14.59	Si
SLV 3	179667	0.32	24940	-22147	187.66	2779.51	14.81	Si
SLV 16	179667	0.32	27521	-24438	187.66	3005.16	16.01	Si
SLV 15	179667	0.32	27988	-24854	187.66	3044.8	16.22	Si
SLV 2	179667	0.32	34462	-30602	187.66	3554.5	18.94	Si
SLV 1	179667	0.32	34930	-31018	187.66	3588.47	19.12	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.91 Wa = 0.05 Ta = 0.0455

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 9	-35992	-45732	328	0.481	4022	0.973	7.19244	3.59744	Si
SLV 10	-35695	-45311	327	0.485	3991.7	0.972	7.24413	3.59744	Si
SLV 5	-35051	-44578	-426	0.49	3926.2	0.972	7.31919	3.59744	Si
SLV 13	-29540	-37708	1273	0.539	3365.1	0.968	8.08918	3.96028	Si
SLV 6	-34754	-44157	-427	0.493	3896	0.972	7.37287	3.59744	Si
SLV 14	-29100	-37083	1272	0.545	3320.2	0.967	8.19544	3.96028	Si
SLV 1	-26405	-33864	-1241	0.593	3046	0.965	8.93206	3.96028	Si
SLV 2	-25965	-33238	-1242	0.601	3001.2	0.964	9.06321	3.96028	Si
SLV 15	-23008	-29590	1328	0.662	2700.4	0.961	10.01654	3.96028	Si
SLV 16	-22568	-28965	1327	0.673	2655.6	0.96	10.18688	3.96028	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	6.41	SLU 83	Si
V_SLU	3.372	SLU 83	Si
PF_SLV	1.532	SLV 8	Si
V_SLV	1.281	SLV 7	Si
PFFP_SLV	9.004	SLV 8	Si
R_SLV	1.999	SLV 9	Si

Maschio 70

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-20.668	1.046	-24.678	1.046	L4	L5	4.01	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	1.67	-2962.76	-108805	-0.0001521	0.0004492	0.0035	4.01	56673.27	136001.8	136001.8	45.9	No	Si
SLU 79	3.77	-11127.7	-83827	-0.0001312	0.0004492	0.0035	4.01	72223.64	121982.21	121982.21	10.96	No	Si
SLU 75	1.67	-2991.17	-108406	-0.0001515	0.0004492	0.0035	4.01	57056.09	135806.86	135806.86	45.4	No	Si
SLU 75	3.77	-11083.4	-83496	-0.0001306	0.0004492	0.0035	4.01	72315.42	121740.63	121740.63	10.98	No	Si
SLU 80	1.67	-2959.47	-108865	-0.0001521	0.0004492	0.0035	4.01	56616.04	136030.76	136030.76	45.96	No	Si
SLU 80	3.77	-11149.55	-83851	-0.0001313	0.0004492	0.0035	4.01	72216.94	121999.54	121999.54	10.94	No	Si
SLU 74	1.67	-2994.45	-108346	-0.0001514	0.0004492	0.0035	4.01	57112.58	135777.91	135777.91	45.34	No	Si
SLU 74	3.77	-11061.55	-83472	-0.0001306	0.0004492	0.0035	4.01	72321.89	121723.3	121723.3	11	No	Si
SLU 77	1.67	-2954.55	-109608	-0.0001533	0.0004492	0.0035	4.01	55891.21	136393.34	136393.34	46.16	No	Si
SLU 77	3.77	-11207.72	-84501	-0.0001325	0.0004492	0.0035	4.01	72027.54	122474.02	122474.02	10.93	No	Si
SLU 84	1.67	-2974.41	-111505	-0.0001565	0.0004492	0.0035	4.01	53973.35	137318.55	137318.55	46.17	No	Si
SLU 84	3.77	-11568.64	-86353	-0.0001361	0.0004492	0.0035	4.01	71424.85	123825.57	123825.57	10.7	No	Si
SLU 83	1.67	-2977.7	-111446	-0.0001564	0.0004492	0.0035	4.01	54034.86	137289.6	137289.6	46.11	No	Si
SLU 83	3.77	-11546.78	-86329	-0.0001361	0.0004492	0.0035	4.01	71433.17	123808.24	123808.24	10.72	No	Si
SLU 81	1.67	-3017.6	-110184	-0.0001545	0.0004492	0.0035	4.01	55319.47	136674.16	136674.16	45.29	No	Si
SLU 81	3.77	-11400.61	-85300	-0.0001341	0.0004492	0.0035	4.01	71778.82	123057.52	123057.52	10.79	No	Si
SLU 82	1.67	-3014.31	-110243	-0.0001545	0.0004492	0.0035	4.01	55260.01	136703.12	136703.12	45.35	No	Si
SLU 82	3.77	-11422.47	-85324	-0.0001342	0.0004492	0.0035	4.01	71771.16	123074.85	123074.85	10.77	No	Si
SLU 78	1.67	-2951.27	-109668	-0.0001534	0.0004492	0.0035	4.01	55832.68	136422.3	136422.3	46.22	No	Si
SLU 78	3.77	-11229.58	-84525	-0.0001326	0.0004492	0.0035	4.01	72020.4	122491.35	122491.35	10.91	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	1.67	21089.77	-111952	-0.0001859	0.0006738	0.0035	4.01		154792.37	154792.37	7.34		Si
SLV 1	3.77	-19071.09	-89531	-0.0001487	0.0006738	0.0035	4.01		141994.76	141994.76	7.45		Si
SLV 2	1.67	21616.56	-111901	-0.000187	0.0006738	0.0035	4.01		154750.88	154750.88	7.16		Si
SLV 2	3.77	-18782.71	-89857	-0.0001486	0.0006738	0.0035	4.01		142326.7	142326.7	7.58		Si
SLV 13	1.67	-27851.82	-37847	-0.0000959	0.0006738	0.0035	4.01		76002.28	76002.28	2.73		Si
SLV 13	3.77	2424.29	-22443	-0.0000303	0.0006738	0.0035	4.01		43425.52	43425.52	17.91		Si
SLD 14	1.67	-13024.07	-58951	-0.0000951	0.0006738	0.0035	4.01		106450.82	106450.82	8.17		Si
SLD 14	3.77	-3048.24	-42183	-0.0000552	0.0006738	0.0035	4.01		82613.99	82613.99	27.1		Si
SLV 15	1.67	-26355.58	-37618	-0.0000925	0.0006738	0.0035	4.01		75654.44	75654.44	2.87		Si
SLV 15	3.77	4043.32	-23459	-0.0000344	0.0006738	0.0035	4.01		45181.43	45181.43	11.17		Si
SLD 13	1.67	-13248.17	-58973	-0.0000956	0.0006738	0.0035	4.01		106480.46	106480.46	8.04		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 13	3.77	-3170.93	-42044	-0.0000553	0.0006738	0.0035	4.01		82402.66	82402.66	25.99		Si
SLV 4	1.67	23112.8	-111672	-0.0001899	0.0006738	0.0035	4.01		154566.66	154566.66	6.69		Si
SLV 4	3.77	-17163.68	-90873	-0.0001467	0.0006738	0.0035	4.01		143361.63	143361.63	8.35		Si
SLV 14	1.67	-27325.04	-37795	-0.0000947	0.0006738	0.0035	4.01		75923.92	75923.92	2.78		Si
SLV 14	3.77	2712.67	-22769	-0.0000312	0.0006738	0.0035	4.01		43988.72	43988.72	16.22		Si
SLV 3	1.67	22586.01	-111724	-0.0001888	0.0006738	0.0035	4.01		154608.16	154608.16	6.85		Si
SLV 3	3.77	-17452.06	-90547	-0.0001468	0.0006738	0.0035	4.01		143029.69	143029.69	8.2		Si
SLV 16	1.67	-25828.8	-37567	-0.0000914	0.0006738	0.0035	4.01		75576.08	75576.08	2.93		Si
SLV 16	3.77	4331.7	-23785	-0.0000353	0.0006738	0.0035	4.01		45744.62	45744.62	10.56		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	1.67	-2991.17	-108406	-78841	-13224	4.01	4.01	-65537	10833	38484	108749	43233	20451	63684	No	4.82	Si
SLU 75	3.77	-11083.4	-83496	-60724	-13854	4.01	4.01	-50477	10833	31238	108749	43233	20451	63684	No	4.6	Si
SLU 70	1.67	-3009.49	-100563	-73136	-13218	4.01	4.01	-60795	10833	36203	108749	43233	20451	63684	No	4.82	Si
SLU 70	3.77	-9910.65	-76287	-55482	-13801	4.01	4.01	-46119	10833	29141	108749	43233	20451	63684	No	4.61	Si
SLU 78	1.67	-2951.27	-109668	-79758	-13352	4.01	4.01	-66299	10833	38851	108749	43233	20451	63684	No	4.77	Si
SLU 78	3.77	-11229.58	-84525	-61472	-13990	4.01	4.01	-51099	10833	31537	108749	43233	20451	63684	No	4.55	Si
SLU 77	1.67	-2954.55	-109608	-79715	-13331	4.01	4.01	-66264	10833	38834	108749	43233	20451	63684	No	4.78	Si
SLU 77	3.77	-11207.72	-84501	-61455	-13968	4.01	4.01	-51085	10833	31531	108749	43233	20451	63684	No	4.56	Si
SLU 83	1.67	-2977.7	-111446	-81051	-13182	4.01	4.01	-67374	10833	39369	108749	43233	20451	63684	No	4.83	Si
SLU 83	3.77	-11546.78	-86329	-62785	-13830	4.01	4.01	-52190	10833	32062	108749	43233	20451	63684	No	4.6	Si
SLU 74	1.67	-2994.45	-108346	-78797	-13202	4.01	4.01	-65501	10833	38467	108749	43233	20451	63684	No	4.82	Si
SLU 74	3.77	-11061.55	-83472	-60707	-13832	4.01	4.01	-50463	10833	31231	108749	43233	20451	63684	No	4.6	Si
SLU 80	1.67	-2959.47	-108865	-79174	-13275	4.01	4.01	-65814	10833	38618	108749	43233	20451	63684	No	4.8	Si
SLU 80	3.77	-11149.55	-83851	-60982	-13908	4.01	4.01	-50692	10833	31341	108749	43233	20451	63684	No	4.58	Si
SLU 79	1.67	-2962.76	-108805	-79131	-13253	4.01	4.01	-65778	10833	38601	108749	43233	20451	63684	No	4.81	Si
SLU 79	3.77	-11127.7	-83827	-60965	-13886	4.01	4.01	-50678	10833	31335	108749	43233	20451	63684	No	4.59	Si
SLU 76	1.67	-2997.18	-107643	-78285	-13160	4.01	4.01	-65075	10833	38262	108749	43233	20451	63684	No	4.84	Si
SLU 76	3.77	-11017.95	-82838	-60246	-13786	4.01	4.01	-50080	10833	31047	108749	43233	20451	63684	No	4.62	Si
SLU 84	1.67	-2974.41	-111505	-81095	-13204	4.01	4.01	-67410	10833	39386	108749	43233	20451	63684	No	4.82	Si
SLU 84	3.77	-11568.64	-86353	-62802	-13853	4.01	4.01	-52204	10833	32069	108749	43233	20451	63684	No	4.6	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 15	1.67	-12643.67	-58883	-42824	-15945	4.01	4.01	-35598	16250	27553	108749	64849	20451	85300		5.35	Si
SLD 15	3.77	-2518.25	-42453	-30875	-15830	4.01	4.01	-25665	16250	22774	108749	64849	20451	85300		5.39	Si
SLD 13	1.67	-13248.17	-58973	-42889	-16433	4.01	4.01	-35652	16250	27579	108749	64849	20451	85300		5.19	Si
SLD 13	3.77	-3170.93	-42044	-30578	-16325	4.01	4.01	-25418	16250	22655	108749	64849	20451	85300		5.23	Si
SLV 10	1.67	-12027.15	-64007	-46550	-16067	4.01	4.01	-38695	16250	29044	108749	64849	20451	85300		5.31	Si
SLV 10	3.77	-6746.69	-45012	-32736	-16145	4.01	4.01	-27212	16250	23518	108749	64849	20451	85300		5.28	Si
SLV 13	1.67	-27851.82	-37847	-27525	-25324	4.01	3.8073	-24359	16250	21434	108749	64849	20451	85300		3.37	Si
SLV 13	3.77	2424.29	-22443	-16323	-24490	4.01	4.01	-13568	15214	18302	108749	64849	20451	85300		3.48	Si
SLD 14	1.67	-13024.07	-58951	-42873	-16231	4.01	4.01	-35639	16250	27573	108749	64849	20451	85300		5.26	Si
SLD 14	3.77	-3048.24	-42183	-30679	-16123	4.01	4.01	-25502	16250	22695	108749	64849	20451	85300		5.29	Si
SLV 14	1.67	-27325.04	-37795	-27487	-24851	4.01	3.8461	-24080	16250	21419	108749	64849	20451	85300		3.43	Si
SLV 14	3.77	2712.67	-22769	-16559	-24017	4.01	4.01	-13765	15253	18349	108749	64849	20451	85300		3.55	Si
SLD 16	1.67	-12419.56	-58861	-42808	-15744	4.01	4.01	-35584	16250	27547	108749	64849	20451	85300		5.42	Si
SLD 16	3.77	-2395.57	-42592	-30976	-15628	4.01	4.01	-25749	16250	22814	108749	64849	20451	85300		5.46	Si
SLV 15	1.67	-26355.58	-37618	-27359	-24118	4.01	3.9132	-23553	16250	21367	108749	64849	20451	85300		3.54	Si
SLV 15	3.77	4043.32	-23459	-17061	-23267	4.01	4.01	-14182	15336	18450	108749	64849	20451	85300		3.67	Si
SLV 16	1.67	-25828.8	-37567	-27321	-23644	4.01	3.9524	-22711	16250	21352	108749	64849	20451	85300		3.61	Si
SLV 16	3.77	4331.7	-23785	-17298	-22793	4.01	4.01	-14379	15376	18497	108749	64849	20451	85300		3.74	Si
SLV 9	1.67	-12381.82	-64041	-46575	-16386	4.01	4.01	-38716	16250	29054	108749	64849	20451	85300		5.21	Si
SLV 9	3.77	-6940.85	-44792	-32576	-16464	4.01	4.01	-27079	16250	23454	108749	64849	20451	85300		5.18	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 3.37 Ta 0.06 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 13	-25226	0.31	347	3350.94	4638.39	3994.67	11.51	Si
SLV 14	-25459	0.31	347	3377.92	4675.58	4026.75	11.6	Si
SLV 15	-25896	0.31	347	3428.15	4745.13	4086.64	11.78	Si
SLV 16	-26129	0.31	347	3454.91	4782.33	4118.62	11.87	Si
SLV 9	-48177	0.31	347	5647.49	8196.66	6922.08	19.95	Si
SLV 10	-48334	0.31	347	5660.75	8220.74	6940.75	20	Si
SLV 11	-50410	0.31	347	5832.73	8538.91	7185.82	20.71	Si
SLV 12	-50567	0.31	347	5845.51	8563	7204.26	20.76	Si
SLV 5	-68486	0.31	347	7082.02	11102.05	9092.04	26.2	Si
SLV 6	-68643	0.31	347	7090.94	11122.57	9106.75	26.24	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 4	-71622	-111672	249	0.342	7868.5	0.977	5.0872	4.41923	Si
SLV 3	-71119	-111724	250	0.344	7817.3	0.977	5.11754	4.41923	Si
SLV 2	-69726	-111901	-471	0.347	7675.3	0.977	5.15956	4.41923	Si
SLV 1	-69223	-111952	-470	0.349	7624.1	0.977	5.19162	4.41923	Si
SLV 8	-58986	-85478	1165	0.388	6581.4	0.973	5.78806	3.83947	Si
SLV 7	-58647	-85512	1166	0.389	6546.9	0.973	5.81656	3.83947	Si
SLV 6	-52664	-86238	-1233	0.425	5937.6	0.97	6.36341	3.83947	Si
SLV 5	-52325	-86273	-1232	0.427	5903.1	0.97	6.39914	3.83947	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 12	-46328	-63246	1231	0.473	5292.6	0.967	7.11092	3.83947	Si
SLV 11	-45989	-63281	1232	0.476	5258.1	0.967	7.15616	3.83947	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	10.704	SLU 84	Si
V_SLU	4.552	SLU 78	Si
PF_SLV	2.729	SLV 13	Si
V_SLV	3.368	SLV 13	Si
PFFP_SLV	11.512	SLV 13	Si
R_SLV	1.151	SLV 4	Si

Maschio 71

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-12.293	1.046	-19.868	1.046	L4	L5	7.575	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 84	1.67	37898.78	-187319	-0.0001545	0.0004492	0.0035	7.575	230857.56	459264.66	459264.66	12.12	No	Si
SLU 84	4.17	21042.55	-170069	-0.0001291	0.0004492	0.0035	7.575	249614.68	434869.66	434869.66	20.67	No	Si
SLU 77	1.67	37138.92	-183441	-0.0001506	0.0004492	0.0035	7.575	235781.6	454558.26	454558.26	12.24	No	Si
SLU 77	4.17	20464.33	-166331	-0.0001257	0.0004492	0.0035	7.575	252608.62	429366.93	429366.93	20.98	No	Si
SLU 79	1.67	36906.17	-182169	-0.0001494	0.0004492	0.0035	7.575	237307.07	452685.82	452685.82	12.27	No	Si
SLU 79	4.17	20355.11	-165051	-0.0001246	0.0004492	0.0035	7.575	253546.88	427481.33	427481.33	21	No	Si
SLU 83	1.67	37746.31	-187069	-0.0001542	0.0004492	0.0035	7.575	231187.64	459061.15	459061.15	12.16	No	Si
SLU 83	4.17	20746.49	-170054	-0.0001289	0.0004492	0.0035	7.575	249627.33	434847.8	434847.8	20.96	No	Si
SLU 82	1.67	37449.65	-185090	-0.0001523	0.0004492	0.0035	7.575	233738.26	456985.74	456985.74	12.2	No	Si
SLU 82	4.17	20902.04	-167812	-0.0001272	0.0004492	0.0035	7.575	251468.46	431546.25	431546.25	20.65	No	Si
SLU 76	1.67	36711.15	-180357	-0.0001477	0.0004492	0.0035	7.575	239404.6	450017.63	450017.63	12.26	No	Si
SLU 76	4.17	20708.04	-162818	-0.0001231	0.0004492	0.0035	7.575	255075.48	424194.35	424194.35	20.48	No	Si
SLU 81	1.67	37297.19	-184840	-0.000152	0.0004492	0.0035	7.575	234053.14	456617.34	456617.34	12.24	No	Si
SLU 81	4.17	20605.98	-167797	-0.000127	0.0004492	0.0035	7.575	251480.19	431524.4	431524.4	20.94	No	Si
SLU 75	1.67	36842.26	-181462	-0.0001487	0.0004492	0.0035	7.575	238136.36	451644.47	451644.47	12.26	No	Si
SLU 75	4.17	20619.88	-164089	-0.000124	0.0004492	0.0035	7.575	254222.04	426065.38	426065.38	20.66	No	Si
SLU 80	1.67	37058.64	-182420	-0.0001497	0.0004492	0.0035	7.575	237010.43	453054.22	453054.22	12.23	No	Si
SLU 80	4.17	20651.17	-165066	-0.0001248	0.0004492	0.0035	7.575	253536.27	427503.19	427503.19	20.7	No	Si
SLU 78	1.67	37291.39	-183691	-0.000151	0.0004492	0.0035	7.575	235476.27	454926.66	454926.66	12.2	No	Si
SLU 78	4.17	20760.39	-166346	-0.0001259	0.0004492	0.0035	7.575	252597.49	429388.79	429388.79	20.68	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 15	1.67	-107008.4	-104381	-0.0001227	0.0006738	0.0035	7.575		363132.66	363132.66	3.39		Si
SLV 15	4.17	16650.25	-92310	-0.0000665	0.0006738	0.0035	7.575		299850.86	299850.86	18.01		Si
SLD 1	1.67	82462.16	-133471	-0.0001304	0.0006738	0.0035	7.575		405061.84	405061.84	4.91		Si
SLD 1	4.17	13787.55	-119140	-0.000083	0.0006738	0.0035	7.575		374074.14	374074.14	27.13		Si
SLV 16	1.67	-108146.68	-102147	-0.0001217	0.0006738	0.0035	7.575		357451.23	357451.23	3.31		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 16	4.17	14940.17	-91416	-0.000065	0.0006738	0.0035	7.575		297365.46	297365.46	19.9		Si
SLV 14	1.67	-101091.62	-112528	-0.0001254	0.0006738	0.0035	7.575		383851.73	383851.73	3.8		Si
SLV 14	4.17	31175.32	-89098	-0.0000719	0.0006738	0.0035	7.575		290919.28	290919.28	9.33		Si
SLV 1	1.67	159082.99	-146235	-0.0001834	0.0006738	0.0035	7.575		432662.82	432662.82	2.72		Si
SLV 1	4.17	13659.24	-130211	-0.0000905	0.0006738	0.0035	7.575		398011.97	398011.97	29.14		Si
SLV 4	1.67	150889.66	-133620	-0.0001688	0.0006738	0.0035	7.575		405382.8	405382.8	2.69		Si
SLV 4	4.17	-4286	-131635	-0.0000864	0.0006738	0.0035	7.575		429663.91	429663.91	100.25		Si
SLV 13	1.67	-99953.35	-114762	-0.0001264	0.0006738	0.0035	7.575		389533.16	389533.16	3.9		Si
SLV 13	4.17	32885.4	-89992	-0.0000734	0.0006738	0.0035	7.575		293404.68	293404.68	8.92		Si
SLV 2	1.67	157944.71	-144001	-0.000181	0.0006738	0.0035	7.575		427831.76	427831.76	2.71		Si
SLV 2	4.17	11949.15	-129317	-0.000089	0.0006738	0.0035	7.575		396079.26	396079.26	33.15		Si
SLV 3	1.67	152027.94	-135854	-0.0001712	0.0006738	0.0035	7.575		410213.86	410213.86	2.7		Si
SLV 3	4.17	-2575.92	-132529	-0.0000861	0.0006738	0.0035	7.575		431647.85	431647.85	167.57		Si
SLD 2	1.67	81977.91	-132521	-0.0001294	0.0006738	0.0035	7.575		403006.61	403006.61	4.92		Si
SLD 2	4.17	13060.04	-118760	-0.0000823	0.0006738	0.0035	7.575		373251.92	373251.92	28.58		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	1.67	37746.31	-187069	-136050	-91	7.575	7.575	-59868	10833	67546	108749	81668	38633	120301	No	1320.11	Si
SLU 83	4.17	20746.49	-170054	-123676	3985	7.575	7.575	-54423	10833	62596	108749	81668	38633	120301	No	30.19	Si
SLU 62	1.67	34216.97	-166743	-121268	154	7.575	7.575	-53363	10833	61633	108749	81668	38633	120301	No	782.12	Si
SLU 62	4.17	18281.17	-149649	-108836	3782	7.575	7.575	-47892	10833	56660	108749	81668	38633	120301	No	31.81	Si
SLU 77	1.67	37138.92	-183441	-133412	-340	7.575	7.575	-58707	10833	66490	108749	81668	38633	120301	No	353.65	Si
SLU 77	4.17	20464.33	-166331	-120968	3647	7.575	7.575	-53231	10833	61513	108749	81668	38633	120301	No	32.98	Si
SLU 60	1.67	33767.85	-164514	-119647	121	7.575	7.575	-52650	10833	60984	108749	81668	38633	120301	No	996.85	Si
SLU 60	4.17	18140.66	-147392	-107194	3717	7.575	7.575	-47170	10833	56004	108749	81668	38633	120301	No	32.36	Si
SLU 84	1.67	37898.78	-187319	-136232	-408	7.575	7.575	-59948	10833	67618	108749	81668	38633	120301	No	294.84	Si
SLU 84	4.17	21042.55	-170069	-123686	3669	7.575	7.575	-54427	10833	62600	108749	81668	38633	120301	No	32.79	Si
SLU 82	1.67	37449.65	-185090	-134611	-441	7.575	7.575	-59235	10833	66970	108749	81668	38633	120301	No	272.7	Si
SLU 82	4.17	20902.04	-167812	-122045	3604	7.575	7.575	-53705	10833	61944	108749	81668	38633	120301	No	33.38	Si
SLU 79	1.67	36906.17	-182169	-132487	-338	7.575	7.575	-58300	10833	66120	108749	81668	38633	120301	No	356.41	Si
SLU 79	4.17	20355.11	-165051	-120037	3623	7.575	7.575	-52821	10833	61141	108749	81668	38633	120301	No	33.21	Si
SLU 81	1.67	37297.19	-184840	-134429	-124	7.575	7.575	-59155	10833	66897	108749	81668	38633	120301	No	968.11	Si
SLU 81	4.17	20605.98	-167797	-122034	3920	7.575	7.575	-53700	10833	61939	108749	81668	38633	120301	No	30.69	Si
SLU 41	1.67	31876.29	-159948	-116326	31	7.575	7.575	-51188	10833	59656	108749	81668	38633	120301	No	3825.51	Si
SLU 41	4.17	17619.52	-147007	-106914	3509	7.575	7.575	-47047	10833	55892	108749	81668	38633	120301	No	34.28	Si
SLU 74	1.67	36689.79	-181212	-131791	-373	7.575	7.575	-57994	10833	65842	108749	81668	38633	120301	No	322.26	Si
SLU 74	4.17	20323.82	-164074	-119327	3583	7.575	7.575	-52509	10833	60856	108749	81668	38633	120301	No	33.58	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	1.67	157944.71	-144001	-104728	61591	7.575	7.575	-46085	16250	61581	108749	122502	38633	161135		2.62	Si
SLV 2	4.17	11949.15	-129317	-94049	59414	7.575	7.575	-41385	16250	57310	108749	122502	38633	161135		2.71	Si
SLV 9	1.67	-1245.69	-137525	-100018	-51218	7.575	7.575	-44012	16250	59697	108749	122502	38633	161135		3.15	Si
SLV 9	4.17	44817.89	-101218	-73613	-46765	7.575	7.575	-32393	16250	49136	108749	122502	38633	157884		3.38	Si
SLV 14	1.67	-101091.62	-112528	-81839	-78783	7.575	7.575	-36013	16250	52426	108749	122502	38633	161135		2.05	Si
SLV 14	4.17	31175.32	-89098	-64799	-71051	7.575	7.575	-28514	16250	45610	108749	122502	38633	154359		2.17	Si
SLV 15	1.67	-107008.4	-104381	-75913	-62736	7.575	7.575	-33405	16250	50056	108749	122502	38633	158804		2.53	Si
SLV 15	4.17	16650.25	-92310	-67135	-55093	7.575	7.575	-29542	16250	46544	108749	122502	38633	155293		2.82	Si
SLV 3	1.67	152027.94	-135854	-98803	77639	7.575	7.575	-43477	16250	59211	108749	122502	38633	161135		2.08	Si
SLV 3	4.17	-2575.92	-132529	-96385	75372	7.575	7.575	-42413	16250	58244	108749	122502	38633	161135		2.14	Si
SLV 4	1.67	150889.66	-133620	-97178	79059	7.575	7.575	-42762	16250	58561	108749	122502	38633	161135		2.04	Si
SLV 4	4.17	-4286	-131635	-95735	76749	7.575	7.575	-42127	16250	57984	108749	122502	38633	161135		2.1	Si
SLV 1	1.67	159082.99	-146235	-106353	60171	7.575	7.575	-46800	16250	62231	108749	122502	38633	161135		2.68	Si
SLV 1	4.17	13659.24	-130211	-94699	58037	7.575	7.575	-41672	16250	57570	108749	122502	38633	161135		2.78	Si
SLV 13	1.67	-99953.35	-114762	-83464	-80203	7.575	7.575	-36728	16250	53076	108749	122502	38633	161135		2.01	Si
SLV 13	4.17	32885.4	-89992	-65449	-72428	7.575	7.575	-28800	16250	45870	108749	122502	38633	154619		2.13	Si
SLV 16	1.67	-108146.68	-102147	-74288	-61316	7.575	7.575	-32690	16250	49406	108749	122502	38633	158155		2.58	Si
SLV 16	4.17	14940.17	-91416	-66485	-53715	7.575	7.575	-29256	16250	46284	108749	122502	38633	155033		2.89	Si
SLV 8	1.67	52182	-110857	-80623	50074	7.575	7.575	-35478	16250	51940	108749	122502	38633	160688		3.21	Si
SLV 8	4.17	-16218.49	-120409	-87570	51086	7.575	7.575	-38535	16250	54718	108749	122502	38633	161135		3.15	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 3.37 Ta 0.06 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 16	-98515	0.31	655.5	11282.05	16591.22	13936.63	21.26	Si
SLV 14	-98778	0.31	655.5	11302.84	16629.67	13966.26	21.31	Si
SLV 15	-99702	0.31	655.5	11375.37	16764.56	14069.96	21.46	Si
SLV 13	-99965	0.31	655.5	11395.93	16803.02	14099.48	21.51	Si
SLV 12	-109950	0.31	655.5	12138.77	18262.17	15200.47	23.19	Si
SLV 11	-110749	0.31	655.5	12195.13	18379.03	15287.08	23.32	Si
SLV 10	-110827	0.31	655.5	12200.65	18390.53	15295.59	23.33	Si
SLV 9	-111627	0.31	655.5	12256.5	18507.41	15381.95	23.47	Si
SLV 8	-119848	0.31	655.5	12804.34	19654.18	16229.26	24.76	Si
SLV 7	-120647	0.31	655.5	12855	19764.22	16309.61	24.88	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 3	-121841	-135854	-6	0.377	13493.2	0.975	5.61626	4.41923	Si
SLV 1	-120160	-146235	-363	0.378	13322	0.975	5.64165	4.41923	Si
SLV 4	-121002	-133620	-8	0.379	13407.7	0.975	5.6494	4.41923	Si
SLV 2	-119321	-144001	-366	0.381	13236.5	0.975	5.67541	4.41923	Si
SLV 7	-113873	-112361	539	0.394	12681.6	0.974	5.8865	3.83947	Si
SLV 8	-113308	-110857	538	0.396	12624.1	0.973	5.91194	3.83947	Si
SLV 15	-93862	-104381	360	0.466	10643.9	0.969	6.9845	4.41923	Si
SLV 16	-93022	-102147	358	0.469	10558.5	0.969	7.03962	4.41923	Si
SLV 5	-108269	-146967	-653	0.41	12110.9	0.972	6.13343	3.83947	Si
SLV 6	-107704	-145463	-654	0.412	12053.3	0.972	6.161	3.83947	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	12.118	SLU 84	Si
V_SLU	30.189	SLU 83	Si
PF_SLV	2.687	SLV 4	Si
V_SLV	2.009	SLV 13	Si
PFFP_SLV	21.261	SLV 16	Si
R_SLV	1.271	SLV 3	Si

Maschio 72

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-4.968	1.046	-11.173	1.046	L4	L5	6.205	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 83	1.67	21722.38	-145952	-0.0001431	0.0004492	0.0035	6.205	162251.21	299658.94	299658.94	13.79	No	Si
SLU 83	4.17	5548.72	-125120	-0.0001076	0.0004492	0.0035	6.205	174645.65	274807.82	274807.82	49.53	No	Si
SLU 79	1.67	20795.72	-142206	-0.0001383	0.0004492	0.0035	6.205	165352.36	295191.11	295191.11	14.19	No	Si
SLU 79	4.17	4986.97	-121317	-0.0001035	0.0004492	0.0035	6.205	175630.64	270270.34	270270.34	54.2	No	Si
SLU 39	1.67	18900.06	-123179	-0.0001178	0.0004492	0.0035	6.205	175197.81	272491.38	272491.38	14.42	No	Si
SLU 39	4.17	4964.4	-106859	-0.0000903	0.0004492	0.0035	6.205	175773.59	248568.3	248568.3	50.07	No	Si
SLU 78	1.67	20270.71	-143075	-0.0001387	0.0004492	0.0035	6.205	164667.56	296226.78	296226.78	14.61	No	Si
SLU 78	4.17	4814.58	-122147	-0.0001041	0.0004492	0.0035	6.205	175449.31	271260.74	271260.74	56.34	No	Si
SLU 82	1.67	20855.59	-143937	-0.0001402	0.0004492	0.0035	6.205	163966.73	297255.9	297255.9	14.25	No	Si
SLU 82	4.17	5309.46	-123295	-0.0001056	0.0004492	0.0035	6.205	175167.73	272629.66	272629.66	51.35	No	Si
SLU 41	1.67	19106.65	-125103	-0.0001198	0.0004492	0.0035	6.205	174650.92	274787.55	274787.55	14.38	No	Si
SLU 41	4.17	5004.05	-108625	-0.0000919	0.0004492	0.0035	6.205	176061.72	251617.28	251617.28	50.28	No	Si
SLU 84	1.67	21062.19	-145862	-0.0001423	0.0004492	0.0035	6.205	162329.85	299552.07	299552.07	14.22	No	Si
SLU 84	4.17	5349.12	-125060	-0.0001073	0.0004492	0.0035	6.205	174664.48	274735.36	274735.36	51.36	No	Si
SLU 81	1.67	21515.78	-144027	-0.0001409	0.0004492	0.0035	6.205	163892.79	297362.77	297362.77	13.82	No	Si
SLU 81	4.17	5509.07	-123355	-0.0001059	0.0004492	0.0035	6.205	175151.83	272702.13	272702.13	49.5	No	Si
SLU 74	1.67	20724.3	-141239	-0.0001373	0.0004492	0.0035	6.205	166090.95	294037.48	294037.48	14.19	No	Si
SLU 74	4.17	4974.54	-120443	-0.0001027	0.0004492	0.0035	6.205	175801.24	269227.52	269227.52	54.12	No	Si
SLU 77	1.67	20930.9	-143164	-0.0001394	0.0004492	0.0035	6.205	164595.73	296333.65	296333.65	14.16	No	Si
SLU 77	4.17	5014.19	-122208	-0.0001044	0.0004492	0.0035	6.205	175435.31	271333.21	271333.21	54.11	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 2	1.67	65927.72	-87863	-0.00012	0.0006738	0.0035	6.205		228907.47	228907.47	3.47		Si
SLV 2	4.17	-37107.93	-66967	-0.0000796	0.0006738	0.0035	6.205		202278.83	202278.83	5.45		Si
SLV 3	1.67	103135.3	-94998	-0.0001572	0.0006738	0.0035	6.205		245052.01	245052.01	2.38		Si
SLV 3	4.17	-25100.68	-73480	-0.0000756	0.0006738	0.0035	6.205		217136.86	217136.86	8.65		Si
SLV 10	1.67	-67299.91	-85578	-0.0001192	0.0006738	0.0035	6.205		243541.04	243541.04	3.62		Si
SLV 10	4.17	-5770.51	-73477	-0.0000606	0.0006738	0.0035	6.205		217132.04	217132.04	37.63		Si
SLV 1	1.67	67585.98	-87484	-0.000121	0.0006738	0.0035	6.205		228050.38	228050.38	3.37		Si
SLV 1	4.17	-36328.08	-67133	-0.0000791	0.0006738	0.0035	6.205		202667.82	202667.82	5.58		Si
SLV 14	1.67	-75648.17	-97930	-0.0001369	0.0006738	0.0035	6.205		268849.35	268849.35	3.55		Si
SLV 14	4.17	31059.23	-88333	-0.0000926	0.0006738	0.0035	6.205		229971.06	229971.06	7.4		Si
SLV 9	1.67	-66183.45	-85323	-0.0001181	0.0006738	0.0035	6.205		243008.47	243008.47	3.67		Si
SLV 9	4.17	-5245.46	-73589	-0.0000603	0.0006738	0.0035	6.205		217379.27	217379.27	41.44		Si
SLV 8	1.67	93670.58	-107605	-0.0001607	0.0006738	0.0035	6.205		268970.97	268970.97	2.87		Si
SLV 8	4.17	11204.01	-88224	-0.0000768	0.0006738	0.0035	6.205		229724	229724	20.5		Si
SLV 7	1.67	94787.03	-107350	-0.0001614	0.0006738	0.0035	6.205		268522.92	268522.92	2.83		Si
SLV 7	4.17	11729.06	-88335	-0.0000773	0.0006738	0.0035	6.205		229975.97	229975.97	19.61		Si
SLV 13	1.67	-73989.92	-97551	-0.0001352	0.0006738	0.0035	6.205		268108.23	268108.23	3.62		Si
SLV 13	4.17	31839.08	-88498	-0.0000933	0.0006738	0.0035	6.205		230345.31	230345.31	7.23		Si
SLV 4	1.67	101477.04	-95377	-0.0001561	0.0006738	0.0035	6.205		245909.1	245909.1	2.42		Si
SLV 4	4.17	-25880.53	-73314	-0.0000761	0.0006738	0.0035	6.205		216769.66	216769.66	8.38		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	1.67	21062.19	-145862	-106081	9444	6.205	6.205	-56987	10833	53184	108749	66898	31645	98543	No	10.43	Si
SLU 84	4.17	5349.12	-125060	-90952	4250	6.205	6.205	-48860	10833	47133	108749	66898	31645	98543	No	23.19	Si
SLU 76	1.67	19488.8	-140132	-101915	9581	6.205	6.205	-54749	10833	51518	108749	66898	31645	98543	No	10.29	Si
SLU 76	4.17	4614.64	-119451	-86873	4581	6.205	6.205	-46668	10833	45501	108749	66898	31645	98543	No	21.51	Si
SLU 68	1.67	16844.55	-126903	-92293	9436	6.205	6.205	-49580	10833	47669	108749	66898	31645	98543	No	10.44	Si
SLU 68	4.17	3211.37	-106457	-77423	4889	6.205	6.205	-41592	10833	41722	108749	66898	31645	98543	No	20.16	Si
SLU 80	1.67	20135.53	-142117	-103358	9510	6.205	6.205	-55524	10833	52095	108749	66898	31645	98543	No	10.36	Si
SLU 80	4.17	4787.37	-121256	-88186	4460	6.205	6.205	-47374	10833	46027	108749	66898	31645	98543	No	22.09	Si
SLU 82	1.67	20855.59	-143937	-104682	9316	6.205	6.205	-56235	10833	52624	108749	66898	31645	98543	No	10.58	Si
SLU 82	4.17	5309.46	-123295	-89669	4171	6.205	6.205	-48170	10833	46619	108749	66898	31645	98543	No	23.62	Si
SLU 78	1.67	20270.71	-143075	-104054	9553	6.205	6.205	-55898	10833	52373	108749	66898	31645	98543	No	10.31	Si
SLU 78	4.17	4814.58	-122147	-88834	4468	6.205	6.205	-47722	10833	46286	108749	66898	31645	98543	No	22.06	Si
SLU 72	1.67	17491.27	-128887	-93736	9365	6.205	6.205	-50355	10833	48246	108749	66898	31645	98543	No	10.52	Si
SLU 72	4.17	3384.09	-108263	-78737	4768	6.205	6.205	-42297	10833	42247	108749	66898	31645	98543	No	20.67	Si
SLU 73	1.67	19282.21	-138208	-100515	9453	6.205	6.205	-53997	10833	50958	108749	66898	31645	98543	No	10.42	Si
SLU 73	4.17	4574.99	-117686	-85589	4502	6.205	6.205	-45979	10833	44988	108749	66898	31645	98543	No	21.89	Si
SLU 75	1.67	20064.11	-141150	-102654	9425	6.205	6.205	-55146	10833	51814	108749	66898	31645	98543	No	10.46	Si
SLU 75	4.17	4774.93	-120382	-87551	4389	6.205	6.205	-47032	10833	45772	108749	66898	31645	98543	No	22.45	Si
SLU 70	1.67	17626.45	-129845	-94433	9409	6.205	6.205	-50729	10833	48525	108749	66898	31645	98543	No	10.47	Si
SLU 70	4.17	3411.31	-109154	-79385	4775	6.205	6.205	-42646	10833	42506	108749	66898	31645	98543	No	20.64	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	1.67	-24827.14	-82558	-60042	52485	6.205	6.205	-32255	16250	40146	108749	100346	31645	131992		2.51	Si
SLV 6	4.17	-26220.66	-67068	-48777	47435	6.205	6.205	-26203	16250	35640	108749	100346	31645	131992		2.78	Si
SLV 2	1.67	65927.72	-87863	-63900	81578	6.205	6.205	-34327	16250	41689	108749	100346	31645	131992		1.62	Si
SLV 2	4.17	-37107.93	-66967	-48704	71918	6.205	6.205	-26164	16250	35611	108749	100346	31645	131992		1.84	Si
SLV 5	1.67	-23710.68	-82303	-59857	51749	6.205	6.205	-32155	16250	40072	108749	100346	31645	131992		2.55	Si
SLV 5	4.17	-25695.61	-67179	-48858	46701	6.205	6.205	-26246	16250	35672	108749	100346	31645	131992		2.83	Si
SLV 15	1.67	-38440.6	-105065	-76411	-68527	6.205	6.205	-41048	16250	46693	108749	100346	31645	131992		1.93	Si
SLV 15	4.17	43066.48	-94845	-68978	-65787	6.205	6.205	-37055	16250	43720	108749	100346	31645	131992		2.01	Si
SLV 16	1.67	-40098.86	-105444	-76687	-67434	6.205	6.205	-41196	16250	46804	108749	100346	31645	131992		1.96	Si
SLV 16	4.17	42286.64	-94680	-68858	-64696	6.205	6.205	-36991	16250	43672	108749	100346	31645	131992		2.04	Si
SLV 4	1.67	101477.04	-95377	-69365	66255	6.205	6.1156	-37263	16250	43875	108749	100346	31645	131992		1.99	Si
SLV 4	4.17	-25880.53	-73314	-53319	56417	6.205	6.205	-28643	16250	37457	108749	100346	31645	131992		2.34	Si
SLV 14	1.67	-75648.17	-97930	-71222	-52111	6.205	6.205	-38261	16250	44618	108749	100346	31645	131992		2.53	Si
SLV 14	4.17	31059.23	-88333	-64242	-49195	6.205	6.205	-34511	16250	41826	108749	100346	31645	131992		2.68	Si
SLV 3	1.67	103135.3	-94998	-69089	65161	6.205	6.0505	-37115	16250	43765	108749	100346	31645	131992		2.03	Si
SLV 3	4.17	-25100.68	-73480	-53440	55326	6.205	6.205	-28708	16250	37505	108749	100346	31645	131992		2.39	Si
SLV 1	1.67	67585.98	-87484	-63625	80485	6.205	6.205	-34179	16250	41579	108749	100346	31645	131992		1.64	Si
SLV 1	4.17	-36328.08	-67133	-48824	70827	6.205	6.205	-26228	16250	35659	108749	100346	31645	131992		1.86	Si
SLV 13	1.67	-73989.92	-97551	-70946	-53204	6.205	6.205	-38113	16250	44508	108749	100346	31645	131992		2.48	Si
SLV 13	4.17	31839.08	-88498	-64362	-50286	6.205	6.205	-34576	16250	41874	108749	100346	31645	131992		2.62	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 3.37 Ta 0.06 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 5	-78909	0.31	536.94	9098.75	13334.25	11216.5	20.89	Si
SLV 6	-79022	0.31	536.94	9107.92	13351.58	11229.75	20.91	Si
SLV 9	-80931	0.31	536.94	9259.97	13635.27	11447.62	21.32	Si
SLV 10	-81044	0.31	536.94	9268.93	13651.9	11460.41	21.34	Si
SLV 1	-81401	0.31	536.94	9296.92	13703.92	11500.42	21.42	Si
SLV 2	-81570	0.31	536.94	9310.16	13728.61	11519.39	21.45	Si
SLV 3	-85582	0.31	536.94	9617.18	14314.93	11966.06	22.29	Si
SLV 4	-85751	0.31	536.94	9629.8	14339.64	11984.72	22.32	Si
SLV 13	-88141	0.31	536.94	9805.54	14688.93	12247.23	22.81	Si
SLV 14	-88310	0.31	536.94	9817.78	14713.64	12265.71	22.84	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-81070	-105065	544	0.442	9144.9	0.97	6.6273	4.41923	Si
SLV 16	-80958	-105444	548	0.443	9133.4	0.97	6.63461	4.41923	Si
SLV 13	-76435	-97551	185	0.469	8673	0.969	7.04047	4.41923	Si
SLV 14	-76323	-97930	188	0.47	8661.5	0.969	7.0488	4.41923	Si
SLV 11	-82472	-110370	715	0.434	9287.6	0.971	6.50055	3.83947	Si
SLV 12	-82396	-110625	717	0.434	9279.9	0.971	6.50528	3.83947	Si
SLV 3	-69679	-94998	-168	0.508	7985.3	0.966	7.63506	4.41923	Si
SLV 4	-69567	-95377	-164	0.508	7973.8	0.966	7.64665	4.41923	Si
SLV 7	-79055	-107350	501	0.452	8939.7	0.97	6.7812	3.83947	Si
SLV 8	-78979	-107605	504	0.453	8932	0.97	6.78638	3.83947	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	13.795	SLU 83	Si
V_SLU	10.285	SLU 76	Si
PF_SLV	2.376	SLV 3	Si
V_SLV	1.618	SLV 2	Si
PFFP_SLV	20.89	SLV 5	Si
R_SLV	1.5	SLV 15	Si

Maschio 73

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	1.046	-4.168	1.046	L4	L5	4.045	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 81	1.67	23025.64	-90204	-0.0001664	0.0004492	0.0035	4.045	71450.23	123524.65	123524.65	5.36	No	Si
SLU 81	3.77	11576.52	-79107	-0.0001235	0.0004492	0.0035	4.045	74634.47	114787.13	114787.13	9.92	No	Si
SLU 77	1.67	22941.73	-89979	-0.0001659	0.0004492	0.0035	4.045	71548.24	123347.35	123347.35	5.38	No	Si
SLU 77	3.77	11465.09	-78562	-0.0001225	0.0004492	0.0035	4.045	74704.3	114357.99	114357.99	9.97	No	Si
SLU 74	1.67	22703.16	-88861	-0.0001634	0.0004492	0.0035	4.045	72014.09	122467.59	122467.59	5.39	No	Si
SLU 74	3.77	11283.94	-77516	-0.0001206	0.0004492	0.0035	4.045	74815.58	113534.84	113534.84	10.06	No	Si
SLU 82	1.67	23023.23	-90237	-0.0001665	0.0004492	0.0035	4.045	71435.67	123550.78	123550.78	5.37	No	Si
SLU 82	3.77	11579.24	-79126	-0.0001236	0.0004492	0.0035	4.045	74631.85	114802.3	114802.3	9.91	No	Si
SLU 83	1.67	23264.2	-91321	-0.0001688	0.0004492	0.0035	4.045	70943.45	124404.42	124404.42	5.35	No	Si
SLU 83	3.77	11757.68	-80152	-0.0001255	0.0004492	0.0035	4.045	74477.83	115610.29	115610.29	9.83	No	Si
SLU 75	1.67	22700.75	-88895	-0.0001635	0.0004492	0.0035	4.045	72000.75	122493.72	122493.72	5.4	No	Si
SLU 75	3.77	11286.66	-77535	-0.0001206	0.0004492	0.0035	4.045	74813.8	113550.01	113550.01	10.06	No	Si
SLU 79	1.67	22796.01	-89334	-0.0001644	0.0004492	0.0035	4.045	71821.2	122839.72	122839.72	5.39	No	Si
SLU 79	3.77	11393.75	-77950	-0.0001214	0.0004492	0.0035	4.045	74772.97	113876.8	113876.8	9.99	No	Si
SLU 78	1.67	22939.32	-90012	-0.0001659	0.0004492	0.0035	4.045	71533.88	123373.48	123373.48	5.38	No	Si
SLU 78	3.77	11467.81	-78581	-0.0001225	0.0004492	0.0035	4.045	74701.97	114373.17	114373.17	9.97	No	Si
SLU 80	1.67	22793.6	-89367	-0.0001645	0.0004492	0.0035	4.045	71807.43	122865.85	122865.85	5.39	No	Si
SLU 80	3.77	11396.47	-77970	-0.0001215	0.0004492	0.0035	4.045	74770.96	113891.97	113891.97	9.99	No	Si
SLU 84	1.67	23261.79	-91355	-0.0001689	0.0004492	0.0035	4.045	70927.88	124430.54	124430.54	5.35	No	Si
SLU 84	3.77	11760.4	-80171	-0.0001255	0.0004492	0.0035	4.045	74474.66	115625.46	115625.46	9.83	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 2	1.67	21257.39	-50903	-0.0000989	0.0006738	0.0035	4.045		87930.72	87930.72	4.14		Si
SLD 2	3.77	2500.61	-40099	-0.0000512	0.0006738	0.0035	4.045		71887.13	71887.13	28.75		Si
SLV 1	1.67	28177.5	-36778	-0.000094	0.0006738	0.0035	4.045		66956.07	66956.07	2.38		Si
SLV 1	3.77	-4216.88	-23554	-0.0000344	0.0006738	0.0035	4.045		53055.08	53055.08	12.58		Si
SLD 1	1.67	21135.89	-50881	-0.0000987	0.0006738	0.0035	4.045		87897.54	87897.54	4.16		Si
SLD 1	3.77	2513.39	-40196	-0.0000513	0.0006738	0.0035	4.045		72031.6	72031.6	28.66		Si
SLV 2	1.67	28463.1	-36831	-0.0000947	0.0006738	0.0035	4.045		67034.08	67034.08	2.36		Si
SLV 2	3.77	-4246.91	-23325	-0.0000342	0.0006738	0.0035	4.045		52664.14	52664.14	12.4		Si
SLV 3	1.67	28398.82	-36453	-0.0000942	0.0006738	0.0035	4.045		66473.15	66473.15	2.34		Si
SLV 3	3.77	-4220.6	-24141	-0.0000351	0.0006738	0.0035	4.045		54058.41	54058.41	12.81		Si
SLD 3	1.67	21226.11	-50749	-0.0000987	0.0006738	0.0035	4.045		87701.33	87701.33	4.13		Si
SLD 3	3.77	2517.93	-40436	-0.0000516	0.0006738	0.0035	4.045		72387.85	72387.85	28.75		Si
SLV 4	1.67	28684.43	-36506	-0.0000949	0.0006738	0.0035	4.045		66551.16	66551.16	2.32		Si
SLV 4	3.77	-4250.63	-23912	-0.0000349	0.0006738	0.0035	4.045		53667.47	53667.47	12.63		Si
SLD 4	1.67	21347.61	-50771	-0.0000989	0.0006738	0.0035	4.045		87734.52	87734.52	4.11		Si
SLD 4	3.77	2505.15	-40339	-0.0000515	0.0006738	0.0035	4.045		72243.38	72243.38	28.84		Si
SLV 8	1.67	20107.44	-53460	-0.0001001	0.0006738	0.0035	4.045		91727.21	91727.21	4.56		Si
SLV 8	3.77	3988.72	-44850	-0.0000597	0.0006738	0.0035	4.045		78941.89	78941.89	19.79		Si
SLV 7	1.67	19915.15	-53424	-0.0000997	0.0006738	0.0035	4.045		91674.69	91674.69	4.6		Si
SLV 7	3.77	4008.94	-45004	-0.0000599	0.0006738	0.0035	4.045		79170.53	79170.53	19.75		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 69	1.67	21292.61	-82735	-60171	10601	4.045	4.045	-49584	10833	31077	108749	43610	20630	64240	No	6.06	Si
SLU 69	3.77	10193.22	-70985	-51625	10549	4.045	4.045	-42543	10833	27659	108749	43610	20630	64240	No	6.09	Si
SLU 67	1.67	21051.64	-81650	-59382	10515	4.045	4.045	-48935	10833	30762	108749	43610	20630	64240	No	6.11	Si
SLU 67	3.77	10014.78	-69959	-50879	10464	4.045	4.045	-41928	10833	27361	108749	43610	20630	64240	No	6.14	Si
SLU 77	1.67	22941.73	-89979	-65439	10465	4.045	4.045	-53926	10833	33185	108749	43610	20630	64240	No	6.14	Si
SLU 77	3.77	11465.09	-78562	-57136	10407	4.045	4.045	-47083	10833	29863	108749	43610	20630	64240	No	6.17	Si
SLU 66	1.67	21054.05	-81617	-59358	10504	4.045	4.045	-48915	10833	30752	108749	43610	20630	64240	No	6.12	Si
SLU 66	3.77	10012.06	-69939	-50865	10453	4.045	4.045	-41916	10833	27355	108749	43610	20630	64240	No	6.15	Si
SLU 78	1.67	22939.32	-90012	-65463	10476	4.045	4.045	-53946	10833	33194	108749	43610	20630	64240	No	6.13	Si
SLU 78	3.77	11467.81	-78581	-57150	10418	4.045	4.045	-47095	10833	29869	108749	43610	20630	64240	No	6.17	Si
SLU 68	1.67	20904.31	-81028	-58929	10454	4.045	4.045	-48561	10833	30581	108749	43610	20630	64240	No	6.14	Si
SLU 68	3.77	9945.25	-69360	-50444	10403	4.045	4.045	-41569	10833	27187	108749	43610	20630	64240	No	6.17	Si
SLU 71	1.67	21146.89	-82090	-59702	10533	4.045	4.045	-49198	10833	30890	108749	43610	20630	64240	No	6.1	Si
SLU 71	3.77	10121.87	-70374	-51181	10482	4.045	4.045	-42176	10833	27482	108749	43610	20630	64240	No	6.13	Si
SLU 72	1.67	21144.48	-82123	-59726	10544	4.045	4.045	-49218	10833	30899	108749	43610	20630	64240	No	6.09	Si
SLU 72	3.77	10124.59	-70393	-51195	10492	4.045	4.045	-42188	10833	27487	108749	43610	20630	64240	No	6.12	Si
SLU 70	1.67	21290.2	-82768	-60195	10612	4.045	4.045	-49604	10833	31087	108749	43610	20630	64240	No	6.05	Si
SLU 70	3.77	10195.94	-71004	-51639	10560	4.045	4.045	-42554	10833	27665	108749	43610	20630	64240	No	6.08	Si
SLU 49	1.67	19037.59	-73302	-53310	10429	4.045	4.045	-43931	10833	28333	108749	43610	20630	64240	No	6.16	Si
SLU 49	3.77	8672.51	-61551	-44764	10384	4.045	4.045	-36888	10833	24915	108749	43610	20630	64240	No	6.19	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 3	1.67	28398.82	-36453	-26511	23970	4.045	3.7303	-21847	16250	21119	108749	65415	20630	86045		3.59	Si
SLV 3	3.77	-4220.6	-24141	-17557	22671	4.045	4.045	-14468	15394	18680	108749	65415	20630	86045		3.8	Si
SLD 3	1.67	21226.11	-50749	-36908	14764	4.045	4.045	-30415	16250	25278	108749	65415	20630	86045		5.83	Si
SLD 3	3.77	2517.93	-40436	-29408	14186	4.045	4.045	-24234	16250	22278	108749	65415	20630	86045		6.07	Si
SLV 2	1.67	28463.1	-36831	-26786	24964	4.045	3.7491	-22073	16250	21229	108749	65415	20630	86045		3.45	Si
SLV 2	3.77	-4246.91	-23325	-16964	23778	4.045	4.045	-13979	15296	18561	108749	65415	20630	86045		3.62	Si
SLV 6	1.67	19369.7	-54544	-39668	13949	4.045	4.045	-32689	16250	26382	108749	65415	20630	86045		6.17	Si
SLV 6	3.77	4001.1	-42893	-31195	13737	4.045	4.045	-25707	16250	22993	108749	65415	20630	86045		6.26	Si
SLD 4	1.67	21347.61	-50771	-36924	14943	4.045	4.045	-30428	16250	25284	108749	65415	20630	86045		5.76	Si
SLD 4	3.77	2505.15	-40339	-29337	14365	4.045	4.045	-24176	16250	22250	108749	65415	20630	86045		5.99	Si
SLV 4	1.67	28684.43	-36506	-26549	24390	4.045	3.7102	-21878	16250	21135	108749	65415	20630	86045		3.53	Si
SLV 4	3.77	-4250.63	-23912	-17391	23092	4.045	4.045	-14331	15366	18647	108749	65415	20630	86045		3.73	Si
SLV 1	1.67	28177.5	-36778	-26748	24543	4.045	3.7691	-22042	16250	21214	108749	65415	20630	86045		3.51	Si
SLV 1	3.77	-4216.88	-23554	-17130	23357	4.045	4.045	-14116	15323	18595	108749	65415	20630	86045		3.68	Si
SLV 5	1.67	19177.42	-54508	-39642	13666	4.045	4.045	-32668	16250	26371	108749	65415	20630	86045		6.3	Si
SLV 5	3.77	4021.32	-43047	-31307	13454	4.045	4.045	-25799	16250	23037	108749	65415	20630	86045		6.4	Si
SLD 1	1.67	21135.89	-50881	-37004	14995	4.045	4.045	-30494	16250	25316	108749	65415	20630	86045		5.74	Si
SLD 1	3.77	2513.39	-40196	-29234	14465	4.045	4.045	-24090	16250	22208	108749	65415	20630	86045		5.95	Si
SLD 2	1.67	21257.39	-50903	-37020	15174	4.045	4.045	-30507	16250	25323	108749	65415	20630	86045		5.67	Si
SLD 2	3.77	2500.61	-40099	-29163	14645	4.045	4.045	-24032	16250	22180	108749	65415	20630	86045		5.88	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 3.37 Ta 0.06 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 2	-25706	0.31	350.03	3410.21	4716.03	4063.12	11.61	Si
SLV 1	-25829	0.31	350.03	3424.45	4735.71	4080.08	11.66	Si
SLV 4	-25919	0.31	350.03	3434.79	4750.03	4092.41	11.69	Si
SLV 3	-26043	0.31	350.03	3449	4769.72	4109.36	11.74	Si
SLV 6	-45396	0.31	350.03	5419.53	7774.11	6596.82	18.85	Si
SLV 5	-45479	0.31	350.03	5426.91	7786.85	6606.88	18.88	Si
SLV 8	-46107	0.31	350.03	5482.35	7883.06	6682.7	19.09	Si
SLV 7	-46190	0.31	350.03	5489.64	7895.8	6692.72	19.12	Si

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 10	-62469	0.31	350.03	6738.51	10301.23	8519.87	24.34	Si
SLV 9	-62552	0.31	350.03	6743.97	10312.68	8528.32	24.36	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-63856	-86002	430	0.376	7082.4	0.975	5.61303	4.41923	Si
SLV 16	-63519	-86055	431	0.378	7048	0.975	5.63829	4.41923	Si
SLV 13	-62818	-86327	-273	0.384	6976.7	0.974	5.72768	4.41923	Si
SLV 14	-62481	-86380	-271	0.386	6942.3	0.974	5.75445	4.41923	Si
SLV 11	-53603	-68289	1192	0.423	6038.2	0.971	6.32768	3.83947	Si
SLV 12	-53376	-68324	1193	0.424	6015.1	0.97	6.3507	3.83947	Si
SLV 9	-50143	-69373	-1149	0.448	5686	0.969	6.71533	3.83947	Si
SLV 10	-49917	-69408	-1149	0.449	5662.9	0.969	6.74196	3.83947	Si
SLV 7	-43824	-53424	1143	0.501	5042.8	0.965	7.55054	3.83947	Si
SLV 8	-43597	-53460	1144	0.504	5019.7	0.965	7.58448	3.83947	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.347	SLU 83	Si
V_SLU	6.053	SLU 70	Si
PF_SLV	2.32	SLV 4	Si
V_SLV	3.447	SLV 2	Si
PFFP_SLV	11.608	SLV 2	Si
R_SLV	1.27	SLV 15	Si

Maschio 74

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.618	6.651	-17.768	6.651	L4	L5	1.85	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 51	2.57	116.64	-17489	-0.0000513	0.0003743	0.0035	1.85	11170.09	12577.16	12577.16	107.83	No	Si
SLU 51	4.47	-356.49	-19185	-0.000059	0.0003743	0.0035	1.85	11720.99	14109.11	14109.11	39.58	No	Si
SLU 49	2.57	112.49	-17707	-0.0000519	0.0003743	0.0035	1.85	11246.16	12700.77	12700.77	112.91	No	Si
SLU 49	4.47	-355.32	-19458	-0.0000598	0.0003743	0.0035	1.85	11800.57	14224.57	14224.57	40.03	No	Si
SLU 44	2.57	125.55	-16535	-0.0000484	0.0003743	0.0035	1.85	10819.06	12042.39	12042.39	95.92	No	Si
SLU 44	4.47	-330.04	-18110	-0.0000553	0.0003743	0.0035	1.85	11382.79	13663.57	13663.57	41.4	No	Si
SLU 50	2.57	121.07	-17697	-0.000052	0.0003743	0.0035	1.85	11242.81	12695.26	12695.26	104.86	No	Si
SLU 50	4.47	-387.53	-19251	-0.0000595	0.0003743	0.0035	1.85	11740.31	14136.73	14136.73	36.48	No	Si
SLU 45	2.57	122.86	-17508	-0.0000514	0.0003743	0.0035	1.85	11176.78	12587.91	12587.91	102.46	No	Si
SLU 45	4.47	-383.49	-19007	-0.0000587	0.0003743	0.0035	1.85	11667.5	14034.02	14034.02	36.6	No	Si
SLU 47	2.57	119.61	-16942	-0.0000496	0.0003743	0.0035	1.85	10972.65	12269.66	12269.66	102.58	No	Si
SLU 47	4.47	-332.91	-18626	-0.000057	0.0003743	0.0035	1.85	11549.77	13875.2	13875.2	41.68	No	Si
SLU 43	2.57	132.94	-16882	-0.0000495	0.0003743	0.0035	1.85	10950.32	12236	12236	92.04	No	Si
SLU 43	4.47	-381.79	-18219	-0.0000562	0.0003743	0.0035	1.85	11418.76	13707.92	13707.92	35.9	No	Si
SLU 48	2.57	116.92	-17915	-0.0000526	0.0003743	0.0035	1.85	11317.4	12819.35	12819.35	109.64	No	Si
SLU 48	4.47	-386.37	-19523	-0.0000604	0.0003743	0.0035	1.85	11819.32	14252.44	14252.44	36.89	No	Si
SLU 1	2.57	95.27	-13819	-0.0000398	0.0003743	0.0035	1.85	9656.48	10567.38	10567.38	110.92	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 1	4.47	-266.08	-15050	-0.0000452	0.0003743	0.0035	1.85	10213.35	12131.93	12131.93	45.59	No	Si
SLU 46	2.57	118.42	-17299	-0.0000507	0.0003743	0.0035	1.85	11102.76	12470.23	12470.23	105.31	No	Si
SLU 46	4.47	-352.45	-18942	-0.0000582	0.0003743	0.0035	1.85	11647.65	14006.64	14006.64	39.74	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	2.57	2186.35	4524	0.4209753	0.0005615	0.0035	1.48		0	0	0		No
SLV 10	4.47	768.45	-3732	-0.0000167	0.0005615	0.0035	1.85		3512.81	3512.81	4.57		Si
SLV 13	2.57	5726.83	-9846	-0.000101	0.0005615	0.0035	1.85		8422.76	8422.76	1.47		Si
SLV 13	4.47	-4252.19	-708	-0.0028936	0.0005615	0.0035	1.48		1533.4	1533.4	0.36		No
SLV 14	2.57	7151.09	-11132	-0.0001436	0.0005615	0.0035	1.85		9291.05	9291.05	1.3		Si
SLV 14	4.47	-5747.74	2512	0.2545963	0.0005615	0.0035	1.48		0	0	0		No
SLV 15	2.57	5913.58	-22292	-0.0001207	0.0005615	0.0035	1.85		16532.24	16532.24	2.8		Si
SLV 15	4.47	-6171.04	-5219	-0.0014488	0.0005615	0.0035	1.48		5445.61	5445.61	0.88		No
SLV 1	2.57	-7170.86	-7201	-0.0010761	0.0005615	0.0035	1.48		7073.3	7073.3	0.99		No
SLV 1	4.47	7271.3	-32082	-0.0001695	0.0005615	0.0035	1.85		21428.17	21428.17	2.95		Si
SLV 2	2.57	-5746.61	-8488	-0.0001219	0.0005615	0.0035	1.48		8093.09	8093.09	1.41		Si
SLV 2	4.47	5775.75	-28862	-0.0001419	0.0005615	0.0035	1.85		20188.68	20188.68	3.5		Si
SLV 5	2.57	-2641.86	6184	0.6055982	0.0005615	0.0035	1.48		0	0	0		No
SLV 5	4.47	5232.4	-15312	-0.0000918	0.0005615	0.0035	1.85		12187.09	12187.09	2.33		Si
SLV 16	2.57	7337.83	-23578	-0.0001396	0.0005615	0.0035	1.85		17238.25	17238.25	2.35		Si
SLV 16	4.47	-7666.58	-1999	-0.0062993	0.0005615	0.0035	1.48		2683.23	2683.23	0.35		No
SLV 9	2.57	1227.45	5390	0.5116319	0.0005615	0.0035	1.48		0	0	0		No
SLV 9	4.47	1775.36	-5900	-0.0000316	0.0005615	0.0035	1.85		5343.26	5343.26	3.01		Si
SLV 6	2.57	-1682.96	5317	0.5187323	0.0005615	0.0035	1.48		0	0	0		No
SLV 6	4.47	4225.5	-13144	-0.0000752	0.0005615	0.0035	1.85		10670.79	10670.79	2.53		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 76	2.57	78.37	-22440	-18897	-2778	1.85	1.85	-34048	10833	6820	38062	16619	4718	21337	No	7.68	Si
SLU 76	4.47	-93.37	-25593	-21552	-2775	1.85	1.85	-38832	10833	7528	38062	16619	4718	21337	No	7.69	Si
SLU 84	2.57	75	-23581	-19858	-2900	1.85	1.85	-35780	10833	7076	38062	16619	4718	21337	No	7.36	Si
SLU 84	4.47	-56.26	-26940	-22686	-2896	1.85	1.85	-40876	10833	7831	38062	16619	4718	21337	No	7.37	Si
SLU 83	2.57	79.44	-23789	-20033	-2812	1.85	1.85	-36096	10833	7123	38062	16619	4718	21337	No	7.59	Si
SLU 83	4.47	-87.3	-27005	-22741	-2807	1.85	1.85	-40975	10833	7845	38062	16619	4718	21337	No	7.6	Si
SLU 75	2.57	77.17	-22797	-19197	-2749	1.85	1.85	-34589	10833	6900	38062	16619	4718	21337	No	7.76	Si
SLU 75	4.47	-112.91	-25909	-21818	-2745	1.85	1.85	-39311	10833	7599	38062	16619	4718	21337	No	7.77	Si
SLU 82	2.57	80.94	-23174	-19515	-2845	1.85	1.85	-35162	10833	6985	38062	16619	4718	21337	No	7.5	Si
SLU 82	4.47	-53.38	-26424	-22252	-2841	1.85	1.85	-40093	10833	7715	38062	16619	4718	21337	No	7.51	Si
SLU 73	2.57	84.3	-22032	-18553	-2724	1.85	1.85	-33430	10833	6729	38062	16619	4718	21337	No	7.83	Si
SLU 73	4.47	-90.5	-25077	-21117	-2720	1.85	1.85	-38049	10833	7412	38062	16619	4718	21337	No	7.84	Si
SLU 81	2.57	85.37	-23382	-19690	-2757	1.85	1.85	-35478	10833	7032	38062	16619	4718	21337	No	7.74	Si
SLU 81	4.47	-84.43	-26489	-22307	-2753	1.85	1.85	-40192	10833	7729	38062	16619	4718	21337	No	7.75	Si
SLU 78	2.57	71.24	-23204	-19540	-2803	1.85	1.85	-35208	10833	6992	38062	16619	4718	21337	No	7.61	Si
SLU 78	4.47	-115.78	-26425	-22252	-2799	1.85	1.85	-40094	10833	7715	38062	16619	4718	21337	No	7.62	Si
SLU 77	2.57	75.68	-23412	-19716	-2715	1.85	1.85	-35524	10833	7038	38062	16619	4718	21337	No	7.86	Si
SLU 77	4.47	-146.83	-26490	-22307	-2711	1.85	1.85	-40193	10833	7730	38062	16619	4718	21337	No	7.87	Si
SLU 80	2.57	75.39	-22986	-19357	-2774	1.85	1.85	-34877	10833	6943	38062	16619	4718	21337	No	7.69	Si
SLU 80	4.47	-116.95	-26152	-22023	-2770	1.85	1.85	-39681	10833	7654	38062	16619	4718	21337	No	7.7	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	2.57	-1682.96	5317	4478	-13117	1.48	1.8255	0	0	0	38062	19943	3774	23717		1.81	Si
SLV 6	4.47	4225.5	-13144	-11069	-13027	1.85	1.8106	-19944	14405	7825	38062	24929	4718	29646		2.28	Si
SLV 15	2.57	5913.58	-22292	-18772	13730	1.85	1.85	-33824	16250	9019	38062	24929	4718	29646		2.16	Si
SLV 15	4.47	-6171.04	-5219	-4395	13471	1.48	0	0	0	0	38062	19943	3774	23717		1.76	Si
SLV 4	2.57	-5559.86	-20934	-17629	-12131	1.85	1.85	-31763	16250	9019	38062	24929	4718	29646		2.44	Si
SLV 4	4.47	3856.91	-33373	-28104	-11874	1.85	1.85	-50638	16250	10166	38062	24929	4718	29646		2.5	Si
SLV 14	2.57	7151.09	-11132	-9374	12504	1.85	0.8479	-16891	13795	5171	38062	24929	4718	29646		2.37	Si
SLV 14	4.47	-5747.74	2512	2115	12252	1.48	0	0	0	0	38062	19943	3774	23717		1.94	Si
SLV 12	2.57	2808.84	-36963	-31127	12272	1.85	1.85	-56084	16250	10972	38062	24929	4718	29646		2.42	Si
SLV 12	4.47	-5627.69	-18769	-15806	12187	1.85	1.85	-28479	16112	8942	38062	24929	4718	29646		2.43	Si
SLV 3	2.57	-6984.11	-19647	-16545	-15858	1.85	1.7086	-32857	16250	8329	38062	24929	4718	29646		1.87	Si
SLV 3	4.47	5352.46	-36593	-30815	-15603	1.85	1.85	-55523	16250	10889	38062	24929	4718	29646		1.9	Si
SLV 2	2.57	-5746.61	-8488	-7148	-17085	1.48	0.7438	0	0	0	38062	19943	3774	23717		1.39	Si
SLV 2	4.47	5775.75	-28862	-24305	-16822	1.85	1.85	-43793	16250	9153	38062	24929	4718	29646		1.76	Si
SLV 5	2.57	-2641.86	6184	5207	-15627	1.48	1.4933	0	0	0	38062	19943	3774	23717		1.52	Si
SLV 5	4.47	5232.4	-15312	-12894	-15538	1.85	1.7498	-23233	15063	7907	38062	24929	4718	29646		1.91	Si
SLV 1	2.57	-7170.86	-7201	-6064	-20812	1.48	0	0	0	0	38062	19943	3774	23717		1.14	Si
SLV 1	4.47	7271.3	-32082	-27016	-20551	1.85	1.85	-48678	16250	9876	38062	24929	4718	29646		1.44	Si
SLV 16	2.57	7337.83	-23578	-19855	17458	1.85	1.8414	-35776	16250	8977	38062	24929	4718	29646		1.7	Si
SLV 16	4.47	-7666.58	-1999	-1684	17200	1.48	0	0	0	0	38062	19943	3774	23717		1.38	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.31	0	330	156.31	0	0	No, Trazione
SLV 10	179667	0.31	0	899	156.31	0	0	No, Trazione
SLV 6	179667	0.31	5645	-3133	156.31	452.55	2.9	Si

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 5	179667	0.31	6669	-3701	156.31	530.95	3.4	Si
SLV 14	179667	0.31	8695	-4826	156.31	682.65	4.37	Si
SLV 13	179667	0.31	10216	-5670	156.31	793.62	5.08	Si
SLV 16	179667	0.31	25013	-13882	156.31	1741.28	11.14	Si
SLV 15	179667	0.31	26535	-14727	156.31	1825.18	11.68	Si
SLV 2	179667	0.31	32909	-18264	156.31	2149.28	13.75	Si
SLV 1	179667	0.31	34430	-19109	156.31	2220.09	14.2	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 3	-35300	-14851	-375	0.317	3860.1	0.979	4.70588	4.41923	Si
SLV 1	-33108	-3313	243	0.338	3636.8	0.977	5.02404	4.41923	Si
SLV 4	-31788	-16105	-373	0.346	3502.3	0.976	5.14278	4.41923	Si
SLV 2	-29596	-4568	245	0.371	3279	0.975	5.52632	4.41923	Si
SLV 7	-26221	-29650	-1053	0.381	2935.2	0.972	5.69967	3.83947	Si
SLV 8	-23856	-30495	-1051	0.413	2694.4	0.97	6.1818	3.83947	Si
SLV 5	-18913	8810	1007	0.503	2191.3	0.964	7.58757	3.83947	Si, Trazione
SLV 11	-16738	-30621	-1016	0.557	1970	0.96	8.42923	3.83947	Si
SLV 6	-16548	7965	1009	0.562	1950.8	0.96	8.51925	3.83947	Si, Trazione
SLV 12	-14373	-31466	-1015	0.632	1729.6	0.955	9.62278	3.83947	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	35.905	SLU 43	Si
V_SLU	7.358	SLU 84	Si
PF_SLV	0	SLV 5	No
V_SLV	1.14	SLV 1	Si
PFFP_SLV	0	SLV 10	No
R_SLV	1.065	SLV 3	Si

Maschio 75

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-16.768	6.651	-12.888	6.651	L4	L5	3.88	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 77	2.57	-129.41	-55994	-0.0000806	0.0003743	0.0035	3.88	57302.51	74579.23	74579.23	576.3	No	Si
SLU 77	4.47	-5440.9	-65861	-0.0001111	0.0003743	0.0035	3.88	56761.88	80063.31	80063.31	14.72	No	Si
SLU 83	2.57	-216.14	-56979	-0.0000825	0.0003743	0.0035	3.88	57391.69	75194.89	75194.89	347.89	No	Si
SLU 83	4.47	-5454.53	-67162	-0.0001135	0.0003743	0.0035	3.88	56452.82	80410.04	80410.04	14.74	No	Si
SLU 71	2.57	53.72	-49788	-0.0000704	0.0003743	0.0035	3.88	56009.51	67759.22	67759.22	1261.28	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 71	4.47	-5004.04	-58009	-0.000096	0.0003743	0.0035	3.88	57451.09	75851	75851	15.16	No	Si
SLU 79	2.57	-124.58	-55468	-0.0000797	0.0003743	0.0035	3.88	57241.79	74254.34	74254.34	596.04	No	Si
SLU 79	4.47	-5419.81	-65199	-0.0001098	0.0003743	0.0035	3.88	56897.95	79854.08	79854.08	14.73	No	Si
SLU 81	2.57	-231.29	-56055	-0.000081	0.0003743	0.0035	3.88	57308.91	74616.8	74616.8	322.61	No	Si
SLU 81	4.47	-5311.06	-66044	-0.0001111	0.0003743	0.0035	3.88	56721.83	80118.45	80118.45	15.09	No	Si
SLU 69	2.57	48.89	-50314	-0.0000712	0.0003743	0.0035	3.88	56168.12	68170.72	68170.72	1394.33	No	Si
SLU 69	4.47	-5025.13	-58672	-0.0000972	0.0003743	0.0035	3.88	57470.89	76278.64	76278.64	15.18	No	Si
SLU 78	2.57	-178.56	-55658	-0.0000802	0.0003743	0.0035	3.88	57264.71	74371.01	74371.01	416.49	No	Si
SLU 78	4.47	-5377.27	-65591	-0.0001104	0.0003743	0.0035	3.88	56818.99	79979.91	79979.91	14.87	No	Si
SLU 80	2.57	-173.73	-55131	-0.0000793	0.0003743	0.0035	3.88	57198.19	74048.06	74048.06	426.22	No	Si
SLU 80	4.47	-5356.18	-64929	-0.0001091	0.0003743	0.0035	3.88	56949.21	79764.78	79764.78	14.89	No	Si
SLU 74	2.57	-144.56	-55071	-0.0000791	0.0003743	0.0035	3.88	57189.95	74011.09	74011.09	511.98	No	Si
SLU 74	4.47	-5297.43	-64743	-0.0001087	0.0003743	0.0035	3.88	56983.27	79701.61	79701.61	15.05	No	Si
SLU 84	2.57	-265.3	-56642	-0.000082	0.0003743	0.0035	3.88	57364.74	74983.04	74983.04	282.64	No	Si
SLU 84	4.47	-5390.9	-66892	-0.0001128	0.0003743	0.0035	3.88	56521.41	80339.21	80339.21	14.9	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	2.57	-15997.9	-4700	-0.0009711	0.0005615	0.0035	3.104		13077.28	13077.28	0.82		No
SLV 5	4.47	9678.64	-16304	-0.0000407	0.0005615	0.0035	3.88		30142.12	30142.12	3.11		Si
SLV 2	2.57	-26301.15	-29997	-0.0000993	0.0005615	0.0035	3.88		54884.96	54884.96	2.09		Si
SLV 2	4.47	14597.78	-39215	-0.0000837	0.0005615	0.0035	3.88		64137.09	64137.09	4.39		Si
SLV 15	2.57	26314.18	-43707	-0.0001165	0.0005615	0.0035	3.88		69287.47	69287.47	2.63		Si
SLV 15	4.47	-21823.41	-46611	-0.000111	0.0005615	0.0035	3.88		76900.19	76900.19	3.52		Si
SLV 13	2.57	22842.03	-23722	-0.0000844	0.0005615	0.0035	3.88		41405.26	41405.26	1.81		Si
SLV 13	4.47	-17883.05	-29665	-0.0000766	0.0005615	0.0035	3.88		54391.37	54391.37	3.04		Si
SLV 1	2.57	-32149.55	-30440	-0.0001235	0.0005615	0.0035	3.88		55531.42	55531.42	1.73		Si
SLV 1	4.47	18403.64	-39630	-0.0000926	0.0005615	0.0035	3.88		64697.13	64697.13	3.52		Si
SLV 10	2.57	4437.11	-2386	-0.0000919	0.0005615	0.0035	3.88		5325.66	5325.66	1.2		Si
SLV 10	4.47	-3769.73	-13035	-0.0000243	0.0005615	0.0035	3.88		27918.93	27918.93	7.41		Si
SLV 14	2.57	28690.43	-23279	-0.0001174	0.0005615	0.0035	3.88		40776.77	40776.77	1.42		Si
SLV 14	4.47	-21688.91	-29250	-0.0000848	0.0005615	0.0035	3.88		53769.08	53769.08	2.48		Si
SLV 3	2.57	-28677.4	-50425	-0.0001327	0.0005615	0.0035	3.88		81392.04	81392.04	2.84		Si
SLV 3	4.47	14463.28	-56576	-0.00011	0.0005615	0.0035	3.88		84120.19	84120.19	5.82		Si
SLV 16	2.57	32162.58	-43265	-0.0001304	0.0005615	0.0035	3.88		68789.88	68789.88	2.14		Si
SLV 16	4.47	-25629.27	-46196	-0.0001189	0.0005615	0.0035	3.88		76407.91	76407.91	2.98		Si
SLV 6	2.57	-12060.36	-4402	-0.0005006	0.0005615	0.0035	3.104		12526.5	12526.5	1.04		Si
SLV 6	4.47	7116.28	-16025	-0.0000351	0.0005615	0.0035	3.88		29675.16	29675.16	4.17		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 56	2.57	50.03	-48496	-40839	888	3.88	3.88	-35085	10833	21938	38062	34855	9894	44749	No	50.38	Si
SLU 56	4.47	-4828.84	-56563	-47632	888	3.88	3.88	-40921	10833	24655	38062	34855	9894	44749	No	50.37	Si
SLU 50	2.57	233.16	-42290	-35613	954	3.88	3.88	-30595	10833	19848	38062	34855	9894	44749	No	46.92	Si
SLU 50	4.47	-4391.98	-48711	-41020	954	3.88	3.88	-35241	10833	22011	38062	34855	9894	44749	No	46.91	Si
SLU 71	2.57	53.72	-49788	-41927	953	3.88	3.88	-36019	10833	22373	38062	34855	9894	44749	No	46.96	Si
SLU 71	4.47	-5004.04	-58009	-48850	953	3.88	3.88	-41967	10833	25143	38062	34855	9894	44749	No	46.95	Si
SLU 69	2.57	48.89	-50314	-42370	945	3.88	3.88	-36400	10833	22551	38062	34855	9894	44749	No	47.35	Si
SLU 69	4.47	-5025.13	-58672	-49408	945	3.88	3.88	-42447	10833	25366	38062	34855	9894	44749	No	47.34	Si
SLU 77	2.57	-129.41	-55994	-47153	887	3.88	3.88	-40510	10833	24464	38062	34855	9894	44749	No	50.43	Si
SLU 77	4.47	-5440.9	-65861	-55462	888	3.88	3.88	-47648	10833	27787	38062	34855	9894	44749	No	50.42	Si
SLU 45	2.57	213.18	-41893	-35278	886	3.88	3.88	-30307	10833	19714	38062	34855	9894	44749	No	50.51	Si
SLU 45	4.47	-4269.6	-48256	-40636	886	3.88	3.88	-34911	10833	21857	38062	34855	9894	44749	No	50.5	Si
SLU 48	2.57	228.33	-42816	-36056	946	3.88	3.88	-30976	10833	20025	38062	34855	9894	44749	No	47.31	Si
SLU 48	4.47	-4413.07	-49374	-41578	946	3.88	3.88	-35720	10833	22234	38062	34855	9894	44749	No	47.3	Si
SLU 79	2.57	-124.58	-55468	-46710	895	3.88	3.88	-40129	10833	24287	38062	34855	9894	44749	No	49.99	Si
SLU 79	4.47	-5419.81	-65199	-54904	895	3.88	3.88	-47169	10833	27564	38062	34855	9894	44749	No	49.97	Si
SLU 51	2.57	184.01	-41953	-35329	886	3.88	3.88	-30351	10833	19734	38062	34855	9894	44749	No	50.49	Si
SLU 51	4.47	-4328.35	-48442	-40793	887	3.88	3.88	-35046	10833	21920	38062	34855	9894	44749	No	50.48	Si
SLU 58	2.57	54.86	-47970	-40396	896	3.88	3.88	-34704	10833	21761	38062	34855	9894	44749	No	49.94	Si
SLU 58	4.47	-4807.75	-55901	-47074	896	3.88	3.88	-40442	10833	24432	38062	34855	9894	44749	No	49.92	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	2.57	-12060.36	-4402	-3707	-12470	3.104	0	0	0	0	38062	41826	7915	38062		3.05	Si
SLV 6	4.47	7116.28	-16025	-13495	-11963	3.88	3.88	-11593	12735	14824	38062	52283	9894	52886		4.42	Si
SLV 14	2.57	28690.43	-23279	-19604	25193	3.88	2.1227	-16842	13785	16246	38062	52283	9894	54308		2.16	Si
SLV 14	4.47	-21688.91	-29250	-24632	24767	3.88	3.5955	-23084	15033	18257	38062	52283	9894	56319		2.27	Si
SLV 15	2.57	26314.18	-43707	-36806	24626	3.88	3.88	-31620	16250	23127	38062	52283	9894	61189		2.48	Si
SLV 15	4.47	-21823.41	-46611	-39251	23992	3.88	3.88	-33721	16250	24105	38062	52283	9894	62167		2.59	Si
SLV 2	2.57	-26301.15	-29997	-25261	-23377	3.88	3.1896	-26766	15770	18509	38062	52283	9894	56571		2.42	Si
SLV 2	4.47	14597.78	-39215	-33023	-22742	3.88	3.88	-28371	16091	21614	38062	52283	9894	59676		2.62	Si
SLV 16	2.57	32162.58	-43265	-36433	29704	3.88	3.5898	-31300	16250	22978	38062	52283	9894	61040		2.05	Si
SLV 16	4.47	-25629.27	-46196	-38902	29070	3.88	3.88	-33421	16250	23965	38062	52283	9894	62027		2.13	Si
SLV 5	2.57	-15997.9	-4700	-3958	-15888	3.104	0	0	0	0	38062	41826	7915	38062		2.4	Si
SLV 5	4.47	9678.64	-16304	-13730	-15381	3.88	3.88	-11796	12776	14871	38062	52283	9894	52933		3.44	Si
SLV 13	2.57	22842.03	-23722	-19976	20115	3.88	2.9313	-17162	13849	16395	38062	52283	9894	54458		2.71	Si
SLV 13	4.47	-17883.05	-29665	-24981	19690	3.88	3.88	-21461	14709	18397	38062	52283	9894	56459		2.87	Si
SLV 3	2.57	-28677.4	-50425	-42463	-23944	3.88	3.88	-36481	16250	25390	38062	52283	9894	62177		2.6	Si
SLV 3	4.47	14463.28	-56576	-47643	-23518	3.88	3.88	-40930	16250	27462	38062	52283	9894	62177		2.64	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	2.57	-32149.55	-30440	-25634	-28455	3.88	2.6515	-32787	16250	18658	38062	52283	9894	56720		1.99	Si
SLV 1	4.47	18403.64	-39630	-33373	-27820	3.88	3.88	-28671	16151	21754	38062	52283	9894	59816		2.15	Si
SLV 4	2.57	-22829	-49982	-42090	-18866	3.88	3.88	-36160	16250	25241	38062	52283	9894	62177		3.3	Si
SLV 4	4.47	10657.43	-56161	-47294	-18440	3.88	3.88	-40630	16250	27322	38062	52283	9894	62177		3.37	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 10	179667	0.31	6405	-7455	327.84	1071.35	3.27	Si
SLV 9	179667	0.31	6653	-7744	327.84	1111	3.39	Si
SLV 6	179667	0.31	8690	-10116	327.84	1431.01	4.36	Si
SLV 5	179667	0.31	8939	-10405	327.84	1469.36	4.48	Si
SLV 14	179667	0.31	22577	-26280	327.84	3359.2	10.25	Si
SLV 13	179667	0.31	22946	-26709	327.84	3404.4	10.38	Si
SLV 2	179667	0.31	30197	-35149	327.84	4229.84	12.9	Si
SLV 1	179667	0.31	30565	-35578	327.84	4268.61	13.02	Si
SLV 16	179667	0.31	38777	-45136	327.84	5051.33	15.41	Si
SLV 15	179667	0.31	39146	-45565	327.84	5082.86	15.5	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-64797	-66317	-2602	0.327	7154.6	0.976	4.87228	3.83947	Si
SLV 8	-64512	-66229	-2602	0.328	7125.6	0.976	4.89037	3.83947	Si
SLV 11	-62024	-64529	-2581	0.339	6872.2	0.975	5.06012	3.83947	Si
SLV 12	-61739	-64441	-2581	0.341	6843.2	0.975	5.07983	3.83947	Si
SLV 3	-52065	-44233	-823	0.424	5857.9	0.971	6.34584	4.41923	Si
SLV 4	-51642	-44103	-823	0.427	5814.9	0.971	6.39071	4.41923	Si
SLV 15	-42822	-38273	-753	0.501	4917	0.966	7.54125	4.41923	Si
SLV 16	-42399	-38143	-753	0.505	4874	0.965	7.60672	4.41923	Si
SLV 1	-38319	-23498	723	0.551	4458.9	0.963	8.31922	4.41923	Si
SLV 2	-37896	-23368	723	0.556	4415.8	0.962	8.40023	4.41923	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	14.715	SLU 77	Si
V_SLU	46.905	SLU 50	Si
PF_SLV	0.817	SLV 5	No
V_SLV	1.993	SLV 1	Si
PFFP_SLV	3.268	SLV 10	Si
R_SLV	1.269	SLV 7	Si

Maschio 76

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.888	6.651	-8.008	6.651	L4	L5	3.88	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 84	2.57	470.12	-54891	-0.0000796	0.0003743	0.0035	3.88	57164.84	71834.29	71834.29	152.8	No	Si
SLU 84	4.47	3711.39	-68517	-0.0001115	0.0003743	0.0035	3.88	56071.97	78968.68	78968.68	21.28	No	Si
SLU 73	2.57	424	-51648	-0.0000742	0.0003743	0.0035	3.88	56529.43	69222.62	69222.62	163.26	No	Si
SLU 73	4.47	3585.54	-64188	-0.0001033	0.0003743	0.0035	3.88	57077.97	77468.77	77468.77	21.61	No	Si
SLU 77	2.57	322.79	-53993	-0.0000778	0.0003743	0.0035	3.88	57023.35	71103.31	71103.31	220.28	No	Si
SLU 77	4.47	3582.9	-67248	-0.0001088	0.0003743	0.0035	3.88	56430.26	78521.46	78521.46	21.92	No	Si
SLU 74	2.57	342.87	-53301	-0.0000767	0.0003743	0.0035	3.88	56896.24	70543.81	70543.81	205.74	No	Si
SLU 74	4.47	3635.82	-66301	-0.0001072	0.0003743	0.0035	3.88	56663.41	78192.1	78192.1	21.51	No	Si
SLU 78	2.57	365.65	-53744	-0.0000775	0.0003743	0.0035	3.88	56979.38	70901.41	70901.41	193.91	No	Si
SLU 78	4.47	3549.71	-66984	-0.0001082	0.0003743	0.0035	3.88	56498.18	78429.29	78429.29	22.09	No	Si
SLU 81	2.57	447.35	-54448	-0.0000788	0.0003743	0.0035	3.88	57098.34	71472.96	71472.96	159.77	No	Si
SLU 81	4.47	3797.5	-67834	-0.0001104	0.0003743	0.0035	3.88	56271.46	78726.98	78726.98	20.73	No	Si
SLU 83	2.57	427.26	-55141	-0.0000799	0.0003743	0.0035	3.88	57199.44	72038.29	72038.29	168.6	No	Si
SLU 83	4.47	3744.57	-68780	-0.000112	0.0003743	0.0035	3.88	55990.82	79062.58	79062.58	21.11	No	Si
SLU 75	2.57	385.73	-53051	-0.0000764	0.0003743	0.0035	3.88	56846.62	70343.17	70343.17	182.36	No	Si
SLU 75	4.47	3602.64	-66038	-0.0001066	0.0003743	0.0035	3.88	56723.15	78101.01	78101.01	21.68	No	Si
SLU 76	2.57	403.92	-52341	-0.0000753	0.0003743	0.0035	3.88	56694	69773.75	69773.75	172.74	No	Si
SLU 76	4.47	3532.62	-65135	-0.0001048	0.0003743	0.0035	3.88	56910.35	77791.53	77791.53	22.02	No	Si
SLU 82	2.57	490.21	-54199	-0.0000785	0.0003743	0.0035	3.88	57058.09	71270.23	71270.23	145.39	No	Si
SLU 82	4.47	3764.32	-67570	-0.0001099	0.0003743	0.0035	3.88	56344.44	78634.15	78634.15	20.89	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 9	2.57	10692.85	-12100	-0.0000384	0.0005615	0.0035	3.88		22958.34	22958.34	2.15		Si
SLV 9	4.47	-4781.03	-19229	-0.0000347	0.0005615	0.0035	3.88		38248.84	38248.84	8		Si
SLV 15	2.57	22146.51	-49356	-0.0001161	0.0005615	0.0035	3.88		75713.36	75713.36	3.42		Si
SLV 15	4.47	-11475.08	-61286	-0.0001107	0.0005615	0.0035	3.88		91749.41	91749.41	8		Si
SLV 3	2.57	-30074.26	-36002	-0.0001157	0.0005615	0.0035	3.88		63323.22	63323.22	2.11		Si
SLV 3	4.47	21942.07	-41101	-0.0001027	0.0005615	0.0035	3.88		66366.26	66366.26	3.02		Si
SLV 10	2.57	14351.83	-12981	-0.0000528	0.0005615	0.0035	3.88		24488.07	24488.07	1.71		Si
SLV 10	4.47	-7035.24	-20518	-0.000041	0.0005615	0.0035	3.88		40365.45	40365.45	5.74		Si
SLV 2	2.57	-21900.02	-22174	-0.0000807	0.0005615	0.0035	3.88		42979.49	42979.49	1.96		Si
SLV 2	4.47	16537.77	-26722	-0.0000695	0.0005615	0.0035	3.88		45696.94	45696.94	2.76		Si
SLV 1	2.57	-27334.67	-20865	-0.0001179	0.0005615	0.0035	3.104		40926.47	40926.47	1.5		Si
SLV 1	4.47	19885.93	-24806	-0.0000752	0.0005615	0.0035	3.88		42949.92	42949.92	2.16		Si
SLV 14	2.57	30320.75	-35529	-0.0001166	0.0005615	0.0035	3.88		58634.58	58634.58	1.93		Si
SLV 14	4.47	-16879.39	-46907	-0.0001004	0.0005615	0.0035	3.88		77252.25	77252.25	4.58		Si
SLV 16	2.57	27581.17	-50666	-0.0001306	0.0005615	0.0035	3.88		77223.92	77223.92	2.8		Si
SLV 16	4.47	-14823.24	-63202	-0.0001215	0.0005615	0.0035	3.88		93422.59	93422.59	6.3		Si
SLV 4	2.57	-24639.61	-37311	-0.0001029	0.0005615	0.0035	3.88		65076.72	65076.72	2.64		Si
SLV 4	4.47	18593.91	-43017	-0.0000982	0.0005615	0.0035	3.88		68511.2	68511.2	3.68		Si
SLV 13	2.57	24886.1	-34219	-0.0000993	0.0005615	0.0035	3.88		56679.05	56679.05	2.28		Si
SLV 13	4.47	-13531.23	-44991	-0.00009	0.0005615	0.0035	3.88		74986.25	74986.25	5.54		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 42	2.57	532.12	-47746	-40207	583	3.88	3.88	-34542	10833	21686	38062	34855	9894	44749	No	76.75	Si
SLU 42	4.47	3163.85	-60036	-50557	583	3.88	3.88	-43434	10833	25825	38062	34855	9894	44749	No	76.76	Si
SLU 84	2.57	470.12	-54891	-46224	575	3.88	3.88	-39711	10833	24092	38062	34855	9894	44749	No	77.78	Si
SLU 84	4.47	3711.39	-68517	-57698	575	3.88	3.88	-49569	10833	28682	38062	34855	9894	44749	No	77.8	Si
SLU 78	2.57	365.65	-53744	-45258	561	3.88	3.88	-38881	10833	23706	38062	34855	9894	44749	No	79.78	Si
SLU 78	4.47	3549.71	-66984	-56408	561	3.88	3.88	-48460	10833	28166	38062	34855	9894	44749	No	79.8	Si
SLU 83	2.57	427.26	-55141	-46434	537	3.88	3.88	-39892	10833	24176	38062	34855	9894	44749	No	83.34	Si
SLU 83	4.47	3744.57	-68780	-57920	537	3.88	3.88	-49760	10833	28771	38062	34855	9894	44749	No	83.35	Si
SLU 76	2.57	403.92	-52341	-44076	538	3.88	3.88	-37866	10833	23233	38062	34855	9894	44749	No	83.13	Si
SLU 76	4.47	3532.62	-65135	-54850	538	3.88	3.88	-47122	10833	27543	38062	34855	9894	44749	No	83.15	Si
SLU 36	2.57	427.65	-46599	-39241	569	3.88	3.88	-33712	10833	21299	38062	34855	9894	44749	No	78.7	Si
SLU 36	4.47	3002.17	-58504	-49267	569	3.88	3.88	-42325	10833	25309	38062	34855	9894	44749	No	78.71	Si
SLU 80	2.57	355.26	-53199	-44799	559	3.88	3.88	-38487	10833	23522	38062	34855	9894	44749	No	79.98	Si
SLU 80	4.47	3501.82	-66257	-55796	559	3.88	3.88	-47934	10833	27921	38062	34855	9894	44749	No	80	Si
SLU 38	2.57	417.26	-46054	-38782	567	3.88	3.88	-33318	10833	21116	38062	34855	9894	44749	No	78.89	Si
SLU 38	4.47	2954.27	-57777	-48655	567	3.88	3.88	-41799	10833	25064	38062	34855	9894	44749	No	78.9	Si
SLU 34	2.57	465.92	-45195	-38059	546	3.88	3.88	-32697	10833	20827	38062	34855	9894	44749	No	81.95	Si
SLU 34	4.47	2985.07	-56654	-47709	546	3.88	3.88	-40987	10833	24686	38062	34855	9894	44749	No	81.96	Si
SLU 41	2.57	489.26	-47995	-40417	545	3.88	3.88	-34723	10833	21770	38062	34855	9894	44749	No	82.15	Si
SLU 41	4.47	3197.03	-60300	-50779	545	3.88	3.88	-43625	10833	25914	38062	34855	9894	44749	No	82.16	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	2.57	-21900.02	-22174	-18673	-19910	3.88	2.8571	-22027	14822	15874	38062	52283	9894	53936		2.71	Si
SLV 2	4.47	16537.77	-26722	-22503	-19055	3.88	3.88	-19332	14283	17406	38062	52283	9894	55468		2.91	Si
SLV 14	2.57	30320.75	-35529	-29919	26819	3.88	3.2598	-25704	15557	20372	38062	52283	9894	58434		2.18	Si
SLV 14	4.47	-16879.39	-46907	-39501	26381	3.88	3.88	-33935	16250	24205	38062	52283	9894	62177		2.36	Si
SLV 1	2.57	-27334.67	-20865	-17570	-24602	3.104	1.8897	0	0	0	38062	41826	7915	38062		1.55	Si
SLV 1	4.47	19885.93	-24806	-20890	-23748	3.88	3.4151	-17946	14006	16761	38062	52283	9894	54823		2.31	Si
SLV 3	2.57	-30074.26	-36002	-30317	-26367	3.88	3.3139	-30826	16250	20532	38062	52283	9894	58594		2.22	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 3	4.47	21942.07	-41101	-34612	-25929	3.88	3.88	-29735	16250	22249	38062	52283	9894	60311		2.33	Si
SLV 13	2.57	24886.1	-34219	-28816	22126	3.88	3.6383	-24756	15368	19931	38062	52283	9894	57993		2.62	Si
SLV 13	4.47	-13531.23	-44991	-37887	21688	3.88	3.88	-32549	16250	23560	38062	52283	9894	61622		2.84	Si
SLD 14	2.57	13002.64	-35852	-30191	11549	3.88	3.88	-25937	15604	20481	38062	52283	9894	58543		5.07	Si
SLD 14	4.47	-5721.31	-45463	-38285	11367	3.88	3.88	-32891	16250	23718	38062	52283	9894	61780		5.44	Si
SLV 4	2.57	-24639.61	-37311	-31420	-21674	3.88	3.8388	-26993	15815	20973	38062	52283	9894	59035		2.72	Si
SLV 4	4.47	18593.91	-43017	-36225	-21236	3.88	3.88	-31121	16250	22894	38062	52283	9894	60957		2.87	Si
SLV 16	2.57	27581.17	-50666	-42666	25054	3.88	3.88	-36655	16250	25471	38062	52283	9894	62177		2.48	Si
SLV 16	4.47	-14823.24	-63202	-53223	24200	3.88	3.88	-45724	16250	29693	38062	52283	9894	62177		2.57	Si
SLV 10	2.57	14351.83	-12981	-10932	11756	3.88	2.5032	-9391	12295	12778	38062	52283	9894	50840		4.32	Si
SLV 10	4.47	-7035.24	-20518	-17279	12257	3.88	3.88	-14844	13385	15581	38062	52283	9894	53643		4.38	Si
SLV 15	2.57	22146.51	-49356	-41563	20362	3.88	3.88	-35707	16250	25030	38062	52283	9894	62177		3.05	Si
SLV 15	4.47	-11475.08	-61286	-51610	19507	3.88	3.88	-44338	16250	29048	38062	52283	9894	62177		3.19	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 5	179667	0.31	9241	-10757	327.84	1515.88	4.62	Si
SLV 6	179667	0.31	10164	-11831	327.84	1656.57	5.05	Si
SLV 9	179667	0.31	13608	-15840	327.84	2164.22	6.6	Si
SLV 10	179667	0.31	14531	-16914	327.84	2295.7	7	Si
SLV 1	179667	0.31	19850	-23106	327.84	3015.34	9.2	Si
SLV 2	179667	0.31	21221	-24701	327.84	3190.34	9.73	Si
SLV 3	179667	0.31	33502	-38996	327.84	4566.24	13.93	Si
SLV 13	179667	0.31	34406	-40048	327.84	4653.85	14.2	Si
SLV 4	179667	0.31	34873	-40592	327.84	4698.45	14.33	Si
SLV 14	179667	0.31	35777	-41644	327.84	4783.22	14.59	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 12	-66968	-59193	-2726	0.317	7375.8	0.977	4.71299	3.83947	Si
SLV 11	-65639	-58580	-2726	0.322	7240.4	0.976	4.79307	3.83947	Si
SLV 16	-59295	-45006	-908	0.379	6594.2	0.974	5.65382	4.41923	Si
SLV 15	-57320	-44095	-907	0.39	6393.2	0.973	5.82063	4.41923	Si
SLV 8	-60565	-55315	-2675	0.345	6723.6	0.974	5.14115	3.83947	Si
SLV 7	-59236	-54701	-2675	0.351	6588.2	0.974	5.23884	3.83947	Si
SLV 14	-46038	-28840	702	0.473	5244.3	0.968	7.09645	4.41923	Si
SLV 13	-44064	-27929	702	0.49	5043.4	0.967	7.37197	4.41923	Si
SLV 4	-37951	-32078	-738	0.555	4421.3	0.962	8.38412	4.41923	Si
SLV 3	-35976	-31167	-737	0.581	4220.5	0.961	8.78472	4.41923	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	20.731	SLU 81	Si
V_SLU	76.748	SLU 42	Si
PF_SLV	1.497	SLV 1	Si
V_SLV	1.547	SLV 1	Si
PFFP_SLV	4.624	SLV 5	Si
R_SLV	1.228	SLV 12	Si

Maschio 77

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.008	6.651	-5.158	6.651	L4	L5	1.85	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 6	2.57	447.58	-15289	-0.0000476	0.0003743	0.0035	1.85	10315.76	11357.28	11357.28	25.38	No	Si
SLU 6	4.47	908.93	-16568	-0.0000561	0.0003743	0.0035	1.85	10831.74	12060.78	12060.78	13.27	No	Si
SLU 71	2.57	631.49	-21562	-0.0000695	0.0003743	0.0035	1.85	12334.01	14595.17	14595.17	23.11	No	Si
SLU 71	4.47	1156.32	-23616	-0.0000818	0.0003743	0.0035	1.85	12714.95	15359.63	15359.63	13.28	No	Si
SLU 43	2.57	552.14	-17707	-0.0000562	0.0003743	0.0035	1.85	11246.43	12701.21	12701.21	23	No	Si
SLU 43	4.47	1044.36	-19123	-0.0000656	0.0003743	0.0035	1.85	11702.31	13513.24	13513.24	12.94	No	Si
SLU 49	2.57	578.32	-18408	-0.0000587	0.0003743	0.0035	1.85	11480.35	13101.43	13101.43	22.65	No	Si
SLU 49	4.47	1097.54	-19930	-0.0000688	0.0003743	0.0035	1.85	11932.99	13962.12	13962.12	12.72	No	Si
SLU 46	2.57	584.31	-18151	-0.0000579	0.0003743	0.0035	1.85	11396.42	12954.3	12954.3	22.17	No	Si
SLU 46	4.47	1046.52	-19719	-0.0000676	0.0003743	0.0035	1.85	11874.66	13860.11	13860.11	13.24	No	Si
SLU 8	2.57	436.82	-15016	-0.0000467	0.0003743	0.0035	1.85	10198.72	11208.94	11208.94	25.66	No	Si
SLU 8	4.47	908.02	-16206	-0.000055	0.0003743	0.0035	1.85	10691.27	11860.41	11860.41	13.06	No	Si
SLU 48	2.57	550.91	-18494	-0.0000587	0.0003743	0.0035	1.85	11508	13150.8	13150.8	23.87	No	Si
SLU 48	4.47	1147.32	-19907	-0.0000692	0.0003743	0.0035	1.85	11926.7	13951.23	13951.23	12.16	No	Si
SLU 50	2.57	540.15	-18221	-0.0000577	0.0003743	0.0035	1.85	11419.6	12994.6	12994.6	24.06	No	Si
SLU 50	4.47	1146.41	-19546	-0.000068	0.0003743	0.0035	1.85	11825.76	13759.42	13759.42	12	No	Si
SLU 45	2.57	556.9	-18237	-0.0000579	0.0003743	0.0035	1.85	11424.8	13003.68	13003.68	23.35	No	Si
SLU 45	4.47	1096.29	-19696	-0.000068	0.0003743	0.0035	1.85	11868.21	13847.34	13847.34	12.63	No	Si
SLU 51	2.57	567.56	-18135	-0.0000577	0.0003743	0.0035	1.85	11391.18	12945.24	12945.24	22.81	No	Si
SLU 51	4.47	1096.64	-19569	-0.0000676	0.0003743	0.0035	1.85	11832.33	13772.92	13772.92	12.56	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 3	2.57	-3260.28	-13557	-0.0000673	0.0005615	0.0035	1.85		11879.85	11879.85	3.64		Si
SLD 3	4.47	4091.68	-7693	-0.0000671	0.0005615	0.0035	1.85		6803.61	6803.61	1.66		Si
SLV 10	2.57	5978.07	-10342	-0.0001054	0.0005615	0.0035	1.85		8756.48	8756.48	1.46		Si
SLV 10	4.47	-6429.31	-27606	-0.0001443	0.0005615	0.0035	1.85		20073.1	20073.1	3.12		Si
SLV 8	2.57	-3987.6	-23135	-0.0001044	0.0005615	0.0035	1.85		17941.29	17941.29	4.5		Si
SLV 8	4.47	7063.16	-11338	-0.000136	0.0005615	0.0035	1.85		9430.9	9430.9	1.34		Si
SLV 1	2.57	-6665.12	-4904	-0.0021984	0.0005615	0.0035	1.48		5178.71	5178.71	0.78		No
SLV 1	4.47	5590.23	4952	0.420703	0.0005615	0.0035	1.48		0	0	0		No
SLV 9	2.57	4980.76	-9284	-0.000083	0.0005615	0.0035	1.85		8045.39	8045.39	1.62		Si
SLV 9	4.47	-5476.25	-24464	-0.0001236	0.0005615	0.0035	1.85		18661.05	18661.05	3.41		Si
SLV 2	2.57	-5183.83	-6476	-0.0001832	0.0005615	0.0035	1.48		6481.84	6481.84	1.25		Si
SLV 2	4.47	4174.66	285	-0.0359272	0.0005615	0.0035	1.48		0	0	0		No
SLV 3	2.57	-8347.61	-10162	-0.0003919	0.0005615	0.0035	1.48		9389.6	9389.6	1.12		Si
SLV 3	4.47	8628.51	6041	0.474129	0.0005615	0.0035	1.48		0	0	0		No
SLV 7	2.57	-4984.91	-22076	-0.0001107	0.0005615	0.0035	1.85		17333.62	17333.62	3.48		Si
SLV 7	4.47	8016.22	-8196	-0.0087857	0.0005615	0.0035	1.48		7203.38	7203.38	0.9		No
SLV 4	2.57	-6866.32	-11734	-0.0001237	0.0005615	0.0035	1.48		10566.79	10566.79	1.54		Si
SLV 4	4.47	7212.94	1374	-0.0602931	0.0005615	0.0035	1.48		0	0	0		No
SLV 14	2.57	9340.77	-22256	-0.0001632	0.0005615	0.0035	1.85		16512.79	16512.79	1.77		Si
SLV 14	4.47	-7041.6	-41842	-0.0002052	0.0005615	0.0035	1.85		25285.18	25285.18	3.59		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	2.57	751.5	-24126	-20317	2678	1.85	1.85	-36606	10833	7199	38062	16619	4717	21337	No	7.97	Si
SLU 75	4.47	1002.74	-27129	-22846	2134	1.85	1.85	-41163	10833	7873	38062	16619	4717	21337	No	10	Si
SLU 80	2.57	734.75	-24110	-20303	2578	1.85	1.85	-36582	10833	7195	38062	16619	4717	21337	No	8.28	Si
SLU 80	4.47	1052.86	-26979	-22719	2032	1.85	1.85	-40935	10833	7839	38062	16619	4717	21337	No	10.5	Si
SLU 78	2.57	745.51	-24383	-20533	2627	1.85	1.85	-36996	10833	7256	38062	16619	4717	21337	No	8.12	Si
SLU 78	4.47	1053.76	-27341	-23024	2076	1.85	1.85	-41484	10833	7921	38062	16619	4717	21337	No	10.28	Si
SLU 84	2.57	773.25	-24982	-21037	2809	1.85	1.85	-37905	10833	7391	38062	16619	4717	21337	No	7.6	Si
SLU 84	4.47	978.82	-28199	-23746	2249	1.85	1.85	-42786	10833	8113	38062	16619	4717	21337	No	9.49	Si
SLU 81	2.57	751.84	-24811	-20894	2767	1.85	1.85	-37646	10833	7353	38062	16619	4717	21337	No	7.71	Si
SLU 81	4.47	977.57	-27964	-23549	2210	1.85	1.85	-42431	10833	8061	38062	16619	4717	21337	No	9.66	Si
SLU 73	2.57	765.01	-23539	-19822	2740	1.85	1.85	-35715	10833	7067	38062	16619	4717	21337	No	7.79	Si
SLU 73	4.47	917.62	-26572	-22376	2212	1.85	1.85	-40317	10833	7748	38062	16619	4717	21337	No	9.64	Si
SLU 82	2.57	779.25	-24725	-20821	2859	1.85	1.85	-37515	10833	7333	38062	16619	4717	21337	No	7.46	Si
SLU 82	4.47	927.79	-27987	-23568	2307	1.85	1.85	-42466	10833	8066	38062	16619	4717	21337	No	9.25	Si
SLU 74	2.57	724.09	-24212	-20389	2585	1.85	1.85	-36737	10833	7218	38062	16619	4717	21337	No	8.25	Si
SLU 74	4.47	1052.51	-27106	-22826	2037	1.85	1.85	-41128	10833	7868	38062	16619	4717	21337	No	10.48	Si
SLU 76	2.57	759.02	-23796	-20038	2690	1.85	1.85	-36105	10833	7125	38062	16619	4717	21337	No	7.93	Si
SLU 76	4.47	968.65	-26783	-22554	2155	1.85	1.85	-40638	10833	7795	38062	16619	4717	21337	No	9.9	Si
SLU 83	2.57	745.84	-25068	-21110	2717	1.85	1.85	-38036	10833	7410	38062	16619	4717	21337	No	7.85	Si
SLU 83	4.47	1028.59	-28176	-23727	2152	1.85	1.85	-42751	10833	8108	38062	16619	4717	21337	No	9.92	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	2.57	-3987.6	-23135	-19482	-10377	1.85	1.85	-35102	16250	9019	38062	24929	4717	29646		2.86	Si
SLV 8	4.47	7063.16	-11338	-9548	-11065	1.85	0.9061	-17203	13857	5218	38062	24929	4717	29646		2.68	Si
SLV 9	2.57	4980.76	-9284	-7818	13755	1.85	1.1655	-14086	13234	4756	38062	24929	4717	29646		2.16	Si
SLV 9	4.47	-5476.25	-24464	-20601	13695	1.85	1.85	-37119	16250	9019	38062	24929	4717	29646		2.16	Si
SLV 4	2.57	-6866.32	-11734	-9881	-12576	1.48	1.0195	0	0	0	38062	19943	3774	23717		1.89	Si
SLV 4	4.47	7212.94	1374	1157	-13119	1.48	0	0	0	0	38062	19943	3774	23717		1.81	Si
SLV 13	2.57	7859.48	-20684	-17418	15954	1.85	1.6351	-31384	16250	7971	38062	24929	4717	29646		1.86	Si
SLV 13	4.47	-5626.02	-37175	-31306	15749	1.85	1.85	-56406	16250	11020	38062	24929	4717	29646		1.88	Si
SLV 16	2.57	7658.28	-27514	-23170	13448	1.85	1.85	-41748	16250	9019	38062	24929	4717	29646		2.2	Si
SLV 16	4.47	-4003.32	-40753	-34318	13164	1.85	1.85	-61835	16250	11823	38062	24929	4717	29646		2.25	Si
SLV 14	2.57	9340.77	-22256	-18742	18951	1.85	1.5159	-33770	16250	7669	38062	24929	4717	29646		1.56	Si
SLV 14	4.47	-7041.6	-41842	-35235	18854	1.85	1.85	-63487	16250	12067	38062	24929	4717	29646		1.57	Si
SLV 3	2.57	-8347.61	-10162	-8557	-15573	1.48	0.3106	0	0	0	38062	19943	3774	23717		1.52	Si
SLV 3	4.47	8628.51	6041	5087	-16224	1.48	0	0	0	0	38062	19943	3774	23717		1.46	Si
SLV 1	2.57	-6665.12	-4904	-4130	-10070	1.48	0	0	0	0	38062	19943	3774	23717		2.36	Si
SLV 1	4.47	5590.23	4952	4170	-10534	1.48	0	0	0	0	38062	19943	3774	23717		2.25	Si
SLV 7	2.57	-4984.91	-22076	-18590	-12395	1.85	1.85	-33496	16250	9019	38062	24929	4717	29646		2.39	Si
SLV 7	4.47	8016.22	-8196	-6902	-13156	1.48	0	0	0	0	38062	19943	3774	23717		1.8	Si
SLV 10	2.57	5978.07	-10342	-8709	15773	1.85	1.0409	-15692	13555	4994	38062	24929	4717	29646		1.88	Si
SLV 10	4.47	-6429.31	-27606	-23247	15786	1.85	1.85	-41886	16250	9019	38062	24929	4717	29646		1.88	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 1	179667	0.31	0	2871	156.31	0	0	No, Trazione
SLV 3	179667	0.31	0	3485	156.31	0	0	No, Trazione
SLV 4	179667	0.31	0	-827	156.31	0	0	No, e>t/2
SLV 2	179667	0.31	2598	-1442	156.31	212.62	1.36	Si
SLV 7	179667	0.31	17769	-9862	156.31	1307.18	8.36	Si
SLV 5	179667	0.31	21461	-11911	156.31	1535.57	9.82	Si
SLV 8	179667	0.31	23001	-12766	156.31	1626.44	10.4	Si
SLV 6	179667	0.31	26693	-14814	156.31	1833.76	11.73	Si
SLV 11	179667	0.31	38403	-21313	156.31	2393.08	15.31	Si
SLV 9	179667	0.31	42094	-23362	156.31	2538.42	16.24	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 14	-36534	-17619	60	0.316	3985.8	0.979	4.69453	4.41923	Si
SLV 16	-34450	-23919	-422	0.322	3773.5	0.978	4.78444	4.41923	Si
SLV 13	-32349	-16397	84	0.349	3559.4	0.977	5.1933	4.41923	Si
SLV 15	-30265	-22698	-398	0.359	3347.1	0.975	5.35067	4.41923	Si
SLV 10	-25715	-5256	742	0.399	2883.7	0.972	5.96494	3.83947	Si
SLV 9	-22897	-4434	758	0.439	2596.8	0.969	6.58269	3.83947	Si
SLV 12	-18768	-26258	-863	0.513	2176.6	0.963	7.7448	3.83947	Si
SLV 11	-15950	-25435	-847	0.589	1889.9	0.958	8.93549	3.83947	Si
SLV 6	-14943	-1131	842	0.622	1787.6	0.956	9.46066	3.83947	Si
SLV 5	-12125	-309	858	0.739	1501.3	0.949	11.32156	3.83947	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	12.002	SLU 50	Si
V_SLU	7.462	SLU 82	Si
PF_SLV	0	SLV 1	No
V_SLV	1.462	SLV 3	Si
PFFP_SLV	0	SLV 3	No
R_SLV	1.062	SLV 14	Si

Maschio 78

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.023	-4.784	-11.013	-3.314	L4	Z medio 275 cm	1.47	0.3	1.08	1.08	1.08			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 39	1.67	1128.31	-24119	-0.0001133	0.0003743	0.0035	1.47	8204.88	11103.35	11103.35	9.84	No	Si
SLU 39	2.75	1467.17	-22212	-0.0001101	0.0003743	0.0035	1.47	8249.59	10745.73	10745.73	7.32	No	Si
SLU 82	1.67	1322.14	-28657	-0.0001402	0.0003743	0.0035	1.47	7619.87	11734.08	11734.08	8.88	No	Si
SLU 82	2.75	1611.54	-26207	-0.0001327	0.0003743	0.0035	1.47	8019.49	11387.61	11387.61	7.07	No	Si
SLU 42	1.67	1118.19	-24673	-0.0001158	0.0003743	0.0035	1.47	8169.59	11179.45	11179.45	10	No	Si
SLU 42	2.75	1491.12	-22697	-0.0001129	0.0003743	0.0035	1.47	8249.52	10881.95	10881.95	7.3	No	Si
SLU 84	1.67	1339.54	-28922	-0.000142	0.0003743	0.0035	1.47	7564.72	11773.22	11773.22	8.79	No	Si
SLU 84	2.75	1626.41	-26451	-0.0001342	0.0003743	0.0035	1.47	7988.51	11420.95	11420.95	7.02	No	Si
SLU 78	1.67	1336.02	-28172	-0.0001378	0.0003743	0.0035	1.47	7714.57	11663.45	11663.45	8.73	No	Si
SLU 78	2.75	1466.05	-25611	-0.0001269	0.0003743	0.0035	1.47	8086.92	11307.32	11307.32	7.71	No	Si
SLU 83	1.67	1367.04	-28634	-0.0001409	0.0003743	0.0035	1.47	7624.41	11730.8	11730.8	8.58	No	Si
SLU 83	2.75	1617.33	-26209	-0.0001328	0.0003743	0.0035	1.47	8019.14	11388	11388	7.04	No	Si
SLU 41	1.67	1145.7	-24385	-0.0001149	0.0003743	0.0035	1.47	8189.2	11139.7	11139.7	9.72	No	Si
SLU 41	2.75	1482.04	-22456	-0.0001116	0.0003743	0.0035	1.47	8250.52	10821.21	10821.21	7.3	No	Si
SLU 81	1.67	1349.65	-28369	-0.0001391	0.0003743	0.0035	1.47	7677.06	11692	11692	8.66	No	Si
SLU 81	2.75	1602.45	-25965	-0.0001313	0.0003743	0.0035	1.47	8048.19	11354.91	11354.91	7.09	No	Si
SLU 40	1.67	1100.8	-24408	-0.0001142	0.0003743	0.0035	1.47	8187.78	11142.77	11142.77	10.12	No	Si
SLU 40	2.75	1476.25	-22453	-0.0001114	0.0003743	0.0035	1.47	8250.52	10820.45	10820.45	7.33	No	Si
SLU 63	1.67	1203.06	-26120	-0.0001246	0.0003743	0.0035	1.47	8030.06	11375.79	11375.79	9.46	No	Si
SLU 63	2.75	1436.41	-23850	-0.0001175	0.0003743	0.0035	1.47	8218.43	11066.78	11066.78	7.7	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 7	1.67	1810.58	-8200	-0.0000541	0.0005615	0.0035	1.47		5565.08	5565.08	3.07		Si
SLD 7	2.75	560.69	-7716	-0.0000344	0.0005615	0.0035	1.47		5294.81	5294.81	9.44		Si
SLV 8	1.67	3123.35	7618	0.9569444	0.0005615	0.0035	1.176		0	0	0		No
SLV 8	2.75	266.7	6152	0.7928298	0.0005615	0.0035	1.176		0	0	0		No
SLV 12	1.67	3151.3	7878	0.9904919	0.0005615	0.0035	1.176		0	0	0		No
SLV 12	2.75	-252.51	5530	0.7159514	0.0005615	0.0035	1.176		0	0	0		No
SLV 4	1.67	1570.8	-11607	-0.0000633	0.0005615	0.0035	1.47		7387.13	7387.13	4.7		Si
SLV 4	2.75	1548.55	-9247	-0.0000542	0.0005615	0.0035	1.47		6116.78	6116.78	3.95		Si
SLV 7	1.67	3107.3	8003	1.0071971	0.0005615	0.0035	1.176		0	0	0		No
SLV 7	2.75	114.58	6318	0.8154173	0.0005615	0.0035	1.176		0	0	0		No
SLD 11	1.67	1822.49	-8089	-0.0000538	0.0005615	0.0035	1.47		5504.4	5504.4	3.02		Si
SLD 11	2.75	338.88	-7982	-0.0000322	0.0005615	0.0035	1.47		5444.86	5444.86	16.07		Si
SLV 11	1.67	3135.24	8263	1.0407222	0.0005615	0.0035	1.176		0	0	0		No
SLV 11	2.75	-404.62	5696	0.7384355	0.0005615	0.0035	1.176		0	0	0		No
SLD 12	1.67	1829.18	-8249	-0.0000545	0.0005615	0.0035	1.47		5590.76	5590.76	3.06		Si
SLD 12	2.75	402.29	-8051	-0.0000334	0.0005615	0.0035	1.47		5483.41	5483.41	13.63		Si
SLD 8	1.67	1817.27	-8361	-0.0000548	0.0005615	0.0035	1.47		5649.18	5649.18	3.11		Si
SLD 8	2.75	624.1	-7785	-0.0000356	0.0005615	0.0035	1.47		5334.46	5334.46	8.55		Si
SLV 15	1.67	1640.12	-10169	-0.0000589	0.0005615	0.0035	1.47		6608.55	6608.55	4.03		Si
SLV 15	2.75	-408.06	-11073	-0.0000444	0.0005615	0.0035	1.47		7632.19	7632.19	18.7		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	1.67	1336.02	-28172	-23724	-2359	1.47	1.47	-53794	10833	11612	9516	13206	3749	16954	No	7.19	Si
SLU 78	2.75	1466.05	-25611	-21567	-998	1.47	1.47	-48904	10833	10750	9516	13206	3749	16954	No	16.98	Si
SLU 75	1.67	1318.63	-27906	-23500	-2331	1.47	1.47	-53286	10833	11523	9516	13206	3749	16954	No	7.27	Si
SLU 75	2.75	1451.17	-25367	-21362	-991	1.47	1.47	-48438	10833	10667	9516	13206	3749	16954	No	17.1	Si
SLU 73	1.67	1274.4	-27664	-23296	-2379	1.47	1.47	-52824	10833	11441	9516	13206	3749	16954	No	7.13	Si
SLU 73	2.75	1434.87	-25129	-21162	-1055	1.47	1.47	-47984	10833	10587	9516	13206	3749	16954	No	16.06	Si
SLU 84	1.67	1339.54	-28922	-24356	-2526	1.47	1.47	-55227	10833	11865	9516	13206	3749	16954	No	6.71	Si
SLU 84	2.75	1626.41	-26451	-22274	-1264	1.47	1.47	-50507	10833	11032	9516	13206	3749	16954	No	13.41	Si
SLU 83	1.67	1367.04	-28634	-24113	-2385	1.47	1.47	-54677	10833	11768	9516	13206	3749	16954	No	7.11	Si
SLU 83	2.75	1617.33	-26209	-22071	-1147	1.47	1.47	-50047	10833	10951	9516	13206	3749	16954	No	14.78	Si
SLU 42	1.67	1118.19	-24673	-20778	-2306	1.47	1.47	-47113	10833	10434	9516	13206	3749	16954	No	7.35	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 42	2.75	1491.12	-22697	-19113	-1312	1.47	1.47	-43339	10833	9768	9516	13206	3749	16954	No	12.93	Si
SLU 76	1.67	1291.79	-27929	-23520	-2406	1.47	1.47	-53331	10833	11530	9516	13206	3749	16954	No	7.05	Si
SLU 76	2.75	1449.74	-25373	-21367	-1063	1.47	1.47	-48450	10833	10669	9516	13206	3749	16954	No	15.96	Si
SLU 82	1.67	1322.14	-28657	-24132	-2498	1.47	1.47	-54720	10833	11775	9516	13206	3749	16954	No	6.79	Si
SLU 82	2.75	1611.54	-26207	-22069	-1257	1.47	1.47	-50041	10833	10950	9516	13206	3749	16954	No	13.49	Si
SLU 81	1.67	1349.65	-28369	-23889	-2358	1.47	1.47	-54169	10833	11678	9516	13206	3749	16954	No	7.19	Si
SLU 81	2.75	1602.45	-25965	-21866	-1140	1.47	1.47	-49581	10833	10869	9516	13206	3749	16954	No	14.87	Si
SLU 80	1.67	1327.51	-28003	-23582	-2340	1.47	1.47	-53472	10833	11555	9516	13206	3749	16954	No	7.25	Si
SLU 80	2.75	1458.56	-25457	-21437	-992	1.47	1.47	-48609	10833	10698	9516	13206	3749	16954	No	17.09	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	1.67	-1218.58	-45533	-38343	-12106	1.47	1.47	-86944	16250	18521	9516	19809	3749	23557		1.95	Si
SLV 9	2.75	1421.7	-40257	-33901	-9309	1.47	1.47	-76871	16250	16744	9516	19809	3749	23557		2.53	Si
SLV 10	1.67	-1202.53	-45918	-38667	-12669	1.47	1.47	-87679	16250	18651	9516	19809	3749	23557		1.86	Si
SLV 10	2.75	1573.81	-40424	-34041	-9890	1.47	1.47	-77190	16250	16801	9516	19809	3749	23557		2.38	Si
SLV 7	1.67	3107.3	8003	6739	9995	1.176	1.0402	0	0	0	9516	15847	2999	9516		0.95	No
SLV 7	2.75	114.58	6318	5321	9280	1.176	1.47	0	0	0	9516	15847	2999	9516		1.03	Si
SLV 8	1.67	3123.35	7618	6415	9431	1.176	0.975	0	0	0	9516	15847	2999	9516		1.01	Si
SLV 8	2.75	266.7	6152	5180	8699	1.176	1.47	0	0	0	9516	15847	2999	9516		1.09	Si
SLV 5	1.67	-1246.53	-45793	-38562	-14695	1.47	1.47	-87441	16250	18609	9516	19809	3749	23557		1.6	Si
SLV 5	2.75	1940.9	-39635	-33377	-11994	1.47	1.47	-75684	16250	16535	9516	19809	3749	23557		1.96	Si
SLV 12	1.67	3151.3	7878	6634	12021	1.176	1.005	0	0	0	9516	15847	2999	9516		0.79	No
SLV 12	2.75	-252.51	5530	4657	11384	1.176	1.47	0	0	0	9516	15847	2999	9516		0.84	No
SLV 15	1.67	1640.12	-10169	-8563	7101	1.47	1.47	-19417	14300	6610	9516	19809	3749	16125		2.27	Si
SLV 15	2.75	-408.06	-11073	-9324	7792	1.47	1.47	-21143	14645	6914	9516	19809	3749	16430		2.11	Si
SLV 6	1.67	-1230.47	-46178	-38886	-15259	1.47	1.47	-88176	16250	18738	9516	19809	3749	23557		1.54	Si
SLV 6	2.75	2093.01	-39802	-33518	-12575	1.47	1.47	-76002	16250	16591	9516	19809	3749	23557		1.87	Si
SLV 2	1.67	264.66	-27746	-23365	-9775	1.47	1.47	-52981	16250	12530	9516	19809	3749	22046		2.26	Si
SLV 2	2.75	2096.45	-23033	-19396	-8402	1.47	1.47	-43982	16250	10943	9516	19809	3749	20458		2.43	Si
SLV 11	1.67	3135.24	8263	6958	12584	1.176	1.0667	0	0	0	9516	15847	2999	9516		0.76	No
SLV 11	2.75	-404.62	5696	4797	11965	1.176	1.47	0	0	0	9516	15847	2999	9516		0.8	No

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.21 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 11	179667	0.29	0	7109	11.58	0	0	No, Trazione
SLV 12	179667	0.29	0	6845	11.58	0	0	No, Trazione
SLV 8	179667	0.29	0	6928	11.58	0	0	No, Trazione
SLV 7	179667	0.29	0	7192	11.58	0	0	No, Trazione
SLV 3	179667	0.29	22110	-9751	11.58	1250.86	108.03	Si
SLV 15	179667	0.29	22734	-10026	11.58	1280.01	110.55	Si
SLV 4	179667	0.29	22998	-10142	11.58	1292.26	111.61	Si
SLV 16	179667	0.29	23622	-10418	11.58	1320.93	114.08	Si
SLV 1	179667	0.29	55351	-24410	11.58	2334.45	201.62	Si
SLV 13	179667	0.29	55975	-24685	11.58	2345.63	202.58	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 2.21 Wa = 0.05 Ta = 0.0065

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-40424	-45918	-276	0.336	4186.4	0.995	4.9042	2.77265	Si
SLV 9	-40257	-45533	-278	0.336	4169.4	0.995	4.91532	2.77265	Si
SLV 6	-39802	-46178	-256	0.339	4123	0.995	4.95641	2.77265	Si
SLV 5	-39635	-45793	-258	0.34	4106	0.995	4.96793	2.77265	Si
SLV 14	-25106	-26879	-216	0.456	2625	0.992	6.68361	2.80805	Si
SLV 13	-24859	-26308	-219	0.459	2599.8	0.992	6.72783	2.80805	Si
SLV 2	-23033	-27746	-149	0.487	2413.7	0.991	7.14171	2.80805	Si
SLV 1	-22786	-27175	-152	0.491	2388.4	0.991	7.19484	2.80805	Si
SLV 16	-11320	-10740	-145	0.834	1219.9	0.983	12.34015	2.80805	Si
SLV 15	-11073	-10169	-148	0.849	1194.7	0.982	12.56203	2.80805	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.022	SLU 84	Si
V_SLU	6.712	SLU 84	Si
PF_SLV	0	SLV 7	No
V_SLV	0.756	SLV 11	No
PFFP_SLV	0	SLV 12	No
R_SLV	1.769	SLV 10	Si

Maschio 79

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.023	-4.784	-11.013	-3.314	Z medio 275 cm	L5	1.47	0.3	2.32	2.32	2.32			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 77	2.75	-352.65	-22767	-0.0000932	0.0003743	0.0035	1.47	8248.87	11068.57	11068.57	31.39	No	Si
SLU 77	5.07	-1731.12	-17780	-0.0000941	0.0003743	0.0035	1.47	7893.45	9779.66	9779.66	5.65	No	Si
SLU 80	2.75	-386.64	-22852	-0.0000942	0.0003743	0.0035	1.47	8247.87	11088.82	11088.82	28.68	No	Si
SLU 80	5.07	-1711.4	-17797	-0.0000939	0.0003743	0.0035	1.47	7896.09	9785	9785	5.72	No	Si
SLU 74	2.75	-360.39	-22530	-0.0000923	0.0003743	0.0035	1.47	8250.41	11006.43	11006.43	30.54	No	Si
SLU 74	5.07	-1715.83	-17573	-0.000093	0.0003743	0.0035	1.47	7861.09	9713.76	9713.76	5.66	No	Si
SLU 81	2.75	-527.12	-22915	-0.0000969	0.0003743	0.0035	1.47	8246.98	11103.63	11103.63	21.06	No	Si
SLU 81	5.07	-1749.87	-17972	-0.0000953	0.0003743	0.0035	1.47	7922.23	9837.53	9837.53	5.62	No	Si
SLU 82	2.75	-559.15	-23149	-0.0000986	0.0003743	0.0035	1.47	8242.52	11156.36	11156.36	19.95	No	Si
SLU 82	5.07	-1740.53	-18121	-0.0000958	0.0003743	0.0035	1.47	7943.73	9880.27	9880.27	5.68	No	Si
SLU 75	2.75	-392.43	-22764	-0.0000939	0.0003743	0.0035	1.47	8248.9	11067.83	11067.83	28.2	No	Si
SLU 75	5.07	-1706.5	-17722	-0.0000935	0.0003743	0.0035	1.47	7884.55	9761.61	9761.61	5.72	No	Si
SLU 83	2.75	-519.37	-23152	-0.0000979	0.0003743	0.0035	1.47	8242.45	11157.03	11157.03	21.48	No	Si
SLU 83	5.07	-1765.16	-18179	-0.0000965	0.0003743	0.0035	1.47	7951.88	9896.34	9896.34	5.61	No	Si
SLU 84	2.75	-551.41	-23386	-0.0000995	0.0003743	0.0035	1.47	8236.18	11206.31	11206.31	20.32	No	Si
SLU 84	5.07	-1755.83	-18328	-0.000097	0.0003743	0.0035	1.47	7972.37	9936.36	9936.36	5.66	No	Si
SLU 79	2.75	-354.6	-22618	-0.0000926	0.0003743	0.0035	1.47	8250.06	11030.51	11030.51	31.11	No	Si
SLU 79	5.07	-1720.73	-17648	-0.0000934	0.0003743	0.0035	1.47	7873.01	9738.12	9738.12	5.66	No	Si
SLU 78	2.75	-384.69	-23001	-0.0000949	0.0003743	0.0035	1.47	8245.54	11123.47	11123.47	28.92	No	Si
SLU 78	5.07	-1721.79	-17929	-0.0000947	0.0003743	0.0035	1.47	7915.89	9824.85	9824.85	5.71	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 16	2.75	1695.41	-11338	-0.0000641	0.0005615	0.0035	1.47		7240.49	7240.49	4.27		Si
SLV 16	5.07	-2470.57	-7152	-0.0000628	0.0005615	0.0035	1.47		5326.61	5326.61	2.16		Si
SLV 12	2.75	2605.22	5884	0.736902	0.0005615	0.0035	1.176		0	0	0		No
SLV 12	5.07	-1676.61	2687	0.3551547	0.0005615	0.0035	1.176		0	0	0		No
SLD 12	2.75	986.22	-7078	-0.0000382	0.0005615	0.0035	1.47		4905.13	4905.13	4.97		Si
SLD 12	5.07	-1398.76	-6129	-0.0000406	0.0005615	0.0035	1.47		4686.32	4686.32	3.35		Si
SLV 7	2.75	2009.02	7302	0.9273872	0.0005615	0.0035	1.176		0	0	0		No
SLV 7	5.07	-1027.86	2563	0.3365414	0.0005615	0.0035	1.176		0	0	0		No
SLV 15	2.75	1820.04	-11318	-0.0000659	0.0005615	0.0035	1.47		7229.68	7229.68	3.97		Si
SLV 15	5.07	-2702.85	-6736	-0.0000693	0.0005615	0.0035	1.47		5066.4	5066.4	1.87		Si
SLV 8	2.75	1925.12	7289	0.926435	0.0005615	0.0035	1.176		0	0	0		No
SLV 8	5.07	-871.47	2283	0.2996454	0.0005615	0.0035	1.176		0	0	0		No
SLD 11	2.75	1021.19	-7072	-0.0000387	0.0005615	0.0035	1.47		4901.66	4901.66	4.8		Si
SLD 11	5.07	-1463.95	-6013	-0.0000411	0.0005615	0.0035	1.47		4612.21	4612.21	3.15		Si
SLD 15	2.75	700.73	-13993	-0.0000595	0.0005615	0.0035	1.47		8708.12	8708.12	12.43		Si
SLD 15	5.07	-1840.07	-9875	-0.0000608	0.0005615	0.0035	1.47		6950.05	6950.05	3.78		Si
SLV 13	2.75	377.55	-24672	-0.0000964	0.0005615	0.0035	1.47		13310.8	13310.8	35.26		Si
SLV 13	5.07	-2610.77	-15515	-0.0000942	0.0005615	0.0035	1.47		9953.46	9953.46	3.81		Si
SLV 11	2.75	2689.13	5897	0.7376606	0.0005615	0.0035	1.176		0	0	0		No
SLV 11	5.07	-1833	2967	0.3920347	0.0005615	0.0035	1.176		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	2.75	-527.12	-22915	-19297	-1404	1.47	1.47	-43756	10833	6561	26168	13206	3749	16954	No	12.07	Si
SLU 81	5.07	-1749.87	-17972	-15134	3460	1.47	1.47	-34317	10833	5451	26168	13206	3749	16954	No	4.9	Si
SLU 82	2.75	-559.15	-23149	-19494	-1550	1.47	1.47	-44202	10833	6613	26168	13206	3749	16954	No	10.94	Si
SLU 82	5.07	-1740.53	-18121	-15260	3359	1.47	1.47	-34602	10833	5484	26168	13206	3749	16954	No	5.05	Si
SLU 80	2.75	-386.64	-22852	-19244	-1304	1.47	1.47	-43635	10833	6547	26168	13206	3749	16954	No	13	Si
SLU 80	5.07	-1711.4	-17797	-14987	3351	1.47	1.47	-33983	10833	5412	26168	13206	3749	16954	No	5.06	Si
SLU 79	2.75	-354.6	-22618	-19046	-1159	1.47	1.47	-43188	10833	6494	26168	13206	3749	16954	No	14.63	Si
SLU 79	5.07	-1720.73	-17648	-14861	3452	1.47	1.47	-33698	10833	5378	26168	13206	3749	16954	No	4.91	Si
SLU 84	2.75	-551.41	-23386	-19693	-1559	1.47	1.47	-44655	10833	6667	26168	13206	3749	16954	No	10.88	Si
SLU 84	5.07	-1755.83	-18328	-15434	3395	1.47	1.47	-34997	10833	5531	26168	13206	3749	16954	No	4.99	Si
SLU 83	2.75	-519.37	-23152	-19496	-1413	1.47	1.47	-44208	10833	6614	26168	13206	3749	16954	No	12	Si
SLU 83	5.07	-1765.16	-18179	-15308	3496	1.47	1.47	-34712	10833	5497	26168	13206	3749	16954	No	4.85	Si
SLU 74	2.75	-360.39	-22530	-18973	-1158	1.47	1.47	-43021	10833	6475	26168	13206	3749	16954	No	14.63	Si
SLU 74	5.07	-1715.83	-17573	-14798	3434	1.47	1.47	-33555	10833	5361	26168	13206	3749	16954	No	4.94	Si
SLU 75	2.75	-392.43	-22764	-19170	-1304	1.47	1.47	-43468	10833	6527	26168	13206	3749	16954	No	13	Si
SLU 75	5.07	-1706.5	-17722	-14924	3333	1.47	1.47	-33839	10833	5395	26168	13206	3749	16954	No	5.09	Si
SLU 78	2.75	-384.69	-23001	-19369	-1313	1.47	1.47	-43920	10833	6580	26168	13206	3749	16954	No	12.92	Si
SLU 78	5.07	-1721.79	-17929	-15098	3369	1.47	1.47	-34235	10833	5441	26168	13206	3749	16954	No	5.03	Si
SLU 77	2.75	-352.65	-22767	-19172	-1167	1.47	1.47	-43473	10833	6528	26168	13206	3749	16954	No	14.53	Si
SLU 77	5.07	-1731.12	-17780	-14972	3470	1.47	1.47	-33950	10833	5408	26168	13206	3749	16954	No	4.89	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	2.75	-2014.08	-20008	-16849	-9802	1.47	1.47	-38205	16250	7166	26168	19809	3749	23557		2.4	Si
SLV 2	5.07	305.32	-17277	-14549	-5417	1.47	1.47	-32990	16250	7166	26168	19809	3749	23557		4.35	Si
SLV 6	2.75	-2883.17	-37223	-31346	-13069	1.47	1.47	-71078	16250	10482	26168	19809	3749	23557		1.8	Si
SLV 6	5.07	-564.53	-26980	-22720	-6639	1.47	1.47	-51518	16250	8181	26168	19809	3749	23557		3.55	Si
SLV 16	2.75	1695.41	-11338	-9548	7762	1.47	1.47	-21650	14747	6503	26168	19809	3749	23557		3.03	Si
SLV 16	5.07	-2470.57	-7152	-6022	9317	1.47	1.1687	-17320	13881	4867	26168	19809	3749	23557		2.53	Si
SLV 12	2.75	2605.22	5884	4955	11348	1.176	0.8767	0	0	0	26168	15847	2999	18846		1.66	Si
SLV 12	5.07	-1676.61	2687	2263	10864	1.176	0.3333	0	0	0	26168	15847	2999	18846		1.73	Si
SLV 7	2.75	2009.02	7302	6149	8628	1.176	1.3797	0	0	0	26168	15847	2999	18846		2.18	Si
SLV 7	5.07	-1027.86	2563	2158	8408	1.176	1.0018	0	0	0	26168	15847	2999	18846		2.24	Si
SLV 11	2.75	2689.13	5897	4966	12004	1.176	0.837	0	0	0	26168	15847	2999	18846		1.57	Si
SLV 11	5.07	-1833	2967	2498	11534	1.176	0.3515	0	0	0	26168	15847	2999	18846		1.63	Si
SLV 15	2.75	1820.04	-11318	-9531	8737	1.47	1.47	-21613	14739	6500	26168	19809	3749	23557		2.7	Si
SLV 15	5.07	-2702.85	-6736	-5673	10312	1.47	1.0014	-19059	14229	4274	26168	19809	3749	23557		2.28	Si
SLV 8	2.75	1925.12	7289	6138	7972	1.176	1.4127	0	0	0	26168	15847	2999	18846		2.36	Si
SLV 8	5.07	-871.47	2283	1923	7738	1.176	1.06	0	0	0	26168	15847	2999	18846		2.44	Si
SLV 10	2.75	-2203.07	-38629	-32529	-9693	1.47	1.47	-73761	16250	10797	26168	19809	3749	23557		2.43	Si
SLV 10	5.07	-1369.68	-26576	-22380	-3513	1.47	1.47	-50747	16250	8091	26168	19809	3749	23557		6.71	Si
SLV 5	2.75	-2799.27	-37210	-31335	-12413	1.47	1.47	-71052	16250	10479	26168	19809	3749	23557		1.9	Si
SLV 5	5.07	-720.92	-26701	-22485	-5970	1.47	1.47	-50985	16250	8119	26168	19809	3749	23557		3.95	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.91 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 8	179667	0.32	0	4671	59.88	0	0	No, Trazione
SLV 12	179667	0.32	0	3408	59.88	0	0	No, Trazione
SLV 7	179667	0.32	0	4611	59.88	0	0	No, Trazione
SLV 11	179667	0.32	0	3348	59.88	0	0	No, Trazione
SLV 4	179667	0.32	13085	-5771	59.88	791.42	13.22	Si
SLV 3	179667	0.32	13287	-5860	59.88	802.46	13.4	Si
SLV 16	179667	0.32	22626	-9979	59.88	1275.01	21.29	Si
SLV 15	179667	0.32	22828	-10068	59.88	1284.39	21.45	Si
SLV 2	179667	0.32	36269	-15995	59.88	1829.44	30.55	Si
SLV 1	179667	0.32	36471	-16084	59.88	1836.43	30.67	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.91 Wa = 0.05 Ta = 0.03

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-26980	-37223	80	0.36	2891.8	0.984	5.31369	3.34516	Si
SLV 10	-26576	-38629	125	0.363	2850.7	0.984	5.35487	3.34516	Si
SLV 5	-26701	-37210	81	0.363	2863.4	0.984	5.3581	3.34516	Si
SLV 9	-26297	-38615	125	0.366	2822.2	0.984	5.40038	3.34516	Si
SLV 2	-17277	-20008	3	0.522	1903.2	0.977	7.76167	3.55682	Si
SLV 1	-16862	-19988	4	0.532	1860.9	0.976	7.92328	3.55682	Si
SLV 14	-15931	-24692	152	0.549	1766	0.975	8.18756	3.55682	Si
SLV 13	-15515	-24672	153	0.561	1723.7	0.974	8.37369	3.55682	Si
SLV 4	-8498	-6654	-19	0.946	1009.5	0.958	14.34987	3.55682	Si
SLV 3	-8083	-6634	-17	0.986	967.3	0.956	14.99457	3.55682	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.606	SLU 83	Si
V_SLU	4.85	SLU 83	Si
PF_SLV	0	SLV 7	No
V_SLV	1.57	SLV 11	Si
PFFP_SLV	0	SLV 12	No
R_SLV	1.588	SLV 6	Si

Maschio 80

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.013	-3.314	-11.013	-0.354	L4	Z medio 391 cm	2.96	0.3	2.24	1.08	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	1.67	4716.31	-56259	-0.0001333	0.0003743	0.0035	2.96	31450.15	47161.14	47161.14	10	No	Si
SLU 79	2.75	972.03	-54293	-0.000111	0.0003743	0.0035	2.96	32098.68	46563.49	46563.49	47.9	No	Si
SLU 84	1.67	4663.77	-58272	-0.0001384	0.0003743	0.0035	2.96	30655.2	47790.16	47790.16	10.25	No	Si
SLU 84	2.75	821.51	-56259	-0.0001151	0.0003743	0.0035	2.96	31450.33	47160.99	47160.99	57.41	No	Si
SLU 77	1.67	4743.9	-56605	-0.0001343	0.0003743	0.0035	2.96	31323.1	47267.89	47267.89	9.96	No	Si
SLU 77	2.75	987.69	-54648	-0.0001119	0.0003743	0.0035	2.96	31990.97	46670.14	46670.14	47.25	No	Si
SLU 80	1.67	4559.31	-56523	-0.0001332	0.0003743	0.0035	2.96	31353.61	47242.51	47242.51	10.36	No	Si
SLU 80	2.75	921.65	-54536	-0.0001114	0.0003743	0.0035	2.96	32025.49	46636.34	46636.34	50.6	No	Si
SLU 78	1.67	4586.9	-56869	-0.0001343	0.0003743	0.0035	2.96	31223.59	47349.64	47349.64	10.32	No	Si
SLU 78	2.75	937.3	-54891	-0.0001123	0.0003743	0.0035	2.96	31914.96	46743.37	46743.37	49.87	No	Si
SLU 74	1.67	4669.3	-55978	-0.0001323	0.0003743	0.0035	2.96	31550.73	47074.58	47074.58	10.08	No	Si
SLU 74	2.75	934.17	-54003	-0.0001101	0.0003743	0.0035	2.96	32183.41	46476.96	46476.96	49.75	No	Si
SLU 82	1.67	4589.17	-57645	-0.0001363	0.0003743	0.0035	2.96	30917.07	47592.34	47592.34	10.37	No	Si
SLU 82	2.75	767.99	-55615	-0.0001133	0.0003743	0.0035	2.96	31676.76	46963.32	46963.32	61.15	No	Si
SLU 75	1.67	4512.3	-56242	-0.0001323	0.0003743	0.0035	2.96	31456.63	47155.62	47155.62	10.45	No	Si
SLU 75	2.75	883.78	-54246	-0.0001105	0.0003743	0.0035	2.96	32112.52	46549.51	46549.51	52.67	No	Si
SLU 81	1.67	4746.17	-57382	-0.0001364	0.0003743	0.0035	2.96	31023.28	47509.7	47509.7	10.01	No	Si
SLU 81	2.75	818.37	-55372	-0.0001129	0.0003743	0.0035	2.96	31758.52	46889.34	46889.34	57.3	No	Si
SLU 83	1.67	4820.77	-58009	-0.0001384	0.0003743	0.0035	2.96	30766.83	47706.81	47706.81	9.9	No	Si
SLU 83	2.75	871.9	-56016	-0.0001148	0.0003743	0.0035	2.96	31537.21	47086.33	47086.33	54	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 15	1.67	9647.24	-31835	-0.0000918	0.0005615	0.0035	2.96		38959.1	38959.1	4.04		Si
SLV 15	2.75	3389.88	-32410	-0.0000695	0.0005615	0.0035	2.96		39455.8	39455.8	11.64		Si
SLV 16	1.67	9266.12	-32611	-0.0000919	0.0005615	0.0035	2.96		39630.67	39630.67	4.28		Si
SLV 16	2.75	3228.63	-33041	-0.0000701	0.0005615	0.0035	2.96		40003.5	40003.5	12.39		Si
SLV 8	1.67	16970.44	-14241	-0.0001866	0.0005615	0.0035	2.96		19814.85	19814.85	1.17		Si
SLV 8	2.75	5729.96	-14207	-0.0000442	0.0005615	0.0035	2.96		19775.16	19775.16	3.45		Si
SLD 12	1.67	9173.41	-29004	-0.0000844	0.0005615	0.0035	2.96		36383.98	36383.98	3.97		Si
SLD 12	2.75	2931.73	-28432	-0.0000603	0.0005615	0.0035	2.96		35716.42	35716.42	12.18		Si
SLD 7	1.67	8788.85	-28505	-0.000082	0.0005615	0.0035	2.96		35801.6	35801.6	4.07		Si
SLD 7	2.75	2717.1	-27607	-0.000058	0.0005615	0.0035	2.96		34758.81	34758.81	12.79		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 11	1.67	18376.87	-14377	-0.0002955	0.0005615	0.0035	2.96		19974.66	19974.66	1.09		Si
SLV 11	2.75	6447.18	-15296	-0.0000487	0.0005615	0.0035	2.96		20989.32	20989.32	3.26		Si
SLV 12	1.67	18120.27	-14900	-0.0002193	0.0005615	0.0035	2.96		20562.12	20562.12	1.13		Si
SLV 12	2.75	6338.61	-15722	-0.0000491	0.0005615	0.0035	2.96		21448.67	21448.67	3.38		Si
SLV 7	1.67	17227.03	-13718	-0.0002422	0.0005615	0.0035	2.96		19166.79	19166.79	1.11		Si
SLV 7	2.75	5838.53	-13782	-0.0000438	0.0005615	0.0035	2.96		19247.59	19247.59	3.3		Si
SLD 8	1.67	8681.89	-28723	-0.000082	0.0005615	0.0035	2.96		36055.64	36055.64	4.15		Si
SLD 8	2.75	2671.84	-27785	-0.0000581	0.0005615	0.0035	2.96		34964.35	34964.35	13.09		Si
SLD 11	1.67	9280.37	-28786	-0.0000844	0.0005615	0.0035	2.96		36129.53	36129.53	3.89		Si
SLD 11	2.75	2976.99	-28255	-0.0000601	0.0005615	0.0035	2.96		35510.11	35510.11	11.93		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	1.67	4559.31	-56523	-47598	9564	2.96	2.96	-53602	10833	23313	23789	26591	7548	34139	No	3.57	Si
SLU 80	2.75	921.65	-54536	-45925	10619	2.96	2.96	-51717	10833	22644	23789	26591	7548	34139	No	3.21	Si
SLU 78	1.67	4586.9	-56869	-47889	9609	2.96	2.96	-53930	10833	23430	23789	26591	7548	34139	No	3.55	Si
SLU 78	2.75	937.3	-54891	-46224	10668	2.96	2.96	-52054	10833	22764	23789	26591	7548	34139	No	3.2	Si
SLU 79	1.67	4716.31	-56259	-47376	9866	2.96	2.96	-53352	10833	23225	23789	26591	7548	34139	No	3.46	Si
SLU 79	2.75	972.03	-54293	-45720	10941	2.96	2.96	-51487	10833	22562	23789	26591	7548	34139	No	3.12	Si
SLU 82	1.67	4589.17	-57645	-48543	9824	2.96	2.96	-54666	10833	23691	23789	26591	7548	34139	No	3.48	Si
SLU 82	2.75	767.99	-55615	-46833	11025	2.96	2.96	-52740	10833	23007	23789	26591	7548	34139	No	3.1	Si
SLU 74	1.67	4669.3	-55978	-47139	9841	2.96	2.96	-53085	10833	23130	23789	26591	7548	34139	No	3.47	Si
SLU 74	2.75	934.17	-54003	-45477	10912	2.96	2.96	-51212	10833	22465	23789	26591	7548	34139	No	3.13	Si
SLU 77	1.67	4743.9	-56605	-47667	9912	2.96	2.96	-53680	10833	23341	23789	26591	7548	34139	No	3.44	Si
SLU 77	2.75	987.69	-54648	-46019	10990	2.96	2.96	-51824	10833	22682	23789	26591	7548	34139	No	3.11	Si
SLU 83	1.67	4820.77	-58009	-48850	10197	2.96	2.96	-55011	10833	23814	23789	26591	7548	34139	No	3.35	Si
SLU 83	2.75	871.9	-56016	-47172	11426	2.96	2.96	-53121	10833	23143	23789	26591	7548	34139	No	2.99	Si
SLU 81	1.67	4746.17	-57382	-48322	10126	2.96	2.96	-54416	10833	23603	23789	26591	7548	34139	No	3.37	Si
SLU 81	2.75	818.37	-55372	-46629	11347	2.96	2.96	-52510	10833	22926	23789	26591	7548	34139	No	3.01	Si
SLU 84	1.67	4663.77	-58272	-49072	9894	2.96	2.96	-55261	10833	23903	23789	26591	7548	34139	No	3.45	Si
SLU 84	2.75	821.51	-56259	-47376	11104	2.96	2.96	-53351	10833	23224	23789	26591	7548	34139	No	3.07	Si
SLU 75	1.67	4512.3	-56242	-47361	9538	2.96	2.96	-53335	10833	23219	23789	26591	7548	34139	No	3.58	Si
SLU 75	2.75	883.78	-54246	-45681	10589	2.96	2.96	-51443	10833	22546	23789	26591	7548	34139	No	3.22	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	1.67	18376.87	-14377	-12107	32862	2.96	0.6052	-69753	16250	11255	23789	39886	7548	35043		1.07	Si
SLV 11	2.75	6447.18	-15296	-12881	35018	2.96	2.96	-14506	13318	11826	23789	39886	7548	35615		1.02	Si
SLD 12	1.67	9173.41	-29004	-24425	17242	2.96	2.96	-27505	15918	16182	23789	39886	7548	39971		2.32	Si
SLD 12	2.75	2931.73	-28432	-23943	18468	2.96	2.96	-26963	15809	15989	23789	39886	7548	39778		2.15	Si
SLV 7	1.67	17227.03	-13718	-11552	32304	2.96	0.6726	-59377	16250	11033	23789	39886	7548	34822		1.08	Si
SLV 7	2.75	5838.53	-13782	-11606	34525	2.96	2.96	-13070	13031	11571	23789	39886	7548	35360		1.02	Si
SLD 11	1.67	9280.37	-28786	-24241	17284	2.96	2.96	-27299	15876	16108	23789	39886	7548	39897		2.31	Si
SLD 11	2.75	2976.99	-28255	-23793	18501	2.96	2.96	-26794	15776	15929	23789	39886	7548	39718		2.15	Si
SLD 8	1.67	8681.89	-28723	-24188	17003	2.96	2.96	-27239	15864	16087	23789	39886	7548	39876		2.35	Si
SLD 8	2.75	2671.84	-27785	-23398	18257	2.96	2.96	-26349	15686	15771	23789	39886	7548	39560		2.17	Si
SLV 5	1.67	-11725.44	-61765	-52013	-19047	2.96	2.96	-58573	16250	27217	23789	39886	7548	47434		2.49	Si
SLV 5	2.75	-5000.69	-57926	-48779	-20023	2.96	2.96	-54932	16250	25923	23789	39886	7548	47434		2.37	Si
SLD 7	1.67	8788.85	-28505	-24004	17046	2.96	2.96	-27032	15823	16014	23789	39886	7548	39802		2.34	Si
SLD 7	2.75	2717.1	-27607	-23248	18290	2.96	2.96	-26180	15653	15711	23789	39886	7548	39500		2.16	Si
SLV 8	1.67	16970.44	-14241	-11992	32203	2.96	0.865	-47513	16250	11209	23789	39886	7548	34998		1.09	Si
SLV 8	2.75	5729.96	-14207	-11964	34445	2.96	2.96	-13473	13111	11643	23789	39886	7548	35432		1.03	Si
SLV 12	1.67	18120.27	-14900	-12547	32761	2.96	0.7915	-54614	16250	11431	23789	39886	7548	35220		1.08	Si
SLV 12	2.75	6338.61	-15722	-13239	34938	2.96	2.96	-14909	13398	11898	23789	39886	7548	35687		1.02	Si
SLV 6	1.67	-11982.04	-62288	-52453	-19149	2.96	2.96	-59069	16250	27393	23789	39886	7548	47434		2.48	Si
SLV 6	2.75	-5109.26	-58351	-49138	-20103	2.96	2.96	-55335	16250	26066	23789	39886	7548	47434		2.36	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 2.21 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.29	15369	-13648	102.71	1841.14	17.93	Si
SLV 8	179667	0.29	15930	-14146	102.71	1900.55	18.5	Si
SLV 11	179667	0.29	16483	-14637	102.71	1958.53	19.07	Si
SLV 12	179667	0.29	17044	-15135	102.71	2016.85	19.64	Si
SLV 3	179667	0.29	32837	-29159	102.71	3433.43	33.43	Si
SLV 4	179667	0.29	33670	-29899	102.71	3496.08	34.04	Si
SLV 15	179667	0.29	36549	-32455	102.71	3703.2	36.05	Si
SLV 16	179667	0.29	37382	-33195	102.71	3760.46	36.61	Si
SLV 1	179667	0.29	49040	-43547	102.71	4434.54	43.17	Si
SLV 2	179667	0.29	49873	-44287	102.71	4473.64	43.55	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 2.21 Wa = 0.05 Ta = 0.0279

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-59865	-62947	-95	0.337	6377.5	0.986	4.96718	3.05453	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 9	-59440	-62424	-97	0.339	6334.2	0.986	4.99502	3.05453	Si
SLV 6	-58351	-62288	76	0.344	6223.2	0.986	5.07387	3.05453	Si
SLV 5	-57926	-61765	75	0.346	6179.9	0.986	5.10377	3.05453	Si
SLV 14	-46284	-47026	-373	0.408	4993.5	0.982	6.02919	3.23358	Si
SLV 13	-45653	-46249	-375	0.412	4929.2	0.982	6.09713	3.23358	Si
SLV 2	-41238	-44830	198	0.452	4479.3	0.98	6.69342	3.23358	Si
SLV 1	-40606	-44053	196	0.457	4414.9	0.98	6.78087	3.23358	Si
SLV 16	-33041	-32611	-440	0.535	3644.3	0.976	7.96667	3.23358	Si
SLV 15	-32410	-31835	-441	0.544	3579.9	0.976	8.09806	3.23358	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.896	SLU 83	Si
V_SLU	2.988	SLU 83	Si
PF_SLV	1.087	SLV 11	Si
V_SLV	1.017	SLV 11	Si
PFFP_SLV	17.925	SLV 7	Si
R_SLV	1.626	SLV 10	Si

Maschio 82

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.013	-0.354	-11.013	1.046	L4	L5	1.4	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 74	1.67	3073.94	-30548	-0.0002043	0.0003743	0.0035	1.4	6107.4	10793.24	10793.24	3.51	No	Si
SLU 74	5.07	791.06	-23784	-0.0001128	0.0003743	0.0035	1.4	7388.57	10171.71	10171.71	12.86	No	Si
SLU 79	1.67	3092.41	-30735	-0.0002062	0.0003743	0.0035	1.4	6050.74	10785.61	10785.61	3.49	No	Si
SLU 79	5.07	803.21	-23971	-0.000114	0.0003743	0.0035	1.4	7373.28	10196.63	10196.63	12.69	No	Si
SLU 84	1.67	3123.64	-31500	-0.0002126	0.0003743	0.0035	1.4	5806.89	10754.87	10754.87	3.44	No	Si
SLU 84	5.07	777.2	-24683	-0.0001172	0.0003743	0.0035	1.4	7304.6	10292.89	10292.89	13.24	No	Si
SLU 78	1.67	3053.61	-30854	-0.0002061	0.0003743	0.0035	1.4	6013.93	10780.76	10780.76	3.53	No	Si
SLU 78	5.07	826.59	-24164	-0.0001155	0.0003743	0.0035	1.4	7356.3	10222.52	10222.52	12.37	No	Si
SLU 75	1.67	3014.15	-30466	-0.0002023	0.0003743	0.0035	1.4	6131.77	10796.58	10796.58	3.58	No	Si
SLU 75	5.07	805.32	-23787	-0.0001131	0.0003743	0.0035	1.4	7388.33	10172.11	10172.11	12.63	No	Si
SLU 82	1.67	3084.18	-31112	-0.0002087	0.0003743	0.0035	1.4	5932.92	10770.36	10770.36	3.49	No	Si
SLU 82	5.07	755.94	-24306	-0.0001148	0.0003743	0.0035	1.4	7343.04	10241.64	10241.64	13.55	No	Si
SLU 81	1.67	3143.98	-31193	-0.0002109	0.0003743	0.0035	1.4	5906.84	10767.09	10767.09	3.42	No	Si
SLU 81	5.07	741.68	-24303	-0.0001145	0.0003743	0.0035	1.4	7343.32	10241.24	10241.24	13.81	No	Si
SLU 77	1.67	3113.4	-30936	-0.0002082	0.0003743	0.0035	1.4	5988.53	10777.46	10777.46	3.46	No	Si
SLU 77	5.07	812.33	-24161	-0.0001152	0.0003743	0.0035	1.4	7356.57	10222.12	10222.12	12.58	No	Si
SLU 83	1.67	3183.44	-31581	-0.0002148	0.0003743	0.0035	1.4	5779.77	10751.64	10751.64	3.38	No	Si
SLU 83	5.07	762.94	-24680	-0.0001169	0.0003743	0.0035	1.4	7304.92	10292.49	10292.49	13.49	No	Si
SLU 80	1.67	3032.61	-30653	-0.0002041	0.0003743	0.0035	1.4	6075.6	10788.93	10788.93	3.56	No	Si
SLU 80	5.07	817.47	-23974	-0.0001143	0.0003743	0.0035	1.4	7373.03	10197.03	10197.03	12.47	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	1.67	-3074.54	-13288	-0.0000998	0.0005615	0.0035	1.4		8344.36	8344.36	2.71		Si
SLV 5	5.07	1454.65	-13390	-0.0000732	0.0005615	0.0035	1.4		7936.66	7936.66	5.46		Si
SLV 12	1.67	7294.8	-28556	-0.0002581	0.0005615	0.0035	1.4		13513.72	13513.72	1.85		Si
SLV 12	5.07	-293.99	-18698	-0.0000754	0.0005615	0.0035	1.4		10755.59	10755.59	36.58		Si
SLV 11	1.67	7306.14	-28515	-0.0002582	0.0005615	0.0035	1.4		13501.74	13501.74	1.85		Si
SLV 11	5.07	-299.55	-18679	-0.0000754	0.0005615	0.0035	1.4		10748.03	10748.03	35.88		Si
SLV 7	1.67	7614.84	-28821	-0.0002681	0.0005615	0.0035	1.4		13591.28	13591.28	1.78		Si
SLV 7	5.07	-218.36	-16457	-0.000065	0.0005615	0.0035	1.4		9811.01	9811.01	44.93		Si
SLV 6	1.67	-3085.88	-13329	-0.0001002	0.0005615	0.0035	1.4		8364.72	8364.72	2.71		Si
SLV 6	5.07	1460.2	-13409	-0.0000733	0.0005615	0.0035	1.4		7947	7947	5.44		Si
SLV 10	1.67	-3394.58	-13023	-0.0001047	0.0005615	0.0035	1.4		8213.18	8213.18	2.42		Si
SLV 10	5.07	1379.02	-15631	-0.0000811	0.0005615	0.0035	1.4		8979.54	8979.54	6.51		Si
SLD 7	1.67	4311.85	-24070	-0.0001712	0.0005615	0.0035	1.4		12226.57	12226.57	2.84		Si
SLD 7	5.07	254.7	-16157	-0.0000644	0.0005615	0.0035	1.4		9191.31	9191.31	36.09		Si
SLD 8	1.67	4307.13	-24087	-0.0001712	0.0005615	0.0035	1.4		12231.38	12231.38	2.84		Si
SLD 8	5.07	257.02	-16165	-0.0000645	0.0005615	0.0035	1.4		9194.53	9194.53	35.77		Si
SLV 8	1.67	7603.51	-28862	-0.000268	0.0005615	0.0035	1.4		13603.3	13603.3	1.79		Si
SLV 8	5.07	-212.81	-16476	-0.000065	0.0005615	0.0035	1.4		9819.48	9819.48	46.14		Si
SLV 9	1.67	-3383.25	-12982	-0.0001044	0.0005615	0.0035	1.4		8192.93	8192.93	2.42		Si
SLV 9	5.07	1373.46	-15612	-0.0000809	0.0005615	0.0035	1.4		8971.83	8971.83	6.53		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	1.67	3073.94	-30548	-25724	7386	1.4	1.4	-61248	10833	8207	38062	12577	3570	16147	No	2.19	Si
SLU 74	5.07	791.06	-23784	-20029	170	1.4	1.4	-47688	10833	6689	38062	12577	3570	16147	No	95.19	Si
SLU 77	1.67	3113.4	-30936	-26051	7472	1.4	1.4	-62026	10833	8295	38062	12577	3570	16147	No	2.16	Si
SLU 77	5.07	812.33	-24161	-20346	160	1.4	1.4	-48444	10833	6773	38062	12577	3570	16147	No	100.75	Si
SLU 79	1.67	3092.41	-30735	-25882	7421	1.4	1.4	-61623	10833	8249	38062	12577	3570	16147	No	2.18	Si
SLU 79	5.07	803.21	-23971	-20186	163	1.4	1.4	-48063	10833	6731	38062	12577	3570	16147	No	99.15	Si
SLU 84	1.67	3123.64	-31500	-26526	7459	1.4	1.4	-63157	10833	8421	38062	12577	3570	16147	No	2.16	Si
SLU 84	5.07	777.2	-24683	-20786	36	1.4	1.4	-49490	10833	6891	38062	12577	3570	16147	No	443.43	Si
SLU 75	1.67	3014.15	-30466	-25656	7226	1.4	1.4	-61085	10833	8189	38062	12577	3570	16147	No	2.23	Si
SLU 75	5.07	805.32	-23787	-20031	7	1.4	1.4	-47694	10833	6689	38062	12577	3570	16147	No	2472.33	Si
SLU 81	1.67	3143.98	-31193	-26268	7533	1.4	1.4	-62543	10833	8352	38062	12577	3570	16147	No	2.14	Si
SLU 81	5.07	741.68	-24303	-20466	209	1.4	1.4	-48728	10833	6805	38062	12577	3570	16147	No	77.3	Si
SLU 83	1.67	3183.44	-31581	-26595	7619	1.4	1.4	-63320	10833	8440	38062	12577	3570	16147	No	2.12	Si
SLU 83	5.07	762.94	-24680	-20783	200	1.4	1.4	-49484	10833	6890	38062	12577	3570	16147	No	80.93	Si
SLU 78	1.67	3053.61	-30854	-25982	7312	1.4	1.4	-61863	10833	8276	38062	12577	3570	16147	No	2.21	Si
SLU 78	5.07	826.59	-24164	-20349	-3	1.4	1.4	-48450	10833	6774	38062	12577	3570	16147	No	5688.43	Si
SLU 82	1.67	3084.18	-31112	-26199	7373	1.4	1.4	-62379	10833	8334	38062	12577	3570	16147	No	2.19	Si
SLU 82	5.07	755.94	-24306	-20468	46	1.4	1.4	-48734	10833	6806	38062	12577	3570	16147	No	352.68	Si
SLU 80	1.67	3032.61	-30653	-25813	7262	1.4	1.4	-61460	10833	8231	38062	12577	3570	16147	No	2.22	Si
SLU 80	5.07	817.47	-23974	-20189	0	1.4	1.4	-48068	10833	6731	38062	12577	3570	16147	No	63928.09	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 12	1.67	7294.8	-28556	-24047	19777	1.4	1.3336	-57255	16250	8434	38062	18865	3570	22435		1.13	Si
SLV 12	5.07	-293.99	-18698	-15746	13437	1.4	1.4	-37490	16250	6825	38062	18865	3570	22435		1.67	Si
SLV 16	1.67	3190.61	-22773	-19177	11583	1.4	1.4	-45660	16250	7136	38062	18865	3570	22435		1.94	Si
SLV 16	5.07	198.19	-20221	-17028	4409	1.4	1.4	-40544	16250	6825	38062	18865	3570	22435		5.09	Si
SLV 7	1.67	7614.84	-28821	-24270	18455	1.4	1.3074	-57786	16250	8494	38062	18865	3570	22435		1.22	Si
SLV 7	5.07	-218.36	-16457	-13859	13297	1.4	1.4	-32997	16250	6825	38062	18865	3570	22435		1.69	Si
SLV 8	1.67	7603.51	-28862	-24305	18397	1.4	1.3097	-57868	16250	8503	38062	18865	3570	22435		1.22	Si
SLV 8	5.07	-212.81	-16476	-13875	13243	1.4	1.4	-33035	16250	6825	38062	18865	3570	22435		1.69	Si
SLV 11	1.67	7306.14	-28515	-24013	19835	1.4	1.3314	-57173	16250	8425	38062	18865	3570	22435		1.13	Si
SLV 11	5.07	-299.55	-18679	-15730	13491	1.4	1.4	-37451	16250	6825	38062	18865	3570	22435		1.66	Si
SLV 10	1.67	-3394.58	-13023	-10967	-8195	1.4	1.318	-28151	16047	6345	38062	18865	3570	22435		2.74	Si
SLV 10	5.07	1379.02	-15631	-13163	-12966	1.4	1.4	-31340	16250	6825	38062	18865	3570	22435		1.73	Si
SLV 15	1.67	3207.44	-22712	-19126	11669	1.4	1.4	-45538	16250	7122	38062	18865	3570	22435		1.92	Si
SLV 15	5.07	189.95	-20193	-17004	4489	1.4	1.4	-40487	16250	6825	38062	18865	3570	22435		5	Si
SLV 5	1.67	-3074.54	-13288	-11190	-9518	1.4	1.4	-26642	15745	6613	38062	18865	3570	22435		2.36	Si
SLV 5	5.07	1454.65	-13390	-11276	-13107	1.4	1.4	-26847	15786	6630	38062	18865	3570	22435		1.71	Si
SLV 6	1.67	-3085.88	-13329	-11224	-9576	1.4	1.4	-26724	15762	6620	38062	18865	3570	22435		2.34	Si
SLV 6	5.07	1460.2	-13409	-11292	-13160	1.4	1.4	-26886	15794	6633	38062	18865	3570	22435		1.7	Si
SLV 9	1.67	-3383.25	-12982	-10932	-8137	1.4	1.3182	-28057	16028	6338	38062	18865	3570	22435		2.76	Si
SLV 9	5.07	1373.46	-15612	-13147	-12913	1.4	1.4	-31302	16250	6825	38062	18865	3570	22435		1.74	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 2	179667	0.31	26902	-11299	121.15	1396.29	11.53	Si
SLV 1	179667	0.31	26950	-11319	121.15	1398.24	11.54	Si
SLV 6	179667	0.31	28572	-12000	121.15	1463.27	12.08	Si
SLV 5	179667	0.31	28604	-12014	121.15	1464.54	12.09	Si
SLV 4	179667	0.31	34134	-14336	121.15	1669.8	13.78	Si
SLV 3	179667	0.31	34182	-14357	121.15	1671.47	13.8	Si
SLV 10	179667	0.31	37228	-15636	121.15	1773.64	14.64	Si
SLV 9	179667	0.31	37260	-15649	121.15	1774.68	14.65	Si
SLV 8	179667	0.31	52678	-22125	121.15	2173.97	17.94	Si
SLV 7	179667	0.31	52710	-22138	121.15	2174.6	17.95	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.

- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 16	-20221	-22773	367	0.395	2259.8	0.973	5.90681	4.41923	Si
SLV 15	-20193	-22712	367	0.396	2256.9	0.973	5.9144	4.41923	Si
SLV 14	-19301	-18113	371	0.411	2166.1	0.972	6.14592	4.41923	Si
SLV 13	-19273	-18052	370	0.411	2163.2	0.972	6.1542	4.41923	Si
SLV 12	-18698	-28556	73	0.437	2104.7	0.971	6.53981	3.83947	Si
SLV 11	-18679	-28515	72	0.437	2102.8	0.971	6.54594	3.83947	Si
SLV 8	-16476	-28862	-177	0.48	1878.5	0.968	7.21172	3.83947	Si
SLV 7	-16457	-28821	-177	0.481	1876.6	0.967	7.2187	3.83947	Si
SLV 4	-12816	-23792	-463	0.573	1506	0.96	8.67197	4.41923	Si
SLV 3	-12787	-23731	-464	0.574	1503.1	0.96	8.68818	4.41923	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.377	SLU 83	Si
V_SLU	2.119	SLU 83	Si
PF_SLV	1.785	SLV 7	Si
V_SLV	1.131	SLV 11	Si
PFFP_SLV	11.525	SLV 2	Si
R_SLV	1.337	SLV 16	Si

Maschio 84

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-9.728	3.421	-9.728	6.651	L4	L5	3.23	0.16	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 76	1.67	-8258.35	-67324	-0.0002568	0.0004492	0.0035	3.23	0	64462.44	64462.44	7.81	No	Si
SLU 76	5.07	-3972.29	-27733	-0.0000914	0.0004492	0.0035	3.23	25118.14	41605.11	41605.11	10.47	No	Si
SLU 82	1.67	-8217.87	-69007	-0.0002642	0.0004492	0.0035	3.23	0	64768.01	64768.01	7.88	No	Si
SLU 82	5.07	-4068.18	-28323	-0.0000936	0.0004492	0.0035	3.23	25225.14	42212.86	42212.86	10.38	No	Si
SLU 55	1.67	-7849.27	-59719	-0.0002217	0.0004492	0.0035	3.23	5234.31	62296.1	62296.1	7.94	No	Si
SLU 55	5.07	-3622.81	-24802	-0.0000813	0.0004492	0.0035	3.23	24322.81	38575.53	38575.53	10.65	No	Si
SLU 52	1.67	-7847.72	-58990	-0.0002187	0.0004492	0.0035	3.23	6270.89	62014.84	62014.84	7.9	No	Si
SLU 52	5.07	-3606.01	-24552	-0.0000805	0.0004492	0.0035	3.23	24234.71	38299.8	38299.8	10.62	No	Si
SLU 75	1.67	-8126.1	-67917	-0.0002585	0.0004492	0.0035	3.23	0	64570.19	64570.19	7.95	No	Si
SLU 75	5.07	-3993.19	-27953	-0.0000922	0.0004492	0.0035	3.23	25160.26	41832.48	41832.48	10.48	No	Si
SLU 68	1.67	-7977.64	-61803	-0.000231	0.0004492	0.0035	3.23	2123.09	63099.59	63099.59	7.91	No	Si
SLU 68	5.07	-3701.03	-25815	-0.0000845	0.0004492	0.0035	3.23	24647.5	39630.07	39630.07	10.71	No	Si
SLU 84	1.67	-8219.43	-69736	-0.0002676	0.0004492	0.0035	3.23	0	64900.44	64900.44	7.9	No	Si
SLU 84	5.07	-4084.97	-28572	-0.0000944	0.0004492	0.0035	3.23	25265.07	42470.16	42470.16	10.4	No	Si
SLU 73	1.67	-8256.8	-66594	-0.0002536	0.0004492	0.0035	3.23	0	64330	64330	7.79	No	Si
SLU 73	5.07	-3955.49	-27483	-0.0000906	0.0004492	0.0035	3.23	25067.48	41347.81	41347.81	10.45	No	Si
SLU 65	1.67	-7976.09	-61074	-0.000228	0.0004492	0.0035	3.23	3237.43	62818.33	62818.33	7.88	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 65	5.07	-3684.23	-25566	-0.0000837	0.0004492	0.0035	3.23	24572.34	39372.77	39372.77	10.69	No	Si
SLU 44	1.67	-7567	-53469	-0.0001956	0.0004492	0.0035	3.23	13233.42	59886.24	59886.24	7.91	No	Si
SLU 44	5.07	-3334.74	-22635	-0.0000738	0.0004492	0.0035	3.23	23452.19	36183.34	36183.34	10.85	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 6	1.67	-14873.95	-42808	-0.0001884	0.0006738	0.0035	3.23		58368.52	58368.52	3.92		Si
SLD 6	5.07	-4103.73	-18577	-0.0000651	0.0006738	0.0035	3.23		32295.66	32295.66	7.87		Si
SLV 9	1.67	-28042.07	-41119	-0.0002634	0.0006738	0.0035	3.23		56859.21	56859.21	2.03		Si
SLV 9	5.07	-6223.23	-18542	-0.0000751	0.0006738	0.0035	3.23		32250.41	32250.41	5.18		Si
SLV 5	1.67	-28164.3	-35552	-0.0002572	0.0006738	0.0035	3.23		51576.8	51576.8	1.83		Si
SLV 5	5.07	-5911.75	-16701	-0.0000688	0.0006738	0.0035	3.23		29862.54	29862.54	5.05		Si
SLV 10	1.67	-28378.65	-42295	-0.0002686	0.0006738	0.0035	3.23		57910.57	57910.57	2.04		Si
SLV 10	5.07	-6276.74	-18949	-0.0000765	0.0006738	0.0035	3.23		32778.72	32778.72	5.22		Si
SLD 5	1.67	-14733.65	-42317	-0.0001861	0.0006738	0.0035	3.23		57930.27	57930.27	3.93		Si
SLD 5	5.07	-4081.42	-18407	-0.0000646	0.0006738	0.0035	3.23		32075.44	32075.44	7.86		Si
SLV 8	1.67	16403.02	-52832	-0.0002292	0.0006738	0.0035	3.23		62511.7	62511.7	3.81		Si
SLV 8	5.07	567.54	-20667	-0.0000537	0.0006738	0.0035	3.23		29994.9	29994.9	52.85		Si
SLV 11	1.67	16861.83	-57222	-0.0002467	0.0006738	0.0035	3.23		65311.23	65311.23	3.87		Si
SLV 11	5.07	309.57	-22100	-0.0000562	0.0006738	0.0035	3.23		31666.26	31666.26	102.29		Si
SLV 12	1.67	16525.24	-58398	-0.0002488	0.0006738	0.0035	3.23		66061.68	66061.68	4		Si
SLV 12	5.07	256.06	-22507	-0.000057	0.0006738	0.0035	3.23		32141.11	32141.11	125.52		Si
SLV 6	1.67	-28500.88	-36729	-0.0002612	0.0006738	0.0035	3.23		52721.91	52721.91	1.85		Si
SLV 6	5.07	-5965.26	-17109	-0.0000702	0.0006738	0.0035	3.23		30390.86	30390.86	5.09		Si
SLV 7	1.67	16739.6	-51655	-0.0002272	0.0006738	0.0035	3.23		61751.34	61751.34	3.69		Si
SLV 7	5.07	621.05	-20259	-0.0000529	0.0006738	0.0035	3.23		29520.05	29520.05	47.53		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	1.67	-8219.43	-69736	-40946	-18006	3.23	3.23	-79230	10833	18395	108749	18573	16473	35046	No	1.95	Si
SLU 84	5.07	-4084.97	-28572	-16776	-18716	3.23	3.23	-32462	10833	9211	108749	18573	16473	35046	No	1.87	Si
SLU 83	1.67	-7980.58	-69806	-40987	-17954	3.23	3.23	-79309	10833	18411	108749	18573	16473	35046	No	1.95	Si
SLU 83	5.07	-4079.61	-28599	-16792	-18669	3.23	3.23	-32493	10833	9217	108749	18573	16473	35046	No	1.88	Si
SLU 78	1.67	-8127.65	-68647	-40306	-17670	3.23	3.23	-77992	10833	18152	108749	18573	16473	35046	No	1.98	Si
SLU 78	5.07	-4009.99	-28203	-16560	-18367	3.23	3.23	-32043	10833	9129	108749	18573	16473	35046	No	1.91	Si
SLU 80	1.67	-8100.67	-68100	-39985	-17511	3.23	3.23	-77371	10833	18030	108749	18573	16473	35046	No	2	Si
SLU 80	5.07	-3985.52	-28000	-16441	-18201	3.23	3.23	-31812	10833	9083	108749	18573	16473	35046	No	1.93	Si
SLU 79	1.67	-7861.82	-68170	-40026	-17459	3.23	3.23	-77450	10833	18046	108749	18573	16473	35046	No	2.01	Si
SLU 79	5.07	-3980.16	-28027	-16457	-18154	3.23	3.23	-31843	10833	9089	108749	18573	16473	35046	No	1.93	Si
SLU 77	1.67	-7888.8	-68717	-40347	-17618	3.23	3.23	-78072	10833	18168	108749	18573	16473	35046	No	1.99	Si
SLU 77	5.07	-4004.63	-28230	-16575	-18319	3.23	3.23	-32073	10833	9135	108749	18573	16473	35046	No	1.91	Si
SLU 82	1.67	-8217.87	-69007	-40518	-17790	3.23	3.23	-78401	10833	18232	108749	18573	16473	35046	No	1.97	Si
SLU 82	5.07	-4068.18	-28323	-16630	-18491	3.23	3.23	-32178	10833	9155	108749	18573	16473	35046	No	1.9	Si
SLU 81	1.67	-7979.02	-69077	-40559	-17738	3.23	3.23	-78481	10833	18248	108749	18573	16473	35046	No	1.98	Si
SLU 81	5.07	-4062.82	-28350	-16646	-18444	3.23	3.23	-32209	10833	9161	108749	18573	16473	35046	No	1.9	Si
SLU 74	1.67	-7887.25	-67987	-39919	-17402	3.23	3.23	-77243	10833	18005	108749	18573	16473	35046	No	2.01	Si
SLU 74	5.07	-3987.83	-27980	-16429	-18094	3.23	3.23	-31790	10833	9079	108749	18573	16473	35046	No	1.94	Si
SLU 75	1.67	-8126.1	-67917	-39878	-17454	3.23	3.23	-77163	10833	17989	108749	18573	16473	35046	No	2.01	Si
SLU 75	5.07	-3993.19	-27953	-16413	-18142	3.23	3.23	-31759	10833	9073	108749	18573	16473	35046	No	1.93	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	1.67	-28378.65	-42295	-24834	-16351	3.23	2.8321	-56562	16250	13691	108749	27859	16473	44332		2.71	Si
SLV 10	5.07	-6276.74	-18949	-11126	-17144	3.23	3.23	-21529	16250	8482	108749	27859	16473	44332		2.59	Si
SLV 6	1.67	-28500.88	-36729	-21566	-14788	3.23	2.5171	-55197	16250	12449	108749	27859	16473	44332		3	Si
SLV 6	5.07	-5965.26	-17109	-10045	-15498	3.23	3.23	-19438	16250	8398	108749	27859	16473	44332		2.86	Si
SLV 5	1.67	-28164.3	-35552	-20875	-14350	3.23	2.4684	-54447	16250	12186	108749	27859	16473	44332		3.09	Si
SLV 5	5.07	-5911.75	-16701	-9806	-15047	3.23	3.23	-18975	16250	8398	108749	27859	16473	44332		2.95	Si
SLV 13	1.67	-12101.44	-52963	-31098	-15175	3.23	3.23	-60174	16250	16071	108749	27859	16473	44332		2.92	Si
SLV 13	5.07	-4287.16	-21836	-12821	-15855	3.23	3.23	-24809	16250	9126	108749	27859	16473	44332		2.8	Si
SLD 10	1.67	-14821.86	-45187	-26532	-13668	3.23	3.23	-51339	16250	14336	108749	27859	16473	44332		3.24	Si
SLD 10	5.07	-4236.87	-19364	-11370	-14299	3.23	3.23	-22000	16250	8575	108749	27859	16473	44332		3.1	Si
SLV 14	1.67	-12601.36	-54711	-32124	-15826	3.23	3.23	-62159	16250	16461	108749	27859	16473	44332		2.8	Si
SLV 14	5.07	-4366.64	-22441	-13176	-16524	3.23	3.23	-25496	16250	9261	108749	27859	16473	44332		2.68	Si
SLD 14	1.67	-8526.53	-50345	-29561	-13515	3.23	3.23	-57199	16250	15487	108749	27859	16473	44332		3.28	Si
SLD 14	5.07	-3466.04	-20829	-12230	-14089	3.23	3.23	-23664	16250	8901	108749	27859	16473	44332		3.15	Si
SLD 9	1.67	-14681.56	-44697	-26244	-13485	3.23	3.23	-50781	16250	14227	108749	27859	16473	44332		3.29	Si
SLD 9	5.07	-4214.56	-19194	-11270	-14111	3.23	3.23	-21807	16250	8537	108749	27859	16473	44332		3.14	Si
SLV 16	1.67	869.8	-59542	-34960	-13723	3.23	3.23	-67648	16250	17539	108749	27859	16473	44332		3.23	Si
SLV 16	5.07	-2406.8	-23508	-13803	-14254	3.23	3.23	-26709	16250	9499	108749	27859	16473	44332		3.11	Si
SLV 9	1.67	-28042.07	-41119	-24143	-15913	3.23	2.7991	-55597	16250	13428	108749	27859	16473	44332		2.79	Si
SLV 9	5.07	-6223.23	-18542	-10887	-16693	3.23	3.23	-21066	16250	8398	108749	27859	16473	44332		2.66	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 3.37 Ta 0.12 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 1	-24179	0.31	156.52	1440.54	2475.23	1957.88	12.51	Si
SLV 2	-25310	0.31	156.52	1483.74	2576.2	2029.97	12.97	Si

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 3	-26010	0.31	156.52	1509.4	2636.79	2073.1	13.25	Si
SLV 5	-26228	0.31	156.52	1517.25	2655.41	2086.33	13.33	Si
SLV 6	-26990	0.31	156.52	1543.94	2720.04	2131.99	13.62	Si
SLV 4	-27141	0.31	156.52	1549.11	2732.83	2140.97	13.68	Si
SLV 9	-29658	0.31	156.52	1629.74	2946.7	2288.22	14.62	Si
SLV 10	-30420	0.31	156.52	1652.02	3011.44	2331.73	14.9	Si
SLV 7	-32332	0.31	156.52	1703.65	3174.13	2438.89	15.58	Si
SLV 8	-33093	0.31	156.52	1722.49	3238.95	2480.72	15.85	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.03 Ta = 0.1207

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 16	-23508	-59542	683	0.721	2640.8	0.971	10.7867	6.79984	Si
SLV 15	-22904	-57794	683	0.738	2579.2	0.971	11.05181	6.79984	Si
SLV 14	-22441	-54711	701	0.751	2532.1	0.97	11.25213	6.79984	Si
SLV 13	-21836	-52963	701	0.77	2470.5	0.969	11.54196	6.79984	Si
SLV 4	-17372	-40987	-701	0.946	2016.2	0.963	14.26968	6.79984	Si
SLV 3	-16768	-39240	-701	0.976	1954.7	0.962	14.7446	6.79984	Si
SLV 2	-16305	-36157	-683	1.002	1907.6	0.961	15.1457	6.79984	Si
SLV 12	-22507	-58398	177	0.771	2538.9	0.97	11.54751	5.10876	Si
SLV 11	-22100	-57222	177	0.784	2497.4	0.97	11.74564	5.10876	Si
SLV 1	-15700	-34409	-683	1.036	1846.1	0.96	15.68249	6.79984	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.791	SLU 73	Si
V_SLU	1.872	SLU 84	Si
PF_SLV	1.831	SLV 5	Si
V_SLV	2.586	SLV 10	Si
PFFP_SLV	12.509	SLV 1	Si
R_SLV	1.586	SLV 16	Si

Maschio 88

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-9.448	-3.359	-11.013	-3.359	L4	L5	1.565	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 74	1.67	4674.93	-12283	-0.000111	0.0004492	0.0035	1.565	7553.56	8186.49	8186.49	1.75	No	Si
SLU 74	3.77	-1446.79	-19623	-0.0000873	0.0004492	0.0035	1.565	10102.9	12044.51	12044.51	8.33	No	Si
SLU 83	1.67	4818.6	-12680	-0.0001149	0.0004492	0.0035	1.565	7729.3	8381.49	8381.49	1.74	No	Si
SLU 83	3.77	-1494.07	-20239	-0.0000904	0.0004492	0.0035	1.565	10249.96	12264.09	12264.09	8.21	No	Si
SLU 84	1.67	4852.59	-12790	-0.0001158	0.0004492	0.0035	1.565	7776.99	8431.6	8431.6	1.74	No	Si
SLU 84	3.77	-1507.16	-20395	-0.0000912	0.0004492	0.0035	1.565	10285.55	12320.31	12320.31	8.17	No	Si
SLU 82	1.67	4810.31	-12654	-0.0001146	0.0004492	0.0035	1.565	7717.74	8369.41	8369.41	1.74	No	Si
SLU 82	3.77	-1498.6	-20171	-0.0000902	0.0004492	0.0035	1.565	10234.26	12239.7	12239.7	8.17	No	Si
SLU 81	1.67	4776.32	-12544	-0.0001137	0.0004492	0.0035	1.565	7669.65	8319.41	8319.41	1.74	No	Si
SLU 81	3.77	-1485.51	-20015	-0.0000894	0.0004492	0.0035	1.565	10197.72	12183.85	12183.85	8.2	No	Si
SLU 80	1.67	4722.71	-12447	-0.0001123	0.0004492	0.0035	1.565	7626.56	8271.35	8271.35	1.75	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 80	3.77	-1457.7	-19860	-0.0000884	0.0004492	0.0035	1.565	10160.76	12128.6	12128.6	8.32	No	Si
SLU 76	1.67	4703.09	-12384	-0.0001118	0.0004492	0.0035	1.565	7598.61	8239.18	8239.18	1.75	No	Si
SLU 76	3.77	-1457.87	-19741	-0.0000879	0.0004492	0.0035	1.565	10131.71	12086.04	12086.04	8.29	No	Si
SLU 75	1.67	4708.93	-12392	-0.0001119	0.0004492	0.0035	1.565	7602.43	8243.61	8243.61	1.75	No	Si
SLU 75	3.77	-1459.87	-19779	-0.0000881	0.0004492	0.0035	1.565	10141.11	12099.73	12099.73	8.29	No	Si
SLU 77	1.67	4717.21	-12419	-0.0001121	0.0004492	0.0035	1.565	7614.18	8257.15	8257.15	1.75	No	Si
SLU 77	3.77	-1455.35	-19847	-0.0000883	0.0004492	0.0035	1.565	10157.54	12123.84	12123.84	8.33	No	Si
SLU 78	1.67	4751.2	-12528	-0.0001131	0.0004492	0.0035	1.565	7662.65	8312.17	8312.17	1.75	No	Si
SLU 78	3.77	-1468.43	-20003	-0.0000891	0.0004492	0.0035	1.565	10194.79	12179.42	12179.42	8.29	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	1.67	887.19	2655	0.2820537	0.0006738	0.0035	1.252		0	0	0		No
SLV 7	3.77	-1364.33	-775	-0.0005192	0.0006738	0.0035	1.252		1259.95	1259.95	0.92		No
SLV 11	1.67	-1448.51	1760	0.1996911	0.0006738	0.0035	1.252		0	0	0		No
SLV 11	3.77	2111.01	3925	0.4059428	0.0006738	0.0035	1.252		0	0	0		No
SLV 15	1.67	-2011.72	-6748	-0.0000468	0.0006738	0.0035	1.565		5583.5	5583.5	2.78		Si
SLV 15	3.77	5677.93	-356	-0.0612208	0.0006738	0.0035	1.252		422.1	422.1	0.07		No
SLV 16	1.67	-1270.67	-6788	-0.0000374	0.0006738	0.0035	1.565		5610.75	5610.75	4.42		Si
SLV 16	3.77	4540.83	-2244	-0.0305135	0.0006738	0.0035	1.252		1856.64	1856.64	0.41		No
SLV 3	1.67	5773.95	-3764	-0.031549	0.0006738	0.0035	1.252		2978.44	2978.44	0.52		No
SLV 3	3.77	-5906.53	-16021	-0.0001379	0.0006738	0.0035	1.565		11389.54	11389.54	1.93		Si
SLV 8	1.67	1386.12	2628	0.2722883	0.0006738	0.0035	1.252		0	0	0		No
SLV 8	3.77	-2129.91	-2046	-0.0005019	0.0006738	0.0035	1.252		2213.95	2213.95	1.04		Si
SLV 1	1.67	7730.66	-10167	-0.0072116	0.0006738	0.0035	1.565		7247.8	7247.8	0.94		No
SLV 1	3.77	-6483.73	-24654	-0.0001731	0.0006738	0.0035	1.565		15779.18	15779.18	2.43		Si
SLV 12	1.67	-949.58	1733	0.1949536	0.0006738	0.0035	1.252		0	0	0		No
SLV 12	3.77	1345.43	2654	0.2757282	0.0006738	0.0035	1.252		0	0	0		No
SLV 2	1.67	8471.72	-10207	-0.012772	0.0006738	0.0035	1.565		7271.29	7271.29	0.86		No
SLV 2	3.77	-7620.83	-26542	-0.0001989	0.0006738	0.0035	1.565		16565.25	16565.25	2.17		Si
SLV 4	1.67	6515	-3804	-0.0390809	0.0006738	0.0035	1.252		3007.77	3007.77	0.46		No
SLV 4	3.77	-7043.63	-17909	-0.0001671	0.0006738	0.0035	1.565		12432.67	12432.67	1.77		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	1.67	4722.71	-12447	-10482	6290	1.565	1.2092	-22325	10833	4603	38062	16873	3991	20864	No	3.32	Si
SLU 80	3.77	-1457.7	-19860	-16725	6672	1.565	1.565	-35622	10833	6268	38062	16873	3991	20864	No	3.13	Si
SLU 77	1.67	4717.21	-12419	-10458	6290	1.565	1.208	-22275	10833	4597	38062	16873	3991	20864	No	3.32	Si
SLU 77	3.77	-1455.35	-19847	-16713	6672	1.565	1.565	-35598	10833	6265	38062	16873	3991	20864	No	3.13	Si
SLU 82	1.67	4810.31	-12654	-10656	6344	1.565	1.2071	-22696	10833	4650	38062	16873	3991	20864	No	3.29	Si
SLU 82	3.77	-1498.6	-20171	-16986	6742	1.565	1.565	-36179	10833	6338	38062	16873	3991	20864	No	3.09	Si
SLU 75	1.67	4708.93	-12392	-10436	6275	1.565	1.2076	-22227	10833	4591	38062	16873	3991	20864	No	3.32	Si
SLU 75	3.77	-1459.87	-19779	-16656	6655	1.565	1.565	-35476	10833	6250	38062	16873	3991	20864	No	3.13	Si
SLU 81	1.67	4776.32	-12544	-10564	6303	1.565	1.2053	-22500	10833	4625	38062	16873	3991	20864	No	3.31	Si
SLU 81	3.77	-1485.51	-20015	-16855	6699	1.565	1.565	-35900	10833	6303	38062	16873	3991	20864	No	3.11	Si
SLU 84	1.67	4852.59	-12790	-10771	6399	1.565	1.2093	-22940	10833	4680	38062	16873	3991	20864	No	3.26	Si
SLU 84	3.77	-1507.16	-20395	-17175	6802	1.565	1.565	-36581	10833	6388	38062	16873	3991	20864	No	3.07	Si
SLU 76	1.67	4703.09	-12384	-10428	6262	1.565	1.2082	-22212	10833	4589	38062	16873	3991	20864	No	3.33	Si
SLU 76	3.77	-1457.87	-19741	-16624	6640	1.565	1.565	-35407	10833	6241	38062	16873	3991	20864	No	3.14	Si
SLU 83	1.67	4818.6	-12680	-10678	6359	1.565	1.2075	-22744	10833	4656	38062	16873	3991	20864	No	3.28	Si
SLU 83	3.77	-1494.07	-20239	-17043	6759	1.565	1.565	-36301	10833	6353	38062	16873	3991	20864	No	3.09	Si
SLU 78	1.67	4751.2	-12528	-10550	6331	1.565	1.2098	-22471	10833	4621	38062	16873	3991	20864	No	3.3	Si
SLU 78	3.77	-1468.43	-20003	-16845	6715	1.565	1.565	-35877	10833	6300	38062	16873	3991	20864	No	3.11	Si
SLU 79	1.67	4688.72	-12337	-10389	6250	1.565	1.2074	-22128	10833	4578	38062	16873	3991	20864	No	3.34	Si
SLU 79	3.77	-1444.61	-19704	-16593	6629	1.565	1.565	-35342	10833	6233	38062	16873	3991	20864	No	3.15	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	1.67	6515	-3804	-3203	12106	1.252	0	0	0	0	38062	20247	3193	23440		1.94	Si
SLV 4	3.77	-7043.63	-17909	-15081	12081	1.565	1.1676	-43930	16250	6734	38062	25309	3991	29300		2.43	Si
SLD 2	1.67	5434.82	-9140	-7697	8731	1.565	0.5637	-16394	15779	4765	38062	25309	3991	29300		3.36	Si
SLD 2	3.77	-3801.29	-18916	-15929	8735	1.565	1.565	-33927	16250	7629	38062	25309	3991	29300		3.35	Si
SLD 1	1.67	5119.56	-9123	-7683	8074	1.565	0.664	-16363	15773	4761	38062	25309	3991	29300		3.63	Si
SLD 1	3.77	-3317.54	-18113	-15253	8037	1.565	1.565	-32487	16250	7629	38062	25309	3991	29300		3.65	Si
SLV 6	1.67	7908.5	-18715	-15760	11625	1.565	1.0798	-33567	16250	6915	38062	25309	3991	29300		2.52	Si
SLV 6	3.77	-4053.91	-30823	-25956	11295	1.565	1.565	-55283	16250	9633	38062	25309	3991	29300		2.59	Si
SLV 1	1.67	7730.66	-10167	-8561	13118	1.565	0.0664	-237753	16250	4995	38062	25309	3991	29300		2.23	Si
SLV 1	3.77	-6483.73	-24654	-20761	12721	1.565	1.5586	-44219	16250	8248	38062	25309	3991	29300		2.3	Si
SLV 2	1.67	8471.72	-10207	-8595	14662	1.565	0	-339649	16250	5004	38062	25309	3991	29300		2	Si
SLV 2	3.77	-7620.83	-26542	-22351	14362	1.565	1.4861	-51378	16250	8672	38062	25309	3991	29300		2.04	Si
SLV 5	1.67	7409.58	-18688	-15737	10585	1.565	1.1581	-33519	16250	6909	38062	25309	3991	29300		2.77	Si
SLV 5	3.77	-3288.33	-29552	-24886	10190	1.565	1.565	-53004	16250	9348	38062	25309	3991	29300		2.88	Si
SLV 3	1.67	5773.95	-3764	-3169	10562	1.252	0	0	0	0	38062	20247	3193	23440		2.22	Si
SLV 3	3.77	-5906.53	-16021	-13491	10440	1.565	1.2415	-36808	16250	6310	38062	25309	3991	29300		2.81	Si
SLD 4	1.67	4668.07	-6557	-5522	7715	1.565	0.2118	-90463	16250	4185	38062	25309	3991	29300		3.8	Si
SLD 4	3.77	-3576.2	-15481	-13036	7831	1.565	1.565	-27766	16250	7629	38062	25309	3991	29300		3.74	Si
SLD 6	1.67	5111.05	-12597	-10608	7341	1.565	1.1303	-22594	16250	5541	38062	25309	3991	29300		3.99	Si
SLD 6	3.77	-2248.78	-20443	-17215	7337	1.565	1.565	-36666	16250	7629	38062	25309	3991	29300		3.99	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 11	215625	0.31	0	3654	132.24	0	0	No, Trazione
SLV 7	215625	0.31	0	-152	132.24	0	0	No, e>t/2
SLV 12	215625	0.31	0	2586	132.24	0	0	No, Trazione
SLV 8	215625	0.31	2599	-1220	132.24	180.41	1.36	Si
SLV 15	215625	0.31	2846	-1336	132.24	197.33	1.49	Si
SLV 16	215625	0.31	6226	-2923	132.24	423.56	3.2	Si
SLV 13	215625	0.31	20536	-9642	132.24	1284.23	9.71	Si
SLV 14	215625	0.31	23916	-11229	132.24	1464.52	11.08	Si
SLV 3	215625	0.31	29867	-14023	132.24	1760.64	13.31	Si
SLV 4	215625	0.31	33247	-15609	132.24	1916.69	14.49	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-23899	-19610	-304	0.382	2658	0.974	5.69429	3.83947	Si
SLV 9	-23877	-19583	-304	0.382	2655.8	0.974	5.69862	3.83947	Si
SLV 6	-22518	-18715	-282	0.402	2517.4	0.973	6.00621	3.83947	Si
SLV 5	-22496	-18688	-283	0.402	2515.2	0.973	6.01109	3.83947	Si
SLV 14	-17398	-13191	-132	0.507	1996	0.966	7.63141	4.41923	Si
SLV 13	-17365	-13151	-132	0.508	1992.7	0.966	7.6436	4.41923	Si
SLV 2	-12796	-10207	-61	0.662	1527.9	0.957	10.057	4.41923	Si
SLV 1	-12763	-10167	-61	0.663	1524.6	0.957	10.07904	4.41923	Si
SLV 16	-10440	-6788	37	0.787	1288.6	0.95	12.03863	4.41923	Si
SLV 15	-10407	-6748	36	0.789	1285.3	0.949	12.07202	4.41923	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.738	SLU 84	Si
V_SLU	3.067	SLU 84	Si
PF_SLV	0	SLV 7	No
V_SLV	1.936	SLV 4	Si
PFFP_SLV	0	SLV 12	No
R_SLV	1.483	SLV 10	Si

Maschio 89

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.648	-3.359	-8.548	-3.359	L4	L5	0.9	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	1.67	-1320.78	-11252	-0.0001237	0.0004492	0.0035	0.9	3336.38	3913.19	3913.19	2.96	No	Si
SLU 79	3.77	281.09	-14439	-0.0001007	0.0004492	0.0035	0.9	3653.74	4455.42	4455.42	15.85	No	Si
SLU 83	1.67	-1367.62	-11562	-0.0001281	0.0004492	0.0035	0.9	3379.41	3988.59	3988.59	2.92	No	Si
SLU 83	3.77	314.23	-14980	-0.0001061	0.0004492	0.0035	0.9	3680.11	4552.97	4552.97	14.49	No	Si
SLU 82	1.67	-1367.38	-11555	-0.0001281	0.0004492	0.0035	0.9	3378.5	3986.94	3986.94	2.92	No	Si
SLU 82	3.77	301.94	-14935	-0.0001052	0.0004492	0.0035	0.9	3678.22	4544.8	4544.8	15.05	No	Si
SLU 76	1.67	-1329.72	-11322	-0.0001246	0.0004492	0.0035	0.9	3346.35	3930.17	3930.17	2.96	No	Si
SLU 76	3.77	263.4	-14479	-0.0001002	0.0004492	0.0035	0.9	3656.01	4462.74	4462.74	16.94	No	Si
SLU 81	1.67	-1353.61	-11439	-0.0001266	0.0004492	0.0035	0.9	3362.78	3958.78	3958.78	2.92	No	Si
SLU 81	3.77	310.05	-14806	-0.0001047	0.0004492	0.0035	0.9	3672.51	4521.48	4521.48	14.58	No	Si
SLU 84	1.67	-1381.39	-11677	-0.0001296	0.0004492	0.0035	0.9	3394.75	4016.9	4016.9	2.91	No	Si
SLU 84	3.77	306.12	-15109	-0.0001067	0.0004492	0.0035	0.9	3685.21	4576.4	4576.4	14.95	No	Si
SLU 78	1.67	-1342.61	-11444	-0.0001261	0.0004492	0.0035	0.9	3363.4	3959.87	3959.87	2.95	No	Si
SLU 78	3.77	272.44	-14667	-0.000102	0.0004492	0.0035	0.9	3665.84	4496.39	4496.39	16.5	No	Si
SLU 80	1.67	-1334.55	-11367	-0.0001252	0.0004492	0.0035	0.9	3352.7	3941.13	3941.13	2.95	No	Si
SLU 80	3.77	272.98	-14567	-0.0001013	0.0004492	0.0035	0.9	3660.74	4478.51	4478.51	16.41	No	Si
SLU 75	1.67	-1328.6	-11322	-0.0001246	0.0004492	0.0035	0.9	3346.37	3930.21	3930.21	2.96	No	Si
SLU 75	3.77	268.26	-14493	-0.0001005	0.0004492	0.0035	0.9	3656.76	4465.18	4465.18	16.64	No	Si
SLU 77	1.67	-1328.84	-11329	-0.0001247	0.0004492	0.0035	0.9	3347.33	3931.84	3931.84	2.96	No	Si
SLU 77	3.77	280.55	-14538	-0.0001014	0.0004492	0.0035	0.9	3659.19	4473.24	4473.24	15.94	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	1.67	19.14	1328	0.3473747	0.0006738	0.0035	0.72		0	0	0		No
SLV 12	3.77	1441.91	-2167	-0.0128258	0.0006738	0.0035	0.72		989.88	989.88	0.69		No
SLV 7	1.67	458.99	1736	0.447065	0.0006738	0.0035	0.72		0	0	0		No
SLV 7	3.77	-127.21	3173	0.8319869	0.0006738	0.0035	0.72		0	0	0		No
SLV 3	1.67	218.53	-4667	-0.0000342	0.0006738	0.0035	0.9		1996.9	1996.9	9.14		Si
SLV 3	3.77	-2696.15	3030	0.8185785	0.0006738	0.0035	0.72		0	0	0		No
SLV 4	1.67	284.08	-5311	-0.0000404	0.0006738	0.0035	0.9		2242.55	2242.55	7.89		Si
SLV 4	3.77	-3332.3	4244	1.1427108	0.0006738	0.0035	0.72		0	0	0		No
SLV 15	1.67	-1394.77	-4580	-0.0001099	0.0006738	0.0035	0.72		2056.29	2056.29	1.47		Si
SLV 15	3.77	3961.92	-17494	-0.0003159	0.0006738	0.0035	0.9		5837.88	5837.88	1.47		Si
SLV 8	1.67	503.13	1302	0.3318939	0.0006738	0.0035	0.72		0	0	0		No
SLV 8	3.77	-555.51	3990	1.0507291	0.0006738	0.0035	0.72		0	0	0		No
SLV 11	1.67	-25	1762	0.461408	0.0006738	0.0035	0.72		0	0	0		No
SLV 11	3.77	1870.21	-2985	-0.0151827	0.0006738	0.0035	0.72		1327.89	1327.89	0.71		No
SLD 4	1.67	-401.74	-6770	-0.0000535	0.0006738	0.0035	0.9		2873.1	2873.1	7.15		Si
SLD 4	3.77	-1332.78	-3816	-0.0001336	0.0006738	0.0035	0.72		1757.4	1757.4	1.32		Si
SLV 1	1.67	-462.39	-10219	-0.0000768	0.0006738	0.0035	0.9		4029.8	4029.8	8.72		Si
SLV 1	3.77	-2989.75	-3079	-0.0107911	0.0006738	0.0035	0.72		1460.3	1460.3	0.49		No
SLV 2	1.67	-396.84	-10862	-0.0000782	0.0006738	0.0035	0.9		4228.41	4228.41	10.66		Si
SLV 2	3.77	-3625.9	-1865	-0.0172772	0.0006738	0.0035	0.72		959.1	959.1	0.26		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	1.67	-1367.62	-11562	-9736	-2541	0.9	0.9	-36059	10833	3636	38062	9703	2295	11998	No	4.72	Si
SLU 83	3.77	314.23	-14980	-12614	-2035	0.9	0.9	-46720	10833	4404	38062	9703	2295	11998	No	5.9	Si
SLU 81	1.67	-1353.61	-11439	-9633	-2515	0.9	0.9	-35679	10833	3609	38062	9703	2295	11998	No	4.77	Si
SLU 81	3.77	310.05	-14806	-12468	-2012	0.9	0.9	-46178	10833	4365	38062	9703	2295	11998	No	5.96	Si
SLU 78	1.67	-1342.61	-11444	-9637	-2527	0.9	0.9	-35693	10833	3610	38062	9703	2295	11998	No	4.75	Si
SLU 78	3.77	272.44	-14667	-12351	-1907	0.9	0.9	-45744	10833	4333	38062	9703	2295	11998	No	6.29	Si
SLU 76	1.67	-1329.72	-11322	-9534	-2515	0.9	0.9	-35311	10833	3582	38062	9703	2295	11998	No	4.77	Si
SLU 76	3.77	263.4	-14479	-12193	-1865	0.9	0.9	-45160	10833	4291	38062	9703	2295	11998	No	6.43	Si
SLU 80	1.67	-1334.55	-11367	-9572	-2510	0.9	0.9	-35452	10833	3592	38062	9703	2295	11998	No	4.78	Si
SLU 80	3.77	272.98	-14567	-12267	-1900	0.9	0.9	-45434	10833	4311	38062	9703	2295	11998	No	6.32	Si
SLU 75	1.67	-1328.6	-11322	-9534	-2500	0.9	0.9	-35312	10833	3582	38062	9703	2295	11998	No	4.8	Si
SLU 75	3.77	268.26	-14493	-12205	-1884	0.9	0.9	-45202	10833	4294	38062	9703	2295	11998	No	6.37	Si
SLU 84	1.67	-1381.39	-11677	-9833	-2589	0.9	0.9	-36419	10833	3662	38062	9703	2295	11998	No	4.63	Si
SLU 84	3.77	306.12	-15109	-12723	-2017	0.9	0.9	-47122	10833	4432	38062	9703	2295	11998	No	5.95	Si
SLU 82	1.67	-1367.38	-11555	-9730	-2562	0.9	0.9	-36038	10833	3634	38062	9703	2295	11998	No	4.68	Si
SLU 82	3.77	301.94	-14935	-12577	-1994	0.9	0.9	-46580	10833	4393	38062	9703	2295	11998	No	6.02	Si
SLU 73	1.67	-1315.71	-11200	-9431	-2488	0.9	0.9	-34931	10833	3555	38062	9703	2295	11998	No	4.82	Si
SLU 73	3.77	259.22	-14306	-12047	-1843	0.9	0.9	-44618	10833	4252	38062	9703	2295	11998	No	6.51	Si
SLU 77	1.67	-1328.84	-11329	-9540	-2479	0.9	0.9	-35333	10833	3584	38062	9703	2295	11998	No	4.84	Si
SLU 77	3.77	280.55	-14538	-12243	-1925	0.9	0.9	-45343	10833	4304	38062	9703	2295	11998	No	6.23	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	1.67	-1394.77	-4580	-3857	-764	0.72	0.4364	0	0	0	38062	11644	1836	13480		17.63	Si
SLV 15	3.77	3961.92	-17494	-14732	-9486	0.9	0.6706	-54563	16250	5488	38062	14555	2295	16850		1.78	Si
SLV 2	1.67	-396.84	-10862	-9147	-2586	0.9	0.9	-33879	16250	4387	38062	14555	2295	16850		6.52	Si
SLV 2	3.77	-3625.9	-1865	-1571	6989	0.72	0	0	0	0	38062	11644	1836	13480		1.93	Si
SLV 11	1.67	-25	1762	1484	1360	0.72	0.9	0	0	0	38062	11644	1836	13480		9.91	Si
SLV 11	3.77	1870.21	-2985	-2513	-4550	0.72	0	0	0	0	38062	11644	1836	13480		2.96	Si
SLV 4	1.67	284.08	-5311	-4472	-789	0.9	0.9	-16563	15813	4269	38062	14555	2295	16850		21.35	Si
SLV 4	3.77	-3332.3	4244	3574	6617	0.72	0	0	0	0	38062	11644	1836	13480		2.04	Si
SLV 13	1.67	-2075.69	-10132	-8532	-2561	0.9	0.7354	-39361	16250	3835	38062	14555	2295	16850		6.58	Si
SLV 13	3.77	3668.32	-23604	-19877	-9115	0.9	0.8838	-73618	16250	6860	38062	14555	2295	16850		1.85	Si
SLV 3	1.67	218.53	-4667	-3930	-589	0.9	0.9	-14555	15411	4161	38062	14555	2295	16850		28.61	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 3	3.77	-2696.15	3030	2552	5190	0.72	0	0	0	0	38062	11644	1836	13480		2.6	Si
SLV 14	1.67	-2010.13	-10776	-9074	-2761	0.9	0.7904	-33609	16250	3979	38062	14555	2295	16850		6.1	Si
SLV 14	3.77	3032.17	-22390	-18855	-7688	0.9	0.9	-69832	16250	6587	38062	14555	2295	16850		2.19	Si
SLV 1	1.67	-462.39	-10219	-8605	-2385	0.9	0.9	-31871	16250	4387	38062	14555	2295	16850		7.06	Si
SLV 1	3.77	-2989.75	-3079	-2593	5562	0.72	0	0	0	0	38062	11644	1836	13480		2.42	Si
SLV 10	1.67	-2250.59	-17178	-14466	-4763	0.9	0.9	-53577	16250	5417	38062	14555	2295	16850		3.54	Si
SLV 10	3.77	463.24	-22532	-18975	-2350	0.9	0.9	-70276	16250	6619	38062	14555	2295	16850		7.17	Si
SLV 16	1.67	-1329.21	-5224	-4399	-965	0.9	0.5867	-25258	16250	2860	38062	14555	2295	16850		17.46	Si
SLV 16	3.77	3325.77	-16280	-13710	-8060	0.9	0.7372	-50777	16250	5216	38062	14555	2295	16850		2.09	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 4	215625	0.31	0	3108	76.04	0	0	No, Trazione
SLV 3	215625	0.31	0	2114	76.04	0	0	No, Trazione
SLV 8	215625	0.31	0	3813	76.04	0	0	No, Trazione
SLV 7	215625	0.31	0	3144	76.04	0	0	No, Trazione
SLV 12	215625	0.31	6358	-1717	76.04	248.57	3.27	Si
SLV 11	215625	0.31	8838	-2386	76.04	340.68	4.48	Si
SLV 2	215625	0.31	11724	-3165	76.04	444.43	5.84	Si
SLV 1	215625	0.31	15407	-4160	76.04	571.53	7.52	Si
SLV 16	215625	0.31	56758	-15325	76.04	1586.84	20.87	Si
SLV 15	215625	0.31	60441	-16319	76.04	1640.63	21.57	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-16477	-17204	-132	0.331	1807	0.978	4.91659	3.83947	Si
SLV 5	-15974	-16771	-131	0.339	1755.7	0.977	5.04803	3.83947	Si
SLV 10	-15539	-17178	-143	0.347	1711.4	0.977	5.15656	3.83947	Si
SLV 9	-15036	-16745	-142	0.356	1660.1	0.976	5.3037	3.83947	Si
SLV 2	-12084	-10862	-23	0.437	1359.5	0.971	6.53689	4.41923	Si
SLV 1	-11337	-10219	-22	0.461	1283.5	0.969	6.91068	4.41923	Si
SLV 14	-8956	-10776	-62	0.558	1041.1	0.963	8.42744	4.41923	Si
SLV 13	-8209	-10132	-61	0.601	965.1	0.96	9.09625	4.41923	Si
SLV 4	-7275	-5311	58	0.665	870.2	0.956	10.1148	4.41923	Si
SLV 3	-6528	-4667	59	0.728	794.3	0.953	11.11467	4.41923	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.908	SLU 84	Si
V_SLU	4.634	SLU 84	Si
PF_SLV	0	SLV 3	No
V_SLV	1.776	SLV 15	Si
PFFP_SLV	0	SLV 8	No
R_SLV	1.281	SLV 6	Si

Maschio 91

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-6.268	-3.359	-6.268	1.046	L4	L5	4.405	0.16	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 44	1.67	-5101.95	-55816	-0.0001242	0.0004492	0.0035	4.405	43256.31	99083.49	99083.49	19.42	No	Si
SLU 44	5.07	2851.77	-34124	-0.0000713	0.0004492	0.0035	4.405	45377.02	63178.47	63178.47	22.15	No	Si
SLU 82	1.67	-5752	-71975	-0.0001649	0.0004492	0.0035	4.405	26034.52	111206.45	111206.45	19.33	No	Si
SLU 82	5.07	3799.56	-44539	-0.0000955	0.0004492	0.0035	4.405	47362.54	77669.49	77669.49	20.44	No	Si
SLU 47	1.67	-5116.27	-56596	-0.000126	0.0004492	0.0035	4.405	42731.48	99677.76	99677.76	19.48	No	Si
SLU 47	5.07	2966.9	-34770	-0.0000729	0.0004492	0.0035	4.405	45661.54	64198.17	64198.17	21.64	No	Si
SLU 84	1.67	-5766.31	-72755	-0.000167	0.0004492	0.0035	4.405	24864.66	111605.24	111605.24	19.35	No	Si
SLU 84	5.07	3914.69	-45185	-0.0000972	0.0004492	0.0035	4.405	47302.97	78459.31	78459.31	20.04	No	Si
SLU 76	1.67	-5899.35	-70436	-0.0001615	0.0004492	0.0035	4.405	28249.47	110216.49	110216.49	18.68	No	Si
SLU 76	5.07	3797.52	-43639	-0.0000936	0.0004492	0.0035	4.405	47409.96	76569.29	76569.29	20.16	No	Si
SLU 73	1.67	-5885.04	-69656	-0.0001596	0.0004492	0.0035	4.405	29326.76	109622.22	109622.22	18.63	No	Si
SLU 73	5.07	3682.38	-42994	-0.0000919	0.0004492	0.0035	4.405	47418.48	75779.46	75779.46	20.58	No	Si
SLU 52	1.67	-5471.46	-62093	-0.0001399	0.0004492	0.0035	4.405	38153.06	103863.01	103863.01	18.98	No	Si
SLU 52	5.07	3127.74	-38027	-0.00008	0.0004492	0.0035	4.405	46771.05	69339.81	69339.81	22.17	No	Si
SLU 55	1.67	-5485.77	-62873	-0.0001418	0.0004492	0.0035	4.405	37377.68	104457.28	104457.28	19.04	No	Si
SLU 55	5.07	3242.88	-38673	-0.0000816	0.0004492	0.0035	4.405	46926.62	70359.51	70359.51	21.7	No	Si
SLU 65	1.67	-5515.53	-63379	-0.0001431	0.0004492	0.0035	4.405	36858.16	104842.7	104842.7	19.01	No	Si
SLU 65	5.07	3406.41	-39091	-0.000083	0.0004492	0.0035	4.405	47015.89	71007.11	71007.11	20.85	No	Si
SLU 68	1.67	-5529.84	-64160	-0.000145	0.0004492	0.0035	4.405	36031.42	105436.97	105436.97	19.07	No	Si
SLU 68	5.07	3521.54	-39737	-0.0000846	0.0004492	0.0035	4.405	47136.32	71796.93	71796.93	20.39	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	1.67	-30708.51	-85801	-0.0002645	0.0006738	0.0035	4.405		133754.67	133754.67	4.36		Si
SLV 6	5.07	1829.98	-46388	-0.0000909	0.0006738	0.0035	4.405		84755.18	84755.18	46.31		Si
SLV 5	1.67	-29780.83	-84347	-0.0002578	0.0006738	0.0035	4.405		132578.26	132578.26	4.45		Si
SLV 5	5.07	1816.77	-45965	-0.00009	0.0006738	0.0035	4.405		84080.84	84080.84	46.28		Si
SLV 3	1.67	2936.71	-28309	-0.0000588	0.0006738	0.0035	4.405		55912.4	55912.4	19.04		Si
SLV 3	5.07	7905.19	-22647	-0.0000607	0.0006738	0.0035	4.405		46842.34	46842.34	5.93		Si
SLV 12	1.67	22386.81	-11994	-0.0002058	0.0006738	0.0035	4.405		26729.28	26729.28	1.19		Si
SLV 12	5.07	3333.53	-13733	-0.0000327	0.0006738	0.0035	4.405		30133.16	30133.16	9.04		Si
SLV 10	1.67	-29596.85	-90046	-0.000272	0.0006738	0.0035	4.405		136171.94	136171.94	4.6		Si
SLV 10	5.07	-985.24	-47483	-0.0000908	0.0006738	0.0035	4.405		94815.63	94815.63	96.24		Si
SLV 7	1.67	22202.83	-6295	-0.0071994	0.0006738	0.0035	4.405		15242.62	15242.62	0.69		No
SLV 7	5.07	6135.54	-12215	-0.0000368	0.0006738	0.0035	4.405		27166.47	27166.47	4.43		Si
SLV 8	1.67	21275.15	-7750	-0.0045378	0.0006738	0.0035	4.405		18218.48	18218.48	0.86		No
SLV 8	5.07	6148.75	-12638	-0.0000376	0.0006738	0.0035	4.405		28001.56	28001.56	4.55		Si
SLV 9	1.67	-28669.17	-88592	-0.0002652	0.0006738	0.0035	4.405		135362.81	135362.81	4.72		Si
SLV 9	5.07	-998.45	-47061	-0.00009	0.0006738	0.0035	4.405		94227.44	94227.44	94.37		Si
SLV 4	1.67	1558.84	-30469	-0.0000593	0.0006738	0.0035	4.405		59358.27	59358.27	38.08		Si
SLV 4	5.07	7924.82	-23275	-0.000062	0.0006738	0.0035	4.405		47881.32	47881.32	6.04		Si
SLV 11	1.67	23314.49	-10540	-0.0014582	0.0006738	0.0035	4.405		23852.15	23852.15	1.02		Si
SLV 11	5.07	3320.31	-13311	-0.0000319	0.0006738	0.0035	4.405		29310.73	29310.73	8.83		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	1.67	-5217.09	-69956	-41075	8108	4.405	4.405	-58279	10833	20501	108749	25329	22466	47794	No	5.89	Si
SLU 74	5.07	3827.94	-43678	-25646	8715	4.405	4.405	-36387	10833	14329	108749	25329	22466	47794	No	5.48	Si
SLU 80	1.67	-5622.26	-70845	-41597	7806	4.405	4.405	-59020	10833	20710	108749	25329	22466	47794	No	6.12	Si
SLU 80	5.07	3911.56	-44158	-25928	8517	4.405	4.405	-36788	10833	14442	108749	25329	22466	47794	No	5.61	Si
SLU 79	1.67	-5185.16	-70289	-41271	8125	4.405	4.405	-58556	10833	20579	108749	25329	22466	47794	No	5.88	Si
SLU 79	5.07	3909.9	-43968	-25816	8734	4.405	4.405	-36629	10833	14397	108749	25329	22466	47794	No	5.47	Si
SLU 75	1.67	-5654.19	-70513	-41402	7789	4.405	4.405	-58743	10833	20632	108749	25329	22466	47794	No	6.14	Si
SLU 75	5.07	3829.59	-43868	-25757	8497	4.405	4.405	-36546	10833	14374	108749	25329	22466	47794	No	5.62	Si
SLU 83	1.67	-5329.21	-72198	-42392	8251	4.405	4.405	-60147	10833	21027	108749	25329	22466	47794	No	5.79	Si
SLU 83	5.07	3913.04	-44995	-26419	8876	4.405	4.405	-37484	10833	14639	108749	25329	22466	47794	No	5.38	Si
SLU 78	1.67	-5668.51	-71293	-41860	7865	4.405	4.405	-59393	10833	20815	108749	25329	22466	47794	No	6.08	Si
SLU 78	5.07	3944.73	-44514	-26137	8580	4.405	4.405	-37084	10833	14526	108749	25329	22466	47794	No	5.57	Si
SLU 84	1.67	-5766.31	-72755	-42719	7932	4.405	4.405	-60611	10833	21158	108749	25329	22466	47794	No	6.03	Si
SLU 84	5.07	3914.69	-45185	-26531	8658	4.405	4.405	-37643	10833	14683	108749	25329	22466	47794	No	5.52	Si
SLU 82	1.67	-5752	-71975	-42260	7856	4.405	4.405	-59961	10833	20975	108749	25329	22466	47794	No	6.08	Si
SLU 82	5.07	3799.56	-44539	-26151	8576	4.405	4.405	-37105	10833	14532	108749	25329	22466	47794	No	5.57	Si
SLU 77	1.67	-5231.41	-70737	-41533	8184	4.405	4.405	-58929	10833	20684	108749	25329	22466	47794	No	5.84	Si
SLU 77	5.07	3943.08	-44324	-26025	8797	4.405	4.405	-36925	10833	14481	108749	25329	22466	47794	No	5.43	Si
SLU 81	1.67	-5314.9	-71418	-41933	8175	4.405	4.405	-59497	10833	20844	108749	25329	22466	47794	No	5.85	Si
SLU 81	5.07	3797.91	-44349	-26040	8793	4.405	4.405	-36946	10833	14487	108749	25329	22466	47794	No	5.44	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 7	1.67	6616.01	-31390	-18431	16266	4.405	4.405	-26150	16250	13479	108749	37993	22466	60459		3.72	Si
SLD 7	5.07	4036.44	-22795	-13384	15654	4.405	4.405	-18990	16250	11461	108749	37993	22466	60459		3.86	Si
SLV 9	1.67	-28669.17	-88592	-52017	-19882	4.405	4.405	-73804	16250	26913	108749	37993	22466	60459		3.04	Si
SLV 9	5.07	-998.45	-47061	-27632	-16944	4.405	4.405	-39205	16250	17160	108749	37993	22466	60459		3.57	Si
SLV 7	1.67	22202.83	-6295	-3696	31973	4.405	0	-113485	16250	7586	108749	37993	22466	60459		1.89	Si
SLV 7	5.07	6135.54	-12215	-7172	29855	4.405	4.405	-10176	14535	10244	108749	37993	22466	60459		2.03	Si
SLV 8	1.67	21275.15	-7750	-4550	31406	4.405	0	-128860	16250	7927	108749	37993	22466	60459		1.93	Si
SLV 8	5.07	6148.75	-12638	-7420	29306	4.405	4.405	-10528	14606	10294	108749	37993	22466	60459		2.06	Si
SLV 5	1.67	-29780.83	-84347	-49525	-19957	4.405	4.405	-70268	16250	25916	108749	37993	22466	60459		3.03	Si
SLV 5	5.07	1816.77	-45965	-26989	-17071	4.405	4.405	-38293	16250	16902	108749	37993	22466	60459		3.54	Si
SLV 6	1.67	-30708.51	-85801	-50379	-20524	4.405	4.405	-71480	16250	26258	108749	37993	22466	60459		2.95	Si
SLV 6	5.07	1829.98	-46388	-27237	-17620	4.405	4.405	-38645	16250	17002	108749	37993	22466	60459		3.43	Si
SLV 10	1.67	-29596.85	-90046	-52871	-20449	4.405	4.405	-75016	16250	27255	108749	37993	22466	60459		2.96	Si
SLV 10	5.07	-985.24	-47483	-27880	-17493	4.405	4.405	-39558	16250	17259	108749	37993	22466	60459		3.46	Si
SLV 12	1.67	22386.81	-11994	-7042	31480	4.405	1.008	-44619	16250	8924	108749	37993	22466	60459		1.92	Si
SLV 12	5.07	3333.53	-13733	-8064	29433	4.405	4.405	-11441	14788	10423	108749	37993	22466	60459		2.05	Si
SLV 11	1.67	23314.49	-10540	-6189	32047	4.405	0	-144852	16250	8583	108749	37993	22466	60459		1.89	Si
SLV 11	5.07	3320.31	-13311	-7815	29982	4.405	4.405	-11089	14718	10373	108749	37993	22466	60459		2.02	Si
SLD 11	1.67	7091.76	-33203	-19495	16298	4.405	4.405	-27661	16250	13905	108749	37993	22466	60459		3.71	Si
SLD 11	5.07	2833.12	-23263	-13659	15709	4.405	4.405	-19380	16250	11571	108749	37993	22466	60459		3.85	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 3.37 Ta 0.12 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 7	-10540	0.31	213.45	774.38	1334.14	1054.26	4.94	Si
SLV 8	-11418	0.31	213.45	832.69	1417.38	1125.04	5.27	Si
SLV 11	-13177	0.31	213.45	946.64	1582.98	1264.81	5.93	Si
SLV 12	-14055	0.31	213.45	1002.09	1665.34	1333.71	6.25	Si
SLV 3	-25341	0.31	213.45	1629.57	2693.76	2161.67	10.13	Si
SLV 4	-26645	0.31	213.45	1691.93	2809.93	2250.93	10.55	Si
SLV 15	-34133	0.31	213.45	2009.1	3476.7	2742.9	12.85	Si
SLV 16	-35437	0.31	213.45	2057.25	3589.38	2823.31	13.23	Si
SLV 1	-40848	0.31	213.45	2234.48	4048.66	3141.57	14.72	Si
SLV 2	-42152	0.31	213.45	2271.78	4159.57	3215.67	15.06	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.03 Ta = 0.1207

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 14	-37052	-68033	762	0.636	4109.8	0.975	9.49008	6.79984	Si
SLV 13	-36424	-65873	762	0.646	4045.8	0.974	9.64253	6.79984	Si
SLV 10	-47483	-90046	424	0.514	5172.5	0.98	7.63217	5.10876	Si
SLV 9	-47061	-88592	424	0.519	5129.4	0.979	7.696	5.10876	Si
SLV 2	-33400	-53884	-632	0.703	3737.9	0.972	10.5088	6.79984	Si
SLV 6	-46388	-85801	6	0.534	5060.9	0.979	7.92784	5.10876	Si
SLV 5	-45965	-84347	6	0.539	5017.8	0.979	7.9958	5.10876	Si
SLV 1	-32772	-51724	-632	0.715	3673.9	0.972	10.69635	6.79984	Si
SLV 16	-26927	-44617	634	0.854	3078.8	0.967	12.84108	6.79984	Si
SLV 15	-26299	-42457	634	0.873	3014.9	0.966	13.1254	6.79984	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	18.627	SLU 73	Si
V_SLU	5.385	SLU 83	Si
PF_SLV	0.687	SLV 7	No
V_SLV	1.887	SLV 11	Si
PFFP_SLV	4.939	SLV 7	Si
R_SLV	1.396	SLV 14	Si

Maschio 92

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-5.158	1.046	-5.158	5.811	L4	L5	4.765	0.16	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 74	1.67	17578.38	-69900	-0.0001768	0.0004492	0.0035	4.765	41575.19	116858.01	116858.01	6.65	No	Si
SLU 74	5.07	-21.21	-46457	-0.0000815	0.0004492	0.0035	4.765	55485.52	99029.99	99029.99	4669.17	No	Si
SLU 81	1.67	17568.81	-70501	-0.0001782	0.0004492	0.0035	4.765	40848.79	117412.63	117412.63	6.68	No	Si
SLU 81	5.07	-280.37	-46623	-0.0000824	0.0004492	0.0035	4.765	55485.84	99260.71	99260.71	354.03	No	Si
SLU 84	1.67	17802.16	-71048	-0.0001802	0.0004492	0.0035	4.765	40172.12	117917.02	117917.02	6.62	No	Si
SLU 84	5.07	-192.27	-47383	-0.0000836	0.0004492	0.0035	4.765	55469.3	100319.86	100319.86	521.75	No	Si
SLU 83	1.67	18009.76	-71725	-0.0001824	0.0004492	0.0035	4.765	39311.95	118542.37	118542.37	6.58	No	Si
SLU 83	5.07	-119.87	-47681	-0.000084	0.0004492	0.0035	4.765	55454.75	100734.76	100734.76	840.37	No	Si
SLU 78	1.67	17811.73	-70446	-0.0001787	0.0004492	0.0035	4.765	40915.33	117362.41	117362.41	6.59	No	Si
SLU 78	5.07	66.89	-47218	-0.000083	0.0004492	0.0035	4.765	55475.42	89548.19	89548.19	1338.74	No	Si
SLU 79	1.67	17920.2	-70614	-0.0001794	0.0004492	0.0035	4.765	40710.28	117516.81	117516.81	6.56	No	Si
SLU 79	5.07	165.81	-47143	-0.0000831	0.0004492	0.0035	4.765	55477.72	89448.74	89448.74	539.45	No	Si
SLU 77	1.67	18019.33	-71124	-0.000181	0.0004492	0.0035	4.765	40076	117987.76	117987.76	6.55	No	Si
SLU 77	5.07	139.29	-47516	-0.0000838	0.0004492	0.0035	4.765	55463.4	89945.35	89945.35	645.72	No	Si
SLU 80	1.67	17712.6	-69936	-0.0001772	0.0004492	0.0035	4.765	41531.91	116891.46	116891.46	6.6	No	Si
SLU 80	5.07	93.41	-46845	-0.0000824	0.0004492	0.0035	4.765	55484.07	89051.59	89051.59	953.33	No	Si
SLU 75	1.67	17370.78	-69222	-0.0001746	0.0004492	0.0035	4.765	42372.06	116232.66	116232.66	6.69	No	Si
SLU 75	5.07	-93.61	-46159	-0.0000811	0.0004492	0.0035	4.765	55481.4	98615.1	98615.1	1053.43	No	Si
SLU 82	1.67	17361.21	-69823	-0.000176	0.0004492	0.0035	4.765	41666.51	116787.28	116787.28	6.73	No	Si
SLU 82	5.07	-352.78	-46325	-0.000082	0.0004492	0.0035	4.765	55484.25	98845.81	98845.81	280.19	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 4	1.67	29935.6	-55828	-0.0001672	0.0006738	0.0035	4.765		106941.41	106941.41	3.57		Si
SLV 4	5.07	9003.73	-35895	-0.0000804	0.0006738	0.0035	4.765		74481.19	74481.19	8.27		Si
SLV 5	1.67	-5844.53	18572	-0.0137176	0.0006738	0.0035	4.765		0	0	0		No
SLV 5	5.07	-7188.04	-364	-0.0001766	0.0006738	0.0035	3.812		14404.14	14404.14	2		Si
SLV 6	1.67	-7354.21	21897	-0.0159995	0.0006738	0.0035	4.765		0	0	0		No
SLV 6	5.07	-8032.5	1237	-0.0002036	0.0006738	0.0035	3.812		10732.53	10732.53	1.34		Si
SLV 1	1.67	18765.12	-21472	-0.0000763	0.0006738	0.0035	4.765		48839.65	48839.65	2.6		Si
SLV 1	5.07	4462.69	-19713	-0.0000421	0.0006738	0.0035	4.765		45302.64	45302.64	10.15		Si
SLV 10	1.67	-14721.41	16234	-0.0055251	0.0006738	0.0035	4.765		0	0	0		No
SLV 10	5.07	-12047.89	-1071	-0.0002986	0.0006738	0.0035	3.812		16014.45	16014.45	1.33		Si
SLV 8	1.67	37355.11	-109085	-0.0003094	0.0006738	0.0035	4.765		162092.9	162092.9	4.34		Si
SLV 8	5.07	11285.21	-60629	-0.000132	0.0006738	0.0035	4.765		113446.05	113446.05	10.05		Si
SLV 2	1.67	16522.8	-16534	-0.0000636	0.0006738	0.0035	4.765		38773.59	38773.59	2.35		Si
SLV 2	5.07	3208.42	-17336	-0.0000354	0.0006738	0.0035	4.765		40439.96	40439.96	12.6		Si
SLV 3	1.67	32177.91	-60767	-0.0001829	0.0006738	0.0035	4.765		113632.88	113632.88	3.53		Si
SLV 3	5.07	10258.01	-38272	-0.0000876	0.0006738	0.0035	4.765		78607.55	78607.55	7.66		Si
SLV 9	1.67	-13211.73	12910	-0.0026868	0.0006738	0.0035	3.812		0	0	0		No
SLV 9	5.07	-11203.43	-2671	-0.0002318	0.0006738	0.0035	3.812		19639.51	19639.51	1.75		Si
SLV 7	1.67	38864.79	-112410	-0.0003227	0.0006738	0.0035	4.765		163914.74	163914.74	4.22		Si
SLV 7	5.07	12129.67	-62229	-0.0001372	0.0006738	0.0035	4.765		115614.71	115614.71	9.53		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	1.67	18019.33	-71124	-41761	-9748	4.765	4.765	-54776	10833	21108	108749	27399	24301	51700	No	5.3	Si
SLU 77	5.07	139.29	-47516	-27899	-5189	4.765	4.765	-36594	10833	15563	108749	27399	24301	51700	No	9.96	Si
SLU 84	1.67	17802.16	-71048	-41716	-10014	4.765	4.765	-54717	10833	21090	108749	27399	24301	51700	No	5.16	Si
SLU 84	5.07	-192.27	-47383	-27821	-5534	4.765	4.765	-36492	10833	15532	108749	27399	24301	51700	No	9.34	Si
SLU 79	1.67	17920.2	-70614	-41461	-9715	4.765	4.765	-54383	10833	20988	108749	27399	24301	51700	No	5.32	Si
SLU 79	5.07	165.81	-47143	-27680	-5185	4.765	4.765	-36307	10833	15476	108749	27399	24301	51700	No	9.97	Si
SLU 75	1.67	17370.78	-69222	-40644	-9881	4.765	4.765	-53311	10833	20661	108749	27399	24301	51700	No	5.23	Si
SLU 75	5.07	-93.61	-46159	-27102	-5533	4.765	4.765	-35549	10833	15245	108749	27399	24301	51700	No	9.34	Si
SLU 78	1.67	17811.73	-70446	-41363	-10065	4.765	4.765	-54254	10833	20949	108749	27399	24301	51700	No	5.14	Si
SLU 78	5.07	66.89	-47218	-27724	-5607	4.765	4.765	-36364	10833	15493	108749	27399	24301	51700	No	9.22	Si
SLU 73	1.67	16692.3	-67035	-39360	-9876	4.765	4.765	-51626	10833	20148	108749	27399	24301	51700	No	5.24	Si
SLU 73	5.07	-275.86	-44529	-26145	-5734	4.765	4.765	-34293	10833	14862	108749	27399	24301	51700	No	9.02	Si
SLU 82	1.67	17361.21	-69823	-40997	-9830	4.765	4.765	-53774	10833	20802	108749	27399	24301	51700	No	5.26	Si
SLU 82	5.07	-352.78	-46325	-27200	-5459	4.765	4.765	-35676	10833	15284	108749	27399	24301	51700	No	9.47	Si
SLU 80	1.67	17712.6	-69936	-41063	-10032	4.765	4.765	-53861	10833	20829	108749	27399	24301	51700	No	5.15	Si
SLU 80	5.07	93.41	-46845	-27505	-5603	4.765	4.765	-36077	10833	15406	108749	27399	24301	51700	No	9.23	Si
SLU 83	1.67	18009.76	-71725	-42114	-9696	4.765	4.765	-55239	10833	21249	108749	27399	24301	51700	No	5.33	Si
SLU 83	5.07	-119.87	-47681	-27996	-5115	4.765	4.765	-36721	10833	15602	108749	27399	24301	51700	No	10.11	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 76	1.67	17133.25	-68260	-40079	-10060	4.765	4.765	-52569	10833	20435	108749	27399	24301	51700	No	5.14	Si
SLU 76	5.07	-115.36	-45587	-26767	-5808	4.765	4.765	-35109	10833	15111	108749	27399	24301	51700	No	8.9	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	1.67	-13211.73	12910	7580	-30988	3.812	4.0773	0	0	0	108749	32878	19441	52320		1.69	Si
SLV 9	5.07	-11203.43	-2671	-1568	-37655	3.812	0	0	0	0	108749	32878	19441	52320		1.39	Si
SLV 2	1.67	16522.8	-16534	-9708	-20095	4.765	4.1495	-12733	15047	10489	108749	41098	24301	65400		3.25	Si
SLV 2	5.07	3208.42	-17336	-10179	-16924	4.765	4.765	-13351	15170	11566	108749	41098	24301	65400		3.86	Si
SLV 5	1.67	-5844.53	18572	10905	-34332	4.765	4.765	526422	0	6606	108749	41098	24301	65400		1.9	Si
SLV 5	5.07	-7188.04	-364	-214	-38916	3.812	0	0	0	0	108749	32878	19441	52320		1.34	Si
SLV 7	1.67	38864.79	-112410	-66002	17171	4.765	4.765	-86571	16250	33006	108749	41098	24301	65400		3.81	Si
SLV 7	5.07	12129.67	-62229	-36538	30667	4.765	4.765	-47925	16250	21221	108749	41098	24301	65400		2.13	Si
SLV 1	1.67	18765.12	-21472	-12607	-20229	4.765	4.5257	-16537	15807	11649	108749	41098	24301	65400		3.23	Si
SLV 1	5.07	4462.69	-19713	-11574	-15859	4.765	4.765	-15182	15536	11845	108749	41098	24301	65400		4.12	Si
SLV 12	1.67	29987.91	-114747	-67375	20605	4.765	4.765	-88372	16250	33555	108749	41098	24301	65400		3.17	Si
SLV 12	5.07	7269.82	-62936	-36954	31210	4.765	4.765	-48470	16250	21387	108749	41098	24301	65400		2.1	Si
SLV 10	1.67	-14721.41	16234	9532	-30898	4.765	4.4271	675746	0	6606	108749	41098	24301	65400		2.12	Si
SLV 10	5.07	-12047.89	-1071	-629	-38373	3.812	0	0	0	0	108749	32878	19441	52320		1.36	Si
SLV 8	1.67	37355.11	-109085	-64050	17261	4.765	4.765	-84011	16250	32225	108749	41098	24301	65400		3.79	Si
SLV 8	5.07	11285.21	-60629	-35599	29950	4.765	4.765	-46693	16250	20845	108749	41098	24301	65400		2.18	Si
SLV 11	1.67	31497.58	-118072	-69327	20515	4.765	4.765	-90932	16250	34336	108749	41098	24301	65400		3.19	Si
SLV 11	5.07	8114.28	-64537	-37893	31928	4.765	4.765	-49703	16250	21763	108749	41098	24301	65400		2.05	Si
SLV 6	1.67	-7354.21	21897	12857	-34242	4.765	4.765	620628	0	6606	108749	41098	24301	65400		1.91	Si
SLV 6	5.07	-8032.5	1237	726	-39633	3.812	0	0	0	0	108749	32878	19441	52320		1.32	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 3.37 Ta 0.12 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 5	7970	0.31	230.9	0	0	0	0	No
SLV 10	7736	0.31	230.9	0	0	0	0	No
SLV 9	5194	0.31	230.9	0	0	0	0	No
SLV 6	10512	0.31	230.9	0	0	0	0	No
SLV 2	-19474	0.31	230.9	1340.79	2195.68	1768.24	7.66	Si
SLV 1	-23250	0.31	230.9	1550.5	2540.53	2045.52	8.86	Si
SLV 14	-28728	0.31	230.9	1825.74	3031.84	2428.79	10.52	Si
SLV 13	-32504	0.31	230.9	1995.43	3368.54	2681.99	11.62	Si
SLV 4	-48481	0.31	230.9	2532.83	4744.44	3638.63	15.76	Si
SLV 3	-52257	0.31	230.9	2617.13	5059.63	3838.38	16.62	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.03 Ta = 0.1207

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-64537	-118072	317	0.42	6937.5	0.983	6.20477	5.10876	Si
SLV 15	-45965	-79642	917	0.56	5045.1	0.978	8.32352	6.79984	Si
SLV 12	-62936	-114747	317	0.43	6774.4	0.983	6.35087	5.10876	Si
SLV 7	-62229	-112410	-224	0.435	6702.4	0.983	6.43912	5.10876	Si
SLV 16	-43587	-74703	917	0.588	4803	0.976	8.7459	6.79984	Si
SLV 8	-60629	-109085	-224	0.446	6539.3	0.982	6.59673	5.10876	Si
SLV 3	-38272	-60767	-885	0.662	4261.6	0.974	9.88493	6.79984	Si
SLV 4	-35895	-55828	-885	0.702	4019.5	0.972	10.49388	6.79984	Si
SLV 13	-27405	-40347	890	0.895	3155.1	0.965	13.4845	6.79984	Si
SLV 14	-25028	-35409	891	0.971	2913.3	0.962	14.66551	6.79984	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	6.548	SLU 77	Si
V_SLU	5.136	SLU 78	Si
PF_SLV	0	SLV 5	No
V_SLV	1.32	SLV 6	Si
PFFP_SLV	0	SLV 5	No
R_SLV	1.215	SLV 11	Si

Maschio 95

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-6.008	-3.359	-6.463	-3.359	L4	L5	0.455	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 76	3.67	289.97	-9712	-0.0001915	0.0003743	0.0035	0.455	665.44	1137.34	1137.34	3.92	No	Si
SLU 76	4.47	-488.85	-11721	-0.0002993	0.0003743	0.0035	0.455	417.56	1110.64	1110.64	2.27	No	Si
SLU 82	3.67	283.91	-9979	-0.0001959	0.0003743	0.0035	0.455	640.08	1135.56	1135.56	4	No	Si
SLU 82	4.47	-480.27	-12056	-0.0003085	0.0003743	0.0035	0.455	363.45	1097.57	1097.57	2.29	No	Si
SLU 78	3.67	284.69	-9865	-0.0001936	0.0003743	0.0035	0.455	651.2	1136.31	1136.31	3.99	No	Si
SLU 78	4.47	-484.35	-11903	-0.0003043	0.0003743	0.0035	0.455	388.66	1103.53	1103.53	2.28	No	Si
SLU 81	3.67	271.79	-9925	-0.0001919	0.0003743	0.0035	0.455	645.34	1135.91	1135.91	4.18	No	Si
SLU 81	4.47	-462.5	-11994	-0.0003002	0.0003743	0.0035	0.455	373.68	1099.96	1099.96	2.38	No	Si
SLU 80	3.67	282.78	-9793	-0.0001916	0.0003743	0.0035	0.455	657.91	1136.78	1136.78	4.02	No	Si
SLU 80	4.47	-480.33	-11817	-0.0002998	0.0003743	0.0035	0.455	402.35	1106.86	1106.86	2.3	No	Si
SLU 77	3.67	272.58	-9811	-0.0001897	0.0003743	0.0035	0.455	656.26	1136.67	1136.67	4.17	No	Si
SLU 77	4.47	-466.58	-11841	-0.0002961	0.0003743	0.0035	0.455	398.59	1105.94	1105.94	2.37	No	Si
SLU 73	3.67	289.09	-9594	-0.0001889	0.0003743	0.0035	0.455	675.85	1138.15	1138.15	3.94	No	Si
SLU 73	4.47	-485.52	-11584	-0.0002934	0.0003743	0.0035	0.455	438.72	1116.05	1116.05	2.3	No	Si
SLU 75	3.67	283.81	-9747	-0.0001909	0.0003743	0.0035	0.455	662.2	1137.1	1137.1	4.01	No	Si
SLU 75	4.47	-481.02	-11765	-0.0002982	0.0003743	0.0035	0.455	410.64	1108.91	1108.91	2.31	No	Si
SLU 84	3.67	284.79	-10096	-0.0001986	0.0003743	0.0035	0.455	628.19	1134.81	1134.81	3.98	No	Si
SLU 84	4.47	-483.6	-12193	-0.000315	0.0003743	0.0035	0.455	340.16	1092.25	1092.25	2.26	No	Si
SLU 83	3.67	272.68	-10043	-0.0001946	0.0003743	0.0035	0.455	633.66	1135.15	1135.15	4.16	No	Si
SLU 83	4.47	-465.83	-12131	-0.0003063	0.0003743	0.0035	0.455	350.68	1094.63	1094.63	2.35	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	3.67	86.66	547	0.424857	0.0005615	0.0035	0.364		0	0	0		No
SLV 7	4.47	181.46	-1399	-0.0000484	0.0005615	0.0035	0.455		312.44	312.44	1.72		Si
SLV 4	3.67	923.29	-1703	-0.0729868	0.0005615	0.0035	0.364		373.23	373.23	0.4		No
SLV 4	4.47	-1369.08	-3278	-0.0230577	0.0005615	0.0035	0.364		687.22	687.22	0.5		No
SLV 8	3.67	209.27	661	0.4980079	0.0005615	0.0035	0.364		0	0	0		No
SLV 8	4.47	-14.52	-1338	-0.0000168	0.0005615	0.0035	0.455		317.3	317.3	21.85		Si
SLV 12	3.67	-218.44	-1083	-0.000146	0.0005615	0.0035	0.364		264.24	264.24	1.21		Si
SLV 12	4.47	654.79	-3090	-0.0067077	0.0005615	0.0035	0.364		619.12	619.12	0.95		No
SLV 11	3.67	-341.05	-1197	-0.002349	0.0005615	0.0035	0.364		288.16	288.16	0.84		No
SLV 11	4.47	850.77	-3150	-0.0259169	0.0005615	0.0035	0.364		629.89	629.89	0.74		No
SLV 6	3.67	738.64	-11987	-0.0003015	0.0005615	0.0035	0.455		1594.07	1594.07	2.16		Si
SLV 6	4.47	-1517.79	-12762	-0.0010122	0.0005615	0.0035	0.364		1624.13	1624.13	1.07		Si
SLV 5	3.67	616.03	-12101	-0.0002769	0.0005615	0.0035	0.455		1600.45	1600.45	2.6		Si
SLV 5	4.47	-1321.81	-12822	-0.0005528	0.0005615	0.0035	0.364		1625.35	1625.35	1.23		Si
SLV 1	3.67	900	-5667	-0.0003659	0.0005615	0.0035	0.455		1024.12	1024.12	1.14		Si
SLV 1	4.47	-1528.97	-6795	-0.0123986	0.0005615	0.0035	0.364		1197.49	1197.49	0.78		No
SLV 3	3.67	741.19	-1872	-0.0448931	0.0005615	0.0035	0.364		404.84	404.84	0.55		No
SLV 3	4.47	-1077.98	-3368	-0.0140644	0.0005615	0.0035	0.364		702.92	702.92	0.65		No
SLV 2	3.67	1082.1	-5497	-0.0075657	0.0005615	0.0035	0.364		1000.14	1000.14	0.92		No
SLV 2	4.47	-1820.06	-6705	-0.0189042	0.0005615	0.0035	0.364		1185.18	1185.18	0.65		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 73	3.67	289.09	-9594	-8079	1059	0.455	0.455	-59188	10833	2592	38062	4087	1160	5248	No	4.95	Si
SLU 73	4.47	-485.52	-11584	-9755	1059	0.455	0.455	-71462	10833	3039	38062	4087	1160	5248	No	4.95	Si
SLU 65	3.67	282.32	-8613	-7253	1023	0.455	0.455	-53134	10833	2372	38062	4087	1160	5248	No	5.13	Si
SLU 65	4.47	-470.1	-10387	-8747	1023	0.455	0.455	-64077	10833	2770	38062	4087	1160	5248	No	5.13	Si
SLU 68	3.67	283.21	-8730	-7352	1029	0.455	0.455	-53859	10833	2398	38062	4087	1160	5248	No	5.1	Si
SLU 68	4.47	-473.43	-10524	-8862	1029	0.455	0.455	-64925	10833	2801	38062	4087	1160	5248	No	5.1	Si
SLU 75	3.67	283.81	-9747	-8208	1048	0.455	0.455	-60132	10833	2627	38062	4087	1160	5248	No	5.01	Si
SLU 75	4.47	-481.02	-11765	-9907	1048	0.455	0.455	-72582	10833	3080	38062	4087	1160	5248	No	5.01	Si
SLU 82	3.67	283.91	-9979	-8403	1050	0.455	0.455	-61562	10833	2679	38062	4087	1160	5248	No	5	Si
SLU 82	4.47	-480.27	-12056	-10152	1050	0.455	0.455	-74374	10833	3145	38062	4087	1160	5248	No	5	Si
SLU 84	3.67	284.79	-10096	-8502	1056	0.455	0.455	-62288	10833	2705	38062	4087	1160	5248	No	4.97	Si
SLU 84	4.47	-483.6	-12193	-10268	1056	0.455	0.455	-75222	10833	3176	38062	4087	1160	5248	No	4.97	Si
SLU 76	3.67	289.97	-9712	-8178	1065	0.455	0.455	-59913	10833	2619	38062	4087	1160	5248	No	4.93	Si
SLU 76	4.47	-488.85	-11721	-9870	1065	0.455	0.455	-72310	10833	3070	38062	4087	1160	5248	No	4.93	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	3.67	284.69	-9865	-8307	1054	0.455	0.455	-60858	10833	2653	38062	4087	1160	5248	No	4.98	Si
SLU 78	4.47	-484.35	-11903	-10023	1054	0.455	0.455	-73430	10833	3111	38062	4087	1160	5248	No	4.98	Si
SLU 80	3.67	282.78	-9793	-8247	1046	0.455	0.455	-60419	10833	2637	38062	4087	1160	5248	No	5.02	Si
SLU 80	4.47	-480.33	-11817	-9951	1047	0.455	0.455	-72904	10833	3092	38062	4087	1160	5248	No	5.01	Si
SLU 83	3.67	272.68	-10043	-8457	1018	0.455	0.455	-61958	10833	2693	38062	4087	1160	5248	No	5.15	Si
SLU 83	4.47	-465.83	-12131	-10216	1019	0.455	0.455	-74842	10833	3162	38062	4087	1160	5248	No	5.15	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	3.67	1082.1	-5497	-4629	3663	0.364	0.0919	0	0	0	38062	4905	928	5833		1.59	Si
SLV 2	4.47	-1820.06	-6705	-5647	3772	0.364	0	0	0	0	38062	4905	928	5833		1.55	Si
SLV 3	3.67	741.19	-1872	-1577	2288	0.364	0	0	0	0	38062	4905	928	5833		2.55	Si
SLV 3	4.47	-1077.98	-3368	-2837	2392	0.364	0	0	0	0	38062	4905	928	5833		2.44	Si
SLV 15	3.67	-684.51	-7687	-6473	-2206	0.455	0.4154	-47423	16250	2383	38062	6131	1160	7291		3.3	Si
SLV 15	4.47	1153.04	-9206	-7753	-2314	0.455	0.3068	-56797	16250	2724	38062	6131	1160	7291		3.15	Si
SLV 5	3.67	616.03	-12101	-10190	2505	0.455	0.455	-74654	16250	3374	38062	6131	1160	7291		2.91	Si
SLV 5	4.47	-1321.81	-12822	-10798	2544	0.364	0.3732	0	0	0	38062	4905	928	5833		2.29	Si
SLD 4	3.67	511.18	-4555	-3836	1659	0.455	0.3458	-28101	16037	1680	38062	6131	1160	7291		4.39	Si
SLD 4	4.47	-782.37	-6008	-5060	1705	0.364	0.2919	0	0	0	38062	4905	928	5833		3.42	Si
SLV 1	3.67	900	-5667	-4772	3069	0.455	0.206	-34959	16250	1930	38062	6131	1160	7291		2.38	Si
SLV 1	4.47	-1528.97	-6795	-5723	3177	0.364	0.0075	0	0	0	38062	4905	928	5833		1.84	Si
SLD 2	3.67	573.31	-6072	-5113	1971	0.455	0.3992	-37459	16250	2021	38062	6131	1160	7291		3.7	Si
SLD 2	4.47	-962.16	-7371	-6207	2018	0.364	0.2909	0	0	0	38062	4905	928	5833		2.89	Si
SLV 4	3.67	923.29	-1703	-1434	2882	0.364	0	0	0	0	38062	4905	928	5833		2.02	Si
SLV 4	4.47	-1369.08	-3278	-2761	2986	0.364	0	0	0	0	38062	4905	928	5833		1.95	Si
SLD 1	3.67	495.84	-6144	-5174	1718	0.455	0.4404	-37905	16250	2147	38062	6131	1160	7291		4.24	Si
SLD 1	4.47	-838.32	-7409	-6239	1765	0.364	0.343	0	0	0	38062	4905	928	5833		3.3	Si
SLV 6	3.67	738.64	-11987	-10094	2905	0.455	0.455	-73949	16250	3349	38062	6131	1160	7291		2.51	Si
SLV 6	4.47	-1517.79	-12762	-10747	2944	0.364	0.3257	0	0	0	38062	4905	928	5833		1.98	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 8	179667	0.31	0	1390	38.44	0	0	No, Trazione
SLV 7	179667	0.31	0	1522	38.44	0	0	No, Trazione
SLV 11	179667	0.31	0	862	38.44	0	0	No, Trazione
SLV 12	179667	0.31	0	730	38.44	0	0	No, Trazione
SLV 3	179667	0.31	16023	-2187	38.44	293.64	7.64	Si
SLV 4	179667	0.31	17455	-2383	38.44	316.54	8.23	Si
SLV 15	179667	0.31	32146	-4388	38.44	519.65	13.52	Si
SLV 16	179667	0.31	33578	-4583	38.44	536.35	13.95	Si
SLV 1	179667	0.31	44351	-6054	38.44	644.37	16.76	Si
SLV 2	179667	0.31	45783	-6249	38.44	656.38	17.07	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-7390	-6858	-32	0.37	817.7	0.975	5.51012	4.41923	Si
SLV 14	-7310	-7323	-31	0.373	809.7	0.975	5.56158	4.41923	Si
SLV 9	-8323	-11953	-16	0.337	912.8	0.978	5.00584	3.83947	Si
SLV 10	-8270	-12266	-16	0.339	907.4	0.978	5.03343	3.83947	Si
SLV 5	-7291	-11959	-14	0.376	807.7	0.975	5.6088	3.83947	Si
SLV 6	-7238	-12272	-13	0.379	802.3	0.975	5.64448	3.83947	Si
SLV 15	-5547	-2562	-42	0.469	630.1	0.968	7.03211	4.41923	Si
SLV 16	-5468	-3027	-42	0.474	622	0.968	7.12119	4.41923	Si
SLV 1	-3950	-6878	-23	0.628	467.6	0.959	9.52418	4.41923	Si
SLV 2	-3871	-7343	-23	0.639	459.6	0.958	9.6952	4.41923	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.259	SLU 84	Si
V_SLU	4.925	SLU 76	Si
PF_SLV	0	SLV 7	No
V_SLV	1.546	SLV 2	Si
PFFP_SLV	0	SLV 12	No
R_SLV	1.247	SLV 13	Si

Maschio 96

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-3.233	-3.359	-5.508	-3.359	L4	L5	2.275	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 82	3.67	7780.99	-29054	-0.0001248	0.0003743	0.0035	2.275	19230.22	23227.95	23227.95	2.99	No	Si
SLU 82	4.47	-725.11	-27578	-0.0000708	0.0003743	0.0035	2.275	18919.65	23520.56	23520.56	32.44	No	Si
SLU 84	3.67	7860.83	-29398	-0.0001265	0.0003743	0.0035	2.275	19292.38	23392.04	23392.04	2.98	No	Si
SLU 84	4.47	-700.06	-27922	-0.0000716	0.0003743	0.0035	2.275	18998.44	23699.2	23699.2	33.85	No	Si
SLU 73	3.67	7637.17	-27820	-0.0001199	0.0003743	0.0035	2.275	18975.42	22646.65	22646.65	2.97	No	Si
SLU 73	4.47	-766.39	-26344	-0.0000678	0.0003743	0.0035	2.275	18605.23	22834.95	22834.95	29.8	No	Si
SLU 80	3.67	7679.66	-28535	-0.0001225	0.0003743	0.0035	2.275	19129.25	22982.39	22982.39	2.99	No	Si
SLU 80	4.47	-705.68	-27059	-0.0000693	0.0003743	0.0035	2.275	18793.64	23234.28	23234.28	32.92	No	Si
SLU 76	3.67	7717.01	-28164	-0.0001216	0.0003743	0.0035	2.275	19051.49	22807.63	22807.63	2.96	No	Si
SLU 76	4.47	-741.34	-26688	-0.0000685	0.0003743	0.0035	2.275	18697.92	23026.06	23026.06	31.06	No	Si
SLU 68	3.67	7107.96	-25348	-0.0001085	0.0003743	0.0035	2.275	18315.23	21515.91	21515.91	3.03	No	Si
SLU 68	4.47	-812.89	-23872	-0.0000615	0.0003743	0.0035	2.275	17825.62	21513.32	21513.32	26.47	No	Si
SLU 65	3.67	7028.11	-25004	-0.0001069	0.0003743	0.0035	2.275	18207.44	21359.72	21359.72	3.04	No	Si
SLU 65	4.47	-837.93	-23528	-0.0000608	0.0003743	0.0035	2.275	17701.21	21336.39	21336.39	25.46	No	Si
SLU 78	3.67	7734.75	-28760	-0.0001236	0.0003743	0.0035	2.275	19174.13	23088.67	23088.67	2.99	No	Si
SLU 78	4.47	-709.86	-27284	-0.0000699	0.0003743	0.0035	2.275	18849.38	23361.27	23361.27	32.91	No	Si
SLU 83	3.67	7685.03	-29439	-0.0001254	0.0003743	0.0035	2.275	19299.54	23411.68	23411.68	3.05	No	Si
SLU 83	4.47	-684.13	-27963	-0.0000716	0.0003743	0.0035	2.275	19007.59	23720	23720	34.67	No	Si
SLU 75	3.67	7654.91	-28416	-0.0001219	0.0003743	0.0035	2.275	19104.78	22926.19	22926.19	2.99	No	Si
SLU 75	4.47	-734.9	-26940	-0.0000691	0.0003743	0.0035	2.275	18763.41	23167.24	23167.24	31.52	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	3.67	-358.26	1532	0.1187476	0.0005615	0.0035	1.82		0	0	0		No
SLV 7	4.47	581.04	2150	0.1628955	0.0005615	0.0035	1.82		0	0	0		No
SLV 2	3.67	10397.53	-25524	-0.0001256	0.0005615	0.0035	2.275		23708.38	23708.38	2.28		Si
SLV 2	4.47	-9758.3	-24261	-0.0001178	0.0005615	0.0035	2.275		24128.74	24128.74	2.47		Si
SLV 15	3.67	-37.18	-13178	-0.0000295	0.0005615	0.0035	2.275		14849.92	14849.92	399.44		Si
SLV 15	4.47	8543.47	-12178	-0.0000982	0.0005615	0.0035	2.275		12750.87	12750.87	1.49		Si
SLV 4	3.67	6769.12	-13417	-0.0000731	0.0005615	0.0035	2.275		13789.28	13789.28	2.04		Si
SLV 4	4.47	-8161.59	-12459	-0.0000902	0.0005615	0.0035	1.82		14190.88	14190.88	1.74		Si
SLV 16	3.67	1015	-14701	-0.0000389	0.0005615	0.0035	2.275		14875.94	14875.94	14.66		Si
SLV 16	4.47	6420.67	-13701	-0.0000705	0.0005615	0.0035	2.275		14028.62	14028.62	2.18		Si
SLV 3	3.67	5716.94	-11894	-0.0000619	0.0005615	0.0035	2.275		12514.34	12514.34	2.19		Si
SLV 3	4.47	-6038.79	-10936	-0.0000639	0.0005615	0.0035	2.275		12740.75	12740.75	2.11		Si
SLV 8	3.67	350.14	506	0.0371561	0.0005615	0.0035	1.82		0	0	0		No
SLV 8	4.47	-848.18	1125	0.0885334	0.0005615	0.0035	1.82		0	0	0		No
SLV 11	3.67	-2084.49	1147	0.0919331	0.0005615	0.0035	1.82		0	0	0		No
SLV 11	4.47	4955.72	1777	0.0619542	0.0005615	0.0035	1.82		0	0	0		No
SLV 12	3.67	-1376.1	121	0.0077284	0.0005615	0.0035	1.82		0	0	0		No
SLV 12	4.47	3526.5	752	-0.0109208	0.0005615	0.0035	1.82		0	0	0		No
SLV 1	3.67	9345.36	-24001	-0.0001142	0.0005615	0.0035	2.275		22690.15	22690.15	2.43		Si
SLV 1	4.47	-7635.5	-22738	-0.0000997	0.0005615	0.0035	2.275		22986.3	22986.3	3.01		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	3.67	7685.03	-29439	-24791	10510	2.275	2.275	-36323	10833	8833	38062	20437	5801	26238	No	2.5	Si
SLU 83	4.47	-684.13	-27963	-23548	10510	2.275	2.275	-34502	10833	8501	38062	20437	5801	26238	No	2.5	Si
SLU 78	3.67	7734.75	-28760	-24219	10604	2.275	2.275	-35486	10833	8680	38062	20437	5801	26238	No	2.47	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	4.47	-709.86	-27284	-22976	10604	2.275	2.275	-33665	10833	8348	38062	20437	5801	26238	No	2.47	Si
SLU 82	3.67	7780.99	-29054	-24466	10681	2.275	2.275	-35848	10833	8746	38062	20437	5801	26238	No	2.46	Si
SLU 82	4.47	-725.11	-27578	-23223	10681	2.275	2.275	-34027	10833	8414	38062	20437	5801	26238	No	2.46	Si
SLU 76	3.67	7717.01	-28164	-23717	10621	2.275	2.275	-34750	10833	8546	38062	20437	5801	26238	No	2.47	Si
SLU 76	4.47	-741.34	-26688	-22474	10621	2.275	2.275	-32929	10833	8213	38062	20437	5801	26238	No	2.47	Si
SLU 75	3.67	7654.91	-28416	-23929	10536	2.275	2.275	-35061	10833	8603	38062	20437	5801	26238	No	2.49	Si
SLU 75	4.47	-734.9	-26940	-22686	10536	2.275	2.275	-33240	10833	8270	38062	20437	5801	26238	No	2.49	Si
SLU 80	3.67	7679.66	-28535	-24030	10530	2.275	2.275	-35208	10833	8630	38062	20437	5801	26238	No	2.49	Si
SLU 80	4.47	-705.68	-27059	-22787	10530	2.275	2.275	-33387	10833	8297	38062	20437	5801	26238	No	2.49	Si
SLU 81	3.67	7605.18	-29095	-24501	10441	2.275	2.275	-35899	10833	8756	38062	20437	5801	26238	No	2.51	Si
SLU 81	4.47	-709.18	-27619	-23258	10441	2.275	2.275	-34078	10833	8423	38062	20437	5801	26238	No	2.51	Si
SLU 84	3.67	7860.83	-29398	-24756	10749	2.275	2.275	-36273	10833	8824	38062	20437	5801	26238	No	2.44	Si
SLU 84	4.47	-700.06	-27922	-23513	10749	2.275	2.275	-34452	10833	8491	38062	20437	5801	26238	No	2.44	Si
SLU 73	3.67	7637.17	-27820	-23427	10553	2.275	2.275	-34325	10833	8468	38062	20437	5801	26238	No	2.49	Si
SLU 73	4.47	-766.39	-26344	-22184	10553	2.275	2.275	-32504	10833	8136	38062	20437	5801	26238	No	2.49	Si
SLU 77	3.67	7558.95	-28801	-24254	10364	2.275	2.275	-35536	10833	8690	38062	20437	5801	26238	No	2.53	Si
SLU 77	4.47	-693.93	-27325	-23011	10364	2.275	2.275	-33716	10833	8357	38062	20437	5801	26238	No	2.53	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	3.67	11736.45	-38823	-32693	21583	2.275	2.275	-47902	16250	12048	38062	30656	5801	36457		1.69	Si
SLV 5	4.47	-4741.33	-37192	-31319	21645	2.275	2.275	-45889	16250	11680	38062	30656	5801	36457		1.68	Si
SLV 3	3.67	5716.94	-11894	-10016	14371	2.275	1.9706	-14676	13352	7893	38062	30656	5801	36457		2.54	Si
SLV 3	4.47	-6038.79	-10936	-9209	14240	2.275	1.7559	-17626	13942	7344	38062	30656	5801	36457		2.56	Si
SLV 1	3.67	9345.36	-24001	-20211	21485	2.275	2.2444	-29614	16250	10941	38062	30656	5801	36457		1.7	Si
SLV 1	4.47	-7635.5	-22738	-19148	21409	2.275	2.275	-28056	16028	10939	38062	30656	5801	36457		1.7	Si
SLV 2	3.67	10397.53	-25524	-21494	25453	2.275	2.1904	-31493	16250	10678	38062	30656	5801	36457		1.43	Si
SLV 2	4.47	-9758.3	-24261	-20431	25378	2.275	2.2059	-29935	16250	10754	38062	30656	5801	36457		1.44	Si
SLD 2	3.67	7344.79	-21830	-18383	14933	2.275	2.275	-26935	15804	10786	38062	30656	5801	36457		2.44	Si
SLD 2	4.47	-4490.77	-20641	-17382	14902	2.275	2.275	-25467	15510	10586	38062	30656	5801	36457		2.45	Si
SLV 9	3.67	10010.22	-39209	-33018	13999	2.275	2.275	-48378	16250	12134	38062	30656	5801	36457		2.6	Si
SLV 9	4.47	-366.65	-37564	-31633	14123	2.275	2.275	-46349	16250	11764	38062	30656	5801	36457		2.58	Si
SLV 10	3.67	10718.61	-40234	-33881	16671	2.275	2.275	-49643	16250	12365	38062	30656	5801	36457		2.19	Si
SLV 10	4.47	-1795.87	-38590	-32497	16795	2.275	2.275	-47614	16250	11995	38062	30656	5801	36457		2.17	Si
SLV 4	3.67	6769.12	-13417	-11299	18340	2.275	1.899	-16555	13728	7821	38062	30656	5801	36457		1.99	Si
SLV 4	4.47	-8161.59	-12459	-10492	18209	1.82	1.4473	0	0	0	38062	24525	4641	29166		1.6	Si
SLV 6	3.67	12444.85	-39849	-33557	24255	2.275	2.275	-49168	16250	12279	38062	30656	5801	36457		1.5	Si
SLV 6	4.47	-6170.54	-38217	-32183	24317	2.275	2.275	-47154	16250	11911	38062	30656	5801	36457		1.5	Si
SLD 6	3.67	8067.2	-27575	-23221	14161	2.275	2.275	-34024	16250	11091	38062	30656	5801	36457		2.57	Si
SLD 6	4.47	-2887.62	-26222	-22082	14191	2.275	2.275	-32354	16250	11091	38062	30656	5801	36457		2.57	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 11	179667	0.31	0	0	192.22	0	0	No, e>t/2
SLV 12	179667	0.31	0	-607	192.22	0	0	No, e>t/2
SLV 8	179667	0.31	0	870	192.22	0	0	No, Trazione
SLV 7	179667	0.31	0	1476	192.22	0	0	No, Trazione
SLV 3	179667	0.31	13202	-9010	192.22	1234.71	6.42	Si
SLV 4	179667	0.31	14521	-9911	192.22	1345.28	7	Si
SLV 15	179667	0.31	20414	-13932	192.22	1810.49	9.42	Si
SLV 16	179667	0.31	21733	-14833	192.22	1908.3	9.93	Si
SLV 1	179667	0.31	28720	-19601	192.22	2387.27	12.42	Si
SLV 2	179667	0.31	30040	-20502	192.22	2470.39	12.85	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-30841	-21310	-941	0.406	3466.6	0.971	6.08174	3.83947	Si
SLV 9	-30287	-21254	-941	0.413	3410.2	0.971	6.17761	3.83947	Si
SLV 6	-29649	-18393	-904	0.421	3345.3	0.97	6.30938	3.83947	Si
SLV 5	-29095	-18337	-903	0.428	3288.9	0.97	6.41315	3.83947	Si
SLV 14	-22092	-17517	-353	0.562	2576.1	0.962	8.48713	4.41923	Si
SLV 13	-21269	-17433	-352	0.58	2492.4	0.961	8.77374	4.41923	Si
SLV 2	-18118	-7793	-228	0.67	2172	0.956	10.18529	4.41923	Si
SLV 1	-17295	-7709	-227	0.696	2088.4	0.954	10.60733	4.41923	Si
SLV 16	-13285	-11336	189	0.869	1681.3	0.945	13.37168	4.41923	Si
SLV 15	-12462	-11252	190	0.916	1597.9	0.942	14.12527	4.41923	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.955	SLU 76	Si
V_SLU	2.441	SLU 84	Si
PF_SLV	0	SLV 7	No

Stato limite	Coeff.s.	Comb.	Verifica
V_SLV	1.432	SLV 2	Si
PFFP_SLV	0	SLV 8	No
R_SLV	1.584	SLV 10	Si

Maschio 97

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	-3.359	-2.233	-3.359	L4	L5	2.11	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 26	2.57	-699.76	-12536	-0.0000355	0.0003743	0.0035	2.11	10652.93	12615.04	12615.04	18.03	No	Si
SLU 26	4.47	-304.64	-15595	-0.0000407	0.0003743	0.0035	2.11	12471.17	14836.08	14836.08	48.7	No	Si
SLU 76	2.57	-903.96	-16602	-0.0000478	0.0003743	0.0035	2.11	13003.21	15526.26	15526.26	17.18	No	Si
SLU 76	4.47	-300.11	-20824	-0.0000548	0.0003743	0.0035	2.11	14870.42	18083.81	18083.81	60.26	No	Si
SLU 42	2.57	-808.71	-14642	-0.0000418	0.0003743	0.0035	2.11	11937.61	14166.34	14166.34	17.52	No	Si
SLU 42	4.47	-49.23	-18887	-0.0000476	0.0003743	0.0035	2.11	14086.17	16998.11	16998.11	345.31	No	Si
SLU 73	2.57	-883.8	-16438	-0.0000472	0.0003743	0.0035	2.11	12918.52	15419.28	15419.28	17.45	No	Si
SLU 73	4.47	-317.43	-20578	-0.0000543	0.0003743	0.0035	2.11	14777.75	17978.6	17978.6	56.64	No	Si
SLU 40	2.57	-788.55	-14477	-0.0000413	0.0003743	0.0035	2.11	11842.34	14052.12	14052.12	17.82	No	Si
SLU 40	4.47	-66.55	-18641	-0.0000471	0.0003743	0.0035	2.11	13977.93	16848.92	16848.92	253.19	No	Si
SLU 34	2.57	-846.43	-14003	-0.0000404	0.0003743	0.0035	2.11	11562.98	13706.79	13706.79	16.19	No	Si
SLU 34	4.47	-152.9	-17909	-0.0000458	0.0003743	0.0035	2.11	13643.36	16387.85	16387.85	107.18	No	Si
SLU 55	2.57	-793.63	-14861	-0.0000423	0.0003743	0.0035	2.11	12062.75	14318.76	14318.76	18.04	No	Si
SLU 55	4.47	-423.94	-18211	-0.0000486	0.0003743	0.0035	2.11	13783.57	16584.92	16584.92	39.12	No	Si
SLU 31	2.57	-826.27	-13838	-0.0000399	0.0003743	0.0035	2.11	11464.27	13584.66	13584.66	16.44	No	Si
SLU 31	4.47	-170.22	-17663	-0.0000452	0.0003743	0.0035	2.11	13527.24	16225.59	16225.59	95.32	No	Si
SLU 13	2.57	-736.1	-12261	-0.0000351	0.0003743	0.0035	2.11	10474.28	12403.69	12403.69	16.85	No	Si
SLU 13	4.47	-276.73	-15296	-0.0000397	0.0003743	0.0035	2.11	12307.16	14624.54	14624.54	52.85	No	Si
SLU 10	2.57	-715.94	-12096	-0.0000345	0.0003743	0.0035	2.11	10366.17	12275.28	12275.28	17.15	No	Si
SLU 10	4.47	-294.05	-15050	-0.0000392	0.0003743	0.0035	2.11	12170.04	14451.63	14451.63	49.15	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 8	2.57	1417.97	7673	0.5749383	0.0005615	0.0035	1.688		0	0	0		No
SLV 8	4.47	1641.46	1643	0.1107585	0.0005615	0.0035	1.688		0	0	0		No
SLV 1	2.57	4986.23	-14034	-0.0000689	0.0005615	0.0035	2.11		13086.25	13086.25	2.62		Si
SLV 1	4.47	-4383.44	-6598	-0.0000574	0.0005615	0.0035	1.688		7835.95	7835.95	1.79		Si
SLV 4	2.57	6222.7	-4359	-0.0122616	0.0005615	0.0035	2.11		4665.59	4665.59	0.75		No
SLV 4	4.47	-3641.8	1664	0.1342523	0.0005615	0.0035	1.688		0	0	0		No
SLV 16	2.57	-5768.79	-9112	-0.0000744	0.0005615	0.0035	1.688		10160.6	10160.6	1.76		Si
SLV 16	4.47	3842.56	-21622	-0.000081	0.0005615	0.0035	2.11		19081.06	19081.06	4.97		Si
SLV 7	2.57	380.14	8891	0.673168	0.0005615	0.0035	1.688		0	0	0		No
SLV 7	4.47	2551.87	880	0.013407	0.0005615	0.0035	1.688		0	0	0		No
SLV 3	2.57	4681.2	-2549	-0.0135176	0.0005615	0.0035	2.11		2865.28	2865.28	0.61		No
SLV 3	4.47	-2289.59	529	0.043779	0.0005615	0.0035	1.688		0	0	0		No
SLV 15	2.57	-7310.29	-7302	-0.0003362	0.0005615	0.0035	1.688		8491.95	8491.95	1.16		Si
SLV 15	4.47	5194.77	-22757	-0.0000941	0.0005615	0.0035	2.11		19790.09	19790.09	3.81		Si
SLV 12	2.57	-2179.47	6247	0.4833698	0.0005615	0.0035	1.688		0	0	0		No
SLV 12	4.47	3886.77	-5342	-0.0000555	0.0005615	0.0035	2.11		5622.36	5622.36	1.45		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 11	2.57	-3217.31	7465	0.5797215	0.0005615	0.0035	1.688		0	0	0		No
SLV 11	4.47	4797.17	-6106	-0.0000785	0.0005615	0.0035	2.11		6354.36	6354.36	1.32		Si
SLV 2	2.57	6527.73	-15844	-0.0000858	0.0005615	0.0035	2.11		14547.04	14547.04	2.23		Si
SLV 2	4.47	-5735.66	-5464	-0.0003267	0.0005615	0.0035	1.688		6746.79	6746.79	1.18		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	2.57	-695.23	-17093	-14394	-4286	2.11	2.11	-22739	9976	6315	38062	18955	5381	24335	No	5.68	Si
SLU 81	4.47	-155.79	-21536	-18136	-4280	2.11	2.11	-28650	10764	6867	38062	18955	5381	24335	No	5.69	Si
SLU 79	2.57	-672.69	-16794	-14142	-4146	2.11	2.11	-22341	9923	6281	38062	18955	5381	24335	No	5.87	Si
SLU 79	4.47	-186.18	-21036	-17714	-4141	2.11	2.11	-27984	10676	6758	38062	18955	5381	24335	No	5.88	Si
SLU 76	2.57	-903.96	-16602	-13981	-4206	2.11	2.11	-22087	9889	6260	38062	18955	5381	24335	No	5.79	Si
SLU 76	4.47	-300.11	-20824	-17536	-4181	2.11	2.11	-27702	10638	6734	38062	18955	5381	24335	No	5.82	Si
SLU 84	2.57	-866.24	-17241	-14519	-4425	2.11	2.11	-22937	10003	6332	38062	18955	5381	24335	No	5.5	Si
SLU 84	4.47	-196.44	-21802	-18359	-4408	2.11	2.11	-29004	10812	6927	38062	18955	5381	24335	No	5.52	Si
SLU 75	2.57	-805.64	-16744	-14100	-4180	2.11	2.11	-22275	9915	6276	38062	18955	5381	24335	No	5.82	Si
SLU 75	4.47	-266.05	-20985	-17672	-4162	2.11	2.11	-27918	10667	6752	38062	18955	5381	24335	No	5.85	Si
SLU 78	2.57	-825.8	-16909	-14239	-4244	2.11	2.11	-22495	9944	6294	38062	18955	5381	24335	No	5.73	Si
SLU 78	4.47	-248.74	-21231	-17879	-4227	2.11	2.11	-28245	10710	6799	38062	18955	5381	24335	No	5.76	Si
SLU 77	2.57	-674.95	-16925	-14253	-4169	2.11	2.11	-22516	9947	6296	38062	18955	5381	24335	No	5.84	Si
SLU 77	4.47	-190.77	-21211	-17862	-4164	2.11	2.11	-28218	10707	6794	38062	18955	5381	24335	No	5.84	Si
SLU 83	2.57	-715.39	-17258	-14533	-4351	2.11	2.11	-22958	10006	6334	38062	18955	5381	24335	No	5.59	Si
SLU 83	4.47	-138.47	-21782	-18342	-4345	2.11	2.11	-28977	10808	6923	38062	18955	5381	24335	No	5.6	Si
SLU 80	2.57	-823.54	-16778	-14129	-4221	2.11	2.11	-22320	9920	6280	38062	18955	5381	24335	No	5.77	Si
SLU 80	4.47	-244.15	-21056	-17731	-4204	2.11	2.11	-28011	10679	6760	38062	18955	5381	24335	No	5.79	Si
SLU 82	2.57	-846.08	-17077	-14380	-4361	2.11	2.11	-22718	9973	6313	38062	18955	5381	24335	No	5.58	Si
SLU 82	4.47	-213.75	-21556	-18153	-4343	2.11	2.11	-28677	10768	6872	38062	18955	5381	24335	No	5.6	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 15	2.57	-3346.22	-9908	-8344	-8418	2.11	2.11	-13182	13053	8263	38062	28432	5381	33813		4.02	Si
SLD 15	4.47	2035.4	-17907	-15080	-8148	2.11	2.11	-23823	15181	9610	38062	28432	5381	33813		4.15	Si
SLV 14	2.57	-5463.76	-20597	-17345	-9498	2.11	2.11	-27401	15897	10063	38062	28432	5381	33813		3.56	Si
SLV 14	4.47	1748.7	-28750	-24210	-8730	2.11	2.11	-38247	16250	10286	38062	28432	5381	33813		3.87	Si
SLV 15	2.57	-7310.29	-7302	-6149	-16278	1.688	0.1616	0	0	0	38062	22746	4304	27050		1.66	Si
SLV 15	4.47	5194.77	-22757	-19164	-15647	2.11	2.11	-30274	16250	10286	38062	28432	5381	33813		2.16	Si
SLV 11	2.57	-3217.31	7465	6287	-12821	1.688	1.8721	0	0	0	38062	22746	4304	27050		2.11	Si
SLV 11	4.47	4797.17	-6106	-5142	-12837	2.11	0.8081	-8123	12041	4418	38062	28432	5381	33813		2.63	Si
SLV 16	2.57	-5768.79	-9112	-7673	-13122	1.688	1.2656	0	0	0	38062	22746	4304	27050		2.06	Si
SLV 16	4.47	3842.56	-21622	-18208	-12491	2.11	2.11	-28765	16170	10235	38062	28432	5381	33813		2.71	Si
SLV 2	2.57	6527.73	-15844	-13342	10985	2.11	1.929	-21078	14632	8468	38062	28432	5381	33813		3.08	Si
SLV 2	4.47	-5735.66	-5464	-4601	10363	1.688	0.0156	0	0	0	38062	22746	4304	27050		2.61	Si
SLV 1	2.57	4986.23	-14034	-11818	7829	2.11	2.0991	-18670	14151	8911	38062	28432	5381	33813		4.32	Si
SLV 1	4.47	-4383.44	-6598	-5556	7206	1.688	1.1719	0	0	0	38062	22746	4304	27050		3.75	Si
SLV 7	2.57	380.14	8891	7487	-6676	1.688	2.11	0	0	0	38062	22746	4304	27050		4.05	Si
SLV 7	4.47	2551.87	880	741	-7109	1.688	0	0	0	0	38062	22746	4304	27050		3.8	Si
SLV 13	2.57	-7005.25	-18787	-15821	-12654	2.11	2.0464	-26124	15642	9603	38062	28432	5381	33813		2.67	Si
SLV 13	4.47	3100.92	-29884	-25166	-11886	2.11	2.11	-39756	16250	10286	38062	28432	5381	33813		2.84	Si
SLV 12	2.57	-2179.47	6247	5261	-10696	1.688	2.11	0	0	0	38062	22746	4304	27050		2.53	Si
SLV 12	4.47	3886.77	-5342	-4499	-10712	2.11	0.9824	-7107	11838	4247	38062	28432	5381	33813		3.16	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.31	0	5105	178.28	0	0	No, Trazione
SLV 8	179667	0.31	0	4864	178.28	0	0	No, Trazione
SLV 12	179667	0.31	0	775	178.28	0	0	No, Trazione
SLV 11	179667	0.31	0	1015	178.28	0	0	No, Trazione
SLV 3	179667	0.31	2171	-1374	178.28	203.24	1.14	Si
SLV 4	179667	0.31	2736	-1732	178.28	255.1	1.43	Si
SLV 1	179667	0.31	17484	-11068	178.28	1470.08	8.25	Si
SLV 2	179667	0.31	18049	-11425	178.28	1511.19	8.48	Si
SLV 15	179667	0.31	23707	-15007	178.28	1901.55	10.67	Si
SLV 16	179667	0.31	24271	-15364	178.28	1938.29	10.87	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-24769	-17901	-127	0.486	2824.8	0.967	7.30622	4.41923	Si
SLV 9	-27711	-24801	-568	0.428	3124.3	0.97	6.4041	3.83947	Si
SLV 14	-24439	-18688	-126	0.492	2791.2	0.967	7.39261	4.41923	Si
SLV 10	-27489	-25331	-567	0.431	3101.7	0.97	6.4491	3.83947	Si
SLV 5	-22934	-21914	-604	0.5	2638	0.965	7.52446	3.83947	Si
SLV 6	-22712	-22444	-604	0.504	2615.4	0.965	7.58883	3.83947	Si
SLV 15	-17424	-9211	215	0.65	2077.5	0.957	9.86554	4.41923	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 16	-17094	-9998	216	0.66	2043.9	0.956	10.03102	4.41923	Si
SLV 1	-8845	-8279	-248	1.128	1207.6	0.931	17.60602	4.41923	Si
SLV 2	-8515	-9066	-247	1.163	1174.3	0.93	18.17202	4.41923	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	16.194	SLU 34	Si
V_SLU	5.499	SLU 84	Si
PF_SLV	0	SLV 3	No
V_SLV	1.662	SLV 15	Si
PFFP_SLV	0	SLV 12	No
R_SLV	1.653	SLV 13	Si

Maschio 98

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-3.013	5.951	-5.158	5.951	L4	L5	2.145	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 50	2.57	5474.68	-18647	-0.0000859	0.0003743	0.0035	2.145	14306.75	15845.04	15845.04	2.89	No	Si
SLU 50	4.47	-2058.12	-22930	-0.0000727	0.0003743	0.0035	2.145	15985.38	19445.73	19445.73	9.45	No	Si
SLU 51	2.57	5315.06	-18338	-0.0000838	0.0003743	0.0035	2.145	14162.51	15643.51	15643.51	2.94	No	Si
SLU 51	4.47	-2014.14	-22627	-0.0000715	0.0003743	0.0035	2.145	15886.37	19303.95	19303.95	9.58	No	Si
SLU 71	2.57	5981.31	-21516	-0.0000984	0.0003743	0.0035	2.145	15497.49	17763.96	17763.96	2.97	No	Si
SLU 71	4.47	-2301.33	-26598	-0.0000853	0.0003743	0.0035	2.145	16945.21	21268.08	21268.08	9.24	No	Si
SLU 48	2.57	5496.96	-18812	-0.0000866	0.0003743	0.0035	2.145	14382.49	15953.01	15953.01	2.9	No	Si
SLU 48	4.47	-2069.51	-23147	-0.0000734	0.0003743	0.0035	2.145	16054.42	19548.07	19548.07	9.45	No	Si
SLU 49	2.57	5337.34	-18503	-0.0000845	0.0003743	0.0035	2.145	14239.92	15751.05	15751.05	2.95	No	Si
SLU 49	4.47	-2025.54	-22844	-0.0000722	0.0003743	0.0035	2.145	15957.56	19405.31	19405.31	9.58	No	Si
SLU 43	2.57	5151.22	-17431	-0.0000799	0.0003743	0.0035	2.145	13721.08	15055.41	15055.41	2.92	No	Si
SLU 43	4.47	-2007.86	-21470	-0.0000682	0.0003743	0.0035	2.145	15480.72	18775.12	18775.12	9.35	No	Si
SLU 45	2.57	5335.23	-18204	-0.0000836	0.0003743	0.0035	2.145	14098.98	15556.07	15556.07	2.92	No	Si
SLU 45	4.47	-2044.38	-22417	-0.0000711	0.0003743	0.0035	2.145	15816	19206.5	19206.5	9.39	No	Si
SLU 66	2.57	5841.86	-21073	-0.000096	0.0003743	0.0035	2.145	15331.31	17462.44	17462.44	2.99	No	Si
SLU 66	4.47	-2287.6	-26085	-0.0000837	0.0003743	0.0035	2.145	16837.43	21001.29	21001.29	9.18	No	Si
SLU 69	2.57	6003.59	-21681	-0.0000991	0.0003743	0.0035	2.145	15557.74	17876.33	17876.33	2.98	No	Si
SLU 69	4.47	-2312.72	-26815	-0.000086	0.0003743	0.0035	2.145	16988.19	21380.55	21380.55	9.24	No	Si
SLU 46	2.57	5175.61	-17895	-0.0000815	0.0003743	0.0035	2.145	13950.27	15355.2	15355.2	2.97	No	Si
SLU 46	4.47	-2000.41	-22114	-0.0000699	0.0003743	0.0035	2.145	15711.89	19067	19067	9.53	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 3	2.57	20859.75	-28464	-0.0003748	0.0005615	0.0035	2.145		23907.18	23907.18	1.15		Si
SLV 3	4.47	-7906.38	-34630	-0.0001466	0.0005615	0.0035	2.145		28415.58	28415.58	3.59		Si
SLV 1	2.57	11354.48	-10142	-0.009074	0.0005615	0.0035	2.145		10235.01	10235.01	0.9		No
SLV 1	4.47	-5427.34	-15968	-0.0000752	0.0005615	0.0035	2.145		16277.37	16277.37	3		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 10	2.57	-3756.25	-2690	-0.0004433	0.0005615	0.0035	1.716		4102.27	4102.27	1.09		Si
SLD 10	4.47	658.28	-5842	-0.0000178	0.0005615	0.0035	2.145		6215.12	6215.12	9.44		Si
SLV 14	2.57	-12235.82	-2595	-0.0072302	0.0005615	0.0035	1.716		4005.73	4005.73	0.33		No
SLV 14	4.47	4441.94	-3890	-0.0023629	0.0005615	0.0035	2.145		4282.05	4282.05	0.96		No
SLV 6	2.57	-9623.1	15100	1.1827779	0.0005615	0.0035	1.716		0	0	0		No
SLV 6	4.47	1663.02	11736	0.8855906	0.0005615	0.0035	1.716		0	0	0		No
SLV 5	2.57	-7365.88	13405	1.0468444	0.0005615	0.0035	1.716		0	0	0		No
SLV 5	4.47	633.84	9378	0.7111468	0.0005615	0.0035	1.716		0	0	0		No
SLV 13	2.57	-8883.18	-5113	-0.0022418	0.0005615	0.0035	1.716		6517.39	6517.39	0.73		No
SLV 13	4.47	2913.32	-7392	-0.0000365	0.0005615	0.0035	2.145		7708.29	7708.29	2.65		Si
SLV 2	2.57	8001.85	-7624	-0.0034379	0.0005615	0.0035	2.145		7927.53	7927.53	0.99		No
SLV 2	4.47	-3898.71	-12466	-0.0000557	0.0005615	0.0035	2.145		13327.16	13327.16	3.42		Si
SLV 9	2.57	-13437.18	14913	1.17711	0.0005615	0.0035	1.716		0	0	0		No
SLV 9	4.47	3136.04	11951	0.8939057	0.0005615	0.0035	1.716		0	0	0		No
SLV 10	2.57	-15694.4	16609	1.3124193	0.0005615	0.0035	1.716		0	0	0		No
SLV 10	4.47	4165.21	14308	1.0678373	0.0005615	0.0035	1.716		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	2.57	6175.19	-23629	-19898	9646	2.145	2.145	-30922	10833	7371	38062	19269	5470	24739	No	2.56	Si
SLU 83	4.47	-2546.59	-29514	-24854	9613	2.145	2.145	-38622	10833	8693	38062	19269	5470	24739	No	2.57	Si
SLU 74	2.57	6090.78	-22978	-19350	9437	2.145	2.145	-30069	10833	7225	38062	19269	5470	24739	No	2.62	Si
SLU 74	4.47	-2476.87	-28637	-24115	9405	2.145	2.145	-37475	10833	8496	38062	19269	5470	24739	No	2.63	Si
SLU 77	2.57	6252.51	-23585	-19861	9604	2.145	2.145	-30865	10833	7361	38062	19269	5470	24739	No	2.58	Si
SLU 77	4.47	-2501.99	-29367	-24730	9572	2.145	2.145	-38430	10833	8660	38062	19269	5470	24739	No	2.58	Si
SLU 78	2.57	6092.89	-23277	-19601	9501	2.145	2.145	-30460	10833	7292	38062	19269	5470	24739	No	2.6	Si
SLU 78	4.47	-2458.02	-29064	-24475	9468	2.145	2.145	-38034	10833	8592	38062	19269	5470	24739	No	2.61	Si
SLU 84	2.57	6015.57	-23320	-19638	9543	2.145	2.145	-30518	10833	7302	38062	19269	5470	24739	No	2.59	Si
SLU 84	4.47	-2502.61	-29211	-24598	9509	2.145	2.145	-38226	10833	8624	38062	19269	5470	24739	No	2.6	Si
SLU 81	2.57	6013.45	-23021	-19386	9479	2.145	2.145	-30126	10833	7235	38062	19269	5470	24739	No	2.61	Si
SLU 81	4.47	-2521.46	-28784	-24239	9446	2.145	2.145	-37667	10833	8529	38062	19269	5470	24739	No	2.62	Si
SLU 80	2.57	6070.62	-23112	-19462	9453	2.145	2.145	-30245	10833	7255	38062	19269	5470	24739	No	2.62	Si
SLU 80	4.47	-2446.62	-28847	-24292	9421	2.145	2.145	-37750	10833	8543	38062	19269	5470	24739	No	2.63	Si
SLU 79	2.57	6230.24	-23420	-19722	9557	2.145	2.145	-30649	10833	7324	38062	19269	5470	24739	No	2.59	Si
SLU 79	4.47	-2490.6	-29150	-24547	9525	2.145	2.145	-38147	10833	8611	38062	19269	5470	24739	No	2.6	Si
SLU 75	2.57	5931.16	-22669	-19090	9334	2.145	2.145	-29665	10833	7156	38062	19269	5470	24739	No	2.65	Si
SLU 75	4.47	-2432.89	-28334	-23860	9301	2.145	2.145	-37079	10833	8428	38062	19269	5470	24739	No	2.66	Si
SLU 82	2.57	5853.83	-22712	-19126	9376	2.145	2.145	-29722	10833	7165	38062	19269	5470	24739	No	2.64	Si
SLU 82	4.47	-2477.49	-28481	-23984	9342	2.145	2.145	-37271	10833	8461	38062	19269	5470	24739	No	2.65	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 3	2.57	20859.75	-28464	-23970	20388	2.145	1.019	-37249	16250	9489	38062	28904	5470	34374		1.69	Si
SLV 3	4.47	-7906.38	-34630	-29162	19876	2.145	2.145	-45318	16250	10874	38062	28904	5470	34374		1.73	Si
SLV 1	2.57	11354.48	-10142	-8541	13629	2.145	0	-228995	16250	5375	38062	28904	5470	34374		2.52	Si
SLV 1	4.47	-5427.34	-15968	-13447	13037	2.145	2.145	-20896	14596	9392	38062	28904	5470	34374		2.64	Si
SLD 8	2.57	11439.29	-27662	-23295	11783	2.145	1.9769	-36200	16250	9637	38062	28904	5470	34374		2.92	Si
SLD 8	4.47	-3693.72	-31696	-26691	11751	2.145	2.145	-41478	16250	10457	38062	28904	5470	34374		2.93	Si
SLD 3	2.57	11239.08	-20786	-17504	12394	2.145	1.5954	-27201	15857	7765	38062	28904	5470	34374		2.77	Si
SLD 3	4.47	-4332.72	-25547	-21514	12164	2.145	2.145	-33432	16250	10457	38062	28904	5470	34374		2.83	Si
SLV 12	2.57	15989.81	-44464	-37443	14176	2.145	2.1387	-58186	16250	13082	38062	28904	5470	34374		2.42	Si
SLV 12	4.47	-4098.28	-47898	-40335	14447	2.145	2.145	-62681	16250	13853	38062	28904	5470	34374		2.38	Si
SLV 8	2.57	22061.11	-45972	-38713	19478	2.145	1.7779	-60161	16250	13421	38062	28904	5470	34374		1.76	Si
SLV 8	4.47	-6600.48	-50471	-42502	19429	2.145	2.145	-66048	16250	14431	38062	28904	5470	34374		1.77	Si
SLV 7	2.57	24318.33	-47668	-40141	21578	2.145	1.687	-62380	16250	13802	38062	28904	5470	34374		1.59	Si
SLV 7	4.47	-7629.65	-52828	-44487	21532	2.145	2.145	-69133	16250	14960	38062	28904	5470	34374		1.6	Si
SLV 11	2.57	18247.03	-46159	-38871	16276	2.145	2.0316	-60406	16250	13463	38062	28904	5470	34374		2.11	Si
SLV 11	4.47	-5127.46	-50255	-42320	16550	2.145	2.145	-65766	16250	14383	38062	28904	5470	34374		2.08	Si
SLV 4	2.57	17507.11	-25945	-21849	17269	2.145	1.1932	-33953	16250	8924	38062	28904	5470	34374		1.99	Si
SLV 4	4.47	-6377.76	-31128	-26213	16752	2.145	2.145	-40735	16250	10457	38062	28904	5470	34374		2.05	Si
SLD 7	2.57	12380.18	-28369	-23890	12659	2.145	1.9083	-37125	16250	9468	38062	28904	5470	34374		2.72	Si
SLD 7	4.47	-4122.72	-32678	-27519	12628	2.145	2.145	-42764	16250	10457	38062	28904	5470	34374		2.72	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.31	0	14775	181.24	0	0	No, Trazione
SLV 10	179667	0.31	0	17036	181.24	0	0	No, Trazione
SLV 5	179667	0.31	0	11947	181.24	0	0	No, Trazione
SLV 6	179667	0.31	0	14208	181.24	0	0	No, Trazione
SLV 14	179667	0.31	2876	-1851	181.24	272.39	1.5	Si
SLV 13	179667	0.31	8095	-5209	181.24	739.95	4.08	Si
SLV 2	179667	0.31	17526	-11278	181.24	1497.57	8.26	Si
SLV 1	179667	0.31	22745	-14636	181.24	1868.48	10.31	Si
SLV 16	179667	0.31	33159	-21338	181.24	2505.72	13.83	Si
SLV 15	179667	0.31	38378	-24696	181.24	2773.49	15.3	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-47825	-31498	752	0.273	5178.3	0.981	4.03888	3.83947	Si
SLV 11	-45911	-32742	913	0.279	4983.2	0.981	4.12749	3.83947	Si
SLV 8	-45813	-30706	745	0.282	4973.2	0.981	4.18666	3.83947	Si
SLV 12	-43898	-31951	906	0.289	4778.1	0.98	4.28551	3.83947	Si
SLV 3	-31346	-16094	12	0.408	3499.5	0.973	6.0946	4.41923	Si
SLV 4	-28358	-14919	2	0.444	3195.1	0.971	6.65164	4.41923	Si
SLV 15	-24964	-20243	548	0.474	2849.6	0.967	7.12745	4.41923	Si
SLV 16	-21975	-19068	538	0.528	2545.5	0.964	7.97019	4.41923	Si
SLV 1	-14888	-3971	-463	0.737	1825	0.951	11.25682	4.41923	Si
SLV 2	-11899	-2796	-473	0.885	1521.7	0.943	13.64659	4.41923	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.894	SLU 50	Si
V_SLU	2.565	SLU 83	Si
PF_SLV	0	SLV 5	No
V_SLV	1.593	SLV 7	Si
PFFP_SLV	0	SLV 10	No
R_SLV	1.052	SLV 7	Si

Maschio 99

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	5.951	-2.013	5.951	L4	L5	1.89	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 45	2.57	125.73	-13293	-0.0000377	0.0003743	0.0035	1.89	9669.35	10590.63	10590.63	84.23	No	Si
SLU 45	4.47	-630.56	-14199	-0.0000449	0.0003743	0.0035	1.89	10117.71	11923.07	11923.07	18.91	No	Si
SLU 46	2.57	116.38	-13067	-0.0000369	0.0003743	0.0035	1.89	9552.96	10457.21	10457.21	89.85	No	Si
SLU 46	4.47	-602.16	-14084	-0.0000443	0.0003743	0.0035	1.89	10062.13	11853.52	11853.52	19.68	No	Si
SLU 1	2.57	85.77	-10376	-0.0000289	0.0003743	0.0035	1.89	8042.89	8495.95	8495.95	99.06	No	Si
SLU 1	4.47	-458.33	-11160	-0.0000344	0.0003743	0.0035	1.89	8507.09	9939.84	9939.84	21.69	No	Si
SLU 49	2.57	103.89	-13430	-0.0000379	0.0003743	0.0035	1.89	9738.5	10666.37	10666.37	102.67	No	Si
SLU 49	4.47	-599.5	-14542	-0.0000456	0.0003743	0.0035	1.89	10280.18	12130.85	12130.85	20.23	No	Si
SLU 47	2.57	115.93	-12766	-0.000036	0.0003743	0.0035	1.89	9395.83	10259.49	10259.49	88.5	No	Si
SLU 47	4.47	-579.84	-13834	-0.0000433	0.0003743	0.0035	1.89	9940.02	11700.16	11700.16	20.18	No	Si
SLU 51	2.57	109.66	-13280	-0.0000375	0.0003743	0.0035	1.89	9662.42	10582.88	10582.88	96.51	No	Si
SLU 51	4.47	-596.11	-14368	-0.0000451	0.0003743	0.0035	1.89	10198.4	12025.41	12025.41	20.17	No	Si
SLU 48	2.57	113.23	-13656	-0.0000386	0.0003743	0.0035	1.89	9852.2	10787.6	10787.6	95.27	No	Si
SLU 48	4.47	-627.9	-14657	-0.0000462	0.0003743	0.0035	1.89	10334.03	12201.24	12201.24	19.43	No	Si
SLU 43	2.57	144	-12781	-0.0000363	0.0003743	0.0035	1.89	9403.67	10270.67	10270.67	71.32	No	Si
SLU 43	4.47	-629.83	-13568	-0.000043	0.0003743	0.0035	1.89	9808.2	11531.77	11531.77	18.31	No	Si
SLU 44	2.57	128.42	-12403	-0.0000351	0.0003743	0.0035	1.89	9202.41	9987.12	9987.12	77.77	No	Si
SLU 44	4.47	-582.5	-13376	-0.000042	0.0003743	0.0035	1.89	9711.36	11408.45	11408.45	19.59	No	Si
SLU 50	2.57	119.01	-13506	-0.0000382	0.0003743	0.0035	1.89	9777.23	10707.46	10707.46	89.97	No	Si
SLU 50	4.47	-624.5	-14484	-0.0000457	0.0003743	0.0035	1.89	10252.91	12095.49	12095.49	19.37	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 14	2.57	-4572.65	-6455	-0.000095	0.0005615	0.0035	1.512		6607.26	6607.26	1.44		Si
SLV 14	4.47	3777.87	-16353	-0.0000782	0.0005615	0.0035	1.89		13232.49	13232.49	3.5		Si
SLV 2	2.57	3254.41	-1256	-0.0151719	0.0005615	0.0035	1.512		1370.6	1370.6	0.42		No
SLV 2	4.47	-1581.35	-1077	-0.0003157	0.0005615	0.0035	1.512		1899.77	1899.77	1.2		Si
SLV 10	2.57	-1992.19	10305	1.0020915	0.0005615	0.0035	1.512		0	0	0		No
SLV 10	4.47	4029.64	-1303	-0.0206325	0.0005615	0.0035	1.512		1414.02	1414.02	0.35		No
SLV 5	2.57	1097.4	10560	1.0131553	0.0005615	0.0035	1.512		0	0	0		No
SLV 5	4.47	1732.18	3697	0.3465183	0.0005615	0.0035	1.512		0	0	0		No
SLV 1	2.57	4355.7	-3195	-0.0109221	0.0005615	0.0035	1.512		3123.51	3123.51	0.72		No
SLV 1	4.47	-2605.74	-456	-0.0012775	0.0005615	0.0035	1.512		1329.76	1329.76	0.51		No
SLV 6	2.57	355.93	11865	1.1426213	0.0005615	0.0035	1.512		0	0	0		No
SLV 6	4.47	2421.87	3279	0.2997494	0.0005615	0.0035	1.512		0	0	0		No
SLV 4	2.57	3544.91	-14334	-0.00007	0.0005615	0.0035	1.89		11783.26	11783.26	3.32		Si
SLV 4	4.47	-3548.36	-9307	-0.0000561	0.0005615	0.0035	1.89		8934.3	8934.3	2.52		Si
SLV 3	2.57	4646.21	-16272	-0.0000858	0.0005615	0.0035	1.89		13174.16	13174.16	2.84		Si
SLV 3	4.47	-4572.75	-8686	-0.0000714	0.0005615	0.0035	1.512		8435	8435	1.84		Si
SLV 13	2.57	-3471.36	-8393	-0.0000536	0.0005615	0.0035	1.89		8201.17	8201.17	2.36		Si
SLV 13	4.47	2753.48	-15732	-0.0000671	0.0005615	0.0035	1.89		12783.67	12783.67	4.64		Si
SLV 9	2.57	-1250.72	9000	0.873292	0.0005615	0.0035	1.512		0	0	0		No
SLV 9	4.47	3339.95	-885	-0.0184291	0.0005615	0.0035	1.512		1028.49	1028.49	0.31		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	2.57	-55.07	-16523	-13914	-2323	1.89	1.89	-24539	10216	5793	38062	16978	4819	21798	No	9.38	Si
SLU 75	4.47	-389.06	-18843	-15868	-2318	1.89	1.89	-27985	10676	6053	38062	16978	4819	21798	No	9.4	Si
SLU 76	2.57	-55.53	-16222	-13660	-2360	1.89	1.89	-24092	10157	5759	38062	16978	4819	21798	No	9.24	Si
SLU 76	4.47	-366.74	-18593	-15657	-2356	1.89	1.89	-27614	10626	6025	38062	16978	4819	21798	No	9.25	Si
SLU 42	2.57	-140.38	-14564	-12264	-2307	1.89	1.89	-21630	9828	5573	38062	16978	4819	21798	No	9.45	Si
SLU 42	4.47	-165.34	-17126	-14422	-2303	1.89	1.89	-25436	10336	5860	38062	16978	4819	21798	No	9.47	Si
SLU 73	2.57	-43.03	-15859	-13355	-2305	1.89	1.89	-23553	10085	5718	38062	16978	4819	21798	No	9.46	Si
SLU 73	4.47	-369.4	-18135	-15271	-2301	1.89	1.89	-26934	10536	5974	38062	16978	4819	21798	No	9.47	Si
SLU 82	2.57	-69.64	-16606	-13984	-2432	1.89	1.89	-24662	10233	5802	38062	16978	4819	21798	No	8.96	Si
SLU 82	4.47	-339.51	-19077	-16065	-2427	1.89	1.89	-28333	10722	6103	38062	16978	4819	21798	No	8.98	Si
SLU 81	2.57	-60.3	-16832	-14175	-2357	1.89	1.89	-24999	10278	5827	38062	16978	4819	21798	No	9.25	Si
SLU 81	4.47	-367.91	-19192	-16162	-2352	1.89	1.89	-28504	10745	6129	38062	16978	4819	21798	No	9.27	Si
SLU 84	2.57	-82.14	-16968	-14289	-2487	1.89	1.89	-25201	10305	5843	38062	16978	4819	21798	No	8.76	Si
SLU 84	4.47	-336.85	-19535	-16450	-2482	1.89	1.89	-29013	10813	6206	38062	16978	4819	21798	No	8.78	Si
SLU 83	2.57	-72.79	-17195	-14480	-2412	1.89	1.89	-25538	10350	5868	38062	16978	4819	21798	No	9.04	Si
SLU 83	4.47	-365.24	-19650	-16547	-2407	1.89	1.89	-29184	10833	6232	38062	16978	4819	21798	No	9.06	Si
SLU 80	2.57	-61.8	-16736	-14093	-2365	1.89	1.89	-24856	10259	5817	38062	16978	4819	21798	No	9.22	Si
SLU 80	4.47	-383	-19127	-16107	-2361	1.89	1.89	-28407	10732	6115	38062	16978	4819	21798	No	9.23	Si
SLU 78	2.57	-67.57	-16885	-14219	-2378	1.89	1.89	-25078	10288	5833	38062	16978	4819	21798	No	9.17	Si
SLU 78	4.47	-386.4	-19300	-16253	-2374	1.89	1.89	-28665	10766	6154	38062	16978	4819	21798	No	9.18	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	2.57	-4572.65	-6455	-5435	-10703	1.512	0.7097	0	0	0	38062	20374	3856	24230		2.26	Si
SLV 14	4.47	3777.87	-16353	-13771	-10175	1.89	1.89	-24287	15274	8660	38062	25468	4819	30287		2.98	Si
SLV 13	2.57	-3471.36	-8393	-7068	-8313	1.89	1.5942	-14885	13394	6406	38062	25468	4819	30287		3.64	Si
SLV 13	4.47	2753.48	-15732	-13248	-7784	1.89	1.89	-23364	15090	8556	38062	25468	4819	30287		3.89	Si
SLV 5	2.57	1097.4	10560	8893	-4345	1.512	1.89	0	0	0	38062	20374	3856	24230		5.58	Si
SLV 5	4.47	1732.18	3697	3114	-4823	1.512	1.4296	0	0	0	38062	20374	3856	24230		5.02	Si
SLV 6	2.57	355.93	11865	9992	-5954	1.512	1.89	0	0	0	38062	20374	3856	24230		4.07	Si
SLV 6	4.47	2421.87	3279	2761	-6432	1.512	0.6194	0	0	0	38062	20374	3856	24230		3.77	Si
SLV 3	2.57	4646.21	-16272	-13703	7952	1.89	1.89	-24167	15250	8647	38062	25468	4819	30287		3.81	Si
SLV 3	4.47	-4572.75	-8686	-7314	7429	1.512	1.2556	0	0	0	38062	20374	3856	24230		3.26	Si
SLV 7	2.57	2065.74	-33032	-27817	7056	1.89	1.89	-49059	16250	10147	38062	25468	4819	30287		4.29	Si
SLV 7	4.47	-4824.52	-23735	-19987	7171	1.89	1.89	-35251	16250	9214	38062	25468	4819	30287		4.22	Si
SLV 10	2.57	-1992.19	10305	8678	-9807	1.512	1.89	0	0	0	38062	20374	3856	24230		2.47	Si
SLV 10	4.47	4029.64	-1303	-1098	-9917	1.512	0	0	0	0	38062	20374	3856	24230		2.44	Si
SLV 16	2.57	-4282.15	-19532	-16448	-7283	1.89	1.89	-29009	16219	9196	38062	25468	4819	30287		4.16	Si
SLV 16	4.47	1810.86	-24582	-20701	-6576	1.89	1.89	-36510	16250	9214	38062	25468	4819	30287		4.61	Si
SLV 9	2.57	-1250.72	9000	7579	-8198	1.512	1.89	0	0	0	38062	20374	3856	24230		2.96	Si
SLV 9	4.47	3339.95	-885	-745	-8307	1.512	0	0	0	0	38062	20374	3856	24230		2.92	Si
SLV 1	2.57	4355.7	-3195	-2690	4531	1.512	0	0	0	0	38062	20374	3856	24230		5.35	Si
SLV 1	4.47	-2605.74	-456	-384	3831	1.512	0	0	0	0	38062	20374	3856	24230		6.32	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 10	179667	0.31	0	4844	159.69	0	0	No, Trazione
SLV 9	179667	0.31	0	4395	159.69	0	0	No, Trazione
SLV 6	179667	0.31	0	7819	159.69	0	0	No, Trazione
SLV 5	179667	0.31	0	7370	159.69	0	0	No, Trazione
SLV 2	179667	0.31	2532	-1435	159.69	211.74	1.33	Si
SLV 1	179667	0.31	3707	-2102	159.69	307.65	1.93	Si
SLV 14	179667	0.31	20020	-11351	159.69	1479.49	9.26	Si
SLV 13	179667	0.31	21196	-12018	159.69	1552.5	9.72	Si
SLV 4	179667	0.31	21933	-12436	159.69	1597.48	10	Si

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 3	179667	0.31	23108	-13102	159.69	1667.98	10.44	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 12	-27425	-25882	525	0.393	3063.6	0.973	5.86853	3.83947	Si
SLV 11	-27332	-26533	525	0.394	3054.1	0.973	5.88588	3.83947	Si
SLV 16	-21564	-17271	108	0.498	2466.9	0.967	7.49299	4.41923	Si
SLV 8	-24071	-23292	563	0.437	2722.1	0.97	6.54495	3.83947	Si
SLV 15	-21426	-18239	108	0.501	2452.9	0.967	7.53548	4.41923	Si
SLV 7	-23978	-23943	563	0.438	2712.6	0.969	6.56713	3.83947	Si
SLV 14	-13168	-7435	-211	0.747	1613.1	0.951	11.42135	4.41923	Si
SLV 13	-13030	-8403	-212	0.754	1599.1	0.951	11.52591	4.41923	Si
SLV 4	-10385	-8637	235	0.907	1330.8	0.942	13.98923	4.41923	Si
SLV 3	-10247	-9605	234	0.917	1316.8	0.942	14.15126	4.41923	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	18.309	SLU 43	Si
V_SLU	8.765	SLU 84	Si
PF_SLV	0	SLV 5	No
V_SLV	2.264	SLV 14	Si
PFFP_SLV	0	SLV 10	No
R_SLV	1.528	SLV 12	Si

Maschio 100

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	-3.359	-0.123	0.146	L4	L5	3.505	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Esterna	100	100	100	100	1	CNR DT215	0.8			0.008				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 71	3.67	6772.69	-43332	-0.0000869	0.0003743	0.0035	3.505	45201.65	54217.59	54217.59	8.01	No	Si
SLU 71	4.47	4806.85	-38689	-0.0000729	0.0003743	0.0035	3.505	43298.85	50902.51	50902.51	10.59	No	Si
SLU 66	3.67	6707.12	-43144	-0.0000864	0.0003743	0.0035	3.505	45138.33	54089.9	54089.9	8.06	No	Si
SLU 66	4.47	4740.51	-38519	-0.0000724	0.0003743	0.0035	3.505	43215.82	50734.22	50734.22	10.7	No	Si
SLU 83	3.67	7350.04	-48742	-0.0000988	0.0003743	0.0035	3.505	46528.38	57965.13	57965.13	7.89	No	Si
SLU 83	4.47	5461.2	-43558	-0.0000835	0.0003743	0.0035	3.505	45276.37	54371.66	54371.66	9.96	No	Si
SLU 79	3.67	7270.74	-47527	-0.0000962	0.0003743	0.0035	3.505	46313.87	57127.98	57127.98	7.86	No	Si
SLU 79	4.47	5343	-42479	-0.0000812	0.0003743	0.0035	3.505	44904.88	53639.8	53639.8	10.04	No	Si
SLU 69	3.67	6841.27	-43727	-0.0000878	0.0003743	0.0035	3.505	45330.94	54486.66	54486.66	7.96	No	Si
SLU 69	4.47	4852.09	-39063	-0.0000737	0.0003743	0.0035	3.505	43478.51	51266.88	51266.88	10.57	No	Si
SLU 80	3.67	7070.92	-47836	-0.0000962	0.0003743	0.0035	3.505	46373.05	57340.56	57340.56	8.11	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 80	4.47	5386.87	-42775	-0.0000819	0.0003743	0.0035	3.505	45010.71	53840.03	53840.03	9.99	No	Si
SLU 74	3.67	7205.17	-47339	-0.0000957	0.0003743	0.0035	3.505	46276.37	56995.08	56995.08	7.91	No	Si
SLU 74	4.47	5276.66	-42309	-0.0000807	0.0003743	0.0035	3.505	44842.94	53525.31	53525.31	10.14	No	Si
SLU 78	3.67	7139.5	-48231	-0.0000972	0.0003743	0.0035	3.505	46444.09	57612.27	57612.27	8.07	No	Si
SLU 78	4.47	5432.11	-43150	-0.0000827	0.0003743	0.0035	3.505	45140.26	54093.76	54093.76	9.96	No	Si
SLU 81	3.67	7215.88	-48159	-0.0000973	0.0003743	0.0035	3.505	46431.48	57562.51	57562.51	7.98	No	Si
SLU 81	4.47	5349.62	-43014	-0.0000822	0.0003743	0.0035	3.505	45093.8	54001.63	54001.63	10.09	No	Si
SLU 77	3.67	7339.33	-47922	-0.0000972	0.0003743	0.0035	3.505	46388.91	57399.48	57399.48	7.82	No	Si
SLU 77	4.47	5388.24	-42853	-0.000082	0.0003743	0.0035	3.505	45038.07	53892.8	53892.8	10	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 12	3.67	11348.32	-26852	-0.0000683	0.0005615	0.0035	3.505		40827.66	40827.66	3.6		Si
SLD 12	4.47	4170.14	-21338	-0.0000413	0.0005615	0.0035	3.505		33736.68	33736.68	8.09		Si
SLV 4	3.67	7300.89	-5334	-0.000047	0.0005615	0.0035	3.505		9618.29	9618.29	1.32		Si
SLV 4	4.47	2294.45	-4969	-0.0000125	0.0005615	0.0035	3.505		9010.57	9010.57	3.93		Si
SLV 3	3.67	8199.33	-5929	-0.0000545	0.0005615	0.0035	3.505		10606.21	10606.21	1.29		Si
SLV 3	4.47	1655.13	-4073	-0.0000097	0.0005615	0.0035	3.505		7512.07	7512.07	4.54		Si
SLD 7	3.67	11116.24	-21709	-0.0000595	0.0005615	0.0035	3.505		34208.06	34208.06	3.08		Si
SLD 7	4.47	3539.67	-16725	-0.0000328	0.0005615	0.0035	3.505		27527.1	27527.1	7.78		Si
SLD 11	3.67	11600.46	-27019	-0.0000692	0.0005615	0.0035	3.505		41045.34	41045.34	3.54		Si
SLD 11	4.47	3990.72	-21087	-0.0000405	0.0005615	0.0035	3.505		33417.34	33417.34	8.37		Si
SLV 12	3.67	20801.73	-17897	-0.0001074	0.0005615	0.0035	3.505		29251.88	29251.88	1.41		Si
SLV 12	4.47	5018.85	-9449	-0.0000257	0.0005615	0.0035	3.505		16317.21	16317.21	3.25		Si
SLV 11	3.67	21406.63	-18298	-0.0001116	0.0005615	0.0035	3.505		29841.8	29841.8	1.39		Si
SLV 11	4.47	4588.42	-8846	-0.0000237	0.0005615	0.0035	3.505		15355.95	15355.95	3.35		Si
SLV 7	3.67	20272.91	-5882	-0.0247145	0.0005615	0.0035	3.505		10529.16	10529.16	0.52		No
SLV 7	4.47	3525.89	1347	0.0435327	0.0005615	0.0035	2.804		0	0	0		No
SLV 8	3.67	19668.02	-5481	-0.0248355	0.0005615	0.0035	3.505		9864.4	9864.4	0.5		No
SLV 8	4.47	3956.32	743	0.0018942	0.0005615	0.0035	2.804		0	0	0		No
SLD 8	3.67	10864.1	-21542	-0.0000586	0.0005615	0.0035	3.505		33995.63	33995.63	3.13		Si
SLD 8	4.47	3719.09	-16977	-0.0000336	0.0005615	0.0035	3.505		27900.92	27900.92	7.5		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	3.67	7016.06	-48468	-40815	9283	3.505	3.505	-38816	10833	21387	33833	31487	8938	40424	No	4.35	Si
SLU 82	4.47	5393.49	-43310	-36472	9312	3.505	3.505	-34686	10833	19650	33833	31487	8938	40424	No	4.34	Si
SLU 75	3.67	7005.35	-47648	-40125	9110	3.505	3.505	-38160	10833	21111	33833	31487	8938	40424	No	4.44	Si
SLU 75	4.47	5320.53	-42605	-35878	9138	3.505	3.505	-34121	10833	19413	33833	31487	8938	40424	No	4.42	Si
SLU 74	3.67	7205.17	-47339	-39865	9402	3.505	3.505	-37912	10833	21007	33833	31487	8938	40424	No	4.3	Si
SLU 74	4.47	5276.66	-42309	-35628	9406	3.505	3.505	-33883	10833	19313	33833	31487	8938	40424	No	4.3	Si
SLU 84	3.67	7150.22	-49051	-41306	9396	3.505	3.505	-39283	10833	21584	33833	31487	8938	40424	No	4.3	Si
SLU 84	4.47	5505.07	-43855	-36930	9424	3.505	3.505	-35122	10833	19833	33833	31487	8938	40424	No	4.29	Si
SLU 83	3.67	7350.04	-48742	-41046	9688	3.505	3.505	-39036	10833	21480	33833	31487	8938	40424	No	4.17	Si
SLU 83	4.47	5461.2	-43558	-36681	9692	3.505	3.505	-34884	10833	19734	33833	31487	8938	40424	No	4.17	Si
SLU 79	3.67	7270.74	-47527	-40023	9441	3.505	3.505	-38063	10833	21070	33833	31487	8938	40424	No	4.28	Si
SLU 79	4.47	5343	-42479	-35771	9445	3.505	3.505	-34019	10833	19370	33833	31487	8938	40424	No	4.28	Si
SLU 77	3.67	7339.33	-47922	-40356	9515	3.505	3.505	-38379	10833	21203	33833	31487	8938	40424	No	4.25	Si
SLU 77	4.47	5388.24	-42853	-36087	9519	3.505	3.505	-34319	10833	19496	33833	31487	8938	40424	No	4.25	Si
SLU 81	3.67	7215.88	-48159	-40555	9576	3.505	3.505	-38569	10833	21283	33833	31487	8938	40424	No	4.22	Si
SLU 81	4.47	5349.62	-43014	-36222	9579	3.505	3.505	-34448	10833	19550	33833	31487	8938	40424	No	4.22	Si
SLU 80	3.67	7070.92	-47836	-40283	9148	3.505	3.505	-38310	10833	21175	33833	31487	8938	40424	No	4.42	Si
SLU 80	4.47	5386.87	-42775	-36021	9177	3.505	3.505	-34257	10833	19470	33833	31487	8938	40424	No	4.41	Si
SLU 78	3.67	7139.5	-48231	-40616	9222	3.505	3.505	-38627	10833	21308	33833	31487	8938	40424	No	4.38	Si
SLU 78	4.47	5432.11	-43150	-36337	9251	3.505	3.505	-34557	10833	19596	33833	31487	8938	40424	No	4.37	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 12	3.67	20801.73	-17897	-15071	35133	3.505	1.7706	-14333	13283	13621	33833	47230	8938	47454		1.35	Si
SLV 12	4.47	5018.85	-9449	-7957	34641	3.505	3.505	-7567	11930	12545	33833	47230	8938	46377		1.34	Si
SLV 11	3.67	21406.63	-18298	-15409	38626	3.505	1.7478	-14654	13347	13756	33833	47230	8938	47589		1.23	Si
SLV 11	4.47	4588.42	-8846	-7449	38134	3.505	3.505	-7084	11833	12443	33833	47230	8938	46276		1.21	Si
SLV 6	3.67	-11468.22	-46722	-39345	-25731	3.505	3.505	-37418	16250	23330	33833	47230	8938	56168		2.18	Si
SLV 6	4.47	2451.47	-49134	-41376	-25234	3.505	3.505	-39349	16250	24143	33833	47230	8938	56168		2.23	Si
SLV 15	3.67	11978.38	-47314	-39843	26004	3.505	3.505	-37892	16250	23529	33833	47230	8938	56168		2.16	Si
SLV 15	4.47	5196.9	-38048	-32040	25641	3.505	3.505	-30471	16250	20408	33833	47230	8938	54241		2.12	Si
SLV 10	3.67	-10334.51	-59138	-49800	-20567	3.505	3.505	-47361	16250	27512	33833	47230	8938	56168		2.73	Si
SLV 10	4.47	3514	-59326	-49959	-20212	3.505	3.505	-47512	16250	27576	33833	47230	8938	56168		2.78	Si
SLD 11	3.67	11600.46	-27019	-22753	19415	3.505	3.505	-21638	14744	16694	33833	47230	8938	50526		2.6	Si
SLD 11	4.47	3990.72	-21087	-17757	19215	3.505	3.505	-16888	13794	14696	33833	47230	8938	48528		2.53	Si
SLV 8	3.67	19668.02	-5481	-4616	29968	3.505	0	-195856	16250	9439	33833	47230	8938	43272		1.44	Si
SLV 8	4.47	3956.32	743	626	29619	2.804	0	0	0	0	33833	37784	7150	33833		1.14	Si
SLV 7	3.67	20272.91	-5882	-4953	33461	3.505	0	-203194	16250	9574	33833	47230	8938	43407		1.3	Si
SLV 7	4.47	3525.89	1347	1134	33112	2.804	0	0	0	0	33833	37784	7150	33833		1.02	Si
SLV 5	3.67	-10863.33	-47123	-39683	-22238	3.505	3.505	-37739	16250	23465	33833	47230	8938	56168		2.53	Si
SLV 5	4.47	2021.04	-48531	-40868	-21741	3.505	3.505	-38866	16250	23939	33833	47230	8938	56168		2.58	Si
SLV 16	3.67	11079.94	-46719	-39342	20816	3.505	3.505	-37415	16250	23329	33833	47230	8938	56168		2.7	Si
SLV 16	4.47	5836.21	-38944	-32795	20454	3.505	3.505	-31188	16250	20710	33833	47230	8938	54543		2.67	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.31	0	-1760	296.15	0	0	No, e>t/2
SLV 8	179667	0.31	0	-1667	296.15	0	0	No, e>t/2
SLV 4	179667	0.31	4269	-4489	296.15	654.46	2.21	Si
SLV 3	179667	0.31	4399	-4626	296.15	673.9	2.28	Si
SLV 12	179667	0.31	12610	-13259	296.15	1824.66	6.16	Si
SLV 11	179667	0.31	12698	-13352	296.15	1836.24	6.2	Si
SLV 2	179667	0.31	17611	-18518	296.15	2457.36	8.3	Si
SLV 1	179667	0.31	17742	-18655	296.15	2473.2	8.35	Si
SLV 16	179667	0.31	41016	-43128	296.15	4731.75	15.98	Si
SLV 15	179667	0.31	41147	-43266	296.15	4741.28	16.01	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 14	-47244	-71859	1457	0.408	5313.3	0.971	6.10957	4.41923	Si
SLV 13	-46780	-71645	1456	0.412	5266.1	0.971	6.16191	4.41923	Si
SLV 10	-50128	-79954	278	0.411	5607	0.972	6.13699	3.83947	Si
SLV 9	-49816	-79810	277	0.413	5575.2	0.972	6.17033	3.83947	Si
SLV 16	-35551	-50173	1561	0.515	4123	0.963	7.77477	4.41923	Si
SLV 15	-35087	-49959	1560	0.521	4075.8	0.963	7.86436	4.41923	Si
SLV 6	-40971	-65237	-630	0.479	4674.7	0.967	7.19045	3.83947	Si
SLV 5	-40659	-65093	-631	0.482	4642.9	0.967	7.23829	3.83947	Si
SLV 2	-16722	-22801	-1569	0.96	2210.9	0.937	14.89528	4.41923	Si
SLV 1	-16258	-22587	-1569	0.982	2164	0.935	15.25168	4.41923	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.821	SLU 77	Si
V_SLU	4.171	SLU 83	Si
PF_SLV	0	SLV 7	No
V_SLV	1.022	SLV 7	Si
PFFP_SLV	0	SLV 7	No
R_SLV	1.382	SLV 14	Si

Maschio 101

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	0.646	-0.123	5.951	L4	L5	5.305	0.3	3.4	3.4	3.4			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Esterna	100	100	100	100	1	CNR DT215	0.8			0.008				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 75	3.67	-11676.51	-67795	-0.0000847	0.0003743	0.0035	5.305	104586.22	131988.86	131988.86	11.3	No	Si
SLU 75	4.47	-14418.33	-64236	-0.0000839	0.0003743	0.0035	5.305	102838.45	128165.6	128165.6	8.89	No	Si
SLU 74	3.67	-11197.7	-68011	-0.0000843	0.0003743	0.0035	5.305	104679	132226.56	132226.56	11.81	No	Si
SLU 74	4.47	-14270.47	-64516	-0.000084	0.0003743	0.0035	5.305	102990.98	128460.16	128460.16	9	No	Si
SLU 81	3.67	-11713.43	-68730	-0.0000859	0.0003743	0.0035	5.305	104976.48	133006.98	133006.98	11.36	No	Si
SLU 81	4.47	-14845.8	-65110	-0.0000855	0.0003743	0.0035	5.305	103305.95	129088.35	129088.35	8.7	No	Si
SLU 83	3.67	-11603.75	-69954	-0.0000872	0.0003743	0.0035	5.305	105444.43	134297.89	134297.89	11.57	No	Si
SLU 83	4.47	-14792.88	-66315	-0.0000869	0.0003743	0.0035	5.305	103909.71	130377.97	130377.97	8.81	No	Si
SLU 84	3.67	-12082.56	-69738	-0.0000876	0.0003743	0.0035	5.305	105365.4	134071.87	134071.87	11.1	No	Si
SLU 84	4.47	-14940.73	-66035	-0.0000867	0.0003743	0.0035	5.305	103773.67	130076.58	130076.58	8.71	No	Si
SLU 82	3.67	-12192.23	-68514	-0.0000862	0.0003743	0.0035	5.305	104888.78	132776.46	132776.46	10.89	No	Si
SLU 82	4.47	-14993.65	-64830	-0.0000853	0.0003743	0.0035	5.305	103158.86	128791.53	128791.53	8.59	No	Si
SLU 76	3.67	-11935.87	-67043	-0.0000841	0.0003743	0.0035	5.305	104251.35	131166.42	131166.42	10.99	No	Si
SLU 76	4.47	-14409.32	-63440	-0.0000829	0.0003743	0.0035	5.305	102390.84	127334.06	127334.06	8.84	No	Si
SLU 73	3.67	-12045.55	-65819	-0.0000828	0.0003743	0.0035	5.305	103666.71	129844.24	129844.24	10.78	No	Si
SLU 73	4.47	-14462.24	-62235	-0.0000815	0.0003743	0.0035	5.305	101673.67	126091.42	126091.42	8.72	No	Si
SLU 78	3.67	-11566.83	-69019	-0.000086	0.0003743	0.0035	5.305	105091.63	133314.71	133314.71	11.53	No	Si
SLU 78	4.47	-14365.41	-65441	-0.0000853	0.0003743	0.0035	5.305	103476.68	129440.95	129440.95	9.01	No	Si
SLU 61	3.67	-11344.61	-60430	-0.0000755	0.0003743	0.0035	5.305	100509.91	124266.09	124266.09	10.95	No	Si
SLU 61	4.47	-13541.32	-57140	-0.0000744	0.0003743	0.0035	5.305	98115.66	120673.65	120673.65	8.91	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	3.67	-55117.9	-27326	-0.0001565	0.0005615	0.0035	4.244		73422.72	73422.72	1.33		Si
SLV 10	4.47	-30744.27	-18963	-0.0000628	0.0005615	0.0035	4.244		54531.69	54531.69	1.77		Si
SLV 8	3.67	37804.84	-65145	-0.000109	0.0005615	0.0035	5.305		138005.65	138005.65	3.65		Si
SLV 8	4.47	11365.31	-67771	-0.0000805	0.0005615	0.0035	5.305		142037.95	142037.95	12.5		Si
SLV 9	3.67	-53684.92	-27359	-0.0001432	0.0005615	0.0035	4.244		73493.34	73493.34	1.37		Si
SLV 9	4.47	-31175.91	-19880	-0.0000626	0.0005615	0.0035	4.244		56605.03	56605.03	1.82		Si
SLV 7	3.67	39237.81	-65178	-0.0001108	0.0005615	0.0035	5.305		138055.57	138055.57	3.52		Si
SLV 7	4.47	10933.67	-68689	-0.000081	0.0005615	0.0035	5.305		143453.04	143453.04	13.12		Si
SLV 6	3.67	-52592.67	-11910	-0.0020302	0.0005615	0.0035	4.244		37665.07	37665.07	0.72		No
SLV 6	4.47	-25630.38	-5007	-0.0007963	0.0005615	0.0035	4.244		20483.29	20483.29	0.8		No
SLD 5	3.67	-25166.05	-32367	-0.0000587	0.0005615	0.0035	5.305		84439.03	84439.03	3.36		Si
SLD 5	4.47	-16293.52	-28530	-0.000045	0.0005615	0.0035	5.305		76037.18	76037.18	4.67		Si
SLV 1	3.67	-16226.76	-12597	-0.0000308	0.0005615	0.0035	5.305		39331.1	39331.1	2.42		Si
SLV 1	4.47	-7252.06	-11833	-0.0000188	0.0005615	0.0035	5.305		37477.68	37477.68	5.17		Si
SLV 2	3.67	-18355.15	-12549	-0.0000353	0.0005615	0.0035	4.244		39214.5	39214.5	2.14		Si
SLV 2	4.47	-6610.95	-10471	-0.0000168	0.0005615	0.0035	5.305		34136.95	34136.95	5.16		Si
SLV 5	3.67	-51159.69	-11943	-0.0018596	0.0005615	0.0035	4.244		37745.08	37745.08	0.74		No
SLV 5	4.47	-26062.02	-5925	-0.0006992	0.0005615	0.0035	4.244		22801.77	22801.77	0.87		No
SLD 6	3.67	-25763.37	-32354	-0.0000594	0.0005615	0.0035	5.305		84409.79	84409.79	3.28		Si
SLD 6	4.47	-16113.6	-28148	-0.0000444	0.0005615	0.0035	5.305		75204.69	75204.69	4.67		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 52	3.67	-11197.92	-57735	-48619	-8012	5.305	5.305	-30549	10833	27108	33833	47657	13528	60941	No	7.61	Si
SLU 52	4.47	-13009.91	-54546	-45933	-8016	5.305	5.305	-28862	10793	26034	33833	47657	13528	59867	No	7.47	Si
SLU 75	3.67	-11676.51	-67795	-57091	-8164	5.305	5.305	-35872	10833	30497	33833	47657	13528	61184	No	7.49	Si
SLU 75	4.47	-14418.33	-64236	-54094	-8169	5.305	5.305	-33989	10833	29298	33833	47657	13528	61184	No	7.49	Si
SLU 78	3.67	-11566.83	-69019	-58122	-8294	5.305	5.305	-36520	10833	30909	33833	47657	13528	61184	No	7.38	Si
SLU 78	4.47	-14365.41	-65441	-55108	-8299	5.305	5.305	-34627	10833	29704	33833	47657	13528	61184	No	7.37	Si
SLU 84	3.67	-12082.56	-69738	-58727	-8349	5.305	5.305	-36900	10833	31151	33833	47657	13528	61184	No	7.33	Si
SLU 84	4.47	-14940.73	-66035	-55608	-8354	5.305	5.305	-34941	10833	29904	33833	47657	13528	61184	No	7.32	Si
SLU 73	3.67	-12045.55	-65819	-55426	-8433	5.305	5.305	-34826	10833	29831	33833	47657	13528	61184	No	7.26	Si
SLU 73	4.47	-14462.24	-62235	-52409	-8438	5.305	5.305	-32930	10833	28624	33833	47657	13528	61184	No	7.25	Si
SLU 55	3.67	-11088.25	-58959	-49650	-8142	5.305	5.305	-31197	10833	27520	33833	47657	13528	61184	No	7.51	Si
SLU 55	4.47	-12956.99	-55751	-46948	-8147	5.305	5.305	-29499	10833	26440	33833	47657	13528	60273	No	7.4	Si
SLU 76	3.67	-11935.87	-67043	-56457	-8563	5.305	5.305	-35474	10833	30243	33833	47657	13528	61184	No	7.14	Si
SLU 76	4.47	-14409.32	-63440	-53424	-8568	5.305	5.305	-33568	10833	29030	33833	47657	13528	61184	No	7.14	Si
SLU 80	3.67	-11506.99	-68411	-57609	-8290	5.305	5.305	-36198	10833	30704	33833	47657	13528	61184	No	7.38	Si
SLU 80	4.47	-14257.83	-64832	-54595	-8295	5.305	5.305	-34304	10833	29499	33833	47657	13528	61184	No	7.38	Si
SLU 68	3.67	-10848.8	-61091	-51445	-8121	5.305	5.305	-32325	10833	28238	33833	47657	13528	61184	No	7.53	Si
SLU 68	4.47	-12939.36	-57822	-48692	-8125	5.305	5.305	-30595	10833	27137	33833	47657	13528	60970	No	7.5	Si
SLU 82	3.67	-12192.23	-68514	-57696	-8219	5.305	5.305	-36252	10833	30739	33833	47657	13528	61184	No	7.44	Si
SLU 82	4.47	-14993.65	-64830	-54594	-8224	5.305	5.305	-34303	10833	29498	33833	47657	13528	61184	No	7.44	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 12	3.67	35279.61	-80562	-67841	39566	5.305	5.305	-42627	16250	38628	33833	71485	13528	72461		1.83	Si
SLV 12	4.47	6251.42	-81727	-68822	38965	5.305	5.305	-43244	16250	39020	33833	71485	13528	72853		1.87	Si
SLV 2	3.67	-18355.15	-12549	-10567	-22799	4.244	3.5693	0	0	0	33833	57188	10822	33833		1.48	Si
SLV 2	4.47	-6610.95	-10471	-8818	-22637	5.305	5.305	-5541	11525	18342	33833	71485	13528	52175		2.3	Si
SLV 7	3.67	39237.81	-65178	-54887	45181	5.305	5.305	-34487	16250	33446	33833	71485	13528	67279		1.49	Si
SLV 7	4.47	10933.67	-68689	-57843	44571	5.305	5.305	-36345	16250	34628	33833	71485	13528	68461		1.54	Si
SLV 8	3.67	37804.84	-65145	-54859	40026	5.305	5.305	-34470	16250	33435	33833	71485	13528	67268		1.68	Si
SLV 8	4.47	11365.31	-67771	-57071	39416	5.305	5.305	-35860	16250	34320	33833	71485	13528	68152		1.73	Si
SLV 11	3.67	36712.58	-80594	-67869	44721	5.305	5.305	-42645	16250	38639	33833	71485	13528	72472		1.62	Si
SLV 11	4.47	5819.78	-82644	-69595	44120	5.305	5.305	-43729	16250	39329	33833	71485	13528	73162		1.66	Si
SLV 5	3.67	-51159.69	-11943	-10057	-50374	4.244	0	0	0	0	33833	57188	10822	33833		0.67	No

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	4.47	-26062.02	-5925	-4989	-49780	4.244	0	0	0	0	33833	57188	10822	33833		0.68	No
SLV 9	3.67	-53684.92	-27359	-23039	-50834	4.244	2.0708	0	0	0	33833	57188	10822	33833		0.67	No
SLV 9	4.47	-31175.91	-19880	-16741	-50231	4.244	3.2528	0	0	0	33833	57188	10822	33833		0.67	No
SLV 6	3.67	-52592.67	-11910	-10029	-55529	4.244	0	0	0	0	33833	57188	10822	33833		0.61	No
SLV 6	4.47	-25630.38	-5007	-4217	-54935	4.244	0	0	0	0	33833	57188	10822	33833		0.62	No
SLV 10	3.67	-55117.9	-27326	-23012	-55989	4.244	1.9064	0	0	0	33833	57188	10822	33833		0.6	No
SLV 10	4.47	-30744.27	-18963	-15968	-55386	4.244	3.0936	0	0	0	33833	57188	10822	33833		0.61	No
SLD 6	3.67	-25763.37	-32354	-27245	-25482	5.305	5.305	-17119	13840	22390	33833	71485	13528	56223		2.21	Si
SLD 6	4.47	-16113.6	-28148	-23703	-25243	5.305	5.305	-14894	13395	21319	33833	71485	13528	55152		2.18	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 3.37 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 6	179667	0.31	4206	-6694	448.24	976.42	2.18	Si
SLV 5	179667	0.31	4456	-7092	448.24	1032.8	2.3	Si
SLV 2	179667	0.31	6440	-10249	448.24	1472.48	3.29	Si
SLV 1	179667	0.31	6812	-10841	448.24	1553.56	3.47	Si
SLV 10	179667	0.31	13750	-21883	448.24	2986.88	6.66	Si
SLV 9	179667	0.31	14000	-22281	448.24	3035.79	6.77	Si
SLV 4	179667	0.31	17950	-28568	448.24	3781.47	8.44	Si
SLV 3	179667	0.31	18322	-29159	448.24	3849.17	8.59	Si
SLV 14	179667	0.31	38252	-60878	448.24	6844.46	15.27	Si
SLV 13	179667	0.31	38624	-61470	448.24	6888.55	15.37	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 3.37 Wa = 0.05 Ta = 0.0643

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-69949	-99991	2153	0.416	7883.4	0.97	6.23712	4.41923	Si
SLV 16	-69275	-98527	2153	0.42	7814.8	0.97	6.28926	4.41923	Si
SLV 11	-73459	-107056	564	0.42	8240.8	0.972	6.28313	3.83947	Si
SLV 12	-73005	-106070	565	0.422	8194.6	0.972	6.31679	3.83947	Si
SLV 13	-54277	-73582	2215	0.514	6288.2	0.964	7.75377	4.41923	Si
SLV 14	-53604	-72118	2216	0.52	6219.6	0.963	7.8383	4.41923	Si
SLV 7	-60890	-86908	-735	0.489	6961.1	0.967	7.3557	3.83947	Si
SLV 8	-60437	-85922	-734	0.492	6915	0.967	7.4038	3.83947	Si
SLV 3	-28053	-32831	-2178	0.89	3624.1	0.941	13.74339	4.41923	Si
SLV 4	-27380	-31367	-2177	0.907	3555.9	0.94	14.03067	4.41923	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.59	SLU 82	Si
V_SLU	7.141	SLU 76	Si
PF_SLV	0.716	SLV 6	No
V_SLV	0.604	SLV 10	No
PFFP_SLV	2.178	SLV 6	Si
R_SLV	1.411	SLV 15	Si

Maschio 102

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-24.678	-3.359	-24.678	1.266	L5	L6	4.626	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 65	5.07	8314.98	-43941	-0.0000635	0.0003743	0.0035	4.6257	70021.21	78944.74	78944.74	9.49	No	Si
SLU 65	7.17	9405.61	-37810	-0.0000573	0.0003743	0.0035	4.6257	64046.5	70363.29	70363.29	7.48	No	Si
SLU 76	5.07	9576.94	-49022	-0.0000721	0.0003743	0.0035	4.6257	74040.19	86239.52	86239.52	9	No	Si
SLU 76	7.17	10040.46	-42041	-0.0000637	0.0003743	0.0035	4.6257	68301.34	76243.8	76243.8	7.59	No	Si
SLU 47	5.07	6869.38	-39064	-0.000055	0.0003743	0.0035	4.6257	65367.95	72086.53	72086.53	10.49	No	Si
SLU 47	7.17	8618.38	-33842	-0.0000511	0.0003743	0.0035	4.6257	59522.83	64984.99	64984.99	7.54	No	Si
SLU 52	5.07	7851.65	-42644	-0.0000611	0.0003743	0.0035	4.6257	68859.68	77096.44	77096.44	9.82	No	Si
SLU 52	7.17	9040.75	-36572	-0.0000552	0.0003743	0.0035	4.6257	62690.28	68667.45	68667.45	7.6	No	Si
SLU 70	5.07	8852.55	-45861	-0.0000668	0.0003743	0.0035	4.6257	71638.76	81711.89	81711.89	9.23	No	Si
SLU 70	7.17	9625.21	-39710	-0.0000601	0.0003743	0.0035	4.6257	66028.98	72980.54	72980.54	7.58	No	Si
SLU 68	5.07	8454.82	-44691	-0.0000646	0.0003743	0.0035	4.6257	70667.85	80021.8	80021.8	9.46	No	Si
SLU 68	7.17	9511.85	-38561	-0.0000584	0.0003743	0.0035	4.6257	64843.85	71393.53	71393.53	7.51	No	Si
SLU 46	5.07	7127.27	-39483	-0.0000559	0.0003743	0.0035	4.6257	65798.09	72665.66	72665.66	10.2	No	Si
SLU 46	7.17	8625.51	-34240	-0.0000517	0.0003743	0.0035	4.6257	60000.41	65517.7	65517.7	7.6	No	Si
SLU 67	5.07	8712.71	-45110	-0.0000656	0.0003743	0.0035	4.6257	71020.82	80625.63	80625.63	9.25	No	Si
SLU 67	7.17	9518.97	-38959	-0.0000589	0.0003743	0.0035	4.6257	65259.85	71942.48	71942.48	7.56	No	Si
SLU 44	5.07	6729.53	-38314	-0.0000538	0.0003743	0.0035	4.6257	64583.07	71053.69	71053.69	10.56	No	Si
SLU 44	7.17	8512.14	-33092	-0.0000501	0.0003743	0.0035	4.6257	58609.55	63986.5	63986.5	7.52	No	Si
SLU 73	5.07	9437.09	-48272	-0.0000709	0.0003743	0.0035	4.6257	73499.92	85210.38	85210.38	9.03	No	Si
SLU 73	7.17	9934.22	-41291	-0.0000626	0.0003743	0.0035	4.6257	67589.49	75187.43	75187.43	7.57	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	5.07	33062.46	-32162	-0.0000872	0.0005615	0.0035	4.6257		65380.97	65380.97	1.98		Si
SLV 7	7.17	-1073.73	-21716	-0.0000251	0.0005615	0.0035	4.6257		52210.72	52210.72	48.63		Si
SLD 8	5.07	17949.38	-33496	-0.0000632	0.0005615	0.0035	4.6257		67714.04	67714.04	3.77		Si
SLD 8	7.17	2838.8	-26015	-0.0000325	0.0005615	0.0035	4.6257		54784.02	54784.02	19.3		Si
SLV 8	5.07	34785.66	-32702	-0.0000916	0.0005615	0.0035	4.6257		66324.69	66324.69	1.91		Si
SLV 8	7.17	-3225.29	-21343	-0.0000278	0.0005615	0.0035	4.6257		51491.28	51491.28	15.96		Si
SLV 11	5.07	30127.81	-20624	-0.0000842	0.0005615	0.0035	4.6257		45214.64	45214.64	1.5		Si
SLV 11	7.17	-1277.67	-14039	-0.0000169	0.0005615	0.0035	4.6257		36771.61	36771.61	28.78		Si
SLD 12	5.07	16696.53	-28557	-0.0000555	0.0005615	0.0035	4.6257		59136.1	59136.1	3.54		Si
SLD 12	7.17	2752.29	-22725	-0.0000287	0.0005615	0.0035	4.6257		49211.16	49211.16	17.88		Si
SLV 16	5.07	10758.24	-12768	-0.0000289	0.0005615	0.0035	4.6257		29189.07	29189.07	2.71		Si
SLV 16	7.17	2274.2	-12475	-0.0000166	0.0005615	0.0035	4.6257		28577.84	28577.84	12.57		Si
SLV 15	5.07	8198.78	-11965	-0.0000244	0.0005615	0.0035	4.6257		27497.56	27497.56	3.35		Si
SLV 15	7.17	5469.89	-13030	-0.0000217	0.0005615	0.0035	4.6257		29736.5	29736.5	5.44		Si
SLV 9	5.07	-21549.73	-34715	-0.0000701	0.0005615	0.0035	4.6257		76308.67	76308.67	3.54		Si
SLV 9	7.17	17189.23	-36487	-0.0000657	0.0005615	0.0035	4.6257		72987.5	72987.5	4.25		Si
SLD 11	5.07	15978.24	-28332	-0.0000542	0.0005615	0.0035	4.6257		58748.6	58748.6	3.68		Si
SLD 11	7.17	3649.14	-22880	-0.0000301	0.0005615	0.0035	4.6257		49473.26	49473.26	13.56		Si
SLV 12	5.07	31851.01	-21165	-0.0000916	0.0005615	0.0035	4.6257		46278.52	46278.52	1.45		Si
SLV 12	7.17	-3429.22	-13665	-0.0000195	0.0005615	0.0035	4.6257		35980.28	35980.28	10.49		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	5.07	10382.42	-50757	-42743	3403	4.6257	4.6257	-30801	10833	23777	40441	41554	11796	53350	No	15.68	Si
SLU 83	7.17	9996.9	-43368	-36520	3387	4.6257	4.6257	-26317	10453	21288	40441	41554	11796	53350	No	15.75	Si
SLU 74	5.07	10029.57	-49368	-41573	3304	4.6257	4.6257	-29958	10833	23309	40441	41554	11796	53350	No	16.15	Si
SLU 74	7.17	9885.52	-42341	-35655	3289	4.6257	4.6257	-25694	10370	20942	40441	41554	11796	53350	No	16.22	Si
SLU 71	5.07	8919.24	-45321	-38165	3083	4.6257	4.6257	-27502	10611	21946	40441	41554	11796	53350	No	17.3	Si
SLU 71	7.17	9347.98	-39146	-32965	3069	4.6257	4.6257	-23755	10112	19866	40441	41554	11796	53350	No	17.38	Si
SLU 80	5.07	9846.61	-49724	-41873	3069	4.6257	4.6257	-30174	10833	23429	40441	41554	11796	53350	No	17.38	Si
SLU 80	7.17	10038.66	-42726	-35979	3094	4.6257	4.6257	-25927	10401	21072	40441	41554	11796	53350	No	17.24	Si
SLU 69	5.07	9047.3	-45788	-38558	3105	4.6257	4.6257	-27786	10649	22103	40441	41554	11796	53350	No	17.18	Si
SLU 69	7.17	9463.15	-39610	-33356	3091	4.6257	4.6257	-24037	10149	20022	40441	41554	11796	53350	No	17.26	Si
SLU 84	5.07	10187.67	-50830	-42804	3107	4.6257	4.6257	-30845	10833	23801	40441	41554	11796	53350	No	17.17	Si
SLU 84	7.17	10158.97	-43467	-36604	3132	4.6257	4.6257	-26377	10461	21321	40441	41554	11796	53350	No	17.03	Si
SLU 79	5.07	10041.35	-49652	-41812	3365	4.6257	4.6257	-30130	10833	23404	40441	41554	11796	53350	No	15.86	Si
SLU 79	7.17	9876.59	-42626	-35896	3350	4.6257	4.6257	-25867	10393	21038	40441	41554	11796	53350	No	15.93	Si
SLU 81	5.07	10242.58	-50007	-42111	3320	4.6257	4.6257	-30346	10833	23524	40441	41554	11796	53350	No	16.07	Si
SLU 81	7.17	9890.66	-42617	-35888	3305	4.6257	4.6257	-25861	10393	21035	40441	41554	11796	53350	No	16.14	Si
SLU 78	5.07	9974.67	-50191	-42266	3091	4.6257	4.6257	-30457	10833	23586	40441	41554	11796	53350	No	17.26	Si
SLU 78	7.17	10153.83	-43190	-36371	3116	4.6257	4.6257	-26209	10439	21228	40441	41554	11796	53350	No	17.12	Si
SLU 77	5.07	10169.41	-50119	-42205	3387	4.6257	4.6257	-30414	10833	23562	40441	41554	11796	53350	No	15.75	Si
SLU 77	7.17	9991.76	-43091	-36287	3372	4.6257	4.6257	-26149	10431	21195	40441	41554	11796	53350	No	15.82	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	5.07	-21549.73	-34715	-29234	-31584	4.6257	4.6257	-21066	14630	21714	40441	62331	11796	62155		1.97	Si
SLV 9	7.17	17189.23	-36487	-30726	-30262	4.6257	4.6257	-22142	14845	22311	40441	62331	11796	62752		2.07	Si
SLV 7	5.07	33062.46	-32162	-27083	31890	4.6257	3.8545	-19517	14320	20854	40441	62331	11796	61294		1.92	Si
SLV 7	7.17	-1073.73	-21716	-18287	30547	4.6257	4.6257	-13178	13052	18113	40441	62331	11796	58554		1.92	Si
SLV 11	5.07	30127.81	-20624	-17368	29714	4.6257	2.5562	-12515	12920	16967	40441	62331	11796	57408		1.93	Si
SLV 11	7.17	-1277.67	-14039	-11822	28528	4.6257	4.6257	-8519	12121	16820	40441	62331	11796	57261		2.01	Si
SLV 5	5.07	-18615.07	-46252	-38949	-29408	4.6257	4.6257	-28067	16030	25600	40441	62331	11796	66041		2.25	Si
SLV 5	7.17	17393.17	-44165	-37191	-28243	4.6257	4.6257	-26800	15777	24896	40441	62331	11796	65337		2.31	Si
SLV 4	5.07	20540.41	-51225	-43137	18148	4.6257	4.6257	-31085	16250	27275	40441	62331	11796	67716		3.73	Si
SLV 4	7.17	2953.98	-38066	-32055	17502	4.6257	4.6257	-23100	15037	22842	40441	62331	11796	63283		3.62	Si
SLV 12	5.07	31851.01	-21165	-17823	33879	4.6257	2.4238	-12843	12985	17149	40441	62331	11796	57590		1.7	Si
SLV 12	7.17	-3429.22	-13665	-11508	32692	4.6257	4.6257	-8293	12075	16757	40441	62331	11796	57198		1.75	Si
SLV 6	5.07	-16891.88	-46793	-39404	-25244	4.6257	4.6257	-28395	16096	25782	40441	62331	11796	66223		2.62	Si
SLV 6	7.17	15241.61	-43791	-36877	-24078	4.6257	4.6257	-26574	15731	24771	40441	62331	11796	65212		2.71	Si
SLV 10	5.07	-19826.53	-35256	-29689	-27419	4.6257	4.6257	-21394	14696	21896	40441	62331	11796	62337		2.27	Si
SLV 10	7.17	15037.68	-36114	-30412	-26098	4.6257	4.6257	-21915	14800	22185	40441	62331	11796	62626		2.4	Si
SLD 8	5.07	17949.38	-33496	-28207	15855	4.6257	4.6257	-20326	14482	21303	40441	62331	11796	61744		3.89	Si
SLD 8	7.17	2838.8	-26015	-21908	15310	4.6257	4.6257	-15787	13574	18837	40441	62331	11796	59278		3.87	Si
SLV 8	5.07	34785.66	-32702	-27539	36054	4.6257	3.7474	-19845	14386	21036	40441	62331	11796	61477		1.71	Si
SLV 8	7.17	-3225.29	-21343	-17973	34712	4.6257	4.6257	-12951	13007	18050	40441	62331	11796	58491		1.69	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 16	179667	0.39	9917	-13762	523.27	1930.25	3.69	Si
SLV 15	179667	0.39	10317	-14317	523.27	2002.44	3.83	Si
SLV 12	179667	0.39	10552	-14643	523.27	2044.67	3.91	Si
SLV 11	179667	0.39	10821	-15016	523.27	2092.86	4	Si
SLV 14	179667	0.39	14783	-20515	523.27	2779.38	5.31	Si
SLV 13	179667	0.39	15183	-21070	523.27	2846.27	5.44	Si
SLV 8	179667	0.39	15906	-22073	523.27	2966.15	5.67	Si
SLV 7	179667	0.39	16176	-22447	523.27	3010.4	5.75	Si
SLV 10	179667	0.39	26773	-37153	523.27	4595.99	8.78	Si
SLV 9	179667	0.39	27042	-37527	523.27	4632.27	8.85	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 1	-34372	-54650	-1741	0.672	4195.4	0.952	10.25685	5.36881	Si
SLV 2	-34157	-55452	-1740	0.675	4173.5	0.952	10.31342	5.36881	Si
SLV 3	-30114	-50422	-1747	0.749	3763.2	0.947	11.49699	5.36881	Si
SLV 4	-29899	-51225	-1746	0.754	3741.3	0.947	11.56891	5.36881	Si
SLV 5	-33511	-46252	-523	0.718	4107.9	0.951	10.97576	4.5984	Si
SLV 6	-33365	-46793	-522	0.721	4093.2	0.951	11.01755	4.5984	Si
SLV 9	-28545	-34715	516	0.82	3604	0.945	12.61329	4.5984	Si
SLV 10	-28399	-35256	516	0.824	3589.3	0.945	12.66844	4.5984	Si
SLV 13	-17819	-16192	1721	1.141	2519.3	0.926	17.90489	5.36881	Si
SLV 14	-17603	-16995	1722	1.152	2497.6	0.926	18.08263	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.481	SLU 65	Si
V_SLU	15.678	SLU 83	Si
PF_SLV	1.453	SLV 12	Si
V_SLV	1.685	SLV 8	Si
PFFP_SLV	3.689	SLV 16	Si
R_SLV	1.91	SLV 1	Si

Maschio 103

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-24.678	2.066	-24.678	5.951	L5	L6	3.885	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 46	5.07	-6492.16	-32471	-0.0000581	0.0003743	0.0035	3.885	45814.72	54835.01	54835.01	8.45	No	Si
SLU 46	7.17	-2581.77	-25786	-0.0000398	0.0003743	0.0035	3.885	39204.23	46362.13	46362.13	17.96	No	Si
SLU 44	5.07	-6553.9	-31345	-0.0000565	0.0003743	0.0035	3.885	44803.54	53443.65	53443.65	8.15	No	Si
SLU 44	7.17	-2412.45	-24614	-0.0000378	0.0003743	0.0035	3.885	37895.32	44733.14	44733.14	18.54	No	Si
SLU 65	5.07	-6872.48	-35913	-0.0000642	0.0003743	0.0035	3.885	48647.75	58755.92	58755.92	8.55	No	Si
SLU 65	7.17	-3175.74	-28796	-0.0000454	0.0003743	0.0035	3.885	42361.55	50290.62	50290.62	15.84	No	Si
SLU 47	5.07	-6612.31	-32048	-0.0000577	0.0003743	0.0035	3.885	45439.86	54310.11	54310.11	8.21	No	Si
SLU 47	7.17	-2422.91	-25296	-0.0000388	0.0003743	0.0035	3.885	38662.24	45685.8	45685.8	18.86	No	Si
SLU 52	5.07	-6865.86	-34526	-0.000062	0.0003743	0.0035	3.885	47552.78	57209.91	57209.91	8.33	No	Si
SLU 52	7.17	-3067.52	-27473	-0.0000433	0.0003743	0.0035	3.885	41011.02	48553.88	48553.88	15.83	No	Si
SLU 55	5.07	-6924.26	-35229	-0.0000633	0.0003743	0.0035	3.885	48115.85	58011.78	58011.78	8.38	No	Si
SLU 55	7.17	-3077.98	-28155	-0.0000443	0.0003743	0.0035	3.885	41714.16	49445.16	49445.16	16.06	No	Si
SLU 61	5.07	-6851.17	-35904	-0.0000641	0.0003743	0.0035	3.885	48641.02	58746.57	58746.57	8.57	No	Si
SLU 61	7.17	-3439.44	-28775	-0.000046	0.0003743	0.0035	3.885	42341.31	50263.82	50263.82	14.61	No	Si
SLU 68	5.07	-6930.89	-36616	-0.0000654	0.0003743	0.0035	3.885	49178.88	59488.71	59488.71	8.58	No	Si
SLU 68	7.17	-3186.2	-29477	-0.0000464	0.0003743	0.0035	3.885	43035.19	51181.69	51181.69	16.06	No	Si
SLU 49	5.07	-6550.57	-33174	-0.0000593	0.0003743	0.0035	3.885	46425.11	55662.11	55662.11	8.5	No	Si
SLU 49	7.17	-2592.23	-26467	-0.0000408	0.0003743	0.0035	3.885	39945.02	47252.45	47252.45	18.23	No	Si
SLU 51	5.07	-6522.34	-32766	-0.0000586	0.0003743	0.0035	3.885	46072.95	55185.99	55185.99	8.46	No	Si
SLU 51	7.17	-2524.56	-26054	-0.0000401	0.0003743	0.0035	3.885	39497.72	46723.1	46723.1	18.51	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 10	5.07	-13465.14	-23077	-0.0000578	0.0005615	0.0035	3.885		44444.42	44444.42	3.3		Si
SLD 10	7.17	2349.36	-14942	-0.000024	0.0005615	0.0035	3.885		27882.82	27882.82	11.87		Si
SLV 14	5.07	-8607.79	-12688	-0.0000336	0.0005615	0.0035	3.885		27370.49	27370.49	3.18		Si
SLV 14	7.17	3072.9	-9164	-0.0000178	0.0005615	0.0035	3.885		17810.79	17810.79	5.8		Si
SLV 9	5.07	-28096.36	-17645	-0.0001843	0.0005615	0.0035	3.108		35722.35	35722.35	1.27		Si
SLV 9	7.17	11703.98	-3766	-0.0084143	0.0005615	0.0035	3.885		7928.9	7928.9	0.68		No
SLV 11	5.07	17205.21	-31369	-0.0000775	0.0005615	0.0035	3.885		52536.5	52536.5	3.05		Si
SLV 11	7.17	-12880.6	-35046	-0.0000737	0.0005615	0.0035	3.885		62130.95	62130.95	4.82		Si
SLV 6	5.07	-27245.8	-23749	-0.0001055	0.0005615	0.0035	3.108		45496.59	45496.59	1.67		Si
SLV 6	7.17	7605.33	-9346	-0.0000276	0.0005615	0.0035	3.885		18138.04	18138.04	2.38		Si
SLV 5	5.07	-29165.58	-24845	-0.000115	0.0005615	0.0035	3.108		47220.98	47220.98	1.62		Si
SLV 5	7.17	9601.01	-8948	-0.0000344	0.0005615	0.0035	3.885		17421.52	17421.52	1.81		Si
SLD 9	5.07	-14265.37	-23534	-0.0000601	0.0005615	0.0035	3.885		45158.85	45158.85	3.17		Si
SLD 9	7.17	3181.23	-14776	-0.0000254	0.0005615	0.0035	3.885		27601.97	27601.97	8.68		Si
SLV 12	5.07	19124.98	-30273	-0.00008	0.0005615	0.0035	3.885		50927.9	50927.9	2.66		Si
SLV 12	7.17	-14876.28	-35444	-0.0000785	0.0005615	0.0035	3.885		62674.69	62674.69	4.21		Si
SLV 10	5.07	-26176.58	-16550	-0.0001657	0.0005615	0.0035	3.108		33939.07	33939.07	1.3		Si
SLV 10	7.17	9708.29	-4164	-0.0026332	0.0005615	0.0035	3.108		8673.76	8673.76	0.89		No
SLV 13	5.07	-11459.22	-14315	-0.0000422	0.0005615	0.0035	3.885		30117.36	30117.36	2.63		Si
SLV 13	7.17	6037.08	-8572	-0.000023	0.0005615	0.0035	3.885		16745.98	16745.98	2.77		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	5.07	-7152.87	-40516	-34119	-2878	3.885	3.885	-29274	10833	19258	40441	34900	9907	44807	No	15.57	Si
SLU 80	7.17	-3942.9	-33094	-27869	-2858	3.885	3.885	-23911	10133	16758	40441	34900	9907	44807	No	15.68	Si
SLU 82	5.07	-7169.76	-40473	-34082	-2850	3.885	3.885	-29243	10833	19243	40441	34900	9907	44807	No	15.72	Si
SLU 82	7.17	-4202.73	-32957	-27753	-2830	3.885	3.885	-23812	10119	16711	40441	34900	9907	44807	No	15.83	Si
SLU 55	5.07	-6924.26	-35229	-29667	-2944	3.885	3.885	-25454	10338	17477	40441	34900	9907	44807	No	15.22	Si
SLU 55	7.17	-3077.98	-28155	-23709	-2927	3.885	3.885	-20343	9657	15094	40441	34900	9907	44807	No	15.31	Si
SLU 68	5.07	-6930.89	-36616	-30835	-2870	3.885	3.885	-26456	10472	17944	40441	34900	9907	44807	No	15.61	Si
SLU 68	7.17	-3186.2	-29477	-24823	-2853	3.885	3.885	-21298	9784	15539	40441	34900	9907	44807	No	15.71	Si
SLU 63	5.07	-6909.58	-36608	-30828	-2831	3.885	3.885	-26450	10471	17941	40441	34900	9907	44807	No	15.83	Si
SLU 63	7.17	-3449.9	-29457	-24806	-2813	3.885	3.885	-21283	9782	15533	40441	34900	9907	44807	No	15.93	Si
SLU 76	5.07	-7242.84	-39798	-33514	-3006	3.885	3.885	-28755	10778	19016	40441	34900	9907	44807	No	14.91	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 76	7.17	-3841.26	-32336	-27230	-2987	3.885	3.885	-23364	10060	16502	40441	34900	9907	44807	No	15	Si
SLU 84	5.07	-7228.16	-41176	-34675	-2893	3.885	3.885	-29751	10833	19480	40441	34900	9907	44807	No	15.49	Si
SLU 84	7.17	-4213.19	-33638	-28327	-2873	3.885	3.885	-24304	10185	16941	40441	34900	9907	44807	No	15.6	Si
SLU 78	5.07	-7181.1	-40924	-34462	-2855	3.885	3.885	-29569	10833	19395	40441	34900	9907	44807	No	15.7	Si
SLU 78	7.17	-4010.58	-33507	-28217	-2835	3.885	3.885	-24210	10172	16897	40441	34900	9907	44807	No	15.81	Si
SLU 73	5.07	-7184.44	-39094	-32922	-2963	3.885	3.885	-28247	10711	18779	40441	34900	9907	44807	No	15.12	Si
SLU 73	7.17	-3830.8	-31655	-26656	-2944	3.885	3.885	-22871	9994	16273	40441	34900	9907	44807	No	15.22	Si
SLU 52	5.07	-6865.86	-34526	-29075	-2901	3.885	3.885	-24946	10271	17240	40441	34900	9907	44807	No	15.45	Si
SLU 52	7.17	-3067.52	-27473	-23135	-2884	3.885	3.885	-19850	9591	14864	40441	34900	9907	44807	No	15.54	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	5.07	18055.77	-37473	-31556	24038	3.885	3.885	-27075	15832	21038	40441	52350	9907	61479		2.56	Si
SLV 8	7.17	-16979.24	-40626	-34211	23138	3.885	3.885	-29353	16250	22100	40441	52350	9907	62257		2.69	Si
SLV 1	5.07	-15023.27	-38313	-32264	-14214	3.885	3.885	-27682	15953	21321	40441	52350	9907	61762		4.35	Si
SLV 1	7.17	-972.8	-25844	-21764	-13954	3.885	3.885	-18673	14151	17121	40441	52350	9907	57562		4.13	Si
SLD 5	5.07	-14719.92	-26617	-22415	-12883	3.885	3.885	-19232	14263	17382	40441	52350	9907	57822		4.49	Si
SLD 5	7.17	2279.43	-16997	-14313	-12509	3.885	3.885	-12281	12873	15003	40441	52350	9907	55444		4.43	Si
SLV 10	5.07	-26176.58	-16550	-13936	-24533	3.108	1.0824	0	0	0	40441	41880	7925	40441		1.65	Si
SLV 10	7.17	9708.29	-4164	-3507	-23606	3.108	0	0	0	0	40441	41880	7925	40441		1.71	Si
SLV 11	5.07	17205.21	-31369	-26416	22250	3.885	3.885	-22665	14950	18982	40441	52350	9907	59423		2.67	Si
SLV 11	7.17	-12880.6	-35046	-29513	21365	3.885	3.885	-25322	15481	20221	40441	52350	9907	60662		2.84	Si
SLV 5	5.07	-29165.58	-24845	-20922	-29236	3.108	2.3058	0	0	0	40441	41880	7925	40441		1.38	Si
SLV 5	7.17	9601.01	-8948	-7535	-28325	3.885	2.6085	-6465	11710	11430	40441	52350	9907	51871		1.83	Si
SLV 7	5.07	16135.99	-38568	-32479	20792	3.885	3.885	-27867	15990	21407	40441	52350	9907	61848		2.97	Si
SLV 7	7.17	-14983.56	-40228	-33876	19892	3.885	3.885	-29066	16230	21966	40441	52350	9907	62257		3.13	Si
SLV 9	5.07	-28096.36	-17645	-14859	-27779	3.108	1.0506	0	0	0	40441	41880	7925	40441		1.46	Si
SLV 9	7.17	11703.98	-3766	-3171	-26852	3.885	0	-113079	16250	9685	40441	52350	9907	50126		1.87	Si
SLV 6	5.07	-27245.8	-23749	-19999	-25991	3.108	2.3858	0	0	0	40441	41880	7925	40441		1.56	Si
SLV 6	7.17	7605.33	-9346	-7870	-25079	3.885	3.3862	-6753	11767	11954	40441	52350	9907	52395		2.09	Si
SLV 12	5.07	19124.98	-30273	-25493	25495	3.885	3.885	-21873	14791	18613	40441	52350	9907	59054		2.32	Si
SLV 12	7.17	-14876.28	-35444	-29848	24611	3.885	3.885	-25610	15539	20355	40441	52350	9907	60796		2.47	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.39	3899	-4544	439.48	664.2	1.51	Si
SLV 10	179667	0.39	4240	-4942	439.48	720.73	1.64	Si
SLV 13	179667	0.39	8018	-9344	439.48	1328.07	3.02	Si
SLV 5	179667	0.39	8362	-9746	439.48	1381.82	3.14	Si
SLV 14	179667	0.39	8525	-9936	439.48	1407.17	3.2	Si
SLV 6	179667	0.39	8703	-10144	439.48	1434.86	3.26	Si
SLV 15	179667	0.39	16082	-18744	439.48	2515.46	5.72	Si
SLV 16	179667	0.39	16589	-19335	439.48	2585.19	5.88	Si
SLV 1	179667	0.39	22895	-26684	439.48	3402.49	7.74	Si
SLV 2	179667	0.39	23402	-27275	439.48	3464.3	7.88	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 4	-25839	-40803	-1895	0.722	3216.1	0.948	11.06487	5.36881	Si
SLV 3	-25623	-42431	-1895	0.727	3194.2	0.948	11.14552	5.36881	Si
SLV 8	-29547	-37473	-362	0.692	3592.6	0.953	10.55692	4.5984	Si
SLV 7	-29402	-38568	-361	0.695	3577.8	0.952	10.60255	4.5984	Si
SLV 12	-26580	-30273	815	0.741	3291.3	0.949	11.34413	4.5984	Si
SLV 11	-26435	-31369	816	0.744	3276.6	0.949	11.3978	4.5984	Si
SLV 2	-19664	-36686	-2033	0.895	2590.3	0.937	13.88	5.36881	Si
SLV 1	-19448	-38313	-2032	0.903	2568.4	0.937	14.01028	5.36881	Si
SLV 16	-15950	-16805	2028	1.056	2215.1	0.929	16.53015	5.36881	Si
SLV 15	-15734	-18432	2029	1.068	2193.3	0.928	16.71559	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.154	SLU 44	Si
V_SLU	14.905	SLU 76	Si
PF_SLV	0.677	SLV 9	No
V_SLV	1.383	SLV 5	Si
PFFP_SLV	1.511	SLV 9	Si
R_SLV	2.061	SLV 4	Si

Maschio 104

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-22.713	5.951	-24.678	5.951	L5	L6	1.965	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 44	5.97	-1487.8	-13365	-0.0000477	0.0003743	0.0035	1.965	10206.85	12058.62	12058.62	8.11	No	Si
SLU 44	7.77	-280.37	-11443	-0.0000322	0.0003743	0.0035	1.965	9099.23	10727.66	10727.66	38.26	No	Si
SLU 46	5.97	-1548.71	-14006	-0.00005	0.0003743	0.0035	1.965	10549.41	12480.95	12480.95	8.06	No	Si
SLU 46	7.77	-299.05	-12037	-0.000034	0.0003743	0.0035	1.965	9454.42	11141.1	11141.1	37.25	No	Si
SLU 50	5.97	-1579.33	-14251	-0.000051	0.0003743	0.0035	1.965	10676.98	12644.48	12644.48	8.01	No	Si
SLU 50	7.77	-286.89	-12214	-0.0000344	0.0003743	0.0035	1.965	9558.07	11265.33	11265.33	39.27	No	Si
SLU 45	5.97	-1591.16	-14118	-0.0000507	0.0003743	0.0035	1.965	10607.88	12555.45	12555.45	7.89	No	Si
SLU 45	7.77	-278.96	-12052	-0.0000339	0.0003743	0.0035	1.965	9463.43	11151.82	11151.82	39.98	No	Si
SLU 48	5.97	-1601.55	-14467	-0.0000518	0.0003743	0.0035	1.965	10787.89	12789.61	12789.61	7.99	No	Si
SLU 48	7.77	-298.96	-12425	-0.0000351	0.0003743	0.0035	1.965	9680.25	11414.12	11414.12	38.18	No	Si
SLU 49	5.97	-1559.1	-14356	-0.0000511	0.0003743	0.0035	1.965	10730.71	12714.43	12714.43	8.15	No	Si
SLU 49	7.77	-319.06	-12410	-0.0000352	0.0003743	0.0035	1.965	9671.43	11403.3	11403.3	35.74	No	Si
SLU 51	5.97	-1536.88	-14139	-0.0000503	0.0003743	0.0035	1.965	10619.01	12569.72	12569.72	8.18	No	Si
SLU 51	7.77	-306.98	-12199	-0.0000345	0.0003743	0.0035	1.965	9549.15	11254.57	11254.57	36.66	No	Si
SLU 66	5.97	-1680.52	-16051	-0.0000572	0.0003743	0.0035	1.965	11552.74	13783.04	13783.04	8.2	No	Si
SLU 66	7.77	-487.26	-14231	-0.0000417	0.0003743	0.0035	1.965	10666.81	12631.31	12631.31	25.92	No	Si
SLU 43	5.97	-1558.55	-13551	-0.0000488	0.0003743	0.0035	1.965	10307.98	12180.87	12180.87	7.82	No	Si
SLU 43	7.77	-246.89	-11469	-0.000032	0.0003743	0.0035	1.965	9114.73	10745.55	10745.55	43.52	No	Si
SLU 64	5.97	-1647.91	-15485	-0.0000552	0.0003743	0.0035	1.965	11288.7	13430.4	13430.4	8.15	No	Si
SLU 64	7.77	-455.19	-13648	-0.0000398	0.0003743	0.0035	1.965	10359.75	12244.22	12244.22	26.9	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 9	5.97	2303.87	2824	0.2216762	0.0005615	0.0035	1.572		0	0	0		No
SLV 9	7.77	-1666.83	-4789	-0.0000251	0.0005615	0.0035	1.965		5535.58	5535.58	3.32		Si
SLV 16	5.97	-6210.86	-15660	-0.0000935	0.0005615	0.0035	1.965		14399.43	14399.43	2.32		Si
SLV 16	7.77	4369.51	-6442	-0.000073	0.0005615	0.0035	1.965		6170.37	6170.37	1.41		Si
SLV 13	5.97	-2389.79	-6224	-0.0000348	0.0005615	0.0035	1.965		6820.47	6820.47	2.85		Si
SLV 13	7.77	2010.88	-4995	-0.0000287	0.0005615	0.0035	1.965		4886	4886	2.43		Si
SLV 5	5.97	4131.34	2295	0.1332454	0.0005615	0.0035	1.572		0	0	0		No
SLV 5	7.77	-3796.26	-7627	-0.0000534	0.0005615	0.0035	1.965		8025.01	8025.01	2.11		Si
SLV 12	5.97	-6640.43	-25942	-0.0001276	0.0005615	0.0035	1.965		21086.47	21086.47	3.18		Si
SLV 12	7.77	3078.56	-13269	-0.0000592	0.0005615	0.0035	1.965		11535.3	11535.3	3.75		Si
SLV 6	5.97	3171.42	1616	0.0850479	0.0005615	0.0035	1.572		0	0	0		No
SLV 6	7.77	-3007.42	-6701	-0.0000423	0.0005615	0.0035	1.965		7229.71	7229.71	2.4		Si
SLV 15	5.97	-4785.1	-14650	-0.0000772	0.0005615	0.0035	1.965		13653.91	13653.91	2.85		Si
SLV 15	7.77	3197.85	-7817	-0.000046	0.0005615	0.0035	1.965		7360.83	7360.83	2.3		Si
SLV 14	5.97	-3815.54	-7234	-0.000054	0.0005615	0.0035	1.965		7685.94	7685.94	2.01		Si
SLV 14	7.77	3182.54	-3621	-0.0001249	0.0005615	0.0035	1.965		3635.65	3635.65	1.14		Si
SLV 1	5.97	3701.77	-7987	-0.0000522	0.0005615	0.0035	1.965		7505.64	7505.64	2.03		Si
SLV 1	7.77	-5087.21	-14454	-0.0000794	0.0005615	0.0035	1.965		13504.49	13504.49	2.65		Si
SLV 10	5.97	1343.95	2144	0.1726782	0.0005615	0.0035	1.572		0	0	0		No
SLV 10	7.77	-877.99	-3864	-0.0000165	0.0005615	0.0035	1.965		4706.66	4706.66	5.36		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 42	5.97	-1312.57	-14789	-12454	369	1.965	1.965	-21126	9761	5754	40441	17652	5011	22663	No	61.39	Si
SLU 42	7.77	-765.68	-14078	-11855	378	1.965	1.965	-20110	9626	5674	40441	17652	5011	22663	No	59.93	Si
SLU 43	5.97	-1558.55	-13551	-11412	-524	1.965	1.965	-19358	9526	5615	40441	17652	5011	22663	No	43.23	Si
SLU 43	7.77	-246.89	-11469	-9658	-516	1.965	1.965	-16383	9129	5381	40441	17652	5011	22663	No	43.9	Si
SLU 45	5.97	-1591.16	-14118	-11889	-515	1.965	1.965	-20167	9633	5679	40441	17652	5011	22663	No	43.99	Si
SLU 45	7.77	-278.96	-12052	-10149	-507	1.965	1.965	-17217	9240	5447	40441	17652	5011	22663	No	44.7	Si
SLU 48	5.97	-1601.55	-14467	-12183	-498	1.965	1.965	-20667	9700	5718	40441	17652	5011	22663	No	45.55	Si
SLU 48	7.77	-298.96	-12425	-10463	-489	1.965	1.965	-17749	9311	5489	40441	17652	5011	22663	No	46.33	Si
SLU 51	5.97	-1536.88	-14139	-11907	-401	1.965	1.965	-20198	9637	5681	40441	17652	5011	22663	No	56.47	Si
SLU 51	7.77	-306.98	-12199	-10273	-393	1.965	1.965	-17426	9268	5463	40441	17652	5011	22663	No	57.65	Si
SLU 49	5.97	-1559.1	-14356	-12089	-410	1.965	1.965	-20507	9679	5706	40441	17652	5011	22663	No	55.27	Si
SLU 49	7.77	-319.06	-12410	-10450	-402	1.965	1.965	-17727	9308	5487	40441	17652	5011	22663	No	56.42	Si
SLU 44	5.97	-1487.8	-13365	-11254	-378	1.965	1.965	-19092	9490	5594	40441	17652	5011	22663	No	59.9	Si
SLU 44	7.77	-280.37	-11443	-9636	-370	1.965	1.965	-16346	9124	5379	40441	17652	5011	22663	No	61.17	Si
SLU 46	5.97	-1548.71	-14006	-11794	-428	1.965	1.965	-20007	9612	5666	40441	17652	5011	22663	No	52.99	Si
SLU 46	7.77	-299.05	-12037	-10136	-420	1.965	1.965	-17195	9237	5445	40441	17652	5011	22663	No	54.02	Si
SLU 47	5.97	-1498.19	-13715	-11549	-361	1.965	1.965	-19591	9557	5634	40441	17652	5011	22663	No	62.84	Si
SLU 47	7.77	-300.38	-11816	-9950	-353	1.965	1.965	-16879	9195	5420	40441	17652	5011	22663	No	64.27	Si
SLU 50	5.97	-1579.33	-14251	-12001	-489	1.965	1.965	-20358	9659	5694	40441	17652	5011	22663	No	46.36	Si
SLU 50	7.77	-286.89	-12214	-10285	-481	1.965	1.965	-17448	9271	5465	40441	17652	5011	22663	No	47.16	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	5.97	2303.87	2824	2378	7190	1.572	0.5	0	0	0	40441	21183	4009	25191		3.5	Si
SLV 9	7.77	-1666.83	-4789	-4033	7437	1.965	1.9034	-6842	11785	6730	40441	26478	5011	31489		4.23	Si
SLV 5	5.97	4131.34	2295	1933	10853	1.572	0	0	0	0	40441	21183	4009	25191		2.32	Si
SLV 5	7.77	-3796.26	-7627	-6423	10641	1.965	1.4543	-14825	13382	5838	40441	26478	5011	31489		2.96	Si
SLV 1	5.97	3701.77	-7987	-6726	9764	1.965	1.5571	-11409	12699	5932	40441	26478	5011	31489		3.22	Si
SLV 1	7.77	-5087.21	-14454	-12172	9009	1.965	1.8916	-21677	14752	8372	40441	26478	5011	31489		3.5	Si
SLV 12	5.97	-6640.43	-25942	-21846	-11260	1.965	1.965	-37058	16250	9579	40441	26478	5011	31489		2.8	Si
SLV 12	7.77	3078.56	-13269	-11174	-11034	1.965	1.965	-18956	14208	8375	40441	26478	5011	31489		2.85	Si
SLV 6	5.97	3171.42	1616	1361	9006	1.572	0	0	0	0	40441	21183	4009	25191		2.8	Si
SLV 6	7.77	-3007.42	-6701	-5643	8794	1.965	1.6012	-11812	12779	6139	40441	26478	5011	31489		3.58	Si
SLV 11	5.97	-5680.51	-25262	-21273	-9413	1.965	1.965	-36087	16250	9579	40441	26478	5011	31489		3.35	Si
SLV 11	7.77	2289.72	-14195	-11954	-9187	1.965	1.965	-20278	14472	8531	40441	26478	5011	31489		3.43	Si
SLV 8	5.97	-4812.96	-26471	-22291	-7597	1.965	1.965	-37813	16250	9579	40441	26478	5011	31489		4.15	Si
SLV 8	7.77	949.13	-16107	-13564	-7829	1.965	1.965	-23009	15018	8853	40441	26478	5011	31489		4.02	Si
SLV 16	5.97	-6210.86	-15660	-13187	-10171	1.965	1.7576	-25282	15473	8159	40441	26478	5011	31489		3.1	Si
SLV 16	7.77	4369.51	-6442	-5425	-9402	1.965	0.9127	-9203	12257	4284	40441	26478	5011	31489		3.35	Si
SLV 15	5.97	-4785.1	-14650	-12337	-7427	1.965	1.965	-20928	14602	8608	40441	26478	5011	31489		4.24	Si
SLV 15	7.77	3197.85	-7817	-6583	-6658	1.965	1.7202	-11167	12650	6528	40441	26478	5011	31489		4.73	Si
SLV 2	5.97	2276.01	-8996	-7576	7021	1.965	1.965	-12851	12987	7656	40441	26478	5011	31489		4.49	Si
SLV 2	7.77	-3915.55	-13079	-11014	6266	1.965	1.965	-18684	14153	8343	40441	26478	5011	31489		5.03	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 10	179667	0.39	3319	-1957	222.29	287.13	1.29	Si
SLV 9	179667	0.39	3816	-2249	222.29	328.99	1.48	Si
SLV 6	179667	0.39	6589	-3884	222.29	557.47	2.51	Si
SLV 5	179667	0.39	7085	-4177	222.29	597.45	2.69	Si
SLV 14	179667	0.39	9085	-5356	222.29	755.57	3.4	Si
SLV 13	179667	0.39	9823	-5791	222.29	812.71	3.66	Si
SLV 16	179667	0.39	17400	-10257	222.29	1363.31	6.13	Si
SLV 15	179667	0.39	18138	-10692	222.29	1413.34	6.36	Si
SLV 2	179667	0.39	19983	-11780	222.29	1535.8	6.91	Si
SLV 1	179667	0.39	20721	-12215	222.29	1583.63	7.12	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 3	-12674	-18453	-149	0.796	1586.6	0.947	12.21491	5.36881	Si
SLV 7	-14510	-23421	466	0.692	1773	0.952	10.5672	4.5984	Si
SLV 8	-14111	-23340	466	0.708	1732.4	0.951	10.82697	4.5984	Si
SLV 4	-12081	-18332	-151	0.828	1526.4	0.945	12.72904	5.36881	Si
SLV 11	-13336	-20682	659	0.729	1653.8	0.949	11.17507	4.5984	Si
SLV 12	-12937	-20600	658	0.748	1613.3	0.947	11.47309	4.5984	Si
SLV 1	-9843	-11438	-485	0.949	1299.7	0.937	14.72142	5.36881	Si
SLV 2	-9250	-11317	-486	0.997	1239.7	0.934	15.51048	5.36881	Si
SLV 15	-8760	-9321	493	1.04	1190.3	0.932	16.22186	5.36881	Si
SLV 16	-8167	-9201	491	1.099	1130.5	0.929	17.19498	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.816	SLU 43	Si
V_SLU	43.232	SLU 43	Si
PF_SLV	0	SLV 5	No
V_SLV	2.321	SLV 5	Si
PFFP_SLV	1.292	SLV 10	Si
R_SLV	2.275	SLV 3	Si

Maschio 105

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.618	5.951	-21.813	5.951	L5	L6	2.195	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 64	5.97	-902.03	-20912	-0.0000568	0.0003743	0.0035	2.195	15792.16	19108.99	19108.99	21.18	No	Si
SLU 64	7.77	1994.42	-21757	-0.0000668	0.0003743	0.0035	2.195	16129.3	18414.23	18414.23	9.23	No	Si
SLU 83	5.97	-927.05	-23858	-0.000065	0.0003743	0.0035	2.195	16866.22	20507.23	20507.23	22.12	No	Si
SLU 83	7.77	2217.16	-25141	-0.0000779	0.0003743	0.0035	2.195	17245.13	20316.48	20316.48	9.16	No	Si
SLU 52	5.97	-827.4	-19598	-0.0000528	0.0003743	0.0035	2.195	15221.52	18300.67	18300.67	22.12	No	Si
SLU 52	7.77	1907.05	-20530	-0.0000628	0.0003743	0.0035	2.195	15631.89	17570.3	17570.3	9.21	No	Si
SLU 81	5.97	-937.76	-23376	-0.0000637	0.0003743	0.0035	2.195	16709.88	20269.69	20269.69	21.62	No	Si
SLU 81	7.77	2237.49	-24734	-0.0000769	0.0003743	0.0035	2.195	17130.66	20135.08	20135.08	9	No	Si
SLU 43	5.97	-872.31	-18185	-0.0000494	0.0003743	0.0035	2.195	14544.69	17370.1	17370.1	19.91	No	Si
SLU 43	7.77	1784.75	-18728	-0.0000571	0.0003743	0.0035	2.195	14812.41	16358.64	16358.64	9.17	No	Si
SLU 82	5.97	-895.81	-23189	-0.0000629	0.0003743	0.0035	2.195	16647.23	20178.52	20178.52	22.53	No	Si
SLU 82	7.77	2208.78	-24565	-0.0000762	0.0003743	0.0035	2.195	17081.55	20060.14	20060.14	9.08	No	Si
SLU 84	5.97	-885.1	-23671	-0.0000642	0.0003743	0.0035	2.195	16806.51	20414.74	20414.74	23.06	No	Si
SLU 84	7.77	2188.45	-24972	-0.0000772	0.0003743	0.0035	2.195	17198.28	20241.03	20241.03	9.25	No	Si
SLU 61	5.97	-866.09	-20462	-0.0000554	0.0003743	0.0035	2.195	15603.02	18860.38	18860.38	21.78	No	Si
SLU 61	7.77	1999.11	-21535	-0.0000662	0.0003743	0.0035	2.195	16043.08	18261.15	18261.15	9.13	No	Si
SLU 73	5.97	-857.12	-22325	-0.0000603	0.0003743	0.0035	2.195	16342.83	19763.79	19763.79	23.06	No	Si
SLU 73	7.77	2116.72	-23559	-0.0000727	0.0003743	0.0035	2.195	16770.1	19596.64	19596.64	9.26	No	Si
SLU 60	5.97	-908.04	-20649	-0.0000562	0.0003743	0.0035	2.195	15682.37	18973.44	18973.44	20.89	No	Si
SLU 60	7.77	2027.82	-21705	-0.0000669	0.0003743	0.0035	2.195	16108.95	18377.8	18377.8	9.06	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	5.97	4887.86	3976	0.2659969	0.0005615	0.0035	1.756		0	0	0		No
SLV 5	7.77	-2913.9	4270	0.3352412	0.0005615	0.0035	1.756		0	0	0		No
SLV 14	5.97	-4890.31	-7605	-0.0000569	0.0005615	0.0035	1.756		9129.92	9129.92	1.87		Si
SLV 14	7.77	5388.51	-16676	-0.0000741	0.0005615	0.0035	2.195		15909.89	15909.89	2.95		Si
SLV 2	5.97	4100.59	-13043	-0.0000565	0.0005615	0.0035	2.195		12895.05	12895.05	3.14		Si
SLV 2	7.77	-2413.49	-8680	-0.000035	0.0005615	0.0035	2.195		10163.48	10163.48	4.21		Si
SLV 9	5.97	2190.59	5607	0.4179158	0.0005615	0.0035	1.756		0	0	0		No
SLV 9	7.77	-573.29	1872	0.145052	0.0005615	0.0035	1.756		0	0	0		No
SLV 6	5.97	3800.65	3331	0.2266166	0.0005615	0.0035	1.756		0	0	0		No
SLV 6	7.77	-1866.56	2104	0.1660998	0.0005615	0.0035	1.756		0	0	0		No
SLV 16	5.97	-7104.38	-19875	-0.0000941	0.0005615	0.0035	2.195		19868.05	19868.05	2.8		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 16	7.77	7042.49	-27868	-0.0001156	0.0005615	0.0035	2.195		24191.31	24191.31	3.44		Si
SLV 13	5.97	-3275.49	-6647	-0.0000368	0.0005615	0.0035	2.195		8198.66	8198.66	2.5		Si
SLV 13	7.77	3832.92	-13459	-0.0000558	0.0005615	0.0035	2.195		13235.75	13235.75	3.45		Si
SLV 15	5.97	-5489.55	-18916	-0.0000806	0.0005615	0.0035	2.195		19108.49	19108.49	3.48		Si
SLV 15	7.77	5486.9	-24651	-0.0000958	0.0005615	0.0035	2.195		22071.74	22071.74	4.02		Si
SLV 1	5.97	5715.41	-12085	-0.0000663	0.0005615	0.0035	2.195		12114.44	12114.44	2.12		Si
SLV 1	7.77	-3969.08	-5464	-0.0000497	0.0005615	0.0035	1.756		7014.72	7014.72	1.77		Si
SLV 10	5.97	1103.38	4962	0.3743209	0.0005615	0.0035	1.756		0	0	0		No
SLV 10	7.77	474.04	-294	-0.0003548	0.0005615	0.0035	1.756		594.3	594.3	1.25		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	5.97	-885.1	-23671	-19934	-4216	2.195	2.195	-30271	10833	7429	40441	19718	5597	25316	No	6	Si
SLU 84	7.77	2188.45	-24972	-21029	-4217	2.195	2.195	-31935	10833	7721	40441	19718	5597	25316	No	6	Si
SLU 77	5.97	-901.35	-23892	-20119	-4071	2.195	2.195	-30553	10833	7478	40441	19718	5597	25316	No	6.22	Si
SLU 77	7.77	2145.12	-24978	-21035	-4072	2.195	2.195	-31943	10833	7722	40441	19718	5597	25316	No	6.22	Si
SLU 78	5.97	-859.4	-23705	-19962	-4043	2.195	2.195	-30314	10833	7436	40441	19718	5597	25316	No	6.26	Si
SLU 78	7.77	2116.41	-24809	-20892	-4043	2.195	2.195	-31727	10833	7684	40441	19718	5597	25316	No	6.26	Si
SLU 83	5.97	-927.05	-23858	-20091	-4245	2.195	2.195	-30510	10833	7471	40441	19718	5597	25316	No	5.96	Si
SLU 83	7.77	2217.16	-25141	-21171	-4245	2.195	2.195	-32151	10833	7759	40441	19718	5597	25316	No	5.96	Si
SLU 82	5.97	-895.81	-23189	-19528	-4279	2.195	2.195	-29655	10833	7320	40441	19718	5597	25316	No	5.92	Si
SLU 82	7.77	2208.78	-24565	-20686	-4280	2.195	2.195	-31414	10833	7629	40441	19718	5597	25316	No	5.92	Si
SLU 81	5.97	-937.76	-23376	-19685	-4308	2.195	2.195	-29894	10833	7362	40441	19718	5597	25316	No	5.88	Si
SLU 81	7.77	2237.49	-24734	-20828	-4308	2.195	2.195	-31630	10833	7667	40441	19718	5597	25316	No	5.88	Si
SLU 76	5.97	-846.41	-22808	-19206	-4057	2.195	2.195	-29167	10833	7235	40441	19718	5597	25316	No	6.24	Si
SLU 76	7.77	2096.39	-23966	-20182	-4058	2.195	2.195	-30649	10833	7495	40441	19718	5597	25316	No	6.24	Si
SLU 73	5.97	-857.12	-22325	-18800	-4120	2.195	2.195	-28550	10751	7127	40441	19718	5597	25316	No	6.14	Si
SLU 73	7.77	2116.72	-23559	-19839	-4121	2.195	2.195	-30128	10833	7404	40441	19718	5597	25316	No	6.14	Si
SLU 75	5.97	-870.11	-23223	-19556	-4106	2.195	2.195	-29698	10833	7328	40441	19718	5597	25316	No	6.17	Si
SLU 75	7.77	2136.74	-24402	-20549	-4106	2.195	2.195	-31206	10833	7593	40441	19718	5597	25316	No	6.17	Si
SLU 74	5.97	-912.06	-23409	-19713	-4134	2.195	2.195	-29937	10833	7370	40441	19718	5597	25316	No	6.12	Si
SLU 74	7.77	2165.46	-24571	-20692	-4135	2.195	2.195	-31422	10833	7631	40441	19718	5597	25316	No	6.12	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	5.97	-4890.31	-7605	-6404	-12799	1.756	1.3635	0	0	0	40441	23662	4478	28140		2.2	Si
SLV 14	7.77	5388.51	-16676	-14043	-12168	2.195	2.195	-21325	14682	9668	40441	29578	5597	35175		2.89	Si
SLD 16	5.97	-3400.91	-17474	-14715	-7913	2.195	2.195	-22346	14886	9802	40441	29578	5597	35175		4.45	Si
SLD 16	7.77	3866.14	-21299	-17936	-7598	2.195	2.195	-27238	15864	10447	40441	29578	5597	35175		4.63	Si
SLD 14	5.97	-2517.05	-12570	-10585	-7186	2.195	2.195	-16074	13632	8976	40441	29578	5597	35175		4.89	Si
SLD 14	7.77	3201.03	-16820	-14164	-6917	2.195	2.195	-21509	14719	9692	40441	29578	5597	35175		5.09	Si
SLV 12	5.97	-6276.83	-35936	-30262	-9756	2.195	2.195	-45955	16250	11239	40441	29578	5597	35175		3.61	Si
SLV 12	7.77	5987.3	-37602	-31665	-9362	2.195	2.195	-48086	16250	11614	40441	29578	5597	35175		3.76	Si
SLV 13	5.97	-3275.49	-6647	-5598	-9661	2.195	1.8142	-10333	12483	6794	40441	29578	5597	35175		3.64	Si
SLV 13	7.77	3832.92	-13459	-11334	-9030	2.195	2.195	-17212	13859	9126	40441	29578	5597	35175		3.9	Si
SLV 16	5.97	-7104.38	-19875	-16737	-14589	2.195	2.195	-25416	15500	10207	40441	29578	5597	35175		2.41	Si
SLV 16	7.77	7042.49	-27868	-23468	-13845	2.195	2.195	-35639	16250	10701	40441	29578	5597	35175		2.54	Si
SLV 3	5.97	3501.35	-24354	-20509	6857	2.195	2.195	-31145	16250	10701	40441	29578	5597	35175		5.13	Si
SLV 3	7.77	-2315.1	-16656	-14026	6225	2.195	2.195	-21300	14677	9665	40441	29578	5597	35175		5.65	Si
SLV 1	5.97	5715.41	-12085	-10177	8647	2.195	1.8737	-15454	13508	7593	40441	29578	5597	35175		4.07	Si
SLV 1	7.77	-3969.08	-5464	-4601	7902	1.756	1.1131	0	0	0	40441	23662	4478	28140		3.56	Si
SLV 11	5.97	-5189.62	-35290	-29718	-7643	2.195	2.195	-45130	16250	11095	40441	29578	5597	35175		4.6	Si
SLV 11	7.77	4939.97	-35436	-29841	-7250	2.195	2.195	-45317	16250	11127	40441	29578	5597	35175		4.85	Si
SLV 15	5.97	-5489.55	-18916	-15930	-11451	2.195	2.195	-24191	15255	10045	40441	29578	5597	35175		3.07	Si
SLV 15	7.77	5486.9	-24651	-20759	-10707	2.195	2.195	-31525	16250	10701	40441	29578	5597	35175		3.29	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.39	0	3184	248.3	0	0	No, Trazione
SLV 5	179667	0.39	0	3907	248.3	0	0	No, Trazione
SLV 6	179667	0.39	0	2398	248.3	0	0	No, Trazione
SLV 10	179667	0.39	0	1675	248.3	0	0	No, Trazione
SLV 1	179667	0.39	12914	-8504	248.3	1167.73	4.7	Si
SLV 2	179667	0.39	16316	-10744	248.3	1439.45	5.8	Si
SLV 13	179667	0.39	16575	-10914	248.3	1459.48	5.88	Si
SLV 14	179667	0.39	19977	-13155	248.3	1715.08	6.91	Si
SLV 3	179667	0.39	30643	-20179	248.3	2419.45	9.74	Si
SLV 4	179667	0.39	34045	-22419	248.3	2613.15	10.52	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 12	-28244	-38058	1035	0.417	3204.6	0.969	6.26096	4.5984	Si
SLV 8	-26077	-38071	1151	0.442	2984	0.967	6.64654	4.5984	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-26354	-36731	1033	0.442	3012.2	0.967	6.64855	4.5984	Si
SLV 16	-22808	-22966	140	0.535	2651.4	0.963	8.07783	5.36881	Si
SLV 7	-24187	-36743	1149	0.471	2791.7	0.964	7.09549	4.5984	Si
SLV 15	-20001	-20994	136	0.598	2365.9	0.959	9.06316	5.36881	Si
SLV 4	-15586	-23007	526	0.715	1917.2	0.95	10.92829	5.36881	Si
SLV 14	-15589	-9766	-512	0.715	1917.6	0.95	10.93841	5.36881	Si
SLV 3	-12779	-21036	523	0.842	1632.5	0.943	12.97253	5.36881	Si
SLV 13	-12782	-7794	-516	0.842	1632.8	0.943	12.97696	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.999	SLU 81	Si
V_SLU	5.876	SLU 81	Si
PF_SLV	0	SLV 5	No
V_SLV	2.199	SLV 14	Si
PFFP_SLV	0	SLV 10	No
R_SLV	1.362	SLV 12	Si

Maschio 106

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-22.493	-3.359	-24.678	-3.359	L5	L6	2.185	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 49	5.97	-1453.06	-15609	-0.000047	0.0003743	0.0035	2.185	13064.18	15459.67	15459.67	10.64	No	Si
SLU 49	7.77	-269.79	-13359	-0.0000333	0.0003743	0.0035	2.185	11673.27	13757.47	13757.47	50.99	No	Si
SLU 50	5.97	-1415.14	-15395	-0.0000461	0.0003743	0.0035	2.185	12938.92	15301.72	15301.72	10.81	No	Si
SLU 50	7.77	-279.55	-13199	-0.000033	0.0003743	0.0035	2.185	11567.72	13633.14	13633.14	48.77	No	Si
SLU 45	5.97	-1403.01	-15236	-0.0000457	0.0003743	0.0035	2.185	12845.45	15185.86	15185.86	10.82	No	Si
SLU 45	7.77	-265.72	-13017	-0.0000324	0.0003743	0.0035	2.185	11447.6	13493.41	13493.41	50.78	No	Si
SLU 51	5.97	-1440.63	-15428	-0.0000464	0.0003743	0.0035	2.185	12958.44	15326.09	15326.09	10.64	No	Si
SLU 51	7.77	-255.34	-13168	-0.0000327	0.0003743	0.0035	2.185	11547.69	13609.71	13609.71	53.3	No	Si
SLU 48	5.97	-1427.57	-15575	-0.0000467	0.0003743	0.0035	2.185	13044.86	15435.09	15435.09	10.81	No	Si
SLU 48	7.77	-294	-13389	-0.0000335	0.0003743	0.0035	2.185	11693.11	13781	13781	46.87	No	Si
SLU 44	5.97	-1408.49	-14772	-0.0000445	0.0003743	0.0035	2.185	12566.07	14846.86	14846.86	10.54	No	Si
SLU 44	7.77	-182.64	-12404	-0.0000304	0.0003743	0.0035	2.185	11032.9	13009.38	13009.38	71.23	No	Si
SLU 47	5.97	-1433.05	-15111	-0.0000455	0.0003743	0.0035	2.185	12770.63	15094.14	15094.14	10.53	No	Si
SLU 47	7.77	-210.92	-12776	-0.0000315	0.0003743	0.0035	2.185	11285.87	13306.72	13306.72	63.09	No	Si
SLU 43	5.97	-1366.02	-14716	-0.0000441	0.0003743	0.0035	2.185	12532.33	14805.58	14805.58	10.84	No	Si
SLU 43	7.77	-222.99	-12455	-0.0000307	0.0003743	0.0035	2.185	11067.53	13050.14	13050.14	58.52	No	Si
SLU 68	5.97	-1449.85	-16892	-0.0000503	0.0003743	0.0035	2.185	13783.56	16385.33	16385.33	11.3	No	Si
SLU 68	7.77	-444.25	-14927	-0.0000384	0.0003743	0.0035	2.185	12660.33	14960.57	14960.57	33.68	No	Si
SLU 46	5.97	-1428.49	-15270	-0.0000459	0.0003743	0.0035	2.185	12865.14	15210.14	15210.14	10.65	No	Si
SLU 46	7.77	-241.51	-12987	-0.0000322	0.0003743	0.0035	2.185	11427.39	13470.08	13470.08	55.77	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	5.97	-6904.72	-13038	-0.0000802	0.0005615	0.0035	2.185		14096.47	14096.47	2.04		Si
SLV 13	7.77	5852.21	-3759	-0.0114451	0.0005615	0.0035	2.185		4238.53	4238.53	0.72		No
SLV 7	5.97	3711.63	-1796	-0.0103521	0.0005615	0.0035	2.185		2192.62	2192.62	0.59		No
SLV 7	7.77	-3861.51	-9687	-0.0000472	0.0005615	0.0035	2.185		11068.03	11068.03	2.87		Si
SLV 8	5.97	4660.11	-1327	-0.0189002	0.0005615	0.0035	2.185		1695.07	1695.07	0.36		No
SLV 8	7.77	-4885.4	-10837	-0.0000575	0.0005615	0.0035	2.185		12121.95	12121.95	2.48		Si
SLV 12	5.97	2297.16	863	0.0263094	0.0005615	0.0035	1.748		0	0	0		No
SLV 12	7.77	-2077.6	-6261	-0.0000274	0.0005615	0.0035	2.185		7776.54	7776.54	3.74		Si
SLV 15	5.97	-4474.04	-5712	-0.0000628	0.0005615	0.0035	1.748		7229.57	7229.57	1.62		Si
SLV 15	7.77	4291.42	-1790	-0.0138088	0.0005615	0.0035	2.185		2185.98	2185.98	0.51		No
SLV 14	5.97	-5495.94	-12341	-0.0000653	0.0005615	0.0035	2.185		13484.66	13484.66	2.45		Si
SLV 14	7.77	4331.43	-5468	-0.0000622	0.0005615	0.0035	2.185		5970.45	5970.45	1.38		Si
SLV 16	5.97	-3065.26	-5015	-0.0000349	0.0005615	0.0035	1.748		6539.5	6539.5	2.13		Si
SLV 16	7.77	2770.64	-3499	-0.0000391	0.0005615	0.0035	2.185		3971.39	3971.39	1.43		Si
SLV 9	5.97	-6753.59	-24026	-0.0001037	0.0005615	0.0035	2.185		22835.79	22835.79	3.38		Si
SLV 9	7.77	4148.92	-11674	-0.0000538	0.0005615	0.0035	2.185		11713.58	11713.58	2.82		Si
SLV 4	5.97	4811.24	-12315	-0.0000599	0.0005615	0.0035	2.185		12231.94	12231.94	2.54		Si
SLV 4	7.77	-6588.68	-18752	-0.0000882	0.0005615	0.0035	2.185		18877.72	18877.72	2.87		Si
SLV 11	5.97	1348.68	394	0.0025834	0.0005615	0.0035	1.748		0	0	0		No
SLV 11	7.77	-1053.71	-5111	-0.0000182	0.0005615	0.0035	2.185		6634.33	6634.33	6.3		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 37	5.97	-1074.67	-15571	-13112	674	2.185	2.185	-20003	9612	6300	40441	19629	5572	25200	No	37.38	Si
SLU 37	7.77	-762.72	-14768	-12436	682	2.185	2.185	-18972	9474	6210	40441	19629	5572	25200	No	36.95	Si
SLU 81	5.97	-1316.44	-18385	-15482	631	2.185	2.185	-23619	10094	6616	40441	19629	5572	25200	No	39.93	Si
SLU 81	7.77	-798.83	-17070	-14375	641	2.185	2.185	-21930	9868	6469	40441	19629	5572	25200	No	39.34	Si
SLU 32	5.97	-1062.54	-15412	-12979	659	2.185	2.185	-19800	9584	6283	40441	19629	5572	25200	No	38.22	Si
SLU 32	7.77	-748.89	-14587	-12283	667	2.185	2.185	-18739	9443	6190	40441	19629	5572	25200	No	37.78	Si
SLU 41	5.97	-1030.2	-15798	-13303	825	2.185	2.185	-20295	9650	6326	40441	19629	5572	25200	No	30.54	Si
SLU 41	7.77	-837.19	-15135	-12745	833	2.185	2.185	-19444	9537	6251	40441	19629	5572	25200	No	30.24	Si
SLU 83	5.97	-1341	-18724	-15768	653	2.185	2.185	-24054	10152	6654	40441	19629	5572	25200	No	38.59	Si
SLU 83	7.77	-827.11	-17442	-14688	663	2.185	2.185	-22407	9932	6510	40441	19629	5572	25200	No	38.04	Si
SLU 40	5.97	-1031.11	-15492	-13046	743	2.185	2.185	-19902	9598	6292	40441	19629	5572	25200	No	33.92	Si
SLU 40	7.77	-784.7	-14733	-12407	740	2.185	2.185	-18927	9468	6206	40441	19629	5572	25200	No	34.07	Si
SLU 35	5.97	-1087.1	-15752	-13264	681	2.185	2.185	-20236	9643	6321	40441	19629	5572	25200	No	37	Si
SLU 35	7.77	-777.17	-14958	-12597	689	2.185	2.185	-19217	9507	6232	40441	19629	5572	25200	No	36.57	Si
SLU 39	5.97	-1005.63	-15459	-13018	803	2.185	2.185	-19859	9592	6288	40441	19629	5572	25200	No	31.37	Si
SLU 39	7.77	-808.91	-14763	-12432	811	2.185	2.185	-18966	9473	6210	40441	19629	5572	25200	No	31.06	Si
SLU 42	5.97	-1055.68	-15831	-13331	765	2.185	2.185	-20338	9656	6330	40441	19629	5572	25200	No	32.94	Si
SLU 42	7.77	-812.98	-15105	-12720	762	2.185	2.185	-19405	9532	6248	40441	19629	5572	25200	No	33.09	Si
SLU 36	5.97	-1112.58	-15785	-13292	621	2.185	2.185	-20278	9648	6324	40441	19629	5572	25200	No	40.59	Si
SLU 36	7.77	-752.96	-14928	-12571	617	2.185	2.185	-19178	9501	6228	40441	19629	5572	25200	No	40.81	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 12	5.97	2297.16	863	727	7644	1.748	0	0	0	0	40441	23554	4457	28012		3.66	Si
SLV 12	7.77	-2077.6	-6261	-5273	7939	2.185	2.185	-8044	12025	7883	40441	29443	5572	35015		4.41	Si
SLV 15	5.97	-4474.04	-5712	-4810	-6424	1.748	0.9277	0	0	0	40441	23554	4457	28012		4.36	Si
SLV 15	7.77	4291.42	-1790	-1507	-5646	2.185	0	0	16250	3558	40441	29443	5572	35015		6.2	Si
SLV 3	5.97	3402.46	-13013	-10958	8773	2.185	2.185	-16717	13760	9020	40441	29443	5572	35015		3.99	Si
SLV 3	7.77	-5067.91	-17043	-14352	8045	2.185	2.185	-21895	14796	9699	40441	29443	5572	35015		4.35	Si
SLV 7	5.97	3711.63	-1796	-1513	10125	2.185	0	0	16250	3559	40441	29443	5572	35015		3.46	Si
SLV 7	7.77	-3861.51	-9687	-8157	9967	2.185	2.0816	-13142	13045	8146	40441	29443	5572	35015		3.51	Si
SLV 8	5.97	4660.11	-1327	-1117	12203	2.185	0	0	16250	3453	40441	29443	5572	35015		2.87	Si
SLV 8	7.77	-4885.4	-10837	-9126	12046	2.185	1.9251	-15925	13602	7855	40441	29443	5572	35015		2.91	Si
SLV 13	5.97	-6904.72	-13038	-10979	-11710	2.185	1.6887	-21901	14797	7497	40441	29443	5572	35015		2.99	Si
SLV 13	7.77	5852.21	-3759	-3165	-10969	2.185	0	-158118	16250	4000	40441	29443	5572	35015		3.19	Si
SLV 10	5.97	-5805.11	-23557	-19837	-9974	2.185	2.185	-30263	16250	10652	40441	29443	5572	35015		3.51	Si
SLV 10	7.77	3125.03	-12824	-10799	-9804	2.185	2.185	-16475	13712	8988	40441	29443	5572	35015		3.57	Si
SLV 14	5.97	-5495.94	-12341	-10392	-8622	2.185	1.9414	-17968	14010	8160	40441	29443	5572	35015		4.06	Si
SLV 14	7.77	4331.43	-5468	-4604	-7882	2.185	0.901	-7024	11822	4383	40441	29443	5572	35015		4.44	Si
SLV 4	5.97	4811.24	-12315	-10371	11860	2.185	2.1055	-15821	13581	8578	40441	29443	5572	35015		2.95	Si
SLV 4	7.77	-6588.68	-18752	-15791	11132	2.185	2.185	-24090	15235	9986	40441	29443	5572	35015		3.15	Si
SLV 9	5.97	-6753.59	-24026	-20233	-12053	2.185	2.185	-30866	16250	10652	40441	29443	5572	35015		2.91	Si
SLV 9	7.77	4148.92	-11674	-9831	-11883	2.185	2.185	-14997	13416	8794	40441	29443	5572	35015		2.95	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 11	179667	0.39	4877	-3197	247.17	464.18	1.88	Si
SLV 15	179667	0.39	5525	-3621	247.17	523.57	2.12	Si
SLV 12	179667	0.39	5655	-3707	247.17	535.47	2.17	Si
SLV 16	179667	0.39	6681	-4380	247.17	628.21	2.54	Si
SLV 7	179667	0.39	10374	-6800	247.17	950.76	3.85	Si
SLV 8	179667	0.39	11153	-7311	247.17	1016.54	4.11	Si
SLV 13	179667	0.39	11740	-7696	247.17	1065.59	4.31	Si
SLV 14	179667	0.39	12897	-8454	247.17	1160.98	4.7	Si
SLV 3	179667	0.39	23850	-15634	247.17	1978.85	8.01	Si
SLV 4	179667	0.39	25007	-16392	247.17	2056.19	8.32	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.

- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 2	-16146	-21980	277	0.705	1972.6	0.952	10.76343	5.36881	Si
SLV 1	-15236	-21674	278	0.739	1880.2	0.95	11.31807	5.36881	Si
SLV 4	-14277	-15484	655	0.757	1782.9	0.947	11.62086	5.36881	Si
SLV 3	-13367	-15179	656	0.799	1690.6	0.945	12.29729	5.36881	Si
SLV 6	-14741	-24633	-492	0.747	1829.9	0.948	11.45231	4.5984	Si
SLV 5	-14128	-24428	-491	0.774	1767.8	0.947	11.88093	4.5984	Si
SLV 10	-11795	-20455	-774	0.877	1531.3	0.94	13.55528	4.5984	Si
SLV 9	-11182	-20249	-773	0.915	1469.3	0.938	14.18367	4.5984	Si
SLV 8	-8511	-2981	767	1.136	1199.5	0.927	17.81148	4.5984	Si
SLV 7	-7898	-2776	768	1.202	1137.8	0.924	18.92389	4.5984	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	10.533	SLU 47	Si
V_SLU	30.243	SLU 41	Si
PF_SLV	0	SLV 11	No
V_SLV	2.869	SLV 8	Si
PFFP_SLV	1.878	SLV 11	Si
R_SLV	2.005	SLV 2	Si

Maschio 107

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.368	-3.359	-21.593	-3.359	L5	L6	2.225	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 81	7.07	-2902.44	-25409	-0.0000821	0.0003743	0.0035	2.225	17698.58	21679.46	21679.46	7.47	No	Si
SLU 81	7.87	-1291.53	-21758	-0.0000608	0.0003743	0.0035	2.225	16456.11	19854.94	19854.94	15.37	No	Si
SLU 75	7.07	-2910.75	-25313	-0.0000819	0.0003743	0.0035	2.225	17671.6	21629.19	21629.19	7.43	No	Si
SLU 75	7.87	-1247.3	-21648	-0.0000602	0.0003743	0.0035	2.225	16411.55	19802.59	19802.59	15.88	No	Si
SLU 77	7.07	-2930.14	-25777	-0.0000834	0.0003743	0.0035	2.225	17799.73	21874.42	21874.42	7.47	No	Si
SLU 77	7.87	-1297.52	-22093	-0.0000617	0.0003743	0.0035	2.225	16588.33	20014.25	20014.25	15.42	No	Si
SLU 82	7.07	-2932.75	-25453	-0.0000824	0.0003743	0.0035	2.225	17711.02	21702.88	21702.88	7.4	No	Si
SLU 82	7.87	-1277.95	-21786	-0.0000608	0.0003743	0.0035	2.225	16467.23	19868.11	19868.11	15.55	No	Si
SLU 84	7.07	-2982.46	-25962	-0.0000843	0.0003743	0.0035	2.225	17848.72	21972.82	21972.82	7.37	No	Si
SLU 84	7.87	-1314.59	-22260	-0.0000623	0.0003743	0.0035	2.225	16652.68	20094.05	20094.05	15.29	No	Si
SLU 76	7.07	-2903.91	-25074	-0.0000812	0.0003743	0.0035	2.225	17602.66	21503.75	21503.75	7.41	No	Si
SLU 76	7.87	-1212.54	-21414	-0.0000593	0.0003743	0.0035	2.225	16316.4	19692.94	19692.94	16.24	No	Si
SLU 80	7.07	-2933.41	-25552	-0.0000827	0.0003743	0.0035	2.225	17738.52	21755.19	21755.19	7.42	No	Si
SLU 80	7.87	-1258.23	-21869	-0.0000609	0.0003743	0.0035	2.225	16500.27	19907.47	19907.47	15.82	No	Si
SLU 73	7.07	-2854.2	-24565	-0.0000794	0.0003743	0.0035	2.225	17450.17	21240.42	21240.42	7.44	No	Si
SLU 73	7.87	-1175.9	-20940	-0.0000578	0.0003743	0.0035	2.225	16117.84	19469.41	19469.41	16.56	No	Si
SLU 78	7.07	-2960.46	-25822	-0.0000837	0.0003743	0.0035	2.225	17811.63	21898.08	21898.08	7.4	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 78	7.87	-1283.94	-22121	-0.0000617	0.0003743	0.0035	2.225	16599.15	20027.56	20027.56	15.6	No	Si
SLU 83	7.07	-2952.15	-25917	-0.0000839	0.0003743	0.0035	2.225	17837.02	21949.07	21949.07	7.43	No	Si
SLU 83	7.87	-1328.17	-22232	-0.0000623	0.0003743	0.0035	2.225	16641.99	20080.69	20080.69	15.12	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 11	7.07	-1166.6	-2876	-0.0000134	0.0005615	0.0035	2.225		4440.44	4440.44	3.81		Si
SLV 11	7.87	776.38	-1926	-0.0000089	0.0005615	0.0035	2.225		2381.58	2381.58	3.07		Si
SLV 12	7.07	-858.87	-2039	-0.0000097	0.0005615	0.0035	2.225		3554.06	3554.06	4.14		Si
SLV 12	7.87	-70.17	-1657	-0.0000041	0.0005615	0.0035	2.225		3146.2	3146.2	44.84		Si
SLV 16	7.07	-2804.52	-11477	-0.0000434	0.0005615	0.0035	2.225		12957.66	12957.66	4.62		Si
SLV 16	7.87	3064.27	-7997	-0.0000368	0.0005615	0.0035	2.225		8623.93	8623.93	2.81		Si
SLV 4	7.07	159.88	-12937	-0.0000304	0.0005615	0.0035	2.225		13023.4	13023.4	81.46		Si
SLV 4	7.87	-6000.01	-13501	-0.0000694	0.0005615	0.0035	2.225		14790.56	14790.56	2.47		Si
SLV 8	7.07	30.45	-2477	-0.0000057	0.0005615	0.0035	2.225		2972.99	2972.99	97.65		Si
SLV 8	7.87	-2789.45	-3308	-0.0000409	0.0005615	0.0035	1.78		4895.71	4895.71	1.76		Si
SLV 13	7.07	-4103.95	-21422	-0.0000763	0.0005615	0.0035	2.225		21378.73	21378.73	5.21		Si
SLV 13	7.87	4465.09	-15539	-0.0000638	0.0005615	0.0035	2.225		15193.04	15193.04	3.4		Si
SLV 7	7.07	-277.27	-3314	-0.000009	0.0005615	0.0035	2.225		4901.68	4901.68	17.68		Si
SLV 7	7.87	-1942.91	-3578	-0.0000208	0.0005615	0.0035	2.225		5177.89	5177.89	2.67		Si
SLV 15	7.07	-3261.57	-12720	-0.0000493	0.0005615	0.0035	2.225		14088.86	14088.86	4.32		Si
SLV 15	7.87	4321.64	-8397	-0.0000475	0.0005615	0.0035	2.225		9015.6	9015.6	2.09		Si
SLV 3	7.07	-297.17	-14180	-0.0000342	0.0005615	0.0035	2.225		15403.37	15403.37	51.83		Si
SLV 3	7.87	-4742.64	-13902	-0.0000615	0.0005615	0.0035	2.225		15152.66	15152.66	3.19		Si
SLV 2	7.07	-682.49	-21639	-0.0000546	0.0005615	0.0035	2.225		21548.6	21548.6	31.57		Si
SLV 2	7.87	-5856.57	-20643	-0.0000859	0.0005615	0.0035	2.225		20773.96	20773.96	3.55		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	7.07	-2930.14	-25777	-21707	-5334	2.225	2.225	-32520	10833	7931	40441	19988	5674	25662	No	4.81	Si
SLU 77	7.87	-1297.52	-22093	-18605	-3840	2.225	2.225	-27873	10661	7116	40441	19988	5674	25662	No	6.68	Si
SLU 79	7.07	-2903.1	-25508	-21480	-5306	2.225	2.225	-32180	10833	7870	40441	19988	5674	25662	No	4.84	Si
SLU 79	7.87	-1271.81	-21841	-18393	-3823	2.225	2.225	-27555	10618	7088	40441	19988	5674	25662	No	6.71	Si
SLU 80	7.07	-2933.41	-25552	-21518	-5387	2.225	2.225	-32236	10833	7880	40441	19988	5674	25662	No	4.76	Si
SLU 80	7.87	-1258.23	-21869	-18416	-3884	2.225	2.225	-27590	10623	7091	40441	19988	5674	25662	No	6.61	Si
SLU 83	7.07	-2952.15	-25917	-21825	-5324	2.225	2.225	-32697	10833	7962	40441	19988	5674	25662	No	4.82	Si
SLU 83	7.87	-1328.17	-22232	-18722	-3838	2.225	2.225	-28048	10684	7134	40441	19988	5674	25662	No	6.69	Si
SLU 78	7.07	-2960.46	-25822	-21745	-5414	2.225	2.225	-32576	10833	7941	40441	19988	5674	25662	No	4.74	Si
SLU 78	7.87	-1283.94	-22121	-18628	-3901	2.225	2.225	-27908	10665	7119	40441	19988	5674	25662	No	6.58	Si
SLU 75	7.07	-2910.75	-25313	-21316	-5347	2.225	2.225	-31935	10833	7826	40441	19988	5674	25662	No	4.8	Si
SLU 75	7.87	-1247.3	-21648	-18229	-3854	2.225	2.225	-27310	10586	7066	40441	19988	5674	25662	No	6.66	Si
SLU 76	7.07	-2903.91	-25074	-21115	-5373	2.225	2.225	-31632	10833	7773	40441	19988	5674	25662	No	4.78	Si
SLU 76	7.87	-1212.54	-21414	-18033	-3878	2.225	2.225	-27016	10547	7040	40441	19988	5674	25662	No	6.62	Si
SLU 84	7.07	-2982.46	-25962	-21862	-5404	2.225	2.225	-32753	10833	7972	40441	19988	5674	25662	No	4.75	Si
SLU 84	7.87	-1314.59	-22260	-18745	-3900	2.225	2.225	-28083	10689	7141	40441	19988	5674	25662	No	6.58	Si
SLU 82	7.07	-2932.75	-25453	-21434	-5337	2.225	2.225	-32111	10833	7858	40441	19988	5674	25662	No	4.81	Si
SLU 82	7.87	-1277.95	-21786	-18346	-3852	2.225	2.225	-27485	10609	7082	40441	19988	5674	25662	No	6.66	Si
SLU 73	7.07	-2854.2	-24565	-20686	-5306	2.225	2.225	-30991	10833	7658	40441	19988	5674	25662	No	4.84	Si
SLU 73	7.87	-1175.9	-20940	-17634	-3830	2.225	2.225	-26418	10467	6987	40441	19988	5674	25662	No	6.7	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 14	7.07	-2677.42	-18344	-15448	-8369	2.225	2.225	-23143	15045	10043	40441	29982	5674	35656		4.26	Si
SLD 14	7.87	932.2	-14685	-12367	-6158	2.225	2.225	-18527	14122	9426	40441	29982	5674	35656		5.79	Si
SLV 16	7.07	-2804.52	-11477	-9665	-10976	2.225	2.225	-14480	13313	8886	40441	29982	5674	35656		3.25	Si
SLV 16	7.87	3064.27	-7997	-6734	-8555	2.225	2.1879	-10088	12434	8162	40441	29982	5674	35656		4.17	Si
SLV 10	7.07	-3666.79	-31045	-26144	-11883	2.225	2.225	-39166	16250	10847	40441	29982	5674	35656		3	Si
SLV 10	7.87	407.98	-25462	-21442	-8099	2.225	2.225	-32123	16250	10847	40441	29982	5674	35656		4.4	Si
SLV 14	7.07	-3646.89	-20179	-16993	-14596	2.225	2.225	-25458	15508	10352	40441	29982	5674	35656		2.44	Si
SLV 14	7.87	3207.72	-15138	-12748	-10809	2.225	2.225	-19098	14236	9503	40441	29982	5674	35656		3.3	Si
SLD 13	7.07	-2871.86	-18873	-15893	-9832	2.225	2.225	-23810	15179	10132	40441	29982	5674	35656		3.63	Si
SLD 13	7.87	1467.11	-14856	-12510	-7236	2.225	2.225	-18742	14165	9455	40441	29982	5674	35656		4.93	Si
SLV 4	7.07	159.88	-12937	-10895	10451	2.225	2.225	-16322	13681	9132	40441	29982	5674	35656		3.41	Si
SLV 4	7.87	-6000.01	-13501	-11369	7889	2.225	2.0043	-19061	14229	8556	40441	29982	5674	35656		4.52	Si
SLD 15	7.07	-2535.84	-15388	-12958	-8373	2.225	2.225	-19413	14299	9545	40441	29982	5674	35656		4.26	Si
SLD 15	7.87	1407.44	-12001	-10106	-6325	2.225	2.225	-15140	13445	8974	40441	29982	5674	35656		5.64	Si
SLV 13	7.07	-4103.95	-21422	-18039	-18035	2.225	2.225	-27025	15822	10561	40441	29982	5674	35656		1.98	Si
SLV 13	7.87	4465.09	-15539	-13086	-13342	2.225	2.225	-19604	14337	9570	40441	29982	5674	35656		2.67	Si
SLV 15	7.07	-3261.57	-12720	-10711	-14414	2.225	2.225	-16047	13626	9095	40441	29982	5674	35656		2.47	Si
SLV 15	7.87	4321.64	-8397	-7071	-11088	2.225	1.7936	-10594	12535	6745	40441	29982	5674	35656		3.22	Si
SLV 9	7.07	-3974.51	-31882	-26848	-14197	2.225	2.225	-40222	16250	10847	40441	29982	5674	35656		2.51	Si
SLV 9	7.87	1254.53	-25732	-21669	-9804	2.225	2.225	-32463	16250	10847	40441	29982	5674	35656		3.64	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.39	2772	-1850	251.7	272.5	1.08	Si
SLV 11	179667	0.39	3503	-2339	251.7	342.74	1.36	Si
SLV 8	179667	0.39	4719	-3150	251.7	457.89	1.82	Si

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.39	5451	-3638	251.7	526.27	2.09	Si
SLV 16	179667	0.39	13694	-9141	251.7	1248.16	4.96	Si
SLV 15	179667	0.39	14781	-9866	251.7	1336.67	5.31	Si
SLV 4	179667	0.39	20184	-13473	251.7	1753.86	6.97	Si
SLV 3	179667	0.39	21271	-14198	251.7	1833.12	7.28	Si
SLV 14	179667	0.39	25155	-16791	251.7	2103.78	8.36	Si
SLV 13	179667	0.39	26242	-17516	251.7	2175.96	8.65	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 5	-21904	-27597	-850	0.531	2563.9	0.961	8.02284	4.5984	Si
SLV 6	-21676	-27330	-850	0.535	2540.8	0.961	8.09597	4.5984	Si
SLV 9	-20696	-25139	-801	0.559	2441.1	0.959	8.462	4.5984	Si
SLV 10	-20468	-24873	-801	0.564	2418	0.959	8.54372	4.5984	Si
SLV 1	-17069	-21683	-328	0.681	2072.5	0.953	10.38198	5.36881	Si
SLV 2	-16732	-21287	-328	0.692	2038.2	0.952	10.56388	5.36881	Si
SLV 13	-13042	-13490	-163	0.861	1663.8	0.943	13.27004	5.36881	Si
SLV 14	-12704	-13094	-163	0.88	1629.6	0.942	13.57166	5.36881	Si
SLV 3	-11670	-14100	170	0.942	1524.8	0.939	14.58376	5.36881	Si
SLV 4	-11332	-13704	170	0.965	1490.6	0.938	14.95204	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.367	SLU 84	Si
V_SLU	4.74	SLU 78	Si
PF_SLV	1.755	SLV 8	Si
V_SLV	1.977	SLV 13	Si
PFFP_SLV	1.083	SLV 12	Si
R_SLV	1.745	SLV 5	Si

Maschio 108

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-18.263	-3.359	-18.868	-3.359	L5	L6	0.605	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 80	7.07	4.42	-8843	-0.0000819	0.0003743	0.0035	0.605	1394.88	1785.65	1785.65	404.01	No	Si
SLU 80	7.87	583.74	-8826	-0.000142	0.0003743	0.0035	0.605	1394.65	1783.34	1783.34	3.06	No	Si
SLU 67	7.07	-15.39	-7916	-0.0000733	0.0003743	0.0035	0.605	1368.77	1704.1	1704.1	110.74	No	Si
SLU 67	7.87	549.7	-7910	-0.000127	0.0003743	0.0035	0.605	1368.52	1666.57	1666.57	3.03	No	Si
SLU 71	7.07	-10.77	-7978	-0.0000735	0.0003743	0.0035	0.605	1371.42	1711.34	1711.34	158.87	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 71	7.87	548.25	-7970	-0.0001276	0.0003743	0.0035	0.605	1371.07	1674.04	1674.04	3.05	No	Si
SLU 76	7.07	-0.59	-8687	-0.0000799	0.0003743	0.0035	0.605	1392.47	1795.46	1795.46	3033.98	No	Si
SLU 76	7.87	577.49	-8675	-0.0001394	0.0003743	0.0035	0.605	1392.24	1763.71	1763.71	3.05	No	Si
SLU 70	7.07	-13.77	-8072	-0.0000748	0.0003743	0.0035	0.605	1375.15	1722.28	1722.28	125.11	No	Si
SLU 70	7.87	561.32	-8066	-0.0001301	0.0003743	0.0035	0.605	1374.92	1686.04	1686.04	3	No	Si
SLU 78	7.07	6.51	-8936	-0.0000831	0.0003743	0.0035	0.605	1395.94	1797.82	1797.82	276.17	No	Si
SLU 78	7.87	588.75	-8913	-0.0001436	0.0003743	0.0035	0.605	1395.71	1794.88	1794.88	3.05	No	Si
SLU 68	7.07	-20.87	-7824	-0.0000729	0.0003743	0.0035	0.605	1364.65	1693.56	1693.56	81.16	No	Si
SLU 68	7.87	550.06	-7827	-0.000126	0.0003743	0.0035	0.605	1364.82	1656.2	1656.2	3.01	No	Si
SLU 69	7.07	-8.68	-8071	-0.0000743	0.0003743	0.0035	0.605	1375.1	1722.13	1722.13	198.36	No	Si
SLU 69	7.87	553.26	-8058	-0.0001291	0.0003743	0.0035	0.605	1374.6	1685.02	1685.02	3.05	No	Si
SLU 72	7.07	-15.86	-7980	-0.000074	0.0003743	0.0035	0.605	1371.47	1711.49	1711.49	107.94	No	Si
SLU 72	7.87	556.31	-7978	-0.0001285	0.0003743	0.0035	0.605	1371.41	1675.06	1675.06	3.01	No	Si
SLU 65	7.07	-22.49	-7667	-0.0000714	0.0003743	0.0035	0.605	1357	1675.8	1675.8	74.51	No	Si
SLU 65	7.87	538.43	-7671	-0.000123	0.0003743	0.0035	0.605	1357.2	1636.62	1636.62	3.04	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 11	7.07	-379.94	-1171	-0.000456	0.0005615	0.0035	0.484		413.47	413.47	1.09		Si
SLV 11	7.87	248.48	-3420	-0.0000495	0.0005615	0.0035	0.605		946.1	946.1	3.81		Si
SLD 14	7.07	-354.6	-4551	-0.0000689	0.0005615	0.0035	0.605		1278.15	1278.15	3.6		Si
SLD 14	7.87	796.67	-5380	-0.0001251	0.0005615	0.0035	0.605		1391.65	1391.65	1.75		Si
SLD 13	7.07	-454.65	-4234	-0.0000749	0.0005615	0.0035	0.605		1205.08	1205.08	2.65		Si
SLD 13	7.87	909.97	-5346	-0.0001479	0.0005615	0.0035	0.605		1383.64	1383.64	1.52		Si
SLV 10	7.07	-193.94	-7995	-0.0000872	0.0005615	0.0035	0.605		1959.58	1959.58	10.1		Si
SLV 10	7.87	1099.13	-7310	-0.0001806	0.0005615	0.0035	0.605		1772.16	1772.16	1.61		Si
SLV 13	7.07	-1054.13	-2033	-0.0069928	0.0005615	0.0035	0.484		650.2	650.2	0.62		No
SLV 13	7.87	1604.63	-4631	-0.021851	0.0005615	0.0035	0.484		1218.23	1218.23	0.76		No
SLV 9	7.07	-352.26	-7493	-0.0000968	0.0005615	0.0035	0.605		1881.39	1881.39	5.34		Si
SLV 9	7.87	1278.44	-7256	-0.0002241	0.0005615	0.0035	0.605		1762.42	1762.42	1.38		Si
SLD 15	7.07	-457.54	-3478	-0.00007	0.0005615	0.0035	0.605		1023.58	1023.58	2.24		Si
SLD 15	7.87	785.45	-4889	-0.0001237	0.0005615	0.0035	0.605		1277.47	1277.47	1.63		Si
SLV 14	7.07	-818.98	-2778	-0.0008623	0.0005615	0.0035	0.484		846.61	846.61	1.03		Si
SLV 14	7.87	1338.3	-4711	-0.0079781	0.0005615	0.0035	0.484		1236.71	1236.71	0.92		No
SLV 16	7.07	-827.28	-881	-0.0074248	0.0005615	0.0035	0.484		331.17	331.17	0.4		No
SLV 16	7.87	1029.32	-3561	-0.0064463	0.0005615	0.0035	0.484		977.17	977.17	0.95		No
SLV 15	7.07	-1062.44	-136	-0.013814	0.0005615	0.0035	0.484		114.09	114.09	0.11		No
SLV 15	7.87	1295.64	-3480	-0.0217432	0.0005615	0.0035	0.484		959.33	959.33	0.74		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	7.07	11.49	-9057	-7627	-317	0.605	0.605	-42021	10833	2616	40441	5435	1543	6978	No	21.98	Si
SLU 84	7.87	583.87	-9033	-7606	-1198	0.605	0.605	-41909	10833	2611	40441	5435	1543	6978	No	5.83	Si
SLU 82	7.07	9.87	-8900	-7495	-310	0.605	0.605	-41294	10833	2581	40441	5435	1543	6978	No	22.48	Si
SLU 82	7.87	572.24	-8876	-7475	-1184	0.605	0.605	-41184	10833	2576	40441	5435	1543	6978	No	5.89	Si
SLU 83	7.07	16.57	-9056	-7626	-294	0.605	0.605	-42015	10833	2616	40441	5435	1543	6978	No	23.72	Si
SLU 83	7.87	575.81	-9024	-7600	-1194	0.605	0.605	-41871	10833	2609	40441	5435	1543	6978	No	5.84	Si
SLU 75	7.07	4.89	-8779	-7393	-340	0.605	0.605	-40733	10833	2554	40441	5435	1543	6978	No	20.52	Si
SLU 75	7.87	577.12	-8757	-7375	-1164	0.605	0.605	-40631	10833	2549	40441	5435	1543	6978	No	5.99	Si
SLU 80	7.07	4.42	-8843	-7447	-348	0.605	0.605	-41030	10833	2568	40441	5435	1543	6978	No	20.05	Si
SLU 80	7.87	583.74	-8826	-7432	-1172	0.605	0.605	-40948	10833	2564	40441	5435	1543	6978	No	5.95	Si
SLU 79	7.07	9.5	-8842	-7446	-325	0.605	0.605	-41024	10833	2568	40441	5435	1543	6978	No	21.49	Si
SLU 79	7.87	575.68	-8817	-7425	-1169	0.605	0.605	-40910	10833	2562	40441	5435	1543	6978	No	5.97	Si
SLU 78	7.07	6.51	-8936	-7525	-347	0.605	0.605	-41459	10833	2589	40441	5435	1543	6978	No	20.11	Si
SLU 78	7.87	588.75	-8913	-7506	-1178	0.605	0.605	-41356	10833	2584	40441	5435	1543	6978	No	5.92	Si
SLU 81	7.07	14.95	-8899	-7494	-287	0.605	0.605	-41289	10833	2581	40441	5435	1543	6978	No	24.31	Si
SLU 81	7.87	564.18	-8868	-7468	-1180	0.605	0.605	-41146	10833	2574	40441	5435	1543	6978	No	5.91	Si
SLU 77	7.07	11.59	-8935	-7524	-324	0.605	0.605	-41454	10833	2589	40441	5435	1543	6978	No	21.56	Si
SLU 77	7.87	580.69	-8905	-7499	-1174	0.605	0.605	-41318	10833	2582	40441	5435	1543	6978	No	5.94	Si
SLU 76	7.07	-0.59	-8687	-7316	-357	0.605	0.605	-40307	10833	2533	40441	5435	1543	6978	No	19.57	Si
SLU 76	7.87	577.49	-8675	-7305	-1161	0.605	0.605	-40249	10833	2530	40441	5435	1543	6978	No	6.01	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	7.07	-1054.13	-2033	-1712	-4482	0.484	0	0	0	0	40441	6522	1234	7756		1.73	Si
SLV 13	7.87	1604.63	-4631	-3900	-1881	0.484	0	0	0	0	40441	6522	1234	7756		4.12	Si
SLD 13	7.07	-454.65	-4234	-3566	-2059	0.605	0.5854	-19647	14346	2519	40441	8152	1543	9695		4.71	Si
SLD 13	7.87	909.97	-5346	-4502	-1271	0.605	0.3969	-24804	15378	2074	40441	8152	1543	9695		7.63	Si
SLV 15	7.07	-1062.44	-136	-115	-3942	0.484	0	0	0	0	40441	6522	1234	7756		1.97	Si
SLV 15	7.87	1295.64	-3480	-2931	-2189	0.484	0	0	0	0	40441	6522	1234	7756		3.54	Si
SLV 3	7.07	805.47	-9068	-7636	3048	0.605	0.605	-42072	16250	2949	40441	8152	1543	9695		3.18	Si
SLV 3	7.87	-541.99	-7107	-5985	-64	0.605	0.605	-32975	16250	2949	40441	8152	1543	9695		152.65	Si
SLV 1	7.07	813.77	-10965	-9233	2508	0.605	0.605	-50872	16250	3336	40441	8152	1543	9695		3.87	Si
SLV 1	7.87	-233	-8258	-6954	245	0.605	0.605	-38315	16250	2949	40441	8152	1543	9695		39.62	Si
SLV 4	7.07	1040.63	-9813	-8263	3960	0.605	0.5894	-45529	16250	3077	40441	8152	1543	9695		2.45	Si
SLV 4	7.87	-808.31	-7188	-6053	264	0.605	0.5701	-33349	16250	2779	40441	8152	1543	9695		36.66	Si
SLV 14	7.07	-818.98	-2778	-2339	-3570	0.484	0.023	0	0	0	40441	6522	1234	7756		2.17	Si
SLV 14	7.87	1338.3	-4711	-3968	-1553	0.484	0.0553	0	0	0	40441	6522	1234	7756		5	Si
SLV 16	7.07	-827.28	-881	-742	-3030	0.484	0	0	0	0	40441	6522	1234	7756		2.56	Si
SLV 16	7.87	1029.32	-3561	-2998	-1861	0.484	0.0403	0	0	0	40441	6522	1234	7756		4.17	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	7.07	1048.93	-11710	-9861	3420	0.605	0.605	-54329	16250	3503	40441	8152	1543	9695		2.83	Si
SLV 2	7.87	-499.32	-8339	-7022	573	0.605	0.605	-38689	16250	2949	40441	8152	1543	9695		16.93	Si
SLV 9	7.07	-352.26	-7493	-6310	-2516	0.605	0.605	-34767	16250	2949	40441	8152	1543	9695		3.85	Si
SLV 9	7.87	1278.44	-7256	-6110	-724	0.605	0.3789	-33666	16250	2503	40441	8152	1543	9695		13.4	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 11	179667	0.39	0	-206	68.44	0	0	No, e>t/2
SLV 12	179667	0.39	0	-398	68.44	0	0	No, e>t/2
SLV 15	179667	0.39	5099	-925	68.44	134.18	1.96	Si
SLV 16	179667	0.39	6668	-1210	68.44	173.61	2.54	Si
SLV 7	179667	0.39	9265	-1682	68.44	236.95	3.46	Si
SLV 8	179667	0.39	10322	-1873	68.44	262.02	3.83	Si
SLV 13	179667	0.39	16848	-3058	68.44	408.08	5.96	Si
SLV 14	179667	0.39	18417	-3343	68.44	440.94	6.44	Si
SLV 3	179667	0.39	32203	-5845	68.44	691.86	10.11	Si
SLV 4	179667	0.39	33772	-6130	68.44	716.12	10.46	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 2	-5269	-6684	-6	0.626	627.3	0.957	9.51003	5.36881	Si
SLV 1	-5159	-6943	-6	0.638	616.1	0.957	9.68863	5.36881	Si
SLV 4	-4480	-3908	-21	0.715	547.1	0.952	10.91389	5.36881	Si
SLV 6	-5299	-9531	11	0.622	630.4	0.957	9.4488	4.5984	Si
SLV 3	-4370	-4167	-20	0.73	536	0.951	11.15428	5.36881	Si
SLV 5	-5225	-9705	12	0.63	622.9	0.957	9.56454	4.5984	Si
SLV 10	-4552	-9157	12	0.707	554.4	0.952	10.78806	4.5984	Si
SLV 9	-4478	-9332	13	0.717	546.9	0.952	10.94182	4.5984	Si
SLV 14	-2776	-5440	-3	1.061	374.5	0.933	16.52421	5.36881	Si
SLV 13	-2666	-5699	-3	1.096	363.4	0.932	17.09477	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.004	SLU 70	Si
V_SLU	5.825	SLU 84	Si
PF_SLV	0.107	SLV 15	No
V_SLV	1.731	SLV 13	Si
PFFP_SLV	0	SLV 11	No
R_SLV	1.771	SLV 2	Si

Maschio 110

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.618	1.046	-19.618	5.811	L5	L6	4.765	0.16	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 55	5.07	-5539.55	-39310	-0.000081	0.0004492	0.0035	4.7652	54137.82	88671.48	88671.48	16.01	No	Si
SLU 55	8.62	-2632.93	-25043	-0.000048	0.0004492	0.0035	4.7652	43626.99	64955.74	64955.74	24.67	No	Si
SLU 80	5.07	-6001.8	-45346	-0.0000937	0.0004492	0.0035	4.7652	55450.53	97487.66	97487.66	16.24	No	Si
SLU 80	8.62	-2972.58	-29333	-0.0000565	0.0004492	0.0035	4.7652	47882.08	72493.83	72493.83	24.39	No	Si
SLU 84	5.07	-6168.15	-46121	-0.0000956	0.0004492	0.0035	4.7652	55484.05	98566.58	98566.58	15.98	No	Si
SLU 84	8.62	-3272.98	-29411	-0.0000573	0.0004492	0.0035	4.7652	47951.3	72629.46	72629.46	22.19	No	Si
SLU 61	5.07	-5597.18	-40212	-0.0000828	0.0004492	0.0035	4.7652	54452.35	90026.91	90026.91	16.08	No	Si
SLU 61	8.62	-2927.6	-25197	-0.000049	0.0004492	0.0035	4.7652	43796.42	65239.09	65239.09	22.28	No	Si
SLU 63	5.07	-5650.73	-41004	-0.0000845	0.0004492	0.0035	4.7652	54694.3	91217.42	91217.42	16.14	No	Si
SLU 63	8.62	-2838.68	-26046	-0.0000503	0.0004492	0.0035	4.7652	44706.07	66796.77	66796.77	23.53	No	Si
SLU 76	5.07	-6056.97	-44427	-0.0000921	0.0004492	0.0035	4.7652	55370.98	96208.5	96208.5	15.88	No	Si
SLU 76	8.62	-3067.23	-28408	-0.000055	0.0004492	0.0035	4.7652	47044.87	70899.64	70899.64	23.12	No	Si
SLU 73	5.07	-6003.42	-43635	-0.0000904	0.0004492	0.0035	4.7652	55267.74	95105.83	95105.83	15.84	No	Si
SLU 73	8.62	-3156.16	-27560	-0.0000537	0.0004492	0.0035	4.7652	46237.77	69436.06	69436.06	22	No	Si
SLU 82	5.07	-6114.6	-45329	-0.000094	0.0004492	0.0035	4.7652	55449.44	97463.92	97463.92	15.94	No	Si
SLU 82	8.62	-3361.91	-28563	-0.000056	0.0004492	0.0035	4.7652	47187.73	71165.88	71165.88	21.17	No	Si
SLU 52	5.07	-5486	-38518	-0.0000793	0.0004492	0.0035	4.7652	53827.25	87480.97	87480.97	15.95	No	Si
SLU 52	8.62	-2721.85	-24194	-0.0000467	0.0004492	0.0035	4.7652	42673.81	63398.07	63398.07	23.29	No	Si
SLU 75	5.07	-5979.72	-44971	-0.0000929	0.0004492	0.0035	4.7652	55423.26	96965.26	96965.26	16.22	No	Si
SLU 75	8.62	-3126.93	-28817	-0.0000559	0.0004492	0.0035	4.7652	47420	71603.7	71603.7	22.9	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 2	5.07	-13546	-35357	-0.0000896	0.0006738	0.0035	4.7652		85302.49	85302.49	6.3		Si
SLV 2	8.62	-3740.56	-22467	-0.0000453	0.0006738	0.0035	4.7652		61462.79	61462.79	16.43		Si
SLV 10	5.07	-18580.35	-8240	-0.0001786	0.0006738	0.0035	3.8121		32005.63	32005.63	1.72		Si
SLV 10	8.62	-4455.69	-4590	-0.0000169	0.0006738	0.0035	4.7652		23943.19	23943.19	5.37		Si
SLD 5	5.07	-11407.19	-24160	-0.0000648	0.0006738	0.0035	4.7652		64688.27	64688.27	5.67		Si
SLD 5	8.62	-2966.61	-15434	-0.0000317	0.0006738	0.0035	4.7652		47277.95	47277.95	15.94		Si
SLD 9	5.07	-10099.61	-21583	-0.0000575	0.0006738	0.0035	4.7652		59689.82	59689.82	5.91		Si
SLD 9	8.62	-2812.42	-13653	-0.0000283	0.0006738	0.0035	4.7652		43525.54	43525.54	15.48		Si
SLD 10	5.07	-9805.47	-21784	-0.0000572	0.0006738	0.0035	4.7652		60094.56	60094.56	6.13		Si
SLD 10	8.62	-3017.64	-13533	-0.0000286	0.0006738	0.0035	4.7652		43272.98	43272.98	14.34		Si
SLV 1	5.07	-14594.1	-34638	-0.0000906	0.0006738	0.0035	4.7652		84045.13	84045.13	5.76		Si
SLV 1	8.62	-3009.31	-22894	-0.0000445	0.0006738	0.0035	4.7652		62276.88	62276.88	20.69		Si
SLV 5	5.07	-22344.97	-13787	-0.0000974	0.0006738	0.0035	3.8121		43807.59	43807.59	1.96		Si
SLV 5	8.62	-4323.45	-9043	-0.0000238	0.0006738	0.0035	4.7652		33751.81	33751.81	7.81		Si
SLV 9	5.07	-19286.01	-7756	-0.0002435	0.0006738	0.0035	3.8121		30948.79	30948.79	1.6		Si
SLV 9	8.62	-3963.37	-4877	-0.0000161	0.0006738	0.0035	4.7652		24583.83	24583.83	6.2		Si
SLD 6	5.07	-11113.05	-24362	-0.0000645	0.0006738	0.0035	4.7652		65072.59	65072.59	5.86		Si
SLD 6	8.62	-3171.83	-15314	-0.0000319	0.0006738	0.0035	4.7652		47025.39	47025.39	14.83		Si
SLV 6	5.07	-21639.31	-14271	-0.0000886	0.0006738	0.0035	3.8121		44827.51	44827.51	2.07		Si
SLV 6	8.62	-4815.78	-8756	-0.0000243	0.0006738	0.0035	4.7652		33126.81	33126.81	6.88		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 52	5.07	-5486	-38518	-22616	-6189	4.7652	4.7652	-29663	10833	13450	115546	27400	24302	51702	No	8.35	Si
SLU 52	8.62	-2721.85	-24194	-14206	-4240	4.7652	4.7652	-18632	10818	10086	115546	27400	24302	51702	No	12.19	Si
SLU 73	5.07	-6003.42	-43635	-25621	-6271	4.7652	4.7652	-33604	10833	14652	115546	27400	24302	51702	No	8.24	Si
SLU 73	8.62	-3156.16	-27560	-16182	-4034	4.7652	4.7652	-21224	10833	10877	115546	27400	24302	51702	No	12.82	Si
SLU 68	5.07	-5543.88	-40771	-23939	-6295	4.7652	4.7652	-31398	10833	13979	115546	27400	24302	51702	No	8.21	Si
SLU 68	8.62	-2573.78	-26245	-15410	-4169	4.7652	4.7652	-20212	10833	10568	115546	27400	24302	51702	No	12.4	Si
SLU 76	5.07	-6056.97	-44427	-26086	-6294	4.7652	4.7652	-34214	10833	14838	115546	27400	24302	51702	No	8.21	Si
SLU 76	8.62	-3067.23	-28408	-16680	-3982	4.7652	4.7652	-21878	10833	11076	115546	27400	24302	51702	No	12.98	Si
SLU 78	5.07	-6033.27	-45763	-26870	-6119	4.7652	4.7652	-35243	10833	15152	115546	27400	24302	51702	No	8.45	Si
SLU 78	8.62	-3038	-29665	-17418	-3704	4.7652	4.7652	-22846	10833	11371	115546	27400	24302	51702	No	13.96	Si
SLU 55	5.07	-5539.55	-39310	-23081	-6212	4.7652	4.7652	-30273	10833	13636	115546	27400	24302	51702	No	8.32	Si
SLU 55	8.62	-2632.93	-25043	-14704	-4188	4.7652	4.7652	-19286	10833	10286	115546	27400	24302	51702	No	12.34	Si
SLU 44	5.07	-4972.9	-34861	-20469	-6191	4.7652	4.7652	-26847	10833	12592	115546	27400	24302	51702	No	8.35	Si
SLU 44	8.62	-2228.4	-22031	-12936	-4427	4.7652	4.7652	-16966	10596	9578	115546	27400	24302	51702	No	11.68	Si
SLU 47	5.07	-5026.45	-35653	-20934	-6213	4.7652	4.7652	-27457	10833	12778	115546	27400	24302	51702	No	8.32	Si
SLU 47	8.62	-2139.48	-22879	-13434	-4375	4.7652	4.7652	-17620	10683	9778	115546	27400	24302	51702	No	11.82	Si
SLU 70	5.07	-5520.17	-42106	-24723	-6121	4.7652	4.7652	-32427	10833	14293	115546	27400	24302	51702	No	8.45	Si
SLU 70	8.62	-2544.55	-27502	-16148	-3891	4.7652	4.7652	-21180	10833	10863	115546	27400	24302	51702	No	13.29	Si
SLU 65	5.07	-5490.33	-39979	-23474	-6273	4.7652	4.7652	-30788	10833	13793	115546	27400	24302	51702	No	8.24	Si
SLU 65	8.62	-2662.71	-25396	-14912	-4221	4.7652	4.7652	-19558	10833	10369	115546	27400	24302	51702	No	12.25	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 12	5.07	14250.69	-48046	-28211	26317	4.7652	4.7652	-37001	16250	17890	115546	41099	24302	65402		2.49	Si
SLV 12	8.62	157.94	-30076	-17660	27382	4.7652	4.7652	-23162	16250	13670	115546	41099	24302	65402		2.39	Si
SLV 5	5.07	-22344.97	-13787	-8095	-35088	3.8121	2.2855	0	0	0	115546	32880	19442	52321		1.49	Si
SLV 5	8.62	-4323.45	-9043	-5310	-32993	4.7652	4.7652	-6964	13893	10592	115546	41099	24302	65402		1.98	Si
SLD 9	5.07	-10099.61	-21583	-12672	-17463	4.7652	4.7652	-16621	15824	12065	115546	41099	24302	65402		3.75	Si
SLD 9	8.62	-2812.42	-13653	-8016	-15853	4.7652	4.7652	-10514	14603	11134	115546	41099	24302	65402		4.13	Si
SLV 10	5.07	-18580.35	-8240	-4838	-36633	3.8121	0.3828	0	0	0	115546	32880	19442	52321		1.43	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	8.62	-4455.69	-4590	-2695	-35105	4.7652	4.2353	-3979	13296	9010	115546	41099	24302	65402		1.86	Si
SLV 7	5.07	10486.08	-53594	-31468	27862	4.7652	4.7652	-41273	16250	19193	115546	41099	24302	65402		2.35	Si
SLV 7	8.62	290.19	-34530	-20275	29494	4.7652	4.7652	-26592	16250	14716	115546	41099	24302	65402		2.22	Si
SLV 9	5.07	-19286.01	-7756	-4554	-37052	3.8121	0	0	0	0	115546	32880	19442	52321		1.41	Si
SLV 9	8.62	-3963.37	-4877	-2864	-35395	4.7652	4.7098	-3756	13251	9986	115546	41099	24302	65402		1.85	Si
SLV 11	5.07	13545.03	-47562	-27927	25898	4.7652	4.7652	-36629	16250	17777	115546	41099	24302	65402		2.53	Si
SLV 11	8.62	650.27	-30364	-17828	27092	4.7652	4.7652	-23384	16250	13738	115546	41099	24302	65402		2.41	Si
SLV 13	5.07	-4397.59	-14534	-8534	-17413	4.7652	4.7652	-11193	14739	11237	115546	41099	24302	65402		3.76	Si
SLV 13	8.62	-1809.04	-9007	-5288	-16397	4.7652	4.7652	-6936	13887	10588	115546	41099	24302	65402		3.99	Si
SLV 6	5.07	-21639.31	-14271	-8379	-34668	3.8121	2.5988	0	0	0	115546	32880	19442	52321		1.51	Si
SLV 6	8.62	-4815.78	-8756	-5141	-32703	4.7652	4.7652	-6743	13849	10558	115546	41099	24302	65402		2	Si
SLV 8	5.07	11191.74	-54078	-31752	28281	4.7652	4.7652	-41646	16250	19307	115546	41099	24302	65402		2.31	Si
SLV 8	8.62	-202.14	-34242	-20106	29784	4.7652	4.7652	-26371	16250	14648	115546	41099	24302	65402		2.2	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 6.845 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 9	-7854	0.39	309.14	593.03	1107.28	850.15	2.75	Si
SLV 10	-8082	0.39	309.14	609.18	1129.16	869.17	2.81	Si
SLV 5	-11836	0.39	309.14	866.68	1486.71	1176.7	3.81	Si
SLV 6	-12064	0.39	309.14	881.79	1508.3	1195.05	3.87	Si
SLV 13	-14346	0.39	309.14	1029.86	1723.08	1376.47	4.45	Si
SLV 14	-14684	0.39	309.14	1051.31	1754.82	1403.06	4.54	Si
SLV 15	-23939	0.39	309.14	1587.06	2603.44	2095.25	6.78	Si
SLV 16	-24278	0.39	309.14	1604.79	2634.31	2119.55	6.86	Si
SLV 1	-27618	0.39	309.14	1772.79	2933.02	2352.9	7.61	Si
SLV 2	-27957	0.39	309.14	1789.09	2963.16	2376.13	7.69	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.03 Ta = 0.1315

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 3	-30540	-46580	-772	0.812	3490.4	0.967	12.21171	8.62629	Si
SLV 4	-30113	-47299	-772	0.823	3446.9	0.967	12.37258	8.62629	Si
SLV 7	-34530	-53594	-191	0.743	3896.6	0.97	11.12952	6.30013	Si
SLV 8	-34242	-54078	-191	0.749	3867.3	0.97	11.21665	6.30013	Si
SLV 1	-22894	-34638	-799	1.05	2712.5	0.958	15.92085	8.62629	Si
SLV 2	-22467	-35357	-799	1.067	2669	0.958	16.19855	8.62629	Si
SLV 11	-30364	-47562	281	0.832	3472.5	0.967	12.50271	6.30013	Si
SLV 12	-30076	-48046	281	0.839	3443.2	0.967	12.61364	6.30013	Si
SLV 15	-16653	-26476	799	1.386	2078.5	0.947	21.26018	8.62629	Si
SLV 16	-16226	-27195	799	1.417	2035.1	0.946	21.76101	8.62629	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	15.842	SLU 73	Si
V_SLU	8.213	SLU 68	Si
PF_SLV	1.605	SLV 9	Si
V_SLV	1.412	SLV 9	Si
PFFP_SLV	2.75	SLV 9	Si
R_SLV	1.416	SLV 3	Si

Maschio 111

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.618	5.951	-19.618	6.651	L5	L6	0.7	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 38	5.07	236.12	-7300	-0.0000723	0.0003743	0.0035	0.7	1682.58	1946.03	1946.03	8.24	No	Si
SLU 38	8.62	375.3	-5785	-0.0000688	0.0003743	0.0035	0.7	1476.86	1629.53	1629.53	4.34	No	Si
SLU 34	5.07	219.07	-7045	-0.0000689	0.0003743	0.0035	0.7	1653.32	1891.43	1891.43	8.63	No	Si
SLU 34	8.62	369.1	-5514	-0.000066	0.0003743	0.0035	0.7	1432.1	1575.2	1575.2	4.27	No	Si
SLU 42	5.07	229.33	-7393	-0.0000726	0.0003743	0.0035	0.7	1692.86	1966.39	1966.39	8.57	No	Si
SLU 42	8.62	384.03	-5738	-0.000069	0.0003743	0.0035	0.7	1469.33	1620.12	1620.12	4.22	No	Si
SLU 36	5.07	239.22	-7393	-0.0000733	0.0003743	0.0035	0.7	1692.82	1966.3	1966.3	8.22	No	Si
SLU 36	8.62	378.88	-5867	-0.0000697	0.0003743	0.0035	0.7	1489.9	1646.08	1646.08	4.34	No	Si
SLU 31	5.07	215.23	-6892	-0.0000673	0.0003743	0.0035	0.7	1634.65	1858.83	1858.83	8.64	No	Si
SLU 31	8.62	349.03	-5246	-0.0000624	0.0003743	0.0035	0.7	1385.64	1522.43	1522.43	4.36	No	Si
SLU 76	5.07	285.66	-8401	-0.0000857	0.0003743	0.0035	0.7	1784.98	2126.76	2126.76	7.45	No	Si
SLU 76	8.62	395.02	-6386	-0.0000754	0.0003743	0.0035	0.7	1567.47	1752.66	1752.66	4.44	No	Si
SLU 84	5.07	295.92	-8749	-0.0000897	0.0003743	0.0035	0.7	1809.08	2174.72	2174.72	7.35	No	Si
SLU 84	8.62	409.96	-6610	-0.0000784	0.0003743	0.0035	0.7	1598.29	1799.47	1799.47	4.39	No	Si
SLU 33	5.07	235.38	-7240	-0.0000717	0.0003743	0.0035	0.7	1675.9	1933.15	1933.15	8.21	No	Si
SLU 33	8.62	358.81	-5599	-0.0000661	0.0003743	0.0035	0.7	1446.53	1592.32	1592.32	4.44	No	Si
SLU 41	5.07	249.14	-7545	-0.0000754	0.0003743	0.0035	0.7	1708.82	1999.38	1999.38	8.03	No	Si
SLU 41	8.62	363.22	-5744	-0.0000676	0.0003743	0.0035	0.7	1470.29	1621.32	1621.32	4.46	No	Si
SLU 40	5.07	225.49	-7240	-0.000071	0.0003743	0.0035	0.7	1675.94	1933.23	1933.23	8.57	No	Si
SLU 40	8.62	363.97	-5471	-0.0000653	0.0003743	0.0035	0.7	1424.83	1566.71	1566.71	4.3	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	5.07	-2113.5	10848	2.8459585	0.0005615	0.0035	0.56		0	0	0		No
SLV 6	8.62	2487.71	-3257	-0.0641504	0.0005615	0.0035	0.56		1081.37	1081.37	0.43		No
SLV 13	5.07	692.37	-6024	-0.0000895	0.0005615	0.0035	0.7		1807.02	1807.02	2.61		Si
SLV 13	8.62	-604.95	664	0.1798237	0.0005615	0.0035	0.56		0	0	0		No
SLD 5	5.07	-830.09	1449	0.3875246	0.0005615	0.0035	0.56		0	0	0		No
SLD 5	8.62	1296.96	-4313	-0.0003996	0.0005615	0.0035	0.7		1364.45	1364.45	1.05		Si
SLV 10	5.07	-1333.93	7244	1.8989528	0.0005615	0.0035	0.56		0	0	0		No
SLV 10	8.62	1472.29	-236	-0.0659575	0.0005615	0.0035	0.56		112.03	112.03	0.08		No
SLD 6	5.07	-709.02	747	0.2024912	0.0005615	0.0035	0.56		0	0	0		No
SLD 6	8.62	1136.1	-3914	-0.0002643	0.0005615	0.0035	0.7		1264.17	1264.17	1.11		Si
SLV 9	5.07	-1624.38	8928	2.3399837	0.0005615	0.0035	0.56		0	0	0		No
SLV 9	8.62	1858.2	-1192	-0.0671758	0.0005615	0.0035	0.56		433.73	433.73	0.23		No
SLV 2	5.07	-1474.8	3488	0.9272544	0.0005615	0.0035	0.56		0	0	0		No
SLV 2	8.62	2206.59	-7987	-0.0006414	0.0005615	0.0035	0.7		2280.55	2280.55	1.03		Si
SLV 16	5.07	2390.39	-18087	-0.0003695	0.0005615	0.0035	0.7		3737.83	3737.83	1.56		Si
SLV 16	8.62	-2354.27	852	0.2026684	0.0005615	0.0035	0.56		0	0	0		No
SLV 5	5.07	-2403.95	12532	3.2870015	0.0005615	0.0035	0.56		0	0	0		No
SLV 5	8.62	2873.63	-4213	-0.0676858	0.0005615	0.0035	0.56		1339.27	1339.27	0.47		No
SLV 14	5.07	1123.77	-8525	-0.0001423	0.0005615	0.0035	0.7		2389.2	2389.2	2.13		Si
SLV 14	8.62	-1178.15	2084	0.5572244	0.0005615	0.0035	0.56		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 79	5.07	322.51	-8806	-7416	1192	0.7	0.7	-35313	10833	2651	40441	6288	1785	8073	No	6.78	Si
SLU 79	8.62	380.41	-6663	-5611	-1234	0.7	0.7	-26719	10507	2206	40441	6288	1785	8073	No	6.54	Si
SLU 75	5.07	301.97	-8595	-7238	1140	0.7	0.7	-34467	10833	2604	40441	6288	1785	8073	No	7.08	Si
SLU 75	8.62	384.73	-6472	-5450	-1224	0.7	0.7	-25951	10405	2185	40441	6288	1785	8073	No	6.59	Si
SLU 82	5.07	292.08	-8596	-7238	1135	0.7	0.7	-34468	10833	2604	40441	6288	1785	8073	No	7.11	Si
SLU 82	8.62	389.89	-6343	-5341	-1211	0.7	0.7	-25436	10336	2171	40441	6288	1785	8073	No	6.67	Si
SLU 84	5.07	295.92	-8749	-7367	1152	0.7	0.7	-35083	10833	2639	40441	6288	1785	8073	No	7.01	Si
SLU 84	8.62	409.96	-6610	-5567	-1269	0.7	0.7	-26507	10479	2201	40441	6288	1785	8073	No	6.36	Si
SLU 77	5.07	325.62	-8900	-7494	1204	0.7	0.7	-35688	10833	2672	40441	6288	1785	8073	No	6.71	Si
SLU 77	8.62	383.99	-6745	-5680	-1245	0.7	0.7	-27047	10551	2216	40441	6288	1785	8073	No	6.49	Si
SLU 74	5.07	321.77	-8746	-7365	1186	0.7	0.7	-35074	10833	2638	40441	6288	1785	8073	No	6.8	Si
SLU 74	8.62	363.92	-6478	-5455	-1187	0.7	0.7	-25975	10408	2186	40441	6288	1785	8073	No	6.8	Si
SLU 78	5.07	305.81	-8748	-7367	1157	0.7	0.7	-35081	10833	2638	40441	6288	1785	8073	No	6.98	Si
SLU 78	8.62	404.8	-6739	-5675	-1282	0.7	0.7	-27023	10547	2215	40441	6288	1785	8073	No	6.3	Si
SLU 83	5.07	315.72	-8900	-7495	1199	0.7	0.7	-35689	10833	2672	40441	6288	1785	8073	No	6.73	Si
SLU 83	8.62	389.15	-6616	-5572	-1232	0.7	0.7	-26531	10482	2201	40441	6288	1785	8073	No	6.56	Si
SLU 80	5.07	302.7	-8655	-7288	1145	0.7	0.7	-34706	10833	2617	40441	6288	1785	8073	No	7.05	Si
SLU 80	8.62	401.22	-6657	-5606	-1272	0.7	0.7	-26695	10504	2206	40441	6288	1785	8073	No	6.35	Si
SLU 76	5.07	285.66	-8401	-7074	1096	0.7	0.7	-33687	10833	2560	40441	6288	1785	8073	No	7.36	Si
SLU 76	8.62	395.02	-6386	-5377	-1239	0.7	0.7	-25607	10359	2175	40441	6288	1785	8073	No	6.52	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	5.07	-2403.95	12532	10553	-5128	0.56	0.4745	0	0	0	40441	7546	1428	8974		1.75	Si
SLV 5	8.62	2873.63	-4213	-3548	-5227	0.56	0	0	0	0	40441	7546	1428	8974		1.72	Si
SLV 15	5.07	1958.99	-15586	-13125	4315	0.7	0.6729	-62501	16250	4511	40441	9433	1785	11218		2.6	Si
SLV 15	8.62	-1781.06	-568	-478	2770	0.56	0	0	0	0	40441	7546	1428	8974		3.24	Si
SLV 16	5.07	2390.39	-18087	-15231	5186	0.7	0.6535	-72531	16250	5072	40441	9433	1785	11218		2.16	Si
SLV 16	8.62	-2354.27	852	717	3835	0.56	0	0	0	0	40441	7546	1428	8974		2.34	Si
SLV 9	5.07	-1624.38	8928	7518	-3669	0.56	0.5042	0	0	0	40441	7546	1428	8974		2.45	Si
SLV 9	8.62	1858.2	-1192	-1004	-3361	0.56	0	0	0	0	40441	7546	1428	8974		2.67	Si
SLV 11	5.07	2597.69	-22946	-19323	6214	0.7	0.7	-92015	16250	6164	40441	9433	1785	11218		1.81	Si
SLV 11	8.62	-2062.18	-5297	-4461	2990	0.56	0	0	0	0	40441	7546	1428	8974		3	Si
SLV 12	5.07	2888.14	-24630	-20741	6800	0.7	0.6982	-98768	16250	6542	40441	9433	1785	11218		1.65	Si
SLV 12	8.62	-2448.1	-4341	-3656	3707	0.56	0	0	0	0	40441	7546	1428	8974		2.42	Si
SLV 6	5.07	-2113.5	10848	9135	-4542	0.56	0.4655	0	0	0	40441	7546	1428	8974		1.98	Si
SLV 6	8.62	2487.71	-3257	-2743	-4510	0.56	0	0	0	0	40441	7546	1428	8974		1.99	Si
SLV 7	5.07	1818.12	-19342	-16288	4754	0.7	0.7	-77563	16250	5354	40441	9433	1785	11218		2.36	Si
SLV 7	8.62	-1046.76	-8318	-7005	1124	0.7	0.6725	-33356	16250	3278	40441	9433	1785	11218		9.98	Si
SLV 1	5.07	-1906.2	5989	5043	-3514	0.56	0.0952	0	0	0	40441	7546	1428	8974		2.55	Si
SLV 1	8.62	2779.79	-9407	-7921	-5355	0.7	0.1634	-200267	16250	3123	40441	9433	1785	11218		2.09	Si
SLV 8	5.07	2108.56	-21026	-17706	5340	0.7	0.7	-84316	16250	5732	40441	9433	1785	11218		2.1	Si
SLV 8	8.62	-1432.68	-7362	-6200	1841	0.56	0.4662	0	0	0	40441	7546	1428	8974		4.87	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 6	179667	0.39	0	2021	79.19	0	0	No, Trazione
SLV 5	179667	0.39	0	2284	79.19	0	0	No, Trazione
SLV 9	179667	0.39	0	2309	79.19	0	0	No, Trazione
SLV 10	179667	0.39	0	2046	79.19	0	0	No, Trazione
SLV 13	179667	0.39	10545	-2214	79.19	309.22	3.91	Si
SLV 1	179667	0.39	10945	-2299	79.19	320.07	4.04	Si
SLV 14	179667	0.39	12403	-2605	79.19	358.96	4.53	Si
SLV 2	179667	0.39	12803	-2689	79.19	369.49	4.67	Si
SLV 15	179667	0.39	29388	-6171	79.19	747.57	9.44	Si
SLV 3	179667	0.39	29788	-6256	79.19	755.3	9.54	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 3	-10638	-3573	-411	0.356	1188	0.973	5.31988	5.36881	No
SLV 1	-9407	5989	-375	0.398	1062.6	0.97	5.96364	5.36881	Si, Trazione
SLV 4	-9218	-6074	-409	0.401	1043.5	0.969	6.0171	5.36881	Si
SLV 2	-7987	3488	-374	0.456	918.1	0.965	6.87152	5.36881	Si, Trazione
SLV 7	-8318	-19342	-178	0.463	951.9	0.967	6.96172	4.5984	Si
SLV 8	-7362	-21026	-177	0.513	854.6	0.963	7.74436	4.5984	Si
SLV 11	-5297	-22946	57	0.696	644.6	0.952	10.62388	4.5984	Si
SLV 12	-4341	-24630	58	0.821	547.6	0.945	12.61987	4.5984	Si
SLV 5	-4213	12532	-60	0.841	534.6	0.944	12.94418	4.5984	Si, Trazione
SLV 6	-3257	10848	-59	1.035	437.8	0.934	16.11367	4.5984	Si, Trazione

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.219	SLU 42	Si
V_SLU	6.296	SLU 78	Si
PF_SLV	0	SLD 5	No
V_SLV	1.65	SLV 12	Si
PFFP_SLV	0	SLV 10	No
R_SLV	0.991	SLV 3	No

Maschio 112

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-18.448	-3.359	-18.448	1.046	L5	L6	4.406	0.16	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 74	5.07	5668.67	-42878	-0.0000973	0.0004492	0.0035	4.4057	47432.6	75653.85	75653.85	13.35	No	Si
SLU 74	8.62	2647.37	-27685	-0.0000579	0.0004492	0.0035	4.4057	41383.31	53022.54	53022.54	20.03	No	Si
SLU 77	5.07	5766.61	-43511	-0.0000989	0.0004492	0.0035	4.4057	47428.42	76428.56	76428.56	13.25	No	Si
SLU 77	8.62	2728.52	-28287	-0.0000593	0.0004492	0.0035	4.4057	41847.83	53973.43	53973.43	19.78	No	Si
SLU 69	5.07	5304.1	-39712	-0.0000895	0.0004492	0.0035	4.4057	47145.89	71782.19	71782.19	13.53	No	Si
SLU 69	8.62	2524.58	-25968	-0.0000542	0.0004492	0.0035	4.4057	39956.64	50310.68	50310.68	19.93	No	Si
SLU 71	5.07	5253.18	-39352	-0.0000886	0.0004492	0.0035	4.4057	47080.76	71341.48	71341.48	13.58	No	Si
SLU 71	8.62	2480.61	-25633	-0.0000534	0.0004492	0.0035	4.4057	39661.18	49782.43	49782.43	20.07	No	Si
SLU 78	5.07	5671.4	-43681	-0.000099	0.0004492	0.0035	4.4057	47423.8	76636.3	76636.3	13.51	No	Si
SLU 78	8.62	2769.16	-28331	-0.0000595	0.0004492	0.0035	4.4057	41880.77	54042.33	54042.33	19.52	No	Si
SLU 79	5.07	5715.68	-43151	-0.000098	0.0004492	0.0035	4.4057	47433.31	75987.85	75987.85	13.29	No	Si
SLU 79	8.62	2684.56	-27953	-0.0000585	0.0004492	0.0035	4.4057	41592.07	53445.18	53445.18	19.91	No	Si
SLU 81	5.07	5718.02	-43512	-0.0000988	0.0004492	0.0035	4.4057	47428.39	76429.73	76429.73	13.37	No	Si
SLU 81	8.62	2609.66	-27742	-0.0000579	0.0004492	0.0035	4.4057	41428.37	53113.14	53113.14	20.35	No	Si
SLU 80	5.07	5620.48	-43321	-0.0000981	0.0004492	0.0035	4.4057	47431.83	76195.59	76195.59	13.56	No	Si
SLU 80	8.62	2725.2	-27996	-0.0000587	0.0004492	0.0035	4.4057	41625.75	53514.08	53514.08	19.64	No	Si
SLU 84	5.07	5720.75	-44316	-0.0001005	0.0004492	0.0035	4.4057	47393.53	77412.18	77412.18	13.53	No	Si
SLU 84	8.62	2731.45	-28388	-0.0000595	0.0004492	0.0035	4.4057	41923.93	54132.94	54132.94	19.82	No	Si
SLU 83	5.07	5815.96	-44146	-0.0001004	0.0004492	0.0035	4.4057	47403.66	77204.44	77204.44	13.27	No	Si
SLU 83	8.62	2690.81	-28345	-0.0000593	0.0004492	0.0035	4.4057	41891.13	54064.04	54064.04	20.09	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 12	5.07	8258.64	-22246	-0.0000608	0.0006738	0.0035	4.4057		46121.31	46121.31	5.58		Si
SLD 12	8.62	892.78	-15546	-0.0000299	0.0006738	0.0035	4.4057		33636.88	33636.88	37.68		Si
SLV 16	5.07	6624.24	-17373	-0.0000476	0.0006738	0.0035	4.4057		37113.55	37113.55	5.6		Si
SLV 16	8.62	1335.19	-11660	-0.000024	0.0006738	0.0035	4.4057		26074.22	26074.22	19.53		Si
SLD 8	5.07	8429.32	-24050	-0.0000647	0.0006738	0.0035	4.4057		49128.71	49128.71	5.83		Si
SLD 8	8.62	784.17	-16866	-0.0000321	0.0006738	0.0035	4.4057		36157.87	36157.87	46.11		Si
SLV 8	5.07	15305.48	-15932	-0.0000685	0.0006738	0.0035	4.4057		34376.6	34376.6	2.25		Si
SLV 8	8.62	-646.96	-13902	-0.0000263	0.0006738	0.0035	4.4057		39517.27	39517.27	61.08		Si
SLD 7	5.07	8397.05	-24239	-0.000065	0.0006738	0.0035	4.4057		49429.77	49429.77	5.89		Si
SLD 7	8.62	899.09	-16886	-0.0000324	0.0006738	0.0035	4.4057		36196.8	36196.8	40.26		Si
SLV 15	5.07	6509.27	-18046	-0.0000485	0.0006738	0.0035	4.4057		38378.67	38378.67	5.9		Si
SLV 15	8.62	1744.67	-11734	-0.0000251	0.0006738	0.0035	4.4057		26220.06	26220.06	15.03		Si
SLV 12	5.07	14905.82	-11708	-0.0000672	0.0006738	0.0035	4.4057		26169.15	26169.15	1.76		Si
SLV 12	8.62	-392.79	-10813	-0.0000201	0.0006738	0.0035	4.4057		33495.72	33495.72	85.28		Si
SLD 11	5.07	8226.37	-22434	-0.0000611	0.0006738	0.0035	4.4057		46464.22	46464.22	5.65		Si
SLD 11	8.62	1007.7	-15566	-0.0000302	0.0006738	0.0035	4.4057		33676.49	33676.49	33.42		Si
SLV 7	5.07	15228.07	-16385	-0.0000687	0.0006738	0.0035	4.4057		35242.95	35242.95	2.31		Si
SLV 7	8.62	-371.27	-13951	-0.0000257	0.0006738	0.0035	4.4057		39614.04	39614.04	106.7		Si
SLV 11	5.07	14828.41	-12161	-0.0000659	0.0006738	0.0035	4.4057		27064.59	27064.59	1.83		Si
SLV 11	8.62	-117.1	-10863	-0.0000195	0.0006738	0.0035	4.4057		33592.49	33592.49	286.88		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	5.07	5766.61	-43511	-25548	5398	4.4057	4.4057	-36243	10833	14291	115546	25333	22469	47802	No	8.86	Si
SLU 77	8.62	2728.52	-28287	-16609	5386	4.4057	4.4057	-23562	10833	10715	115546	25333	22469	47802	No	8.87	Si
SLU 79	5.07	5715.68	-43151	-25336	5372	4.4057	4.4057	-35943	10833	14206	115546	25333	22469	47802	No	8.9	Si
SLU 79	8.62	2684.56	-27953	-16413	5360	4.4057	4.4057	-23283	10833	10637	115546	25333	22469	47802	No	8.92	Si
SLU 82	5.07	5622.81	-43682	-25648	5074	4.4057	4.4057	-36385	10833	14331	115546	25333	22469	47802	No	9.42	Si
SLU 82	8.62	2650.3	-27786	-16315	5165	4.4057	4.4057	-23144	10833	10598	115546	25333	22469	47802	No	9.25	Si
SLU 80	5.07	5620.48	-43321	-25436	5105	4.4057	4.4057	-36084	10833	14246	115546	25333	22469	47802	No	9.36	Si
SLU 80	8.62	2725.2	-27996	-16438	5197	4.4057	4.4057	-23320	10833	10647	115546	25333	22469	47802	No	9.2	Si
SLU 83	5.07	5815.96	-44146	-25920	5411	4.4057	4.4057	-36771	10833	14440	115546	25333	22469	47802	No	8.83	Si
SLU 83	8.62	2690.81	-28345	-16643	5399	4.4057	4.4057	-23610	10833	10729	115546	25333	22469	47802	No	8.85	Si
SLU 84	5.07	5720.75	-44316	-26020	5144	4.4057	4.4057	-36913	10833	14480	115546	25333	22469	47802	No	9.29	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	8.62	2731.45	-28388	-16668	5235	4.4057	4.4057	-23646	10833	10739	115546	25333	22469	47802	No	9.13	Si
SLU 81	5.07	5718.02	-43512	-25549	5341	4.4057	4.4057	-36244	10833	14291	115546	25333	22469	47802	No	8.95	Si
SLU 81	8.62	2609.66	-27742	-16289	5329	4.4057	4.4057	-23108	10833	10587	115546	25333	22469	47802	No	8.97	Si
SLU 78	5.07	5671.4	-43681	-25648	5131	4.4057	4.4057	-36384	10833	14331	115546	25333	22469	47802	No	9.32	Si
SLU 78	8.62	2769.16	-28331	-16635	5223	4.4057	4.4057	-23598	10833	10726	115546	25333	22469	47802	No	9.15	Si
SLU 75	5.07	5573.46	-43048	-25276	5061	4.4057	4.4057	-35857	10833	14182	115546	25333	22469	47802	No	9.45	Si
SLU 75	8.62	2688.01	-27729	-16281	5153	4.4057	4.4057	-23097	10833	10584	115546	25333	22469	47802	No	9.28	Si
SLU 74	5.07	5668.67	-42878	-25176	5328	4.4057	4.4057	-35715	10833	14142	115546	25333	22469	47802	No	8.97	Si
SLU 74	8.62	2647.37	-27685	-16255	5317	4.4057	4.4057	-23060	10833	10574	115546	25333	22469	47802	No	8.99	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	5.07	-7477.3	-42287	-24829	-20315	4.4057	4.4057	-35223	16250	16039	115546	37999	22469	60468		2.98	Si
SLV 10	8.62	3888.18	-23565	-13836	-18396	4.4057	4.4057	-19628	16250	11642	115546	37999	22469	60468		3.29	Si
SLV 8	5.07	15305.48	-15932	-9355	28235	4.4057	3.7265	-13271	15154	9850	115546	37999	22469	60468		2.14	Si
SLV 8	8.62	-646.96	-13902	-8163	26299	4.4057	4.4057	-11580	14816	10444	115546	37999	22469	60468		2.3	Si
SLV 5	5.07	-7155.05	-46963	-27575	-21611	4.4057	4.4057	-39118	16250	17138	115546	37999	22469	60468		2.8	Si
SLV 5	8.62	3909.7	-26703	-15679	-19686	4.4057	4.4057	-22242	16250	12379	115546	37999	22469	60468		3.07	Si
SLV 7	5.07	15228.07	-16385	-9620	27966	4.4057	3.8203	-13648	15230	9956	115546	37999	22469	60468		2.16	Si
SLV 7	8.62	-371.27	-13951	-8192	26030	4.4057	4.4057	-11621	14824	10450	115546	37999	22469	60468		2.32	Si
SLV 11	5.07	14828.41	-12161	-7140	28992	4.4057	2.9505	-10130	14526	8964	115546	37999	22469	60468		2.09	Si
SLV 11	8.62	-117.1	-10863	-6378	27052	4.4057	4.4057	-9048	14310	10087	115546	37999	22469	60468		2.24	Si
SLV 6	5.07	-7077.64	-46510	-27309	-21341	4.4057	4.4057	-38741	16250	17031	115546	37999	22469	60468		2.83	Si
SLV 6	8.62	3634.01	-26653	-15650	-19417	4.4057	4.4057	-22201	16250	12368	115546	37999	22469	60468		3.11	Si
SLD 12	5.07	8258.64	-22246	-13062	14005	4.4057	4.4057	-18529	16206	11424	115546	37999	22469	60468		4.32	Si
SLD 12	8.62	892.78	-15546	-9128	13220	4.4057	4.4057	-12949	15090	10637	115546	37999	22469	60468		4.57	Si
SLV 9	5.07	-7554.7	-42740	-25095	-20584	4.4057	4.4057	-35600	16250	16146	115546	37999	22469	60468		2.94	Si
SLV 9	8.62	4163.87	-23614	-13865	-18665	4.4057	4.4057	-19669	16250	11654	115546	37999	22469	60468		3.24	Si
SLD 11	5.07	8226.37	-22434	-13172	13892	4.4057	4.4057	-18687	16237	11446	115546	37999	22469	60468		4.35	Si
SLD 11	8.62	1007.7	-15566	-9140	13108	4.4057	4.4057	-12966	15093	10639	115546	37999	22469	60468		4.61	Si
SLV 12	5.07	14905.82	-11708	-6875	29262	4.4057	2.7893	-9753	14451	8858	115546	37999	22469	60468		2.07	Si
SLV 12	8.62	-392.79	-10813	-6349	27320	4.4057	4.4057	-9007	14301	10081	115546	37999	22469	60468		2.21	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 6.845 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 12	-12923	0.39	285.82	930.41	1559.14	1244.78	4.36	Si
SLV 11	-13158	0.39	285.82	945.41	1581.16	1263.28	4.42	Si
SLV 16	-15453	0.39	285.82	1088.38	1795.6	1441.99	5.05	Si
SLV 15	-15802	0.39	285.82	1109.54	1827.5	1468.52	5.14	Si
SLV 8	-16767	0.39	285.82	1167.27	1915.83	1541.55	5.39	Si
SLV 7	-17002	0.39	285.82	1181.15	1937.36	1559.26	5.46	Si
SLV 14	-21515	0.39	285.82	1434.57	2349.96	1892.27	6.62	Si
SLV 13	-21864	0.39	285.82	1453.11	2381.77	1917.44	6.71	Si
SLV 4	-28267	0.39	285.82	1766.6	2954.52	2360.56	8.26	Si
SLV 3	-28616	0.39	285.82	1782.22	2985.63	2383.93	8.34	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.03 Ta = 0.1315

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 1	-25856	-41298	-588	0.884	2984.8	0.964	13.31881	8.62629	Si
SLV 2	-25782	-40626	-588	0.886	2977.3	0.964	13.35403	8.62629	Si
SLV 3	-22030	-32125	-507	1.023	2595.6	0.96	15.49124	8.62629	Si
SLV 4	-21956	-31452	-507	1.026	2588.1	0.96	15.53904	8.62629	Si
SLV 5	-26703	-46963	-298	0.869	3071	0.965	13.07704	6.30013	Si
SLV 6	-26653	-46510	-298	0.87	3066	0.965	13.0996	6.30013	Si
SLV 9	-23614	-42740	30	0.98	2756.8	0.962	14.80933	6.30013	Si
SLV 10	-23565	-42287	30	0.982	2751.7	0.962	14.83818	6.30013	Si
SLV 13	-15560	-27219	508	1.386	1938.2	0.948	21.259	8.62629	Si
SLV 14	-15486	-26547	508	1.392	1930.7	0.947	21.34998	8.62629	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	13.254	SLU 77	Si
V_SLU	8.834	SLU 83	Si
PF_SLV	1.756	SLV 12	Si
V_SLV	2.066	SLV 12	Si
PFFP_SLV	4.355	SLV 12	Si
R_SLV	1.544	SLV 1	Si

Maschio 114

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-16.333	-3.359	-17.278	-3.359	L5	L6	0.945	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 80	5.07	-1255.07	-10657	-0.0001077	0.0004492	0.0035	0.945	3486.26	4117.76	4117.76	3.28	No	Si
SLU 80	7.17	-221.69	-12435	-0.0000793	0.0004492	0.0035	0.945	3766.33	4506.48	4506.48	20.33	No	Si
SLU 68	5.07	-1194.71	-9831	-0.0000998	0.0004492	0.0035	0.945	3326.88	3911.29	3911.29	3.27	No	Si
SLU 68	7.17	-132.13	-11043	-0.0000671	0.0004492	0.0035	0.945	3554.4	4199.41	4199.41	31.78	No	Si
SLU 70	5.07	-1224.74	-10046	-0.0001024	0.0004492	0.0035	0.945	3370.04	3970.59	3970.59	3.24	No	Si
SLU 70	7.17	-133.41	-11315	-0.0000688	0.0004492	0.0035	0.945	3599.92	4257.81	4257.81	31.92	No	Si
SLU 77	5.07	-1252.43	-10667	-0.0001077	0.0004492	0.0035	0.945	3488.18	4119.98	4119.98	3.29	No	Si
SLU 77	7.17	-237.87	-12480	-0.0000802	0.0004492	0.0035	0.945	3772.33	4516.79	4516.79	18.99	No	Si
SLU 78	5.07	-1268.76	-10756	-0.0001089	0.0004492	0.0035	0.945	3504.21	4138.66	4138.66	3.26	No	Si
SLU 78	7.17	-220.91	-12560	-0.00008	0.0004492	0.0035	0.945	3782.79	4535.05	4535.05	20.53	No	Si
SLU 72	5.07	-1211.05	-9946	-0.0001012	0.0004492	0.0035	0.945	3350.16	3943.38	3943.38	3.26	No	Si
SLU 72	7.17	-134.19	-11189	-0.0000681	0.0004492	0.0035	0.945	3579.21	4230.82	4230.82	31.53	No	Si
SLU 67	5.07	-1197.52	-9871	-0.0001002	0.0004492	0.0035	0.945	3335.08	3922.63	3922.63	3.28	No	Si
SLU 67	7.17	-142.66	-11115	-0.0000679	0.0004492	0.0035	0.945	3566.64	4214.79	4214.79	29.54	No	Si
SLU 69	5.07	-1208.42	-9957	-0.0001012	0.0004492	0.0035	0.945	3352.29	3946.3	3946.3	3.27	No	Si
SLU 69	7.17	-150.37	-11235	-0.000069	0.0004492	0.0035	0.945	3586.75	4240.56	4240.56	28.2	No	Si
SLU 66	5.07	-1181.2	-9783	-0.000099	0.0004492	0.0035	0.945	3316.91	3897.49	3897.49	3.3	No	Si
SLU 66	7.17	-159.63	-11035	-0.0000681	0.0004492	0.0035	0.945	3553.03	4197.71	4197.71	26.3	No	Si
SLU 71	5.07	-1194.73	-9857	-0.0001	0.0004492	0.0035	0.945	3332.16	3918.6	3918.6	3.28	No	Si
SLU 71	7.17	-151.15	-11110	-0.0000682	0.0004492	0.0035	0.945	3565.76	4213.68	4213.68	27.88	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 8	5.07	1151.08	1359	0.196188	0.0006738	0.0035	0.756		0	0	0		No
SLV 8	7.17	-2454.29	-2723	-0.0053379	0.0006738	0.0035	0.756		1451.35	1451.35	0.59		No
SLV 12	5.07	18.58	41	0.0074586	0.0006738	0.0035	0.756		0	0	0		No
SLV 12	7.17	-422.8	1071	0.2118358	0.0006738	0.0035	0.756		0	0	0		No
SLV 16	5.07	-2138.73	-6736	-0.0001564	0.0006738	0.0035	0.756		3081.93	3081.93	1.44		Si
SLV 16	7.17	2538.99	-75	-0.0759668	0.0006738	0.0035	0.756		94.09	94.09	0.04		No
SLV 3	5.07	1201.26	-3225	-0.000113	0.0006738	0.0035	0.945		1504.13	1504.13	1.25		Si
SLV 3	7.17	-3469.46	-11872	-0.0002538	0.0006738	0.0035	0.756		4860.95	4860.95	1.4		Si
SLV 15	5.07	-2573.74	-7619	-0.0002107	0.0006738	0.0035	0.756		3411.99	3411.99	1.33		Si
SLV 15	7.17	3302.16	775	-0.1102687	0.0006738	0.0035	0.756		0	0	0		No
SLV 11	5.07	-274.3	-554	-0.0000926	0.0006738	0.0035	0.756		485.72	485.72	1.77		Si
SLV 11	7.17	91.02	1643	0	0.0006738	0.0035	0.756		0	0	0		No
SLV 14	5.07	-2916.26	-11350	-0.0001949	0.0006738	0.0035	0.756		4696.44	4696.44	1.61		Si
SLV 14	7.17	3153.04	-4732	-0.030127	0.0006738	0.0035	0.756		2133.66	2133.66	0.68		No
SLV 7	5.07	858.2	764	0.0769787	0.0006738	0.0035	0.756		0	0	0		No
SLV 7	7.17	-1940.47	-2151	-0.0036203	0.0006738	0.0035	0.756		1202.19	1202.19	0.62		No
SLV 13	5.07	-3351.27	-12233	-0.0002343	0.0006738	0.0035	0.756		4974.1	4974.1	1.48		Si
SLV 13	7.17	3916.21	-3882	-0.0614049	0.0006738	0.0035	0.756		1781.89	1781.89	0.46		No
SLV 4	5.07	1636.27	-2343	-0.0168151	0.0006738	0.0035	0.756		1121.96	1121.96	0.69		No
SLV 4	7.17	-4232.64	-12722	-0.0003851	0.0006738	0.0035	0.756		5124	5124	1.21		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	5.07	-1225.21	-10493	-8837	-964	0.945	0.945	-31169	10833	3448	40441	10188	2410	12598	No	13.06	Si
SLU 74	7.17	-247.12	-12280	-10341	760	0.945	0.945	-36477	10833	3849	40441	10188	2410	12598	No	16.57	Si
SLU 76	5.07	-1238.72	-10542	-8877	-960	0.945	0.945	-31314	10833	3459	40441	10188	2410	12598	No	13.13	Si
SLU 76	7.17	-219.63	-12288	-10348	693	0.945	0.945	-36501	10833	3851	40441	10188	2410	12598	No	18.19	Si
SLU 70	5.07	-1224.74	-10046	-8459	-962	0.945	0.945	-29839	10833	3348	40441	10188	2410	12598	No	13.09	Si
SLU 70	7.17	-133.41	-11315	-9528	483	0.945	0.945	-33609	10833	3633	40441	10188	2410	12598	No	26.11	Si
SLU 77	5.07	-1252.43	-10667	-8983	-986	0.945	0.945	-31686	10833	3487	40441	10188	2410	12598	No	12.78	Si
SLU 77	7.17	-237.87	-12480	-10509	747	0.945	0.945	-37070	10833	3894	40441	10188	2410	12598	No	16.86	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	5.07	-1230.38	-10698	-9009	-966	0.945	0.945	-31779	10833	3494	40441	10188	2410	12598	No	13.05	Si
SLU 83	7.17	-285.4	-12689	-10685	856	0.945	0.945	-37691	10833	3941	40441	10188	2410	12598	No	14.72	Si
SLU 75	5.07	-1241.53	-10582	-8911	-968	0.945	0.945	-31433	10833	3468	40441	10188	2410	12598	No	13.02	Si
SLU 75	7.17	-230.16	-12360	-10408	720	0.945	0.945	-36714	10833	3867	40441	10188	2410	12598	No	17.49	Si
SLU 79	5.07	-1238.74	-10568	-8899	-975	0.945	0.945	-31391	10833	3465	40441	10188	2410	12598	No	12.91	Si
SLU 79	7.17	-238.65	-12355	-10404	746	0.945	0.945	-36699	10833	3866	40441	10188	2410	12598	No	16.88	Si
SLU 80	5.07	-1255.07	-10657	-8974	-979	0.945	0.945	-31655	10833	3485	40441	10188	2410	12598	No	12.87	Si
SLU 80	7.17	-221.69	-12435	-10471	706	0.945	0.945	-36936	10833	3884	40441	10188	2410	12598	No	17.84	Si
SLU 78	5.07	-1268.76	-10756	-9058	-989	0.945	0.945	-31951	10833	3507	40441	10188	2410	12598	No	12.73	Si
SLU 78	7.17	-220.91	-12560	-10577	707	0.945	0.945	-37308	10833	3912	40441	10188	2410	12598	No	17.82	Si
SLU 84	5.07	-1246.7	-10787	-9084	-969	0.945	0.945	-32043	10833	3514	40441	10188	2410	12598	No	13	Si
SLU 84	7.17	-268.44	-12769	-10753	815	0.945	0.945	-37928	10833	3959	40441	10188	2410	12598	No	15.45	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	5.07	1636.27	-2343	-1973	1337	0.756	0	0	0	0	40441	12226	1928	14154		10.58	Si
SLV 4	7.17	-4232.64	-12722	-10713	8629	0.756	0.4194	0	0	0	40441	12226	1928	14154		1.64	Si
SLV 13	5.07	-3351.27	-12233	-10301	-2693	0.756	0.5956	0	0	0	40441	12226	1928	14154		5.26	Si
SLV 13	7.17	3916.21	-3882	-3269	-7667	0.756	0	0	0	0	40441	12226	1928	14154		1.85	Si
SLV 14	5.07	-2916.26	-11350	-9558	-2365	0.756	0.6467	0	0	0	40441	12226	1928	14154		5.99	Si
SLV 14	7.17	3153.04	-4732	-3985	-6140	0.756	0	0	0	0	40441	12226	1928	14154		2.3	Si
SLV 1	5.07	423.72	-7839	-6602	714	0.945	0.945	-23286	16250	4607	40441	15282	2410	17692		24.79	Si
SLV 1	7.17	-2855.41	-16529	-13919	5498	0.945	0.8992	-52927	16250	5349	40441	15282	2410	17692		3.22	Si
SLV 8	5.07	1151.08	1359	1144	436	0.756	0	0	0	0	40441	12226	1928	14154		32.44	Si
SLV 8	7.17	-2454.29	-2723	-2293	5645	0.756	0	0	0	0	40441	12226	1928	14154		2.51	Si
SLV 16	5.07	-2138.73	-6736	-5672	-2069	0.756	0.465	0	0	0	40441	12226	1928	14154		6.84	Si
SLV 16	7.17	2538.99	-75	-63	-4535	0.756	0	0	0	0	40441	12226	1928	14154		3.12	Si
SLV 3	5.07	1201.26	-3225	-2716	1009	0.945	0.3001	-9580	14416	2362	40441	15282	2410	17692		17.53	Si
SLV 3	7.17	-3469.46	-11872	-9997	7103	0.756	0.5408	0	0	0	40441	12226	1928	14154		1.99	Si
SLV 2	5.07	858.74	-6957	-5858	1042	0.945	0.945	-20665	16250	4607	40441	15282	2410	17692		16.98	Si
SLV 2	7.17	-3618.59	-17379	-14635	7024	0.945	0.7929	-63517	16250	5540	40441	15282	2410	17692		2.52	Si
SLV 7	5.07	858.2	764	644	215	0.756	0	0	0	0	40441	12226	1928	14154		65.72	Si
SLV 7	7.17	-1940.47	-2151	-1811	4618	0.756	0	0	0	0	40441	12226	1928	14154		3.06	Si
SLV 15	5.07	-2573.74	-7619	-6416	-2397	0.756	0.404	0	0	0	40441	12226	1928	14154		5.9	Si
SLV 15	7.17	3302.16	775	653	-6061	0.756	0	0	0	0	40441	12226	1928	14154		2.34	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	215625	0.39	0	729	106.9	0	0	No, Trazione
SLV 15	215625	0.39	0	170	106.9	0	0	No, Trazione
SLV 11	215625	0.39	0	1236	106.9	0	0	No, Trazione
SLV 16	215625	0.39	0	-583	106.9	0	0	No, e>t/2
SLV 7	215625	0.39	7880	-2234	106.9	320.7	3	Si
SLV 8	215625	0.39	9669	-2741	106.9	389.48	3.64	Si
SLV 13	215625	0.39	15234	-4319	106.9	593.97	5.56	Si
SLV 14	215625	0.39	17890	-5072	106.9	686.52	6.42	Si
SLV 3	215625	0.39	40202	-11397	106.9	1334.6	12.48	Si
SLV 4	215625	0.39	42858	-12150	106.9	1396.37	13.06	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 9	-10606	-15934	-107	0.497	1221.5	0.965	7.49141	4.5984	Si
SLV 10	-10200	-15340	-106	0.514	1180.2	0.964	7.75214	4.5984	Si
SLV 13	-8670	-12233	-32	0.597	1024.6	0.959	9.05099	5.36881	Si
SLV 5	-9634	-14616	-107	0.539	1122.6	0.962	8.14636	4.5984	Si
SLV 14	-8067	-11350	-31	0.635	963.3	0.957	9.6419	5.36881	Si
SLV 6	-9227	-14022	-107	0.559	1081.3	0.961	8.45994	4.5984	Si
SLV 15	-5954	-7619	31	0.817	748.7	0.946	12.55529	5.36881	Si
SLV 1	-5429	-7839	-35	0.881	695.5	0.942	13.58289	5.36881	Si
SLV 16	-5351	-6736	32	0.892	687.6	0.942	13.76024	5.36881	Si
SLV 2	-4826	-6957	-34	0.969	634.4	0.938	15.02085	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.242	SLU 70	Si
V_SLU	12.732	SLU 78	Si
PF_SLV	0	SLV 7	No
V_SLV	1.64	SLV 4	Si
PFFP_SLV	0	SLV 15	No
R_SLV	1.629	SLV 9	Si

Maschio 115

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	-3.359	-15.433	-3.359	L5	L6	1.67	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 70	5.07	-320.54	-14109	-0.0000476	0.0004492	0.0035	1.67	9065.52	10473.43	10473.43	32.67	No	Si
SLU 70	7.17	1472.34	-15500	-0.0000657	0.0004492	0.0035	1.67	9665.64	10527.96	10527.96	7.15	No	Si
SLU 80	5.07	-373.4	-15051	-0.0000513	0.0004492	0.0035	1.67	9477.54	10990.93	10990.93	29.43	No	Si
SLU 80	7.17	1552.93	-16605	-0.0000705	0.0004492	0.0035	1.67	10104.23	11077.29	11077.29	7.13	No	Si
SLU 72	5.07	-319.08	-13965	-0.0000471	0.0004492	0.0035	1.67	9000.49	10391.14	10391.14	32.57	No	Si
SLU 72	7.17	1454.2	-15327	-0.0000649	0.0004492	0.0035	1.67	9593.82	10442.33	10442.33	7.18	No	Si
SLU 28	5.07	-350.11	-11636	-0.0000398	0.0004492	0.0035	1.67	7869.46	9031.74	9031.74	25.8	No	Si
SLU 28	7.17	1304.04	-13093	-0.0000555	0.0004492	0.0035	1.67	8594.45	9322.07	9322.07	7.15	No	Si
SLU 36	5.07	-404.43	-12723	-0.0000439	0.0004492	0.0035	1.67	8415.5	9684.18	9684.18	23.95	No	Si
SLU 36	7.17	1402.76	-14371	-0.000061	0.0004492	0.0035	1.67	9182.74	9973.57	9973.57	7.11	No	Si
SLU 38	5.07	-402.97	-12579	-0.0000435	0.0004492	0.0035	1.67	8345.03	9597.51	9597.51	23.82	No	Si
SLU 38	7.17	1384.63	-14198	-0.0000602	0.0004492	0.0035	1.67	9105.58	9889.35	9889.35	7.14	No	Si
SLU 76	5.07	-366.23	-14900	-0.0000507	0.0004492	0.0035	1.67	9413.37	10911.14	10911.14	29.79	No	Si
SLU 76	7.17	1529.98	-16389	-0.0000695	0.0004492	0.0035	1.67	10021.14	10969.24	10969.24	7.17	No	Si
SLU 26	5.07	-341.48	-11342	-0.0000387	0.0004492	0.0035	1.67	7715.95	8856.46	8856.46	25.94	No	Si
SLU 26	7.17	1262.95	-12704	-0.0000537	0.0004492	0.0035	1.67	8406.46	9062.88	9062.88	7.18	No	Si
SLU 78	5.07	-374.86	-15195	-0.0000518	0.0004492	0.0035	1.67	9538.31	11067.45	11067.45	29.52	No	Si
SLU 78	7.17	1571.07	-16778	-0.0000714	0.0004492	0.0035	1.67	10170.01	11164.28	11164.28	7.11	No	Si
SLU 30	5.07	-348.65	-11493	-0.0000393	0.0004492	0.0035	1.67	7794.73	8946.37	8946.37	25.66	No	Si
SLU 30	7.17	1285.9	-12920	-0.0000547	0.0004492	0.0035	1.67	8511.25	9206.47	9206.47	7.16	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	5.07	-1282.36	1094	0.1250099	0.0006738	0.0035	1.336		0	0	0		No
SLV 12	7.17	295.36	-1635	-0.0000079	0.0006738	0.0035	1.67		1509.68	1509.68	5.11		Si
SLV 15	5.07	-6350.15	-3310	-0.0047964	0.0006738	0.0035	1.336		3351.6	3351.6	0.53		No
SLV 15	7.17	6036.6	-14586	-0.0001221	0.0006738	0.0035	1.67		10624.74	10624.74	1.76		Si
SLV 14	5.07	-5443.59	-10125	-0.0001197	0.0006738	0.0035	1.336		8387.27	8387.27	1.54		Si
SLV 14	7.17	6041.67	-19576	-0.000132	0.0006738	0.0035	1.67		13825.6	13825.6	2.29		Si
SLV 13	5.07	-6508.42	-9622	-0.0002244	0.0006738	0.0035	1.336		8036.35	8036.35	1.23		Si
SLV 13	7.17	7143.08	-21076	-0.0001529	0.0006738	0.0035	1.67		14562.27	14562.27	2.04		Si
SLV 4	5.07	6121.15	-11068	-0.00014	0.0006738	0.0035	1.67		8417.57	8417.57	1.38		Si
SLV 4	7.17	-5147.32	-1303	-0.0049505	0.0006738	0.0035	1.336		1758.9	1758.9	0.34		No
SLV 8	5.07	2139.58	-1083	-0.0109641	0.0006738	0.0035	1.336		1060.84	1060.84	0.5		No
SLV 8	7.17	-2729.4	1899	0.2180126	0.0006738	0.0035	1.336		0	0	0		No
SLV 16	5.07	-5285.32	-3812	-0.0024156	0.0006738	0.0035	1.336		3742.96	3742.96	0.71		No
SLV 16	7.17	4935.2	-13086	-0.0000993	0.0006738	0.0035	1.67		9676.68	9676.68	1.96		Si
SLV 3	5.07	5056.32	-10566	-0.0001032	0.0006738	0.0035	1.67		8107.02	8107.02	1.6		Si
SLV 3	7.17	-4045.91	-2803	-0.001621	0.0006738	0.0035	1.336		2952.48	2952.48	0.73		No
SLV 11	5.07	-1999.27	1432	0.1642927	0.0006738	0.0035	1.336		0	0	0		No
SLV 11	7.17	1036.9	-2645	-0.0000197	0.0006738	0.0035	1.67		2319.37	2319.37	2.24		Si
SLV 7	5.07	1422.67	-744	-0.0066613	0.0006738	0.0035	1.336		785.19	785.19	0.55		No
SLV 7	7.17	-1987.86	890	0.1034159	0.0006738	0.0035	1.336		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	5.07	-384.41	-15292	-12877	-2294	1.67	1.67	-25703	10833	5428	40441	18005	4259	22263	No	9.7	Si
SLU 84	7.17	1553.44	-16862	-14199	-2508	1.67	1.67	-28342	10833	5716	40441	18005	4259	22263	No	8.88	Si
SLU 79	5.07	-365.75	-14940	-12581	-2295	1.67	1.67	-25111	10833	5428	40441	18005	4259	22263	No	9.7	Si
SLU 79	7.17	1524.65	-16492	-13888	-2496	1.67	1.67	-27721	10833	5633	40441	18005	4259	22263	No	8.92	Si
SLU 77	5.07	-367.21	-15084	-12702	-2315	1.67	1.67	-25353	10833	5428	40441	18005	4259	22263	No	9.62	Si
SLU 77	7.17	1542.79	-16665	-14034	-2519	1.67	1.67	-28012	10833	5672	40441	18005	4259	22263	No	8.84	Si
SLU 83	5.07	-376.76	-15181	-12784	-2278	1.67	1.67	-25516	10833	5428	40441	18005	4259	22263	No	9.78	Si
SLU 83	7.17	1525.16	-16749	-14104	-2485	1.67	1.67	-28152	10833	5690	40441	18005	4259	22263	No	8.96	Si
SLU 74	5.07	-354.94	-14859	-12513	-2265	1.67	1.67	-24976	10833	5428	40441	18005	4259	22263	No	9.83	Si
SLU 74	7.17	1500.98	-16374	-13789	-2464	1.67	1.67	-27522	10833	5606	40441	18005	4259	22263	No	9.04	Si
SLU 80	5.07	-373.4	-15051	-12674	-2312	1.67	1.67	-25298	10833	5428	40441	18005	4259	22263	No	9.63	Si
SLU 80	7.17	1552.93	-16605	-13983	-2519	1.67	1.67	-27911	10833	5658	40441	18005	4259	22263	No	8.84	Si
SLU 78	5.07	-374.86	-15195	-12795	-2332	1.67	1.67	-25540	10833	5428	40441	18005	4259	22263	No	9.55	Si
SLU 78	7.17	1571.07	-16778	-14129	-2541	1.67	1.67	-28202	10833	5697	40441	18005	4259	22263	No	8.76	Si
SLU 75	5.07	-362.59	-14970	-12606	-2282	1.67	1.67	-25162	10833	5428	40441	18005	4259	22263	No	9.76	Si
SLU 75	7.17	1529.26	-16487	-13884	-2487	1.67	1.67	-27712	10833	5632	40441	18005	4259	22263	No	8.95	Si
SLU 82	5.07	-372.15	-15067	-12688	-2244	1.67	1.67	-25326	10833	5428	40441	18005	4259	22263	No	9.92	Si
SLU 82	7.17	1511.63	-16570	-13954	-2453	1.67	1.67	-27852	10833	5650	40441	18005	4259	22263	No	9.07	Si
SLU 76	5.07	-366.23	-14900	-12548	-2273	1.67	1.67	-25045	10833	5428	40441	18005	4259	22263	No	9.79	Si
SLU 76	7.17	1529.98	-16389	-13801	-2480	1.67	1.67	-27548	10833	5610	40441	18005	4259	22263	No	8.98	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 3	5.07	5056.32	-10566	-8898	6757	1.67	1.0694	-17760	16052	5267	40441	27007	4259	31266		4.63	Si
SLV 3	7.17	-4045.91	-2803	-2360	6540	1.336	0	0	0	0	40441	21606	3407	25012		3.82	Si
SLD 13	5.07	-2891.62	-9945	-8375	-5841	1.67	1.6327	-16717	15843	7760	40441	27007	4259	31266		5.35	Si
SLD 13	7.17	3609.28	-15324	-12904	-5978	1.67	1.67	-25757	16250	8141	40441	27007	4259	31266		5.23	Si
SLV 1	5.07	4898.04	-16878	-14213	6192	1.67	1.6344	-28370	16250	7968	40441	27007	4259	31266		5.05	Si
SLV 1	7.17	-2939.43	-9293	-7826	5745	1.67	1.5561	-15620	15624	7294	40441	27007	4259	31266		5.44	Si
SLV 14	5.07	-5443.59	-10125	-8526	-9842	1.336	0.892	0	0	0	40441	21606	3407	25012		2.54	Si
SLV 14	7.17	6041.67	-19576	-16485	-9884	1.67	1.5791	-32905	16250	7698	40441	27007	4259	31266		3.16	Si
SLV 2	5.07	5962.87	-17380	-14636	7966	1.67	1.4758	-29214	16250	7194	40441	27007	4259	31266		3.92	Si
SLV 2	7.17	-4040.84	-7793	-6563	7631	1.336	0.9494	0	0	0	40441	21606	3407	25012		3.28	Si
SLV 9	5.07	-2526.86	-19608	-16512	-5752	1.67	1.67	-32958	16250	8141	40441	27007	4259	31266		5.44	Si
SLV 9	7.17	4725.16	-24279	-20445	-6260	1.67	1.67	-40809	16250	8346	40441	27007	4259	31266		4.99	Si
SLV 16	5.07	-5285.32	-3812	-3211	-9277	1.336	0	0	0	0	40441	21606	3407	25012		2.7	Si
SLV 16	7.17	4935.2	-13086	-11020	-9088	1.67	1.3736	-21996	16250	6696	40441	27007	4259	31266		3.44	Si
SLV 4	5.07	6121.15	-11068	-9321	8531	1.67	0.8459	-18604	16221	5380	40441	27007	4259	31266		3.66	Si
SLV 4	7.17	-5147.32	-1303	-1097	8427	1.336	0	0	0	0	40441	21606	3407	25012		2.97	Si
SLV 13	5.07	-6508.42	-9622	-8103	-11616	1.336	0.4758	0	0	0	40441	21606	3407	25012		2.15	Si
SLV 13	7.17	7143.08	-21076	-17748	-11770	1.67	1.4882	-35426	16250	7627	40441	27007	4259	31266		2.66	Si
SLV 15	5.07	-6350.15	-3310	-2787	-11051	1.336	0	0	0	0	40441	21606	3407	25012		2.26	Si
SLV 15	7.17	6036.6	-14586	-12283	-10974	1.67	1.2634	-24517	16250	6170	40441	27007	4259	31266		2.85	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 8	215625	0.39	0	1554	188.91	0	0	No, Trazione
SLV 12	215625	0.39	0	-907	188.91	0	0	No, e>t/2
SLV 7	215625	0.39	0	804	188.91	0	0	No, Trazione
SLV 11	215625	0.39	3307	-1657	188.91	244.04	1.29	Si
SLV 4	215625	0.39	6158	-3085	188.91	447.2	2.37	Si
SLV 3	215625	0.39	8381	-4199	188.91	601.02	3.18	Si
SLV 2	215625	0.39	19317	-9678	188.91	1298.67	6.87	Si
SLV 1	215625	0.39	21540	-10792	188.91	1428.49	7.56	Si
SLV 16	215625	0.39	22530	-11287	188.91	1484.99	7.86	Si
SLV 15	215625	0.39	24753	-12401	188.91	1608.96	8.52	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-15022	-22123	-338	0.59	1780.1	0.958	8.95282	4.5984	Si
SLV 5	-14865	-21785	-335	0.596	1764.2	0.958	9.03753	4.5984	Si
SLV 10	-14230	-19946	-226	0.625	1699.6	0.957	9.4933	4.5984	Si
SLV 9	-14073	-19608	-223	0.631	1683.7	0.956	9.58802	4.5984	Si
SLV 2	-11708	-17380	-257	0.733	1443.4	0.95	11.21483	5.36881	Si
SLV 1	-11475	-16878	-253	0.745	1419.8	0.949	11.41627	5.36881	Si
SLV 14	-9069	-10125	116	0.917	1175.8	0.94	14.17518	5.36881	Si
SLV 13	-8836	-9622	120	0.936	1152.2	0.939	14.48665	5.36881	Si
SLV 4	-8043	-11068	-75	1.014	1072	0.935	15.75996	5.36881	Si
SLV 3	-7810	-10566	-71	1.039	1048.5	0.934	16.16042	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.106	SLU 78	Si
V_SLU	8.761	SLU 78	Si
PF_SLV	0	SLV 7	No
V_SLV	2.153	SLV 13	Si
PFFP_SLV	0	SLV 8	No
R_SLV	1.947	SLV 6	Si

Maschio 119

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-15.058	2.206	-15.058	6.651	L5	L6	4.445	0.16	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 82	5.07	-17884.88	-37769	-0.0001193	0.0004492	0.0035	4.445	47458.31	78431.05	78431.05	4.39	No	Si
SLU 82	7.17	-11776.87	-33997	-0.0000943	0.0004492	0.0035	4.445	45998.46	73048.38	73048.38	6.2	No	Si
SLU 78	5.07	-17606.89	-38203	-0.0001195	0.0004492	0.0035	4.445	47579.7	79043.81	79043.81	4.49	No	Si
SLU 78	7.17	-11652.83	-34432	-0.0000949	0.0004492	0.0035	4.445	46203.64	73705.61	73705.61	6.33	No	Si
SLU 84	5.07	-18009.67	-38401	-0.000121	0.0004492	0.0035	4.445	47631.82	79323.09	79323.09	4.4	No	Si
SLU 84	7.17	-11960.47	-34630	-0.0000961	0.0004492	0.0035	4.445	46293.96	74001.87	74001.87	6.19	No	Si
SLU 73	5.07	-17457.92	-36367	-0.000115	0.0004492	0.0035	4.445	47000.69	76453.28	76453.28	4.38	No	Si
SLU 73	7.17	-11015.32	-32595	-0.0000893	0.0004492	0.0035	4.445	45270.37	70927.11	70927.11	6.44	No	Si
SLU 52	5.07	-15589.6	-32276	-0.000101	0.0004492	0.0035	4.445	45090.22	70443.28	70443.28	4.52	No	Si
SLU 52	7.17	-9480.8	-28705	-0.0000772	0.0004492	0.0035	4.445	42723.18	64964.06	64964.06	6.85	No	Si
SLU 83	5.07	-17646.84	-38783	-0.0001209	0.0004492	0.0035	4.445	47726.65	79861.5	79861.5	4.53	No	Si
SLU 83	7.17	-12206.97	-35011	-0.0000976	0.0004492	0.0035	4.445	46462.41	74540.27	74540.27	6.11	No	Si
SLU 75	5.07	-17482.1	-37571	-0.0001177	0.0004492	0.0035	4.445	47399.79	78151.76	78151.76	4.47	No	Si
SLU 75	7.17	-11469.22	-33799	-0.000093	0.0004492	0.0035	4.445	45901.74	72748.83	72748.83	6.34	No	Si
SLU 80	5.07	-17465.61	-37886	-0.0001184	0.0004492	0.0035	4.445	47492	78596.31	78596.31	4.5	No	Si
SLU 80	7.17	-11546.85	-34114	-0.0000939	0.0004492	0.0035	4.445	46054.75	73225.64	73225.64	6.34	No	Si
SLU 76	5.07	-17582.71	-36999	-0.0001167	0.0004492	0.0035	4.445	47219.54	77345.33	77345.33	4.4	No	Si
SLU 76	7.17	-11198.92	-33228	-0.0000911	0.0004492	0.0035	4.445	45611.21	71883.88	71883.88	6.42	No	Si
SLU 81	5.07	-17522.05	-38151	-0.0001191	0.0004492	0.0035	4.445	47565.48	78969.45	78969.45	4.51	No	Si
SLU 81	7.17	-12023.37	-34379	-0.0000958	0.0004492	0.0035	4.445	46179.26	73625.85	73625.85	6.12	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	5.07	-50466.6	11341	-0.0026397	0.0006738	0.0035	3.556		0	0	0		No
SLV 6	7.17	14276.93	14211	-0.02295	0.0006738	0.0035	4.445		0	0	0		No
SLD 6	5.07	-27274.49	-11240	-0.0004756	0.0006738	0.0035	3.556		34620.18	34620.18	1.27		Si
SLD 6	7.17	1030.44	-8378	-0.0000171	0.0006738	0.0035	4.445		19715.63	19715.63	19.13		Si
SLV 2	5.07	-27766.29	-13323	-0.0003207	0.0006738	0.0035	3.556		38718.24	38718.24	1.39		Si
SLV 2	7.17	-173.67	-10432	-0.0000187	0.0006738	0.0035	4.445		33029.64	33029.64	190.18		Si
SLD 10	5.07	-26034.93	-11719	-0.0003634	0.0006738	0.0035	3.556		35561.67	35561.67	1.37		Si
SLD 10	7.17	705.29	-8865	-0.0000172	0.0006738	0.0035	4.445		20710.89	20710.89	29.37		Si
SLV 1	5.07	-27844.79	-13239	-0.0003318	0.0006738	0.0035	3.556		38554.6	38554.6	1.38		Si
SLV 1	7.17	241.12	-10349	-0.0000188	0.0006738	0.0035	4.445		23720.11	23720.11	98.37		Si
SLV 5	5.07	-50519.45	11397	-0.0026428	0.0006738	0.0035	3.556		0	0	0		No

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	7.17	14556.2	14267	-0.0231866	0.0006738	0.0035	4.445		0	0	0		No
SLV 9	5.07	-47619.36	10277	-0.0024039	0.0006738	0.0035	3.556		0	0	0		No
SLV 9	7.17	13795.61	13129	-0.0215662	0.0006738	0.0035	4.445		0	0	0		No
SLD 5	5.07	-27296.52	-11217	-0.0004789	0.0006738	0.0035	3.556		34574.25	34574.25	1.27		Si
SLD 5	7.17	1146.85	-8355	-0.0000174	0.0006738	0.0035	4.445		19667.55	19667.55	17.15		Si
SLD 9	5.07	-26056.96	-11695	-0.0003667	0.0006738	0.0035	3.556		35515.75	35515.75	1.36		Si
SLD 9	7.17	821.7	-8841	-0.0000175	0.0006738	0.0035	4.445		20663.58	20663.58	25.15		Si
SLV 10	5.07	-47566.51	10221	-0.0024009	0.0006738	0.0035	3.556		0	0	0		No
SLV 10	7.17	13516.34	13073	-0.0213285	0.0006738	0.0035	4.445		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 65	5.07	-15897.28	-33690	-19781	-2961	4.445	4.445	-27814	10833	12021	115546	25559	22670	48228	No	16.29	Si
SLU 65	7.17	-9621.81	-29918	-17567	-2961	4.445	4.445	-24700	10833	11135	115546	25559	22670	48228	No	16.29	Si
SLU 73	5.07	-17457.92	-36367	-21353	-3040	4.445	4.445	-30024	10833	12649	115546	25559	22670	48228	No	15.86	Si
SLU 73	7.17	-11015.32	-32595	-19139	-3040	4.445	4.445	-26910	10833	11764	115546	25559	22670	48228	No	15.86	Si
SLU 55	5.07	-15714.39	-32908	-19322	-2852	4.445	4.445	-27168	10833	11837	115546	25559	22670	48228	No	16.91	Si
SLU 55	7.17	-9664.4	-29337	-17225	-2852	4.445	4.445	-24220	10833	10998	115546	25559	22670	48228	No	16.91	Si
SLU 82	5.07	-17884.88	-37769	-22176	-2881	4.445	4.445	-31182	10833	12979	115546	25559	22670	48228	No	16.74	Si
SLU 82	7.17	-11776.87	-33997	-19962	-2881	4.445	4.445	-28068	10833	12093	115546	25559	22670	48228	No	16.74	Si
SLU 68	5.07	-16022.07	-34322	-20152	-2933	4.445	4.445	-28336	10833	12169	115546	25559	22670	48228	No	16.45	Si
SLU 68	7.17	-9805.41	-30550	-17938	-2933	4.445	4.445	-25222	10833	11283	115546	25559	22670	48228	No	16.45	Si
SLU 52	5.07	-15589.6	-32276	-18951	-2880	4.445	4.445	-26646	10833	11688	115546	25559	22670	48228	No	16.74	Si
SLU 52	7.17	-9480.8	-28705	-16854	-2880	4.445	4.445	-23698	10833	10850	115546	25559	22670	48228	No	16.74	Si
SLU 78	5.07	-17606.89	-38203	-22431	-2808	4.445	4.445	-31540	10833	13081	115546	25559	22670	48228	No	17.18	Si
SLU 78	7.17	-11652.83	-34432	-20217	-2808	4.445	4.445	-28426	10833	12195	115546	25559	22670	48228	No	17.18	Si
SLU 76	5.07	-17582.71	-36999	-21724	-3012	4.445	4.445	-30546	10833	12798	115546	25559	22670	48228	No	16.01	Si
SLU 76	7.17	-11198.92	-33228	-19510	-3012	4.445	4.445	-27432	10833	11912	115546	25559	22670	48228	No	16.01	Si
SLU 75	5.07	-17482.1	-37571	-22060	-2836	4.445	4.445	-31018	10833	12932	115546	25559	22670	48228	No	17.01	Si
SLU 75	7.17	-11469.22	-33799	-19845	-2836	4.445	4.445	-27904	10833	12046	115546	25559	22670	48228	No	17.01	Si
SLU 84	5.07	-18009.67	-38401	-22548	-2853	4.445	4.445	-31704	10833	13127	115546	25559	22670	48228	No	16.91	Si
SLU 84	7.17	-11960.47	-34630	-20333	-2853	4.445	4.445	-28590	10833	12241	115546	25559	22670	48228	No	16.91	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	5.07	23968.92	-62762	-36851	25566	4.445	4.445	-51815	16250	20902	115546	38338	22670	61008		2.39	Si
SLV 7	7.17	-29072.95	-59899	-35170	25018	4.445	4.445	-49451	16250	20230	115546	38338	22670	61008		2.44	Si
SLV 8	5.07	24021.77	-62818	-36884	25724	4.445	4.445	-51861	16250	20916	115546	38338	22670	61008		2.37	Si
SLV 8	7.17	-29352.22	-59955	-35203	25176	4.445	4.445	-49498	16250	20243	115546	38338	22670	61008		2.42	Si
SLV 5	5.07	-50519.45	11397	6692	-31258	3.556	0	0	0	0	115546	30671	18136	48806		1.56	Si
SLV 5	7.17	14556.2	14267	8377	-30713	4.445	3.6067	356754	0	6163	115546	38338	22670	61008		1.99	Si
SLD 5	5.07	-27296.52	-11217	-6586	-13641	3.556	0	0	0	0	115546	30671	18136	48806		3.58	Si
SLD 5	7.17	1146.85	-8355	-4906	-13425	4.445	4.445	-6898	13880	9871	115546	38338	22670	61008		4.54	Si
SLV 9	5.07	-47619.36	10277	6034	-29510	3.556	0	0	0	0	115546	30671	18136	48806		1.65	Si
SLV 9	7.17	13795.61	13129	7709	-28962	4.445	3.5151	327994	0	6163	115546	38338	22670	61008		2.11	Si
SLV 12	5.07	26921.86	-63937	-37541	27472	4.445	4.445	-52785	16250	21178	115546	38338	22670	61008		2.22	Si
SLV 12	7.17	-30112.81	-61093	-35871	26927	4.445	4.445	-50438	16250	20511	115546	38338	22670	61008		2.27	Si
SLV 11	5.07	26869.01	-63881	-37508	27314	4.445	4.445	-52739	16250	21165	115546	38338	22670	61008		2.23	Si
SLV 11	7.17	-29833.54	-61037	-35838	26769	4.445	4.445	-50391	16250	20497	115546	38338	22670	61008		2.28	Si
SLV 6	5.07	-50466.6	11341	6659	-31100	3.556	0	0	0	0	115546	30671	18136	48806		1.57	Si
SLV 6	7.17	14276.93	14211	8344	-30555	4.445	3.6536	355781	0	6163	115546	38338	22670	61008		2	Si
SLV 10	5.07	-47566.51	10221	6001	-29352	3.556	0	0	0	0	115546	30671	18136	48806		1.66	Si
SLV 10	7.17	13516.34	13073	7676	-28804	4.445	3.5657	327029	0	6163	115546	38338	22670	61008		2.12	Si
SLD 6	5.07	-27274.49	-11240	-6600	-13575	3.556	0	0	0	0	115546	30671	18136	48806		3.6	Si
SLD 6	7.17	1030.44	-8378	-4919	-13359	4.445	4.445	-6917	13883	9874	115546	38338	22670	61008		4.57	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 6.845 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 6	13571	0.39	288.37	0	0	0	0	No
SLV 9	12486	0.39	288.37	0	0	0	0	No
SLV 10	12431	0.39	288.37	0	0	0	0	No
SLV 5	13627	0.39	288.37	0	0	0	0	No
SLV 1	-10932	0.39	288.37	801.2	1371.87	1086.54	3.77	Si
SLV 2	-11015	0.39	288.37	806.73	1379.75	1093.24	3.79	Si
SLV 13	-14733	0.39	288.37	1045.44	1729.56	1387.5	4.81	Si
SLV 14	-14816	0.39	288.37	1050.59	1737.36	1393.98	4.83	Si
SLD 5	-8952	0.16	119.33	666.99	1183.89	925.44	7.76	Si
SLD 6	-8976	0.16	119.33	668.6	1186.11	927.36	7.77	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.03 Ta = 0.1315

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-37774	-63881	276	0.64	4201.4	0.974	9.55623	6.30013	Si
SLV 12	-37737	-63937	276	0.641	4197.7	0.974	9.5649	6.30013	Si
SLV 7	-37497	-62762	-311	0.644	4173.2	0.974	9.60869	6.30013	Si
SLV 8	-37461	-62818	-311	0.644	4169.5	0.974	9.61747	6.30013	Si
SLV 15	-24444	-39218	972	0.923	2844.3	0.963	13.93026	8.62629	Si
SLV 16	-24389	-39301	972	0.924	2838.8	0.962	13.959	8.62629	Si
SLV 3	-23521	-35487	-983	0.954	2750.4	0.961	14.4277	8.62629	Si
SLV 4	-23466	-35570	-983	0.956	2744.9	0.961	14.45859	8.62629	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-12733	-16970	983	1.624	1654.9	0.94	25.12323	8.62629	Si
SLV 14	-12679	-17054	983	1.63	1649.4	0.939	25.21806	8.62629	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.379	SLU 73	Si
V_SLU	15.864	SLU 73	Si
PF_SLV	0	SLV 5	No
V_SLV	1.561	SLV 5	Si
PFFP_SLV	0	SLV 5	No
R_SLV	1.517	SLV 11	Si

Maschio 120

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	-4.784	-13.763	-3.314	L5	L6	1.47	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 78	5.07	-602.94	-16767	-0.0000713	0.0003743	0.0035	1.47	7721.64	9409.93	9409.93	15.61	No	Si
SLU 78	8.62	21.68	-11605	-0.0000416	0.0003743	0.0035	1.47	6325.09	6959.24	6959.24	321.01	No	Si
SLU 76	5.07	-604.57	-16516	-0.0000702	0.0003743	0.0035	1.47	7673.85	9316.83	9316.83	15.41	No	Si
SLU 76	8.62	15.95	-11333	-0.0000405	0.0003743	0.0035	1.47	6227.1	6846.13	6846.13	429.29	No	Si
SLU 81	5.07	-599.62	-16787	-0.0000713	0.0003743	0.0035	1.47	7725.25	9417.16	9417.16	15.71	No	Si
SLU 81	8.62	0.12	-11499	-0.0000409	0.0003743	0.0035	1.47	6287.09	6915.06	6915.06	56671.69	No	Si
SLU 84	5.07	-622.86	-17105	-0.000073	0.0003743	0.0035	1.47	7782.66	9536.56	9536.56	15.31	No	Si
SLU 84	8.62	25.32	-11734	-0.0000422	0.0003743	0.0035	1.47	6370.56	7012.82	7012.82	277.02	No	Si
SLU 83	5.07	-605.04	-16986	-0.0000722	0.0003743	0.0035	1.47	7761.56	9491.71	9491.71	15.69	No	Si
SLU 83	8.62	11.33	-11682	-0.0000418	0.0003743	0.0035	1.47	6352.42	6991.34	6991.34	617.09	No	Si
SLU 80	5.07	-598.1	-16636	-0.0000706	0.0003743	0.0035	1.47	7696.9	9361.12	9361.12	15.65	No	Si
SLU 80	8.62	17.83	-11482	-0.0000411	0.0003743	0.0035	1.47	6281.1	6908.12	6908.12	387.42	No	Si
SLU 82	5.07	-617.45	-16906	-0.0000721	0.0003743	0.0035	1.47	7747.12	9461.67	9461.67	15.32	No	Si
SLU 82	8.62	14.11	-11550	-0.0000413	0.0003743	0.0035	1.47	6305.54	6936.44	6936.44	491.67	No	Si
SLU 75	5.07	-597.52	-16568	-0.0000703	0.0003743	0.0035	1.47	7683.9	9336.01	9336.01	15.62	No	Si
SLU 75	8.62	10.47	-11421	-0.0000408	0.0003743	0.0035	1.47	6259.3	6882.97	6882.97	657.29	No	Si
SLU 42	5.07	-548.58	-14588	-0.0000614	0.0003743	0.0035	1.47	7238.44	8633.15	8633.15	15.74	No	Si
SLU 42	8.62	55.41	-10038	-0.0000362	0.0003743	0.0035	1.47	5728.33	6249.85	6249.85	112.79	No	Si
SLU 73	5.07	-599.15	-16317	-0.0000693	0.0003743	0.0035	1.47	7634.47	9243.63	9243.63	15.43	No	Si
SLU 73	8.62	4.74	-11149	-0.0000396	0.0003743	0.0035	1.47	6159.67	6770.19	6770.19	1428.22	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	5.07	2221.48	1251	0.0996605	0.0005615	0.0035	1.176		0	0	0		No
SLV 7	8.62	-1107.51	-1453	-0.0001575	0.0005615	0.0035	1.176		1557.58	1557.58	1.41		Si
SLV 3	5.07	954.84	-6901	-0.0000371	0.0005615	0.0035	1.47		4794.67	4794.67	5.02		Si
SLV 3	8.62	-1525.3	-6131	-0.0000424	0.0005615	0.0035	1.47		4687.1	4687.1	3.07		Si
SLV 4	5.07	1041.62	-6815	-0.000038	0.0005615	0.0035	1.47		4741.18	4741.18	4.55		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 4	8.62	-1804.26	-6140	-0.000047	0.0005615	0.0035	1.47		4693.11	4693.11	2.6		Si
SLV 12	5.07	1888.86	882	0.045109	0.0005615	0.0035	1.176		0	0	0		No
SLV 12	8.62	-454.87	-1275	-0.0000111	0.0005615	0.0035	1.47		1432.32	1432.32	3.15		Si
SLV 11	5.07	1830.43	824	0.0367584	0.0005615	0.0035	1.176		0	0	0		No
SLV 11	8.62	-267.05	-1268	-0.0000079	0.0005615	0.0035	1.47		1427.82	1427.82	5.35		Si
SLV 14	5.07	-1726.47	-15639	-0.0000812	0.0005615	0.0035	1.47		10014.01	10014.01	5.8		Si
SLV 14	8.62	1440.56	-9353	-0.000053	0.0005615	0.0035	1.47		6172.91	6172.91	4.29		Si
SLV 16	5.07	-261.88	-8237	-0.000032	0.0005615	0.0035	1.47		5986.3	5986.3	22.86		Si
SLV 16	8.62	997.26	-5526	-0.0000328	0.0005615	0.0035	1.47		3923.84	3923.84	3.93		Si
SLV 15	5.07	-348.66	-8323	-0.0000336	0.0005615	0.0035	1.47		6037.83	6037.83	17.32		Si
SLV 15	8.62	1276.23	-5517	-0.0000367	0.0005615	0.0035	1.47		3917.78	3917.78	3.07		Si
SLV 13	5.07	-1813.25	-15725	-0.0000828	0.0005615	0.0035	1.47		10056.16	10056.16	5.55		Si
SLV 13	8.62	1719.52	-9344	-0.000057	0.0005615	0.0035	1.47		6167.89	6167.89	3.59		Si
SLV 8	5.07	2279.9	1309	0.1073126	0.0005615	0.0035	1.176		0	0	0		No
SLV 8	8.62	-1295.33	-1459	-0.0003039	0.0005615	0.0035	1.176		1562.06	1562.06	1.21		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	5.07	-602.94	-16767	-14120	-3686	1.47	1.47	-32018	10833	5180	40441	13206	3749	16954	No	4.6	Si
SLU 78	8.62	21.68	-11605	-9773	504	1.47	1.47	-22161	9899	4366	40441	13206	3749	16954	No	33.67	Si
SLU 75	5.07	-597.52	-16568	-13952	-3616	1.47	1.47	-31637	10833	5136	40441	13206	3749	16954	No	4.69	Si
SLU 75	8.62	10.47	-11421	-9618	508	1.47	1.47	-21810	9852	4345	40441	13206	3749	16954	No	33.34	Si
SLU 82	5.07	-617.45	-16906	-14237	-3718	1.47	1.47	-32283	10833	5212	40441	13206	3749	16954	No	4.56	Si
SLU 82	8.62	14.11	-11550	-9727	460	1.47	1.47	-22056	9885	4359	40441	13206	3749	16954	No	36.83	Si
SLU 84	5.07	-622.86	-17105	-14405	-3788	1.47	1.47	-32664	10833	5256	40441	13206	3749	16954	No	4.48	Si
SLU 84	8.62	25.32	-11734	-9881	455	1.47	1.47	-22407	9932	4380	40441	13206	3749	16954	No	37.23	Si
SLU 76	5.07	-604.57	-16516	-13908	-3635	1.47	1.47	-31538	10833	5124	40441	13206	3749	16954	No	4.66	Si
SLU 76	8.62	15.95	-11333	-9543	470	1.47	1.47	-21640	9830	4335	40441	13206	3749	16954	No	36.1	Si
SLU 83	5.07	-605.04	-16986	-14304	-3698	1.47	1.47	-32436	10833	5230	40441	13206	3749	16954	No	4.58	Si
SLU 83	8.62	11.33	-11682	-9838	512	1.47	1.47	-22308	9919	4374	40441	13206	3749	16954	No	33.11	Si
SLU 80	5.07	-598.1	-16636	-14009	-3645	1.47	1.47	-31767	10833	5151	40441	13206	3749	16954	No	4.65	Si
SLU 80	8.62	17.83	-11482	-9669	502	1.47	1.47	-21925	9868	4352	40441	13206	3749	16954	No	33.74	Si
SLU 81	5.07	-599.62	-16787	-14136	-3628	1.47	1.47	-32055	10833	5185	40441	13206	3749	16954	No	4.67	Si
SLU 81	8.62	0.12	-11499	-9683	517	1.47	1.47	-21957	9872	4354	40441	13206	3749	16954	No	32.8	Si
SLU 73	5.07	-599.15	-16317	-13740	-3565	1.47	1.47	-31157	10833	5079	40441	13206	3749	16954	No	4.76	Si
SLU 73	8.62	4.74	-11149	-9389	474	1.47	1.47	-21289	9783	4314	40441	13206	3749	16954	No	35.73	Si
SLU 77	5.07	-585.11	-16648	-14020	-3596	1.47	1.47	-31790	10833	5154	40441	13206	3749	16954	No	4.71	Si
SLU 77	8.62	7.69	-11554	-9729	560	1.47	1.47	-22062	9886	4360	40441	13206	3749	16954	No	30.26	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	5.07	-1813.25	-15725	-13242	-11370	1.47	1.47	-30027	16250	7166	40441	19808	3749	23557		2.07	Si
SLV 13	8.62	1719.52	-9344	-7868	-6586	1.47	1.47	-17842	13985	6167	40441	19808	3749	23557		3.58	Si
SLV 8	5.07	2279.9	1309	1102	9991	1.176	0	0	0	0	40441	15847	2999	18845		1.89	Si
SLV 8	8.62	-1295.33	-1459	-1229	5828	1.176	0	0	0	0	40441	15847	2999	18845		3.23	Si
SLV 9	5.07	-3051.54	-23848	-20083	-14522	1.47	1.47	-45539	16250	7478	40441	19808	3749	23557		1.62	Si
SLV 9	8.62	1210.59	-14025	-11810	-4824	1.47	1.47	-26781	15773	6956	40441	19808	3749	23557		4.88	Si
SLV 10	5.07	-2993.11	-23791	-20034	-13903	1.47	1.47	-45429	16250	7465	40441	19808	3749	23557		1.69	Si
SLV 10	8.62	1022.77	-14031	-11816	-4147	1.47	1.47	-26793	15775	6957	40441	19808	3749	23557		5.68	Si
SLV 12	5.07	1888.86	882	743	6654	1.176	0	0	0	0	40441	15847	2999	18845		2.83	Si
SLV 12	8.62	-454.87	-1275	-1074	2474	1.47	1.1346	-3157	11048	3760	40441	19808	3749	23557		9.52	Si
SLV 4	5.07	1041.62	-6815	-5739	6839	1.47	1.47	-13013	13019	5741	40441	19808	3749	23557		3.44	Si
SLV 4	8.62	-1804.26	-6140	-5171	7590	1.47	1.3234	-13090	13035	5175	40441	19808	3749	23557		3.1	Si
SLV 6	5.07	-2602.06	-23364	-19675	-10566	1.47	1.47	-44614	16250	7369	40441	19808	3749	23557		2.23	Si
SLV 6	8.62	182.31	-14215	-11971	-792	1.47	1.47	-27145	15846	6988	40441	19808	3749	23557		29.74	Si
SLV 14	5.07	-1726.47	-15639	-13170	-10450	1.47	1.47	-29863	16250	7166	40441	19808	3749	23557		2.25	Si
SLV 14	8.62	1440.56	-9353	-7876	-5579	1.47	1.47	-17860	13989	6169	40441	19808	3749	23557		4.22	Si
SLV 5	5.07	-2660.49	-23422	-19723	-11185	1.47	1.47	-44724	16250	7382	40441	19808	3749	23557		2.11	Si
SLV 5	8.62	370.13	-14209	-11965	-1470	1.47	1.47	-27132	15843	6987	40441	19808	3749	23557		16.03	Si
SLV 7	5.07	2221.48	1251	1054	9371	1.176	0	0	0	0	40441	15847	2999	18845		2.01	Si
SLV 7	8.62	-1107.51	-1453	-1223	5151	1.176	0	0	0	0	40441	15847	2999	18845		3.66	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 11	179667	0.39	0	-215	170.3	0	0	No, e>t/2
SLV 7	179667	0.39	0	-1094	170.3	0	0	No, e>t/2
SLV 12	179667	0.39	0	-404	170.3	0	0	No, e>t/2
SLV 8	179667	0.39	2910	-1283	170.3	188.82	1.11	Si
SLV 15	179667	0.39	11145	-4915	170.3	683.47	4.01	Si
SLV 16	179667	0.39	11782	-5196	170.3	719.24	4.22	Si
SLV 3	179667	0.39	17791	-7846	170.3	1039.78	6.11	Si
SLV 4	179667	0.39	18428	-8127	170.3	1071.89	6.29	Si
SLV 13	179667	0.39	22364	-9862	170.3	1262.71	7.41	Si
SLV 14	179667	0.39	23000	-10143	170.3	1292.31	7.59	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-14215	-23364	11	0.574	1667.9	0.961	8.68197	4.5984	Si
SLV 5	-14209	-23422	11	0.574	1667.2	0.961	8.68498	4.5984	Si
SLV 10	-14031	-23791	66	0.577	1649.2	0.96	8.72742	4.5984	Si
SLV 9	-14025	-23848	66	0.577	1648.5	0.96	8.73048	4.5984	Si
SLV 2	-9967	-14217	-81	0.766	1236.2	0.949	11.73984	5.36881	Si
SLV 1	-9957	-14302	-80	0.767	1235.2	0.948	11.75032	5.36881	Si
SLV 14	-9353	-15639	103	0.805	1173.9	0.946	12.371	5.36881	Si
SLV 13	-9344	-15725	104	0.806	1172.9	0.946	12.38094	5.36881	Si
SLV 4	-6140	-6815	-104	1.13	848.7	0.929	17.67154	5.36881	Si
SLV 3	-6131	-6901	-103	1.132	847.8	0.929	17.69535	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	15.311	SLU 84	Si
V_SLU	4.476	SLU 84	Si
PF_SLV	0	SLV 7	No
V_SLV	1.622	SLV 9	Si
PFFP_SLV	0	SLV 7	No
R_SLV	1.888	SLV 6	Si

Maschio 122

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	-3.314	-13.763	-0.354	Z medio 563 cm	L6	2.96	0.3	2.995	2.44	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 82	6.18	3971.66	-31752	-0.0000731	0.0003743	0.0035	2.96	30488.78	35632.34	35632.34	8.97	No	Si
SLU 82	8.62	398.05	-24609	-0.0000451	0.0003743	0.0035	2.96	26507.67	29181.05	29181.05	73.31	No	Si
SLU 39	6.18	3473.17	-26824	-0.0000611	0.0003743	0.0035	2.96	27920.67	31149.61	31149.61	8.97	No	Si
SLU 39	8.62	379.72	-20909	-0.0000381	0.0003743	0.0035	2.96	23788.51	25993.92	25993.92	68.46	No	Si
SLU 79	6.18	3961.35	-31637	-0.0000728	0.0003743	0.0035	2.96	30437.72	35535.47	35535.47	8.97	No	Si
SLU 79	8.62	293.26	-24599	-0.0000447	0.0003743	0.0035	2.96	26500.45	29171.62	29171.62	99.47	No	Si
SLU 83	6.18	4073.19	-32113	-0.0000743	0.0003743	0.0035	2.96	30645.61	35928.23	35928.23	8.82	No	Si
SLU 83	8.62	408.5	-24993	-0.0000459	0.0003743	0.0035	2.96	26764.27	29519.78	29519.78	72.26	No	Si
SLU 77	6.18	4002.06	-31958	-0.0000737	0.0003743	0.0035	2.96	30578.54	35801.99	35801.99	8.95	No	Si
SLU 77	8.62	289.59	-24901	-0.0000453	0.0003743	0.0035	2.96	26702.76	29437.85	29437.85	101.65	No	Si
SLU 81	6.18	3986.35	-31567	-0.0000728	0.0003743	0.0035	2.96	30406.4	35475.93	35475.93	8.9	No	Si
SLU 81	8.62	390.59	-24473	-0.0000448	0.0003743	0.0035	2.96	26415.19	29060.88	29060.88	74.4	No	Si
SLU 41	6.18	3560.02	-27371	-0.0000625	0.0003743	0.0035	2.96	28244.77	31642.4	31642.4	8.89	No	Si
SLU 41	8.62	397.63	-21430	-0.0000391	0.0003743	0.0035	2.96	24198.36	26435.32	26435.32	66.48	No	Si
SLU 42	6.18	3545.33	-27556	-0.0000629	0.0003743	0.0035	2.96	28352.67	31810.56	31810.56	8.97	No	Si
SLU 42	8.62	405.1	-21567	-0.0000394	0.0003743	0.0035	2.96	24304.47	26551.64	26551.64	65.54	No	Si
SLU 78	6.18	3987.38	-32143	-0.000074	0.0003743	0.0035	2.96	30658.54	35952.21	35952.21	9.02	No	Si
SLU 78	8.62	297.06	-25037	-0.0000456	0.0003743	0.0035	2.96	26793.33	29558.63	29558.63	99.5	No	Si
SLU 84	6.18	4058.51	-32299	-0.0000746	0.0003743	0.0035	2.96	30724.67	36041.99	36041.99	8.88	No	Si
SLU 84	8.62	415.96	-25130	-0.0000462	0.0003743	0.0035	2.96	26854.42	29640.69	29640.69	71.26	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 11	6.18	5049.63	-6371	-0.0000309	0.0005615	0.0035	2.96		9504.8	9504.8	1.88		Si
SLV 11	8.62	1214.28	-5457	-0.0000133	0.0005615	0.0035	2.96		8246.08	8246.08	6.79		Si
SLV 8	6.18	4894.68	-5602	-0.0000308	0.0005615	0.0035	2.96		8447.95	8447.95	1.73		Si
SLV 8	8.62	1437.5	-5026	-0.0000133	0.0005615	0.0035	2.96		7646.24	7646.24	5.32		Si
SLV 3	6.18	3228.78	-16005	-0.0000386	0.0005615	0.0035	2.96		21754.85	21754.85	6.74		Si
SLV 3	8.62	886.41	-13004	-0.0000251	0.0005615	0.0035	2.96		18268.21	18268.21	20.61		Si
SLD 11	6.18	3561.17	-15509	-0.0000389	0.0005615	0.0035	2.96		21218.55	21218.55	5.96		Si
SLD 11	8.62	510.38	-12065	-0.0000222	0.0005615	0.0035	2.96		17067.16	17067.16	33.44		Si
SLV 12	6.18	4970.02	-6205	-0.0000305	0.0005615	0.0035	2.96		9277.65	9277.65	1.87		Si
SLV 12	8.62	1182.76	-5201	-0.0000127	0.0005615	0.0035	2.96		7889.25	7889.25	6.67		Si
SLD 7	6.18	3529.3	-15249	-0.0000383	0.0005615	0.0035	2.96		20938.84	20938.84	5.93		Si
SLD 7	8.62	619.37	-11990	-0.0000225	0.0005615	0.0035	2.96		16970.32	16970.32	27.4		Si
SLV 15	6.18	3479.94	-18018	-0.0000431	0.0005615	0.0035	2.96		23947.94	23947.94	6.88		Si
SLV 15	8.62	37.26	-13586	-0.0000232	0.0005615	0.0035	2.96		19000.87	19000.87	509.94		Si
SLV 7	6.18	4974.28	-5767	-0.0000312	0.0005615	0.0035	2.96		8675.79	8675.79	1.74		Si
SLV 7	8.62	1469.02	-5282	-0.0000138	0.0005615	0.0035	2.96		8002.6	8002.6	5.45		Si
SLD 8	6.18	3496.12	-15180	-0.0000381	0.0005615	0.0035	2.96		20864.6	20864.6	5.97		Si
SLD 8	8.62	606.23	-11883	-0.0000222	0.0005615	0.0035	2.96		16832.88	16832.88	27.77		Si
SLD 12	6.18	3527.99	-15440	-0.0000387	0.0005615	0.0035	2.96		21144.18	21144.18	5.99		Si
SLD 12	8.62	497.24	-11958	-0.000022	0.0005615	0.0035	2.96		16929.81	16929.81	34.05		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	6.18	3986.35	-31567	-26582	3175	2.96	2.96	-29935	10833	14733	33304	26591	7548	34139	No	10.75	Si
SLU 81	8.62	390.59	-24473	-20609	-480	2.96	2.96	-23208	10039	12372	33304	26591	7548	34139	No	71.08	Si
SLU 83	6.18	4073.19	-32113	-27043	3166	2.96	2.96	-30454	10833	14915	33304	26591	7548	34139	No	10.78	Si
SLU 83	8.62	408.5	-24993	-21047	-495	2.96	2.96	-23702	10105	12545	33304	26591	7548	34139	No	68.99	Si
SLU 56	6.18	3488.59	-28409	-23923	3000	2.96	2.96	-26940	10536	13682	33304	26591	7548	34139	No	11.38	Si
SLU 56	8.62	336.43	-22111	-18620	-416	2.96	2.96	-20968	9740	11585	33304	26591	7548	34139	No	82.04	Si
SLU 79	6.18	3961.35	-31637	-26642	3073	2.96	2.96	-30002	10833	14756	33304	26591	7548	34139	No	11.11	Si
SLU 79	8.62	293.26	-24599	-20715	-344	2.96	2.96	-23327	10055	12414	33304	26591	7548	34139	No	99.21	Si
SLU 58	6.18	3447.87	-28088	-23653	3014	2.96	2.96	-26636	10496	13575	33304	26591	7548	34139	No	11.33	Si
SLU 58	8.62	340.09	-21809	-18365	-408	2.96	2.96	-20682	9702	11485	33304	26591	7548	34139	No	83.61	Si
SLU 60	6.18	3472.87	-28017	-23594	3116	2.96	2.96	-26569	10487	13552	33304	26591	7548	34139	No	10.96	Si
SLU 60	8.62	437.42	-21683	-18259	-544	2.96	2.96	-20562	9686	11443	33304	26591	7548	34139	No	62.7	Si
SLU 74	6.18	3915.22	-31411	-26451	3068	2.96	2.96	-29788	10833	14681	33304	26591	7548	34139	No	11.13	Si
SLU 74	8.62	271.68	-24380	-20530	-337	2.96	2.96	-23120	10027	12341	33304	26591	7548	34139	No	101.2	Si
SLU 77	6.18	4002.06	-31958	-26912	3059	2.96	2.96	-30306	10833	14863	33304	26591	7548	34139	No	11.16	Si
SLU 77	8.62	289.59	-24901	-20969	-352	2.96	2.96	-23614	10093	12514	33304	26591	7548	34139	No	97.01	Si
SLU 62	6.18	3559.72	-28564	-24054	3107	2.96	2.96	-27088	10556	13734	33304	26591	7548	34139	No	10.99	Si
SLU 62	8.62	455.33	-22204	-18698	-559	2.96	2.96	-21056	9752	11616	33304	26591	7548	34139	No	61.07	Si
SLU 53	6.18	3401.74	-27862	-23463	3008	2.96	2.96	-26422	10467	13500	33304	26591	7548	34139	No	11.35	Si
SLU 53	8.62	318.51	-21590	-18181	-402	2.96	2.96	-20474	9674	11412	33304	26591	7548	34139	No	85.02	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	6.18	5049.63	-6371	-5365	25082	2.96	2.0621	-6041	11625	8458	33304	39886	7548	41762		1.67	Si
SLV 11	8.62	1214.28	-5457	-4595	8492	2.96	2.96	-5175	11452	10169	33304	39886	7548	43473		5.12	Si
SLD 7	6.18	3529.3	-15249	-12842	11983	2.96	2.96	-14461	13309	11818	33304	39886	7548	45123		3.77	Si
SLD 7	8.62	619.37	-11990	-10097	3548	2.96	2.96	-11370	12691	11269	33304	39886	7548	44574		12.56	Si
SLV 5	6.18	183.11	-36916	-31087	-20377	2.96	2.96	-35008	16250	18626	33304	39886	7548	47434		2.33	Si
SLV 5	8.62	-1066.58	-27748	-23367	-8641	2.96	2.96	-26314	15679	15574	33304	39886	7548	47434		5.49	Si
SLV 9	6.18	258.46	-37520	-31596	-21839	2.96	2.96	-35581	16250	18827	33304	39886	7548	47434		2.17	Si
SLV 9	8.62	-1321.32	-27923	-23514	-9097	2.96	2.96	-26480	15713	15633	33304	39886	7548	47434		5.21	Si
SLV 7	6.18	4974.28	-5767	-4856	26544	2.96	1.8523	-5469	11510	8257	33304	39886	7548	41561		1.57	Si
SLV 7	8.62	1469.02	-5282	-4448	8948	2.96	2.96	-5009	11419	10140	33304	39886	7548	43444		4.86	Si
SLV 12	6.18	4970.02	-6205	-5226	24913	2.96	2.0373	-5885	11594	8403	33304	39886	7548	41707		1.67	Si
SLV 12	8.62	1182.76	-5201	-4380	8502	2.96	2.96	-4932	11403	10126	33304	39886	7548	43430		5.11	Si
SLV 8	6.18	4894.68	-5602	-4717	26374	2.96	1.8186	-5312	11479	8202	33304	39886	7548	41506		1.57	Si
SLV 8	8.62	1437.5	-5026	-4232	8957	2.96	2.96	-4766	11370	10096	33304	39886	7548	43401		4.85	Si
SLV 10	6.18	178.86	-37355	-31456	-22008	2.96	2.96	-35424	16250	18772	33304	39886	7548	47434		2.16	Si
SLV 10	8.62	-1352.84	-27667	-23298	-9087	2.96	2.96	-26237	15664	15547	33304	39886	7548	47434		5.22	Si
SLD 8	6.18	3496.12	-15180	-12784	11913	2.96	2.96	-14396	13296	11807	33304	39886	7548	45111		3.79	Si
SLD 8	8.62	606.23	-11883	-10007	3552	2.96	2.96	-11269	12670	11251	33304	39886	7548	44556		12.54	Si
SLV 6	6.18	103.51	-36751	-30948	-20546	2.96	2.96	-34851	16250	18571	33304	39886	7548	47434		2.31	Si
SLV 6	8.62	-1098.1	-27492	-23151	-8632	2.96	2.96	-26071	15631	15489	33304	39886	7548	47434		5.5	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 7.4 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 8	179667	0.4	3638	-3231	251.32	473.08	1.88	Si
SLV 7	179667	0.4	3773	-3351	251.32	490.2	1.95	Si
SLV 12	179667	0.4	3826	-3397	251.32	496.84	1.98	Si
SLV 11	179667	0.4	3961	-3517	251.32	513.91	2.04	Si
SLV 4	179667	0.4	15630	-13879	251.32	1868.78	7.44	Si
SLV 3	179667	0.4	15830	-14057	251.32	1890	7.52	Si
SLV 16	179667	0.4	16255	-14434	251.32	1934.66	7.7	Si
SLV 15	179667	0.4	16455	-14612	251.32	1955.65	7.78	Si
SLV 2	179667	0.4	26123	-23197	251.32	2884.4	11.48	Si

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 1	179667	0.4	26324	-23376	251.32	2901.94	11.55	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 7.4 Wa = 0.05 Ta = 0.0499

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 5	-27748	-36916	-727	0.582	3199.6	0.965	8.76046	4.26384	Si
SLV 6	-27492	-36751	-728	0.586	3173.5	0.964	8.8312	4.26384	Si
SLV 9	-27923	-37520	444	0.588	3217.4	0.965	8.85376	4.26384	Si
SLV 10	-27667	-37355	443	0.592	3191.3	0.965	8.92552	4.26384	Si
SLV 13	-20326	-27362	1928	0.702	2444.7	0.955	10.68801	4.74188	Si
SLV 14	-19945	-27117	1927	0.713	2406.1	0.954	10.86499	4.74188	Si
SLV 1	-19743	-25349	-1976	0.717	2385.5	0.954	10.92767	4.74188	Si
SLV 2	-19363	-25104	-1977	0.729	2346.9	0.953	11.1126	4.74188	Si
SLV 15	-13586	-18018	2029	0.971	1760.8	0.94	15.01177	4.74188	Si
SLV 16	-13206	-17772	2028	0.994	1722.3	0.939	15.37827	4.74188	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.821	SLU 83	Si
V_SLU	10.753	SLU 81	Si
PF_SLV	1.726	SLV 8	Si
V_SLV	1.566	SLV 7	Si
PFFP_SLV	1.882	SLV 8	Si
R_SLV	2.055	SLV 5	Si

Maschio 124

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	0.672	-13.763	1.046	L5	L6	0.374	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	5.07	164.06	-5075	-0.0001179	0.0003743	0.0035	0.3743	528.18	654.68	654.68	3.99	No	Si
SLU 79	7.17	-260.79	-7656	-0.0002048	0.0003743	0.0035	0.3743	473.34	770.69	770.69	2.96	No	Si
SLU 77	5.07	164.32	-5135	-0.0001191	0.0003743	0.0035	0.3743	529.39	659.92	659.92	4.02	No	Si
SLU 77	7.17	-261.93	-7728	-0.0002072	0.0003743	0.0035	0.3743	468.69	771.31	771.31	2.94	No	Si
SLU 74	5.07	163.05	-5034	-0.0001168	0.0003743	0.0035	0.3743	527.29	651.11	651.11	3.99	No	Si
SLU 74	7.17	-259.05	-7593	-0.0002026	0.0003743	0.0035	0.3743	477.23	770.16	770.16	2.97	No	Si
SLU 84	5.07	160.01	-5226	-0.0001196	0.0003743	0.0035	0.3743	530.97	667.84	667.84	4.17	No	Si
SLU 84	7.17	-259.29	-7750	-0.0002069	0.0003743	0.0035	0.3743	467.21	771.51	771.51	2.98	No	Si
SLU 81	5.07	167.79	-5048	-0.0001184	0.0003743	0.0035	0.3743	527.6	652.32	652.32	3.89	No	Si
SLU 81	7.17	-265.33	-7680	-0.0002071	0.0003743	0.0035	0.3743	471.79	770.9	770.9	2.91	No	Si
SLU 60	5.07	173.54	-4308	-0.0001061	0.0003743	0.0035	0.3743	502.46	588.75	588.75	3.39	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 60	7.17	-259.58	-6972	-0.0001869	0.0003743	0.0035	0.3743	509.11	762.51	762.51	2.94	No	Si
SLU 56	5.07	170.06	-4396	-0.0001068	0.0003743	0.0035	0.3743	506.37	596.07	596.07	3.5	No	Si
SLU 56	7.17	-256.18	-7019	-0.000187	0.0003743	0.0035	0.3743	507.11	764.05	764.05	2.98	No	Si
SLU 83	5.07	169.06	-5149	-0.0001206	0.0003743	0.0035	0.3743	529.65	661.14	661.14	3.91	No	Si
SLU 83	7.17	-268.2	-7814	-0.0002117	0.0003743	0.0035	0.3743	462.87	772.1	772.1	2.88	No	Si
SLU 58	5.07	169.8	-4336	-0.0001056	0.0003743	0.0035	0.3743	503.7	591.02	591.02	3.48	No	Si
SLU 58	7.17	-255.05	-6948	-0.0001848	0.0003743	0.0035	0.3743	510.09	761.68	761.68	2.99	No	Si
SLU 62	5.07	174.81	-4410	-0.0001083	0.0003743	0.0035	0.3743	506.97	597.24	597.24	3.42	No	Si
SLU 62	7.17	-262.46	-7106	-0.0001912	0.0003743	0.0035	0.3743	503.3	766.57	766.57	2.92	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 9	5.07	-832.65	-10717	-0.0004926	0.0005615	0.0035	0.3743		1104.78	1104.78	1.33		Si
SLV 9	7.17	676.29	1557	0.7362035	0.0005615	0.0035	0.2994		0	0	0		No
SLV 8	5.07	1069.52	3942	2.7528673	0.0005615	0.0035	0.2994		0	0	0		No
SLV 8	7.17	-1042.94	-11951	-0.0011981	0.0005615	0.0035	0.2994		1120.88	1120.88	1.07		Si
SLV 11	5.07	1013.78	3452	2.3533558	0.0005615	0.0035	0.2994		0	0	0		No
SLV 11	7.17	-975.2	-11432	-0.0007473	0.0005615	0.0035	0.2994		1113.81	1113.81	1.14		Si
SLV 7	5.07	1075.29	3975	2.7776403	0.0005615	0.0035	0.2994		0	0	0		No
SLV 7	7.17	-1049.6	-12011	-0.0012823	0.0005615	0.0035	0.2994		1121.74	1121.74	1.07		Si
SLV 12	5.07	1008.01	3419	2.3281237	0.0005615	0.0035	0.2994		0	0	0		No
SLV 12	7.17	-968.55	-11371	-0.0007237	0.0005615	0.0035	0.2994		1113.01	1113.01	1.15		Si
SLV 3	5.07	502.2	-366	-0.1074395	0.0005615	0.0035	0.2994		74.63	74.63	0.15		No
SLV 3	7.17	-559.98	-8156	-0.0002826	0.0005615	0.0035	0.3743		1010.48	1010.48	1.8		Si
SLV 10	5.07	-838.42	-10750	-0.0004986	0.0005615	0.0035	0.3743		1105.18	1105.18	1.32		Si
SLV 10	7.17	682.94	1618	0.8104376	0.0005615	0.0035	0.2994		0	0	0		No
SLV 6	5.07	-776.91	-10227	-0.0004374	0.0005615	0.0035	0.3743		1099.07	1099.07	1.41		Si
SLV 6	7.17	608.55	1038	0.0785552	0.0005615	0.0035	0.2994		0	0	0		No
SLV 5	5.07	-771.14	-10194	-0.0004327	0.0005615	0.0035	0.3743		1098.7	1098.7	1.42		Si
SLV 5	7.17	601.89	977	0.0235062	0.0005615	0.0035	0.2994		0	0	0		No
SLV 4	5.07	493.63	-414	-0.1028389	0.0005615	0.0035	0.2994		83.38	83.38	0.17		No
SLV 4	7.17	-550.1	-8066	-0.000277	0.0005615	0.0035	0.3743		1006.51	1006.51	1.83		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 56	5.07	170.06	-4396	-3702	477	0.3743	0.3743	-32965	10833	1347	40441	3363	954	4317	No	9.06	Si
SLU 56	7.17	-256.18	-7019	-5911	497	0.3743	0.3743	-52641	10833	1937	40441	3363	954	4317	No	8.68	Si
SLU 79	5.07	164.06	-5075	-4274	472	0.3743	0.3743	-38059	10833	1500	40441	3363	954	4317	No	9.15	Si
SLU 79	7.17	-260.79	-7656	-6447	495	0.3743	0.3743	-57412	10833	2079	40441	3363	954	4317	No	8.72	Si
SLU 62	5.07	174.81	-4410	-3713	488	0.3743	0.3743	-33069	10833	1351	40441	3363	954	4317	No	8.84	Si
SLU 62	7.17	-262.46	-7106	-5984	509	0.3743	0.3743	-53290	10833	1956	40441	3363	954	4317	No	8.48	Si
SLU 83	5.07	169.06	-5149	-4336	485	0.3743	0.3743	-38615	10833	1517	40441	3363	954	4317	No	8.9	Si
SLU 83	7.17	-268.2	-7814	-6580	509	0.3743	0.3743	-58599	10833	2115	40441	3363	954	4317	No	8.49	Si
SLU 58	5.07	169.8	-4336	-3651	475	0.3743	0.3743	-32513	10833	1334	40441	3363	954	4317	No	9.09	Si
SLU 58	7.17	-255.05	-6948	-5851	496	0.3743	0.3743	-52102	10833	1920	40441	3363	954	4317	No	8.71	Si
SLU 77	5.07	164.32	-5135	-4324	474	0.3743	0.3743	-38511	10833	1514	40441	3363	954	4317	No	9.12	Si
SLU 77	7.17	-261.93	-7728	-6507	497	0.3743	0.3743	-57951	10833	2096	40441	3363	954	4317	No	8.69	Si
SLU 74	5.07	163.05	-5034	-4239	469	0.3743	0.3743	-37751	10833	1491	40441	3363	954	4317	No	9.21	Si
SLU 74	7.17	-259.05	-7593	-6394	492	0.3743	0.3743	-56945	10833	2065	40441	3363	954	4317	No	8.78	Si
SLU 81	5.07	167.79	-5048	-4251	481	0.3743	0.3743	-37855	10833	1494	40441	3363	954	4317	No	8.98	Si
SLU 81	7.17	-265.33	-7680	-6467	504	0.3743	0.3743	-57593	10833	2085	40441	3363	954	4317	No	8.57	Si
SLU 53	5.07	168.8	-4294	-3616	472	0.3743	0.3743	-32205	10833	1325	40441	3363	954	4317	No	9.15	Si
SLU 53	7.17	-253.31	-6885	-5798	492	0.3743	0.3743	-51635	10833	1907	40441	3363	954	4317	No	8.77	Si
SLU 60	5.07	173.54	-4308	-3628	484	0.3743	0.3743	-32309	10833	1328	40441	3363	954	4317	No	8.92	Si
SLU 60	7.17	-259.58	-6972	-5871	504	0.3743	0.3743	-52284	10833	1926	40441	3363	954	4317	No	8.56	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	5.07	-771.14	-10194	-8584	-1791	0.3743	0.3345	-76447	16250	2830	40441	5044	954	5998		3.35	Si
SLV 5	7.17	601.89	977	823	-1373	0.2994	0	0	0	0	40441	4035	764	4799		3.5	Si
SLV 10	5.07	-838.42	-10750	-9053	-1963	0.3743	0.3275	-80617	16250	2955	40441	5044	954	5998		3.06	Si
SLV 10	7.17	682.94	1618	1362	-1566	0.2994	0	0	0	0	40441	4035	764	4799		3.06	Si
SLV 8	5.07	1069.52	3942	3320	2622	0.2994	0	0	0	0	40441	4035	764	4799		1.83	Si
SLV 8	7.17	-1042.94	-11951	-10064	2256	0.2994	0.2997	0	0	0	40441	4035	764	4799		2.13	Si
SLV 12	5.07	1008.01	3419	2879	2464	0.2994	0	0	0	0	40441	4035	764	4799		1.95	Si
SLV 12	7.17	-968.55	-11371	-9576	2077	0.2994	0.3059	0	0	0	40441	4035	764	4799		2.31	Si
SLV 3	5.07	502.2	-366	-308	1274	0.2994	0	0	0	0	40441	4035	764	4799		3.77	Si
SLV 3	7.17	-559.98	-8156	-6868	1208	0.3743	0.3555	-61165	16250	2372	40441	5044	954	5998		4.96	Si
SLV 7	5.07	1075.29	3975	3347	2636	0.2994	0	0	0	0	40441	4035	764	4799		1.82	Si
SLV 7	7.17	-1049.6	-12011	-10115	2270	0.2994	0.2993	0	0	0	40441	4035	764	4799		2.11	Si
SLV 11	5.07	1013.78	3452	2907	2478	0.2994	0	0	0	0	40441	4035	764	4799		1.94	Si
SLV 11	7.17	-975.2	-11432	-9627	2091	0.2994	0.3055	0	0	0	40441	4035	764	4799		2.29	Si
SLD 7	5.07	501.28	-438	-369	1257	0.2994	0	0	0	0	40441	4035	764	4799		3.82	Si
SLD 7	7.17	-530.06	-7925	-6673	1120	0.3743	0.3608	-59430	16250	2320	40441	5044	954	5998		5.35	Si
SLV 6	5.07	-776.91	-10227	-8612	-1805	0.3743	0.3336	-76692	16250	2837	40441	5044	954	5998		3.32	Si
SLV 6	7.17	608.55	1038	874	-1387	0.2994	0	0	0	0	40441	4035	764	4799		3.46	Si
SLV 9	5.07	-832.65	-10717	-9025	-1949	0.3743	0.3284	-80373	16250	2947	40441	5044	954	5998		3.08	Si
SLV 9	7.17	676.29	1557	1311	-1552	0.2994	0	0	0	0	40441	4035	764	4799		3.09	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 10	179667	0.39	0	1535	43.36	0	0	No, Trazione
SLV 6	179667	0.39	0	978	43.36	0	0	No, Trazione
SLV 9	179667	0.39	0	1474	43.36	0	0	No, Trazione
SLV 5	179667	0.39	0	917	43.36	0	0	No, Trazione
SLV 14	179667	0.39	20891	-2346	43.36	303.75	7	Si
SLV 13	179667	0.39	21694	-2436	43.36	313.5	7.23	Si
SLV 2	179667	0.39	37430	-4203	43.36	475.94	10.98	Si
SLV 1	179667	0.39	38232	-4293	43.36	482.76	11.13	Si
SLV 7	179667	0.39	107491	-12070	43.36	536.18	12.36	Si
SLV 8	179667	0.39	106950	-12010	43.36	539.86	12.45	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-5238	-10227	-36	0.414	589.4	0.971	6.20151	4.5984	Si
SLV 5	-5203	-10194	-36	0.417	585.9	0.971	6.23719	4.5984	Si
SLV 10	-5170	-10750	-21	0.422	582.5	0.971	6.31202	4.5984	Si
SLV 9	-5136	-10717	-21	0.424	579	0.97	6.34885	4.5984	Si
SLV 2	-3387	-4665	-34	0.599	401	0.958	9.07618	5.36881	Si
SLV 1	-3336	-4616	-34	0.606	395.8	0.958	9.1982	5.36881	Si
SLV 14	-3162	-6409	16	0.639	378.2	0.956	9.71425	5.36881	Si
SLV 13	-3111	-6361	16	0.648	372.9	0.956	9.85431	5.36881	Si
SLV 4	-1726	-414	-17	1.05	232.5	0.933	16.34372	5.36881	Si
SLV 3	-1675	-366	-17	1.075	227.3	0.932	16.76217	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.879	SLU 83	Si
V_SLU	8.477	SLU 62	Si
PF_SLV	0	SLV 5	No
V_SLV	1.82	SLV 7	Si
PFFP_SLV	0	SLV 10	No
R_SLV	1.349	SLV 6	Si

Maschio 125

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-20.668	1.046	-24.678	1.046	L5	L6	4.01	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 75	5.07	-12554.49	-62723	-0.000103	0.0004492	0.0035	4.01	72096.43	104226.03	104226.03	8.3	No	Si
SLU 75	7.17	-4512.93	-54896	-0.0000759	0.0004492	0.0035	4.01	68960.43	95418.53	95418.53	21.14	No	Si
SLU 84	5.07	-12728.4	-63947	-0.0001051	0.0004492	0.0035	4.01	72435.71	105559.76	105559.76	8.29	No	Si
SLU 84	7.17	-4796.81	-56317	-0.0000784	0.0004492	0.0035	4.01	69654.33	97099.33	97099.33	20.24	No	Si
SLU 74	5.07	-12518.83	-62720	-0.0001029	0.0004492	0.0035	4.01	72095.68	104223.26	104223.26	8.33	No	Si
SLU 74	7.17	-4561.16	-54854	-0.0000759	0.0004492	0.0035	4.01	68939.2	95369.12	95369.12	20.91	No	Si
SLU 78	5.07	-12645.2	-63635	-0.0001045	0.0004492	0.0035	4.01	72353.22	105220.25	105220.25	8.32	No	Si
SLU 78	7.17	-4671.28	-55776	-0.0000774	0.0004492	0.0035	4.01	69396.66	96459.45	96459.45	20.65	No	Si
SLU 73	5.07	-12383.38	-61160	-0.0001004	0.0004492	0.0035	4.01	71603.82	102523.05	102523.05	8.28	No	Si
SLU 73	7.17	-4247.87	-53397	-0.0000733	0.0004492	0.0035	4.01	68169.45	93647.15	93647.15	22.05	No	Si
SLU 82	5.07	-12637.69	-63034	-0.0001036	0.0004492	0.0035	4.01	72186.67	104565.54	104565.54	8.27	No	Si
SLU 82	7.17	-4638.46	-55437	-0.0000768	0.0004492	0.0035	4.01	69231.1	96058.41	96058.41	20.71	No	Si
SLU 83	5.07	-12692.74	-63944	-0.000105	0.0004492	0.0035	4.01	72435.04	105556.98	105556.98	8.32	No	Si
SLU 83	7.17	-4845.04	-56276	-0.0000784	0.0004492	0.0035	4.01	69634.72	97049.93	97049.93	20.03	No	Si
SLU 65	5.07	-11734.53	-56782	-0.0000929	0.0004492	0.0035	4.01	69869.29	97649.01	97649.01	8.32	No	Si
SLU 65	7.17	-3411.54	-48573	-0.0000653	0.0004492	0.0035	4.01	65206.72	87683.12	87683.12	25.7	No	Si
SLU 76	5.07	-12474.09	-62072	-0.0001019	0.0004492	0.0035	4.01	71899.5	103517.27	103517.27	8.3	No	Si
SLU 76	7.17	-4406.22	-54278	-0.0000748	0.0004492	0.0035	4.01	68641.68	94688.07	94688.07	21.49	No	Si
SLU 81	5.07	-12602.03	-63032	-0.0001035	0.0004492	0.0035	4.01	72185.95	104562.77	104562.77	8.3	No	Si
SLU 81	7.17	-4686.69	-55395	-0.0000769	0.0004492	0.0035	4.01	69210.48	96009	96009	20.49	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 9	5.07	-15934.74	-34914	-0.0000698	0.0006738	0.0035	4.01		71348.71	71348.71	4.48		Si
SLV 9	7.17	6040.11	-32179	-0.0000484	0.0006738	0.0035	4.01		59468.29	59468.29	9.85		Si
SLD 13	5.07	-13815.51	-35167	-0.0000662	0.0006738	0.0035	4.01		71757.15	71757.15	5.19		Si
SLD 13	7.17	4159.62	-28252	-0.0000403	0.0006738	0.0035	4.01		53341.74	53341.74	12.82		Si
SLD 14	5.07	-13634.28	-35356	-0.0000661	0.0006738	0.0035	4.01		72060.35	72060.35	5.29		Si
SLD 14	7.17	3918.43	-28045	-0.0000396	0.0006738	0.0035	4.01		52995.12	52995.12	13.52		Si
SLV 4	5.07	2469.92	-63190	-0.0000805	0.0006738	0.0035	4.01		104932.23	104932.23	42.48		Si
SLV 4	7.17	-18879.17	-58292	-0.0001055	0.0006738	0.0035	4.01		105557.96	105557.96	5.59		Si
SLV 13	5.07	-20385.47	-23897	-0.0000655	0.0006738	0.0035	4.01		53165.72	53165.72	2.61		Si
SLV 13	7.17	13455.91	-16221	-0.000043	0.0006738	0.0035	4.01		32397.47	32397.47	2.41		Si
SLV 15	5.07	-18098.11	-25646	-0.0000622	0.0006738	0.0035	4.01		56127.7	56127.7	3.1		Si
SLV 15	7.17	10953.27	-15468	-0.0000371	0.0006738	0.0035	4.01		31032.45	31032.45	2.83		Si
SLD 15	5.07	-12897.51	-35868	-0.0000654	0.0006738	0.0035	4.01		72884.83	72884.83	5.65		Si
SLD 15	7.17	3154.35	-27952	-0.0000381	0.0006738	0.0035	4.01		52839.21	52839.21	16.75		Si
SLV 16	5.07	-17672.12	-26089	-0.0000619	0.0006738	0.0035	4.01		56877.74	56877.74	3.22		Si
SLV 16	7.17	10386.34	-14981	-0.0000354	0.0006738	0.0035	4.01		30149.46	30149.46	2.9		Si
SLV 14	5.07	-19959.48	-24340	-0.0000649	0.0006738	0.0035	4.01		53915.76	53915.76	2.7		Si
SLV 14	7.17	12888.97	-15734	-0.0000413	0.0006738	0.0035	4.01		31514.48	31514.48	2.45		Si
SLV 10	5.07	-15647.93	-35212	-0.0000696	0.0006738	0.0035	4.01		71828.55	71828.55	4.59		Si
SLV 10	7.17	5658.41	-31851	-0.0000473	0.0006738	0.0035	4.01		58984.94	58984.94	10.42		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 47	5.07	-10876.73	-51402	-37383	-6184	4.01	4.01	-31075	10833	21902	115546	43233	20451	63684	No	10.3	Si
SLU 47	7.17	-2598.86	-42940	-31229	-6160	4.01	4.01	-25959	10833	19440	115546	43233	20451	63684	No	10.34	Si
SLU 49	5.07	-11047.84	-52965	-38520	-6201	4.01	4.01	-32020	10833	22357	115546	43233	20451	63684	No	10.27	Si
SLU 49	7.17	-2863.92	-44438	-32319	-6176	4.01	4.01	-26865	10833	19876	115546	43233	20451	63684	No	10.31	Si
SLU 67	5.07	-11905.64	-58345	-42433	-5829	4.01	4.01	-35273	10833	23922	115546	43233	20451	63684	No	10.92	Si
SLU 67	7.17	-3676.59	-50071	-36415	-5802	4.01	4.01	-30270	10833	21515	115546	43233	20451	63684	No	10.98	Si
SLU 43	5.07	-10726.59	-50486	-36717	-6181	4.01	4.01	-30521	10833	21636	115546	43233	20451	63684	No	10.3	Si
SLU 43	7.17	-2520.9	-41989	-30538	-6158	4.01	4.01	-25385	10833	19164	115546	43233	20451	63684	No	10.34	Si
SLU 51	5.07	-10943.67	-52313	-38046	-6181	4.01	4.01	-31626	10833	22167	115546	43233	20451	63684	No	10.3	Si
SLU 51	7.17	-2789.37	-43792	-31849	-6156	4.01	4.01	-26475	10833	19688	115546	43233	20451	63684	No	10.34	Si
SLU 45	5.07	-10921.47	-52050	-37855	-6200	4.01	4.01	-31467	10833	22091	115546	43233	20451	63684	No	10.27	Si
SLU 45	7.17	-2753.8	-43516	-31648	-6176	4.01	4.01	-26307	10833	19608	115546	43233	20451	63684	No	10.31	Si
SLU 48	5.07	-11012.18	-52962	-38518	-6199	4.01	4.01	-32018	10833	22356	115546	43233	20451	63684	No	10.27	Si
SLU 48	7.17	-2912.15	-44396	-32288	-6174	4.01	4.01	-26840	10833	19864	115546	43233	20451	63684	No	10.31	Si
SLU 46	5.07	-10957.13	-52053	-37856	-6203	4.01	4.01	-31468	10833	22091	115546	43233	20451	63684	No	10.27	Si
SLU 46	7.17	-2705.57	-43557	-31678	-6178	4.01	4.01	-26333	10833	19620	115546	43233	20451	63684	No	10.31	Si
SLU 50	5.07	-10908.01	-52310	-38044	-6178	4.01	4.01	-31624	10833	22166	115546	43233	20451	63684	No	10.31	Si
SLU 50	7.17	-2837.6	-43750	-31818	-6154	4.01	4.01	-26449	10833	19676	115546	43233	20451	63684	No	10.35	Si
SLU 44	5.07	-10786.02	-50490	-36720	-6185	4.01	4.01	-30524	10833	21637	115546	43233	20451	63684	No	10.3	Si
SLU 44	7.17	-2440.51	-42059	-30588	-6162	4.01	4.01	-25427	10833	19184	115546	43233	20451	63684	No	10.34	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 16	5.07	-12716.29	-36057	-26223	-11037	4.01	4.01	-21798	16250	20913	115546	64849	20451	85300		7.73	Si
SLD 16	7.17	2913.16	-27744	-20178	-10651	4.01	4.01	-16773	15855	19073	115546	64849	20451	85300		8.01	Si
SLD 13	5.07	-13815.51	-35167	-25576	-10784	4.01	4.01	-21260	16250	20654	115546	64849	20451	85300		7.91	Si
SLD 13	7.17	4159.62	-28252	-20547	-10385	4.01	4.01	-17080	15916	19147	115546	64849	20451	85300		8.21	Si
SLD 14	5.07	-13634.28	-35356	-25713	-10960	4.01	4.01	-21374	16250	20709	115546	64849	20451	85300		7.78	Si
SLD 14	7.17	3918.43	-28045	-20396	-10562	4.01	4.01	-16954	15891	19117	115546	64849	20451	85300		8.08	Si
SLV 1	5.07	-243.42	-60997	-44362	11125	4.01	4.01	-36876	16250	28168	115546	64849	20451	85300		7.67	Si
SLV 1	7.17	-15809.6	-59533	-43296	10291	4.01	4.01	-35990	16250	27742	115546	64849	20451	85300		8.29	Si
SLV 13	5.07	-20385.47	-23897	-17379	-19328	4.01	3.4558	-16891	15878	17376	115546	64849	20451	85300		4.41	Si
SLV 13	7.17	13455.91	-16221	-11797	-18420	4.01	3.5264	-9807	14461	15299	115546	64849	20451	85300		4.63	Si
SLD 15	5.07	-12897.51	-35868	-26086	-10860	4.01	4.01	-21684	16250	20858	115546	64849	20451	85300		7.85	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 15	7.17	3154.35	-27952	-20328	-10474	4.01	4.01	-16898	15880	19103	115546	64849	20451	85300		8.14	Si
SLV 15	5.07	-18098.11	-25646	-18652	-19516	4.01	3.8979	-16063	15713	18374	115546	64849	20451	85300		4.37	Si
SLV 15	7.17	10953.27	-15468	-11250	-18641	4.01	3.8907	-9351	14370	16773	115546	64849	20451	85300		4.58	Si
SLV 14	5.07	-19959.48	-24340	-17702	-19742	4.01	3.5549	-16724	15845	17505	115546	64849	20451	85300		4.32	Si
SLV 14	7.17	12888.97	-15734	-11443	-18835	4.01	3.5575	-9512	14402	15371	115546	64849	20451	85300		4.53	Si
SLV 16	5.07	-17672.12	-26089	-18974	-19931	4.01	3.9829	-15772	15654	18705	115546	64849	20451	85300		4.28	Si
SLV 16	7.17	10386.34	-14981	-10895	-19056	4.01	3.9351	-9057	14311	16895	115546	64849	20451	85300		4.48	Si
SLV 3	5.07	2043.93	-62747	-45634	10937	4.01	4.01	-37933	16250	28677	115546	64849	20451	85300		7.8	Si
SLV 3	7.17	-18312.24	-58779	-42749	10070	4.01	4.01	-35535	16250	27523	115546	64849	20451	85300		8.47	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 6.845 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 16	-15747	0.39	464.57	2193.37	3119.76	2656.57	5.72	Si
SLV 15	-16234	0.39	464.57	2255.85	3198.29	2727.07	5.87	Si
SLV 14	-16532	0.39	464.57	2293.82	3246.24	2770.03	5.96	Si
SLV 13	-17019	0.39	464.57	2355.78	3324.68	2840.23	6.11	Si
SLV 12	-30060	0.39	464.57	3894.31	5399.76	4647.04	10	Si
SLV 11	-30388	0.39	464.57	3930.02	5451.16	4690.59	10.1	Si
SLV 10	-32675	0.39	464.57	4174.96	5809.64	4992.3	10.75	Si
SLV 9	-33003	0.39	464.57	4209.5	5860.62	5035.06	10.84	Si
SLV 8	-43045	0.39	464.57	5196.24	7410.88	6303.56	13.57	Si
SLV 7	-43373	0.39	464.57	5226.15	7461.08	6343.62	13.65	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 1	-42906	-60997	-652	0.514	4969.8	0.964	7.74565	5.36881	Si
SLV 2	-42464	-61440	-654	0.518	4924.9	0.963	7.81546	5.36881	Si
SLV 3	-41739	-62747	155	0.537	4851.1	0.963	8.09889	5.36881	Si
SLV 4	-41297	-63190	154	0.541	4806.1	0.963	8.1751	5.36881	Si
SLV 5	-36708	-46044	-1420	0.567	4339.4	0.959	8.58912	4.5984	Si
SLV 6	-36411	-46342	-1421	0.571	4309.1	0.959	8.64984	4.5984	Si
SLV 7	-32817	-51875	1272	0.626	3943.8	0.955	9.53066	4.5984	Si
SLV 8	-32520	-52173	1271	0.631	3913.6	0.955	9.60688	4.5984	Si
SLV 9	-30290	-34914	-1270	0.67	3687.1	0.952	10.21878	4.5984	Si
SLV 10	-29993	-35212	-1271	0.675	3656.9	0.952	10.30626	4.5984	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.274	SLU 82	Si
V_SLU	10.267	SLU 46	Si
PF_SLV	2.408	SLV 13	Si
V_SLV	4.28	SLV 16	Si
PFFP_SLV	5.718	SLV 16	Si
R_SLV	1.443	SLV 1	Si

Maschio 126

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-12.293	1.046	-19.868	1.046	L5	L6	7.575	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 49	5.07	10662.4	-115586	-0.0000813	0.0004492	0.0035	7.575	255547.42	339044.56	339044.56	31.8	No	Si
SLU 49	7.57	2047.61	-96015	-0.0000628	0.0004492	0.0035	7.575	237910.18	297422.48	297422.48	145.25	No	Si
SLU 62	5.07	11383.85	-126334	-0.0000896	0.0004492	0.0035	7.575	260789.06	361904.52	361904.52	31.79	No	Si
SLU 62	7.57	2658.33	-107943	-0.0000714	0.0004492	0.0035	7.575	249903.19	322790.35	322790.35	121.43	No	Si
SLU 56	5.07	11416.92	-125720	-0.0000891	0.0004492	0.0035	7.575	260574.47	360598.4	360598.4	31.58	No	Si
SLU 56	7.57	2310.56	-106966	-0.0000705	0.0004492	0.0035	7.575	249066.5	320711.78	320711.78	138.8	No	Si
SLU 53	5.07	11152.14	-123325	-0.0000872	0.0004492	0.0035	7.575	259639.16	355504	355504	31.88	No	Si
SLU 53	7.57	2457.62	-104582	-0.0000689	0.0004492	0.0035	7.575	246916.54	315642.17	315642.17	128.43	No	Si
SLU 59	5.07	11291.59	-124406	-0.0000881	0.0004492	0.0035	7.575	260080.55	357802.6	357802.6	31.69	No	Si
SLU 59	7.57	2485.95	-105629	-0.0000697	0.0004492	0.0035	7.575	247880.18	317869.43	317869.43	127.87	No	Si
SLU 48	5.07	10721.32	-115552	-0.0000813	0.0004492	0.0035	7.575	255525.99	338972.75	338972.75	31.62	No	Si
SLU 48	7.57	1894.73	-96023	-0.0000627	0.0004492	0.0035	7.575	237919.22	297438.93	297438.93	156.98	No	Si
SLU 57	5.07	11358	-125754	-0.0000891	0.0004492	0.0035	7.575	260586.54	360670.21	360670.21	31.75	No	Si
SLU 57	7.57	2463.44	-106958	-0.0000706	0.0004492	0.0035	7.575	249059.78	320695.33	320695.33	130.18	No	Si
SLU 51	5.07	10595.99	-114237	-0.0000803	0.0004492	0.0035	7.575	254667.41	336176.95	336176.95	31.73	No	Si
SLU 51	7.57	2070.12	-94687	-0.0000619	0.0004492	0.0035	7.575	236333.93	294596.58	294596.58	142.31	No	Si
SLU 50	5.07	10654.92	-114204	-0.0000803	0.0004492	0.0035	7.575	254644.74	336105.14	336105.14	31.54	No	Si
SLU 50	7.57	1917.24	-94694	-0.0000618	0.0004492	0.0035	7.575	236343.25	294613.03	294613.03	153.67	No	Si
SLU 58	5.07	11350.52	-124372	-0.0000881	0.0004492	0.0035	7.575	260067.25	357730.79	357730.79	31.52	No	Si
SLU 58	7.57	2333.06	-105637	-0.0000696	0.0004492	0.0035	7.575	247887.19	317885.87	317885.87	136.25	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 14	5.07	-71952.42	-80792	-0.0000876	0.0006738	0.0035	7.575		299098.71	299098.71	4.16		Si
SLV 14	7.57	34528.99	-57718	-0.000053	0.0006738	0.0035	7.575		203659.27	203659.27	5.9		Si
SLD 4	5.07	42502.72	-100411	-0.0000855	0.0006738	0.0035	7.575		322378.1	322378.1	7.58		Si
SLD 4	7.57	-11722.38	-89604	-0.0000622	0.0006738	0.0035	7.575		323753.97	323753.97	27.62		Si
SLD 3	5.07	42759.02	-100760	-0.0000859	0.0006738	0.0035	7.575		323347.56	323347.56	7.56		Si
SLD 3	7.57	-11318.68	-89767	-0.0000621	0.0006738	0.0035	7.575		324196.4	324196.4	28.64		Si
SLV 1	5.07	85576.46	-107146	-0.0001131	0.0006738	0.0035	7.575		341105.01	341105.01	3.99		Si
SLV 1	7.57	-20306.91	-99344	-0.0000731	0.0006738	0.0035	7.575		350098.75	350098.75	17.24		Si
SLV 15	5.07	-68109	-83281	-0.0000873	0.0006738	0.0035	7.575		306232.7	306232.7	4.5		Si
SLV 15	7.57	25854.56	-61465	-0.000051	0.0006738	0.0035	7.575		214080.18	214080.18	8.28		Si
SLV 13	5.07	-71349.96	-81611	-0.0000878	0.0006738	0.0035	7.575		301447.65	301447.65	4.22		Si
SLV 13	7.57	35477.95	-58102	-0.0000537	0.0006738	0.0035	7.575		204728.49	204728.49	5.77		Si
SLV 3	5.07	88817.42	-108815	-0.0001161	0.0006738	0.0035	7.575		345747.21	345747.21	3.89		Si
SLV 3	7.57	-29930.3	-102707	-0.0000804	0.0006738	0.0035	7.575		358877.47	358877.47	11.99		Si
SLV 2	5.07	84974	-106326	-0.0001122	0.0006738	0.0035	7.575		338826.19	338826.19	3.99		Si
SLV 2	7.57	-21255.87	-98960	-0.0000733	0.0006738	0.0035	7.575		349058.78	349058.78	16.42		Si
SLV 16	5.07	-68711.46	-82461	-0.000087	0.0006738	0.0035	7.575		303883.75	303883.75	4.42		Si
SLV 16	7.57	24905.6	-61081	-0.0000503	0.0006738	0.0035	7.575		213010.96	213010.96	8.55		Si
SLV 4	5.07	88214.96	-107996	-0.0001151	0.0006738	0.0035	7.575		343468.39	343468.39	3.89		Si
SLV 4	7.57	-30879.26	-102323	-0.0000807	0.0006738	0.0035	7.575		357899.65	357899.65	11.59		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 65	5.07	10837.09	-123546	-89852	-3075	7.575	7.575	-39539	10833	49067	115546	81668	38633	120301	No	39.13	Si
SLU 65	7.57	3338.84	-104313	-75864	685	7.575	7.575	-33383	10833	43472	115546	81668	38633	120301	No	175.7	Si
SLU 44	5.07	10027.14	-109469	-79614	-2760	7.575	7.575	-35034	10833	44972	115546	81668	38633	120301	No	43.6	Si
SLU 44	7.57	2466.16	-89914	-65392	545	7.575	7.575	-28775	10833	39283	115546	81668	38633	120301	No	220.89	Si
SLU 72	5.07	11405.95	-128314	-93320	-2689	7.575	7.575	-41065	10833	50454	115546	81668	38633	120301	No	44.74	Si
SLU 72	7.57	2942.81	-109085	-79335	1121	7.575	7.575	-34911	10833	44860	115546	81668	38633	120301	No	107.3	Si
SLU 47	5.07	10291.92	-111865	-81356	-2666	7.575	7.575	-35800	10833	45669	115546	81668	38633	120301	No	45.12	Si
SLU 47	7.57	2319.1	-92298	-67126	665	7.575	7.575	-29538	10833	39977	115546	81668	38633	120301	No	180.93	Si
SLU 23	5.07	8714.09	-102010	-74189	-2636	7.575	7.575	-32646	10833	42802	115546	81668	38633	120301	No	45.64	Si
SLU 23	7.57	3058.69	-87358	-63533	483	7.575	7.575	-27957	10833	38540	115546	81668	38633	120301	No	249.1	Si
SLU 70	5.07	11472.35	-129663	-94300	-2722	7.575	7.575	-41496	10833	50846	115546	81668	38633	120301	No	44.19	Si
SLU 70	7.57	2920.3	-110414	-80301	1132	7.575	7.575	-35336	10833	45247	115546	81668	38633	120301	No	106.24	Si
SLU 83	5.07	12193.8	-140411	-102117	-1681	7.575	7.575	-44936	10833	53973	115546	81668	38633	120301	No	71.55	Si
SLU 83	7.57	3531.02	-122342	-88976	2580	7.575	7.575	-39153	10833	48717	115546	81668	38633	120301	No	46.64	Si
SLU 68	5.07	11101.88	-125941	-91594	-2982	7.575	7.575	-40305	10833	49764	115546	81668	38633	120301	No	40.35	Si
SLU 68	7.57	3191.78	-106697	-77597	805	7.575	7.575	-34146	10833	44165	115546	81668	38633	120301	No	149.45	Si
SLU 67	5.07	11207.57	-127267	-92558	-2815	7.575	7.575	-40730	10833	50149	115546	81668	38633	120301	No	42.73	Si
SLU 67	7.57	3067.36	-108030	-78568	1012	7.575	7.575	-34573	10833	44553	115546	81668	38633	120301	No	118.86	Si
SLU 64	5.07	10935.3	-123490	-89811	-2576	7.575	7.575	-39521	10833	49051	115546	81668	38633	120301	No	46.69	Si
SLU 64	7.57	3084.04	-104326	-75873	1174	7.575	7.575	-33387	10833	43476	115546	81668	38633	120301	No	102.43	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	5.07	-20710.87	-87915	-63938	-48026	7.575	7.575	-28136	16250	45266	115546	122502	38633	160811		3.35	Si
SLV 10	7.57	26386.6	-68292	-49667	-42928	7.575	7.575	-21855	16250	39557	115546	122502	38633	155103		3.61	Si
SLV 4	5.07	88214.96	-107996	-78542	68178	7.575	7.575	-34562	16250	51107	115546	122502	38633	161135		2.36	Si
SLV 4	7.57	-30879.26	-102323	-74417	64789	7.575	7.575	-32747	16250	49457	115546	122502	38633	161135		2.49	Si
SLV 15	5.07	-68109	-83281	-60568	-54889	7.575	7.575	-26652	16250	43918	115546	122502	38633	159463		2.91	Si
SLV 15	7.57	25854.56	-61465	-44702	-45951	7.575	7.575	-19671	16250	37572	115546	122502	38633	153117		3.33	Si
SLV 3	5.07	88817.42	-108815	-79138	67819	7.575	7.575	-34824	16250	51346	115546	122502	38633	161135		2.38	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 3	7.57	-29930.3	-102707	-74696	64410	7.575	7.575	-32870	16250	49569	115546	122502	38633	161135		2.5	Si
SLV 2	5.07	84974	-106326	-77328	51385	7.575	7.575	-34028	16250	50622	115546	122502	38633	161135		3.14	Si
SLV 2	7.57	-21255.87	-98960	-71971	48210	7.575	7.575	-31670	16250	48479	115546	122502	38633	161135		3.34	Si
SLV 14	5.07	-71952.42	-80792	-58758	-71324	7.575	7.575	-25856	16250	43194	115546	122502	38633	158739		2.23	Si
SLV 14	7.57	34528.99	-57718	-41976	-62151	7.575	7.575	-18471	16194	36802	115546	122502	38633	152347		2.45	Si
SLV 1	5.07	85576.46	-107146	-77924	51026	7.575	7.575	-34290	16250	50860	115546	122502	38633	161135		3.16	Si
SLV 1	7.57	-20306.91	-99344	-72250	47832	7.575	7.575	-31793	16250	48591	115546	122502	38633	161135		3.37	Si
SLV 13	5.07	-71349.96	-81611	-59354	-71682	7.575	7.575	-26118	16250	43432	115546	122502	38633	158978		2.22	Si
SLV 13	7.57	35477.95	-58102	-42256	-62529	7.575	7.575	-18594	16219	36858	115546	122502	38633	152403		2.44	Si
SLV 9	5.07	-20305.25	-88467	-64340	-48267	7.575	7.575	-28312	16250	45426	115546	122502	38633	160972		3.34	Si
SLV 9	7.57	27025.5	-68550	-49855	-43183	7.575	7.575	-21938	16250	39633	115546	122502	38633	155178		3.59	Si
SLV 16	5.07	-68711.46	-82461	-59972	-54531	7.575	7.575	-26390	16250	43679	115546	122502	38633	159225		2.92	Si
SLV 16	7.57	24905.6	-61081	-44422	-45572	7.575	7.575	-19548	16250	37460	115546	122502	38633	153005		3.36	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 6.845 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 14	-69386	0.39	877.59	8674.04	12144.04	10409.04	11.86	Si
SLV 13	-69814	0.39	877.59	8716.78	12210.74	10463.76	11.92	Si
SLV 16	-71779	0.39	877.59	8911.35	12517.12	10714.23	12.21	Si
SLV 15	-72207	0.39	877.59	8953.35	12583.83	10768.59	12.27	Si
SLV 10	-77043	0.39	877.59	9418.77	13325.01	11371.89	12.96	Si
SLV 9	-77331	0.39	877.59	9445.97	13369.15	11407.56	13	Si
SLV 12	-85020	0.39	877.59	10149.77	14544.25	12347.01	14.07	Si
SLV 11	-85308	0.39	877.59	10175.31	14588.04	12381.67	14.11	Si
SLV 6	-85939	0.39	877.59	10231.02	14683.94	12457.48	14.2	Si
SLV 5	-86227	0.39	877.59	10256.37	14727.75	12492.06	14.23	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 3	-89072	-108815	96	0.486	10204.4	0.966	7.31117	5.36881	Si
SLV 1	-88356	-107146	-320	0.487	10131.5	0.966	7.32768	5.36881	Si
SLV 4	-88642	-107996	94	0.488	10160.6	0.966	7.3426	5.36881	Si
SLV 2	-87926	-106326	-323	0.489	10087.7	0.966	7.35854	5.36881	Si
SLV 7	-80183	-101692	659	0.525	9299.9	0.963	7.9176	4.5984	Si
SLV 8	-79894	-101140	657	0.526	9270.4	0.963	7.94302	4.5984	Si
SLV 5	-77797	-96127	-729	0.538	9057	0.962	8.11699	4.5984	Si
SLV 6	-77507	-95576	-731	0.539	9027.5	0.962	8.14318	4.5984	Si
SLV 15	-61490	-83281	317	0.661	7398.9	0.955	10.06013	5.36881	Si
SLV 16	-61059	-82461	314	0.665	7355.2	0.955	10.12263	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	31.517	SLU 58	Si
V_SLU	39.126	SLU 65	Si
PF_SLV	3.893	SLV 3	Si
V_SLV	2.218	SLV 13	Si
PFFP_SLV	11.861	SLV 14	Si
R_SLV	1.362	SLV 3	Si

Maschio 127

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-10.466	1.046	-11.173	1.046	L5	L6	0.706	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 84	5.07	-250.07	-16020	-0.0001354	0.0004492	0.0035	0.7064	2157.26	3915.82	3915.82	15.66	No	Si
SLU 84	7.57	163.26	-13504	-0.0001078	0.0004492	0.0035	0.7064	2281.89	3466.99	3466.99	21.24	No	Si
SLU 81	5.07	-254.89	-15809	-0.0001339	0.0004492	0.0035	0.7064	2174.32	3895.84	3895.84	15.28	No	Si
SLU 81	7.57	169.01	-13184	-0.0001055	0.0004492	0.0035	0.7064	2285.37	3416.93	3416.93	20.22	No	Si
SLU 82	5.07	-251.52	-15746	-0.0001331	0.0004492	0.0035	0.7064	2179.2	3889.85	3889.85	15.47	No	Si
SLU 82	7.57	166.56	-13243	-0.0001059	0.0004492	0.0035	0.7064	2284.94	3428.42	3428.42	20.58	No	Si
SLU 18	5.07	-206.73	-11841	-0.0000972	0.0004492	0.0035	0.7064	2269.48	3354.87	3354.87	16.23	No	Si
SLU 18	7.57	146.14	-9685	-0.0000764	0.0004492	0.0035	0.7064	2141.08	2741.63	2741.63	18.76	No	Si
SLU 62	5.07	-244.93	-14589	-0.0001226	0.0004492	0.0035	0.7064	2249.34	3737.95	3737.95	15.26	No	Si
SLU 62	7.57	173.39	-11690	-0.0000938	0.0004492	0.0035	0.7064	2264.63	3128.67	3128.67	18.04	No	Si
SLU 61	5.07	-243.01	-14252	-0.0001196	0.0004492	0.0035	0.7064	2262.9	3691.2	3691.2	15.19	No	Si
SLU 61	7.57	174.25	-11489	-0.0000922	0.0004492	0.0035	0.7064	2257.17	3089.76	3089.76	17.73	No	Si
SLU 83	5.07	-253.44	-16083	-0.0001362	0.0004492	0.0035	0.7064	2151.91	3921.81	3921.81	15.47	No	Si
SLU 83	7.57	165.7	-13445	-0.0001075	0.0004492	0.0035	0.7064	2282.75	3459.08	3459.08	20.88	No	Si
SLU 60	5.07	-246.38	-14315	-0.0001203	0.0004492	0.0035	0.7064	2260.59	3699.96	3699.96	15.02	No	Si
SLU 60	7.57	176.69	-11429	-0.0000919	0.0004492	0.0035	0.7064	2254.75	3078.27	3078.27	17.42	No	Si
SLU 63	5.07	-241.56	-14526	-0.0001218	0.0004492	0.0035	0.7064	2252.12	3729.19	3729.19	15.44	No	Si
SLU 63	7.57	170.94	-11750	-0.0000941	0.0004492	0.0035	0.7064	2266.62	3140.15	3140.15	18.37	No	Si
SLU 53	5.07	-227.84	-14162	-0.0001177	0.0004492	0.0035	0.7064	2265.99	3678.72	3678.72	16.15	No	Si
SLU 53	7.57	159.44	-11262	-0.0000895	0.0004492	0.0035	0.7064	2247.47	3046.09	3046.09	19.11	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 4	5.07	3128.73	-8038	-0.0158173	0.0006738	0.0035	0.5651		2473.42	2473.42	0.79		No
SLV 4	7.57	-3158.93	-4222	-0.0074124	0.0006738	0.0035	0.5651		1620.93	1620.93	0.51		No
SLV 2	5.07	3274.44	-3637	-0.0379705	0.0006738	0.0035	0.5651		1260.43	1260.43	0.38		No
SLV 2	7.57	-3267.64	-7019	-0.0062412	0.0006738	0.0035	0.5651		2422.54	2422.54	0.74		No
SLV 14	5.07	-3426.07	-13457	-0.0006354	0.0006738	0.0035	0.5651		3944.08	3944.08	1.15		Si
SLV 14	7.57	3345.81	-13108	-0.0006243	0.0006738	0.0035	0.7064		3664.02	3664.02	1.1		Si
SLV 1	5.07	3257.17	-3659	-0.0376005	0.0006738	0.0035	0.5651		1267.43	1267.43	0.39		No
SLV 1	7.57	-3251.58	-7077	-0.0061381	0.0006738	0.0035	0.5651		2438.2	2438.2	0.75		No
SLV 5	5.07	1084.8	-1957	-0.0089986	0.0006738	0.0035	0.5651		724.77	724.77	0.67		No
SLV 5	7.57	-1066.32	-12461	-0.0001529	0.0006738	0.0035	0.7064		3739.01	3739.01	3.51		Si
SLV 16	5.07	-3571.78	-17859	-0.0004871	0.0006738	0.0035	0.5651		4671.84	4671.84	1.31		Si
SLV 16	7.57	3454.52	-10311	-0.0096899	0.0006738	0.0035	0.7064		3048.03	3048.03	0.88		No
SLV 13	5.07	-3443.35	-13480	-0.0006492	0.0006738	0.0035	0.5651		3948.64	3948.64	1.15		Si
SLV 13	7.57	3361.88	-13165	-0.0006315	0.0006738	0.0035	0.7064		3675.29	3675.29	1.09		Si
SLV 6	5.07	1096.43	-1942	-0.0092707	0.0006738	0.0035	0.5651		719.82	719.82	0.66		No
SLV 6	7.57	-1077.13	-12423	-0.0001533	0.0006738	0.0035	0.7064		3730.65	3730.65	3.46		Si
SLV 15	5.07	-3589.05	-17881	-0.0004917	0.0006738	0.0035	0.5651		4675.12	4675.12	1.3		Si
SLV 15	7.57	3470.58	-10368	-0.0096896	0.0006738	0.0035	0.7064		3062.53	3062.53	0.88		No
SLV 3	5.07	3111.46	-8061	-0.0153715	0.0006738	0.0035	0.5651		2479.11	2479.11	0.8		No
SLV 3	7.57	-3142.87	-4280	-0.0073332	0.0006738	0.0035	0.5651		1638.21	1638.21	0.52		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 54	5.07	-224.47	-14099	-10253	-262	0.7064	0.7064	-48387	10833	3550	115546	7615	3602	11218	No	42.87	Si
SLU 54	7.57	156.99	-11322	-8234	-264	0.7064	0.7064	-38857	10833	3012	115546	7615	3602	11218	No	42.43	Si
SLU 63	5.07	-241.56	-14526	-10564	-268	0.7064	0.7064	-49852	10833	3633	115546	7615	3602	11218	No	41.83	Si
SLU 63	7.57	170.94	-11750	-8545	-278	0.7064	0.7064	-40326	10833	3095	115546	7615	3602	11218	No	40.3	Si
SLU 60	5.07	-246.38	-14315	-10411	-281	0.7064	0.7064	-49129	10833	3592	115546	7615	3602	11218	No	39.94	Si
SLU 60	7.57	176.69	-11429	-8312	-292	0.7064	0.7064	-39225	10833	3033	115546	7615	3602	11218	No	38.46	Si
SLU 58	5.07	-224.03	-14297	-10398	-271	0.7064	0.7064	-49067	10833	3589	115546	7615	3602	11218	No	41.44	Si
SLU 58	7.57	154.15	-11392	-8285	-273	0.7064	0.7064	-39097	10833	3025	115546	7615	3602	11218	No	41.06	Si
SLU 62	5.07	-244.93	-14589	-10610	-280	0.7064	0.7064	-50069	10833	3645	115546	7615	3602	11218	No	40.03	Si
SLU 62	7.57	173.39	-11690	-8502	-290	0.7064	0.7064	-40121	10833	3083	115546	7615	3602	11218	No	38.62	Si
SLU 81	5.07	-254.89	-15809	-11498	-257	0.7064	0.7064	-54258	10833	3882	115546	7615	3602	11218	No	43.72	Si
SLU 81	7.57	169.01	-13184	-9588	-268	0.7064	0.7064	-45247	10833	3373	115546	7615	3602	11218	No	41.93	Si
SLU 83	5.07	-253.44	-16083	-11697	-256	0.7064	0.7064	-55198	10833	3935	115546	7615	3602	11218	No	43.83	Si
SLU 83	7.57	165.7	-13445	-9778	-266	0.7064	0.7064	-46143	10833	3423	115546	7615	3602	11218	No	42.11	Si
SLU 61	5.07	-243.01	-14252	-10365	-269	0.7064	0.7064	-48912	10833	3580	115546	7615	3602	11218	No	41.73	Si
SLU 61	7.57	174.25	-11489	-8355	-280	0.7064	0.7064	-39430	10833	3044	115546	7615	3602	11218	No	40.13	Si
SLU 53	5.07	-227.84	-14162	-10299	-274	0.7064	0.7064	-48604	10833	3562	115546	7615	3602	11218	No	40.98	Si
SLU 53	7.57	159.44	-11262	-8191	-276	0.7064	0.7064	-38653	10833	3000	115546	7615	3602	11218	No	40.57	Si
SLU 56	5.07	-226.39	-14436	-10499	-273	0.7064	0.7064	-49544	10833	3616	115546	7615	3602	11218	No	41.08	Si
SLU 56	7.57	156.13	-11524	-8381	-275	0.7064	0.7064	-39549	10833	3051	115546	7615	3602	11218	No	40.75	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	5.07	3257.17	-3659	-2661	3132	0.5651	0	0	0	0	115546	9138	2882	12020		3.84	Si
SLV 1	7.57	-3251.58	-7077	-5147	2651	0.5651	0	0	0	0	115546	9138	2882	12020		4.53	Si
SLV 15	5.07	-3589.05	-17881	-13005	-3514	0.5651	0.4574	0	0	0	115546	9138	2882	12020		3.42	Si
SLV 15	7.57	3470.58	-10368	-7540	-3023	0.7064	0.0553	-321282	16250	3235	115546	11423	3602	15025		4.97	Si
SLV 4	5.07	3128.73	-8038	-5846	2485	0.5651	0	0	0	0	115546	9138	2882	12020		4.84	Si
SLV 4	7.57	-3158.93	-4222	-3071	1977	0.5651	0	0	0	0	115546	9138	2882	12020		6.08	Si
SLV 3	5.07	3111.46	-8061	-5862	2475	0.5651	0	0	0	0	115546	9138	2882	12020		4.86	Si
SLV 3	7.57	-3142.87	-4280	-3112	1967	0.5651	0	0	0	0	115546	9138	2882	12020		6.11	Si
SLV 2	5.07	3274.44	-3637	-2645	3143	0.5651	0	0	0	0	115546	9138	2882	12020		3.82	Si
SLV 2	7.57	-3267.64	-7019	-5105	2662	0.5651	0	0	0	0	115546	9138	2882	12020		4.52	Si
SLV 16	5.07	-3571.78	-17859	-12988	-3504	0.5651	0.4595	0	0	0	115546	9138	2882	12020		3.43	Si
SLV 16	7.57	3454.52	-10311	-7499	-3012	0.7064	0.0544	-321049	16250	3224	115546	11423	3602	15025		4.99	Si
SLV 6	5.07	1096.43	-1942	-1413	1812	0.5651	0	0	0	0	115546	9138	2882	12020		6.63	Si
SLV 6	7.57	-1077.13	-12423	-9035	1712	0.7064	0.7064	-42636	16250	3633	115546	11423	3602	15025		8.78	Si
SLV 13	5.07	-3443.35	-13480	-9803	-2857	0.5651	0.2932	0	0	0	115546	9138	2882	12020		4.21	Si
SLV 13	7.57	3361.88	-13165	-9575	-2338	0.7064	0.2934	-45183	16250	3777	115546	11423	3602	15025		6.43	Si
SLV 14	5.07	-3426.07	-13457	-9787	-2846	0.5651	0.2958	0	0	0	115546	9138	2882	12020		4.22	Si
SLV 14	7.57	3345.81	-13108	-9533	-2328	0.7064	0.2938	-44987	16250	3766	115546	11423	3602	15025		6.45	Si
SLV 5	5.07	1084.8	-1957	-1424	1805	0.5651	0	0	0	0	115546	9138	2882	12020		6.66	Si
SLV 5	7.57	-1066.32	-12461	-9063	1705	0.7064	0.7064	-42768	16250	3641	115546	11423	3602	15025		8.81	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 6.845 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 4	-5797	0.39	81.83	739.81	1026.1	882.95	10.79	Si
SLV 3	-5839	0.39	81.83	744.19	1032.64	888.42	10.86	Si
SLV 2	-6003	0.39	81.83	761.24	1058.27	909.76	11.12	Si
SLV 1	-6044	0.39	81.83	765.57	1064.82	915.19	11.18	Si
SLV 8	-7564	0.39	81.83	913.62	1300.63	1107.13	13.53	Si
SLV 7	-7592	0.39	81.83	916.19	1304.95	1110.57	13.57	Si
SLV 6	-8248	0.39	81.83	974.48	1405.82	1190.15	14.54	Si
SLV 5	-8276	0.39	81.83	976.9	1410.15	1193.52	14.58	Si
SLV 12	-9277	0.39	81.83	1059.2	1562.83	1311.01	16.02	Si
SLV 11	-9306	0.39	81.83	1061.4	1566.97	1314.18	16.06	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 16	-6957	-17859	39	0.561	814.3	0.961	8.47555	5.36881	Si
SLV 15	-6929	-17881	39	0.562	811.4	0.961	8.50625	5.36881	Si
SLV 14	-6782	-13457	7	0.577	796.5	0.96	8.73338	5.36881	Si
SLV 13	-6753	-13480	7	0.579	793.6	0.96	8.76586	5.36881	Si
SLV 12	-6023	-19561	63	0.629	719.3	0.957	9.56143	4.5984	Si
SLV 11	-6004	-19576	63	0.631	717.4	0.956	9.58832	4.5984	Si
SLV 10	-5439	-4888	-47	0.688	660	0.953	10.49141	4.5984	Si
SLV 9	-5420	-4904	-47	0.69	658	0.953	10.52433	4.5984	Si
SLV 8	-5051	-16614	50	0.731	620.6	0.95	11.18021	4.5984	Si
SLV 7	-5031	-16630	50	0.734	618.6	0.95	11.21755	4.5984	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	15.017	SLU 60	Si
V_SLU	38.464	SLU 60	Si
PF_SLV	0.385	SLV 2	No
V_SLV	3.42	SLV 15	Si
PFFP_SLV	10.79	SLV 4	Si
R_SLV	1.579	SLV 16	Si

Maschio 128

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.278	1.046	-9.386	1.046	L5	L6	2.109	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 76	5.07	2827.13	-43926	-0.0001288	0.0004492	0.0035	2.1086	19993.06	32285.9	32285.9	11.42	No	Si
SLU 76	7.57	1941.8	-35212	-0.0000976	0.0004492	0.0035	2.1086	20212.26	28094.73	28094.73	14.47	No	Si
SLU 26	5.07	2364.86	-33657	-0.0000966	0.0004492	0.0035	2.1086	20033.5	27160.65	27160.65	11.49	No	Si
SLU 26	7.57	1336.27	-26839	-0.0000714	0.0004492	0.0035	2.1086	18471.36	23066.79	23066.79	17.26	No	Si
SLU 72	5.07	2765.05	-41064	-0.0001201	0.0004492	0.0035	2.1086	20293.56	31090.63	31090.63	11.24	No	Si
SLU 72	7.57	1712.42	-32585	-0.0000889	0.0004492	0.0035	2.1086	19871.89	26516.99	26516.99	15.49	No	Si
SLU 68	5.07	2751.9	-40225	-0.0001176	0.0004492	0.0035	2.1086	20339.26	30740.36	30740.36	11.17	No	Si
SLU 68	7.57	1645.43	-31822	-0.0000864	0.0004492	0.0035	2.1086	19737.83	26059.04	26059.04	15.84	No	Si
SLU 80	5.07	2840.28	-44765	-0.0001314	0.0004492	0.0035	2.1086	19862.64	32636.17	32636.17	11.49	No	Si
SLU 80	7.57	2008.79	-35975	-0.0001001	0.0004492	0.0035	2.1086	20275.79	28552.68	28552.68	14.21	No	Si
SLU 70	5.07	2777.67	-41490	-0.0001214	0.0004492	0.0035	2.1086	20262.94	31268.81	31268.81	11.26	No	Si
SLU 70	7.57	1737.8	-32970	-0.0000901	0.0004492	0.0035	2.1086	19933.61	26748.44	26748.44	15.39	No	Si
SLU 69	5.07	2723.8	-41472	-0.0001209	0.0004492	0.0035	2.1086	20264.39	31260.99	31260.99	11.48	No	Si
SLU 69	7.57	1777.56	-32973	-0.0000904	0.0004492	0.0035	2.1086	19934.06	26750.16	26750.16	15.05	No	Si
SLU 67	5.07	2728.6	-40639	-0.0001186	0.0004492	0.0035	2.1086	20319.09	30913.33	30913.33	11.33	No	Si
SLU 67	7.57	1697.32	-32210	-0.0000878	0.0004492	0.0035	2.1086	19807.91	26291.64	26291.64	15.49	No	Si
SLU 71	5.07	2711.18	-41045	-0.0001196	0.0004492	0.0035	2.1086	20294.79	31082.81	31082.81	11.46	No	Si
SLU 71	7.57	1752.18	-32588	-0.0000892	0.0004492	0.0035	2.1086	19872.37	26518.71	26518.71	15.13	No	Si
SLU 65	5.07	2702.83	-39373	-0.0001148	0.0004492	0.0035	2.1086	20366.01	30384.88	30384.88	11.24	No	Si
SLU 65	7.57	1604.94	-31062	-0.0000841	0.0004492	0.0035	2.1086	19588.3	25602.24	25602.24	15.95	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	5.07	18495.79	-31518	-0.0002366	0.0006738	0.0035	2.1086		27806.13	27806.13	1.5		Si
SLV 1	7.57	-8688.8	-19869	-0.0001039	0.0006738	0.0035	2.1086		21000.12	21000.12	2.42		Si
SLV 6	5.07	11115.73	-30104	-0.0001456	0.0006738	0.0035	2.1086		26700.42	26700.42	2.4		Si
SLV 6	7.57	-5210.42	-20628	-0.0000806	0.0006738	0.0035	2.1086		21608.74	21608.74	4.15		Si
SLV 3	5.07	15705.17	-31837	-0.0001938	0.0006738	0.0035	2.1086		28055.79	28055.79	1.79		Si
SLV 3	7.57	-6367.63	-21220	-0.0000898	0.0006738	0.0035	2.1086		22083.44	22083.44	3.47		Si
SLV 15	5.07	-14582.94	-28913	-0.0001777	0.0006738	0.0035	2.1086		27958.18	27958.18	1.92		Si
SLV 15	7.57	11399.65	-27938	-0.000143	0.0006738	0.0035	2.1086		25006.44	25006.44	2.19		Si
SLV 2	5.07	18454.03	-31496	-0.0002359	0.0006738	0.0035	2.1086		27789.26	27789.26	1.51		Si
SLV 2	7.57	-8727.21	-19850	-0.0001042	0.0006738	0.0035	2.1086		20985.25	20985.25	2.4		Si
SLV 4	5.07	15663.4	-31815	-0.0001933	0.0006738	0.0035	2.1086		28038.91	28038.91	1.79		Si
SLV 4	7.57	-6406.04	-21202	-0.00009	0.0006738	0.0035	2.1086		22068.57	22068.57	3.44		Si
SLV 16	5.07	-14624.71	-28892	-0.0001782	0.0006738	0.0035	2.1086		27942.8	27942.8	1.91		Si
SLV 16	7.57	11361.24	-27920	-0.0001427	0.0006738	0.0035	2.1086		24991.93	24991.93	2.2		Si
SLV 13	5.07	-11792.32	-28594	-0.0001478	0.0006738	0.0035	2.1086		27730.6	27730.6	2.35		Si
SLV 13	7.57	9078.48	-26587	-0.0001218	0.0006738	0.0035	2.1086		23949.55	23949.55	2.64		Si
SLV 14	5.07	-11834.09	-28572	-0.0001482	0.0006738	0.0035	2.1086		27715.21	27715.21	2.34		Si
SLV 14	7.57	9040.07	-26568	-0.0001215	0.0006738	0.0035	2.1086		23935.04	23935.04	2.65		Si
SLV 5	5.07	11143.85	-30119	-0.0001459	0.0006738	0.0035	2.1086		26711.78	26711.78	2.4		Si
SLV 5	7.57	-5184.55	-20640	-0.0000804	0.0006738	0.0035	2.1086		21618.75	21618.75	4.17		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	5.07	2803.83	-44341	-32248	2676	2.1086	2.1086	-50977	10833	11035	115546	22734	10754	33488	No	12.51	Si
SLU 75	7.57	1993.69	-35600	-25891	-103	2.1086	2.1086	-40928	10833	9340	115546	22734	10754	33488	No	325.58	Si
SLU 78	5.07	2852.9	-45192	-32867	2722	2.1086	2.1086	-51956	10833	11200	115546	22734	10754	33488	No	12.3	Si
SLU 78	7.57	2034.17	-36360	-26444	-97	2.1086	2.1086	-41803	10833	9488	115546	22734	10754	33488	No	346.6	Si
SLU 79	5.07	2786.41	-44747	-32543	2660	2.1086	2.1086	-51444	10833	11114	115546	22734	10754	33488	No	12.59	Si
SLU 79	7.57	2048.55	-35978	-26166	-125	2.1086	2.1086	-41363	10833	9413	115546	22734	10754	33488	No	267.38	Si
SLU 76	5.07	2827.13	-43926	-31946	2694	2.1086	2.1086	-50501	10833	10955	115546	22734	10754	33488	No	12.43	Si
SLU 76	7.57	1941.8	-35212	-25609	-74	2.1086	2.1086	-40483	10833	9265	115546	22734	10754	33488	No	455.01	Si
SLU 73	5.07	2778.06	-43075	-31327	2648	2.1086	2.1086	-49522	10833	10790	115546	22734	10754	33488	No	12.65	Si
SLU 73	7.57	1901.32	-34452	-25056	-80	2.1086	2.1086	-39608	10833	9117	115546	22734	10754	33488	No	419.45	Si
SLU 77	5.07	2799.03	-45173	-32853	2674	2.1086	2.1086	-51935	10833	11197	115546	22734	10754	33488	No	12.52	Si
SLU 77	7.57	2073.93	-36363	-26446	-131	2.1086	2.1086	-41806	10833	9488	115546	22734	10754	33488	No	254.95	Si
SLU 70	5.07	2777.67	-41490	-30175	2672	2.1086	2.1086	-47700	10833	10483	115546	22734	10754	33488	No	12.54	Si
SLU 70	7.57	1737.8	-32970	-23978	-63	2.1086	2.1086	-37905	10833	8830	115546	22734	10754	33488	No	532.73	Si
SLU 72	5.07	2765.05	-41064	-29864	2657	2.1086	2.1086	-47210	10833	10400	115546	22734	10754	33488	No	12.6	Si
SLU 72	7.57	1712.42	-32585	-23698	-57	2.1086	2.1086	-37462	10833	8755	115546	22734	10754	33488	No	590.05	Si
SLU 80	5.07	2840.28	-44765	-32557	2708	2.1086	2.1086	-51466	10833	11118	115546	22734	10754	33488	No	12.37	Si
SLU 80	7.57	2008.79	-35975	-26164	-91	2.1086	2.1086	-41360	10833	9413	115546	22734	10754	33488	No	369.98	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	5.07	2823.46	-45500	-33091	2684	2.1086	2.1086	-52311	10833	11260	115546	22734	10754	33488	No	12.48	Si
SLU 84	7.57	2095.33	-36667	-26667	-111	2.1086	2.1086	-42155	10833	9547	115546	22734	10754	33488	No	301.1	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	5.07	18495.79	-31518	-22922	15448	2.1086	1.4024	-36235	16250	9767	115546	34101	10754	44855		2.9	Si
SLV 1	7.57	-8688.8	-19869	-14450	8503	2.1086	1.851	-26266	16250	9024	115546	34101	10754	44855		5.27	Si
SLV 14	5.07	-11834.09	-28572	-20780	-9225	2.1086	1.9204	-36718	16250	9362	115546	34101	10754	44855		4.86	Si
SLV 14	7.57	9040.07	-26568	-19322	-6837	2.1086	2.1086	-30545	16250	10280	115546	34101	10754	44855		6.56	Si
SLV 16	5.07	-14624.71	-28892	-21012	-11709	2.1086	1.6444	-43489	16250	9257	115546	34101	10754	44855		3.83	Si
SLV 16	7.57	11361.24	-27920	-20305	-8744	2.1086	1.9422	-32098	16250	9468	115546	34101	10754	44855		5.13	Si
SLV 4	5.07	15663.4	-31815	-23138	12957	2.1086	1.686	-36577	16250	9824	115546	34101	10754	44855		3.46	Si
SLV 4	7.57	-6406.04	-21202	-15419	6628	2.1086	2.1086	-24375	16250	10280	115546	34101	10754	44855		6.77	Si
SLV 3	5.07	15705.17	-31837	-23154	12963	2.1086	1.683	-36602	16250	9829	115546	34101	10754	44855		3.46	Si
SLV 3	7.57	-6367.63	-21220	-15433	6596	2.1086	2.1086	-24396	16250	10280	115546	34101	10754	44855		6.8	Si
SLV 6	5.07	11115.73	-30104	-21894	9708	2.1086	2.0552	-34610	16250	10019	115546	34101	10754	44855		4.62	Si
SLV 6	7.57	-5210.42	-20628	-15002	5374	2.1086	2.1086	-23715	16250	10280	115546	34101	10754	44855		8.35	Si
SLV 13	5.07	-11792.32	-28594	-20796	-9218	2.1086	1.9257	-36642	16250	9388	115546	34101	10754	44855		4.87	Si
SLV 13	7.57	9078.48	-26587	-19336	-6869	2.1086	2.1086	-30566	16250	10280	115546	34101	10754	44855		6.53	Si
SLV 15	5.07	-14582.94	-28913	-21028	-11703	2.1086	1.6498	-43377	16250	9262	115546	34101	10754	44855		3.83	Si
SLV 15	7.57	11399.65	-27938	-20319	-8776	2.1086	1.9388	-32120	16250	9452	115546	34101	10754	44855		5.11	Si
SLV 5	5.07	11143.85	-30119	-21904	9713	2.1086	2.0529	-34627	16250	10008	115546	34101	10754	44855		4.62	Si
SLV 5	7.57	-5184.55	-20640	-15011	5353	2.1086	2.1086	-23730	16250	10280	115546	34101	10754	44855		8.38	Si
SLV 2	5.07	18454.03	-31496	-22906	15442	2.1086	1.4052	-36210	16250	9762	115546	34101	10754	44855		2.9	Si
SLV 2	7.57	-8727.21	-19850	-14437	8535	2.1086	1.844	-26336	16250	8989	115546	34101	10754	44855		5.26	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 6.845 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 14	-26420	0.39	244.29	3059.91	4487.1	3773.51	15.45	Si
SLV 13	-26441	0.39	244.29	3061.67	4490.4	3776.03	15.46	Si
SLV 16	-26841	0.39	244.29	3094.08	4551.44	3822.76	15.65	Si
SLV 15	-26863	0.39	244.29	3095.82	4554.73	3825.28	15.66	Si
SLV 10	-26986	0.39	244.29	3105.73	4573.56	3839.65	15.72	Si
SLV 9	-27001	0.39	244.29	3106.9	4575.78	3841.34	15.72	Si
SLV 6	-27890	0.39	244.29	3177.15	4706.86	3942.01	16.14	Si
SLV 5	-27904	0.39	244.29	3178.28	4708.99	3943.63	16.14	Si
SLV 12	-28391	0.39	244.29	3215.81	4780.21	3998.01	16.37	Si
SLV 11	-28405	0.39	244.29	3216.92	4782.33	3999.63	16.37	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-24501	-28913	505	0.473	2810.7	0.966	7.11602	5.36881	Si
SLV 16	-24463	-28892	506	0.474	2806.8	0.966	7.12565	5.36881	Si
SLV 13	-24637	-28594	-290	0.479	2824.5	0.966	7.2037	5.36881	Si
SLV 14	-24598	-28572	-290	0.48	2820.6	0.966	7.21352	5.36881	Si
SLV 9	-22935	-29241	-1292	0.469	2651.3	0.964	7.06258	4.5984	Si
SLV 10	-22909	-29227	-1291	0.469	2648.7	0.964	7.06949	4.5984	Si
SLV 11	-22485	-30305	1360	0.474	2605.5	0.964	7.14304	4.5984	Si
SLV 12	-22459	-30291	1360	0.474	2602.9	0.964	7.15009	4.5984	Si
SLV 5	-21347	-30119	-1355	0.495	2489.8	0.962	7.47497	4.5984	Si
SLV 6	-21321	-30104	-1355	0.495	2487.1	0.962	7.48284	4.5984	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	11.171	SLU 68	Si
V_SLU	12.301	SLU 78	Si
PF_SLV	1.503	SLV 1	Si
V_SLV	2.904	SLV 1	Si
PFFP_SLV	15.447	SLV 14	Si
R_SLV	1.325	SLV 15	Si

Maschio 129

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-4.968	1.046	-6.478	1.046	L5	L6	1.51	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 82	5.07	2201.58	-30620	-0.0001371	0.0004492	0.0035	1.51	10329.24	16301.86	16301.86	7.4	No	Si
SLU 82	7.17	-1260.91	-28020	-0.0001122	0.0004492	0.0035	1.51	10445.87	16286.76	16286.76	12.92	No	Si
SLU 70	5.07	2149.41	-29241	-0.0001306	0.0004492	0.0035	1.51	10414.07	15885.71	15885.71	7.39	No	Si
SLU 70	7.17	-1327.59	-25721	-0.0001044	0.0004492	0.0035	1.51	10395.38	15573.49	15573.49	11.73	No	Si
SLU 67	5.07	2139.02	-28638	-0.000128	0.0004492	0.0035	1.51	10434.84	15703.98	15703.98	7.34	No	Si
SLU 67	7.17	-1335.56	-25196	-0.0001025	0.0004492	0.0035	1.51	10363.61	15374.09	15374.09	11.51	No	Si
SLU 65	5.07	2146.83	-27760	-0.0001246	0.0004492	0.0035	1.51	10447.39	15438.87	15438.87	7.19	No	Si
SLU 65	7.17	-1357.91	-24381	-0.0000997	0.0004492	0.0035	1.51	10299.41	15064.71	15064.71	11.09	No	Si
SLU 72	5.07	2139.16	-28952	-0.0001293	0.0004492	0.0035	1.51	10425.27	15798.54	15798.54	7.39	No	Si
SLU 72	7.17	-1323.93	-25434	-0.0001032	0.0004492	0.0035	1.51	10378.96	15464.61	15464.61	11.68	No	Si
SLU 73	5.07	2205.07	-29771	-0.0001336	0.0004492	0.0035	1.51	10387.61	16045.64	16045.64	7.28	No	Si
SLU 73	7.17	-1302.63	-26926	-0.0001086	0.0004492	0.0035	1.51	10439.83	15981.42	15981.42	12.27	No	Si
SLU 68	5.07	2157.22	-28362	-0.0001272	0.0004492	0.0035	1.51	10441.06	15620.61	15620.61	7.24	No	Si
SLU 68	7.17	-1349.94	-24906	-0.0001016	0.0004492	0.0035	1.51	10342.86	15264.11	15264.11	11.31	No	Si
SLU 76	5.07	2215.46	-30373	-0.0001363	0.0004492	0.0035	1.51	10348.24	16227.37	16227.37	7.32	No	Si
SLU 76	7.17	-1294.66	-27451	-0.0001105	0.0004492	0.0035	1.51	10446.8	16128.04	16128.04	12.46	No	Si
SLU 44	5.07	1959.18	-24697	-0.0001097	0.0004492	0.0035	1.51	10326.51	14190.05	14190.05	7.24	No	Si
SLU 44	7.17	-1300.18	-21002	-0.0000863	0.0004492	0.0035	1.51	9840.01	13658.72	13658.72	10.51	No	Si
SLU 47	5.07	1969.57	-25300	-0.0001122	0.0004492	0.0035	1.51	10370.49	14450.82	14450.82	7.34	No	Si
SLU 47	7.17	-1292.2	-21527	-0.0000881	0.0004492	0.0035	1.51	9931.87	13894.29	13894.29	10.75	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	5.07	10282.97	-20319	-0.0002984	0.0006738	0.0035	1.51		13010.29	13010.29	1.27		Si
SLV 1	7.17	-8726.51	-16362	-0.0002614	0.0006738	0.0035	1.208		11967.79	11967.79	1.37		Si
SLV 13	5.07	-5115.1	-22331	-0.0001401	0.0006738	0.0035	1.51		15144.06	15144.06	2.96		Si
SLV 13	7.17	5267.33	-20158	-0.0001344	0.0006738	0.0035	1.51		12919.64	12919.64	2.45		Si
SLV 6	5.07	7439.51	-21098	-0.0001772	0.0006738	0.0035	1.51		13448.43	13448.43	1.81		Si
SLV 6	7.17	-5571.39	-16348	-0.0001295	0.0006738	0.0035	1.51		11959.76	11959.76	2.15		Si
SLV 14	5.07	-5022.79	-22258	-0.0001386	0.0006738	0.0035	1.51		15106.64	15106.64	3.01		Si
SLV 14	7.17	5268.87	-20052	-0.0001341	0.0006738	0.0035	1.51		12860.15	12860.15	2.44		Si
SLV 3	5.07	8166.99	-20203	-0.0001971	0.0006738	0.0035	1.51		12945.04	12945.04	1.59		Si
SLV 3	7.17	-7231.64	-17437	-0.0001726	0.0006738	0.0035	1.208		12564.09	12564.09	1.74		Si
SLV 4	5.07	8259.3	-20130	-0.0002003	0.0006738	0.0035	1.51		12904	12904	1.56		Si
SLV 4	7.17	-7230.1	-17331	-0.0001728	0.0006738	0.0035	1.208		12506.51	12506.51	1.73		Si
SLV 2	5.07	10375.27	-20246	-0.0003069	0.0006738	0.0035	1.51		12969.26	12969.26	1.25		Si
SLV 2	7.17	-8724.97	-16256	-0.000264	0.0006738	0.0035	1.208		11906.89	11906.89	1.36		Si
SLV 16	5.07	-7138.77	-22142	-0.0001725	0.0006738	0.0035	1.51		15047.12	15047.12	2.11		Si
SLV 16	7.17	6763.74	-21127	-0.0001627	0.0006738	0.0035	1.51		13465.09	13465.09	1.99		Si
SLV 5	5.07	7377.36	-21147	-0.0001758	0.0006738	0.0035	1.51		13476.06	13476.06	1.83		Si
SLV 5	7.17	-5572.43	-16419	-0.0001296	0.0006738	0.0035	1.51		12000.76	12000.76	2.15		Si
SLV 15	5.07	-7231.08	-22215	-0.0001745	0.0006738	0.0035	1.51		15084.54	15084.54	2.09		Si
SLV 15	7.17	6762.2	-21233	-0.0001629	0.0006738	0.0035	1.51		13524.58	13524.58	2		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 70	5.07	2149.41	-29241	-21266	2045	1.51	1.51	-46945	10833	7415	115546	16280	7701	23981	No	11.73	Si
SLU 70	7.17	-1327.59	-25721	-18706	2044	1.51	1.51	-41294	10833	6733	115546	16280	7701	23981	No	11.73	Si
SLU 65	5.07	2146.83	-27760	-20189	2086	1.51	1.51	-44567	10833	7128	115546	16280	7701	23981	No	11.5	Si
SLU 65	7.17	-1357.91	-24381	-17731	2085	1.51	1.51	-39142	10833	6473	115546	16280	7701	23981	No	11.5	Si
SLU 75	5.07	2197.26	-30649	-22290	2003	1.51	1.51	-49206	10833	7688	115546	16280	7701	23981	No	11.97	Si
SLU 75	7.17	-1280.28	-27741	-20175	2002	1.51	1.51	-44537	10833	7124	115546	16280	7701	23981	No	11.98	Si
SLU 80	5.07	2197.4	-30963	-22518	2016	1.51	1.51	-49709	10833	7749	115546	16280	7701	23981	No	11.89	Si
SLU 80	7.17	-1268.65	-27979	-20349	2015	1.51	1.51	-44920	10833	7171	115546	16280	7701	23981	No	11.9	Si
SLU 72	5.07	2139.16	-28952	-21056	2045	1.51	1.51	-46481	10833	7359	115546	16280	7701	23981	No	11.73	Si
SLU 72	7.17	-1323.93	-25434	-18498	2044	1.51	1.51	-40833	10833	6677	115546	16280	7701	23981	No	11.73	Si
SLU 76	5.07	2215.46	-30373	-22089	2071	1.51	1.51	-48763	10833	7635	115546	16280	7701	23981	No	11.58	Si
SLU 76	7.17	-1294.66	-27451	-19965	2070	1.51	1.51	-44072	10833	7068	115546	16280	7701	23981	No	11.58	Si
SLU 67	5.07	2139.02	-28638	-20828	2032	1.51	1.51	-45978	10833	7298	115546	16280	7701	23981	No	11.8	Si
SLU 67	7.17	-1335.56	-25196	-18324	2031	1.51	1.51	-40451	10833	6631	115546	16280	7701	23981	No	11.81	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 68	5.07	2157.22	-28362	-20627	2099	1.51	1.51	-45534	10833	7245	115546	16280	7701	23981	No	11.42	Si
SLU 68	7.17	-1349.94	-24906	-18113	2098	1.51	1.51	-39985	10833	6575	115546	16280	7701	23981	No	11.43	Si
SLU 78	5.07	2207.65	-31252	-22728	2017	1.51	1.51	-50173	10833	7805	115546	16280	7701	23981	No	11.89	Si
SLU 78	7.17	-1272.31	-28266	-20557	2016	1.51	1.51	-45380	10833	7226	115546	16280	7701	23981	No	11.9	Si
SLU 73	5.07	2205.07	-29771	-21651	2057	1.51	1.51	-47796	10833	7518	115546	16280	7701	23981	No	11.66	Si
SLU 73	7.17	-1302.63	-26926	-19583	2056	1.51	1.51	-43229	10833	6966	115546	16280	7701	23981	No	11.66	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	5.07	7377.36	-21147	-15379	13517	1.51	1.2184	-33950	16250	6718	115546	24420	7701	32121		2.38	Si
SLV 5	7.17	-5572.43	-16419	-11941	13384	1.51	1.2468	-32415	16250	6078	115546	24420	7701	32121		2.4	Si
SLV 15	5.07	-7231.08	-22215	-16157	-10609	1.51	1.2885	-42689	16250	6925	115546	24420	7701	32121		3.03	Si
SLV 15	7.17	6762.2	-21233	-15442	-10158	1.51	1.3096	-34089	16250	6735	115546	24420	7701	32121		3.16	Si
SLV 3	5.07	8166.99	-20203	-14693	7597	1.51	1.0523	-32435	16250	6535	115546	24420	7701	32121		4.23	Si
SLV 3	7.17	-7231.64	-17437	-12681	7143	1.208	1.0208	0	0	0	115546	19536	6161	25696		3.6	Si
SLV 6	5.07	7439.51	-21098	-15344	13678	1.51	1.2071	-33871	16250	6708	115546	24420	7701	32121		2.35	Si
SLV 6	7.17	-5571.39	-16348	-11890	13545	1.51	1.2426	-32383	16250	6058	115546	24420	7701	32121		2.37	Si
SLV 1	5.07	10282.97	-20319	-14778	13252	1.51	0.7468	-32622	16250	6557	115546	24420	7701	32121		2.42	Si
SLV 1	7.17	-8726.51	-16362	-11900	12800	1.208	0.665	0	0	0	115546	19536	6161	25696		2.01	Si
SLV 4	5.07	8259.3	-20130	-14640	7837	1.51	1.0341	-32318	16250	6521	115546	24420	7701	32121		4.1	Si
SLV 4	7.17	-7230.1	-17331	-12605	7382	1.208	1.0135	0	0	0	115546	19536	6161	25696		3.48	Si
SLV 11	5.07	-4295.31	-21364	-15537	-10796	1.51	1.51	-34299	16250	7361	115546	24420	7701	32121		2.98	Si
SLV 11	7.17	3608.62	-21141	-15375	-10664	1.51	1.51	-33941	16250	7361	115546	24420	7701	32121		3.01	Si
SLV 12	5.07	-4233.17	-21315	-15502	-10635	1.51	1.51	-34220	16250	7361	115546	24420	7701	32121		3.02	Si
SLV 12	7.17	3609.66	-21070	-15324	-10503	1.51	1.51	-33827	16250	7361	115546	24420	7701	32121		3.06	Si
SLV 16	5.07	-7138.77	-22142	-16104	-10370	1.51	1.2978	-42234	16250	6911	115546	24420	7701	32121		3.1	Si
SLV 16	7.17	6763.74	-21127	-15365	-9919	1.51	1.3046	-33919	16250	6714	115546	24420	7701	32121		3.24	Si
SLV 2	5.07	10375.27	-20246	-14725	13492	1.51	0.7276	-32504	16250	6543	115546	24420	7701	32121		2.38	Si
SLV 2	7.17	-8724.97	-16256	-11823	13039	1.208	0.6549	0	0	0	115546	19536	6161	25696		1.97	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 6.845 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 2	-16567	0.39	174.94	1989.22	2853.12	2421.17	13.84	Si
SLV 1	-16673	0.39	174.94	1998.73	2869.33	2434.03	13.91	Si
SLV 6	-16711	0.39	174.94	2002.16	2875.2	2438.68	13.94	Si
SLV 5	-16783	0.39	174.94	2008.53	2886.12	2447.32	13.99	Si
SLV 4	-17597	0.39	174.94	2080.1	3011.01	2545.55	14.55	Si
SLV 3	-17703	0.39	174.94	2089.21	3027.22	2558.22	14.62	Si
SLV 10	-17849	0.39	174.94	2101.81	3049.76	2575.79	14.72	Si
SLV 9	-17921	0.39	174.94	2107.89	3060.67	2584.28	14.77	Si
SLV 8	-20143	0.39	174.94	2288.41	3396.84	2842.62	16.25	Si
SLV 7	-20214	0.39	174.94	2293.9	3407.29	2850.6	16.29	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-16736	-22215	31	0.51	1930.4	0.965	7.68867	5.36881	Si
SLV 16	-16653	-22142	33	0.512	1922	0.965	7.7208	5.36881	Si
SLV 13	-16370	-22331	62	0.518	1893.1	0.964	7.81248	5.36881	Si
SLV 14	-16287	-22258	64	0.52	1884.7	0.964	7.84589	5.36881	Si
SLV 11	-15691	-21364	-39	0.538	1824.1	0.963	8.12798	4.5984	Si
SLV 12	-15636	-21315	-38	0.54	1818.4	0.963	8.15417	4.5984	Si
SLV 3	-12570	-20203	-66	0.647	1506.6	0.956	9.83858	5.36881	Si
SLV 4	-12487	-20130	-64	0.651	1498.2	0.956	9.89708	5.36881	Si
SLV 1	-12204	-20319	-35	0.666	1469.4	0.955	10.13031	5.36881	Si
SLV 9	-14471	-21750	65	0.575	1700	0.96	8.69961	4.5984	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.191	SLU 65	Si
V_SLU	11.423	SLU 68	Si
PF_SLV	1.25	SLV 2	Si
V_SLV	1.971	SLV 2	Si
PFFP_SLV	13.84	SLV 2	Si
R_SLV	1.432	SLV 15	Si

Maschio 130

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	1.046	-4.168	1.046	L5	L6	4.045	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 82	5.07	12164.33	-59069	-0.0000958	0.0004492	0.0035	4.045	71874.23	93667.9	93667.9	7.7	No	Si
SLU 82	7.17	6063.66	-52409	-0.0000748	0.0004492	0.0035	4.045	68531.34	86097.48	86097.48	14.2	No	Si
SLU 74	5.07	12139.07	-58996	-0.0000957	0.0004492	0.0035	4.045	71844.03	93584.59	93584.59	7.71	No	Si
SLU 74	7.17	5998.77	-52008	-0.0000741	0.0004492	0.0035	4.045	68291.5	85641.77	85641.77	14.28	No	Si
SLU 78	5.07	12308.6	-59973	-0.0000974	0.0004492	0.0035	4.045	72234.76	94695.65	94695.65	7.69	No	Si
SLU 78	7.17	6173.25	-52949	-0.0000757	0.0004492	0.0035	4.045	68847.59	86711.53	86711.53	14.05	No	Si
SLU 80	5.07	12209.69	-59363	-0.0000963	0.0004492	0.0035	4.045	71994.09	94002.58	94002.58	7.7	No	Si
SLU 80	7.17	6092.82	-52330	-0.0000747	0.0004492	0.0035	4.045	68484.52	86007.85	86007.85	14.12	No	Si
SLU 83	5.07	12298.38	-60037	-0.0000974	0.0004492	0.0035	4.045	72259.49	94768.55	94768.55	7.71	No	Si
SLU 83	7.17	6268.91	-53353	-0.0000764	0.0004492	0.0035	4.045	69078.81	87170.58	87170.58	13.91	No	Si
SLU 77	5.07	12290.86	-59969	-0.0000973	0.0004492	0.0035	4.045	72232.99	94690.45	94690.45	7.7	No	Si
SLU 77	7.17	6188.63	-52950	-0.0000757	0.0004492	0.0035	4.045	68848.44	86713.2	86713.2	14.01	No	Si
SLU 75	5.07	12156.81	-59000	-0.0000957	0.0004492	0.0035	4.045	71845.92	93589.79	93589.79	7.7	No	Si
SLU 75	7.17	5983.38	-52006	-0.0000741	0.0004492	0.0035	4.045	68290.62	85640.1	85640.1	14.31	No	Si
SLU 76	5.07	12069.73	-58394	-0.0000947	0.0004492	0.0035	4.045	71590.37	92900.19	92900.19	7.7	No	Si
SLU 76	7.17	5892.69	-51386	-0.0000731	0.0004492	0.0035	4.045	67911.02	84935.31	84935.31	14.41	No	Si
SLU 84	5.07	12316.12	-60042	-0.0000975	0.0004492	0.0035	4.045	72261.25	94773.76	94773.76	7.7	No	Si
SLU 84	7.17	6253.52	-53351	-0.0000764	0.0004492	0.0035	4.045	69077.97	87168.91	87168.91	13.94	No	Si
SLU 73	5.07	11917.94	-57421	-0.000093	0.0004492	0.0035	4.045	71159.6	91794.33	91794.33	7.7	No	Si
SLU 73	7.17	5702.83	-50444	-0.0000715	0.0004492	0.0035	4.045	67313.86	83863.87	83863.87	14.71	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	5.07	13703.07	-34841	-0.0000648	0.0006738	0.0035	4.045		64079.63	64079.63	4.68		Si
SLV 6	7.17	-1310.3	-27541	-0.000034	0.0006738	0.0035	4.045		59870.55	59870.55	45.69		Si
SLV 5	5.07	13785.44	-35092	-0.0000653	0.0006738	0.0035	4.045		64451.93	64451.93	4.68		Si
SLV 5	7.17	-1240.29	-27707	-0.0000341	0.0006738	0.0035	4.045		60154.78	60154.78	48.5		Si
SLV 3	5.07	21048.65	-28072	-0.0000698	0.0006738	0.0035	4.045		53568.9	53568.9	2.55		Si
SLV 3	7.17	-8688.12	-17963	-0.0000356	0.0006738	0.0035	4.045		43182.84	43182.84	4.97		Si
SLD 3	5.07	13948.97	-35483	-0.000066	0.0006738	0.0035	4.045		65032.05	65032.05	4.66		Si
SLD 3	7.17	-1546.53	-27826	-0.0000348	0.0006738	0.0035	4.045		60357.54	60357.54	39.03		Si
SLD 1	5.07	14259.25	-35012	-0.000066	0.0006738	0.0035	4.045		64333.09	64333.09	4.51		Si
SLD 1	7.17	-1831.54	-27299	-0.0000347	0.0006738	0.0035	4.045		59457.98	59457.98	32.46		Si
SLV 2	5.07	21704.56	-26528	-0.0000697	0.0006738	0.0035	4.045		50932.31	50932.31	2.35		Si
SLV 2	7.17	-9511.16	-16406	-0.0000351	0.0006738	0.0035	4.045		40389.52	40389.52	4.25		Si
SLV 4	5.07	20926.32	-27700	-0.0000692	0.0006738	0.0035	4.045		52941.02	52941.02	2.53		Si
SLV 4	7.17	-8792.1	-17716	-0.0000354	0.0006738	0.0035	4.045		42739.77	42739.77	4.86		Si
SLD 2	5.07	14207.21	-34853	-0.0000657	0.0006738	0.0035	4.045		64097.85	64097.85	4.51		Si
SLD 2	7.17	-1875.78	-27194	-0.0000346	0.0006738	0.0035	4.045		59278.38	59278.38	31.6		Si
SLV 1	5.07	21826.89	-26900	-0.0000704	0.0006738	0.0035	4.045		51570.6	51570.6	2.36		Si
SLV 1	7.17	-9407.17	-16653	-0.0000352	0.0006738	0.0035	4.045		40832.6	40832.6	4.34		Si
SLD 4	5.07	13896.93	-35324	-0.0000658	0.0006738	0.0035	4.045		64796.81	64796.81	4.66		Si
SLD 4	7.17	-1590.77	-27721	-0.0000347	0.0006738	0.0035	4.045		60177.95	60177.95	37.83		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 49	5.07	10644.68	-50394	-36650	5002	4.045	4.045	-30202	10833	21670	115546	43610	20630	64240	No	12.84	Si
SLU 49	7.17	4349.85	-42125	-30636	4986	4.045	4.045	-25246	10833	19264	115546	43610	20630	64240	No	12.88	Si
SLU 44	5.07	10254.02	-47841	-34794	4994	4.045	4.045	-28672	10833	20927	115546	43610	20630	64240	No	12.86	Si
SLU 44	7.17	3879.43	-39620	-28814	4979	4.045	4.045	-23745	10833	18535	115546	43610	20630	64240	No	12.9	Si
SLU 43	5.07	10224.45	-47834	-34788	4958	4.045	4.045	-28668	10833	20925	115546	43610	20630	64240	No	12.96	Si
SLU 43	7.17	3905.07	-39622	-28816	4943	4.045	4.045	-23746	10833	18536	115546	43610	20630	64240	No	13	Si
SLU 47	5.07	10405.81	-48814	-35501	5005	4.045	4.045	-29255	10833	21210	115546	43610	20630	64240	No	12.84	Si
SLU 47	7.17	4069.3	-40562	-29500	4990	4.045	4.045	-24310	10833	18810	115546	43610	20630	64240	No	12.87	Si
SLU 68	5.07	11467.23	-54540	-39666	4381	4.045	4.045	-32687	10833	22876	115546	43610	20630	64240	No	14.66	Si
SLU 68	7.17	5074.69	-46803	-34039	4363	4.045	4.045	-28050	10833	20625	115546	43610	20630	64240	No	14.72	Si
SLU 46	5.07	10492.89	-49421	-35943	4991	4.045	4.045	-29619	10833	21387	115546	43610	20630	64240	No	12.87	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 46	7.17	4159.98	-41182	-29951	4975	4.045	4.045	-24681	10833	18990	115546	43610	20630	64240	No	12.91	Si
SLU 45	5.07	10475.15	-49416	-35939	4969	4.045	4.045	-29616	10833	21385	115546	43610	20630	64240	No	12.93	Si
SLU 45	7.17	4175.37	-41184	-29952	4954	4.045	4.045	-24682	10833	18990	115546	43610	20630	64240	No	12.97	Si
SLU 50	5.07	10528.02	-49780	-36203	4980	4.045	4.045	-29834	10833	21491	115546	43610	20630	64240	No	12.9	Si
SLU 50	7.17	4284.8	-41507	-30187	4965	4.045	4.045	-24876	10833	19084	115546	43610	20630	64240	No	12.94	Si
SLU 48	5.07	10626.93	-50389	-36647	4980	4.045	4.045	-30199	10833	21668	115546	43610	20630	64240	No	12.9	Si
SLU 48	7.17	4365.24	-42126	-30637	4965	4.045	4.045	-25247	10833	19265	115546	43610	20630	64240	No	12.94	Si
SLU 51	5.07	10545.76	-49784	-36207	5002	4.045	4.045	-29837	10833	21492	115546	43610	20630	64240	No	12.84	Si
SLU 51	7.17	4269.42	-41506	-30186	4987	4.045	4.045	-24875	10833	19084	115546	43610	20630	64240	No	12.88	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	5.07	20926.32	-27700	-20145	19924	4.045	3.8011	-16601	15820	18573	115546	65415	20630	86045		4.32	Si
SLV 4	7.17	-8792.1	-17716	-12884	18672	4.045	4.045	-10617	14623	17746	115546	65415	20630	86045		4.61	Si
SLV 2	5.07	21704.56	-26528	-19293	20817	4.045	3.613	-15899	15680	18232	115546	65415	20630	86045		4.13	Si
SLV 2	7.17	-9511.16	-16406	-11931	19566	4.045	4.045	-9832	14466	17555	115546	65415	20630	86045		4.4	Si
SLV 15	5.07	-4463.94	-55557	-40405	-14334	4.045	4.045	-33296	16250	26676	115546	65415	20630	86045		6	Si
SLV 15	7.17	17091.22	-54029	-39294	-13110	4.045	4.045	-32380	16250	26232	115546	65415	20630	86045		6.56	Si
SLD 2	5.07	14207.21	-34853	-25348	10740	4.045	4.045	-20888	16250	20654	115546	65415	20630	86045		8.01	Si
SLD 2	7.17	-1875.78	-27194	-19778	10199	4.045	4.045	-16298	15760	19124	115546	65415	20630	86045		8.44	Si
SLV 14	5.07	-3808.04	-54012	-39282	-13571	4.045	4.045	-32371	16250	26227	115546	65415	20630	86045		6.34	Si
SLV 14	7.17	16268.18	-52472	-38161	-12345	4.045	4.045	-31447	16250	25779	115546	65415	20630	86045		6.97	Si
SLD 1	5.07	14259.25	-35012	-25463	10796	4.045	4.045	-20983	16250	20700	115546	65415	20630	86045		7.97	Si
SLD 1	7.17	-1831.54	-27299	-19854	10254	4.045	4.045	-16361	15772	19140	115546	65415	20630	86045		8.39	Si
SLV 13	5.07	-3685.71	-54385	-39553	-13442	4.045	4.045	-32594	16250	26336	115546	65415	20630	86045		6.4	Si
SLV 13	7.17	16372.16	-52719	-38341	-12216	4.045	4.045	-31595	16250	25851	115546	65415	20630	86045		7.04	Si
SLV 3	5.07	21048.65	-28072	-20416	20053	4.045	3.8181	-16824	15865	18681	115546	65415	20630	86045		4.29	Si
SLV 3	7.17	-8688.12	-17963	-13064	18802	4.045	4.045	-10765	14653	17781	115546	65415	20630	86045		4.58	Si
SLV 16	5.07	-4586.28	-55184	-40134	-14464	4.045	4.045	-33073	16250	26568	115546	65415	20630	86045		5.95	Si
SLV 16	7.17	16987.23	-53782	-39114	-13239	4.045	4.045	-32232	16250	26160	115546	65415	20630	86045		6.5	Si
SLV 1	5.07	21826.89	-26900	-19564	20946	4.045	3.6333	-16122	15724	18340	115546	65415	20630	86045		4.11	Si
SLV 1	7.17	-9407.17	-16653	-12111	19695	4.045	4.045	-9980	14496	17591	115546	65415	20630	86045		4.37	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 6.845 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 2	-17210	0.39	468.63	2381.7	3356.19	2868.94	6.12	Si
SLV 1	-17457	0.39	468.63	2412.97	3395.93	2904.45	6.2	Si
SLV 4	-18521	0.39	468.63	2546.77	3567.24	3057.01	6.52	Si
SLV 3	-18768	0.39	468.63	2577.61	3607.01	3092.31	6.6	Si
SLV 6	-28323	0.39	468.63	3707.39	5129.38	4418.39	9.43	Si
SLV 5	-28489	0.39	468.63	3725.96	5155.41	4440.69	9.48	Si
SLV 8	-32693	0.39	468.63	4183.11	5814.36	4998.74	10.67	Si
SLV 7	-32859	0.39	468.63	4200.7	5840.44	5020.57	10.71	Si
SLV 10	-39125	0.39	468.63	4836.33	6814.32	5825.32	12.43	Si
SLV 9	-39291	0.39	468.63	4852.48	6839.75	5846.11	12.47	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-40523	-55557	321	0.55	4732.7	0.962	8.31837	5.36881	Si
SLV 16	-40304	-55184	323	0.553	4710.4	0.962	8.35734	5.36881	Si
SLV 13	-39710	-54385	-504	0.556	4649.9	0.961	8.40362	5.36881	Si
SLV 14	-39491	-54012	-503	0.558	4627.6	0.961	8.44494	5.36881	Si
SLV 11	-34855	-47243	1348	0.598	4156.3	0.957	9.08684	4.5984	Si
SLV 12	-34707	-46993	1349	0.6	4141.3	0.957	9.12004	4.5984	Si
SLV 9	-32144	-43337	-1405	0.639	3880.7	0.954	9.72633	4.5984	Si
SLV 10	-31996	-43086	-1403	0.641	3865.7	0.954	9.76578	4.5984	Si
SLV 7	-29214	-38998	1402	0.691	3583.1	0.951	10.56886	4.5984	Si
SLV 8	-29066	-38747	1403	0.694	3568.1	0.951	10.61481	4.5984	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.693	SLU 78	Si
V_SLU	12.835	SLU 47	Si
PF_SLV	2.347	SLV 2	Si
V_SLV	4.108	SLV 1	Si
PFFP_SLV	6.122	SLV 2	Si
R_SLV	1.549	SLV 15	Si

Maschio 131

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.758	6.651	-17.718	6.651	L5	L6	2.04	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 48	5.97	2056.56	-19044	-0.0000661	0.0003743	0.0035	2.04	13488	15137.78	15137.78	7.36	No	Si
SLU 48	7.77	771.58	-16189	-0.0000476	0.0003743	0.0035	2.04	12222.63	13428.87	13428.87	17.4	No	Si
SLU 49	5.97	1994.21	-19038	-0.0000655	0.0003743	0.0035	2.04	13485.43	15133.83	15133.83	7.59	No	Si
SLU 49	7.77	807.38	-16183	-0.0000478	0.0003743	0.0035	2.04	12219.45	13425.09	13425.09	16.63	No	Si
SLU 64	5.97	2132.42	-20706	-0.0000716	0.0003743	0.0035	2.04	14101.66	16168.2	16168.2	7.58	No	Si
SLU 64	7.77	950.58	-17808	-0.0000536	0.0003743	0.0035	2.04	12972.65	14388.22	14388.22	15.14	No	Si
SLU 45	5.97	2011.73	-18443	-0.0000639	0.0003743	0.0035	2.04	13243.72	14772.13	14772.13	7.34	No	Si
SLU 45	7.77	735.5	-15588	-0.0000456	0.0003743	0.0035	2.04	11922.15	13078.93	13078.93	17.78	No	Si
SLU 71	5.97	2222.08	-21909	-0.000076	0.0003743	0.0035	2.04	14489.3	16923.7	16923.7	7.62	No	Si
SLU 71	7.77	1022.73	-19010	-0.0000576	0.0003743	0.0035	2.04	13474.4	15116.85	15116.85	14.78	No	Si
SLU 43	5.97	1934.99	-17533	-0.0000607	0.0003743	0.0035	2.04	12851.54	14223.65	14223.65	7.35	No	Si
SLU 43	7.77	678.75	-14678	-0.0000427	0.0003743	0.0035	2.04	11444.92	12555.11	12555.11	18.5	No	Si
SLU 69	5.97	2253.99	-22217	-0.0000772	0.0003743	0.0035	2.04	14581.16	17103.19	17103.19	7.59	No	Si
SLU 69	7.77	1043.41	-19319	-0.0000586	0.0003743	0.0035	2.04	13595.54	15305.91	15305.91	14.67	No	Si
SLU 46	5.97	1949.38	-18437	-0.0000634	0.0003743	0.0035	2.04	13241.02	14768.22	14768.22	7.58	No	Si
SLU 46	7.77	771.31	-15582	-0.0000459	0.0003743	0.0035	2.04	11918.85	13075.17	13075.17	16.95	No	Si
SLU 66	5.97	2209.16	-21616	-0.000075	0.0003743	0.0035	2.04	14399.33	16743.89	16743.89	7.58	No	Si
SLU 66	7.77	1007.33	-18718	-0.0000566	0.0003743	0.0035	2.04	13356.66	14938.53	14938.53	14.83	No	Si
SLU 50	5.97	2024.65	-18736	-0.0000649	0.0003743	0.0035	2.04	13364.08	14949.61	14949.61	7.38	No	Si
SLU 50	7.77	750.9	-15881	-0.0000466	0.0003743	0.0035	2.04	12069.86	13249.03	13249.03	17.64	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	5.97	6577.32	-4942	-0.0118465	0.0005615	0.0035	1.632		5043.7	5043.7	0.77		No
SLV 13	7.77	-4460.88	-2559	-0.0010224	0.0005615	0.0035	1.632		3628.29	3628.29	0.81		No
SLV 12	5.97	10949.61	-13286	-0.0002771	0.0005615	0.0035	2.04		12079.26	12079.26	1.1		Si
SLV 12	7.77	-5718.34	-10937	-0.000076	0.0005615	0.0035	2.04		11220.07	11220.07	1.96		Si
SLV 15	5.97	10341.1	-6114	-0.028079	0.0005615	0.0035	1.632		6130.75	6130.75	0.59		No
SLV 15	7.77	-6684.02	-3687	-0.0020121	0.0005615	0.0035	1.632		4713.1	4713.1	0.71		No
SLD 16	5.97	6179.6	-10419	-0.0000849	0.0005615	0.0035	2.04		9937.05	9937.05	1.61		Si
SLD 16	7.77	-3157.72	-8109	-0.0000433	0.0005615	0.0035	2.04		8772.21	8772.21	2.78		Si
SLD 15	5.97	5302.46	-11671	-0.000071	0.0005615	0.0035	2.04		10881.56	10881.56	2.05		Si
SLD 15	7.77	-2407.65	-9362	-0.0000407	0.0005615	0.0035	2.04		9864.26	9864.26	4.1		Si
SLV 14	5.97	8639.15	-1998	-0.0425381	0.0005615	0.0035	1.632		2217.36	2217.36	0.26		No
SLV 14	7.77	-6224.01	385	-0.0014606	0.0005615	0.0035	1.632		0	0	0		No
SLD 14	5.97	4667.17	-9965	-0.0000617	0.0005615	0.0035	2.04		9554.93	9554.93	2.05		Si
SLD 14	7.77	-2261.82	-7675	-0.0000353	0.0005615	0.0035	2.04		8380.93	8380.93	3.71		Si
SLV 16	5.97	12402.93	-3170	-0.0590642	0.0005615	0.0035	1.632		3358.42	3358.42	0.27		No
SLV 16	7.77	-8447.15	-743	-0.006712	0.0005615	0.0035	1.632		1849.91	1849.91	0.22		No
SLV 5	5.97	-7705.25	-18446	-0.0001086	0.0005615	0.0035	2.04		17094.36	17094.36	2.22		Si
SLV 5	7.77	7194.41	-16356	-0.0000992	0.0005615	0.0035	2.04		14402.7	14402.7	2		Si
SLV 11	5.97	9561.45	-15268	-0.0001411	0.0005615	0.0035	2.04		13572.39	13572.39	1.42		Si
SLV 11	7.77	-4531.28	-12919	-0.0000662	0.0005615	0.0035	2.04		12857.31	12857.31	2.84		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 69	5.97	2253.99	-22217	-18709	688	2.04	2.04	-30571	10833	6953	40441	18326	5202	23528	No	34.19	Si
SLU 69	7.77	1043.41	-19319	-16268	688	2.04	2.04	-26582	10489	6419	40441	18326	5202	23528	No	34.19	Si
SLU 46	5.97	1949.38	-18437	-15526	670	2.04	2.04	-25369	10327	6320	40441	18326	5202	23528	No	35.12	Si
SLU 46	7.77	771.31	-15582	-13121	670	2.04	2.04	-21440	9803	6000	40441	18326	5202	23528	No	35.12	Si
SLU 66	5.97	2209.16	-21616	-18203	683	2.04	2.04	-29743	10833	6818	40441	18326	5202	23528	No	34.43	Si
SLU 66	7.77	1007.33	-18718	-15762	683	2.04	2.04	-25755	10378	6352	40441	18326	5202	23528	No	34.43	Si
SLU 71	5.97	2222.08	-21909	-18449	682	2.04	2.04	-30146	10833	6884	40441	18326	5202	23528	No	34.5	Si
SLU 71	7.77	1022.73	-19010	-16009	682	2.04	2.04	-26158	10432	6384	40441	18326	5202	23528	No	34.5	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 48	5.97	2056.56	-19044	-16037	729	2.04	2.04	-26205	10438	6388	40441	18326	5202	23528	No	32.26	Si
SLU 48	7.77	771.58	-16189	-13633	729	2.04	2.04	-22276	9915	6068	40441	18326	5202	23528	No	32.26	Si
SLU 50	5.97	2024.65	-18736	-15778	723	2.04	2.04	-25780	10382	6354	40441	18326	5202	23528	No	32.54	Si
SLU 50	7.77	750.9	-15881	-13373	723	2.04	2.04	-21852	9858	6033	40441	18326	5202	23528	No	32.54	Si
SLU 45	5.97	2011.73	-18443	-15531	724	2.04	2.04	-25378	10328	6321	40441	18326	5202	23528	No	32.48	Si
SLU 45	7.77	735.5	-15588	-13127	724	2.04	2.04	-21449	9804	6000	40441	18326	5202	23528	No	32.48	Si
SLU 64	5.97	2132.42	-20706	-17437	672	2.04	2.04	-28491	10743	6614	40441	18326	5202	23528	No	35	Si
SLU 64	7.77	950.58	-17808	-14996	672	2.04	2.04	-24503	10212	6249	40441	18326	5202	23528	No	35	Si
SLU 49	5.97	1994.21	-19038	-16032	675	2.04	2.04	-26196	10437	6388	40441	18326	5202	23528	No	34.87	Si
SLU 49	7.77	807.38	-16183	-13628	675	2.04	2.04	-22268	9913	6067	40441	18326	5202	23528	No	34.87	Si
SLU 43	5.97	1934.99	-17533	-14765	713	2.04	2.04	-24126	10161	6219	40441	18326	5202	23528	No	32.98	Si
SLU 43	7.77	678.75	-14678	-12361	713	2.04	2.04	-20197	9637	5898	40441	18326	5202	23528	No	32.98	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	5.97	9561.45	-15268	-12858	7776	2.04	1.1813	-21009	14618	6375	40441	27489	5202	32691		4.2	Si
SLV 11	7.77	-4531.28	-12919	-10879	7683	2.04	2.0077	-17776	13972	8416	40441	27489	5202	32691		4.25	Si
SLV 2	5.97	-7096.74	-25619	-21574	-8637	2.04	2.04	-35251	16250	9945	40441	27489	5202	32691		3.78	Si
SLV 2	7.77	8160.09	-23606	-19879	-8288	2.04	2.023	-32481	16250	9862	40441	27489	5202	32691		3.94	Si
SLV 12	5.97	10949.61	-13286	-11189	9207	2.04	0.5876	-66267	16250	5930	40441	27489	5202	32691		3.55	Si
SLV 12	7.77	-5718.34	-10937	-9210	9114	2.04	1.4914	-20798	14577	6522	40441	27489	5202	32691		3.59	Si
SLV 14	5.97	8639.15	-1998	-1682	8520	1.632	0	0	0	0	40441	21991	4162	26153		3.07	Si
SLV 14	7.77	-6224.01	385	324	8163	1.632	0	0	0	0	40441	21991	4162	26153		3.2	Si
SLV 3	5.97	-5394.79	-29735	-25040	-7513	2.04	2.04	-40915	16250	9945	40441	27489	5202	32691		4.35	Si
SLV 3	7.77	7700.08	-27678	-23307	-7156	2.04	2.04	-38084	16250	9945	40441	27489	5202	32691		4.57	Si
SLV 1	5.97	-9158.57	-28562	-24053	-10762	2.04	2.04	-39302	16250	9945	40441	27489	5202	32691		3.04	Si
SLV 1	7.77	9923.22	-26550	-22358	-10413	2.04	1.9387	-36532	16250	9451	40441	27489	5202	32691		3.14	Si
SLV 5	5.97	-7705.25	-18446	-15534	-8201	2.04	1.8069	-29102	16237	8802	40441	27489	5202	32691		3.99	Si
SLV 5	7.77	7194.41	-16356	-13773	-8108	2.04	1.7404	-22506	14918	7789	40441	27489	5202	32691		4.03	Si
SLV 13	5.97	6577.32	-4942	-4162	6395	1.632	0	0	0	0	40441	21991	4162	26153		4.09	Si
SLV 13	7.77	-4460.88	-2559	-2155	6038	1.632	0	0	0	0	40441	21991	4162	26153		4.33	Si
SLV 15	5.97	10341.1	-6114	-5149	9644	1.632	0	0	0	0	40441	21991	4162	26153		2.71	Si
SLV 15	7.77	-6684.02	-3687	-3105	9294	1.632	0	0	0	0	40441	21991	4162	26153		2.81	Si
SLV 16	5.97	12402.93	-3170	-2670	11769	1.632	0	0	0	0	40441	21991	4162	26153		2.22	Si
SLV 16	7.77	-8447.15	-743	-626	11419	1.632	0	0	0	0	40441	21991	4162	26153		2.29	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 14	179667	0.39	0	-1134	230.77	0	0	No, e>t/2
SLV 16	179667	0.39	3477	-2128	230.77	311.88	1.35	Si
SLV 13	179667	0.39	6664	-4078	230.77	585.02	2.54	Si
SLV 15	179667	0.39	8287	-5071	230.77	719.44	3.12	Si
SLV 10	179667	0.39	14266	-8731	230.77	1187.28	5.14	Si
SLV 9	179667	0.39	17505	-10713	230.77	1422.73	6.17	Si
SLV 12	179667	0.39	19676	-12042	230.77	1573.57	6.82	Si
SLV 11	179667	0.39	22915	-14024	230.77	1787.96	7.75	Si
SLV 6	179667	0.39	25855	-15823	230.77	1971.65	8.54	Si
SLV 5	179667	0.39	29093	-17805	230.77	2161.98	9.37	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 3	-18663	-34445	-350	0.585	2206.4	0.959	8.86731	5.36881	Si
SLV 4	-17433	-30025	-349	0.62	2081.3	0.957	9.41168	5.36881	Si
SLV 7	-18062	-19775	-1098	0.564	2145.3	0.958	8.55737	4.5984	Si
SLV 1	-15968	-35643	306	0.669	1932.5	0.954	10.19706	5.36881	Si
SLV 8	-17234	-16799	-1097	0.587	2061.1	0.956	8.91383	4.5984	Si
SLV 2	-14738	-31223	307	0.715	1807.6	0.951	10.93234	5.36881	Si
SLV 11	-15025	-9017	-1083	0.658	1836.6	0.952	10.05245	4.5984	Si
SLV 12	-14197	-6041	-1083	0.69	1752.6	0.949	10.5579	4.5984	Si
SLV 15	-8538	1413	-301	1.113	1179.6	0.93	17.4087	5.36881	Si, Trazione
SLV 5	-9080	-23769	1088	0.99	1234.2	0.932	15.4292	4.5984	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.343	SLU 45	Si
V_SLU	32.259	SLU 48	Si
PF_SLV	0	SLV 14	No
V_SLV	2.222	SLV 16	Si
PFFP_SLV	0	SLV 14	No
R_SLV	1.652	SLV 3	Si

Maschio 132

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-16.818	6.651	-12.838	6.651	L5	L6	3.98	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 69	5.97	110.64	-53181	-0.0000738	0.0003743	0.0035	3.98	59531.77	73013.32	73013.32	659.92	No	Si
SLU 69	7.77	-1816.18	-47633	-0.000069	0.0003743	0.0035	3.98	57647.18	71650.39	71650.39	39.45	No	Si
SLU 71	5.97	102.29	-52438	-0.0000726	0.0003743	0.0035	3.98	59337.81	72392.63	72392.63	707.72	No	Si
SLU 71	7.77	-1828.28	-46890	-0.0000679	0.0003743	0.0035	3.98	57318.21	70964.1	70964.1	38.81	No	Si
SLU 56	5.97	156.04	-50996	-0.0000705	0.0003743	0.0035	3.98	58909.87	71199.79	71199.79	456.28	No	Si
SLU 56	7.77	-1761.86	-45532	-0.0000656	0.0003743	0.0035	3.98	56670.64	69731.48	69731.48	39.58	No	Si
SLU 72	5.97	18.62	-52292	-0.0000722	0.0003743	0.0035	3.98	59297.45	72270.77	72270.77	3880.44	No	Si
SLU 72	7.77	-1764.67	-46743	-0.0000675	0.0003743	0.0035	3.98	57251.24	70829.8	70829.8	40.14	No	Si
SLU 79	5.97	93.15	-57662	-0.0000809	0.0003743	0.0035	3.98	60318.09	76841.74	76841.74	824.94	No	Si
SLU 79	7.77	-1943.77	-52114	-0.0000762	0.0003743	0.0035	3.98	59247.54	75461.06	75461.06	38.82	No	Si
SLU 48	5.97	165.18	-45772	-0.0000625	0.0003743	0.0035	3.98	56789.35	66964.88	66964.88	405.39	No	Si
SLU 48	7.77	-1646.37	-40308	-0.0000575	0.0003743	0.0035	3.98	53615.53	65240.41	65240.41	39.63	No	Si
SLU 80	5.97	9.48	-57516	-0.0000805	0.0003743	0.0035	3.98	60302.78	76714.28	76714.28	8089.57	No	Si
SLU 80	7.77	-1880.16	-51967	-0.0000759	0.0003743	0.0035	3.98	59205.62	75378.96	75378.96	40.09	No	Si
SLU 50	5.97	156.84	-45029	-0.0000614	0.0003743	0.0035	3.98	56415.1	66368.4	66368.4	423.17	No	Si
SLU 50	7.77	-1658.47	-39565	-0.0000565	0.0003743	0.0035	3.98	53108.34	64626.54	64626.54	38.97	No	Si
SLU 58	5.97	147.69	-50253	-0.0000693	0.0003743	0.0035	3.98	58662.74	70590.97	70590.97	477.95	No	Si
SLU 58	7.77	-1773.96	-44789	-0.0000645	0.0003743	0.0035	3.98	56290.56	69068.13	69068.13	38.93	No	Si
SLU 77	5.97	101.5	-58406	-0.0000821	0.0003743	0.0035	3.98	60384.93	77490.9	77490.9	763.48	No	Si
SLU 77	7.77	-1931.67	-52857	-0.0000774	0.0003743	0.0035	3.98	59449.39	75881.23	75881.23	39.28	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 3	5.97	-24505.01	-48501	-0.0001154	0.0005615	0.0035	3.98		81903.65	81903.65	3.34		Si
SLV 3	7.77	19898.74	-44219	-0.000099	0.0005615	0.0035	3.98		72032.31	72032.31	3.62		Si
SLV 14	5.97	24738.97	-27969	-0.0000882	0.0005615	0.0035	3.98		48841.06	48841.06	1.97		Si
SLV 14	7.77	-22374.86	-23751	-0.0000784	0.0005615	0.0035	3.98		46988.25	46988.25	2.1		Si
SLV 16	5.97	29505.87	-37659	-0.0001108	0.0005615	0.0035	3.98		63745.18	63745.18	2.16		Si
SLV 16	7.77	-26337.03	-33525	-0.0000978	0.0005615	0.0035	3.98		61911.03	61911.03	2.35		Si
SLV 13	5.97	19432.06	-28585	-0.0000753	0.0005615	0.0035	3.98		49770.32	49770.32	2.56		Si
SLV 13	7.77	-18040.4	-24367	-0.0000669	0.0005615	0.0035	3.98		47970.59	47970.59	2.66		Si
SLV 15	5.97	24198.97	-38276	-0.0000992	0.0005615	0.0035	3.98		64713.39	64713.39	2.67		Si
SLV 15	7.77	-22002.58	-34141	-0.0000885	0.0005615	0.0035	3.98		62803.35	62803.35	2.85		Si
SLV 6	5.97	-13346.98	-23411	-0.0000559	0.0005615	0.0035	3.98		46446.9	46446.9	3.48		Si
SLV 6	7.77	10191.64	-19000	-0.0000437	0.0005615	0.0035	3.98		35570.76	35570.76	3.49		Si
SLV 1	5.97	-29271.91	-38810	-0.0001116	0.0005615	0.0035	3.98		69363.99	69363.99	2.37		Si
SLV 1	7.77	23860.91	-34446	-0.000093	0.0005615	0.0035	3.98		58733.65	58733.65	2.46		Si
SLV 4	5.97	-19198.1	-47884	-0.0001031	0.0005615	0.0035	3.98		81161.36	81161.36	4.23		Si
SLV 4	7.77	15564.28	-43603	-0.000089	0.0005615	0.0035	3.98		71310.48	71310.48	4.58		Si
SLV 5	5.97	-16919.95	-23826	-0.0000637	0.0005615	0.0035	3.98		47106.51	47106.51	2.78		Si
SLV 5	7.77	13109.88	-19415	-0.00005	0.0005615	0.0035	3.98		36196.39	36196.39	2.76		Si
SLV 2	5.97	-23965.01	-38194	-0.0000986	0.0005615	0.0035	3.98		68520.36	68520.36	2.86		Si
SLV 2	7.77	19526.46	-33830	-0.000083	0.0005615	0.0035	3.98		57780.89	57780.89	2.96		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	5.97	9.48	-57516	-48434	1079	3.98	3.98	-40565	10833	25121	40441	35754	10149	45903	No	42.56	Si
SLU 80	7.77	-1880.16	-51967	-43762	1079	3.98	3.98	-36652	10833	23252	40441	35754	10149	45903	No	42.56	Si
SLU 56	5.97	156.04	-50996	-42944	1095	3.98	3.98	-35967	10833	22925	40441	35754	10149	45903	No	41.93	Si
SLU 56	7.77	-1761.86	-45532	-38343	1095	3.98	3.98	-32113	10833	21084	40441	35754	10149	45903	No	41.93	Si
SLU 79	5.97	93.15	-57662	-48558	1160	3.98	3.98	-40668	10833	25170	40441	35754	10149	45903	No	39.56	Si
SLU 79	7.77	-1943.77	-52114	-43885	1160	3.98	3.98	-36755	10833	23301	40441	35754	10149	45903	No	39.56	Si
SLU 71	5.97	102.29	-52438	-44158	1101	3.98	3.98	-36984	10833	23410	40441	35754	10149	45903	No	41.68	Si
SLU 71	7.77	-1828.28	-46890	-39486	1101	3.98	3.98	-33070	10833	21542	40441	35754	10149	45903	No	41.68	Si
SLU 81	5.97	126.83	-57345	-48291	1088	3.98	3.98	-40444	10833	25063	40441	35754	10149	45903	No	42.18	Si
SLU 81	7.77	-1780.09	-51797	-43618	1088	3.98	3.98	-36531	10833	23194	40441	35754	10149	45903	No	42.18	Si
SLU 77	5.97	101.5	-58406	-49184	1158	3.98	3.98	-41192	10833	25421	40441	35754	10149	45903	No	39.63	Si
SLU 77	7.77	-1931.67	-52857	-44511	1158	3.98	3.98	-37279	10833	23552	40441	35754	10149	45903	No	39.63	Si
SLU 74	5.97	120.3	-57127	-48107	1110	3.98	3.98	-40291	10833	24990	40441	35754	10149	45903	No	41.37	Si
SLU 74	7.77	-1825.08	-51579	-43435	1110	3.98	3.98	-36378	10833	23121	40441	35754	10149	45903	No	41.37	Si
SLU 58	5.97	147.69	-50253	-42318	1097	3.98	3.98	-35442	10833	22674	40441	35754	10149	45903	No	41.85	Si
SLU 58	7.77	-1773.96	-44789	-37717	1097	3.98	3.98	-31589	10833	20834	40441	35754	10149	45903	No	41.85	Si
SLU 83	5.97	108.03	-58623	-49367	1137	3.98	3.98	-41346	10833	25494	40441	35754	10149	45903	No	40.37	Si
SLU 83	7.77	-1886.68	-53075	-44695	1137	3.98	3.98	-37433	10833	23625	40441	35754	10149	45903	No	40.37	Si
SLU 69	5.97	110.64	-53181	-44784	1099	3.98	3.98	-37508	10833	23661	40441	35754	10149	45903	No	41.76	Si
SLU 69	7.77	-1816.18	-47633	-40112	1099	3.98	3.98	-33594	10833	21792	40441	35754	10149	45903	No	41.76	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	5.97	-23965.01	-38194	-32164	-24403	3.98	3.98	-26938	15804	21487	40441	53630	10149	61928		2.54	Si
SLV 2	7.77	19526.46	-33830	-28488	-23754	3.98	3.98	-23860	15189	20017	40441	53630	10149	60458		2.55	Si
SLV 5	5.97	-16919.95	-23826	-20064	-16682	3.98	3.8395	-17566	13930	16647	40441	53630	10149	57088		3.42	Si
SLV 5	7.77	13109.88	-19415	-16350	-16511	3.98	3.9443	-13693	13155	15566	40441	53630	10149	56007		3.39	Si
SLV 14	5.97	24738.97	-27969	-23553	26499	3.98	3.3165	-19726	14362	18043	40441	53630	10149	58484		2.21	Si
SLV 14	7.77	-22374.86	-23751	-20001	25834	3.98	3.1439	-21429	14703	16622	40441	53630	10149	57063		2.21	Si
SLV 16	5.97	29505.87	-37659	-31713	31310	3.98	3.6195	-26561	15729	21307	40441	53630	10149	61748		1.97	Si
SLV 16	7.77	-26337.03	-33525	-28231	30660	3.98	3.6132	-26406	15698	19914	40441	53630	10149	60355		1.97	Si
SLV 15	5.97	24198.97	-38276	-32232	25953	3.98	3.98	-26995	15816	21514	40441	53630	10149	61955		2.39	Si
SLV 15	7.77	-22002.58	-34141	-28750	25304	3.98	3.98	-24079	15232	20121	40441	53630	10149	60562		2.39	Si
SLV 12	5.97	17153.9	-52644	-44332	18232	3.98	3.98	-37129	16250	26354	40441	53630	10149	63779		3.5	Si
SLV 12	7.77	-15586.01	-48556	-40889	18061	3.98	3.98	-34245	16250	24977	40441	53630	10149	63779		3.53	Si
SLV 4	5.97	-19198.1	-47884	-40324	-19592	3.98	3.98	-33772	16250	24751	40441	53630	10149	63779		3.26	Si
SLV 4	7.77	15564.28	-43603	-36719	-18927	3.98	3.98	-30753	16250	23309	40441	53630	10149	63750		3.37	Si
SLV 3	5.97	-24505.01	-48501	-40843	-24949	3.98	3.98	-34207	16250	24958	40441	53630	10149	63779		2.56	Si
SLV 3	7.77	19898.74	-44219	-37237	-24284	3.98	3.98	-31187	16250	23516	40441	53630	10149	63779		2.63	Si
SLV 13	5.97	19432.06	-28585	-24072	21142	3.98	3.9306	-20161	14449	18250	40441	53630	10149	58691		2.78	Si
SLV 13	7.77	-18040.4	-24367	-20520	20477	3.98	3.7489	-18404	14097	16829	40441	53630	10149	57270		2.8	Si
SLV 1	5.97	-29271.91	-38810	-32682	-29760	3.98	3.7073	-29856	16250	21694	40441	53630	10149	62135		2.09	Si
SLV 1	7.77	23860.91	-34446	-29007	-29110	3.98	3.8919	-24294	15275	20224	40441	53630	10149	60665		2.08	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 10	179667	0.39	15018	-17932	450.23	2425.22	5.39	Si
SLV 9	179667	0.39	15365	-18346	450.23	2475.06	5.5	Si
SLV 6	179667	0.39	17578	-20989	450.23	2785.91	6.19	Si
SLV 5	179667	0.39	17926	-21403	450.23	2833.66	6.29	Si
SLV 14	179667	0.39	21638	-25836	450.23	3326.28	7.39	Si
SLV 13	179667	0.39	22154	-26452	450.23	3392.19	7.53	Si
SLV 16	179667	0.39	29945	-35754	450.23	4311.54	9.58	Si
SLV 2	179667	0.39	30173	-36026	450.23	4336.26	9.63	Si
SLV 15	179667	0.39	30461	-36370	450.23	4367.39	9.7	Si
SLV 1	179667	0.39	30689	-36642	450.23	4391.84	9.75	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-41878	-53974	-2358	0.483	4860.7	0.963	7.29455	4.5984	Si
SLV 8	-41512	-53597	-2358	0.487	4823.4	0.963	7.35035	4.5984	Si
SLV 11	-39801	-50385	-2366	0.504	4649.4	0.962	7.62106	4.5984	Si
SLV 12	-39434	-50008	-2366	0.508	4612.1	0.961	7.68247	4.5984	Si
SLV 3	-34869	-47840	-695	0.606	4147.8	0.957	9.20414	5.36881	Si
SLV 4	-34325	-47280	-695	0.614	4092.5	0.957	9.33135	5.36881	Si
SLV 15	-27944	-35875	-720	0.729	3444.3	0.95	11.14795	5.36881	Si
SLV 16	-27400	-35315	-720	0.741	3389.1	0.949	11.33955	5.36881	Si
SLV 1	-26708	-38914	723	0.756	3318.7	0.948	11.59218	5.36881	Si
SLV 2	-26163	-38354	723	0.769	3263.5	0.947	11.80024	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	38.815	SLU 71	Si
V_SLU	39.556	SLU 79	Si
PF_SLV	1.974	SLV 14	Si
V_SLV	1.968	SLV 16	Si
PFFP_SLV	5.387	SLV 10	Si
R_SLV	1.586	SLV 7	Si

Maschio 133

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.938	6.651	-7.958	6.651	L5	L6	3.98	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 65	5.97	-466.1	-51024	-0.0000712	0.0003743	0.0035	3.98	58918.94	74825.76	74825.76	160.54	No	Si
SLU 65	7.77	1804.41	-45619	-0.0000659	0.0003743	0.0035	3.98	56714.07	66842.24	66842.24	37.04	No	Si
SLU 82	5.97	-287.69	-59087	-0.0000836	0.0003743	0.0035	3.98	60430.31	79641.73	79641.73	276.83	No	Si
SLU 82	7.77	2039.21	-53681	-0.0000789	0.0003743	0.0035	3.98	59652.16	73433.44	73433.44	36.01	No	Si
SLU 73	5.97	-326.84	-56591	-0.0000797	0.0003743	0.0035	3.98	60189.96	78084.44	78084.44	238.9	No	Si
SLU 73	7.77	1969.21	-51186	-0.0000748	0.0003743	0.0035	3.98	58970.27	71356.39	71356.39	36.24	No	Si
SLU 61	5.97	-313.58	-51417	-0.0000715	0.0003743	0.0035	3.98	59041.84	75072.58	75072.58	239.4	No	Si
SLU 61	7.77	1841.16	-46096	-0.0000667	0.0003743	0.0035	3.98	56947.16	67226.71	67226.71	36.51	No	Si
SLU 64	5.97	-517.42	-51297	-0.0000718	0.0003743	0.0035	3.98	59004.93	75006.43	75006.43	144.96	No	Si
SLU 64	7.77	1802.85	-45892	-0.0000663	0.0003743	0.0035	3.98	56848.38	67062.07	67062.07	37.2	No	Si
SLU 43	5.97	-543.31	-43628	-0.0000601	0.0003743	0.0035	3.98	55660.56	68048.02	68048.02	125.25	No	Si
SLU 43	7.77	1604.8	-38307	-0.0000545	0.0003743	0.0035	3.98	52209.01	59075.7	59075.7	36.81	No	Si
SLU 81	5.97	-318.48	-59250	-0.000084	0.0003743	0.0035	3.98	60438.96	79746.36	79746.36	250.39	No	Si
SLU 81	7.77	2038.28	-53845	-0.0000792	0.0003743	0.0035	3.98	59689.8	73571.4	73571.4	36.09	No	Si
SLU 52	5.97	-352.74	-48922	-0.0000677	0.0003743	0.0035	3.98	58174.95	72860.13	72860.13	206.56	No	Si
SLU 52	7.77	1771.16	-43601	-0.0000627	0.0003743	0.0035	3.98	55645.63	65221.79	65221.79	36.82	No	Si
SLU 44	5.97	-491.99	-43355	-0.0000596	0.0003743	0.0035	3.98	55506.01	67811.04	67811.04	137.83	No	Si
SLU 44	7.77	1606.36	-38034	-0.0000541	0.0003743	0.0035	3.98	52006.9	58739	58739	36.57	No	Si
SLU 60	5.97	-344.38	-51581	-0.0000718	0.0003743	0.0035	3.98	59091.62	75163.42	75163.42	218.26	No	Si
SLU 60	7.77	1840.22	-46260	-0.0000669	0.0003743	0.0035	3.98	57025.47	67359.11	67359.11	36.6	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 14	5.97	26344.92	-44215	-0.0001127	0.0005615	0.0035	3.98		72026.64	72026.64	2.73		Si
SLV 14	7.77	-20225.18	-40240	-0.0000938	0.0005615	0.0035	3.98		71333.94	71333.94	3.53		Si
SLV 13	5.97	21392.68	-42236	-0.0000992	0.0005615	0.0035	3.98		69711.65	69711.65	3.26		Si
SLV 13	7.77	-16383.92	-38262	-0.000083	0.0005615	0.0035	3.98		68612.54	68612.54	4.19		Si
SLV 3	5.97	-27072.76	-34514	-0.0001008	0.0005615	0.0035	3.98		63345.94	63345.94	2.34		Si
SLV 3	7.77	23005.91	-30211	-0.0000856	0.0005615	0.0035	3.98		52233.45	52233.45	2.27		Si
SLV 1	5.97	-25074.17	-23998	-0.0000885	0.0005615	0.0035	3.98		47381.1	47381.1	1.89		Si
SLV 1	7.77	22856.62	-19652	-0.0000825	0.0005615	0.0035	3.98		36540.09	36540.09	1.6		Si
SLV 15	5.97	19394.09	-52753	-0.0001109	0.0005615	0.0035	3.98		82204.56	82204.56	4.24		Si
SLV 15	7.77	-16234.63	-48820	-0.0000982	0.0005615	0.0035	3.98		82290.1	82290.1	5.07		Si
SLV 16	5.97	24346.34	-54731	-0.0001248	0.0005615	0.0035	3.98		84605.33	84605.33	3.48		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 16	7.77	-20075.89	-50799	-0.0001094	0.0005615	0.0035	3.98		84690.13	84690.13	4.22		Si
SLV 10	5.97	11604.17	-25239	-0.000055	0.0005615	0.0035	3.98		44753.27	44753.27	3.86		Si
SLV 10	7.77	-6037.64	-21085	-0.0000384	0.0005615	0.0035	3.98		42685.17	42685.17	7.07		Si
SLV 5	5.97	-5670.06	-18435	-0.0000342	0.0005615	0.0035	3.98		38262.68	38262.68	6.75		Si
SLV 5	7.77	8320.71	-14170	-0.0000337	0.0005615	0.0035	3.98		27288.33	27288.33	3.28		Si
SLV 4	5.97	-22120.51	-36493	-0.0000922	0.0005615	0.0035	3.98		66193.29	66193.29	2.99		Si
SLV 4	7.77	19164.65	-32189	-0.0000799	0.0005615	0.0035	3.98		55255.18	55255.18	2.88		Si
SLV 2	5.97	-20121.93	-25976	-0.0000736	0.0005615	0.0035	3.98		50553.31	50553.31	2.51		Si
SLV 2	7.77	19015.36	-21630	-0.0000668	0.0005615	0.0035	3.98		39424.95	39424.95	2.07		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	5.97	-420.83	-58717	-49446	-1250	3.98	3.98	-41412	10833	25525	40441	35754	10149	45903	No	36.73	Si
SLU 74	7.77	1853.41	-53312	-44894	-1250	3.98	3.98	-37600	10833	23705	40441	35754	10149	45903	No	36.73	Si
SLU 82	5.97	-287.69	-59087	-49757	-1279	3.98	3.98	-41673	10833	25650	40441	35754	10149	45903	No	35.89	Si
SLU 82	7.77	2039.21	-53681	-45205	-1279	3.98	3.98	-37861	10833	23829	40441	35754	10149	45903	No	35.89	Si
SLU 64	5.97	-517.42	-51297	-43198	-1275	3.98	3.98	-36179	10833	23026	40441	35754	10149	45903	No	35.99	Si
SLU 64	7.77	1802.85	-45892	-38646	-1275	3.98	3.98	-32367	10833	21206	40441	35754	10149	45903	No	35.99	Si
SLU 66	5.97	-560.08	-53150	-44758	-1236	3.98	3.98	-37485	10833	23650	40441	35754	10149	45903	No	37.15	Si
SLU 66	7.77	1688.61	-47745	-40206	-1236	3.98	3.98	-33673	10833	21830	40441	35754	10149	45903	No	37.15	Si
SLU 83	5.97	-380.83	-60265	-50749	-1239	3.98	3.98	-42504	10833	26047	40441	35754	10149	45903	No	37.04	Si
SLU 83	7.77	1874.45	-54860	-46198	-1239	3.98	3.98	-38692	10833	24226	40441	35754	10149	45903	No	37.04	Si
SLU 75	5.97	-390.03	-58553	-49308	-1233	3.98	3.98	-41296	10833	25470	40441	35754	10149	45903	No	37.22	Si
SLU 75	7.77	1854.35	-53148	-44756	-1233	3.98	3.98	-37484	10833	23650	40441	35754	10149	45903	No	37.22	Si
SLU 81	5.97	-318.48	-59250	-49895	-1296	3.98	3.98	-41788	10833	25705	40441	35754	10149	45903	No	35.43	Si
SLU 81	7.77	2038.28	-53845	-45343	-1296	3.98	3.98	-37976	10833	23885	40441	35754	10149	45903	No	35.43	Si
SLU 65	5.97	-466.1	-51024	-42968	-1248	3.98	3.98	-35986	10833	22934	40441	35754	10149	45903	No	36.79	Si
SLU 65	7.77	1804.41	-45619	-38416	-1248	3.98	3.98	-32174	10833	21114	40441	35754	10149	45903	No	36.79	Si
SLU 73	5.97	-326.84	-56591	-47656	-1262	3.98	3.98	-39913	10833	24809	40441	35754	10149	45903	No	36.37	Si
SLU 73	7.77	1969.21	-51186	-43104	-1262	3.98	3.98	-36101	10833	22989	40441	35754	10149	45903	No	36.37	Si
SLU 84	5.97	-350.04	-60101	-50611	-1223	3.98	3.98	-42388	10833	25992	40441	35754	10149	45903	No	37.54	Si
SLU 84	7.77	1875.39	-54696	-46060	-1223	3.98	3.98	-38576	10833	24171	40441	35754	10149	45903	No	37.54	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 1	5.97	-10951.79	-32949	-27746	-12189	3.98	3.98	-23238	15064	19720	40441	53631	10149	60161		4.94	Si
SLD 1	7.77	10566.07	-28719	-24184	-11905	3.98	3.98	-20255	14468	18295	40441	53631	10149	58736		4.93	Si
SLV 14	5.97	26344.92	-44215	-37233	26277	3.98	3.98	-31184	16250	23515	40441	53631	10149	63780		2.43	Si
SLV 14	7.77	-20225.18	-40240	-33886	25643	3.98	3.98	-28380	16093	22176	40441	53631	10149	62617		2.44	Si
SLV 3	5.97	-27072.76	-34514	-29065	-28206	3.98	3.6168	-27171	15851	20247	40441	53631	10149	60688		2.15	Si
SLV 3	7.77	23005.91	-30211	-25441	-27571	3.98	3.6854	-21307	14678	18798	40441	53631	10149	59239		2.15	Si
SLV 15	5.97	19394.09	-52753	-44423	20378	3.98	3.98	-37205	16250	26390	40441	53631	10149	63780		3.13	Si
SLV 15	7.77	-16234.63	-48820	-41112	19710	3.98	3.98	-34432	16250	25066	40441	53631	10149	63780		3.24	Si
SLV 4	5.97	-22120.51	-36493	-30731	-23320	3.98	3.98	-25738	15564	20914	40441	53631	10149	61355		2.63	Si
SLV 4	7.77	19164.65	-32189	-27106	-22686	3.98	3.98	-22702	14957	19464	40441	53631	10149	59905		2.64	Si
SLV 2	5.97	-20121.93	-25976	-21875	-22306	3.98	3.6461	-20180	14453	17371	40441	53631	10149	57812		2.59	Si
SLV 2	7.77	19015.36	-21630	-18215	-21638	3.98	3.3327	-15255	13468	15908	40441	53631	10149	56348		2.6	Si
SLV 16	5.97	24346.34	-54731	-46089	25263	3.98	3.98	-38601	16250	27057	40441	53631	10149	63780		2.52	Si
SLV 16	7.77	-20075.89	-50799	-42778	24595	3.98	3.98	-35827	16250	25732	40441	53631	10149	63780		2.59	Si
SLV 1	5.97	-25074.17	-23998	-20209	-27191	3.98	2.8355	-24046	15226	16705	40441	53631	10149	57146		2.1	Si
SLV 1	7.77	22856.62	-19652	-16549	-26523	3.98	2.4808	-13860	13189	15241	40441	53631	10149	55682		2.1	Si
SLV 13	5.97	21392.68	-42236	-35567	21392	3.98	3.98	-29788	16250	22848	40441	53631	10149	63289		2.96	Si
SLV 13	7.77	-16383.92	-38262	-32220	20757	3.98	3.98	-26985	15814	21509	40441	53631	10149	61950		2.98	Si
SLD 3	5.97	-11738.8	-37146	-31281	-12577	3.98	3.98	-26198	15656	21134	40441	53631	10149	61575		4.9	Si
SLD 3	7.77	10611.41	-32935	-27734	-12306	3.98	3.98	-23228	15062	19715	40441	53631	10149	60156		4.89	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 5	179667	0.39	13435	-16041	450.23	2194.52	4.87	Si
SLV 6	179667	0.39	14550	-17373	450.23	2357.7	5.24	Si
SLV 1	179667	0.39	18009	-21503	450.23	2845.1	6.32	Si
SLV 9	179667	0.39	18117	-21631	450.23	2859.77	6.35	Si
SLV 10	179667	0.39	19232	-22963	450.23	3010.7	6.69	Si
SLV 2	179667	0.39	19666	-23481	450.23	3068.64	6.82	Si
SLV 3	179667	0.39	26844	-32052	450.23	3962.65	8.8	Si
SLV 4	179667	0.39	28501	-34030	450.23	4151.85	9.22	Si
SLV 13	179667	0.39	33615	-40136	450.23	4695.24	10.43	Si
SLV 14	179667	0.39	35272	-42114	450.23	4858.13	10.79	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 12	-42852	-63483	-2601	0.469	4959.8	0.964	7.07212	4.5984	Si
SLV 11	-41930	-62160	-2601	0.478	4866	0.963	7.20675	4.5984	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 16	-38468	-56444	-735	0.557	4513.8	0.961	8.43328	5.36881	Si
SLV 15	-37098	-54478	-735	0.575	4374.4	0.959	8.70475	5.36881	Si
SLV 8	-39205	-57470	-2631	0.504	4588.7	0.961	7.62824	4.5984	Si
SLV 7	-38282	-56147	-2631	0.515	4494.9	0.96	7.78746	4.5984	Si
SLV 14	-30870	-44122	834	0.667	3741.4	0.953	10.17401	5.36881	Si
SLV 13	-29500	-42156	834	0.693	3602.2	0.952	10.58357	5.36881	Si
SLV 4	-26309	-36401	-836	0.762	3278.3	0.948	11.68656	5.36881	Si
SLV 3	-24938	-34435	-836	0.796	3139.3	0.946	12.23868	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	36.011	SLU 82	Si
V_SLU	35.426	SLU 81	Si
PF_SLV	1.599	SLV 1	Si
V_SLV	2.099	SLV 1	Si
PFFP_SLV	4.874	SLV 5	Si
R_SLV	1.538	SLV 12	Si

Maschio 134

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.058	6.651	-5.018	6.651	L5	L6	2.04	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 69	5.97	-3679.23	-20271	-0.0000832	0.0003743	0.0035	2.04	13949.68	16787	16787	4.56	No	Si
SLU 69	7.77	-289.75	-17452	-0.0000473	0.0003743	0.0035	2.04	12815.01	15302.41	15302.41	52.81	No	Si
SLU 70	5.97	-3638.32	-20300	-0.0000829	0.0003743	0.0035	2.04	13959.88	16799.78	16799.78	4.62	No	Si
SLU 70	7.77	-307.09	-17480	-0.0000475	0.0003743	0.0035	2.04	12827.86	15319.74	15319.74	49.89	No	Si
SLU 77	5.97	-3937.5	-22619	-0.0000927	0.0003743	0.0035	2.04	14696.18	17873.61	17873.61	4.54	No	Si
SLU 77	7.77	-396.44	-19800	-0.0000548	0.0003743	0.0035	2.04	13778.27	16578.86	16578.86	41.82	No	Si
SLU 74	5.97	-3862.72	-22473	-0.0000916	0.0003743	0.0035	2.04	14654.83	17803.36	17803.36	4.61	No	Si
SLU 74	7.77	-371.01	-19653	-0.0000542	0.0003743	0.0035	2.04	13723.38	16514.66	16514.66	44.51	No	Si
SLU 79	5.97	-3888.62	-22205	-0.000091	0.0003743	0.0035	2.04	14577.46	17675.81	17675.81	4.55	No	Si
SLU 79	7.77	-391.36	-19385	-0.0000536	0.0003743	0.0035	2.04	13621.26	16396.77	16396.77	41.9	No	Si
SLU 72	5.97	-3589.43	-19885	-0.0000812	0.0003743	0.0035	2.04	13809.66	16616.09	16616.09	4.63	No	Si
SLU 72	7.77	-302.01	-17066	-0.0000463	0.0003743	0.0035	2.04	12639.35	15066.55	15066.55	49.89	No	Si
SLU 83	5.97	-3924.52	-23064	-0.0000941	0.0003743	0.0035	2.04	14817.27	18088.57	18088.57	4.61	No	Si
SLU 83	7.77	-411.66	-20245	-0.0000562	0.0003743	0.0035	2.04	13940.43	16775.46	16775.46	40.75	No	Si
SLU 71	5.97	-3630.34	-19856	-0.0000815	0.0003743	0.0035	2.04	13799.07	16603.48	16603.48	4.57	No	Si
SLU 71	7.77	-284.68	-17037	-0.0000461	0.0003743	0.0035	2.04	12626.11	15048.84	15048.84	52.86	No	Si
SLU 78	5.97	-3896.59	-22648	-0.0000925	0.0003743	0.0035	2.04	14704.18	17887.38	17887.38	4.59	No	Si
SLU 78	7.77	-413.77	-19829	-0.000055	0.0003743	0.0035	2.04	13788.91	16591.44	16591.44	40.1	No	Si
SLU 80	5.97	-3847.7	-22233	-0.0000907	0.0003743	0.0035	2.04	14585.85	17689.4	17689.4	4.6	No	Si
SLU 80	7.77	-408.7	-19414	-0.0000538	0.0003743	0.0035	2.04	13632.3	16410.25	16410.25	40.15	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	5.97	-6956.89	-487	-0.0053949	0.0005615	0.0035	1.632		1595.47	1595.47	0.23		No
SLV 1	7.77	5049.2	1979	0.0759273	0.0005615	0.0035	1.632		0	0	0		No
SLV 8	5.97	-8038.09	-9511	-0.0002012	0.0005615	0.0035	1.632		9992.27	9992.27	1.24		Si
SLV 8	7.77	2934.27	-7425	-0.0000399	0.0005615	0.0035	2.04		7322.14	7322.14	2.5		Si
SLV 7	5.97	-8805.07	-7213	-0.0015669	0.0005615	0.0035	1.632		7967.06	7967.06	0.9		No
SLV 7	7.77	3688.91	-5128	-0.0000581	0.0005615	0.0035	2.04		5218.08	5218.08	1.41		Si
SLV 3	5.97	-9513.65	1069	0.0802938	0.0005615	0.0035	1.632		0	0	0		No
SLV 3	7.77	6202.2	3444	0.2195138	0.0005615	0.0035	1.632		0	0	0		No
SLD 3	5.97	-5548.76	-8185	-0.0000829	0.0005615	0.0035	1.632		8840.74	8840.74	1.59		Si
SLD 3	7.77	2523.25	-5930	-0.0000333	0.0005615	0.0035	2.04		5961.28	5961.28	2.36		Si
SLV 4	5.97	-8374.47	-2344	-0.0050012	0.0005615	0.0035	1.632		3420.03	3420.03	0.41		No
SLV 4	7.77	5081.33	31	-0.0337352	0.0005615	0.0035	1.632		194.05	194.05	0.04		No
SLD 7	5.97	-5152.54	-11801	-0.0000695	0.0005615	0.0035	2.04		11929.13	11929.13	2.32		Si
SLD 7	7.77	1407.99	-9669	-0.0000342	0.0005615	0.0035	2.04		9301.67	9301.67	6.61		Si
SLD 1	5.97	-4533.27	-8794	-0.0000594	0.0005615	0.0035	2.04		9378.81	9378.81	2.07		Si
SLD 1	7.77	2065.07	-6502	-0.0000309	0.0005615	0.0035	2.04		6486.72	6486.72	3.14		Si
SLV 2	5.97	-5817.71	-3900	-0.0012282	0.0005615	0.0035	1.632		4914.08	4914.08	0.84		No
SLV 2	7.77	3928.33	-1434	-0.015725	0.0005615	0.0035	1.632		1661.58	1661.58	0.42		No
SLD 4	5.97	-5064.13	-9637	-0.0000668	0.0005615	0.0035	2.04		10101.05	10101.05	1.99		Si
SLD 4	7.77	2046.41	-7382	-0.000033	0.0005615	0.0035	2.04		7283.43	7283.43	3.56		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	5.97	-3883.61	-23093	-19447	-1962	2.04	2.04	-31776	10833	7150	40441	18326	5202	23528	No	11.99	Si
SLU 84	7.77	-428.99	-20274	-17073	-1962	2.04	2.04	-27896	10664	6526	40441	18326	5202	23528	No	11.99	Si
SLU 79	5.97	-3888.62	-22205	-18699	-1985	2.04	2.04	-30553	10833	6950	40441	18326	5202	23528	No	11.85	Si
SLU 79	7.77	-391.36	-19385	-16324	-1985	2.04	2.04	-26674	10501	6427	40441	18326	5202	23528	No	11.85	Si
SLU 83	5.97	-3924.52	-23064	-19423	-1994	2.04	2.04	-31736	10833	7143	40441	18326	5202	23528	No	11.8	Si
SLU 83	7.77	-411.66	-20245	-17048	-1994	2.04	2.04	-27857	10659	6523	40441	18326	5202	23528	No	11.8	Si
SLU 75	5.97	-3821.8	-22501	-18948	-1950	2.04	2.04	-30962	10833	7017	40441	18326	5202	23528	No	12.07	Si
SLU 75	7.77	-388.35	-19682	-16574	-1950	2.04	2.04	-27082	10555	6460	40441	18326	5202	23528	No	12.07	Si
SLU 74	5.97	-3862.72	-22473	-18924	-1982	2.04	2.04	-30922	10833	7010	40441	18326	5202	23528	No	11.87	Si
SLU 74	7.77	-371.01	-19653	-16550	-1982	2.04	2.04	-27043	10550	6457	40441	18326	5202	23528	No	11.87	Si
SLU 82	5.97	-3808.82	-22946	-19323	-1934	2.04	2.04	-31574	10833	7117	40441	18326	5202	23528	No	12.16	Si
SLU 82	7.77	-403.57	-20127	-16949	-1934	2.04	2.04	-27695	10637	6510	40441	18326	5202	23528	No	12.16	Si
SLU 78	5.97	-3896.59	-22648	-19072	-1977	2.04	2.04	-31163	10833	7050	40441	18326	5202	23528	No	11.9	Si
SLU 78	7.77	-413.77	-19829	-16698	-1977	2.04	2.04	-27284	10582	6476	40441	18326	5202	23528	No	11.9	Si
SLU 80	5.97	-3847.7	-22233	-18723	-1953	2.04	2.04	-30593	10833	6957	40441	18326	5202	23528	No	12.05	Si
SLU 80	7.77	-408.7	-19414	-16349	-1953	2.04	2.04	-26713	10506	6430	40441	18326	5202	23528	No	12.05	Si
SLU 81	5.97	-3849.73	-22918	-19299	-1967	2.04	2.04	-31534	10833	7110	40441	18326	5202	23528	No	11.96	Si
SLU 81	7.77	-386.23	-20098	-16925	-1967	2.04	2.04	-27655	10632	6507	40441	18326	5202	23528	No	11.96	Si
SLU 77	5.97	-3937.5	-22619	-19048	-2010	2.04	2.04	-31124	10833	7043	40441	18326	5202	23528	No	11.71	Si
SLU 77	7.77	-396.44	-19800	-16674	-2010	2.04	2.04	-27245	10577	6473	40441	18326	5202	23528	No	11.71	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	5.97	-8374.47	-2344	-1974	-7723	1.632	0	0	0	0	40441	21991	4162	26153		3.39	Si
SLV 4	7.77	5081.33	31	26	-7367	1.632	0	0	0	0	40441	21991	4162	26153		3.55	Si
SLV 2	5.97	-5817.71	-3900	-3284	-5723	1.632	0	0	0	0	40441	21991	4162	26153		4.57	Si
SLV 2	7.77	3928.33	-1434	-1207	-5364	1.632	0	0	0	0	40441	21991	4162	26153		4.88	Si
SLV 1	5.97	-6956.89	-487	-410	-6978	1.632	0	0	0	0	40441	21991	4162	26153		3.75	Si
SLV 1	7.77	5049.2	1979	1667	-6620	1.632	0	0	0	0	40441	21991	4162	26153		3.95	Si
SLV 13	5.97	3058.46	-27742	-23361	4911	2.04	2.04	-38172	16250	9945	40441	27489	5202	32691		6.66	Si
SLV 13	7.77	-5451.78	-25798	-21725	4555	2.04	2.04	-35498	16250	9945	40441	27489	5202	32691		7.18	Si
SLD 3	5.97	-5548.76	-8185	-6893	-4610	1.632	1.0263	0	0	0	40441	21991	4162	26153		5.67	Si
SLD 3	7.77	2523.25	-5930	-4994	-4458	2.04	1.7836	-8160	12049	6447	40441	27489	5202	32691		7.33	Si
SLV 14	5.97	4197.64	-31154	-26235	6166	2.04	2.04	-42868	16250	9945	40441	27489	5202	32691		5.3	Si
SLV 14	7.77	-6572.66	-29211	-24599	5810	2.04	2.04	-40194	16250	9945	40441	27489	5202	32691		5.63	Si
SLV 7	5.97	-8805.07	-7213	-6074	-6947	1.632	0	0	0	0	40441	21991	4162	26153		3.76	Si
SLV 7	7.77	3688.91	-5128	-4318	-6843	2.04	0.9017	-7055	11828	4098	40441	27489	5202	32691		4.78	Si
SLV 3	5.97	-9513.65	1069	900	-8979	1.632	0	0	0	0	40441	21991	4162	26153		2.91	Si
SLV 3	7.77	6202.2	3444	2900	-8623	1.632	0	0	0	0	40441	21991	4162	26153		3.03	Si
SLV 16	5.97	1640.88	-29599	-24925	4166	2.04	2.04	-40728	16250	9945	40441	27489	5202	32691		7.85	Si
SLV 16	7.77	-5419.66	-27746	-23365	3807	2.04	2.04	-38179	16250	9945	40441	27489	5202	32691		8.59	Si
SLV 8	5.97	-8038.09	-9511	-8009	-6102	1.632	0.5245	0	0	0	40441	21991	4162	26153		4.29	Si
SLV 8	7.77	2934.27	-7425	-6253	-5998	2.04	1.8745	-10217	12460	7007	40441	27489	5202	32691		5.45	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 3	179667	0.39	0	2438	230.77	0	0	No, Trazione
SLV 4	179667	0.39	0	-975	230.77	0	0	No, e>t/2
SLV 1	179667	0.39	0	957	230.77	0	0	No, Trazione
SLV 2	179667	0.39	4013	-2456	230.77	358.74	1.55	Si
SLV 7	179667	0.39	9902	-6060	230.77	850.09	3.68	Si
SLV 8	179667	0.39	13657	-8358	230.77	1141.59	4.95	Si
SLV 5	179667	0.39	17972	-10999	230.77	1455.66	6.31	Si
SLV 6	179667	0.39	21726	-13296	230.77	1710.73	7.41	Si
SLV 11	179667	0.39	23445	-14348	230.77	1821.83	7.89	Si
SLV 12	179667	0.39	27199	-16646	230.77	2052.2	8.89	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.

- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 14	-20879	-35715	340	0.533	2431.8	0.962	8.04684	5.36881	Si
SLV 16	-20843	-32194	-313	0.535	2428.1	0.962	8.07638	5.36881	Si
SLV 13	-18746	-31301	340	0.583	2214.9	0.959	8.84063	5.36881	Si
SLV 15	-18711	-27780	-313	0.586	2211.2	0.959	8.87492	5.36881	Si
SLV 10	-14775	-26213	1094	0.667	1811.2	0.951	10.18991	4.5984	Si
SLV 12	-14655	-14478	-1082	0.672	1799.1	0.951	10.27275	4.5984	Si
SLV 9	-13339	-23241	1094	0.725	1665.5	0.947	11.12951	4.5984	Si
SLV 11	-13219	-11506	-1082	0.732	1653.4	0.947	11.22831	4.5984	Si
SLV 6	-9805	-15166	1088	0.931	1307.5	0.935	14.47044	4.5984	Si
SLV 8	-9686	-3431	-1088	0.94	1295.4	0.935	14.61957	4.5984	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.539	SLU 77	Si
V_SLU	11.708	SLU 77	Si
PF_SLV	0	SLV 1	No
V_SLV	2.913	SLV 3	Si
PFFP_SLV	0	SLV 3	No
R_SLV	1.499	SLV 14	Si

Maschio 136

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.013	-3.314	-11.013	-0.354	L5	Z medio 740 cm	2.96	0.3	2.33	1.11	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 48	5.07	2483.58	-37377	-0.000079	0.0003743	0.0035	2.96	32447.94	39069.02	39069.02	15.73	No	Si
SLU 48	6.18	3730.44	-33026	-0.0000748	0.0003743	0.0035	2.96	31022.98	36463.62	36463.62	9.77	No	Si
SLU 67	5.07	2527.59	-41813	-0.0000889	0.0003743	0.0035	2.96	33262.67	41807.33	41807.33	16.54	No	Si
SLU 67	6.18	4073.07	-36933	-0.0000845	0.0003743	0.0035	2.96	32331.02	38797.32	38797.32	9.53	No	Si
SLU 68	5.07	2441.28	-41562	-0.0000879	0.0003743	0.0035	2.96	33233.76	41648.53	41648.53	17.06	No	Si
SLU 68	6.18	4014.45	-36668	-0.0000837	0.0003743	0.0035	2.96	32258.05	38635.4	38635.4	9.62	No	Si
SLU 66	5.07	2617.7	-41638	-0.0000888	0.0003743	0.0035	2.96	33242.79	41696.89	41696.89	15.93	No	Si
SLU 66	6.18	4086.07	-36809	-0.0000843	0.0003743	0.0035	2.96	32297.26	38721.72	38721.72	9.48	No	Si
SLU 65	5.07	2364.15	-40891	-0.0000861	0.0003743	0.0035	2.96	33146.41	41226.48	41226.48	17.44	No	Si
SLU 65	6.18	3899.51	-36027	-0.0000819	0.0003743	0.0035	2.96	32072.25	38246.3	38246.3	9.81	No	Si
SLU 72	5.07	2578.48	-42116	-0.0000897	0.0003743	0.0035	2.96	33294.85	41999.87	41999.87	16.29	No	Si
SLU 72	6.18	4138.04	-37226	-0.0000854	0.0003743	0.0035	2.96	32408.98	38976.85	38976.85	9.42	No	Si
SLU 71	5.07	2668.59	-41942	-0.0000897	0.0003743	0.0035	2.96	33276.7	41889.04	41889.04	15.7	No	Si
SLU 71	6.18	4151.03	-37102	-0.0000852	0.0003743	0.0035	2.96	32376.41	38900.99	38900.99	9.37	No	Si
SLU 64	5.07	2514.33	-40600	-0.0000861	0.0003743	0.0035	2.96	33103.95	41044.5	41044.5	16.32	No	Si
SLU 64	6.18	3921.17	-35821	-0.0000815	0.0003743	0.0035	2.96	32009.59	38121.73	38121.73	9.72	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 70	5.07	2604.72	-42483	-0.0000907	0.0003743	0.0035	2.96	33329.78	42233.91	42233.91	16.21	No	Si
SLU 70	6.18	4188	-37574	-0.0000864	0.0003743	0.0035	2.96	32497.82	39187.63	39187.63	9.36	No	Si
SLU 69	5.07	2694.83	-42309	-0.0000907	0.0003743	0.0035	2.96	33313.74	42122.61	42122.61	15.63	No	Si
SLU 69	6.18	4201	-37450	-0.0000862	0.0003743	0.0035	2.96	32466.66	39113.15	39113.15	9.31	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 11	5.07	6021.23	-25427	-0.0000659	0.0005615	0.0035	2.96		32247.45	32247.45	5.36		Si
SLD 11	6.18	4019.31	-23765	-0.0000555	0.0005615	0.0035	2.96		30354.86	30354.86	7.55		Si
SLV 11	5.07	12467.53	-16565	-0.0000789	0.0005615	0.0035	2.96		22362.7	22362.7	1.79		Si
SLV 11	6.18	5638.44	-17810	-0.0000504	0.0005615	0.0035	2.96		23721.11	23721.11	4.21		Si
SLV 16	5.07	7290.01	-30271	-0.0000799	0.0005615	0.0035	2.96		37613.5	37613.5	5.16		Si
SLV 16	6.18	6047.04	-28733	-0.0000723	0.0005615	0.0035	2.96		36066.97	36066.97	5.96		Si
SLV 8	5.07	10608.72	-14936	-0.0000665	0.0005615	0.0035	2.96		20600.85	20600.85	1.94		Si
SLV 8	6.18	3904.14	-15516	-0.0000401	0.0005615	0.0035	2.96		21226.78	21226.78	5.44		Si
SLV 6	5.07	-9031.7	-45961	-0.0001183	0.0005615	0.0035	2.96		52968.6	52968.6	5.86		Si
SLV 6	6.18	194.53	-37493	-0.0000673	0.0005615	0.0035	2.96		43912.57	43912.57	225.74		Si
SLD 12	5.07	5939.57	-25590	-0.0000659	0.0005615	0.0035	2.96		32434.93	32434.93	5.46		Si
SLD 12	6.18	3964.57	-23861	-0.0000555	0.0005615	0.0035	2.96		30463.5	30463.5	7.68		Si
SLV 7	5.07	10804.62	-14543	-0.0000677	0.0005615	0.0035	2.96		20167.59	20167.59	1.87		Si
SLV 7	6.18	4035.46	-15286	-0.0000402	0.0005615	0.0035	2.96		20978.78	20978.78	5.2		Si
SLV 15	5.07	7580.98	-29688	-0.0000798	0.0005615	0.0035	2.96		37091.36	37091.36	4.89		Si
SLV 15	6.18	6242.09	-28391	-0.0000724	0.0005615	0.0035	2.96		35669.35	35669.35	5.71		Si
SLV 12	5.07	12271.63	-16958	-0.0000775	0.0005615	0.0035	2.96		22790.04	22790.04	1.86		Si
SLV 12	6.18	5507.12	-18040	-0.0000504	0.0005615	0.0035	2.96		23972.88	23972.88	4.35		Si
SLD 7	5.07	5309.68	-24563	-0.0000617	0.0005615	0.0035	2.96		31261.94	31261.94	5.89		Si
SLD 7	6.18	3334.18	-22687	-0.0000511	0.0005615	0.0035	2.96		29136.23	29136.23	8.74		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 60	5.07	1454.28	-41248	-34735	3361	2.96	2.96	-39117	10833	18168	26168	26591	7548	34139	No	10.16	Si
SLU 60	6.18	3468.7	-36746	-30944	4570	2.96	2.96	-34846	10833	16652	26168	26591	7548	34139	No	7.47	Si
SLU 82	5.07	1575.42	-46355	-39036	3241	2.96	2.96	-43959	10833	19889	26168	26591	7548	34139	No	10.53	Si
SLU 82	6.18	3926.27	-41294	-34774	4614	2.96	2.96	-39160	10833	18184	26168	26591	7548	34139	No	7.4	Si
SLU 81	5.07	1665.53	-46181	-38889	3460	2.96	2.96	-43794	10833	19830	26168	26591	7548	34139	No	9.87	Si
SLU 81	6.18	3939.27	-41170	-34669	4828	2.96	2.96	-39042	10833	18142	26168	26591	7548	34139	No	7.07	Si
SLU 79	5.07	2074.43	-45848	-38609	3420	2.96	2.96	-43478	10833	19718	26168	26591	7548	34139	No	9.98	Si
SLU 79	6.18	4163.7	-40847	-34397	4715	2.96	2.96	-38736	10833	18033	26168	26591	7548	34139	No	7.24	Si
SLU 77	5.07	2100.67	-46215	-38918	3415	2.96	2.96	-43827	10833	19841	26168	26591	7548	34139	No	10	Si
SLU 77	6.18	4213.66	-41194	-34690	4721	2.96	2.96	-39065	10833	18150	26168	26591	7548	34139	No	7.23	Si
SLU 84	5.07	1652.55	-47026	-39601	3228	2.96	2.96	-44596	10833	20114	26168	26591	7548	34139	No	10.58	Si
SLU 84	6.18	4041.2	-41934	-35313	4626	2.96	2.96	-39767	10833	18399	26168	26591	7548	34139	No	7.38	Si
SLU 83	5.07	1742.66	-46851	-39454	3447	2.96	2.96	-44430	10833	20056	26168	26591	7548	34139	No	9.9	Si
SLU 83	6.18	4054.2	-41811	-35209	4840	2.96	2.96	-39650	10833	18358	26168	26591	7548	34139	No	7.05	Si
SLU 78	5.07	2010.56	-46390	-39065	3195	2.96	2.96	-43992	10833	19900	26168	26591	7548	34139	No	10.68	Si
SLU 78	6.18	4200.67	-41318	-34794	4507	2.96	2.96	-39183	10833	18192	26168	26591	7548	34139	No	7.58	Si
SLU 74	5.07	2023.54	-45545	-38353	3427	2.96	2.96	-43191	10833	19616	26168	26591	7548	34139	No	9.96	Si
SLU 74	6.18	4098.73	-40554	-34150	4709	2.96	2.96	-38458	10833	17934	26168	26591	7548	34139	No	7.25	Si
SLU 62	5.07	1531.41	-41919	-35300	3349	2.96	2.96	-39753	10833	18394	26168	26591	7548	34139	No	10.19	Si
SLU 62	6.18	3583.63	-37386	-31483	4582	2.96	2.96	-35454	10833	16868	26168	26591	7548	34139	No	7.45	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	5.07	10804.62	-14543	-12246	27109	2.96	2.2111	-13791	13175	11311	26168	39886	7548	37478		1.38	Si
SLV 7	6.18	4035.46	-15286	-12873	26679	2.96	2.96	-14496	13316	11825	26168	39886	7548	37992		1.42	Si
SLV 10	5.07	-7368.79	-47983	-40407	-21886	2.96	2.96	-45503	16250	22574	26168	39886	7548	47434		2.17	Si
SLV 10	6.18	1797.51	-40017	-33699	-19882	2.96	2.96	-37949	16250	19891	26168	39886	7548	46059		2.32	Si
SLV 6	5.07	-9031.7	-45961	-38704	-19214	2.96	2.96	-43585	16250	21893	26168	39886	7548	47434		2.47	Si
SLV 6	6.18	194.53	-37493	-31573	-17637	2.96	2.96	-35555	16250	19041	26168	39886	7548	45209		2.56	Si
SLV 8	5.07	10608.72	-14936	-12577	27401	2.96	2.3091	-14164	13249	11443	26168	39886	7548	37611		1.37	Si
SLV 8	6.18	3904.14	-15516	-13066	26925	2.96	2.96	-14714	13360	11863	26168	39886	7548	38031		1.41	Si
SLV 3	5.07	2037.94	-22947	-19324	13841	2.96	2.96	-21761	14769	14141	26168	39886	7548	40309		2.91	Si
SLV 3	6.18	898.81	-19978	-16823	13642	2.96	2.96	-18945	14206	13141	26168	39886	7548	39309		2.88	Si
SLV 4	5.07	1746.97	-23530	-19815	14275	2.96	2.96	-22314	14880	14338	26168	39886	7548	40506		2.84	Si
SLV 4	6.18	703.76	-20319	-17111	14007	2.96	2.96	-19269	14270	13256	26168	39886	7548	39424		2.81	Si
SLV 12	5.07	12271.63	-16958	-14280	24729	2.96	2.269	-16081	13633	12124	26168	39886	7548	38292		1.55	Si
SLV 12	6.18	5507.12	-18040	-15192	24680	2.96	2.96	-17108	13838	12489	26168	39886	7548	38656		1.57	Si
SLV 11	5.07	12467.53	-16565	-13949	24436	2.96	2.1821	-15709	13558	11992	26168	39886	7548	38159		1.56	Si
SLV 11	6.18	5638.44	-17810	-14998	24434	2.96	2.96	-16890	13795	12411	26168	39886	7548	38579		1.58	Si
SLV 9	5.07	-7172.89	-47590	-40076	-22179	2.96	2.96	-45131	16250	22442	26168	39886	7548	47434		2.14	Si
SLV 9	6.18	1928.83	-39787	-33505	-20128	2.96	2.96	-37731	16250	19814	26168	39886	7548	45981		2.28	Si
SLV 5	5.07	-8835.8	-45568	-38373	-19506	2.96	2.96	-43213	16250	21761	26168	39886	7548	47434		2.43	Si
SLV 5	6.18	325.85	-37263	-31380	-17883	2.96	2.96	-35338	16250	18964	26168	39886	7548	45131		2.52	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 5.625 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.36	14374	-12765	138.09	1734.46	12.56	Si
SLV 8	179667	0.36	14721	-13072	138.09	1771.8	12.83	Si

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 11	179667	0.36	16796	-14915	138.09	1991.2	14.42	Si
SLV 12	179667	0.36	17143	-15223	138.09	2027.08	14.68	Si
SLV 3	179667	0.36	22701	-20158	138.09	2574.25	18.64	Si
SLV 4	179667	0.36	23215	-20615	138.09	2622.17	18.99	Si
SLV 15	179667	0.36	30773	-27327	138.09	3273.02	23.7	Si
SLV 16	179667	0.36	31288	-27783	138.09	3313.7	24	Si
SLV 1	179667	0.36	32331	-28710	138.09	3394.78	24.58	Si
SLV 2	179667	0.36	32846	-29167	138.09	3434.06	24.87	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 5.625 Wa = 0.05 Ta = 0.0302

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-40017	-47983	-263	0.458	4366.1	0.979	6.7972	3.61373	Si
SLV 9	-39787	-47590	-262	0.46	4342.7	0.979	6.83057	3.61373	Si
SLV 14	-35326	-39579	-703	0.496	3888.2	0.977	7.3769	3.84454	Si
SLV 13	-34985	-38995	-701	0.5	3853.4	0.977	7.43853	3.84454	Si
SLV 6	-37493	-45961	123	0.487	4109	0.978	7.23359	3.61373	Si
SLV 5	-37263	-45568	125	0.489	4085.6	0.978	7.27093	3.61373	Si
SLV 16	-28733	-30271	-693	0.589	3216.6	0.972	8.80584	3.84454	Si
SLV 15	-28391	-29688	-692	0.595	3181.9	0.972	8.89774	3.84454	Si
SLV 2	-26912	-32838	585	0.626	3031.2	0.971	9.37372	3.84454	Si
SLV 1	-26571	-32254	586	0.633	2996.5	0.97	9.47693	3.84454	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.31	SLU 69	Si
V_SLU	7.054	SLU 83	Si
PF_SLV	1.794	SLV 11	Si
V_SLV	1.373	SLV 8	Si
PFFP_SLV	12.56	SLV 7	Si
R_SLV	1.881	SLV 10	Si

Maschio 138

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.013	-0.354	-11.013	1.046	L5	L6	1.4	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 77	5.07	2698.09	-22778	-0.0001463	0.0003743	0.0035	1.4	7451.2	10040.17	10040.17	3.72	No	Si
SLU 77	8.62	437.64	-17163	-0.0000746	0.0003743	0.0035	1.4	7192.03	8604.44	8604.44	19.66	No	Si
SLU 84	5.07	2731.57	-23076	-0.0001487	0.0003743	0.0035	1.4	7436.09	10078.71	10078.71	3.69	No	Si
SLU 84	8.62	361.86	-17301	-0.0000738	0.0003743	0.0035	1.4	7210.75	8642.66	8642.66	23.88	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 81	5.07	2709.77	-22708	-0.0001461	0.0003743	0.0035	1.4	7454.33	10031.16	10031.16	3.7	No	Si
SLU 81	8.62	319.51	-16863	-0.0000711	0.0003743	0.0035	1.4	7149.05	8521.54	8521.54	26.67	No	Si
SLU 80	5.07	2654.18	-22586	-0.0001443	0.0003743	0.0035	1.4	7459.39	10015.52	10015.52	3.77	No	Si
SLU 80	8.62	446.12	-17024	-0.0000741	0.0003743	0.0035	1.4	7172.49	8565.95	8565.95	19.2	No	Si
SLU 79	5.07	2677.09	-22590	-0.0001448	0.0003743	0.0035	1.4	7459.2	10016.16	10016.16	3.74	No	Si
SLU 79	8.62	428.05	-16976	-0.0000736	0.0003743	0.0035	1.4	7165.55	8552.62	8552.62	19.98	No	Si
SLU 62	5.07	2529	-20635	-0.0001311	0.0003743	0.0035	1.4	7474.07	9598.07	9598.07	3.8	No	Si
SLU 62	8.62	260.45	-15387	-0.0000637	0.0003743	0.0035	1.4	6895.1	8119.65	8119.65	31.18	No	Si
SLU 78	5.07	2675.18	-22773	-0.0001458	0.0003743	0.0035	1.4	7451.42	10039.53	10039.53	3.75	No	Si
SLU 78	8.62	455.71	-17212	-0.0000751	0.0003743	0.0035	1.4	7198.67	8617.83	8617.83	18.91	No	Si
SLU 74	5.07	2653.38	-22404	-0.0001433	0.0003743	0.0035	1.4	7466	9992.46	9992.46	3.77	No	Si
SLU 74	8.62	413.36	-16773	-0.0000724	0.0003743	0.0035	1.4	7135.69	8497	8497	20.56	No	Si
SLU 83	5.07	2754.48	-23081	-0.0001492	0.0003743	0.0035	1.4	7435.81	10079.36	10079.36	3.66	No	Si
SLU 83	8.62	343.8	-17253	-0.0000733	0.0003743	0.0035	1.4	7204.25	8629.23	8629.23	25.1	No	Si
SLU 82	5.07	2686.86	-22703	-0.0001456	0.0003743	0.0035	1.4	7454.54	10030.52	10030.52	3.73	No	Si
SLU 82	8.62	337.58	-16911	-0.0000717	0.0003743	0.0035	1.4	7156.16	8534.83	8534.83	25.28	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	5.07	4440.24	-18760	-0.0001482	0.0005615	0.0035	1.4		10254.96	10254.96	2.31		Si
SLV 12	8.62	-1075.06	-8988	-0.0000496	0.0005615	0.0035	1.4		6103.38	6103.38	5.68		Si
SLD 7	5.07	2989.28	-15987	-0.0001099	0.0005615	0.0035	1.4		9122.75	9122.75	3.05		Si
SLD 7	8.62	-167.3	-9990	-0.000039	0.0005615	0.0035	1.4		6650.46	6650.46	39.75		Si
SLV 7	5.07	4751.77	-17085	-0.0001482	0.0005615	0.0035	1.4		9566.93	9566.93	2.01		Si
SLV 7	8.62	-922.71	-8104	-0.0000438	0.0005615	0.0035	1.4		5604.96	5604.96	6.07		Si
SLD 11	5.07	2850.53	-16694	-0.0001106	0.0005615	0.0035	1.4		9407.92	9407.92	3.3		Si
SLD 11	8.62	-232.3	-10361	-0.0000415	0.0005615	0.0035	1.4		6851.2	6851.2	29.49		Si
SLD 12	5.07	2856	-16702	-0.0001107	0.0005615	0.0035	1.4		9411.52	9411.52	3.3		Si
SLD 12	8.62	-232.48	-10368	-0.0000415	0.0005615	0.0035	1.4		6854.67	6854.67	29.48		Si
SLV 3	5.07	3172.38	-13308	-0.0001016	0.0005615	0.0035	1.4		7892.62	7892.62	2.49		Si
SLV 3	8.62	192.74	-9011	-0.0000357	0.0005615	0.0035	1.4		5642.24	5642.24	29.27		Si
SLD 8	5.07	2994.75	-15996	-0.0001101	0.0005615	0.0035	1.4		9126.34	9126.34	3.05		Si
SLD 8	8.62	-167.48	-9997	-0.000039	0.0005615	0.0035	1.4		6653.96	6653.96	39.73		Si
SLV 11	5.07	4427.12	-18738	-0.0001478	0.0005615	0.0035	1.4		10246.11	10246.11	2.31		Si
SLV 11	8.62	-1074.64	-8972	-0.0000495	0.0005615	0.0035	1.4		6094.85	6094.85	5.67		Si
SLV 8	5.07	4764.9	-17106	-0.0001486	0.0005615	0.0035	1.4		9575.62	9575.62	2.01		Si
SLV 8	8.62	-923.13	-8119	-0.0000439	0.0005615	0.0035	1.4		5613.77	5613.77	6.08		Si
SLV 4	5.07	3191.88	-13340	-0.0001021	0.0005615	0.0035	1.4		7909.69	7909.69	2.48		Si
SLV 4	8.62	192.1	-9034	-0.0000358	0.0005615	0.0035	1.4		5653.94	5653.94	29.43		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	5.07	2654.18	-22586	-19019	3988	1.4	1.4	-45284	10833	6420	40441	12577	3570	16147	No	4.05	Si
SLU 80	8.62	446.12	-17024	-14336	-1982	1.4	1.4	-34133	10833	5171	40441	12577	3570	16147	No	8.15	Si
SLU 84	5.07	2731.57	-23076	-19433	4112	1.4	1.4	-46268	10833	6530	40441	12577	3570	16147	No	3.93	Si
SLU 84	8.62	361.86	-17301	-14569	-1962	1.4	1.4	-34689	10833	5233	40441	12577	3570	16147	No	8.23	Si
SLU 74	5.07	2653.38	-22404	-18867	4049	1.4	1.4	-44921	10833	6379	40441	12577	3570	16147	No	3.99	Si
SLU 74	8.62	413.36	-16773	-14125	-1843	1.4	1.4	-33630	10833	5114	40441	12577	3570	16147	No	8.76	Si
SLU 77	5.07	2698.09	-22778	-19181	4103	1.4	1.4	-45670	10833	6463	40441	12577	3570	16147	No	3.94	Si
SLU 77	8.62	437.64	-17163	-14453	-1896	1.4	1.4	-34412	10833	5202	40441	12577	3570	16147	No	8.51	Si
SLU 79	5.07	2677.09	-22590	-19024	4076	1.4	1.4	-45294	10833	6421	40441	12577	3570	16147	No	3.96	Si
SLU 79	8.62	428.05	-16976	-14295	-1865	1.4	1.4	-34036	10833	5160	40441	12577	3570	16147	No	8.66	Si
SLU 82	5.07	2686.86	-22703	-19118	4059	1.4	1.4	-45519	10833	6446	40441	12577	3570	16147	No	3.98	Si
SLU 82	8.62	337.58	-16911	-14241	-1908	1.4	1.4	-33907	10833	5145	40441	12577	3570	16147	No	8.46	Si
SLU 78	5.07	2675.18	-22773	-19177	4015	1.4	1.4	-45660	10833	6462	40441	12577	3570	16147	No	4.02	Si
SLU 78	8.62	455.71	-17212	-14494	-2013	1.4	1.4	-34509	10833	5213	40441	12577	3570	16147	No	8.02	Si
SLU 62	5.07	2529	-20635	-17377	4023	1.4	1.4	-41373	10833	5982	40441	12577	3570	16147	No	4.01	Si
SLU 62	8.62	260.45	-15387	-12957	-1327	1.4	1.4	-30851	10833	4803	40441	12577	3570	16147	No	12.17	Si
SLU 83	5.07	2754.48	-23081	-19437	4200	1.4	1.4	-46278	10833	6531	40441	12577	3570	16147	No	3.84	Si
SLU 83	8.62	343.8	-17253	-14529	-1845	1.4	1.4	-34592	10833	5222	40441	12577	3570	16147	No	8.75	Si
SLU 81	5.07	2709.77	-22708	-19122	4147	1.4	1.4	-45529	10833	6447	40441	12577	3570	16147	No	3.89	Si
SLU 81	8.62	319.51	-16863	-14200	-1791	1.4	1.4	-33810	10833	5134	40441	12577	3570	16147	No	9.01	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	5.07	-1145.38	-13495	-11364	-6430	1.4	1.4	-27057	15828	6648	40441	18865	3570	22435		3.49	Si
SLV 10	8.62	1605.18	-14487	-12200	-12281	1.4	1.4	-29047	16226	6815	40441	18865	3570	22435		1.83	Si
SLV 7	5.07	4751.77	-17085	-14387	12057	1.4	1.2656	-34256	16250	6170	40441	18865	3570	22435		1.86	Si
SLV 7	8.62	-922.71	-8104	-6824	9877	1.4	1.4	-16248	13666	5740	40441	18865	3570	22435		2.27	Si
SLV 8	5.07	4764.9	-17106	-14405	12109	1.4	1.2644	-34299	16250	6164	40441	18865	3570	22435		1.85	Si
SLV 8	8.62	-923.13	-8119	-6837	9888	1.4	1.4	-16279	13672	5742	40441	18865	3570	22435		2.27	Si
SLV 14	5.07	434.01	-17272	-14544	-407	1.4	1.4	-34629	16250	6825	40441	18865	3570	22435		55.06	Si
SLV 14	8.62	489.74	-13579	-11435	-7017	1.4	1.4	-27227	15862	6662	40441	18865	3570	22435		3.2	Si
SLV 6	5.07	-820.73	-11841	-9972	-6114	1.4	1.4	-23742	15165	6369	40441	18865	3570	22435		3.67	Si
SLV 6	8.62	1757.12	-13619	-11468	-10634	1.4	1.4	-27306	15878	6669	40441	18865	3570	22435		2.11	Si
SLV 11	5.07	4427.12	-18738	-15780	11741	1.4	1.3912	-37571	16250	6782	40441	18865	3570	22435		1.91	Si
SLV 11	8.62	-1074.64	-8972	-7555	8230	1.4	1.4	-17989	14014	5886	40441	18865	3570	22435		2.73	Si
SLV 9	5.07	-1158.51	-13473	-11346	-6482	1.4	1.4	-27014	15819	6644	40441	18865	3570	22435		3.46	Si
SLV 9	8.62	1605.61	-14472	-12187	-12291	1.4	1.4	-29016	16220	6812	40441	18865	3570	22435		1.83	Si
SLV 5	5.07	-833.85	-11820	-9954	-6166	1.4	1.4	-23699	15157	6366	40441	18865	3570	22435		3.64	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	8.62	1757.54	-13603	-11455	-10644	1.4	1.4	-27275	15872	6666	40441	18865	3570	22435		2.11	Si
SLV 12	5.07	4440.24	-18760	-15798	11793	1.4	1.3899	-37613	16250	6776	40441	18865	3570	22435		1.9	Si
SLV 12	8.62	-1075.06	-8988	-7568	8241	1.4	1.4	-18020	14021	5889	40441	18865	3570	22435		2.72	Si
SLV 13	5.07	414.51	-17240	-14518	-485	1.4	1.4	-34566	16250	6825	40441	18865	3570	22435		46.28	Si
SLV 13	8.62	490.38	-13556	-11416	-7032	1.4	1.4	-27181	15853	6658	40441	18865	3570	22435		3.19	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 4	179667	0.39	16321	-6855	162.2	918.31	5.66	Si
SLV 3	179667	0.39	16398	-6887	162.2	922.14	5.69	Si
SLV 2	179667	0.39	19023	-7990	162.2	1049.18	6.47	Si
SLV 1	179667	0.39	19101	-8022	162.2	1052.84	6.49	Si
SLV 8	179667	0.39	24191	-10160	162.2	1282.6	7.91	Si
SLV 7	179667	0.39	24243	-10182	162.2	1284.84	7.92	Si
SLV 6	179667	0.39	33200	-13944	162.2	1636.9	10.09	Si
SLV 5	179667	0.39	33252	-13966	162.2	1638.75	10.1	Si
SLV 12	179667	0.39	33628	-14124	162.2	1652.07	10.19	Si
SLV 11	179667	0.39	33680	-14146	162.2	1653.91	10.2	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 14	-13579	-17272	368	0.548	1592.6	0.961	8.29591	5.36881	Si
SLV 13	-13556	-17240	368	0.549	1590.3	0.961	8.30876	5.36881	Si
SLV 16	-11930	-18851	332	0.614	1424.9	0.957	9.3301	5.36881	Si
SLV 15	-11907	-18819	331	0.615	1422.5	0.956	9.34645	5.36881	Si
SLV 10	-14487	-13495	133	0.534	1685	0.963	8.06554	4.5984	Si
SLV 9	-14472	-13473	132	0.535	1683.4	0.963	8.07344	4.5984	Si
SLV 6	-13619	-11841	-106	0.565	1596.7	0.961	8.54029	4.5984	Si
SLV 5	-13603	-11820	-106	0.565	1595.1	0.961	8.54839	4.5984	Si
SLV 2	-10684	-11760	-427	0.665	1298.4	0.953	10.14845	5.36881	Si
SLV 1	-10661	-11729	-428	0.666	1296	0.953	10.16672	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.659	SLU 83	Si
V_SLU	3.844	SLU 83	Si
PF_SLV	2.01	SLV 8	Si
V_SLV	1.825	SLV 9	Si
PFFP_SLV	5.662	SLV 4	Si
R_SLV	1.545	SLV 14	Si

Maschio 140

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-9.728	3.421	-9.728	6.651	L5	L6	3.23	0.16	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 40	5.07	-13325.88	-17637	-0.0001159	0.0004492	0.0035	3.23	20528.32	30400.39	30400.39	2.28	No	Si
SLU 40	8.62	6353.93	-13835	-0.0000646	0.0004492	0.0035	3.23	17448.14	21055.55	21055.55	3.31	No	Si
SLU 82	5.07	-15344.01	-21265	-0.0001369	0.0004492	0.0035	3.23	22777.91	34671.08	34671.08	2.26	No	Si
SLU 82	8.62	7095.62	-16472	-0.0000754	0.0004492	0.0035	3.23	19663.21	24110.46	24110.46	3.4	No	Si
SLU 81	5.07	-15348.66	-21286	-0.000137	0.0004492	0.0035	3.23	22788.9	34694.12	34694.12	2.26	No	Si
SLU 81	8.62	7085.96	-16493	-0.0000754	0.0004492	0.0035	3.23	19679.31	24134.53	24134.53	3.41	No	Si
SLU 83	5.07	-15536.06	-21430	-0.0001387	0.0004492	0.0035	3.23	22864.12	34853.04	34853.04	2.24	No	Si
SLU 83	8.62	7256.29	-16637	-0.0000767	0.0004492	0.0035	3.23	19789.83	24300.59	24300.59	3.35	No	Si
SLU 41	5.07	-13517.94	-17802	-0.0001177	0.0004492	0.0035	3.23	20645.12	30594.51	30594.51	2.26	No	Si
SLU 41	8.62	6514.6	-14000	-0.0000658	0.0004492	0.0035	3.23	17597	21258.34	21258.34	3.26	No	Si
SLU 39	5.07	-13330.53	-17658	-0.000116	0.0004492	0.0035	3.23	20543.19	30424.96	30424.96	2.28	No	Si
SLU 39	8.62	6344.27	-13856	-0.0000646	0.0004492	0.0035	3.23	17467.07	21083.14	21083.14	3.32	No	Si
SLU 77	5.07	-15157.59	-21249	-0.0001354	0.0004492	0.0035	3.23	22769.35	34653.18	34653.18	2.29	No	Si
SLU 77	8.62	7119.57	-16456	-0.0000755	0.0004492	0.0035	3.23	19650.67	24091.75	24091.75	3.38	No	Si
SLU 42	5.07	-13513.29	-17781	-0.0001176	0.0004492	0.0035	3.23	20630.41	30569.93	30569.93	2.26	No	Si
SLU 42	8.62	6524.26	-13979	-0.0000658	0.0004492	0.0035	3.23	17578.23	21234.27	21234.27	3.25	No	Si
SLU 78	5.07	-15152.94	-21228	-0.0001353	0.0004492	0.0035	3.23	22758.32	34629.51	34629.51	2.29	No	Si
SLU 78	8.62	7129.23	-16435	-0.0000755	0.0004492	0.0035	3.23	19634.53	24067.68	24067.68	3.38	No	Si
SLU 84	5.07	-15531.41	-21409	-0.0001386	0.0004492	0.0035	3.23	22853.28	34830	34830	2.24	No	Si
SLU 84	8.62	7265.95	-16616	-0.0000766	0.0004492	0.0035	3.23	19773.87	24276.52	24276.52	3.34	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 6	5.07	-10886.86	-14517	-0.0000907	0.0006738	0.0035	3.23		26997.64	26997.64	2.48		Si
SLD 6	8.62	5052.96	-11200	-0.0000506	0.0006738	0.0035	3.23		17829.19	17829.19	3.53		Si
SLV 13	5.07	-13369.91	-16282	-0.0001121	0.0006738	0.0035	3.23		29319.2	29319.2	2.19		Si
SLV 13	8.62	6570.55	-12944	-0.0000622	0.0006738	0.0035	3.23		20259.11	20259.11	3.08		Si
SLV 6	5.07	-12144.57	-13655	-0.0001023	0.0006738	0.0035	3.23		25821.64	25821.64	2.13		Si
SLV 6	8.62	6141.16	-10948	-0.000055	0.0006738	0.0035	3.23		17476.74	17476.74	2.85		Si
SLD 10	5.07	-11603.02	-14941	-0.0000966	0.0006738	0.0035	3.23		27576.53	27576.53	2.38		Si
SLD 10	8.62	5495.14	-11629	-0.0000537	0.0006738	0.0035	3.23		18429.66	18429.66	3.35		Si
SLD 14	5.07	-11661.3	-15758	-0.0000977	0.0006738	0.0035	3.23		28639.43	28639.43	2.46		Si
SLD 14	8.62	5456.59	-12226	-0.0000551	0.0006738	0.0035	3.23		19266.8	19266.8	3.53		Si
SLV 9	5.07	-13461	-14430	-0.0001158	0.0006738	0.0035	2.584		26878.63	26878.63	2		Si
SLV 9	8.62	6923.89	-11734	-0.0000609	0.0006738	0.0035	3.23		18576.42	18576.42	2.68		Si
SLD 9	5.07	-11453.34	-14850	-0.0000953	0.0006738	0.0035	3.23		27452.66	27452.66	2.4		Si
SLD 9	8.62	5390.19	-11538	-0.000053	0.0006738	0.0035	3.23		18302.51	18302.51	3.4		Si
SLV 10	5.07	-13820.09	-14648	-0.0001196	0.0006738	0.0035	2.584		27175.79	27175.79	1.97		Si
SLV 10	8.62	7175.65	-11951	-0.0000627	0.0006738	0.0035	3.23		18881.46	18881.46	2.63		Si
SLV 5	5.07	-11785.48	-13437	-0.0000988	0.0006738	0.0035	3.23		25524.48	25524.48	2.17		Si
SLV 5	8.62	5889.39	-10731	-0.0000533	0.0006738	0.0035	3.23		17168.39	17168.39	2.92		Si
SLV 14	5.07	-13903.27	-16606	-0.000117	0.0006738	0.0035	3.23		29738.81	29738.81	2.14		Si
SLV 14	8.62	6944.5	-13268	-0.0000647	0.0006738	0.0035	3.23		20704.45	20704.45	2.98		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	5.07	-15344.01	-21265	-12486	-6321	3.23	2.6803	-29779	10833	7260	115546	18573	16473	35046	No	5.54	Si
SLU 82	8.62	7095.62	-16472	-9672	-6321	3.23	3.23	-18715	10829	6236	115546	18573	16473	35046	No	5.54	Si
SLU 81	5.07	-15348.66	-21286	-12498	-6320	3.23	2.6818	-29793	10833	7265	115546	18573	16473	35046	No	5.55	Si
SLU 81	8.62	7085.96	-16493	-9684	-6320	3.23	3.23	-18739	10832	6241	115546	18573	16473	35046	No	5.55	Si
SLU 83	5.07	-15536.06	-21430	-12583	-6420	3.23	2.6701	-30134	10833	7296	115546	18573	16473	35046	No	5.46	Si
SLU 83	8.62	7256.29	-16637	-9769	-6420	3.23	3.23	-18902	10833	6271	115546	18573	16473	35046	No	5.46	Si
SLU 78	5.07	-15152.94	-21228	-12464	-6277	3.23	2.7036	-29465	10833	7252	115546	18573	16473	35046	No	5.58	Si
SLU 78	8.62	7129.23	-16435	-9650	-6277	3.23	3.23	-18673	10823	6228	115546	18573	16473	35046	No	5.58	Si
SLU 84	5.07	-15531.41	-21409	-12571	-6422	3.23	2.6686	-30121	10833	7291	115546	18573	16473	35046	No	5.46	Si
SLU 84	8.62	7265.95	-16616	-9756	-6422	3.23	3.23	-18878	10833	6267	115546	18573	16473	35046	No	5.46	Si
SLU 77	5.07	-15157.59	-21249	-12477	-6275	3.23	2.705	-29479	10833	7257	115546	18573	16473	35046	No	5.58	Si
SLU 77	8.62	7119.57	-16456	-9662	-6275	3.23	3.23	-18696	10826	6233	115546	18573	16473	35046	No	5.58	Si
SLU 80	5.07	-14995.74	-21108	-12394	-6199	3.23	2.7137	-29182	10833	7227	115546	18573	16473	35046	No	5.65	Si
SLU 80	8.62	7010.24	-16315	-9579	-6199	3.23	3.23	-18536	10805	6203	115546	18573	16473	35046	No	5.65	Si
SLU 75	5.07	-14965.54	-21084	-12380	-6176	3.23	2.7156	-29128	10833	7222	115546	18573	16473	35046	No	5.67	Si
SLU 75	8.62	6958.9	-16291	-9566	-6176	3.23	3.23	-18509	10801	6197	115546	18573	16473	35046	No	5.67	Si
SLU 79	5.07	-15000.39	-21129	-12406	-6197	3.23	2.7151	-29196	10833	7231	115546	18573	16473	35046	No	5.65	Si
SLU 79	8.62	7000.58	-16336	-9592	-6197	3.23	3.23	-18560	10808	6207	115546	18573	16473	35046	No	5.65	Si
SLU 74	5.07	-14970.18	-21105	-12392	-6175	3.23	2.7171	-29142	10833	7226	115546	18573	16473	35046	No	5.68	Si
SLU 74	8.62	6949.24	-16312	-9578	-6175	3.23	3.23	-18533	10804	6202	115546	18573	16473	35046	No	5.68	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	5.07	-13461	-14430	-8473	-5220	2.584	2.0464	0	0	0	115546	22287	13178	35465		6.79	Si
SLV 9	8.62	6923.89	-11734	-6889	-3964	3.23	3.0747	-13331	15166	7461	115546	27859	16473	44332		11.18	Si
SLV 11	5.07	-7864.64	-16566	-9727	-3483	3.23	3.23	-18821	16250	8398	115546	27859	16473	44332		12.73	Si
SLV 11	8.62	2640.6	-12001	-7047	-4719	3.23	3.23	-13635	15227	7869	115546	27859	16473	44332		9.39	Si
SLV 16	5.07	-12224.36	-17247	-10127	-5198	3.23	2.7186	-23544	16250	7760	115546	27859	16473	44332		8.53	Si
SLV 16	8.62	5659.52	-13348	-7838	-5538	3.23	3.23	-15165	15533	8028	115546	27859	16473	44332		8	Si
SLV 14	5.07	-13903.27	-16606	-9750	-5719	3.23	2.3332	-26439	16250	7623	115546	27859	16473	44332		7.75	Si
SLV 14	8.62	6944.5	-13268	-7790	-5311	3.23	3.23	-15074	15515	8018	115546	27859	16473	44332		8.35	Si
SLV 10	5.07	-13820.09	-14648	-8600	-5392	2.584	2.0145	0	0	0	115546	22287	13178	35465		6.58	Si
SLV 10	8.62	7175.65	-11951	-7017	-4136	3.23	3.0438	-13578	15216	7410	115546	27859	16473	44332		10.72	Si
SLV 12	5.07	-8223.73	-16784	-9855	-3655	3.23	3.23	-19069	16250	8398	115546	27859	16473	44332		12.13	Si
SLV 12	8.62	2892.37	-12219	-7175	-4891	3.23	3.23	-13883	15277	7895	115546	27859	16473	44332		9.06	Si
SLD 14	5.07	-11661.3	-15758	-9253	-4760	3.23	2.625	-22261	16250	7442	115546	27859	16473	44332		9.31	Si
SLD 14	8.62	5456.59	-12226	-7179	-4601	3.23	3.23	-13891	15278	7896	115546	27859	16473	44332		9.64	Si
SLD 16	5.07	-10962	-16014	-9403	-4549	3.23	2.7915	-21268	16250	7497	115546	27859	16473	44332		9.75	Si
SLD 16	8.62	4958.17	-12290	-7216	-4680	3.23	3.23	-13963	15293	7903	115546	27859	16473	44332		9.47	Si
SLV 15	5.07	-11691.01	-16923	-9937	-4942	3.23	2.7725	-22644	16250	7691	115546	27859	16473	44332		8.97	Si
SLV 15	8.62	5285.57	-13025	-7648	-5283	3.23	3.23	-14798	15460	7990	115546	27859	16473	44332		8.39	Si
SLV 13	5.07	-13369.91	-16282	-9560	-5463	3.23	2.3816	-25386	16250	7554	115546	27859	16473	44332		8.11	Si
SLV 13	8.62	6570.55	-12944	-7600	-5056	3.23	3.23	-14707	15441	7980	115546	27859	16473	44332		8.77	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 6.845 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 5	-10244	0.39	209.55	730.88	1213.84	972.36	4.64	Si
SLV 6	-10462	0.39	209.55	744.49	1234.3	989.4	4.72	Si
SLV 1	-10607	0.39	209.55	753.54	1247.97	1000.76	4.78	Si
SLV 2	-10931	0.39	209.55	773.53	1278.38	1025.96	4.9	Si
SLV 9	-11242	0.39	209.55	792.6	1307.57	1050.09	5.01	Si
SLV 10	-11460	0.39	209.55	805.85	1327.91	1066.88	5.09	Si
SLV 3	-11962	0.39	209.55	836.08	1374.56	1105.32	5.27	Si
SLV 4	-12285	0.39	209.55	855.34	1404.63	1129.98	5.39	Si
SLV 13	-13933	0.39	209.55	950.7	1556.47	1253.58	5.98	Si
SLV 14	-14257	0.39	209.55	968.88	1586.06	1277.47	6.1	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.03 Ta = 0.1315

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 16	-13348	-17247	743	1.185	1618.1	0.953	18.06645	8.62629	Si
SLV 14	-13268	-16606	722	1.193	1609.9	0.953	18.18732	8.62629	Si
SLV 15	-13025	-16923	743	1.211	1585.2	0.952	18.47367	8.62629	Si
SLV 13	-12944	-16282	722	1.219	1577	0.952	18.59963	8.62629	Si
SLV 4	-10005	-13939	-722	1.52	1278.8	0.943	23.43785	8.62629	Si
SLV 2	-9925	-13298	-743	1.529	1270.6	0.942	23.57795	8.62629	Si
SLV 3	-9682	-13615	-722	1.563	1246	0.941	24.12968	8.62629	Si
SLV 1	-9601	-12974	-743	1.572	1237.9	0.941	24.27907	8.62629	Si
SLV 12	-12219	-16784	255	1.315	1503.4	0.95	20.1119	6.30013	Si
SLV 11	-12001	-16566	255	1.336	1481.3	0.95	20.44123	6.30013	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.243	SLU 84	Si
V_SLU	5.457	SLU 84	Si
PF_SLV	1.966	SLV 10	Si
V_SLV	6.577	SLV 10	Si
PFFP_SLV	4.64	SLV 5	Si
R_SLV	2.094	SLV 16	Si

Maschio 144

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-9.448	-3.359	-11.013	-3.359	L5	L6	1.565	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 83	5.07	1317.18	-16786	-0.0000745	0.0004492	0.0035	1.565	9291.84	10310.35	10310.35	7.83	No	Si
SLU 83	7.17	-2339.49	-19140	-0.000098	0.0004492	0.0035	1.565	9980.16	11874.71	11874.71	5.08	No	Si
SLU 80	5.07	1282.63	-16561	-0.0000732	0.0004492	0.0035	1.565	9217.94	10201.48	10201.48	7.95	No	Si
SLU 80	7.17	-2310.69	-18913	-0.0000967	0.0004492	0.0035	1.565	9920.53	11796.07	11796.07	5.11	No	Si
SLU 75	5.07	1283.24	-16464	-0.0000729	0.0004492	0.0035	1.565	9185.78	10154.84	10154.84	7.91	No	Si
SLU 75	7.17	-2302.69	-18804	-0.0000962	0.0004492	0.0035	1.565	9891.2	11758.24	11758.24	5.11	No	Si
SLU 82	5.07	1321.99	-16672	-0.0000742	0.0004492	0.0035	1.565	9254.6	10255.19	10255.19	7.76	No	Si
SLU 82	7.17	-2337.03	-18983	-0.0000974	0.0004492	0.0035	1.565	9939.09	11820.3	11820.3	5.06	No	Si
SLU 78	5.07	1290.72	-16700	-0.0000738	0.0004492	0.0035	1.565	9263.9	10268.9	10268.9	7.96	No	Si
SLU 78	7.17	-2332.36	-19087	-0.0000977	0.0004492	0.0035	1.565	9966.45	11856.42	11856.42	5.08	No	Si
SLU 73	5.07	1275.86	-16169	-0.0000716	0.0004492	0.0035	1.565	9086.33	10013.34	10013.34	7.85	No	Si
SLU 73	7.17	-2269.49	-18431	-0.0000942	0.0004492	0.0035	1.565	9788.91	11630.4	11630.4	5.12	No	Si
SLU 77	5.07	1278.43	-16578	-0.0000732	0.0004492	0.0035	1.565	9223.66	10209.83	10209.83	7.99	No	Si
SLU 77	7.17	-2305.14	-18960	-0.0000968	0.0004492	0.0035	1.565	9933.03	11812.36	11812.36	5.12	No	Si
SLU 84	5.07	1329.47	-16909	-0.0000752	0.0004492	0.0035	1.565	9331.38	10369.61	10369.61	7.8	No	Si
SLU 84	7.17	-2366.71	-19267	-0.0000989	0.0004492	0.0035	1.565	10012.95	11919.01	11919.01	5.04	No	Si
SLU 81	5.07	1309.7	-16550	-0.0000735	0.0004492	0.0035	1.565	9214.28	10196.15	10196.15	7.79	No	Si
SLU 81	7.17	-2309.81	-18856	-0.0000965	0.0004492	0.0035	1.565	9905.31	11776.38	11776.38	5.1	No	Si
SLU 76	5.07	1283.34	-16406	-0.0000726	0.0004492	0.0035	1.565	9166.35	10126.88	10126.88	7.89	No	Si
SLU 76	7.17	-2299.16	-18715	-0.0000957	0.0004492	0.0035	1.565	9867.03	11727.47	11727.47	5.1	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	5.07	-1255.3	-707	-0.0004742	0.0006738	0.0035	1.252		1208.65	1208.65	0.96		No
SLV 12	7.17	1524.34	391	-0.016266	0.0006738	0.0035	1.252		0	0	0		No
SLV 2	5.07	7502.79	-9779	-0.0073321	0.0006738	0.0035	1.565		7021.15	7021.15	0.94		No
SLV 2	7.17	-7741.05	-23347	-0.0001912	0.0006738	0.0035	1.565		15182.47	15182.47	1.96		Si
SLV 4	5.07	7109.76	-2618	-0.055609	0.0006738	0.0035	1.252		2135.02	2135.02	0.3		No
SLV 4	7.17	-6633.52	-16195	-0.0001566	0.0006738	0.0035	1.565		11488.58	11488.58	1.73		Si
SLV 11	5.07	-1941.82	-967	-0.0008664	0.0006738	0.0035	1.252		1405.93	1405.93	0.72		No
SLV 11	7.17	2193	1490	0.1099349	0.0006738	0.0035	1.252		0	0	0		No
SLV 16	5.07	-4797.85	-12434	-0.0001096	0.0006738	0.0035	1.565		9280.51	9280.51	1.93		Si
SLV 16	7.17	3679.55	-3925	-0.0086541	0.0006738	0.0035	1.252		3095.07	3095.07	0.84		No
SLV 15	5.07	-5817.52	-12821	-0.0001389	0.0006738	0.0035	1.252		9515.32	9515.32	1.64		Si
SLV 15	7.17	4672.7	-2293	-0.0315424	0.0006738	0.0035	1.252		1892.98	1892.98	0.41		No
SLV 7	5.07	1630.46	1977	0.1935389	0.0006738	0.0035	1.252		0	0	0		No
SLV 7	7.17	-900.92	-2191	-0.0000195	0.0006738	0.0035	1.565		2322.06	2322.06	2.58		Si
SLV 1	5.07	6483.11	-10165	-0.0002751	0.0006738	0.0035	1.565		7247.05	7247.05	1.12		Si
SLV 1	7.17	-6747.9	-21715	-0.0001672	0.0006738	0.0035	1.565		14399.43	14399.43	2.13		Si
SLV 8	5.07	2316.98	2238	0.2061004	0.0006738	0.0035	1.252		0	0	0		No
SLV 8	7.17	-1569.58	-3290	-0.0000359	0.0006738	0.0035	1.252		3132.11	3132.11	2		Si
SLV 3	5.07	6090.08	-3005	-0.0410177	0.0006738	0.0035	1.252		2422.22	2422.22	0.4		No
SLV 3	7.17	-5640.37	-14563	-0.0001306	0.0006738	0.0035	1.565		10555.57	10555.57	1.87		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	5.07	1270.95	-16341	-13761	3097	1.565	1.565	-29310	10833	5478	40441	16873	3991	20864	No	6.74	Si
SLU 74	7.17	-2275.47	-18677	-15728	3450	1.565	1.565	-33499	10833	6002	40441	16873	3991	20864	No	6.05	Si
SLU 82	5.07	1321.99	-16672	-14040	3104	1.565	1.565	-29903	10833	5552	40441	16873	3991	20864	No	6.72	Si
SLU 82	7.17	-2337.03	-18983	-15986	3464	1.565	1.565	-34049	10833	6071	40441	16873	3991	20864	No	6.02	Si
SLU 77	5.07	1278.43	-16578	-13960	3129	1.565	1.565	-29734	10833	5531	40441	16873	3991	20864	No	6.67	Si
SLU 77	7.17	-2305.14	-18960	-15967	3487	1.565	1.565	-34008	10833	6066	40441	16873	3991	20864	No	5.98	Si
SLU 84	5.07	1329.47	-16909	-14239	3136	1.565	1.565	-30328	10833	5605	40441	16873	3991	20864	No	6.65	Si
SLU 84	7.17	-2366.71	-19267	-16224	3502	1.565	1.565	-34557	10833	6134	40441	16873	3991	20864	No	5.96	Si
SLU 80	5.07	1282.63	-16561	-13946	3123	1.565	1.565	-29703	10833	5527	40441	16873	3991	20864	No	6.68	Si
SLU 80	7.17	-2310.69	-18913	-15927	3483	1.565	1.565	-33923	10833	6055	40441	16873	3991	20864	No	5.99	Si
SLU 83	5.07	1317.18	-16786	-14136	3117	1.565	1.565	-30108	10833	5578	40441	16873	3991	20864	No	6.69	Si
SLU 83	7.17	-2339.49	-19140	-16118	3477	1.565	1.565	-34329	10833	6106	40441	16873	3991	20864	No	6	Si
SLU 79	5.07	1270.34	-16438	-13843	3104	1.565	1.565	-29484	10833	5499	40441	16873	3991	20864	No	6.72	Si
SLU 79	7.17	-2283.47	-18787	-15820	3459	1.565	1.565	-33696	10833	6027	40441	16873	3991	20864	No	6.03	Si
SLU 75	5.07	1283.24	-16464	-13864	3116	1.565	1.565	-29530	10833	5505	40441	16873	3991	20864	No	6.7	Si
SLU 75	7.17	-2302.69	-18804	-15835	3474	1.565	1.565	-33727	10833	6031	40441	16873	3991	20864	No	6.01	Si
SLU 76	5.07	1283.34	-16406	-13815	3103	1.565	1.565	-29425	10833	5492	40441	16873	3991	20864	No	6.72	Si
SLU 76	7.17	-2299.16	-18715	-15760	3462	1.565	1.565	-33567	10833	6011	40441	16873	3991	20864	No	6.03	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	5.07	1290.72	-16700	-14064	3148	1.565	1.565	-29954	10833	5558	40441	16873	3991	20864	No	6.63	Si
SLU 78	7.17	-2332.36	-19087	-16073	3512	1.565	1.565	-34235	10833	6094	40441	16873	3991	20864	No	5.94	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	5.07	7502.79	-9779	-8235	12591	1.565	0.0458	-240385	16250	4908	40441	25309	3991	29300		2.33	Si
SLV 2	7.17	-7741.05	-23347	-19660	13049	1.565	1.3528	-49591	16250	7955	40441	25309	3991	29300		2.25	Si
SLV 16	5.07	-4797.85	-12434	-10471	-6607	1.565	1.1899	-29708	16250	5801	40441	25309	3991	29300		4.43	Si
SLV 16	7.17	3679.55	-3925	-3305	-6457	1.252	0	0	0	0	40441	20247	3193	23440		3.63	Si
SLD 2	5.07	3680.19	-10548	-8883	6609	1.565	1.3009	-18920	16250	6342	40441	25309	3991	29300		4.43	Si
SLD 2	7.17	-4167.59	-17211	-14494	6939	1.565	1.565	-30870	16250	7629	40441	25309	3991	29300		4.22	Si
SLV 1	5.07	6483.11	-10165	-8560	10940	1.565	0.4342	-68051	16250	4995	40441	25309	3991	29300		2.68	Si
SLV 1	7.17	-6747.9	-21715	-18286	11275	1.565	1.4153	-43953	16250	7588	40441	25309	3991	29300		2.6	Si
SLV 15	5.07	-5817.52	-12821	-10796	-8258	1.252	0.9862	0	0	0	40441	20247	3193	23440		2.84	Si
SLV 15	7.17	4672.7	-2293	-1931	-8231	1.252	0	0	0	0	40441	20247	3193	23440		2.85	Si
SLV 6	5.07	3627.08	-21632	-18216	6411	1.565	1.565	-38799	16250	7629	40441	25309	3991	29300		4.57	Si
SLV 6	7.17	-5261.35	-27129	-22846	7239	1.565	1.565	-48659	16250	8804	40441	25309	3991	29300		4.05	Si
SLV 4	5.07	7109.76	-2618	-2205	12057	1.252	0	0	0	0	40441	20247	3193	23440		1.94	Si
SLV 4	7.17	-6633.52	-16195	-13638	12188	1.565	1.1187	-41401	16250	6349	40441	25309	3991	29300		2.4	Si
SLD 4	5.07	3528.26	-7692	-6477	6404	1.565	0.9714	-13796	15259	4447	40441	25309	3991	29300		4.58	Si
SLD 4	7.17	-3730.6	-14367	-12099	6603	1.565	1.565	-25769	16250	7629	40441	25309	3991	29300		4.44	Si
SLV 13	5.07	-5424.49	-19982	-16827	-7724	1.565	1.5331	-35839	16250	7474	40441	25309	3991	29300		3.79	Si
SLV 13	7.17	3565.16	-9445	-7953	-7369	1.565	1.2151	-16940	15888	5792	40441	25309	3991	29300		3.98	Si
SLV 3	5.07	6090.08	-3005	-2530	10406	1.252	0	0	0	0	40441	20247	3193	23440		2.25	Si
SLV 3	7.17	-5640.37	-14563	-12264	10413	1.565	1.1856	-35015	16250	5982	40441	25309	3991	29300		2.81	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	215625	0.39	0	424	177.04	0	0	No, Trazione
SLV 11	215625	0.39	0	1283	177.04	0	0	No, Trazione
SLV 7	215625	0.39	2646	-1242	177.04	183.68	1.04	Si
SLV 8	215625	0.39	4475	-2101	177.04	307.49	1.74	Si
SLV 15	215625	0.39	8704	-4086	177.04	583.85	3.3	Si
SLV 16	215625	0.39	11420	-5362	177.04	754.17	4.26	Si
SLV 13	215625	0.39	24266	-11393	177.04	1482.68	8.37	Si
SLV 3	215625	0.39	26634	-12505	177.04	1603.14	9.06	Si
SLV 14	215625	0.39	26983	-12668	177.04	1620.51	9.15	Si
SLV 4	215625	0.39	29351	-13780	177.04	1736.03	9.81	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-13625	-19982	-153	0.618	1622.3	0.957	9.37599	5.36881	Si
SLV 14	-13364	-19595	-152	0.628	1595.7	0.957	9.53712	5.36881	Si
SLV 9	-15525	-24837	-280	0.546	1815.4	0.961	8.25182	4.5984	Si
SLV 10	-15348	-24577	-280	0.551	1797.5	0.961	8.33505	4.5984	Si
SLV 5	-13682	-21892	-224	0.611	1628	0.957	9.27093	4.5984	Si
SLV 6	-13506	-21632	-223	0.617	1610.1	0.957	9.37707	4.5984	Si
SLV 15	-10118	-12821	14	0.803	1266	0.947	12.32908	5.36881	Si
SLV 16	-9856	-12434	15	0.821	1239.5	0.946	12.61002	5.36881	Si
SLV 1	-7482	-10165	36	1.024	999.1	0.935	15.91596	5.36881	Si
SLV 2	-7221	-9779	37	1.053	972.6	0.934	16.39744	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.036	SLU 84	Si
V_SLU	5.941	SLU 78	Si
PF_SLV	0	SLV 7	No
V_SLV	1.944	SLV 4	Si
PFFP_SLV	0	SLV 12	No
R_SLV	1.746	SLV 13	Si

Maschio 145

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.648	-3.359	-8.548	-3.359	L5	L6	0.9	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 80	5.07	1171.09	-11378	-0.000118	0.0004492	0.0035	0.9	3354.25	3867.07	3867.07	3.3	No	Si
SLU 80	7.17	-155.49	-9664	-0.000063	0.0004492	0.0035	0.9	3074.95	3542.01	3542.01	22.78	No	Si
SLU 75	5.07	1165.81	-11315	-0.0001173	0.0004492	0.0035	0.9	3345.37	3850.1	3850.1	3.3	No	Si
SLU 75	7.17	-157.88	-9591	-0.0000627	0.0004492	0.0035	0.9	3061.2	3525.48	3525.48	22.33	No	Si
SLU 84	5.07	1181.41	-11527	-0.0001196	0.0004492	0.0035	0.9	3374.69	3907.11	3907.11	3.31	No	Si
SLU 84	7.17	-136.63	-9918	-0.0000639	0.0004492	0.0035	0.9	3121.39	3599.66	3599.66	26.35	No	Si
SLU 70	5.07	1119.58	-10743	-0.0001111	0.0004492	0.0035	0.9	3260.04	3697.76	3697.76	3.3	No	Si
SLU 70	7.17	-200.41	-8770	-0.0000592	0.0004492	0.0035	0.9	2897.39	3334.92	3334.92	16.64	No	Si
SLU 68	5.07	1100.06	-10530	-0.0001088	0.0004492	0.0035	0.9	3226.13	3641.59	3641.59	3.31	No	Si
SLU 68	7.17	-206.25	-8540	-0.0000579	0.0004492	0.0035	0.9	2848.21	3272.79	3272.79	15.87	No	Si
SLU 78	5.07	1182.41	-11484	-0.0001193	0.0004492	0.0035	0.9	3368.87	3895.56	3895.56	3.29	No	Si
SLU 78	7.17	-159	-9762	-0.0000638	0.0004492	0.0035	0.9	3093.06	3564.15	3564.15	22.42	No	Si
SLU 72	5.07	1108.25	-10637	-0.0001099	0.0004492	0.0035	0.9	3243.28	3669.71	3669.71	3.31	No	Si
SLU 72	7.17	-196.9	-8672	-0.0000584	0.0004492	0.0035	0.9	2876.63	3309.96	3309.96	16.81	No	Si
SLU 73	5.07	1146.28	-11103	-0.0001149	0.0004492	0.0035	0.9	3314.77	3793.33	3793.33	3.31	No	Si
SLU 73	7.17	-163.72	-9361	-0.0000614	0.0004492	0.0035	0.9	3017.17	3474.01	3474.01	21.22	No	Si
SLU 77	5.07	1169.8	-11390	-0.0001181	0.0004492	0.0035	0.9	3355.9	3870.25	3870.25	3.31	No	Si
SLU 77	7.17	-143.3	-9703	-0.0000628	0.0004492	0.0035	0.9	3082.21	3550.84	3550.84	24.78	No	Si
SLU 76	5.07	1162.89	-11272	-0.0001169	0.0004492	0.0035	0.9	3339.24	3838.52	3838.52	3.3	No	Si
SLU 76	7.17	-164.84	-9532	-0.0000626	0.0004492	0.0035	0.9	3050.1	3512.29	3512.29	21.31	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 4	5.07	1559.79	-8550	-0.0001119	0.0006738	0.0035	0.9		3327.79	3327.79	2.13		Si
SLD 4	7.17	-1536.27	-1828	-0.0041323	0.0006738	0.0035	0.72		943.57	943.57	0.61		No
SLV 8	5.07	542.88	-941	-0.0022276	0.0006738	0.0035	0.72		466.32	466.32	0.86		No
SLV 8	7.17	-451.23	2509	0.6618266	0.0006738	0.0035	0.72		0	0	0		No
SLV 2	5.07	3115.82	-14335	-0.0002345	0.0006738	0.0035	0.9		5031.87	5031.87	1.61		Si
SLV 2	7.17	-3935.51	862	0.1209788	0.0006738	0.0035	0.72		0	0	0		No
SLV 1	5.07	2762.19	-13258	-0.0002045	0.0006738	0.0035	0.9		4754.54	4754.54	1.72		Si
SLV 1	7.17	-3302.25	-311	-0.019943	0.0006738	0.0035	0.72		290.47	290.47	0.09		No
SLV 11	5.07	-808.82	1881	0.5007204	0.0006738	0.0035	0.72		0	0	0		No
SLV 11	7.17	1925.38	-3383	-0.0128167	0.0006738	0.0035	0.72		1489.72	1489.72	0.77		No
SLV 12	5.07	-570.74	1156	0.30843	0.0006738	0.0035	0.72		0	0	0		No
SLV 12	7.17	1499.03	-2593	-0.0102046	0.0006738	0.0035	0.72		1166.94	1166.94	0.78		No
SLV 15	5.07	-1511.06	-1296	-0.0052585	0.0006738	0.0035	0.72		717.51	717.51	0.47		No
SLV 15	7.17	3708.85	-13722	-0.0003059	0.0006738	0.0035	0.9		4873.52	4873.52	1.31		Si
SLV 7	5.07	304.79	-216	-0.0040042	0.0006738	0.0035	0.72		147.91	147.91	0.49		No
SLV 7	7.17	-24.87	1719	0.4501941	0.0006738	0.0035	0.72		0	0	0		No
SLV 3	5.07	2200.98	-8287	-0.0001628	0.0006738	0.0035	0.9		3241.61	3241.61	1.47		Si
SLV 3	7.17	-2792	3284	0.8860903	0.0006738	0.0035	0.72		0	0	0		No
SLV 4	5.07	2554.61	-9363	-0.0001958	0.0006738	0.0035	0.9		3595.5	3595.5	1.41		Si
SLV 4	7.17	-3425.27	4458	1.1996783	0.0006738	0.0035	0.72		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	5.07	1168.8	-11433	-9627	1445	0.9	0.9	-35657	10833	3607	40441	9703	2295	11998	No	8.3	Si
SLU 83	7.17	-120.93	-9859	-8303	151	0.9	0.9	-30751	10833	3254	40441	9703	2295	11998	No	79.56	Si
SLU 77	5.07	1169.8	-11390	-9591	1439	0.9	0.9	-35524	10833	3597	40441	9703	2295	11998	No	8.34	Si
SLU 77	7.17	-143.3	-9703	-8171	217	0.9	0.9	-30264	10833	3219	40441	9703	2295	11998	No	55.18	Si
SLU 84	5.07	1181.41	-11527	-9707	1441	0.9	0.9	-35950	10833	3628	40441	9703	2295	11998	No	8.33	Si
SLU 84	7.17	-136.63	-9918	-8352	195	0.9	0.9	-30934	10833	3267	40441	9703	2295	11998	No	61.67	Si
SLU 74	5.07	1153.19	-11221	-9449	1419	0.9	0.9	-34997	10833	3559	40441	9703	2295	11998	No	8.45	Si
SLU 74	7.17	-142.19	-9532	-8027	217	0.9	0.9	-29730	10833	3180	40441	9703	2295	11998	No	55.21	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 79	5.07	1158.47	-11284	-9502	1427	0.9	0.9	-35194	10833	3574	40441	9703	2295	11998	No	8.41	Si
SLU 79	7.17	-139.8	-9605	-8089	210	0.9	0.9	-29959	10833	3197	40441	9703	2295	11998	No	57.04	Si
SLU 82	5.07	1164.8	-11358	-9564	1421	0.9	0.9	-35423	10833	3590	40441	9703	2295	11998	No	8.44	Si
SLU 82	7.17	-135.51	-9747	-8208	194	0.9	0.9	-30400	10833	3229	40441	9703	2295	11998	No	61.72	Si
SLU 81	5.07	1152.19	-11264	-9485	1426	0.9	0.9	-35130	10833	3569	40441	9703	2295	11998	No	8.42	Si
SLU 81	7.17	-119.82	-9688	-8158	151	0.9	0.9	-30217	10833	3215	40441	9703	2295	11998	No	79.63	Si
SLU 78	5.07	1182.41	-11484	-9671	1434	0.9	0.9	-35817	10833	3619	40441	9703	2295	11998	No	8.36	Si
SLU 78	7.17	-159	-9762	-8221	261	0.9	0.9	-30447	10833	3232	40441	9703	2295	11998	No	45.94	Si
SLU 80	5.07	1171.09	-11378	-9581	1422	0.9	0.9	-35487	10833	3595	40441	9703	2295	11998	No	8.44	Si
SLU 80	7.17	-155.49	-9664	-8138	254	0.9	0.9	-30142	10833	3210	40441	9703	2295	11998	No	47.22	Si
SLU 75	5.07	1165.81	-11315	-9528	1415	0.9	0.9	-35290	10833	3581	40441	9703	2295	11998	No	8.48	Si
SLU 75	7.17	-157.88	-9591	-8077	261	0.9	0.9	-29913	10833	3193	40441	9703	2295	11998	No	45.96	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	5.07	-1157.44	-2373	-1999	-387	0.72	0	0	0	0	40441	11644	1836	13480		34.79	Si
SLV 16	7.17	3075.58	-12548	-10567	-7940	0.9	0.6147	-39137	16250	4377	40441	14555	2295	16850		2.12	Si
SLV 1	5.07	2762.19	-13258	-11165	2363	0.9	0.725	-41351	16250	4537	40441	14555	2295	16850		7.13	Si
SLV 1	7.17	-3302.25	-311	-262	8352	0.72	0	0	0	0	40441	11644	1836	13480		1.61	Si
SLV 11	5.07	-808.82	1881	1584	415	0.72	0.0602	0	0	0	40441	11644	1836	13480		32.44	Si
SLV 11	7.17	1925.38	-3383	-2849	-5620	0.72	0	0	0	0	40441	11644	1836	13480		2.4	Si
SLV 4	5.07	2554.61	-9363	-7885	2528	0.9	0.5315	-29204	16250	3662	40441	14555	2295	16850		6.66	Si
SLV 4	7.17	-3425.27	4458	3754	8249	0.72	0	0	0	0	40441	11644	1836	13480		1.63	Si
SLV 6	5.07	2413.58	-17513	-14748	1560	0.9	0.9	-54621	16250	5492	40441	14555	2295	16850		10.8	Si
SLV 6	7.17	-2152.05	-9476	-7980	6032	0.9	0.6687	-40518	16250	3688	40441	14555	2295	16850		2.79	Si
SLV 2	5.07	3115.82	-14335	-12072	2568	0.9	0.6979	-44710	16250	4779	40441	14555	2295	16850		6.56	Si
SLV 2	7.17	-3935.51	862	726	9963	0.72	0	0	0	0	40441	11644	1836	13480		1.35	Si
SLV 14	5.07	-596.23	-7345	-6185	-348	0.9	0.9	-22908	16250	4387	40441	14555	2295	16850		48.41	Si
SLV 14	7.17	2565.33	-16144	-13595	-6227	0.9	0.8733	-50351	16250	5185	40441	14555	2295	16850		2.71	Si
SLV 15	5.07	-1511.06	-1296	-1092	-593	0.72	0	0	0	0	40441	11644	1836	13480		22.75	Si
SLV 15	7.17	3708.85	-13722	-11555	-9550	0.9	0.5391	-42798	16250	4641	40441	14555	2295	16850		1.76	Si
SLV 3	5.07	2200.98	-8287	-6978	2323	0.9	0.5532	-25845	16250	3421	40441	14555	2295	16850		7.25	Si
SLV 3	7.17	-2792	3284	2766	6639	0.72	0	0	0	0	40441	11644	1836	13480		2.03	Si
SLV 13	5.07	-949.85	-6268	-5278	-553	0.9	0.8954	-19550	16250	4365	40441	14555	2295	16850		30.46	Si
SLV 13	7.17	3198.6	-17318	-14583	-7837	0.9	0.7959	-54012	16250	5448	40441	14555	2295	16850		2.15	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 7	215625	0.39	0	1359	101.81	0	0	No, Trazione
SLV 3	215625	0.39	0	1970	101.81	0	0	No, Trazione
SLV 8	215625	0.39	0	1981	101.81	0	0	No, Trazione
SLV 4	215625	0.39	0	2893	101.81	0	0	No, Trazione
SLV 2	215625	0.39	2957	-798	101.81	117.82	1.16	Si
SLV 1	215625	0.39	6376	-1721	101.81	249.24	2.45	Si
SLV 12	215625	0.39	8755	-2364	101.81	337.63	3.32	Si
SLV 11	215625	0.39	11057	-2985	101.81	420.79	4.13	Si
SLV 6	215625	0.39	38237	-10324	101.81	1225.53	12.04	Si
SLV 5	215625	0.39	40539	-10946	101.81	1278.69	12.56	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-10690	-17513	-176	0.468	1223.4	0.967	7.03229	4.5984	Si
SLV 2	-9072	-14335	-19	0.553	1058.6	0.962	8.35433	5.36881	Si
SLV 5	-10295	-16788	-175	0.483	1183.1	0.966	7.26854	4.5984	Si
SLV 1	-8485	-13258	-17	0.585	998.9	0.96	8.86111	5.36881	Si
SLV 10	-9482	-15416	-200	0.515	1100.4	0.963	7.77193	4.5984	Si
SLV 9	-9087	-14691	-199	0.534	1060.2	0.962	8.068	4.5984	Si
SLV 4	-6394	-9363	93	0.731	786.5	0.95	11.18216	5.36881	Si
SLV 3	-5807	-8287	95	0.791	726.9	0.947	12.14989	5.36881	Si
SLV 14	-5045	-7345	-99	0.887	649.6	0.941	13.70216	5.36881	Si
SLV 13	-4458	-6268	-97	0.981	590.2	0.936	15.22701	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.295	SLU 78	Si
V_SLU	8.303	SLU 83	Si
PF_SLV	0	SLV 2	No
V_SLV	1.353	SLV 2	Si
PFFP_SLV	0	SLV 8	No
R_SLV	1.529	SLV 6	Si

Maschio 147

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-6.268	-3.359	-6.268	1.046	L5	L6	4.405	0.16	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 66	5.07	6417.58	-38445	-0.00009	0.0004492	0.0035	4.405	46874.19	69999.9	69999.9	10.91	No	Si
SLU 66	8.62	2951.92	-24818	-0.0000531	0.0004492	0.0035	4.405	38909.32	48486.95	48486.95	16.43	No	Si
SLU 48	5.07	5808.13	-34419	-0.00008	0.0004492	0.0035	4.405	45509.64	63644.27	63644.27	10.96	No	Si
SLU 48	8.62	2661.16	-22348	-0.0000476	0.0004492	0.0035	4.405	36447.95	44586.31	44586.31	16.75	No	Si
SLU 77	5.07	7007.25	-42695	-0.0001007	0.0004492	0.0035	4.405	47415.2	75414.69	75414.69	10.76	No	Si
SLU 77	8.62	3235.63	-27581	-0.0000593	0.0004492	0.0035	4.405	41291.61	52848.24	52848.24	16.33	No	Si
SLU 79	5.07	6950.92	-42341	-0.0000998	0.0004492	0.0035	4.405	47405.4	74981.29	74981.29	10.79	No	Si
SLU 79	8.62	3193.02	-27249	-0.0000585	0.0004492	0.0035	4.405	41026.21	52324.61	52324.61	16.39	No	Si
SLU 80	5.07	6869.92	-42515	-0.0000999	0.0004492	0.0035	4.405	47411.01	75193.84	75193.84	10.95	No	Si
SLU 80	8.62	3233.86	-27297	-0.0000587	0.0004492	0.0035	4.405	41064.36	52399.19	52399.19	16.2	No	Si
SLU 74	5.07	6857.53	-42051	-0.0000989	0.0004492	0.0035	4.405	47392.6	74626.68	74626.68	10.88	No	Si
SLU 74	8.62	3121.95	-26981	-0.0000578	0.0004492	0.0035	4.405	40807.02	51900.3	51900.3	16.62	No	Si
SLU 69	5.07	6567.3	-39090	-0.0000918	0.0004492	0.0035	4.405	47015.65	71005.65	71005.65	10.81	No	Si
SLU 69	8.62	3065.61	-25419	-0.0000546	0.0004492	0.0035	4.405	39460.32	49434.89	49434.89	16.13	No	Si
SLU 83	5.07	6989.75	-43242	-0.0001018	0.0004492	0.0035	4.405	47417.73	76082.86	76082.86	10.88	No	Si
SLU 83	8.62	3152.21	-27575	-0.000059	0.0004492	0.0035	4.405	41287.25	52839.53	52839.53	16.76	No	Si
SLU 71	5.07	6510.97	-38735	-0.0000909	0.0004492	0.0035	4.405	46940.48	70457.72	70457.72	10.82	No	Si
SLU 71	8.62	3022.99	-25087	-0.0000538	0.0004492	0.0035	4.405	39158.23	48911.26	48911.26	16.18	No	Si
SLU 78	5.07	6926.25	-42869	-0.0001009	0.0004492	0.0035	4.405	47417.66	75627.25	75627.25	10.92	No	Si
SLU 78	8.62	3276.47	-27628	-0.0000595	0.0004492	0.0035	4.405	41328.96	52922.82	52922.82	16.15	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 7	5.07	9410.88	-22275	-0.0000638	0.0006738	0.0035	4.405		46166.32	46166.32	4.91		Si
SLD 7	8.62	1574.35	-15400	-0.0000314	0.0006738	0.0035	4.405		33351.92	33351.92	21.18		Si
SLV 7	5.07	16352.71	-12469	-0.000075	0.0006738	0.0035	4.405		27668.36	27668.36	1.69		Si
SLV 7	8.62	741.47	-11045	-0.0000214	0.0006738	0.0035	4.405		24852.6	24852.6	33.52		Si
SLD 11	5.07	8537.44	-22607	-0.0000622	0.0006738	0.0035	4.405		46769.66	46769.66	5.48		Si
SLD 11	8.62	978.52	-16105	-0.0000312	0.0006738	0.0035	4.405		34700.85	34700.85	35.46		Si
SLV 3	5.07	11471.18	-22479	-0.0000695	0.0006738	0.0035	4.405		46537.79	46537.79	4.06		Si
SLV 3	8.62	3758.28	-13633	-0.0000335	0.0006738	0.0035	4.405		29938.65	29938.65	7.97		Si
SLD 12	5.07	8432.79	-22781	-0.0000623	0.0006738	0.0035	4.405		47085.77	47085.77	5.58		Si
SLD 12	8.62	1016.59	-16105	-0.0000313	0.0006738	0.0035	4.405		34701.57	34701.57	34.14		Si
SLD 8	5.07	9306.23	-22449	-0.0000639	0.0006738	0.0035	4.405		46482.42	46482.42	4.99		Si
SLD 8	8.62	1612.42	-15400	-0.0000314	0.0006738	0.0035	4.405		33352.65	33352.65	20.68		Si
SLV 8	5.07	16101.66	-12886	-0.0000723	0.0006738	0.0035	4.405		28484.89	28484.89	1.77		Si
SLV 8	8.62	832.79	-11046	-0.0000216	0.0006738	0.0035	4.405		24854.4	24854.4	29.84		Si
SLV 12	5.07	14057.23	-13664	-0.0000619	0.0006738	0.0035	4.405		29998.78	29998.78	2.13		Si
SLV 12	8.62	-560.29	-12695	-0.0000239	0.0006738	0.0035	4.405		37159.95	37159.95	66.32		Si
SLV 4	5.07	11098.3	-23099	-0.0000697	0.0006738	0.0035	4.405		47601.25	47601.25	4.29		Si
SLV 4	8.62	3893.92	-13635	-0.0000339	0.0006738	0.0035	4.405		29941.27	29941.27	7.69		Si
SLV 11	5.07	14308.28	-13247	-0.0000628	0.0006738	0.0035	4.405		29186.75	29186.75	2.04		Si
SLV 11	8.62	-651.61	-12695	-0.0000242	0.0006738	0.0035	4.405		37158.18	37158.18	57.03		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	5.07	7007.25	-42695	-25069	4517	4.405	4.405	-35569	10833	14099	115546	25329	22466	47794	No	10.58	Si
SLU 77	8.62	3235.63	-27581	-16194	4499	4.405	4.405	-22977	10833	10549	115546	25329	22466	47794	No	10.62	Si
SLU 82	5.07	6759.03	-42771	-25113	4238	4.405	4.405	-35632	10833	14116	115546	25329	22466	47794	No	11.28	Si
SLU 82	8.62	3079.36	-27022	-15866	4327	4.405	4.405	-22512	10833	10418	115546	25329	22466	47794	No	11.05	Si
SLU 74	5.07	6857.53	-42051	-24690	4479	4.405	4.405	-35032	10833	13947	115546	25329	22466	47794	No	10.67	Si
SLU 74	8.62	3121.95	-26981	-15842	4461	4.405	4.405	-22477	10833	10408	115546	25329	22466	47794	No	10.71	Si
SLU 80	5.07	6869.92	-42515	-24963	4237	4.405	4.405	-35418	10833	14056	115546	25329	22466	47794	No	11.28	Si
SLU 80	8.62	3233.86	-27297	-16027	4326	4.405	4.405	-22740	10833	10482	115546	25329	22466	47794	No	11.05	Si
SLU 69	5.07	6567.3	-39090	-22952	4337	4.405	4.405	-32565	10833	13252	115546	25329	22466	47794	No	11.02	Si
SLU 69	8.62	3065.61	-25419	-14925	4321	4.405	4.405	-21176	10833	10041	115546	25329	22466	47794	No	11.06	Si
SLU 81	5.07	6840.03	-42597	-25011	4489	4.405	4.405	-35487	10833	14076	115546	25329	22466	47794	No	10.65	Si
SLU 81	8.62	3038.52	-26975	-15839	4470	4.405	4.405	-22472	10833	10407	115546	25329	22466	47794	No	10.69	Si
SLU 79	5.07	6950.92	-42341	-24861	4488	4.405	4.405	-35273	10833	14015	115546	25329	22466	47794	No	10.65	Si
SLU 79	8.62	3193.02	-27249	-16000	4470	4.405	4.405	-22701	10833	10471	115546	25329	22466	47794	No	10.69	Si
SLU 83	5.07	6989.75	-43242	-25390	4527	4.405	4.405	-36024	10833	14227	115546	25329	22466	47794	No	10.56	Si
SLU 83	8.62	3152.21	-27575	-16191	4508	4.405	4.405	-22973	10833	10548	115546	25329	22466	47794	No	10.6	Si
SLU 84	5.07	6908.75	-43416	-25492	4276	4.405	4.405	-36169	10833	14268	115546	25329	22466	47794	No	11.18	Si
SLU 84	8.62	3193.04	-27623	-16219	4365	4.405	4.405	-23012	10833	10559	115546	25329	22466	47794	No	10.95	Si
SLU 78	5.07	6926.25	-42869	-25171	4267	4.405	4.405	-35713	10833	14139	115546	25329	22466	47794	No	11.2	Si
SLU 78	8.62	3276.47	-27628	-16222	4356	4.405	4.405	-23017	10833	10560	115546	25329	22466	47794	No	10.97	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	5.07	-6878.8	-45148	-26509	-19158	4.405	4.405	-37612	16250	16710	115546	37993	22466	60459		3.16	Si
SLV 10	8.62	3478.87	-25588	-15024	-17519	4.405	4.405	-21317	16250	12117	115546	37993	22466	60459		3.45	Si
SLV 8	5.07	16101.66	-12886	-7566	25301	4.405	2.8589	-10735	14647	9134	115546	37993	22466	60459		2.39	Si
SLV 8	8.62	832.79	-11046	-6486	23637	4.405	4.405	-9202	14340	10107	115546	37993	22466	60459		2.56	Si
SLV 5	5.07	-4583.33	-43953	-25807	-19485	4.405	4.405	-36617	16250	16430	115546	37993	22466	60459		3.1	Si
SLV 5	8.62	4780.63	-23938	-14055	-17889	4.405	4.405	-19943	16250	11729	115546	37993	22466	60459		3.38	Si
SLV 11	5.07	14308.28	-13247	-7778	26361	4.405	3.3671	-11036	14707	9218	115546	37993	22466	60459		2.29	Si
SLV 11	8.62	-651.61	-12695	-7454	24739	4.405	4.405	-10576	14615	10301	115546	37993	22466	60459		2.44	Si
SLD 11	5.07	8537.44	-22607	-13274	12493	4.405	4.405	-18833	16250	11453	115546	37993	22466	60459		4.84	Si
SLD 11	8.62	978.52	-16105	-9456	11844	4.405	4.405	-13417	15183	10701	115546	37993	22466	60459		5.1	Si
SLV 9	5.07	-6627.76	-44731	-26264	-18792	4.405	4.405	-37265	16250	16612	115546	37993	22466	60459		3.22	Si
SLV 9	8.62	3387.55	-25588	-15024	-17153	4.405	4.405	-21317	16250	12117	115546	37993	22466	60459		3.52	Si
SLD 12	5.07	8432.79	-22781	-13376	12341	4.405	4.405	-18978	16250	11457	115546	37993	22466	60459		4.9	Si
SLD 12	8.62	1016.59	-16105	-9456	11691	4.405	4.405	-13417	15183	10701	115546	37993	22466	60459		5.17	Si
SLV 6	5.07	-4834.37	-44370	-26052	-19852	4.405	4.405	-36964	16250	16528	115546	37993	22466	60459		3.05	Si
SLV 6	8.62	4871.95	-23939	-14056	-18255	4.405	4.405	-19943	16250	11729	115546	37993	22466	60459		3.31	Si
SLV 12	5.07	14057.23	-13664	-8023	25995	4.405	3.5212	-11383	14777	9316	115546	37993	22466	60459		2.33	Si
SLV 12	8.62	-560.29	-12695	-7454	24373	4.405	4.405	-10576	14615	10301	115546	37993	22466	60459		2.48	Si
SLV 7	5.07	16352.71	-12469	-7321	25667	4.405	2.673	-10388	14578	9036	115546	37993	22466	60459		2.36	Si
SLV 7	8.62	741.47	-11045	-6485	24003	4.405	4.405	-9202	14340	10107	115546	37993	22466	60459		2.52	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 6.845 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 7	-13097	0.39	285.78	941.52	1575.46	1258.49	4.4	Si
SLV 8	-13230	0.39	285.78	950.01	1587.94	1268.97	4.44	Si
SLV 11	-15932	0.39	285.78	1117.38	1839.4	1478.39	5.17	Si
SLV 12	-16065	0.39	285.78	1125.39	1851.58	1488.49	5.21	Si
SLV 3	-16598	0.39	285.78	1157.21	1900.32	1528.77	5.35	Si
SLV 4	-16796	0.39	285.78	1168.94	1918.44	1543.69	5.4	Si
SLV 1	-22462	0.39	285.78	1484.47	2436.27	1960.37	6.86	Si
SLV 2	-22659	0.39	285.78	1494.77	2454.31	1974.54	6.91	Si
SLV 15	-26049	0.39	285.78	1663.69	2756.83	2210.26	7.73	Si
SLV 16	-26247	0.39	285.78	1673.11	2774.45	2223.78	7.78	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.03 Ta = 0.1315

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 14	-23000	-35138	589	0.981	2694.3	0.961	14.83706	8.62629	Si
SLV 13	-22999	-34518	589	0.981	2694.1	0.961	14.83785	8.62629	Si
SLV 16	-19132	-25693	512	1.158	2301	0.955	17.6227	8.62629	Si
SLV 15	-19131	-25073	512	1.158	2300.9	0.955	17.62382	8.62629	Si
SLV 10	-25588	-45148	293	0.903	2957.6	0.964	13.60524	6.30013	Si
SLV 9	-25588	-44731	293	0.903	2957.5	0.964	13.60568	6.30013	Si
SLV 2	-17503	-32544	-513	1.252	2135.4	0.952	19.10909	8.62629	Si
SLV 1	-17501	-31925	-513	1.252	2135.3	0.952	19.11045	8.62629	Si
SLV 6	-23939	-44370	-38	0.968	2789.8	0.962	14.61697	6.30013	Si
SLV 5	-23938	-43953	-38	0.968	2789.7	0.962	14.61749	6.30013	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	10.762	SLU 77	Si
V_SLU	10.558	SLU 83	Si
PF_SLV	1.692	SLV 7	Si
V_SLV	2.294	SLV 11	Si

Stato limite	Coeff.s.	Comb.	Verifica
PFFP_SLV	4.404	SLV 7	Si
R_SLV	1.72	SLV 14	Si

Maschio 148

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-5.158	1.046	-5.158	5.811	L5	L6	4.765	0.16	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 81	5.07	-2677.79	-44944	-0.0000849	0.0004492	0.0035	4.765	55417.6	96923.76	96923.76	36.2	No	Si
SLU 81	8.62	-2743.73	-28601	-0.0000547	0.0004492	0.0035	4.765	47220.8	71229.43	71229.43	25.96	No	Si
SLU 73	5.07	-2847.77	-43005	-0.0000816	0.0004492	0.0035	4.765	55159.33	94221.4	94221.4	33.09	No	Si
SLU 73	8.62	-2509.23	-27525	-0.0000522	0.0004492	0.0035	4.765	46202.12	69374.2	69374.2	27.65	No	Si
SLU 19	5.07	-2253.75	-32875	-0.0000613	0.0004492	0.0035	4.765	50683.53	78489.44	78489.44	34.83	No	Si
SLU 19	8.62	-2070.2	-20851	-0.0000394	0.0004492	0.0035	4.765	38558.25	57258.87	57258.87	27.66	No	Si
SLU 31	5.07	-2402.73	-36288	-0.0000679	0.0004492	0.0035	4.765	52777.78	83997.33	83997.33	34.96	No	Si
SLU 31	8.62	-2236.68	-23257	-0.000044	0.0004492	0.0035	4.765	41576.48	61675.59	61675.59	27.57	No	Si
SLU 61	5.07	-2698.8	-39592	-0.0000748	0.0004492	0.0035	4.765	54237.64	89091.99	89091.99	33.01	No	Si
SLU 61	8.62	-2342.74	-25119	-0.0000475	0.0004492	0.0035	4.765	43709.2	65093.98	65093.98	27.79	No	Si
SLU 60	5.07	-2522.02	-39864	-0.0000749	0.0004492	0.0035	4.765	54333.01	89501.06	89501.06	35.49	No	Si
SLU 60	8.62	-2352.91	-25242	-0.0000478	0.0004492	0.0035	4.765	43843.03	65318.43	65318.43	27.76	No	Si
SLU 18	5.07	-2076.98	-33147	-0.0000614	0.0004492	0.0035	4.765	50872.42	78928.7	78928.7	38	No	Si
SLU 18	8.62	-2080.36	-20973	-0.0000397	0.0004492	0.0035	4.765	38718.77	57483.32	57483.32	27.63	No	Si
SLU 39	5.07	-2232.74	-38227	-0.0000712	0.0004492	0.0035	4.765	53702.32	87040.84	87040.84	38.98	No	Si
SLU 39	8.62	-2471.19	-24333	-0.0000464	0.0004492	0.0035	4.765	42830.01	63650.09	63650.09	25.76	No	Si
SLU 82	5.07	-2854.57	-44672	-0.0000848	0.0004492	0.0035	4.765	55392.96	96544.87	96544.87	33.82	No	Si
SLU 82	8.62	-2733.57	-28479	-0.0000544	0.0004492	0.0035	4.765	47107.98	71018.54	71018.54	25.98	No	Si
SLU 40	5.07	-2409.52	-37955	-0.0000711	0.0004492	0.0035	4.765	53584.16	86631.77	86631.77	35.95	No	Si
SLU 40	8.62	-2461.02	-24210	-0.0000462	0.0004492	0.0035	4.765	42690.49	63425.64	63425.64	25.77	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	5.07	-19261.9	-362	-0.0005287	0.0006738	0.0035	3.812		14400.65	14400.65	0.75		No
SLV 6	8.62	-2760.82	-3602	-0.0000115	0.0006738	0.0035	4.765		21734.21	21734.21	7.87		Si
SLD 10	5.07	-10121.36	-19517	-0.0000539	0.0006738	0.0035	4.765		55544.29	55544.29	5.49		Si
SLD 10	8.62	-1838.72	-14699	-0.000028	0.0006738	0.0035	4.765		45726.95	45726.95	24.87		Si
SLV 7	5.07	18992.84	-58619	-0.0001465	0.0006738	0.0035	4.765		110722.96	110722.96	5.83		Si
SLV 7	8.62	-1012.15	-32064	-0.000056	0.0006738	0.0035	4.765		79401.2	79401.2	78.45		Si
SLV 8	5.07	18156.87	-57189	-0.0001417	0.0006738	0.0035	4.765		108784.76	108784.76	5.99		Si
SLV 8	8.62	-236.91	-32307	-0.0000547	0.0006738	0.0035	4.765		79838.37	79838.37	337		Si
SLD 9	5.07	-9772.9	-20113	-0.0000542	0.0006738	0.0035	4.765		56740.12	56740.12	5.81		Si
SLD 9	8.62	-2161.87	-14598	-0.0000286	0.0006738	0.0035	4.765		45514.07	45514.07	21.05		Si
SLV 13	5.07	-12296.32	-26996	-0.0000718	0.0006738	0.0035	4.765		70086.74	70086.74	5.7		Si
SLV 13	8.62	-1650.73	-21039	-0.0000384	0.0006738	0.0035	4.765		58596.95	58596.95	35.5		Si
SLV 9	5.07	-21735.07	-4085	-0.0005245	0.0006738	0.0035	3.812		22818.52	22818.52	1.05		Si
SLV 9	8.62	-2986.8	-6910	-0.0000175	0.0006738	0.0035	4.765		29084.69	29084.69	9.74		Si
SLV 14	5.07	-13538	-24871	-0.0000707	0.0006738	0.0035	4.765		66040.57	66040.57	4.88		Si
SLV 14	8.62	-499.28	-21399	-0.0000365	0.0006738	0.0035	4.765		59319.11	59319.11	118.81		Si
SLV 10	5.07	-22571.05	-2655	-0.0005983	0.0006738	0.0035	3.812		19601.78	19601.78	0.87		No

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	8.62	-2211.56	-7152	-0.0000163	0.0006738	0.0035	4.765		29618.53	29618.53	13.39		Si
SLV 5	5.07	-18425.93	-1793	-0.0004772	0.0006738	0.0035	3.812		17653.5	17653.5	0.96		No
SLV 5	8.62	-3536.06	-3360	-0.0000131	0.0006738	0.0035	4.765		21188.67	21188.67	5.99		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 68	5.07	-2448.57	-40594	-23835	-5514	4.765	4.765	-31263	10833	13938	115546	27399	24302	51700	No	9.38	Si
SLU 68	8.62	-1736.45	-26633	-15638	-4133	4.765	4.765	-20511	10833	10659	115546	27399	24302	51700	No	12.51	Si
SLU 47	5.07	-2292.8	-35514	-20852	-5524	4.765	4.765	-27351	10833	12745	115546	27399	24302	51700	No	9.36	Si
SLU 47	8.62	-1345.62	-23274	-13665	-4273	4.765	4.765	-17924	10723	9870	115546	27399	24302	51700	No	12.1	Si
SLU 51	5.07	-2066.58	-36751	-21579	-5470	4.765	4.765	-28304	10833	13035	115546	27399	24302	51700	No	9.45	Si
SLU 51	8.62	-1087.28	-24497	-14384	-4115	4.765	4.765	-18866	10833	10157	115546	27399	24302	51700	No	12.56	Si
SLU 55	5.07	-2583.63	-38981	-22888	-5392	4.765	4.765	-30021	10833	13559	115546	27399	24302	51700	No	9.59	Si
SLU 55	8.62	-1853.28	-25308	-14860	-4104	4.765	4.765	-19491	10833	10348	115546	27399	24302	51700	No	12.6	Si
SLU 44	5.07	-2401.17	-34458	-20232	-5391	4.765	4.765	-26538	10833	12497	115546	27399	24302	51700	No	9.59	Si
SLU 44	8.62	-1610.75	-22132	-12995	-4225	4.765	4.765	-17044	10606	9602	115546	27399	24302	51700	No	12.24	Si
SLU 76	5.07	-2739.4	-44060	-25870	-5381	4.765	4.765	-33933	10833	14752	115546	27399	24302	51700	No	9.61	Si
SLU 76	8.62	-2244.1	-28668	-16832	-3964	4.765	4.765	-22078	10833	11137	115546	27399	24302	51700	No	13.04	Si
SLU 70	5.07	-2257.97	-42197	-24776	-5446	4.765	4.765	-32497	10833	14314	115546	27399	24302	51700	No	9.49	Si
SLU 70	8.62	-1581.73	-28137	-16521	-3958	4.765	4.765	-21670	10833	11012	115546	27399	24302	51700	No	13.06	Si
SLU 72	5.07	-2222.35	-41831	-24562	-5459	4.765	4.765	-32216	10833	14228	115546	27399	24302	51700	No	9.47	Si
SLU 72	8.62	-1478.1	-27857	-16356	-3975	4.765	4.765	-21454	10833	10946	115546	27399	24302	51700	No	13.01	Si
SLU 49	5.07	-2102.21	-37117	-21793	-5456	4.765	4.765	-28585	10833	13121	115546	27399	24302	51700	No	9.48	Si
SLU 49	8.62	-1190.9	-24778	-14548	-4098	4.765	4.765	-19082	10833	10223	115546	27399	24302	51700	No	12.62	Si
SLU 65	5.07	-2556.94	-39538	-23215	-5381	4.765	4.765	-30450	10833	13690	115546	27399	24302	51700	No	9.61	Si
SLU 65	8.62	-2001.57	-25491	-14967	-4086	4.765	4.765	-19632	10833	10391	115546	27399	24302	51700	No	12.65	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	5.07	-21735.07	-4085	-2399	-29420	3.812	0	0	0	0	115546	32879	19441	52320		1.78	Si
SLV 9	8.62	-2986.8	-6910	-4057	-29932	4.765	4.765	-5321	13564	10341	115546	41098	24302	65400		2.18	Si
SLV 11	5.07	15683.7	-60911	-35765	24614	4.765	4.765	-46910	16250	20912	115546	41098	24302	65400		2.66	Si
SLV 11	8.62	-462.88	-35614	-20911	26751	4.765	4.765	-27428	16250	14970	115546	41098	24302	65400		2.44	Si
SLV 12	5.07	14847.72	-59481	-34925	24789	4.765	4.765	-45809	16250	20576	115546	41098	24302	65400		2.64	Si
SLV 12	8.62	312.35	-35857	-21053	26700	4.765	4.765	-27615	16250	15027	115546	41098	24302	65400		2.45	Si
SLV 7	5.07	18992.84	-58619	-34419	21759	4.765	4.765	-45145	16250	20373	115546	41098	24302	65400		3.01	Si
SLV 7	8.62	-1012.15	-32064	-18827	24520	4.765	4.765	-24694	16250	14137	115546	41098	24302	65400		2.67	Si
SLV 1	5.07	-1265.84	-19354	-11364	-16737	4.765	4.765	-14906	15481	11803	115546	41098	24302	65400		3.91	Si
SLV 1	8.62	-3481.6	-9206	-5405	-14914	4.765	4.765	-7090	13918	10611	115546	41098	24302	65400		4.39	Si
SLV 2	5.07	-2507.51	-17230	-10117	-16477	4.765	4.765	-13269	15154	11553	115546	41098	24302	65400		3.97	Si
SLV 2	8.62	-2330.15	-9566	-5617	-14990	4.765	4.765	-7367	13973	10653	115546	41098	24302	65400		4.36	Si
SLV 6	5.07	-19261.9	-362	-213	-32100	3.812	0	0	0	0	115546	32879	19441	52320		1.63	Si
SLV 6	8.62	-2760.82	-3602	-2115	-32213	4.765	4.765	-2774	13055	9953	115546	41098	24302	65400		2.03	Si
SLV 5	5.07	-18425.93	-1793	-1053	-32275	3.812	0	0	0	0	115546	32879	19441	52320		1.62	Si
SLV 5	8.62	-3536.06	-3360	-1973	-32163	4.765	3.9901	-3094	13119	8375	115546	41098	24302	65400		2.03	Si
SLV 8	5.07	18156.87	-57189	-33579	21934	4.765	4.765	-44043	16250	20037	115546	41098	24302	65400		2.98	Si
SLV 8	8.62	-236.91	-32307	-18969	24469	4.765	4.765	-24881	16250	14194	115546	41098	24302	65400		2.67	Si
SLV 10	5.07	-22571.05	-2655	-1559	-29245	3.812	0	0	0	0	115546	32879	19441	52320		1.79	Si
SLV 10	8.62	-2211.56	-7152	-4199	-29982	4.765	4.765	-5508	13602	10370	115546	41098	24302	65400		2.18	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 6.845 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 6	-5170	0.39	309.13	398.32	847.65	622.98	2.02	Si
SLV 5	-5865	0.39	309.13	449.47	915.38	682.43	2.21	Si
SLV 10	-6382	0.39	309.13	487.23	965.42	726.32	2.35	Si
SLV 9	-7076	0.39	309.13	537.42	1032.45	784.94	2.54	Si
SLV 2	-17666	0.39	309.13	1234.6	2029.91	1632.25	5.28	Si
SLV 1	-18697	0.39	309.13	1295.62	2124.4	1710.01	5.53	Si
SLV 14	-21704	0.39	309.13	1466.65	2399.76	1933.21	6.25	Si
SLV 13	-22736	0.39	309.13	1522.91	2493.68	2008.3	6.5	Si
SLV 4	-29732	0.39	309.13	1872.47	3121.36	2496.92	8.08	Si
SLV 3	-30764	0.39	309.13	1919.25	3213.3	2566.28	8.3	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.03 Ta = 0.1315

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 16	-30010	-41919	797	0.825	3436.4	0.966	12.39993	8.62629	Si
SLV 15	-29650	-44044	797	0.834	3399.8	0.966	12.53961	8.62629	Si
SLV 12	-35857	-59481	210	0.717	4031.6	0.971	10.73745	6.30013	Si
SLV 11	-35614	-60911	210	0.722	4007	0.971	10.80557	6.30013	Si
SLV 8	-32307	-57189	-274	0.787	3670.2	0.968	11.80464	6.30013	Si
SLV 7	-32064	-58619	-274	0.792	3645.5	0.968	11.88765	6.30013	Si
SLV 14	-21399	-24871	816	1.114	2560.5	0.956	16.92614	8.62629	Si
SLV 13	-21039	-26996	816	1.13	2523.9	0.956	17.19075	8.62629	Si
SLV 4	-18178	-34278	-817	1.284	2233.2	0.95	19.63314	8.62629	Si
SLV 3	-17818	-36402	-817	1.306	2196.7	0.95	19.99125	8.62629	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	25.757	SLU 39	Si
V_SLU	9.359	SLU 47	Si
PF_SLV	0.748	SLV 6	No
V_SLV	1.621	SLV 5	Si
PFFP_SLV	2.015	SLV 6	Si
R_SLV	1.437	SLV 16	Si

Maschio 151

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-6.008	-3.359	-6.513	-3.359	L5	L6	0.505	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 67	7.07	0.14	-6313	-0.0000682	0.0003743	0.0035	0.505	941.63	1129.9	1129.9	8176.61	No	Si
SLU 67	7.87	-454.08	-6304	-0.0001333	0.0003743	0.0035	0.505	941.22	1173.71	1173.71	2.58	No	Si
SLU 65	7.07	8.14	-6108	-0.0000669	0.0003743	0.0035	0.505	931.54	1107.92	1107.92	136.08	No	Si
SLU 65	7.87	-447.84	-6116	-0.0001297	0.0003743	0.0035	0.505	931.95	1155.18	1155.18	2.58	No	Si
SLU 68	7.07	4.54	-6236	-0.0000679	0.0003743	0.0035	0.505	938.01	1121.63	1121.63	246.94	No	Si
SLU 68	7.87	-453.78	-6235	-0.0001323	0.0003743	0.0035	0.505	937.93	1167.09	1167.09	2.57	No	Si
SLU 78	7.07	-22.02	-7135	-0.0000815	0.0003743	0.0035	0.505	968.21	1245.12	1245.12	56.54	No	Si
SLU 78	7.87	-482.42	-7114	-0.00015	0.0003743	0.0035	0.505	967.8	1243.2	1243.2	2.58	No	Si
SLU 73	7.07	-10.42	-6802	-0.0000757	0.0003743	0.0035	0.505	960.1	1215.77	1215.77	116.7	No	Si
SLU 73	7.87	-470.23	-6807	-0.0001433	0.0003743	0.0035	0.505	960.24	1216.18	1216.18	2.59	No	Si
SLU 76	7.07	-14.02	-6930	-0.0000778	0.0003743	0.0035	0.505	963.65	1226.92	1226.92	87.53	No	Si
SLU 76	7.87	-476.17	-6925	-0.0001461	0.0003743	0.0035	0.505	963.53	1226.5	1226.5	2.58	No	Si
SLU 80	7.07	-21	-7061	-0.0000804	0.0003743	0.0035	0.505	966.72	1238.46	1238.46	58.98	No	Si
SLU 80	7.87	-477.61	-7042	-0.0001481	0.0003743	0.0035	0.505	966.31	1236.78	1236.78	2.59	No	Si
SLU 70	7.07	-3.46	-6442	-0.0000703	0.0003743	0.0035	0.505	947.23	1185.08	1185.08	342.38	No	Si
SLU 70	7.87	-460.03	-6423	-0.000136	0.0003743	0.0035	0.505	946.46	1183.54	1183.54	2.57	No	Si
SLU 72	7.07	-2.44	-6367	-0.0000692	0.0003743	0.0035	0.505	944.05	1178.89	1178.89	483.27	No	Si
SLU 72	7.87	-455.21	-6351	-0.0001342	0.0003743	0.0035	0.505	943.34	1177.57	1177.57	2.59	No	Si
SLU 75	7.07	-18.42	-7007	-0.0000794	0.0003743	0.0035	0.505	965.52	1233.68	1233.68	66.97	No	Si
SLU 75	7.87	-476.48	-6995	-0.0001472	0.0003743	0.0035	0.505	965.25	1232.63	1232.63	2.59	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 4	7.07	390.82	-2490	-0.0000911	0.0005615	0.0035	0.505		584.16	584.16	1.49		Si
SLD 4	7.87	-678.51	-3726	-0.0002014	0.0005615	0.0035	0.404		889.27	889.27	1.31		Si
SLV 8	7.07	222.21	-856	-0.0011868	0.0005615	0.0035	0.404		223.9	223.9	1.01		Si
SLV 8	7.87	-221.71	-2778	-0.0000547	0.0005615	0.0035	0.505		698.91	698.91	3.15		Si
SLV 5	7.07	281.05	-6063	-0.0000992	0.0005615	0.0035	0.505		1226.73	1226.73	4.36		Si
SLV 5	7.87	-936.82	-5534	-0.000269	0.0005615	0.0035	0.404		1211.88	1211.88	1.29		Si
SLV 4	7.07	916.9	551	-0.1072884	0.0005615	0.0035	0.404		0	0	0		No
SLV 4	7.87	-1135.34	-2363	-0.0102843	0.0005615	0.0035	0.404		611.86	611.86	0.54		No
SLV 6	7.07	410.44	-5605	-0.0001108	0.0005615	0.0035	0.505		1156.89	1156.89	2.82		Si
SLV 6	7.87	-1077.1	-5424	-0.0005003	0.0005615	0.0035	0.404		1193.91	1193.91	1.11		Si
SLV 3	7.07	724.72	-129	-0.0756127	0.0005615	0.0035	0.404		47.11	47.11	0.06		No

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 3	7.87	-926.99	-2526	-0.0064885	0.0005615	0.0035	0.404		646.23	646.23	0.7		No
SLD 2	7.07	411.93	-3064	-0.0000907	0.0005615	0.0035	0.505		693.44	693.44	1.68		Si
SLD 2	7.87	-780.12	-4040	-0.0002742	0.0005615	0.0035	0.404		948.05	948.05	1.22		Si
SLV 2	7.07	973.37	-874	-0.0806554	0.0005615	0.0035	0.404		228.05	228.05	0.23		No
SLV 2	7.87	-1391.95	-3157	-0.0120484	0.0005615	0.0035	0.404		776.91	776.91	0.56		No
SLV 1	7.07	781.19	-1554	-0.0426715	0.0005615	0.0035	0.404		385.69	385.69	0.49		No
SLV 1	7.87	-1183.6	-3320	-0.0083655	0.0005615	0.0035	0.404		809.3	809.3	0.68		No
SLD 1	7.07	330.17	-3353	-0.0000752	0.0005615	0.0035	0.505		748.9	748.9	2.27		Si
SLD 1	7.87	-691.48	-4109	-0.0001834	0.0005615	0.0035	0.404		960.99	960.99	1.39		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	7.07	-27.09	-7139	-6012	97	0.505	0.505	-39681	10833	2089	40441	4537	1288	5824	No	59.94	Si
SLU 77	7.87	-475.66	-7111	-5988	699	0.505	0.505	-39524	10833	2083	40441	4537	1288	5824	No	8.33	Si
SLU 80	7.07	-21	-7061	-5946	119	0.505	0.505	-39247	10833	2072	40441	4537	1288	5824	No	49.1	Si
SLU 80	7.87	-477.61	-7042	-5930	697	0.505	0.505	-39142	10833	2067	40441	4537	1288	5824	No	8.35	Si
SLU 81	7.07	-26.83	-7105	-5983	82	0.505	0.505	-39494	10833	2082	40441	4537	1288	5824	No	71.26	Si
SLU 81	7.87	-468.56	-7097	-5977	711	0.505	0.505	-39449	10833	2080	40441	4537	1288	5824	No	8.2	Si
SLU 79	7.07	-26.07	-7064	-5949	97	0.505	0.505	-39268	10833	2073	40441	4537	1288	5824	No	60.35	Si
SLU 79	7.87	-470.84	-7039	-5927	695	0.505	0.505	-39124	10833	2067	40441	4537	1288	5824	No	8.38	Si
SLU 82	7.07	-21.75	-7102	-5980	104	0.505	0.505	-39474	10833	2081	40441	4537	1288	5824	No	56.08	Si
SLU 82	7.87	-475.32	-7100	-5979	713	0.505	0.505	-39468	10833	2081	40441	4537	1288	5824	No	8.16	Si
SLU 75	7.07	-18.42	-7007	-5901	125	0.505	0.505	-38948	10833	2060	40441	4537	1288	5824	No	46.57	Si
SLU 75	7.87	-476.48	-6995	-5891	697	0.505	0.505	-38882	10833	2057	40441	4537	1288	5824	No	8.36	Si
SLU 84	7.07	-25.35	-7230	-6088	98	0.505	0.505	-40187	10833	2110	40441	4537	1288	5824	No	59.37	Si
SLU 84	7.87	-481.26	-7219	-6079	719	0.505	0.505	-40128	10833	2107	40441	4537	1288	5824	No	8.1	Si
SLU 78	7.07	-22.02	-7135	-6009	119	0.505	0.505	-39661	10833	2088	40441	4537	1288	5824	No	48.82	Si
SLU 78	7.87	-482.42	-7114	-5991	702	0.505	0.505	-39542	10833	2084	40441	4537	1288	5824	No	8.3	Si
SLU 83	7.07	-30.43	-7233	-6091	76	0.505	0.505	-40207	10833	2111	40441	4537	1288	5824	No	76.66	Si
SLU 83	7.87	-474.5	-7216	-6077	716	0.505	0.505	-40109	10833	2107	40441	4537	1288	5824	No	8.13	Si
SLU 74	7.07	-23.49	-7011	-5904	103	0.505	0.505	-38968	10833	2060	40441	4537	1288	5824	No	56.58	Si
SLU 74	7.87	-469.72	-6992	-5888	694	0.505	0.505	-38864	10833	2056	40441	4537	1288	5824	No	8.39	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	7.07	-982.18	-8581	-7226	-3806	0.505	0.4141	-60380	16250	2656	40441	6805	1288	8093		2.13	Si
SLV 15	7.87	730.75	-6283	-5291	-80	0.505	0.4086	-34922	16250	2140	40441	6805	1288	8093		101.01	Si
SLV 6	7.07	410.44	-5605	-4720	2423	0.505	0.505	-31155	16250	2462	40441	6805	1288	8093		3.34	Si
SLV 6	7.87	-1077.1	-5424	-4568	467	0.404	0.1618	0	0	0	40441	5444	1030	6474		13.87	Si
SLV 11	7.07	-419.25	-3850	-3242	-2201	0.505	0.4308	-25416	15500	2003	40441	6805	1288	8093		3.68	Si
SLV 11	7.87	415.89	-4015	-3381	497	0.505	0.4468	-22318	14880	1994	40441	6805	1288	8093		16.3	Si
SLV 13	7.07	-925.71	-10005	-8425	-3146	0.505	0.4799	-55614	16250	2976	40441	6805	1288	8093		2.57	Si
SLV 13	7.87	474.13	-7077	-5959	-223	0.505	0.505	-39335	16250	2462	40441	6805	1288	8093		36.25	Si
SLV 2	7.07	973.37	-874	-736	4028	0.404	0	0	0	0	40441	5444	1030	6474		1.61	Si
SLV 2	7.87	-1391.95	-3157	-2658	1043	0.404	0	0	0	0	40441	5444	1030	6474		6.2	Si
SLV 1	7.07	781.19	-1554	-1309	3297	0.404	0	0	0	0	40441	5444	1030	6474		1.96	Si
SLV 1	7.87	-1183.6	-3320	-2796	863	0.404	0	0	0	0	40441	5444	1030	6474		7.5	Si
SLV 14	7.07	-733.53	-9325	-7853	-2416	0.505	0.505	-51834	16250	2823	40441	6805	1288	8093		3.35	Si
SLV 14	7.87	265.78	-6913	-5821	-43	0.505	0.505	-38426	16250	2462	40441	6805	1288	8093		188.84	Si
SLV 4	7.07	916.9	551	464	3368	0.404	0	0	0	0	40441	5444	1030	6474		1.92	Si
SLV 4	7.87	-1135.34	-2363	-1990	1187	0.404	0	0	0	0	40441	5444	1030	6474		5.46	Si
SLV 16	7.07	-790	-7901	-6653	-3075	0.505	0.4575	-49927	16250	2503	40441	6805	1288	8093		2.63	Si
SLV 16	7.87	522.4	-6119	-5153	100	0.505	0.5014	-34013	16250	2444	40441	6805	1288	8093		80.69	Si
SLV 3	7.07	724.72	-129	-109	2637	0.404	0	0	0	0	40441	5444	1030	6474		2.46	Si
SLV 3	7.87	-926.99	-2526	-2127	1006	0.404	0	0	0	0	40441	5444	1030	6474		6.43	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.39	0	-264	57.13	0	0	No, e>t/2
SLV 8	179667	0.39	0	-145	57.13	0	0	No, e>t/2
SLV 4	179667	0.39	5786	-877	57.13	126.51	2.21	Si
SLV 3	179667	0.39	6952	-1053	57.13	150.79	2.64	Si
SLV 12	179667	0.39	7918	-1200	57.13	170.61	2.99	Si
SLV 11	179667	0.39	8703	-1319	57.13	186.51	3.26	Si
SLV 2	179667	0.39	17052	-2583	57.13	344.24	6.03	Si
SLV 1	179667	0.39	18218	-2760	57.13	364.62	6.38	Si
SLV 16	179667	0.39	28994	-4393	57.13	533.8	9.34	Si
SLV 15	179667	0.39	30160	-4569	57.13	550.03	9.63	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-4054	-5136	3	0.671	488.6	0.955	10.2192	5.36881	Si
SLV 14	-3925	-5383	4	0.689	475.6	0.953	10.50847	5.36881	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-3451	-2700	-18	0.764	427.5	0.949	11.69862	5.36881	Si
SLV 16	-3323	-2947	-17	0.788	414.4	0.947	12.09099	5.36881	Si
SLV 9	-3953	-7938	26	0.68	478.4	0.954	10.36804	4.5984	Si
SLV 10	-3867	-8105	26	0.693	469.6	0.953	10.56855	4.5984	Si
SLV 5	-3283	-7869	24	0.794	410.3	0.947	12.19042	4.5984	Si
SLV 6	-3196	-8036	25	0.812	401.6	0.946	12.47324	4.5984	Si
SLV 1	-1819	-4906	-2	1.282	262.3	0.923	20.17958	5.36881	Si
SLV 2	-1690	-5153	-1	1.355	249.4	0.92	21.40432	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.572	SLU 68	Si
V_SLU	8.105	SLU 84	Si
PF_SLV	0	SLV 4	No
V_SLV	1.607	SLV 2	Si
PFFP_SLV	0	SLV 7	No
R_SLV	1.903	SLV 13	Si

Maschio 152

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-3.183	-3.359	-5.508	-3.359	L5	L6	2.325	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 76	7.07	3262.52	-24627	-0.0000775	0.0003743	0.0035	2.325	18700.5	21801.26	21801.26	6.68	No	Si
SLU 76	7.87	1031.04	-21802	-0.0000561	0.0003743	0.0035	2.325	17563.63	19742.01	19742.01	19.15	No	Si
SLU 72	7.07	3052.24	-22922	-0.0000716	0.0003743	0.0035	2.325	18045.53	20548.23	20548.23	6.73	No	Si
SLU 72	7.87	886.13	-20176	-0.0000511	0.0003743	0.0035	2.325	16790.79	18590.05	18590.05	20.98	No	Si
SLU 73	7.07	3214.8	-24172	-0.000076	0.0003743	0.0035	2.325	18534.93	21463.69	21463.69	6.68	No	Si
SLU 73	7.87	974.95	-21362	-0.0000546	0.0003743	0.0035	2.325	17363	19428.24	19428.24	19.93	No	Si
SLU 80	7.07	3287.6	-25049	-0.0000788	0.0003743	0.0035	2.325	18847.98	22074.93	22074.93	6.71	No	Si
SLU 80	7.87	1103.07	-22219	-0.0000576	0.0003743	0.0035	2.325	17747.72	20040.42	20040.42	18.17	No	Si
SLU 65	7.07	2979.44	-22044	-0.0000689	0.0003743	0.0035	2.325	17671.35	19915.29	19915.29	6.68	No	Si
SLU 65	7.87	758	-19319	-0.0000482	0.0003743	0.0035	2.325	16348.77	17993.69	17993.69	23.74	No	Si
SLU 78	7.07	3316.69	-25336	-0.0000798	0.0003743	0.0035	2.325	18944.73	22216.81	22216.81	6.7	No	Si
SLU 78	7.87	1122.12	-22489	-0.0000584	0.0003743	0.0035	2.325	17864.11	20235.02	20235.02	18.03	No	Si
SLU 75	7.07	3268.98	-24880	-0.0000782	0.0003743	0.0035	2.325	18789.72	21986.51	21986.51	6.73	No	Si
SLU 75	7.87	1066.03	-22049	-0.0000569	0.0003743	0.0035	2.325	17673.37	19918.58	19918.58	18.68	No	Si
SLU 84	7.07	3340.76	-25506	-0.0000804	0.0003743	0.0035	2.325	19000.85	22293.96	22293.96	6.67	No	Si
SLU 84	7.87	1139.96	-22654	-0.0000589	0.0003743	0.0035	2.325	17933.99	20354.18	20354.18	17.86	No	Si
SLU 82	7.07	3293.04	-25050	-0.0000788	0.0003743	0.0035	2.325	18848.38	22075.51	22075.51	6.7	No	Si
SLU 82	7.87	1083.87	-22214	-0.0000574	0.0003743	0.0035	2.325	17745.63	20036.98	20036.98	18.49	No	Si
SLU 68	7.07	3027.15	-22500	-0.0000704	0.0003743	0.0035	2.325	17868.64	20242.67	20242.67	6.69	No	Si
SLU 68	7.87	814.09	-19759	-0.0000496	0.0003743	0.0035	2.325	16578.84	18299.08	18299.08	22.48	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	7.07	488.23	-20356	-0.0000478	0.0005615	0.0035	2.325		20248.06	20248.06	41.47		Si
SLV 13	7.87	7006.34	-19797	-0.0000851	0.0005615	0.0035	2.325		19743.77	19743.77	2.82		Si
SLV 2	7.07	4956.26	-22542	-0.0000796	0.0005615	0.0035	2.325		22238.87	22238.87	4.49		Si
SLV 2	7.87	-6621.51	-17683	-0.0000776	0.0005615	0.0035	2.325		19483.92	19483.92	2.94		Si
SLV 8	7.07	1379.91	-2220	-0.0000135	0.0005615	0.0035	2.325		2805.34	2805.34	2.03		Si
SLV 8	7.87	-255.88	-1539	-0.0000047	0.0005615	0.0035	2.325		3318.95	3318.95	12.97		Si
SLV 3	7.07	3484.34	-12081	-0.000046	0.0005615	0.0035	2.325		12995.24	12995.24	3.73		Si
SLV 3	7.87	-4137.75	-9138	-0.0000434	0.0005615	0.0035	2.325		11411.85	11411.85	2.76		Si
SLV 12	7.07	189.5	-1960	-0.0000052	0.0005615	0.0035	2.325		2514.35	2514.35	13.27		Si
SLV 12	7.87	3349.88	-2381	-0.0026898	0.0005615	0.0035	2.325		2986.77	2986.77	0.89		No
SLV 7	7.07	1043.28	-1330	-0.0000116	0.0005615	0.0035	2.325		1803.71	1803.71	1.73		Si
SLV 7	7.87	827.16	-1073	-0.000009	0.0005615	0.0035	2.325		1511.14	1511.14	1.83		Si
SLV 16	7.07	16.29	-12537	-0.0000273	0.0005615	0.0035	2.325		13382.55	13382.55	821.6		Si
SLV 16	7.87	6272.83	-12638	-0.000065	0.0005615	0.0035	2.325		13468.85	13468.85	2.15		Si
SLV 11	7.07	-147.13	-1071	-0.0000031	0.0005615	0.0035	2.325		2793.65	2793.65	18.99		Si
SLV 11	7.87	4432.92	-1915	-0.0119223	0.0005615	0.0035	2.325		2463.7	2463.7	0.56		No
SLV 4	7.07	3984.33	-13402	-0.000052	0.0005615	0.0035	2.325		14122.54	14122.54	3.54		Si
SLV 4	7.87	-5746.38	-9831	-0.0000579	0.0005615	0.0035	2.325		12117.72	12117.72	2.11		Si
SLV 15	7.07	-483.7	-11216	-0.000027	0.0005615	0.0035	2.325		13476.74	13476.74	27.86		Si
SLV 15	7.87	7881.47	-11945	-0.0000825	0.0005615	0.0035	2.325		12879.42	12879.42	1.63		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 73	7.07	3214.8	-24172	-20355	4882	2.325	2.325	-29183	10833	7666	40441	20886	5929	26815	No	5.49	Si
SLU 73	7.87	974.95	-21362	-17989	3985	2.325	2.325	-25791	10383	7242	40441	20886	5929	26815	No	6.73	Si
SLU 82	7.07	3293.04	-25050	-21095	4881	2.325	2.325	-30244	10833	7864	40441	20886	5929	26815	No	5.49	Si
SLU 82	7.87	1083.87	-22214	-18706	3983	2.325	2.325	-26819	10520	7338	40441	20886	5929	26815	No	6.73	Si
SLU 83	7.07	3306.82	-25456	-21437	4798	2.325	2.325	-30733	10833	7955	40441	20886	5929	26815	No	5.59	Si
SLU 83	7.87	1163.88	-22619	-19047	3912	2.325	2.325	-27308	10586	7383	40441	20886	5929	26815	No	6.85	Si
SLU 77	7.07	3282.75	-25286	-21293	4783	2.325	2.325	-30528	10833	7917	40441	20886	5929	26815	No	5.61	Si
SLU 77	7.87	1146.04	-22454	-18908	3898	2.325	2.325	-27109	10559	7365	40441	20886	5929	26815	No	6.88	Si
SLU 81	7.07	3259.1	-25001	-21053	4786	2.325	2.325	-30184	10833	7852	40441	20886	5929	26815	No	5.6	Si
SLU 81	7.87	1107.78	-22179	-18677	3904	2.325	2.325	-26777	10515	7334	40441	20886	5929	26815	No	6.87	Si
SLU 76	7.07	3262.52	-24627	-20738	4893	2.325	2.325	-29732	10833	7769	40441	20886	5929	26815	No	5.48	Si
SLU 76	7.87	1031.04	-21802	-18360	3994	2.325	2.325	-26322	10454	7292	40441	20886	5929	26815	No	6.71	Si
SLU 84	7.07	3340.76	-25506	-21478	4893	2.325	2.325	-30793	10833	7966	40441	20886	5929	26815	No	5.48	Si
SLU 84	7.87	1139.96	-22654	-19077	3992	2.325	2.325	-27350	10591	7387	40441	20886	5929	26815	No	6.72	Si
SLU 75	7.07	3268.98	-24880	-20952	4867	2.325	2.325	-30038	10833	7825	40441	20886	5929	26815	No	5.51	Si
SLU 75	7.87	1066.03	-22049	-18567	3969	2.325	2.325	-26620	10494	7319	40441	20886	5929	26815	No	6.76	Si
SLU 80	7.07	3287.6	-25049	-21094	4841	2.325	2.325	-30242	10833	7863	40441	20886	5929	26815	No	5.54	Si
SLU 80	7.87	1103.07	-22219	-18710	3950	2.325	2.325	-26825	10521	7338	40441	20886	5929	26815	No	6.79	Si
SLU 78	7.07	3316.69	-25336	-21335	4878	2.325	2.325	-30588	10833	7928	40441	20886	5929	26815	No	5.5	Si
SLU 78	7.87	1122.12	-22489	-18938	3978	2.325	2.325	-27151	10565	7369	40441	20886	5929	26815	No	6.74	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	7.07	4456.27	-21222	-17871	16787	2.325	2.325	-25622	15541	10840	40441	31329	5929	37258		2.22	Si
SLV 1	7.87	-5012.87	-16990	-14307	13852	2.325	2.325	-20512	14519	10127	40441	31329	5929	37258		2.69	Si
SLV 13	7.07	488.23	-20356	-17142	-9101	2.325	2.325	-24577	15332	10694	40441	31329	5929	37258		4.09	Si
SLV 13	7.87	7006.34	-19797	-16671	-7925	2.325	2.325	-23902	15197	10600	40441	31329	5929	37258		4.7	Si
SLV 5	7.07	4283.06	-31799	-26778	13397	2.325	2.325	-38391	16250	11334	40441	31329	5929	37258		2.78	Si
SLV 5	7.87	-2089.92	-27246	-22944	10521	2.325	2.325	-32895	16250	11334	40441	31329	5929	37258		3.54	Si
SLV 2	7.07	4956.26	-22542	-18983	20402	2.325	2.325	-27216	15860	11062	40441	31329	5929	37258		1.83	Si
SLV 2	7.87	-6621.51	-17683	-14891	16845	2.325	2.325	-21349	14686	10244	40441	31329	5929	37258		2.21	Si
SLD 2	7.07	3383.43	-19165	-16139	10637	2.325	2.325	-23138	15044	10493	40441	31329	5929	37258		3.5	Si
SLD 2	7.87	-2450.39	-15925	-13410	8767	2.325	2.325	-19226	14262	9948	40441	31329	5929	37258		4.25	Si
SLV 6	7.07	4619.69	-32688	-27526	15831	2.325	2.325	-39464	16250	11334	40441	31329	5929	37258		2.35	Si
SLV 6	7.87	-3172.96	-27713	-23337	12536	2.325	2.325	-33458	16250	11334	40441	31329	5929	37258		2.97	Si
SLV 4	7.07	3984.33	-13402	-11286	16048	2.325	2.325	-16180	13653	9523	40441	31329	5929	37258		2.32	Si
SLV 4	7.87	-5746.38	-9831	-8278	13586	2.325	1.7339	-16038	13624	7087	40441	31329	5929	37258		2.74	Si
SLV 16	7.07	16.29	-12537	-10557	-9840	2.325	2.325	-15136	13444	9377	40441	31329	5929	37258		3.79	Si
SLV 16	7.87	6272.83	-12638	-10642	-8191	2.325	1.9984	-15258	13468	8075	40441	31329	5929	37258		4.55	Si
SLV 3	7.07	3484.34	-12081	-10174	12433	2.325	2.325	-14586	13334	9300	40441	31329	5929	37258		3	Si
SLV 3	7.87	-4137.75	-9138	-7695	10594	2.325	2.129	-12108	12838	8200	40441	31329	5929	37258		3.52	Si
SLV 15	7.07	-483.7	-11216	-9445	-13455	2.325	2.325	-13541	13125	9155	40441	31329	5929	37258		2.77	Si
SLV 15	7.87	7881.47	-11945	-10059	-11184	2.325	1.5081	-14421	13301	6040	40441	31329	5929	37258		3.33	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.39	0	-1433	263.01	0	0	No, e>t/2
SLV 8	179667	0.39	2762	-1927	263.01	283.77	1.08	Si
SLV 11	179667	0.39	3421	-2386	263.01	349.93	1.33	Si
SLV 12	179667	0.39	4129	-2880	263.01	420.27	1.6	Si
SLV 3	179667	0.39	13643	-9516	263.01	1299.84	4.94	Si
SLV 4	179667	0.39	14693	-10248	263.01	1389.36	5.28	Si
SLV 15	179667	0.39	18197	-12692	263.01	1676.99	6.38	Si
SLV 16	179667	0.39	19247	-13425	263.01	1759.95	6.69	Si
SLV 1	179667	0.39	25088	-17499	263.01	2193.64	8.34	Si
SLV 2	179667	0.39	26139	-18232	263.01	2266.68	8.62	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.

- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-21871	-28012	-916	0.55	2575.7	0.96	8.32925	4.5984	Si
SLV 9	-21694	-27773	-917	0.554	2557.7	0.959	8.38819	4.5984	Si
SLV 6	-20764	-25807	-881	0.576	2463.1	0.958	8.7379	4.5984	Si
SLV 5	-20587	-25568	-881	0.58	2445.2	0.958	8.80305	4.5984	Si
SLV 14	-16893	-21461	-326	0.713	2069.8	0.951	10.89704	5.36881	Si
SLV 13	-16631	-21106	-327	0.722	2043.1	0.95	11.04605	5.36881	Si
SLV 2	-13202	-14111	-209	0.881	1695.4	0.942	13.59741	5.36881	Si
SLV 1	-12940	-13756	-209	0.896	1668.8	0.941	13.83271	5.36881	Si
SLV 16	-11482	-13591	215	0.986	1521.3	0.936	15.30469	5.36881	Si
SLV 15	-11220	-13236	214	1.004	1494.7	0.935	15.60647	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	6.673	SLU 84	Si
V_SLU	5.48	SLU 76	Si
PF_SLV	0.556	SLV 11	No
V_SLV	1.826	SLV 2	Si
PFFP_SLV	0	SLV 7	No
R_SLV	1.811	SLV 10	Si

Maschio 153

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	-3.359	-2.283	-3.359	L5	L6	2.16	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 39	5.97	468.06	-14988	-0.0000392	0.0003743	0.0035	2.16	12509.45	13638.6	13638.6	29.14	No	Si
SLU 39	7.77	988.97	-15038	-0.0000429	0.0003743	0.0035	2.16	12539.12	13670.04	13670.04	13.82	No	Si
SLU 47	5.97	932.87	-14593	-0.0000414	0.0003743	0.0035	2.16	12274.34	13393.38	13393.38	14.36	No	Si
SLU 47	7.77	394.44	-13049	-0.0000338	0.0003743	0.0035	2.16	11305.46	12118.55	12118.55	30.72	No	Si
SLU 41	5.97	470.08	-15234	-0.0000399	0.0003743	0.0035	2.16	12653.77	13792.65	13792.65	29.34	No	Si
SLU 41	7.77	1039.24	-15339	-0.0000441	0.0003743	0.0035	2.16	12714.55	13858.36	13858.36	13.34	No	Si
SLU 37	5.97	520.41	-14923	-0.0000394	0.0003743	0.0035	2.16	12471.53	13598.58	13598.58	26.13	No	Si
SLU 37	7.77	978.46	-14885	-0.0000425	0.0003743	0.0035	2.16	12448.86	13574.74	13574.74	13.87	No	Si
SLU 36	5.97	559.78	-15173	-0.0000403	0.0003743	0.0035	2.16	12618.1	13754.31	13754.31	24.57	No	Si
SLU 36	7.77	959.12	-15078	-0.0000428	0.0003743	0.0035	2.16	12562.44	13694.83	13694.83	14.28	No	Si
SLU 35	5.97	531.51	-15122	-0.00004	0.0003743	0.0035	2.16	12588.23	13722.34	13722.34	25.82	No	Si
SLU 35	7.77	989.09	-15095	-0.0000431	0.0003743	0.0035	2.16	12572.45	13705.51	13705.51	13.86	No	Si
SLU 44	5.97	930.86	-14346	-0.0000408	0.0003743	0.0035	2.16	12124.84	13215.35	13215.35	14.2	No	Si
SLU 44	7.77	344.17	-12748	-0.0000327	0.0003743	0.0035	2.16	11107.46	11859.58	11859.58	34.46	No	Si
SLU 42	5.97	498.35	-15285	-0.0000402	0.0003743	0.0035	2.16	12683.46	13824.68	13824.68	27.74	No	Si
SLU 42	7.77	1009.27	-15322	-0.0000438	0.0003743	0.0035	2.16	12704.67	13847.64	13847.64	13.72	No	Si
SLU 38	5.97	548.69	-14975	-0.0000397	0.0003743	0.0035	2.16	12501.74	13630.45	13630.45	24.84	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 38	7.77	948.49	-14868	-0.0000422	0.0003743	0.0035	2.16	12438.73	13564.1	13564.1	14.3	No	Si
SLU 40	5.97	496.34	-15039	-0.0000395	0.0003743	0.0035	2.16	12539.55	13670.5	13670.5	27.54	No	Si
SLU 40	7.77	959	-15021	-0.0000427	0.0003743	0.0035	2.16	12529.07	13659.38	13659.38	14.24	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 4	5.97	4946.75	-5197	-0.0001479	0.0005615	0.0035	2.16		5626.57	5626.57	1.14		Si
SLV 4	7.77	-4442.39	-1330	-0.0012522	0.0005615	0.0035	1.728		2724.58	2724.58	0.61		No
SLV 15	5.97	-5966.85	-10517	-0.0000705	0.0005615	0.0035	2.16		11685.33	11685.33	1.96		Si
SLV 15	7.77	7367.71	-18950	-0.0000962	0.0005615	0.0035	2.16		17536.63	17536.63	2.38		Si
SLV 3	5.97	3523.09	-4335	-0.0000551	0.0005615	0.0035	2.16		4765.81	4765.81	1.35		Si
SLV 3	7.77	-2916.77	-2874	-0.0001071	0.0005615	0.0035	1.728		4317.98	4317.98	1.48		Si
SLV 16	5.97	-4543.19	-11378	-0.0000569	0.0005615	0.0035	2.16		12471.14	12471.14	2.75		Si
SLV 16	7.77	5842.09	-17406	-0.0000811	0.0005615	0.0035	2.16		16235.92	16235.92	2.78		Si
SLV 11	5.97	-5062.55	1828	0.1483551	0.0005615	0.0035	1.728		0	0	0		No
SLV 11	7.77	5731.43	-9893	-0.0000678	0.0005615	0.0035	2.16		10116.82	10116.82	1.77		Si
SLV 2	5.97	7217.97	-14045	-0.0000864	0.0005615	0.0035	2.16		13459.1	13459.1	1.86		Si
SLV 2	7.77	-6338.84	-4055	-0.0010784	0.0005615	0.0035	1.728		5516.15	5516.15	0.87		No
SLV 12	5.97	-4104.04	1248	0.1018538	0.0005615	0.0035	1.728		0	0	0		No
SLV 12	7.77	4704.28	-8854	-0.0000548	0.0005615	0.0035	2.16		9152.65	9152.65	1.95		Si
SLV 1	5.97	5794.3	-13183	-0.0000708	0.0005615	0.0035	2.16		12759.15	12759.15	2.2		Si
SLV 1	7.77	-4813.22	-5599	-0.0000869	0.0005615	0.0035	1.728		7036.65	7036.65	1.46		Si
SLV 8	5.97	-1257.06	3102	0.2410736	0.0005615	0.0035	1.728		0	0	0		No
SLV 8	7.77	1618.94	-4031	-0.0000197	0.0005615	0.0035	2.16		4458.12	4458.12	2.75		Si
SLV 7	5.97	-2215.56	3682	0.2881828	0.0005615	0.0035	1.728		0	0	0		No
SLV 7	7.77	2646.09	-5070	-0.0000303	0.0005615	0.0035	2.16		5500.82	5500.82	2.08		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 39	5.97	468.06	-14988	-12621	-1678	2.16	2.16	-19477	9541	6183	40441	19404	5508	24912	No	14.85	Si
SLU 39	7.77	988.97	-15038	-12664	-1679	2.16	2.16	-19543	9550	6188	40441	19404	5508	24912	No	14.83	Si
SLU 84	5.97	712.86	-18126	-15264	-1681	2.16	2.16	-23555	10085	6535	40441	19404	5508	24912	No	14.82	Si
SLU 84	7.77	1034.35	-17708	-14912	-1672	2.16	2.16	-23013	10013	6488	40441	19404	5508	24912	No	14.9	Si
SLU 41	5.97	470.08	-15234	-12829	-1737	2.16	2.16	-19798	9584	6211	40441	19404	5508	24912	No	14.34	Si
SLU 41	7.77	1039.24	-15339	-12917	-1739	2.16	2.16	-19934	9602	6222	40441	19404	5508	24912	No	14.33	Si
SLU 81	5.97	682.57	-17828	-15013	-1689	2.16	2.16	-23168	10034	6502	40441	19404	5508	24912	No	14.75	Si
SLU 81	7.77	1014.05	-17424	-14673	-1691	2.16	2.16	-22644	9964	6456	40441	19404	5508	24912	No	14.73	Si
SLU 42	5.97	498.35	-15285	-12872	-1670	2.16	2.16	-19864	9593	6216	40441	19404	5508	24912	No	14.92	Si
SLU 42	7.77	1009.27	-15322	-12903	-1660	2.16	2.16	-19912	9599	6220	40441	19404	5508	24912	No	15.01	Si
SLU 79	5.97	734.92	-17764	-14959	-1601	2.16	2.16	-23085	10022	6495	40441	19404	5508	24912	No	15.56	Si
SLU 79	7.77	1003.54	-17272	-14544	-1603	2.16	2.16	-22445	9937	6439	40441	19404	5508	24912	No	15.54	Si
SLU 83	5.97	684.58	-18075	-15221	-1749	2.16	2.16	-23489	10076	6529	40441	19404	5508	24912	No	14.25	Si
SLU 83	7.77	1064.32	-17725	-14927	-1751	2.16	2.16	-23035	10016	6490	40441	19404	5508	24912	No	14.23	Si
SLU 77	5.97	746.02	-17962	-15126	-1608	2.16	2.16	-23343	10057	6517	40441	19404	5508	24912	No	15.5	Si
SLU 77	7.77	1014.18	-17481	-14721	-1610	2.16	2.16	-22718	9973	6463	40441	19404	5508	24912	No	15.48	Si
SLU 82	5.97	710.85	-17879	-15056	-1622	2.16	2.16	-23235	10042	6507	40441	19404	5508	24912	No	15.36	Si
SLU 82	7.77	984.08	-17407	-14659	-1613	2.16	2.16	-22622	9961	6455	40441	19404	5508	24912	No	15.45	Si
SLU 40	5.97	496.34	-15039	-12664	-1610	2.16	2.16	-19544	9550	6189	40441	19404	5508	24912	No	15.47	Si
SLU 40	7.77	959	-15021	-12649	-1601	2.16	2.16	-19520	9547	6187	40441	19404	5508	24912	No	15.56	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	5.97	-4543.19	-11378	-9582	-11006	2.16	2.0422	-15755	13568	8312	40441	29106	5508	34614		3.15	Si
SLV 16	7.77	5842.09	-17406	-14658	-10226	2.16	2.16	-22620	14941	9682	40441	29106	5508	34614		3.39	Si
SLV 7	5.97	-2215.56	3682	3101	-8735	1.728	1.435	0	0	0	40441	23285	4406	27691		3.17	Si
SLV 7	7.77	2646.09	-5070	-4270	-9028	2.16	1.6744	-6589	11735	5894	40441	29106	5508	34614		3.83	Si
SLV 11	5.97	-5062.55	1828	1539	-14059	1.728	0	0	0	0	40441	23285	4406	27691		1.97	Si
SLV 11	7.77	5731.43	-9893	-8331	-13873	2.16	1.502	-12857	12988	5852	40441	29106	5508	34614		2.5	Si
SLV 15	5.97	-5966.85	-10517	-8856	-14087	2.16	1.5379	-19378	14293	6594	40441	29106	5508	34614		2.46	Si
SLV 15	7.77	7367.71	-18950	-15958	-13307	2.16	2.0736	-24627	15342	9544	40441	29106	5508	34614		2.6	Si
SLV 5	5.97	5355.16	-25809	-21734	10366	2.16	2.16	-33540	16250	10530	40441	29106	5508	34614		3.34	Si
SLV 5	7.77	-3675.42	-14151	-11917	10177	2.16	2.16	-18390	14095	9133	40441	29106	5508	34614		3.4	Si
SLV 12	5.97	-4104.04	1248	1051	-11984	1.728	0	0	0	0	40441	23285	4406	27691		2.31	Si
SLV 12	7.77	4704.28	-8854	-7456	-11799	2.16	1.646	-11506	12718	6280	40441	29106	5508	34614		2.93	Si
SLV 2	5.97	7217.97	-14045	-11827	12468	2.16	1.6982	-18252	14067	7167	40441	29106	5508	34614		2.78	Si
SLV 2	7.77	-6338.84	-4055	-3414	11685	1.728	0	0	0	0	40441	23285	4406	27691		2.37	Si
SLV 6	5.97	6313.66	-26389	-22223	12440	2.16	2.16	-34294	16250	10530	40441	29106	5508	34614		2.78	Si
SLV 6	7.77	-4702.56	-13112	-11041	12252	2.16	2.16	-17039	13824	8958	40441	29106	5508	34614		2.83	Si
SLV 1	5.97	5794.3	-13183	-11101	9387	2.16	1.9214	-17132	13843	7979	40441	29106	5508	34614		3.69	Si
SLV 1	7.77	-4813.22	-5599	-4715	8604	1.728	0.6609	0	0	0	40441	23285	4406	27691		3.22	Si
SLV 13	5.97	-3695.63	-19364	-16307	-8357	2.16	2.16	-25164	15450	10011	40441	29106	5508	34614		4.14	Si
SLV 13	7.77	5471.26	-21674	-18252	-7545	2.16	2.16	-28167	16050	10400	40441	29106	5508	34614		4.59	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 8	179667	0.39	0	-1431	244.35	0	0	No, e>t/2
SLV 7	179667	0.39	2806	-1819	244.35	267.77	1.1	Si
SLV 4	179667	0.39	4763	-3086	244.35	448.48	1.84	Si

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 3	179667	0.39	5650	-3661	244.35	528.9	2.16	Si
SLV 12	179667	0.39	7801	-5055	244.35	719.48	2.94	Si
SLV 11	179667	0.39	8398	-5442	244.35	771.42	3.16	Si
SLV 2	179667	0.39	12668	-8209	244.35	1129.17	4.62	Si
SLV 1	179667	0.39	13556	-8784	244.35	1200.65	4.91	Si
SLV 16	179667	0.39	23402	-15165	244.35	1926.11	7.88	Si
SLV 15	179667	0.39	24290	-15740	244.35	1985.46	8.13	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-16120	-21549	132	0.707	1966.1	0.952	10.79004	5.36881	Si
SLV 14	-15438	-21458	134	0.733	1896.9	0.95	11.20188	5.36881	Si
SLV 9	-16476	-25356	-554	0.671	2002.3	0.953	10.23998	4.5984	Si
SLV 10	-16017	-25295	-553	0.687	1955.7	0.952	10.4953	4.5984	Si
SLV 15	-13173	-14315	522	0.81	1667.1	0.945	12.458	5.36881	Si
SLV 16	-12491	-14224	524	0.846	1597.9	0.943	13.03746	5.36881	Si
SLV 5	-13930	-21397	-752	0.759	1743.8	0.947	11.6523	4.5984	Si
SLV 6	-13471	-21336	-751	0.78	1697.2	0.945	11.99429	4.5984	Si
SLV 1	-7632	-8352	-529	1.247	1107.2	0.923	19.64762	5.36881	Si
SLV 2	-6950	-8261	-527	1.338	1038.8	0.919	21.17225	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	13.335	SLU 41	Si
V_SLU	14.229	SLU 83	Si
PF_SLV	0	SLV 7	No
V_SLV	1.97	SLV 11	Si
PFFP_SLV	0	SLV 8	No
R_SLV	2.01	SLV 13	Si

Maschio 154

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-2.963	5.951	-5.158	5.951	L5	L6	2.195	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 82	5.97	832.25	-22980	-0.0000619	0.0003743	0.0035	2.195	16575.94	19262.34	19262.34	23.14	No	Si
SLU 82	7.77	-2214.19	-24419	-0.0000758	0.0003743	0.0035	2.195	17038.45	20787.74	20787.74	9.39	No	Si
SLU 73	5.97	808.99	-22153	-0.0000595	0.0003743	0.0035	2.195	16279.08	18688.51	18688.51	23.1	No	Si
SLU 73	7.77	-2128.11	-23466	-0.0000725	0.0003743	0.0035	2.195	16739.68	20313.83	20313.83	9.55	No	Si
SLU 60	5.97	828.42	-20454	-0.0000551	0.0003743	0.0035	2.195	15599.66	17518.81	17518.81	21.15	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 60	7.77	-2057.34	-21519	-0.0000666	0.0003743	0.0035	2.195	16036.6	19386.52	19386.52	9.42	No	Si
SLU 74	5.97	852.07	-23505	-0.0000635	0.0003743	0.0035	2.195	16752.53	19567.11	19567.11	22.96	No	Si
SLU 74	7.77	-2225.59	-24771	-0.0000769	0.0003743	0.0035	2.195	17141.36	20966.28	20966.28	9.42	No	Si
SLU 66	5.97	843.86	-21884	-0.000059	0.0003743	0.0035	2.195	16177.97	18502.16	18502.16	21.93	No	Si
SLU 66	7.77	-2092.85	-22792	-0.0000704	0.0003743	0.0035	2.195	16510.41	19986.62	19986.62	9.55	No	Si
SLU 81	5.97	861.85	-23180	-0.0000627	0.0003743	0.0035	2.195	16644.14	19381.73	19381.73	22.49	No	Si
SLU 81	7.77	-2257.99	-24576	-0.0000766	0.0003743	0.0035	2.195	17084.84	20867.14	20867.14	9.24	No	Si
SLU 83	5.97	863.13	-23969	-0.0000648	0.0003743	0.0035	2.195	16900.97	19797.62	19797.62	22.94	No	Si
SLU 83	7.77	-2263.97	-25364	-0.0000789	0.0003743	0.0035	2.195	17305.49	21271.06	21271.06	9.4	No	Si
SLU 43	5.97	816.69	-18139	-0.0000489	0.0003743	0.0035	2.195	14521.24	15968.89	15968.89	19.55	No	Si
SLU 43	7.77	-1867.71	-18692	-0.0000576	0.0003743	0.0035	2.195	14795.06	17715.26	17715.26	9.48	No	Si
SLU 84	5.97	833.53	-23769	-0.0000641	0.0003743	0.0035	2.195	16837.91	19709.13	19709.13	23.65	No	Si
SLU 84	7.77	-2220.17	-25207	-0.0000781	0.0003743	0.0035	2.195	17263.15	21189.85	21189.85	9.54	No	Si
SLU 64	5.97	850.12	-20864	-0.0000563	0.0003743	0.0035	2.195	15772.36	17799.05	17799.05	20.94	No	Si
SLU 64	7.77	-2068.36	-21749	-0.0000673	0.0003743	0.0035	2.195	16126.19	19493.24	19493.24	9.42	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 3	5.97	5300.28	-21999	-0.0000875	0.0005615	0.0035	2.195		20357.34	20357.34	3.84		Si
SLV 3	7.77	-8343.91	-26239	-0.0001202	0.0005615	0.0035	2.195		24500.67	24500.67	2.94		Si
SLV 4	5.97	4110.7	-20617	-0.0000758	0.0005615	0.0035	2.195		19279.96	19279.96	4.69		Si
SLV 4	7.77	-6693.31	-23587	-0.0001013	0.0005615	0.0035	2.195		22641.93	22641.93	3.38		Si
SLV 13	5.97	-2812.82	-11210	-0.0000437	0.0005615	0.0035	2.195		12526.32	12526.32	4.45		Si
SLV 13	7.77	3523.56	-9660	-0.0000444	0.0005615	0.0035	2.195		10080.94	10080.94	2.86		Si
SLV 5	5.97	-836.61	5920	0.4556708	0.0005615	0.0035	1.756		0	0	0		No
SLV 5	7.77	734.52	-325	-0.0010389	0.0005615	0.0035	1.756		627.81	627.81	0.85		No
SLV 10	5.97	-3559.04	6138	0.480405	0.0005615	0.0035	1.756		0	0	0		No
SLV 10	7.77	4637.31	3184	0.2021157	0.0005615	0.0035	1.756		0	0	0		No
SLV 6	5.97	-1637.52	6851	0.529585	0.0005615	0.0035	1.756		0	0	0		No
SLV 6	7.77	1845.81	1460	0.0969381	0.0005615	0.0035	1.756		0	0	0		No
SLV 9	5.97	-2758.13	5207	0.4069113	0.0005615	0.0035	1.756		0	0	0		No
SLV 9	7.77	3526.02	1399	0.0505061	0.0005615	0.0035	1.756		0	0	0		No
SLV 2	5.97	2402.64	-7451	-0.000032	0.0005615	0.0035	2.195		7967.5	7967.5	3.32		Si
SLV 2	7.77	-4130.83	-12755	-0.000056	0.0005615	0.0035	2.195		13916	13916	3.37		Si
SLV 1	5.97	3592.23	-8834	-0.0000431	0.0005615	0.0035	2.195		9298.37	9298.37	2.59		Si
SLV 1	7.77	-5781.44	-15407	-0.0000735	0.0005615	0.0035	2.195		16220.28	16220.28	2.81		Si
SLV 14	5.97	-4002.41	-9828	-0.0000481	0.0005615	0.0035	2.195		11250.45	11250.45	2.81		Si
SLV 14	7.77	5174.16	-7008	-0.0000669	0.0005615	0.0035	2.195		7532	7532	1.46		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	5.97	833.53	-23769	-20016	4249	2.195	2.195	-30396	10833	7451	40441	19718	5597	25316	No	5.96	Si
SLU 84	7.77	-2220.17	-25207	-21227	4255	2.195	2.195	-32235	10833	7774	40441	19718	5597	25316	No	5.95	Si
SLU 82	5.97	832.25	-22980	-19352	4246	2.195	2.195	-29388	10833	7274	40441	19718	5597	25316	No	5.96	Si
SLU 82	7.77	-2214.19	-24419	-20563	4251	2.195	2.195	-31227	10833	7597	40441	19718	5597	25316	No	5.95	Si
SLU 83	5.97	863.13	-23969	-20184	4264	2.195	2.195	-30652	10833	7496	40441	19718	5597	25316	No	5.94	Si
SLU 83	7.77	-2263.97	-25364	-21359	4270	2.195	2.195	-32436	10833	7809	40441	19718	5597	25316	No	5.93	Si
SLU 81	5.97	861.85	-23180	-19520	4261	2.195	2.195	-29643	10833	7318	40441	19718	5597	25316	No	5.94	Si
SLU 81	7.77	-2257.99	-24576	-20695	4266	2.195	2.195	-31428	10833	7632	40441	19718	5597	25316	No	5.93	Si
SLU 74	5.97	852.07	-23505	-19794	4158	2.195	2.195	-30059	10833	7391	40441	19718	5597	25316	No	6.09	Si
SLU 74	7.77	-2225.59	-24771	-20860	4163	2.195	2.195	-31678	10833	7676	40441	19718	5597	25316	No	6.08	Si
SLU 79	5.97	860.89	-24063	-20263	4141	2.195	2.195	-30772	10833	7517	40441	19718	5597	25316	No	6.11	Si
SLU 79	7.77	-2213.06	-25304	-21309	4147	2.195	2.195	-32359	10833	7795	40441	19718	5597	25316	No	6.11	Si
SLU 75	5.97	822.47	-23306	-19626	4143	2.195	2.195	-29804	10833	7347	40441	19718	5597	25316	No	6.11	Si
SLU 75	7.77	-2181.79	-24614	-20727	4148	2.195	2.195	-31477	10833	7640	40441	19718	5597	25316	No	6.1	Si
SLU 80	5.97	831.28	-23863	-20095	4126	2.195	2.195	-30517	10833	7472	40441	19718	5597	25316	No	6.14	Si
SLU 80	7.77	-2169.26	-25147	-21176	4132	2.195	2.195	-32159	10833	7760	40441	19718	5597	25316	No	6.13	Si
SLU 78	5.97	823.75	-24094	-20290	4147	2.195	2.195	-30812	10833	7524	40441	19718	5597	25316	No	6.1	Si
SLU 78	7.77	-2187.77	-25402	-21391	4152	2.195	2.195	-32485	10833	7817	40441	19718	5597	25316	No	6.1	Si
SLU 77	5.97	853.35	-24294	-20458	4162	2.195	2.195	-31068	10833	7569	40441	19718	5597	25316	No	6.08	Si
SLU 77	7.77	-2231.57	-25559	-21523	4167	2.195	2.195	-32685	10833	7853	40441	19718	5597	25316	No	6.08	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 3	5.97	2607.04	-18318	-15426	6712	2.195	2.195	-23426	15102	9945	40441	29578	5597	35175		5.24	Si
SLD 3	7.77	-4429.95	-20567	-17320	6436	2.195	2.195	-26302	15677	10323	40441	29578	5597	35175		5.47	Si
SLV 4	5.97	4110.7	-20617	-17362	9441	2.195	2.195	-26366	15690	10332	40441	29578	5597	35175		3.73	Si
SLV 4	7.77	-6693.31	-23587	-19863	8791	2.195	2.195	-30164	16250	10701	40441	29578	5597	35175		4	Si
SLD 1	5.97	1931.76	-13080	-11015	6344	2.195	2.195	-16727	13762	9062	40441	29578	5597	35175		5.54	Si
SLD 1	7.77	-3415.43	-16269	-13700	6074	2.195	2.195	-20805	14578	9599	40441	29578	5597	35175		5.79	Si
SLV 2	5.97	2402.64	-7451	-6275	8496	2.195	2.195	-9529	12322	8114	40441	29578	5597	35175		4.14	Si
SLV 2	7.77	-4130.83	-12755	-10741	7855	2.195	2.195	-16312	13679	9008	40441	29578	5597	35175		4.48	Si
SLV 1	5.97	3592.23	-8834	-7439	10847	2.195	2.0726	-11297	12676	7882	40441	29578	5597	35175		3.24	Si
SLV 1	7.77	-5781.44	-15407	-12974	10207	2.195	2.1668	-19703	14357	9333	40441	29578	5597	35175		3.45	Si
SLV 3	5.97	5300.28	-21999	-18526	11793	2.195	2.195	-28133	16043	10565	40441	29578	5597	35175		2.98	Si
SLV 3	7.77	-8343.91	-26239	-22096	11143	2.195	2.195	-33555	16250	10701	40441	29578	5597	35175		3.16	Si
SLV 14	5.97	-4002.41	-9828	-8276	-5879	2.195	2.0707	-13404	13097	8136	40441	29578	5597	35175		5.98	Si
SLV 14	7.77	5174.16	-7008	-5902	-5221	2.195	1.0777	-8963	12209	4744	40441	29578	5597	35175		6.74	Si
SLD 4	5.97	2100.97	-17730	-14931	5711	2.195	2.195	-22674	14951	9845	40441	29578	5597	35175		6.16	Si
SLD 4	7.77	-3727.75	-19439	-16370	5436	2.195	2.195	-24860	15389	10133	40441	29578	5597	35175		6.47	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	5.97	4056	-37035	-31187	5898	2.195	2.195	-47361	16250	11486	40441	29578	5597	35175		5.96	Si
SLV 8	7.77	-6695.77	-34646	-29176	5690	2.195	2.195	-44306	16250	10950	40441	29578	5597	35175		6.18	Si
SLV 7	5.97	4856.91	-37965	-31971	7481	2.195	2.195	-48551	16250	11695	40441	29578	5597	35175		4.7	Si
SLV 7	7.77	-7807.06	-36432	-30679	7274	2.195	2.195	-46589	16250	11351	40441	29578	5597	35175		4.84	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 6	179667	0.39	0	4219	248.3	0	0	No, Trazione
SLV 10	179667	0.39	0	5117	248.3	0	0	No, Trazione
SLV 5	179667	0.39	0	2738	248.3	0	0	No, Trazione
SLV 9	179667	0.39	0	3635	248.3	0	0	No, Trazione
SLV 14	179667	0.39	11962	-7877	248.3	1089.02	4.39	Si
SLV 13	179667	0.39	15304	-10078	248.3	1360.19	5.48	Si
SLV 2	179667	0.39	16504	-10868	248.3	1454	5.86	Si
SLV 1	179667	0.39	19846	-13069	248.3	1705.54	6.87	Si
SLV 16	179667	0.39	30706	-20220	248.3	2423.17	9.76	Si
SLV 15	179667	0.39	34048	-22421	248.3	2613.31	10.52	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-28107	-42563	1064	0.418	3190.7	0.969	6.27288	4.5984	Si
SLV 11	-26948	-41264	1175	0.429	3072.7	0.968	6.44799	4.5984	Si
SLV 8	-26662	-40887	1058	0.437	3043.6	0.967	6.56912	4.5984	Si
SLV 12	-25503	-39588	1169	0.45	2925.6	0.966	6.76642	4.5984	Si
SLV 3	-21378	-26885	165	0.564	2505.9	0.961	8.53237	5.36881	Si
SLV 4	-19231	-24395	155	0.617	2287.6	0.957	9.36629	5.36881	Si
SLV 15	-17514	-22555	535	0.648	2113.1	0.954	9.86845	5.36881	Si
SLV 16	-15367	-20065	525	0.723	1895.1	0.95	11.0639	5.36881	Si
SLV 1	-14150	-11799	-497	0.776	1771.5	0.947	11.90871	5.36881	Si
SLV 2	-12003	-9309	-506	0.887	1553.9	0.94	13.70373	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.241	SLU 81	Si
V_SLU	5.929	SLU 83	Si
PF_SLV	0	SLV 5	No
V_SLV	2.983	SLV 3	Si
PFFP_SLV	0	SLV 10	No
R_SLV	1.364	SLV 7	Si

Maschio 155

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	5.951	-2.063	5.951	L5	L6	1.94	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 51	5.97	1503.14	-13896	-0.0000502	0.0003743	0.0035	1.94	10318.3	11302.35	11302.35	7.52	No	Si
SLU 51	7.77	440.31	-12533	-0.0000371	0.0003743	0.0035	1.94	9585.85	10358.56	10358.56	23.53	No	Si
SLU 43	5.97	1467.04	-13013	-0.0000473	0.0003743	0.0035	1.94	9850.38	10726.9	10726.9	7.31	No	Si
SLU 43	7.77	348.31	-11509	-0.0000335	0.0003743	0.0035	1.94	8995.16	9580.28	9580.28	27.5	No	Si
SLU 46	5.97	1476.42	-13575	-0.000049	0.0003743	0.0035	1.94	10151.18	11127.45	11127.45	7.54	No	Si
SLU 46	7.77	414.55	-12194	-0.0000359	0.0003743	0.0035	1.94	9394.02	10099.23	10099.23	24.36	No	Si
SLU 49	5.97	1515.99	-14088	-0.0000508	0.0003743	0.0035	1.94	10416.21	11407.01	11407.01	7.52	No	Si
SLU 49	7.77	449.81	-12727	-0.0000377	0.0003743	0.0035	1.94	9693.67	10507.17	10507.17	23.36	No	Si
SLU 48	5.97	1559.03	-14229	-0.0000516	0.0003743	0.0035	1.94	10487.74	11484.53	11484.53	7.37	No	Si
SLU 48	7.77	428.32	-12769	-0.0000377	0.0003743	0.0035	1.94	9716.65	10539.09	10539.09	24.61	No	Si
SLU 1	5.97	1142.12	-10511	-0.0000373	0.0003743	0.0035	1.94	8386.94	8838.16	8838.16	7.74	No	Si
SLU 1	7.77	325.84	-9442	-0.0000275	0.0003743	0.0035	1.94	7699.03	8058.83	8058.83	24.73	No	Si
SLU 45	5.97	1519.46	-13716	-0.0000498	0.0003743	0.0035	1.94	10225.08	11204.22	11204.22	7.37	No	Si
SLU 45	7.77	393.07	-12236	-0.0000359	0.0003743	0.0035	1.94	9417.72	10130.93	10130.93	25.77	No	Si
SLU 47	5.97	1434.88	-13290	-0.0000478	0.0003743	0.0035	1.94	9999.84	10940.82	10940.82	7.62	No	Si
SLU 47	7.77	419.38	-11972	-0.0000354	0.0003743	0.0035	1.94	9266.81	9930.64	9930.64	23.68	No	Si
SLU 44	5.97	1395.31	-12777	-0.000046	0.0003743	0.0035	1.94	9721.42	10545.74	10545.74	7.56	No	Si
SLU 44	7.77	384.12	-11439	-0.0000336	0.0003743	0.0035	1.94	8953.98	9528.28	9528.28	24.81	No	Si
SLU 50	5.97	1546.18	-14038	-0.000051	0.0003743	0.0035	1.94	10390.71	11379.6	11379.6	7.36	No	Si
SLU 50	7.77	418.83	-12575	-0.0000371	0.0003743	0.0035	1.94	9609.08	10390.41	10390.41	24.81	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	5.97	-2243.89	6513	0.5621075	0.0005615	0.0035	1.552		0	0	0		No
SLV 6	7.77	2272.14	-1260	-0.0074899	0.0005615	0.0035	1.94		1397.96	1397.96	0.62		No
SLV 14	5.97	-4293.8	-6055	-0.0000799	0.0005615	0.0035	1.552		6585.34	6585.34	1.53		Si
SLV 14	7.77	4866.41	-12830	-0.000075	0.0005615	0.0035	1.94		11045.38	11045.38	2.27		Si
SLV 2	5.97	2848.06	-4988	-0.0000421	0.0005615	0.0035	1.94		4809.84	4809.84	1.69		Si
SLV 2	7.77	-1486.5	-4165	-0.0000225	0.0005615	0.0035	1.94		4917.93	4917.93	3.31		Si
SLV 4	5.97	5256.52	-15351	-0.0000851	0.0005615	0.0035	1.94		12872.15	12872.15	2.45		Si
SLV 4	7.77	-2946.19	-9123	-0.0000476	0.0005615	0.0035	1.94		9163.71	9163.71	3.11		Si
SLV 9	5.97	-3489.75	5300	0.4628769	0.0005615	0.0035	1.552		0	0	0		No
SLV 9	7.77	3486.31	-3231	-0.0031904	0.0005615	0.0035	1.94		3228.03	3228.03	0.93		No
SLV 1	5.97	4179.9	-6312	-0.0000705	0.0005615	0.0035	1.94		5970.83	5970.83	1.43		Si
SLV 1	7.77	-2513.88	-3231	-0.0000561	0.0005615	0.0035	1.552		4076.34	4076.34	1.62		Si
SLV 13	5.97	-2961.95	-7380	-0.0000437	0.0005615	0.0035	1.94		7710.49	7710.49	2.6		Si
SLV 13	7.77	3839.03	-11896	-0.0000628	0.0005615	0.0035	1.94		10379.01	10379.01	2.7		Si
SLV 3	5.97	6588.36	-16675	-0.0001023	0.0005615	0.0035	1.94		13848.94	13848.94	2.1		Si
SLV 3	7.77	-3973.56	-8189	-0.0000575	0.0005615	0.0035	1.94		8401.73	8401.73	2.11		Si
SLV 5	5.97	-1347.2	5621	0.4827946	0.0005615	0.0035	1.552		0	0	0		No
SLV 5	7.77	1580.44	-631	-0.0065223	0.0005615	0.0035	1.94		802.37	802.37	0.51		No
SLV 10	5.97	-4386.44	6192	0.5416161	0.0005615	0.0035	1.552		0	0	0		No
SLV 10	7.77	4178.01	-3860	-0.0047156	0.0005615	0.0035	1.94		3799.71	3799.71	0.91		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 38	5.97	1196.28	-14385	-12114	-727	1.94	1.94	-20814	9720	5657	40441	17428	4947	22375	No	30.76	Si
SLU 38	7.77	839.88	-14204	-11961	-729	1.94	1.94	-20551	9685	5636	40441	17428	4947	22375	No	30.69	Si
SLU 36	5.97	1209.13	-14577	-12275	-727	1.94	1.94	-21091	9757	5678	40441	17428	4947	22375	No	30.78	Si
SLU 36	7.77	849.38	-14397	-12124	-728	1.94	1.94	-20832	9722	5658	40441	17428	4947	22375	No	30.71	Si
SLU 82	5.97	1427.64	-16330	-13752	-751	1.94	1.94	-23628	10095	5875	40441	17428	4947	22375	No	29.81	Si
SLU 82	7.77	878.62	-15849	-13347	-752	1.94	1.94	-22933	10002	5821	40441	17428	4947	22375	No	29.75	Si
SLU 34	5.97	1128.02	-13779	-11603	-778	1.94	1.94	-19937	9603	5589	40441	17428	4947	22375	No	28.74	Si
SLU 34	7.77	818.95	-13643	-11489	-780	1.94	1.94	-19740	9576	5573	40441	17428	4947	22375	No	28.69	Si
SLU 42	5.97	1142.3	-14341	-12076	-870	1.94	1.94	-20750	9711	5652	40441	17428	4947	22375	No	25.71	Si
SLU 42	7.77	891.4	-14315	-12055	-872	1.94	1.94	-20713	9706	5649	40441	17428	4947	22375	No	25.66	Si
SLU 40	5.97	1102.73	-13828	-11645	-862	1.94	1.94	-20008	9612	5594	40441	17428	4947	22375	No	25.96	Si
SLU 40	7.77	856.14	-13782	-11606	-863	1.94	1.94	-19942	9603	5589	40441	17428	4947	22375	No	25.92	Si
SLU 84	5.97	1467.21	-16843	-14183	-759	1.94	1.94	-24370	10194	5933	40441	17428	4947	22375	No	29.47	Si
SLU 84	7.77	913.88	-16382	-13796	-761	1.94	1.94	-23704	10105	5881	40441	17428	4947	22375	No	29.4	Si
SLU 31	5.97	1088.45	-13266	-11172	-770	1.94	1.94	-19195	9504	5531	40441	17428	4947	22375	No	29.07	Si
SLU 31	7.77	783.69	-13110	-11040	-771	1.94	1.94	-18969	9474	5514	40441	17428	4947	22375	No	29.02	Si
SLU 39	5.97	1145.77	-13969	-11764	-772	1.94	1.94	-20212	9639	5610	40441	17428	4947	22375	No	28.97	Si
SLU 39	7.77	834.66	-13824	-11641	-774	1.94	1.94	-20002	9611	5594	40441	17428	4947	22375	No	28.92	Si
SLU 41	5.97	1185.34	-14482	-12195	-781	1.94	1.94	-20954	9738	5668	40441	17428	4947	22375	No	28.65	Si
SLU 41	7.77	869.92	-14357	-12090	-782	1.94	1.94	-20773	9714	5654	40441	17428	4947	22375	No	28.6	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	5.97	4538.45	-29243	-24626	7434	1.94	1.94	-42313	16250	9458	40441	26142	4947	31089		4.18	Si
SLV 11	7.77	-1379.3	-19758	-16639	7683	1.94	1.94	-28589	16134	9390	40441	26142	4947	31089		4.05	Si
SLV 13	5.97	-2961.95	-7380	-6215	-7651	1.94	1.706	-12214	12859	6581	40441	26142	4947	31089		4.06	Si
SLV 13	7.77	3839.03	-11896	-10017	-6906	1.94	1.94	-17212	13859	8066	40441	26142	4947	31089		4.5	Si
SLV 14	5.97	-4293.8	-6055	-5099	-10178	1.552	0.7827	0	0	0	40441	20913	3958	24871		2.44	Si
SLV 14	7.77	4866.41	-12830	-10804	-9433	1.94	1.7721	-18564	14129	7512	40441	26142	4947	31089		3.3	Si
SLV 3	5.97	6588.36	-16675	-14042	9867	1.94	1.7247	-24128	15242	7887	40441	26142	4947	31089		3.15	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 3	7.77	-3973.56	-8189	-6896	9120	1.94	1.4543	-15927	13602	5935	40441	26142	4947	31089		3.41	Si
SLV 6	5.97	-2243.89	6513	5484	-7745	1.552	1.8764	0	0	0	40441	20913	3958	24871		3.21	Si
SLV 6	7.77	2272.14	-1260	-1061	-7996	1.94	0	0	16250	3085	40441	26142	4947	31089		3.89	Si
SLV 10	5.97	-4386.44	6192	5215	-11453	1.552	0.7849	0	0	0	40441	20913	3958	24871		2.17	Si
SLV 10	7.77	4178.01	-3860	-3250	-11253	1.94	0	-141256	16250	3668	40441	26142	4947	31089		2.76	Si
SLV 9	5.97	-3489.75	5300	4463	-9752	1.552	0.9348	0	0	0	40441	20913	3958	24871		2.55	Si
SLV 9	7.77	3486.31	-3231	-2721	-9551	1.94	0	-135555	16250	3527	40441	26142	4947	31089		3.25	Si
SLV 7	5.97	6681.01	-28923	-24356	11142	1.94	1.94	-41849	16250	9458	40441	26142	4947	31089		2.79	Si
SLV 7	7.77	-3285.17	-17159	-14450	10940	1.94	1.94	-24828	15382	8952	40441	26142	4947	31089		2.84	Si
SLV 8	5.97	5784.32	-28031	-23605	9441	1.94	1.94	-40559	16250	9458	40441	26142	4947	31089		3.29	Si
SLV 8	7.77	-2593.47	-17788	-14979	9238	1.94	1.94	-25738	15564	9058	40441	26142	4947	31089		3.37	Si
SLV 5	5.97	-1347.2	5621	4733	-6043	1.552	1.94	0	0	0	40441	20913	3958	24871		4.12	Si
SLV 5	7.77	1580.44	-631	-532	-6295	1.94	0	0	16250	2944	40441	26142	4947	31089		4.94	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 10	179667	0.39	0	-504	219.46	0	0	No, e>t/2
SLV 5	179667	0.39	0	1146	219.46	0	0	No, Trazione
SLV 9	179667	0.39	0	-491	219.46	0	0	No, e>t/2
SLV 6	179667	0.39	0	1133	219.46	0	0	No, Trazione
SLV 1	179667	0.39	8569	-4987	219.46	706.08	3.22	Si
SLV 2	179667	0.39	8602	-5006	219.46	708.64	3.23	Si
SLV 13	179667	0.39	17944	-10444	219.46	1382.46	6.3	Si
SLV 14	179667	0.39	17977	-10463	219.46	1384.66	6.31	Si
SLV 3	179667	0.39	20419	-11884	219.46	1544.23	7.04	Si
SLV 4	179667	0.39	20452	-11903	219.46	1546.34	7.05	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 12	-16651	-24972	484	0.609	1986.7	0.957	9.25167	4.5984	Si
SLV 11	-16398	-25156	483	0.617	1961	0.956	9.37643	4.5984	Si
SLV 8	-15518	-22707	635	0.637	1871.5	0.954	9.70506	4.5984	Si
SLV 7	-15266	-22891	634	0.646	1845.9	0.954	9.84525	4.5984	Si
SLV 16	-13344	-17827	-81	0.759	1650.8	0.949	11.61989	5.36881	Si
SLV 15	-12969	-18100	-82	0.777	1612.7	0.948	11.9091	5.36881	Si
SLV 4	-9568	-10275	422	0.966	1268.1	0.936	14.99169	5.36881	Si
SLV 14	-9325	-9475	-415	0.986	1243.5	0.935	15.33077	5.36881	Si
SLV 3	-9193	-10548	421	0.997	1230.2	0.935	15.50664	5.36881	Si
SLV 13	-8950	-9748	-416	1.019	1205.6	0.934	15.86612	5.36881	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.312	SLU 43	Si
V_SLU	25.663	SLU 42	Si
PF_SLV	0	SLV 5	No
V_SLV	2.171	SLV 10	Si
PFFP_SLV	0	SLV 6	No
R_SLV	2.012	SLV 12	Si

Maschio 156

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	-3.359	-0.123	5.951	L5	L6	9.31	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 73	5.07	-5286.95	-99111	-0.0000592	0.0003743	0.0035	9.31	300557.26	368001.49	368001.49	69.61	No	Si
SLU 73	8.62	-113.03	-69569	-0.000039	0.0003743	0.0035	9.31	244615.59	292311.34	292311.34	2586.23	No	Si
SLU 2	5.07	-4606.75	-63701	-0.0000372	0.0003743	0.0035	9.31	230101.84	274006.58	274006.58	59.48	No	Si
SLU 2	8.62	-168.69	-44655	-0.0000245	0.0003743	0.0035	9.31	175225.82	209531.19	209531.19	1242.1	No	Si
SLU 61	5.07	-5931.62	-91267	-0.0000544	0.0003743	0.0035	9.31	288489.68	351402.62	351402.62	59.24	No	Si
SLU 61	8.62	-1072.38	-63602	-0.0000358	0.0003743	0.0035	9.31	229845.98	273688.31	273688.31	255.22	No	Si
SLU 10	5.07	-5252.61	-72396	-0.0000426	0.0003743	0.0035	9.31	251204	300992.27	300992.27	57.3	No	Si
SLU 10	8.62	-625.63	-50551	-0.0000281	0.0003743	0.0035	9.31	193482.99	230332.5	230332.5	368.16	No	Si
SLU 55	5.07	-5443.04	-89299	-0.000053	0.0003743	0.0035	9.31	285146.3	346889.74	346889.74	63.73	No	Si
SLU 55	8.62	27.67	-62762	-0.0000349	0.0003743	0.0035	9.31	227674.45	248293.73	248293.73	8975.01	No	Si
SLU 13	5.07	-4254.88	-74155	-0.0000433	0.0003743	0.0035	9.31	255173.18	306097.36	306097.36	71.94	No	Si
SLU 13	8.62	322.27	-52267	-0.0000289	0.0003743	0.0035	9.31	198581.21	210047.46	210047.46	651.77	No	Si
SLU 44	5.07	-5794.92	-78845	-0.0000467	0.0003743	0.0035	9.31	265258.22	319369.23	319369.23	55.11	No	Si
SLU 44	8.62	-463.3	-55151	-0.0000306	0.0003743	0.0035	9.31	206934.64	246201.27	246201.27	531.41	No	Si
SLU 19	5.07	-4743.46	-76123	-0.0000447	0.0003743	0.0035	9.31	259492.19	311685.73	311685.73	65.71	No	Si
SLU 19	8.62	-777.78	-53106	-0.0000296	0.0003743	0.0035	9.31	201041.25	239203.94	239203.94	307.55	No	Si
SLU 52	5.07	-6440.77	-87540	-0.0000523	0.0003743	0.0035	9.31	282049.49	342764.29	342764.29	53.22	No	Si
SLU 52	8.62	-920.23	-61047	-0.0000343	0.0003743	0.0035	9.31	223165.73	265473.98	265473.98	288.49	No	Si
SLU 47	5.07	-4797.18	-80605	-0.0000474	0.0003743	0.0035	9.31	268855.88	324334.21	324334.21	67.61	No	Si
SLU 47	8.62	484.6	-56866	-0.0000317	0.0003743	0.0035	9.31	211774.53	226887.8	226887.8	468.2	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	5.07	-136426.35	-53002	-0.0000888	0.0005615	0.0035	7.448		248770.21	248770.21	1.82		Si
SLV 6	8.62	-32196.56	-38427	-0.000032	0.0005615	0.0035	9.31		191719.71	191719.71	5.95		Si
SLV 3	5.07	48282.03	-35362	-0.0000359	0.0005615	0.0035	9.31		158144.52	158144.52	3.28		Si
SLV 3	8.62	14216.04	-35536	-0.0000241	0.0005615	0.0035	9.31		158854.28	158854.28	11.17		Si
SLV 8	5.07	133966.05	-64373	-0.0000872	0.0005615	0.0035	9.31		263464.18	263464.18	1.97		Si
SLV 8	8.62	38943.91	-50200	-0.000041	0.0005615	0.0035	9.31		214388.57	214388.57	5.51		Si
SLV 12	5.07	128943.38	-85909	-0.0000955	0.0005615	0.0035	9.31		340536.72	340536.72	2.64		Si
SLV 12	8.62	35434.6	-59251	-0.000045	0.0005615	0.0035	9.31		245578.88	245578.88	6.93		Si
SLV 5	5.07	-133936.89	-53079	-0.0000867	0.0005615	0.0035	9.31		249054.97	249054.97	1.86		Si
SLV 5	8.62	-35353.45	-38439	-0.0000331	0.0005615	0.0035	9.31		191772.32	191772.32	5.42		Si
SLV 11	5.07	131432.84	-85986	-0.0000966	0.0005615	0.0035	9.31		340816.55	340816.55	2.59		Si
SLV 11	8.62	32277.72	-59264	-0.0000438	0.0005615	0.0035	9.31		245623.65	245623.65	7.61		Si
SLV 9	5.07	-138959.56	-74615	-0.0000934	0.0005615	0.0035	9.31		327009.77	327009.77	2.35		Si
SLV 9	8.62	-38862.75	-47491	-0.0000395	0.0005615	0.0035	9.31		227393.78	227393.78	5.85		Si
SLV 10	5.07	-141449.03	-74539	-0.0000946	0.0005615	0.0035	9.31		326746.77	326746.77	2.31		Si
SLV 10	8.62	-35705.87	-47478	-0.0000383	0.0005615	0.0035	9.31		227343.6	227343.6	6.37		Si
SLV 7	5.07	136455.52	-64449	-0.0000886	0.0005615	0.0035	9.31		263733.27	263733.27	1.93		Si
SLV 7	8.62	35787.03	-50213	-0.0000399	0.0005615	0.0035	9.31		214432.6	214432.6	5.99		Si
SLV 4	5.07	44584.44	-35248	-0.0000345	0.0005615	0.0035	9.31		157678.03	157678.03	3.54		Si
SLV 4	8.62	18904.94	-35516	-0.0000257	0.0005615	0.0035	9.31		158775.86	158775.86	8.4		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 65	5.07	-4641.09	-90416	-76140	-1314	9.31	9.31	-27261	10579	43900	40441	83635	23741	84341	No	64.2	Si
SLU 65	8.62	343.91	-63673	-53620	-1203	9.31	9.31	-19198	9504	34892	40441	83635	23741	75333	No	62.63	Si
SLU 68	5.07	-3643.36	-92176	-77622	-1232	9.31	9.31	-27791	10650	44493	40441	83635	23741	84934	No	68.92	Si
SLU 68	8.62	1291.8	-65389	-55064	-1121	9.31	9.31	-19715	9573	35470	40441	83635	23741	75911	No	67.69	Si
SLU 2	5.07	-4606.75	-63701	-53643	-1481	9.31	9.31	-19206	9505	34902	40441	83635	23741	75343	No	50.89	Si
SLU 2	8.62	-168.69	-44655	-37604	-1369	9.31	9.31	-13464	8740	28487	40441	83635	23741	68927	No	50.34	Si
SLU 13	5.07	-4254.88	-74155	-62447	-1267	9.31	9.31	-22358	9926	38423	40441	83635	23741	78864	No	62.22	Si
SLU 13	8.62	322.27	-52267	-44014	-1156	9.31	9.31	-15759	9046	31050	40441	83635	23741	71491	No	61.83	Si
SLU 5	5.07	-3609.02	-65461	-55125	-1399	9.31	9.31	-19737	9576	35494	40441	83635	23741	75935	No	54.26	Si
SLU 5	8.62	779.2	-46371	-39049	-1288	9.31	9.31	-13981	8809	29064	40441	83635	23741	69505	No	53.97	Si
SLU 44	5.07	-5794.92	-78845	-66396	-1692	9.31	9.31	-23772	10114	40003	40441	83635	23741	80444	No	47.55	Si
SLU 44	8.62	-463.3	-55151	-46443	-1581	9.31	9.31	-16628	9162	32022	40441	83635	23741	72463	No	45.83	Si
SLU 52	5.07	-6440.77	-87540	-73718	-1560	9.31	9.31	-26394	10464	42931	40441	83635	23741	83372	No	53.45	Si
SLU 52	8.62	-920.23	-61047	-51408	-1450	9.31	9.31	-18406	9399	34008	40441	83635	23741	74449	No	51.36	Si
SLU 10	5.07	-5252.61	-72396	-60965	-1349	9.31	9.31	-21828	9855	37830	40441	83635	23741	78271	No	58.03	Si
SLU 10	8.62	-625.63	-50551	-42569	-1238	9.31	9.31	-15241	8977	30473	40441	83635	23741	70913	No	57.29	Si
SLU 47	5.07	-4797.18	-80605	-67878	-1610	9.31	9.31	-24303	10185	40595	40441	83635	23741	81036	No	50.32	Si
SLU 47	8.62	484.6	-56866	-47887	-1500	9.31	9.31	-17145	9231	32600	40441	83635	23741	73041	No	48.71	Si
SLU 55	5.07	-5443.04	-89299	-75199	-1479	9.31	9.31	-26924	10534	43524	40441	83635	23741	83965	No	56.79	Si
SLU 55	8.62	27.67	-62762	-52852	-1368	9.31	9.31	-18923	9468	34586	40441	83635	23741	75026	No	54.84	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 6	5.07	-55824.48	-62604	-52719	-31040	9.31	9.31	-18875	14192	41255	40441	125452	23741	81696		2.63	Si
SLD 6	8.62	-12604.87	-44540	-37508	-29253	9.31	9.31	-13429	13103	36595	40441	125452	23741	77036		2.63	Si
SLV 10	5.07	-141449.03	-74539	-62769	-75890	9.31	8.272	-25566	15530	45275	40441	125452	23741	85716		1.13	Si
SLV 10	8.62	-35705.87	-47478	-39981	-71627	9.31	9.31	-14315	13280	37090	40441	125452	23741	77531		1.08	Si
SLV 11	5.07	131432.84	-85986	-72409	77206	9.31	9.31	-25925	15602	49131	40441	125452	23741	89572		1.16	Si
SLV 11	8.62	32277.72	-59264	-49906	72718	9.31	9.31	-17868	13990	40130	40441	125452	23741	80571		1.11	Si
SLV 5	5.07	-133936.89	-53079	-44698	-68996	9.31	6.3949	-23571	15132	38047	40441	125452	23741	78488		1.14	Si
SLV 5	8.62	-35353.45	-38439	-32370	-64512	9.31	9.31	-11590	12735	35568	40441	125452	23741	76009		1.18	Si
SLV 8	5.07	133966.05	-64373	-54208	67176	9.31	7.7217	-19409	14298	41851	40441	125452	23741	82292		1.23	Si
SLV 8	8.62	38943.91	-50200	-42273	62909	9.31	9.31	-15136	13444	37548	40441	125452	23741	77989		1.24	Si
SLV 6	5.07	-136426.35	-53002	-44633	-77458	7.448	6.2431	0	0	0	40441	100362	18992	40441		0.52	No
SLV 6	8.62	-32196.56	-38427	-32359	-72974	9.31	9.31	-11586	12734	35566	40441	125452	23741	76007		1.04	Si
SLV 9	5.07	-138959.56	-74615	-62834	-67428	9.31	8.378	-25279	15472	45301	40441	125452	23741	85742		1.27	Si
SLV 9	8.62	-38862.75	-47491	-39992	-63165	9.31	9.31	-14319	13280	37092	40441	125452	23741	77533		1.23	Si
SLV 7	5.07	136455.52	-64449	-54273	75638	9.31	7.6132	-19432	14303	41876	40441	125452	23741	82317		1.09	Si
SLV 7	8.62	35787.03	-50213	-42284	71371	9.31	9.31	-15139	13445	37551	40441	125452	23741	77992		1.09	Si
SLV 2	5.07	-36533.28	-31837	-26810	-30718	9.31	9.31	-9599	12336	34456	40441	125452	23741	74897		2.44	Si
SLV 2	8.62	-2437.2	-31985	-26934	-29040	9.31	9.31	-9644	12345	34481	40441	125452	23741	74922		2.58	Si
SLV 12	5.07	128943.38	-85909	-72344	68744	9.31	9.31	-25902	15597	49105	40441	125452	23741	89546		1.3	Si
SLV 12	8.62	35434.6	-59251	-49895	64256	9.31	9.31	-17864	13990	40125	40441	125452	23741	80566		1.25	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 6.845 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 2	179667	0.39	11868	-33148	1053.17	4585.79	4.35	Si
SLV 1	179667	0.39	11882	-33187	1053.17	4590.69	4.36	Si
SLV 4	179667	0.39	13201	-36870	1053.17	5052.4	4.8	Si
SLV 3	179667	0.39	13215	-36908	1053.17	5057.2	4.8	Si
SLV 6	179667	0.39	16232	-45336	1053.17	6077.55	5.77	Si
SLV 5	179667	0.39	16241	-45362	1053.17	6080.63	5.77	Si
SLV 8	179667	0.39	20673	-57741	1053.17	7488.69	7.11	Si
SLV 7	179667	0.39	20683	-57767	1053.17	7491.54	7.11	Si
SLV 10	179667	0.39	21303	-59498	1053.17	7679.83	7.29	Si
SLV 9	179667	0.39	21312	-59524	1053.17	7682.65	7.29	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 6.845 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-65706	-107150	3415	0.702	8091.2	0.95	10.7436	5.36881	Si
SLV 16	-65687	-107037	3415	0.702	8089.3	0.95	10.74628	5.36881	Si
SLV 13	-62174	-103739	3409	0.735	7732.7	0.948	11.27027	5.36881	Si
SLV 14	-62155	-103625	3409	0.735	7730.8	0.948	11.27324	5.36881	Si
SLV 11	-59264	-85986	1047	0.799	7437.5	0.946	12.27799	4.5984	Si
SLV 12	-59251	-85909	1047	0.799	7436.2	0.946	12.28028	4.5984	Si
SLV 7	-50213	-64449	-988	0.916	6520.1	0.94	14.16878	4.5984	Si
SLV 8	-50200	-64373	-988	0.916	6518.8	0.94	14.1719	4.5984	Si
SLV 9	-47491	-74615	1029	0.958	6244.6	0.938	14.84469	4.5984	Si
SLV 10	-47478	-74539	1029	0.958	6243.3	0.938	14.84808	4.5984	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	53.218	SLU 52	Si
V_SLU	45.832	SLU 44	Si
PF_SLV	1.823	SLV 6	Si
V_SLV	0.522	SLV 6	No
PFFP_SLV	4.354	SLV 2	Si
R_SLV	2.001	SLV 15	Si

Maschio 157

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-24.678	-3.359	-24.678	5.951	L6	L7	9.311	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Esterna	100	100	100	100	1	CNR DT215	0.8			0.008				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 60	8.62	-5099.08	-58264	-0.0000342	0.0003743	0.0035	9.3107	215668.11	253745.34	253745.34	49.76	No	Si
SLU 60	12.17	-1191.47	-30694	-0.000017	0.0003743	0.0035	9.3107	127468.65	154141.92	154141.92	129.37	No	Si
SLU 47	8.62	-4674.93	-52493	-0.0000306	0.0003743	0.0035	9.3107	199263.91	234406.34	234406.34	50.14	No	Si
SLU 47	12.17	-232.29	-28591	-0.0000155	0.0003743	0.0035	9.3107	119721.03	145887.11	145887.11	628.04	No	Si
SLU 44	8.62	-4852.95	-51033	-0.0000299	0.0003743	0.0035	9.3107	194942.71	229372.04	229372.04	47.26	No	Si
SLU 44	12.17	-464.88	-27296	-0.0000149	0.0003743	0.0035	9.3107	114876.91	140852.75	140852.75	302.99	No	Si
SLU 43	8.62	-4574.26	-51092	-0.0000298	0.0003743	0.0035	9.3107	195117.51	229575.49	229575.49	50.19	No	Si
SLU 43	12.17	-819.96	-27326	-0.000015	0.0003743	0.0035	9.3107	114988.95	140967.9	140967.9	171.92	No	Si
SLU 52	8.62	-5220.32	-56054	-0.0000329	0.0003743	0.0035	9.3107	209514.62	246345.35	246345.35	47.19	No	Si
SLU 52	12.17	-724.94	-29654	-0.0000163	0.0003743	0.0035	9.3107	123653.99	150046.34	150046.34	206.98	No	Si
SLU 55	8.62	-5042.3	-57513	-0.0000337	0.0003743	0.0035	9.3107	213595.89	251238.29	251238.29	49.83	No	Si
SLU 55	12.17	-492.35	-30949	-0.0000169	0.0003743	0.0035	9.3107	128398.15	155152.21	155152.21	315.12	No	Si
SLU 63	8.62	-5088.27	-59689	-0.000035	0.0003743	0.0035	9.3107	219548.82	258478.92	258478.92	50.8	No	Si
SLU 63	12.17	-745.84	-31971	-0.0000176	0.0003743	0.0035	9.3107	132104.22	159218.57	159218.57	213.48	No	Si
SLU 62	8.62	-4921.06	-59724	-0.0000349	0.0003743	0.0035	9.3107	219643.75	258595.36	258595.36	52.55	No	Si
SLU 62	12.17	-958.89	-31989	-0.0000177	0.0003743	0.0035	9.3107	132168.71	159289.87	159289.87	166.12	No	Si
SLU 61	8.62	-5266.29	-58229	-0.0000342	0.0003743	0.0035	9.3107	215571.5	253628.14	253628.14	48.16	No	Si
SLU 61	12.17	-978.43	-30676	-0.0000169	0.0003743	0.0035	9.3107	127403.4	154071.35	154071.35	157.47	No	Si
SLU 54	8.62	-4856.16	-58431	-0.0000342	0.0003743	0.0035	9.3107	216124.93	254299.92	254299.92	52.37	No	Si
SLU 54	12.17	-641.48	-31691	-0.0000174	0.0003743	0.0035	9.3107	131091.79	158101.74	158101.74	246.47	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	8.62	42176.03	-52893	-0.0000437	0.0005615	0.0035	9.3107		225196.75	225196.75	5.34		Si
SLV 7	12.17	-2835.2	-25522	-0.0000146	0.0005615	0.0035	9.3107		135564.82	135564.82	47.81		Si
SLV 11	8.62	47140.3	-44833	-0.0000409	0.0005615	0.0035	9.3107		195782.3	195782.3	4.15		Si
SLV 11	12.17	-2586.28	-25393	-0.0000145	0.0005615	0.0035	9.3107		135025	135025	52.21		Si
SLV 9	8.62	-48702.48	-36790	-0.0000369	0.0005615	0.0035	9.3107		182137.99	182137.99	3.74		Si
SLV 9	12.17	4406.4	-22455	-0.0000135	0.0005615	0.0035	9.3107		103807.82	103807.82	23.56		Si
SLV 12	8.62	46969.86	-44856	-0.0000408	0.0005615	0.0035	9.3107		195871.62	195871.62	4.17		Si
SLV 12	12.17	-5376.42	-25471	-0.0000155	0.0005615	0.0035	9.3107		135352.27	135352.27	25.18		Si
SLV 8	8.62	42005.59	-52916	-0.0000437	0.0005615	0.0035	9.3107		225273.79	225273.79	5.36		Si
SLV 8	12.17	-5625.34	-25601	-0.0000156	0.0005615	0.0035	9.3107		135892.19	135892.19	24.16		Si
SLV 5	8.62	-53666.75	-44849	-0.0000432	0.0005615	0.0035	9.3107		214538.2	214538.2	4		Si
SLV 5	12.17	4157.48	-22585	-0.0000135	0.0005615	0.0035	9.3107		104368.04	104368.04	25.1		Si
SLV 10	8.62	-48872.92	-36813	-0.0000369	0.0005615	0.0035	9.3107		182229.4	182229.4	3.73		Si
SLV 10	12.17	1616.26	-22534	-0.0000126	0.0005615	0.0035	9.3107		104147.46	104147.46	64.44		Si
SLV 16	8.62	19175.18	-32644	-0.0000242	0.0005615	0.0035	9.3107		146619.06	146619.06	7.65		Si
SLV 16	12.17	-3315.6	-24311	-0.0000141	0.0005615	0.0035	9.3107		130531.57	130531.57	39.37		Si
SLV 15	8.62	19428.34	-32610	-0.0000243	0.0005615	0.0035	9.3107		146479.11	146479.11	7.54		Si
SLV 15	12.17	828.58	-24194	-0.0000132	0.0005615	0.0035	9.3107		111219.48	111219.48	134.23		Si
SLV 6	8.62	-53837.2	-44872	-0.0000433	0.0005615	0.0035	9.3107		214628.07	214628.07	3.99		Si
SLV 6	12.17	1367.34	-22663	-0.0000126	0.0005615	0.0035	9.3107		104707.66	104707.66	76.58		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 44	8.62	-4852.95	-51033	-42975	-1947	9.3107	9.3107	-15386	8996	30636	35948	83641	23742	66583	No	34.19	Si
SLU 44	12.17	-464.88	-27296	-22986	-1838	9.3107	9.3107	-8229	8042	22641	35948	83641	23742	58588	No	31.87	Si
SLU 47	8.62	-4674.93	-52493	-44204	-1888	9.3107	9.3107	-15826	9055	31127	35948	83641	23742	67075	No	35.53	Si
SLU 47	12.17	-232.29	-28591	-24077	-1779	9.3107	9.3107	-8620	8094	23077	35948	83641	23742	59024	No	33.18	Si
SLU 46	8.62	-4488.79	-53410	-44977	-1613	9.3107	9.3107	-16102	9091	31436	35948	83641	23742	67384	No	41.78	Si
SLU 46	12.17	-381.41	-29334	-24702	-1547	9.3107	9.3107	-8844	8124	23327	35948	83641	23742	59274	No	38.32	Si
SLU 65	8.62	-4352.12	-58526	-49285	-1670	9.3107	9.3107	-17645	9297	33160	35948	83641	23742	69107	No	41.38	Si
SLU 65	12.17	-290.94	-31545	-26564	-1561	9.3107	9.3107	-9510	8212	24072	35948	83641	23742	60019	No	38.45	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 52	8.62	-5220.32	-56054	-47203	-1923	9.3107	9.3107	-16899	9198	32327	35948	83641	23742	68275	No	35.5	Si
SLU 52	12.17	-724.94	-29654	-24972	-1814	9.3107	9.3107	-8940	8136	23435	35948	83641	23742	59382	No	32.73	Si
SLU 61	8.62	-5266.29	-58229	-49035	-1686	9.3107	9.3107	-17555	9285	33060	35948	83641	23742	69007	No	40.94	Si
SLU 61	12.17	-978.43	-30676	-25833	-1620	9.3107	9.3107	-9248	8178	23779	35948	83641	23742	59727	No	36.87	Si
SLU 54	8.62	-4856.16	-58431	-49205	-1589	9.3107	9.3107	-17616	9293	33128	35948	83641	23742	69075	No	43.48	Si
SLU 54	12.17	-641.48	-31691	-26687	-1523	9.3107	9.3107	-9554	8218	24121	35948	83641	23742	60068	No	39.45	Si
SLU 63	8.62	-5088.27	-59689	-50264	-1626	9.3107	9.3107	-17995	9344	33551	35948	83641	23742	69499	No	42.74	Si
SLU 63	12.17	-745.84	-31971	-26923	-1560	9.3107	9.3107	-9639	8230	24215	35948	83641	23742	60163	No	38.56	Si
SLU 51	8.62	-4385.44	-53976	-45453	-1601	9.3107	9.3107	-16273	9114	31627	35948	83641	23742	67574	No	42.21	Si
SLU 51	12.17	-141.73	-29898	-25178	-1535	9.3107	9.3107	-9014	8146	23517	35948	83641	23742	59465	No	38.74	Si
SLU 55	8.62	-5042.3	-57513	-48432	-1864	9.3107	9.3107	-17339	9256	32819	35948	83641	23742	68766	No	36.9	Si
SLU 55	12.17	-492.35	-30949	-26062	-1754	9.3107	9.3107	-9331	8189	23871	35948	83641	23742	59818	No	34.1	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 12	8.62	46969.86	-44856	-37774	47464	9.3107	9.3107	-13523	13121	36651	35948	125462	23742	72598		1.53	Si
SLV 12	12.17	-5376.42	-25471	-21450	41262	9.3107	9.3107	-7679	11953	33386	35948	125462	23742	69333		1.68	Si
SLD 5	8.62	-23544.75	-44981	-37879	-20368	9.3107	9.3107	-13561	13129	36672	35948	125462	23742	72619		3.57	Si
SLD 5	12.17	1303.32	-23459	-19755	-17884	9.3107	9.3107	-7073	11831	33047	35948	125462	23742	68994		3.86	Si
SLV 7	8.62	42176.03	-52893	-44541	39969	9.3107	9.3107	-15946	13606	38004	35948	125462	23742	73952		1.85	Si
SLV 7	12.17	-2835.2	-25522	-21493	33645	9.3107	9.3107	-7695	11956	33394	35948	125462	23742	69342		2.06	Si
SLV 10	8.62	-48872.92	-36813	-31000	-41773	9.3107	9.3107	-11098	12636	35296	35948	125462	23742	71243		1.71	Si
SLV 10	12.17	1616.26	-22534	-18976	-35447	9.3107	9.3107	-6794	11775	32891	35948	125462	23742	68839		1.94	Si
SLV 9	8.62	-48702.48	-36790	-30981	-47418	9.3107	9.3107	-11091	12635	35292	35948	125462	23742	71240		1.5	Si
SLV 9	12.17	4406.4	-22455	-18909	-41091	9.3107	9.3107	-6770	11771	32878	35948	125462	23742	68825		1.67	Si
SLV 8	8.62	42005.59	-52916	-44560	45614	9.3107	9.3107	-15953	13607	38008	35948	125462	23742	73956		1.62	Si
SLV 8	12.17	-5625.34	-25601	-21559	39288	9.3107	9.3107	-7718	11960	33408	35948	125462	23742	69355		1.77	Si
SLV 1	8.62	-25872.07	-57061	-48052	-21563	9.3107	9.3107	-17203	13857	39390	35948	125462	23742	75337		3.49	Si
SLV 1	12.17	2096.66	-23745	-19996	-19887	9.3107	9.3107	-7159	11848	33095	35948	125462	23742	69043		3.47	Si
SLV 5	8.62	-53666.75	-44849	-37768	-49268	9.3107	9.3107	-13521	13121	36649	35948	125462	23742	72597		1.47	Si
SLV 5	12.17	4157.48	-22585	-19019	-43064	9.3107	9.3107	-6809	11778	32900	35948	125462	23742	68847		1.6	Si
SLV 11	8.62	47140.3	-44833	-37754	41819	9.3107	9.3107	-13516	13120	36647	35948	125462	23742	72594		1.74	Si
SLV 11	12.17	-2586.28	-25393	-21383	35618	9.3107	9.3107	-7655	11948	33373	35948	125462	23742	69320		1.95	Si
SLV 6	8.62	-53837.2	-44872	-37787	-43623	9.3107	9.3107	-13528	13122	36653	35948	125462	23742	72601		1.66	Si
SLV 6	12.17	1367.34	-22663	-19085	-37420	9.3107	9.3107	-6833	11783	32913	35948	125462	23742	68860		1.84	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 13	179667	0.46	9940	-27765	1253.08	3893.64	3.11	Si
SLV 14	179667	0.46	9954	-27805	1253.08	3898.86	3.11	Si
SLV 15	179667	0.46	10449	-29185	1253.08	4078.28	3.25	Si
SLV 16	179667	0.46	10463	-29225	1253.08	4083.45	3.26	Si
SLV 9	179667	0.46	10745	-30012	1253.08	4185.11	3.34	Si
SLV 10	179667	0.46	10754	-30039	1253.08	4188.59	3.34	Si
SLV 5	179667	0.46	11941	-33354	1253.08	4611.87	3.68	Si
SLV 6	179667	0.46	11951	-33381	1253.08	4615.28	3.68	Si
SLV 11	179667	0.46	12440	-34747	1253.08	4787.55	3.82	Si
SLV 12	179667	0.46	12450	-34774	1253.08	4790.93	3.82	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 4	-24743	-59509	-4843	1.463	3956.3	0.911	23.33279	6.14217	Si
SLV 3	-24627	-59474	-4843	1.468	3944.7	0.911	23.4164	6.14217	Si
SLV 16	-24311	-32644	4805	1.483	3913.3	0.911	23.66326	6.14217	Si
SLV 15	-24194	-32610	4805	1.488	3901.7	0.91	23.74903	6.14217	Si
SLV 2	-23862	-57096	-4822	1.502	3868.7	0.91	23.9879	6.14217	Si
SLV 1	-23745	-57061	-4822	1.507	3857	0.91	24.0762	6.14217	Si
SLV 14	-23430	-30231	4826	1.521	3825.7	0.909	24.31613	6.14217	Si
SLV 13	-23313	-30197	4826	1.527	3814.1	0.909	24.40671	6.14217	Si
SLV 8	-25601	-52916	-1490	1.525	4041.8	0.913	24.28389	5.26078	Si
SLV 7	-25522	-52893	-1490	1.528	4033.9	0.912	24.34103	5.26078	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	47.19	SLU 52	Si
V_SLU	31.869	SLU 44	Si
PF_SLV	3.729	SLV 10	Si
V_SLV	1.474	SLV 5	Si
PFFP_SLV	3.107	SLV 13	Si
R_SLV	3.799	SLV 4	Si

Maschio 158

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-22.713	5.951	-24.678	5.951	L6	L7	1.965	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 45	9.52	-938.31	-10163	-0.0000341	0.0003743	0.0035	1.965	8294.45	9786.59	9786.59	10.43	No	Si
SLU 45	11.32	-396.99	-8093	-0.0000241	0.0003743	0.0035	1.965	6878.88	8202.28	8202.28	20.66	No	Si
SLU 44	9.52	-863.4	-9505	-0.0000316	0.0003743	0.0035	1.965	7859.71	9299.63	9299.63	10.77	No	Si
SLU 44	11.32	-380.9	-7469	-0.0000223	0.0003743	0.0035	1.965	6425.01	7701.21	7701.21	20.22	No	Si
SLU 48	9.52	-946.87	-10556	-0.0000352	0.0003743	0.0035	1.965	8547.07	10076.79	10076.79	10.64	No	Si
SLU 48	11.32	-403.66	-8525	-0.0000253	0.0003743	0.0035	1.965	7186.42	8537.16	8537.16	21.15	No	Si
SLU 46	9.52	-908.89	-10132	-0.0000337	0.0003743	0.0035	1.965	8274.3	9763.81	9763.81	10.74	No	Si
SLU 46	11.32	-410.62	-8113	-0.0000242	0.0003743	0.0035	1.965	6893.59	8218.34	8218.34	20.01	No	Si
SLU 40	9.52	-552.47	-9512	-0.0000291	0.0003743	0.0035	1.965	7864.06	9304.51	9304.51	16.84	No	Si
SLU 40	11.32	-824.85	-8842	-0.0000295	0.0003743	0.0035	1.965	7407.18	8782.5	8782.5	10.65	No	Si
SLU 42	9.52	-561.02	-9904	-0.0000303	0.0003743	0.0035	1.965	8125.06	9596.67	9596.67	17.11	No	Si
SLU 42	11.32	-831.53	-9275	-0.0000308	0.0003743	0.0035	1.965	7704.1	9121.62	9121.62	10.97	No	Si
SLU 39	9.52	-581.89	-9542	-0.0000295	0.0003743	0.0035	1.965	7884.85	9327.84	9327.84	16.03	No	Si
SLU 39	11.32	-811.22	-8821	-0.0000294	0.0003743	0.0035	1.965	7392.96	8766.53	8766.53	10.81	No	Si
SLU 50	9.52	-929.54	-10342	-0.0000345	0.0003743	0.0035	1.965	8410.13	9918.4	9918.4	10.67	No	Si
SLU 50	11.32	-371.54	-8300	-0.0000244	0.0003743	0.0035	1.965	7027.34	8364.09	8364.09	22.51	No	Si
SLU 43	9.52	-912.43	-9557	-0.0000322	0.0003743	0.0035	1.965	7894.34	9338.49	9338.49	10.23	No	Si
SLU 43	11.32	-358.18	-7435	-0.000022	0.0003743	0.0035	1.965	6399.76	7673.17	7673.17	21.42	No	Si
SLU 49	9.52	-917.45	-10525	-0.0000349	0.0003743	0.0035	1.965	8527.32	10053.78	10053.78	10.96	No	Si
SLU 49	11.32	-417.3	-8546	-0.0000254	0.0003743	0.0035	1.965	7200.84	8553.01	8553.01	20.5	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 9	9.52	2216.56	-1961	-0.0015895	0.0005615	0.0035	1.572		2086.48	2086.48	0.94		No
SLV 9	11.32	-1548.47	-6353	-0.0000282	0.0005615	0.0035	1.965		6932.95	6932.95	4.48		Si
SLV 10	9.52	1464.62	-2283	-0.0000222	0.0005615	0.0035	1.965		2391.48	2391.48	1.63		Si
SLV 10	11.32	-889.82	-5525	-0.0000209	0.0005615	0.0035	1.965		6192.93	6192.93	6.96		Si
SLV 12	9.52	-4683.66	-14727	-0.0000766	0.0005615	0.0035	1.965		13712.68	13712.68	2.93		Si
SLV 12	11.32	2140.94	-5795	-0.0000316	0.0005615	0.0035	1.965		5599.27	5599.27	2.62		Si
SLV 6	9.52	2586.96	-1870	-0.0052841	0.0005615	0.0035	1.572		2000.51	2000.51	0.77		No
SLV 6	11.32	-2377.61	-6938	-0.0000363	0.0005615	0.0035	1.965		7432.17	7432.17	3.13		Si
SLV 1	9.52	2678.86	-5344	-0.0000372	0.0005615	0.0035	1.965		5197.73	5197.73	1.94		Si
SLV 1	11.32	-3871.08	-9710	-0.0000565	0.0005615	0.0035	1.965		9772.52	9772.52	2.52		Si
SLV 15	9.52	-2906.76	-10453	-0.00005	0.0005615	0.0035	1.965		10391.67	10391.67	3.57		Si
SLV 15	11.32	1997.46	-5081	-0.0000287	0.0005615	0.0035	1.965		4962.81	4962.81	2.48		Si
SLV 16	9.52	-4023.61	-10932	-0.0000607	0.0005615	0.0035	1.965		10772.97	10772.97	2.68		Si
SLV 16	11.32	2975.76	-3851	-0.0000628	0.0005615	0.0035	1.965		3846.83	3846.83	1.29		Si
SLV 14	9.52	-2179.13	-7198	-0.0000354	0.0005615	0.0035	1.965		7655.58	7655.58	3.51		Si
SLV 14	11.32	2066.53	-3770	-0.0000289	0.0005615	0.0035	1.965		3773	3773	1.83		Si
SLV 5	9.52	3338.9	-1548	-0.0129148	0.0005615	0.0035	1.965		1695.36	1695.36	0.51		No
SLV 5	11.32	-3036.27	-7766	-0.0000442	0.0005615	0.0035	1.965		8145.43	8145.43	2.68		Si
SLV 2	9.52	1562.01	-5822	-0.0000269	0.0005615	0.0035	1.965		5623.87	5623.87	3.6		Si
SLV 2	11.32	-2892.78	-8480	-0.0000446	0.0005615	0.0035	1.965		8760.06	8760.06	3.03		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 34	9.52	-570.38	-9671	-8144	869	1.965	1.965	-13815	8787	5180	40441	17652	5011	22663	No	26.09	Si
SLU 34	11.32	-762.96	-8921	-7513	869	1.965	1.965	-12744	8644	5095	40441	17652	5011	22663	No	26.08	Si
SLU 84	9.52	-776.47	-11800	-9937	895	1.965	1.965	-16856	9192	5419	40441	17652	5011	22663	No	25.31	Si
SLU 84	11.32	-856.41	-10598	-8925	896	1.965	1.965	-15140	8963	5284	40441	17652	5011	22663	No	25.3	Si
SLU 41	9.52	-590.44	-9935	-8366	926	1.965	1.965	-14192	8837	5209	40441	17652	5011	22663	No	24.48	Si
SLU 41	11.32	-817.9	-9254	-7793	926	1.965	1.965	-13219	8707	5133	40441	17652	5011	22663	No	24.48	Si
SLU 39	9.52	-581.89	-9542	-8036	905	1.965	1.965	-13632	8762	5165	40441	17652	5011	22663	No	25.04	Si
SLU 39	11.32	-811.22	-8821	-7428	905	1.965	1.965	-12601	8625	5084	40441	17652	5011	22663	No	25.04	Si
SLU 82	9.52	-767.92	-11407	-9606	875	1.965	1.965	-16295	9117	5375	40441	17652	5011	22663	No	25.91	Si
SLU 82	11.32	-849.74	-10165	-8560	875	1.965	1.965	-14521	8881	5235	40441	17652	5011	22663	No	25.91	Si
SLU 38	9.52	-598.55	-10085	-8492	855	1.965	1.965	-14406	8865	5226	40441	17652	5011	22663	No	26.51	Si
SLU 38	11.32	-760.55	-9340	-7866	855	1.965	1.965	-13343	8723	5142	40441	17652	5011	22663	No	26.5	Si
SLU 36	9.52	-615.87	-10298	-8672	869	1.965	1.965	-14711	8906	5250	40441	17652	5011	22663	No	26.07	Si
SLU 36	11.32	-792.68	-9565	-8055	869	1.965	1.965	-13664	8766	5168	40441	17652	5011	22663	No	26.06	Si
SLU 33	9.52	-607.32	-9906	-8342	848	1.965	1.965	-14150	8831	5206	40441	17652	5011	22663	No	26.71	Si
SLU 33	11.32	-786	-9132	-7690	849	1.965	1.965	-13046	8684	5119	40441	17652	5011	22663	No	26.71	Si
SLU 42	9.52	-561.02	-9904	-8340	978	1.965	1.965	-14148	8831	5206	40441	17652	5011	22663	No	23.18	Si
SLU 42	11.32	-831.53	-9275	-7810	978	1.965	1.965	-13249	8711	5135	40441	17652	5011	22663	No	23.17	Si
SLU 40	9.52	-552.47	-9512	-8010	957	1.965	1.965	-13587	8756	5162	40441	17652	5011	22663	No	23.68	Si
SLU 40	11.32	-824.85	-8842	-7446	957	1.965	1.965	-12630	8628	5086	40441	17652	5011	22663	No	23.68	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	9.52	2678.86	-5344	-4500	7568	1.965	1.4437	-7634	11943	5173	40441	26478	5011	31489		4.16	Si
SLV 1	11.32	-3871.08	-9710	-8177	6603	1.965	1.7515	-15655	13548	7119	40441	26478	5011	31489		4.77	Si
SLV 8	9.52	-3561.32	-14314	-12054	-4710	1.965	1.965	-20448	14506	8551	40441	26478	5011	31489		6.69	Si
SLV 8	11.32	653.15	-7208	-6070	-5124	1.965	1.965	-10296	12476	7355	40441	26478	5011	31489		6.15	Si
SLV 16	9.52	-4023.61	-10932	-9206	-6992	1.965	1.8433	-16777	13772	7616	40441	26478	5011	31489		4.5	Si
SLV 16	11.32	2975.76	-3851	-3243	-6026	1.965	0.6293	-17325	13882	3703	40441	26478	5011	31489		5.23	Si
SLV 6	9.52	2586.96	-1870	-1575	6597	1.572	0	0	0	0	40441	21183	4009	25191		3.82	Si
SLV 6	11.32	-2377.61	-6938	-5843	6412	1.965	1.9194	-9911	12399	7140	40441	26478	5011	31489		4.91	Si
SLV 12	9.52	-4683.66	-14727	-12402	-7431	1.965	1.965	-21038	14624	8621	40441	26478	5011	31489		4.24	Si
SLV 12	11.32	2140.94	-5795	-4880	-7246	1.965	1.8391	-8278	12072	6661	40441	26478	5011	31489		4.35	Si
SLV 2	9.52	1562.01	-5822	-4903	5472	1.965	1.965	-8317	12080	7121	40441	26478	5011	31489		5.75	Si
SLV 2	11.32	-2892.78	-8480	-7141	4507	1.965	1.9241	-12114	12839	7411	40441	26478	5011	31489		6.99	Si
SLV 5	9.52	3338.9	-1548	-1304	8008	1.965	0	0	16250	3186	40441	26478	5011	31489		3.93	Si
SLV 5	11.32	-3036.27	-7766	-6540	7823	1.965	1.7746	-12344	12885	6860	40441	26478	5011	31489		4.03	Si
SLV 9	9.52	2216.56	-1961	-1652	5286	1.572	0	0	0	0	40441	21183	4009	25191		4.77	Si
SLV 9	11.32	-1548.47	-6353	-5350	5701	1.965	1.965	-9076	12232	7211	40441	26478	5011	31489		5.52	Si
SLV 11	9.52	-3931.72	-14405	-12131	-6020	1.965	1.965	-20578	14532	8567	40441	26478	5011	31489		5.23	Si
SLV 11	11.32	1482.29	-6623	-5577	-5835	1.965	1.965	-9461	12309	7256	40441	26478	5011	31489		5.4	Si
SLV 15	9.52	-2906.76	-10453	-8803	-4896	1.965	1.965	-14933	13403	7901	40441	26478	5011	31489		6.43	Si
SLV 15	11.32	1997.46	-5081	-4279	-3930	1.965	1.7682	-7258	11868	6296	40441	26478	5011	31489		8.01	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 10	179667	0.46	7380	-4350	264.46	621.03	2.35	Si
SLV 9	179667	0.46	7997	-4714	264.46	670.14	2.53	Si
SLV 6	179667	0.46	8574	-5054	264.46	715.57	2.71	Si
SLV 14	179667	0.46	8944	-5273	264.46	744.58	2.82	Si
SLV 5	179667	0.46	9191	-5418	264.46	763.83	2.89	Si
SLV 13	179667	0.46	9862	-5813	264.46	815.7	3.08	Si
SLV 16	179667	0.46	11608	-6843	264.46	948.39	3.59	Si
SLV 15	179667	0.46	12525	-7383	264.46	1016.68	3.84	Si
SLV 2	179667	0.46	12924	-7619	264.46	1046.09	3.96	Si
SLV 1	179667	0.46	13841	-8159	264.46	1112.98	4.21	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 1	-6572	-7604	-615	1.284	969.9	0.92	20.28107	6.14217	Si
SLV 3	-6779	-10621	-275	1.294	990.8	0.922	20.40309	6.14217	Si
SLV 2	-6018	-7181	-616	1.371	914.4	0.917	21.7364	6.14217	Si
SLV 4	-6226	-10198	-276	1.379	935.3	0.918	21.82972	6.14217	Si
SLV 7	-6302	-13010	436	1.347	942.8	0.919	21.31336	5.26078	Si
SLV 15	-4979	-7587	622	1.572	810.8	0.909	25.11462	6.14217	Si
SLV 11	-5761	-12100	705	1.404	888.8	0.915	22.30216	5.26078	Si
SLV 8	-5929	-12725	435	1.41	905.5	0.916	22.35893	5.26078	Si
SLV 5	-5609	-2953	-699	1.433	873.5	0.914	22.78238	5.26078	Si
SLV 13	-4771	-4570	281	1.671	790.2	0.908	26.74214	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	10.235	SLU 43	Si
V_SLU	23.174	SLU 42	Si
PF_SLV	0.508	SLV 5	No
V_SLV	3.819	SLV 6	Si
PFFP_SLV	2.348	SLV 10	Si
R_SLV	3.302	SLV 1	Si

Maschio 159

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.618	5.951	-21.813	5.951	L6	L7	2.195	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 46	9.52	-966.8	-14235	-0.0000399	0.0003743	0.0035	2.195	12305.86	14516.69	14516.69	15.02	No	Si
SLU 46	11.32	1357	-11347	-0.0000353	0.0003743	0.0035	2.195	10345.78	10866.4	10866.4	8.01	No	Si
SLU 8	9.52	-666.23	-11537	-0.0000312	0.0003743	0.0035	2.195	10483.24	12358.39	12358.39	18.55	No	Si
SLU 8	11.32	1132.82	-9302	-0.0000288	0.0003743	0.0035	2.195	8792.48	9169.59	9169.59	8.09	No	Si
SLU 49	9.52	-883.94	-14489	-0.00004	0.0003743	0.0035	2.195	12465.33	14711.59	14711.59	16.64	No	Si
SLU 49	11.32	1401.74	-11601	-0.0000362	0.0003743	0.0035	2.195	10529.29	11081.59	11081.59	7.91	No	Si
SLU 44	9.52	-1041.88	-13575	-0.0000388	0.0003743	0.0035	2.195	11881.61	13997.35	13997.35	13.43	No	Si
SLU 44	11.32	1286.95	-10687	-0.0000332	0.0003743	0.0035	2.195	9859.07	10311.72	10311.72	8.01	No	Si
SLU 50	9.52	-901.43	-14181	-0.0000394	0.0003743	0.0035	2.195	12271.41	14474.59	14474.59	16.06	No	Si
SLU 50	11.32	1417.2	-11293	-0.0000355	0.0003743	0.0035	2.195	10306.18	10820.41	10820.41	7.64	No	Si
SLU 43	9.52	-1067.17	-13672	-0.0000392	0.0003743	0.0035	2.195	11945.21	14074.28	14074.28	13.19	No	Si
SLU 43	11.32	1327.71	-10784	-0.0000337	0.0003743	0.0035	2.195	9931.9	10393.29	10393.29	7.83	No	Si
SLU 48	9.52	-899.11	-14548	-0.0000403	0.0003743	0.0035	2.195	12501.77	14756.12	14756.12	16.41	No	Si
SLU 48	11.32	1426.2	-11660	-0.0000365	0.0003743	0.0035	2.195	10571.28	11131.31	11131.31	7.8	No	Si
SLU 47	9.52	-959.01	-13829	-0.0000389	0.0003743	0.0035	2.195	12046.58	14198.05	14198.05	14.8	No	Si
SLU 47	11.32	1331.7	-10941	-0.0000341	0.0003743	0.0035	2.195	10048.08	10524.44	10524.44	7.9	No	Si
SLU 51	9.52	-886.26	-14122	-0.0000391	0.0003743	0.0035	2.195	12234.26	14429.19	14429.19	16.28	No	Si
SLU 51	11.32	1392.75	-11234	-0.0000352	0.0003743	0.0035	2.195	10263.5	10771.01	10771.01	7.73	No	Si
SLU 45	9.52	-981.98	-14294	-0.0000402	0.0003743	0.0035	2.195	12342.79	14561.83	14561.83	14.83	No	Si
SLU 45	11.32	1381.45	-11406	-0.0000356	0.0003743	0.0035	2.195	10388.25	10915.9	10915.9	7.9	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	9.52	-3145.42	-10450	-0.0000439	0.0005615	0.0035	2.195		11822.29	11822.29	3.76		Si
SLV 13	11.32	2478.79	-7974	-0.0000337	0.0005615	0.0035	2.195		8472.99	8472.99	3.42		Si
SLV 16	9.52	-5718.47	-16605	-0.0000762	0.0005615	0.0035	2.195		17237.99	17237.99	3.01		Si
SLV 16	11.32	5262.14	-14162	-0.0000669	0.0005615	0.0035	2.195		13814.1	13814.1	2.63		Si
SLV 12	9.52	-3901.77	-20300	-0.0000736	0.0005615	0.0035	2.195		20190.27	20190.27	5.17		Si
SLV 12	11.32	5084.17	-18040	-0.0000756	0.0005615	0.0035	2.195		17064.85	17064.85	3.36		Si
SLV 15	9.52	-3969.73	-14835	-0.0000601	0.0005615	0.0035	2.195		15738.96	15738.96	3.96		Si
SLV 15	11.32	4159.55	-12391	-0.0000552	0.0005615	0.0035	2.195		12363.06	12363.06	2.97		Si
SLV 1	9.52	3976.58	-7217	-0.0000445	0.0005615	0.0035	2.195		7736.94	7736.94	1.95		Si
SLV 1	11.32	-3117.59	-5160	-0.000035	0.0005615	0.0035	1.756		6713.01	6713.01	2.15		Si
SLV 14	9.52	-4894.17	-12221	-0.0000598	0.0005615	0.0035	2.195		13445.91	13445.91	2.75		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 14	11.32	3581.38	-9745	-0.000045	0.0005615	0.0035	2.195		10160.68	10160.68	2.84		Si
SLV 5	9.52	2159.88	-3522	-0.0000241	0.0005615	0.0035	2.195		4016.36	4016.36	1.86		Si
SLV 5	11.32	-2939.61	-1281	-0.0005554	0.0005615	0.0035	1.756		2711.09	2711.09	0.92		No
SLV 6	9.52	982.5	-4715	-0.0000167	0.0005615	0.0035	2.195		5240.22	5240.22	5.33		Si
SLV 6	11.32	-2197.27	-2473	-0.0000388	0.0005615	0.0035	1.756		3965.86	3965.86	1.8		Si
SLV 9	9.52	23.28	-4492	-0.0000103	0.0005615	0.0035	2.195		5012.9	5012.9	215.35		Si
SLV 9	11.32	-1260.7	-2126	-0.0000139	0.0005615	0.0035	2.195		3601.2	3601.2	2.86		Si
SLV 11	9.52	-2724.4	-19108	-0.0000627	0.0005615	0.0035	2.195		19264.03	19264.03	7.07		Si
SLV 11	11.32	4341.83	-16848	-0.0000676	0.0005615	0.0035	2.195		16055.03	16055.03	3.7		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	9.52	-1161.27	-17506	-14742	-1398	2.195	2.195	-22388	9929	6539	40441	19718	5597	25316	No	18.11	Si
SLU 83	11.32	1481.45	-14566	-12266	-1398	2.195	2.195	-18627	9428	6208	40441	19718	5597	25316	No	18.11	Si
SLU 75	9.52	-1103.26	-17323	-14588	-1353	2.195	2.195	-22153	9898	6518	40441	19718	5597	25316	No	18.72	Si
SLU 75	11.32	1458.33	-14383	-12112	-1353	2.195	2.195	-18393	9397	6188	40441	19718	5597	25316	No	18.72	Si
SLU 60	9.52	-1202.19	-15311	-12894	-1349	2.195	2.195	-19581	9555	6292	40441	19718	5597	25316	No	18.77	Si
SLU 60	11.32	1353.25	-12424	-10462	-1349	2.195	2.195	-15887	9063	5968	40441	19718	5597	25316	No	18.77	Si
SLU 84	9.52	-1146.09	-17448	-14693	-1376	2.195	2.195	-22313	9919	6532	40441	19718	5597	25316	No	18.4	Si
SLU 84	11.32	1457	-14507	-12217	-1376	2.195	2.195	-18552	9418	6202	40441	19718	5597	25316	No	18.4	Si
SLU 79	9.52	-1037.89	-17269	-14542	-1350	2.195	2.195	-22084	9889	6512	40441	19718	5597	25316	No	18.76	Si
SLU 79	11.32	1518.54	-14328	-12066	-1350	2.195	2.195	-18323	9388	6182	40441	19718	5597	25316	No	18.76	Si
SLU 77	9.52	-1035.57	-17636	-14851	-1353	2.195	2.195	-22553	9952	6553	40441	19718	5597	25316	No	18.7	Si
SLU 77	11.32	1527.53	-14695	-12375	-1353	2.195	2.195	-18793	9450	6223	40441	19718	5597	25316	No	18.7	Si
SLU 74	9.52	-1118.43	-17382	-14637	-1375	2.195	2.195	-22228	9908	6525	40441	19718	5597	25316	No	18.42	Si
SLU 74	11.32	1482.79	-14441	-12161	-1375	2.195	2.195	-18468	9407	6194	40441	19718	5597	25316	No	18.42	Si
SLU 81	9.52	-1244.13	-17252	-14528	-1419	2.195	2.195	-22062	9886	6510	40441	19718	5597	25316	No	17.84	Si
SLU 81	11.32	1436.71	-14311	-12052	-1419	2.195	2.195	-18302	9385	6180	40441	19718	5597	25316	No	17.84	Si
SLU 73	9.52	-1178.34	-16663	-14032	-1355	2.195	2.195	-21309	9786	6444	40441	19718	5597	25316	No	18.68	Si
SLU 73	11.32	1388.28	-13722	-11555	-1355	2.195	2.195	-17548	9284	6114	40441	19718	5597	25316	No	18.68	Si
SLU 82	9.52	-1228.96	-17194	-14479	-1397	2.195	2.195	-21988	9876	6503	40441	19718	5597	25316	No	18.12	Si
SLU 82	11.32	1412.25	-14253	-12002	-1397	2.195	2.195	-18227	9375	6173	40441	19718	5597	25316	No	18.12	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	9.52	3976.58	-7217	-6078	4225	2.195	1.6395	-9229	12263	6031	40441	29578	5597	35175		8.32	Si
SLV 1	11.32	-3117.59	-5160	-4345	3618	1.756	1.4799	0	0	0	40441	23662	4478	28140		7.78	Si
SLV 16	9.52	-5718.47	-16605	-13984	-6276	2.195	2.195	-21235	14664	9656	40441	29578	5597	35175		5.6	Si
SLV 16	11.32	5262.14	-14162	-11926	-5669	2.195	2.1778	-18110	14039	9172	40441	29578	5597	35175		6.21	Si
SLV 12	9.52	-3901.77	-20300	-17095	-4967	2.195	2.195	-25960	15609	10278	40441	29578	5597	35175		7.08	Si
SLV 12	11.32	5084.17	-18040	-15192	-4795	2.195	2.195	-23070	15031	9898	40441	29578	5597	35175		7.34	Si
SLV 15	9.52	-3969.73	-14835	-12492	-4692	2.195	2.195	-18971	14211	9358	40441	29578	5597	35175		7.5	Si
SLV 15	11.32	4159.55	-12391	-10434	-4085	2.195	2.195	-15846	13586	8946	40441	29578	5597	35175		8.61	Si
SLV 8	9.52	-1765.17	-19330	-16278	-2701	2.195	2.195	-24720	15361	10115	40441	29578	5597	35175		13.02	Si
SLV 8	11.32	3405.26	-17196	-14481	-2896	2.195	2.195	-21991	14815	9756	40441	29578	5597	35175		12.14	Si
SLV 11	9.52	-2724.4	-19108	-16091	-3900	2.195	2.195	-24436	15304	10078	40441	29578	5597	35175		9.02	Si
SLV 11	11.32	4341.83	-16848	-14188	-3729	2.195	2.195	-21546	14726	9697	40441	29578	5597	35175		9.43	Si
SLV 13	9.52	-3145.42	-10450	-8800	-3326	2.195	2.195	-13364	13089	8619	40441	29578	5597	35175		10.57	Si
SLV 13	11.32	2478.79	-7974	-6715	-2712	2.195	2.195	-10197	12456	8202	40441	29578	5597	35175		12.97	Si
SLD 16	9.52	-2937.75	-13860	-11672	-3254	2.195	2.195	-17725	13962	9194	40441	29578	5597	35175		10.81	Si
SLD 16	11.32	2841.4	-11527	-9707	-2995	2.195	2.195	-14741	13365	8801	40441	29578	5597	35175		11.74	Si
SLV 5	9.52	2159.88	-3522	-2966	2916	2.195	1.4529	-4504	11318	4933	40441	29578	5597	35175		12.06	Si
SLV 5	11.32	-2939.61	-1281	-1079	2745	1.756	0	0	0	0	40441	23662	4478	28140		10.25	Si
SLV 14	9.52	-4894.17	-12221	-10291	-4910	2.195	2.0911	-16534	13723	8609	40441	29578	5597	35175		7.16	Si
SLV 14	11.32	3581.38	-9745	-8206	-4296	2.195	2.19	-12462	12909	8481	40441	29578	5597	35175		8.19	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 5	179667	0.46	3533	-2327	295.41	340.92	1.15	Si
SLV 9	179667	0.46	4833	-3183	295.41	462.3	1.56	Si
SLV 6	179667	0.46	5344	-3519	295.41	509.36	1.72	Si
SLV 10	179667	0.46	6644	-4375	295.41	627.69	2.12	Si
SLV 1	179667	0.46	9424	-6205	295.41	873.38	2.96	Si
SLV 2	179667	0.46	12113	-7976	295.41	1101.55	3.73	Si
SLV 13	179667	0.46	13757	-9059	295.41	1236.46	4.19	Si
SLV 3	179667	0.46	16149	-10634	295.41	1426.46	4.83	Si
SLV 14	179667	0.46	16446	-10830	295.41	1449.54	4.91	Si
SLV 4	179667	0.46	18838	-12405	295.41	1631.23	5.52	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 8	-12425	-21702	1245	0.811	1596.7	0.942	12.52012	5.26078	Si
SLV 12	-11977	-24378	1355	0.828	1551.3	0.94	12.79779	5.26078	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-12012	-19696	1245	0.834	1554.8	0.94	12.88601	5.26078	Si
SLV 11	-11564	-22371	1354	0.852	1509.4	0.939	13.18479	5.26078	Si
SLV 4	-9745	-12449	208	1.073	1325.5	0.932	16.72823	6.14217	Si
SLV 3	-9131	-9469	208	1.129	1263.6	0.929	17.65744	6.14217	Si
SLV 16	-8251	-21368	572	1.186	1174.9	0.925	18.63531	6.14217	Si
SLV 15	-7637	-18387	572	1.258	1113.2	0.922	19.83668	6.14217	Si
SLV 2	-6914	-6776	-571	1.356	1040.6	0.918	21.47019	6.14217	Si
SLV 1	-6299	-3796	-571	1.452	979.2	0.914	23.08327	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.635	SLU 50	Si
V_SLU	17.843	SLU 81	Si
PF_SLV	0.922	SLV 5	No
V_SLV	5.605	SLV 16	Si
PFFP_SLV	1.154	SLV 5	Si
R_SLV	2.38	SLV 8	Si

Maschio 160

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-22.493	-3.359	-24.678	-3.359	L6	L7	2.185	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 51	9.52	-1210.66	-11050	-0.0000338	0.0003743	0.0035	2.185	10073.07	11898.76	11898.76	9.83	No	Si
SLU 51	11.32	-400.48	-8903	-0.0000232	0.0003743	0.0035	2.185	8429.04	10067.55	10067.55	25.14	No	Si
SLU 46	9.52	-1196.76	-10832	-0.0000331	0.0003743	0.0035	2.185	9913.17	11721.94	11721.94	9.79	No	Si
SLU 46	11.32	-375.19	-8629	-0.0000224	0.0003743	0.0035	2.185	8208.57	9820.85	9820.85	26.18	No	Si
SLU 43	9.52	-1130.12	-10231	-0.0000312	0.0003743	0.0035	2.185	9464.19	11208.6	11208.6	9.92	No	Si
SLU 43	11.32	-303.17	-7974	-0.0000204	0.0003743	0.0035	2.185	7670.51	9223.96	9223.96	30.43	No	Si
SLU 47	9.52	-1200.96	-10631	-0.0000327	0.0003743	0.0035	2.185	9763.94	11551.82	11551.82	9.62	No	Si
SLU 47	11.32	-332.74	-8385	-0.0000216	0.0003743	0.0035	2.185	8009.5	9597.13	9597.13	28.84	No	Si
SLU 2	9.52	-902.02	-8165	-0.0000247	0.0003743	0.0035	2.185	7828.78	9396.99	9396.99	10.42	No	Si
SLU 2	11.32	-273.64	-6457	-0.0000166	0.0003743	0.0035	2.185	6371.35	7830.59	7830.59	28.62	No	Si
SLU 50	9.52	-1184.46	-11058	-0.0000336	0.0003743	0.0035	2.185	10079.33	11905.7	11905.7	10.05	No	Si
SLU 50	11.32	-416.85	-8949	-0.0000235	0.0003743	0.0035	2.185	8465.82	10106.44	10106.44	24.24	No	Si
SLU 44	9.52	-1173.79	-10217	-0.0000315	0.0003743	0.0035	2.185	9453.39	11196.19	11196.19	9.54	No	Si
SLU 44	11.32	-275.9	-7897	-0.00002	0.0003743	0.0035	2.185	7606.73	9154.82	9154.82	33.18	No	Si
SLU 49	9.52	-1223.93	-11245	-0.0000344	0.0003743	0.0035	2.185	10215.41	12057.75	12057.75	9.85	No	Si
SLU 49	11.32	-432.03	-9117	-0.000024	0.0003743	0.0035	2.185	8599.65	10248.93	10248.93	23.72	No	Si
SLU 48	9.52	-1197.73	-11254	-0.0000342	0.0003743	0.0035	2.185	10221.61	12064.72	12064.72	10.07	No	Si
SLU 48	11.32	-448.39	-9163	-0.0000242	0.0003743	0.0035	2.185	8636.11	10288.02	10288.02	22.94	No	Si
SLU 45	9.52	-1170.56	-10841	-0.000033	0.0003743	0.0035	2.185	9919.48	11729.13	11729.13	10.02	No	Si
SLU 45	11.32	-391.55	-8675	-0.0000226	0.0003743	0.0035	2.185	8245.76	9863.03	9863.03	25.19	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 4	9.52	3033.2	-8577	-0.000039	0.0005615	0.0035	2.185		9007.81	9007.81	2.97		Si
SLV 4	11.32	-4886.05	-11760	-0.0000592	0.0005615	0.0035	2.185		12972.27	12972.27	2.65		Si
SLV 14	9.52	-3509.32	-8638	-0.0000424	0.0005615	0.0035	2.185		10075.52	10075.52	2.87		Si
SLV 14	11.32	2854.7	-4207	-0.000034	0.0005615	0.0035	2.185		4696.82	4696.82	1.65		Si
SLV 11	9.52	1358	-3467	-0.0000163	0.0005615	0.0035	2.185		3938.64	3938.64	2.9		Si
SLV 11	11.32	-960.84	-6546	-0.000021	0.0005615	0.0035	2.185		8061.18	8061.18	8.39		Si
SLV 16	9.52	-1558.45	-5717	-0.0000228	0.0005615	0.0035	2.185		7234.32	7234.32	4.64		Si
SLV 16	11.32	1712.87	-4713	-0.0000214	0.0005615	0.0035	2.185		5212.01	5212.01	3.04		Si
SLV 12	9.52	2135.89	-3340	-0.0000245	0.0005615	0.0035	2.185		3807.66	3807.66	1.78		Si
SLV 12	11.32	-1739.85	-7530	-0.0000282	0.0005615	0.0035	2.185		9016.07	9016.07	5.18		Si
SLV 13	9.52	-4664.72	-8826	-0.0000531	0.0005615	0.0035	2.185		10256.58	10256.58	2.2		Si
SLV 13	11.32	4011.76	-2746	-0.0065102	0.0005615	0.0035	2.185		3189.89	3189.89	0.8		No
SLV 15	9.52	-2713.85	-5905	-0.0000311	0.0005615	0.0035	2.185		7421.22	7421.22	2.73		Si
SLV 15	11.32	2869.94	-3251	-0.0000526	0.0005615	0.0035	2.185		3715.13	3715.13	1.29		Si
SLV 9	9.52	-5144.91	-13205	-0.0000643	0.0005615	0.0035	2.185		14243.39	14243.39	2.77		Si
SLV 9	11.32	2845.24	-4861	-0.000032	0.0005615	0.0035	2.185		5362.25	5362.25	1.88		Si
SLV 7	9.52	2735.49	-4325	-0.0000314	0.0005615	0.0035	2.185		4816.97	4816.97	1.76		Si
SLV 7	11.32	-2940.51	-8660	-0.0000386	0.0005615	0.0035	2.185		10096.79	10096.79	3.43		Si
SLV 8	9.52	3513.39	-4199	-0.0000558	0.0005615	0.0035	2.185		4687.73	4687.73	1.33		Si
SLV 8	11.32	-3719.53	-9644	-0.0000461	0.0005615	0.0035	2.185		11029.53	11029.53	2.97		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 41	9.52	-690.43	-10703	-9013	1076	2.185	2.185	-13750	8778	5754	40441	19629	5572	25200	No	23.42	Si
SLU 41	11.32	-928.89	-9970	-8396	1076	2.185	2.185	-12808	8652	5672	40441	19629	5572	25200	No	23.41	Si
SLU 42	9.52	-716.64	-10695	-9006	1035	2.185	2.185	-13739	8776	5753	40441	19629	5572	25200	No	24.34	Si
SLU 42	11.32	-912.53	-9924	-8357	1025	2.185	2.185	-12749	8644	5666	40441	19629	5572	25200	No	24.59	Si
SLU 38	9.52	-789.85	-10826	-9117	929	2.185	2.185	-13908	8799	5768	40441	19629	5572	25200	No	27.13	Si
SLU 38	11.32	-875.04	-9981	-8405	918	2.185	2.185	-12823	8654	5673	40441	19629	5572	25200	No	27.44	Si
SLU 36	9.52	-803.12	-11022	-9282	950	2.185	2.185	-14159	8832	5790	40441	19629	5572	25200	No	26.52	Si
SLU 36	11.32	-906.58	-10195	-8585	940	2.185	2.185	-13098	8691	5697	40441	19629	5572	25200	No	26.82	Si
SLU 39	9.52	-663.26	-10290	-8665	1015	2.185	2.185	-13219	8707	5707	40441	19629	5572	25200	No	24.83	Si
SLU 39	11.32	-872.06	-9482	-7985	1015	2.185	2.185	-12182	8569	5617	40441	19629	5572	25200	No	24.83	Si
SLU 40	9.52	-689.47	-10281	-8658	974	2.185	2.185	-13208	8706	5706	40441	19629	5572	25200	No	25.87	Si
SLU 40	11.32	-855.69	-9436	-7946	963	2.185	2.185	-12123	8561	5612	40441	19629	5572	25200	No	26.16	Si
SLU 32	9.52	-749.74	-10617	-8941	930	2.185	2.185	-13639	8763	5744	40441	19629	5572	25200	No	27.11	Si
SLU 32	11.32	-866.11	-9754	-8213	930	2.185	2.185	-12530	8615	5647	40441	19629	5572	25200	No	27.11	Si
SLU 37	9.52	-763.64	-10835	-9124	970	2.185	2.185	-13919	8800	5769	40441	19629	5572	25200	No	25.98	Si
SLU 37	11.32	-891.4	-10027	-8444	970	2.185	2.185	-12882	8662	5678	40441	19629	5572	25200	No	25.98	Si
SLU 83	9.52	-962.2	-12756	-10742	953	2.185	2.185	-16387	9129	5984	40441	19629	5572	25200	No	26.44	Si
SLU 83	11.32	-931.15	-11411	-9609	953	2.185	2.185	-14659	8899	5833	40441	19629	5572	25200	No	26.43	Si
SLU 35	9.52	-776.91	-11030	-9289	991	2.185	2.185	-14170	8834	5791	40441	19629	5572	25200	No	25.43	Si
SLU 35	11.32	-922.95	-10241	-8624	991	2.185	2.185	-13157	8699	5702	40441	19629	5572	25200	No	25.42	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	9.52	-3509.32	-8638	-7274	-5505	2.185	2.0587	-11841	12785	7896	40441	29443	5572	35015		6.36	Si
SLV 14	11.32	2854.7	-4207	-3543	-4418	2.185	1.242	-5405	11498	4284	40441	29443	5572	35015		7.92	Si
SLV 12	9.52	2135.89	-3340	-2813	5933	2.185	1.3593	-4291	11275	4598	40441	29443	5572	35015		5.9	Si
SLV 12	11.32	-1739.85	-7530	-6341	6362	2.185	2.185	-9674	12351	8096	40441	29443	5572	35015		5.5	Si
SLV 4	9.52	3033.2	-8577	-7223	8347	2.185	2.185	-11019	12620	8273	40441	29443	5572	35015		4.19	Si
SLV 4	11.32	-4886.05	-11760	-9903	7261	2.185	2.031	-16374	13691	8342	40441	29443	5572	35015		4.82	Si
SLV 10	9.52	-4367.02	-13078	-11013	-6843	2.185	2.185	-16801	13777	9031	40441	29443	5572	35015		5.12	Si
SLV 10	11.32	2066.22	-5845	-4922	-6603	2.185	2.185	-7509	11919	7813	40441	29443	5572	35015		5.3	Si
SLV 5	9.52	-3767.42	-14063	-11842	-5376	2.185	2.185	-18066	14030	9197	40441	29443	5572	35015		6.51	Si
SLV 5	11.32	865.56	-6975	-5874	-5805	2.185	2.185	-8961	12209	8003	40441	29443	5572	35015		6.03	Si
SLV 13	9.52	-4664.72	-8826	-7433	-7790	2.185	1.692	-14740	13365	6784	40441	29443	5572	35015		4.49	Si
SLV 13	11.32	4011.76	-2746	-2312	-6704	2.185	0	-123672	16250	3772	40441	29443	5572	35015		5.22	Si
SLV 8	9.52	3513.39	-4199	-3536	8939	2.185	0.7671	-5394	11495	4098	40441	29443	5572	35015		3.92	Si
SLV 8	11.32	-3719.53	-9644	-8121	8699	2.185	2.1205	-12390	12895	8203	40441	29443	5572	35015		4.02	Si
SLV 3	9.52	1877.79	-8765	-7381	6062	2.185	2.185	-11260	12669	8304	40441	29443	5572	35015		5.78	Si
SLV 3	11.32	-3728.99	-10298	-8672	4976	2.185	2.185	-13230	13063	8563	40441	29443	5572	35015		7.04	Si
SLV 7	9.52	2735.49	-4325	-3642	7401	2.185	1.3801	-5556	11528	4773	40441	29443	5572	35015		4.73	Si
SLV 7	11.32	-2940.51	-8660	-7293	7161	2.185	2.185	-11126	12642	8287	40441	29443	5572	35015		4.89	Si
SLV 9	9.52	-5144.91	-13205	-11120	-8382	2.185	2.1086	-17729	13962	8832	40441	29443	5572	35015		4.18	Si
SLV 9	11.32	2845.24	-4861	-4094	-8142	2.185	1.5217	-6245	11666	5325	40441	29443	5572	35015		4.3	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 15	179667	0.46	7052	-4623	294.07	661.37	2.25	Si
SLV 16	179667	0.46	8279	-5427	294.07	769.86	2.62	Si
SLV 13	179667	0.46	8362	-5481	294.07	777.16	2.64	Si
SLV 11	179667	0.46	8624	-5653	294.07	800.1	2.72	Si
SLV 12	179667	0.46	9450	-6195	294.07	871.68	2.96	Si
SLV 14	179667	0.46	9588	-6285	294.07	883.58	3	Si
SLV 7	179667	0.46	11110	-7283	294.07	1012.92	3.44	Si
SLV 8	179667	0.46	11936	-7824	294.07	1081.86	3.68	Si
SLV 9	179667	0.46	12990	-8515	294.07	1168.62	3.97	Si
SLV 10	179667	0.46	13816	-9056	294.07	1235.56	4.2	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.

- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 4	-8150	-11316	602	1.19	1163.1	0.925	18.70448	6.14217	Si
SLV 2	-7913	-13448	99	1.268	1139.3	0.924	19.94841	6.14217	Si
SLV 3	-7347	-10674	603	1.288	1082.5	0.921	20.32861	6.14217	Si
SLV 1	-7111	-12807	100	1.374	1058.8	0.919	21.72959	6.14217	Si
SLV 8	-7264	-6065	942	1.262	1074.2	0.92	19.94167	5.26078	Si
SLV 7	-6724	-5633	943	1.337	1020	0.917	21.19252	5.26078	Si
SLV 6	-6475	-13173	-736	1.399	995.1	0.915	22.20867	5.26078	Si
SLV 12	-6381	-3787	730	1.415	985.7	0.915	22.47329	5.26078	Si
SLV 14	-4968	-5854	-609	1.707	845.2	0.906	27.38817	6.14217	Si
SLV 16	-5205	-3721	-105	1.721	868.6	0.907	27.57862	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.538	SLU 44	Si
V_SLU	23.412	SLU 41	Si
PF_SLV	0.795	SLV 13	No
V_SLV	3.917	SLV 8	Si
PFFP_SLV	2.249	SLV 15	Si
R_SLV	3.045	SLV 4	Si

Maschio 161

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.368	-3.359	-21.593	-3.359	L6	L7	2.225	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 78	10.62	-1509	-17069	-0.00005	0.0003743	0.0035	2.225	14219.64	16866.85	16866.85	11.18	No	Si
SLU 78	11.42	-577.56	-14475	-0.0000374	0.0003743	0.0035	2.225	12673.57	14930.74	14930.74	25.85	No	Si
SLU 65	10.62	-1336.97	-14459	-0.0000422	0.0003743	0.0035	2.225	12663.45	14918.43	14918.43	11.16	No	Si
SLU 65	11.42	-335.04	-11969	-0.0000297	0.0003743	0.0035	2.225	10970.64	12907.78	12907.78	38.53	No	Si
SLU 67	10.62	-1391.84	-15364	-0.0000449	0.0003743	0.0035	2.225	13228.43	15604.42	15604.42	11.21	No	Si
SLU 67	11.42	-410	-12836	-0.0000323	0.0003743	0.0035	2.225	11582.73	13627.32	13627.32	33.24	No	Si
SLU 82	10.62	-1437.14	-15992	-0.0000468	0.0003743	0.0035	2.225	13604.8	16078.84	16078.84	11.19	No	Si
SLU 82	11.42	-532	-13463	-0.0000346	0.0003743	0.0035	2.225	12010.26	14124.44	14124.44	26.55	No	Si
SLU 76	10.62	-1454.13	-16164	-0.0000473	0.0003743	0.0035	2.225	13705.16	16208.28	16208.28	11.15	No	Si
SLU 76	11.42	-502.59	-13609	-0.0000347	0.0003743	0.0035	2.225	12107.98	14240.65	14240.65	28.33	No	Si
SLU 80	10.62	-1486.86	-16766	-0.0000491	0.0003743	0.0035	2.225	14050.36	16650.06	16650.06	11.2	No	Si
SLU 80	11.42	-548.34	-14186	-0.0000365	0.0003743	0.0035	2.225	12487.82	14704.64	14704.64	26.82	No	Si
SLU 75	10.62	-1467.86	-16450	-0.0000481	0.0003743	0.0035	2.225	13870.56	16419.66	16419.66	11.19	No	Si
SLU 75	11.42	-541.27	-13888	-0.0000357	0.0003743	0.0035	2.225	12292.89	14464.33	14464.33	26.72	No	Si
SLU 84	10.62	-1478.29	-16612	-0.0000486	0.0003743	0.0035	2.225	13963.15	16538.22	16538.22	11.19	No	Si
SLU 84	11.42	-568.3	-14050	-0.0000362	0.0003743	0.0035	2.225	12399.11	14594.89	14594.89	25.68	No	Si
SLU 73	10.62	-1412.98	-15545	-0.0000455	0.0003743	0.0035	2.225	13337.74	15739.6	15739.6	11.14	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 73	11.42	-466.3	-13021	-0.0000331	0.0003743	0.0035	2.225	11710.64	13776.39	13776.39	29.54	No	Si
SLU 68	10.62	-1378.11	-15078	-0.0000441	0.0003743	0.0035	2.225	13052.88	15391.45	15391.45	11.17	No	Si
SLU 68	11.42	-371.33	-12557	-0.0000313	0.0003743	0.0035	2.225	11388.2	13399.73	13399.73	36.09	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	10.62	-260.52	-13413	-0.0000322	0.0005615	0.0035	2.225		14710.73	14710.73	56.47		Si
SLV 1	11.42	-2807.96	-12043	-0.0000448	0.0005615	0.0035	2.225		13485.04	13485.04	4.8		Si
SLV 15	10.62	-2153.92	-9293	-0.0000342	0.0005615	0.0035	2.225		10904.26	10904.26	5.06		Si
SLV 15	11.42	3317.99	-6287	-0.000036	0.0005615	0.0035	2.225		6923.17	6923.17	2.09		Si
SLV 14	10.62	-2050.46	-12924	-0.0000422	0.0005615	0.0035	2.225		14271.72	14271.72	6.96		Si
SLV 14	11.42	2767.89	-9609	-0.0000387	0.0005615	0.0035	2.225		10186.75	10186.75	3.68		Si
SLV 16	10.62	-1730.27	-8566	-0.0000299	0.0005615	0.0035	2.225		10192.96	10192.96	5.89		Si
SLV 16	11.42	2246.57	-6165	-0.0000274	0.0005615	0.0035	2.225		6800.51	6800.51	3.03		Si
SLV 13	10.62	-2474.11	-13651	-0.0000466	0.0005615	0.0035	2.225		14926.11	14926.11	6.03		Si
SLV 13	11.42	3839.32	-9731	-0.0000457	0.0005615	0.0035	2.225		10302.75	10302.75	2.68		Si
SLV 7	10.62	-272.32	-3934	-0.0000104	0.0005615	0.0035	2.225		5550.95	5550.95	20.38		Si
SLV 7	11.42	-1785.99	-3751	-0.0000195	0.0005615	0.0035	2.225		5359.1	5359.1	3		Si
SLV 4	10.62	483.32	-8327	-0.0000217	0.0005615	0.0035	2.225		8947.06	8947.06	18.51		Si
SLV 4	11.42	-4400.71	-8477	-0.0000483	0.0005615	0.0035	2.225		10105.87	10105.87	2.3		Si
SLV 8	10.62	12.91	-3445	-0.0000077	0.0005615	0.0035	2.225		3997.08	3997.08	309.64		Si
SLV 8	11.42	-2507.34	-3669	-0.0000284	0.0005615	0.0035	1.78		5273.29	5273.29	2.1		Si
SLV 2	10.62	163.12	-12685	-0.0000298	0.0005615	0.0035	2.225		12815.57	12815.57	78.56		Si
SLV 2	11.42	-3879.39	-11921	-0.0000512	0.0005615	0.0035	2.225		13372.27	13372.27	3.45		Si
SLV 3	10.62	59.67	-9054	-0.0000208	0.0005615	0.0035	2.225		9653.12	9653.12	161.78		Si
SLV 3	11.42	-3329.29	-8599	-0.0000398	0.0005615	0.0035	2.225		10225.11	10225.11	3.07		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 68	10.62	-1378.11	-15078	-12698	-2949	2.225	2.225	-19023	9481	6328	40441	19988	5674	25662	No	8.7	Si
SLU 68	11.42	-371.33	-12557	-10574	-2165	2.225	2.225	-15841	9057	6045	40441	19988	5674	25662	No	11.85	Si
SLU 80	10.62	-1486.86	-16766	-14118	-2941	2.225	2.225	-21151	9765	6518	40441	19988	5674	25662	No	8.73	Si
SLU 80	11.42	-548.34	-14186	-11946	-2167	2.225	2.225	-17897	9331	6228	40441	19988	5674	25662	No	11.84	Si
SLU 67	10.62	-1391.84	-15364	-12938	-2927	2.225	2.225	-19383	9529	6361	40441	19988	5674	25662	No	8.77	Si
SLU 67	11.42	-410	-12836	-10809	-2145	2.225	2.225	-16193	9104	6077	40441	19988	5674	25662	No	11.96	Si
SLU 76	10.62	-1454.13	-16164	-13612	-2923	2.225	2.225	-20392	9663	6450	40441	19988	5674	25662	No	8.78	Si
SLU 76	11.42	-502.59	-13609	-11460	-2154	2.225	2.225	-17168	9234	6163	40441	19988	5674	25662	No	11.92	Si
SLU 70	10.62	-1432.99	-15983	-13460	-2978	2.225	2.225	-20164	9633	6430	40441	19988	5674	25662	No	8.62	Si
SLU 70	11.42	-446.3	-13423	-11304	-2185	2.225	2.225	-16934	9202	6143	40441	19988	5674	25662	No	11.75	Si
SLU 78	10.62	-1509	-17069	-14374	-2952	2.225	2.225	-21534	9816	6552	40441	19988	5674	25662	No	8.69	Si
SLU 78	11.42	-577.56	-14475	-12190	-2173	2.225	2.225	-18262	9379	6261	40441	19988	5674	25662	No	11.81	Si
SLU 71	10.62	-1398.23	-15655	-13183	-2916	2.225	2.225	-19750	9578	6393	40441	19988	5674	25662	No	8.8	Si
SLU 71	11.42	-431.25	-13120	-11048	-2140	2.225	2.225	-16552	9151	6109	40441	19988	5674	25662	No	11.99	Si
SLU 77	10.62	-1496.39	-17043	-14352	-2902	2.225	2.225	-21501	9811	6549	40441	19988	5674	25662	No	8.84	Si
SLU 77	11.42	-591.74	-14461	-12178	-2134	2.225	2.225	-18243	9377	6259	40441	19988	5674	25662	No	12.02	Si
SLU 69	10.62	-1420.37	-15958	-13438	-2927	2.225	2.225	-20132	9629	6427	40441	19988	5674	25662	No	8.77	Si
SLU 69	11.42	-460.47	-13409	-11292	-2146	2.225	2.225	-16916	9200	6141	40441	19988	5674	25662	No	11.96	Si
SLU 72	10.62	-1410.85	-15680	-13205	-2967	2.225	2.225	-19782	9582	6396	40441	19988	5674	25662	No	8.65	Si
SLU 72	11.42	-417.07	-13134	-11061	-2179	2.225	2.225	-16570	9154	6110	40441	19988	5674	25662	No	11.78	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	10.62	-1730.27	-8566	-7213	-6980	2.225	2.225	-10806	12578	8396	40441	29982	5674	35656		5.11	Si
SLV 16	11.42	2246.57	-6165	-5191	-5529	2.225	2.225	-7777	11972	7991	40441	29982	5674	35656		6.45	Si
SLV 8	10.62	12.91	-3445	-2901	5440	2.225	2.225	-4346	11286	7533	40441	29982	5674	35656		6.55	Si
SLV 8	11.42	-2507.34	-3669	-3090	3818	1.78	1.2874	0	0	0	40441	23985	4539	28524		7.47	Si
SLV 13	10.62	-2474.11	-13651	-11496	-12383	2.225	2.225	-17222	13861	9252	40441	29982	5674	35656		2.88	Si
SLV 13	11.42	3839.32	-9731	-8194	-9387	2.225	2.1539	-12276	12872	8317	40441	29982	5674	35656		3.8	Si
SLD 13	10.62	-1624.8	-12069	-10164	-6480	2.225	2.225	-15226	13462	8986	40441	29982	5674	35656		5.5	Si
SLD 13	11.42	1474.44	-9325	-7853	-4884	2.225	2.225	-11764	12770	8524	40441	29982	5674	35656		7.3	Si
SLV 10	10.62	-1718.48	-18044	-15195	-7802	2.225	2.225	-22764	14969	9992	40441	29982	5674	35656		4.57	Si
SLV 10	11.42	1224.59	-14457	-12174	-5487	2.225	2.225	-18238	14064	9388	40441	29982	5674	35656		6.5	Si
SLV 2	10.62	163.12	-12685	-10682	5531	2.225	2.225	-16004	13617	9090	40441	29982	5674	35656		6.45	Si
SLV 2	11.42	-3879.39	-11921	-10039	4556	2.225	2.225	-15040	13425	8961	40441	29982	5674	35656		7.83	Si
SLV 15	10.62	-2153.92	-9293	-7826	-9771	2.225	2.225	-11724	12761	8518	40441	29982	5674	35656		3.65	Si
SLV 15	11.42	3317.99	-6287	-5294	-7659	2.225	1.7541	-7931	12003	6316	40441	29982	5674	35656		4.66	Si
SLV 14	10.62	-2050.46	-12924	-10883	-9592	2.225	2.225	-16305	13678	9130	40441	29982	5674	35656		3.72	Si
SLV 14	11.42	2767.89	-9609	-8092	-7257	2.225	2.225	-12123	12841	8572	40441	29982	5674	35656		4.91	Si
SLV 9	10.62	-2003.7	-18534	-15607	-9681	2.225	2.225	-23382	15093	10075	40441	29982	5674	35656		3.68	Si
SLV 9	11.42	1945.95	-14539	-12243	-6921	2.225	2.225	-18342	14085	9402	40441	29982	5674	35656		5.15	Si
SLV 4	10.62	483.32	-8327	-7012	8142	2.225	2.225	-10505	12518	8356	40441	29982	5674	35656		4.38	Si
SLV 4	11.42	-4400.71	-8477	-7138	6284	2.225	1.7801	-13451	13107	6999	40441	29982	5674	35656		5.67	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.46	5041	-3365	299.45	488.03	1.63	Si
SLV 11	179667	0.46	5279	-3524	299.45	510.33	1.7	Si
SLV 8	179667	0.46	6094	-4068	299.45	585.82	1.96	Si

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.46	6333	-4227	299.45	607.79	2.03	Si
SLV 16	179667	0.46	10253	-6844	299.45	957.7	3.2	Si
SLV 15	179667	0.46	10608	-7081	299.45	988.36	3.3	Si
SLV 4	179667	0.46	13765	-9188	299.45	1254	4.19	Si
SLV 3	179667	0.46	14120	-9425	299.45	1283.04	4.28	Si
SLV 14	179667	0.46	15825	-10563	299.45	1420.27	4.74	Si
SLV 13	179667	0.46	16180	-10800	299.45	1448.35	4.84	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 5	-10971	-17944	-1192	0.912	1454.1	0.936	14.15601	5.26078	Si
SLV 6	-10931	-18001	-1192	0.915	1450.1	0.936	14.19899	5.26078	Si
SLV 9	-10624	-16125	-1041	0.947	1419	0.935	14.72718	5.26078	Si
SLV 10	-10585	-16182	-1041	0.95	1415	0.935	14.77322	5.26078	Si
SLV 1	-8841	-15076	-588	1.136	1239	0.927	17.79887	6.14217	Si
SLV 2	-8782	-15161	-588	1.142	1233.1	0.927	17.89618	6.14217	Si
SLV 13	-7687	-9014	-83	1.316	1122.9	0.922	20.74786	6.14217	Si
SLV 14	-7628	-9099	-83	1.323	1117	0.921	20.87554	6.14217	Si
SLV 3	-6661	-10812	82	1.464	1020.1	0.916	23.23889	6.14217	Si
SLV 4	-6602	-10897	81	1.474	1014.2	0.916	23.39933	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	11.139	SLU 73	Si
V_SLU	8.617	SLU 70	Si
PF_SLV	2.087	SLV 15	Si
V_SLV	2.879	SLV 13	Si
PFFP_SLV	1.63	SLV 12	Si
R_SLV	2.691	SLV 5	Si

Maschio 162

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-18.263	-3.359	-18.868	-3.359	L6	L7	0.605	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 71	10.62	23.35	-4876	-0.0000443	0.0003743	0.0035	0.605	1085.84	1193.15	1193.15	51.09	No	Si
SLU 71	11.42	327.52	-4731	-0.0000704	0.0003743	0.0035	0.605	1064.68	1167.37	1167.37	3.56	No	Si
SLU 70	10.62	23.65	-4960	-0.0000451	0.0003743	0.0035	0.605	1097.62	1207.97	1207.97	51.08	No	Si
SLU 70	11.42	336.79	-4813	-0.0000721	0.0003743	0.0035	0.605	1076.72	1181.91	1181.91	3.51	No	Si
SLU 67	10.62	20.36	-4792	-0.0000432	0.0003743	0.0035	0.605	1073.67	1178.2	1178.2	57.87	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 67	11.42	324.48	-4646	-0.0000693	0.0003743	0.0035	0.605	1052.11	1152.56	1152.56	3.55	No	Si
SLU 51	10.62	11.12	-4258	-0.0000375	0.0003743	0.0035	0.605	991.2	1085.25	1085.25	97.62	No	Si
SLU 51	11.42	294.59	-4116	-0.0000614	0.0003743	0.0035	0.605	967.76	1057.01	1057.01	3.59	No	Si
SLU 44	10.62	2.37	-3913	-0.0000336	0.0003743	0.0035	0.605	933.05	1011.31	1011.31	427.4	No	Si
SLU 44	11.42	273.18	-3778	-0.0000562	0.0003743	0.0035	0.605	909.22	979.26	979.26	3.58	No	Si
SLU 68	10.62	14.63	-4685	-0.0000418	0.0003743	0.0035	0.605	1057.96	1159.42	1159.42	79.22	No	Si
SLU 68	11.42	323.21	-4553	-0.0000683	0.0003743	0.0035	0.605	1037.87	1136.18	1136.18	3.52	No	Si
SLU 69	10.62	26.91	-4974	-0.0000455	0.0003743	0.0035	0.605	1099.58	1210.48	1210.48	44.99	No	Si
SLU 69	11.42	331.99	-4820	-0.0000717	0.0003743	0.0035	0.605	1077.71	1183.12	1183.12	3.56	No	Si
SLU 65	10.62	11.35	-4518	-0.0000399	0.0003743	0.0035	0.605	1032.51	1130.12	1130.12	99.61	No	Si
SLU 65	11.42	310.91	-4386	-0.0000655	0.0003743	0.0035	0.605	1011.85	1107.29	1107.29	3.56	No	Si
SLU 47	10.62	5.66	-4081	-0.0000354	0.0003743	0.0035	0.605	961.83	1049.3	1049.3	185.54	No	Si
SLU 47	11.42	285.48	-3945	-0.0000589	0.0003743	0.0035	0.605	938.56	1018.67	1018.67	3.57	No	Si
SLU 72	10.62	20.1	-4862	-0.0000439	0.0003743	0.0035	0.605	1083.84	1190.66	1190.66	59.25	No	Si
SLU 72	11.42	332.32	-4724	-0.0000708	0.0003743	0.0035	0.605	1063.67	1166.17	1166.17	3.51	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 9	10.62	-87.41	-3218	-0.0000342	0.0005615	0.0035	0.605		958.12	958.12	10.96		Si
SLD 9	11.42	479.08	-3123	-0.0000721	0.0005615	0.0035	0.605		880.92	880.92	1.84		Si
SLD 14	10.62	-233.8	-2336	-0.0000387	0.0005615	0.0035	0.605		730.62	730.62	3.12		Si
SLD 14	11.42	499.79	-2920	-0.0000769	0.0005615	0.0035	0.605		834.3	834.3	1.67		Si
SLV 10	10.62	-89.94	-3366	-0.0000357	0.0005615	0.0035	0.605		995.58	995.58	11.07		Si
SLV 10	11.42	692.35	-2851	-0.0001794	0.0005615	0.0035	0.605		816.49	816.49	1.18		Si
SLV 13	10.62	-775.7	-71	-0.0100272	0.0005615	0.0035	0.484		94.74	94.74	0.12		No
SLV 13	11.42	1087.8	-2195	-0.0302817	0.0005615	0.0035	0.484		644.6	644.6	0.59		No
SLV 15	10.62	-795.66	289	0.0898112	0.0005615	0.0035	0.484		0	0	0		No
SLV 15	11.42	881.11	-2342	-0.0150697	0.0005615	0.0035	0.484		683.64	683.64	0.78		No
SLD 15	10.62	-331.24	-1879	-0.0000504	0.0005615	0.0035	0.484		609.04	609.04	1.84		Si
SLD 15	11.42	508.76	-2932	-0.0000787	0.0005615	0.0035	0.605		837.47	837.47	1.65		Si
SLD 13	10.62	-322.18	-2026	-0.0000477	0.0005615	0.0035	0.605		648.25	648.25	2.01		Si
SLD 13	11.42	592.2	-2872	-0.0001054	0.0005615	0.0035	0.605		822.02	822.02	1.39		Si
SLV 16	10.62	-587.91	-441	-0.0053984	0.0005615	0.0035	0.484		203.68	203.68	0.35		No
SLV 16	11.42	663.87	-2454	-0.0003246	0.0005615	0.0035	0.484		713.1	713.1	1.07		Si
SLV 14	10.62	-567.95	-801	-0.0036857	0.0005615	0.0035	0.484		308.15	308.15	0.54		No
SLV 14	11.42	870.56	-2307	-0.0149997	0.0005615	0.0035	0.484		674.38	674.38	0.77		No
SLV 9	10.62	-229.81	-2874	-0.0000431	0.0005615	0.0035	0.605		871.07	871.07	3.79		Si
SLV 9	11.42	838.61	-2776	-0.0063163	0.0005615	0.0035	0.484		797.04	797.04	0.95		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	10.62	40.31	-5178	-4361	-115	0.605	0.605	-24027	10148	1842	40441	5435	1543	6978	No	60.58	Si
SLU 82	11.42	314.46	-5010	-4219	-611	0.605	0.605	-23243	10044	1823	40441	5435	1543	6978	No	11.42	Si
SLU 79	10.62	42.11	-5332	-4490	-135	0.605	0.605	-24740	10243	1859	40441	5435	1543	6978	No	51.67	Si
SLU 79	11.42	332.25	-5164	-4349	-623	0.605	0.605	-23960	10139	1840	40441	5435	1543	6978	No	11.21	Si
SLU 84	10.62	43.6	-5346	-4502	-120	0.605	0.605	-24804	10252	1861	40441	5435	1543	6978	No	57.98	Si
SLU 84	11.42	326.77	-5176	-4359	-625	0.605	0.605	-24016	10147	1842	40441	5435	1543	6978	No	11.16	Si
SLU 78	10.62	42.4	-5416	-4561	-147	0.605	0.605	-25127	10295	1868	40441	5435	1543	6978	No	47.61	Si
SLU 78	11.42	341.51	-5246	-4418	-627	0.605	0.605	-24342	10190	1849	40441	5435	1543	6978	No	11.12	Si
SLU 80	10.62	38.85	-5318	-4479	-151	0.605	0.605	-24676	10235	1858	40441	5435	1543	6978	No	46.22	Si
SLU 80	11.42	337.05	-5157	-4343	-624	0.605	0.605	-23928	10135	1839	40441	5435	1543	6978	No	11.19	Si
SLU 75	10.62	39.12	-5248	-4419	-141	0.605	0.605	-24349	10191	1850	40441	5435	1543	6978	No	49.35	Si
SLU 75	11.42	329.21	-5080	-4278	-613	0.605	0.605	-23568	10087	1831	40441	5435	1543	6978	No	11.38	Si
SLU 74	10.62	42.37	-5262	-4431	-125	0.605	0.605	-24414	10200	1851	40441	5435	1543	6978	No	55.62	Si
SLU 74	11.42	324.41	-5087	-4283	-612	0.605	0.605	-23600	10091	1832	40441	5435	1543	6978	No	11.4	Si
SLU 77	10.62	45.66	-5430	-4572	-131	0.605	0.605	-25192	10303	1870	40441	5435	1543	6978	No	53.42	Si
SLU 77	11.42	336.72	-5253	-4424	-626	0.605	0.605	-24373	10194	1850	40441	5435	1543	6978	No	11.14	Si
SLU 83	10.62	46.86	-5360	-4514	-104	0.605	0.605	-24869	10260	1862	40441	5435	1543	6978	No	66.82	Si
SLU 83	11.42	321.97	-5183	-4365	-624	0.605	0.605	-24048	10151	1842	40441	5435	1543	6978	No	11.18	Si
SLU 76	10.62	33.39	-5141	-4330	-156	0.605	0.605	-23854	10125	1838	40441	5435	1543	6978	No	44.61	Si
SLU 76	11.42	327.94	-4986	-4199	-610	0.605	0.605	-23133	10029	1820	40441	5435	1543	6978	No	11.43	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	10.62	808.28	-6910	-5819	3121	0.605	0.5566	-32061	16250	2713	40441	8152	1543	9695		3.11	Si
SLV 4	11.42	-635.66	-4550	-3832	390	0.605	0.4884	-26511	15719	2303	40441	8152	1543	9695		24.84	Si
SLV 3	10.62	600.53	-6180	-5204	2339	0.605	0.605	-28673	16151	2931	40441	8152	1543	9695		4.15	Si
SLV 3	11.42	-418.42	-4439	-3738	98	0.605	0.605	-20594	14535	2638	40441	8152	1543	9695		99.24	Si
SLV 16	10.62	-587.91	-441	-371	-2051	0.484	0	0	0	0	40441	6522	1234	7756		3.78	Si
SLV 16	11.42	663.87	-2454	-2066	-1239	0.484	0.0959	0	0	0	40441	6522	1234	7756		6.26	Si
SLV 15	10.62	-795.66	289	243	-2833	0.484	0	0	0	0	40441	6522	1234	7756		2.74	Si
SLV 15	11.42	881.11	-2342	-1972	-1531	0.484	0	0	0	0	40441	6522	1234	7756		5.07	Si
SLV 8	10.62	262.39	-4107	-3458	1805	0.605	0.605	-19054	14227	2582	40441	8152	1543	9695		5.37	Si
SLV 8	11.42	-386.47	-3970	-3343	-562	0.605	0.605	-18419	14100	2559	40441	8152	1543	9695		17.24	Si
SLV 13	10.62	-775.7	-71	-60	-3366	0.484	0	0	0	0	40441	6522	1234	7756		2.3	Si
SLV 13	11.42	1087.8	-2195	-1849	-1244	0.484	0	0	0	0	40441	6522	1234	7756		6.23	Si
SLV 2	10.62	828.23	-7270	-6122	2588	0.605	0.5657	-33732	16250	2758	40441	8152	1543	9695		3.75	Si
SLV 2	11.42	-428.98	-4404	-3708	677	0.605	0.605	-20431	14503	2632	40441	8152	1543	9695		14.32	Si
SLV 9	10.62	-229.81	-2874	-2421	-2050	0.605	0.605	-13336	13084	2375	40441	8152	1543	9695		4.73	Si
SLV 9	11.42	838.61	-2776	-2338	-292	0.484	0.0012	0	0	0	40441	6522	1234	7756		26.6	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	10.62	620.49	-6540	-5507	1806	0.605	0.605	-30344	16250	2949	40441	8152	1543	9695		5.37	Si
SLV 1	11.42	-211.74	-4292	-3614	385	0.605	0.605	-19912	14399	2613	40441	8152	1543	9695		25.21	Si
SLV 14	10.62	-567.95	-801	-675	-2584	0.484	0	0	0	0	40441	6522	1234	7756		3	Si
SLV 14	11.42	870.56	-2307	-1943	-952	0.484	0	0	0	0	40441	6522	1234	7756		8.15	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 15	179667	0.46	0	-522	81.42	0	0	No, e>t/2
SLV 16	179667	0.46	4522	-821	81.42	119.48	1.47	Si
SLV 11	179667	0.46	5102	-926	81.42	134.27	1.65	Si
SLV 12	179667	0.46	6212	-1127	81.42	162.24	1.99	Si
SLV 13	179667	0.46	6868	-1247	81.42	178.57	2.19	Si
SLV 14	179667	0.46	8516	-1546	81.42	218.91	2.69	Si
SLV 7	179667	0.46	10774	-1956	81.42	272.64	3.35	Si
SLV 8	179667	0.46	11884	-2157	81.42	298.36	3.66	Si
SLV 9	179667	0.46	18413	-3342	81.42	440.86	5.41	Si
SLV 10	179667	0.46	19523	-3543	81.42	463.56	5.69	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 4	-2728	-2556	-21	1.071	369.6	0.933	16.68658	6.14217	Si
SLV 2	-2734	-3809	-14	1.071	370.2	0.933	16.68838	6.14217	Si
SLV 3	-2618	-2670	-20	1.106	358.4	0.931	17.27393	6.14217	Si
SLV 1	-2624	-3923	-13	1.107	359	0.931	17.2747	6.14217	Si
SLV 6	-2178	-5014	2	1.283	314.2	0.923	20.1884	5.26078	Si
SLV 8	-2158	-837	-21	1.285	312.2	0.923	20.2287	5.26078	Si
SLV 5	-2104	-5091	2	1.317	306.7	0.922	20.75984	5.26078	Si
SLV 7	-2084	-914	-20	1.319	304.7	0.922	20.80913	5.26078	Si
SLV 10	-1711	-4777	8	1.533	267.4	0.914	24.37884	5.26078	Si
SLV 12	-1691	-601	-14	1.543	265.4	0.913	24.55607	5.26078	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.509	SLU 72	Si
V_SLU	11.121	SLU 78	Si
PF_SLV	0	SLV 15	No
V_SLV	2.304	SLV 13	Si
PFFP_SLV	0	SLV 15	No
R_SLV	2.717	SLV 4	Si

Maschio 164

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.618	1.046	-19.618	5.811	L6	L7	4.765	0.16	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 60	8.62	-4926.02	-23695	-0.0000507	0.0004492	0.0035	4.7652	42096.07	62482.03	62482.03	12.68	No	Si
SLU 60	12.17	-893.14	-13346	-0.000024	0.0004492	0.0035	4.7652	27242.05	42466.39	42466.39	47.55	No	Si
SLU 65	8.62	-4910.28	-23873	-0.000051	0.0004492	0.0035	4.7652	42303.09	62807.96	62807.96	12.79	No	Si
SLU 65	12.17	-866.56	-13781	-0.0000246	0.0004492	0.0035	4.7652	27976.9	43361.65	43361.65	50.04	No	Si
SLU 73	8.62	-5329.28	-25746	-0.0000553	0.0004492	0.0035	4.7652	44389.05	66246.71	66246.71	12.43	No	Si
SLU 73	12.17	-952.61	-14705	-0.0000264	0.0004492	0.0035	4.7652	29505.03	45262.5	45262.5	47.51	No	Si
SLU 52	8.62	-4883.83	-22731	-0.0000489	0.0004492	0.0035	4.7652	40943.06	60711.15	60711.15	12.43	No	Si
SLU 52	12.17	-759.41	-12914	-0.0000229	0.0004492	0.0035	4.7652	26503.72	41578.52	41578.52	54.75	No	Si
SLU 61	8.62	-5008.44	-23598	-0.0000507	0.0004492	0.0035	4.7652	41982.15	62303.75	62303.75	12.44	No	Si
SLU 61	12.17	-835.03	-13324	-0.0000238	0.0004492	0.0035	4.7652	27205.75	42422.46	42422.46	50.8	No	Si
SLU 84	8.62	-5408.33	-27445	-0.0000586	0.0004492	0.0035	4.7652	46125.45	69237.52	69237.52	12.8	No	Si
SLU 84	12.17	-1009.65	-15920	-0.0000286	0.0004492	0.0035	4.7652	31448.73	47676.91	47676.91	47.22	No	Si
SLU 76	8.62	-5283.71	-26577	-0.0000567	0.0004492	0.0035	4.7652	45257.07	67741.11	67741.11	12.82	No	Si
SLU 76	12.17	-934.03	-15510	-0.0000277	0.0004492	0.0035	4.7652	30801.16	46878.45	46878.45	50.19	No	Si
SLU 82	8.62	-5453.89	-26614	-0.0000572	0.0004492	0.0035	4.7652	45294.32	67803.97	67803.97	12.43	No	Si
SLU 82	12.17	-1028.23	-15115	-0.0000273	0.0004492	0.0035	4.7652	30169.5	46106.43	46106.43	44.84	No	Si
SLU 81	8.62	-5371.47	-26711	-0.0000572	0.0004492	0.0035	4.7652	45393.26	67971.48	67971.48	12.65	No	Si
SLU 81	12.17	-1086.34	-15136	-0.0000274	0.0004492	0.0035	4.7652	30203.85	46150.36	46150.36	42.48	No	Si
SLU 44	8.62	-4464.83	-20857	-0.0000447	0.0004492	0.0035	4.7652	38568.16	57272.39	57272.39	12.83	No	Si
SLU 44	12.17	-673.36	-11990	-0.0000212	0.0004492	0.0035	4.7652	24890.97	39677.68	39677.68	58.92	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	8.62	5742.27	-27278	-0.000058	0.0006738	0.0035	4.7652		59525.48	59525.48	10.37		Si
SLV 12	12.17	-6887.89	-12198	-0.0000345	0.0006738	0.0035	4.7652		40461.14	40461.14	5.87		Si
SLD 10	8.62	-7793.34	-12947	-0.0000376	0.0006738	0.0035	4.7652		42037.74	42037.74	5.39		Si
SLD 10	12.17	1048.74	-8716	-0.0000164	0.0006738	0.0035	4.7652		22066.25	22066.25	21.04		Si
SLV 5	8.62	-13128.83	-9444	-0.0000502	0.0006738	0.0035	3.8121		34621.95	34621.95	2.64		Si
SLV 5	12.17	5441.48	-8799	-0.0000257	0.0006738	0.0035	4.7652		22249.74	22249.74	4.09		Si
SLV 9	8.62	-13402.27	-5317	-0.0001697	0.0006738	0.0035	3.8121		25563.73	25563.73	1.91		Si
SLV 9	12.17	4309.91	-6540	-0.0000196	0.0006738	0.0035	4.7652		17242.12	17242.12	4		Si
SLV 6	8.62	-13692.59	-9053	-0.0000549	0.0006738	0.0035	3.8121		33772.7	33772.7	2.47		Si
SLV 6	12.17	4885.86	-8362	-0.0000238	0.0006738	0.0035	4.7652		21283.77	21283.77	4.36		Si
SLD 6	8.62	-7676.68	-14711	-0.0000404	0.0006738	0.0035	4.7652		45754.33	45754.33	5.96		Si
SLD 6	12.17	1531.91	-9682	-0.000019	0.0006738	0.0035	4.7652		24177.57	24177.57	15.78		Si
SLV 13	8.62	-6686.58	-8421	-0.0000277	0.0006738	0.0035	4.7652		32398.53	32398.53	4.85		Si
SLV 13	12.17	-600.21	-6143	-0.0000113	0.0006738	0.0035	4.7652		27398.26	27398.26	45.65		Si
SLV 10	8.62	-13966.03	-4926	-0.000217	0.0006738	0.0035	3.8121		24693.24	24693.24	1.77		Si
SLV 10	12.17	3754.28	-6103	-0.0000177	0.0006738	0.0035	4.7652		16261.38	16261.38	4.33		Si
SLD 9	8.62	-7558.34	-13110	-0.0000374	0.0006738	0.0035	4.7652		42380.91	42380.91	5.61		Si
SLD 9	12.17	1280.34	-8898	-0.0000172	0.0006738	0.0035	4.7652		22468.73	22468.73	17.55		Si
SLV 14	8.62	-7523.93	-7840	-0.0000288	0.0006738	0.0035	4.7652		31134.85	31134.85	4.14		Si
SLV 14	12.17	-1425.47	-5495	-0.0000119	0.0006738	0.0035	4.7652		25960.51	25960.51	18.21		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 51	8.62	-4318.76	-22584	-13261	-2656	4.7652	4.7652	-17393	10652	9708	115546	27400	24302	51702	No	19.47	Si
SLU 51	12.17	-674.93	-13615	-7994	-1184	4.7652	4.7652	-10485	9731	7602	115546	27400	24302	51702	No	43.65	Si
SLU 48	8.62	-4320.61	-22998	-13504	-2417	4.7652	4.7652	-17711	10695	9806	115546	27400	24302	51702	No	21.39	Si
SLU 48	12.17	-839.02	-13886	-8153	-916	4.7652	4.7652	-10694	9759	7665	115546	27400	24302	51702	No	56.45	Si
SLU 50	8.62	-4236.33	-22681	-13318	-2460	4.7652	4.7652	-17467	10662	9731	115546	27400	24302	51702	No	21.02	Si
SLU 50	12.17	-733.03	-13636	-8007	-978	4.7652	4.7652	-10501	9734	7607	115546	27400	24302	51702	No	52.87	Si
SLU 49	8.62	-4403.03	-22901	-13447	-2613	4.7652	4.7652	-17637	10685	9783	115546	27400	24302	51702	No	19.79	Si
SLU 49	12.17	-780.91	-13864	-8141	-1122	4.7652	4.7652	-10677	9757	7660	115546	27400	24302	51702	No	46.07	Si
SLU 68	8.62	-4864.72	-24704	-14505	-2433	4.7652	4.7652	-19025	10833	10206	115546	27400	24302	51702	No	21.25	Si
SLU 68	12.17	-847.98	-14586	-8564	-856	4.7652	4.7652	-11233	9831	7830	115546	27400	24302	51702	No	60.37	Si
SLU 55	8.62	-4838.26	-23562	-13834	-2437	4.7652	4.7652	-18145	10753	9938	115546	27400	24302	51702	No	21.21	Si
SLU 55	12.17	-740.83	-13719	-8055	-951	4.7652	4.7652	-10566	9742	7626	115546	27400	24302	51702	No	54.38	Si
SLU 46	8.62	-4448.6	-22070	-12959	-2587	4.7652	4.7652	-16997	10600	9588	115546	27400	24302	51702	No	19.98	Si
SLU 46	12.17	-799.5	-13059	-7668	-1166	4.7652	4.7652	-10057	9674	7471	115546	27400	24302	51702	No	44.34	Si
SLU 52	8.62	-4883.83	-22731	-13346	-2412	4.7652	4.7652	-17505	10667	9743	115546	27400	24302	51702	No	21.44	Si
SLU 52	12.17	-759.41	-12914	-7583	-994	4.7652	4.7652	-9945	9659	7437	115546	27400	24302	51702	No	51.99	Si
SLU 47	8.62	-4419.27	-21688	-12735	-2761	4.7652	4.7652	-16703	10560	9498	115546	27400	24302	51702	No	18.73	Si
SLU 47	12.17	-654.78	-12795	-7513	-1366	4.7652	4.7652	-9854	9647	7409	115546	27400	24302	51702	No	37.86	Si
SLU 44	8.62	-4464.83	-20857	-12247	-2735	4.7652	4.7652	-16063	10475	9303	115546	27400	24302	51702	No	18.9	Si
SLU 44	12.17	-673.36	-11990	-7040	-1409	4.7652	4.7652	-9234	9565	7292	115546	27400	24302	51702	No	36.68	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 9	8.62	-7558.34	-13110	-7697	-10563	4.7652	4.7652	-10096	14519	11070	115546	41099	24302	65402		6.19	Si
SLD 9	12.17	1280.34	-8898	-5224	-9065	4.7652	4.7652	-6852	13870	10575	115546	41099	24302	65402		7.21	Si
SLV 12	8.62	5742.27	-27278	-16016	19934	4.7652	4.7652	-21007	16250	13013	115546	41099	24302	65402		3.28	Si
SLV 12	12.17	-6887.89	-12198	-7162	20562	4.7652	4.7652	-9394	14379	10963	115546	41099	24302	65402		3.18	Si
SLV 11	8.62	6306.03	-27669	-16246	19933	4.7652	4.7652	-21308	16250	13105	115546	41099	24302	65402		3.28	Si
SLV 11	12.17	-6332.27	-12635	-7419	20460	4.7652	4.7652	-9730	14446	11014	115546	41099	24302	65402		3.2	Si
SLV 7	8.62	6579.47	-31795	-18669	20894	4.7652	4.7652	-24486	16250	14074	115546	41099	24302	65402		3.13	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	12.17	-5200.7	-14894	-8745	21137	4.7652	4.7652	-11470	14794	11279	115546	41099	24302	65402		3.09	Si
SLD 10	8.62	-7793.34	-12947	-7602	-10563	4.7652	4.7652	-9971	14494	11051	115546	41099	24302	65402		6.19	Si
SLD 10	12.17	1048.74	-8716	-5117	-9022	4.7652	4.7652	-6712	13842	10554	115546	41099	24302	65402		7.25	Si
SLV 8	8.62	6015.71	-31404	-18439	20895	4.7652	4.7652	-24185	16250	13982	115546	41099	24302	65402		3.13	Si
SLV 8	12.17	-5756.32	-14457	-8489	21239	4.7652	4.7652	-11134	14727	11228	115546	41099	24302	65402		3.08	Si
SLV 10	8.62	-13966.03	-4926	-2893	-24055	3.8121	0	0	0	0	115546	32880	19442	52321		2.18	Si
SLV 10	12.17	3754.28	-6103	-3584	-21979	4.7652	4.7652	-4700	13440	10247	115546	41099	24302	65402		2.98	Si
SLV 9	8.62	-13402.27	-5317	-3122	-24055	3.8121	0	0	0	0	115546	32880	19442	52321		2.18	Si
SLV 9	12.17	4309.91	-6540	-3840	-22081	4.7652	4.7652	-5036	13507	10298	115546	41099	24302	65402		2.96	Si
SLV 5	8.62	-13128.83	-9444	-5545	-23094	3.8121	2.9771	0	0	0	115546	32880	19442	52321		2.27	Si
SLV 5	12.17	5441.48	-8799	-5166	-21404	4.7652	4.7652	-6776	13855	10564	115546	41099	24302	65402		3.06	Si
SLV 6	8.62	-13692.59	-9053	-5315	-23094	3.8121	2.6102	0	0	0	115546	32880	19442	52321		2.27	Si
SLV 6	12.17	4885.86	-8362	-4910	-21302	4.7652	4.7652	-6440	13788	10512	115546	41099	24302	65402		3.07	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 10.395 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 10	-6523	0.46	367.79	497.5	979.08	738.29	2.01	Si
SLV 9	-6946	0.46	367.79	528.08	1019.92	774	2.1	Si
SLV 14	-8257	0.46	367.79	621.51	1145.93	883.72	2.4	Si
SLV 13	-8885	0.46	367.79	665.6	1206.28	935.94	2.54	Si
SLV 6	-9171	0.46	367.79	685.52	1233.71	959.62	2.61	Si
SLV 5	-9594	0.46	367.79	714.81	1273.91	994.36	2.7	Si
SLV 16	-12478	0.46	367.79	909.1	1547.54	1228.32	3.34	Si
SLV 15	-13106	0.46	367.79	950.16	1606.86	1278.51	3.48	Si
SLV 2	-17082	0.46	367.79	1199.51	1976.48	1587.99	4.32	Si
SLV 1	-17710	0.46	367.79	1237.25	2033.97	1635.61	4.45	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.03 Ta = 0.1315

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 3	-15502	-28881	-732	1.477	1961.7	0.945	22.72403	9.86888	Si
SLV 4	-14854	-28301	-732	1.531	1896	0.943	23.60385	9.86888	Si
SLV 1	-13673	-22176	-740	1.642	1776.4	0.94	25.38793	9.86888	Si
SLV 2	-13025	-21595	-740	1.709	1710.8	0.938	26.49199	9.86888	Si
SLV 7	-14894	-31795	-208	1.558	1900.1	0.943	24.01344	7.20764	Si
SLV 8	-14457	-31404	-208	1.598	1855.9	0.942	24.65489	7.20764	Si
SLV 11	-12635	-27669	233	1.787	1671.3	0.937	27.72656	7.20764	Si
SLV 12	-12198	-27278	233	1.839	1627.2	0.935	28.58615	7.20764	Si
SLV 15	-7972	-15126	739	2.528	1201.6	0.918	40.04107	9.86888	Si
SLV 16	-7324	-14546	739	2.695	1136.7	0.914	42.83356	9.86888	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	12.431	SLU 73	Si
V_SLU	18.727	SLU 47	Si
PF_SLV	1.768	SLV 10	Si
V_SLV	2.175	SLV 9	Si
PFFP_SLV	2.007	SLV 10	Si
R_SLV	2.303	SLV 3	Si

Maschio 165

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.618	5.811	-19.618	6.521	L6	L7	0.71	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 60	8.62	456.69	-3821	-0.0000564	0.0003743	0.0035	0.71	1117.47	1180.88	1180.88	2.59	No	Si
SLU 60	12.17	199.23	-3764	-0.0000396	0.0003743	0.0035	0.71	1104.19	1165.68	1165.68	5.85	No	Si
SLU 83	8.62	528.77	-4601	-0.0000675	0.0003743	0.0035	0.71	1286.81	1391.95	1391.95	2.63	No	Si
SLU 83	12.17	231.41	-4582	-0.0000481	0.0003743	0.0035	0.71	1282.87	1386.65	1386.65	5.99	No	Si
SLU 82	8.62	505.54	-4228	-0.0000629	0.0003743	0.0035	0.71	1208.23	1289.85	1289.85	2.55	No	Si
SLU 82	12.17	221.39	-4283	-0.0000451	0.0003743	0.0035	0.71	1220.11	1304.82	1304.82	5.89	No	Si
SLU 40	8.62	424.89	-3513	-0.0000519	0.0003743	0.0035	0.71	1045.12	1100.07	1100.07	2.59	No	Si
SLU 40	12.17	183.55	-3628	-0.0000376	0.0003743	0.0035	0.71	1072.51	1130.09	1130.09	6.16	No	Si
SLU 81	8.62	514.54	-4300	-0.0000641	0.0003743	0.0035	0.71	1223.75	1309.42	1309.42	2.54	No	Si
SLU 81	12.17	218.48	-4269	-0.0000448	0.0003743	0.0035	0.71	1217.18	1301.1	1301.1	5.96	No	Si
SLU 39	8.62	433.89	-3585	-0.0000531	0.0003743	0.0035	0.71	1062.33	1118.85	1118.85	2.58	No	Si
SLU 39	12.17	180.64	-3615	-0.0000373	0.0003743	0.0035	0.71	1069.28	1126.52	1126.52	6.24	No	Si
SLU 84	8.62	519.77	-4529	-0.0000663	0.0003743	0.0035	0.71	1272	1372.11	1372.11	2.64	No	Si
SLU 84	12.17	234.32	-4595	-0.0000484	0.0003743	0.0035	0.71	1285.67	1390.41	1390.41	5.93	No	Si
SLU 73	8.62	487.21	-4126	-0.0000609	0.0003743	0.0035	0.71	1186.08	1262.42	1262.42	2.59	No	Si
SLU 73	12.17	219.35	-4187	-0.0000442	0.0003743	0.0035	0.71	1199.41	1278.87	1278.87	5.83	No	Si
SLU 61	8.62	447.69	-3749	-0.0000553	0.0003743	0.0035	0.71	1100.82	1161.85	1161.85	2.6	No	Si
SLU 61	12.17	202.14	-3777	-0.0000399	0.0003743	0.0035	0.71	1107.35	1169.28	1169.28	5.78	No	Si
SLU 31	8.62	406.56	-3412	-0.0000499	0.0003743	0.0035	0.71	1020.61	1073.74	1073.74	2.64	No	Si
SLU 31	12.17	181.51	-3532	-0.0000367	0.0003743	0.0035	0.71	1049.76	1105.1	1105.1	6.09	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 14	8.62	594.02	1262	0.2910529	0.0005615	0.0035	0.568		0	0	0		No
SLV 14	12.17	203.88	-1030	-0.0000217	0.0005615	0.0035	0.71		386.39	386.39	1.9		Si
SLD 6	8.62	-128.35	296	0.078609	0.0005615	0.0035	0.568		0	0	0		No
SLD 6	12.17	233.43	-3363	-0.000038	0.0005615	0.0035	0.71		1130.21	1130.21	4.84		Si
SLV 9	8.62	-666.4	6002	1.5649319	0.0005615	0.0035	0.568		0	0	0		No
SLV 9	12.17	352.07	-3176	-0.0000438	0.0005615	0.0035	0.71		1073.82	1073.82	3.05		Si
SLV 5	8.62	-962.32	5120	1.3430805	0.0005615	0.0035	0.568		0	0	0		No
SLV 5	12.17	355.28	-4277	-0.0000524	0.0005615	0.0035	0.71		1379.34	1379.34	3.88		Si
SLD 10	8.62	-1.81	673	0.1735192	0.0005615	0.0035	0.568		0	0	0		No
SLD 10	12.17	232.07	-2892	-0.0000344	0.0005615	0.0035	0.71		986.95	986.95	4.25		Si
SLV 6	8.62	-857.75	5449	1.4261455	0.0005615	0.0035	0.568		0	0	0		No
SLV 6	12.17	348.26	-3902	-0.0000491	0.0005615	0.0035	0.71		1284	1284	3.69		Si
SLD 9	8.62	-45.4	536	0.1392984	0.0005615	0.0035	0.568		0	0	0		No
SLD 9	12.17	235	-3049	-0.0000357	0.0005615	0.0035	0.71		1035.2	1035.2	4.41		Si
SLV 13	8.62	438.71	773	0.1695634	0.0005615	0.0035	0.568		0	0	0		No
SLV 13	12.17	214.31	-1587	-0.0000239	0.0005615	0.0035	0.71		571.31	571.31	2.67		Si
SLV 10	8.62	-561.83	6331	1.6474693	0.0005615	0.0035	0.568		0	0	0		No
SLV 10	12.17	345.05	-2801	-0.0000406	0.0005615	0.0035	0.71		958.57	958.57	2.78		Si
SLD 5	8.62	-171.93	158	0.0432051	0.0005615	0.0035	0.568		0	0	0		No
SLD 5	12.17	236.35	-3519	-0.0000393	0.0005615	0.0035	0.71		1176.11	1176.11	4.98		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 79	8.62	530.67	-4849	-4083	969	0.71	0.71	-19170	9500	2024	40441	6378	1811	8189	No	8.45	Si
SLU 79	12.17	240.36	-4790	-4033	-810	0.71	0.71	-18936	9469	2017	40441	6378	1811	8189	No	10.11	Si
SLU 81	8.62	514.54	-4300	-3621	922	0.71	0.706	-16999	9211	1951	40441	6378	1811	8189	No	8.88	Si
SLU 81	12.17	218.48	-4269	-3595	-757	0.71	0.71	-16878	9195	1959	40441	6378	1811	8189	No	10.82	Si
SLU 78	8.62	528.09	-4822	-4061	961	0.71	0.71	-19064	9486	2021	40441	6378	1811	8189	No	8.52	Si
SLU 78	12.17	244.35	-4846	-4080	-826	0.71	0.71	-19157	9499	2023	40441	6378	1811	8189	No	9.92	Si
SLU 74	8.62	522.87	-4593	-3867	948	0.71	0.71	-18157	9365	1995	40441	6378	1811	8189	No	8.64	Si
SLU 74	12.17	228.5	-4519	-3806	-780	0.71	0.71	-17867	9327	1987	40441	6378	1811	8189	No	10.5	Si
SLU 80	8.62	521.67	-4777	-4023	947	0.71	0.71	-18885	9463	2016	40441	6378	1811	8189	No	8.65	Si
SLU 80	12.17	243.28	-4803	-4045	-820	0.71	0.71	-18990	9476	2018	40441	6378	1811	8189	No	9.98	Si
SLU 77	8.62	537.1	-4894	-4121	982	0.71	0.71	-19348	9524	2029	40441	6378	1811	8189	No	8.33	Si
SLU 77	12.17	241.43	-4832	-4069	-815	0.71	0.71	-19103	9492	2022	40441	6378	1811	8189	No	10.05	Si
SLU 84	8.62	519.77	-4529	-3814	935	0.71	0.71	-17905	9332	1988	40441	6378	1811	8189	No	8.76	Si
SLU 84	12.17	234.32	-4595	-3870	-803	0.71	0.71	-18168	9367	1995	40441	6378	1811	8189	No	10.2	Si
SLU 75	8.62	513.86	-4521	-3807	926	0.71	0.71	-17872	9327	1987	40441	6378	1811	8189	No	8.84	Si
SLU 75	12.17	231.41	-4533	-3817	-791	0.71	0.71	-17921	9334	1988	40441	6378	1811	8189	No	10.35	Si
SLU 83	8.62	528.77	-4601	-3875	957	0.71	0.71	-18190	9370	1996	40441	6378	1811	8189	No	8.56	Si
SLU 83	12.17	231.41	-4582	-3858	-792	0.71	0.71	-18114	9360	1994	40441	6378	1811	8189	No	10.34	Si
SLU 69	8.62	508.33	-4769	-4016	930	0.71	0.71	-18856	9459	2015	40441	6378	1811	8189	No	8.81	Si
SLU 69	12.17	232.14	-4587	-3863	-775	0.71	0.71	-18136	9363	1994	40441	6378	1811	8189	No	10.57	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	8.62	-962.32	5120	4312	-2220	0.568	0.5011	0	0	0	40441	7654	1448	9102		4.1	Si
SLV 5	12.17	355.28	-4277	-3601	-1441	0.71	0.71	-16908	13798	2939	40441	9567	1811	11378		7.89	Si
SLV 15	8.62	1111.77	-4523	-3809	1902	0.71	0.3276	-17882	13993	2041	40441	9567	1811	11378		5.98	Si
SLV 15	12.17	97.97	-1248	-1051	-197	0.71	0.71	-4935	11404	2429	40441	9567	1811	11378		57.65	Si
SLV 11	8.62	1577.15	-11651	-9811	3375	0.71	0.6589	-46062	16250	3642	40441	9567	1811	11378		3.37	Si
SLV 11	12.17	-35.72	-2046	-1723	348	0.71	0.71	-8090	12035	2563	40441	9567	1811	11378		32.65	Si
SLV 9	8.62	-666.4	6002	5054	-1880	0.568	0.71	0	0	0	40441	7654	1448	9102		4.84	Si
SLV 9	12.17	352.07	-3176	-2674	-1385	0.71	0.71	-12556	12928	2754	40441	9567	1811	11378		8.22	Si
SLV 8	8.62	1385.79	-12204	-10277	3161	0.71	0.71	-48249	16250	3766	40441	9567	1811	11378		3.6	Si
SLV 8	12.17	-39.53	-2772	-2334	315	0.71	0.71	-10960	12609	2686	40441	9567	1811	11378		36.16	Si
SLV 16	8.62	1267.08	-4034	-3397	2088	0.71	0.1228	-99657	16250	1931	40441	9567	1811	11378		5.45	Si
SLV 16	12.17	87.54	-691	-582	-163	0.71	0.6852	-2734	10963	2254	40441	9567	1811	11378		69.72	Si
SLV 7	8.62	1281.23	-12533	-10554	3035	0.71	0.71	-49550	16250	3840	40441	9567	1811	11378		3.75	Si
SLV 7	12.17	-32.51	-3147	-2650	292	0.71	0.71	-12442	12905	2749	40441	9567	1811	11378		39.01	Si
SLV 6	8.62	-857.75	5449	4589	-2095	0.568	0.5928	0	0	0	40441	7654	1448	9102		4.35	Si
SLV 6	12.17	348.26	-3902	-3286	-1418	0.71	0.71	-15426	13502	2876	40441	9567	1811	11378		8.02	Si
SLV 10	8.62	-561.83	6331	5332	-1755	0.568	0.71	0	0	0	40441	7654	1448	9102		5.19	Si
SLV 10	12.17	345.05	-2801	-2359	-1362	0.71	0.6954	-11074	12631	2635	40441	9567	1811	11378		8.36	Si
SLV 12	8.62	1681.71	-11322	-9534	3501	0.71	0.6194	-44761	16250	3568	40441	9567	1811	11378		3.25	Si
SLV 12	12.17	-42.74	-1671	-1407	371	0.71	0.71	-6608	11738	2500	40441	9567	1811	11378		30.63	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 6	179667	0.46	0	-26	95.56	0	0	No, e>t/2
SLV 10	179667	0.46	0	984	95.56	0	0	No, Trazione
SLV 9	179667	0.46	0	639	95.56	0	0	No, Trazione
SLV 14	179667	0.46	0	57	95.56	0	0	No, Trazione
SLV 13	179667	0.46	0	-455	95.56	0	0	No, e>t/2
SLV 5	179667	0.46	0	-371	95.56	0	0	No, e>t/2
SLV 16	179667	0.46	8532	-1817	95.56	257.38	2.69	Si
SLV 15	179667	0.46	10938	-2330	95.56	324.44	3.4	Si
SLV 2	179667	0.46	15524	-3307	95.56	445.57	4.66	Si
SLV 1	179667	0.46	17929	-3819	95.56	505.59	5.29	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 1	-5256	-2168	-286	0.671	642	0.952	10.24266	6.14217	Si
SLV 3	-4918	-7463	-288	0.708	607.6	0.949	10.84295	6.14217	Si
SLV 2	-4700	-1679	-285	0.736	585.5	0.948	11.28433	6.14217	Si
SLV 4	-4361	-6975	-288	0.782	551.1	0.945	12.02611	6.14217	Si
SLV 5	-4277	5120	-82	0.836	542.6	0.944	12.87102	5.26078	Si, Trazione
SLV 6	-3902	5449	-82	0.901	504.6	0.941	13.92354	5.26078	Si, Trazione
SLV 9	-3176	6002	90	1.06	431.1	0.932	16.53175	5.26078	Si, Trazione
SLV 7	-3147	-12533	-91	1.068	428.2	0.932	16.65383	5.26078	Si
SLV 10	-2801	6331	90	1.17	393.3	0.927	18.3421	5.26078	Si, Trazione
SLV 8	-2772	-12204	-91	1.179	390.4	0.927	18.49421	5.26078	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.545	SLU 81	Si
V_SLU	8.335	SLU 77	Si
PF_SLV	0	SLD 5	No
V_SLV	3.25	SLV 12	Si
PFFP_SLV	0	SLV 14	No
R_SLV	1.668	SLV 1	Si

Maschio 166

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-18.448	-3.359	-18.448	1.046	L6	L7	4.406	0.16	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 74	8.62	4140.94	-26207	-0.0000589	0.0004492	0.0035	4.4057	40165.02	50689.53	50689.53	12.24	No	Si
SLU 74	12.17	1915.35	-14265	-0.0000304	0.0004492	0.0035	4.4057	26218.59	30683.95	30683.95	16.02	No	Si
SLU 69	8.62	4009.3	-24787	-0.0000558	0.0004492	0.0035	4.4057	38888.25	48446.21	48446.21	12.08	No	Si
SLU 69	12.17	1961.76	-13927	-0.0000299	0.0004492	0.0035	4.4057	25718.78	30050.35	30050.35	15.32	No	Si
SLU 77	8.62	4242.44	-26807	-0.0000604	0.0004492	0.0035	4.4057	40672.71	51635.98	51635.98	12.17	No	Si
SLU 77	12.17	2029.97	-14820	-0.0000317	0.0004492	0.0035	4.4057	27028.55	31726.78	31726.78	15.63	No	Si
SLU 48	8.62	3608.87	-21915	-0.0000492	0.0004492	0.0035	4.4057	35992.61	43912.35	43912.35	12.17	No	Si
SLU 48	12.17	1722.94	-12312	-0.0000263	0.0004492	0.0035	4.4057	23245.12	26983.51	26983.51	15.66	No	Si
SLU 50	8.62	3560.16	-21583	-0.0000484	0.0004492	0.0035	4.4057	35630.79	43388.39	43388.39	12.19	No	Si
SLU 50	12.17	1667.37	-12017	-0.0000256	0.0004492	0.0035	4.4057	22778.87	26419	26419	15.84	No	Si
SLU 66	8.62	3907.8	-24187	-0.0000544	0.0004492	0.0035	4.4057	38318.61	47499.76	47499.76	12.16	No	Si
SLU 66	12.17	1847.14	-13372	-0.0000286	0.0004492	0.0035	4.4057	24883.47	29007.51	29007.51	15.7	No	Si
SLU 71	8.62	3960.59	-24455	-0.000055	0.0004492	0.0035	4.4057	38575.16	47922.25	47922.25	12.1	No	Si
SLU 71	12.17	1906.2	-13632	-0.0000292	0.0004492	0.0035	4.4057	25276.9	29496.24	29496.24	15.47	No	Si
SLU 70	8.62	3979.69	-24828	-0.0000558	0.0004492	0.0035	4.4057	38927.01	48511.74	48511.74	12.19	No	Si
SLU 70	12.17	1996.3	-13928	-0.00003	0.0004492	0.0035	4.4057	25720.07	30051.98	30051.98	15.05	No	Si
SLU 72	8.62	3930.98	-24496	-0.000055	0.0004492	0.0035	4.4057	38614.63	47987.78	47987.78	12.21	No	Si
SLU 72	12.17	1940.73	-13633	-0.0000293	0.0004492	0.0035	4.4057	25278.21	29497.87	29497.87	15.2	No	Si
SLU 79	8.62	4193.72	-26475	-0.0000596	0.0004492	0.0035	4.4057	40393.92	51112.01	51112.01	12.19	No	Si
SLU 79	12.17	1974.41	-14525	-0.000031	0.0004492	0.0035	4.4057	26600.14	31172.67	31172.67	15.79	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 15	8.62	5297.03	-11491	-0.0000334	0.0006738	0.0035	4.4057		25739.7	25739.7	4.86		Si
SLV 15	12.17	976.32	-6361	-0.0000136	0.0006738	0.0035	4.4057		15380.91	15380.91	15.75		Si
SLV 16	8.62	5133.16	-11354	-0.0000327	0.0006738	0.0035	4.4057		25467.6	25467.6	4.96		Si
SLV 16	12.17	754.86	-6418	-0.0000131	0.0006738	0.0035	4.4057		15500.07	15500.07	20.53		Si
SLD 11	8.62	5347.71	-14790	-0.0000396	0.0006738	0.0035	4.4057		32189.88	32189.88	6.02		Si
SLD 11	12.17	131.62	-8390	-0.0000152	0.0006738	0.0035	4.4057		19530.84	19530.84	148.38		Si
SLV 11	8.62	9070.74	-10295	-0.000041	0.0006738	0.0035	4.4057		23364.49	23364.49	2.58		Si
SLV 11	12.17	-1571.61	-6724	-0.0000157	0.0006738	0.0035	4.4057		25358.6	25358.6	16.14		Si
SLV 7	8.62	8739.69	-13023	-0.0000447	0.0006738	0.0035	4.4057		28755.76	28755.76	3.29		Si
SLV 7	12.17	-1887.81	-8245	-0.0000192	0.0006738	0.0035	4.4057		28431.12	28431.12	15.06		Si
SLV 8	8.62	8629.37	-12930	-0.0000443	0.0006738	0.0035	4.4057		28575.54	28575.54	3.31		Si
SLV 8	12.17	-2036.92	-8283	-0.0000196	0.0006738	0.0035	4.4057		28508.87	28508.87	14		Si
SLD 12	8.62	5301.73	-14751	-0.0000394	0.0006738	0.0035	4.4057		32116	32116	6.06		Si
SLD 12	12.17	69.47	-8406	-0.000015	0.0006738	0.0035	4.4057		19563.76	19563.76	281.6		Si
SLV 10	8.62	-3001.57	-22648	-0.0000483	0.0006738	0.0035	4.4057		55666.3	55666.3	18.55		Si
SLV 10	12.17	4401.73	-10820	-0.00003	0.0006738	0.0035	4.4057		24411.78	24411.78	5.55		Si
SLV 9	8.62	-2891.25	-22741	-0.0000482	0.0006738	0.0035	4.4057		55829.63	55829.63	19.31		Si
SLV 9	12.17	4550.84	-10781	-0.0000303	0.0006738	0.0035	4.4057		24335.28	24335.28	5.35		Si
SLV 12	8.62	8960.41	-10202	-0.0000405	0.0006738	0.0035	4.4057		23178.3	23178.3	2.59		Si
SLV 12	12.17	-1720.72	-6763	-0.0000161	0.0006738	0.0035	4.4057		25437.37	25437.37	14.78		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 50	8.62	3560.16	-21583	-12673	2612	4.4057	4.4057	-17978	10730	9141	115546	25333	22469	47802	No	18.3	Si
SLU 50	12.17	1667.37	-12017	-7056	2620	4.4057	4.4057	-10010	9668	6894	115546	25333	22469	47802	No	18.25	Si
SLU 48	8.62	3608.87	-21915	-12868	2603	4.4057	4.4057	-18254	10767	9219	115546	25333	22469	47802	No	18.37	Si
SLU 48	12.17	1722.94	-12312	-7229	2610	4.4057	4.4057	-10256	9701	6964	115546	25333	22469	47802	No	18.31	Si
SLU 45	8.62	3507.37	-21316	-12516	2567	4.4057	4.4057	-17755	10701	9078	115546	25333	22469	47802	No	18.62	Si
SLU 45	12.17	1608.31	-11757	-6903	2574	4.4057	4.4057	-9793	9639	6833	115546	25333	22469	47802	No	18.57	Si
SLU 77	8.62	4242.44	-26807	-15740	2595	4.4057	4.4057	-22329	10833	10368	115546	25333	22469	47802	No	18.42	Si
SLU 77	12.17	2029.97	-14820	-8701	2604	4.4057	4.4057	-12344	9979	7553	115546	25333	22469	47802	No	18.36	Si
SLU 66	8.62	3907.8	-24187	-14202	2572	4.4057	4.4057	-20147	10833	9753	115546	25333	22469	47802	No	18.59	Si
SLU 66	12.17	1847.14	-13372	-7852	2580	4.4057	4.4057	-11138	9818	7213	115546	25333	22469	47802	No	18.53	Si
SLU 58	8.62	3793.29	-23604	-13859	2600	4.4057	4.4057	-19661	10833	9615	115546	25333	22469	47802	No	18.39	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 58	12.17	1735.58	-12910	-7580	2608	4.4057	4.4057	-10753	9767	7104	115546	25333	22469	47802	No	18.33	Si
SLU 79	8.62	4193.72	-26475	-15545	2604	4.4057	4.4057	-22052	10833	10290	115546	25333	22469	47802	No	18.36	Si
SLU 79	12.17	1974.41	-14525	-8528	2613	4.4057	4.4057	-12098	9946	7483	115546	25333	22469	47802	No	18.29	Si
SLU 71	8.62	3960.59	-24455	-14359	2617	4.4057	4.4057	-20370	10833	9815	115546	25333	22469	47802	No	18.27	Si
SLU 71	12.17	1906.2	-13632	-8004	2625	4.4057	4.4057	-11355	9847	7274	115546	25333	22469	47802	No	18.21	Si
SLU 56	8.62	3842	-23935	-14054	2590	4.4057	4.4057	-19937	10833	9693	115546	25333	22469	47802	No	18.46	Si
SLU 56	12.17	1791.14	-13205	-7753	2598	4.4057	4.4057	-10999	9800	7173	115546	25333	22469	47802	No	18.4	Si
SLU 69	8.62	4009.3	-24787	-14554	2607	4.4057	4.4057	-20646	10833	9893	115546	25333	22469	47802	No	18.33	Si
SLU 69	12.17	1961.76	-13927	-8177	2616	4.4057	4.4057	-11601	9880	7343	115546	25333	22469	47802	No	18.27	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	8.62	8739.69	-13023	-7646	19590	4.4057	4.4057	-10847	14669	10341	115546	37999	22469	60468		3.09	Si
SLV 7	12.17	-1887.81	-8245	-4841	16641	4.4057	4.4057	-6867	13873	9780	115546	37999	22469	60468		3.63	Si
SLV 15	8.62	5297.03	-11491	-6747	9988	4.4057	4.4057	-9572	14414	10161	115546	37999	22469	60468		6.05	Si
SLV 15	12.17	976.32	-6361	-3735	9070	4.4057	4.4057	-5298	13560	9558	115546	37999	22469	60468		6.67	Si
SLV 10	8.62	-3001.57	-22648	-13298	-15683	4.4057	4.4057	-18865	16250	11455	115546	37999	22469	60468		3.86	Si
SLV 10	12.17	4401.73	-10820	-6353	-12722	4.4057	4.4057	-9013	14303	10082	115546	37999	22469	60468		4.75	Si
SLV 9	8.62	-2891.25	-22741	-13352	-15552	4.4057	4.4057	-18942	16250	11455	115546	37999	22469	60468		3.89	Si
SLV 9	12.17	4550.84	-10781	-6330	-12590	4.4057	4.4057	-8980	14296	10077	115546	37999	22469	60468		4.8	Si
SLV 16	8.62	5133.16	-11354	-6666	9793	4.4057	4.4057	-9457	14391	10145	115546	37999	22469	60468		6.17	Si
SLV 16	12.17	754.86	-6418	-3768	8873	4.4057	4.4057	-5346	13569	9565	115546	37999	22469	60468		6.81	Si
SLV 8	8.62	8629.37	-12930	-7592	19459	4.4057	4.4057	-10770	14654	10330	115546	37999	22469	60468		3.11	Si
SLV 8	12.17	-2036.92	-8283	-4864	16508	4.4057	4.4057	-6900	13880	9784	115546	37999	22469	60468		3.66	Si
SLV 11	8.62	9070.74	-10295	-6045	21057	4.4057	3.9653	-8575	14215	9019	115546	37999	22469	60468		2.87	Si
SLV 11	12.17	-1571.61	-6724	-3948	18088	4.4057	4.4057	-5601	13620	9601	115546	37999	22469	60468		3.34	Si
SLV 12	8.62	8960.41	-10202	-5990	20926	4.4057	3.9738	-8498	14200	9028	115546	37999	22469	60468		2.89	Si
SLV 12	12.17	-1720.72	-6763	-3971	17955	4.4057	4.4057	-5633	13627	9606	115546	37999	22469	60468		3.37	Si
SLV 6	8.62	-3332.62	-25376	-14899	-17151	4.4057	4.4057	-21137	16250	12068	115546	37999	22469	60468		3.53	Si
SLV 6	12.17	4085.53	-12341	-7246	-14169	4.4057	4.4057	-10279	14556	10261	115546	37999	22469	60468		4.27	Si
SLV 5	8.62	-3222.29	-25468	-14954	-17019	4.4057	4.4057	-21214	16250	12089	115546	37999	22469	60468		3.55	Si
SLV 5	12.17	4234.63	-12302	-7223	-14036	4.4057	4.4057	-10247	14549	10256	115546	37999	22469	60468		4.31	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 10.395 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 16	-9616	0.46	340.05	711.99	1246.37	979.18	2.88	Si
SLV 15	-9650	0.46	340.05	714.33	1249.62	981.97	2.89	Si
SLV 12	-9757	0.46	340.05	721.64	1259.83	990.73	2.91	Si
SLV 11	-9780	0.46	340.05	723.2	1262.02	992.61	2.92	Si
SLV 14	-11708	0.46	340.05	851.77	1444.9	1148.34	3.38	Si
SLV 13	-11742	0.46	340.05	854.02	1448.15	1151.08	3.39	Si
SLV 8	-11967	0.46	340.05	868.66	1469.32	1168.99	3.44	Si
SLV 7	-11990	0.46	340.05	870.17	1471.48	1170.82	3.44	Si
SLV 10	-16733	0.46	340.05	1165.25	1912.7	1538.97	4.53	Si
SLV 9	-16756	0.46	340.05	1166.61	1914.81	1540.71	4.53	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.03 Ta = 0.1315

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 2	-12704	-24179	-623	1.639	1648.7	0.94	25.342	9.86888	Si
SLV 1	-12647	-24317	-623	1.645	1642.9	0.94	25.44329	9.86888	Si
SLV 4	-11487	-20446	-530	1.789	1525.6	0.936	27.77926	9.86888	Si
SLV 3	-11429	-20583	-530	1.796	1519.7	0.936	27.90054	9.86888	Si
SLV 6	-12341	-25376	-327	1.699	1611.9	0.939	26.30986	7.20764	Si
SLV 5	-12302	-25468	-327	1.704	1608	0.939	26.38241	7.20764	Si
SLV 14	-7635	-15087	530	2.477	1137.4	0.919	39.1635	9.86888	Si
SLV 13	-7578	-15225	530	2.491	1131.7	0.919	39.40319	9.86888	Si
SLV 10	-10820	-22648	19	1.918	1458.2	0.933	29.86331	7.20764	Si
SLV 9	-10781	-22741	19	1.924	1454.2	0.933	29.95548	7.20764	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	12.083	SLU 69	Si
V_SLU	18.208	SLU 71	Si
PF_SLV	2.576	SLV 11	Si
V_SLV	2.872	SLV 11	Si
PFFP_SLV	2.88	SLV 16	Si
R_SLV	2.568	SLV 2	Si

Maschio 168

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-16.333	-3.359	-17.278	-3.359	L6	L7	0.945	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 80	8.62	-742.21	-7279	-0.0000666	0.0004492	0.0035	0.945	2716.52	3131.65	3131.65	4.22	No	Si
SLU 80	10.72	116.43	-7075	-0.0000428	0.0004492	0.0035	0.945	2660.21	2873.64	2873.64	24.68	No	Si
SLU 36	8.62	-652.9	-6183	-0.0000567	0.0004492	0.0035	0.945	2399.92	2759.24	2759.24	4.23	No	Si
SLU 36	10.72	117.9	-6179	-0.0000377	0.0004492	0.0035	0.945	2398.75	2533.97	2533.97	21.49	No	Si
SLU 76	8.62	-724.52	-7109	-0.0000649	0.0004492	0.0035	0.945	2669.69	3075.95	3075.95	4.25	No	Si
SLU 76	10.72	114.43	-6882	-0.0000416	0.0004492	0.0035	0.945	2605.83	2800.21	2800.21	24.47	No	Si
SLU 77	8.62	-743.38	-7348	-0.000067	0.0004492	0.0035	0.945	2735.56	3154.47	3154.47	4.24	No	Si
SLU 77	10.72	102.57	-7185	-0.0000429	0.0004492	0.0035	0.945	2690.69	2913.22	2913.22	28.4	No	Si
SLU 70	8.62	-728.94	-7157	-0.0000653	0.0004492	0.0035	0.945	2683.13	3091.87	3091.87	4.24	No	Si
SLU 70	10.72	153.76	-6591	-0.0000413	0.0004492	0.0035	0.945	2521.73	2689.37	2689.37	17.49	No	Si
SLU 84	8.62	-728.03	-7180	-0.0000654	0.0004492	0.0035	0.945	2689.43	3099.36	3099.36	4.26	No	Si
SLU 84	10.72	88.61	-7132	-0.0000421	0.0004492	0.0035	0.945	2675.95	2894.16	2894.16	32.66	No	Si
SLU 75	8.62	-729.45	-7194	-0.0000656	0.0004492	0.0035	0.945	2693.21	3103.86	3103.86	4.26	No	Si
SLU 75	10.72	106.02	-6999	-0.0000419	0.0004492	0.0035	0.945	2638.93	2844.93	2844.93	26.83	No	Si
SLU 72	8.62	-716.51	-7043	-0.0000642	0.0004492	0.0035	0.945	2651.12	3053.68	3053.68	4.26	No	Si
SLU 72	10.72	151.27	-6460	-0.0000404	0.0004492	0.0035	0.945	2483	2639.62	2639.62	17.45	No	Si
SLU 78	8.62	-754.65	-7393	-0.0000677	0.0004492	0.0035	0.945	2747.78	3169.16	3169.16	4.2	No	Si
SLU 78	10.72	118.92	-7207	-0.0000436	0.0004492	0.0035	0.945	2696.72	2920.98	2920.98	24.56	No	Si
SLU 38	8.62	-640.47	-6068	-0.0000556	0.0004492	0.0035	0.945	2364.86	2718.11	2718.11	4.24	No	Si
SLU 38	10.72	115.41	-6047	-0.0000368	0.0004492	0.0035	0.945	2358.54	2484.76	2484.76	21.53	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	8.62	-2389.12	-8695	-0.0001587	0.0006738	0.0035	0.756		3803.81	3803.81	1.59		Si
SLV 13	10.72	3172.07	-861	-0.0823585	0.0006738	0.0035	0.756		457.34	457.34	0.14		No
SLV 14	8.62	-2038.73	-8032	-0.0001301	0.0006738	0.0035	0.756		3563.47	3563.47	1.75		Si
SLV 14	10.72	2547.36	-1695	-0.050977	0.0006738	0.0035	0.756		835.54	835.54	0.33		No
SLV 15	8.62	-1907.18	-6230	-0.0001327	0.0006738	0.0035	0.756		2888.5	2888.5	1.51		Si
SLV 15	10.72	2441.66	764	-0.0806524	0.0006738	0.0035	0.756		0	0	0		No
SLV 8	8.62	877.23	-34	-0.0259652	0.0006738	0.0035	0.756		74.9	74.9	0.09		No
SLV 8	10.72	-2093.78	-3475	-0.0020743	0.0006738	0.0035	0.756		1771.42	1771.42	0.85		No
SLV 3	8.62	1060.49	-1977	-0.0050176	0.0006738	0.0035	0.756		961.06	961.06	0.91		No
SLV 3	10.72	-2420.85	-7601	-0.0001805	0.0006738	0.0035	0.756		3405.52	3405.52	1.41		Si
SLV 7	8.62	641.32	-481	-0.0117679	0.0006738	0.0035	0.756		282.58	282.58	0.44		No
SLV 7	10.72	-1673.18	-2913	-0.0012409	0.0006738	0.0035	0.756		1533.18	1533.18	0.92		No
SLD 15	8.62	-1101.37	-5562	-0.000069	0.0006738	0.0035	0.945		2625.86	2625.86	2.38		Si
SLD 15	10.72	1088.8	-2360	-0.0007051	0.0006738	0.0035	0.756		1129.72	1129.72	1.04		Si
SLV 4	8.62	1410.88	-1314	-0.0230971	0.0006738	0.0035	0.756		663.72	663.72	0.47		No
SLV 4	10.72	-3045.56	-8435	-0.0002983	0.0006738	0.0035	0.756		3710.27	3710.27	1.22		Si
SLV 16	8.62	-1556.79	-5566	-0.0001002	0.0006738	0.0035	0.756		2627.44	2627.44	1.69		Si
SLV 16	10.72	1816.95	-70	-0.0540642	0.0006738	0.0035	0.756		91.56	91.56	0.05		No
SLD 13	8.62	-1295.08	-6549	-0.0000818	0.0006738	0.0035	0.945		3011	3011	2.32		Si
SLD 13	10.72	1383.28	-3004	-0.0012279	0.0006738	0.0035	0.756		1409.22	1409.22	1.02		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	8.62	-729.45	-7194	-6058	-651	0.945	0.945	-21369	10833	3071	40441	10188	2410	12598	No	19.35	Si
SLU 75	10.72	106.02	-6999	-5894	103	0.945	0.945	-20791	10833	3071	40441	10188	2410	12598	No	122.53	Si
SLU 69	8.62	-717.68	-7112	-5989	-657	0.945	0.945	-21127	10833	3071	40441	10188	2410	12598	No	19.18	Si
SLU 69	10.72	137.41	-6569	-5532	-17	0.945	0.945	-19513	10833	3071	40441	10188	2410	12598	No	727.19	Si
SLU 78	8.62	-754.65	-7393	-6226	-673	0.945	0.945	-21961	10833	3071	40441	10188	2410	12598	No	18.71	Si
SLU 78	10.72	118.92	-7207	-6069	84	0.945	0.945	-21407	10833	3071	40441	10188	2410	12598	No	149.94	Si
SLU 72	8.62	-716.51	-7043	-5931	-651	0.945	0.945	-20920	10833	3071	40441	10188	2410	12598	No	19.35	Si
SLU 72	10.72	151.27	-6460	-5440	-51	0.945	0.945	-19188	10833	3071	40441	10188	2410	12598	No	248.08	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	8.62	-743.38	-7348	-6188	-668	0.945	0.945	-21828	10833	3071	40441	10188	2410	12598	No	18.85	Si
SLU 77	10.72	102.57	-7185	-6050	119	0.945	0.945	-21342	10833	3071	40441	10188	2410	12598	No	105.78	Si
SLU 70	8.62	-728.94	-7157	-6027	-662	0.945	0.945	-21261	10833	3071	40441	10188	2410	12598	No	19.04	Si
SLU 70	10.72	153.76	-6591	-5550	-52	0.945	0.945	-19578	10833	3071	40441	10188	2410	12598	No	240.42	Si
SLU 74	8.62	-718.18	-7149	-6020	-646	0.945	0.945	-21235	10833	3071	40441	10188	2410	12598	No	19.51	Si
SLU 74	10.72	89.68	-6977	-5876	138	0.945	0.945	-20726	10833	3071	40441	10188	2410	12598	No	91.36	Si
SLU 80	8.62	-742.21	-7279	-6129	-663	0.945	0.945	-21620	10833	3071	40441	10188	2410	12598	No	19.01	Si
SLU 80	10.72	116.43	-7075	-5958	86	0.945	0.945	-21016	10833	3071	40441	10188	2410	12598	No	147.11	Si
SLU 71	8.62	-705.24	-6998	-5893	-646	0.945	0.945	-20786	10833	3071	40441	10188	2410	12598	No	19.5	Si
SLU 71	10.72	134.93	-6438	-5421	-16	0.945	0.945	-19123	10833	3071	40441	10188	2410	12598	No	802.09	Si
SLU 79	8.62	-730.95	-7234	-6091	-658	0.945	0.945	-21487	10833	3071	40441	10188	2410	12598	No	19.15	Si
SLU 79	10.72	100.09	-7053	-5940	121	0.945	0.945	-20951	10833	3071	40441	10188	2410	12598	No	104.36	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	8.62	877.23	-34	-29	402	0.756	0	0	0	0	40441	12226	1928	14154		35.25	Si
SLV 8	10.72	-2093.78	-3475	-2926	4547	0.756	0	0	0	0	40441	12226	1928	14154		3.11	Si
SLV 2	8.62	928.93	-3779	-3183	1007	0.945	0.6801	-11226	14745	3008	40441	15282	2410	17692		17.56	Si
SLV 2	10.72	-2315.15	-10060	-8472	4662	0.945	0.7271	-39536	16250	3897	40441	15282	2410	17692		3.8	Si
SLV 9	8.62	-1855.47	-9975	-8400	-1295	0.945	0.8595	-33056	16250	4190	40441	15282	2410	17692		13.66	Si
SLV 9	10.72	2220.29	-5821	-4902	-4415	0.945	0.2732	-61675	16250	2945	40441	15282	2410	17692		4.01	Si
SLV 16	8.62	-1556.79	-5566	-4688	-1626	0.756	0.5785	0	0	0	40441	12226	1928	14154		8.71	Si
SLV 16	10.72	1816.95	-70	-59	-3265	0.756	0	0	0	0	40441	12226	1928	14154		4.34	Si
SLV 3	8.62	1060.49	-1977	-1665	931	0.756	0	0	0	0	40441	12226	1928	14154		15.21	Si
SLV 3	10.72	-2420.85	-7601	-6401	4975	0.756	0.4621	0	0	0	40441	12226	1928	14154		2.84	Si
SLV 7	8.62	641.32	-481	-405	216	0.756	0	0	0	0	40441	12226	1928	14154		65.42	Si
SLV 7	10.72	-1673.18	-2913	-2453	3696	0.756	0	0	0	0	40441	12226	1928	14154		3.83	Si
SLV 15	8.62	-1907.18	-6230	-5246	-1901	0.756	0.4991	0	0	0	40441	12226	1928	14154		7.45	Si
SLV 15	10.72	2441.66	764	644	-4529	0.756	0	0	0	0	40441	12226	1928	14154		3.12	Si
SLV 4	8.62	1410.88	-1314	-1106	1206	0.756	0	0	0	0	40441	12226	1928	14154		11.74	Si
SLV 4	10.72	-3045.56	-8435	-7103	6240	0.756	0.3343	0	0	0	40441	12226	1928	14154		2.27	Si
SLV 13	8.62	-2389.12	-8695	-7323	-2099	0.756	0.5932	0	0	0	40441	12226	1928	14154		6.74	Si
SLV 13	10.72	3172.07	-861	-725	-6107	0.756	0	0	0	0	40441	12226	1928	14154		2.32	Si
SLV 14	8.62	-2038.73	-8032	-6764	-1824	0.756	0.656	0	0	0	40441	12226	1928	14154		7.76	Si
SLV 14	10.72	2547.36	-1695	-1427	-4843	0.756	0	0	0	0	40441	12226	1928	14154		2.92	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 16	215625	0.46	0	-325	127.18	0	0	No, e>t/2
SLV 15	215625	0.46	0	430	127.18	0	0	No, Trazione
SLV 12	215625	0.46	0	-792	127.18	0	0	No, e>t/2
SLV 11	215625	0.46	0	-284	127.18	0	0	No, e>t/2
SLV 13	215625	0.46	4749	-1346	127.18	196.72	1.55	Si
SLV 14	215625	0.46	7413	-2102	127.18	302.48	2.38	Si
SLV 7	215625	0.46	9052	-2566	127.18	365.94	2.88	Si
SLV 8	215625	0.46	10846	-3075	127.18	433.92	3.41	Si
SLV 9	215625	0.46	21889	-6206	127.18	819.68	6.44	Si
SLV 10	215625	0.46	23683	-6714	127.18	876.98	6.9	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-4422	-8695	-47	1.037	593.6	0.934	16.13339	6.14217	Si
SLV 14	-4084	-8032	-45	1.105	559.4	0.931	17.24859	6.14217	Si
SLV 9	-4784	-9975	-134	0.958	630.1	0.937	14.85914	5.26078	Si
SLV 10	-4556	-9528	-133	0.997	607.1	0.935	15.48756	5.26078	Si
SLV 5	-4297	-8699	-132	1.045	580.9	0.933	16.27278	5.26078	Si
SLV 15	-3578	-6230	32	1.228	508.4	0.925	19.27941	6.14217	Si
SLV 6	-4069	-8252	-131	1.091	557.9	0.931	17.03243	5.26078	Si
SLV 16	-3239	-5566	34	1.324	474.4	0.921	20.88356	6.14217	Si
SLV 1	-2798	-4443	-38	1.476	430.1	0.915	23.4249	6.14217	Si
SLV 2	-2460	-3779	-36	1.62	396.4	0.91	25.86204	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.199	SLU 78	Si
V_SLU	18.708	SLU 78	Si
PF_SLV	0	SLV 15	No
V_SLV	2.268	SLV 4	Si
PFFP_SLV	0	SLV 15	No
R_SLV	2.627	SLV 13	Si

Maschio 169

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	-3.359	-15.433	-3.359	L6	L7	1.67	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 35	8.62	-597.52	-8742	-0.0000332	0.0004492	0.0035	1.67	6256.86	7194.04	7194.04	12.04	No	Si
SLU 35	10.72	1782.07	-9931	-0.0000504	0.0004492	0.0035	1.67	6947.06	7260.5	7260.5	4.07	No	Si
SLU 40	8.62	-593.08	-8317	-0.0000318	0.0004492	0.0035	1.67	6001.33	6914.95	6914.95	11.66	No	Si
SLU 40	10.72	1699.04	-9367	-0.0000476	0.0004492	0.0035	1.67	6624.48	6903.61	6903.61	4.06	No	Si
SLU 31	8.62	-580.12	-8188	-0.0000313	0.0004492	0.0035	1.67	5922.41	6828.6	6828.6	11.77	No	Si
SLU 31	10.72	1651.86	-9133	-0.0000463	0.0004492	0.0035	1.67	6488.4	6756.8	6756.8	4.09	No	Si
SLU 34	8.62	-596.22	-8437	-0.0000322	0.0004492	0.0035	1.67	6073.8	6994.05	6994.05	11.73	No	Si
SLU 34	10.72	1719.19	-9483	-0.0000482	0.0004492	0.0035	1.67	6691.41	6976.62	6976.62	4.06	No	Si
SLU 41	8.62	-598.16	-8502	-0.0000325	0.0004492	0.0035	1.67	6113.37	7036.93	7036.93	11.76	No	Si
SLU 41	10.72	1743.73	-9647	-0.0000491	0.0004492	0.0035	1.67	6786.08	7080.83	7080.83	4.06	No	Si
SLU 37	8.62	-593.95	-8579	-0.0000327	0.0004492	0.0035	1.67	6159.66	7087.34	7087.34	11.93	No	Si
SLU 37	10.72	1748.79	-9718	-0.0000493	0.0004492	0.0035	1.67	6826.08	7125.16	7125.16	4.07	No	Si
SLU 36	8.62	-608.55	-8805	-0.0000336	0.0004492	0.0035	1.67	6294.92	7236.13	7236.13	11.89	No	Si
SLU 36	10.72	1804.71	-10000	-0.0000509	0.0004492	0.0035	1.67	6985.71	7304.14	7304.14	4.05	No	Si
SLU 33	8.62	-592.44	-8557	-0.0000326	0.0004492	0.0035	1.67	6146.03	7072.47	7072.47	11.94	No	Si
SLU 33	10.72	1737.38	-9650	-0.000049	0.0004492	0.0035	1.67	6787.63	7082.53	7082.53	4.08	No	Si
SLU 38	8.62	-604.98	-8643	-0.000033	0.0004492	0.0035	1.67	6198	7129.28	7129.28	11.78	No	Si
SLU 38	10.72	1771.43	-9786	-0.0000498	0.0004492	0.0035	1.67	6865.13	7168.65	7168.65	4.05	No	Si
SLU 42	8.62	-609.19	-8566	-0.0000328	0.0004492	0.0035	1.67	6151.84	7078.8	7078.8	11.62	No	Si
SLU 42	10.72	1766.37	-9716	-0.0000495	0.0004492	0.0035	1.67	6825.27	7124.26	7124.26	4.03	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	8.62	-1003.49	-545	-0.0003383	0.0006738	0.0035	1.336		1145.94	1145.94	1.14		Si
SLV 12	10.72	625.01	-2412	-0.0000138	0.0006738	0.0035	1.67		2134.05	2134.05	3.41		Si
SLV 4	8.62	4500.98	-8817	-0.000094	0.0006738	0.0035	1.67		6976.67	6976.67	1.55		Si
SLV 4	10.72	-4062.06	299	-0.0023899	0.0006738	0.0035	1.336		0	0	0		No
SLV 3	8.62	3600.04	-8238	-0.0000706	0.0006738	0.0035	1.67		6561.47	6561.47	1.82		Si
SLV 3	10.72	-3073.81	-953	-0.0018865	0.0006738	0.0035	1.336		1476.71	1476.71	0.48		No
SLV 13	8.62	-5252.35	-5715	-0.000913	0.0006738	0.0035	1.336		5192.04	5192.04	0.99		No
SLV 13	10.72	6587.49	-15353	-0.0001344	0.0006738	0.0035	1.67		11113.72	11113.72	1.69		Si
SLV 2	8.62	4282.57	-12416	-0.0000873	0.0006738	0.0035	1.67		9256.67	9256.67	2.16		Si
SLV 2	10.72	-3096.44	-3474	-0.000401	0.0006738	0.0035	1.336		3479.33	3479.33	1.12		Si
SLV 16	8.62	-4133	-2696	-0.0018	0.0006738	0.0035	1.336		2867.96	2867.96	0.69		No
SLV 16	10.72	4633.61	-10328	-0.0000924	0.0006738	0.0035	1.67		7960.55	7960.55	1.72		Si
SLV 8	8.62	1586.71	-2381	-0.0000474	0.0006738	0.0035	1.67		2109.52	2109.52	1.33		Si
SLV 8	10.72	-1983.69	776	0.0906939	0.0006738	0.0035	1.336		0	0	0		No
SLV 11	8.62	-1610.06	-155	-0.0010829	0.0006738	0.0035	1.336		827.44	827.44	0.51		No
SLV 11	10.72	1290.38	-3255	-0.0000246	0.0006738	0.0035	1.67		2801.99	2801.99	2.17		Si
SLV 7	8.62	980.13	-1992	-0.0000192	0.0006738	0.0035	1.67		1796.06	1796.06	1.83		Si
SLV 7	10.72	-1318.33	-67	-0.0009248	0.0006738	0.0035	1.336		754.45	754.45	0.57		No
SLV 15	8.62	-5033.94	-2117	-0.0037494	0.0006738	0.0035	1.336		2408.96	2408.96	0.48		No
SLV 15	10.72	5621.87	-11581	-0.0001164	0.0006738	0.0035	1.67		8735.37	8735.37	1.55		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 70	8.62	-578.46	-10233	-8617	-1671	1.67	1.67	-17199	10627	5324	40441	18005	4258	22263	No	13.32	Si
SLU 70	10.72	1877.19	-10934	-9208	-2926	1.67	1.67	-18379	10784	5403	40441	18005	4258	22263	No	7.61	Si
SLU 67	8.62	-562.36	-9984	-8407	-1618	1.67	1.67	-16781	10571	5296	40441	18005	4258	22263	No	13.76	Si
SLU 67	10.72	1809.86	-10585	-8914	-2820	1.67	1.67	-17792	10706	5363	40441	18005	4258	22263	No	7.89	Si
SLU 69	8.62	-567.44	-10169	-8563	-1663	1.67	1.67	-17092	10612	5317	40441	18005	4258	22263	No	13.39	Si
SLU 69	10.72	1854.56	-10866	-9150	-2896	1.67	1.67	-18264	10768	5395	40441	18005	4258	22263	No	7.69	Si
SLU 77	8.62	-614.85	-10570	-8901	-1586	1.67	1.67	-17767	10702	5362	40441	18005	4258	22263	No	14.04	Si
SLU 77	10.72	1999.85	-11517	-9699	-2913	1.67	1.67	-19359	10833	5427	40441	18005	4258	22263	No	7.64	Si
SLU 71	8.62	-563.86	-10006	-8426	-1641	1.67	1.67	-16819	10576	5299	40441	18005	4258	22263	No	13.57	Si
SLU 71	10.72	1821.28	-10652	-8970	-2843	1.67	1.67	-17905	10721	5371	40441	18005	4258	22263	No	7.83	Si
SLU 78	8.62	-625.88	-10634	-8955	-1594	1.67	1.67	-17874	10717	5369	40441	18005	4258	22263	No	13.97	Si
SLU 78	10.72	2022.48	-11586	-9757	-2943	1.67	1.67	-19475	10833	5427	40441	18005	4258	22263	No	7.57	Si
SLU 79	8.62	-611.28	-10408	-8764	-1564	1.67	1.67	-17494	10666	5344	40441	18005	4258	22263	No	14.23	Si
SLU 79	10.72	1966.57	-11304	-9519	-2859	1.67	1.67	-19000	10833	5427	40441	18005	4258	22263	No	7.79	Si
SLU 75	8.62	-609.78	-10385	-8745	-1541	1.67	1.67	-17456	10661	5341	40441	18005	4258	22263	No	14.44	Si
SLU 75	10.72	1955.15	-11237	-9463	-2837	1.67	1.67	-18887	10833	5427	40441	18005	4258	22263	No	7.85	Si
SLU 72	8.62	-574.89	-10070	-8480	-1649	1.67	1.67	-16927	10590	5306	40441	18005	4258	22263	No	13.5	Si
SLU 72	10.72	1843.91	-10721	-9028	-2873	1.67	1.67	-18020	10736	5379	40441	18005	4258	22263	No	7.75	Si
SLU 80	8.62	-622.31	-10472	-8818	-1572	1.67	1.67	-17601	10680	5351	40441	18005	4258	22263	No	14.16	Si
SLU 80	10.72	1989.2	-11373	-9577	-2889	1.67	1.67	-19116	10833	5427	40441	18005	4258	22263	No	7.71	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	8.62	-4133	-2696	-2270	-8357	1.336	0	0	0	0	40441	21606	3407	25012		2.99	Si
SLV 16	10.72	4633.61	-10328	-8698	-7069	1.67	1.1591	-17361	15972	5554	40441	27007	4258	31266		4.42	Si
SLV 2	8.62	4282.57	-12416	-10456	7834	1.67	1.4702	-20870	16250	7167	40441	27007	4258	31266		3.99	Si
SLV 2	10.72	-3096.44	-3474	-2925	4929	1.336	0	0	0	0	40441	21606	3407	25012		5.07	Si
SLD 15	8.62	-2368.29	-5119	-4310	-4870	1.336	1.117	0	0	0	40441	21606	3407	25012		5.14	Si
SLD 15	10.72	3137.53	-9312	-7842	-4826	1.67	1.4942	-15652	15630	7006	40441	27007	4258	31266		6.48	Si
SLV 14	8.62	-4351.41	-6294	-5301	-8372	1.336	0.4311	0	0	0	40441	21606	3407	25012		2.99	Si
SLV 14	10.72	5599.23	-14101	-11875	-8327	1.67	1.3138	-23702	16250	6405	40441	27007	4258	31266		3.75	Si
SLV 4	8.62	4500.98	-8817	-7425	7849	1.67	0.9736	-14821	15464	4874	40441	27007	4258	31266		3.98	Si
SLV 4	10.72	-4062.06	299	252	6188	1.336	0	0	0	0	40441	21606	3407	25012		4.04	Si
SLV 1	8.62	3381.63	-11837	-9968	6222	1.67	1.648	-19897	16250	8034	40441	27007	4258	31266		5.03	Si
SLV 1	10.72	-2108.18	-4726	-3980	3280	1.67	1.1667	-11418	14784	5174	40441	27007	4258	31266		9.53	Si
SLV 13	8.62	-5252.35	-5715	-4813	-9984	1.336	0	0	0	0	40441	21606	3407	25012		2.51	Si
SLV 13	10.72	6587.49	-15353	-12929	-9976	1.67	1.2178	-25806	16250	6342	40441	27007	4258	31266		3.13	Si
SLV 9	8.62	-2338.08	-12151	-10233	-4065	1.67	1.67	-20425	16250	8141	40441	27007	4258	31266		7.69	Si
SLV 9	10.72	4509.11	-15830	-13331	-6535	1.67	1.6505	-26609	16250	8046	40441	27007	4258	31266		4.78	Si
SLV 15	8.62	-5033.94	-2117	-1782	-9970	1.336	0	0	0	0	40441	21606	3407	25012		2.51	Si
SLV 15	10.72	5621.87	-11581	-9752	-8718	1.67	1.0486	-19465	16250	5495	40441	27007	4258	31266		3.59	Si
SLV 3	8.62	3600.04	-8238	-6938	6236	1.67	1.1941	-13847	15269	5470	40441	27007	4258	31266		5.01	Si
SLV 3	10.72	-3073.81	-953	-803	4539	1.336	0	0	0	0	40441	21606	3407	25012		5.51	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 7	215625	0.46	0	-392	224.76	0	0	No, e>t/2
SLV 4	215625	0.46	0	-24	224.76	0	0	No, e>t/2
SLV 3	215625	0.46	0	-1276	224.76	0	0	No, e>t/2
SLV 8	215625	0.46	0	451	224.76	0	0	No, Trazione
SLV 12	215625	0.46	5463	-2737	224.76	398.3	1.77	Si
SLV 11	215625	0.46	7145	-3580	224.76	516.05	2.3	Si
SLV 2	215625	0.46	7574	-3795	224.76	545.66	2.43	Si
SLV 1	215625	0.46	10073	-5047	224.76	715.4	3.18	Si
SLV 16	215625	0.46	21257	-10650	224.76	1412.2	6.28	Si
SLV 15	215625	0.46	23756	-11902	224.76	1553.89	6.91	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-8199	-5715	271	0.979	1087.8	0.936	15.1953	6.14217	Si
SLV 14	-8013	-6294	271	0.997	1069	0.935	15.49259	6.14217	Si
SLV 9	-9251	-12151	-309	0.884	1194.3	0.941	13.66278	5.26078	Si
SLV 10	-9125	-12541	-309	0.894	1181.6	0.94	13.82254	5.26078	Si
SLV 5	-8258	-13988	-548	0.945	1093.8	0.936	14.66711	5.26078	Si
SLV 6	-8133	-14378	-549	0.957	1081.1	0.936	14.85716	5.26078	Si
SLV 15	-6279	-2117	528	1.174	894	0.925	18.44742	6.14217	Si
SLV 16	-6093	-2696	528	1.202	875.3	0.924	18.90354	6.14217	Si
SLV 1	-4890	-11837	-529	1.416	754.7	0.915	22.49718	6.14217	Si
SLV 2	-4704	-12416	-529	1.457	736.1	0.913	23.17985	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.033	SLU 42	Si
V_SLU	7.566	SLU 78	Si
PF_SLV	0	SLV 4	No
V_SLV	2.505	SLV 13	Si
PFFP_SLV	0	SLV 8	No
R_SLV	2.474	SLV 13	Si

Maschio 173

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-15.058	2.206	-15.058	6.501	L6	L7	4.295	0.16	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 81	8.62	-4093.02	-20669	-0.0000496	0.0004492	0.0035	4.295	33461	49173.57	49173.57	12.01	No	Si
SLU 81	10.72	-9197.99	-17027	-0.0000562	0.0004492	0.0035	4.295	29150.45	42980.24	42980.24	4.67	No	Si
SLU 83	8.62	-4057.05	-21067	-0.0000503	0.0004492	0.0035	4.295	33890.39	49834.87	49834.87	12.28	No	Si
SLU 83	10.72	-9477.3	-17424	-0.0000578	0.0004492	0.0035	4.295	29653.9	43680.59	43680.59	4.61	No	Si
SLU 82	8.62	-4296.11	-20437	-0.0000497	0.0004492	0.0035	4.295	33206.17	48786.86	48786.86	11.36	No	Si
SLU 82	10.72	-9029.42	-16794	-0.0000553	0.0004492	0.0035	4.295	28852.3	42570.71	42570.71	4.71	No	Si
SLU 77	8.62	-3908.48	-21155	-0.0000501	0.0004492	0.0035	4.295	33984.06	49980.82	49980.82	12.79	No	Si
SLU 77	10.72	-9387.97	-17512	-0.0000577	0.0004492	0.0035	4.295	29763.93	43835.16	43835.16	4.67	No	Si
SLU 39	8.62	-3484.53	-17288	-0.0000413	0.0004492	0.0035	4.295	29482.33	43440.65	43440.65	12.47	No	Si
SLU 39	10.72	-8191.06	-14390	-0.0000483	0.0004492	0.0035	4.295	25606.5	38335.01	38335.01	4.68	No	Si
SLU 35	8.62	-3299.99	-17773	-0.0000418	0.0004492	0.0035	4.295	30089.32	44295.56	44295.56	13.42	No	Si
SLU 35	10.72	-8381.04	-14875	-0.0000498	0.0004492	0.0035	4.295	26285.43	39189.92	39189.92	4.68	No	Si
SLU 41	8.62	-3448.56	-17686	-0.000042	0.0004492	0.0035	4.295	29980.47	44141	44141	12.8	No	Si
SLU 41	10.72	-8470.37	-14788	-0.0000498	0.0004492	0.0035	4.295	26163.57	39035.35	39035.35	4.61	No	Si
SLU 78	8.62	-4111.57	-20922	-0.0000502	0.0004492	0.0035	4.295	33735	49594.11	49594.11	12.06	No	Si
SLU 78	10.72	-9219.4	-17280	-0.0000568	0.0004492	0.0035	4.295	29471.55	43425.62	43425.62	4.71	No	Si
SLU 42	8.62	-3651.66	-17453	-0.0000421	0.0004492	0.0035	4.295	29690.16	43731.46	43731.46	11.98	No	Si
SLU 42	10.72	-8301.8	-14555	-0.0000489	0.0004492	0.0035	4.295	25838.8	38625.81	38625.81	4.65	No	Si
SLU 84	8.62	-4260.15	-20834	-0.0000504	0.0004492	0.0035	4.295	33640.28	49448.16	49448.16	11.61	No	Si
SLU 84	10.72	-9308.73	-17192	-0.0000569	0.0004492	0.0035	4.295	29360.48	43271.05	43271.05	4.65	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 10	8.62	-12003.42	-5165	-0.0002026	0.0006738	0.0035	3.436		21030.19	21030.19	1.75		Si
SLD 10	10.72	413.61	-2458	-0.0000055	0.0006738	0.0035	4.295		7059.91	7059.91	17.07		Si
SLD 6	8.62	-13049.54	-4709	-0.0002869	0.0006738	0.0035	3.436		20113.3	20113.3	1.54		Si
SLD 6	10.72	443.62	-2001	-0.0000047	0.0006738	0.0035	4.295		6114.89	6114.89	13.78		Si
SLV 1	8.62	-14065.35	-5554	-0.0002786	0.0006738	0.0035	3.436		21806.2	21806.2	1.55		Si
SLV 1	10.72	-856.96	-2823	-0.0000073	0.0006738	0.0035	4.295		16307.07	16307.07	19.03		Si
SLV 5	8.62	-28405.34	10021	-0.0011088	0.0006738	0.0035	3.436		0	0	0		No
SLV 5	10.72	9906.91	12668	-0.0192866	0.0006738	0.0035	3.436		0	0	0		No
SLV 2	8.62	-14294.29	-5515	-0.0002929	0.0006738	0.0035	3.436		21729.44	21729.44	1.52		Si
SLV 2	10.72	-1084.36	-2785	-0.0000078	0.0006738	0.0035	4.295		16228.67	16228.67	14.97		Si
SLD 9	8.62	-11939.18	-5176	-0.0001984	0.0006738	0.0035	3.436		21051.98	21051.98	1.76		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 9	10.72	477.43	-2469	-0.0000057	0.0006738	0.0035	4.295		7082.18	7082.18	14.83		Si
SLV 6	8.62	-28559.47	10047	-0.0011187	0.0006738	0.0035	3.436		0	0	0		No
SLV 6	10.72	9753.81	12694	-0.0192072	0.0006738	0.0035	3.436		0	0	0		No
SLD 5	8.62	-12985.29	-4720	-0.0002832	0.0006738	0.0035	3.436		20135.08	20135.08	1.55		Si
SLD 5	10.72	507.44	-2012	-0.0000049	0.0006738	0.0035	4.295		6137.38	6137.38	12.09		Si
SLV 10	8.62	-26112.31	8980	-0.0009938	0.0006738	0.0035	3.436		0	0	0		No
SLV 10	10.72	9683.94	11624	-0.0180718	0.0006738	0.0035	3.436		0	0	0		No
SLV 9	8.62	-25958.18	8954	-0.0009845	0.0006738	0.0035	3.436		0	0	0		No
SLV 9	10.72	9837.04	11598	-0.0181491	0.0006738	0.0035	3.436		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	8.62	-4260.15	-20834	-12233	2429	4.295	4.295	-17801	10707	8863	115546	24696	21904	46601	No	19.18	Si
SLU 84	10.72	-9308.73	-17192	-10094	2429	4.295	4.295	-14689	10292	8007	115546	24696	21904	46601	No	19.18	Si
SLU 81	8.62	-4093.02	-20669	-12136	2456	4.295	4.295	-17660	10688	8824	115546	24696	21904	46601	No	18.98	Si
SLU 81	10.72	-9197.99	-17027	-9997	2456	4.295	4.295	-14548	10273	7969	115546	24696	21904	46601	No	18.98	Si
SLU 74	8.62	-3944.45	-20757	-12188	2484	4.295	4.295	-17735	10698	8845	115546	24696	21904	46601	No	18.76	Si
SLU 74	10.72	-9108.65	-17115	-10049	2484	4.295	4.295	-14623	10283	7989	115546	24696	21904	46601	No	18.76	Si
SLU 80	8.62	-4062.72	-20740	-12178	2402	4.295	4.295	-17721	10696	8841	115546	24696	21904	46601	No	19.4	Si
SLU 80	10.72	-9055.47	-17098	-10039	2402	4.295	4.295	-14609	10281	7985	115546	24696	21904	46601	No	19.4	Si
SLU 79	8.62	-3859.62	-20973	-12314	2579	4.295	4.295	-17919	10723	8895	115546	24696	21904	46601	No	18.07	Si
SLU 79	10.72	-9224.04	-17330	-10176	2579	4.295	4.295	-14807	10308	8040	115546	24696	21904	46601	No	18.07	Si
SLU 41	8.62	-3448.56	-17686	-10384	2410	4.295	4.295	-15111	10348	8123	115546	24696	21904	46601	No	19.33	Si
SLU 41	10.72	-8470.37	-14788	-8683	2410	4.295	4.295	-12635	10018	7443	115546	24696	21904	46601	No	19.33	Si
SLU 83	8.62	-4057.05	-21067	-12370	2606	4.295	4.295	-18000	10733	8917	115546	24696	21904	46601	No	17.88	Si
SLU 83	10.72	-9477.3	-17424	-10231	2606	4.295	4.295	-14888	10318	8062	115546	24696	21904	46601	No	17.88	Si
SLU 77	8.62	-3908.48	-21155	-12421	2634	4.295	4.295	-18075	10743	8938	115546	24696	21904	46601	No	17.69	Si
SLU 77	10.72	-9387.97	-17512	-10282	2634	4.295	4.295	-14963	10328	8083	115546	24696	21904	46601	No	17.69	Si
SLU 35	8.62	-3299.99	-17773	-10436	2438	4.295	4.295	-15186	10358	8144	115546	24696	21904	46601	No	19.11	Si
SLU 35	10.72	-8381.04	-14875	-8734	2438	4.295	4.295	-12710	10028	7463	115546	24696	21904	46601	No	19.11	Si
SLU 78	8.62	-4111.57	-20922	-12285	2457	4.295	4.295	-17876	10717	8883	115546	24696	21904	46601	No	18.96	Si
SLU 78	10.72	-9219.4	-17280	-10146	2457	4.295	4.295	-14764	10302	8028	115546	24696	21904	46601	No	18.96	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	8.62	20616.39	-38015	-22321	20301	4.295	4.295	-32481	16250	14883	115546	37044	21904	58949		2.9	Si
SLV 7	10.72	-21186.04	-35140	-20633	19495	4.295	4.295	-30025	16250	14208	115546	37044	21904	58949		3.02	Si
SLV 5	8.62	-28405.34	10021	5884	-18598	3.436	0	0	0	0	115546	29635	17524	47159		2.54	Si
SLV 5	10.72	9906.91	12668	7438	-17782	3.436	4.0963	0	0	0	115546	29635	17524	47159		2.65	Si
SLD 12	8.62	7489.37	-24315	-14277	9458	4.295	4.295	-20775	16250	11665	115546	37044	21904	58949		6.23	Si
SLD 12	10.72	-12009.54	-21505	-12627	9132	4.295	4.295	-18374	16175	11115	115546	37044	21904	58949		6.45	Si
SLV 8	8.62	20462.26	-37989	-22306	20301	4.295	4.295	-32459	16250	14877	115546	37044	21904	58949		2.9	Si
SLV 8	10.72	-21339.14	-35114	-20618	19494	4.295	4.295	-30002	16250	14201	115546	37044	21904	58949		3.02	Si
SLV 11	8.62	23063.55	-39082	-22947	21497	4.295	4.295	-33392	16250	15133	115546	37044	21904	58949		2.74	Si
SLV 11	10.72	-21255.91	-36210	-21261	20682	4.295	4.295	-30939	16250	14459	115546	37044	21904	58949		2.85	Si
SLV 12	8.62	22909.42	-39056	-22932	21496	4.295	4.295	-33370	16250	15127	115546	37044	21904	58949		2.74	Si
SLV 12	10.72	-21409.01	-36184	-21246	20681	4.295	4.295	-30917	16250	14453	115546	37044	21904	58949		2.85	Si
SLV 9	8.62	-25958.18	8954	5258	-17402	3.436	0	0	0	0	115546	29635	17524	47159		2.71	Si
SLV 9	10.72	9837.04	11598	6810	-16596	3.436	3.8979	0	0	0	115546	29635	17524	47159		2.84	Si
SLV 10	8.62	-26112.31	8980	5273	-17403	3.436	0	0	0	0	115546	29635	17524	47159		2.71	Si
SLV 10	10.72	9683.94	11624	6825	-16596	3.436	3.9431	0	0	0	115546	29635	17524	47159		2.84	Si
SLV 6	8.62	-28559.47	10047	5899	-18598	3.436	0	0	0	0	115546	29635	17524	47159		2.54	Si
SLV 6	10.72	9753.81	12694	7453	-17783	3.436	4.1373	0	0	0	115546	29635	17524	47159		2.65	Si
SLD 11	8.62	7553.61	-24326	-14283	9459	4.295	4.295	-20785	16250	11668	115546	37044	21904	58949		6.23	Si
SLD 11	10.72	-11945.73	-21516	-12633	9133	4.295	4.295	-18383	16177	11117	115546	37044	21904	58949		6.45	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 10.395 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 9	11015	0.46	331.51	0	0	0	0	No
SLV 5	12084	0.46	331.51	0	0	0	0	No
SLV 10	11041	0.46	331.51	0	0	0	0	No
SLV 6	12110	0.46	331.51	0	0	0	0	No
SLV 2	-3341	0.46	331.51	0	627.44	313.72	0.95	No
SLV 1	-3379	0.46	331.51	0	631.24	315.62	0.95	No
SLV 14	-6905	0.46	331.51	522.1	973.79	747.94	2.26	Si
SLV 13	-6943	0.46	331.51	524.85	977.51	751.18	2.27	Si
SLD 6	-2562	0.19	137.17	200.8	550.28	375.54	2.74	Si
SLD 5	-2573	0.19	137.17	201.63	551.36	376.5	2.74	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.03 Ta = 0.1315

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-17424	-39082	234	1.243	2118.5	0.953	18.95928	7.20764	Si
SLV 12	-17391	-39056	234	1.245	2115.2	0.953	18.99171	7.20764	Si
SLV 7	-17035	-38015	-268	1.266	2079	0.952	19.32429	7.20764	Si
SLV 8	-17002	-37989	-268	1.268	2075.7	0.952	19.35804	7.20764	Si
SLV 15	-10643	-23520	832	1.841	1431.1	0.934	28.64744	9.86888	Si
SLV 16	-10594	-23481	832	1.848	1426.2	0.934	28.76074	9.86888	Si
SLV 3	-9347	-19965	-842	2.044	1300.3	0.928	31.99344	9.86888	Si
SLV 4	-9298	-19926	-842	2.053	1295.4	0.928	32.13471	9.86888	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-4435	-9109	842	3.541	810	0.9	57.16619	9.86888	Si
SLV 14	-4387	-9070	842	3.567	805.3	0.9	57.60701	9.86888	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.608	SLU 41	Si
V_SLU	17.69	SLU 77	Si
PF_SLV	0	SLV 5	No
V_SLV	2.536	SLV 6	Si
PFFP_SLV	0	SLV 5	No
R_SLV	2.63	SLV 11	Si

Maschio 174

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	-4.784	-13.763	-3.359	L6	Z medio 966 cm	1.424	0.3	1.04	1.04	1.04			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 35	8.62	-380.18	-9272	-0.0000396	0.0003743	0.0035	1.4243	5195.57	6080.56	6080.56	15.99	No	Si
SLU 35	9.66	980.46	-8010	-0.0000442	0.0003743	0.0035	1.4243	4654.16	4927.76	4927.76	5.03	No	Si
SLU 37	8.62	-371.85	-9155	-0.0000391	0.0003743	0.0035	1.4243	5147.75	6023.67	6023.67	16.2	No	Si
SLU 37	9.66	961.63	-7905	-0.0000435	0.0003743	0.0035	1.4243	4606.6	4871.3	4871.3	5.07	No	Si
SLU 41	8.62	-378.33	-9378	-0.00004	0.0003743	0.0035	1.4243	5238.92	6132.08	6132.08	16.21	No	Si
SLU 41	9.66	1069.05	-8153	-0.0000461	0.0003743	0.0035	1.4243	4717.89	5004.39	5004.39	4.68	No	Si
SLU 21	8.62	-303.68	-8300	-0.0000347	0.0003743	0.0035	1.4243	4783.23	5584.46	5584.46	18.39	No	Si
SLU 21	9.66	902.19	-7211	-0.0000398	0.0003743	0.0035	1.4243	4284.25	4503.32	4503.32	4.99	No	Si
SLU 39	8.62	-370.02	-9204	-0.0000392	0.0003743	0.0035	1.4243	5167.8	6047.55	6047.55	16.34	No	Si
SLU 39	9.66	1038.96	-7995	-0.000045	0.0003743	0.0035	1.4243	4647.39	4919.69	4919.69	4.74	No	Si
SLU 38	8.62	-373.46	-9200	-0.0000393	0.0003743	0.0035	1.4243	5166.22	6045.68	6045.68	16.19	No	Si
SLU 38	9.66	968.82	-7942	-0.0000437	0.0003743	0.0035	1.4243	4623.38	4891.16	4891.16	5.05	No	Si
SLU 36	8.62	-381.79	-9316	-0.0000398	0.0003743	0.0035	1.4243	5213.87	6102.24	6102.24	15.98	No	Si
SLU 36	9.66	987.64	-8047	-0.0000444	0.0003743	0.0035	1.4243	4670.81	4947.68	4947.68	5.01	No	Si
SLU 40	8.62	-371.63	-9249	-0.0000394	0.0003743	0.0035	1.4243	5186.2	6069.5	6069.5	16.33	No	Si
SLU 40	9.66	1046.15	-8032	-0.0000453	0.0003743	0.0035	1.4243	4664.06	4939.6	4939.6	4.72	No	Si
SLU 20	8.62	-302.07	-8255	-0.0000345	0.0003743	0.0035	1.4243	4763.43	5561.41	5561.41	18.41	No	Si
SLU 20	9.66	895.01	-7174	-0.0000396	0.0003743	0.0035	1.4243	4266.58	4483.86	4483.86	5.01	No	Si
SLU 42	8.62	-379.94	-9423	-0.0000402	0.0003743	0.0035	1.4243	5257.06	6153.84	6153.84	16.2	No	Si
SLU 42	9.66	1076.24	-8190	-0.0000464	0.0003743	0.0035	1.4243	4734.37	5024.38	5024.38	4.67	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 14	8.62	-1414.64	-9177	-0.0000544	0.0005615	0.0035	1.4243		6325.74	6325.74	4.47		Si
SLV 14	9.66	1831.35	-7149	-0.0000532	0.0005615	0.0035	1.4243		4778.08	4778.08	2.61		Si
SLV 12	8.62	455.45	-1987	-0.0000135	0.0005615	0.0035	1.4243		1490.1	1490.1	3.27		Si
SLV 12	9.66	-589.65	-1912	-0.0000156	0.0005615	0.0035	1.4243		1823.91	1823.91	3.09		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	8.62	-1470.1	-12785	-0.0000693	0.0005615	0.0035	1.4243		8257.57	8257.57	5.62		Si
SLV 10	9.66	2144.55	-10313	-0.0000702	0.0005615	0.0035	1.4243		6439.97	6439.97	3		Si
SLV 8	8.62	1003.36	-1824	-0.0000377	0.0005615	0.0035	1.4243		1380.6	1380.6	1.38		Si
SLV 8	9.66	-1165.84	-2099	-0.0000447	0.0005615	0.0035	1.1394		1949.9	1949.9	1.67		Si
SLV 7	8.62	917.89	-1899	-0.0000276	0.0005615	0.0035	1.4243		1430.98	1430.98	1.56		Si
SLV 7	9.66	-1048.6	-2119	-0.0000325	0.0005615	0.0035	1.1394		1963.33	1963.33	1.87		Si
SLV 16	8.62	-836.98	-5938	-0.0000335	0.0005615	0.0035	1.4243		4417.76	4417.76	5.28		Si
SLV 16	9.66	1011.09	-4629	-0.0000313	0.0005615	0.0035	1.4243		3223.77	3223.77	3.19		Si
SLV 15	8.62	-963.93	-6049	-0.0000358	0.0005615	0.0035	1.4243		4486.21	4486.21	4.65		Si
SLV 15	9.66	1185.23	-4659	-0.000034	0.0005615	0.0035	1.4243		3242.63	3242.63	2.74		Si
SLV 13	8.62	-1541.59	-9289	-0.0000568	0.0005615	0.0035	1.4243		6387.91	6387.91	4.14		Si
SLV 13	9.66	2005.49	-7179	-0.0000564	0.0005615	0.0035	1.4243		4795.81	4795.81	2.39		Si
SLV 4	8.62	989.38	-5396	-0.0000337	0.0005615	0.0035	1.4243		3706.87	3706.87	3.75		Si
SLV 4	9.66	-909.54	-5253	-0.000032	0.0005615	0.0035	1.4243		3991.54	3991.54	4.39		Si
SLV 9	8.62	-1555.57	-12860	-0.0000709	0.0005615	0.0035	1.4243		8295.17	8295.17	5.33		Si
SLV 9	9.66	2261.79	-10333	-0.0000721	0.0005615	0.0035	1.4243		6450.47	6450.47	2.85		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 84	8.62	-427.13	-11065	-9318	-3481	1.4243	1.4243	-21807	9852	5784	9516	12795	3632	15299	No	4.4	Si
SLU 84	9.66	1138.54	-9554	-8046	-2785	1.4243	1.4243	-18829	9455	5275	9516	12795	3632	14791	No	5.31	Si
SLU 77	8.62	-427.37	-10914	-9190	-3430	1.4243	1.4243	-21508	9812	5733	9516	12795	3632	15248	No	4.45	Si
SLU 77	9.66	1042.76	-9375	-7894	-2700	1.4243	1.4243	-18476	9408	5215	9516	12795	3632	14730	No	5.46	Si
SLU 79	8.62	-419.04	-10797	-9092	-3356	1.4243	1.4243	-21279	9782	5694	9516	12795	3632	15209	No	4.53	Si
SLU 79	9.66	1023.94	-9269	-7806	-2636	1.4243	1.4243	-18268	9380	5179	9516	12795	3632	14695	No	5.57	Si
SLU 83	8.62	-425.52	-11020	-9280	-3448	1.4243	1.4243	-21718	9840	5769	9516	12795	3632	15284	No	4.43	Si
SLU 83	9.66	1131.35	-9517	-8014	-2763	1.4243	1.4243	-18756	9445	5263	9516	12795	3632	14778	No	5.35	Si
SLU 75	8.62	-420.67	-10784	-9081	-3355	1.4243	1.4243	-21253	9778	5689	9516	12795	3632	15205	No	4.53	Si
SLU 75	9.66	1019.86	-9254	-7793	-2631	1.4243	1.4243	-18238	9376	5174	9516	12795	3632	14690	No	5.58	Si
SLU 74	8.62	-419.06	-10739	-9044	-3322	1.4243	1.4243	-21165	9766	5674	9516	12795	3632	15190	No	4.57	Si
SLU 74	9.66	1012.67	-9217	-7762	-2608	1.4243	1.4243	-18165	9366	5162	9516	12795	3632	14677	No	5.63	Si
SLU 80	8.62	-420.65	-10842	-9130	-3388	1.4243	1.4243	-21367	9793	5709	9516	12795	3632	15224	No	4.49	Si
SLU 80	9.66	1031.13	-9306	-7837	-2658	1.4243	1.4243	-18341	9390	5192	9516	12795	3632	14707	No	5.53	Si
SLU 81	8.62	-417.21	-10846	-9133	-3340	1.4243	1.4243	-21375	9794	5710	9516	12795	3632	15226	No	4.56	Si
SLU 81	9.66	1101.26	-9360	-7882	-2671	1.4243	1.4243	-18446	9404	5210	9516	12795	3632	14725	No	5.51	Si
SLU 82	8.62	-418.82	-10891	-9171	-3373	1.4243	1.4243	-21463	9806	5725	9516	12795	3632	15241	No	4.52	Si
SLU 82	9.66	1108.45	-9397	-7913	-2693	1.4243	1.4243	-18519	9414	5222	9516	12795	3632	14738	No	5.47	Si
SLU 78	8.62	-428.98	-10958	-9228	-3463	1.4243	1.4243	-21597	9824	5748	9516	12795	3632	15264	No	4.41	Si
SLU 78	9.66	1049.95	-9412	-7926	-2722	1.4243	1.4243	-18549	9418	5227	9516	12795	3632	14743	No	5.42	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	8.62	989.38	-5396	-4544	6318	1.4243	1.4243	-10634	12543	5360	9516	19193	3632	14875		2.35	Si
SLV 4	9.66	-909.54	-5253	-4423	6627	1.4243	1.4243	-10352	12487	5336	9516	19193	3632	14851		2.24	Si
SLV 7	8.62	917.89	-1899	-1599	6078	1.4243	0.6867	-3743	11165	3725	9516	19193	3632	13241		2.18	Si
SLV 7	9.66	-1048.6	-2119	-1784	5814	1.1394	0.6518	0	0	0	9516	15354	2906	9516		1.64	Si
SLV 10	8.62	-1470.1	-12785	-10766	-10185	1.4243	1.4243	-25197	15456	7392	9516	19193	3632	16907		1.66	Si
SLV 10	9.66	2144.55	-10313	-8685	-8861	1.4243	1.4243	-20325	14482	6559	9516	19193	3632	16075		1.81	Si
SLV 6	8.62	-922.19	-12622	-10629	-6657	1.4243	1.4243	-24876	15392	7337	9516	19193	3632	16853		2.53	Si
SLV 6	9.66	1568.36	-10500	-8842	-5327	1.4243	1.4243	-20694	14555	6622	9516	19193	3632	16138		3.03	Si
SLV 5	8.62	-1007.66	-12697	-10692	-7307	1.4243	1.4243	-25023	15421	7362	9516	19193	3632	16878		2.31	Si
SLV 5	9.66	1685.6	-10520	-8859	-5989	1.4243	1.4243	-20733	14563	6629	9516	19193	3632	16144		2.7	Si
SLV 13	8.62	-1541.59	-9289	-7822	-10424	1.4243	1.4243	-18306	14078	6214	9516	19193	3632	15730		1.51	Si
SLV 13	9.66	2005.49	-7179	-6046	-9674	1.4243	1.2984	-14149	13246	5504	9516	19193	3632	15019		1.55	Si
SLV 15	8.62	-963.93	-6049	-5094	-6409	1.4243	1.4243	-11922	12801	5470	9516	19193	3632	14985		2.34	Si
SLV 15	9.66	1185.23	-4659	-3923	-6133	1.4243	1.3732	-9182	12253	5048	9516	19193	3632	14563		2.37	Si
SLV 8	8.62	1003.36	-1824	-1536	6729	1.4243	0.4866	-10576	12532	3700	9516	19193	3632	13216		1.96	Si
SLV 8	9.66	-1165.84	-2099	-1767	6476	1.1394	0.4701	0	0	0	9516	15354	2906	9516		1.47	Si
SLV 9	8.62	-1555.57	-12860	-10829	-10835	1.4243	1.4243	-25344	15486	7417	9516	19193	3632	16933		1.56	Si
SLV 9	9.66	2261.79	-10333	-8702	-9522	1.4243	1.4243	-20364	14490	6566	9516	19193	3632	16081		1.69	Si
SLV 14	8.62	-1414.64	-9177	-7728	-9458	1.4243	1.4243	-18087	14034	6177	9516	19193	3632	15692		1.66	Si
SLV 14	9.66	1831.35	-7149	-6021	-8691	1.4243	1.368	-14090	13235	5494	9516	19193	3632	15009		1.73	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 9.14 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 8	179667	0.43	4806	-2053	15.9	298.32	18.76	Si
SLV 12	179667	0.43	4944	-2113	15.9	306.62	19.29	Si
SLV 7	179667	0.43	4957	-2118	15.9	307.39	19.33	Si
SLV 11	179667	0.43	5095	-2177	15.9	315.67	19.86	Si
SLV 4	179667	0.43	12533	-5355	15.9	737.38	46.38	Si
SLV 3	179667	0.43	12758	-5451	15.9	749.39	47.13	Si
SLV 16	179667	0.43	12995	-5552	15.9	762	47.93	Si
SLV 15	179667	0.43	13219	-5648	15.9	773.93	48.68	Si
SLV 2	179667	0.43	19327	-8258	15.9	1081.96	68.05	Si
SLV 1	179667	0.43	19551	-8354	15.9	1092.69	68.73	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 9.14 Wa = 0.05 Ta = 0.006

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 5	-10520	-12697	120	0.871	1133.9	0.983	12.88345	3.72509	Si
SLV 6	-10500	-12622	121	0.872	1131.9	0.983	12.90219	3.72509	Si
SLV 9	-10333	-12860	49	0.89	1114.9	0.982	13.17365	3.72509	Si
SLV 10	-10313	-12785	50	0.892	1112.8	0.982	13.19326	3.72509	Si
SLV 1	-7803	-8746	153	1.108	857.1	0.977	16.4744	3.76914	Si
SLV 2	-7773	-8635	155	1.111	854	0.977	16.52502	3.76914	Si
SLV 13	-7179	-9289	-86	1.196	793.5	0.976	17.81751	3.76914	Si
SLV 14	-7149	-9177	-84	1.2	790.5	0.976	17.88377	3.76914	Si
SLV 3	-5282	-5507	110	1.543	600.4	0.968	23.15701	3.76914	Si
SLV 4	-5253	-5396	112	1.55	597.4	0.968	23.26688	3.76914	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.668	SLU 42	Si
V_SLU	4.395	SLU 84	Si
PF_SLV	1.376	SLV 8	Si
V_SLV	1.469	SLV 8	Si
PFFP_SLV	18.763	SLV 8	Si
R_SLV	3.459	SLV 5	Si

Maschio 175

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	-4.784	-13.763	-3.359	Z medio 966 cm	L7	1.424	0.3	2.51	2.51	2.51			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 36	9.66	-595.69	-6491	-0.0000323	0.0003743	0.0035	1.4243	3932.93	4610.68	4610.68	7.74	No	Si
SLU 36	12.17	526.14	-1615	-0.0000138	0.0003743	0.0035	1.4243	1107.66	1228.19	1228.19	2.33	No	Si
SLU 40	9.66	-718.51	-6172	-0.000033	0.0003743	0.0035	1.4243	3771.66	4428.22	4428.22	6.16	No	Si
SLU 40	12.17	455.23	-1519	-0.0000122	0.0003743	0.0035	1.4243	1044.12	1163.4	1163.4	2.56	No	Si
SLU 35	9.66	-588.25	-6459	-0.0000321	0.0003743	0.0035	1.4243	3917.08	4592.67	4592.67	7.81	No	Si
SLU 35	12.17	517.03	-1611	-0.0000136	0.0003743	0.0035	1.4243	1105.06	1225.57	1225.57	2.37	No	Si
SLU 37	9.66	-585.02	-6361	-0.0000317	0.0003743	0.0035	1.4243	3867.49	4536.2	4536.2	7.75	No	Si
SLU 37	12.17	490.06	-1578	-0.000013	0.0003743	0.0035	1.4243	1083.06	1203.27	1203.27	2.46	No	Si
SLU 32	9.66	-586.45	-6312	-0.0000315	0.0003743	0.0035	1.4243	3843.15	4508.58	4508.58	7.69	No	Si
SLU 32	12.17	477.97	-1561	-0.0000127	0.0003743	0.0035	1.4243	1071.97	1191.93	1191.93	2.49	No	Si
SLU 42	9.66	-720.31	-6319	-0.0000336	0.0003743	0.0035	1.4243	3846.26	4512.1	4512.1	6.26	No	Si
SLU 42	12.17	494.29	-1569	-0.0000131	0.0003743	0.0035	1.4243	1077.27	1197.37	1197.37	2.42	No	Si
SLU 41	9.66	-712.87	-6287	-0.0000334	0.0003743	0.0035	1.4243	3830.24	4493.98	4493.98	6.3	No	Si
SLU 41	12.17	485.18	-1565	-0.0000129	0.0003743	0.0035	1.4243	1074.67	1194.7	1194.7	2.46	No	Si
SLU 38	9.66	-592.46	-6392	-0.0000319	0.0003743	0.0035	1.4243	3883.44	4554.36	4554.36	7.69	No	Si
SLU 38	12.17	499.17	-1582	-0.0000132	0.0003743	0.0035	1.4243	1085.66	1205.92	1205.92	2.42	No	Si
SLU 34	9.66	-595.62	-6267	-0.0000315	0.0003743	0.0035	1.4243	3819.91	4482.33	4482.33	7.53	No	Si
SLU 34	12.17	466.18	-1535	-0.0000124	0.0003743	0.0035	1.4243	1054.26	1173.79	1173.79	2.52	No	Si
SLU 33	9.66	-593.89	-6344	-0.0000317	0.0003743	0.0035	1.4243	3859.15	4526.72	4526.72	7.62	No	Si
SLU 33	12.17	487.08	-1565	-0.0000129	0.0003743	0.0035	1.4243	1074.57	1194.6	1194.6	2.45	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 14	9.66	-1463.3	-5646	-0.0000419	0.0005615	0.0035	1.4243		4237.41	4237.41	2.9		Si
SLV 14	12.17	2154.52	-1067	-0.0172401	0.0005615	0.0035	1.1394		861.46	861.46	0.4		No
SLD 13	9.66	-861.13	-5452	-0.000032	0.0005615	0.0035	1.4243		4116.51	4116.51	4.78		Si
SLD 13	12.17	1200.54	-1165	-0.0041103	0.0005615	0.0035	1.1394		928.54	928.54	0.77		No
SLV 13	9.66	-1628.93	-5579	-0.0000448	0.0005615	0.0035	1.4243		4195.27	4195.27	2.58		Si
SLV 13	12.17	2482.28	-1052	-0.0214714	0.0005615	0.0035	1.1394		851.15	851.15	0.34		No
SLD 15	9.66	-709.28	-4615	-0.0000267	0.0005615	0.0035	1.4243		3590.73	3590.73	5.06		Si
SLD 15	12.17	972.71	-1091	-0.0016248	0.0005615	0.0035	1.1394		877.46	877.46	0.9		No
SLV 15	9.66	-1252.81	-3477	-0.000033	0.0005615	0.0035	1.4243		2857.94	2857.94	2.28		Si
SLV 15	12.17	1915.74	-864	-0.016013	0.0005615	0.0035	1.1394		720.65	720.65	0.38		No
SLV 16	9.66	-1087.17	-3545	-0.0000291	0.0005615	0.0035	1.4243		2902.05	2902.05	2.67		Si
SLV 16	12.17	1587.98	-879	-0.0117515	0.0005615	0.0035	1.1394		731.04	731.04	0.46		No
SLD 14	9.66	-790.66	-5481	-0.0000311	0.0005615	0.0035	1.4243		4134.5	4134.5	5.23		Si
SLD 14	12.17	1061.11	-1171	-0.0020113	0.0005615	0.0035	1.1394		932.91	932.91	0.88		No
SLV 10	9.66	-1185.71	-8680	-0.000049	0.0005615	0.0035	1.4243		6045.32	6045.32	5.1		Si
SLV 10	12.17	1623.87	-1486	-0.0072064	0.0005615	0.0035	1.1394		1148.83	1148.83	0.71		No
SLV 9	9.66	-1297.22	-8635	-0.0000505	0.0005615	0.0035	1.4243		6018.6	6018.6	4.64		Si
SLV 9	12.17	1844.54	-1476	-0.0100692	0.0005615	0.0035	1.1394		1141.92	1141.92	0.62		No
SLV 4	9.66	1037	-5241	-0.0000339	0.0005615	0.0035	1.4243		3610.49	3610.49	3.48		Si
SLV 4	12.17	-1969.58	-1456	-0.001054	0.0005615	0.0035	1.1394		1514.83	1514.83	0.77		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 81	9.66	-732.31	-7427	-6254	-2392	1.4243	1.4243	-14637	8896	3801	28547	12795	3632	16427	No	6.87	Si
SLU 81	12.17	457.01	-1787	-1505	-1064	1.4243	1.3693	-3522	7414	3046	28547	12795	3632	16427	No	15.44	Si
SLU 42	9.66	-720.31	-6319	-5321	-2414	1.4243	1.4243	-12453	8605	3677	28547	12795	3632	16427	No	6.8	Si
SLU 42	12.17	494.29	-1569	-1322	-1204	1.4243	1.1916	-3093	7357	2630	28547	12795	3632	16427	No	13.65	Si
SLU 75	9.66	-615.13	-7631	-6426	-2403	1.4243	1.4243	-15040	8950	3824	28547	12795	3632	16427	No	6.84	Si
SLU 75	12.17	497.97	-1837	-1547	-1109	1.4243	1.3233	-3621	7427	2949	28547	12795	3632	16427	No	14.81	Si
SLU 80	9.66	-613.69	-7680	-6467	-2431	1.4243	1.4243	-15135	8962	3830	28547	12795	3632	16427	No	6.76	Si
SLU 80	12.17	510.05	-1854	-1561	-1130	1.4243	1.3111	-3654	7432	2923	28547	12795	3632	16427	No	14.54	Si
SLU 78	9.66	-616.92	-7778	-6550	-2499	1.4243	1.4243	-15329	8988	3841	28547	12795	3632	16427	No	6.57	Si
SLU 78	12.17	537.03	-1887	-1589	-1189	1.4243	1.2828	-3719	7440	2863	28547	12795	3632	16427	No	13.81	Si
SLU 76	9.66	-616.86	-7554	-6361	-2375	1.4243	1.4243	-14887	8929	3815	28547	12795	3632	16427	No	6.92	Si
SLU 76	12.17	477.07	-1806	-1521	-1070	1.4243	1.3442	-3560	7419	2992	28547	12795	3632	16427	No	15.36	Si
SLU 77	9.66	-609.48	-7747	-6523	-2439	1.4243	1.4243	-15267	8980	3837	28547	12795	3632	16427	No	6.73	Si
SLU 77	12.17	527.92	-1883	-1586	-1159	1.4243	1.2955	-3712	7439	2891	28547	12795	3632	16427	No	14.17	Si
SLU 83	9.66	-734.11	-7574	-6378	-2489	1.4243	1.4243	-14927	8935	3818	28547	12795	3632	16427	No	6.6	Si
SLU 83	12.17	496.07	-1837	-1547	-1145	1.4243	1.3265	-3621	7427	2956	28547	12795	3632	16427	No	14.35	Si
SLU 84	9.66	-741.55	-7606	-6405	-2548	1.4243	1.4243	-14989	8943	3821	28547	12795	3632	16427	No	6.45	Si
SLU 84	12.17	505.17	-1841	-1551	-1175	1.4243	1.3134	-3629	7428	2927	28547	12795	3632	16427	No	13.98	Si
SLU 82	9.66	-739.75	-7459	-6281	-2452	1.4243	1.4243	-14700	8904	3805	28547	12795	3632	16427	No	6.7	Si
SLU 82	12.17	466.12	-1791	-1508	-1094	1.4243	1.3558	-3530	7415	3016	28547	12795	3632	16427	No	15.01	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	9.66	-1087.17	-3545	-2985	-5437	1.4243	1.2165	-8211	12059	4401	28547	19193	3632	22825		4.2	Si
SLV 16	12.17	1587.98	-879	-740	-5502	1.1394	0	0	0	0	28547	15354	2906	18260		3.32	Si
SLV 15	9.66	-1252.81	-3477	-2928	-6474	1.4243	1.0556	-9285	12274	3887	28547	19193	3632	22825		3.53	Si
SLV 15	12.17	1915.74	-864	-728	-6637	1.1394	0	0	0	0	28547	15354	2906	18260		2.75	Si
SLV 4	9.66	1037	-5241	-4413	6994	1.4243	1.4243	-10328	12482	5334	28547	19193	3632	22825		3.26	Si
SLV 4	12.17	-1969.58	-1456	-1226	7345	1.1394	0	0	0	0	28547	15354	2906	18260		2.49	Si
SLV 10	9.66	-1185.71	-8680	-7310	-8116	1.4243	1.4243	-17107	13838	5913	28547	19193	3632	22825		2.81	Si
SLV 10	12.17	1623.87	-1486	-1252	-4901	1.1394	0	0	0	0	28547	15354	2906	18260		3.73	Si
SLV 3	9.66	871.36	-5173	-4356	5958	1.4243	1.4243	-10195	12456	5322	28547	19193	3632	22825		3.83	Si
SLV 3	12.17	-1641.82	-1441	-1213	6211	1.1394	0	0	0	0	28547	15354	2906	18260		2.94	Si
SLV 13	9.66	-1628.93	-5579	-4698	-9640	1.4243	1.2605	-12498	12916	4884	28547	19193	3632	22825		2.37	Si
SLV 13	12.17	2482.28	-1052	-886	-8349	1.1394	0	0	0	0	28547	15354	2906	18260		2.19	Si
SLV 9	9.66	-1297.22	-8635	-7271	-8814	1.4243	1.4243	-17017	13820	5905	28547	19193	3632	22825		2.59	Si
SLV 9	12.17	1844.54	-1476	-1243	-5665	1.1394	0	0	0	0	28547	15354	2906	18260		3.22	Si
SLV 8	9.66	705.29	-2185	-1840	6168	1.4243	1.168	-4306	11278	3952	28547	19193	3632	22825		3.7	Si
SLV 8	12.17	-1331.85	-1032	-869	4661	1.1394	0	0	0	0	28547	15354	2906	18260		3.92	Si
SLV 14	9.66	-1463.3	-5646	-4755	-8603	1.4243	1.359	-11128	12642	5154	28547	19193	3632	22825		2.65	Si
SLV 14	12.17	2154.52	-1067	-899	-7214	1.1394	0	0	0	0	28547	15354	2906	18260		2.53	Si
SLV 2	9.66	660.87	-7342	-6183	3828	1.4243	1.4243	-14470	13311	5688	28547	19193	3632	22825		5.96	Si
SLV 2	12.17	-1403.05	-1644	-1384	5633	1.1394	0	0	0	0	28547	15354	2906	18260		3.24	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.915 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 11	179667	0.47	4292	-1834	100.43	267.34	2.66	Si
SLV 15	179667	0.47	4302	-1838	100.43	267.97	2.67	Si
SLV 12	179667	0.47	4612	-1971	100.43	286.67	2.85	Si
SLV 16	179667	0.47	4778	-2041	100.43	296.63	2.95	Si
SLV 7	179667	0.47	6495	-2775	100.43	398.6	3.97	Si
SLV 13	179667	0.47	6581	-2812	100.43	403.63	4.02	Si
SLV 8	179667	0.47	6815	-2912	100.43	417.34	4.16	Si
SLV 14	179667	0.47	7057	-3015	100.43	431.38	4.3	Si
SLV 3	179667	0.47	11647	-4977	100.43	689.59	6.87	Si

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.47	11888	-5080	100.43	702.66	7	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.915 Wa = 0.05 Ta = 0.0351

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 2	-1644	-7342	-35	3.135	326.3	0.896	50.86859	4.87125	Si
SLV 1	-1629	-7274	-35	3.152	324.9	0.895	51.1683	4.87125	Si
SLV 6	-1659	-9189	40	3.115	327.8	0.896	50.53269	4.53044	Si
SLV 5	-1649	-9143	40	3.127	326.8	0.896	50.73271	4.53044	Si
SLV 4	-1456	-5241	-68	3.36	308.2	0.893	54.68869	4.87125	Si
SLV 3	-1441	-5173	-68	3.381	306.8	0.893	55.03417	4.87125	Si
SLV 10	-1486	-8680	71	3.318	311.2	0.893	53.97097	4.53044	Si
SLV 9	-1476	-8635	71	3.331	310.2	0.893	54.19856	4.53044	Si
SLV 14	-1067	-5646	70	3.99	271.7	0.889	65.21271	4.87125	Si
SLV 13	-1052	-5579	70	4.019	270.3	0.889	65.695	4.87125	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.334	SLU 36	Si
V_SLU	6.446	SLU 84	Si
PF_SLV	0.343	SLV 13	No
V_SLV	2.187	SLV 13	Si
PFFP_SLV	2.662	SLV 11	Si
R_SLV	10.443	SLV 2	Si

Maschio 177

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	-3.359	-13.763	-0.354	Z medio 914 cm	L7	3.006	0.3	3.03	2.51	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 21	9.66	1933.42	-15279	-0.0000327	0.0003743	0.0035	3.0057	19140.57	20064.3	20064.3	10.38	No	Si
SLU 21	12.17	-433.77	-10080	-0.0000184	0.0003743	0.0035	3.0057	13485.22	16412.11	16412.11	37.84	No	Si
SLU 41	9.66	2189.1	-17545	-0.0000377	0.0003743	0.0035	3.0057	21328.24	22682.13	22682.13	10.36	No	Si
SLU 41	12.17	-727.37	-11710	-0.0000222	0.0003743	0.0035	3.0057	15353.95	18427.88	18427.88	25.33	No	Si
SLU 18	9.66	1861.78	-14549	-0.0000311	0.0003743	0.0035	3.0057	18399.67	19236.76	19236.76	10.33	No	Si
SLU 18	12.17	-354.18	-9461	-0.000017	0.0003743	0.0035	3.0057	12752.6	15622.04	15622.04	44.11	No	Si
SLU 40	9.66	2124.73	-17101	-0.0000366	0.0003743	0.0035	3.0057	20913.23	22163.65	22163.65	10.43	No	Si
SLU 40	12.17	-637.89	-11259	-0.0000211	0.0003743	0.0035	3.0057	14844.89	17862.37	17862.37	28	No	Si
SLU 39	9.66	2121.09	-16958	-0.0000364	0.0003743	0.0035	3.0057	20777.71	21996.66	21996.66	10.37	No	Si
SLU 39	12.17	-642.84	-11175	-0.000021	0.0003743	0.0035	3.0057	14749.76	17757.97	17757.97	27.62	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 20	9.66	1929.78	-15136	-0.0000324	0.0003743	0.0035	3.0057	18996.49	19901.23	19901.23	10.31	No	Si
SLU 20	12.17	-438.72	-9996	-0.0000182	0.0003743	0.0035	3.0057	13386.86	16310.2	16310.2	37.18	No	Si
SLU 19	9.66	1865.41	-14692	-0.0000314	0.0003743	0.0035	3.0057	18546.5	19398.61	19398.61	10.4	No	Si
SLU 19	12.17	-349.23	-9544	-0.0000172	0.0003743	0.0035	3.0057	12852.44	15732.05	15732.05	45.05	No	Si
SLU 42	9.66	2192.73	-17688	-0.000038	0.0003743	0.0035	3.0057	21461	22850.3	22850.3	10.42	No	Si
SLU 42	12.17	-722.43	-11794	-0.0000223	0.0003743	0.0035	3.0057	15447.62	18533.22	18533.22	25.65	No	Si
SLU 62	9.66	2223.01	-18373	-0.0000393	0.0003743	0.0035	3.0057	22085.27	23656.8	23656.8	10.64	No	Si
SLU 62	12.17	-510.78	-11957	-0.0000219	0.0003743	0.0035	3.0057	15629.16	18738.54	18738.54	36.69	No	Si
SLU 83	9.66	2482.33	-20782	-0.0000447	0.0003743	0.0035	3.0057	24161.71	26413.07	26413.07	10.64	No	Si
SLU 83	12.17	-799.44	-13671	-0.0000259	0.0003743	0.0035	3.0057	17486.2	20775.37	20775.37	25.99	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	9.66	2607.3	-1483	-0.0006464	0.0005615	0.0035	2.4046		2670.28	2670.28	1.02		Si
SLV 7	12.17	715.66	-1188	-0.0000043	0.0005615	0.0035	3.0057		2237.74	2237.74	3.13		Si
SLV 12	9.66	2390.48	-1228	-0.0008822	0.0005615	0.0035	2.4046		2296.66	2296.66	0.96		No
SLV 12	12.17	-243.54	-1595	-0.0000034	0.0005615	0.0035	3.0057		4919.52	4919.52	20.2		Si
SLV 8	9.66	2525.37	-1308	-0.0009259	0.0005615	0.0035	2.4046		2414.26	2414.26	0.96		No
SLV 8	12.17	886.69	-763	-0.0000073	0.0005615	0.0035	3.0057		1610.3	1610.3	1.82		Si
SLV 3	9.66	2061.16	-10772	-0.0000248	0.0005615	0.0035	3.0057		15661.38	15661.38	7.6		Si
SLV 3	12.17	1400.94	-5771	-0.0000141	0.0005615	0.0035	3.0057		8833.17	8833.17	6.31		Si
SLV 4	9.66	1939.46	-10512	-0.000024	0.0005615	0.0035	3.0057		15313.89	15313.89	7.9		Si
SLV 4	12.17	1654.98	-5140	-0.0000139	0.0005615	0.0035	3.0057		7940.56	7940.56	4.8		Si
SLV 16	9.66	1489.84	-10246	-0.000022	0.0005615	0.0035	3.0057		14956.61	14956.61	10.04		Si
SLV 16	12.17	-2112.45	-7914	-0.0000201	0.0005615	0.0035	3.0057		13806.02	13806.02	6.54		Si
SLV 11	9.66	2472.42	-1403	-0.0006102	0.0005615	0.0035	2.4046		2553.27	2553.27	1.03		Si
SLV 11	12.17	-414.57	-2020	-0.0000047	0.0005615	0.0035	3.0057		5536.55	5536.55	13.35		Si
SLD 8	9.66	1885.54	-9204	-0.0000215	0.0005615	0.0035	3.0057		13558.58	13558.58	7.19		Si
SLD 8	12.17	6.53	-5796	-0.0000096	0.0005615	0.0035	3.0057		8868.17	8868.17	1358.05		Si
SLV 15	9.66	1611.54	-10506	-0.0000229	0.0005615	0.0035	3.0057		15304.99	15304.99	9.5		Si
SLV 15	12.17	-2366.49	-8545	-0.000022	0.0005615	0.0035	3.0057		14671.09	14671.09	6.2		Si
SLD 7	9.66	1919.7	-9277	-0.0000218	0.0005615	0.0035	3.0057		13657.06	13657.06	7.11		Si
SLD 7	12.17	-64.76	-5973	-0.0000101	0.0005615	0.0035	3.0057		11156.34	11156.34	172.26		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 61	9.66	2158.64	-17929	-15098	786	3.0057	3.0057	-16744	9177	10296	33304	27001	7665	34666	No	44.13	Si
SLU 61	12.17	-421.29	-11505	-9689	-245	3.0057	3.0057	-10745	8377	8150	33304	27001	7665	34666	No	141.63	Si
SLU 43	9.66	1567.01	-16779	-14130	906	3.0057	3.0057	-15670	9034	9912	33304	27001	7665	34666	No	38.27	Si
SLU 43	12.17	-642.16	-10457	-8806	188	3.0057	3.0057	-9766	8247	7800	33304	27001	7665	34666	No	184.76	Si
SLU 45	9.66	1658.63	-17715	-14918	774	3.0057	3.0057	-16544	9150	10225	33304	27001	7665	34666	No	44.78	Si
SLU 45	12.17	-797	-11316	-9529	226	3.0057	3.0057	-10568	8353	8087	33304	27001	7665	34666	No	153.06	Si
SLU 53	9.66	2070.23	-18419	-15511	796	3.0057	3.0057	-17202	9238	10460	33304	27001	7665	34666	No	43.55	Si
SLU 53	12.17	-645.86	-11991	-10098	-37	3.0057	3.0057	-11198	8438	8312	33304	27001	7665	34666	No	939.58	Si
SLU 62	9.66	2223.01	-18373	-15472	873	3.0057	3.0057	-17158	9232	10445	33304	27001	7665	34666	No	39.72	Si
SLU 62	12.17	-510.78	-11957	-10069	-159	3.0057	3.0057	-11167	8433	8301	33304	27001	7665	34666	No	218.01	Si
SLU 58	9.66	2114.62	-18657	-15712	799	3.0057	3.0057	-17424	9268	10540	33304	27001	7665	34666	No	43.36	Si
SLU 58	12.17	-660.09	-12203	-10276	-17	3.0057	3.0057	-11397	8464	8383	33304	27001	7665	34666	No	2099.64	Si
SLU 60	9.66	2155	-17786	-14977	937	3.0057	3.0057	-16610	9159	10249	33304	27001	7665	34666	No	37	Si
SLU 60	12.17	-426.24	-11422	-9618	-189	3.0057	3.0057	-10667	8367	8122	33304	27001	7665	34666	No	183.78	Si
SLU 50	9.66	1703.02	-17953	-15118	778	3.0057	3.0057	-16766	9180	10304	33304	27001	7665	34666	No	44.58	Si
SLU 50	12.17	-811.24	-11528	-9708	247	3.0057	3.0057	-10766	8380	8158	33304	27001	7665	34666	No	140.42	Si
SLU 56	9.66	2138.23	-19006	-16005	732	3.0057	3.0057	-17750	9311	10656	33304	27001	7665	34666	No	47.37	Si
SLU 56	12.17	-730.4	-12527	-10549	-7	3.0057	3.0057	-11699	8504	8491	33304	27001	7665	34666	No	4765.29	Si
SLU 63	9.66	2226.64	-18516	-15592	721	3.0057	3.0057	-17292	9250	10493	33304	27001	7665	34666	No	48.05	Si
SLU 63	12.17	-505.83	-12041	-10140	-215	3.0057	3.0057	-11245	8444	8329	33304	27001	7665	34666	No	161.12	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 7	9.66	1919.7	-9277	-7812	8006	3.0057	3.0057	-8664	12149	10955	33304	40502	7665	44260		5.53	Si
SLD 7	12.17	-64.76	-5973	-5030	2091	3.0057	3.0057	-5578	11532	10399	33304	40502	7665	43703		20.9	Si
SLV 9	9.66	405.57	-27556	-23205	-17778	3.0057	3.0057	-25735	15564	15666	33304	40502	7665	48166		2.71	Si
SLV 9	12.17	-2105.47	-17594	-14816	-4661	3.0057	3.0057	-16431	13703	12356	33304	40502	7665	45660		9.8	Si
SLV 5	9.66	540.46	-27636	-23273	-16696	3.0057	3.0057	-25809	15579	15693	33304	40502	7665	48166		2.88	Si
SLV 5	12.17	-975.24	-16762	-14115	-4387	3.0057	3.0057	-15654	13547	12216	33304	40502	7665	45520		10.38	Si
SLV 3	9.66	2061.16	-10772	-9071	7971	3.0057	3.0057	-10060	12429	11207	33304	40502	7665	44511		5.58	Si
SLV 3	12.17	1400.94	-5771	-4860	2068	3.0057	3.0057	-5389	11495	10365	33304	40502	7665	43669		21.11	Si
SLV 7	9.66	2607.3	-1483	-1249	19193	2.4046	0	0	0	0	33304	32401	6132	33304		1.74	Si
SLV 7	12.17	715.66	-1188	-1000	5014	3.0057	2.7011	-1109	10639	8621	33304	40502	7665	41925		8.36	Si
SLV 6	9.66	458.52	-27461	-23125	-17011	3.0057	3.0057	-25646	15546	15634	33304	40502	7665	48166		2.83	Si
SLV 6	12.17	-804.21	-16337	-13757	-4490	3.0057	3.0057	-15257	13468	12144	33304	40502	7665	45449		10.12	Si
SLV 8	9.66	2525.37	-1308	-1101	18878	2.4046	0	0	0	0	33304	32401	6132	33304		1.76	Si
SLV 8	12.17	886.69	-763	-642	4910	3.0057	1.0217	-712	10559	6714	33304	40502	7665	40018		8.15	Si
SLV 12	9.66	2390.48	-1228	-1034	17796	2.4046	0	0	0	0	33304	32401	6132	33304		1.87	Si
SLV 12	12.17	-243.54	-1595	-1343	4636	3.0057	3.0057	-1490	10715	9661	33304	40502	7665	42966		9.27	Si
SLV 10	9.66	323.64	-27381	-23058	-18093	3.0057	3.0057	-25571	15531	15608	33304	40502	7665	48166		2.66	Si
SLV 10	12.17	-1934.44	-17169	-14458	-4764	3.0057	3.0057	-16034	13624	12284	33304	40502	7665	45589		9.57	Si
SLV 11	9.66	2472.42	-1403	-1181	18111	2.4046	0	0	0	0	33304	32401	6132	33304		1.84	Si
SLV 11	12.17	-414.57	-2020	-1701	4740	3.0057	3.0057	-1887	10794	9733	33304	40502	7665	43037		9.08	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.915 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 11	179667	0.47	0	-1456	308.86	0	0	No, e>t/2
SLV 8	179667	0.47	0	-1270	308.86	0	0	No, e>t/2
SLV 7	179667	0.47	0	-1474	308.86	0	0	No, e>t/2
SLV 12	179667	0.47	0	-1251	308.86	0	0	No, e>t/2
SLV 16	179667	0.47	9139	-8241	308.86	1162.11	3.76	Si
SLV 4	179667	0.47	9208	-8303	308.86	1170.37	3.79	Si
SLV 15	179667	0.47	9476	-8544	308.86	1202.14	3.89	Si
SLV 3	179667	0.47	9545	-8607	308.86	1210.36	3.92	Si
SLV 14	179667	0.47	15851	-14293	308.86	1921.41	6.22	Si
SLV 2	179667	0.47	15920	-14355	308.86	1928.84	6.25	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.915 Wa = 0.05 Ta = 0.0511

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 9	-17594	-27556	672	0.864	2177.7	0.949	13.23164	4.88584	Si
SLV 13	-13217	-18352	2838	0.953	1734	0.938	14.76975	5.44851	Si
SLV 5	-16762	-27636	-1048	0.88	2093.2	0.947	13.4978	4.88584	Si
SLV 10	-17169	-27381	672	0.882	2134.5	0.948	13.51467	4.88584	Si
SLV 6	-16337	-27461	-1048	0.898	2050.1	0.946	13.79967	4.88584	Si
SLV 14	-12586	-18092	2837	0.991	1670.1	0.936	15.38978	5.44851	Si
SLV 1	-10443	-18618	-2898	1.143	1453.7	0.928	17.891	5.44851	Si
SLV 2	-9812	-18358	-2898	1.199	1390.1	0.926	18.82317	5.44851	Si
SLV 15	-8545	-10506	2973	1.325	1262.8	0.92	20.92209	5.44851	Si
SLV 16	-7914	-10246	2972	1.402	1199.6	0.917	22.22292	5.44851	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	10.313	SLU 20	Si
V_SLU	36.998	SLU 60	Si
PF_SLV	0.956	SLV 8	No
V_SLV	1.735	SLV 7	Si
PFFP_SLV	0	SLV 7	No
R_SLV	2.708	SLV 9	Si

Maschio 179

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	0.672	-13.763	1.046	L6	L7	0.374	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 60	8.62	55.52	-3448	-0.000062	0.0003743	0.0035	0.3743	450.71	507.36	507.36	9.14	No	Si
SLU 60	10.72	-111.22	-4087	-0.0000863	0.0003743	0.0035	0.3743	491.48	589.63	589.63	5.3	No	Si
SLU 50	8.62	51.21	-3380	-0.0000599	0.0003743	0.0035	0.3743	445.53	498.77	498.77	9.74	No	Si
SLU 50	10.72	-104.16	-3970	-0.0000825	0.0003743	0.0035	0.3743	485.02	578.02	578.02	5.55	No	Si
SLU 48	8.62	49.48	-3463	-0.0000608	0.0003743	0.0035	0.3743	451.78	509.16	509.16	10.29	No	Si
SLU 48	10.72	-103.32	-4037	-0.0000834	0.0003743	0.0035	0.3743	488.73	584.66	584.66	5.66	No	Si
SLU 61	8.62	49.03	-3509	-0.0000614	0.0003743	0.0035	0.3743	455.19	515.03	515.03	10.5	No	Si
SLU 61	10.72	-104.95	-4046	-0.000084	0.0003743	0.0035	0.3743	489.22	585.55	585.55	5.58	No	Si
SLU 56	8.62	50.62	-3703	-0.0000649	0.0003743	0.0035	0.3743	468.53	539.36	539.36	10.66	No	Si
SLU 56	10.72	-108.71	-4304	-0.0000893	0.0003743	0.0035	0.3743	502.27	605.74	605.74	5.57	No	Si
SLU 58	8.62	52.35	-3619	-0.000064	0.0003743	0.0035	0.3743	462.93	528.95	528.95	10.1	No	Si
SLU 58	10.72	-109.55	-4238	-0.0000884	0.0003743	0.0035	0.3743	499.14	600.98	600.98	5.49	No	Si
SLU 62	8.62	54.18	-3585	-0.0000639	0.0003743	0.0035	0.3743	460.57	524.61	524.61	9.68	No	Si
SLU 62	10.72	-111.54	-4220	-0.0000886	0.0003743	0.0035	0.3743	498.26	599.7	599.7	5.38	No	Si
SLU 45	8.62	50.82	-3326	-0.0000589	0.0003743	0.0035	0.3743	441.37	492.09	492.09	9.68	No	Si
SLU 45	10.72	-103.01	-3904	-0.0000811	0.0003743	0.0035	0.3743	481.15	571.18	571.18	5.54	No	Si
SLU 53	8.62	51.96	-3566	-0.000063	0.0003743	0.0035	0.3743	459.19	522.13	522.13	10.05	No	Si
SLU 53	10.72	-108.39	-4172	-0.000087	0.0003743	0.0035	0.3743	495.85	596.25	596.25	5.5	No	Si
SLU 43	8.62	53.89	-3106	-0.0000562	0.0003743	0.0035	0.3743	423.35	465.05	465.05	8.63	No	Si
SLU 43	10.72	-103.53	-3705	-0.0000779	0.0003743	0.0035	0.3743	468.7	549.77	549.77	5.31	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 11	8.62	329.23	-234	-0.0706727	0.0005615	0.0035	0.2994		50.78	50.78	0.15		No
SLD 11	10.72	-315.21	-4875	-0.0001453	0.0005615	0.0035	0.3743		737.42	737.42	2.34		Si
SLD 7	8.62	352.79	-264	-0.075072	0.0005615	0.0035	0.2994		56.24	56.24	0.16		No
SLD 7	10.72	-337.5	-5181	-0.0001565	0.0005615	0.0035	0.3743		768.85	768.85	2.28		Si
SLV 10	8.62	-776.65	-9159	-0.0004169	0.0005615	0.0035	0.2994		1056.44	1056.44	1.36		Si
SLV 10	10.72	585.49	2061	1.4206587	0.0005615	0.0035	0.2994		0	0	0		No
SLV 7	8.62	836.91	3558	2.5594847	0.0005615	0.0035	0.2994		0	0	0		No
SLV 7	10.72	-733.39	-8280	-0.0003761	0.0005615	0.0035	0.2994		1015.98	1015.98	1.39		Si
SLV 5	8.62	-709.8	-9143	-0.0003726	0.0005615	0.0035	0.3743		1055.69	1055.69	1.49		Si
SLV 5	10.72	520.5	1242	0.6301902	0.0005615	0.0035	0.2994		0	0	0		No
SLV 8	8.62	824.92	3471	2.4928366	0.0005615	0.0035	0.2994		0	0	0		No
SLV 8	10.72	-720.58	-8177	-0.0003663	0.0005615	0.0035	0.2994		1011.4	1011.4	1.4		Si
SLV 12	8.62	770.06	3542	2.5785216	0.0005615	0.0035	0.2994		0	0	0		No
SLV 12	10.72	-668.41	-7460	-0.0003269	0.0005615	0.0035	0.2994		965.11	965.11	1.44		Si
SLV 11	8.62	782.05	3628	2.6446457	0.0005615	0.0035	0.2994		0	0	0		No
SLV 11	10.72	-681.22	-7563	-0.0003358	0.0005615	0.0035	0.2994		973.33	973.33	1.43		Si
SLV 9	8.62	-764.66	-9073	-0.0004069	0.0005615	0.0035	0.2994		1052.35	1052.35	1.38		Si
SLV 9	10.72	572.67	1958	1.3371579	0.0005615	0.0035	0.2994		0	0	0		No
SLV 6	8.62	-721.79	-9230	-0.0003812	0.0005615	0.0035	0.3743		1059.81	1059.81	1.47		Si
SLV 6	10.72	533.32	1344	0.7434036	0.0005615	0.0035	0.2994		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 53	8.62	51.96	-3566	-3003	173	0.3743	0.3743	-26739	10510	1180	40441	3363	954	4317	No	24.92	Si
SLU 53	10.72	-108.39	-4172	-3513	186	0.3743	0.3743	-31284	10833	1297	40441	3363	954	4317	No	23.25	Si
SLU 61	8.62	49.03	-3509	-2955	164	0.3743	0.3743	-26318	10454	1174	40441	3363	954	4317	No	26.32	Si
SLU 61	10.72	-104.95	-4046	-3407	177	0.3743	0.3743	-30339	10833	1269	40441	3363	954	4317	No	24.46	Si
SLU 50	8.62	51.21	-3380	-2846	170	0.3743	0.3743	-25344	10324	1159	40441	3363	954	4317	No	25.42	Si
SLU 50	10.72	-104.16	-3970	-3344	182	0.3743	0.3743	-29776	10833	1252	40441	3363	954	4317	No	23.74	Si
SLU 60	8.62	55.52	-3448	-2904	179	0.3743	0.3743	-25860	10392	1167	40441	3363	954	4317	No	24.06	Si
SLU 60	10.72	-111.22	-4087	-3442	192	0.3743	0.3743	-30652	10833	1278	40441	3363	954	4317	No	22.52	Si
SLU 45	8.62	50.82	-3326	-2801	168	0.3743	0.3743	-24941	10270	1153	40441	3363	954	4317	No	25.68	Si
SLU 45	10.72	-103.01	-3904	-3288	180	0.3743	0.3743	-29277	10833	1237	40441	3363	954	4317	No	23.99	Si
SLU 56	8.62	50.62	-3703	-3118	172	0.3743	0.3743	-27766	10647	1196	40441	3363	954	4317	No	25.08	Si
SLU 56	10.72	-108.71	-4304	-3625	185	0.3743	0.3743	-32279	10833	1327	40441	3363	954	4317	No	23.35	Si
SLU 43	8.62	53.89	-3106	-2615	172	0.3743	0.3743	-23291	10050	1129	40441	3363	954	4317	No	25.09	Si
SLU 43	10.72	-103.53	-3705	-3120	184	0.3743	0.3743	-27786	10649	1196	40441	3363	954	4317	No	23.52	Si
SLU 62	8.62	54.18	-3585	-3019	178	0.3743	0.3743	-26887	10529	1182	40441	3363	954	4317	No	24.21	Si
SLU 62	10.72	-111.54	-4220	-3554	191	0.3743	0.3743	-31647	10833	1308	40441	3363	954	4317	No	22.62	Si
SLU 58	8.62	52.35	-3619	-3048	175	0.3743	0.3743	-27143	10563	1186	40441	3363	954	4317	No	24.67	Si
SLU 58	10.72	-109.55	-4238	-3569	188	0.3743	0.3743	-31782	10833	1312	40441	3363	954	4317	No	23.01	Si
SLU 48	8.62	49.48	-3463	-2916	167	0.3743	0.3743	-25968	10407	1169	40441	3363	954	4317	No	25.85	Si
SLU 48	10.72	-103.32	-4037	-3399	179	0.3743	0.3743	-30272	10833	1267	40441	3363	954	4317	No	24.1	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 12	8.62	770.06	3542	2982	1944	0.2994	0	0	0	0	40441	4035	764	4799		2.47	Si
SLV 12	10.72	-668.41	-7460	-6282	1388	0.2994	0.2927	0	0	0	40441	4035	764	4799		3.46	Si
SLD 7	8.62	352.79	-264	-223	895	0.2994	0	0	0	0	40441	4035	764	4799		5.36	Si
SLD 7	10.72	-337.5	-5181	-4363	688	0.3743	0.3661	-38856	16250	1785	40441	5044	954	5998		8.72	Si
SLV 11	8.62	782.05	3628	3055	1973	0.2994	0	0	0	0	40441	4035	764	4799		2.43	Si
SLV 11	10.72	-681.22	-7563	-6369	1417	0.2994	0.2912	0	0	0	40441	4035	764	4799		3.39	Si
SLV 5	8.62	-709.8	-9143	-7700	-1723	0.3743	0.3286	-68569	16250	2594	40441	5044	954	5998		3.48	Si
SLV 5	10.72	520.5	1242	1046	-1148	0.2994	0	0	0	0	40441	4035	764	4799		4.18	Si
SLV 10	8.62	-776.65	-9159	-7713	-1852	0.2994	0.3071	0	0	0	40441	4035	764	4799		2.59	Si
SLV 10	10.72	585.49	2061	1736	-1300	0.2994	0	0	0	0	40441	4035	764	4799		3.69	Si
SLV 7	8.62	836.91	3558	2996	2073	0.2994	0	0	0	0	40441	4035	764	4799		2.31	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	10.72	-733.39	-8280	-6973	1541	0.2994	0.2957	0	0	0	40441	4035	764	4799		3.11	Si
SLV 6	8.62	-721.79	-9230	-7773	-1752	0.3743	0.3269	-69218	16250	2613	40441	5044	954	5998		3.42	Si
SLV 6	10.72	533.32	1344	1132	-1177	0.2994	0	0	0	0	40441	4035	764	4799		4.08	Si
SLD 8	8.62	347.79	-300	-253	883	0.2994	0	0	0	0	40441	4035	764	4799		5.43	Si
SLD 8	10.72	-332.15	-5138	-4327	676	0.3743	0.3675	-38534	16250	1792	40441	5044	954	5998		8.87	Si
SLV 8	8.62	824.92	3471	2923	2044	0.2994	0	0	0	0	40441	4035	764	4799		2.35	Si
SLV 8	10.72	-720.58	-8177	-6886	1512	0.2994	0.2971	0	0	0	40441	4035	764	4799		3.17	Si
SLV 9	8.62	-764.66	-9073	-7640	-1823	0.2994	0.3086	0	0	0	40441	4035	764	4799		2.63	Si
SLV 9	10.72	572.67	1958	1649	-1271	0.2994	0	0	0	0	40441	4035	764	4799		3.77	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 6	179667	0.46	0	1273	51.59	0	0	No, Trazione
SLV 5	179667	0.46	0	1170	51.59	0	0	No, Trazione
SLV 9	179667	0.46	0	1885	51.59	0	0	No, Trazione
SLV 10	179667	0.46	0	1987	51.59	0	0	No, Trazione
SLV 14	179667	0.46	4315	-485	51.59	70.63	1.37	Si
SLV 13	179667	0.46	5676	-637	51.59	92.06	1.78	Si
SLV 2	179667	0.46	25537	-2868	51.59	358.21	6.94	Si
SLV 1	179667	0.46	26898	-3020	51.59	373.27	7.23	Si
SLV 16	179667	0.46	29741	-3340	51.59	403.4	7.82	Si
SLV 15	179667	0.46	31102	-3493	51.59	417.19	8.09	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-4321	-9230	-14	0.492	496	0.966	7.39919	5.26078	Si
SLV 5	-4266	-9143	-14	0.497	490.4	0.965	7.48263	5.26078	Si
SLV 2	-3236	-4888	-28	0.624	385.7	0.957	9.46997	6.14217	Si
SLV 10	-3863	-9159	1	0.544	449.4	0.963	8.20995	5.26078	Si
SLV 1	-3155	-4760	-28	0.637	377.4	0.956	9.68424	6.14217	Si
SLV 9	-3808	-9073	1	0.55	443.8	0.962	8.31338	5.26078	Si
SLV 4	-1837	-1078	-24	0.996	243.8	0.936	15.45894	6.14217	Si
SLV 3	-1755	-949	-24	1.033	235.5	0.934	16.06325	6.14217	Si
SLV 14	-1709	-4652	22	1.056	230.8	0.933	16.445	6.14217	Si
SLV 13	-1627	-4524	22	1.097	222.5	0.931	17.13041	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.301	SLU 60	Si
V_SLU	22.516	SLU 60	Si
PF_SLV	0	SLV 5	No
V_SLV	2.315	SLV 7	Si
PFFP_SLV	0	SLV 10	No
R_SLV	1.406	SLV 6	Si

Maschio 180

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-20.668	1.046	-24.678	1.046	L6	L7	4.01	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 61	8.62	-6823.75	-32136	-0.0000506	0.0004492	0.0035	4.01	50346.12	64978.42	64978.42	9.52	No	Si
SLU 61	10.72	-3275.54	-26021	-0.0000365	0.0004492	0.0035	4.01	42936.42	55513.66	55513.66	16.95	No	Si
SLU 60	8.62	-6835.77	-32099	-0.0000506	0.0004492	0.0035	4.01	50304.66	64924.82	64924.82	9.5	No	Si
SLU 60	10.72	-3301.57	-26009	-0.0000365	0.0004492	0.0035	4.01	42920.35	55494.4	55494.4	16.81	No	Si
SLU 64	8.62	-7020.11	-33090	-0.0000522	0.0004492	0.0035	4.01	51409.93	66370.46	66370.46	9.45	No	Si
SLU 64	10.72	-3409.74	-26565	-0.0000374	0.0004492	0.0035	4.01	43637.34	56358.35	56358.35	16.53	No	Si
SLU 81	8.62	-7355.35	-35030	-0.0000553	0.0004492	0.0035	4.01	53496.75	69201.33	69201.33	9.41	No	Si
SLU 81	10.72	-4088.81	-29641	-0.0000425	0.0004492	0.0035	4.01	47445.72	61130.89	61130.89	14.95	No	Si
SLU 73	8.62	-7234.73	-34509	-0.0000544	0.0004492	0.0035	4.01	52946.63	68441.4	68441.4	9.46	No	Si
SLU 73	10.72	-3841.71	-28739	-0.0000409	0.0004492	0.0035	4.01	46355.56	59731.22	59731.22	15.55	No	Si
SLU 83	8.62	-7372.17	-35726	-0.0000562	0.0004492	0.0035	4.01	54220.96	70217.72	70217.72	9.52	No	Si
SLU 83	10.72	-4395.9	-30336	-0.0000439	0.0004492	0.0035	4.01	48271.04	62209.98	62209.98	14.15	No	Si
SLU 75	8.62	-7394.94	-35843	-0.0000564	0.0004492	0.0035	4.01	54341.81	70389.16	70389.16	9.52	No	Si
SLU 75	10.72	-4314.01	-30154	-0.0000435	0.0004492	0.0035	4.01	48056.22	61927.44	61927.44	14.35	No	Si
SLU 82	8.62	-7343.32	-35066	-0.0000553	0.0004492	0.0035	4.01	53535.27	69254.93	69254.93	9.43	No	Si
SLU 82	10.72	-4062.78	-29653	-0.0000424	0.0004492	0.0035	4.01	47460.56	61150.14	61150.14	15.05	No	Si
SLU 74	8.62	-7406.97	-35807	-0.0000564	0.0004492	0.0035	4.01	54304.06	70335.56	70335.56	9.5	No	Si
SLU 74	10.72	-4340.04	-30142	-0.0000435	0.0004492	0.0035	4.01	48041.55	61908.18	61908.18	14.26	No	Si
SLU 65	8.62	-7000.06	-33151	-0.0000523	0.0004492	0.0035	4.01	51477.35	66459.78	66459.78	9.49	No	Si
SLU 65	10.72	-3366.36	-26586	-0.0000374	0.0004492	0.0035	4.01	43663.81	56390.44	56390.44	16.75	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 16	8.62	-11144.71	-15682	-0.0000377	0.0006738	0.0035	4.01		38758.95	38758.95	3.48		Si
SLV 16	10.72	9430.76	-8747	-0.0000292	0.0006738	0.0035	4.01		18610.61	18610.61	1.97		Si
SLV 1	8.62	438.83	-34714	-0.0000414	0.0006738	0.0035	4.01		63203.31	63203.31	144.03		Si
SLV 1	10.72	-14602.1	-31756	-0.0000634	0.0006738	0.0035	4.01		66268.04	66268.04	4.54		Si
SLV 14	8.62	-10275.97	-16715	-0.0000373	0.0006738	0.0035	4.01		40595.64	40595.64	3.95		Si
SLV 14	10.72	10791.64	-8683	-0.0000354	0.0006738	0.0035	4.01		18489.11	18489.11	1.71		Si
SLV 4	8.62	-1164.89	-33324	-0.000041	0.0006738	0.0035	4.01		68791.18	68791.18	59.05		Si
SLV 4	10.72	-15793.25	-31454	-0.0000652	0.0006738	0.0035	4.01		65782.49	65782.49	4.17		Si
SLV 13	8.62	-9540.98	-17071	-0.0000364	0.0006738	0.0035	4.01		41229.07	41229.07	4.32		Si
SLV 13	10.72	10621.91	-9049	-0.0000338	0.0006738	0.0035	4.01		19180.96	19180.96	1.81		Si
SLV 12	8.62	-8545.24	-20709	-0.000039	0.0006738	0.0035	4.01		47695.98	47695.98	5.58		Si
SLV 12	10.72	-1013.07	-16829	-0.0000212	0.0006738	0.0035	4.01		40798.98	40798.98	40.27		Si
SLV 15	8.62	-10409.73	-16038	-0.0000367	0.0006738	0.0035	4.01		39392.37	39392.37	3.78		Si
SLV 15	10.72	9261.02	-9113	-0.0000285	0.0006738	0.0035	4.01		19300.66	19300.66	2.08		Si
SLV 11	8.62	-8050.39	-20949	-0.0000385	0.0006738	0.0035	4.01		48122.44	48122.44	5.98		Si
SLV 11	10.72	-1127.35	-17076	-0.0000217	0.0006738	0.0035	4.01		41236.82	41236.82	36.58		Si
SLV 2	8.62	-296.15	-34357	-0.0000407	0.0006738	0.0035	4.01		70453.67	70453.67	237.9		Si
SLV 2	10.72	-14432.36	-31390	-0.0000626	0.0006738	0.0035	4.01		65679.41	65679.41	4.55		Si
SLV 3	8.62	-429.91	-33680	-0.0000401	0.0006738	0.0035	4.01		69364.52	69364.52	161.35		Si
SLV 3	10.72	-15962.99	-31820	-0.000066	0.0006738	0.0035	4.01		66371.12	66371.12	4.16		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 43	8.62	-6500.54	-30160	-21934	-2886	4.01	4.01	-18233	10764	15723	115546	43233	20451	63684	No	22.07	Si
SLU 43	10.72	-2622.5	-22933	-16679	-2876	4.01	4.01	-13864	10182	13621	115546	43233	20451	63684	No	22.14	Si
SLU 47	8.62	-6497.31	-30917	-22485	-2798	4.01	4.01	-18691	10825	15943	115546	43233	20451	63684	No	22.76	Si
SLU 47	10.72	-2886.21	-23649	-17199	-2788	4.01	4.01	-14297	10240	13829	115546	43233	20451	63684	No	22.84	Si
SLU 49	8.62	-6657.53	-32252	-23456	-2573	4.01	4.01	-19498	10833	16331	115546	43233	20451	63684	No	24.75	Si
SLU 49	10.72	-3358.51	-25064	-18229	-2563	4.01	4.01	-15153	10354	14241	115546	43233	20451	63684	No	24.85	Si
SLU 45	8.62	-6652.73	-31519	-22923	-2680	4.01	4.01	-19055	10833	16118	115546	43233	20451	63684	No	23.76	Si
SLU 45	10.72	-3077.45	-24357	-17714	-2670	4.01	4.01	-14725	10297	14035	115546	43233	20451	63684	No	23.85	Si
SLU 50	8.62	-6534.18	-31552	-22947	-2612	4.01	4.01	-19075	10833	16128	115546	43233	20451	63684	No	24.38	Si
SLU 50	10.72	-3236.69	-24324	-17690	-2601	4.01	4.01	-14705	10294	14025	115546	43233	20451	63684	No	24.48	Si
SLU 48	8.62	-6669.56	-32215	-23429	-2543	4.01	4.01	-19476	10833	16321	115546	43233	20451	63684	No	25.04	Si
SLU 48	10.72	-3384.54	-25052	-18220	-2533	4.01	4.01	-15145	10353	14237	115546	43233	20451	63684	No	25.14	Si
SLU 44	8.62	-6480.49	-30221	-21979	-2935	4.01	4.01	-18270	10769	15741	115546	43233	20451	63684	No	21.7	Si
SLU 44	10.72	-2579.12	-22954	-16694	-2926	4.01	4.01	-13877	10184	13627	115546	43233	20451	63684	No	21.77	Si
SLU 51	8.62	-6522.16	-31589	-22974	-2641	4.01	4.01	-19097	10833	16139	115546	43233	20451	63684	No	24.11	Si
SLU 51	10.72	-3210.66	-24336	-17699	-2631	4.01	4.01	-14713	10295	14029	115546	43233	20451	63684	No	24.2	Si
SLU 52	8.62	-6715.16	-31579	-22966	-2063	4.01	4.01	-19091	10833	16136	115546	43233	20451	63684	No	30.87	Si
SLU 52	10.72	-3054.46	-25107	-18259	-2053	4.01	4.01	-15178	10357	14253	115546	43233	20451	63684	No	31.03	Si
SLU 46	8.62	-6640.71	-31555	-22949	-2710	4.01	4.01	-19077	10833	16129	115546	43233	20451	63684	No	23.5	Si
SLU 46	10.72	-3051.42	-24369	-17723	-2700	4.01	4.01	-14732	10298	14038	115546	43233	20451	63684	No	23.59	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	8.62	-296.15	-34357	-24987	9956	4.01	4.01	-20771	16250	20419	115546	64849	20451	85300		8.57	Si
SLV 2	10.72	-14432.36	-31390	-22829	8388	4.01	4.01	-18977	16250	19555	115546	64849	20451	85300		10.17	Si
SLV 16	8.62	-11144.71	-15682	-11405	-13292	4.01	3.8829	-9832	14466	16852	115546	64849	20451	85300		6.42	Si
SLV 16	10.72	9430.76	-8747	-6362	-11707	4.01	2.7806	-5288	13558	12969	115546	64849	20451	85300		7.29	Si
SLV 9	8.62	-5154.59	-24393	-17741	-7101	4.01	4.01	-14747	15449	18586	115546	64849	20451	85300		12.01	Si
SLV 9	10.72	3408.93	-16862	-12263	-6580	4.01	4.01	-10194	14539	17490	115546	64849	20451	85300		12.96	Si
SLV 13	8.62	-9540.98	-17071	-12415	-14126	4.01	4.01	-10320	14564	17521	115546	64849	20451	85300		6.04	Si
SLV 13	10.72	10621.91	-9049	-6581	-12519	4.01	2.4936	-5471	13594	13057	115546	64849	20451	85300		6.81	Si
SLV 1	8.62	438.83	-34714	-25246	10396	4.01	4.01	-20986	16250	20522	115546	64849	20451	85300		8.21	Si
SLV 1	10.72	-14602.1	-31756	-23095	8827	4.01	4.01	-19198	16250	19662	115546	64849	20451	85300		9.66	Si
SLV 10	8.62	-5649.43	-24153	-17566	-7397	4.01	4.01	-14602	15420	18551	115546	64849	20451	85300		11.53	Si
SLV 10	10.72	3523.21	-16616	-12084	-6876	4.01	4.01	-10045	14509	17454	115546	64849	20451	85300		12.41	Si
SLV 14	8.62	-10275.97	-16715	-12156	-14566	4.01	4.01	-10105	14521	17469	115546	64849	20451	85300		5.86	Si
SLV 14	10.72	10791.64	-8683	-6315	-12959	4.01	2.2866	-5250	13550	12950	115546	64849	20451	85300		6.58	Si
SLV 4	8.62	-1164.89	-33324	-24236	11229	4.01	4.01	-20146	16250	20118	115546	64849	20451	85300		7.6	Si
SLV 4	10.72	-15793.25	-31454	-22876	9639	4.01	4.01	-19016	16250	19574	115546	64849	20451	85300		8.85	Si
SLV 15	8.62	-10409.73	-16038	-11664	-12853	4.01	4.01	-9696	14439	17370	115546	64849	20451	85300		6.64	Si
SLV 15	10.72	9261.02	-9113	-6628	-11267	4.01	2.9664	-5509	13602	13075	115546	64849	20451	85300		7.57	Si
SLV 3	8.62	-429.91	-33680	-24495	11669	4.01	4.01	-20361	16250	20222	115546	64849	20451	85300		7.31	Si
SLV 3	10.72	-15962.99	-31820	-23142	10079	4.01	4.01	-19237	16250	19681	115546	64849	20451	85300		8.46	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 10.395 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 14	-9512	0.46	552.71	1365.31	2104.63	1734.97	3.14	Si
SLV 16	-9575	0.46	552.71	1373.91	2114.94	1744.42	3.16	Si
SLV 13	-9878	0.46	552.71	1415.36	2164.72	1790.04	3.24	Si
SLV 15	-9941	0.46	552.71	1423.92	2175.03	1799.48	3.26	Si
SLV 10	-17404	0.46	552.71	2404.55	3386.7	2895.63	5.24	Si
SLV 12	-17613	0.46	552.71	2430.95	3420.37	2925.66	5.29	Si
SLV 9	-17650	0.46	552.71	2435.63	3426.34	2930.98	5.3	Si
SLV 11	-17860	0.46	552.71	2461.95	3460.01	2960.98	5.36	Si
SLV 6	-24180	0.46	552.71	3229.24	4471.87	3850.56	6.97	Si
SLV 8	-24389	0.46	552.71	3253.71	4505.18	3879.45	7.02	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 1	-21872	-34714	-503	0.905	2833.1	0.94	13.98727	6.14217	Si
SLV 3	-21804	-33680	560	0.905	2826.2	0.94	13.98978	6.14217	Si
SLV 2	-21755	-34357	-504	0.909	2821.3	0.94	14.05064	6.14217	Si
SLV 4	-21687	-33324	559	0.909	2814.4	0.94	14.05493	6.14217	Si
SLV 5	-18400	-29686	-1763	0.983	2481.8	0.933	15.30626	5.26078	Si
SLV 6	-18321	-29446	-1764	0.986	2473.9	0.933	15.36062	5.26078	Si
SLV 7	-18173	-26242	1781	0.992	2458.9	0.933	15.45319	5.26078	Si
SLV 8	-18094	-26002	1780	0.995	2450.9	0.933	15.50994	5.26078	Si
SLV 9	-15372	-24393	-1780	1.13	2176.4	0.926	17.74133	5.26078	Si
SLV 10	-15293	-24153	-1781	1.135	2168.5	0.926	17.81504	5.26078	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.408	SLU 81	Si
V_SLU	21.696	SLU 44	Si
PF_SLV	1.713	SLV 14	Si
V_SLV	5.856	SLV 14	Si
PFFP_SLV	3.139	SLV 14	Si
R_SLV	2.277	SLV 1	Si

Maschio 181

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-12.293	1.046	-19.868	1.046	L6	L7	7.575	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 45	8.62	472.16	-77221	-0.0000492	0.0004492	0.0035	7.575	211137.93	247787.73	247787.73	524.79	No	Si
SLU 45	11.12	-3904.59	-61896	-0.0000408	0.0004492	0.0035	7.575	182173.49	236371.8	236371.8	60.54	No	Si
SLU 46	8.62	273.85	-77272	-0.0000491	0.0004492	0.0035	7.575	211222.27	247925.9	247925.9	905.33	No	Si
SLU 46	11.12	-3850.53	-61893	-0.0000408	0.0004492	0.0035	7.575	182168.17	236364.86	236364.86	61.38	No	Si
SLU 49	8.62	430.51	-79828	-0.0000509	0.0004492	0.0035	7.575	215426.85	254962.71	254962.71	592.23	No	Si
SLU 49	11.12	-4240.36	-64592	-0.0000428	0.0004492	0.0035	7.575	187732.96	243761.35	243761.35	57.49	No	Si
SLU 51	8.62	514	-78419	-0.00005	0.0004492	0.0035	7.575	213131.31	251083.98	251083.98	488.49	No	Si
SLU 51	11.12	-4113.17	-63117	-0.0000417	0.0004492	0.0035	7.575	184717.12	239720.1	239720.1	58.28	No	Si
SLU 48	8.62	628.82	-79778	-0.000051	0.0004492	0.0035	7.575	215346.01	254824.55	254824.55	405.24	No	Si
SLU 48	11.12	-4294.42	-64594	-0.0000428	0.0004492	0.0035	7.575	187738.08	243768.29	243768.29	56.76	No	Si
SLU 47	8.62	225.14	-75896	-0.0000481	0.0004492	0.0035	7.575	208885.92	244139.27	244139.27	1084.41	No	Si
SLU 47	11.12	-3687.31	-60417	-0.0000397	0.0004492	0.0035	7.575	179040.19	232208.1	232208.1	62.97	No	Si
SLU 8	8.62	460.59	-63591	-0.0000401	0.0004492	0.0035	7.575	185693.67	210271.74	210271.74	456.53	No	Si
SLU 8	11.12	-3358.02	-52182	-0.0000342	0.0004492	0.0035	7.575	160498.74	208177.21	208177.21	61.99	No	Si
SLU 7	8.62	178.79	-65051	-0.0000409	0.0004492	0.0035	7.575	188660.29	214288.63	214288.63	1198.55	No	Si
SLU 7	11.12	-3431.15	-53654	-0.0000352	0.0004492	0.0035	7.575	163948.51	212472.36	212472.36	61.92	No	Si
SLU 50	8.62	712.31	-78369	-0.0000501	0.0004492	0.0035	7.575	213048.55	250945.82	250945.82	352.3	No	Si
SLU 50	11.12	-4167.23	-63120	-0.0000418	0.0004492	0.0035	7.575	184722.35	239727.04	239727.04	57.53	No	Si
SLU 6	8.62	377.1	-65001	-0.000041	0.0004492	0.0035	7.575	188559.22	214150.47	214150.47	567.89	No	Si
SLU 6	11.12	-3485.21	-53657	-0.0000352	0.0004492	0.0035	7.575	163954.39	212479.74	212479.74	60.97	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	8.62	28328.41	-65176	-0.0000547	0.0006738	0.0035	7.575		224398.28	224398.28	7.92		Si
SLV 7	11.12	-24006.57	-59567	-0.0000489	0.0006738	0.0035	7.575		236413.34	236413.34	9.85		Si
SLV 4	8.62	43046.43	-73681	-0.0000678	0.0006738	0.0035	7.575		248049.53	248049.53	5.76		Si
SLV 4	11.12	-49850.65	-70347	-0.0000691	0.0006738	0.0035	7.575		269053.52	269053.52	5.4		Si
SLV 1	8.62	34072.05	-74459	-0.0000637	0.0006738	0.0035	7.575		250212.35	250212.35	7.34		Si
SLV 1	11.12	-44822.79	-68609	-0.0000654	0.0006738	0.0035	7.575		263791.2	263791.2	5.89		Si
SLV 14	8.62	-43851.37	-49724	-0.0000525	0.0006738	0.0035	7.575		205568.93	205568.93	4.69		Si
SLV 14	11.12	44898.2	-31307	-0.0000414	0.0006738	0.0035	7.575		117602.73	117602.73	2.62		Si
SLV 15	8.62	-33104.95	-49846	-0.0000472	0.0006738	0.0035	7.575		205959.49	205959.49	6.22		Si
SLV 15	11.12	40131.74	-33256	-0.0000401	0.0006738	0.0035	7.575		124217.45	124217.45	3.1		Si
SLV 16	8.62	-33990.97	-49396	-0.0000474	0.0006738	0.0035	7.575		204523.8	204523.8	6.02		Si
SLV 16	11.12	40001.04	-33151	-0.00004	0.0006738	0.0035	7.575		123862.13	123862.13	3.1		Si
SLV 9	8.62	-27650.81	-58982	-0.0000504	0.0006738	0.0035	7.575		234642.32	234642.32	8.49		Si
SLV 9	11.12	19272.81	-42264	-0.0000355	0.0006738	0.0035	7.575		154282.27	154282.27	8.01		Si
SLV 3	8.62	43932.45	-74131	-0.0000686	0.0006738	0.0035	7.575		249301.19	249301.19	5.67		Si
SLV 3	11.12	-49719.96	-70453	-0.0000691	0.0006738	0.0035	7.575		269373.04	269373.04	5.42		Si
SLV 13	8.62	-42965.35	-50174	-0.0000524	0.0006738	0.0035	7.575		207004.62	207004.62	4.82		Si
SLV 13	11.12	45028.9	-31413	-0.0000404	0.0006738	0.0035	7.575		117963.7	117963.7	2.62		Si
SLV 2	8.62	33186.03	-74009	-0.000063	0.0006738	0.0035	7.575		248960.69	248960.69	7.5		Si
SLV 2	11.12	-44953.49	-68504	-0.0000654	0.0006738	0.0035	7.575		263471.69	263471.69	5.86		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 44	8.62	68.47	-73339	-53338	-2745	7.575	7.575	-23471	10833	34462	115546	81668	38633	120301	No	43.82	Si
SLU 44	11.12	-3297.48	-57719	-41977	-695	7.575	7.575	-18472	10796	29918	115546	81668	38633	120301	No	173.16	Si
SLU 64	8.62	-206.35	-81324	-59144	-2641	7.575	7.575	-26026	10833	36785	115546	81668	38633	120301	No	45.55	Si
SLU 64	11.12	-3283.45	-66760	-48552	-336	7.575	7.575	-21365	10833	32548	115546	81668	38633	120301	No	357.73	Si
SLU 70	8.62	-174.82	-87896	-63924	-2553	7.575	7.575	-28130	10833	38696	115546	81668	38633	120301	No	47.11	Si
SLU 70	11.12	-4136.23	-73628	-53548	-205	7.575	7.575	-23563	10833	34546	115546	81668	38633	120301	No	586.88	Si
SLU 65	8.62	-536.86	-81407	-59205	-3080	7.575	7.575	-26053	10833	36809	115546	81668	38633	120301	No	39.06	Si
SLU 65	11.12	-3193.36	-66755	-48549	-764	7.575	7.575	-21364	10833	32547	115546	81668	38633	120301	No	157.54	Si
SLU 23	8.62	-788.59	-66630	-48458	-2636	7.575	7.575	-21324	10833	32510	115546	81668	38633	120301	No	45.64	Si
SLU 23	11.12	-2384.14	-55818	-40595	-720	7.575	7.575	-17864	10715	29365	115546	81668	38633	120301	No	167.07	Si
SLU 72	8.62	-91.33	-86487	-62900	-2506	7.575	7.575	-27679	10833	38287	115546	81668	38633	120301	No	48.01	Si
SLU 72	11.12	-4009.04	-72154	-52476	-215	7.575	7.575	-23092	10833	34117	115546	81668	38633	120301	No	559.63	Si
SLU 67	8.62	-331.48	-85340	-62065	-2753	7.575	7.575	-27311	10833	37953	115546	81668	38633	120301	No	43.7	Si
SLU 67	11.12	-3746.41	-70930	-51585	-394	7.575	7.575	-22700	10833	33761	115546	81668	38633	120301	No	305.45	Si
SLU 68	8.62	-380.2	-83964	-61065	-2880	7.575	7.575	-26871	10833	37553	115546	81668	38633	120301	No	41.76	Si
SLU 68	11.12	-3583.18	-69454	-50512	-575	7.575	7.575	-22227	10833	33332	115546	81668	38633	120301	No	209.31	Si
SLU 73	8.62	-305.06	-85412	-62118	-2593	7.575	7.575	-27334	10833	37974	115546	81668	38633	120301	No	46.4	Si
SLU 73	11.12	-2711.26	-72049	-52399	-115	7.575	7.575	-23058	10833	34087	115546	81668	38633	120301	No	1044.81	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 47	8.62	225.14	-75896	-55197	-2546	7.575	7.575	-24289	10833	35206	115546	81668	38633	120301	No	47.25	Si
SLU 47	11.12	-3687.31	-60417	-43940	-506	7.575	7.575	-19335	10833	30703	115546	81668	38633	120301	No	237.8	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	8.62	43046.43	-73681	-53586	52907	7.575	7.575	-23580	16250	41125	115546	122502	38633	156671		2.96	Si
SLV 4	11.12	-49850.65	-70347	-51162	48198	7.575	7.575	-22513	16250	40155	115546	122502	38633	155701		3.23	Si
SLV 15	8.62	-33104.95	-49846	-36252	-41239	7.575	7.575	-15952	15690	35657	115546	122502	38633	151202		3.67	Si
SLV 15	11.12	40131.74	-33256	-24186	-33343	7.575	7.575	-10643	14629	33244	115546	122502	38633	148789		4.46	Si
SLV 7	8.62	28328.41	-65176	-47401	38116	7.575	7.575	-20858	16250	38651	115546	122502	38633	154197		4.05	Si
SLV 7	11.12	-24006.57	-59567	-43322	37389	7.575	7.575	-19063	16250	37020	115546	122502	38633	152565		4.08	Si
SLV 14	8.62	-43851.37	-49724	-36163	-57166	7.575	7.575	-15913	15683	35639	115546	122502	38633	151184		2.64	Si
SLV 14	11.12	44898.2	-31307	-22769	-48857	7.575	7.0602	-10019	14504	30720	115546	122502	38633	146266		2.99	Si
SLV 10	8.62	-28247.33	-58679	-42676	-41754	7.575	7.575	-18779	16250	36928	115546	122502	38633	152474		3.65	Si
SLV 10	11.12	19184.82	-42193	-30685	-37506	7.575	7.575	-13503	15201	34543	115546	122502	38633	150089		4	Si
SLV 8	8.62	27731.89	-64873	-47180	37697	7.575	7.575	-20761	16250	38563	115546	122502	38633	154108		4.09	Si
SLV 8	11.12	-24094.56	-59496	-43270	37024	7.575	7.575	-19041	16250	36999	115546	122502	38633	152545		4.12	Si
SLV 3	8.62	43932.45	-74131	-53914	53528	7.575	7.575	-23724	16250	41256	115546	122502	38633	156802		2.93	Si
SLV 3	11.12	-49719.96	-70453	-51238	48741	7.575	7.575	-22547	16250	40186	115546	122502	38633	155732		3.2	Si
SLV 9	8.62	-27650.81	-58982	-42896	-41335	7.575	7.575	-18876	16250	36928	115546	122502	38633	152474		3.69	Si
SLV 9	11.12	19272.81	-42264	-30737	-37140	7.575	7.575	-13526	15205	34554	115546	122502	38633	150099		4.04	Si
SLV 16	8.62	-33990.97	-49396	-35924	-41860	7.575	7.575	-15808	15662	35591	115546	122502	38633	151137		3.61	Si
SLV 16	11.12	40001.04	-33151	-24110	-33886	7.575	7.575	-10609	14622	33228	115546	122502	38633	148774		4.39	Si
SLV 13	8.62	-42965.35	-50174	-36490	-56545	7.575	7.575	-16057	15711	35704	115546	122502	38633	151250		2.67	Si
SLV 13	11.12	45028.9	-31413	-22846	-48314	7.575	7.0621	-10053	14511	30743	115546	122502	38633	146288		3.03	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 10.395 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 14	-40500	0.46	1044.09	5484.22	7611	6547.61	6.27	Si
SLV 13	-40542	0.46	1044.09	5489.34	7617.67	6553.5	6.28	Si
SLV 16	-41516	0.46	1044.09	5606.71	7771.25	6688.98	6.41	Si
SLV 15	-41559	0.46	1044.09	5611.79	7777.92	6694.86	6.41	Si
SLV 10	-49240	0.46	1044.09	6512.79	8991.27	7752.03	7.42	Si
SLV 9	-49268	0.46	1044.09	6516.06	8995.78	7755.92	7.43	Si
SLV 12	-52629	0.46	1044.09	6896.85	9523.5	8210.17	7.86	Si
SLV 11	-52658	0.46	1044.09	6900.04	9527.97	8214	7.87	Si
SLV 6	-57742	0.46	1044.09	7460.59	10325.6	8893.09	8.52	Si
SLV 5	-57771	0.46	1044.09	7463.68	10330.07	8896.87	8.52	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 1	-58297	-74459	-421	0.69	7074.5	0.953	10.51473	6.14217	Si
SLV 2	-58129	-74009	-423	0.691	7057.5	0.953	10.54086	6.14217	Si
SLV 3	-58239	-74131	167	0.694	7068.6	0.953	10.58305	6.14217	Si
SLV 4	-58071	-73681	166	0.696	7051.6	0.953	10.60988	6.14217	Si
SLV 5	-49769	-66268	-1021	0.776	6208.6	0.947	11.90172	5.26078	Si
SLV 6	-49656	-65965	-1021	0.777	6197.2	0.947	11.92488	5.26078	Si
SLV 7	-49574	-65176	942	0.78	6188.9	0.947	11.96319	5.26078	Si
SLV 8	-49462	-64873	941	0.781	6177.4	0.947	11.98694	5.26078	Si
SLV 9	-42424	-58982	-945	0.886	5463.9	0.941	13.67664	5.26078	Si
SLV 10	-42311	-58679	-946	0.888	5452.5	0.941	13.70754	5.26078	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	56.764	SLU 48	Si
V_SLU	39.06	SLU 65	Si
PF_SLV	2.619	SLV 14	Si
V_SLV	2.645	SLV 14	Si
PFFP_SLV	6.271	SLV 14	Si
R_SLV	1.712	SLV 1	Si

Maschio 182

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-10.466	1.046	-11.173	1.046	L6	L7	0.706	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 28	8.62	169.18	-6816	-0.0000564	0.0004492	0.0035	0.7064	1773.55	2065.1	2065.1	12.21	No	Si
SLU 28	11.12	-155.93	-7291	-0.0000591	0.0004492	0.0035	0.7064	1849.97	2398.39	2398.39	15.38	No	Si
SLU 26	8.62	157.44	-6453	-0.0000531	0.0004492	0.0035	0.7064	1711.11	1974.51	1974.51	12.54	No	Si
SLU 26	11.12	-144.06	-6892	-0.0000555	0.0004492	0.0035	0.7064	1786.24	2299.97	2299.97	15.96	No	Si
SLU 24	8.62	155.75	-6575	-0.0000539	0.0004492	0.0035	0.7064	1732.46	2004.91	2004.91	12.87	No	Si
SLU 24	11.12	-142.65	-6929	-0.0000556	0.0004492	0.0035	0.7064	1792.22	2308.93	2308.93	16.19	No	Si
SLU 29	8.62	166.52	-6703	-0.0000554	0.0004492	0.0035	0.7064	1754.48	2036.88	2036.88	12.23	No	Si
SLU 29	11.12	-153.5	-7073	-0.0000573	0.0004492	0.0035	0.7064	1815.62	2344.51	2344.51	15.27	No	Si
SLU 23	8.62	145.65	-6209	-0.0000506	0.0004492	0.0035	0.7064	1667.04	1913.51	1913.51	13.14	No	Si
SLU 23	11.12	-132.22	-6598	-0.0000526	0.0004492	0.0035	0.7064	1736.44	2227.36	2227.36	16.85	No	Si
SLU 38	8.62	162.89	-7079	-0.000058	0.0004492	0.0035	0.7064	1816.57	2130.77	2130.77	13.08	No	Si
SLU 38	11.12	-146.51	-7812	-0.0000623	0.0004492	0.0035	0.7064	1926.53	2522.32	2522.32	17.22	No	Si
SLU 30	8.62	168.15	-6700	-0.0000555	0.0004492	0.0035	0.7064	1753.92	2036.06	2036.06	12.11	No	Si
SLU 30	11.12	-154.94	-7141	-0.0000579	0.0004492	0.0035	0.7064	1826.5	2361.36	2361.36	15.24	No	Si
SLU 25	8.62	157.38	-6572	-0.0000539	0.0004492	0.0035	0.7064	1731.89	2004.1	2004.1	12.73	No	Si
SLU 25	11.12	-144.09	-6997	-0.0000562	0.0004492	0.0035	0.7064	1803.37	2325.78	2325.78	16.14	No	Si
SLU 36	8.62	163.92	-7195	-0.0000589	0.0004492	0.0035	0.7064	1834.99	2159.81	2159.81	13.18	No	Si
SLU 36	11.12	-147.5	-7962	-0.0000635	0.0004492	0.0035	0.7064	1947.26	2557.04	2557.04	17.34	No	Si
SLU 27	8.62	167.54	-6819	-0.0000564	0.0004492	0.0035	0.7064	1774.09	2065.92	2065.92	12.33	No	Si
SLU 27	11.12	-154.49	-7223	-0.0000585	0.0004492	0.0035	0.7064	1839.37	2381.55	2381.55	15.42	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	8.62	-935.54	-8218	-0.0001115	0.0006738	0.0035	0.7064		2739.97	2739.97	2.93		Si
SLV 12	11.12	871.38	123	-0.0140583	0.0006738	0.0035	0.5651		20.44	20.44	0.02		No
SLV 4	8.62	3308.96	-4870	-0.0334723	0.0006738	0.0035	0.5651		1634.79	1634.79	0.49		No
SLV 4	11.12	-2845.64	-3016	-0.006855	0.0006738	0.0035	0.5651		1248.97	1248.97	0.44		No
SLV 16	8.62	-3143.19	-8053	-0.0049043	0.0006738	0.0035	0.5651		2697.26	2697.26	0.86		No
SLV 16	11.12	2740.92	-4839	-0.0242464	0.0006738	0.0035	0.5651		1625.86	1625.86	0.59		No
SLV 3	8.62	3317.24	-4810	-0.0338554	0.0006738	0.0035	0.5651		1617.2	1617.2	0.49		No
SLV 3	11.12	-2855.91	-3041	-0.0068796	0.0006738	0.0035	0.5651		1256.99	1256.99	0.44		No
SLV 7	8.62	1005.68	-7223	-0.0001095	0.0006738	0.0035	0.7064		2267.32	2267.32	2.25		Si
SLV 7	11.12	-811.51	652	-0.0011004	0.0006738	0.0035	0.5651		0	0	0		No
SLV 15	8.62	-3134.91	-7994	-0.0049192	0.0006738	0.0035	0.5651		2681.87	2681.87	0.86		No
SLV 15	11.12	2730.65	-4865	-0.0239647	0.0006738	0.0035	0.5651		1633.36	1633.36	0.6		No
SLV 1	8.62	3361.78	-3705	-0.0391036	0.0006738	0.0035	0.5651		1281.79	1281.79	0.38		No
SLV 1	11.12	-2930.86	-6751	-0.0050596	0.0006738	0.0035	0.5651		2349.29	2349.29	0.8		No
SLV 11	8.62	-929.96	-8178	-0.0001108	0.0006738	0.0035	0.7064		2729.61	2729.61	2.94		Si
SLV 11	11.12	864.46	105	-0.0138785	0.0006738	0.0035	0.5651		26.41	26.41	0.03		No
SLV 2	8.62	3353.49	-3765	-0.0387297	0.0006738	0.0035	0.5651		1300.27	1300.27	0.39		No
SLV 2	11.12	-2920.58	-6726	-0.0050352	0.0006738	0.0035	0.5651		2342.35	2342.35	0.8		No
SLV 8	8.62	1000.11	-7263	-0.0001093	0.0006738	0.0035	0.7064		2277.43	2277.43	2.28		Si
SLV 8	11.12	-804.59	670	-0.0010864	0.0006738	0.0035	0.5651		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	8.62	176.24	-8664	-6301	283	0.7064	0.7064	-29734	10833	2496	115546	7615	3602	11218	No	39.68	Si
SLU 77	11.12	-155.81	-9046	-6579	268	0.7064	0.7064	-31047	10833	2570	115546	7615	3602	11218	No	41.86	Si
SLU 76	8.62	166.14	-8298	-6035	278	0.7064	0.7064	-28478	10833	2425	115546	7615	3602	11218	No	40.41	Si
SLU 76	11.12	-145.38	-8716	-6339	262	0.7064	0.7064	-29912	10833	2506	115546	7615	3602	11218	No	42.77	Si
SLU 84	8.62	162.8	-8462	-6154	286	0.7064	0.7064	-29043	10833	2457	115546	7615	3602	11218	No	39.21	Si
SLU 84	11.12	-140.8	-8957	-6514	263	0.7064	0.7064	-30742	10833	2553	115546	7615	3602	11218	No	42.62	Si
SLU 78	8.62	177.87	-8660	-6298	290	0.7064	0.7064	-29723	10833	2496	115546	7615	3602	11218	No	38.74	Si
SLU 78	11.12	-157.25	-9115	-6629	275	0.7064	0.7064	-31282	10833	2584	115546	7615	3602	11218	No	40.8	Si
SLU 42	8.62	148.84	-6997	-5089	279	0.7064	0.7064	-24014	10833	2296	115546	7615	3602	11218	No	40.23	Si
SLU 42	11.12	-131.05	-7804	-5676	255	0.7064	0.7064	-26785	10833	2330	115546	7615	3602	11218	No	44	Si
SLU 38	8.62	162.89	-7079	-5148	279	0.7064	0.7064	-24295	10833	2296	115546	7615	3602	11218	No	40.22	Si
SLU 38	11.12	-146.51	-7812	-5681	263	0.7064	0.7064	-26810	10833	2331	115546	7615	3602	11218	No	42.65	Si
SLU 80	8.62	176.85	-8544	-6214	286	0.7064	0.7064	-29324	10833	2473	115546	7615	3602	11218	No	39.19	Si
SLU 80	11.12	-156.26	-8964	-6520	271	0.7064	0.7064	-30766	10833	2555	115546	7615	3602	11218	No	41.35	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 79	8.62	175.22	-8547	-6216	279	0.7064	0.7064	-29335	10833	2474	115546	7615	3602	11218	No	40.16	Si
SLU 79	11.12	-154.82	-8896	-6470	264	0.7064	0.7064	-30532	10833	2541	115546	7615	3602	11218	No	42.45	Si
SLU 36	8.62	163.92	-7195	-5233	282	0.7064	0.7064	-24694	10833	2296	115546	7615	3602	11218	No	39.74	Si
SLU 36	11.12	-147.5	-7962	-5790	267	0.7064	0.7064	-27325	10833	2360	115546	7615	3602	11218	No	42.06	Si
SLU 83	8.62	161.17	-8466	-6157	279	0.7064	0.7064	-29054	10833	2458	115546	7615	3602	11218	No	40.18	Si
SLU 83	11.12	-139.36	-8889	-6465	256	0.7064	0.7064	-30507	10833	2540	115546	7615	3602	11218	No	43.78	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	8.62	-3134.91	-7994	-5814	-2738	0.5651	0	0	0	0	115546	9138	2882	12020		4.39	Si
SLV 15	11.12	2730.65	-4865	-3538	-2122	0.5651	0	0	0	0	115546	9138	2882	12020		5.67	Si
SLV 6	8.62	1148.55	-3580	-2604	1665	0.7064	0.0972	-91719	16250	1918	115546	11423	3602	15025		9.03	Si
SLV 6	11.12	-1054.4	-11696	-8506	1536	0.7064	0.7064	-40140	16250	3492	115546	11423	3602	15025		9.78	Si
SLV 5	8.62	1154.13	-3540	-2575	1674	0.7064	0.0816	-106576	16250	1911	115546	11423	3602	15025		8.98	Si
SLV 5	11.12	-1061.31	-11713	-8518	1546	0.7064	0.7064	-40199	16250	3496	115546	11423	3602	15025		9.72	Si
SLV 3	8.62	3317.24	-4810	-3498	2653	0.5651	0	0	0	0	115546	9138	2882	12020		4.53	Si
SLV 3	11.12	-2855.91	-3041	-2212	1989	0.5651	0	0	0	0	115546	9138	2882	12020		6.04	Si
SLV 13	8.62	-3090.37	-6889	-5010	-2318	0.5651	0	0	0	0	115546	9138	2882	12020		5.19	Si
SLV 13	11.12	2655.71	-8574	-6236	-1661	0.7064	0.1304	-202091	16250	2887	115546	11423	3602	15025		9.05	Si
SLV 2	8.62	3353.49	-3765	-2738	3059	0.5651	0	0	0	0	115546	9138	2882	12020		3.93	Si
SLV 2	11.12	-2920.58	-6726	-4891	2435	0.5651	0	0	0	0	115546	9138	2882	12020		4.94	Si
SLV 4	8.62	3308.96	-4870	-3542	2639	0.5651	0	0	0	0	115546	9138	2882	12020		4.56	Si
SLV 4	11.12	-2845.64	-3016	-2193	1974	0.5651	0	0	0	0	115546	9138	2882	12020		6.09	Si
SLV 14	8.62	-3098.65	-6949	-5053	-2332	0.5651	0	0	0	0	115546	9138	2882	12020		5.15	Si
SLV 14	11.12	2665.98	-8549	-6217	-1675	0.7064	0.124	-206840	16250	2882	115546	11423	3602	15025		8.97	Si
SLV 16	8.62	-3143.19	-8053	-5857	-2752	0.5651	0	0	0	0	115546	9138	2882	12020		4.37	Si
SLV 16	11.12	2740.92	-4839	-3520	-2136	0.5651	0	0	0	0	115546	9138	2882	12020		5.63	Si
SLV 1	8.62	3361.78	-3705	-2695	3073	0.5651	0	0	0	0	115546	9138	2882	12020		3.91	Si
SLV 1	11.12	-2930.86	-6751	-4910	2449	0.5651	0	0	0	0	115546	9138	2882	12020		4.91	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 10.395 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 7	-1634	0.46	97.36	234.76	356.75	295.76	3.04	Si
SLV 8	-1637	0.46	97.36	235.17	357.24	296.21	3.04	Si
SLV 11	-2045	0.46	97.36	290.62	424.22	357.42	3.67	Si
SLV 12	-2048	0.46	97.36	291.02	424.71	357.87	3.68	Si
SLV 3	-3740	0.46	97.36	506.94	698.93	602.94	6.19	Si
SLV 4	-3744	0.46	97.36	507.48	699.65	603.56	6.2	Si
SLV 15	-5111	0.46	97.36	665.75	917.59	791.67	8.13	Si
SLV 16	-5115	0.46	97.36	666.24	918.29	792.27	8.14	Si
SLV 1	-5957	0.46	97.36	756.46	1051.06	903.76	9.28	Si
SLV 2	-5961	0.46	97.36	756.93	1051.76	904.34	9.29	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 14	-3969	-6949	0	0.902	510.8	0.941	13.92958	6.14217	Si
SLV 13	-3917	-6889	0	0.912	505.5	0.941	14.08934	6.14217	Si
SLV 10	-4494	-4536	-81	0.799	564	0.946	12.27779	5.26078	Si
SLV 9	-4459	-4496	-81	0.805	560.4	0.946	12.36183	5.26078	Si
SLV 6	-4200	-3580	-97	0.842	534.3	0.944	12.96485	5.26078	Si
SLV 5	-4165	-3540	-97	0.848	530.7	0.943	13.05937	5.26078	Si
SLV 16	-3218	-8053	54	1.054	434.9	0.933	16.42189	6.14217	Si
SLV 15	-3166	-7994	54	1.068	429.6	0.932	16.64917	6.14217	Si
SLV 2	-2991	-3765	-51	1.118	411.9	0.93	17.46875	6.14217	Si
SLV 1	-2939	-3705	-51	1.133	406.6	0.929	17.72698	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	12.109	SLU 30	Si
V_SLU	38.738	SLU 78	Si
PF_SLV	0	SLV 7	No
V_SLV	3.912	SLV 1	Si
PFFP_SLV	3.038	SLV 7	Si
R_SLV	2.268	SLV 14	Si

Maschio 183

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.278	1.046	-9.386	1.046	L6	L7	2.109	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 30	8.62	1831.25	-23025	-0.0000653	0.0004492	0.0035	2.1086	17044.29	20411.61	20411.61	11.15	No	Si
SLU 30	11.12	357.4	-17533	-0.0000419	0.0004492	0.0035	2.1086	14292.03	16159.91	16159.91	45.21	No	Si
SLU 70	8.62	2142.94	-28050	-0.0000802	0.0004492	0.0035	2.1086	18841.42	23793.91	23793.91	11.1	No	Si
SLU 70	11.12	503.59	-21183	-0.0000516	0.0004492	0.0035	2.1086	16212.83	18985.47	18985.47	37.7	No	Si
SLU 26	8.62	1829.82	-22162	-0.0000631	0.0004492	0.0035	2.1086	16666.3	19743.49	19743.49	10.79	No	Si
SLU 26	11.12	301.55	-16734	-0.0000396	0.0004492	0.0035	2.1086	13823.5	15541.94	15541.94	51.54	No	Si
SLU 65	8.62	2093.67	-25842	-0.0000742	0.0004492	0.0035	2.1086	18136.55	22467.94	22467.94	10.73	No	Si
SLU 65	11.12	390.26	-19155	-0.000046	0.0004492	0.0035	2.1086	15190.61	17415.74	17415.74	44.63	No	Si
SLU 68	8.62	2134.98	-26725	-0.0000767	0.0004492	0.0035	2.1086	18434.51	22998.42	22998.42	10.77	No	Si
SLU 68	11.12	424.19	-19958	-0.0000481	0.0004492	0.0035	2.1086	15609.02	18037.65	18037.65	42.52	No	Si
SLU 25	8.62	1796.48	-22603	-0.000064	0.0004492	0.0035	2.1086	16862.12	20085.12	20085.12	11.18	No	Si
SLU 25	11.12	347.02	-17155	-0.0000409	0.0004492	0.0035	2.1086	14072.76	15867.85	15867.85	45.73	No	Si
SLU 67	8.62	2101.63	-27167	-0.0000776	0.0004492	0.0035	2.1086	18575.39	23263.43	23263.43	11.07	No	Si
SLU 67	11.12	469.66	-20379	-0.0000494	0.0004492	0.0035	2.1086	15821.25	18363.55	18363.55	39.1	No	Si
SLU 64	8.62	1993.97	-25791	-0.0000734	0.0004492	0.0035	2.1086	18118.78	22437.45	22437.45	11.25	No	Si
SLU 64	11.12	445.05	-19142	-0.0000463	0.0004492	0.0035	2.1086	15183.83	17405.87	17405.87	39.11	No	Si
SLU 72	8.62	2136.41	-27589	-0.000079	0.0004492	0.0035	2.1086	18705.06	23516.71	23516.71	11.01	No	Si
SLU 72	11.12	480.04	-20757	-0.0000504	0.0004492	0.0035	2.1086	16007.34	18655.62	18655.62	38.86	No	Si
SLU 23	8.62	1788.51	-21279	-0.0000606	0.0004492	0.0035	2.1086	16258.36	19059.65	19059.65	10.66	No	Si
SLU 23	11.12	267.62	-15931	-0.0000375	0.0004492	0.0035	2.1086	13334.42	14920.03	14920.03	55.75	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 15	8.62	-10505.24	-22308	-0.0001251	0.0006738	0.0035	2.1086		22955.69	22955.69	2.19		Si
SLV 15	11.12	9984.56	-21432	-0.0001188	0.0006738	0.0035	2.1086		19918.03	19918.03	1.99		Si
SLV 1	8.62	13612.05	-17029	-0.000234	0.0006738	0.0035	2.1086		16474.16	16474.16	1.21		Si
SLV 1	11.12	-9320.51	-7742	-0.0005921	0.0006738	0.0035	1.6869		10257	10257	1.1		Si
SLV 14	8.62	-7519.25	-23139	-0.0001024	0.0006738	0.0035	2.1086		23622	23622	3.14		Si
SLV 14	11.12	8268.55	-21302	-0.0001033	0.0006738	0.0035	2.1086		19816.41	19816.41	2.4		Si
SLV 4	8.62	10236.5	-16108	-0.0001259	0.0006738	0.0035	2.1086		15753.94	15753.94	1.54		Si
SLV 4	11.12	-7387.03	-7914	-0.0001891	0.0006738	0.0035	1.6869		10417.7	10417.7	1.41		Si
SLV 13	8.62	-7324.47	-23184	-0.0001011	0.0006738	0.0035	2.1086		23657.96	23657.96	3.23		Si
SLV 13	11.12	8159.81	-21281	-0.0001024	0.0006738	0.0035	2.1086		19799.99	19799.99	2.43		Si
SLV 6	8.62	9832.2	-20168	-0.0001158	0.0006738	0.0035	2.1086		18929.12	18929.12	1.93		Si
SLV 6	11.12	-5240.3	-12322	-0.0000617	0.0006738	0.0035	2.1086		14494.68	14494.68	2.77		Si
SLV 5	8.62	9963.34	-20198	-0.0001173	0.0006738	0.0035	2.1086		18952.74	18952.74	1.9		Si
SLV 5	11.12	-5313.51	-12308	-0.0000623	0.0006738	0.0035	2.1086		14482.09	14482.09	2.73		Si
SLV 2	8.62	13417.27	-16984	-0.0002237	0.0006738	0.0035	2.1086		16439.07	16439.07	1.23		Si
SLV 2	11.12	-9211.77	-7763	-0.0005653	0.0006738	0.0035	1.6869		10276.63	10276.63	1.12		Si
SLV 16	8.62	-10700.02	-22263	-0.0001271	0.0006738	0.0035	2.1086		22919.73	22919.73	2.14		Si
SLV 16	11.12	10093.3	-21453	-0.0001199	0.0006738	0.0035	2.1086		19934.45	19934.45	1.98		Si
SLV 3	8.62	10431.28	-16153	-0.0001298	0.0006738	0.0035	2.1086		15789.02	15789.02	1.51		Si
SLV 3	11.12	-7495.76	-7893	-0.0002069	0.0006738	0.0035	1.6869		10398.07	10398.07	1.39		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 71	8.62	2076.59	-27558	-20042	2017	2.1086	2.1086	-31683	10833	7781	115546	22734	10754	33488	No	16.6	Si
SLU 71	11.12	512.91	-20749	-15090	595	2.1086	2.1086	-23855	10833	6853	115546	22734	10754	33488	No	56.24	Si
SLU 65	8.62	2093.67	-25842	-18794	2022	2.1086	2.1086	-29710	10833	7448	115546	22734	10754	33488	No	16.56	Si
SLU 65	11.12	390.26	-19155	-13931	596	2.1086	2.1086	-22022	10833	6853	115546	22734	10754	33488	No	56.21	Si
SLU 68	8.62	2134.98	-26725	-19437	2060	2.1086	2.1086	-30726	10833	7619	115546	22734	10754	33488	No	16.25	Si
SLU 68	11.12	424.19	-19958	-14515	622	2.1086	2.1086	-22946	10833	6853	115546	22734	10754	33488	No	53.88	Si
SLU 69	8.62	2083.13	-28020	-20378	2026	2.1086	2.1086	-32214	10833	7870	115546	22734	10754	33488	No	16.53	Si
SLU 69	11.12	536.46	-21175	-15400	594	2.1086	2.1086	-24345	10833	6853	115546	22734	10754	33488	No	56.41	Si
SLU 72	8.62	2136.41	-27589	-20064	2066	2.1086	2.1086	-31718	10833	7786	115546	22734	10754	33488	No	16.21	Si
SLU 72	11.12	480.04	-20757	-15096	627	2.1086	2.1086	-23863	10833	6853	115546	22734	10754	33488	No	53.45	Si
SLU 76	8.62	2103.72	-28208	-20515	2021	2.1086	2.1086	-32430	10833	7907	115546	22734	10754	33488	No	16.57	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 76	11.12	547.36	-21369	-15541	643	2.1086	2.1086	-24568	10833	6853	115546	22734	10754	33488	No	52.06	Si
SLU 78	8.62	2111.69	-29533	-21479	2036	2.1086	2.1086	-33953	10833	8164	115546	22734	10754	33488	No	16.45	Si
SLU 78	11.12	626.76	-22594	-16432	647	2.1086	2.1086	-25975	10833	6853	115546	22734	10754	33488	No	51.79	Si
SLU 80	8.62	2105.16	-29071	-21143	2027	2.1086	2.1086	-33423	10833	8074	115546	22734	10754	33488	No	16.52	Si
SLU 80	11.12	603.21	-22168	-16122	648	2.1086	2.1086	-25486	10833	6853	115546	22734	10754	33488	No	51.65	Si
SLU 70	8.62	2142.94	-28050	-20400	2075	2.1086	2.1086	-32249	10833	7876	115546	22734	10754	33488	No	16.14	Si
SLU 70	11.12	503.59	-21183	-15406	625	2.1086	2.1086	-24353	10833	6853	115546	22734	10754	33488	No	53.6	Si
SLU 67	8.62	2101.63	-27167	-19758	2037	2.1086	2.1086	-31233	10833	7705	115546	22734	10754	33488	No	16.44	Si
SLU 67	11.12	469.66	-20379	-14821	599	2.1086	2.1086	-23430	10833	6853	115546	22734	10754	33488	No	55.9	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	8.62	-7519.25	-23139	-16829	-7279	2.1086	2.1086	-26603	16250	10280	115546	34101	10754	44855		6.16	Si
SLV 14	11.12	8268.55	-21302	-15492	-5095	2.1086	1.9985	-24491	16250	9743	115546	34101	10754	44855		8.8	Si
SLV 15	8.62	-10505.24	-22308	-16224	-9654	2.1086	1.7502	-31357	16250	8532	115546	34101	10754	44855		4.65	Si
SLV 15	11.12	9984.56	-21432	-15587	-6753	2.1086	1.7653	-24640	16250	8606	115546	34101	10754	44855		6.64	Si
SLV 16	8.62	-10700.02	-22263	-16192	-9813	2.1086	1.7211	-31828	16250	8390	115546	34101	10754	44855		4.57	Si
SLV 16	11.12	10093.3	-21453	-15602	-6832	2.1086	1.7515	-24664	16250	8539	115546	34101	10754	44855		6.57	Si
SLV 1	8.62	13612.05	-17029	-12384	12659	2.1086	0.7649	-19577	16250	6957	115546	34101	10754	44855		3.54	Si
SLV 1	11.12	-9320.51	-7742	-5631	7585	1.6869	0	0	0	0	115546	27280	8603	35884		4.73	Si
SLV 5	8.62	9963.34	-20198	-14689	8667	2.1086	1.6831	-23221	16250	8205	115546	34101	10754	44855		5.18	Si
SLV 5	11.12	-5313.51	-12308	-8951	5188	2.1086	1.8678	-16090	15718	8808	115546	34101	10754	44855		8.65	Si
SLV 2	8.62	13417.27	-16984	-12352	12501	2.1086	0.7929	-19526	16250	6948	115546	34101	10754	44855		3.59	Si
SLV 2	11.12	-9211.77	-7763	-5646	7505	1.6869	0	0	0	0	115546	27280	8603	35884		4.78	Si
SLV 4	8.62	10236.5	-16108	-11715	9966	2.1086	1.2564	-18519	16204	6778	115546	34101	10754	44855		4.5	Si
SLV 4	11.12	-7387.03	-7914	-5756	5769	1.6869	0.3627	0	0	0	115546	27280	8603	35884		6.22	Si
SLV 6	8.62	9832.2	-20168	-14667	8560	2.1086	1.7004	-23186	16250	8289	115546	34101	10754	44855		5.24	Si
SLV 6	11.12	-5240.3	-12322	-8962	5134	2.1086	1.8871	-15920	15684	8879	115546	34101	10754	44855		8.74	Si
SLV 3	8.62	10431.28	-16153	-11747	10125	2.1086	1.2256	-18570	16214	6787	115546	34101	10754	44855		4.43	Si
SLV 3	11.12	-7495.76	-7893	-5740	5848	1.6869	0.3139	0	0	0	115546	27280	8603	35884		6.14	Si
SLV 13	8.62	-7324.47	-23184	-16861	-7120	2.1086	2.1086	-26654	16250	10280	115546	34101	10754	44855		6.3	Si
SLV 13	11.12	8159.81	-21281	-15477	-5016	2.1086	2.0127	-24466	16250	9812	115546	34101	10754	44855		8.94	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 10.395 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 4	-14019	0.46	290.64	1848.57	2565.83	2207.2	7.59	Si
SLV 3	-14064	0.46	290.64	1853.67	2572.91	2213.29	7.62	Si
SLV 2	-14875	0.46	290.64	1944.93	2700.82	2322.88	7.99	Si
SLV 1	-14919	0.46	290.64	1949.93	2707.9	2328.92	8.01	Si
SLV 8	-15212	0.46	290.64	1982.4	2754.05	2368.23	8.15	Si
SLV 7	-15242	0.46	290.64	1985.74	2758.81	2372.28	8.16	Si
SLV 12	-17084	0.46	290.64	2184.97	3049.4	2617.19	9	Si
SLV 11	-17114	0.46	290.64	2188.17	3054.16	2621.17	9.02	Si
SLV 6	-18064	0.46	290.64	2287.43	3202.64	2745.04	9.44	Si
SLV 5	-18094	0.46	290.64	2290.55	3207.36	2748.96	9.46	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-19149	-23184	-621	0.576	2266.2	0.959	8.73952	6.14217	Si
SLV 14	-19131	-23139	-620	0.577	2264.4	0.959	8.74671	6.14217	Si
SLV 15	-18388	-22308	962	0.58	2188.8	0.957	8.80011	6.14217	Si
SLV 16	-18370	-22263	962	0.58	2187	0.957	8.80734	6.14217	Si
SLV 9	-16331	-22044	-2583	0.552	1979.8	0.953	8.40822	5.26078	Si
SLV 10	-16319	-22014	-2583	0.552	1978.6	0.953	8.4136	5.26078	Si
SLV 11	-13795	-19124	2691	0.626	1722.2	0.947	9.61076	5.26078	Si
SLV 12	-13783	-19094	2691	0.627	1721	0.947	9.61772	5.26078	Si
SLV 5	-13157	-20198	-2683	0.651	1657.6	0.945	10.01366	5.26078	Si
SLV 6	-13145	-20168	-2683	0.652	1656.4	0.945	10.02151	5.26078	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	10.657	SLU 23	Si
V_SLU	16.136	SLU 70	Si
PF_SLV	1.1	SLV 1	Si
V_SLV	3.543	SLV 1	Si
PFFP_SLV	7.594	SLV 4	Si
R_SLV	1.423	SLV 13	Si

Maschio 184

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-4.968	1.046	-6.478	1.046	L6	L7	1.51	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 2	8.62	941.93	-12224	-0.0000507	0.0004492	0.0035	1.51	7190.99	8103.55	8103.55	8.6	No	Si
SLU 2	10.72	-611.94	-10368	-0.0000403	0.0004492	0.0035	1.51	6361.48	8180.11	8180.11	13.37	No	Si
SLU 43	8.62	1134.73	-15352	-0.000064	0.0004492	0.0035	1.51	8376.03	9845.65	9845.65	8.68	No	Si
SLU 43	10.72	-745.22	-12798	-0.0000501	0.0004492	0.0035	1.51	7428.43	9573.24	9573.24	12.85	No	Si
SLU 46	8.62	1152.33	-16223	-0.0000672	0.0004492	0.0035	1.51	8658.35	10330.47	10330.47	8.96	No	Si
SLU 46	10.72	-724.94	-13601	-0.0000525	0.0004492	0.0035	1.51	7745.46	10016.24	10016.24	13.82	No	Si
SLU 47	8.62	1173.31	-15947	-0.0000665	0.0004492	0.0035	1.51	8571.08	10176.76	10176.76	8.67	No	Si
SLU 47	10.72	-742.06	-13273	-0.0000516	0.0004492	0.0035	1.51	7617.99	9835.14	9835.14	13.25	No	Si
SLU 65	8.62	1229.35	-16900	-0.0000706	0.0004492	0.0035	1.51	8863.57	10707.44	10707.44	8.71	No	Si
SLU 65	10.72	-774.47	-14832	-0.0000573	0.0004492	0.0035	1.51	8197.58	10677.51	10677.51	13.79	No	Si
SLU 52	8.62	1122.08	-16008	-0.0000661	0.0004492	0.0035	1.51	8590.59	10210.82	10210.82	9.1	No	Si
SLU 52	10.72	-687.19	-14100	-0.0000537	0.0004492	0.0035	1.51	7933.71	10291.66	10291.66	14.98	No	Si
SLU 5	8.62	920.6	-12810	-0.0000524	0.0004492	0.0035	1.51	7433.06	8429.57	8429.57	9.16	No	Si
SLU 5	10.72	-566.7	-10861	-0.0000413	0.0004492	0.0035	1.51	6590.87	8469.04	8469.04	14.94	No	Si
SLU 64	8.62	1169.45	-16890	-0.0000698	0.0004492	0.0035	1.51	8860.89	10702.35	10702.35	9.15	No	Si
SLU 64	10.72	-732.39	-14851	-0.0000568	0.0004492	0.0035	1.51	8203.95	10686.94	10686.94	14.59	No	Si
SLU 44	8.62	1194.64	-15361	-0.0000648	0.0004492	0.0035	1.51	8379.1	9850.74	9850.74	8.25	No	Si
SLU 44	10.72	-787.3	-12780	-0.0000506	0.0004492	0.0035	1.51	7421.03	9563.19	9563.19	12.15	No	Si
SLU 68	8.62	1208.03	-17485	-0.0000724	0.0004492	0.0035	1.51	9030.98	11033.46	11033.46	9.13	No	Si
SLU 68	10.72	-729.23	-15325	-0.0000584	0.0004492	0.0035	1.51	8366.94	10932.5	10932.5	14.99	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	8.62	-4198.78	-14921	-0.0001016	0.0006738	0.0035	1.51		11137.8	11137.8	2.65		Si
SLV 13	10.72	4268.16	-13478	-0.0000991	0.0006738	0.0035	1.51		9160.46	9160.46	2.15		Si
SLV 15	8.62	-6070.36	-15191	-0.0001412	0.0006738	0.0035	1.208		11293.43	11293.43	1.86		Si
SLV 15	10.72	5639.91	-14440	-0.0001301	0.0006738	0.0035	1.51		9701.65	9701.65	1.72		Si
SLV 4	8.62	5941.21	-10757	-0.0001796	0.0006738	0.0035	1.51		7629.18	7629.18	1.28		Si
SLV 4	10.72	-5343.34	-9221	-0.0001741	0.0006738	0.0035	1.208		7655.77	7655.77	1.43		Si
SLV 14	8.62	-4267.93	-14830	-0.0001024	0.0006738	0.0035	1.51		11085.21	11085.21	2.6		Si
SLV 14	10.72	4399.84	-13372	-0.0001013	0.0006738	0.0035	1.51		9100.52	9100.52	2.07		Si
SLV 6	8.62	5779.34	-11707	-0.0001488	0.0006738	0.0035	1.51		8163.62	8163.62	1.41		Si
SLV 6	10.72	-4446.74	-8944	-0.0001123	0.0006738	0.0035	1.208		7478.85	7478.85	1.68		Si
SLV 16	8.62	-6139.52	-15100	-0.0001434	0.0006738	0.0035	1.208		11240.84	11240.84	1.83		Si
SLV 16	10.72	5771.58	-14333	-0.0001339	0.0006738	0.0035	1.51		9641.71	9641.71	1.67		Si
SLV 3	8.62	6010.37	-10848	-0.0001831	0.0006738	0.0035	1.51		7680.55	7680.55	1.28		Si
SLV 3	10.72	-5475.02	-9327	-0.0001845	0.0006738	0.0035	1.208		7723.82	7723.82	1.41		Si
SLV 1	8.62	7881.95	-10578	-0.006101	0.0006738	0.0035	1.51		7528.53	7528.53	0.96		No
SLV 1	10.72	-6846.76	-8366	-0.0009078	0.0006738	0.0035	1.208		7109.38	7109.38	1.04		Si
SLV 5	8.62	5825.91	-11768	-0.0001505	0.0006738	0.0035	1.51		8198.2	8198.2	1.41		Si
SLV 5	10.72	-4535.4	-9016	-0.0001161	0.0006738	0.0035	1.208		7524.67	7524.67	1.66		Si
SLV 2	8.62	7812.79	-10487	-0.0060268	0.0006738	0.0035	1.51		7477.15	7477.15	0.96		No
SLV 2	10.72	-6715.09	-8259	-0.0008611	0.0006738	0.0035	1.208		7041.33	7041.33	1.05		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 47	8.62	1173.31	-15947	-11598	1204	1.51	1.51	-25602	10833	4908	115546	16280	7701	23981	No	19.92	Si
SLU 47	10.72	-742.06	-13273	-9653	1204	1.51	1.51	-21309	10833	4908	115546	16280	7701	23981	No	19.92	Si
SLU 67	8.62	1187.05	-17761	-12917	1133	1.51	1.51	-28514	10833	5189	115546	16280	7701	23981	No	21.16	Si
SLU 67	10.72	-712.11	-15653	-11384	1133	1.51	1.51	-25131	10833	4908	115546	16280	7701	23981	No	21.17	Si
SLU 68	8.62	1208.03	-17485	-12716	1189	1.51	1.51	-28071	10833	5135	115546	16280	7701	23981	No	20.17	Si
SLU 68	10.72	-729.23	-15325	-11146	1189	1.51	1.51	-24604	10833	4908	115546	16280	7701	23981	No	20.17	Si
SLU 49	8.62	1131	-16808	-12224	1136	1.51	1.51	-26985	10833	5004	115546	16280	7701	23981	No	21.12	Si
SLU 49	10.72	-679.7	-14094	-10250	1136	1.51	1.51	-22627	10833	4908	115546	16280	7701	23981	No	21.12	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 70	8.62	1165.72	-18346	-13343	1121	1.51	1.51	-29454	10833	5303	115546	16280	7701	23981	No	21.4	Si
SLU 70	10.72	-666.87	-16146	-11743	1121	1.51	1.51	-25922	10833	4908	115546	16280	7701	23981	No	21.4	Si
SLU 72	8.62	1162.74	-18067	-13139	1130	1.51	1.51	-29005	10833	5248	115546	16280	7701	23981	No	21.21	Si
SLU 72	10.72	-667.15	-15825	-11509	1130	1.51	1.51	-25407	10833	4908	115546	16280	7701	23981	No	21.22	Si
SLU 44	8.62	1194.64	-15361	-11172	1216	1.51	1.51	-24662	10833	4908	115546	16280	7701	23981	No	19.72	Si
SLU 44	10.72	-787.3	-12780	-9294	1216	1.51	1.51	-20518	10833	4908	115546	16280	7701	23981	No	19.72	Si
SLU 46	8.62	1152.33	-16223	-11798	1148	1.51	1.51	-26045	10833	4908	115546	16280	7701	23981	No	20.89	Si
SLU 46	10.72	-724.94	-13601	-9892	1148	1.51	1.51	-21836	10833	4908	115546	16280	7701	23981	No	20.89	Si
SLU 51	8.62	1128.02	-16528	-12021	1145	1.51	1.51	-26536	10833	4950	115546	16280	7701	23981	No	20.94	Si
SLU 51	10.72	-679.99	-13773	-10017	1145	1.51	1.51	-22112	10833	4908	115546	16280	7701	23981	No	20.94	Si
SLU 65	8.62	1229.35	-16900	-12291	1201	1.51	1.51	-27131	10833	5022	115546	16280	7701	23981	No	19.96	Si
SLU 65	10.72	-774.47	-14832	-10787	1201	1.51	1.51	-23813	10833	4908	115546	16280	7701	23981	No	19.96	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	8.62	-6070.36	-15191	-11048	-8477	1.208	1.0662	0	0	0	115546	19536	6161	25696		3.03	Si
SLV 15	10.72	5639.91	-14440	-10502	-7834	1.51	1.0933	-23183	16250	5417	115546	24420	7701	32121		4.1	Si
SLV 3	8.62	6010.37	-10848	-7890	5885	1.51	0.6029	-17417	15983	4721	115546	24420	7701	32121		5.46	Si
SLV 3	10.72	-5475.02	-9327	-6784	5248	1.208	0.5041	0	0	0	115546	19536	6161	25696		4.9	Si
SLV 4	8.62	5941.21	-10757	-7823	5807	1.51	0.6081	-17270	15954	4703	115546	24420	7701	32121		5.53	Si
SLV 4	10.72	-5343.34	-9221	-6706	5170	1.208	0.5266	0	0	0	115546	19536	6161	25696		4.97	Si
SLV 16	8.62	-6139.52	-15100	-10982	-8555	1.208	1.0452	0	0	0	115546	19536	6161	25696		3	Si
SLV 16	10.72	5771.58	-14333	-10424	-7912	1.51	1.057	-23012	16250	5397	115546	24420	7701	32121		4.06	Si
SLV 2	8.62	7812.79	-10487	-7627	10081	1.51	0.03	-217169	16250	4651	115546	24420	7701	32121		3.19	Si
SLV 2	10.72	-6715.09	-8259	-6007	9437	1.208	0	0	0	0	115546	19536	6161	25696		2.72	Si
SLV 11	8.62	-4036.91	-13972	-10161	-8449	1.51	1.3982	-24478	16250	6816	115546	24420	7701	32121		3.8	Si
SLV 11	10.72	3371.56	-13755	-10004	-8247	1.51	1.51	-22083	16250	7361	115546	24420	7701	32121		3.9	Si
SLV 12	8.62	-4083.47	-13910	-10117	-8502	1.51	1.3843	-24611	16250	6749	115546	24420	7701	32121		3.78	Si
SLV 12	10.72	3460.22	-13683	-9952	-8299	1.51	1.5064	-21968	16250	7344	115546	24420	7701	32121		3.87	Si
SLV 1	8.62	7881.95	-10578	-7693	10159	1.51	0.0297	-218694	16250	4668	115546	24420	7701	32121		3.16	Si
SLV 1	10.72	-6846.76	-8366	-6084	9515	1.208	0	0	0	0	115546	19536	6161	25696		2.7	Si
SLV 5	8.62	5825.91	-11768	-8559	10105	1.51	0.7798	-18894	16250	4899	115546	24420	7701	32121		3.18	Si
SLV 5	10.72	-4535.4	-9016	-6557	9903	1.208	0.7559	0	0	0	115546	19536	6161	25696		2.59	Si
SLV 6	8.62	5779.34	-11707	-8514	10053	1.51	0.784	-18795	16250	4887	115546	24420	7701	32121		3.2	Si
SLV 6	10.72	-4446.74	-8944	-6505	9850	1.208	0.7735	0	0	0	115546	19536	6161	25696		2.61	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 10.395 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 2	-8561	0.46	208.13	1151.78	1598.88	1375.33	6.61	Si
SLV 1	-8668	0.46	208.13	1164.44	1615.91	1390.17	6.68	Si
SLV 6	-9252	0.46	208.13	1233.13	1709.18	1471.15	7.07	Si
SLV 5	-9324	0.46	208.13	1241.48	1720.63	1481.05	7.12	Si
SLV 4	-9512	0.46	208.13	1263.38	1750.77	1507.08	7.24	Si
SLV 3	-9619	0.46	208.13	1275.67	1767.78	1521.73	7.31	Si
SLV 10	-10780	0.46	208.13	1407.03	1951.87	1679.45	8.07	Si
SLV 9	-10851	0.46	208.13	1414.98	1963.21	1689.09	8.12	Si
SLV 8	-12422	0.46	208.13	1584.52	2210.95	1897.73	9.12	Si
SLV 7	-12494	0.46	208.13	1592.04	2222.17	1907.1	9.16	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-10012	-15191	22	0.786	1246.9	0.948	12.05058	6.14217	Si
SLV 16	-9973	-15100	23	0.788	1242.9	0.948	12.09063	6.14217	Si
SLV 13	-9618	-14921	77	0.807	1206.9	0.946	12.40046	6.14217	Si
SLV 14	-9579	-14830	77	0.81	1202.9	0.946	12.44328	6.14217	Si
SLV 11	-9348	-13972	-77	0.827	1179.5	0.945	12.70928	5.26078	Si
SLV 12	-9321	-13910	-76	0.828	1176.8	0.945	12.74107	5.26078	Si
SLV 7	-8390	-12669	-107	0.9	1082.4	0.941	13.89805	5.26078	Si
SLV 8	-8363	-12607	-106	0.902	1079.7	0.941	13.93639	5.26078	Si
SLV 3	-6819	-10848	-78	1.066	923.5	0.933	16.61546	6.14217	Si
SLV 4	-6779	-10757	-78	1.071	919.5	0.932	16.6973	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.246	SLU 44	Si
V_SLU	19.716	SLU 44	Si
PF_SLV	0.955	SLV 1	No
V_SLV	2.595	SLV 5	Si
PFFP_SLV	6.608	SLV 2	Si
R_SLV	1.962	SLV 15	Si

Maschio 185

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	1.046	-4.168	1.046	L6	L7	4.045	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 48	8.62	6017.51	-31561	-0.0000479	0.0004492	0.0035	4.045	50245.2	56474.82	56474.82	9.39	No	Si
SLU 48	10.72	2588.45	-25670	-0.0000345	0.0004492	0.0035	4.045	42929.57	47817.75	47817.75	18.47	No	Si
SLU 65	8.62	6101.31	-32200	-0.0000488	0.0004492	0.0035	4.045	50981.65	57413.65	57413.65	9.41	No	Si
SLU 65	10.72	2392.08	-27076	-0.0000358	0.0004492	0.0035	4.045	44761.98	49884.36	49884.36	20.85	No	Si
SLU 51	8.62	5920.23	-30906	-0.0000469	0.0004492	0.0035	4.045	49478.98	55512.76	55512.76	9.38	No	Si
SLU 51	10.72	2435.33	-24905	-0.0000333	0.0004492	0.0035	4.045	41909.89	46693.3	46693.3	19.17	No	Si
SLU 44	8.62	5793.51	-29284	-0.0000447	0.0004492	0.0035	4.045	47529.61	53128.45	53128.45	9.17	No	Si
SLU 44	10.72	1979.63	-23276	-0.0000305	0.0004492	0.0035	4.045	39686.05	44264.36	44264.36	22.36	No	Si
SLU 46	8.62	5961.1	-30752	-0.0000468	0.0004492	0.0035	4.045	49296.37	55285.63	55285.63	9.27	No	Si
SLU 46	10.72	2344.29	-24845	-0.000033	0.0004492	0.0035	4.045	41829.19	46605.06	46605.06	19.88	No	Si
SLU 49	8.62	6027.94	-31564	-0.0000479	0.0004492	0.0035	4.045	50248.71	56479.26	56479.26	9.37	No	Si
SLU 49	10.72	2563.98	-25654	-0.0000344	0.0004492	0.0035	4.045	42908.16	47793.96	47793.96	18.64	No	Si
SLU 47	8.62	5860.34	-30096	-0.0000458	0.0004492	0.0035	4.045	48514.48	54322.09	54322.09	9.27	No	Si
SLU 47	10.72	2199.32	-24085	-0.0000319	0.0004492	0.0035	4.045	40799.65	45488.54	45488.54	20.68	No	Si
SLU 43	8.62	5776.12	-29279	-0.0000446	0.0004492	0.0035	4.045	47523.44	53121.05	53121.05	9.2	No	Si
SLU 43	10.72	2020.42	-23303	-0.0000306	0.0004492	0.0035	4.045	39723.48	44309.63	44309.63	21.93	No	Si
SLU 50	8.62	5909.8	-30903	-0.0000469	0.0004492	0.0035	4.045	49475.41	55508.32	55508.32	9.39	No	Si
SLU 50	10.72	2459.81	-24921	-0.0000333	0.0004492	0.0035	4.045	41931.63	46717.09	46717.09	18.99	No	Si
SLU 45	8.62	5950.67	-30749	-0.0000468	0.0004492	0.0035	4.045	49292.79	55281.19	55281.19	9.29	No	Si
SLU 45	10.72	2368.76	-24861	-0.0000331	0.0004492	0.0035	4.045	41850.96	46628.85	46628.85	19.68	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 2	8.62	10136	-16310	-0.0000361	0.0006738	0.0035	4.045		32878.54	32878.54	3.24		Si
SLV 2	10.72	-10041.8	-9287	-0.0000305	0.0006738	0.0035	4.045		27312.8	27312.8	2.72		Si
SLV 16	8.62	-1473.62	-32436	-0.0000401	0.0006738	0.0035	4.045		67986.86	67986.86	46.14		Si
SLV 16	10.72	13842.33	-31947	-0.0000615	0.0006738	0.0035	4.045		59782.61	59782.61	4.32		Si
SLV 1	8.62	10683.09	-16553	-0.0000373	0.0006738	0.0035	4.045		33323.09	33323.09	3.12		Si
SLV 1	10.72	-10167.35	-9378	-0.0000309	0.0006738	0.0035	4.045		27483.03	27483.03	2.7		Si
SLV 13	8.62	-555.87	-31960	-0.000038	0.0006738	0.0035	4.045		67212.65	67212.65	120.91		Si
SLV 13	10.72	12442.95	-30423	-0.0000571	0.0006738	0.0035	4.045		57519.46	57519.46	4.62		Si
SLD 1	8.62	7205.42	-21109	-0.0000367	0.0006738	0.0035	4.045		41496.27	41496.27	5.76		Si
SLD 1	10.72	-3274.27	-15862	-0.0000237	0.0006738	0.0035	4.045		39413.47	39413.47	12.04		Si
SLV 4	8.62	9765.34	-17029	-0.0000363	0.0006738	0.0035	4.045		34193.91	34193.91	3.5		Si
SLV 4	10.72	-8767.97	-10902	-0.0000276	0.0006738	0.0035	4.045		30339.15	30339.15	3.46		Si
SLV 5	8.62	7092.52	-21066	-0.0000365	0.0006738	0.0035	4.045		41419.35	41419.35	5.84		Si
SLV 5	10.72	-3719.37	-14845	-0.0000233	0.0006738	0.0035	4.045		37589.62	37589.62	10.11		Si
SLV 14	8.62	-1102.95	-31716	-0.0000386	0.0006738	0.0035	4.045		66817.42	66817.42	60.58		Si
SLV 14	10.72	12568.5	-30333	-0.0000572	0.0006738	0.0035	4.045		57378.87	57378.87	4.57		Si
SLV 15	8.62	-926.54	-32679	-0.0000395	0.0006738	0.0035	4.045		68382.09	68382.09	73.8		Si
SLV 15	10.72	13716.78	-32038	-0.0000614	0.0006738	0.0035	4.045		59917.5	59917.5	4.37		Si
SLV 3	8.62	10312.42	-17273	-0.0000376	0.0006738	0.0035	4.045		34632.8	34632.8	3.36		Si
SLV 3	10.72	-8893.52	-10993	-0.000028	0.0006738	0.0035	4.045		30509.38	30509.38	3.43		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 41	8.62	4861.18	-28870	-20996	-1540	4.045	4.045	-17302	10640	15408	115546	43610	20630	64240	No	41.72	Si
SLU 41	10.72	2578.6	-26783	-19478	-1549	4.045	4.045	-16051	10474	14801	115546	43610	20630	64240	No	41.46	Si
SLU 49	8.62	6027.94	-31564	-22956	1598	4.045	4.045	-18917	10833	16192	115546	43610	20630	64240	No	40.21	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 49	10.72	2563.98	-25654	-18657	1589	4.045	4.045	-15375	10383	14473	115546	43610	20630	64240	No	40.42	Si
SLU 43	8.62	5776.12	-29279	-21294	1799	4.045	4.045	-17547	10673	15527	115546	43610	20630	64240	No	35.7	Si
SLU 43	10.72	2020.42	-23303	-16948	1791	4.045	4.045	-13966	10195	13789	115546	43610	20630	64240	No	35.87	Si
SLU 44	8.62	5793.51	-29284	-21297	1858	4.045	4.045	-17550	10673	15529	115546	43610	20630	64240	No	34.58	Si
SLU 44	10.72	1979.63	-23276	-16928	1849	4.045	4.045	-13950	10193	13781	115546	43610	20630	64240	No	34.74	Si
SLU 47	8.62	5860.34	-30096	-21888	1788	4.045	4.045	-18037	10738	15765	115546	43610	20630	64240	No	35.93	Si
SLU 47	10.72	2199.32	-24085	-17517	1780	4.045	4.045	-14435	10258	14016	115546	43610	20630	64240	No	36.09	Si
SLU 45	8.62	5950.67	-30749	-22363	1632	4.045	4.045	-18428	10790	15955	115546	43610	20630	64240	No	39.36	Si
SLU 45	10.72	2368.76	-24861	-18081	1623	4.045	4.045	-14900	10320	14242	115546	43610	20630	64240	No	39.57	Si
SLU 51	8.62	5920.23	-30906	-22477	1695	4.045	4.045	-18523	10803	16001	115546	43610	20630	64240	No	37.9	Si
SLU 51	10.72	2435.33	-24905	-18113	1687	4.045	4.045	-14926	10323	14255	115546	43610	20630	64240	No	38.07	Si
SLU 50	8.62	5909.8	-30903	-22475	1660	4.045	4.045	-18521	10803	16000	115546	43610	20630	64240	No	38.7	Si
SLU 50	10.72	2459.81	-24921	-18125	1652	4.045	4.045	-14936	10325	14260	115546	43610	20630	64240	No	38.88	Si
SLU 48	8.62	6017.51	-31561	-22954	1562	4.045	4.045	-18915	10833	16191	115546	43610	20630	64240	No	41.11	Si
SLU 48	10.72	2588.45	-25670	-18669	1554	4.045	4.045	-15385	10385	14477	115546	43610	20630	64240	No	41.33	Si
SLU 46	8.62	5961.1	-30752	-22365	1667	4.045	4.045	-18430	10791	15956	115546	43610	20630	64240	No	38.53	Si
SLU 46	10.72	2344.29	-24845	-18069	1659	4.045	4.045	-14890	10319	14237	115546	43610	20630	64240	No	38.73	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	8.62	-555.87	-31960	-23243	-10851	4.045	4.045	-19154	16250	19812	115546	65415	20630	86045		7.93	Si
SLV 13	10.72	12442.95	-30423	-22126	-9100	4.045	4.045	-18233	16147	19594	115546	65415	20630	86045		9.46	Si
SLV 14	8.62	-1102.95	-31716	-23067	-11317	4.045	4.045	-19008	16250	19741	115546	65415	20630	86045		7.6	Si
SLV 14	10.72	12568.5	-30333	-22060	-9567	4.045	4.045	-18179	16136	19581	115546	65415	20630	86045		8.99	Si
SLV 16	8.62	-1473.62	-32436	-23590	-12937	4.045	4.045	-19440	16250	19951	115546	65415	20630	86045		6.65	Si
SLV 16	10.72	13842.33	-31947	-23234	-11189	4.045	4.045	-19147	16250	19809	115546	65415	20630	86045		7.69	Si
SLV 1	8.62	10683.09	-16553	-12038	13925	4.045	4.045	-9920	14484	17576	115546	65415	20630	86045		6.18	Si
SLV 1	10.72	-10167.35	-9378	-6820	12161	4.045	2.815	-8100	14120	13243	115546	65415	20630	86045		7.08	Si
SLV 15	8.62	-926.54	-32679	-23767	-12470	4.045	4.045	-19585	16250	20022	115546	65415	20630	86045		6.9	Si
SLV 15	10.72	13716.78	-32038	-23301	-10721	4.045	4.045	-19201	16250	19835	115546	65415	20630	86045		8.03	Si
SLV 4	8.62	9765.34	-17029	-12385	11838	4.045	4.045	-10206	14541	17646	115546	65415	20630	86045		7.27	Si
SLV 4	10.72	-8767.97	-10902	-7929	10073	4.045	3.6547	-7249	13950	15295	115546	65415	20630	86045		8.54	Si
SLV 3	8.62	10312.42	-17273	-12562	12305	4.045	4.045	-10352	14570	17681	115546	65415	20630	86045		6.99	Si
SLV 3	10.72	-8893.52	-10993	-7995	10540	4.045	3.6404	-7337	13967	15254	115546	65415	20630	86045		8.16	Si
SLV 2	8.62	10136	-16310	-11862	13458	4.045	4.045	-9775	14455	17541	115546	65415	20630	86045		6.39	Si
SLV 2	10.72	-10041.8	-9287	-6754	11694	4.045	2.8237	-7996	14100	13217	115546	65415	20630	86045		7.36	Si
SLV 5	8.62	7092.52	-21066	-15321	7066	4.045	4.045	-12625	15025	18233	115546	65415	20630	86045		12.18	Si
SLV 5	10.72	-3719.37	-14845	-10796	6535	4.045	4.045	-8897	14279	17328	115546	65415	20630	86045		13.17	Si
SLV 6	8.62	6724.19	-20902	-15201	6752	4.045	4.045	-12527	15005	18209	115546	65415	20630	86045		12.74	Si
SLV 6	10.72	-3634.84	-14784	-10752	6220	4.045	4.045	-8860	14272	17319	115546	65415	20630	86045		13.83	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 10.395 Ta 0.07 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 2	-10740	0.46	557.54	1533.21	2306.55	1919.88	3.44	Si
SLV 1	-10822	0.46	557.54	1544.33	2319.93	1932.13	3.47	Si
SLV 4	-12056	0.46	557.54	1710.43	2520.74	2115.59	3.79	Si
SLV 3	-12139	0.46	557.54	1721.41	2534.09	2127.75	3.82	Si
SLV 6	-16290	0.46	557.54	2264.55	3208.07	2736.31	4.91	Si
SLV 5	-16345	0.46	557.54	2271.62	3216.98	2744.3	4.92	Si
SLV 8	-20678	0.46	557.54	2813.35	3914.57	3363.96	6.03	Si
SLV 7	-20733	0.46	557.54	2820.1	3923.45	3371.78	6.05	Si
SLV 10	-22352	0.46	557.54	3015.89	4181.75	3598.82	6.45	Si
SLV 9	-22408	0.46	557.54	3022.51	4190.56	3606.53	6.47	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-22330	-32679	571	0.894	2884.9	0.941	13.80703	6.14217	Si
SLV 16	-22109	-32436	571	0.901	2862.5	0.94	13.92413	6.14217	Si
SLV 13	-21242	-31960	-542	0.932	2774.7	0.939	14.425	6.14217	Si
SLV 14	-21021	-31716	-541	0.94	2752.3	0.938	14.5542	6.14217	Si
SLV 11	-20239	-28087	1857	0.914	2673.2	0.937	14.18236	5.26078	Si
SLV 12	-20090	-27923	1858	0.92	2658.1	0.937	14.27045	5.26078	Si
SLV 7	-17389	-23465	1848	1.031	2385.2	0.931	16.108	5.26078	Si
SLV 8	-17240	-23301	1849	1.038	2370.2	0.93	16.22252	5.26078	Si
SLV 9	-16611	-25688	-1850	1.069	2306.8	0.929	16.7267	5.26078	Si
SLV 10	-16463	-25524	-1849	1.076	2291.8	0.928	16.85136	5.26078	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.17	SLU 44	Si
V_SLU	34.581	SLU 44	Si
PF_SLV	2.703	SLV 1	Si
V_SLV	6.179	SLV 1	Si
PFFP_SLV	3.443	SLV 2	Si
R_SLV	2.248	SLV 15	Si

Maschio 186

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.758	6.651	-17.718	6.651	L6	L7	2.04	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 40	9.52	356.89	-13462	-0.0000369	0.0003743	0.0035	2.04	10764.63	11672.57	11672.57	32.71	No	Si
SLU 40	11.32	869.95	-11275	-0.0000349	0.0003743	0.0035	2.04	9419.73	9949.72	9949.72	11.44	No	Si
SLU 38	9.52	405.45	-14245	-0.0000394	0.0003743	0.0035	2.04	11208.28	12280.72	12280.72	30.29	No	Si
SLU 38	11.32	912.69	-12059	-0.0000374	0.0003743	0.0035	2.04	9919.46	10558.81	10558.81	11.57	No	Si
SLU 42	9.52	368.41	-14096	-0.0000387	0.0003743	0.0035	2.04	11125.34	12171.81	12171.81	33.04	No	Si
SLU 42	11.32	923.01	-11910	-0.000037	0.0003743	0.0035	2.04	9825.84	10442.02	10442.02	11.31	No	Si
SLU 41	9.52	406	-14107	-0.000039	0.0003743	0.0035	2.04	11131.1	12179.46	12179.46	30	No	Si
SLU 41	11.32	904.64	-11920	-0.0000369	0.0003743	0.0035	2.04	9832.33	10450.09	10450.09	11.55	No	Si
SLU 33	9.52	411.55	-13951	-0.0000386	0.0003743	0.0035	2.04	11043.96	12062.29	12062.29	29.31	No	Si
SLU 33	11.32	877.54	-11764	-0.0000363	0.0003743	0.0035	2.04	9734.07	10328.86	10328.86	11.77	No	Si
SLU 39	9.52	394.48	-13472	-0.0000372	0.0003743	0.0035	2.04	10770.6	11680.85	11680.85	29.61	No	Si
SLU 39	11.32	851.58	-11286	-0.0000348	0.0003743	0.0035	2.04	9426.44	9957.69	9957.69	11.69	No	Si
SLU 31	9.52	357.34	-12970	-0.0000356	0.0003743	0.0035	2.04	10475.8	11279.24	11279.24	31.56	No	Si
SLU 31	11.32	818.82	-10784	-0.0000332	0.0003743	0.0035	2.04	9095.69	9571.91	9571.91	11.69	No	Si
SLU 34	9.52	368.87	-13604	-0.0000374	0.0003743	0.0035	2.04	10846.72	11786.97	11786.97	31.95	No	Si
SLU 34	11.32	871.88	-11418	-0.0000353	0.0003743	0.0035	2.04	9512	10059.69	10059.69	11.54	No	Si
SLU 37	9.52	443.04	-14256	-0.0000397	0.0003743	0.0035	2.04	11213.99	12288.12	12288.12	27.74	No	Si
SLU 37	11.32	894.32	-12069	-0.0000372	0.0003743	0.0035	2.04	9925.91	10566.9	10566.9	11.82	No	Si
SLU 36	9.52	423.07	-14585	-0.0000404	0.0003743	0.0035	2.04	11394.52	12501.95	12501.95	29.55	No	Si
SLU 36	11.32	930.6	-12399	-0.0000384	0.0003743	0.0035	2.04	10130.03	10826.04	10826.04	11.63	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	9.52	-6269.97	-14581	-0.000086	0.0005615	0.0035	2.04		14172.58	14172.58	2.26		Si
SLV 1	11.32	6247.89	-12266	-0.0000835	0.0005615	0.0035	2.04		11320.83	11320.83	1.81		Si
SLV 15	9.52	5764.29	-8017	-0.0000933	0.0005615	0.0035	2.04		7851.67	7851.67	1.36		Si
SLV 15	11.32	-4038.04	-6020	-0.0000586	0.0005615	0.0035	1.632		6890.04	6890.04	1.71		Si
SLV 5	9.52	-5361.15	-10506	-0.0000709	0.0005615	0.0035	2.04		10852.68	10852.68	2.02		Si
SLV 5	11.32	4174.19	-8022	-0.0000545	0.0005615	0.0035	2.04		7856.28	7856.28	1.88		Si
SLV 14	9.52	4876.66	-5791	-0.000116	0.0005615	0.0035	2.04		5832.8	5832.8	1.2		Si
SLV 14	11.32	-4041.11	-3610	-0.0003754	0.0005615	0.0035	1.632		4639.92	4639.92	1.15		Si
SLV 12	9.52	6301.51	-10912	-0.0000858	0.0005615	0.0035	2.04		10323.92	10323.92	1.64		Si
SLV 12	11.32	-3095.66	-9084	-0.0000451	0.0005615	0.0035	2.04		9625.76	9625.76	3.11		Si
SLV 16	9.52	7210.33	-6836	-0.0053263	0.0005615	0.0035	1.632		6791.15	6791.15	0.94		No
SLV 16	11.32	-5169.37	-4839	-0.0004217	0.0005615	0.0035	1.632		5790.45	5790.45	1.12		Si
SLV 6	9.52	-4387.58	-9711	-0.0000582	0.0005615	0.0035	2.04		10164.28	10164.28	2.32		Si
SLV 6	11.32	3412.5	-7227	-0.0000445	0.0005615	0.0035	2.04		7143.87	7143.87	2.09		Si
SLV 2	9.52	-4823.93	-13400	-0.0000698	0.0005615	0.0035	2.04		13242	13242	2.75		Si
SLV 2	11.32	5116.56	-11085	-0.0000682	0.0005615	0.0035	2.04		10451.17	10451.17	2.04		Si
SLV 11	9.52	5327.94	-11707	-0.0000713	0.0005615	0.0035	2.04		10907.61	10907.61	2.05		Si
SLV 11	11.32	-2333.97	-9879	-0.0000415	0.0005615	0.0035	2.04		10309.14	10309.14	4.42		Si
SLV 13	9.52	3430.62	-6972	-0.0000445	0.0005615	0.0035	2.04		6913.7	6913.7	2.02		Si
SLV 13	11.32	-2909.78	-4791	-0.0000389	0.0005615	0.0035	1.632		5745.28	5745.28	1.97		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 42	9.52	368.41	-14096	-11871	-274	2.04	2.04	-19396	9531	5833	40441	18326	5202	23528	No	85.72	Si
SLU 42	11.32	923.01	-11910	-10029	-274	2.04	2.04	-16387	9129	5587	40441	18326	5202	23528	No	85.72	Si
SLU 34	9.52	368.87	-13604	-11456	-246	2.04	2.04	-18720	9440	5778	40441	18326	5202	23528	No	95.72	Si
SLU 34	11.32	871.88	-11418	-9615	-246	2.04	2.04	-15711	9039	5532	40441	18326	5202	23528	No	95.72	Si
SLU 35	9.52	460.66	-14596	-12291	-217	2.04	2.04	-20083	9622	5889	40441	18326	5202	23528	No	108.31	Si
SLU 35	11.32	912.23	-12409	-10450	-217	2.04	2.04	-17074	9221	5643	40441	18326	5202	23528	No	108.31	Si
SLU 38	9.52	405.45	-14245	-11996	-248	2.04	2.04	-19602	9558	5849	40441	18326	5202	23528	No	94.81	Si
SLU 38	11.32	912.69	-12059	-10155	-248	2.04	2.04	-16593	9157	5604	40441	18326	5202	23528	No	94.81	Si
SLU 40	9.52	356.89	-13462	-11337	-251	2.04	2.04	-18524	9414	5762	40441	18326	5202	23528	No	93.59	Si
SLU 40	11.32	869.95	-11275	-9495	-251	2.04	2.04	-15515	9013	5516	40441	18326	5202	23528	No	93.59	Si
SLU 36	9.52	423.07	-14585	-12282	-248	2.04	2.04	-20069	9620	5888	40441	18326	5202	23528	No	94.75	Si
SLU 36	11.32	930.6	-12399	-10441	-248	2.04	2.04	-17060	9219	5642	40441	18326	5202	23528	No	94.75	Si
SLU 33	9.52	411.55	-13951	-11748	-225	2.04	2.04	-19197	9504	5816	40441	18326	5202	23528	No	104.46	Si
SLU 33	11.32	877.54	-11764	-9907	-225	2.04	2.04	-16188	9103	5571	40441	18326	5202	23528	No	104.46	Si
SLU 31	9.52	357.34	-12970	-10922	-223	2.04	2.04	-17847	9324	5706	40441	18326	5202	23528	No	105.63	Si
SLU 31	11.32	818.82	-10784	-9081	-223	2.04	2.04	-14838	8923	5461	40441	18326	5202	23528	No	105.63	Si
SLU 41	9.52	406	-14107	-11879	-243	2.04	2.04	-19410	9533	5834	40441	18326	5202	23528	No	96.68	Si
SLU 41	11.32	904.64	-11920	-10038	-243	2.04	2.04	-16402	9131	5588	40441	18326	5202	23528	No	96.68	Si
SLU 39	9.52	394.48	-13472	-11345	-220	2.04	2.04	-18538	9416	5763	40441	18326	5202	23528	No	106.8	Si
SLU 39	11.32	851.58	-11286	-9504	-220	2.04	2.04	-15529	9015	5517	40441	18326	5202	23528	No	106.8	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	9.52	-6269.97	-14581	-12279	-7192	2.04	1.77	-23403	15097	8017	40441	27489	5202	32691		4.55	Si
SLV 1	11.32	6247.89	-12266	-10330	-6632	2.04	1.5319	-16878	13792	6339	40441	27489	5202	32691		4.93	Si
SLV 14	9.52	4876.66	-5791	-4877	5294	2.04	0.5337	-30957	16250	4247	40441	27489	5202	32691		6.17	Si
SLV 14	11.32	-4041.11	-3610	-3040	4730	1.632	0	0	0	0	40441	21991	4162	26153		5.53	Si
SLV 16	9.52	7210.33	-6836	-5757	7182	1.632	0	0	0	0	40441	21991	4162	26153		3.64	Si
SLV 16	11.32	-5169.37	-4839	-4075	6622	1.632	0	0	0	0	40441	21991	4162	26153		3.95	Si
SLV 5	9.52	-5361.15	-10506	-8847	-5292	2.04	1.5291	-19473	14311	6565	40441	27489	5202	32691		6.18	Si
SLV 5	11.32	4174.19	-8022	-6756	-5130	2.04	1.499	-11039	12624	5677	40441	27489	5202	32691		6.37	Si
SLV 11	9.52	5327.94	-11707	-9858	4318	2.04	1.6946	-16108	13638	6934	40441	27489	5202	32691		7.57	Si
SLV 11	11.32	-2333.97	-9879	-8319	4156	2.04	2.04	-13593	13135	8039	40441	27489	5202	32691		7.87	Si
SLV 6	9.52	-4387.58	-9711	-8177	-4328	2.04	1.7045	-16117	13640	6975	40441	27489	5202	32691		7.55	Si
SLV 6	11.32	3412.5	-7227	-6086	-4166	2.04	1.6435	-9945	12406	6117	40441	27489	5202	32691		7.85	Si
SLV 15	9.52	5764.29	-8017	-6751	5750	2.04	0.903	-11031	12623	4746	40441	27489	5202	32691		5.68	Si
SLV 15	11.32	-4038.04	-6020	-5070	5190	1.632	1.0478	0	0	0	40441	21991	4162	26153		5.04	Si
SLV 12	9.52	6301.51	-10912	-9189	5282	2.04	1.3275	-15014	13420	5396	40441	27489	5202	32691		6.19	Si
SLV 12	11.32	-3095.66	-9084	-7649	5120	2.04	2.0376	-12499	12916	7896	40441	27489	5202	32691		6.38	Si
SLV 2	9.52	-4823.93	-13400	-11284	-5760	2.04	1.98	-18439	14104	8378	40441	27489	5202	32691		5.68	Si
SLV 2	11.32	5116.56	-11085	-9335	-5200	2.04	1.6753	-15253	13467	6769	40441	27489	5202	32691		6.29	Si
SLV 3	9.52	-3936.3	-15626	-13159	-5304	2.04	2.04	-21502	14717	9007	40441	27489	5202	32691		6.16	Si
SLV 3	11.32	5119.63	-13496	-11365	-4740	2.04	1.922	-18570	14131	8148	40441	27489	5202	32691		6.9	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 14	179667	0.46	7434	-4550	274.55	649.23	2.36	Si
SLV 16	179667	0.46	9289	-5685	274.55	800.85	2.92	Si
SLV 13	179667	0.46	9364	-5730	274.55	806.87	2.94	Si
SLV 10	179667	0.46	9914	-6067	274.55	851.03	3.1	Si
SLV 9	179667	0.46	11213	-6862	274.55	953.79	3.47	Si
SLV 15	179667	0.46	11218	-6866	274.55	954.19	3.48	Si
SLV 6	179667	0.46	13624	-8338	274.55	1139.14	4.15	Si
SLV 5	179667	0.46	14923	-9133	274.55	1236.1	4.5	Si
SLV 12	179667	0.46	16097	-9851	274.55	1321.92	4.81	Si
SLV 11	179667	0.46	17396	-10646	274.55	1415.02	5.15	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-10822	-8027	-1109	0.859	1410.4	0.939	13.28899	5.26078	Si
SLV 12	-10812	-6480	-1109	0.859	1409.4	0.939	13.29982	5.26078	Si
SLV 7	-10671	-12928	-1121	0.867	1395.2	0.939	13.43246	5.26078	Si
SLV 8	-10661	-11382	-1121	0.868	1394.1	0.939	13.44354	5.26078	Si
SLV 15	-8175	-3053	-314	1.151	1142.9	0.928	18.02388	6.14217	Si
SLV 16	-8159	-756	-314	1.152	1141.4	0.928	18.05182	6.14217	Si
SLV 3	-7672	-19392	-356	1.204	1092.3	0.925	18.91547	6.14217	Si
SLV 4	-7657	-17095	-356	1.206	1090.8	0.925	18.94638	6.14217	Si
SLV 13	-5752	-3370	354	1.494	899.8	0.914	23.76375	6.14217	Si
SLV 14	-5737	-1073	354	1.497	898.3	0.913	23.81198	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	11.313	SLU 42	Si
V_SLU	85.725	SLU 42	Si
PF_SLV	0.942	SLV 16	No
V_SLV	3.641	SLV 16	Si
PFFP_SLV	2.365	SLV 14	Si
R_SLV	2.526	SLV 11	Si

Maschio 187

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-16.818	6.651	-12.838	6.651	L6	L7	3.98	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 53	9.52	1068.91	-34267	-0.0000475	0.0003743	0.0035	3.98	48968.94	54144.41	54144.41	50.65	No	Si
SLU 53	11.32	-357.04	-28908	-0.0000385	0.0003743	0.0035	3.98	43846.75	52132.27	52132.27	146.01	No	Si
SLU 43	9.52	1006	-29089	-0.0000401	0.0003743	0.0035	3.98	44034.8	48055.82	48055.82	47.77	No	Si
SLU 43	11.32	-343.96	-23730	-0.0000314	0.0003743	0.0035	3.98	38004.05	45029.35	45029.35	130.91	No	Si
SLU 64	9.52	1058.35	-34101	-0.0000473	0.0003743	0.0035	3.98	48824.69	53945.65	53945.65	50.97	No	Si
SLU 64	11.32	-301.88	-28658	-0.0000381	0.0003743	0.0035	3.98	43584.76	51800.52	51800.52	171.59	No	Si
SLU 45	9.52	1000.52	-31355	-0.0000433	0.0003743	0.0035	3.98	46301.94	50691.87	50691.87	50.67	No	Si
SLU 45	11.32	-385.65	-25996	-0.0000345	0.0003743	0.0035	3.98	40668.77	48206.73	48206.73	125	No	Si
SLU 60	9.52	1103.71	-33249	-0.0000462	0.0003743	0.0035	3.98	48068.44	52927.74	52927.74	47.95	No	Si
SLU 60	11.32	-303.1	-27890	-0.000037	0.0003743	0.0035	3.98	42767.67	50788.78	50788.78	167.57	No	Si
SLU 62	9.52	1078.19	-34711	-0.0000482	0.0003743	0.0035	3.98	49350.8	54678.06	54678.06	50.71	No	Si
SLU 62	11.32	-383.11	-29352	-0.0000392	0.0003743	0.0035	3.98	44306.43	52723.37	52723.37	137.62	No	Si
SLU 1	9.52	787.66	-23698	-0.0000322	0.0003743	0.0035	3.98	37965.48	40532.27	40532.27	51.46	No	Si
SLU 1	11.32	-253.49	-19553	-0.0000256	0.0003743	0.0035	3.98	32652.29	38846.92	38846.92	153.25	No	Si
SLU 18	9.52	885.36	-27858	-0.0000381	0.0003743	0.0035	3.98	42733.42	46645.59	46645.59	52.69	No	Si
SLU 18	11.32	-212.62	-23714	-0.0000311	0.0003743	0.0035	3.98	37984.78	45007.39	45007.39	211.68	No	Si
SLU 81	9.52	1156.06	-38262	-0.0000535	0.0003743	0.0035	3.98	52175.54	59019.61	59019.61	51.05	No	Si
SLU 81	11.32	-261.02	-32818	-0.0000438	0.0003743	0.0035	3.98	47677.08	57127.97	57127.97	218.87	No	Si
SLU 61	9.52	1030.68	-33205	-0.0000459	0.0003743	0.0035	3.98	48028.36	52874.88	52874.88	51.3	No	Si
SLU 61	11.32	-248.29	-27846	-0.0000368	0.0003743	0.0035	3.98	42719.8	50730.54	50730.54	204.32	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 2	9.52	-15324.59	-27410	-0.0000654	0.0005615	0.0035	3.98		52777.36	52777.36	3.44		Si
SLV 2	11.32	16741.64	-23238	-0.0000626	0.0005615	0.0035	3.98		41788.53	41788.53	2.5		Si
SLV 14	9.52	16926.17	-21278	-0.0000608	0.0005615	0.0035	3.98		38908.75	38908.75	2.3		Si
SLV 14	11.32	-17806.67	-17159	-0.0000615	0.0005615	0.0035	3.98		36137.28	36137.28	2.03		Si
SLV 5	9.52	-12564.42	-22120	-0.0000526	0.0005615	0.0035	3.98		44396.27	44396.27	3.53		Si
SLV 5	11.32	12062.66	-18020	-0.0000461	0.0005615	0.0035	3.98		33939.73	33939.73	2.81		Si
SLV 4	9.52	-11049.97	-30332	-0.0000609	0.0005615	0.0035	3.98		57221.76	57221.76	5.18		Si
SLV 4	11.32	13291.21	-26113	-0.0000595	0.0005615	0.0035	3.98		46056.95	46056.95	3.47		Si
SLV 3	9.52	-15281.86	-30647	-0.0000698	0.0005615	0.0035	3.98		57706.73	57706.73	3.78		Si
SLV 3	11.32	17340.09	-26428	-0.000068	0.0005615	0.0035	3.98		46528.18	46528.18	2.68		Si
SLV 15	9.52	16968.9	-24514	-0.0000647	0.0005615	0.0035	3.98		43675.77	43675.77	2.57		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 15	11.32	-17208.23	-20349	-0.0000607	0.0005615	0.0035	3.98		41448.06	41448.06	2.41		Si
SLV 13	9.52	12694.28	-21593	-0.0000521	0.0005615	0.0035	3.98		39370.11	39370.11	3.1		Si
SLV 13	11.32	-13757.79	-17474	-0.0000491	0.0005615	0.0035	3.98		36675.55	36675.55	2.67		Si
SLV 1	9.52	-19556.48	-27726	-0.0000744	0.0005615	0.0035	3.98		53253.06	53253.06	2.72		Si
SLV 1	11.32	20790.52	-23553	-0.0000733	0.0005615	0.0035	3.98		42253.87	42253.87	2.03		Si
SLV 6	9.52	-9715.23	-21908	-0.0000467	0.0005615	0.0035	3.98		44052.26	44052.26	4.53		Si
SLV 6	11.32	9336.69	-17808	-0.0000405	0.0005615	0.0035	3.98		33579.6	33579.6	3.6		Si
SLV 16	9.52	21200.79	-24199	-0.000075	0.0005615	0.0035	3.98		43208.4	43208.4	2.04		Si
SLV 16	11.32	-21257.11	-20034	-0.0000744	0.0005615	0.0035	3.98		40920.39	40920.39	1.93		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 58	9.52	1023.35	-34924	-29409	791	3.98	3.98	-24631	10229	17511	40441	35754	10149	45903	No	58	Si
SLU 58	11.32	-475.38	-29565	-24897	791	3.98	3.98	-20851	9725	15706	40441	35754	10149	45903	No	58	Si
SLU 83	9.52	1130.53	-39723	-33451	776	3.98	3.98	-28016	10680	19128	40441	35754	10149	45903	No	59.14	Si
SLU 83	11.32	-341.03	-34280	-28867	776	3.98	3.98	-24177	10168	17294	40441	35754	10149	45903	No	59.14	Si
SLU 50	9.52	954.95	-32011	-26957	769	3.98	3.98	-22577	9955	16530	40441	35754	10149	45903	No	59.67	Si
SLU 50	11.32	-503.99	-26652	-22444	769	3.98	3.98	-18797	9451	14725	40441	35754	10149	45903	No	59.67	Si
SLU 79	9.52	1075.7	-39936	-33631	797	3.98	3.98	-28166	10700	19200	40441	35754	10149	45903	No	57.6	Si
SLU 79	11.32	-433.31	-34493	-29047	797	3.98	3.98	-24327	10188	17366	40441	35754	10149	45903	No	57.6	Si
SLU 71	9.52	1007.3	-37024	-31178	775	3.98	3.98	-26112	10426	18219	40441	35754	10149	45903	No	59.24	Si
SLU 71	11.32	-461.91	-31581	-26594	775	3.98	3.98	-22273	9914	16385	40441	35754	10149	45903	No	59.24	Si
SLU 48	9.52	974.99	-32816	-27635	759	3.98	3.98	-23144	10030	16801	40441	35754	10149	45903	No	60.47	Si
SLU 48	11.32	-465.66	-27457	-23122	759	3.98	3.98	-19365	9526	14996	40441	35754	10149	45903	No	60.47	Si
SLU 56	9.52	1043.39	-35728	-30087	781	3.98	3.98	-25198	10304	17782	40441	35754	10149	45903	No	58.75	Si
SLU 56	11.32	-437.06	-30369	-25574	781	3.98	3.98	-21419	9800	15977	40441	35754	10149	45903	No	58.75	Si
SLU 77	9.52	1095.73	-40741	-34308	787	3.98	3.98	-28734	10776	19471	40441	35754	10149	45903	No	58.34	Si
SLU 77	11.32	-394.98	-35298	-29724	787	3.98	3.98	-24895	10264	17637	40441	35754	10149	45903	No	58.34	Si
SLU 69	9.52	1027.34	-37829	-31856	765	3.98	3.98	-26680	10502	18490	40441	35754	10149	45903	No	60.03	Si
SLU 69	11.32	-423.59	-32385	-27272	765	3.98	3.98	-22841	9990	16656	40441	35754	10149	45903	No	60.03	Si
SLU 62	9.52	1078.19	-34711	-29230	771	3.98	3.98	-24481	10209	17439	40441	35754	10149	45903	No	59.57	Si
SLU 62	11.32	-383.11	-29352	-24717	771	3.98	3.98	-20701	9705	15634	40441	35754	10149	45903	No	59.57	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	9.52	-15324.59	-27410	-23083	-18359	3.98	3.98	-19332	14283	17854	40441	53630	10149	58295		3.18	Si
SLV 2	11.32	16741.64	-23238	-19569	-17349	3.98	3.8087	-16389	13695	16449	40441	53630	10149	56890		3.28	Si
SLV 13	9.52	12694.28	-21593	-18183	15204	3.98	3.98	-15229	13462	16074	40441	53630	10149	56515		3.72	Si
SLV 13	11.32	-13757.79	-17474	-14715	14187	3.98	3.608	-13670	13151	14507	40441	53630	10149	54948		3.87	Si
SLV 3	9.52	-15281.86	-30647	-25808	-18695	3.98	3.98	-21615	14740	18945	40441	53630	10149	59385		3.18	Si
SLV 3	11.32	17340.09	-26428	-22256	-17678	3.98	3.98	-18639	14145	17524	40441	53630	10149	57965		3.28	Si
SLV 14	9.52	16926.17	-21278	-17918	19804	3.98	3.5835	-15007	13418	15789	40441	53630	10149	56230		2.84	Si
SLV 14	11.32	-17806.67	-17159	-14449	18788	3.98	2.8567	-16998	13817	14401	40441	53630	10149	54842		2.92	Si
SLV 1	9.52	-19556.48	-27726	-23348	-22960	3.98	3.8539	-20396	14496	17961	40441	53630	10149	58402		2.54	Si
SLV 1	11.32	20790.52	-23553	-19834	-21950	3.98	3.3219	-16612	13739	16555	40441	53630	10149	56996		2.6	Si
SLV 4	9.52	-11049.97	-30332	-25542	-14095	3.98	3.98	-21392	14695	18838	40441	53630	10149	59279		4.21	Si
SLV 4	11.32	13291.21	-26113	-21990	-13078	3.98	3.98	-18417	14100	17418	40441	53630	10149	57858		4.42	Si
SLV 12	9.52	14208.73	-29805	-25099	14935	3.98	3.98	-21021	14621	18661	40441	53630	10149	59102		3.96	Si
SLV 12	11.32	-12529.25	-25567	-21530	14642	3.98	3.98	-18032	14023	17234	40441	53630	10149	57675		3.94	Si
SLV 16	9.52	21200.79	-24199	-20378	24069	3.98	3.3417	-17067	13830	16773	40441	53630	10149	57214		2.38	Si
SLV 16	11.32	-21257.11	-20034	-16870	23059	3.98	2.7868	-20380	14493	15370	40441	53630	10149	55811		2.42	Si
SLV 5	9.52	-12564.42	-22120	-18627	-13826	3.98	3.98	-15601	13537	16163	40441	53630	10149	56604		4.09	Si
SLV 5	11.32	12062.66	-18020	-15175	-13533	3.98	3.9618	-12709	12958	15401	40441	53630	10149	55842		4.13	Si
SLV 15	9.52	16968.9	-24514	-20643	19468	3.98	3.8934	-17289	13874	16879	40441	53630	10149	57320		2.94	Si
SLV 15	11.32	-17208.23	-20349	-17136	18458	3.98	3.433	-16776	13772	15476	40441	53630	10149	55917		3.03	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 10	179667	0.46	14805	-17677	535.65	2394.53	4.47	Si
SLV 9	179667	0.46	14983	-17889	535.65	2420.16	4.52	Si
SLV 14	179667	0.46	15921	-19009	535.65	2554.14	4.77	Si
SLV 13	179667	0.46	16185	-19325	535.65	2591.48	4.84	Si
SLV 6	179667	0.46	16305	-19469	535.65	2608.51	4.87	Si
SLV 5	179667	0.46	16483	-19681	535.65	2633.51	4.92	Si
SLV 16	179667	0.46	18414	-21987	535.65	2900.34	5.41	Si
SLV 15	179667	0.46	18678	-22302	535.65	2936.14	5.48	Si
SLV 2	179667	0.46	20922	-24981	535.65	3233.79	6.04	Si
SLV 1	179667	0.46	21186	-25296	535.65	3268.04	6.1	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 3	-19568	-31141	-794	0.971	2595.3	0.936	15.07909	6.14217	Si
SLV 4	-19397	-30733	-794	0.978	2578	0.936	15.19134	6.14217	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-20472	-31636	-2685	0.859	2686.7	0.938	13.30799	5.26078	Si
SLV 8	-20356	-31361	-2685	0.863	2675	0.938	13.37162	5.26078	Si
SLV 11	-19465	-29155	-2694	0.894	2584.8	0.936	13.87908	5.26078	Si
SLV 12	-19350	-28880	-2694	0.898	2573.2	0.936	13.94853	5.26078	Si
SLV 1	-17763	-28178	818	1.048	2412.9	0.932	16.33722	6.14217	Si
SLV 2	-17592	-27770	818	1.056	2395.6	0.932	16.46969	6.14217	Si
SLV 15	-16212	-22870	-825	1.125	2256.4	0.928	17.61688	6.14217	Si
SLV 16	-16041	-22463	-825	1.135	2239.1	0.928	17.77161	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	47.769	SLU 43	Si
V_SLU	57.595	SLU 79	Si
PF_SLV	1.925	SLV 16	Si
V_SLV	2.377	SLV 16	Si
PFFP_SLV	4.47	SLV 10	Si
R_SLV	2.455	SLV 3	Si

Maschio 188

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.938	6.651	-7.958	6.651	L6	L7	3.98	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 48	9.52	-1472.02	-32802	-0.0000463	0.0003743	0.0035	3.98	47662.1	57107.56	57107.56	38.8	No	Si
SLU 48	11.32	-100.35	-27486	-0.000036	0.0003743	0.0035	3.98	42330.06	50260.58	50260.58	500.85	No	Si
SLU 68	9.52	-1535.7	-35839	-0.0000508	0.0003743	0.0035	3.98	50293.5	60750.85	60750.85	39.56	No	Si
SLU 68	11.32	190.49	-30439	-0.0000403	0.0003743	0.0035	3.98	45406.43	49622.13	49622.13	260.49	No	Si
SLU 69	9.52	-1614.39	-38011	-0.0000541	0.0003743	0.0035	3.98	51989.46	63156.05	63156.05	39.12	No	Si
SLU 69	11.32	-54.18	-32611	-0.0000431	0.0003743	0.0035	3.98	47486.28	56869.21	56869.21	1049.7	No	Si
SLU 49	9.52	-1462.41	-32707	-0.0000461	0.0003743	0.0035	3.98	47575.3	56989.61	56989.61	38.97	No	Si
SLU 49	11.32	-106.66	-27392	-0.0000359	0.0003743	0.0035	3.98	42226.79	50137.26	50137.26	470.06	No	Si
SLU 70	9.52	-1604.77	-37916	-0.0000539	0.0003743	0.0035	3.98	51918.78	63060.92	63060.92	39.3	No	Si
SLU 70	11.32	-60.49	-32516	-0.000043	0.0003743	0.0035	3.98	47398.88	56751.54	56751.54	938.24	No	Si
SLU 47	9.52	-1393.33	-30631	-0.000043	0.0003743	0.0035	3.98	45595.85	54410.81	54410.81	39.05	No	Si
SLU 47	11.32	144.32	-25315	-0.0000331	0.0003743	0.0035	3.98	39885.91	43093.31	43093.31	298.6	No	Si
SLU 51	9.52	-1468.81	-31786	-0.0000448	0.0003743	0.0035	3.98	46714.7	55848.58	55848.58	38.02	No	Si
SLU 51	11.32	-165.65	-26470	-0.0000348	0.0003743	0.0035	3.98	41205.87	48871.87	48871.87	295.03	No	Si
SLU 72	9.52	-1611.18	-36995	-0.0000526	0.0003743	0.0035	3.98	51215.28	62088.47	62088.47	38.54	No	Si
SLU 72	11.32	-119.48	-31595	-0.0000418	0.0003743	0.0035	3.98	46532.51	55613.37	55613.37	465.47	No	Si
SLU 71	9.52	-1620.8	-37090	-0.0000528	0.0003743	0.0035	3.98	51288.81	62198.88	62198.88	38.38	No	Si
SLU 71	11.32	-113.17	-31689	-0.0000419	0.0003743	0.0035	3.98	46622.77	55729.62	55729.62	492.45	No	Si
SLU 50	9.52	-1478.43	-31881	-0.000045	0.0003743	0.0035	3.98	46804.36	55965.12	55965.12	37.85	No	Si
SLU 50	11.32	-159.34	-26565	-0.0000349	0.0003743	0.0035	3.98	41312	49003.4	49003.4	307.54	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 16	9.52	15004.65	-35420	-0.000076	0.0005615	0.0035	3.98		60245.13	60245.13	4.02		Si
SLV 16	11.32	-17501.55	-31252	-0.0000752	0.0005615	0.0035	3.98		58618.9	58618.9	3.35		Si
SLV 1	9.52	-17233.81	-17828	-0.0000594	0.0005615	0.0035	3.98		37259.48	37259.48	2.16		Si
SLV 1	11.32	18317.17	-13725	-0.0000721	0.0005615	0.0035	3.98		26507.7	26507.7	1.45		Si
SLD 1	9.52	-8028.91	-22943	-0.0000448	0.0005615	0.0035	3.98		45705.05	45705.05	5.69		Si
SLD 1	11.32	8076.79	-18822	-0.0000394	0.0005615	0.0035	3.98		35293.77	35293.77	4.37		Si
SLV 2	9.52	-13491.85	-19034	-0.0000503	0.0005615	0.0035	3.98		39255.15	39255.15	2.91		Si
SLV 2	11.32	14674.47	-14931	-0.0000502	0.0005615	0.0035	3.98		28620.86	28620.86	1.95		Si
SLV 13	9.52	12298.64	-28312	-0.0000606	0.0005615	0.0035	3.98		49357.95	49357.95	4.01		Si
SLV 13	11.32	-14480.45	-24165	-0.0000592	0.0005615	0.0035	3.98		47648.15	47648.15	3.29		Si
SLV 5	9.52	-5077.53	-14809	-0.0000283	0.0005615	0.0035	3.98		32030.01	32030.01	6.31		Si
SLV 5	11.32	5517.7	-10715	-0.0000238	0.0005615	0.0035	3.98		21123.2	21123.2	3.83		Si
SLV 4	9.52	-14527.8	-24936	-0.0000603	0.0005615	0.0035	3.98		48880.37	48880.37	3.36		Si
SLV 4	11.32	15296.07	-20812	-0.0000564	0.0005615	0.0035	3.98		38228.43	38228.43	2.5		Si
SLV 3	9.52	-18269.76	-23730	-0.0000667	0.0005615	0.0035	3.98		46954.31	46954.31	2.57		Si
SLV 3	11.32	18938.77	-19606	-0.0000656	0.0005615	0.0035	3.98		36473.37	36473.37	1.93		Si
SLV 15	9.52	11262.69	-34214	-0.0000667	0.0005615	0.0035	3.98		58374.6	58374.6	5.18		Si
SLV 15	11.32	-13858.85	-30046	-0.0000661	0.0005615	0.0035	3.98		56783.59	56783.59	4.1		Si
SLV 14	9.52	16040.6	-29518	-0.0000697	0.0005615	0.0035	3.98		51181.75	51181.75	3.19		Si
SLV 14	11.32	-18123.15	-25371	-0.0000683	0.0005615	0.0035	3.98		49579.27	49579.27	2.74		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 60	9.52	-1367.11	-34291	-28877	-1069	3.98	3.98	-24185	10169	17298	40441	35754	10149	45903	No	42.93	Si
SLU 60	11.32	577.3	-28976	-24401	-1069	3.98	3.98	-20436	9669	15508	40441	35754	10149	45903	No	42.93	Si
SLU 64	9.52	-1482.65	-34905	-29393	-1099	3.98	3.98	-24618	10227	17505	40441	35754	10149	45903	No	41.77	Si
SLU 64	11.32	515.19	-29504	-24846	-1099	3.98	3.98	-20809	9719	15686	40441	35754	10149	45903	No	41.77	Si
SLU 82	9.52	-1499.86	-39406	-33184	-1165	3.98	3.98	-27792	10650	19021	40441	35754	10149	45903	No	39.4	Si
SLU 82	11.32	617.16	-34006	-28636	-1165	3.98	3.98	-23983	10142	17202	40441	35754	10149	45903	No	39.4	Si
SLU 81	9.52	-1509.48	-39500	-33263	-1174	3.98	3.98	-27859	10659	19053	40441	35754	10149	45903	No	39.1	Si
SLU 81	11.32	623.47	-34100	-28716	-1174	3.98	3.98	-24050	10151	17234	40441	35754	10149	45903	No	39.1	Si
SLU 75	9.52	-1554.48	-40041	-33718	-1036	3.98	3.98	-28240	10710	19235	40441	35754	10149	45903	No	44.32	Si
SLU 75	11.32	329.49	-34641	-29171	-1036	3.98	3.98	-24431	10202	17416	40441	35754	10149	45903	No	44.32	Si
SLU 61	9.52	-1357.5	-34197	-28797	-1060	3.98	3.98	-24118	10160	17266	40441	35754	10149	45903	No	43.29	Si
SLU 61	11.32	570.99	-28881	-24321	-1060	3.98	3.98	-20369	9660	15476	40441	35754	10149	45903	No	43.29	Si
SLU 65	9.52	-1466.63	-34747	-29261	-1084	3.98	3.98	-24506	10212	17452	40441	35754	10149	45903	No	42.34	Si
SLU 65	11.32	504.67	-29347	-24713	-1084	3.98	3.98	-20698	9704	15633	40441	35754	10149	45903	No	42.34	Si
SLU 74	9.52	-1564.1	-40135	-33798	-1045	3.98	3.98	-28307	10719	19267	40441	35754	10149	45903	No	43.95	Si
SLU 74	11.32	335.8	-34735	-29251	-1045	3.98	3.98	-24498	10211	17448	40441	35754	10149	45903	No	43.95	Si
SLU 73	9.52	-1485.41	-37964	-31970	-1137	3.98	3.98	-26775	10514	18535	40441	35754	10149	45903	No	40.38	Si
SLU 73	11.32	580.47	-32564	-27422	-1137	3.98	3.98	-22967	10007	16716	40441	35754	10149	45903	No	40.38	Si
SLU 83	9.52	-1578.55	-40593	-34183	-1038	3.98	3.98	-28629	10762	19421	40441	35754	10149	45903	No	44.23	Si
SLU 83	11.32	309.3	-35193	-29636	-1038	3.98	3.98	-24821	10254	17602	40441	35754	10149	45903	No	44.23	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 1	9.52	-8028.91	-22943	-19320	-9192	3.98	3.98	-16181	13653	16350	40441	53630	10149	56791		6.18	Si
SLD 1	11.32	8076.79	-18822	-15850	-8760	3.98	3.98	-13275	13072	15608	40441	53630	10149	56048		6.4	Si
SLV 4	9.52	-14527.8	-24936	-20999	-16933	3.98	3.98	-17587	13934	17021	40441	53630	10149	57462		3.39	Si
SLV 4	11.32	15296.07	-20812	-17526	-15928	3.98	3.7651	-14678	13352	15632	40441	53630	10149	56073		3.52	Si
SLV 13	9.52	12298.64	-28312	-23842	15259	3.98	3.98	-19968	14410	18158	40441	53630	10149	58599		3.84	Si
SLV 13	11.32	-14480.45	-24165	-20350	14253	3.98	3.98	-17043	13825	16761	40441	53630	10149	57202		4.01	Si
SLV 3	9.52	-18269.76	-23730	-19983	-21036	3.98	3.6603	-18348	14086	16615	40441	53630	10149	57056		2.71	Si
SLV 3	11.32	18938.77	-19606	-16510	-20031	3.98	3.0721	-13828	13182	15226	40441	53630	10149	55667		2.78	Si
SLV 15	9.52	11262.69	-34214	-28812	14566	3.98	3.98	-24130	15243	20146	40441	53630	10149	60587		4.16	Si
SLV 15	11.32	-13858.85	-30046	-25302	13548	3.98	3.98	-21191	14655	18742	40441	53630	10149	59183		4.37	Si
SLV 1	9.52	-17233.81	-17828	-15013	-20343	3.98	3.07	-16423	13701	14627	40441	53630	10149	55068		2.71	Si
SLV 1	11.32	18317.17	-13725	-11558	-19325	3.98	1.9663	-9680	12353	13245	40441	53630	10149	53686		2.78	Si
SLV 16	9.52	15004.65	-35420	-29827	18668	3.98	3.98	-24981	15413	20552	40441	53630	10149	60993		3.27	Si
SLV 16	11.32	-17501.55	-31252	-26318	17651	3.98	3.98	-22041	14825	19148	40441	53630	10149	59589		3.38	Si
SLD 3	9.52	-8432.15	-25309	-21313	-9455	3.98	3.98	-17850	13987	17147	40441	53630	10149	57587		6.09	Si
SLD 3	11.32	8311.1	-21178	-17834	-9024	3.98	3.98	-14936	13404	16004	40441	53630	10149	56445		6.26	Si
SLV 14	9.52	16040.6	-29518	-24857	19361	3.98	3.98	-20818	14580	18564	40441	53630	10149	59005		3.05	Si
SLV 14	11.32	-18123.15	-25371	-21365	18356	3.98	3.827	-18778	14172	17168	40441	53630	10149	57609		3.14	Si
SLV 2	9.52	-13491.85	-19034	-16029	-16240	3.98	3.8435	-13993	13215	15238	40441	53630	10149	55679		3.43	Si
SLV 2	11.32	14674.47	-14931	-12574	-15223	3.98	3.0216	-10531	12523	13651	40441	53630	10149	54092		3.55	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 5	179667	0.46	10522	-12563	535.65	1754.65	3.28	Si
SLV 6	179667	0.46	11202	-13375	535.65	1859.11	3.47	Si
SLV 1	179667	0.46	12978	-15495	535.65	2126.78	3.97	Si
SLV 9	179667	0.46	13192	-15751	535.65	2158.6	4.03	Si
SLV 10	179667	0.46	13872	-16563	535.65	2258.8	4.22	Si
SLV 2	179667	0.46	13988	-16701	535.65	2275.73	4.25	Si
SLV 3	179667	0.46	17894	-21365	535.65	2829.29	5.28	Si
SLV 4	179667	0.46	18904	-22571	535.65	2966.59	5.54	Si
SLV 13	179667	0.46	21878	-26122	535.65	3356.97	6.27	Si
SLV 14	179667	0.46	22888	-27328	535.65	3484.83	6.51	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.

- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 12	-24589	-41064	-2723	0.739	3103.8	0.945	11.36654	5.26078	Si
SLV 16	-22666	-37852	-814	0.862	2908.9	0.942	13.29765	6.14217	Si
SLV 11	-24098	-40060	-2723	0.751	3054	0.944	11.56467	5.26078	Si
SLV 15	-21936	-36360	-814	0.885	2834.9	0.941	13.67472	6.14217	Si
SLV 8	-22708	-36953	-2727	0.788	2913.2	0.942	12.16371	5.26078	Si
SLV 7	-22217	-35949	-2727	0.802	2863.4	0.941	12.3923	5.26078	Si
SLV 14	-19034	-30778	818	0.992	2541.3	0.935	15.41832	6.14217	Si
SLV 13	-18304	-29287	819	1.023	2467.5	0.933	15.93206	6.14217	Si
SLV 4	-16396	-24149	-827	1.115	2274.9	0.929	17.45258	6.14217	Si
SLV 3	-15666	-22657	-827	1.156	2201.4	0.927	18.11827	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	37.854	SLU 50	Si
V_SLU	39.1	SLU 81	Si
PF_SLV	1.447	SLV 1	Si
V_SLV	2.707	SLV 1	Si
PFFP_SLV	3.276	SLV 5	Si
R_SLV	2.161	SLV 12	Si

Maschio 189

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.058	6.651	-5.018	6.651	L6	L7	2.04	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 77	9.52	-1444.61	-15119	-0.0000499	0.0003743	0.0035	2.04	11679.49	13807.54	13807.54	9.56	No	Si
SLU 77	11.32	-506.9	-12304	-0.0000349	0.0003743	0.0035	2.04	10071.78	11817.7	11817.7	23.31	No	Si
SLU 50	9.52	-1179.29	-11575	-0.0000381	0.0003743	0.0035	2.04	9613.1	11288.5	11288.5	9.57	No	Si
SLU 50	11.32	-272.81	-8803	-0.0000239	0.0003743	0.0035	2.04	7710.44	9111.18	9111.18	33.4	No	Si
SLU 66	9.52	-1362.99	-13826	-0.0000456	0.0003743	0.0035	2.04	10973.16	12910.6	12910.6	9.47	No	Si
SLU 66	11.32	-363.96	-11011	-0.0000304	0.0003743	0.0035	2.04	9246.24	10853.37	10853.37	29.82	No	Si
SLU 48	9.52	-1216.04	-12031	-0.0000396	0.0003743	0.0035	2.04	9901.92	11618.25	11618.25	9.55	No	Si
SLU 48	11.32	-282.9	-9259	-0.0000252	0.0003743	0.0035	2.04	8040.64	9481.66	9481.66	33.52	No	Si
SLU 64	9.52	-1319.1	-13237	-0.0000437	0.0003743	0.0035	2.04	10633.67	12508.06	12508.06	9.48	No	Si
SLU 64	11.32	-314.47	-10422	-0.0000285	0.0003743	0.0035	2.04	8852.52	10397.7	10397.7	33.06	No	Si
SLU 69	9.52	-1370.13	-13958	-0.0000461	0.0003743	0.0035	2.04	11048.07	13001.89	13001.89	9.49	No	Si
SLU 69	11.32	-403.37	-11143	-0.000031	0.0003743	0.0035	2.04	9333.37	10956.92	10956.92	27.16	No	Si
SLU 45	9.52	-1208.91	-11898	-0.0000392	0.0003743	0.0035	2.04	9818.65	11521.99	11521.99	9.53	No	Si
SLU 45	11.32	-243.49	-9126	-0.0000246	0.0003743	0.0035	2.04	7945.33	9373.51	9373.51	38.5	No	Si
SLU 74	9.52	-1437.47	-14987	-0.0000495	0.0003743	0.0035	2.04	11609.62	13720.19	13720.19	9.54	No	Si
SLU 74	11.32	-467.49	-12171	-0.0000343	0.0003743	0.0035	2.04	9989.68	11720.78	11720.78	25.07	No	Si
SLU 43	9.52	-1165.01	-11310	-0.0000373	0.0003743	0.0035	2.04	9442.02	11087.5	11087.5	9.52	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 43	11.32	-193.99	-8538	-0.0000227	0.0003743	0.0035	2.04	7515.3	8897.65	8897.65	45.87	No	Si
SLU 71	9.52	-1333.37	-13503	-0.0000445	0.0003743	0.0035	2.04	10788.02	12689.19	12689.19	9.52	No	Si
SLU 71	11.32	-393.29	-10687	-0.0000298	0.0003743	0.0035	2.04	9031.3	10602.17	10602.17	26.96	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	9.52	2098.54	-11179	-0.0000432	0.0005615	0.0035	2.04		10519.73	10519.73	5.01		Si
SLV 13	11.32	-4262.87	-9033	-0.0000561	0.0005615	0.0035	2.04		9582.26	9582.26	2.25		Si
SLV 3	9.52	-4878.53	-8186	-0.0000661	0.0005615	0.0035	1.632		8841.31	8841.31	1.81		Si
SLV 3	11.32	4700.56	-6020	-0.0000877	0.0005615	0.0035	2.04		6044.15	6044.15	1.29		Si
SLV 10	9.52	1914.28	-7715	-0.0000329	0.0005615	0.0035	2.04		7582.37	7582.37	3.96		Si
SLV 10	11.32	-3088.66	-5920	-0.0000399	0.0005615	0.0035	2.04		6795.9	6795.9	2.2		Si
SLV 4	9.52	-4102.75	-9002	-0.0000542	0.0005615	0.0035	2.04		9556.25	9556.25	2.33		Si
SLV 4	11.32	3772.87	-6837	-0.0000494	0.0005615	0.0035	2.04		6791.41	6791.41	1.8		Si
SLV 14	9.52	2874.32	-11995	-0.0000511	0.0005615	0.0035	2.04		11120.49	11120.49	3.87		Si
SLV 14	11.32	-5190.56	-9849	-0.0000686	0.0005615	0.0035	2.04		10283.58	10283.58	1.98		Si
SLV 9	9.52	1391.98	-7165	-0.0000277	0.0005615	0.0035	2.04		7088.11	7088.11	5.09		Si
SLV 9	11.32	-2464.08	-5370	-0.000032	0.0005615	0.0035	2.04		6282.84	6282.84	2.55		Si
SLV 7	9.52	-3918.49	-12466	-0.0000602	0.0005615	0.0035	2.04		12480.3	12480.3	3.18		Si
SLV 7	11.32	2598.67	-9949	-0.0000437	0.0005615	0.0035	2.04		9541.38	9541.38	3.67		Si
SLV 2	9.52	-3042.09	-6959	-0.0000401	0.0005615	0.0035	2.04		7740.1	7740.1	2.54		Si
SLV 2	11.32	2990.33	-5029	-0.0000397	0.0005615	0.0035	2.04		5125.73	5125.73	1.71		Si
SLV 1	9.52	-3817.86	-6142	-0.0000522	0.0005615	0.0035	1.632		7003.62	7003.62	1.83		Si
SLV 1	11.32	3918.02	-4213	-0.0001725	0.0005615	0.0035	2.04		4355.73	4355.73	1.11		Si
SLV 16	9.52	1813.66	-14039	-0.0000486	0.0005615	0.0035	2.04		12643.25	12643.25	6.97		Si
SLV 16	11.32	-4408.01	-11657	-0.000062	0.0005615	0.0035	2.04		11810.33	11810.33	2.68		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	9.52	-1437.47	-14987	-12620	-582	2.04	2.04	-20621	9694	5933	40441	18326	5202	23528	No	40.4	Si
SLU 74	11.32	-467.49	-12171	-10250	-582	2.04	2.04	-16748	9177	5617	40441	18326	5202	23528	No	40.4	Si
SLU 69	9.52	-1370.13	-13958	-11754	-581	2.04	2.04	-19207	9505	5817	40441	18326	5202	23528	No	40.52	Si
SLU 69	11.32	-403.37	-11143	-9384	-581	2.04	2.04	-15333	8989	5501	40441	18326	5202	23528	No	40.52	Si
SLU 43	9.52	-1165.01	-11310	-9524	-583	2.04	2.04	-15562	9019	5520	40441	18326	5202	23528	No	40.37	Si
SLU 43	11.32	-193.99	-8538	-7190	-583	2.04	2.04	-11748	8511	5209	40441	18326	5202	23528	No	40.37	Si
SLU 66	9.52	-1362.99	-13826	-11643	-599	2.04	2.04	-19024	9481	5802	40441	18326	5202	23528	No	39.31	Si
SLU 66	11.32	-363.96	-11011	-9272	-599	2.04	2.04	-15151	8965	5486	40441	18326	5202	23528	No	39.31	Si
SLU 67	9.52	-1344.69	-13802	-11623	-582	2.04	2.04	-18991	9477	5800	40441	18326	5202	23528	No	40.43	Si
SLU 67	11.32	-375.64	-10987	-9252	-582	2.04	2.04	-15118	8960	5484	40441	18326	5202	23528	No	40.43	Si
SLU 65	9.52	-1288.6	-13198	-11114	-574	2.04	2.04	-18160	9366	5732	40441	18326	5202	23528	No	41	Si
SLU 65	11.32	-333.92	-10382	-8743	-574	2.04	2.04	-14286	8849	5416	40441	18326	5202	23528	No	41	Si
SLU 45	9.52	-1208.91	-11898	-10019	-580	2.04	2.04	-16372	9127	5586	40441	18326	5202	23528	No	40.59	Si
SLU 45	11.32	-243.49	-9126	-7685	-580	2.04	2.04	-12558	8619	5275	40441	18326	5202	23528	No	40.59	Si
SLU 64	9.52	-1319.1	-13237	-11147	-602	2.04	2.04	-18215	9373	5736	40441	18326	5202	23528	No	39.11	Si
SLU 64	11.32	-314.47	-10422	-8777	-602	2.04	2.04	-14341	8857	5420	40441	18326	5202	23528	No	39.11	Si
SLU 81	9.52	-1425.49	-14896	-12544	-579	2.04	2.04	-20496	9677	5922	40441	18326	5202	23528	No	40.66	Si
SLU 81	11.32	-462.36	-12080	-10173	-579	2.04	2.04	-16623	9161	5606	40441	18326	5202	23528	No	40.66	Si
SLU 71	9.52	-1333.37	-13503	-11371	-566	2.04	2.04	-18579	9422	5766	40441	18326	5202	23528	No	41.59	Si
SLU 71	11.32	-393.29	-10687	-9000	-566	2.04	2.04	-14706	8905	5450	40441	18326	5202	23528	No	41.59	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	9.52	-3396.18	-13016	-10961	-3153	2.04	2.04	-17910	13999	8567	40441	27489	5202	32691		10.37	Si
SLV 8	11.32	1974.08	-10499	-8841	-3010	2.04	2.04	-14446	13306	8143	40441	27489	5202	32691		10.86	Si
SLV 10	9.52	1914.28	-7715	-6497	2882	2.04	2.04	-10616	12540	7674	40441	27489	5202	32691		11.34	Si
SLV 10	11.32	-3088.66	-5920	-4985	2739	2.04	1.4947	-11174	12652	5673	40441	27489	5202	32691		11.93	Si
SLV 3	9.52	-4878.53	-8186	-6893	-5569	1.632	1.2721	0	0	0	40441	21991	4162	26153		4.7	Si
SLV 3	11.32	4700.56	-6020	-5070	-5075	2.04	0.7176	-23840	15185	4298	40441	27489	5202	32691		6.44	Si
SLV 4	9.52	-4102.75	-9002	-7581	-4623	2.04	1.6928	-15036	13424	6817	40441	27489	5202	32691		7.07	Si
SLV 4	11.32	3772.87	-6837	-5757	-4128	2.04	1.4044	-9407	12298	5181	40441	27489	5202	32691		7.92	Si
SLV 14	9.52	2874.32	-11995	-10101	4661	2.04	2.04	-16505	13718	8395	40441	27489	5202	32691		7.01	Si
SLV 14	11.32	-5190.56	-9849	-8294	4167	2.04	1.479	-18867	14190	6296	40441	27489	5202	32691		7.85	Si
SLV 13	9.52	2098.54	-11179	-9414	3715	2.04	2.04	-15382	13493	8258	40441	27489	5202	32691		8.8	Si
SLV 13	11.32	-4262.87	-9033	-7606	3220	2.04	1.6442	-15535	13524	6671	40441	27489	5202	32691		10.15	Si
SLV 7	9.52	-3918.49	-12466	-10498	-3790	2.04	2.04	-17154	13847	8475	40441	27489	5202	32691		8.63	Si
SLV 7	11.32	2598.67	-9949	-8378	-3647	2.04	2.04	-13690	13155	8051	40441	27489	5202	32691		8.96	Si
SLV 16	9.52	1813.66	-14039	-11822	3590	2.04	2.04	-19317	14280	8739	40441	27489	5202	32691		9.11	Si
SLV 16	11.32	-4408.01	-11657	-9816	3091	2.04	1.9255	-17130	13843	7996	40441	27489	5202	32691		10.57	Si
SLV 2	9.52	-3042.09	-6959	-5860	-3552	2.04	1.7485	-11230	12663	6642	40441	27489	5202	32691		9.2	Si
SLV 2	11.32	2990.33	-5029	-4235	-3053	2.04	1.2761	-6920	11801	4518	40441	27489	5202	32691		10.71	Si
SLV 1	9.52	-3817.86	-6142	-5173	-4498	1.632	1.1953	0	0	0	40441	21991	4162	26153		5.81	Si
SLV 1	11.32	3918.02	-4213	-3548	-4000	2.04	0.2698	-44383	16250	3892	40441	27489	5202	32691		8.17	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 5	179667	0.46	7738	-4735	274.55	674.33	2.46	Si
SLV 1	179667	0.46	8479	-5189	274.55	735.2	2.68	Si
SLV 6	179667	0.46	8636	-5285	274.55	747.93	2.72	Si

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 2	179667	0.46	9813	-6006	274.55	842.97	3.07	Si
SLV 9	179667	0.46	10019	-6131	274.55	859.38	3.13	Si
SLV 10	179667	0.46	10917	-6681	274.55	930.52	3.39	Si
SLV 3	179667	0.46	11583	-7089	274.55	982.67	3.58	Si
SLV 4	179667	0.46	12917	-7905	274.55	1085.47	3.95	Si
SLV 13	179667	0.46	16083	-9843	274.55	1320.92	4.81	Si
SLV 14	179667	0.46	17417	-10659	274.55	1416.51	5.16	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-10975	-7926	-1208	0.841	1425.9	0.94	13.01335	5.26078	Si
SLV 8	-10942	-9034	-1207	0.844	1422.5	0.94	13.04737	5.26078	Si
SLV 11	-10398	-11611	-1212	0.878	1367.5	0.938	13.61654	5.26078	Si
SLV 12	-10364	-12719	-1212	0.881	1364.1	0.937	13.65392	5.26078	Si
SLV 3	-8701	-2638	-357	1.092	1196	0.93	17.05685	6.14217	Si
SLV 4	-8651	-4284	-357	1.097	1190.9	0.93	17.1385	6.14217	Si
SLV 15	-6776	-14922	-372	1.321	1002.2	0.92	20.87466	6.14217	Si
SLV 16	-6726	-16568	-372	1.329	997.3	0.92	20.99773	6.14217	Si
SLV 1	-6166	-2022	368	1.418	941.2	0.916	22.49275	6.14217	Si
SLV 2	-6117	-3667	368	1.426	936.2	0.916	22.634	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.472	SLU 66	Si
V_SLU	39.106	SLU 64	Si
PF_SLV	1.112	SLV 1	Si
V_SLV	4.696	SLV 3	Si
PFFP_SLV	2.456	SLV 5	Si
R_SLV	2.474	SLV 7	Si

Maschio 190

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.013	-4.784	-11.013	-3.403	Z medio 966 cm	L7	1.381	0.3	2.512	2.51	2.514			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 84	9.66	-504.64	-9760	-0.0000452	0.0003743	0.0035	1.381	5180.07	6097.43	6097.43	12.08	No	Si
SLU 84	12.17	-130.41	-6481	-0.000026	0.0003743	0.0035	1.381	3787.58	4455.33	4455.33	34.16	No	Si
SLU 40	9.66	-509.27	-8016	-0.0000383	0.0003743	0.0035	1.381	4483.25	5252.66	5252.66	10.31	No	Si
SLU 40	12.17	-97.11	-5298	-0.000021	0.0003743	0.0035	1.381	3198.74	3800.53	3800.53	39.14	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 39	9.66	-494.52	-7985	-0.0000379	0.0003743	0.0035	1.381	4469.9	5237.31	5237.31	10.59	No	Si
SLU 39	12.17	-112.19	-5276	-0.0000211	0.0003743	0.0035	1.381	3187.6	3788.23	3788.23	33.77	No	Si
SLU 21	9.66	-425.7	-7209	-0.0000337	0.0003743	0.0035	1.381	4127.22	4837.52	4837.52	11.36	No	Si
SLU 21	12.17	-115.28	-4811	-0.0000194	0.0003743	0.0035	1.381	2943.28	3521.32	3521.32	30.55	No	Si
SLU 42	9.66	-509.08	-8195	-0.000039	0.0003743	0.0035	1.381	4559.45	5341.32	5341.32	10.49	No	Si
SLU 42	12.17	-80.89	-5464	-0.0000213	0.0003743	0.0035	1.381	3284.04	3894.81	3894.81	48.15	No	Si
SLU 20	9.66	-410.95	-7178	-0.0000333	0.0003743	0.0035	1.381	4113.05	4821.16	4821.16	11.73	No	Si
SLU 20	12.17	-130.36	-4790	-0.0000196	0.0003743	0.0035	1.381	2931.8	3509.04	3509.04	26.92	No	Si
SLU 19	9.66	-425.88	-7030	-0.000033	0.0003743	0.0035	1.381	4045.24	4743.66	4743.66	11.14	No	Si
SLU 19	12.17	-131.5	-4645	-0.0000191	0.0003743	0.0035	1.381	2854.43	3426.96	3426.96	26.06	No	Si
SLU 41	9.66	-494.34	-8164	-0.0000386	0.0003743	0.0035	1.381	4546.28	5325.87	5325.87	10.77	No	Si
SLU 41	12.17	-95.97	-5442	-0.0000215	0.0003743	0.0035	1.381	3273.03	3882.63	3882.63	40.46	No	Si
SLU 18	9.66	-411.14	-6999	-0.0000326	0.0003743	0.0035	1.381	4030.88	4727.41	4727.41	11.5	No	Si
SLU 18	12.17	-146.59	-4624	-0.0000192	0.0003743	0.0035	1.381	2842.83	3414.68	3414.68	23.29	No	Si
SLU 82	9.66	-504.83	-9581	-0.0000445	0.0003743	0.0035	1.381	5113.05	6012.43	6012.43	11.91	No	Si
SLU 82	12.17	-146.64	-6315	-0.0000257	0.0003743	0.0035	1.381	3707.79	4363.64	4363.64	29.76	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 3	9.66	-1306.04	-4591	-0.0000379	0.0005615	0.0035	1.381		3464.93	3464.93	2.65		Si
SLV 3	12.17	1083.77	-416	-0.0104131	0.0005615	0.0035	1.1048		390.94	390.94	0.36		No
SLV 12	9.66	1083.6	-3375	-0.0000305	0.0005615	0.0035	1.381		2332.97	2332.97	2.15		Si
SLV 12	12.17	-1986.54	-5451	-0.0000569	0.0005615	0.0035	1.381		3987.05	3987.05	2.01		Si
SLD 2	9.66	-1011.61	-6807	-0.0000411	0.0005615	0.0035	1.381		4786.93	4786.93	4.73		Si
SLD 2	12.17	933.6	-2420	-0.0000264	0.0005615	0.0035	1.381		1720.96	1720.96	1.84		Si
SLV 7	9.66	359.77	-2697	-0.0000153	0.0005615	0.0035	1.381		1899.43	1899.43	5.28		Si
SLV 7	12.17	-1159.79	-3317	-0.0000325	0.0005615	0.0035	1.381		2671.12	2671.12	2.3		Si
SLV 11	9.66	1296.64	-3288	-0.0000372	0.0005615	0.0035	1.381		2278.45	2278.45	1.76		Si
SLV 11	12.17	-2269.95	-5924	-0.000066	0.0005615	0.0035	1.381		4270.19	4270.19	1.88		Si
SLV 2	9.66	-2157.74	-6951	-0.0000625	0.0005615	0.0035	1.381		4871.49	4871.49	2.26		Si
SLV 2	12.17	2376.55	264	-0.0354657	0.0005615	0.0035	1.1048		0	0	0		No
SLV 5	9.66	-1424.49	-10138	-0.0000609	0.0005615	0.0035	1.381		6630.16	6630.16	4.65		Si
SLV 5	12.17	1746.32	-3390	-0.0000663	0.0005615	0.0035	1.381		2342.73	2342.73	1.34		Si
SLV 6	9.66	-1637.53	-10224	-0.0000648	0.0005615	0.0035	1.381		6676.17	6676.17	4.08		Si
SLV 6	12.17	2029.73	-2917	-0.0012083	0.0005615	0.0035	1.1048		2040.97	2040.97	1.01		Si
SLV 4	9.66	-1622.46	-4719	-0.0000459	0.0005615	0.0035	1.381		3542.91	3542.91	2.18		Si
SLV 4	12.17	1504.72	286	-0.0226278	0.0005615	0.0035	1.1048		0	0	0		No
SLV 1	9.66	-1841.32	-6823	-0.0000551	0.0005615	0.0035	1.381		4796.06	4796.06	2.6		Si
SLV 1	12.17	1955.6	-438	-0.0224344	0.0005615	0.0035	1.1048		405.73	405.73	0.21		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	9.66	-409.15	-9856	-8299	-1304	1.381	1.381	-20032	9615	3984	28547	12406	3522	15928	No	12.22	Si
SLU 78	12.17	-98.43	-6597	-5555	943	1.381	1.381	-13409	8732	3618	28547	12406	3522	15928	No	16.89	Si
SLU 83	9.66	-489.9	-9729	-8193	-1336	1.381	1.381	-19775	9581	3970	28547	12406	3522	15928	No	11.92	Si
SLU 83	12.17	-145.5	-6459	-5440	988	1.381	1.381	-13129	8695	3602	28547	12406	3522	15928	No	16.12	Si
SLU 82	9.66	-504.83	-9581	-8068	-1367	1.381	1.381	-19474	9541	3953	28547	12406	3522	15928	No	11.65	Si
SLU 82	12.17	-146.64	-6315	-5318	953	1.381	1.381	-12836	8656	3586	28547	12406	3522	15928	No	16.71	Si
SLU 81	9.66	-490.08	-9550	-8042	-1299	1.381	1.381	-19411	9533	3949	28547	12406	3522	15928	No	12.26	Si
SLU 81	12.17	-161.72	-6294	-5300	990	1.381	1.381	-12792	8650	3584	28547	12406	3522	15928	No	16.08	Si
SLU 84	9.66	-504.64	-9760	-8219	-1403	1.381	1.381	-19838	9590	3973	28547	12406	3522	15928	No	11.35	Si
SLU 84	12.17	-130.41	-6481	-5458	950	1.381	1.381	-13173	8701	3605	28547	12406	3522	15928	No	16.76	Si
SLU 40	9.66	-509.27	-8016	-6750	-1319	1.381	1.381	-16293	9117	3777	28547	12406	3522	15928	No	12.07	Si
SLU 40	12.17	-97.11	-5298	-4461	712	1.381	1.381	-10768	8380	3472	28547	12406	3522	15928	No	22.36	Si
SLU 42	9.66	-509.08	-8195	-6901	-1356	1.381	1.381	-16658	9165	3797	28547	12406	3522	15928	No	11.75	Si
SLU 42	12.17	-80.89	-5464	-4601	710	1.381	1.381	-11105	8425	3491	28547	12406	3522	15928	No	22.44	Si
SLU 80	9.66	-405.26	-9743	-8205	-1277	1.381	1.381	-19803	9585	3971	28547	12406	3522	15928	No	12.48	Si
SLU 80	12.17	-107.95	-6501	-5474	951	1.381	1.381	-13213	8706	3607	28547	12406	3522	15928	No	16.76	Si
SLU 76	9.66	-415.28	-9584	-8071	-1285	1.381	1.381	-19481	9542	3953	28547	12406	3522	15928	No	12.4	Si
SLU 76	12.17	-114.12	-6349	-5347	928	1.381	1.381	-12905	8665	3590	28547	12406	3522	15928	No	17.16	Si
SLU 41	9.66	-494.34	-8164	-6875	-1289	1.381	1.381	-16594	9157	3794	28547	12406	3522	15928	No	12.36	Si
SLU 41	12.17	-95.97	-5442	-4583	747	1.381	1.381	-11062	8419	3488	28547	12406	3522	15928	No	21.31	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 12	9.66	1083.6	-3375	-2842	4222	1.381	1.1082	-6859	11788	3919	28547	18609	3522	22131		5.24	Si
SLV 12	12.17	-1986.54	-5451	-4590	5084	1.381	0.9782	-15760	13569	3982	28547	18609	3522	22131		4.35	Si
SLV 15	9.66	1816.84	-6561	-5525	4179	1.381	1.2408	-13336	13084	4870	28547	18609	3522	22131		5.3	Si
SLV 15	12.17	-2616.78	-9105	-7667	6200	1.381	1.2093	-21364	14689	5329	28547	18609	3522	22131		3.57	Si
SLV 5	9.66	-1424.49	-10138	-8537	-5488	1.381	1.381	-20606	14538	6023	28547	18609	3522	22131		4.03	Si
SLV 5	12.17	1746.32	-3390	-2855	-3541	1.381	0.5261	-6891	11795	2756	28547	18609	3522	22131		6.25	Si
SLV 11	9.66	1296.64	-3288	-2769	4671	1.381	0.8885	-6683	11753	3133	28547	18609	3522	22131		4.74	Si
SLV 11	12.17	-2269.95	-5924	-4988	5553	1.381	0.9219	-18193	14056	3887	28547	18609	3522	22131		3.99	Si
SLV 1	9.66	-1841.32	-6823	-5746	-4778	1.381	1.2619	-15277	13472	5100	28547	18609	3522	22131		4.63	Si
SLV 1	12.17	1955.6	-438	-369	-3960	1.1048	0	0	0	0	28547	14887	2817	17705		4.47	Si
SLV 16	9.66	1500.42	-6690	-5633	3512	1.381	1.381	-13597	13136	5442	28547	18609	3522	22131		6.3	Si
SLV 16	12.17	-2195.83	-8403	-7076	5503	1.381	1.2875	-18476	14112	5451	28547	18609	3522	22131		4.02	Si
SLV 13	9.66	1281.56	-8794	-7405	1716	1.381	1.381	-17874	13991	5797	28547	18609	3522	22131		12.9	Si
SLV 13	12.17	-1744.94	-9127	-7686	4207	1.381	1.381	-18551	14127	5853	28547	18609	3522	22131		5.26	Si
SLV 2	9.66	-2157.74	-6951	-5854	-5445	1.381	1.1403	-17256	13868	4744	28547	18609	3522	22131		4.06	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	12.17	2376.55	264	222	-4658	1.1048	0	0	0	0	28547	14887	2817	17705		3.8	Si
SLV 10	9.66	-700.67	-10816	-9108	-3988	1.381	1.381	-21984	14813	6137	28547	18609	3522	22131		5.55	Si
SLV 10	12.17	919.57	-5524	-4652	-1560	1.381	1.381	-11228	12662	5246	28547	18609	3522	22131		14.18	Si
SLV 6	9.66	-1637.53	-10224	-8610	-5937	1.381	1.381	-20782	14573	6038	28547	18609	3522	22131		3.73	Si
SLV 6	12.17	2029.73	-2917	-2457	-4010	1.1048	0	0	0	0	28547	14887	2817	17705		4.41	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.915 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 4	179667	0.47	0	-97	97.53	0	0	No, e>t/2
SLV 3	179667	0.47	1661	-688	97.53	102.12	1.05	Si
SLV 2	179667	0.47	2583	-1070	97.53	157.78	1.62	Si
SLV 1	179667	0.47	4009	-1661	97.53	242.59	2.49	Si
SLV 8	179667	0.47	4791	-1985	97.53	288.38	2.96	Si
SLV 7	179667	0.47	5751	-2383	97.53	343.93	3.53	Si
SLV 12	179667	0.47	10843	-4492	97.53	626.01	6.42	Si
SLV 11	179667	0.47	11803	-4890	97.53	676.83	6.94	Si
SLV 6	179667	0.47	12616	-5227	97.53	719.24	7.37	Si
SLV 5	179667	0.47	13576	-5625	97.53	768.68	7.88	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.915 Wa = 0.05 Ta = 0.0351

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-9127	-8794	-66	0.83	1075.9	0.96	12.56485	4.87302	Si
SLV 15	-9105	-6561	-56	0.832	1073.7	0.959	12.60613	4.87302	Si
SLV 14	-8425	-8922	-58	0.888	1004.5	0.957	13.48814	4.87302	Si
SLV 16	-8403	-6690	-49	0.891	1002.3	0.957	13.53486	4.87302	Si
SLV 9	-5997	-10729	-54	1.179	757.9	0.945	18.13236	4.53155	Si
SLV 11	-5924	-3288	-22	1.195	750.5	0.944	18.39816	4.53155	Si
SLV 10	-5524	-10816	-49	1.261	710	0.942	19.46937	4.53155	Si
SLV 12	-5451	-3375	-16	1.28	702.6	0.941	19.77149	4.53155	Si
SLV 5	-3390	-10138	-36	1.857	494.6	0.922	29.28126	4.53155	Si
SLV 7	-3317	-2697	-3	1.896	487.3	0.921	29.9179	4.53155	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	10.314	SLU 40	Si
V_SLU	11.349	SLU 84	Si
PF_SLV	0	SLV 2	No
V_SLV	3.569	SLV 15	Si
PFFP_SLV	0	SLV 4	No
R_SLV	2.578	SLV 13	Si

Maschio 191

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.013	-3.359	-11.013	-0.354	L6	Z medio 1093 cm	3.005	0.3	2.311	1.072	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 41	8.62	516.68	-26581	-0.0000485	0.0003743	0.0035	3.005	28371.44	31513.67	31513.67	60.99	No	Si
SLU 41	9.69	2651.62	-22158	-0.0000479	0.0003743	0.0035	3.005	25254.71	27604.3	27604.3	10.41	No	Si
SLU 84	8.62	849.42	-31417	-0.0000591	0.0003743	0.0035	3.005	31046	35994.76	35994.76	42.38	No	Si
SLU 84	9.69	2932.86	-26301	-0.0000569	0.0003743	0.0035	3.005	28193.28	31261.31	31261.31	10.66	No	Si
SLU 21	8.62	418.22	-23405	-0.0000422	0.0003743	0.0035	3.005	26198.33	28687.14	28687.14	68.59	No	Si
SLU 21	9.69	2276.3	-19435	-0.0000415	0.0003743	0.0035	3.005	23018.07	24917.5	24917.5	10.95	No	Si
SLU 81	8.62	799.45	-30660	-0.0000575	0.0003743	0.0035	3.005	30678.12	35285.74	35285.74	44.14	No	Si
SLU 81	9.69	2846.06	-25562	-0.0000551	0.0003743	0.0035	3.005	27710.37	30598.48	30598.48	10.75	No	Si
SLU 20	8.62	441.93	-23287	-0.0000421	0.0003743	0.0035	3.005	26111.6	28584.43	28584.43	64.68	No	Si
SLU 20	9.69	2269.28	-19327	-0.0000413	0.0003743	0.0035	3.005	22923.72	24787.38	24787.38	10.92	No	Si
SLU 82	8.62	775.73	-30778	-0.0000576	0.0003743	0.0035	3.005	30736.49	35396.31	35396.31	45.63	No	Si
SLU 82	9.69	2853.09	-25671	-0.0000554	0.0003743	0.0035	3.005	27782.53	30695.81	30695.81	10.76	No	Si
SLU 39	8.62	443	-25942	-0.0000471	0.0003743	0.0035	3.005	27960.76	30938.49	30938.49	69.84	No	Si
SLU 39	9.69	2571.85	-21527	-0.0000464	0.0003743	0.0035	3.005	24758.47	27062.3	27062.3	10.52	No	Si
SLU 83	8.62	873.13	-31299	-0.000059	0.0003743	0.0035	3.005	30990.09	35888.35	35888.35	41.1	No	Si
SLU 83	9.69	2925.83	-26192	-0.0000567	0.0003743	0.0035	3.005	28123.36	31163.48	31163.48	10.65	No	Si
SLU 40	8.62	419.28	-26059	-0.0000472	0.0003743	0.0035	3.005	28037.28	31043.93	31043.93	74.04	No	Si
SLU 40	9.69	2578.87	-21636	-0.0000467	0.0003743	0.0035	3.005	24844.98	27155.71	27155.71	10.53	No	Si
SLU 42	8.62	492.97	-26698	-0.0000487	0.0003743	0.0035	3.005	28445.5	31619.9	31619.9	64.14	No	Si
SLU 42	9.69	2658.65	-22266	-0.0000481	0.0003743	0.0035	3.005	25338.98	27698.04	27698.04	10.42	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 7	8.62	2855.99	-16385	-0.0000372	0.0005615	0.0035	3.005		22592.82	22592.82	7.91		Si
SLD 7	9.69	1713.51	-12975	-0.0000274	0.0005615	0.0035	3.005		18537.91	18537.91	10.82		Si
SLD 8	8.62	2826.5	-16440	-0.0000372	0.0005615	0.0035	3.005		22653.25	22653.25	8.01		Si
SLD 8	9.69	1745.96	-12953	-0.0000275	0.0005615	0.0035	3.005		18508.94	18508.94	10.6		Si
SLD 12	8.62	3065.91	-17582	-0.0000401	0.0005615	0.0035	3.005		23911.27	23911.27	7.8		Si
SLD 12	9.69	1763.49	-14409	-0.0000301	0.0005615	0.0035	3.005		20375.13	20375.13	11.55		Si
SLV 15	8.62	3485.76	-22337	-0.00005	0.0005615	0.0035	3.005		29242.14	29242.14	8.39		Si
SLV 15	9.69	1719.48	-20440	-0.0000405	0.0005615	0.0035	3.005		27097.19	27097.19	15.76		Si
SLV 4	8.62	1514.78	-13629	-0.0000279	0.0005615	0.0035	3.005		19380.62	19380.62	12.79		Si
SLV 4	9.69	1699.34	-9008	-0.0000206	0.0005615	0.0035	3.005		13289.95	13289.95	7.82		Si
SLV 8	8.62	5419.91	-9525	-0.0000341	0.0005615	0.0035	3.005		13987.54	13987.54	2.58		Si
SLV 8	9.69	1918.04	-5593	-0.0000155	0.0005615	0.0035	3.005		8579.81	8579.81	4.47		Si
SLV 11	8.62	6050.44	-12064	-0.0000405	0.0005615	0.0035	3.005		17354.46	17354.46	2.87		Si
SLV 11	9.69	1880.93	-9053	-0.0000213	0.0005615	0.0035	3.005		13350.59	13350.59	7.1		Si
SLD 11	8.62	3095.41	-17527	-0.0000401	0.0005615	0.0035	3.005		23850.43	23850.43	7.71		Si
SLD 11	9.69	1731.04	-14431	-0.00003	0.0005615	0.0035	3.005		20403.65	20403.65	11.79		Si
SLV 12	8.62	5979.68	-12196	-0.0000405	0.0005615	0.0035	3.005		17526.77	17526.77	2.93		Si
SLV 12	9.69	1958.77	-8999	-0.0000214	0.0005615	0.0035	3.005		13277.87	13277.87	6.78		Si
SLV 7	8.62	5490.67	-9393	-0.0000342	0.0005615	0.0035	3.005		13809.73	13809.73	2.52		Si
SLV 7	9.69	1840.19	-5647	-0.0000154	0.0005615	0.0035	3.005		8655.57	8655.57	4.7		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 62	8.62	798.38	-28006	-23584	509	3.005	3.005	-26161	10433	13773	26168	26995	7663	34658	No	68.1	Si
SLU 62	9.69	2543.49	-23361	-19673	1258	3.005	3.005	-21822	9854	12209	26168	26995	7663	34658	No	27.56	Si
SLU 48	8.62	1797.95	-25829	-21751	804	3.005	3.005	-24128	10161	13040	26168	26995	7663	34658	No	43.11	Si
SLU 48	9.69	1815.62	-22317	-18793	1205	3.005	3.005	-20846	9724	11857	26168	26995	7663	34658	No	28.75	Si
SLU 61	8.62	700.98	-27484	-23145	480	3.005	3.005	-25673	10368	13597	26168	26995	7663	34658	No	72.21	Si
SLU 61	9.69	2470.75	-22840	-19234	1188	3.005	3.005	-21335	9789	12033	26168	26995	7663	34658	No	29.17	Si
SLU 56	8.62	1164.21	-28039	-23612	498	3.005	3.005	-26192	10437	13784	26168	26995	7663	34658	No	69.57	Si
SLU 56	9.69	2402.57	-23725	-19979	1166	3.005	3.005	-22162	9899	12331	26168	26995	7663	34658	No	29.73	Si
SLU 53	8.62	1090.53	-27400	-23074	576	3.005	3.005	-25595	10357	13569	26168	26995	7663	34658	No	60.14	Si
SLU 53	9.69	2322.8	-23095	-19448	1221	3.005	3.005	-21573	9821	12119	26168	26995	7663	34658	No	28.37	Si
SLU 45	8.62	1724.27	-25190	-21213	882	3.005	3.005	-23531	10082	12825	26168	26995	7663	34658	No	39.3	Si
SLU 45	9.69	1735.85	-21686	-18262	1261	3.005	3.005	-20258	9645	11644	26168	26995	7663	34658	No	27.49	Si
SLU 50	8.62	1777.41	-25488	-21464	868	3.005	3.005	-23809	10119	12925	26168	26995	7663	34658	No	39.95	Si
SLU 50	9.69	1784.77	-21980	-18509	1259	3.005	3.005	-20531	9682	11743	26168	26995	7663	34658	No	27.54	Si
SLU 60	8.62	724.7	-27367	-23046	587	3.005	3.005	-25564	10353	13558	26168	26995	7663	34658	No	59.04	Si
SLU 60	9.69	2463.72	-22731	-19142	1313	3.005	3.005	-21234	9776	11996	26168	26995	7663	34658	No	26.39	Si
SLU 58	8.62	1143.67	-27698	-23324	562	3.005	3.005	-25873	10394	13669	26168	26995	7663	34658	No	61.68	Si
SLU 58	9.69	2371.71	-23388	-19695	1219	3.005	3.005	-21847	9857	12218	26168	26995	7663	34658	No	28.43	Si
SLU 43	8.62	1630.04	-24210	-20388	1024	3.005	3.005	-22615	9960	12494	26168	26995	7663	34658	No	33.85	Si
SLU 43	9.69	1625.23	-20719	-17448	1370	3.005	3.005	-19354	9525	11319	26168	26995	7663	34658	No	25.3	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	8.62	5419.91	-9525	-8021	18346	3.005	2.8004	-8897	12196	10246	26168	40492	7663	36414		1.98	Si
SLV 8	9.69	1918.04	-5593	-4710	17347	3.005	3.005	-5225	11462	10333	26168	40492	7663	36500		2.1	Si
SLV 11	8.62	6050.44	-12064	-10159	16093	3.005	3.0029	-11269	12671	11415	26168	40492	7663	37582		2.34	Si
SLV 11	9.69	1880.93	-9053	-7623	15040	3.005	3.005	-8456	12108	10915	26168	40492	7663	37083		2.47	Si
SLV 5	8.62	-3751.92	-29932	-25206	-15182	3.005	3.005	-27960	16009	16592	26168	40492	7663	42759		2.82	Si
SLV 5	9.69	1297.13	-26792	-22562	-13341	3.005	3.005	-25027	15422	15534	26168	40492	7663	41702		3.13	Si
SLV 10	8.62	-3262.91	-32736	-27567	-17137	3.005	3.005	-30579	16250	17536	26168	40492	7663	43704		2.55	Si
SLV 10	9.69	1415.71	-30144	-25385	-15347	3.005	3.005	-28158	16048	16663	26168	40492	7663	42831		2.79	Si
SLV 9	8.62	-3192.16	-32604	-27456	-17286	3.005	3.005	-30456	16250	17491	26168	40492	7663	43659		2.53	Si
SLV 9	9.69	1337.86	-30198	-25430	-15498	3.005	3.005	-28208	16058	16681	26168	40492	7663	42849		2.76	Si
SLV 3	8.62	1619.87	-13433	-11312	8933	3.005	3.005	-12548	12926	11653	26168	40492	7663	37821		4.23	Si
SLV 3	9.69	1583.71	-9087	-7653	8987	3.005	3.005	-8489	12114	10921	26168	40492	7663	37089		4.13	Si
SLV 6	8.62	-3822.68	-30064	-25317	-15034	3.005	3.005	-28084	16033	16636	26168	40492	7663	42804		2.85	Si
SLV 6	9.69	1374.98	-26739	-22517	-13191	3.005	3.005	-24977	15412	15516	26168	40492	7663	41684		3.16	Si
SLV 12	8.62	5979.68	-12196	-10270	16242	3.005	3.005	-11393	12695	11445	26168	40492	7663	37612		2.32	Si
SLV 12	9.69	1958.77	-8999	-7578	15191	3.005	3.005	-8406	12098	10906	26168	40492	7663	37074		2.44	Si
SLV 4	8.62	1514.78	-13629	-11477	9153	3.005	3.005	-12731	12963	11686	26168	40492	7663	37854		4.14	Si
SLV 4	9.69	1699.34	-9008	-7586	9211	3.005	3.005	-8415	12100	10908	26168	40492	7663	37075		4.03	Si
SLV 7	8.62	5490.67	-9393	-7910	18197	3.005	2.7538	-8774	12171	10055	26168	40492	7663	36223		1.99	Si
SLV 7	9.69	1840.19	-5647	-4755	17196	3.005	3.005	-5275	11472	10342	26168	40492	7663	36509		2.12	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 9.156 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.43	9670	-8717	165.79	1224.79	7.39	Si
SLV 8	179667	0.43	9757	-8796	165.79	1235.06	7.45	Si
SLV 11	179667	0.43	12727	-11473	165.79	1577.53	9.51	Si
SLV 12	179667	0.43	12814	-11551	165.79	1587.33	9.57	Si
SLV 3	179667	0.43	13511	-12180	165.79	1665.37	10.04	Si
SLV 4	179667	0.43	13640	-12297	165.79	1679.75	10.13	Si
SLV 1	179667	0.43	19878	-17920	165.79	2338.14	14.1	Si
SLV 2	179667	0.43	20008	-18037	165.79	2351.07	14.18	Si
SLV 15	179667	0.43	23700	-21366	165.79	2707.5	16.33	Si
SLV 16	179667	0.43	23830	-21482	165.79	2719.55	16.4	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 9.156 Wa = 0.05 Ta = 0.0297

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 9	-30198	-32604	-194	0.589	3367.9	0.973	8.79435	4.14921	Si
SLV 10	-30144	-32736	-194	0.59	3362.4	0.973	8.80804	4.14921	Si
SLV 13	-26783	-28499	-845	0.629	3020.2	0.97	9.41533	4.40959	Si
SLV 14	-26704	-28695	-845	0.63	3012.1	0.97	9.43994	4.40959	Si
SLV 5	-26792	-29932	321	0.647	3021.1	0.97	9.68671	4.14921	Si
SLV 6	-26739	-30064	321	0.648	3015.6	0.97	9.70325	4.14921	Si
SLV 15	-20440	-22337	-888	0.787	2374.5	0.963	11.87726	4.40959	Si
SLV 16	-20360	-22534	-887	0.79	2366.4	0.963	11.91817	4.40959	Si
SLV 1	-15431	-19595	872	0.997	1865.2	0.954	15.18793	4.40959	Si
SLV 2	-15352	-19791	872	1.001	1857.1	0.954	15.25564	4.40959	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	10.41	SLU 41	Si
V_SLU	25.302	SLU 43	Si
PF_SLV	2.515	SLV 7	Si
V_SLV	1.985	SLV 8	Si
PFFP_SLV	7.387	SLV 7	Si
R_SLV	2.12	SLV 9	Si

Maschio 193

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.013	-0.354	-11.013	1.046	L6	L7	1.4	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 59	8.62	1044.56	-13823	-0.0000706	0.0003743	0.0035	1.4	6548.11	7447.94	7447.94	7.13	No	Si
SLU 59	12.17	251.38	-8975	-0.0000372	0.0003743	0.0035	1.4	4963.89	5352.51	5352.51	21.29	No	Si
SLU 18	8.62	882.71	-10996	-0.0000558	0.0003743	0.0035	1.4	5717.9	6283.43	6283.43	7.12	No	Si
SLU 18	12.17	55.47	-6958	-0.0000263	0.0003743	0.0035	1.4	4078.09	4282.1	4282.1	77.2	No	Si
SLU 58	8.62	1053.62	-13779	-0.0000706	0.0003743	0.0035	1.4	6537.29	7429.43	7429.43	7.05	No	Si
SLU 58	12.17	236.77	-8915	-0.0000367	0.0003743	0.0035	1.4	4939.5	5319.87	5319.87	22.47	No	Si
SLU 62	8.62	1095.04	-13763	-0.0000712	0.0003743	0.0035	1.4	6533.16	7422.41	7422.41	6.78	No	Si
SLU 62	12.17	142.25	-8793	-0.0000347	0.0003743	0.0035	1.4	4889.57	5253.67	5253.67	36.93	No	Si
SLU 20	8.62	908.88	-11386	-0.0000579	0.0003743	0.0035	1.4	5847.86	6439.68	6439.68	7.09	No	Si
SLU 20	12.17	86.52	-7356	-0.0000283	0.0003743	0.0035	1.4	4263.64	4488.8	4488.8	51.88	No	Si
SLU 53	8.62	1034.9	-13575	-0.0000694	0.0003743	0.0035	1.4	6485.84	7343.09	7343.09	7.1	No	Si
SLU 53	12.17	219.09	-8704	-0.0000356	0.0003743	0.0035	1.4	4852.48	5205.03	5205.03	23.76	No	Si
SLU 60	8.62	1068.87	-13373	-0.0000691	0.0003743	0.0035	1.4	6433.52	7257.98	7257.98	6.79	No	Si
SLU 60	12.17	111.19	-8395	-0.0000327	0.0003743	0.0035	1.4	4722.77	5038.35	5038.35	45.31	No	Si
SLU 61	8.62	1059.81	-13417	-0.0000691	0.0003743	0.0035	1.4	6444.93	7276.32	7276.32	6.87	No	Si
SLU 61	12.17	125.8	-8455	-0.0000331	0.0003743	0.0035	1.4	4748.18	5070.59	5070.59	40.31	No	Si
SLU 56	8.62	1061.06	-13965	-0.0000715	0.0003743	0.0035	1.4	6582.91	7508.35	7508.35	7.08	No	Si
SLU 56	12.17	250.15	-9102	-0.0000377	0.0003743	0.0035	1.4	5015.26	5421.93	5421.93	21.67	No	Si
SLU 63	8.62	1085.98	-13806	-0.0000713	0.0003743	0.0035	1.4	6544.01	7440.92	7440.92	6.85	No	Si
SLU 63	12.17	156.85	-8853	-0.0000352	0.0003743	0.0035	1.4	4914.2	5286.22	5286.22	33.7	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	8.62	2724.11	-8452	-0.0000774	0.0005615	0.0035	1.4		5357.95	5357.95	1.97		Si
SLV 7	12.17	-1076.56	-1620	-0.0001022	0.0005615	0.0035	1.12		1600.36	1600.36	1.49		Si
SLV 2	8.62	1621.61	-10911	-0.000066	0.0005615	0.0035	1.4		6622.43	6622.43	4.08		Si
SLV 2	12.17	648.91	-7265	-0.0000363	0.0005615	0.0035	1.4		4747.69	4747.69	7.32		Si
SLV 1	8.62	1604.6	-10876	-0.0000655	0.0005615	0.0035	1.4		6603.74	6603.74	4.12		Si
SLV 1	12.17	642.29	-7212	-0.000036	0.0005615	0.0035	1.4		4718.47	4718.47	7.35		Si
SLD 7	8.62	1527.08	-9666	-0.0000595	0.0005615	0.0035	1.4		5977.02	5977.02	3.91		Si
SLD 7	12.17	-285.57	-4574	-0.0000207	0.0005615	0.0035	1.4		3503.38	3503.38	12.27		Si
SLV 12	8.62	1906.08	-8566	-0.0000613	0.0005615	0.0035	1.4		5415.88	5415.88	2.84		Si
SLV 12	12.17	-1074.71	-2075	-0.000038	0.0005615	0.0035	1.12		1902.22	1902.22	1.77		Si
SLV 4	8.62	2583.66	-9741	-0.0000775	0.0005615	0.0035	1.4		6015.94	6015.94	2.33		Si
SLV 4	12.17	-143.5	-4454	-0.0000181	0.0005615	0.0035	1.4		3429.1	3429.1	23.9		Si
SLD 8	8.62	1531.86	-9676	-0.0000596	0.0005615	0.0035	1.4		5982.18	5982.18	3.91		Si
SLD 8	12.17	-283.71	-4589	-0.0000207	0.0005615	0.0035	1.4		3512.51	3512.51	12.38		Si
SLV 3	8.62	2566.65	-9706	-0.000077	0.0005615	0.0035	1.4		5997.53	5997.53	2.34		Si
SLV 3	12.17	-150.12	-4401	-0.000018	0.0005615	0.0035	1.4		3396.46	3396.46	22.62		Si
SLV 8	8.62	2735.56	-8476	-0.0000777	0.0005615	0.0035	1.4		5370.16	5370.16	1.96		Si
SLV 8	12.17	-1072.1	-1655	-0.0000868	0.0005615	0.0035	1.12		1623.99	1623.99	1.51		Si
SLV 11	8.62	1894.63	-8542	-0.000061	0.0005615	0.0035	1.4		5403.66	5403.66	2.85		Si
SLV 11	12.17	-1079.17	-2039	-0.0000398	0.0005615	0.0035	1.12		1878.81	1878.81	1.74		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	8.62	1058.09	-15220	-12817	942	1.4	1.4	-30516	10833	4766	40441	12577	3570	16147	No	17.14	Si
SLU 75	12.17	304.82	-9854	-8298	-2732	1.4	1.4	-19757	9579	4023	40441	12577	3570	16147	No	5.91	Si
SLU 76	8.62	1044.6	-15063	-12685	916	1.4	1.4	-30202	10833	4730	40441	12577	3570	16147	No	17.64	Si
SLU 76	12.17	301.19	-9707	-8174	-2717	1.4	1.4	-19462	9539	4007	40441	12577	3570	16147	No	5.94	Si
SLU 74	8.62	1067.14	-15176	-12780	992	1.4	1.4	-30428	10833	4756	40441	12577	3570	16147	No	16.28	Si
SLU 74	12.17	290.22	-9794	-8248	-2659	1.4	1.4	-19637	9563	4016	40441	12577	3570	16147	No	6.07	Si
SLU 80	8.62	1076.81	-15424	-12988	957	1.4	1.4	-30925	10833	4811	40441	12577	3570	16147	No	16.88	Si
SLU 80	12.17	322.51	-10065	-8476	-2769	1.4	1.4	-20181	9635	4047	40441	12577	3570	16147	No	5.83	Si
SLU 70	8.62	926.54	-14739	-12412	885	1.4	1.4	-29552	10833	4658	40441	12577	3570	16147	No	18.25	Si
SLU 70	12.17	483.98	-9607	-8090	-2672	1.4	1.4	-19262	9513	3995	40441	12577	3570	16147	No	6.04	Si
SLU 78	8.62	1084.26	-15609	-13145	950	1.4	1.4	-31297	10833	4853	40441	12577	3570	16147	No	16.99	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	12.17	335.88	-10252	-8634	-2832	1.4	1.4	-20556	9685	4068	40441	12577	3570	16147	No	5.7	Si
SLU 83	8.62	1127.29	-15364	-12938	1026	1.4	1.4	-30804	10833	4798	40441	12577	3570	16147	No	15.74	Si
SLU 83	12.17	213.38	-9884	-8323	-2665	1.4	1.4	-19817	9587	4026	40441	12577	3570	16147	No	6.06	Si
SLU 79	8.62	1085.86	-15380	-12952	1006	1.4	1.4	-30837	10833	4802	40441	12577	3570	16147	No	16.05	Si
SLU 79	12.17	307.9	-10006	-8426	-2696	1.4	1.4	-20061	9619	4040	40441	12577	3570	16147	No	5.99	Si
SLU 84	8.62	1118.23	-15407	-12975	977	1.4	1.4	-30892	10833	4808	40441	12577	3570	16147	No	16.53	Si
SLU 84	12.17	227.98	-9944	-8374	-2738	1.4	1.4	-19937	9603	4033	40441	12577	3570	16147	No	5.9	Si
SLU 77	8.62	1093.31	-15566	-13108	1000	1.4	1.4	-31209	10833	4843	40441	12577	3570	16147	No	16.15	Si
SLU 77	12.17	321.28	-10193	-8583	-2759	1.4	1.4	-20436	9669	4061	40441	12577	3570	16147	No	5.85	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	8.62	-482.74	-12352	-10401	-5360	1.4	1.4	-24765	15370	6455	40441	18865	3570	22435		4.19	Si
SLV 5	12.17	1564.8	-10989	-9254	-7874	1.4	1.4	-22033	14823	6226	40441	18865	3570	22435		2.85	Si
SLV 10	8.62	-1300.76	-12466	-10498	-6226	1.4	1.4	-24995	15416	6475	40441	18865	3570	22435		3.6	Si
SLV 10	12.17	1566.65	-11443	-9637	-9610	1.4	1.4	-22944	15005	6302	40441	18865	3570	22435		2.33	Si
SLV 6	8.62	-471.29	-12376	-10422	-5324	1.4	1.4	-24814	15379	6459	40441	18865	3570	22435		4.21	Si
SLV 6	12.17	1569.26	-11024	-9284	-7821	1.4	1.4	-22104	14837	6232	40441	18865	3570	22435		2.87	Si
SLV 12	8.62	1906.08	-8566	-7213	6910	1.4	1.4	-17175	13852	5818	40441	18865	3570	22435		3.25	Si
SLV 12	12.17	-1074.71	-2075	-1747	4466	1.12	0.546	0	0	0	40441	15092	2856	17948		4.02	Si
SLV 9	8.62	-1312.21	-12442	-10477	-6261	1.4	1.4	-24946	15406	6471	40441	18865	3570	22435		3.58	Si
SLV 9	12.17	1562.19	-11408	-9607	-9663	1.4	1.4	-22873	14991	6296	40441	18865	3570	22435		2.32	Si
SLV 8	8.62	2735.56	-8476	-7137	7812	1.4	1.1318	-16994	13815	4691	40441	18865	3570	22435		2.87	Si
SLV 8	12.17	-1072.1	-1655	-1394	6255	1.12	0.1572	0	0	0	40441	15092	2856	17948		2.87	Si
SLV 13	8.62	-1160.31	-11176	-9412	-2724	1.4	1.4	-22409	14898	6257	40441	18865	3570	22435		8.24	Si
SLV 13	12.17	633.59	-8609	-7250	-6835	1.4	1.4	-17262	13869	5825	40441	18865	3570	22435		3.28	Si
SLV 7	8.62	2724.11	-8452	-7117	7776	1.4	1.1331	-16946	13806	4693	40441	18865	3570	22435		2.88	Si
SLV 7	12.17	-1076.56	-1620	-1364	6202	1.12	0.1064	0	0	0	40441	15092	2856	17948		2.89	Si
SLV 11	8.62	1894.63	-8542	-7193	6875	1.4	1.4	-17127	13842	5814	40441	18865	3570	22435		3.26	Si
SLV 11	12.17	-1079.17	-2039	-1717	4413	1.12	0.5124	0	0	0	40441	15092	2856	17948		4.07	Si
SLV 14	8.62	-1143.31	-11212	-9442	-2671	1.4	1.4	-22480	14913	6263	40441	18865	3570	22435		8.4	Si
SLV 14	12.17	640.21	-8662	-7294	-6757	1.4	1.4	-17367	13890	5834	40441	18865	3570	22435		3.32	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.46	7510	-3154	192.97	449.89	2.33	Si
SLV 8	179667	0.46	7573	-3181	192.97	453.45	2.35	Si
SLV 3	179667	0.46	10459	-4393	192.97	613.77	3.18	Si
SLV 4	179667	0.46	10552	-4432	192.97	618.84	3.21	Si
SLV 11	179667	0.46	12069	-5069	192.97	700.27	3.63	Si
SLV 12	179667	0.46	12132	-5095	192.97	703.6	3.65	Si
SLV 1	179667	0.46	17558	-7374	192.97	978.96	5.07	Si
SLV 2	179667	0.46	17651	-7413	192.97	983.48	5.1	Si
SLV 15	179667	0.46	25655	-10775	192.97	1344.74	6.97	Si
SLV 16	179667	0.46	25748	-10814	192.97	1348.63	6.99	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-11443	-12466	228	0.644	1375.5	0.955	9.79842	5.26078	Si
SLV 9	-11408	-12442	227	0.646	1371.9	0.955	9.82538	5.26078	Si
SLV 14	-8662	-11212	575	0.776	1093.1	0.945	11.94033	6.14217	Si
SLV 6	-11024	-12376	-126	0.673	1332.9	0.954	10.24798	5.26078	Si
SLV 5	-10989	-12352	-126	0.674	1329.3	0.954	10.27638	5.26078	Si
SLV 13	-8609	-11176	575	0.78	1087.7	0.945	12.00384	6.14217	Si
SLV 2	-7265	-10911	-602	0.893	951.5	0.938	13.82647	6.14217	Si
SLV 1	-7212	-10876	-602	0.898	946.2	0.938	13.91097	6.14217	Si
SLV 16	-5851	-10042	520	1.071	808.7	0.929	16.74681	6.14217	Si
SLV 15	-5799	-10006	520	1.079	803.4	0.929	16.87336	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	6.778	SLU 62	Si
V_SLU	5.701	SLU 78	Si
PF_SLV	1.487	SLV 7	Si
V_SLV	2.322	SLV 9	Si
PFFP_SLV	2.331	SLV 7	Si
R_SLV	1.863	SLV 10	Si

Maschio 195

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-9.728	3.421	-9.728	6.501	L6	L7	3.08	0.16	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 81	8.62	-4698.87	-8709	-0.0000464	0.0004492	0.0035	3.08	11471.52	17464.24	17464.24	3.72	No	Si
SLU 81	12.17	75.63	-4138	-0.0000108	0.0004492	0.0035	3.08	5934.73	7078.78	7078.78	93.6	No	Si
SLU 39	8.62	-4197.89	-6926	-0.0000393	0.0004492	0.0035	3.08	9438.69	15081.75	15081.75	3.59	No	Si
SLU 39	12.17	60	-3300	-0.0000086	0.0004492	0.0035	3.08	4803.28	5876.68	5876.68	97.94	No	Si
SLU 84	8.62	-4717.06	-8709	-0.0000465	0.0004492	0.0035	3.08	11471.52	17464.24	17464.24	3.7	No	Si
SLU 84	12.17	137.26	-4138	-0.0000112	0.0004492	0.0035	3.08	5934.73	7078.78	7078.78	51.57	No	Si
SLU 41	8.62	-4259.34	-6926	-0.0000397	0.0004492	0.0035	3.08	9438.69	15081.75	15081.75	3.54	No	Si
SLU 41	12.17	83.93	-3300	-0.0000087	0.0004492	0.0035	3.08	4803.28	5876.68	5876.68	70.02	No	Si
SLU 83	8.62	-4760.32	-8709	-0.0000468	0.0004492	0.0035	3.08	11471.52	17464.24	17464.24	3.67	No	Si
SLU 83	12.17	99.56	-4138	-0.000011	0.0004492	0.0035	3.08	5934.73	7078.78	7078.78	71.1	No	Si
SLU 40	8.62	-4154.63	-6926	-0.0000391	0.0004492	0.0035	3.08	9438.69	15081.75	15081.75	3.63	No	Si
SLU 40	12.17	97.7	-3300	-0.0000088	0.0004492	0.0035	3.08	4803.28	5876.68	5876.68	60.15	No	Si
SLU 32	8.62	-4043.05	-6926	-0.0000384	0.0004492	0.0035	3.08	9438.69	15081.75	15081.75	3.73	No	Si
SLU 32	12.17	86.21	-3300	-0.0000088	0.0004492	0.0035	3.08	4803.28	5876.68	5876.68	68.17	No	Si
SLU 35	8.62	-4104.5	-6926	-0.0000388	0.0004492	0.0035	3.08	9438.69	15081.75	15081.75	3.67	No	Si
SLU 35	12.17	110.14	-3300	-0.0000089	0.0004492	0.0035	3.08	4803.28	5876.68	5876.68	53.36	No	Si
SLU 42	8.62	-4216.08	-6926	-0.0000394	0.0004492	0.0035	3.08	9438.69	15081.75	15081.75	3.58	No	Si
SLU 42	12.17	121.63	-3300	-0.0000089	0.0004492	0.0035	3.08	4803.28	5876.68	5876.68	48.32	No	Si
SLU 36	8.62	-4061.25	-6926	-0.0000385	0.0004492	0.0035	3.08	9438.69	15081.75	15081.75	3.71	No	Si
SLU 36	12.17	147.84	-3300	-0.0000091	0.0004492	0.0035	3.08	4803.28	5876.68	5876.68	39.75	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	8.62	209.17	-6841	-0.0000184	0.0006738	0.0035	3.08		10978.81	10978.81	52.49		Si
SLV 6	12.17	3161.11	-3132	-0.0000309	0.0006738	0.0035	3.08		5672.59	5672.59	1.79		Si
SLV 10	8.62	-362.95	-6843	-0.0000191	0.0006738	0.0035	3.08		15084.62	15084.62	41.56		Si
SLV 10	12.17	3033.97	-3132	-0.0000286	0.0006738	0.0035	3.08		5672.5	5672.5	1.87		Si
SLV 5	8.62	308.1	-6841	-0.0000189	0.0006738	0.0035	3.08		10978.81	10978.81	35.63		Si
SLV 5	12.17	3035.64	-3132	-0.0000287	0.0006738	0.0035	3.08		5672.59	5672.59	1.87		Si
SLV 16	8.62	-4791.98	-6529	-0.0000426	0.0006738	0.0035	3.08		14655.14	14655.14	3.06		Si
SLV 16	12.17	-946.32	-3131	-0.0000126	0.0006738	0.0035	3.08		9832.4	9832.4	10.39		Si
SLV 9	8.62	-264.01	-6843	-0.0000187	0.0006738	0.0035	3.08		15084.62	15084.62	57.14		Si
SLV 9	12.17	2908.5	-3132	-0.0000267	0.0006738	0.0035	3.08		5672.5	5672.5	1.95		Si
SLV 7	8.62	-5441.98	-6353	-0.0000491	0.0006738	0.0035	3.08		14414.73	14414.73	2.65		Si
SLV 7	12.17	-2906.53	-3131	-0.0000267	0.0006738	0.0035	2.464		9832.17	9832.17	3.38		Si
SLV 8	8.62	-5540.92	-6353	-0.0000502	0.0006738	0.0035	2.464		14414.73	14414.73	2.6		Si
SLV 8	12.17	-2781.06	-3131	-0.000025	0.0006738	0.0035	2.464		9832.17	9832.17	3.54		Si
SLV 12	8.62	-6113.04	-6356	-0.0000582	0.0006738	0.0035	2.464		14418.01	14418.01	2.36		Si
SLV 12	12.17	-2908.2	-3131	-0.0000267	0.0006738	0.0035	2.464		9832.08	9832.08	3.38		Si
SLV 15	8.62	-4645.03	-6529	-0.0000414	0.0006738	0.0035	3.08		14655.14	14655.14	3.16		Si
SLV 15	12.17	-1132.68	-3131	-0.0000135	0.0006738	0.0035	3.08		9832.4	9832.4	8.68		Si
SLV 11	8.62	-6014.1	-6356	-0.0000566	0.0006738	0.0035	2.464		14418.01	14418.01	2.4		Si
SLV 11	12.17	-3033.67	-3131	-0.0000286	0.0006738	0.0035	2.464		9832.08	9832.08	3.24		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	8.62	-4605.48	-8709	-5113	-1333	3.08	3.0335	-10376	9717	4716	115546	17710	15708	33418	No	25.07	Si
SLU 77	12.17	125.77	-4138	-2430	-1333	3.08	3.08	-4930	8991	4431	115546	17710	15708	33418	No	25.07	Si
SLU 80	8.62	-4487.44	-8709	-5113	-1311	3.08	3.0741	-10376	9717	4779	115546	17710	15708	33418	No	25.5	Si
SLU 80	12.17	165.28	-4138	-2430	-1311	3.08	3.08	-4930	8991	4431	115546	17710	15708	33418	No	25.5	Si
SLU 74	8.62	-4544.04	-8709	-5113	-1309	3.08	3.0546	-10376	9717	4749	115546	17710	15708	33418	No	25.54	Si
SLU 74	12.17	101.84	-4138	-2430	-1309	3.08	3.08	-4930	8991	4431	115546	17710	15708	33418	No	25.54	Si
SLU 82	8.62	-4655.61	-8709	-5113	-1343	3.08	3.0162	-10376	9717	4689	115546	17710	15708	33418	No	24.88	Si
SLU 82	12.17	113.33	-4138	-2430	-1343	3.08	3.08	-4930	8991	4431	115546	17710	15708	33418	No	24.88	Si
SLU 79	8.62	-4530.7	-8709	-5113	-1312	3.08	3.0592	-10376	9717	4756	115546	17710	15708	33418	No	25.47	Si
SLU 79	12.17	127.58	-4138	-2430	-1312	3.08	3.08	-4930	8991	4431	115546	17710	15708	33418	No	25.47	Si
SLU 84	8.62	-4717.06	-8709	-5113	-1367	3.08	2.995	-10376	9717	4656	115546	17710	15708	33418	No	24.44	Si
SLU 84	12.17	137.26	-4138	-2430	-1367	3.08	3.08	-4930	8991	4431	115546	17710	15708	33418	No	24.44	Si
SLU 75	8.62	-4500.78	-8709	-5113	-1307	3.08	3.0695	-10376	9717	4772	115546	17710	15708	33418	No	25.57	Si
SLU 75	12.17	139.54	-4138	-2430	-1307	3.08	3.08	-4930	8991	4431	115546	17710	15708	33418	No	25.57	Si
SLU 81	8.62	-4698.87	-8709	-5113	-1345	3.08	3.0013	-10376	9717	4666	115546	17710	15708	33418	No	24.85	Si
SLU 81	12.17	75.63	-4138	-2430	-1345	3.08	3.08	-4930	8991	4431	115546	17710	15708	33418	No	24.85	Si
SLU 83	8.62	-4760.32	-8709	-5113	-1369	3.08	2.9801	-10376	9717	4633	115546	17710	15708	33418	No	24.41	Si
SLU 83	12.17	99.56	-4138	-2430	-1369	3.08	3.08	-4930	8991	4431	115546	17710	15708	33418	No	24.41	Si
SLU 78	8.62	-4562.23	-8709	-5113	-1331	3.08	3.0484	-10376	9717	4739	115546	17710	15708	33418	No	25.1	Si
SLU 78	12.17	163.47	-4138	-2430	-1331	3.08	3.08	-4930	8991	4431	115546	17710	15708	33418	No	25.1	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	8.62	-3066.95	-6675	-3919	-1156	3.08	3.08	-7953	14091	6944	115546	26565	15708	42273		36.56	Si
SLV 14	12.17	836.33	-3131	-1839	-971	3.08	3.08	-3731	13246	6528	115546	26565	15708	42273		43.55	Si
SLV 7	8.62	-5441.98	-6353	-3730	-535	3.08	2.0502	-11417	14784	4999	115546	26565	15708	42273		78.99	Si
SLV 7	12.17	-2906.53	-3131	-1838	-1166	2.464	1.835	0	0	0	115546	21252	12566	33818		28.99	Si
SLV 16	8.62	-4791.98	-6529	-3834	-1033	3.08	2.4181	-9949	14490	5606	115546	26565	15708	42273		40.91	Si
SLV 16	12.17	-946.32	-3131	-1838	-1227	3.08	3.08	-3731	13246	6528	115546	26565	15708	42273		34.45	Si
SLV 13	8.62	-2920.01	-6675	-3919	-1062	3.08	3.08	-7953	14091	6944	115546	26565	15708	42273		39.79	Si
SLV 13	12.17	649.97	-3131	-1839	-877	3.08	3.08	-3731	13246	6528	115546	26565	15708	42273		48.21	Si
SLV 10	8.62	-362.95	-6843	-4018	-1136	3.08	3.08	-8153	14131	6964	115546	26565	15708	42273		37.22	Si
SLV 10	12.17	3033.97	-3132	-1839	-505	3.08	1.7136	-3731	13246	4343	115546	26565	15708	42273		83.77	Si
SLV 15	8.62	-4645.03	-6529	-3834	-939	3.08	2.4856	-9679	14436	5741	115546	26565	15708	42273		45	Si
SLV 15	12.17	-1132.68	-3131	-1838	-1133	3.08	3.08	-3731	13246	6528	115546	26565	15708	42273		37.3	Si
SLV 8	8.62	-5540.92	-6353	-3730	-598	2.464	2.0035	0	0	0	115546	21252	12566	33818		56.51	Si
SLV 8	12.17	-2781.06	-3131	-1838	-1230	2.464	1.9552	0	0	0	115546	21252	12566	33818		27.5	Si
SLV 9	8.62	-264.01	-6843	-4018	-1073	3.08	3.08	-8153	14131	6964	115546	26565	15708	42273		39.41	Si
SLV 9	12.17	2908.5	-3132	-1839	-441	3.08	1.8338	-3731	13246	4343	115546	26565	15708	42273		95.77	Si
SLV 12	8.62	-6113.04	-6356	-3732	-726	2.464	1.7345	0	0	0	115546	21252	12566	33818		46.59	Si
SLV 12	12.17	-2908.2	-3131	-1838	-1360	2.464	1.8333	0	0	0	115546	21252	12566	33818		24.87	Si
SLV 11	8.62	-6014.1	-6356	-3732	-663	2.464	1.7812	0	0	0	115546	21252	12566	33818		51.04	Si
SLV 11	12.17	-3033.67	-3131	-1838	-1296	2.464	1.7131	0	0	0	115546	21252	12566	33818		26.09	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 10.395 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 8	-5004	0.46	237.73	378.17	701.75	539.96	2.27	Si
SLV 7	-5004	0.46	237.73	378.17	701.75	539.96	2.27	Si
SLV 12	-5005	0.46	237.73	378.21	701.81	540.01	2.27	Si
SLV 11	-5005	0.46	237.73	378.21	701.81	540.01	2.27	Si
SLV 4	-5028	0.46	237.73	379.86	704.03	541.94	2.28	Si
SLV 3	-5028	0.46	237.73	379.86	704.03	541.94	2.28	Si
SLV 16	-5030	0.46	237.73	380	704.23	542.11	2.28	Si
SLV 15	-5030	0.46	237.73	380	704.23	542.11	2.28	Si
SLV 2	-5049	0.46	237.73	381.35	706.04	543.7	2.29	Si
SLV 1	-5049	0.46	237.73	381.35	706.04	543.7	2.29	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.03 Ta = 0.1315

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 2	-3132	-6667	-563	3.587	576.1	0.9	57.9274	9.86888	Si
SLV 1	-3132	-6667	-563	3.587	576.1	0.9	57.9274	9.86888	Si
SLV 15	-3131	-6529	563	3.587	576	0.9	57.93334	9.86888	Si
SLV 16	-3131	-6529	563	3.587	576	0.9	57.93335	9.86888	Si
SLV 13	-3131	-6675	559	3.588	576.1	0.9	57.94636	9.86888	Si
SLV 14	-3131	-6675	559	3.588	576.1	0.9	57.94636	9.86888	Si
SLV 4	-3131	-6521	-559	3.588	576.1	0.9	57.94689	9.86888	Si
SLV 3	-3131	-6521	-559	3.588	576.1	0.9	57.9469	9.86888	Si
SLV 6	-3132	-6841	-176	3.669	576.1	0.9	59.25322	7.20764	Si
SLV 5	-3132	-6841	-176	3.669	576.1	0.9	59.25323	7.20764	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.541	SLU 41	Si
V_SLU	24.411	SLU 83	Si
PF_SLV	1.794	SLV 6	Si
V_SLV	24.874	SLV 12	Si

Stato limite	Coeff.s.	Comb.	Verifica
PFFP_SLV	2.271	SLV 8	Si
R_SLV	5.87	SLV 2	Si

Maschio 199

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-9.448	-3.359	-11.013	-3.359	L6	L7	1.565	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 83	8.62	943.33	-11239	-0.0000492	0.0004492	0.0035	1.565	7071.64	7554.16	7554.16	8.01	No	Si
SLU 83	10.72	-2144.47	-12063	-0.000068	0.0004492	0.0035	1.565	7454.57	8626.03	8626.03	4.02	No	Si
SLU 81	8.62	934.93	-10995	-0.0000482	0.0004492	0.0035	1.565	6954.74	7402.61	7402.61	7.92	No	Si
SLU 81	10.72	-2103.74	-11765	-0.0000664	0.0004492	0.0035	1.565	7318.01	8459.23	8459.23	4.02	No	Si
SLU 34	8.62	871.88	-9162	-0.000041	0.0004492	0.0035	1.565	6024.19	6283.95	6283.95	7.21	No	Si
SLU 34	10.72	-1842.35	-10118	-0.0000569	0.0004492	0.0035	1.565	6520.91	7524.87	7524.87	4.08	No	Si
SLU 31	8.62	863.47	-8918	-0.00004	0.0004492	0.0035	1.565	5893.46	6137.72	6137.72	7.11	No	Si
SLU 31	10.72	-1801.62	-9819	-0.0000553	0.0004492	0.0035	1.565	6368.5	7350.74	7350.74	4.08	No	Si
SLU 39	8.62	843.6	-9067	-0.0000403	0.0004492	0.0035	1.565	5973.79	6227.28	6227.28	7.38	No	Si
SLU 39	10.72	-1859.64	-9975	-0.0000567	0.0004492	0.0035	1.565	6448.34	7441.46	7441.46	4	No	Si
SLU 41	8.62	852	-9311	-0.0000413	0.0004492	0.0035	1.565	6103.52	6373.9	6373.9	7.48	No	Si
SLU 41	10.72	-1900.37	-10274	-0.0000583	0.0004492	0.0035	1.565	6599.47	7616.22	7616.22	4.01	No	Si
SLU 42	8.62	867.83	-9365	-0.0000416	0.0004492	0.0035	1.565	6131.74	6406.13	6406.13	7.38	No	Si
SLU 42	10.72	-1925.17	-10345	-0.0000588	0.0004492	0.0035	1.565	6635.11	7658.02	7658.02	3.98	No	Si
SLU 40	8.62	859.43	-9121	-0.0000407	0.0004492	0.0035	1.565	6002.37	6259.37	6259.37	7.28	No	Si
SLU 40	10.72	-1884.45	-10046	-0.0000572	0.0004492	0.0035	1.565	6484.55	7482.97	7482.97	3.97	No	Si
SLU 84	8.62	959.16	-11292	-0.0000496	0.0004492	0.0035	1.565	7097.05	7587.49	7587.49	7.91	No	Si
SLU 84	10.72	-2169.27	-12134	-0.0000686	0.0004492	0.0035	1.565	7486.73	8665.92	8665.92	3.99	No	Si
SLU 82	8.62	950.76	-11049	-0.0000486	0.0004492	0.0035	1.565	6980.51	7435.77	7435.77	7.82	No	Si
SLU 82	10.72	-2128.54	-11836	-0.000067	0.0004492	0.0035	1.565	7350.75	8498.85	8498.85	3.99	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	8.62	1031.93	-1010	-0.0016236	0.0006738	0.0035	1.252		923.02	923.02	0.89		No
SLV 7	10.72	-576.5	-2774	-0.0000157	0.0006738	0.0035	1.565		2753.19	2753.19	4.78		Si
SLV 3	8.62	4795.8	-1188	-0.0428303	0.0006738	0.0035	1.252		1059.07	1059.07	0.22		No
SLV 3	10.72	-4750.89	-9836	-0.0001151	0.0006738	0.0035	1.252		7640.52	7640.52	1.61		Si
SLV 12	8.62	-1278.93	-3765	-0.0000282	0.0006738	0.0035	1.565		3477.92	3477.92	2.72		Si
SLV 12	10.72	1479.6	-1051	-0.0067735	0.0006738	0.0035	1.252		953.99	953.99	0.64		No
SLV 16	8.62	-3954.64	-11186	-0.00009	0.0006738	0.0035	1.565		8502.68	8502.68	2.15		Si
SLV 16	10.72	3122.82	-2808	-0.0110714	0.0006738	0.0035	1.252		2276.16	2276.16	0.73		No
SLV 11	8.62	-1845.79	-4206	-0.0000409	0.0006738	0.0035	1.252		3796.14	3796.14	2.06		Si
SLV 11	10.72	2031.56	-357	-0.0194139	0.0006738	0.0035	1.252		422.28	422.28	0.21		No
SLV 2	8.62	6104.1	-3790	-0.0348258	0.0006738	0.0035	1.252		2997.77	2997.77	0.49		No
SLV 2	10.72	-6655.49	-14646	-0.0001614	0.0006738	0.0035	1.252		10604.94	10604.94	1.59		Si
SLV 8	8.62	1598.79	-569	-0.0123866	0.0006738	0.0035	1.252		585.72	585.72	0.37		No
SLV 8	10.72	-1128.46	-3468	-0.0000251	0.0006738	0.0035	1.565		3262.04	3262.04	2.89		Si
SLV 4	8.62	5637.75	-533	-0.0589509	0.0006738	0.0035	1.252		558.15	558.15	0.1		No
SLV 4	10.72	-5570.71	-10867	-0.0001437	0.0006738	0.0035	1.252		8304.56	8304.56	1.49		Si
SLV 15	8.62	-4796.6	-11841	-0.0001097	0.0006738	0.0035	1.565		8911.13	8911.13	1.86		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 15	10.72	3942.65	-1777	-0.0279171	0.0006738	0.0035	1.252		1504.91	1504.91	0.38		No
SLV 1	8.62	5262.15	-4445	-0.0210924	0.0006738	0.0035	1.252		3471.04	3471.04	0.66		No
SLV 1	10.72	-5835.67	-13616	-0.0001369	0.0006738	0.0035	1.252		9990.66	9990.66	1.71		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	8.62	953.16	-11384	-9586	1270	1.565	1.565	-20418	10833	5086	40441	16873	3991	20864	No	16.43	Si
SLU 77	10.72	-2112.88	-12259	-10324	3368	1.565	1.565	-21988	10833	5086	40441	16873	3991	20864	No	6.19	Si
SLU 79	8.62	945.22	-11244	-9469	1254	1.565	1.565	-20168	10833	5086	40441	16873	3991	20864	No	16.64	Si
SLU 79	10.72	-2085.83	-12087	-10179	3327	1.565	1.565	-21680	10833	5086	40441	16873	3991	20864	No	6.27	Si
SLU 67	8.62	945.41	-10636	-8957	1424	1.565	1.565	-19077	10833	5086	40441	16873	3991	20864	No	14.65	Si
SLU 67	10.72	-1865.12	-11392	-9593	3312	1.565	1.565	-20433	10833	5086	40441	16873	3991	20864	No	6.3	Si
SLU 69	8.62	937.98	-10827	-9117	1426	1.565	1.565	-19419	10833	5086	40441	16873	3991	20864	No	14.63	Si
SLU 69	10.72	-1881.04	-11619	-9785	3343	1.565	1.565	-20840	10833	5086	40441	16873	3991	20864	No	6.24	Si
SLU 80	8.62	961.05	-11298	-9514	1272	1.565	1.565	-20264	10833	5086	40441	16873	3991	20864	No	16.4	Si
SLU 80	10.72	-2110.64	-12158	-10239	3362	1.565	1.565	-21807	10833	5086	40441	16873	3991	20864	No	6.21	Si
SLU 78	8.62	968.99	-11437	-9631	1287	1.565	1.565	-20514	10833	5086	40441	16873	3991	20864	No	16.21	Si
SLU 78	10.72	-2137.69	-12330	-10383	3404	1.565	1.565	-22116	10833	5086	40441	16873	3991	20864	No	6.13	Si
SLU 72	8.62	945.87	-10741	-9045	1428	1.565	1.565	-19265	10833	5086	40441	16873	3991	20864	No	14.61	Si
SLU 72	10.72	-1878.8	-11519	-9700	3337	1.565	1.565	-20660	10833	5086	40441	16873	3991	20864	No	6.25	Si
SLU 76	8.62	963.21	-11089	-9339	1264	1.565	1.565	-19890	10833	5086	40441	16873	3991	20864	No	16.51	Si
SLU 76	10.72	-2086.45	-11907	-10027	3319	1.565	1.565	-21357	10833	5086	40441	16873	3991	20864	No	6.29	Si
SLU 70	8.62	953.81	-10880	-9162	1444	1.565	1.565	-19515	10833	5086	40441	16873	3991	20864	No	14.45	Si
SLU 70	10.72	-1905.85	-11690	-9845	3379	1.565	1.565	-20968	10833	5086	40441	16873	3991	20864	No	6.17	Si
SLU 75	8.62	960.59	-11193	-9426	1267	1.565	1.565	-20076	10833	5086	40441	16873	3991	20864	No	16.46	Si
SLU 75	10.72	-2096.96	-12032	-10132	3337	1.565	1.565	-21580	10833	5086	40441	16873	3991	20864	No	6.25	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	8.62	-3488.29	-14443	-12163	-6281	1.565	1.565	-25905	16250	7629	40441	25309	3991	29300		4.66	Si
SLV 14	10.72	2038.04	-6588	-5547	-3552	1.565	1.4194	-11815	14863	6329	40441	25309	3991	29300		8.25	Si
SLV 1	8.62	5262.15	-4445	-3743	8710	1.252	0	0	0	0	40441	20247	3193	23440		2.69	Si
SLV 1	10.72	-5835.67	-13616	-11466	9500	1.252	1.0617	0	0	0	40441	20247	3193	23440		2.47	Si
SLV 5	8.62	2586.44	-11866	-9993	3855	1.565	1.565	-21283	16250	7629	40441	25309	3991	29300		7.6	Si
SLV 5	10.72	-4192.44	-15373	-12946	6197	1.565	1.5294	-27573	16250	7456	40441	25309	3991	29300		4.73	Si
SLV 13	8.62	-4330.24	-15098	-12714	-7672	1.565	1.4871	-28857	16250	7250	40441	25309	3991	29300		3.82	Si
SLV 13	10.72	2857.86	-5557	-4679	-5007	1.565	0.8046	-9967	14493	3960	40441	25309	3991	29300		5.85	Si
SLV 4	8.62	5637.75	-533	-449	9542	1.252	0	0	0	0	40441	20247	3193	23440		2.46	Si
SLV 4	10.72	-5570.71	-10867	-9151	9638	1.252	0.8096	0	0	0	40441	20247	3193	23440		2.43	Si
SLV 2	8.62	6104.1	-3790	-3192	10101	1.252	0	0	0	0	40441	20247	3193	23440		2.32	Si
SLV 2	10.72	-6655.49	-14646	-12334	10954	1.252	0.9843	0	0	0	40441	20247	3193	23440		2.14	Si
SLV 6	8.62	3153.3	-11425	-9621	4791	1.565	1.5195	-20492	16250	7408	40441	25309	3991	29300		6.12	Si
SLV 6	10.72	-4744.41	-16067	-13530	7176	1.565	1.4617	-31281	16250	7126	40441	25309	3991	29300		4.08	Si
SLV 16	8.62	-3954.64	-11186	-9420	-6839	1.565	1.2869	-24651	16250	6274	40441	25309	3991	29300		4.28	Si
SLV 16	10.72	3122.82	-2808	-2365	-4869	1.252	0	0	0	0	40441	20247	3193	23440		4.81	Si
SLV 3	8.62	4795.8	-1188	-1001	8152	1.252	0	0	0	0	40441	20247	3193	23440		2.88	Si
SLV 3	10.72	-4750.89	-9836	-8283	8184	1.252	0.8985	0	0	0	40441	20247	3193	23440		2.86	Si
SLV 15	8.62	-4796.6	-11841	-9971	-8230	1.565	1.1323	-29730	16250	5520	40441	25309	3991	29300		3.56	Si
SLV 15	10.72	3942.65	-1777	-1497	-6323	1.252	0	0	0	0	40441	20247	3193	23440		3.71	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 11	215625	0.46	0	-1081	210.63	0	0	No, e>t/2
SLV 12	215625	0.46	3325	-1561	210.63	229.92	1.09	Si
SLV 7	215625	0.46	5249	-2464	210.63	359.06	1.7	Si
SLV 8	215625	0.46	6271	-2944	210.63	426.54	2.03	Si
SLV 15	215625	0.46	7900	-3709	210.63	532.38	2.53	Si
SLV 16	215625	0.46	9419	-4422	210.63	629.23	2.99	Si
SLV 13	215625	0.46	15857	-7445	210.63	1020.1	4.84	Si
SLV 14	215625	0.46	17375	-8158	210.63	1107.66	5.26	Si
SLV 3	215625	0.46	17720	-8320	210.63	1127.31	5.35	Si
SLV 4	215625	0.46	19239	-9033	210.63	1212.7	5.76	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-7941	-15098	-206	0.958	1045.5	0.937	14.85669	6.14217	Si
SLV 14	-7580	-14443	-206	0.995	1008.9	0.935	15.45351	6.14217	Si
SLV 15	-6740	-11841	18	1.115	924.1	0.931	17.40413	6.14217	Si
SLV 9	-7521	-15062	-402	0.979	1003	0.935	15.21655	5.26078	Si
SLV 16	-6379	-11186	18	1.164	887.6	0.928	18.21613	6.14217	Si
SLV 10	-7278	-14621	-402	1.005	978.4	0.934	15.64294	5.26078	Si
SLV 5	-6010	-11866	-346	1.175	850.5	0.926	18.44169	5.26078	Si
SLV 6	-5767	-11425	-346	1.213	826	0.924	19.07258	5.26078	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-3517	-4206	344	1.738	601.3	0.905	27.91099	5.26078	Si
SLV 1	-2906	-4445	-20	2.047	541.2	0.899	33.09621	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.971	SLU 40	Si
V_SLU	6.129	SLU 78	Si
PF_SLV	0.099	SLV 4	No
V_SLV	2.14	SLV 2	Si
PFFP_SLV	0	SLV 11	No
R_SLV	2.419	SLV 13	Si

Maschio 200

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.648	-3.359	-8.548	-3.359	L6	L7	0.9	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 65	8.62	787.9	-7102	-0.0000723	0.0004492	0.0035	0.9	2507.89	2703.04	2703.04	3.43	No	Si
SLU 65	10.72	-330.42	-4607	-0.0000386	0.0004492	0.0035	0.9	1783.63	2006.5	2006.5	6.07	No	Si
SLU 70	8.62	831.14	-7561	-0.000077	0.0004492	0.0035	0.9	2622.6	2860.06	2860.06	3.44	No	Si
SLU 70	10.72	-337.42	-5060	-0.0000416	0.0004492	0.0035	0.9	1927.7	2167.44	2167.44	6.42	No	Si
SLU 28	8.62	707.99	-6289	-0.0000638	0.0004492	0.0035	0.9	2290.59	2429.96	2429.96	3.43	No	Si
SLU 28	10.72	-303.32	-4246	-0.0000354	0.0004492	0.0035	0.9	1664.76	1875.38	1875.38	6.18	No	Si
SLU 23	8.62	664.75	-5830	-0.0000592	0.0004492	0.0035	0.9	2159.96	2278.8	2278.8	3.43	No	Si
SLU 23	10.72	-296.31	-3793	-0.0000325	0.0004492	0.0035	0.9	1510.64	1709.15	1709.15	5.77	No	Si
SLU 67	8.62	811.77	-7373	-0.000075	0.0004492	0.0035	0.9	2576.24	2795.41	2795.41	3.44	No	Si
SLU 67	10.72	-331.71	-4881	-0.0000403	0.0004492	0.0035	0.9	1871.47	2104.96	2104.96	6.35	No	Si
SLU 25	8.62	688.62	-6101	-0.0000619	0.0004492	0.0035	0.9	2237.7	2367.69	2367.69	3.44	No	Si
SLU 25	10.72	-297.61	-4067	-0.0000342	0.0004492	0.0035	0.9	1604.56	1809.95	1809.95	6.08	No	Si
SLU 30	8.62	695.52	-6175	-0.0000626	0.0004492	0.0035	0.9	2258.76	2392.3	2392.3	3.44	No	Si
SLU 30	10.72	-297.48	-4146	-0.0000346	0.0004492	0.0035	0.9	1631.2	1838.83	1838.83	6.18	No	Si
SLU 72	8.62	818.67	-7447	-0.0000758	0.0004492	0.0035	0.9	2594.71	2820.96	2820.96	3.45	No	Si
SLU 72	10.72	-331.58	-4960	-0.0000408	0.0004492	0.0035	0.9	1896.36	2132.44	2132.44	6.43	No	Si
SLU 68	8.62	807.28	-7290	-0.0000743	0.0004492	0.0035	0.9	2555.63	2767.2	2767.2	3.43	No	Si
SLU 68	10.72	-336.13	-4786	-0.0000399	0.0004492	0.0035	0.9	1841.19	2071.02	2071.02	6.16	No	Si
SLU 26	8.62	684.12	-6018	-0.0000612	0.0004492	0.0035	0.9	2214.24	2340.54	2340.54	3.42	No	Si
SLU 26	10.72	-302.03	-3972	-0.0000338	0.0004492	0.0035	0.9	1572.17	1775	1775	5.88	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	8.62	2102.2	-9793	-0.0001494	0.0006738	0.0035	0.9		3737.98	3737.98	1.78		Si
SLV 1	10.72	-2693.16	2162	0.5906913	0.0006738	0.0035	0.72		0	0	0		No
SLV 4	8.62	1897.13	-7803	-0.000134	0.0006738	0.0035	0.9		3084.34	3084.34	1.63		Si
SLV 4	10.72	-2508.66	4049	1.084376	0.0006738	0.0035	0.72		0	0	0		No
SLV 8	8.62	290.62	-1938	-0.0000213	0.0006738	0.0035	0.9		893.31	893.31	3.07		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 8	10.72	23.02	77	0.0198976	0.0006738	0.0035	0.72		0	0	0		No
SLV 12	8.62	-565.2	140	0.0276216	0.0006738	0.0035	0.72		0	0	0		No
SLV 12	10.72	1455.3	-3923	-0.000182	0.0006738	0.0035	0.9		1705.87	1705.87	1.17		Si
SLV 2	8.62	2379.49	-10634	-0.0001713	0.0006738	0.0035	0.9		4020.04	4020.04	1.69		Si
SLV 2	10.72	-3178.44	3294	0.8920553	0.0006738	0.0035	0.72		0	0	0		No
SLV 15	8.62	-1232.9	-35	-0.0072374	0.0006738	0.0035	0.72		168.64	168.64	0.14		No
SLV 15	10.72	2750.88	-10417	-0.0002096	0.0006738	0.0035	0.9		3947.03	3947.03	1.43		Si
SLV 11	8.62	-751.89	707	0.1920058	0.0006738	0.0035	0.72		0	0	0		No
SLV 11	10.72	1782.02	-4685	-0.0002601	0.0006738	0.0035	0.9		2004.13	2004.13	1.12		Si
SLD 2	8.62	1337.75	-7557	-0.0000959	0.0006738	0.0035	0.9		3004.9	3004.9	2.25		Si
SLD 2	10.72	-1470.39	-622	-0.0067315	0.0006738	0.0035	0.72		426.13	426.13	0.29		No
SLD 4	8.62	1146.83	-6433	-0.0000813	0.0006738	0.0035	0.9		2644.55	2644.55	2.31		Si
SLD 4	10.72	-1205.44	-318	-0.0058471	0.0006738	0.0035	0.72		293.29	293.29	0.24		No
SLV 3	8.62	1619.84	-6961	-0.0001122	0.0006738	0.0035	0.9		2812.97	2812.97	1.74		Si
SLV 3	10.72	-2023.37	2917	0.7829944	0.0006738	0.0035	0.72		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	8.62	834.85	-7678	-6465	1108	0.9	0.9	-23946	10833	2925	40441	9703	2295	11998	No	10.83	Si
SLU 75	10.72	-315.77	-5359	-4512	649	0.9	0.9	-16713	10562	2852	40441	9703	2295	11998	No	18.49	Si
SLU 77	8.62	842.25	-7819	-6584	1132	0.9	0.9	-24387	10833	2925	40441	9703	2295	11998	No	10.6	Si
SLU 77	10.72	-306.09	-5530	-4657	615	0.9	0.9	-17248	10633	2871	40441	9703	2295	11998	No	19.51	Si
SLU 83	8.62	820.3	-7648	-6440	1111	0.9	0.9	-23853	10833	2925	40441	9703	2295	11998	No	10.8	Si
SLU 83	10.72	-287.71	-5456	-4595	558	0.9	0.9	-17017	10602	2863	40441	9703	2295	11998	No	21.49	Si
SLU 82	8.62	812.9	-7507	-6321	1087	0.9	0.9	-23413	10833	2925	40441	9703	2295	11998	No	11.04	Si
SLU 82	10.72	-297.38	-5284	-4450	592	0.9	0.9	-16482	10531	2843	40441	9703	2295	11998	No	20.26	Si
SLU 84	8.62	832.27	-7695	-6480	1113	0.9	0.9	-24000	10833	2925	40441	9703	2295	11998	No	10.78	Si
SLU 84	10.72	-303.09	-5463	-4601	600	0.9	0.9	-17039	10605	2863	40441	9703	2295	11998	No	19.99	Si
SLU 78	8.62	854.22	-7866	-6624	1134	0.9	0.9	-24533	10833	2925	40441	9703	2295	11998	No	10.58	Si
SLU 78	10.72	-321.48	-5537	-4663	657	0.9	0.9	-17271	10636	2872	40441	9703	2295	11998	No	18.27	Si
SLU 74	8.62	822.88	-7631	-6426	1106	0.9	0.9	-23800	10833	2925	40441	9703	2295	11998	No	10.84	Si
SLU 74	10.72	-300.38	-5351	-4506	607	0.9	0.9	-16690	10559	2851	40441	9703	2295	11998	No	19.76	Si
SLU 80	8.62	841.75	-7752	-6528	1118	0.9	0.9	-24179	10833	2925	40441	9703	2295	11998	No	10.73	Si
SLU 80	10.72	-315.64	-5437	-4579	646	0.9	0.9	-16959	10594	2861	40441	9703	2295	11998	No	18.58	Si
SLU 79	8.62	829.78	-7705	-6489	1117	0.9	0.9	-24032	10833	2925	40441	9703	2295	11998	No	10.74	Si
SLU 79	10.72	-300.25	-5430	-4573	604	0.9	0.9	-16936	10591	2860	40441	9703	2295	11998	No	19.86	Si
SLU 76	8.62	830.36	-7595	-6396	1094	0.9	0.9	-23689	10833	2925	40441	9703	2295	11998	No	10.97	Si
SLU 76	10.72	-320.19	-5263	-4432	666	0.9	0.9	-16416	10522	2841	40441	9703	2295	11998	No	18.02	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	8.62	1898.48	-11376	-9580	1391	0.9	0.8494	-35482	16250	4141	40441	14555	2295	16850		12.11	Si
SLV 6	10.72	-2209.58	-2437	-2053	5941	0.72	0	0	0	0	40441	11644	1836	13480		2.27	Si
SLV 1	8.62	2102.2	-9793	-8246	1994	0.9	0.706	-30542	16250	3759	40441	14555	2295	16850		8.45	Si
SLV 1	10.72	-2693.16	2162	1821	7058	0.72	0	0	0	0	40441	11644	1836	13480		1.91	Si
SLV 5	8.62	1711.79	-10810	-9103	1267	0.9	0.8749	-33714	16250	4265	40441	14555	2295	16850		13.3	Si
SLV 5	10.72	-1882.86	-3200	-2695	5047	0.72	0	0	0	0	40441	11644	1836	13480		2.67	Si
SLV 16	8.62	-955.61	-877	-739	-458	0.72	0	0	0	0	40441	11644	1836	13480		29.45	Si
SLV 16	10.72	2265.59	-9285	-7819	-6131	0.9	0.618	-28959	16250	3645	40441	14555	2295	16850		2.75	Si
SLV 3	8.62	1619.84	-6961	-5862	1884	0.9	0.6519	-21711	16250	3178	40441	14555	2295	16850		8.94	Si
SLV 3	10.72	-2023.37	2917	2456	5177	0.72	0	0	0	0	40441	11644	1836	13480		2.6	Si
SLV 2	8.62	2379.49	-10634	-8955	2178	0.9	0.6787	-33168	16250	3948	40441	14555	2295	16850		7.74	Si
SLV 2	10.72	-3178.44	3294	2774	8386	0.72	0	0	0	0	40441	11644	1836	13480		1.61	Si
SLV 13	8.62	-750.54	-2867	-2414	-533	0.9	0.5646	-14329	15366	2603	40441	14555	2295	16850		31.61	Si
SLV 13	10.72	2081.09	-11172	-9408	-5578	0.9	0.7912	-34844	16250	4068	40441	14555	2295	16850		3.02	Si
SLV 4	8.62	1897.13	-7803	-6571	2069	0.9	0.6206	-24336	16250	3312	40441	14555	2295	16850		8.14	Si
SLV 4	10.72	-2508.66	4049	3410	6505	0.72	0	0	0	0	40441	11644	1836	13480		2.07	Si
SLV 15	8.62	-1232.9	-35	-30	-642	0.72	0	0	0	0	40441	11644	1836	13480		20.98	Si
SLV 15	10.72	2750.88	-10417	-8773	-7459	0.9	0.5578	-32491	16250	3899	40441	14555	2295	16850		2.26	Si
SLV 11	8.62	-751.89	707	595	145	0.72	0	0	0	0	40441	11644	1836	13480		93.28	Si
SLV 11	10.72	1782.02	-4685	-3946	-5014	0.9	0.209	-64917	16250	2612	40441	14555	2295	16850		3.36	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 1	215625	0.46	0	409	121.13	0	0	No, Trazione
SLV 8	215625	0.46	0	-12	121.13	0	0	No, e>t/2
SLV 2	215625	0.46	0	1265	121.13	0	0	No, Trazione
SLV 7	215625	0.46	0	-589	121.13	0	0	No, e>t/2
SLV 4	215625	0.46	0	2458	121.13	0	0	No, Trazione
SLV 3	215625	0.46	0	1602	121.13	0	0	No, Trazione
SLV 12	215625	0.46	11862	-3203	121.13	449.3	3.71	Si
SLV 11	215625	0.46	13996	-3779	121.13	523.56	4.32	Si
SLV 6	215625	0.46	14774	-3989	121.13	550.1	4.54	Si
SLV 5	215625	0.46	16908	-4565	121.13	621.61	5.13	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 2	-4037	-10634	-25	1.076	547.6	0.932	16.77967	6.14217	Si
SLV 1	-3826	-9793	-23	1.124	526.3	0.93	17.55404	6.14217	Si
SLV 6	-4343	-11376	-186	0.985	578.6	0.935	15.29888	5.26078	Si
SLV 5	-4201	-10810	-184	1.011	564.3	0.934	15.73693	5.26078	Si
SLV 10	-3946	-9299	-208	1.058	538.5	0.931	16.50672	5.26078	Si
SLV 4	-3347	-7803	91	1.23	478.1	0.925	19.33503	6.14217	Si
SLV 9	-3804	-8732	-206	1.089	524.1	0.93	17.02166	5.26078	Si
SLV 3	-3136	-6961	94	1.292	456.9	0.922	20.37054	6.14217	Si
SLV 14	-2712	-3709	-99	1.439	414.3	0.916	22.83179	6.14217	Si
SLV 13	-2501	-2867	-96	1.528	393.3	0.913	24.3171	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.421	SLU 26	Si
V_SLU	10.584	SLU 78	Si
PF_SLV	0	SLV 1	No
V_SLV	1.607	SLV 2	Si
PFFP_SLV	0	SLV 4	No
R_SLV	2.732	SLV 2	Si

Maschio 202

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-6.268	-3.359	-6.268	1.046	L6	L7	4.405	0.16	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 48	8.62	3934.36	-21709	-0.0000496	0.0004492	0.0035	4.405	35761.4	43578.73	43578.73	11.08	No	Si
SLU 48	12.17	1837.83	-12064	-0.0000261	0.0004492	0.0035	4.405	22848.18	26502.67	26502.67	14.42	No	Si
SLU 71	8.62	4258.02	-24188	-0.0000553	0.0004492	0.0035	4.405	38311.12	47491.95	47491.95	11.15	No	Si
SLU 71	12.17	1973.99	-13295	-0.0000288	0.0004492	0.0035	4.405	24761.12	28856.69	28856.69	14.62	No	Si
SLU 66	8.62	4176.71	-23921	-0.0000546	0.0004492	0.0035	4.405	38050.95	47069.43	47069.43	11.27	No	Si
SLU 66	12.17	1925.36	-13063	-0.0000282	0.0004492	0.0035	4.405	24407.51	28415.45	28415.45	14.76	No	Si
SLU 72	8.62	4244.62	-24229	-0.0000553	0.0004492	0.0035	4.405	38350.72	47556.78	47556.78	11.2	No	Si
SLU 72	12.17	2010.64	-13297	-0.0000288	0.0004492	0.0035	4.405	24764.28	28860.58	28860.58	14.35	No	Si
SLU 69	8.62	4310.61	-24520	-0.0000561	0.0004492	0.0035	4.405	38628.54	48015.71	48015.71	11.14	No	Si
SLU 69	12.17	2035.92	-13599	-0.0000295	0.0004492	0.0035	4.405	25222.75	29429.11	29429.11	14.45	No	Si
SLU 51	8.62	3868.38	-21419	-0.0000489	0.0004492	0.0035	4.405	35441.79	43119.8	43119.8	11.15	No	Si
SLU 51	12.17	1812.55	-11761	-0.0000255	0.0004492	0.0035	4.405	22365.92	25923.46	25923.46	14.3	No	Si
SLU 49	8.62	3920.96	-21751	-0.0000497	0.0004492	0.0035	4.405	35806.2	43643.56	43643.56	11.13	No	Si
SLU 49	12.17	1874.48	-12066	-0.0000262	0.0004492	0.0035	4.405	22851.46	26506.63	26506.63	14.14	No	Si
SLU 45	8.62	3800.46	-21110	-0.0000481	0.0004492	0.0035	4.405	35097.65	42632.44	42632.44	11.22	No	Si
SLU 45	12.17	1727.27	-11528	-0.0000249	0.0004492	0.0035	4.405	21990.82	25476.8	25476.8	14.75	No	Si
SLU 70	8.62	4297.21	-24561	-0.0000561	0.0004492	0.0035	4.405	38667.44	48080.54	48080.54	11.19	No	Si
SLU 70	12.17	2072.58	-13602	-0.0000296	0.0004492	0.0035	4.405	25225.87	29433	29433	14.2	No	Si
SLU 50	8.62	3881.78	-21378	-0.0000489	0.0004492	0.0035	4.405	35396.29	43054.96	43054.96	11.09	No	Si
SLU 50	12.17	1775.89	-11759	-0.0000254	0.0004492	0.0035	4.405	22362.61	25919.5	25919.5	14.6	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	8.62	3207.07	-17170	-0.0000387	0.0006738	0.0035	4.405		36724.24	36724.24	11.45		Si
SLV 1	12.17	3399.33	-7585	-0.0000217	0.0006738	0.0035	4.405		17882.72	17882.72	5.26		Si
SLV 12	8.62	7272.38	-12301	-0.0000398	0.0006738	0.0035	4.405		27336.94	27336.94	3.76		Si
SLV 12	12.17	-2209.62	-7877	-0.0000193	0.0006738	0.0035	4.405		27688.44	27688.44	12.53		Si
SLV 8	8.62	8215.61	-10967	-0.0000397	0.0006738	0.0035	4.405		24698.29	24698.29	3.01		Si
SLV 8	12.17	-1477.89	-6456	-0.000015	0.0006738	0.0035	4.405		24809.48	24809.48	16.79		Si
SLV 11	8.62	7320.76	-12286	-0.0000399	0.0006738	0.0035	4.405		27306.97	27306.97	3.73		Si
SLV 11	12.17	-2324.26	-7926	-0.0000197	0.0006738	0.0035	4.405		27785.55	27785.55	11.95		Si
SLV 4	8.62	5982.48	-13603	-0.000039	0.0006738	0.0035	4.405		29879.08	29879.08	4.99		Si
SLV 4	12.17	1646.84	-6255	-0.000015	0.0006738	0.0035	4.405		15158.51	15158.51	9.2		Si
SLV 3	8.62	6054.34	-13580	-0.0000391	0.0006738	0.0035	4.405		29835.29	29835.29	4.93		Si
SLV 3	12.17	1476.56	-6327	-0.0000147	0.0006738	0.0035	4.405		15307.35	15307.35	10.37		Si
SLV 5	8.62	-1226.92	-22918	-0.0000443	0.0006738	0.0035	4.405		56134.01	56134.01	45.75		Si
SLV 5	12.17	4816.69	-10700	-0.0000308	0.0006738	0.0035	4.405		24169.23	24169.23	5.02		Si
SLV 6	8.62	-1275.3	-22934	-0.0000445	0.0006738	0.0035	4.405		56160.73	56160.73	44.04		Si
SLV 6	12.17	4931.34	-10651	-0.000031	0.0006738	0.0035	4.405		24073.68	24073.68	4.88		Si
SLV 2	8.62	3135.21	-17193	-0.0000385	0.0006738	0.0035	4.405		36766.58	36766.58	11.73		Si
SLV 2	12.17	3569.61	-7513	-0.000022	0.0006738	0.0035	4.405		17736.19	17736.19	4.97		Si
SLV 7	8.62	8263.98	-10952	-0.0000397	0.0006738	0.0035	4.405		24668.32	24668.32	2.99		Si
SLV 7	12.17	-1592.53	-6504	-0.0000153	0.0006738	0.0035	4.405		24907.88	24907.88	15.64		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 58	8.62	4007.86	-23280	-13669	1371	4.405	4.405	-19394	10833	9539	115546	25329	22466	47794	No	34.87	Si
SLU 58	12.17	1771.41	-12543	-7365	1372	4.405	4.405	-10450	9727	7017	115546	25329	22466	47794	No	34.85	Si
SLU 46	8.62	3787.06	-21151	-12419	1282	4.405	4.405	-17621	10683	9039	115546	25329	22466	47794	No	37.27	Si
SLU 46	12.17	1763.92	-11530	-6770	1385	4.405	4.405	-9605	9614	6779	115546	25329	22466	47794	No	34.5	Si
SLU 43	8.62	3613.97	-20179	-11848	1455	4.405	4.405	-16811	10575	8811	115546	25329	22466	47794	No	32.85	Si
SLU 43	12.17	1554.76	-10687	-6275	1455	4.405	4.405	-8903	9520	6710	115546	25329	22466	47794	No	32.85	Si
SLU 56	8.62	4060.45	-23611	-13864	1355	4.405	4.405	-19670	10833	9617	115546	25329	22466	47794	No	35.26	Si
SLU 56	12.17	1833.35	-12848	-7544	1356	4.405	4.405	-10704	9760	7089	115546	25329	22466	47794	No	35.24	Si
SLU 49	8.62	3920.96	-21751	-12771	1293	4.405	4.405	-18120	10749	9180	115546	25329	22466	47794	No	36.96	Si
SLU 49	12.17	1874.48	-12066	-7084	1396	4.405	4.405	-10052	9674	6905	115546	25329	22466	47794	No	34.23	Si
SLU 48	8.62	3934.36	-21709	-12747	1461	4.405	4.405	-18086	10745	9170	115546	25329	22466	47794	No	32.71	Si
SLU 48	12.17	1837.83	-12064	-7083	1462	4.405	4.405	-10050	9673	6905	115546	25329	22466	47794	No	32.7	Si
SLU 51	8.62	3868.38	-21419	-12576	1308	4.405	4.405	-17844	10712	9102	115546	25329	22466	47794	No	36.53	Si
SLU 51	12.17	1812.55	-11761	-6906	1412	4.405	4.405	-9798	9640	6834	115546	25329	22466	47794	No	33.85	Si
SLU 50	8.62	3881.78	-21378	-12552	1476	4.405	4.405	-17809	10708	9092	115546	25329	22466	47794	No	32.37	Si
SLU 50	12.17	1775.89	-11759	-6904	1477	4.405	4.405	-9796	9639	6833	115546	25329	22466	47794	No	32.36	Si
SLU 47	8.62	3725.54	-20847	-12240	1185	4.405	4.405	-17367	10649	8967	115546	25329	22466	47794	No	40.32	Si
SLU 47	12.17	1726.42	-11226	-6592	1357	4.405	4.405	-9352	9580	6752	115546	25329	22466	47794	No	35.21	Si
SLU 45	8.62	3800.46	-21110	-12395	1450	4.405	4.405	-17586	10678	9029	115546	25329	22466	47794	No	32.95	Si
SLU 45	12.17	1727.27	-11528	-6768	1451	4.405	4.405	-9603	9614	6779	115546	25329	22466	47794	No	32.95	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 12	8.62	7272.38	-12301	-7223	18551	4.405	4.405	-10248	14550	10255	115546	37993	22466	60459		3.26	Si
SLV 12	12.17	-2209.62	-7877	-4625	15621	4.405	4.405	-6562	13812	9735	115546	37993	22466	60459		3.87	Si
SLV 10	8.62	-2218.53	-24268	-14249	-15731	4.405	4.405	-20217	16250	11807	115546	37993	22466	60459		3.84	Si
SLV 10	12.17	4199.61	-12073	-7088	-12801	4.405	4.405	-10057	14511	10228	115546	37993	22466	60459		4.72	Si
SLV 11	8.62	7320.76	-12286	-7214	18614	4.405	4.405	-10235	14547	10253	115546	37993	22466	60459		3.25	Si
SLV 11	12.17	-2324.26	-7926	-4654	15684	4.405	4.405	-6603	13821	9741	115546	37993	22466	60459		3.85	Si
SLD 11	8.62	4723.01	-15512	-9108	8052	4.405	4.405	-12923	15085	10632	115546	37993	22466	60459		7.51	Si
SLD 11	12.17	-151.57	-8776	-5153	6852	4.405	4.405	-7311	13962	9841	115546	37993	22466	60459		8.82	Si
SLV 6	8.62	-1275.3	-22934	-13466	-16602	4.405	4.405	-19106	16250	11493	115546	37993	22466	60459		3.64	Si
SLV 6	12.17	4931.34	-10651	-6254	-13672	4.405	4.405	-8874	14275	10061	115546	37993	22466	60459		4.42	Si
SLV 7	8.62	8263.98	-10952	-6431	17743	4.405	4.3438	-9124	14325	9956	115546	37993	22466	60459		3.41	Si
SLV 7	12.17	-1592.53	-6504	-3819	14813	4.405	4.405	-5419	13584	9574	115546	37993	22466	60459		4.08	Si
SLV 8	8.62	8215.61	-10967	-6439	17680	4.405	4.3602	-9137	14327	9995	115546	37993	22466	60459		3.42	Si
SLV 8	12.17	-1477.89	-6456	-3791	14751	4.405	4.405	-5378	13576	9568	115546	37993	22466	60459		4.1	Si
SLD 12	8.62	4702.84	-15519	-9112	8026	4.405	4.405	-12928	15086	10632	115546	37993	22466	60459		7.53	Si
SLD 12	12.17	-103.78	-8756	-5141	6826	4.405	4.405	-7294	13959	9838	115546	37993	22466	60459		8.86	Si
SLV 5	8.62	-1226.92	-22918	-13457	-16539	4.405	4.405	-19093	16250	11490	115546	37993	22466	60459		3.66	Si
SLV 5	12.17	4816.69	-10700	-6282	-13609	4.405	4.405	-8914	14283	10066	115546	37993	22466	60459		4.44	Si
SLV 9	8.62	-2170.15	-24253	-14240	-15668	4.405	4.405	-20204	16250	11803	115546	37993	22466	60459		3.86	Si
SLV 9	12.17	4084.97	-12121	-7117	-12739	4.405	4.405	-10098	14520	10233	115546	37993	22466	60459		4.75	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 10.395 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 4	-8812	0.46	340	656.89	1170.06	913.47	2.69	Si
SLV 3	-8892	0.46	340	662.41	1177.68	920.05	2.71	Si
SLV 8	-9812	0.46	340	725.33	1265	995.16	2.93	Si
SLV 7	-9866	0.46	340	728.98	1270.12	999.55	2.94	Si
SLV 2	-10613	0.46	340	779.26	1341.07	1060.16	3.12	Si
SLV 1	-10693	0.46	340	784.6	1348.67	1066.64	3.14	Si
SLV 12	-12458	0.46	340	900.51	1515.46	1207.99	3.55	Si
SLV 11	-12512	0.46	340	903.99	1520.53	1212.26	3.57	Si

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 6	-15813	0.46	340	1110.18	1828.48	1469.33	4.32	Si
SLV 5	-15867	0.46	340	1113.43	1833.41	1473.42	4.33	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.03 Ta = 0.1315

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-12322	-21617	640	1.68	1610	0.939	26.00865	9.86888	Si
SLV 14	-12250	-21640	640	1.688	1602.7	0.938	26.14212	9.86888	Si
SLV 15	-11064	-18027	522	1.845	1482.7	0.934	28.70336	9.86888	Si
SLV 16	-10992	-18050	522	1.855	1475.4	0.934	28.86518	9.86888	Si
SLV 9	-12121	-24253	370	1.722	1589.6	0.938	26.67701	7.20764	Si
SLV 10	-12073	-24268	370	1.728	1584.7	0.938	26.77038	7.20764	Si
SLV 1	-7585	-17170	-522	2.49	1132.4	0.919	39.37973	9.86888	Si
SLV 2	-7513	-17193	-523	2.508	1125.2	0.919	39.68298	9.86888	Si
SLV 5	-10700	-22918	22	1.935	1445.9	0.933	30.14477	7.20764	Si
SLV 6	-10651	-22934	22	1.942	1441.1	0.933	30.26233	7.20764	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	11.076	SLU 48	Si
V_SLU	32.359	SLU 50	Si
PF_SLV	2.985	SLV 7	Si
V_SLV	3.248	SLV 11	Si
PFFP_SLV	2.687	SLV 4	Si
R_SLV	2.635	SLV 13	Si

Maschio 203

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-5.158	1.046	-5.158	5.811	L6	L7	4.765	0.16	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 40	8.62	-3313.66	-22887	-0.0000457	0.0004492	0.0035	4.765	41131.91	60996.84	60996.84	18.41	No	Si
SLU 40	12.17	-426.29	-13190	-0.0000227	0.0004492	0.0035	4.765	26975.64	42144.6	42144.6	98.86	No	Si
SLU 44	8.62	-3130.7	-21372	-0.0000427	0.0004492	0.0035	4.765	39237.02	58215.39	58215.39	18.6	No	Si
SLU 44	12.17	-39.02	-12554	-0.0000208	0.0004492	0.0035	4.765	25879.91	40837.04	40837.04	1046.48	No	Si
SLU 60	8.62	-3559.07	-24095	-0.0000484	0.0004492	0.0035	4.765	42558.19	63213.92	63213.92	17.76	No	Si
SLU 60	12.17	-337.91	-13802	-0.0000236	0.0004492	0.0035	4.765	28010.58	43402.91	43402.91	128.45	No	Si
SLU 81	8.62	-3856.85	-27167	-0.0000546	0.0004492	0.0035	4.765	45850	68756.82	68756.82	17.83	No	Si
SLU 81	12.17	-471.1	-15645	-0.000027	0.0004492	0.0035	4.765	31014.48	47140.26	47140.26	100.06	No	Si
SLU 10	8.62	-2899.5	-18979	-0.000038	0.0004492	0.0035	4.765	36005.18	53629.71	53629.71	18.5	No	Si
SLU 10	12.17	-194.89	-10967	-0.0000185	0.0004492	0.0035	4.765	23052.68	37570.91	37570.91	192.78	No	Si
SLU 73	8.62	-3813.23	-26217	-0.0000528	0.0004492	0.0035	4.765	44883.32	67109.09	67109.09	17.6	No	Si
SLU 73	12.17	-321.67	-15234	-0.000026	0.0004492	0.0035	4.765	30359.21	46339.45	46339.45	144.06	No	Si
SLU 61	8.62	-3631.84	-23981	-0.0000484	0.0004492	0.0035	4.765	42426.3	63003.93	63003.93	17.35	No	Si
SLU 61	12.17	-286.68	-13770	-0.0000234	0.0004492	0.0035	4.765	27957	43337.2	43337.2	151.17	No	Si
SLU 52	8.62	-3515.45	-23145	-0.0000466	0.0004492	0.0035	4.765	41442.15	61469.37	61469.37	17.49	No	Si
SLU 52	12.17	-188.47	-13390	-0.0000225	0.0004492	0.0035	4.765	27316.51	42556.48	42556.48	225.79	No	Si
SLU 19	8.62	-3015.89	-19815	-0.0000397	0.0004492	0.0035	4.765	37167.46	55256.96	55256.96	18.32	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 19	12.17	-293.1	-11346	-0.0000193	0.0004492	0.0035	4.765	23740.2	38351.62	38351.62	130.85	No	Si
SLU 82	8.62	-3929.61	-27053	-0.0000545	0.0004492	0.0035	4.765	45736.09	68559.52	68559.52	17.45	No	Si
SLU 82	12.17	-419.87	-15613	-0.0000268	0.0004492	0.0035	4.765	30963.92	47078.09	47078.09	112.13	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 6	8.62	-6588.69	-12559	-0.0000344	0.0006738	0.0035	4.765		41220.43	41220.43	6.26		Si
SLD 6	12.17	1599.73	-8771	-0.0000177	0.0006738	0.0035	4.765		22188.43	22188.43	13.87		Si
SLD 9	8.62	-6533.83	-14014	-0.0000368	0.0006738	0.0035	4.765		44284.06	44284.06	6.78		Si
SLD 9	12.17	1445.86	-9542	-0.0000186	0.0006738	0.0035	4.765		23872.63	23872.63	16.51		Si
SLD 10	8.62	-6149.91	-14161	-0.0000362	0.0006738	0.0035	4.765		44594.23	44594.23	7.25		Si
SLD 10	12.17	1632.02	-9665	-0.0000192	0.0006738	0.0035	4.765		24141.7	24141.7	14.79		Si
SLV 5	8.62	-13509.02	-2944	-0.0002934	0.0006738	0.0035	3.812		20253.03	20253.03	1.5		Si
SLV 5	12.17	3841.15	-5246	-0.0000165	0.0006738	0.0035	4.765		14332.99	14332.99	3.73		Si
SLD 5	8.62	-6972.62	-12412	-0.000035	0.0006738	0.0035	4.765		40910.27	40910.27	5.87		Si
SLD 5	12.17	1413.56	-8648	-0.0000171	0.0006738	0.0035	4.765		21915.18	21915.18	15.5		Si
SLV 10	8.62	-11560.67	-7044	-0.0000498	0.0006738	0.0035	3.812		29381.48	29381.48	2.54		Si
SLV 10	12.17	4364.65	-7634	-0.0000215	0.0006738	0.0035	4.765		19671.38	19671.38	4.51		Si
SLV 6	8.62	-12587.98	-3297	-0.0002511	0.0006738	0.0035	3.812		21047.84	21047.84	1.67		Si
SLV 6	12.17	4287.75	-5542	-0.0000179	0.0006738	0.0035	4.765		14998.56	14998.56	3.5		Si
SLV 9	8.62	-12481.71	-6691	-0.0000665	0.0006738	0.0035	3.812		28603.71	28603.71	2.29		Si
SLV 9	12.17	3918.05	-7338	-0.0000201	0.0006738	0.0035	4.765		19015.83	19015.83	4.85		Si
SLV 1	8.62	-7968.59	-8138	-0.0000303	0.0006738	0.0035	4.765		31782.75	31782.75	3.99		Si
SLV 1	12.17	622.93	-5889	-0.0000109	0.0006738	0.0035	4.765		15780.16	15780.16	25.33		Si
SLV 2	8.62	-6600.58	-8662	-0.0000279	0.0006738	0.0035	4.765		32922.8	32922.8	4.99		Si
SLV 2	12.17	1286.27	-6329	-0.000013	0.0006738	0.0035	4.765		16768.73	16768.73	13.04		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 47	8.62	-2897.61	-22534	-13231	-2542	4.765	4.765	-17354	10647	9696	115546	27399	24301	51700	No	20.34	Si
SLU 47	12.17	414.86	-13760	-8079	-1179	4.765	4.765	-10597	9746	7636	115546	27399	24301	51700	No	43.87	Si
SLU 49	8.62	-2720.86	-24041	-14116	-2551	4.765	4.765	-18515	10802	10050	115546	27399	24301	51700	No	20.27	Si
SLU 49	12.17	620.26	-15172	-8908	-1059	4.765	4.765	-11684	9891	7967	115546	27399	24301	51700	No	48.83	Si
SLU 50	8.62	-2543.25	-23886	-14025	-2480	4.765	4.765	-18395	10786	10014	115546	27399	24301	51700	No	20.85	Si
SLU 50	12.17	783.36	-15018	-8818	-993	4.765	4.765	-11566	9875	7931	115546	27399	24301	51700	No	52.09	Si
SLU 51	8.62	-2616.01	-23771	-13958	-2650	4.765	4.765	-18307	10774	9987	115546	27399	24301	51700	No	19.51	Si
SLU 51	12.17	834.59	-14986	-8799	-1164	4.765	4.765	-11541	9872	7924	115546	27399	24301	51700	No	44.4	Si
SLU 46	8.62	-2953.95	-22879	-13434	-2330	4.765	4.765	-17620	10683	9778	115546	27399	24301	51700	No	22.19	Si
SLU 46	12.17	166.38	-13967	-8201	-959	4.765	4.765	-10756	9768	7684	115546	27399	24301	51700	No	53.93	Si
SLU 72	8.62	-2913.79	-26844	-15761	-2268	4.765	4.765	-20673	10833	10709	115546	27399	24301	51700	No	22.79	Si
SLU 72	12.17	701.4	-16830	-9882	-595	4.765	4.765	-12961	10061	8357	115546	27399	24301	51700	No	86.86	Si
SLU 59	8.62	-3000.77	-25544	-14998	-2230	4.765	4.765	-19673	10833	10403	115546	27399	24301	51700	No	23.18	Si
SLU 59	12.17	685.14	-15822	-9290	-648	4.765	4.765	-12185	9958	8120	115546	27399	24301	51700	No	79.78	Si
SLU 44	8.62	-3130.7	-21372	-12549	-2322	4.765	4.765	-16460	10528	9424	115546	27399	24301	51700	No	22.27	Si
SLU 44	12.17	-39.02	-12554	-7371	-1078	4.765	4.765	-9669	9622	7353	115546	27399	24301	51700	No	47.95	Si
SLU 48	8.62	-2648.1	-24155	-14183	-2381	4.765	4.765	-18603	10814	10077	115546	27399	24301	51700	No	21.71	Si
SLU 48	12.17	569.04	-15204	-8927	-887	4.765	4.765	-11709	9895	7975	115546	27399	24301	51700	No	58.28	Si
SLU 70	8.62	-3018.64	-27113	-15920	-2169	4.765	4.765	-20881	10833	10772	115546	27399	24301	51700	No	23.83	Si
SLU 70	12.17	487.07	-17015	-9991	-490	4.765	4.765	-13104	10081	8400	115546	27399	24301	51700	No	105.56	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	8.62	7304.74	-30872	-18126	17557	4.765	4.765	-23775	16250	13857	115546	41098	24301	65400		3.72	Si
SLV 8	12.17	-4341.2	-14562	-8550	17101	4.765	4.765	-11215	14743	11240	115546	41098	24301	65400		3.82	Si
SLV 9	8.62	-12481.71	-6691	-3929	-20036	3.812	1.5512	0	0	0	115546	32878	19441	52320		2.61	Si
SLV 9	12.17	3918.05	-7338	-4309	-17399	4.765	4.765	-5651	13630	10392	115546	41098	24301	65400		3.76	Si
SLV 5	8.62	-13509.02	-2944	-1729	-21534	3.812	0	0	0	0	115546	32878	19441	52320		2.43	Si
SLV 5	12.17	3841.15	-5246	-3080	-18426	4.765	4.765	-4040	13308	10146	115546	41098	24301	65400		3.55	Si
SLV 1	8.62	-7968.59	-8138	-4778	-9690	4.765	4.2098	-7116	13923	9378	115546	41098	24301	65400		6.75	Si
SLV 1	12.17	622.93	-5889	-3458	-7201	4.765	4.765	-4536	13407	10222	115546	41098	24301	65400		9.08	Si
SLV 11	8.62	7411.02	-34265	-20119	18904	4.765	4.765	-26389	16250	14654	115546	41098	24301	65400		3.46	Si
SLV 11	12.17	-4710.91	-16358	-9605	18110	4.765	4.765	-12598	15020	11451	115546	41098	24301	65400		3.61	Si
SLV 6	8.62	-12587.98	-3297	-1936	-21383	3.812	0	0	0	0	115546	32878	19441	52320		2.45	Si
SLV 6	12.17	4287.75	-5542	-3254	-18408	4.765	4.765	-4268	13354	10181	115546	41098	24301	65400		3.55	Si
SLV 7	8.62	6383.7	-30518	-17919	17406	4.765	4.765	-23503	16250	13774	115546	41098	24301	65400		3.76	Si
SLV 7	12.17	-4787.81	-14266	-8376	17083	4.765	4.765	-10987	14697	11205	115546	41098	24301	65400		3.83	Si
SLV 10	8.62	-11560.67	-7044	-4136	-19884	3.812	2.2241	0	0	0	115546	32878	19441	52320		2.63	Si
SLV 10	12.17	4364.65	-7634	-4482	-17381	4.765	4.765	-5879	13676	10426	115546	41098	24301	65400		3.76	Si
SLV 12	8.62	8332.05	-34619	-20327	19056	4.765	4.765	-26661	16250	14737	115546	41098	24301	65400		3.43	Si
SLV 12	12.17	-4264.3	-16654	-9779	18129	4.765	4.765	-12826	15065	11486	115546	41098	24301	65400		3.61	Si
SLV 2	8.62	-6600.58	-8662	-5086	-9465	4.765	4.765	-6671	13834	10547	115546	41098	24301	65400		6.91	Si
SLV 2	12.17	1286.27	-6329	-3716	-7173	4.765	4.765	-4874	13475	10273	115546	41098	24301	65400		9.12	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 10.395 Ta 0.13 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 5	-6247	0.46	367.78	477.43	952.41	714.92	1.94	Si
SLV 6	-6538	0.46	367.78	498.57	980.51	739.54	2.01	Si

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 9	-8046	0.46	367.78	606.63	1125.7	866.17	2.36	Si
SLV 10	-8337	0.46	367.78	627.17	1153.65	890.41	2.42	Si
SLV 1	-10049	0.46	367.78	746.13	1317.18	1031.65	2.81	Si
SLV 2	-10481	0.46	367.78	775.62	1358.23	1066.92	2.9	Si
SLV 3	-15168	0.46	367.78	1081.71	1800.17	1440.94	3.92	Si
SLV 4	-15600	0.46	367.78	1108.67	1840.17	1474.42	4.01	Si
SLV 13	-16046	0.46	367.78	1136.27	1881.26	1508.77	4.1	Si
SLV 14	-16478	0.46	367.78	1162.79	1921.1	1541.95	4.19	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.03 Ta = 0.1315

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 16	-16010	-29425	797	1.433	2013.3	0.946	22.02354	9.86888	Si
SLV 15	-15571	-28900	797	1.468	1968.7	0.945	22.57825	9.86888	Si
SLV 14	-13304	-21153	795	1.676	1739.1	0.939	25.94961	9.86888	Si
SLV 13	-12865	-20628	795	1.723	1694.6	0.937	26.72377	9.86888	Si
SLV 12	-16654	-34619	243	1.415	2078.6	0.947	21.70495	7.20764	Si
SLV 11	-16358	-34265	243	1.437	2048.6	0.947	22.05709	7.20764	Si
SLV 8	-14562	-30872	-235	1.587	1866.4	0.942	24.4736	7.20764	Si
SLV 7	-14266	-30518	-235	1.614	1836.4	0.941	24.92258	7.20764	Si
SLV 4	-9035	-16935	-795	2.291	1308.2	0.923	36.08463	9.86888	Si
SLV 3	-8595	-16410	-795	2.382	1264.1	0.921	37.59235	9.86888	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	17.348	SLU 61	Si
V_SLU	19.513	SLU 51	Si
PF_SLV	1.499	SLV 5	Si
V_SLV	2.43	SLV 5	Si
PFFP_SLV	1.944	SLV 5	Si
R_SLV	2.232	SLV 16	Si

Maschio 206

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-6.008	-3.359	-6.513	-3.359	L6	L7	0.505	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 44	10.62	12.33	-3079	-0.0000329	0.0003743	0.0035	0.505	622.32	669.74	669.74	54.34	No	Si
SLU 44	11.42	-215.77	-3150	-0.0000594	0.0003743	0.0035	0.505	632.94	741.08	741.08	3.43	No	Si
SLU 67	10.62	-0.27	-3776	-0.000039	0.0003743	0.0035	0.505	720.08	848.91	848.91	3139.12	No	Si
SLU 67	11.42	-253.2	-3861	-0.0000727	0.0003743	0.0035	0.505	730.85	863.07	863.07	3.41	No	Si
SLU 64	10.62	1.73	-3578	-0.000037	0.0003743	0.0035	0.505	693.89	755.11	755.11	437.18	No	Si
SLU 64	11.42	-239.25	-3661	-0.0000685	0.0003743	0.0035	0.505	704.98	829.27	829.27	3.47	No	Si
SLU 65	10.62	9.05	-3546	-0.0000376	0.0003743	0.0035	0.505	689.54	750.35	750.35	82.9	No	Si
SLU 65	11.42	-245.88	-3645	-0.0000691	0.0003743	0.0035	0.505	702.86	826.55	826.55	3.36	No	Si
SLU 70	10.62	-4.63	-3916	-0.0000411	0.0003743	0.0035	0.505	737.76	872.3	872.3	188.22	No	Si
SLU 70	11.42	-259.44	-3997	-0.0000751	0.0003743	0.0035	0.505	747.66	885.03	885.03	3.41	No	Si
SLU 47	10.62	7.96	-3219	-0.0000339	0.0003743	0.0035	0.505	643.19	696.23	696.23	87.44	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 47	11.42	-222	-3286	-0.0000618	0.0003743	0.0035	0.505	652.91	765.17	765.17	3.45	No	Si
SLU 69	10.62	-9.03	-3935	-0.0000419	0.0003743	0.0035	0.505	740.14	875.36	875.36	96.95	No	Si
SLU 69	11.42	-255.46	-4006	-0.0000747	0.0003743	0.0035	0.505	748.82	886.54	886.54	3.47	No	Si
SLU 66	10.62	-4.67	-3796	-0.0000398	0.0003743	0.0035	0.505	722.55	852.17	852.17	182.67	No	Si
SLU 66	11.42	-249.23	-3870	-0.0000723	0.0003743	0.0035	0.505	732.06	864.66	864.66	3.47	No	Si
SLU 68	10.62	4.69	-3686	-0.0000386	0.0003743	0.0035	0.505	708.27	771.15	771.15	164.51	No	Si
SLU 68	11.42	-252.11	-3781	-0.0000716	0.0003743	0.0035	0.505	720.62	849.62	849.62	3.37	No	Si
SLU 72	10.62	-2.61	-3838	-0.00004	0.0003743	0.0035	0.505	727.99	859.28	859.28	329.71	No	Si
SLU 72	11.42	-255.7	-3923	-0.0000738	0.0003743	0.0035	0.505	738.58	873.37	873.37	3.42	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	10.62	386.46	-1554	-0.0023559	0.0005615	0.0035	0.404		385.7	385.7	1		No
SLV 5	11.42	-560.04	-1560	-0.0027128	0.0005615	0.0035	0.404		435.04	435.04	0.78		No
SLD 6	10.62	205.43	-2053	-0.0000454	0.0005615	0.0035	0.505		497.08	497.08	2.42		Si
SLD 6	11.42	-374.44	-2244	-0.0000915	0.0005615	0.0035	0.404		586.06	586.06	1.57		Si
SLD 1	10.62	279.57	-1444	-0.0000853	0.0005615	0.0035	0.505		360.74	360.74	1.29		Si
SLD 1	11.42	-400.33	-2057	-0.0001264	0.0005615	0.0035	0.404		545.15	545.15	1.36		Si
SLD 4	10.62	294.59	-1256	-0.0002777	0.0005615	0.0035	0.404		317.46	317.46	1.08		Si
SLD 4	11.42	-396.34	-2173	-0.0001094	0.0005615	0.0035	0.404		570.62	570.62	1.44		Si
SLV 4	10.62	686.86	745	0.0045395	0.0005615	0.0035	0.404		0	0	0		No
SLV 4	11.42	-679.77	-1331	-0.0058867	0.0005615	0.0035	0.404		382.44	382.44	0.56		No
SLV 3	10.62	514.92	46	-0.0578942	0.0005615	0.0035	0.404		0	0	0		No
SLV 3	11.42	-535.56	-1527	-0.0023766	0.0005615	0.0035	0.404		427.34	427.34	0.8		No
SLV 1	10.62	661.21	316	-0.0793535	0.0005615	0.0035	0.404		0	0	0		No
SLV 1	11.42	-700.95	-1030	-0.0071897	0.0005615	0.0035	0.404		313.45	313.45	0.45		No
SLV 6	10.62	502.22	-1083	-0.0253661	0.0005615	0.0035	0.404		277.28	277.28	0.55		No
SLV 6	11.42	-657.13	-1429	-0.0051637	0.0005615	0.0035	0.404		404.8	404.8	0.62		No
SLV 2	10.62	833.15	1015	0.0621974	0.0005615	0.0035	0.404		0	0	0		No
SLV 2	11.42	-845.16	-834	-0.010185	0.0005615	0.0035	0.404		267.37	267.37	0.32		No
SLD 2	10.62	352.71	-1147	-0.0087409	0.0005615	0.0035	0.404		292.11	292.11	0.83		No
SLD 2	11.42	-461.68	-1974	-0.0003432	0.0005615	0.0035	0.404		526.88	526.88	1.14		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	10.62	-24.93	-4240	-3570	64	0.505	0.505	-23567	10087	1528	40441	4537	1288	5824	No	91.25	Si
SLU 83	11.42	-257.05	-4324	-3641	302	0.505	0.505	-24032	10149	1538	40441	4537	1288	5824	No	19.3	Si
SLU 79	10.62	-22.61	-4223	-3556	81	0.505	0.505	-23473	10074	1526	40441	4537	1288	5824	No	72.08	Si
SLU 79	11.42	-259.81	-4301	-3622	299	0.505	0.505	-23908	10132	1535	40441	4537	1288	5824	No	19.48	Si
SLU 74	10.62	-20.27	-4161	-3504	86	0.505	0.505	-23129	10028	1519	40441	4537	1288	5824	No	67.8	Si
SLU 74	11.42	-257.32	-4239	-3570	294	0.505	0.505	-23564	10086	1528	40441	4537	1288	5824	No	19.78	Si
SLU 84	10.62	-20.54	-4221	-3554	83	0.505	0.505	-23461	10073	1526	40441	4537	1288	5824	No	70.3	Si
SLU 84	11.42	-261.02	-4314	-3633	302	0.505	0.505	-23979	10142	1536	40441	4537	1288	5824	No	19.3	Si
SLU 75	10.62	-15.88	-4142	-3488	105	0.505	0.505	-23023	10014	1517	40441	4537	1288	5824	No	55.52	Si
SLU 75	11.42	-261.3	-4230	-3562	294	0.505	0.505	-23511	10079	1527	40441	4537	1288	5824	No	19.78	Si
SLU 82	10.62	-16.17	-4081	-3437	90	0.505	0.505	-22684	9969	1510	40441	4537	1288	5824	No	64.95	Si
SLU 82	11.42	-254.79	-4178	-3519	295	0.505	0.505	-23225	10041	1521	40441	4537	1288	5824	No	19.76	Si
SLU 80	10.62	-18.21	-4204	-3540	100	0.505	0.505	-23366	10060	1524	40441	4537	1288	5824	No	58.35	Si
SLU 80	11.42	-263.79	-4292	-3614	299	0.505	0.505	-23855	10125	1534	40441	4537	1288	5824	No	19.48	Si
SLU 78	10.62	-20.24	-4282	-3606	98	0.505	0.505	-23799	10118	1533	40441	4537	1288	5824	No	59.38	Si
SLU 78	11.42	-267.53	-4366	-3676	301	0.505	0.505	-24265	10180	1542	40441	4537	1288	5824	No	19.32	Si
SLU 81	10.62	-20.57	-4100	-3453	71	0.505	0.505	-22791	9983	1512	40441	4537	1288	5824	No	82.43	Si
SLU 81	11.42	-250.82	-4188	-3527	295	0.505	0.505	-23278	10048	1522	40441	4537	1288	5824	No	19.76	Si
SLU 77	10.62	-24.64	-4301	-3622	79	0.505	0.505	-23906	10132	1535	40441	4537	1288	5824	No	73.66	Si
SLU 77	11.42	-263.55	-4375	-3684	301	0.505	0.505	-24319	10187	1543	40441	4537	1288	5824	No	19.32	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	10.62	-666.03	-5825	-4905	-2542	0.505	0.4145	-40342	16250	2037	40441	6805	1288	8093		3.18	Si
SLV 16	11.42	341.48	-4596	-3870	453	0.505	0.505	-25545	15526	2352	40441	6805	1288	8093		17.85	Si
SLV 2	10.62	833.15	1015	855	3377	0.404	0	0	0	0	40441	5444	1030	6474		1.92	Si
SLV 2	11.42	-845.16	-834	-702	43	0.404	0	0	0	0	40441	5444	1030	6474		150.53	Si
SLV 11	10.62	-507.04	-4425	-3727	-2236	0.505	0.4138	-30508	16250	2017	40441	6805	1288	8093		3.62	Si
SLV 11	11.42	297.66	-4197	-3534	529	0.505	0.505	-23328	15082	2285	40441	6805	1288	8093		15.3	Si
SLV 3	10.62	514.92	46	39	1925	0.404	0	0	0	0	40441	5444	1030	6474		3.36	Si
SLV 3	11.42	-535.56	-1527	-1286	148	0.404	0	0	0	0	40441	5444	1030	6474		43.72	Si
SLV 1	10.62	661.21	316	266	2735	0.404	0	0	0	0	40441	5444	1030	6474		2.37	Si
SLV 1	11.42	-700.95	-1030	-867	-45	0.404	0	0	0	0	40441	5444	1030	6474		143.81	Si
SLV 13	10.62	-691.68	-6254	-5266	-2374	0.505	0.4257	-42231	16250	2134	40441	6805	1288	8093		3.41	Si
SLV 13	11.42	320.29	-4294	-3616	172	0.505	0.505	-23870	15191	2301	40441	6805	1288	8093		46.99	Si
SLV 4	10.62	686.86	745	628	2567	0.404	0	0	0	0	40441	5444	1030	6474		2.52	Si
SLV 4	11.42	-679.77	-1331	-1121	236	0.404	0	0	0	0	40441	5444	1030	6474		27.42	Si
SLV 6	10.62	502.22	-1083	-912	2429	0.404	0	0	0	0	40441	5444	1030	6474		2.67	Si
SLV 6	11.42	-657.13	-1429	-1203	-121	0.404	0	0	0	0	40441	5444	1030	6474		53.67	Si
SLV 5	10.62	386.46	-1554	-1309	1997	0.404	0.0115	0	0	0	40441	5444	1030	6474		3.24	Si
SLV 5	11.42	-560.04	-1560	-1314	-180	0.404	0	0	0	0	40441	5444	1030	6474		35.99	Si
SLV 15	10.62	-837.97	-6524	-5494	-3184	0.505	0.3722	-50705	16250	2194	40441	6805	1288	8093		2.54	Si
SLV 15	11.42	485.69	-4792	-4035	365	0.505	0.4534	-26634	15743	2141	40441	6805	1288	8093		22.15	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 4	179667	0.46	0	-317	67.97	0	0	No, e>t/2
SLV 3	179667	0.46	3848	-583	67.97	85.23	1.25	Si
SLV 2	179667	0.46	4833	-732	67.97	106.35	1.56	Si
SLV 8	179667	0.46	5995	-908	67.97	130.9	1.93	Si
SLV 1	179667	0.46	6588	-998	67.97	143.26	2.11	Si
SLV 7	179667	0.46	7177	-1087	67.97	155.44	2.29	Si
SLV 12	179667	0.46	11836	-1793	67.97	248.12	3.65	Si
SLV 11	179667	0.46	13018	-1972	67.97	270.61	3.98	Si
SLV 6	179667	0.46	15131	-2292	67.97	309.78	4.56	Si
SLV 5	179667	0.46	16313	-2471	67.97	331.11	4.87	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-2710	-2009	-10	0.934	352.3	0.94	14.44297	6.14217	Si
SLV 16	-2500	-2050	-9	0.997	331	0.936	15.46877	6.14217	Si
SLV 13	-2452	-3035	3	1.015	326.1	0.936	15.76052	6.14217	Si
SLV 14	-2242	-3077	3	1.089	304.9	0.932	16.9881	6.14217	Si
SLV 11	-2137	-584	-24	1.123	294.4	0.93	17.54867	5.26078	Si
SLV 12	-1996	-612	-24	1.185	280.1	0.927	18.56971	5.26078	Si
SLV 7	-1417	-383	-25	1.532	222.1	0.913	24.37672	5.26078	Si
SLV 8	-1276	-411	-24	1.652	208	0.909	26.39937	5.26078	Si
SLV 9	-1276	-4004	17	1.656	208	0.909	26.46798	5.26078	Si
SLV 10	-1135	-4032	17	1.797	194	0.905	28.85208	5.26078	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.362	SLU 65	Si
V_SLU	19.297	SLU 83	Si
PF_SLV	0	SLV 1	No
V_SLV	1.917	SLV 2	Si
PFFP_SLV	0	SLV 4	No
R_SLV	2.351	SLV 15	Si

Maschio 207

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-3.183	-3.359	-5.508	-3.359	L6	L7	2.325	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 80	10.62	1632.21	-16742	-0.0000472	0.0003743	0.0035	2.325	14873.99	16240.8	16240.8	9.95	No	Si
SLU 80	11.42	753.09	-14371	-0.0000363	0.0003743	0.0035	2.325	13325.29	14310.51	14310.51	19	No	Si
SLU 84	10.62	1623.77	-16628	-0.0000469	0.0003743	0.0035	2.325	14803.66	16164.68	16164.68	9.96	No	Si
SLU 84	11.42	758.32	-14262	-0.0000361	0.0003743	0.0035	2.325	13249.58	14209.69	14209.69	18.74	No	Si
SLU 64	10.62	1450.01	-14465	-0.0000406	0.0003743	0.0035	2.325	13390.41	14397.73	14397.73	9.93	No	Si
SLU 64	11.42	500.45	-12160	-0.0000297	0.0003743	0.0035	2.325	11715.34	12305.06	12305.06	24.59	No	Si
SLU 65	10.62	1477.02	-14520	-0.0000409	0.0003743	0.0035	2.325	13428.09	14448.42	14448.42	9.78	No	Si
SLU 65	11.42	454.4	-12190	-0.0000295	0.0003743	0.0035	2.325	11738.41	12331.94	12331.94	27.14	No	Si
SLU 68	10.62	1519.88	-15099	-0.0000426	0.0003743	0.0035	2.325	13820.62	14986.1	14986.1	9.86	No	Si
SLU 68	11.42	516.27	-12755	-0.0000311	0.0003743	0.0035	2.325	12164.34	12837.33	12837.33	24.87	No	Si
SLU 44	10.62	1280.25	-12624	-0.0000353	0.0003743	0.0035	2.325	12066.85	12720.14	12720.14	9.94	No	Si
SLU 44	11.42	297.54	-10395	-0.0000244	0.0003743	0.0035	2.325	10315.64	10756.68	10756.68	36.15	No	Si
SLU 73	10.62	1557.31	-15605	-0.000044	0.0003743	0.0035	2.325	14154.55	15458.11	15458.11	9.93	No	Si
SLU 73	11.42	610.95	-13253	-0.0000328	0.0003743	0.0035	2.325	12531.55	13287.17	13287.17	21.75	No	Si
SLU 23	10.62	1239.71	-12119	-0.0000339	0.0003743	0.0035	2.325	11684.14	12268.76	12268.76	9.9	No	Si
SLU 23	11.42	416.49	-10271	-0.0000248	0.0003743	0.0035	2.325	10213.46	10649.56	10649.56	25.57	No	Si
SLU 76	10.62	1600.16	-16184	-0.0000457	0.0003743	0.0035	2.325	14526.49	15870.32	15870.32	9.92	No	Si
SLU 76	11.42	672.81	-13818	-0.0000345	0.0003743	0.0035	2.325	12937.82	13801.26	13801.26	20.51	No	Si
SLU 78	10.62	1654.9	-17068	-0.0000481	0.0003743	0.0035	2.325	15072.62	16459.09	16459.09	9.95	No	Si
SLU 78	11.42	777.61	-14681	-0.0000372	0.0003743	0.0035	2.325	13538.04	14597.23	14597.23	18.77	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 2	10.62	2963.91	-14657	-0.000049	0.0005615	0.0035	2.325		15204.49	15204.49	5.13		Si
SLV 2	11.42	-5007.79	-10810	-0.0000524	0.0005615	0.0035	2.325		13082.68	13082.68	2.61		Si
SLV 3	10.62	2003.12	-9202	-0.0000311	0.0005615	0.0035	2.325		10253.75	10253.75	5.12		Si
SLV 3	11.42	-2606.98	-6796	-0.0000291	0.0005615	0.0035	2.325		9007.49	9007.49	3.46		Si
SLV 4	10.62	2419.35	-9942	-0.0000351	0.0005615	0.0035	2.325		10998.84	10998.84	4.55		Si
SLV 4	11.42	-3844.14	-7002	-0.0000383	0.0005615	0.0035	2.325		9225.69	9225.69	2.4		Si
SLV 16	10.62	-357.52	-8124	-0.0000195	0.0005615	0.0035	2.325		10384.37	10384.37	29.05		Si
SLV 16	11.42	4561.04	-7922	-0.0000456	0.0005615	0.0035	2.325		8944.17	8944.17	1.96		Si
SLV 15	10.62	-773.75	-7384	-0.0000202	0.0005615	0.0035	2.325		9628.09	9628.09	12.44		Si
SLV 15	11.42	5798.21	-7716	-0.0000643	0.0005615	0.0035	2.325		8731.69	8731.69	1.51		Si
SLV 11	10.62	-369.17	-2640	-0.0000076	0.0005615	0.0035	2.325		4545	4545	12.31		Si
SLV 11	11.42	4011.87	-2985	-0.0028866	0.0005615	0.0035	2.325		3659.64	3659.64	0.91		No
SLV 7	10.62	463.89	-3186	-0.0000093	0.0005615	0.0035	2.325		3880.88	3880.88	8.37		Si
SLV 7	11.42	1490.32	-2709	-0.0000146	0.0005615	0.0035	2.325		3354.61	3354.61	2.25		Si
SLV 13	10.62	-229.18	-12099	-0.0000275	0.0005615	0.0035	2.325		14340.35	14340.35	62.57		Si
SLV 13	11.42	4634.56	-11524	-0.0000514	0.0005615	0.0035	2.325		12522.88	12522.88	2.7		Si
SLV 12	10.62	-88.94	-3138	-0.0000072	0.0005615	0.0035	2.325		5093.3	5093.3	57.27		Si
SLV 12	11.42	3178.93	-3124	-0.0000743	0.0005615	0.0035	2.325		3812.42	3812.42	1.2		Si
SLV 1	10.62	2547.68	-13917	-0.0000449	0.0005615	0.0035	2.325		14565.52	14565.52	5.72		Si
SLV 1	11.42	-3770.62	-10604	-0.0000443	0.0005615	0.0035	2.325		12883.96	12883.96	3.42		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 76	10.62	1600.16	-16184	-13629	2801	2.325	2.325	-19540	9550	6661	40441	20886	5929	26815	No	9.57	Si
SLU 76	11.42	672.81	-13818	-11636	2238	2.325	2.325	-16683	9169	6395	40441	20886	5929	26815	No	11.98	Si
SLU 67	10.62	1531.76	-15403	-12971	2838	2.325	2.325	-18597	9424	6573	40441	20886	5929	26815	No	9.45	Si
SLU 67	11.42	559.21	-13053	-10992	2252	2.325	2.325	-15759	9046	6309	40441	20886	5929	26815	No	11.91	Si
SLU 70	10.62	1574.61	-15983	-13459	2834	2.325	2.325	-19296	9517	6638	40441	20886	5929	26815	No	9.46	Si
SLU 70	11.42	621.07	-13617	-11467	2255	2.325	2.325	-16440	9137	6373	40441	20886	5929	26815	No	11.89	Si
SLU 75	10.62	1612.04	-16489	-13885	2772	2.325	2.325	-19907	9599	6695	40441	20886	5929	26815	No	9.68	Si
SLU 75	11.42	715.75	-14116	-11887	2212	2.325	2.325	-17042	9217	6429	40441	20886	5929	26815	No	12.13	Si
SLU 68	10.62	1519.88	-15099	-12715	2867	2.325	2.325	-18229	9375	6539	40441	20886	5929	26815	No	9.35	Si
SLU 68	11.42	516.27	-12755	-10741	2278	2.325	2.325	-15399	8998	6276	40441	20886	5929	26815	No	11.77	Si
SLU 72	10.62	1551.93	-15656	-13184	2812	2.325	2.325	-18902	9465	6602	40441	20886	5929	26815	No	9.54	Si
SLU 72	11.42	596.55	-13308	-11206	2239	2.325	2.325	-16067	9087	6338	40441	20886	5929	26815	No	11.97	Si
SLU 78	10.62	1654.9	-17068	-14373	2768	2.325	2.325	-20606	9692	6760	40441	20886	5929	26815	No	9.69	Si
SLU 78	11.42	777.61	-14681	-12363	2214	2.325	2.325	-17724	9308	6492	40441	20886	5929	26815	No	12.11	Si
SLU 73	10.62	1557.31	-15605	-13141	2805	2.325	2.325	-18840	9457	6596	40441	20886	5929	26815	No	9.56	Si
SLU 73	11.42	610.95	-13253	-11161	2235	2.325	2.325	-16001	9078	6332	40441	20886	5929	26815	No	12	Si
SLU 66	10.62	1515.55	-15371	-12944	2759	2.325	2.325	-18557	9419	6570	40441	20886	5929	26815	No	9.72	Si
SLU 66	11.42	586.83	-13034	-10976	2190	2.325	2.325	-15737	9043	6307	40441	20886	5929	26815	No	12.24	Si
SLU 65	10.62	1477.02	-14520	-12227	2871	2.325	2.325	-17530	9282	6474	40441	20886	5929	26815	No	9.34	Si
SLU 65	11.42	454.4	-12190	-10265	2276	2.325	2.325	-14717	8907	6212	40441	20886	5929	26815	No	11.78	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 2	10.62	1886.98	-12502	-10528	7495	2.325	2.325	-15093	13435	9371	40441	31329	5929	37258		4.97	Si
SLD 2	11.42	-1893.71	-9868	-8310	5956	2.325	2.325	-11913	12799	8928	40441	31329	5929	37258		6.26	Si
SLV 2	10.62	2963.91	-14657	-12343	14934	2.325	2.325	-17695	13956	9734	40441	31329	5929	37258		2.49	Si
SLV 2	11.42	-5007.79	-10810	-9103	11862	2.325	2.0977	-14550	13327	8387	40441	31329	5929	37258		3.14	Si
SLV 11	10.62	-369.17	-2640	-2223	-8647	2.325	2.325	-3188	11054	7710	40441	31329	5929	37258		4.31	Si
SLV 11	11.42	4011.87	-2985	-2514	-6445	2.325	0	-126734	16250	4028	40441	31329	5929	37258		5.78	Si
SLV 4	10.62	2419.35	-9942	-8372	10786	2.325	2.325	-12003	12817	8940	40441	31329	5929	37258		3.45	Si
SLV 4	11.42	-3844.14	-7002	-5896	8852	2.325	1.8405	-10730	12563	6936	40441	31329	5929	37258		4.21	Si
SLV 6	10.62	2559.34	-19401	-16337	12752	2.325	2.325	-23423	15101	10533	40441	31329	5929	37258		2.92	Si
SLV 6	11.42	-3221.45	-15541	-13087	9695	2.325	2.325	-18763	14169	9883	40441	31329	5929	37258		3.84	Si
SLV 3	10.62	2003.12	-9202	-7749	7865	2.325	2.325	-11110	12639	8815	40441	31329	5929	37258		4.74	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 3	11.42	-2606.98	-6796	-5723	6524	2.325	2.325	-8206	12058	8410	40441	31329	5929	37258		5.71	Si
SLV 16	10.62	-357.52	-8124	-6841	-7908	2.325	2.325	-9808	12378	8634	40441	31329	5929	37258		4.71	Si
SLV 16	11.42	4561.04	-7922	-6671	-6283	2.325	1.7602	-9564	12329	6511	40441	31329	5929	37258		5.93	Si
SLV 15	10.62	-773.75	-7384	-6218	-10829	2.325	2.325	-8915	12200	8509	40441	31329	5929	37258		3.44	Si
SLV 15	11.42	5798.21	-7716	-6498	-8612	2.325	1.2332	-9316	12280	5090	40441	31329	5929	37258		4.33	Si
SLV 5	10.62	2279.11	-18903	-15918	10785	2.325	2.325	-22822	14981	10449	40441	31329	5929	37258		3.45	Si
SLV 5	11.42	-2388.51	-15403	-12971	8127	2.325	2.325	-18596	14136	9860	40441	31329	5929	37258		4.58	Si
SLV 1	10.62	2547.68	-13917	-11720	12013	2.325	2.325	-16802	13777	9610	40441	31329	5929	37258		3.1	Si
SLV 1	11.42	-3770.62	-10604	-8930	9533	2.325	2.325	-12803	12977	9052	40441	31329	5929	37258		3.91	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.46	4969	-3466	312.91	502.98	1.61	Si
SLV 8	179667	0.46	5278	-3681	312.91	533.13	1.7	Si
SLV 11	179667	0.46	5367	-3744	312.91	541.8	1.73	Si
SLV 12	179667	0.46	5676	-3959	312.91	571.78	1.83	Si
SLV 3	179667	0.46	11069	-7720	312.91	1074.14	3.43	Si
SLV 4	179667	0.46	11528	-8041	312.91	1115.04	3.56	Si
SLV 15	179667	0.46	12395	-8646	312.91	1191.61	3.81	Si
SLV 16	179667	0.46	12854	-8966	312.91	1231.68	3.94	Si
SLV 1	179667	0.46	16759	-11690	312.91	1561.02	4.99	Si
SLV 2	179667	0.46	17218	-12010	312.91	1598.35	5.11	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 10	-11089	-18055	-1259	0.935	1481.5	0.935	14.54195	5.26078	Si
SLV 9	-11083	-18095	-1259	0.936	1480.9	0.935	14.548	5.26078	Si
SLV 6	-10841	-16377	-1096	0.965	1456.5	0.934	15.01361	5.26078	Si
SLV 5	-10836	-16417	-1096	0.965	1455.9	0.934	15.01999	5.26078	Si
SLV 14	-8830	-14937	-626	1.175	1253.5	0.926	18.45316	6.14217	Si
SLV 13	-8821	-14996	-626	1.176	1252.7	0.925	18.46709	6.14217	Si
SLV 2	-8005	-9343	-82	1.32	1170.7	0.922	20.81177	6.14217	Si
SLV 1	-7997	-9402	-82	1.321	1169.8	0.921	20.82885	6.14217	Si
SLV 16	-6645	-10594	80	1.516	1034.4	0.914	24.09836	6.14217	Si
SLV 15	-6636	-10653	80	1.517	1033.6	0.914	24.12146	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.782	SLU 65	Si
V_SLU	9.34	SLU 65	Si
PF_SLV	0.912	SLV 11	No
V_SLV	2.495	SLV 2	Si
PFFP_SLV	1.607	SLV 7	Si
R_SLV	2.764	SLV 10	Si

Maschio 208

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	-3.359	-2.283	-3.359	L6	L7	2.16	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 36	9.52	434.96	-10522	-0.0000278	0.0003743	0.0035	2.16	9551.69	9987.23	9987.23	22.96	No	Si
SLU 36	11.32	1116.26	-10020	-0.0000311	0.0003743	0.0035	2.16	9177.66	9574.63	9574.63	8.58	No	Si
SLU 37	9.52	385.21	-10290	-0.0000269	0.0003743	0.0035	2.16	9379.86	9796.09	9796.09	25.43	No	Si
SLU 37	11.32	1116.27	-9828	-0.0000306	0.0003743	0.0035	2.16	9033.38	9418.84	9418.84	8.44	No	Si
SLU 35	9.52	399.4	-10511	-0.0000275	0.0003743	0.0035	2.16	9543.41	9977.95	9977.95	24.98	No	Si
SLU 35	11.32	1142.27	-10066	-0.0000314	0.0003743	0.0035	2.16	9212.76	9612.8	9612.8	8.42	No	Si
SLU 41	9.52	320.89	-10280	-0.0000264	0.0003743	0.0035	2.16	9372.21	9787.64	9787.64	30.5	No	Si
SLU 41	11.32	1136.41	-9887	-0.0000309	0.0003743	0.0035	2.16	9077.56	9466.34	9466.34	8.33	No	Si
SLU 42	9.52	356.45	-10291	-0.0000267	0.0003743	0.0035	2.16	9380.58	9796.88	9796.88	27.48	No	Si
SLU 42	11.32	1110.4	-9840	-0.0000306	0.0003743	0.0035	2.16	9042.19	9428.3	9428.3	8.49	No	Si
SLU 39	9.52	319.53	-9990	-0.0000257	0.0003743	0.0035	2.16	9155.73	9550.83	9550.83	29.89	No	Si
SLU 39	11.32	1054.48	-9505	-0.0000294	0.0003743	0.0035	2.16	8786.14	9156.04	9156.04	8.68	No	Si
SLU 33	9.52	433.61	-10233	-0.000027	0.0003743	0.0035	2.16	9337.52	9749.4	9749.4	22.48	No	Si
SLU 33	11.32	1034.34	-9637	-0.0000296	0.0003743	0.0035	2.16	8887.91	9263.58	9263.58	8.96	No	Si
SLU 38	9.52	420.77	-10301	-0.0000271	0.0003743	0.0035	2.16	9388.23	9805.33	9805.33	23.3	No	Si
SLU 38	11.32	1090.26	-9782	-0.0000303	0.0003743	0.0035	2.16	8997.92	9380.83	9380.83	8.6	No	Si
SLU 40	9.52	355.09	-10002	-0.0000259	0.0003743	0.0035	2.16	9164.21	9560.02	9560.02	26.92	No	Si
SLU 40	11.32	1028.47	-9458	-0.0000291	0.0003743	0.0035	2.16	8750.19	9118.25	9118.25	8.87	No	Si
SLU 32	9.52	398.04	-10222	-0.0000268	0.0003743	0.0035	2.16	9329.12	9740.17	9740.17	24.47	No	Si
SLU 32	11.32	1060.35	-9684	-0.0000299	0.0003743	0.0035	2.16	8923.58	9301.49	9301.49	8.77	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	9.52	5165.98	-15131	-0.0000705	0.0005615	0.0035	2.16		14348.42	14348.42	2.78		Si
SLV 5	11.32	-3055.1	-5584	-0.0000351	0.0005615	0.0035	2.16		7021.94	7021.94	2.3		Si
SLV 12	9.52	-4085.77	-1761	-0.0008886	0.0005615	0.0035	1.728		3172.2	3172.2	0.78		No
SLV 12	11.32	4242.68	-8955	-0.00005	0.0005615	0.0035	2.16		9247.62	9247.62	2.18		Si
SLV 1	9.52	3828.74	-9805	-0.0000481	0.0005615	0.0035	2.16		10035.83	10035.83	2.62		Si
SLV 1	11.32	-3419.98	-3790	-0.0000707	0.0005615	0.0035	1.728		5249.5	5249.5	1.53		Si
SLV 6	9.52	5944.23	-15343	-0.0000766	0.0005615	0.0035	2.16		14522.46	14522.46	2.44		Si
SLV 6	11.32	-3821.03	-4616	-0.0000618	0.0005615	0.0035	1.728		6075.77	6075.77	1.59		Si
SLV 15	9.52	-3904.46	-6773	-0.0000454	0.0005615	0.0035	2.16		8191.94	8191.94	2.1		Si
SLV 15	11.32	5745.19	-12186	-0.0000688	0.0005615	0.0035	2.16		11955.9	11955.9	2.08		Si
SLV 2	9.52	4984.66	-10119	-0.0000587	0.0005615	0.0035	2.16		10310.5	10310.5	2.07		Si
SLV 2	11.32	-4557.61	-2353	-0.0008813	0.0005615	0.0035	1.728		3783.52	3783.52	0.83		No
SLV 7	9.52	-3306.59	-1205	-0.0007488	0.0005615	0.0035	1.728		2594.46	2594.46	0.78		No
SLV 7	11.32	2784.64	-7584	-0.0000356	0.0005615	0.0035	2.16		7951.76	7951.76	2.86		Si
SLV 4	9.52	2442.89	-5941	-0.0000296	0.0005615	0.0035	2.16		6360.95	6360.95	2.6		Si
SLV 4	11.32	-2805.69	-2953	-0.0000715	0.0005615	0.0035	1.728		4398.36	4398.36	1.57		Si
SLV 11	9.52	-4864.02	-1549	-0.0013843	0.0005615	0.0035	1.728		2952.45	2952.45	0.61		No
SLV 11	11.32	5008.61	-9923	-0.0000588	0.0005615	0.0035	2.16		10143.78	10143.78	2.03		Si
SLV 8	9.52	-2528.35	-1417	-0.0003857	0.0005615	0.0035	1.728		2814.63	2814.63	1.11		Si
SLV 8	11.32	2018.7	-6616	-0.0000283	0.0005615	0.0035	2.16		7019.32	7019.32	3.48		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	9.52	527.13	-12277	-10339	-1432	2.16	2.16	-15955	9072	5879	40441	19404	5508	24912	No	17.39	Si
SLU 83	11.32	1181.02	-11343	-9552	-1431	2.16	2.16	-14741	8910	5774	40441	19404	5508	24912	No	17.41	Si
SLU 39	9.52	319.53	-9990	-8413	-1386	2.16	2.16	-12983	8676	5622	40441	19404	5508	24912	No	17.98	Si
SLU 39	11.32	1054.48	-9505	-8004	-1385	2.16	2.16	-12352	8591	5567	40441	19404	5508	24912	No	17.99	Si
SLU 36	9.52	434.96	-10522	-8861	-1351	2.16	2.16	-13674	8768	5681	40441	19404	5508	24912	No	18.44	Si
SLU 36	11.32	1116.26	-10020	-8437	-1339	2.16	2.16	-13021	8681	5625	40441	19404	5508	24912	No	18.6	Si
SLU 77	9.52	605.64	-12509	-10534	-1361	2.16	2.16	-16256	9112	5905	40441	19404	5508	24912	No	18.3	Si
SLU 77	11.32	1186.88	-11523	-9703	-1359	2.16	2.16	-14974	8941	5794	40441	19404	5508	24912	No	18.33	Si
SLU 84	9.52	562.69	-12289	-10348	-1369	2.16	2.16	-15970	9074	5880	40441	19404	5508	24912	No	18.2	Si
SLU 84	11.32	1155.01	-11296	-9513	-1357	2.16	2.16	-14680	8902	5768	40441	19404	5508	24912	No	18.36	Si
SLU 37	9.52	385.21	-10290	-8665	-1398	2.16	2.16	-13372	8727	5655	40441	19404	5508	24912	No	17.82	Si
SLU 37	11.32	1116.27	-9828	-8277	-1397	2.16	2.16	-12772	8647	5604	40441	19404	5508	24912	No	17.84	Si
SLU 42	9.52	356.45	-10291	-8666	-1423	2.16	2.16	-13374	8728	5655	40441	19404	5508	24912	No	17.51	Si
SLU 42	11.32	1110.4	-9840	-8286	-1411	2.16	2.16	-12788	8649	5605	40441	19404	5508	24912	No	17.66	Si
SLU 79	9.52	591.44	-12288	-10348	-1344	2.16	2.16	-15969	9074	5880	40441	19404	5508	24912	No	18.53	Si
SLU 79	11.32	1160.88	-11285	-9503	-1343	2.16	2.16	-14665	8900	5767	40441	19404	5508	24912	No	18.55	Si
SLU 35	9.52	399.4	-10511	-8852	-1415	2.16	2.16	-13660	8766	5680	40441	19404	5508	24912	No	17.61	Si
SLU 35	11.32	1142.27	-10066	-8477	-1413	2.16	2.16	-13082	8689	5630	40441	19404	5508	24912	No	17.63	Si
SLU 41	9.52	320.89	-10280	-8657	-1486	2.16	2.16	-13359	8726	5654	40441	19404	5508	24912	No	16.76	Si
SLU 41	11.32	1136.41	-9887	-8326	-1485	2.16	2.16	-12848	8658	5610	40441	19404	5508	24912	No	16.78	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	9.52	5944.23	-15343	-12920	10709	2.16	2.0777	-19939	14404	8978	40441	29106	5508	34614		3.23	Si
SLV 6	11.32	-3821.03	-4616	-3887	10475	1.728	0.7566	0	0	0	40441	23285	4406	27691		2.64	Si
SLV 16	9.52	-2748.53	-7087	-5968	-7999	2.16	2.0766	-9622	12341	7688	40441	29106	5508	34614		4.33	Si
SLV 16	11.32	4607.55	-10749	-9052	-6996	2.16	1.954	-13969	13210	7744	40441	29106	5508	34614		4.95	Si
SLV 15	9.52	-3904.46	-6773	-5704	-10324	2.16	1.5106	-12658	12949	5868	40441	29106	5508	34614		3.35	Si
SLV 15	11.32	5745.19	-12186	-10262	-9320	2.16	1.8256	-15836	13584	7440	40441	29106	5508	34614		3.71	Si
SLV 8	9.52	-2528.35	-1417	-1193	-6698	1.728	0	0	0	0	40441	23285	4406	27691		4.13	Si
SLV 8	11.32	2018.7	-6616	-5572	-7078	2.16	2.16	-8598	12136	7864	40441	29106	5508	34614		4.89	Si
SLV 5	9.52	5165.98	-15131	-12742	9144	2.16	2.16	-19664	14349	9298	40441	29106	5508	34614		3.79	Si
SLV 5	11.32	-3055.1	-5584	-4702	8910	2.16	1.5985	-9848	12386	5940	40441	29106	5508	34614		3.88	Si
SLV 7	9.52	-3306.59	-1205	-1015	-8263	1.728	0	0	0	0	40441	23285	4406	27691		3.35	Si
SLV 7	11.32	2784.64	-7584	-6387	-8643	2.16	2.1385	-9856	12388	7947	40441	29106	5508	34614		4.01	Si
SLV 2	9.52	4984.66	-10119	-8521	9182	2.16	1.7622	-13150	13047	6897	40441	29106	5508	34614		3.77	Si
SLV 2	11.32	-4557.61	-2353	-1981	8180	1.728	0	0	0	0	40441	23285	4406	27691		3.39	Si
SLV 11	9.52	-4864.02	-1549	-1305	-11851	1.728	0	0	0	0	40441	23285	4406	27691		2.34	Si
SLV 11	11.32	5008.61	-9923	-8356	-11616	2.16	1.7258	-12895	12996	6728	40441	29106	5508	34614		2.98	Si
SLV 10	9.52	4386.8	-15687	-13210	7122	2.16	2.16	-20385	14494	9392	40441	29106	5508	34614		4.86	Si
SLV 10	11.32	-1597.06	-6955	-5857	7502	2.16	2.16	-9038	12224	7921	40441	29106	5508	34614		4.61	Si
SLV 12	9.52	-4085.77	-1761	-1483	-10286	1.728	0	0	0	0	40441	23285	4406	27691		2.69	Si
SLV 12	11.32	4242.68	-8955	-7541	-10051	2.16	1.8187	-11638	12744	6953	40441	29106	5508	34614		3.44	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 4	179667	0.46	6820	-4419	290.7	633.27	2.18	Si
SLV 8	179667	0.46	7541	-4887	290.7	696.78	2.4	Si
SLV 3	179667	0.46	7946	-5149	290.7	732.2	2.52	Si
SLV 7	179667	0.46	8300	-5378	290.7	762.87	2.62	Si
SLV 2	179667	0.46	8813	-5711	290.7	807.19	2.78	Si
SLV 1	179667	0.46	9940	-6441	290.7	903.27	3.11	Si
SLV 12	179667	0.46	9995	-6477	290.7	907.91	3.12	Si
SLV 11	179667	0.46	10753	-6968	290.7	971.63	3.34	Si
SLV 6	179667	0.46	14185	-9192	290.7	1250.75	4.3	Si
SLV 5	179667	0.46	14944	-9684	290.7	1310.43	4.51	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-7930	-10538	641	1.2	1137.1	0.924	18.87409	6.14217	Si
SLV 13	-7920	-13524	157	1.25	1136.1	0.924	19.65384	6.14217	Si
SLV 16	-7201	-10048	642	1.291	1063.9	0.92	20.39078	6.14217	Si
SLV 14	-7191	-13034	158	1.345	1062.9	0.92	21.23707	6.14217	Si
SLV 11	-6741	-4529	923	1.324	1017.8	0.918	20.97743	5.26078	Si
SLV 9	-6709	-14483	-689	1.356	1014.6	0.917	21.47653	5.26078	Si
SLV 12	-6250	-4199	924	1.4	968.7	0.915	22.24655	5.26078	Si
SLV 10	-6219	-14153	-688	1.433	965.5	0.914	22.78507	5.26078	Si
SLV 5	-5783	-12388	-931	1.48	922.1	0.912	23.59263	5.26078	Si
SLV 1	-4832	-6539	-650	1.719	827.8	0.905	27.5983	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.33	SLU 41	Si
V_SLU	16.763	SLU 41	Si
PF_SLV	0.607	SLV 11	No
V_SLV	2.337	SLV 11	Si
PFFP_SLV	2.178	SLV 4	Si
R_SLV	3.073	SLV 15	Si

Maschio 209

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-2.963	5.951	-5.158	5.951	L6	L7	2.195	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 46	9.52	749.92	-15109	-0.0000407	0.0003743	0.0035	2.195	12845	14016.14	14016.14	18.69	No	Si
SLU 46	11.32	-1292.11	-12057	-0.0000366	0.0003743	0.0035	2.195	10852.98	12790.33	12790.33	9.9	No	Si
SLU 45	9.52	770.48	-15164	-0.000041	0.0003743	0.0035	2.195	12878.14	14050.88	14050.88	18.24	No	Si
SLU 45	11.32	-1320.01	-12112	-0.0000369	0.0003743	0.0035	2.195	10891.62	12836.08	12836.08	9.72	No	Si
SLU 47	9.52	746.67	-14785	-0.0000399	0.0003743	0.0035	2.195	12648.01	13799.96	13799.96	18.48	No	Si
SLU 47	11.32	-1260.57	-11733	-0.0000356	0.0003743	0.0035	2.195	10623.62	12520.18	12520.18	9.93	No	Si
SLU 48	9.52	714.81	-15908	-0.0000425	0.0003743	0.0035	2.195	13316.04	14522.94	14522.94	20.32	No	Si
SLU 48	11.32	-1365.17	-12856	-0.0000391	0.0003743	0.0035	2.195	11403.81	13438.08	13438.08	9.84	No	Si
SLU 43	9.52	836.61	-14133	-0.0000388	0.0003743	0.0035	2.195	12241.17	13277.2	13277.2	15.87	No	Si
SLU 43	11.32	-1261.92	-11081	-0.000034	0.0003743	0.0035	2.195	10151.66	11984.72	11984.72	9.5	No	Si
SLU 44	9.52	802.34	-14041	-0.0000383	0.0003743	0.0035	2.195	12182.78	13196.35	13196.35	16.45	No	Si
SLU 44	11.32	-1215.41	-10990	-0.0000335	0.0003743	0.0035	2.195	10084.1	11909.99	11909.99	9.8	No	Si
SLU 64	9.52	860.42	-16182	-0.0000442	0.0003743	0.0035	2.195	13472.81	14697.71	14697.71	17.08	No	Si
SLU 64	11.32	-1349.78	-13083	-0.0000396	0.0003743	0.0035	2.195	11556.87	13614.36	13614.36	10.09	No	Si
SLU 50	9.52	725.26	-15620	-0.0000418	0.0003743	0.0035	2.195	13149.05	14340.01	14340.01	19.77	No	Si
SLU 50	11.32	-1352.24	-12569	-0.0000383	0.0003743	0.0035	2.195	11208.13	13208.56	13208.56	9.77	No	Si
SLU 49	9.52	694.25	-15852	-0.0000422	0.0003743	0.0035	2.195	13284.23	14487.9	14487.9	20.87	No	Si
SLU 49	11.32	-1337.27	-12801	-0.0000388	0.0003743	0.0035	2.195	11366.51	13394.37	13394.37	10.02	No	Si
SLU 51	9.52	704.7	-15565	-0.0000415	0.0003743	0.0035	2.195	13116.73	14305.01	14305.01	20.3	No	Si
SLU 51	11.32	-1324.34	-12514	-0.000038	0.0003743	0.0035	2.195	11170.31	13164.13	13164.13	9.94	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	9.52	-799.26	-4695	-0.0000156	0.0005615	0.0035	2.195		6251.25	6251.25	7.82		Si
SLV 6	11.32	1761.93	-2203	-0.0000246	0.0005615	0.0035	2.195		2636.08	2636.08	1.5		Si
SLV 7	9.52	4107.22	-20209	-0.0000747	0.0005615	0.0035	2.195		18926.3	18926.3	4.61		Si
SLV 7	11.32	-5439.37	-17791	-0.0000774	0.0005615	0.0035	2.195		18200.79	18200.79	3.35		Si
SLV 5	9.52	222.72	-5543	-0.0000139	0.0005615	0.0035	2.195		6076.11	6076.11	27.28		Si
SLV 5	11.32	1108.94	-3051	-0.0000137	0.0005615	0.0035	2.195		3525.18	3525.18	3.18		Si
SLV 9	9.52	-1744.21	-5255	-0.0000227	0.0005615	0.0035	2.195		6807.3	6807.3	3.9		Si
SLV 9	11.32	2746.3	-2927	-0.0000628	0.0005615	0.0035	2.195		3396.44	3396.44	1.24		Si
SLV 3	9.52	5290.38	-15617	-0.0000708	0.0005615	0.0035	2.195		15022.24	15022.24	2.84		Si
SLV 3	11.32	-5216.16	-12981	-0.0000638	0.0005615	0.0035	2.195		14115.59	14115.59	2.71		Si
SLV 8	9.52	3085.24	-19362	-0.0000657	0.0005615	0.0035	2.195		18195.12	18195.12	5.9		Si
SLV 8	11.32	-4786.38	-16943	-0.0000708	0.0005615	0.0035	2.195		17523.48	17523.48	3.66		Si
SLV 4	9.52	3772.43	-14358	-0.0000576	0.0005615	0.0035	2.195		13976.53	13976.53	3.7		Si
SLV 4	11.32	-4246.28	-11722	-0.0000541	0.0005615	0.0035	2.195		13000.42	13000.42	3.06		Si
SLV 1	9.52	4125.03	-11217	-0.0000521	0.0005615	0.0035	2.195		11412.7	11412.7	2.77		Si
SLV 1	11.32	-3251.67	-8559	-0.0000401	0.0005615	0.0035	2.195		10046.41	10046.41	3.09		Si
SLV 14	9.52	-3949.35	-8999	-0.0000461	0.0005615	0.0035	2.195		10471.62	10471.62	2.65		Si
SLV 14	11.32	3176.07	-6889	-0.0000363	0.0005615	0.0035	2.195		7414.71	7414.71	2.33		Si
SLV 10	9.52	-2766.19	-4407	-0.0000313	0.0005615	0.0035	1.756		5960.32	5960.32	2.15		Si
SLV 10	11.32	3399.29	-2080	-0.0065947	0.0005615	0.0035	1.756		2505.27	2505.27	0.74		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 79	9.52	797.68	-18758	-15796	1218	2.195	2.195	-23988	10143	6679	40441	19718	5597	25316	No	20.79	Si
SLU 79	11.32	-1443.81	-15660	-13187	1218	2.195	2.195	-20026	9615	6331	40441	19718	5597	25316	No	20.79	Si
SLU 84	9.52	853.62	-18426	-15516	1209	2.195	2.195	-23563	10086	6642	40441	19718	5597	25316	No	20.94	Si
SLU 84	11.32	-1372.34	-15328	-12907	1209	2.195	2.195	-19601	9558	6294	40441	19718	5597	25316	No	20.94	Si
SLU 82	9.52	909.29	-17682	-14890	1215	2.195	2.195	-22612	9959	6558	40441	19718	5597	25316	No	20.84	Si
SLU 82	11.32	-1327.18	-14584	-12281	1215	2.195	2.195	-18650	9431	6210	40441	19718	5597	25316	No	20.84	Si
SLU 81	9.52	929.85	-17737	-14936	1242	2.195	2.195	-22683	9969	6564	40441	19718	5597	25316	No	20.38	Si
SLU 81	11.32	-1355.08	-14639	-12328	1242	2.195	2.195	-18721	9441	6217	40441	19718	5597	25316	No	20.38	Si
SLU 75	9.52	822.33	-18246	-15365	1198	2.195	2.195	-23334	10056	6622	40441	19718	5597	25316	No	21.13	Si
SLU 75	11.32	-1383.68	-15148	-12756	1198	2.195	2.195	-19372	9527	6274	40441	19718	5597	25316	No	21.13	Si
SLU 64	9.52	860.42	-16182	-13627	1200	2.195	2.195	-20693	9704	6390	40441	19718	5597	25316	No	21.09	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 64	11.32	-1349.78	-13083	-11018	1200	2.195	2.195	-16731	9175	6042	40441	19718	5597	25316	No	21.09	Si
SLU 83	9.52	874.18	-18481	-15563	1236	2.195	2.195	-23633	10096	6648	40441	19718	5597	25316	No	20.48	Si
SLU 83	11.32	-1400.24	-15383	-12954	1236	2.195	2.195	-19672	9567	6300	40441	19718	5597	25316	No	20.48	Si
SLU 74	9.52	842.9	-18301	-15412	1225	2.195	2.195	-23404	10065	6628	40441	19718	5597	25316	No	20.66	Si
SLU 74	11.32	-1411.59	-15203	-12803	1225	2.195	2.195	-19442	9537	6280	40441	19718	5597	25316	No	20.66	Si
SLU 77	9.52	787.22	-19045	-16038	1219	2.195	2.195	-24355	10192	6711	40441	19718	5597	25316	No	20.76	Si
SLU 77	11.32	-1456.75	-15947	-13429	1219	2.195	2.195	-20393	9664	6363	40441	19718	5597	25316	No	20.76	Si
SLU 66	9.52	794.29	-17212	-14495	1196	2.195	2.195	-22012	9879	6506	40441	19718	5597	25316	No	21.17	Si
SLU 66	11.32	-1407.88	-14114	-11886	1196	2.195	2.195	-18050	9351	6158	40441	19718	5597	25316	No	21.17	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	9.52	3772.43	-14358	-12091	4528	2.195	2.195	-18362	14089	9278	40441	29578	5597	35175		7.77	Si
SLV 4	11.32	-4246.28	-11722	-9871	4011	2.195	2.195	-14991	13415	8834	40441	29578	5597	35175		8.77	Si
SLV 7	9.52	4107.22	-20209	-17018	5252	2.195	2.195	-25844	15585	10263	40441	29578	5597	35175		6.7	Si
SLV 7	11.32	-5439.37	-17791	-14982	5141	2.195	2.195	-22751	14967	9856	40441	29578	5597	35175		6.84	Si
SLV 14	9.52	-3949.35	-8999	-7578	-4074	2.195	1.9759	-12848	12986	7698	40441	29578	5597	35175		8.63	Si
SLV 14	11.32	3176.07	-6889	-5802	-3556	2.195	1.9094	-8810	12179	6976	40441	29578	5597	35175		9.89	Si
SLD 3	9.52	2628.04	-13654	-11498	3025	2.195	2.195	-17461	13909	9159	40441	29578	5597	35175		11.63	Si
SLD 3	11.32	-2783.69	-11166	-9403	2804	2.195	2.195	-14280	13273	8740	40441	29578	5597	35175		12.55	Si
SLV 1	9.52	4125.03	-11217	-9446	4211	2.195	2.1893	-14345	13286	8726	40441	29578	5597	35175		8.35	Si
SLV 1	11.32	-3251.67	-8559	-7208	3664	2.195	2.1528	-10946	12606	8141	40441	29578	5597	35175		9.6	Si
SLV 10	9.52	-2766.19	-4407	-3711	-3416	1.756	1.4096	0	0	0	40441	23662	4478	28140		8.24	Si
SLV 10	11.32	3399.29	-2080	-1751	-3304	1.756	0	0	0	0	40441	23662	4478	28140		8.52	Si
SLV 2	9.52	2607.08	-9958	-8386	2829	2.195	2.195	-12735	12964	8537	40441	29578	5597	35175		12.44	Si
SLV 2	11.32	-2281.79	-7300	-6148	2282	2.195	2.195	-9336	12284	8089	40441	29578	5597	35175		15.42	Si
SLV 11	9.52	2140.29	-19921	-16776	3181	2.195	2.195	-25476	15512	10215	40441	29578	5597	35175		11.06	Si
SLV 11	11.32	-3802.02	-17667	-14878	3389	2.195	2.195	-22594	14935	9835	40441	29578	5597	35175		10.38	Si
SLV 3	9.52	5290.38	-15617	-13151	5911	2.195	2.195	-19972	14411	9490	40441	29578	5597	35175		5.95	Si
SLV 3	11.32	-5216.16	-12981	-10932	5393	2.195	2.087	-17606	13938	8727	40441	29578	5597	35175		6.52	Si
SLV 8	9.52	3085.24	-19362	-16304	4321	2.195	2.195	-24760	15369	10120	40441	29578	5597	35175		8.14	Si
SLV 8	11.32	-4786.38	-16943	-14268	4210	2.195	2.195	-21667	14750	9713	40441	29578	5597	35175		8.35	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 10	179667	0.46	5168	-3403	295.41	493.23	1.67	Si
SLV 6	179667	0.46	5442	-3583	295.41	518.36	1.75	Si
SLV 9	179667	0.46	6455	-4251	295.41	610.69	2.07	Si
SLV 5	179667	0.46	6729	-4431	295.41	635.37	2.15	Si
SLV 14	179667	0.46	12378	-8151	295.41	1123.53	3.8	Si
SLV 2	179667	0.46	13289	-8751	295.41	1198.44	4.06	Si
SLV 13	179667	0.46	14290	-9410	295.41	1279.39	4.33	Si
SLV 1	179667	0.46	15201	-10010	295.41	1352.05	4.58	Si
SLV 16	179667	0.46	19099	-12576	295.41	1650.55	5.59	Si
SLV 4	179667	0.46	20010	-13177	295.41	1717.53	5.81	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 11	-12378	-22129	1277	0.812	1591.9	0.942	12.52702	5.26078	Si
SLV 12	-12258	-20614	1277	0.818	1579.8	0.941	12.63136	5.26078	Si
SLV 15	-10828	-13673	260	0.982	1435	0.936	15.25029	6.14217	Si
SLV 16	-10651	-11424	259	0.996	1417	0.936	15.46524	6.14217	Si
SLV 7	-11264	-23992	1359	0.87	1479.1	0.938	13.4755	5.26078	Si
SLV 8	-11144	-22477	1359	0.877	1467	0.937	13.59784	5.26078	Si
SLV 13	-8361	-7974	-531	1.178	1186	0.926	18.49744	6.14217	Si
SLV 14	-8183	-5725	-531	1.198	1168.1	0.925	18.82339	6.14217	Si
SLV 3	-7115	-19884	532	1.332	1060.8	0.919	21.05568	6.14217	Si
SLV 4	-6938	-17634	532	1.357	1043	0.918	21.48119	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.497	SLU 43	Si
V_SLU	20.383	SLU 81	Si
PF_SLV	0.737	SLV 10	No
V_SLV	5.951	SLV 3	Si
PFFP_SLV	1.67	SLV 10	Si
R_SLV	2.381	SLV 11	Si

Maschio 210

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	5.951	-2.063	5.951	L6	L7	1.94	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 41	9.52	375.01	-10283	-0.0000303	0.0003743	0.0035	1.94	8243.45	8670.7	8670.7	23.12	No	Si
SLU 41	11.32	1045.4	-9609	-0.000034	0.0003743	0.0035	1.94	7809.21	8179.77	8179.77	7.82	No	Si
SLU 34	9.52	367.13	-9991	-0.0000294	0.0003743	0.0035	1.94	8057.4	8457.49	8457.49	23.04	No	Si
SLU 34	11.32	988.13	-9265	-0.0000325	0.0003743	0.0035	1.94	7581.59	7931.45	7931.45	8.03	No	Si
SLU 40	9.52	308.37	-9692	-0.0000281	0.0003743	0.0035	1.94	7863.76	8240.17	8240.17	26.72	No	Si
SLU 40	11.32	1010.78	-9061	-0.0000322	0.0003743	0.0035	1.94	7445.16	7785.42	7785.42	7.7	No	Si
SLU 31	9.52	334.75	-9445	-0.0000276	0.0003743	0.0035	1.94	7701.57	8061.6	8061.6	24.08	No	Si
SLU 31	11.32	932.5	-8703	-0.0000305	0.0003743	0.0035	1.94	7202.23	7530.34	7530.34	8.08	No	Si
SLU 36	9.52	432.58	-10767	-0.0000321	0.0003743	0.0035	1.94	8546.02	9027.1	9027.1	20.87	No	Si
SLU 36	11.32	1053.64	-10032	-0.0000352	0.0003743	0.0035	1.94	8083.66	8487.31	8487.31	8.06	No	Si
SLU 42	9.52	340.74	-10238	-0.0000298	0.0003743	0.0035	1.94	8215.17	8638	8638	25.35	No	Si
SLU 42	11.32	1066.41	-9622	-0.0000342	0.0003743	0.0035	1.94	7817.95	8189.42	8189.42	7.68	No	Si
SLU 33	9.52	400.21	-10221	-0.0000303	0.0003743	0.0035	1.94	8204.05	8625.18	8625.18	21.55	No	Si
SLU 33	11.32	998.01	-9471	-0.0000332	0.0003743	0.0035	1.94	7718.4	8079.99	8079.99	8.1	No	Si
SLU 35	9.52	466.85	-10811	-0.0000325	0.0003743	0.0035	1.94	8573.53	9060.13	9060.13	19.41	No	Si
SLU 35	11.32	1032.64	-10019	-0.000035	0.0003743	0.0035	1.94	8075.09	8477.58	8477.58	8.21	No	Si
SLU 39	9.52	342.63	-9737	-0.0000285	0.0003743	0.0035	1.94	7892.84	8272.52	8272.52	24.14	No	Si
SLU 39	11.32	989.77	-9048	-0.0000319	0.0003743	0.0035	1.94	7436.17	7775.87	7775.87	7.86	No	Si
SLU 38	9.52	422.34	-10567	-0.0000314	0.0003743	0.0035	1.94	8422.03	8879.55	8879.55	21.02	No	Si
SLU 38	11.32	1029.76	-9817	-0.0000344	0.0003743	0.0035	1.94	7944.87	8330.64	8330.64	8.09	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	9.52	-4094.42	-275	-0.0025183	0.0005615	0.0035	1.552		1331.33	1331.33	0.33		No
SLV 10	11.32	3977.53	-6842	-0.0000601	0.0005615	0.0035	1.94		6427.53	6427.53	1.62		Si
SLV 1	9.52	1777.05	-6653	-0.0000314	0.0005615	0.0035	1.94		6265	6265	3.53		Si
SLV 1	11.32	-1703.97	-4232	-0.0000248	0.0005615	0.0035	1.94		4977.5	4977.5	2.92		Si
SLV 5	9.52	-2268.69	-850	-0.0006368	0.0005615	0.0035	1.552		1874.16	1874.16	0.83		No
SLV 5	11.32	1834.64	-4982	-0.0000276	0.0005615	0.0035	1.94		4805.21	4805.21	2.62		Si
SLV 13	9.52	-1903.86	-5670	-0.0000298	0.0005615	0.0035	1.94		6242.93	6242.93	3.28		Si
SLV 13	11.32	3269.15	-7992	-0.0000482	0.0005615	0.0035	1.94		7403.79	7403.79	2.26		Si
SLV 6	9.52	-2990.15	-570	-0.0012181	0.0005615	0.0035	1.552		1611.03	1611.03	0.54		No
SLV 6	11.32	2485.6	-5714	-0.0000358	0.0005615	0.0035	1.94		5449.9	5449.9	2.19		Si
SLV 14	9.52	-2975.44	-5255	-0.0000438	0.0005615	0.0035	1.552		5875.89	5875.89	1.97		Si
SLV 14	11.32	4236.01	-9079	-0.0000616	0.0005615	0.0035	1.94		8308.31	8308.31	1.96		Si
SLV 3	9.52	3990.5	-11275	-0.0000626	0.0005615	0.0035	1.94		9939.13	9939.13	2.49		Si
SLV 3	11.32	-3109.75	-4869	-0.0000496	0.0005615	0.0035	1.552		5535.64	5535.64	1.78		Si
SLV 4	9.52	2918.93	-10860	-0.0000523	0.0005615	0.0035	1.94		9646.69	9646.69	3.3		Si
SLV 4	11.32	-2142.89	-5955	-0.0000326	0.0005615	0.0035	1.94		6496.84	6496.84	3.03		Si
SLV 9	9.52	-3372.96	-554	-0.0015132	0.0005615	0.0035	1.552		1596	1596	0.47		No
SLV 9	11.32	3326.58	-6110	-0.0000486	0.0005615	0.0035	1.94		5796.46	5796.46	1.74		Si
SLV 7	9.52	5109.49	-16254	-0.0000863	0.0005615	0.0035	1.94		13537.3	13537.3	2.65		Si
SLV 7	11.32	-2851.27	-7105	-0.000042	0.0005615	0.0035	1.94		7477.36	7477.36	2.62		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 34	9.52	367.13	-9991	-8414	-1092	1.94	1.94	-14457	8872	5163	40441	17428	4947	22375	No	20.49	Si
SLU 34	11.32	988.13	-9265	-7802	-1091	1.94	1.94	-13405	8732	5082	40441	17428	4947	22375	No	20.51	Si
SLU 81	9.52	524.91	-11637	-9800	-1086	1.94	1.94	-16838	9190	5348	40441	17428	4947	22375	No	20.61	Si
SLU 81	11.32	1031.92	-10409	-8765	-1085	1.94	1.94	-15060	8952	5210	40441	17428	4947	22375	No	20.63	Si
SLU 39	9.52	342.63	-9737	-8200	-1127	1.94	1.94	-14089	8823	5135	40441	17428	4947	22375	No	19.86	Si
SLU 39	11.32	989.77	-9048	-7619	-1126	1.94	1.94	-13091	8690	5058	40441	17428	4947	22375	No	19.88	Si
SLU 41	9.52	375.01	-10283	-8659	-1148	1.94	1.94	-14878	8928	5196	40441	17428	4947	22375	No	19.49	Si
SLU 41	11.32	1045.4	-9609	-8092	-1147	1.94	1.94	-13903	8798	5121	40441	17428	4947	22375	No	19.51	Si
SLU 36	9.52	432.58	-10767	-9067	-1088	1.94	1.94	-15578	9022	5251	40441	17428	4947	22375	No	20.56	Si
SLU 36	11.32	1053.64	-10032	-8448	-1086	1.94	1.94	-14516	8880	5168	40441	17428	4947	22375	No	20.6	Si
SLU 83	9.52	557.28	-12183	-10259	-1107	1.94	1.94	-17628	9295	5410	40441	17428	4947	22375	No	20.21	Si
SLU 83	11.32	1087.54	-10970	-9238	-1105	1.94	1.94	-15873	9061	5273	40441	17428	4947	22375	No	20.24	Si
SLU 84	9.52	523.01	-12139	-10222	-1169	1.94	1.94	-17563	9286	5405	40441	17428	4947	22375	No	19.14	Si
SLU 84	11.32	1108.55	-10983	-9249	-1167	1.94	1.94	-15892	9063	5275	40441	17428	4947	22375	No	19.17	Si
SLU 82	9.52	490.64	-11593	-9762	-1147	1.94	1.94	-16774	9181	5343	40441	17428	4947	22375	No	19.5	Si
SLU 82	11.32	1052.92	-10422	-8776	-1146	1.94	1.94	-15080	8955	5212	40441	17428	4947	22375	No	19.52	Si
SLU 40	9.52	308.37	-9692	-8162	-1188	1.94	1.94	-14024	8814	5130	40441	17428	4947	22375	No	18.83	Si
SLU 40	11.32	1010.78	-9061	-7630	-1188	1.94	1.94	-13111	8693	5059	40441	17428	4947	22375	No	18.84	Si
SLU 42	9.52	340.74	-10238	-8622	-1210	1.94	1.94	-14814	8920	5191	40441	17428	4947	22375	No	18.49	Si
SLU 42	11.32	1066.41	-9622	-8103	-1208	1.94	1.94	-13923	8801	5122	40441	17428	4947	22375	No	18.51	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	9.52	-1903.86	-5670	-4774	-5612	1.94	1.9026	-8203	12057	6882	40441	26142	4947	31089		5.54	Si
SLV 13	11.32	3269.15	-7992	-6730	-4817	1.94	1.6829	-11564	12729	6427	40441	26142	4947	31089		6.45	Si
SLV 5	9.52	-2268.69	-850	-715	-5457	1.552	0	0	0	0	40441	20913	3958	24871		4.56	Si
SLV 5	11.32	1834.64	-4982	-4196	-5771	1.94	1.8053	-7209	11858	6422	40441	26142	4947	31089		5.39	Si
SLV 7	9.52	5109.49	-16254	-13688	8285	1.94	1.94	-23519	15120	8800	40441	26142	4947	31089		3.75	Si
SLV 7	11.32	-2851.27	-7105	-5983	8111	1.94	1.7061	-11755	12768	6535	40441	26142	4947	31089		3.83	Si
SLV 11	9.52	4005.21	-15959	-13439	5847	1.94	1.94	-23092	15035	8750	40441	26142	4947	31089		5.32	Si
SLV 11	11.32	-1359.33	-8234	-6934	6163	1.94	1.94	-11913	12799	7449	40441	26142	4947	31089		5.04	Si
SLV 14	9.52	-2975.44	-5255	-4425	-7553	1.552	1.2113	0	0	0	40441	20913	3958	24871		3.29	Si
SLV 14	11.32	4236.01	-9079	-7645	-6758	1.94	1.5103	-13136	13044	5910	40441	26142	4947	31089		4.6	Si
SLV 10	9.52	-4094.42	-275	-232	-9202	1.552	0	0	0	0	40441	20913	3958	24871		2.7	Si
SLV 10	11.32	3977.53	-6842	-5762	-9026	1.94	1.166	-9900	12397	4338	40441	26142	4947	31089		3.44	Si
SLV 9	9.52	-3372.96	-554	-467	-7895	1.552	0	0	0	0	40441	20913	3958	24871		3.15	Si
SLV 9	11.32	3326.58	-6110	-5146	-7719	1.94	1.2768	-8841	12185	4667	40441	26142	4947	31089		4.03	Si
SLV 6	9.52	-2990.15	-570	-480	-6763	1.552	0	0	0	0	40441	20913	3958	24871		3.68	Si
SLV 6	11.32	2485.6	-5714	-4812	-7078	1.94	1.605	-8268	12070	5812	40441	26142	4947	31089		4.39	Si
SLV 8	9.52	4388.03	-15975	-13453	6978	1.94	1.94	-23115	15040	8753	40441	26142	4947	31089		4.45	Si
SLV 8	11.32	-2200.31	-7837	-6600	6805	1.94	1.94	-11339	12685	7382	40441	26142	4947	31089		4.57	Si
SLV 3	9.52	3990.5	-11275	-9495	6637	1.94	1.8482	-16314	13679	7585	40441	26142	4947	31089		4.68	Si
SLV 3	11.32	-3109.75	-4869	-4100	5843	1.552	0.9938	0	0	0	40441	20913	3958	24871		4.26	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 5	179667	0.46	5182	-3016	261.09	437.01	1.67	Si
SLV 6	179667	0.46	5554	-3232	261.09	467.22	1.79	Si
SLV 9	179667	0.46	5893	-3430	261.09	494.62	1.89	Si
SLV 10	179667	0.46	6265	-3646	261.09	524.52	2.01	Si
SLV 1	179667	0.46	9612	-5594	261.09	786.28	3.01	Si
SLV 2	179667	0.46	10164	-5916	261.09	828.29	3.17	Si
SLV 13	179667	0.46	11983	-6974	261.09	964.04	3.69	Si
SLV 14	179667	0.46	12536	-7296	261.09	1004.55	3.85	Si
SLV 3	179667	0.46	14198	-8263	261.09	1124.22	4.31	Si
SLV 4	179667	0.46	14750	-8585	261.09	1163.33	4.46	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 16	-6744	-10929	-223	1.292	983.3	0.922	20.36774	6.14217	Si
SLV 14	-6235	-6641	-546	1.331	932.2	0.919	21.05093	6.14217	Si
SLV 15	-6147	-10783	-224	1.385	923.4	0.918	21.925	6.14217	Si
SLV 4	-5889	-8797	554	1.387	897.5	0.916	22.00005	6.14217	Si
SLV 13	-5638	-6494	-547	1.433	872.4	0.915	22.77214	6.14217	Si
SLV 12	-6941	-15163	426	1.241	1003.1	0.923	19.53859	5.26078	Si
SLV 8	-6685	-14523	659	1.25	977.3	0.922	19.70867	5.26078	Si
SLV 3	-5292	-8651	553	1.5	837.9	0.912	23.89302	6.14217	Si
SLV 11	-6539	-15064	425	1.298	962.7	0.921	20.49765	5.26078	Si
SLV 7	-6283	-14424	658	1.309	937	0.919	20.7071	5.26078	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.679	SLU 42	Si
V_SLU	18.494	SLU 42	Si
PF_SLV	0.325	SLV 10	No
V_SLV	2.703	SLV 10	Si
PFFP_SLV	1.674	SLV 5	Si
R_SLV	3.316	SLV 16	Si

Maschio 211

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	-3.359	-0.123	0.146	L6	L7	3.505	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Esterna	100	100	100	100	1	CNR DT215	0.8			0.008				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 49	10.62	2959.79	-16998	-0.0000323	0.0003743	0.0035	3.505	25059.54	26223.65	26223.65	8.86	No	Si
SLU 49	11.42	1722.51	-14708	-0.0000256	0.0003743	0.0035	3.505	22234.78	23316.03	23316.03	13.54	No	Si
SLU 47	10.62	2800.1	-16100	-0.0000305	0.0003743	0.0035	3.505	23972	25074.93	25074.93	8.96	No	Si
SLU 47	11.42	1698.71	-13869	-0.0000243	0.0003743	0.0035	3.505	21156.02	22266.63	22266.63	13.11	No	Si
SLU 70	10.62	3244.69	-19242	-0.0000365	0.0003743	0.0035	3.505	27660.12	29137.35	29137.35	8.98	No	Si
SLU 70	11.42	2026.65	-16749	-0.0000295	0.0003743	0.0035	3.505	24760.28	25903.76	25903.76	12.78	No	Si
SLU 46	10.62	2832.92	-16449	-0.0000311	0.0003743	0.0035	3.505	24397.38	25519.69	25519.69	9.01	No	Si
SLU 46	11.42	1699.57	-14196	-0.0000248	0.0003743	0.0035	3.505	21579.28	22674.59	22674.59	13.34	No	Si
SLU 48	10.62	2958.85	-17033	-0.0000323	0.0003743	0.0035	3.505	25100.71	26267.88	26267.88	8.88	No	Si
SLU 48	11.42	1662.36	-14721	-0.0000255	0.0003743	0.0035	3.505	22251.34	23332.39	23332.39	14.04	No	Si
SLU 72	10.62	3211.24	-18916	-0.0000359	0.0003743	0.0035	3.505	27292.66	28710.01	28710.01	8.94	No	Si
SLU 72	11.42	1985.69	-16430	-0.0000289	0.0003743	0.0035	3.505	24374.93	25496.08	25496.08	12.84	No	Si
SLU 51	10.62	2926.35	-16673	-0.0000317	0.0003743	0.0035	3.505	24668.15	25805.85	25805.85	8.82	No	Si
SLU 51	11.42	1681.55	-14390	-0.000025	0.0003743	0.0035	3.505	21828.14	22916.71	22916.71	13.63	No	Si
SLU 69	10.62	3243.75	-19276	-0.0000365	0.0003743	0.0035	3.505	27698.77	29182.61	29182.61	9	No	Si
SLU 69	11.42	1966.49	-16762	-0.0000294	0.0003743	0.0035	3.505	24775.97	25920.46	25920.46	13.18	No	Si
SLU 71	10.62	3210.3	-18950	-0.0000359	0.0003743	0.0035	3.505	27331.68	28755.12	28755.12	8.96	No	Si
SLU 71	11.42	1925.53	-16443	-0.0000288	0.0003743	0.0035	3.505	24390.75	25512.72	25512.72	13.25	No	Si
SLU 50	10.62	2925.41	-16707	-0.0000317	0.0003743	0.0035	3.505	24709.69	25849.96	25849.96	8.84	No	Si
SLU 50	11.42	1621.4	-14403	-0.0000249	0.0003743	0.0035	3.505	21844.84	22933.01	22933.01	14.14	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 11	10.62	6439.5	-15405	-0.0000381	0.0005615	0.0035	3.505		25552.64	25552.64	3.97		Si
SLV 11	11.42	-4218.8	-9689	-0.0000241	0.0005615	0.0035	3.505		19266.57	19266.57	4.57		Si
SLV 5	10.62	-1697.35	-12553	-0.0000221	0.0005615	0.0035	3.505		23787.74	23787.74	14.01		Si
SLV 5	11.42	6335.96	-14054	-0.0000358	0.0005615	0.0035	3.505		23504.3	23504.3	3.71		Si
SLV 12	10.62	6183.54	-14769	-0.0000365	0.0005615	0.0035	3.505		24593.1	24593.1	3.98		Si
SLV 12	11.42	-3448.85	-9529	-0.000022	0.0005615	0.0035	3.505		19015.44	19015.44	5.51		Si
SLV 10	10.62	-1365.58	-13645	-0.0000229	0.0005615	0.0035	3.505		25431.27	25431.27	18.62		Si
SLV 10	11.42	7776.31	-14851	-0.0000406	0.0005615	0.0035	3.505		24718.32	24718.32	3.18		Si
SLD 10	10.62	817.71	-13676	-0.0000216	0.0005615	0.0035	3.505		22931.59	22931.59	28.04		Si
SLD 10	11.42	3987.21	-13023	-0.0000284	0.0005615	0.0035	3.505		21925.15	21925.15	5.5		Si
SLV 9	10.62	-1109.62	-14281	-0.0000232	0.0005615	0.0035	3.505		26388.55	26388.55	23.78		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 9	11.42	7006.35	-15011	-0.0000389	0.0005615	0.0035	3.505		24960.45	24960.45	3.56		Si
SLV 7	10.62	5851.77	-13677	-0.000034	0.0005615	0.0035	3.505		22932.29	22932.29	3.92		Si
SLV 7	11.42	-4889.2	-8732	-0.0000243	0.0005615	0.0035	3.505		17768.4	17768.4	3.63		Si
SLV 6	10.62	-1953.32	-11917	-0.0000218	0.0005615	0.0035	3.505		22794.83	22794.83	11.67		Si
SLV 6	11.42	7105.92	-13894	-0.0000374	0.0005615	0.0035	3.505		23261.2	23261.2	3.27		Si
SLV 8	10.62	5595.81	-13041	-0.0000324	0.0005615	0.0035	3.505		21952.94	21952.94	3.92		Si
SLV 8	11.42	-4119.24	-8572	-0.0000222	0.0005615	0.0035	3.505		17518.91	17518.91	4.25		Si
SLV 14	10.62	1900.19	-15899	-0.0000275	0.0005615	0.0035	3.505		26292.44	26292.44	13.84		Si
SLV 14	11.42	4816.46	-14066	-0.000032	0.0005615	0.0035	3.505		23522.66	23522.66	4.88		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 74	10.62	3226.89	-20204	-17014	2798	3.505	3.505	-16180	9102	11717	35948	31487	8938	40424	No	14.45	Si
SLU 74	11.42	2169.37	-17577	-14802	2798	3.505	3.505	-14077	8821	10843	35948	31487	8938	40424	No	14.45	Si
SLU 78	10.62	3354.71	-20719	-17447	2875	3.505	3.505	-16593	9157	11888	35948	31487	8938	40424	No	14.06	Si
SLU 78	11.42	2252.48	-18076	-15222	2896	3.505	3.505	-14477	8875	11009	35948	31487	8938	40424	No	13.96	Si
SLU 71	10.62	3210.3	-18950	-15958	2820	3.505	3.505	-15177	8968	11300	35948	31487	8938	40424	No	14.34	Si
SLU 71	11.42	1925.53	-16443	-13847	2819	3.505	3.505	-13169	8700	10466	35948	31487	8938	40424	No	14.34	Si
SLU 69	10.62	3243.75	-19276	-16233	2826	3.505	3.505	-15438	9003	11408	35948	31487	8938	40424	No	14.31	Si
SLU 69	11.42	1966.49	-16762	-14115	2826	3.505	3.505	-13424	8734	10572	35948	31487	8938	40424	No	14.31	Si
SLU 77	10.62	3353.77	-20753	-17476	3009	3.505	3.505	-16621	9161	11899	35948	31487	8938	40424	No	13.43	Si
SLU 77	11.42	2192.32	-18089	-15233	3009	3.505	3.505	-14487	8876	11013	35948	31487	8938	40424	No	13.43	Si
SLU 84	10.62	3241.54	-20477	-17243	2736	3.505	3.505	-16399	9131	11807	35948	31487	8938	40424	No	14.78	Si
SLU 84	11.42	2285.35	-17814	-15001	2757	3.505	3.505	-14267	8847	10922	35948	31487	8938	40424	No	14.66	Si
SLU 80	10.62	3321.27	-20393	-17173	2868	3.505	3.505	-16332	9122	11780	35948	31487	8938	40424	No	14.09	Si
SLU 80	11.42	2211.52	-17758	-14954	2890	3.505	3.505	-14221	8841	10903	35948	31487	8938	40424	No	13.99	Si
SLU 79	10.62	3320.33	-20428	-17202	3003	3.505	3.505	-16360	9126	11791	35948	31487	8938	40424	No	13.46	Si
SLU 79	11.42	2151.36	-17771	-14965	3003	3.505	3.505	-14232	8842	10908	35948	31487	8938	40424	No	13.46	Si
SLU 83	10.62	3240.6	-20511	-17272	2870	3.505	3.505	-16427	9135	11819	35948	31487	8938	40424	No	14.08	Si
SLU 83	11.42	2225.2	-17827	-15012	2870	3.505	3.505	-14277	8848	10926	35948	31487	8938	40424	No	14.08	Si
SLU 70	10.62	3244.69	-19242	-16204	2691	3.505	3.505	-15410	8999	11397	35948	31487	8938	40424	No	15.02	Si
SLU 70	11.42	2026.65	-16749	-14104	2713	3.505	3.505	-13414	8733	10568	35948	31487	8938	40424	No	14.9	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	10.62	-1697.35	-12553	-10571	-16954	3.505	3.505	-10053	12427	13067	35948	47230	8938	49015		2.89	Si
SLV 5	11.42	6335.96	-14054	-11835	-16325	3.505	3.505	-11255	12668	13320	35948	47230	8938	49268		3.02	Si
SLD 11	10.62	3920.11	-14388	-12117	10265	3.505	3.505	-11523	12721	13376	35948	47230	8938	49324		4.81	Si
SLD 11	11.42	-812.62	-10972	-9240	10012	3.505	3.505	-8787	12174	12801	35948	47230	8938	48749		4.87	Si
SLV 8	10.62	5595.81	-13041	-10982	18922	3.505	3.505	-10444	12505	13149	35948	47230	8938	49097		2.59	Si
SLV 8	11.42	-4119.24	-8572	-7218	18320	3.505	3.505	-6865	11790	12397	35948	47230	8938	48344		2.64	Si
SLV 15	10.62	4545.1	-17181	-14468	12071	3.505	3.505	-13760	13169	13847	35948	47230	8938	49794		4.13	Si
SLV 15	11.42	305.3	-12707	-10700	11840	3.505	3.505	-10176	12452	13093	35948	47230	8938	49041		4.14	Si
SLV 6	10.62	-1953.32	-11917	-10035	-19279	3.505	3.505	-9544	12325	12960	35948	47230	8938	48908		2.54	Si
SLV 6	11.42	7105.92	-13894	-11700	-18650	3.505	3.505	-11127	12642	13293	35948	47230	8938	49241		2.64	Si
SLV 9	10.62	-1109.62	-14281	-12026	-15278	3.505	3.505	-11437	12704	13358	35948	47230	8938	49306		3.23	Si
SLV 9	11.42	7006.35	-15011	-12640	-14677	3.505	3.505	-12021	12821	13481	35948	47230	8938	49429		3.37	Si
SLV 12	10.62	6183.54	-14769	-12437	20597	3.505	3.505	-11828	12782	13440	35948	47230	8938	49388		2.4	Si
SLV 12	11.42	-3448.85	-9529	-8024	19968	3.505	3.505	-7631	11943	12558	35948	47230	8938	48505		2.43	Si
SLV 11	10.62	6439.5	-15405	-12972	22922	3.505	3.505	-12337	12884	13548	35948	47230	8938	49495		2.16	Si
SLV 11	11.42	-4218.8	-9689	-8159	22293	3.505	3.505	-7759	11969	12585	35948	47230	8938	48532		2.18	Si
SLV 7	10.62	5851.77	-13677	-11517	21246	3.505	3.505	-10953	12607	13257	35948	47230	8938	49204		2.32	Si
SLV 7	11.42	-4889.2	-8732	-7353	20645	3.505	3.505	-6993	11815	12424	35948	47230	8938	48371		2.34	Si
SLV 10	10.62	-1365.58	-13645	-11490	-17603	3.505	3.505	-10927	12602	13251	35948	47230	8938	49199		2.79	Si
SLV 10	11.42	7776.31	-14851	-12506	-17002	3.505	3.505	-11893	12795	13454	35948	47230	8938	49402		2.91	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 4	179667	0.46	10094	-10614	471.72	1486.82	3.15	Si
SLV 2	179667	0.46	10556	-11099	471.72	1549.8	3.29	Si
SLV 3	179667	0.46	10774	-11329	471.72	1579.46	3.35	Si
SLV 1	179667	0.46	11236	-11814	471.72	1641.79	3.48	Si
SLV 8	179667	0.46	11409	-11996	471.72	1665.01	3.53	Si
SLV 7	179667	0.46	11867	-12478	471.72	1726.24	3.66	Si
SLV 12	179667	0.46	12902	-13567	471.72	1863.07	3.95	Si
SLV 6	179667	0.46	12948	-13614	471.72	1869.03	3.96	Si
SLV 11	179667	0.46	13360	-14048	471.72	1922.89	4.08	Si
SLV 5	179667	0.46	13406	-14096	471.72	1928.81	4.09	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-10482	-24911	1687	1.353	1605.8	0.916	21.47159	6.14217	Si
SLV 14	-10165	-24393	1687	1.384	1574.1	0.915	21.98742	6.14217	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-9643	-22379	1740	1.434	1522	0.913	22.83044	6.14217	Si
SLV 16	-9326	-21861	1740	1.468	1490.5	0.911	23.41607	6.14217	Si
SLV 1	-9155	-12960	-1747	1.487	1473.5	0.911	23.73521	6.14217	Si
SLV 2	-8838	-12442	-1747	1.525	1442	0.909	24.37027	6.14217	Si
SLV 3	-8316	-10428	-1694	1.595	1390.2	0.907	25.56385	6.14217	Si
SLV 9	-10944	-23597	423	1.399	1652.1	0.918	22.15878	5.26078	Si
SLV 10	-10731	-23249	423	1.419	1630.8	0.917	22.50305	5.26078	Si
SLV 4	-7999	-9910	-1694	1.639	1358.8	0.906	26.29873	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.818	SLU 51	Si
V_SLU	13.433	SLU 77	Si
PF_SLV	3.179	SLV 10	Si
V_SLV	2.159	SLV 11	Si
PFFP_SLV	3.152	SLV 4	Si
R_SLV	3.496	SLV 13	Si

Maschio 212

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	0.646	-0.123	5.951	L6	L7	5.305	0.3	3.55	3.55	3.55			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Esterna	100	100	100	100	1	CNR DT215	0.8			0.008				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 61	10.62	-5224.77	-26979	-0.0000318	0.0003743	0.0035	5.305	59646.74	70159.07	70159.07	13.43	No	Si
SLU 61	11.42	-4333.96	-23279	-0.0000271	0.0003743	0.0035	5.305	52876.3	62576.8	62576.8	14.44	No	Si
SLU 39	10.62	-4894.09	-26010	-0.0000304	0.0003743	0.0035	5.305	57916.75	68197.22	68197.22	13.93	No	Si
SLU 39	11.42	-4342.28	-22561	-0.0000264	0.0003743	0.0035	5.305	51511.17	61024.42	61024.42	14.05	No	Si
SLU 82	10.62	-5799.46	-30584	-0.0000361	0.0003743	0.0035	5.305	65811.38	77325.38	77325.38	13.33	No	Si
SLU 82	11.42	-4956.4	-26482	-0.000031	0.0003743	0.0035	5.305	58762.89	69148.28	69148.28	13.95	No	Si
SLU 52	10.62	-5008.32	-26067	-0.0000306	0.0003743	0.0035	5.305	58019.16	68311.67	68311.67	13.64	No	Si
SLU 52	11.42	-4062.22	-22499	-0.000026	0.0003743	0.0035	5.305	51391.4	60889.62	60889.62	14.99	No	Si
SLU 81	10.62	-5730.36	-30583	-0.0000361	0.0003743	0.0035	5.305	65809.62	77323.37	77323.37	13.49	No	Si
SLU 81	11.42	-5006.47	-26508	-0.0000311	0.0003743	0.0035	5.305	58808.75	69200.19	69200.19	13.82	No	Si
SLU 40	10.62	-4963.19	-26011	-0.0000305	0.0003743	0.0035	5.305	57918.66	68199.35	68199.35	13.74	No	Si
SLU 40	11.42	-4292.21	-22536	-0.0000263	0.0003743	0.0035	5.305	51461.99	60969.05	60969.05	14.2	No	Si
SLU 73	10.62	-5583.01	-29672	-0.000035	0.0003743	0.0035	5.305	64291.46	75588.24	75588.24	13.54	No	Si
SLU 73	11.42	-4684.66	-25702	-0.0000299	0.0003743	0.0035	5.305	57359.8	67577.98	67577.98	14.43	No	Si
SLU 31	10.62	-4746.75	-25099	-0.0000294	0.0003743	0.0035	5.305	56262.17	66372.94	66372.94	13.98	No	Si
SLU 31	11.42	-4020.47	-21755	-0.0000252	0.0003743	0.0035	5.305	49958.1	59293.79	59293.79	14.75	No	Si
SLU 19	10.62	-4388.5	-22406	-0.0000263	0.0003743	0.0035	5.305	51214.35	60690.79	60690.79	13.83	No	Si
SLU 19	11.42	-3669.78	-19333	-0.0000224	0.0003743	0.0035	5.305	45161.59	54139.34	54139.34	14.75	No	Si
SLU 60	10.62	-5155.66	-26978	-0.0000317	0.0003743	0.0035	5.305	59644.86	70156.91	70156.91	13.61	No	Si
SLU 60	11.42	-4384.03	-23305	-0.0000272	0.0003743	0.0035	5.305	52924.85	62632.56	62632.56	14.29	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	10.62	-16611.91	-18088	-0.0000349	0.0005615	0.0035	5.305		52426.41	52426.41	3.16		Si
SLV 10	11.42	-84.28	-11482	-0.0000108	0.0005615	0.0035	5.305		36615.9	36615.9	434.44		Si
SLV 5	10.62	-14274.91	-16265	-0.0000306	0.0005615	0.0035	5.305		48042.43	48042.43	3.37		Si
SLV 5	11.42	1087.85	-10837	-0.0000113	0.0005615	0.0035	5.305		28900.69	28900.69	26.57		Si
SLD 10	10.62	-8921.45	-19873	-0.0000283	0.0005615	0.0035	5.305		56588.71	56588.71	6.34		Si
SLD 10	11.42	-2013.9	-15566	-0.0000168	0.0005615	0.0035	5.305		46374.31	46374.31	23.03		Si
SLV 7	10.62	9044.79	-23913	-0.0000324	0.0005615	0.0035	5.305		59869.85	59869.85	6.62		Si
SLV 7	11.42	-6439.83	-24995	-0.0000307	0.0005615	0.0035	5.305		68307.08	68307.08	10.61		Si
SLD 9	10.62	-8679.73	-19691	-0.0000279	0.0005615	0.0035	5.305		56178.76	56178.76	6.47		Si
SLD 9	11.42	-2367.91	-15606	-0.0000172	0.0005615	0.0035	5.305		46468.88	46468.88	19.62		Si
SLV 9	10.62	-16032.01	-17653	-0.0000338	0.0005615	0.0035	5.305		51376.43	51376.43	3.2		Si
SLV 9	11.42	-933.55	-11577	-0.0000118	0.0005615	0.0035	5.305		36848.62	36848.62	39.47		Si
SLV 13	10.62	-9779.36	-21843	-0.0000312	0.0005615	0.0035	5.305		61061.85	61061.85	6.24		Si
SLV 13	11.42	-6132.62	-17418	-0.000023	0.0005615	0.0035	5.305		50811.73	50811.73	8.29		Si
SLV 14	10.62	-10640.68	-22490	-0.0000328	0.0005615	0.0035	5.305		62540.56	62540.56	5.88		Si
SLV 14	11.42	-4871.2	-17277	-0.0000215	0.0005615	0.0035	5.305		50471.8	50471.8	10.36		Si
SLV 6	10.62	-14854.8	-16700	-0.0000316	0.0005615	0.0035	5.305		49085.94	49085.94	3.3		Si
SLV 6	11.42	1937.12	-10742	-0.0000121	0.0005615	0.0035	5.305		28665.1	28665.1	14.8		Si
SLD 6	10.62	-8167.49	-19274	-0.0000269	0.0005615	0.0035	5.305		55237.22	55237.22	6.76		Si
SLD 6	11.42	-1147.29	-15245	-0.0000155	0.0005615	0.0035	5.305		45608.84	45608.84	39.75		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 55	10.62	-4847	-27120	-22838	-3170	5.305	5.305	-14350	8858	16796	35948	47657	13528	52744	No	16.64	Si
SLU 55	11.42	-3982.33	-23559	-19839	-3169	5.305	5.305	-12466	8607	15597	35948	47657	13528	51544	No	16.26	Si
SLU 82	10.62	-5799.46	-30584	-25755	-3076	5.305	5.305	-16183	9102	17963	35948	47657	13528	53910	No	17.53	Si
SLU 82	11.42	-4956.4	-26482	-22301	-3075	5.305	5.305	-14012	8813	16581	35948	47657	13528	52529	No	17.08	Si
SLU 65	10.62	-4970.48	-27541	-23193	-3032	5.305	5.305	-14573	8887	16938	35948	47657	13528	52886	No	17.44	Si
SLU 65	11.42	-4128.48	-23921	-20144	-3032	5.305	5.305	-12657	8632	15719	35948	47657	13528	51666	No	17.04	Si
SLU 63	10.62	-5063.45	-28032	-23606	-3068	5.305	5.305	-14832	8922	17103	35948	47657	13528	53051	No	17.29	Si
SLU 63	11.42	-4254.07	-24340	-20497	-3068	5.305	5.305	-12879	8662	15860	35948	47657	13528	51807	No	16.89	Si
SLU 44	10.62	-4395.79	-23937	-20157	-3068	5.305	5.305	-12666	8633	15724	35948	47657	13528	51672	No	16.84	Si
SLU 44	11.42	-3506.04	-20718	-17447	-3067	5.305	5.305	-10963	8406	14640	35948	47657	13528	50587	No	16.49	Si
SLU 61	10.62	-5224.77	-26979	-22719	-3111	5.305	5.305	-14275	8848	16749	35948	47657	13528	52696	No	16.94	Si
SLU 61	11.42	-4333.96	-23279	-19603	-3111	5.305	5.305	-12318	8587	15502	35948	47657	13528	51450	No	16.54	Si
SLU 73	10.62	-5583.01	-29672	-24987	-3178	5.305	5.305	-15700	9038	17656	35948	47657	13528	53603	No	16.87	Si
SLU 73	11.42	-4684.66	-25702	-21643	-3177	5.305	5.305	-13599	8758	16318	35948	47657	13528	52266	No	16.45	Si
SLU 47	10.62	-4234.47	-24989	-21044	-3024	5.305	5.305	-13223	8707	16079	35948	47657	13528	52026	No	17.2	Si
SLU 47	11.42	-3426.16	-21779	-18340	-3024	5.305	5.305	-11524	8481	14997	35948	47657	13528	50945	No	16.85	Si
SLU 52	10.62	-5008.32	-26067	-21951	-3213	5.305	5.305	-13793	8783	16442	35948	47657	13528	52389	No	16.3	Si
SLU 52	11.42	-4062.22	-22499	-18946	-3213	5.305	5.305	-11905	8532	15240	35948	47657	13528	51187	No	15.93	Si
SLU 76	10.62	-5421.69	-30724	-25873	-3135	5.305	5.305	-16257	9112	18010	35948	47657	13528	53958	No	17.21	Si
SLU 76	11.42	-4604.77	-26762	-22537	-3134	5.305	5.305	-14161	8833	16676	35948	47657	13528	52623	No	16.79	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 12	10.62	6707.79	-25737	-21673	25895	5.305	5.305	-13618	13140	20913	35948	71485	13528	56860		2.2	Si
SLV 12	11.42	-7611.96	-25640	-21592	24966	5.305	5.305	-13567	13130	20896	35948	71485	13528	56844		2.28	Si
SLV 6	10.62	-14854.8	-16700	-14063	-33256	5.305	5.289	-8899	12197	19352	35948	71485	13528	55300		1.66	Si
SLV 6	11.42	1937.12	-10742	-9046	-32326	5.305	5.305	-5684	11553	18387	35948	71485	13528	54335		1.68	Si
SLV 10	10.62	-16611.91	-18088	-15232	-34288	5.305	5.2024	-9804	12377	19318	35948	71485	13528	55265		1.61	Si
SLV 10	11.42	-84.28	-11482	-9669	-33380	5.305	5.305	-6075	11632	18512	35948	71485	13528	54459		1.63	Si
SLV 14	10.62	-10640.68	-22490	-18939	-15211	5.305	5.305	-11900	12797	20366	35948	71485	13528	56313		3.7	Si
SLV 14	11.42	-4871.2	-17277	-14549	-14973	5.305	5.305	-9142	12245	19488	35948	71485	13528	55435		3.7	Si
SLV 8	10.62	8464.89	-24349	-20504	26926	5.305	5.305	-12883	12993	20679	35948	71485	13528	56626		2.1	Si
SLV 8	11.42	-5590.55	-24900	-20969	26020	5.305	5.305	-13175	13052	20772	35948	71485	13528	56719		2.18	Si
SLD 10	10.62	-8921.45	-19873	-16735	-14942	5.305	5.305	-10515	12520	19925	35948	71485	13528	55873		3.74	Si
SLD 10	11.42	-2013.9	-15566	-13109	-14578	5.305	5.305	-8237	12064	19200	35948	71485	13528	55147		3.78	Si
SLV 7	10.62	9044.79	-23913	-20137	30156	5.305	5.305	-12653	12947	20606	35948	71485	13528	56553		1.88	Si
SLV 7	11.42	-6439.83	-24995	-21049	29250	5.305	5.305	-13226	13062	20788	35948	71485	13528	56735		1.94	Si
SLV 11	10.62	7287.68	-25301	-21306	29124	5.305	5.305	-13388	13094	20839	35948	71485	13528	56787		1.95	Si
SLV 11	11.42	-8461.23	-25735	-21672	28195	5.305	5.305	-13617	13140	20912	35948	71485	13528	56860		2.02	Si
SLV 5	10.62	-14274.91	-16265	-13697	-30027	5.305	5.305	-8606	12138	19317	35948	71485	13528	55265		1.84	Si
SLV 5	11.42	1087.85	-10837	-9126	-29096	5.305	5.305	-5734	11563	18403	35948	71485	13528	54351		1.87	Si
SLV 9	10.62	-16032.01	-17653	-14865	-31058	5.305	5.2329	-9511	12319	19339	35948	71485	13528	55287		1.78	Si
SLV 9	11.42	-933.55	-11577	-9749	-30151	5.305	5.305	-6126	11642	18528	35948	71485	13528	54475		1.81	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 10.395 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 5	179667	0.46	10290	-16376	713.97	2290.86	3.21	Si
SLV 6	179667	0.46	10609	-16883	713.97	2356.6	3.3	Si
SLV 1	179667	0.46	10684	-17004	713.97	2372.18	3.32	Si
SLV 2	179667	0.46	11158	-17758	713.97	2469.11	3.46	Si
SLV 9	179667	0.46	11497	-18298	713.97	2538.08	3.55	Si
SLV 10	179667	0.46	11816	-18806	713.97	2602.61	3.65	Si
SLV 3	179667	0.46	12297	-19571	713.97	2699.23	3.78	Si
SLV 4	179667	0.46	12771	-20325	713.97	2793.78	3.91	Si
SLV 13	179667	0.46	14711	-23412	713.97	3173.53	4.44	Si
SLV 14	179667	0.46	15185	-24166	713.97	3264.51	4.57	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.

- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 10.395 Wa = 0.05 Ta = 0.0702

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 16	-16461	-38068	2276	1.33	2490.1	0.917	21.0661	6.14217	Si
SLV 4	-16215	-23900	-2322	1.342	2465.6	0.917	21.28061	6.14217	Si
SLV 15	-16195	-37518	2276	1.346	2463.5	0.917	21.33598	6.14217	Si
SLV 3	-15949	-23351	-2321	1.359	2438.9	0.916	21.55757	6.14217	Si
SLV 8	-18802	-35277	-762	1.267	2725	0.923	19.95339	5.26078	Si
SLV 12	-18876	-39528	617	1.269	2732.4	0.923	19.98613	5.26078	Si
SLV 14	-14280	-32489	2318	1.472	2272.3	0.912	23.47097	6.14217	Si
SLV 7	-18623	-34908	-762	1.276	2707	0.922	20.1081	5.26078	Si
SLV 11	-18696	-39158	617	1.278	2714.4	0.922	20.14	5.26078	Si
SLV 13	-14014	-31940	2319	1.492	2245.8	0.911	23.80695	6.14217	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	13.333	SLU 82	Si
V_SLU	15.933	SLU 52	Si
PF_SLV	3.156	SLV 10	Si
V_SLV	1.612	SLV 10	Si
PFFP_SLV	3.209	SLV 5	Si
R_SLV	3.43	SLV 16	Si

Maschio 213

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-24.678	-3.359	-24.678	5.951	L7	L8	9.311	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Esterna	100	100	100	100	1	CNR DT215	0.8			0.008				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 9	12.17	-2.47	-24123	-0.000013	0.0003743	0.0035	9.3107	102774.32	128014.35	128014.35	51773.71	No	Si
SLU 9	15.32	1054.58	-4189	-0.0000026	0.0003743	0.0035	9.3107	19213.14	22963.74	22963.74	21.78	No	Si
SLU 58	12.17	-703.62	-31281	-0.0000172	0.0003743	0.0035	9.3107	129604.11	156468.83	156468.83	222.38	No	Si
SLU 58	15.32	1192.57	-4904	-0.000003	0.0003743	0.0035	9.3107	22435.77	26199.81	26199.81	21.97	No	Si
SLU 48	12.17	-463.46	-30039	-0.0000164	0.0003743	0.0035	9.3107	125068.89	151558.29	151558.29	327.01	No	Si
SLU 48	15.32	1134.44	-4787	-0.0000029	0.0003743	0.0035	9.3107	21911.63	25672.82	25672.82	22.63	No	Si
SLU 51	12.17	-290.81	-29335	-0.000016	0.0003743	0.0035	9.3107	122476.94	148794.9	148794.9	511.65	No	Si
SLU 51	15.32	1182.36	-4780	-0.0000029	0.0003743	0.0035	9.3107	21880.5	25641.53	25641.53	21.69	No	Si
SLU 59	12.17	-530.28	-31265	-0.0000171	0.0003743	0.0035	9.3107	129546.58	156405.87	156405.87	294.95	No	Si
SLU 59	15.32	1178.26	-4910	-0.000003	0.0003743	0.0035	9.3107	22462.14	26226.33	26226.33	22.26	No	Si
SLU 16	12.17	-415.28	-26069	-0.0000142	0.0003743	0.0035	9.3107	110233.51	136073.97	136073.97	327.67	No	Si
SLU 16	15.32	1064.79	-4312	-0.0000026	0.0003743	0.0035	9.3107	19770.8	23522.99	23522.99	22.09	No	Si
SLU 71	12.17	-219.64	-33069	-0.000018	0.0003743	0.0035	9.3107	136044.46	163608.74	163608.74	744.89	No	Si
SLU 71	15.32	1251.1	-5345	-0.0000033	0.0003743	0.0035	9.3107	24414.89	28191.7	28191.7	22.53	No	Si
SLU 8	12.17	-175.82	-24139	-0.0000131	0.0003743	0.0035	9.3107	102835.55	128080.51	128080.51	728.49	No	Si
SLU 8	15.32	1068.88	-4183	-0.0000026	0.0003743	0.0035	9.3107	19186.63	22937.16	22937.16	21.46	No	Si
SLU 50	12.17	-464.16	-29351	-0.000016	0.0003743	0.0035	9.3107	122535.47	148857	148857	320.7	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 50	15.32	1196.67	-4775	-0.0000029	0.0003743	0.0035	9.3107	21854.1	25615	25615	21.41	No	Si
SLU 17	12.17	-241.93	-26053	-0.0000141	0.0003743	0.0035	9.3107	110173.28	136010.34	136010.34	562.18	No	Si
SLU 17	15.32	1050.48	-4318	-0.0000026	0.0003743	0.0035	9.3107	19797.28	23549.55	23549.55	22.42	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 7	12.17	1681.62	-23697	-0.0000132	0.0005615	0.0035	9.3107		109118.32	109118.32	64.89		Si
SLD 7	15.32	2509.02	-2656	-0.0000022	0.0005615	0.0035	9.3107		16045.09	16045.09	6.39		Si
SLV 8	12.17	3265.75	-24478	-0.0000142	0.0005615	0.0035	9.3107		112419.36	112419.36	34.42		Si
SLV 8	15.32	4960.22	-2422	-0.000003	0.0005615	0.0035	9.3107		14975.41	14975.41	3.02		Si
SLV 11	12.17	5171.18	-24227	-0.0000147	0.0005615	0.0035	9.3107		111360.25	111360.25	21.53		Si
SLV 11	15.32	5330.14	-2963	-0.0000034	0.0005615	0.0035	9.3107		17449.59	17449.59	3.27		Si
SLV 12	12.17	3498.44	-24303	-0.0000142	0.0005615	0.0035	9.3107		111680.6	111680.6	31.92		Si
SLV 12	15.32	4865.15	-2961	-0.0000032	0.0005615	0.0035	9.3107		17440.02	17440.02	3.58		Si
SLV 4	12.17	-840.7	-23918	-0.0000131	0.0005615	0.0035	9.3107		128903.32	128903.32	153.33		Si
SLV 4	15.32	1708.45	-1885	-0.0000016	0.0005615	0.0035	9.3107		12514.59	12514.59	7.33		Si
SLD 8	12.17	984.36	-23729	-0.000013	0.0005615	0.0035	9.3107		109251.69	109251.69	110.99		Si
SLD 8	15.32	2315.2	-2655	-0.0000022	0.0005615	0.0035	9.3107		16041.1	16041.1	6.93		Si
SLV 3	12.17	1643.81	-23806	-0.0000133	0.0005615	0.0035	9.3107		109577.35	109577.35	66.66		Si
SLV 3	15.32	2399.11	-1888	-0.0000018	0.0005615	0.0035	9.3107		12528.88	12528.88	5.22		Si
SLD 12	12.17	1085.39	-23649	-0.000013	0.0005615	0.0035	9.3107		108914.06	108914.06	100.35		Si
SLD 12	15.32	2274.56	-2885	-0.0000023	0.0005615	0.0035	9.3107		17094.29	17094.29	7.52		Si
SLV 7	12.17	4938.49	-24402	-0.0000148	0.0005615	0.0035	9.3107		112098.89	112098.89	22.7		Si
SLV 7	15.32	5425.21	-2425	-0.0000033	0.0005615	0.0035	9.3107		14985.01	14985.01	2.76		Si
SLD 11	12.17	1782.65	-23617	-0.0000132	0.0005615	0.0035	9.3107		108780.72	108780.72	61.02		Si
SLD 11	15.32	2468.39	-2886	-0.0000024	0.0005615	0.0035	9.3107		17098.27	17098.27	6.93		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 61	12.17	-1138.78	-29575	-24906	-1230	9.3107	9.3107	-8917	8133	23408	31718	83641	23742	55127	No	44.8	Si
SLU 61	15.32	595.77	-3406	-2868	-1164	9.3107	9.3107	-1027	7081	19780	31718	83641	23742	51498	No	44.23	Si
SLU 53	12.17	-955.86	-30710	-25861	-1102	9.3107	9.3107	-9259	8179	23791	31718	83641	23742	55509	No	50.35	Si
SLU 53	15.32	839.97	-4137	-3484	-1116	9.3107	9.3107	-1247	7111	19862	31718	83641	23742	51580	No	46.22	Si
SLU 58	12.17	-703.62	-31281	-26342	-1088	9.3107	9.3107	-9431	8202	23983	31718	83641	23742	55701	No	51.18	Si
SLU 58	15.32	1192.57	-4904	-4130	-1108	9.3107	9.3107	-1478	7142	19948	31718	83641	23742	51666	No	46.62	Si
SLU 60	12.17	-1312.12	-29591	-24919	-1208	9.3107	9.3107	-8921	8134	23414	31718	83641	23742	55132	No	45.65	Si
SLU 60	15.32	610.08	-3400	-2863	-1217	9.3107	9.3107	-1025	7081	19779	31718	83641	23742	51497	No	42.32	Si
SLU 55	12.17	-667.65	-29996	-25260	-1168	9.3107	9.3107	-9043	8150	23550	31718	83641	23742	55268	No	47.32	Si
SLU 55	15.32	878.36	-4134	-3481	-1057	9.3107	9.3107	-1246	7111	19861	31718	83641	23742	51580	No	48.8	Si
SLU 52	12.17	-920.59	-28738	-24200	-1210	9.3107	9.3107	-8664	8100	23126	31718	83641	23742	54845	No	45.34	Si
SLU 52	15.32	587.99	-3355	-2825	-1093	9.3107	9.3107	-1011	7079	19774	31718	83641	23742	51492	No	47.1	Si
SLU 43	12.17	-970.03	-26834	-22597	-1087	9.3107	9.3107	-8090	8023	22485	31718	83641	23742	54203	No	49.85	Si
SLU 43	15.32	615.93	-3216	-2708	-1096	9.3107	9.3107	-969	7074	19758	31718	83641	23742	51477	No	46.95	Si
SLU 63	12.17	-885.84	-30834	-25965	-1189	9.3107	9.3107	-9296	8184	23832	31718	83641	23742	55550	No	46.73	Si
SLU 63	15.32	886.14	-4186	-3525	-1128	9.3107	9.3107	-1262	7113	19867	31718	83641	23742	51586	No	45.73	Si
SLU 56	12.17	-702.92	-31968	-26921	-1061	9.3107	9.3107	-9638	8230	24214	31718	83641	23742	55933	No	52.72	Si
SLU 56	15.32	1130.34	-4917	-4140	-1080	9.3107	9.3107	-1482	7142	19949	31718	83641	23742	51668	No	47.85	Si
SLU 62	12.17	-1059.18	-30849	-25979	-1166	9.3107	9.3107	-9301	8185	23837	31718	83641	23742	55556	No	47.64	Si
SLU 62	15.32	900.45	-4180	-3520	-1181	9.3107	9.3107	-1260	7112	19867	31718	83641	23742	51585	No	43.69	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 5	12.17	-2445.88	-22823	-19220	-7670	9.3107	9.3107	-6881	11793	32940	31718	125462	23742	64658		8.43	Si
SLD 5	15.32	-1269.5	-2762	-2326	-4624	9.3107	9.3107	-833	10583	29561	31718	125462	23742	61280		13.25	Si
SLV 10	12.17	-6298.99	-22070	-18585	-15981	9.3107	9.3107	-6654	11747	32813	31718	125462	23742	64531		4.04	Si
SLV 10	15.32	-4420.15	-3223	-2714	-8261	9.3107	9.3107	-972	10611	29639	31718	125462	23742	61357		7.43	Si
SLV 5	12.17	-4858.93	-22169	-18669	-17820	9.3107	9.3107	-6684	11753	32830	31718	125462	23742	64548		3.62	Si
SLV 5	15.32	-3860.08	-2687	-2262	-10180	9.3107	9.3107	-810	10579	29548	31718	125462	23742	61267		6.02	Si
SLV 6	12.17	-6531.68	-22245	-18732	-15915	9.3107	9.3107	-6706	11758	32842	31718	125462	23742	64561		4.06	Si
SLV 6	15.32	-4325.08	-2685	-2261	-8276	9.3107	9.1328	-825	10582	28992	31718	125462	23742	60711		7.34	Si
SLD 9	12.17	-2344.86	-22743	-19152	-7699	9.3107	9.3107	-6857	11788	32926	31718	125462	23742	64645		8.4	Si
SLD 9	15.32	-1310.14	-2993	-2520	-4617	9.3107	9.3107	-902	10597	29600	31718	125462	23742	61318		13.28	Si
SLV 7	12.17	4938.49	-24402	-20549	14431	9.3107	9.3107	-7357	11888	33206	31718	125462	23742	64924		4.5	Si
SLV 7	15.32	5425.21	-2425	-2042	6695	9.3107	7.2533	-731	10563	22985	31718	125462	23742	54703		8.17	Si
SLV 12	12.17	3498.44	-24303	-20466	16271	9.3107	9.3107	-7327	11882	33189	31718	125462	23742	64907		3.99	Si
SLV 12	15.32	4865.15	-2961	-2494	8615	9.3107	9.0369	-893	10595	28724	31718	125462	23742	60443		7.02	Si
SLV 8	12.17	3265.75	-24478	-20613	16336	9.3107	9.3107	-7380	11893	33218	31718	125462	23742	64937		3.97	Si
SLV 8	15.32	4960.22	-2422	-2040	8599	9.3107	7.8233	-730	10563	24791	31718	125462	23742	56509		6.57	Si
SLV 9	12.17	-4626.25	-21994	-18522	-17886	9.3107	9.3107	-6631	11743	32800	31718	125462	23742	64519		3.61	Si
SLV 9	15.32	-3955.16	-3225	-2716	-10165	9.3107	9.3107	-972	10611	29639	31718	125462	23742	61358		6.04	Si
SLV 11	12.17	5171.18	-24227	-20402	14365	9.3107	9.3107	-7304	11877	33176	31718	125462	23742	64895		4.52	Si
SLV 11	15.32	5330.14	-2963	-2495	6711	9.3107	8.5696	-893	10595	27239	31718	125462	23742	58958		8.79	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 1	179667	0.53	3776	-10547	1135.07	1542.93	1.36	Si
SLV 2	179667	0.53	3792	-10591	1135.07	1549.15	1.36	Si
SLV 3	179667	0.53	3859	-10779	1135.07	1575.98	1.39	Si

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 4	179667	0.53	3875	-10822	1135.07	1582.19	1.39	Si
SLV 5	179667	0.53	4195	-11718	1135.07	1709.4	1.51	Si
SLV 6	179667	0.53	4206	-11747	1135.07	1713.56	1.51	Si
SLV 7	179667	0.53	4472	-12491	1135.07	1818.77	1.6	Si
SLV 8	179667	0.53	4482	-12520	1135.07	1822.92	1.61	Si
SLV 9	179667	0.53	4635	-12947	1135.07	1883.16	1.66	Si
SLV 10	179667	0.53	4646	-12977	1135.07	1887.29	1.66	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-3762	-22554	2459	4.347	1801.3	0.902	70.06583	6.16452	Si
SLV 14	-3759	-22666	2459	4.348	1801.1	0.902	70.08217	6.16452	Si
SLV 15	-3684	-23224	2454	4.376	1795.4	0.902	70.4897	6.16452	Si
SLV 16	-3681	-23336	2455	4.377	1795.2	0.902	70.50619	6.16452	Si
SLV 1	-1967	-23136	-2415	5.132	1681	0.926	80.52468	6.16452	Si
SLV 2	-1964	-23248	-2414	5.133	1680.8	0.926	80.54419	6.16452	Si
SLV 3	-1888	-23806	-2420	5.172	1676.6	0.928	81.00946	6.16452	Si
SLV 4	-1885	-23918	-2419	5.174	1676.4	0.928	81.02907	6.16452	Si
SLV 9	-3225	-21994	759	4.706	1762	0.907	75.43089	5.47446	Si
SLV 10	-3223	-22070	759	4.707	1761.9	0.907	75.44294	5.47446	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	21.405	SLU 50	Si
V_SLU	42.324	SLU 60	Si
PF_SLV	2.762	SLV 7	Si
V_SLV	3.607	SLV 9	Si
PFFP_SLV	1.359	SLV 1	Si
R_SLV	11.366	SLV 13	Si

Maschio 214

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-22.713	5.951	-24.678	5.951	L7	L8	1.965	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 36	13.07	-73.13	-5084	-0.0000135	0.0003743	0.0035	1.965	4571.87	5722.56	5722.56	78.25	No	Si
SLU 36	14.87	-1102.58	-4707	-0.0000206	0.0003743	0.0035	1.965	4261.62	5397.39	5397.39	4.9	No	Si
SLU 37	13.07	-60.95	-4848	-0.0000128	0.0003743	0.0035	1.965	4378.79	5521.37	5521.37	90.58	No	Si
SLU 37	14.87	-1006.99	-4363	-0.000019	0.0003743	0.0035	1.965	3975	5093.17	5093.17	5.06	No	Si
SLU 78	13.07	-194.57	-6070	-0.0000171	0.0003743	0.0035	1.965	5360.35	6555.29	6555.29	33.69	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 78	14.87	-1173.35	-5186	-0.0000224	0.0003743	0.0035	1.965	4655.38	5808.17	5808.17	4.95	No	Si
SLU 77	13.07	-215.35	-6074	-0.0000172	0.0003743	0.0035	1.965	5363.77	6558.98	6558.98	30.46	No	Si
SLU 77	14.87	-1163.05	-5177	-0.0000223	0.0003743	0.0035	1.965	4647.64	5800.21	5800.21	4.99	No	Si
SLU 35	13.07	-93.91	-5088	-0.0000137	0.0003743	0.0035	1.965	4575.43	5726.2	5726.2	60.97	No	Si
SLU 35	14.87	-1092.29	-4697	-0.0000205	0.0003743	0.0035	1.965	4253.74	5389.03	5389.03	4.93	No	Si
SLU 33	13.07	-59.13	-4583	-0.0000121	0.0003743	0.0035	1.965	4158.86	5288.35	5288.35	89.44	No	Si
SLU 33	14.87	-963.77	-4110	-0.000018	0.0003743	0.0035	1.965	3761.49	4869.81	4869.81	5.05	No	Si
SLU 80	13.07	-161.61	-5830	-0.0000162	0.0003743	0.0035	1.965	5171.43	6350.56	6350.56	39.3	No	Si
SLU 80	14.87	-1088.05	-4852	-0.0000209	0.0003743	0.0035	1.965	4381.99	5524.75	5524.75	5.08	No	Si
SLU 32	13.07	-79.91	-4587	-0.0000123	0.0003743	0.0035	1.965	4162.49	5292.21	5292.21	66.23	No	Si
SLU 32	14.87	-953.48	-4100	-0.0000178	0.0003743	0.0035	1.965	3753.42	4861.43	4861.43	5.1	No	Si
SLU 42	13.07	43.24	-4229	-0.0000111	0.0003743	0.0035	1.965	3862.11	4127.1	4127.1	95.45	No	Si
SLU 42	14.87	-897.87	-3776	-0.0000166	0.0003743	0.0035	1.965	3476.26	4577.01	4577.01	5.1	No	Si
SLU 38	13.07	-40.17	-4844	-0.0000127	0.0003743	0.0035	1.965	4375.2	5517.57	5517.57	137.35	No	Si
SLU 38	14.87	-1017.28	-4372	-0.0000191	0.0003743	0.0035	1.965	3982.99	5101.6	5101.6	5.01	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	13.07	-2698.97	-6213	-0.000038	0.0005615	0.0035	1.965		6810.68	6810.68	2.52		Si
SLV 12	14.87	1282.75	-1952	-0.0000198	0.0005615	0.0035	1.965		2078.01	2078.01	1.62		Si
SLV 6	13.07	1750.65	-1602	-0.0008701	0.0005615	0.0035	1.572		1745.87	1745.87	1		No
SLV 6	14.87	-2074.78	-3146	-0.0000325	0.0005615	0.0035	1.572		4047.66	4047.66	1.95		Si
SLV 8	13.07	-2693.61	-5862	-0.0000376	0.0005615	0.0035	1.965		6495.68	6495.68	2.41		Si
SLV 8	14.87	1004.36	-1913	-0.0000138	0.0005615	0.0035	1.965		2041.2	2041.2	2.03		Si
SLV 7	13.07	-2182.47	-5569	-0.0000315	0.0005615	0.0035	1.965		6232.04	6232.04	2.86		Si
SLV 7	14.87	701.13	-2108	-0.0000107	0.0005615	0.0035	1.965		2225.57	2225.57	3.17		Si
SLV 10	13.07	1745.29	-1953	-0.000075	0.0005615	0.0035	1.965		2078.86	2078.86	1.19		Si
SLV 10	14.87	-1796.39	-3185	-0.0000253	0.0005615	0.0035	1.572		4083.58	4083.58	2.27		Si
SLV 2	13.07	77.39	-2754	-0.0000075	0.0005615	0.0035	1.965		2831.36	2831.36	36.59		Si
SLV 2	14.87	-1248.29	-2622	-0.0000171	0.0005615	0.0035	1.965		3562.13	3562.13	2.85		Si
SLV 9	13.07	2256.42	-1660	-0.0040213	0.0005615	0.0035	1.572		1801.41	1801.41	0.8		No
SLV 9	14.87	-2099.62	-3379	-0.0000312	0.0005615	0.0035	1.572		4263.44	4263.44	2.03		Si
SLV 11	13.07	-2187.83	-5920	-0.0000323	0.0005615	0.0035	1.965		6548.38	6548.38	2.99		Si
SLV 11	14.87	979.52	-2147	-0.0000134	0.0005615	0.0035	1.965		2262.42	2262.42	2.31		Si
SLV 1	13.07	836.58	-2318	-0.0000123	0.0005615	0.0035	1.965		2424.57	2424.57	2.9		Si
SLV 1	14.87	-1698.68	-2911	-0.0000242	0.0005615	0.0035	1.572		3830.86	3830.86	2.26		Si
SLV 5	13.07	2261.78	-1308	-0.0066392	0.0005615	0.0035	1.572		1466.71	1466.71	0.65		No
SLV 5	14.87	-2378.01	-3340	-0.0000413	0.0005615	0.0035	1.572		4227.52	4227.52	1.78		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 36	13.07	-73.13	-5084	-4281	1521	1.965	1.965	-7262	7913	4665	35683	17652	5011	22663	No	14.9	Si
SLU 36	14.87	-1102.58	-4707	-3963	1519	1.965	1.965	-6723	7841	4622	35683	17652	5011	22663	No	14.92	Si
SLU 78	13.07	-194.57	-6070	-5111	1549	1.965	1.965	-8671	8101	4775	35683	17652	5011	22663	No	14.64	Si
SLU 78	14.87	-1173.35	-5186	-4368	1545	1.965	1.965	-7409	7932	4676	35683	17652	5011	22663	No	14.67	Si
SLU 38	13.07	-40.17	-4844	-4079	1441	1.965	1.965	-6920	7867	4638	35683	17652	5011	22663	No	15.73	Si
SLU 38	14.87	-1017.28	-4372	-3682	1438	1.965	1.965	-6246	7777	4585	35683	17652	5011	22663	No	15.76	Si
SLU 42	13.07	43.24	-4229	-3561	1431	1.965	1.965	-6041	7750	4569	35683	17652	5011	22663	No	15.84	Si
SLU 42	14.87	-897.87	-3776	-3180	1429	1.965	1.965	-5394	7664	4518	35683	17652	5011	22663	No	15.86	Si
SLU 83	13.07	-98.98	-5219	-4395	1433	1.965	1.965	-7455	7938	4680	35683	17652	5011	22663	No	15.81	Si
SLU 83	14.87	-958.34	-4246	-3576	1431	1.965	1.965	-6066	7753	4571	35683	17652	5011	22663	No	15.84	Si
SLU 79	13.07	-182.39	-5834	-4913	1443	1.965	1.965	-8334	8056	4749	35683	17652	5011	22663	No	15.7	Si
SLU 79	14.87	-1077.75	-4843	-4078	1440	1.965	1.965	-6918	7867	4638	35683	17652	5011	22663	No	15.74	Si
SLU 77	13.07	-215.35	-6074	-5115	1524	1.965	1.965	-8677	8101	4776	35683	17652	5011	22663	No	14.87	Si
SLU 77	14.87	-1163.05	-5177	-4360	1521	1.965	1.965	-7395	7930	4675	35683	17652	5011	22663	No	14.9	Si
SLU 80	13.07	-161.61	-5830	-4909	1468	1.965	1.965	-8328	8055	4748	35683	17652	5011	22663	No	15.44	Si
SLU 80	14.87	-1088.05	-4852	-4086	1465	1.965	1.965	-6932	7869	4639	35683	17652	5011	22663	No	15.47	Si
SLU 84	13.07	-78.2	-5215	-4391	1458	1.965	1.965	-7449	7938	4679	35683	17652	5011	22663	No	15.54	Si
SLU 84	14.87	-968.64	-4256	-3584	1456	1.965	1.965	-6079	7755	4572	35683	17652	5011	22663	No	15.57	Si
SLU 35	13.07	-93.91	-5088	-4285	1497	1.965	1.965	-7269	7914	4665	35683	17652	5011	22663	No	15.14	Si
SLU 35	14.87	-1092.29	-4697	-3955	1494	1.965	1.965	-6710	7839	4621	35683	17652	5011	22663	No	15.17	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	13.07	2256.42	-1660	-1398	4339	1.572	0	0	0	0	35683	21183	4009	25191		5.81	Si
SLV 9	14.87	-2099.62	-3379	-2846	5082	1.572	1.0835	0	0	0	35683	21183	4009	25191		4.96	Si
SLV 6	13.07	1750.65	-1602	-1349	4184	1.572	0	0	0	0	35683	21183	4009	25191		6.02	Si
SLV 6	14.87	-2074.78	-3146	-2649	3714	1.572	0.9688	0	0	0	35683	21183	4009	25191		6.78	Si
SLV 1	13.07	836.58	-2318	-1952	3249	1.965	1.8649	-3312	11079	6198	35683	26478	5011	31489		9.69	Si
SLV 1	14.87	-1698.68	-2911	-2451	1269	1.572	1.1968	0	0	0	35683	21183	4009	25191		19.85	Si
SLV 13	13.07	818.71	-3490	-2939	1373	1.965	1.965	-4986	11414	6728	35683	26478	5011	31489		22.93	Si
SLV 13	14.87	-770.71	-3041	-2560	3434	1.965	1.965	-4343	11285	6653	35683	26478	5011	31489		9.17	Si
SLV 12	13.07	-2698.97	-6213	-5232	-3476	1.965	1.6444	-10659	12548	6190	35683	26478	5011	31489		9.06	Si
SLV 12	14.87	1282.75	-1952	-1644	-3009	1.965	0.9763	-2789	10974	3276	35683	26478	5011	31489		10.46	Si
SLV 11	13.07	-2187.83	-5920	-4986	-2758	1.965	1.8389	-9073	12231	6747	35683	26478	5011	31489		11.42	Si
SLV 11	14.87	979.52	-2147	-1808	-2291	1.965	1.5788	-3067	11030	5224	35683	26478	5011	31489		13.75	Si
SLV 8	13.07	-2693.61	-5862	-4936	-2913	1.965	1.5689	-10537	12524	5895	35683	26478	5011	31489		10.81	Si
SLV 8	14.87	1004.36	-1913	-1611	-3658	1.965	1.3728	-2733	10963	4515	35683	26478	5011	31489		8.61	Si
SLV 7	13.07	-2182.47	-5569	-4689	-2195	1.965	1.7717	-8850	12187	6478	35683	26478	5011	31489		14.35	Si
SLV 7	14.87	701.13	-2108	-1775	-2940	1.965	1.9497	-3011	11019	6445	35683	26478	5011	31489		10.71	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	13.07	1745.29	-1953	-1645	3621	1.965	0.2668	-20563	14537	3276	35683	26478	5011	31489		8.7	Si
SLV 10	14.87	-1796.39	-3185	-2682	4364	1.572	1.2552	0	0	0	35683	21183	4009	25191		5.77	Si
SLV 5	13.07	2261.78	-1308	-1102	4902	1.572	0	0	0	0	35683	21183	4009	25191		5.14	Si
SLV 5	14.87	-2378.01	-3340	-2813	4433	1.572	0.8118	0	0	0	35683	21183	4009	25191		5.68	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 5	179667	0.53	3812	-2247	239.55	328.63	1.37	Si
SLV 6	179667	0.53	4006	-2362	239.55	344.95	1.44	Si
SLV 9	179667	0.53	4171	-2459	239.55	358.74	1.5	Si
SLV 10	179667	0.53	4365	-2573	239.55	374.98	1.57	Si
SLV 1	179667	0.53	4571	-2694	239.55	392.08	1.64	Si
SLV 2	179667	0.53	4860	-2865	239.55	416.05	1.74	Si
SLV 3	179667	0.53	5621	-3314	239.55	478.77	2	Si
SLV 13	179667	0.53	5769	-3401	239.55	490.82	2.05	Si
SLV 4	179667	0.53	5910	-3484	239.55	502.39	2.1	Si
SLV 14	179667	0.53	6057	-3571	239.55	514.39	2.15	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-2436	-3861	389	2.66	525.6	0.892	43.31553	6.16452	Si
SLV 16	-2419	-3585	388	2.67	524	0.892	43.50031	6.16452	Si
SLV 13	-2325	-3489	198	2.78	515.1	0.892	45.31542	6.16452	Si
SLV 14	-2308	-3213	198	2.792	513.5	0.891	45.51355	6.16452	Si
SLV 3	-2205	-4289	-223	2.858	503.7	0.891	46.63561	6.16452	Si
SLV 4	-2188	-4013	-223	2.871	502.1	0.891	46.84146	6.16452	Si
SLV 1	-2094	-3917	-413	2.891	493.3	0.89	47.19773	6.16452	Si
SLV 2	-2077	-3641	-413	2.904	491.7	0.89	47.41138	6.16452	Si
SLV 11	-2482	-4399	397	2.629	530	0.893	42.7964	5.47446	Si
SLV 12	-2471	-4213	397	2.636	528.9	0.893	42.91793	5.47446	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.895	SLU 36	Si
V_SLU	14.635	SLU 78	Si
PF_SLV	0.648	SLV 5	No
V_SLV	4.957	SLV 9	Si
PFFP_SLV	1.372	SLV 5	Si
R_SLV	7.027	SLV 15	Si

Maschio 215

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.758	5.951	-21.813	5.951	L7	L8	2.055	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 77	13.07	75.13	-5638	-0.0000143	0.0003743	0.0035	2.055	5272.8	22426.06	22426.06	298.5	No	Si
SLU 77	14.87	2113.62	-2701	-0.0000334	0.0003743	0.0035	2.055	2656.25	20154.49	20154.49	9.54	No	Si
SLU 71	13.07	16.29	-5388	-0.0000133	0.0003743	0.0035	2.055	5061.05	22264.56	22264.56	1366.68	No	Si
SLU 71	14.87	2027.53	-2451	-0.0000344	0.0003743	0.0035	2.055	2420.47	19924.8	19924.8	9.83	No	Si
SLU 66	13.07	6.51	-5510	-0.0000135	0.0003743	0.0035	2.055	5164.35	22343.34	22343.34	3430.9	No	Si
SLU 66	14.87	2009.06	-2573	-0.0000317	0.0003743	0.0035	2.055	2535.47	20036.91	20036.91	9.97	No	Si
SLU 74	13.07	24.23	-5367	-0.0000133	0.0003743	0.0035	2.055	5043.38	22251.08	22251.08	918.38	No	Si
SLU 74	14.87	2001.81	-2431	-0.0000338	0.0003743	0.0035	2.055	2400.8	19905.61	19905.61	9.94	No	Si
SLU 80	13.07	53.03	-5239	-0.0000132	0.0003743	0.0035	2.055	4933.66	22167.41	22167.41	418.04	No	Si
SLU 80	14.87	2003.61	-2302	-0.0000366	0.0003743	0.0035	2.055	2278.73	19786.37	19786.37	9.88	No	Si
SLU 72	13.07	35.31	-5381	-0.0000134	0.0003743	0.0035	2.055	5055.23	22260.12	22260.12	630.42	No	Si
SLU 72	14.87	2010.85	-2445	-0.0000339	0.0003743	0.0035	2.055	2413.99	19918.48	19918.48	9.91	No	Si
SLU 78	13.07	94.15	-5631	-0.0000144	0.0003743	0.0035	2.055	5267.03	22421.66	22421.66	238.15	No	Si
SLU 78	14.87	2096.94	-2695	-0.000033	0.0003743	0.0035	2.055	2649.83	20148.24	20148.24	9.61	No	Si
SLU 69	13.07	57.41	-5781	-0.0000145	0.0003743	0.0035	2.055	5392.51	22517.39	22517.39	392.2	No	Si
SLU 69	14.87	2120.86	-2844	-0.0000318	0.0003743	0.0035	2.055	2789.66	20284.15	20284.15	9.56	No	Si
SLU 70	13.07	76.43	-5774	-0.0000147	0.0003743	0.0035	2.055	5386.78	22513.01	22513.01	294.55	No	Si
SLU 70	14.87	2104.18	-2837	-0.0000313	0.0003743	0.0035	2.055	2783.27	20277.94	20277.94	9.64	No	Si
SLU 79	13.07	34.01	-5246	-0.000013	0.0003743	0.0035	2.055	4939.51	22171.87	22171.87	651.97	No	Si
SLU 79	14.87	2020.29	-2309	-0.0000372	0.0003743	0.0035	2.055	2285.24	19792.73	19792.73	9.8	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 9	13.07	2501.18	-1260	-0.000108	0.0005615	0.0035	2.055		19465.36	19465.36	7.78		Si
SLV 9	14.87	845.63	1318	0.0018453	0.0005615	0.0035	1.644		809.72	809.72	0.96		No
SLD 14	13.07	329.26	-2108	-0.0000074	0.0005615	0.0035	2.055		20686.48	20686.48	62.83		Si
SLD 14	14.87	2709.01	-3	-0.0002666	0.0005615	0.0035	2.055		16621.83	16621.83	6.14		Si
SLV 14	13.07	917.35	-123	-0.0000644	0.0005615	0.0035	2.055		16930.61	16930.61	18.46		Si
SLV 14	14.87	4512.46	1790	0.0017849	0.0005615	0.0035	1.644		0	0	0		No
SLD 16	13.07	-203.42	-2545	-0.0000075	0.0005615	0.0035	2.055		21309.32	21309.32	104.75		Si
SLD 16	14.87	2879.32	-561	-0.0001878	0.0005615	0.0035	2.055		18044.67	18044.67	6.27		Si
SLV 10	13.07	2130.66	-706	-0.0001127	0.0005615	0.0035	2.055		18405.96	18405.96	8.64		Si
SLV 10	14.87	1961.7	1872	0.0025509	0.0005615	0.0035	1.644		0	0	0		No
SLV 16	13.07	-409.61	-1225	-0.0000058	0.0005615	0.0035	2.055		19428.17	19428.17	47.43		Si
SLV 16	14.87	4938.3	404	-0.0002904	0.0005615	0.0035	2.055		14034.29	14034.29	2.84		Si
SLV 13	13.07	1467.68	-946	-0.0000526	0.0005615	0.0035	2.055		18996.78	18996.78	12.94		Si
SLV 13	14.87	2854.78	967	0.0009105	0.0005615	0.0035	1.644		5959.76	5959.76	2.09		Si
SLD 15	13.07	30.7	-2895	-0.0000072	0.0005615	0.0035	2.055		21749.28	21749.28	708.39		Si
SLD 15	14.87	2174.1	-911	-0.0001034	0.0005615	0.0035	2.055		18912.37	18912.37	8.7		Si
SLV 15	13.07	140.72	-2048	-0.0000059	0.0005615	0.0035	2.055		20601.5	20601.5	146.4		Si
SLV 15	14.87	3280.61	-419	-0.0002434	0.0005615	0.0035	2.055		17685.93	17685.93	5.39		Si
SLV 12	13.07	-2292.55	-4380	-0.0000288	0.0005615	0.0035	2.055		23218.15	23218.15	10.13		Si
SLV 12	14.87	3381.16	-2746	-0.0000992	0.0005615	0.0035	2.055		21570.02	21570.02	6.38		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 71	13.07	16.29	-5388	-4537	-1122	2.055	2.055	-7360	7926	4886	16295	18461	5240	21182	No	18.87	Si
SLU 71	14.87	2027.53	-2451	-2064	-1122	2.055	0.6013	-8937	8187	2529	16295	18461	5240	18824	No	16.77	Si
SLU 48	13.07	-19.92	-5216	-4393	-1103	2.055	2.055	-7125	7894	4867	16295	18461	5240	21162	No	19.19	Si
SLU 48	14.87	1955.4	-2323	-1956	-1103	2.055	0.5568	-8751	8167	2500	16295	18461	5240	18795	No	17.04	Si
SLU 72	13.07	35.31	-5381	-4532	-1103	2.055	2.055	-7351	7925	4885	16295	18461	5240	21181	No	19.21	Si
SLU 72	14.87	2010.85	-2445	-2059	-1103	2.055	0.6148	-8822	8170	2527	16295	18461	5240	18823	No	17.07	Si
SLU 66	13.07	6.51	-5510	-4640	-1118	2.055	2.055	-7526	7948	4900	16295	18461	5240	21195	No	18.97	Si
SLU 66	14.87	2009.06	-2573	-2167	-1118	2.055	0.7401	-8431	8103	2556	16295	18461	5240	18852	No	16.87	Si
SLU 79	13.07	34.01	-5246	-4417	-1109	2.055	2.055	-7165	7900	4870	16295	18461	5240	21166	No	19.09	Si
SLU 79	14.87	2020.29	-2309	-1944	-1109	2.055	0.4576	-9340	8264	2497	16295	18461	5240	18792	No	16.95	Si
SLU 70	13.07	76.43	-5774	-4862	-1132	2.055	2.055	-7887	7996	4930	16295	18461	5240	21225	No	18.76	Si
SLU 70	14.87	2104.18	-2837	-2389	-1132	2.055	0.8574	-8476	8099	2616	16295	18461	5240	18911	No	16.71	Si
SLU 77	13.07	75.13	-5638	-4748	-1138	2.055	2.055	-7701	7971	4914	16295	18461	5240	21210	No	18.65	Si
SLU 77	14.87	2113.62	-2701	-2275	-1138	2.055	0.7353	-8886	8166	2585	16295	18461	5240	18880	No	16.6	Si
SLU 78	13.07	94.15	-5631	-4742	-1118	2.055	2.055	-7692	7970	4914	16295	18461	5240	21209	No	18.98	Si
SLU 78	14.87	2096.94	-2695	-2269	-1118	2.055	0.7479	-8777	8149	2584	16295	18461	5240	18879	No	16.89	Si
SLU 74	13.07	24.23	-5367	-4520	-1104	2.055	2.055	-7332	7922	4884	16295	18461	5240	21179	No	19.19	Si
SLU 74	14.87	2001.81	-2431	-2047	-1104	2.055	0.6118	-8791	8166	2524	16295	18461	5240	18820	No	17.05	Si
SLU 69	13.07	57.41	-5781	-4868	-1151	2.055	2.055	-7896	7997	4930	16295	18461	5240	21226	No	18.43	Si
SLU 69	14.87	2120.86	-2844	-2395	-1151	2.055	0.8452	-8579	8114	2617	16295	18461	5240	18912	No	16.43	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	13.07	-2286.08	-6421	-5407	-1863	2.055	2.0144	-8984	12213	7381	16295	27691	5240	23676		12.71	Si
SLV 7	14.87	736.7	-4500	-3789	-2372	2.055	2.055	-6146	11646	7180	16295	27691	5240	23475		9.9	Si
SLV 12	13.07	-2292.55	-4380	-3688	-3522	2.055	1.5122	-8117	12043	5464	16295	27691	5240	21759		6.18	Si
SLV 12	14.87	3381.16	-2746	-2312	-3364	2.055	0	-18436	15040	3584	16295	27691	5240	19880		5.91	Si
SLV 8	13.07	-2656.6	-5867	-4940	-2689	2.055	1.724	-9580	12334	6379	16295	27691	5240	22675		8.43	Si
SLV 8	14.87	1852.76	-3946	-3323	-3197	2.055	1.6738	-6623	11742	5896	16295	27691	5240	22192		6.94	Si
SLV 11	13.07	-1922.03	-4934	-4155	-2696	2.055	1.9139	-7257	11868	6814	16295	27691	5240	23110		8.57	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	14.87	2265.1	-3300	-2779	-2538	2.055	1.0233	-8647	12169	3736	16295	27691	5240	20031		7.89	Si
SLV 9	13.07	2501.18	-1260	-1061	1096	2.055	0	-12819	14957	3251	16295	27691	5240	19546		17.84	Si
SLV 9	14.87	845.63	1318	1110	1604	1.644	1.1573	0	0	0	16295	22153	4192	16295		10.16	Si
SLV 5	13.07	2137.13	-2747	-2313	1929	2.055	0.7485	-8937	12256	3585	16295	27691	5240	19880		10.31	Si
SLV 5	14.87	-682.77	118	99	1770	1.644	0	0	0	0	16295	22153	4192	16295		9.2	Si
SLV 16	13.07	-409.61	-1225	-1032	-3367	2.055	2.055	-1673	10751	6628	16295	27691	5240	22924		6.81	Si
SLV 16	14.87	4938.3	404	340	-2308	2.055	0	0	10099	2968	16295	27691	5240	19263		8.35	Si
SLV 14	13.07	917.35	-123	-103	-2230	2.055	0	0	16250	2995	16295	27691	5240	19291		8.65	Si
SLV 14	14.87	4512.46	1790	1507	-1066	1.644	0	0	0	0	16295	22153	4192	16295		15.29	Si
SLV 15	13.07	140.72	-2048	-1725	-2140	2.055	2.055	-2797	10976	6767	16295	27691	5240	23062		10.77	Si
SLV 15	14.87	3280.61	-419	-353	-1082	2.055	0	0	16250	3062	16295	27691	5240	19357		17.9	Si
SLD 12	13.07	-965.43	-3858	-3249	-1915	2.055	2.055	-5270	11471	7072	16295	27691	5240	23367		12.2	Si
SLD 12	14.87	2193.35	-1871	-1576	-1839	2.055	0	-11907	13312	3388	16295	27691	5240	19683		10.71	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 14	179667	0.53	0	640	250.53	0	0	No, Trazione
SLV 9	179667	0.53	0	-361	250.53	0	0	No, e>t/2
SLV 6	179667	0.53	0	-1188	250.53	0	0	No, e>t/2
SLV 10	179667	0.53	0	193	250.53	0	0	No, Trazione
SLV 13	179667	0.53	0	-183	250.53	0	0	No, e>t/2
SLV 15	179667	0.53	0	-1295	250.53	0	0	No, e>t/2
SLV 16	179667	0.53	0	-472	250.53	0	0	No, e>t/2
SLV 5	179667	0.53	2825	-1742	250.53	256.42	1.02	Si
SLV 12	179667	0.53	5701	-3515	250.53	507.54	2.03	Si
SLV 2	179667	0.53	6425	-3961	250.53	569.18	2.27	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 3	-3742	-7139	338	2.104	665.6	0.902	33.89109	6.16452	Si
SLV 1	-3022	-5017	-250	2.432	595.3	0.896	39.45506	6.16452	Si
SLV 4	-2517	-7204	338	2.694	546.8	0.892	43.89068	6.16452	Si
SLV 7	-2748	-8538	994	2.413	568.8	0.894	39.23368	5.47446	Si
SLV 2	-1798	-5082	-250	3.256	479.6	0.889	53.23964	6.16452	Si
SLV 8	-1923	-8582	994	2.944	491.1	0.889	48.12686	5.47446	Si
SLV 11	-1347	-7607	967	3.492	439.6	0.891	56.99344	5.47446	Si
SLV 12	-522	-7651	967	4.744	376.2	0.919	75.05019	5.47446	Si
SLV 5	-348	-1466	-968	5.133	366.4	0.935	79.76828	5.47446	Si
SLV 6	477	-1510	-968	7.101	356.3	1	103.20193	5.47446	Si, Trazione

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.536	SLU 77	Si
V_SLU	16.426	SLU 69	Si
PF_SLV	0	SLV 10	No
V_SLV	5.91	SLV 12	Si
PFFP_SLV	0	SLV 14	No
R_SLV	5.498	SLV 3	Si

Maschio 216

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-22.493	-3.359	-24.678	-3.359	L7	L8	2.185	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 2	13.07	-530.92	-4024	-0.0000125	0.0003743	0.0035	2.185	4131.33	5493.02	5493.02	10.35	No	Si
SLU 2	14.87	-118.44	-2467	-0.0000063	0.0003743	0.0035	2.185	2595.8	3921.68	3921.68	33.11	No	Si
SLU 45	13.07	-728.99	-5890	-0.0000181	0.0003743	0.0035	2.185	5867.15	7297.93	7297.93	10.01	No	Si
SLU 45	14.87	-263.63	-3997	-0.0000108	0.0003743	0.0035	2.185	4105.57	5467.16	5467.16	20.74	No	Si
SLU 51	13.07	-736.46	-6198	-0.0000189	0.0003743	0.0035	2.185	6142.28	7585.99	7585.99	10.3	No	Si
SLU 51	14.87	-217.14	-4375	-0.0000114	0.0003743	0.0035	2.185	4466.2	5832.84	5832.84	26.86	No	Si
SLU 47	13.07	-733.89	-5643	-0.0000176	0.0003743	0.0035	2.185	5643.99	7067.6	7067.6	9.63	No	Si
SLU 47	14.87	-154.87	-3660	-0.0000093	0.0003743	0.0035	2.185	3779.7	5135.4	5135.4	33.16	No	Si
SLU 44	13.07	-714.92	-5096	-0.0000162	0.0003743	0.0035	2.185	5142.61	6541.44	6541.44	9.15	No	Si
SLU 44	14.87	-98.32	-2959	-0.0000073	0.0003743	0.0035	2.185	3089.48	4418.65	4418.65	44.94	No	Si
SLU 43	13.07	-673.88	-5115	-0.000016	0.0003743	0.0035	2.185	5160.07	6559.89	6559.89	9.73	No	Si
SLU 43	14.87	-112.63	-2992	-0.0000075	0.0003743	0.0035	2.185	3121.96	4451.82	4451.82	39.53	No	Si
SLU 50	13.07	-711.83	-6209	-0.0000188	0.0003743	0.0035	2.185	6152.35	7596.66	7596.66	10.67	No	Si
SLU 50	14.87	-225.73	-4394	-0.0000115	0.0003743	0.0035	2.185	4484.78	5851.89	5851.89	25.92	No	Si
SLU 49	13.07	-772.59	-6426	-0.0000197	0.0003743	0.0035	2.185	6344.33	7801.53	7801.53	10.1	No	Si
SLU 49	14.87	-311.6	-4679	-0.0000127	0.0003743	0.0035	2.185	4753.56	6130.02	6130.02	19.67	No	Si
SLU 46	13.07	-753.61	-5879	-0.0000183	0.0003743	0.0035	2.185	5856.97	7287.4	7287.4	9.67	No	Si
SLU 46	14.87	-255.05	-3978	-0.0000107	0.0003743	0.0035	2.185	4086.73	5448.28	5448.28	21.36	No	Si
SLU 48	13.07	-747.97	-6437	-0.0000196	0.0003743	0.0035	2.185	6354.31	7812.25	7812.25	10.44	No	Si
SLU 48	14.87	-320.18	-4699	-0.0000128	0.0003743	0.0035	2.185	4771.94	6149.22	6149.22	19.21	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	13.07	-2690.45	-5943	-0.000031	0.0005615	0.0035	2.185		7458.83	7458.83	2.77		Si
SLV 10	14.87	1982.83	-2032	-0.000059	0.0005615	0.0035	2.185		2441.61	2441.61	1.23		Si
SLV 7	13.07	1885.7	-2264	-0.0000291	0.0005615	0.0035	2.185		2686.01	2686.01	1.42		Si
SLV 7	14.87	-2384.44	-3414	-0.0000288	0.0005615	0.0035	1.748		4921.06	4921.06	2.06		Si
SLV 5	13.07	-3308.15	-6134	-0.0000372	0.0005615	0.0035	2.185		7649.22	7649.22	2.31		Si
SLV 5	14.87	1892.49	-1929	-0.0000587	0.0005615	0.0035	2.185		2332.44	2332.44	1.23		Si
SLV 12	13.07	2503.4	-2073	-0.0010694	0.0005615	0.0035	1.748		2484.25	2484.25	0.99		No
SLV 12	14.87	-2294.1	-3517	-0.0000265	0.0005615	0.0035	1.748		5027.27	5027.27	2.19		Si
SLV 8	13.07	2545.63	-2043	-0.0013695	0.0005615	0.0035	1.748		2453.01	2453.01	0.96		No
SLV 8	14.87	-2906.76	-3767	-0.0000393	0.0005615	0.0035	1.748		5283.73	5283.73	1.82		Si
SLV 13	13.07	-1741.94	-4897	-0.000022	0.0005615	0.0035	2.185		6423.58	6423.58	3.69		Si
SLV 13	14.87	1849.74	-1822	-0.0000796	0.0005615	0.0035	2.185		2219.58	2219.58	1.2		Si
SLV 11	13.07	1843.47	-2293	-0.0000264	0.0005615	0.0035	2.185		2717.28	2717.28	1.47		Si
SLV 11	14.87	-1771.78	-3164	-0.0000197	0.0005615	0.0035	2.185		4664.52	4664.52	2.63		Si
SLV 6	13.07	-2648.22	-5913	-0.0000306	0.0005615	0.0035	2.185		7429.38	7429.38	2.81		Si
SLV 6	14.87	1370.17	-2282	-0.0000153	0.0005615	0.0035	2.185		2705.33	2705.33	1.97		Si
SLV 4	13.07	937.18	-3310	-0.0000133	0.0005615	0.0035	2.185		3775.62	3775.62	4.03		Si
SLV 4	14.87	-2251.35	-3624	-0.0000255	0.0005615	0.0035	1.748		5137.13	5137.13	2.28		Si
SLV 9	13.07	-3350.39	-6163	-0.0000377	0.0005615	0.0035	2.185		7678.74	7678.74	2.29		Si
SLV 9	14.87	2505.15	-1679	-0.0032453	0.0005615	0.0035	1.748		2069.09	2069.09	0.83		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 38	13.07	-246.19	-5336	-4494	1117	2.185	2.185	-6855	7858	5151	35683	19629	5572	25200	No	22.57	Si
SLU 38	14.87	-475.47	-4664	-3928	1104	2.185	2.185	-5992	7743	5076	35683	19629	5572	25200	No	22.83	Si
SLU 36	13.07	-282.32	-5564	-4686	1195	2.185	2.185	-7148	7898	5177	35683	19629	5572	25200	No	21.08	Si
SLU 36	14.87	-569.92	-4969	-4184	1182	2.185	2.185	-6383	7796	5110	35683	19629	5572	25200	No	21.31	Si
SLU 42	13.07	-142.24	-4703	-3961	1124	2.185	2.185	-6042	7750	5080	35683	19629	5572	25200	No	22.42	Si
SLU 42	14.87	-446.07	-3975	-3348	1111	2.185	2.185	-5107	7625	4998	35683	19629	5572	25200	No	22.68	Si
SLU 35	13.07	-257.7	-5575	-4695	1212	2.185	2.185	-7163	7899	5178	35683	19629	5572	25200	No	20.78	Si
SLU 35	14.87	-578.51	-4988	-4201	1212	2.185	2.185	-6408	7799	5112	35683	19629	5572	25200	No	20.8	Si
SLU 78	13.07	-466.32	-6636	-5588	1129	2.185	2.185	-8526	8081	5297	35683	19629	5572	25200	No	22.32	Si
SLU 78	14.87	-549.8	-5461	-4598	1116	2.185	2.185	-7015	7880	5165	35683	19629	5572	25200	No	22.58	Si
SLU 37	13.07	-221.57	-5347	-4503	1134	2.185	2.185	-6870	7860	5152	35683	19629	5572	25200	No	22.23	Si
SLU 37	14.87	-484.05	-4684	-3944	1133	2.185	2.185	-6017	7747	5078	35683	19629	5572	25200	No	22.24	Si
SLU 77	13.07	-441.69	-6648	-5598	1146	2.185	2.185	-8540	8083	5298	35683	19629	5572	25200	No	21.98	Si
SLU 77	14.87	-558.38	-5480	-4615	1146	2.185	2.185	-7040	7883	5167	35683	19629	5572	25200	No	22	Si
SLU 33	13.07	-263.35	-5017	-4225	1081	2.185	2.185	-6445	7804	5115	35683	19629	5572	25200	No	23.32	Si
SLU 33	14.87	-513.37	-4267	-3594	1068	2.185	2.185	-5482	7675	5031	35683	19629	5572	25200	No	23.59	Si
SLU 32	13.07	-238.72	-5029	-4235	1098	2.185	2.185	-6460	7806	5117	35683	19629	5572	25200	No	22.95	Si
SLU 32	14.87	-521.95	-4287	-3610	1098	2.185	2.185	-5507	7679	5033	35683	19629	5572	25200	No	22.96	Si
SLU 41	13.07	-117.62	-4715	-3970	1141	2.185	2.185	-6057	7752	5081	35683	19629	5572	25200	No	22.08	Si
SLU 41	14.87	-454.65	-3995	-3364	1141	2.185	2.185	-5132	7629	5001	35683	19629	5572	25200	No	22.09	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	13.07	2545.63	-2043	-1721	5537	1.748	0	0	0	0	35683	23554	4457	28012		5.06	Si
SLV 8	14.87	-2906.76	-3767	-3172	5203	1.748	0.9626	0	0	0	35683	23554	4457	28012		5.38	Si
SLV 5	13.07	-3308.15	-6134	-5165	-3840	2.185	1.6595	-10418	12500	6223	35683	29443	5572	35015		9.12	Si
SLV 5	14.87	1892.49	-1929	-1624	-4449	2.185	0.3342	-16243	13669	3734	35683	29443	5572	35015		7.87	Si
SLV 4	13.07	937.18	-3310	-2787	3847	2.185	2.185	-4252	11267	7386	35683	29443	5572	35015		9.1	Si
SLV 4	14.87	-2251.35	-3624	-3052	2317	1.748	1.414	0	0	0	35683	23554	4457	28012		12.09	Si
SLV 11	13.07	1843.47	-2293	-1931	3678	2.185	0.8661	-2946	11006	3819	35683	29443	5572	35015		9.52	Si
SLV 11	14.87	-1771.78	-3164	-2665	4287	2.185	1.5977	-5572	11531	5527	35683	29443	5572	35015		8.17	Si
SLV 7	13.07	1885.7	-2264	-1906	4533	2.185	0.7786	-2908	10998	3812	35683	29443	5572	35015		7.73	Si
SLV 7	14.87	-2384.44	-3414	-2875	4198	1.748	1.1822	0	0	0	35683	23554	4457	28012		6.67	Si
SLV 13	13.07	-1741.94	-4897	-4124	-3004	2.185	2.185	-6291	11675	7653	35683	29443	5572	35015		11.66	Si
SLV 13	14.87	1849.74	-1822	-1534	-1475	2.185	0.2317	-21777	14789	3709	35683	29443	5572	35015		23.75	Si
SLV 12	13.07	2503.4	-2073	-1745	4683	1.748	0	0	0	0	35683	23554	4457	28012		5.98	Si
SLV 12	14.87	-2294.1	-3517	-2962	5291	1.748	1.3208	0	0	0	35683	23554	4457	28012		5.29	Si
SLV 6	13.07	-2648.22	-5913	-4979	-2835	2.185	1.9339	-8616	12140	7043	35683	29443	5572	35015		12.35	Si
SLV 6	14.87	1370.17	-2282	-1922	-3444	2.185	1.4763	-2932	11003	4873	35683	29443	5572	35015		10.17	Si
SLV 9	13.07	-3350.39	-6163	-5190	-4694	2.185	1.6467	-10557	12528	6189	35683	29443	5572	35015		7.46	Si
SLV 9	14.87	2505.15	-1679	-1414	-4361	1.748	0	0	0	0	35683	23554	4457	28012		6.42	Si
SLV 10	13.07	-2690.45	-5943	-5004	-3690	2.185	1.9193	-8726	12162	7003	35683	29443	5572	35015		9.49	Si
SLV 10	14.87	1982.83	-2032	-1711	-3356	2.185	0.3506	-16329	13686	3758	35683	29443	5572	35015		10.43	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.53	4142	-2715	266.37	396.2	1.49	Si
SLV 11	179667	0.53	4146	-2718	266.37	396.57	1.49	Si
SLV 8	179667	0.53	4386	-2875	266.37	418.9	1.57	Si
SLV 7	179667	0.53	4390	-2878	266.37	419.27	1.57	Si
SLV 16	179667	0.53	4731	-3101	266.37	450.77	1.69	Si
SLV 15	179667	0.53	4737	-3105	266.37	451.31	1.69	Si
SLV 14	179667	0.53	5481	-3593	266.37	519.62	1.95	Si
SLV 13	179667	0.53	5487	-3597	266.37	520.16	1.95	Si
SLV 4	179667	0.53	5546	-3636	266.37	525.53	1.97	Si
SLV 3	179667	0.53	5552	-3639	266.37	526.07	1.97	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 4	-2371	-5431	301	2.899	552.5	0.89	47.32564	6.16452	Si
SLV 2	-2343	-5491	79	2.971	549.8	0.89	48.50974	6.16452	Si
SLV 14	-2264	-3685	-292	2.975	542.5	0.89	48.59655	6.16452	Si
SLV 3	-2247	-4934	301	2.986	540.9	0.89	48.76545	6.16452	Si
SLV 16	-2293	-3625	-71	3.009	545.2	0.89	49.12981	6.16452	Si
SLV 1	-2218	-4994	80	3.06	538.2	0.89	49.99496	6.16452	Si
SLV 13	-2140	-3188	-291	3.067	530.9	0.889	50.11314	6.16452	Si
SLV 15	-2168	-3128	-70	3.1	533.6	0.889	50.6542	6.16452	Si
SLV 8	-2357	-4647	429	2.879	551.2	0.89	46.99178	5.47446	Si
SLV 12	-2333	-4105	317	2.921	549	0.89	47.69089	5.47446	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.15	SLU 44	Si
V_SLU	20.784	SLU 35	Si
PF_SLV	0.826	SLV 9	No
V_SLV	5.059	SLV 8	Si
PFFP_SLV	1.487	SLV 12	Si
R_SLV	7.677	SLV 4	Si

Maschio 217

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.368	-3.359	-21.593	-3.359	L7	L8	2.225	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 2	14.17	-391.69	-4076	-0.0000115	0.0003743	0.0035	2.225	4262.43	5642.37	5642.37	14.41	No	Si
SLU 2	14.97	255.23	-2564	-0.0000072	0.0003743	0.0035	2.225	2745.27	3039.68	3039.68	11.91	No	Si
SLU 52	14.17	-473.94	-4910	-0.0000139	0.0003743	0.0035	2.225	5068.16	6472.4	6472.4	13.66	No	Si
SLU 52	14.97	325.95	-3032	-0.0000087	0.0003743	0.0035	2.225	3222.38	3526.34	3526.34	10.82	No	Si
SLU 43	14.17	-455.26	-4991	-0.000014	0.0003743	0.0035	2.225	5144.92	6553.93	6553.93	14.4	No	Si
SLU 43	14.97	325.85	-3073	-0.0000088	0.0003743	0.0035	2.225	3264.53	3569.55	3569.55	10.95	No	Si
SLU 55	14.17	-475.96	-5745	-0.0000158	0.0003743	0.0035	2.225	5850.6	7295.25	7295.25	15.33	No	Si
SLU 55	14.97	351.69	-3804	-0.0000106	0.0003743	0.0035	2.225	3994.73	4318.97	4318.97	12.28	No	Si
SLU 61	14.17	-464.3	-4862	-0.0000137	0.0003743	0.0035	2.225	5021.89	6423.43	6423.43	13.83	No	Si
SLU 61	14.97	316.67	-3015	-0.0000086	0.0003743	0.0035	2.225	3205.25	3508.79	3508.79	11.08	No	Si
SLU 60	14.17	-451.52	-4852	-0.0000136	0.0003743	0.0035	2.225	5012.26	6413.25	6413.25	14.2	No	Si
SLU 60	14.97	309.92	-3016	-0.0000086	0.0003743	0.0035	2.225	3205.94	3509.5	3509.5	11.32	No	Si
SLU 1	14.17	-370.4	-4059	-0.0000113	0.0003743	0.0035	2.225	4245.93	5625.8	5625.8	15.19	No	Si
SLU 1	14.97	243.98	-2566	-0.0000072	0.0003743	0.0035	2.225	2746.44	3040.87	3040.87	12.46	No	Si
SLU 10	14.17	-389.08	-3978	-0.0000113	0.0003743	0.0035	2.225	4166.71	5546.41	5546.41	14.26	No	Si
SLU 10	14.97	244.08	-2524	-0.0000071	0.0003743	0.0035	2.225	2703.6	2997.41	2997.41	12.28	No	Si
SLU 47	14.17	-478.58	-5842	-0.0000161	0.0003743	0.0035	2.225	5940.67	7388.08	7388.08	15.44	No	Si
SLU 47	14.97	362.84	-3844	-0.0000108	0.0003743	0.0035	2.225	4034.71	4360.14	4360.14	12.02	No	Si
SLU 44	14.17	-476.55	-5008	-0.0000141	0.0003743	0.0035	2.225	5160.9	6570.96	6570.96	13.79	No	Si
SLU 44	14.97	337.11	-3072	-0.0000089	0.0003743	0.0035	2.225	3263.37	3568.37	3568.37	10.59	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	14.17	-1391.53	-6000	-0.0000218	0.0005615	0.0035	2.225		7652.55	7652.55	5.5		Si
SLV 5	14.97	646.24	-3223	-0.000011	0.0005615	0.0035	2.225		3762.96	3762.96	5.82		Si
SLV 10	14.17	-1376.63	-5900	-0.0000215	0.0005615	0.0035	2.225		7550.92	7550.92	5.49		Si
SLV 10	14.97	547.91	-3285	-0.0000106	0.0005615	0.0035	2.225		3828.47	3828.47	6.99		Si
SLV 7	14.17	593.56	-2638	-0.0000094	0.0005615	0.0035	2.225		3143.53	3143.53	5.3		Si
SLV 7	14.97	-80.79	-2259	-0.0000055	0.0005615	0.0035	2.225		3788.31	3788.31	46.89		Si
SLV 14	14.17	-1047.4	-4866	-0.0000172	0.0005615	0.0035	2.225		6508.67	6508.67	6.21		Si
SLV 14	14.97	413.02	-2957	-0.000009	0.0005615	0.0035	2.225		3481.5	3481.5	8.43		Si
SLV 4	14.17	879.87	-3254	-0.0000125	0.0005615	0.0035	2.225		3795.43	3795.43	4.31		Si
SLV 4	14.97	-322.54	-2689	-0.0000079	0.0005615	0.0035	2.225		4243.08	4243.08	13.16		Si
SLV 13	14.17	-1662.95	-5284	-0.0000218	0.0005615	0.0035	2.225		6928.56	6928.56	4.17		Si
SLV 13	14.97	789.65	-2856	-0.0000111	0.0005615	0.0035	2.225		3374.23	3374.23	4.27		Si
SLV 9	14.17	-1791.06	-6181	-0.0000247	0.0005615	0.0035	2.225		7836.54	7836.54	4.38		Si
SLV 9	14.97	801.48	-3217	-0.0000119	0.0005615	0.0035	2.225		3756.32	3756.32	4.69		Si
SLV 12	14.17	608.46	-2538	-0.0000093	0.0005615	0.0035	2.225		3037.2	3037.2	4.99		Si
SLV 12	14.97	-179.13	-2321	-0.0000062	0.0005615	0.0035	2.225		3854.26	3854.26	21.52		Si
SLV 8	14.17	1007.98	-2357	-0.0000113	0.0005615	0.0035	2.225		2843.74	2843.74	2.82		Si
SLV 8	14.97	-334.36	-2328	-0.0000072	0.0005615	0.0035	2.225		3860.94	3860.94	11.55		Si
SLV 15	14.17	-1067.42	-4275	-0.0000159	0.0005615	0.0035	2.225		5903.58	5903.58	5.53		Si
SLV 15	14.97	571.54	-2566	-0.0000091	0.0005615	0.0035	2.225		3067.77	3067.77	5.37		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 49	14.17	-480.5	-7031	-5921	-2282	2.225	2.225	-8870	8127	5425	35683	19988	5674	25662	No	11.25	Si
SLU 49	14.97	358.88	-4941	-4161	-1779	2.225	2.225	-6234	7776	5190	35683	19988	5674	25662	No	14.42	Si
SLU 72	14.17	-548.68	-7502	-6318	-2373	2.225	2.225	-9465	8206	5478	35683	19988	5674	25662	No	10.81	Si
SLU 72	14.97	358.75	-5380	-4531	-1904	2.225	2.225	-6788	7849	5240	35683	19988	5674	25662	No	13.48	Si
SLU 69	14.17	-544.32	-7853	-6613	-2362	2.225	2.225	-9907	8265	5517	35683	19988	5674	25662	No	10.86	Si
SLU 69	14.97	326.81	-5706	-4805	-1896	2.225	2.225	-7198	7904	5276	35683	19988	5674	25662	No	13.53	Si
SLU 67	14.17	-555.07	-7029	-5919	-2283	2.225	2.225	-8868	8127	5425	35683	19988	5674	25662	No	11.24	Si
SLU 67	14.97	307.83	-4933	-4154	-1807	2.225	2.225	-6224	7774	5189	35683	19988	5674	25662	No	14.2	Si
SLU 77	14.17	-541.7	-7756	-6531	-2256	2.225	2.225	-9784	8249	5506	35683	19988	5674	25662	No	11.37	Si
SLU 77	14.97	315.65	-5665	-4771	-1861	2.225	2.225	-7147	7897	5272	35683	19988	5674	25662	No	13.79	Si
SLU 68	14.17	-555.17	-6675	-5621	-2280	2.225	2.225	-8421	8067	5385	35683	19988	5674	25662	No	11.26	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 68	14.97	337.52	-4608	-3880	-1805	2.225	2.225	-5813	7720	5153	35683	19988	5674	25662	No	14.22	Si
SLU 78	14.17	-554.47	-7766	-6539	-2297	2.225	2.225	-9797	8251	5507	35683	19988	5674	25662	No	11.17	Si
SLU 78	14.97	322.41	-5665	-4770	-1888	2.225	2.225	-7146	7897	5271	35683	19988	5674	25662	No	13.59	Si
SLU 80	14.17	-546.06	-7405	-6235	-2267	2.225	2.225	-9341	8190	5467	35683	19988	5674	25662	No	11.32	Si
SLU 80	14.97	347.6	-5340	-4497	-1868	2.225	2.225	-6736	7843	5235	35683	19988	5674	25662	No	13.74	Si
SLU 70	14.17	-557.09	-7863	-6622	-2404	2.225	2.225	-9920	8267	5518	35683	19988	5674	25662	No	10.68	Si
SLU 70	14.97	333.56	-5705	-4804	-1924	2.225	2.225	-7197	7904	5276	35683	19988	5674	25662	No	13.34	Si
SLU 71	14.17	-535.9	-7492	-6309	-2332	2.225	2.225	-9452	8205	5477	35683	19988	5674	25662	No	11.01	Si
SLU 71	14.97	352	-5381	-4531	-1876	2.225	2.225	-6788	7850	5240	35683	19988	5674	25662	No	13.68	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	14.17	1007.98	-2357	-1984	3207	2.225	2.0543	-2973	11011	6786	35683	29982	5674	35656		11.12	Si
SLV 8	14.97	-334.36	-2328	-1960	1451	2.225	2.225	-2936	11004	7345	35683	29982	5674	35656		24.57	Si
SLV 10	14.17	-1376.63	-5900	-4969	-4924	2.225	2.225	-7443	11905	7947	35683	29982	5674	35656		7.24	Si
SLV 10	14.97	547.91	-3285	-2766	-2973	2.225	2.225	-4144	11246	7506	35683	29982	5674	35656		11.99	Si
SLV 5	14.17	-1391.53	-6000	-5053	-5180	2.225	2.225	-7570	11931	7964	35683	29982	5674	35656		6.88	Si
SLV 5	14.97	646.24	-3223	-2714	-3350	2.225	2.225	-4066	11230	7496	35683	29982	5674	35656		10.64	Si
SLD 13	14.17	-929.39	-4690	-3950	-3223	2.225	2.225	-5917	11600	7743	35683	29982	5674	35656		11.06	Si
SLD 13	14.97	469.61	-2804	-2361	-2139	2.225	2.225	-3537	11124	7425	35683	29982	5674	35656		16.67	Si
SLV 14	14.17	-1047.4	-4866	-4098	-3453	2.225	2.225	-6139	11645	7773	35683	29982	5674	35656		10.33	Si
SLV 14	14.97	413.02	-2957	-2490	-2025	2.225	2.225	-3730	11163	7451	35683	29982	5674	35656		17.61	Si
SLV 15	14.17	-1067.42	-4275	-3600	-3409	2.225	2.225	-5394	11495	7673	35683	29982	5674	35656		10.46	Si
SLV 15	14.97	571.54	-2566	-2161	-2227	2.225	2.225	-3238	11064	7385	35683	29982	5674	35656		16.01	Si
SLV 13	14.17	-1662.95	-5284	-4450	-5509	2.225	2.225	-6666	11750	7843	35683	29982	5674	35656		6.47	Si
SLV 13	14.97	789.65	-2856	-2405	-3392	2.225	2.225	-3603	11137	7434	35683	29982	5674	35656		10.51	Si
SLV 6	14.17	-977.11	-5719	-4816	-3796	2.225	2.225	-7215	11860	7916	35683	29982	5674	35656		9.39	Si
SLV 6	14.97	392.67	-3291	-2772	-2429	2.225	2.225	-4152	11247	7507	35683	29982	5674	35656		14.68	Si
SLV 9	14.17	-1791.06	-6181	-5205	-6308	2.225	2.225	-7798	11976	7994	35683	29982	5674	35656		5.65	Si
SLV 9	14.97	801.48	-3217	-2709	-3893	2.225	2.225	-4058	11228	7495	35683	29982	5674	35656		9.16	Si
SLD 9	14.17	-965.78	-5040	-4244	-3499	2.225	2.225	-6358	11688	7802	35683	29982	5674	35656		10.19	Si
SLD 9	14.97	467.26	-2949	-2483	-2317	2.225	2.225	-3721	11161	7450	35683	29982	5674	35656		15.39	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 15	179667	0.53	4350	-2903	271.25	423.11	1.56	Si
SLV 13	179667	0.53	4726	-3155	271.25	458.56	1.69	Si
SLV 11	179667	0.53	4740	-3164	271.25	459.88	1.7	Si
SLV 16	179667	0.53	4901	-3271	271.25	474.96	1.75	Si
SLV 12	179667	0.53	5111	-3412	271.25	494.64	1.82	Si
SLV 14	179667	0.53	5277	-3523	271.25	510.14	1.88	Si
SLV 7	179667	0.53	5374	-3587	271.25	519.15	1.91	Si
SLV 8	179667	0.53	5745	-3835	271.25	553.6	2.04	Si
SLV 9	179667	0.53	5995	-4002	271.25	576.69	2.13	Si
SLV 10	179667	0.53	6366	-4249	271.25	610.84	2.25	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-2492	-4504	-314	2.847	569.9	0.891	46.45371	6.16452	Si
SLV 14	-2406	-4739	-314	2.903	561.8	0.89	47.38972	6.16452	Si
SLV 9	-2752	-6779	-756	2.595	594.6	0.892	42.27111	5.47446	Si
SLV 5	-2720	-7324	-698	2.625	591.5	0.892	42.76898	5.47446	Si
SLV 10	-2694	-6937	-756	2.627	589.1	0.892	42.81193	5.47446	Si
SLV 1	-2386	-6320	-122	2.961	560	0.89	48.34113	6.16452	Si
SLV 6	-2662	-7482	-698	2.658	586	0.892	43.31964	5.47446	Si
SLV 2	-2301	-6555	-122	3.021	552	0.89	49.33661	6.16452	Si
SLV 15	-2225	-3131	122	3.075	545	0.89	50.23899	6.16452	Si
SLV 3	-2120	-4947	314	3.107	535.2	0.889	50.77751	6.16452	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	10.585	SLU 44	Si
V_SLU	10.677	SLU 70	Si
PF_SLV	2.821	SLV 8	Si
V_SLV	5.652	SLV 9	Si
PFFP_SLV	1.56	SLV 15	Si
R_SLV	7.536	SLV 13	Si

Maschio 218

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-18.263	-3.359	-18.868	-3.359	L7	L8	0.605	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 43	14.17	-75.28	-1249	-0.0000165	0.0003743	0.0035	0.605	352.34	429.75	429.75	5.71	No	Si
SLU 43	14.97	155.69	-1373	-0.0000243	0.0003743	0.0035	0.605	384.59	413.57	413.57	2.66	No	Si
SLU 52	14.17	-77.82	-1244	-0.0000167	0.0003743	0.0035	0.605	351.02	428.39	428.39	5.5	No	Si
SLU 52	14.97	150.82	-1404	-0.0000241	0.0003743	0.0035	0.605	392.54	421.87	421.87	2.8	No	Si
SLU 2	14.17	-63.15	-1003	-0.0000134	0.0003743	0.0035	0.605	286.9	362.41	362.41	5.74	No	Si
SLU 2	14.97	131.36	-1143	-0.0000203	0.0003743	0.0035	0.605	324.27	350.55	350.55	2.67	No	Si
SLU 44	14.17	-79.54	-1230	-0.0000167	0.0003743	0.0035	0.605	347.24	424.5	424.5	5.34	No	Si
SLU 44	14.97	161.18	-1386	-0.000025	0.0003743	0.0035	0.605	387.76	416.87	416.87	2.59	No	Si
SLU 23	14.17	-66.9	-1236	-0.0000157	0.0003743	0.0035	0.605	348.81	426.12	426.12	6.37	No	Si
SLU 23	14.97	154.51	-1422	-0.0000246	0.0003743	0.0035	0.605	397.17	426.73	426.73	2.76	No	Si
SLU 68	14.17	-80.96	-1651	-0.0000204	0.0003743	0.0035	0.605	454.71	538.13	538.13	6.65	No	Si
SLU 68	14.97	197.61	-1878	-0.0000322	0.0003743	0.0035	0.605	510.41	545.71	545.71	2.76	No	Si
SLU 1	14.17	-58.9	-1022	-0.0000132	0.0003743	0.0035	0.605	292.15	367.9	367.9	6.25	No	Si
SLU 1	14.97	125.87	-1130	-0.0000197	0.0003743	0.0035	0.605	321.01	347.18	347.18	2.76	No	Si
SLU 47	14.17	-77.22	-1418	-0.0000181	0.0003743	0.0035	0.605	395.97	475.23	475.23	6.15	No	Si
SLU 47	14.97	174.46	-1598	-0.0000278	0.0003743	0.0035	0.605	441.69	473.99	473.99	2.72	No	Si
SLU 64	14.17	-79.03	-1482	-0.0000188	0.0003743	0.0035	0.605	412.37	492.59	492.59	6.23	No	Si
SLU 64	14.97	178.85	-1653	-0.0000287	0.0003743	0.0035	0.605	455.38	488.36	488.36	2.73	No	Si
SLU 65	14.17	-83.29	-1463	-0.000019	0.0003743	0.0035	0.605	407.42	487.33	487.33	5.85	No	Si
SLU 65	14.97	184.33	-1666	-0.0000293	0.0003743	0.0035	0.605	458.43	491.57	491.57	2.67	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 8	14.17	206.62	-1943	-0.0000331	0.0005615	0.0035	0.605		576.87	576.87	2.79		Si
SLV 8	14.97	-386.57	-1206	-0.000442	0.0005615	0.0035	0.484		422.98	422.98	1.09		Si
SLD 9	14.17	-169.92	-740	-0.0000337	0.0005615	0.0035	0.484		290.64	290.64	1.71		Si
SLD 9	14.97	341.54	-1221	-0.0001988	0.0005615	0.0035	0.484		377.5	377.5	1.11		Si
SLV 13	14.17	-368.81	63	-0.0037516	0.0005615	0.0035	0.484		0	0	0		No
SLV 13	14.97	651.38	-1154	-0.0208035	0.0005615	0.0035	0.484		358.47	358.47	0.55		No
SLV 9	14.17	-325.58	-243	-0.0020226	0.0005615	0.0035	0.484		145.58	145.58	0.45		No
SLV 9	14.97	645.62	-1226	-0.0191887	0.0005615	0.0035	0.484		378.75	378.75	0.59		No
SLV 5	14.17	-214.67	-742	-0.0001242	0.0005615	0.0035	0.484		291.09	291.09	1.36		Si
SLV 5	14.97	459.62	-1307	-0.0059676	0.0005615	0.0035	0.484		401.58	401.58	0.87		No
SLD 13	14.17	-191.03	-602	-0.0001891	0.0005615	0.0035	0.484		250.43	250.43	1.31		Si
SLD 13	14.97	350.47	-1190	-0.0004751	0.0005615	0.0035	0.484		368.79	368.79	1.05		Si
SLV 4	14.17	249.85	-2249	-0.0000395	0.0005615	0.0035	0.605		658.97	658.97	2.64		Si
SLV 4	14.97	-392.32	-1278	-0.0003601	0.0005615	0.0035	0.484		442.82	442.82	1.13		Si
SLV 14	14.17	-215.22	-298	-0.0008051	0.0005615	0.0035	0.484		161.7	161.7	0.75		No
SLV 14	14.97	438.54	-1008	-0.0098255	0.0005615	0.0035	0.484		317.23	317.23	0.72		No
SLV 10	14.17	-222.17	-486	-0.0005379	0.0005615	0.0035	0.484		216.71	216.71	0.98		No
SLV 10	14.97	502.32	-1127	-0.0118314	0.0005615	0.0035	0.484		351.01	351.01	0.7		No
SLV 15	14.17	-273.44	-225	-0.0014879	0.0005615	0.0035	0.484		140.19	140.19	0.51		No
SLV 15	14.97	440.51	-1153	-0.0074263	0.0005615	0.0035	0.484		358.24	358.24	0.81		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 71	14.17	-74.38	-1858	-1565	-342	0.605	0.605	-8621	8094	1469	35683	5435	1543	6978	No	20.38	Si
SLU 71	14.97	205.4	-2079	-1750	-508	0.605	0.605	-9644	8230	1494	35683	5435	1543	6978	No	13.73	Si
SLU 80	14.17	-75.22	-1861	-1567	-329	0.605	0.605	-8634	8096	1469	35683	5435	1543	6978	No	21.18	Si
SLU 80	14.97	198.33	-2105	-1772	-525	0.605	0.605	-9764	8246	1497	35683	5435	1543	6978	No	13.28	Si
SLU 84	14.17	-76.81	-1679	-1414	-312	0.605	0.605	-7790	7983	1449	35683	5435	1543	6978	No	22.36	Si
SLU 84	14.97	180.62	-1900	-1600	-504	0.605	0.605	-8815	8120	1474	35683	5435	1543	6978	No	13.85	Si
SLU 69	14.17	-70.3	-1979	-1667	-334	0.605	0.605	-9184	8169	1483	35683	5435	1543	6978	No	20.87	Si
SLU 69	14.97	209.32	-2202	-1854	-515	0.605	0.605	-10217	8307	1508	35683	5435	1543	6978	No	13.54	Si
SLU 77	14.17	-68.58	-1994	-1679	-308	0.605	0.605	-9250	8178	1484	35683	5435	1543	6978	No	22.63	Si
SLU 77	14.97	198.96	-2221	-1870	-528	0.605	0.605	-10304	8318	1510	35683	5435	1543	6978	No	13.2	Si
SLU 72	14.17	-76.94	-1846	-1555	-355	0.605	0.605	-8567	8087	1468	35683	5435	1543	6978	No	19.63	Si
SLU 72	14.97	208.69	-2086	-1757	-512	0.605	0.605	-9678	8235	1495	35683	5435	1543	6978	No	13.62	Si
SLU 70	14.17	-72.85	-1968	-1657	-348	0.605	0.605	-9129	8162	1481	35683	5435	1543	6978	No	20.08	Si
SLU 70	14.97	212.61	-2210	-1861	-519	0.605	0.605	-10252	8311	1509	35683	5435	1543	6978	No	13.43	Si
SLU 75	14.17	-73.46	-1794	-1511	-315	0.605	0.605	-8324	8054	1462	35683	5435	1543	6978	No	22.14	Si
SLU 75	14.97	188.97	-2016	-1697	-505	0.605	0.605	-9351	8191	1487	35683	5435	1543	6978	No	13.81	Si
SLU 78	14.17	-71.14	-1982	-1669	-321	0.605	0.605	-9196	8171	1483	35683	5435	1543	6978	No	21.7	Si
SLU 78	14.97	202.25	-2228	-1876	-532	0.605	0.605	-10338	8323	1511	35683	5435	1543	6978	No	13.1	Si
SLU 79	14.17	-72.67	-1873	-1577	-316	0.605	0.605	-8688	8103	1471	35683	5435	1543	6978	No	22.06	Si
SLU 79	14.97	195.04	-2097	-1766	-521	0.605	0.605	-9730	8242	1496	35683	5435	1543	6978	No	13.39	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 9	14.17	-169.92	-740	-624	-874	0.484	0.219	0	0	0	35683	6522	1234	7756		8.88	Si
SLD 9	14.97	341.54	-1221	-1028	-353	0.484	0.0684	0	0	0	35683	6522	1234	7756		22	Si
SLV 8	14.17	206.62	-1943	-1636	1302	0.605	0.5885	-9015	12220	2157	35683	8152	1543	9695		7.45	Si
SLV 8	14.97	-386.57	-1206	-1015	-334	0.484	0	0	0	0	35683	6522	1234	7756		23.19	Si
SLD 13	14.17	-191.03	-602	-507	-938	0.484	0	0	0	0	35683	6522	1234	7756		8.27	Si
SLD 13	14.97	350.47	-1190	-1002	-409	0.484	0.0241	0	0	0	35683	6522	1234	7756		18.98	Si
SLV 9	14.17	-325.58	-243	-205	-1781	0.484	0	0	0	0	35683	6522	1234	7756		4.35	Si
SLV 9	14.97	645.62	-1226	-1032	-354	0.484	0	0	0	0	35683	6522	1234	7756		21.94	Si
SLV 5	14.17	-214.67	-742	-625	-1170	0.484	0.0395	0	0	0	35683	6522	1234	7756		6.63	Si
SLV 5	14.97	459.62	-1307	-1100	-329	0.484	0	0	0	0	35683	6522	1234	7756		23.56	Si
SLV 14	14.17	-215.22	-298	-251	-1238	0.484	0	0	0	0	35683	6522	1234	7756		6.27	Si
SLV 14	14.97	438.54	-1008	-849	-223	0.484	0	0	0	0	35683	6522	1234	7756		34.82	Si
SLV 13	14.17	-368.81	63	53	-1889	0.484	0	0	0	0	35683	6522	1234	7756		4.11	Si
SLV 13	14.97	651.38	-1154	-972	-490	0.484	0	0	0	0	35683	6522	1234	7756		15.82	Si
SLV 4	14.17	249.85	-2249	-1894	1410	0.605	0.5742	-10434	12503	2154	35683	8152	1543	9695		6.88	Si
SLV 4	14.97	-392.32	-1278	-1076	-198	0.484	0	0	0	0	35683	6522	1234	7756		39.26	Si
SLV 10	14.17	-222.17	-486	-409	-1343	0.484	0	0	0	0	35683	6522	1234	7756		5.78	Si
SLV 10	14.97	502.32	-1127	-949	-173	0.484	0	0	0	0	35683	6522	1234	7756		44.74	Si
SLV 15	14.17	-273.44	-225	-189	-1278	0.484	0	0	0	0	35683	6522	1234	7756		6.07	Si
SLV 15	14.97	440.51	-1153	-971	-546	0.484	0	0	0	0	35683	6522	1234	7756		14.21	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 11	179667	0.53	0	148	73.76	0	0	No, Trazione
SLV 12	179667	0.53	0	260	73.76	0	0	No, Trazione
SLV 8	179667	0.53	0	351	73.76	0	0	No, Trazione
SLV 7	179667	0.53	0	238	73.76	0	0	No, Trazione
SLV 4	179667	0.53	0	-331	73.76	0	0	No, e>t/2
SLV 3	179667	0.53	2746	-498	73.76	73.43	1	No, M>Mu
SLV 16	179667	0.53	3485	-633	73.76	92.72	1.26	Si
SLV 15	179667	0.53	4407	-800	73.76	116.51	1.58	Si
SLV 2	179667	0.53	5673	-1030	73.76	148.71	2.02	Si
SLV 1	179667	0.53	6594	-1197	73.76	171.78	2.33	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 3	-904	-1516	-8	2.455	176.6	0.896	39.80309	6.16452	Si
SLV 7	-1058	-825	-15	2.215	191.6	0.901	35.73207	5.47446	Si
SLV 4	-888	-1490	-7	2.484	175	0.896	40.28695	6.16452	Si
SLV 8	-1047	-807	-15	2.23	190.5	0.901	35.99614	5.47446	Si
SLV 11	-988	-591	-15	2.315	184.9	0.899	37.4303	5.47446	Si
SLV 12	-977	-573	-15	2.332	183.8	0.898	37.7192	5.47446	Si
SLV 1	-701	-1870	-1	2.863	157.1	0.891	46.69509	6.16452	Si
SLV 2	-684	-1844	0	2.902	155.6	0.891	47.34936	6.16452	Si
SLV 15	-673	-734	-7	2.924	154.5	0.891	47.71064	6.16452	Si
SLV 16	-657	-708	-7	2.965	153	0.89	48.39284	6.16452	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.586	SLU 44	Si
V_SLU	13.104	SLU 78	Si
PF_SLV	0	SLV 13	No
V_SLV	4.107	SLV 13	Si
PFFP_SLV	0	SLV 12	No
R_SLV	6.457	SLV 3	Si

Maschio 220

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.618	1.046	-19.618	5.811	L7	L8	4.765	0.16	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 48	12.17	-702.58	-13404	-0.0000237	0.0004492	0.0035	4.7652	27340.4	42585.52	42585.52	60.61	No	Si
SLU 48	15.32	4883.2	-3566	-0.0000184	0.0004492	0.0035	4.7652	8171.51	10473.73	10473.73	2.14	No	Si
SLU 71	12.17	-473.16	-14752	-0.0000255	0.0004492	0.0035	4.7652	29581.47	45359.03	45359.03	95.86	No	Si
SLU 71	15.32	5222.24	-3893	-0.0000195	0.0004492	0.0035	4.7652	8887.49	11213.07	11213.07	2.15	No	Si
SLU 58	12.17	-381.36	-13924	-0.0000239	0.0004492	0.0035	4.7652	28215.86	43655.35	43655.35	114.47	No	Si
SLU 58	15.32	5037.79	-3627	-0.0000191	0.0004492	0.0035	4.7652	8305.92	10612.1	10612.1	2.11	No	Si
SLU 9	12.17	-422	-10897	-0.0000188	0.0004492	0.0035	4.7652	22925.19	37427.25	37427.25	88.69	No	Si
SLU 9	15.32	4389.42	-3090	-0.0000167	0.0004492	0.0035	4.7652	7118.63	9396.59	9396.59	2.14	No	Si
SLU 51	12.17	-609.42	-13150	-0.000023	0.0004492	0.0035	4.7652	26908.78	42064.2	42064.2	69.02	No	Si
SLU 51	15.32	5120.53	-3583	-0.0000196	0.0004492	0.0035	4.7652	8208.56	10511.85	10511.85	2.05	No	Si
SLU 49	12.17	-693.36	-13388	-0.0000236	0.0004492	0.0035	4.7652	27314.24	42553.81	42553.81	61.37	No	Si
SLU 49	15.32	4884.88	-3556	-0.0000184	0.0004492	0.0035	4.7652	8148.68	10450.25	10450.25	2.14	No	Si
SLU 8	12.17	-431.23	-10912	-0.0000189	0.0004492	0.0035	4.7652	22953.32	37458.97	37458.97	86.87	No	Si
SLU 8	15.32	4387.74	-3101	-0.0000167	0.0004492	0.0035	4.7652	7141.71	9420.08	9420.08	2.15	No	Si
SLU 50	12.17	-618.64	-13166	-0.0000231	0.0004492	0.0035	4.7652	26935.13	42095.92	42095.92	68.05	No	Si
SLU 50	15.32	5118.85	-3593	-0.0000196	0.0004492	0.0035	4.7652	8231.38	10535.34	10535.34	2.06	No	Si
SLU 72	12.17	-463.93	-14736	-0.0000254	0.0004492	0.0035	4.7652	29556.37	45327.32	45327.32	97.7	No	Si
SLU 72	15.32	5223.92	-3882	-0.0000196	0.0004492	0.0035	4.7652	8864.83	11189.58	11189.58	2.14	No	Si
SLU 59	12.17	-372.13	-13908	-0.0000238	0.0004492	0.0035	4.7652	28190.11	43623.64	43623.64	117.23	No	Si
SLU 59	15.32	5039.47	-3617	-0.0000191	0.0004492	0.0035	4.7652	8283.12	10588.61	10588.61	2.1	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	12.17	236.89	-8902	-0.000015	0.0006738	0.0035	4.7652		22479.1	22479.1	94.89		Si
SLV 5	15.32	1726.65	-46	-0.0003443	0.0006738	0.0035	3.8121		2414.09	2414.09	1.4		Si
SLD 9	12.17	-542.06	-8682	-0.0000153	0.0006738	0.0035	4.7652		32967.7	32967.7	60.82		Si
SLD 9	15.32	2686.32	-1481	-0.0000135	0.0006738	0.0035	4.7652		5743.23	5743.23	2.14		Si
SLV 9	12.17	-826.2	-6758	-0.0000127	0.0006738	0.0035	4.7652		28750.83	28750.83	34.8		Si
SLV 9	15.32	2880.45	-577	-0.0003871	0.0006738	0.0035	4.7652		3648.08	3648.08	1.27		Si
SLV 14	12.17	-2567.97	-5400	-0.0000141	0.0006738	0.0035	4.7652		25748.22	25748.22	10.03		Si
SLV 14	15.32	5067.31	-2682	-0.0000284	0.0006738	0.0035	4.7652		8506.33	8506.33	1.68		Si
SLV 10	12.17	-1345.33	-6342	-0.0000131	0.0006738	0.0035	4.7652		27836.44	27836.44	20.69		Si
SLV 10	15.32	3620	-855	-0.0004408	0.0006738	0.0035	4.7652		4292.87	4292.87	1.19		Si
SLD 10	12.17	-758.46	-8509	-0.0000155	0.0006738	0.0035	4.7652		32591.55	32591.55	42.97		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 10	15.32	2994.59	-1597	-0.0000163	0.0006738	0.0035	4.7652		6011.06	6011.06	2.01		Si
SLD 14	12.17	-1291.87	-8053	-0.0000158	0.0006738	0.0035	4.7652		31599.84	31599.84	24.46		Si
SLD 14	15.32	3628.45	-2350	-0.0000145	0.0006738	0.0035	4.7652		7747.51	7747.51	2.14		Si
SLV 16	12.17	-2444.9	-6823	-0.0000162	0.0006738	0.0035	4.7652		28895.63	28895.63	11.82		Si
SLV 16	15.32	5000.26	-3659	-0.0000187	0.0006738	0.0035	4.7652		10736.82	10736.82	2.15		Si
SLV 13	12.17	-1796.91	-6017	-0.0000135	0.0006738	0.0035	4.7652		27119.32	27119.32	15.09		Si
SLV 13	15.32	3968.85	-2269	-0.0000186	0.0006738	0.0035	4.7652		7561.24	7561.24	1.91		Si
SLV 6	12.17	-282.24	-8487	-0.0000145	0.0006738	0.0035	4.7652		32543.12	32543.12	115.3		Si
SLV 6	15.32	2466.21	-324	-0.0003997	0.0006738	0.0035	4.7652		3060.83	3060.83	1.24		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 47	12.17	-616.88	-12346	-7249	-1080	4.7652	4.7652	-9508	9601	7320	101952	27400	24302	51702	No	47.85	Si
SLU 47	15.32	4205.38	-3018	-1772	-2076	4.7652	2.9677	-2324	8643	5113	101952	27400	24302	51702	No	24.91	Si
SLU 59	12.17	-372.13	-13908	-8166	-725	4.7652	4.7652	-10711	9761	7671	101952	27400	24302	51702	No	71.27	Si
SLU 59	15.32	5039.47	-3617	-2124	-1935	4.7652	2.9679	-2785	8705	5254	101952	27400	24302	51702	No	26.72	Si
SLU 48	12.17	-702.58	-13404	-7870	-717	4.7652	4.7652	-10322	9710	7552	101952	27400	24302	51702	No	72.06	Si
SLU 48	15.32	4883.2	-3566	-2094	-2085	4.7652	3.0398	-2746	8700	5242	101952	27400	24302	51702	No	24.8	Si
SLU 58	12.17	-381.36	-13924	-8175	-592	4.7652	4.7652	-10723	9763	7674	101952	27400	24302	51702	No	87.28	Si
SLU 58	15.32	5037.79	-3627	-2130	-1857	4.7652	2.9812	-2793	8706	5256	101952	27400	24302	51702	No	27.84	Si
SLU 51	12.17	-609.42	-13150	-7721	-959	4.7652	4.7652	-10127	9684	7493	101952	27400	24302	51702	No	53.9	Si
SLU 51	15.32	5120.53	-3583	-2104	-2395	4.7652	2.8604	-2759	8701	5246	101952	27400	24302	51702	No	21.59	Si
SLU 72	12.17	-463.93	-14736	-8652	-561	4.7652	4.7652	-11349	9846	7865	101952	27400	24302	51702	No	92.22	Si
SLU 72	15.32	5223.92	-3882	-2280	-1859	4.7652	3.1112	-2990	8732	5316	101952	27400	24302	51702	No	27.81	Si
SLU 50	12.17	-618.64	-13166	-7730	-826	4.7652	4.7652	-10139	9685	7496	101952	27400	24302	51702	No	62.58	Si
SLU 50	15.32	5118.85	-3593	-2110	-2317	4.7652	2.8742	-2767	8702	5248	101952	27400	24302	51702	No	22.31	Si
SLU 49	12.17	-693.36	-13388	-7861	-851	4.7652	4.7652	-10311	9708	7549	101952	27400	24302	51702	No	60.78	Si
SLU 49	15.32	4884.88	-3556	-2088	-2163	4.7652	3.0264	-2738	8698	5239	101952	27400	24302	51702	No	23.91	Si
SLU 9	12.17	-422	-10897	-6398	-649	4.7652	4.7652	-8392	9452	7207	101952	27400	24302	51702	No	79.72	Si
SLU 9	15.32	4389.42	-3090	-1814	-1890	4.7652	2.8866	-2380	8651	5130	101952	27400	24302	51702	No	27.36	Si
SLU 8	12.17	-431.23	-10912	-6407	-515	4.7652	4.7652	-8404	9454	7208	101952	27400	24302	51702	No	100.31	Si
SLU 8	15.32	4387.74	-3101	-1821	-1812	4.7652	2.9025	-2388	8652	5133	101952	27400	24302	51702	No	28.53	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	12.17	-415.96	-11502	-6754	17296	4.7652	4.7652	-8858	14272	10881	101952	41099	24302	65402		3.78	Si
SLV 11	15.32	2656.92	-3836	-2252	7243	4.7652	4.7652	-2954	13091	9981	101952	41099	24302	65402		9.03	Si
SLD 6	12.17	-304.56	-9426	-5535	-7463	4.7652	4.7652	-7259	13952	10637	101952	41099	24302	65402		8.76	Si
SLD 6	15.32	2500.37	-1370	-804	-3952	4.7652	1.6709	-1055	12711	6928	101952	41099	24302	65402		16.55	Si
SLV 6	12.17	-282.24	-8487	-4983	-18095	4.7652	4.7652	-6536	13807	10527	101952	41099	24302	65402		3.61	Si
SLV 6	15.32	2466.21	-324	-190	-8816	4.7652	0	-13402	16250	6683	101952	41099	24302	65402		7.42	Si
SLV 5	12.17	236.89	-8902	-5227	-18168	4.7652	4.7652	-6856	13871	10576	101952	41099	24302	65402		3.6	Si
SLV 5	15.32	1726.65	-46	-27	-7946	3.8121	0	0	0	0	101952	32880	19442	52321		6.58	Si
SLV 8	12.17	127.99	-13232	-7769	16757	4.7652	4.7652	-10190	14538	11084	101952	41099	24302	65402		3.9	Si
SLV 8	15.32	2242.69	-3583	-2104	8119	4.7652	4.7652	-2759	13052	9951	101952	41099	24302	65402		8.05	Si
SLV 10	12.17	-1345.33	-6342	-3724	-17484	4.7652	4.7652	-4884	13477	10275	101952	41099	24302	65402		3.74	Si
SLV 10	15.32	3620	-855	-502	-10562	4.7652	0	-30883	16250	6807	101952	41099	24302	65402		6.19	Si
SLV 12	12.17	-935.09	-11087	-6510	17369	4.7652	4.7652	-8538	14208	10832	101952	41099	24302	65402		3.77	Si
SLV 12	15.32	3396.48	-4114	-2415	6373	4.7652	4.6707	-3168	13134	9815	101952	41099	24302	65402		10.26	Si
SLV 7	12.17	647.12	-13647	-8013	16685	4.7652	4.7652	-10510	14602	11133	101952	41099	24302	65402		3.92	Si
SLV 7	15.32	1503.13	-3305	-1941	8990	4.7652	4.7652	-2545	13009	9918	101952	41099	24302	65402		7.28	Si
SLV 9	12.17	-826.2	-6758	-3968	-17557	4.7652	4.7652	-5204	13541	10324	101952	41099	24302	65402		3.73	Si
SLV 9	15.32	2880.45	-577	-339	-9692	4.7652	0	-22234	16250	6742	101952	41099	24302	65402		6.75	Si
SLD 5	12.17	-88.17	-9599	-5636	-7493	4.7652	4.7652	-7393	13979	10658	101952	41099	24302	65402		8.73	Si
SLD 5	15.32	2192.1	-1254	-736	-3589	4.7652	1.9028	-966	12693	6901	101952	41099	24302	65402		18.22	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 13.745 Ta 0.1 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 10	-4851	0.53	333.16	374.59	816.36	595.47	1.79	Si
SLV 9	-4927	0.53	333.16	380.28	823.85	602.07	1.81	Si
SLV 14	-4990	0.53	333.16	384.91	829.95	607.43	1.82	Si
SLV 13	-5103	0.53	333.16	393.34	841.08	617.21	1.85	Si
SLV 6	-5526	0.53	333.16	424.62	882.48	653.55	1.96	Si
SLV 5	-5603	0.53	333.16	430.25	889.92	660.09	1.98	Si
SLV 16	-5800	0.53	333.16	444.74	909.1	676.92	2.03	Si
SLV 15	-5914	0.53	333.16	453.07	920.15	686.61	2.06	Si
SLV 2	-7241	0.53	333.16	549.3	1048.41	798.85	2.4	Si
SLV 1	-7355	0.53	333.16	557.44	1059.32	808.38	2.43	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.03 Ta = 0.1036

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 16	-3659	-6823	394	4.566	728.6	0.895	74.09723	8.86034	Si
SLV 15	-3247	-7440	393	4.912	689	0.893	79.95064	8.86034	Si
SLV 12	-4114	-11087	110	4.282	772.7	0.899	69.25937	6.96406	Si
SLV 14	-2682	-5400	399	5.481	635.5	0.89	89.49832	8.86034	Si
SLV 11	-3836	-11502	110	4.479	745.7	0.897	72.60191	6.96406	Si
SLV 8	-3583	-13232	-128	4.672	721.3	0.895	75.86917	6.96406	Si
SLV 13	-2269	-6017	398	5.989	597.4	0.889	97.91362	8.86034	Si
SLV 7	-3305	-13647	-128	4.908	694.6	0.893	79.85793	6.96406	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 4	-1891	-13973	-399	6.546	563.3	0.889	106.96657	8.86034	Si
SLV 3	-1478	-14589	-400	7.284	527.7	0.892	118.63469	8.86034	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.053	SLU 51	Si
V_SLU	21.591	SLU 51	Si
PF_SLV	1.186	SLV 10	Si
V_SLV	3.6	SLV 5	Si
PFFP_SLV	1.787	SLV 10	Si
R_SLV	8.363	SLV 16	Si

Maschio 222

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-18.448	-3.359	-18.448	1.046	L7	L8	4.406	0.16	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 78	12.17	2494.39	-13592	-0.0000306	0.0004492	0.0035	4.4057	25216.93	29421.47	29421.47	11.8	No	Si
SLU 78	15.32	561.2	-1286	-0.0000036	0.0004492	0.0035	4.4057	2791.04	4708.45	4708.45	8.39	No	Si
SLU 72	12.17	2444.51	-12656	-0.0000287	0.0004492	0.0035	4.4057	23782.27	27640.65	27640.65	11.31	No	Si
SLU 72	15.32	537.83	-1193	-0.0000034	0.0004492	0.0035	4.4057	2591.53	4510.29	4510.29	8.39	No	Si
SLU 27	12.17	2054.4	-10937	-0.0000246	0.0004492	0.0035	4.4057	21033.18	24334.27	24334.27	11.84	No	Si
SLU 27	15.32	508.05	-1112	-0.0000032	0.0004492	0.0035	4.4057	2417.78	4338.07	4338.07	8.54	No	Si
SLU 79	12.17	2441.73	-13307	-0.0000299	0.0004492	0.0035	4.4057	24784.82	28885.64	28885.64	11.83	No	Si
SLU 79	15.32	549.18	-1221	-0.0000035	0.0004492	0.0035	4.4057	2651.45	4569.75	4569.75	8.32	No	Si
SLU 71	12.17	2441.49	-12654	-0.0000287	0.0004492	0.0035	4.4057	23779.39	27637.11	27637.11	11.32	No	Si
SLU 71	15.32	544.65	-1188	-0.0000034	0.0004492	0.0035	4.4057	2580.19	4499.03	4499.03	8.26	No	Si
SLU 69	12.17	2491.12	-12937	-0.0000294	0.0004492	0.0035	4.4057	24218.18	28179.44	28179.44	11.31	No	Si
SLU 69	15.32	563.5	-1248	-0.0000035	0.0004492	0.0035	4.4057	2708.56	4626.47	4626.47	8.21	No	Si
SLU 77	12.17	2491.37	-13591	-0.0000306	0.0004492	0.0035	4.4057	25214.14	29417.99	29417.99	11.81	No	Si
SLU 77	15.32	568.02	-1281	-0.0000036	0.0004492	0.0035	4.4057	2779.72	4697.19	4697.19	8.27	No	Si
SLU 80	12.17	2444.76	-13309	-0.00003	0.0004492	0.0035	4.4057	24787.64	28889.12	28889.12	11.82	No	Si
SLU 80	15.32	542.36	-1226	-0.0000035	0.0004492	0.0035	4.4057	2662.78	4581.01	4581.01	8.45	No	Si
SLU 70	12.17	2494.15	-12939	-0.0000294	0.0004492	0.0035	4.4057	24221.03	28182.98	28182.98	11.3	No	Si
SLU 70	15.32	556.68	-1253	-0.0000035	0.0004492	0.0035	4.4057	2719.89	4637.73	4637.73	8.33	No	Si
SLU 35	12.17	2054.64	-11590	-0.0000258	0.0004492	0.0035	4.4057	22095.99	25601.74	25601.74	12.46	No	Si
SLU 35	15.32	512.58	-1145	-0.0000032	0.0004492	0.0035	4.4057	2489.17	4408.79	4408.79	8.6	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	12.17	1952.09	-7381	-0.0000178	0.0006738	0.0035	4.4057		17469.34	17469.34	8.95		Si
SLV 13	15.32	826.76	-603	-0.0000037	0.0006738	0.0035	4.4057		3260.22	3260.22	3.94		Si
SLD 6	12.17	885.9	-9860	-0.0000196	0.0006738	0.0035	4.4057		22489.12	22489.12	25.39		Si
SLD 6	15.32	1151.69	-925	-0.000005	0.0006738	0.0035	4.4057		3950.22	3950.22	3.43		Si
SLV 14	12.17	1757.2	-7359	-0.0000173	0.0006738	0.0035	4.4057		17425.11	17425.11	9.92		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 14	15.32	890.19	-648	-0.000004	0.0006738	0.0035	4.4057		3356.27	3356.27	3.77		Si
SLD 10	12.17	1063.39	-9338	-0.0000191	0.0006738	0.0035	4.4057		21440.96	21440.96	20.16		Si
SLD 10	15.32	1134.92	-869	-0.000005	0.0006738	0.0035	4.4057		3831.16	3831.16	3.38		Si
SLV 9	12.17	276.66	-10214	-0.0000188	0.0006738	0.0035	4.4057		23201.03	23201.03	83.86		Si
SLV 9	15.32	2351.66	-1091	-0.0000642	0.0006738	0.0035	4.4057		4306.7	4306.7	1.83		Si
SLD 5	12.17	940.59	-9866	-0.0000198	0.0006738	0.0035	4.4057		22501.34	22501.34	23.92		Si
SLD 5	15.32	1133.88	-912	-0.0000049	0.0006738	0.0035	4.4057		3923.26	3923.26	3.46		Si
SLV 6	12.17	-269.19	-11419	-0.0000209	0.0006738	0.0035	4.4057		34676.67	34676.67	128.82		Si
SLV 6	15.32	2433.34	-1251	-0.0000251	0.0006738	0.0035	4.4057		4648.69	4648.69	1.91		Si
SLV 10	12.17	145.45	-10199	-0.0000184	0.0006738	0.0035	4.4057		23171.72	23171.72	159.31		Si
SLV 10	15.32	2394.36	-1121	-0.0000592	0.0006738	0.0035	4.4057		4371.14	4371.14	1.83		Si
SLV 5	12.17	-137.98	-11433	-0.0000206	0.0006738	0.0035	4.4057		34705.09	34705.09	251.53		Si
SLV 5	15.32	2390.64	-1221	-0.0000258	0.0006738	0.0035	4.4057		4584.25	4584.25	1.92		Si
SLD 9	12.17	1118.08	-9344	-0.0000193	0.0006738	0.0035	4.4057		21453.18	21453.18	19.19		Si
SLD 9	15.32	1117.11	-857	-0.0000049	0.0006738	0.0035	4.4057		3804.21	3804.21	3.41		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 46	12.17	2229.88	-11043	-6484	943	4.4057	4.4057	-9199	9560	6739	101952	25333	22469	47802	No	50.68	Si
SLU 46	15.32	409.87	-965	-567	1049	4.4057	4.4057	-804	8441	5950	101952	25333	22469	47802	No	45.58	Si
SLU 43	12.17	2056.34	-10222	-6002	1130	4.4057	4.4057	-8515	9469	6675	101952	25333	22469	47802	No	42.3	Si
SLU 43	15.32	326.45	-779	-458	1126	4.4057	4.4057	-649	8420	5935	101952	25333	22469	47802	No	42.45	Si
SLU 50	12.17	2298.09	-11294	-6631	1026	4.4057	4.4057	-9407	9588	6758	101952	25333	22469	47802	No	46.6	Si
SLU 50	15.32	469.25	-1020	-599	1015	4.4057	4.4057	-850	8447	5954	101952	25333	22469	47802	No	47.07	Si
SLU 51	12.17	2301.12	-11296	-6632	942	4.4057	4.4057	-9409	9588	6759	101952	25333	22469	47802	No	50.74	Si
SLU 51	15.32	462.43	-1026	-602	1044	4.4057	4.4057	-854	8447	5955	101952	25333	22469	47802	No	45.8	Si
SLU 45	12.17	2226.85	-11041	-6483	1027	4.4057	4.4057	-9197	9560	6739	101952	25333	22469	47802	No	46.55	Si
SLU 45	15.32	416.7	-960	-564	1020	4.4057	4.4057	-799	8440	5949	101952	25333	22469	47802	No	46.85	Si
SLU 55	12.17	2182.51	-11415	-6702	857	4.4057	4.4057	-9508	9601	6768	101952	25333	22469	47802	No	55.75	Si
SLU 55	15.32	391	-942	-553	1037	4.4057	4.4057	-785	8438	5948	101952	25333	22469	47802	No	46.1	Si
SLU 61	12.17	2059.72	-11157	-6551	931	4.4057	4.4057	-9294	9572	6748	101952	25333	22469	47802	No	51.37	Si
SLU 61	15.32	326.09	-832	-489	1039	4.4057	4.4057	-693	8426	5939	101952	25333	22469	47802	No	46.03	Si
SLU 52	12.17	2061.63	-10879	-6387	909	4.4057	4.4057	-9061	9542	6726	101952	25333	22469	47802	No	52.56	Si
SLU 52	15.32	319.6	-821	-482	1092	4.4057	4.4057	-684	8425	5939	101952	25333	22469	47802	No	43.77	Si
SLU 44	12.17	2061.38	-10225	-6004	991	4.4057	4.4057	-8517	9469	6675	101952	25333	22469	47802	No	48.26	Si
SLU 44	15.32	315.08	-788	-463	1173	4.4057	4.4057	-657	8421	5936	101952	25333	22469	47802	No	40.74	Si
SLU 47	12.17	2182.26	-10761	-6318	938	4.4057	4.4057	-8964	9528	6717	101952	25333	22469	47802	No	50.94	Si
SLU 47	15.32	386.48	-909	-534	1118	4.4057	4.4057	-757	8434	5945	101952	25333	22469	47802	No	42.76	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 12	12.17	3459.29	-6161	-3617	10879	4.4057	4.4057	-5132	13526	9535	101952	37999	22469	60468		5.56	Si
SLV 12	15.32	-1802.96	-181	-106	8688	3.5246	0	0	0	0	101952	30399	17975	48375		5.57	Si
SLD 11	12.17	2435.41	-7735	-4541	5031	4.4057	4.4057	-6443	13789	9720	101952	37999	22469	60468		12.02	Si
SLD 11	15.32	-564.01	-477	-280	4162	4.4057	3.0617	-571	12614	6220	101952	37999	22469	60468		14.53	Si
SLV 8	12.17	3044.65	-7381	-4334	10068	4.4057	4.4057	-6148	13730	9678	101952	37999	22469	60468		6.01	Si
SLV 8	15.32	-1763.98	-311	-182	7805	3.5246	0	0	0	0	101952	30399	17975	48375		6.2	Si
SLV 9	12.17	276.66	-10214	-5997	-8550	4.4057	4.4057	-8508	14202	10011	101952	37999	22469	60468		7.07	Si
SLV 9	15.32	2351.66	-1091	-641	-6294	4.4057	0.1429	-14178	15469	6364	101952	37999	22469	60468		9.61	Si
SLV 7	12.17	3175.86	-7395	-4342	10623	4.4057	4.4057	-6160	13732	9680	101952	37999	22469	60468		5.69	Si
SLV 7	15.32	-1806.68	-281	-165	8360	3.5246	0	0	0	0	101952	30399	17975	48375		5.79	Si
SLV 15	12.17	2946.24	-6170	-3623	5522	4.4057	4.4057	-5139	13528	9536	101952	37999	22469	60468		10.95	Si
SLV 15	15.32	-432.44	-321	-189	4970	3.5246	2.5679	0	0	0	101952	30399	17975	48375		9.73	Si
SLV 5	12.17	-137.98	-11433	-6713	-9362	4.4057	4.4057	-9523	14405	10154	101952	37999	22469	60468		6.46	Si
SLV 5	15.32	2390.64	-1221	-717	-7177	4.4057	0.7348	-6052	13713	6395	101952	37999	22469	60468		8.42	Si
SLV 10	12.17	145.45	-10199	-5989	-9106	4.4057	4.4057	-8495	14199	10009	101952	37999	22469	60468		6.64	Si
SLV 10	15.32	2394.36	-1121	-658	-6850	4.4057	0.2025	-13243	15245	6372	101952	37999	22469	60468		8.83	Si
SLV 11	12.17	3590.5	-6176	-3626	11435	4.4057	4.4057	-5144	13529	9537	101952	37999	22469	60468		5.29	Si
SLV 11	15.32	-1845.66	-151	-89	9243	3.5246	0	0	0	0	101952	30399	17975	48375		5.23	Si
SLV 6	12.17	-269.19	-11419	-6705	-9917	4.4057	4.4057	-9511	14402	10152	101952	37999	22469	60468		6.1	Si
SLV 6	15.32	2433.34	-1251	-735	-7733	4.4057	0.774	-5901	13683	6402	101952	37999	22469	60468		7.82	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 13.745 Ta 0.1 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 12	-3861	0.53	308.03	299.62	691.18	495.4	1.61	Si
SLV 11	-3974	0.53	308.03	308.17	702.34	505.26	1.64	Si
SLV 16	-4034	0.53	308.03	312.63	708.17	510.4	1.66	Si
SLV 15	-4203	0.53	308.03	325.29	724.72	525	1.7	Si
SLV 8	-4321	0.53	308.03	334.11	736.28	535.19	1.74	Si
SLV 7	-4435	0.53	308.03	342.59	747.42	545	1.77	Si
SLV 14	-4666	0.53	308.03	359.81	770.07	564.94	1.83	Si
SLV 13	-4835	0.53	308.03	372.34	786.59	579.47	1.88	Si
SLV 4	-5568	0.53	308.03	426.24	858.1	642.17	2.08	Si
SLV 3	-5737	0.53	308.03	438.57	874.41	656.49	2.13	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.03 Ta = 0.1036

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 2	-1081	-11425	-269	7.991	464.7	0.898	129.36293	8.86034	Si
SLV 1	-1036	-11446	-269	8.109	461.2	0.899	131.09347	8.86034	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 4	-799	-10213	-246	8.802	443.6	0.907	140.97936	8.86034	Si
SLV 3	-754	-10235	-246	8.945	440.5	0.91	142.93483	8.86034	Si
SLV 14	-648	-7359	246	9.303	433.4	0.915	147.6973	8.86034	Si
SLV 13	-603	-7381	247	9.462	430.6	0.918	149.76391	8.86034	Si
SLV 6	-1251	-11419	-115	7.621	478.3	0.894	123.86847	6.96406	Si
SLV 5	-1221	-11433	-115	7.692	475.9	0.895	124.94944	6.96406	Si
SLV 16	-366	-6148	269	10.4	417.4	0.939	161.03105	8.86034	Si
SLV 15	-321	-6170	269	10.6	415.4	0.944	163.24275	8.86034	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.21	SLU 69	Si
V_SLU	40.744	SLU 44	Si
PF_SLV	1.826	SLV 10	Si
V_SLV	5.234	SLV 11	Si
PFFP_SLV	1.608	SLV 12	Si
R_SLV	14.6	SLV 2	Si

Maschio 223

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-16.333	-3.359	-17.278	-3.359	L7	L8	0.945	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 34	12.17	-455.27	-2418	-0.0000285	0.0004492	0.0035	0.945	1062.72	1303.38	1303.38	2.86	No	Si
SLU 34	14.27	261.75	-1931	-0.0000189	0.0004492	0.0035	0.945	861.68	928.53	928.53	3.55	No	Si
SLU 38	12.17	-478.58	-2622	-0.0000303	0.0004492	0.0035	0.945	1144.92	1389.34	1389.34	2.9	No	Si
SLU 38	14.27	254.32	-2206	-0.0000202	0.0004492	0.0035	0.945	975.88	1046.77	1046.77	4.12	No	Si
SLU 41	12.17	-433.78	-2285	-0.000027	0.0004492	0.0035	0.945	1008.65	1246.91	1246.91	2.87	No	Si
SLU 41	14.27	224.04	-1883	-0.0000174	0.0004492	0.0035	0.945	841.38	907.67	907.67	4.05	No	Si
SLU 33	12.17	-464.42	-2536	-0.0000294	0.0004492	0.0035	0.945	1110.57	1353.22	1353.22	2.91	No	Si
SLU 33	14.27	247.88	-2102	-0.0000194	0.0004492	0.0035	0.945	933.12	1002.35	1002.35	4.04	No	Si
SLU 36	12.17	-495.51	-2746	-0.0000316	0.0004492	0.0035	0.945	1194.81	1442.39	1442.39	2.91	No	Si
SLU 36	14.27	253.69	-2391	-0.0000212	0.0004492	0.0035	0.945	1051.83	1125.55	1125.55	4.44	No	Si
SLU 84	12.17	-519.33	-2947	-0.0000335	0.0004492	0.0035	0.945	1274.15	1525.87	1525.87	2.94	No	Si
SLU 84	14.27	266.01	-2244	-0.0000208	0.0004492	0.0035	0.945	991.57	1063.06	1063.06	4	No	Si
SLU 31	12.17	-424.19	-2208	-0.0000263	0.0004492	0.0035	0.945	976.6	1213.62	1213.62	2.86	No	Si
SLU 31	14.27	255.93	-1643	-0.0000172	0.0004492	0.0035	0.945	739.35	802.96	802.96	3.14	No	Si
SLU 39	12.17	-402.69	-2075	-0.0000249	0.0004492	0.0035	0.945	921.77	1156.9	1156.9	2.87	No	Si
SLU 39	14.27	218.22	-1594	-0.0000157	0.0004492	0.0035	0.945	718.67	781.77	781.77	3.58	No	Si
SLU 40	12.17	-414.35	-2085	-0.0000254	0.0004492	0.0035	0.945	925.99	1161.25	1161.25	2.8	No	Si
SLU 40	14.27	238.1	-1616	-0.0000164	0.0004492	0.0035	0.945	727.8	791.12	791.12	3.32	No	Si
SLU 42	12.17	-445.44	-2296	-0.0000276	0.0004492	0.0035	0.945	1012.81	1251.25	1251.25	2.81	No	Si
SLU 42	14.27	243.92	-1904	-0.0000182	0.0004492	0.0035	0.945	850.34	916.88	916.88	3.76	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 16	12.17	-788.21	-2988	-0.0000481	0.0006738	0.0035	0.756		1564.82	1564.82	1.99		Si
SLV 16	14.27	840.08	224	-0.0279	0.0006738	0.0035	0.756		0	0	0		No
SLV 13	12.17	-1438.61	-3909	-0.0001311	0.0006738	0.0035	0.756		1953.02	1953.02	1.36		Si
SLV 13	14.27	2066.96	329	-0.0676263	0.0006738	0.0035	0.756		0	0	0		No
SLV 7	12.17	461.54	-1177	-0.0000492	0.0006738	0.0035	0.945		602	602	1.3		Si
SLV 7	14.27	-1267.64	-836	-0.0025095	0.0006738	0.0035	0.756		614.34	614.34	0.48		No
SLV 12	12.17	172.65	-1614	-0.0000142	0.0006738	0.0035	0.945		799.4	799.4	4.63		Si
SLV 12	14.27	-832.16	-237	-0.0017973	0.0006738	0.0035	0.756		340.81	340.81	0.41		No
SLV 14	12.17	-1190.74	-3523	-0.00009	0.0006738	0.0035	0.756		1791.53	1791.53	1.5		Si
SLV 14	14.27	1576.32	-330	-0.0424505	0.0006738	0.0035	0.756		212.42	212.42	0.13		No
SLV 9	12.17	-1335.99	-3657	-0.0001187	0.0006738	0.0035	0.756		1847.65	1847.65	1.38		Si
SLV 9	14.27	1952.31	-1641	-0.034365	0.0006738	0.0035	0.756		811.31	811.31	0.42		No
SLV 15	12.17	-1036.09	-3374	-0.0000694	0.0006738	0.0035	0.756		1728.93	1728.93	1.67		Si
SLV 15	14.27	1330.72	883	0.0239702	0.0006738	0.0035	0.756		0	0	0		No
SLD 13	12.17	-812.69	-2974	-0.0000502	0.0006738	0.0035	0.756		1558.82	1558.82	1.92		Si
SLD 13	14.27	976.16	-686	-0.0188804	0.0006738	0.0035	0.756		376.93	376.93	0.39		No
SLD 15	12.17	-650.57	-2759	-0.0000389	0.0006738	0.0035	0.945		1466.91	1466.91	2.25		Si
SLD 15	14.27	679.59	-468	-0.0131088	0.0006738	0.0035	0.756		276.54	276.54	0.41		No
SLV 11	12.17	5.77	-1874	-0.00001	0.0006738	0.0035	0.945		915.16	915.16	158.74		Si
SLV 11	14.27	-501.82	206	0.0424094	0.0006738	0.0035	0.756		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 71	12.17	-545.64	-3533	-2975	-517	0.945	0.945	-10493	9732	2759	35683	10188	2410	12598	No	24.35	Si
SLU 71	14.27	267.25	-2554	-2151	-330	0.945	0.945	-7586	9345	2649	35683	10188	2410	12598	No	38.22	Si
SLU 80	12.17	-552.48	-3273	-2756	-496	0.945	0.9111	-9723	9630	2632	35683	10188	2410	12598	No	25.39	Si
SLU 80	14.27	276.42	-2545	-2143	-300	0.945	0.945	-7561	9341	2648	35683	10188	2410	12598	No	41.99	Si
SLU 77	12.17	-557.74	-3388	-2853	-505	0.945	0.9236	-10064	9675	2681	35683	10188	2410	12598	No	24.97	Si
SLU 77	14.27	255.91	-2709	-2282	-264	0.945	0.945	-8048	9406	2667	35683	10188	2410	12598	No	47.68	Si
SLU 72	12.17	-557.3	-3543	-2983	-519	0.945	0.945	-10523	9736	2760	35683	10188	2410	12598	No	24.26	Si
SLU 72	14.27	287.12	-2575	-2169	-360	0.945	0.945	-7649	9353	2652	35683	10188	2410	12598	No	35.01	Si
SLU 66	12.17	-531.48	-3447	-2903	-505	0.945	0.945	-10240	9699	2750	35683	10188	2410	12598	No	24.94	Si
SLU 66	14.27	260.8	-2451	-2064	-319	0.945	0.945	-7279	9304	2638	35683	10188	2410	12598	No	39.44	Si
SLU 70	12.17	-574.22	-3668	-3089	-530	0.945	0.945	-10895	9786	2774	35683	10188	2410	12598	No	23.78	Si
SLU 70	14.27	286.49	-2760	-2325	-354	0.945	0.945	-8200	9427	2672	35683	10188	2410	12598	No	35.57	Si
SLU 68	12.17	-533.99	-3339	-2812	-498	0.945	0.9378	-9919	9656	2716	35683	10188	2410	12598	No	25.29	Si
SLU 68	14.27	294.55	-2301	-1937	-375	0.945	0.945	-6834	9245	2621	35683	10188	2410	12598	No	33.55	Si
SLU 78	12.17	-569.4	-3398	-2862	-507	0.945	0.9148	-10094	9679	2656	35683	10188	2410	12598	No	24.87	Si
SLU 78	14.27	275.79	-2731	-2300	-294	0.945	0.945	-8111	9415	2669	35683	10188	2410	12598	No	42.79	Si
SLU 67	12.17	-543.14	-3457	-2911	-507	0.945	0.945	-10270	9703	2751	35683	10188	2410	12598	No	24.84	Si
SLU 67	14.27	280.68	-2472	-2082	-350	0.945	0.945	-7342	9312	2640	35683	10188	2410	12598	No	36.03	Si
SLU 69	12.17	-562.56	-3658	-3080	-528	0.945	0.945	-10864	9782	2773	35683	10188	2410	12598	No	23.87	Si
SLU 69	14.27	266.62	-2739	-2307	-324	0.945	0.945	-8136	9418	2670	35683	10188	2410	12598	No	38.89	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	12.17	-1335.99	-3657	-3079	-685	0.756	0.3215	0	0	0	35683	12226	1928	14154		20.68	Si
SLV 9	14.27	1952.31	-1641	-1382	-3524	0.756	0	0	0	0	35683	12226	1928	14154		4.02	Si
SLV 13	12.17	-1438.61	-3909	-3291	-1261	0.756	0.3133	0	0	0	35683	12226	1928	14154		11.22	Si
SLV 13	14.27	2066.96	329	277	-3676	0.756	0	0	0	0	35683	12226	1928	14154		3.85	Si
SLV 10	12.17	-1169.11	-3397	-2861	-561	0.756	0.3851	0	0	0	35683	12226	1928	14154		25.23	Si
SLV 10	14.27	1621.97	-2084	-1755	-2875	0.756	0	0	0	0	35683	12226	1928	14154		4.92	Si
SLV 7	12.17	461.54	-1177	-992	-130	0.945	0.2415	-13755	15251	1902	35683	15282	2410	17692		136.6	Si
SLV 7	14.27	-1267.64	-836	-704	2459	0.756	0	0	0	0	35683	12226	1928	14154		5.76	Si
SLV 15	12.17	-1036.09	-3374	-2841	-1241	0.756	0.4962	0	0	0	35683	12226	1928	14154		11.4	Si
SLV 15	14.27	1330.72	883	743	-2294	0.756	0	0	0	0	35683	12226	1928	14154		6.17	Si
SLV 8	12.17	628.43	-918	-773	-6	0.756	0	0	0	0	35683	12226	1928	14154		2391.06	Si
SLV 8	14.27	-1597.97	-1279	-1077	3108	0.756	0	0	0	0	35683	12226	1928	14154		4.55	Si
SLV 2	12.17	328.52	-1201	-1011	551	0.945	0.5967	-3567	13213	2365	35683	15282	2410	17692		32.11	Si
SLV 2	14.27	-976.39	-3803	-3202	1878	0.756	0.6472	0	0	0	35683	12226	1928	14154		7.54	Si
SLV 3	12.17	483.18	-1052	-886	387	0.756	0.0391	0	0	0	35683	12226	1928	14154		36.55	Si
SLV 3	14.27	-1221.98	-2590	-2181	2296	0.756	0.0023	0	0	0	35683	12226	1928	14154		6.16	Si
SLV 14	12.17	-1190.74	-3523	-2967	-1078	0.756	0.4035	0	0	0	35683	12226	1928	14154		13.13	Si
SLV 14	14.27	1576.32	-330	-278	-2712	0.756	0	0	0	0	35683	12226	1928	14154		5.22	Si
SLV 4	12.17	731.05	-666	-561	571	0.756	0	0	0	0	35683	12226	1928	14154		24.79	Si
SLV 4	14.27	-1712.63	-3249	-2736	3260	0.756	0	0	0	0	35683	12226	1928	14154		4.34	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	215625	0.53	0	-247	115.21	0	0	No, e>t/2
SLV 15	215625	0.53	0	270	115.21	0	0	No, Trazione
SLV 7	215625	0.53	0	-713	115.21	0	0	No, e>t/2
SLV 11	215625	0.53	0	90	115.21	0	0	No, Trazione
SLV 16	215625	0.53	0	-230	115.21	0	0	No, e>t/2
SLV 13	215625	0.53	0	-449	115.21	0	0	No, e>t/2
SLV 14	215625	0.53	3344	-948	115.21	139.6	1.21	Si
SLV 8	215625	0.53	3702	-1049	115.21	154.23	1.34	Si
SLV 9	215625	0.53	8131	-2305	115.21	330.42	2.87	Si
SLV 3	215625	0.53	8489	-2407	115.21	344.26	2.99	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.

- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-1241	-2700	90	2.618	259.4	0.893	42.59061	5.47446	Si
SLV 5	-1217	-2960	91	2.648	257.2	0.893	43.08967	5.47446	Si
SLV 2	-1002	-1201	-17	2.998	236.8	0.89	48.95431	6.16452	Si
SLV 10	-1174	-3397	119	2.691	253	0.892	43.83364	5.47446	Si
SLV 9	-1150	-3657	120	2.723	250.7	0.892	44.36365	5.47446	Si
SLV 1	-967	-1586	-15	3.058	233.5	0.89	49.95706	6.16452	Si
SLV 14	-777	-3523	80	3.379	216.1	0.889	55.2466	6.16452	Si
SLV 13	-742	-3909	82	3.454	212.9	0.889	56.46083	6.16452	Si
SLV 4	-725	-666	-79	3.492	211.4	0.889	57.08522	6.16452	Si
SLV 3	-690	-1052	-77	3.576	208.3	0.889	58.42228	6.16452	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.803	SLU 40	Si
V_SLU	23.78	SLU 70	Si
PF_SLV	0	SLV 11	No
V_SLV	3.85	SLV 13	Si
PFFP_SLV	0	SLV 15	No
R_SLV	7.78	SLV 6	Si

Maschio 224

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	-3.359	-15.433	-3.359	L7	L8	1.67	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 81	12.17	-1451.31	-5291	-0.0000317	0.0004492	0.0035	1.67	4036.25	4802.22	4802.22	3.31	No	Si
SLU 81	14.27	915.7	-4451	-0.0000232	0.0004492	0.0035	1.67	3446.22	3672.89	3672.89	4.01	No	Si
SLU 82	12.17	-1471.21	-5306	-0.000032	0.0004492	0.0035	1.67	4046.55	4812.92	4812.92	3.27	No	Si
SLU 82	14.27	941.18	-4479	-0.0000236	0.0004492	0.0035	1.67	3466.16	3693.58	3693.58	3.92	No	Si
SLU 34	12.17	-1338.36	-4712	-0.0000286	0.0004492	0.0035	1.67	3631.34	4378.13	4378.13	3.27	No	Si
SLU 34	14.27	899.58	-4315	-0.0000226	0.0004492	0.0035	1.67	3349.37	3571.68	3571.68	3.97	No	Si
SLU 39	12.17	-1315.77	-4211	-0.0000269	0.0004492	0.0035	1.67	3274.54	4003.49	4003.49	3.04	No	Si
SLU 39	14.27	786.29	-3765	-0.0000197	0.0004492	0.0035	1.67	2950.4	3157.11	3157.11	4.02	No	Si
SLU 41	12.17	-1358.52	-4600	-0.0000285	0.0004492	0.0035	1.67	3552.42	4294.3	4294.3	3.16	No	Si
SLU 41	14.27	845.18	-4244	-0.0000218	0.0004492	0.0035	1.67	3297.98	3518.06	3518.06	4.16	No	Si
SLU 84	12.17	-1513.96	-5695	-0.0000337	0.0004492	0.0035	1.67	4312.82	5091.14	5091.14	3.36	No	Si
SLU 84	14.27	1000.07	-4958	-0.0000257	0.0004492	0.0035	1.67	3804.42	4047.23	4047.23	4.05	No	Si
SLU 40	12.17	-1335.68	-4226	-0.0000272	0.0004492	0.0035	1.67	3285.29	4014.6	4014.6	3.01	No	Si
SLU 40	14.27	811.77	-3793	-0.0000201	0.0004492	0.0035	1.67	2970.86	3178.2	3178.2	3.92	No	Si
SLU 33	12.17	-1347.9	-4957	-0.0000295	0.0004492	0.0035	1.67	3803.88	4560.8	4560.8	3.38	No	Si
SLU 33	14.27	911.2	-4590	-0.0000236	0.0004492	0.0035	1.67	3545.42	3775.99	3775.99	4.14	No	Si
SLU 31	12.17	-1295.62	-4323	-0.000027	0.0004492	0.0035	1.67	3354.64	4086.62	4086.62	3.15	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 31	14.27	840.69	-3837	-0.0000205	0.0004492	0.0035	1.67	3002.72	3211.07	3211.07	3.82	No	Si
SLU 42	12.17	-1378.42	-4615	-0.0000288	0.0004492	0.0035	1.67	3563.01	4305.51	4305.51	3.12	No	Si
SLU 42	14.27	870.66	-4272	-0.0000222	0.0004492	0.0035	1.67	3318.08	3539.06	3539.06	4.06	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 9	12.17	-3363.39	-7215	-0.0000665	0.0006738	0.0035	1.336		6309.7	6309.7	1.88		Si
SLV 9	14.27	3134.95	-6699	-0.0000619	0.0006738	0.0035	1.67		5434.48	5434.48	1.73		Si
SLV 7	12.17	936.66	-1052	-0.0003936	0.0006738	0.0035	1.336		1035.98	1035.98	1.11		Si
SLV 7	14.27	-1258.89	-496	-0.0005186	0.0006738	0.0035	1.336		1106.28	1106.28	0.88		No
SLV 3	12.17	1595.25	-2301	-0.0000547	0.0006738	0.0035	1.67		2044.97	2044.97	1.28		Si
SLV 3	14.27	-1523.77	-472	-0.0007217	0.0006738	0.0035	1.336		1086.16	1086.16	0.71		No
SLV 15	12.17	-3446.36	-4287	-0.0002681	0.0006738	0.0035	1.336		4110.53	4110.53	1.19		Si
SLV 15	14.27	2706.49	-5603	-0.0000537	0.0006738	0.0035	1.67		4613.58	4613.58	1.7		Si
SLV 14	12.17	-3484.89	-5983	-0.000081	0.0006738	0.0035	1.336		5393.72	5393.72	1.55		Si
SLV 14	14.27	2896.85	-6150	-0.0000571	0.0006738	0.0035	1.67		5026.51	5026.51	1.74		Si
SLV 2	12.17	1556.72	-3997	-0.0000298	0.0006738	0.0035	1.67		3381.55	3381.55	2.17		Si
SLV 2	14.27	-1333.4	-1018	-0.0003447	0.0006738	0.0035	1.336		1529.51	1529.51	1.15		Si
SLV 13	12.17	-4282.63	-5957	-0.0001774	0.0006738	0.0035	1.336		5374.28	5374.28	1.25		Si
SLV 13	14.27	3643.92	-7002	-0.0000761	0.0006738	0.0035	1.67		5659.15	5659.15	1.55		Si
SLV 4	12.17	2392.99	-2327	-0.0042579	0.0006738	0.0035	1.336		2065.69	2065.69	0.86		No
SLV 4	14.27	-2270.83	381	0.0400388	0.0006738	0.0035	1.336		0	0	0		No
SLV 16	12.17	-2648.62	-4313	-0.000066	0.0006738	0.0035	1.336		4130.25	4130.25	1.56		Si
SLV 16	14.27	1959.42	-4751	-0.0000375	0.0006738	0.0035	1.67		3963.87	3963.87	2.02		Si
SLV 8	12.17	1473.75	-1070	-0.0045103	0.0006738	0.0035	1.336		1050.11	1050.11	0.71		No
SLV 8	14.27	-1761.87	78	-0.0015455	0.0006738	0.0035	1.336		308.09	308.09	0.17		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	12.17	-1494.06	-5680	-4783	-1954	1.67	1.67	-9547	9606	4813	35683	18005	4258	22263	No	11.39	Si
SLU 83	14.27	974.59	-4930	-4151	-1955	1.67	1.67	-8286	9438	4729	35683	18005	4258	22263	No	11.39	Si
SLU 70	12.17	-1401.75	-6628	-5581	-1956	1.67	1.67	-11140	9819	4919	35683	18005	4258	22263	No	11.38	Si
SLU 70	14.27	1127.34	-5813	-4895	-1959	1.67	1.67	-9771	9636	4828	35683	18005	4258	22263	No	11.36	Si
SLU 79	12.17	-1483.47	-6155	-5183	-1994	1.67	1.67	-10346	9713	4866	35683	18005	4258	22263	No	11.17	Si
SLU 79	14.27	1045.41	-5434	-4576	-1995	1.67	1.67	-9133	9551	4785	35683	18005	4258	22263	No	11.16	Si
SLU 74	12.17	-1463.54	-6022	-5071	-1949	1.67	1.67	-10122	9683	4851	35683	18005	4258	22263	No	11.42	Si
SLU 74	14.27	1015.13	-5248	-4419	-1951	1.67	1.67	-8821	9510	4764	35683	18005	4258	22263	No	11.41	Si
SLU 78	12.17	-1526.19	-6426	-5411	-2060	1.67	1.67	-10800	9773	4896	35683	18005	4258	22263	No	10.81	Si
SLU 78	14.27	1099.5	-5755	-4846	-2062	1.67	1.67	-9673	9623	4821	35683	18005	4258	22263	No	10.8	Si
SLU 84	12.17	-1513.96	-5695	-4796	-1981	1.67	1.67	-9572	9610	4814	35683	18005	4258	22263	No	11.24	Si
SLU 84	14.27	1000.07	-4958	-4175	-1982	1.67	1.67	-8333	9444	4732	35683	18005	4258	22263	No	11.23	Si
SLU 80	12.17	-1503.37	-6170	-5196	-2020	1.67	1.67	-10371	9716	4868	35683	18005	4258	22263	No	11.02	Si
SLU 80	14.27	1070.89	-5462	-4599	-2022	1.67	1.67	-9180	9557	4788	35683	18005	4258	22263	No	11.01	Si
SLU 76	12.17	-1473.9	-5791	-4877	-1954	1.67	1.67	-9734	9631	4825	35683	18005	4258	22263	No	11.39	Si
SLU 76	14.27	1028.99	-5001	-4212	-1956	1.67	1.67	-8406	9454	4737	35683	18005	4258	22263	No	11.38	Si
SLU 77	12.17	-1506.28	-6411	-5398	-2033	1.67	1.67	-10775	9770	4895	35683	18005	4258	22263	No	10.95	Si
SLU 77	14.27	1074.01	-5727	-4823	-2035	1.67	1.67	-9626	9617	4818	35683	18005	4258	22263	No	10.94	Si
SLU 75	12.17	-1483.44	-6037	-5084	-1976	1.67	1.67	-10147	9686	4853	35683	18005	4258	22263	No	11.27	Si
SLU 75	14.27	1040.61	-5276	-4443	-1978	1.67	1.67	-8868	9516	4767	35683	18005	4258	22263	No	11.26	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	12.17	2392.99	-2327	-1960	2913	1.336	0	0	0	0	35683	21606	3407	25012		8.59	Si
SLV 4	14.27	-2270.83	381	321	1966	1.336	0	0	0	0	35683	21606	3407	25012		12.72	Si
SLV 9	12.17	-3363.39	-7215	-6075	-3995	1.336	1.1064	0	0	0	35683	21606	3407	25012		6.26	Si
SLV 9	14.27	3134.95	-6699	-5641	-3606	1.67	1.1011	-11260	14752	4873	35683	27007	4258	31266		8.67	Si
SLV 14	12.17	-3484.89	-5983	-5038	-4371	1.336	0.7576	0	0	0	35683	21606	3407	25012		5.72	Si
SLV 14	14.27	2896.85	-6150	-5179	-3426	1.67	1.0919	-10337	14567	4772	35683	27007	4258	31266		9.13	Si
SLD 14	12.17	-2022.96	-4904	-4130	-2591	1.67	1.2674	-10899	14680	5582	35683	27007	4258	31266		12.07	Si
SLD 14	14.27	1622.44	-4508	-3797	-2188	1.67	1.4254	-7578	14016	5993	35683	27007	4258	31266		14.29	Si
SLV 13	12.17	-4282.63	-5957	-5017	-5455	1.336	0.3483	0	0	0	35683	21606	3407	25012		4.59	Si
SLV 13	14.27	3643.92	-7002	-5897	-4511	1.67	0.9438	-11770	14854	4467	35683	27007	4258	31266		6.93	Si
SLV 15	12.17	-3446.36	-4287	-3610	-4620	1.336	0.0934	0	0	0	35683	21606	3407	25012		5.41	Si
SLV 15	14.27	2706.49	-5603	-4719	-3746	1.67	1.056	-9418	14384	4557	35683	27007	4258	31266		8.35	Si
SLD 13	12.17	-2362.34	-4893	-4120	-3052	1.336	1.0566	0	0	0	35683	21606	3407	25012		8.2	Si
SLD 13	14.27	1940.25	-4871	-4102	-2649	1.67	1.31	-8187	14137	5556	35683	27007	4258	31266		11.8	Si
SLV 10	12.17	-2826.3	-7232	-6090	-3265	1.67	1.3326	-15324	15565	6222	35683	27007	4258	31266		9.57	Si
SLV 10	14.27	2631.98	-6125	-5158	-2876	1.67	1.216	-10296	14559	5311	35683	27007	4258	31266		10.87	Si
SLV 16	12.17	-2648.62	-4313	-3632	-3536	1.336	0.6627	0	0	0	35683	21606	3407	25012		7.07	Si
SLV 16	14.27	1959.42	-4751	-4001	-2661	1.67	1.2677	-7986	14097	5362	35683	27007	4258	31266		11.75	Si
SLD 15	12.17	-2024.36	-4229	-3561	-2711	1.336	1.0689	0	0	0	35683	21606	3407	25012		9.22	Si
SLD 15	14.27	1561.28	-4309	-3629	-2338	1.67	1.4181	-7243	13949	5934	35683	27007	4258	31266		13.37	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 3	215625	0.53	0	-1007	203.59	0	0	No, e>t/2
SLV 8	215625	0.53	0	-487	203.59	0	0	No, e>t/2
SLV 7	215625	0.53	0	-959	203.59	0	0	No, e>t/2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 4	215625	0.53	0	-306	203.59	0	0	No, e>t/2
SLV 2	215625	0.53	3331	-1669	203.59	245.77	1.21	Si
SLV 12	215625	0.53	3806	-1907	203.59	280.07	1.38	Si
SLV 1	215625	0.53	4731	-2370	203.59	346.37	1.7	Si
SLV 11	215625	0.53	4749	-2379	203.59	347.62	1.71	Si
SLV 6	215625	0.53	10041	-5030	203.59	713.21	3.5	Si
SLV 16	215625	0.53	10058	-5039	203.59	714.38	3.51	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 2	-1888	-3997	-318	2.807	429.4	0.891	45.79723	6.16452	Si
SLV 1	-1828	-3971	-317	2.859	423.7	0.89	46.65908	6.16452	Si
SLV 6	-2095	-6636	-263	2.66	449.1	0.893	43.32053	5.47446	Si
SLV 5	-2054	-6619	-263	2.691	445.2	0.892	43.83739	5.47446	Si
SLV 4	-1491	-2327	-208	3.221	392.6	0.889	52.65938	6.16452	Si
SLV 10	-1884	-7232	-107	2.875	429	0.891	46.89762	5.47446	Si
SLV 9	-1843	-7215	-106	2.91	425.2	0.891	47.48925	5.47446	Si
SLV 3	-1431	-2301	-207	3.288	387.1	0.889	53.76461	6.16452	Si
SLV 14	-1185	-5983	204	3.596	365.1	0.89	58.73875	6.16452	Si
SLV 13	-1125	-5957	205	3.68	359.8	0.89	60.07303	6.16452	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.006	SLU 40	Si
V_SLU	10.797	SLU 78	Si
PF_SLV	0	SLV 4	No
V_SLV	4.585	SLV 13	Si
PFFP_SLV	0	SLV 3	No
R_SLV	7.429	SLV 2	Si

Maschio 226

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-15.058	2.206	-15.058	6.501	L7	L8	4.295	0.16	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 36	12.17	2433.64	-7728	-0.0000204	0.0004492	0.0035	4.295	15067.8	17558.54	17558.54	7.21	No	Si
SLU 36	14.27	-5553.9	-4839	-0.0000254	0.0004492	0.0035	4.295	9792.7	20301.69	20301.69	3.66	No	Si
SLU 75	12.17	2499.26	-9092	-0.0000231	0.0004492	0.0035	4.295	17411.65	20201.79	20201.79	8.08	No	Si
SLU 75	14.27	-5891.6	-5462	-0.0000268	0.0004492	0.0035	4.295	10966.32	21521.4	21521.4	3.65	No	Si
SLU 77	12.17	2708.47	-9347	-0.0000241	0.0004492	0.0035	4.295	17837.81	20687.67	20687.67	7.64	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 77	14.27	-6341.13	-5716	-0.000029	0.0004492	0.0035	4.295	11439.7	22019.3	22019.3	3.47	No	Si
SLU 83	12.17	2688.32	-9249	-0.0000239	0.0004492	0.0035	4.295	17674.41	20501.71	20501.71	7.63	No	Si
SLU 83	14.27	-6129.79	-5618	-0.000028	0.0004492	0.0035	4.295	11258.15	21827.94	21827.94	3.56	No	Si
SLU 35	12.17	2491.24	-7799	-0.0000206	0.0004492	0.0035	4.295	15192.89	17696.95	17696.95	7.1	No	Si
SLU 35	14.27	-5676.95	-4910	-0.000026	0.0004492	0.0035	4.295	9928.35	20441.62	20441.62	3.6	No	Si
SLU 74	12.17	2556.87	-9164	-0.0000234	0.0004492	0.0035	4.295	17531.75	20339.81	20339.81	7.95	No	Si
SLU 74	14.27	-6014.64	-5533	-0.0000274	0.0004492	0.0035	4.295	11099.69	21661.33	21661.33	3.6	No	Si
SLU 84	12.17	2630.72	-9178	-0.0000236	0.0004492	0.0035	4.295	17554.62	20365.73	20365.73	7.74	No	Si
SLU 84	14.27	-6006.75	-5547	-0.0000274	0.0004492	0.0035	4.295	11125.09	21688.01	21688.01	3.61	No	Si
SLU 79	12.17	2666.15	-9259	-0.0000238	0.0004492	0.0035	4.295	17691.73	20521.4	20521.4	7.7	No	Si
SLU 79	14.27	-6174.34	-5629	-0.0000282	0.0004492	0.0035	4.295	11277.4	21848.2	21848.2	3.54	No	Si
SLU 80	12.17	2608.55	-9188	-0.0000235	0.0004492	0.0035	4.295	17571.98	20385.42	20385.42	7.81	No	Si
SLU 80	14.27	-6051.3	-5557	-0.0000276	0.0004492	0.0035	4.295	11144.37	21708.27	21708.27	3.59	No	Si
SLU 78	12.17	2650.87	-9275	-0.0000238	0.0004492	0.0035	4.295	17718.37	20551.69	20551.69	7.75	No	Si
SLU 78	14.27	-6218.08	-5645	-0.0000284	0.0004492	0.0035	4.295	11306.99	21879.37	21879.37	3.52	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 11	12.17	9897.91	-14086	-0.0000516	0.0006738	0.0035	4.295		30029.58	30029.58	3.03		Si
SLV 11	14.27	-16931.37	-11340	-0.0000929	0.0006738	0.0035	3.436		33053.27	33053.27	1.95		Si
SLV 9	12.17	-6107.7	890	-0.0001997	0.0006738	0.0035	3.436		8687.11	8687.11	1.42		Si
SLV 9	14.27	9216.27	3637	-0.0094748	0.0006738	0.0035	3.436		0	0	0		No
SLV 8	12.17	9142.46	-13817	-0.0000491	0.0006738	0.0035	4.295		29520.92	29520.92	3.23		Si
SLV 8	14.27	-16667.26	-11064	-0.0000925	0.0006738	0.0035	3.436		32528.12	32528.12	1.95		Si
SLV 7	12.17	9296.7	-13843	-0.0000495	0.0006738	0.0035	4.295		29570.32	29570.32	3.18		Si
SLV 7	14.27	-16668.31	-11090	-0.0000922	0.0006738	0.0035	3.436		32577.61	32577.61	1.95		Si
SLV 10	12.17	-6261.94	916	-0.000205	0.0006738	0.0035	3.436		8633.03	8633.03	1.38		Si
SLV 10	14.27	9217.32	3663	-0.0095032	0.0006738	0.0035	3.436		0	0	0		No
SLD 6	12.17	-1820.99	-3427	-0.0000108	0.0006738	0.0035	4.295		17533.06	17533.06	9.63		Si
SLD 6	14.27	1541.38	-675	-0.00008	0.0006738	0.0035	4.295		3352.45	3352.45	2.17		Si
SLV 5	12.17	-6708.9	1132	-0.0002198	0.0006738	0.0035	3.436		8182.38	8182.38	1.22		Si
SLV 5	14.27	9479.34	3886	-0.0099279	0.0006738	0.0035	3.436		0	0	0		No
SLD 5	12.17	-1756.69	-3438	-0.0000106	0.0006738	0.0035	4.295		17555.07	17555.07	9.99		Si
SLD 5	14.27	1540.95	-686	-0.0000735	0.0006738	0.0035	4.295		3375.12	3375.12	2.19		Si
SLV 6	12.17	-6863.14	1158	-0.0002251	0.0006738	0.0035	3.436		8128.3	8128.3	1.18		Si
SLV 6	14.27	9480.38	3912	-0.0099562	0.0006738	0.0035	3.436		0	0	0		No
SLV 12	12.17	9743.66	-14060	-0.0000511	0.0006738	0.0035	4.295		29980.98	29980.98	3.08		Si
SLV 12	14.27	-16930.33	-11314	-0.0000932	0.0006738	0.0035	3.436		33003.78	33003.78	1.95		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	12.17	2499.26	-9092	-5339	4020	4.295	4.295	-7769	9369	6438	101952	24696	21905	46601	No	11.59	Si
SLU 75	14.27	-5891.6	-5462	-3207	4020	4.295	3.2064	-6274	9170	5253	101952	24696	21905	46601	No	11.59	Si
SLU 78	12.17	2650.87	-9275	-5446	4248	4.295	4.295	-7925	9390	6453	101952	24696	21905	46601	No	10.97	Si
SLU 78	14.27	-6218.08	-5645	-3314	4248	4.295	3.1377	-6627	9217	5295	101952	24696	21905	46601	No	10.97	Si
SLU 77	12.17	2708.47	-9347	-5488	4334	4.295	4.295	-7986	9398	6458	101952	24696	21905	46601	No	10.75	Si
SLU 77	14.27	-6341.13	-5716	-3356	4334	4.295	3.1145	-6761	9235	5312	101952	24696	21905	46601	No	10.75	Si
SLU 83	12.17	2688.32	-9249	-5431	4223	4.295	4.295	-7903	9387	6451	101952	24696	21905	46601	No	11.03	Si
SLU 83	14.27	-6129.79	-5618	-3299	4223	4.295	3.1694	-6530	9204	5289	101952	24696	21905	46601	No	11.03	Si
SLU 84	12.17	2630.72	-9178	-5389	4137	4.295	4.295	-7841	9379	6445	101952	24696	21905	46601	No	11.26	Si
SLU 84	14.27	-6006.75	-5547	-3257	4137	4.295	3.1938	-6397	9187	5273	101952	24696	21905	46601	No	11.26	Si
SLU 80	12.17	2608.55	-9188	-5395	4148	4.295	4.295	-7850	9380	6446	101952	24696	21905	46601	No	11.23	Si
SLU 80	14.27	-6051.3	-5557	-3263	4148	4.295	3.1758	-6446	9193	5275	101952	24696	21905	46601	No	11.23	Si
SLU 74	12.17	2556.87	-9164	-5381	4106	4.295	4.295	-7830	9377	6444	101952	24696	21905	46601	No	11.35	Si
SLU 74	14.27	-6014.64	-5533	-3249	4106	4.295	3.1815	-6406	9188	5269	101952	24696	21905	46601	No	11.35	Si
SLU 82	12.17	2479.12	-8995	-5281	3910	4.295	4.295	-7685	9358	6431	101952	24696	21905	46601	No	11.92	Si
SLU 82	14.27	-5680.26	-5364	-3150	3910	4.295	3.2657	-6046	9140	5230	101952	24696	21905	46601	No	11.92	Si
SLU 81	12.17	2536.72	-9066	-5323	3996	4.295	4.295	-7746	9366	6436	101952	24696	21905	46601	No	11.66	Si
SLU 81	14.27	-5803.3	-5436	-3192	3996	4.295	3.2395	-6176	9157	5246	101952	24696	21905	46601	No	11.66	Si
SLU 79	12.17	2666.15	-9259	-5437	4234	4.295	4.295	-7911	9388	6452	101952	24696	21905	46601	No	11.01	Si
SLU 79	14.27	-6174.34	-5629	-3305	4234	4.295	3.1517	-6579	9211	5292	101952	24696	21905	46601	No	11.01	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 9	12.17	-6107.7	890	522	-7703	3.436	0	0	0	0	101952	29636	17524	47159		6.12	Si
SLV 9	14.27	9216.27	3637	2135	-6621	3.436	0	0	0	0	101952	29636	17524	47159		7.12	Si
SLV 6	12.17	-6863.14	1158	680	-8189	3.436	0	0	0	0	101952	29636	17524	47159		5.76	Si
SLV 6	14.27	9480.38	3912	2297	-7108	3.436	0	0	0	0	101952	29636	17524	47159		6.63	Si
SLV 12	12.17	9743.66	-14060	-8255	13145	4.295	4.295	-12013	14903	10241	101952	37044	21905	58949		4.48	Si
SLV 12	14.27	-16930.33	-11314	-6643	12065	3.436	1.9531	0	0	0	101952	29636	17524	47159		3.91	Si
SLD 12	12.17	4791.46	-9490	-5572	6753	4.295	4.295	-8108	14122	9704	101952	37044	21905	58949		8.73	Si
SLD 12	14.27	-8991.94	-6742	-3958	6317	3.436	2.4411	0	0	0	101952	29636	17524	47159		7.47	Si
SLV 10	12.17	-6261.94	916	538	-7777	3.436	0	0	0	0	101952	29636	17524	47159		6.06	Si
SLV 10	14.27	9217.32	3663	2151	-6695	3.436	0	0	0	0	101952	29636	17524	47159		7.04	Si
SLD 11	12.17	4855.75	-9500	-5578	6784	4.295	4.295	-8117	14123	9706	101952	37044	21905	58949		8.69	Si
SLD 11	14.27	-8992.37	-6752	-3965	6348	3.436	2.4473	0	0	0	101952	29636	17524	47159		7.43	Si
SLV 11	12.17	9897.91	-14086	-8270	13219	4.295	4.295	-12035	14907	10244	101952	37044	21905	58949		4.46	Si
SLV 11	14.27	-16931.37	-11340	-6658	12139	3.436	1.9631	0	0	0	101952	29636	17524	47159		3.88	Si
SLV 7	12.17	9296.7	-13843	-8128	12808	4.295	4.295	-11828	14866	10216	101952	37044	21905	58949		4.6	Si
SLV 7	14.27	-16668.31	-11090	-6511	11726	3.436	1.9333	0	0	0	101952	29636	17524	47159		4.02	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	12.17	9142.46	-13817	-8113	12734	4.295	4.295	-11805	14861	10213	101952	37044	21905	58949		4.63	Si
SLV 8	14.27	-16667.26	-11064	-6496	11652	3.436	1.923	0	0	0	101952	29636	17524	47159		4.05	Si
SLV 5	12.17	-6708.9	1132	665	-8115	3.436	0	0	0	0	101952	29636	17524	47159		5.81	Si
SLV 5	14.27	9479.34	3886	2282	-7034	3.436	0	0	0	0	101952	29636	17524	47159		6.7	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 13.745 Ta 0.1 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 6	3316	0.53	300.29	0	0	0	0	No
SLV 5	3290	0.53	300.29	0	0	0	0	No
SLV 9	3045	0.53	300.29	0	0	0	0	No
SLV 10	3071	0.53	300.29	0	0	0	0	No
SLV 2	-1627	0.53	300.29	0	456.09	228.05	0.76	No
SLV 1	-1666	0.53	300.29	0	460.02	230.01	0.77	No
SLV 14	-2442	0.53	300.29	0	538.27	269.13	0.9	No
SLV 13	-2480	0.53	300.29	0	542.12	271.06	0.9	No
SLD 6	-1264	0.22	124.26	0	418.97	209.48	1.69	Si
SLD 5	-1275	0.22	124.26	0	420.08	210.04	1.69	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.03 Ta = 0.1036

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-633	-9134	721	9.11	422.6	0.915	144.65966	8.86034	Si
SLV 16	-628	-9095	721	9.129	422.3	0.916	144.90401	8.86034	Si
SLV 3	-510	-8325	-717	9.567	415.1	0.924	150.47888	8.86034	Si
SLV 4	-505	-8286	-717	9.588	414.8	0.924	150.73341	8.86034	Si
SLV 11	-1261	-14086	222	7.489	469.7	0.893	121.81695	6.96406	Si
SLV 12	-1258	-14060	222	7.497	469.4	0.893	121.94428	6.96406	Si
SLV 7	-1224	-13843	-209	7.58	466.7	0.894	123.21189	6.96406	Si
SLV 8	-1221	-13817	-209	7.588	466.4	0.894	123.34157	6.96406	Si
SLV 13	-58	-4641	717	11.72	397.5	0.986	172.7078	8.86034	Si
SLV 14	-52	-4603	717	11.751	397.5	0.987	172.95687	8.86034	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	3.472	SLU 77	Si
V_SLU	10.753	SLU 77	Si
PF_SLV	0	SLV 5	No
V_SLV	3.885	SLV 11	Si
PFFP_SLV	0	SLV 5	No
R_SLV	16.327	SLV 15	Si

Maschio 227

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	-3.359	-13.763	-0.228	L7	L8	3.131	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 34	12.17	-1882.79	-11520	-0.0000245	0.0003743	0.0035	3.1314	15864.38	19209.56	19209.56	10.2	No	Si
SLU 34	14.27	349.5	-6024	-0.0000107	0.0003743	0.0035	3.1314	8837.43	9445.48	9445.48	27.03	No	Si
SLU 35	12.17	-2033.76	-12317	-0.0000263	0.0003743	0.0035	3.1314	16800.91	20240.75	20240.75	9.95	No	Si
SLU 35	14.27	150.23	-6714	-0.0000112	0.0003743	0.0035	3.1314	9774.15	10420.1	10420.1	69.36	No	Si
SLU 39	12.17	-1935.57	-10923	-0.0000236	0.0003743	0.0035	3.1314	15148.65	18447.29	18447.29	9.53	No	Si
SLU 39	14.27	220.58	-5477	-0.0000094	0.0003743	0.0035	3.1314	8083.95	8668.13	8668.13	39.3	No	Si
SLU 41	12.17	-2042.68	-11496	-0.0000249	0.0003743	0.0035	3.1314	15836.01	19178.89	19178.89	9.39	No	Si
SLU 41	14.27	174.45	-5960	-0.00001	0.0003743	0.0035	3.1314	8750.08	9354.8	9354.8	53.63	No	Si
SLU 42	12.17	-2079.03	-11567	-0.0000252	0.0003743	0.0035	3.1314	15919.58	19269.35	19269.35	9.27	No	Si
SLU 42	14.27	251.95	-6017	-0.0000104	0.0003743	0.0035	3.1314	8828.55	9436.25	9436.25	37.45	No	Si
SLU 33	12.17	-1963.02	-11814	-0.0000252	0.0003743	0.0035	3.1314	16211.95	19588.05	19588.05	9.98	No	Si
SLU 33	14.27	273.85	-6288	-0.0000109	0.0003743	0.0035	3.1314	9197.91	9820.66	9820.66	35.86	No	Si
SLU 32	12.17	-1926.66	-11743	-0.000025	0.0003743	0.0035	3.1314	16128.95	19497.23	19497.23	10.12	No	Si
SLU 32	14.27	196.35	-6231	-0.0000105	0.0003743	0.0035	3.1314	9119.95	9739.69	9739.69	49.6	No	Si
SLU 36	12.17	-2070.12	-12387	-0.0000265	0.0003743	0.0035	3.1314	16882.59	20332.42	20332.42	9.82	No	Si
SLU 36	14.27	227.73	-6771	-0.0000115	0.0003743	0.0035	3.1314	9851.21	10500.39	10500.39	46.11	No	Si
SLU 40	12.17	-1971.93	-10993	-0.0000239	0.0003743	0.0035	3.1314	15233.54	18536.56	18536.56	9.4	No	Si
SLU 40	14.27	298.08	-5534	-0.0000097	0.0003743	0.0035	3.1314	8163.32	8749.79	8749.79	29.35	No	Si
SLU 38	12.17	-1965.65	-12047	-0.0000256	0.0003743	0.0035	3.1314	16485.64	19889.57	19889.57	10.12	No	Si
SLU 38	14.27	251.7	-6469	-0.0000111	0.0003743	0.0035	3.1314	9443.21	10075.64	10075.64	40.03	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	12.17	-8221	-15839	-0.0000513	0.0005615	0.0035	3.1314		25441.65	25441.65	3.09		Si
SLV 10	14.27	9141.92	-10845	-0.0000508	0.0005615	0.0035	3.1314		16450.46	16450.46	1.8		Si
SLV 9	12.17	-8262.92	-16379	-0.0000524	0.0005615	0.0035	3.1314		26154.74	26154.74	3.17		Si
SLV 9	14.27	8915.43	-10795	-0.0000494	0.0005615	0.0035	3.1314		16379.78	16379.78	1.84		Si
SLV 6	12.17	-6319.82	-15064	-0.000044	0.0005615	0.0035	3.1314		24425.46	24425.46	3.86		Si
SLV 6	14.27	9160.31	-11056	-0.0000508	0.0005615	0.0035	3.1314		16743.03	16743.03	1.83		Si
SLV 12	12.17	4535.78	-3543	-0.0000417	0.0005615	0.0035	3.1314		5904.09	5904.09	1.3		Si
SLV 12	14.27	-8558.1	1743	0.0949468	0.0005615	0.0035	2.5051		0	0	0		No
SLV 11	12.17	4493.85	-4083	-0.0000293	0.0005615	0.0035	3.1314		6711.62	6711.62	1.49		Si
SLV 11	14.27	-8784.59	1794	0.0977002	0.0005615	0.0035	2.5051		0	0	0		No
SLD 7	12.17	2025.21	-7055	-0.0000174	0.0005615	0.0035	3.1314		11079.78	11079.78	5.47		Si
SLD 7	14.27	-3384.8	-2165	-0.0000787	0.0005615	0.0035	2.5051		6198.61	6198.61	1.83		Si
SLV 7	12.17	6395.03	-3308	-0.0033476	0.0005615	0.0035	3.1314		5549.3	5549.3	0.87		No
SLV 7	14.27	-8766.21	1584	0.0866311	0.0005615	0.0035	2.5051		0	0	0		No
SLD 11	12.17	1211.87	-7388	-0.0000154	0.0005615	0.0035	3.1314		11559.28	11559.28	9.54		Si
SLD 11	14.27	-3392.66	-2075	-0.0000958	0.0005615	0.0035	2.5051		6062.28	6062.28	1.79		Si
SLD 12	12.17	1229.35	-7162	-0.0000151	0.0005615	0.0035	3.1314		11234.96	11234.96	9.14		Si
SLD 12	14.27	-3298.25	-2096	-0.000079	0.0005615	0.0035	2.5051		6094.32	6094.32	1.85		Si
SLV 8	12.17	6436.95	-2768	-0.0062285	0.0005615	0.0035	3.1314		4733.6	4733.6	0.74		No
SLV 8	14.27	-8539.72	1533	0.0838788	0.0005615	0.0035	2.5051		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 48	12.17	-879.84	-12752	-10738	689	3.1314	3.1314	-11431	8469	8765	35683	28130	7985	36115	No	52.45	Si
SLU 48	14.27	12.68	-6500	-5474	686	3.1314	3.1314	-5827	7721	7254	35683	28130	7985	36115	No	52.62	Si
SLU 56	12.17	-1394.31	-12970	-10922	601	3.1314	3.1314	-11626	8495	8838	35683	28130	7985	36115	No	60.07	Si
SLU 56	14.27	-94.38	-6574	-5536	600	3.1314	3.1314	-5893	7730	7262	35683	28130	7985	36115	No	60.17	Si
SLU 45	12.17	-772.74	-12178	-10255	650	3.1314	3.1314	-10917	8400	8573	35683	28130	7985	36115	No	55.53	Si
SLU 45	14.27	58.81	-6017	-5067	648	3.1314	3.1314	-5394	7664	7199	35683	28130	7985	36115	No	55.72	Si
SLU 50	12.17	-775.37	-12411	-10452	699	3.1314	3.1314	-11126	8428	8651	35683	28130	7985	36115	No	51.7	Si
SLU 50	14.27	36.66	-6198	-5219	696	3.1314	3.1314	-5556	7685	7220	35683	28130	7985	36115	No	51.87	Si
SLU 51	12.17	-811.73	-12482	-10511	654	3.1314	3.1314	-11189	8436	8675	35683	28130	7985	36115	No	55.24	Si
SLU 51	14.27	114.16	-6255	-5268	652	3.1314	3.1314	-5607	7692	7226	35683	28130	7985	36115	No	55.4	Si
SLU 49	12.17	-916.2	-12822	-10798	644	3.1314	3.1314	-11494	8477	8789	35683	28130	7985	36115	No	56.09	Si
SLU 49	14.27	90.18	-6558	-5522	642	3.1314	3.1314	-5878	7728	7260	35683	28130	7985	36115	No	56.27	Si
SLU 47	12.17	-728.87	-11955	-10067	586	3.1314	3.1314	-10717	8373	8499	35683	28130	7985	36115	No	61.66	Si
SLU 47	14.27	211.95	-5810	-4893	584	3.1314	3.1314	-5208	7639	7176	35683	28130	7985	36115	No	61.84	Si
SLU 46	12.17	-809.1	-12249	-10315	606	3.1314	3.1314	-10980	8408	8597	35683	28130	7985	36115	No	59.63	Si
SLU 46	14.27	136.31	-6075	-5115	604	3.1314	3.1314	-5445	7670	7206	35683	28130	7985	36115	No	59.82	Si
SLU 58	12.17	-1289.84	-12629	-10635	611	3.1314	3.1314	-11321	8454	8724	35683	28130	7985	36115	No	59.09	Si
SLU 58	14.27	-70.4	-6272	-5282	610	3.1314	3.1314	-5622	7694	7228	35683	28130	7985	36115	No	59.19	Si
SLU 43	12.17	-561.16	-11264	-9486	622	3.1314	3.1314	-10098	8291	8267	35683	28130	7985	36115	No	58.07	Si
SLU 43	14.27	128.91	-5232	-4406	620	3.1314	3.1314	-4690	7570	7111	35683	28130	7985	36115	No	58.25	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 11	12.17	1211.87	-7388	-6221	3733	3.1314	3.1314	-6622	11741	11030	35683	42195	7985	46713		12.51	Si
SLD 11	14.27	-3392.66	-2075	-1747	3164	2.5051	0	0	0	0	35683	33756	6388	35683		11.28	Si
SLV 12	12.17	4535.78	-3543	-2984	8275	3.1314	0.8564	-11675	12752	7930	35683	42195	7985	43613		5.27	Si
SLV 12	14.27	-8558.1	1743	1468	6856	2.5051	0	0	0	0	35683	33756	6388	35683		5.2	Si
SLV 11	12.17	4493.85	-4083	-3439	8804	3.1314	1.3955	-3660	11149	8111	35683	42195	7985	43794		4.97	Si
SLV 11	14.27	-8784.59	1794	1511	7384	2.5051	0	0	0	0	35683	33756	6388	35683		4.83	Si
SLV 5	12.17	-6361.74	-15604	-13140	-7514	3.1314	3.1314	-13988	13214	12414	35683	42195	7985	48097		6.4	Si
SLV 5	14.27	8933.82	-11005	-9268	-6097	3.1314	2.2618	-9865	12390	10428	35683	42195	7985	46112		7.56	Si
SLV 10	12.17	-8221	-15839	-13338	-8284	3.1314	3.1314	-14198	13256	12453	35683	42195	7985	48136		5.81	Si
SLV 10	14.27	9141.92	-10845	-9133	-6741	3.1314	2.1683	-9722	12361	10375	35683	42195	7985	46058		6.83	Si
SLV 6	12.17	-6319.82	-15064	-12685	-8042	3.1314	3.1314	-13503	13117	12323	35683	42195	7985	48006		5.97	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	14.27	9160.31	-11056	-9310	-6625	3.1314	2.2115	-9911	12399	10445	35683	42195	7985	46129		6.96	Si
SLV 7	12.17	6395.03	-3308	-2786	9045	3.1314	0	-117873	16250	7851	35683	42195	7985	43534		4.81	Si
SLV 7	14.27	-8766.21	1584	1333	7500	2.5051	0	0	0	0	35683	33756	6388	35683		4.76	Si
SLV 9	12.17	-8262.92	-16379	-13793	-7755	3.1314	3.1314	-14683	13353	12544	35683	42195	7985	48227		6.22	Si
SLV 9	14.27	8915.43	-10795	-9090	-6212	3.1314	2.2194	-9677	12352	10358	35683	42195	7985	46041		7.41	Si
SLD 7	12.17	2025.21	-7055	-5941	3836	3.1314	3.1314	-6325	11682	10974	35683	42195	7985	46657		12.16	Si
SLD 7	14.27	-3384.8	-2165	-1823	3213	2.5051	0.0075	0	0	0	35683	33756	6388	35683		11.11	Si
SLV 8	12.17	6436.95	-2768	-2331	8516	3.1314	0	-106739	16250	7670	35683	42195	7985	43353		5.09	Si
SLV 8	14.27	-8539.72	1533	1291	6971	2.5051	0	0	0	0	35683	33756	6388	35683		5.12	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.53	0	272	390.96	0	0	No, Trazione
SLV 11	179667	0.53	0	221	390.96	0	0	No, Trazione
SLV 7	179667	0.53	0	184	390.96	0	0	No, Trazione
SLV 8	179667	0.53	0	234	390.96	0	0	No, Trazione
SLV 16	179667	0.53	4307	-4046	390.96	589.76	1.51	Si
SLV 15	179667	0.53	4387	-4121	390.96	600.4	1.54	Si
SLV 4	179667	0.53	4439	-4170	390.96	607.34	1.55	Si
SLV 3	179667	0.53	4519	-4245	390.96	617.96	1.58	Si
SLV 14	179667	0.53	8297	-7794	390.96	1105.62	2.83	Si
SLV 13	179667	0.53	8377	-7869	390.96	1115.67	2.85	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-2125	-13111	977	3.543	676.2	0.89	57.85032	6.16452	Si
SLV 14	-2064	-12309	977	3.589	670.8	0.89	58.57431	6.16452	Si
SLV 9	-2630	-16379	213	3.354	721	0.889	54.83807	5.47446	Si
SLV 10	-2589	-15839	212	3.38	717.2	0.889	55.26566	5.47446	Si
SLV 5	-2485	-15604	-385	3.414	707.9	0.889	55.81211	5.47446	Si
SLV 6	-2443	-15064	-386	3.441	704.2	0.889	56.25407	5.47446	Si
SLV 1	-1640	-10527	-1017	3.928	635.2	0.895	63.82317	6.16452	Si
SLV 2	-1578	-9724	-1017	3.985	630.2	0.895	64.67305	6.16452	Si
SLV 15	-1538	-9423	1034	4.018	627	0.896	65.1747	6.16452	Si
SLV 16	-1476	-8620	1034	4.078	622.1	0.897	66.05881	6.16452	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.268	SLU 42	Si
V_SLU	51.704	SLU 50	Si
PF_SLV	0	SLV 7	No
V_SLV	4.758	SLV 7	Si
PFFP_SLV	0	SLV 12	No
R_SLV	9.384	SLV 13	Si

Maschio 228

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	0.672	-13.763	1.046	L7	L8	0.374	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 34	12.17	-95.12	-2616	-0.0000583	0.0003743	0.0035	0.3743	377.57	435.03	435.03	4.57	No	Si
SLU 34	14.27	68.31	-1056	-0.0000291	0.0003743	0.0035	0.3743	179.36	186.78	186.78	2.73	No	Si
SLU 31	12.17	-85.8	-2417	-0.0000531	0.0003743	0.0035	0.3743	356.67	409.17	409.17	4.77	No	Si
SLU 31	14.27	60.05	-969	-0.000026	0.0003743	0.0035	0.3743	165.93	173.69	173.69	2.89	No	Si
SLU 38	12.17	-101.44	-2791	-0.0000626	0.0003743	0.0035	0.3743	394.82	456.78	456.78	4.5	No	Si
SLU 38	14.27	73.85	-1161	-0.0000318	0.0003743	0.0035	0.3743	195.18	201.87	201.87	2.73	No	Si
SLU 25	12.17	-94.17	-2691	-0.0000593	0.0003743	0.0035	0.3743	385.11	444.62	444.62	4.72	No	Si
SLU 25	14.27	68.5	-1158	-0.0000305	0.0003743	0.0035	0.3743	194.71	201.41	201.41	2.94	No	Si
SLU 36	12.17	-108.18	-2910	-0.0000661	0.0003743	0.0035	0.3743	406.02	469.75	469.75	4.34	No	Si
SLU 36	14.27	79.86	-1198	-0.0000337	0.0003743	0.0035	0.3743	200.76	207.26	207.26	2.6	No	Si
SLU 35	12.17	-103.69	-2874	-0.0000644	0.0003743	0.0035	0.3743	402.63	466.28	466.28	4.5	No	Si
SLU 35	14.27	75.77	-1225	-0.0000331	0.0003743	0.0035	0.3743	204.67	211.08	211.08	2.79	No	Si
SLU 42	12.17	-94.14	-2600	-0.0000578	0.0003743	0.0035	0.3743	375.93	432.99	432.99	4.6	No	Si
SLU 42	14.27	66.91	-1054	-0.0000287	0.0003743	0.0035	0.3743	179.02	186.45	186.45	2.79	No	Si
SLU 28	12.17	-103.48	-2891	-0.0000646	0.0003743	0.0035	0.3743	404.21	467.89	467.89	4.52	No	Si
SLU 28	14.27	76.77	-1245	-0.0000336	0.0003743	0.0035	0.3743	207.6	213.96	213.96	2.79	No	Si
SLU 32	12.17	-94.38	-2674	-0.0000591	0.0003743	0.0035	0.3743	383.42	442.44	442.44	4.69	No	Si
SLU 32	14.27	67.5	-1138	-0.00003	0.0003743	0.0035	0.3743	191.72	198.55	198.55	2.94	No	Si
SLU 33	12.17	-98.86	-2711	-0.0000607	0.0003743	0.0035	0.3743	387.05	447.12	447.12	4.52	No	Si
SLU 33	14.27	71.59	-1111	-0.0000306	0.0003743	0.0035	0.3743	187.73	194.77	194.77	2.72	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 11	12.17	594.91	2712	1.9721473	0.0005615	0.0035	0.2994		0	0	0		No
SLV 11	14.27	-401.78	-3996	-0.0001722	0.0005615	0.0035	0.2994		644.29	644.29	1.6		Si
SLV 8	12.17	581.22	1950	1.3223908	0.0005615	0.0035	0.2994		0	0	0		No
SLV 8	14.27	-394.66	-4476	-0.0001682	0.0005615	0.0035	0.2994		697.24	697.24	1.77		Si
SLV 15	12.17	149.73	456	0.2966203	0.0005615	0.0035	0.2994		0	0	0		No
SLV 15	14.27	-96.11	-1109	-0.000037	0.0005615	0.0035	0.3743		221.83	221.83	2.31		Si
SLV 7	12.17	597.71	2058	1.4085587	0.0005615	0.0035	0.2994		0	0	0		No
SLV 7	14.27	-410.42	-4586	-0.0001758	0.0005615	0.0035	0.2994		708.3	708.3	1.73		Si
SLV 9	12.17	-679.11	-5988	-0.0003568	0.0005615	0.0035	0.2994		850.95	850.95	1.25		Si
SLV 9	14.27	453.69	2361	1.7440998	0.0005615	0.0035	0.2994		0	0	0		No
SLV 6	12.17	-692.8	-6750	-0.0003481	0.0005615	0.0035	0.2994		909.82	909.82	1.31		Si
SLV 6	14.27	460.81	1881	1.3436273	0.0005615	0.0035	0.2994		0	0	0		No
SLV 12	12.17	578.42	2604	1.8899988	0.0005615	0.0035	0.2994		0	0	0		No
SLV 12	14.27	-386.03	-3886	-0.0001641	0.0005615	0.0035	0.2994		630.8	630.8	1.63		Si
SLV 5	12.17	-676.31	-6642	-0.0003353	0.0005615	0.0035	0.2994		901.59	901.59	1.33		Si
SLV 5	14.27	445.05	1772	1.2591506	0.0005615	0.0035	0.2994		0	0	0		No
SLV 10	12.17	-695.61	-6096	-0.000372	0.0005615	0.0035	0.2994		861	861	1.24		Si
SLV 10	14.27	469.45	2471	1.8269862	0.0005615	0.0035	0.2994		0	0	0		No
SLV 16	12.17	125.23	295	0.146843	0.0005615	0.0035	0.2994		0	0	0		No
SLV 16	14.27	-72.71	-947	-0.0000286	0.0005615	0.0035	0.3743		193.95	193.95	2.67		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 35	12.17	-103.69	-2874	-2420	-194	0.3743	0.3743	-21550	9818	1102	35683	3363	954	4317	No	22.25	Si
SLU 35	14.27	75.77	-1225	-1031	-197	0.3743	0.3743	-9185	8169	917	35683	3363	954	4317	No	21.88	Si
SLU 70	12.17	-102.15	-3301	-2780	-188	0.3743	0.3743	-24758	10245	1150	35683	3363	954	4317	No	22.91	Si
SLU 70	14.27	72.45	-1573	-1324	-190	0.3743	0.3743	-11795	8517	956	35683	3363	954	4317	No	22.74	Si
SLU 38	12.17	-101.44	-2791	-2350	-190	0.3743	0.3743	-20930	9735	1093	35683	3363	954	4317	No	22.67	Si
SLU 38	14.27	73.85	-1161	-977	-193	0.3743	0.3706	-8705	8105	901	35683	3363	954	4317	No	22.31	Si
SLU 36	12.17	-108.18	-2910	-2451	-204	0.3743	0.3743	-21825	9854	1107	35683	3363	954	4317	No	21.19	Si
SLU 36	14.27	79.86	-1198	-1009	-207	0.3743	0.3615	-8986	8143	883	35683	3363	954	4317	No	20.85	Si
SLU 33	12.17	-98.86	-2711	-2283	-185	0.3743	0.3743	-20330	9655	1084	35683	3363	954	4317	No	23.28	Si
SLU 33	14.27	71.59	-1111	-936	-188	0.3743	0.3682	-8332	8055	890	35683	3363	954	4317	No	22.96	Si
SLU 80	12.17	-100.11	-3202	-2696	-184	0.3743	0.3743	-24010	10146	1139	35683	3363	954	4317	No	23.41	Si
SLU 80	14.27	69.53	-1489	-1254	-187	0.3743	0.3743	-11165	8433	947	35683	3363	954	4317	No	23.1	Si
SLU 27	12.17	-98.99	-2854	-2403	-185	0.3743	0.3743	-21403	9798	1100	35683	3363	954	4317	No	23.38	Si
SLU 27	14.27	72.68	-1271	-1071	-187	0.3743	0.3743	-9534	8216	923	35683	3363	954	4317	No	23.12	Si
SLU 77	12.17	-102.36	-3284	-2766	-188	0.3743	0.3743	-24630	10228	1149	35683	3363	954	4317	No	22.96	Si
SLU 77	14.27	71.45	-1553	-1308	-191	0.3743	0.3743	-11645	8497	954	35683	3363	954	4317	No	22.64	Si
SLU 78	12.17	-106.85	-3321	-2797	-198	0.3743	0.3743	-24905	10265	1153	35683	3363	954	4317	No	21.83	Si
SLU 78	14.27	75.54	-1526	-1285	-200	0.3743	0.3743	-11446	8471	951	35683	3363	954	4317	No	21.54	Si
SLU 28	12.17	-103.48	-2891	-2434	-194	0.3743	0.3743	-21678	9835	1104	35683	3363	954	4317	No	22.2	Si
SLU 28	14.27	76.77	-1245	-1048	-196	0.3743	0.3743	-9335	8189	920	35683	3363	954	4317	No	21.97	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 10	12.17	-306.98	-3637	-3063	-689	0.3743	0.3082	-27273	15871	1468	35683	5044	954	5998		8.7	Si
SLD 10	14.27	204.63	356	300	-454	0.2994	0	0	0	0	35683	4035	764	4799		10.57	Si
SLV 8	12.17	581.22	1950	1642	1388	0.2994	0	0	0	0	35683	4035	764	4799		3.46	Si
SLV 8	14.27	-394.66	-4476	-3770	794	0.2994	0.297	0	0	0	35683	4035	764	4799		6.04	Si
SLV 10	12.17	-695.61	-6096	-5134	-1594	0.2994	0.2192	0	0	0	35683	4035	764	4799		3.01	Si
SLV 10	14.27	469.45	2471	2081	-1000	0.2994	0	0	0	0	35683	4035	764	4799		4.8	Si
SLV 5	12.17	-676.31	-6642	-5593	-1558	0.2994	0.256	0	0	0	35683	4035	764	4799		3.08	Si
SLV 5	14.27	445.05	1772	1492	-913	0.2994	0	0	0	0	35683	4035	764	4799		5.25	Si
SLV 14	12.17	-256.97	-2315	-1949	-561	0.2994	0.2284	0	0	0	35683	4035	764	4799		8.56	Si
SLV 14	14.27	183.93	961	809	-460	0.2994	0	0	0	0	35683	4035	764	4799		10.43	Si
SLV 6	12.17	-692.8	-6750	-5684	-1593	0.2994	0.2536	0	0	0	35683	4035	764	4799		3.01	Si
SLV 6	14.27	460.81	1881	1584	-948	0.2994	0	0	0	0	35683	4035	764	4799		5.06	Si
SLV 7	12.17	597.71	2058	1733	1422	0.2994	0	0	0	0	35683	4035	764	4799		3.37	Si
SLV 7	14.27	-410.42	-4586	-3862	829	0.2994	0.293	0	0	0	35683	4035	764	4799		5.79	Si
SLV 9	12.17	-679.11	-5988	-5043	-1559	0.2994	0.2212	0	0	0	35683	4035	764	4799		3.08	Si
SLV 9	14.27	453.69	2361	1989	-965	0.2994	0	0	0	0	35683	4035	764	4799		4.97	Si
SLV 11	12.17	594.91	2712	2284	1421	0.2994	0	0	0	0	35683	4035	764	4799		3.38	Si
SLV 11	14.27	-401.78	-3996	-3365	777	0.2994	0.2598	0	0	0	35683	4035	764	4799		6.18	Si
SLV 12	12.17	578.42	2604	2193	1387	0.2994	0	0	0	0	35683	4035	764	4799		3.46	Si
SLV 12	14.27	-386.03	-3886	-3273	742	0.2994	0.2635	0	0	0	35683	4035	764	4799		6.47	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 6	179667	0.53	0	852	46.73	0	0	No, Trazione
SLV 10	179667	0.53	0	1480	46.73	0	0	No, Trazione
SLV 9	179667	0.53	0	1404	46.73	0	0	No, Trazione
SLV 5	179667	0.53	0	776	46.73	0	0	No, Trazione
SLV 13	179667	0.53	0	449	46.73	0	0	No, Trazione
SLV 14	179667	0.53	0	561	46.73	0	0	No, Trazione
SLV 16	179667	0.53	7753	-871	46.73	123.96	2.65	Si
SLV 15	179667	0.53	8757	-983	46.73	139.04	2.98	Si
SLV 2	179667	0.53	13660	-1534	46.73	209.5	4.48	Si
SLV 1	179667	0.53	14663	-1647	46.73	223.27	4.78	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 2	-1031	-4495	15	1.606	155.9	0.917	25.4468	6.16452	Si
SLV 1	-1026	-4334	15	1.612	155.4	0.917	25.55162	6.16452	Si
SLV 4	-983	-1885	18	1.661	151.1	0.915	26.36794	6.16452	Si
SLV 3	-978	-1724	18	1.668	150.6	0.915	26.4807	6.16452	Si
SLV 6	-737	-6750	-1	2.053	126.7	0.905	32.97237	5.47446	Si
SLV 5	-734	-6642	-1	2.06	126.4	0.905	33.09032	5.47446	Si
SLV 8	-577	1950	11	2.4	111	0.897	38.86862	5.47446	Si, Trazione
SLV 7	-574	2058	11	2.409	110.7	0.897	39.031	5.47446	Si, Trazione
SLV 10	-438	-6096	-11	2.832	97.7	0.891	46.16865	5.47446	Si
SLV 9	-435	-5988	-11	2.845	97.3	0.891	46.3951	5.47446	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.595	SLU 36	Si
V_SLU	20.849	SLU 36	Si
PF_SLV	0	SLD 5	No
V_SLV	3.01	SLV 10	Si
PFFP_SLV	0	SLV 14	No
R_SLV	4.128	SLV 2	Si

Maschio 229

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-20.668	1.046	-24.678	1.046	L7	L8	4.01	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 35	12.17	-2292.93	-11235	-0.000017	0.0004492	0.0035	4.01	20804.37	30455.32	30455.32	13.28	No	Si
SLU 35	14.27	-2872.77	-8435	-0.0000147	0.0004492	0.0035	4.01	15941.84	25334.08	25334.08	8.82	No	Si
SLU 69	12.17	-3421.16	-15271	-0.0000237	0.0004492	0.0035	4.01	27437.37	37567.56	37567.56	10.98	No	Si
SLU 69	14.27	-3165.8	-10154	-0.0000172	0.0004492	0.0035	4.01	18953	28478.75	28478.75	9	No	Si
SLU 29	12.17	-2420.88	-11466	-0.0000175	0.0004492	0.0035	4.01	21196.67	30878.56	30878.56	12.76	No	Si
SLU 29	14.27	-2749.52	-7759	-0.0000137	0.0004492	0.0035	4.01	14734.77	24096.58	24096.58	8.76	No	Si
SLU 38	12.17	-2076.24	-10361	-0.0000156	0.0004492	0.0035	4.01	19308.95	28856.15	28856.15	13.9	No	Si
SLU 38	14.27	-2587.78	-7312	-0.0000129	0.0004492	0.0035	4.01	13931.07	23279.64	23279.64	9	No	Si
SLU 70	12.17	-3434.09	-15282	-0.0000238	0.0004492	0.0035	4.01	27454.87	37586.7	37586.7	10.95	No	Si
SLU 70	14.27	-3136.15	-10147	-0.0000172	0.0004492	0.0035	4.01	18941.05	28466.1	28466.1	9.08	No	Si
SLU 36	12.17	-2305.86	-11246	-0.000017	0.0004492	0.0035	4.01	20823.09	30475.48	30475.48	13.22	No	Si
SLU 36	14.27	-2843.13	-8428	-0.0000146	0.0004492	0.0035	4.01	15929.56	25321.43	25321.43	8.91	No	Si
SLU 37	12.17	-2063.3	-10350	-0.0000155	0.0004492	0.0035	4.01	19289.97	28835.99	28835.99	13.98	No	Si
SLU 37	14.27	-2617.42	-7319	-0.0000129	0.0004492	0.0035	4.01	13943.56	23292.29	23292.29	8.9	No	Si
SLU 27	12.17	-2650.51	-12352	-0.0000189	0.0004492	0.0035	4.01	22684.1	32497.67	32497.67	12.26	No	Si
SLU 27	14.27	-3004.87	-8875	-0.0000154	0.0004492	0.0035	4.01	16719.66	26138.37	26138.37	8.7	No	Si
SLU 28	12.17	-2663.45	-12363	-0.0000189	0.0004492	0.0035	4.01	22702.48	32516.81	32516.81	12.21	No	Si
SLU 28	14.27	-2975.23	-8868	-0.0000154	0.0004492	0.0035	4.01	16707.46	26125.72	26125.72	8.78	No	Si
SLU 30	12.17	-2433.82	-11477	-0.0000175	0.0004492	0.0035	4.01	21215.31	30898.72	30898.72	12.7	No	Si
SLU 30	14.27	-2719.88	-7752	-0.0000136	0.0004492	0.0035	4.01	14722.36	24083.93	24083.93	8.85	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	12.17	-3036.69	-6108	-0.0000122	0.0006738	0.0035	4.01		21127.75	21127.75	6.96		Si
SLV 13	14.27	4740.46	-1429	-0.0006069	0.0006738	0.0035	3.208		4533.38	4533.38	0.96		No
SLV 10	12.17	-3397.77	-8960	-0.0000161	0.0006738	0.0035	4.01		26485.26	26485.26	7.79		Si
SLV 10	14.27	2882.05	-3637	-0.0000092	0.0006738	0.0035	4.01		8839.31	8839.31	3.07		Si
SLV 9	12.17	-3277.57	-9003	-0.000016	0.0006738	0.0035	4.01		26565.31	26565.31	8.11		Si
SLV 9	14.27	2737.58	-3723	-0.000009	0.0006738	0.0035	4.01		9006.54	9006.54	3.29		Si
SLV 16	12.17	-2760.39	-5938	-0.0000115	0.0006738	0.0035	4.01		20805.29	20805.29	7.54		Si
SLV 16	14.27	3533.16	-1856	-0.0000519	0.0006738	0.0035	4.01		5370.06	5370.06	1.52		Si
SLV 7	12.17	-1488.1	-11034	-0.0000152	0.0006738	0.0035	4.01		30337.29	30337.29	20.39		Si
SLV 7	14.27	-5170.72	-8113	-0.0000182	0.0006738	0.0035	4.01		24898.65	24898.65	4.82		Si
SLV 3	12.17	-1670.65	-13949	-0.000019	0.0006738	0.0035	4.01		35679.41	35679.41	21.36		Si
SLV 3	14.27	-7243.71	-10449	-0.0000246	0.0006738	0.0035	4.01		29250.63	29250.63	4.04		Si
SLV 15	12.17	-2581.86	-6002	-0.0000113	0.0006738	0.0035	4.01		20926.79	20926.79	8.11		Si
SLV 15	14.27	3318.58	-1984	-0.0000183	0.0006738	0.0035	4.01		5620.34	5620.34	1.69		Si
SLV 4	12.17	-1849.17	-13885	-0.0000192	0.0006738	0.0035	4.01		35565.6	35565.6	19.23		Si
SLV 4	14.27	-7029.13	-10321	-0.000024	0.0006738	0.0035	4.01		29013.23	29013.23	4.13		Si
SLV 14	12.17	-3215.22	-6044	-0.0000124	0.0006738	0.0035	4.01		21006.25	21006.25	6.53		Si
SLV 14	14.27	4955.04	-1301	-0.0007477	0.0006738	0.0035	3.208		4283.11	4283.11	0.86		No
SLV 1	12.17	-2125.48	-14055	-0.0000199	0.0006738	0.0035	4.01		35867.66	35867.66	16.88		Si
SLV 1	14.27	-5821.83	-9894	-0.0000214	0.0006738	0.0035	4.01		28219.6	28219.6	4.85		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 33	12.17	-2362.04	-10817	-7867	1891	4.01	4.01	-6539	9205	11074	101952	43233	20451	63684	No	33.68	Si
SLU 33	14.27	-2220.82	-7983	-5806	1897	4.01	4.01	-4826	8977	10799	101952	43233	20451	63684	No	33.57	Si
SLU 39	12.17	-2022.41	-9013	-6555	1680	4.01	4.01	-5449	9060	10899	101952	43233	20451	63684	No	37.9	Si
SLU 39	14.27	-1316.19	-6240	-4538	1686	4.01	4.01	-3772	8836	10630	101952	43233	20451	63684	No	37.77	Si
SLU 77	12.17	-3063.57	-14154	-10294	1713	4.01	4.01	-8557	9474	11398	101952	43233	20451	63684	No	37.19	Si
SLU 77	14.27	-3033.69	-9715	-7065	1720	4.01	4.01	-5873	9116	10967	101952	43233	20451	63684	No	37.03	Si
SLU 38	12.17	-2076.24	-10361	-7535	1997	4.01	4.01	-6264	9168	11030	101952	43233	20451	63684	No	31.89	Si
SLU 38	14.27	-2587.78	-7312	-5318	2003	4.01	4.01	-4420	8923	10734	101952	43233	20451	63684	No	31.79	Si
SLU 32	12.17	-2349.11	-10806	-7859	1928	4.01	4.01	-6533	9204	11073	101952	43233	20451	63684	No	33.03	Si
SLU 32	14.27	-2250.46	-7990	-5811	1934	4.01	4.01	-4830	8977	10800	101952	43233	20451	63684	No	32.92	Si
SLU 35	12.17	-2292.93	-11235	-8171	2267	4.01	4.01	-6792	9239	11114	101952	43233	20451	63684	No	28.1	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 35	14.27	-2872.77	-8435	-6135	2273	4.01	4.01	-5099	9013	10843	101952	43233	20451	63684	No	28.02	Si
SLU 36	12.17	-2305.86	-11246	-8179	2229	4.01	4.01	-6799	9240	11116	101952	43233	20451	63684	No	28.57	Si
SLU 36	14.27	-2843.13	-8428	-6130	2236	4.01	4.01	-5095	9013	10842	101952	43233	20451	63684	No	28.48	Si
SLU 37	12.17	-2063.3	-10350	-7527	2034	4.01	4.01	-6257	9168	11029	101952	43233	20451	63684	No	31.31	Si
SLU 37	14.27	-2617.42	-7319	-5323	2040	4.01	4.01	-4425	8923	10735	101952	43233	20451	63684	No	31.21	Si
SLU 41	12.17	-1966.23	-9442	-6867	2019	4.01	4.01	-5708	9094	10941	101952	43233	20451	63684	No	31.55	Si
SLU 41	14.27	-1938.5	-6685	-4862	2025	4.01	4.01	-4041	8872	10673	101952	43233	20451	63684	No	31.46	Si
SLU 42	12.17	-1979.17	-9453	-6875	1981	4.01	4.01	-5715	9095	10942	101952	43233	20451	63684	No	32.14	Si
SLU 42	14.27	-1908.85	-6678	-4857	1987	4.01	4.01	-4037	8872	10673	101952	43233	20451	63684	No	32.04	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	12.17	-3036.69	-6108	-4442	-5272	4.01	4.01	-3693	13239	15926	101952	64849	20451	85300		16.18	Si
SLV 13	14.27	4740.46	-1429	-1039	-2048	3.208	0	0	0	0	101952	51879	16361	68240		33.33	Si
SLV 8	12.17	-1608.3	-10991	-7993	3849	4.01	4.01	-6644	13829	16636	101952	64849	20451	85300		22.16	Si
SLV 8	14.27	-5026.24	-8027	-5838	2884	4.01	4.01	-4853	13471	16205	101952	64849	20451	85300		29.58	Si
SLV 7	12.17	-1488.1	-11034	-8025	4016	4.01	4.01	-6670	13834	16642	101952	64849	20451	85300		21.24	Si
SLV 7	14.27	-5170.72	-8113	-5900	3051	4.01	4.01	-4905	13481	16218	101952	64849	20451	85300		27.96	Si
SLV 1	12.17	-2125.48	-14055	-10222	4002	4.01	4.01	-8497	14199	17082	101952	64849	20451	85300		21.31	Si
SLV 1	14.27	-5821.83	-9894	-7195	790	4.01	4.01	-5981	13696	16477	101952	64849	20451	85300		107.97	Si
SLV 3	12.17	-1670.65	-13949	-10145	5525	4.01	4.01	-8433	14187	17066	101952	64849	20451	85300		15.44	Si
SLV 3	14.27	-7243.71	-10449	-7599	2310	4.01	3.9352	-6317	13763	16248	101952	64849	20451	85300		36.92	Si
SLV 10	12.17	-3397.77	-8960	-6516	-4010	4.01	4.01	-5417	13583	16341	101952	64849	20451	85300		21.27	Si
SLV 10	14.27	2882.05	-3637	-2645	-3036	4.01	3.6375	-2199	12940	14121	101952	64849	20451	85300		28.1	Si
SLV 4	12.17	-1849.17	-13885	-10098	5277	4.01	4.01	-8394	14179	17057	101952	64849	20451	85300		16.16	Si
SLV 4	14.27	-7029.13	-10321	-7506	2062	4.01	3.9718	-6239	13748	16381	101952	64849	20451	85300		41.36	Si
SLV 16	12.17	-2760.39	-5938	-4319	-3997	4.01	4.01	-3590	13218	15901	101952	64849	20451	85300		21.34	Si
SLV 16	14.27	3533.16	-1856	-1350	-775	4.01	0.3041	-13294	15194	10964	101952	64849	20451	85300		110.03	Si
SLV 14	12.17	-3215.22	-6044	-4396	-5520	4.01	4.01	-3654	13231	15917	101952	64849	20451	85300		15.45	Si
SLV 14	14.27	4955.04	-1301	-946	-2296	3.208	0	0	0	0	101952	51879	16361	68240		29.73	Si
SLV 9	12.17	-3277.57	-9003	-6547	-3843	4.01	4.01	-5443	13589	16347	101952	64849	20451	85300		22.19	Si
SLV 9	14.27	2737.58	-3723	-2707	-2869	4.01	3.8089	-2251	12950	14798	101952	64849	20451	85300		29.73	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 13.745 Ta 0.06 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 14	-2806	0.53	500.66	0	992.72	496.36	0.99	No
SLV 13	-2922	0.53	500.66	0	1012.35	506.17	1.01	Si
SLV 16	-3244	0.53	500.66	0	1066.54	533.27	1.07	Si
SLV 15	-3360	0.53	500.66	496.3	1086.02	791.16	1.58	Si
SLV 10	-5256	0.53	500.66	769.67	1402.65	1086.16	2.17	Si
SLV 9	-5334	0.53	500.66	780.81	1415.65	1098.23	2.19	Si
SLV 12	-6716	0.53	500.66	976.77	1644.74	1310.76	2.62	Si
SLV 11	-6794	0.53	500.66	987.76	1657.6	1322.68	2.64	Si
SLV 6	-7779	0.53	500.66	1125.63	1819.71	1472.67	2.94	Si
SLV 5	-7857	0.53	500.66	1136.51	1832.56	1484.53	2.97	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 3	-4297	-13949	264	2.957	1008.9	0.89	48.27076	6.16452	Si
SLV 4	-4280	-13885	264	2.963	1007.3	0.89	48.38156	6.16452	Si
SLV 1	-4226	-14055	-283	2.981	1002.2	0.89	48.68367	6.16452	Si
SLV 2	-4208	-13991	-283	2.988	1000.6	0.89	48.79529	6.16452	Si
SLV 7	-3880	-11034	909	3.035	970.1	0.889	49.59459	5.47446	Si
SLV 8	-3868	-10991	909	3.04	969	0.889	49.67485	5.47446	Si
SLV 5	-3642	-11387	-914	3.135	948.2	0.889	51.24868	5.47446	Si
SLV 6	-3630	-11344	-914	3.14	947.1	0.889	51.33316	5.47446	Si
SLV 15	-2875	-6002	284	3.612	879.3	0.89	59.00387	6.16452	Si
SLV 16	-2858	-5938	284	3.622	877.7	0.89	59.16324	6.16452	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.699	SLU 27	Si
V_SLU	28.019	SLU 35	Si
PF_SLV	0.864	SLV 14	No
V_SLV	15.439	SLV 3	Si
PFFP_SLV	0.991	SLV 14	No
R_SLV	7.83	SLV 3	Si

Maschio 230

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-12.293	1.046	-19.868	1.046	L7	L8	7.575	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 22	12.17	-5795.87	-35084	-0.0000245	0.0004492	0.0035	7.575	116092.48	155714.3	155714.3	26.87	No	Si
SLU 22	14.67	-4282.07	-29863	-0.0000204	0.0004492	0.0035	7.575	100942.2	138626.62	138626.62	32.37	No	Si
SLU 65	12.17	-6905.37	-43929	-0.0000307	0.0004492	0.0035	7.575	140058.05	183269.11	183269.11	26.54	No	Si
SLU 65	14.67	-5241.78	-35942	-0.0000248	0.0004492	0.0035	7.575	118510.17	158521.37	158521.37	30.24	No	Si
SLU 31	12.17	-5995.14	-33379	-0.0000235	0.0004492	0.0035	7.575	111227.03	150134.42	150134.42	25.04	No	Si
SLU 31	14.67	-3440.46	-29343	-0.0000197	0.0004492	0.0035	7.575	99392.01	136924.15	136924.15	39.8	No	Si
SLU 73	12.17	-6759.68	-42170	-0.0000295	0.0004492	0.0035	7.575	135461.74	177824.37	177824.37	26.31	No	Si
SLU 73	14.67	-4482.96	-35495	-0.0000241	0.0004492	0.0035	7.575	117252.14	157057.82	157057.82	35.03	No	Si
SLU 82	12.17	-6559.27	-41394	-0.0000289	0.0004492	0.0035	7.575	133408.7	175424.11	175424.11	26.74	No	Si
SLU 82	14.67	-4190.87	-35332	-0.0000238	0.0004492	0.0035	7.575	116793.78	156526.15	156526.15	37.35	No	Si
SLU 33	12.17	-5998.2	-37977	-0.0000264	0.0004492	0.0035	7.575	124165.35	164845.98	164845.98	27.48	No	Si
SLU 33	14.67	-3894.94	-35096	-0.0000236	0.0004492	0.0035	7.575	116126.08	155753.15	155753.15	39.99	No	Si
SLU 23	12.17	-6140.83	-35138	-0.0000247	0.0004492	0.0035	7.575	116245.14	155890.85	155890.85	25.39	No	Si
SLU 23	14.67	-4199.28	-29790	-0.0000204	0.0004492	0.0035	7.575	100725.09	138387.7	138387.7	32.96	No	Si
SLU 40	12.17	-5794.72	-32604	-0.0000229	0.0004492	0.0035	7.575	108988.04	147596.75	147596.75	25.47	No	Si
SLU 40	14.67	-3148.37	-29180	-0.0000195	0.0004492	0.0035	7.575	98906.39	136392.48	136392.48	43.32	No	Si
SLU 34	12.17	-5825.92	-36396	-0.0000253	0.0004492	0.0035	7.575	119780.37	159951.18	159951.18	27.46	No	Si
SLU 34	14.67	-3557.18	-33123	-0.0000221	0.0004492	0.0035	7.575	110488.56	149295.38	149295.38	41.97	No	Si
SLU 39	12.17	-5587.75	-32572	-0.0000228	0.0004492	0.0035	7.575	108894.22	147490.82	147490.82	26.4	No	Si
SLU 39	14.67	-3198.05	-29224	-0.0000195	0.0004492	0.0035	7.575	99037.4	136535.83	136535.83	42.69	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	12.17	-7114.87	-44372	-0.0000308	0.0006738	0.0035	7.575		188498.56	188498.56	26.49		Si
SLV 1	14.67	-54426.81	-40870	-0.0000522	0.0006738	0.0035	7.575		177261.46	177261.46	3.26		Si
SLV 2	12.17	-7226.27	-44191	-0.0000307	0.0006738	0.0035	7.575		187921.44	187921.44	26.01		Si
SLV 2	14.67	-54713.39	-41043	-0.0000524	0.0006738	0.0035	7.575		177841.68	177841.68	3.25		Si
SLV 9	12.17	-23113.66	-31131	-0.0000303	0.0006738	0.0035	7.575		144624.07	144624.07	6.26		Si
SLV 9	14.67	18218.27	-17634	-0.0000195	0.0006738	0.0035	7.575		70069.19	70069.19	3.85		Si
SLV 15	12.17	-2117.28	-21117	-0.0000139	0.0006738	0.0035	7.575		110482.54	110482.54	52.18		Si
SLV 15	14.67	47120.91	-12190	-0.0005371	0.0006738	0.0035	7.575		50587.23	50587.23	1.07		Si
SLV 14	12.17	-12813.47	-21984	-0.0000196	0.0006738	0.0035	7.575		113500.08	113500.08	8.86		Si
SLV 14	14.67	50514.62	-9819	-0.0024764	0.0006738	0.0035	7.575		41970.57	41970.57	0.83		No
SLV 3	12.17	3469.92	-43324	-0.0000283	0.0006738	0.0035	7.575		157739.35	157739.35	45.46		Si
SLV 3	14.67	-58107.1	-43414	-0.0000557	0.0006738	0.0035	7.575		185443.87	185443.87	3.19		Si
SLV 10	12.17	-23188.67	-31009	-0.0000303	0.0006738	0.0035	7.575		144215.82	144215.82	6.22		Si
SLV 10	14.67	18025.32	-17751	-0.0000195	0.0006738	0.0035	7.575		70480.39	70480.39	3.91		Si
SLV 16	12.17	-2228.68	-20936	-0.0000138	0.0006738	0.0035	7.575		109848.58	109848.58	49.29		Si
SLV 16	14.67	46834.33	-12363	-0.000431	0.0006738	0.0035	7.575		51212.19	51212.19	1.09		Si
SLV 13	12.17	-12702.07	-22165	-0.0000197	0.0006738	0.0035	7.575		114125.66	114125.66	8.98		Si
SLV 13	14.67	50801.21	-9646	-0.0026701	0.0006738	0.0035	7.575		41341.35	41341.35	0.81		No
SLV 4	12.17	3358.51	-43143	-0.0000281	0.0006738	0.0035	7.575		157149.38	157149.38	46.79		Si
SLV 4	14.67	-58393.69	-43587	-0.0000559	0.0006738	0.0035	7.575		185996.1	185996.1	3.19		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 73	12.17	-6759.68	-42170	-30669	-1250	7.575	7.575	-13496	10133	25395	101952	81668	38633	120301	No	96.22	Si
SLU 73	14.67	-4482.96	-35495	-25815	-300	7.575	7.575	-11359	9848	23453	101952	81668	38633	120301	No	401.26	Si
SLU 26	12.17	-5971.6	-38155	-27749	-1076	7.575	7.575	-12211	9961	24227	101952	81668	38633	120301	No	111.77	Si
SLU 26	14.67	-4315.99	-33570	-24415	-406	7.575	7.575	-10744	9766	22893	101952	81668	38633	120301	No	296.12	Si
SLU 44	12.17	-5389.91	-41230	-29985	-1441	7.575	7.575	-13195	10093	25121	101952	81668	38633	120301	No	83.5	Si
SLU 44	14.67	-4865.14	-31576	-22964	-615	7.575	7.575	-10105	9681	22313	101952	81668	38633	120301	No	195.63	Si
SLU 47	12.17	-5220.69	-44246	-32179	-1079	7.575	7.575	-14160	10221	25999	101952	81668	38633	120301	No	111.52	Si
SLU 47	14.67	-4981.86	-35356	-25714	-357	7.575	7.575	-11315	9842	23413	101952	81668	38633	120301	No	337.14	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 67	12.17	-6908.42	-48526	-35292	-1159	7.575	7.575	-15530	10404	27244	101952	81668	38633	120301	No	103.84	Si
SLU 67	14.67	-5696.25	-41696	-30324	-236	7.575	7.575	-13344	10113	25257	101952	81668	38633	120301	No	509.46	Si
SLU 68	12.17	-6736.14	-46945	-34142	-1271	7.575	7.575	-15024	10337	26784	101952	81668	38633	120301	No	94.64	Si
SLU 68	14.67	-5358.49	-39722	-28889	-442	7.575	7.575	-12712	10028	24683	101952	81668	38633	120301	No	272.22	Si
SLU 23	12.17	-6140.83	-35138	-25555	-1438	7.575	7.575	-11245	9833	23349	101952	81668	38633	120301	No	83.64	Si
SLU 23	14.67	-4199.28	-29790	-21666	-664	7.575	7.575	-9534	9605	21826	101952	81668	38633	120301	No	181.08	Si
SLU 2	12.17	-4625.37	-32439	-23592	-1246	7.575	7.575	-10382	9718	22564	101952	81668	38633	120301	No	96.56	Si
SLU 2	14.67	-3822.64	-25424	-18490	-579	7.575	7.575	-8136	9418	21403	101952	81668	38633	120301	No	207.68	Si
SLU 65	12.17	-6905.37	-43929	-31948	-1633	7.575	7.575	-14059	10208	25906	101952	81668	38633	120301	No	73.66	Si
SLU 65	14.67	-5241.78	-35942	-26140	-700	7.575	7.575	-11503	9867	23583	101952	81668	38633	120301	No	171.85	Si
SLU 64	12.17	-6560.41	-43875	-31909	-1257	7.575	7.575	-14041	10206	25891	101952	81668	38633	120301	No	95.71	Si
SLU 64	14.67	-5324.57	-36015	-26193	-337	7.575	7.575	-11526	9870	23604	101952	81668	38633	120301	No	357.12	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	12.17	-2228.68	-20936	-15226	-24251	7.575	7.575	-6700	13840	31452	101952	122502	38633	133404		5.5	Si
SLV 16	14.67	46834.33	-12363	-8991	-17648	7.575	0	-85814	16250	23288	101952	122502	38633	125240		7.1	Si
SLV 7	12.17	13845.11	-34299	-24945	30162	7.575	7.575	-10977	14695	33395	101952	122502	38633	135347		4.49	Si
SLV 7	14.67	-25617.8	-35482	-25805	28251	7.575	7.575	-11355	14771	33567	101952	122502	38633	135519		4.8	Si
SLV 8	12.17	13770.11	-34177	-24856	29897	7.575	7.575	-10938	14688	33378	101952	122502	38633	135330		4.53	Si
SLV 8	14.67	-25810.75	-35599	-25890	28029	7.575	7.575	-11393	14779	33584	101952	122502	38633	135536		4.84	Si
SLV 13	12.17	-12702.07	-22165	-16120	-36999	7.575	7.575	-7094	13919	31630	101952	122502	38633	133582		3.61	Si
SLV 13	14.67	50801.21	-9646	-7015	-30012	7.575	0	-99252	16250	22498	101952	122502	38633	124450		4.15	Si
SLV 14	12.17	-12813.47	-21984	-15989	-37392	7.575	7.575	-7036	13907	31604	101952	122502	38633	133556		3.57	Si
SLV 14	14.67	50514.62	-9819	-7141	-30341	7.575	0	-101959	16250	22548	101952	122502	38633	124500		4.1	Si
SLV 10	12.17	-23188.67	-31009	-22552	-31793	7.575	7.575	-9924	14485	32917	101952	122502	38633	134869		4.24	Si
SLV 10	14.67	18025.32	-17751	-12910	-28503	7.575	7.575	-5681	13636	30988	101952	122502	38633	132940		4.66	Si
SLV 4	12.17	3358.51	-43143	-31376	35369	7.575	7.575	-13807	15261	34682	101952	122502	38633	136634		3.86	Si
SLV 4	14.67	-58393.69	-43587	-31700	29759	7.575	7.3434	-14481	15396	33918	101952	122502	38633	135870		4.57	Si
SLV 15	12.17	-2117.28	-21117	-15358	-23858	7.575	7.575	-6758	13852	31478	101952	122502	38633	133430		5.59	Si
SLV 15	14.67	47120.91	-12190	-8865	-17319	7.575	0	-97155	16250	23238	101952	122502	38633	125190		7.23	Si
SLV 3	12.17	3469.92	-43324	-31508	35762	7.575	7.575	-13865	15273	34708	101952	122502	38633	136660		3.82	Si
SLV 3	14.67	-58107.1	-43414	-31574	30088	7.575	7.3472	-14416	15383	33907	101952	122502	38633	135859		4.52	Si
SLV 9	12.17	-23113.66	-31131	-22641	-31528	7.575	7.575	-9963	14493	32934	101952	122502	38633	134886		4.28	Si
SLV 9	14.67	18218.27	-17634	-12825	-28281	7.575	7.575	-5644	13629	30971	101952	122502	38633	132923		4.7	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 13.745 Ta 0.06 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 13	-15922	0.53	945.77	2296.99	3642.39	2969.69	3.14	Si
SLV 14	-16102	0.53	945.77	2321.89	3671.92	2996.91	3.17	Si
SLV 15	-16741	0.53	945.77	2410.2	3776.92	3093.56	3.27	Si
SLV 16	-16921	0.53	945.77	2434.99	3806.46	3120.73	3.3	Si
SLV 9	-24049	0.53	945.77	3399.02	4968.63	4183.82	4.42	Si
SLV 10	-24170	0.53	945.77	3415.07	4988.27	4201.67	4.44	Si
SLV 11	-26779	0.53	945.77	3758.54	5411.79	4585.16	4.85	Si
SLV 12	-26900	0.53	945.77	3774.36	5431.45	4602.9	4.87	Si
SLV 5	-31808	0.53	945.77	4406.86	6223.11	5314.99	5.62	Si
SLV 6	-31929	0.53	945.77	4422.24	6242.56	5332.4	5.64	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 4	-37015	-43143	1290	1.004	4784.6	0.941	15.5142	6.16452	Si
SLV 3	-36793	-43324	1287	1.009	4762.1	0.94	15.59501	6.16452	Si
SLV 2	-35032	-44191	-1619	1.042	4583.8	0.938	16.13527	6.16452	Si
SLV 1	-34810	-44372	-1623	1.047	4561.4	0.938	16.22119	6.16452	Si
SLV 8	-31174	-34177	4765	1.06	4193.6	0.934	16.50189	5.47446	Si
SLV 7	-31025	-34299	4763	1.064	4178.6	0.934	16.56902	5.47446	Si
SLV 6	-24565	-37671	-4932	1.271	3527.2	0.924	19.98686	5.47446	Si
SLV 5	-24416	-37793	-4934	1.277	3512.2	0.924	20.08426	5.47446	Si
SLV 12	-24216	-27515	4836	1.288	3492.2	0.923	20.26803	5.47446	Si
SLV 11	-24067	-27637	4833	1.294	3477.2	0.923	20.3702	5.47446	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	25.043	SLU 31	Si
V_SLU	73.661	SLU 65	Si
PF_SLV	0.814	SLV 13	No
V_SLV	3.572	SLV 14	Si
PFFP_SLV	3.14	SLV 13	Si
R_SLV	2.517	SLV 4	Si

Maschio 231

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-10.466	1.046	-11.173	1.046	L7	L8	0.706	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 40	12.17	191.91	-2664	-0.0000285	0.0004492	0.0035	0.7064	844.12	939.38	939.38	4.89	No	Si
SLU 40	14.67	-133.51	-5483	-0.0000447	0.0004492	0.0035	0.7064	1526.35	1937.51	1937.51	14.51	No	Si
SLU 31	12.17	194.02	-2783	-0.0000294	0.0004492	0.0035	0.7064	877.27	976.41	976.41	5.03	No	Si
SLU 31	14.67	-135.52	-5503	-0.000045	0.0004492	0.0035	0.7064	1530.51	1942.88	1942.88	14.34	No	Si
SLU 42	12.17	211.41	-2945	-0.0000315	0.0004492	0.0035	0.7064	921.91	1026.16	1026.16	4.85	No	Si
SLU 42	14.67	-148.18	-6046	-0.0000496	0.0004492	0.0035	0.7064	1636.69	2085.12	2085.12	14.07	No	Si
SLU 41	12.17	210.01	-2932	-0.0000314	0.0004492	0.0035	0.7064	918.32	1022.15	1022.15	4.87	No	Si
SLU 41	14.67	-147.42	-5982	-0.0000491	0.0004492	0.0035	0.7064	1624.62	2068.4	2068.4	14.03	No	Si
SLU 39	12.17	190.51	-2651	-0.0000283	0.0004492	0.0035	0.7064	840.44	935.29	935.29	4.91	No	Si
SLU 39	14.67	-132.75	-5419	-0.0000442	0.0004492	0.0035	0.7064	1513.3	1920.79	1920.79	14.47	No	Si
SLU 35	12.17	233.25	-3448	-0.0000363	0.0004492	0.0035	0.7064	1055.59	1178.5	1178.5	5.05	No	Si
SLU 35	14.67	-162.68	-6797	-0.0000559	0.0004492	0.0035	0.7064	1770.34	2276.4	2276.4	13.99	No	Si
SLU 36	12.17	234.65	-3461	-0.0000364	0.0004492	0.0035	0.7064	1059	1182.44	1182.44	5.04	No	Si
SLU 36	14.67	-163.43	-6861	-0.0000564	0.0004492	0.0035	0.7064	1780.98	2292.14	2292.14	14.02	No	Si
SLU 38	12.17	232.09	-3337	-0.0000354	0.0004492	0.0035	0.7064	1026.57	1145.14	1145.14	4.93	No	Si
SLU 38	14.67	-164.34	-6587	-0.0000545	0.0004492	0.0035	0.7064	1734.56	2224.68	2224.68	13.54	No	Si
SLU 37	12.17	230.69	-3324	-0.0000353	0.0004492	0.0035	0.7064	1023.13	1141.2	1141.2	4.95	No	Si
SLU 37	14.67	-163.58	-6523	-0.000054	0.0004492	0.0035	0.7064	1723.43	2208.94	2208.94	13.5	No	Si
SLU 34	12.17	213.52	-3064	-0.0000325	0.0004492	0.0035	0.7064	954.15	1062.48	1062.48	4.98	No	Si
SLU 34	14.67	-150.18	-6066	-0.0000499	0.0004492	0.0035	0.7064	1640.54	2090.5	2090.5	13.92	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 2	12.17	2479.24	-2496	-0.0297262	0.0006738	0.0035	0.5651		899.88	899.88	0.36		No
SLV 2	14.67	-1819.94	-5135	-0.001067	0.0006738	0.0035	0.5651		1892.87	1892.87	1.04		Si
SLV 3	12.17	2406.39	-2103	-0.0301254	0.0006738	0.0035	0.5651		772.25	772.25	0.32		No
SLV 3	14.67	-1767	-1205	-0.0036693	0.0006738	0.0035	0.5651		663.9	663.9	0.38		No
SLV 15	12.17	-2161.28	-3250	-0.0042855	0.0006738	0.0035	0.5651		1322.7	1322.7	0.61		No
SLV 15	14.67	1596.13	-4123	-0.0075665	0.0006738	0.0035	0.5651		1409.8	1409.8	0.88		No
SLV 8	12.17	707.45	-2203	-0.0002355	0.0006738	0.0035	0.7064		805.07	805.07	1.14		Si
SLV 8	14.67	-513.64	2618	0.0399123	0.0006738	0.0035	0.5651		0	0	0		No
SLV 16	12.17	-2168.89	-3329	-0.0042697	0.0006738	0.0035	0.5651		1347.57	1347.57	0.62		No
SLV 16	14.67	1603.37	-3993	-0.0084187	0.0006738	0.0035	0.5651		1370.09	1370.09	0.85		No
SLV 12	12.17	-662.85	-2547	-0.0000869	0.0006738	0.0035	0.5651		1101.15	1101.15	1.66		Si
SLV 12	14.67	495.3	1743	-0.0140378	0.0006738	0.0035	0.5651		0	0	0		No
SLV 1	12.17	2486.85	-2417	-0.0301659	0.0006738	0.0035	0.5651		874.51	874.51	0.35		No
SLV 1	14.67	-1827.18	-5265	-0.0009677	0.0006738	0.0035	0.5651		1930.19	1930.19	1.06		Si
SLV 7	12.17	712.58	-2150	-0.0003387	0.0006738	0.0035	0.7064		787.7	787.7	1.11		Si
SLV 7	14.67	-518.52	2531	0.0252115	0.0006738	0.0035	0.5651		0	0	0		No
SLV 4	12.17	2398.78	-2181	-0.0296878	0.0006738	0.0035	0.5651		798.05	798.05	0.33		No
SLV 4	14.67	-1759.76	-1075	-0.0036863	0.0006738	0.0035	0.5651		620.67	620.67	0.35		No
SLV 11	12.17	-657.72	-2494	-0.0000884	0.0006738	0.0035	0.5651		1084.41	1084.41	1.65		Si
SLV 11	14.67	490.42	1656	-0.0136321	0.0006738	0.0035	0.5651		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 79	12.17	257.81	-4164	-3029	548	0.7064	0.7064	-14292	10239	2170	101952	7615	3602	11218	No	20.48	Si
SLU 79	14.67	-182.55	-7469	-5432	535	0.7064	0.7064	-25633	10833	2296	101952	7615	3602	11218	No	20.98	Si
SLU 83	12.17	237.13	-3773	-2744	525	0.7064	0.7064	-12950	10060	2132	101952	7615	3602	11218	No	21.36	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	14.67	-166.39	-6928	-5038	506	0.7064	0.7064	-23776	10833	2296	101952	7615	3602	11218	No	22.16	Si
SLU 78	12.17	261.77	-4302	-3129	565	0.7064	0.7064	-14765	10302	2183	101952	7615	3602	11218	No	19.87	Si
SLU 78	14.67	-182.4	-7806	-5677	552	0.7064	0.7064	-26791	10833	2330	101952	7615	3602	11218	No	20.31	Si
SLU 69	12.17	263.13	-4546	-3306	530	0.7064	0.7064	-15601	10414	2207	101952	7615	3602	11218	No	21.18	Si
SLU 69	14.67	-185.13	-7691	-5593	531	0.7064	0.7064	-26395	10833	2308	101952	7615	3602	11218	No	21.14	Si
SLU 84	12.17	238.53	-3786	-2754	530	0.7064	0.7064	-12995	10066	2133	101952	7615	3602	11218	No	21.16	Si
SLU 84	14.67	-167.15	-6991	-5085	511	0.7064	0.7064	-23995	10833	2296	101952	7615	3602	11218	No	21.95	Si
SLU 80	12.17	259.21	-4178	-3038	553	0.7064	0.7064	-14338	10245	2171	101952	7615	3602	11218	No	20.3	Si
SLU 80	14.67	-183.31	-7532	-5478	540	0.7064	0.7064	-25852	10833	2296	101952	7615	3602	11218	No	20.79	Si
SLU 74	12.17	240.87	-4008	-2915	524	0.7064	0.7064	-13755	10167	2155	101952	7615	3602	11218	No	21.39	Si
SLU 74	14.67	-166.98	-7179	-5221	512	0.7064	0.7064	-24639	10833	2296	101952	7615	3602	11218	No	21.92	Si
SLU 77	12.17	260.37	-4289	-3119	560	0.7064	0.7064	-14720	10296	2182	101952	7615	3602	11218	No	20.04	Si
SLU 77	14.67	-181.64	-7742	-5631	547	0.7064	0.7064	-26572	10833	2318	101952	7615	3602	11218	No	20.49	Si
SLU 75	12.17	242.27	-4021	-2924	529	0.7064	0.7064	-13800	10173	2156	101952	7615	3602	11218	No	21.2	Si
SLU 75	14.67	-167.74	-7243	-5267	517	0.7064	0.7064	-24858	10833	2296	101952	7615	3602	11218	No	21.72	Si
SLU 70	12.17	264.53	-4559	-3316	534	0.7064	0.7064	-15647	10420	2208	101952	7615	3602	11218	No	20.99	Si
SLU 70	14.67	-185.89	-7755	-5640	536	0.7064	0.7064	-26614	10833	2320	101952	7615	3602	11218	No	20.95	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLD 1	12.17	1153.45	-2672	-1943	1185	0.5651	0	0	0	0	101952	9138	2882	12020		10.14	Si
SLD 1	14.67	-844.19	-4841	-3521	887	0.7064	0.5364	-22098	16250	2615	101952	11423	3602	15025		16.93	Si
SLV 1	12.17	2486.85	-2417	-1758	2344	0.5651	0	0	0	0	101952	9138	2882	12020		5.13	Si
SLV 1	14.67	-1827.18	-5265	-3829	1653	0.5651	0.0184	0	0	0	101952	9138	2882	12020		7.27	Si
SLV 15	12.17	-2161.28	-3250	-2363	-1666	0.5651	0	0	0	0	101952	9138	2882	12020		7.22	Si
SLV 15	14.67	1596.13	-4123	-2998	-982	0.5651	0	0	0	0	101952	9138	2882	12020		12.24	Si
SLV 13	12.17	-2080.82	-3565	-2592	-1328	0.5651	0	0	0	0	101952	9138	2882	12020		9.05	Si
SLV 13	14.67	1535.95	-8182	-5951	-640	0.7064	0.4964	-28081	16250	2811	101952	11423	3602	15025		23.47	Si
SLV 14	12.17	-2088.43	-3643	-2650	-1350	0.5651	0	0	0	0	101952	9138	2882	12020		8.9	Si
SLV 14	14.67	1543.19	-8052	-5856	-663	0.7064	0.4846	-27635	16250	2786	101952	11423	3602	15025		22.68	Si
SLD 2	12.17	1150.21	-2706	-1968	1176	0.5651	0	0	0	0	101952	9138	2882	12020		10.22	Si
SLD 2	14.67	-841.11	-4785	-3480	878	0.7064	0.5322	-22013	16250	2595	101952	11423	3602	15025		17.11	Si
SLV 4	12.17	2398.78	-2181	-1587	1984	0.5651	0	0	0	0	101952	9138	2882	12020		6.06	Si
SLV 4	14.67	-1759.76	-1075	-782	1289	0.5651	0	0	0	0	101952	9138	2882	12020		9.32	Si
SLV 16	12.17	-2168.89	-3329	-2421	-1688	0.5651	0	0	0	0	101952	9138	2882	12020		7.12	Si
SLV 16	14.67	1603.37	-3993	-2904	-1004	0.5651	0	0	0	0	101952	9138	2882	12020		11.97	Si
SLV 3	12.17	2406.39	-2103	-1529	2006	0.5651	0	0	0	0	101952	9138	2882	12020		5.99	Si
SLV 3	14.67	-1767	-1205	-877	1312	0.5651	0	0	0	0	101952	9138	2882	12020		9.16	Si
SLV 2	12.17	2479.24	-2496	-1815	2322	0.5651	0	0	0	0	101952	9138	2882	12020		5.18	Si
SLV 2	14.67	-1819.94	-5135	-3735	1631	0.5651	0	0	0	0	101952	9138	2882	12020		7.37	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 13.745 Ta 0.06 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 8	876	0.53	88.19	0	0	0	0	No
SLV 7	849	0.53	88.19	0	0	0	0	No
SLV 11	189	0.53	88.19	0	0	0	0	No
SLV 12	216	0.53	88.19	0	0	0	0	No
SLV 4	-1222	0.53	88.19	177.55	289.03	233.29	2.65	Si
SLV 3	-1262	0.53	88.19	183.17	295.61	239.39	2.71	Si
SLV 16	-3422	0.53	88.19	468.11	647.77	557.94	6.33	Si
SLV 15	-3462	0.53	88.19	473.04	654.24	563.64	6.39	Si
SLV 2	-3686	0.53	88.19	500.46	690.4	595.43	6.75	Si
SLV 1	-3726	0.53	88.19	505.32	696.8	601.06	6.82	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 9	-8481	-3543	-399	0.444	957.5	0.97	6.64718	5.47446	Si
SLV 10	-8409	-3596	-399	0.447	950.1	0.97	6.6967	5.47446	Si
SLV 5	-7395	-3199	-395	0.498	846.9	0.966	7.48833	5.47446	Si
SLV 6	-7323	-3252	-395	0.502	839.6	0.966	7.55268	5.47446	Si
SLV 13	-6457	-3565	-137	0.594	751.4	0.963	8.97637	6.16452	Si
SLV 14	-6350	-3643	-136	0.603	740.5	0.962	9.10942	6.16452	Si
SLV 15	-3621	-3250	93	0.972	463.3	0.942	14.99145	6.16452	Si
SLV 16	-3514	-3329	93	0.996	452.5	0.941	15.37998	6.16452	Si
SLV 1	-2838	-2417	-123	1.174	384.1	0.933	18.29202	6.16452	Si
SLV 2	-2731	-2496	-123	1.21	373.2	0.931	18.89044	6.16452	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.854	SLU 42	Si
V_SLU	19.867	SLU 78	Si
PF_SLV	0	SLV 7	No
V_SLV	5.128	SLV 1	Si
PFFP_SLV	0	SLV 7	No
R_SLV	1.214	SLV 9	Si

Maschio 232

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.278	1.046	-9.386	1.046	L7	L8	2.109	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 40	12.17	1365.82	-10426	-0.0000319	0.0004492	0.0035	2.1086	9509.68	10541.23	10541.23	7.72	No	Si
SLU 40	14.67	-263	-6191	-0.0000152	0.0004492	0.0035	2.1086	6004.03	8704.03	8704.03	33.1	No	Si
SLU 34	12.17	1447.47	-11709	-0.0000354	0.0004492	0.0035	2.1086	10475.15	11652.11	11652.11	8.05	No	Si
SLU 34	14.67	-186.76	-7269	-0.0000172	0.0004492	0.0035	2.1086	6943.36	9703.92	9703.92	51.96	No	Si
SLU 31	12.17	1414.94	-10704	-0.0000329	0.0004492	0.0035	2.1086	9722.26	10786.44	10786.44	7.62	No	Si
SLU 31	14.67	-268.64	-6386	-0.0000157	0.0004492	0.0035	2.1086	6176.94	8892.42	8892.42	33.1	No	Si
SLU 23	12.17	1453.14	-11314	-0.0000346	0.0004492	0.0035	2.1086	10182.14	11325.44	11325.44	7.79	No	Si
SLU 23	14.67	-247.15	-6840	-0.0000166	0.0004492	0.0035	2.1086	6573.67	9312.21	9312.21	37.68	No	Si
SLU 82	12.17	1609.58	-13294	-0.0000402	0.0004492	0.0035	2.1086	11605.41	12878.77	12878.77	8	No	Si
SLU 82	14.67	-242.24	-7856	-0.0000188	0.0004492	0.0035	2.1086	7440.47	10239.23	10239.23	42.27	No	Si
SLU 39	12.17	1316.7	-10402	-0.0000316	0.0004492	0.0035	2.1086	9491.1	10519.92	10519.92	7.99	No	Si
SLU 39	14.67	-240.72	-6189	-0.0000151	0.0004492	0.0035	2.1086	6002.29	8702.14	8702.14	36.15	No	Si
SLU 26	12.17	1485.67	-12319	-0.0000371	0.0004492	0.0035	2.1086	10918.29	12124.25	12124.25	8.16	No	Si
SLU 26	14.67	-165.27	-7723	-0.0000181	0.0004492	0.0035	2.1086	7329.15	10118.48	10118.48	61.22	No	Si
SLU 65	12.17	1696.9	-14181	-0.0000429	0.0004492	0.0035	2.1086	12208.44	13565.7	13565.7	7.99	No	Si
SLU 65	14.67	-226.39	-8505	-0.0000202	0.0004492	0.0035	2.1086	7980.59	10832.66	10832.66	47.85	No	Si
SLU 42	12.17	1398.35	-11432	-0.0000345	0.0004492	0.0035	2.1086	10270.19	11430.01	11430.01	8.17	No	Si
SLU 42	14.67	-181.12	-7073	-0.0000167	0.0004492	0.0035	2.1086	6775.17	9525.05	9525.05	52.59	No	Si
SLU 73	12.17	1658.7	-13571	-0.0000412	0.0004492	0.0035	2.1086	11796.28	13093.56	13093.56	7.89	No	Si
SLU 73	14.67	-247.89	-8051	-0.0000193	0.0004492	0.0035	2.1086	7604.48	10418.1	10418.1	42.03	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 3	12.17	3565.52	-7754	-0.0000406	0.0006738	0.0035	2.1086		8237.31	8237.31	2.31		Si
SLD 3	14.67	-3113.37	-2757	-0.0001487	0.0006738	0.0035	1.6869		5398.69	5398.69	1.73		Si
SLV 4	12.17	6580.61	-3975	-0.0072544	0.0006738	0.0035	2.1086		4543.4	4543.4	0.69		No
SLV 4	14.67	-7012.01	1935	-0.0008827	0.0006738	0.0035	1.6869		0	0	0		No
SLV 6	12.17	7480.8	-10557	-0.0000983	0.0006738	0.0035	2.1086		10879.18	10879.18	1.45		Si
SLV 6	14.67	-4535.2	-3440	-0.0002934	0.0006738	0.0035	1.6869		6079.97	6079.97	1.34		Si
SLV 1	12.17	9264.75	-5104	-0.0116317	0.0006738	0.0035	2.1086		5663.67	5663.67	0.61		No
SLV 1	14.67	-8387.53	2163	-0.0011495	0.0006738	0.0035	1.6869		0	0	0		No
SLD 4	12.17	3524.87	-7742	-0.0000402	0.0006738	0.0035	2.1086		8225.68	8225.68	2.33		Si
SLD 4	14.67	-3080.79	-2765	-0.000142	0.0006738	0.0035	1.6869		5407.3	5407.3	1.76		Si
SLV 5	12.17	7545.14	-10577	-0.0001	0.0006738	0.0035	2.1086		10897.05	10897.05	1.44		Si
SLV 5	14.67	-4586.76	-3427	-0.0003029	0.0006738	0.0035	1.6869		6066.48	6066.48	1.32		Si
SLD 1	12.17	4596.18	-8191	-0.000052	0.0006738	0.0035	2.1086		8656.42	8656.42	1.88		Si
SLD 1	14.67	-3646.03	-2672	-0.0002413	0.0006738	0.0035	1.6869		5313.96	5313.96	1.46		Si
SLD 2	12.17	4555.53	-8179	-0.0000515	0.0006738	0.0035	2.1086		8644.8	8644.8	1.9		Si
SLD 2	14.67	-3613.45	-2680	-0.0002356	0.0006738	0.0035	1.6869		5322.57	5322.57	1.47		Si
SLV 2	12.17	9169.18	-5076	-0.0114565	0.0006738	0.0035	2.1086		5635.53	5635.53	0.61		No
SLV 2	14.67	-8310.95	2143	-0.0011337	0.0006738	0.0035	1.6869		0	0	0		No
SLV 3	12.17	6676.18	-4003	-0.0074402	0.0006738	0.0035	2.1086		4571.93	4571.93	0.68		No
SLV 3	14.67	-7088.59	1955	-0.0008964	0.0006738	0.0035	1.6869		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 68	12.17	1729.43	-15187	-11045	1538	2.1086	2.1086	-17460	10661	6744	101952	22734	10754	33488	No	21.78	Si
SLU 68	14.67	-144.51	-9388	-6828	842	2.1086	2.1086	-10793	9772	6182	101952	22734	10754	33488	No	39.77	Si
SLU 70	12.17	1730.66	-16744	-12178	1556	2.1086	2.1086	-19250	10833	6853	101952	22734	10754	33488	No	21.52	Si
SLU 70	14.67	-25.01	-10787	-7845	831	2.1086	2.1086	-12401	9987	6318	101952	22734	10754	33488	No	40.28	Si
SLU 67	12.17	1698.12	-15738	-11446	1524	2.1086	2.1086	-18094	10746	6798	101952	22734	10754	33488	No	21.98	Si
SLU 67	14.67	-106.89	-9904	-7203	823	2.1086	2.1086	-11386	9852	6232	101952	22734	10754	33488	No	40.7	Si
SLU 71	12.17	1680.1	-16153	-11747	1504	2.1086	2.1086	-18570	10809	6838	101952	22734	10754	33488	No	22.27	Si
SLU 71	14.67	-25.49	-10268	-7468	808	2.1086	2.1086	-11805	9907	6267	101952	22734	10754	33488	No	41.43	Si
SLU 66	12.17	1649	-15714	-11429	1484	2.1086	2.1086	-18066	10742	6795	101952	22734	10754	33488	No	22.57	Si
SLU 66	14.67	-84.61	-9902	-7201	797	2.1086	2.1086	-11384	9851	6232	101952	22734	10754	33488	No	42	Si
SLU 78	12.17	1692.45	-16134	-11734	1471	2.1086	2.1086	-18549	10807	6836	101952	22734	10754	33488	No	22.76	Si
SLU 78	14.67	-46.5	-10333	-7515	853	2.1086	2.1086	-11879	9917	6274	101952	22734	10754	33488	No	39.26	Si
SLU 80	12.17	1691.02	-15567	-11321	1459	2.1086	2.1086	-17897	10720	6781	101952	22734	10754	33488	No	22.96	Si
SLU 80	14.67	-69.27	-9816	-7139	855	2.1086	2.1086	-11285	9838	6223	101952	22734	10754	33488	No	39.16	Si
SLU 72	12.17	1729.22	-16177	-11765	1544	2.1086	2.1086	-18598	10813	6840	101952	22734	10754	33488	No	21.69	Si
SLU 72	14.67	-47.77	-10270	-7469	834	2.1086	2.1086	-11807	9908	6267	101952	22734	10754	33488	No	40.17	Si
SLU 65	12.17	1696.9	-14181	-10314	1505	2.1086	2.1086	-16304	10507	6647	101952	22734	10754	33488	No	22.25	Si
SLU 65	14.67	-226.39	-8505	-6186	833	2.1086	2.1086	-9778	9637	6096	101952	22734	10754	33488	No	40.18	Si
SLU 69	12.17	1681.54	-16720	-12160	1516	2.1086	2.1086	-19223	10833	6853	101952	22734	10754	33488	No	22.09	Si
SLU 69	14.67	-2.73	-10785	-7844	806	2.1086	2.1086	-12399	9987	6317	101952	22734	10754	33488	No	41.55	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	12.17	6580.61	-3975	-2891	7543	2.1086	0	-116764	16250	4443	101952	34101	10754	44855		5.95	Si
SLV 4	14.67	-7012.01	1935	1407	5110	1.6869	0	0	0	0	101952	27280	8603	35884		7.02	Si
SLV 16	12.17	-6916.53	-15951	-11601	-7592	2.1086	1.8621	-20966	16250	9078	101952	34101	10754	44855		5.91	Si
SLV 16	14.67	8141.35	-14720	-10705	-5553	2.1086	1.5037	-16923	15885	7166	101952	34101	10754	44855		8.08	Si
SLV 13	12.17	-4232.39	-17081	-12423	-5461	2.1086	2.1086	-19638	16250	10280	101952	34101	10754	44855		8.21	Si
SLV 13	14.67	6765.84	-14492	-10539	-3969	2.1086	1.7623	-16661	15832	8370	101952	34101	10754	44855		11.3	Si
SLV 1	12.17	9264.75	-5104	-3712	9673	2.1086	0	-148985	16250	4663	101952	34101	10754	44855		4.64	Si
SLV 1	14.67	-8387.53	2163	1573	6693	1.6869	0	0	0	0	101952	27280	8603	35884		5.36	Si
SLV 2	12.17	9169.18	-5076	-3692	9579	2.1086	0	-148025	16250	4658	101952	34101	10754	44855		4.68	Si
SLV 2	14.67	-8310.95	2143	1559	6636	1.6869	0	0	0	0	101952	27280	8603	35884		5.41	Si
SLV 3	12.17	6676.18	-4003	-2911	7636	2.1086	0	-117598	16250	4449	101952	34101	10754	44855		5.87	Si
SLV 3	14.67	-7088.59	1955	1422	5167	1.6869	0	0	0	0	101952	27280	8603	35884		6.94	Si
SLV 6	12.17	7480.8	-10557	-7678	6673	2.1086	1.0372	-12138	14928	5725	101952	34101	10754	44855		6.72	Si
SLV 6	14.67	-4535.2	-3440	-2502	4693	1.6869	0	0	0	0	101952	27280	8603	35884		7.65	Si
SLV 15	12.17	-6820.96	-15980	-11622	-7498	2.1086	1.8824	-20739	16250	9177	101952	34101	10754	44855		5.98	Si
SLV 15	14.67	8064.77	-14700	-10691	-5495	2.1086	1.517	-16900	15880	7227	101952	34101	10754	44855		8.16	Si
SLV 5	12.17	7545.14	-10577	-7692	6736	2.1086	1.0228	-12160	14932	5729	101952	34101	10754	44855		6.66	Si
SLV 5	14.67	-4586.76	-3427	-2492	4732	1.6869	0	0	0	0	101952	27280	8603	35884		7.58	Si
SLV 14	12.17	-4327.96	-17053	-12402	-5555	2.1086	2.1086	-19605	16250	10280	101952	34101	10754	44855		8.07	Si
SLV 14	14.67	6842.41	-14512	-10554	-4027	2.1086	1.7484	-16684	15837	8307	101952	34101	10754	44855		11.14	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 13.745 Ta 0.06 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 4	-2506	0.53	263.27	367.76	699.08	533.42	2.03	Si
SLV 3	-2534	0.53	263.27	371.85	703.83	537.84	2.04	Si
SLV 2	-3466	0.53	263.27	504.37	858.45	681.41	2.59	Si
SLV 1	-3495	0.53	263.27	508.4	863.14	685.77	2.6	Si
SLV 8	-5384	0.53	263.27	770.12	1173.93	972.03	3.69	Si
SLV 7	-5403	0.53	263.27	772.74	1177.08	974.91	3.7	Si
SLV 6	-8585	0.53	263.27	1192.39	1694.71	1443.55	5.48	Si
SLV 5	-8604	0.53	263.27	1194.84	1697.81	1446.33	5.49	Si
SLV 12	-8808	0.53	263.27	1220.77	1730.64	1475.7	5.61	Si
SLV 11	-8827	0.53	263.27	1223.21	1733.74	1478.48	5.62	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-10905	-17081	437	0.953	1392.8	0.943	14.68574	6.16452	Si
SLV 14	-10894	-17053	436	0.954	1391.6	0.943	14.69877	6.16452	Si
SLV 15	-10558	-15980	-264	0.992	1357.6	0.942	15.31307	6.16452	Si
SLV 16	-10547	-15951	-264	0.993	1356.5	0.942	15.32658	6.16452	Si
SLV 9	-7689	-14170	1187	1.18	1067.6	0.929	18.47194	5.47446	Si
SLV 10	-7682	-14150	1187	1.181	1066.8	0.929	18.48691	5.47446	Si
SLV 11	-6534	-10498	-1149	1.342	951.3	0.922	21.15446	5.47446	Si
SLV 12	-6527	-10479	-1149	1.343	950.6	0.922	21.17358	5.47446	Si
SLV 5	-4589	-10577	1129	1.74	756.9	0.908	27.84198	5.47446	Si
SLV 6	-4581	-10557	1129	1.742	756.2	0.908	27.87583	5.47446	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.623	SLU 31	Si
V_SLU	21.521	SLU 70	Si
PF_SLV	0	SLV 1	No
V_SLV	4.637	SLV 1	Si

Stato limite	Coeff.s.	Comb.	Verifica
PFFP_SLV	2.026	SLV 4	Si
R_SLV	2.382	SLV 13	Si

Maschio 233

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-4.968	1.046	-6.478	1.046	L7	L8	1.51	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 65	12.17	555.11	-8009	-0.0000318	0.0004492	0.0035	1.51	5171.97	5756.07	5756.07	10.37	No	Si
SLU 65	14.27	-167.68	-7765	-0.0000262	0.0004492	0.0035	1.51	5040.37	6596.31	6596.31	39.34	No	Si
SLU 47	12.17	527.89	-8360	-0.0000326	0.0004492	0.0035	1.51	5358.24	5951.18	5951.18	11.27	No	Si
SLU 47	14.27	-107.51	-7516	-0.0000246	0.0004492	0.0035	1.51	4904.05	6441.51	6441.51	59.92	No	Si
SLU 52	12.17	483.62	-7185	-0.0000283	0.0004492	0.0035	1.51	4720.55	5237.76	5237.76	10.83	No	Si
SLU 52	14.27	-111.96	-6833	-0.0000225	0.0004492	0.0035	1.51	4522.06	6010.76	6010.76	53.69	No	Si
SLU 10	12.17	351.76	-5466	-0.0000212	0.0004492	0.0035	1.51	3719.53	4114.21	4114.21	11.7	No	Si
SLU 10	14.27	-64.1	-5495	-0.0000177	0.0004492	0.0035	1.51	3736.94	5134.3	5134.3	80.1	No	Si
SLU 1	12.17	403.89	-6031	-0.0000236	0.0004492	0.0035	1.51	4057.39	4487.45	4487.45	11.11	No	Si
SLU 1	14.27	-118.89	-5532	-0.0000185	0.0004492	0.0035	1.51	3759.25	5158.48	5158.48	43.39	No	Si
SLU 43	12.17	535.75	-7750	-0.0000308	0.0004492	0.0035	1.51	5031.93	5597.23	5597.23	10.45	No	Si
SLU 43	14.27	-166.75	-6870	-0.0000233	0.0004492	0.0035	1.51	4543.02	6034.94	6034.94	36.19	No	Si
SLU 44	12.17	586.29	-7745	-0.0000314	0.0004492	0.0035	1.51	5029.15	5593.98	5593.98	9.54	No	Si
SLU 44	14.27	-203.24	-6827	-0.0000236	0.0004492	0.0035	1.51	4518.66	6006.85	6006.85	29.55	No	Si
SLU 23	12.17	423.25	-6291	-0.0000247	0.0004492	0.0035	1.51	4209.59	4658.04	4658.04	11.01	No	Si
SLU 23	14.27	-119.81	-6428	-0.0000213	0.0004492	0.0035	1.51	4289.29	5745.16	5745.16	47.95	No	Si
SLU 2	12.17	454.43	-6026	-0.0000242	0.0004492	0.0035	1.51	4054.37	4484.09	4484.09	9.87	No	Si
SLU 2	14.27	-155.38	-5489	-0.0000188	0.0004492	0.0035	1.51	3733.32	5130.39	5130.39	33.02	No	Si
SLU 64	12.17	504.57	-8014	-0.0000312	0.0004492	0.0035	1.51	5174.71	5758.92	5758.92	11.41	No	Si
SLU 64	14.27	-131.19	-7808	-0.0000258	0.0004492	0.0035	1.51	5063.64	6622.93	6622.93	50.49	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	12.17	4182.8	-4785	-0.0053179	0.0006738	0.0035	1.51		3709.51	3709.51	0.89		No
SLV 6	14.27	-2973.4	-2773	-0.0004528	0.0006738	0.0035	1.208		3304.41	3304.41	1.11		Si
SLV 15	12.17	-4096	-7811	-0.0001092	0.0006738	0.0035	1.208		6747.71	6747.71	1.65		Si
SLV 15	14.27	3989.63	-8903	-0.0000931	0.0006738	0.0035	1.51		6473.05	6473.05	1.62		Si
SLV 2	12.17	4827.3	-4083	-0.0106389	0.0006738	0.0035	1.51		3219.01	3219.01	0.67		No
SLV 2	14.27	-4154.93	-2701	-0.0008745	0.0006738	0.0035	1.208		3253.67	3253.67	0.78		No
SLV 3	12.17	3231.35	-4515	-0.0004022	0.0006738	0.0035	1.51		3520.48	3520.48	1.09		Si
SLV 3	14.27	-3128.04	-4139	-0.0002551	0.0006738	0.0035	1.208		4264.74	4264.74	1.36		Si
SLD 2	12.17	2251.55	-5154	-0.0000507	0.0006738	0.0035	1.51		3963.6	3963.6	1.76		Si
SLD 2	14.27	-1811.1	-4490	-0.0000397	0.0006738	0.0035	1.208		4507.96	4507.96	2.49		Si
SLV 5	12.17	4212.23	-4812	-0.0053943	0.0006738	0.0035	1.51		3728.24	3728.24	0.89		No
SLV 5	14.27	-3029.89	-2814	-0.0004646	0.0006738	0.0035	1.208		3333.82	3333.82	1.1		Si
SLD 1	12.17	2270.14	-5171	-0.0000513	0.0006738	0.0035	1.51		3975.26	3975.26	1.75		Si
SLD 1	14.27	-1846.8	-4517	-0.0000406	0.0006738	0.0035	1.208		4526.1	4526.1	2.45		Si
SLV 4	12.17	3187.64	-4475	-0.0003677	0.0006738	0.0035	1.51		3492.67	3492.67	1.1		Si
SLV 4	14.27	-3044.12	-4077	-0.0002369	0.0006738	0.0035	1.208		4221.55	4221.55	1.39		Si
SLV 1	12.17	4871.01	-4122	-0.0107353	0.0006738	0.0035	1.51		3246.82	3246.82	0.67		No

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 1	14.27	-4238.84	-2763	-0.0008995	0.0006738	0.0035	1.208		3297.35	3297.35	0.78		No
SLV 16	12.17	-4139.71	-7771	-0.0001129	0.0006738	0.0035	1.208		6721	6721	1.62		Si
SLV 16	14.27	4073.55	-8841	-0.0000967	0.0006738	0.0035	1.51		6433.01	6433.01	1.58		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 64	12.17	504.57	-8014	-5829	368	1.51	1.51	-12867	10049	4552	101952	16280	7701	23981	No	65.1	Si
SLU 64	14.27	-131.19	-7808	-5679	368	1.51	1.51	-12536	10005	4532	101952	16280	7701	23981	No	65.12	Si
SLU 52	12.17	483.62	-7185	-5226	368	1.51	1.51	-11535	9871	4472	101952	16280	7701	23981	No	65.17	Si
SLU 52	14.27	-111.96	-6833	-4969	368	1.51	1.51	-10970	9796	4438	101952	16280	7701	23981	No	65.18	Si
SLU 47	12.17	527.89	-8360	-6080	447	1.51	1.51	-13421	10123	4586	101952	16280	7701	23981	No	53.68	Si
SLU 47	14.27	-107.51	-7516	-5466	447	1.51	1.51	-12067	9942	4504	101952	16280	7701	23981	No	53.69	Si
SLU 44	12.17	586.29	-7745	-5633	505	1.51	1.51	-12434	9991	4526	101952	16280	7701	23981	No	47.51	Si
SLU 44	14.27	-203.24	-6827	-4965	505	1.51	1.51	-10961	9795	4437	101952	16280	7701	23981	No	47.51	Si
SLU 65	12.17	555.11	-8009	-5825	439	1.51	1.51	-12858	10048	4552	101952	16280	7701	23981	No	54.68	Si
SLU 65	14.27	-167.68	-7765	-5648	439	1.51	1.51	-12467	9996	4528	101952	16280	7701	23981	No	54.69	Si
SLU 43	12.17	535.75	-7750	-5636	435	1.51	1.51	-12442	9992	4527	101952	16280	7701	23981	No	55.18	Si
SLU 43	14.27	-166.75	-6870	-4996	434	1.51	1.51	-11029	9804	4441	101952	16280	7701	23981	No	55.19	Si
SLU 46	12.17	507.47	-8670	-6305	406	1.51	1.51	-13919	10189	4616	101952	16280	7701	23981	No	59.12	Si
SLU 46	14.27	-95.58	-8024	-5836	406	1.51	1.51	-12883	10051	4553	101952	16280	7701	23981	No	59.13	Si
SLU 68	12.17	496.72	-8624	-6272	381	1.51	1.51	-13845	10179	4611	101952	16280	7701	23981	No	63.02	Si
SLU 68	14.27	-71.94	-8454	-6149	380	1.51	1.51	-13573	10143	4595	101952	16280	7701	23981	No	63.03	Si
SLU 2	12.17	454.43	-6026	-4383	387	1.51	1.51	-9675	9623	4359	101952	16280	7701	23981	No	61.96	Si
SLU 2	14.27	-155.38	-5489	-3992	387	1.51	1.51	-8813	9508	4307	101952	16280	7701	23981	No	61.96	Si
SLU 45	12.17	477.14	-8673	-6307	364	1.51	1.51	-13924	10190	4616	101952	16280	7701	23981	No	65.97	Si
SLU 45	14.27	-73.69	-8050	-5855	363	1.51	1.51	-12924	10057	4556	101952	16280	7701	23981	No	65.99	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	12.17	-4096	-7811	-5681	-5583	1.208	0.6919	0	0	0	101952	19536	6161	25696		4.6	Si
SLV 15	14.27	3989.63	-8903	-6475	-4565	1.51	0.9206	-14293	15359	4343	101952	24420	7701	32121		7.04	Si
SLV 12	12.17	-3480.93	-7081	-5150	-5902	1.208	0.7903	0	0	0	101952	19536	6161	25696		4.35	Si
SLV 12	14.27	2864.59	-8789	-6392	-5548	1.51	1.2873	-14111	15322	5917	101952	24420	7701	32121		5.79	Si
SLV 16	12.17	-4139.71	-7771	-5652	-5801	1.208	0.6669	0	0	0	101952	19536	6161	25696		4.43	Si
SLV 16	14.27	4073.55	-8841	-6430	-4783	1.51	0.8827	-14194	15339	4331	101952	24420	7701	32121		6.71	Si
SLV 9	12.17	2014.02	-5801	-4219	3700	1.51	1.2235	-9314	14363	5272	101952	24420	7701	32121		8.68	Si
SLV 9	14.27	-894.59	-4243	-3086	3947	1.51	1.51	-6813	13863	6280	101952	24420	7701	32121		8.14	Si
SLV 2	12.17	4827.3	-4083	-2969	6101	1.51	0	-159553	16250	3409	101952	24420	7701	32121		5.27	Si
SLV 2	14.27	-4154.93	-2701	-1964	5082	1.208	0	0	0	0	101952	19536	6161	25696		5.06	Si
SLV 11	12.17	-3451.51	-7108	-5170	-5755	1.208	0.8083	0	0	0	101952	19536	6161	25696		4.46	Si
SLV 11	14.27	2808.1	-8831	-6422	-5401	1.51	1.311	-14178	15336	6032	101952	24420	7701	32121		5.95	Si
SLV 6	12.17	4182.8	-4785	-3480	6273	1.51	0	-157303	16250	3545	101952	24420	7701	32121		5.12	Si
SLV 6	14.27	-2973.4	-2773	-2017	5918	1.208	0	0	0	0	101952	19536	6161	25696		4.34	Si
SLV 10	12.17	1984.6	-5774	-4200	3553	1.51	1.2339	-9271	14354	5314	101952	24420	7701	32121		9.04	Si
SLV 10	14.27	-838.09	-4202	-3056	3800	1.51	1.51	-6746	13849	6274	101952	24420	7701	32121		8.45	Si
SLV 5	12.17	4212.23	-4812	-3500	6420	1.51	0	-158043	16250	3550	101952	24420	7701	32121		5	Si
SLV 5	14.27	-3029.89	-2814	-2047	6065	1.208	0	0	0	0	101952	19536	6161	25696		4.24	Si
SLV 1	12.17	4871.01	-4122	-2998	6319	1.51	0	-160947	16250	3416	101952	24420	7701	32121		5.08	Si
SLV 1	14.27	-4238.84	-2763	-2009	5301	1.208	0	0	0	0	101952	19536	6161	25696		4.85	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 13.745 Ta 0.06 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 2	-3114	0.53	188.53	449.58	715.41	582.5	3.09	Si
SLV 1	-3179	0.53	188.53	458.55	726.06	592.3	3.14	Si
SLV 6	-3209	0.53	188.53	462.71	731	596.85	3.17	Si
SLV 5	-3252	0.53	188.53	468.73	738.17	603.45	3.2	Si
SLV 4	-4263	0.53	188.53	606.57	903.83	755.2	4.01	Si
SLV 3	-4327	0.53	188.53	615.27	914.38	764.82	4.06	Si
SLV 10	-4429	0.53	188.53	628.98	931.04	780.01	4.14	Si
SLV 9	-4473	0.53	188.53	634.81	938.14	786.47	4.17	Si
SLV 8	-7038	0.53	188.53	966.15	1354.17	1160.16	6.15	Si
SLV 7	-7081	0.53	188.53	971.57	1361.19	1166.38	6.19	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-7332	-7811	139	1.023	949	0.94	15.80998	6.16452	Si
SLV 16	-7327	-7771	138	1.024	948.5	0.94	15.82128	6.16452	Si
SLV 11	-7614	-7108	500	0.952	977.6	0.942	14.6828	5.47446	Si
SLV 12	-7610	-7081	499	0.952	977.2	0.942	14.68975	5.47446	Si
SLV 13	-5964	-7419	-162	1.204	810.7	0.932	18.77055	6.16452	Si
SLV 14	-5960	-7379	-164	1.204	810.3	0.932	18.77914	6.16452	Si
SLV 7	-6488	-6119	508	1.081	863.7	0.935	16.79873	5.47446	Si
SLV 8	-6485	-6092	507	1.082	863.4	0.935	16.80761	5.47446	Si
SLV 3	-3582	-4515	167	1.769	571.4	0.911	28.20794	6.16452	Si
SLV 4	-3577	-4475	165	1.771	571	0.911	28.24056	6.16452	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.541	SLU 44	Si
V_SLU	47.507	SLU 44	Si
PF_SLV	0.667	SLV 1	No
V_SLV	4.237	SLV 5	Si
PFFP_SLV	3.09	SLV 2	Si
R_SLV	2.565	SLV 15	Si

Maschio 234

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	1.046	-4.168	1.046	L7	L8	4.045	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 29	12.17	1530.29	-11865	-0.0000162	0.0004492	0.0035	4.045	22076.45	24366.06	24366.06	15.92	No	Si
SLU 29	14.27	1867.86	-8130	-0.0000124	0.0004492	0.0035	4.045	15540.93	17462.05	17462.05	9.35	No	Si
SLU 27	12.17	1737.56	-12744	-0.0000176	0.0004492	0.0035	4.045	23560.17	25962.79	25962.79	14.94	No	Si
SLU 27	14.27	2225.1	-9271	-0.0000144	0.0004492	0.0035	4.045	17577.32	19588.23	19588.23	8.8	No	Si
SLU 37	12.17	1064.06	-10704	-0.000014	0.0004492	0.0035	4.045	20086.01	22238.47	22238.47	20.9	No	Si
SLU 37	14.27	1800.57	-7702	-0.0000118	0.0004492	0.0035	4.045	14767.51	16661.97	16661.97	9.25	No	Si
SLU 36	12.17	1291.7	-11578	-0.0000155	0.0004492	0.0035	4.045	21588.26	23840.57	23840.57	18.46	No	Si
SLU 36	14.27	2116.6	-8825	-0.0000137	0.0004492	0.0035	4.045	16785.86	18757.46	18757.46	8.86	No	Si
SLU 77	12.17	1857.4	-14511	-0.0000199	0.0004492	0.0035	4.045	26476.46	29145.17	29145.17	15.69	No	Si
SLU 77	14.27	2302.27	-10160	-0.0000155	0.0004492	0.0035	4.045	19140.55	21241.38	21241.38	9.23	No	Si
SLU 78	12.17	1877.77	-14506	-0.0000199	0.0004492	0.0035	4.045	26467.57	29135.48	29135.48	15.52	No	Si
SLU 78	14.27	2261.06	-10142	-0.0000155	0.0004492	0.0035	4.045	19109.83	21209.13	21209.13	9.38	No	Si
SLU 69	12.17	2323.63	-15672	-0.000022	0.0004492	0.0035	4.045	28346.34	31200.65	31200.65	13.43	No	Si
SLU 69	14.27	2369.56	-10588	-0.0000162	0.0004492	0.0035	4.045	19885.26	22026.05	22026.05	9.3	No	Si
SLU 32	12.17	1325.71	-10999	-0.0000148	0.0004492	0.0035	4.045	20595.31	22779.13	22779.13	17.18	No	Si
SLU 32	14.27	1914.52	-8342	-0.0000128	0.0004492	0.0035	4.045	15921.6	17856.69	17856.69	9.33	No	Si
SLU 28	12.17	1757.92	-12739	-0.0000176	0.0004492	0.0035	4.045	23551.02	25952.94	25952.94	14.76	No	Si
SLU 28	14.27	2183.89	-9253	-0.0000143	0.0004492	0.0035	4.045	17546.17	19555.43	19555.43	8.95	No	Si
SLU 35	12.17	1271.33	-11584	-0.0000154	0.0004492	0.0035	4.045	21597.59	23850.6	23850.6	18.76	No	Si
SLU 35	14.27	2157.81	-8842	-0.0000138	0.0004492	0.0035	4.045	16817.21	18790.26	18790.26	8.71	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	12.17	-508.41	-12589	-0.0000152	0.0006738	0.0035	4.045		33470.13	33470.13	65.83		Si
SLV 12	14.27	6561.94	-9222	-0.0000217	0.0006738	0.0035	4.045		19705.66	19705.66	3		Si
SLV 13	12.17	1868.54	-13312	-0.0000184	0.0006738	0.0035	4.045		27368.65	27368.65	14.65		Si
SLV 13	14.27	6241.92	-8667	-0.0000205	0.0006738	0.0035	4.045		18647.66	18647.66	2.99		Si
SLV 16	12.17	623.95	-13999	-0.000017	0.0006738	0.0035	4.045		28643.3	28643.3	45.91		Si
SLV 16	14.27	8547.75	-9941	-0.0000264	0.0006738	0.0035	4.045		21061.57	21061.57	2.46		Si
SLV 2	12.17	2548.89	-5870	-0.000011	0.0006738	0.0035	4.045		13282.37	13282.37	5.21		Si
SLV 2	14.27	-6240.72	-2216	-0.0001171	0.0006738	0.0035	3.236		13803.45	13803.45	2.21		Si
SLV 14	12.17	1820.01	-13077	-0.000018	0.0006738	0.0035	4.045		26933.51	26933.51	14.8		Si
SLV 14	14.27	6424.67	-8636	-0.0000208	0.0006738	0.0035	4.045		18589.29	18589.29	2.89		Si
SLV 11	12.17	-475.73	-12747	-0.0000153	0.0006738	0.0035	4.045		33762.13	33762.13	70.97		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 11	14.27	6438.9	-9242	-0.0000215	0.0006738	0.0035	4.045		19744.37	19744.37	3.07		Si
SLV 15	12.17	672.49	-14233	-0.0000174	0.0006738	0.0035	4.045		29078.44	29078.44	43.24		Si
SLV 15	14.27	8365	-9972	-0.000026	0.0006738	0.0035	4.045		21119.07	21119.07	2.52		Si
SLV 1	12.17	2597.43	-6105	-0.0000113	0.0006738	0.0035	4.045		13737.49	13737.49	5.29		Si
SLV 1	14.27	-6423.47	-2246	-0.0001222	0.0006738	0.0035	3.236		13862.41	13862.41	2.16		Si
SLV 5	12.17	3729.78	-7514	-0.0000148	0.0006738	0.0035	4.045		16442.95	16442.95	4.41		Si
SLV 5	14.27	-4437.66	-2966	-0.0000171	0.0006738	0.0035	3.236		15252.85	15252.85	3.44		Si
SLV 6	12.17	3697.11	-7356	-0.0000146	0.0006738	0.0035	4.045		16141.01	16141.01	4.37		Si
SLV 6	14.27	-4314.62	-2945	-0.0000161	0.0006738	0.0035	3.236		15213.16	15213.16	3.53		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 41	12.17	918.63	-9622	-6998	-2628	4.045	4.045	-5767	9102	11046	101952	43610	20630	64240	No	24.44	Si
SLU 41	14.27	1528.44	-7017	-5103	-2653	4.045	4.045	-4206	8894	10793	101952	43610	20630	64240	No	24.22	Si
SLU 33	12.17	1346.08	-10994	-7995	-2526	4.045	4.045	-6589	9212	11179	101952	43610	20630	64240	No	25.43	Si
SLU 33	14.27	1873.31	-8324	-6054	-2550	4.045	4.045	-4989	8998	10920	101952	43610	20630	64240	No	25.19	Si
SLU 38	12.17	1084.43	-10699	-7781	-2263	4.045	4.045	-6412	9188	11150	101952	43610	20630	64240	No	28.38	Si
SLU 38	14.27	1759.36	-7684	-5588	-2294	4.045	4.045	-4605	8947	10858	101952	43610	20630	64240	No	28	Si
SLU 32	12.17	1325.71	-10999	-7999	-2567	4.045	4.045	-6592	9212	11179	101952	43610	20630	64240	No	25.02	Si
SLU 32	14.27	1914.52	-8342	-6067	-2591	4.045	4.045	-4999	9000	10921	101952	43610	20630	64240	No	24.79	Si
SLU 39	12.17	973.02	-9037	-6573	-2568	4.045	4.045	-5416	9055	10989	101952	43610	20630	64240	No	25.01	Si
SLU 39	14.27	1285.15	-6516	-4739	-2587	4.045	4.045	-3905	8854	10744	101952	43610	20630	64240	No	24.83	Si
SLU 36	12.17	1291.7	-11578	-8420	-2586	4.045	4.045	-6939	9259	11235	101952	43610	20630	64240	No	24.84	Si
SLU 36	14.27	2116.6	-8825	-6418	-2616	4.045	4.045	-5289	9039	10968	101952	43610	20630	64240	No	24.56	Si
SLU 40	12.17	993.38	-9032	-6569	-2527	4.045	4.045	-5413	9055	10988	101952	43610	20630	64240	No	25.42	Si
SLU 40	14.27	1243.94	-6499	-4726	-2546	4.045	4.045	-3895	8853	10743	101952	43610	20630	64240	No	25.23	Si
SLU 42	12.17	939	-9616	-6994	-2587	4.045	4.045	-5763	9102	11045	101952	43610	20630	64240	No	24.83	Si
SLU 42	14.27	1487.23	-7000	-5091	-2612	4.045	4.045	-4195	8893	10791	101952	43610	20630	64240	No	24.59	Si
SLU 37	12.17	1064.06	-10704	-7785	-2304	4.045	4.045	-6415	9189	11150	101952	43610	20630	64240	No	27.88	Si
SLU 37	14.27	1800.57	-7702	-5601	-2335	4.045	4.045	-4616	8949	10859	101952	43610	20630	64240	No	27.51	Si
SLU 35	12.17	1271.33	-11584	-8424	-2627	4.045	4.045	-6942	9259	11236	101952	43610	20630	64240	No	24.45	Si
SLU 35	14.27	2157.81	-8842	-6431	-2657	4.045	4.045	-5299	9040	10970	101952	43610	20630	64240	No	24.18	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	12.17	623.95	-13999	-10181	-6252	4.045	4.045	-8390	14178	17205	101952	65415	20630	86045		13.76	Si
SLV 16	14.27	8547.75	-9941	-7230	-2893	4.045	3.488	-5958	13692	14327	101952	65415	20630	86045		29.74	Si
SLV 2	12.17	2548.89	-5870	-4269	4621	4.045	4.045	-3518	13204	16023	101952	65415	20630	86045		18.62	Si
SLV 2	14.27	-6240.72	-2216	-1611	1229	3.236	0	0	0	0	101952	52332	16504	68836		56.01	Si
SLV 14	12.17	1820.01	-13077	-9511	-4312	4.045	4.045	-7837	14067	17071	101952	65415	20630	86045		19.95	Si
SLV 14	14.27	6424.67	-8636	-6281	-938	4.045	3.8357	-5176	13535	15575	101952	65415	20630	86045		91.72	Si
SLV 6	12.17	3697.11	-7356	-5350	3807	4.045	4.045	-4409	13382	16239	101952	65415	20630	86045		22.6	Si
SLV 6	14.27	-4314.62	-2945	-2142	2801	3.236	1.6728	0	0	0	101952	52332	16504	68836		24.57	Si
SLV 13	12.17	1868.54	-13312	-9681	-4006	4.045	4.045	-7978	14096	17105	101952	65415	20630	86045		21.48	Si
SLV 13	14.27	6241.92	-8667	-6303	-632	4.045	3.9068	-5194	13539	15868	101952	65415	20630	86045		136.2	Si
SLV 15	12.17	672.49	-14233	-10351	-5945	4.045	4.045	-8530	14206	17239	101952	65415	20630	86045		14.47	Si
SLV 15	14.27	8365	-9972	-7252	-2587	4.045	3.5509	-5976	13695	14589	101952	65415	20630	86045		33.26	Si
SLV 5	12.17	3729.78	-7514	-5465	4013	4.045	4.045	-4503	13401	16262	101952	65415	20630	86045		21.44	Si
SLV 5	14.27	-4437.66	-2966	-2157	3008	3.236	1.5788	0	0	0	101952	52332	16504	68836		22.89	Si
SLV 11	12.17	-475.73	-12747	-9271	-5132	4.045	4.045	-7640	14028	17023	101952	65415	20630	86045		16.77	Si
SLV 11	14.27	6438.9	-9242	-6722	-4159	4.045	3.9774	-5539	13608	16237	101952	65415	20630	86045		20.69	Si
SLV 12	12.17	-508.41	-12589	-9156	-5338	4.045	4.045	-7545	14009	17000	101952	65415	20630	86045		16.12	Si
SLV 12	14.27	6561.94	-9222	-6707	-4365	4.045	3.9327	-5527	13605	16052	101952	65415	20630	86045		19.71	Si
SLV 1	12.17	2597.43	-6105	-4440	4927	4.045	4.045	-3659	13232	16057	101952	65415	20630	86045		17.46	Si
SLV 1	14.27	-6423.47	-2246	-1634	1535	3.236	0	0	0	0	101952	52332	16504	68836		44.83	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 13.745 Ta 0.06 Wa 0.05 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 2	-3170	0.53	505.03	0	1054.5	527.25	1.04	Si
SLV 1	-3239	0.53	505.03	0	1066.12	533.06	1.06	Si
SLV 6	-3902	0.53	505.03	574.96	1177.08	876.02	1.73	Si
SLV 5	-3948	0.53	505.03	581.69	1184.84	883.27	1.75	Si
SLV 4	-4409	0.53	505.03	648.3	1261.82	955.06	1.89	Si
SLV 3	-4479	0.53	505.03	658.25	1273.34	965.8	1.91	Si
SLV 10	-5758	0.53	505.03	841.31	1486.44	1163.87	2.3	Si
SLV 9	-5804	0.53	505.03	847.92	1494.19	1171.05	2.32	Si
SLV 8	-8032	0.53	505.03	1161.3	1861.84	1511.57	2.99	Si
SLV 7	-8079	0.53	505.03	1167.77	1869.5	1518.63	3.01	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-4282	-14233	261	2.977	1012.8	0.89	48.61381	6.16452	Si
SLV 16	-4274	-13999	261	2.98	1012.1	0.89	48.66174	6.16452	Si
SLV 13	-4160	-13312	-299	3.019	1001.4	0.89	49.3166	6.16452	Si
SLV 14	-4152	-13077	-299	3.022	1000.7	0.89	49.36669	6.16452	Si
SLV 11	-4037	-12747	928	2.984	989.9	0.89	48.75753	5.47446	Si
SLV 12	-4032	-12589	928	2.986	989.4	0.89	48.79077	5.47446	Si
SLV 3	-3177	-7026	298	3.461	911.5	0.889	56.57404	6.16452	Si
SLV 4	-3169	-6791	299	3.465	910.8	0.889	56.63734	6.16452	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-3705	-10585	939	3.119	959.3	0.889	50.986	5.47446	Si
SLV 8	-3700	-10427	939	3.121	958.9	0.889	51.0221	5.47446	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	8.708	SLU 35	Si
V_SLU	24.179	SLU 35	Si
PF_SLV	2.158	SLV 1	Si
V_SLV	13.763	SLV 16	Si
PFFP_SLV	1.044	SLV 2	Si
R_SLV	7.886	SLV 15	Si

Maschio 235

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-19.758	6.651	-17.718	6.651	L7	L8	2.04	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	13.07	341.25	-5630	-0.0000163	0.0003743	0.0035	2.04	5223.99	22140.06	22140.06	64.88	No	Si
SLU 79	14.87	3244.02	-2800	-0.0000923	0.0003743	0.0035	2.04	0	19986.55	19986.55	6.16	No	Si
SLU 83	13.07	292.8	-4946	-0.0000143	0.0003743	0.0035	2.04	4644.26	21695.76	21695.76	74.1	No	Si
SLU 83	14.87	3112.09	-2115	-0.0001132	0.0003743	0.0035	2.04	0	19355.25	19355.25	6.22	No	Si
SLU 80	13.07	326.84	-5550	-0.000016	0.0003743	0.0035	2.04	5156.7	22088.48	22088.48	67.58	No	Si
SLU 80	14.87	3328.32	-2720	-0.0001011	0.0003743	0.0035	2.04	0	19913.46	19913.46	5.98	No	Si
SLU 75	13.07	354.34	-5360	-0.0000157	0.0003743	0.0035	2.04	4996.61	21965.79	21965.79	61.99	No	Si
SLU 75	14.87	3212.29	-2529	-0.0001015	0.0003743	0.0035	2.04	0	19739.41	19739.41	6.14	No	Si
SLU 78	13.07	371.73	-5881	-0.0000172	0.0003743	0.0035	2.04	5432.31	22299.8	22299.8	59.99	No	Si
SLU 78	14.87	3469	-3050	-0.0000969	0.0003743	0.0035	2.04	0	20212.55	20212.55	5.83	No	Si
SLU 84	13.07	278.38	-4865	-0.0000139	0.0003743	0.0035	2.04	4575.16	21642.8	21642.8	77.74	No	Si
SLU 84	14.87	3196.38	-2035	-0.0001231	0.0003743	0.0035	2.04	0	19279.72	19279.72	6.03	No	Si
SLU 74	13.07	368.75	-5440	-0.0000161	0.0003743	0.0035	2.04	5064.4	22017.74	22017.74	59.71	No	Si
SLU 74	14.87	3128	-2610	-0.0000925	0.0003743	0.0035	2.04	0	19813.15	19813.15	6.33	No	Si
SLU 77	13.07	386.15	-5961	-0.0000175	0.0003743	0.0035	2.04	5498.73	22350.75	22350.75	57.88	No	Si
SLU 77	14.87	3384.7	-3131	-0.0000884	0.0003743	0.0035	2.04	0	20284.54	20284.54	5.99	No	Si
SLU 76	13.07	299.83	-4975	-0.0000144	0.0003743	0.0035	2.04	4669.46	21715.08	21715.08	72.42	No	Si
SLU 76	14.87	3127.81	-2145	-0.0001129	0.0003743	0.0035	2.04	0	19382.78	19382.78	6.2	No	Si
SLU 36	13.07	283	-4946	-0.0000142	0.0003743	0.0035	2.04	4644.3	21695.79	21695.79	76.66	No	Si
SLU 36	14.87	3171.4	-2747	-0.0000897	0.0003743	0.0035	2.04	0	19938.41	19938.41	6.29	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 9	13.07	-295.08	-324	-0.0000057	0.0005615	0.0035	2.04		17231.18	17231.18	58.4		Si
SLD 9	14.87	5076.34	1850	0.0017479	0.0005615	0.0035	1.632		0	0	0		No
SLV 5	13.07	-1540.43	7675	0.0118096	0.0005615	0.0035	1.632		0	0	0		No
SLV 5	14.87	13617.9	9828	0.012185	0.0005615	0.0035	1.632		0	0	0		No
SLD 2	13.07	-79.33	-711	-0.0000023	0.0005615	0.0035	2.04		18202.88	18202.88	229.45		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 2	14.87	5087.78	1435	0.0010439	0.0005615	0.0035	1.632		0	0	0		No
SLV 10	13.07	-795.25	3636	0.0056029	0.0005615	0.0035	1.632		0	0	0		No
SLV 10	14.87	8595.26	5819	0.0070618	0.0005615	0.0035	1.632		0	0	0		No
SLV 9	13.07	-1140.57	4691	0.0071516	0.0005615	0.0035	1.632		0	0	0		No
SLV 9	14.87	10003.8	6873	0.0084067	0.0005615	0.0035	1.632		0	0	0		No
SLD 10	13.07	-151.14	-763	-0.0000029	0.0005615	0.0035	2.04		18333.14	18333.14	121.3		Si
SLD 10	14.87	4489.21	1410	0.0011474	0.0005615	0.0035	1.632		0	0	0		No
SLD 5	13.07	-466.52	953	0.001338	0.0005615	0.0035	1.632		6020.4	6020.4	12.91		Si
SLD 5	14.87	6622.42	3113	0.0033458	0.0005615	0.0035	1.632		0	0	0		No
SLD 1	13.07	-297.53	-44	-0.0000204	0.0005615	0.0035	2.04		16514.31	16514.31	55.51		Si
SLD 1	14.87	5977.8	2101	0.001928	0.0005615	0.0035	1.632		0	0	0		No
SLD 6	13.07	-322.58	513	0.0006997	0.0005615	0.0035	1.632		12329.85	12329.85	38.22		Si
SLD 6	14.87	6035.29	2674	0.0028094	0.0005615	0.0035	1.632		0	0	0		No
SLV 6	13.07	-1195.12	6621	0.0102363	0.0005615	0.0035	1.632		0	0	0		No
SLV 6	14.87	12209.36	8774	0.010874	0.0005615	0.0035	1.632		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	13.07	354.34	-5360	-4513	-1536	2.04	2.04	-7375	7928	4852	16176	18326	5202	21028	No	13.69	Si
SLU 75	14.87	3212.29	-2529	-2130	-1536	2.04	0	-17712	9982	2532	16176	18326	5202	18708	No	12.18	Si
SLU 36	13.07	283	-4946	-4165	-1565	2.04	2.04	-6805	7852	4805	16176	18326	5202	20982	No	13.41	Si
SLU 36	14.87	3171.4	-2747	-2313	-1565	2.04	0	-17264	9735	2581	16176	18326	5202	18757	No	11.99	Si
SLU 77	13.07	386.15	-5961	-5020	-1614	2.04	2.04	-8203	8038	4919	16176	18326	5202	21096	No	13.07	Si
SLU 77	14.87	3384.7	-3131	-2637	-1614	2.04	0	-18061	9757	2667	16176	18326	5202	18844	No	11.67	Si
SLU 79	13.07	341.25	-5630	-4741	-1561	2.04	2.04	-7747	7977	4882	16176	18326	5202	21059	No	13.49	Si
SLU 79	14.87	3244.02	-2800	-2358	-1561	2.04	0	-17666	9806	2593	16176	18326	5202	18769	No	12.02	Si
SLU 78	13.07	371.73	-5881	-4952	-1669	2.04	2.04	-8092	8023	4910	16176	18326	5202	21087	No	12.63	Si
SLU 78	14.87	3469	-3050	-2569	-1669	2.04	0	-18786	9955	2649	16176	18326	5202	18825	No	11.28	Si
SLU 76	13.07	299.83	-4975	-4190	-1520	2.04	2.04	-6846	7857	4809	16176	18326	5202	20985	No	13.81	Si
SLU 76	14.87	3127.81	-2145	-1806	-1520	2.04	0	-17176	10180	2446	16176	18326	5202	18622	No	12.26	Si
SLU 80	13.07	326.84	-5550	-4674	-1616	2.04	2.04	-7637	7963	4873	16176	18326	5202	21050	No	13.03	Si
SLU 80	14.87	3328.32	-2720	-2290	-1616	2.04	0	-18279	10007	2575	16176	18326	5202	18751	No	11.6	Si
SLU 83	13.07	292.8	-4946	-4165	-1515	2.04	2.04	-6805	7852	4805	16176	18326	5202	20982	No	13.85	Si
SLU 83	14.87	3112.09	-2115	-1781	-1515	2.04	0	-17074	10181	2439	16176	18326	5202	18616	No	12.29	Si
SLU 38	13.07	238.11	-4615	-3886	-1512	2.04	2.04	-6350	7791	4768	16176	18326	5202	20945	No	13.86	Si
SLU 38	14.87	3030.72	-2416	-2035	-1512	2.04	0	-16717	9788	2507	16176	18326	5202	18683	No	12.36	Si
SLU 84	13.07	278.38	-4865	-4097	-1570	2.04	2.04	-6695	7837	4796	16176	18326	5202	20973	No	13.36	Si
SLU 84	14.87	3196.38	-2035	-1714	-1570	2.04	0	-17346	10393	2421	16176	18326	5202	18597	No	11.85	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	13.07	1737.82	-13860	-11671	5859	2.04	2.04	-19071	14231	8709	16176	27489	5202	24886		4.25	Si
SLV 11	14.87	-8525.83	-11677	-9834	5758	2.04	0.8696	-34846	16250	5568	16176	27489	5202	21745		3.78	Si
SLV 5	13.07	-1540.43	7675	6463	-8499	1.632	2.04	0	0	0	16176	21991	4162	16176		1.9	Si
SLV 5	14.87	13617.9	9828	8276	-8398	1.632	0	0	0	0	16176	21991	4162	16176		1.93	Si
SLV 9	13.07	-1140.57	4691	3950	-6014	1.632	2.04	0	0	0	16176	21991	4162	16176		2.69	Si
SLV 9	14.87	10003.8	6873	5788	-6263	1.632	0	0	0	0	16176	21991	4162	16176		2.58	Si
SLV 16	13.07	1625.99	-12159	-10239	5814	2.04	2.04	-16731	13763	8423	16176	27489	5202	24599		4.23	Si
SLV 16	14.87	-8007.22	-9942	-8372	5253	2.04	0.6439	-35280	16250	5179	16176	27489	5202	21355		4.07	Si
SLV 1	13.07	-1083.29	4920	4143	-7479	1.632	2.04	0	0	0	16176	21991	4162	16176		2.16	Si
SLV 1	14.87	11690.75	7038	5927	-6918	1.632	0	0	0	0	16176	21991	4162	16176		2.34	Si
SLV 10	13.07	-795.25	3636	3062	-5040	1.632	2.04	0	0	0	16176	21991	4162	16176		3.21	Si
SLV 10	14.87	8595.26	5819	4900	-5289	1.632	0	0	0	0	16176	21991	4162	16176		3.06	Si
SLV 12	13.07	2083.13	-14914	-12559	6834	2.04	2.04	-20522	14521	8887	16176	27489	5202	25063		3.67	Si
SLV 12	14.87	-9934.37	-12732	-10721	6733	2.04	0.7191	-42732	16250	5805	16176	27489	5202	21981		3.26	Si
SLV 2	13.07	-570.39	3354	2825	-6032	1.632	2.04	0	0	0	16176	21991	4162	16176		2.68	Si
SLV 2	14.87	9598.66	5472	4608	-5471	1.632	0	0	0	0	16176	21991	4162	16176		2.96	Si
SLV 6	13.07	-1195.12	6621	5575	-7525	1.632	2.04	0	0	0	16176	21991	4162	16176		2.15	Si
SLV 6	14.87	12209.36	8774	7388	-7424	1.632	0	0	0	0	16176	21991	4162	16176		2.18	Si
SLD 5	13.07	-466.52	953	802	-3949	1.632	1.5913	0	0	0	16176	21991	4162	16176		4.1	Si
SLD 5	14.87	6622.42	3113	2622	-3906	1.632	0	0	0	0	16176	21991	4162	16176		4.14	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 9	179667	0.53	0	5455	248.7	0	0	No, Trazione
SLV 10	179667	0.53	0	4401	248.7	0	0	No, Trazione
SLV 5	179667	0.53	0	8418	248.7	0	0	No, Trazione
SLV 1	179667	0.53	0	5645	248.7	0	0	No, Trazione
SLV 3	179667	0.53	0	86	248.7	0	0	No, Trazione
SLV 6	179667	0.53	0	7364	248.7	0	0	No, Trazione
SLV 4	179667	0.53	0	-1480	248.7	0	0	No, e>t/2
SLV 2	179667	0.53	0	4079	248.7	0	0	No, Trazione
SLV 13	179667	0.53	6913	-4231	248.7	605.9	2.44	Si
SLV 14	179667	0.53	9472	-5797	248.7	815.61	3.28	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 12	-6975	-10329	189	1.351	986.1	0.926	21.19945	5.47446	Si
SLV 16	-5884	-7929	109	1.548	876.5	0.919	24.47719	6.16452	Si
SLV 11	-6500	-10023	172	1.428	938.3	0.923	22.48331	5.47446	Si
SLV 15	-5178	-7474	83	1.705	805.8	0.914	27.10885	6.16452	Si
SLV 8	-5735	-9254	177	1.569	861.5	0.918	24.83621	5.47446	Si
SLV 7	-5259	-8948	160	1.675	813.9	0.915	26.61176	5.47446	Si
SLV 14	-3610	-4733	24	2.202	650.4	0.901	35.5178	6.16452	Si
SLV 13	-2904	-4278	-1	2.535	581.6	0.895	41.16003	6.16452	Si
SLV 4	-1749	-4345	68	3.341	472.9	0.889	54.61815	6.16452	Si
SLV 3	-1043	-3890	43	4.187	411.8	0.895	67.97925	6.16452	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.827	SLU 78	Si
V_SLU	11.279	SLU 78	Si
PF_SLV	0	SLD 1	No
V_SLV	1.903	SLV 5	Si
PFFP_SLV	0	SLV 10	No
R_SLV	3.872	SLV 12	Si

Maschio 236

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-16.818	6.651	-12.838	6.651	L7	L8	3.98	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 59	13.07	-164.82	-16003	-0.0000207	0.0003743	0.0035	3.98	27653.66	33257.5	33257.5	201.78	No	Si
SLU 59	14.87	-1157.58	-10839	-0.0000159	0.0003743	0.0035	3.98	19646.3	24629.24	24629.24	21.28	No	Si
SLU 16	13.07	-174.61	-13589	-0.0000176	0.0003743	0.0035	3.98	24019.62	29308.5	29308.5	167.85	No	Si
SLU 16	14.87	-1051.58	-9594	-0.0000141	0.0003743	0.0035	3.98	17586.1	22483.02	22483.02	21.38	No	Si
SLU 71	13.07	-170.86	-17993	-0.0000233	0.0003743	0.0035	3.98	30505.8	36384.24	36384.24	212.95	No	Si
SLU 71	14.87	-1283.47	-12744	-0.0000186	0.0003743	0.0035	3.98	22701.15	27893.98	27893.98	21.73	No	Si
SLU 51	13.07	-180.3	-16031	-0.0000208	0.0003743	0.0035	3.98	27695.28	33304.03	33304.03	184.72	No	Si
SLU 51	14.87	-1186.77	-10867	-0.000016	0.0003743	0.0035	3.98	19692.72	24677.3	24677.3	20.79	No	Si
SLU 48	13.07	-82.01	-16846	-0.0000216	0.0003743	0.0035	3.98	28877.91	34610.1	34610.1	422.04	No	Si
SLU 48	14.87	-1189.59	-11682	-0.000017	0.0003743	0.0035	3.98	21013.09	26063.34	26063.34	21.91	No	Si
SLU 9	13.07	-264.86	-13610	-0.0000178	0.0003743	0.0035	3.98	24051.87	29342.44	29342.44	110.78	No	Si
SLU 9	14.87	-1044.52	-9615	-0.0000141	0.0003743	0.0035	3.98	17621.07	22520.54	22520.54	21.56	No	Si
SLU 50	13.07	-105.52	-16039	-0.0000206	0.0003743	0.0035	3.98	27706.3	33316.35	33316.35	315.73	No	Si
SLU 50	14.87	-1223.02	-10875	-0.000016	0.0003743	0.0035	3.98	19705.01	24690.03	24690.03	20.19	No	Si
SLU 58	13.07	-90.04	-16011	-0.0000206	0.0003743	0.0035	3.98	27664.69	33269.84	33269.84	369.5	No	Si
SLU 58	14.87	-1193.83	-10846	-0.000016	0.0003743	0.0035	3.98	19658.6	24641.97	24641.97	20.64	No	Si
SLU 17	13.07	-249.38	-13582	-0.0000177	0.0003743	0.0035	3.98	24008	29296.26	29296.26	117.47	No	Si
SLU 17	14.87	-1015.33	-9587	-0.000014	0.0003743	0.0035	3.98	17573.49	22469.49	22469.49	22.13	No	Si
SLU 8	13.07	-190.09	-13618	-0.0000176	0.0003743	0.0035	3.98	24063.49	29354.66	29354.66	154.43	No	Si
SLU 8	14.87	-1080.77	-9623	-0.0000142	0.0003743	0.0035	3.98	17633.67	22534.06	22534.06	20.85	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 3	13.07	-6873.89	-11916	-0.000028	0.0005615	0.0035	3.98		26947.17	26947.17	3.92		Si
SLV 3	14.87	4775.71	-7933	-0.0000189	0.0005615	0.0035	3.98		16023.21	16023.21	3.36		Si
SLV 12	13.07	11285.23	-11449	-0.0000383	0.0005615	0.0035	3.98		22446.31	22446.31	1.99		Si
SLV 12	14.87	-6675.47	-7407	-0.0000226	0.0005615	0.0035	3.98		18773.49	18773.49	2.81		Si
SLV 16	13.07	11871.11	-10308	-0.0000414	0.0005615	0.0035	3.98		20383.91	20383.91	1.72		Si
SLV 16	14.87	-8170.34	-6246	-0.0000305	0.0005615	0.0035	3.184		16607.84	16607.84	2.03		Si
SLV 11	13.07	9138.67	-11537	-0.0000322	0.0005615	0.0035	3.98		22604.06	22604.06	2.47		Si
SLV 11	14.87	-5361.28	-7495	-0.0000195	0.0005615	0.0035	3.98		18935.36	18935.36	3.53		Si
SLV 1	13.07	-11485.17	-11399	-0.0000389	0.0005615	0.0035	3.98		26008.08	26008.08	2.26		Si
SLV 1	14.87	7065.94	-7423	-0.0000237	0.0005615	0.0035	3.98		15077.76	15077.76	2.13		Si
SLV 2	13.07	-8296.91	-11269	-0.00003	0.0005615	0.0035	3.98		25772.19	25772.19	3.11		Si
SLV 2	14.87	5113.99	-7293	-0.0000187	0.0005615	0.0035	3.98		14834.61	14834.61	2.9		Si
SLV 15	13.07	8682.85	-10438	-0.0000301	0.0005615	0.0035	3.98		20620.19	20620.19	2.37		Si
SLV 15	14.87	-6218.39	-6376	-0.0000208	0.0005615	0.0035	3.98		16851.21	16851.21	2.71		Si
SLV 5	13.07	-10899.29	-10258	-0.0000371	0.0005615	0.0035	3.98		23943.52	23943.52	2.2		Si
SLV 5	14.87	5571.07	-6262	-0.0000188	0.0005615	0.0035	3.98		12903.07	12903.07	2.32		Si
SLV 6	13.07	-8752.73	-10171	-0.00003	0.0005615	0.0035	3.98		23785.74	23785.74	2.72		Si
SLV 6	14.87	4256.88	-6175	-0.0000157	0.0005615	0.0035	3.98		12738.49	12738.49	2.99		Si
SLV 14	13.07	7259.83	-9791	-0.0000255	0.0005615	0.0035	3.98		19440.62	19440.62	2.68		Si
SLV 14	14.87	-5880.11	-5736	-0.0000197	0.0005615	0.0035	3.98		15652.18	15652.18	2.66		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 69	13.07	-147.35	-18800	-15831	614	3.98	3.98	-13259	8712	12080	35683	35754	10149	45903	No	74.78	Si
SLU 69	14.87	-1250.04	-13551	-11411	614	3.98	3.98	-9557	8219	10312	35683	35754	10149	45903	No	74.78	Si
SLU 79	13.07	-155.38	-17964	-15128	612	3.98	3.98	-12670	8634	11799	35683	35754	10149	45903	No	75.04	Si
SLU 79	14.87	-1254.28	-12715	-10707	612	3.98	3.98	-8968	8140	10031	35683	35754	10149	45714	No	74.73	Si
SLU 58	13.07	-90.04	-16011	-13483	614	3.98	3.98	-11292	8450	11141	35683	35754	10149	45903	No	74.71	Si
SLU 58	14.87	-1193.83	-10846	-9134	614	3.98	3.98	-7650	7964	9510	35683	35754	10149	45193	No	73.55	Si
SLU 45	13.07	116.64	-15189	-12791	578	3.98	3.98	-10713	8373	10864	35683	35754	10149	45903	No	79.47	Si
SLU 45	14.87	-920.84	-10025	-8442	578	3.98	3.98	-7070	7887	9417	35683	35754	10149	45100	No	78.08	Si
SLU 71	13.07	-170.86	-17993	-15152	619	3.98	3.98	-12690	8636	11808	35683	35754	10149	45903	No	74.12	Si
SLU 71	14.87	-1283.47	-12744	-10731	619	3.98	3.98	-8988	8143	10040	35683	35754	10149	45723	No	73.83	Si
SLU 50	13.07	-105.52	-16039	-13506	622	3.98	3.98	-11312	8453	11150	35683	35754	10149	45903	No	73.79	Si
SLU 50	14.87	-1223.02	-10875	-9158	622	3.98	3.98	-7670	7967	9513	35683	35754	10149	45196	No	72.66	Si
SLU 62	13.07	115.25	-14341	-12077	572	3.98	3.98	-10115	8293	10578	35683	35754	10149	45903	No	80.22	Si
SLU 62	14.87	-912.57	-9177	-7728	572	3.98	3.98	-6473	7807	9322	35683	35754	10149	45005	No	78.65	Si
SLU 56	13.07	-66.53	-16818	-14162	609	3.98	3.98	-11861	8526	11413	35683	35754	10149	45903	No	75.38	Si
SLU 56	14.87	-1160.4	-11654	-9814	609	3.98	3.98	-8219	8040	9673	35683	35754	10149	45356	No	74.49	Si
SLU 48	13.07	-82.01	-16846	-14186	617	3.98	3.98	-11881	8529	11422	35683	35754	10149	45903	No	74.45	Si
SLU 48	14.87	-1189.59	-11682	-9837	617	3.98	3.98	-8239	8043	9683	35683	35754	10149	45366	No	73.58	Si
SLU 77	13.07	-131.87	-18771	-15807	606	3.98	3.98	-13239	8710	12071	35683	35754	10149	45903	No	75.72	Si
SLU 77	14.87	-1220.85	-13522	-11387	606	3.98	3.98	-9537	8216	10303	35683	35754	10149	45903	No	75.72	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	13.07	-8752.73	-10171	-8565	-7448	3.98	3.3882	-8458	12108	12308	35683	53630	10149	47991		6.44	Si
SLV 6	14.87	4256.88	-6175	-5200	-7013	3.98	3.9018	-4355	11288	13213	35683	53630	10149	48896		6.97	Si
SLV 1	13.07	-11485.17	-11399	-9600	-11109	3.98	2.9474	-10910	12599	12462	35683	53630	10149	48145		4.33	Si
SLV 1	14.87	7065.94	-7423	-6251	-9601	3.98	3.1144	-5236	11464	11122	35683	53630	10149	46805		4.87	Si
SLV 12	13.07	11285.23	-11449	-9642	10201	3.98	3.013	-8075	12032	12478	35683	53630	10149	48162		4.72	Si
SLV 12	14.87	-6675.47	-7407	-6238	9765	3.98	3.2663	-6383	11693	11458	35683	53630	10149	47141		4.83	Si
SLV 11	13.07	9138.67	-11537	-9715	8278	3.98	3.5936	-8137	12044	12985	35683	53630	10149	48668		5.88	Si
SLV 11	14.87	-5361.28	-7495	-6311	7842	3.98	3.8239	-5514	11520	13215	35683	53630	10149	48898		6.24	Si
SLV 3	13.07	-6873.89	-11916	-10035	-7288	3.98	3.98	-8404	12098	14444	35683	53630	10149	50128		6.88	Si
SLV 3	14.87	4775.71	-7933	-6681	-5769	3.98	3.98	-5595	11536	13774	35683	53630	10149	49457		8.57	Si
SLV 5	13.07	-10899.29	-10258	-8638	-9371	3.98	2.7825	-10395	12496	12077	35683	53630	10149	47760		5.1	Si
SLV 5	14.87	5571.07	-6262	-5273	-8935	3.98	3.3011	-4417	11300	11191	35683	53630	10149	46874		5.25	Si
SLV 16	13.07	11871.11	-10308	-8680	11939	3.98	2.5151	-7270	11871	12094	35683	53630	10149	47777		4	Si
SLV 16	14.87	-8170.34	-6246	-5260	10431	3.184	2.0457	0	0	0	35683	42904	8119	35683		3.42	Si
SLV 15	13.07	8682.85	-10438	-8790	9084	3.98	3.4745	-7362	11889	12392	35683	53630	10149	48076		5.29	Si
SLV 15	14.87	-6218.39	-6376	-5369	7575	3.98	3.0442	-5891	11595	10769	35683	53630	10149	46453		6.13	Si
SLV 2	13.07	-8296.91	-11269	-9490	-8254	3.98	3.7613	-8441	12105	13659	35683	53630	10149	49342		5.98	Si
SLV 2	14.87	5113.99	-7293	-6142	-6746	3.98	3.8664	-5144	11445	13276	35683	53630	10149	48959		7.26	Si
SLV 14	13.07	7259.83	-9791	-8245	8118	3.98	3.7457	-6906	11798	13257	35683	53630	10149	48940		6.03	Si
SLV 14	14.87	-5880.11	-5736	-4830	6599	3.98	2.8947	-5574	11532	10554	35683	53630	10149	46237		7.01	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 10	179667	0.53	7117	-8497	485.2	1215.19	2.5	Si
SLV 14	179667	0.53	7143	-8529	485.2	1219.46	2.51	Si
SLV 9	179667	0.53	7190	-8585	485.2	1227.09	2.53	Si
SLV 13	179667	0.53	7252	-8659	485.2	1237.13	2.55	Si
SLV 6	179667	0.53	7506	-8963	485.2	1278.32	2.63	Si
SLV 16	179667	0.53	7571	-9039	485.2	1288.67	2.66	Si
SLV 5	179667	0.53	7580	-9050	485.2	1290.16	2.66	Si
SLV 15	179667	0.53	7679	-9169	485.2	1306.23	2.69	Si
SLV 2	179667	0.53	8442	-10080	485.2	1428.44	2.94	Si

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.53	8542	-10199	485.2	1444.31	2.98	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 3	-5350	-14197	-537	2.564	1104.4	0.894	41.68398	6.16452	Si
SLV 4	-5305	-13996	-537	2.577	1100.1	0.894	41.90614	6.16452	Si
SLV 1	-5230	-12848	532	2.599	1092.9	0.893	42.28401	6.16452	Si
SLV 2	-5185	-12647	532	2.613	1088.6	0.893	42.51296	6.16452	Si
SLV 15	-4852	-10804	-530	2.717	1056.8	0.892	44.2639	6.16452	Si
SLV 16	-4807	-10603	-530	2.732	1052.5	0.892	44.51287	6.16452	Si
SLV 7	-5308	-14550	-1781	2.433	1100.4	0.894	39.56196	5.47446	Si
SLV 8	-5277	-14415	-1781	2.441	1097.4	0.894	39.70416	5.47446	Si
SLV 13	-4733	-9455	539	2.755	1045.4	0.892	44.90776	6.16452	Si
SLV 14	-4687	-9254	539	2.77	1041.1	0.891	45.16443	6.16452	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	20.188	SLU 50	Si
V_SLU	72.656	SLU 50	Si
PF_SLV	1.717	SLV 16	Si
V_SLV	3.421	SLV 16	Si
PFFP_SLV	2.505	SLV 10	Si
R_SLV	6.762	SLV 3	Si

Maschio 237

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.938	6.651	-7.958	6.651	L7	L8	3.98	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 19	13.07	-804.4	-9925	-0.000014	0.0003743	0.0035	3.98	18138.86	23071.69	23071.69	28.68	No	Si
SLU 19	14.87	71.93	-5930	-0.0000075	0.0003743	0.0035	3.98	11225.85	12147.31	12147.31	168.88	No	Si
SLU 52	13.07	-975.9	-12242	-0.0000173	0.0003743	0.0035	3.98	21908.72	27025.2	27025.2	27.69	No	Si
SLU 52	14.87	111.47	-7078	-0.0000091	0.0003743	0.0035	3.98	13265.1	14245.93	14245.93	127.8	No	Si
SLU 60	13.07	-1003.16	-12280	-0.0000174	0.0003743	0.0035	3.98	21968.74	27090.31	27090.31	27.01	No	Si
SLU 60	14.87	107.93	-7116	-0.0000091	0.0003743	0.0035	3.98	13331.51	14314.28	14314.28	132.63	No	Si
SLU 61	13.07	-997.25	-12263	-0.0000174	0.0003743	0.0035	3.98	21940.93	27060.13	27060.13	27.13	No	Si
SLU 61	14.87	109.31	-7098	-0.0000091	0.0003743	0.0035	3.98	13300.74	14282.6	14282.6	130.66	No	Si
SLU 81	13.07	-1098.89	-14138	-0.0000201	0.0003743	0.0035	3.98	24862.95	30195.72	30195.72	27.48	No	Si
SLU 81	14.87	64.2	-8889	-0.0000113	0.0003743	0.0035	3.98	16395.67	17502.97	17502.97	272.63	No	Si
SLU 43	13.07	-945.09	-12251	-0.0000173	0.0003743	0.0035	3.98	21923.21	27040.92	27040.92	28.61	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 43	14.87	112.03	-7087	-0.0000091	0.0003743	0.0035	3.98	13281.13	14262.43	14262.43	127.31	No	Si
SLU 73	13.07	-1071.63	-14101	-0.00002	0.0003743	0.0035	3.98	24805.23	30134.41	30134.41	28.12	No	Si
SLU 73	14.87	67.74	-8851	-0.0000112	0.0003743	0.0035	3.98	16331.45	17435.13	17435.13	257.38	No	Si
SLU 44	13.07	-935.25	-12222	-0.0000172	0.0003743	0.0035	3.98	21876.82	26990.64	26990.64	28.86	No	Si
SLU 44	14.87	114.34	-7058	-0.000009	0.0003743	0.0035	3.98	13229.81	14209.65	14209.65	124.28	No	Si
SLU 82	13.07	-1092.99	-14121	-0.00002	0.0003743	0.0035	3.98	24836.2	30167.3	30167.3	27.6	No	Si
SLU 82	14.87	65.59	-8872	-0.0000113	0.0003743	0.0035	3.98	16365.91	17471.52	17471.52	266.39	No	Si
SLU 18	13.07	-810.31	-9943	-0.0000141	0.0003743	0.0035	3.98	18168.02	23102.48	23102.48	28.51	No	Si
SLU 18	14.87	70.54	-5948	-0.0000076	0.0003743	0.0035	3.98	11257.29	12179.39	12179.39	172.65	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 16	13.07	6820.46	-12214	-0.0000283	0.0005615	0.0035	3.98		23822.99	23822.99	3.49		Si
SLV 16	14.87	-5797.43	-8265	-0.0000212	0.0005615	0.0035	3.98		20355.83	20355.83	3.51		Si
SLV 14	13.07	7273.67	-11223	-0.0000278	0.0005615	0.0035	3.98		22039.32	22039.32	3.03		Si
SLV 14	14.87	-5781.91	-7221	-0.0000201	0.0005615	0.0035	3.98		18428.3	18428.3	3.19		Si
SLV 4	13.07	-6177.16	-9971	-0.0000241	0.0005615	0.0035	3.98		23426.98	23426.98	3.79		Si
SLV 4	14.87	4173.91	-5935	-0.0000152	0.0005615	0.0035	3.98		12287.61	12287.61	2.94		Si
SLD 1	13.07	-4063.18	-9711	-0.0000198	0.0005615	0.0035	3.98		22958.86	22958.86	5.65		Si
SLD 1	14.87	2571.74	-5662	-0.0000118	0.0005615	0.0035	3.98		11771.58	11771.58	4.58		Si
SLV 13	13.07	4594.74	-10930	-0.0000224	0.0005615	0.0035	3.98		21512.45	21512.45	4.68		Si
SLV 13	14.87	-4051.25	-6928	-0.0000162	0.0005615	0.0035	3.98		17881.49	17881.49	4.41		Si
SLV 1	13.07	-8402.88	-8688	-0.0000283	0.0005615	0.0035	3.98		21126.32	21126.32	2.51		Si
SLV 1	14.87	5920.09	-4598	-0.0000217	0.0005615	0.0035	3.98		9755.78	9755.78	1.65		Si
SLV 2	13.07	-5723.95	-8981	-0.000022	0.0005615	0.0035	3.98		21653.71	21653.71	3.78		Si
SLV 2	14.87	4189.43	-4891	-0.0000142	0.0005615	0.0035	3.98		10310.56	10310.56	2.46		Si
SLV 15	13.07	4141.53	-11921	-0.0000228	0.0005615	0.0035	3.98		23295.94	23295.94	5.62		Si
SLV 15	14.87	-4066.77	-7973	-0.0000176	0.0005615	0.0035	3.98		19818.26	19818.26	4.87		Si
SLV 3	13.07	-8856.09	-9678	-0.00003	0.0005615	0.0035	3.98		22901.15	22901.15	2.59		Si
SLV 3	14.87	5904.57	-5642	-0.0000198	0.0005615	0.0035	3.98		11735	11735	1.99		Si
SLV 5	13.07	-2887.32	-8366	-0.0000159	0.0005615	0.0035	3.98		20539	20539	7.11		Si
SLV 5	14.87	2165.49	-4243	-0.0000093	0.0005615	0.0035	3.98		9076.45	9076.45	4.19		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 52	13.07	-975.9	-12242	-10309	-575	3.98	3.98	-8634	8096	9871	35683	35754	10149	45555	No	79.17	Si
SLU 52	14.87	111.47	-7078	-5960	-575	3.98	3.98	-4992	7610	9086	35683	35754	10149	44770	No	77.81	Si
SLU 43	13.07	-945.09	-12251	-10317	-559	3.98	3.98	-8641	8097	9875	35683	35754	10149	45558	No	81.56	Si
SLU 43	14.87	112.03	-7087	-5968	-559	3.98	3.98	-4998	7611	9087	35683	35754	10149	44771	No	80.15	Si
SLU 73	13.07	-1071.63	-14101	-11874	-604	3.98	3.98	-9945	8270	10497	35683	35754	10149	45903	No	75.99	Si
SLU 73	14.87	67.74	-8851	-7454	-604	3.98	3.98	-6243	7777	9285	35683	35754	10149	44969	No	74.45	Si
SLU 81	13.07	-1098.89	-14138	-11906	-617	3.98	3.98	-9971	8274	10510	35683	35754	10149	45903	No	74.37	Si
SLU 81	14.87	64.2	-8889	-7485	-617	3.98	3.98	-6269	7780	9290	35683	35754	10149	44973	No	72.87	Si
SLU 44	13.07	-935.25	-12222	-10292	-554	3.98	3.98	-8620	8094	9865	35683	35754	10149	45548	No	82.16	Si
SLU 44	14.87	114.34	-7058	-5944	-554	3.98	3.98	-4978	7608	9084	35683	35754	10149	44767	No	80.75	Si
SLU 82	13.07	-1092.99	-14121	-11891	-615	3.98	3.98	-9959	8272	10504	35683	35754	10149	45903	No	74.68	Si
SLU 82	14.87	65.59	-8872	-7471	-615	3.98	3.98	-6257	7779	9288	35683	35754	10149	44971	No	73.16	Si
SLU 60	13.07	-1003.16	-12280	-10341	-589	3.98	3.98	-8661	8099	9884	35683	35754	10149	45567	No	77.42	Si
SLU 60	14.87	107.93	-7116	-5992	-589	3.98	3.98	-5019	7614	9091	35683	35754	10149	44774	No	76.07	Si
SLU 61	13.07	-997.25	-12263	-10326	-586	3.98	3.98	-8649	8098	9878	35683	35754	10149	45561	No	77.74	Si
SLU 61	14.87	109.31	-7098	-5977	-586	3.98	3.98	-5006	7612	9089	35683	35754	10149	44772	No	76.4	Si
SLU 64	13.07	-1040.82	-14110	-11882	-587	3.98	3.98	-9951	8271	10500	35683	35754	10149	45903	No	78.17	Si
SLU 64	14.87	68.3	-8860	-7461	-587	3.98	3.98	-6249	7778	9287	35683	35754	10149	44970	No	76.58	Si
SLU 65	13.07	-1030.98	-14080	-11857	-583	3.98	3.98	-9931	8269	10491	35683	35754	10149	45903	No	78.73	Si
SLU 65	14.87	70.61	-8831	-7437	-583	3.98	3.98	-6228	7775	9283	35683	35754	10149	44966	No	77.12	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	13.07	7273.67	-11223	-9451	8110	3.98	3.98	-7916	12000	14328	35683	53630	10149	50011		6.17	Si
SLV 14	14.87	-5781.91	-7221	-6081	6580	3.98	3.5679	-5690	11555	12368	35683	53630	10149	48051		7.3	Si
SLV 15	13.07	4141.53	-11921	-10038	5403	3.98	3.98	-8407	12098	14445	35683	53630	10149	50128		9.28	Si
SLV 15	14.87	-4066.77	-7973	-6714	3848	3.98	3.98	-5623	11541	13780	35683	53630	10149	49463		12.86	Si
SLV 3	13.07	-8856.09	-9678	-8150	-9013	3.98	3.2249	-8455	12108	11882	35683	53630	10149	47565		5.28	Si
SLV 3	14.87	5904.57	-5642	-4751	-7482	3.98	2.8305	-3979	11213	10522	35683	53630	10149	46205		6.18	Si
SLV 2	13.07	-5723.95	-8981	-7563	-6306	3.98	3.98	-6334	11684	13950	35683	53630	10149	49633		7.87	Si
SLV 2	14.87	4189.43	-4891	-4119	-4750	3.98	3.4002	-3449	11107	11329	35683	53630	10149	47013		9.9	Si
SLV 1	13.07	-8402.88	-8688	-7316	-8756	3.98	3.0685	-7972	12011	11548	35683	53630	10149	47231		5.39	Si
SLV 1	14.87	5920.09	-4598	-3872	-7200	3.98	2.1073	-3243	11065	10171	35683	53630	10149	45854		6.37	Si
SLD 3	13.07	-4230.36	-10108	-8512	-4105	3.98	3.98	-7129	11842	14140	35683	53630	10149	49823		12.14	Si
SLD 3	14.87	2556	-6080	-5120	-3450	3.98	3.98	-4288	11274	13462	35683	53630	10149	49145		14.24	Si
SLV 4	13.07	-6177.16	-9971	-8397	-6564	3.98	3.98	-7033	11823	14117	35683	53630	10149	49800		7.59	Si
SLV 4	14.87	4173.91	-5935	-4998	-5033	3.98	3.8603	-4186	11254	13033	35683	53630	10149	48716		9.68	Si
SLV 13	13.07	4594.74	-10930	-9205	5661	3.98	3.98	-7709	11958	14278	35683	53630	10149	49962		8.83	Si
SLV 13	14.87	-4051.25	-6928	-5834	4130	3.98	3.98	-4886	11394	13604	35683	53630	10149	49288		11.93	Si
SLV 16	13.07	6820.46	-12214	-10285	7853	3.98	3.98	-8614	12139	14495	35683	53630	10149	50178		6.39	Si
SLV 16	14.87	-5797.43	-8265	-6960	6297	3.98	3.8658	-6017	11620	13476	35683	53630	10149	49159		7.81	Si
SLD 1	13.07	-4063.18	-9711	-8177	-4016	3.98	3.98	-6849	11786	14073	35683	53630	10149	49756		12.39	Si
SLD 1	14.87	2571.74	-5662	-4768	-3349	3.98	3.98	-3993	11215	13391	35683	53630	10149	49074		14.66	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 5	179667	0.53	5878	-7018	485.2	1012.18	2.09	Si
SLV 6	179667	0.53	6043	-7215	485.2	1039.46	2.14	Si
SLV 1	179667	0.53	6180	-7380	485.2	1062.13	2.19	Si
SLV 2	179667	0.53	6426	-7672	485.2	1102.44	2.27	Si
SLV 9	179667	0.53	6466	-7720	485.2	1108.96	2.29	Si
SLV 10	179667	0.53	6631	-7917	485.2	1136.01	2.34	Si
SLV 3	179667	0.53	7062	-8432	485.2	1206.36	2.49	Si
SLV 4	179667	0.53	7308	-8725	485.2	1246.17	2.57	Si
SLV 13	179667	0.53	8140	-9719	485.2	1380.18	2.84	Si
SLV 14	179667	0.53	8385	-10012	485.2	1419.37	2.93	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 16	-5055	-15692	-504	2.656	1076.2	0.893	43.23055	6.16452	Si
SLV 15	-4961	-15150	-505	2.685	1067.2	0.892	43.72795	6.16452	Si
SLV 14	-4803	-13055	483	2.739	1052.1	0.892	44.62778	6.16452	Si
SLV 13	-4708	-12514	483	2.77	1043.2	0.892	45.15722	6.16452	Si
SLV 12	-5068	-17004	-1649	2.516	1077.4	0.893	40.96076	5.47446	Si
SLV 11	-5004	-16639	-1649	2.535	1071.3	0.893	41.27618	5.47446	Si
SLV 8	-4840	-15569	-1642	2.586	1055.6	0.892	42.1288	5.47446	Si
SLV 4	-4294	-10907	-482	2.917	1004.1	0.89	47.61857	6.16452	Si
SLV 7	-4776	-15204	-1642	2.605	1049.6	0.892	42.46141	5.47446	Si
SLV 3	-4200	-10365	-483	2.953	995.2	0.89	48.21501	6.16452	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	27.005	SLU 60	Si
V_SLU	72.866	SLU 81	Si
PF_SLV	1.648	SLV 1	Si
V_SLV	5.277	SLV 3	Si
PFFP_SLV	2.086	SLV 5	Si
R_SLV	7.013	SLV 16	Si

Maschio 238

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.058	6.651	-5.018	6.651	L7	L8	2.04	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	13.07	-676.31	-4811	-0.0000167	0.0003743	0.0035	2.04	4528.54	21621.48	21621.48	31.97	No	Si
SLU 79	14.87	-3609.11	-2000	-0.0001554	0.0003743	0.0035	2.04	0	19261.21	19261.21	5.34	No	Si
SLU 59	13.07	-627	-4226	-0.0000149	0.0003743	0.0035	2.04	4017.91	21229.75	21229.75	33.86	No	Si
SLU 59	14.87	-3266.74	-1458	-0.0001592	0.0003743	0.0035	2.04	0	18561.13	18561.13	5.68	No	Si
SLU 71	13.07	-723.82	-4995	-0.0000175	0.0003743	0.0035	2.04	4686.62	21742.61	21742.61	30.04	No	Si
SLU 71	14.87	-3508.17	-2184	-0.0001384	0.0003743	0.0035	2.04	0	19433.8	19433.8	5.54	No	Si
SLU 80	13.07	-669.26	-4743	-0.0000165	0.0003743	0.0035	2.04	4469.91	21576.54	21576.54	32.24	No	Si
SLU 80	14.87	-3671.83	-1932	-0.0001639	0.0003743	0.0035	2.04	0	19191.57	19191.57	5.23	No	Si
SLU 72	13.07	-716.76	-4927	-0.0000173	0.0003743	0.0035	2.04	4628.4	21698	21698	30.27	No	Si
SLU 72	14.87	-3570.89	-2116	-0.0001465	0.0003743	0.0035	2.04	0	19370.28	19370.28	5.42	No	Si
SLU 69	13.07	-762.87	-5486	-0.000019	0.0003743	0.0035	2.04	5103.27	22061.78	22061.78	28.92	No	Si
SLU 69	14.87	-3522.61	-2675	-0.0001162	0.0003743	0.0035	2.04	0	19887.13	19887.13	5.65	No	Si
SLU 70	13.07	-755.82	-5418	-0.0000188	0.0003743	0.0035	2.04	5046.14	22018.02	22018.02	29.13	No	Si
SLU 70	14.87	-3585.32	-2607	-0.0001236	0.0003743	0.0035	2.04	0	19825.09	19825.09	5.53	No	Si
SLU 38	13.07	-545.87	-3820	-0.0000133	0.0003743	0.0035	2.04	3657.95	20905.46	20905.46	38.3	No	Si
SLU 38	14.87	-3383.65	-1637	-0.000158	0.0003743	0.0035	2.04	0	18800.46	18800.46	5.56	No	Si
SLU 78	13.07	-708.31	-5234	-0.000018	0.0003743	0.0035	2.04	4890.61	21898.87	21898.87	30.92	No	Si
SLU 78	14.87	-3686.26	-2423	-0.0001396	0.0003743	0.0035	2.04	0	19656.01	19656.01	5.33	No	Si
SLU 77	13.07	-715.37	-5302	-0.0000182	0.0003743	0.0035	2.04	4948.15	21942.95	21942.95	30.67	No	Si
SLU 77	14.87	-3623.55	-2491	-0.0001318	0.0003743	0.0035	2.04	0	19718.59	19718.59	5.44	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 9	13.07	-207.71	-229	-0.000004	0.0005615	0.0035	2.04		16990.76	16990.76	81.8		Si
SLD 9	14.87	-4866.4	1897	0.0018806	0.0005615	0.0035	1.632		0	0	0		No
SLV 10	13.07	412.54	5826	0.0091717	0.0005615	0.0035	1.632		0	0	0		No
SLV 10	14.87	-10841.07	7918	0.0098816	0.0005615	0.0035	1.632		0	0	0		No
SLV 5	13.07	55.15	2296	0.0037107	0.0005615	0.0035	1.632		0	0	0		No
SLV 5	14.87	-6748.22	4449	0.0053907	0.0005615	0.0035	1.632		0	0	0		No
SLV 14	13.07	129.71	3719	0.0058896	0.0005615	0.0035	1.632		0	0	0		No
SLV 14	14.87	-9564.38	5761	0.0067419	0.0005615	0.0035	1.632		0	0	0		No
SLD 10	13.07	-110.53	108	0.0001401	0.0005615	0.0035	1.632		16117.21	16117.21	145.82		Si
SLD 10	14.87	-5314.4	2235	0.0023069	0.0005615	0.0035	1.632		0	0	0		No
SLD 14	13.07	-213.62	-633	-0.000003	0.0005615	0.0035	2.04		18009.95	18009.95	84.31		Si
SLD 14	14.87	-4921.97	1471	0.0011428	0.0005615	0.0035	1.632		0	0	0		No
SLV 6	13.07	288.3	3106	0.0049036	0.0005615	0.0035	1.632		0	0	0		No
SLV 6	14.87	-7822.98	5259	0.0063783	0.0005615	0.0035	1.632		0	0	0		No
SLV 16	13.07	-285.44	-976	-0.0000044	0.0005615	0.0035	2.04		18803.67	18803.67	65.88		Si
SLV 16	14.87	-5228.46	1084	0.0005987	0.0005615	0.0035	1.632		4109.82	4109.82	0.79		No
SLV 13	13.07	-216.59	2516	0.0040148	0.0005615	0.0035	1.632		0	0	0		No
SLV 13	14.87	-7968.04	4558	0.0052566	0.0005615	0.0035	1.632		0	0	0		No
SLV 9	13.07	179.39	5016	0.0078866	0.0005615	0.0035	1.632		0	0	0		No
SLV 9	14.87	-9766.3	7108	0.008865	0.0005615	0.0035	1.632		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 72	13.07	-716.76	-4927	-4149	1542	2.04	2.04	-6780	7848	4803	16176	18326	5202	20980	No	13.61	Si
SLU 72	14.87	-3570.89	-2116	-1782	1542	2.04	0	-19010	10833	2439	16176	18326	5202	18616	No	12.07	Si
SLU 79	13.07	-676.31	-4811	-4052	1586	2.04	2.04	-6620	7827	4790	16176	18326	5202	20967	No	13.22	Si
SLU 79	14.87	-3609.11	-2000	-1684	1586	2.04	0	-18875	10833	2413	16176	18326	5202	18590	No	11.72	Si
SLU 78	13.07	-708.31	-5234	-4408	1611	2.04	2.04	-7203	7905	4838	16176	18326	5202	21014	No	13.05	Si
SLU 78	14.87	-3686.26	-2423	-2041	1611	2.04	0	-20020	10833	2508	16176	18326	5202	18685	No	11.6	Si
SLU 70	13.07	-755.82	-5418	-4563	1528	2.04	2.04	-7456	7939	4858	16176	18326	5202	21035	No	13.76	Si
SLU 70	14.87	-3585.32	-2607	-2196	1528	2.04	0	-19706	10510	2550	16176	18326	5202	18726	No	12.25	Si
SLU 36	13.07	-584.93	-4312	-3631	1529	2.04	2.04	-5933	7735	4734	16176	18326	5202	20910	No	13.67	Si
SLU 36	14.87	-3398.08	-2128	-1792	1529	2.04	0	-18340	10636	2442	16176	18326	5202	18618	No	12.18	Si
SLU 71	13.07	-723.82	-4995	-4206	1503	2.04	2.04	-6873	7861	4811	16176	18326	5202	20987	No	13.96	Si
SLU 71	14.87	-3508.17	-2184	-1839	1503	2.04	0	-18893	10764	2455	16176	18326	5202	18631	No	12.4	Si
SLU 80	13.07	-669.26	-4743	-3994	1624	2.04	2.04	-6527	7815	4783	16176	18326	5202	20959	No	12.9	Si
SLU 80	14.87	-3671.83	-1932	-1627	1624	2.04	0	-18903	10833	2398	16176	18326	5202	18574	No	11.44	Si
SLU 77	13.07	-715.37	-5302	-4465	1572	2.04	2.04	-7296	7917	4845	16176	18326	5202	21022	No	13.37	Si
SLU 77	14.87	-3623.55	-2491	-2098	1572	2.04	0	-19814	10672	2524	16176	18326	5202	18700	No	11.9	Si
SLU 37	13.07	-552.92	-3888	-3274	1504	2.04	2.04	-5350	7658	4687	16176	18326	5202	20863	No	13.87	Si
SLU 37	14.87	-3320.94	-1705	-1435	1504	2.04	0	-17027	10833	2347	16176	18326	5202	18523	No	12.32	Si
SLU 38	13.07	-545.87	-3820	-3217	1543	2.04	2.04	-5257	7645	4679	16176	18326	5202	20855	No	13.52	Si
SLU 38	14.87	-3383.65	-1637	-1378	1543	2.04	0	-17009	10833	2332	16176	18326	5202	18508	No	12	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	13.07	-216.59	2516	2119	4708	1.632	2.04	0	0	0	16176	21991	4162	16176		3.44	Si
SLV 13	14.87	-7968.04	4558	3838	4008	1.632	0	0	0	0	16176	21991	4162	16176		4.04	Si
SLV 3	13.07	-1045.87	-11246	-9470	-4621	2.04	2.04	-15474	13511	8269	16176	27489	5202	24445		5.29	Si
SLV 3	14.87	6428.17	-8982	-7563	-3921	2.04	0.9129	-25842	15684	4963	16176	27489	5202	21139		5.39	Si
SLV 9	13.07	179.39	5016	4224	5627	1.632	2.04	0	0	0	16176	21991	4162	16176		2.88	Si
SLV 9	14.87	-9766.3	7108	5986	5445	1.632	0	0	0	0	16176	21991	4162	16176		2.97	Si
SLD 10	13.07	-110.53	108	91	2915	1.632	0	0	0	0	16176	21991	4162	16176		5.55	Si
SLD 10	14.87	-5314.4	2235	1882	2838	1.632	0	0	0	0	16176	21991	4162	16176		5.7	Si
SLV 7	13.07	-1328.69	-13353	-11245	-5187	2.04	2.04	-18373	14091	8624	16176	27489	5202	24800		4.78	Si
SLV 7	14.87	7704.86	-11139	-9380	-5006	2.04	0.9849	-30353	16250	5447	16176	27489	5202	21624		4.32	Si
SLV 8	13.07	-1095.54	-12543	-10562	-4460	2.04	2.04	-17259	13868	8487	16176	27489	5202	24664		5.53	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 8	14.87	6630.09	-10329	-8698	-4279	2.04	1.1344	-25069	15478	5267	16176	27489	5202	21444		5.01	Si
SLV 10	13.07	412.54	5826	4906	6353	1.632	2.04	0	0	0	16176	21991	4162	16176		2.55	Si
SLV 10	14.87	-10841.07	7918	6668	6172	1.632	0	0	0	0	16176	21991	4162	16176		2.62	Si
SLV 14	13.07	129.71	3719	3132	5787	1.632	2.04	0	0	0	16176	21991	4162	16176		2.8	Si
SLV 14	14.87	-9564.38	5761	4851	5087	1.632	0	0	0	0	16176	21991	4162	16176		3.18	Si
SLV 5	13.07	55.15	2296	1934	3621	1.632	2.04	0	0	0	16176	21991	4162	16176		4.47	Si
SLV 5	14.87	-6748.22	4449	3747	3865	1.632	0	0	0	0	16176	21991	4162	16176		4.19	Si
SLV 6	13.07	288.3	3106	2616	4347	1.632	2.04	0	0	0	16176	21991	4162	16176		3.72	Si
SLV 6	14.87	-7822.98	5259	4429	4592	1.632	0	0	0	0	16176	21991	4162	16176		3.52	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 10	179667	0.53	0	6541	248.7	0	0	No, Trazione
SLV 9	179667	0.53	0	5732	248.7	0	0	No, Trazione
SLV 15	179667	0.53	0	-1453	248.7	0	0	No, e>t/2
SLV 13	179667	0.53	0	3223	248.7	0	0	No, Trazione
SLV 14	179667	0.53	0	4426	248.7	0	0	No, Trazione
SLV 5	179667	0.53	0	3037	248.7	0	0	No, Trazione
SLV 6	179667	0.53	0	3847	248.7	0	0	No, Trazione
SLV 16	179667	0.53	0	-250	248.7	0	0	No, e>t/2
SLV 2	179667	0.53	7445	-4556	248.7	650.15	2.61	Si
SLV 1	179667	0.53	9411	-5759	248.7	810.68	3.26	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-11538	-9915	-850	0.853	1447.6	0.946	13.10337	5.47446	Si
SLV 8	-10522	-9655	-851	0.92	1344.6	0.943	14.18076	5.47446	Si
SLV 3	-9447	-7914	-208	1.061	1235.7	0.938	16.43345	6.16452	Si
SLV 4	-7937	-7528	-210	1.219	1083.1	0.931	19.02379	6.16452	Si
SLV 11	-8466	-8690	-878	1.093	1136.5	0.934	17.0059	5.47446	Si
SLV 12	-7449	-8430	-879	1.209	1033.9	0.929	18.91017	5.47446	Si
SLV 1	-4370	-4920	313	1.887	725.4	0.908	30.21018	6.16452	Si
SLV 2	-2860	-4533	312	2.491	577.4	0.895	40.46296	6.16452	Si
SLV 10	9473	1552	859	3.436	353.7	1	49.94055	5.47446	Si, Trazione
SLV 9	8456	1292	860	4.156	353.7	1	60.39669	5.47446	Si, Trazione

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.227	SLU 80	Si
V_SLU	11.435	SLU 80	Si
PF_SLV	0	SLD 9	No
V_SLV	2.546	SLV 10	Si
PFFP_SLV	0	SLV 14	No
R_SLV	2.394	SLV 7	Si

Maschio 239

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.013	-3.509	-11.013	1.046	L7	L8	4.556	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 40	12.17	1413.42	-19106	-0.0000234	0.0003743	0.0035	4.5557	37545.26	39133.4	39133.4	27.69	No	Si
SLU 40	15.32	1644.92	-3723	-0.0000064	0.0003743	0.0035	4.5557	8252.75	9330.41	9330.41	5.67	No	Si
SLU 61	12.17	1997.41	-20558	-0.0000259	0.0003743	0.0035	4.5557	39909.1	41590.78	41590.78	20.82	No	Si
SLU 61	15.32	1640.32	-3519	-0.0000062	0.0003743	0.0035	4.5557	7812.64	8884.43	8884.43	5.42	No	Si
SLU 52	12.17	2345.32	-20476	-0.0000264	0.0003743	0.0035	4.5557	39777.17	41450.92	41450.92	17.67	No	Si
SLU 52	15.32	1591.59	-3515	-0.0000061	0.0003743	0.0035	4.5557	7803.57	8875.27	8875.27	5.58	No	Si
SLU 60	12.17	1921.13	-20451	-0.0000257	0.0003743	0.0035	4.5557	39736.77	41408.17	41408.17	21.55	No	Si
SLU 60	15.32	1591.86	-3493	-0.0000061	0.0003743	0.0035	4.5557	7756.65	8827.86	8827.86	5.55	No	Si
SLU 10	12.17	1691.81	-16532	-0.0000208	0.0003743	0.0035	4.5557	33182.96	34849.16	34849.16	20.6	No	Si
SLU 10	15.32	1351.19	-2932	-0.0000051	0.0003743	0.0035	4.5557	6538.75	7603.86	7603.86	5.63	No	Si
SLU 19	12.17	1343.89	-16614	-0.0000204	0.0003743	0.0035	4.5557	33325.5	34984.4	34984.4	26.03	No	Si
SLU 19	15.32	1399.92	-2937	-0.0000052	0.0003743	0.0035	4.5557	6547.9	7613.04	7613.04	5.44	No	Si
SLU 18	12.17	1267.62	-16507	-0.0000202	0.0003743	0.0035	4.5557	33139.32	34807.83	34807.83	27.46	No	Si
SLU 18	15.32	1351.46	-2911	-0.0000051	0.0003743	0.0035	4.5557	6491.41	7556.4	7556.4	5.59	No	Si
SLU 81	12.17	1990.66	-22943	-0.0000287	0.0003743	0.0035	4.5557	43643.47	45694.3	45694.3	22.95	No	Si
SLU 81	15.32	1836.85	-4279	-0.0000073	0.0003743	0.0035	4.5557	9447.18	10537.58	10537.58	5.74	No	Si
SLU 73	12.17	2414.84	-22968	-0.0000294	0.0003743	0.0035	4.5557	43681.81	45737.96	45737.96	18.94	No	Si
SLU 73	15.32	1836.58	-4301	-0.0000073	0.0003743	0.0035	4.5557	9493.54	10584.35	10584.35	5.76	No	Si
SLU 82	12.17	2066.93	-23050	-0.000029	0.0003743	0.0035	4.5557	43807.04	45880.8	45880.8	22.2	No	Si
SLU 82	15.32	1885.32	-4305	-0.0000074	0.0003743	0.0035	4.5557	9502.5	10593.39	10593.39	5.62	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 9	12.17	1900.97	-21051	-0.000026	0.0005615	0.0035	4.5557		45278.16	45278.16	23.82		Si
SLD 9	15.32	3994.06	-4080	-0.0000103	0.0005615	0.0035	4.5557		10167.77	10167.77	2.55		Si
SLV 5	12.17	4987.74	-25293	-0.0000354	0.0005615	0.0035	4.5557		52541.52	52541.52	10.53		Si
SLV 5	15.32	7720.32	-5341	-0.0000213	0.0005615	0.0035	4.5557		12933.97	12933.97	1.68		Si
SLD 10	12.17	1981.76	-21040	-0.0000261	0.0005615	0.0035	4.5557		45256.34	45256.34	22.84		Si
SLD 10	15.32	3956.52	-4057	-0.0000102	0.0005615	0.0035	4.5557		10117.89	10117.89	2.56		Si
SLV 7	12.17	2190.27	-6195	-0.0000098	0.0005615	0.0035	4.5557		14785.6	14785.6	6.75		Si
SLV 7	15.32	-5666.16	-635	-0.0002859	0.0005615	0.0035	3.6446		7627.97	7627.97	1.35		Si
SLV 8	12.17	2384.08	-6168	-0.0000101	0.0005615	0.0035	4.5557		14727.18	14727.18	6.18		Si
SLV 8	15.32	-5756.21	-581	-0.0003018	0.0005615	0.0035	3.6446		7506.74	7506.74	1.3		Si
SLV 9	12.17	1775.23	-27450	-0.0000332	0.0005615	0.0035	4.5557		56180.35	56180.35	31.65		Si
SLV 9	15.32	8166.9	-5575	-0.0000227	0.0005615	0.0035	4.5557		13441.92	13441.92	1.65		Si
SLV 10	12.17	1969.04	-27423	-0.0000334	0.0005615	0.0035	4.5557		56134.79	56134.79	28.51		Si
SLV 10	15.32	8076.85	-5521	-0.0000225	0.0005615	0.0035	4.5557		13324.41	13324.41	1.65		Si
SLV 6	12.17	5181.54	-25266	-0.0000357	0.0005615	0.0035	4.5557		52496.33	52496.33	10.13		Si
SLV 6	15.32	7630.27	-5287	-0.000021	0.0005615	0.0035	4.5557		12816.16	12816.16	1.68		Si
SLV 11	12.17	-1022.24	-8352	-0.0000106	0.0005615	0.0035	4.5557		24415.8	24415.8	23.88		Si
SLV 11	15.32	-5219.58	-870	-0.000222	0.0005615	0.0035	3.6446		8150.96	8150.96	1.56		Si
SLV 12	12.17	-828.43	-8325	-0.0000102	0.0005615	0.0035	4.5557		24358.32	24358.32	29.4		Si
SLV 12	15.32	-5309.63	-815	-0.0002349	0.0005615	0.0035	3.6446		8029.9	8029.9	1.51		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 83	12.17	2277.69	-23899	-20125	-4343	4.5557	4.5557	-14725	8908	14629	35683	40925	11617	50312	No	11.58	Si
SLU 83	15.32	1691.61	-4774	-4020	-4582	4.5557	4.5557	-2942	7337	10027	35683	40925	11617	45710	No	9.98	Si
SLU 75	12.17	2732.57	-24331	-20489	-4349	4.5557	4.5557	-14991	8943	14775	35683	40925	11617	50458	No	11.6	Si
SLU 75	15.32	1565.16	-5066	-4266	-4597	4.5557	4.5557	-3122	7361	10060	35683	40925	11617	45743	No	9.95	Si
SLU 79	12.17	2861.78	-24701	-20801	-4396	4.5557	4.5557	-15219	8974	14899	35683	40925	11617	50582	No	11.51	Si
SLU 79	15.32	1465.33	-5248	-4420	-4588	4.5557	4.5557	-3234	7376	10080	35683	40925	11617	45763	No	9.98	Si
SLU 80	12.17	2938.06	-24808	-20891	-4431	4.5557	4.5557	-15286	8983	14935	35683	40925	11617	50619	No	11.42	Si
SLU 80	15.32	1513.79	-5274	-4441	-4668	4.5557	4.5557	-3250	7378	10083	35683	40925	11617	45766	No	9.81	Si
SLU 74	12.17	2656.3	-24223	-20399	-4314	4.5557	4.5557	-14925	8934	14738	35683	40925	11617	50422	No	11.69	Si
SLU 74	15.32	1516.7	-5040	-4245	-4517	4.5557	4.5557	-3106	7359	10057	35683	40925	11617	45740	No	10.13	Si
SLU 36	12.17	2366.09	-21342	-17973	-4540	4.5557	4.5557	-13150	8698	13768	35683	40925	11617	49451	No	10.89	Si
SLU 36	15.32	1179.52	-4979	-4193	-4656	4.5557	4.5557	-3068	7354	10050	35683	40925	11617	45733	No	9.82	Si
SLU 35	12.17	2289.82	-21235	-17882	-4506	4.5557	4.5557	-13084	8689	13732	35683	40925	11617	49415	No	10.97	Si
SLU 35	15.32	1131.06	-4953	-4171	-4576	4.5557	4.5557	-3052	7351	10047	35683	40925	11617	45730	No	9.99	Si
SLU 84	12.17	2353.96	-24006	-20215	-4378	4.5557	4.5557	-14791	8917	14665	35683	40925	11617	50348	No	11.5	Si
SLU 84	15.32	1740.08	-4800	-4042	-4662	4.5557	4.5557	-2958	7339	10030	35683	40925	11617	45713	No	9.81	Si
SLU 78	12.17	3019.6	-25286	-21294	-4663	4.5557	4.5557	-15580	9022	15096	35683	40925	11617	50780	No	10.89	Si
SLU 78	15.32	1419.92	-5562	-4683	-4861	4.5557	4.5557	-3427	7401	10115	35683	40925	11617	45799	No	9.42	Si
SLU 77	12.17	2943.33	-25179	-21203	-4628	4.5557	4.5557	-15514	9013	15060	35683	40925	11617	50744	No	10.96	Si
SLU 77	15.32	1371.46	-5536	-4662	-4781	4.5557	4.5557	-3411	7399	10113	35683	40925	11617	45796	No	9.58	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 5	12.17	4987.74	-25293	-21300	-12827	4.5557	4.5557	-15585	13534	18496	35683	61388	11617	54180		4.22	Si
SLV 5	15.32	7720.32	-5341	-4498	-9766	4.5557	2.497	-3291	11075	11668	35683	61388	11617	47351		4.85	Si
SLV 10	12.17	1969.04	-27423	-23093	-16541	4.5557	4.5557	-16897	13796	19106	35683	61388	11617	54789		3.31	Si
SLV 10	15.32	8076.85	-5521	-4649	-13181	4.5557	2.4449	-3402	11097	11729	35683	61388	11617	47412		3.6	Si
SLV 12	12.17	-828.43	-8325	-7010	8160	4.5557	4.5557	-5129	11443	15639	35683	61388	11617	51322		6.29	Si
SLV 12	15.32	-5309.63	-815	-687	4631	3.6446	0	0	0	0	35683	49110	9294	35683		7.7	Si
SLV 14	12.17	-2710.97	-23248	-19577	-12640	4.5557	4.5557	-14325	13282	18152	35683	61388	11617	53835		4.26	Si
SLV 14	15.32	3890.74	-4135	-3482	-11225	4.5557	4.0105	-2548	10926	13146	35683	61388	11617	48829		4.35	Si
SLV 4	12.17	7158.14	-10330	-8699	8634	4.5557	4.5557	-6365	11690	15976	35683	61388	11617	51660		5.98	Si
SLV 4	15.32	-1613.8	-1941	-1634	6565	4.5557	4.3391	-1256	10668	13887	35683	61388	11617	49570		7.55	Si
SLV 9	12.17	1775.23	-27450	-23116	-16986	4.5557	4.5557	-16913	13799	19115	35683	61388	11617	54798		3.23	Si
SLV 9	15.32	8166.9	-5575	-4695	-13500	4.5557	2.4392	-3435	11104	11747	35683	61388	11617	47430		3.51	Si
SLV 6	12.17	5181.54	-25266	-21277	-12382	4.5557	4.5557	-15568	13530	18492	35683	61388	11617	54175		4.38	Si
SLV 6	15.32	7630.27	-5287	-4452	-9447	4.5557	2.5035	-3257	11068	11650	35683	61388	11617	47333		5.01	Si
SLV 13	12.17	-2998.83	-23288	-19611	-13301	4.5557	4.5557	-14349	13286	18159	35683	61388	11617	53842		4.05	Si
SLV 13	15.32	4024.49	-4215	-3550	-11699	4.5557	3.9693	-2597	10936	13023	35683	61388	11617	48706		4.16	Si
SLV 7	12.17	2190.27	-6195	-5217	11874	4.5557	4.5557	-3817	11180	15280	35683	61388	11617	50963		4.29	Si
SLV 7	15.32	-5666.16	-635	-535	8046	3.6446	0	0	0	0	35683	49110	9294	35683		4.44	Si
SLV 8	12.17	2384.08	-6168	-5194	12319	4.5557	4.5557	-3801	11177	15275	35683	61388	11617	50959		4.14	Si
SLV 8	15.32	-5756.21	-581	-489	8365	3.6446	0	0	0	0	35683	49110	9294	35683		4.27	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.53	0	-1619	568.79	0	0	No, e>t/2
SLV 8	179667	0.53	0	-1423	568.79	0	0	No, e>t/2
SLV 12	179667	0.53	2882	-3939	568.79	579.63	1.02	Si
SLV 4	179667	0.53	2941	-4019	568.79	591.25	1.04	Si
SLV 11	179667	0.53	3025	-4134	568.79	607.79	1.07	Si
SLV 3	179667	0.53	3153	-4309	568.79	633.02	1.11	Si
SLV 2	179667	0.53	6439	-8800	568.79	1264.29	2.22	Si
SLV 1	179667	0.53	6651	-9090	568.79	1304.07	2.29	Si
SLV 16	179667	0.53	9075	-12403	568.79	1749.86	3.08	Si
SLV 15	179667	0.53	9287	-12693	568.79	1788.13	3.14	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-4215	-23288	1859	3.004	1084.3	0.889	49.10097	6.16452	Si
SLV 14	-4135	-23248	1859	3.033	1076.9	0.889	49.59125	6.16452	Si
SLV 9	-5575	-27450	304	2.743	1211.7	0.892	44.68432	5.47446	Si
SLV 5	-5341	-25293	-889	2.748	1189.4	0.891	44.8018	5.47446	Si
SLV 10	-5521	-27423	304	2.758	1206.6	0.892	44.94636	5.47446	Si
SLV 6	-5287	-25266	-889	2.764	1184.3	0.891	45.07048	5.47446	Si
SLV 1	-3433	-16099	-2118	3.285	1013.7	0.889	53.68343	6.16452	Si
SLV 2	-3353	-16059	-2118	3.321	1006.5	0.889	54.26412	6.16452	Si
SLV 15	-2804	-17559	2000	3.608	958.9	0.891	58.81576	6.16452	Si
SLV 16	-2723	-17519	2000	3.651	952.1	0.892	59.49337	6.16452	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.416	SLU 61	Si
V_SLU	9.421	SLU 78	Si
PF_SLV	1.304	SLV 8	Si
V_SLV	3.226	SLV 9	Si
PFFP_SLV	0	SLV 7	No
R_SLV	7.965	SLV 13	Si

Maschio 241

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-9.728	3.421	-9.728	6.501	L7	L8	3.08	0.16	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 13	12.17	140.8	-3032	-0.0000083	0.0004492	0.0035	3.08	4434.33	5491.84	5491.84	39	No	Si
SLU 13	15.32	0	-16	0	0.0004492	0.0035	3.08	24.42	1050.01	1050.01	28643111007.02	No	Si
SLU 30	12.17	159.18	-3240	-0.000009	0.0004492	0.0035	3.08	4721.55	5791.1	5791.1	36.38	No	Si
SLU 30	15.32	0	-30	-0.0000001	0.0004492	0.0035	3.08	45.78	1070.84	1070.84	15566262721.43	No	Si
SLU 36	12.17	147.84	-3240	-0.0000089	0.0004492	0.0035	3.08	4721.55	5791.1	5791.1	39.17	No	Si
SLU 36	15.32	0	-30	-0.0000001	0.0004492	0.0035	3.08	45.78	1070.84	1070.84	15567150823.27	No	Si
SLU 5	12.17	150.34	-3032	-0.0000084	0.0004492	0.0035	3.08	4434.33	5491.84	5491.84	36.53	No	Si
SLU 5	15.32	0	-16	0	0.0004492	0.0035	3.08	24.42	1050.01	1050.01	28638814649.38	No	Si
SLU 34	12.17	150.85	-3240	-0.0000089	0.0004492	0.0035	3.08	4721.55	5791.1	5791.1	38.39	No	Si
SLU 34	15.32	0	-30	-0.0000001	0.0004492	0.0035	3.08	45.78	1070.84	1070.84	15567822736.13	No	Si
SLU 26	12.17	160.38	-3240	-0.000009	0.0004492	0.0035	3.08	4721.55	5791.1	5791.1	36.11	No	Si
SLU 26	15.32	0	-30	-0.0000001	0.0004492	0.0035	3.08	45.78	1070.84	1070.84	15566578180.09	No	Si
SLU 28	12.17	157.37	-3240	-0.000009	0.0004492	0.0035	3.08	4721.55	5791.1	5791.1	36.8	No	Si
SLU 28	15.32	0	-30	-0.0000001	0.0004492	0.0035	3.08	45.78	1070.84	1070.84	15565906374.65	No	Si
SLU 7	12.17	147.33	-3032	-0.0000084	0.0004492	0.0035	3.08	4434.33	5491.84	5491.84	37.28	No	Si
SLU 7	15.32	0	-16	0	0.0004492	0.0035	3.08	24.42	1050.01	1050.01	28636495746.12	No	Si
SLU 38	12.17	149.65	-3240	-0.0000089	0.0004492	0.0035	3.08	4721.55	5791.1	5791.1	38.7	No	Si
SLU 38	15.32	0	-30	-0.0000001	0.0004492	0.0035	3.08	45.78	1070.84	1070.84	15567507227.03	No	Si
SLU 9	12.17	149.14	-3032	-0.0000084	0.0004492	0.0035	3.08	4434.33	5491.84	5491.84	36.82	No	Si
SLU 9	15.32	0	-16	0	0.0004492	0.0035	3.08	24.42	1050.01	1050.01	28637725743.67	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 9	12.17	2873.27	-3092	-0.0000264	0.0006738	0.0035	3.08		5614.68	5614.68	1.95		Si
SLV 9	15.32	-0.37	-20	-0.0000001	0.0006738	0.0035	3.08		5282.96	5282.96	14300.56		Si
SLV 8	12.17	-2745.82	-3091	-0.0000247	0.0006738	0.0035	2.464		9775.11	9775.11	3.56		Si
SLV 8	15.32	0.37	-20	-0.0000001	0.0006738	0.0035	3.08		1055.47	1055.47	2857.07		Si
SLV 7	12.17	-2871.29	-3091	-0.0000263	0.0006738	0.0035	2.464		9775.11	9775.11	3.4		Si
SLV 7	15.32	0.37	-20	-0.0000001	0.0006738	0.0035	3.08		1055.47	1055.47	2857.07		Si
SLV 12	12.17	-2874.65	-3091	-0.0000264	0.0006738	0.0035	2.464		9775.26	9775.26	3.4		Si
SLV 12	15.32	0.32	-20	-0.0000001	0.0006738	0.0035	3.08		1055.51	1055.51	3256.53		Si
SLV 10	12.17	2998.74	-3092	-0.0000283	0.0006738	0.0035	3.08		5614.68	5614.68	1.87		Si
SLV 10	15.32	-0.37	-20	-0.0000001	0.0006738	0.0035	3.08		5282.96	5282.96	14300.56		Si
SLV 2	12.17	1252.63	-3091	-0.000014	0.0006738	0.0035	3.08		5614.16	5614.16	4.48		Si
SLV 2	15.32	-0.03	-20	0	0.0006738	0.0035	3.08		5283.08	5283.08	185180.05		Si
SLV 5	12.17	3002.1	-3092	-0.0000284	0.0006738	0.0035	3.08		5614.53	5614.53	1.87		Si
SLV 5	15.32	-0.32	-20	-0.0000001	0.0006738	0.0035	3.08		5282.92	5282.92	16299.16		Si
SLV 11	12.17	-3000.12	-3091	-0.0000283	0.0006738	0.0035	2.464		9775.26	9775.26	3.26		Si
SLV 11	15.32	0.32	-20	-0.0000001	0.0006738	0.0035	3.08		1055.51	1055.51	3256.53		Si
SLD 6	12.17	1294.16	-3092	-0.0000142	0.0006738	0.0035	3.08		5614.34	5614.34	4.34		Si
SLD 6	15.32	-0.1	-20	-0.0000001	0.0006738	0.0035	3.08		5283.14	5283.14	50943.14		Si
SLV 6	12.17	3127.57	-3092	-0.0000306	0.0006738	0.0035	3.08		5614.53	5614.53	1.8		Si
SLV 6	15.32	-0.32	-20	-0.0000001	0.0006738	0.0035	3.08		5282.92	5282.92	16299.16		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 68	12.17	176.01	-4079	-2395	56	3.08	3.08	-4859	8981	4426	101952	17710	15708	33418	No	598.07	Si
SLU 68	15.32	0	-30	-17	56	3.08	3.08	-35	8338	4109	101952	17710	15708	33418	No	598.07	Si
SLU 47	12.17	165.96	-3870	-2273	53	3.08	3.08	-4611	8948	4410	101952	17710	15708	33418	No	634.28	Si
SLU 47	15.32	0	-16	-9	53	3.08	3.08	-19	8336	4108	101952	17710	15708	33418	No	634.28	Si
SLU 49	12.17	162.95	-3870	-2273	52	3.08	3.08	-4611	8948	4410	101952	17710	15708	33418	No	645.99	Si
SLU 49	15.32	0	-16	-9	52	3.08	3.08	-19	8336	4108	101952	17710	15708	33418	No	645.99	Si
SLU 76	12.17	166.48	-4079	-2395	53	3.08	3.08	-4859	8981	4426	101952	17710	15708	33418	No	632.32	Si
SLU 76	15.32	0	-30	-17	53	3.08	3.08	-35	8338	4109	101952	17710	15708	33418	No	632.32	Si
SLU 78	12.17	163.47	-4079	-2395	52	3.08	3.08	-4859	8981	4426	101952	17710	15708	33418	No	643.96	Si
SLU 78	15.32	0	-30	-17	52	3.08	3.08	-35	8338	4109	101952	17710	15708	33418	No	643.96	Si
SLU 80	12.17	165.28	-4079	-2395	52	3.08	3.08	-4859	8981	4426	101952	17710	15708	33418	No	636.91	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	15.32	0	-30	-17	52	3.08	3.08	-35	8338	4109	101952	17710	15708	33418	No	636.91	Si
SLU 26	12.17	160.38	-3240	-1903	51	3.08	3.08	-3861	8848	4360	101952	17710	15708	33418	No	656.34	Si
SLU 26	15.32	0	-30	-17	51	3.08	3.08	-35	8338	4109	101952	17710	15708	33418	No	656.34	Si
SLU 70	12.17	173	-4079	-2395	55	3.08	3.08	-4859	8981	4426	101952	17710	15708	33418	No	608.47	Si
SLU 70	15.32	0	-30	-17	55	3.08	3.08	-35	8338	4109	101952	17710	15708	33418	No	608.47	Si
SLU 72	12.17	174.81	-4079	-2395	55	3.08	3.08	-4859	8981	4426	101952	17710	15708	33418	No	602.17	Si
SLU 72	15.32	0	-30	-17	55	3.08	3.08	-35	8338	4109	101952	17710	15708	33418	No	602.17	Si
SLU 51	12.17	164.76	-3870	-2273	52	3.08	3.08	-4611	8948	4410	101952	17710	15708	33418	No	638.9	Si
SLU 51	15.32	0	-16	-9	52	3.08	3.08	-19	8336	4108	101952	17710	15708	33418	No	638.9	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 12	12.17	-2874.65	-3091	-1815	-386	2.464	1.8304	0	0	0	101952	21252	12566	33818		87.59	Si
SLV 12	15.32	0.32	-20	-12	-1480	3.08	3.08	-24	12505	6162	101952	26565	15708	42273		28.56	Si
SLV 9	12.17	2873.27	-3092	-1815	386	3.08	1.8321	-3684	13237	4885	101952	26565	15708	42273		109.65	Si
SLV 9	15.32	-0.37	-20	-12	1478	3.08	3.08	-23	12505	6162	101952	26565	15708	42273		28.6	Si
SLD 5	12.17	1241.86	-3092	-1815	182	3.08	3.08	-3684	13237	6523	101952	26565	15708	42273		231.75	Si
SLD 5	15.32	-0.1	-20	-12	623	3.08	3.08	-24	12505	6162	101952	26565	15708	42273		67.81	Si
SLV 10	12.17	2998.74	-3092	-1815	425	3.08	1.7103	-3684	13237	4885	101952	26565	15708	42273		99.38	Si
SLV 10	15.32	-0.37	-20	-12	1518	3.08	3.08	-23	12505	6162	101952	26565	15708	42273		27.85	Si
SLD 6	12.17	1294.16	-3092	-1815	199	3.08	3.08	-3684	13237	6523	101952	26565	15708	42273		212.42	Si
SLD 6	15.32	-0.1	-20	-12	640	3.08	3.08	-24	12505	6162	101952	26565	15708	42273		66.05	Si
SLV 8	12.17	-2745.82	-3091	-1815	-345	2.464	1.9553	0	0	0	101952	21252	12566	33818		98.01	Si
SLV 8	15.32	0.37	-20	-12	-1437	3.08	3.08	-24	12505	6162	101952	26565	15708	42273		29.41	Si
SLV 7	12.17	-2871.29	-3091	-1815	-385	2.464	1.8336	0	0	0	101952	21252	12566	33818		87.87	Si
SLV 7	15.32	0.37	-20	-12	-1477	3.08	3.08	-24	12505	6162	101952	26565	15708	42273		28.62	Si
SLV 5	12.17	3002.1	-3092	-1815	427	3.08	1.707	-3684	13237	4885	101952	26565	15708	42273		99.1	Si
SLV 5	15.32	-0.32	-20	-12	1520	3.08	3.08	-23	12505	6162	101952	26565	15708	42273		27.8	Si
SLV 11	12.17	-3000.12	-3091	-1815	-426	2.464	1.7086	0	0	0	101952	21252	12566	33818		79.4	Si
SLV 11	15.32	0.32	-20	-12	-1520	3.08	3.08	-24	12505	6162	101952	26565	15708	42273		27.82	Si
SLV 6	12.17	3127.57	-3092	-1815	466	3.08	1.5852	-3684	13237	4885	101952	26565	15708	42273		90.64	Si
SLV 6	15.32	-0.32	-20	-12	1560	3.08	3.08	-23	12505	6162	101952	26565	15708	42273		27.09	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 13.745 Ta 0.1 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 5	-1536	0.53	215.34	0	363.61	181.81	0.84	No
SLV 6	-1536	0.53	215.34	0	363.61	181.81	0.84	No
SLV 1	-1536	0.53	215.34	0	363.61	181.81	0.84	No
SLV 2	-1536	0.53	215.34	0	363.61	181.81	0.84	No
SLV 9	-1536	0.53	215.34	0	363.62	181.81	0.84	No
SLV 10	-1536	0.53	215.34	0	363.62	181.81	0.84	No
SLV 3	-1536	0.53	215.34	0	363.62	181.81	0.84	No
SLV 4	-1536	0.53	215.34	0	363.62	181.81	0.84	No
SLV 13	-1536	0.53	215.34	0	363.63	181.81	0.84	No
SLV 14	-1536	0.53	215.34	0	363.63	181.81	0.84	No

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.03 Ta = 0.1036

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 3	-20	-3091	-607	11.832	284.9	0.993	173.1455	8.86034	Si
SLV 4	-20	-3091	-607	11.832	284.9	0.993	173.14553	8.86034	Si
SLV 14	-20	-3092	607	11.832	284.9	0.993	173.14712	8.86034	Si
SLV 13	-20	-3092	607	11.832	284.9	0.993	173.14714	8.86034	Si
SLV 16	-20	-3092	605	11.832	284.9	0.993	173.1571	8.86034	Si
SLV 15	-20	-3092	605	11.832	284.9	0.993	173.15712	8.86034	Si
SLV 1	-20	-3091	-605	11.834	284.9	0.993	173.17129	8.86034	Si
SLV 2	-20	-3091	-605	11.834	284.9	0.993	173.17132	8.86034	Si
SLV 7	-20	-3091	-185	12.128	284.9	0.993	177.4929	6.96406	Si
SLV 8	-20	-3091	-185	12.128	284.9	0.993	177.49292	6.96406	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	36.108	SLU 26	Si
V_SLU	598.068	SLU 68	Si
PF_SLV	1.795	SLV 6	Si
V_SLV	27.094	SLV 6	Si
PFFP_SLV	0.844	SLV 5	No
R_SLV	19.542	SLV 3	Si

Maschio 243

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-9.448	-3.359	-11.013	-3.359	L7	L8	1.565	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 82	12.17	1406.01	-4352	-0.0000318	0.0004492	0.0035	1.5649	3146.63	3345.23	3345.23	2.38	No	Si
SLU 82	14.27	-1296.76	-4696	-0.0000311	0.0004492	0.0035	1.5649	3373.8	4089.98	4089.98	3.15	No	Si
SLU 33	12.17	1258.68	-3837	-0.0000283	0.0004492	0.0035	1.5649	2801.64	2986.1	2986.1	2.37	No	Si
SLU 33	14.27	-1231.61	-4476	-0.0000296	0.0004492	0.0035	1.5649	3228.93	3936.3	3936.3	3.2	No	Si
SLU 39	12.17	1249.85	-3394	-0.0000274	0.0004492	0.0035	1.5649	2498.45	2671.53	2671.53	2.14	No	Si
SLU 39	14.27	-1097.47	-3906	-0.000026	0.0004492	0.0035	1.5649	2847.8	3538.55	3538.55	3.22	No	Si
SLU 81	12.17	1391.08	-4349	-0.0000316	0.0004492	0.0035	1.5649	3144.79	3343.29	3343.29	2.4	No	Si
SLU 81	14.27	-1277	-4658	-0.0000308	0.0004492	0.0035	1.5649	3348.88	4063.98	4063.98	3.18	No	Si
SLU 31	12.17	1224.66	-3456	-0.000027	0.0004492	0.0035	1.5649	2540.87	2715.29	2715.29	2.22	No	Si
SLU 31	14.27	-1128.96	-3961	-0.0000266	0.0004492	0.0035	1.5649	2885.48	3577.24	3577.24	3.17	No	Si
SLU 32	12.17	1243.75	-3835	-0.000028	0.0004492	0.0035	1.5649	2799.76	2984.14	2984.14	2.4	No	Si
SLU 32	14.27	-1211.85	-4438	-0.0000292	0.0004492	0.0035	1.5649	3203.78	3909.6	3909.6	3.23	No	Si
SLU 40	12.17	1264.78	-3397	-0.0000277	0.0004492	0.0035	1.5649	2500.37	2673.51	2673.51	2.11	No	Si
SLU 40	14.27	-1117.23	-3944	-0.0000264	0.0004492	0.0035	1.5649	2873.5	3564.92	3564.92	3.19	No	Si
SLU 34	12.17	1251.66	-3711	-0.0000279	0.0004492	0.0035	1.5649	2715.72	2896.74	2896.74	2.31	No	Si
SLU 34	14.27	-1200.37	-4331	-0.0000287	0.0004492	0.0035	1.5649	3132.71	3834.51	3834.51	3.19	No	Si
SLU 41	12.17	1276.85	-3649	-0.0000282	0.0004492	0.0035	1.5649	2673.72	2853	2853	2.23	No	Si
SLU 41	14.27	-1168.88	-4275	-0.0000281	0.0004492	0.0035	1.5649	3095.59	3795.49	3795.49	3.25	No	Si
SLU 42	12.17	1291.78	-3652	-0.0000285	0.0004492	0.0035	1.5649	2675.62	2854.98	2854.98	2.21	No	Si
SLU 42	14.27	-1188.64	-4313	-0.0000285	0.0004492	0.0035	1.5649	3120.91	3822.09	3822.09	3.22	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	12.17	-1149.34	-2649	-0.0000252	0.0006738	0.0035	1.2519		2661.09	2661.09	2.32		Si
SLV 12	14.27	1319.61	131	-0.0159769	0.0006738	0.0035	1.2519		0	0	0		No
SLD 4	12.17	2301.49	-1582	-0.0116782	0.0006738	0.0035	1.2519		1357.48	1357.48	0.59		No
SLD 4	14.27	-2173.29	-4636	-0.0000497	0.0006738	0.0035	1.2519		4102.51	4102.51	1.89		Si
SLV 2	12.17	4930.43	-69	-0.0556105	0.0006738	0.0035	1.2519		199.8	199.8	0.04		No
SLV 2	14.27	-4751.53	-7913	-0.0001549	0.0006738	0.0035	1.2519		6372.06	6372.06	1.34		Si
SLV 1	12.17	4196.54	-677	-0.0410181	0.0006738	0.0035	1.2519		668.41	668.41	0.16		No
SLV 1	14.27	-4061.36	-7087	-0.0001183	0.0006738	0.0035	1.2519		5812.11	5812.11	1.43		Si
SLV 15	12.17	-3105.91	-6755	-0.0000713	0.0006738	0.0035	1.2519		5587.8	5587.8	1.8		Si
SLV 15	14.27	2893.77	1056	-0.0037585	0.0006738	0.0035	1.2519		0	0	0		No
SLV 11	12.17	-1643.45	-3059	-0.0000416	0.0006738	0.0035	1.2519		2962.45	2962.45	1.8		Si
SLV 11	14.27	1784.28	688	0.0024945	0.0006738	0.0035	1.2519		0	0	0		No
SLV 3	12.17	3396.56	292	-0.041447	0.0006738	0.0035	1.2519		0	0	0		No
SLV 3	14.27	-3113.53	-5362	-0.0000911	0.0006738	0.0035	1.2519		4613.49	4613.49	1.48		Si
SLV 13	12.17	-2305.93	-7724	-0.0000538	0.0006738	0.0035	1.5649		6243.98	6243.98	2.71		Si
SLV 13	14.27	1945.94	-669	-0.01544	0.0006738	0.0035	1.2519		661.91	661.91	0.34		No
SLV 4	12.17	4130.46	900	-0.050068	0.0006738	0.0035	1.2519		0	0	0		No
SLV 4	14.27	-3803.69	-6188	-0.0001287	0.0006738	0.0035	1.2519		5195.65	5195.65	1.37		Si
SLV 16	12.17	-2372.01	-6147	-0.0000522	0.0006738	0.0035	1.5649		5166.97	5166.97	2.18		Si
SLV 16	14.27	2203.61	230	-0.02709	0.0006738	0.0035	1.2519		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	12.17	1409.94	-4919	-4143	2439	1.5649	1.4875	-8824	9510	4244	35683	16871	3990	20862	No	8.55	Si
SLU 80	14.27	-1438.13	-5428	-4571	2429	1.5649	1.5524	-9736	9631	4486	35683	16871	3990	20862	No	8.59	Si
SLU 79	12.17	1395.01	-4917	-4140	2417	1.5649	1.4961	-8819	9509	4268	35683	16871	3990	20862	No	8.63	Si
SLU 79	14.27	-1418.37	-5389	-4538	2384	1.5649	1.5578	-9667	9622	4497	35683	16871	3990	20862	No	8.75	Si
SLU 78	12.17	1426.92	-5048	-4251	2485	1.5649	1.4993	-9054	9541	4291	35683	16871	3990	20862	No	8.39	Si
SLU 78	14.27	-1482.54	-5598	-4714	2474	1.5649	1.5528	-10042	9672	4506	35683	16871	3990	20862	No	8.43	Si
SLU 83	12.17	1418.09	-4604	-3877	2376	1.5649	1.4233	-8259	9435	4029	35683	16871	3990	20862	No	8.78	Si
SLU 83	14.27	-1348.4	-5028	-4234	2342	1.5649	1.5427	-9018	9536	4413	35683	16871	3990	20862	No	8.91	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	12.17	1399.91	-4792	-4036	2395	1.5649	1.471	-8596	9479	4183	35683	16871	3990	20862	No	8.71	Si
SLU 75	14.27	-1411.13	-5229	-4403	2384	1.5649	1.5377	-9379	9584	4421	35683	16871	3990	20862	No	8.75	Si
SLU 77	12.17	1411.99	-5045	-4248	2463	1.5649	1.5077	-9049	9540	4315	35683	16871	3990	20862	No	8.47	Si
SLU 77	14.27	-1462.78	-5560	-4682	2429	1.5649	1.5581	-9973	9663	4517	35683	16871	3990	20862	No	8.59	Si
SLU 74	12.17	1384.99	-4790	-4033	2372	1.5649	1.4798	-8591	9479	4208	35683	16871	3990	20862	No	8.79	Si
SLU 74	14.27	-1391.37	-5191	-4371	2339	1.5649	1.5432	-9311	9575	4433	35683	16871	3990	20862	No	8.92	Si
SLU 70	12.17	1310.07	-5181	-4363	2369	1.5649	1.5649	-9293	9572	4494	35683	16871	3990	20862	No	8.81	Si
SLU 70	14.27	-1479.18	-5580	-4699	2362	1.5649	1.5521	-10010	9668	4502	35683	16871	3990	20862	No	8.83	Si
SLU 76	12.17	1392.89	-4666	-3929	2364	1.5649	1.4517	-8369	9449	4115	35683	16871	3990	20862	No	8.83	Si
SLU 76	14.27	-1379.89	-5084	-4281	2368	1.5649	1.533	-9119	9549	4392	35683	16871	3990	20862	No	8.81	Si
SLU 84	12.17	1433.01	-4607	-3880	2399	1.5649	1.4142	-8264	9435	4003	35683	16871	3990	20862	No	8.7	Si
SLU 84	14.27	-1368.16	-5066	-4266	2387	1.5649	1.5371	-9087	9545	4401	35683	16871	3990	20862	No	8.74	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 15	12.17	-3105.91	-6755	-5689	-5736	1.2519	0.968	0	0	0	35683	20246	3192	23438		4.09	Si
SLV 15	14.27	2893.77	1056	889	-4206	1.2519	0	0	0	0	35683	20246	3192	23438		5.57	Si
SLV 5	12.17	2973.87	-4175	-3516	4936	1.5649	0.2104	-56615	16250	3650	35683	25307	3990	29298		5.94	Si
SLV 5	14.27	-3177.37	-6988	-5885	4463	1.2519	0.9832	0	0	0	35683	20246	3192	23438		5.25	Si
SLD 2	12.17	2617.31	-1971	-1659	4672	1.2519	0	0	0	0	35683	20246	3192	23438		5.02	Si
SLD 2	14.27	-2548.04	-5319	-4479	3987	1.2519	0.9101	0	0	0	35683	20246	3192	23438		5.88	Si
SLD 1	12.17	2305.09	-2229	-1877	4154	1.2519	0	0	0	0	35683	20246	3192	23438		5.64	Si
SLD 1	14.27	-2254.44	-4967	-4183	3469	1.2519	0.9857	0	0	0	35683	20246	3192	23438		6.76	Si
SLV 4	12.17	4130.46	900	758	7706	1.2519	0	0	0	0	35683	20246	3192	23438		3.04	Si
SLV 4	14.27	-3803.69	-6188	-5211	6125	1.2519	0.5032	0	0	0	35683	20246	3192	23438		3.83	Si
SLV 3	12.17	3396.56	292	246	6489	1.2519	0	0	0	0	35683	20246	3192	23438		3.61	Si
SLV 3	14.27	-3113.53	-5362	-4515	4907	1.2519	0.6052	0	0	0	35683	20246	3192	23438		4.78	Si
SLD 4	12.17	2301.49	-1582	-1332	4212	1.2519	0	0	0	0	35683	20246	3192	23438		5.56	Si
SLD 4	14.27	-2173.29	-4636	-3904	3523	1.2519	0.9408	0	0	0	35683	20246	3192	23438		6.65	Si
SLV 6	12.17	3467.98	-3766	-3171	5755	1.2519	0	0	0	0	35683	20246	3192	23438		4.07	Si
SLV 6	14.27	-3642.03	-7544	-6353	5283	1.2519	0.899	0	0	0	35683	20246	3192	23438		4.44	Si
SLV 1	12.17	4196.54	-677	-570	7655	1.2519	0	0	0	0	35683	20246	3192	23438		3.06	Si
SLV 1	14.27	-4061.36	-7087	-5968	6082	1.2519	0.628	0	0	0	35683	20246	3192	23438		3.85	Si
SLV 2	12.17	4930.43	-69	-58	8872	1.2519	0	0	0	0	35683	20246	3192	23438		2.64	Si
SLV 2	14.27	-4751.53	-7913	-6663	7300	1.2519	0.5459	0	0	0	35683	20246	3192	23438		3.21	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	215625	0.53	0	-340	190.78	0	0	No, e>t/2
SLV 15	215625	0.53	0	-97	190.78	0	0	No, e>t/2
SLV 11	215625	0.53	0	60	190.78	0	0	No, Trazione
SLV 16	215625	0.53	0	-692	190.78	0	0	No, e>t/2
SLV 7	215625	0.53	2863	-1344	190.78	198.49	1.04	Si
SLV 13	215625	0.53	3663	-1719	190.78	252.76	1.32	Si
SLV 8	215625	0.53	3717	-1745	190.78	256.44	1.34	Si
SLV 14	215625	0.53	4931	-2315	190.78	337.87	1.77	Si
SLV 3	215625	0.53	10180	-4779	190.78	677.04	3.55	Si
SLV 9	215625	0.53	11393	-5349	190.78	752.44	3.94	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-987	-7724	-87	3.831	331.4	0.891	62.47586	6.16452	Si
SLV 9	-1261	-6289	-144	3.407	355.5	0.889	55.70514	5.47446	Si
SLV 10	-1224	-5880	-143	3.457	352.1	0.889	56.51659	5.47446	Si
SLV 14	-930	-7116	-86	3.925	326.6	0.892	63.95048	6.16452	Si
SLV 5	-1196	-4175	-115	3.505	349.7	0.889	57.29482	5.47446	Si
SLV 6	-1158	-3766	-115	3.558	346.3	0.889	58.14576	5.47446	Si
SLV 1	-769	-677	9	4.259	313.4	0.896	69.08659	6.16452	Si
SLV 2	-713	-69	10	4.375	308.9	0.898	70.80059	6.16452	Si
SLV 15	-678	-6755	-9	4.451	306.2	0.899	71.91487	6.16452	Si
SLV 16	-622	-6147	-8	4.578	301.9	0.902	73.75295	6.16452	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.114	SLU 40	Si
V_SLU	8.394	SLU 78	Si
PF_SLV	0	SLV 3	No
V_SLV	2.642	SLV 2	Si
PFFP_SLV	0	SLV 11	No
R_SLV	10.135	SLV 13	Si

Maschio 244

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-7.648	-3.359	-8.548	-3.359	L7	L8	0.9	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 76	12.17	641.77	-3430	-0.0000443	0.0004492	0.0035	0.9	1383.15	4735.15	4735.15	7.38	No	Si
SLU 76	14.27	-546.95	-1408	-0.0000538	0.0004492	0.0035	0.9	606.43	4087.71	4087.71	7.47	No	Si
SLU 73	12.17	612.64	-3223	-0.000042	0.0004492	0.0035	0.9	1308.56	4680.4	4680.4	7.64	No	Si
SLU 73	14.27	-541.23	-1147	-0.0000703	0.0004492	0.0035	0.9	0	3969.32	3969.32	7.33	No	Si
SLU 77	12.17	664.07	-3758	-0.0000468	0.0004492	0.0035	0.9	1498.56	4819.92	4819.92	7.26	No	Si
SLU 77	14.27	-524.94	-1806	-0.0000371	0.0004492	0.0035	0.9	768.11	4242.33	4242.33	8.08	No	Si
SLU 72	12.17	652.59	-3876	-0.0000469	0.0004492	0.0035	0.9	1539.36	4849.92	4849.92	7.43	No	Si
SLU 72	14.27	-526.57	-1730	-0.0000385	0.0004492	0.0035	0.9	737.6	4213.3	4213.3	8	No	Si
SLU 78	12.17	679.48	-3759	-0.0000476	0.0004492	0.0035	0.9	1498.81	4820.09	4820.09	7.09	No	Si
SLU 78	14.27	-546.99	-1813	-0.0000398	0.0004492	0.0035	0.9	771.04	4245.11	4245.11	7.76	No	Si
SLU 79	12.17	645.22	-3637	-0.0000454	0.0004492	0.0035	0.9	1456.16	4788.76	4788.76	7.42	No	Si
SLU 79	14.27	-515.91	-1656	-0.0000385	0.0004492	0.0035	0.9	707.96	4185.04	4185.04	8.11	No	Si
SLU 75	12.17	650.35	-3551	-0.0000452	0.0004492	0.0035	0.9	1426.08	4766.67	4766.67	7.33	No	Si
SLU 75	14.27	-541.27	-1552	-0.0000458	0.0004492	0.0035	0.9	665.61	4144.55	4144.55	7.66	No	Si
SLU 84	12.17	634.94	-3328	-0.0000436	0.0004492	0.0035	0.9	1346.38	4708.16	4708.16	7.42	No	Si
SLU 84	14.27	-537.13	-1374	-0.0000533	0.0004492	0.0035	0.9	592.75	4074.53	4074.53	7.59	No	Si
SLU 80	12.17	660.63	-3638	-0.0000461	0.0004492	0.0035	0.9	1456.4	4788.94	4788.94	7.25	No	Si
SLU 80	14.27	-537.97	-1664	-0.0000417	0.0004492	0.0035	0.9	710.92	4187.86	4187.86	7.78	No	Si
SLU 70	12.17	671.44	-3998	-0.0000484	0.0004492	0.0035	0.9	1580.97	4880.56	4880.56	7.27	No	Si
SLU 70	14.27	-535.59	-1879	-0.0000374	0.0004492	0.0035	0.9	797.45	4270.18	4270.18	7.97	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 2	12.17	990.41	-3626	-0.0000682	0.0006738	0.0035	0.9		5246.46	5246.46	5.3		Si
SLD 2	14.27	-1427.37	911	0.0015411	0.0006738	0.0035	0.72		0	0	0		No
SLV 2	12.17	1762.37	-5087	-0.0001551	0.0006738	0.0035	0.9		5668.09	5668.09	3.22		Si
SLV 2	14.27	-2890.45	3322	0.008277	0.0006738	0.0035	0.72		0	0	0		No
SLD 4	12.17	794.66	-3404	-0.0000526	0.0006738	0.0035	0.9		5172.7	5172.7	6.51		Si
SLD 4	14.27	-1089.25	917	0.0019928	0.0006738	0.0035	0.72		0	0	0		No
SLV 4	12.17	1269.13	-4520	-0.0000897	0.0006738	0.0035	0.9		5510.67	5510.67	4.34		Si
SLV 4	14.27	-2036.6	3322	0.0093841	0.0006738	0.0035	0.72		0	0	0		No
SLV 1	12.17	1532.49	-4625	-0.0001262	0.0006738	0.0035	0.9		5540.35	5540.35	3.62		Si
SLV 1	14.27	-2404.54	2450	0.0057426	0.0006738	0.0035	0.72		0	0	0		No
SLV 3	12.17	1039.25	-4058	-0.0000702	0.0006738	0.0035	0.9		5377.82	5377.82	5.17		Si
SLV 3	14.27	-1550.7	2450	0.0068215	0.0006738	0.0035	0.72		0	0	0		No
SLD 1	12.17	892.61	-3430	-0.0000602	0.0006738	0.0035	0.9		5181.44	5181.44	5.8		Si
SLD 1	14.27	-1220.66	540	0.0005211	0.0006738	0.0035	0.72		447.78	447.78	0.37		No
SLV 6	12.17	1618.61	-4259	-0.0001608	0.0006738	0.0035	0.9		5436.2	5436.2	3.36		Si
SLV 6	14.27	-2503.53	539	-0.0011468	0.0006738	0.0035	0.9		456.89	456.89	0.18		No
SLD 3	12.17	696.87	-3207	-0.0000461	0.0006738	0.0035	0.9		5106.48	5106.48	7.33		Si
SLD 3	14.27	-882.54	546	0.0009151	0.0006738	0.0035	0.72		392.41	392.41	0.44		No
SLV 8	12.17	-25.53	-2368	-0.000014	0.0006738	0.0035	0.9		4807.54	4807.54	188.27		Si
SLV 8	14.27	342.61	541	0.0014992	0.0006738	0.0035	0.72		428.46	428.46	1.25		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 75	12.17	650.35	-3551	-2991	633	0.9	0.8006	-12539	10006	2403	7137	9703	2295	9540	No	15.07	Si
SLU 75	14.27	-541.27	-1552	-1307	947	0.9	0.3038	-12039	9994	1388	7137	9703	2295	8525	No	9	Si
SLU 68	12.17	633.73	-3669	-3090	633	0.9	0.8318	-12472	9996	2495	7137	9703	2295	9631	No	15.2	Si
SLU 68	14.27	-535.55	-1474	-1241	990	0.9	0.2598	-12340	10051	1371	7137	9703	2295	8507	No	8.6	Si
SLU 78	12.17	679.48	-3759	-3165	657	0.9	0.8077	-13162	10089	2445	7137	9703	2295	9581	No	14.59	Si
SLU 78	14.27	-546.99	-1813	-1527	948	0.9	0.4449	-10928	9810	1447	7137	9703	2295	8584	No	9.06	Si
SLU 72	12.17	652.59	-3876	-3264	661	0.9	0.8449	-12978	10064	2551	7137	9703	2295	9688	No	14.65	Si
SLU 72	14.27	-526.57	-1730	-1457	964	0.9	0.4368	-10576	9764	1428	7137	9703	2295	8565	No	8.88	Si
SLU 76	12.17	641.77	-3430	-2889	616	0.9	0.7887	-12289	9973	2360	7137	9703	2295	9496	No	15.41	Si
SLU 76	14.27	-546.95	-1408	-1185	964	0.9	0.1844	-13327	10225	1356	7137	9703	2295	8493	No	8.81	Si
SLU 82	12.17	605.81	-3120	-2627	589	0.9	0.7675	-11476	9864	2271	7137	9703	2295	9408	No	15.97	Si
SLU 82	14.27	-531.41	-1114	-938	926	0.9	0	-14649	10612	1290	7137	9703	2295	8427	No	9.1	Si
SLU 73	12.17	612.64	-3223	-2714	592	0.9	0.7797	-11673	9890	2313	7137	9703	2295	9450	No	15.96	Si
SLU 73	14.27	-541.23	-1147	-966	963	0.9	0	-14854	10631	1297	7137	9703	2295	8434	No	8.76	Si
SLU 67	12.17	642.31	-3790	-3192	650	0.9	0.8416	-12737	10032	2533	7137	9703	2295	9669	No	14.87	Si
SLU 67	14.27	-529.87	-1618	-1363	973	0.9	0.3677	-11199	9861	1403	7137	9703	2295	8540	No	8.78	Si
SLU 70	12.17	671.44	-3998	-3366	674	0.9	0.8461	-13369	10116	2568	7137	9703	2295	9704	No	14.4	Si
SLU 70	14.27	-535.59	-1879	-1582	974	0.9	0.4949	-10381	9730	1462	7137	9703	2295	8598	No	8.83	Si
SLU 65	12.17	604.6	-3461	-2915	610	0.9	0.826	-11844	9913	2456	7137	9703	2295	9593	No	15.74	Si
SLU 65	14.27	-529.83	-1213	-1021	989	0.9	0.0395	-14010	10418	1312	7137	9703	2295	8449	No	8.54	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	12.17	1269.13	-4520	-3806	1528	0.9	0.5076	-24520	16250	2575	7137	14555	2295	9711		6.36	Si
SLV 4	14.27	-2036.6	3322	2798	4370	0.72	0	0	0	0	7137	11644	1836	7137		1.63	Si
SLV 3	12.17	1039.25	-4058	-3417	1426	0.9	0.5817	-19470	16250	2836	7137	14555	2295	9972		6.99	Si
SLV 3	14.27	-1550.7	2450	2064	3261	0.72	0	0	0	0	7137	11644	1836	7137		2.19	Si
SLV 5	12.17	1463.84	-3948	-3325	230	0.9	0.2376	-34330	16250	2446	7137	14555	2295	9583		41.69	Si
SLV 5	14.27	-2176.39	-48	-40	4582	0.9	0	0	4469	1570	7137	14555	2295	8707		1.9	Si
SLV 2	12.17	1762.37	-5087	-4284	1252	0.9	0.3107	-39111	16250	2702	7137	14555	2295	9839		7.86	Si
SLV 2	14.27	-2890.45	3322	2797	6212	0.72	0	0	0	0	7137	11644	1836	7137		1.15	Si
SLV 1	12.17	1532.49	-4625	-3895	1151	0.9	0.356	-32806	16250	2598	7137	14555	2295	9735		8.46	Si
SLV 1	14.27	-2404.54	2450	2063	5103	0.72	0	0	0	0	7137	11644	1836	7137		1.4	Si
SLV 16	12.17	-678.46	-478	-402	-234	0.9	0	0	16250	1667	7137	14555	2295	8804		37.69	Si
SLV 16	14.27	1688.2	-4218	-3552	-3778	0.9	0.1494	-41971	16250	2507	7137	14555	2295	9644		2.55	Si
SLD 2	12.17	990.41	-3626	-3054	802	0.9	0.5306	-18891	16250	2587	7137	14555	2295	9723		12.13	Si
SLD 2	14.27	-1427.37	911	767	3006	0.72	0	0	0	0	7137	11644	1836	7137		2.37	Si
SLV 6	12.17	1618.61	-4259	-3587	298	0.9	0.2099	-38714	16250	2516	7137	14555	2295	9653		32.35	Si
SLV 6	14.27	-2503.53	539	454	5329	0.9	0	0	11831	1560	7137	14555	2295	8696		1.63	Si
SLV 11	12.17	-764.58	-844	-711	619	0.9	0	-20053	16250	1749	7137	14555	2295	8886		14.36	Si
SLV 11	14.27	1787.19	-2308	-1943	-4004	0.9	0	-47726	16250	2078	7137	14555	2295	9215		2.3	Si
SLV 15	12.17	-908.34	-16	-13	-335	0.9	0	0	9295	1563	7137	14555	2295	8700		25.94	Si
SLV 15	14.27	2174.11	-5090	-4286	-4888	0.9	0.0686	-56134	16250	2703	7137	14555	2295	9839		2.01	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 2	215625	0.53	0	1312	109.72	0	0	No, Trazione
SLV 7	215625	0.53	0	321	109.72	0	0	No, Trazione
SLV 8	215625	0.53	0	689	109.72	0	0	No, Trazione
SLV 1	215625	0.53	0	765	109.72	0	0	No, Trazione
SLV 3	215625	0.53	0	1354	109.72	0	0	No, Trazione
SLV 4	215625	0.53	0	1901	109.72	0	0	No, Trazione
SLV 12	215625	0.53	3193	-862	109.72	127.07	1.16	Si
SLV 11	215625	0.53	4559	-1231	109.72	180.03	1.64	Si
SLV 6	215625	0.53	4723	-1275	109.72	186.35	1.7	Si
SLV 5	215625	0.53	6088	-1644	109.72	238.38	2.17	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-1685	-16	-79	2.093	296.1	0.903	33.68661	6.16452	Si
SLV 13	-1526	-583	-96	2.228	280.4	0.9	35.98068	6.16452	Si
SLV 16	-1447	-478	-79	2.314	272.7	0.898	37.42876	6.16452	Si
SLV 14	-1287	-1045	-96	2.481	257.2	0.895	40.27652	6.16452	Si
SLV 11	-1205	-844	3	2.631	249.2	0.894	42.77377	5.47446	Si
SLV 12	-1044	-1155	3	2.86	233.9	0.891	46.63824	5.47446	Si
SLV 9	-673	-2735	-55	3.549	199.8	0.889	58.00352	5.47446	Si
SLV 7	-666	-2057	56	3.565	199.2	0.889	58.25115	5.47446	Si
SLV 10	-512	-3046	-55	3.989	186	0.893	64.94065	5.47446	Si
SLV 8	-506	-2368	55	4.009	185.4	0.893	65.24528	5.47446	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	7.094	SLU 78	Si
V_SLU	8.541	SLU 65	Si
PF_SLV	0	SLD 2	No
V_SLV	1.149	SLV 2	Si
PFFP_SLV	0	SLV 8	No
R_SLV	5.465	SLV 15	Si

Maschio 245

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-6.268	-3.359	-6.268	1.046	L7	L8	4.405	0.16	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 84	12.17	2114.79	-12618	-0.0000279	0.0004492	0.0035	4.405	23718.82	27562.9	27562.9	13.03	No	Si
SLU 84	15.32	710.35	-1149	-0.0000037	0.0004492	0.0035	4.405	2496.97	4415.64	4415.64	6.22	No	Si
SLU 77	12.17	2340.95	-13199	-0.0000295	0.0004492	0.0035	4.405	24615.43	28675.33	28675.33	12.25	No	Si
SLU 77	15.32	802.56	-1316	-0.0000042	0.0004492	0.0035	4.405	2854.89	4771.08	4771.08	5.94	No	Si
SLU 74	12.17	2209.84	-12681	-0.0000282	0.0004492	0.0035	4.405	23817.46	27684.25	27684.25	12.53	No	Si
SLU 74	15.32	745.33	-1198	-0.0000039	0.0004492	0.0035	4.405	2600.93	4518.73	4518.73	6.06	No	Si
SLU 78	12.17	2347.2	-13204	-0.0000295	0.0004492	0.0035	4.405	24622.67	28684.41	28684.41	12.22	No	Si
SLU 78	15.32	784.67	-1320	-0.0000042	0.0004492	0.0035	4.405	2862.46	4778.6	4778.6	6.09	No	Si
SLU 35	12.17	1884.27	-11212	-0.0000247	0.0004492	0.0035	4.405	21478.86	24865.05	24865.05	13.2	No	Si
SLU 35	15.32	720.96	-1182	-0.0000038	0.0004492	0.0035	4.405	2567.05	4485.12	4485.12	6.22	No	Si
SLU 79	12.17	2285.83	-12902	-0.0000288	0.0004492	0.0035	4.405	24159.51	28106.99	28106.99	12.3	No	Si
SLU 79	15.32	762.99	-1247	-0.000004	0.0004492	0.0035	4.405	2705.85	4622.89	4622.89	6.06	No	Si
SLU 80	12.17	2292.08	-12907	-0.0000288	0.0004492	0.0035	4.405	24166.83	28116.07	28116.07	12.27	No	Si
SLU 80	15.32	745.1	-1250	-0.000004	0.0004492	0.0035	4.405	2713.43	4630.42	4630.42	6.21	No	Si
SLU 75	12.17	2216.08	-12686	-0.0000282	0.0004492	0.0035	4.405	23824.83	27693.33	27693.33	12.5	No	Si
SLU 75	15.32	727.43	-1201	-0.0000039	0.0004492	0.0035	4.405	2608.52	4526.26	4526.26	6.22	No	Si
SLU 81	12.17	1977.43	-12095	-0.0000265	0.0004492	0.0035	4.405	22897.94	26562.75	26562.75	13.43	No	Si
SLU 81	15.32	671.01	-1027	-0.0000034	0.0004492	0.0035	4.405	2234.37	4155.76	4155.76	6.19	No	Si
SLU 83	12.17	2108.55	-12613	-0.0000278	0.0004492	0.0035	4.405	23711.43	27553.83	27553.83	13.07	No	Si
SLU 83	15.32	728.25	-1145	-0.0000038	0.0004492	0.0035	4.405	2489.37	4408.11	4408.11	6.05	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	12.17	397.15	-10251	-0.0000191	0.0006738	0.0035	4.405		23271.6	23271.6	58.6		Si
SLV 5	15.32	2765.19	-1644	-0.0000164	0.0006738	0.0035	4.405		5485.84	5485.84	1.98		Si
SLD 10	12.17	1031.28	-9701	-0.0000197	0.0006738	0.0035	4.405		22165.83	22165.83	21.49		Si
SLD 10	15.32	1481.73	-1210	-0.0000064	0.0006738	0.0035	4.405		4558.5	4558.5	3.08		Si
SLD 9	12.17	976.83	-9710	-0.0000196	0.0006738	0.0035	4.405		22183.09	22183.09	22.71		Si
SLD 9	15.32	1518.82	-1213	-0.0000066	0.0006738	0.0035	4.405		4564.89	4564.89	3.01		Si
SLD 6	12.17	1173.22	-9218	-0.0000192	0.0006738	0.0035	4.405		21194.16	21194.16	18.06		Si
SLD 6	15.32	1316.9	-1072	-0.0000057	0.0006738	0.0035	4.405		4265.49	4265.49	3.24		Si
SLD 5	12.17	1118.78	-9226	-0.0000191	0.0006738	0.0035	4.405		21211.42	21211.42	18.96		Si
SLD 5	15.32	1354	-1075	-0.0000059	0.0006738	0.0035	4.405		4271.89	4271.89	3.16		Si
SLV 10	12.17	196.87	-11362	-0.0000206	0.0006738	0.0035	4.405		25479.84	25479.84	129.43		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 10	15.32	3061.39	-1957	-0.0000159	0.0006738	0.0035	4.405		6153.99	6153.99	2.01		Si
SLV 14	12.17	749.76	-11127	-0.0000216	0.0006738	0.0035	4.405		25013.79	25013.79	33.36		Si
SLV 14	15.32	1763.92	-1571	-0.0000075	0.0006738	0.0035	4.405		5331.29	5331.29	3.02		Si
SLV 9	12.17	66.26	-11383	-0.0000204	0.0006738	0.0035	4.405		25520.58	25520.58	385.16		Si
SLV 9	15.32	3150.38	-1964	-0.000017	0.0006738	0.0035	4.405		6169.24	6169.24	1.96		Si
SLV 6	12.17	527.76	-10230	-0.0000194	0.0006738	0.0035	4.405		23230.19	23230.19	44.02		Si
SLV 6	15.32	2676.2	-1636	-0.000015	0.0006738	0.0035	4.405		5470.51	5470.51	2.04		Si
SLV 13	12.17	555.78	-11157	-0.0000212	0.0006738	0.0035	4.405		25074.31	25074.31	45.12		Si
SLV 13	15.32	1896.1	-1582	-0.0000081	0.0006738	0.0035	4.405		5354.04	5354.04	2.82		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	12.17	2347.2	-13204	-7753	-588	4.405	4.405	-11000	9800	7172	101952	25329	22466	47794	No	81.25	Si
SLU 78	15.32	784.67	-1320	-775	-469	4.405	4.405	-1100	8480	5977	101952	25329	22466	47794	No	101.92	Si
SLU 40	12.17	1527	-10112	-5938	-603	4.405	4.405	-8424	9457	6665	101952	25329	22466	47794	No	79.21	Si
SLU 40	15.32	571.52	-896	-526	-486	4.405	4.405	-746	8433	5943	101952	25329	22466	47794	No	98.42	Si
SLU 38	12.17	1835.4	-10919	-6411	-596	4.405	4.405	-9097	9546	6728	101952	25329	22466	47794	No	80.24	Si
SLU 38	15.32	663.5	-1116	-655	-477	4.405	4.405	-929	8457	5961	101952	25329	22466	47794	No	100.16	Si
SLU 42	12.17	1658.11	-10630	-6242	-631	4.405	4.405	-8856	9514	6706	101952	25329	22466	47794	No	75.69	Si
SLU 42	15.32	628.75	-1014	-596	-513	4.405	4.405	-845	8446	5953	101952	25329	22466	47794	No	93.12	Si
SLU 31	12.17	1577.33	-9887	-5805	-586	4.405	4.405	-8236	9432	6647	101952	25329	22466	47794	No	81.53	Si
SLU 31	15.32	537.1	-880	-517	-392	4.405	4.405	-733	8431	5942	101952	25329	22466	47794	No	121.8	Si
SLU 33	12.17	1759.4	-10698	-6282	-647	4.405	4.405	-8913	9522	6711	101952	25329	22466	47794	No	73.92	Si
SLU 33	15.32	645.83	-1067	-626	-528	4.405	4.405	-888	8452	5957	101952	25329	22466	47794	No	90.45	Si
SLU 34	12.17	1708.44	-10405	-6109	-614	4.405	4.405	-8668	9489	6688	101952	25329	22466	47794	No	77.81	Si
SLU 34	15.32	594.33	-999	-587	-420	4.405	4.405	-832	8444	5952	101952	25329	22466	47794	No	113.79	Si
SLU 36	12.17	1890.52	-11216	-6586	-675	4.405	4.405	-9344	9579	6751	101952	25329	22466	47794	No	70.85	Si
SLU 36	15.32	703.07	-1185	-696	-556	4.405	4.405	-987	8465	5966	101952	25329	22466	47794	No	85.95	Si
SLU 32	12.17	1753.16	-10694	-6279	-577	4.405	4.405	-8909	9521	6711	101952	25329	22466	47794	No	82.87	Si
SLU 32	15.32	663.73	-1063	-624	-573	4.405	4.405	-886	8451	5957	101952	25329	22466	47794	No	83.45	Si
SLU 35	12.17	1884.27	-11212	-6583	-605	4.405	4.405	-9340	9579	6751	101952	25329	22466	47794	No	79.03	Si
SLU 35	15.32	720.96	-1182	-694	-600	4.405	4.405	-984	8465	5966	101952	25329	22466	47794	No	79.61	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	12.17	2658.39	-6951	-4081	8183	4.405	4.405	-5791	13658	9626	101952	37993	22466	60459		7.39	Si
SLV 11	15.32	-1778.95	203	119	4000	3.524	0	0	0	0	101952	30395	17972	48367		12.09	Si
SLV 8	12.17	3119.89	-5798	-3405	8407	4.405	4.405	-4831	13466	9491	101952	37993	22466	60459		7.19	Si
SLV 8	15.32	-2253.13	531	312	4210	3.524	0	0	0	0	101952	30395	17972	48367		11.49	Si
SLV 9	12.17	66.26	-11383	-6684	-8728	4.405	4.405	-9483	14397	10147	101952	37993	22466	60459		6.93	Si
SLV 9	15.32	3150.38	-1964	-1153	-4525	4.405	1.7963	-1636	12827	6569	101952	37993	22466	60459		13.36	Si
SLV 10	12.17	196.87	-11362	-6671	-8210	4.405	4.405	-9466	14393	10144	101952	37993	22466	60459		7.36	Si
SLV 10	15.32	3061.39	-1957	-1149	-4007	4.405	1.915	-1631	12826	6567	101952	37993	22466	60459		15.09	Si
SLD 5	12.17	1118.78	-9226	-5417	-3687	4.405	4.405	-7686	14037	9893	101952	37993	22466	60459		16.4	Si
SLD 5	15.32	1354	-1075	-631	-2050	4.405	2.8305	-896	12679	6360	101952	37993	22466	60459		29.49	Si
SLV 7	12.17	2989.28	-5819	-3417	7889	4.405	4.405	-4848	13470	9493	101952	37993	22466	60459		7.66	Si
SLV 7	15.32	-2164.13	524	307	3692	3.524	0	0	0	0	101952	30395	17972	48367		13.1	Si
SLV 12	12.17	2789	-6930	-4069	8701	4.405	4.405	-5774	13655	9624	101952	37993	22466	60459		6.95	Si
SLV 12	15.32	-1867.94	210	123	4518	3.524	0	0	0	0	101952	30395	17972	48367		10.71	Si
SLV 1	12.17	1658.74	-7384	-4336	-3572	4.405	4.405	-6152	13730	9677	101952	37993	22466	60459		16.92	Si
SLV 1	15.32	612.13	-513	-301	-2334	4.405	3.0243	-427	12585	6228	101952	37993	22466	60459		25.91	Si
SLV 5	12.17	397.15	-10251	-6019	-9022	4.405	4.405	-8540	14208	10014	101952	37993	22466	60459		6.7	Si
SLV 5	15.32	2765.19	-1644	-965	-4833	4.405	1.5602	-1369	12774	6493	101952	37993	22466	60459		12.51	Si
SLV 6	12.17	527.76	-10230	-6007	-8504	4.405	4.405	-8523	14205	10011	101952	37993	22466	60459		7.11	Si
SLV 6	15.32	2676.2	-1636	-961	-4315	4.405	1.7012	-1363	12773	6492	101952	37993	22466	60459		14.01	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 13.745 Ta 0.1 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 3	-3011	0.53	307.98	0	607.13	303.57	0.99	No
SLV 4	-3081	0.53	307.98	0	614.05	307.02	1	No
SLV 1	-3654	0.53	307.98	0	670.83	335.42	1.09	Si
SLV 7	-3692	0.53	307.98	0	674.5	337.25	1.1	Si
SLV 2	-3724	0.53	307.98	0	677.71	338.86	1.1	Si
SLV 8	-3739	0.53	307.98	0	679.14	339.57	1.1	Si
SLV 11	-4909	0.53	307.98	377.81	793.82	585.82	1.9	Si
SLV 12	-4956	0.53	307.98	381.28	798.41	589.84	1.92	Si
SLV 5	-5837	0.53	307.98	445.88	884.08	664.98	2.16	Si
SLV 6	-5884	0.53	307.98	449.29	888.61	668.95	2.17	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.03 Ta = 0.1036

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-1582	-11157	365	6.849	506.2	0.89	111.81505	8.86034	Si
SLV 14	-1571	-11127	364	6.87	505.3	0.89	112.13879	8.86034	Si
SLV 9	-1964	-11383	443	6.171	540.1	0.889	100.89072	6.96406	Si
SLV 10	-1957	-11362	443	6.182	539.4	0.889	101.07317	6.96406	Si
SLV 15	-932	-9828	145	8.438	453.2	0.902	135.93739	8.86034	Si
SLV 16	-921	-9797	145	8.469	452.4	0.903	136.37711	8.86034	Si
SLV 5	-1644	-10251	290	6.754	511.6	0.89	110.31321	6.96406	Si
SLV 6	-1636	-10230	290	6.767	510.9	0.89	110.52555	6.96406	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 1	-513	-7384	-145	9.843	425.1	0.925	154.67483	8.86034	Si
SLV 2	-502	-7354	-145	9.885	424.5	0.926	155.1856	8.86034	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.945	SLU 77	Si
V_SLU	70.846	SLU 36	Si
PF_SLV	1.958	SLV 9	Si
V_SLV	6.701	SLV 5	Si
PFFP_SLV	0.986	SLV 3	No
R_SLV	12.62	SLV 13	Si

Maschio 246

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-5.158	1.046	-5.158	5.811	L7	L8	4.765	0.16	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			517500	13500	30000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Entrambi	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 49	12.17	304.4	-14628	-0.0000249	0.0004492	0.0035	4.765	29377.81	34267.59	34267.59	112.58	No	Si
SLU 49	15.32	7704.32	-4643	-0.0000339	0.0004492	0.0035	4.765	10510.25	12894.68	12894.68	1.67	No	Si
SLU 8	12.17	565.17	-12112	-0.0000212	0.0004492	0.0035	4.765	25104.94	29068.74	29068.74	51.43	No	Si
SLU 8	15.32	7076.02	-4119	-0.0000327	0.0004492	0.0035	4.765	9380.48	11725.26	11725.26	1.66	No	Si
SLU 50	12.17	458.67	-14476	-0.000025	0.0004492	0.0035	4.765	29130.1	33958.99	33958.99	74.04	No	Si
SLU 50	15.32	8119.43	-4739	-0.0000375	0.0004492	0.0035	4.765	10717.06	13109.56	13109.56	1.61	No	Si
SLU 58	12.17	671.9	-15146	-0.0000266	0.0004492	0.0035	4.765	30217.86	35325.18	35325.18	52.58	No	Si
SLU 58	15.32	7976.72	-4749	-0.0000357	0.0004492	0.0035	4.765	10738.65	13132.02	13132.02	1.65	No	Si
SLU 59	12.17	688.15	-15121	-0.0000265	0.0004492	0.0035	4.765	30178.86	35275.68	35275.68	51.26	No	Si
SLU 59	15.32	7929.92	-4721	-0.0000355	0.0004492	0.0035	4.765	10676.75	13067.64	13067.64	1.65	No	Si
SLU 48	12.17	288.14	-14652	-0.0000249	0.0004492	0.0035	4.765	29417.43	34317.08	34317.08	119.1	No	Si
SLU 48	15.32	7751.12	-4672	-0.0000341	0.0004492	0.0035	4.765	10572.26	12959.06	12959.06	1.67	No	Si
SLU 72	12.17	680.93	-16079	-0.0000282	0.0004492	0.0035	4.765	31696.35	37219.69	37219.69	54.66	No	Si
SLU 72	15.32	8373.36	-5090	-0.0000365	0.0004492	0.0035	4.765	11464.11	13889.94	13889.94	1.66	No	Si
SLU 9	12.17	581.42	-12088	-0.0000212	0.0004492	0.0035	4.765	25062.17	29018.35	29018.35	49.91	No	Si
SLU 9	15.32	7029.21	-4090	-0.0000325	0.0004492	0.0035	4.765	9317.65	11659.81	11659.81	1.66	No	Si
SLU 71	12.17	664.68	-16103	-0.0000282	0.0004492	0.0035	4.765	31734.17	37268.29	37268.29	56.07	No	Si
SLU 71	15.32	8420.17	-5119	-0.0000367	0.0004492	0.0035	4.765	11525.46	13954.32	13954.32	1.66	No	Si
SLU 51	12.17	474.93	-14452	-0.000025	0.0004492	0.0035	4.765	29090.26	33909.5	33909.5	71.4	No	Si
SLU 51	15.32	8072.62	-4710	-0.0000373	0.0004492	0.0035	4.765	10655.15	13045.18	13045.18	1.62	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 4	12.17	365.6	-8179	-0.0000141	0.0006738	0.0035	4.765		20876.54	20876.54	57.1		Si
SLV 4	15.32	9017.33	-5440	-0.0000394	0.0006738	0.0035	4.765		14769.14	14769.14	1.64		Si
SLV 1	12.17	-191.9	-5619	-0.0000095	0.0006738	0.0035	4.765		26235.5	26235.5	136.71		Si
SLV 1	15.32	8507.42	-4163	-0.0000653	0.0006738	0.0035	4.765		11886.29	11886.29	1.4		Si
SLV 5	12.17	25.28	-5638	-0.0000092	0.0006738	0.0035	4.765		15214.17	15214.17	601.84		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	15.32	1696.28	-81	-0.0003233	0.0006738	0.0035	3.812		2493.24	2493.24	1.47		Si
SLV 2	12.17	506	-6037	-0.0000109	0.0006738	0.0035	4.765		16112.54	16112.54	31.84		Si
SLV 2	15.32	6410.17	-3366	-0.0000369	0.0006738	0.0035	4.765		10066.44	10066.44	1.57		Si
SLD 2	12.17	217.81	-8566	-0.0000144	0.0006738	0.0035	4.765		21732.98	21732.98	99.78		Si
SLD 2	15.32	4996.31	-2969	-0.0000221	0.0006738	0.0035	4.765		9160.52	9160.52	1.83		Si
SLD 4	12.17	155.85	-9416	-0.0000157	0.0006738	0.0035	4.765		23598.42	23598.42	151.42		Si
SLD 4	15.32	6032.5	-3788	-0.000025	0.0006738	0.0035	4.765		11030.33	11030.33	1.83		Si
SLV 3	12.17	-332.3	-7760	-0.0000134	0.0006738	0.0035	4.765		30958.12	30958.12	93.16		Si
SLV 3	15.32	11114.58	-6237	-0.000055	0.0006738	0.0035	4.765		16561.94	16561.94	1.49		Si
SLD 3	12.17	-141.05	-9238	-0.0000154	0.0006738	0.0035	4.765		34174.59	34174.59	242.29		Si
SLD 3	15.32	6924.71	-4128	-0.0000306	0.0006738	0.0035	4.765		11804.53	11804.53	1.7		Si
SLD 1	12.17	-79.09	-8388	-0.0000139	0.0006738	0.0035	4.765		32325.85	32325.85	408.73		Si
SLD 1	15.32	5888.52	-3308	-0.0000287	0.0006738	0.0035	4.765		9934.72	9934.72	1.69		Si
SLV 7	12.17	-442.71	-12775	-0.0000219	0.0006738	0.0035	4.765		41675.28	41675.28	94.14		Si
SLV 7	15.32	10386.8	-6994	-0.000041	0.0006738	0.0035	4.765		18253.13	18253.13	1.76		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 50	12.17	458.67	-14476	-8500	-1966	4.765	4.765	-11149	9820	7804	101952	27399	24301	51700	No	26.3	Si
SLU 50	15.32	8119.43	-4739	-2783	-5039	4.765	2.0079	-3650	8820	5517	101952	27399	24301	51700	No	10.26	Si
SLU 58	12.17	671.9	-15146	-8893	-1589	4.765	4.765	-11664	9889	7961	101952	27399	24301	51700	No	32.53	Si
SLU 58	15.32	7976.72	-4749	-2789	-4376	4.765	2.109	-3658	8821	5520	101952	27399	24301	51700	No	11.81	Si
SLU 9	12.17	581.42	-12088	-7097	-1696	4.765	4.765	-9309	9575	7300	101952	27399	24301	51700	No	30.49	Si
SLU 9	15.32	7029.21	-4090	-2402	-4249	4.765	1.9922	-3150	8753	5365	101952	27399	24301	51700	No	12.17	Si
SLU 59	12.17	688.15	-15121	-8879	-1685	4.765	4.765	-11646	9886	7956	101952	27399	24301	51700	No	30.69	Si
SLU 59	15.32	7929.92	-4721	-2772	-4355	4.765	2.1079	-3635	8818	5513	101952	27399	24301	51700	No	11.87	Si
SLU 51	12.17	474.93	-14452	-8486	-2061	4.765	4.765	-11130	9817	7798	101952	27399	24301	51700	No	25.09	Si
SLU 51	15.32	8072.62	-4710	-2766	-5018	4.765	2.0062	-3628	8817	5510	101952	27399	24301	51700	No	10.3	Si
SLU 8	12.17	565.17	-12112	-7112	-1601	4.765	4.765	-9328	9577	7302	101952	27399	24301	51700	No	32.3	Si
SLU 8	15.32	7076.02	-4119	-2419	-4270	4.765	1.9943	-3173	8756	5372	101952	27399	24301	51700	No	12.11	Si
SLU 49	12.17	304.4	-14628	-8589	-1824	4.765	4.765	-11265	9835	7840	101952	27399	24301	51700	No	28.35	Si
SLU 49	15.32	7704.32	-4643	-2726	-4602	4.765	2.1693	-3576	8810	5495	101952	27399	24301	51700	No	11.23	Si
SLU 72	12.17	680.93	-16079	-9441	-1625	4.765	4.765	-12383	9984	8180	101952	27399	24301	51700	No	31.82	Si
SLU 72	15.32	8373.36	-5090	-2989	-4544	4.765	2.2122	-3920	8856	5600	101952	27399	24301	51700	No	11.38	Si
SLU 71	12.17	664.68	-16103	-9455	-1530	4.765	4.765	-12402	9987	8186	101952	27399	24301	51700	No	33.8	Si
SLU 71	15.32	8420.17	-5119	-3006	-4565	4.765	2.2127	-3942	8859	5606	101952	27399	24301	51700	No	11.33	Si
SLU 48	12.17	288.14	-14652	-8603	-1729	4.765	4.765	-11284	9838	7845	101952	27399	24301	51700	No	29.91	Si
SLU 48	15.32	7751.12	-4672	-2743	-4623	4.765	2.1701	-3598	8813	5501	101952	27399	24301	51700	No	11.18	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	12.17	-191.9	-5619	-3299	-3457	4.765	4.765	-4327	13365	10190	101952	41098	24301	65400		18.92	Si
SLV 1	15.32	8507.42	-4163	-2445	-9435	4.765	1.0173	-15085	15520	7584	101952	41098	24301	65400		6.93	Si
SLV 6	12.17	495.15	-5919	-3476	-13121	4.765	4.765	-4559	13412	10225	101952	41098	24301	65400		4.98	Si
SLV 6	15.32	284.27	457	268	-1711	3.812	4.765	0	0	0	101952	32878	19441	52320		30.57	Si
SLV 12	12.17	-24.81	-15156	-8899	12397	4.765	4.765	-11672	14834	11310	101952	41098	24301	65400		5.28	Si
SLV 12	15.32	6037.51	-5142	-3019	137	4.765	3.6254	-3960	13292	7814	101952	41098	24301	65400		478.63	Si
SLV 3	12.17	-332.3	-7760	-4557	4405	4.765	4.765	-5977	13695	10441	101952	41098	24301	65400		14.85	Si
SLV 3	15.32	11114.58	-6237	-3662	-10089	4.765	1.8016	-4804	13461	8071	101952	41098	24301	65400		6.48	Si
SLV 10	12.17	443.19	-8018	-4708	-13807	4.765	4.765	-6175	13735	10472	101952	41098	24301	65400		4.74	Si
SLV 10	15.32	-2653.01	1771	1040	2317	3.812	2.6523	0	0	0	101952	32878	19441	52320		22.58	Si
SLV 11	12.17	-494.68	-14874	-8733	12150	4.765	4.765	-11455	14791	11277	101952	41098	24301	65400		5.38	Si
SLV 11	15.32	7449.51	-5680	-3335	-1682	4.765	3.2126	-4374	13375	7940	101952	41098	24301	65400		38.88	Si
SLV 7	12.17	-442.71	-12775	-7501	12836	4.765	4.765	-9839	14468	11030	101952	41098	24301	65400		5.1	Si
SLV 7	15.32	10386.8	-6994	-4106	-5711	4.765	2.6919	-5386	13577	8249	101952	41098	24301	65400		11.45	Si
SLV 9	12.17	-26.69	-7736	-4542	-14054	4.765	4.765	-5958	13692	10438	101952	41098	24301	65400		4.65	Si
SLV 9	15.32	-1241.01	1233	724	498	3.812	4.1292	0	0	0	101952	32878	19441	52320		104.98	Si
SLV 5	12.17	25.28	-5638	-3310	-13368	4.765	4.765	-4342	13368	10192	101952	41098	24301	65400		4.89	Si
SLV 5	15.32	1696.28	-81	-47	-3530	3.812	0	0	0	0	101952	32878	19441	52320		14.82	Si
SLV 8	12.17	27.16	-13057	-7666	13083	4.765	4.765	-10056	14511	11063	101952	41098	24301	65400		5	Si
SLV 8	15.32	8974.79	-6456	-3791	-3892	4.765	2.9774	-4972	13494	8123	101952	41098	24301	65400		16.8	Si

Verifica a pressoflessione fuori piano muratura rinforzata con FRCM D.M. 17-01-18 (N.T.C.)

quota 13.745 Ta 0.1 Wa 0.03 denominatore 8

Comb.	N	Sa	M	M0d	M1d	MRd	Coeff.s.	Verifica
SLV 1	-5207	0.53	333.15	401.07	851.29	626.18	1.88	Si
SLV 3	-5341	0.53	333.15	410.94	864.35	637.65	1.91	Si
SLV 2	-5443	0.53	333.15	418.46	874.32	646.39	1.94	Si
SLV 4	-5576	0.53	333.15	428.3	887.34	657.82	1.97	Si
SLV 5	-6312	0.53	333.15	482.19	958.72	720.45	2.16	Si
SLV 6	-6471	0.53	333.15	493.7	974.02	733.86	2.2	Si
SLV 7	-6757	0.53	333.15	514.45	1001.68	758.07	2.28	Si
SLV 8	-6916	0.53	333.15	525.88	1016.98	771.43	2.32	Si
SLV 9	-7360	0.53	333.15	557.8	1059.81	808.8	2.43	Si
SLV 10	-7519	0.53	333.15	569.12	1075.03	822.07	2.47	Si

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.03 Ta = 0.1036

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 3	-6237	-7760	-480	3.162	982.6	0.913	50.33897	8.86034	Si
SLV 4	-5440	-8179	-480	3.491	903.2	0.908	55.89435	8.86034	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 7	-6994	-12775	-213	2.932	1058.1	0.917	46.4485	6.96406	Si
SLV 8	-6456	-13057	-213	3.113	1004.4	0.914	49.48941	6.96406	Si
SLV 1	-4163	-5619	-434	4.197	777.6	0.899	67.86089	8.86034	Si
SLV 11	-5680	-14874	61	3.438	927.1	0.909	54.95507	6.96406	Si
SLV 12	-5142	-15156	62	3.689	873.8	0.906	59.19809	6.96406	Si
SLV 2	-3366	-6037	-433	4.799	700.4	0.894	78.05655	8.86034	Si
SLV 15	-1857	-14756	436	6.591	560.3	0.889	107.6902	8.86034	Si
SLV 16	-1060	-15174	436	8.216	494.1	0.901	132.59322	8.86034	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.615	SLU 50	Si
V_SLU	10.261	SLU 50	Si
PF_SLV	1.397	SLV 1	Si
V_SLV	4.653	SLV 9	Si
PFFP_SLV	1.88	SLV 1	Si
R_SLV	5.681	SLV 3	Si

Maschio 249

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-6.008	-3.359	-6.513	-3.359	L7	L8	0.505	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 65	14.17	56.77	-1186	-0.0000185	0.0003743	0.0035	0.505	276.49	296.2	296.2	5.22	No	Si
SLU 65	14.97	-161.07	-1316	-0.0000343	0.0003743	0.0035	0.505	303.94	373.58	373.58	2.32	No	Si
SLU 64	14.17	50.76	-1210	-0.000018	0.0003743	0.0035	0.505	281.49	301.48	301.48	5.94	No	Si
SLU 64	14.97	-152.88	-1305	-0.0000326	0.0003743	0.0035	0.505	301.73	371.22	371.22	2.43	No	Si
SLU 68	14.17	52.42	-1352	-0.0000197	0.0003743	0.0035	0.505	311.45	333.17	333.17	6.36	No	Si
SLU 68	14.97	-167.42	-1499	-0.0000362	0.0003743	0.0035	0.505	341.72	414.02	414.02	2.47	No	Si
SLU 44	14.17	55.57	-992	-0.0000163	0.0003743	0.0035	0.505	234.43	252.25	252.25	4.54	No	Si
SLU 44	14.97	-142.76	-1091	-0.0000303	0.0003743	0.0035	0.505	255.91	323.18	323.18	2.26	No	Si
SLU 2	14.17	44.45	-809	-0.0000132	0.0003743	0.0035	0.505	193.57	210.04	210.04	4.73	No	Si
SLU 2	14.97	-116.53	-901	-0.0000245	0.0003743	0.0035	0.505	214.17	280.28	280.28	2.41	No	Si
SLU 52	14.17	50.97	-1010	-0.000016	0.0003743	0.0035	0.505	238.22	256.21	256.21	5.03	No	Si
SLU 52	14.97	-133.19	-1105	-0.0000282	0.0003743	0.0035	0.505	259.09	326.46	326.46	2.45	No	Si
SLU 73	14.17	52.17	-1204	-0.0000181	0.0003743	0.0035	0.505	280.17	300.09	300.09	5.75	No	Si
SLU 73	14.97	-151.49	-1331	-0.0000325	0.0003743	0.0035	0.505	307.01	376.87	376.87	2.49	No	Si
SLU 23	14.17	45.65	-1003	-0.0000153	0.0003743	0.0035	0.505	236.79	254.71	254.71	5.58	No	Si
SLU 23	14.97	-134.84	-1126	-0.0000286	0.0003743	0.0035	0.505	263.6	331.13	331.13	2.46	No	Si
SLU 47	14.17	51.22	-1158	-0.0000175	0.0003743	0.0035	0.505	270.45	289.84	289.84	5.66	No	Si
SLU 47	14.97	-149.12	-1274	-0.0000318	0.0003743	0.0035	0.505	295.04	364.09	364.09	2.44	No	Si
SLU 43	14.17	49.56	-1016	-0.0000159	0.0003743	0.0035	0.505	239.58	257.62	257.62	5.2	No	Si
SLU 43	14.97	-134.58	-1080	-0.0000284	0.0003743	0.0035	0.505	253.62	320.83	320.83	2.38	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 2	14.17	442.51	648	0.0986063	0.0005615	0.0035	0.404		0	0	0		No
SLV 2	14.97	-734.23	-553	-0.009284	0.0005615	0.0035	0.404		199.94	199.94	0.27		No
SLV 4	14.17	273.89	123	-0.032734	0.0005615	0.0035	0.404		0	0	0		No
SLV 4	14.97	-457.1	-563	-0.0042774	0.0005615	0.0035	0.404		202.32	202.32	0.44		No
SLV 6	14.17	439.62	439	-0.0128995	0.0005615	0.0035	0.404		0	0	0		No
SLV 6	14.97	-752.25	-831	-0.0086613	0.0005615	0.0035	0.404		266.75	266.75	0.35		No
SLD 6	14.17	200.19	-354	-0.0116965	0.0005615	0.0035	0.404		102.59	102.59	0.51		No
SLD 6	14.97	-369.96	-898	-0.0016331	0.0005615	0.0035	0.404		282.63	282.63	0.76		No
SLV 10	14.17	287.23	-213	-0.0249697	0.0005615	0.0035	0.404		67.77	67.77	0.24		No
SLV 10	14.97	-516.13	-1087	-0.0035554	0.0005615	0.0035	0.404		326.48	326.48	0.63		No
SLV 1	14.17	309.01	263	-0.0238812	0.0005615	0.0035	0.404		0	0	0		No
SLV 1	14.97	-551.68	-504	-0.0062867	0.0005615	0.0035	0.404		188.15	188.15	0.34		No
SLD 2	14.17	208.09	-243	-0.0154785	0.0005615	0.0035	0.404		75.18	75.18	0.36		No
SLD 2	14.97	-373.13	-784	-0.0019692	0.0005615	0.0035	0.404		255.45	255.45	0.68		No
SLV 11	14.17	-364.69	-2224	-0.0000874	0.0005615	0.0035	0.404		581.77	581.77	1.6		Si
SLV 11	14.97	530.56	-1086	-0.0281888	0.0005615	0.0035	0.404		278.02	278.02	0.52		No
SLV 5	14.17	349.74	179	-0.0417774	0.0005615	0.0035	0.404		0	0	0		No
SLV 5	14.97	-629.34	-798	-0.0066761	0.0005615	0.0035	0.404		258.86	258.86	0.41		No
SLV 3	14.17	140.4	-263	-0.0074824	0.0005615	0.0035	0.404		80.19	80.19	0.57		No
SLV 3	14.97	-274.54	-514	-0.0013503	0.0005615	0.0035	0.404		190.53	190.53	0.69		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 70	14.17	41.7	-1633	-1375	199	0.505	0.505	-9078	8155	1235	35683	4537	1288	5824	No	29.31	Si
SLU 70	14.97	-172.92	-1785	-1503	211	0.505	0.4669	-9921	8267	1158	35683	4537	1288	5824	No	27.66	Si
SLU 72	14.17	45.67	-1527	-1286	210	0.505	0.505	-8488	8076	1224	35683	4537	1288	5824	No	27.78	Si
SLU 72	14.97	-170.5	-1678	-1413	211	0.505	0.4526	-10469	8340	1133	35683	4537	1288	5824	No	27.61	Si
SLU 65	14.17	56.77	-1186	-999	246	0.505	0.505	-6594	7824	1185	35683	4537	1288	5824	No	23.71	Si
SLU 65	14.97	-161.07	-1316	-1108	194	0.505	0.3903	-9524	8214	962	35683	4537	1288	5824	No	29.98	Si
SLU 47	14.17	51.22	-1158	-975	216	0.505	0.505	-6437	7803	1182	35683	4537	1288	5824	No	27	Si
SLU 47	14.97	-149.12	-1274	-1073	197	0.505	0.4063	-8854	8125	990	35683	4537	1288	5824	No	29.64	Si
SLU 80	14.17	41.07	-1544	-1301	181	0.505	0.505	-8584	8089	1225	35683	4537	1288	5824	No	32.2	Si
SLU 80	14.97	-160.93	-1692	-1425	208	0.505	0.4722	-9408	8199	1162	35683	4537	1288	5824	No	28.05	Si
SLU 64	14.17	50.76	-1210	-1019	221	0.505	0.505	-6724	7841	1188	35683	4537	1288	5824	No	26.41	Si
SLU 64	14.97	-152.88	-1305	-1099	186	0.505	0.4062	-9079	8155	994	35683	4537	1288	5824	No	31.37	Si
SLU 67	14.17	46.05	-1467	-1236	212	0.505	0.505	-8157	8032	1217	35683	4537	1288	5824	No	27.52	Si
SLU 67	14.97	-166.57	-1602	-1349	201	0.505	0.4456	-10167	8300	1109	35683	4537	1288	5824	No	29.05	Si
SLU 68	14.17	52.42	-1352	-1139	233	0.505	0.505	-7515	7946	1204	35683	4537	1288	5824	No	25.04	Si
SLU 68	14.97	-167.42	-1499	-1262	204	0.505	0.4224	-10032	8282	1050	35683	4537	1288	5824	No	28.5	Si
SLU 44	14.17	55.57	-992	-836	229	0.505	0.505	-5515	7680	1163	35683	4537	1288	5824	No	25.47	Si
SLU 44	14.97	-142.76	-1091	-918	186	0.505	0.3648	-8441	8070	883	35683	4537	1288	5824	No	31.24	Si
SLU 73	14.17	52.17	-1204	-1013	217	0.505	0.505	-6690	7836	1187	35683	4537	1288	5824	No	26.86	Si
SLU 73	14.97	-151.49	-1331	-1121	191	0.505	0.416	-9037	8149	1017	35683	4537	1288	5824	No	30.5	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	14.17	439.62	439	369	2125	0.404	0	0	0	0	35683	5444	1030	6474		3.05	Si
SLV 6	14.97	-752.25	-831	-700	437	0.404	0	0	0	0	35683	5444	1030	6474		14.81	Si
SLV 12	14.17	-274.81	-1964	-1654	-1447	0.404	0.3378	0	0	0	35683	5444	1030	6474		4.47	Si
SLV 12	14.97	407.66	-1119	-943	-22	0.404	0	0	0	0	35683	5444	1030	6474		288.71	Si
SLV 7	14.17	-212.3	-1573	-1325	-1038	0.404	0.3526	0	0	0	35683	5444	1030	6474		6.24	Si
SLV 7	14.97	294.44	-831	-700	-136	0.404	0	0	0	0	35683	5444	1030	6474		47.71	Si
SLV 2	14.17	442.51	648	546	2133	0.404	0	0	0	0	35683	5444	1030	6474		3.03	Si
SLV 2	14.97	-734.23	-553	-466	341	0.404	0	0	0	0	35683	5444	1030	6474		19.01	Si
SLV 10	14.17	287.23	-213	-179	1354	0.404	0	0	0	0	35683	5444	1030	6474		4.78	Si
SLV 10	14.97	-516.13	-1087	-915	416	0.404	0	0	0	0	35683	5444	1030	6474		15.56	Si
SLV 4	14.17	273.89	123	103	1293	0.404	0	0	0	0	35683	5444	1030	6474		5.01	Si
SLV 4	14.97	-457.1	-563	-474	209	0.404	0	0	0	0	35683	5444	1030	6474		30.96	Si
SLV 15	14.17	-367.57	-2434	-2050	-1818	0.404	0.3044	0	0	0	35683	5444	1030	6474		3.56	Si
SLV 15	14.97	512.55	-1365	-1149	-60	0.404	0	0	0	0	35683	5444	1030	6474		107.35	Si
SLV 1	14.17	309.01	263	221	1595	0.404	0	0	0	0	35683	5444	1030	6474		4.06	Si
SLV 1	14.97	-551.68	-504	-424	141	0.404	0	0	0	0	35683	5444	1030	6474		45.85	Si
SLV 11	14.17	-364.69	-2224	-1873	-1810	0.404	0.2656	0	0	0	35683	5444	1030	6474		3.58	Si
SLV 11	14.97	530.56	-1086	-915	-157	0.404	0	0	0	0	35683	5444	1030	6474		41.32	Si
SLV 5	14.17	349.74	179	151	1763	0.404	0	0	0	0	35683	5444	1030	6474		3.67	Si
SLV 5	14.97	-629.34	-798	-672	303	0.404	0	0	0	0	35683	5444	1030	6474		21.38	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 8	179667	0.53	0	192	61.56	0	0	No, Trazione
SLV 11	179667	0.53	0	722	61.56	0	0	No, Trazione
SLV 12	179667	0.53	0	577	61.56	0	0	No, Trazione
SLV 16	179667	0.53	0	88	61.56	0	0	No, Trazione
SLV 15	179667	0.53	0	302	61.56	0	0	No, Trazione
SLV 7	179667	0.53	0	336	61.56	0	0	No, Trazione
SLV 13	179667	0.53	3119	-473	61.56	69.44	1.13	Si
SLV 14	179667	0.53	4533	-687	61.56	99.95	1.62	Si
SLV 3	179667	0.53	6489	-983	61.56	141.19	2.29	Si
SLV 4	179667	0.53	7903	-1197	61.56	170.29	2.77	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.

- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 15	-965	-880	-3	2.095	168	0.904	33.6859	6.16452	Si
SLV 16	-935	-930	-3	2.139	165.1	0.903	34.43445	6.16452	Si
SLV 11	-935	-292	-20	2.128	165	0.903	34.25568	5.47446	Si
SLV 12	-915	-326	-20	2.158	163.1	0.902	34.77575	5.47446	Si
SLV 13	-766	-1316	8	2.43	148.6	0.897	39.37289	6.16452	Si
SLV 14	-737	-1366	8	2.49	145.7	0.896	40.40441	6.16452	Si
SLV 7	-715	-218	-23	2.525	143.6	0.895	40.99466	5.47446	Si
SLV 8	-695	-251	-23	2.568	141.7	0.894	41.73397	5.47446	Si
SLV 3	-232	-632	-13	4.349	99.8	0.898	70.40151	6.16452	Si
SLV 4	-202	-682	-13	4.55	97.6	0.902	73.32382	6.16452	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.264	SLU 44	Si
V_SLU	23.715	SLU 65	Si
PF_SLV	0	SLV 1	No
V_SLV	3.035	SLV 2	Si
PFFP_SLV	0	SLV 16	No
R_SLV	5.464	SLV 15	Si

Maschio 250

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-3.183	-3.359	-5.508	-3.359	L7	L8	2.325	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 82	14.17	591.65	-5881	-0.000016	0.0003743	0.0035	2.325	6270.83	6680.16	6680.16	11.29	No	Si
SLU 82	14.97	-38.3	-3975	-0.0000087	0.0003743	0.0035	2.325	4362.27	5961.95	5961.95	155.66	No	Si
SLU 61	14.17	507.79	-5020	-0.0000136	0.0003743	0.0035	2.325	5423.42	5791.36	5791.36	11.4	No	Si
SLU 61	14.97	-103.63	-3174	-0.0000073	0.0003743	0.0035	2.325	3524.43	5093.08	5093.08	49.15	No	Si
SLU 10	14.17	432.41	-4112	-0.0000112	0.0003743	0.0035	2.325	4503.87	4837.38	4837.38	11.19	No	Si
SLU 10	14.97	-74.15	-2655	-0.0000061	0.0003743	0.0035	2.325	2971.32	4537.09	4537.09	61.18	No	Si
SLU 65	14.17	620.07	-6047	-0.0000165	0.0003743	0.0035	2.325	6430.68	6848.46	6848.46	11.04	No	Si
SLU 65	14.97	-81.66	-4028	-0.0000091	0.0003743	0.0035	2.325	4416.54	6018.28	6018.28	73.7	No	Si
SLU 52	14.17	526.03	-5076	-0.0000138	0.0003743	0.0035	2.325	5479.53	5850.08	5850.08	11.12	No	Si
SLU 52	14.97	-121.39	-3189	-0.0000075	0.0003743	0.0035	2.325	3540.57	5109.54	5109.54	42.09	No	Si
SLU 2	14.17	442.59	-4221	-0.0000115	0.0003743	0.0035	2.325	4615.71	4952.51	4952.51	11.19	No	Si
SLU 2	14.97	-99.76	-2693	-0.0000063	0.0003743	0.0035	2.325	3011.48	4576.96	4576.96	45.88	No	Si
SLU 73	14.17	609.89	-5938	-0.0000162	0.0003743	0.0035	2.325	6325.35	6737.51	6737.51	11.05	No	Si
SLU 73	14.97	-56.06	-3990	-0.0000089	0.0003743	0.0035	2.325	4378.01	5978.3	5978.3	106.64	No	Si
SLU 44	14.17	536.21	-5185	-0.0000141	0.0003743	0.0035	2.325	5587.93	5963.98	5963.98	11.12	No	Si
SLU 44	14.97	-146.99	-3226	-0.0000077	0.0003743	0.0035	2.325	3580.08	5149.87	5149.87	35.04	No	Si
SLU 23	14.17	526.45	-5083	-0.0000138	0.0003743	0.0035	2.325	5485.64	5856.48	5856.48	11.12	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 23	14.97	-34.43	-3494	-0.0000077	0.0003743	0.0035	2.325	3861.94	5439.92	5439.92	158	No	Si
SLU 31	14.17	516.27	-4974	-0.0000136	0.0003743	0.0035	2.325	5376.88	5742.79	5742.79	11.12	No	Si
SLU 31	14.97	-8.83	-3457	-0.0000074	0.0003743	0.0035	2.325	3822.76	5399.35	5399.35	611.67	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 5	14.17	2361.81	-6771	-0.0000277	0.0005615	0.0035	2.325		7746.58	7746.58	3.28		Si
SLV 5	14.97	-593.92	-3538	-0.0000108	0.0005615	0.0035	2.325		5532.44	5532.44	9.32		Si
SLV 10	14.17	2069.57	-6646	-0.0000257	0.0005615	0.0035	2.325		7615.14	7615.14	3.68		Si
SLV 10	14.97	-735.57	-3391	-0.0000112	0.0005615	0.0035	2.325		5371.56	5371.56	7.3		Si
SLV 12	14.17	-1503.89	-2053	-0.0000157	0.0005615	0.0035	1.86		3893.53	3893.53	2.59		Si
SLV 12	14.97	480.3	-2287	-0.0000075	0.0005615	0.0035	2.325		2881.57	2881.57	6		Si
SLV 6	14.17	2848.5	-7075	-0.0000311	0.0005615	0.0035	2.325		8065.64	8065.64	2.83		Si
SLV 6	14.97	-816.91	-3503	-0.0000119	0.0005615	0.0035	2.325		5494.22	5494.22	6.73		Si
SLV 15	14.17	-1766.71	-2785	-0.0000174	0.0005615	0.0035	2.325		4704.18	4704.18	2.66		Si
SLV 15	14.97	426.74	-2587	-0.0000078	0.0005615	0.0035	2.325		3217.33	3217.33	7.54		Si
SLV 2	14.17	2624.63	-6040	-0.0000276	0.0005615	0.0035	2.325		6974.02	6974.02	2.66		Si
SLV 2	14.97	-540.36	-3239	-0.0000099	0.0005615	0.0035	2.325		5204.3	5204.3	9.63		Si
SLV 7	14.17	-1211.65	-2179	-0.0000118	0.0005615	0.0035	2.325		4032.45	4032.45	3.33		Si
SLV 7	14.97	621.95	-2434	-0.0000086	0.0005615	0.0035	2.325		3046.51	3046.51	4.9		Si
SLV 11	14.17	-1990.58	-1750	-0.0000764	0.0005615	0.0035	1.86		3555.49	3555.49	1.79		Si
SLV 11	14.97	703.29	-2322	-0.0000088	0.0005615	0.0035	2.325		2920.77	2920.77	4.15		Si
SLV 4	14.17	1552.59	-4662	-0.0000185	0.0005615	0.0035	2.325		5496.49	5496.49	3.54		Si
SLV 4	14.97	-175.6	-2908	-0.0000071	0.0005615	0.0035	2.325		4839.74	4839.74	27.56		Si
SLV 1	14.17	1901.75	-5590	-0.0000225	0.0005615	0.0035	2.325		6495.34	6495.34	3.42		Si
SLV 1	14.97	-209.16	-3291	-0.0000082	0.0005615	0.0035	2.325		5261.46	5261.46	25.16		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 72	14.17	591.28	-7727	-6507	2004	2.325	2.325	-9329	8188	5711	35683	20886	5929	26815	No	13.38	Si
SLU 72	14.97	-83.82	-5611	-4725	1706	2.325	2.325	-6774	7848	5474	35683	20886	5929	26815	No	15.72	Si
SLU 70	14.17	597.53	-8103	-6824	2032	2.325	2.325	-9783	8249	5754	35683	20886	5929	26815	No	13.2	Si
SLU 70	14.97	-51.79	-5946	-5007	1721	2.325	2.325	-7179	7902	5511	35683	20886	5929	26815	No	15.58	Si
SLU 71	14.17	570.47	-7713	-6495	1939	2.325	2.325	-9312	8186	5710	35683	20886	5929	26815	No	13.83	Si
SLU 71	14.97	-73.64	-5612	-4726	1663	2.325	2.325	-6775	7848	5474	35683	20886	5929	26815	No	16.12	Si
SLU 65	14.17	620.07	-6047	-5092	1904	2.325	2.325	-7300	7918	5523	35683	20886	5929	26815	No	14.08	Si
SLU 65	14.97	-81.66	-4028	-3392	1553	2.325	2.325	-4863	7593	5296	35683	20886	5929	26815	No	17.27	Si
SLU 49	14.17	513.67	-7242	-6098	1963	2.325	2.325	-8743	8110	5657	35683	20886	5929	26815	No	13.66	Si
SLU 49	14.97	-117.12	-5144	-4332	1604	2.325	2.325	-6211	7773	5421	35683	20886	5929	26815	No	16.71	Si
SLU 69	14.17	576.72	-8089	-6812	1968	2.325	2.325	-9766	8247	5752	35683	20886	5929	26815	No	13.63	Si
SLU 69	14.97	-41.61	-5947	-5008	1678	2.325	2.325	-7180	7902	5511	35683	20886	5929	26815	No	15.98	Si
SLU 67	14.17	604.99	-7258	-6112	1961	2.325	2.325	-8763	8113	5659	35683	20886	5929	26815	No	13.68	Si
SLU 67	14.97	-47.32	-5155	-4341	1630	2.325	2.325	-6223	7774	5423	35683	20886	5929	26815	No	16.45	Si
SLU 68	14.17	612.61	-6892	-5804	1975	2.325	2.325	-8321	8054	5618	35683	20886	5929	26815	No	13.57	Si
SLU 68	14.97	-86.14	-4819	-4058	1643	2.325	2.325	-5818	7720	5385	35683	20886	5929	26815	No	16.32	Si
SLU 51	14.17	507.42	-6866	-5782	1934	2.325	2.325	-8290	8050	5615	35683	20886	5929	26815	No	13.86	Si
SLU 51	14.97	-149.15	-4809	-4050	1589	2.325	2.325	-5806	7719	5384	35683	20886	5929	26815	No	16.87	Si
SLU 47	14.17	528.75	-6031	-5078	1906	2.325	2.325	-7281	7915	5521	35683	20886	5929	26815	No	14.07	Si
SLU 47	14.97	-151.46	-4017	-3383	1527	2.325	2.325	-4850	7591	5295	35683	20886	5929	26815	No	17.56	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	14.17	1901.75	-5590	-4707	4911	2.325	2.325	-6749	11766	8207	35683	31329	5929	37258		7.59	Si
SLV 1	14.97	-209.16	-3291	-2771	3021	2.325	2.325	-3973	11211	7820	35683	31329	5929	37258		12.33	Si
SLV 11	14.17	-1990.58	-1750	-1474	-6081	1.86	0.0758	0	0	0	35683	25063	4743	29806		4.9	Si
SLV 11	14.97	703.29	-2322	-1956	-3227	2.325	2.325	-2804	10977	7657	35683	31329	5929	37258		11.54	Si
SLV 7	14.17	-1211.65	-2179	-1835	-4326	2.325	1.819	-3365	11090	6052	35683	31329	5929	37258		8.61	Si
SLV 7	14.97	621.95	-2434	-2050	-2249	2.325	2.325	-2939	11004	7676	35683	31329	5929	37258		16.57	Si
SLV 15	14.17	-1766.71	-2785	-2345	-4419	2.325	1.5843	-4942	11405	5421	35683	31329	5929	37258		8.43	Si
SLV 15	14.97	426.74	-2587	-2178	-2254	2.325	2.325	-3123	11041	7701	35683	31329	5929	37258		16.53	Si
SLV 2	14.17	2624.63	-6040	-5086	7061	2.325	2.1839	-7292	11875	7780	35683	31329	5929	37258		5.28	Si
SLV 2	14.97	-540.36	-3239	-2728	4445	2.325	2.325	-3911	11199	7811	35683	31329	5929	37258		8.38	Si
SLV 9	14.17	1582.88	-6343	-5342	5520	2.325	2.325	-7658	11948	8334	35683	31329	5929	37258		6.75	Si
SLV 9	14.97	-512.58	-3426	-2885	3481	2.325	2.325	-4136	11244	7843	35683	31329	5929	37258		10.7	Si
SLV 6	14.17	2848.5	-7075	-5958	8722	2.325	2.2796	-8541	12125	8292	35683	31329	5929	37258		4.27	Si
SLV 6	14.97	-816.91	-3503	-2950	5418	2.325	2.325	-4229	11263	7856	35683	31329	5929	37258		6.88	Si
SLV 10	14.17	2069.57	-6646	-5597	6967	2.325	2.325	-8024	12022	8385	35683	31329	5929	37258		5.35	Si
SLV 10	14.97	-735.57	-3391	-2856	4439	2.325	2.325	-4094	11236	7837	35683	31329	5929	37258		8.39	Si
SLV 12	14.17	-1503.89	-2053	-1729	-4634	1.86	1.2904	0	0	0	35683	25063	4743	29806		6.43	Si
SLV 12	14.97	480.3	-2287	-1926	-2269	2.325	2.325	-2762	10969	7651	35683	31329	5929	37258		16.42	Si
SLV 5	14.17	2361.81	-6771	-5702	7275	2.325	2.325	-8175	12052	8406	35683	31329	5929	37258		5.12	Si
SLV 5	14.97	-593.92	-3538	-2979	4460	2.325	2.325	-4272	11271	7862	35683	31329	5929	37258		8.35	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 8	179667	0.53	4967	-3465	283.44	502.79	1.77	Si
SLV 4	179667	0.53	5072	-3538	283.44	513.01	1.81	Si
SLV 7	179667	0.53	5146	-3589	283.44	520.24	1.84	Si

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 3	179667	0.53	5337	-3723	283.44	538.87	1.9	Si
SLV 12	179667	0.53	5392	-3761	283.44	544.18	1.92	Si
SLV 11	179667	0.53	5570	-3885	283.44	561.52	1.98	Si
SLV 2	179667	0.53	5623	-3922	283.44	566.64	2	Si
SLV 1	179667	0.53	5888	-4107	283.44	592.3	2.09	Si
SLV 16	179667	0.53	6486	-4524	283.44	649.81	2.29	Si
SLV 15	179667	0.53	6752	-4709	283.44	675.16	2.38	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 2	-3004	-4620	-229	2.642	633.6	0.893	42.99275	6.16452	Si
SLV 6	-3328	-6813	-817	2.373	664.6	0.895	38.52122	5.47446	Si
SLV 5	-3241	-6958	-817	2.412	656.3	0.895	39.17437	5.47446	Si
SLV 1	-2876	-4836	-229	2.711	621.3	0.892	44.15184	6.16452	Si
SLV 10	-3182	-7341	-827	2.437	650.6	0.894	39.59726	5.47446	Si
SLV 9	-3096	-7486	-827	2.477	642.3	0.894	40.28651	5.47446	Si
SLV 4	-2564	-3299	264	2.886	591.8	0.891	47.09774	6.16452	Si
SLV 14	-2520	-6381	-264	2.914	587.6	0.89	47.56375	6.16452	Si
SLV 3	-2435	-3515	264	2.969	579.7	0.89	48.47914	6.16452	Si
SLV 13	-2391	-6596	-264	2.998	575.6	0.89	48.97123	6.16452	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	11.045	SLU 65	Si
V_SLU	13.197	SLU 70	Si
PF_SLV	1.786	SLV 11	Si
V_SLV	4.272	SLV 6	Si
PFFP_SLV	1.774	SLV 8	Si
R_SLV	6.974	SLV 2	Si

Maschio 251

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	-3.359	-2.283	-3.359	L7	L8	2.16	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 36	13.07	-58.5	-5018	-0.000012	0.0003743	0.0035	2.16	5007.65	6391.84	6391.84	109.26	No	Si
SLU 36	14.87	995.43	-4638	-0.0000171	0.0003743	0.0035	2.16	4657.01	4990.32	4990.32	5.01	No	Si
SLU 35	13.07	-93.2	-5018	-0.0000122	0.0003743	0.0035	2.16	5007.2	6391.37	6391.37	68.57	No	Si
SLU 35	14.87	1015.37	-4658	-0.0000173	0.0003743	0.0035	2.16	4675.45	5009.49	5009.49	4.93	No	Si
SLU 79	13.07	12.41	-5816	-0.0000136	0.0003743	0.0035	2.16	5727.67	6115.21	6115.21	492.68	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 79	14.87	968.49	-4806	-0.0000174	0.0003743	0.0035	2.16	4812.18	5151.98	5151.98	5.32	No	Si
SLU 42	13.07	-186.06	-4298	-0.0000111	0.0003743	0.0035	2.16	4339.84	5693.91	5693.91	30.6	No	Si
SLU 42	14.87	794.86	-3773	-0.0000138	0.0003743	0.0035	2.16	3841.5	4144.06	4144.06	5.21	No	Si
SLU 37	13.07	-121.52	-4757	-0.0000118	0.0003743	0.0035	2.16	4767.21	6136.71	6136.71	50.5	No	Si
SLU 37	14.87	946.62	-4313	-0.0000161	0.0003743	0.0035	2.16	4353.57	4674.94	4674.94	4.94	No	Si
SLU 32	13.07	-91.77	-4654	-0.0000114	0.0003743	0.0035	2.16	4672.16	6037.18	6037.18	65.79	No	Si
SLU 32	14.87	846.76	-4120	-0.000015	0.0003743	0.0035	2.16	4171.95	4486.87	4486.87	5.3	No	Si
SLU 14	13.07	60.88	-4681	-0.0000112	0.0003743	0.0035	2.16	4696.34	5031.22	5031.22	82.64	No	Si
SLU 14	14.87	805.05	-3932	-0.0000142	0.0003743	0.0035	2.16	3993.86	4301.83	4301.83	5.34	No	Si
SLU 77	13.07	40.73	-6077	-0.0000144	0.0003743	0.0035	2.16	5958.61	6359.7	6359.7	156.15	No	Si
SLU 77	14.87	1037.24	-5151	-0.0000186	0.0003743	0.0035	2.16	5128.49	5483.51	5483.51	5.29	No	Si
SLU 41	13.07	-220.76	-4298	-0.0000113	0.0003743	0.0035	2.16	4339.38	5693.45	5693.45	25.79	No	Si
SLU 41	14.87	814.79	-3793	-0.000014	0.0003743	0.0035	2.16	3860.5	4163.69	4163.69	5.11	No	Si
SLU 38	13.07	-86.82	-4758	-0.0000116	0.0003743	0.0035	2.16	4767.66	6137.18	6137.18	70.69	No	Si
SLU 38	14.87	926.68	-4293	-0.0000159	0.0003743	0.0035	2.16	4334.91	4655.67	4655.67	5.02	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 16	13.07	-903.8	-2671	-0.0000118	0.0005615	0.0035	2.16		4109.9	4109.9	4.55		Si
SLV 16	14.87	2472.6	-3281	-0.0000336	0.0005615	0.0035	2.16		3697.47	3697.47	1.5		Si
SLV 10	13.07	4215.82	-6811	-0.00005	0.0005615	0.0035	2.16		7208.02	7208.02	1.71		Si
SLV 10	14.87	-2134.03	-1430	-0.0002563	0.0005615	0.0035	1.728		2828.55	2828.55	1.33		Si
SLV 15	13.07	-1909.88	-2347	-0.0000291	0.0005615	0.0035	1.728		3777.7	3777.7	1.98		Si
SLV 15	14.87	3215.45	-3798	-0.0000553	0.0005615	0.0035	2.16		4222.68	4222.68	1.31		Si
SLV 8	13.07	-3220.06	-1304	-0.0006766	0.0005615	0.0035	1.728		2697.44	2697.44	0.84		No
SLV 8	14.87	2429.67	-3603	-0.0000296	0.0005615	0.0035	2.16		4025.49	4025.49	1.66		Si
SLV 2	13.07	2228.28	-5550	-0.0000272	0.0005615	0.0035	2.16		5975.78	5975.78	2.68		Si
SLV 2	14.87	-2419.67	-1583	-0.0003045	0.0005615	0.0035	1.728		2987.85	2987.85	1.23		Si
SLV 12	13.07	-3468.13	-967	-0.0009182	0.0005615	0.0035	1.728		2345.14	2345.14	0.68		No
SLV 12	14.87	3399.35	-3891	-0.0000646	0.0005615	0.0035	2.16		4316.72	4316.72	1.27		Si
SLV 5	13.07	3786.53	-6930	-0.0000438	0.0005615	0.0035	2.16		7323.54	7323.54	1.93		Si
SLV 5	14.87	-2603.57	-1490	-0.0003899	0.0005615	0.0035	1.728		2891	2891	1.11		Si
SLV 11	13.07	-4145.49	-748	-0.0014014	0.0005615	0.0035	1.728		2116.45	2116.45	0.51		No
SLV 11	14.87	3899.48	-4239	-0.0000926	0.0005615	0.0035	2.16		4668.25	4668.25	1.2		Si
SLV 6	13.07	4463.89	-7148	-0.0000533	0.0005615	0.0035	2.16		7534.77	7534.77	1.69		Si
SLV 6	14.87	-3103.71	-1142	-0.0006862	0.0005615	0.0035	1.728		2528.87	2528.87	0.81		No
SLV 7	13.07	-3897.42	-1086	-0.0010775	0.0005615	0.0035	1.728		2470.11	2470.11	0.63		No
SLV 7	14.87	2929.81	-3951	-0.0000392	0.0005615	0.0035	2.16		4377.34	4377.34	1.49		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	13.07	40.73	-6077	-5117	-1809	2.16	2.16	-7897	7997	5182	35683	19404	5508	24912	No	13.77	Si
SLU 77	14.87	1037.24	-5151	-4337	-1849	2.16	2.16	-6694	7837	5078	35683	19404	5508	24912	No	13.47	Si
SLU 79	13.07	12.41	-5816	-4898	-1736	2.16	2.16	-7558	7952	5153	35683	19404	5508	24912	No	14.35	Si
SLU 79	14.87	968.49	-4806	-4047	-1777	2.16	2.16	-6245	7777	5040	35683	19404	5508	24912	No	14.02	Si
SLU 80	13.07	47.11	-5817	-4898	-1700	2.16	2.16	-7559	7952	5153	35683	19404	5508	24912	No	14.65	Si
SLU 80	14.87	948.56	-4786	-4030	-1727	2.16	2.16	-6220	7774	5037	35683	19404	5508	24912	No	14.42	Si
SLU 36	13.07	-58.5	-5018	-4226	-1771	2.16	2.16	-6522	7814	5063	35683	19404	5508	24912	No	14.07	Si
SLU 36	14.87	995.43	-4638	-3906	-1792	2.16	2.16	-6027	7748	5021	35683	19404	5508	24912	No	13.9	Si
SLU 41	13.07	-220.76	-4298	-3619	-1681	2.16	2.16	-5585	7689	4983	35683	19404	5508	24912	No	14.82	Si
SLU 41	14.87	814.79	-3793	-3194	-1710	2.16	2.16	-4929	7602	4926	35683	19404	5508	24912	No	14.57	Si
SLU 78	13.07	75.43	-6077	-5118	-1773	2.16	2.16	-7898	7998	5182	35683	19404	5508	24912	No	14.05	Si
SLU 78	14.87	1017.31	-5131	-4321	-1799	2.16	2.16	-6668	7833	5076	35683	19404	5508	24912	No	13.84	Si
SLU 83	13.07	-86.83	-5357	-4511	-1683	2.16	2.16	-6962	7873	5101	35683	19404	5508	24912	No	14.8	Si
SLU 83	14.87	836.67	-4285	-3609	-1717	2.16	2.16	-5569	7687	4981	35683	19404	5508	24912	No	14.51	Si
SLU 37	13.07	-121.52	-4757	-4006	-1733	2.16	2.16	-6182	7769	5034	35683	19404	5508	24912	No	14.37	Si
SLU 37	14.87	946.62	-4313	-3632	-1770	2.16	2.16	-5605	7692	4984	35683	19404	5508	24912	No	14.08	Si
SLU 35	13.07	-93.2	-5018	-4226	-1806	2.16	2.16	-6521	7814	5063	35683	19404	5508	24912	No	13.79	Si
SLU 35	14.87	1015.37	-4658	-3923	-1842	2.16	2.16	-6053	7752	5023	35683	19404	5508	24912	No	13.53	Si
SLU 38	13.07	-86.82	-4758	-4006	-1697	2.16	2.16	-6183	7769	5034	35683	19404	5508	24912	No	14.68	Si
SLU 38	14.87	926.68	-4293	-3615	-1720	2.16	2.16	-5579	7688	4982	35683	19404	5508	24912	No	14.48	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 11	13.07	-4145.49	-748	-630	-8080	1.728	0	0	0	0	35683	23285	4406	27691		3.43	Si
SLV 11	14.87	3899.48	-4239	-3570	-7876	2.16	0.4802	-25086	15435	4188	35683	29106	5508	34614		4.39	Si
SLV 9	13.07	3538.46	-6593	-5552	4132	2.16	1.6298	-8567	12130	5931	35683	29106	5508	34614		8.38	Si
SLV 9	14.87	-1633.89	-1778	-1497	4694	1.728	0.4833	0	0	0	35683	23285	4406	27691		5.9	Si
SLV 5	13.07	3786.53	-6930	-5836	5550	2.16	1.6009	-9006	12218	5868	35683	29106	5508	34614		6.24	Si
SLV 5	14.87	-2603.57	-1490	-1255	5306	1.728	0	0	0	0	35683	23285	4406	27691		5.22	Si
SLV 15	13.07	-1909.88	-2347	-1976	-5700	1.728	0.7988	0	0	0	35683	23285	4406	27691		4.86	Si
SLV 15	14.87	3215.45	-3798	-3198	-4432	2.16	0.7001	-4936	11404	4086	35683	29106	5508	34614		7.81	Si
SLV 8	13.07	-3220.06	-1304	-1098	-5669	1.728	0	0	0	0	35683	23285	4406	27691		4.88	Si
SLV 8	14.87	2429.67	-3603	-3034	-6270	2.16	1.2169	-4682	11353	4145	35683	29106	5508	34614		5.52	Si
SLV 16	13.07	-903.8	-2671	-2249	-4225	2.16	2.16	-3471	11111	7200	35683	29106	5508	34614		8.19	Si
SLV 16	14.87	2472.6	-3281	-2763	-2956	2.16	0.9793	-4264	11269	3966	35683	29106	5508	34614		11.71	Si
SLV 7	13.07	-3897.42	-1086	-915	-6663	1.728	0	0	0	0	35683	23285	4406	27691		4.16	Si
SLV 7	14.87	2929.81	-3951	-3327	-7263	2.16	1.0153	-5134	11444	4121	35683	29106	5508	34614		4.77	Si
SLV 6	13.07	4463.89	-7148	-6020	6543	2.16	1.3666	-9290	12275	5032	35683	29106	5508	34614		5.29	Si
SLV 6	14.87	-3103.71	-1142	-962	6300	1.728	0	0	0	0	35683	23285	4406	27691		4.4	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 10	13.07	4215.82	-6811	-5735	5126	2.16	1.383	-8851	12187	5056	35683	29106	5508	34614		6.75	Si
SLV 10	14.87	-2134.03	-1430	-1204	5688	1.728	0	0	0	0	35683	23285	4406	27691		4.87	Si
SLV 12	13.07	-3468.13	-967	-814	-7087	1.728	0	0	0	0	35683	23285	4406	27691		3.91	Si
SLV 12	14.87	3399.35	-3891	-3277	-6882	2.16	0.619	-17800	13977	4107	35683	29106	5508	34614		5.03	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 11	179667	0.53	3534	-2290	263.33	335.6	1.27	Si
SLV 12	179667	0.53	3543	-2296	263.33	336.38	1.28	Si
SLV 7	179667	0.53	3702	-2399	263.33	351.09	1.33	Si
SLV 8	179667	0.53	3710	-2404	263.33	351.87	1.34	Si
SLV 15	179667	0.53	4715	-3056	263.33	444.18	1.69	Si
SLV 16	179667	0.53	4728	-3064	263.33	445.32	1.69	Si
SLV 3	179667	0.53	5273	-3417	263.33	494.85	1.88	Si
SLV 4	179667	0.53	5286	-3425	263.33	495.98	1.88	Si
SLV 13	179667	0.53	5897	-3821	263.33	551.02	2.09	Si
SLV 14	179667	0.53	5909	-3829	263.33	552.14	2.1	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 1	-2382	-3621	-233	2.889	549.8	0.891	47.14055	6.16452	Si
SLV 2	-2369	-3074	-232	2.898	548.6	0.89	47.29411	6.16452	Si
SLV 5	-2562	-4398	-338	2.749	566.8	0.892	44.80564	5.47446	Si
SLV 6	-2553	-4030	-338	2.754	565.9	0.892	44.9003	5.47446	Si
SLV 3	-2140	-3435	-55	3.106	527.2	0.889	50.75153	6.16452	Si
SLV 4	-2127	-2887	-55	3.117	526	0.889	50.92537	6.16452	Si
SLV 13	-2095	-5473	58	3.141	523	0.889	51.32415	6.16452	Si
SLV 14	-2082	-4926	59	3.151	521.8	0.889	51.49748	6.16452	Si
SLV 9	-2476	-4954	-251	2.823	558.6	0.891	46.04277	5.47446	Si
SLV 10	-2467	-4585	-250	2.829	557.8	0.891	46.14175	5.47446	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.934	SLU 35	Si
V_SLU	13.473	SLU 77	Si
PF_SLV	0.511	SLV 11	No
V_SLV	3.427	SLV 11	Si
PFFP_SLV	1.274	SLV 11	Si
R_SLV	7.647	SLV 1	Si

Maschio 252

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-2.963	5.951	-5.008	5.951	L7	L8	2.045	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 18	13.07	-19.84	-3897	-0.0000096	0.0003743	0.0035	2.045	3736.29	4870.51	4870.51	245.49	No	Si
SLU 18	14.87	-962.87	-1760	-0.0000122	0.0003743	0.0035	2.045	1748.98	2851.26	2851.26	2.96	No	Si
SLU 81	13.07	-73.48	-5607	-0.0000143	0.0003743	0.0035	2.045	5218.92	6417.06	6417.06	87.33	No	Si
SLU 81	14.87	-1332.64	-2801	-0.000017	0.0003743	0.0035	2.045	2735.24	3841.76	3841.76	2.88	No	Si
SLU 43	13.07	81.36	-5066	-0.000013	0.0003743	0.0035	2.045	4760.24	5082.46	5082.46	62.47	No	Si
SLU 43	14.87	-1307.37	-2303	-0.0000168	0.0003743	0.0035	2.045	2268.06	3369.57	3369.57	2.58	No	Si
SLU 44	13.07	48.91	-5080	-0.0000128	0.0003743	0.0035	2.045	4771.49	5094.15	5094.15	104.14	No	Si
SLU 44	14.87	-1248.09	-2316	-0.0000159	0.0003743	0.0035	2.045	2280.49	3381.96	3381.96	2.71	No	Si
SLU 60	13.07	24.87	-4873	-0.0000121	0.0003743	0.0035	2.045	4593.57	4906.33	4906.33	197.24	No	Si
SLU 60	14.87	-1240.19	-2109	-0.0000161	0.0003743	0.0035	1.636	2083.85	3186.82	3186.82	2.57	No	Si
SLU 61	13.07	5.41	-4880	-0.000012	0.0003743	0.0035	2.045	4600.37	4913.52	4913.52	908.69	No	Si
SLU 61	14.87	-1204.62	-2117	-0.0000155	0.0003743	0.0035	2.045	2091.36	3194.33	3194.33	2.65	No	Si
SLU 1	13.07	36.65	-4091	-0.0000102	0.0003743	0.0035	2.045	3909.15	4190.95	4190.95	114.36	No	Si
SLU 1	14.87	-1030.05	-1954	-0.000013	0.0003743	0.0035	2.045	1935.41	3038.58	3038.58	2.95	No	Si
SLU 52	13.07	9.37	-4944	-0.0000122	0.0003743	0.0035	2.045	4655	4971.43	4971.43	530.3	No	Si
SLU 52	14.87	-1201.06	-2181	-0.0000153	0.0003743	0.0035	2.045	2151.74	3254.14	3254.14	2.71	No	Si
SLU 82	13.07	-92.94	-5615	-0.0000145	0.0003743	0.0035	2.045	5225.53	6423.99	6423.99	69.12	No	Si
SLU 82	14.87	-1297.07	-2809	-0.0000166	0.0003743	0.0035	2.045	2742.57	3849.28	3849.28	2.97	No	Si
SLU 64	13.07	-16.99	-5801	-0.0000144	0.0003743	0.0035	2.045	5380.93	6588	6588	387.74	No	Si
SLU 64	14.87	-1399.81	-2994	-0.0000179	0.0003743	0.0035	2.045	2915.06	4027.27	4027.27	2.88	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 1	13.07	-553.82	-2423	-0.0000098	0.0005615	0.0035	2.045		3504.86	3504.86	6.33		Si
SLD 1	14.87	-2498.39	-481	-0.0008775	0.0005615	0.0035	1.636		1593.5	1593.5	0.64		No
SLV 4	13.07	-385.04	-1360	-0.000006	0.0005615	0.0035	2.045		2464.73	2464.73	6.4		Si
SLV 4	14.87	-4438.05	486	0.0357675	0.0005615	0.0035	1.636		0	0	0		No
SLV 6	13.07	-2720.41	-3011	-0.0000799	0.0005615	0.0035	1.636		4074.04	4074.04	1.5		Si
SLV 6	14.87	1701	-1279	-0.0015587	0.0005615	0.0035	1.636		1512.46	1512.46	0.89		No
SLV 2	13.07	-1773.62	-1038	-0.0003139	0.0005615	0.0035	1.636		2146.57	2146.57	1.21		Si
SLV 2	14.87	-2555.23	629	0.0577834	0.0005615	0.0035	1.636		0	0	0		No
SLV 1	13.07	-1342.84	56	-0.000612	0.0005615	0.0035	1.636		1047.72	1047.72	0.78		No
SLV 1	14.87	-4388.14	1722	0.1552283	0.0005615	0.0035	1.636		0	0	0		No
SLV 8	13.07	1908.17	-4085	-0.0000244	0.0005615	0.0035	2.045		4246.28	4246.28	2.23		Si
SLV 8	14.87	-4575.06	-1753	-0.0014926	0.0005615	0.0035	1.636		2850.2	2850.2	0.62		No
SLD 3	13.07	-2.17	-2545	-0.0000062	0.0005615	0.0035	2.045		3623.47	3623.47	1671.06		Si
SLD 3	14.87	-3252.74	-527	-0.001325	0.0005615	0.0035	1.636		1638.88	1638.88	0.5		No
SLV 3	13.07	45.74	-267	-0.000001	0.0005615	0.0035	2.045		498.85	498.85	10.91		Si
SLV 3	14.87	-6270.96	1580	0.144815	0.0005615	0.0035	1.636		0	0	0		No
SLD 4	13.07	-185.43	-3011	-0.0000086	0.0005615	0.0035	2.045		4074.27	4074.27	21.97		Si
SLD 4	14.87	-2472.98	-992	-0.0006203	0.0005615	0.0035	1.636		2101.21	2101.21	0.85		No
SLV 7	13.07	2198.2	-3348	-0.0000305	0.0005615	0.0035	2.045		3539.44	3539.44	1.61		Si
SLV 7	14.87	-5809.1	-1016	-0.0032642	0.0005615	0.0035	1.636		2124.81	2124.81	0.37		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 43	13.07	81.36	-5066	-4266	725	2.045	2.045	-6954	7872	4829	35683	18371	5215	23586	No	32.55	Si
SLU 43	14.87	-1307.37	-2303	-1939	725	2.045	1.3645	-4751	7578	3102	35683	18371	5215	23586	No	32.55	Si
SLU 60	13.07	24.87	-4873	-4103	656	2.045	2.045	-6688	7836	4808	35683	18371	5215	23586	No	35.96	Si
SLU 60	14.87	-1240.19	-2109	-1776	656	1.636	1.3035	0	0	0	35683	14697	4172	18869	No	28.77	Si
SLU 46	13.07	-35.84	-6200	-5221	678	2.045	2.045	-8510	8079	4957	35683	18371	5215	23586	No	34.79	Si
SLU 46	14.87	-1340.59	-3437	-2894	678	2.045	1.8973	-5100	7624	4340	35683	18371	5215	23586	No	34.79	Si
SLU 45	13.07	-16.37	-6192	-5214	709	2.045	2.045	-8500	8078	4956	35683	18371	5215	23586	No	33.29	Si
SLU 45	14.87	-1376.16	-3429	-2887	709	2.045	1.8634	-5180	7635	4268	35683	18371	5215	23586	No	33.29	Si
SLU 66	13.07	-114.72	-6927	-5833	705	2.045	2.045	-9508	8212	5038	35683	18371	5215	23586	No	33.45	Si
SLU 66	14.87	-1468.61	-4120	-3470	705	2.045	1.9982	-5656	7699	4615	35683	18371	5215	23586	No	33.45	Si
SLU 64	13.07	-16.99	-5801	-4885	721	2.045	2.045	-7963	8006	4912	35683	18371	5215	23586	No	32.71	Si
SLU 64	14.87	-1399.81	-2994	-2522	721	2.045	1.6651	-5065	7620	3806	35683	18371	5215	23586	No	32.71	Si
SLU 53	13.07	-55.91	-6056	-5100	660	2.045	2.045	-8313	8053	4940	35683	18371	5215	23586	No	35.71	Si
SLU 53	14.87	-1329.14	-3293	-2773	660	2.045	1.8567	-4992	7610	4239	35683	18371	5215	23586	No	35.71	Si
SLU 67	13.07	-134.19	-6935	-5840	674	2.045	2.045	-9519	8214	5039	35683	18371	5215	23586	No	34.97	Si
SLU 67	14.87	-1433.04	-4128	-3476	674	2.045	2.0261	-5666	7700	4680	35683	18371	5215	23586	No	34.97	Si
SLU 65	13.07	-49.44	-5814	-4896	670	2.045	2.045	-7981	8009	4913	35683	18371	5215	23586	No	35.19	Si
SLU 65	14.87	-1340.53	-3008	-2533	670	2.045	1.7304	-4895	7597	3944	35683	18371	5215	23586	No	35.19	Si
SLU 44	13.07	48.91	-5080	-4278	674	2.045	2.045	-6972	7874	4831	35683	18371	5215	23586	No	35.01	Si
SLU 44	14.87	-1248.09	-2316	-1950	674	2.045	1.451	-4493	7544	3284	35683	18371	5215	23586	No	35.01	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 1	13.07	-1342.84	56	47	2047	1.636	0	0	0	0	35683	22045	4172	26217		12.81	Si
SLV 1	14.87	-4388.14	1722	1450	1107	1.636	0	0	0	0	35683	22045	4172	26217		23.68	Si
SLV 8	13.07	1908.17	-4085	-3440	3542	2.045	1.666	-5607	11538	5767	35683	27556	5215	32771		9.25	Si
SLV 8	14.87	-4575.06	-1753	-1476	3261	1.636	0	0	0	0	35683	22045	4172	26217		8.04	Si
SLV 11	13.07	2714.91	-5514	-4643	3341	2.045	1.5904	-7569	11930	5692	35683	27556	5215	32771		9.81	Si
SLV 11	14.87	-3787.05	-2946	-2481	3623	1.636	0	0	0	0	35683	22045	4172	26217		7.24	Si
SLV 14	13.07	-51.24	-8258	-6954	-2703	2.045	2.045	-11335	12684	7781	35683	27556	5215	32771		12.12	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	14.87	4184.9	-5806	-4889	-1764	2.045	0.905	-7969	12010	4257	35683	27556	5215	32771		18.58	Si
SLV 10	13.07	-2203.7	-5176	-4359	-3305	2.045	1.7903	-8146	12046	6470	35683	27556	5215	32771		9.92	Si
SLV 10	14.87	3723.04	-3209	-2702	-3024	1.636	0	0	0	0	35683	22045	4172	26217		8.67	Si
SLV 7	13.07	2198.2	-3348	-2819	4388	2.045	1.0979	-4596	11336	3734	35683	27556	5215	32771		7.47	Si
SLV 7	14.87	-5809.1	-1016	-856	4108	1.636	0	0	0	0	35683	22045	4172	26217		6.38	Si
SLV 9	13.07	-1913.67	-4440	-3739	-2458	2.045	1.7745	-7046	11826	6295	35683	27556	5215	32771		13.33	Si
SLV 9	14.87	2489.01	-2473	-2082	-2177	1.636	0.0478	0	0	0	35683	22045	4172	26217		12.04	Si
SLV 3	13.07	45.74	-267	-225	3786	2.045	2.045	-366	10490	6436	35683	27556	5215	32771		8.66	Si
SLV 3	14.87	-6270.96	1580	1331	2847	1.636	0	0	0	0	35683	22045	4172	26217		9.21	Si
SLV 6	13.07	-2720.41	-3011	-2535	-2257	1.636	0.3566	0	0	0	35683	22045	4172	26217		11.61	Si
SLV 6	14.87	1701	-1279	-1077	-2540	1.636	0	0	0	0	35683	22045	4172	26217		10.32	Si
SLV 12	13.07	2424.88	-6250	-5264	2494	2.045	1.9036	-8580	12133	6929	35683	27556	5215	32771		13.14	Si
SLV 12	14.87	-2553.02	-3683	-3101	2777	1.636	0.9879	0	0	0	35683	22045	4172	26217		9.44	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 4	179667	0.53	0	-681	249.31	0	0	No, e>t/2
SLV 1	179667	0.53	0	665	249.31	0	0	No, Trazione
SLV 2	179667	0.53	0	-428	249.31	0	0	No, e>t/2
SLV 3	179667	0.53	0	413	249.31	0	0	No, Trazione
SLV 5	179667	0.53	2728	-1674	249.31	246.56	0.99	No, M>Mu
SLV 6	179667	0.53	3928	-2410	249.31	352.21	1.41	Si
SLV 7	179667	0.53	4098	-2514	249.31	367.04	1.47	Si
SLV 8	179667	0.53	5299	-3251	249.31	470.71	1.89	Si
SLV 9	179667	0.53	6158	-3778	249.31	543.8	2.18	Si
SLV 10	179667	0.53	7358	-4514	249.31	644.49	2.59	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 14	-5514	-6633	-250	1.608	840.1	0.916	25.50306	6.16452	Si
SLV 16	-5052	-8467	359	1.698	794	0.913	27.03333	6.16452	Si
SLV 13	-4112	-6453	-250	1.982	700.6	0.905	31.81469	6.16452	Si
SLV 15	-3650	-8287	358	2.128	655.1	0.901	34.30508	6.16452	Si
SLV 10	-3508	-2789	-998	2.062	641.1	0.9	33.29381	5.47446	Si
SLV 9	-2564	-2667	-998	2.504	549.8	0.893	40.77721	5.47446	Si
SLV 12	-1968	-8902	1031	2.89	493.7	0.889	47.23854	5.47446	Si
SLV 6	-1523	-1352	-1030	3.279	453.4	0.889	53.5806	5.47446	Si
SLV 11	-1024	-8780	1031	3.862	411	0.896	62.67039	5.47446	Si
SLV 5	-578	-1231	-1031	4.595	378.1	0.914	73.02695	5.47446	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.57	SLU 60	Si
V_SLU	28.767	SLU 60	Si
PF_SLV	0	SLV 1	No
V_SLV	6.383	SLV 7	Si
PFFP_SLV	0	SLV 3	No
R_SLV	4.137	SLV 14	Si

Maschio 253

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	5.951	-2.063	5.951	L7	L8	1.94	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 41	13.07	-149.99	-4117	-0.0000118	0.0003743	0.0035	1.94	3716.2	4815.28	4815.28	32.1	No	Si
SLU 41	14.87	893.83	-3787	-0.0000169	0.0003743	0.0035	1.94	3438.45	3681.31	3681.31	4.12	No	Si
SLU 38	13.07	-65.97	-4730	-0.0000127	0.0003743	0.0035	1.94	4221.78	5349.67	5349.67	81.09	No	Si
SLU 38	14.87	1035.92	-4333	-0.0000195	0.0003743	0.0035	1.94	3895.86	4158.23	4158.23	4.01	No	Si
SLU 37	13.07	-42.04	-4741	-0.0000126	0.0003743	0.0035	1.94	4230.49	5358.89	5358.89	127.46	No	Si
SLU 37	14.87	1022.27	-4324	-0.0000193	0.0003743	0.0035	1.94	3888.02	4150.04	4150.04	4.06	No	Si
SLU 35	13.07	-18.16	-4989	-0.000013	0.0003743	0.0035	1.94	4431.7	5570.44	5570.44	306.79	No	Si
SLU 35	14.87	1096.41	-4678	-0.0000209	0.0003743	0.0035	1.94	4179.59	4455.66	4455.66	4.06	No	Si
SLU 34	13.07	-111.63	-4215	-0.0000117	0.0003743	0.0035	1.94	3797.94	4900.57	4900.57	43.9	No	Si
SLU 34	14.87	889.27	-3797	-0.0000169	0.0003743	0.0035	1.94	3447.13	3690.32	3690.32	4.15	No	Si
SLU 42	13.07	-173.92	-4107	-0.000012	0.0003743	0.0035	1.94	3707.28	4806	4806	27.63	No	Si
SLU 42	14.87	907.48	-3796	-0.000017	0.0003743	0.0035	1.94	3446.46	3689.62	3689.62	4.07	No	Si
SLU 33	13.07	-71.79	-4471	-0.0000121	0.0003743	0.0035	1.94	4009.28	5123.7	5123.7	71.37	No	Si
SLU 33	14.87	954.31	-4145	-0.0000183	0.0003743	0.0035	1.94	3739.54	3995.08	3995.08	4.19	No	Si
SLU 80	13.07	31.24	-5664	-0.0000149	0.0003743	0.0035	1.94	4968.92	5290.69	5290.69	169.38	No	Si
SLU 80	14.87	1093.26	-4821	-0.0000212	0.0003743	0.0035	1.94	4296.12	4577.89	4577.89	4.19	No	Si
SLU 78	13.07	55.12	-5912	-0.0000158	0.0003743	0.0035	1.94	5162.63	5498.03	5498.03	99.75	No	Si
SLU 78	14.87	1167.4	-5176	-0.0000228	0.0003743	0.0035	1.94	4581.91	4879.47	4879.47	4.18	No	Si
SLU 36	13.07	-42.08	-4978	-0.0000132	0.0003743	0.0035	1.94	4423.08	5561.68	5561.68	132.16	No	Si
SLU 36	14.87	1110.06	-4688	-0.000021	0.0003743	0.0035	1.94	4187.32	4463.76	4463.76	4.02	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	13.07	-2650.46	-1002	-0.0007731	0.0005615	0.0035	1.552		2016.88	2016.88	0.76		No
SLV 6	14.87	2362.77	-3643	-0.000038	0.0005615	0.0035	1.94		3604.42	3604.42	1.53		Si
SLD 10	13.07	-952.85	-2308	-0.0000136	0.0005615	0.0035	1.94		3231.63	3231.63	3.39		Si
SLD 10	14.87	1347.18	-2894	-0.000019	0.0005615	0.0035	1.94		2919.29	2919.29	2.17		Si
SLV 14	13.07	-836.8	-1499	-0.000012	0.0005615	0.0035	1.552		2481.92	2481.92	2.97		Si
SLV 14	14.87	1669.4	-2309	-0.0000312	0.0005615	0.0035	1.94		2380.47	2380.47	1.43		Si
SLV 13	13.07	-158.89	-1804	-0.0000058	0.0005615	0.0035	1.94		2764.93	2764.93	17.4		Si
SLV 13	14.87	1262.05	-2023	-0.0000193	0.0005615	0.0035	1.94		2113.18	2113.18	1.67		Si
SLV 5	13.07	-2194.05	-1207	-0.0004717	0.0005615	0.0035	1.552		2209.06	2209.06	1.01		Si
SLV 5	14.87	2088.52	-3451	-0.0000316	0.0005615	0.0035	1.94		3429.32	3429.32	1.64		Si
SLV 11	13.07	2870.3	-6247	-0.0000412	0.0005615	0.0035	1.94		5914.84	5914.84	2.06		Si
SLV 11	14.87	-1336.24	-1750	-0.0000278	0.0005615	0.0035	1.552		2714.98	2714.98	2.03		Si
SLV 7	13.07	2786.69	-6918	-0.000041	0.0005615	0.0035	1.94		6492.46	6492.46	2.33		Si
SLV 7	14.87	-1577.75	-2182	-0.0000292	0.0005615	0.0035	1.552		3115.47	3115.47	1.97		Si
SLD 9	13.07	-762.6	-2394	-0.0000121	0.0005615	0.0035	1.94		3310.37	3310.37	4.34		Si
SLD 9	14.87	1232.86	-2814	-0.0000175	0.0005615	0.0035	1.94		2845.64	2845.64	2.31		Si
SLV 9	13.07	-2110.44	-537	-0.0006934	0.0005615	0.0035	1.552		1579.52	1579.52	0.75		No
SLV 9	14.87	2330.03	-3018	-0.0000517	0.0005615	0.0035	1.94		3033.1	3033.1	1.3		Si
SLV 10	13.07	-2566.85	-332	-0.0011082	0.0005615	0.0035	1.552		1384.91	1384.91	0.54		No
SLV 10	14.87	2604.28	-3211	-0.0000694	0.0005615	0.0035	1.94		3209.66	3209.66	1.23		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 35	13.07	-18.16	-4989	-4201	-1496	1.94	1.94	-7218	7907	4602	35683	17428	4947	22375	No	14.96	Si
SLU 35	14.87	1096.41	-4678	-3940	-1538	1.94	1.94	-6769	7847	4567	35683	17428	4947	22375	No	14.55	Si
SLU 84	13.07	-76.71	-5041	-4245	-1518	1.94	1.94	-7293	7917	4608	35683	17428	4947	22375	No	14.74	Si
SLU 84	14.87	964.82	-4284	-3608	-1558	1.94	1.94	-6199	7771	4523	35683	17428	4947	22375	No	14.36	Si
SLU 83	13.07	-52.79	-5051	-4254	-1486	1.94	1.94	-7309	7919	4609	35683	17428	4947	22375	No	15.06	Si
SLU 83	14.87	951.16	-4275	-3600	-1527	1.94	1.94	-6185	7769	4522	35683	17428	4947	22375	No	14.66	Si
SLU 75	13.07	25.41	-5405	-4551	-1480	1.94	1.94	-7820	7987	4649	35683	17428	4947	22375	No	15.12	Si
SLU 75	14.87	1011.64	-4633	-3902	-1519	1.94	1.94	-6704	7838	4562	35683	17428	4947	22375	No	14.73	Si
SLU 42	13.07	-173.92	-4107	-3458	-1480	1.94	1.94	-5942	7737	4503	35683	17428	4947	22375	No	15.12	Si
SLU 42	14.87	907.48	-3796	-3197	-1515	1.94	1.94	-5493	7677	4468	35683	17428	4947	22375	No	14.77	Si
SLU 36	13.07	-42.08	-4978	-4192	-1527	1.94	1.94	-7203	7905	4601	35683	17428	4947	22375	No	14.65	Si
SLU 36	14.87	1110.06	-4688	-3948	-1570	1.94	1.94	-6783	7849	4568	35683	17428	4947	22375	No	14.25	Si
SLU 79	13.07	55.16	-5675	-4779	-1448	1.94	1.94	-8211	8039	4679	35683	17428	4947	22375	No	15.45	Si
SLU 79	14.87	1079.61	-4812	-4052	-1497	1.94	1.94	-6962	7873	4582	35683	17428	4947	22375	No	14.94	Si
SLU 80	13.07	31.24	-5664	-4770	-1480	1.94	1.94	-8195	8037	4678	35683	17428	4947	22375	No	15.12	Si
SLU 80	14.87	1093.26	-4821	-4060	-1529	1.94	1.94	-6976	7875	4583	35683	17428	4947	22375	No	14.63	Si
SLU 77	13.07	79.05	-5923	-4988	-1534	1.94	1.94	-8570	8087	4707	35683	17428	4947	22375	No	14.59	Si
SLU 77	14.87	1153.75	-5166	-4351	-1582	1.94	1.94	-7475	7941	4622	35683	17428	4947	22375	No	14.15	Si
SLU 78	13.07	55.12	-5912	-4979	-1565	1.94	1.94	-8554	8085	4705	35683	17428	4947	22375	No	14.29	Si
SLU 78	14.87	1167.4	-5176	-4358	-1613	1.94	1.94	-7489	7943	4623	35683	17428	4947	22375	No	13.87	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 7	13.07	2786.69	-6918	-5825	4166	1.94	1.7015	-10009	12418	6339	35683	26141	4947	31088		7.46	Si
SLV 7	14.87	-1577.75	-2182	-1838	3781	1.552	0.741	0	0	0	35683	20913	3958	24871		6.58	Si
SLV 12	13.07	2413.89	-6042	-5088	2874	1.94	1.7115	-8742	12165	6246	35683	26141	4947	31088		10.82	Si
SLV 12	14.87	-1061.98	-1942	-1636	3532	1.552	1.2697	0	0	0	35683	20913	3958	24871		7.04	Si
SLV 10	13.07	-2566.85	-332	-279	-5681	1.552	0	0	0	0	35683	20913	3958	24871		4.38	Si
SLV 10	14.87	2604.28	-3211	-2704	-5343	1.94	0.4767	-19078	14233	3523	35683	26141	4947	31088		5.82	Si
SLV 14	13.07	-836.8	-1499	-1262	-3621	1.552	1.235	0	0	0	35683	20913	3958	24871		6.87	Si
SLV 14	14.87	1669.4	-2309	-1945	-1955	1.94	0.7411	-3341	11085	3320	35683	26141	4947	31088		15.9	Si
SLV 11	13.07	2870.3	-6247	-5261	3494	1.94	1.5317	-9040	12225	5617	35683	26141	4947	31088		8.9	Si
SLV 11	14.87	-1336.24	-1750	-1474	4152	1.552	0.6191	0	0	0	35683	20913	3958	24871		5.99	Si
SLV 9	13.07	-2110.44	-537	-452	-5061	1.552	0	0	0	0	35683	20913	3958	24871		4.91	Si
SLV 9	14.87	2330.03	-3018	-2542	-4723	1.94	0.5942	-14359	13288	3480	35683	26141	4947	31088		6.58	Si
SLV 2	13.07	-1115.5	-3732	-3143	-1381	1.94	1.94	-5400	11497	6691	35683	26141	4947	31088		22.51	Si
SLV 2	14.87	864.37	-3750	-3158	-3191	1.94	1.94	-5427	11502	6694	35683	26141	4947	31088		9.74	Si
SLV 5	13.07	-2194.05	-1207	-1016	-4389	1.552	0	0	0	0	35683	20913	3958	24871		5.67	Si
SLV 5	14.87	2088.52	-3451	-2906	-5094	1.94	1.0943	-4993	11415	3748	35683	26141	4947	31088		6.1	Si
SLV 8	13.07	2330.28	-6712	-5652	3545	1.94	1.8685	-9712	12359	6928	35683	26141	4947	31088		8.77	Si
SLV 8	14.87	-1303.49	-2375	-2000	3161	1.552	1.2633	0	0	0	35683	20913	3958	24871		7.87	Si
SLV 6	13.07	-2650.46	-1002	-844	-5009	1.552	0	0	0	0	35683	20913	3958	24871		4.97	Si
SLV 6	14.87	2362.77	-3643	-3068	-5714	1.94	0.9644	-5271	11471	3620	35683	26141	4947	31088		5.44	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 10	179667	0.53	0	-1575	236.51	0	0	No, e>t/2
SLV 9	179667	0.53	2807	-1634	236.51	240.55	1.02	Si
SLV 6	179667	0.53	3392	-1974	236.51	289.54	1.22	Si
SLV 5	179667	0.53	3493	-2033	236.51	297.98	1.26	Si
SLV 14	179667	0.53	3635	-2116	236.51	309.81	1.31	Si
SLV 13	179667	0.53	3786	-2203	236.51	322.31	1.36	Si
SLV 16	179667	0.53	5139	-2991	236.51	433.56	1.83	Si
SLV 15	179667	0.53	5290	-3079	236.51	445.8	1.88	Si
SLV 2	179667	0.53	5922	-3447	236.51	496.98	2.1	Si
SLV 1	179667	0.53	6073	-3534	236.51	509.09	2.15	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 4	-2732	-4566	230	2.5	550.3	0.895	40.59259	6.16452	Si
SLV 3	-2651	-4159	230	2.546	542.5	0.894	41.37862	6.16452	Si
SLV 2	-2687	-3977	48	2.567	546	0.895	41.70389	6.16452	Si
SLV 1	-2606	-3570	48	2.615	538.2	0.894	42.51957	6.16452	Si
SLV 8	-2481	-5117	342	2.621	526.2	0.893	42.66855	5.47446	Si
SLV 7	-2426	-4844	342	2.656	521	0.892	43.25262	5.47446	Si
SLV 6	-2332	-3155	-264	2.738	511.9	0.892	44.6189	5.47446	Si
SLV 14	-1858	-3780	-237	3.109	467.6	0.889	50.80519	6.16452	Si
SLV 5	-2277	-2881	-264	2.775	506.7	0.891	45.24914	5.47446	Si
SLV 16	-1903	-4369	-55	3.121	471.7	0.889	51.0012	6.16452	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.014	SLU 38	Si
V_SLU	13.868	SLU 78	Si
PF_SLV	0.54	SLV 10	No
V_SLV	4.378	SLV 10	Si
PFFP_SLV	0	SLV 10	No
R_SLV	6.585	SLV 4	Si

Maschio 254

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-0.123	-3.359	-0.123	5.951	L7	L8	9.31	0.3	3.15	3.15	3.15			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 29	12.17	3057.48	-30175	-0.0000174	0.0003743	0.0035	9.31	125560.36	133443.2	133443.2	43.64	No	Si
SLU 29	15.32	-524.93	-6974	-0.0000039	0.0003743	0.0035	9.31	31669.55	58174.06	58174.06	110.82	No	Si
SLU 72	12.17	3339.47	-35672	-0.0000206	0.0003743	0.0035	9.31	145221.76	151918.95	151918.95	45.49	No	Si
SLU 72	15.32	-513.8	-7713	-0.0000043	0.0003743	0.0035	9.31	34928.11	61429.14	61429.14	119.56	No	Si
SLU 9	12.17	2712.1	-26107	-0.000015	0.0003743	0.0035	9.31	110370.12	117271.11	117271.11	43.24	No	Si
SLU 9	15.32	-407.11	-6170	-0.0000034	0.0003743	0.0035	9.31	28096.03	54592.51	54592.51	134.1	No	Si
SLU 28	12.17	3168.04	-30860	-0.0000178	0.0003743	0.0035	9.31	128063.49	135806.3	135806.3	42.87	No	Si
SLU 28	15.32	-499.26	-6906	-0.0000038	0.0003743	0.0035	9.31	31368.6	57871.77	57871.77	115.92	No	Si
SLU 27	12.17	3012.44	-30883	-0.0000178	0.0003743	0.0035	9.31	128146.71	135881.98	135881.98	45.11	No	Si
SLU 27	15.32	-517.99	-6909	-0.0000038	0.0003743	0.0035	9.31	31379.03	57882.22	57882.22	111.74	No	Si
SLU 38	12.17	2942.93	-32248	-0.0000185	0.0003743	0.0035	9.31	133091.54	140420.89	140420.89	47.71	No	Si
SLU 38	15.32	-519.72	-7100	-0.0000039	0.0003743	0.0035	9.31	32224.98	58734.77	58734.77	113.01	No	Si
SLU 7	12.17	2667.07	-26814	-0.0000154	0.0003743	0.0035	9.31	113050.71	120145.93	120145.93	45.05	No	Si
SLU 7	15.32	-400.16	-6104	-0.0000034	0.0003743	0.0035	9.31	27803.78	54299.84	54299.84	135.69	No	Si
SLU 30	12.17	3213.07	-30153	-0.0000174	0.0003743	0.0035	9.31	125476.61	133362.03	133362.03	41.51	No	Si
SLU 30	15.32	-506.21	-6972	-0.0000039	0.0003743	0.0035	9.31	31659.12	58163.58	58163.58	114.9	No	Si
SLU 8	12.17	2556.51	-26130	-0.000015	0.0003743	0.0035	9.31	110456.89	117363.76	117363.76	45.91	No	Si
SLU 8	15.32	-425.84	-6172	-0.0000034	0.0003743	0.0035	9.31	28106.51	54603.01	54603.01	128.22	No	Si
SLU 70	12.17	3294.44	-36379	-0.000021	0.0003743	0.0035	9.31	147680.78	154315.58	154315.58	46.84	No	Si
SLU 70	15.32	-506.85	-7647	-0.0000042	0.0003743	0.0035	9.31	34639.17	61139.57	61139.57	120.63	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	12.17	9882.93	-26621	-0.0000177	0.0005615	0.0035	9.31		121893.69	121893.69	12.33		Si
SLV 12	15.32	6470.83	-3916	-0.0000043	0.0005615	0.0035	9.31		22273.46	22273.46	3.44		Si
SLV 11	12.17	7857.12	-26668	-0.000017	0.0005615	0.0035	9.31		122089.42	122089.42	15.54		Si
SLV 11	15.32	6082.96	-3912	-0.0000041	0.0005615	0.0035	9.31		22254.99	22254.99	3.66		Si
SLV 10	12.17	-7495.83	-23002	-0.0000149	0.0005615	0.0035	9.31		127942.51	127942.51	17.07		Si
SLV 10	15.32	-6541.51	-3250	-0.000004	0.0005615	0.0035	9.31		41476.92	41476.92	6.34		Si
SLV 5	12.17	-7763.29	-22931	-0.0000149	0.0005615	0.0035	9.31		127645.15	127645.15	16.44		Si
SLV 5	15.32	-6812.28	-3387	-0.0000042	0.0005615	0.0035	9.31		42094.84	42094.84	6.18		Si
SLV 9	12.17	-9521.64	-23048	-0.0000156	0.0005615	0.0035	9.31		128137.22	128137.22	13.46		Si
SLV 9	15.32	-6929.38	-3246	-0.0000042	0.0005615	0.0035	9.31		41458.49	41458.49	5.98		Si
SLD 8	12.17	5352.45	-25450	-0.0000155	0.0005615	0.0035	9.31		116969.73	116969.73	21.85		Si
SLD 8	15.32	2605.79	-3820	-0.0000029	0.0005615	0.0035	9.31		21834.2	21834.2	8.38		Si
SLV 6	12.17	-5737.48	-22884	-0.0000142	0.0005615	0.0035	9.31		127450.53	127450.53	22.21		Si
SLV 6	15.32	-6424.41	-3391	-0.000004	0.0005615	0.0035	9.31		42113.27	42113.27	6.56		Si
SLV 8	12.17	11641.29	-26504	-0.0000182	0.0005615	0.0035	9.31		121399.05	121399.05	10.43		Si
SLV 8	15.32	6587.93	-4057	-0.0000044	0.0005615	0.0035	9.31		22911.68	22911.68	3.48		Si
SLV 7	12.17	9615.48	-26550	-0.0000175	0.0005615	0.0035	9.31		121594.73	121594.73	12.65		Si
SLV 7	15.32	6200.06	-4053	-0.0000042	0.0005615	0.0035	9.31		22893.19	22893.19	3.69		Si
SLD 12	12.17	4598.63	-25504	-0.0000152	0.0005615	0.0035	9.31		117196.75	117196.75	25.49		Si
SLD 12	15.32	2555.68	-3759	-0.0000029	0.0005615	0.0035	9.31		21558.83	21558.83	8.44		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 30	12.17	3213.07	-30153	-25392	2055	9.31	9.31	-9091	8157	23602	35683	83635	23740	59285	No	28.84	Si
SLU 30	15.32	-506.21	-6972	-5871	2130	9.31	9.31	-2102	7225	20179	35683	83635	23740	55862	No	26.23	Si
SLU 38	12.17	2942.93	-32248	-27156	2013	9.31	9.31	-9723	8241	24308	35683	83635	23740	59991	No	29.8	Si
SLU 38	15.32	-519.72	-7100	-5979	2087	9.31	9.31	-2141	7230	20193	35683	83635	23740	55876	No	26.77	Si
SLU 69	12.17	3138.84	-36402	-30655	2107	9.31	9.31	-10975	8408	25707	35683	83635	23740	61390	No	29.13	Si
SLU 69	15.32	-525.58	-7649	-6441	2104	9.31	9.31	-2306	7252	20255	35683	83635	23740	55938	No	26.58	Si
SLU 29	12.17	3057.48	-30175	-25411	2134	9.31	9.31	-9098	8158	23609	35683	83635	23740	59293	No	27.79	Si
SLU 29	15.32	-524.93	-6974	-5873	2131	9.31	9.31	-2103	7225	20179	35683	83635	23740	55862	No	26.22	Si
SLU 37	12.17	2787.34	-32271	-27176	2091	9.31	9.31	-9730	8242	24315	35683	83635	23740	59998	No	28.69	Si
SLU 37	15.32	-538.44	-7102	-5981	2088	9.31	9.31	-2141	7230	20193	35683	83635	23740	55876	No	26.76	Si
SLU 72	12.17	3339.47	-35672	-30039	2055	9.31	9.31	-10755	8378	25461	35683	83635	23740	61144	No	29.76	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 72	15.32	-513.8	-7713	-6495	2129	9.31	9.31	-2325	7254	20262	35683	83635	23740	55945	No	26.28	Si
SLU 27	12.17	3012.44	-30883	-26007	2108	9.31	9.31	-9311	8186	23848	35683	83635	23740	59531	No	28.24	Si
SLU 27	15.32	-517.99	-6909	-5818	2105	9.31	9.31	-2083	7222	20172	35683	83635	23740	55855	No	26.53	Si
SLU 71	12.17	3183.88	-35695	-30059	2133	9.31	9.31	-10762	8379	25468	35683	83635	23740	61152	No	28.67	Si
SLU 71	15.32	-532.53	-7715	-6497	2130	9.31	9.31	-2326	7255	20262	35683	83635	23740	55945	No	26.27	Si
SLU 28	12.17	3168.04	-30860	-25987	2030	9.31	9.31	-9304	8185	23840	35683	83635	23740	59523	No	29.33	Si
SLU 28	15.32	-499.26	-6906	-5816	2104	9.31	9.31	-2082	7222	20171	35683	83635	23740	55854	No	26.54	Si
SLU 70	12.17	3294.44	-36379	-30635	2029	9.31	9.31	-10969	8407	25699	35683	83635	23740	61382	No	30.25	Si
SLU 70	15.32	-506.85	-7647	-6440	2103	9.31	9.31	-2306	7252	20254	35683	83635	23740	55938	No	26.59	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 6	12.17	-5737.48	-22884	-19271	-23410	9.31	9.31	-6900	11797	32948	35683	125452	23740	68631		2.93	Si
SLV 6	15.32	-6424.41	-3391	-2855	-15618	9.31	8.2807	-1148	10646	26448	35683	125452	23740	62131		3.98	Si
SLV 8	12.17	11641.29	-26504	-22319	23144	9.31	9.31	-7991	12015	33558	35683	125452	23740	69241		2.99	Si
SLV 8	15.32	6587.93	-4057	-3416	15191	9.31	9.0934	-1223	10661	29084	35683	125452	23740	64767		4.26	Si
SLV 7	12.17	9615.48	-26550	-22358	24676	9.31	9.31	-8005	12018	33565	35683	125452	23740	69249		2.81	Si
SLV 7	15.32	6200.06	-4053	-3413	16722	9.31	9.31	-1222	10661	29776	35683	125452	23740	65460		3.91	Si
SLV 11	12.17	7857.12	-26668	-22457	24672	9.31	9.31	-8041	12025	33585	35683	125452	23740	69268		2.81	Si
SLV 11	15.32	6082.96	-3912	-3294	16877	9.31	9.3002	-1179	10653	29721	35683	125452	23740	65404		3.88	Si
SLV 10	12.17	-7495.83	-23002	-19370	-23414	9.31	9.31	-6935	11804	32968	35683	125452	23740	68651		2.93	Si
SLV 10	15.32	-6541.51	-3250	-2737	-15462	9.31	7.9263	-1151	10647	25317	35683	125452	23740	61000		3.95	Si
SLD 11	12.17	3754.2	-25523	-21493	10200	9.31	9.31	-7695	11956	33392	35683	125452	23740	69076		6.77	Si
SLD 11	15.32	2394	-3758	-3164	7087	9.31	9.31	-1133	10643	29727	35683	125452	23740	65410		9.23	Si
SLD 7	12.17	4508.01	-25469	-21448	10202	9.31	9.31	-7679	11953	33383	35683	125452	23740	69067		6.77	Si
SLD 7	15.32	2444.11	-3818	-3215	7021	9.31	9.31	-1151	10647	29737	35683	125452	23740	65420		9.32	Si
SLV 12	12.17	9882.93	-26621	-22418	23140	9.31	9.31	-8027	12022	33577	35683	125452	23740	69261		2.99	Si
SLV 12	15.32	6470.83	-3916	-3298	15347	9.31	9.0079	-1181	10653	28788	35683	125452	23740	64471		4.2	Si
SLV 5	12.17	-7763.29	-22931	-19310	-21878	9.31	9.31	-6914	11799	32956	35683	125452	23740	68639		3.14	Si
SLV 5	15.32	-6812.28	-3387	-2852	-14087	9.31	7.9303	-1199	10656	25353	35683	125452	23740	61036		4.33	Si
SLV 9	12.17	-9521.64	-23048	-19409	-21882	9.31	9.31	-6949	11807	32976	35683	125452	23740	68659		3.14	Si
SLV 9	15.32	-6929.38	-3246	-2733	-13932	9.31	7.5602	-1205	10658	24172	35683	125452	23740	59855		4.3	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.745 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 14	179667	0.53	4481	-12515	1134.99	1822.24	1.61	Si
SLV 13	179667	0.53	4498	-12562	1134.99	1828.74	1.61	Si
SLV 10	179667	0.53	4617	-12895	1134.99	1875.81	1.65	Si
SLV 9	179667	0.53	4628	-12926	1134.99	1880.18	1.66	Si
SLV 16	179667	0.53	4680	-13070	1134.99	1900.45	1.67	Si
SLV 15	179667	0.53	4696	-13116	1134.99	1906.94	1.68	Si
SLV 6	179667	0.53	4930	-13769	1134.99	1998.69	1.76	Si
SLV 5	179667	0.53	4941	-13800	1134.99	2003.04	1.76	Si
SLV 12	179667	0.53	5279	-14744	1134.99	2135.2	1.88	Si
SLV 11	179667	0.53	5290	-14775	1134.99	2139.53	1.89	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.745 Wa = 0.05 Ta = 0.0552

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 4	-3989	-25089	-3122	4.209	1818.4	0.9	67.98329	6.16452	Si
SLV 3	-3983	-25158	-3122	4.211	1817.9	0.9	68.01378	6.16452	Si
SLV 2	-3789	-24003	-3122	4.28	1803.2	0.901	69.01007	6.16452	Si
SLV 1	-3783	-24072	-3122	4.282	1802.7	0.901	69.04125	6.16452	Si
SLV 16	-3520	-25480	3501	4.347	1783.1	0.904	69.8988	6.16452	Si
SLV 15	-3513	-25549	3501	4.349	1782.7	0.904	69.93128	6.16452	Si
SLV 14	-3320	-24395	3501	4.423	1768.6	0.906	70.9717	6.16452	Si
SLV 13	-3314	-24464	3501	4.425	1768.2	0.906	71.00487	6.16452	Si
SLV 8	-4057	-26504	-804	4.379	1823.6	0.899	70.76824	5.47446	Si
SLV 7	-4053	-26550	-804	4.38	1823.3	0.899	70.78957	5.47446	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	41.506	SLU 30	Si
V_SLU	26.215	SLU 29	Si
PF_SLV	3.442	SLV 12	Si
V_SLV	2.806	SLV 7	Si
PFFP_SLV	1.606	SLV 14	Si
R_SLV	11.028	SLV 4	Si

Maschio 257

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.023	-4.784	-11.023	-3.509	L7	F1	1.274	0.3	2.895	2.67	3.119			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 28	12.17	-170.36	-4401	-0.0000206	0.0003743	0.0035	1.2743	2487.05	2934.29	2934.29	17.22	No	Si
SLU 28	14.84	406.26	-1549	-0.0000137	0.0003743	0.0035	1.2743	947.54	1049.77	1049.77	2.58	No	Si
SLU 27	12.17	-173.1	-4358	-0.0000205	0.0003743	0.0035	1.2743	2465.83	2911.24	2911.24	16.82	No	Si
SLU 27	14.84	402.3	-1541	-0.0000136	0.0003743	0.0035	1.2743	943.25	1045.41	1045.41	2.6	No	Si
SLU 70	12.17	-185.32	-5286	-0.0000246	0.0003743	0.0035	1.2743	2910.42	3396.43	3396.43	18.33	No	Si
SLU 70	14.84	417.35	-1720	-0.0000144	0.0003743	0.0035	1.2743	1047.29	1151.96	1151.96	2.76	No	Si
SLU 35	12.17	-187.92	-4565	-0.0000216	0.0003743	0.0035	1.2743	2567.27	3022.33	3022.33	16.08	No	Si
SLU 35	14.84	411.58	-1577	-0.0000139	0.0003743	0.0035	1.2743	963.98	1066.54	1066.54	2.59	No	Si
SLU 38	12.17	-177.02	-4523	-0.0000213	0.0003743	0.0035	1.2743	2547.18	3000.13	3000.13	16.95	No	Si
SLU 38	14.84	376.61	-1485	-0.0000128	0.0003743	0.0035	1.2743	910.18	1011.78	1011.78	2.69	No	Si
SLU 29	12.17	-164.94	-4274	-0.00002	0.0003743	0.0035	1.2743	2424.11	2866.26	2866.26	17.38	No	Si
SLU 29	14.84	363.37	-1443	-0.0000124	0.0003743	0.0035	1.2743	885.03	986.29	986.29	2.71	No	Si
SLU 37	12.17	-179.76	-4480	-0.0000211	0.0003743	0.0035	1.2743	2526.12	2976.98	2976.98	16.56	No	Si
SLU 37	14.84	372.65	-1478	-0.0000127	0.0003743	0.0035	1.2743	905.88	1007.41	1007.41	2.7	No	Si
SLU 36	12.17	-185.18	-4608	-0.0000218	0.0003743	0.0035	1.2743	2588.2	3045.55	3045.55	16.45	No	Si
SLU 36	14.84	415.54	-1584	-0.000014	0.0003743	0.0035	1.2743	968.26	1070.91	1070.91	2.58	No	Si
SLU 78	12.17	-200.14	-5492	-0.0000257	0.0003743	0.0035	1.2743	3005.58	3503.02	3503.02	17.5	No	Si
SLU 78	14.84	426.63	-1755	-0.0000148	0.0003743	0.0035	1.2743	1067.82	1173.12	1173.12	2.75	No	Si
SLU 30	12.17	-162.2	-4317	-0.0000201	0.0003743	0.0035	1.2743	2445.45	2889.22	2889.22	17.81	No	Si
SLU 30	14.84	367.33	-1450	-0.0000125	0.0003743	0.0035	1.2743	889.34	990.65	990.65	2.7	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 6	12.17	-629.38	-3074	-0.0000236	0.0005615	0.0035	1.2743		2237.52	2237.52	3.56		Si
SLV 6	14.84	348.75	-1071	-0.0000113	0.0005615	0.0035	1.2743		765.91	765.91	2.2		Si
SLV 3	12.17	-937.53	-2439	-0.0000322	0.0005615	0.0035	1.0194		1866.25	1866.25	1.99		Si
SLV 3	14.84	281.26	-1135	-0.0000096	0.0005615	0.0035	1.2743		805.32	805.32	2.86		Si
SLD 6	12.17	-333.69	-3440	-0.0000196	0.0005615	0.0035	1.2743		2452.06	2452.06	7.35		Si
SLD 6	14.84	243.25	-999	-0.0000083	0.0005615	0.0035	1.2743		721.71	721.71	2.97		Si
SLV 1	12.17	-1044.5	-2357	-0.0000407	0.0005615	0.0035	1.0194		1817.91	1817.91	1.74		Si
SLV 1	14.84	346.81	-1147	-0.0000113	0.0005615	0.0035	1.2743		812.75	812.75	2.34		Si
SLV 4	12.17	-1080.26	-2233	-0.0000489	0.0005615	0.0035	1.0194		1744.42	1744.42	1.61		Si
SLV 4	14.84	335.61	-1237	-0.0000111	0.0005615	0.0035	1.2743		868.23	868.23	2.59		Si
SLV 9	12.17	31.85	-4056	-0.0000165	0.0005615	0.0035	1.2743		2537.67	2537.67	79.67		Si
SLV 9	14.84	209.28	-851	-0.0000071	0.0005615	0.0035	1.2743		630.82	630.82	3.01		Si
SLD 2	12.17	-575.28	-3041	-0.0000225	0.0005615	0.0035	1.2743		2218.27	2218.27	3.86		Si
SLD 2	14.84	267.75	-1073	-0.0000091	0.0005615	0.0035	1.2743		767.52	767.52	2.87		Si
SLV 10	12.17	-64.25	-3918	-0.0000165	0.0005615	0.0035	1.2743		2725.17	2725.17	42.42		Si
SLV 10	14.84	245.88	-920	-0.0000082	0.0005615	0.0035	1.2743		673.2	673.2	2.74		Si
SLV 5	12.17	-533.29	-3213	-0.0000224	0.0005615	0.0035	1.2743		2318.49	2318.49	4.35		Si
SLV 5	14.84	312.16	-1002	-0.0000101	0.0005615	0.0035	1.2743		723.55	723.55	2.32		Si
SLV 2	12.17	-1187.23	-2152	-0.0000829	0.0005615	0.0035	1.0194		1695.98	1695.98	1.43		Si
SLV 2	14.84	401.17	-1249	-0.000013	0.0005615	0.0035	1.2743		875.66	875.66	2.18		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 79	12.17	-194.73	-5365	-4518	-924	1.2743	1.2743	-11818	8520	3257	30925	11448	3249	14697	No	15.91	Si
SLU 79	14.84	383.74	-1649	-1388	-657	1.2743	1.2132	-3632	7429	2704	30925	11448	3249	14697	No	22.37	Si
SLU 35	12.17	-187.92	-4565	-3844	-954	1.2743	1.2743	-10055	8285	3167	30925	11448	3249	14697	No	15.41	Si
SLU 35	14.84	411.58	-1577	-1328	-790	1.2743	1.1284	-3473	7408	2508	30925	11448	3249	14697	No	18.61	Si
SLU 78	12.17	-200.14	-5492	-4625	-987	1.2743	1.2743	-12098	8558	3271	30925	11448	3249	14697	No	14.9	Si
SLU 78	14.84	426.63	-1755	-1478	-725	1.2743	1.1822	-3866	7460	2646	30925	11448	3249	14697	No	20.28	Si
SLU 70	12.17	-185.32	-5286	-4451	-915	1.2743	1.2743	-11643	8497	3248	30925	11448	3249	14697	No	16.06	Si
SLU 70	14.84	417.35	-1720	-1448	-659	1.2743	1.1834	-3788	7450	2645	30925	11448	3249	14697	No	22.32	Si
SLU 36	12.17	-185.18	-4608	-3880	-959	1.2743	1.2743	-10150	8298	3172	30925	11448	3249	14697	No	15.33	Si
SLU 36	14.84	415.54	-1584	-1334	-779	1.2743	1.1245	-3490	7410	2500	30925	11448	3249	14697	No	18.87	Si
SLU 38	12.17	-177.02	-4523	-3809	-901	1.2743	1.2743	-9964	8273	3163	30925	11448	3249	14697	No	16.32	Si
SLU 38	14.84	376.61	-1485	-1251	-700	1.2743	1.1507	-3272	7381	2548	30925	11448	3249	14697	No	21	Si
SLU 80	12.17	-191.98	-5408	-4554	-929	1.2743	1.2743	-11913	8533	3262	30925	11448	3249	14697	No	15.83	Si
SLU 80	14.84	387.7	-1656	-1395	-646	1.2743	1.2091	-3648	7431	2695	30925	11448	3249	14697	No	22.76	Si
SLU 77	12.17	-202.88	-5449	-4589	-982	1.2743	1.2743	-12003	8545	3267	30925	11448	3249	14697	No	14.97	Si
SLU 77	14.84	422.67	-1748	-1472	-736	1.2743	1.186	-3850	7458	2653	30925	11448	3249	14697	No	19.97	Si
SLU 75	12.17	-192.39	-5350	-4505	-905	1.2743	1.2743	-11784	8516	3255	30925	11448	3249	14697	No	16.24	Si
SLU 75	14.84	361.03	-1589	-1338	-598	1.2743	1.23	-3501	7411	2735	30925	11448	3249	14697	No	24.57	Si
SLU 69	12.17	-188.06	-5243	-4415	-911	1.2743	1.2743	-11548	8484	3243	30925	11448	3249	14697	No	16.14	Si
SLU 69	14.84	413.39	-1712	-1442	-670	1.2743	1.1872	-3772	7447	2653	30925	11448	3249	14697	No	21.95	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	12.17	-1080.26	-2233	-1881	-5108	1.0194	0.4603	0	0	0	30925	13737	2600	16337		3.2	Si
SLV 4	14.84	335.61	-1237	-1042	-3428	1.2743	1.0976	-2725	10962	3609	30925	17171	3249	20421		5.96	Si
SLV 1	12.17	-1044.5	-2357	-1985	-5815	1.0194	0.5822	0	0	0	30925	13737	2600	16337		2.81	Si
SLV 1	14.84	346.81	-1147	-966	-3361	1.2743	1.0043	-2526	10922	3291	30925	17171	3249	20421		6.08	Si
SLV 5	12.17	-533.29	-3213	-2705	-4216	1.2743	1.2743	-7077	11832	4523	30925	17171	3249	20421		4.84	Si
SLV 5	14.84	312.16	-1002	-844	-1908	1.2743	0.9768	-2207	10858	3182	30925	17171	3249	20421		10.71	Si
SLV 6	12.17	-629.38	-3074	-2589	-4751	1.2743	1.2743	-6772	11771	4500	30925	17171	3249	20421		4.3	Si
SLV 6	14.84	348.75	-1071	-902	-2336	1.2743	0.9344	-2359	10888	3052	30925	17171	3249	20421		8.74	Si
SLV 16	12.17	803.53	-5045	-4248	4831	1.2743	1.2743	-11113	12639	4832	30925	17171	3249	20421		4.23	Si
SLV 16	14.84	-7.3	-735	-619	2921	1.2743	1.2743	-1619	10740	4106	30925	17171	3249	20421		6.99	Si
SLV 15	12.17	946.26	-5250	-4421	5624	1.2743	1.2743	-11566	12730	4867	30925	17171	3249	20421		3.63	Si
SLV 15	14.84	-61.66	-633	-533	3558	1.2743	1.2743	-1394	10695	4089	30925	17171	3249	20421		5.74	Si
SLV 3	12.17	-937.53	-2439	-2054	-4314	1.0194	0.7583	0	0	0	30925	13737	2600	16337		3.79	Si
SLV 3	14.84	281.26	-1135	-956	-2792	1.2743	1.1679	-2500	10917	3825	30925	17171	3249	20421		7.31	Si
SLV 11	12.17	388.42	-4328	-3645	3767	1.2743	1.2743	-9534	12323	4711	30925	17171	3249	20421		5.42	Si
SLV 11	14.84	-9.24	-811	-683	1896	1.2743	1.2743	-1786	10774	4119	30925	17171	3249	20421		10.77	Si
SLV 2	12.17	-1187.23	-2152	-1812	-6609	1.0194	0.2562	0	0	0	30925	13737	2600	16337		2.47	Si
SLV 2	14.84	401.17	-1249	-1052	-3998	1.2743	0.948	-2752	10967	3119	30925	17171	3249	20421		5.11	Si
SLV 13	12.17	839.3	-5169	-4353	4124	1.2743	1.2743	-11386	12694	4853	30925	17171	3249	20421		4.95	Si
SLV 13	14.84	3.9	-645	-543	2988	1.2743	1.2743	-1420	10701	4091	30925	17171	3249	20421		6.83	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 13.505 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 3	179667	0.52	3979	-1521	129.95	222.2	1.71	Si
SLV 1	179667	0.52	4017	-1536	129.95	224.28	1.73	Si
SLV 4	179667	0.52	4060	-1552	129.95	226.64	1.74	Si
SLV 2	179667	0.52	4098	-1567	129.95	228.71	1.76	Si
SLV 7	179667	0.52	4838	-1849	129.95	268.63	2.07	Si
SLV 8	179667	0.52	4893	-1870	129.95	271.58	2.09	Si
SLV 5	179667	0.52	4965	-1898	129.95	275.47	2.12	Si
SLV 6	179667	0.52	5020	-1919	129.95	278.42	2.14	Si
SLV 11	179667	0.52	5601	-2141	129.95	309.41	2.38	Si
SLV 12	179667	0.52	5656	-2162	129.95	312.33	2.4	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 13.505 Wa = 0.05 Ta = 0.0466

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 4	-1237	-2233	85	3.242	293	0.89	52.94404	5.75528	Si
SLV 2	-1249	-2152	22	3.253	294.1	0.89	53.11197	5.75528	Si
SLV 3	-1135	-2439	84	3.396	283.4	0.889	55.49589	5.75528	Si
SLV 1	-1147	-2357	22	3.406	284.6	0.889	55.65998	5.75528	Si
SLV 6	-1071	-3074	-91	3.496	277.5	0.889	57.15434	5.21468	Si
SLV 8	-1031	-3346	117	3.552	273.9	0.889	58.06595	5.21468	Si
SLV 5	-1002	-3213	-91	3.615	271.3	0.889	59.09885	5.21468	Si
SLV 7	-962	-3485	117	3.675	267.6	0.889	60.08247	5.21468	Si
SLV 14	-747	-4963	-93	4.135	248.7	0.891	67.45678	5.75528	Si
SLV 10	-920	-3918	-125	3.749	263.9	0.889	61.2859	5.21468	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	2.577	SLU 36	Si
V_SLU	14.896	SLU 78	Si
PF_SLV	1.429	SLV 2	Si
V_SLV	2.472	SLV 2	Si
PFFP_SLV	1.71	SLV 3	Si
R_SLV	9.199	SLV 4	Si

Maschio 262

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.763	-4.784	-13.143	-4.784	L3	Z medio 275 cm	0.62	0.3	2.43	2.43	2.43			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 81	0.32	1645.72	-13493	-0.0004162	0.0003743	0.0035	0.62	1202.44	2115.14	2115.14	1.29	No	Si
SLU 81	2.75	348.98	-10820	-0.0001364	0.0003743	0.0035	0.62	1437.7	2011.19	2011.19	5.76	No	Si
SLU 73	0.32	1581.09	-13116	-0.0003748	0.0003743	0.0035	0.62	1249.79	2120.69	2120.69	1.34	No	Si
SLU 73	2.75	341.56	-10542	-0.0001322	0.0003743	0.0035	0.62	1448.76	1994.05	1994.05	5.84	No	Si
SLU 84	0.32	1669.61	-13742	-0.0004403	0.0003743	0.0035	0.62	1168.61	2111.45	2111.45	1.26	No	Si
SLU 84	2.75	354.96	-11034	-0.0001397	0.0003743	0.0035	0.62	1427.47	2024.6	2024.6	5.7	No	Si
SLU 76	0.32	1591.75	-13216	-0.0003818	0.0003743	0.0035	0.62	1237.65	2119.34	2119.34	1.33	No	Si
SLU 76	2.75	343.61	-10631	-0.0001335	0.0003743	0.0035	0.62	1445.47	1999.53	1999.53	5.82	No	Si
SLU 82	0.32	1658.95	-13642	-0.0004295	0.0003743	0.0035	0.62	1182.47	2112.92	2112.92	1.27	No	Si
SLU 82	2.75	352.91	-10945	-0.0001384	0.0003743	0.0035	0.62	1431.94	2018.96	2018.96	5.72	No	Si
SLU 80	0.32	1593.58	-13217	-0.0003826	0.0003743	0.0035	0.62	1237.52	2119.32	2119.32	1.33	No	Si
SLU 80	2.75	343.03	-10638	-0.0001335	0.0003743	0.0035	0.62	1445.22	1999.94	1999.94	5.83	No	Si
SLU 75	0.32	1588.97	-13180	-0.0003796	0.0003743	0.0035	0.62	1242.06	2119.9	2119.9	1.33	No	Si
SLU 75	2.75	343.39	-10613	-0.0001332	0.0003743	0.0035	0.62	1446.15	1998.44	1998.44	5.82	No	Si
SLU 83	0.32	1656.38	-13593	-0.000426	0.0003743	0.0035	0.62	1189.06	2113.64	2113.64	1.28	No	Si
SLU 83	2.75	351.03	-10910	-0.0001377	0.0003743	0.0035	0.62	1433.6	2016.78	2016.78	5.75	No	Si
SLU 78	0.32	1599.63	-13281	-0.000387	0.0003743	0.0035	0.62	1229.71	2118.36	2118.36	1.32	No	Si
SLU 78	2.75	345.44	-10703	-0.0001346	0.0003743	0.0035	0.62	1442.65	2003.95	2003.95	5.8	No	Si
SLU 77	0.32	1586.39	-13132	-0.0003773	0.0003743	0.0035	0.62	1247.91	2120.52	2120.52	1.34	No	Si
SLU 77	2.75	341.5	-10579	-0.0001326	0.0003743	0.0035	0.62	1447.43	1996.31	1996.31	5.85	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 11	0.32	659.95	1525	0.5561455	0.0005615	0.0035	0.496		0	0	0		No
SLV 11	2.75	-523.4	6421	0	0.0005615	0.0035	0.496		0	0	0		No
SLV 4	0.32	-1707.75	5390	2.1507868	0.0005615	0.0035	0.496		0	0	0		No
SLV 4	2.75	1351.94	-8358	-0.0002189	0.0005615	0.0035	0.62		2021.31	2021.31	1.5		Si
SLV 13	0.32	3843.77	-23216	-0.0069034	0.0005615	0.0035	0.62		2966.74	2966.74	0.77		No
SLV 13	2.75	-881.76	-5977	-0.0001329	0.0005615	0.0035	0.62		1636.51	1636.51	1.86		Si
SLV 15	0.32	3123.71	-14961	-0.0061423	0.0005615	0.0035	0.62		2860.8	2860.8	0.92		No
SLV 15	2.75	-1092.27	1207	0.4936457	0.0005615	0.0035	0.496		0	0	0		No
SLV 8	0.32	-924.11	8166	3.2239222	0.0005615	0.0035	0.496		0	0	0		No
SLV 8	2.75	291.87	3190	0	0.0005615	0.0035	0.496		0	0	0		No

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	0.32	-681.29	7201	0	0.0005615	0.0035	0.496		0	0	0		No
SLV 7	2.75	143.95	3842	0	0.0005615	0.0035	0.496		0	0	0		No
SLV 16	0.32	2763.06	-13528	-0.0040258	0.0005615	0.0035	0.62		2764.81	2764.81	1		Si
SLV 16	2.75	-872.57	239	0.0208738	0.0005615	0.0035	0.496		0	0	0		No
SLV 14	0.32	3483.12	-21783	-0.0059695	0.0005615	0.0035	0.62		3043.9	3043.9	0.87		No
SLV 14	2.75	-662.05	-6945	-0.0001153	0.0005615	0.0035	0.62		1837.3	1837.3	2.78		Si
SLV 12	0.32	417.13	2490	0.9586978	0.0005615	0.0035	0.496		0	0	0		No
SLV 12	2.75	-375.49	5769	0	0.0005615	0.0035	0.496		0	0	0		No
SLV 3	0.32	-1347.09	3957	1.5805666	0.0005615	0.0035	0.496		0	0	0		No
SLV 3	2.75	1132.24	-7390	-0.0001766	0.0005615	0.0035	0.62		1842.97	1842.97	1.63		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 79	0.32	1580.35	-13069	-11005	3662	0.62	0.5672	-59168	10833	3532	26168	5570	1581	7151	No	1.95	Si
SLU 79	2.75	339.1	-10513	-8853	-1414	0.62	0.62	-47598	10833	2958	26168	5570	1581	7151	No	5.06	Si
SLU 75	0.32	1588.97	-13180	-11099	3680	0.62	0.5683	-59673	10833	3557	26168	5570	1581	7151	No	1.94	Si
SLU 75	2.75	343.39	-10613	-8938	-1432	0.62	0.62	-48052	10833	2980	26168	5570	1581	7151	No	4.99	Si
SLU 80	0.32	1593.58	-13217	-11130	3690	0.62	0.5683	-59841	10833	3565	26168	5570	1581	7151	No	1.94	Si
SLU 80	2.75	343.03	-10638	-8958	-1431	0.62	0.62	-48162	10833	2986	26168	5570	1581	7151	No	5	Si
SLU 83	0.32	1656.38	-13593	-11447	3837	0.62	0.5644	-61543	10833	3649	26168	5570	1581	7151	No	1.86	Si
SLU 83	2.75	351.03	-10910	-9187	-1464	0.62	0.62	-49393	10833	3047	26168	5570	1581	7151	No	4.88	Si
SLU 76	0.32	1591.75	-13216	-11130	3685	0.62	0.5687	-59837	10833	3565	26168	5570	1581	7151	No	1.94	Si
SLU 76	2.75	343.61	-10631	-8953	-1433	0.62	0.62	-48132	10833	2984	26168	5570	1581	7151	No	4.99	Si
SLU 78	0.32	1599.63	-13281	-11184	3704	0.62	0.5687	-60127	10833	3579	26168	5570	1581	7151	No	1.93	Si
SLU 78	2.75	345.44	-10703	-9013	-1441	0.62	0.62	-48458	10833	3000	26168	5570	1581	7151	No	4.96	Si
SLU 77	0.32	1586.39	-13132	-11058	3675	0.62	0.5676	-59454	10833	3546	26168	5570	1581	7151	No	1.95	Si
SLU 77	2.75	341.5	-10579	-8908	-1424	0.62	0.62	-47894	10833	2972	26168	5570	1581	7151	No	5.02	Si
SLU 82	0.32	1658.95	-13642	-11488	3842	0.62	0.5652	-61763	10833	3660	26168	5570	1581	7151	No	1.86	Si
SLU 82	2.75	352.91	-10945	-9216	-1472	0.62	0.62	-49551	10833	3055	26168	5570	1581	7151	No	4.86	Si
SLU 81	0.32	1645.72	-13493	-11363	3813	0.62	0.5641	-61090	10833	3627	26168	5570	1581	7151	No	1.88	Si
SLU 81	2.75	348.98	-10820	-9112	-1455	0.62	0.62	-48987	10833	3027	26168	5570	1581	7151	No	4.91	Si
SLU 84	0.32	1669.61	-13742	-11572	3866	0.62	0.5655	-62217	10833	3683	26168	5570	1581	7151	No	1.85	Si
SLU 84	2.75	354.96	-11034	-9292	-1481	0.62	0.62	-49957	10833	3075	26168	5570	1581	7151	No	4.83	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 16	0.32	2763.06	-13528	-11392	7130	0.62	0.3172	-164021	16250	3933	26168	8355	1581	9936		1.39	Si
SLV 16	2.75	-872.57	239	201	3114	0.496	0	0	0	0	26168	6684	1265	7948		2.55	Si
SLV 10	0.32	2817.32	-25027	-21075	6587	0.62	0.5923	-113306	16250	6515	26168	8355	1581	9936		1.51	Si
SLV 10	2.75	326.23	-18176	-15306	-1412	0.62	0.62	-82292	16250	4977	26168	8355	1581	9936		7.04	Si
SLV 9	0.32	3060.13	-25992	-21888	7218	0.62	0.5768	-117675	16250	6732	26168	8355	1581	9936		1.38	Si
SLV 9	2.75	178.32	-17524	-14757	-839	0.62	0.62	-79341	16250	4831	26168	8355	1581	9936		11.84	Si
SLV 14	0.32	3483.12	-21783	-18343	8721	0.62	0.4503	-98620	16250	5787	26168	8355	1581	9936		1.14	Si
SLV 14	2.75	-662.05	-6945	-5848	2288	0.62	0.62	-31442	16250	3023	26168	8355	1581	9936		4.34	Si
SLD 13	0.32	2244.33	-14909	-12555	5523	0.62	0.4784	-67502	16250	4243	26168	8355	1581	9936		1.8	Si
SLD 13	2.75	-245.49	-6555	-5520	793	0.62	0.62	-29679	16250	3023	26168	8355	1581	9936		12.53	Si
SLV 13	0.32	3843.77	-23216	-19550	9658	0.62	0.4333	-105109	16250	6109	26168	8355	1581	9936		1.03	Si
SLV 13	2.75	-881.76	-5977	-5033	3139	0.62	0.4874	-35068	16250	2376	26168	8355	1581	9936		3.17	Si
SLD 14	0.32	2090.9	-14300	-12042	5125	0.62	0.4913	-64741	16250	4106	26168	8355	1581	9936		1.94	Si
SLD 14	2.75	-152.03	-6967	-5867	431	0.62	0.62	-31543	16250	3023	26168	8355	1581	9936		23.06	Si
SLV 4	0.32	-1707.75	5390	4539	-4708	0.496	0	0	0	0	26168	6684	1265	7948		1.69	Si
SLV 4	2.75	1351.94	-8358	-7038	-5099	0.62	0.4447	-37839	16250	2772	26168	8355	1581	9936		1.95	Si
SLV 2	0.32	-987.69	-2865	-2413	-3117	0.496	0	0	0	0	26168	6684	1265	7948		2.55	Si
SLV 2	2.75	1562.46	-15541	-13087	-5926	0.62	0.62	-70362	16250	4385	26168	8355	1581	9936		1.68	Si
SLV 15	0.32	3123.71	-14961	-12599	8067	0.62	0.3036	-183610	16250	4255	26168	8355	1581	9936		1.23	Si
SLV 15	2.75	-1092.27	1207	1016	3965	0.496	0	0	0	0	26168	6684	1265	7948		2	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 1.535 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.28	0	4183	23.54	0	0	No, Trazione
SLV 4	179667	0.28	0	176	23.54	0	0	No, Trazione
SLV 7	179667	0.28	0	5795	23.54	0	0	No, Trazione
SLV 11	179667	0.28	0	3863	23.54	0	0	No, Trazione
SLV 8	179667	0.28	0	6115	23.54	0	0	No, Trazione
SLV 3	179667	0.28	1605	-298	23.54	44.3	1.88	Si
SLV 16	179667	0.28	33683	-6265	23.54	732.49	31.12	Si
SLV 15	179667	0.28	36236	-6740	23.54	771.1	32.76	Si
SLV 2	179667	0.28	37166	-6913	23.54	784.58	33.33	Si
SLV 1	179667	0.28	39719	-7388	23.54	819.94	34.84	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 1.535 Wa = 0.05 Ta = 0.0329

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-20755	-19351	23	0.226	2178.1	0.991	3.32113	3.01953	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 5	-20103	-20316	23	0.232	2111.7	0.99	3.39885	3.01953	Si
SLV 10	-18176	-25027	27	0.249	1915.2	0.989	3.65815	3.01953	Si
SLV 9	-17524	-25992	27	0.256	1848.8	0.989	3.75953	3.01953	Si
SLV 2	-15541	-2865	3	0.281	1646.7	0.988	4.14148	3.23101	Si
SLV 1	-14573	-4298	3	0.296	1548	0.987	4.35371	3.23101	Si
SLV 4	-8358	5390	-10	0.461	914.6	0.978	6.84488	3.23101	Si, Trazione
SLV 3	-7390	3957	-10	0.51	816	0.976	7.60009	3.23101	Si, Trazione
SLV 14	-6945	-21783	15	0.537	770.7	0.975	8.0051	3.23101	Si
SLV 13	-5977	-23216	15	0.609	672.1	0.971	9.11186	3.23101	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	1.265	SLU 84	Si
V_SLU	1.85	SLU 84	Si
PF_SLV	0	SLV 3	No
V_SLV	1.029	SLV 13	Si
PFFP_SLV	0	SLV 12	No
R_SLV	1.1	SLV 6	Si

Maschio 263

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.743	-4.784	-11.023	-4.784	L3	Z medio 275 cm	0.72	0.3	2.43	2.43	2.43			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 77	0.32	-322.18	-12353	-0.0001226	0.0003743	0.0035	0.72	1949.06	2748.63	2748.63	8.53	No	Si
SLU 77	2.75	-615.34	-13747	-0.0001615	0.0003743	0.0035	0.72	1855.35	2840.73	2840.73	4.62	No	Si
SLU 80	0.32	-330.12	-12447	-0.0001242	0.0003743	0.0035	0.72	1944.76	2754.42	2754.42	8.34	No	Si
SLU 80	2.75	-616.51	-13822	-0.0001625	0.0003743	0.0035	0.72	1848.47	2845.93	2845.93	4.62	No	Si
SLU 81	0.32	-378.91	-12738	-0.0001311	0.0003743	0.0035	0.72	1929.52	2772.92	2772.92	7.32	No	Si
SLU 81	2.75	-628.31	-14075	-0.0001665	0.0003743	0.0035	0.72	1824.02	2863.71	2863.71	4.56	No	Si
SLU 75	0.32	-332.8	-12426	-0.0001242	0.0003743	0.0035	0.72	1945.76	2753.11	2753.11	8.27	No	Si
SLU 75	2.75	-613.42	-13780	-0.0001617	0.0003743	0.0035	0.72	1852.3	2843.04	2843.04	4.63	No	Si
SLU 78	0.32	-328.11	-12505	-0.0001247	0.0003743	0.0035	0.72	1941.95	2758.05	2758.05	8.41	No	Si
SLU 78	2.75	-619.59	-13901	-0.0001636	0.0003743	0.0035	0.72	1841.1	2851.41	2851.41	4.6	No	Si
SLU 79	0.32	-324.19	-12295	-0.0001222	0.0003743	0.0035	0.72	1951.58	2745.07	2745.07	8.47	No	Si
SLU 79	2.75	-612.26	-13668	-0.0001603	0.0003743	0.0035	0.72	1862.33	2835.35	2835.35	4.63	No	Si
SLU 83	0.32	-374.22	-12817	-0.0001315	0.0003743	0.0035	0.72	1924.9	2778.05	2778.05	7.42	No	Si
SLU 83	2.75	-634.49	-14195	-0.0001685	0.0003743	0.0035	0.72	1811.66	2872.34	2872.34	4.53	No	Si
SLU 82	0.32	-384.84	-12890	-0.0001331	0.0003743	0.0035	0.72	1920.5	2782.78	2782.78	7.23	No	Si
SLU 82	2.75	-632.56	-14229	-0.0001687	0.0003743	0.0035	0.72	1808.12	2874.24	2874.24	4.54	No	Si
SLU 76	0.32	-338.76	-12469	-0.0001251	0.0003743	0.0035	0.72	1943.71	2755.79	2755.79	8.13	No	Si
SLU 76	2.75	-613.17	-13804	-0.000162	0.0003743	0.0035	0.72	1850.11	2844.7	2844.7	4.64	No	Si
SLU 84	0.32	-380.15	-12969	-0.0001336	0.0003743	0.0035	0.72	1915.49	2788	2788	7.33	No	Si
SLU 84	2.75	-638.74	-14349	-0.0001707	0.0003743	0.0035	0.72	1795.14	2879.19	2879.19	4.51	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 14	0.32	2109.79	-6792	-0.0048328	0.0005615	0.0035	0.72		2074.07	2074.07	0.98		No
SLV 14	2.75	-1795.31	-18373	-0.000289	0.0005615	0.0035	0.72		3982.59	3982.59	2.22		Si
SLV 12	0.32	1046.77	7249	1.8368959	0.0005615	0.0035	0.576		0	0	0		No
SLV 12	2.75	-367.93	3886	0	0.0005615	0.0035	0.576		0	0	0		No
SLV 4	0.32	-2950.6	-11337	-0.0007576	0.0005615	0.0035	0.576		3133.66	3133.66	1.06		Si
SLV 4	2.75	1222.14	525	-0.0530001	0.0005615	0.0035	0.576		0	0	0		No
SLV 11	0.32	1339.51	8129	2.0529575	0.0005615	0.0035	0.576		0	0	0		No
SLV 11	2.75	-542.48	3383	0.8860183	0.0005615	0.0035	0.576		0	0	0		No
SLV 8	0.32	-576.55	3339	0.875417	0.0005615	0.0035	0.576		0	0	0		No
SLV 8	2.75	469	6952	0	0.0005615	0.0035	0.576		0	0	0		No
SLV 13	0.32	2544.6	-5485	-0.0317404	0.0005615	0.0035	0.576		1720.8	1720.8	0.68		No
SLV 13	2.75	-2054.56	-19120	-0.0003223	0.0005615	0.0035	0.72		4034.7	4034.7	1.96		Si
SLV 3	0.32	-2515.79	-10031	-0.0004328	0.0005615	0.0035	0.576		2913.98	2913.98	1.16		Si
SLV 3	2.75	962.89	-223	-0.0390677	0.0005615	0.0035	0.576		111.49	111.49	0.12		No
SLV 15	0.32	2895.28	3002	0.4367087	0.0005615	0.0035	0.576		0	0	0		No
SLV 15	2.75	-1826.88	-10441	-0.0002191	0.0005615	0.0035	0.72		2981.77	2981.77	1.63		Si
SLV 7	0.32	-283.81	4219	0	0.0005615	0.0035	0.576		0	0	0		No
SLV 7	2.75	294.45	6449	0	0.0005615	0.0035	0.576		0	0	0		No
SLV 16	0.32	2460.48	1696	0.0284724	0.0005615	0.0035	0.576		0	0	0		No
SLV 16	2.75	-1567.63	-9694	-0.0001843	0.0005615	0.0035	0.72		2853.44	2853.44	1.82		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	0.32	-330.12	-12447	-10481	-9	0.72	0.72	-48525	10833	3488	26168	6468	1836	8304	No	910.14	Si
SLU 80	2.75	-616.51	-13822	-11639	1972	0.72	0.72	-53886	10833	3797	26168	6468	1836	8304	No	4.21	Si
SLU 82	0.32	-384.84	-12890	-10855	-59	0.72	0.72	-50252	10833	3588	26168	6468	1836	8304	No	141.63	Si
SLU 82	2.75	-632.56	-14229	-11982	2013	0.72	0.72	-55472	10833	3888	26168	6468	1836	8304	No	4.13	Si
SLU 76	0.32	-338.76	-12469	-10500	-19	0.72	0.72	-48610	10833	3493	26168	6468	1836	8304	No	431.25	Si
SLU 76	2.75	-613.17	-13804	-11625	1960	0.72	0.72	-53817	10833	3793	26168	6468	1836	8304	No	4.24	Si
SLU 78	0.32	-328.11	-12505	-10530	-5	0.72	0.72	-48751	10833	3501	26168	6468	1836	8304	No	1672.27	Si
SLU 78	2.75	-619.59	-13901	-11706	1983	0.72	0.72	-54193	10833	3815	26168	6468	1836	8304	No	4.19	Si
SLU 79	0.32	-324.19	-12295	-10354	-5	0.72	0.72	-47935	10833	3454	26168	6468	1836	8304	No	1651.46	Si
SLU 79	2.75	-612.26	-13668	-11510	1956	0.72	0.72	-53286	10833	3762	26168	6468	1836	8304	No	4.25	Si
SLU 84	0.32	-380.15	-12969	-10921	-51	0.72	0.72	-50561	10833	3605	26168	6468	1836	8304	No	162.1	Si
SLU 84	2.75	-638.74	-14349	-12083	2036	0.72	0.72	-55941	10833	3915	26168	6468	1836	8304	No	4.08	Si
SLU 77	0.32	-322.18	-12353	-10403	-1	0.72	0.72	-48161	10833	3467	26168	6468	1836	8304	No	9544.02	Si
SLU 77	2.75	-615.34	-13747	-11576	1967	0.72	0.72	-53593	10833	3780	26168	6468	1836	8304	No	4.22	Si
SLU 83	0.32	-374.22	-12817	-10794	-47	0.72	0.72	-49970	10833	3571	26168	6468	1836	8304	No	176.18	Si
SLU 83	2.75	-634.49	-14195	-11954	2019	0.72	0.72	-55341	10833	3881	26168	6468	1836	8304	No	4.11	Si
SLU 75	0.32	-332.8	-12426	-10464	-12	0.72	0.72	-48443	10833	3483	26168	6468	1836	8304	No	671.46	Si
SLU 75	2.75	-613.42	-13780	-11604	1960	0.72	0.72	-53724	10833	3788	26168	6468	1836	8304	No	4.24	Si
SLU 81	0.32	-378.91	-12738	-10727	-55	0.72	0.72	-49662	10833	3554	26168	6468	1836	8304	No	152.27	Si
SLU 81	2.75	-628.31	-14075	-11852	1997	0.72	0.72	-54872	10833	3854	26168	6468	1836	8304	No	4.16	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	0.32	2109.79	-6792	-5719	2524	0.72	0.1481	-168295	16250	2565	26168	9702	1836	11538		4.57	Si
SLV 14	2.75	-1795.31	-18373	-15472	6531	0.72	0.72	-71630	16250	5166	26168	9702	1836	11538		1.77	Si
SLV 10	0.32	-122.19	-21041	-17719	318	0.72	0.72	-82033	16250	5765	26168	9702	1836	11538		36.26	Si
SLV 10	2.75	-1126.87	-25044	-21090	3874	0.72	0.72	-97638	16250	6664	26168	9702	1836	11538		2.98	Si
SLV 3	0.32	-2515.79	-10031	-8447	-2485	0.576	0.3276	0	0	0	26168	7762	1469	9230		3.71	Si
SLV 3	2.75	962.89	-223	-187	-3869	0.576	0	0	0	0	26168	7762	1469	9230		2.39	Si
SLV 16	0.32	2460.48	1696	1428	2771	0.576	0	0	0	0	26168	7762	1469	9230		3.33	Si
SLV 16	2.75	-1567.63	-9694	-8163	5756	0.72	0.5949	-46999	16250	3217	26168	9702	1836	11538		2	Si
SLV 13	0.32	2544.6	-5485	-4619	2946	0.576	0	0	0	0	26168	7762	1469	9230		3.13	Si
SLV 13	2.75	-2054.56	-19120	-16101	7564	0.72	0.72	-74543	16250	5333	26168	9702	1836	11538		1.53	Si
SLV 9	0.32	170.55	-20162	-16979	602	0.72	0.72	-78604	16250	5567	26168	9702	1836	11538		19.16	Si
SLV 9	2.75	-1301.42	-25547	-21514	4570	0.72	0.72	-99599	16250	6777	26168	9702	1836	11538		2.52	Si
SLD 13	0.32	976.51	-7039	-5928	1274	0.72	0.6638	-27442	15905	3167	26168	9702	1836	11538		9.06	Si
SLD 13	2.75	-1113.46	-13373	-11261	3985	0.72	0.72	-52135	16250	4043	26168	9702	1836	11538		2.9	Si
SLV 15	0.32	2895.28	3002	2528	3193	0.576	0	0	0	0	26168	7762	1469	9230		2.89	Si
SLV 15	2.75	-1826.88	-10441	-8793	6789	0.72	0.5551	-54576	16250	3384	26168	9702	1836	11538		1.7	Si
SLV 4	0.32	-2950.6	-11337	-9547	-2907	0.576	0.2992	0	0	0	26168	7762	1469	9230		3.18	Si
SLV 4	2.75	1222.14	525	442	-4902	0.576	0	0	0	0	26168	7762	1469	9230		1.88	Si
SLV 2	0.32	-3301.28	-19824	-16694	-3153	0.72	0.5804	-105745	16250	5491	26168	9702	1836	11538		3.66	Si
SLV 2	2.75	994.46	-8154	-6867	-4126	0.72	0.7141	-31791	16250	3481	26168	9702	1836	11538		2.8	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 1.535 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 16	179667	0.28	0	2138	27.33	0	0	No, Trazione
SLV 7	179667	0.28	0	4791	27.33	0	0	No, Trazione
SLV 8	179667	0.28	0	3912	27.33	0	0	No, Trazione
SLV 11	179667	0.28	0	8692	27.33	0	0	No, Trazione
SLV 12	179667	0.28	0	7814	27.33	0	0	No, Trazione
SLV 15	179667	0.28	0	3443	27.33	0	0	No, Trazione
SLV 13	179667	0.28	23803	-5142	27.33	651.02	23.82	Si
SLV 14	179667	0.28	29842	-6446	27.33	777.95	28.46	Si
SLV 6	179667	0.28	114356	-24701	27.33	930.69	34.05	Si
SLV 5	179667	0.28	110290	-23823	27.33	992.74	36.32	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 1.535 Wa = 0.05 Ta = 0.0329

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 9	-25547	-20162	78	0.215	2676.7	0.991	3.15637	3.01953	Si
SLV 10	-25044	-21041	78	0.218	2625.4	0.991	3.20133	3.01953	Si
SLV 5	-22482	-24072	78	0.236	2364.2	0.99	3.46118	3.01953	Si
SLV 6	-21979	-24951	78	0.24	2312.9	0.99	3.51923	3.01953	Si
SLV 13	-19120	-5485	32	0.268	2021.6	0.988	3.94086	3.23101	Si
SLV 14	-18373	-6792	32	0.276	1945.4	0.988	4.06301	3.23101	Si
SLV 15	-10441	3002	-8	0.434	1137.1	0.98	6.44098	3.23101	Si, Trazione
SLV 16	-9694	1696	-8	0.462	1061	0.978	6.85678	3.23101	Si, Trazione
SLV 1	-8902	-18518	31	0.493	980.3	0.977	7.33574	3.23101	Si
SLV 2	-8154	-19824	31	0.53	904.1	0.975	7.90677	3.23101	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.508	SLU 84	Si
V_SLU	4.079	SLU 84	Si
PF_SLV	0	SLV 4	No
V_SLV	1.525	SLV 13	Si
PFFP_SLV	0	SLV 16	No
R_SLV	1.045	SLV 9	Si

Maschio 266

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.613	-4.784	-13.143	-4.784	Z medio 275 cm	Z medio 618 cm	0.47	0.3	3.43	3.43	3.43			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 47	2.75	-12.27	-6760	-0.000082	0.0003743	0.0035	0.47	840.52	1081.3	1081.3	88.1	No	Si
SLU 47	2.82	18.13	-6782	-0.0000833	0.0003743	0.0035	0.47	840.81	1072.27	1072.27	59.13	No	Si
SLU 44	2.75	-11.93	-6690	-0.000081	0.0003743	0.0035	0.47	839.48	1077.36	1077.36	90.34	No	Si
SLU 44	2.82	18.6	-6711	-0.0000824	0.0003743	0.0035	0.47	839.82	1064.83	1064.83	57.25	No	Si
SLU 65	2.75	-11.79	-7504	-0.0000923	0.0003743	0.0035	0.47	841.64	1125.34	1125.34	95.41	No	Si
SLU 65	2.82	19.52	-7528	-0.000094	0.0003743	0.0035	0.47	841.37	1120.96	1120.96	57.44	No	Si
SLU 67	2.75	-12.84	-7563	-0.0000933	0.0003743	0.0035	0.47	840.95	1129.03	1129.03	87.96	No	Si
SLU 67	2.82	18.43	-7587	-0.0000946	0.0003743	0.0035	0.47	840.63	1123.96	1123.96	60.97	No	Si
SLU 68	2.75	-12.14	-7574	-0.0000934	0.0003743	0.0035	0.47	840.81	1129.71	1129.71	93.03	No	Si
SLU 68	2.82	19.05	-7598	-0.0000949	0.0003743	0.0035	0.47	840.48	1124.52	1124.52	59.02	No	Si
SLU 2	2.75	-8.75	-5398	-0.0000634	0.0003743	0.0035	0.47	791.51	944.4	944.4	107.9	No	Si
SLU 2	2.82	15.11	-5415	-0.0000646	0.0003743	0.0035	0.47	792.53	932.17	932.17	61.69	No	Si
SLU 49	2.75	-13.32	-6819	-0.000083	0.0003743	0.0035	0.47	841.27	1084.66	1084.66	81.46	No	Si
SLU 49	2.82	17.05	-6841	-0.0000839	0.0003743	0.0035	0.47	841.53	1078.57	1078.57	63.25	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 46	2.75	-12.97	-6749	-0.000082	0.0003743	0.0035	0.47	840.37	1080.69	1080.69	83.34	No	Si
SLU 46	2.82	17.52	-6771	-0.000083	0.0003743	0.0035	0.47	840.67	1071.11	1071.11	61.15	No	Si
SLU 70	2.75	-13.18	-7633	-0.0000944	0.0003743	0.0035	0.47	839.98	1133.43	1133.43	85.97	No	Si
SLU 70	2.82	17.97	-7658	-0.0000956	0.0003743	0.0035	0.47	839.6	1127.54	1127.54	62.75	No	Si
SLU 23	2.75	-8.62	-6212	-0.000074	0.0003743	0.0035	0.47	828.1	1028.51	1028.51	119.3	No	Si
SLU 23	2.82	16.03	-6232	-0.0000755	0.0003743	0.0035	0.47	828.73	1014.75	1014.75	63.31	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	2.75	-354.21	-2237	-0.0001029	0.0005615	0.0035	0.376		513.38	513.38	1.45		Si
SLV 13	2.82	-855.12	-2265	-0.0122296	0.0005615	0.0035	0.376		518.94	518.94	0.61		No
SLV 11	2.75	-184.21	5790	0	0.0005615	0.0035	0.376		0	0	0		No
SLV 11	2.82	-427.5	5800	0	0.0005615	0.0035	0.376		0	0	0		No
SLD 11	2.75	-82.78	-1063	-0.0000224	0.0005615	0.0035	0.47		268.66	268.66	3.25		Si
SLD 11	2.82	-170.4	-1070	-0.0000477	0.0005615	0.0035	0.376		270.24	270.24	1.59		Si
SLV 8	2.75	54.26	1579	0	0.0005615	0.0035	0.376		0	0	0		No
SLV 8	2.82	177.29	1589	1.2440112	0.0005615	0.0035	0.376		0	0	0		No
SLV 7	2.75	12.88	2393	0	0.0005615	0.0035	0.376		0	0	0		No
SLV 7	2.82	69.29	2404	0	0.0005615	0.0035	0.376		0	0	0		No
SLD 15	2.75	-170.86	-1894	-0.0000441	0.0005615	0.0035	0.47		444.03	444.03	2.6		Si
SLD 15	2.82	-392.11	-1910	-0.0002468	0.0005615	0.0035	0.376		447.2	447.2	1.14		Si
SLV 14	2.75	-292.74	-3447	-0.0000795	0.0005615	0.0035	0.47		743	743	2.54		Si
SLV 14	2.82	-694.71	-3475	-0.0004776	0.0005615	0.0035	0.376		748.06	748.06	1.08		Si
SLV 12	2.75	-142.83	4976	0	0.0005615	0.0035	0.376		0	0	0		No
SLV 12	2.82	-319.5	4985	0	0.0005615	0.0035	0.376		0	0	0		No
SLV 15	2.75	-386.51	3388	2.6960499	0.0005615	0.0035	0.376		0	0	0		No
SLV 15	2.82	-937.36	3377	2.7107878	0.0005615	0.0035	0.376		0	0	0		No
SLV 16	2.75	-325.04	2178	1.7368076	0.0005615	0.0035	0.376		0	0	0		No
SLV 16	2.82	-776.95	2167	1.7466883	0.0005615	0.0035	0.376		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 65	2.75	-11.79	-7504	-6319	-528	0.47	0.47	-44815	10833	2137	38062	4222	1198	5421	No	10.26	Si
SLU 65	2.82	19.52	-7528	-6339	-530	0.47	0.47	-44960	10833	2143	38062	4222	1198	5421	No	10.23	Si
SLU 66	2.75	-13.84	-7467	-6288	-521	0.47	0.47	-44593	10833	2129	38062	4222	1198	5421	No	10.4	Si
SLU 66	2.82	16.97	-7491	-6308	-523	0.47	0.47	-44738	10833	2135	38062	4222	1198	5421	No	10.37	Si
SLU 68	2.75	-12.14	-7574	-6378	-528	0.47	0.47	-45234	10833	2153	38062	4222	1198	5421	No	10.27	Si
SLU 68	2.82	19.05	-7598	-6399	-529	0.47	0.47	-45381	10833	2159	38062	4222	1198	5421	No	10.24	Si
SLU 73	2.75	-14.42	-8279	-6972	-525	0.47	0.47	-49444	10833	2312	38062	4222	1198	5421	No	10.32	Si
SLU 73	2.82	16.05	-8306	-6994	-527	0.47	0.47	-49605	10833	2318	38062	4222	1198	5421	No	10.28	Si
SLU 75	2.75	-15.47	-8338	-7022	-525	0.47	0.47	-49798	10833	2325	38062	4222	1198	5421	No	10.32	Si
SLU 75	2.82	14.97	-8365	-7044	-527	0.47	0.47	-49960	10833	2331	38062	4222	1198	5421	No	10.28	Si
SLU 72	2.75	-13.16	-7580	-6383	-522	0.47	0.47	-45269	10833	2155	38062	4222	1198	5421	No	10.39	Si
SLU 72	2.82	17.61	-7604	-6404	-523	0.47	0.47	-45416	10833	2160	38062	4222	1198	5421	No	10.36	Si
SLU 76	2.75	-14.77	-8349	-7031	-524	0.47	0.47	-49863	10833	2327	38062	4222	1198	5421	No	10.34	Si
SLU 76	2.82	15.58	-8376	-7054	-526	0.47	0.47	-50026	10833	2333	38062	4222	1198	5421	No	10.3	Si
SLU 78	2.75	-15.81	-8408	-7081	-525	0.47	0.47	-50217	10833	2341	38062	4222	1198	5421	No	10.33	Si
SLU 78	2.82	14.5	-8436	-7104	-526	0.47	0.47	-50381	10833	2347	38062	4222	1198	5421	No	10.3	Si
SLU 67	2.75	-12.84	-7563	-6369	-529	0.47	0.47	-45169	10833	2151	38062	4222	1198	5421	No	10.25	Si
SLU 67	2.82	18.43	-7587	-6389	-530	0.47	0.47	-45315	10833	2156	38062	4222	1198	5421	No	10.22	Si
SLU 70	2.75	-13.18	-7633	-6428	-528	0.47	0.47	-45588	10833	2167	38062	4222	1198	5421	No	10.27	Si
SLU 70	2.82	17.97	-7658	-6449	-529	0.47	0.47	-45736	10833	2172	38062	4222	1198	5421	No	10.24	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	2.75	331.92	-9145	-7701	-7851	0.47	0.47	-54617	16250	2732	38062	6333	1198	7532		0.96	No
SLV 4	2.82	879.02	-9154	-7709	-7856	0.47	0.4169	-54671	16250	2734	38062	6333	1198	7532		0.96	No
SLV 14	2.75	-292.74	-3447	-2903	5653	0.47	0.4502	-20587	14534	1963	38062	6333	1198	7532		1.33	Si
SLV 14	2.82	-694.71	-3475	-2926	5655	0.376	0.1053	0	0	0	38062	5067	959	6025		1.07	Si
SLV 13	2.75	-354.21	-2237	-1884	7068	0.376	0.2301	0	0	0	38062	5067	959	6025		0.85	No
SLV 13	2.82	-855.12	-2265	-1908	7071	0.376	0	0	0	0	38062	5067	959	6025		0.85	No
SLV 6	2.75	161.93	-17173	-14461	-4291	0.47	0.47	-102562	16250	4535	38062	6333	1198	7532		1.76	Si
SLV 6	2.82	451.4	-17219	-14500	-4294	0.47	0.47	-102839	16250	4545	38062	6333	1198	7532		1.75	Si
SLV 3	2.75	270.46	-7935	-6682	-6436	0.47	0.47	-47391	16250	2461	38062	6333	1198	7532		1.17	Si
SLV 3	2.82	718.61	-7944	-6690	-6441	0.47	0.4336	-47444	16250	2463	38062	6333	1198	7532		1.17	Si
SLV 16	2.75	-325.04	2178	1834	6422	0.376	0.2574	0	0	0	38062	5067	959	6025		0.94	No
SLV 16	2.82	-776.95	2167	1825	6424	0.376	0	0	0	0	38062	5067	959	6025		0.94	No
SLV 15	2.75	-386.51	3388	2853	7837	0.376	0.3628	0	0	0	38062	5067	959	6025		0.77	No
SLV 15	2.82	-937.36	3377	2844	7840	0.376	0	0	0	0	38062	5067	959	6025		0.77	No
SLV 11	2.75	-184.21	5790	4876	3507	0.376	0.47	0	0	0	38062	5067	959	6025		1.72	Si
SLV 11	2.82	-427.5	5800	4884	3508	0.376	0.47	0	0	0	38062	5067	959	6025		1.72	Si
SLV 2	2.75	364.22	-14770	-12438	-8620	0.47	0.47	-88214	16250	3995	38062	6333	1198	7532		0.87	No
SLV 2	2.82	961.25	-14796	-12460	-8626	0.47	0.47	-88369	16250	4001	38062	6333	1198	7532		0.87	No
SLV 1	2.75	302.76	-13561	-11419	-7205	0.47	0.47	-80989	16250	3724	38062	6333	1198	7532		1.05	Si
SLV 1	2.82	800.84	-13586	-11441	-7210	0.47	0.47	-81143	16250	3730	38062	6333	1198	7532		1.04	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 4.465 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.34	0	1395	43.32	0	0	No, Trazione
SLV 7	179667	0.34	0	1710	43.32	0	0	No, Trazione
SLV 11	179667	0.34	0	1391	43.32	0	0	No, Trazione
SLV 8	179667	0.34	0	1713	43.32	0	0	No, Trazione
SLV 4	179667	0.34	12824	-1808	43.32	248.45	5.74	Si
SLV 3	179667	0.34	12860	-1813	43.32	249.09	5.75	Si
SLV 16	179667	0.34	20349	-2869	43.32	373.04	8.61	Si
SLV 15	179667	0.34	20385	-2874	43.32	373.6	8.62	Si
SLV 2	179667	0.34	36492	-5145	43.32	587.38	13.56	Si
SLV 1	179667	0.34	36528	-5150	43.32	587.78	13.57	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 4.465 Wa = 0.05 Ta = 0.0655

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 6	-6652	-17173	14	0.417	745.3	0.972	6.23414	4.06057	Si
SLV 2	-5593	-14770	-1	0.485	637.5	0.968	7.27914	4.68676	Si
SLV 5	-6441	-16358	14	0.428	723.9	0.971	6.41079	4.06057	Si
SLV 1	-5279	-13561	-2	0.509	605.6	0.966	7.6543	4.68676	Si
SLV 10	-5704	-13776	18	0.474	648.9	0.968	7.11318	4.06057	Si
SLV 9	-5493	-12961	18	0.489	627.4	0.967	7.35098	4.06057	Si
SLV 4	-3693	-9145	-10	0.685	444.3	0.955	10.42928	4.68676	Si
SLV 3	-3380	-7935	-10	0.738	412.4	0.952	11.26684	4.68676	Si
SLV 14	-2434	-3447	13	0.966	316.5	0.94	14.93975	4.68676	Si
SLV 13	-2121	-2237	13	1.079	284.8	0.934	16.78857	4.68676	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	57.254	SLU 44	Si
V_SLU	10.223	SLU 67	Si
PF_SLV	0	SLV 7	No
V_SLV	0.769	SLV 15	No
PFFP_SLV	0	SLV 12	No
R_SLV	1.535	SLV 6	Si

Maschio 267

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.743	-4.784	-11.143	-4.784	Z medio 275 cm	Z medio 618 cm	0.6	0.3	3.43	3.43	3.43			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 76	2.75	-131.26	-12010	-0.000134	0.0003743	0.0035	0.5998	1240.71	1985.17	1985.17	15.12	No	Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 76	2.82	-336.19	-12004	-0.0001583	0.0003743	0.0035	0.5998	1241.24	1985.15	1985.15	5.9	No	Si
SLU 84	2.75	-136.09	-12431	-0.0001401	0.0003743	0.0035	0.5998	1198.56	1986.86	1986.86	14.6	No	Si
SLU 84	2.82	-349.46	-12425	-0.000166	0.0003743	0.0035	0.5998	1199.19	1986.83	1986.83	5.69	No	Si
SLU 80	2.75	-130.91	-12035	-0.0001342	0.0003743	0.0035	0.5998	1238.38	1985.25	1985.25	15.16	No	Si
SLU 80	2.82	-337.73	-12029	-0.0001588	0.0003743	0.0035	0.5998	1238.91	1985.23	1985.23	5.88	No	Si
SLU 83	2.75	-133.75	-12304	-0.0001381	0.0003743	0.0035	0.5998	1211.83	1986.27	1986.27	14.85	No	Si
SLU 83	2.82	-346.69	-12299	-0.0001638	0.0003743	0.0035	0.5998	1212.42	1986.24	1986.24	5.73	No	Si
SLU 82	2.75	-134.87	-12322	-0.0001385	0.0003743	0.0035	0.5998	1210.05	1986.35	1986.35	14.73	No	Si
SLU 82	2.82	-346.07	-12316	-0.0001639	0.0003743	0.0035	0.5998	1210.65	1986.32	1986.32	5.74	No	Si
SLU 79	2.75	-128.57	-11909	-0.0001323	0.0003743	0.0035	0.5998	1250.01	1984.88	1984.88	15.44	No	Si
SLU 79	2.82	-334.96	-11903	-0.0001567	0.0003743	0.0035	0.5998	1250.51	1984.86	1984.86	5.93	No	Si
SLU 75	2.75	-130.13	-11995	-0.0001336	0.0003743	0.0035	0.5998	1242.08	1985.12	1985.12	15.25	No	Si
SLU 75	2.82	-335.77	-11990	-0.000158	0.0003743	0.0035	0.5998	1242.6	1985.11	1985.11	5.91	No	Si
SLU 77	2.75	-129.01	-11978	-0.0001333	0.0003743	0.0035	0.5998	1243.67	1985.07	1985.07	15.39	No	Si
SLU 77	2.82	-336.39	-11972	-0.0001578	0.0003743	0.0035	0.5998	1244.19	1985.06	1985.06	5.9	No	Si
SLU 81	2.75	-132.52	-12195	-0.0001365	0.0003743	0.0035	0.5998	1222.86	1985.82	1985.82	14.98	No	Si
SLU 81	2.82	-343.3	-12190	-0.0001618	0.0003743	0.0035	0.5998	1223.43	1985.79	1985.79	5.78	No	Si
SLU 78	2.75	-131.35	-12104	-0.0001352	0.0003743	0.0035	0.5998	1231.76	1985.48	1985.48	15.12	No	Si
SLU 78	2.82	-339.17	-12099	-0.00016	0.0003743	0.0035	0.5998	1232.31	1985.46	1985.46	5.85	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 12	2.75	-52.12	2237	0	0.0005615	0.0035	0.4799		0	0	0		No
SLV 12	2.82	-246.47	2234	0.8812115	0.0005615	0.0035	0.4799		0	0	0		No
SLV 4	2.75	518.51	2597	0.9900019	0.0005615	0.0035	0.4799		0	0	0		No
SLV 4	2.82	1022.27	2599	0.9458075	0.0005615	0.0035	0.4799		0	0	0		No
SLV 7	2.75	193.56	5479	0	0.0005615	0.0035	0.4799		0	0	0		No
SLV 7	2.82	264.64	5476	0	0.0005615	0.0035	0.4799		0	0	0		No
SLV 15	2.75	-596.87	-11713	-0.0001674	0.0005615	0.0035	0.5998		2449.24	2449.24	4.1		Si
SLV 15	2.82	-1335.47	-11712	-0.0002517	0.0005615	0.0035	0.5998		2449.03	2449.03	1.83		Si
SLV 13	2.75	-691.06	-18927	-0.0002743	0.0005615	0.0035	0.5998		2870.87	2870.87	4.15		Si
SLV 13	2.82	-1477.48	-18922	-0.0003849	0.0005615	0.0035	0.5998		2870.78	2870.78	1.94		Si
SLV 3	2.75	427.13	1516	0.5690885	0.0005615	0.0035	0.4799		0	0	0		No
SLV 3	2.82	820.67	1518	0.5165894	0.0005615	0.0035	0.4799		0	0	0		No
SLV 16	2.75	-505.49	-10633	-0.0001458	0.0005615	0.0035	0.5998		2327.89	2327.89	4.61		Si
SLV 16	2.82	-1133.87	-10631	-0.0002124	0.0005615	0.0035	0.5998		2327.68	2327.68	2.05		Si
SLV 2	2.75	424.31	-4617	-0.0000767	0.0005615	0.0035	0.5998		1203.35	1203.35	2.84		Si
SLV 2	2.82	880.25	-4611	-0.0001558	0.0005615	0.0035	0.5998		1202.01	1202.01	1.37		Si
SLV 11	2.75	-113.64	1510	0	0.0005615	0.0035	0.4799		0	0	0		No
SLV 11	2.82	-382.2	1507	0.5994141	0.0005615	0.0035	0.4799		0	0	0		No
SLV 8	2.75	255.08	6206	0	0.0005615	0.0035	0.4799		0	0	0		No
SLV 8	2.82	400.37	6203	0	0.0005615	0.0035	0.4799		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	2.75	-130.91	-12035	-10135	2934	0.5998	0.5998	-56320	10833	3280	38062	5388	1530	6918	No	2.36	Si
SLU 80	2.82	-337.73	-12029	-10130	2933	0.5998	0.5998	-56293	10833	3279	38062	5388	1530	6918	No	2.36	Si
SLU 79	2.75	-128.57	-11909	-10028	2928	0.5998	0.5998	-55729	10833	3252	38062	5388	1530	6918	No	2.36	Si
SLU 79	2.82	-334.96	-11903	-10024	2927	0.5998	0.5998	-55702	10833	3250	38062	5388	1530	6918	No	2.36	Si
SLU 78	2.75	-131.35	-12104	-10193	2948	0.5998	0.5998	-56645	10833	3296	38062	5388	1530	6918	No	2.35	Si
SLU 78	2.82	-339.17	-12099	-10188	2947	0.5998	0.5998	-56619	10833	3294	38062	5388	1530	6918	No	2.35	Si
SLU 77	2.75	-129.01	-11978	-10087	2942	0.5998	0.5998	-56054	10833	3267	38062	5388	1530	6918	No	2.35	Si
SLU 77	2.82	-336.39	-11972	-10082	2942	0.5998	0.5998	-56028	10833	3266	38062	5388	1530	6918	No	2.35	Si
SLU 75	2.75	-130.13	-11995	-10101	2917	0.5998	0.5998	-56135	10833	3271	38062	5388	1530	6918	No	2.37	Si
SLU 75	2.82	-335.77	-11990	-10097	2917	0.5998	0.5998	-56108	10833	3270	38062	5388	1530	6918	No	2.37	Si
SLU 83	2.75	-133.75	-12304	-10362	3021	0.5998	0.5998	-57581	10833	3340	38062	5388	1530	6918	No	2.29	Si
SLU 83	2.82	-346.69	-12299	-10357	3020	0.5998	0.5998	-57554	10833	3339	38062	5388	1530	6918	No	2.29	Si
SLU 74	2.75	-127.79	-11869	-9995	2911	0.5998	0.5998	-55544	10833	3243	38062	5388	1530	6918	No	2.38	Si
SLU 74	2.82	-333	-11863	-9990	2911	0.5998	0.5998	-55517	10833	3241	38062	5388	1530	6918	No	2.38	Si
SLU 84	2.75	-136.09	-12431	-10468	3027	0.5998	0.5998	-58172	10833	3369	38062	5388	1530	6918	No	2.29	Si
SLU 84	2.82	-349.46	-12425	-10463	3026	0.5998	0.5998	-58145	10833	3368	38062	5388	1530	6918	No	2.29	Si
SLU 82	2.75	-134.87	-12322	-10376	2996	0.5998	0.5998	-57662	10833	3344	38062	5388	1530	6918	No	2.31	Si
SLU 82	2.82	-346.07	-12316	-10371	2996	0.5998	0.5998	-57635	10833	3343	38062	5388	1530	6918	No	2.31	Si
SLU 81	2.75	-132.52	-12195	-10270	2990	0.5998	0.5998	-57071	10833	3316	38062	5388	1530	6918	No	2.31	Si
SLU 81	2.82	-343.3	-12190	-10265	2990	0.5998	0.5998	-57044	10833	3315	38062	5388	1530	6918	No	2.31	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	2.75	424.31	-4617	-3888	-6533	0.5998	0.5998	-21608	14738	2652	38062	8083	1530	9612		1.47	Si
SLV 2	2.82	880.25	-4611	-3883	-6532	0.5998	0.3271	-21580	14733	1902	38062	8083	1530	9612		1.47	Si
SLD 15	2.75	-305.55	-9781	-8236	5659	0.5998	0.5998	-45771	16250	3063	38062	8083	1530	9612		1.7	Si
SLD 15	2.82	-702.49	-9778	-8234	5658	0.5998	0.5998	-45757	16250	3062	38062	8083	1530	9612		1.7	Si
SLV 3	2.75	427.13	1516	1277	-5628	0.4799	0.0547	0	0	0	38062	6466	1224	7690		1.37	Si
SLV 3	2.82	820.67	1518	1279	-5628	0.4799	0	0	0	0	38062	6466	1224	7690		1.37	Si
SLV 9	2.75	-427.63	-22536	-18978	6078	0.5998	0.5998	-105465	16250	5927	38062	8083	1530	9612		1.58	Si
SLV 9	2.82	-855.59	-22526	-18970	6077	0.5998	0.5998	-105418	16250	5925	38062	8083	1530	9612		1.58	Si
SLV 14	2.75	-599.69	-17847	-15029	9638	0.5998	0.5998	-83520	16250	4874	38062	8083	1530	9612		1	No
SLV 14	2.82	-1275.89	-17841	-15024	9637	0.5998	0.5998	-83493	16250	4873	38062	8083	1530	9612		1	No
SLV 16	2.75	-505.49	-10633	-8954	8968	0.5998	0.5998	-49761	16250	3254	38062	8083	1530	9612		1.07	Si
SLV 16	2.82	-1133.87	-10631	-8953	8967	0.5998	0.5798	-49752	16250	3254	38062	8083	1530	9612		1.07	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	2.75	-691.06	-18927	-15939	11213	0.5998	0.5998	-88574	16250	5116	38062	8083	1530	9612		0.86	No
SLV 13	2.82	-1477.48	-18922	-15934	11212	0.5998	0.5998	-88548	16250	5115	38062	8083	1530	9612		0.86	No
SLV 4	2.75	518.51	2597	2187	-7203	0.4799	0.3007	0	0	0	38062	6466	1224	7690		1.07	Si
SLV 4	2.82	1022.27	2599	2188	-7203	0.4799	0	0	0	0	38062	6466	1224	7690		1.07	Si
SLD 13	2.75	-343.52	-12663	-10664	5931	0.5998	0.5998	-59259	16250	3710	38062	8083	1530	9612		1.62	Si
SLD 13	2.82	-759.91	-12658	-10660	5931	0.5998	0.5998	-59238	16250	3709	38062	8083	1530	9612		1.62	Si
SLV 15	2.75	-596.87	-11713	-9864	10543	0.5998	0.5998	-54815	16250	3497	38062	8083	1530	9612		0.91	No
SLV 15	2.82	-1335.47	-11712	-9862	10542	0.5998	0.5576	-54807	16250	3496	38062	8083	1530	9612		0.91	No

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 4.465 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 12	179667	0.34	0	946	55.29	0	0	No, Trazione
SLV 11	179667	0.34	0	715	55.29	0	0	No, Trazione
SLV 8	179667	0.34	0	2365	55.29	0	0	No, Trazione
SLV 7	179667	0.34	0	2134	55.29	0	0	No, Trazione
SLV 4	179667	0.34	4704	-847	55.29	123.06	2.23	Si
SLV 3	179667	0.34	6609	-1189	55.29	170.68	3.09	Si
SLV 2	179667	0.34	28156	-5067	55.29	619.87	11.21	Si
SLV 1	179667	0.34	30061	-5409	55.29	651.7	11.79	Si
SLV 16	179667	0.34	30994	-5577	55.29	666.81	12.06	Si
SLV 15	179667	0.34	32900	-5920	55.29	696.72	12.6	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 4.465 Wa = 0.05 Ta = 0.0655

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-12044	-18927	52	0.309	1313.3	0.979	4.58474	4.68676	No
SLV 14	-10970	-17847	52	0.334	1203.9	0.978	4.96068	4.68676	Si
SLV 15	-10009	-11713	-42	0.361	1105.9	0.976	5.37666	4.68676	Si
SLV 16	-8934	-10633	-42	0.397	996.5	0.973	5.92699	4.68676	Si
SLV 9	-10046	-22536	158	0.349	1109.8	0.976	5.19726	4.06057	Si
SLV 10	-9323	-21809	158	0.371	1036.1	0.974	5.53936	4.06057	Si
SLV 5	-6449	-18568	154	0.506	743.4	0.965	7.62526	4.06057	Si
SLV 6	-5725	-17840	154	0.559	669.8	0.961	8.45853	4.06057	Si
SLV 11	-3261	1510	-156	0.892	419.5	0.941	13.77318	4.06057	Si, Trazione
SLV 12	-2537	2237	-156	1.091	346.4	0.931	17.01923	4.06057	Si, Trazione

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.685	SLU 84	Si
V_SLU	2.285	SLU 84	Si
PF_SLV	0	SLV 3	No
V_SLV	0.857	SLV 13	No
PFFP_SLV	0	SLV 12	No
R_SLV	0.978	SLV 13	No

Maschio 272

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.613	-4.784	-12.933	-4.784	Z medio 618 cm	Z medio 966 cm	0.68	0.3	3.48	3.48	3.48			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 76	7.13	409.78	-7769	-0.0000928	0.0003743	0.0035	0.68	1653.59	1954.8	1954.8	4.77	No	Si
SLU 76	9.13	-33.9	-4480	-0.0000364	0.0003743	0.0035	0.68	1194.84	1367.01	1367.01	40.33	No	Si
SLU 82	7.13	422.12	-7944	-0.0000954	0.0003743	0.0035	0.68	1668.06	1978	1978	4.69	No	Si
SLU 82	9.13	-35.37	-4574	-0.0000373	0.0003743	0.0035	0.68	1212.7	1388.73	1388.73	39.26	No	Si
SLU 81	7.13	420.29	-7904	-0.0000949	0.0003743	0.0035	0.68	1664.85	1972.74	1972.74	4.69	No	Si
SLU 81	9.13	-34.67	-4563	-0.0000371	0.0003743	0.0035	0.68	1210.71	1386.3	1386.3	39.99	No	Si
SLU 77	7.13	415.1	-7859	-0.0000941	0.0003743	0.0035	0.68	1661.17	1966.76	1966.76	4.74	No	Si
SLU 77	9.13	-34.96	-4554	-0.0000371	0.0003743	0.0035	0.68	1208.98	1384.19	1384.19	39.59	No	Si
SLU 83	7.13	426.11	-7998	-0.0000963	0.0003743	0.0035	0.68	1672.35	1985.14	1985.14	4.66	No	Si
SLU 83	9.13	-36.61	-4613	-0.0000377	0.0003743	0.0035	0.68	1220.16	1397.9	1397.9	38.18	No	Si
SLU 78	7.13	416.93	-7899	-0.0000946	0.0003743	0.0035	0.68	1664.44	1972.07	1972.07	4.73	No	Si
SLU 78	9.13	-35.66	-4564	-0.0000372	0.0003743	0.0035	0.68	1210.97	1386.62	1386.62	38.88	No	Si
SLU 80	7.13	414.38	-7837	-0.0000938	0.0003743	0.0035	0.68	1659.3	1963.77	1963.77	4.74	No	Si
SLU 80	9.13	-35.38	-4523	-0.0000369	0.0003743	0.0035	0.68	1203.09	1377.02	1377.02	38.92	No	Si
SLU 75	7.13	411.11	-7805	-0.0000932	0.0003743	0.0035	0.68	1656.63	1959.54	1959.54	4.77	No	Si
SLU 75	9.13	-33.72	-4515	-0.0000367	0.0003743	0.0035	0.68	1201.44	1375	1375	40.78	No	Si
SLU 79	7.13	412.55	-7797	-0.0000933	0.0003743	0.0035	0.68	1655.95	1958.47	1958.47	4.75	No	Si
SLU 79	9.13	-34.67	-4513	-0.0000367	0.0003743	0.0035	0.68	1201.09	1374.58	1374.58	39.64	No	Si
SLU 84	7.13	427.94	-8038	-0.0000968	0.0003743	0.0035	0.68	1675.45	1990.4	1990.4	4.65	No	Si
SLU 84	9.13	-37.32	-4623	-0.0000378	0.0003743	0.0035	0.68	1222.13	1400.33	1400.33	37.53	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 2	7.13	-1925.21	1005	0.3874597	0.0005615	0.0035	0.544		0	0	0		No
SLV 2	9.13	2074	-12127	-0.0002991	0.0005615	0.0035	0.68		2944.44	2944.44	1.42		Si
SLD 16	7.13	1049.67	-7525	-0.000136	0.0005615	0.0035	0.68		2105.64	2105.64	2.01		Si
SLD 16	9.13	-757.62	79	-0.009042	0.0005615	0.0035	0.544		0	0	0		No
SLV 4	7.13	-2039.71	3830	1.5429886	0.0005615	0.0035	0.544		0	0	0		No
SLV 4	9.13	2052.43	-10861	-0.0002999	0.0005615	0.0035	0.68		2771.11	2771.11	1.35		Si
SLV 14	7.13	2198.25	-13185	-0.0003246	0.0005615	0.0035	0.68		3092.23	3092.23	1.41		Si
SLV 14	9.13	-1728.97	3156	1.2725155	0.0005615	0.0035	0.544		0	0	0		No
SLV 11	7.13	835.56	-3210	-0.0001472	0.0005615	0.0035	0.68		1033.76	1033.76	1.24		Si
SLV 11	9.13	-743.91	1754	0.7036108	0.0005615	0.0035	0.544		0	0	0		No
SLV 12	7.13	571.13	-2315	-0.0000864	0.0005615	0.0035	0.68		769.05	769.05	1.35		Si
SLV 12	9.13	-503.1	787	0.3183802	0.0005615	0.0035	0.544		0	0	0		No
SLV 3	7.13	-1646.95	2501	1.0125331	0.0005615	0.0035	0.544		0	0	0		No
SLV 3	9.13	1694.75	-9424	-0.0002308	0.0005615	0.0035	0.68		2483.53	2483.53	1.47		Si
SLV 7	7.13	-401.48	1047	0.4193548	0.0005615	0.0035	0.544		0	0	0		No
SLV 7	9.13	396.98	-2831	-0.0000479	0.0005615	0.0035	0.68		923.34	923.34	2.33		Si
SLV 13	7.13	2591.01	-14514	-0.00042	0.0005615	0.0035	0.68		3281.48	3281.48	1.27		Si
SLV 13	9.13	-2086.64	4593	1.8447337	0.0005615	0.0035	0.544		0	0	0		No
SLV 8	7.13	-665.91	1942	0.7763987	0.0005615	0.0035	0.544		0	0	0		No
SLV 8	9.13	637.79	-3798	-0.0000763	0.0005615	0.0035	0.68		1190.49	1190.49	1.87		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 77	7.13	415.1	-7859	-6618	1748	0.68	0.68	-32440	10833	2420	38062	6109	1734	7843	No	4.49	Si
SLU 77	9.13	-34.96	-4554	-3835	-34	0.68	0.68	-18798	9451	1928	38062	6109	1734	7843	No	232.69	Si
SLU 82	7.13	422.12	-7944	-6690	1787	0.68	0.68	-32790	10833	2439	38062	6109	1734	7843	No	4.39	Si
SLU 82	9.13	-35.37	-4574	-3851	-23	0.68	0.68	-18878	9462	1930	38062	6109	1734	7843	No	342.45	Si
SLU 80	7.13	414.38	-7837	-6599	1746	0.68	0.68	-32347	10833	2414	38062	6109	1734	7843	No	4.49	Si
SLU 80	9.13	-35.38	-4523	-3809	-31	0.68	0.68	-18671	9434	1925	38062	6109	1734	7843	No	250.67	Si
SLU 79	7.13	412.55	-7797	-6566	1740	0.68	0.68	-32183	10833	2406	38062	6109	1734	7843	No	4.51	Si
SLU 79	9.13	-34.67	-4513	-3800	-34	0.68	0.68	-18628	9428	1923	38062	6109	1734	7843	No	233.48	Si
SLU 84	7.13	427.94	-8038	-6769	1807	0.68	0.68	-33178	10833	2460	38062	6109	1734	7843	No	4.34	Si
SLU 84	9.13	-37.32	-4623	-3893	-18	0.68	0.68	-19084	9489	1936	38062	6109	1734	7843	No	441.83	Si
SLU 78	7.13	416.93	-7899	-6652	1755	0.68	0.68	-32604	10833	2428	38062	6109	1734	7843	No	4.47	Si
SLU 78	9.13	-35.66	-4564	-3844	-31	0.68	0.68	-18841	9457	1929	38062	6109	1734	7843	No	249.76	Si
SLU 83	7.13	426.11	-7998	-6735	1801	0.68	0.68	-33014	10833	2451	38062	6109	1734	7843	No	4.36	Si
SLU 83	9.13	-36.61	-4613	-3885	-20	0.68	0.68	-19041	9483	1935	38062	6109	1734	7843	No	391.08	Si
SLU 76	7.13	409.78	-7769	-6542	1730	0.68	0.68	-32068	10833	2399	38062	6109	1734	7843	No	4.53	Si
SLU 76	9.13	-33.9	-4480	-3773	-35	0.68	0.68	-18494	9410	1920	38062	6109	1734	7843	No	224.7	Si
SLU 75	7.13	411.11	-7805	-6572	1734	0.68	0.68	-32216	10833	2407	38062	6109	1734	7843	No	4.52	Si
SLU 75	9.13	-33.72	-4515	-3802	-37	0.68	0.68	-18635	9429	1924	38062	6109	1734	7843	No	214.56	Si
SLU 81	7.13	420.29	-7904	-6656	1780	0.68	0.68	-32625	10833	2430	38062	6109	1734	7843	No	4.41	Si
SLU 81	9.13	-34.67	-4563	-3843	-25	0.68	0.68	-18835	9456	1929	38062	6109	1734	7843	No	311.15	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	7.13	2591.01	-14514	-12222	9318	0.68	0.4845	-59910	16250	4241	38062	9164	1734	10898		1.17	Si
SLV 13	9.13	-2086.64	4593	3868	7245	0.544	0	0	0	0	38062	7331	1387	8718		1.2	Si
SLV 15	7.13	2476.51	-11689	-9844	8858	0.68	0.3845	-48249	16250	3607	38062	9164	1734	10898		1.23	Si
SLV 15	9.13	-2108.22	5860	4935	7415	0.544	0	0	0	0	38062	7331	1387	8718		1.18	Si
SLV 9	7.13	1217.22	-12626	-10633	4571	0.68	0.68	-52117	16250	3817	38062	9164	1734	10898		2.38	Si
SLV 9	9.13	-672.01	-2469	-2079	2100	0.544	0.2036	0	0	0	38062	7331	1387	8718		4.15	Si
SLV 16	7.13	2083.76	-10360	-8724	7452	0.68	0.4167	-42763	16250	3309	38062	9164	1734	10898		1.46	Si
SLV 16	9.13	-1750.54	4423	3725	6177	0.544	0	0	0	0	38062	7331	1387	8718		1.41	Si
SLV 4	7.13	-2039.71	3830	3225	-6984	0.544	0	0	0	0	38062	7331	1387	8718		1.25	Si
SLV 4	9.13	2052.43	-10861	-9146	-7378	0.68	0.4531	-44829	16250	3421	38062	9164	1734	10898		1.48	Si
SLV 1	7.13	-1532.45	-324	-273	-5119	0.544	0	0	0	0	38062	7331	1387	8718		1.7	Si
SLV 1	9.13	1716.32	-10691	-9003	-6310	0.68	0.5385	-44129	16250	3383	38062	9164	1734	10898		1.73	Si
SLV 2	7.13	-1925.21	1005	846	-6525	0.544	0	0	0	0	38062	7331	1387	8718		1.34	Si
SLV 2	9.13	2074	-12127	-10213	-7548	0.68	0.507	-50058	16250	3705	38062	9164	1734	10898		1.44	Si
SLD 13	7.13	1263.99	-9225	-7768	4645	0.68	0.609	-38077	16250	3054	38062	9164	1734	10898		2.35	Si
SLD 13	9.13	-902.19	186	157	3061	0.544	0	0	0	0	38062	7331	1387	8718		2.85	Si
SLV 14	7.13	2198.25	-13185	-11103	7911	0.68	0.5199	-54424	16250	3943	38062	9164	1734	10898		1.38	Si
SLV 14	9.13	-1728.97	3156	2658	6006	0.544	0	0	0	0	38062	7331	1387	8718		1.45	Si
SLV 3	7.13	-1646.95	2501	2106	-5578	0.544	0	0	0	0	38062	7331	1387	8718		1.56	Si
SLV 3	9.13	1694.75	-9424	-7936	-6139	0.68	0.4806	-38899	16250	3098	38062	9164	1734	10898		1.78	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 7.92 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 8	179667	0.41	0	-176	78.17	0	0	No, e>t/2
SLV 7	179667	0.41	0	-231	78.17	0	0	No, e>t/2
SLV 12	179667	0.41	2804	-572	78.17	84.23	1.08	Si
SLV 11	179667	0.41	3073	-627	78.17	92.15	1.18	Si
SLV 4	179667	0.41	11688	-2384	78.17	330.29	4.23	Si
SLV 3	179667	0.41	12087	-2466	78.17	340.62	4.36	Si
SLV 16	179667	0.41	18161	-3705	78.17	489.68	6.26	Si
SLV 15	179667	0.41	18561	-3787	78.17	498.97	6.38	Si
SLV 2	179667	0.41	22965	-4685	78.17	597.09	7.64	Si
SLV 1	179667	0.41	23364	-4767	78.17	605.61	7.75	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 7.92 Wa = 0.05 Ta = 0.0674

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 2	-7174	-4950	8	0.534	830.3	0.964	8.05944	5.49099	Si
SLV 1	-6435	-4926	8	0.586	755.2	0.961	8.8632	5.49099	Si
SLV 4	-6358	-2733	-32	0.588	747.4	0.96	8.90571	5.49099	Si
SLV 3	-5620	-2709	-32	0.653	672.4	0.956	9.91953	5.49099	Si
SLV 6	-5181	-7467	64	0.693	627.7	0.953	10.56544	4.73496	Si
SLV 5	-4684	-7451	64	0.754	577.3	0.95	11.53427	4.73496	Si
SLV 10	-2761	-7410	72	1.153	382.6	0.929	18.04195	4.73496	Si
SLV 8	-2464	-76	-70	1.26	352.6	0.924	19.81313	4.73496	Si
SLV 9	-2265	-7394	72	1.344	332.6	0.921	21.20152	4.73496	Si
SLV 7	-1967	-60	-71	1.492	302.8	0.915	23.69463	4.73496	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.651	SLU 84	Si
V_SLU	4.34	SLU 84	Si
PF_SLV	0	SLD 13	No
V_SLV	1.17	SLV 13	Si
PFFP_SLV	0	SLV 7	No
R_SLV	1.468	SLV 2	Si

Maschio 273

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.933	-4.784	-11.173	-4.784	Z medio 618 cm	Z medio 966 cm	0.76	0.3	3.48	3.48	3.48			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 83	7.13	147.16	-8021	-0.0000652	0.0003743	0.0035	0.7599	1994.37	2314	2314	15.72	No	Si
SLU 83	9.13	-507.53	-6931	-0.0000779	0.0003743	0.0035	0.7599	1846.95	2192.68	2192.68	4.32	No	Si
SLU 63	7.13	128.53	-7309	-0.0000586	0.0003743	0.0035	0.7599	1902.49	2150.2	2150.2	16.73	No	Si
SLU 63	9.13	-457.61	-6237	-0.0000693	0.0003743	0.0035	0.7599	1732.97	2045.43	2045.43	4.47	No	Si
SLU 77	7.13	131.94	-7911	-0.0000635	0.0003743	0.0035	0.7599	1981.25	2288.42	2288.42	17.34	No	Si
SLU 77	9.13	-485.16	-6821	-0.0000756	0.0003743	0.0035	0.7599	1829.9	2172.34	2172.34	4.48	No	Si
SLU 84	7.13	146.19	-8057	-0.0000655	0.0003743	0.0035	0.7599	1998.54	2322.31	2322.31	15.89	No	Si
SLU 84	9.13	-507.76	-6966	-0.0000782	0.0003743	0.0035	0.7599	1852.4	2199.1	2199.1	4.33	No	Si
SLU 82	7.13	144.47	-7964	-0.0000646	0.0003743	0.0035	0.7599	1987.58	2300.69	2300.69	15.92	No	Si
SLU 82	9.13	-502.42	-6873	-0.0000771	0.0003743	0.0035	0.7599	1838.12	2182.19	2182.19	4.34	No	Si
SLU 79	7.13	132.71	-7847	-0.000063	0.0003743	0.0035	0.7599	1973.44	2273.55	2273.55	17.13	No	Si
SLU 79	9.13	-483.37	-6757	-0.000075	0.0003743	0.0035	0.7599	1819.81	2160.16	2160.16	4.47	No	Si
SLU 81	7.13	145.45	-7928	-0.0000644	0.0003743	0.0035	0.7599	1983.3	2292.39	2292.39	15.76	No	Si
SLU 81	9.13	-502.18	-6838	-0.0000768	0.0003743	0.0035	0.7599	1832.56	2175.54	2175.54	4.33	No	Si
SLU 61	7.13	126.81	-7216	-0.0000577	0.0003743	0.0035	0.7599	1889.25	2129.17	2129.17	16.79	No	Si
SLU 61	9.13	-452.26	-6144	-0.0000683	0.0003743	0.0035	0.7599	1716.47	2023.83	2023.83	4.47	No	Si
SLU 60	7.13	127.78	-7180	-0.0000575	0.0003743	0.0035	0.7599	1884.1	2121.13	2121.13	16.6	No	Si
SLU 60	9.13	-452.03	-6108	-0.000068	0.0003743	0.0035	0.7599	1710.06	2015.49	2015.49	4.46	No	Si
SLU 62	7.13	129.5	-7273	-0.0000583	0.0003743	0.0035	0.7599	1897.44	2142.12	2142.12	16.54	No	Si
SLU 62	9.13	-457.37	-6202	-0.000069	0.0003743	0.0035	0.7599	1726.67	2037.12	2037.12	4.45	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 13	7.13	3167.44	-7887	-0.0187773	0.0005615	0.0035	0.6079		2516.11	2516.11	0.79		No
SLV 13	9.13	-3563.27	-7056	-0.0112059	0.0005615	0.0035	0.6079		2404.45	2404.45	0.67		No
SLV 4	7.13	-3012.8	-2967	-0.0153661	0.0005615	0.0035	0.6079		1181.28	1181.28	0.39		No
SLV 4	9.13	2924.67	-2129	-0.0813858	0.0005615	0.0035	0.6079		804.54	804.54	0.28		No
SLV 2	7.13	-3127.21	-5659	-0.0107839	0.0005615	0.0035	0.6079		2015.71	2015.71	0.64		No
SLV 2	9.13	2945.13	-4828	-0.0467666	0.0005615	0.0035	0.6079		1652.14	1652.14	0.56		No
SLV 15	7.13	3281.86	-5195	-0.0543938	0.0005615	0.0035	0.6079		1752.95	1752.95	0.53		No
SLV 15	9.13	-3583.73	-4357	-0.0166602	0.0005615	0.0035	0.6079		1625.98	1625.98	0.45		No
SLV 16	7.13	2735.03	-5091	-0.0360491	0.0005615	0.0035	0.6079		1724.19	1724.19	0.63		No
SLV 16	9.13	-3011.37	-4253	-0.0127244	0.0005615	0.0035	0.6079		1593.86	1593.86	0.53		No
SLV 8	7.13	-778.25	-586	-0.0029899	0.0005615	0.0035	0.6079		351.42	351.42	0.45		No
SLV 8	9.13	729.68	259	-0.029774	0.0005615	0.0035	0.6079		0	0	0		No
SLV 7	7.13	-410.09	-657	-0.0006323	0.0005615	0.0035	0.6079		377.13	377.13	0.92		No
SLV 7	9.13	344.33	189	-0.0045251	0.0005615	0.0035	0.6079		0	0	0		No
SLV 11	7.13	1314.26	-1294	-0.0317801	0.0005615	0.0035	0.6079		511.51	511.51	0.39		No
SLV 11	9.13	-1436.48	-448	-0.0092271	0.0005615	0.0035	0.6079		300.77	300.77	0.21		No
SLV 3	7.13	-2465.97	-3071	-0.0111308	0.0005615	0.0035	0.6079		1215.44	1215.44	0.49		No
SLV 3	9.13	2352.31	-2233	-0.0581012	0.0005615	0.0035	0.6079		840.53	840.53	0.36		No
SLV 12	7.13	946.1	-1224	-0.0189729	0.0005615	0.0035	0.6079		486.32	486.32	0.51		No
SLV 12	9.13	-1051.13	-378	-0.0062115	0.0005615	0.0035	0.6079		274.88	274.88	0.26		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	7.13	130.97	-7947	-6692	309	0.7599	0.7599	-29355	10833	2516	38062	6826	1938	8764	No	28.37	Si
SLU 78	9.13	-485.39	-6856	-5774	309	0.7599	0.7599	-25327	10321	2353	38062	6826	1938	8764	No	28.37	Si
SLU 83	7.13	147.16	-8021	-6755	328	0.7599	0.7599	-29630	10833	2533	38062	6826	1938	8764	No	26.71	Si
SLU 83	9.13	-507.53	-6931	-5836	328	0.7599	0.7599	-25601	10358	2361	38062	6826	1938	8764	No	26.71	Si
SLU 77	7.13	131.94	-7911	-6662	309	0.7599	0.7599	-29223	10833	2508	38062	6826	1938	8764	No	28.33	Si
SLU 77	9.13	-485.16	-6821	-5744	309	0.7599	0.7599	-25195	10304	2349	38062	6826	1938	8764	No	28.33	Si
SLU 81	7.13	145.45	-7928	-6676	325	0.7599	0.7599	-29286	10833	2512	38062	6826	1938	8764	No	27	Si
SLU 81	9.13	-502.18	-6838	-5758	325	0.7599	0.7599	-25258	10312	2351	38062	6826	1938	8764	No	27	Si
SLU 80	7.13	131.74	-7883	-6638	308	0.7599	0.7599	-29118	10827	2502	38062	6826	1938	8764	No	28.42	Si
SLU 80	9.13	-483.61	-6792	-5720	308	0.7599	0.7599	-25090	10290	2346	38062	6826	1938	8764	No	28.42	Si
SLU 82	7.13	144.47	-7964	-6706	324	0.7599	0.7599	-29418	10833	2520	38062	6826	1938	8764	No	27.03	Si

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	9.13	-502.42	-6873	-5788	324	0.7599	0.7599	-25390	10330	2355	38062	6826	1938	8764	No	27.03	Si
SLU 74	7.13	130.22	-7818	-6583	306	0.7599	0.7599	-28879	10795	2487	38062	6826	1938	8764	No	28.66	Si
SLU 74	9.13	-479.82	-6727	-5665	306	0.7599	0.7599	-24851	10258	2338	38062	6826	1938	8764	No	28.66	Si
SLU 79	7.13	132.71	-7847	-6608	309	0.7599	0.7599	-28986	10809	2494	38062	6826	1938	8764	No	28.38	Si
SLU 79	9.13	-483.37	-6757	-5690	309	0.7599	0.7599	-24958	10272	2342	38062	6826	1938	8764	No	28.38	Si
SLU 84	7.13	146.19	-8057	-6785	328	0.7599	0.7599	-29762	10833	2541	38062	6826	1938	8764	No	26.74	Si
SLU 84	9.13	-507.76	-6966	-5866	328	0.7599	0.7599	-25733	10376	2365	38062	6826	1938	8764	No	26.74	Si
SLU 75	7.13	129.25	-7854	-6614	305	0.7599	0.7599	-29011	10813	2495	38062	6826	1938	8764	No	28.7	Si
SLU 75	9.13	-480.05	-6763	-5695	305	0.7599	0.7599	-24983	10275	2342	38062	6826	1938	8764	No	28.7	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 4	7.13	-3012.8	-2967	-2498	-3031	0.6079	0	0	0	0	38062	8192	1550	9742		3.21	Si
SLV 4	9.13	2924.67	-2129	-1793	-2893	0.6079	0	0	0	0	38062	8192	1550	9742		3.37	Si
SLV 15	7.13	3281.86	-5195	-4375	3541	0.6079	0	0	0	0	38062	8192	1550	9742		2.75	Si
SLV 15	9.13	-3583.73	-4357	-3669	3321	0.6079	0	0	0	0	38062	8192	1550	9742		2.93	Si
SLV 14	7.13	2620.62	-7783	-6554	2870	0.7599	0.1297	-197472	16250	2845	38062	10240	1938	12177		4.24	Si
SLV 14	9.13	-2990.91	-6951	-5854	2731	0.6079	0	0	0	0	38062	8192	1550	9742		3.57	Si
SLV 3	7.13	-2465.97	-3071	-2586	-2472	0.6079	0	0	0	0	38062	8192	1550	9742		3.94	Si
SLV 3	9.13	2352.31	-2233	-1881	-2333	0.6079	0	0	0	0	38062	8192	1550	9742		4.18	Si
SLD 15	7.13	1443.75	-5365	-4518	1625	0.7599	0.3326	-19819	14380	2302	38062	10240	1938	12177		7.49	Si
SLD 15	9.13	-1712.53	-4529	-3814	1532	0.6079	0.0055	0	0	0	38062	8192	1550	9742		6.36	Si
SLV 1	7.13	-2580.39	-5763	-4853	-2584	0.6079	0	0	0	0	38062	8192	1550	9742		3.77	Si
SLV 1	9.13	2372.77	-4932	-4153	-2364	0.6079	0	0	0	0	38062	8192	1550	9742		4.12	Si
SLD 13	7.13	1400.21	-6441	-5424	1581	0.7599	0.4877	-23793	15175	2544	38062	10240	1938	12177		7.7	Si
SLD 13	9.13	-1706.8	-5607	-4722	1521	0.6079	0.2267	0	0	0	38062	8192	1550	9742		6.4	Si
SLV 2	7.13	-3127.21	-5659	-4765	-3143	0.6079	0	0	0	0	38062	8192	1550	9742		3.1	Si
SLV 2	9.13	2945.13	-4828	-4065	-2924	0.6079	0	0	0	0	38062	8192	1550	9742		3.33	Si
SLV 13	7.13	3167.44	-7887	-6642	3429	0.6079	0	0	0	0	38062	8192	1550	9742		2.84	Si
SLV 13	9.13	-3563.27	-7056	-5942	3291	0.6079	0	0	0	0	38062	8192	1550	9742		2.96	Si
SLV 16	7.13	2735.03	-5091	-4287	2982	0.6079	0	0	0	0	38062	8192	1550	9742		3.27	Si
SLV 16	9.13	-3011.37	-4253	-3581	2762	0.6079	0	0	0	0	38062	8192	1550	9742		3.53	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 7.92 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.41	0	-369	87.35	0	0	No, e>t/2
SLV 8	179667	0.41	0	-299	87.35	0	0	No, e>t/2
SLV 12	179667	0.41	4079	-930	87.35	135.77	1.55	Si
SLV 11	179667	0.41	4388	-1000	87.35	145.74	1.67	Si
SLV 4	179667	0.41	11662	-2659	87.35	368.33	4.22	Si
SLV 3	179667	0.41	12120	-2763	87.35	381.56	4.37	Si
SLV 16	179667	0.41	20892	-4763	87.35	616.67	7.06	Si
SLV 15	179667	0.41	21350	-4867	87.35	628.01	7.19	Si
SLV 2	179667	0.41	23368	-5327	87.35	676.8	7.75	Si
SLV 1	179667	0.41	23826	-5432	87.35	687.63	7.87	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 7.92 Wa = 0.05 Ta = 0.0674

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 2	-7419	1745	59	0.564	867.1	0.962	8.53125	5.49099	Si, Trazione
SLV 6	-8385	-6224	176	0.496	965.4	0.965	7.47224	4.73496	Si
SLV 5	-8005	-7145	176	0.516	926.7	0.964	7.78039	4.73496	Si
SLV 1	-6855	378	59	0.603	809.7	0.959	9.14236	5.49099	Si, Trazione
SLV 10	-6915	-10796	172	0.584	815.8	0.959	8.84902	4.73496	Si
SLV 9	-6535	-11717	172	0.612	777.2	0.957	9.29634	4.73496	Si
SLV 4	-5041	3813	-45	0.782	625.5	0.948	11.98566	5.49099	Si, Trazione
SLV 3	-4477	2445	-45	0.863	568.2	0.944	13.27948	5.49099	Si, Trazione
SLV 14	-2517	-13494	45	1.36	370.3	0.921	21.45967	5.49099	Si
SLV 13	-1953	-14862	45	1.638	313.9	0.911	26.14203	5.49099	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	4.32	SLU 83	Si
V_SLU	26.712	SLU 83	Si
PF_SLV	0	SLV 7	No
V_SLV	2.751	SLV 15	Si
PFFP_SLV	0	SLV 7	No
R_SLV	1.554	SLV 2	Si

Maschio 276

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-13.613	-4.784	-12.933	-4.784	Z medio 966 cm	F1	0.68	0.3	5.181	5.182	5.181			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 42	10.61	176.75	-2961	-0.000034	0.0003743	0.0035	0.68	863.19	908.29	908.29	5.14	No	Si
SLU 42	12.61	23.13	-1211	-0.0000104	0.0003743	0.0035	0.68	387.66	420.42	420.42	18.18	No	Si
SLU 39	10.61	174.1	-2917	-0.0000335	0.0003743	0.0035	0.68	852.66	897.73	897.73	5.16	No	Si
SLU 39	12.61	21.65	-1187	-0.0000101	0.0003743	0.0035	0.68	380.42	412.93	412.93	19.07	No	Si
SLU 84	10.61	205.77	-3537	-0.0000406	0.0003743	0.0035	0.68	997.8	1051.75	1051.75	5.11	No	Si
SLU 84	12.61	28.89	-1590	-0.0000136	0.0003743	0.0035	0.68	499.23	537.02	537.02	18.59	No	Si
SLU 80	10.61	200.29	-3491	-0.0000399	0.0003743	0.0035	0.68	987.41	1040.08	1040.08	5.19	No	Si
SLU 80	12.61	34.12	-1643	-0.0000143	0.0003743	0.0035	0.68	514.41	553.13	553.13	16.21	No	Si
SLU 83	10.61	205.59	-3532	-0.0000406	0.0003743	0.0035	0.68	996.72	1050.54	1050.54	5.11	No	Si
SLU 83	12.61	29.04	-1581	-0.0000135	0.0003743	0.0035	0.68	496.71	534.36	534.36	18.4	No	Si
SLU 79	10.61	200.11	-3486	-0.0000398	0.0003743	0.0035	0.68	986.33	1038.87	1038.87	5.19	No	Si
SLU 79	12.61	34.26	-1634	-0.0000143	0.0003743	0.0035	0.68	511.91	550.47	550.47	16.07	No	Si
SLU 41	10.61	176.57	-2956	-0.0000339	0.0003743	0.0035	0.68	862.03	907.12	907.12	5.14	No	Si
SLU 41	12.61	23.27	-1202	-0.0000103	0.0003743	0.0035	0.68	385.04	417.71	417.71	17.95	No	Si
SLU 81	10.61	203.12	-3493	-0.0000401	0.0003743	0.0035	0.68	988.08	1040.83	1040.83	5.12	No	Si
SLU 81	12.61	27.42	-1566	-0.0000133	0.0003743	0.0035	0.68	492.28	529.68	529.68	19.32	No	Si
SLU 82	10.61	203.3	-3498	-0.0000401	0.0003743	0.0035	0.68	989.16	1042.04	1042.04	5.13	No	Si
SLU 82	12.61	27.27	-1575	-0.0000134	0.0003743	0.0035	0.68	494.8	532.34	532.34	19.52	No	Si
SLU 40	10.61	174.28	-2922	-0.0000335	0.0003743	0.0035	0.68	853.83	898.9	898.9	5.16	No	Si
SLU 40	12.61	21.5	-1195	-0.0000101	0.0003743	0.0035	0.68	383.05	415.64	415.64	19.33	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 14	10.61	1072.86	-5279	-0.0001403	0.0005615	0.0035	0.68		1559.31	1559.31	1.45		Si
SLV 14	12.61	-936.21	5068	2.0122835	0.0005615	0.0035	0.544		0	0	0		No
SLV 15	10.61	1268.04	-5414	-0.0001946	0.0005615	0.0035	0.68		1593.5	1593.5	1.26		Si
SLV 15	12.61	-1220.46	6612	2.6251921	0.0005615	0.0035	0.544		0	0	0		No
SLD 16	10.61	531.52	-3447	-0.0000635	0.0005615	0.0035	0.68		1099.96	1099.96	2.07		Si
SLD 16	12.61	-415.18	1584	0.6310617	0.0005615	0.0035	0.544		0	0	0		No
SLV 4	10.61	-1008.11	1021	0.4187345	0.0005615	0.0035	0.544		0	0	0		No
SLV 4	12.61	1200.99	-8806	-0.0001598	0.0005615	0.0035	0.68		2358.65	2358.65	1.96		Si
SLV 13	10.61	1279.98	-5928	-0.0001794	0.0005615	0.0035	0.68		1725.18	1725.18	1.35		Si
SLV 13	12.61	-1148.11	6264	2.4870347	0.0005615	0.0035	0.544		0	0	0		No
SLV 2	10.61	-996.16	507	0.1944278	0.0005615	0.0035	0.544		0	0	0		No
SLV 2	12.61	1273.33	-9153	-0.0001697	0.0005615	0.0035	0.68		2428.61	2428.61	1.91		Si
SLV 9	10.61	535.92	-4396	-0.0000693	0.0005615	0.0035	0.68		1337.51	1337.51	2.5		Si
SLV 9	12.61	-255.75	686	0.2745268	0.0005615	0.0035	0.544		0	0	0		No
SLV 3	10.61	-800.98	372	0.1397526	0.0005615	0.0035	0.544		0	0	0		No
SLV 3	12.61	989.09	-7609	-0.0001307	0.0005615	0.0035	0.68		2122.22	2122.22	2.15		Si
SLV 12	10.61	356.66	-2247	-0.0000417	0.0005615	0.0035	0.68		748.29	748.29	2.1		Si
SLV 12	12.61	-354.23	1039	0.4153937	0.0005615	0.0035	0.544		0	0	0		No
SLV 11	10.61	496.11	-2683	-0.000059	0.0005615	0.0035	0.68		879.43	879.43	1.77		Si
SLV 11	12.61	-496.9	1844	0.7350762	0.0005615	0.0035	0.544		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 80	10.61	200.29	-3491	-2939	1056	0.68	0.68	-14408	8865	1809	59472	6109	1734	7843	No	7.42	Si
SLU 80	12.61	34.12	-1643	-1383	-165	0.68	0.68	-6781	7849	1601	59472	6109	1734	7843	No	47.45	Si
SLU 82	10.61	203.3	-3498	-2946	1093	0.68	0.68	-14440	8870	1810	59472	6109	1734	7843	No	7.18	Si
SLU 82	12.61	27.27	-1575	-1326	-135	0.68	0.68	-6499	7811	1594	59472	6109	1734	7843	No	58.14	Si
SLU 84	10.61	205.77	-3537	-2978	1104	0.68	0.68	-14598	8891	1814	59472	6109	1734	7843	No	7.1	Si
SLU 84	12.61	28.89	-1590	-1339	-138	0.68	0.68	-6563	7819	1595	59472	6109	1734	7843	No	56.69	Si
SLU 81	10.61	203.12	-3493	-2942	1096	0.68	0.68	-14420	8867	1809	59472	6109	1734	7843	No	7.15	Si
SLU 81	12.61	27.42	-1566	-1319	-128	0.68	0.68	-6463	7806	1593	59472	6109	1734	7843	No	61.28	Si
SLU 77	10.61	201.17	-3511	-2957	1064	0.68	0.68	-14493	8877	1811	59472	6109	1734	7843	No	7.37	Si
SLU 77	12.61	35.91	-1646	-1386	-161	0.68	0.68	-6794	7850	1602	59472	6109	1734	7843	No	48.85	Si
SLU 79	10.61	200.11	-3486	-2935	1060	0.68	0.68	-14388	8863	1808	59472	6109	1734	7843	No	7.4	Si
SLU 79	12.61	34.26	-1634	-1376	-158	0.68	0.68	-6745	7844	1600	59472	6109	1734	7843	No	49.52	Si
SLU 78	10.61	201.35	-3516	-2961	1061	0.68	0.68	-14513	8880	1812	59472	6109	1734	7843	No	7.39	Si
SLU 78	12.61	35.77	-1655	-1393	-167	0.68	0.68	-6830	7855	1603	59472	6109	1734	7843	No	46.83	Si
SLU 74	10.61	198.7	-3473	-2925	1053	0.68	0.68	-14335	8856	1807	59472	6109	1734	7843	No	7.45	Si
SLU 74	12.61	34.29	-1630	-1373	-157	0.68	0.68	-6730	7842	1600	59472	6109	1734	7843	No	49.93	Si
SLU 83	10.61	205.59	-3532	-2974	1107	0.68	0.68	-14579	8888	1813	59472	6109	1734	7843	No	7.08	Si
SLU 83	12.61	29.04	-1581	-1332	-131	0.68	0.68	-6527	7815	1594	59472	6109	1734	7843	No	59.68	Si
SLU 75	10.61	198.88	-3478	-2929	1050	0.68	0.68	-14355	8858	1807	59472	6109	1734	7843	No	7.47	Si
SLU 75	12.61	34.14	-1639	-1380	-164	0.68	0.68	-6766	7847	1601	59472	6109	1734	7843	No	47.82	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 14	10.61	1072.86	-5279	-4446	5406	0.68	0.4104	-21792	14775	2168	59472	9164	1734	10898		2.02	Si
SLV 14	12.61	-936.21	5068	4268	2325	0.544	0.4659	0	0	0	59472	7331	1387	8718		3.75	Si
SLV 16	10.61	1060.91	-4766	-4013	5695	0.68	0.3522	-19671	14351	2052	59472	9164	1734	10898		1.91	Si
SLV 16	12.61	-1008.56	5415	4560	2496	0.544	0.4614	0	0	0	59472	7331	1387	8718		3.49	Si
SLD 13	10.61	624.88	-3933	-3312	3182	0.68	0.5435	-16236	13664	2228	59472	9164	1734	10898		3.42	Si
SLD 13	12.61	-476.58	1955	1646	1067	0.544	0.2888	0	0	0	59472	7331	1387	8718		8.17	Si
SLV 2	10.61	-996.16	507	427	-5399	0.544	0	0	0	0	59472	7331	1387	8718		1.61	Si
SLV 2	12.61	1273.33	-9153	-7708	-3159	0.68	0.6027	-37781	16250	3037	59472	9164	1734	10898		3.45	Si
SLD 15	10.61	619.63	-3723	-3135	3295	0.68	0.5208	-15368	13490	2108	59472	9164	1734	10898		3.31	Si
SLD 15	12.61	-505.32	2093	1762	1135	0.544	0.2956	0	0	0	59472	7331	1387	8718		7.68	Si
SLV 1	10.61	-789.04	-141	-119	-4304	0.544	0	0	0	0	59472	7331	1387	8718		2.03	Si
SLV 1	12.61	1061.44	-7957	-6701	-2795	0.68	0.6199	-32844	16250	3022	59472	9164	1734	10898		3.9	Si
SLV 4	10.61	-1008.11	1021	860	-5110	0.544	0	0	0	0	59472	7331	1387	8718		1.71	Si
SLV 4	12.61	1200.99	-8806	-7415	-2988	0.68	0.6109	-36346	16250	2978	59472	9164	1734	10898		3.65	Si
SLV 15	10.61	1268.04	-5414	-4559	6791	0.68	0.3174	-22347	14886	2198	59472	9164	1734	10898		1.6	Si
SLV 15	12.61	-1220.46	6612	5568	2860	0.544	0.4663	0	0	0	59472	7331	1387	8718		3.05	Si
SLV 3	10.61	-800.98	372	314	-4014	0.544	0	0	0	0	59472	7331	1387	8718		2.17	Si
SLV 3	12.61	989.09	-7609	-6408	-2624	0.68	0.6301	-31409	16250	3072	59472	9164	1734	10898		4.15	Si
SLV 13	10.61	1279.98	-5928	-4992	6502	0.68	0.3723	-24467	15310	2313	59472	9164	1734	10898		1.68	Si
SLV 13	12.61	-1148.11	6264	5275	2689	0.544	0.4702	0	0	0	59472	7331	1387	8718		3.24	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 12.251 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 13	179667	0.5	0	5668	211.23	0	0	No, Trazione
SLV 16	179667	0.5	0	4744	211.23	0	0	No, Trazione
SLV 9	179667	0.5	0	604	211.23	0	0	No, Trazione
SLV 10	179667	0.5	0	-181	211.23	0	0	No, e>t/2
SLV 15	179667	0.5	0	5910	211.23	0	0	No, Trazione
SLV 11	179667	0.5	0	1410	211.23	0	0	No, Trazione
SLV 12	179667	0.5	0	625	211.23	0	0	No, Trazione
SLV 14	179667	0.5	0	4502	211.23	0	0	No, Trazione
SLV 7	179667	0.5	12379	-2526	211.23	348.12	1.65	Si
SLV 8	179667	0.5	16226	-3310	211.23	443.8	2.1	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 12.251 Wa = 0.05 Ta = 0.1494

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 16	-281	-478	-78	3.089	204.6	0.919	48.83892	12.10375	Si
SLV 4	-291	-3120	-49	3.086	205.2	0.918	48.87634	12.10375	Si
SLV 15	-260	-272	-78	3.14	203.3	0.922	49.48847	12.10375	Si
SLV 3	-270	-2914	-49	3.137	204	0.921	49.52636	12.10375	Si
SLV 2	-150	-3648	78	3.451	197.6	0.944	53.10192	12.10375	Si
SLV 1	-130	-3441	78	3.515	196.8	0.95	53.7877	12.10375	Si
SLV 14	-140	-1006	50	3.509	197.2	0.947	53.85004	12.10375	Si
SLV 13	-119	-800	50	3.576	196.4	0.953	54.54114	12.10375	Si
SLV 12	-445	-753	-217	2.629	215.9	0.902	42.3586	8.45805	Si
SLV 8	-448	-1546	-208	2.63	216.1	0.902	42.37455	8.45805	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	5.11	SLU 83	Si
V_SLU	7.082	SLU 83	Si
PF_SLV	0	SLD 11	No
V_SLV	1.605	SLV 15	Si
PFFP_SLV	0	SLV 16	No
R_SLV	4.035	SLV 16	Si

Maschio 277

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.933	-4.784	-11.143	-4.784	Z medio 966 cm	F1	0.79	0.3	5.18	5.181	5.18			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 34	10.61	114.32	-3074	-0.0000253	0.0003743	0.0035	0.7897	1059.11	1130.7	1130.7	9.89	No	Si
SLU 34	12.61	-156.63	-2510	-0.0000237	0.0003743	0.0035	0.7897	887.82	1048.57	1048.57	6.69	No	Si
SLU 84	10.61	149.7	-3716	-0.0000315	0.0003743	0.0035	0.7897	1241.31	1309.27	1309.27	8.75	No	Si
SLU 84	12.61	-188.84	-3095	-0.0000292	0.0003743	0.0035	0.7897	1065.22	1240.57	1240.57	6.57	No	Si
SLU 41	10.61	137.14	-3090	-0.0000266	0.0003743	0.0035	0.7897	1063.87	1135.13	1135.13	8.28	No	Si
SLU 41	12.61	-164.87	-2599	-0.0000247	0.0003743	0.0035	0.7897	915.69	1078.63	1078.63	6.54	No	Si
SLU 81	10.61	153.09	-3624	-0.000031	0.0003743	0.0035	0.7897	1216.08	1283.37	1283.37	8.38	No	Si
SLU 81	12.61	-185.55	-3055	-0.0000287	0.0003743	0.0035	0.7897	1053.37	1227.67	1227.67	6.62	No	Si
SLU 42	10.61	134.91	-3107	-0.0000266	0.0003743	0.0035	0.7897	1068.9	1139.82	1139.82	8.45	No	Si
SLU 42	12.61	-167.02	-2587	-0.0000247	0.0003743	0.0035	0.7897	911.84	1074.51	1074.51	6.43	No	Si
SLU 40	10.61	136.07	-3033	-0.0000261	0.0003743	0.0035	0.7897	1046.92	1119.41	1119.41	8.23	No	Si
SLU 40	12.61	-165.87	-2534	-0.0000243	0.0003743	0.0035	0.7897	895.45	1056.86	1056.86	6.37	No	Si
SLU 31	10.61	115.49	-2999	-0.0000249	0.0003743	0.0035	0.7897	1037.05	1110.32	1110.32	9.61	No	Si
SLU 31	12.61	-155.48	-2457	-0.0000233	0.0003743	0.0035	0.7897	871.3	1030.67	1030.67	6.63	No	Si
SLU 83	10.61	151.93	-3699	-0.0000314	0.0003743	0.0035	0.7897	1236.62	1304.43	1304.43	8.59	No	Si
SLU 83	12.61	-186.7	-3107	-0.0000292	0.0003743	0.0035	0.7897	1068.86	1244.55	1244.55	6.67	No	Si
SLU 39	10.61	138.3	-3016	-0.0000261	0.0003743	0.0035	0.7897	1041.85	1114.73	1114.73	8.06	No	Si
SLU 39	12.61	-163.72	-2546	-0.0000243	0.0003743	0.0035	0.7897	899.32	1061.07	1061.07	6.48	No	Si
SLU 82	10.61	150.86	-3642	-0.000031	0.0003743	0.0035	0.7897	1220.81	1288.2	1288.2	8.54	No	Si
SLU 82	12.61	-187.69	-3042	-0.0000288	0.0003743	0.0035	0.7897	1049.7	1223.68	1223.68	6.52	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 16	10.61	1103.1	260	-0.0427504	0.0005615	0.0035	0.6318		0	0	0		No
SLD 16	12.61	-455.93	-3033	-0.0000417	0.0005615	0.0035	0.7897		1252.08	1252.08	2.75		Si
SLV 13	10.61	2792.89	3859	0.8639046	0.0005615	0.0035	0.6318		0	0	0		No
SLV 13	12.61	-1144.57	-4914	-0.0001074	0.0005615	0.0035	0.6318		1872.78	1872.78	1.64		Si
SLV 12	10.61	996.95	1707	0.4035455	0.0005615	0.0035	0.6318		0	0	0		No
SLV 12	12.61	-239.7	-2133	-0.000025	0.0005615	0.0035	0.7897		934.43	934.43	3.9		Si
SLV 3	10.61	-2132.45	-7730	-0.0002608	0.0005615	0.0035	0.6318		2700.6	2700.6	1.27		Si
SLV 3	12.61	734.53	262	-0.0266205	0.0005615	0.0035	0.6318		0	0	0		No
SLV 14	10.61	2290.27	2496	0.4922056	0.0005615	0.0035	0.6318		0	0	0		No
SLV 14	12.61	-964.56	-4572	-0.0000866	0.0005615	0.0035	0.7897		1763.94	1763.94	1.83		Si

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLD 15	10.61	1316.92	840	0.032573	0.0005615	0.0035	0.6318		0	0	0		No
SLD 15	12.61	-532.51	-3178	-0.0000472	0.0005615	0.0035	0.7897		1301.5	1301.5	2.44		Si
SLV 15	10.61	2984.68	5535	1.3264867	0.0005615	0.0035	0.6318		0	0	0		No
SLV 15	12.61	-1091.4	-4537	-0.0001037	0.0005615	0.0035	0.6318		1752.65	1752.65	1.61		Si
SLV 4	10.61	-2635.06	-9094	-0.0003904	0.0005615	0.0035	0.6318		3056.94	3056.94	1.16		Si
SLV 4	12.61	914.54	603	0.0307448	0.0005615	0.0035	0.6318		0	0	0		No
SLV 11	10.61	1335.34	2625	0.6342033	0.0005615	0.0035	0.6318		0	0	0		No
SLV 11	12.61	-360.89	-2362	-0.0000326	0.0005615	0.0035	0.7897		1016.53	1016.53	2.82		Si
SLV 2	10.61	-2826.86	-10770	-0.0003569	0.0005615	0.0035	0.6318		3432.28	3432.28	1.21		Si
SLV 2	12.61	861.37	227	-0.0332907	0.0005615	0.0035	0.6318		0	0	0		No

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 82	10.61	150.86	-3642	-3067	196	0.7897	0.7897	-12944	8670	2054	59472	7094	2014	9108	No	46.38	Si
SLU 82	12.61	-187.69	-3042	-2562	641	0.7897	0.7897	-10813	8386	1987	59472	7094	2014	9108	No	14.21	Si
SLU 84	10.61	149.7	-3716	-3130	191	0.7897	0.7897	-13210	8706	2062	59472	7094	2014	9108	No	47.57	Si
SLU 84	12.61	-188.84	-3095	-2606	637	0.7897	0.7897	-11001	8411	1993	59472	7094	2014	9108	No	14.29	Si
SLU 62	10.61	140.11	-3309	-2786	199	0.7897	0.7897	-11761	8513	2017	59472	7094	2014	9108	No	45.74	Si
SLU 62	12.61	-162.63	-2816	-2372	635	0.7897	0.7897	-10011	8279	1961	59472	7094	2014	9108	No	14.35	Si
SLU 60	10.61	141.28	-3234	-2723	204	0.7897	0.7897	-11495	8477	2008	59472	7094	2014	9108	No	44.63	Si
SLU 60	12.61	-161.48	-2764	-2327	638	0.7897	0.7897	-9824	8254	1956	59472	7094	2014	9108	No	14.28	Si
SLU 83	10.61	151.93	-3699	-3115	196	0.7897	0.7897	-13149	8698	2061	59472	7094	2014	9108	No	46.41	Si
SLU 83	12.61	-186.7	-3107	-2617	648	0.7897	0.7897	-11045	8417	1994	59472	7094	2014	9108	No	14.05	Si
SLU 81	10.61	153.09	-3624	-3052	201	0.7897	0.7897	-12883	8662	2052	59472	7094	2014	9108	No	45.27	Si
SLU 81	12.61	-185.55	-3055	-2572	651	0.7897	0.7897	-10858	8392	1988	59472	7094	2014	9108	No	13.98	Si
SLU 74	10.61	130.49	-3710	-3124	168	0.7897	0.7897	-13187	8703	2062	59472	7094	2014	9108	No	54.29	Si
SLU 74	12.61	-175.23	-3074	-2589	630	0.7897	0.7897	-10926	8401	1990	59472	7094	2014	9108	No	14.46	Si
SLU 79	10.61	131.66	-3729	-3140	169	0.7897	0.7897	-13255	8712	2064	59472	7094	2014	9108	No	53.94	Si
SLU 79	12.61	-176.03	-3091	-2603	629	0.7897	0.7897	-10988	8409	1992	59472	7094	2014	9108	No	14.47	Si
SLU 61	10.61	139.05	-3251	-2738	199	0.7897	0.7897	-11556	8485	2010	59472	7094	2014	9108	No	45.71	Si
SLU 61	12.61	-163.62	-2751	-2317	627	0.7897	0.7897	-9780	8248	1954	59472	7094	2014	9108	No	14.52	Si
SLU 77	10.61	129.32	-3785	-3187	163	0.7897	0.7897	-13453	8738	2070	59472	7094	2014	9108	No	55.93	Si
SLU 77	12.61	-176.38	-3127	-2633	627	0.7897	0.7897	-11113	8426	1996	59472	7094	2014	9108	No	14.53	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 13	10.61	2792.89	3859	3250	4467	0.6318	0	0	0	0	59472	8513	1611	10124		2.27	Si
SLV 13	12.61	-1144.57	-4914	-4138	3753	0.6318	0.4857	0	0	0	59472	8513	1611	10124		2.7	Si
SLV 3	10.61	-2132.45	-7730	-6510	-3422	0.6318	0.357	0	0	0	59472	8513	1611	10124		2.96	Si
SLV 3	12.61	734.53	262	221	-2379	0.6318	0	0	0	0	59472	8513	1611	10124		4.26	Si
SLV 16	10.61	2482.07	4172	3513	4074	0.6318	0	0	0	0	59472	8513	1611	10124		2.48	Si
SLV 16	12.61	-911.39	-4196	-3533	3667	0.7897	0.5329	-22348	14887	2380	59472	10641	2014	12655		3.45	Si
SLD 15	10.61	1316.92	840	708	2149	0.6318	0	0	0	0	59472	8513	1611	10124		4.71	Si
SLD 15	12.61	-532.51	-3178	-2676	2017	0.7897	0.6818	-13165	13050	2669	59472	10641	2014	12655		6.27	Si
SLV 11	10.61	1335.34	2625	2210	2347	0.6318	0	0	0	0	59472	8513	1611	10124		4.31	Si
SLV 11	12.61	-360.89	-2362	-1989	2172	0.7897	0.7262	-8397	12096	2635	59472	10641	2014	12655		5.83	Si
SLV 1	10.61	-2324.24	-9406	-7921	-3849	0.6318	0.4433	0	0	0	59472	8513	1611	10124		2.63	Si
SLV 1	12.61	681.36	-115	-96	-2729	0.6318	0	0	0	0	59472	8513	1611	10124		3.71	Si
SLV 2	10.61	-2826.86	-10770	-9069	-4668	0.6318	0.3971	0	0	0	59472	8513	1611	10124		2.17	Si
SLV 2	12.61	861.37	227	191	-3166	0.6318	0	0	0	0	59472	8513	1611	10124		3.2	Si
SLV 14	10.61	2290.27	2496	2102	3648	0.6318	0	0	0	0	59472	8513	1611	10124		2.78	Si
SLV 14	12.61	-964.56	-4572	-3850	3316	0.7897	0.5517	-23543	15126	2503	59472	10641	2014	12655		3.82	Si
SLV 4	10.61	-2635.06	-9094	-7658	-4242	0.6318	0.3153	0	0	0	59472	8513	1611	10124		2.39	Si
SLV 4	12.61	914.54	603	508	-2816	0.6318	0	0	0	0	59472	8513	1611	10124		3.6	Si
SLV 15	10.61	2984.68	5535	4661	4894	0.6318	0	0	0	0	59472	8513	1611	10124		2.07	Si
SLV 15	12.61	-1091.4	-4537	-3821	4103	0.6318	0.4629	0	0	0	59472	8513	1611	10124		2.47	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 12.25 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 8	179667	0.5	0	-787	245.19	0	0	No, e>t/2
SLV 11	179667	0.5	0	-1013	245.19	0	0	No, e>t/2
SLV 12	179667	0.5	0	-999	245.19	0	0	No, e>t/2
SLV 4	179667	0.5	0	-1403	245.19	0	0	No, e>t/2
SLV 7	179667	0.5	0	-802	245.19	0	0	No, e>t/2
SLV 3	179667	0.5	0	-1425	245.19	0	0	No, e>t/2
SLV 16	179667	0.5	8899	-2108	245.19	297.8	1.21	Si
SLV 15	179667	0.5	8991	-2130	245.19	300.69	1.23	Si
SLV 2	179667	0.5	9059	-2146	245.19	302.84	1.24	Si
SLV 1	179667	0.5	9151	-2168	245.19	305.72	1.25	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.
Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:
- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 12.25 Wa = 0.05 Ta = 0.1494

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 2	-739	-5706	-3	2.45	268.3	0.893	39.89081	12.09821	Si

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 4	-686	-4126	8	2.519	263.9	0.894	40.93957	12.09821	Si
SLV 1	-615	-5250	-2	2.626	258.2	0.897	42.55339	12.09821	Si
SLV 3	-561	-3670	9	2.706	254	0.9	43.71368	12.09821	Si
SLV 6	-403	-6071	-18	2.982	242.5	0.911	47.57303	8.4553	Si
SLV 14	342	-1697	-9	4.8	225.2	1	69.75702	12.09821	Si, Trazione
SLV 5	-319	-5764	-17	3.156	237.1	0.92	49.85044	8.4553	Si
SLV 16	395	-117	2	4.946	225.2	1	71.87965	12.09821	Si, Trazione
SLV 13	467	-1241	-8	5.14	225.2	1	74.69536	12.09821	Si, Trazione
SLV 8	-225	-806	19	3.374	231.8	0.934	52.48897	8.4553	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	6.372	SLU 40	Si
V_SLU	13.982	SLU 81	Si
PF_SLV	0	SLD 13	No
V_SLV	2.069	SLV 15	Si
PFFP_SLV	0	SLV 3	No
R_SLV	3.297	SLV 2	Si

Maschio 281

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	X fin.	Y fin.	Quota i.	Quota.s	l	Sp.	h netta	h ini.	h fin.	a	a.s.,sx	a.s.,dx
-11.013	-4.784	-11.013	-3.403	L5	Z medio 966 cm	1.381	0.3	4.588	4.59	4.586			

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb	fk	fvk0	fmedio	τ0	fv0	μ	ϕ	fv,lim	E	G	FC
600000			431200	11200	25000	0.58	0.77	32500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Destro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche, γM = 3

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLU 21	5.07	-521.46	-13133	-0.0000596	0.0003743	0.0035	1.381	6244.93	7501.7	7501.7	14.39	No	Si
SLU 21	9.66	497.12	-9168	-0.0000427	0.0003743	0.0035	1.381	4954.65	5379.33	5379.33	10.82	No	Si
SLU 18	5.07	-492.76	-12797	-0.0000577	0.0003743	0.0035	1.381	6155.49	7402.8	7402.8	15.02	No	Si
SLU 18	9.66	472.64	-8951	-0.0000414	0.0003743	0.0035	1.381	4869.26	5261.96	5261.96	11.13	No	Si
SLU 20	5.07	-501.13	-12998	-0.0000587	0.0003743	0.0035	1.381	6209.43	7461.75	7461.75	14.89	No	Si
SLU 20	9.66	488.55	-9141	-0.0000425	0.0003743	0.0035	1.381	4944.07	5364.65	5364.65	10.98	No	Si
SLU 42	5.07	-604.37	-14898	-0.0000688	0.0003743	0.0035	1.381	6653.82	8048.23	8048.23	13.32	No	Si
SLU 42	9.66	596.09	-10388	-0.0000494	0.0003743	0.0035	1.381	5406.62	5932.65	5932.65	9.95	No	Si
SLU 41	5.07	-584.04	-14763	-0.0000678	0.0003743	0.0035	1.381	6626.13	8004.79	8004.79	13.71	No	Si
SLU 41	9.66	587.52	-10361	-0.0000491	0.0003743	0.0035	1.381	5397.12	5922.11	5922.11	10.08	No	Si
SLU 40	5.07	-596	-14697	-0.0000677	0.0003743	0.0035	1.381	6612.39	7983.68	7983.68	13.4	No	Si
SLU 40	9.66	580.18	-10199	-0.0000483	0.0003743	0.0035	1.381	5339.56	5858.94	5858.94	10.1	No	Si
SLU 39	5.07	-575.67	-14562	-0.0000668	0.0003743	0.0035	1.381	6583.81	7940.64	7940.64	13.79	No	Si
SLU 39	9.66	571.61	-10172	-0.0000481	0.0003743	0.0035	1.381	5329.89	5848.45	5848.45	10.23	No	Si
SLU 84	5.07	-695.21	-17456	-0.000082	0.0003743	0.0035	1.381	7065.27	8872.11	8872.11	12.76	No	Si
SLU 84	9.66	586.63	-12158	-0.0000566	0.0003743	0.0035	1.381	5975.48	6637.16	6637.16	11.31	No	Si
SLU 83	5.07	-674.87	-17321	-0.000081	0.0003743	0.0035	1.381	7048.9	8840.98	8840.98	13.1	No	Si
SLU 83	9.66	578.06	-12131	-0.0000564	0.0003743	0.0035	1.381	5967.55	6626.17	6626.17	11.46	No	Si
SLU 19	5.07	-513.09	-12932	-0.0000586	0.0003743	0.0035	1.381	6191.88	7442.34	7442.34	14.51	No	Si
SLU 19	9.66	481.21	-8978	-0.0000417	0.0003743	0.0035	1.381	4880.01	5276.58	5276.58	10.97	No	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche, γM = 2

Verifica condotta secondo CNR-DT 215

Comb.	Quota	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	c.s.	incremento > 50%	Verifica
SLV 7	5.07	1840.08	1533	0.1527849	0.0005615	0.0035	1.1048		0	0	0		No
SLV 7	9.66	-1053.78	-3771	-0.0000306	0.0005615	0.0035	1.381		2957.13	2957.13	2.81		Si
SLV 4	5.07	-1597.52	-11450	-0.0000691	0.0005615	0.0035	1.381		7307.35	7307.35	4.57		Si
SLV 4	9.66	1348.96	-3650	-0.0000382	0.0005615	0.0035	1.381		2506.39	2506.39	1.86		Si
SLV 3	5.07	-1230.89	-10486	-0.0000591	0.0005615	0.0035	1.381		6814.55	6814.55	5.54		Si
SLV 3	9.66	1048.67	-3949	-0.000031	0.0005615	0.0035	1.381		2695.42	2695.42	2.57		Si
SLV 16	5.07	1965.14	-4238	-0.0000639	0.0005615	0.0035	1.381		2874.36	2874.36	1.46		Si
SLV 16	9.66	-1624.63	-9987	-0.0000636	0.0005615	0.0035	1.381		6549.57	6549.57	4.03		Si
SLV 15	5.07	2331.77	-3274	-0.0023531	0.0005615	0.0035	1.1048		2269.22	2269.22	0.97		No
SLV 15	9.66	-1924.92	-10287	-0.0000698	0.0005615	0.0035	1.381		6709.32	6709.32	3.49		Si
SLV 11	5.07	2908.87	3696	0.427401	0.0005615	0.0035	1.1048		0	0	0		No
SLV 11	9.66	-1945.86	-5672	-0.0000555	0.0005615	0.0035	1.381		4120	4120	2.12		Si
SLV 1	5.07	-2845.68	-18758	-0.0001222	0.0005615	0.0035	1.381		10594.73	10594.73	3.72		Si
SLV 1	9.66	2000.74	-5961	-0.0000572	0.0005615	0.0035	1.381		3921.01	3921.01	1.96		Si
SLV 2	5.07	-3212.31	-19723	-0.0001333	0.0005615	0.0035	1.381		10912.92	10912.92	3.4		Si
SLV 2	9.66	2301.03	-5662	-0.0000684	0.0005615	0.0035	1.381		3742.64	3742.64	1.63		Si
SLV 8	5.07	1593.24	883	0.0505099	0.0005615	0.0035	1.1048		0	0	0		No
SLV 8	9.66	-851.6	-3569	-0.0000263	0.0005615	0.0035	1.381		2829.69	2829.69	3.32		Si
SLV 12	5.07	2662.03	3047	0.3445004	0.0005615	0.0035	1.1048		0	0	0		No
SLV 12	9.66	-1743.68	-5470	-0.0000498	0.0005615	0.0035	1.381		3998.79	3998.79	2.29		Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni non sismiche secondo metodo CNR DT215, γM = 3

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLU 78	5.07	-682.69	-17111	-14409	-2356	1.381	1.381	-34778	10833	5172	52335	12406	3522	15928	No	6.76	Si
SLU 78	9.66	494.05	-11969	-10079	-939	1.381	1.381	-24328	10188	4221	52335	12406	3522	15928	No	16.96	Si
SLU 73	5.07	-671.82	-16669	-14037	-2289	1.381	1.381	-33880	10833	5073	52335	12406	3522	15928	No	6.96	Si
SLU 73	9.66	459.11	-11489	-9675	-844	1.381	1.381	-23353	10058	4167	52335	12406	3522	15928	No	18.88	Si
SLU 80	5.07	-675.01	-16981	-14300	-2329	1.381	1.381	-34515	10833	5143	52335	12406	3522	15928	No	6.84	Si
SLU 80	9.66	485.21	-11851	-9980	-911	1.381	1.381	-24088	10156	4208	52335	12406	3522	15928	No	17.49	Si
SLU 82	5.07	-686.83	-17255	-14530	-2395	1.381	1.381	-35071	10833	5204	52335	12406	3522	15928	No	6.65	Si
SLU 82	9.66	570.72	-11969	-10079	-977	1.381	1.381	-24327	10188	4221	52335	12406	3522	15928	No	16.31	Si
SLU 76	5.07	-680.2	-16870	-14206	-2331	1.381	1.381	-34289	10833	5118	52335	12406	3522	15928	No	6.83	Si
SLU 76	9.66	475.02	-11679	-9835	-882	1.381	1.381	-23739	10110	4188	52335	12406	3522	15928	No	18.07	Si
SLU 81	5.07	-666.5	-17120	-14416	-2329	1.381	1.381	-34797	10833	5174	52335	12406	3522	15928	No	6.84	Si
SLU 81	9.66	562.15	-11941	-10056	-964	1.381	1.381	-24272	10181	4218	52335	12406	3522	15928	No	16.53	Si
SLU 84	5.07	-695.21	-17456	-14700	-2437	1.381	1.381	-35480	10833	5249	52335	12406	3522	15928	No	6.54	Si
SLU 84	9.66	586.63	-12158	-10239	-1015	1.381	1.381	-24713	10239	4242	52335	12406	3522	15928	No	15.7	Si
SLU 77	5.07	-662.36	-16975	-14295	-2290	1.381	1.381	-34504	10833	5141	52335	12406	3522	15928	No	6.95	Si
SLU 77	9.66	485.48	-11942	-10056	-926	1.381	1.381	-24273	10181	4218	52335	12406	3522	15928	No	17.19	Si
SLU 75	5.07	-674.32	-16909	-14240	-2314	1.381	1.381	-34370	10833	5127	52335	12406	3522	15928	No	6.88	Si
SLU 75	9.66	478.14	-11779	-9919	-902	1.381	1.381	-23942	10137	4200	52335	12406	3522	15928	No	17.67	Si
SLU 83	5.07	-674.87	-17321	-14586	-2371	1.381	1.381	-35205	10833	5219	52335	12406	3522	15928	No	6.72	Si
SLU 83	9.66	578.06	-12131	-10216	-1002	1.381	1.381	-24658	10232	4239	52335	12406	3522	15928	No	15.9	Si

Verifica a taglio nel piano delle sezioni rinforzate con rete a fibra in combinazioni sismiche secondo metodo CNR DT215, γM = 2

Comb.	Quota	M	N	Nmur	V	df	l'	σN	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	res. > 50%	c.s.	Verifica
SLV 2	5.07	-3212.31	-19723	-16609	-8619	1.381	1.381	-40088	16250	6732	52335	18609	3522	22131		2.57	Si
SLV 2	9.66	2301.03	-5662	-4768	-5204	1.381	0.8523	-11508	12718	3266	52335	18609	3522	22131		4.25	Si
SLV 1	5.07	-2845.68	-18758	-15796	-7699	1.381	1.381	-38128	16250	6732	52335	18609	3522	22131		2.87	Si
SLV 1	9.66	2000.74	-5961	-5020	-4572	1.381	1.0647	-12117	12840	4101	52335	18609	3522	22131		4.84	Si
SLV 7	5.07	1840.08	1533	1291	5598	1.1048	0	0	0	0	52335	14887	2817	17705		3.16	Si
SLV 7	9.66	-1053.78	-3771	-3176	4108	1.381	1.2332	-8607	12138	4491	52335	18609	3522	22131		5.39	Si
SLV 15	5.07	2331.77	-3274	-2757	5752	1.1048	0	0	0	0	52335	14887	2817	17705		3.08	Si
SLV 15	9.66	-1924.92	-10287	-8663	4361	1.381	1.381	-20909	14598	6048	52335	18609	3522	22131		5.07	Si
SLV 11	5.07	2908.87	3696	3113	8190	1.1048	0	0	0	0	52335	14887	2817	17705		2.16	Si
SLV 11	9.66	-1945.86	-5672	-4777	5853	1.381	1.0424	-15388	13494	4220	52335	18609	3522	22131		3.78	Si
SLV 12	5.07	2662.03	3047	2566	7571	1.1048	0	0	0	0	52335	14887	2817	17705		2.34	Si
SLV 12	9.66	-1743.68	-5470	-4607	5428	1.381	1.1153	-13858	13188	4413	52335	18609	3522	22131		4.08	Si
SLV 6	5.07	-3789.41	-26692	-22478	-11057	1.381	1.381	-54254	16250	7988	52335	18609	3522	22131		2	Si
SLV 6	9.66	2321.97	-10276	-8654	-6696	1.381	1.381	-20887	14594	6046	52335	18609	3522	22131		3.31	Si
SLV 9	5.07	-2473.78	-23879	-20109	-7846	1.381	1.381	-48537	16250	7357	52335	18609	3522	22131		2.82	Si
SLV 9	9.66	1227.71	-12379	-10425	-4525	1.381	1.381	-25162	15449	6401	52335	18609	3522	22131		4.89	Si
SLV 5	5.07	-3542.57	-26043	-21931	-10438	1.381	1.381	-52935	16250	7842	52335	18609	3522	22131		2.12	Si
SLV 5	9.66	2119.79	-10478	-8824	-6270	1.381	1.381	-21298	14676	6080	52335	18609	3522	22131		3.53	Si
SLV 10	5.07	-2720.62	-24529	-20656	-8465	1.381	1.381	-49856	16250	7502	52335	18609	3522	22131		2.61	Si
SLV 10	9.66	1429.89	-12178	-10255	-4950	1.381	1.381	-24752	15367	6367	52335	18609	3522	22131		4.47	Si

Verifica a pressoflessione fuori piano D.M. 17-01-18 (N.T.C.)

quota 7.363 Wa 0.05 denominatore 8 γM = 2

Comb.	fd	Sa	σ0	N	M	Mc	Coeff.s.	Verifica
SLV 7	179667	0.4	0	735	274.65	0	0	No, Trazione
SLV 12	179667	0.4	0	582	274.65	0	0	No, Trazione
SLV 8	179667	0.4	0	517	274.65	0	0	No, Trazione
SLV 11	179667	0.4	0	800	274.65	0	0	No, Trazione
SLV 15	179667	0.4	14449	-5986	274.65	812.99	2.96	Si
SLV 3	179667	0.4	14973	-6203	274.65	839.26	3.06	Si
SLV 16	179667	0.4	15230	-6310	274.65	852.08	3.1	Si
SLV 4	179667	0.4	15753	-6527	274.65	878.01	3.2	Si
SLV 13	179667	0.4	28755	-11913	274.65	1450.51	5.28	Si
SLV 1	179667	0.4	29278	-12130	274.65	1470.68	5.35	Si

Per la verifica della tabella precedente non é stato considerato il rinforzo predisposto.

Le motivazioni per cui la sezione di verifica nonostante abbia un rinforzo non venga condotta come sezione rinforzata possono essere:

- Il rinforzo predisposto non è atto ad essere utilizzato per queste tipologie di verifiche.
- Non sono stati predisposti rinforzi di tipo rete e betoncino oppure FRP sia orizzontali che verticali.
- Non sono stati predisposti rinforzi di tipo rete e betoncino, FRP oppure FRCM su entrambi i lati.
- Si sono predisposti solamente FRP Diagonali che sono validi solo per la resistenza a taglio.

Verifica dei meccanismi locali di collasso con analisi cinematica lineare

forza di aggancio al piano = 5617 quota mezzeria = 7.363 Wa = 0.05 Ta = 0.1172

Comb.	N top	N base	V orto	α0	M*	e*	a0*	aLim	Verifica
SLV 13	-12299	-11546	-104	0.583	1521	0.949	8.92611	7.86399	Si
SLV 14	-11999	-12510	-100	0.595	1490.6	0.948	9.12353	7.86399	Si
SLV 15	-10287	-3274	-79	0.677	1316.9	0.942	10.44556	7.86399	Si
SLV 16	-9987	-4238	-75	0.694	1286.5	0.941	10.71872	7.86399	Si
SLV 9	-12379	-23879	-87	0.581	1529.1	0.949	8.89461	5.96257	Si
SLV 10	-12178	-24529	-84	0.589	1508.7	0.949	9.02528	5.96257	Si
SLV 5	-10478	-26043	-47	0.67	1336.3	0.943	10.32165	5.96257	Si
SLV 6	-10276	-26692	-45	0.681	1315.8	0.942	10.49881	5.96257	Si
SLV 1	-5961	-18758	27	1.047	880.2	0.92	16.54198	7.86399	Si
SLV 2	-5662	-19723	32	1.088	850.2	0.918	17.22388	7.86399	Si

Per la verifica della tabella precedente non si considerano i rinforzi predisposti ma qualora la sezione di verifica sia in trazione si ipotizza che tale componente sia assorbita dal rinforzo e la verifica viene effettuata conteggiando la forza di aggancio al piano definita.

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLU	9.953	SLU 42	Si
V_SLU	6.536	SLU 84	Si
PF_SLV	0	SLV 7	No
V_SLV	2.001	SLV 6	Si
PFFP_SLV	0	SLV 12	No
R_SLV	1.135	SLV 13	Si

1.7 Verifiche travi di accoppiamento in muratura

Le unità di misura elencate nel capitolo sono in [m, daN] ove non espressamente specificato.

***X ini.**: coordinata punto iniziale. [m]*
***Y ini.**: coordinata punto iniziale. [m]*
***Z ini.inf.**: coordinata punto iniziale. [m]*
***Z ini.sup.**: coordinata punto iniziale. [m]*
***H ini.**: altezza della sezione iniziale. [m]*
***X fin.**: coordinata punto finale. [m]*
***Y fin.**: coordinata punto finale. [m]*
***Z fin.inf.**: coordinata punto finale. [m]*
***Z fin.sup**: coordinata punto finale. [m]*
***H fin.**: altezza della sezione finale. [m]*
***Luce**: lunghezza della trave. [m]*
***Spessore**: spessore. [m]*
***R. Trazione**: resistenza a trazione dell'elemento teso disposto orizzontalmente. [daN]*
***fb_**: resistenza normalizzata a compressione in direzione orizzontale dei blocchi. [daN/m²]*
***fhk**: resistenza caratteristica a compressione della muratura utilizzata in direzione orizzontale. [daN/m²]*
***fvk0**: resistenza caratteristica a taglio in assenza di carichi verticali. [daN/m²]*
***fhmedio**: resistenza media a compressione della muratura utilizzata in direzione orizzontale. [daN/m²]*
***τ0**: resistenza media a taglio in assenza di azioni normali [C8.7.1.16]. [daN/m²]*
***fv0**: resistenza media a taglio in assenza di azioni normali [C8.7.1.17]. [daN/m²]*
***μ**: coefficiente di attrito [C8.7.1.17].*
***φ**: coefficiente di ammorsamento o ingranamento secondo Circolare 7 21-01-19 §C8.7.1.3.1.1.*
***fvk,lim**: valore caratteristico massimo della resistenza a taglio che può essere impiegata nel calcolo (§11.10.3.3). [daN/m²]*
***E**: modulo di elasticità longitudinale della muratura utilizzato. [daN/m²]*
***G**: modulo di elasticità tangenziale della muratura utilizzato. [daN/m²]*
***FC**: fattore di confidenza della muratura.*
***Materiale**: descrizione del materiale.*
***Fu Verticale**: carico di rottura a trazione per unità di lunghezza della maglia verticale. [daN/m]*
***Fu Orizzontale**: carico di rottura a trazione per unità di lunghezza della maglia verticale. [daN/m]*
***tfv**: spessore di calcolo equivalente verticale di uno strato di rinforzo.*
***tfo**: spessore di calcolo equivalente orizzontale di uno strato di rinforzo.*
***E**: modulo di elasticità longitudinale. [daN/m²]*
***εu**: dilatazione a rottura.*
***Tipo fibra**: natura della fibra.*
***materiale**: materiale fibra del rinforzo.*
***lato applicazione**: lato di applicazione del rinforzo.*
***esposizione**: condizione di esposizione secondo CNR-DT 215 §3.2.*

ancoraggio verticale iniziale: *grado di ancoraggio iniziale dei rinforzi verticali.*
ancoraggio verticale finale: *grado di ancoraggio finale dei rinforzi verticali.*
ancoraggio orizzontale iniziale: *grado di ancoraggio iniziale dei rinforzi orizzontali.*
ancoraggio orizzontale finale: *grado di ancoraggio finale dei rinforzi orizzontali.*
strati: *numero strati del rinforzo.*
verifica taglio: *tipo di verifica a taglio.*
εlim,conv / ε,CNR DT-200: *dati relativi ai parametri per il calcolo della deformazione di progetto.*
αt: *coefficiente che tiene conto della ridotta capacità estensionale delle fibre sollecitate a tagliosecondo CNR-DT 215 §4.1.1.*
α: *coeffiicente amplificativo tensione di distacco secondo CNR-DT 215 §3.1 ovvero secondo CNR-DT 200 R1/2013 §5.3.3.*
εlim,conv: *deformazione limite convenzionale del rinforzo FRCM.*
ε,fd: *deformazione di progetto del rinforzo FRCM ovvero CRM.*
γF,d: *fattore parziali di sicurezza per stato limite di distacco secondo CNR-DT 200 R1/2013 §3.4.1.*
connettori: *presenza di connettori per la prevenzione del distacco del rinforzo.*
tipo di muratura: *tipo di muratura per stato limite di distacco di estremità secondo CNR-DT 200 R1/2013 §5.3.2.*
CRM / Fibrenet?: *dati relativi ai parametri per il calcolo secondo metodo Fibrenet? ovvero se il materiale è di tipo CRM.*
CRM: *stabilisce se il rinforzo è di tipo CRM secondo le Linee Guida del C.S.L.P. Ottobre 2019.*
intonaco: *materiale intonaco FRCM ovvero CRM.*
spessore intonaco: *spessore intonaco. [m]*
tipo blocco fibrenet: *tipo blocco muratura per verifica a tglio tipo Fibrenet.*
Comb.: *combinazione.*
Sez.: *sezione di verifica.*
M: *momento flettente nel piano. [daN*m]*
N: *sforzo normale. [daN]*
εm: *deformazione della muratura.*
εm_: *deformazione elastica della muratura.*
εmu: *deformazione ultima della muratura.*
df: *distanza tra il lembo compresso e la fibra tesa più lontana. [m]*
M0d: *momento resistente della sezione non rinforzata. [daN*m]*
M1d: *momento resistente della sezione rinforzata. [daN*m]*
MRd: *momento resistente della sezione. [daN*m]*
incremento > 50%: *incremento resistenza superiore al 50% della resistenza non rinforzata in condizioni non sismiche.*
c.s.: *coefficiente di sicurezza.*
Verifica: *stato di verifica.*
V: *taglio nel piano. [daN]*
df: *distanza tra lembo compresso e baricentro dell'armatura tesa. [m]*
fvd: *resistenza a taglio di calcolo. [daN/m²]*
Vt: *resistenza a taglio della muratura non rinforzata. [daN]*
Vt,f: *resistenza a taglio del rinforzo (CNR DT215 4.1a). [daN]*
Vt,c: *resistenza a taglio per schiacciamento delle bielle (CNR DT215 4.1b). [daN]*
Vt,c int.: *contributo di resistenza a taglio delle bielle dell'intonaco se considerato. [daN]*
Vt,R: *resistenza a taglio della sezione rinforzata. [daN]*
Stato limite: *pF_SLV=Presso flessione per azioni sismiche; V_SLV=Taglio per azioni sismiche.*
Coeff.s.: *coefficiente di sicurezza.*

Trave di accoppiamento 1

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-21.763	5.876	-1.3	0.7	2	-22.763	5.876	-1.3	0.7	2	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 84	ini.	444.38	-7234	-0.0000447	0.0001872	0.0035	2		10722.86	10722.86	No	24.13	Si
SLU 84	fin.	3772.04	-8156	-0.0004533	0.0001872	0.0035	2		10722.86	10722.86	No	2.84	Si
SLU 78	ini.	414.21	-7146	-0.0000416	0.0001872	0.0035	2		10722.86	10722.86	No	25.89	Si
SLU 78	fin.	3718.23	-8096	-0.0004455	0.0001872	0.0035	2		10722.86	10722.86	No	2.88	Si
SLU 74	ini.	374.23	-7158	-0.0000376	0.0001872	0.0035	2		10722.86	10722.86	No	28.65	Si
SLU 74	fin.	3703.42	-8131	-0.0004434	0.0001872	0.0035	2		10722.86	10722.86	No	2.9	Si
SLU 80	ini.	410.3	-7085	-0.0000412	0.0001872	0.0035	2		10722.86	10722.86	No	26.13	Si
SLU 80	fin.	3692.79	-8029	-0.0004419	0.0001872	0.0035	2		10722.86	10722.86	No	2.9	Si
SLU 82	ini.	433.48	-7127	-0.0000436	0.0001872	0.0035	2		10722.86	10722.86	No	24.74	Si
SLU 82	fin.	3729.89	-8044	-0.0004472	0.0001872	0.0035	2		10722.86	10722.86	No	2.87	Si
SLU 83	ini.	415.29	-7353	-0.0000418	0.0001872	0.0035	2		10722.86	10722.86	No	25.82	Si
SLU 83	fin.	3799.38	-8302	-0.0004573	0.0001872	0.0035	2		10722.86	10722.86	No	2.82	Si
SLU 75	ini.	403.31	-7039	-0.0000405	0.0001872	0.0035	2		10722.86	10722.86	No	26.59	Si
SLU 75	fin.	3676.08	-7984	-0.0004395	0.0001872	0.0035	2		10722.86	10722.86	No	2.92	Si
SLU 81	ini.	404.4	-7246	-0.0000406	0.0001872	0.0035	2		10722.86	10722.86	No	26.52	Si
SLU 81	fin.	3757.23	-8191	-0.0004512	0.0001872	0.0035	2		10722.86	10722.86	No	2.85	Si
SLU 79	ini.	381.22	-7204	-0.0000383	0.0001872	0.0035	2		10722.86	10722.86	No	28.13	Si
SLU 79	fin.	3720.13	-8175	-0.0004458	0.0001872	0.0035	2		10722.86	10722.86	No	2.88	Si
SLU 77	ini.	385.12	-7265	-0.0000387	0.0001872	0.0035	2		10722.86	10722.86	No	27.84	Si
SLU 77	fin.	3745.57	-8243	-0.0004495	0.0001872	0.0035	2		10722.86	10722.86	No	2.86	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 82	ini.	433.48	592	2	0	6250	7930	13475	5100	14180	No	23.97	Si
SLU 82	fin.	3729.89	8309	2	0	6250	7930	13475	5100	14180	No	1.71	Si
SLU 84	ini.	444.38	578	2	0	6250	7930	13475	5100	14180	No	24.53	Si
SLU 84	fin.	3772.04	8402	2	0	6250	7930	13475	5100	14180	No	1.69	Si
SLU 77	ini.	385.12	705	2	0	6250	7930	13475	5100	14180	No	20.13	Si
SLU 77	fin.	3745.57	8450	2	0	6250	7930	13475	5100	14180	No	1.68	Si
SLU 79	ini.	381.22	705	2	0	6250	7930	13475	5100	14180	No	20.11	Si
SLU 79	fin.	3720.13	8389	2	0	6250	7930	13475	5100	14180	No	1.69	Si
SLU 75	ini.	403.31	675	2	0	6250	7930	13475	5100	14180	No	20.99	Si
SLU 75	fin.	3676.08	8223	2	0	6250	7930	13475	5100	14180	No	1.72	Si
SLU 78	ini.	414.21	662	2	0	6250	7930	13475	5100	14180	No	21.43	Si
SLU 78	fin.	3718.23	8317	2	0	6250	7930	13475	5100	14180	No	1.7	Si
SLU 83	ini.	415.29	621	2	0	6250	7930	13475	5100	14180	No	22.84	Si
SLU 83	fin.	3799.38	8536	2	0	6250	7930	13475	5100	14180	No	1.66	Si
SLU 81	ini.	404.4	634	2	0	6250	7930	13475	5100	14180	No	22.35	Si
SLU 81	fin.	3757.23	8442	2	0	6250	7930	13475	5100	14180	No	1.68	Si
SLU 80	ini.	410.3	662	2	0	6250	7930	13475	5100	14180	No	21.4	Si
SLU 80	fin.	3692.79	8256	2	0	6250	7930	13475	5100	14180	No	1.72	Si
SLU 74	ini.	374.23	718	2	0	6250	7930	13475	5100	14180	No	19.74	Si
SLU 74	fin.	3703.42	8357	2	0	6250	7930	13475	5100	14180	No	1.7	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-2561.06	-3651	-0.0002757	0.0002807	0.0035	2		15648.46	15648.46		6.11	Si
SLV 16	fin.	4097	-9933	-0.0004729	0.0002807	0.0035	2		15635.95	15635.95		3.82	Si
SLV 15	ini.	-1783.1	-3175	-0.0001864	0.0002807	0.0035	2		15648.46	15648.46		8.78	Si
SLV 15	fin.	3802.72	-8226	-0.0004329	0.0002807	0.0035	2		15635.95	15635.95		4.11	Si
SLV 12	ini.	-3086.56	-14713	-0.0003398	0.0002807	0.0035	2		15648.46	15648.46		5.07	Si
SLV 12	fin.	5604.05	-19964	-0.000693	0.0002807	0.0035	2		15635.95	15635.95		2.79	Si
SLD 12	ini.	-1134.83	-8792	-0.000116	0.0002807	0.0035	2		15648.46	15648.46		13.79	Si
SLD 12	fin.	3786.09	-11387	-0.0004307	0.0002807	0.0035	2		15635.95	15635.95		4.13	Si
SLV 7	ini.	-1595.6	-17283	-0.0001657	0.0002807	0.0035	2		15648.46	15648.46		9.81	Si
SLV 7	fin.	5078.33	-19274	-0.0006132	0.0002807	0.0035	2		15635.95	15635.95		3.08	Si
SLD 8	ini.	-721.64	-10026	-0.0000728	0.0002807	0.0035	2		15648.46	15648.46		21.68	Si
SLD 8	fin.	3646.04	-11583	-0.0004121	0.0002807	0.0035	2		15635.95	15635.95		4.29	Si
SLV 11	ini.	-2562.79	-14393	-0.0002759	0.0002807	0.0035	2		15648.46	15648.46		6.11	Si
SLV 11	fin.	5405.93	-18815	-0.0006626	0.0002807	0.0035	2		15635.95	15635.95		2.89	Si
SLV 8	ini.	-2119.37	-17603	-0.0002242	0.0002807	0.0035	2		15648.46	15648.46		7.38	Si
SLV 8	fin.	5276.45	-20424	-0.0006429	0.0002807	0.0035	2		15635.95	15635.95		2.96	Si
SLD 11	ini.	-916.5	-8658	-0.0000931	0.0002807	0.0035	2		15648.46	15648.46		17.07	Si
SLD 11	fin.	3703.5	-10908	-0.0004197	0.0002807	0.0035	2		15635.95	15635.95		4.22	Si
SLD 7	ini.	-503.31	-9892	-0.0000505	0.0002807	0.0035	2		15648.46	15648.46		31.09	Si
SLD 7	fin.	3563.45	-11104	-0.0004012	0.0002807	0.0035	2		15635.95	15635.95		4.39	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-2561.06	10737	2	0	6643	7930	20213	5100	14573		1.36	Si
SLV 16	fin.	4097	14368	2	0	6643	7930	20213	5100	14573		1.01	Si
SLV 15	ini.	-1783.1	8602	2	0	6643	7930	20213	5100	14573		1.69	Si
SLV 15	fin.	3802.72	11906	2	0	6643	7930	20213	5100	14573		1.22	Si
SLD 11	ini.	-916.5	3157	2	0	6643	7930	20213	5100	14573		4.62	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 11	fin.	3703.5	11130	2	0	6643	7930	20213	5100	14573		1.31	Si
SLV 8	ini.	-2119.37	3527	2	0	6643	7930	20213	5100	14573		4.13	Si
SLV 8	fin.	5276.45	18633	2	0	6643	7930	20213	5100	14573		0.78	No
SLD 12	ini.	-1134.83	3756	2	0	6643	7930	20213	5100	14573		3.88	Si
SLD 12	fin.	3786.09	11821	2	0	6643	7930	20213	5100	14573		1.23	Si
SLD 8	ini.	-721.64	1799	2	0	6643	7930	20213	5100	14573		8.1	Si
SLD 8	fin.	3646.04	10954	2	0	6643	7930	20213	5100	14573		1.33	Si
SLV 12	ini.	-3086.56	8110	2	0	6643	7930	20213	5100	14573		1.8	Si
SLV 12	fin.	5604.05	20669	2	0	6643	7930	20213	5100	14573		0.71	No
SLV 11	ini.	-2562.79	6673	2	0	6643	7930	20213	5100	14573		2.18	Si
SLV 11	fin.	5405.93	19011	2	0	6643	7930	20213	5100	14573		0.77	No
SLV 7	ini.	-1595.6	2090	2	0	6643	7930	20213	5100	14573		6.97	Si
SLV 7	fin.	5078.33	16975	2	0	6643	7930	20213	5100	14573		0.86	No
SLD 7	ini.	-503.31	1200	2	0	6643	7930	20213	5100	14573		12.15	Si
SLD 7	fin.	3563.45	10263	2	0	6643	7930	20213	5100	14573		1.42	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.79	SLV 12	Si
V_SLV	0.705	SLV 12	No
PF_SLU	2.822	SLU 83	Si
V_SLU	1.661	SLU 83	Si

Trave di accoppiamento 2

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-21.763	5.876	1.1	1.67	0.57	-22.763	5.876	1.1	1.67	0.57	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-992.73	-3240	-0.0023267	0.0001872	0.0035	0.57		912.83	912.83	No	0.92	No
SLU 77	fin.	121.41	659	-0.000158	0.0001872	0.0035	0.57		908.75	908.75	No	7.49	Si
SLU 80	ini.	-975.51	-3175	-0.0022465	0.0001872	0.0035	0.57		912.83	912.83	No	0.94	No
SLU 80	fin.	114.9	640	-0.0001489	0.0001872	0.0035	0.57		908.75	908.75	No	7.91	Si
SLU 81	ini.	-1002.24	-3244	-0.0023725	0.0001872	0.0035	0.57		912.83	912.83	No	0.91	No
SLU 81	fin.	112.3	656	-0.0001454	0.0001872	0.0035	0.57		908.75	908.75	No	8.09	Si
SLU 82	ini.	-991.02	-3201	-0.0023187	0.0001872	0.0035	0.57		912.83	912.83	No	0.92	No
SLU 82	fin.	106.76	639	-0.0001377	0.0001872	0.0035	0.57		908.75	908.75	No	8.51	Si
SLU 74	ini.	-983.18	-3204	-0.0022818	0.0001872	0.0035	0.57		912.83	912.83	No	0.93	No
SLU 74	fin.	120.63	659	-0.0001569	0.0001872	0.0035	0.57		908.75	908.75	No	7.53	Si
SLU 75	ini.	-971.96	-3162	-0.0022304	0.0001872	0.0035	0.57		912.83	912.83	No	0.94	No
SLU 75	fin.	115.08	642	-0.0001492	0.0001872	0.0035	0.57		908.75	908.75	No	7.9	Si
SLU 83	ini.	-1011.79	-3279	-0.0024195	0.0001872	0.0035	0.57		912.83	912.83	No	0.9	No
SLU 83	fin.	113.08	656	-0.0001464	0.0001872	0.0035	0.57		908.75	908.75	No	8.04	Si
SLU 84	ini.	-1000.57	-3237	-0.0023644	0.0001872	0.0035	0.57		912.83	912.83	No	0.91	No
SLU 84	fin.	107.54	639	-0.0001388	0.0001872	0.0035	0.57		908.75	908.75	No	8.45	Si
SLU 79	ini.	-986.73	-3217	-0.0022984	0.0001872	0.0035	0.57		912.83	912.83	No	0.93	No
SLU 79	fin.	120.44	657	-0.0001567	0.0001872	0.0035	0.57		908.75	908.75	No	7.55	Si
SLU 78	ini.	-981.51	-3197	-0.0022741	0.0001872	0.0035	0.57		912.83	912.83	No	0.93	No
SLU 78	fin.	115.86	642	-0.0001503	0.0001872	0.0035	0.57		908.75	908.75	No	7.84	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-983.18	4695	0.57	0	1460	4520	3840	1454	5294	No	1.13	Si
SLU 74	fin.	120.63	-246	0.57	0	1460	4520	3840	1454	5294	No	21.54	Si
SLU 77	ini.	-992.73	4738	0.57	0	1460	4520	3840	1454	5294	No	1.12	Si
SLU 77	fin.	121.41	-246	0.57	0	1460	4520	3840	1454	5294	No	21.52	Si
SLU 75	ini.	-971.96	4649	0.57	0	1460	4520	3840	1454	5294	No	1.14	Si
SLU 75	fin.	115.08	-266	0.57	0	1460	4520	3840	1454	5294	No	19.87	Si
SLU 79	ini.	-986.73	4711	0.57	0	1460	4520	3840	1454	5294	No	1.12	Si
SLU 79	fin.	120.44	-248	0.57	0	1460	4520	3840	1454	5294	No	21.36	Si
SLU 78	ini.	-981.51	4691	0.57	0	1460	4520	3840	1454	5294	No	1.13	Si
SLU 78	fin.	115.86	-267	0.57	0	1460	4520	3840	1454	5294	No	19.85	Si
SLU 83	ini.	-1011.79	4849	0.57	0	1460	4520	3840	1454	5294	No	1.09	Si
SLU 83	fin.	113.08	-314	0.57	0	1460	4520	3840	1454	5294	No	16.87	Si
SLU 81	ini.	-1002.24	4807	0.57	0	1460	4520	3840	1454	5294	No	1.1	Si
SLU 81	fin.	112.3	-314	0.57	0	1460	4520	3840	1454	5294	No	16.89	Si
SLU 82	ini.	-991.02	4760	0.57	0	1460	4520	3840	1454	5294	No	1.11	Si
SLU 82	fin.	106.76	-334	0.57	0	1460	4520	3840	1454	5294	No	15.84	Si
SLU 80	ini.	-975.51	4665	0.57	0	1460	4520	3840	1454	5294	No	1.13	Si
SLU 80	fin.	114.9	-269	0.57	0	1460	4520	3840	1454	5294	No	19.71	Si
SLU 84	ini.	-1000.57	4802	0.57	0	1460	4520	3840	1454	5294	No	1.1	Si
SLU 84	fin.	107.54	-334	0.57	0	1460	4520	3840	1454	5294	No	15.83	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 8	ini.	-1673.21	-6241	-0.005599	0.0002807	0.0035	0.57		1281.66	1281.66		0.77	No
SLV 8	fin.	502.76	1955	-0.0007875	0.0002807	0.0035	0.57		1278.06	1278.06		2.54	Si
SLD 8	ini.	-1075.14	-3836	-0.0025079	0.0002807	0.0035	0.57		1281.66	1281.66		1.19	Si
SLD 8	fin.	256.77	1080	-0.0003502	0.0002807	0.0035	0.57		1278.06	1278.06		4.98	Si
SLV 7	ini.	-1542.02	-5762	-0.0050012	0.0002807	0.0035	0.57		1281.66	1281.66		0.83	No
SLV 7	fin.	381.74	1537	-0.000559	0.0002807	0.0035	0.57		1278.06	1278.06		3.35	Si
SLV 12	ini.	-1911.21	-7106	-0.0066417	0.0002807	0.0035	0.57		1281.66	1281.66		0.67	No
SLV 12	fin.	851.85	3260	-0.0016391	0.0002807	0.0035	0.57		1278.06	1278.06		1.5	Si
SLV 16	ini.	-1489.28	-5293	-0.0047527	0.0002807	0.0035	0.57		1281.66	1281.66		0.86	No
SLV 16	fin.	927.07	3556	-0.0018894	0.0002807	0.0035	0.57		1278.06	1278.06		1.38	Si
SLV 15	ini.	-1294.43	-4581	-0.0037658	0.0002807	0.0035	0.57		1281.66	1281.66		0.99	No
SLV 15	fin.	747.33	2936	-0.0013437	0.0002807	0.0035	0.57		1278.06	1278.06		1.71	Si
SLD 11	ini.	-1122.21	-4006	-0.0027556	0.0002807	0.0035	0.57		1281.66	1281.66		1.14	Si
SLD 11	fin.	355.47	1463	-0.0005128	0.0002807	0.0035	0.57		1278.06	1278.06		3.6	Si
SLV 11	ini.	-1780.02	-6626	-0.0060707	0.0002807	0.0035	0.57		1281.66	1281.66		0.72	No
SLV 11	fin.	730.84	2842	-0.0013011	0.0002807	0.0035	0.57		1278.06	1278.06		1.75	Si
SLD 7	ini.	-1020.46	-3636	-0.0022513	0.0002807	0.0035	0.57		1281.66	1281.66		1.26	Si
SLD 7	fin.	206.33	906	-0.000274	0.0002807	0.0035	0.57		1278.06	1278.06		6.19	Si
SLD 12	ini.	-1176.9	-4206	-0.0030763	0.0002807	0.0035	0.57		1281.66	1281.66		1.09	Si
SLD 12	fin.	405.92	1638	-0.0006025	0.0002807	0.0035	0.57		1278.06	1278.06		3.15	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 7	ini.	-1542.02	6871	0.57	0	1638	4520	5761	1454	6158		0.9	No
SLV 7	fin.	381.74	1462	0.57	0	1638	4520	5761	1454	6158		4.21	Si
SLV 11	ini.	-1780.02	7806	0.57	0	1638	4520	5761	1454	6158		0.79	No
SLV 11	fin.	730.84	2977	0.57	0	1638	4520	5761	1454	6158		2.07	Si
SLD 8	ini.	-1075.14	4898	0.57	0	1638	4520	5761	1454	6158		1.26	Si
SLD 8	fin.	256.77	730	0.57	0	1638	4520	5761	1454	6158		8.44	Si
SLD 7	ini.	-1020.46	4681	0.57	0	1638	4520	5761	1454	6158		1.32	Si
SLD 7	fin.	206.33	528	0.57	0	1638	4520	5761	1454	6158		11.67	Si
SLV 8	ini.	-1673.21	7391	0.57	0	1638	4520	5761	1454	6158		0.83	No
SLV 8	fin.	502.76	1946	0.57	0	1638	4520	5761	1454	6158		3.16	Si
SLV 16	ini.	-1489.28	6493	0.57	0	1638	4520	5761	1454	6158		0.95	No
SLV 16	fin.	927.07	3563	0.57	0	1638	4520	5761	1454	6158		1.73	Si
SLV 15	ini.	-1294.43	5720	0.57	0	1638	4520	5761	1454	6158		1.08	Si
SLV 15	fin.	747.33	2843	0.57	0	1638	4520	5761	1454	6158		2.17	Si
SLD 11	ini.	-1122.21	5082	0.57	0	1638	4520	5761	1454	6158		1.21	Si
SLD 11	fin.	355.47	1175	0.57	0	1638	4520	5761	1454	6158		5.24	Si
SLD 12	ini.	-1176.9	5298	0.57	0	1638	4520	5761	1454	6158		1.16	Si
SLD 12	fin.	405.92	1377	0.57	0	1638	4520	5761	1454	6158		4.47	Si
SLV 12	ini.	-1911.21	8326	0.57	0	1638	4520	5761	1454	6158		0.74	No
SLV 12	fin.	851.85	3462	0.57	0	1638	4520	5761	1454	6158		1.78	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.671	SLV 12	No
V_SLV	0.74	SLV 12	No
PF_SLU	0.902	SLU 83	No
V_SLU	1.092	SLU 83	Si

Trave di accoppiamento 3

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-21.543	-3.284	-1.3	0.7	2	-22.543	-3.284	-1.3	0.7	2	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 76	ini.	-956.85	-4847	-0.0000983	0.0001872	0.0035	2		10737.13	10737.13	No	11.22	Si
SLU 76	fin.	2328.02	-6278	-0.0002574	0.0001872	0.0035	2		10722.86	10722.86	No	4.61	Si
SLU 75	ini.	-924.35	-4751	-0.0000949	0.0001872	0.0035	2		10737.13	10737.13	No	11.62	Si
SLU 75	fin.	2327.96	-6168	-0.0002574	0.0001872	0.0035	2		10722.86	10722.86	No	4.61	Si
SLU 84	ini.	-917.53	-4903	-0.0000941	0.0001872	0.0035	2		10737.13	10737.13	No	11.7	Si
SLU 84	fin.	2382.78	-6326	-0.0002643	0.0001872	0.0035	2		10722.86	10722.86	No	4.5	Si
SLU 78	ini.	-933.05	-4797	-0.0000958	0.0001872	0.0035	2		10737.13	10737.13	No	11.51	Si
SLU 78	fin.	2350.3	-6230	-0.0002602	0.0001872	0.0035	2		10722.86	10722.86	No	4.56	Si
SLU 79	ini.	-868.63	-4582	-0.0000889	0.0001872	0.0035	2		10737.13	10737.13	No	12.36	Si
SLU 79	fin.	2315.62	-5967	-0.0002558	0.0001872	0.0035	2		10722.86	10722.86	No	4.63	Si
SLU 80	ini.	-926.79	-4769	-0.0000951	0.0001872	0.0035	2		10737.13	10737.13	No	11.59	Si
SLU 80	fin.	2336.46	-6191	-0.0002585	0.0001872	0.0035	2		10722.86	10722.86	No	4.59	Si
SLU 83	ini.	-859.37	-4717	-0.0000879	0.0001872	0.0035	2		10737.13	10737.13	No	12.49	Si
SLU 83	fin.	2361.94	-6102	-0.0002617	0.0001872	0.0035	2		10722.86	10722.86	No	4.54	Si
SLU 77	ini.	-874.9	-4611	-0.0000896	0.0001872	0.0035	2		10737.13	10737.13	No	12.27	Si
SLU 77	fin.	2329.46	-6006	-0.0002576	0.0001872	0.0035	2		10722.86	10722.86	No	4.6	Si
SLU 82	ini.	-908.82	-4857	-0.0000932	0.0001872	0.0035	2		10737.13	10737.13	No	11.81	Si
SLU 82	fin.	2360.44	-6264	-0.0002615	0.0001872	0.0035	2		10722.86	10722.86	No	4.54	Si
SLU 81	ini.	-850.66	-4671	-0.000087	0.0001872	0.0035	2		10737.13	10737.13	No	12.62	Si
SLU 81	fin.	2339.6	-6041	-0.0002589	0.0001872	0.0035	2		10722.86	10722.86	No	4.58	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-908.82	2249	2	0	6250	7930	13475	5100	14180	No	6.31	Si
SLU 82	fin.	2360.44	7194	2	0	6250	7930	13475	5100	14180	No	1.97	Si
SLU 75	ini.	-924.35	2327	2	0	6250	7930	13475	5100	14180	No	6.09	Si
SLU 75	fin.	2327.96	7095	2	0	6250	7930	13475	5100	14180	No	2	Si
SLU 78	ini.	-933.05	2349	2	0	6250	7930	13475	5100	14180	No	6.04	Si
SLU 78	fin.	2350.3	7169	2	0	6250	7930	13475	5100	14180	No	1.98	Si
SLU 81	ini.	-850.66	2157	2	0	6250	7930	13475	5100	14180	No	6.57	Si
SLU 81	fin.	2339.6	7046	2	0	6250	7930	13475	5100	14180	No	2.01	Si
SLU 76	ini.	-956.85	2372	2	0	6250	7930	13475	5100	14180	No	5.98	Si
SLU 76	fin.	2328.02	7147	2	0	6250	7930	13475	5100	14180	No	1.98	Si
SLU 84	ini.	-917.53	2271	2	0	6250	7930	13475	5100	14180	No	6.24	Si
SLU 84	fin.	2382.78	7267	2	0	6250	7930	13475	5100	14180	No	1.95	Si
SLU 77	ini.	-874.9	2258	2	0	6250	7930	13475	5100	14180	No	6.28	Si
SLU 77	fin.	2329.46	7021	2	0	6250	7930	13475	5100	14180	No	2.02	Si
SLU 80	ini.	-926.79	2334	2	0	6250	7930	13475	5100	14180	No	6.08	Si
SLU 80	fin.	2336.46	7122	2	0	6250	7930	13475	5100	14180	No	1.99	Si
SLU 73	ini.	-948.14	2350	2	0	6250	7930	13475	5100	14180	No	6.03	Si
SLU 73	fin.	2305.68	7073	2	0	6250	7930	13475	5100	14180	No	2	Si
SLU 83	ini.	-859.37	2180	2	0	6250	7930	13475	5100	14180	No	6.51	Si
SLU 83	fin.	2361.94	7119	2	0	6250	7930	13475	5100	14180	No	1.99	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 7	ini.	3174.65	5797	-0.0003512	0.0002807	0.0035	2		15635.95	15635.95		4.93	Si
SLV 7	fin.	-85.12	7290	-0.0000084	0.0002807	0.0035	2		15648.46	15648.46		183.83	Si
SLV 9	ini.	-5106.14	-12794	-0.0006168	0.0002807	0.0035	2		15648.46	15648.46		3.06	Si
SLV 9	fin.	3472.88	-16698	-0.0003894	0.0002807	0.0035	2		15635.95	15635.95		4.5	Si
SLV 13	ini.	-5057.35	-4172	-0.0006095	0.0002807	0.0035	2		15648.46	15648.46		3.09	Si
SLV 13	fin.	4240.35	-9223	-0.0004927	0.0002807	0.0035	2		15635.95	15635.95		3.69	Si
SLV 14	ini.	-4111.17	-3141	-0.0004743	0.0002807	0.0035	2		15648.46	15648.46		3.81	Si
SLV 14	fin.	4028.49	-7584	-0.0004635	0.0002807	0.0035	2		15635.95	15635.95		3.88	Si
SLV 16	ini.	-2160	2888	-0.0002289	0.0002807	0.0035	2		15648.46	15648.46		7.24	Si
SLV 16	fin.	3352.37	-517	-0.0003738	0.0002807	0.0035	2		15635.95	15635.95		4.66	Si
SLV 4	ini.	3762.88	-2131	-0.0004276	0.0002807	0.0035	2		15635.95	15635.95		4.16	Si
SLV 4	fin.	-995.22	919	-0.0001013	0.0002807	0.0035	2		15648.46	15648.46		15.72	Si
SLV 5	ini.	-3329.27	-14300	-0.0003705	0.0002807	0.0035	2		15648.46	15648.46		4.7	Si
SLV 5	fin.	2168.61	-16268	-0.0002301	0.0002807	0.0035	2		15635.95	15635.95		7.21	Si
SLV 15	ini.	-3106.17	1857	-0.0003422	0.0002807	0.0035	2		15648.46	15648.46		5.04	Si
SLV 15	fin.	3564.23	-2156	-0.0004013	0.0002807	0.0035	2		15635.95	15635.95		4.39	Si
SLV 8	ini.	3811.67	6491	-0.0004341	0.0002807	0.0035	2		15635.95	15635.95		4.1	Si
SLV 8	fin.	-227.76	8393	-0.0000227	0.0002807	0.0035	2		15648.46	15648.46		68.71	Si
SLV 10	ini.	-4469.11	-12100	-0.0005243	0.0002807	0.0035	2		15648.46	15648.46		3.5	Si
SLV 10	fin.	3330.25	-15594	-0.000371	0.0002807	0.0035	2		15635.95	15635.95		4.7	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-3106.17	10932	2	0	6643	7930	20213	5100	14573		1.33	Si
SLV 15	fin.	3564.23	9384	2	0	6643	7930	20213	5100	14573		1.55	Si
SLV 13	ini.	-5057.35	12624	2	0	6643	7930	20213	5100	14573		1.15	Si
SLV 13	fin.	4240.35	14740	2	0	6643	7930	20213	5100	14573		0.99	No
SLV 16	ini.	-2160	9290	2	0	6643	7930	20213	5100	14573		1.57	Si
SLV 16	fin.	3352.37	7484	2	0	6643	7930	20213	5100	14573		1.95	Si
SLV 10	ini.	-4469.11	6766	2	0	6643	7930	20213	5100	14573		2.15	Si
SLV 10	fin.	3330.25	15019	2	0	6643	7930	20213	5100	14573		0.97	No
SLV 5	ini.	-3329.27	2334	2	0	6643	7930	20213	5100	14573		6.24	Si
SLV 5	fin.	2168.61	12544	2	0	6643	7930	20213	5100	14573		1.16	Si
SLV 4	ini.	3762.88	-9165	2	0	6643	7930	20213	5100	14573		1.59	Si
SLV 4	fin.	-995.22	-5030	2	0	6643	7930	20213	5100	14573		2.9	Si
SLV 6	ini.	-2692.24	1229	2	0	6643	7930	20213	5100	14573		11.86	Si
SLV 6	fin.	2025.97	11265	2	0	6643	7930	20213	5100	14573		1.29	Si
SLV 14	ini.	-4111.17	10983	2	0	6643	7930	20213	5100	14573		1.33	Si
SLV 14	fin.	4028.49	12840	2	0	6643	7930	20213	5100	14573		1.13	Si
SLV 9	ini.	-5106.14	7871	2	0	6643	7930	20213	5100	14573		1.85	Si
SLV 9	fin.	3472.88	16298	2	0	6643	7930	20213	5100	14573		0.89	No
SLD 9	ini.	-2467.47	4257	2	0	6643	7930	20213	5100	14573		3.42	Si
SLD 9	fin.	2380.95	9485	2	0	6643	7930	20213	5100	14573		1.54	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.065	SLV 9	Si
V_SLV	0.894	SLV 9	No
PF_SLU	4.5	SLU 84	Si
V_SLU	1.951	SLU 84	Si

Trave di accoppiamento 4

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-21.543	-3.284	1.1	1.67	0.57	-22.543	-3.284	1.1	1.67	0.57	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-770.75	-2159	-0.0015015	0.0001872	0.0035	0.57		912.83	912.83	No	1.18	Si
SLU 77	fin.	-2.12	474	-0.0000026	0.0001872	0.0035	0.57		912.83	912.83	No	429.79	Si
SLU 75	ini.	-767.95	-2176	-0.0014933	0.0001872	0.0035	0.57		912.83	912.83	No	1.19	Si
SLU 75	fin.	9.77	486	-0.000012	0.0001872	0.0035	0.57		908.75	908.75	No	93.02	Si
SLU 79	ini.	-766.87	-2146	-0.0014902	0.0001872	0.0035	0.57		912.83	912.83	No	1.19	Si
SLU 79	fin.	-2.65	472	-0.0000032	0.0001872	0.0035	0.57		912.83	912.83	No	344.42	Si
SLU 76	ini.	-766.43	-2188	-0.0014889	0.0001872	0.0035	0.57		912.83	912.83	No	1.19	Si
SLU 76	fin.	17.61	493	-0.0000217	0.0001872	0.0035	0.57		908.75	908.75	No	51.61	Si
SLU 84	ini.	-792.27	-2231	-0.0015658	0.0001872	0.0035	0.57		912.83	912.83	No	1.15	Si
SLU 84	fin.	-0.13	479	-0.0000002	0.0001872	0.0035	0.57		912.83	912.83	No	6772.98	Si
SLU 80	ini.	-770.41	-2184	-0.0015006	0.0001872	0.0035	0.57		912.83	912.83	No	1.18	Si
SLU 80	fin.	9.9	487	-0.0000121	0.0001872	0.0035	0.57		908.75	908.75	No	91.82	Si
SLU 78	ini.	-774.29	-2196	-0.001512	0.0001872	0.0035	0.57		912.83	912.83	No	1.18	Si
SLU 78	fin.	10.42	489	-0.0000128	0.0001872	0.0035	0.57		908.75	908.75	No	87.19	Si
SLU 83	ini.	-788.73	-2194	-0.0015551	0.0001872	0.0035	0.57		912.83	912.83	No	1.16	Si
SLU 83	fin.	-12.68	463	-0.0000155	0.0001872	0.0035	0.57		912.83	912.83	No	71.98	Si
SLU 81	ini.	-782.38	-2173	-0.001536	0.0001872	0.0035	0.57		912.83	912.83	No	1.17	Si
SLU 81	fin.	-13.34	460	-0.0000163	0.0001872	0.0035	0.57		912.83	912.83	No	68.45	Si
SLU 82	ini.	-785.92	-2211	-0.0015466	0.0001872	0.0035	0.57		912.83	912.83	No	1.16	Si
SLU 82	fin.	-0.79	475	-0.000001	0.0001872	0.0035	0.57		912.83	912.83	No	1157.41	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-764.41	3951	0.57	0	1460	4520	3840	1454	5294	No	1.34	Si
SLU 74	fin.	-2.78	-859	0.57	0	1460	4520	3840	1454	5294	No	6.17	Si
SLU 75	ini.	-767.95	3942	0.57	0	1460	4520	3840	1454	5294	No	1.34	Si
SLU 75	fin.	9.77	-783	0.57	0	1460	4520	3840	1454	5294	No	6.76	Si
SLU 78	ini.	-774.29	3972	0.57	0	1460	4520	3840	1454	5294	No	1.33	Si
SLU 78	fin.	10.42	-785	0.57	0	1460	4520	3840	1454	5294	No	6.75	Si
SLU 80	ini.	-770.41	3954	0.57	0	1460	4520	3840	1454	5294	No	1.34	Si
SLU 80	fin.	9.9	-785	0.57	0	1460	4520	3840	1454	5294	No	6.75	Si
SLU 79	ini.	-766.87	3962	0.57	0	1460	4520	3840	1454	5294	No	1.34	Si
SLU 79	fin.	-2.65	-860	0.57	0	1460	4520	3840	1454	5294	No	6.16	Si
SLU 77	ini.	-770.75	3981	0.57	0	1460	4520	3840	1454	5294	No	1.33	Si
SLU 77	fin.	-2.12	-860	0.57	0	1460	4520	3840	1454	5294	No	6.16	Si
SLU 82	ini.	-785.92	4050	0.57	0	1460	4520	3840	1454	5294	No	1.31	Si
SLU 82	fin.	-0.79	-861	0.57	0	1460	4520	3840	1454	5294	No	6.15	Si
SLU 81	ini.	-782.38	4059	0.57	0	1460	4520	3840	1454	5294	No	1.3	Si
SLU 81	fin.	-13.34	-936	0.57	0	1460	4520	3840	1454	5294	No	5.66	Si
SLU 84	ini.	-792.27	4080	0.57	0	1460	4520	3840	1454	5294	No	1.3	Si
SLU 84	fin.	-0.13	-862	0.57	0	1460	4520	3840	1454	5294	No	6.14	Si
SLU 83	ini.	-788.73	4089	0.57	0	1460	4520	3840	1454	5294	No	1.29	Si
SLU 83	fin.	-12.68	-937	0.57	0	1460	4520	3840	1454	5294	No	5.65	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 13	ini.	-904.57	-2913	-0.0018014	0.0002807	0.0035	0.57		1281.66	1281.66		1.42	Si
SLD 13	fin.	392.62	1724	-0.0005784	0.0002807	0.0035	0.57		1278.06	1278.06		3.26	Si
SLV 13	ini.	-1418.72	-4855	-0.0044102	0.0002807	0.0035	0.57		1281.66	1281.66		0.9	No
SLV 13	fin.	909.91	3566	-0.0018287	0.0002807	0.0035	0.57		1278.06	1278.06		1.4	Si
SLV 15	ini.	-1016.63	-3241	-0.0022345	0.0002807	0.0035	0.57		1281.66	1281.66		1.26	Si
SLV 15	fin.	734.65	2885	-0.0013108	0.0002807	0.0035	0.57		1278.06	1278.06		1.74	Si
SLV 9	ini.	-1437.14	-5062	-0.0045009	0.0002807	0.0035	0.57		1281.66	1281.66		0.89	No
SLV 9	fin.	572.64	2444	-0.0009321	0.0002807	0.0035	0.57		1278.06	1278.06		2.23	Si
SLV 14	ini.	-1257.92	-4273	-0.0035614	0.0002807	0.0035	0.57		1281.66	1281.66		1.02	Si
SLV 14	fin.	768.85	3082	-0.0014007	0.0002807	0.0035	0.57		1278.06	1278.06		1.66	Si
SLD 9	ini.	-898.51	-2952	-0.0017809	0.0002807	0.0035	0.57		1281.66	1281.66		1.43	Si
SLD 9	fin.	242.72	1229	-0.0003285	0.0002807	0.0035	0.57		1278.06	1278.06		5.27	Si
SLV 4	ini.	356.76	1857	-0.000515	0.0002807	0.0035	0.57		1278.06	1278.06		3.58	Si
SLV 4	fin.	-888.44	-2846	-0.0017475	0.0002807	0.0035	0.57		1281.66	1281.66		1.44	Si
SLV 5	ini.	-1073.36	-3707	-0.0024991	0.0002807	0.0035	0.57		1281.66	1281.66		1.19	Si
SLV 5	fin.	128.03	870	-0.000164	0.0002807	0.0035	0.57		1278.06	1278.06		9.98	Si
SLV 10	ini.	-1328.88	-4670	-0.0039512	0.0002807	0.0035	0.57		1281.66	1281.66		0.96	No
SLV 10	fin.	477.66	2118	-0.000738	0.0002807	0.0035	0.57		1278.06	1278.06		2.68	Si
SLV 6	ini.	-965.1	-3315	-0.0020217	0.0002807	0.0035	0.57		1281.66	1281.66		1.33	Si
SLV 6	fin.	33.06	544	-0.0000408	0.0002807	0.0035	0.57		1278.06	1278.06		38.66	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	ini.	-1073.36	5217	0.57	0	1638	4520	5761	1454	6158		1.18	Si
SLV 5	fin.	128.03	-1276	0.57	0	1638	4520	5761	1454	6158		4.83	Si
SLV 13	ini.	-1418.72	6337	0.57	0	1638	4520	5761	1454	6158		0.97	No
SLV 13	fin.	909.91	2942	0.57	0	1638	4520	5761	1454	6158		2.09	Si
SLD 10	ini.	-853.38	4152	0.57	0	1638	4520	5761	1454	6158		1.48	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 10	fin.	203.13	-217	0.57	0	1638	4520	5761	1454	6158		28.39	Si
SLV 10	ini.	-1328.88	6218	0.57	0	1638	4520	5761	1454	6158		0.99	No
SLV 10	fin.	477.66	262	0.57	0	1638	4520	5761	1454	6158		23.53	Si
SLV 14	ini.	-1257.92	5695	0.57	0	1638	4520	5761	1454	6158		1.08	Si
SLV 14	fin.	768.85	2383	0.57	0	1638	4520	5761	1454	6158		2.58	Si
SLV 6	ini.	-965.1	4784	0.57	0	1638	4520	5761	1454	6158		1.29	Si
SLV 6	fin.	33.06	-1652	0.57	0	1638	4520	5761	1454	6158		3.73	Si
SLV 15	ini.	-1016.63	4546	0.57	0	1638	4520	5761	1454	6158		1.35	Si
SLV 15	fin.	734.65	2925	0.57	0	1638	4520	5761	1454	6158		2.11	Si
SLD 9	ini.	-898.51	4332	0.57	0	1638	4520	5761	1454	6158		1.42	Si
SLD 9	fin.	242.72	-60	0.57	0	1638	4520	5761	1454	6158		102.58	Si
SLD 13	ini.	-904.57	4251	0.57	0	1638	4520	5761	1454	6158		1.45	Si
SLD 13	fin.	392.62	943	0.57	0	1638	4520	5761	1454	6158		6.53	Si
SLV 9	ini.	-1437.14	6650	0.57	0	1638	4520	5761	1454	6158		0.93	No
SLV 9	fin.	572.64	638	0.57	0	1638	4520	5761	1454	6158		9.65	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.892	SLV 9	No
V_SLV	0.926	SLV 9	No
PF_SLU	1.152	SLU 84	Si
V_SLU	1.295	SLU 83	Si

Trave di accoppiamento 5

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-17.313	-3.284	-1.3	0.7	2	-18.313	-3.284	-1.3	0.7	2	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 60	ini.	1226.81	-19008	-0.0001278	0.0001872	0.0035	2		10722.86	10722.86	No	8.74	Si
SLU 60	fin.	192.19	-12272	-0.0000192	0.0001872	0.0035	2		10722.86	10722.86	No	55.79	Si
SLU 79	ini.	1221.1	-20366	-0.0001271	0.0001872	0.0035	2		10722.86	10722.86	No	8.78	Si
SLU 79	fin.	283.03	-13334	-0.0000283	0.0001872	0.0035	2		10722.86	10722.86	No	37.89	Si
SLU 62	ini.	1220.48	-19136	-0.0001271	0.0001872	0.0035	2		10722.86	10722.86	No	8.79	Si
SLU 62	fin.	199.66	-12371	-0.0000199	0.0001872	0.0035	2		10722.86	10722.86	No	53.71	Si
SLU 83	ini.	1361.3	-21118	-0.0001427	0.0001872	0.0035	2		10722.86	10722.86	No	7.88	Si
SLU 83	fin.	308.07	-13808	-0.0000308	0.0001872	0.0035	2		10722.86	10722.86	No	34.81	Si
SLU 74	ini.	1225.64	-20321	-0.0001276	0.0001872	0.0035	2		10722.86	10722.86	No	8.75	Si
SLU 74	fin.	278.61	-13293	-0.0000279	0.0001872	0.0035	2		10722.86	10722.86	No	38.49	Si
SLU 81	ini.	1367.62	-20989	-0.0001434	0.0001872	0.0035	2		10722.86	10722.86	No	7.84	Si
SLU 81	fin.	300.6	-13709	-0.0000301	0.0001872	0.0035	2		10722.86	10722.86	No	35.67	Si
SLU 84	ini.	1328.12	-21214	-0.000139	0.0001872	0.0035	2		10722.86	10722.86	No	8.07	Si
SLU 84	fin.	343.76	-13876	-0.0000345	0.0001872	0.0035	2		10722.86	10722.86	No	31.19	Si
SLU 82	ini.	1334.44	-21086	-0.0001397	0.0001872	0.0035	2		10722.86	10722.86	No	8.04	Si
SLU 82	fin.	336.28	-13777	-0.0000337	0.0001872	0.0035	2		10722.86	10722.86	No	31.89	Si
SLU 39	ini.	1224.63	-17803	-0.0001275	0.0001872	0.0035	2		10722.86	10722.86	No	8.76	Si
SLU 39	fin.	309.84	-11697	-0.000031	0.0001872	0.0035	2		10722.86	10722.86	No	34.61	Si
SLU 77	ini.	1219.31	-20450	-0.0001269	0.0001872	0.0035	2		10722.86	10722.86	No	8.79	Si
SLU 77	fin.	286.08	-13393	-0.0000286	0.0001872	0.0035	2		10722.86	10722.86	No	37.48	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	1219.31	-8882	2	0	6250	7930	13475	5100	14180	No	1.6	Si
SLU 77	fin.	286.08	-8256	2	0	6250	7930	13475	5100	14180	No	1.72	Si
SLU 83	ini.	1361.3	-9307	2	0	6250	7930	13475	5100	14180	No	1.52	Si
SLU 83	fin.	308.07	-8598	2	0	6250	7930	13475	5100	14180	No	1.65	Si
SLU 75	ini.	1192.46	-8840	2	0	6250	7930	13475	5100	14180	No	1.6	Si
SLU 75	fin.	314.29	-8197	2	0	6250	7930	13475	5100	14180	No	1.73	Si
SLU 82	ini.	1334.44	-9265	2	0	6250	7930	13475	5100	14180	No	1.53	Si
SLU 82	fin.	336.28	-8540	2	0	6250	7930	13475	5100	14180	No	1.66	Si
SLU 80	ini.	1187.92	-8839	2	0	6250	7930	13475	5100	14180	No	1.6	Si
SLU 80	fin.	318.72	-8191	2	0	6250	7930	13475	5100	14180	No	1.73	Si
SLU 84	ini.	1328.12	-9292	2	0	6250	7930	13475	5100	14180	No	1.53	Si
SLU 84	fin.	343.76	-8551	2	0	6250	7930	13475	5100	14180	No	1.66	Si
SLU 79	ini.	1221.1	-8855	2	0	6250	7930	13475	5100	14180	No	1.6	Si
SLU 79	fin.	283.03	-8239	2	0	6250	7930	13475	5100	14180	No	1.72	Si
SLU 74	ini.	1225.64	-8855	2	0	6250	7930	13475	5100	14180	No	1.6	Si
SLU 74	fin.	278.61	-8245	2	0	6250	7930	13475	5100	14180	No	1.72	Si
SLU 81	ini.	1367.62	-9280	2	0	6250	7930	13475	5100	14180	No	1.53	Si
SLU 81	fin.	300.6	-8587	2	0	6250	7930	13475	5100	14180	No	1.65	Si
SLU 78	ini.	1186.13	-8867	2	0	6250	7930	13475	5100	14180	No	1.6	Si
SLU 78	fin.	321.77	-8208	2	0	6250	7930	13475	5100	14180	No	1.73	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 5	ini.	-2217.1	-26316	-0.0002354	0.0002807	0.0035	2		15648.46	15648.46		7.06	Si
SLV 5	fin.	3825.71	-19442	-0.000436	0.0002807	0.0035	2		15635.95	15635.95		4.09	Si
SLV 9	ini.	-4776.35	-21953	-0.0005683	0.0002807	0.0035	2		15648.46	15648.46		3.28	Si
SLV 9	fin.	5902.7	-21485	-0.0007398	0.0002807	0.0035	2		15635.95	15635.95		2.65	Si
SLV 2	ini.	4176.76	-24834	-0.0004839	0.0002807	0.0035	2		15635.95	15635.95		3.74	Si
SLV 2	fin.	-2298.77	-8389	-0.0002449	0.0002807	0.0035	2		15648.46	15648.46		6.81	Si
SLV 8	ini.	6310.45	-6125	-0.0008054	0.0002807	0.0035	2		15635.95	15635.95		2.48	Si
SLV 8	fin.	-5611.27	3203	-0.0006934	0.0002807	0.0035	2		15648.46	15648.46		2.79	Si
SLV 7	ini.	5836.1	-5571	-0.0007293	0.0002807	0.0035	2		15635.95	15635.95		2.68	Si
SLV 7	fin.	-5164.98	2370	-0.0006255	0.0002807	0.0035	2		15648.46	15648.46		3.03	Si
SLV 3	ini.	5888.16	-17787	-0.0007375	0.0002807	0.0035	2		15635.95	15635.95		2.66	Si
SLV 3	fin.	-4333.1	-3083	-0.0005051	0.0002807	0.0035	2		15648.46	15648.46		3.61	Si
SLV 13	ini.	-5058.62	-9468	-0.0006097	0.0002807	0.0035	2		15648.46	15648.46		3.09	Si
SLV 13	fin.	5287.4	-16436	-0.0006446	0.0002807	0.0035	2		15635.95	15635.95		2.96	Si
SLV 10	ini.	-4301.99	-22508	-0.0005008	0.0002807	0.0035	2		15648.46	15648.46		3.64	Si
SLV 10	fin.	5456.41	-20652	-0.0006703	0.0002807	0.0035	2		15635.95	15635.95		2.87	Si
SLV 14	ini.	-4354.06	-10292	-0.0005081	0.0002807	0.0035	2		15648.46	15648.46		3.59	Si
SLV 14	fin.	4624.52	-15199	-0.0005469	0.0002807	0.0035	2		15635.95	15635.95		3.38	Si
SLV 4	ini.	6592.72	-18610	-0.0008521	0.0002807	0.0035	2		15635.95	15635.95		2.37	Si
SLV 4	fin.	-4995.97	-1846	-0.0006004	0.0002807	0.0035	2		15648.46	15648.46		3.13	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	6592.72	-28230	2	0	6643	7930	20213	5100	14573		0.52	No
SLV 4	fin.	-4995.97	-28592	2	0	6643	7930	20213	5100	14573		0.51	No
SLV 3	ini.	5888.16	-24868	2	0	6643	7930	20213	5100	14573		0.59	No
SLV 3	fin.	-4333.1	-25188	2	0	6643	7930	20213	5100	14573		0.58	No
SLV 2	ini.	4176.76	-24026	2	0	6643	7930	20213	5100	14573		0.61	No
SLV 2	fin.	-2298.77	-22513	2	0	6643	7930	20213	5100	14573		0.65	No
SLD 4	ini.	3224.43	-15484	2	0	6643	7930	20213	5100	14573		0.94	No
SLD 4	fin.	-2014.96	-15455	2	0	6643	7930	20213	5100	14573		0.94	No
SLD 3	ini.	2924.69	-14054	2	0	6643	7930	20213	5100	14573		1.04	Si
SLD 3	fin.	-1732.96	-14006	2	0	6643	7930	20213	5100	14573		1.04	Si
SLV 8	ini.	6310.45	-19721	2	0	6643	7930	20213	5100	14573		0.74	No
SLV 8	fin.	-5611.27	-22487	2	0	6643	7930	20213	5100	14573		0.65	No
SLV 1	ini.	3472.2	-20664	2	0	6643	7930	20213	5100	14573		0.71	No
SLV 1	fin.	-1635.89	-19108	2	0	6643	7930	20213	5100	14573		0.76	No
SLV 13	ini.	-5058.62	16092	2	0	6643	7930	20213	5100	14573		0.91	No
SLV 13	fin.	5287.4	17010	2	0	6643	7930	20213	5100	14573		0.86	No
SLD 2	ini.	2255.73	-13794	2	0	6643	7930	20213	5100	14573		1.06	Si
SLD 2	fin.	-933.81	-13012	2	0	6643	7930	20213	5100	14573		1.12	Si
SLV 7	ini.	5836.1	-17457	2	0	6643	7930	20213	5100	14573		0.83	No
SLV 7	fin.	-5164.98	-20195	2	0	6643	7930	20213	5100	14573		0.72	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.372	SLV 4	Si
V_SLV	0.51	SLV 4	No
PF_SLU	7.841	SLU 81	Si
V_SLU	1.523	SLU 83	Si

Trave di accoppiamento 6

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-17.313	-3.284	1.1	1.67	0.57	-18.313	-3.284	1.1	1.67	0.57	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-482.11	-3848	-0.0007928	0.0001872	0.0035	0.57		912.83	912.83	No	1.89	Si
SLU 83	fin.	-409.61	-2086	-0.0006457	0.0001872	0.0035	0.57		912.83	912.83	No	2.23	Si
SLU 76	ini.	-479.61	-3790	-0.0007876	0.0001872	0.0035	0.57		912.83	912.83	No	1.9	Si
SLU 76	fin.	-374.24	-1888	-0.0005774	0.0001872	0.0035	0.57		912.83	912.83	No	2.44	Si
SLU 84	ini.	-493.1	-3920	-0.000816	0.0001872	0.0035	0.57		912.83	912.83	No	1.85	Si
SLU 84	fin.	-402.69	-2041	-0.0006322	0.0001872	0.0035	0.57		912.83	912.83	No	2.27	Si
SLU 82	ini.	-487.79	-3882	-0.0008048	0.0001872	0.0035	0.57		912.83	912.83	No	1.87	Si
SLU 82	fin.	-402.27	-2041	-0.0006314	0.0001872	0.0035	0.57		912.83	912.83	No	2.27	Si
SLU 80	ini.	-477.59	-3780	-0.0007834	0.0001872	0.0035	0.57		912.83	912.83	No	1.91	Si
SLU 80	fin.	-379.27	-1918	-0.000587	0.0001872	0.0035	0.57		912.83	912.83	No	2.41	Si
SLU 77	ini.	-469.43	-3728	-0.0007664	0.0001872	0.0035	0.57		912.83	912.83	No	1.94	Si
SLU 77	fin.	-386.99	-1965	-0.0006018	0.0001872	0.0035	0.57		912.83	912.83	No	2.36	Si
SLU 81	ini.	-476.8	-3809	-0.0007817	0.0001872	0.0035	0.57		912.83	912.83	No	1.91	Si
SLU 81	fin.	-409.19	-2086	-0.0006449	0.0001872	0.0035	0.57		912.83	912.83	No	2.23	Si
SLU 73	ini.	-474.31	-3752	-0.0007765	0.0001872	0.0035	0.57		912.83	912.83	No	1.92	Si
SLU 73	fin.	-373.81	-1888	-0.0005766	0.0001872	0.0035	0.57		912.83	912.83	No	2.44	Si
SLU 75	ini.	-475.11	-3762	-0.0007782	0.0001872	0.0035	0.57		912.83	912.83	No	1.92	Si
SLU 75	fin.	-379.65	-1921	-0.0005877	0.0001872	0.0035	0.57		912.83	912.83	No	2.4	Si
SLU 78	ini.	-480.42	-3800	-0.0007893	0.0001872	0.0035	0.57		912.83	912.83	No	1.9	Si
SLU 78	fin.	-380.07	-1921	-0.0005886	0.0001872	0.0035	0.57		912.83	912.83	No	2.4	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-480.42	5717	0.57	0	1460	4520	3840	1454	5294	No	0.93	No
SLU 78	fin.	-380.07	-3830	0.57	0	1460	4520	3840	1454	5294	No	1.38	Si
SLU 82	ini.	-487.79	5850	0.57	0	1460	4520	3840	1454	5294	No	0.9	No
SLU 82	fin.	-402.27	-3984	0.57	0	1460	4520	3840	1454	5294	No	1.33	Si
SLU 83	ini.	-482.11	5818	0.57	0	1460	4520	3840	1454	5294	No	0.91	No
SLU 83	fin.	-409.61	-4010	0.57	0	1460	4520	3840	1454	5294	No	1.32	Si
SLU 76	ini.	-479.61	5691	0.57	0	1460	4520	3840	1454	5294	No	0.93	No
SLU 76	fin.	-374.24	-3794	0.57	0	1460	4520	3840	1454	5294	No	1.4	Si
SLU 75	ini.	-475.11	5663	0.57	0	1460	4520	3840	1454	5294	No	0.93	No
SLU 75	fin.	-379.65	-3813	0.57	0	1460	4520	3840	1454	5294	No	1.39	Si
SLU 81	ini.	-476.8	5764	0.57	0	1460	4520	3840	1454	5294	No	0.92	No
SLU 81	fin.	-409.19	-3993	0.57	0	1460	4520	3840	1454	5294	No	1.33	Si
SLU 77	ini.	-469.43	5632	0.57	0	1460	4520	3840	1454	5294	No	0.94	No
SLU 77	fin.	-386.99	-3839	0.57	0	1460	4520	3840	1454	5294	No	1.38	Si
SLU 73	ini.	-474.31	5637	0.57	0	1460	4520	3840	1454	5294	No	0.94	No
SLU 73	fin.	-373.81	-3777	0.57	0	1460	4520	3840	1454	5294	No	1.4	Si
SLU 84	ini.	-493.1	5904	0.57	0	1460	4520	3840	1454	5294	No	0.9	No
SLU 84	fin.	-402.69	-4001	0.57	0	1460	4520	3840	1454	5294	No	1.32	Si
SLU 80	ini.	-477.59	5688	0.57	0	1460	4520	3840	1454	5294	No	0.93	No
SLU 80	fin.	-379.27	-3817	0.57	0	1460	4520	3840	1454	5294	No	1.39	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 8	ini.	932.3	5873	-0.0019083	0.0002807	0.0035	0.57		1278.06	1278.06		1.37	Si
SLV 8	fin.	-1266.04	-7202	-0.0036076	0.0002807	0.0035	0.57		1281.66	1281.66		1.01	Si
SLV 7	ini.	827.49	5175	-0.0015657	0.0002807	0.0035	0.57		1278.06	1278.06		1.54	Si
SLV 7	fin.	-1141.72	-6503	-0.0028661	0.0002807	0.0035	0.57		1281.66	1281.66		1.12	Si
SLV 13	ini.	-1239.96	-8530	-0.0034573	0.0002807	0.0035	0.57		1281.66	1281.66		1.03	Si
SLV 13	fin.	918.33	5388	-0.0018582	0.0002807	0.0035	0.57		1278.06	1278.06		1.39	Si
SLV 14	ini.	-1084.29	-7494	-0.0025541	0.0002807	0.0035	0.57		1281.66	1281.66		1.18	Si
SLV 14	fin.	733.68	4351	-0.0013084	0.0002807	0.0035	0.57		1278.06	1278.06		1.74	Si
SLV 5	ini.	-1237.76	-8782	-0.0034443	0.0002807	0.0035	0.57		1281.66	1281.66		1.04	Si
SLV 5	fin.	213.06	1540	-0.0002839	0.0002807	0.0035	0.57		1278.06	1278.06		6	Si
SLV 10	ini.	-1455.84	-10145	-0.004592	0.0002807	0.0035	0.57		1281.66	1281.66		0.88	No
SLV 10	fin.	619.18	3839	-0.0010341	0.0002807	0.0035	0.57		1278.06	1278.06		2.06	Si
SLV 9	ini.	-1560.65	-10842	-0.0050877	0.0002807	0.0035	0.57		1281.66	1281.66		0.82	No
SLV 9	fin.	743.5	4537	-0.0013337	0.0002807	0.0035	0.57		1278.06	1278.06		1.72	Si
SLV 4	ini.	611.61	3561	-0.0010171	0.0002807	0.0035	0.57		1278.06	1278.06		2.09	Si
SLV 4	fin.	-1440.87	-8053	-0.0045191	0.0002807	0.0035	0.57		1281.66	1281.66		0.89	No
SLV 6	ini.	-1132.95	-8084	-0.0028158	0.0002807	0.0035	0.57		1281.66	1281.66		1.13	Si
SLV 6	fin.	88.75	842	-0.0001119	0.0002807	0.0035	0.57		1278.06	1278.06		14.4	Si
SLV 3	ini.	455.93	2525	-0.000696	0.0002807	0.0035	0.57		1278.06	1278.06		2.8	Si
SLV 3	fin.	-1256.22	-7015	-0.0035517	0.0002807	0.0035	0.57		1281.66	1281.66		1.02	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 10	ini.	-775.2	7188	0.57	0	1638	4520	5761	1454	6158		0.86	No
SLD 10	fin.	98.39	-1307	0.57	0	1638	4520	5761	1454	6158		4.71	Si
SLV 4	ini.	611.61	-2637	0.57	0	1638	4520	5761	1454	6158		2.34	Si
SLV 4	fin.	-1440.87	-8149	0.57	0	1638	4520	5761	1454	6158		0.76	No
SLV 6	ini.	-1132.95	10158	0.57	0	1638	4520	5761	1454	6158		0.61	No
SLV 6	fin.	88.75	-2097	0.57	0	1638	4520	5761	1454	6158		2.94	Si
SLV 9	ini.	-1560.65	12989	0.57	0	1638	4520	5761	1454	6158		0.47	No
SLV 9	fin.	743.5	1187	0.57	0	1638	4520	5761	1454	6158		5.19	Si
SLV 14	ini.	-1084.29	9086	0.57	0	1638	4520	5761	1454	6158		0.68	No
SLV 14	fin.	733.68	2030	0.57	0	1638	4520	5761	1454	6158		3.03	Si
SLD 9	ini.	-818.89	7488	0.57	0	1638	4520	5761	1454	6158		0.82	No
SLD 9	fin.	150.21	-1050	0.57	0	1638	4520	5761	1454	6158		5.87	Si
SLV 5	ini.	-1237.76	10879	0.57	0	1638	4520	5761	1454	6158		0.57	No
SLV 5	fin.	213.06	-1480	0.57	0	1638	4520	5761	1454	6158		4.16	Si
SLV 10	ini.	-1455.84	12268	0.57	0	1638	4520	5761	1454	6158		0.5	No
SLV 10	fin.	619.18	571	0.57	0	1638	4520	5761	1454	6158		10.79	Si
SLV 13	ini.	-1239.96	10156	0.57	0	1638	4520	5761	1454	6158		0.61	No
SLV 13	fin.	918.33	2947	0.57	0	1638	4520	5761	1454	6158		2.09	Si
SLV 3	ini.	455.93	-1567	0.57	0	1638	4520	5761	1454	6158		3.93	Si
SLV 3	fin.	-1256.22	-7233	0.57	0	1638	4520	5761	1454	6158		0.85	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.821	SLV 9	No
V_SLV	0.474	SLV 9	No
PF_SLU	1.851	SLU 84	Si
V_SLU	0.897	SLU 84	No

Trave di accoppiamento 7

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-19.618	1.271	0.7	1.67	0.97	-19.618	2.071	0.7	1.67	0.97	0.8	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	909.33	-1745	-0.0004553	0.0002246	0.0035	0.97		3516.22	3516.22	No	3.87	Si
SLU 75	fin.	-1867.18	-4217	-0.0011297	0.0002246	0.0035	0.97		3522.26	3522.26	No	1.89	Si
SLU 78	ini.	921.25	-1769	-0.0004624	0.0002246	0.0035	0.97		3516.22	3516.22	No	3.82	Si
SLU 78	fin.	-1892.47	-4274	-0.0011508	0.0002246	0.0035	0.97		3522.26	3522.26	No	1.86	Si
SLU 81	ini.	944.65	-1821	-0.0004766	0.0002246	0.0035	0.97		3516.22	3516.22	No	3.72	Si
SLU 81	fin.	-1958.3	-4404	-0.0012066	0.0002246	0.0035	0.97		3522.26	3522.26	No	1.8	Si
SLU 74	ini.	924.02	-1783	-0.0004641	0.0002246	0.0035	0.97		3516.22	3516.22	No	3.81	Si
SLU 74	fin.	-1917.62	-4313	-0.0011719	0.0002246	0.0035	0.97		3522.26	3522.26	No	1.84	Si
SLU 84	ini.	941.89	-1806	-0.0004749	0.0002246	0.0035	0.97		3516.22	3516.22	No	3.73	Si
SLU 84	fin.	-1933.15	-4365	-0.0011851	0.0002246	0.0035	0.97		3522.26	3522.26	No	1.82	Si
SLU 83	ini.	956.57	-1845	-0.0004838	0.0002246	0.0035	0.97		3516.22	3516.22	No	3.68	Si
SLU 83	fin.	-1983.6	-4461	-0.0012284	0.0002246	0.0035	0.97		3522.26	3522.26	No	1.78	Si
SLU 79	ini.	929.17	-1793	-0.0004672	0.0002246	0.0035	0.97		3516.22	3516.22	No	3.78	Si
SLU 79	fin.	-1928.24	-4337	-0.0011809	0.0002246	0.0035	0.97		3522.26	3522.26	No	1.83	Si
SLU 82	ini.	929.97	-1783	-0.0004677	0.0002246	0.0035	0.97		3516.22	3516.22	No	3.78	Si
SLU 82	fin.	-1907.85	-4308	-0.0011637	0.0002246	0.0035	0.97		3522.26	3522.26	No	1.85	Si
SLU 77	ini.	935.94	-1807	-0.0004713	0.0002246	0.0035	0.97		3516.22	3516.22	No	3.76	Si
SLU 77	fin.	-1942.92	-4370	-0.0011934	0.0002246	0.0035	0.97		3522.26	3522.26	No	1.81	Si
SLU 80	ini.	914.48	-1755	-0.0004583	0.0002246	0.0035	0.97		3516.22	3516.22	No	3.85	Si
SLU 80	fin.	-1877.79	-4241	-0.0011385	0.0002246	0.0035	0.97		3522.26	3522.26	No	1.88	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	935.94	-2331	0.97	0	2425	6344	5229	2474	7702	No	3.3	Si
SLU 77	fin.	-1942.92	-7915	0.97	0	2425	6344	5229	2474	7702	No	0.97	No
SLU 74	ini.	924.02	-2296	0.97	0	2425	6344	5229	2474	7702	No	3.35	Si
SLU 74	fin.	-1917.62	-7818	0.97	0	2425	6344	5229	2474	7702	No	0.99	No
SLU 84	ini.	941.89	-2288	0.97	0	2425	6344	5229	2474	7702	No	3.37	Si
SLU 84	fin.	-1933.15	-7945	0.97	0	2425	6344	5229	2474	7702	No	0.97	No
SLU 81	ini.	944.65	-2342	0.97	0	2425	6344	5229	2474	7702	No	3.29	Si
SLU 81	fin.	-1958.3	-7990	0.97	0	2425	6344	5229	2474	7702	No	0.96	No
SLU 78	ini.	921.25	-2242	0.97	0	2425	6344	5229	2474	7702	No	3.44	Si
SLU 78	fin.	-1892.47	-7772	0.97	0	2425	6344	5229	2474	7702	No	0.99	No
SLU 83	ini.	956.57	-2378	0.97	0	2425	6344	5229	2474	7702	No	3.24	Si
SLU 83	fin.	-1983.6	-8087	0.97	0	2425	6344	5229	2474	7702	No	0.95	No
SLU 82	ini.	929.97	-2252	0.97	0	2425	6344	5229	2474	7702	No	3.42	Si
SLU 82	fin.	-1907.85	-7848	0.97	0	2425	6344	5229	2474	7702	No	0.98	No
SLU 79	ini.	929.17	-2311	0.97	0	2425	6344	5229	2474	7702	No	3.33	Si
SLU 79	fin.	-1928.24	-7859	0.97	0	2425	6344	5229	2474	7702	No	0.98	No
SLU 80	ini.	914.48	-2221	0.97	0	2425	6344	5229	2474	7702	No	3.47	Si
SLU 80	fin.	-1877.79	-7717	0.97	0	2425	6344	5229	2474	7702	No	1	No
SLU 75	ini.	909.33	-2206	0.97	0	2425	6344	5229	2474	7702	No	3.49	Si
SLU 75	fin.	-1867.18	-7676	0.97	0	2425	6344	5229	2474	7702	No	1	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 8	ini.	1168.79	-2790	-0.0005824	0.0003369	0.0035	0.97		3471.47	3471.47		2.97	Si
SLD 8	fin.	-3218.77	-6627	-0.0025746	0.0003369	0.0035	0.97		3477.77	3477.77		1.08	Si
SLV 11	ini.	1662.49	-4613	-0.0009065	0.0003369	0.0035	0.97		3471.47	3471.47		2.09	Si
SLV 11	fin.	-5536.62	-10955	-0.0064593	0.0003369	0.0035	0.97		3477.77	3477.77		0.63	No
SLV 9	ini.	-729.07	2707	-0.0003359	0.0003369	0.0035	0.97		3477.77	3477.77		4.77	Si
SLV 9	fin.	3482.32	6294	-0.0030903	0.0003369	0.0035	0.97		3471.47	3471.47		1	No
SLV 7	ini.	1918.45	-4956	-0.0010972	0.0003369	0.0035	0.97		3471.47	3471.47		1.81	Si
SLV 7	fin.	-5857.38	-11728	-0.0069242	0.0003369	0.0035	0.97		3477.77	3477.77		0.59	No
SLV 12	ini.	1725.83	-4781	-0.0009521	0.0003369	0.0035	0.97		3471.47	3471.47		2.01	Si
SLV 12	fin.	-5757.95	-11365	-0.006781	0.0003369	0.0035	0.97		3477.77	3477.77		0.6	No
SLV 4	ini.	1458.71	-3001	-0.0007662	0.0003369	0.0035	0.97		3471.47	3471.47		2.38	Si
SLV 4	fin.	-3350.01	-7103	-0.0028144	0.0003369	0.0035	0.97		3477.77	3477.77		1.04	Si
SLV 8	ini.	1981.78	-5123	-0.0011473	0.0003369	0.0035	0.97		3471.47	3471.47		1.75	Si
SLV 8	fin.	-6078.71	-12138	-0.0072407	0.0003369	0.0035	0.97		3477.77	3477.77		0.57	No
SLV 10	ini.	-665.74	2540	-0.0003038	0.0003369	0.0035	0.97		3477.77	3477.77		5.22	Si
SLV 10	fin.	3260.99	5884	-0.002659	0.0003369	0.0035	0.97		3471.47	3471.47		1.06	Si
SLD 7	ini.	1142.39	-2720	-0.0005665	0.0003369	0.0035	0.97		3471.47	3471.47		3.04	Si
SLD 7	fin.	-3126.52	-6456	-0.0024197	0.0003369	0.0035	0.97		3477.77	3477.77		1.11	Si
SLV 5	ini.	-473.12	2365	-0.0002101	0.0003369	0.0035	0.97		3477.77	3477.77		7.35	Si
SLV 5	fin.	3161.56	5521	-0.0024861	0.0003369	0.0035	0.97		3471.47	3471.47		1.1	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 8	ini.	1168.79	-4897	0.97	0	3638	6344	7843	2474	9981		2.04	Si
SLD 8	fin.	-3218.77	-10831	0.97	0	3638	6344	7843	2474	9981		0.92	No
SLV 11	ini.	1662.49	-9096	0.97	0	3638	6344	7843	2474	9981		1.1	Si
SLV 11	fin.	-5536.62	-16994	0.97	0	3638	6344	7843	2474	9981		0.59	No
SLD 7	ini.	1142.39	-4734	0.97	0	3638	6344	7843	2474	9981		2.11	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 7	fin.	-3126.52	-10577	0.97	0	3638	6344	7843	2474	9981		0.94	No
SLV 4	ini.	1458.71	-4920	0.97	0	3638	6344	7843	2474	9981		2.03	Si
SLV 4	fin.	-3350.01	-11961	0.97	0	3638	6344	7843	2474	9981		0.83	No
SLV 8	ini.	1981.78	-9909	0.97	0	3638	6344	7843	2474	9981		1.01	Si
SLV 8	fin.	-6078.71	-19033	0.97	0	3638	6344	7843	2474	9981		0.52	No
SLV 3	ini.	1364.64	-4339	0.97	0	3638	6344	7843	2474	9981		2.3	Si
SLV 3	fin.	-3021.27	-11059	0.97	0	3638	6344	7843	2474	9981		0.9	No
SLV 7	ini.	1918.45	-9518	0.97	0	3638	6344	7843	2474	9981		1.05	Si
SLV 7	fin.	-5857.38	-18426	0.97	0	3638	6344	7843	2474	9981		0.54	No
SLD 11	ini.	1033.21	-4553	0.97	0	3638	6344	7843	2474	9981		2.19	Si
SLD 11	fin.	-2989.4	-9966	0.97	0	3638	6344	7843	2474	9981		1	Si
SLV 12	ini.	1725.83	-9487	0.97	0	3638	6344	7843	2474	9981		1.05	Si
SLV 12	fin.	-5757.95	-17602	0.97	0	3638	6344	7843	2474	9981		0.57	No
SLD 12	ini.	1059.61	-4716	0.97	0	3638	6344	7843	2474	9981		2.12	Si
SLD 12	fin.	-3081.65	-10219	0.97	0	3638	6344	7843	2474	9981		0.98	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.572	SLV 8	No
V_SLV	0.524	SLV 8	No
PF_SLU	1.776	SLU 83	Si
V_SLU	0.952	SLU 83	No

Trave di accoppiamento 11

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-12.613	1.046	0.86	1.67	0.81	-13.583	1.046	0.86	1.67	0.81	0.97	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	561.98	-311	-0.0003945	0.0002246	0.0035	0.81		1886.61	1886.61	No	3.36	Si
SLU 77	fin.	38.26	-2426	-0.0000233	0.0002246	0.0035	0.81		1886.61	1886.61	No	49.31	Si
SLU 79	ini.	558	-310	-0.0003912	0.0002246	0.0035	0.81		1886.61	1886.61	No	3.38	Si
SLU 79	fin.	37.79	-2412	-0.000023	0.0002246	0.0035	0.81		1886.61	1886.61	No	49.92	Si
SLU 75	ini.	556.03	-307	-0.0003896	0.0002246	0.0035	0.81		1886.61	1886.61	No	3.39	Si
SLU 75	fin.	36.69	-2412	-0.0000223	0.0002246	0.0035	0.81		1886.61	1886.61	No	51.42	Si
SLU 80	ini.	558.98	-310	-0.000392	0.0002246	0.0035	0.81		1886.61	1886.61	No	3.38	Si
SLU 80	fin.	36.85	-2424	-0.0000224	0.0002246	0.0035	0.81		1886.61	1886.61	No	51.19	Si
SLU 82	ini.	571.68	-297	-0.0004025	0.0002246	0.0035	0.81		1886.61	1886.61	No	3.3	Si
SLU 82	fin.	39.8	-2461	-0.0000242	0.0002246	0.0035	0.81		1886.61	1886.61	No	47.4	Si
SLU 78	ini.	562.97	-311	-0.0003953	0.0002246	0.0035	0.81		1886.61	1886.61	No	3.35	Si
SLU 78	fin.	37.32	-2438	-0.0000227	0.0002246	0.0035	0.81		1886.61	1886.61	No	50.55	Si
SLU 81	ini.	570.69	-297	-0.0004017	0.0002246	0.0035	0.81		1886.61	1886.61	No	3.31	Si
SLU 81	fin.	40.74	-2449	-0.0000248	0.0002246	0.0035	0.81		1886.61	1886.61	No	46.31	Si
SLU 74	ini.	555.04	-307	-0.0003888	0.0002246	0.0035	0.81		1886.61	1886.61	No	3.4	Si
SLU 74	fin.	37.63	-2400	-0.0000229	0.0002246	0.0035	0.81		1886.61	1886.61	No	50.14	Si
SLU 84	ini.	578.62	-301	-0.0004083	0.0002246	0.0035	0.81		1886.61	1886.61	No	3.26	Si
SLU 84	fin.	40.44	-2486	-0.0000246	0.0002246	0.0035	0.81		1886.61	1886.61	No	46.66	Si
SLU 83	ini.	577.64	-301	-0.0004075	0.0002246	0.0035	0.81		1886.61	1886.61	No	3.27	Si
SLU 83	fin.	41.37	-2475	-0.0000252	0.0002246	0.0035	0.81		1886.61	1886.61	No	45.6	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 74	ini.	555.04	6012	0.81	0	2463	6423	6550	2066	8615	No	1.43	Si
SLU 74	fin.	37.63	-7971	0.81	0	2463	6423	6550	2066	8615	No	1.08	Si
SLU 75	ini.	556.03	6020	0.81	0	2463	6423	6550	2066	8615	No	1.43	Si
SLU 75	fin.	36.69	-7984	0.81	0	2463	6423	6550	2066	8615	No	1.08	Si
SLU 83	ini.	577.64	6239	0.81	0	2463	6423	6550	2066	8615	No	1.38	Si
SLU 83	fin.	41.37	-8262	0.81	0	2463	6423	6550	2066	8615	No	1.04	Si
SLU 78	ini.	562.97	6093	0.81	0	2463	6423	6550	2066	8615	No	1.41	Si
SLU 78	fin.	37.32	-8073	0.81	0	2463	6423	6550	2066	8615	No	1.07	Si
SLU 80	ini.	558.98	6050	0.81	0	2463	6423	6550	2066	8615	No	1.42	Si
SLU 80	fin.	36.85	-8023	0.81	0	2463	6423	6550	2066	8615	No	1.07	Si
SLU 82	ini.	571.68	6174	0.81	0	2463	6423	6550	2066	8615	No	1.4	Si
SLU 82	fin.	39.8	-8186	0.81	0	2463	6423	6550	2066	8615	No	1.05	Si
SLU 77	ini.	561.98	6085	0.81	0	2463	6423	6550	2066	8615	No	1.42	Si
SLU 77	fin.	38.26	-8060	0.81	0	2463	6423	6550	2066	8615	No	1.07	Si
SLU 79	ini.	558	6043	0.81	0	2463	6423	6550	2066	8615	No	1.43	Si
SLU 79	fin.	37.79	-8010	0.81	0	2463	6423	6550	2066	8615	No	1.08	Si
SLU 84	ini.	578.62	6247	0.81	0	2463	6423	6550	2066	8615	No	1.38	Si
SLU 84	fin.	40.44	-8275	0.81	0	2463	6423	6550	2066	8615	No	1.04	Si
SLU 81	ini.	570.69	6166	0.81	0	2463	6423	6550	2066	8615	No	1.4	Si
SLU 81	fin.	40.74	-8173	0.81	0	2463	6423	6550	2066	8615	No	1.05	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 16	ini.	764.71	1101	-0.0005395	0.0003369	0.0035	0.81		2160.1	2160.1		2.82	Si
SLD 16	fin.	373.02	43	-0.0002401	0.0003369	0.0035	0.81		2160.1	2160.1		5.79	Si
SLV 13	ini.	1349.88	2959	-0.0011112	0.0003369	0.0035	0.81		2160.1	2160.1		1.6	Si
SLV 13	fin.	795.97	1803	-0.0005661	0.0003369	0.0035	0.81		2160.1	2160.1		2.71	Si
SLV 16	ini.	1287.48	2885	-0.0010421	0.0003369	0.0035	0.81		2160.1	2160.1		1.68	Si
SLV 16	fin.	844.15	2330	-0.000608	0.0003369	0.0035	0.81		2160.1	2160.1		2.56	Si
SLV 1	ini.	-540.18	-3343	-0.0003595	0.0003369	0.0035	0.81		2165.48	2165.48		4.01	Si
SLV 1	fin.	-798.99	-5632	-0.0005673	0.0003369	0.0035	0.81		2165.48	2165.48		2.71	Si
SLD 14	ini.	785.42	1106	-0.0005571	0.0003369	0.0035	0.81		2160.1	2160.1		2.75	Si
SLD 14	fin.	353.1	-169	-0.0002264	0.0003369	0.0035	0.81		2160.1	2160.1		6.12	Si
SLV 2	ini.	-551.39	-3408	-0.0003679	0.0003369	0.0035	0.81		2165.48	2165.48		3.93	Si
SLV 2	fin.	-800.22	-5633	-0.0005684	0.0003369	0.0035	0.81		2165.48	2165.48		2.71	Si
SLV 14	ini.	1338.67	2894	-0.0010986	0.0003369	0.0035	0.81		2160.1	2160.1		1.61	Si
SLV 14	fin.	794.74	1802	-0.0005651	0.0003369	0.0035	0.81		2160.1	2160.1		2.72	Si
SLD 15	ini.	769.47	1129	-0.0005435	0.0003369	0.0035	0.81		2160.1	2160.1		2.81	Si
SLD 15	fin.	373.54	44	-0.0002405	0.0003369	0.0035	0.81		2160.1	2160.1		5.78	Si
SLV 15	ini.	1298.69	2950	-0.0010543	0.0003369	0.0035	0.81		2160.1	2160.1		1.66	Si
SLV 15	fin.	845.38	2332	-0.0006091	0.0003369	0.0035	0.81		2160.1	2160.1		2.56	Si
SLD 13	ini.	790.19	1133	-0.0005612	0.0003369	0.0035	0.81		2160.1	2160.1		2.73	Si
SLD 13	fin.	353.63	-168	-0.0002267	0.0003369	0.0035	0.81		2160.1	2160.1		6.11	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	1287.48	11092	0.81	0	2616	6423	9824	2066	9039		0.81	No
SLV 16	fin.	844.15	-5073	0.81	0	2616	6423	9824	2066	9039		1.78	Si
SLV 9	ini.	746.25	6889	0.81	0	2616	6423	9824	2066	9039		1.31	Si
SLV 9	fin.	179.89	-6388	0.81	0	2616	6423	9824	2066	9039		1.42	Si
SLD 16	ini.	764.71	7076	0.81	0	2616	6423	9824	2066	9039		1.28	Si
SLD 16	fin.	373.02	-5288	0.81	0	2616	6423	9824	2066	9039		1.71	Si
SLV 14	ini.	1338.67	11472	0.81	0	2616	6423	9824	2066	9039		0.79	No
SLV 14	fin.	794.74	-5624	0.81	0	2616	6423	9824	2066	9039		1.61	Si
SLV 15	ini.	1298.69	11133	0.81	0	2616	6423	9824	2066	9039		0.81	No
SLV 15	fin.	845.38	-5190	0.81	0	2616	6423	9824	2066	9039		1.74	Si
SLV 10	ini.	738.7	6861	0.81	0	2616	6423	9824	2066	9039		1.32	Si
SLV 10	fin.	179.06	-6309	0.81	0	2616	6423	9824	2066	9039		1.43	Si
SLD 15	ini.	769.47	7093	0.81	0	2616	6423	9824	2066	9039		1.27	Si
SLD 15	fin.	373.54	-5338	0.81	0	2616	6423	9824	2066	9039		1.69	Si
SLV 13	ini.	1349.88	11513	0.81	0	2616	6423	9824	2066	9039		0.79	No
SLV 13	fin.	795.97	-5742	0.81	0	2616	6423	9824	2066	9039		1.57	Si
SLD 14	ini.	785.42	7230	0.81	0	2616	6423	9824	2066	9039		1.25	Si
SLD 14	fin.	353.1	-5512	0.81	0	2616	6423	9824	2066	9039		1.64	Si
SLD 13	ini.	790.19	7247	0.81	0	2616	6423	9824	2066	9039		1.25	Si
SLD 13	fin.	353.63	-5562	0.81	0	2616	6423	9824	2066	9039		1.63	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.6	SLV 13	Si
V_SLV	0.785	SLV 13	No
PF_SLU	3.261	SLU 84	Si
V_SLU	1.041	SLU 84	Si

Trave di accoppiamento 12

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-11.238	1.046	0.86	1.67	0.81	-12.238	1.046	0.86	1.67	0.81	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-614.03	-4929	-0.0004372	0.0002246	0.0035	0.81		1892.63	1892.63	No	3.08	Si
SLU 82	fin.	672.18	-2184	-0.0004885	0.0002246	0.0035	0.81		1886.61	1886.61	No	2.81	Si
SLU 76	ini.	-594.71	-4790	-0.0004208	0.0002246	0.0035	0.81		1892.63	1892.63	No	3.18	Si
SLU 76	fin.	649.56	-2137	-0.0004688	0.0002246	0.0035	0.81		1886.61	1886.61	No	2.9	Si
SLU 79	ini.	-590.49	-4808	-0.0004173	0.0002246	0.0035	0.81		1892.63	1892.63	No	3.21	Si
SLU 79	fin.	651.13	-2150	-0.0004701	0.0002246	0.0035	0.81		1886.61	1886.61	No	2.9	Si
SLU 75	ini.	-594.26	-4806	-0.0004205	0.0002246	0.0035	0.81		1892.63	1892.63	No	3.18	Si
SLU 75	fin.	651.72	-2146	-0.0004706	0.0002246	0.0035	0.81		1886.61	1886.61	No	2.89	Si
SLU 83	ini.	-614.04	-4963	-0.0004372	0.0002246	0.0035	0.81		1892.63	1892.63	No	3.08	Si
SLU 83	fin.	676.35	-2203	-0.0004922	0.0002246	0.0035	0.81		1886.61	1886.61	No	2.79	Si
SLU 77	ini.	-594.27	-4840	-0.0004205	0.0002246	0.0035	0.81		1892.63	1892.63	No	3.18	Si
SLU 77	fin.	655.89	-2165	-0.0004743	0.0002246	0.0035	0.81		1886.61	1886.61	No	2.88	Si
SLU 81	ini.	-607.69	-4905	-0.0004318	0.0002246	0.0035	0.81		1892.63	1892.63	No	3.11	Si
SLU 81	fin.	668.28	-2176	-0.0004851	0.0002246	0.0035	0.81		1886.61	1886.61	No	2.82	Si
SLU 80	ini.	-596.83	-4831	-0.0004226	0.0002246	0.0035	0.81		1892.63	1892.63	No	3.17	Si
SLU 80	fin.	655.03	-2158	-0.0004735	0.0002246	0.0035	0.81		1886.61	1886.61	No	2.88	Si
SLU 84	ini.	-620.37	-4986	-0.0004426	0.0002246	0.0035	0.81		1892.63	1892.63	No	3.05	Si
SLU 84	fin.	680.25	-2210	-0.0004956	0.0002246	0.0035	0.81		1886.61	1886.61	No	2.77	Si
SLU 78	ini.	-600.6	-4863	-0.0004258	0.0002246	0.0035	0.81		1892.63	1892.63	No	3.15	Si
SLU 78	fin.	659.79	-2172	-0.0004777	0.0002246	0.0035	0.81		1886.61	1886.61	No	2.86	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-600.6	2012	0.81	0	2389	6423	6550	2066	8615	No	4.28	Si
SLU 78	fin.	659.79	5619	0.81	0	2389	6423	6550	2066	8615	No	1.53	Si
SLU 81	ini.	-607.69	2089	0.81	0	2389	6423	6550	2066	8615	No	4.12	Si
SLU 81	fin.	668.28	5656	0.81	0	2389	6423	6550	2066	8615	No	1.52	Si
SLU 77	ini.	-594.27	1976	0.81	0	2389	6423	6550	2066	8615	No	4.36	Si
SLU 77	fin.	655.89	5585	0.81	0	2389	6423	6550	2066	8615	No	1.54	Si
SLU 79	ini.	-590.49	1967	0.81	0	2389	6423	6550	2066	8615	No	4.38	Si
SLU 79	fin.	651.13	5543	0.81	0	2389	6423	6550	2066	8615	No	1.55	Si
SLU 82	ini.	-614.03	2126	0.81	0	2389	6423	6550	2066	8615	No	4.05	Si
SLU 82	fin.	672.18	5690	0.81	0	2389	6423	6550	2066	8615	No	1.51	Si
SLU 84	ini.	-620.37	2137	0.81	0	2389	6423	6550	2066	8615	No	4.03	Si
SLU 84	fin.	680.25	5763	0.81	0	2389	6423	6550	2066	8615	No	1.49	Si
SLU 75	ini.	-594.26	2000	0.81	0	2389	6423	6550	2066	8615	No	4.31	Si
SLU 75	fin.	651.72	5547	0.81	0	2389	6423	6550	2066	8615	No	1.55	Si
SLU 80	ini.	-596.83	2004	0.81	0	2389	6423	6550	2066	8615	No	4.3	Si
SLU 80	fin.	655.03	5577	0.81	0	2389	6423	6550	2066	8615	No	1.54	Si
SLU 83	ini.	-614.04	2101	0.81	0	2389	6423	6550	2066	8615	No	4.1	Si
SLU 83	fin.	676.35	5729	0.81	0	2389	6423	6550	2066	8615	No	1.5	Si
SLU 76	ini.	-594.71	2016	0.81	0	2389	6423	6550	2066	8615	No	4.27	Si
SLU 76	fin.	649.56	5527	0.81	0	2389	6423	6550	2066	8615	No	1.56	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 1	ini.	1506.2	4644	-0.0012956	0.0003369	0.0035	0.81		2160.1	2160.1		1.43	Si
SLV 1	fin.	-1419.13	-603	-0.0011875	0.0003369	0.0035	0.81		2165.48	2165.48		1.53	Si
SLV 4	ini.	1860.87	5900	-0.0017981	0.0003369	0.0035	0.81		2160.1	2160.1		1.16	Si
SLV 4	fin.	-1650.7	-267	-0.0014786	0.0003369	0.0035	0.81		2165.48	2165.48		1.31	Si
SLV 16	ini.	-2292.95	-11120	-0.0026981	0.0003369	0.0035	0.81		2165.48	2165.48		0.94	No
SLV 16	fin.	2284.07	-2331	-0.0026868	0.0003369	0.0035	0.81		2160.1	2160.1		0.95	No
SLV 14	ini.	-2633.86	-12347	-0.0036613	0.0003369	0.0035	0.81		2165.48	2165.48		0.82	No
SLV 14	fin.	2491.35	-2710	-0.0032767	0.0003369	0.0035	0.81		2160.1	2160.1		0.87	No
SLV 9	ini.	-1589.27	-7846	-0.0013969	0.0003369	0.0035	0.81		2165.48	2165.48		1.36	Si
SLV 9	fin.	1376.33	-2394	-0.0011413	0.0003369	0.0035	0.81		2160.1	2160.1		1.57	Si
SLV 15	ini.	-2306.7	-11148	-0.0027345	0.0003369	0.0035	0.81		2165.48	2165.48		0.94	No
SLV 15	fin.	2308.37	-2288	-0.0027513	0.0003369	0.0035	0.81		2160.1	2160.1		0.94	No
SLV 3	ini.	1847.12	5872	-0.0017755	0.0003369	0.0035	0.81		2160.1	2160.1		1.17	Si
SLV 3	fin.	-1626.41	-224	-0.0014458	0.0003369	0.0035	0.81		2165.48	2165.48		1.33	Si
SLV 13	ini.	-2647.62	-12375	-0.0036981	0.0003369	0.0035	0.81		2165.48	2165.48		0.82	No
SLV 13	fin.	2515.65	-2667	-0.003347	0.0003369	0.0035	0.81		2160.1	2160.1		0.86	No
SLV 10	ini.	-1580.01	-7826	-0.0013849	0.0003369	0.0035	0.81		2165.48	2165.48		1.37	Si
SLV 10	fin.	1359.97	-2423	-0.0011226	0.0003369	0.0035	0.81		2160.1	2160.1		1.59	Si
SLV 2	ini.	1519.96	4673	-0.0013127	0.0003369	0.0035	0.81		2160.1	2160.1		1.42	Si
SLV 2	fin.	-1443.43	-646	-0.001216	0.0003369	0.0035	0.81		2165.48	2165.48		1.5	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	1860.87	-11487	0.81	0	2538	6423	9824	2066	8961		0.78	No
SLV 4	fin.	-1650.7	-12789	0.81	0	2538	6423	9824	2066	8961		0.7	No
SLV 10	ini.	-1580.01	8047	0.81	0	2538	6423	9824	2066	8961		1.11	Si
SLV 10	fin.	1359.97	11293	0.81	0	2538	6423	9824	2066	8961		0.79	No
SLV 2	ini.	1519.96	-9501	0.81	0	2538	6423	9824	2066	8961		0.94	No
SLV 2	fin.	-1443.43	-11003	0.81	0	2538	6423	9824	2066	8961		0.81	No
SLV 9	ini.	-1589.27	8127	0.81	0	2538	6423	9824	2066	8961		1.1	Si
SLV 9	fin.	1376.33	11390	0.81	0	2538	6423	9824	2066	8961		0.79	No
SLV 14	ini.	-2633.86	13902	0.81	0	2538	6423	9824	2066	8961		0.64	No
SLV 14	fin.	2491.35	20057	0.81	0	2538	6423	9824	2066	8961		0.45	No
SLV 3	ini.	1847.12	-11368	0.81	0	2538	6423	9824	2066	8961		0.79	No
SLV 3	fin.	-1626.41	-12645	0.81	0	2538	6423	9824	2066	8961		0.71	No
SLV 15	ini.	-2306.7	12035	0.81	0	2538	6423	9824	2066	8961		0.74	No
SLV 15	fin.	2308.37	18415	0.81	0	2538	6423	9824	2066	8961		0.49	No
SLV 13	ini.	-2647.62	14020	0.81	0	2538	6423	9824	2066	8961		0.64	No
SLV 13	fin.	2515.65	20201	0.81	0	2538	6423	9824	2066	8961		0.44	No
SLV 1	ini.	1506.2	-9383	0.81	0	2538	6423	9824	2066	8961		0.96	No
SLV 1	fin.	-1419.13	-10859	0.81	0	2538	6423	9824	2066	8961		0.83	No
SLV 16	ini.	-2292.95	11917	0.81	0	2538	6423	9824	2066	8961		0.75	No
SLV 16	fin.	2284.07	18271	0.81	0	2538	6423	9824	2066	8961		0.49	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.818	SLV 13	No
V_SLV	0.444	SLV 13	No
PF_SLU	2.773	SLU 84	Si
V_SLU	1.495	SLU 84	Si

Trave di accoppiamento 13

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-17.768	6.576	-1.3	0.7	2	-16.768	6.576	-1.3	0.7	2	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	3503.75	-9071	-0.0004149	0.0001872	0.0035	2		10722.86	10722.86	No	3.06	Si
SLU 75	fin.	-823.94	-6620	-0.0000842	0.0001872	0.0035	2		10737.13	10737.13	No	13.03	Si
SLU 83	ini.	3624.53	-9467	-0.0004321	0.0001872	0.0035	2		10722.86	10722.86	No	2.96	Si
SLU 83	fin.	-836.51	-6936	-0.0000855	0.0001872	0.0035	2		10737.13	10737.13	No	12.84	Si
SLU 79	ini.	3548.05	-9251	-0.0004212	0.0001872	0.0035	2		10722.86	10722.86	No	3.02	Si
SLU 79	fin.	-843.02	-6749	-0.0000862	0.0001872	0.0035	2		10737.13	10737.13	No	12.74	Si
SLU 78	ini.	3552.79	-9200	-0.0004219	0.0001872	0.0035	2		10722.86	10722.86	No	3.02	Si
SLU 78	fin.	-831.92	-6710	-0.000085	0.0001872	0.0035	2		10737.13	10737.13	No	12.91	Si
SLU 80	ini.	3527.74	-9132	-0.0004183	0.0001872	0.0035	2		10722.86	10722.86	No	3.04	Si
SLU 80	fin.	-830.56	-6657	-0.0000849	0.0001872	0.0035	2		10737.13	10737.13	No	12.93	Si
SLU 74	ini.	3524.06	-9190	-0.0004178	0.0001872	0.0035	2		10722.86	10722.86	No	3.04	Si
SLU 74	fin.	-836.4	-6712	-0.0000855	0.0001872	0.0035	2		10737.13	10737.13	No	12.84	Si
SLU 77	ini.	3573.1	-9319	-0.0004247	0.0001872	0.0035	2		10722.86	10722.86	No	3	Si
SLU 77	fin.	-844.38	-6802	-0.0000864	0.0001872	0.0035	2		10737.13	10737.13	No	12.72	Si
SLU 84	ini.	3604.22	-9348	-0.0004292	0.0001872	0.0035	2		10722.86	10722.86	No	2.98	Si
SLU 84	fin.	-824.05	-6844	-0.0000842	0.0001872	0.0035	2		10737.13	10737.13	No	13.03	Si
SLU 82	ini.	3555.18	-9219	-0.0004222	0.0001872	0.0035	2		10722.86	10722.86	No	3.02	Si
SLU 82	fin.	-816.07	-6754	-0.0000834	0.0001872	0.0035	2		10737.13	10737.13	No	13.16	Si
SLU 81	ini.	3575.49	-9338	-0.0004251	0.0001872	0.0035	2		10722.86	10722.86	No	3	Si
SLU 81	fin.	-828.53	-6846	-0.0000847	0.0001872	0.0035	2		10737.13	10737.13	No	12.96	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 81	ini.	3575.49	-10427	2	0	6250	7930	13475	5100	14180	No	1.36	Si
SLU 81	fin.	-828.53	-5863	2	0	6250	7930	13475	5100	14180	No	2.42	Si
SLU 77	ini.	3573.1	-10442	2	0	6250	7930	13475	5100	14180	No	1.36	Si
SLU 77	fin.	-844.38	-5911	2	0	6250	7930	13475	5100	14180	No	2.4	Si
SLU 79	ini.	3548.05	-10369	2	0	6250	7930	13475	5100	14180	No	1.37	Si
SLU 79	fin.	-843.02	-5886	2	0	6250	7930	13475	5100	14180	No	2.41	Si
SLU 75	ini.	3503.75	-10187	2	0	6250	7930	13475	5100	14180	No	1.39	Si
SLU 75	fin.	-823.94	-5813	2	0	6250	7930	13475	5100	14180	No	2.44	Si
SLU 82	ini.	3555.18	-10321	2	0	6250	7930	13475	5100	14180	No	1.37	Si
SLU 82	fin.	-816.07	-5832	2	0	6250	7930	13475	5100	14180	No	2.43	Si
SLU 80	ini.	3527.74	-10264	2	0	6250	7930	13475	5100	14180	No	1.38	Si
SLU 80	fin.	-830.56	-5855	2	0	6250	7930	13475	5100	14180	No	2.42	Si
SLU 78	ini.	3552.79	-10337	2	0	6250	7930	13475	5100	14180	No	1.37	Si
SLU 78	fin.	-831.92	-5880	2	0	6250	7930	13475	5100	14180	No	2.41	Si
SLU 74	ini.	3524.06	-10292	2	0	6250	7930	13475	5100	14180	No	1.38	Si
SLU 74	fin.	-836.4	-5844	2	0	6250	7930	13475	5100	14180	No	2.43	Si
SLU 83	ini.	3624.53	-10576	2	0	6250	7930	13475	5100	14180	No	1.34	Si
SLU 83	fin.	-836.51	-5930	2	0	6250	7930	13475	5100	14180	No	2.39	Si
SLU 84	ini.	3604.22	-10471	2	0	6250	7930	13475	5100	14180	No	1.35	Si
SLU 84	fin.	-824.05	-5899	2	0	6250	7930	13475	5100	14180	No	2.4	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	5609.9	-11032	-0.0006939	0.0002807	0.0035	2		15635.95	15635.95		2.79	Si
SLV 16	fin.	-3898.39	-756	-0.0004454	0.0002807	0.0035	2		15648.46	15648.46		4.01	Si
SLV 8	ini.	3983.34	-17540	-0.0004573	0.0002807	0.0035	2		15635.95	15635.95		3.93	Si
SLV 8	fin.	-1517.38	-14405	-0.0001571	0.0002807	0.0035	2		15648.46	15648.46		10.31	Si
SLV 15	ini.	5284.21	-10316	-0.0006441	0.0002807	0.0035	2		15635.95	15635.95		2.96	Si
SLV 15	fin.	-3440.74	-1368	-0.0003849	0.0002807	0.0035	2		15648.46	15648.46		4.55	Si
SLD 12	ini.	3637.59	-11034	-0.000411	0.0002807	0.0035	2		15635.95	15635.95		4.3	Si
SLD 12	fin.	-1639.3	-6996	-0.0001705	0.0002807	0.0035	2		15648.46	15648.46		9.55	Si
SLV 14	ini.	4313	-4247	-0.0005028	0.0002807	0.0035	2		15635.95	15635.95		3.63	Si
SLV 14	fin.	-2992.1	4205	-0.000328	0.0002807	0.0035	2		15648.46	15648.46		5.23	Si
SLV 12	ini.	5407.84	-18136	-0.0006629	0.0002807	0.0035	2		15635.95	15635.95		2.89	Si
SLV 12	fin.	-3069.8	-10823	-0.0003377	0.0002807	0.0035	2		15648.46	15648.46		5.1	Si
SLV 7	ini.	3764.07	-17057	-0.0004278	0.0002807	0.0035	2		15635.95	15635.95		4.15	Si
SLV 7	fin.	-1209.26	-14817	-0.0001239	0.0002807	0.0035	2		15648.46	15648.46		12.94	Si
SLV 11	ini.	5188.56	-17653	-0.0006297	0.0002807	0.0035	2		15635.95	15635.95		3.01	Si
SLV 11	fin.	-2761.68	-11235	-0.0002997	0.0002807	0.0035	2		15648.46	15648.46		5.67	Si
SLD 16	ini.	3767.35	-8221	-0.0004282	0.0002807	0.0035	2		15635.95	15635.95		4.15	Si
SLD 16	fin.	-2016.38	-2859	-0.0002125	0.0002807	0.0035	2		15648.46	15648.46		7.76	Si
SLV 13	ini.	3987.31	-3531	-0.0004579	0.0002807	0.0035	2		15635.95	15635.95		3.92	Si
SLV 13	fin.	-2534.45	3593	-0.0002725	0.0002807	0.0035	2		15648.46	15648.46		6.17	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 12	ini.	5407.84	-21357	2	0	6643	7930	20213	5100	14573		0.68	No
SLV 12	fin.	-3069.8	-12012	2	0	6643	7930	20213	5100	14573		1.21	Si
SLV 11	ini.	5188.56	-19961	2	0	6643	7930	20213	5100	14573		0.73	No
SLV 11	fin.	-2761.68	-10671	2	0	6643	7930	20213	5100	14573		1.37	Si
SLD 16	ini.	3767.35	-13194	2	0	6643	7930	20213	5100	14573		1.1	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 16	fin.	-2016.38	-10279	2	0	6643	7930	20213	5100	14573		1.42	Si
SLV 15	ini.	5284.21	-19505	2	0	6643	7930	20213	5100	14573		0.75	No
SLV 15	fin.	-3440.74	-16486	2	0	6643	7930	20213	5100	14573		0.88	No
SLV 16	ini.	5609.9	-21579	2	0	6643	7930	20213	5100	14573		0.68	No
SLV 16	fin.	-3898.39	-18477	2	0	6643	7930	20213	5100	14573		0.79	No
SLV 14	ini.	4313	-15294	2	0	6643	7930	20213	5100	14573		0.95	No
SLV 14	fin.	-2992.1	-16401	2	0	6643	7930	20213	5100	14573		0.89	No
SLV 7	ini.	3764.07	-13775	2	0	6643	7930	20213	5100	14573		1.06	Si
SLV 7	fin.	-1209.26	-3333	2	0	6643	7930	20213	5100	14573		4.37	Si
SLV 8	ini.	3983.34	-15171	2	0	6643	7930	20213	5100	14573		0.96	No
SLV 8	fin.	-1517.38	-4673	2	0	6643	7930	20213	5100	14573		3.12	Si
SLV 13	ini.	3987.31	-13220	2	0	6643	7930	20213	5100	14573		1.1	Si
SLV 13	fin.	-2534.45	-14410	2	0	6643	7930	20213	5100	14573		1.01	Si
SLD 12	ini.	3637.59	-12891	2	0	6643	7930	20213	5100	14573		1.13	Si
SLD 12	fin.	-1639.3	-7446	2	0	6643	7930	20213	5100	14573		1.96	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.787	SLV 16	Si
V_SLV	0.675	SLV 16	No
PF_SLU	2.958	SLU 83	Si
V_SLU	1.341	SLU 83	Si

Trave di accoppiamento 14

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-17.768	6.576	1.1	1.67	0.57	-16.768	6.576	1.1	1.67	0.57	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 74	ini.	349.05	1122	-0.000532	0.0001872	0.0035	0.57		908.75	908.75	No	2.6	Si
SLU 74	fin.	-1005.76	-3670	-0.0023897	0.0001872	0.0035	0.57		912.83	912.83	No	0.91	No
SLU 83	ini.	355.18	1135	-0.0005435	0.0001872	0.0035	0.57		908.75	908.75	No	2.56	Si
SLU 83	fin.	-1031.76	-3771	-0.0025212	0.0001872	0.0035	0.57		912.83	912.83	No	0.88	No
SLU 81	ini.	350.96	1123	-0.0005356	0.0001872	0.0035	0.57		908.75	908.75	No	2.59	Si
SLU 81	fin.	-1018.37	-3720	-0.0024524	0.0001872	0.0035	0.57		912.83	912.83	No	0.9	No
SLU 80	ini.	349.4	1124	-0.0005327	0.0001872	0.0035	0.57		908.75	908.75	No	2.6	Si
SLU 80	fin.	-1004.51	-3663	-0.0023836	0.0001872	0.0035	0.57		912.83	912.83	No	0.91	No
SLU 84	ini.	352.89	1130	-0.0005392	0.0001872	0.0035	0.57		908.75	908.75	No	2.58	Si
SLU 84	fin.	-1023.83	-3739	-0.0024802	0.0001872	0.0035	0.57		912.83	912.83	No	0.89	No
SLU 82	ini.	348.67	1117	-0.0005313	0.0001872	0.0035	0.57		908.75	908.75	No	2.61	Si
SLU 82	fin.	-1010.43	-3688	-0.0024127	0.0001872	0.0035	0.57		912.83	912.83	No	0.9	No
SLU 75	ini.	346.77	1116	-0.0005278	0.0001872	0.0035	0.57		908.75	908.75	No	2.62	Si
SLU 75	fin.	-997.82	-3638	-0.0023511	0.0001872	0.0035	0.57		912.83	912.83	No	0.91	No
SLU 79	ini.	351.68	1130	-0.0005369	0.0001872	0.0035	0.57		908.75	908.75	No	2.58	Si
SLU 79	fin.	-1012.45	-3695	-0.0024227	0.0001872	0.0035	0.57		912.83	912.83	No	0.9	No
SLU 77	ini.	353.27	1134	-0.0005399	0.0001872	0.0035	0.57		908.75	908.75	No	2.57	Si
SLU 77	fin.	-1019.15	-3721	-0.0024564	0.0001872	0.0035	0.57		912.83	912.83	No	0.9	No
SLU 78	ini.	350.99	1128	-0.0005357	0.0001872	0.0035	0.57		908.75	908.75	No	2.59	Si
SLU 78	fin.	-1011.22	-3689	-0.0024166	0.0001872	0.0035	0.57		912.83	912.83	No	0.9	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	349.4	-1079	0.57	0	1460	4520	3840	1454	5294	No	4.9	Si
SLU 80	fin.	-1004.51	-4418	0.57	0	1460	4520	3840	1454	5294	No	1.2	Si
SLU 77	ini.	353.27	-1092	0.57	0	1460	4520	3840	1454	5294	No	4.85	Si
SLU 77	fin.	-1019.15	-4479	0.57	0	1460	4520	3840	1454	5294	No	1.18	Si
SLU 81	ini.	350.96	-1084	0.57	0	1460	4520	3840	1454	5294	No	4.88	Si
SLU 81	fin.	-1018.37	-4476	0.57	0	1460	4520	3840	1454	5294	No	1.18	Si
SLU 75	ini.	346.77	-1070	0.57	0	1460	4520	3840	1454	5294	No	4.95	Si
SLU 75	fin.	-997.82	-4390	0.57	0	1460	4520	3840	1454	5294	No	1.21	Si
SLU 83	ini.	355.18	-1098	0.57	0	1460	4520	3840	1454	5294	No	4.82	Si
SLU 83	fin.	-1031.76	-4533	0.57	0	1460	4520	3840	1454	5294	No	1.17	Si
SLU 79	ini.	351.68	-1087	0.57	0	1460	4520	3840	1454	5294	No	4.87	Si
SLU 79	fin.	-1012.45	-4451	0.57	0	1460	4520	3840	1454	5294	No	1.19	Si
SLU 84	ini.	352.89	-1090	0.57	0	1460	4520	3840	1454	5294	No	4.86	Si
SLU 84	fin.	-1023.83	-4500	0.57	0	1460	4520	3840	1454	5294	No	1.18	Si
SLU 82	ini.	348.67	-1076	0.57	0	1460	4520	3840	1454	5294	No	4.92	Si
SLU 82	fin.	-1010.43	-4443	0.57	0	1460	4520	3840	1454	5294	No	1.19	Si
SLU 78	ini.	350.99	-1084	0.57	0	1460	4520	3840	1454	5294	No	4.88	Si
SLU 78	fin.	-1011.22	-4447	0.57	0	1460	4520	3840	1454	5294	No	1.19	Si
SLU 74	ini.	349.05	-1078	0.57	0	1460	4520	3840	1454	5294	No	4.91	Si
SLU 74	fin.	-1005.76	-4422	0.57	0	1460	4520	3840	1454	5294	No	1.2	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 11	ini.	770.86	2153	-0.0014061	0.0002807	0.0035	0.57		1278.06	1278.06		1.66	Si
SLV 11	fin.	-1668.54	-6514	-0.0055782	0.0002807	0.0035	0.57		1281.66	1281.66		0.77	No
SLV 15	ini.	1163.44	3947	-0.0030149	0.0002807	0.0035	0.57		1278.06	1278.06		1.1	Si
SLV 15	fin.	-1703.94	-6232	-0.0057358	0.0002807	0.0035	0.57		1281.66	1281.66		0.75	No
SLV 16	ini.	1310.49	4471	-0.0038733	0.0002807	0.0035	0.57		1278.06	1278.06		0.98	No
SLV 16	fin.	-1859.62	-6793	-0.0064188	0.0002807	0.0035	0.57		1281.66	1281.66		0.69	No
SLV 14	ini.	1129.38	4144	-0.002814	0.0002807	0.0035	0.57		1278.06	1278.06		1.13	Si
SLV 14	fin.	-1399.53	-4831	-0.0043146	0.0002807	0.0035	0.57		1281.66	1281.66		0.92	No
SLV 12	ini.	869.86	2505	-0.0016955	0.0002807	0.0035	0.57		1278.06	1278.06		1.47	Si
SLV 12	fin.	-1773.36	-6891	-0.0060413	0.0002807	0.0035	0.57		1281.66	1281.66		0.72	No
SLV 13	ini.	982.33	3620	-0.0021016	0.0002807	0.0035	0.57		1278.06	1278.06		1.3	Si
SLV 13	fin.	-1243.85	-4270	-0.0034801	0.0002807	0.0035	0.57		1281.66	1281.66		1.03	Si
SLD 12	ini.	508.77	1518	-0.0007996	0.0002807	0.0035	0.57		1278.06	1278.06		2.51	Si
SLD 12	fin.	-1134.85	-4309	-0.0028266	0.0002807	0.0035	0.57		1281.66	1281.66		1.13	Si
SLV 7	ini.	232.66	214	-0.0003132	0.0002807	0.0035	0.57		1278.06	1278.06		5.49	Si
SLV 7	fin.	-1156.31	-4715	-0.0029519	0.0002807	0.0035	0.57		1281.66	1281.66		1.11	Si
SLD 16	ini.	701.13	2372	-0.0012266	0.0002807	0.0035	0.57		1278.06	1278.06		1.82	Si
SLD 16	fin.	-1187.63	-4328	-0.0031419	0.0002807	0.0035	0.57		1281.66	1281.66		1.08	Si
SLV 8	ini.	331.66	567	-0.0004719	0.0002807	0.0035	0.57		1278.06	1278.06		3.85	Si
SLV 8	fin.	-1261.13	-5092	-0.0035797	0.0002807	0.0035	0.57		1281.66	1281.66		1.02	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	982.33	-3718	0.57	0	1638	4520	5761	1454	6158		1.66	Si
SLV 13	fin.	-1243.85	-5190	0.57	0	1638	4520	5761	1454	6158		1.19	Si
SLV 11	ini.	770.86	-2986	0.57	0	1638	4520	5761	1454	6158		2.06	Si
SLV 11	fin.	-1668.54	-7212	0.57	0	1638	4520	5761	1454	6158		0.85	No
SLV 12	ini.	869.86	-3381	0.57	0	1638	4520	5761	1454	6158		1.82	Si
SLV 12	fin.	-1773.36	-7627	0.57	0	1638	4520	5761	1454	6158		0.81	No
SLV 16	ini.	1310.49	-5099	0.57	0	1638	4520	5761	1454	6158		1.21	Si
SLV 16	fin.	-1859.62	-7796	0.57	0	1638	4520	5761	1454	6158		0.79	No
SLV 7	ini.	232.66	-801	0.57	0	1638	4520	5761	1454	6158		7.69	Si
SLV 7	fin.	-1156.31	-5163	0.57	0	1638	4520	5761	1454	6158		1.19	Si
SLD 12	ini.	508.77	-1866	0.57	0	1638	4520	5761	1454	6158		3.3	Si
SLD 12	fin.	-1134.85	-4942	0.57	0	1638	4520	5761	1454	6158		1.25	Si
SLD 16	ini.	701.13	-2614	0.57	0	1638	4520	5761	1454	6158		2.36	Si
SLD 16	fin.	-1187.63	-5071	0.57	0	1638	4520	5761	1454	6158		1.21	Si
SLV 15	ini.	1163.44	-4512	0.57	0	1638	4520	5761	1454	6158		1.36	Si
SLV 15	fin.	-1703.94	-7180	0.57	0	1638	4520	5761	1454	6158		0.86	No
SLV 8	ini.	331.66	-1196	0.57	0	1638	4520	5761	1454	6158		5.15	Si
SLV 8	fin.	-1261.13	-5578	0.57	0	1638	4520	5761	1454	6158		1.1	Si
SLV 14	ini.	1129.38	-4305	0.57	0	1638	4520	5761	1454	6158		1.43	Si
SLV 14	fin.	-1399.53	-5807	0.57	0	1638	4520	5761	1454	6158		1.06	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.689	SLV 16	No
V_SLV	0.79	SLV 16	No
PF_SLU	0.885	SLU 83	No
V_SLU	1.168	SLU 83	Si

Trave di accoppiamento 15

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-14.223	-3.284	0.8	1.67	0.87	-16.523	-3.284	0.8	1.67	0.87	2.3	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	ini.	291.06	1127	-0.0001611	0.0002246	0.0035	0.87		2095.51	2095.51	No	7.2	Si
SLU 82	fin.	-2963.76	-9923	-0.0038223	0.0002246	0.0035	0.87		2102.07	2102.07	No	0.71	No
SLU 79	ini.	279.3	1044	-0.0001542	0.0002246	0.0035	0.87		2095.51	2095.51	No	7.5	Si
SLU 79	fin.	-2839.68	-9520	-0.0035136	0.0002246	0.0035	0.87		2102.07	2102.07	No	0.74	No
SLU 83	ini.	291.16	1128	-0.0001611	0.0002246	0.0035	0.87		2095.51	2095.51	No	7.2	Si
SLU 83	fin.	-2964.88	-9922	-0.003825	0.0002246	0.0035	0.87		2102.07	2102.07	No	0.71	No
SLU 75	ini.	280.53	1040	-0.0001549	0.0002246	0.0035	0.87		2095.51	2095.51	No	7.47	Si
SLU 75	fin.	-2850.17	-9564	-0.0035406	0.0002246	0.0035	0.87		2102.07	2102.07	No	0.74	No
SLU 77	ini.	280.63	1041	-0.0001549	0.0002246	0.0035	0.87		2095.51	2095.51	No	7.47	Si
SLU 77	fin.	-2851.28	-9563	-0.0035434	0.0002246	0.0035	0.87		2102.07	2102.07	No	0.74	No
SLU 84	ini.	293.06	1122	-0.0001622	0.0002246	0.0035	0.87		2095.51	2095.51	No	7.15	Si
SLU 84	fin.	-2981.23	-9989	-0.0038641	0.0002246	0.0035	0.87		2102.07	2102.07	No	0.71	No
SLU 76	ini.	280.46	1039	-0.0001548	0.0002246	0.0035	0.87		2095.51	2095.51	No	7.47	Si
SLU 76	fin.	-2849.47	-9566	-0.0035388	0.0002246	0.0035	0.87		2102.07	2102.07	No	0.74	No
SLU 78	ini.	282.52	1034	-0.000156	0.0002246	0.0035	0.87		2095.51	2095.51	No	7.42	Si
SLU 78	fin.	-2867.64	-9630	-0.0035851	0.0002246	0.0035	0.87		2102.07	2102.07	No	0.73	No
SLU 81	ini.	289.17	1134	-0.0001599	0.0002246	0.0035	0.87		2095.51	2095.51	No	7.25	Si
SLU 81	fin.	-2947.41	-9856	-0.0037828	0.0002246	0.0035	0.87		2102.07	2102.07	No	0.71	No
SLU 80	ini.	281.19	1038	-0.0001553	0.0002246	0.0035	0.87		2095.51	2095.51	No	7.45	Si
SLU 80	fin.	-2856.03	-9587	-0.0035556	0.0002246	0.0035	0.87		2102.07	2102.07	No	0.74	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	281.19	-169	0.87	0	1130	6899	7035	2219	8029	No	47.49	Si
SLU 80	fin.	-2856.03	-8248	0.87	0	1130	6899	7035	2219	8029	No	0.97	No
SLU 78	ini.	282.52	-176	0.87	0	1130	6899	7035	2219	8029	No	45.5	Si
SLU 78	fin.	-2867.64	-8272	0.87	0	1130	6899	7035	2219	8029	No	0.97	No
SLU 77	ini.	280.63	-165	0.87	0	1130	6899	7035	2219	8029	No	48.72	Si
SLU 77	fin.	-2851.28	-8236	0.87	0	1130	6899	7035	2219	8029	No	0.97	No
SLU 83	ini.	291.16	-124	0.87	0	1130	6899	7035	2219	8029	No	64.87	Si
SLU 83	fin.	-2964.88	-8644	0.87	0	1130	6899	7035	2219	8029	No	0.93	No
SLU 82	ini.	291.06	-124	0.87	0	1130	6899	7035	2219	8029	No	64.84	Si
SLU 82	fin.	-2963.76	-8643	0.87	0	1130	6899	7035	2219	8029	No	0.93	No
SLU 76	ini.	280.46	-165	0.87	0	1130	6899	7035	2219	8029	No	48.59	Si
SLU 76	fin.	-2849.47	-8235	0.87	0	1130	6899	7035	2219	8029	No	0.97	No
SLU 75	ini.	280.53	-165	0.87	0	1130	6899	7035	2219	8029	No	48.7	Si
SLU 75	fin.	-2850.17	-8235	0.87	0	1130	6899	7035	2219	8029	No	0.97	No
SLU 81	ini.	289.17	-112	0.87	0	1130	6899	7035	2219	8029	No	71.58	Si
SLU 81	fin.	-2947.41	-8606	0.87	0	1130	6899	7035	2219	8029	No	0.93	No
SLU 79	ini.	279.3	-157	0.87	0	1130	6899	7035	2219	8029	No	51.01	Si
SLU 79	fin.	-2839.68	-8212	0.87	0	1130	6899	7035	2219	8029	No	0.98	No
SLU 84	ini.	293.06	-135	0.87	0	1130	6899	7035	2219	8029	No	59.28	Si
SLU 84	fin.	-2981.23	-8680	0.87	0	1130	6899	7035	2219	8029	No	0.92	No

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 2	ini.	327.51	-811	-0.0001795	0.0003369	0.0035	0.87		2465.18	2465.18		7.53	Si
SLV 2	fin.	-4055.07	-13143	-0.0057164	0.0003369	0.0035	0.87		2471.01	2471.01		0.61	No
SLV 5	ini.	314.26	-774	-0.0001718	0.0003369	0.0035	0.87		2465.18	2465.18		7.84	Si
SLV 5	fin.	-3841.34	-13749	-0.005314	0.0003369	0.0035	0.87		2471.01	2471.01		0.64	No
SLD 2	ini.	247.13	48	-0.0001338	0.0003369	0.0035	0.87		2465.18	2465.18		9.98	Si
SLD 2	fin.	-2828.56	-9280	-0.0031405	0.0003369	0.0035	0.87		2471.01	2471.01		0.87	No
SLV 10	ini.	264.16	-39	-0.0001433	0.0003369	0.0035	0.87		2465.18	2465.18		9.33	Si
SLV 10	fin.	-2959.3	-11039	-0.0034668	0.0003369	0.0035	0.87		2471.01	2471.01		0.83	No
SLV 6	ini.	324.22	-749	-0.0001776	0.0003369	0.0035	0.87		2465.18	2465.18		7.6	Si
SLV 6	fin.	-3928.94	-13903	-0.0054801	0.0003369	0.0035	0.87		2471.01	2471.01		0.63	No
SLV 4	ini.	268.2	-159	-0.0001456	0.0003369	0.0035	0.87		2465.18	2465.18		9.19	Si
SLV 4	fin.	-3175.33	-9596	-0.0039645	0.0003369	0.0035	0.87		2471.01	2471.01		0.78	No
SLV 1	ini.	312.71	-848	-0.000171	0.0003369	0.0035	0.87		2465.18	2465.18		7.88	Si
SLV 1	fin.	-3924.97	-12915	-0.0054726	0.0003369	0.0035	0.87		2471.01	2471.01		0.63	No
SLV 3	ini.	253.4	-195	-0.0001373	0.0003369	0.0035	0.87		2465.18	2465.18		9.73	Si
SLV 3	fin.	-3045.22	-9367	-0.0036707	0.0003369	0.0035	0.87		2471.01	2471.01		0.81	No
SLV 9	ini.	254.2	-63	-0.0001377	0.0003369	0.0035	0.87		2465.18	2465.18		9.7	Si
SLV 9	fin.	-2871.7	-10886	-0.0032497	0.0003369	0.0035	0.87		2471.01	2471.01		0.86	No
SLD 1	ini.	240.83	32	-0.0001302	0.0003369	0.0035	0.87		2465.18	2465.18		10.24	Si
SLD 1	fin.	-2773.21	-9183	-0.0030005	0.0003369	0.0035	0.87		2471.01	2471.01		0.89	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 6	ini.	324.22	-2654	0.87	0	1195	6899	10552	2219	8094		3.05	Si
SLV 6	fin.	-3928.94	-9187	0.87	0	1195	6899	10552	2219	8094		0.88	No
SLD 5	ini.	237.41	-1186	0.87	0	1195	6899	10552	2219	8094		6.83	Si
SLD 5	fin.	-2710.09	-6951	0.87	0	1195	6899	10552	2219	8094		1.16	Si
SLV 10	ini.	264.16	-1699	0.87	0	1195	6899	10552	2219	8094		4.76	Si
SLV 10	fin.	-2959.3	-7837	0.87	0	1195	6899	10552	2219	8094		1.03	Si
SLV 5	ini.	314.26	-2633	0.87	0	1195	6899	10552	2219	8094		3.07	Si
SLV 5	fin.	-3841.34	-9064	0.87	0	1195	6899	10552	2219	8094		0.89	No
SLV 2	ini.	327.51	-2359	0.87	0	1195	6899	10552	2219	8094		3.43	Si
SLV 2	fin.	-4055.07	-8731	0.87	0	1195	6899	10552	2219	8094		0.93	No
SLD 2	ini.	247.13	-1084	0.87	0	1195	6899	10552	2219	8094		7.46	Si
SLD 2	fin.	-2828.56	-6861	0.87	0	1195	6899	10552	2219	8094		1.18	Si
SLV 9	ini.	254.2	-1678	0.87	0	1195	6899	10552	2219	8094		4.82	Si
SLV 9	fin.	-2871.7	-7714	0.87	0	1195	6899	10552	2219	8094		1.05	Si
SLV 4	ini.	268.2	-1146	0.87	0	1195	6899	10552	2219	8094		7.06	Si
SLV 4	fin.	-3175.33	-6964	0.87	0	1195	6899	10552	2219	8094		1.16	Si
SLV 1	ini.	312.71	-2328	0.87	0	1195	6899	10552	2219	8094		3.48	Si
SLV 1	fin.	-3924.97	-8548	0.87	0	1195	6899	10552	2219	8094		0.95	No
SLD 6	ini.	241.56	-1195	0.87	0	1195	6899	10552	2219	8094		6.78	Si
SLD 6	fin.	-2746.61	-7003	0.87	0	1195	6899	10552	2219	8094		1.16	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.609	SLV 2	No
V_SLV	0.881	SLV 6	No
PF_SLU	0.705	SLU 84	No
V_SLU	0.925	SLU 84	No

Trave di accoppiamento 16

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-15.058	1.271	0.7	1.67	0.97	-15.058	2.071	0.7	1.67	0.97	0.8	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	1252.48	-2719	-0.0006736	0.0002246	0.0035	0.97		3516.22	3516.22	No	2.81	Si
SLU 77	fin.	-3442.44	-6532	-0.0033349	0.0002246	0.0035	0.97		3522.26	3522.26	No	1.02	Si
SLU 78	ini.	1216.87	-2642	-0.0006498	0.0002246	0.0035	0.97		3516.22	3516.22	No	2.89	Si
SLU 78	fin.	-3363.15	-6371	-0.0031618	0.0002246	0.0035	0.97		3522.26	3522.26	No	1.05	Si
SLU 79	ini.	1241.58	-2696	-0.0006663	0.0002246	0.0035	0.97		3516.22	3516.22	No	2.83	Si
SLU 79	fin.	-3415.17	-6484	-0.0032757	0.0002246	0.0035	0.97		3522.26	3522.26	No	1.03	Si
SLU 75	ini.	1195.71	-2596	-0.0006357	0.0002246	0.0035	0.97		3516.22	3516.22	No	2.94	Si
SLU 75	fin.	-3310.77	-6277	-0.0030472	0.0002246	0.0035	0.97		3522.26	3522.26	No	1.06	Si
SLU 80	ini.	1205.97	-2618	-0.0006425	0.0002246	0.0035	0.97		3516.22	3516.22	No	2.92	Si
SLU 80	fin.	-3335.89	-6323	-0.003102	0.0002246	0.0035	0.97		3522.26	3522.26	No	1.06	Si
SLU 83	ini.	1270.76	-2758	-0.0006859	0.0002246	0.0035	0.97		3516.22	3516.22	No	2.77	Si
SLU 83	fin.	-3514.03	-6687	-0.0034874	0.0002246	0.0035	0.97		3522.26	3522.26	No	1	Si
SLU 81	ini.	1249.61	-2712	-0.0006717	0.0002246	0.0035	0.97		3516.22	3516.22	No	2.81	Si
SLU 81	fin.	-3461.65	-6592	-0.0033763	0.0002246	0.0035	0.97		3522.26	3522.26	No	1.02	Si
SLU 82	ini.	1214	-2634	-0.0006478	0.0002246	0.0035	0.97		3516.22	3516.22	No	2.9	Si
SLU 82	fin.	-3382.36	-6432	-0.0032039	0.0002246	0.0035	0.97		3522.26	3522.26	No	1.04	Si
SLU 84	ini.	1235.15	-2680	-0.000662	0.0002246	0.0035	0.97		3516.22	3516.22	No	2.85	Si
SLU 84	fin.	-3434.74	-6526	-0.0033182	0.0002246	0.0035	0.97		3522.26	3522.26	No	1.03	Si
SLU 74	ini.	1231.32	-2673	-0.0006594	0.0002246	0.0035	0.97		3516.22	3516.22	No	2.86	Si
SLU 74	fin.	-3390.06	-6438	-0.0032208	0.0002246	0.0035	0.97		3522.26	3522.26	No	1.04	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 81	ini.	1249.61	-5137	0.97	0	2425	6344	5229	2474	7702	No	1.5	Si
SLU 81	fin.	-3461.65	-10261	0.97	0	2425	6344	5229	2474	7702	No	0.75	No
SLU 83	ini.	1270.76	-5221	0.97	0	2425	6344	5229	2474	7702	No	1.48	Si
SLU 83	fin.	-3514.03	-10390	0.97	0	2425	6344	5229	2474	7702	No	0.74	No
SLU 78	ini.	1216.87	-5019	0.97	0	2425	6344	5229	2474	7702	No	1.53	Si
SLU 78	fin.	-3363.15	-9930	0.97	0	2425	6344	5229	2474	7702	No	0.78	No
SLU 75	ini.	1195.71	-4935	0.97	0	2425	6344	5229	2474	7702	No	1.56	Si
SLU 75	fin.	-3310.77	-9801	0.97	0	2425	6344	5229	2474	7702	No	0.79	No
SLU 79	ini.	1241.58	-5103	0.97	0	2425	6344	5229	2474	7702	No	1.51	Si
SLU 79	fin.	-3415.17	-10070	0.97	0	2425	6344	5229	2474	7702	No	0.76	No
SLU 77	ini.	1252.48	-5147	0.97	0	2425	6344	5229	2474	7702	No	1.5	Si
SLU 77	fin.	-3442.44	-10136	0.97	0	2425	6344	5229	2474	7702	No	0.76	No
SLU 84	ini.	1235.15	-5093	0.97	0	2425	6344	5229	2474	7702	No	1.51	Si
SLU 84	fin.	-3434.74	-10183	0.97	0	2425	6344	5229	2474	7702	No	0.76	No
SLU 80	ini.	1205.97	-4975	0.97	0	2425	6344	5229	2474	7702	No	1.55	Si
SLU 80	fin.	-3335.89	-9863	0.97	0	2425	6344	5229	2474	7702	No	0.78	No
SLU 74	ini.	1231.32	-5063	0.97	0	2425	6344	5229	2474	7702	No	1.52	Si
SLU 74	fin.	-3390.06	-10007	0.97	0	2425	6344	5229	2474	7702	No	0.77	No
SLU 82	ini.	1214	-5009	0.97	0	2425	6344	5229	2474	7702	No	1.54	Si
SLU 82	fin.	-3382.36	-10055	0.97	0	2425	6344	5229	2474	7702	No	0.77	No

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 7	ini.	3864.04	-8436	-0.003834	0.0003369	0.0035	0.97		3471.47	3471.47		0.9	No
SLV 7	fin.	-9093.62	-18130	-0.0113679	0.0003369	0.0035	0.97		3477.77	3477.77		0.38	No
SLV 11	ini.	4107.1	-8978	-0.0042603	0.0003369	0.0035	0.97		3471.47	3471.47		0.85	No
SLV 11	fin.	-9597.97	-19176	-0.0120401	0.0003369	0.0035	0.97		3477.77	3477.77		0.36	No
SLD 11	ini.	2144.1	-4681	-0.0012815	0.0003369	0.0035	0.97		3471.47	3471.47		1.62	Si
SLD 11	fin.	-5211.31	-10273	-0.0059782	0.0003369	0.0035	0.97		3477.77	3477.77		0.67	No
SLV 16	ini.	2226.39	-4876	-0.0013532	0.0003369	0.0035	0.97		3471.47	3471.47		1.56	Si
SLV 16	fin.	-5331.12	-10554	-0.0061567	0.0003369	0.0035	0.97		3477.77	3477.77		0.65	No
SLV 12	ini.	4155.27	-9085	-0.0043418	0.0003369	0.0035	0.97		3471.47	3471.47		0.84	No
SLV 12	fin.	-9700.27	-19388	-0.0121762	0.0003369	0.0035	0.97		3477.77	3477.77		0.36	No
SLV 5	ini.	-2490.62	5469	-0.0015999	0.0003369	0.0035	0.97		3477.77	3477.77		1.4	Si
SLV 5	fin.	5141.75	10743	-0.0058871	0.0003369	0.0035	0.97		3471.47	3471.47		0.68	No
SLD 12	ini.	2164.17	-4726	-0.0012988	0.0003369	0.0035	0.97		3471.47	3471.47		1.6	Si
SLD 12	fin.	-5253.96	-10361	-0.0060419	0.0003369	0.0035	0.97		3477.77	3477.77		0.66	No
SLV 15	ini.	2154.86	-4716	-0.0012907	0.0003369	0.0035	0.97		3471.47	3471.47		1.61	Si
SLV 15	fin.	-5179.16	-10239	-0.00593	0.0003369	0.0035	0.97		3477.77	3477.77		0.67	No
SLV 6	ini.	-2442.46	5361	-0.0015516	0.0003369	0.0035	0.97		3477.77	3477.77		1.42	Si
SLV 6	fin.	5039.44	10531	-0.0057344	0.0003369	0.0035	0.97		3471.47	3471.47		0.69	No
SLV 8	ini.	3912.2	-8544	-0.0039208	0.0003369	0.0035	0.97		3471.47	3471.47		0.89	No
SLV 8	fin.	-9195.93	-18342	-0.0115045	0.0003369	0.0035	0.97		3477.77	3477.77		0.38	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	2226.39	-8483	0.97	0	3638	6344	7843	2474	9981		1.18	Si
SLV 16	fin.	-5331.12	-14640	0.97	0	3638	6344	7843	2474	9981		0.68	No
SLV 8	ini.	3912.2	-14521	0.97	0	3638	6344	7843	2474	9981		0.69	No
SLV 8	fin.	-9195.93	-24759	0.97	0	3638	6344	7843	2474	9981		0.4	No
SLV 15	ini.	2154.86	-8207	0.97	0	3638	6344	7843	2474	9981		1.22	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	fin.	-5179.16	-14250	0.97	0	3638	6344	7843	2474	9981		0.7	No
SLV 11	ini.	4107.1	-15223	0.97	0	3638	6344	7843	2474	9981		0.66	No
SLV 11	fin.	-9597.97	-25772	0.97	0	3638	6344	7843	2474	9981		0.39	No
SLV 12	ini.	4155.27	-15409	0.97	0	3638	6344	7843	2474	9981		0.65	No
SLV 12	fin.	-9700.27	-26035	0.97	0	3638	6344	7843	2474	9981		0.38	No
SLD 7	ini.	2040.67	-7778	0.97	0	3638	6344	7843	2474	9981		1.28	Si
SLD 7	fin.	-4995.78	-13835	0.97	0	3638	6344	7843	2474	9981		0.72	No
SLD 11	ini.	2144.1	-8157	0.97	0	3638	6344	7843	2474	9981		1.22	Si
SLD 11	fin.	-5211.31	-14380	0.97	0	3638	6344	7843	2474	9981		0.69	No
SLV 7	ini.	3864.04	-14335	0.97	0	3638	6344	7843	2474	9981		0.7	No
SLV 7	fin.	-9093.62	-24496	0.97	0	3638	6344	7843	2474	9981		0.41	No
SLD 12	ini.	2164.17	-8234	0.97	0	3638	6344	7843	2474	9981		1.21	Si
SLD 12	fin.	-5253.96	-14490	0.97	0	3638	6344	7843	2474	9981		0.69	No
SLD 8	ini.	2060.75	-7855	0.97	0	3638	6344	7843	2474	9981		1.27	Si
SLD 8	fin.	-5038.43	-13945	0.97	0	3638	6344	7843	2474	9981		0.72	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.359	SLV 12	No
V_SLV	0.383	SLV 12	No
PF_SLU	1.002	SLU 83	Si
V_SLU	0.741	SLU 83	No

Trave di accoppiamento 18

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-12.888	6.576	-1.3	0.7	2	-11.888	6.576	-1.3	0.7	2	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	1668.57	-9575	-0.0001777	0.0001872	0.0035	2		10722.86	10722.86	No	6.43	Si
SLU 75	fin.	369.9	-9106	-0.0000371	0.0001872	0.0035	2		10722.86	10722.86	No	28.99	Si
SLU 83	ini.	1743.5	-9973	-0.0001864	0.0001872	0.0035	2		10722.86	10722.86	No	6.15	Si
SLU 83	fin.	361.97	-9470	-0.0000363	0.0001872	0.0035	2		10722.86	10722.86	No	29.62	Si
SLU 79	ini.	1706.86	-9798	-0.0001821	0.0001872	0.0035	2		10722.86	10722.86	No	6.28	Si
SLU 79	fin.	318.46	-9286	-0.0000319	0.0001872	0.0035	2		10722.86	10722.86	No	33.67	Si
SLU 84	ini.	1731.07	-9828	-0.0001849	0.0001872	0.0035	2		10722.86	10722.86	No	6.19	Si
SLU 84	fin.	389.93	-9345	-0.0000392	0.0001872	0.0035	2		10722.86	10722.86	No	27.5	Si
SLU 80	ini.	1694.43	-9654	-0.0001807	0.0001872	0.0035	2		10722.86	10722.86	No	6.33	Si
SLU 80	fin.	346.43	-9161	-0.0000347	0.0001872	0.0035	2		10722.86	10722.86	No	30.95	Si
SLU 78	ini.	1708.63	-9730	-0.0001823	0.0001872	0.0035	2		10722.86	10722.86	No	6.28	Si
SLU 78	fin.	350.75	-9233	-0.0000352	0.0001872	0.0035	2		10722.86	10722.86	No	30.57	Si
SLU 82	ini.	1691.01	-9674	-0.0001803	0.0001872	0.0035	2		10722.86	10722.86	No	6.34	Si
SLU 82	fin.	409.08	-9218	-0.0000411	0.0001872	0.0035	2		10722.86	10722.86	No	26.21	Si
SLU 77	ini.	1721.06	-9874	-0.0001838	0.0001872	0.0035	2		10722.86	10722.86	No	6.23	Si
SLU 77	fin.	322.78	-9358	-0.0000323	0.0001872	0.0035	2		10722.86	10722.86	No	33.22	Si
SLU 74	ini.	1681	-9720	-0.0001791	0.0001872	0.0035	2		10722.86	10722.86	No	6.38	Si
SLU 74	fin.	341.93	-9231	-0.0000343	0.0001872	0.0035	2		10722.86	10722.86	No	31.36	Si
SLU 81	ini.	1703.44	-9818	-0.0001817	0.0001872	0.0035	2		10722.86	10722.86	No	6.29	Si
SLU 81	fin.	381.12	-9342	-0.0000383	0.0001872	0.0035	2		10722.86	10722.86	No	28.14	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	1694.43	-3044	2	0	6250	7930	13475	5100	14180	No	4.66	Si
SLU 80	fin.	346.43	-698	2	0	6250	7930	13475	5100	14180	No	20.32	Si
SLU 84	ini.	1731.07	-3088	2	0	6250	7930	13475	5100	14180	No	4.59	Si
SLU 84	fin.	389.93	-626	2	0	6250	7930	13475	5100	14180	No	22.67	Si
SLU 77	ini.	1721.06	-3156	2	0	6250	7930	13475	5100	14180	No	4.49	Si
SLU 77	fin.	322.78	-732	2	0	6250	7930	13475	5100	14180	No	19.37	Si
SLU 82	ini.	1691.01	-2974	2	0	6250	7930	13475	5100	14180	No	4.77	Si
SLU 82	fin.	409.08	-566	2	0	6250	7930	13475	5100	14180	No	25.04	Si
SLU 78	ini.	1708.63	-3074	2	0	6250	7930	13475	5100	14180	No	4.61	Si
SLU 78	fin.	350.75	-695	2	0	6250	7930	13475	5100	14180	No	20.39	Si
SLU 81	ini.	1703.44	-3057	2	0	6250	7930	13475	5100	14180	No	4.64	Si
SLU 81	fin.	381.12	-603	2	0	6250	7930	13475	5100	14180	No	23.51	Si
SLU 83	ini.	1743.5	-3170	2	0	6250	7930	13475	5100	14180	No	4.47	Si
SLU 83	fin.	361.97	-662	2	0	6250	7930	13475	5100	14180	No	21.41	Si
SLU 79	ini.	1706.86	-3126	2	0	6250	7930	13475	5100	14180	No	4.54	Si
SLU 79	fin.	318.46	-734	2	0	6250	7930	13475	5100	14180	No	19.31	Si
SLU 75	ini.	1668.57	-2960	2	0	6250	7930	13475	5100	14180	No	4.79	Si
SLU 75	fin.	369.9	-636	2	0	6250	7930	13475	5100	14180	No	22.29	Si
SLU 74	ini.	1681	-3043	2	0	6250	7930	13475	5100	14180	No	4.66	Si
SLU 74	fin.	341.93	-673	2	0	6250	7930	13475	5100	14180	No	21.07	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	-4180.76	-7875	-0.0004839	0.0002807	0.0035	2		15648.46	15648.46		3.74	Si
SLV 3	fin.	4741.59	-12922	-0.0005638	0.0002807	0.0035	2		15635.95	15635.95		3.3	Si
SLV 14	ini.	6406.53	-5491	-0.0008212	0.0002807	0.0035	2		15635.95	15635.95		2.44	Si
SLV 14	fin.	-4271.44	187	-0.0004965	0.0002807	0.0035	2		15648.46	15648.46		3.66	Si
SLV 16	ini.	7185.23	-13779	-0.0009535	0.0002807	0.0035	2		15635.95	15635.95		2.18	Si
SLV 16	fin.	-5789.93	-6986	-0.0007213	0.0002807	0.0035	2		15648.46	15648.46		2.7	Si
SLV 15	ini.	6510.8	-13424	-0.0008385	0.0002807	0.0035	2		15635.95	15635.95		2.4	Si
SLV 15	fin.	-5223.3	-7522	-0.0006343	0.0002807	0.0035	2		15648.46	15648.46		3	Si
SLV 1	ini.	-4959.45	414	-0.000595	0.0002807	0.0035	2		15648.46	15648.46		3.16	Si
SLV 1	fin.	6260.07	-5749	-0.0007972	0.0002807	0.0035	2		15635.95	15635.95		2.5	Si
SLV 4	ini.	-3506.33	-8229	-0.0003934	0.0002807	0.0035	2		15648.46	15648.46		4.46	Si
SLV 4	fin.	4174.95	-12385	-0.0004836	0.0002807	0.0035	2		15635.95	15635.95		3.75	Si
SLV 12	ini.	4241.48	-21448	-0.0004928	0.0002807	0.0035	2		15635.95	15635.95		3.69	Si
SLV 12	fin.	-3981.22	-17331	-0.0004566	0.0002807	0.0035	2		15648.46	15648.46		3.93	Si
SLV 13	ini.	5732.1	-5136	-0.000713	0.0002807	0.0035	2		15635.95	15635.95		2.73	Si
SLV 13	fin.	-3704.81	-350	-0.0004195	0.0002807	0.0035	2		15648.46	15648.46		4.22	Si
SLV 5	ini.	-2015.7	8083	-0.0002124	0.0002807	0.0035	2		15648.46	15648.46		7.76	Si
SLV 5	fin.	4451.36	4596	-0.0005223	0.0002807	0.0035	2		15635.95	15635.95		3.51	Si
SLV 2	ini.	-4285.02	59	-0.0004984	0.0002807	0.0035	2		15648.46	15648.46		3.65	Si
SLV 2	fin.	5693.44	-5213	-0.0007069	0.0002807	0.0035	2		15635.95	15635.95		2.75	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	-4959.45	17216	2	0	6643	7930	20213	5100	14573		0.85	No
SLV 1	fin.	6260.07	17158	2	0	6643	7930	20213	5100	14573		0.85	No
SLV 12	ini.	4241.48	-15130	2	0	6643	7930	20213	5100	14573		0.96	No
SLV 12	fin.	-3981.22	-9344	2	0	6643	7930	20213	5100	14573		1.56	Si
SLV 14	ini.	6406.53	-16447	2	0	6643	7930	20213	5100	14573		0.89	No
SLV 14	fin.	-4271.44	-16044	2	0	6643	7930	20213	5100	14573		0.91	No
SLV 4	ini.	-3506.33	10458	2	0	6643	7930	20213	5100	14573		1.39	Si
SLV 4	fin.	4174.95	12984	2	0	6643	7930	20213	5100	14573		1.12	Si
SLV 11	ini.	3787.41	-13710	2	0	6643	7930	20213	5100	14573		1.06	Si
SLV 11	fin.	-3599.73	-7942	2	0	6643	7930	20213	5100	14573		1.83	Si
SLV 16	ini.	7185.23	-21096	2	0	6643	7930	20213	5100	14573		0.69	No
SLV 16	fin.	-5789.93	-18136	2	0	6643	7930	20213	5100	14573		0.8	No
SLV 13	ini.	5732.1	-14338	2	0	6643	7930	20213	5100	14573		1.02	Si
SLV 13	fin.	-3704.81	-13962	2	0	6643	7930	20213	5100	14573		1.04	Si
SLV 3	ini.	-4180.76	12568	2	0	6643	7930	20213	5100	14573		1.16	Si
SLV 3	fin.	4741.59	15066	2	0	6643	7930	20213	5100	14573		0.97	No
SLV 15	ini.	6510.8	-18986	2	0	6643	7930	20213	5100	14573		0.77	No
SLV 15	fin.	-5223.3	-16054	2	0	6643	7930	20213	5100	14573		0.91	No
SLV 2	ini.	-4285.02	15107	2	0	6643	7930	20213	5100	14573		0.96	No
SLV 2	fin.	5693.44	15076	2	0	6643	7930	20213	5100	14573		0.97	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.176	SLV 16	Si
V_SLV	0.691	SLV 16	No
PF_SLU	6.15	SLU 83	Si
V_SLU	4.473	SLU 83	Si

Trave di accoppiamento 19

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-12.888	6.576	1.1	1.67	0.57	-11.888	6.576	1.1	1.67	0.57	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-293.68	-941	-0.0004302	0.0001872	0.0035	0.57		912.83	912.83	No	3.11	Si
SLU 83	fin.	-606.57	-1764	-0.0010704	0.0001872	0.0035	0.57		912.83	912.83	No	1.5	Si
SLU 78	ini.	-280.98	-911	-0.0004081	0.0001872	0.0035	0.57		912.83	912.83	No	3.25	Si
SLU 78	fin.	-588.73	-1720	-0.0010284	0.0001872	0.0035	0.57		912.83	912.83	No	1.55	Si
SLU 80	ini.	-279.33	-903	-0.0004052	0.0001872	0.0035	0.57		912.83	912.83	No	3.27	Si
SLU 80	fin.	-584.71	-1706	-0.001019	0.0001872	0.0035	0.57		912.83	912.83	No	1.56	Si
SLU 81	ini.	-295.81	-941	-0.000434	0.0001872	0.0035	0.57		912.83	912.83	No	3.09	Si
SLU 81	fin.	-595.49	-1729	-0.0010442	0.0001872	0.0035	0.57		912.83	912.83	No	1.53	Si
SLU 82	ini.	-297.78	-941	-0.0004374	0.0001872	0.0035	0.57		912.83	912.83	No	3.07	Si
SLU 82	fin.	-588.68	-1706	-0.0010283	0.0001872	0.0035	0.57		912.83	912.83	No	1.55	Si
SLU 79	ini.	-277.36	-903	-0.0004018	0.0001872	0.0035	0.57		912.83	912.83	No	3.29	Si
SLU 79	fin.	-591.52	-1729	-0.0010349	0.0001872	0.0035	0.57		912.83	912.83	No	1.54	Si
SLU 84	ini.	-295.65	-941	-0.0004337	0.0001872	0.0035	0.57		912.83	912.83	No	3.09	Si
SLU 84	fin.	-599.76	-1741	-0.0010542	0.0001872	0.0035	0.57		912.83	912.83	No	1.52	Si
SLU 75	ini.	-283.11	-911	-0.0004118	0.0001872	0.0035	0.57		912.83	912.83	No	3.22	Si
SLU 75	fin.	-577.66	-1685	-0.0010028	0.0001872	0.0035	0.57		912.83	912.83	No	1.58	Si
SLU 77	ini.	-279.01	-911	-0.0004047	0.0001872	0.0035	0.57		912.83	912.83	No	3.27	Si
SLU 77	fin.	-595.54	-1743	-0.0010443	0.0001872	0.0035	0.57		912.83	912.83	No	1.53	Si
SLU 74	ini.	-281.14	-910	-0.0004084	0.0001872	0.0035	0.57		912.83	912.83	No	3.25	Si
SLU 74	fin.	-584.47	-1708	-0.0010185	0.0001872	0.0035	0.57		912.83	912.83	No	1.56	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 84	ini.	-295.65	1756	0.57	0	1460	4520	3840	1454	5294	No	3.02	Si
SLU 84	fin.	-599.76	-2814	0.57	0	1460	4520	3840	1454	5294	No	1.88	Si
SLU 75	ini.	-283.11	1678	0.57	0	1460	4520	3840	1454	5294	No	3.15	Si
SLU 75	fin.	-577.66	-2704	0.57	0	1460	4520	3840	1454	5294	No	1.96	Si
SLU 78	ini.	-280.98	1675	0.57	0	1460	4520	3840	1454	5294	No	3.16	Si
SLU 78	fin.	-588.73	-2746	0.57	0	1460	4520	3840	1454	5294	No	1.93	Si
SLU 79	ini.	-277.36	1661	0.57	0	1460	4520	3840	1454	5294	No	3.19	Si
SLU 79	fin.	-591.52	-2753	0.57	0	1460	4520	3840	1454	5294	No	1.92	Si
SLU 83	ini.	-293.68	1750	0.57	0	1460	4520	3840	1454	5294	No	3.03	Si
SLU 83	fin.	-606.57	-2838	0.57	0	1460	4520	3840	1454	5294	No	1.87	Si
SLU 77	ini.	-279.01	1670	0.57	0	1460	4520	3840	1454	5294	No	3.17	Si
SLU 77	fin.	-595.54	-2770	0.57	0	1460	4520	3840	1454	5294	No	1.91	Si
SLU 82	ini.	-297.78	1759	0.57	0	1460	4520	3840	1454	5294	No	3.01	Si
SLU 82	fin.	-588.68	-2772	0.57	0	1460	4520	3840	1454	5294	No	1.91	Si
SLU 74	ini.	-281.14	1673	0.57	0	1460	4520	3840	1454	5294	No	3.17	Si
SLU 74	fin.	-584.47	-2728	0.57	0	1460	4520	3840	1454	5294	No	1.94	Si
SLU 81	ini.	-295.81	1753	0.57	0	1460	4520	3840	1454	5294	No	3.02	Si
SLU 81	fin.	-595.49	-2796	0.57	0	1460	4520	3840	1454	5294	No	1.89	Si
SLU 80	ini.	-279.33	1667	0.57	0	1460	4520	3840	1454	5294	No	3.18	Si
SLU 80	fin.	-584.71	-2729	0.57	0	1460	4520	3840	1454	5294	No	1.94	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	1203.06	3143	-0.0032573	0.0002807	0.0035	0.57		1278.06	1278.06		1.06	Si
SLV 14	fin.	-1620.91	-4111	-0.0053637	0.0002807	0.0035	0.57		1281.66	1281.66		0.79	No
SLV 4	ini.	-1417.7	-3957	-0.0044051	0.0002807	0.0035	0.57		1281.66	1281.66		0.9	No
SLV 4	fin.	669.94	1380	-0.0011512	0.0002807	0.0035	0.57		1278.06	1278.06		1.91	Si
SLV 13	ini.	1032.3	2704	-0.0023177	0.0002807	0.0035	0.57		1278.06	1278.06		1.24	Si
SLV 13	fin.	-1452.88	-3679	-0.0045776	0.0002807	0.0035	0.57		1281.66	1281.66		0.88	No
SLV 1	ini.	-1721.98	-4371	-0.0058156	0.0002807	0.0035	0.57		1281.66	1281.66		0.74	No
SLV 1	fin.	1224.93	3230	-0.0033893	0.0002807	0.0035	0.57		1278.06	1278.06		1.04	Si
SLV 2	ini.	-1551.21	-3932	-0.005044	0.0002807	0.0035	0.57		1281.66	1281.66		0.83	No
SLV 2	fin.	1056.9	2799	-0.0024334	0.0002807	0.0035	0.57		1278.06	1278.06		1.21	Si
SLV 3	ini.	-1588.46	-4396	-0.0052158	0.0002807	0.0035	0.57		1281.66	1281.66		0.81	No
SLV 3	fin.	837.97	1812	-0.0015969	0.0002807	0.0035	0.57		1278.06	1278.06		1.53	Si
SLV 12	ini.	500.45	541	-0.0007829	0.0002807	0.0035	0.57		1278.06	1278.06		2.55	Si
SLV 12	fin.	-1494.65	-4695	-0.0047783	0.0002807	0.0035	0.57		1281.66	1281.66		0.86	No
SLV 11	ini.	385.48	245	-0.0005656	0.0002807	0.0035	0.57		1278.06	1278.06		3.32	Si
SLV 11	fin.	-1381.52	-4405	-0.0042238	0.0002807	0.0035	0.57		1281.66	1281.66		0.93	No
SLV 15	ini.	1165.81	2679	-0.0030293	0.0002807	0.0035	0.57		1278.06	1278.06		1.1	Si
SLV 15	fin.	-1839.84	-5098	-0.0063329	0.0002807	0.0035	0.57		1281.66	1281.66		0.7	No
SLV 16	ini.	1336.57	3117	-0.004012	0.0002807	0.0035	0.57		1278.06	1278.06		0.96	No
SLV 16	fin.	-2007.87	-5529	-0.0070542	0.0002807	0.0035	0.57		1281.66	1281.66		0.64	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	-1721.98	6052	0.57	0	1638	4520	5761	1454	6158		1.02	Si
SLV 1	fin.	1224.93	3906	0.57	0	1638	4520	5761	1454	6158		1.58	Si
SLV 11	ini.	385.48	133	0.57	0	1638	4520	5761	1454	6158		46.33	Si
SLV 11	fin.	-1381.52	-5362	0.57	0	1638	4520	5761	1454	6158		1.15	Si
SLV 16	ini.	1336.57	-3777	0.57	0	1638	4520	5761	1454	6158		1.63	Si
SLV 16	fin.	-2007.87	-7566	0.57	0	1638	4520	5761	1454	6158		0.81	No
SLV 13	ini.	1032.3	-3329	0.57	0	1638	4520	5761	1454	6158		1.85	Si
SLV 13	fin.	-1452.88	-5587	0.57	0	1638	4520	5761	1454	6158		1.1	Si
SLV 14	ini.	1203.06	-3902	0.57	0	1638	4520	5761	1454	6158		1.58	Si
SLV 14	fin.	-1620.91	-6181	0.57	0	1638	4520	5761	1454	6158		1	No
SLV 3	ini.	-1588.46	6178	0.57	0	1638	4520	5761	1454	6158		1	No
SLV 3	fin.	837.97	2521	0.57	0	1638	4520	5761	1454	6158		2.44	Si
SLV 4	ini.	-1417.7	5605	0.57	0	1638	4520	5761	1454	6158		1.1	Si
SLV 4	fin.	669.94	1926	0.57	0	1638	4520	5761	1454	6158		3.2	Si
SLV 12	ini.	500.45	-253	0.57	0	1638	4520	5761	1454	6158		24.35	Si
SLV 12	fin.	-1494.65	-5763	0.57	0	1638	4520	5761	1454	6158		1.07	Si
SLV 15	ini.	1165.81	-3204	0.57	0	1638	4520	5761	1454	6158		1.92	Si
SLV 15	fin.	-1839.84	-6972	0.57	0	1638	4520	5761	1454	6158		0.88	No
SLV 2	ini.	-1551.21	5479	0.57	0	1638	4520	5761	1454	6158		1.12	Si
SLV 2	fin.	1056.9	3311	0.57	0	1638	4520	5761	1454	6158		1.86	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.638	SLV 16	No
V_SLV	0.814	SLV 16	No
PF_SLU	1.505	SLU 83	Si
V_SLU	1.865	SLU 83	Si

Trave di accoppiamento 20

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-8.008	6.576	-1.3	0.7	2	-7.008	6.576	-1.3	0.7	2	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-1733.87	-6625	-0.0001851	0.0001872	0.0035	2		10737.13	10737.13	No	6.19	Si
SLU 75	fin.	4085.72	-8477	-0.0004993	0.0001872	0.0035	2		10722.86	10722.86	No	2.62	Si
SLU 77	ini.	-1824.81	-6789	-0.0001958	0.0001872	0.0035	2		10737.13	10737.13	No	5.88	Si
SLU 77	fin.	4181.45	-8723	-0.0005135	0.0001872	0.0035	2		10722.86	10722.86	No	2.56	Si
SLU 81	ini.	-1770.45	-6833	-0.0001894	0.0001872	0.0035	2		10737.13	10737.13	No	6.06	Si
SLU 81	fin.	4178.1	-8731	-0.000513	0.0001872	0.0035	2		10722.86	10722.86	No	2.57	Si
SLU 83	ini.	-1812.89	-6919	-0.0001944	0.0001872	0.0035	2		10737.13	10737.13	No	5.92	Si
SLU 83	fin.	4240.59	-8861	-0.0005224	0.0001872	0.0035	2		10722.86	10722.86	No	2.53	Si
SLU 78	ini.	-1776.31	-6710	-0.0001901	0.0001872	0.0035	2		10737.13	10737.13	No	6.04	Si
SLU 78	fin.	4148.21	-8607	-0.0005086	0.0001872	0.0035	2		10722.86	10722.86	No	2.58	Si
SLU 74	ini.	-1782.37	-6703	-0.0001908	0.0001872	0.0035	2		10737.13	10737.13	No	6.02	Si
SLU 74	fin.	4118.96	-8594	-0.0005042	0.0001872	0.0035	2		10722.86	10722.86	No	2.6	Si
SLU 82	ini.	-1721.95	-6755	-0.0001837	0.0001872	0.0035	2		10737.13	10737.13	No	6.24	Si
SLU 82	fin.	4144.86	-8614	-0.0005081	0.0001872	0.0035	2		10722.86	10722.86	No	2.59	Si
SLU 84	ini.	-1764.39	-6841	-0.0001887	0.0001872	0.0035	2		10737.13	10737.13	No	6.09	Si
SLU 84	fin.	4207.35	-8744	-0.0005174	0.0001872	0.0035	2		10722.86	10722.86	No	2.55	Si
SLU 79	ini.	-1820.43	-6731	-0.0001953	0.0001872	0.0035	2		10737.13	10737.13	No	5.9	Si
SLU 79	fin.	4154.01	-8657	-0.0005094	0.0001872	0.0035	2		10722.86	10722.86	No	2.58	Si
SLU 80	ini.	-1771.93	-6653	-0.0001896	0.0001872	0.0035	2		10737.13	10737.13	No	6.06	Si
SLU 80	fin.	4120.77	-8541	-0.0005045	0.0001872	0.0035	2		10722.86	10722.86	No	2.6	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-1733.87	6732	2	0	6250	7930	13475	5100	14180	No	2.11	Si
SLU 75	fin.	4085.72	9465	2	0	6250	7930	13475	5100	14180	No	1.5	Si
SLU 78	ini.	-1776.31	6853	2	0	6250	7930	13475	5100	14180	No	2.07	Si
SLU 78	fin.	4148.21	9646	2	0	6250	7930	13475	5100	14180	No	1.47	Si
SLU 79	ini.	-1820.43	6922	2	0	6250	7930	13475	5100	14180	No	2.05	Si
SLU 79	fin.	4154.01	9733	2	0	6250	7930	13475	5100	14180	No	1.46	Si
SLU 74	ini.	-1782.37	6826	2	0	6250	7930	13475	5100	14180	No	2.08	Si
SLU 74	fin.	4118.96	9614	2	0	6250	7930	13475	5100	14180	No	1.47	Si
SLU 83	ini.	-1812.89	6969	2	0	6250	7930	13475	5100	14180	No	2.03	Si
SLU 83	fin.	4240.59	9900	2	0	6250	7930	13475	5100	14180	No	1.43	Si
SLU 81	ini.	-1770.45	6847	2	0	6250	7930	13475	5100	14180	No	2.07	Si
SLU 81	fin.	4178.1	9719	2	0	6250	7930	13475	5100	14180	No	1.46	Si
SLU 80	ini.	-1771.93	6827	2	0	6250	7930	13475	5100	14180	No	2.08	Si
SLU 80	fin.	4120.77	9584	2	0	6250	7930	13475	5100	14180	No	1.48	Si
SLU 84	ini.	-1764.39	6874	2	0	6250	7930	13475	5100	14180	No	2.06	Si
SLU 84	fin.	4207.35	9751	2	0	6250	7930	13475	5100	14180	No	1.45	Si
SLU 77	ini.	-1824.81	6948	2	0	6250	7930	13475	5100	14180	No	2.04	Si
SLU 77	fin.	4181.45	9794	2	0	6250	7930	13475	5100	14180	No	1.45	Si
SLU 82	ini.	-1721.95	6752	2	0	6250	7930	13475	5100	14180	No	2.1	Si
SLU 82	fin.	4144.86	9571	2	0	6250	7930	13475	5100	14180	No	1.48	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 3	ini.	-4187.08	-2832	-0.0004848	0.0002807	0.0035	2		15648.46	15648.46		3.74	Si
SLD 3	fin.	5084.07	-7581	-0.0006141	0.0002807	0.0035	2		15635.95	15635.95		3.08	Si
SLV 14	ini.	5668.64	-8427	-0.0007031	0.0002807	0.0035	2		15635.95	15635.95		2.76	Si
SLV 14	fin.	-2524.72	-1586	-0.0002714	0.0002807	0.0035	2		15648.46	15648.46		6.2	Si
SLV 7	ini.	-7806.76	-9995	-0.0010641	0.0002807	0.0035	2		15648.46	15648.46		2	Si
SLV 7	fin.	7623.74	-17322	-0.0010318	0.0002807	0.0035	2		15635.95	15635.95		2.05	Si
SLV 2	ini.	-4364.54	3167	-0.0005095	0.0002807	0.0035	2		15648.46	15648.46		3.59	Si
SLV 2	fin.	5514.19	-2852	-0.0006792	0.0002807	0.0035	2		15635.95	15635.95		2.84	Si
SLV 8	ini.	-7120.41	-10395	-0.0009412	0.0002807	0.0035	2		15648.46	15648.46		2.2	Si
SLV 8	fin.	7189.96	-16900	-0.0009543	0.0002807	0.0035	2		15635.95	15635.95		2.17	Si
SLV 3	ini.	-8199.79	-670	-0.0011379	0.0002807	0.0035	2		15648.46	15648.46		1.91	Si
SLV 3	fin.	8181.93	-10120	-0.0011358	0.0002807	0.0035	2		15635.95	15635.95		1.91	Si
SLV 1	ini.	-5383.97	3761	-0.0006586	0.0002807	0.0035	2		15648.46	15648.46		2.91	Si
SLV 1	fin.	6158.49	-3479	-0.0007807	0.0002807	0.0035	2		15635.95	15635.95		2.54	Si
SLV 4	ini.	-7180.36	-1264	-0.0009516	0.0002807	0.0035	2		15648.46	15648.46		2.18	Si
SLV 4	fin.	7537.63	-9493	-0.0010162	0.0002807	0.0035	2		15635.95	15635.95		2.07	Si
SLV 11	ini.	-4796.81	-13473	-0.0005713	0.0002807	0.0035	2		15648.46	15648.46		3.26	Si
SLV 11	fin.	5212.07	-16942	-0.0006332	0.0002807	0.0035	2		15635.95	15635.95		3	Si
SLV 10	ini.	5275.61	897	-0.0006428	0.0002807	0.0035	2		15635.95	15635.95		2.96	Si
SLV 10	fin.	-1966.53	5616	-0.0002069	0.0002807	0.0035	2		15648.46	15648.46		7.96	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 8	ini.	-7120.41	18106	2	0	6643	7930	20213	5100	14573		0.8	No
SLV 8	fin.	7189.96	24408	2	0	6643	7930	20213	5100	14573		0.6	No
SLV 4	ini.	-7180.36	21815	2	0	6643	7930	20213	5100	14573		0.67	No
SLV 4	fin.	7537.63	23616	2	0	6643	7930	20213	5100	14573		0.62	No
SLV 7	ini.	-7806.76	19969	2	0	6643	7930	20213	5100	14573		0.73	No

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 7	fin.	7623.74	26287	2	0	6643	7930	20213	5100	14573		0.55	No
SLV 1	ini.	-5383.97	18845	2	0	6643	7930	20213	5100	14573		0.77	No
SLV 1	fin.	6158.49	17677	2	0	6643	7930	20213	5100	14573		0.82	No
SLV 3	ini.	-8199.79	24583	2	0	6643	7930	20213	5100	14573		0.59	No
SLV 3	fin.	8181.93	26408	2	0	6643	7930	20213	5100	14573		0.55	No
SLV 2	ini.	-4364.54	16077	2	0	6643	7930	20213	5100	14573		0.91	No
SLV 2	fin.	5514.19	14885	2	0	6643	7930	20213	5100	14573		0.98	No
SLV 11	ini.	-4796.81	10664	2	0	6643	7930	20213	5100	14573		1.37	Si
SLV 11	fin.	5212.07	17843	2	0	6643	7930	20213	5100	14573		0.82	No
SLV 14	ini.	5668.64	-14940	2	0	6643	7930	20213	5100	14573		0.98	No
SLV 14	fin.	-2524.72	-13262	2	0	6643	7930	20213	5100	14573		1.1	Si
SLD 3	ini.	-4187.08	13176	2	0	6643	7930	20213	5100	14573		1.11	Si
SLD 3	fin.	5084.07	14916	2	0	6643	7930	20213	5100	14573		0.98	No
SLV 12	ini.	-4110.46	8800	2	0	6643	7930	20213	5100	14573		1.66	Si
SLV 12	fin.	4778.29	15963	2	0	6643	7930	20213	5100	14573		0.91	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.908	SLV 3	Si
V_SLV	0.552	SLV 3	No
PF_SLU	2.529	SLU 83	Si
V_SLU	1.432	SLU 83	Si

Trave di accoppiamento 21

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-8.008	6.576	1.1	1.67	0.57	-7.008	6.576	1.1	1.67	0.57	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-1133.23	-3261	-0.0031187	0.0001872	0.0035	0.57		912.83	912.83	No	0.81	No
SLU 79	fin.	508.71	1007	-0.0008525	0.0001872	0.0035	0.57		908.75	908.75	No	1.79	Si
SLU 84	ini.	-1141.38	-3290	-0.0031719	0.0001872	0.0035	0.57		912.83	912.83	No	0.8	No
SLU 84	fin.	502.63	984	-0.0008394	0.0001872	0.0035	0.57		908.75	908.75	No	1.81	Si
SLU 83	ini.	-1153.96	-3327	-0.0032541	0.0001872	0.0035	0.57		912.83	912.83	No	0.79	No
SLU 83	fin.	511.83	1003	-0.0008593	0.0001872	0.0035	0.57		908.75	908.75	No	1.78	Si
SLU 80	ini.	-1120.65	-3224	-0.0030373	0.0001872	0.0035	0.57		912.83	912.83	No	0.81	No
SLU 80	fin.	499.51	988	-0.0008327	0.0001872	0.0035	0.57		908.75	908.75	No	1.82	Si
SLU 77	ini.	-1140.31	-3282	-0.0031649	0.0001872	0.0035	0.57		912.83	912.83	No	0.8	No
SLU 77	fin.	510.48	1008	-0.0008563	0.0001872	0.0035	0.57		908.75	908.75	No	1.78	Si
SLU 78	ini.	-1127.73	-3245	-0.003083	0.0001872	0.0035	0.57		912.83	912.83	No	0.81	No
SLU 78	fin.	501.28	989	-0.0008365	0.0001872	0.0035	0.57		908.75	908.75	No	1.81	Si
SLU 74	ini.	-1123.12	-3232	-0.0030532	0.0001872	0.0035	0.57		912.83	912.83	No	0.81	No
SLU 74	fin.	500.13	988	-0.000834	0.0001872	0.0035	0.57		908.75	908.75	No	1.82	Si
SLU 82	ini.	-1124.18	-3239	-0.00306	0.0001872	0.0035	0.57		912.83	912.83	No	0.81	No
SLU 82	fin.	492.28	964	-0.0008173	0.0001872	0.0035	0.57		908.75	908.75	No	1.85	Si
SLU 81	ini.	-1136.76	-3276	-0.0031417	0.0001872	0.0035	0.57		912.83	912.83	No	0.8	No
SLU 81	fin.	501.47	983	-0.0008369	0.0001872	0.0035	0.57		908.75	908.75	No	1.81	Si
SLU 75	ini.	-1110.54	-3194	-0.002973	0.0001872	0.0035	0.57		912.83	912.83	No	0.82	No
SLU 75	fin.	490.93	969	-0.0008144	0.0001872	0.0035	0.57		908.75	908.75	No	1.85	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-1110.54	4330	0.57	0	1460	4520	3840	1454	5294	No	1.22	Si
SLU 75	fin.	490.93	1263	0.57	0	1460	4520	3840	1454	5294	No	4.19	Si
SLU 80	ini.	-1120.65	4365	0.57	0	1460	4520	3840	1454	5294	No	1.21	Si
SLU 80	fin.	499.51	1294	0.57	0	1460	4520	3840	1454	5294	No	4.09	Si
SLU 77	ini.	-1140.31	4437	0.57	0	1460	4520	3840	1454	5294	No	1.19	Si
SLU 77	fin.	510.48	1328	0.57	0	1460	4520	3840	1454	5294	No	3.99	Si
SLU 84	ini.	-1141.38	4446	0.57	0	1460	4520	3840	1454	5294	No	1.19	Si
SLU 84	fin.	502.63	1296	0.57	0	1460	4520	3840	1454	5294	No	4.09	Si
SLU 79	ini.	-1133.23	4410	0.57	0	1460	4520	3840	1454	5294	No	1.2	Si
SLU 79	fin.	508.71	1325	0.57	0	1460	4520	3840	1454	5294	No	4	Si
SLU 83	ini.	-1153.96	4490	0.57	0	1460	4520	3840	1454	5294	No	1.18	Si
SLU 83	fin.	511.83	1327	0.57	0	1460	4520	3840	1454	5294	No	3.99	Si
SLU 74	ini.	-1123.12	4374	0.57	0	1460	4520	3840	1454	5294	No	1.21	Si
SLU 74	fin.	500.13	1295	0.57	0	1460	4520	3840	1454	5294	No	4.09	Si
SLU 82	ini.	-1124.18	4383	0.57	0	1460	4520	3840	1454	5294	No	1.21	Si
SLU 82	fin.	492.28	1263	0.57	0	1460	4520	3840	1454	5294	No	4.19	Si
SLU 81	ini.	-1136.76	4428	0.57	0	1460	4520	3840	1454	5294	No	1.2	Si
SLU 81	fin.	501.47	1294	0.57	0	1460	4520	3840	1454	5294	No	4.09	Si
SLU 78	ini.	-1127.73	4393	0.57	0	1460	4520	3840	1454	5294	No	1.21	Si
SLU 78	fin.	501.28	1297	0.57	0	1460	4520	3840	1454	5294	No	4.08	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 8	ini.	-2297.17	-6685	-0.0082597	0.0002807	0.0035	0.57		1281.66	1281.66		0.56	No
SLV 8	fin.	1580.37	3235	-0.0051997	0.0002807	0.0035	0.57		1278.06	1278.06		0.81	No
SLV 2	ini.	-1437.87	-3772	-0.0045044	0.0002807	0.0035	0.57		1281.66	1281.66		0.89	No
SLV 2	fin.	1266.18	3188	-0.0036291	0.0002807	0.0035	0.57		1278.06	1278.06		1.01	Si
SLD 3	ini.	-1462.08	-4063	-0.0046221	0.0002807	0.0035	0.57		1281.66	1281.66		0.88	No
SLD 3	fin.	1074.86	2464	-0.002522	0.0002807	0.0035	0.57		1278.06	1278.06		1.19	Si
SLV 11	ini.	-1756.44	-5288	-0.0059671	0.0002807	0.0035	0.57		1281.66	1281.66		0.73	No
SLV 11	fin.	958	1668	-0.0020049	0.0002807	0.0035	0.57		1278.06	1278.06		1.33	Si
SLV 12	ini.	-1609.17	-4899	-0.0053104	0.0002807	0.0035	0.57		1281.66	1281.66		0.8	No
SLV 12	fin.	790.77	1247	-0.0014606	0.0002807	0.0035	0.57		1278.06	1278.06		1.62	Si
SLV 4	ini.	-2188.43	-6034	-0.0078108	0.0002807	0.0035	0.57		1281.66	1281.66		0.59	No
SLV 4	fin.	1817.64	4233	-0.0062589	0.0002807	0.0035	0.57		1278.06	1278.06		0.7	No
SLV 7	ini.	-2444.43	-7073	-0.0088614	0.0002807	0.0035	0.57		1281.66	1281.66		0.52	No
SLV 7	fin.	1747.6	3656	-0.0059505	0.0002807	0.0035	0.57		1278.06	1278.06		0.73	No
SLV 1	ini.	-1656.6	-4350	-0.0055247	0.0002807	0.0035	0.57		1281.66	1281.66		0.77	No
SLV 1	fin.	1514.56	3813	-0.0048931	0.0002807	0.0035	0.57		1278.06	1278.06		0.84	No
SLV 3	ini.	-2407.16	-6612	-0.0087097	0.0002807	0.0035	0.57		1281.66	1281.66		0.53	No
SLV 3	fin.	2066.01	4859	-0.0073246	0.0002807	0.0035	0.57		1278.06	1278.06		0.62	No
SLD 7	ini.	-1452.56	-4185	-0.004576	0.0002807	0.0035	0.57		1281.66	1281.66		0.88	No
SLD 7	fin.	919.03	1908	-0.0018607	0.0002807	0.0035	0.57		1278.06	1278.06		1.39	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 11	ini.	-1756.44	6482	0.57	0	1638	4520	5761	1454	6158		0.95	No
SLV 11	fin.	958	3072	0.57	0	1638	4520	5761	1454	6158		2	Si
SLV 8	ini.	-2297.17	8391	0.57	0	1638	4520	5761	1454	6158		0.73	No
SLV 8	fin.	1580.37	5241	0.57	0	1638	4520	5761	1454	6158		1.17	Si
SLV 12	ini.	-1609.17	5983	0.57	0	1638	4520	5761	1454	6158		1.03	Si
SLV 12	fin.	790.77	2484	0.57	0	1638	4520	5761	1454	6158		2.48	Si
SLV 7	ini.	-2444.43	8890	0.57	0	1638	4520	5761	1454	6158		0.69	No
SLV 7	fin.	1747.6	5830	0.57	0	1638	4520	5761	1454	6158		1.06	Si
SLD 7	ini.	-1452.56	5411	0.57	0	1638	4520	5761	1454	6158		1.14	Si
SLD 7	fin.	919.03	2913	0.57	0	1638	4520	5761	1454	6158		2.11	Si
SLD 3	ini.	-1462.08	5434	0.57	0	1638	4520	5761	1454	6158		1.13	Si
SLD 3	fin.	1074.86	3441	0.57	0	1638	4520	5761	1454	6158		1.79	Si
SLV 2	ini.	-1437.87	5355	0.57	0	1638	4520	5761	1454	6158		1.15	Si
SLV 2	fin.	1266.18	4082	0.57	0	1638	4520	5761	1454	6158		1.51	Si
SLV 4	ini.	-2188.43	7996	0.57	0	1638	4520	5761	1454	6158		0.77	No
SLV 4	fin.	1817.64	6036	0.57	0	1638	4520	5761	1454	6158		1.02	Si
SLV 1	ini.	-1656.6	6096	0.57	0	1638	4520	5761	1454	6158		1.01	Si
SLV 1	fin.	1514.56	4956	0.57	0	1638	4520	5761	1454	6158		1.24	Si
SLV 3	ini.	-2407.16	8738	0.57	0	1638	4520	5761	1454	6158		0.7	No
SLV 3	fin.	2066.01	6910	0.57	0	1638	4520	5761	1454	6158		0.89	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.524	SLV 7	No
V_SLV	0.693	SLV 7	No
PF_SLU	0.791	SLU 83	No
V_SLU	1.179	SLU 83	Si

Trave di accoppiamento 23

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-10.553	-3.284	0.75	1.67	0.92	-8.253	-3.284	0.75	1.67	0.92	2.3	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	239.09	-111	-0.0001162	0.0002246	0.0035	0.92		2236.65	2236.65	No	9.35	Si
SLU 75	fin.	-1882.72	-4479	-0.0013214	0.0002246	0.0035	0.92		2243.57	2243.57	No	1.19	Si
SLU 77	ini.	236.97	-114	-0.0001151	0.0002246	0.0035	0.92		2236.65	2236.65	No	9.44	Si
SLU 77	fin.	-1882.09	-4467	-0.0013208	0.0002246	0.0035	0.92		2243.57	2243.57	No	1.19	Si
SLU 82	ini.	252.06	-73	-0.0001228	0.0002246	0.0035	0.92		2236.65	2236.65	No	8.87	Si
SLU 82	fin.	-1968.74	-4656	-0.0014101	0.0002246	0.0035	0.92		2243.57	2243.57	No	1.14	Si
SLU 78	ini.	241.86	-120	-0.0001176	0.0002246	0.0035	0.92		2236.65	2236.65	No	9.25	Si
SLU 78	fin.	-1895.58	-4518	-0.0013344	0.0002246	0.0035	0.92		2243.57	2243.57	No	1.18	Si
SLU 81	ini.	247.17	-67	-0.0001203	0.0002246	0.0035	0.92		2236.65	2236.65	No	9.05	Si
SLU 81	fin.	-1955.26	-4605	-0.0013959	0.0002246	0.0035	0.92		2243.57	2243.57	No	1.15	Si
SLU 84	ini.	254.83	-82	-0.0001242	0.0002246	0.0035	0.92		2236.65	2236.65	No	8.78	Si
SLU 84	fin.	-1981.6	-4695	-0.0014237	0.0002246	0.0035	0.92		2243.57	2243.57	No	1.13	Si
SLU 83	ini.	249.94	-76	-0.0001217	0.0002246	0.0035	0.92		2236.65	2236.65	No	8.95	Si
SLU 83	fin.	-1968.11	-4644	-0.0014094	0.0002246	0.0035	0.92		2243.57	2243.57	No	1.14	Si
SLU 80	ini.	240.13	-114	-0.0001167	0.0002246	0.0035	0.92		2236.65	2236.65	No	9.31	Si
SLU 80	fin.	-1887.75	-4494	-0.0013265	0.0002246	0.0035	0.92		2243.57	2243.57	No	1.19	Si
SLU 79	ini.	235.24	-108	-0.0001143	0.0002246	0.0035	0.92		2236.65	2236.65	No	9.51	Si
SLU 79	fin.	-1874.27	-4443	-0.0013129	0.0002246	0.0035	0.92		2243.57	2243.57	No	1.2	Si
SLU 76	ini.	240.62	-109	-0.000117	0.0002246	0.0035	0.92		2236.65	2236.65	No	9.3	Si
SLU 76	fin.	-1883.89	-4489	-0.0013226	0.0002246	0.0035	0.92		2243.57	2243.57	No	1.19	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	249.94	2834	0.92	0	1206	7295	7439	2346	8502	No	3	Si
SLU 83	fin.	-1968.11	-7324	0.92	0	1206	7295	7439	2346	8502	No	1.16	Si
SLU 78	ini.	241.86	2730	0.92	0	1206	7295	7439	2346	8502	No	3.11	Si
SLU 78	fin.	-1895.58	-7039	0.92	0	1206	7295	7439	2346	8502	No	1.21	Si
SLU 75	ini.	239.09	2720	0.92	0	1206	7295	7439	2346	8502	No	3.13	Si
SLU 75	fin.	-1882.72	-7003	0.92	0	1206	7295	7439	2346	8502	No	1.21	Si
SLU 84	ini.	254.83	2835	0.92	0	1206	7295	7439	2346	8502	No	3	Si
SLU 84	fin.	-1981.6	-7363	0.92	0	1206	7295	7439	2346	8502	No	1.15	Si
SLU 82	ini.	252.06	2826	0.92	0	1206	7295	7439	2346	8502	No	3.01	Si
SLU 82	fin.	-1968.74	-7327	0.92	0	1206	7295	7439	2346	8502	No	1.16	Si
SLU 76	ini.	240.62	2715	0.92	0	1206	7295	7439	2346	8502	No	3.13	Si
SLU 76	fin.	-1883.89	-7007	0.92	0	1206	7295	7439	2346	8502	No	1.21	Si
SLU 79	ini.	235.24	2724	0.92	0	1206	7295	7439	2346	8502	No	3.12	Si
SLU 79	fin.	-1874.27	-6979	0.92	0	1206	7295	7439	2346	8502	No	1.22	Si
SLU 77	ini.	236.97	2729	0.92	0	1206	7295	7439	2346	8502	No	3.12	Si
SLU 77	fin.	-1882.09	-7001	0.92	0	1206	7295	7439	2346	8502	No	1.21	Si
SLU 81	ini.	247.17	2825	0.92	0	1206	7295	7439	2346	8502	No	3.01	Si
SLU 81	fin.	-1955.26	-7288	0.92	0	1206	7295	7439	2346	8502	No	1.17	Si
SLU 80	ini.	240.13	2725	0.92	0	1206	7295	7439	2346	8502	No	3.12	Si
SLU 80	fin.	-1887.75	-7017	0.92	0	1206	7295	7439	2346	8502	No	1.21	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 16	ini.	541.67	634	-0.0002721	0.0003369	0.0035	0.92		2632.15	2632.15		4.86	Si
SLD 16	fin.	-2173.23	-4977	-0.0015204	0.0003369	0.0035	0.92		2639.33	2639.33		1.21	Si
SLV 15	ini.	1125.57	1843	-0.0006312	0.0003369	0.0035	0.92		2632.15	2632.15		2.34	Si
SLV 15	fin.	-3567.65	-7856	-0.0039891	0.0003369	0.0035	0.92		2639.33	2639.33		0.74	No
SLV 16	ini.	1050.75	1617	-0.0005804	0.0003369	0.0035	0.92		2632.15	2632.15		2.51	Si
SLV 16	fin.	-3373.11	-7546	-0.0035946	0.0003369	0.0035	0.92		2639.33	2639.33		0.78	No
SLV 9	ini.	908.63	-481	-0.0004879	0.0003369	0.0035	0.92		2632.15	2632.15		2.9	Si
SLV 9	fin.	-3128.7	-9003	-0.003054	0.0003369	0.0035	0.92		2639.33	2639.33		0.84	No
SLD 15	ini.	573.5	730	-0.0002896	0.0003369	0.0035	0.92		2632.15	2632.15		4.59	Si
SLD 15	fin.	-2255.99	-5109	-0.0016119	0.0003369	0.0035	0.92		2639.33	2639.33		1.17	Si
SLD 13	ini.	673.39	503	-0.0003458	0.0003369	0.0035	0.92		2632.15	2632.15		3.91	Si
SLD 13	fin.	-2506.84	-6096	-0.0019261	0.0003369	0.0035	0.92		2639.33	2639.33		1.05	Si
SLV 14	ini.	1296.81	1059	-0.0007529	0.0003369	0.0035	0.92		2632.15	2632.15		2.03	Si
SLV 14	fin.	-3999.61	-10017	-0.0047908	0.0003369	0.0035	0.92		2639.33	2639.33		0.66	No
SLV 10	ini.	858.25	-633	-0.0004563	0.0003369	0.0035	0.92		2632.15	2632.15		3.07	Si
SLV 10	fin.	-2997.72	-8794	-0.002767	0.0003369	0.0035	0.92		2639.33	2639.33		0.88	No
SLV 13	ini.	1371.63	1285	-0.0008085	0.0003369	0.0035	0.92		2632.15	2632.15		1.92	Si
SLV 13	fin.	-4194.14	-10327	-0.0051311	0.0003369	0.0035	0.92		2639.33	2639.33		0.63	No
SLD 14	ini.	641.56	408	-0.0003277	0.0003369	0.0035	0.92		2632.15	2632.15		4.1	Si
SLD 14	fin.	-2424.08	-5964	-0.0018155	0.0003369	0.0035	0.92		2639.33	2639.33		1.09	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 14	ini.	641.56	887	0.92	0	1271	7295	11159	2346	8566		9.66	Si
SLD 14	fin.	-2424.08	-6666	0.92	0	1271	7295	11159	2346	8566		1.29	Si
SLV 14	ini.	1296.81	-419	0.92	0	1271	7295	11159	2346	8566		20.46	Si
SLV 14	fin.	-3999.61	-9337	0.92	0	1271	7295	11159	2346	8566		0.92	No
SLV 9	ini.	908.63	1221	0.92	0	1271	7295	11159	2346	8566		7.02	Si
SLV 9	fin.	-3128.7	-8907	0.92	0	1271	7295	11159	2346	8566		0.96	No
SLV 5	ini.	276.18	2649	0.92	0	1271	7295	11159	2346	8566		3.23	Si
SLV 5	fin.	-1616.21	-6584	0.92	0	1271	7295	11159	2346	8566		1.3	Si
SLD 9	ini.	469.22	1588	0.92	0	1271	7295	11159	2346	8566		5.39	Si
SLD 9	fin.	-2031.36	-6426	0.92	0	1271	7295	11159	2346	8566		1.33	Si
SLV 10	ini.	858.25	1308	0.92	0	1271	7295	11159	2346	8566		6.55	Si
SLV 10	fin.	-2997.72	-8732	0.92	0	1271	7295	11159	2346	8566		0.98	No
SLD 13	ini.	673.39	832	0.92	0	1271	7295	11159	2346	8566		10.29	Si
SLD 13	fin.	-2506.84	-6776	0.92	0	1271	7295	11159	2346	8566		1.26	Si
SLV 13	ini.	1371.63	-547	0.92	0	1271	7295	11159	2346	8566		15.65	Si
SLV 13	fin.	-4194.14	-9598	0.92	0	1271	7295	11159	2346	8566		0.89	No
SLV 16	ini.	1050.75	-489	0.92	0	1271	7295	11159	2346	8566		17.53	Si
SLV 16	fin.	-3373.11	-7570	0.92	0	1271	7295	11159	2346	8566		1.13	Si
SLV 15	ini.	1125.57	-617	0.92	0	1271	7295	11159	2346	8566		13.88	Si
SLV 15	fin.	-3567.65	-7830	0.92	0	1271	7295	11159	2346	8566		1.09	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.629	SLV 13	No
V_SLV	0.893	SLV 13	No
PF_SLU	1.132	SLU 84	Si
V_SLU	1.155	SLU 84	Si

Trave di accoppiamento 25

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-6.528	1.046	0.8	1.67	0.87	-7.428	1.046	0.8	1.67	0.87	0.9	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-1246.64	-5896	-0.0008804	0.0002246	0.0035	0.87		2102.07	2102.07	No	1.69	Si
SLU 77	fin.	-1075.44	-7811	-0.0007287	0.0002246	0.0035	0.87		2102.07	2102.07	No	1.95	Si
SLU 75	ini.	-1261.04	-5865	-0.0008936	0.0002246	0.0035	0.87		2102.07	2102.07	No	1.67	Si
SLU 75	fin.	-1062.12	-7735	-0.0007173	0.0002246	0.0035	0.87		2102.07	2102.07	No	1.98	Si
SLU 83	ini.	-1280.64	-6124	-0.0009118	0.0002246	0.0035	0.87		2102.07	2102.07	No	1.64	Si
SLU 83	fin.	-1093.72	-7990	-0.0007444	0.0002246	0.0035	0.87		2102.07	2102.07	No	1.92	Si
SLU 78	ini.	-1269.73	-5924	-0.0009017	0.0002246	0.0035	0.87		2102.07	2102.07	No	1.66	Si
SLU 78	fin.	-1076.05	-7828	-0.0007292	0.0002246	0.0035	0.87		2102.07	2102.07	No	1.95	Si
SLU 80	ini.	-1264.86	-5894	-0.0008972	0.0002246	0.0035	0.87		2102.07	2102.07	No	1.66	Si
SLU 80	fin.	-1070.14	-7785	-0.0007241	0.0002246	0.0035	0.87		2102.07	2102.07	No	1.96	Si
SLU 84	ini.	-1303.73	-6153	-0.0009334	0.0002246	0.0035	0.87		2102.07	2102.07	No	1.61	Si
SLU 84	fin.	-1094.33	-8008	-0.0007449	0.0002246	0.0035	0.87		2102.07	2102.07	No	1.92	Si
SLU 81	ini.	-1271.96	-6065	-0.0009037	0.0002246	0.0035	0.87		2102.07	2102.07	No	1.65	Si
SLU 81	fin.	-1079.78	-7897	-0.0007324	0.0002246	0.0035	0.87		2102.07	2102.07	No	1.95	Si
SLU 82	ini.	-1295.05	-6094	-0.0009252	0.0002246	0.0035	0.87		2102.07	2102.07	No	1.62	Si
SLU 82	fin.	-1080.39	-7914	-0.0007329	0.0002246	0.0035	0.87		2102.07	2102.07	No	1.95	Si
SLU 73	ini.	-1262.88	-5795	-0.0008953	0.0002246	0.0035	0.87		2102.07	2102.07	No	1.66	Si
SLU 73	fin.	-1042.68	-7609	-0.0007008	0.0002246	0.0035	0.87		2102.07	2102.07	No	2.02	Si
SLU 76	ini.	-1271.56	-5854	-0.0009034	0.0002246	0.0035	0.87		2102.07	2102.07	No	1.65	Si
SLU 76	fin.	-1056.62	-7702	-0.0007126	0.0002246	0.0035	0.87		2102.07	2102.07	No	1.99	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-1295.05	11230	0.87	0	2888	6899	7035	2219	9253	No	0.82	No
SLU 82	fin.	-1080.39	-12748	0.87	0	2888	6899	7035	2219	9253	No	0.73	No
SLU 81	ini.	-1271.96	11174	0.87	0	2888	6899	7035	2219	9253	No	0.83	No
SLU 81	fin.	-1079.78	-12765	0.87	0	2888	6899	7035	2219	9253	No	0.72	No
SLU 77	ini.	-1246.64	10955	0.87	0	2888	6899	7035	2219	9253	No	0.84	No
SLU 77	fin.	-1075.44	-12674	0.87	0	2888	6899	7035	2219	9253	No	0.73	No
SLU 84	ini.	-1303.73	11340	0.87	0	2888	6899	7035	2219	9253	No	0.82	No
SLU 84	fin.	-1094.33	-12909	0.87	0	2888	6899	7035	2219	9253	No	0.72	No
SLU 80	ini.	-1264.86	10952	0.87	0	2888	6899	7035	2219	9253	No	0.84	No
SLU 80	fin.	-1070.14	-12580	0.87	0	2888	6899	7035	2219	9253	No	0.74	No
SLU 75	ini.	-1261.04	10902	0.87	0	2888	6899	7035	2219	9253	No	0.85	No
SLU 75	fin.	-1062.12	-12496	0.87	0	2888	6899	7035	2219	9253	No	0.74	No
SLU 78	ini.	-1269.73	11011	0.87	0	2888	6899	7035	2219	9253	No	0.84	No
SLU 78	fin.	-1076.05	-12657	0.87	0	2888	6899	7035	2219	9253	No	0.73	No
SLU 83	ini.	-1280.64	11284	0.87	0	2888	6899	7035	2219	9253	No	0.82	No
SLU 83	fin.	-1093.72	-12926	0.87	0	2888	6899	7035	2219	9253	No	0.72	No
SLU 79	ini.	-1241.77	10896	0.87	0	2888	6899	7035	2219	9253	No	0.85	No
SLU 79	fin.	-1069.53	-12597	0.87	0	2888	6899	7035	2219	9253	No	0.73	No
SLU 74	ini.	-1237.96	10846	0.87	0	2888	6899	7035	2219	9253	No	0.85	No
SLU 74	fin.	-1061.51	-12513	0.87	0	2888	6899	7035	2219	9253	No	0.74	No

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-322.28	-7904	-0.0001761	0.0003369	0.0035	0.87		2471.01	2471.01		7.67	Si
SLV 16	fin.	1927.86	3474	-0.0015089	0.0003369	0.0035	0.87		2465.18	2465.18		1.28	Si
SLV 5	ini.	-2799.37	-4821	-0.0030665	0.0003369	0.0035	0.87		2471.01	2471.01		0.88	No
SLV 5	fin.	-1576.89	-9189	-0.001126	0.0003369	0.0035	0.87		2471.01	2471.01		1.57	Si
SLV 6	ini.	-2884.54	-4837	-0.003282	0.0003369	0.0035	0.87		2471.01	2471.01		0.86	No
SLV 6	fin.	-1547.91	-9110	-0.0010977	0.0003369	0.0035	0.87		2471.01	2471.01		1.6	Si
SLV 4	ini.	-343.34	1471	-0.0001882	0.0003369	0.0035	0.87		2471.01	2471.01		7.2	Si
SLV 4	fin.	-3311.76	-13035	-0.0042583	0.0003369	0.0035	0.87		2471.01	2471.01		0.75	No
SLV 1	ini.	-1402.64	96	-0.0009617	0.0003369	0.0035	0.87		2471.01	2471.01		1.76	Si
SLV 1	fin.	-3383.87	-13999	-0.0044089	0.0003369	0.0035	0.87		2471.01	2471.01		0.73	No
SLV 14	ini.	-1508.08	-9302	-0.0010595	0.0003369	0.0035	0.87		2471.01	2471.01		1.64	Si
SLV 14	fin.	1898.79	2627	-0.0014743	0.0003369	0.0035	0.87		2465.18	2465.18		1.3	Si
SLV 10	ini.	-2878.22	-7649	-0.0032661	0.0003369	0.0035	0.87		2471.01	2471.01		0.86	No
SLV 10	fin.	23.97	-4158	-0.0000126	0.0003369	0.0035	0.87		2465.18	2465.18		102.83	Si
SLV 3	ini.	-216.84	1494	-0.0001166	0.0003369	0.0035	0.87		2471.01	2471.01		11.4	Si
SLV 3	fin.	-3354.8	-13152	-0.0043485	0.0003369	0.0035	0.87		2471.01	2471.01		0.74	No
SLV 9	ini.	-2793.05	-7634	-0.0030505	0.0003369	0.0035	0.87		2471.01	2471.01		0.88	No
SLV 9	fin.	-5	-4237	-0.0000026	0.0003369	0.0035	0.87		2471.01	2471.01		493.91	Si
SLV 2	ini.	-1529.14	73	-0.0010797	0.0003369	0.0035	0.87		2471.01	2471.01		1.62	Si
SLV 2	fin.	-3340.83	-13882	-0.0043193	0.0003369	0.0035	0.87		2471.01	2471.01		0.74	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-195.78	14105	0.87	0	3053	6899	10552	2219	9952		0.71	No
SLV 15	fin.	1884.82	2488	0.87	0	3053	6899	10552	2219	9952		4	Si
SLV 16	ini.	-322.28	14501	0.87	0	3053	6899	10552	2219	9952		0.69	No
SLV 16	fin.	1927.86	2689	0.87	0	3053	6899	10552	2219	9952		3.7	Si
SLV 2	ini.	-1529.14	658	0.87	0	3053	6899	10552	2219	9952		15.12	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	fin.	-3340.83	-19579	0.87	0	3053	6899	10552	2219	9952		0.51	No
SLV 3	ini.	-216.84	-2466	0.87	0	3053	6899	10552	2219	9952		4.04	Si
SLV 3	fin.	-3354.8	-20829	0.87	0	3053	6899	10552	2219	9952		0.48	No
SLV 14	ini.	-1508.08	17229	0.87	0	3053	6899	10552	2219	9952		0.58	No
SLV 14	fin.	1898.79	3738	0.87	0	3053	6899	10552	2219	9952		2.66	Si
SLV 1	ini.	-1402.64	263	0.87	0	3053	6899	10552	2219	9952		37.84	Si
SLV 1	fin.	-3383.87	-19780	0.87	0	3053	6899	10552	2219	9952		0.5	No
SLV 10	ini.	-2878.22	14548	0.87	0	3053	6899	10552	2219	9952		0.68	No
SLV 10	fin.	23.97	-3231	0.87	0	3053	6899	10552	2219	9952		3.08	Si
SLV 4	ini.	-343.34	-2070	0.87	0	3053	6899	10552	2219	9952		4.81	Si
SLV 4	fin.	-3311.76	-20629	0.87	0	3053	6899	10552	2219	9952		0.48	No
SLV 13	ini.	-1381.58	16834	0.87	0	3053	6899	10552	2219	9952		0.59	No
SLV 13	fin.	1855.75	3538	0.87	0	3053	6899	10552	2219	9952		2.81	Si
SLV 9	ini.	-2793.05	14282	0.87	0	3053	6899	10552	2219	9952		0.7	No
SLV 9	fin.	-5	-3366	0.87	0	3053	6899	10552	2219	9952		2.96	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.73	SLV 1	No
V_SLV	0.478	SLV 3	No
PF_SLU	1.612	SLU 84	Si
V_SLU	0.716	SLU 83	No

Trave di accoppiamento 27

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-7.463	-3.284	-1.3	0.7	2	-6.463	-3.284	-1.3	0.7	2	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-751.62	-16602	-0.0000766	0.0001872	0.0035	2		10737.13	10737.13	No	14.29	Si
SLU 83	fin.	-2254.56	-9399	-0.000248	0.0001872	0.0035	2		10737.13	10737.13	No	4.76	Si
SLU 80	ini.	-851.3	-16119	-0.0000871	0.0001872	0.0035	2		10737.13	10737.13	No	12.61	Si
SLU 80	fin.	-2189.15	-9138	-0.0002398	0.0001872	0.0035	2		10737.13	10737.13	No	4.9	Si
SLU 78	ini.	-860.27	-16188	-0.000088	0.0001872	0.0035	2		10737.13	10737.13	No	12.48	Si
SLU 78	fin.	-2197.82	-9179	-0.0002409	0.0001872	0.0035	2		10737.13	10737.13	No	4.89	Si
SLU 79	ini.	-807.88	-16038	-0.0000825	0.0001872	0.0035	2		10737.13	10737.13	No	13.29	Si
SLU 79	fin.	-2202.32	-9076	-0.0002415	0.0001872	0.0035	2		10737.13	10737.13	No	4.88	Si
SLU 81	ini.	-739.56	-16490	-0.0000753	0.0001872	0.0035	2		10737.13	10737.13	No	14.52	Si
SLU 81	fin.	-2240.07	-9334	-0.0002462	0.0001872	0.0035	2		10737.13	10737.13	No	4.79	Si
SLU 77	ini.	-816.85	-16107	-0.0000834	0.0001872	0.0035	2		10737.13	10737.13	No	13.14	Si
SLU 77	fin.	-2210.99	-9117	-0.0002425	0.0001872	0.0035	2		10737.13	10737.13	No	4.86	Si
SLU 82	ini.	-782.98	-16570	-0.0000799	0.0001872	0.0035	2		10737.13	10737.13	No	13.71	Si
SLU 82	fin.	-2226.9	-9396	-0.0002445	0.0001872	0.0035	2		10737.13	10737.13	No	4.82	Si
SLU 84	ini.	-795.05	-16682	-0.0000811	0.0001872	0.0035	2		10737.13	10737.13	No	13.51	Si
SLU 84	fin.	-2241.39	-9461	-0.0002463	0.0001872	0.0035	2		10737.13	10737.13	No	4.79	Si
SLU 74	ini.	-804.78	-15995	-0.0000822	0.0001872	0.0035	2		10737.13	10737.13	No	13.34	Si
SLU 74	fin.	-2196.5	-9053	-0.0002407	0.0001872	0.0035	2		10737.13	10737.13	No	4.89	Si
SLU 75	ini.	-848.21	-16076	-0.0000868	0.0001872	0.0035	2		10737.13	10737.13	No	12.66	Si
SLU 75	fin.	-2183.33	-9115	-0.0002391	0.0001872	0.0035	2		10737.13	10737.13	No	4.92	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-739.56	-8856	2	0	6250	7930	13475	5100	14180	No	1.6	Si
SLU 81	fin.	-2240.07	-8734	2	0	6250	7930	13475	5100	14180	No	1.62	Si
SLU 74	ini.	-804.78	-8504	2	0	6250	7930	13475	5100	14180	No	1.67	Si
SLU 74	fin.	-2196.5	-8444	2	0	6250	7930	13475	5100	14180	No	1.68	Si
SLU 78	ini.	-860.27	-8540	2	0	6250	7930	13475	5100	14180	No	1.66	Si
SLU 78	fin.	-2197.82	-8441	2	0	6250	7930	13475	5100	14180	No	1.68	Si
SLU 80	ini.	-851.3	-8509	2	0	6250	7930	13475	5100	14180	No	1.67	Si
SLU 80	fin.	-2189.15	-8417	2	0	6250	7930	13475	5100	14180	No	1.68	Si
SLU 83	ini.	-751.62	-8911	2	0	6250	7930	13475	5100	14180	No	1.59	Si
SLU 83	fin.	-2254.56	-8779	2	0	6250	7930	13475	5100	14180	No	1.62	Si
SLU 82	ini.	-782.98	-8837	2	0	6250	7930	13475	5100	14180	No	1.6	Si
SLU 82	fin.	-2226.9	-8686	2	0	6250	7930	13475	5100	14180	No	1.63	Si
SLU 75	ini.	-848.21	-8485	2	0	6250	7930	13475	5100	14180	No	1.67	Si
SLU 75	fin.	-2183.33	-8396	2	0	6250	7930	13475	5100	14180	No	1.69	Si
SLU 79	ini.	-807.88	-8528	2	0	6250	7930	13475	5100	14180	No	1.66	Si
SLU 79	fin.	-2202.32	-8465	2	0	6250	7930	13475	5100	14180	No	1.68	Si
SLU 77	ini.	-816.85	-8559	2	0	6250	7930	13475	5100	14180	No	1.66	Si
SLU 77	fin.	-2210.99	-8490	2	0	6250	7930	13475	5100	14180	No	1.67	Si
SLU 84	ini.	-795.05	-8892	2	0	6250	7930	13475	5100	14180	No	1.59	Si
SLU 84	fin.	-2241.39	-8731	2	0	6250	7930	13475	5100	14180	No	1.62	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	3496.74	-23941	-0.0003925	0.0002807	0.0035	2		15635.95	15635.95		4.47	Si
SLV 13	fin.	-4683.66	-6272	-0.0005549	0.0002807	0.0035	2		15648.46	15648.46		3.34	Si
SLV 12	ini.	5737.6	-5541	-0.0007138	0.0002807	0.0035	2		15635.95	15635.95		2.73	Si
SLV 12	fin.	-4909.19	4496	-0.0005877	0.0002807	0.0035	2		15648.46	15648.46		3.19	Si
SLV 4	ini.	-4759.85	1795	-0.0005659	0.0002807	0.0035	2		15648.46	15648.46		3.29	Si
SLV 4	fin.	1556.28	-6196	-0.0001615	0.0002807	0.0035	2		15635.95	15635.95		10.05	Si
SLV 16	ini.	5832.35	-18061	-0.0007287	0.0002807	0.0035	2		15635.95	15635.95		2.68	Si
SLV 16	fin.	-5635.96	-1082	-0.0006973	0.0002807	0.0035	2		15648.46	15648.46		2.78	Si
SLV 2	ini.	-7762.84	-3116	-0.001056	0.0002807	0.0035	2		15648.46	15648.46		2.02	Si
SLV 2	fin.	3019.46	-12373	-0.0003317	0.0002807	0.0035	2		15635.95	15635.95		5.18	Si
SLV 15	ini.	6499.73	-19031	-0.0008366	0.0002807	0.0035	2		15635.95	15635.95		2.41	Si
SLV 15	fin.	-6146.85	-95	-0.000778	0.0002807	0.0035	2		15648.46	15648.46		2.55	Si
SLV 6	ini.	-7450.04	-15952	-0.0009993	0.0002807	0.0035	2		15648.46	15648.46		2.1	Si
SLV 6	fin.	2125.76	-17629	-0.0002252	0.0002807	0.0035	2		15635.95	15635.95		7.36	Si
SLV 1	ini.	-7095.47	-4085	-0.0009368	0.0002807	0.0035	2		15648.46	15648.46		2.21	Si
SLV 1	fin.	2508.58	-11386	-0.0002697	0.0002807	0.0035	2		15635.95	15635.95		6.23	Si
SLV 11	ini.	6186.92	-6194	-0.0007853	0.0002807	0.0035	2		15635.95	15635.95		2.53	Si
SLV 11	fin.	-5253.15	5161	-0.0006388	0.0002807	0.0035	2		15648.46	15648.46		2.98	Si
SLV 5	ini.	-7000.71	-16605	-0.0009204	0.0002807	0.0035	2		15648.46	15648.46		2.24	Si
SLV 5	fin.	1781.8	-16964	-0.0001864	0.0002807	0.0035	2		15635.95	15635.95		8.78	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 12	ini.	5737.6	-18546	2	0	6643	7930	20213	5100	14573		0.79	No
SLV 12	fin.	-4909.19	-21399	2	0	6643	7930	20213	5100	14573		0.68	No
SLV 2	ini.	-7762.84	19050	2	0	6643	7930	20213	5100	14573		0.77	No
SLV 2	fin.	3019.46	19677	2	0	6643	7930	20213	5100	14573		0.74	No
SLD 15	ini.	2372.25	-16399	2	0	6643	7930	20213	5100	14573		0.89	No
SLD 15	fin.	-3501.43	-16768	2	0	6643	7930	20213	5100	14573		0.87	No
SLD 16	ini.	2088.33	-15084	2	0	6643	7930	20213	5100	14573		0.97	No
SLD 16	fin.	-3284.09	-15451	2	0	6643	7930	20213	5100	14573		0.94	No
SLV 15	ini.	6499.73	-30720	2	0	6643	7930	20213	5100	14573		0.47	No
SLV 15	fin.	-6146.85	-31520	2	0	6643	7930	20213	5100	14573		0.46	No
SLV 14	ini.	2829.36	-23177	2	0	6643	7930	20213	5100	14573		0.63	No
SLV 14	fin.	-4172.78	-22287	2	0	6643	7930	20213	5100	14573		0.65	No
SLV 11	ini.	6186.92	-20627	2	0	6643	7930	20213	5100	14573		0.71	No
SLV 11	fin.	-5253.15	-23484	2	0	6643	7930	20213	5100	14573		0.62	No
SLV 1	ini.	-7095.47	15958	2	0	6643	7930	20213	5100	14573		0.91	No
SLV 1	fin.	2508.58	16580	2	0	6643	7930	20213	5100	14573		0.88	No
SLV 13	ini.	3496.74	-26269	2	0	6643	7930	20213	5100	14573		0.55	No
SLV 13	fin.	-4683.66	-25385	2	0	6643	7930	20213	5100	14573		0.57	No
SLV 16	ini.	5832.35	-27628	2	0	6643	7930	20213	5100	14573		0.53	No
SLV 16	fin.	-5635.96	-28423	2	0	6643	7930	20213	5100	14573		0.51	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.016	SLV 2	Si
V_SLV	0.462	SLV 15	No
PF_SLU	4.762	SLU 83	Si
V_SLU	1.591	SLU 83	Si

Trave di accoppiamento 28

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-7.463	-3.284	1.1	1.67	0.57	-6.463	-3.284	1.1	1.67	0.57	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-115.71	-773	-0.0001496	0.0001872	0.0035	0.57		912.83	912.83	No	7.89	Si
SLU 78	fin.	-642.62	-3068	-0.0011577	0.0001872	0.0035	0.57		912.83	912.83	No	1.42	Si
SLU 79	ini.	-101.57	-715	-0.0001302	0.0001872	0.0035	0.57		912.83	912.83	No	8.99	Si
SLU 79	fin.	-648.61	-3084	-0.0011725	0.0001872	0.0035	0.57		912.83	912.83	No	1.41	Si
SLU 77	ini.	-102.84	-721	-0.0001319	0.0001872	0.0035	0.57		912.83	912.83	No	8.88	Si
SLU 77	fin.	-650.68	-3095	-0.0011777	0.0001872	0.0035	0.57		912.83	912.83	No	1.4	Si
SLU 84	ini.	-119.86	-814	-0.0001554	0.0001872	0.0035	0.57		912.83	912.83	No	7.62	Si
SLU 84	fin.	-670.4	-3197	-0.0012274	0.0001872	0.0035	0.57		912.83	912.83	No	1.36	Si
SLU 80	ini.	-114.43	-767	-0.0001479	0.0001872	0.0035	0.57		912.83	912.83	No	7.98	Si
SLU 80	fin.	-640.55	-3057	-0.0011526	0.0001872	0.0035	0.57		912.83	912.83	No	1.43	Si
SLU 82	ini.	-118.35	-806	-0.0001533	0.0001872	0.0035	0.57		912.83	912.83	No	7.71	Si
SLU 82	fin.	-666.53	-3178	-0.0012176	0.0001872	0.0035	0.57		912.83	912.83	No	1.37	Si
SLU 75	ini.	-114.19	-766	-0.0001475	0.0001872	0.0035	0.57		912.83	912.83	No	7.99	Si
SLU 75	fin.	-638.75	-3048	-0.0011481	0.0001872	0.0035	0.57		912.83	912.83	No	1.43	Si
SLU 81	ini.	-105.48	-753	-0.0001356	0.0001872	0.0035	0.57		912.83	912.83	No	8.65	Si
SLU 81	fin.	-674.59	-3205	-0.0012382	0.0001872	0.0035	0.57		912.83	912.83	No	1.35	Si
SLU 74	ini.	-101.32	-713	-0.0001299	0.0001872	0.0035	0.57		912.83	912.83	No	9.01	Si
SLU 74	fin.	-646.81	-3076	-0.0011681	0.0001872	0.0035	0.57		912.83	912.83	No	1.41	Si
SLU 83	ini.	-106.99	-761	-0.0001376	0.0001872	0.0035	0.57		912.83	912.83	No	8.53	Si
SLU 83	fin.	-678.46	-3225	-0.0012481	0.0001872	0.0035	0.57		912.83	912.83	No	1.35	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-101.32	4574	0.57	0	1460	4520	3840	1454	5294	No	1.16	Si
SLU 74	fin.	-646.81	-6006	0.57	0	1460	4520	3840	1454	5294	No	0.88	No
SLU 79	ini.	-101.57	4587	0.57	0	1460	4520	3840	1454	5294	No	1.15	Si
SLU 79	fin.	-648.61	-6023	0.57	0	1460	4520	3840	1454	5294	No	0.88	No
SLU 81	ini.	-105.48	4740	0.57	0	1460	4520	3840	1454	5294	No	1.12	Si
SLU 81	fin.	-674.59	-6229	0.57	0	1460	4520	3840	1454	5294	No	0.85	No
SLU 75	ini.	-114.19	4664	0.57	0	1460	4520	3840	1454	5294	No	1.14	Si
SLU 75	fin.	-638.75	-6013	0.57	0	1460	4520	3840	1454	5294	No	0.88	No
SLU 84	ini.	-119.86	4869	0.57	0	1460	4520	3840	1454	5294	No	1.09	Si
SLU 84	fin.	-670.4	-6277	0.57	0	1460	4520	3840	1454	5294	No	0.84	No
SLU 80	ini.	-114.43	4677	0.57	0	1460	4520	3840	1454	5294	No	1.13	Si
SLU 80	fin.	-640.55	-6030	0.57	0	1460	4520	3840	1454	5294	No	0.88	No
SLU 77	ini.	-102.84	4613	0.57	0	1460	4520	3840	1454	5294	No	1.15	Si
SLU 77	fin.	-650.68	-6047	0.57	0	1460	4520	3840	1454	5294	No	0.88	No
SLU 82	ini.	-118.35	4830	0.57	0	1460	4520	3840	1454	5294	No	1.1	Si
SLU 82	fin.	-666.53	-6236	0.57	0	1460	4520	3840	1454	5294	No	0.85	No
SLU 78	ini.	-115.71	4704	0.57	0	1460	4520	3840	1454	5294	No	1.13	Si
SLU 78	fin.	-642.62	-6055	0.57	0	1460	4520	3840	1454	5294	No	0.87	No
SLU 83	ini.	-106.99	4779	0.57	0	1460	4520	3840	1454	5294	No	1.11	Si
SLU 83	fin.	-678.46	-6270	0.57	0	1460	4520	3840	1454	5294	No	0.84	No

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	499.2	1528	-0.0007804	0.0002807	0.0035	0.57		1278.06	1278.06		2.56	Si
SLV 13	fin.	-1566.77	-7042	-0.005116	0.0002807	0.0035	0.57		1281.66	1281.66		0.82	No
SLV 6	ini.	-1543.45	-6613	-0.0050079	0.0002807	0.0035	0.57		1281.66	1281.66		0.83	No
SLV 6	fin.	733.34	2570	-0.0013075	0.0002807	0.0035	0.57		1278.06	1278.06		1.74	Si
SLV 16	ini.	1015.33	3734	-0.0022415	0.0002807	0.0035	0.57		1278.06	1278.06		1.26	Si
SLV 16	fin.	-1799.77	-7857	-0.0061576	0.0002807	0.0035	0.57		1281.66	1281.66		0.71	No
SLV 15	ini.	1202.6	4518	-0.0032545	0.0002807	0.0035	0.57		1278.06	1278.06		1.06	Si
SLV 15	fin.	-2006.56	-8707	-0.0070486	0.0002807	0.0035	0.57		1281.66	1281.66		0.64	No
SLV 2	ini.	-1327.04	-5403	-0.0039414	0.0002807	0.0035	0.57		1281.66	1281.66		0.97	No
SLV 2	fin.	1123.13	4513	-0.0027787	0.0002807	0.0035	0.57		1278.06	1278.06		1.14	Si
SLV 14	ini.	311.92	744	-0.0004389	0.0002807	0.0035	0.57		1278.06	1278.06		4.1	Si
SLV 14	fin.	-1359.99	-6192	-0.0041137	0.0002807	0.0035	0.57		1281.66	1281.66		0.94	No
SLV 12	ini.	1292.92	5200	-0.0037779	0.0002807	0.0035	0.57		1278.06	1278.06		0.99	No
SLV 12	fin.	-1477.55	-6192	-0.0046966	0.0002807	0.0035	0.57		1281.66	1281.66		0.87	No
SLV 11	ini.	1419.01	5728	-0.0044319	0.0002807	0.0035	0.57		1278.06	1278.06		0.9	No
SLV 11	fin.	-1616.77	-6764	-0.0053449	0.0002807	0.0035	0.57		1281.66	1281.66		0.79	No
SLV 5	ini.	-1417.36	-6085	-0.0044035	0.0002807	0.0035	0.57		1281.66	1281.66		0.9	No
SLV 5	fin.	594.12	1998	-0.0009785	0.0002807	0.0035	0.57		1278.06	1278.06		2.15	Si
SLV 1	ini.	-1139.77	-4619	-0.0028548	0.0002807	0.0035	0.57		1281.66	1281.66		1.12	Si
SLV 1	fin.	916.35	3664	-0.0018512	0.0002807	0.0035	0.57		1278.06	1278.06		1.39	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	1015.33	-2757	0.57	0	1638	4520	5761	1454	6158		2.23	Si
SLV 16	fin.	-1799.77	-9096	0.57	0	1638	4520	5761	1454	6158		0.68	No
SLV 9	ini.	-925.67	9333	0.57	0	1638	4520	5761	1454	6158		0.66	No
SLV 9	fin.	-150.81	-4482	0.57	0	1638	4520	5761	1454	6158		1.37	Si
SLV 1	ini.	-1139.77	8892	0.57	0	1638	4520	5761	1454	6158		0.69	No
SLV 1	fin.	916.35	892	0.57	0	1638	4520	5761	1454	6158		6.9	Si
SLV 2	ini.	-1327.04	9905	0.57	0	1638	4520	5761	1454	6158		0.62	No
SLV 2	fin.	1123.13	1653	0.57	0	1638	4520	5761	1454	6158		3.73	Si
SLV 14	ini.	311.92	1925	0.57	0	1638	4520	5761	1454	6158		3.2	Si
SLV 14	fin.	-1359.99	-8277	0.57	0	1638	4520	5761	1454	6158		0.74	No
SLV 15	ini.	1202.6	-3770	0.57	0	1638	4520	5761	1454	6158		1.63	Si
SLV 15	fin.	-2006.56	-9857	0.57	0	1638	4520	5761	1454	6158		0.62	No
SLV 6	ini.	-1543.45	12409	0.57	0	1638	4520	5761	1454	6158		0.5	No
SLV 6	fin.	733.34	-991	0.57	0	1638	4520	5761	1454	6158		6.21	Si
SLV 10	ini.	-1051.76	10015	0.57	0	1638	4520	5761	1454	6158		0.61	No
SLV 10	fin.	-11.59	-3970	0.57	0	1638	4520	5761	1454	6158		1.55	Si
SLV 5	ini.	-1417.36	11727	0.57	0	1638	4520	5761	1454	6158		0.53	No
SLV 5	fin.	594.12	-1503	0.57	0	1638	4520	5761	1454	6158		4.1	Si
SLV 13	ini.	499.2	912	0.57	0	1638	4520	5761	1454	6158		6.75	Si
SLV 13	fin.	-1566.77	-9037	0.57	0	1638	4520	5761	1454	6158		0.68	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.639	SLV 15	No
V_SLV	0.496	SLV 6	No
PF_SLU	1.345	SLU 83	Si
V_SLU	0.843	SLU 84	No

Trave di accoppiamento 29

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-3.233	-3.284	-1.3	0.7	2	-2.233	-3.284	-1.3	0.7	2	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-458.29	-3755	-0.0000461	0.0001872	0.0035	2		10737.13	10737.13	No	23.43	Si
SLU 83	fin.	1783.79	-5881	-0.0001911	0.0001872	0.0035	2		10722.86	10722.86	No	6.01	Si
SLU 82	ini.	-506.56	-3873	-0.0000511	0.0001872	0.0035	2		10737.13	10737.13	No	21.2	Si
SLU 82	fin.	1789.38	-6046	-0.0001918	0.0001872	0.0035	2		10722.86	10722.86	No	5.99	Si
SLU 78	ini.	-524	-3824	-0.0000529	0.0001872	0.0035	2		10737.13	10737.13	No	20.49	Si
SLU 78	fin.	1774.46	-6008	-0.00019	0.0001872	0.0035	2		10722.86	10722.86	No	6.04	Si
SLU 76	ini.	-549.55	-3866	-0.0000555	0.0001872	0.0035	2		10737.13	10737.13	No	19.54	Si
SLU 76	fin.	1762.65	-6059	-0.0001886	0.0001872	0.0035	2		10722.86	10722.86	No	6.08	Si
SLU 75	ini.	-519.22	-3781	-0.0000524	0.0001872	0.0035	2		10737.13	10737.13	No	20.68	Si
SLU 75	fin.	1761.57	-5953	-0.0001885	0.0001872	0.0035	2		10722.86	10722.86	No	6.09	Si
SLU 84	ini.	-511.34	-3916	-0.0000516	0.0001872	0.0035	2		10737.13	10737.13	No	21	Si
SLU 84	fin.	1802.27	-6101	-0.0001933	0.0001872	0.0035	2		10722.86	10722.86	No	5.95	Si
SLU 81	ini.	-453.51	-3713	-0.0000456	0.0001872	0.0035	2		10737.13	10737.13	No	23.68	Si
SLU 81	fin.	1770.9	-5826	-0.0001896	0.0001872	0.0035	2		10722.86	10722.86	No	6.06	Si
SLU 73	ini.	-544.77	-3824	-0.000055	0.0001872	0.0035	2		10737.13	10737.13	No	19.71	Si
SLU 73	fin.	1749.77	-6004	-0.0001871	0.0001872	0.0035	2		10722.86	10722.86	No	6.13	Si
SLU 80	ini.	-518.96	-3802	-0.0000523	0.0001872	0.0035	2		10737.13	10737.13	No	20.69	Si
SLU 80	fin.	1763.22	-5968	-0.0001887	0.0001872	0.0035	2		10722.86	10722.86	No	6.08	Si
SLU 77	ini.	-470.95	-3663	-0.0000474	0.0001872	0.0035	2		10737.13	10737.13	No	22.8	Si
SLU 77	fin.	1755.97	-5788	-0.0001879	0.0001872	0.0035	2		10722.86	10722.86	No	6.11	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-518.96	-314	2	0	6250	7930	13475	5100	14180	No	45.16	Si
SLU 80	fin.	1763.22	7984	2	0	6250	7930	13475	5100	14180	No	1.78	Si
SLU 77	ini.	-470.95	-391	2	0	6250	7930	13475	5100	14180	No	36.28	Si
SLU 77	fin.	1755.97	7866	2	0	6250	7930	13475	5100	14180	No	1.8	Si
SLU 76	ini.	-549.55	-247	2	0	6250	7930	13475	5100	14180	No	57.32	Si
SLU 76	fin.	1762.65	8035	2	0	6250	7930	13475	5100	14180	No	1.76	Si
SLU 82	ini.	-506.56	-426	2	0	6250	7930	13475	5100	14180	No	33.29	Si
SLU 82	fin.	1789.38	8103	2	0	6250	7930	13475	5100	14180	No	1.75	Si
SLU 78	ini.	-524	-306	2	0	6250	7930	13475	5100	14180	No	46.32	Si
SLU 78	fin.	1774.46	8039	2	0	6250	7930	13475	5100	14180	No	1.76	Si
SLU 73	ini.	-544.77	-237	2	0	6250	7930	13475	5100	14180	No	59.77	Si
SLU 73	fin.	1749.77	7972	2	0	6250	7930	13475	5100	14180	No	1.78	Si
SLU 83	ini.	-458.29	-521	2	0	6250	7930	13475	5100	14180	No	27.23	Si
SLU 83	fin.	1783.79	7994	2	0	6250	7930	13475	5100	14180	No	1.77	Si
SLU 81	ini.	-453.51	-511	2	0	6250	7930	13475	5100	14180	No	27.77	Si
SLU 81	fin.	1770.9	7930	2	0	6250	7930	13475	5100	14180	No	1.79	Si
SLU 84	ini.	-511.34	-436	2	0	6250	7930	13475	5100	14180	No	32.51	Si
SLU 84	fin.	1802.27	8167	2	0	6250	7930	13475	5100	14180	No	1.74	Si
SLU 75	ini.	-519.22	-296	2	0	6250	7930	13475	5100	14180	No	47.91	Si
SLU 75	fin.	1761.57	7975	2	0	6250	7930	13475	5100	14180	No	1.78	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 7	ini.	2301.45	7419	-0.0002454	0.0002807	0.0035	2		15635.95	15635.95		6.79	Si
SLV 7	fin.	344.18	8415	-0.0000344	0.0002807	0.0035	2		15635.95	15635.95		45.43	Si
SLV 4	ini.	-1201.03	3909	-0.0001231	0.0002807	0.0035	2		15648.46	15648.46		13.03	Si
SLV 4	fin.	2453.99	-1402	-0.0002632	0.0002807	0.0035	2		15635.95	15635.95		6.37	Si
SLV 12	ini.	2694.59	4550	-0.0002919	0.0002807	0.0035	2		15635.95	15635.95		5.8	Si
SLV 12	fin.	-453.91	7495	-0.0000455	0.0002807	0.0035	2		15648.46	15648.46		34.47	Si
SLV 1	ini.	-2264.72	-592	-0.0002409	0.0002807	0.0035	2		15648.46	15648.46		6.91	Si
SLV 1	fin.	3052.35	-7031	-0.0003358	0.0002807	0.0035	2		15635.95	15635.95		5.12	Si
SLV 2	ini.	-2911.19	-1168	-0.000318	0.0002807	0.0035	2		15648.46	15648.46		5.38	Si
SLV 2	fin.	3224.68	-8581	-0.0003575	0.0002807	0.0035	2		15635.95	15635.95		4.85	Si
SLV 5	ini.	-3399.06	-9504	-0.0003795	0.0002807	0.0035	2		15648.46	15648.46		4.6	Si
SLV 5	fin.	2913.17	-15515	-0.0003185	0.0002807	0.0035	2		15635.95	15635.95		5.37	Si
SLV 11	ini.	3129.83	4938	-0.0003455	0.0002807	0.0035	2		15635.95	15635.95		5	Si
SLV 11	fin.	-569.94	8538	-0.0000573	0.0002807	0.0035	2		15648.46	15648.46		27.46	Si
SLV 9	ini.	-2570.68	-11986	-0.0002768	0.0002807	0.0035	2		15648.46	15648.46		6.09	Si
SLV 9	fin.	1999.05	-15392	-0.0002107	0.0002807	0.0035	2		15635.95	15635.95		7.82	Si
SLV 10	ini.	-3005.92	-12373	-0.0003297	0.0002807	0.0035	2		15648.46	15648.46		5.21	Si
SLV 10	fin.	2115.08	-16435	-0.0002239	0.0002807	0.0035	2		15635.95	15635.95		7.39	Si
SLV 6	ini.	-3834.31	-9892	-0.0004367	0.0002807	0.0035	2		15648.46	15648.46		4.08	Si
SLV 6	fin.	3029.2	-16559	-0.0003329	0.0002807	0.0035	2		15635.95	15635.95		5.16	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 5	ini.	-1576.8	1714	2	0	6643	7930	20213	5100	14573		8.5	Si
SLD 5	fin.	1914.8	10460	2	0	6643	7930	20213	5100	14573		1.39	Si
SLV 10	ini.	-3005.92	-206	2	0	6643	7930	20213	5100	14573		70.84	Si
SLV 10	fin.	2115.08	16041	2	0	6643	7930	20213	5100	14573		0.91	No
SLV 15	ini.	2206.71	-10825	2	0	6643	7930	20213	5100	14573		1.35	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	fin.	-765.42	-4314	2	0	6643	7930	20213	5100	14573		3.38	Si
SLD 10	ini.	-1403.98	-234	2	0	6643	7930	20213	5100	14573		62.31	Si
SLD 10	fin.	1572.39	9639	2	0	6643	7930	20213	5100	14573		1.51	Si
SLV 1	ini.	-2264.72	9074	2	0	6643	7930	20213	5100	14573		1.61	Si
SLV 1	fin.	3052.35	13294	2	0	6643	7930	20213	5100	14573		1.1	Si
SLD 6	ini.	-1758.23	2153	2	0	6643	7930	20213	5100	14573		6.77	Si
SLD 6	fin.	1963.17	11013	2	0	6643	7930	20213	5100	14573		1.32	Si
SLV 9	ini.	-2570.68	-1259	2	0	6643	7930	20213	5100	14573		11.58	Si
SLV 9	fin.	1999.05	14714	2	0	6643	7930	20213	5100	14573		0.99	No
SLV 2	ini.	-2911.19	10638	2	0	6643	7930	20213	5100	14573		1.37	Si
SLV 2	fin.	3224.68	15265	2	0	6643	7930	20213	5100	14573		0.95	No
SLV 5	ini.	-3399.06	4323	2	0	6643	7930	20213	5100	14573		3.37	Si
SLV 5	fin.	2913.17	17925	2	0	6643	7930	20213	5100	14573		0.81	No
SLV 6	ini.	-3834.31	5377	2	0	6643	7930	20213	5100	14573		2.71	Si
SLV 6	fin.	3029.2	19252	2	0	6643	7930	20213	5100	14573		0.76	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	4.081	SLV 6	Si
V_SLV	0.757	SLV 6	No
PF_SLU	5.95	SLU 84	Si
V_SLU	1.736	SLU 84	Si

Trave di accoppiamento 30

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-3.233	-3.284	1.1	1.67	0.57	-2.233	-3.284	1.1	1.67	0.57	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 73	ini.	-855	-1960	-0.0017682	0.0001872	0.0035	0.57		912.83	912.83	No	1.07	Si
SLU 73	fin.	183.7	102	-0.0002496	0.0001872	0.0035	0.57		908.75	908.75	No	4.95	Si
SLU 80	ini.	-860.39	-1972	-0.0017869	0.0001872	0.0035	0.57		912.83	912.83	No	1.06	Si
SLU 80	fin.	176.42	88	-0.0002384	0.0001872	0.0035	0.57		908.75	908.75	No	5.15	Si
SLU 84	ini.	-883.89	-2027	-0.0018708	0.0001872	0.0035	0.57		912.83	912.83	No	1.03	Si
SLU 84	fin.	171.9	71	-0.0002315	0.0001872	0.0035	0.57		908.75	908.75	No	5.29	Si
SLU 75	ini.	-859.71	-1970	-0.0017845	0.0001872	0.0035	0.57		912.83	912.83	No	1.06	Si
SLU 75	fin.	177.25	91	-0.0002397	0.0001872	0.0035	0.57		908.75	908.75	No	5.13	Si
SLU 82	ini.	-878.13	-2012	-0.0018499	0.0001872	0.0035	0.57		912.83	912.83	No	1.04	Si
SLU 82	fin.	170.79	73	-0.0002298	0.0001872	0.0035	0.57		908.75	908.75	No	5.32	Si
SLU 76	ini.	-860.75	-1975	-0.0017882	0.0001872	0.0035	0.57		912.83	912.83	No	1.06	Si
SLU 76	fin.	184.82	101	-0.0002513	0.0001872	0.0035	0.57		908.75	908.75	No	4.92	Si
SLU 78	ini.	-865.47	-1985	-0.0018047	0.0001872	0.0035	0.57		912.83	912.83	No	1.05	Si
SLU 78	fin.	178.37	90	-0.0002414	0.0001872	0.0035	0.57		908.75	908.75	No	5.09	Si
SLU 81	ini.	-868.96	-1985	-0.001817	0.0001872	0.0035	0.57		912.83	912.83	No	1.05	Si
SLU 81	fin.	156.52	54	-0.0002085	0.0001872	0.0035	0.57		908.75	908.75	No	5.81	Si
SLU 77	ini.	-856.3	-1958	-0.0017727	0.0001872	0.0035	0.57		912.83	912.83	No	1.07	Si
SLU 77	fin.	164.1	72	-0.0002198	0.0001872	0.0035	0.57		908.75	908.75	No	5.54	Si
SLU 83	ini.	-874.71	-2000	-0.0018375	0.0001872	0.0035	0.57		912.83	912.83	No	1.04	Si
SLU 83	fin.	157.64	53	-0.0002102	0.0001872	0.0035	0.57		908.75	908.75	No	5.76	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-874.71	3907	0.57	0	1460	4520	3840	1454	5294	No	1.35	Si
SLU 83	fin.	157.64	-522	0.57	0	1460	4520	3840	1454	5294	No	10.13	Si
SLU 74	ini.	-850.54	3776	0.57	0	1460	4520	3840	1454	5294	No	1.4	Si
SLU 74	fin.	162.99	-456	0.57	0	1460	4520	3840	1454	5294	No	11.62	Si
SLU 78	ini.	-865.47	3792	0.57	0	1460	4520	3840	1454	5294	No	1.4	Si
SLU 78	fin.	178.37	-372	0.57	0	1460	4520	3840	1454	5294	No	14.24	Si
SLU 77	ini.	-856.3	3799	0.57	0	1460	4520	3840	1454	5294	No	1.39	Si
SLU 77	fin.	164.1	-455	0.57	0	1460	4520	3840	1454	5294	No	11.63	Si
SLU 81	ini.	-868.96	3884	0.57	0	1460	4520	3840	1454	5294	No	1.36	Si
SLU 81	fin.	156.52	-523	0.57	0	1460	4520	3840	1454	5294	No	10.12	Si
SLU 79	ini.	-851.22	3780	0.57	0	1460	4520	3840	1454	5294	No	1.4	Si
SLU 79	fin.	162.16	-459	0.57	0	1460	4520	3840	1454	5294	No	11.53	Si
SLU 84	ini.	-883.89	3900	0.57	0	1460	4520	3840	1454	5294	No	1.36	Si
SLU 84	fin.	171.9	-439	0.57	0	1460	4520	3840	1454	5294	No	12.06	Si
SLU 82	ini.	-878.13	3877	0.57	0	1460	4520	3840	1454	5294	No	1.37	Si
SLU 82	fin.	170.79	-439	0.57	0	1460	4520	3840	1454	5294	No	12.05	Si
SLU 80	ini.	-860.39	3773	0.57	0	1460	4520	3840	1454	5294	No	1.4	Si
SLU 80	fin.	176.42	-376	0.57	0	1460	4520	3840	1454	5294	No	14.1	Si
SLU 75	ini.	-859.71	3769	0.57	0	1460	4520	3840	1454	5294	No	1.4	Si
SLU 75	fin.	177.25	-372	0.57	0	1460	4520	3840	1454	5294	No	14.23	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	-1108.42	-2141	-0.0026803	0.0002807	0.0035	0.57		1281.66	1281.66		1.16	Si
SLV 4	fin.	820.27	1725	-0.0015445	0.0002807	0.0035	0.57		1278.06	1278.06		1.56	Si
SLD 6	ini.	-1139.46	-2610	-0.002853	0.0002807	0.0035	0.57		1281.66	1281.66		1.12	Si
SLD 6	fin.	499.05	629	-0.0007801	0.0002807	0.0035	0.57		1278.06	1278.06		2.56	Si
SLD 5	ini.	-1079.98	-2485	-0.0025322	0.0002807	0.0035	0.57		1281.66	1281.66		1.19	Si
SLD 5	fin.	449.66	539	-0.000684	0.0002807	0.0035	0.57		1278.06	1278.06		2.84	Si
SLV 10	ini.	-1508	-3668	-0.0048416	0.0002807	0.0035	0.57		1281.66	1281.66		0.85	No
SLV 10	fin.	564.78	393	-0.0009153	0.0002807	0.0035	0.57		1278.06	1278.06		2.26	Si
SLV 1	ini.	-1532.11	-3237	-0.0049549	0.0002807	0.0035	0.57		1281.66	1281.66		0.84	No
SLV 1	fin.	1013.85	1834	-0.002235	0.0002807	0.0035	0.57		1278.06	1278.06		1.26	Si
SLV 2	ini.	-1744.05	-3681	-0.0059128	0.0002807	0.0035	0.57		1281.66	1281.66		0.73	No
SLV 2	fin.	1189.86	2153	-0.0031765	0.0002807	0.0035	0.57		1278.06	1278.06		1.07	Si
SLV 9	ini.	-1365.31	-3369	-0.004141	0.0002807	0.0035	0.57		1281.66	1281.66		0.94	No
SLV 9	fin.	446.28	178	-0.0006776	0.0002807	0.0035	0.57		1278.06	1278.06		2.86	Si
SLD 2	ini.	-1076.76	-2326	-0.002516	0.0002807	0.0035	0.57		1281.66	1281.66		1.19	Si
SLD 2	fin.	575.97	961	-0.0009392	0.0002807	0.0035	0.57		1278.06	1278.06		2.22	Si
SLV 5	ini.	-1800.54	-4170	-0.006161	0.0002807	0.0035	0.57		1281.66	1281.66		0.71	No
SLV 5	fin.	920.52	1197	-0.0018659	0.0002807	0.0035	0.57		1278.06	1278.06		1.39	Si
SLV 6	ini.	-1943.23	-4469	-0.006779	0.0002807	0.0035	0.57		1281.66	1281.66		0.66	No
SLV 6	fin.	1039.02	1412	-0.0023487	0.0002807	0.0035	0.57		1278.06	1278.06		1.23	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	-1532.11	5649	0.57	0	1638	4520	5761	1454	6158		1.09	Si
SLV 1	fin.	1013.85	2605	0.57	0	1638	4520	5761	1454	6158		2.36	Si
SLV 9	ini.	-1365.31	5477	0.57	0	1638	4520	5761	1454	6158		1.12	Si
SLV 9	fin.	446.28	104	0.57	0	1638	4520	5761	1454	6158		59.36	Si
SLV 5	ini.	-1800.54	6816	0.57	0	1638	4520	5761	1454	6158		0.9	No
SLV 5	fin.	920.52	1740	0.57	0	1638	4520	5761	1454	6158		3.54	Si
SLD 6	ini.	-1139.46	4505	0.57	0	1638	4520	5761	1454	6158		1.37	Si
SLD 6	fin.	499.05	705	0.57	0	1638	4520	5761	1454	6158		8.74	Si
SLV 2	ini.	-1744.05	6296	0.57	0	1638	4520	5761	1454	6158		0.98	No
SLV 2	fin.	1189.86	3152	0.57	0	1638	4520	5761	1454	6158		1.95	Si
SLD 5	ini.	-1079.98	4324	0.57	0	1638	4520	5761	1454	6158		1.42	Si
SLD 5	fin.	449.66	551	0.57	0	1638	4520	5761	1454	6158		11.17	Si
SLV 4	ini.	-1108.42	4046	0.57	0	1638	4520	5761	1454	6158		1.52	Si
SLV 4	fin.	820.27	2334	0.57	0	1638	4520	5761	1454	6158		2.64	Si
SLV 6	ini.	-1943.23	7252	0.57	0	1638	4520	5761	1454	6158		0.85	No
SLV 6	fin.	1039.02	2108	0.57	0	1638	4520	5761	1454	6158		2.92	Si
SLD 2	ini.	-1076.76	4162	0.57	0	1638	4520	5761	1454	6158		1.48	Si
SLD 2	fin.	575.97	1186	0.57	0	1638	4520	5761	1454	6158		5.19	Si
SLV 10	ini.	-1508	5912	0.57	0	1638	4520	5761	1454	6158		1.04	Si
SLV 10	fin.	564.78	472	0.57	0	1638	4520	5761	1454	6158		13.06	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.66	SLV 6	No
V_SLV	0.849	SLV 6	No
PF_SLU	1.033	SLU 84	Si
V_SLU	1.355	SLU 83	Si

Trave di accoppiamento 31

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-3.013	5.876	-1.3	0.7	2	-2.013	5.876	-1.3	0.7	2	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-1960.36	-4321	-0.0002119	0.0001872	0.0035	2		10737.13	10737.13	No	5.48	Si
SLU 82	fin.	3289.73	-6428	-0.0003849	0.0001872	0.0035	2		10722.86	10722.86	No	3.26	Si
SLU 83	ini.	-2050.55	-4460	-0.0002228	0.0001872	0.0035	2		10737.13	10737.13	No	5.24	Si
SLU 83	fin.	3382.07	-6661	-0.0003978	0.0001872	0.0035	2		10722.86	10722.86	No	3.17	Si
SLU 81	ini.	-2013.44	-4395	-0.0002183	0.0001872	0.0035	2		10737.13	10737.13	No	5.33	Si
SLU 81	fin.	3326.91	-6547	-0.0003901	0.0001872	0.0035	2		10722.86	10722.86	No	3.22	Si
SLU 77	ini.	-2059.06	-4423	-0.0002239	0.0001872	0.0035	2		10737.13	10737.13	No	5.21	Si
SLU 77	fin.	3368.15	-6641	-0.0003958	0.0001872	0.0035	2		10722.86	10722.86	No	3.18	Si
SLU 75	ini.	-1968.87	-4284	-0.000213	0.0001872	0.0035	2		10737.13	10737.13	No	5.45	Si
SLU 75	fin.	3275.81	-6407	-0.000383	0.0001872	0.0035	2		10722.86	10722.86	No	3.27	Si
SLU 79	ini.	-2043.27	-4393	-0.0002219	0.0001872	0.0035	2		10737.13	10737.13	No	5.25	Si
SLU 79	fin.	3347.52	-6593	-0.000393	0.0001872	0.0035	2		10722.86	10722.86	No	3.2	Si
SLU 74	ini.	-2021.95	-4358	-0.0002194	0.0001872	0.0035	2		10737.13	10737.13	No	5.31	Si
SLU 74	fin.	3313	-6527	-0.0003881	0.0001872	0.0035	2		10722.86	10722.86	No	3.24	Si
SLU 84	ini.	-1997.47	-4386	-0.0002164	0.0001872	0.0035	2		10737.13	10737.13	No	5.38	Si
SLU 84	fin.	3344.88	-6541	-0.0003926	0.0001872	0.0035	2		10722.86	10722.86	No	3.21	Si
SLU 80	ini.	-1990.19	-4319	-0.0002155	0.0001872	0.0035	2		10737.13	10737.13	No	5.4	Si
SLU 80	fin.	3310.33	-6473	-0.0003878	0.0001872	0.0035	2		10722.86	10722.86	No	3.24	Si
SLU 78	ini.	-2005.98	-4349	-0.0002174	0.0001872	0.0035	2		10737.13	10737.13	No	5.35	Si
SLU 78	fin.	3330.97	-6521	-0.0003906	0.0001872	0.0035	2		10722.86	10722.86	No	3.22	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-2021.95	6073	2	0	6250	7930	13475	5100	14180	No	2.34	Si
SLU 74	fin.	3313	9499	2	0	6250	7930	13475	5100	14180	No	1.49	Si
SLU 82	ini.	-1960.36	5915	2	0	6250	7930	13475	5100	14180	No	2.4	Si
SLU 82	fin.	3289.73	9370	2	0	6250	7930	13475	5100	14180	No	1.51	Si
SLU 78	ini.	-2005.98	6073	2	0	6250	7930	13475	5100	14180	No	2.33	Si
SLU 78	fin.	3330.97	9512	2	0	6250	7930	13475	5100	14180	No	1.49	Si
SLU 83	ini.	-2050.55	6126	2	0	6250	7930	13475	5100	14180	No	2.31	Si
SLU 83	fin.	3382.07	9720	2	0	6250	7930	13475	5100	14180	No	1.46	Si
SLU 75	ini.	-1968.87	5967	2	0	6250	7930	13475	5100	14180	No	2.38	Si
SLU 75	fin.	3275.81	9330	2	0	6250	7930	13475	5100	14180	No	1.52	Si
SLU 80	ini.	-1990.19	6036	2	0	6250	7930	13475	5100	14180	No	2.35	Si
SLU 80	fin.	3310.33	9439	2	0	6250	7930	13475	5100	14180	No	1.5	Si
SLU 81	ini.	-2013.44	6020	2	0	6250	7930	13475	5100	14180	No	2.36	Si
SLU 81	fin.	3326.91	9538	2	0	6250	7930	13475	5100	14180	No	1.49	Si
SLU 84	ini.	-1997.47	6021	2	0	6250	7930	13475	5100	14180	No	2.36	Si
SLU 84	fin.	3344.88	9551	2	0	6250	7930	13475	5100	14180	No	1.48	Si
SLU 79	ini.	-2043.27	6141	2	0	6250	7930	13475	5100	14180	No	2.31	Si
SLU 79	fin.	3347.52	9607	2	0	6250	7930	13475	5100	14180	No	1.48	Si
SLU 77	ini.	-2059.06	6179	2	0	6250	7930	13475	5100	14180	No	2.29	Si
SLU 77	fin.	3368.15	9680	2	0	6250	7930	13475	5100	14180	No	1.46	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	4180.05	3224	-0.0004843	0.0002807	0.0035	2		15635.95	15635.95		3.74	Si
SLV 10	fin.	-2246.54	7537	-0.0002388	0.0002807	0.0035	2		15648.46	15648.46		6.97	Si
SLV 11	ini.	-6725.57	-10552	-0.0008735	0.0002807	0.0035	2		15648.46	15648.46		2.33	Si
SLV 11	fin.	5656.15	-16446	-0.0007011	0.0002807	0.0035	2		15635.95	15635.95		2.76	Si
SLV 3	ini.	-3899.08	-3208	-0.0004455	0.0002807	0.0035	2		15648.46	15648.46		4.01	Si
SLV 3	fin.	5829.81	-9042	-0.0007283	0.0002807	0.0035	2		15635.95	15635.95		2.68	Si
SLD 8	ini.	-3434.34	-5345	-0.000384	0.0002807	0.0035	2		15648.46	15648.46		4.56	Si
SLD 8	fin.	3961.07	-8951	-0.0004543	0.0002807	0.0035	2		15635.95	15635.95		3.95	Si
SLV 4	ini.	-3052.31	-2636	-0.0003355	0.0002807	0.0035	2		15648.46	15648.46		5.13	Si
SLV 4	fin.	5144.99	-7545	-0.0006232	0.0002807	0.0035	2		15635.95	15635.95		3.04	Si
SLV 6	ini.	3878.85	4493	-0.0004432	0.0002807	0.0035	2		15635.95	15635.95		4.03	Si
SLV 6	fin.	-1015.91	7356	-0.0001035	0.0002807	0.0035	2		15648.46	15648.46		15.4	Si
SLV 8	ini.	-6456.68	-8897	-0.0008286	0.0002807	0.0035	2		15648.46	15648.46		2.42	Si
SLV 8	fin.	6425.71	-15619	-0.0008244	0.0002807	0.0035	2		15635.95	15635.95		2.43	Si
SLD 7	ini.	-3671.98	-5506	-0.0004151	0.0002807	0.0035	2		15648.46	15648.46		4.26	Si
SLD 7	fin.	4153.26	-9371	-0.0004806	0.0002807	0.0035	2		15635.95	15635.95		3.76	Si
SLV 7	ini.	-7026.78	-9283	-0.0009249	0.0002807	0.0035	2		15648.46	15648.46		2.23	Si
SLV 7	fin.	6886.77	-16627	-0.0009018	0.0002807	0.0035	2		15635.95	15635.95		2.27	Si
SLV 12	ini.	-6155.48	-10167	-0.0007794	0.0002807	0.0035	2		15648.46	15648.46		2.54	Si
SLV 12	fin.	5195.08	-15438	-0.0006307	0.0002807	0.0035	2		15635.95	15635.95		3.01	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 8	ini.	-3434.34	9118	2	0	6643	7930	20213	5100	14573		1.6	Si
SLD 8	fin.	3961.07	13196	2	0	6643	7930	20213	5100	14573		1.1	Si
SLV 12	ini.	-6155.48	12941	2	0	6643	7930	20213	5100	14573		1.13	Si
SLV 12	fin.	5195.08	21244	2	0	6643	7930	20213	5100	14573		0.69	No
SLV 11	ini.	-6725.57	14471	2	0	6643	7930	20213	5100	14573		1.01	Si
SLV 11	fin.	5656.15	22981	2	0	6643	7930	20213	5100	14573		0.63	No
SLD 11	ini.	-3543.37	8367	2	0	6643	7930	20213	5100	14573		1.74	Si
SLD 11	fin.	3626.84	13074	2	0	6643	7930	20213	5100	14573		1.11	Si
SLV 7	ini.	-7026.78	17720	2	0	6643	7930	20213	5100	14573		0.82	No
SLV 7	fin.	6886.77	24961	2	0	6643	7930	20213	5100	14573		0.58	No
SLV 8	ini.	-6456.68	16189	2	0	6643	7930	20213	5100	14573		0.9	No
SLV 8	fin.	6425.71	23224	2	0	6643	7930	20213	5100	14573		0.63	No
SLV 3	ini.	-3899.08	14206	2	0	6643	7930	20213	5100	14573		1.03	Si
SLV 3	fin.	5829.81	16105	2	0	6643	7930	20213	5100	14573		0.9	No
SLD 12	ini.	-3305.73	7729	2	0	6643	7930	20213	5100	14573		1.89	Si
SLD 12	fin.	3434.65	12350	2	0	6643	7930	20213	5100	14573		1.18	Si
SLV 4	ini.	-3052.31	11932	2	0	6643	7930	20213	5100	14573		1.22	Si
SLV 4	fin.	5144.99	13525	2	0	6643	7930	20213	5100	14573		1.08	Si
SLD 7	ini.	-3671.98	9756	2	0	6643	7930	20213	5100	14573		1.49	Si
SLD 7	fin.	4153.26	13920	2	0	6643	7930	20213	5100	14573		1.05	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.227	SLV 7	Si
V_SLV	0.584	SLV 7	No
PF_SLU	3.17	SLU 83	Si
V_SLU	1.459	SLU 83	Si

Trave di accoppiamento 32

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-3.013	5.876	1.1	1.67	0.57	-2.013	5.876	1.1	1.67	0.57	1	0.45	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-1095.5	-2495	-0.0028801	0.0001872	0.0035	0.57		912.83	912.83	No	0.83	No
SLU 81	fin.	375.95	1162	-0.0005828	0.0001872	0.0035	0.57		908.75	908.75	No	2.42	Si
SLU 82	ini.	-1081.83	-2460	-0.0027985	0.0001872	0.0035	0.57		912.83	912.83	No	0.84	No
SLU 82	fin.	367.23	1141	-0.0005662	0.0001872	0.0035	0.57		908.75	908.75	No	2.47	Si
SLU 83	ini.	-1111.06	-2534	-0.0029763	0.0001872	0.0035	0.57		912.83	912.83	No	0.82	No
SLU 83	fin.	383.52	1180	-0.0005973	0.0001872	0.0035	0.57		908.75	908.75	No	2.37	Si
SLU 78	ini.	-1082.82	-2482	-0.0028043	0.0001872	0.0035	0.57		912.83	912.83	No	0.84	No
SLU 78	fin.	383.47	1162	-0.0005972	0.0001872	0.0035	0.57		908.75	908.75	No	2.37	Si
SLU 79	ini.	-1090.57	-2502	-0.0028504	0.0001872	0.0035	0.57		912.83	912.83	No	0.84	No
SLU 79	fin.	389.43	1176	-0.0006087	0.0001872	0.0035	0.57		908.75	908.75	No	2.33	Si
SLU 84	ini.	-1097.4	-2499	-0.0028917	0.0001872	0.0035	0.57		912.83	912.83	No	0.83	No
SLU 84	fin.	374.8	1159	-0.0005806	0.0001872	0.0035	0.57		908.75	908.75	No	2.42	Si
SLU 74	ini.	-1080.92	-2478	-0.0027932	0.0001872	0.0035	0.57		912.83	912.83	No	0.84	No
SLU 74	fin.	384.63	1165	-0.0005994	0.0001872	0.0035	0.57		908.75	908.75	No	2.36	Si
SLU 75	ini.	-1067.26	-2443	-0.0027144	0.0001872	0.0035	0.57		912.83	912.83	No	0.86	No
SLU 75	fin.	375.91	1144	-0.0005827	0.0001872	0.0035	0.57		908.75	908.75	No	2.42	Si
SLU 77	ini.	-1096.48	-2517	-0.0028861	0.0001872	0.0035	0.57		912.83	912.83	No	0.83	No
SLU 77	fin.	392.2	1183	-0.000614	0.0001872	0.0035	0.57		908.75	908.75	No	2.32	Si
SLU 80	ini.	-1076.91	-2467	-0.0027698	0.0001872	0.0035	0.57		912.83	912.83	No	0.85	No
SLU 80	fin.	380.71	1156	-0.0005919	0.0001872	0.0035	0.57		908.75	908.75	No	2.39	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-1067.26	4617	0.57	0	1460	4520	3840	1454	5294	No	1.15	Si
SLU 75	fin.	375.91	454	0.57	0	1460	4520	3840	1454	5294	No	11.65	Si
SLU 77	ini.	-1096.48	4731	0.57	0	1460	4520	3840	1454	5294	No	1.12	Si
SLU 77	fin.	392.2	500	0.57	0	1460	4520	3840	1454	5294	No	10.59	Si
SLU 83	ini.	-1111.06	4820	0.57	0	1460	4520	3840	1454	5294	No	1.1	Si
SLU 83	fin.	383.52	433	0.57	0	1460	4520	3840	1454	5294	No	12.22	Si
SLU 81	ini.	-1095.5	4757	0.57	0	1460	4520	3840	1454	5294	No	1.11	Si
SLU 81	fin.	375.95	413	0.57	0	1460	4520	3840	1454	5294	No	12.8	Si
SLU 82	ini.	-1081.83	4705	0.57	0	1460	4520	3840	1454	5294	No	1.13	Si
SLU 82	fin.	367.23	387	0.57	0	1460	4520	3840	1454	5294	No	13.66	Si
SLU 74	ini.	-1080.92	4669	0.57	0	1460	4520	3840	1454	5294	No	1.13	Si
SLU 74	fin.	384.63	480	0.57	0	1460	4520	3840	1454	5294	No	11.02	Si
SLU 79	ini.	-1090.57	4708	0.57	0	1460	4520	3840	1454	5294	No	1.12	Si
SLU 79	fin.	389.43	493	0.57	0	1460	4520	3840	1454	5294	No	10.74	Si
SLU 84	ini.	-1097.4	4768	0.57	0	1460	4520	3840	1454	5294	No	1.11	Si
SLU 84	fin.	374.8	407	0.57	0	1460	4520	3840	1454	5294	No	13.01	Si
SLU 80	ini.	-1076.91	4656	0.57	0	1460	4520	3840	1454	5294	No	1.14	Si
SLU 80	fin.	380.71	467	0.57	0	1460	4520	3840	1454	5294	No	11.34	Si
SLU 78	ini.	-1082.82	4679	0.57	0	1460	4520	3840	1454	5294	No	1.13	Si
SLU 78	fin.	383.47	474	0.57	0	1460	4520	3840	1454	5294	No	11.17	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 12	ini.	-1175.5	-2776	-0.0030678	0.0002807	0.0035	0.57		1281.66	1281.66		1.09	Si
SLD 12	fin.	548.44	1481	-0.0008809	0.0002807	0.0035	0.57		1278.06	1278.06		2.33	Si
SLV 4	ini.	-1501.21	-3775	-0.0048094	0.0002807	0.0035	0.57		1281.66	1281.66		0.85	No
SLV 4	fin.	998.11	2507	-0.0021672	0.0002807	0.0035	0.57		1278.06	1278.06		1.28	Si
SLV 11	ini.	-1997.5	-4841	-0.0070103	0.0002807	0.0035	0.57		1281.66	1281.66		0.64	No
SLV 11	fin.	1107.56	2823	-0.0026928	0.0002807	0.0035	0.57		1278.06	1278.06		1.15	Si
SLD 8	ini.	-1298.57	-3128	-0.0037884	0.0002807	0.0035	0.57		1281.66	1281.66		0.99	No
SLD 8	fin.	688.41	1807	-0.0011955	0.0002807	0.0035	0.57		1278.06	1278.06		1.86	Si
SLV 7	ini.	-2285.34	-5663	-0.0082111	0.0002807	0.0035	0.57		1281.66	1281.66		0.56	No
SLV 7	fin.	1434.94	3584	-0.0045104	0.0002807	0.0035	0.57		1278.06	1278.06		0.89	No
SLV 8	ini.	-2122.32	-5236	-0.0075355	0.0002807	0.0035	0.57		1281.66	1281.66		0.6	No
SLV 8	fin.	1293.74	3241	-0.0037824	0.0002807	0.0035	0.57		1278.06	1278.06		0.99	No
SLD 7	ini.	-1366.53	-3305	-0.0041473	0.0002807	0.0035	0.57		1281.66	1281.66		0.94	No
SLD 7	fin.	747.27	1950	-0.0013435	0.0002807	0.0035	0.57		1278.06	1278.06		1.71	Si
SLD 11	ini.	-1243.45	-2954	-0.0034777	0.0002807	0.0035	0.57		1281.66	1281.66		1.03	Si
SLD 11	fin.	607.3	1625	-0.0010076	0.0002807	0.0035	0.57		1278.06	1278.06		2.1	Si
SLV 3	ini.	-1743.35	-4408	-0.0059097	0.0002807	0.0035	0.57		1281.66	1281.66		0.74	No
SLV 3	fin.	1207.83	3018	-0.0032863	0.0002807	0.0035	0.57		1278.06	1278.06		1.06	Si
SLV 12	ini.	-1834.48	-4415	-0.0063095	0.0002807	0.0035	0.57		1281.66	1281.66		0.7	No
SLV 12	fin.	966.36	2479	-0.0020375	0.0002807	0.0035	0.57		1278.06	1278.06		1.32	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 12	ini.	-1834.48	7381	0.57	0	1638	4520	5761	1454	6158		0.83	No
SLV 12	fin.	966.36	2823	0.57	0	1638	4520	5761	1454	6158		2.18	Si
SLD 8	ini.	-1298.57	5255	0.57	0	1638	4520	5761	1454	6158		1.17	Si
SLD 8	fin.	688.41	1875	0.57	0	1638	4520	5761	1454	6158		3.28	Si
SLV 11	ini.	-1997.5	7947	0.57	0	1638	4520	5761	1454	6158		0.77	No

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 11	fin.	1107.56	3297	0.57	0	1638	4520	5761	1454	6158		1.87	Si
SLV 7	ini.	-2285.34	8872	0.57	0	1638	4520	5761	1454	6158		0.69	No
SLV 7	fin.	1434.94	4486	0.57	0	1638	4520	5761	1454	6158		1.37	Si
SLV 8	ini.	-2122.32	8306	0.57	0	1638	4520	5761	1454	6158		0.74	No
SLV 8	fin.	1293.74	4012	0.57	0	1638	4520	5761	1454	6158		1.54	Si
SLD 7	ini.	-1366.53	5491	0.57	0	1638	4520	5761	1454	6158		1.12	Si
SLD 7	fin.	747.27	2072	0.57	0	1638	4520	5761	1454	6158		2.97	Si
SLV 3	ini.	-1743.35	6650	0.57	0	1638	4520	5761	1454	6158		0.93	No
SLV 3	fin.	1207.83	3713	0.57	0	1638	4520	5761	1454	6158		1.66	Si
SLD 12	ini.	-1175.5	4859	0.57	0	1638	4520	5761	1454	6158		1.27	Si
SLD 12	fin.	548.44	1367	0.57	0	1638	4520	5761	1454	6158		4.51	Si
SLD 11	ini.	-1243.45	5095	0.57	0	1638	4520	5761	1454	6158		1.21	Si
SLD 11	fin.	607.3	1564	0.57	0	1638	4520	5761	1454	6158		3.94	Si
SLV 4	ini.	-1501.21	5810	0.57	0	1638	4520	5761	1454	6158		1.06	Si
SLV 4	fin.	998.11	3009	0.57	0	1638	4520	5761	1454	6158		2.05	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.561	SLV 7	No
V_SLV	0.694	SLV 7	No
PF_SLU	0.822	SLU 83	No
V_SLU	1.098	SLU 83	Si

Trave di accoppiamento 33

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-21.763	5.951	1.67	2.57	0.9	-22.763	5.951	1.67	2.57	0.9	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-81.1	-1765	-0.0000402	0.0001872	0.0035	0.9		2948.11	2948.11	No	36.35	Si
SLU 82	fin.	955.44	-3266	-0.0005965	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.08	Si
SLU 77	ini.	-89.13	-1783	-0.0000443	0.0001872	0.0035	0.9		2948.11	2948.11	No	33.08	Si
SLU 77	fin.	981.68	-3333	-0.0006168	0.0001872	0.0035	0.9		2942.43	2942.43	No	3	Si
SLU 83	ini.	-84.08	-1807	-0.0000417	0.0001872	0.0035	0.9		2948.11	2948.11	No	35.06	Si
SLU 83	fin.	983.03	-3352	-0.0006179	0.0001872	0.0035	0.9		2942.43	2942.43	No	2.99	Si
SLU 81	ini.	-91.37	-1767	-0.0000454	0.0001872	0.0035	0.9		2948.11	2948.11	No	32.26	Si
SLU 81	fin.	974.71	-3310	-0.0006114	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.02	Si
SLU 79	ini.	-90.26	-1765	-0.0000448	0.0001872	0.0035	0.9		2948.11	2948.11	No	32.66	Si
SLU 79	fin.	974.06	-3305	-0.0006109	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.02	Si
SLU 78	ini.	-78.86	-1781	-0.0000391	0.0001872	0.0035	0.9		2948.11	2948.11	No	37.39	Si
SLU 78	fin.	962.41	-3289	-0.0006019	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.06	Si
SLU 74	ini.	-96.42	-1743	-0.000048	0.0001872	0.0035	0.9		2948.11	2948.11	No	30.58	Si
SLU 74	fin.	973.36	-3291	-0.0006104	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.02	Si
SLU 75	ini.	-86.14	-1741	-0.0000428	0.0001872	0.0035	0.9		2948.11	2948.11	No	34.22	Si
SLU 75	fin.	954.09	-3247	-0.0005955	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.08	Si
SLU 80	ini.	-79.99	-1763	-0.0000397	0.0001872	0.0035	0.9		2948.11	2948.11	No	36.86	Si
SLU 80	fin.	954.79	-3261	-0.000596	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.08	Si
SLU 84	ini.	-73.81	-1805	-0.0000366	0.0001872	0.0035	0.9		2948.11	2948.11	No	39.94	Si
SLU 84	fin.	963.76	-3308	-0.0006029	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.05	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-90.26	733	0.9	0	1875	7137	4043	2295	6338	No	8.65	Si
SLU 79	fin.	974.06	2743	0.9	0	1875	7137	4043	2295	6338	No	2.31	Si
SLU 78	ini.	-78.86	696	0.9	0	1875	7137	4043	2295	6338	No	9.11	Si
SLU 78	fin.	962.41	2705	0.9	0	1875	7137	4043	2295	6338	No	2.34	Si
SLU 82	ini.	-81.1	699	0.9	0	1875	7137	4043	2295	6338	No	9.07	Si
SLU 82	fin.	955.44	2686	0.9	0	1875	7137	4043	2295	6338	No	2.36	Si
SLU 81	ini.	-91.37	734	0.9	0	1875	7137	4043	2295	6338	No	8.63	Si
SLU 81	fin.	974.71	2748	0.9	0	1875	7137	4043	2295	6338	No	2.31	Si
SLU 84	ini.	-73.81	679	0.9	0	1875	7137	4043	2295	6338	No	9.33	Si
SLU 84	fin.	963.76	2709	0.9	0	1875	7137	4043	2295	6338	No	2.34	Si
SLU 83	ini.	-84.08	715	0.9	0	1875	7137	4043	2295	6338	No	8.87	Si
SLU 83	fin.	983.03	2770	0.9	0	1875	7137	4043	2295	6338	No	2.29	Si
SLU 75	ini.	-86.14	715	0.9	0	1875	7137	4043	2295	6338	No	8.86	Si
SLU 75	fin.	954.09	2682	0.9	0	1875	7137	4043	2295	6338	No	2.36	Si
SLU 77	ini.	-89.13	731	0.9	0	1875	7137	4043	2295	6338	No	8.67	Si
SLU 77	fin.	981.68	2766	0.9	0	1875	7137	4043	2295	6338	No	2.29	Si
SLU 74	ini.	-96.42	751	0.9	0	1875	7137	4043	2295	6338	No	8.44	Si
SLU 74	fin.	973.36	2744	0.9	0	1875	7137	4043	2295	6338	No	2.31	Si
SLU 80	ini.	-79.99	697	0.9	0	1875	7137	4043	2295	6338	No	9.09	Si
SLU 80	fin.	954.79	2682	0.9	0	1875	7137	4043	2295	6338	No	2.36	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 1	ini.	2202.02	-4629	-0.0017378	0.0002807	0.0035	0.9		2967.55	2967.55		1.35	Si
SLV 1	fin.	-1497.97	579	-0.0009904	0.0002807	0.0035	0.9		2973.32	2973.32		1.98	Si
SLV 8	ini.	-691.25	-2318	-0.0003815	0.0002807	0.0035	0.9		2973.32	2973.32		4.3	Si
SLV 8	fin.	2356.51	-6721	-0.001955	0.0002807	0.0035	0.9		2967.55	2967.55		1.26	Si
SLD 12	ini.	-773.2	-815	-0.0004348	0.0002807	0.0035	0.9		2973.32	2973.32		3.85	Si
SLD 12	fin.	1703.04	-4363	-0.0011821	0.0002807	0.0035	0.9		2967.55	2967.55		1.74	Si
SLV 15	ini.	-1809.11	1492	-0.0012839	0.0002807	0.0035	0.9		2973.32	2973.32		1.64	Si
SLV 15	fin.	2295.28	-4334	-0.0018653	0.0002807	0.0035	0.9		2967.55	2967.55		1.29	Si
SLV 16	ini.	-2406.85	2335	-0.0020256	0.0002807	0.0035	0.9		2973.32	2973.32		1.24	Si
SLV 16	fin.	2898.35	-5192	-0.0030072	0.0002807	0.0035	0.9		2967.55	2967.55		1.02	Si
SLV 14	ini.	-1862.3	2630	-0.0013386	0.0002807	0.0035	0.9		2973.32	2973.32		1.6	Si
SLV 14	fin.	1785.16	-2516	-0.001263	0.0002807	0.0035	0.9		2967.55	2967.55		1.66	Si
SLV 11	ini.	-1328.78	-960	-0.0008465	0.0002807	0.0035	0.9		2973.32	2973.32		2.24	Si
SLV 11	fin.	2754.51	-6814	-0.0026762	0.0002807	0.0035	0.9		2967.55	2967.55		1.08	Si
SLV 5	ini.	1526.39	-1902	-0.0010181	0.0002807	0.0035	0.9		2967.55	2967.55		1.94	Si
SLV 5	fin.	-1760.15	2779	-0.0012348	0.0002807	0.0035	0.9		2973.32	2973.32		1.69	Si
SLV 12	ini.	-1731.22	-393	-0.0012064	0.0002807	0.0035	0.9		2973.32	2973.32		1.72	Si
SLV 12	fin.	3160.53	-7392	-0.0036353	0.0002807	0.0035	0.9		2967.55	2967.55		0.94	No
SLV 7	ini.	-288.8	-2885	-0.0001473	0.0002807	0.0035	0.9		2973.32	2973.32		10.3	Si
SLV 7	fin.	1950.49	-6143	-0.0014367	0.0002807	0.0035	0.9		2967.55	2967.55		1.52	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 11	ini.	-1328.78	5763	0.9	0	2615	7137	6064	2295	8359		1.45	Si
SLV 11	fin.	2754.51	8361	0.9	0	2615	7137	6064	2295	8359		1	No
SLV 5	ini.	1526.39	-5768	0.9	0	2615	7137	6064	2295	8359		1.45	Si
SLV 5	fin.	-1760.15	-5766	0.9	0	2615	7137	6064	2295	8359		1.45	Si
SLV 12	ini.	-1731.22	7075	0.9	0	2615	7137	6064	2295	8359		1.18	Si
SLV 12	fin.	3160.53	9708	0.9	0	2615	7137	6064	2295	8359		0.86	No
SLV 16	ini.	-2406.85	8447	0.9	0	2615	7137	6064	2295	8359		0.99	No
SLV 16	fin.	2898.35	9280	0.9	0	2615	7137	6064	2295	8359		0.9	No
SLV 8	ini.	-691.25	3720	0.9	0	2615	7137	6064	2295	8359		2.25	Si
SLV 8	fin.	2356.51	6945	0.9	0	2615	7137	6064	2295	8359		1.2	Si
SLV 7	ini.	-288.8	2408	0.9	0	2615	7137	6064	2295	8359		3.47	Si
SLV 7	fin.	1950.49	5599	0.9	0	2615	7137	6064	2295	8359		1.49	Si
SLV 14	ini.	-1862.3	5994	0.9	0	2615	7137	6064	2295	8359		1.39	Si
SLV 14	fin.	1785.16	5870	0.9	0	2615	7137	6064	2295	8359		1.42	Si
SLV 15	ini.	-1809.11	6498	0.9	0	2615	7137	6064	2295	8359		1.29	Si
SLV 15	fin.	2295.28	7279	0.9	0	2615	7137	6064	2295	8359		1.15	Si
SLV 2	ini.	1604.28	-5191	0.9	0	2615	7137	6064	2295	8359		1.61	Si
SLV 2	fin.	-894.9	-3338	0.9	0	2615	7137	6064	2295	8359		2.5	Si
SLV 1	ini.	2202.02	-7140	0.9	0	2615	7137	6064	2295	8359		1.17	Si
SLV 1	fin.	-1497.97	-5338	0.9	0	2615	7137	6064	2295	8359		1.57	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.939	SLV 12	No
V_SLV	0.861	SLV 12	No
PF_SLU	2.993	SLU 83	Si
V_SLU	2.288	SLU 83	Si

Trave di accoppiamento 34

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-21.763	5.951	4.47	5.07	0.6	-22.763	5.951	4.47	5.07	0.6	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-805.62	-2777	-0.001371	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.64	Si
SLU 80	fin.	25.19	69	-0.0000279	0.0001872	0.0035	0.6		1320.56	1320.56	No	52.42	Si
SLU 75	ini.	-803.86	-2770	-0.0013666	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.65	Si
SLU 75	fin.	28.65	81	-0.0000318	0.0001872	0.0035	0.6		1320.56	1320.56	No	46.09	Si
SLU 77	ini.	-823.75	-2844	-0.0014162	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.61	Si
SLU 77	fin.	31.08	84	-0.0000346	0.0001872	0.0035	0.6		1320.56	1320.56	No	42.49	Si
SLU 82	ini.	-811.49	-2784	-0.0013855	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.63	Si
SLU 82	fin.	22.67	73	-0.0000251	0.0001872	0.0035	0.6		1320.56	1320.56	No	58.25	Si
SLU 81	ini.	-823.14	-2827	-0.0014146	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.61	Si
SLU 81	fin.	29.07	91	-0.0000323	0.0001872	0.0035	0.6		1320.56	1320.56	No	45.42	Si
SLU 84	ini.	-819.73	-2816	-0.0014061	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.62	Si
SLU 84	fin.	18.7	56	-0.0000207	0.0001872	0.0035	0.6		1320.56	1320.56	No	70.6	Si
SLU 78	ini.	-812.1	-2802	-0.001387	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.63	Si
SLU 78	fin.	24.68	65	-0.0000274	0.0001872	0.0035	0.6		1320.56	1320.56	No	53.5	Si
SLU 83	ini.	-831.38	-2858	-0.0014355	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.59	Si
SLU 83	fin.	25.1	75	-0.0000278	0.0001872	0.0035	0.6		1320.56	1320.56	No	52.6	Si
SLU 74	ini.	-815.51	-2812	-0.0013955	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.62	Si
SLU 74	fin.	35.05	100	-0.000039	0.0001872	0.0035	0.6		1320.56	1320.56	No	37.68	Si
SLU 79	ini.	-817.27	-2820	-0.0013999	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.62	Si
SLU 79	fin.	31.59	87	-0.0000351	0.0001872	0.0035	0.6		1320.56	1320.56	No	41.8	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-817.27	3921	0.6	0	1250	4758	2695	1530	4225	No	1.08	Si
SLU 79	fin.	31.59	-337	0.6	0	1250	4758	2695	1530	4225	No	12.52	Si
SLU 77	ini.	-823.75	3951	0.6	0	1250	4758	2695	1530	4225	No	1.07	Si
SLU 77	fin.	31.08	-342	0.6	0	1250	4758	2695	1530	4225	No	12.34	Si
SLU 84	ini.	-819.73	3949	0.6	0	1250	4758	2695	1530	4225	No	1.07	Si
SLU 84	fin.	18.7	-410	0.6	0	1250	4758	2695	1530	4225	No	10.3	Si
SLU 75	ini.	-803.86	3861	0.6	0	1250	4758	2695	1530	4225	No	1.09	Si
SLU 75	fin.	28.65	-347	0.6	0	1250	4758	2695	1530	4225	No	12.17	Si
SLU 80	ini.	-805.62	3871	0.6	0	1250	4758	2695	1530	4225	No	1.09	Si
SLU 80	fin.	25.19	-364	0.6	0	1250	4758	2695	1530	4225	No	11.62	Si
SLU 83	ini.	-831.38	3999	0.6	0	1250	4758	2695	1530	4225	No	1.06	Si
SLU 83	fin.	25.1	-384	0.6	0	1250	4758	2695	1530	4225	No	11	Si
SLU 78	ini.	-812.1	3901	0.6	0	1250	4758	2695	1530	4225	No	1.08	Si
SLU 78	fin.	24.68	-368	0.6	0	1250	4758	2695	1530	4225	No	11.47	Si
SLU 82	ini.	-811.49	3910	0.6	0	1250	4758	2695	1530	4225	No	1.08	Si
SLU 82	fin.	22.67	-389	0.6	0	1250	4758	2695	1530	4225	No	10.86	Si
SLU 74	ini.	-815.51	3911	0.6	0	1250	4758	2695	1530	4225	No	1.08	Si
SLU 74	fin.	35.05	-321	0.6	0	1250	4758	2695	1530	4225	No	13.15	Si
SLU 81	ini.	-823.14	3960	0.6	0	1250	4758	2695	1530	4225	No	1.07	Si
SLU 81	fin.	29.07	-363	0.6	0	1250	4758	2695	1530	4225	No	11.63	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 8	ini.	-1622.2	-5914	-0.0046083	0.0002807	0.0035	0.6		1319.01	1319.01		0.81	No
SLV 8	fin.	494.11	1189	-0.000674	0.0002807	0.0035	0.6		1315.04	1315.04		2.66	Si
SLV 7	ini.	-1388.76	-5123	-0.0035114	0.0002807	0.0035	0.6		1319.01	1319.01		0.95	No
SLV 7	fin.	272.25	449	-0.0003318	0.0002807	0.0035	0.6		1315.04	1315.04		4.83	Si
SLD 16	ini.	-1093.83	-3754	-0.0020966	0.0002807	0.0035	0.6		1319.01	1319.01		1.21	Si
SLD 16	fin.	554.64	1831	-0.0007797	0.0002807	0.0035	0.6		1315.04	1315.04		2.37	Si
SLV 12	ini.	-2055.59	-7333	-0.0063731	0.0002807	0.0035	0.6		1319.01	1319.01		0.64	No
SLV 12	fin.	1007.05	2970	-0.0018143	0.0002807	0.0035	0.6		1315.04	1315.04		1.31	Si
SLV 14	ini.	-1124.3	-3661	-0.0022115	0.0002807	0.0035	0.6		1319.01	1319.01		1.17	Si
SLV 14	fin.	889.28	3187	-0.001486	0.0002807	0.0035	0.6		1315.04	1315.04		1.48	Si
SLV 16	ini.	-1813.63	-6209	-0.0054113	0.0002807	0.0035	0.6		1319.01	1319.01		0.73	No
SLV 16	fin.	1244.68	4128	-0.0027582	0.0002807	0.0035	0.6		1315.04	1315.04		1.06	Si
SLD 12	ini.	-1174.98	-4153	-0.0024189	0.0002807	0.0035	0.6		1319.01	1319.01		1.12	Si
SLD 12	fin.	443.09	1307	-0.0005891	0.0002807	0.0035	0.6		1315.04	1315.04		2.97	Si
SLV 15	ini.	-1466.9	-5034	-0.0039014	0.0002807	0.0035	0.6		1319.01	1319.01		0.9	No
SLV 15	fin.	915.15	3029	-0.0015528	0.0002807	0.0035	0.6		1315.04	1315.04		1.44	Si
SLV 1	ini.	667.04	2244	-0.0009913	0.0002807	0.0035	0.6		1315.04	1315.04		1.97	Si
SLV 1	fin.	-1150.04	-3848	-0.0023142	0.0002807	0.0035	0.6		1319.01	1319.01		1.15	Si
SLV 11	ini.	-1822.14	-6542	-0.0054459	0.0002807	0.0035	0.6		1319.01	1319.01		0.72	No
SLV 11	fin.	785.19	2230	-0.0012391	0.0002807	0.0035	0.6		1315.04	1315.04		1.67	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	667.04	-2522	0.6	0	1565	4758	4043	1530	5573		2.21	Si
SLV 1	fin.	-1150.04	-5128	0.6	0	1565	4758	4043	1530	5573		1.09	Si
SLV 15	ini.	-1466.9	6525	0.6	0	1565	4758	4043	1530	5573		0.85	No
SLV 15	fin.	915.15	3518	0.6	0	1565	4758	4043	1530	5573		1.58	Si
SLV 14	ini.	-1124.3	5029	0.6	0	1565	4758	4043	1530	5573		1.11	Si
SLV 14	fin.	889.28	3490	0.6	0	1565	4758	4043	1530	5573		1.6	Si
SLV 12	ini.	-2055.59	9073	0.6	0	1565	4758	4043	1530	5573		0.61	No
SLV 12	fin.	1007.05	3781	0.6	0	1565	4758	4043	1530	5573		1.47	Si
SLV 8	ini.	-1622.2	7247	0.6	0	1565	4758	4043	1530	5573		0.77	No
SLV 8	fin.	494.11	1610	0.6	0	1565	4758	4043	1530	5573		3.46	Si
SLV 16	ini.	-1813.63	7989	0.6	0	1565	4758	4043	1530	5573		0.7	No
SLV 16	fin.	1244.68	4898	0.6	0	1565	4758	4043	1530	5573		1.14	Si
SLV 7	ini.	-1388.76	6261	0.6	0	1565	4758	4043	1530	5573		0.89	No
SLV 7	fin.	272.25	681	0.6	0	1565	4758	4043	1530	5573		8.18	Si
SLD 12	ini.	-1174.98	5307	0.6	0	1565	4758	4043	1530	5573		1.05	Si
SLD 12	fin.	443.09	1490	0.6	0	1565	4758	4043	1530	5573		3.74	Si
SLV 11	ini.	-1822.14	8087	0.6	0	1565	4758	4043	1530	5573		0.69	No
SLV 11	fin.	785.19	2852	0.6	0	1565	4758	4043	1530	5573		1.95	Si
SLD 16	ini.	-1093.83	4939	0.6	0	1565	4758	4043	1530	5573		1.13	Si
SLD 16	fin.	554.64	2009	0.6	0	1565	4758	4043	1530	5573		2.77	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.642	SLV 12	No
V_SLV	0.614	SLV 12	No
PF_SLU	1.593	SLU 83	Si
V_SLU	1.056	SLU 83	Si

Trave di accoppiamento 35

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-21.543	-3.359	1.67	2.57	0.9	-22.543	-3.359	1.67	2.57	0.9	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	213.58	-2298	-0.0001091	0.0001872	0.0035	0.9		2942.43	2942.43	No	13.78	Si
SLU 80	fin.	724.78	-3058	-0.0004263	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.06	Si
SLU 76	ini.	210.1	-2287	-0.0001073	0.0001872	0.0035	0.9		2942.43	2942.43	No	14.01	Si
SLU 76	fin.	722.63	-3052	-0.0004248	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.07	Si
SLU 77	ini.	216.18	-2290	-0.0001105	0.0001872	0.0035	0.9		2942.43	2942.43	No	13.61	Si
SLU 77	fin.	719.6	-3035	-0.0004227	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.09	Si
SLU 84	ini.	239.41	-2380	-0.0001231	0.0001872	0.0035	0.9		2942.43	2942.43	No	12.29	Si
SLU 84	fin.	721.19	-3100	-0.0004238	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.08	Si
SLU 73	ini.	206.1	-2259	-0.0001051	0.0001872	0.0035	0.9		2942.43	2942.43	No	14.28	Si
SLU 73	fin.	714.72	-3018	-0.0004192	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.12	Si
SLU 70	ini.	147.36	-2058	-0.0000742	0.0001872	0.0035	0.9		2942.43	2942.43	No	19.97	Si
SLU 70	fin.	718.15	-2899	-0.0004217	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.1	Si
SLU 78	ini.	216.95	-2316	-0.0001109	0.0001872	0.0035	0.9		2942.43	2942.43	No	13.56	Si
SLU 78	fin.	728.23	-3076	-0.0004288	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.04	Si
SLU 72	ini.	143.99	-2040	-0.0000725	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.43	Si
SLU 72	fin.	714.71	-2881	-0.0004192	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.12	Si
SLU 75	ini.	212.95	-2287	-0.0001088	0.0001872	0.0035	0.9		2942.43	2942.43	No	13.82	Si
SLU 75	fin.	720.32	-3042	-0.0004232	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.08	Si
SLU 79	ini.	212.82	-2272	-0.0001087	0.0001872	0.0035	0.9		2942.43	2942.43	No	13.83	Si
SLU 79	fin.	716.15	-3017	-0.0004203	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.11	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 70	ini.	147.36	35	0.9	0	1875	7137	4043	2295	6338	No	180.69	Si
SLU 70	fin.	718.15	1778	0.9	0	1875	7137	4043	2295	6338	No	3.56	Si
SLU 83	ini.	238.65	-298	0.9	0	1875	7137	4043	2295	6338	No	21.3	Si
SLU 83	fin.	712.56	1787	0.9	0	1875	7137	4043	2295	6338	No	3.55	Si
SLU 80	ini.	213.58	-164	0.9	0	1875	7137	4043	2295	6338	No	38.73	Si
SLU 80	fin.	724.78	1776	0.9	0	1875	7137	4043	2295	6338	No	3.57	Si
SLU 78	ini.	216.95	-173	0.9	0	1875	7137	4043	2295	6338	No	36.64	Si
SLU 78	fin.	728.23	1785	0.9	0	1875	7137	4043	2295	6338	No	3.55	Si
SLU 74	ini.	212.19	-218	0.9	0	1875	7137	4043	2295	6338	No	29.11	Si
SLU 74	fin.	711.69	1793	0.9	0	1875	7137	4043	2295	6338	No	3.53	Si
SLU 69	ini.	146.59	-20	0.9	0	1875	7137	4043	2295	6338	No	324.92	Si
SLU 69	fin.	709.52	1808	0.9	0	1875	7137	4043	2295	6338	No	3.51	Si
SLU 79	ini.	212.82	-218	0.9	0	1875	7137	4043	2295	6338	No	29.04	Si
SLU 79	fin.	716.15	1806	0.9	0	1875	7137	4043	2295	6338	No	3.51	Si
SLU 71	ini.	143.23	-10	0.9	0	1875	7137	4043	2295	6338	No	622.97	Si
SLU 71	fin.	706.07	1799	0.9	0	1875	7137	4043	2295	6338	No	3.52	Si
SLU 77	ini.	216.18	-228	0.9	0	1875	7137	4043	2295	6338	No	27.85	Si
SLU 77	fin.	719.6	1815	0.9	0	1875	7137	4043	2295	6338	No	3.49	Si
SLU 66	ini.	142.6	-10	0.9	0	1875	7137	4043	2295	6338	No	657.15	Si
SLU 66	fin.	701.62	1786	0.9	0	1875	7137	4043	2295	6338	No	3.55	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 9	ini.	-1278.74	-1251	-0.0008057	0.0002807	0.0035	0.9		2973.32	2973.32		2.33	Si
SLV 9	fin.	2834.42	-7081	-0.002855	0.0002807	0.0035	0.9		2967.55	2967.55		1.05	Si
SLV 5	ini.	-218.04	-2790	-0.0001099	0.0002807	0.0035	0.9		2973.32	2973.32		13.64	Si
SLV 5	fin.	1812.06	-5709	-0.0012903	0.0002807	0.0035	0.9		2967.55	2967.55		1.64	Si
SLV 4	ini.	2366.77	-4209	-0.0019705	0.0002807	0.0035	0.9		2967.55	2967.55		1.25	Si
SLV 4	fin.	-1971.97	1841	-0.0014565	0.0002807	0.0035	0.9		2973.32	2973.32		1.51	Si
SLV 13	ini.	-2144.65	1173	-0.0016593	0.0002807	0.0035	0.9		2973.32	2973.32		1.39	Si
SLV 13	fin.	3022.3	-6093	-0.0033107	0.0002807	0.0035	0.9		2967.55	2967.55		0.98	No
SLV 15	ini.	-1745.43	1615	-0.0012203	0.0002807	0.0035	0.9		2973.32	2973.32		1.7	Si
SLV 15	fin.	2071.92	-3734	-0.0015754	0.0002807	0.0035	0.9		2967.55	2967.55		1.43	Si
SLV 3	ini.	1790.27	-3514	-0.0012682	0.0002807	0.0035	0.9		2967.55	2967.55		1.66	Si
SLV 3	fin.	-1335.93	839	-0.0008524	0.0002807	0.0035	0.9		2973.32	2973.32		2.23	Si
SLV 10	ini.	-890.61	-1719	-0.0005145	0.0002807	0.0035	0.9		2973.32	2973.32		3.34	Si
SLV 10	fin.	2406.19	-6406	-0.0020314	0.0002807	0.0035	0.9		2967.55	2967.55		1.23	Si
SLV 14	ini.	-1568.15	478	-0.0010531	0.0002807	0.0035	0.9		2973.32	2973.32		1.9	Si
SLV 14	fin.	2386.25	-5091	-0.0020003	0.0002807	0.0035	0.9		2967.55	2967.55		1.24	Si
SLV 2	ini.	1967.54	-4651	-0.0014555	0.0002807	0.0035	0.9		2967.55	2967.55		1.51	Si
SLV 2	fin.	-1021.59	-518	-0.000608	0.0002807	0.0035	0.9		2973.32	2973.32		2.91	Si
SLV 8	ini.	1500.86	-1785	-0.0009955	0.0002807	0.0035	0.9		2967.55	2967.55		1.98	Si
SLV 8	fin.	-1784.09	2829	-0.0012587	0.0002807	0.0035	0.9		2973.32	2973.32		1.67	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-2144.65	8195	0.9	0	2615	7137	6064	2295	8359		1.02	Si
SLV 13	fin.	3022.3	9030	0.9	0	2615	7137	6064	2295	8359		0.93	No
SLV 14	ini.	-1568.15	6255	0.9	0	2615	7137	6064	2295	8359		1.34	Si
SLV 14	fin.	2386.25	7007	0.9	0	2615	7137	6064	2295	8359		1.19	Si
SLV 2	ini.	1967.54	-6137	0.9	0	2615	7137	6064	2295	8359		1.36	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	fin.	-1021.59	-3716	0.9	0	2615	7137	6064	2295	8359		2.25	Si
SLV 4	ini.	2366.77	-8228	0.9	0	2615	7137	6064	2295	8359		1.02	Si
SLV 4	fin.	-1971.97	-6367	0.9	0	2615	7137	6064	2295	8359		1.31	Si
SLV 5	ini.	-218.04	2263	0.9	0	2615	7137	6064	2295	8359		3.69	Si
SLV 5	fin.	1812.06	4822	0.9	0	2615	7137	6064	2295	8359		1.73	Si
SLV 10	ini.	-890.61	4674	0.9	0	2615	7137	6064	2295	8359		1.79	Si
SLV 10	fin.	2406.19	6677	0.9	0	2615	7137	6064	2295	8359		1.25	Si
SLV 8	ini.	1500.86	-6013	0.9	0	2615	7137	6064	2295	8359		1.39	Si
SLV 8	fin.	-1784.09	-5376	0.9	0	2615	7137	6064	2295	8359		1.55	Si
SLV 3	ini.	1790.27	-6288	0.9	0	2615	7137	6064	2295	8359		1.33	Si
SLV 3	fin.	-1335.93	-4344	0.9	0	2615	7137	6064	2295	8359		1.92	Si
SLV 9	ini.	-1278.74	5981	0.9	0	2615	7137	6064	2295	8359		1.4	Si
SLV 9	fin.	2834.42	8039	0.9	0	2615	7137	6064	2295	8359		1.04	Si
SLV 15	ini.	-1745.43	6104	0.9	0	2615	7137	6064	2295	8359		1.37	Si
SLV 15	fin.	2071.92	6380	0.9	0	2615	7137	6064	2295	8359		1.31	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.982	SLV 13	No
V_SLV	0.926	SLV 13	No
PF_SLU	4.041	SLU 78	Si
V_SLU	3.492	SLU 77	Si

Trave di accoppiamento 36

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-21.543	-3.359	4.47	5.07	0.6	-22.543	-3.359	4.47	5.07	0.6	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-771.84	-2811	-0.0012894	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.72	Si
SLU 77	fin.	-75.42	-419	-0.0000854	0.0001872	0.0035	0.6		1324.3	1324.3	No	17.56	Si
SLU 78	ini.	-780.04	-2853	-0.0013089	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.7	Si
SLU 78	fin.	-73.76	-427	-0.0000834	0.0001872	0.0035	0.6		1324.3	1324.3	No	17.95	Si
SLU 76	ini.	-772.21	-2830	-0.0012903	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.71	Si
SLU 76	fin.	-69.1	-416	-0.000078	0.0001872	0.0035	0.6		1324.3	1324.3	No	19.17	Si
SLU 80	ini.	-775.67	-2836	-0.0012985	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.71	Si
SLU 80	fin.	-72.12	-420	-0.0000815	0.0001872	0.0035	0.6		1324.3	1324.3	No	18.36	Si
SLU 82	ini.	-776.92	-2836	-0.0013014	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.7	Si
SLU 82	fin.	-85.62	-460	-0.0000974	0.0001872	0.0035	0.6		1324.3	1324.3	No	15.47	Si
SLU 83	ini.	-777.65	-2828	-0.0013032	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.7	Si
SLU 83	fin.	-89.2	-462	-0.0001016	0.0001872	0.0035	0.6		1324.3	1324.3	No	14.85	Si
SLU 81	ini.	-768.72	-2794	-0.001282	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.72	Si
SLU 81	fin.	-87.28	-452	-0.0000994	0.0001872	0.0035	0.6		1324.3	1324.3	No	15.17	Si
SLU 79	ini.	-767.47	-2794	-0.0012791	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.73	Si
SLU 79	fin.	-73.78	-412	-0.0000834	0.0001872	0.0035	0.6		1324.3	1324.3	No	17.95	Si
SLU 84	ini.	-785.85	-2870	-0.0013228	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.69	Si
SLU 84	fin.	-87.54	-470	-0.0000997	0.0001872	0.0035	0.6		1324.3	1324.3	No	15.13	Si
SLU 75	ini.	-771.11	-2819	-0.0012877	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.72	Si
SLU 75	fin.	-71.84	-418	-0.0000812	0.0001872	0.0035	0.6		1324.3	1324.3	No	18.43	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-771.84	3606	0.6	0	1250	4758	2695	1530	4225	No	1.17	Si
SLU 77	fin.	-75.42	-689	0.6	0	1250	4758	2695	1530	4225	No	6.13	Si
SLU 81	ini.	-768.72	3602	0.6	0	1250	4758	2695	1530	4225	No	1.17	Si
SLU 81	fin.	-87.28	-749	0.6	0	1250	4758	2695	1530	4225	No	5.64	Si
SLU 80	ini.	-775.67	3611	0.6	0	1250	4758	2695	1530	4225	No	1.17	Si
SLU 80	fin.	-72.12	-665	0.6	0	1250	4758	2695	1530	4225	No	6.35	Si
SLU 79	ini.	-767.47	3586	0.6	0	1250	4758	2695	1530	4225	No	1.18	Si
SLU 79	fin.	-73.78	-680	0.6	0	1250	4758	2695	1530	4225	No	6.21	Si
SLU 76	ini.	-772.21	3587	0.6	0	1250	4758	2695	1530	4225	No	1.18	Si
SLU 76	fin.	-69.1	-644	0.6	0	1250	4758	2695	1530	4225	No	6.56	Si
SLU 82	ini.	-776.92	3628	0.6	0	1250	4758	2695	1530	4225	No	1.16	Si
SLU 82	fin.	-85.62	-734	0.6	0	1250	4758	2695	1530	4225	No	5.76	Si
SLU 75	ini.	-771.11	3590	0.6	0	1250	4758	2695	1530	4225	No	1.18	Si
SLU 75	fin.	-71.84	-663	0.6	0	1250	4758	2695	1530	4225	No	6.38	Si
SLU 84	ini.	-785.85	3669	0.6	0	1250	4758	2695	1530	4225	No	1.15	Si
SLU 84	fin.	-87.54	-745	0.6	0	1250	4758	2695	1530	4225	No	5.67	Si
SLU 83	ini.	-777.65	3644	0.6	0	1250	4758	2695	1530	4225	No	1.16	Si
SLU 83	fin.	-89.2	-760	0.6	0	1250	4758	2695	1530	4225	No	5.56	Si
SLU 78	ini.	-780.04	3632	0.6	0	1250	4758	2695	1530	4225	No	1.16	Si
SLU 78	fin.	-73.76	-674	0.6	0	1250	4758	2695	1530	4225	No	6.27	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 9	ini.	-1133.03	-4156	-0.0022457	0.0002807	0.0035	0.6		1319.01	1319.01		1.16	Si
SLD 9	fin.	382.97	969	-0.0004937	0.0002807	0.0035	0.6		1315.04	1315.04		3.43	Si
SLV 13	ini.	-1986.52	-7031	-0.0061012	0.0002807	0.0035	0.6		1319.01	1319.01		0.66	No
SLV 13	fin.	1366.52	4310	-0.0034138	0.0002807	0.0035	0.6		1315.04	1315.04		0.96	No
SLD 13	ini.	-1149.79	-4099	-0.0023132	0.0002807	0.0035	0.6		1319.01	1319.01		1.15	Si
SLD 13	fin.	564.62	1712	-0.0007977	0.0002807	0.0035	0.6		1315.04	1315.04		2.33	Si
SLV 9	ini.	-1993.96	-7342	-0.0061306	0.0002807	0.0035	0.6		1319.01	1319.01		0.66	No
SLV 9	fin.	962.51	2625	-0.0016822	0.0002807	0.0035	0.6		1315.04	1315.04		1.37	Si
SLV 15	ini.	-1360.32	-4649	-0.0033606	0.0002807	0.0035	0.6		1319.01	1319.01		0.97	No
SLV 15	fin.	1033.56	3479	-0.0018985	0.0002807	0.0035	0.6		1315.04	1315.04		1.27	Si
SLV 14	ini.	-1610.38	-5731	-0.0045567	0.0002807	0.0035	0.6		1319.01	1319.01		0.82	No
SLV 14	fin.	1009.96	3144	-0.0018233	0.0002807	0.0035	0.6		1315.04	1315.04		1.3	Si
SLV 6	ini.	-1173.55	-4533	-0.0024128	0.0002807	0.0035	0.6		1319.01	1319.01		1.12	Si
SLV 6	fin.	93.13	-273	-0.0001054	0.0002807	0.0035	0.6		1315.04	1315.04		14.12	Si
SLV 5	ini.	-1426.8	-5408	-0.0037052	0.0002807	0.0035	0.6		1319.01	1319.01		0.92	No
SLV 5	fin.	333.19	512	-0.0004187	0.0002807	0.0035	0.6		1315.04	1315.04		3.95	Si
SLV 4	ini.	906.36	3096	-0.0015298	0.0002807	0.0035	0.6		1315.04	1315.04		1.45	Si
SLV 4	fin.	-1420.74	-4728	-0.0036749	0.0002807	0.0035	0.6		1319.01	1319.01		0.93	No
SLV 10	ini.	-1740.71	-6467	-0.0051117	0.0002807	0.0035	0.6		1319.01	1319.01		0.76	No
SLV 10	fin.	722.45	1839	-0.0011039	0.0002807	0.0035	0.6		1315.04	1315.04		1.82	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-1610.38	6936	0.6	0	1565	4758	4043	1530	5573		0.8	No
SLV 14	fin.	1009.96	4079	0.6	0	1565	4758	4043	1530	5573		1.37	Si
SLV 10	ini.	-1740.71	7489	0.6	0	1565	4758	4043	1530	5573		0.74	No
SLV 10	fin.	722.45	2789	0.6	0	1565	4758	4043	1530	5573		2	Si
SLV 9	ini.	-1993.96	8543	0.6	0	1565	4758	4043	1530	5573		0.65	No
SLV 9	fin.	962.51	3807	0.6	0	1565	4758	4043	1530	5573		1.46	Si
SLV 5	ini.	-1426.8	6198	0.6	0	1565	4758	4043	1530	5573		0.9	No
SLV 5	fin.	333.19	1104	0.6	0	1565	4758	4043	1530	5573		5.05	Si
SLV 13	ini.	-1986.52	8503	0.6	0	1565	4758	4043	1530	5573		0.66	No
SLV 13	fin.	1366.52	5591	0.6	0	1565	4758	4043	1530	5573		1	No
SLV 4	ini.	906.36	-3481	0.6	0	1565	4758	4043	1530	5573		1.6	Si
SLV 4	fin.	-1420.74	-6317	0.6	0	1565	4758	4043	1530	5573		0.88	No
SLD 9	ini.	-1133.03	4972	0.6	0	1565	4758	4043	1530	5573		1.12	Si
SLD 9	fin.	382.97	1362	0.6	0	1565	4758	4043	1530	5573		4.09	Si
SLV 6	ini.	-1173.55	5143	0.6	0	1565	4758	4043	1530	5573		1.08	Si
SLV 6	fin.	93.13	86	0.6	0	1565	4758	4043	1530	5573		64.63	Si
SLV 15	ini.	-1360.32	5903	0.6	0	1565	4758	4043	1530	5573		0.94	No
SLV 15	fin.	1033.56	4205	0.6	0	1565	4758	4043	1530	5573		1.33	Si
SLD 13	ini.	-1149.79	5037	0.6	0	1565	4758	4043	1530	5573		1.11	Si
SLD 13	fin.	564.62	2165	0.6	0	1565	4758	4043	1530	5573		2.57	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.662	SLV 9	No
V_SLV	0.652	SLV 9	No
PF_SLU	1.685	SLU 84	Si
V_SLU	1.152	SLU 84	Si

Trave di accoppiamento 38

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-18.868	-3.359	4.47	5.07	0.6	-19.368	-3.359	4.47	5.07	0.6	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 73	ini.	-1003.65	-1828	-0.0019419	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.32	Si
SLU 73	fin.	1003.67	-1828	-0.0019514	0.0001872	0.0035	0.6		1320.56	1320.56	No	1.32	Si
SLU 78	ini.	-1020.8	-1891	-0.0020022	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.3	Si
SLU 78	fin.	1020.86	-1891	-0.0020124	0.0001872	0.0035	0.6		1320.56	1320.56	No	1.29	Si
SLU 83	ini.	-1030.12	-2004	-0.0020359	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.29	Si
SLU 83	fin.	1013.96	-2004	-0.0019876	0.0001872	0.0035	0.6		1320.56	1320.56	No	1.3	Si
SLU 82	ini.	-1032.05	-1960	-0.002043	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.28	Si
SLU 82	fin.	1020.93	-1960	-0.0020127	0.0001872	0.0035	0.6		1320.56	1320.56	No	1.29	Si
SLU 84	ini.	-1041.99	-1976	-0.0020799	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.27	Si
SLU 84	fin.	1032.99	-1976	-0.0020568	0.0001872	0.0035	0.6		1320.56	1320.56	No	1.28	Si
SLU 76	ini.	-1013.59	-1844	-0.0019766	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.31	Si
SLU 76	fin.	1015.73	-1844	-0.001994	0.0001872	0.0035	0.6		1320.56	1320.56	No	1.3	Si
SLU 75	ini.	-1010.86	-1875	-0.0019669	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.31	Si
SLU 75	fin.	1008.8	-1875	-0.0019694	0.0001872	0.0035	0.6		1320.56	1320.56	No	1.31	Si
SLU 80	ini.	-1015.61	-1879	-0.0019837	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.3	Si
SLU 80	fin.	1015.1	-1879	-0.0019917	0.0001872	0.0035	0.6		1320.56	1320.56	No	1.3	Si
SLU 81	ini.	-1020.17	-1988	-0.0019999	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.3	Si
SLU 81	fin.	1001.91	-1988	-0.0019453	0.0001872	0.0035	0.6		1320.56	1320.56	No	1.32	Si
SLU 77	ini.	-1008.92	-1919	-0.0019602	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.31	Si
SLU 77	fin.	1001.83	-1919	-0.001945	0.0001872	0.0035	0.6		1320.56	1320.56	No	1.32	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-1032.05	4211	0.6	0	1250	3965	2695	1530	4225	No	1	Si
SLU 82	fin.	1020.93	4001	0.6	0	1250	3965	2695	1530	4225	No	1.06	Si
SLU 75	ini.	-1010.86	4145	0.6	0	1250	3965	2695	1530	4225	No	1.02	Si
SLU 75	fin.	1008.8	3934	0.6	0	1250	3965	2695	1530	4225	No	1.07	Si
SLU 81	ini.	-1020.17	4149	0.6	0	1250	3965	2695	1530	4225	No	1.02	Si
SLU 81	fin.	1001.91	3939	0.6	0	1250	3965	2695	1530	4225	No	1.07	Si
SLU 78	ini.	-1020.8	4189	0.6	0	1250	3965	2695	1530	4225	No	1.01	Si
SLU 78	fin.	1020.86	3978	0.6	0	1250	3965	2695	1530	4225	No	1.06	Si
SLU 84	ini.	-1041.99	4255	0.6	0	1250	3965	2695	1530	4225	No	0.99	No
SLU 84	fin.	1032.99	4045	0.6	0	1250	3965	2695	1530	4225	No	1.04	Si
SLU 77	ini.	-1008.92	4127	0.6	0	1250	3965	2695	1530	4225	No	1.02	Si
SLU 77	fin.	1001.83	3916	0.6	0	1250	3965	2695	1530	4225	No	1.08	Si
SLU 73	ini.	-1003.65	4120	0.6	0	1250	3965	2695	1530	4225	No	1.03	Si
SLU 73	fin.	1003.67	3909	0.6	0	1250	3965	2695	1530	4225	No	1.08	Si
SLU 80	ini.	-1015.61	4167	0.6	0	1250	3965	2695	1530	4225	No	1.01	Si
SLU 80	fin.	1015.1	3956	0.6	0	1250	3965	2695	1530	4225	No	1.07	Si
SLU 76	ini.	-1013.59	4164	0.6	0	1250	3965	2695	1530	4225	No	1.01	Si
SLU 76	fin.	1015.73	3953	0.6	0	1250	3965	2695	1530	4225	No	1.07	Si
SLU 83	ini.	-1030.12	4193	0.6	0	1250	3965	2695	1530	4225	No	1.01	Si
SLU 83	fin.	1013.96	3983	0.6	0	1250	3965	2695	1530	4225	No	1.06	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-833.88	670	-0.0013453	0.0002807	0.0035	0.6		1319.01	1319.01		1.58	Si
SLV 16	fin.	1135.05	653	-0.0022661	0.0002807	0.0035	0.6		1315.04	1315.04		1.16	Si
SLV 13	ini.	-1006.56	2006	-0.0018043	0.0002807	0.0035	0.6		1319.01	1319.01		1.31	Si
SLV 13	fin.	1722.5	1787	-0.0050555	0.0002807	0.0035	0.6		1315.04	1315.04		0.76	No
SLV 14	ini.	-883.99	1426	-0.0014665	0.0002807	0.0035	0.6		1319.01	1319.01		1.49	Si
SLV 14	fin.	1474.21	1207	-0.0039557	0.0002807	0.0035	0.6		1315.04	1315.04		0.89	No
SLV 9	ini.	-886.93	971	-0.0014739	0.0002807	0.0035	0.6		1319.01	1319.01		1.49	Si
SLV 9	fin.	1562.07	600	-0.0043618	0.0002807	0.0035	0.6		1315.04	1315.04		0.84	No
SLV 5	ini.	-751.45	-590	-0.0011609	0.0002807	0.0035	0.6		1319.01	1319.01		1.76	Si
SLV 5	fin.	1120.17	-891	-0.0022073	0.0002807	0.0035	0.6		1315.04	1315.04		1.17	Si
SLD 14	ini.	-775.16	-120	-0.0012122	0.0002807	0.0035	0.6		1319.01	1319.01		1.7	Si
SLD 14	fin.	1023.09	-214	-0.0018647	0.0002807	0.0035	0.6		1315.04	1315.04		1.29	Si
SLD 13	ini.	-827.3	127	-0.0013299	0.0002807	0.0035	0.6		1319.01	1319.01		1.59	Si
SLD 13	fin.	1128.71	33	-0.0022409	0.0002807	0.0035	0.6		1315.04	1315.04		1.17	Si
SLV 10	ini.	-804.41	581	-0.0012774	0.0002807	0.0035	0.6		1319.01	1319.01		1.64	Si
SLV 10	fin.	1394.9	210	-0.003563	0.0002807	0.0035	0.6		1315.04	1315.04		0.94	No
SLV 15	ini.	-956.45	1251	-0.0016578	0.0002807	0.0035	0.6		1319.01	1319.01		1.38	Si
SLV 15	fin.	1383.34	1233	-0.0035029	0.0002807	0.0035	0.6		1315.04	1315.04		0.95	No
SLD 9	ini.	-774.63	-331	-0.0012111	0.0002807	0.0035	0.6		1319.01	1319.01		1.7	Si
SLD 9	fin.	1050.65	-491	-0.0019552	0.0002807	0.0035	0.6		1315.04	1315.04		1.25	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-883.99	4748	0.6	0	1875	3965	4043	1530	5573		1.17	Si
SLV 14	fin.	1474.21	4558	0.6	0	1875	3965	4043	1530	5573		1.22	Si
SLD 15	ini.	-806.88	3666	0.6	0	1875	3965	4043	1530	5573		1.52	Si
SLD 15	fin.	991.28	3530	0.6	0	1875	3965	4043	1530	5573		1.58	Si
SLV 5	ini.	-751.45	3800	0.6	0	1875	3965	4043	1530	5573		1.47	Si
SLV 5	fin.	1120.17	3494	0.6	0	1875	3965	4043	1530	5573		1.59	Si
SLV 15	ini.	-956.45	4733	0.6	0	1875	3965	4043	1530	5573		1.18	Si
SLV 15	fin.	1383.34	4627	0.6	0	1875	3965	4043	1530	5573		1.2	Si
SLV 16	ini.	-833.88	3991	0.6	0	1875	3965	4043	1530	5573		1.4	Si
SLV 16	fin.	1135.05	3885	0.6	0	1875	3965	4043	1530	5573		1.43	Si
SLV 9	ini.	-886.93	4932	0.6	0	1875	3965	4043	1530	5573		1.13	Si
SLV 9	fin.	1562.07	4634	0.6	0	1875	3965	4043	1530	5573		1.2	Si
SLV 13	ini.	-1006.56	5490	0.6	0	1875	3965	4043	1530	5573		1.02	Si
SLV 13	fin.	1722.5	5300	0.6	0	1875	3965	4043	1530	5573		1.05	Si
SLV 10	ini.	-804.41	4432	0.6	0	1875	3965	4043	1530	5573		1.26	Si
SLV 10	fin.	1394.9	4135	0.6	0	1875	3965	4043	1530	5573		1.35	Si
SLD 13	ini.	-827.3	3971	0.6	0	1875	3965	4043	1530	5573		1.4	Si
SLD 13	fin.	1128.71	3795	0.6	0	1875	3965	4043	1530	5573		1.47	Si
SLD 9	ini.	-774.63	3707	0.6	0	1875	3965	4043	1530	5573		1.5	Si
SLD 9	fin.	1050.65	3483	0.6	0	1875	3965	4043	1530	5573		1.6	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.763	SLV 13	No
V_SLV	1.015	SLV 13	Si
PF_SLU	1.271	SLU 84	Si
V_SLU	0.993	SLU 84	No

Trave di accoppiamento 39

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-17.313	-3.359	1.67	2.57	0.9	-18.313	-3.359	1.67	2.57	0.9	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 74	ini.	403.32	-868	-0.0002162	0.0001872	0.0035	0.9		2942.43	2942.43	No	7.3	Si
SLU 74	fin.	-70.39	-331	-0.0000348	0.0001872	0.0035	0.9		2948.11	2948.11	No	41.88	Si
SLU 62	ini.	407.05	-907	-0.0002185	0.0001872	0.0035	0.9		2942.43	2942.43	No	7.23	Si
SLU 62	fin.	-91.63	-248	-0.0000455	0.0001872	0.0035	0.9		2948.11	2948.11	No	32.17	Si
SLU 83	ini.	436.06	-951	-0.000236	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.75	Si
SLU 83	fin.	-87.42	-306	-0.0000434	0.0001872	0.0035	0.9		2948.11	2948.11	No	33.72	Si
SLU 77	ini.	401.63	-861	-0.0002152	0.0001872	0.0035	0.9		2942.43	2942.43	No	7.33	Si
SLU 77	fin.	-64.71	-351	-0.000032	0.0001872	0.0035	0.9		2948.11	2948.11	No	45.56	Si
SLU 82	ini.	424.58	-913	-0.000229	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.93	Si
SLU 82	fin.	-79.46	-319	-0.0000394	0.0001872	0.0035	0.9		2948.11	2948.11	No	37.1	Si
SLU 60	ini.	408.74	-914	-0.0002195	0.0001872	0.0035	0.9		2942.43	2942.43	No	7.2	Si
SLU 60	fin.	-97.31	-228	-0.0000484	0.0001872	0.0035	0.9		2948.11	2948.11	No	30.3	Si
SLU 84	ini.	422.89	-905	-0.000228	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.96	Si
SLU 84	fin.	-73.78	-340	-0.0000365	0.0001872	0.0035	0.9		2948.11	2948.11	No	39.96	Si
SLU 81	ini.	437.75	-958	-0.000237	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.72	Si
SLU 81	fin.	-93.1	-286	-0.0000463	0.0001872	0.0035	0.9		2948.11	2948.11	No	31.67	Si
SLU 61	ini.	395.56	-869	-0.0002116	0.0001872	0.0035	0.9		2942.43	2942.43	No	7.44	Si
SLU 61	fin.	-83.67	-261	-0.0000415	0.0001872	0.0035	0.9		2948.11	2948.11	No	35.24	Si
SLU 79	ini.	400.31	-858	-0.0002144	0.0001872	0.0035	0.9		2942.43	2942.43	No	7.35	Si
SLU 79	fin.	-66.23	-343	-0.0000328	0.0001872	0.0035	0.9		2948.11	2948.11	No	44.51	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	436.06	-3955	0.9	0	1875	7137	4043	2295	6338	No	1.6	Si
SLU 83	fin.	-87.42	1862	0.9	0	1875	7137	4043	2295	6338	No	3.4	Si
SLU 81	ini.	437.75	-3937	0.9	0	1875	7137	4043	2295	6338	No	1.61	Si
SLU 81	fin.	-93.1	1810	0.9	0	1875	7137	4043	2295	6338	No	3.5	Si
SLU 74	ini.	403.32	-3756	0.9	0	1875	7137	4043	2295	6338	No	1.69	Si
SLU 74	fin.	-70.39	1865	0.9	0	1875	7137	4043	2295	6338	No	3.4	Si
SLU 75	ini.	390.15	-3728	0.9	0	1875	7137	4043	2295	6338	No	1.7	Si
SLU 75	fin.	-56.75	1969	0.9	0	1875	7137	4043	2295	6338	No	3.22	Si
SLU 82	ini.	424.58	-3909	0.9	0	1875	7137	4043	2295	6338	No	1.62	Si
SLU 82	fin.	-79.46	1914	0.9	0	1875	7137	4043	2295	6338	No	3.31	Si
SLU 77	ini.	401.63	-3774	0.9	0	1875	7137	4043	2295	6338	No	1.68	Si
SLU 77	fin.	-64.71	1918	0.9	0	1875	7137	4043	2295	6338	No	3.3	Si
SLU 84	ini.	422.89	-3928	0.9	0	1875	7137	4043	2295	6338	No	1.61	Si
SLU 84	fin.	-73.78	1966	0.9	0	1875	7137	4043	2295	6338	No	3.22	Si
SLU 78	ini.	388.46	-3746	0.9	0	1875	7137	4043	2295	6338	No	1.69	Si
SLU 78	fin.	-51.07	2022	0.9	0	1875	7137	4043	2295	6338	No	3.13	Si
SLU 80	ini.	387.14	-3726	0.9	0	1875	7137	4043	2295	6338	No	1.7	Si
SLU 80	fin.	-52.59	2000	0.9	0	1875	7137	4043	2295	6338	No	3.17	Si
SLU 79	ini.	400.31	-3754	0.9	0	1875	7137	4043	2295	6338	No	1.69	Si
SLU 79	fin.	-66.23	1896	0.9	0	1875	7137	4043	2295	6338	No	3.34	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	2603.75	-7558	-0.0023721	0.0002807	0.0035	0.9		2967.55	2967.55		1.14	Si
SLV 4	fin.	-2154.98	4790	-0.0016722	0.0002807	0.0035	0.9		2973.32	2973.32		1.38	Si
SLV 13	ini.	-2072.29	6425	-0.0015714	0.0002807	0.0035	0.9		2973.32	2973.32		1.43	Si
SLV 13	fin.	2068.75	-5268	-0.0015717	0.0002807	0.0035	0.9		2967.55	2967.55		1.43	Si
SLV 8	ini.	1737.03	-5036	-0.0012152	0.0002807	0.0035	0.9		2967.55	2967.55		1.71	Si
SLV 8	fin.	-2080.62	5349	-0.0015813	0.0002807	0.0035	0.9		2973.32	2973.32		1.43	Si
SLV 10	ini.	-908.2	3022	-0.0005268	0.0002807	0.0035	0.9		2973.32	2973.32		3.27	Si
SLV 10	fin.	1724	-5173	-0.0012025	0.0002807	0.0035	0.9		2967.55	2967.55		1.72	Si
SLV 7	ini.	1439.66	-4155	-0.000942	0.0002807	0.0035	0.9		2967.55	2967.55		2.06	Si
SLV 7	fin.	-1810.22	4695	-0.001285	0.0002807	0.0035	0.9		2973.32	2973.32		1.64	Si
SLV 1	ini.	1708.8	-4848	-0.0011877	0.0002807	0.0035	0.9		2967.55	2967.55		1.74	Si
SLV 1	fin.	-877.1	1250	-0.0005051	0.0002807	0.0035	0.9		2973.32	2973.32		3.39	Si
SLV 9	ini.	-1205.57	3903	-0.0007475	0.0002807	0.0035	0.9		2973.32	2973.32		2.47	Si
SLV 9	fin.	1994.39	-5827	-0.0014856	0.0002807	0.0035	0.9		2967.55	2967.55		1.49	Si
SLV 14	ini.	-1630.61	5117	-0.0011105	0.0002807	0.0035	0.9		2973.32	2973.32		1.82	Si
SLV 14	fin.	1667.14	-4298	-0.0011477	0.0002807	0.0035	0.9		2967.55	2967.55		1.78	Si
SLV 2	ini.	2150.48	-6156	-0.0016715	0.0002807	0.0035	0.9		2967.55	2967.55		1.38	Si
SLV 2	fin.	-1278.72	2220	-0.0008057	0.0002807	0.0035	0.9		2973.32	2973.32		2.33	Si
SLV 3	ini.	2162.07	-6250	-0.0016862	0.0002807	0.0035	0.9		2967.55	2967.55		1.37	Si
SLV 3	fin.	-1753.36	3820	-0.0012281	0.0002807	0.0035	0.9		2973.32	2973.32		1.7	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 7	ini.	1439.66	-6534	0.9	0	2615	7137	6064	2295	8359		1.28	Si
SLV 7	fin.	-1810.22	-7672	0.9	0	2615	7137	6064	2295	8359		1.09	Si
SLV 2	ini.	2150.48	-10297	0.9	0	2615	7137	6064	2295	8359		0.81	No
SLV 2	fin.	-1278.72	-4151	0.9	0	2615	7137	6064	2295	8359		2.01	Si
SLV 14	ini.	-1630.61	4879	0.9	0	2615	7137	6064	2295	8359		1.71	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	fin.	1667.14	9398	0.9	0	2615	7137	6064	2295	8359		0.89	No
SLV 1	ini.	1708.8	-8567	0.9	0	2615	7137	6064	2295	8359		0.98	No
SLV 1	fin.	-877.1	-2267	0.9	0	2615	7137	6064	2295	8359		3.69	Si
SLV 4	ini.	2603.75	-11679	0.9	0	2615	7137	6064	2295	8359		0.72	No
SLV 4	fin.	-2154.98	-8692	0.9	0	2615	7137	6064	2295	8359		0.96	No
SLV 3	ini.	2162.07	-9950	0.9	0	2615	7137	6064	2295	8359		0.84	No
SLV 3	fin.	-1753.36	-6808	0.9	0	2615	7137	6064	2295	8359		1.23	Si
SLV 8	ini.	1737.03	-7699	0.9	0	2615	7137	6064	2295	8359		1.09	Si
SLV 8	fin.	-2080.62	-8940	0.9	0	2615	7137	6064	2295	8359		0.93	No
SLV 10	ini.	-908.2	1463	0.9	0	2615	7137	6064	2295	8359		5.71	Si
SLV 10	fin.	1724	10261	0.9	0	2615	7137	6064	2295	8359		0.81	No
SLV 13	ini.	-2072.29	6609	0.9	0	2615	7137	6064	2295	8359		1.26	Si
SLV 13	fin.	2068.75	11282	0.9	0	2615	7137	6064	2295	8359		0.74	No
SLV 9	ini.	-1205.57	2628	0.9	0	2615	7137	6064	2295	8359		3.18	Si
SLV 9	fin.	1994.39	11529	0.9	0	2615	7137	6064	2295	8359		0.73	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.14	SLV 4	Si
V_SLV	0.716	SLV 4	No
PF_SLU	6.722	SLU 81	Si
V_SLU	1.602	SLU 83	Si

Trave di accoppiamento 40

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-17.313	-3.359	4.47	5.07	0.6	-18.313	-3.359	4.47	5.07	0.6	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-349.49	-1831	-0.000467	0.0001872	0.0035	0.6		1324.3	1324.3	No	3.79	Si
SLU 81	fin.	-576.21	-2000	-0.0008701	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.3	Si
SLU 83	ini.	-355.97	-1863	-0.0004774	0.0001872	0.0035	0.6		1324.3	1324.3	No	3.72	Si
SLU 83	fin.	-579.61	-2010	-0.0008768	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.28	Si
SLU 84	ini.	-368.34	-1923	-0.0004976	0.0001872	0.0035	0.6		1324.3	1324.3	No	3.6	Si
SLU 84	fin.	-569.32	-1969	-0.0008567	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.33	Si
SLU 78	ini.	-368.13	-1922	-0.0004973	0.0001872	0.0035	0.6		1324.3	1324.3	No	3.6	Si
SLU 78	fin.	-540.87	-1861	-0.0008021	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.45	Si
SLU 82	ini.	-361.87	-1891	-0.000487	0.0001872	0.0035	0.6		1324.3	1324.3	No	3.66	Si
SLU 82	fin.	-565.93	-1959	-0.0008501	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.34	Si
SLU 75	ini.	-361.66	-1890	-0.0004867	0.0001872	0.0035	0.6		1324.3	1324.3	No	3.66	Si
SLU 75	fin.	-537.47	-1851	-0.0007957	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.46	Si
SLU 74	ini.	-349.29	-1830	-0.0004666	0.0001872	0.0035	0.6		1324.3	1324.3	No	3.79	Si
SLU 74	fin.	-547.76	-1892	-0.0008152	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.42	Si
SLU 77	ini.	-355.76	-1862	-0.0004771	0.0001872	0.0035	0.6		1324.3	1324.3	No	3.72	Si
SLU 77	fin.	-551.16	-1902	-0.0008217	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.4	Si
SLU 79	ini.	-352.47	-1845	-0.0004718	0.0001872	0.0035	0.6		1324.3	1324.3	No	3.76	Si
SLU 79	fin.	-548.08	-1892	-0.0008158	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.42	Si
SLU 80	ini.	-364.85	-1906	-0.0004919	0.0001872	0.0035	0.6		1324.3	1324.3	No	3.63	Si
SLU 80	fin.	-537.79	-1851	-0.0007963	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.46	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-361.87	5592	0.6	0	1250	4758	2695	1530	4225	No	0.76	No
SLU 82	fin.	-565.93	-4272	0.6	0	1250	4758	2695	1530	4225	No	0.99	No
SLU 80	ini.	-364.85	5548	0.6	0	1250	4758	2695	1530	4225	No	0.76	No
SLU 80	fin.	-537.79	-4115	0.6	0	1250	4758	2695	1530	4225	No	1.03	Si
SLU 84	ini.	-368.34	5669	0.6	0	1250	4758	2695	1530	4225	No	0.75	No
SLU 84	fin.	-569.32	-4308	0.6	0	1250	4758	2695	1530	4225	No	0.98	No
SLU 78	ini.	-368.13	5591	0.6	0	1250	4758	2695	1530	4225	No	0.76	No
SLU 78	fin.	-540.87	-4141	0.6	0	1250	4758	2695	1530	4225	No	1.02	Si
SLU 76	ini.	-366.62	5530	0.6	0	1250	4758	2695	1530	4225	No	0.76	No
SLU 76	fin.	-527.54	-4056	0.6	0	1250	4758	2695	1530	4225	No	1.04	Si
SLU 77	ini.	-355.76	5501	0.6	0	1250	4758	2695	1530	4225	No	0.77	No
SLU 77	fin.	-551.16	-4176	0.6	0	1250	4758	2695	1530	4225	No	1.01	Si
SLU 83	ini.	-355.97	5579	0.6	0	1250	4758	2695	1530	4225	No	0.76	No
SLU 83	fin.	-579.61	-4343	0.6	0	1250	4758	2695	1530	4225	No	0.97	No
SLU 75	ini.	-361.66	5513	0.6	0	1250	4758	2695	1530	4225	No	0.77	No
SLU 75	fin.	-537.47	-4105	0.6	0	1250	4758	2695	1530	4225	No	1.03	Si
SLU 81	ini.	-349.49	5502	0.6	0	1250	4758	2695	1530	4225	No	0.77	No
SLU 81	fin.	-576.21	-4308	0.6	0	1250	4758	2695	1530	4225	No	0.98	No
SLU 79	ini.	-352.47	5458	0.6	0	1250	4758	2695	1530	4225	No	0.77	No
SLU 79	fin.	-548.08	-4151	0.6	0	1250	4758	2695	1530	4225	No	1.02	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 6	ini.	-1015.32	-5227	-0.0018314	0.0002807	0.0035	0.6		1319.01	1319.01		1.3	Si
SLV 6	fin.	-204.36	-633	-0.0002407	0.0002807	0.0035	0.6		1319.01	1319.01		6.45	Si
SLV 7	ini.	734.72	3515	-0.0011297	0.0002807	0.0035	0.6		1315.04	1315.04		1.79	Si
SLV 7	fin.	-1099.76	-4171	-0.0021184	0.0002807	0.0035	0.6		1319.01	1319.01		1.2	Si
SLV 8	ini.	827.76	3951	-0.0013363	0.0002807	0.0035	0.6		1315.04	1315.04		1.59	Si
SLV 8	fin.	-1254.46	-4782	-0.0027903	0.0002807	0.0035	0.6		1319.01	1319.01		1.05	Si
SLV 5	ini.	-1108.36	-5664	-0.0021505	0.0002807	0.0035	0.6		1319.01	1319.01		1.19	Si
SLV 5	fin.	-49.66	-22	-0.0000552	0.0002807	0.0035	0.6		1319.01	1319.01		26.56	Si
SLV 10	ini.	-1217.59	-6061	-0.0026106	0.0002807	0.0035	0.6		1319.01	1319.01		1.08	Si
SLV 10	fin.	373.09	1673	-0.0004785	0.0002807	0.0035	0.6		1315.04	1315.04		3.52	Si
SLV 9	ini.	-1310.64	-6498	-0.0030889	0.0002807	0.0035	0.6		1319.01	1319.01		1.01	Si
SLV 9	fin.	527.79	2284	-0.0007322	0.0002807	0.0035	0.6		1315.04	1315.04		2.49	Si
SLV 3	ini.	303.05	1170	-0.000375	0.0002807	0.0035	0.6		1315.04	1315.04		4.34	Si
SLV 3	fin.	-1368.38	-5261	-0.0034038	0.0002807	0.0035	0.6		1319.01	1319.01		0.96	No
SLV 1	ini.	-249.88	-1584	-0.0003003	0.0002807	0.0035	0.6		1319.01	1319.01		5.28	Si
SLV 1	fin.	-1053.35	-4017	-0.0019546	0.0002807	0.0035	0.6		1319.01	1319.01		1.25	Si
SLV 2	ini.	-111.68	-936	-0.0001268	0.0002807	0.0035	0.6		1319.01	1319.01		11.81	Si
SLV 2	fin.	-1283.13	-4925	-0.0029394	0.0002807	0.0035	0.6		1319.01	1319.01		1.03	Si
SLV 4	ini.	441.25	1818	-0.0005861	0.0002807	0.0035	0.6		1315.04	1315.04		2.98	Si
SLV 4	fin.	-1598.16	-6169	-0.0045031	0.0002807	0.0035	0.6		1319.01	1319.01		0.83	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 9	ini.	-672.81	6828	0.6	0	1565	4758	4043	1530	5573		0.82	No
SLD 9	fin.	3.77	-1739	0.6	0	1565	4758	4043	1530	5573		3.2	Si
SLV 13	ini.	-924.12	7802	0.6	0	1565	4758	4043	1530	5573		0.71	No
SLV 13	fin.	871.48	2143	0.6	0	1565	4758	4043	1530	5573		2.6	Si
SLV 6	ini.	-1015.32	9954	0.6	0	1565	4758	4043	1530	5573		0.56	No
SLV 6	fin.	-204.36	-3395	0.6	0	1565	4758	4043	1530	5573		1.64	Si
SLV 3	ini.	303.05	459	0.6	0	1565	4758	4043	1530	5573		12.14	Si
SLV 3	fin.	-1368.38	-6741	0.6	0	1565	4758	4043	1530	5573		0.83	No
SLV 4	ini.	441.25	-364	0.6	0	1565	4758	4043	1530	5573		15.29	Si
SLV 4	fin.	-1598.16	-7693	0.6	0	1565	4758	4043	1530	5573		0.72	No
SLV 9	ini.	-1310.64	11453	0.6	0	1565	4758	4043	1530	5573		0.49	No
SLV 9	fin.	527.79	-259	0.6	0	1565	4758	4043	1530	5573		21.48	Si
SLV 10	ini.	-1217.59	10899	0.6	0	1565	4758	4043	1530	5573		0.51	No
SLV 10	fin.	373.09	-901	0.6	0	1565	4758	4043	1530	5573		6.19	Si
SLV 2	ini.	-111.68	3827	0.6	0	1565	4758	4043	1530	5573		1.46	Si
SLV 2	fin.	-1283.13	-7125	0.6	0	1565	4758	4043	1530	5573		0.78	No
SLV 5	ini.	-1108.36	10508	0.6	0	1565	4758	4043	1530	5573		0.53	No
SLV 5	fin.	-49.66	-2754	0.6	0	1565	4758	4043	1530	5573		2.02	Si
SLV 14	ini.	-785.92	6978	0.6	0	1565	4758	4043	1530	5573		0.8	No
SLV 14	fin.	641.7	1191	0.6	0	1565	4758	4043	1530	5573		4.68	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.825	SLV 4	No
V_SLV	0.487	SLV 9	No
PF_SLU	2.285	SLU 83	Si
V_SLU	0.745	SLU 84	No

Trave di accoppiamento 42

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-15.483	-3.359	3.77	5.07	1.3	-16.383	-3.359	3.77	5.07	1.3	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	345.2	-3894	-0.0000832	0.0002246	0.0035	1.3		6307.58	6307.58	No	18.27	Si
SLU 75	fin.	-1106.74	-4912	-0.0002885	0.0002246	0.0035	1.3		6315.63	6315.63	No	5.71	Si
SLU 78	ini.	333.76	-3965	-0.0000804	0.0002246	0.0035	1.3		6307.58	6307.58	No	18.9	Si
SLU 78	fin.	-1113.29	-4968	-0.0002905	0.0002246	0.0035	1.3		6315.63	6315.63	No	5.67	Si
SLU 77	ini.	343.67	-3905	-0.0000828	0.0002246	0.0035	1.3		6307.58	6307.58	No	18.35	Si
SLU 77	fin.	-1111.22	-4906	-0.0002899	0.0002246	0.0035	1.3		6315.63	6315.63	No	5.68	Si
SLU 79	ini.	344.67	-3869	-0.0000831	0.0002246	0.0035	1.3		6307.58	6307.58	No	18.3	Si
SLU 79	fin.	-1104.1	-4871	-0.0002877	0.0002246	0.0035	1.3		6315.63	6315.63	No	5.72	Si
SLU 83	ini.	420.7	-3887	-0.0001021	0.0002246	0.0035	1.3		6307.58	6307.58	No	14.99	Si
SLU 83	fin.	-1154.01	-5023	-0.0003026	0.0002246	0.0035	1.3		6315.63	6315.63	No	5.47	Si
SLU 74	ini.	355.1	-3834	-0.0000857	0.0002246	0.0035	1.3		6307.58	6307.58	No	17.76	Si
SLU 74	fin.	-1104.67	-4851	-0.0002879	0.0002246	0.0035	1.3		6315.63	6315.63	No	5.72	Si
SLU 80	ini.	334.76	-3929	-0.0000806	0.0002246	0.0035	1.3		6307.58	6307.58	No	18.84	Si
SLU 80	fin.	-1106.17	-4932	-0.0002884	0.0002246	0.0035	1.3		6315.63	6315.63	No	5.71	Si
SLU 82	ini.	422.23	-3875	-0.0001025	0.0002246	0.0035	1.3		6307.58	6307.58	No	14.94	Si
SLU 82	fin.	-1149.53	-5029	-0.0003013	0.0002246	0.0035	1.3		6315.63	6315.63	No	5.49	Si
SLU 81	ini.	432.13	-3815	-0.000105	0.0002246	0.0035	1.3		6307.58	6307.58	No	14.6	Si
SLU 81	fin.	-1147.46	-4968	-0.0003007	0.0002246	0.0035	1.3		6315.63	6315.63	No	5.5	Si
SLU 84	ini.	410.79	-3946	-0.0000996	0.0002246	0.0035	1.3		6307.58	6307.58	No	15.35	Si
SLU 84	fin.	-1156.08	-5085	-0.0003032	0.0002246	0.0035	1.3		6315.63	6315.63	No	5.46	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 84	ini.	410.79	-1277	1.3	0	3250	7137	7008	3315	10323	No	8.08	Si
SLU 84	fin.	-1156.08	-7435	1.3	0	3250	7137	7008	3315	10323	No	1.39	Si
SLU 75	ini.	345.2	-1136	1.3	0	3250	7137	7008	3315	10323	No	9.09	Si
SLU 75	fin.	-1106.74	-7025	1.3	0	3250	7137	7008	3315	10323	No	1.47	Si
SLU 77	ini.	343.67	-1125	1.3	0	3250	7137	7008	3315	10323	No	9.18	Si
SLU 77	fin.	-1111.22	-7045	1.3	0	3250	7137	7008	3315	10323	No	1.47	Si
SLU 80	ini.	334.76	-1111	1.3	0	3250	7137	7008	3315	10323	No	9.29	Si
SLU 80	fin.	-1106.17	-7028	1.3	0	3250	7137	7008	3315	10323	No	1.47	Si
SLU 79	ini.	344.67	-1120	1.3	0	3250	7137	7008	3315	10323	No	9.22	Si
SLU 79	fin.	-1104.1	-7008	1.3	0	3250	7137	7008	3315	10323	No	1.47	Si
SLU 82	ini.	422.23	-1298	1.3	0	3250	7137	7008	3315	10323	No	7.96	Si
SLU 82	fin.	-1149.53	-7394	1.3	0	3250	7137	7008	3315	10323	No	1.4	Si
SLU 74	ini.	355.1	-1145	1.3	0	3250	7137	7008	3315	10323	No	9.02	Si
SLU 74	fin.	-1104.67	-7005	1.3	0	3250	7137	7008	3315	10323	No	1.47	Si
SLU 78	ini.	333.76	-1116	1.3	0	3250	7137	7008	3315	10323	No	9.25	Si
SLU 78	fin.	-1113.29	-7066	1.3	0	3250	7137	7008	3315	10323	No	1.46	Si
SLU 81	ini.	432.13	-1306	1.3	0	3250	7137	7008	3315	10323	No	7.9	Si
SLU 81	fin.	-1147.46	-7374	1.3	0	3250	7137	7008	3315	10323	No	1.4	Si
SLU 83	ini.	420.7	-1286	1.3	0	3250	7137	7008	3315	10323	No	8.03	Si
SLU 83	fin.	-1154.01	-7414	1.3	0	3250	7137	7008	3315	10323	No	1.39	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-4561.48	-6304	-0.0016517	0.0003369	0.0035	1.3		6274.6	6274.6		1.38	Si
SLV 15	fin.	2228.79	1202	-0.0006264	0.0003369	0.0035	1.3		6266.21	6266.21		2.81	Si
SLV 14	ini.	-3956.46	-8027	-0.0013298	0.0003369	0.0035	1.3		6274.6	6274.6		1.59	Si
SLV 14	fin.	1529.79	-2056	-0.0004011	0.0003369	0.0035	1.3		6266.21	6266.21		4.1	Si
SLV 4	ini.	5334.9	3877	-0.0021877	0.0003369	0.0035	1.3		6266.21	6266.21		1.17	Si
SLV 4	fin.	-3581.21	-4853	-0.0011549	0.0003369	0.0035	1.3		6274.6	6274.6		1.75	Si
SLD 4	ini.	2401.15	96	-0.0006868	0.0003369	0.0035	1.3		6266.21	6266.21		2.61	Si
SLD 4	fin.	-1967.93	-4015	-0.0005379	0.0003369	0.0035	1.3		6274.6	6274.6		3.19	Si
SLV 2	ini.	4997.46	993	-0.0019341	0.0003369	0.0035	1.3		6266.21	6266.21		1.25	Si
SLV 2	fin.	-3747.47	-7835	-0.0012305	0.0003369	0.0035	1.3		6274.6	6274.6		1.67	Si
SLV 1	ini.	4055	-169	-0.0013811	0.0003369	0.0035	1.3		6266.21	6266.21		1.55	Si
SLV 1	fin.	-3214.73	-7560	-0.0009975	0.0003369	0.0035	1.3		6274.6	6274.6		1.95	Si
SLV 13	ini.	-4898.92	-9188	-0.0018625	0.0003369	0.0035	1.3		6274.6	6274.6		1.28	Si
SLV 13	fin.	2062.53	-1781	-0.00057	0.0003369	0.0035	1.3		6266.21	6266.21		3.04	Si
SLV 3	ini.	4392.44	2716	-0.0015587	0.0003369	0.0035	1.3		6266.21	6266.21		1.43	Si
SLV 3	fin.	-3048.47	-4577	-0.0009298	0.0003369	0.0035	1.3		6274.6	6274.6		2.06	Si
SLV 8	ini.	2440.73	3896	-0.0007009	0.0003369	0.0035	1.3		6266.21	6266.21		2.57	Si
SLV 8	fin.	-1453.18	695	-0.0003778	0.0003369	0.0035	1.3		6274.6	6274.6		4.32	Si
SLV 16	ini.	-3619.02	-5142	-0.0011718	0.0003369	0.0035	1.3		6274.6	6274.6		1.73	Si
SLV 16	fin.	1696.05	926	-0.0004519	0.0003369	0.0035	1.3		6266.21	6266.21		3.69	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	4055	-12662	1.3	0	4560	7137	10512	3315	11697		0.92	No
SLV 1	fin.	-3214.73	-15231	1.3	0	4560	7137	10512	3315	11697		0.77	No
SLV 16	ini.	-3619.02	11138	1.3	0	4560	7137	10512	3315	11697		1.05	Si
SLV 16	fin.	1696.05	5901	1.3	0	4560	7137	10512	3315	11697		1.98	Si
SLV 2	ini.	4997.46	-15371	1.3	0	4560	7137	10512	3315	11697		0.76	No
SLV 2	fin.	-3747.47	-17349	1.3	0	4560	7137	10512	3315	11697		0.67	No
SLV 4	ini.	5334.9	-15563	1.3	0	4560	7137	10512	3315	11697		0.75	No
SLV 4	fin.	-3581.21	-16002	1.3	0	4560	7137	10512	3315	11697		0.73	No
SLD 2	ini.	2262	-6999	1.3	0	4560	7137	10512	3315	11697		1.67	Si
SLD 2	fin.	-2032.57	-10060	1.3	0	4560	7137	10512	3315	11697		1.16	Si
SLV 3	ini.	4392.44	-12854	1.3	0	4560	7137	10512	3315	11697		0.91	No
SLV 3	fin.	-3048.47	-13884	1.3	0	4560	7137	10512	3315	11697		0.84	No
SLV 14	ini.	-3956.46	11330	1.3	0	4560	7137	10512	3315	11697		1.03	Si
SLV 14	fin.	1529.79	4554	1.3	0	4560	7137	10512	3315	11697		2.57	Si
SLV 13	ini.	-4898.92	14039	1.3	0	4560	7137	10512	3315	11697		0.83	No
SLV 13	fin.	2062.53	6672	1.3	0	4560	7137	10512	3315	11697		1.75	Si
SLV 6	ini.	1315.95	-5359	1.3	0	4560	7137	10512	3315	11697		2.18	Si
SLV 6	fin.	-2007.36	-10909	1.3	0	4560	7137	10512	3315	11697		1.07	Si
SLV 15	ini.	-4561.48	13847	1.3	0	4560	7137	10512	3315	11697		0.84	No
SLV 15	fin.	2228.79	8019	1.3	0	4560	7137	10512	3315	11697		1.46	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.175	SLV 4	Si
V_SLV	0.674	SLV 2	No
PF_SLU	5.463	SLU 84	Si
V_SLU	1.388	SLU 84	Si

Trave di accoppiamento 44

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-15.058	1.406	3.77	5.07	1.3	-15.058	2.206	3.77	5.07	1.3	0.8	0.16	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 74	ini.	1303.44	-2666	-0.0003488	0.0002246	0.0035	1.3		6358.94	6358.94	No	4.88	Si
SLU 74	fin.	-1844.66	-5149	-0.0005265	0.0002246	0.0035	1.3		6367.01	6367.01	No	3.45	Si
SLU 82	ini.	1284.84	-2695	-0.000343	0.0002246	0.0035	1.3		6358.94	6358.94	No	4.95	Si
SLU 82	fin.	-1807.62	-5129	-0.0005137	0.0002246	0.0035	1.3		6367.01	6367.01	No	3.52	Si
SLU 75	ini.	1263.1	-2619	-0.0003363	0.0002246	0.0035	1.3		6358.94	6358.94	No	5.03	Si
SLU 75	fin.	-1748.96	-4988	-0.0004936	0.0002246	0.0035	1.3		6367.01	6367.01	No	3.64	Si
SLU 78	ini.	1287.68	-2663	-0.0003439	0.0002246	0.0035	1.3		6358.94	6358.94	No	4.94	Si
SLU 78	fin.	-1788.87	-5085	-0.0005072	0.0002246	0.0035	1.3		6367.01	6367.01	No	3.56	Si
SLU 77	ini.	1328.03	-2710	-0.0003564	0.0002246	0.0035	1.3		6358.94	6358.94	No	4.79	Si
SLU 77	fin.	-1884.57	-5246	-0.0005404	0.0002246	0.0035	1.3		6367.01	6367.01	No	3.38	Si
SLU 83	ini.	1349.76	-2786	-0.0003633	0.0002246	0.0035	1.3		6358.94	6358.94	No	4.71	Si
SLU 83	fin.	-1943.23	-5388	-0.000561	0.0002246	0.0035	1.3		6367.01	6367.01	No	3.28	Si
SLU 84	ini.	1309.42	-2739	-0.0003506	0.0002246	0.0035	1.3		6358.94	6358.94	No	4.86	Si
SLU 84	fin.	-1847.53	-5226	-0.0005275	0.0002246	0.0035	1.3		6367.01	6367.01	No	3.45	Si
SLU 81	ini.	1325.18	-2742	-0.0003556	0.0002246	0.0035	1.3		6358.94	6358.94	No	4.8	Si
SLU 81	fin.	-1903.32	-5291	-0.000547	0.0002246	0.0035	1.3		6367.01	6367.01	No	3.35	Si
SLU 80	ini.	1275.53	-2641	-0.0003401	0.0002246	0.0035	1.3		6358.94	6358.94	No	4.99	Si
SLU 80	fin.	-1771.6	-5039	-0.0005013	0.0002246	0.0035	1.3		6367.01	6367.01	No	3.59	Si
SLU 79	ini.	1315.88	-2688	-0.0003526	0.0002246	0.0035	1.3		6358.94	6358.94	No	4.83	Si
SLU 79	fin.	-1867.3	-5201	-0.0005344	0.0002246	0.0035	1.3		6367.01	6367.01	No	3.41	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 82	ini.	1284.84	-5636	1.3	0	1733	6344	3738	3315	7053	No	1.25	Si
SLU 82	fin.	-1807.62	-6077	1.3	0	1733	6344	3738	3315	7053	No	1.16	Si
SLU 80	ini.	1275.53	-5551	1.3	0	1733	6344	3738	3315	7053	No	1.27	Si
SLU 80	fin.	-1771.6	-5991	1.3	0	1733	6344	3738	3315	7053	No	1.18	Si
SLU 77	ini.	1328.03	-5870	1.3	0	1733	6344	3738	3315	7053	No	1.2	Si
SLU 77	fin.	-1884.57	-6310	1.3	0	1733	6344	3738	3315	7053	No	1.12	Si
SLU 84	ini.	1309.42	-5760	1.3	0	1733	6344	3738	3315	7053	No	1.22	Si
SLU 84	fin.	-1847.53	-6201	1.3	0	1733	6344	3738	3315	7053	No	1.14	Si
SLU 74	ini.	1303.44	-5746	1.3	0	1733	6344	3738	3315	7053	No	1.23	Si
SLU 74	fin.	-1844.66	-6186	1.3	0	1733	6344	3738	3315	7053	No	1.14	Si
SLU 81	ini.	1325.18	-5900	1.3	0	1733	6344	3738	3315	7053	No	1.2	Si
SLU 81	fin.	-1903.32	-6340	1.3	0	1733	6344	3738	3315	7053	No	1.11	Si
SLU 78	ini.	1287.68	-5607	1.3	0	1733	6344	3738	3315	7053	No	1.26	Si
SLU 78	fin.	-1788.87	-6047	1.3	0	1733	6344	3738	3315	7053	No	1.17	Si
SLU 83	ini.	1349.76	-6024	1.3	0	1733	6344	3738	3315	7053	No	1.17	Si
SLU 83	fin.	-1943.23	-6464	1.3	0	1733	6344	3738	3315	7053	No	1.09	Si
SLU 75	ini.	1263.1	-5483	1.3	0	1733	6344	3738	3315	7053	No	1.29	Si
SLU 75	fin.	-1748.96	-5923	1.3	0	1733	6344	3738	3315	7053	No	1.19	Si
SLU 79	ini.	1315.88	-5814	1.3	0	1733	6344	3738	3315	7053	No	1.21	Si
SLU 79	fin.	-1867.3	-6254	1.3	0	1733	6344	3738	3315	7053	No	1.13	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 11	ini.	4475.71	-6313	-0.0016055	0.0003369	0.0035	1.3		6528.18	6528.18		1.46	Si
SLV 11	fin.	-10087.87	-18579	-0.0065791	0.0003369	0.0035	1.3		6536.57	6536.57		0.65	No
SLD 12	ini.	2329.02	-3583	-0.0006613	0.0003369	0.0035	1.3		6528.18	6528.18		2.8	Si
SLD 12	fin.	-4766.56	-9481	-0.0017764	0.0003369	0.0035	1.3		6536.57	6536.57		1.37	Si
SLD 11	ini.	2313.21	-3581	-0.0006557	0.0003369	0.0035	1.3		6528.18	6528.18		2.82	Si
SLD 11	fin.	-4743.89	-9450	-0.0017621	0.0003369	0.0035	1.3		6536.57	6536.57		1.38	Si
SLV 7	ini.	4225.12	-6258	-0.0014684	0.0003369	0.0035	1.3		6528.18	6528.18		1.55	Si
SLV 7	fin.	-9627.95	-17956	-0.0062032	0.0003369	0.0035	1.3		6536.57	6536.57		0.68	No
SLV 5	ini.	-2771.7	2797	-0.0008218	0.0003369	0.0035	1.3		6536.57	6536.57		2.36	Si
SLV 5	fin.	7781.9	11918	-0.004635	0.0003369	0.0035	1.3		6528.18	6528.18		0.84	No
SLV 6	ini.	-2733.77	2794	-0.0008075	0.0003369	0.0035	1.3		6536.57	6536.57		2.39	Si
SLV 6	fin.	7727.51	11846	-0.0045856	0.0003369	0.0035	1.3		6528.18	6528.18		0.84	No
SLV 12	ini.	4513.64	-6316	-0.0016272	0.0003369	0.0035	1.3		6528.18	6528.18		1.45	Si
SLV 12	fin.	-10142.26	-18652	-0.0066231	0.0003369	0.0035	1.3		6536.57	6536.57		0.64	No
SLV 9	ini.	-2521.1	2742	-0.0007288	0.0003369	0.0035	1.3		6536.57	6536.57		2.59	Si
SLV 9	fin.	7321.97	11294	-0.004208	0.0003369	0.0035	1.3		6528.18	6528.18		0.89	No
SLV 10	ini.	-2483.18	2739	-0.000715	0.0003369	0.0035	1.3		6536.57	6536.57		2.63	Si
SLV 10	fin.	7267.59	11222	-0.0041559	0.0003369	0.0035	1.3		6528.18	6528.18		0.9	No
SLV 8	ini.	4263.05	-6261	-0.0014885	0.0003369	0.0035	1.3		6528.18	6528.18		1.53	Si
SLV 8	fin.	-9682.33	-18028	-0.006248	0.0003369	0.0035	1.3		6536.57	6536.57		0.68	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 11	ini.	2313.21	-13437	1.3	0	2600	6344	5606	3315	8921		0.66	No
SLD 11	fin.	-4743.89	-13772	1.3	16250	2600	6344	5606	3315	8921		0.65	No
SLV 8	ini.	4263.05	-26854	1.3	16250	2600	6344	5606	3315	8921		0.33	No
SLV 8	fin.	-9682.33	-27193	1.3	16250	2600	6344	5606	3315	8921		0.33	No
SLV 10	ini.	-2483.18	19254	1.3	0	2600	6344	5606	3315	8921		0.46	No

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 10	fin.	7267.59	18925	1.3	16250	2600	6344	5606	3315	8921		0.47	No
SLV 6	ini.	-2733.77	20591	1.3	0	2600	6344	5606	3315	8921		0.43	No
SLV 6	fin.	7727.51	20258	1.3	16250	2600	6344	5606	3315	8921		0.44	No
SLV 5	ini.	-2771.7	20763	1.3	0	2600	6344	5606	3315	8921		0.43	No
SLV 5	fin.	7781.9	20430	1.3	16250	2600	6344	5606	3315	8921		0.44	No
SLV 7	ini.	4225.12	-26682	1.3	16250	2600	6344	5606	3315	8921		0.33	No
SLV 7	fin.	-9627.95	-27021	1.3	16250	2600	6344	5606	3315	8921		0.33	No
SLV 12	ini.	4513.64	-28190	1.3	16250	2600	6344	5606	3315	8921		0.32	No
SLV 12	fin.	-10142.26	-28526	1.3	16250	2600	6344	5606	3315	8921		0.31	No
SLV 9	ini.	-2521.1	19426	1.3	0	2600	6344	5606	3315	8921		0.46	No
SLV 9	fin.	7321.97	19097	1.3	16250	2600	6344	5606	3315	8921		0.47	No
SLV 11	ini.	4475.71	-28018	1.3	16250	2600	6344	5606	3315	8921		0.32	No
SLV 11	fin.	-10087.87	-28354	1.3	16250	2600	6344	5606	3315	8921		0.31	No
SLD 12	ini.	2329.02	-13508	1.3	0	2600	6344	5606	3315	8921		0.66	No
SLD 12	fin.	-4766.56	-13843	1.3	16250	2600	6344	5606	3315	8921		0.64	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.644	SLV 12	No
V_SLV	0.313	SLV 12	No
PF_SLU	3.277	SLU 83	Si
V_SLU	1.091	SLU 83	Si

Trave di accoppiamento 45

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-13.763	-0.228	3.77	5.07	1.3	-13.763	0.672	3.77	5.07	1.3	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 84	ini.	2435.88	1008	-0.000766	0.0001872	0.0035	1.3		6076.69	6076.69	No	2.49	Si
SLU 84	fin.	136.49	-1229	-0.0000324	0.0001872	0.0035	1.3		6076.69	6076.69	No	44.52	Si
SLU 82	ini.	2416.44	1020	-0.0007582	0.0001872	0.0035	1.3		6076.69	6076.69	No	2.51	Si
SLU 82	fin.	130.56	-1204	-0.000031	0.0001872	0.0035	1.3		6076.69	6076.69	No	46.54	Si
SLU 77	ini.	2431.66	1099	-0.0007643	0.0001872	0.0035	1.3		6076.69	6076.69	No	2.5	Si
SLU 77	fin.	110.95	-1155	-0.0000263	0.0001872	0.0035	1.3		6076.69	6076.69	No	54.77	Si
SLU 81	ini.	2510.87	1194	-0.0007961	0.0001872	0.0035	1.3		6076.69	6076.69	No	2.42	Si
SLU 81	fin.	102.85	-1149	-0.0000243	0.0001872	0.0035	1.3		6076.69	6076.69	No	59.08	Si
SLU 79	ini.	2422.86	1110	-0.0007608	0.0001872	0.0035	1.3		6076.69	6076.69	No	2.51	Si
SLU 79	fin.	107.09	-1139	-0.0000253	0.0001872	0.0035	1.3		6076.69	6076.69	No	56.75	Si
SLU 62	ini.	2439.04	1408	-0.0007672	0.0001872	0.0035	1.3		6076.69	6076.69	No	2.49	Si
SLU 62	fin.	38.54	-915	-0.0000091	0.0001872	0.0035	1.3		6076.69	6076.69	No	157.67	Si
SLU 63	ini.	2344.61	1234	-0.0007298	0.0001872	0.0035	1.3		6076.69	6076.69	No	2.59	Si
SLU 63	fin.	66.25	-970	-0.0000156	0.0001872	0.0035	1.3		6076.69	6076.69	No	91.72	Si
SLU 60	ini.	2419.6	1421	-0.0007595	0.0001872	0.0035	1.3		6076.69	6076.69	No	2.51	Si
SLU 60	fin.	32.61	-889	-0.0000077	0.0001872	0.0035	1.3		6076.69	6076.69	No	186.33	Si
SLU 83	ini.	2530.31	1182	-0.000804	0.0001872	0.0035	1.3		6076.69	6076.69	No	2.4	Si
SLU 83	fin.	108.78	-1174	-0.0000257	0.0001872	0.0035	1.3		6076.69	6076.69	No	55.86	Si
SLU 74	ini.	2412.22	1111	-0.0007565	0.0001872	0.0035	1.3		6076.69	6076.69	No	2.52	Si
SLU 74	fin.	105.02	-1129	-0.0000248	0.0001872	0.0035	1.3		6076.69	6076.69	No	57.86	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	2530.31	-4007	1.3	0	2708	7137	5839	3315	9154	No	2.28	Si
SLU 83	fin.	108.78	-4796	1.3	0	2708	7137	5839	3315	9154	No	1.91	Si
SLU 77	ini.	2431.66	-3821	1.3	0	2708	7137	5839	3315	9154	No	2.4	Si
SLU 77	fin.	110.95	-4610	1.3	0	2708	7137	5839	3315	9154	No	1.99	Si
SLU 60	ini.	2419.6	-3950	1.3	0	2708	7137	5839	3315	9154	No	2.32	Si
SLU 60	fin.	32.61	-4710	1.3	0	2708	7137	5839	3315	9154	No	1.94	Si
SLU 81	ini.	2510.87	-3983	1.3	0	2708	7137	5839	3315	9154	No	2.3	Si
SLU 81	fin.	102.85	-4771	1.3	0	2708	7137	5839	3315	9154	No	1.92	Si
SLU 62	ini.	2439.04	-3974	1.3	0	2708	7137	5839	3315	9154	No	2.3	Si
SLU 62	fin.	38.54	-4734	1.3	0	2708	7137	5839	3315	9154	No	1.93	Si
SLU 84	ini.	2435.88	-3786	1.3	0	2708	7137	5839	3315	9154	No	2.42	Si
SLU 84	fin.	136.49	-4575	1.3	0	2708	7137	5839	3315	9154	No	2	Si
SLU 82	ini.	2416.44	-3761	1.3	0	2708	7137	5839	3315	9154	No	2.43	Si
SLU 82	fin.	130.56	-4550	1.3	0	2708	7137	5839	3315	9154	No	2.01	Si
SLU 79	ini.	2422.86	-3813	1.3	0	2708	7137	5839	3315	9154	No	2.4	Si
SLU 79	fin.	107.09	-4601	1.3	0	2708	7137	5839	3315	9154	No	1.99	Si
SLU 74	ini.	2412.22	-3797	1.3	0	2708	7137	5839	3315	9154	No	2.41	Si
SLU 74	fin.	105.02	-4585	1.3	0	2708	7137	5839	3315	9154	No	2	Si
SLU 56	ini.	2340.39	-3788	1.3	0	2708	7137	5839	3315	9154	No	2.42	Si
SLU 56	fin.	40.71	-4548	1.3	0	2708	7137	5839	3315	9154	No	2.01	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	5394.31	7853	-0.0023352	0.0002807	0.0035	1.3		6220.52	6220.52		1.15	Si
SLV 3	fin.	-982.73	1682	-0.0002481	0.0002807	0.0035	1.3		6228.81	6228.81		6.34	Si
SLV 10	ini.	-7065.41	-15254	-0.00411	0.0002807	0.0035	1.3		6228.81	6228.81		0.88	No
SLV 10	fin.	2456.65	-5716	-0.0007267	0.0002807	0.0035	1.3		6220.52	6220.52		2.53	Si
SLV 9	ini.	-7022.72	-15192	-0.0040675	0.0002807	0.0035	1.3		6228.81	6228.81		0.89	No
SLV 9	fin.	2448.33	-5707	-0.0007236	0.0002807	0.0035	1.3		6220.52	6220.52		2.54	Si
SLV 7	ini.	10406.65	16965	-0.0070406	0.0002807	0.0035	1.3		6220.52	6220.52		0.6	No
SLV 7	fin.	-2358.21	4292	-0.0006892	0.0002807	0.0035	1.3		6228.81	6228.81		2.64	Si
SLV 12	ini.	9653.47	15501	-0.0064188	0.0002807	0.0035	1.3		6220.52	6220.52		0.64	No
SLV 12	fin.	-2148.91	3697	-0.0006141	0.0002807	0.0035	1.3		6228.81	6228.81		2.9	Si
SLV 4	ini.	5330.89	7761	-0.0022798	0.0002807	0.0035	1.3		6220.52	6220.52		1.17	Si
SLV 4	fin.	-970.37	1667	-0.0002447	0.0002807	0.0035	1.3		6228.81	6228.81		6.42	Si
SLV 6	ini.	-6354.93	-13851	-0.0033543	0.0002807	0.0035	1.3		6228.81	6228.81		0.98	No
SLV 6	fin.	2255.69	-5132	-0.0006531	0.0002807	0.0035	1.3		6220.52	6220.52		2.76	Si
SLV 11	ini.	9696.17	15563	-0.0064544	0.0002807	0.0035	1.3		6220.52	6220.52		0.64	No
SLV 11	fin.	-2157.24	3707	-0.000617	0.0002807	0.0035	1.3		6228.81	6228.81		2.89	Si
SLV 5	ini.	-6312.23	-13790	-0.0033049	0.0002807	0.0035	1.3		6228.81	6228.81		0.99	No
SLV 5	fin.	2247.36	-5122	-0.0006501	0.0002807	0.0035	1.3		6220.52	6220.52		2.77	Si
SLV 8	ini.	10363.96	16904	-0.0070058	0.0002807	0.0035	1.3		6220.52	6220.52		0.6	No
SLV 8	fin.	-2349.88	4282	-0.0006861	0.0002807	0.0035	1.3		6228.81	6228.81		2.65	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	5394.31	-11221	1.3	0	4063	7137	8759	3315	11199		1	No
SLV 3	fin.	-982.73	-11854	1.3	0	4063	7137	8759	3315	11199		0.94	No
SLV 6	ini.	-6354.93	16048	1.3	0	4063	7137	8759	3315	11199		0.7	No
SLV 6	fin.	2255.69	15361	1.3	0	4063	7137	8759	3315	11199		0.73	No
SLV 10	ini.	-7065.41	17654	1.3	0	4063	7137	8759	3315	11199		0.63	No
SLV 10	fin.	2456.65	16999	1.3	0	4063	7137	8759	3315	11199		0.66	No
SLV 7	ini.	10406.65	-22935	1.3	0	4063	7137	8759	3315	11199		0.49	No
SLV 7	fin.	-2358.21	-23482	1.3	0	4063	7137	8759	3315	11199		0.48	No
SLV 4	ini.	5330.89	-11081	1.3	0	4063	7137	8759	3315	11199		1.01	Si
SLV 4	fin.	-970.37	-11714	1.3	0	4063	7137	8759	3315	11199		0.96	No
SLV 9	ini.	-7022.72	17559	1.3	0	4063	7137	8759	3315	11199		0.64	No
SLV 9	fin.	2448.33	16905	1.3	0	4063	7137	8759	3315	11199		0.66	No
SLV 5	ini.	-6312.23	15954	1.3	0	4063	7137	8759	3315	11199		0.7	No
SLV 5	fin.	2247.36	15267	1.3	0	4063	7137	8759	3315	11199		0.73	No
SLV 12	ini.	9653.47	-21235	1.3	0	4063	7137	8759	3315	11199		0.53	No
SLV 12	fin.	-2148.91	-21750	1.3	0	4063	7137	8759	3315	11199		0.51	No
SLV 11	ini.	9696.17	-21330	1.3	0	4063	7137	8759	3315	11199		0.53	No
SLV 11	fin.	-2157.24	-21844	1.3	0	4063	7137	8759	3315	11199		0.51	No
SLV 8	ini.	10363.96	-22841	1.3	0	4063	7137	8759	3315	11199		0.49	No
SLV 8	fin.	-2349.88	-23388	1.3	0	4063	7137	8759	3315	11199		0.48	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.598	SLV 7	No
V_SLV	0.477	SLV 7	No
PF_SLU	2.402	SLU 83	Si
V_SLU	1.909	SLU 83	Si

Trave di accoppiamento 46

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-19.868	1.046	3.77	5.07	1.3	-20.668	1.046	3.77	5.07	1.3	0.8	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-2431.44	-9579	-0.0007416	0.0002246	0.0035	1.3		6315.63	6315.63	No	2.6	Si
SLU 74	fin.	964.49	-7535	-0.0002475	0.0002246	0.0035	1.3		6307.58	6307.58	No	6.54	Si
SLU 79	ini.	-2423.99	-9617	-0.0007387	0.0002246	0.0035	1.3		6315.63	6315.63	No	2.61	Si
SLU 79	fin.	950.09	-7586	-0.0002434	0.0002246	0.0035	1.3		6307.58	6307.58	No	6.64	Si
SLU 78	ini.	-2438.76	-9695	-0.0007444	0.0002246	0.0035	1.3		6315.63	6315.63	No	2.59	Si
SLU 78	fin.	953.59	-7653	-0.0002444	0.0002246	0.0035	1.3		6307.58	6307.58	No	6.61	Si
SLU 83	ini.	-2503.3	-9899	-0.0007695	0.0002246	0.0035	1.3		6315.63	6315.63	No	2.52	Si
SLU 83	fin.	979.65	-7801	-0.0002519	0.0002246	0.0035	1.3		6307.58	6307.58	No	6.44	Si
SLU 82	ini.	-2498.12	-9790	-0.0007675	0.0002246	0.0035	1.3		6315.63	6315.63	No	2.53	Si
SLU 82	fin.	989.18	-7690	-0.0002546	0.0002246	0.0035	1.3		6307.58	6307.58	No	6.38	Si
SLU 81	ini.	-2497.05	-9787	-0.0007671	0.0002246	0.0035	1.3		6315.63	6315.63	No	2.53	Si
SLU 81	fin.	989.87	-7687	-0.0002548	0.0002246	0.0035	1.3		6307.58	6307.58	No	6.37	Si
SLU 80	ini.	-2425.06	-9621	-0.0007391	0.0002246	0.0035	1.3		6315.63	6315.63	No	2.6	Si
SLU 80	fin.	949.4	-7589	-0.0002432	0.0002246	0.0035	1.3		6307.58	6307.58	No	6.64	Si
SLU 84	ini.	-2504.37	-9903	-0.0007699	0.0002246	0.0035	1.3		6315.63	6315.63	No	2.52	Si
SLU 84	fin.	978.96	-7804	-0.0002517	0.0002246	0.0035	1.3		6307.58	6307.58	No	6.44	Si
SLU 75	ini.	-2432.51	-9583	-0.000742	0.0002246	0.0035	1.3		6315.63	6315.63	No	2.6	Si
SLU 75	fin.	963.81	-7539	-0.0002473	0.0002246	0.0035	1.3		6307.58	6307.58	No	6.54	Si
SLU 77	ini.	-2437.69	-9692	-0.000744	0.0002246	0.0035	1.3		6315.63	6315.63	No	2.59	Si
SLU 77	fin.	954.28	-7650	-0.0002446	0.0002246	0.0035	1.3		6307.58	6307.58	No	6.61	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 76	ini.	-2419.52	6915	1.3	0	3250	6344	7008	3315	9594	No	1.39	Si
SLU 76	fin.	959.16	4809	1.3	0	3250	6344	7008	3315	9594	No	1.99	Si
SLU 73	ini.	-2413.26	6922	1.3	0	3250	6344	7008	3315	9594	No	1.39	Si
SLU 73	fin.	969.38	4816	1.3	0	3250	6344	7008	3315	9594	No	1.99	Si
SLU 74	ini.	-2431.44	6945	1.3	0	3250	6344	7008	3315	9594	No	1.38	Si
SLU 74	fin.	964.49	4839	1.3	0	3250	6344	7008	3315	9594	No	1.98	Si
SLU 84	ini.	-2504.37	7183	1.3	0	3250	6344	7008	3315	9594	No	1.34	Si
SLU 84	fin.	978.96	4909	1.3	0	3250	6344	7008	3315	9594	No	1.95	Si
SLU 75	ini.	-2432.51	6946	1.3	0	3250	6344	7008	3315	9594	No	1.38	Si
SLU 75	fin.	963.81	4840	1.3	0	3250	6344	7008	3315	9594	No	1.98	Si
SLU 82	ini.	-2498.12	7189	1.3	0	3250	6344	7008	3315	9594	No	1.33	Si
SLU 82	fin.	989.18	4915	1.3	0	3250	6344	7008	3315	9594	No	1.95	Si
SLU 77	ini.	-2437.69	6939	1.3	0	3250	6344	7008	3315	9594	No	1.38	Si
SLU 77	fin.	954.28	4833	1.3	0	3250	6344	7008	3315	9594	No	1.99	Si
SLU 83	ini.	-2503.3	7182	1.3	0	3250	6344	7008	3315	9594	No	1.34	Si
SLU 83	fin.	979.65	4908	1.3	0	3250	6344	7008	3315	9594	No	1.95	Si
SLU 78	ini.	-2438.76	6940	1.3	0	3250	6344	7008	3315	9594	No	1.38	Si
SLU 78	fin.	953.59	4833	1.3	0	3250	6344	7008	3315	9594	No	1.98	Si
SLU 81	ini.	-2497.05	7188	1.3	0	3250	6344	7008	3315	9594	No	1.33	Si
SLU 81	fin.	989.87	4915	1.3	0	3250	6344	7008	3315	9594	No	1.95	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-5893.09	-7199	-0.0026878	0.0003369	0.0035	1.3		6274.6	6274.6		1.06	Si
SLV 15	fin.	5146.31	-711	-0.0020415	0.0003369	0.0035	1.3		6266.21	6266.21		1.22	Si
SLV 4	ini.	2534.46	-5915	-0.0007348	0.0003369	0.0035	1.3		6266.21	6266.21		2.47	Si
SLV 4	fin.	-3799.47	-9529	-0.0012547	0.0003369	0.0035	1.3		6274.6	6274.6		1.65	Si
SLV 1	ini.	2448.6	-5904	-0.0007037	0.0003369	0.0035	1.3		6266.21	6266.21		2.56	Si
SLV 1	fin.	-3699.88	-9458	-0.0012086	0.0003369	0.0035	1.3		6274.6	6274.6		1.7	Si
SLV 3	ini.	2492.71	-5963	-0.0007196	0.0003369	0.0035	1.3		6266.21	6266.21		2.51	Si
SLV 3	fin.	-3768.43	-9538	-0.0012402	0.0003369	0.0035	1.3		6274.6	6274.6		1.67	Si
SLD 15	ini.	-3493.5	-6815	-0.0011161	0.0003369	0.0035	1.3		6274.6	6274.6		1.8	Si
SLD 15	fin.	2604.31	-3213	-0.0007604	0.0003369	0.0035	1.3		6266.21	6266.21		2.41	Si
SLV 14	ini.	-5895.46	-7091	-0.0026902	0.0003369	0.0035	1.3		6274.6	6274.6		1.06	Si
SLV 14	fin.	5183.82	-623	-0.0020697	0.0003369	0.0035	1.3		6266.21	6266.21		1.21	Si
SLD 13	ini.	-3510.79	-6789	-0.0011237	0.0003369	0.0035	1.3		6274.6	6274.6		1.79	Si
SLD 13	fin.	2633.44	-3181	-0.0007712	0.0003369	0.0035	1.3		6266.21	6266.21		2.38	Si
SLV 2	ini.	2490.34	-5856	-0.0007188	0.0003369	0.0035	1.3		6266.21	6266.21		2.52	Si
SLV 2	fin.	-3730.92	-9450	-0.0012228	0.0003369	0.0035	1.3		6274.6	6274.6		1.68	Si
SLV 13	ini.	-5937.21	-7139	-0.002733	0.0003369	0.0035	1.3		6274.6	6274.6		1.06	Si
SLV 13	fin.	5214.86	-631	-0.0020933	0.0003369	0.0035	1.3		6266.21	6266.21		1.2	Si
SLV 16	ini.	-5851.35	-7151	-0.0026457	0.0003369	0.0035	1.3		6274.6	6274.6		1.07	Si
SLV 16	fin.	5115.27	-703	-0.0020185	0.0003369	0.0035	1.3		6266.21	6266.21		1.23	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	ini.	2490.34	-10034	1.3	0	4875	6344	10512	3315	11219		1.12	Si
SLV 2	fin.	-3730.92	-11261	1.3	0	4875	6344	10512	3315	11219		1	No
SLV 3	ini.	2492.71	-10017	1.3	0	4875	6344	10512	3315	11219		1.12	Si
SLV 3	fin.	-3768.43	-11410	1.3	0	4875	6344	10512	3315	11219		0.98	No
SLV 4	ini.	2534.46	-10140	1.3	0	4875	6344	10512	3315	11219		1.11	Si
SLV 4	fin.	-3799.47	-11533	1.3	0	4875	6344	10512	3315	11219		0.97	No
SLV 14	ini.	-5895.46	19712	1.3	0	4875	6344	10512	3315	11219		0.57	No
SLV 14	fin.	5183.82	18420	1.3	0	4875	6344	10512	3315	11219		0.61	No
SLV 13	ini.	-5937.21	19835	1.3	0	4875	6344	10512	3315	11219		0.57	No
SLV 13	fin.	5214.86	18543	1.3	0	4875	6344	10512	3315	11219		0.61	No
SLV 16	ini.	-5851.35	19606	1.3	0	4875	6344	10512	3315	11219		0.57	No
SLV 16	fin.	5115.27	18148	1.3	0	4875	6344	10512	3315	11219		0.62	No
SLD 14	ini.	-3493.03	11198	1.3	0	4875	6344	10512	3315	11219		1	Si
SLD 14	fin.	2620.23	9877	1.3	0	4875	6344	10512	3315	11219		1.14	Si
SLD 13	ini.	-3510.79	11250	1.3	0	4875	6344	10512	3315	11219		1	No
SLD 13	fin.	2633.44	9929	1.3	0	4875	6344	10512	3315	11219		1.13	Si
SLV 15	ini.	-5893.09	19729	1.3	0	4875	6344	10512	3315	11219		0.57	No
SLV 15	fin.	5146.31	18271	1.3	0	4875	6344	10512	3315	11219		0.61	No
SLD 15	ini.	-3493.5	11209	1.3	0	4875	6344	10512	3315	11219		1	Si
SLD 15	fin.	2604.31	9815	1.3	0	4875	6344	10512	3315	11219		1.14	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.057	SLV 13	Si
V_SLV	0.566	SLV 13	No
PF_SLU	2.522	SLU 84	Si
V_SLU	1.334	SLU 82	Si

Trave di accoppiamento 47

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-11.173	1.046	4.17	5.07	0.9	-12.293	1.046	4.17	5.07	0.9	1.12	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-1217.68	-5728	-0.0007841	0.0002246	0.0035	0.9		3033.73	3033.73	No	2.49	Si
SLU 80	fin.	-31.52	-3891	-0.0000155	0.0002246	0.0035	0.9		3033.73	3033.73	No	96.24	Si
SLU 84	ini.	-1286.23	-5918	-0.0008412	0.0002246	0.0035	0.9		3033.73	3033.73	No	2.36	Si
SLU 84	fin.	-24.22	-3966	-0.0000119	0.0002246	0.0035	0.9		3033.73	3033.73	No	125.27	Si
SLU 77	ini.	-1203.19	-5742	-0.0007723	0.0002246	0.0035	0.9		3033.73	3033.73	No	2.52	Si
SLU 77	fin.	-52.92	-3958	-0.0000261	0.0002246	0.0035	0.9		3033.73	3033.73	No	57.33	Si
SLU 73	ini.	-1212.4	-5595	-0.0007798	0.0002246	0.0035	0.9		3033.73	3033.73	No	2.5	Si
SLU 73	fin.	-11.87	-3740	-0.0000058	0.0002246	0.0035	0.9		3033.73	3033.73	No	255.62	Si
SLU 82	ini.	-1275.67	-5841	-0.0008323	0.0002246	0.0035	0.9		3033.73	3033.73	No	2.38	Si
SLU 82	fin.	-22.4	-3903	-0.000011	0.0002246	0.0035	0.9		3033.73	3033.73	No	135.4	Si
SLU 75	ini.	-1216.38	-5697	-0.0007831	0.0002246	0.0035	0.9		3033.73	3033.73	No	2.49	Si
SLU 75	fin.	-27.06	-3857	-0.0000133	0.0002246	0.0035	0.9		3033.73	3033.73	No	112.11	Si
SLU 78	ini.	-1226.95	-5775	-0.0007918	0.0002246	0.0035	0.9		3033.73	3033.73	No	2.47	Si
SLU 78	fin.	-28.87	-3921	-0.0000142	0.0002246	0.0035	0.9		3033.73	3033.73	No	105.07	Si
SLU 83	ini.	-1262.47	-5885	-0.0008213	0.0002246	0.0035	0.9		3033.73	3033.73	No	2.4	Si
SLU 83	fin.	-48.26	-4004	-0.0000238	0.0002246	0.0035	0.9		3033.73	3033.73	No	62.86	Si
SLU 76	ini.	-1222.96	-5673	-0.0007885	0.0002246	0.0035	0.9		3033.73	3033.73	No	2.48	Si
SLU 76	fin.	-13.68	-3803	-0.0000067	0.0002246	0.0035	0.9		3033.73	3033.73	No	221.76	Si
SLU 81	ini.	-1251.91	-5808	-0.0008124	0.0002246	0.0035	0.9		3033.73	3033.73	No	2.42	Si
SLU 81	fin.	-46.45	-3940	-0.0000229	0.0002246	0.0035	0.9		3033.73	3033.73	No	65.31	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-1262.47	3303	0.9	0	2216	7137	4852	2295	7147	No	2.16	Si
SLU 83	fin.	-48.26	378	0.9	0	2216	7137	4852	2295	7147	No	18.9	Si
SLU 42	ini.	-1161.74	3117	0.9	0	2216	7137	4852	2295	7147	No	2.29	Si
SLU 42	fin.	3.86	409	0.9	0	2216	7137	4852	2295	7147	No	17.49	Si
SLU 80	ini.	-1217.68	3124	0.9	0	2216	7137	4852	2295	7147	No	2.29	Si
SLU 80	fin.	-31.52	471	0.9	0	2216	7137	4852	2295	7147	No	15.16	Si
SLU 75	ini.	-1216.38	3128	0.9	0	2216	7137	4852	2295	7147	No	2.28	Si
SLU 75	fin.	-27.06	476	0.9	0	2216	7137	4852	2295	7147	No	15.02	Si
SLU 81	ini.	-1251.91	3290	0.9	0	2216	7137	4852	2295	7147	No	2.17	Si
SLU 81	fin.	-46.45	365	0.9	0	2216	7137	4852	2295	7147	No	19.6	Si
SLU 84	ini.	-1286.23	3374	0.9	0	2216	7137	4852	2295	7147	No	2.12	Si
SLU 84	fin.	-24.22	449	0.9	0	2216	7137	4852	2295	7147	No	15.92	Si
SLU 78	ini.	-1226.95	3142	0.9	0	2216	7137	4852	2295	7147	No	2.27	Si
SLU 78	fin.	-28.87	489	0.9	0	2216	7137	4852	2295	7147	No	14.61	Si
SLU 82	ini.	-1275.67	3361	0.9	0	2216	7137	4852	2295	7147	No	2.13	Si
SLU 82	fin.	-22.4	435	0.9	0	2216	7137	4852	2295	7147	No	16.41	Si
SLU 73	ini.	-1212.4	3144	0.9	0	2216	7137	4852	2295	7147	No	2.27	Si
SLU 73	fin.	-11.87	492	0.9	0	2216	7137	4852	2295	7147	No	14.53	Si
SLU 76	ini.	-1222.96	3158	0.9	0	2216	7137	4852	2295	7147	No	2.26	Si
SLU 76	fin.	-13.68	505	0.9	0	2216	7137	4852	2295	7147	No	14.14	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-7692.72	-14004	-0.0111619	0.0003369	0.0035	0.9		2999.9	2999.9		0.39	No
SLV 14	fin.	7383.39	8850	-0.0107011	0.0003369	0.0035	0.9		2994.08	2994.08		0.41	No
SLV 16	ini.	-6365.08	-12292	-0.0090762	0.0003369	0.0035	0.9		2999.9	2999.9		0.47	No
SLV 16	fin.	6033.43	6657	-0.0085643	0.0003369	0.0035	0.9		2994.08	2994.08		0.5	No
SLV 10	ini.	-4842.44	-9427	-0.0065916	0.0003369	0.0035	0.9		2999.9	2999.9		0.62	No
SLV 10	fin.	4210.52	4085	-0.0055144	0.0003369	0.0035	0.9		2994.08	2994.08		0.71	No
SLV 13	ini.	-7777.25	-14139	-0.0112933	0.0003369	0.0035	0.9		2999.9	2999.9		0.39	No
SLV 13	fin.	7466.61	8966	-0.0108311	0.0003369	0.0035	0.9		2994.08	2994.08		0.4	No
SLV 2	ini.	4915.86	4846	-0.0067305	0.0003369	0.0035	0.9		2994.08	2994.08		0.61	No
SLV 2	fin.	-6220.63	-12128	-0.008846	0.0003369	0.0035	0.9		2999.9	2999.9		0.48	No
SLV 1	ini.	4831.33	4711	-0.0065877	0.0003369	0.0035	0.9		2994.08	2994.08		0.62	No
SLV 1	fin.	-6137.41	-12012	-0.008713	0.0003369	0.0035	0.9		2999.9	2999.9		0.49	No
SLV 3	ini.	6158.97	6424	-0.0087657	0.0003369	0.0035	0.9		2994.08	2994.08		0.49	No
SLV 3	fin.	-7487.36	-14205	-0.0108421	0.0003369	0.0035	0.9		2999.9	2999.9		0.4	No
SLV 4	ini.	6243.5	6558	-0.008901	0.0003369	0.0035	0.9		2994.08	2994.08		0.48	No
SLV 4	fin.	-7570.59	-14321	-0.0109718	0.0003369	0.0035	0.9		2999.9	2999.9		0.4	No
SLV 9	ini.	-4899.35	-9517	-0.0066876	0.0003369	0.0035	0.9		2999.9	2999.9		0.61	No
SLV 9	fin.	4266.56	4163	-0.005613	0.0003369	0.0035	0.9		2994.08	2994.08		0.7	No
SLV 15	ini.	-6449.61	-12426	-0.0092105	0.0003369	0.0035	0.9		2999.9	2999.9		0.47	No
SLV 15	fin.	6116.66	6773	-0.0086979	0.0003369	0.0035	0.9		2994.08	2994.08		0.49	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-6449.61	19707	0.9	0	2415	7137	7277	2295	9551		0.48	No
SLV 15	fin.	6116.66	18099	0.9	0	2415	7137	7277	2295	9551		0.53	No
SLV 1	ini.	4831.33	-15663	0.9	0	2415	7137	7277	2295	9551		0.61	No
SLV 1	fin.	-6137.41	-17299	0.9	0	2415	7137	7277	2295	9551		0.55	No
SLV 10	ini.	-4842.44	14376	0.9	0	2415	7137	7277	2295	9551		0.66	No

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 10	fin.	4210.52	12695	0.9	0	2415	7137	7277	2295	9551		0.75	No
SLV 3	ini.	6158.97	-19658	0.9	0	2415	7137	7277	2295	9551		0.49	No
SLV 3	fin.	-7487.36	-21259	0.9	0	2415	7137	7277	2295	9551		0.45	No
SLV 4	ini.	6243.5	-19908	0.9	0	2415	7137	7277	2295	9551		0.48	No
SLV 4	fin.	-7570.59	-21510	0.9	0	2415	7137	7277	2295	9551		0.44	No
SLV 16	ini.	-6365.08	19456	0.9	0	2415	7137	7277	2295	9551		0.49	No
SLV 16	fin.	6033.43	17849	0.9	0	2415	7137	7277	2295	9551		0.54	No
SLV 14	ini.	-7692.72	23451	0.9	0	2415	7137	7277	2295	9551		0.41	No
SLV 14	fin.	7383.39	21809	0.9	0	2415	7137	7277	2295	9551		0.44	No
SLV 13	ini.	-7777.25	23702	0.9	0	2415	7137	7277	2295	9551		0.4	No
SLV 13	fin.	7466.61	22060	0.9	0	2415	7137	7277	2295	9551		0.43	No
SLV 2	ini.	4915.86	-15913	0.9	0	2415	7137	7277	2295	9551		0.6	No
SLV 2	fin.	-6220.63	-17549	0.9	0	2415	7137	7277	2295	9551		0.54	No
SLV 9	ini.	-4899.35	14544	0.9	0	2415	7137	7277	2295	9551		0.66	No
SLV 9	fin.	4266.56	12864	0.9	0	2415	7137	7277	2295	9551		0.74	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.386	SLV 13	No
V_SLV	0.403	SLV 13	No
PF_SLU	2.359	SLU 84	Si
V_SLU	2.118	SLU 84	Si

Trave di accoppiamento 48

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-4.168	1.046	3.77	5.07	1.3	-4.968	1.046	3.77	5.07	1.3	0.8	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	1106.05	-6578	-0.0002887	0.0002246	0.0035	1.3		6307.58	6307.58	No	5.7	Si
SLU 77	fin.	-2122.74	-8669	-0.0006256	0.0002246	0.0035	1.3		6315.63	6315.63	No	2.98	Si
SLU 80	ini.	1098.58	-6526	-0.0002865	0.0002246	0.0035	1.3		6307.58	6307.58	No	5.74	Si
SLU 80	fin.	-2110.76	-8605	-0.0006212	0.0002246	0.0035	1.3		6315.63	6315.63	No	2.99	Si
SLU 74	ini.	1109.93	-6470	-0.0002899	0.0002246	0.0035	1.3		6307.58	6307.58	No	5.68	Si
SLU 74	fin.	-2116.81	-8558	-0.0006234	0.0002246	0.0035	1.3		6315.63	6315.63	No	2.98	Si
SLU 78	ini.	1105.53	-6579	-0.0002886	0.0002246	0.0035	1.3		6307.58	6307.58	No	5.71	Si
SLU 78	fin.	-2123.23	-8670	-0.0006258	0.0002246	0.0035	1.3		6315.63	6315.63	No	2.97	Si
SLU 84	ini.	1122.55	-6712	-0.0002936	0.0002246	0.0035	1.3		6307.58	6307.58	No	5.62	Si
SLU 84	fin.	-2179.36	-8849	-0.0006464	0.0002246	0.0035	1.3		6315.63	6315.63	No	2.9	Si
SLU 79	ini.	1099.1	-6525	-0.0002867	0.0002246	0.0035	1.3		6307.58	6307.58	No	5.74	Si
SLU 79	fin.	-2110.27	-8604	-0.000621	0.0002246	0.0035	1.3		6315.63	6315.63	No	2.99	Si
SLU 81	ini.	1126.96	-6604	-0.000295	0.0002246	0.0035	1.3		6307.58	6307.58	No	5.6	Si
SLU 81	fin.	-2172.93	-8737	-0.000644	0.0002246	0.0035	1.3		6315.63	6315.63	No	2.91	Si
SLU 75	ini.	1109.41	-6471	-0.0002897	0.0002246	0.0035	1.3		6307.58	6307.58	No	5.69	Si
SLU 75	fin.	-2117.3	-8559	-0.0006236	0.0002246	0.0035	1.3		6315.63	6315.63	No	2.98	Si
SLU 83	ini.	1123.08	-6711	-0.0002938	0.0002246	0.0035	1.3		6307.58	6307.58	No	5.62	Si
SLU 83	fin.	-2178.87	-8848	-0.0006462	0.0002246	0.0035	1.3		6315.63	6315.63	No	2.9	Si
SLU 82	ini.	1126.43	-6604	-0.0002948	0.0002246	0.0035	1.3		6307.58	6307.58	No	5.6	Si
SLU 82	fin.	-2173.42	-8738	-0.0006442	0.0002246	0.0035	1.3		6315.63	6315.63	No	2.91	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 74	ini.	1109.93	-4653	1.3	0	3250	6344	7008	3315	9594	No	2.06	Si
SLU 74	fin.	-2116.81	-6738	1.3	0	3250	6344	7008	3315	9594	No	1.42	Si
SLU 81	ini.	1126.96	-4697	1.3	0	3250	6344	7008	3315	9594	No	2.04	Si
SLU 81	fin.	-2172.93	-6951	1.3	0	3250	6344	7008	3315	9594	No	1.38	Si
SLU 80	ini.	1098.58	-4624	1.3	0	3250	6344	7008	3315	9594	No	2.07	Si
SLU 80	fin.	-2110.76	-6710	1.3	0	3250	6344	7008	3315	9594	No	1.43	Si
SLU 78	ini.	1105.53	-4659	1.3	0	3250	6344	7008	3315	9594	No	2.06	Si
SLU 78	fin.	-2123.23	-6744	1.3	0	3250	6344	7008	3315	9594	No	1.42	Si
SLU 84	ini.	1122.55	-4703	1.3	0	3250	6344	7008	3315	9594	No	2.04	Si
SLU 84	fin.	-2179.36	-6956	1.3	0	3250	6344	7008	3315	9594	No	1.38	Si
SLU 79	ini.	1099.1	-4624	1.3	0	3250	6344	7008	3315	9594	No	2.07	Si
SLU 79	fin.	-2110.27	-6709	1.3	0	3250	6344	7008	3315	9594	No	1.43	Si
SLU 83	ini.	1123.08	-4703	1.3	0	3250	6344	7008	3315	9594	No	2.04	Si
SLU 83	fin.	-2178.87	-6956	1.3	0	3250	6344	7008	3315	9594	No	1.38	Si
SLU 77	ini.	1106.05	-4658	1.3	0	3250	6344	7008	3315	9594	No	2.06	Si
SLU 77	fin.	-2122.74	-6744	1.3	0	3250	6344	7008	3315	9594	No	1.42	Si
SLU 82	ini.	1126.43	-4698	1.3	0	3250	6344	7008	3315	9594	No	2.04	Si
SLU 82	fin.	-2173.42	-6951	1.3	0	3250	6344	7008	3315	9594	No	1.38	Si
SLU 75	ini.	1109.41	-4653	1.3	0	3250	6344	7008	3315	9594	No	2.06	Si
SLU 75	fin.	-2117.3	-6739	1.3	0	3250	6344	7008	3315	9594	No	1.42	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	5540.85	-767	-0.0023613	0.0003369	0.0035	1.3		6266.21	6266.21		1.13	Si
SLV 4	fin.	-6169.15	-7853	-0.0029844	0.0003369	0.0035	1.3		6274.6	6274.6		1.02	Si
SLV 3	ini.	5530.4	-795	-0.0023521	0.0003369	0.0035	1.3		6266.21	6266.21		1.13	Si
SLV 3	fin.	-6155.95	-7876	-0.0029695	0.0003369	0.0035	1.3		6274.6	6274.6		1.02	Si
SLD 3	ini.	2825.66	-2823	-0.0008438	0.0003369	0.0035	1.3		6266.21	6266.21		2.22	Si
SLD 3	fin.	-3477.53	-6694	-0.0011091	0.0003369	0.0035	1.3		6274.6	6274.6		1.8	Si
SLV 16	ini.	-3919.74	-8190	-0.001312	0.0003369	0.0035	1.3		6274.6	6274.6		1.6	Si
SLV 16	fin.	3183.38	-3948	-0.0009862	0.0003369	0.0035	1.3		6266.21	6266.21		1.97	Si
SLV 1	ini.	5535.91	-486	-0.0023569	0.0003369	0.0035	1.3		6266.21	6266.21		1.13	Si
SLV 1	fin.	-6140.31	-7679	-0.002952	0.0003369	0.0035	1.3		6274.6	6274.6		1.02	Si
SLD 4	ini.	2830.1	-2812	-0.0008455	0.0003369	0.0035	1.3		6266.21	6266.21		2.21	Si
SLD 4	fin.	-3483.15	-6684	-0.0011116	0.0003369	0.0035	1.3		6274.6	6274.6		1.8	Si
SLV 14	ini.	-3914.23	-7881	-0.0013093	0.0003369	0.0035	1.3		6274.6	6274.6		1.6	Si
SLV 14	fin.	3199.02	-3751	-0.0009927	0.0003369	0.0035	1.3		6266.21	6266.21		1.96	Si
SLV 2	ini.	5546.35	-459	-0.0023661	0.0003369	0.0035	1.3		6266.21	6266.21		1.13	Si
SLV 2	fin.	-6153.51	-7656	-0.0029668	0.0003369	0.0035	1.3		6274.6	6274.6		1.02	Si
SLV 15	ini.	-3930.19	-8217	-0.0013171	0.0003369	0.0035	1.3		6274.6	6274.6		1.6	Si
SLV 15	fin.	3196.59	-3971	-0.0009917	0.0003369	0.0035	1.3		6266.21	6266.21		1.96	Si
SLV 13	ini.	-3924.68	-7909	-0.0013144	0.0003369	0.0035	1.3		6274.6	6274.6		1.6	Si
SLV 13	fin.	3212.23	-3774	-0.0009981	0.0003369	0.0035	1.3		6266.21	6266.21		1.95	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-3914.23	12918	1.3	0	4875	6344	10512	3315	11219		0.87	No
SLV 14	fin.	3199.02	11633	1.3	0	4875	6344	10512	3315	11219		0.96	No
SLV 1	ini.	5535.91	-19666	1.3	0	4875	6344	10512	3315	11219		0.57	No
SLV 1	fin.	-6140.31	-20975	1.3	0	4875	6344	10512	3315	11219		0.53	No
SLV 4	ini.	5540.85	-19686	1.3	0	4875	6344	10512	3315	11219		0.57	No
SLV 4	fin.	-6169.15	-21055	1.3	0	4875	6344	10512	3315	11219		0.53	No
SLV 16	ini.	-3919.74	12932	1.3	0	4875	6344	10512	3315	11219		0.87	No
SLV 16	fin.	3183.38	11587	1.3	0	4875	6344	10512	3315	11219		0.97	No
SLD 3	ini.	2825.66	-10326	1.3	0	4875	6344	10512	3315	11219		1.09	Si
SLD 3	fin.	-3477.53	-11672	1.3	0	4875	6344	10512	3315	11219		0.96	No
SLD 4	ini.	2830.1	-10340	1.3	0	4875	6344	10512	3315	11219		1.08	Si
SLD 4	fin.	-3483.15	-11686	1.3	0	4875	6344	10512	3315	11219		0.96	No
SLV 13	ini.	-3924.68	12952	1.3	0	4875	6344	10512	3315	11219		0.87	No
SLV 13	fin.	3212.23	11667	1.3	0	4875	6344	10512	3315	11219		0.96	No
SLV 2	ini.	5546.35	-19700	1.3	0	4875	6344	10512	3315	11219		0.57	No
SLV 2	fin.	-6153.51	-21009	1.3	0	4875	6344	10512	3315	11219		0.53	No
SLV 15	ini.	-3930.19	12966	1.3	0	4875	6344	10512	3315	11219		0.87	No
SLV 15	fin.	3196.59	11621	1.3	0	4875	6344	10512	3315	11219		0.97	No
SLV 3	ini.	5530.4	-19652	1.3	0	4875	6344	10512	3315	11219		0.57	No
SLV 3	fin.	-6155.95	-21022	1.3	0	4875	6344	10512	3315	11219		0.53	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.017	SLV 4	Si
V_SLV	0.533	SLV 4	No
PF_SLU	2.898	SLU 84	Si
V_SLU	1.379	SLU 84	Si

Trave di accoppiamento 49

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-17.768	6.651	1.67	2.57	0.9	-16.768	6.651	1.67	2.57	0.9	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	1112.56	-3292	-0.0007212	0.0001872	0.0035	0.9		2942.43	2942.43	No	2.64	Si
SLU 79	fin.	-231.95	-1510	-0.0001188	0.0001872	0.0035	0.9		2948.11	2948.11	No	12.71	Si
SLU 84	ini.	1108.98	-3303	-0.0007182	0.0001872	0.0035	0.9		2942.43	2942.43	No	2.65	Si
SLU 84	fin.	-218.37	-1548	-0.0001115	0.0001872	0.0035	0.9		2948.11	2948.11	No	13.5	Si
SLU 74	ini.	1104.43	-3269	-0.0007145	0.0001872	0.0035	0.9		2942.43	2942.43	No	2.66	Si
SLU 74	fin.	-230.52	-1499	-0.000118	0.0001872	0.0035	0.9		2948.11	2948.11	No	12.79	Si
SLU 83	ini.	1128.23	-3350	-0.000734	0.0001872	0.0035	0.9		2942.43	2942.43	No	2.61	Si
SLU 83	fin.	-227.04	-1555	-0.0001161	0.0001872	0.0035	0.9		2948.11	2948.11	No	12.99	Si
SLU 80	ini.	1093.31	-3246	-0.0007055	0.0001872	0.0035	0.9		2942.43	2942.43	No	2.69	Si
SLU 80	fin.	-223.29	-1503	-0.0001141	0.0001872	0.0035	0.9		2948.11	2948.11	No	13.2	Si
SLU 78	ini.	1101.83	-3274	-0.0007124	0.0001872	0.0035	0.9		2942.43	2942.43	No	2.67	Si
SLU 78	fin.	-222.77	-1521	-0.0001138	0.0001872	0.0035	0.9		2948.11	2948.11	No	13.23	Si
SLU 81	ini.	1111.58	-3298	-0.0007204	0.0001872	0.0035	0.9		2942.43	2942.43	No	2.65	Si
SLU 81	fin.	-226.12	-1527	-0.0001156	0.0001872	0.0035	0.9		2948.11	2948.11	No	13.04	Si
SLU 82	ini.	1092.33	-3252	-0.0007047	0.0001872	0.0035	0.9		2942.43	2942.43	No	2.69	Si
SLU 82	fin.	-217.46	-1520	-0.000111	0.0001872	0.0035	0.9		2948.11	2948.11	No	13.56	Si
SLU 77	ini.	1121.08	-3320	-0.0007281	0.0001872	0.0035	0.9		2942.43	2942.43	No	2.62	Si
SLU 77	fin.	-231.43	-1528	-0.0001185	0.0001872	0.0035	0.9		2948.11	2948.11	No	12.74	Si
SLU 75	ini.	1085.18	-3222	-0.0006989	0.0001872	0.0035	0.9		2942.43	2942.43	No	2.71	Si
SLU 75	fin.	-221.86	-1492	-0.0001134	0.0001872	0.0035	0.9		2948.11	2948.11	No	13.29	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	1101.83	-3131	0.9	0	1875	7137	4043	2295	6338	No	2.02	Si
SLU 78	fin.	-222.77	-1040	0.9	0	1875	7137	4043	2295	6338	No	6.09	Si
SLU 75	ini.	1085.18	-3082	0.9	0	1875	7137	4043	2295	6338	No	2.06	Si
SLU 75	fin.	-221.86	-1034	0.9	0	1875	7137	4043	2295	6338	No	6.13	Si
SLU 74	ini.	1104.43	-3140	0.9	0	1875	7137	4043	2295	6338	No	2.02	Si
SLU 74	fin.	-230.52	-1068	0.9	0	1875	7137	4043	2295	6338	No	5.93	Si
SLU 80	ini.	1093.31	-3107	0.9	0	1875	7137	4043	2295	6338	No	2.04	Si
SLU 80	fin.	-223.29	-1040	0.9	0	1875	7137	4043	2295	6338	No	6.09	Si
SLU 77	ini.	1121.08	-3190	0.9	0	1875	7137	4043	2295	6338	No	1.99	Si
SLU 77	fin.	-231.43	-1075	0.9	0	1875	7137	4043	2295	6338	No	5.9	Si
SLU 81	ini.	1111.58	-3167	0.9	0	1875	7137	4043	2295	6338	No	2	Si
SLU 81	fin.	-226.12	-1048	0.9	0	1875	7137	4043	2295	6338	No	6.05	Si
SLU 79	ini.	1112.56	-3165	0.9	0	1875	7137	4043	2295	6338	No	2	Si
SLU 79	fin.	-231.95	-1074	0.9	0	1875	7137	4043	2295	6338	No	5.9	Si
SLU 84	ini.	1108.98	-3158	0.9	0	1875	7137	4043	2295	6338	No	2.01	Si
SLU 84	fin.	-218.37	-1020	0.9	0	1875	7137	4043	2295	6338	No	6.21	Si
SLU 83	ini.	1128.23	-3216	0.9	0	1875	7137	4043	2295	6338	No	1.97	Si
SLU 83	fin.	-227.04	-1054	0.9	0	1875	7137	4043	2295	6338	No	6.01	Si
SLU 82	ini.	1092.33	-3108	0.9	0	1875	7137	4043	2295	6338	No	2.04	Si
SLU 82	fin.	-217.46	-1014	0.9	0	1875	7137	4043	2295	6338	No	6.25	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	3715.2	-6967	-0.0047751	0.0002807	0.0035	0.9		2967.55	2967.55		0.8	No
SLV 15	fin.	-2850.11	2185	-0.0028794	0.0002807	0.0035	0.9		2973.32	2973.32		1.04	Si
SLV 16	ini.	4399.51	-8013	-0.0060229	0.0002807	0.0035	0.9		2967.55	2967.55		0.67	No
SLV 16	fin.	-3494.93	3012	-0.0043312	0.0002807	0.0035	0.9		2973.32	2973.32		0.85	No
SLV 13	ini.	2556.42	-4137	-0.0022849	0.0002807	0.0035	0.9		2967.55	2967.55		1.16	Si
SLV 13	fin.	-2309.48	2580	-0.0018796	0.0002807	0.0035	0.9		2973.32	2973.32		1.29	Si
SLV 12	ini.	3742.68	-8464	-0.0048276	0.0002807	0.0035	0.9		2967.55	2967.55		0.79	No
SLV 12	fin.	-2116.18	-229	-0.0016242	0.0002807	0.0035	0.9		2973.32	2973.32		1.41	Si
SLV 1	ini.	-2863.4	3517	-0.0029107	0.0002807	0.0035	0.9		2973.32	2973.32		1.04	Si
SLV 1	fin.	3130.95	-4978	-0.0035679	0.0002807	0.0035	0.9		2967.55	2967.55		0.95	No
SLV 3	ini.	-1704.63	687	-0.0011806	0.0002807	0.0035	0.9		2973.32	2973.32		1.74	Si
SLV 3	fin.	2590.32	-5374	-0.002347	0.0002807	0.0035	0.9		2967.55	2967.55		1.15	Si
SLV 14	ini.	3240.73	-5183	-0.0038135	0.0002807	0.0035	0.9		2967.55	2967.55		0.92	No
SLV 14	fin.	-2954.3	3408	-0.003131	0.0002807	0.0035	0.9		2973.32	2973.32		1.01	Si
SLV 2	ini.	-2179.09	2471	-0.0017029	0.0002807	0.0035	0.9		2973.32	2973.32		1.36	Si
SLV 2	fin.	2486.13	-4151	-0.002162	0.0002807	0.0035	0.9		2967.55	2967.55		1.19	Si
SLV 11	ini.	3281.95	-7760	-0.0039028	0.0002807	0.0035	0.9		2967.55	2967.55		0.9	No
SLV 11	fin.	-1682.04	-787	-0.001159	0.0002807	0.0035	0.9		2973.32	2973.32		1.77	Si
SLD 16	ini.	2304.05	-4674	-0.0018779	0.0002807	0.0035	0.9		2967.55	2967.55		1.29	Si
SLD 16	fin.	-1590.55	730	-0.0010735	0.0002807	0.0035	0.9		2973.32	2973.32		1.87	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 16	ini.	2304.05	-7086	0.9	0	2615	7137	6064	2295	8359		1.18	Si
SLD 16	fin.	-1590.55	-5619	0.9	0	2615	7137	6064	2295	8359		1.49	Si
SLV 3	ini.	-1704.63	5928	0.9	0	2615	7137	6064	2295	8359		1.41	Si
SLV 3	fin.	2590.32	8077	0.9	0	2615	7137	6064	2295	8359		1.03	Si
SLV 15	ini.	3715.2	-11588	0.9	0	2615	7137	6064	2295	8359		0.72	No
SLV 15	fin.	-2850.11	-9924	0.9	0	2615	7137	6064	2295	8359		0.84	No
SLV 1	ini.	-2863.4	9451	0.9	0	2615	7137	6064	2295	8359		0.88	No
SLV 1	fin.	3130.95	10427	0.9	0	2615	7137	6064	2295	8359		0.8	No
SLV 16	ini.	4399.51	-13785	0.9	0	2615	7137	6064	2295	8359		0.61	No
SLV 16	fin.	-3494.93	-12091	0.9	0	2615	7137	6064	2295	8359		0.69	No
SLV 11	ini.	3281.95	-9927	0.9	0	2615	7137	6064	2295	8359		0.84	No
SLV 11	fin.	-1682.04	-6718	0.9	0	2615	7137	6064	2295	8359		1.24	Si
SLV 2	ini.	-2179.09	7254	0.9	0	2615	7137	6064	2295	8359		1.15	Si
SLV 2	fin.	2486.13	8259	0.9	0	2615	7137	6064	2295	8359		1.01	Si
SLV 12	ini.	3742.68	-11406	0.9	0	2615	7137	6064	2295	8359		0.73	No
SLV 12	fin.	-2116.18	-8178	0.9	0	2615	7137	6064	2295	8359		1.02	Si
SLV 13	ini.	2556.42	-8066	0.9	0	2615	7137	6064	2295	8359		1.04	Si
SLV 13	fin.	-2309.48	-7574	0.9	0	2615	7137	6064	2295	8359		1.1	Si
SLV 14	ini.	3240.73	-10263	0.9	0	2615	7137	6064	2295	8359		0.81	No
SLV 14	fin.	-2954.3	-9741	0.9	0	2615	7137	6064	2295	8359		0.86	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.675	SLV 16	No
V_SLV	0.606	SLV 16	No
PF_SLU	2.608	SLU 83	Si
V_SLU	1.971	SLU 83	Si

Trave di accoppiamento 50

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-17.768	6.651	4.47	5.07	0.6	-16.768	6.651	4.47	5.07	0.6	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-101.14	-316	-0.0001159	0.0001872	0.0035	0.6		1324.3	1324.3	No	13.09	Si
SLU 79	fin.	-889.55	-2996	-0.00159	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.49	Si
SLU 74	ini.	-99.86	-311	-0.0001144	0.0001872	0.0035	0.6		1324.3	1324.3	No	13.26	Si
SLU 74	fin.	-883.07	-2974	-0.0015722	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.5	Si
SLU 82	ini.	-109.47	-328	-0.000126	0.0001872	0.0035	0.6		1324.3	1324.3	No	12.1	Si
SLU 82	fin.	-889.25	-2979	-0.0015892	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.49	Si
SLU 75	ini.	-103.94	-320	-0.0001193	0.0001872	0.0035	0.6		1324.3	1324.3	No	12.74	Si
SLU 75	fin.	-875.04	-2942	-0.0015502	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.51	Si
SLU 78	ini.	-107.48	-334	-0.0001236	0.0001872	0.0035	0.6		1324.3	1324.3	No	12.32	Si
SLU 78	fin.	-888.88	-2991	-0.0015882	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.49	Si
SLU 81	ini.	-105.38	-319	-0.0001211	0.0001872	0.0035	0.6		1324.3	1324.3	No	12.57	Si
SLU 81	fin.	-897.27	-3010	-0.0016116	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.48	Si
SLU 83	ini.	-108.92	-332	-0.0001254	0.0001872	0.0035	0.6		1324.3	1324.3	No	12.16	Si
SLU 83	fin.	-911.12	-3059	-0.0016509	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.45	Si
SLU 84	ini.	-113	-341	-0.0001303	0.0001872	0.0035	0.6		1324.3	1324.3	No	11.72	Si
SLU 84	fin.	-903.09	-3027	-0.001628	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.47	Si
SLU 80	ini.	-105.22	-325	-0.0001209	0.0001872	0.0035	0.6		1324.3	1324.3	No	12.59	Si
SLU 80	fin.	-881.53	-2964	-0.0015679	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.5	Si
SLU 77	ini.	-103.4	-325	-0.0001187	0.0001872	0.0035	0.6		1324.3	1324.3	No	12.81	Si
SLU 77	fin.	-896.91	-3022	-0.0016106	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.48	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-108.92	1034	0.6	0	1250	4758	2695	1530	4225	No	4.09	Si
SLU 83	fin.	-911.12	-4486	0.6	0	1250	4758	2695	1530	4225	No	0.94	No
SLU 75	ini.	-103.94	988	0.6	0	1250	4758	2695	1530	4225	No	4.28	Si
SLU 75	fin.	-875.04	-4307	0.6	0	1250	4758	2695	1530	4225	No	0.98	No
SLU 80	ini.	-105.22	997	0.6	0	1250	4758	2695	1530	4225	No	4.24	Si
SLU 80	fin.	-881.53	-4338	0.6	0	1250	4758	2695	1530	4225	No	0.97	No
SLU 84	ini.	-113	1053	0.6	0	1250	4758	2695	1530	4225	No	4.01	Si
SLU 84	fin.	-903.09	-4453	0.6	0	1250	4758	2695	1530	4225	No	0.95	No
SLU 77	ini.	-103.4	992	0.6	0	1250	4758	2695	1530	4225	No	4.26	Si
SLU 77	fin.	-896.91	-4407	0.6	0	1250	4758	2695	1530	4225	No	0.96	No
SLU 78	ini.	-107.48	1010	0.6	0	1250	4758	2695	1530	4225	No	4.18	Si
SLU 78	fin.	-888.88	-4374	0.6	0	1250	4758	2695	1530	4225	No	0.97	No
SLU 81	ini.	-105.38	1012	0.6	0	1250	4758	2695	1530	4225	No	4.18	Si
SLU 81	fin.	-897.27	-4419	0.6	0	1250	4758	2695	1530	4225	No	0.96	No
SLU 74	ini.	-99.86	969	0.6	0	1250	4758	2695	1530	4225	No	4.36	Si
SLU 74	fin.	-883.07	-4340	0.6	0	1250	4758	2695	1530	4225	No	0.97	No
SLU 82	ini.	-109.47	1030	0.6	0	1250	4758	2695	1530	4225	No	4.1	Si
SLU 82	fin.	-889.25	-4386	0.6	0	1250	4758	2695	1530	4225	No	0.96	No
SLU 79	ini.	-101.14	978	0.6	0	1250	4758	2695	1530	4225	No	4.32	Si
SLU 79	fin.	-889.55	-4371	0.6	0	1250	4758	2695	1530	4225	No	0.97	No

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 1	ini.	-1832.97	-5755	-0.0054897	0.0002807	0.0035	0.6		1319.01	1319.01		0.72	No
SLV 1	fin.	1096.79	4026	-0.0021185	0.0002807	0.0035	0.6		1315.04	1315.04		1.2	Si
SLV 11	ini.	672.67	1706	-0.0010025	0.0002807	0.0035	0.6		1315.04	1315.04		1.95	Si
SLV 11	fin.	-1687.67	-6215	-0.0048893	0.0002807	0.0035	0.6		1319.01	1319.01		0.78	No
SLV 2	ini.	-1483.5	-4656	-0.0039806	0.0002807	0.0035	0.6		1319.01	1319.01		0.89	No
SLV 2	fin.	777.32	2888	-0.0012216	0.0002807	0.0035	0.6		1315.04	1315.04		1.69	Si
SLD 16	ini.	704.63	2210	-0.001067	0.0002807	0.0035	0.6		1315.04	1315.04		1.87	Si
SLD 16	fin.	-1316.53	-4584	-0.0031213	0.0002807	0.0035	0.6		1319.01	1319.01		1	Si
SLV 13	ini.	1139.07	3830	-0.0022823	0.0002807	0.0035	0.6		1315.04	1315.04		1.15	Si
SLV 13	fin.	-1489.44	-5006	-0.0040087	0.0002807	0.0035	0.6		1319.01	1319.01		0.89	No
SLV 15	ini.	1377.56	4315	-0.0034725	0.0002807	0.0035	0.6		1315.04	1315.04		0.95	No
SLV 15	fin.	-1974.62	-6937	-0.006054	0.0002807	0.0035	0.6		1319.01	1319.01		0.67	No
SLV 16	ini.	1727.02	5414	-0.0050744	0.0002807	0.0035	0.6		1315.04	1315.04		0.76	No
SLV 16	fin.	-2294.09	-8075	-0.0072895	0.0002807	0.0035	0.6		1319.01	1319.01		0.57	No
SLV 12	ini.	907.96	2446	-0.0015339	0.0002807	0.0035	0.6		1315.04	1315.04		1.45	Si
SLV 12	fin.	-1902.76	-6981	-0.0057697	0.0002807	0.0035	0.6		1319.01	1319.01		0.69	No
SLV 3	ini.	-1594.48	-5270	-0.0044869	0.0002807	0.0035	0.6		1319.01	1319.01		0.83	No
SLV 3	fin.	611.61	2094	-0.0008843	0.0002807	0.0035	0.6		1315.04	1315.04		2.15	Si
SLV 14	ini.	1488.53	4929	-0.0040237	0.0002807	0.0035	0.6		1315.04	1315.04		0.88	No
SLV 14	fin.	-1808.91	-6143	-0.0053921	0.0002807	0.0035	0.6		1319.01	1319.01		0.73	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	-1594.48	7357	0.6	0	1565	4758	4043	1530	5573		0.76	No
SLV 3	fin.	611.61	2000	0.6	0	1565	4758	4043	1530	5573		2.79	Si
SLV 15	ini.	1377.56	-5736	0.6	0	1565	4758	4043	1530	5573		0.97	No
SLV 15	fin.	-1974.62	-8552	0.6	0	1565	4758	4043	1530	5573		0.65	No
SLV 16	ini.	1727.02	-7285	0.6	0	1565	4758	4043	1530	5573		0.76	No

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	fin.	-2294.09	-9846	0.6	0	1565	4758	4043	1530	5573		0.57	No
SLV 1	ini.	-1832.97	8452	0.6	0	1565	4758	4043	1530	5573		0.66	No
SLV 1	fin.	1096.79	3983	0.6	0	1565	4758	4043	1530	5573		1.4	Si
SLD 16	ini.	704.63	-2765	0.6	0	1565	4758	4043	1530	5573		2.02	Si
SLD 16	fin.	-1316.53	-5859	0.6	0	1565	4758	4043	1530	5573		0.95	No
SLV 11	ini.	672.67	-2684	0.6	0	1565	4758	4043	1530	5573		2.08	Si
SLV 11	fin.	-1687.67	-7384	0.6	0	1565	4758	4043	1530	5573		0.75	No
SLV 13	ini.	1139.07	-4640	0.6	0	1565	4758	4043	1530	5573		1.2	Si
SLV 13	fin.	-1489.44	-6568	0.6	0	1565	4758	4043	1530	5573		0.85	No
SLV 12	ini.	907.96	-3728	0.6	0	1565	4758	4043	1530	5573		1.49	Si
SLV 12	fin.	-1902.76	-8255	0.6	0	1565	4758	4043	1530	5573		0.68	No
SLV 2	ini.	-1483.5	6902	0.6	0	1565	4758	4043	1530	5573		0.81	No
SLV 2	fin.	777.32	2689	0.6	0	1565	4758	4043	1530	5573		2.07	Si
SLV 14	ini.	1488.53	-6190	0.6	0	1565	4758	4043	1530	5573		0.9	No
SLV 14	fin.	-1808.91	-7863	0.6	0	1565	4758	4043	1530	5573		0.71	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.575	SLV 16	No
V_SLV	0.566	SLV 16	No
PF_SLU	1.453	SLU 83	Si
V_SLU	0.942	SLU 83	No

Trave di accoppiamento 51

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-12.888	6.651	1.67	2.57	0.9	-11.888	6.651	1.67	2.57	0.9	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 74	ini.	740.07	-3227	-0.0004371	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.98	Si
SLU 74	fin.	310.63	-2619	-0.0001624	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.47	Si
SLU 77	ini.	760.84	-3287	-0.0004519	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.87	Si
SLU 77	fin.	305.96	-2643	-0.0001598	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.62	Si
SLU 80	ini.	745.79	-3234	-0.0004412	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.95	Si
SLU 80	fin.	303.83	-2608	-0.0001586	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.68	Si
SLU 79	ini.	754.59	-3258	-0.0004475	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.9	Si
SLU 79	fin.	301.37	-2616	-0.0001572	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.76	Si
SLU 82	ini.	737.59	-3255	-0.0004354	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.99	Si
SLU 82	fin.	327.68	-2675	-0.0001721	0.0001872	0.0035	0.9		2942.43	2942.43	No	8.98	Si
SLU 83	ini.	767.16	-3338	-0.0004564	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.84	Si
SLU 83	fin.	320.55	-2706	-0.0001681	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.18	Si
SLU 81	ini.	746.4	-3279	-0.0004416	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.94	Si
SLU 81	fin.	325.22	-2683	-0.0001707	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.05	Si
SLU 84	ini.	758.35	-3314	-0.0004501	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.88	Si
SLU 84	fin.	323.01	-2698	-0.0001694	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.11	Si
SLU 75	ini.	731.26	-3203	-0.0004309	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.02	Si
SLU 75	fin.	313.09	-2611	-0.0001638	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.4	Si
SLU 78	ini.	752.03	-3263	-0.0004456	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.91	Si
SLU 78	fin.	308.42	-2635	-0.0001612	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.54	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 74	ini.	740.07	-1685	0.9	0	1875	7137	4043	2295	6338	No	3.76	Si
SLU 74	fin.	310.63	274	0.9	0	1875	7137	4043	2295	6338	No	23.16	Si
SLU 83	ini.	767.16	-1752	0.9	0	1875	7137	4043	2295	6338	No	3.62	Si
SLU 83	fin.	320.55	284	0.9	0	1875	7137	4043	2295	6338	No	22.33	Si
SLU 78	ini.	752.03	-1719	0.9	0	1875	7137	4043	2295	6338	No	3.69	Si
SLU 78	fin.	308.42	261	0.9	0	1875	7137	4043	2295	6338	No	24.32	Si
SLU 75	ini.	731.26	-1657	0.9	0	1875	7137	4043	2295	6338	No	3.82	Si
SLU 75	fin.	313.09	283	0.9	0	1875	7137	4043	2295	6338	No	22.38	Si
SLU 82	ini.	737.59	-1662	0.9	0	1875	7137	4043	2295	6338	No	3.81	Si
SLU 82	fin.	327.68	316	0.9	0	1875	7137	4043	2295	6338	No	20.06	Si
SLU 79	ini.	754.59	-1732	0.9	0	1875	7137	4043	2295	6338	No	3.66	Si
SLU 79	fin.	301.37	241	0.9	0	1875	7137	4043	2295	6338	No	26.28	Si
SLU 81	ini.	746.4	-1690	0.9	0	1875	7137	4043	2295	6338	No	3.75	Si
SLU 81	fin.	325.22	306	0.9	0	1875	7137	4043	2295	6338	No	20.68	Si
SLU 84	ini.	758.35	-1724	0.9	0	1875	7137	4043	2295	6338	No	3.68	Si
SLU 84	fin.	323.01	293	0.9	0	1875	7137	4043	2295	6338	No	21.6	Si
SLU 77	ini.	760.84	-1747	0.9	0	1875	7137	4043	2295	6338	No	3.63	Si
SLU 77	fin.	305.96	251	0.9	0	1875	7137	4043	2295	6338	No	25.24	Si
SLU 80	ini.	745.79	-1704	0.9	0	1875	7137	4043	2295	6338	No	3.72	Si
SLU 80	fin.	303.83	251	0.9	0	1875	7137	4043	2295	6338	No	25.28	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	3940.59	-7496	-0.0051982	0.0002807	0.0035	0.9		2967.55	2967.55		0.75	No
SLV 16	fin.	-3031.31	2240	-0.0033192	0.0002807	0.0035	0.9		2973.32	2973.32		0.98	No
SLV 15	ini.	3390	-6701	-0.0041303	0.0002807	0.0035	0.9		2967.55	2967.55		0.88	No
SLV 15	fin.	-2491.66	1511	-0.0021636	0.0002807	0.0035	0.9		2973.32	2973.32		1.19	Si
SLV 2	ini.	-2413.22	2378	-0.0020356	0.0002807	0.0035	0.9		2973.32	2973.32		1.23	Si
SLV 2	fin.	2917.32	-5054	-0.0030534	0.0002807	0.0035	0.9		2967.55	2967.55		1.02	Si
SLV 14	ini.	3413.85	-5995	-0.0041794	0.0002807	0.0035	0.9		2967.55	2967.55		0.87	No
SLV 14	fin.	-2827.84	2735	-0.0028279	0.0002807	0.0035	0.9		2973.32	2973.32		1.05	Si
SLV 3	ini.	-2437.07	1672	-0.0020736	0.0002807	0.0035	0.9		2973.32	2973.32		1.22	Si
SLV 3	fin.	3253.51	-6277	-0.0038413	0.0002807	0.0035	0.9		2967.55	2967.55		0.91	No
SLV 12	ini.	2425.69	-6187	-0.0020624	0.0002807	0.0035	0.9		2967.55	2967.55		1.22	Si
SLV 12	fin.	-1169.72	-1183	-0.0007195	0.0002807	0.0035	0.9		2973.32	2973.32		2.54	Si
SLV 1	ini.	-2963.81	3173	-0.0031543	0.0002807	0.0035	0.9		2973.32	2973.32		1	Si
SLV 1	fin.	3456.97	-5782	-0.0042674	0.0002807	0.0035	0.9		2967.55	2967.55		0.86	No
SLV 4	ini.	-1886.48	877	-0.0013639	0.0002807	0.0035	0.9		2973.32	2973.32		1.58	Si
SLV 4	fin.	2713.86	-5549	-0.0025901	0.0002807	0.0035	0.9		2967.55	2967.55		1.09	Si
SLV 11	ini.	2055	-5651	-0.0015554	0.0002807	0.0035	0.9		2967.55	2967.55		1.44	Si
SLV 11	fin.	-806.39	-1673	-0.0004569	0.0002807	0.0035	0.9		2973.32	2973.32		3.69	Si
SLV 13	ini.	2863.26	-5200	-0.0029227	0.0002807	0.0035	0.9		2967.55	2967.55		1.04	Si
SLV 13	fin.	-2288.19	2006	-0.0018494	0.0002807	0.0035	0.9		2973.32	2973.32		1.3	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	3413.85	-10555	0.9	0	2615	7137	6064	2295	8359		0.79	No
SLV 14	fin.	-2827.84	-9758	0.9	0	2615	7137	6064	2295	8359		0.86	No
SLV 15	ini.	3390	-10531	0.9	0	2615	7137	6064	2295	8359		0.79	No
SLV 15	fin.	-2491.66	-8678	0.9	0	2615	7137	6064	2295	8359		0.96	No
SLV 16	ini.	3940.59	-12321	0.9	0	2615	7137	6064	2295	8359		0.68	No
SLV 16	fin.	-3031.31	-10446	0.9	0	2615	7137	6064	2295	8359		0.8	No
SLV 3	ini.	-2437.07	8377	0.9	0	2615	7137	6064	2295	8359		1	No
SLV 3	fin.	3253.51	10124	0.9	0	2615	7137	6064	2295	8359		0.83	No
SLV 11	ini.	2055	-6266	0.9	0	2615	7137	6064	2295	8359		1.33	Si
SLV 11	fin.	-806.39	-3189	0.9	0	2615	7137	6064	2295	8359		2.62	Si
SLV 4	ini.	-1886.48	6588	0.9	0	2615	7137	6064	2295	8359		1.27	Si
SLV 4	fin.	2713.86	8356	0.9	0	2615	7137	6064	2295	8359		1	Si
SLV 1	ini.	-2963.81	10143	0.9	0	2615	7137	6064	2295	8359		0.82	No
SLV 1	fin.	3456.97	10813	0.9	0	2615	7137	6064	2295	8359		0.77	No
SLV 2	ini.	-2413.22	8353	0.9	0	2615	7137	6064	2295	8359		1	Si
SLV 2	fin.	2917.32	9045	0.9	0	2615	7137	6064	2295	8359		0.92	No
SLV 12	ini.	2425.69	-7471	0.9	0	2615	7137	6064	2295	8359		1.12	Si
SLV 12	fin.	-1169.72	-4380	0.9	0	2615	7137	6064	2295	8359		1.91	Si
SLV 13	ini.	2863.26	-8765	0.9	0	2615	7137	6064	2295	8359		0.95	No
SLV 13	fin.	-2288.19	-7990	0.9	0	2615	7137	6064	2295	8359		1.05	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.753	SLV 16	No
V_SLV	0.678	SLV 16	No
PF_SLU	3.835	SLU 83	Si
V_SLU	3.617	SLU 83	Si

Trave di accoppiamento 52

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-12.888	6.651	4.47	5.07	0.6	-11.888	6.651	4.47	5.07	0.6	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-466.23	-1705	-0.000665	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.84	Si
SLU 80	fin.	-661.61	-2367	-0.0010434	0.0001872	0.0035	0.6		1324.3	1324.3	No	2	Si
SLU 78	ini.	-471.61	-1726	-0.0006746	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.81	Si
SLU 78	fin.	-667.78	-2391	-0.0010564	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.98	Si
SLU 83	ini.	-485.8	-1773	-0.0007001	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.73	Si
SLU 83	fin.	-684.1	-2445	-0.0010913	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.94	Si
SLU 84	ini.	-486.56	-1774	-0.0007015	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.72	Si
SLU 84	fin.	-679.5	-2428	-0.0010815	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.95	Si
SLU 82	ini.	-483.88	-1761	-0.0006967	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.74	Si
SLU 82	fin.	-665.28	-2377	-0.0010511	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.99	Si
SLU 75	ini.	-468.93	-1713	-0.0006698	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.82	Si
SLU 75	fin.	-653.56	-2340	-0.0010265	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.03	Si
SLU 79	ini.	-465.47	-1705	-0.0006636	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.85	Si
SLU 79	fin.	-666.21	-2385	-0.0010531	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.99	Si
SLU 77	ini.	-470.85	-1725	-0.0006732	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.81	Si
SLU 77	fin.	-672.38	-2408	-0.0010662	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.97	Si
SLU 81	ini.	-483.12	-1761	-0.0006953	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.74	Si
SLU 81	fin.	-669.88	-2394	-0.0010609	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.98	Si
SLU 74	ini.	-468.17	-1713	-0.0006685	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.83	Si
SLU 74	fin.	-658.16	-2357	-0.0010361	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.01	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-465.47	2500	0.6	0	1250	4758	2695	1530	4225	No	1.69	Si
SLU 79	fin.	-666.21	-3358	0.6	0	1250	4758	2695	1530	4225	No	1.26	Si
SLU 84	ini.	-486.56	2608	0.6	0	1250	4758	2695	1530	4225	No	1.62	Si
SLU 84	fin.	-679.5	-3433	0.6	0	1250	4758	2695	1530	4225	No	1.23	Si
SLU 82	ini.	-483.88	2590	0.6	0	1250	4758	2695	1530	4225	No	1.63	Si
SLU 82	fin.	-665.28	-3367	0.6	0	1250	4758	2695	1530	4225	No	1.25	Si
SLU 78	ini.	-471.61	2530	0.6	0	1250	4758	2695	1530	4225	No	1.67	Si
SLU 78	fin.	-667.78	-3369	0.6	0	1250	4758	2695	1530	4225	No	1.25	Si
SLU 77	ini.	-470.85	2528	0.6	0	1250	4758	2695	1530	4225	No	1.67	Si
SLU 77	fin.	-672.38	-3388	0.6	0	1250	4758	2695	1530	4225	No	1.25	Si
SLU 80	ini.	-466.23	2503	0.6	0	1250	4758	2695	1530	4225	No	1.69	Si
SLU 80	fin.	-661.61	-3338	0.6	0	1250	4758	2695	1530	4225	No	1.27	Si
SLU 81	ini.	-483.12	2587	0.6	0	1250	4758	2695	1530	4225	No	1.63	Si
SLU 81	fin.	-669.88	-3387	0.6	0	1250	4758	2695	1530	4225	No	1.25	Si
SLU 83	ini.	-485.8	2606	0.6	0	1250	4758	2695	1530	4225	No	1.62	Si
SLU 83	fin.	-684.1	-3453	0.6	0	1250	4758	2695	1530	4225	No	1.22	Si
SLU 75	ini.	-468.93	2512	0.6	0	1250	4758	2695	1530	4225	No	1.68	Si
SLU 75	fin.	-653.56	-3302	0.6	0	1250	4758	2695	1530	4225	No	1.28	Si
SLU 74	ini.	-468.17	2509	0.6	0	1250	4758	2695	1530	4225	No	1.68	Si
SLU 74	fin.	-658.16	-3322	0.6	0	1250	4758	2695	1530	4225	No	1.27	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	1471.72	4720	-0.0039438	0.0002807	0.0035	0.6		1315.04	1315.04		0.89	No
SLV 16	fin.	-2350.17	-8112	-0.007501	0.0002807	0.0035	0.6		1319.01	1319.01		0.56	No
SLV 13	ini.	1076.91	3553	-0.0020462	0.0002807	0.0035	0.6		1315.04	1315.04		1.22	Si
SLV 13	fin.	-1752.2	-5970	-0.0051593	0.0002807	0.0035	0.6		1319.01	1319.01		0.75	No
SLV 2	ini.	-1787.94	-5985	-0.0053065	0.0002807	0.0035	0.6		1319.01	1319.01		0.74	No
SLV 2	fin.	1163.71	3919	-0.0023844	0.0002807	0.0035	0.6		1315.04	1315.04		1.13	Si
SLV 11	ini.	200.94	324	-0.000237	0.0002807	0.0035	0.6		1315.04	1315.04		6.54	Si
SLV 11	fin.	-1276.22	-4608	-0.0029027	0.0002807	0.0035	0.6		1319.01	1319.01		1.03	Si
SLV 4	ini.	-1702.78	-5846	-0.004953	0.0002807	0.0035	0.6		1319.01	1319.01		0.77	No
SLV 4	fin.	884.87	2857	-0.0014748	0.0002807	0.0035	0.6		1315.04	1315.04		1.49	Si
SLV 15	ini.	1162.07	3692	-0.0023775	0.0002807	0.0035	0.6		1315.04	1315.04		1.13	Si
SLV 15	fin.	-2031.04	-7032	-0.0062768	0.0002807	0.0035	0.6		1319.01	1319.01		0.65	No
SLV 1	ini.	-2097.58	-7013	-0.0065367	0.0002807	0.0035	0.6		1319.01	1319.01		0.63	No
SLV 1	fin.	1482.84	4999	-0.0039967	0.0002807	0.0035	0.6		1315.04	1315.04		0.89	No
SLV 14	ini.	1386.56	4581	-0.0035197	0.0002807	0.0035	0.6		1315.04	1315.04		0.95	No
SLV 14	fin.	-2071.33	-7051	-0.0064345	0.0002807	0.0035	0.6		1319.01	1319.01		0.64	No
SLV 12	ini.	409.42	1016	-0.000535	0.0002807	0.0035	0.6		1315.04	1315.04		3.21	Si
SLV 12	fin.	-1491.08	-5335	-0.0040165	0.0002807	0.0035	0.6		1319.01	1319.01		0.88	No
SLV 3	ini.	-2012.42	-6874	-0.0062035	0.0002807	0.0035	0.6		1319.01	1319.01		0.66	No
SLV 3	fin.	1204	3937	-0.0025628	0.0002807	0.0035	0.6		1315.04	1315.04		1.09	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	1386.56	-5651	0.6	0	1565	4758	4043	1530	5573		0.99	No
SLV 14	fin.	-2071.33	-9043	0.6	0	1565	4758	4043	1530	5573		0.62	No
SLV 4	ini.	-1702.78	7700	0.6	0	1565	4758	4043	1530	5573		0.72	No
SLV 4	fin.	884.87	3316	0.6	0	1565	4758	4043	1530	5573		1.68	Si
SLV 11	ini.	200.94	7	0.6	0	1565	4758	4043	1530	5573		810.89	Si
SLV 11	fin.	-1276.22	-5806	0.6	0	1565	4758	4043	1530	5573		0.96	No
SLV 13	ini.	1076.91	-4347	0.6	0	1565	4758	4043	1530	5573		1.28	Si
SLV 13	fin.	-1752.2	-7704	0.6	0	1565	4758	4043	1530	5573		0.72	No
SLV 2	ini.	-1787.94	7758	0.6	0	1565	4758	4043	1530	5573		0.72	No
SLV 2	fin.	1163.71	4532	0.6	0	1565	4758	4043	1530	5573		1.23	Si
SLV 3	ini.	-2012.42	9004	0.6	0	1565	4758	4043	1530	5573		0.62	No
SLV 3	fin.	1204	4656	0.6	0	1565	4758	4043	1530	5573		1.2	Si
SLV 12	ini.	409.42	-871	0.6	0	1565	4758	4043	1530	5573		6.39	Si
SLV 12	fin.	-1491.08	-6708	0.6	0	1565	4758	4043	1530	5573		0.83	No
SLV 15	ini.	1162.07	-4405	0.6	0	1565	4758	4043	1530	5573		1.26	Si
SLV 15	fin.	-2031.04	-8920	0.6	0	1565	4758	4043	1530	5573		0.62	No
SLV 1	ini.	-2097.58	9063	0.6	0	1565	4758	4043	1530	5573		0.61	No
SLV 1	fin.	1482.84	5872	0.6	0	1565	4758	4043	1530	5573		0.95	No
SLV 16	ini.	1471.72	-5710	0.6	0	1565	4758	4043	1530	5573		0.98	No
SLV 16	fin.	-2350.17	-10259	0.6	0	1565	4758	4043	1530	5573		0.54	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.561	SLV 16	No
V_SLV	0.543	SLV 16	No
PF_SLU	1.936	SLU 83	Si
V_SLU	1.223	SLU 83	Si

Trave di accoppiamento 53

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-8.008	6.651	1.67	2.57	0.9	-7.008	6.651	1.67	2.57	0.9	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-388.75	-1675	-0.0002071	0.0001872	0.0035	0.9		2948.11	2948.11	No	7.58	Si
SLU 80	fin.	1431.43	-4398	-0.0009981	0.0001872	0.0035	0.9		2942.43	2942.43	No	2.06	Si
SLU 78	ini.	-389.91	-1696	-0.0002078	0.0001872	0.0035	0.9		2948.11	2948.11	No	7.56	Si
SLU 78	fin.	1444.34	-4441	-0.00101	0.0001872	0.0035	0.9		2942.43	2942.43	No	2.04	Si
SLU 83	ini.	-399.19	-1731	-0.0002133	0.0001872	0.0035	0.9		2948.11	2948.11	No	7.39	Si
SLU 83	fin.	1478.11	-4540	-0.0010416	0.0001872	0.0035	0.9		2942.43	2942.43	No	1.99	Si
SLU 77	ini.	-404.44	-1678	-0.0002165	0.0001872	0.0035	0.9		2948.11	2948.11	No	7.29	Si
SLU 77	fin.	1460.5	-4468	-0.0010251	0.0001872	0.0035	0.9		2942.43	2942.43	No	2.01	Si
SLU 75	ini.	-379.79	-1688	-0.0002019	0.0001872	0.0035	0.9		2948.11	2948.11	No	7.76	Si
SLU 75	fin.	1422.46	-4385	-0.0009898	0.0001872	0.0035	0.9		2942.43	2942.43	No	2.07	Si
SLU 79	ini.	-403.28	-1657	-0.0002158	0.0001872	0.0035	0.9		2948.11	2948.11	No	7.31	Si
SLU 79	fin.	1447.6	-4425	-0.0010131	0.0001872	0.0035	0.9		2942.43	2942.43	No	2.03	Si
SLU 81	ini.	-389.07	-1723	-0.0002073	0.0001872	0.0035	0.9		2948.11	2948.11	No	7.58	Si
SLU 81	fin.	1456.23	-4484	-0.0010211	0.0001872	0.0035	0.9		2942.43	2942.43	No	2.02	Si
SLU 74	ini.	-394.32	-1670	-0.0002104	0.0001872	0.0035	0.9		2948.11	2948.11	No	7.48	Si
SLU 74	fin.	1438.62	-4412	-0.0010047	0.0001872	0.0035	0.9		2942.43	2942.43	No	2.05	Si
SLU 84	ini.	-384.66	-1749	-0.0002047	0.0001872	0.0035	0.9		2948.11	2948.11	No	7.66	Si
SLU 84	fin.	1461.94	-4513	-0.0010264	0.0001872	0.0035	0.9		2942.43	2942.43	No	2.01	Si
SLU 82	ini.	-374.55	-1741	-0.0001988	0.0001872	0.0035	0.9		2948.11	2948.11	No	7.87	Si
SLU 82	fin.	1440.06	-4457	-0.0010061	0.0001872	0.0035	0.9		2942.43	2942.43	No	2.04	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-374.55	2138	0.9	0	1875	7137	4043	2295	6338	No	2.96	Si
SLU 82	fin.	1440.06	3905	0.9	0	1875	7137	4043	2295	6338	No	1.62	Si
SLU 77	ini.	-404.44	2226	0.9	0	1875	7137	4043	2295	6338	No	2.85	Si
SLU 77	fin.	1460.5	3983	0.9	0	1875	7137	4043	2295	6338	No	1.59	Si
SLU 84	ini.	-384.66	2176	0.9	0	1875	7137	4043	2295	6338	No	2.91	Si
SLU 84	fin.	1461.94	3973	0.9	0	1875	7137	4043	2295	6338	No	1.6	Si
SLU 75	ini.	-379.79	2144	0.9	0	1875	7137	4043	2295	6338	No	2.96	Si
SLU 75	fin.	1422.46	3857	0.9	0	1875	7137	4043	2295	6338	No	1.64	Si
SLU 74	ini.	-394.32	2188	0.9	0	1875	7137	4043	2295	6338	No	2.9	Si
SLU 74	fin.	1438.62	3915	0.9	0	1875	7137	4043	2295	6338	No	1.62	Si
SLU 78	ini.	-389.91	2182	0.9	0	1875	7137	4043	2295	6338	No	2.9	Si
SLU 78	fin.	1444.34	3925	0.9	0	1875	7137	4043	2295	6338	No	1.61	Si
SLU 80	ini.	-388.75	2170	0.9	0	1875	7137	4043	2295	6338	No	2.92	Si
SLU 80	fin.	1431.43	3889	0.9	0	1875	7137	4043	2295	6338	No	1.63	Si
SLU 81	ini.	-389.07	2182	0.9	0	1875	7137	4043	2295	6338	No	2.9	Si
SLU 81	fin.	1456.23	3963	0.9	0	1875	7137	4043	2295	6338	No	1.6	Si
SLU 83	ini.	-399.19	2221	0.9	0	1875	7137	4043	2295	6338	No	2.85	Si
SLU 83	fin.	1478.11	4031	0.9	0	1875	7137	4043	2295	6338	No	1.57	Si
SLU 79	ini.	-403.28	2215	0.9	0	1875	7137	4043	2295	6338	No	2.86	Si
SLU 79	fin.	1447.6	3947	0.9	0	1875	7137	4043	2295	6338	No	1.61	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	2122.13	-4734	-0.0016362	0.0002807	0.0035	0.9		2967.55	2967.55		1.4	Si
SLV 10	fin.	-1354.62	233	-0.0008679	0.0002807	0.0035	0.9		2973.32	2973.32		2.19	Si
SLV 13	ini.	2374.78	-6098	-0.0019827	0.0002807	0.0035	0.9		2967.55	2967.55		1.25	Si
SLV 13	fin.	-1098.43	-1097	-0.000665	0.0002807	0.0035	0.9		2973.32	2973.32		2.71	Si
SLV 4	ini.	-2938.55	3868	-0.0030923	0.0002807	0.0035	0.9		2973.32	2973.32		1.01	Si
SLV 4	fin.	3066.44	-4921	-0.0034169	0.0002807	0.0035	0.9		2967.55	2967.55		0.97	No
SLV 8	ini.	-2314.95	1767	-0.0018875	0.0002807	0.0035	0.9		2973.32	2973.32		1.28	Si
SLV 8	fin.	3053.98	-6059	-0.0033872	0.0002807	0.0035	0.9		2967.55	2967.55		0.97	No
SLV 14	ini.	2925.76	-7192	-0.0030741	0.0002807	0.0035	0.9		2967.55	2967.55		1.01	Si
SLV 14	fin.	-1497.45	-812	-0.00099	0.0002807	0.0035	0.9		2973.32	2973.32		1.99	Si
SLV 1	ini.	-2606.75	3913	-0.0023688	0.0002807	0.0035	0.9		2973.32	2973.32		1.14	Si
SLV 1	fin.	2463.44	-3538	-0.002124	0.0002807	0.0035	0.9		2967.55	2967.55		1.2	Si
SLV 7	ini.	-2685.91	2504	-0.0025228	0.0002807	0.0035	0.9		2973.32	2973.32		1.11	Si
SLV 7	fin.	3322.63	-6251	-0.0039894	0.0002807	0.0035	0.9		2967.55	2967.55		0.89	No
SLV 3	ini.	-3489.54	4962	-0.0043204	0.0002807	0.0035	0.9		2973.32	2973.32		0.85	No
SLV 3	fin.	3465.45	-5206	-0.0042846	0.0002807	0.0035	0.9		2967.55	2967.55		0.86	No
SLV 11	ini.	-1191.45	-500	-0.0007364	0.0002807	0.0035	0.9		2973.32	2973.32		2.5	Si
SLV 11	fin.	2254.06	-5519	-0.0018077	0.0002807	0.0035	0.9		2967.55	2967.55		1.32	Si
SLV 2	ini.	-2055.77	2819	-0.0015519	0.0002807	0.0035	0.9		2973.32	2973.32		1.45	Si
SLV 2	fin.	2064.43	-3253	-0.0015665	0.0002807	0.0035	0.9		2967.55	2967.55		1.44	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 11	ini.	-1191.45	4686	0.9	0	2615	7137	6064	2295	8359		1.78	Si
SLV 11	fin.	2254.06	6923	0.9	0	2615	7137	6064	2295	8359		1.21	Si
SLV 8	ini.	-2314.95	7928	0.9	0	2615	7137	6064	2295	8359		1.05	Si
SLV 8	fin.	3053.98	10023	0.9	0	2615	7137	6064	2295	8359		0.83	No
SLV 2	ini.	-2055.77	6556	0.9	0	2615	7137	6064	2295	8359		1.27	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	fin.	2064.43	7013	0.9	0	2615	7137	6064	2295	8359		1.19	Si
SLV 1	ini.	-2606.75	8196	0.9	0	2615	7137	6064	2295	8359		1.02	Si
SLV 1	fin.	2463.44	8520	0.9	0	2615	7137	6064	2295	8359		0.98	No
SLV 3	ini.	-3489.54	11045	0.9	0	2615	7137	6064	2295	8359		0.76	No
SLV 3	fin.	3465.45	12011	0.9	0	2615	7137	6064	2295	8359		0.7	No
SLV 14	ini.	2925.76	-7929	0.9	0	2615	7137	6064	2295	8359		1.05	Si
SLV 14	fin.	-1497.45	-6703	0.9	0	2615	7137	6064	2295	8359		1.25	Si
SLV 4	ini.	-2938.55	9406	0.9	0	2615	7137	6064	2295	8359		0.89	No
SLV 4	fin.	3066.44	10504	0.9	0	2615	7137	6064	2295	8359		0.8	No
SLV 13	ini.	2374.78	-6289	0.9	0	2615	7137	6064	2295	8359		1.33	Si
SLV 13	fin.	-1098.43	-5196	0.9	0	2615	7137	6064	2295	8359		1.61	Si
SLD 3	ini.	-1638.55	5571	0.9	0	2615	7137	6064	2295	8359		1.5	Si
SLD 3	fin.	2029.61	6602	0.9	0	2615	7137	6064	2295	8359		1.27	Si
SLV 7	ini.	-2685.91	9032	0.9	0	2615	7137	6064	2295	8359		0.93	No
SLV 7	fin.	3322.63	11037	0.9	0	2615	7137	6064	2295	8359		0.76	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.852	SLV 3	No
V_SLV	0.696	SLV 3	No
PF_SLU	1.991	SLU 83	Si
V_SLU	1.572	SLU 83	Si

Trave di accoppiamento 54

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-8.008	6.651	4.47	5.07	0.6	-7.008	6.651	4.47	5.07	0.6	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-1032.2	-3178	-0.0020435	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.28	Si
SLU 77	fin.	-60.69	-743	-0.0000682	0.0001872	0.0035	0.6		1324.3	1324.3	No	21.82	Si
SLU 79	ini.	-1022.18	-3145	-0.0020071	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.3	Si
SLU 79	fin.	-58.25	-728	-0.0000654	0.0001872	0.0035	0.6		1324.3	1324.3	No	22.74	Si
SLU 74	ini.	-1018.37	-3134	-0.0019935	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.3	Si
SLU 74	fin.	-63.78	-744	-0.0000718	0.0001872	0.0035	0.6		1324.3	1324.3	No	20.76	Si
SLU 80	ini.	-1012	-3119	-0.001971	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.31	Si
SLU 80	fin.	-67.6	-752	-0.0000762	0.0001872	0.0035	0.6		1324.3	1324.3	No	19.59	Si
SLU 82	ini.	-1027.7	-3162	-0.0020271	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.29	Si
SLU 82	fin.	-83.66	-803	-0.0000951	0.0001872	0.0035	0.6		1324.3	1324.3	No	15.83	Si
SLU 84	ini.	-1041.53	-3206	-0.0020781	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.27	Si
SLU 84	fin.	-80.58	-802	-0.0000914	0.0001872	0.0035	0.6		1324.3	1324.3	No	16.44	Si
SLU 78	ini.	-1022.02	-3152	-0.0020065	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.3	Si
SLU 78	fin.	-70.05	-767	-0.0000791	0.0001872	0.0035	0.6		1324.3	1324.3	No	18.91	Si
SLU 81	ini.	-1037.88	-3188	-0.0020645	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.28	Si
SLU 81	fin.	-74.31	-779	-0.000084	0.0001872	0.0035	0.6		1324.3	1324.3	No	17.82	Si
SLU 75	ini.	-1008.19	-3108	-0.0019576	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.31	Si
SLU 75	fin.	-73.13	-768	-0.0000827	0.0001872	0.0035	0.6		1324.3	1324.3	No	18.11	Si
SLU 83	ini.	-1051.71	-3232	-0.0021166	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.26	Si
SLU 83	fin.	-71.22	-778	-0.0000804	0.0001872	0.0035	0.6		1324.3	1324.3	No	18.59	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-1008.19	4293	0.6	0	1250	4758	2695	1530	4225	No	0.98	No
SLU 75	fin.	-73.13	-910	0.6	0	1250	4758	2695	1530	4225	No	4.64	Si
SLU 77	ini.	-1032.2	4387	0.6	0	1250	4758	2695	1530	4225	No	0.96	No
SLU 77	fin.	-60.69	-868	0.6	0	1250	4758	2695	1530	4225	No	4.87	Si
SLU 84	ini.	-1041.53	4444	0.6	0	1250	4758	2695	1530	4225	No	0.95	No
SLU 84	fin.	-80.58	-968	0.6	0	1250	4758	2695	1530	4225	No	4.37	Si
SLU 82	ini.	-1027.7	4388	0.6	0	1250	4758	2695	1530	4225	No	0.96	No
SLU 82	fin.	-83.66	-976	0.6	0	1250	4758	2695	1530	4225	No	4.33	Si
SLU 83	ini.	-1051.71	4482	0.6	0	1250	4758	2695	1530	4225	No	0.94	No
SLU 83	fin.	-71.22	-934	0.6	0	1250	4758	2695	1530	4225	No	4.52	Si
SLU 80	ini.	-1012	4306	0.6	0	1250	4758	2695	1530	4225	No	0.98	No
SLU 80	fin.	-67.6	-886	0.6	0	1250	4758	2695	1530	4225	No	4.77	Si
SLU 78	ini.	-1022.02	4349	0.6	0	1250	4758	2695	1530	4225	No	0.97	No
SLU 78	fin.	-70.05	-902	0.6	0	1250	4758	2695	1530	4225	No	4.68	Si
SLU 79	ini.	-1022.18	4344	0.6	0	1250	4758	2695	1530	4225	No	0.97	No
SLU 79	fin.	-58.25	-852	0.6	0	1250	4758	2695	1530	4225	No	4.96	Si
SLU 81	ini.	-1037.88	4426	0.6	0	1250	4758	2695	1530	4225	No	0.95	No
SLU 81	fin.	-74.31	-942	0.6	0	1250	4758	2695	1530	4225	No	4.48	Si
SLU 74	ini.	-1018.37	4331	0.6	0	1250	4758	2695	1530	4225	No	0.98	No
SLU 74	fin.	-63.78	-876	0.6	0	1250	4758	2695	1530	4225	No	4.82	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	716	1072	-0.0010905	0.0002807	0.0035	0.6		1315.04	1315.04		1.84	Si
SLV 13	fin.	-1827.1	-5437	-0.0054659	0.0002807	0.0035	0.6		1319.01	1319.01		0.72	No
SLV 2	ini.	-1481.21	-3704	-0.0039698	0.0002807	0.0035	0.6		1319.01	1319.01		0.89	No
SLV 2	fin.	1215.84	3130	-0.002618	0.0002807	0.0035	0.6		1315.04	1315.04		1.08	Si
SLV 16	ini.	383.68	84	-0.0004948	0.0002807	0.0035	0.6		1315.04	1315.04		3.43	Si
SLV 16	fin.	-1666.55	-5157	-0.0047995	0.0002807	0.0035	0.6		1319.01	1319.01		0.79	No
SLV 7	ini.	-2166.39	-5794	-0.0068026	0.0002807	0.0035	0.6		1319.01	1319.01		0.61	No
SLV 7	fin.	1516.41	3577	-0.0041538	0.0002807	0.0035	0.6		1315.04	1315.04		0.87	No
SLV 4	ini.	-2090.24	-5303	-0.0065082	0.0002807	0.0035	0.6		1319.01	1319.01		0.63	No
SLV 4	fin.	1759.96	4480	-0.0052113	0.0002807	0.0035	0.6		1315.04	1315.04		0.75	No
SLV 8	ini.	-1980.09	-5383	-0.0060757	0.0002807	0.0035	0.6		1319.01	1319.01		0.67	No
SLV 8	fin.	1258.16	2857	-0.0028266	0.0002807	0.0035	0.6		1315.04	1315.04		1.05	Si
SLV 14	ini.	992.71	1683	-0.0017706	0.0002807	0.0035	0.6		1315.04	1315.04		1.32	Si
SLV 14	fin.	-2210.67	-6507	-0.0069723	0.0002807	0.0035	0.6		1319.01	1319.01		0.6	No
SLV 3	ini.	-2366.95	-5914	-0.0075641	0.0002807	0.0035	0.6		1319.01	1319.01		0.56	No
SLV 3	fin.	2143.54	5549	-0.0067375	0.0002807	0.0035	0.6		1315.04	1315.04		0.61	No
SLV 10	ini.	792.16	1563	-0.0012547	0.0002807	0.0035	0.6		1315.04	1315.04		1.66	Si
SLV 10	fin.	-1583.54	-4534	-0.0044385	0.0002807	0.0035	0.6		1319.01	1319.01		0.83	No
SLV 1	ini.	-1757.92	-4315	-0.005183	0.0002807	0.0035	0.6		1319.01	1319.01		0.75	No
SLV 1	fin.	1599.42	4199	-0.0045279	0.0002807	0.0035	0.6		1315.04	1315.04		0.82	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	716	-2220	0.6	0	1565	4758	4043	1530	5573		2.51	Si
SLV 13	fin.	-1827.1	-7168	0.6	0	1565	4758	4043	1530	5573		0.78	No
SLV 7	ini.	-2166.39	8388	0.6	0	1565	4758	4043	1530	5573		0.66	No
SLV 7	fin.	1516.41	5125	0.6	0	1565	4758	4043	1530	5573		1.09	Si
SLV 16	ini.	383.68	-914	0.6	0	1565	4758	4043	1530	5573		6.1	Si
SLV 16	fin.	-1666.55	-6625	0.6	0	1565	4758	4043	1530	5573		0.84	No
SLV 3	ini.	-2366.95	9021	0.6	0	1565	4758	4043	1530	5573		0.62	No
SLV 3	fin.	2143.54	7503	0.6	0	1565	4758	4043	1530	5573		0.74	No
SLV 4	ini.	-2090.24	8045	0.6	0	1565	4758	4043	1530	5573		0.69	No
SLV 4	fin.	1759.96	6075	0.6	0	1565	4758	4043	1530	5573		0.92	No
SLV 14	ini.	992.71	-3196	0.6	0	1565	4758	4043	1530	5573		1.74	Si
SLV 14	fin.	-2210.67	-8596	0.6	0	1565	4758	4043	1530	5573		0.65	No
SLV 8	ini.	-1980.09	7731	0.6	0	1565	4758	4043	1530	5573		0.72	No
SLV 8	fin.	1258.16	4164	0.6	0	1565	4758	4043	1530	5573		1.34	Si
SLV 10	ini.	792.16	-2563	0.6	0	1565	4758	4043	1530	5573		2.17	Si
SLV 10	fin.	-1583.54	-6218	0.6	0	1565	4758	4043	1530	5573		0.9	No
SLV 1	ini.	-1757.92	6739	0.6	0	1565	4758	4043	1530	5573		0.83	No
SLV 1	fin.	1599.42	5532	0.6	0	1565	4758	4043	1530	5573		1.01	Si
SLV 2	ini.	-1481.21	5763	0.6	0	1565	4758	4043	1530	5573		0.97	No
SLV 2	fin.	1215.84	4104	0.6	0	1565	4758	4043	1530	5573		1.36	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.557	SLV 3	No
V_SLV	0.618	SLV 3	No
PF_SLU	1.259	SLU 83	Si
V_SLU	0.943	SLU 83	No

Trave di accoppiamento 56

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-8.548	-3.359	3.77	5.07	1.3	-9.448	-3.359	3.77	5.07	1.3	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-37.04	-5094	-0.0000087	0.0002246	0.0035	1.3		6315.63	6315.63	No	170.5	Si
SLU 77	fin.	-1401.37	-6037	-0.000379	0.0002246	0.0035	1.3		6315.63	6315.63	No	4.51	Si
SLU 82	ini.	-62.7	-5175	-0.0000147	0.0002246	0.0035	1.3		6315.63	6315.63	No	100.73	Si
SLU 82	fin.	-1397.76	-6100	-0.0003779	0.0002246	0.0035	1.3		6315.63	6315.63	No	4.52	Si
SLU 84	ini.	-65.17	-5240	-0.0000153	0.0002246	0.0035	1.3		6315.63	6315.63	No	96.91	Si
SLU 84	fin.	-1409.42	-6172	-0.0003816	0.0002246	0.0035	1.3		6315.63	6315.63	No	4.48	Si
SLU 83	ini.	-68.67	-5180	-0.0000162	0.0002246	0.0035	1.3		6315.63	6315.63	No	91.97	Si
SLU 83	fin.	-1390.18	-6104	-0.0003755	0.0002246	0.0035	1.3		6315.63	6315.63	No	4.54	Si
SLU 76	ini.	-31.23	-5090	-0.0000073	0.0002246	0.0035	1.3		6315.63	6315.63	No	202.26	Si
SLU 76	fin.	-1410.18	-6030	-0.0003818	0.0002246	0.0035	1.3		6315.63	6315.63	No	4.48	Si
SLU 75	ini.	-31.07	-5089	-0.0000073	0.0002246	0.0035	1.3		6315.63	6315.63	No	203.25	Si
SLU 75	fin.	-1408.96	-6032	-0.0003814	0.0002246	0.0035	1.3		6315.63	6315.63	No	4.48	Si
SLU 80	ini.	-36.03	-5114	-0.0000085	0.0002246	0.0035	1.3		6315.63	6315.63	No	175.3	Si
SLU 80	fin.	-1409.01	-6057	-0.0003815	0.0002246	0.0035	1.3		6315.63	6315.63	No	4.48	Si
SLU 70	ini.	40.22	-4711	-0.0000095	0.0002246	0.0035	1.3		6307.58	6307.58	No	156.84	Si
SLU 70	fin.	-1392.44	-5667	-0.0003762	0.0002246	0.0035	1.3		6315.63	6315.63	No	4.54	Si
SLU 73	ini.	-28.76	-5025	-0.0000067	0.0002246	0.0035	1.3		6315.63	6315.63	No	219.63	Si
SLU 73	fin.	-1398.52	-5958	-0.0003781	0.0002246	0.0035	1.3		6315.63	6315.63	No	4.52	Si
SLU 78	ini.	-33.54	-5154	-0.0000079	0.0002246	0.0035	1.3		6315.63	6315.63	No	188.29	Si
SLU 78	fin.	-1420.62	-6105	-0.0003852	0.0002246	0.0035	1.3		6315.63	6315.63	No	4.45	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 73	ini.	-28.76	-1290	1.3	0	3250	7137	7008	3315	10323	No	8	Si
SLU 73	fin.	-1398.52	-3083	1.3	0	3250	7137	7008	3315	10323	No	3.35	Si
SLU 76	ini.	-31.23	-1305	1.3	0	3250	7137	7008	3315	10323	No	7.91	Si
SLU 76	fin.	-1410.18	-3099	1.3	0	3250	7137	7008	3315	10323	No	3.33	Si
SLU 83	ini.	-68.67	-1171	1.3	0	3250	7137	7008	3315	10323	No	8.82	Si
SLU 83	fin.	-1390.18	-3082	1.3	0	3250	7137	7008	3315	10323	No	3.35	Si
SLU 77	ini.	-37.04	-1291	1.3	0	3250	7137	7008	3315	10323	No	8	Si
SLU 77	fin.	-1401.37	-3084	1.3	0	3250	7137	7008	3315	10323	No	3.35	Si
SLU 80	ini.	-36.03	-1300	1.3	0	3250	7137	7008	3315	10323	No	7.94	Si
SLU 80	fin.	-1409.01	-3094	1.3	0	3250	7137	7008	3315	10323	No	3.34	Si
SLU 75	ini.	-31.07	-1306	1.3	0	3250	7137	7008	3315	10323	No	7.9	Si
SLU 75	fin.	-1408.96	-3100	1.3	0	3250	7137	7008	3315	10323	No	3.33	Si
SLU 82	ini.	-62.7	-1186	1.3	0	3250	7137	7008	3315	10323	No	8.7	Si
SLU 82	fin.	-1397.76	-3098	1.3	0	3250	7137	7008	3315	10323	No	3.33	Si
SLU 84	ini.	-65.17	-1202	1.3	0	3250	7137	7008	3315	10323	No	8.59	Si
SLU 84	fin.	-1409.42	-3114	1.3	0	3250	7137	7008	3315	10323	No	3.32	Si
SLU 78	ini.	-33.54	-1322	1.3	0	3250	7137	7008	3315	10323	No	7.81	Si
SLU 78	fin.	-1420.62	-3116	1.3	0	3250	7137	7008	3315	10323	No	3.31	Si
SLU 74	ini.	-34.57	-1275	1.3	0	3250	7137	7008	3315	10323	No	8.1	Si
SLU 74	fin.	-1389.71	-3069	1.3	0	3250	7137	7008	3315	10323	No	3.36	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 2	ini.	2324.35	-3461	-0.0006596	0.0003369	0.0035	1.3		6266.21	6266.21		2.7	Si
SLD 2	fin.	-3626.75	-6638	-0.0011753	0.0003369	0.0035	1.3		6274.6	6274.6		1.73	Si
SLV 3	ini.	4450.39	-593	-0.0015911	0.0003369	0.0035	1.3		6266.21	6266.21		1.41	Si
SLV 3	fin.	-5346.95	-5856	-0.002192	0.0003369	0.0035	1.3		6274.6	6274.6		1.17	Si
SLV 2	ini.	5457.42	-3561	-0.0022891	0.0003369	0.0035	1.3		6266.21	6266.21		1.15	Si
SLV 2	fin.	-7199.19	-10117	-0.0040811	0.0003369	0.0035	1.3		6274.6	6274.6		0.87	No
SLV 6	ini.	1957.04	-7955	-0.0005351	0.0003369	0.0035	1.3		6266.21	6266.21		3.2	Si
SLV 6	fin.	-4301.36	-11098	-0.0015061	0.0003369	0.0035	1.3		6274.6	6274.6		1.46	Si
SLV 1	ini.	4552.41	-3534	-0.0016497	0.0003369	0.0035	1.3		6266.21	6266.21		1.38	Si
SLV 1	fin.	-6177.7	-9147	-0.002994	0.0003369	0.0035	1.3		6274.6	6274.6		1.02	Si
SLV 16	ini.	-4563.29	-3382	-0.0016527	0.0003369	0.0035	1.3		6274.6	6274.6		1.38	Si
SLV 16	fin.	4203.44	892	-0.0014571	0.0003369	0.0035	1.3		6266.21	6266.21		1.49	Si
SLV 4	ini.	5355.41	-619	-0.0022043	0.0003369	0.0035	1.3		6266.21	6266.21		1.17	Si
SLV 4	fin.	-6368.44	-6826	-0.0032105	0.0003369	0.0035	1.3		6274.6	6274.6		0.99	No
SLV 13	ini.	-5366.29	-6297	-0.0022077	0.0003369	0.0035	1.3		6274.6	6274.6		1.17	Si
SLV 13	fin.	4394.18	-1429	-0.0015597	0.0003369	0.0035	1.3		6266.21	6266.21		1.43	Si
SLV 14	ini.	-4461.28	-6324	-0.0015941	0.0003369	0.0035	1.3		6274.6	6274.6		1.41	Si
SLV 14	fin.	3372.69	-2399	-0.0010657	0.0003369	0.0035	1.3		6266.21	6266.21		1.86	Si
SLV 15	ini.	-5468.3	-3356	-0.0022926	0.0003369	0.0035	1.3		6274.6	6274.6		1.15	Si
SLV 15	fin.	5224.92	1862	-0.002101	0.0003369	0.0035	1.3		6266.21	6266.21		1.2	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-5468.3	16211	1.3	0	4560	7137	10512	3315	11697		0.72	No
SLV 15	fin.	5224.92	15068	1.3	0	4560	7137	10512	3315	11697		0.78	No
SLV 6	ini.	1957.04	-8602	1.3	0	4560	7137	10512	3315	11697		1.36	Si
SLV 6	fin.	-4301.36	-9879	1.3	0	4560	7137	10512	3315	11697		1.18	Si
SLV 4	ini.	5355.41	-16878	1.3	0	4560	7137	10512	3315	11697		0.69	No
SLV 4	fin.	-6368.44	-18050	1.3	0	4560	7137	10512	3315	11697		0.65	No
SLD 2	ini.	2324.35	-8291	1.3	0	4560	7137	10512	3315	11697		1.41	Si
SLD 2	fin.	-3626.75	-9493	1.3	0	4560	7137	10512	3315	11697		1.23	Si
SLV 1	ini.	4552.41	-15338	1.3	0	4560	7137	10512	3315	11697		0.76	No
SLV 1	fin.	-6177.7	-16564	1.3	0	4560	7137	10512	3315	11697		0.71	No
SLV 2	ini.	5457.42	-18160	1.3	0	4560	7137	10512	3315	11697		0.64	No
SLV 2	fin.	-7199.19	-19385	1.3	0	4560	7137	10512	3315	11697		0.6	No
SLV 13	ini.	-5366.29	14929	1.3	0	4560	7137	10512	3315	11697		0.78	No
SLV 13	fin.	4394.18	13733	1.3	0	4560	7137	10512	3315	11697		0.85	No
SLV 16	ini.	-4563.29	13389	1.3	0	4560	7137	10512	3315	11697		0.87	No
SLV 16	fin.	4203.44	12247	1.3	0	4560	7137	10512	3315	11697		0.96	No
SLV 14	ini.	-4461.28	12107	1.3	0	4560	7137	10512	3315	11697		0.97	No
SLV 14	fin.	3372.69	10911	1.3	0	4560	7137	10512	3315	11697		1.07	Si
SLV 3	ini.	4450.39	-14056	1.3	0	4560	7137	10512	3315	11697		0.83	No
SLV 3	fin.	-5346.95	-15228	1.3	0	4560	7137	10512	3315	11697		0.77	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.872	SLV 2	No
V_SLV	0.603	SLV 2	No
PF_SLU	4.446	SLU 78	Si
V_SLU	3.313	SLU 78	Si

Trave di accoppiamento 58

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-5.158	6.001	1.67	3.67	2	-5.158	6.501	1.67	3.67	2	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-2342.1	-2986	-0.0002589	0.0001872	0.0035	2		14219.44	14219.44	No	6.07	Si
SLU 75	fin.	-2754.63	-1441	-0.0003121	0.0001872	0.0035	2		14219.44	14219.44	No	5.16	Si
SLU 74	ini.	-2303.02	-3093	-0.000254	0.0001872	0.0035	2		14219.44	14219.44	No	6.17	Si
SLU 74	fin.	-2756.81	-1466	-0.0003124	0.0001872	0.0035	2		14219.44	14219.44	No	5.16	Si
SLU 80	ini.	-2288.6	-3097	-0.0002522	0.0001872	0.0035	2		14219.44	14219.44	No	6.21	Si
SLU 80	fin.	-2752.26	-1468	-0.0003118	0.0001872	0.0035	2		14219.44	14219.44	No	5.17	Si
SLU 82	ini.	-2453.88	-2943	-0.0002731	0.0001872	0.0035	2		14219.44	14219.44	No	5.79	Si
SLU 82	fin.	-2816.69	-1442	-0.0003203	0.0001872	0.0035	2		14219.44	14219.44	No	5.05	Si
SLU 79	ini.	-2249.52	-3204	-0.0002473	0.0001872	0.0035	2		14219.44	14219.44	No	6.32	Si
SLU 79	fin.	-2754.45	-1493	-0.0003121	0.0001872	0.0035	2		14219.44	14219.44	No	5.16	Si
SLU 84	ini.	-2437.58	-3061	-0.000271	0.0001872	0.0035	2		14219.44	14219.44	No	5.83	Si
SLU 84	fin.	-2843.71	-1478	-0.0003239	0.0001872	0.0035	2		14219.44	14219.44	No	5	Si
SLU 78	ini.	-2325.8	-3104	-0.0002569	0.0001872	0.0035	2		14219.44	14219.44	No	6.11	Si
SLU 78	fin.	-2781.64	-1477	-0.0003157	0.0001872	0.0035	2		14219.44	14219.44	No	5.11	Si
SLU 83	ini.	-2398.5	-3168	-0.0002661	0.0001872	0.0035	2		14219.44	14219.44	No	5.93	Si
SLU 83	fin.	-2845.9	-1503	-0.0003242	0.0001872	0.0035	2		14219.44	14219.44	No	5	Si
SLU 77	ini.	-2286.72	-3211	-0.000252	0.0001872	0.0035	2		14219.44	14219.44	No	6.22	Si
SLU 77	fin.	-2783.83	-1502	-0.000316	0.0001872	0.0035	2		14219.44	14219.44	No	5.11	Si
SLU 81	ini.	-2414.8	-3050	-0.0002681	0.0001872	0.0035	2		14219.44	14219.44	No	5.89	Si
SLU 81	fin.	-2818.88	-1467	-0.0003206	0.0001872	0.0035	2		14219.44	14219.44	No	5.04	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 69	ini.	-1977.12	-6126	2	0	4167	3965	8983	5100	8131	No	1.33	Si
SLU 69	fin.	-2507.4	1767	2	0	4167	3965	8983	5100	8131	No	4.6	Si
SLU 77	ini.	-2286.72	-6423	2	0	4167	3965	8983	5100	8131	No	1.27	Si
SLU 77	fin.	-2783.83	2238	2	0	4167	3965	8983	5100	8131	No	3.63	Si
SLU 83	ini.	-2398.5	-6272	2	0	4167	3965	8983	5100	8131	No	1.3	Si
SLU 83	fin.	-2845.9	2528	2	0	4167	3965	8983	5100	8131	No	3.22	Si
SLU 74	ini.	-2303.02	-6148	2	0	4167	3965	8983	5100	8131	No	1.32	Si
SLU 74	fin.	-2756.81	2411	2	0	4167	3965	8983	5100	8131	No	3.37	Si
SLU 81	ini.	-2414.8	-5997	2	0	4167	3965	8983	5100	8131	No	1.36	Si
SLU 81	fin.	-2818.88	2702	2	0	4167	3965	8983	5100	8131	No	3.01	Si
SLU 71	ini.	-1939.92	-6122	2	0	4167	3965	8983	5100	8131	No	1.33	Si
SLU 71	fin.	-2478.02	1682	2	0	4167	3965	8983	5100	8131	No	4.84	Si
SLU 84	ini.	-2437.58	-6026	2	0	4167	3965	8983	5100	8131	No	1.35	Si
SLU 84	fin.	-2843.71	2773	2	0	4167	3965	8983	5100	8131	No	2.93	Si
SLU 79	ini.	-2249.52	-6419	2	0	4167	3965	8983	5100	8131	No	1.27	Si
SLU 79	fin.	-2754.45	2153	2	0	4167	3965	8983	5100	8131	No	3.78	Si
SLU 80	ini.	-2288.6	-6173	2	0	4167	3965	8983	5100	8131	No	1.32	Si
SLU 80	fin.	-2752.26	2398	2	0	4167	3965	8983	5100	8131	No	3.39	Si
SLU 78	ini.	-2325.8	-6177	2	0	4167	3965	8983	5100	8131	No	1.32	Si
SLU 78	fin.	-2781.64	2483	2	0	4167	3965	8983	5100	8131	No	3.28	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	4196.65	-9854	-0.0004866	0.0002807	0.0035	2		13920.08	13920.08		3.32	Si
SLV 4	fin.	-65.88	-2284	-0.0000065	0.0002807	0.0035	2		13933.43	13933.43		211.48	Si
SLV 15	ini.	-5023.97	-550	-0.0006046	0.0002807	0.0035	2		13933.43	13933.43		2.77	Si
SLV 15	fin.	-3893.37	-1116	-0.0004447	0.0002807	0.0035	2		13933.43	13933.43		3.58	Si
SLV 10	ini.	-7242.33	10383	-0.0009625	0.0002807	0.0035	2		13933.43	13933.43		1.92	Si
SLV 10	fin.	-2253.05	1627	-0.0002396	0.0002807	0.0035	2		13933.43	13933.43		6.18	Si
SLV 14	ini.	-8507.59	7299	-0.0011976	0.0002807	0.0035	2		13933.43	13933.43		1.64	Si
SLV 14	fin.	-4061.49	571	-0.0004675	0.0002807	0.0035	2		13933.43	13933.43		3.43	Si
SLV 3	ini.	5447.97	-11531	-0.000669	0.0002807	0.0035	2		13920.08	13920.08		2.56	Si
SLV 3	fin.	329.91	-2584	-0.0000329	0.0002807	0.0035	2		13920.08	13920.08		42.19	Si
SLV 13	ini.	-7256.26	5622	-0.0009649	0.0002807	0.0035	2		13933.43	13933.43		1.92	Si
SLV 13	fin.	-3665.69	272	-0.0004143	0.0002807	0.0035	2		13933.43	13933.43		3.8	Si
SLV 7	ini.	4182.71	-14615	-0.0004847	0.0002807	0.0035	2		13920.08	13920.08		3.33	Si
SLV 7	fin.	-1478.53	-3639	-0.0001529	0.0002807	0.0035	2		13933.43	13933.43		9.42	Si
SLV 9	ini.	-6399.85	9254	-0.0008192	0.0002807	0.0035	2		13933.43	13933.43		2.18	Si
SLV 9	fin.	-1986.57	1425	-0.0002091	0.0002807	0.0035	2		13933.43	13933.43		7.01	Si
SLD 14	ini.	-4476.33	1814	-0.0005253	0.0002807	0.0035	2		13933.43	13933.43		3.11	Si
SLD 14	fin.	-2806.01	-353	-0.0003051	0.0002807	0.0035	2		13933.43	13933.43		4.97	Si
SLV 16	ini.	-6275.29	1126	-0.0007989	0.0002807	0.0035	2		13933.43	13933.43		2.22	Si
SLV 16	fin.	-4289.17	-816	-0.000499	0.0002807	0.0035	2		13933.43	13933.43		3.25	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 7	ini.	4182.71	-33819	2	0	6250	3965	13475	5100	10215		0.3	No
SLV 7	fin.	-1478.53	-30577	2	0	6250	3965	13475	5100	10215		0.33	No
SLV 9	ini.	-6399.85	22576	2	0	6250	3965	13475	5100	10215		0.45	No
SLV 9	fin.	-1986.57	30167	2	0	6250	3965	13475	5100	10215		0.34	No
SLV 3	ini.	5447.97	-27390	2	0	6250	3965	13475	5100	10215		0.37	No

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	fin.	329.91	-29434	2	0	6250	3965	13475	5100	10215		0.35	No
SLV 13	ini.	-7256.26	14797	2	0	6250	3965	13475	5100	10215		0.69	No
SLV 13	fin.	-3665.69	27262	2	0	6250	3965	13475	5100	10215		0.37	No
SLV 12	ini.	198.65	-22706	2	0	6250	3965	13475	5100	10215		0.45	No
SLV 12	fin.	-3011.99	-14262	2	0	6250	3965	13475	5100	10215		0.72	No
SLV 4	ini.	4196.65	-23257	2	0	6250	3965	13475	5100	10215		0.44	No
SLV 4	fin.	-65.88	-24039	2	0	6250	3965	13475	5100	10215		0.42	No
SLV 11	ini.	1041.13	-25488	2	0	6250	3965	13475	5100	10215		0.4	No
SLV 11	fin.	-2745.51	-17894	2	0	6250	3965	13475	5100	10215		0.57	No
SLV 10	ini.	-7242.33	25359	2	0	6250	3965	13475	5100	10215		0.4	No
SLV 10	fin.	-2253.05	33799	2	0	6250	3965	13475	5100	10215		0.3	No
SLV 8	ini.	3340.24	-31036	2	0	6250	3965	13475	5100	10215		0.33	No
SLV 8	fin.	-1745	-26945	2	0	6250	3965	13475	5100	10215		0.38	No
SLV 14	ini.	-8507.59	18931	2	0	6250	3965	13475	5100	10215		0.54	No
SLV 14	fin.	-4061.49	32656	2	0	6250	3965	13475	5100	10215		0.31	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.638	SLV 14	Si
V_SLV	0.302	SLV 7	No
PF_SLU	4.996	SLU 83	Si
V_SLU	1.266	SLU 77	Si

Trave di accoppiamento 59

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-5.158	6.001	4.47	5.07	0.6	-5.158	6.501	4.47	5.07	0.6	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-299.54	-885	-0.0003882	0.0001872	0.0035	0.6		1324.3	1324.3	No	4.42	Si
SLU 83	fin.	332.95	-671	-0.0004419	0.0001872	0.0035	0.6		1320.56	1320.56	No	3.97	Si
SLU 81	ini.	-306.21	-936	-0.0003985	0.0001872	0.0035	0.6		1324.3	1324.3	No	4.32	Si
SLU 81	fin.	328.67	-706	-0.0004351	0.0001872	0.0035	0.6		1320.56	1320.56	No	4.02	Si
SLU 74	ini.	-285.43	-828	-0.0003666	0.0001872	0.0035	0.6		1324.3	1324.3	No	4.64	Si
SLU 74	fin.	322.23	-632	-0.0004249	0.0001872	0.0035	0.6		1320.56	1320.56	No	4.1	Si
SLU 79	ini.	-272.23	-749	-0.0003467	0.0001872	0.0035	0.6		1324.3	1324.3	No	4.86	Si
SLU 79	fin.	323.52	-576	-0.000427	0.0001872	0.0035	0.6		1320.56	1320.56	No	4.08	Si
SLU 78	ini.	-287.82	-832	-0.0003703	0.0001872	0.0035	0.6		1324.3	1324.3	No	4.6	Si
SLU 78	fin.	327.37	-635	-0.000433	0.0001872	0.0035	0.6		1320.56	1320.56	No	4.03	Si
SLU 75	ini.	-294.48	-883	-0.0003804	0.0001872	0.0035	0.6		1324.3	1324.3	No	4.5	Si
SLU 75	fin.	323.08	-671	-0.0004263	0.0001872	0.0035	0.6		1320.56	1320.56	No	4.09	Si
SLU 77	ini.	-278.77	-778	-0.0003566	0.0001872	0.0035	0.6		1324.3	1324.3	No	4.75	Si
SLU 77	fin.	326.52	-597	-0.0004317	0.0001872	0.0035	0.6		1320.56	1320.56	No	4.04	Si
SLU 84	ini.	-308.59	-940	-0.0004022	0.0001872	0.0035	0.6		1324.3	1324.3	No	4.29	Si
SLU 84	fin.	333.8	-709	-0.0004433	0.0001872	0.0035	0.6		1320.56	1320.56	No	3.96	Si
SLU 82	ini.	-315.26	-991	-0.0004126	0.0001872	0.0035	0.6		1324.3	1324.3	No	4.2	Si
SLU 82	fin.	329.51	-745	-0.0004364	0.0001872	0.0035	0.6		1320.56	1320.56	No	4.01	Si
SLU 80	ini.	-281.28	-804	-0.0003604	0.0001872	0.0035	0.6		1324.3	1324.3	No	4.71	Si
SLU 80	fin.	324.37	-614	-0.0004283	0.0001872	0.0035	0.6		1320.56	1320.56	No	4.07	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-278.77	2370	0.6	0	1250	3965	2695	1530	4225	No	1.78	Si
SLU 77	fin.	326.52	717	0.6	0	1250	3965	2695	1530	4225	No	5.89	Si
SLU 74	ini.	-285.43	2349	0.6	0	1250	3965	2695	1530	4225	No	1.8	Si
SLU 74	fin.	322.23	750	0.6	0	1250	3965	2695	1530	4225	No	5.63	Si
SLU 81	ini.	-306.21	2406	0.6	0	1250	3965	2695	1530	4225	No	1.76	Si
SLU 81	fin.	328.67	834	0.6	0	1250	3965	2695	1530	4225	No	5.06	Si
SLU 76	ini.	-293.98	2342	0.6	0	1250	3965	2695	1530	4225	No	1.8	Si
SLU 76	fin.	320.65	793	0.6	0	1250	3965	2695	1530	4225	No	5.33	Si
SLU 78	ini.	-287.82	2383	0.6	0	1250	3965	2695	1530	4225	No	1.77	Si
SLU 78	fin.	327.37	756	0.6	0	1250	3965	2695	1530	4225	No	5.59	Si
SLU 80	ini.	-281.28	2355	0.6	0	1250	3965	2695	1530	4225	No	1.79	Si
SLU 80	fin.	324.37	734	0.6	0	1250	3965	2695	1530	4225	No	5.75	Si
SLU 84	ini.	-308.59	2440	0.6	0	1250	3965	2695	1530	4225	No	1.73	Si
SLU 84	fin.	333.8	840	0.6	0	1250	3965	2695	1530	4225	No	5.03	Si
SLU 82	ini.	-315.26	2419	0.6	0	1250	3965	2695	1530	4225	No	1.75	Si
SLU 82	fin.	329.51	873	0.6	0	1250	3965	2695	1530	4225	No	4.84	Si
SLU 75	ini.	-294.48	2362	0.6	0	1250	3965	2695	1530	4225	No	1.79	Si
SLU 75	fin.	323.08	789	0.6	0	1250	3965	2695	1530	4225	No	5.36	Si
SLU 83	ini.	-299.54	2427	0.6	0	1250	3965	2695	1530	4225	No	1.74	Si
SLU 83	fin.	332.95	801	0.6	0	1250	3965	2695	1530	4225	No	5.27	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-1501.49	-7613	-0.0040653	0.0002807	0.0035	0.6		1319.01	1319.01		0.88	No
SLV 14	fin.	499.59	-5351	-0.0006834	0.0002807	0.0035	0.6		1315.04	1315.04		2.63	Si
SLV 13	ini.	-1263.4	-6327	-0.0028359	0.0002807	0.0035	0.6		1319.01	1319.01		1.04	Si
SLV 13	fin.	449.88	-4435	-0.0006002	0.0002807	0.0035	0.6		1315.04	1315.04		2.92	Si
SLV 3	ini.	1130.37	6571	-0.0022474	0.0002807	0.0035	0.6		1315.04	1315.04		1.16	Si
SLV 3	fin.	-63.93	4545	-0.0000714	0.0002807	0.0035	0.6		1319.01	1319.01		20.63	Si
SLV 16	ini.	-1002.33	-4590	-0.0017914	0.0002807	0.0035	0.6		1319.01	1319.01		1.32	Si
SLV 16	fin.	427.33	-3357	-0.0005636	0.0002807	0.0035	0.6		1315.04	1315.04		3.08	Si
SLV 4	ini.	892.28	5285	-0.0014936	0.0002807	0.0035	0.6		1315.04	1315.04		1.47	Si
SLV 4	fin.	-14.22	3629	-0.0000156	0.0002807	0.0035	0.6		1319.01	1319.01		92.75	Si
SLV 8	ini.	850.43	5565	-0.00139	0.0002807	0.0035	0.6		1315.04	1315.04		1.55	Si
SLV 8	fin.	47.91	3660	-0.0000534	0.0002807	0.0035	0.6		1315.04	1315.04		27.45	Si
SLV 6	ini.	-813.46	-4510	-0.001298	0.0002807	0.0035	0.6		1319.01	1319.01		1.62	Si
SLV 6	fin.	288.75	-2986	-0.0003547	0.0002807	0.0035	0.6		1315.04	1315.04		4.55	Si
SLV 9	ini.	-1221.55	-6607	-0.0026292	0.0002807	0.0035	0.6		1319.01	1319.01		1.08	Si
SLV 9	fin.	387.75	-4466	-0.0005011	0.0002807	0.0035	0.6		1315.04	1315.04		3.39	Si
SLV 7	ini.	1010.72	6431	-0.0018257	0.0002807	0.0035	0.6		1315.04	1315.04		1.3	Si
SLV 7	fin.	14.44	4276	-0.0000159	0.0002807	0.0035	0.6		1315.04	1315.04		91.05	Si
SLV 10	ini.	-1381.84	-7473	-0.0034752	0.0002807	0.0035	0.6		1319.01	1319.01		0.95	No
SLV 10	fin.	421.22	-5082	-0.0005538	0.0002807	0.0035	0.6		1315.04	1315.04		3.12	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-1002.33	4068	0.6	0	1875	3965	4043	1530	5573		1.37	Si
SLV 16	fin.	427.33	3419	0.6	0	1875	3965	4043	1530	5573		1.63	Si
SLV 4	ini.	892.28	-1035	0.6	0	1875	3965	4043	1530	5573		5.38	Si
SLV 4	fin.	-14.22	-3756	0.6	0	1875	3965	4043	1530	5573		1.48	Si
SLV 13	ini.	-1263.4	4200	0.6	0	1875	3965	4043	1530	5573		1.33	Si
SLV 13	fin.	449.88	4692	0.6	0	1875	3965	4043	1530	5573		1.19	Si
SLV 10	ini.	-1381.84	3715	0.6	0	1875	3965	4043	1530	5573		1.5	Si
SLV 10	fin.	421.22	5526	0.6	0	1875	3965	4043	1530	5573		1.01	Si
SLV 7	ini.	1010.72	-551	0.6	0	1875	3965	4043	1530	5573		10.12	Si
SLV 7	fin.	14.44	-4591	0.6	0	1875	3965	4043	1530	5573		1.21	Si
SLV 9	ini.	-1221.55	3329	0.6	0	1875	3965	4043	1530	5573		1.67	Si
SLV 9	fin.	387.75	4901	0.6	0	1875	3965	4043	1530	5573		1.14	Si
SLV 3	ini.	1130.37	-1608	0.6	0	1875	3965	4043	1530	5573		3.46	Si
SLV 3	fin.	-63.93	-4685	0.6	0	1875	3965	4043	1530	5573		1.19	Si
SLV 15	ini.	-764.24	3495	0.6	0	1875	3965	4043	1530	5573		1.59	Si
SLV 15	fin.	377.63	2490	0.6	0	1875	3965	4043	1530	5573		2.24	Si
SLV 14	ini.	-1501.49	4773	0.6	0	1875	3965	4043	1530	5573		1.17	Si
SLV 14	fin.	499.59	5621	0.6	0	1875	3965	4043	1530	5573		0.99	No
SLV 8	ini.	850.43	-165	0.6	0	1875	3965	4043	1530	5573		33.79	Si
SLV 8	fin.	47.91	-3965	0.6	0	1875	3965	4043	1530	5573		1.41	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.878	SLV 14	No
V_SLV	0.991	SLV 14	No
PF_SLU	3.956	SLU 84	Si
V_SLU	1.732	SLU 84	Si

Trave di accoppiamento 60

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-6.463	-3.359	1.67	2.57	0.9	-7.463	-3.359	1.67	2.57	0.9	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-195.18	253	-0.0000991	0.0001872	0.0035	0.9		2948.11	2948.11	No	15.1	Si
SLU 77	fin.	-13.06	-374	-0.0000064	0.0001872	0.0035	0.9		2948.11	2948.11	No	225.76	Si
SLU 84	ini.	-203.9	273	-0.0001038	0.0001872	0.0035	0.9		2948.11	2948.11	No	14.46	Si
SLU 84	fin.	-13.11	-383	-0.0000064	0.0001872	0.0035	0.9		2948.11	2948.11	No	224.82	Si
SLU 81	ini.	-212.38	298	-0.0001083	0.0001872	0.0035	0.9		2948.11	2948.11	No	13.88	Si
SLU 81	fin.	4.89	-429	-0.0000024	0.0001872	0.0035	0.9		2942.43	2942.43	No	601.94	Si
SLU 60	ini.	-200.74	293	-0.0001021	0.0001872	0.0035	0.9		2948.11	2948.11	No	14.69	Si
SLU 60	fin.	19.85	-436	-0.0000097	0.0001872	0.0035	0.9		2942.43	2942.43	No	148.26	Si
SLU 79	ini.	-196.13	258	-0.0000996	0.0001872	0.0035	0.9		2948.11	2948.11	No	15.03	Si
SLU 79	fin.	-10.86	-377	-0.0000053	0.0001872	0.0035	0.9		2948.11	2948.11	No	271.38	Si
SLU 63	ini.	-192.26	268	-0.0000976	0.0001872	0.0035	0.9		2948.11	2948.11	No	15.33	Si
SLU 63	fin.	1.84	-390	-0.0000009	0.0001872	0.0035	0.9		2942.43	2942.43	No	1595.14	Si
SLU 83	ini.	-213.33	296	-0.0001088	0.0001872	0.0035	0.9		2948.11	2948.11	No	13.82	Si
SLU 83	fin.	5.05	-434	-0.0000025	0.0001872	0.0035	0.9		2942.43	2942.43	No	582.68	Si
SLU 82	ini.	-202.95	275	-0.0001033	0.0001872	0.0035	0.9		2948.11	2948.11	No	14.53	Si
SLU 82	fin.	-13.27	-377	-0.0000065	0.0001872	0.0035	0.9		2948.11	2948.11	No	222.09	Si
SLU 74	ini.	-194.23	254	-0.0000986	0.0001872	0.0035	0.9		2948.11	2948.11	No	15.18	Si
SLU 74	fin.	-13.22	-368	-0.0000065	0.0001872	0.0035	0.9		2948.11	2948.11	No	223.01	Si
SLU 62	ini.	-201.68	291	-0.0001026	0.0001872	0.0035	0.9		2948.11	2948.11	No	14.62	Si
SLU 62	fin.	20.01	-442	-0.0000098	0.0001872	0.0035	0.9		2942.43	2942.43	No	147.07	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-186.7	-2660	0.9	0	1875	7137	4043	2295	6338	No	2.38	Si
SLU 80	fin.	-29.03	4325	0.9	0	1875	7137	4043	2295	6338	No	1.47	Si
SLU 77	ini.	-195.18	-2577	0.9	0	1875	7137	4043	2295	6338	No	2.46	Si
SLU 77	fin.	-13.06	4361	0.9	0	1875	7137	4043	2295	6338	No	1.45	Si
SLU 74	ini.	-194.23	-2544	0.9	0	1875	7137	4043	2295	6338	No	2.49	Si
SLU 74	fin.	-13.22	4313	0.9	0	1875	7137	4043	2295	6338	No	1.47	Si
SLU 75	ini.	-184.81	-2656	0.9	0	1875	7137	4043	2295	6338	No	2.39	Si
SLU 75	fin.	-31.38	4298	0.9	0	1875	7137	4043	2295	6338	No	1.47	Si
SLU 79	ini.	-196.13	-2548	0.9	0	1875	7137	4043	2295	6338	No	2.49	Si
SLU 79	fin.	-10.86	4340	0.9	0	1875	7137	4043	2295	6338	No	1.46	Si
SLU 82	ini.	-202.95	-2637	0.9	0	1875	7137	4043	2295	6338	No	2.4	Si
SLU 82	fin.	-13.27	4466	0.9	0	1875	7137	4043	2295	6338	No	1.42	Si
SLU 78	ini.	-185.75	-2689	0.9	0	1875	7137	4043	2295	6338	No	2.36	Si
SLU 78	fin.	-31.22	4346	0.9	0	1875	7137	4043	2295	6338	No	1.46	Si
SLU 81	ini.	-212.38	-2525	0.9	0	1875	7137	4043	2295	6338	No	2.51	Si
SLU 81	fin.	4.89	4481	0.9	0	1875	7137	4043	2295	6338	No	1.41	Si
SLU 83	ini.	-213.33	-2557	0.9	0	1875	7137	4043	2295	6338	No	2.48	Si
SLU 83	fin.	5.05	4529	0.9	0	1875	7137	4043	2295	6338	No	1.4	Si
SLU 84	ini.	-203.9	-2669	0.9	0	1875	7137	4043	2295	6338	No	2.37	Si
SLU 84	fin.	-13.11	4514	0.9	0	1875	7137	4043	2295	6338	No	1.4	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	1200.98	-2966	-0.0007456	0.0002807	0.0035	0.9		2967.55	2967.55		2.47	Si
SLV 4	fin.	-2125.57	6381	-0.0016357	0.0002807	0.0035	0.9		2973.32	2973.32		1.4	Si
SLV 5	ini.	1326.87	-4253	-0.0008469	0.0002807	0.0035	0.9		2967.55	2967.55		2.24	Si
SLV 5	fin.	-1658.75	4123	-0.0011369	0.0002807	0.0035	0.9		2973.32	2973.32		1.79	Si
SLV 6	ini.	1559.51	-4878	-0.0010479	0.0002807	0.0035	0.9		2967.55	2967.55		1.9	Si
SLV 6	fin.	-1980.78	5071	-0.0014663	0.0002807	0.0035	0.9		2973.32	2973.32		1.5	Si
SLV 3	ini.	855.45	-2038	-0.0004913	0.0002807	0.0035	0.9		2967.55	2967.55		3.47	Si
SLV 3	fin.	-1647.26	4974	-0.0011261	0.0002807	0.0035	0.9		2973.32	2973.32		1.81	Si
SLV 1	ini.	1528.77	-4199	-0.0010203	0.0002807	0.0035	0.9		2967.55	2967.55		1.94	Si
SLV 1	fin.	-2328.41	6648	-0.001907	0.0002807	0.0035	0.9		2973.32	2973.32		1.28	Si
SLV 16	ini.	-1781.53	4515	-0.0012561	0.0002807	0.0035	0.9		2973.32	2973.32		1.67	Si
SLV 16	fin.	2281.5	-7070	-0.0018458	0.0002807	0.0035	0.9		2967.55	2967.55		1.3	Si
SLV 11	ini.	-1812.28	5195	-0.0012871	0.0002807	0.0035	0.9		2973.32	2973.32		1.64	Si
SLV 11	fin.	1933.87	-5493	-0.0014185	0.0002807	0.0035	0.9		2967.55	2967.55		1.53	Si
SLV 13	ini.	-1453.75	3283	-0.0009519	0.0002807	0.0035	0.9		2973.32	2973.32		2.05	Si
SLV 13	fin.	2078.66	-6803	-0.0015835	0.0002807	0.0035	0.9		2967.55	2967.55		1.43	Si
SLV 15	ini.	-2127.07	5444	-0.0016375	0.0002807	0.0035	0.9		2973.32	2973.32		1.4	Si
SLV 15	fin.	2759.81	-8478	-0.0026877	0.0002807	0.0035	0.9		2967.55	2967.55		1.08	Si
SLV 2	ini.	1874.3	-5127	-0.0013547	0.0002807	0.0035	0.9		2967.55	2967.55		1.58	Si
SLV 2	fin.	-2806.72	8055	-0.00278	0.0002807	0.0035	0.9		2973.32	2973.32		1.06	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-2127.07	9595	0.9	0	2615	7137	6064	2295	8359		0.87	No
SLV 15	fin.	2759.81	13010	0.9	0	2615	7137	6064	2295	8359		0.64	No
SLV 13	ini.	-1453.75	4703	0.9	0	2615	7137	6064	2295	8359		1.78	Si
SLV 13	fin.	2078.66	12309	0.9	0	2615	7137	6064	2295	8359		0.68	No
SLV 16	ini.	-1781.53	7621	0.9	0	2615	7137	6064	2295	8359		1.1	Si
SLV 16	fin.	2281.5	11288	0.9	0	2615	7137	6064	2295	8359		0.74	No
SLV 4	ini.	1200.98	-8283	0.9	0	2615	7137	6064	2295	8359		1.01	Si
SLV 4	fin.	-2125.57	-6497	0.9	0	2615	7137	6064	2295	8359		1.29	Si
SLV 1	ini.	1528.77	-11201	0.9	0	2615	7137	6064	2295	8359		0.75	No
SLV 1	fin.	-2328.41	-5477	0.9	0	2615	7137	6064	2295	8359		1.53	Si
SLV 2	ini.	1874.3	-13175	0.9	0	2615	7137	6064	2295	8359		0.63	No
SLV 2	fin.	-2806.72	-7198	0.9	0	2615	7137	6064	2295	8359		1.16	Si
SLV 5	ini.	1326.87	-11664	0.9	0	2615	7137	6064	2295	8359		0.72	No
SLV 5	fin.	-1658.75	-351	0.9	0	2615	7137	6064	2295	8359		23.8	Si
SLV 6	ini.	1559.51	-12993	0.9	0	2615	7137	6064	2295	8359		0.64	No
SLV 6	fin.	-1980.78	-1510	0.9	0	2615	7137	6064	2295	8359		5.53	Si
SLV 11	ini.	-1812.28	9413	0.9	0	2615	7137	6064	2295	8359		0.89	No
SLV 11	fin.	1933.87	7322	0.9	0	2615	7137	6064	2295	8359		1.14	Si
SLV 14	ini.	-1108.21	2729	0.9	0	2615	7137	6064	2295	8359		3.06	Si
SLV 14	fin.	1600.35	10587	0.9	0	2615	7137	6064	2295	8359		0.79	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.059	SLV 2	Si
V_SLV	0.634	SLV 2	No
PF_SLU	13.82	SLU 83	Si
V_SLU	1.399	SLU 83	Si

Trave di accoppiamento 61

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-6.463	-3.359	4.47	5.07	0.6	-7.463	-3.359	4.47	5.07	0.6	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-516.87	-1986	-0.0007571	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.56	Si
SLU 77	fin.	-217.21	-833	-0.0002669	0.0001872	0.0035	0.6		1324.3	1324.3	No	6.1	Si
SLU 74	ini.	-511.07	-1964	-0.0007463	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.59	Si
SLU 74	fin.	-214.05	-821	-0.0002624	0.0001872	0.0035	0.6		1324.3	1324.3	No	6.19	Si
SLU 75	ini.	-504.13	-1931	-0.0007336	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.63	Si
SLU 75	fin.	-225.02	-871	-0.0002779	0.0001872	0.0035	0.6		1324.3	1324.3	No	5.89	Si
SLU 84	ini.	-531.63	-2043	-0.0007847	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.49	Si
SLU 84	fin.	-226.42	-868	-0.0002799	0.0001872	0.0035	0.6		1324.3	1324.3	No	5.85	Si
SLU 82	ini.	-525.83	-2022	-0.0007738	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.52	Si
SLU 82	fin.	-223.25	-856	-0.0002754	0.0001872	0.0035	0.6		1324.3	1324.3	No	5.93	Si
SLU 81	ini.	-532.77	-2055	-0.0007868	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.49	Si
SLU 81	fin.	-212.29	-805	-0.00026	0.0001872	0.0035	0.6		1324.3	1324.3	No	6.24	Si
SLU 79	ini.	-514.13	-1976	-0.000752	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.58	Si
SLU 79	fin.	-214.46	-822	-0.000263	0.0001872	0.0035	0.6		1324.3	1324.3	No	6.18	Si
SLU 78	ini.	-509.93	-1952	-0.0007442	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.6	Si
SLU 78	fin.	-228.18	-884	-0.0002824	0.0001872	0.0035	0.6		1324.3	1324.3	No	5.8	Si
SLU 83	ini.	-538.57	-2077	-0.0007978	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.46	Si
SLU 83	fin.	-215.45	-818	-0.0002644	0.0001872	0.0035	0.6		1324.3	1324.3	No	6.15	Si
SLU 80	ini.	-507.18	-1942	-0.0007392	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.61	Si
SLU 80	fin.	-225.43	-872	-0.0002785	0.0001872	0.0035	0.6		1324.3	1324.3	No	5.87	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-504.13	4614	0.6	0	1250	4758	2695	1530	4225	No	0.92	No
SLU 75	fin.	-225.02	-2952	0.6	0	1250	4758	2695	1530	4225	No	1.43	Si
SLU 80	ini.	-507.18	4639	0.6	0	1250	4758	2695	1530	4225	No	0.91	No
SLU 80	fin.	-225.43	-2962	0.6	0	1250	4758	2695	1530	4225	No	1.43	Si
SLU 79	ini.	-514.13	4668	0.6	0	1250	4758	2695	1530	4225	No	0.91	No
SLU 79	fin.	-214.46	-2897	0.6	0	1250	4758	2695	1530	4225	No	1.46	Si
SLU 77	ini.	-516.87	4696	0.6	0	1250	4758	2695	1530	4225	No	0.9	No
SLU 77	fin.	-217.21	-2923	0.6	0	1250	4758	2695	1530	4225	No	1.45	Si
SLU 82	ini.	-525.83	4781	0.6	0	1250	4758	2695	1530	4225	No	0.88	No
SLU 82	fin.	-223.25	-2991	0.6	0	1250	4758	2695	1530	4225	No	1.41	Si
SLU 84	ini.	-531.63	4833	0.6	0	1250	4758	2695	1530	4225	No	0.87	No
SLU 84	fin.	-226.42	-3027	0.6	0	1250	4758	2695	1530	4225	No	1.4	Si
SLU 83	ini.	-538.57	4862	0.6	0	1250	4758	2695	1530	4225	No	0.87	No
SLU 83	fin.	-215.45	-2963	0.6	0	1250	4758	2695	1530	4225	No	1.43	Si
SLU 74	ini.	-511.07	4644	0.6	0	1250	4758	2695	1530	4225	No	0.91	No
SLU 74	fin.	-214.05	-2887	0.6	0	1250	4758	2695	1530	4225	No	1.46	Si
SLU 78	ini.	-509.93	4666	0.6	0	1250	4758	2695	1530	4225	No	0.91	No
SLU 78	fin.	-228.18	-2988	0.6	0	1250	4758	2695	1530	4225	No	1.41	Si
SLU 81	ini.	-532.77	4810	0.6	0	1250	4758	2695	1530	4225	No	0.88	No
SLU 81	fin.	-212.29	-2926	0.6	0	1250	4758	2695	1530	4225	No	1.44	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 11	ini.	-1008.13	-4557	-0.0018091	0.0002807	0.0035	0.6		1319.01	1319.01		1.31	Si
SLV 11	fin.	850.77	3979	-0.0013909	0.0002807	0.0035	0.6		1315.04	1315.04		1.55	Si
SLV 10	ini.	-182.68	-373	-0.0002132	0.0002807	0.0035	0.6		1319.01	1319.01		7.22	Si
SLV 10	fin.	-863.78	-3951	-0.0014167	0.0002807	0.0035	0.6		1319.01	1319.01		1.53	Si
SLV 16	ini.	-1210.28	-5329	-0.0025765	0.0002807	0.0035	0.6		1319.01	1319.01		1.09	Si
SLV 16	fin.	495.74	2201	-0.0006768	0.0002807	0.0035	0.6		1315.04	1315.04		2.65	Si
SLV 15	ini.	-1386.15	-6127	-0.0034978	0.0002807	0.0035	0.6		1319.01	1319.01		0.95	No
SLV 15	fin.	644.8	2867	-0.0009477	0.0002807	0.0035	0.6		1315.04	1315.04		2.04	Si
SLV 12	ini.	-889.73	-4020	-0.0014809	0.0002807	0.0035	0.6		1319.01	1319.01		1.48	Si
SLV 12	fin.	750.41	3531	-0.0011631	0.0002807	0.0035	0.6		1315.04	1315.04		1.75	Si
SLV 13	ini.	-1174.03	-5032	-0.0024149	0.0002807	0.0035	0.6		1319.01	1319.01		1.12	Si
SLV 13	fin.	160.55	623	-0.0001863	0.0002807	0.0035	0.6		1315.04	1315.04		8.19	Si
SLV 5	ini.	210.41	1419	-0.0002492	0.0002807	0.0035	0.6		1315.04	1315.04		6.25	Si
SLV 5	fin.	-1050.26	-4700	-0.0019442	0.0002807	0.0035	0.6		1319.01	1319.01		1.26	Si
SLV 14	ini.	-998.16	-4235	-0.0017788	0.0002807	0.0035	0.6		1319.01	1319.01		1.32	Si
SLV 14	fin.	11.48	-43	-0.0000126	0.0002807	0.0035	0.6		1315.04	1315.04		114.55	Si
SLV 6	ini.	328.82	1955	-0.0004123	0.0002807	0.0035	0.6		1315.04	1315.04		4	Si
SLV 6	fin.	-1150.62	-5149	-0.0023166	0.0002807	0.0035	0.6		1319.01	1319.01		1.15	Si
SLV 2	ini.	706.83	3525	-0.0010716	0.0002807	0.0035	0.6		1315.04	1315.04		1.86	Si
SLV 2	fin.	-944.66	-4037	-0.0016251	0.0002807	0.0035	0.6		1319.01	1319.01		1.4	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	ini.	706.83	-2263	0.6	0	1565	4758	4043	1530	5573		2.46	Si
SLV 2	fin.	-944.66	-6277	0.6	0	1565	4758	4043	1530	5573		0.89	No
SLV 15	ini.	-1386.15	8490	0.6	0	1565	4758	4043	1530	5573		0.66	No
SLV 15	fin.	644.8	2317	0.6	0	1565	4758	4043	1530	5573		2.4	Si
SLV 5	ini.	210.41	1090	0.6	0	1565	4758	4043	1530	5573		5.11	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	fin.	-1050.26	-7480	0.6	0	1565	4758	4043	1530	5573		0.74	No
SLV 6	ini.	328.82	471	0.6	0	1565	4758	4043	1530	5573		11.84	Si
SLV 6	fin.	-1150.62	-8017	0.6	0	1565	4758	4043	1530	5573		0.7	No
SLV 14	ini.	-998.16	7004	0.6	0	1565	4758	4043	1530	5573		0.8	No
SLV 14	fin.	11.48	-1513	0.6	0	1565	4758	4043	1530	5573		3.68	Si
SLV 10	ini.	-182.68	3251	0.6	0	1565	4758	4043	1530	5573		1.71	Si
SLV 10	fin.	-863.78	-6588	0.6	0	1565	4758	4043	1530	5573		0.85	No
SLV 9	ini.	-301.09	3870	0.6	0	1565	4758	4043	1530	5573		1.44	Si
SLV 9	fin.	-763.42	-6051	0.6	0	1565	4758	4043	1530	5573		0.92	No
SLV 13	ini.	-1174.03	7924	0.6	0	1565	4758	4043	1530	5573		0.7	No
SLV 13	fin.	160.55	-715	0.6	0	1565	4758	4043	1530	5573		7.79	Si
SLV 11	ini.	-1008.13	5757	0.6	0	1565	4758	4043	1530	5573		0.97	No
SLV 11	fin.	850.77	4058	0.6	0	1565	4758	4043	1530	5573		1.37	Si
SLV 16	ini.	-1210.28	7570	0.6	0	1565	4758	4043	1530	5573		0.74	No
SLV 16	fin.	495.74	1519	0.6	0	1565	4758	4043	1530	5573		3.67	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.952	SLV 15	No
V_SLV	0.656	SLV 15	No
PF_SLU	2.459	SLU 83	Si
V_SLU	0.869	SLU 83	No

Trave di accoppiamento 63

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-5.508	-3.359	4.47	5.07	0.6	-6.008	-3.359	4.47	5.07	0.6	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	913.81	-1574	-0.0016659	0.0001872	0.0035	0.6		1320.56	1320.56	No	1.45	Si
SLU 80	fin.	-869.3	-1574	-0.0015347	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.52	Si
SLU 84	ini.	933.38	-1659	-0.0017239	0.0001872	0.0035	0.6		1320.56	1320.56	No	1.41	Si
SLU 84	fin.	-895.4	-1659	-0.0016064	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.48	Si
SLU 77	ini.	900.41	-1618	-0.0016274	0.0001872	0.0035	0.6		1320.56	1320.56	No	1.47	Si
SLU 77	fin.	-864.2	-1618	-0.0015211	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.53	Si
SLU 83	ini.	913.73	-1695	-0.0016657	0.0001872	0.0035	0.6		1320.56	1320.56	No	1.45	Si
SLU 83	fin.	-885.31	-1695	-0.0015783	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.5	Si
SLU 82	ini.	926.49	-1639	-0.0017032	0.0001872	0.0035	0.6		1320.56	1320.56	No	1.43	Si
SLU 82	fin.	-889.19	-1639	-0.001589	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.49	Si
SLU 78	ini.	920.05	-1582	-0.0016842	0.0001872	0.0035	0.6		1320.56	1320.56	No	1.44	Si
SLU 78	fin.	-874.3	-1582	-0.0015482	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.51	Si
SLU 75	ini.	913.16	-1562	-0.001664	0.0001872	0.0035	0.6		1320.56	1320.56	No	1.45	Si
SLU 75	fin.	-868.08	-1562	-0.0015315	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.53	Si
SLU 73	ini.	913.12	-1510	-0.0016639	0.0001872	0.0035	0.6		1320.56	1320.56	No	1.45	Si
SLU 73	fin.	-863.59	-1510	-0.0015195	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.53	Si
SLU 81	ini.	906.84	-1675	-0.0016458	0.0001872	0.0035	0.6		1320.56	1320.56	No	1.46	Si
SLU 81	fin.	-879.09	-1675	-0.0015613	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.51	Si
SLU 76	ini.	920.01	-1530	-0.0016841	0.0001872	0.0035	0.6		1320.56	1320.56	No	1.44	Si
SLU 76	fin.	-869.81	-1530	-0.0015361	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.52	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	920.05	-3483	0.6	0	1250	3965	2695	1530	4225	No	1.21	Si
SLU 78	fin.	-874.3	-3694	0.6	0	1250	3965	2695	1530	4225	No	1.14	Si
SLU 73	ini.	913.12	-3448	0.6	0	1250	3965	2695	1530	4225	No	1.23	Si
SLU 73	fin.	-863.59	-3659	0.6	0	1250	3965	2695	1530	4225	No	1.15	Si
SLU 81	ini.	906.84	-3467	0.6	0	1250	3965	2695	1530	4225	No	1.22	Si
SLU 81	fin.	-879.09	-3677	0.6	0	1250	3965	2695	1530	4225	No	1.15	Si
SLU 82	ini.	926.49	-3526	0.6	0	1250	3965	2695	1530	4225	No	1.2	Si
SLU 82	fin.	-889.19	-3737	0.6	0	1250	3965	2695	1530	4225	No	1.13	Si
SLU 80	ini.	913.81	-3461	0.6	0	1250	3965	2695	1530	4225	No	1.22	Si
SLU 80	fin.	-869.3	-3672	0.6	0	1250	3965	2695	1530	4225	No	1.15	Si
SLU 83	ini.	913.73	-3493	0.6	0	1250	3965	2695	1530	4225	No	1.21	Si
SLU 83	fin.	-885.31	-3703	0.6	0	1250	3965	2695	1530	4225	No	1.14	Si
SLU 75	ini.	913.16	-3457	0.6	0	1250	3965	2695	1530	4225	No	1.22	Si
SLU 75	fin.	-868.08	-3668	0.6	0	1250	3965	2695	1530	4225	No	1.15	Si
SLU 77	ini.	900.41	-3424	0.6	0	1250	3965	2695	1530	4225	No	1.23	Si
SLU 77	fin.	-864.2	-3635	0.6	0	1250	3965	2695	1530	4225	No	1.16	Si
SLU 76	ini.	920.01	-3474	0.6	0	1250	3965	2695	1530	4225	No	1.22	Si
SLU 76	fin.	-869.81	-3685	0.6	0	1250	3965	2695	1530	4225	No	1.15	Si
SLU 84	ini.	933.38	-3552	0.6	0	1250	3965	2695	1530	4225	No	1.19	Si
SLU 84	fin.	-895.4	-3763	0.6	0	1250	3965	2695	1530	4225	No	1.12	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 6	ini.	1595.22	1913	-0.0045094	0.0002807	0.0035	0.6		1315.04	1315.04		0.82	No
SLV 6	fin.	-736.38	1716	-0.0011289	0.0002807	0.0035	0.6		1319.01	1319.01		1.79	Si
SLD 2	ini.	1134.78	785	-0.002265	0.0002807	0.0035	0.6		1315.04	1315.04		1.16	Si
SLD 2	fin.	-691.61	726	-0.0010366	0.0002807	0.0035	0.6		1319.01	1319.01		1.91	Si
SLV 10	ini.	1064.15	-158	-0.0020014	0.0002807	0.0035	0.6		1315.04	1315.04		1.24	Si
SLV 10	fin.	-640.63	-301	-0.0009363	0.0002807	0.0035	0.6		1319.01	1319.01		2.06	Si
SLV 3	ini.	1200.63	1544	-0.0025473	0.0002807	0.0035	0.6		1315.04	1315.04		1.1	Si
SLV 3	fin.	-692.99	1504	-0.0010394	0.0002807	0.0035	0.6		1319.01	1319.01		1.9	Si
SLV 2	ini.	1825.86	3268	-0.0054811	0.0002807	0.0035	0.6		1315.04	1315.04		0.72	No
SLV 2	fin.	-819.7	3127	-0.0013123	0.0002807	0.0035	0.6		1319.01	1319.01		1.61	Si
SLD 6	ini.	1023.59	176	-0.0018663	0.0002807	0.0035	0.6		1315.04	1315.04		1.28	Si
SLD 6	fin.	-654.6	96	-0.0009633	0.0002807	0.0035	0.6		1319.01	1319.01		2.01	Si
SLD 1	ini.	1025.88	481	-0.0018736	0.0002807	0.0035	0.6		1315.04	1315.04		1.28	Si
SLD 1	fin.	-653.39	422	-0.000961	0.0002807	0.0035	0.6		1319.01	1319.01		2.02	Si
SLV 4	ini.	1456.62	2259	-0.0038711	0.0002807	0.0035	0.6		1315.04	1315.04		0.9	No
SLV 4	fin.	-782.81	2219	-0.001229	0.0002807	0.0035	0.6		1319.01	1319.01		1.68	Si
SLV 1	ini.	1569.86	2554	-0.0043967	0.0002807	0.0035	0.6		1315.04	1315.04		0.84	No
SLV 1	fin.	-729.88	2412	-0.0011152	0.0002807	0.0035	0.6		1319.01	1319.01		1.81	Si
SLV 5	ini.	1422.87	1432	-0.0037051	0.0002807	0.0035	0.6		1315.04	1315.04		0.92	No
SLV 5	fin.	-675.9	1235	-0.0010052	0.0002807	0.0035	0.6		1319.01	1319.01		1.95	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 4	ini.	987.17	-3274	0.6	0	1875	3965	4043	1530	5573		1.7	Si
SLD 4	fin.	-676.77	-3413	0.6	0	1875	3965	4043	1530	5573		1.63	Si
SLV 10	ini.	1064.15	-3074	0.6	0	1875	3965	4043	1530	5573		1.81	Si
SLV 10	fin.	-640.63	-3387	0.6	0	1875	3965	4043	1530	5573		1.65	Si
SLV 6	ini.	1595.22	-4316	0.6	0	1875	3965	4043	1530	5573		1.29	Si
SLV 6	fin.	-736.38	-4625	0.6	0	1875	3965	4043	1530	5573		1.2	Si
SLV 4	ini.	1456.62	-4456	0.6	0	1875	3965	4043	1530	5573		1.25	Si
SLV 4	fin.	-782.81	-4568	0.6	0	1875	3965	4043	1530	5573		1.22	Si
SLD 2	ini.	1134.78	-3528	0.6	0	1875	3965	4043	1530	5573		1.58	Si
SLD 2	fin.	-691.61	-3708	0.6	0	1875	3965	4043	1530	5573		1.5	Si
SLD 1	ini.	1025.88	-3233	0.6	0	1875	3965	4043	1530	5573		1.72	Si
SLD 1	fin.	-653.39	-3413	0.6	0	1875	3965	4043	1530	5573		1.63	Si
SLV 1	ini.	1569.86	-4421	0.6	0	1875	3965	4043	1530	5573		1.26	Si
SLV 1	fin.	-729.88	-4622	0.6	0	1875	3965	4043	1530	5573		1.21	Si
SLV 5	ini.	1422.87	-3850	0.6	0	1875	3965	4043	1530	5573		1.45	Si
SLV 5	fin.	-675.9	-4160	0.6	0	1875	3965	4043	1530	5573		1.34	Si
SLV 2	ini.	1825.86	-5112	0.6	0	1875	3965	4043	1530	5573		1.09	Si
SLV 2	fin.	-819.7	-5313	0.6	0	1875	3965	4043	1530	5573		1.05	Si
SLV 3	ini.	1200.63	-3765	0.6	0	1875	3965	4043	1530	5573		1.48	Si
SLV 3	fin.	-692.99	-3876	0.6	0	1875	3965	4043	1530	5573		1.44	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.72	SLV 2	No
V_SLV	1.049	SLV 2	Si
PF_SLU	1.415	SLU 84	Si
V_SLU	1.123	SLU 84	Si

Trave di accoppiamento 64

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-2.233	-3.359	1.67	2.57	0.9	-3.233	-3.359	1.67	2.57	0.9	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 76	ini.	480.25	-2603	-0.0002633	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.13	Si
SLU 76	fin.	365.56	-2357	-0.0001939	0.0001872	0.0035	0.9		2942.43	2942.43	No	8.05	Si
SLU 73	ini.	482.39	-2587	-0.0002647	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.1	Si
SLU 73	fin.	354.07	-2324	-0.0001873	0.0001872	0.0035	0.9		2942.43	2942.43	No	8.31	Si
SLU 75	ini.	476.46	-2591	-0.0002609	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.18	Si
SLU 75	fin.	368.93	-2356	-0.0001959	0.0001872	0.0035	0.9		2942.43	2942.43	No	7.98	Si
SLU 44	ini.	478.21	-2237	-0.000262	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.15	Si
SLU 44	fin.	198.3	-1780	-0.000101	0.0001872	0.0035	0.9		2942.43	2942.43	No	14.84	Si
SLU 68	ini.	488.15	-2459	-0.0002683	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.03	Si
SLU 68	fin.	285.4	-2100	-0.0001483	0.0001872	0.0035	0.9		2942.43	2942.43	No	10.31	Si
SLU 72	ini.	478.22	-2444	-0.0002621	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.15	Si
SLU 72	fin.	297.75	-2116	-0.0001552	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.88	Si
SLU 65	ini.	490.29	-2443	-0.0002696	0.0001872	0.0035	0.9		2942.43	2942.43	No	6	Si
SLU 65	fin.	273.92	-2066	-0.0001419	0.0001872	0.0035	0.9		2942.43	2942.43	No	10.74	Si
SLU 47	ini.	476.07	-2253	-0.0002607	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.18	Si
SLU 47	fin.	209.79	-1814	-0.0001071	0.0001872	0.0035	0.9		2942.43	2942.43	No	14.03	Si
SLU 70	ini.	482.23	-2463	-0.0002646	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.1	Si
SLU 70	fin.	300.27	-2132	-0.0001566	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.8	Si
SLU 67	ini.	484.36	-2447	-0.0002659	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.07	Si
SLU 67	fin.	288.78	-2099	-0.0001502	0.0001872	0.0035	0.9		2942.43	2942.43	No	10.19	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 45	ini.	460.59	-931	0.9	0	1875	7137	4043	2295	6338	No	6.81	Si
SLU 45	fin.	214.44	80	0.9	0	1875	7137	4043	2295	6338	No	78.79	Si
SLU 50	ini.	454.45	-910	0.9	0	1875	7137	4043	2295	6338	No	6.97	Si
SLU 50	fin.	223.41	109	0.9	0	1875	7137	4043	2295	6338	No	58.07	Si
SLU 64	ini.	470.81	-920	0.9	0	1875	7137	4043	2295	6338	No	6.89	Si
SLU 64	fin.	276.05	245	0.9	0	1875	7137	4043	2295	6338	No	25.89	Si
SLU 43	ini.	458.73	-932	0.9	0	1875	7137	4043	2295	6338	No	6.8	Si
SLU 43	fin.	200.44	41	0.9	0	1875	7137	4043	2295	6338	No	155.8	Si
SLU 46	ini.	472.28	-905	0.9	0	1875	7137	4043	2295	6338	No	7	Si
SLU 46	fin.	213.16	16	0.9	0	1875	7137	4043	2295	6338	No	403.94	Si
SLU 49	ini.	470.14	-894	0.9	0	1875	7137	4043	2295	6338	No	7.09	Si
SLU 49	fin.	224.65	50	0.9	0	1875	7137	4043	2295	6338	No	126.95	Si
SLU 66	ini.	472.68	-919	0.9	0	1875	7137	4043	2295	6338	No	6.9	Si
SLU 66	fin.	290.06	285	0.9	0	1875	7137	4043	2295	6338	No	22.27	Si
SLU 69	ini.	470.54	-908	0.9	0	1875	7137	4043	2295	6338	No	6.98	Si
SLU 69	fin.	301.55	319	0.9	0	1875	7137	4043	2295	6338	No	19.88	Si
SLU 48	ini.	458.45	-919	0.9	0	1875	7137	4043	2295	6338	No	6.89	Si
SLU 48	fin.	225.93	115	0.9	0	1875	7137	4043	2295	6338	No	55.27	Si
SLU 71	ini.	466.54	-898	0.9	0	1875	7137	4043	2295	6338	No	7.06	Si
SLU 71	fin.	299.03	313	0.9	0	1875	7137	4043	2295	6338	No	20.23	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 6	ini.	2933.87	-7479	-0.003094	0.0002807	0.0035	0.9		2967.55	2967.55		1.01	Si
SLV 6	fin.	-1328.37	-1084	-0.0008461	0.0002807	0.0035	0.9		2973.32	2973.32		2.24	Si
SLV 16	ini.	-1801.32	1664	-0.001276	0.0002807	0.0035	0.9		2973.32	2973.32		1.65	Si
SLV 16	fin.	2130.53	-3672	-0.0016466	0.0002807	0.0035	0.9		2967.55	2967.55		1.39	Si
SLV 5	ini.	2503.81	-6786	-0.0021921	0.0002807	0.0035	0.9		2967.55	2967.55		1.19	Si
SLV 5	fin.	-939.73	-1515	-0.000549	0.0002807	0.0035	0.9		2973.32	2973.32		3.16	Si
SLV 15	ini.	-2440.09	2693	-0.0020784	0.0002807	0.0035	0.9		2973.32	2973.32		1.22	Si
SLV 15	fin.	2707.78	-4313	-0.0025775	0.0002807	0.0035	0.9		2967.55	2967.55		1.1	Si
SLV 11	ini.	-2219.37	3847	-0.0017554	0.0002807	0.0035	0.9		2973.32	2973.32		1.34	Si
SLV 11	fin.	1765.63	-2047	-0.0012435	0.0002807	0.0035	0.9		2967.55	2967.55		1.68	Si
SLV 1	ini.	2515.81	-5296	-0.0022129	0.0002807	0.0035	0.9		2967.55	2967.55		1.18	Si
SLV 1	fin.	-1693.27	541	-0.0011697	0.0002807	0.0035	0.9		2973.32	2973.32		1.76	Si
SLV 12	ini.	-1789.31	3154	-0.0012639	0.0002807	0.0035	0.9		2973.32	2973.32		1.66	Si
SLV 12	fin.	1376.99	-1616	-0.0008886	0.0002807	0.0035	0.9		2967.55	2967.55		2.16	Si
SLV 13	ini.	-1373.14	-22	-0.0008833	0.0002807	0.0035	0.9		2973.32	2973.32		2.17	Si
SLV 13	fin.	2251.17	-4618	-0.0018037	0.0002807	0.0035	0.9		2967.55	2967.55		1.32	Si
SLV 4	ini.	2087.64	-3610	-0.0015942	0.0002807	0.0035	0.9		2967.55	2967.55		1.42	Si
SLV 4	fin.	-1813.91	1486	-0.0012887	0.0002807	0.0035	0.9		2973.32	2973.32		1.64	Si
SLV 2	ini.	3154.58	-6325	-0.0036219	0.0002807	0.0035	0.9		2967.55	2967.55		0.94	No
SLV 2	fin.	-2270.52	1181	-0.0018247	0.0002807	0.0035	0.9		2973.32	2973.32		1.31	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	ini.	2503.81	-6999	0.9	0	2615	7137	6064	2295	8359		1.19	Si
SLV 5	fin.	-939.73	-6034	0.9	0	2615	7137	6064	2295	8359		1.39	Si
SLV 15	ini.	-2440.09	7998	0.9	0	2615	7137	6064	2295	8359		1.05	Si
SLV 15	fin.	2707.78	9340	0.9	0	2615	7137	6064	2295	8359		0.89	No
SLV 13	ini.	-1373.14	4908	0.9	0	2615	7137	6064	2295	8359		1.7	Si
SLV 13	fin.	2251.17	6411	0.9	0	2615	7137	6064	2295	8359		1.3	Si
SLV 16	ini.	-1801.32	5971	0.9	0	2615	7137	6064	2295	8359		1.4	Si
SLV 16	fin.	2130.53	7413	0.9	0	2615	7137	6064	2295	8359		1.13	Si
SLV 12	ini.	-1789.31	5615	0.9	0	2615	7137	6064	2295	8359		1.49	Si
SLV 12	fin.	1376.99	6452	0.9	0	2615	7137	6064	2295	8359		1.3	Si
SLV 11	ini.	-2219.37	6979	0.9	0	2615	7137	6064	2295	8359		1.2	Si
SLV 11	fin.	1765.63	7749	0.9	0	2615	7137	6064	2295	8359		1.08	Si
SLV 1	ini.	2515.81	-7356	0.9	0	2615	7137	6064	2295	8359		1.14	Si
SLV 1	fin.	-1693.27	-6996	0.9	0	2615	7137	6064	2295	8359		1.19	Si
SLV 4	ini.	2087.64	-6292	0.9	0	2615	7137	6064	2295	8359		1.33	Si
SLV 4	fin.	-1813.91	-5994	0.9	0	2615	7137	6064	2295	8359		1.39	Si
SLV 6	ini.	2933.87	-8364	0.9	0	2615	7137	6064	2295	8359		1	No
SLV 6	fin.	-1328.37	-7331	0.9	0	2615	7137	6064	2295	8359		1.14	Si
SLV 2	ini.	3154.58	-9382	0.9	0	2615	7137	6064	2295	8359		0.89	No
SLV 2	fin.	-2270.52	-8922	0.9	0	2615	7137	6064	2295	8359		0.94	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.941	SLV 2	No
V_SLV	0.891	SLV 2	No
PF_SLU	6.001	SLU 65	Si
V_SLU	6.798	SLU 43	Si

Trave di accoppiamento 65

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-2.233	-3.359	4.47	5.07	0.6	-3.233	-3.359	4.47	5.07	0.6	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-204.43	-981	-0.000249	0.0001872	0.0035	0.6		1324.3	1324.3	No	6.48	Si
SLU 78	fin.	-664.29	-2177	-0.0010491	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.99	Si
SLU 84	ini.	-218.42	-1020	-0.0002685	0.0001872	0.0035	0.6		1324.3	1324.3	No	6.06	Si
SLU 84	fin.	-671.5	-2201	-0.0010643	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.97	Si
SLU 73	ini.	-187.47	-934	-0.0002259	0.0001872	0.0035	0.6		1324.3	1324.3	No	7.06	Si
SLU 73	fin.	-660.77	-2159	-0.0010416	0.0001872	0.0035	0.6		1324.3	1324.3	No	2	Si
SLU 83	ini.	-220.37	-1010	-0.0002713	0.0001872	0.0035	0.6		1324.3	1324.3	No	6.01	Si
SLU 83	fin.	-661.75	-2163	-0.0010437	0.0001872	0.0035	0.6		1324.3	1324.3	No	2	Si
SLU 76	ini.	-194.57	-957	-0.0002355	0.0001872	0.0035	0.6		1324.3	1324.3	No	6.81	Si
SLU 76	fin.	-663.25	-2172	-0.0010468	0.0001872	0.0035	0.6		1324.3	1324.3	No	2	Si
SLU 82	ini.	-211.32	-997	-0.0002586	0.0001872	0.0035	0.6		1324.3	1324.3	No	6.27	Si
SLU 82	fin.	-669.01	-2188	-0.0010591	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.98	Si
SLU 80	ini.	-202.97	-973	-0.000247	0.0001872	0.0035	0.6		1324.3	1324.3	No	6.52	Si
SLU 80	fin.	-659.23	-2159	-0.0010384	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.01	Si
SLU 77	ini.	-206.38	-970	-0.0002517	0.0001872	0.0035	0.6		1324.3	1324.3	No	6.42	Si
SLU 77	fin.	-654.54	-2138	-0.0010285	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.02	Si
SLU 81	ini.	-213.27	-987	-0.0002613	0.0001872	0.0035	0.6		1324.3	1324.3	No	6.21	Si
SLU 81	fin.	-659.26	-2149	-0.0010384	0.0001872	0.0035	0.6		1324.3	1324.3	No	2.01	Si
SLU 75	ini.	-197.33	-958	-0.0002393	0.0001872	0.0035	0.6		1324.3	1324.3	No	6.71	Si
SLU 75	fin.	-661.81	-2164	-0.0010438	0.0001872	0.0035	0.6		1324.3	1324.3	No	2	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-213.27	1202	0.6	0	1250	4758	2695	1530	4225	No	3.51	Si
SLU 81	fin.	-659.26	-2833	0.6	0	1250	4758	2695	1530	4225	No	1.49	Si
SLU 84	ini.	-218.42	1216	0.6	0	1250	4758	2695	1530	4225	No	3.47	Si
SLU 84	fin.	-671.5	-2872	0.6	0	1250	4758	2695	1530	4225	No	1.47	Si
SLU 80	ini.	-202.97	1143	0.6	0	1250	4758	2695	1530	4225	No	3.7	Si
SLU 80	fin.	-659.23	-2810	0.6	0	1250	4758	2695	1530	4225	No	1.5	Si
SLU 78	ini.	-204.43	1151	0.6	0	1250	4758	2695	1530	4225	No	3.67	Si
SLU 78	fin.	-664.29	-2831	0.6	0	1250	4758	2695	1530	4225	No	1.49	Si
SLU 77	ini.	-206.38	1166	0.6	0	1250	4758	2695	1530	4225	No	3.62	Si
SLU 77	fin.	-654.54	-2805	0.6	0	1250	4758	2695	1530	4225	No	1.51	Si
SLU 83	ini.	-220.37	1231	0.6	0	1250	4758	2695	1530	4225	No	3.43	Si
SLU 83	fin.	-661.75	-2846	0.6	0	1250	4758	2695	1530	4225	No	1.48	Si
SLU 73	ini.	-187.47	1075	0.6	0	1250	4758	2695	1530	4225	No	3.93	Si
SLU 73	fin.	-660.77	-2800	0.6	0	1250	4758	2695	1530	4225	No	1.51	Si
SLU 76	ini.	-194.57	1104	0.6	0	1250	4758	2695	1530	4225	No	3.83	Si
SLU 76	fin.	-663.25	-2814	0.6	0	1250	4758	2695	1530	4225	No	1.5	Si
SLU 75	ini.	-197.33	1122	0.6	0	1250	4758	2695	1530	4225	No	3.77	Si
SLU 75	fin.	-661.81	-2817	0.6	0	1250	4758	2695	1530	4225	No	1.5	Si
SLU 82	ini.	-211.32	1187	0.6	0	1250	4758	2695	1530	4225	No	3.56	Si
SLU 82	fin.	-669.01	-2859	0.6	0	1250	4758	2695	1530	4225	No	1.48	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	273.72	-342	-0.0003338	0.0002807	0.0035	0.6		1315.04	1315.04		4.8	Si
SLV 10	fin.	-1453.44	-4637	-0.0038364	0.0002807	0.0035	0.6		1319.01	1319.01		0.91	No
SLV 6	ini.	1066.12	1572	-0.0020082	0.0002807	0.0035	0.6		1315.04	1315.04		1.23	Si
SLV 6	fin.	-2174.08	-6395	-0.0068321	0.0002807	0.0035	0.6		1319.01	1319.01		0.61	No
SLV 13	ini.	-1433.11	-3958	-0.0037366	0.0002807	0.0035	0.6		1319.01	1319.01		0.92	No
SLV 13	fin.	576.3	854	-0.0008189	0.0002807	0.0035	0.6		1315.04	1315.04		2.28	Si
SLV 4	ini.	1211.09	2776	-0.0025957	0.0002807	0.0035	0.6		1315.04	1315.04		1.09	Si
SLV 4	fin.	-1510.38	-3869	-0.0041067	0.0002807	0.0035	0.6		1319.01	1319.01		0.87	No
SLV 16	ini.	-1430.26	-3603	-0.0037225	0.0002807	0.0035	0.6		1319.01	1319.01		0.92	No
SLV 16	fin.	891.76	1993	-0.0014923	0.0002807	0.0035	0.6		1315.04	1315.04		1.47	Si
SLV 15	ini.	-1822.45	-4500	-0.0054471	0.0002807	0.0035	0.6		1319.01	1319.01		0.72	No
SLV 15	fin.	1301.56	3047	-0.0030587	0.0002807	0.0035	0.6		1315.04	1315.04		1.01	Si
SLV 5	ini.	802.07	968	-0.0012771	0.0002807	0.0035	0.6		1315.04	1315.04		1.64	Si
SLV 5	fin.	-1898.17	-5686	-0.0057514	0.0002807	0.0035	0.6		1319.01	1319.01		0.69	No
SLV 1	ini.	1208.24	2422	-0.0025824	0.0002807	0.0035	0.6		1315.04	1315.04		1.09	Si
SLV 1	fin.	-1825.83	-5008	-0.0054608	0.0002807	0.0035	0.6		1319.01	1319.01		0.72	No
SLV 2	ini.	1600.43	3319	-0.0045323	0.0002807	0.0035	0.6		1315.04	1315.04		0.82	No
SLV 2	fin.	-2235.64	-6061	-0.0070675	0.0002807	0.0035	0.6		1319.01	1319.01		0.59	No
SLV 11	ini.	-1288.14	-2754	-0.0029663	0.0002807	0.0035	0.6		1319.01	1319.01		1.02	Si
SLV 11	fin.	1240.01	3381	-0.002735	0.0002807	0.0035	0.6		1315.04	1315.04		1.06	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-1822.45	6936	0.6	0	1565	4758	4043	1530	5573		0.8	No
SLV 15	fin.	1301.56	4220	0.6	0	1565	4758	4043	1530	5573		1.32	Si
SLV 4	ini.	1211.09	-4147	0.6	0	1565	4758	4043	1530	5573		1.34	Si
SLV 4	fin.	-1510.38	-5609	0.6	0	1565	4758	4043	1530	5573		0.99	No
SLV 1	ini.	1208.24	-4150	0.6	0	1565	4758	4043	1530	5573		1.34	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	fin.	-1825.83	-6727	0.6	0	1565	4758	4043	1530	5573		0.83	No
SLV 10	ini.	273.72	-721	0.6	0	1565	4758	4043	1530	5573		7.73	Si
SLV 10	fin.	-1453.44	-5489	0.6	0	1565	4758	4043	1530	5573		1.02	Si
SLV 16	ini.	-1430.26	5515	0.6	0	1565	4758	4043	1530	5573		1.01	Si
SLV 16	fin.	891.76	2770	0.6	0	1565	4758	4043	1530	5573		2.01	Si
SLV 2	ini.	1600.43	-5571	0.6	0	1565	4758	4043	1530	5573		1	Si
SLV 2	fin.	-2235.64	-8177	0.6	0	1565	4758	4043	1530	5573		0.68	No
SLV 11	ini.	-1288.14	4984	0.6	0	1565	4758	4043	1530	5573		1.12	Si
SLV 11	fin.	1240.01	4046	0.6	0	1565	4758	4043	1530	5573		1.38	Si
SLV 5	ini.	802.07	-2663	0.6	0	1565	4758	4043	1530	5573		2.09	Si
SLV 5	fin.	-1898.17	-7027	0.6	0	1565	4758	4043	1530	5573		0.79	No
SLV 13	ini.	-1433.11	5511	0.6	0	1565	4758	4043	1530	5573		1.01	Si
SLV 13	fin.	576.3	1653	0.6	0	1565	4758	4043	1530	5573		3.37	Si
SLV 6	ini.	1066.12	-3620	0.6	0	1565	4758	4043	1530	5573		1.54	Si
SLV 6	fin.	-2174.08	-8003	0.6	0	1565	4758	4043	1530	5573		0.7	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.59	SLV 2	No
V_SLV	0.682	SLV 2	No
PF_SLU	1.972	SLU 84	Si
V_SLU	1.471	SLU 84	Si

Trave di accoppiamento 66

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-2.013	5.951	1.67	2.57	0.9	-3.013	5.951	1.67	2.57	0.9	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	867.72	-3112	-0.00053	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.39	Si
SLU 83	fin.	-74.52	-1758	-0.0000369	0.0001872	0.0035	0.9		2948.11	2948.11	No	39.56	Si
SLU 80	ini.	846.86	-3044	-0.0005145	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.47	Si
SLU 80	fin.	-69.28	-1729	-0.0000343	0.0001872	0.0035	0.9		2948.11	2948.11	No	42.56	Si
SLU 74	ini.	861.78	-3064	-0.0005255	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.41	Si
SLU 74	fin.	-85.19	-1704	-0.0000423	0.0001872	0.0035	0.9		2948.11	2948.11	No	34.61	Si
SLU 78	ini.	852.77	-3065	-0.0005189	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.45	Si
SLU 78	fin.	-69.21	-1741	-0.0000342	0.0001872	0.0035	0.9		2948.11	2948.11	No	42.6	Si
SLU 71	ini.	841.89	-2946	-0.0005108	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.5	Si
SLU 71	fin.	-102.4	-1593	-0.000051	0.0001872	0.0035	0.9		2948.11	2948.11	No	28.79	Si
SLU 77	ini.	875.46	-3127	-0.0005358	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.36	Si
SLU 77	fin.	-77.27	-1760	-0.0000383	0.0001872	0.0035	0.9		2948.11	2948.11	No	38.15	Si
SLU 84	ini.	845.04	-3049	-0.0005131	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.48	Si
SLU 84	fin.	-66.46	-1739	-0.0000329	0.0001872	0.0035	0.9		2948.11	2948.11	No	44.36	Si
SLU 69	ini.	847.8	-2967	-0.0005152	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.47	Si
SLU 69	fin.	-102.33	-1605	-0.000051	0.0001872	0.0035	0.9		2948.11	2948.11	No	28.81	Si
SLU 81	ini.	854.04	-3048	-0.0005198	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.45	Si
SLU 81	fin.	-82.44	-1701	-0.0000409	0.0001872	0.0035	0.9		2948.11	2948.11	No	35.76	Si
SLU 79	ini.	869.55	-3106	-0.0005314	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.38	Si
SLU 79	fin.	-77.34	-1748	-0.0000383	0.0001872	0.0035	0.9		2948.11	2948.11	No	38.12	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	852.77	-2071	0.9	0	1875	7137	4043	2295	6338	No	3.06	Si
SLU 78	fin.	-69.21	-822	0.9	0	1875	7137	4043	2295	6338	No	7.71	Si
SLU 69	ini.	847.8	-2069	0.9	0	1875	7137	4043	2295	6338	No	3.06	Si
SLU 69	fin.	-102.33	-926	0.9	0	1875	7137	4043	2295	6338	No	6.84	Si
SLU 74	ini.	861.78	-2105	0.9	0	1875	7137	4043	2295	6338	No	3.01	Si
SLU 74	fin.	-85.19	-873	0.9	0	1875	7137	4043	2295	6338	No	7.26	Si
SLU 77	ini.	875.46	-2134	0.9	0	1875	7137	4043	2295	6338	No	2.97	Si
SLU 77	fin.	-77.27	-859	0.9	0	1875	7137	4043	2295	6338	No	7.38	Si
SLU 81	ini.	854.04	-2086	0.9	0	1875	7137	4043	2295	6338	No	3.04	Si
SLU 81	fin.	-82.44	-857	0.9	0	1875	7137	4043	2295	6338	No	7.39	Si
SLU 80	ini.	846.86	-2053	0.9	0	1875	7137	4043	2295	6338	No	3.09	Si
SLU 80	fin.	-69.28	-822	0.9	0	1875	7137	4043	2295	6338	No	7.71	Si
SLU 79	ini.	869.55	-2116	0.9	0	1875	7137	4043	2295	6338	No	3	Si
SLU 79	fin.	-77.34	-858	0.9	0	1875	7137	4043	2295	6338	No	7.38	Si
SLU 83	ini.	867.72	-2115	0.9	0	1875	7137	4043	2295	6338	No	3	Si
SLU 83	fin.	-74.52	-843	0.9	0	1875	7137	4043	2295	6338	No	7.52	Si
SLU 84	ini.	845.04	-2052	0.9	0	1875	7137	4043	2295	6338	No	3.09	Si
SLU 84	fin.	-66.46	-807	0.9	0	1875	7137	4043	2295	6338	No	7.86	Si
SLU 71	ini.	841.89	-2051	0.9	0	1875	7137	4043	2295	6338	No	3.09	Si
SLU 71	fin.	-102.4	-925	0.9	0	1875	7137	4043	2295	6338	No	6.85	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 7	ini.	1744.04	-5002	-0.0012221	0.0002807	0.0035	0.9		2967.55	2967.55		1.7	Si
SLD 7	fin.	-579.21	-1752	-0.0003119	0.0002807	0.0035	0.9		2973.32	2973.32		5.13	Si
SLV 4	ini.	2424.54	-5812	-0.0020606	0.0002807	0.0035	0.9		2967.55	2967.55		1.22	Si
SLV 4	fin.	-1313.91	-667	-0.0008343	0.0002807	0.0035	0.9		2973.32	2973.32		2.26	Si
SLV 3	ini.	2994.77	-6909	-0.0032436	0.0002807	0.0035	0.9		2967.55	2967.55		0.99	No
SLV 3	fin.	-1738.41	-373	-0.0012134	0.0002807	0.0035	0.9		2973.32	2973.32		1.71	Si
SLV 11	ini.	2536.62	-7815	-0.0022495	0.0002807	0.0035	0.9		2967.55	2967.55		1.17	Si
SLV 11	fin.	-550.18	-3458	-0.0002945	0.0002807	0.0035	0.9		2973.32	2973.32		5.4	Si
SLV 12	ini.	2152.71	-7076	-0.0016743	0.0002807	0.0035	0.9		2967.55	2967.55		1.38	Si
SLV 12	fin.	-264.38	-3656	-0.0001343	0.0002807	0.0035	0.9		2973.32	2973.32		11.25	Si
SLV 9	ini.	-1774.94	4216	-0.0012495	0.0002807	0.0035	0.9		2973.32	2973.32		1.68	Si
SLV 9	fin.	822.23	656	-0.0004686	0.0002807	0.0035	0.9		2967.55	2967.55		3.61	Si
SLV 7	ini.	3401.56	-9258	-0.0041542	0.0002807	0.0035	0.9		2967.55	2967.55		0.87	No
SLV 7	fin.	-1288.28	-2721	-0.0008134	0.0002807	0.0035	0.9		2973.32	2973.32		2.31	Si
SLV 14	ini.	-1752.06	2606	-0.0012269	0.0002807	0.0035	0.9		2973.32	2973.32		1.7	Si
SLV 14	fin.	1558.16	-1890	-0.0010467	0.0002807	0.0035	0.9		2967.55	2967.55		1.9	Si
SLV 8	ini.	3017.65	-8519	-0.0032994	0.0002807	0.0035	0.9		2967.55	2967.55		0.98	No
SLV 8	fin.	-1002.48	-2919	-0.000594	0.0002807	0.0035	0.9		2973.32	2973.32		2.97	Si
SLV 10	ini.	-2158.86	4955	-0.0016771	0.0002807	0.0035	0.9		2973.32	2973.32		1.38	Si
SLV 10	fin.	1108.03	458	-0.0006738	0.0002807	0.0035	0.9		2967.55	2967.55		2.68	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 8	ini.	3017.65	-7719	0.9	0	2615	7137	6064	2295	8359		1.08	Si
SLV 8	fin.	-1002.48	-5668	0.9	0	2615	7137	6064	2295	8359		1.47	Si
SLV 11	ini.	2536.62	-6356	0.9	0	2615	7137	6064	2295	8359		1.32	Si
SLV 11	fin.	-550.18	-3976	0.9	0	2615	7137	6064	2295	8359		2.1	Si
SLV 12	ini.	2152.71	-5215	0.9	0	2615	7137	6064	2295	8359		1.6	Si
SLV 12	fin.	-264.38	-2927	0.9	0	2615	7137	6064	2295	8359		2.86	Si
SLV 3	ini.	2994.77	-8196	0.9	0	2615	7137	6064	2295	8359		1.02	Si
SLV 3	fin.	-1738.41	-7303	0.9	0	2615	7137	6064	2295	8359		1.14	Si
SLV 9	ini.	-1774.94	4680	0.9	0	2615	7137	6064	2295	8359		1.79	Si
SLV 9	fin.	822.23	4213	0.9	0	2615	7137	6064	2295	8359		1.98	Si
SLV 4	ini.	2424.54	-6501	0.9	0	2615	7137	6064	2295	8359		1.29	Si
SLV 4	fin.	-1313.91	-5744	0.9	0	2615	7137	6064	2295	8359		1.46	Si
SLV 1	ini.	1701.3	-4886	0.9	0	2615	7137	6064	2295	8359		1.71	Si
SLV 1	fin.	-1326.68	-4846	0.9	0	2615	7137	6064	2295	8359		1.72	Si
SLV 7	ini.	3401.56	-8861	0.9	0	2615	7137	6064	2295	8359		0.94	No
SLV 7	fin.	-1288.28	-6717	0.9	0	2615	7137	6064	2295	8359		1.24	Si
SLV 10	ini.	-2158.86	5821	0.9	0	2615	7137	6064	2295	8359		1.44	Si
SLV 10	fin.	1108.03	5262	0.9	0	2615	7137	6064	2295	8359		1.59	Si
SLV 14	ini.	-1752.06	5157	0.9	0	2615	7137	6064	2295	8359		1.62	Si
SLV 14	fin.	1558.16	5848	0.9	0	2615	7137	6064	2295	8359		1.43	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.872	SLV 7	No
V_SLV	0.943	SLV 7	No
PF_SLU	3.361	SLU 77	Si
V_SLU	2.97	SLU 77	Si

Trave di accoppiamento 67

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-2.013	5.951	4.47	5.07	0.6	-3.013	5.951	4.47	5.07	0.6	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-57.97	-266	-0.0000651	0.0001872	0.0035	0.6		1324.3	1324.3	No	22.85	Si
SLU 74	fin.	-734.25	-2565	-0.0012023	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.8	Si
SLU 79	ini.	-61.69	-284	-0.0000694	0.0001872	0.0035	0.6		1324.3	1324.3	No	21.47	Si
SLU 79	fin.	-743.94	-2604	-0.0012244	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.78	Si
SLU 78	ini.	-69.61	-305	-0.0000786	0.0001872	0.0035	0.6		1324.3	1324.3	No	19.03	Si
SLU 78	fin.	-733.78	-2564	-0.0012012	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.8	Si
SLU 77	ini.	-63.09	-290	-0.000071	0.0001872	0.0035	0.6		1324.3	1324.3	No	20.99	Si
SLU 77	fin.	-748.25	-2620	-0.0012343	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.77	Si
SLU 81	ini.	-65.63	-277	-0.0000739	0.0001872	0.0035	0.6		1324.3	1324.3	No	20.18	Si
SLU 81	fin.	-732.65	-2545	-0.0011986	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.81	Si
SLU 84	ini.	-77.26	-316	-0.0000875	0.0001872	0.0035	0.6		1324.3	1324.3	No	17.14	Si
SLU 84	fin.	-732.17	-2544	-0.0011975	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.81	Si
SLU 83	ini.	-70.75	-301	-0.0000799	0.0001872	0.0035	0.6		1324.3	1324.3	No	18.72	Si
SLU 83	fin.	-746.64	-2599	-0.0012306	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.77	Si
SLU 80	ini.	-68.2	-299	-0.0000769	0.0001872	0.0035	0.6		1324.3	1324.3	No	19.42	Si
SLU 80	fin.	-729.46	-2548	-0.0011914	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.82	Si
SLU 75	ini.	-64.48	-281	-0.0000726	0.0001872	0.0035	0.6		1324.3	1324.3	No	20.54	Si
SLU 75	fin.	-719.78	-2510	-0.0011697	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.84	Si
SLU 82	ini.	-72.14	-292	-0.0000815	0.0001872	0.0035	0.6		1324.3	1324.3	No	18.36	Si
SLU 82	fin.	-718.17	-2489	-0.0011661	0.0001872	0.0035	0.6		1324.3	1324.3	No	1.84	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-68.2	684	0.6	0	1250	4758	2695	1530	4225	No	6.18	Si
SLU 80	fin.	-729.46	-3513	0.6	0	1250	4758	2695	1530	4225	No	1.2	Si
SLU 78	ini.	-69.61	692	0.6	0	1250	4758	2695	1530	4225	No	6.11	Si
SLU 78	fin.	-733.78	-3534	0.6	0	1250	4758	2695	1530	4225	No	1.2	Si
SLU 79	ini.	-61.69	655	0.6	0	1250	4758	2695	1530	4225	No	6.46	Si
SLU 79	fin.	-743.94	-3573	0.6	0	1250	4758	2695	1530	4225	No	1.18	Si
SLU 82	ini.	-72.14	713	0.6	0	1250	4758	2695	1530	4225	No	5.92	Si
SLU 82	fin.	-718.17	-3477	0.6	0	1250	4758	2695	1530	4225	No	1.22	Si
SLU 81	ini.	-65.63	684	0.6	0	1250	4758	2695	1530	4225	No	6.18	Si
SLU 81	fin.	-732.65	-3537	0.6	0	1250	4758	2695	1530	4225	No	1.19	Si
SLU 75	ini.	-64.48	666	0.6	0	1250	4758	2695	1530	4225	No	6.35	Si
SLU 75	fin.	-719.78	-3469	0.6	0	1250	4758	2695	1530	4225	No	1.22	Si
SLU 83	ini.	-70.75	710	0.6	0	1250	4758	2695	1530	4225	No	5.95	Si
SLU 83	fin.	-746.64	-3602	0.6	0	1250	4758	2695	1530	4225	No	1.17	Si
SLU 74	ini.	-57.97	637	0.6	0	1250	4758	2695	1530	4225	No	6.64	Si
SLU 74	fin.	-734.25	-3529	0.6	0	1250	4758	2695	1530	4225	No	1.2	Si
SLU 84	ini.	-77.26	739	0.6	0	1250	4758	2695	1530	4225	No	5.72	Si
SLU 84	fin.	-732.17	-3542	0.6	0	1250	4758	2695	1530	4225	No	1.19	Si
SLU 77	ini.	-63.09	663	0.6	0	1250	4758	2695	1530	4225	No	6.38	Si
SLU 77	fin.	-748.25	-3594	0.6	0	1250	4758	2695	1530	4225	No	1.18	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 7	ini.	930.89	2239	-0.0015947	0.0002807	0.0035	0.6		1315.04	1315.04		1.41	Si
SLV 7	fin.	-2351.72	-8854	-0.0075069	0.0002807	0.0035	0.6		1319.01	1319.01		0.56	No
SLV 10	ini.	-962.04	-2460	-0.0016735	0.0002807	0.0035	0.6		1319.01	1319.01		1.37	Si
SLV 10	fin.	1316.72	5224	-0.0031422	0.0002807	0.0035	0.6		1315.04	1315.04		1	No
SLV 3	ini.	1172.06	3452	-0.0024202	0.0002807	0.0035	0.6		1315.04	1315.04		1.12	Si
SLV 3	fin.	-2066.84	-7538	-0.006417	0.0002807	0.0035	0.6		1319.01	1319.01		0.64	No
SLV 4	ini.	875.42	2545	-0.0014512	0.0002807	0.0035	0.6		1315.04	1315.04		1.5	Si
SLV 4	fin.	-1697.93	-6206	-0.0049326	0.0002807	0.0035	0.6		1319.01	1319.01		0.78	No
SLV 11	ini.	413.08	594	-0.0005408	0.0002807	0.0035	0.6		1315.04	1315.04		3.18	Si
SLV 11	fin.	-1790.05	-6824	-0.0053151	0.0002807	0.0035	0.6		1319.01	1319.01		0.74	No
SLV 14	ini.	-1203.22	-3673	-0.0025441	0.0002807	0.0035	0.6		1319.01	1319.01		1.1	Si
SLV 14	fin.	1031.84	3907	-0.0018929	0.0002807	0.0035	0.6		1315.04	1315.04		1.27	Si
SLD 7	ini.	371.21	855	-0.0004757	0.0002807	0.0035	0.6		1315.04	1315.04		3.54	Si
SLD 7	fin.	-1257.04	-4652	-0.0028033	0.0002807	0.0035	0.6		1319.01	1319.01		1.05	Si
SLV 12	ini.	213.36	-17	-0.000253	0.0002807	0.0035	0.6		1315.04	1315.04		6.16	Si
SLV 12	fin.	-1541.67	-5927	-0.0042504	0.0002807	0.0035	0.6		1319.01	1319.01		0.86	No
SLV 1	ini.	819.44	2719	-0.0013169	0.0002807	0.0035	0.6		1315.04	1315.04		1.6	Si
SLV 1	fin.	-1209.33	-4193	-0.0025721	0.0002807	0.0035	0.6		1319.01	1319.01		1.09	Si
SLV 8	ini.	731.17	1629	-0.0011222	0.0002807	0.0035	0.6		1315.04	1315.04		1.8	Si
SLV 8	fin.	-2103.35	-7958	-0.0065591	0.0002807	0.0035	0.6		1319.01	1319.01		0.63	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	819.44	-3371	0.6	0	1565	4758	4043	1530	5573		1.65	Si
SLV 1	fin.	-1209.33	-5261	0.6	0	1565	4758	4043	1530	5573		1.06	Si
SLV 3	ini.	1172.06	-4935	0.6	0	1565	4758	4043	1530	5573		1.13	Si
SLV 3	fin.	-2066.84	-8819	0.6	0	1565	4758	4043	1530	5573		0.63	No
SLV 7	ini.	930.89	-3865	0.6	0	1565	4758	4043	1530	5573		1.44	Si
SLV 7	fin.	-2351.72	-10055	0.6	0	1565	4758	4043	1530	5573		0.55	No
SLV 14	ini.	-1203.22	5585	0.6	0	1565	4758	4043	1530	5573		1	No
SLV 14	fin.	1031.84	3881	0.6	0	1565	4758	4043	1530	5573		1.44	Si
SLV 8	ini.	731.17	-2998	0.6	0	1565	4758	4043	1530	5573		1.86	Si
SLV 8	fin.	-2103.35	-9027	0.6	0	1565	4758	4043	1530	5573		0.62	No
SLV 11	ini.	413.08	-1565	0.6	0	1565	4758	4043	1530	5573		3.56	Si
SLV 11	fin.	-1790.05	-7770	0.6	0	1565	4758	4043	1530	5573		0.72	No
SLD 7	ini.	371.21	-1385	0.6	0	1565	4758	4043	1530	5573		4.02	Si
SLD 7	fin.	-1257.04	-5527	0.6	0	1565	4758	4043	1530	5573		1.01	Si
SLV 4	ini.	875.42	-3647	0.6	0	1565	4758	4043	1530	5573		1.53	Si
SLV 4	fin.	-1697.93	-7292	0.6	0	1565	4758	4043	1530	5573		0.76	No
SLD 3	ini.	486.59	-1898	0.6	0	1565	4758	4043	1530	5573		2.94	Si
SLD 3	fin.	-1166.26	-5127	0.6	0	1565	4758	4043	1530	5573		1.09	Si
SLV 12	ini.	213.36	-698	0.6	0	1565	4758	4043	1530	5573		7.99	Si
SLV 12	fin.	-1541.67	-6742	0.6	0	1565	4758	4043	1530	5573		0.83	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.561	SLV 7	No
V_SLV	0.554	SLV 7	No
PF_SLU	1.77	SLU 77	Si
V_SLU	1.173	SLU 83	Si

Trave di accoppiamento 68

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-0.123	0.146	1.67	3.67	2	-0.123	0.646	1.67	3.67	2	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	364.04	-6866	-0.0000365	0.0001872	0.0035	2		14206.68	14206.68	No	39.02	Si
SLU 77	fin.	-1193.29	-6054	-0.000124	0.0001872	0.0035	2		14219.44	14219.44	No	11.92	Si
SLU 79	ini.	358.53	-6810	-0.000036	0.0001872	0.0035	2		14206.68	14206.68	No	39.62	Si
SLU 79	fin.	-1184.13	-6006	-0.000123	0.0001872	0.0035	2		14219.44	14219.44	No	12.01	Si
SLU 83	ini.	348.02	-6955	-0.0000349	0.0001872	0.0035	2		14206.68	14206.68	No	40.82	Si
SLU 83	fin.	-1195.79	-6146	-0.0001242	0.0001872	0.0035	2		14219.44	14219.44	No	11.89	Si
SLU 74	ini.	354.94	-6772	-0.0000356	0.0001872	0.0035	2		14206.68	14206.68	No	40.03	Si
SLU 74	fin.	-1184.34	-5967	-0.000123	0.0001872	0.0035	2		14219.44	14219.44	No	12.01	Si
SLU 69	ini.	367.33	-6309	-0.0000369	0.0001872	0.0035	2		14206.68	14206.68	No	38.68	Si
SLU 69	fin.	-1145.2	-5525	-0.0001187	0.0001872	0.0035	2		14219.44	14219.44	No	12.42	Si
SLU 81	ini.	338.92	-6861	-0.000034	0.0001872	0.0035	2		14206.68	14206.68	No	41.92	Si
SLU 81	fin.	-1186.83	-6059	-0.0001233	0.0001872	0.0035	2		14219.44	14219.44	No	11.98	Si
SLU 71	ini.	361.82	-6254	-0.0000363	0.0001872	0.0035	2		14206.68	14206.68	No	39.26	Si
SLU 71	fin.	-1136.04	-5477	-0.0001177	0.0001872	0.0035	2		14219.44	14219.44	No	12.52	Si
SLU 84	ini.	320.3	-6935	-0.0000321	0.0001872	0.0035	2		14206.68	14206.68	No	44.35	Si
SLU 84	fin.	-1136.8	-6170	-0.0001178	0.0001872	0.0035	2		14219.44	14219.44	No	12.51	Si
SLU 66	ini.	358.23	-6215	-0.0000359	0.0001872	0.0035	2		14206.68	14206.68	No	39.66	Si
SLU 66	fin.	-1136.25	-5438	-0.0001177	0.0001872	0.0035	2		14219.44	14219.44	No	12.51	Si
SLU 78	ini.	336.33	-6845	-0.0000337	0.0001872	0.0035	2		14206.68	14206.68	No	42.24	Si
SLU 78	fin.	-1134.31	-6079	-0.0001175	0.0001872	0.0035	2		14219.44	14219.44	No	12.54	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	330.82	-8560	2	0	4167	3965	8983	5100	8131	No	0.95	No
SLU 80	fin.	-1125.15	-3518	2	0	4167	3965	8983	5100	8131	No	2.31	Si
SLU 83	ini.	348.02	-8938	2	0	4167	3965	8983	5100	8131	No	0.91	No
SLU 83	fin.	-1195.79	-3763	2	0	4167	3965	8983	5100	8131	No	2.16	Si
SLU 81	ini.	338.92	-8835	2	0	4167	3965	8983	5100	8131	No	0.92	No
SLU 81	fin.	-1186.83	-3728	2	0	4167	3965	8983	5100	8131	No	2.18	Si
SLU 74	ini.	354.94	-8784	2	0	4167	3965	8983	5100	8131	No	0.93	No
SLU 74	fin.	-1184.34	-3783	2	0	4167	3965	8983	5100	8131	No	2.15	Si
SLU 84	ini.	320.3	-8686	2	0	4167	3965	8983	5100	8131	No	0.94	No
SLU 84	fin.	-1136.8	-3498	2	0	4167	3965	8983	5100	8131	No	2.32	Si
SLU 78	ini.	336.33	-8635	2	0	4167	3965	8983	5100	8131	No	0.94	No
SLU 78	fin.	-1134.31	-3553	2	0	4167	3965	8983	5100	8131	No	2.29	Si
SLU 82	ini.	311.2	-8583	2	0	4167	3965	8983	5100	8131	No	0.95	No
SLU 82	fin.	-1127.85	-3463	2	0	4167	3965	8983	5100	8131	No	2.35	Si
SLU 77	ini.	364.04	-8887	2	0	4167	3965	8983	5100	8131	No	0.91	No
SLU 77	fin.	-1193.29	-3818	2	0	4167	3965	8983	5100	8131	No	2.13	Si
SLU 79	ini.	358.53	-8812	2	0	4167	3965	8983	5100	8131	No	0.92	No
SLU 79	fin.	-1184.13	-3783	2	0	4167	3965	8983	5100	8131	No	2.15	Si
SLU 75	ini.	327.22	-8532	2	0	4167	3965	8983	5100	8131	No	0.95	No
SLU 75	fin.	-1125.35	-3518	2	0	4167	3965	8983	5100	8131	No	2.31	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 11	ini.	2561.03	-7942	-0.0002759	0.0002807	0.0035	2		13920.08	13920.08		5.44	Si
SLV 11	fin.	-5928.6	-3541	-0.0007431	0.0002807	0.0035	2		13933.43	13933.43		2.35	Si
SLV 5	ini.	-1831.25	-1744	-0.0001917	0.0002807	0.0035	2		13933.43	13933.43		7.61	Si
SLV 5	fin.	3730.27	-4584	-0.0004233	0.0002807	0.0035	2		13920.08	13920.08		3.73	Si
SLV 7	ini.	2582.24	-6046	-0.0002784	0.0002807	0.0035	2		13920.08	13920.08		5.39	Si
SLV 7	fin.	-5612.19	-1833	-0.0006936	0.0002807	0.0035	2		13933.43	13933.43		2.48	Si
SLD 11	ini.	1180.56	-6008	-0.000121	0.0002807	0.0035	2		13920.08	13920.08		11.79	Si
SLD 11	fin.	-2892.95	-3892	-0.0003158	0.0002807	0.0035	2		13933.43	13933.43		4.82	Si
SLV 15	ini.	1042.87	-8736	-0.0001064	0.0002807	0.0035	2		13920.08	13920.08		13.35	Si
SLV 15	fin.	-3146.36	-6486	-0.0003473	0.0002807	0.0035	2		13933.43	13933.43		4.43	Si
SLV 6	ini.	-2042.7	-1390	-0.0002155	0.0002807	0.0035	2		13933.43	13933.43		6.82	Si
SLV 6	fin.	4218.51	-4626	-0.0004896	0.0002807	0.0035	2		13920.08	13920.08		3.3	Si
SLV 8	ini.	2370.79	-5692	-0.0002535	0.0002807	0.0035	2		13920.08	13920.08		5.87	Si
SLV 8	fin.	-5123.96	-1876	-0.0006194	0.0002807	0.0035	2		13933.43	13933.43		2.72	Si
SLV 12	ini.	2349.58	-7588	-0.000251	0.0002807	0.0035	2		13920.08	13920.08		5.92	Si
SLV 12	fin.	-5440.37	-3584	-0.0006672	0.0002807	0.0035	2		13933.43	13933.43		2.56	Si
SLV 10	ini.	-2063.91	-3287	-0.0002179	0.0002807	0.0035	2		13933.43	13933.43		6.75	Si
SLV 10	fin.	3902.1	-6334	-0.0004463	0.0002807	0.0035	2		13920.08	13920.08		3.57	Si
SLV 9	ini.	-1852.46	-3641	-0.0001941	0.0002807	0.0035	2		13933.43	13933.43		7.52	Si
SLV 9	fin.	3413.86	-6292	-0.0003817	0.0002807	0.0035	2		13920.08	13920.08		4.08	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 9	ini.	-1852.46	11812	2	0	6250	3965	13475	5100	10215		0.86	No
SLV 9	fin.	3413.86	16720	2	0	6250	3965	13475	5100	10215		0.61	No
SLV 12	ini.	2349.58	-26604	2	0	6250	3965	13475	5100	10215		0.38	No
SLV 12	fin.	-5440.37	-23159	2	0	6250	3965	13475	5100	10215		0.44	No
SLV 5	ini.	-1831.25	14231	2	0	6250	3965	13475	5100	10215		0.72	No

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	fin.	3730.27	17558	2	0	6250	3965	13475	5100	10215		0.58	No
SLV 10	ini.	-2063.91	14012	2	0	6250	3965	13475	5100	10215		0.73	No
SLV 10	fin.	3902.1	18901	2	0	6250	3965	13475	5100	10215		0.54	No
SLD 11	ini.	1180.56	-15290	2	0	6250	3965	13475	5100	10215		0.67	No
SLD 11	fin.	-2892.95	-11847	2	0	6250	3965	13475	5100	10215		0.86	No
SLV 6	ini.	-2042.7	16431	2	0	6250	3965	13475	5100	10215		0.62	No
SLV 6	fin.	4218.51	19739	2	0	6250	3965	13475	5100	10215		0.52	No
SLV 7	ini.	2582.24	-26385	2	0	6250	3965	13475	5100	10215		0.39	No
SLV 7	fin.	-5612.19	-24502	2	0	6250	3965	13475	5100	10215		0.42	No
SLV 8	ini.	2370.79	-24185	2	0	6250	3965	13475	5100	10215		0.42	No
SLV 8	fin.	-5123.96	-22321	2	0	6250	3965	13475	5100	10215		0.46	No
SLV 11	ini.	2561.03	-28804	2	0	6250	3965	13475	5100	10215		0.35	No
SLV 11	fin.	-5928.6	-25340	2	0	6250	3965	13475	5100	10215		0.4	No
SLV 15	ini.	1042.87	-17944	2	0	6250	3965	13475	5100	10215		0.57	No
SLV 15	fin.	-3146.36	-12125	2	0	6250	3965	13475	5100	10215		0.84	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.35	SLV 11	Si
V_SLV	0.355	SLV 11	No
PF_SLU	11.891	SLU 83	Si
V_SLU	0.91	SLU 83	No

Trave di accoppiamento 69

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-0.123	0.146	4.47	5.07	0.6	-0.123	0.646	4.47	5.07	0.6	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 66	ini.	301.56	-1688	-0.0003926	0.0001872	0.0035	0.6		1320.56	1320.56	No	4.38	Si
SLU 66	fin.	-323.6	-1688	-0.0004257	0.0001872	0.0035	0.6		1324.3	1324.3	No	4.09	Si
SLU 79	ini.	303.71	-1866	-0.0003959	0.0001872	0.0035	0.6		1320.56	1320.56	No	4.35	Si
SLU 79	fin.	-328.86	-1866	-0.000434	0.0001872	0.0035	0.6		1324.3	1324.3	No	4.03	Si
SLU 81	ini.	295.49	-1878	-0.0003832	0.0001872	0.0035	0.6		1320.56	1320.56	No	4.47	Si
SLU 81	fin.	-320.2	-1878	-0.0004203	0.0001872	0.0035	0.6		1324.3	1324.3	No	4.14	Si
SLU 69	ini.	305.89	-1718	-0.0003993	0.0001872	0.0035	0.6		1320.56	1320.56	No	4.32	Si
SLU 69	fin.	-328.7	-1718	-0.0004337	0.0001872	0.0035	0.6		1324.3	1324.3	No	4.03	Si
SLU 77	ini.	306.89	-1883	-0.0004009	0.0001872	0.0035	0.6		1320.56	1320.56	No	4.3	Si
SLU 77	fin.	-332.29	-1883	-0.0004394	0.0001872	0.0035	0.6		1324.3	1324.3	No	3.99	Si
SLU 64	ini.	294.07	-1642	-0.000381	0.0001872	0.0035	0.6		1320.56	1320.56	No	4.49	Si
SLU 64	fin.	-315.07	-1642	-0.0004123	0.0001872	0.0035	0.6		1324.3	1324.3	No	4.2	Si
SLU 71	ini.	302.72	-1700	-0.0003944	0.0001872	0.0035	0.6		1320.56	1320.56	No	4.36	Si
SLU 71	fin.	-325.27	-1700	-0.0004283	0.0001872	0.0035	0.6		1324.3	1324.3	No	4.07	Si
SLU 74	ini.	302.56	-1854	-0.0003942	0.0001872	0.0035	0.6		1320.56	1320.56	No	4.36	Si
SLU 74	fin.	-327.19	-1854	-0.0004313	0.0001872	0.0035	0.6		1324.3	1324.3	No	4.05	Si
SLU 83	ini.	299.82	-1907	-0.0003899	0.0001872	0.0035	0.6		1320.56	1320.56	No	4.4	Si
SLU 83	fin.	-325.3	-1907	-0.0004284	0.0001872	0.0035	0.6		1324.3	1324.3	No	4.07	Si
SLU 56	ini.	291.21	-1670	-0.0003767	0.0001872	0.0035	0.6		1320.56	1320.56	No	4.53	Si
SLU 56	fin.	-313.06	-1670	-0.0004092	0.0001872	0.0035	0.6		1324.3	1324.3	No	4.23	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 69	ini.	305.89	-1164	0.6	0	1250	3965	2695	1530	4225	No	3.63	Si
SLU 69	fin.	-328.7	-1374	0.6	0	1250	3965	2695	1530	4225	No	3.07	Si
SLU 74	ini.	302.56	-1154	0.6	0	1250	3965	2695	1530	4225	No	3.66	Si
SLU 74	fin.	-327.19	-1365	0.6	0	1250	3965	2695	1530	4225	No	3.1	Si
SLU 66	ini.	301.56	-1145	0.6	0	1250	3965	2695	1530	4225	No	3.69	Si
SLU 66	fin.	-323.6	-1356	0.6	0	1250	3965	2695	1530	4225	No	3.12	Si
SLU 56	ini.	291.21	-1103	0.6	0	1250	3965	2695	1530	4225	No	3.83	Si
SLU 56	fin.	-313.06	-1314	0.6	0	1250	3965	2695	1530	4225	No	3.22	Si
SLU 79	ini.	303.71	-1160	0.6	0	1250	3965	2695	1530	4225	No	3.64	Si
SLU 79	fin.	-328.86	-1370	0.6	0	1250	3965	2695	1530	4225	No	3.08	Si
SLU 81	ini.	295.49	-1126	0.6	0	1250	3965	2695	1530	4225	No	3.75	Si
SLU 81	fin.	-320.2	-1337	0.6	0	1250	3965	2695	1530	4225	No	3.16	Si
SLU 83	ini.	299.82	-1145	0.6	0	1250	3965	2695	1530	4225	No	3.69	Si
SLU 83	fin.	-325.3	-1356	0.6	0	1250	3965	2695	1530	4225	No	3.12	Si
SLU 64	ini.	294.07	-1113	0.6	0	1250	3965	2695	1530	4225	No	3.8	Si
SLU 64	fin.	-315.07	-1324	0.6	0	1250	3965	2695	1530	4225	No	3.19	Si
SLU 71	ini.	302.72	-1151	0.6	0	1250	3965	2695	1530	4225	No	3.67	Si
SLU 71	fin.	-325.27	-1361	0.6	0	1250	3965	2695	1530	4225	No	3.1	Si
SLU 77	ini.	306.89	-1173	0.6	0	1250	3965	2695	1530	4225	No	3.6	Si
SLU 77	fin.	-332.29	-1384	0.6	0	1250	3965	2695	1530	4225	No	3.05	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 11	ini.	2164.34	-1372	-0.0068177	0.0002807	0.0035	0.6		1315.04	1315.04		0.61	No
SLV 11	fin.	-2196.33	-1394	-0.0069174	0.0002807	0.0035	0.6		1319.01	1319.01		0.6	No
SLV 6	ini.	-1718.25	-1154	-0.005018	0.0002807	0.0035	0.6		1319.01	1319.01		0.77	No
SLV 6	fin.	1718	-1133	-0.0050366	0.0002807	0.0035	0.6		1315.04	1315.04		0.77	No
SLD 11	ini.	1001.15	-1315	-0.0017962	0.0002807	0.0035	0.6		1315.04	1315.04		1.31	Si
SLD 11	fin.	-1023.5	-1324	-0.0018571	0.0002807	0.0035	0.6		1319.01	1319.01		1.29	Si
SLV 10	ini.	-1657.63	-1711	-0.0047613	0.0002807	0.0035	0.6		1319.01	1319.01		0.8	No
SLV 10	fin.	1661.39	-1733	-0.0047969	0.0002807	0.0035	0.6		1315.04	1315.04		0.79	No
SLV 7	ini.	2103.72	-815	-0.0065832	0.0002807	0.0035	0.6		1315.04	1315.04		0.63	No
SLV 7	fin.	-2139.72	-794	-0.0066999	0.0002807	0.0035	0.6		1319.01	1319.01		0.62	No
SLV 12	ini.	1983.16	-1372	-0.0061094	0.0002807	0.0035	0.6		1315.04	1315.04		0.66	No
SLV 12	fin.	-2013.02	-1393	-0.0062059	0.0002807	0.0035	0.6		1319.01	1319.01		0.66	No
SLV 9	ini.	-1476.45	-1712	-0.0039471	0.0002807	0.0035	0.6		1319.01	1319.01		0.89	No
SLV 9	fin.	1478.09	-1733	-0.0039742	0.0002807	0.0035	0.6		1315.04	1315.04		0.89	No
SLV 15	ini.	1004.76	-2141	-0.0018072	0.0002807	0.0035	0.6		1315.04	1315.04		1.31	Si
SLV 15	fin.	-1020.8	-2212	-0.0018486	0.0002807	0.0035	0.6		1319.01	1319.01		1.29	Si
SLV 8	ini.	1922.54	-815	-0.0058691	0.0002807	0.0035	0.6		1315.04	1315.04		0.68	No
SLV 8	fin.	-1956.41	-793	-0.0059821	0.0002807	0.0035	0.6		1319.01	1319.01		0.67	No
SLV 5	ini.	-1537.07	-1155	-0.0042295	0.0002807	0.0035	0.6		1319.01	1319.01		0.86	No
SLV 5	fin.	1534.7	-1134	-0.0042378	0.0002807	0.0035	0.6		1315.04	1315.04		0.86	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 7	ini.	2103.72	-8372	0.6	0	1875	3965	4043	1530	5573		0.67	No
SLV 7	fin.	-2139.72	-8528	0.6	0	1875	3965	4043	1530	5573		0.65	No
SLD 11	ini.	1001.15	-3983	0.6	0	1875	3965	4043	1530	5573		1.4	Si
SLD 11	fin.	-1023.5	-4145	0.6	0	1875	3965	4043	1530	5573		1.34	Si
SLV 8	ini.	1922.54	-7643	0.6	0	1875	3965	4043	1530	5573		0.73	No
SLV 8	fin.	-1956.41	-7799	0.6	0	1875	3965	4043	1530	5573		0.71	No
SLV 15	ini.	1004.76	-4084	0.6	0	1875	3965	4043	1530	5573		1.36	Si
SLV 15	fin.	-1020.8	-4256	0.6	0	1875	3965	4043	1530	5573		1.31	Si
SLV 5	ini.	-1537.07	6259	0.6	0	1875	3965	4043	1530	5573		0.89	No
SLV 5	fin.	1534.7	6097	0.6	0	1875	3965	4043	1530	5573		0.91	No
SLV 11	ini.	2164.34	-8675	0.6	0	1875	3965	4043	1530	5573		0.64	No
SLV 11	fin.	-2196.33	-8837	0.6	0	1875	3965	4043	1530	5573		0.63	No
SLV 6	ini.	-1718.25	6988	0.6	0	1875	3965	4043	1530	5573		0.8	No
SLV 6	fin.	1718	6826	0.6	0	1875	3965	4043	1530	5573		0.82	No
SLV 10	ini.	-1657.63	6685	0.6	0	1875	3965	4043	1530	5573		0.83	No
SLV 10	fin.	1661.39	6517	0.6	0	1875	3965	4043	1530	5573		0.86	No
SLV 9	ini.	-1476.45	5956	0.6	0	1875	3965	4043	1530	5573		0.94	No
SLV 9	fin.	1478.09	5788	0.6	0	1875	3965	4043	1530	5573		0.96	No
SLV 12	ini.	1983.16	-7946	0.6	0	1875	3965	4043	1530	5573		0.7	No
SLV 12	fin.	-2013.02	-8108	0.6	0	1875	3965	4043	1530	5573		0.69	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.601	SLV 11	No
V_SLV	0.631	SLV 11	No
PF_SLU	3.985	SLU 77	Si
V_SLU	3.054	SLU 77	Si

Trave di accoppiamento 70

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-24.678	1.266	7.17	8.62	1.45	-24.678	2.066	7.17	8.62	1.45	0.8	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 51	ini.	-703.68	-2961	-0.0001401	0.0001872	0.0035	1.45		7555.42	7555.42	No	10.74	Si
SLU 51	fin.	216.64	-1639	-0.0000414	0.0001872	0.0035	1.45		7546.08	7546.08	No	34.83	Si
SLU 55	ini.	-697.54	-3083	-0.0001388	0.0001872	0.0035	1.45		7555.42	7555.42	No	10.83	Si
SLU 55	fin.	171.47	-1845	-0.0000327	0.0001872	0.0035	1.45		7546.08	7546.08	No	44.01	Si
SLU 68	ini.	-708.99	-3184	-0.0001412	0.0001872	0.0035	1.45		7555.42	7555.42	No	10.66	Si
SLU 68	fin.	160.71	-1949	-0.0000306	0.0001872	0.0035	1.45		7546.08	7546.08	No	46.95	Si
SLU 76	ini.	-699.73	-3352	-0.0001392	0.0001872	0.0035	1.45		7555.42	7555.42	No	10.8	Si
SLU 76	fin.	96.09	-2234	-0.0000182	0.0001872	0.0035	1.45		7546.08	7546.08	No	78.54	Si
SLU 70	ini.	-708.16	-3265	-0.000141	0.0001872	0.0035	1.45		7555.42	7555.42	No	10.67	Si
SLU 70	fin.	137.39	-2064	-0.0000261	0.0001872	0.0035	1.45		7546.08	7546.08	No	54.93	Si
SLU 72	ini.	-705.87	-3231	-0.0001405	0.0001872	0.0035	1.45		7555.42	7555.42	No	10.7	Si
SLU 72	fin.	141.25	-2028	-0.0000269	0.0001872	0.0035	1.45		7546.08	7546.08	No	53.42	Si
SLU 57	ini.	-696.71	-3163	-0.0001386	0.0001872	0.0035	1.45		7555.42	7555.42	No	10.84	Si
SLU 57	fin.	148.15	-1960	-0.0000282	0.0001872	0.0035	1.45		7546.08	7546.08	No	50.94	Si
SLU 78	ini.	-698.9	-3432	-0.0001391	0.0001872	0.0035	1.45		7555.42	7555.42	No	10.81	Si
SLU 78	fin.	72.76	-2349	-0.0000138	0.0001872	0.0035	1.45		7546.08	7546.08	No	103.71	Si
SLU 49	ini.	-705.96	-2995	-0.0001406	0.0001872	0.0035	1.45		7555.42	7555.42	No	10.7	Si
SLU 49	fin.	212.77	-1675	-0.0000407	0.0001872	0.0035	1.45		7546.08	7546.08	No	35.47	Si
SLU 47	ini.	-706.79	-2915	-0.0001407	0.0001872	0.0035	1.45		7555.42	7555.42	No	10.69	Si
SLU 47	fin.	236.1	-1560	-0.0000452	0.0001872	0.0035	1.45		7546.08	7546.08	No	31.96	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 76	ini.	-699.73	5298	1.45	0	3021	6344	6513	3698	9365	No	1.77	Si
SLU 76	fin.	96.09	-1057	1.45	0	3021	6344	6513	3698	9365	No	8.86	Si
SLU 72	ini.	-705.87	5260	1.45	0	3021	6344	6513	3698	9365	No	1.78	Si
SLU 72	fin.	141.25	-749	1.45	0	3021	6344	6513	3698	9365	No	12.5	Si
SLU 84	ini.	-679.07	5228	1.45	0	3021	6344	6513	3698	9365	No	1.79	Si
SLU 84	fin.	50.5	-1328	1.45	0	3021	6344	6513	3698	9365	No	7.05	Si
SLU 67	ini.	-694.58	5209	1.45	0	3021	6344	6513	3698	9365	No	1.8	Si
SLU 67	fin.	138.96	-769	1.45	0	3021	6344	6513	3698	9365	No	12.19	Si
SLU 70	ini.	-708.16	5298	1.45	0	3021	6344	6513	3698	9365	No	1.77	Si
SLU 70	fin.	137.39	-794	1.45	0	3021	6344	6513	3698	9365	No	11.8	Si
SLU 78	ini.	-698.9	5339	1.45	0	3021	6344	6513	3698	9365	No	1.75	Si
SLU 78	fin.	72.76	-1217	1.45	0	3021	6344	6513	3698	9365	No	7.7	Si
SLU 68	ini.	-708.99	5257	1.45	0	3021	6344	6513	3698	9365	No	1.78	Si
SLU 68	fin.	160.71	-634	1.45	0	3021	6344	6513	3698	9365	No	14.76	Si
SLU 77	ini.	-673.87	5208	1.45	0	3021	6344	6513	3698	9365	No	1.8	Si
SLU 77	fin.	45.93	-1352	1.45	0	3021	6344	6513	3698	9365	No	6.93	Si
SLU 80	ini.	-696.61	5300	1.45	0	3021	6344	6513	3698	9365	No	1.77	Si
SLU 80	fin.	76.63	-1172	1.45	0	3021	6344	6513	3698	9365	No	7.99	Si
SLU 75	ini.	-685.33	5249	1.45	0	3021	6344	6513	3698	9365	No	1.78	Si
SLU 75	fin.	74.33	-1192	1.45	0	3021	6344	6513	3698	9365	No	7.86	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 11	ini.	1741.03	1044	-0.0003689	0.0002807	0.0035	1.45		7650.82	7650.82		4.39	Si
SLV 11	fin.	-2195.99	-4792	-0.0004836	0.0002807	0.0035	1.45		7660.66	7660.66		3.49	Si
SLD 5	ini.	-1520.52	-3886	-0.0003158	0.0002807	0.0035	1.45		7660.66	7660.66		5.04	Si
SLD 5	fin.	1123.81	-31	-0.0002267	0.0002807	0.0035	1.45		7650.82	7650.82		6.81	Si
SLV 12	ini.	2042.7	1499	-0.0004444	0.0002807	0.0035	1.45		7650.82	7650.82		3.75	Si
SLV 12	fin.	-2495.62	-5195	-0.0005643	0.0002807	0.0035	1.45		7660.66	7660.66		3.07	Si
SLV 10	ini.	-2777.36	-5456	-0.0006435	0.0002807	0.0035	1.45		7660.66	7660.66		2.76	Si
SLV 10	fin.	2532.22	2277	-0.0005752	0.0002807	0.0035	1.45		7650.82	7650.82		3.02	Si
SLV 5	ini.	-3042.12	-6179	-0.000721	0.0002807	0.0035	1.45		7660.66	7660.66		2.52	Si
SLV 5	fin.	2672.71	2187	-0.0006145	0.0002807	0.0035	1.45		7650.82	7650.82		2.86	Si
SLV 7	ini.	1777.94	777	-0.0003779	0.0002807	0.0035	1.45		7650.82	7650.82		4.3	Si
SLV 7	fin.	-2355.13	-5285	-0.000526	0.0002807	0.0035	1.45		7660.66	7660.66		3.25	Si
SLD 9	ini.	-1536.29	-3772	-0.0003195	0.0002807	0.0035	1.45		7660.66	7660.66		4.99	Si
SLD 9	fin.	1192.01	181	-0.0002416	0.0002807	0.0035	1.45		7650.82	7650.82		6.42	Si
SLV 8	ini.	2079.61	1232	-0.0004539	0.0002807	0.0035	1.45		7650.82	7650.82		3.68	Si
SLV 8	fin.	-2654.76	-5689	-0.0006086	0.0002807	0.0035	1.45		7660.66	7660.66		2.89	Si
SLV 9	ini.	-3079.03	-5911	-0.0007321	0.0002807	0.0035	1.45		7660.66	7660.66		2.49	Si
SLV 9	fin.	2831.85	2681	-0.0006601	0.0002807	0.0035	1.45		7650.82	7650.82		2.7	Si
SLV 6	ini.	-2740.45	-5724	-0.0006329	0.0002807	0.0035	1.45		7660.66	7660.66		2.8	Si
SLV 6	fin.	2373.09	1783	-0.0005315	0.0002807	0.0035	1.45		7650.82	7650.82		3.22	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 12	ini.	2042.7	-9328	1.45	0	4531	6344	9769	3698	10875		1.17	Si
SLV 12	fin.	-2495.62	-14032	1.45	0	4531	6344	9769	3698	10875		0.78	No
SLV 10	ini.	-2777.36	15320	1.45	0	4531	6344	9769	3698	10875		0.71	No
SLV 10	fin.	2532.22	12023	1.45	0	4531	6344	9769	3698	10875		0.9	No
SLV 7	ini.	1777.94	-7754	1.45	0	4531	6344	9769	3698	10875		1.4	Si
SLV 7	fin.	-2355.13	-13310	1.45	0	4531	6344	9769	3698	10875		0.82	No
SLV 8	ini.	2079.61	-9289	1.45	0	4531	6344	9769	3698	10875		1.17	Si
SLV 8	fin.	-2654.76	-14857	1.45	0	4531	6344	9769	3698	10875		0.73	No
SLD 5	ini.	-1520.52	9049	1.45	0	4531	6344	9769	3698	10875		1.2	Si
SLD 5	fin.	1123.81	4720	1.45	0	4531	6344	9769	3698	10875		2.3	Si
SLV 5	ini.	-3042.12	16894	1.45	0	4531	6344	9769	3698	10875		0.64	No
SLV 5	fin.	2672.71	12744	1.45	0	4531	6344	9769	3698	10875		0.85	No
SLV 9	ini.	-3079.03	16855	1.45	0	4531	6344	9769	3698	10875		0.65	No
SLV 9	fin.	2831.85	13569	1.45	0	4531	6344	9769	3698	10875		0.8	No
SLV 6	ini.	-2740.45	15359	1.45	0	4531	6344	9769	3698	10875		0.71	No
SLV 6	fin.	2373.09	11198	1.45	0	4531	6344	9769	3698	10875		0.97	No
SLV 11	ini.	1741.03	-7793	1.45	0	4531	6344	9769	3698	10875		1.4	Si
SLV 11	fin.	-2195.99	-12485	1.45	0	4531	6344	9769	3698	10875		0.87	No
SLD 9	ini.	-1536.29	9033	1.45	0	4531	6344	9769	3698	10875		1.2	Si
SLD 9	fin.	1192.01	5074	1.45	0	4531	6344	9769	3698	10875		2.14	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.488	SLV 9	Si
V_SLV	0.644	SLV 5	No
PF_SLU	10.657	SLU 68	Si
V_SLU	1.754	SLU 78	Si

Trave di accoppiamento 71

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-21.813	5.951	5.07	5.97	0.9	-22.713	5.951	5.07	5.97	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-268.61	-833	-0.0001387	0.0001872	0.0035	0.9		2948.11	2948.11	No	10.98	Si
SLU 78	fin.	626	-2123	-0.0003582	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.7	Si
SLU 81	ini.	-291.74	-777	-0.0001515	0.0001872	0.0035	0.9		2948.11	2948.11	No	10.11	Si
SLU 81	fin.	637.22	-2119	-0.0003658	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.62	Si
SLU 66	ini.	-290.94	-697	-0.0001511	0.0001872	0.0035	0.9		2948.11	2948.11	No	10.13	Si
SLU 66	fin.	624.66	-2029	-0.0003573	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.71	Si
SLU 83	ini.	-284.05	-816	-0.0001473	0.0001872	0.0035	0.9		2948.11	2948.11	No	10.38	Si
SLU 83	fin.	639.32	-2148	-0.0003672	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.6	Si
SLU 79	ini.	-278.01	-816	-0.0001439	0.0001872	0.0035	0.9		2948.11	2948.11	No	10.6	Si
SLU 79	fin.	635.43	-2135	-0.0003646	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.63	Si
SLU 74	ini.	-287.08	-787	-0.000149	0.0001872	0.0035	0.9		2948.11	2948.11	No	10.27	Si
SLU 74	fin.	638.65	-2126	-0.0003668	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.61	Si
SLU 75	ini.	-276.3	-794	-0.000143	0.0001872	0.0035	0.9		2948.11	2948.11	No	10.67	Si
SLU 75	fin.	623.9	-2094	-0.0003568	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.72	Si
SLU 69	ini.	-283.25	-736	-0.0001468	0.0001872	0.0035	0.9		2948.11	2948.11	No	10.41	Si
SLU 69	fin.	626.76	-2057	-0.0003587	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.69	Si
SLU 84	ini.	-273.26	-823	-0.0001413	0.0001872	0.0035	0.9		2948.11	2948.11	No	10.79	Si
SLU 84	fin.	624.57	-2116	-0.0003572	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.71	Si
SLU 77	ini.	-279.39	-826	-0.0001447	0.0001872	0.0035	0.9		2948.11	2948.11	No	10.55	Si
SLU 77	fin.	640.75	-2154	-0.0003682	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.59	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-268.61	804	0.9	0	1875	7137	4043	2295	6338	No	7.88	Si
SLU 78	fin.	626	2489	0.9	0	1875	7137	4043	2295	6338	No	2.55	Si
SLU 81	ini.	-291.74	913	0.9	0	1875	7137	4043	2295	6338	No	6.94	Si
SLU 81	fin.	637.22	2507	0.9	0	1875	7137	4043	2295	6338	No	2.53	Si
SLU 66	ini.	-290.94	881	0.9	0	1875	7137	4043	2295	6338	No	7.2	Si
SLU 66	fin.	624.66	2488	0.9	0	1875	7137	4043	2295	6338	No	2.55	Si
SLU 75	ini.	-276.3	841	0.9	0	1875	7137	4043	2295	6338	No	7.53	Si
SLU 75	fin.	623.9	2473	0.9	0	1875	7137	4043	2295	6338	No	2.56	Si
SLU 74	ini.	-287.08	876	0.9	0	1875	7137	4043	2295	6338	No	7.23	Si
SLU 74	fin.	638.65	2532	0.9	0	1875	7137	4043	2295	6338	No	2.5	Si
SLU 83	ini.	-284.05	877	0.9	0	1875	7137	4043	2295	6338	No	7.23	Si
SLU 83	fin.	639.32	2522	0.9	0	1875	7137	4043	2295	6338	No	2.51	Si
SLU 71	ini.	-281.86	847	0.9	0	1875	7137	4043	2295	6338	No	7.49	Si
SLU 71	fin.	621.44	2475	0.9	0	1875	7137	4043	2295	6338	No	2.56	Si
SLU 69	ini.	-283.25	844	0.9	0	1875	7137	4043	2295	6338	No	7.51	Si
SLU 69	fin.	626.76	2504	0.9	0	1875	7137	4043	2295	6338	No	2.53	Si
SLU 79	ini.	-278.01	842	0.9	0	1875	7137	4043	2295	6338	No	7.53	Si
SLU 79	fin.	635.43	2519	0.9	0	1875	7137	4043	2295	6338	No	2.52	Si
SLU 77	ini.	-279.39	839	0.9	0	1875	7137	4043	2295	6338	No	7.55	Si
SLU 77	fin.	640.75	2548	0.9	0	1875	7137	4043	2295	6338	No	2.49	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-2170.41	2195	-0.0016918	0.0002807	0.0035	0.9		2973.32	2973.32		1.37	Si
SLV 16	fin.	2654.97	-5234	-0.0024708	0.0002807	0.0035	0.9		2967.55	2967.55		1.12	Si
SLD 16	ini.	-1049.82	652	-0.0006287	0.0002807	0.0035	0.9		2973.32	2973.32		2.83	Si
SLD 16	fin.	1392.49	-3075	-0.0009018	0.0002807	0.0035	0.9		2967.55	2967.55		2.13	Si
SLV 5	ini.	1363.49	-1885	-0.0008773	0.0002807	0.0035	0.9		2967.55	2967.55		2.18	Si
SLV 5	fin.	-1625.19	2755	-0.0011055	0.0002807	0.0035	0.9		2973.32	2973.32		1.83	Si
SLV 12	ini.	-1818.78	897	-0.0012937	0.0002807	0.0035	0.9		2973.32	2973.32		1.63	Si
SLV 12	fin.	2567.41	-5779	-0.0023048	0.0002807	0.0035	0.9		2967.55	2967.55		1.16	Si
SLV 11	ini.	-1457.13	369	-0.0009548	0.0002807	0.0035	0.9		2973.32	2973.32		2.04	Si
SLV 11	fin.	2178.09	-5137	-0.0017067	0.0002807	0.0035	0.9		2967.55	2967.55		1.36	Si
SLD 12	ini.	-881.17	91	-0.0005079	0.0002807	0.0035	0.9		2973.32	2973.32		3.37	Si
SLD 12	fin.	1327.6	-3245	-0.0008475	0.0002807	0.0035	0.9		2967.55	2967.55		2.24	Si
SLV 15	ini.	-1633.25	1411	-0.001113	0.0002807	0.0035	0.9		2973.32	2973.32		1.82	Si
SLV 15	fin.	2076.71	-4280	-0.0015811	0.0002807	0.0035	0.9		2967.55	2967.55		1.43	Si
SLV 14	ini.	-1571.69	1906	-0.0010563	0.0002807	0.0035	0.9		2973.32	2973.32		1.89	Si
SLV 14	fin.	1775.93	-3274	-0.0012538	0.0002807	0.0035	0.9		2967.55	2967.55		1.67	Si
SLV 1	ini.	1715.12	-3183	-0.0011938	0.0002807	0.0035	0.9		2967.55	2967.55		1.73	Si
SLV 1	fin.	-1712.74	2210	-0.0011885	0.0002807	0.0035	0.9		2973.32	2973.32		1.74	Si
SLV 8	ini.	-993.88	-394	-0.0005878	0.0002807	0.0035	0.9		2973.32	2973.32		2.99	Si
SLV 8	fin.	1694.29	-4420	-0.0011737	0.0002807	0.0035	0.9		2967.55	2967.55		1.75	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 16	ini.	-1049.82	3797	0.9	0	2813	7137	6064	2295	8359		2.2	Si
SLD 16	fin.	1392.49	5200	0.9	0	2813	7137	6064	2295	8359		1.61	Si
SLV 11	ini.	-1457.13	4700	0.9	0	2813	7137	6064	2295	8359		1.78	Si
SLV 11	fin.	2178.09	8345	0.9	0	2813	7137	6064	2295	8359		1	Si
SLV 12	ini.	-1818.78	6022	0.9	0	2813	7137	6064	2295	8359		1.39	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 12	fin.	2567.41	9805	0.9	0	2813	7137	6064	2295	8359		0.85	No
SLV 5	ini.	1363.49	-4604	0.9	0	2813	7137	6064	2295	8359		1.82	Si
SLV 5	fin.	-1625.19	-6084	0.9	0	2813	7137	6064	2295	8359		1.37	Si
SLV 16	ini.	-2170.41	7994	0.9	0	2813	7137	6064	2295	8359		1.05	Si
SLV 16	fin.	2654.97	9789	0.9	0	2813	7137	6064	2295	8359		0.85	No
SLV 14	ini.	-1571.69	6174	0.9	0	2813	7137	6064	2295	8359		1.35	Si
SLV 14	fin.	1775.93	6386	0.9	0	2813	7137	6064	2295	8359		1.31	Si
SLV 15	ini.	-1633.25	6031	0.9	0	2813	7137	6064	2295	8359		1.39	Si
SLV 15	fin.	2076.71	7621	0.9	0	2813	7137	6064	2295	8359		1.1	Si
SLV 7	ini.	-632.23	1465	0.9	0	2813	7137	6064	2295	8359		5.71	Si
SLV 7	fin.	1304.97	5260	0.9	0	2813	7137	6064	2295	8359		1.59	Si
SLV 1	ini.	1715.12	-6576	0.9	0	2813	7137	6064	2295	8359		1.27	Si
SLV 1	fin.	-1712.74	-6068	0.9	0	2813	7137	6064	2295	8359		1.38	Si
SLV 8	ini.	-993.88	2786	0.9	0	2813	7137	6064	2295	8359		3	Si
SLV 8	fin.	1694.29	6719	0.9	0	2813	7137	6064	2295	8359		1.24	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.118	SLV 16	Si
V_SLV	0.853	SLV 12	No
PF_SLU	4.592	SLU 77	Si
V_SLU	2.487	SLU 77	Si

Trave di accoppiamento 72

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-21.813	5.951	7.77	8.62	0.85	-22.713	5.951	7.77	8.62	0.85	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 84	ini.	-558.84	-1692	-0.0003568	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.73	Si
SLU 84	fin.	23.69	-452	-0.000013	0.0001872	0.0035	0.85		2640.4	2640.4	No	111.44	Si
SLU 69	ini.	-561.46	-1618	-0.0003588	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.71	Si
SLU 69	fin.	56.19	-326	-0.0000311	0.0001872	0.0035	0.85		2640.4	2640.4	No	46.99	Si
SLU 66	ini.	-558.11	-1590	-0.0003562	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.74	Si
SLU 66	fin.	62.44	-295	-0.0000346	0.0001872	0.0035	0.85		2640.4	2640.4	No	42.29	Si
SLU 79	ini.	-570.3	-1700	-0.0003654	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.64	Si
SLU 79	fin.	35.13	-419	-0.0000194	0.0001872	0.0035	0.85		2640.4	2640.4	No	75.17	Si
SLU 83	ini.	-572.38	-1714	-0.000367	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.62	Si
SLU 83	fin.	31.74	-432	-0.0000175	0.0001872	0.0035	0.85		2640.4	2640.4	No	83.18	Si
SLU 81	ini.	-569.03	-1686	-0.0003645	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.65	Si
SLU 81	fin.	37.99	-401	-0.000021	0.0001872	0.0035	0.85		2640.4	2640.4	No	69.51	Si
SLU 71	ini.	-557.63	-1600	-0.0003559	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.74	Si
SLU 71	fin.	57.59	-316	-0.0000319	0.0001872	0.0035	0.85		2640.4	2640.4	No	45.85	Si
SLU 77	ini.	-574.13	-1718	-0.0003683	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.61	Si
SLU 77	fin.	33.73	-429	-0.0000186	0.0001872	0.0035	0.85		2640.4	2640.4	No	78.28	Si
SLU 74	ini.	-570.78	-1689	-0.0003658	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.64	Si
SLU 74	fin.	39.98	-398	-0.0000221	0.0001872	0.0035	0.85		2640.4	2640.4	No	66.05	Si
SLU 78	ini.	-560.59	-1695	-0.0003581	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.72	Si
SLU 78	fin.	25.68	-449	-0.0000141	0.0001872	0.0035	0.85		2640.4	2640.4	No	102.81	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-560.59	3071	0.85	0	1771	6740	3818	2168	5985	No	1.95	Si
SLU 78	fin.	25.68	-898	0.85	0	1771	6740	3818	2168	5985	No	6.67	Si
SLU 79	ini.	-570.3	3095	0.85	0	1771	6740	3818	2168	5985	No	1.93	Si
SLU 79	fin.	35.13	-844	0.85	0	1771	6740	3818	2168	5985	No	7.09	Si
SLU 84	ini.	-558.84	3094	0.85	0	1771	6740	3818	2168	5985	No	1.93	Si
SLU 84	fin.	23.69	-941	0.85	0	1771	6740	3818	2168	5985	No	6.36	Si
SLU 81	ini.	-569.03	3123	0.85	0	1771	6740	3818	2168	5985	No	1.92	Si
SLU 81	fin.	37.99	-868	0.85	0	1771	6740	3818	2168	5985	No	6.9	Si
SLU 77	ini.	-574.13	3121	0.85	0	1771	6740	3818	2168	5985	No	1.92	Si
SLU 77	fin.	33.73	-861	0.85	0	1771	6740	3818	2168	5985	No	6.95	Si
SLU 80	ini.	-556.76	3046	0.85	0	1771	6740	3818	2168	5985	No	1.97	Si
SLU 80	fin.	27.08	-881	0.85	0	1771	6740	3818	2168	5985	No	6.8	Si
SLU 75	ini.	-557.24	3050	0.85	0	1771	6740	3818	2168	5985	No	1.96	Si
SLU 75	fin.	31.93	-861	0.85	0	1771	6740	3818	2168	5985	No	6.95	Si
SLU 82	ini.	-555.5	3073	0.85	0	1771	6740	3818	2168	5985	No	1.95	Si
SLU 82	fin.	29.94	-904	0.85	0	1771	6740	3818	2168	5985	No	6.62	Si
SLU 83	ini.	-572.38	3144	0.85	0	1771	6740	3818	2168	5985	No	1.9	Si
SLU 83	fin.	31.74	-904	0.85	0	1771	6740	3818	2168	5985	No	6.62	Si
SLU 74	ini.	-570.78	3100	0.85	0	1771	6740	3818	2168	5985	No	1.93	Si
SLU 74	fin.	39.98	-824	0.85	0	1771	6740	3818	2168	5985	No	7.26	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-1594.99	-2645	-0.0012585	0.0002807	0.0035	0.85		2647.52	2647.52		1.66	Si
SLV 14	fin.	899.63	2072	-0.0005981	0.0002807	0.0035	0.85		2641.96	2641.96		2.94	Si
SLV 15	ini.	-1864.02	-3333	-0.0015863	0.0002807	0.0035	0.85		2647.52	2647.52		1.42	Si
SLV 15	fin.	974.28	2114	-0.00066	0.0002807	0.0035	0.85		2641.96	2641.96		2.71	Si
SLD 12	ini.	-1214.35	-2490	-0.0008708	0.0002807	0.0035	0.85		2647.52	2647.52		2.18	Si
SLD 12	fin.	520.56	927	-0.0003144	0.0002807	0.0035	0.85		2641.96	2641.96		5.08	Si
SLV 12	ini.	-2364.41	-4402	-0.0024409	0.0002807	0.0035	0.85		2647.52	2647.52		1.12	Si
SLV 12	fin.	1193.21	2532	-0.0008534	0.0002807	0.0035	0.85		2641.96	2641.96		2.21	Si
SLD 16	ini.	-1261.58	-2407	-0.0009153	0.0002807	0.0035	0.85		2647.52	2647.52		2.1	Si
SLD 16	fin.	600.91	1199	-0.0003702	0.0002807	0.0035	0.85		2641.96	2641.96		4.4	Si
SLV 8	ini.	-1579.11	-3316	-0.0012408	0.0002807	0.0035	0.85		2647.52	2647.52		1.68	Si
SLV 8	fin.	662.8	1159	-0.0004148	0.0002807	0.0035	0.85		2641.96	2641.96		3.99	Si
SLV 16	ini.	-2414.47	-4098	-0.0025524	0.0002807	0.0035	0.85		2647.52	2647.52		1.1	Si
SLV 16	fin.	1348.98	3097	-0.0010026	0.0002807	0.0035	0.85		2641.96	2641.96		1.96	Si
SLV 1	ini.	1573.12	1739	-0.0012376	0.0002807	0.0035	0.85		2641.96	2641.96		1.68	Si
SLV 1	fin.	-1243.09	-3488	-0.0008978	0.0002807	0.0035	0.85		2647.52	2647.52		2.13	Si
SLV 11	ini.	-1993.81	-3887	-0.0017696	0.0002807	0.0035	0.85		2647.52	2647.52		1.33	Si
SLV 11	fin.	940.93	1870	-0.0006321	0.0002807	0.0035	0.85		2641.96	2641.96		2.81	Si
SLV 5	ini.	1523.06	2042	-0.0011828	0.0002807	0.0035	0.85		2641.96	2641.96		1.73	Si
SLV 5	fin.	-1087.31	-2922	-0.0007558	0.0002807	0.0035	0.85		2647.52	2647.52		2.43	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 16	ini.	-1261.58	5162	0.85	0	2656	6740	5727	2168	7894		1.53	Si
SLD 16	fin.	600.91	2103	0.85	0	2656	6740	5727	2168	7894		3.75	Si
SLV 5	ini.	1523.06	-4831	0.85	0	2656	6740	5727	2168	7894		1.63	Si
SLV 5	fin.	-1087.31	-5664	0.85	0	2656	6740	5727	2168	7894		1.39	Si
SLV 1	ini.	1573.12	-4774	0.85	0	2656	6740	5727	2168	7894		1.65	Si
SLV 1	fin.	-1243.09	-6409	0.85	0	2656	6740	5727	2168	7894		1.23	Si
SLV 14	ini.	-1594.99	6184	0.85	0	2656	6740	5727	2168	7894		1.28	Si
SLV 14	fin.	899.63	3495	0.85	0	2656	6740	5727	2168	7894		2.26	Si
SLV 7	ini.	-1208.51	5241	0.85	0	2656	6740	5727	2168	7894		1.51	Si
SLV 7	fin.	410.52	1204	0.85	0	2656	6740	5727	2168	7894		6.56	Si
SLV 15	ini.	-1864.02	7236	0.85	0	2656	6740	5727	2168	7894		1.09	Si
SLV 15	fin.	974.28	3854	0.85	0	2656	6740	5727	2168	7894		2.05	Si
SLV 12	ini.	-2364.41	9263	0.85	0	2656	6740	5727	2168	7894		0.85	No
SLV 12	fin.	1193.21	4810	0.85	0	2656	6740	5727	2168	7894		1.64	Si
SLV 16	ini.	-2414.47	9205	0.85	0	2656	6740	5727	2168	7894		0.86	No
SLV 16	fin.	1348.98	5555	0.85	0	2656	6740	5727	2168	7894		1.42	Si
SLV 11	ini.	-1993.81	7937	0.85	0	2656	6740	5727	2168	7894		0.99	No
SLV 11	fin.	940.93	3665	0.85	0	2656	6740	5727	2168	7894		2.15	Si
SLV 8	ini.	-1579.11	6566	0.85	0	2656	6740	5727	2168	7894		1.2	Si
SLV 8	fin.	662.8	2349	0.85	0	2656	6740	5727	2168	7894		3.36	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.097	SLV 16	Si
V_SLV	0.852	SLV 12	No
PF_SLU	4.608	SLU 77	Si
V_SLU	1.904	SLU 83	Si

Trave di accoppiamento 73

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-21.593	-3.359	5.07	5.97	0.9	-22.493	-3.359	5.07	5.97	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 72	ini.	-44.35	-1361	-0.0000218	0.0001872	0.0035	0.9		2948.11	2948.11	No	66.48	Si
SLU 72	fin.	567.95	-2271	-0.0003196	0.0001872	0.0035	0.9		2942.43	2942.43	No	5.18	Si
SLU 69	ini.	-35.37	-1386	-0.0000174	0.0001872	0.0035	0.9		2948.11	2948.11	No	83.35	Si
SLU 69	fin.	561.37	-2272	-0.0003153	0.0001872	0.0035	0.9		2942.43	2942.43	No	5.24	Si
SLU 68	ini.	-52.72	-1325	-0.000026	0.0001872	0.0035	0.9		2948.11	2948.11	No	55.92	Si
SLU 68	fin.	568.73	-2249	-0.0003201	0.0001872	0.0035	0.9		2942.43	2942.43	No	5.17	Si
SLU 78	ini.	2	-1560	-0.000001	0.0001872	0.0035	0.9		2942.43	2942.43	No	1474.04	Si
SLU 78	fin.	563.24	-2387	-0.0003165	0.0001872	0.0035	0.9		2942.43	2942.43	No	5.22	Si
SLU 67	ini.	-45.8	-1347	-0.0000226	0.0001872	0.0035	0.9		2948.11	2948.11	No	64.37	Si
SLU 67	fin.	565.16	-2256	-0.0003177	0.0001872	0.0035	0.9		2942.43	2942.43	No	5.21	Si
SLU 76	ini.	-9.19	-1506	-0.0000045	0.0001872	0.0035	0.9		2948.11	2948.11	No	320.9	Si
SLU 76	fin.	561.58	-2348	-0.0003154	0.0001872	0.0035	0.9		2942.43	2942.43	No	5.24	Si
SLU 71	ini.	-38.18	-1368	-0.0000188	0.0001872	0.0035	0.9		2948.11	2948.11	No	77.22	Si
SLU 71	fin.	558.93	-2255	-0.0003137	0.0001872	0.0035	0.9		2942.43	2942.43	No	5.26	Si
SLU 80	ini.	-0.81	-1543	-0.0000004	0.0001872	0.0035	0.9		2948.11	2948.11	No	3626.85	Si
SLU 80	fin.	560.8	-2370	-0.0003149	0.0001872	0.0035	0.9		2942.43	2942.43	No	5.25	Si
SLU 65	ini.	-56.98	-1293	-0.0000281	0.0001872	0.0035	0.9		2948.11	2948.11	No	51.74	Si
SLU 65	fin.	563.5	-2217	-0.0003167	0.0001872	0.0035	0.9		2942.43	2942.43	No	5.22	Si
SLU 70	ini.	-41.54	-1379	-0.0000204	0.0001872	0.0035	0.9		2948.11	2948.11	No	70.97	Si
SLU 70	fin.	570.39	-2288	-0.0003212	0.0001872	0.0035	0.9		2942.43	2942.43	No	5.16	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 70	ini.	-41.54	485	0.9	0	1875	7137	4043	2295	6338	No	13.07	Si
SLU 70	fin.	570.39	1963	0.9	0	1875	7137	4043	2295	6338	No	3.23	Si
SLU 51	ini.	-80.7	578	0.9	0	1875	7137	4043	2295	6338	No	10.96	Si
SLU 51	fin.	552.41	1918	0.9	0	1875	7137	4043	2295	6338	No	3.3	Si
SLU 49	ini.	-77.89	568	0.9	0	1875	7137	4043	2295	6338	No	11.16	Si
SLU 49	fin.	554.85	1930	0.9	0	1875	7137	4043	2295	6338	No	3.28	Si
SLU 68	ini.	-52.72	525	0.9	0	1875	7137	4043	2295	6338	No	12.07	Si
SLU 68	fin.	568.73	1949	0.9	0	1875	7137	4043	2295	6338	No	3.25	Si
SLU 71	ini.	-38.18	474	0.9	0	1875	7137	4043	2295	6338	No	13.38	Si
SLU 71	fin.	558.93	1916	0.9	0	1875	7137	4043	2295	6338	No	3.31	Si
SLU 65	ini.	-56.98	541	0.9	0	1875	7137	4043	2295	6338	No	11.72	Si
SLU 65	fin.	563.5	1925	0.9	0	1875	7137	4043	2295	6338	No	3.29	Si
SLU 69	ini.	-35.37	463	0.9	0	1875	7137	4043	2295	6338	No	13.68	Si
SLU 69	fin.	561.37	1928	0.9	0	1875	7137	4043	2295	6338	No	3.29	Si
SLU 47	ini.	-89.07	608	0.9	0	1875	7137	4043	2295	6338	No	10.42	Si
SLU 47	fin.	553.19	1917	0.9	0	1875	7137	4043	2295	6338	No	3.31	Si
SLU 67	ini.	-45.8	500	0.9	0	1875	7137	4043	2295	6338	No	12.66	Si
SLU 67	fin.	565.16	1938	0.9	0	1875	7137	4043	2295	6338	No	3.27	Si
SLU 72	ini.	-44.35	495	0.9	0	1875	7137	4043	2295	6338	No	12.8	Si
SLU 72	fin.	567.95	1951	0.9	0	1875	7137	4043	2295	6338	No	3.25	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	1463.05	-3066	-0.0009623	0.0002807	0.0035	0.9		2967.55	2967.55		2.03	Si
SLV 3	fin.	-1318.99	1250	-0.0008384	0.0002807	0.0035	0.9		2973.32	2973.32		2.25	Si
SLV 13	ini.	-2035.46	1737	-0.0015283	0.0002807	0.0035	0.9		2973.32	2973.32		1.46	Si
SLV 13	fin.	2741.42	-5616	-0.0026482	0.0002807	0.0035	0.9		2967.55	2967.55		1.08	Si
SLV 5	ini.	-684.14	-951	-0.000377	0.0002807	0.0035	0.9		2973.32	2973.32		4.35	Si
SLV 5	fin.	1506.62	-4311	-0.0010005	0.0002807	0.0035	0.9		2967.55	2967.55		1.97	Si
SLV 15	ini.	-1481.73	1436	-0.0009762	0.0002807	0.0035	0.9		2973.32	2973.32		2.01	Si
SLV 15	fin.	1915.3	-3786	-0.0013984	0.0002807	0.0035	0.9		2967.55	2967.55		1.55	Si
SLV 4	ini.	1972.51	-3758	-0.0014611	0.0002807	0.0035	0.9		2967.55	2967.55		1.5	Si
SLV 4	fin.	-1908.54	2265	-0.0013874	0.0002807	0.0035	0.9		2973.32	2973.32		1.56	Si
SLV 8	ini.	1504.63	-2421	-0.0009988	0.0002807	0.0035	0.9		2967.55	2967.55		1.97	Si
SLV 8	fin.	-1644.03	2470	-0.0011231	0.0002807	0.0035	0.9		2973.32	2973.32		1.81	Si
SLV 14	ini.	-1525.99	1046	-0.0010153	0.0002807	0.0035	0.9		2973.32	2973.32		1.95	Si
SLV 14	fin.	2151.87	-4601	-0.0016733	0.0002807	0.0035	0.9		2967.55	2967.55		1.38	Si
SLV 9	ini.	-1567.57	400	-0.0010526	0.0002807	0.0035	0.9		2973.32	2973.32		1.9	Si
SLV 9	fin.	2476.9	-5822	-0.0021464	0.0002807	0.0035	0.9		2967.55	2967.55		1.2	Si
SLV 2	ini.	1418.78	-3456	-0.0009241	0.0002807	0.0035	0.9		2967.55	2967.55		2.09	Si
SLV 2	fin.	-1082.42	435	-0.000653	0.0002807	0.0035	0.9		2973.32	2973.32		2.75	Si
SLV 10	ini.	-1224.57	-65	-0.0007624	0.0002807	0.0035	0.9		2973.32	2973.32		2.43	Si
SLV 10	fin.	2079.98	-5138	-0.001585	0.0002807	0.0035	0.9		2967.55	2967.55		1.43	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-2035.46	7863	0.9	0	2813	7137	6064	2295	8359		1.06	Si
SLV 13	fin.	2741.42	9724	0.9	0	2813	7137	6064	2295	8359		0.86	No
SLV 10	ini.	-1224.57	4811	0.9	0	2813	7137	6064	2295	8359		1.74	Si
SLV 10	fin.	2079.98	7764	0.9	0	2813	7137	6064	2295	8359		1.08	Si
SLV 4	ini.	1972.51	-7114	0.9	0	2813	7137	6064	2295	8359		1.17	Si
SLV 4	fin.	-1908.54	-6897	0.9	0	2813	7137	6064	2295	8359		1.21	Si
SLV 8	ini.	1504.63	-5333	0.9	0	2813	7137	6064	2295	8359		1.57	Si
SLV 8	fin.	-1644.03	-6380	0.9	0	2813	7137	6064	2295	8359		1.31	Si
SLV 9	ini.	-1567.57	6081	0.9	0	2813	7137	6064	2295	8359		1.37	Si
SLV 9	fin.	2476.9	9207	0.9	0	2813	7137	6064	2295	8359		0.91	No
SLV 2	ini.	1418.78	-5065	0.9	0	2813	7137	6064	2295	8359		1.65	Si
SLV 2	fin.	-1082.42	-3666	0.9	0	2813	7137	6064	2295	8359		2.28	Si
SLV 15	ini.	-1481.73	5813	0.9	0	2813	7137	6064	2295	8359		1.44	Si
SLV 15	fin.	1915.3	6493	0.9	0	2813	7137	6064	2295	8359		1.29	Si
SLV 14	ini.	-1525.99	5976	0.9	0	2813	7137	6064	2295	8359		1.4	Si
SLV 14	fin.	2151.87	7581	0.9	0	2813	7137	6064	2295	8359		1.1	Si
SLV 3	ini.	1463.05	-5227	0.9	0	2813	7137	6064	2295	8359		1.6	Si
SLV 3	fin.	-1318.99	-4754	0.9	0	2813	7137	6064	2295	8359		1.76	Si
SLV 5	ini.	-684.14	2769	0.9	0	2813	7137	6064	2295	8359		3.02	Si
SLV 5	fin.	1506.62	5833	0.9	0	2813	7137	6064	2295	8359		1.43	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.082	SLV 13	Si
V_SLV	0.86	SLV 13	No
PF_SLU	5.159	SLU 70	Si
V_SLU	3.228	SLU 70	Si

Trave di accoppiamento 74

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-21.593	-3.359	7.77	8.62	0.85	-22.493	-3.359	7.77	8.62	0.85	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-726.25	-2261	-0.000488	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.64	Si
SLU 77	fin.	-74.11	-891	-0.0000411	0.0001872	0.0035	0.85		2645.85	2645.85	No	35.7	Si
SLU 70	ini.	-728.03	-2138	-0.0004894	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.63	Si
SLU 70	fin.	-27.06	-660	-0.0000149	0.0001872	0.0035	0.85		2645.85	2645.85	No	97.78	Si
SLU 84	ini.	-730.96	-2280	-0.0004918	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.62	Si
SLU 84	fin.	-77.23	-909	-0.0000429	0.0001872	0.0035	0.85		2645.85	2645.85	No	34.26	Si
SLU 76	ini.	-734.54	-2231	-0.0004948	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.6	Si
SLU 76	fin.	-55.57	-805	-0.0000307	0.0001872	0.0035	0.85		2645.85	2645.85	No	47.61	Si
SLU 78	ini.	-738.06	-2278	-0.0004976	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.58	Si
SLU 78	fin.	-67.81	-868	-0.0000376	0.0001872	0.0035	0.85		2645.85	2645.85	No	39.02	Si
SLU 72	ini.	-724.27	-2118	-0.0004864	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.65	Si
SLU 72	fin.	-24.1	-643	-0.0000132	0.0001872	0.0035	0.85		2645.85	2645.85	No	109.77	Si
SLU 80	ini.	-734.31	-2258	-0.0004946	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.6	Si
SLU 80	fin.	-64.86	-851	-0.0000359	0.0001872	0.0035	0.85		2645.85	2645.85	No	40.79	Si
SLU 75	ini.	-730.42	-2240	-0.0004914	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.62	Si
SLU 75	fin.	-62.72	-837	-0.0000347	0.0001872	0.0035	0.85		2645.85	2645.85	No	42.18	Si
SLU 68	ini.	-724.51	-2091	-0.0004866	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.65	Si
SLU 68	fin.	-14.82	-597	-0.0000081	0.0001872	0.0035	0.85		2645.85	2645.85	No	178.56	Si
SLU 73	ini.	-726.9	-2193	-0.0004885	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.64	Si
SLU 73	fin.	-50.48	-774	-0.0000279	0.0001872	0.0035	0.85		2645.85	2645.85	No	52.41	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-730.42	3208	0.85	0	1771	6740	3818	2168	5985	No	1.87	Si
SLU 75	fin.	-62.72	-1277	0.85	0	1771	6740	3818	2168	5985	No	4.69	Si
SLU 77	ini.	-726.25	3208	0.85	0	1771	6740	3818	2168	5985	No	1.87	Si
SLU 77	fin.	-74.11	-1361	0.85	0	1771	6740	3818	2168	5985	No	4.4	Si
SLU 76	ini.	-734.54	3216	0.85	0	1771	6740	3818	2168	5985	No	1.86	Si
SLU 76	fin.	-55.57	-1227	0.85	0	1771	6740	3818	2168	5985	No	4.88	Si
SLU 83	ini.	-719.14	3196	0.85	0	1771	6740	3818	2168	5985	No	1.87	Si
SLU 83	fin.	-83.53	-1437	0.85	0	1771	6740	3818	2168	5985	No	4.16	Si
SLU 82	ini.	-723.32	3196	0.85	0	1771	6740	3818	2168	5985	No	1.87	Si
SLU 82	fin.	-72.14	-1353	0.85	0	1771	6740	3818	2168	5985	No	4.42	Si
SLU 79	ini.	-722.49	3189	0.85	0	1771	6740	3818	2168	5985	No	1.88	Si
SLU 79	fin.	-71.15	-1337	0.85	0	1771	6740	3818	2168	5985	No	4.48	Si
SLU 84	ini.	-730.96	3235	0.85	0	1771	6740	3818	2168	5985	No	1.85	Si
SLU 84	fin.	-77.23	-1399	0.85	0	1771	6740	3818	2168	5985	No	4.28	Si
SLU 73	ini.	-726.9	3177	0.85	0	1771	6740	3818	2168	5985	No	1.88	Si
SLU 73	fin.	-50.48	-1181	0.85	0	1771	6740	3818	2168	5985	No	5.07	Si
SLU 80	ini.	-734.31	3228	0.85	0	1771	6740	3818	2168	5985	No	1.85	Si
SLU 80	fin.	-64.86	-1299	0.85	0	1771	6740	3818	2168	5985	No	4.61	Si
SLU 78	ini.	-738.06	3247	0.85	0	1771	6740	3818	2168	5985	No	1.84	Si
SLU 78	fin.	-67.81	-1323	0.85	0	1771	6740	3818	2168	5985	No	4.52	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-2754.33	-4416	-0.0034373	0.0002807	0.0035	0.85		2647.52	2647.52		0.96	No
SLV 13	fin.	1292.99	4173	-0.0009478	0.0002807	0.0035	0.85		2641.96	2641.96		2.04	Si
SLD 13	ini.	-1470.01	-2757	-0.0011232	0.0002807	0.0035	0.85		2647.52	2647.52		1.8	Si
SLD 13	fin.	536.89	1495	-0.0003255	0.0002807	0.0035	0.85		2641.96	2641.96		4.92	Si
SLV 15	ini.	-1900.19	-2998	-0.0016354	0.0002807	0.0035	0.85		2647.52	2647.52		1.39	Si
SLV 15	fin.	901.73	2863	-0.0005999	0.0002807	0.0035	0.85		2641.96	2641.96		2.93	Si
SLV 14	ini.	-2169.83	-3667	-0.0020572	0.0002807	0.0035	0.85		2647.52	2647.52		1.22	Si
SLV 14	fin.	948.86	2948	-0.0006387	0.0002807	0.0035	0.85		2641.96	2641.96		2.78	Si
SLV 8	ini.	1540.31	1598	-0.0012015	0.0002807	0.0035	0.85		2641.96	2641.96		1.72	Si
SLV 8	fin.	-1069.98	-4087	-0.0007405	0.0002807	0.0035	0.85		2647.52	2647.52		2.47	Si
SLD 9	ini.	-1378.23	-2833	-0.0010291	0.0002807	0.0035	0.85		2647.52	2647.52		1.92	Si
SLD 9	fin.	413.61	1011	-0.0002438	0.0002807	0.0035	0.85		2641.96	2641.96		6.39	Si
SLV 10	ini.	-2209.13	-4197	-0.0021288	0.0002807	0.0035	0.85		2647.52	2647.52		1.2	Si
SLV 10	fin.	800.68	2309	-0.0005191	0.0002807	0.0035	0.85		2641.96	2641.96		3.3	Si
SLV 9	ini.	-2602.66	-4702	-0.003025	0.0002807	0.0035	0.85		2647.52	2647.52		1.02	Si
SLV 9	fin.	1032.37	3134	-0.0007096	0.0002807	0.0035	0.85		2641.96	2641.96		2.56	Si
SLV 5	ini.	-1700.36	-3633	-0.0013802	0.0002807	0.0035	0.85		2647.52	2647.52		1.56	Si
SLV 5	fin.	465.92	1105	-0.0002778	0.0002807	0.0035	0.85		2641.96	2641.96		5.67	Si
SLV 4	ini.	1691.98	1312	-0.0013741	0.0002807	0.0035	0.85		2641.96	2641.96		1.56	Si
SLV 4	fin.	-1330.59	-5126	-0.0009819	0.0002807	0.0035	0.85		2647.52	2647.52		1.99	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-1900.19	6784	0.85	0	2656	6740	5727	2168	7894		1.16	Si
SLV 15	fin.	901.73	4577	0.85	0	2656	6740	5727	2168	7894		1.72	Si
SLV 2	ini.	837.84	-2193	0.85	0	2656	6740	5727	2168	7894		3.6	Si
SLV 2	fin.	-939.33	-6011	0.85	0	2656	6740	5727	2168	7894		1.31	Si
SLV 5	ini.	-1700.36	6406	0.85	0	2656	6740	5727	2168	7894		1.23	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	fin.	465.92	2018	0.85	0	2656	6740	5727	2168	7894		3.91	Si
SLV 14	ini.	-2169.83	7783	0.85	0	2656	6740	5727	2168	7894		1.01	Si
SLV 14	fin.	948.86	4836	0.85	0	2656	6740	5727	2168	7894		1.63	Si
SLV 9	ini.	-2602.66	9399	0.85	0	2656	6740	5727	2168	7894		0.84	No
SLV 9	fin.	1032.37	5272	0.85	0	2656	6740	5727	2168	7894		1.5	Si
SLV 10	ini.	-2209.13	8074	0.85	0	2656	6740	5727	2168	7894		0.98	No
SLV 10	fin.	800.68	3951	0.85	0	2656	6740	5727	2168	7894		2	Si
SLV 4	ini.	1691.98	-5159	0.85	0	2656	6740	5727	2168	7894		1.53	Si
SLV 4	fin.	-1330.59	-8232	0.85	0	2656	6740	5727	2168	7894		0.96	No
SLV 13	ini.	-2754.33	9751	0.85	0	2656	6740	5727	2168	7894		0.81	No
SLV 13	fin.	1292.99	6798	0.85	0	2656	6740	5727	2168	7894		1.16	Si
SLV 8	ini.	1540.31	-4807	0.85	0	2656	6740	5727	2168	7894		1.64	Si
SLV 8	fin.	-1069.98	-6706	0.85	0	2656	6740	5727	2168	7894		1.18	Si
SLV 3	ini.	1107.48	-3191	0.85	0	2656	6740	5727	2168	7894		2.47	Si
SLV 3	fin.	-986.46	-6270	0.85	0	2656	6740	5727	2168	7894		1.26	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.961	SLV 13	No
V_SLV	0.81	SLV 13	No
PF_SLU	3.585	SLU 78	Si
V_SLU	1.843	SLU 78	Si

Trave di accoppiamento 75

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-18.868	-3.359	5.07	7.07	2	-19.368	-3.359	5.07	7.07	2	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-1588.07	-4021	-0.0001682	0.0001872	0.0035	2		14219.44	14219.44	No	8.95	Si
SLU 77	fin.	1658.17	-4021	-0.0001765	0.0001872	0.0035	2		14206.68	14206.68	No	8.57	Si
SLU 76	ini.	-1595.8	-3996	-0.0001691	0.0001872	0.0035	2		14219.44	14219.44	No	8.91	Si
SLU 76	fin.	1653.1	-3996	-0.0001759	0.0001872	0.0035	2		14206.68	14206.68	No	8.59	Si
SLU 75	ini.	-1588.28	-3998	-0.0001683	0.0001872	0.0035	2		14219.44	14219.44	No	8.95	Si
SLU 75	fin.	1652.3	-3998	-0.0001758	0.0001872	0.0035	2		14206.68	14206.68	No	8.6	Si
SLU 80	ini.	-1605.01	-4040	-0.0001702	0.0001872	0.0035	2		14219.44	14219.44	No	8.86	Si
SLU 80	fin.	1662.79	-4040	-0.000177	0.0001872	0.0035	2		14206.68	14206.68	No	8.54	Si
SLU 81	ini.	-1543.01	-3897	-0.0001631	0.0001872	0.0035	2		14219.44	14219.44	No	9.22	Si
SLU 81	fin.	1670.37	-3897	-0.0001779	0.0001872	0.0035	2		14206.68	14206.68	No	8.51	Si
SLU 79	ini.	-1576.74	-3978	-0.0001669	0.0001872	0.0035	2		14219.44	14219.44	No	9.02	Si
SLU 79	fin.	1651.35	-3978	-0.0001757	0.0001872	0.0035	2		14206.68	14206.68	No	8.6	Si
SLU 78	ini.	-1616.34	-4082	-0.0001715	0.0001872	0.0035	2		14219.44	14219.44	No	8.8	Si
SLU 78	fin.	1669.62	-4082	-0.0001778	0.0001872	0.0035	2		14206.68	14206.68	No	8.51	Si
SLU 83	ini.	-1571.07	-3981	-0.0001663	0.0001872	0.0035	2		14219.44	14219.44	No	9.05	Si
SLU 83	fin.	1687.69	-3981	-0.0001799	0.0001872	0.0035	2		14206.68	14206.68	No	8.42	Si
SLU 84	ini.	-1599.35	-4043	-0.0001695	0.0001872	0.0035	2		14219.44	14219.44	No	8.89	Si
SLU 84	fin.	1699.14	-4043	-0.0001812	0.0001872	0.0035	2		14206.68	14206.68	No	8.36	Si
SLU 82	ini.	-1571.28	-3958	-0.0001663	0.0001872	0.0035	2		14219.44	14219.44	No	9.05	Si
SLU 82	fin.	1681.81	-3958	-0.0001792	0.0001872	0.0035	2		14206.68	14206.68	No	8.45	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-1588.07	6807	2	0	4167	3965	8983	5100	8131	No	1.19	Si
SLU 77	fin.	1658.17	6084	2	0	4167	3965	8983	5100	8131	No	1.34	Si
SLU 76	ini.	-1595.8	6812	2	0	4167	3965	8983	5100	8131	No	1.19	Si
SLU 76	fin.	1653.1	6089	2	0	4167	3965	8983	5100	8131	No	1.34	Si
SLU 83	ini.	-1571.07	6832	2	0	4167	3965	8983	5100	8131	No	1.19	Si
SLU 83	fin.	1687.69	6109	2	0	4167	3965	8983	5100	8131	No	1.33	Si
SLU 79	ini.	-1576.74	6771	2	0	4167	3965	8983	5100	8131	No	1.2	Si
SLU 79	fin.	1651.35	6048	2	0	4167	3965	8983	5100	8131	No	1.34	Si
SLU 80	ini.	-1605.01	6850	2	0	4167	3965	8983	5100	8131	No	1.19	Si
SLU 80	fin.	1662.79	6127	2	0	4167	3965	8983	5100	8131	No	1.33	Si
SLU 78	ini.	-1616.34	6886	2	0	4167	3965	8983	5100	8131	No	1.18	Si
SLU 78	fin.	1669.62	6164	2	0	4167	3965	8983	5100	8131	No	1.32	Si
SLU 82	ini.	-1571.28	6821	2	0	4167	3965	8983	5100	8131	No	1.19	Si
SLU 82	fin.	1681.81	6098	2	0	4167	3965	8983	5100	8131	No	1.33	Si
SLU 84	ini.	-1599.35	6912	2	0	4167	3965	8983	5100	8131	No	1.18	Si
SLU 84	fin.	1699.14	6189	2	0	4167	3965	8983	5100	8131	No	1.31	Si
SLU 81	ini.	-1543.01	6741	2	0	4167	3965	8983	5100	8131	No	1.21	Si
SLU 81	fin.	1670.37	6018	2	0	4167	3965	8983	5100	8131	No	1.35	Si
SLU 75	ini.	-1588.28	6796	2	0	4167	3965	8983	5100	8131	No	1.2	Si
SLU 75	fin.	1652.3	6073	2	0	4167	3965	8983	5100	8131	No	1.34	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	-3422.44	-8819	-0.0003825	0.0002807	0.0035	2		13933.43	13933.43		4.07	Si
SLV 10	fin.	1165.66	-8999	-0.0001194	0.0002807	0.0035	2		13920.08	13920.08		11.94	Si
SLD 15	ini.	-2313.85	-3696	-0.0002466	0.0002807	0.0035	2		13933.43	13933.43		6.02	Si
SLD 15	fin.	2143.81	-3660	-0.0002272	0.0002807	0.0035	2		13920.08	13920.08		6.49	Si
SLV 13	ini.	-4928.33	-8156	-0.0005905	0.0002807	0.0035	2		13933.43	13933.43		2.83	Si
SLV 13	fin.	3264.15	-8183	-0.0003625	0.0002807	0.0035	2		13920.08	13920.08		4.26	Si
SLV 16	ini.	-3080.4	-3804	-0.000339	0.0002807	0.0035	2		13933.43	13933.43		4.52	Si
SLV 16	fin.	2916.21	-3717	-0.0003189	0.0002807	0.0035	2		13920.08	13920.08		4.77	Si
SLV 9	ini.	-3972.59	-9541	-0.0004554	0.0002807	0.0035	2		13933.43	13933.43		3.51	Si
SLV 9	fin.	1550.57	-9721	-0.0001609	0.0002807	0.0035	2		13920.08	13920.08		8.98	Si
SLV 14	ini.	-4111.2	-7085	-0.0004743	0.0002807	0.0035	2		13933.43	13933.43		3.39	Si
SLV 14	fin.	2692.44	-7111	-0.0002916	0.0002807	0.0035	2		13920.08	13920.08		5.17	Si
SLV 15	ini.	-3897.54	-4876	-0.0004453	0.0002807	0.0035	2		13933.43	13933.43		3.57	Si
SLV 15	fin.	3487.92	-4789	-0.0003914	0.0002807	0.0035	2		13920.08	13920.08		3.99	Si
SLV 4	ini.	2704.83	2676	-0.0002931	0.0002807	0.0035	2		13920.08	13920.08		5.15	Si
SLV 4	fin.	-966.99	2703	-0.0000983	0.0002807	0.0035	2		13933.43	13933.43		14.41	Si
SLD 14	ini.	-2381.5	-4555	-0.0002545	0.0002807	0.0035	2		13933.43	13933.43		5.85	Si
SLD 14	fin.	1813.94	-4566	-0.0001899	0.0002807	0.0035	2		13920.08	13920.08		7.67	Si
SLD 13	ini.	-2729.12	-5011	-0.0002958	0.0002807	0.0035	2		13933.43	13933.43		5.11	Si
SLD 13	fin.	2057.15	-5022	-0.0002173	0.0002807	0.0035	2		13920.08	13920.08		6.77	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-3080.4	12444	2	0	6250	3965	13475	5100	10215		0.82	No
SLV 16	fin.	2916.21	11873	2	0	6250	3965	13475	5100	10215		0.86	No
SLD 13	ini.	-2729.12	9783	2	0	6250	3965	13475	5100	10215		1.04	Si
SLD 13	fin.	2057.15	9249	2	0	6250	3965	13475	5100	10215		1.1	Si
SLD 15	ini.	-2313.85	9246	2	0	6250	3965	13475	5100	10215		1.1	Si
SLD 15	fin.	2143.81	8685	2	0	6250	3965	13475	5100	10215		1.18	Si
SLD 14	ini.	-2381.5	8601	2	0	6250	3965	13475	5100	10215		1.19	Si
SLD 14	fin.	1813.94	8067	2	0	6250	3965	13475	5100	10215		1.27	Si
SLD 16	ini.	-1966.23	8064	2	0	6250	3965	13475	5100	10215		1.27	Si
SLD 16	fin.	1900.6	7503	2	0	6250	3965	13475	5100	10215		1.36	Si
SLV 14	ini.	-4111.2	13778	2	0	6250	3965	13475	5100	10215		0.74	No
SLV 14	fin.	2692.44	13269	2	0	6250	3965	13475	5100	10215		0.77	No
SLV 10	ini.	-3422.44	8970	2	0	6250	3965	13475	5100	10215		1.14	Si
SLV 10	fin.	1165.66	8525	2	0	6250	3965	13475	5100	10215		1.2	Si
SLV 15	ini.	-3897.54	15221	2	0	6250	3965	13475	5100	10215		0.67	No
SLV 15	fin.	3487.92	14651	2	0	6250	3965	13475	5100	10215		0.7	No
SLV 13	ini.	-4928.33	16555	2	0	6250	3965	13475	5100	10215		0.62	No
SLV 13	fin.	3264.15	16047	2	0	6250	3965	13475	5100	10215		0.64	No
SLV 9	ini.	-3972.59	10841	2	0	6250	3965	13475	5100	10215		0.94	No
SLV 9	fin.	1550.57	10396	2	0	6250	3965	13475	5100	10215		0.98	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.827	SLV 13	Si
V_SLV	0.617	SLV 13	No
PF_SLU	8.361	SLU 84	Si
V_SLU	1.177	SLU 84	Si

Trave di accoppiamento 76

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-18.868	-3.359	7.87	8.62	0.75	-19.368	-3.359	7.87	8.62	0.75	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-499.76	-1692	-0.0004199	0.0001872	0.0035	0.75		2071.83	2071.83	No	4.15	Si
SLU 74	fin.	26.32	-1000	-0.0000186	0.0001872	0.0035	0.75		2067.09	2067.09	No	78.52	Si
SLU 84	ini.	-517.29	-1760	-0.0004376	0.0001872	0.0035	0.75		2071.83	2071.83	No	4.01	Si
SLU 84	fin.	24.64	-1043	-0.0000174	0.0001872	0.0035	0.75		2067.09	2067.09	No	83.89	Si
SLU 80	ini.	-501.28	-1673	-0.0004214	0.0001872	0.0035	0.75		2071.83	2071.83	No	4.13	Si
SLU 80	fin.	33.8	-977	-0.000024	0.0001872	0.0035	0.75		2067.09	2067.09	No	61.15	Si
SLU 77	ini.	-504.41	-1711	-0.0004246	0.0001872	0.0035	0.75		2071.83	2071.83	No	4.11	Si
SLU 77	fin.	27.32	-1015	-0.0000193	0.0001872	0.0035	0.75		2067.09	2067.09	No	75.66	Si
SLU 83	ini.	-518.21	-1783	-0.0004385	0.0001872	0.0035	0.75		2071.83	2071.83	No	4	Si
SLU 83	fin.	18.76	-1068	-0.0000132	0.0001872	0.0035	0.75		2067.09	2067.09	No	110.17	Si
SLU 75	ini.	-498.85	-1668	-0.000419	0.0001872	0.0035	0.75		2071.83	2071.83	No	4.15	Si
SLU 75	fin.	32.2	-975	-0.0000228	0.0001872	0.0035	0.75		2067.09	2067.09	No	64.19	Si
SLU 78	ini.	-503.5	-1688	-0.0004237	0.0001872	0.0035	0.75		2071.83	2071.83	No	4.11	Si
SLU 78	fin.	33.2	-990	-0.0000235	0.0001872	0.0035	0.75		2067.09	2067.09	No	62.26	Si
SLU 79	ini.	-502.2	-1697	-0.0004224	0.0001872	0.0035	0.75		2071.83	2071.83	No	4.13	Si
SLU 79	fin.	27.93	-1002	-0.0000198	0.0001872	0.0035	0.75		2067.09	2067.09	No	74.02	Si
SLU 82	ini.	-512.64	-1740	-0.0004329	0.0001872	0.0035	0.75		2071.83	2071.83	No	4.04	Si
SLU 82	fin.	23.64	-1028	-0.0000167	0.0001872	0.0035	0.75		2067.09	2067.09	No	87.43	Si
SLU 81	ini.	-513.55	-1764	-0.0004338	0.0001872	0.0035	0.75		2071.83	2071.83	No	4.03	Si
SLU 81	fin.	17.77	-1053	-0.0000125	0.0001872	0.0035	0.75		2067.09	2067.09	No	116.35	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-504.41	2627	0.75	0	1563	3965	3369	1913	5281	No	2.01	Si
SLU 77	fin.	27.32	-793	0.75	0	1563	3965	3369	1913	5281	No	6.66	Si
SLU 80	ini.	-501.28	2623	0.75	0	1563	3965	3369	1913	5281	No	2.01	Si
SLU 80	fin.	33.8	-760	0.75	0	1563	3965	3369	1913	5281	No	6.95	Si
SLU 79	ini.	-502.2	2612	0.75	0	1563	3965	3369	1913	5281	No	2.02	Si
SLU 79	fin.	27.93	-770	0.75	0	1563	3965	3369	1913	5281	No	6.86	Si
SLU 82	ini.	-512.64	2638	0.75	0	1563	3965	3369	1913	5281	No	2	Si
SLU 82	fin.	23.64	-750	0.75	0	1563	3965	3369	1913	5281	No	7.05	Si
SLU 78	ini.	-503.5	2638	0.75	0	1563	3965	3369	1913	5281	No	2	Si
SLU 78	fin.	33.2	-783	0.75	0	1563	3965	3369	1913	5281	No	6.75	Si
SLU 83	ini.	-518.21	2661	0.75	0	1563	3965	3369	1913	5281	No	1.99	Si
SLU 83	fin.	18.76	-793	0.75	0	1563	3965	3369	1913	5281	No	6.66	Si
SLU 76	ini.	-496.02	2597	0.75	0	1563	3965	3369	1913	5281	No	2.03	Si
SLU 76	fin.	36.73	-720	0.75	0	1563	3965	3369	1913	5281	No	7.33	Si
SLU 84	ini.	-517.29	2672	0.75	0	1563	3965	3369	1913	5281	No	1.98	Si
SLU 84	fin.	24.64	-783	0.75	0	1563	3965	3369	1913	5281	No	6.74	Si
SLU 75	ini.	-498.85	2604	0.75	0	1563	3965	3369	1913	5281	No	2.03	Si
SLU 75	fin.	32.2	-749	0.75	0	1563	3965	3369	1913	5281	No	7.05	Si
SLU 81	ini.	-513.55	2626	0.75	0	1563	3965	3369	1913	5281	No	2.01	Si
SLU 81	fin.	17.77	-760	0.75	0	1563	3965	3369	1913	5281	No	6.95	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-553.49	989	-0.0004487	0.0002807	0.0035	0.75		2057.16	2057.16		3.72	Si
SLV 16	fin.	668.15	2247	-0.0005639	0.0002807	0.0035	0.75		2052.27	2052.27		3.07	Si
SLV 15	ini.	-615.75	1640	-0.0005095	0.0002807	0.0035	0.75		2057.16	2057.16		3.34	Si
SLV 15	fin.	881.3	3122	-0.0007963	0.0002807	0.0035	0.75		2052.27	2052.27		2.33	Si
SLV 3	ini.	-345.43	-4116	-0.0002623	0.0002807	0.0035	0.75		2057.16	2057.16		5.96	Si
SLV 3	fin.	-769.53	-4095	-0.0006692	0.0002807	0.0035	0.75		2057.16	2057.16		2.67	Si
SLV 2	ini.	-75.57	-3869	-0.0000538	0.0002807	0.0035	0.75		2057.16	2057.16		27.22	Si
SLV 2	fin.	-822.48	-4375	-0.0007274	0.0002807	0.0035	0.75		2057.16	2057.16		2.5	Si
SLV 12	ini.	-711.26	-1966	-0.0006071	0.0002807	0.0035	0.75		2057.16	2057.16		2.89	Si
SLV 12	fin.	-61.72	-830	-0.0000438	0.0002807	0.0035	0.75		2057.16	2057.16		33.33	Si
SLV 4	ini.	-283.17	-4767	-0.0002114	0.0002807	0.0035	0.75		2057.16	2057.16		7.26	Si
SLV 4	fin.	-982.68	-4970	-0.0009142	0.0002807	0.0035	0.75		2057.16	2057.16		2.09	Si
SLV 13	ini.	-408.15	2537	-0.0003157	0.0002807	0.0035	0.75		2057.16	2057.16		5.04	Si
SLV 13	fin.	1041.51	3717	-0.00099	0.0002807	0.0035	0.75		2052.27	2052.27		1.97	Si
SLV 11	ini.	-753.18	-1528	-0.0006516	0.0002807	0.0035	0.75		2057.16	2057.16		2.73	Si
SLV 11	fin.	81.79	-241	-0.0000584	0.0002807	0.0035	0.75		2052.27	2052.27		25.09	Si
SLV 7	ini.	-672.08	-3255	-0.0005664	0.0002807	0.0035	0.75		2057.16	2057.16		3.06	Si
SLV 7	fin.	-413.46	-2406	-0.0003204	0.0002807	0.0035	0.75		2057.16	2057.16		4.98	Si
SLV 14	ini.	-345.89	1887	-0.0002627	0.0002807	0.0035	0.75		2057.16	2057.16		5.95	Si
SLV 14	fin.	828.36	2842	-0.000736	0.0002807	0.0035	0.75		2052.27	2052.27		2.48	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-615.75	4456	0.75	0	2344	3965	5053	1913	6309		1.42	Si
SLV 15	fin.	881.3	3557	0.75	0	2344	3965	5053	1913	6309		1.77	Si
SLV 4	ini.	-283.17	-627	0.75	0	2344	3965	5053	1913	6309		10.07	Si
SLV 4	fin.	-982.68	-3583	0.75	0	2344	3965	5053	1913	6309		1.76	Si
SLV 2	ini.	-75.57	-838	0.75	0	2344	3965	5053	1913	6309		7.53	Si
SLV 2	fin.	-822.48	-4444	0.75	0	2344	3965	5053	1913	6309		1.42	Si
SLV 16	ini.	-553.49	3774	0.75	0	2344	3965	5053	1913	6309		1.67	Si
SLV 16	fin.	668.15	2754	0.75	0	2344	3965	5053	1913	6309		2.29	Si
SLV 11	ini.	-753.18	3050	0.75	0	2344	3965	5053	1913	6309		2.07	Si
SLV 11	fin.	81.79	2213	0.75	0	2344	3965	5053	1913	6309		2.85	Si
SLV 13	ini.	-408.15	4244	0.75	0	2344	3965	5053	1913	6309		1.49	Si
SLV 13	fin.	1041.51	2695	0.75	0	2344	3965	5053	1913	6309		2.34	Si
SLV 6	ini.	61.85	567	0.75	0	2344	3965	5053	1913	6309		11.12	Si
SLV 6	fin.	-22.96	-3100	0.75	0	2344	3965	5053	1913	6309		2.03	Si
SLV 1	ini.	-137.83	-156	0.75	0	2344	3965	5053	1913	6309		40.32	Si
SLV 1	fin.	-609.33	-3642	0.75	0	2344	3965	5053	1913	6309		1.73	Si
SLD 15	ini.	-458.31	2936	0.75	0	2344	3965	5053	1913	6309		2.15	Si
SLD 15	fin.	395	1253	0.75	0	2344	3965	5053	1913	6309		5.03	Si
SLV 14	ini.	-345.89	3563	0.75	0	2344	3965	5053	1913	6309		1.77	Si
SLV 14	fin.	828.36	1893	0.75	0	2344	3965	5053	1913	6309		3.33	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.97	SLV 13	Si
V_SLV	1.416	SLV 15	Si
PF_SLU	3.998	SLU 83	Si
V_SLU	1.977	SLU 84	Si

Trave di accoppiamento 77

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-17.363	-3.359	5.07	5.97	0.9	-18.263	-3.359	5.07	5.97	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 69	ini.	17.21	-1881	-0.0000084	0.0001872	0.0035	0.9		2942.43	2942.43	No	170.99	Si
SLU 69	fin.	187.37	-1429	-0.0000952	0.0001872	0.0035	0.9		2942.43	2942.43	No	15.7	Si
SLU 71	ini.	18.22	-1865	-0.0000089	0.0001872	0.0035	0.9		2942.43	2942.43	No	161.5	Si
SLU 71	fin.	183.35	-1408	-0.0000931	0.0001872	0.0035	0.9		2942.43	2942.43	No	16.05	Si
SLU 65	ini.	1.83	-1787	-0.0000009	0.0001872	0.0035	0.9		2942.43	2942.43	No	1603.96	Si
SLU 65	fin.	194.21	-1419	-0.0000988	0.0001872	0.0035	0.9		2942.43	2942.43	No	15.15	Si
SLU 49	ini.	-0.26	-1673	-0.0000001	0.0001872	0.0035	0.9		2948.11	2948.11	No	11471.26	Si
SLU 49	fin.	187.5	-1351	-0.0000952	0.0001872	0.0035	0.9		2942.43	2942.43	No	15.69	Si
SLU 47	ini.	-4.69	-1623	-0.0000023	0.0001872	0.0035	0.9		2948.11	2948.11	No	629.01	Si
SLU 47	fin.	185.76	-1325	-0.0000943	0.0001872	0.0035	0.9		2942.43	2942.43	No	15.84	Si
SLU 72	ini.	1.71	-1839	-0.0000008	0.0001872	0.0035	0.9		2942.43	2942.43	No	1721	Si
SLU 72	fin.	202.27	-1470	-0.0001031	0.0001872	0.0035	0.9		2942.43	2942.43	No	14.55	Si
SLU 68	ini.	-3.73	-1804	-0.0000018	0.0001872	0.0035	0.9		2948.11	2948.11	No	790.13	Si
SLU 68	fin.	204.54	-1465	-0.0001043	0.0001872	0.0035	0.9		2942.43	2942.43	No	14.39	Si
SLU 70	ini.	0.7	-1854	-0.0000003	0.0001872	0.0035	0.9		2942.43	2942.43	No	4210.98	Si
SLU 70	fin.	206.28	-1491	-0.0001052	0.0001872	0.0035	0.9		2942.43	2942.43	No	14.26	Si
SLU 67	ini.	6.26	-1837	-0.0000031	0.0001872	0.0035	0.9		2942.43	2942.43	No	469.71	Si
SLU 67	fin.	195.95	-1444	-0.0000997	0.0001872	0.0035	0.9		2942.43	2942.43	No	15.02	Si
SLU 51	ini.	0.75	-1658	-0.0000004	0.0001872	0.0035	0.9		2942.43	2942.43	No	3902.58	Si
SLU 51	fin.	183.48	-1330	-0.0000931	0.0001872	0.0035	0.9		2942.43	2942.43	No	16.04	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	56.11	-4467	0.9	0	1875	7137	4043	2295	6338	No	1.42	Si
SLU 80	fin.	166.62	2399	0.9	0	1875	7137	4043	2295	6338	No	2.64	Si
SLU 78	ini.	55.1	-4500	0.9	0	1875	7137	4043	2295	6338	No	1.41	Si
SLU 78	fin.	170.64	2434	0.9	0	1875	7137	4043	2295	6338	No	2.6	Si
SLU 81	ini.	107.07	-4671	0.9	0	1875	7137	4043	2295	6338	No	1.36	Si
SLU 81	fin.	111.77	2120	0.9	0	1875	7137	4043	2295	6338	No	2.99	Si
SLU 84	ini.	85	-4662	0.9	0	1875	7137	4043	2295	6338	No	1.36	Si
SLU 84	fin.	141.01	2296	0.9	0	1875	7137	4043	2295	6338	No	2.76	Si
SLU 75	ini.	60.67	-4463	0.9	0	1875	7137	4043	2295	6338	No	1.42	Si
SLU 75	fin.	160.31	2358	0.9	0	1875	7137	4043	2295	6338	No	2.69	Si
SLU 82	ini.	90.56	-4625	0.9	0	1875	7137	4043	2295	6338	No	1.37	Si
SLU 82	fin.	130.68	2220	0.9	0	1875	7137	4043	2295	6338	No	2.85	Si
SLU 83	ini.	101.51	-4708	0.9	0	1875	7137	4043	2295	6338	No	1.35	Si
SLU 83	fin.	122.1	2196	0.9	0	1875	7137	4043	2295	6338	No	2.89	Si
SLU 77	ini.	71.61	-4546	0.9	0	1875	7137	4043	2295	6338	No	1.39	Si
SLU 77	fin.	151.72	2334	0.9	0	1875	7137	4043	2295	6338	No	2.72	Si
SLU 79	ini.	72.62	-4512	0.9	0	1875	7137	4043	2295	6338	No	1.4	Si
SLU 79	fin.	147.71	2299	0.9	0	1875	7137	4043	2295	6338	No	2.76	Si
SLU 74	ini.	77.18	-4509	0.9	0	1875	7137	4043	2295	6338	No	1.41	Si
SLU 74	fin.	141.39	2258	0.9	0	1875	7137	4043	2295	6338	No	2.81	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 9	ini.	-1780.18	1646	-0.0012548	0.0002807	0.0035	0.9		2973.32	2973.32		1.67	Si
SLV 9	fin.	2211.09	-7806	-0.0017498	0.0002807	0.0035	0.9		2967.55	2967.55		1.34	Si
SLV 15	ini.	-1615.15	3181	-0.0010962	0.0002807	0.0035	0.9		2973.32	2973.32		1.84	Si
SLV 15	fin.	1315.47	-4005	-0.0008375	0.0002807	0.0035	0.9		2967.55	2967.55		2.26	Si
SLV 4	ini.	2373.58	-6899	-0.0019808	0.0002807	0.0035	0.9		2967.55	2967.55		1.25	Si
SLV 4	fin.	-2010.95	5210	-0.0015002	0.0002807	0.0035	0.9		2973.32	2973.32		1.48	Si
SLV 8	ini.	1856	-4532	-0.0013355	0.0002807	0.0035	0.9		2967.55	2967.55		1.6	Si
SLV 8	fin.	-1989.43	5866	-0.0014759	0.0002807	0.0035	0.9		2973.32	2973.32		1.49	Si
SLV 14	ini.	-1857.84	2986	-0.0013339	0.0002807	0.0035	0.9		2973.32	2973.32		1.6	Si
SLV 14	fin.	1842.84	-6011	-0.0013219	0.0002807	0.0035	0.9		2967.55	2967.55		1.61	Si
SLV 7	ini.	1559.82	-3841	-0.0010482	0.0002807	0.0035	0.9		2967.55	2967.55		1.9	Si
SLV 7	fin.	-1727.01	5099	-0.0012023	0.0002807	0.0035	0.9		2973.32	2973.32		1.72	Si
SLV 2	ini.	1690.97	-6067	-0.0011705	0.0002807	0.0035	0.9		2967.55	2967.55		1.75	Si
SLV 2	fin.	-1093.81	2065	-0.0006616	0.0002807	0.0035	0.9		2973.32	2973.32		2.72	Si
SLV 13	ini.	-2297.75	4012	-0.0018629	0.0002807	0.0035	0.9		2973.32	2973.32		1.29	Si
SLV 13	fin.	2232.61	-7150	-0.0017785	0.0002807	0.0035	0.9		2967.55	2967.55		1.33	Si
SLV 3	ini.	1933.66	-5872	-0.0014183	0.0002807	0.0035	0.9		2967.55	2967.55		1.53	Si
SLV 3	fin.	-1621.18	4071	-0.0011018	0.0002807	0.0035	0.9		2973.32	2973.32		1.83	Si
SLV 10	ini.	-1483.99	955	-0.0009782	0.0002807	0.0035	0.9		2973.32	2973.32		2	Si
SLV 10	fin.	1948.67	-7039	-0.0014347	0.0002807	0.0035	0.9		2967.55	2967.55		1.52	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 10	ini.	-1483.99	1635	0.9	0	2813	7137	6064	2295	8359		5.11	Si
SLV 10	fin.	1948.67	11190	0.9	0	2813	7137	6064	2295	8359		0.75	No
SLV 3	ini.	1933.66	-12099	0.9	0	2813	7137	6064	2295	8359		0.69	No
SLV 3	fin.	-1621.18	-6494	0.9	0	2813	7137	6064	2295	8359		1.29	Si
SLV 8	ini.	1856	-9130	0.9	0	2813	7137	6064	2295	8359		0.92	No

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 8	fin.	-1989.43	-9188	0.9	0	2813	7137	6064	2295	8359		0.91	No
SLV 4	ini.	2373.58	-14108	0.9	0	2813	7137	6064	2295	8359		0.59	No
SLV 4	fin.	-2010.95	-8375	0.9	0	2813	7137	6064	2295	8359		1	No
SLV 14	ini.	-1857.84	5956	0.9	0	2813	7137	6064	2295	8359		1.4	Si
SLV 14	fin.	1842.84	9761	0.9	0	2813	7137	6064	2295	8359		0.86	No
SLV 2	ini.	1690.97	-12544	0.9	0	2813	7137	6064	2295	8359		0.67	No
SLV 2	fin.	-1093.81	-3450	0.9	0	2813	7137	6064	2295	8359		2.42	Si
SLV 9	ini.	-1780.18	2988	0.9	0	2813	7137	6064	2295	8359		2.8	Si
SLV 9	fin.	2211.09	12456	0.9	0	2813	7137	6064	2295	8359		0.67	No
SLV 1	ini.	1251.05	-10534	0.9	0	2813	7137	6064	2295	8359		0.79	No
SLV 1	fin.	-704.04	-1569	0.9	0	2813	7137	6064	2295	8359		5.33	Si
SLV 5	ini.	-715.53	-2562	0.9	0	2813	7137	6064	2295	8359		3.26	Si
SLV 5	fin.	1330.1	8493	0.9	0	2813	7137	6064	2295	8359		0.98	No
SLV 13	ini.	-2297.75	7966	0.9	0	2813	7137	6064	2295	8359		1.05	Si
SLV 13	fin.	2232.61	11642	0.9	0	2813	7137	6064	2295	8359		0.72	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.25	SLV 4	Si
V_SLV	0.592	SLV 4	No
PF_SLU	14.264	SLU 70	Si
V_SLU	1.346	SLU 83	Si

Trave di accoppiamento 78

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-17.363	-3.359	7.77	8.62	0.85	-18.263	-3.359	7.77	8.62	0.85	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-119.59	-1206	-0.000067	0.0001872	0.0035	0.85		2645.85	2645.85	No	22.12	Si
SLU 82	fin.	-346.21	-2292	-0.0002063	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.64	Si
SLU 78	ini.	-146.15	-1265	-0.0000825	0.0001872	0.0035	0.85		2645.85	2645.85	No	18.1	Si
SLU 78	fin.	-323.12	-2217	-0.0001911	0.0001872	0.0035	0.85		2645.85	2645.85	No	8.19	Si
SLU 62	ini.	-101.91	-1085	-0.0000569	0.0001872	0.0035	0.85		2645.85	2645.85	No	25.96	Si
SLU 62	fin.	-324.3	-2108	-0.0001919	0.0001872	0.0035	0.85		2645.85	2645.85	No	8.16	Si
SLU 81	ini.	-105.4	-1174	-0.0000589	0.0001872	0.0035	0.85		2645.85	2645.85	No	25.1	Si
SLU 81	fin.	-357.13	-2323	-0.0002135	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.41	Si
SLU 74	ini.	-124.84	-1201	-0.0000701	0.0001872	0.0035	0.85		2645.85	2645.85	No	21.19	Si
SLU 74	fin.	-332.38	-2223	-0.0001972	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.96	Si
SLU 83	ini.	-112.52	-1207	-0.000063	0.0001872	0.0035	0.85		2645.85	2645.85	No	23.51	Si
SLU 83	fin.	-358.79	-2347	-0.0002146	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.37	Si
SLU 84	ini.	-126.71	-1238	-0.0000712	0.0001872	0.0035	0.85		2645.85	2645.85	No	20.88	Si
SLU 84	fin.	-347.87	-2316	-0.0002073	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.61	Si
SLU 79	ini.	-129.25	-1217	-0.0000726	0.0001872	0.0035	0.85		2645.85	2645.85	No	20.47	Si
SLU 79	fin.	-331.52	-2229	-0.0001966	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.98	Si
SLU 60	ini.	-94.79	-1052	-0.0000528	0.0001872	0.0035	0.85		2645.85	2645.85	No	27.91	Si
SLU 60	fin.	-322.64	-2083	-0.0001908	0.0001872	0.0035	0.85		2645.85	2645.85	No	8.2	Si
SLU 77	ini.	-131.97	-1233	-0.0000742	0.0001872	0.0035	0.85		2645.85	2645.85	No	20.05	Si
SLU 77	fin.	-334.04	-2248	-0.0001983	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.92	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-119.59	1883	0.85	0	1771	6740	3818	2168	5985	No	3.18	Si
SLU 82	fin.	-346.21	-4126	0.85	0	1771	6740	3818	2168	5985	No	1.45	Si
SLU 75	ini.	-139.03	1954	0.85	0	1771	6740	3818	2168	5985	No	3.06	Si
SLU 75	fin.	-321.46	-3964	0.85	0	1771	6740	3818	2168	5985	No	1.51	Si
SLU 74	ini.	-124.84	1889	0.85	0	1771	6740	3818	2168	5985	No	3.17	Si
SLU 74	fin.	-332.38	-4014	0.85	0	1771	6740	3818	2168	5985	No	1.49	Si
SLU 81	ini.	-105.4	1818	0.85	0	1771	6740	3818	2168	5985	No	3.29	Si
SLU 81	fin.	-357.13	-4176	0.85	0	1771	6740	3818	2168	5985	No	1.43	Si
SLU 77	ini.	-131.97	1942	0.85	0	1771	6740	3818	2168	5985	No	3.08	Si
SLU 77	fin.	-334.04	-4063	0.85	0	1771	6740	3818	2168	5985	No	1.47	Si
SLU 80	ini.	-143.44	1983	0.85	0	1771	6740	3818	2168	5985	No	3.02	Si
SLU 80	fin.	-320.6	-3978	0.85	0	1771	6740	3818	2168	5985	No	1.5	Si
SLU 79	ini.	-129.25	1918	0.85	0	1771	6740	3818	2168	5985	No	3.12	Si
SLU 79	fin.	-331.52	-4028	0.85	0	1771	6740	3818	2168	5985	No	1.49	Si
SLU 78	ini.	-146.15	2007	0.85	0	1771	6740	3818	2168	5985	No	2.98	Si
SLU 78	fin.	-323.12	-4013	0.85	0	1771	6740	3818	2168	5985	No	1.49	Si
SLU 84	ini.	-126.71	1937	0.85	0	1771	6740	3818	2168	5985	No	3.09	Si
SLU 84	fin.	-347.87	-4175	0.85	0	1771	6740	3818	2168	5985	No	1.43	Si
SLU 83	ini.	-112.52	1872	0.85	0	1771	6740	3818	2168	5985	No	3.2	Si
SLU 83	fin.	-358.79	-4225	0.85	0	1771	6740	3818	2168	5985	No	1.42	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 8	ini.	1462.61	2594	-0.0011184	0.0002807	0.0035	0.85		2641.96	2641.96		1.81	Si
SLV 8	fin.	-1445.62	-5195	-0.0010978	0.0002807	0.0035	0.85		2647.52	2647.52		1.83	Si
SLV 14	ini.	-1170.3	-2428	-0.0008302	0.0002807	0.0035	0.85		2647.52	2647.52		2.26	Si
SLV 14	fin.	1148.11	2923	-0.0008121	0.0002807	0.0035	0.85		2641.96	2641.96		2.3	Si
SLV 10	ini.	-1473.92	-3959	-0.0011273	0.0002807	0.0035	0.85		2647.52	2647.52		1.8	Si
SLV 10	fin.	803.67	1612	-0.0005215	0.0002807	0.0035	0.85		2641.96	2641.96		3.29	Si
SLV 7	ini.	1279.97	2291	-0.0009352	0.0002807	0.0035	0.85		2641.96	2641.96		2.06	Si
SLV 7	fin.	-1228.15	-4539	-0.0008837	0.0002807	0.0035	0.85		2647.52	2647.52		2.16	Si
SLV 3	ini.	976.35	760	-0.0006618	0.0002807	0.0035	0.85		2641.96	2641.96		2.71	Si
SLV 3	fin.	-1572.59	-5850	-0.0012336	0.0002807	0.0035	0.85		2647.52	2647.52		1.68	Si
SLV 2	ini.	518.68	-591	-0.0003131	0.0002807	0.0035	0.85		2641.96	2641.96		5.09	Si
SLV 2	fin.	-1455.09	-5545	-0.0011076	0.0002807	0.0035	0.85		2647.52	2647.52		1.82	Si
SLV 4	ini.	1247.63	1210	-0.0009044	0.0002807	0.0035	0.85		2641.96	2641.96		2.12	Si
SLV 4	fin.	-1895.59	-6825	-0.001629	0.0002807	0.0035	0.85		2647.52	2647.52		1.4	Si
SLV 13	ini.	-1441.58	-2878	-0.0010936	0.0002807	0.0035	0.85		2647.52	2647.52		1.84	Si
SLV 13	fin.	1471.11	3898	-0.0011274	0.0002807	0.0035	0.85		2641.96	2641.96		1.8	Si
SLV 9	ini.	-1656.56	-4262	-0.0013287	0.0002807	0.0035	0.85		2647.52	2647.52		1.6	Si
SLV 9	fin.	1021.14	2269	-0.0006999	0.0002807	0.0035	0.85		2641.96	2641.96		2.59	Si
SLV 5	ini.	-1149.87	-3711	-0.0008116	0.0002807	0.0035	0.85		2647.52	2647.52		2.3	Si
SLV 5	fin.	240.18	-272	-0.0001368	0.0002807	0.0035	0.85		2641.96	2641.96		11	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	247.4	-564	0.85	0	2656	6740	5727	2168	7894		14	Si
SLV 1	fin.	-1132.09	-6614	0.85	0	2656	6740	5727	2168	7894		1.19	Si
SLV 13	ini.	-1441.58	7804	0.85	0	2656	6740	5727	2168	7894		1.01	Si
SLV 13	fin.	1471.11	4957	0.85	0	2656	6740	5727	2168	7894		1.59	Si
SLV 8	ini.	1462.61	-5840	0.85	0	2656	6740	5727	2168	7894		1.35	Si
SLV 8	fin.	-1445.62	-8475	0.85	0	2656	6740	5727	2168	7894		0.93	No
SLV 9	ini.	-1656.56	8512	0.85	0	2656	6740	5727	2168	7894		0.93	No
SLV 9	fin.	1021.14	3196	0.85	0	2656	6740	5727	2168	7894		2.47	Si
SLV 3	ini.	976.35	-3859	0.85	0	2656	6740	5727	2168	7894		2.05	Si
SLV 3	fin.	-1572.59	-8780	0.85	0	2656	6740	5727	2168	7894		0.9	No
SLV 10	ini.	-1473.92	7656	0.85	0	2656	6740	5727	2168	7894		1.03	Si
SLV 10	fin.	803.67	2216	0.85	0	2656	6740	5727	2168	7894		3.56	Si
SLV 2	ini.	518.68	-1836	0.85	0	2656	6740	5727	2168	7894		4.3	Si
SLV 2	fin.	-1455.09	-8070	0.85	0	2656	6740	5727	2168	7894		0.98	No
SLV 7	ini.	1279.97	-4983	0.85	0	2656	6740	5727	2168	7894		1.58	Si
SLV 7	fin.	-1228.15	-7495	0.85	0	2656	6740	5727	2168	7894		1.05	Si
SLV 4	ini.	1247.63	-5132	0.85	0	2656	6740	5727	2168	7894		1.54	Si
SLV 4	fin.	-1895.59	-10236	0.85	0	2656	6740	5727	2168	7894		0.77	No
SLV 14	ini.	-1170.3	6532	0.85	0	2656	6740	5727	2168	7894		1.21	Si
SLV 14	fin.	1148.11	3501	0.85	0	2656	6740	5727	2168	7894		2.25	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.397	SLV 4	Si
V_SLV	0.771	SLV 4	No
PF_SLU	7.374	SLU 83	Si
V_SLU	1.417	SLU 83	Si

Trave di accoppiamento 80

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-15.433	-3.359	7.17	8.62	1.45	-16.333	-3.359	7.17	8.62	1.45	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

												εlim,conv / ε,CNR DT-200						CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-460.12	-3033	-0.0000892	0.0002246	0.0035	1.45		7858.95	7858.95	No	17.08	Si
SLU 78	fin.	150.27	-2805	-0.0000286	0.0002246	0.0035	1.45		7849.88	7849.88	No	52.24	Si
SLU 28	ini.	-462.53	-2523	-0.0000897	0.0002246	0.0035	1.45		7858.95	7858.95	No	16.99	Si
SLU 28	fin.	215.34	-2216	-0.0000411	0.0002246	0.0035	1.45		7849.88	7849.88	No	36.45	Si
SLU 71	ini.	-475.12	-2888	-0.0000922	0.0002246	0.0035	1.45		7858.95	7858.95	No	16.54	Si
SLU 71	fin.	181.17	-2584	-0.0000345	0.0002246	0.0035	1.45		7849.88	7849.88	No	43.33	Si
SLU 67	ini.	-477.05	-2889	-0.0000926	0.0002246	0.0035	1.45		7858.95	7858.95	No	16.47	Si
SLU 67	fin.	185.1	-2588	-0.0000353	0.0002246	0.0035	1.45		7849.88	7849.88	No	42.41	Si
SLU 72	ini.	-492.38	-2926	-0.0000957	0.0002246	0.0035	1.45		7858.95	7858.95	No	15.96	Si
SLU 72	fin.	197.59	-2612	-0.0000377	0.0002246	0.0035	1.45		7849.88	7849.88	No	39.73	Si
SLU 68	ini.	-482.4	-2875	-0.0000937	0.0002246	0.0035	1.45		7858.95	7858.95	No	16.29	Si
SLU 68	fin.	190.95	-2572	-0.0000364	0.0002246	0.0035	1.45		7849.88	7849.88	No	41.11	Si
SLU 65	ini.	-460.91	-2799	-0.0000894	0.0002246	0.0035	1.45		7858.95	7858.95	No	17.05	Si
SLU 65	fin.	173.37	-2514	-0.000033	0.0002246	0.0035	1.45		7849.88	7849.88	No	45.28	Si
SLU 69	ini.	-481.27	-2927	-0.0000935	0.0002246	0.0035	1.45		7858.95	7858.95	No	16.33	Si
SLU 69	fin.	186.26	-2618	-0.0000355	0.0002246	0.0035	1.45		7849.88	7849.88	No	42.15	Si
SLU 70	ini.	-498.54	-2965	-0.0000969	0.0002246	0.0035	1.45		7858.95	7858.95	No	15.76	Si
SLU 70	fin.	202.68	-2646	-0.0000387	0.0002246	0.0035	1.45		7849.88	7849.88	No	38.73	Si
SLU 66	ini.	-459.78	-2852	-0.0000891	0.0002246	0.0035	1.45		7858.95	7858.95	No	17.09	Si
SLU 66	fin.	168.68	-2560	-0.0000321	0.0002246	0.0035	1.45		7849.88	7849.88	No	46.54	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 72	ini.	-492.38	1826	1.45	0	3625	7137	7816	3698	10762	No	5.89	Si
SLU 72	fin.	197.59	195	1.45	0	3625	7137	7816	3698	10762	No	55.32	Si
SLU 70	ini.	-498.54	1843	1.45	0	3625	7137	7816	3698	10762	No	5.84	Si
SLU 70	fin.	202.68	211	1.45	0	3625	7137	7816	3698	10762	No	50.89	Si
SLU 76	ini.	-443.98	1763	1.45	0	3625	7137	7816	3698	10762	No	6.11	Si
SLU 76	fin.	138.54	-145	1.45	0	3625	7137	7816	3698	10762	No	74.41	Si
SLU 69	ini.	-481.27	1798	1.45	0	3625	7137	7816	3698	10762	No	5.99	Si
SLU 69	fin.	186.26	166	1.45	0	3625	7137	7816	3698	10762	No	64.69	Si
SLU 77	ini.	-442.85	1762	1.45	0	3625	7137	7816	3698	10762	No	6.11	Si
SLU 77	fin.	133.85	-145	1.45	0	3625	7137	7816	3698	10762	No	74	Si
SLU 78	ini.	-460.12	1807	1.45	0	3625	7137	7816	3698	10762	No	5.96	Si
SLU 78	fin.	150.27	-100	1.45	0	3625	7137	7816	3698	10762	No	107.3	Si
SLU 80	ini.	-453.96	1790	1.45	0	3625	7137	7816	3698	10762	No	6.01	Si
SLU 80	fin.	145.17	-117	1.45	0	3625	7137	7816	3698	10762	No	91.79	Si
SLU 71	ini.	-475.12	1781	1.45	0	3625	7137	7816	3698	10762	No	6.04	Si
SLU 71	fin.	181.17	149	1.45	0	3625	7137	7816	3698	10762	No	72.03	Si
SLU 68	ini.	-482.4	1799	1.45	0	3625	7137	7816	3698	10762	No	5.98	Si
SLU 68	fin.	190.95	167	1.45	0	3625	7137	7816	3698	10762	No	64.38	Si
SLU 67	ini.	-477.05	1786	1.45	0	3625	7137	7816	3698	10762	No	6.03	Si
SLU 67	fin.	185.1	154	1.45	0	3625	7137	7816	3698	10762	No	69.87	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	4185.74	2255	-0.0010616	0.0003369	0.0035	1.45		7781.38	7781.38		1.86	Si
SLV 3	fin.	-4006.99	-1185	-0.0009996	0.0003369	0.0035	1.45		7791.28	7791.28		1.94	Si
SLV 14	ini.	-4771.98	-6336	-0.0012713	0.0003369	0.0035	1.45		7791.28	7791.28		1.63	Si
SLV 14	fin.	4160.45	-2578	-0.0010529	0.0003369	0.0035	1.45		7781.38	7781.38		1.87	Si
SLV 9	ini.	-3195.47	-7154	-0.0007458	0.0003369	0.0035	1.45		7791.28	7791.28		2.44	Si
SLV 9	fin.	2560.62	-4894	-0.0005683	0.0003369	0.0035	1.45		7781.38	7781.38		3.04	Si
SLV 1	ini.	3495.15	49	-0.0008372	0.0003369	0.0035	1.45		7781.38	7781.38		2.23	Si
SLV 1	fin.	-3472.81	-2969	-0.0008291	0.0003369	0.0035	1.45		7791.28	7791.28		2.24	Si
SLV 15	ini.	-5132.07	-5114	-0.0014134	0.0003369	0.0035	1.45		7791.28	7791.28		1.52	Si
SLV 15	fin.	4548.12	-995	-0.0011899	0.0003369	0.0035	1.45		7781.38	7781.38		1.71	Si
SLV 2	ini.	4545.83	1034	-0.0011891	0.0003369	0.0035	1.45		7781.38	7781.38		1.71	Si
SLV 2	fin.	-4394.65	-2768	-0.0011328	0.0003369	0.0035	1.45		7791.28	7791.28		1.77	Si
SLD 13	ini.	-2647.54	-4269	-0.000591	0.0003369	0.0035	1.45		7791.28	7791.28		2.94	Si
SLD 13	fin.	2209.92	-2241	-0.0004768	0.0003369	0.0035	1.45		7781.38	7781.38		3.52	Si
SLV 4	ini.	5236.42	3240	-0.0014591	0.0003369	0.0035	1.45		7781.38	7781.38		1.49	Si
SLV 4	fin.	-4928.84	-984	-0.0013319	0.0003369	0.0035	1.45		7791.28	7791.28		1.58	Si
SLV 16	ini.	-4081.39	-4130	-0.0010245	0.0003369	0.0035	1.45		7791.28	7791.28		1.91	Si
SLV 16	fin.	3626.27	-794	-0.0008779	0.0003369	0.0035	1.45		7781.38	7781.38		2.15	Si
SLV 13	ini.	-5822.66	-7321	-0.0017219	0.0003369	0.0035	1.45		7791.28	7791.28		1.34	Si
SLV 13	fin.	5082.3	-2779	-0.0013954	0.0003369	0.0035	1.45		7781.38	7781.38		1.53	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	3495.15	-9532	1.45	0	5144	7137	11725	3698	12280		1.29	Si
SLV 1	fin.	-3472.81	-10706	1.45	0	5144	7137	11725	3698	12280		1.15	Si
SLV 15	ini.	-5132.07	14690	1.45	0	5144	7137	11725	3698	12280		0.84	No
SLV 15	fin.	4548.12	13321	1.45	0	5144	7137	11725	3698	12280		0.92	No
SLV 9	ini.	-3195.47	8528	1.45	0	5144	7137	11725	3698	12280		1.44	Si
SLV 9	fin.	2560.62	7571	1.45	0	5144	7137	11725	3698	12280		1.62	Si
SLV 14	ini.	-4771.98	13395	1.45	0	5144	7137	11725	3698	12280		0.92	No
SLV 14	fin.	4160.45	12216	1.45	0	5144	7137	11725	3698	12280		1.01	Si
SLV 13	ini.	-5822.66	16218	1.45	0	5144	7137	11725	3698	12280		0.76	No
SLV 13	fin.	5082.3	15039	1.45	0	5144	7137	11725	3698	12280		0.82	No
SLV 2	ini.	4545.83	-12355	1.45	0	5144	7137	11725	3698	12280		0.99	No
SLV 2	fin.	-4394.65	-13529	1.45	0	5144	7137	11725	3698	12280		0.91	No
SLV 3	ini.	4185.74	-11061	1.45	0	5144	7137	11725	3698	12280		1.11	Si
SLV 3	fin.	-4006.99	-12424	1.45	0	5144	7137	11725	3698	12280		0.99	No
SLV 16	ini.	-4081.39	11867	1.45	0	5144	7137	11725	3698	12280		1.03	Si
SLV 16	fin.	3626.27	10498	1.45	0	5144	7137	11725	3698	12280		1.17	Si
SLV 8	ini.	2609.23	-6193	1.45	0	5144	7137	11725	3698	12280		1.98	Si
SLV 8	fin.	-2407.16	-7779	1.45	0	5144	7137	11725	3698	12280		1.58	Si
SLV 4	ini.	5236.42	-13884	1.45	0	5144	7137	11725	3698	12280		0.88	No
SLV 4	fin.	-4928.84	-15246	1.45	0	5144	7137	11725	3698	12280		0.81	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.338	SLV 13	Si
V_SLV	0.757	SLV 13	No
PF_SLU	15.764	SLU 70	Si
V_SLU	5.839	SLU 70	Si

Trave di accoppiamento 82

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-15.058	1.406	7.17	8.62	1.45	-15.058	2.206	7.17	8.62	1.45	0.8	0.16	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 41	ini.	1004.83	-2129	-0.0002036	0.0002246	0.0035	1.45		7913.67	7913.67	No	7.88	Si
SLU 41	fin.	-1581.64	-3494	-0.0003382	0.0002246	0.0035	1.45		7922.75	7922.75	No	5.01	Si
SLU 81	ini.	1103.72	-2332	-0.0002256	0.0002246	0.0035	1.45		7913.67	7913.67	No	7.17	Si
SLU 81	fin.	-1654.55	-3781	-0.0003564	0.0002246	0.0035	1.45		7922.75	7922.75	No	4.79	Si
SLU 78	ini.	1077.22	-2276	-0.0002196	0.0002246	0.0035	1.45		7913.67	7913.67	No	7.35	Si
SLU 78	fin.	-1551.17	-3662	-0.0003307	0.0002246	0.0035	1.45		7922.75	7922.75	No	5.11	Si
SLU 83	ini.	1130.79	-2389	-0.0002317	0.0002246	0.0035	1.45		7913.67	7913.67	No	7	Si
SLU 83	fin.	-1707	-3884	-0.0003696	0.0002246	0.0035	1.45		7922.75	7922.75	No	4.64	Si
SLU 74	ini.	1081.81	-2283	-0.0002206	0.0002246	0.0035	1.45		7913.67	7913.67	No	7.32	Si
SLU 74	fin.	-1594.85	-3693	-0.0003415	0.0002246	0.0035	1.45		7922.75	7922.75	No	4.97	Si
SLU 77	ini.	1108.88	-2340	-0.0002267	0.0002246	0.0035	1.45		7913.67	7913.67	No	7.14	Si
SLU 77	fin.	-1647.31	-3796	-0.0003546	0.0002246	0.0035	1.45		7922.75	7922.75	No	4.81	Si
SLU 79	ini.	1096.16	-2313	-0.0002239	0.0002246	0.0035	1.45		7913.67	7913.67	No	7.22	Si
SLU 79	fin.	-1626.16	-3750	-0.0003493	0.0002246	0.0035	1.45		7922.75	7922.75	No	4.87	Si
SLU 80	ini.	1064.5	-2249	-0.0002168	0.0002246	0.0035	1.45		7913.67	7913.67	No	7.43	Si
SLU 80	fin.	-1530.02	-3616	-0.0003255	0.0002246	0.0035	1.45		7922.75	7922.75	No	5.18	Si
SLU 84	ini.	1099.13	-2325	-0.0002245	0.0002246	0.0035	1.45		7913.67	7913.67	No	7.2	Si
SLU 84	fin.	-1610.87	-3750	-0.0003455	0.0002246	0.0035	1.45		7922.75	7922.75	No	4.92	Si
SLU 82	ini.	1072.06	-2268	-0.0002185	0.0002246	0.0035	1.45		7913.67	7913.67	No	7.38	Si
SLU 82	fin.	-1558.42	-3647	-0.0003325	0.0002246	0.0035	1.45		7922.75	7922.75	No	5.08	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 79	ini.	1096.16	-4436	1.45	0	1933	6344	4169	3698	7866	No	1.77	Si
SLU 79	fin.	-1626.16	-4964	1.45	0	1933	6344	4169	3698	7866	No	1.58	Si
SLU 81	ini.	1103.72	-4492	1.45	0	1933	6344	4169	3698	7866	No	1.75	Si
SLU 81	fin.	-1654.55	-5021	1.45	0	1933	6344	4169	3698	7866	No	1.57	Si
SLU 77	ini.	1108.88	-4495	1.45	0	1933	6344	4169	3698	7866	No	1.75	Si
SLU 77	fin.	-1647.31	-5024	1.45	0	1933	6344	4169	3698	7866	No	1.57	Si
SLU 84	ini.	1099.13	-4410	1.45	0	1933	6344	4169	3698	7866	No	1.78	Si
SLU 84	fin.	-1610.87	-4938	1.45	0	1933	6344	4169	3698	7866	No	1.59	Si
SLU 82	ini.	1072.06	-4269	1.45	0	1933	6344	4169	3698	7866	No	1.84	Si
SLU 82	fin.	-1558.42	-4798	1.45	0	1933	6344	4169	3698	7866	No	1.64	Si
SLU 83	ini.	1130.79	-4633	1.45	0	1933	6344	4169	3698	7866	No	1.7	Si
SLU 83	fin.	-1707	-5161	1.45	0	1933	6344	4169	3698	7866	No	1.52	Si
SLU 41	ini.	1004.83	-4258	1.45	0	1933	6344	4169	3698	7866	No	1.85	Si
SLU 41	fin.	-1581.64	-4675	1.45	0	1933	6344	4169	3698	7866	No	1.68	Si
SLU 78	ini.	1077.22	-4272	1.45	0	1933	6344	4169	3698	7866	No	1.84	Si
SLU 78	fin.	-1551.17	-4801	1.45	0	1933	6344	4169	3698	7866	No	1.64	Si
SLU 80	ini.	1064.5	-4213	1.45	0	1933	6344	4169	3698	7866	No	1.87	Si
SLU 80	fin.	-1530.02	-4741	1.45	0	1933	6344	4169	3698	7866	No	1.66	Si
SLU 74	ini.	1081.81	-4355	1.45	0	1933	6344	4169	3698	7866	No	1.81	Si
SLU 74	fin.	-1594.85	-4883	1.45	0	1933	6344	4169	3698	7866	No	1.61	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 11	ini.	3585.18	-8081	-0.0008651	0.0003369	0.0035	1.45		8135.93	8135.93		2.27	Si
SLV 11	fin.	-10528.27	-15979	-0.0052242	0.0003369	0.0035	1.45		8145.22	8145.22		0.77	No
SLV 5	ini.	-2209.07	5188	-0.000476	0.0003369	0.0035	1.45		8145.22	8145.22		3.69	Si
SLV 5	fin.	8670.09	11388	-0.0038599	0.0003369	0.0035	1.45		8135.93	8135.93		0.94	No
SLV 12	ini.	3600.68	-8111	-0.0008699	0.0003369	0.0035	1.45		8135.93	8135.93		2.26	Si
SLV 12	fin.	-10572.88	-16037	-0.005255	0.0003369	0.0035	1.45		8145.22	8145.22		0.77	No
SLD 12	ini.	1858.57	-4117	-0.0003902	0.0003369	0.0035	1.45		8135.93	8135.93		4.38	Si
SLD 12	fin.	-4798.47	-7806	-0.0012814	0.0003369	0.0035	1.45		8145.22	8145.22		1.7	Si
SLV 9	ini.	-2028.7	5008	-0.000431	0.0003369	0.0035	1.45		8145.22	8145.22		4.02	Si
SLV 9	fin.	8188.56	10821	-0.003455	0.0003369	0.0035	1.45		8135.93	8135.93		0.99	No
SLD 11	ini.	1852.11	-4105	-0.0003887	0.0003369	0.0035	1.45		8135.93	8135.93		4.39	Si
SLD 11	fin.	-4779.87	-7782	-0.0012743	0.0003369	0.0035	1.45		8145.22	8145.22		1.7	Si
SLV 6	ini.	-2193.57	5158	-0.0004721	0.0003369	0.0035	1.45		8145.22	8145.22		3.71	Si
SLV 6	fin.	8625.48	11329	-0.0038238	0.0003369	0.0035	1.45		8135.93	8135.93		0.94	No
SLV 8	ini.	3420.31	-7931	-0.0008142	0.0003369	0.0035	1.45		8135.93	8135.93		2.38	Si
SLV 8	fin.	-10091.34	-15471	-0.0049185	0.0003369	0.0035	1.45		8145.22	8145.22		0.81	No
SLV 10	ini.	-2013.2	4978	-0.0004272	0.0003369	0.0035	1.45		8145.22	8145.22		4.05	Si
SLV 10	fin.	8143.95	10762	-0.0034157	0.0003369	0.0035	1.45		8135.93	8135.93		1	No
SLV 7	ini.	3404.81	-7901	-0.0008095	0.0003369	0.0035	1.45		8135.93	8135.93		2.39	Si
SLV 7	fin.	-10046.73	-15412	-0.0048869	0.0003369	0.0035	1.45		8145.22	8145.22		0.81	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 11	ini.	3585.18	-24448	1.45	0	2900	6344	6253	3698	9244		0.38	No
SLV 11	fin.	-10528.27	-24857	1.45	16250	2900	6344	6253	3698	9244		0.37	No
SLV 10	ini.	-2013.2	18059	1.45	0	2900	6344	6253	3698	9244		0.51	No
SLV 10	fin.	8143.95	17674	1.45	16250	2900	6344	6253	3698	9244		0.52	No
SLV 5	ini.	-2209.07	19276	1.45	0	2900	6344	6253	3698	9244		0.48	No

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	fin.	8670.09	18882	1.45	16250	2900	6344	6253	3698	9244		0.49	No
SLV 7	ini.	3404.81	-23331	1.45	0	2900	6344	6253	3698	9244		0.4	No
SLV 7	fin.	-10046.73	-23750	1.45	16250	2900	6344	6253	3698	9244		0.39	No
SLD 12	ini.	1858.57	-11397	1.45	0	2900	6344	6253	3698	9244		0.81	No
SLD 12	fin.	-4798.47	-11803	1.45	16250	2900	6344	6253	3698	9244		0.78	No
SLV 6	ini.	-2193.57	19175	1.45	0	2900	6344	6253	3698	9244		0.48	No
SLV 6	fin.	8625.48	18780	1.45	16250	2900	6344	6253	3698	9244		0.49	No
SLV 9	ini.	-2028.7	18160	1.45	0	2900	6344	6253	3698	9244		0.51	No
SLV 9	fin.	8188.56	17775	1.45	16250	2900	6344	6253	3698	9244		0.52	No
SLV 12	ini.	3600.68	-24549	1.45	0	2900	6344	6253	3698	9244		0.38	No
SLV 12	fin.	-10572.88	-24958	1.45	16250	2900	6344	6253	3698	9244		0.37	No
SLV 8	ini.	3420.31	-23433	1.45	0	2900	6344	6253	3698	9244		0.39	No
SLV 8	fin.	-10091.34	-23852	1.45	16250	2900	6344	6253	3698	9244		0.39	No
SLD 11	ini.	1852.11	-11355	1.45	0	2900	6344	6253	3698	9244		0.81	No
SLD 11	fin.	-4779.87	-11760	1.45	16250	2900	6344	6253	3698	9244		0.79	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.77	SLV 12	No
V_SLV	0.37	SLV 12	No
PF_SLU	4.641	SLU 83	Si
V_SLU	1.524	SLU 83	Si

Trave di accoppiamento 83

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-13.763	-0.228	7.17	8.62	1.45	-13.763	0.672	7.17	8.62	1.45	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	1627.49	-579	-0.0003585	0.0001872	0.0035	1.45		7546.08	7546.08	No	4.64	Si
SLU 83	fin.	346.67	-1408	-0.000067	0.0001872	0.0035	1.45		7546.08	7546.08	No	21.77	Si
SLU 79	ini.	1540.26	-634	-0.000336	0.0001872	0.0035	1.45		7546.08	7546.08	No	4.9	Si
SLU 79	fin.	352.45	-1404	-0.0000682	0.0001872	0.0035	1.45		7546.08	7546.08	No	21.41	Si
SLU 60	ini.	1693.29	-111	-0.0003757	0.0001872	0.0035	1.45		7546.08	7546.08	No	4.46	Si
SLU 60	fin.	196.49	-1039	-0.0000375	0.0001872	0.0035	1.45		7546.08	7546.08	No	38.4	Si
SLU 53	ini.	1601.26	-206	-0.0003517	0.0001872	0.0035	1.45		7546.08	7546.08	No	4.71	Si
SLU 53	fin.	214.58	-1065	-0.000041	0.0001872	0.0035	1.45		7546.08	7546.08	No	35.17	Si
SLU 81	ini.	1623.58	-525	-0.0003574	0.0001872	0.0035	1.45		7546.08	7546.08	No	4.65	Si
SLU 81	fin.	328.42	-1361	-0.0000634	0.0001872	0.0035	1.45		7546.08	7546.08	No	22.98	Si
SLU 56	ini.	1605.18	-259	-0.0003527	0.0001872	0.0035	1.45		7546.08	7546.08	No	4.7	Si
SLU 56	fin.	232.84	-1112	-0.0000446	0.0001872	0.0035	1.45		7546.08	7546.08	No	32.41	Si
SLU 62	ini.	1697.21	-164	-0.0003767	0.0001872	0.0035	1.45		7546.08	7546.08	No	4.45	Si
SLU 62	fin.	214.74	-1086	-0.0000411	0.0001872	0.0035	1.45		7546.08	7546.08	No	35.14	Si
SLU 61	ini.	1592.95	-250	-0.0003495	0.0001872	0.0035	1.45		7546.08	7546.08	No	4.74	Si
SLU 61	fin.	233.14	-1103	-0.0000447	0.0001872	0.0035	1.45		7546.08	7546.08	No	32.37	Si
SLU 63	ini.	1596.87	-303	-0.0003505	0.0001872	0.0035	1.45		7546.08	7546.08	No	4.73	Si
SLU 63	fin.	251.39	-1151	-0.0000482	0.0001872	0.0035	1.45		7546.08	7546.08	No	30.02	Si
SLU 58	ini.	1609.97	-220	-0.0003539	0.0001872	0.0035	1.45		7546.08	7546.08	No	4.69	Si
SLU 58	fin.	220.53	-1082	-0.0000422	0.0001872	0.0035	1.45		7546.08	7546.08	No	34.22	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 53	ini.	1601.26	-1826	1.45	0	3021	7137	6513	3698	10157	No	5.56	Si
SLU 53	fin.	214.58	-2695	1.45	0	3021	7137	6513	3698	10157	No	3.77	Si
SLU 56	ini.	1605.18	-1805	1.45	0	3021	7137	6513	3698	10157	No	5.63	Si
SLU 56	fin.	232.84	-2674	1.45	0	3021	7137	6513	3698	10157	No	3.8	Si
SLU 58	ini.	1609.97	-1832	1.45	0	3021	7137	6513	3698	10157	No	5.55	Si
SLU 58	fin.	220.53	-2700	1.45	0	3021	7137	6513	3698	10157	No	3.76	Si
SLU 83	ini.	1627.49	-1670	1.45	0	3021	7137	6513	3698	10157	No	6.08	Si
SLU 83	fin.	346.67	-2571	1.45	0	3021	7137	6513	3698	10157	No	3.95	Si
SLU 60	ini.	1693.29	-2004	1.45	0	3021	7137	6513	3698	10157	No	5.07	Si
SLU 60	fin.	196.49	-2873	1.45	0	3021	7137	6513	3698	10157	No	3.54	Si
SLU 61	ini.	1592.95	-1792	1.45	0	3021	7137	6513	3698	10157	No	5.67	Si
SLU 61	fin.	233.14	-2660	1.45	0	3021	7137	6513	3698	10157	No	3.82	Si
SLU 81	ini.	1623.58	-1691	1.45	0	3021	7137	6513	3698	10157	No	6.01	Si
SLU 81	fin.	328.42	-2592	1.45	0	3021	7137	6513	3698	10157	No	3.92	Si
SLU 62	ini.	1697.21	-1983	1.45	0	3021	7137	6513	3698	10157	No	5.12	Si
SLU 62	fin.	214.74	-2852	1.45	0	3021	7137	6513	3698	10157	No	3.56	Si
SLU 59	ini.	1509.63	-1620	1.45	0	3021	7137	6513	3698	10157	No	6.27	Si
SLU 59	fin.	257.17	-2488	1.45	0	3021	7137	6513	3698	10157	No	4.08	Si
SLU 63	ini.	1596.87	-1771	1.45	0	3021	7137	6513	3698	10157	No	5.73	Si
SLU 63	fin.	251.39	-2639	1.45	0	3021	7137	6513	3698	10157	No	3.85	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 8	ini.	11290.77	13869	-0.005928	0.0002807	0.0035	1.45		7650.82	7650.82		0.68	No
SLV 8	fin.	-3185.55	5618	-0.0007643	0.0002807	0.0035	1.45		7660.66	7660.66		2.4	Si
SLV 5	ini.	-8324.45	-13466	-0.0037246	0.0002807	0.0035	1.45		7660.66	7660.66		0.92	No
SLV 5	fin.	3339.43	-6849	-0.0008129	0.0002807	0.0035	1.45		7650.82	7650.82		2.29	Si
SLV 3	ini.	5419.79	5606	-0.0015922	0.0002807	0.0035	1.45		7650.82	7650.82		1.41	Si
SLV 3	fin.	-1211.7	1901	-0.0002457	0.0002807	0.0035	1.45		7660.66	7660.66		6.32	Si
SLV 12	ini.	10506.99	12834	-0.0053877	0.0002807	0.0035	1.45		7650.82	7650.82		0.73	No
SLV 12	fin.	-2939.49	5093	-0.0006906	0.0002807	0.0035	1.45		7660.66	7660.66		2.61	Si
SLV 11	ini.	10596.52	12941	-0.0054503	0.0002807	0.0035	1.45		7650.82	7650.82		0.72	No
SLV 11	fin.	-2965.05	5130	-0.0006981	0.0002807	0.0035	1.45		7660.66	7660.66		2.58	Si
SLV 9	ini.	-9108.24	-14502	-0.0043575	0.0002807	0.0035	1.45		7660.66	7660.66		0.84	No
SLV 9	fin.	3585.49	-7374	-0.0008912	0.0002807	0.0035	1.45		7650.82	7650.82		2.13	Si
SLV 4	ini.	5286.8	5446	-0.0015319	0.0002807	0.0035	1.45		7650.82	7650.82		1.45	Si
SLV 4	fin.	-1173.74	1846	-0.0002373	0.0002807	0.0035	1.45		7660.66	7660.66		6.53	Si
SLV 10	ini.	-9197.77	-14610	-0.0044262	0.0002807	0.0035	1.45		7660.66	7660.66		0.83	No
SLV 10	fin.	3611.05	-7412	-0.0008995	0.0002807	0.0035	1.45		7650.82	7650.82		2.12	Si
SLV 7	ini.	11380.31	13977	-0.0059887	0.0002807	0.0035	1.45		7650.82	7650.82		0.67	No
SLV 7	fin.	-3211.11	5656	-0.0007721	0.0002807	0.0035	1.45		7660.66	7660.66		2.39	Si
SLV 6	ini.	-8413.98	-13574	-0.0038005	0.0002807	0.0035	1.45		7660.66	7660.66		0.91	No
SLV 6	fin.	3364.99	-6886	-0.0008209	0.0002807	0.0035	1.45		7650.82	7650.82		2.27	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	ini.	-8324.45	18405	1.45	0	4531	7137	9769	3698	11668		0.63	No
SLV 5	fin.	3339.43	17673	1.45	0	4531	7137	9769	3698	11668		0.66	No
SLV 3	ini.	5419.79	-10008	1.45	0	4531	7137	9769	3698	11668		1.17	Si
SLV 3	fin.	-1211.7	-10821	1.45	0	4531	7137	9769	3698	11668		1.08	Si
SLV 11	ini.	10596.52	-20834	1.45	0	4531	7137	9769	3698	11668		0.56	No
SLV 11	fin.	-2965.05	-21473	1.45	0	4531	7137	9769	3698	11668		0.54	No
SLV 9	ini.	-9108.24	19981	1.45	0	4531	7137	9769	3698	11668		0.58	No
SLV 9	fin.	3585.49	19326	1.45	0	4531	7137	9769	3698	11668		0.6	No
SLV 10	ini.	-9197.77	20166	1.45	0	4531	7137	9769	3698	11668		0.58	No
SLV 10	fin.	3611.05	19511	1.45	0	4531	7137	9769	3698	11668		0.6	No
SLV 7	ini.	11380.31	-22410	1.45	0	4531	7137	9769	3698	11668		0.52	No
SLV 7	fin.	-3211.11	-23126	1.45	0	4531	7137	9769	3698	11668		0.5	No
SLV 6	ini.	-8413.98	18590	1.45	0	4531	7137	9769	3698	11668		0.63	No
SLV 6	fin.	3364.99	17857	1.45	0	4531	7137	9769	3698	11668		0.65	No
SLV 4	ini.	5286.8	-9734	1.45	0	4531	7137	9769	3698	11668		1.2	Si
SLV 4	fin.	-1173.74	-10546	1.45	0	4531	7137	9769	3698	11668		1.11	Si
SLV 8	ini.	11290.77	-22225	1.45	0	4531	7137	9769	3698	11668		0.52	No
SLV 8	fin.	-3185.55	-22942	1.45	0	4531	7137	9769	3698	11668		0.51	No
SLV 12	ini.	10506.99	-20649	1.45	0	4531	7137	9769	3698	11668		0.57	No
SLV 12	fin.	-2939.49	-21288	1.45	0	4531	7137	9769	3698	11668		0.55	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.672	SLV 7	No
V_SLV	0.505	SLV 7	No
PF_SLU	4.446	SLU 62	Si
V_SLU	3.536	SLU 60	Si

Trave di accoppiamento 84

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-19.868	1.046	7.17	8.62	1.45	-20.668	1.046	7.17	8.62	1.45	0.8	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-1795.03	-7130	-0.0003921	0.0002246	0.0035	1.45		7858.95	7858.95	No	4.38	Si
SLU 74	fin.	596.63	-5196	-0.000117	0.0002246	0.0035	1.45		7849.88	7849.88	No	13.16	Si
SLU 81	ini.	-1852.22	-7219	-0.0004069	0.0002246	0.0035	1.45		7858.95	7858.95	No	4.24	Si
SLU 81	fin.	643.67	-5200	-0.0001266	0.0002246	0.0035	1.45		7849.88	7849.88	No	12.2	Si
SLU 83	ini.	-1837.82	-7314	-0.0004032	0.0002246	0.0035	1.45		7858.95	7858.95	No	4.28	Si
SLU 83	fin.	609.35	-5333	-0.0001196	0.0002246	0.0035	1.45		7849.88	7849.88	No	12.88	Si
SLU 75	ini.	-1798.77	-7137	-0.0003931	0.0002246	0.0035	1.45		7858.95	7858.95	No	4.37	Si
SLU 75	fin.	596.91	-5199	-0.000117	0.0002246	0.0035	1.45		7849.88	7849.88	No	13.15	Si
SLU 76	ini.	-1785.6	-7059	-0.0003897	0.0002246	0.0035	1.45		7858.95	7858.95	No	4.4	Si
SLU 76	fin.	592.18	-5136	-0.0001161	0.0002246	0.0035	1.45		7849.88	7849.88	No	13.26	Si
SLU 78	ini.	-1784.37	-7232	-0.0003894	0.0002246	0.0035	1.45		7858.95	7858.95	No	4.4	Si
SLU 78	fin.	562.59	-5332	-0.00011	0.0002246	0.0035	1.45		7849.88	7849.88	No	13.95	Si
SLU 84	ini.	-1841.56	-7321	-0.0004042	0.0002246	0.0035	1.45		7858.95	7858.95	No	4.27	Si
SLU 84	fin.	609.63	-5337	-0.0001196	0.0002246	0.0035	1.45		7849.88	7849.88	No	12.88	Si
SLU 77	ini.	-1780.63	-7225	-0.0003884	0.0002246	0.0035	1.45		7858.95	7858.95	No	4.41	Si
SLU 77	fin.	562.31	-5329	-0.00011	0.0002246	0.0035	1.45		7849.88	7849.88	No	13.96	Si
SLU 82	ini.	-1855.96	-7226	-0.0004079	0.0002246	0.0035	1.45		7858.95	7858.95	No	4.23	Si
SLU 82	fin.	643.95	-5204	-0.0001267	0.0002246	0.0035	1.45		7849.88	7849.88	No	12.19	Si
SLU 73	ini.	-1800	-6964	-0.0003934	0.0002246	0.0035	1.45		7858.95	7858.95	No	4.37	Si
SLU 73	fin.	626.5	-5003	-0.0001231	0.0002246	0.0035	1.45		7849.88	7849.88	No	12.53	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 76	ini.	-1785.6	6053	1.45	0	3625	6344	7816	3697	9969	No	1.65	Si
SLU 76	fin.	592.18	3309	1.45	0	3625	6344	7816	3698	9969	No	3.01	Si
SLU 78	ini.	-1784.37	5993	1.45	0	3625	6344	7816	3697	9969	No	1.66	Si
SLU 78	fin.	562.59	3249	1.45	0	3625	6344	7816	3698	9969	No	3.07	Si
SLU 81	ini.	-1852.22	6399	1.45	0	3625	6344	7816	3697	9969	No	1.56	Si
SLU 81	fin.	643.67	3432	1.45	0	3625	6344	7816	3698	9969	No	2.9	Si
SLU 74	ini.	-1795.03	6081	1.45	0	3625	6344	7816	3697	9969	No	1.64	Si
SLU 74	fin.	596.63	3337	1.45	0	3625	6344	7816	3698	9969	No	2.99	Si
SLU 84	ini.	-1841.56	6312	1.45	0	3625	6344	7816	3697	9969	No	1.58	Si
SLU 84	fin.	609.63	3344	1.45	0	3625	6344	7816	3698	9969	No	2.98	Si
SLU 73	ini.	-1800	6148	1.45	0	3625	6344	7816	3697	9969	No	1.62	Si
SLU 73	fin.	626.5	3404	1.45	0	3625	6344	7816	3698	9969	No	2.93	Si
SLU 75	ini.	-1798.77	6089	1.45	0	3625	6344	7816	3697	9969	No	1.64	Si
SLU 75	fin.	596.91	3345	1.45	0	3625	6344	7816	3698	9969	No	2.98	Si
SLU 83	ini.	-1837.82	6304	1.45	0	3625	6344	7816	3697	9969	No	1.58	Si
SLU 83	fin.	609.35	3336	1.45	0	3625	6344	7816	3698	9969	No	2.99	Si
SLU 77	ini.	-1780.63	5985	1.45	0	3625	6344	7816	3697	9969	No	1.67	Si
SLU 77	fin.	562.31	3242	1.45	0	3625	6344	7816	3698	9969	No	3.08	Si
SLU 82	ini.	-1855.96	6407	1.45	0	3625	6344	7816	3697	9969	No	1.56	Si
SLU 82	fin.	643.95	3440	1.45	0	3625	6344	7816	3698	9969	No	2.9	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 14	ini.	-2854.21	-5609	-0.0006479	0.0003369	0.0035	1.45		7791.28	7791.28		2.73	Si
SLD 14	fin.	2115.71	-1704	-0.0004531	0.0003369	0.0035	1.45		7781.38	7781.38		3.68	Si
SLV 14	ini.	-4975.49	-6611	-0.0013503	0.0003369	0.0035	1.45		7791.28	7791.28		1.57	Si
SLV 14	fin.	4348.67	669	-0.0011183	0.0003369	0.0035	1.45		7781.38	7781.38		1.79	Si
SLV 13	ini.	-4939.39	-6625	-0.0013361	0.0003369	0.0035	1.45		7791.28	7791.28		1.58	Si
SLV 13	fin.	4277.97	559	-0.0010935	0.0003369	0.0035	1.45		7781.38	7781.38		1.82	Si
SLV 2	ini.	2223.12	-3276	-0.0004802	0.0003369	0.0035	1.45		7781.38	7781.38		3.5	Si
SLV 2	fin.	-3316.44	-7507	-0.0007817	0.0003369	0.0035	1.45		7791.28	7791.28		2.35	Si
SLV 16	ini.	-4808.07	-6440	-0.0012851	0.0003369	0.0035	1.45		7791.28	7791.28		1.62	Si
SLV 16	fin.	4287.84	668	-0.0010969	0.0003369	0.0035	1.45		7781.38	7781.38		1.81	Si
SLV 4	ini.	2390.54	-3105	-0.0005233	0.0003369	0.0035	1.45		7781.38	7781.38		3.26	Si
SLV 4	fin.	-3377.27	-7507	-0.0008	0.0003369	0.0035	1.45		7791.28	7791.28		2.31	Si
SLV 1	ini.	2259.22	-3290	-0.0004894	0.0003369	0.0035	1.45		7781.38	7781.38		3.44	Si
SLV 1	fin.	-3387.14	-7616	-0.000803	0.0003369	0.0035	1.45		7791.28	7791.28		2.3	Si
SLV 15	ini.	-4771.96	-6454	-0.0012713	0.0003369	0.0035	1.45		7791.28	7791.28		1.63	Si
SLV 15	fin.	4217.14	559	-0.0010724	0.0003369	0.0035	1.45		7781.38	7781.38		1.85	Si
SLV 3	ini.	2426.65	-3119	-0.0005328	0.0003369	0.0035	1.45		7781.38	7781.38		3.21	Si
SLV 3	fin.	-3447.97	-7616	-0.0008215	0.0003369	0.0035	1.45		7791.28	7791.28		2.26	Si
SLD 13	ini.	-2838.86	-5615	-0.0006436	0.0003369	0.0035	1.45		7791.28	7791.28		2.74	Si
SLD 13	fin.	2085.64	-1750	-0.0004456	0.0003369	0.0035	1.45		7781.38	7781.38		3.73	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	2259.22	-10027	1.45	0	5437	6344	11725	3697	11781		1.17	Si
SLV 1	fin.	-3387.14	-11784	1.45	0	5438	6344	11725	3698	11781		1	No
SLD 13	ini.	-2838.86	10443	1.45	0	5437	6344	11725	3697	11781		1.13	Si
SLD 13	fin.	2085.64	8724	1.45	0	5438	6344	11725	3698	11781		1.35	Si
SLV 4	ini.	2390.54	-10219	1.45	0	5437	6344	11725	3697	11781		1.15	Si
SLV 4	fin.	-3377.27	-12007	1.45	0	5438	6344	11725	3698	11781		0.98	No
SLV 15	ini.	-4771.96	18327	1.45	0	5437	6344	11725	3697	11781		0.64	No
SLV 15	fin.	4217.14	16602	1.45	0	5438	6344	11725	3698	11781		0.71	No
SLV 3	ini.	2426.65	-10440	1.45	0	5437	6344	11725	3697	11781		1.13	Si
SLV 3	fin.	-3447.97	-12228	1.45	0	5438	6344	11725	3698	11781		0.96	No
SLD 14	ini.	-2854.21	10537	1.45	0	5437	6344	11725	3697	11781		1.12	Si
SLD 14	fin.	2115.71	8817	1.45	0	5438	6344	11725	3698	11781		1.34	Si
SLV 13	ini.	-4939.39	18739	1.45	0	5437	6344	11725	3697	11781		0.63	No
SLV 13	fin.	4277.97	17046	1.45	0	5438	6344	11725	3698	11781		0.69	No
SLV 16	ini.	-4808.07	18547	1.45	0	5437	6344	11725	3697	11781		0.64	No
SLV 16	fin.	4287.84	16822	1.45	0	5438	6344	11725	3698	11781		0.7	No
SLV 2	ini.	2223.12	-9807	1.45	0	5437	6344	11725	3697	11781		1.2	Si
SLV 2	fin.	-3316.44	-11563	1.45	0	5438	6344	11725	3698	11781		1.02	Si
SLV 14	ini.	-4975.49	18959	1.45	0	5437	6344	11725	3697	11781		0.62	No
SLV 14	fin.	4348.67	17266	1.45	0	5438	6344	11725	3698	11781		0.68	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.566	SLV 14	Si
V_SLV	0.621	SLV 14	No
PF_SLU	4.234	SLU 82	Si
V_SLU	1.556	SLU 82	Si

Trave di accoppiamento 85

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-11.173	1.046	7.57	8.62	1.05	-12.293	1.046	7.57	8.62	1.05	1.12	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 76	ini.	-982.46	-4360	-0.0004125	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.2	Si
SLU 76	fin.	-212.06	-3597	-0.0000781	0.0002246	0.0035	1.05		4129.05	4129.05	No	19.47	Si
SLU 84	ini.	-1017.94	-4482	-0.0004302	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.06	Si
SLU 84	fin.	-230.69	-3711	-0.0000852	0.0002246	0.0035	1.05		4129.05	4129.05	No	17.9	Si
SLU 80	ini.	-970.98	-4416	-0.0004068	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.25	Si
SLU 80	fin.	-242.26	-3712	-0.0000896	0.0002246	0.0035	1.05		4129.05	4129.05	No	17.04	Si
SLU 73	ini.	-971.39	-4264	-0.000407	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.25	Si
SLU 73	fin.	-201.04	-3496	-0.0000739	0.0002246	0.0035	1.05		4129.05	4129.05	No	20.54	Si
SLU 75	ini.	-972.71	-4374	-0.0004076	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.24	Si
SLU 75	fin.	-226.84	-3647	-0.0000837	0.0002246	0.0035	1.05		4129.05	4129.05	No	18.2	Si
SLU 83	ini.	-984.1	-4422	-0.0004133	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.2	Si
SLU 83	fin.	-259.46	-3732	-0.0000962	0.0002246	0.0035	1.05		4129.05	4129.05	No	15.91	Si
SLU 82	ini.	-1006.87	-4386	-0.0004247	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.1	Si
SLU 82	fin.	-219.67	-3610	-0.000081	0.0002246	0.0035	1.05		4129.05	4129.05	No	18.8	Si
SLU 81	ini.	-973.03	-4325	-0.0004078	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.24	Si
SLU 81	fin.	-248.44	-3631	-0.0000919	0.0002246	0.0035	1.05		4129.05	4129.05	No	16.62	Si
SLU 77	ini.	-949.94	-4410	-0.0003964	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.35	Si
SLU 77	fin.	-266.63	-3769	-0.0000989	0.0002246	0.0035	1.05		4129.05	4129.05	No	15.49	Si
SLU 78	ini.	-983.78	-4471	-0.0004131	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.2	Si
SLU 78	fin.	-237.86	-3748	-0.0000879	0.0002246	0.0035	1.05		4129.05	4129.05	No	17.36	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 84	ini.	-1017.94	2589	1.05	0	2625	8326	5660	2678	8338	No	3.22	Si
SLU 84	fin.	-230.69	-459	1.05	0	2625	8326	5660	2678	8338	No	18.17	Si
SLU 73	ini.	-971.39	2436	1.05	0	2625	8326	5660	2678	8338	No	3.42	Si
SLU 73	fin.	-201.04	-340	1.05	0	2625	8326	5660	2678	8338	No	24.55	Si
SLU 42	ini.	-948.57	2480	1.05	0	2625	8326	5660	2678	8338	No	3.36	Si
SLU 42	fin.	-162.85	-325	1.05	0	2625	8326	5660	2678	8338	No	25.69	Si
SLU 78	ini.	-983.78	2393	1.05	0	2625	8326	5660	2678	8338	No	3.48	Si
SLU 78	fin.	-237.86	-382	1.05	0	2625	8326	5660	2678	8338	No	21.8	Si
SLU 81	ini.	-973.03	2497	1.05	0	2625	8326	5660	2678	8338	No	3.34	Si
SLU 81	fin.	-248.44	-551	1.05	0	2625	8326	5660	2678	8338	No	15.13	Si
SLU 76	ini.	-982.46	2434	1.05	0	2625	8326	5660	2678	8338	No	3.43	Si
SLU 76	fin.	-212.06	-342	1.05	0	2625	8326	5660	2678	8338	No	24.4	Si
SLU 40	ini.	-937.49	2482	1.05	0	2625	8326	5660	2678	8338	No	3.36	Si
SLU 40	fin.	-151.84	-322	1.05	0	2625	8326	5660	2678	8338	No	25.85	Si
SLU 82	ini.	-1006.87	2591	1.05	0	2625	8326	5660	2678	8338	No	3.22	Si
SLU 82	fin.	-219.67	-457	1.05	0	2625	8326	5660	2678	8338	No	18.25	Si
SLU 83	ini.	-984.1	2495	1.05	0	2625	8326	5660	2678	8338	No	3.34	Si
SLU 83	fin.	-259.46	-553	1.05	0	2625	8326	5660	2678	8338	No	15.08	Si
SLU 75	ini.	-972.71	2395	1.05	0	2625	8326	5660	2678	8338	No	3.48	Si
SLU 75	fin.	-226.84	-380	1.05	0	2625	8326	5660	2678	8338	No	21.92	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	4233.04	-1935	-0.0033544	0.0003369	0.0035	1.05		4071.54	4071.54		0.96	No
SLV 3	fin.	-8357.49	-17899	-0.0087137	0.0003369	0.0035	1.05		4078.37	4078.37		0.49	No
SLV 16	ini.	-3439.5	-442	-0.0021311	0.0003369	0.0035	1.05		4078.37	4078.37		1.19	Si
SLV 16	fin.	6246.97	11407	-0.0061696	0.0003369	0.0035	1.05		4071.54	4071.54		0.65	No
SLV 15	ini.	-3486.04	-494	-0.0021877	0.0003369	0.0035	1.05		4078.37	4078.37		1.17	Si
SLV 15	fin.	6296.44	11473	-0.0062321	0.0003369	0.0035	1.05		4071.54	4071.54		0.65	No
SLV 7	ini.	3839.62	2478	-0.0026872	0.0003369	0.0035	1.05		4071.54	4071.54		1.06	Si
SLV 7	fin.	-5240.15	-9351	-0.0048479	0.0003369	0.0035	1.05		4078.37	4078.37		0.78	No
SLV 13	ini.	-5458.04	-3837	-0.0051404	0.0003369	0.0035	1.05		4078.37	4078.37		0.75	No
SLV 13	fin.	8013.69	12949	-0.0083234	0.0003369	0.0035	1.05		4071.54	4071.54		0.51	No
SLV 8	ini.	3870.96	2513	-0.0027365	0.0003369	0.0035	1.05		4071.54	4071.54		1.05	Si
SLV 8	fin.	-5273.46	-9396	-0.0048931	0.0003369	0.0035	1.05		4078.37	4078.37		0.77	No
SLV 4	ini.	4279.58	-1884	-0.0034334	0.0003369	0.0035	1.05		4071.54	4071.54		0.95	No
SLV 4	fin.	-8406.96	-17966	-0.0087718	0.0003369	0.0035	1.05		4078.37	4078.37		0.49	No
SLV 1	ini.	2261.05	-5279	-0.0011058	0.0003369	0.0035	1.05		4071.54	4071.54		1.8	Si
SLV 1	fin.	-6640.24	-16424	-0.0066494	0.0003369	0.0035	1.05		4078.37	4078.37		0.61	No
SLV 2	ini.	2307.59	-5227	-0.0011372	0.0003369	0.0035	1.05		4071.54	4071.54		1.76	Si
SLV 2	fin.	-6689.71	-16491	-0.0067107	0.0003369	0.0035	1.05		4078.37	4078.37		0.61	No
SLV 14	ini.	-5411.5	-3785	-0.0050785	0.0003369	0.0035	1.05		4078.37	4078.37		0.75	No
SLV 14	fin.	7964.22	12882	-0.0082648	0.0003369	0.0035	1.05		4071.54	4071.54		0.51	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-3486.04	15158	1.05	0	2883	8326	8490	2678	11168		0.74	No
SLV 15	fin.	6296.44	13441	1.05	0	2883	8326	8490	2678	11168		0.83	No
SLV 10	ini.	-5018.08	15530	1.05	0	2883	8326	8490	2678	11168		0.72	No
SLV 10	fin.	4846.89	13780	1.05	0	2883	8326	8490	2678	11168		0.81	No
SLV 13	ini.	-5458.04	20711	1.05	0	2883	8326	8490	2678	11168		0.54	No

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	fin.	8013.69	18976	1.05	0	2883	8326	8490	2678	11168		0.59	No
SLV 3	ini.	4233.04	-17822	1.05	0	2883	8326	8490	2678	11168		0.63	No
SLV 3	fin.	-8357.49	-19520	1.05	0	2883	8326	8490	2678	11168		0.57	No
SLV 16	ini.	-3439.5	15017	1.05	0	2883	8326	8490	2678	11168		0.74	No
SLV 16	fin.	6246.97	13299	1.05	0	2883	8326	8490	2678	11168		0.84	No
SLV 8	ini.	3870.96	-12876	1.05	0	2883	8326	8490	2678	11168		0.87	No
SLV 8	fin.	-5273.46	-14560	1.05	0	2883	8326	8490	2678	11168		0.77	No
SLV 4	ini.	4279.58	-17963	1.05	0	2883	8326	8490	2678	11168		0.62	No
SLV 4	fin.	-8406.96	-19661	1.05	0	2883	8326	8490	2678	11168		0.57	No
SLV 7	ini.	3839.62	-12781	1.05	0	2883	8326	8490	2678	11168		0.87	No
SLV 7	fin.	-5240.15	-14465	1.05	0	2883	8326	8490	2678	11168		0.77	No
SLV 14	ini.	-5411.5	20570	1.05	0	2883	8326	8490	2678	11168		0.54	No
SLV 14	fin.	7964.22	18835	1.05	0	2883	8326	8490	2678	11168		0.59	No
SLV 9	ini.	-5049.42	15625	1.05	0	2883	8326	8490	2678	11168		0.71	No
SLV 9	fin.	4880.19	13875	1.05	0	2883	8326	8490	2678	11168		0.8	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.485	SLV 4	No
V_SLV	0.539	SLV 13	No
PF_SLU	4.056	SLU 84	Si
V_SLU	3.218	SLU 82	Si

Trave di accoppiamento 86

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-9.386	1.046	7.57	8.62	1.05	-10.466	1.046	7.57	8.62	1.05	1.08	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 42	ini.	-27.82	-3314	-0.00001	0.0002246	0.0035	1.05		4129.05	4129.05	No	148.42	Si
SLU 42	fin.	-658.53	-3881	-0.00026	0.0002246	0.0035	1.05		4129.05	4129.05	No	6.27	Si
SLU 78	ini.	-61.88	-3797	-0.0000224	0.0002246	0.0035	1.05		4129.05	4129.05	No	66.73	Si
SLU 78	fin.	-684.27	-4344	-0.0002714	0.0002246	0.0035	1.05		4129.05	4129.05	No	6.03	Si
SLU 75	ini.	-73.4	-3748	-0.0000266	0.0002246	0.0035	1.05		4129.05	4129.05	No	56.25	Si
SLU 75	fin.	-668.37	-4261	-0.0002643	0.0002246	0.0035	1.05		4129.05	4129.05	No	6.18	Si
SLU 83	ini.	-106.72	-3883	-0.0000388	0.0002246	0.0035	1.05		4129.05	4129.05	No	38.69	Si
SLU 83	fin.	-657.78	-4320	-0.0002596	0.0002246	0.0035	1.05		4129.05	4129.05	No	6.28	Si
SLU 76	ini.	-62.57	-3710	-0.0000226	0.0002246	0.0035	1.05		4129.05	4129.05	No	65.99	Si
SLU 76	fin.	-679.82	-4253	-0.0002694	0.0002246	0.0035	1.05		4129.05	4129.05	No	6.07	Si
SLU 73	ini.	-74.09	-3661	-0.0000268	0.0002246	0.0035	1.05		4129.05	4129.05	No	55.73	Si
SLU 73	fin.	-663.91	-4169	-0.0002623	0.0002246	0.0035	1.05		4129.05	4129.05	No	6.22	Si
SLU 80	ini.	-63.8	-3758	-0.0000231	0.0002246	0.0035	1.05		4129.05	4129.05	No	64.72	Si
SLU 80	fin.	-675.19	-4292	-0.0002674	0.0002246	0.0035	1.05		4129.05	4129.05	No	6.12	Si
SLU 36	ini.	-2.11	-3228	-0.0000008	0.0002246	0.0035	1.05		4129.05	4129.05	No	1958.95	Si
SLU 36	fin.	-654.22	-3839	-0.0002581	0.0002246	0.0035	1.05		4129.05	4129.05	No	6.31	Si
SLU 84	ini.	-87.59	-3883	-0.0000317	0.0002246	0.0035	1.05		4129.05	4129.05	No	47.14	Si
SLU 84	fin.	-688.58	-4386	-0.0002733	0.0002246	0.0035	1.05		4129.05	4129.05	No	6	Si
SLU 82	ini.	-99.11	-3834	-0.000036	0.0002246	0.0035	1.05		4129.05	4129.05	No	41.66	Si
SLU 82	fin.	-672.68	-4303	-0.0002662	0.0002246	0.0035	1.05		4129.05	4129.05	No	6.14	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 42	ini.	-27.82	-1420	1.05	0	2625	8326	5660	2678	8338	No	5.87	Si
SLU 42	fin.	-658.53	-1682	1.05	0	2625	8326	5660	2678	8338	No	4.96	Si
SLU 84	ini.	-87.59	-1509	1.05	0	2625	8326	5660	2678	8338	No	5.53	Si
SLU 84	fin.	-688.58	-1684	1.05	0	2625	8326	5660	2678	8338	No	4.95	Si
SLU 76	ini.	-62.57	-1536	1.05	0	2625	8326	5660	2678	8338	No	5.43	Si
SLU 76	fin.	-679.82	-1644	1.05	0	2625	8326	5660	2678	8338	No	5.07	Si
SLU 40	ini.	-39.34	-1360	1.05	0	2625	8326	5660	2678	8338	No	6.13	Si
SLU 40	fin.	-642.62	-1643	1.05	0	2625	8326	5660	2678	8338	No	5.07	Si
SLU 80	ini.	-63.8	-1548	1.05	0	2625	8326	5660	2678	8338	No	5.39	Si
SLU 80	fin.	-675.19	-1629	1.05	0	2625	8326	5660	2678	8338	No	5.12	Si
SLU 36	ini.	-2.11	-1486	1.05	0	2625	8326	5660	2678	8338	No	5.61	Si
SLU 36	fin.	-654.22	-1642	1.05	0	2625	8326	5660	2678	8338	No	5.08	Si
SLU 78	ini.	-61.88	-1575	1.05	0	2625	8326	5660	2678	8338	No	5.29	Si
SLU 78	fin.	-684.27	-1644	1.05	0	2625	8326	5660	2678	8338	No	5.07	Si
SLU 34	ini.	-2.79	-1447	1.05	0	2625	8326	5660	2678	8338	No	5.76	Si
SLU 34	fin.	-649.76	-1642	1.05	0	2625	8326	5660	2678	8338	No	5.08	Si
SLU 38	ini.	-4.03	-1459	1.05	0	2625	8326	5660	2678	8338	No	5.71	Si
SLU 38	fin.	-645.13	-1627	1.05	0	2625	8326	5660	2678	8338	No	5.12	Si
SLU 82	ini.	-99.11	-1449	1.05	0	2625	8326	5660	2678	8338	No	5.76	Si
SLU 82	fin.	-672.68	-1645	1.05	0	2625	8326	5660	2678	8338	No	5.07	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-4888.14	-13448	-0.0043577	0.0003369	0.0035	1.05		4078.37	4078.37		0.83	No
SLV 15	fin.	1560.29	-5566	-0.0006834	0.0003369	0.0035	1.05		4071.54	4071.54		2.61	Si
SLV 13	ini.	-3807.47	-13372	-0.0026286	0.0003369	0.0035	1.05		4078.37	4078.37		1.07	Si
SLV 13	fin.	-197.25	-9240	-0.000072	0.0003369	0.0035	1.05		4078.37	4078.37		20.68	Si
SLV 6	ini.	2992.16	856	-0.0016696	0.0003369	0.0035	1.05		4071.54	4071.54		1.36	Si
SLV 6	fin.	-3642.98	-7491	-0.0023916	0.0003369	0.0035	1.05		4078.37	4078.37		1.12	Si
SLV 5	ini.	2996.17	829	-0.0016733	0.0003369	0.0035	1.05		4071.54	4071.54		1.36	Si
SLV 5	fin.	-3661.42	-7547	-0.002417	0.0003369	0.0035	1.05		4078.37	4078.37		1.11	Si
SLV 3	ini.	3640.83	8254	-0.0023964	0.0003369	0.0035	1.05		4071.54	4071.54		1.12	Si
SLV 3	fin.	-621.53	3612	-0.0002374	0.0003369	0.0035	1.05		4078.37	4078.37		6.56	Si
SLV 1	ini.	4721.51	8330	-0.0041264	0.0003369	0.0035	1.05		4071.54	4071.54		0.86	No
SLV 1	fin.	-2379.07	-62	-0.0011838	0.0003369	0.0035	1.05		4078.37	4078.37		1.71	Si
SLV 14	ini.	-3813.44	-13333	-0.0026377	0.0003369	0.0035	1.05		4078.37	4078.37		1.07	Si
SLV 14	fin.	-169.86	-9157	-0.0000619	0.0003369	0.0035	1.05		4078.37	4078.37		24.01	Si
SLV 2	ini.	4715.54	8369	-0.0041176	0.0003369	0.0035	1.05		4071.54	4071.54		0.86	No
SLV 2	fin.	-2351.68	22	-0.0011648	0.0003369	0.0035	1.05		4078.37	4078.37		1.73	Si
SLV 16	ini.	-4894.11	-13409	-0.0043663	0.0003369	0.0035	1.05		4078.37	4078.37		0.83	No
SLV 16	fin.	1587.68	-5482	-0.0006983	0.0003369	0.0035	1.05		4071.54	4071.54		2.56	Si
SLV 4	ini.	3634.87	8293	-0.0023883	0.0003369	0.0035	1.05		4071.54	4071.54		1.12	Si
SLV 4	fin.	-594.14	3696	-0.0002263	0.0003369	0.0035	1.05		4078.37	4078.37		6.86	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	3640.83	-6593	1.05	0	2990	8326	8490	2678	11168		1.69	Si
SLV 3	fin.	-621.53	-6221	1.05	0	2990	8326	8490	2678	11168		1.8	Si
SLV 2	ini.	4715.54	-10662	1.05	0	2990	8326	8490	2678	11168		1.05	Si
SLV 2	fin.	-2351.68	-10712	1.05	0	2990	8326	8490	2678	11168		1.04	Si
SLV 15	ini.	-4888.14	8815	1.05	0	2990	8326	8490	2678	11168		1.27	Si
SLV 15	fin.	1560.29	8912	1.05	0	2990	8326	8490	2678	11168		1.25	Si
SLV 6	ini.	2992.16	-10088	1.05	0	2990	8326	8490	2678	11168		1.11	Si
SLV 6	fin.	-3642.98	-10723	1.05	0	2990	8326	8490	2678	11168		1.04	Si
SLV 4	ini.	3634.87	-6538	1.05	0	2990	8326	8490	2678	11168		1.71	Si
SLV 4	fin.	-594.14	-6169	1.05	0	2990	8326	8490	2678	11168		1.81	Si
SLV 5	ini.	2996.17	-10125	1.05	0	2990	8326	8490	2678	11168		1.1	Si
SLV 5	fin.	-3661.42	-10758	1.05	0	2990	8326	8490	2678	11168		1.04	Si
SLV 16	ini.	-4894.11	8870	1.05	0	2990	8326	8490	2678	11168		1.26	Si
SLV 16	fin.	1587.68	8964	1.05	0	2990	8326	8490	2678	11168		1.25	Si
SLV 12	ini.	-3168.77	8278	1.05	0	2990	8326	8490	2678	11168		1.35	Si
SLV 12	fin.	2870.02	8959	1.05	0	2990	8326	8490	2678	11168		1.25	Si
SLV 11	ini.	-3164.76	8242	1.05	0	2990	8326	8490	2678	11168		1.36	Si
SLV 11	fin.	2851.58	8924	1.05	0	2990	8326	8490	2678	11168		1.25	Si
SLV 1	ini.	4721.51	-10716	1.05	0	2990	8326	8490	2678	11168		1.04	Si
SLV 1	fin.	-2379.07	-10764	1.05	0	2990	8326	8490	2678	11168		1.04	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.833	SLV 16	No
V_SLV	1.038	SLV 1	Si
PF_SLU	5.996	SLU 84	Si
V_SLU	4.952	SLU 84	Si

Trave di accoppiamento 87

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-6.478	1.046	7.17	8.62	1.45	-7.278	1.046	7.17	8.62	1.45	0.8	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 69	ini.	158.19	-5099	-0.0000301	0.0002246	0.0035	1.45		7849.88	7849.88	No	49.62	Si
SLU 69	fin.	-949.35	-5929	-0.0001912	0.0002246	0.0035	1.45		7858.95	7858.95	No	8.28	Si
SLU 67	ini.	168.96	-4981	-0.0000322	0.0002246	0.0035	1.45		7849.88	7849.88	No	46.46	Si
SLU 67	fin.	-957.27	-5825	-0.0001929	0.0002246	0.0035	1.45		7858.95	7858.95	No	8.21	Si
SLU 49	ini.	231.36	-4367	-0.0000442	0.0002246	0.0035	1.45		7849.88	7849.88	No	33.93	Si
SLU 49	fin.	-944.85	-5271	-0.0001902	0.0002246	0.0035	1.45		7858.95	7858.95	No	8.32	Si
SLU 65	ini.	178.02	-4803	-0.0000339	0.0002246	0.0035	1.45		7849.88	7849.88	No	44.1	Si
SLU 65	fin.	-960.53	-5657	-0.0001936	0.0002246	0.0035	1.45		7858.95	7858.95	No	8.18	Si
SLU 66	ini.	149.82	-5004	-0.0000285	0.0002246	0.0035	1.45		7849.88	7849.88	No	52.39	Si
SLU 66	fin.	-944.54	-5823	-0.0001901	0.0002246	0.0035	1.45		7858.95	7858.95	No	8.32	Si
SLU 71	ini.	162.86	-5032	-0.000031	0.0002246	0.0035	1.45		7849.88	7849.88	No	48.2	Si
SLU 71	fin.	-948.94	-5866	-0.0001911	0.0002246	0.0035	1.45		7858.95	7858.95	No	8.28	Si
SLU 70	ini.	177.33	-5077	-0.0000338	0.0002246	0.0035	1.45		7849.88	7849.88	No	44.27	Si
SLU 70	fin.	-962.08	-5932	-0.0001939	0.0002246	0.0035	1.45		7858.95	7858.95	No	8.17	Si
SLU 47	ini.	240.42	-4189	-0.000046	0.0002246	0.0035	1.45		7849.88	7849.88	No	32.65	Si
SLU 47	fin.	-948.12	-5102	-0.0001909	0.0002246	0.0035	1.45		7858.95	7858.95	No	8.29	Si
SLU 68	ini.	186.38	-4899	-0.0000355	0.0002246	0.0035	1.45		7849.88	7849.88	No	42.12	Si
SLU 68	fin.	-965.35	-5763	-0.0001947	0.0002246	0.0035	1.45		7858.95	7858.95	No	8.14	Si
SLU 72	ini.	182	-5010	-0.0000347	0.0002246	0.0035	1.45		7849.88	7849.88	No	43.13	Si
SLU 72	fin.	-961.67	-5868	-0.0001939	0.0002246	0.0035	1.45		7858.95	7858.95	No	8.17	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 68	ini.	186.38	-1131	1.45	0	3625	6344	7816	3698	9969	No	8.81	Si
SLU 68	fin.	-965.35	-3377	1.45	0	3625	6344	7816	3698	9969	No	2.95	Si
SLU 64	ini.	146.12	-1001	1.45	0	3625	6344	7816	3698	9969	No	9.95	Si
SLU 64	fin.	-939.32	-3247	1.45	0	3625	6344	7816	3698	9969	No	3.07	Si
SLU 72	ini.	182	-1116	1.45	0	3625	6344	7816	3698	9969	No	8.93	Si
SLU 72	fin.	-961.67	-3362	1.45	0	3625	6344	7816	3698	9969	No	2.97	Si
SLU 67	ini.	168.96	-1081	1.45	0	3625	6344	7816	3698	9969	No	9.22	Si
SLU 67	fin.	-957.27	-3326	1.45	0	3625	6344	7816	3698	9969	No	3	Si
SLU 71	ini.	162.86	-1054	1.45	0	3625	6344	7816	3698	9969	No	9.46	Si
SLU 71	fin.	-948.94	-3299	1.45	0	3625	6344	7816	3698	9969	No	3.02	Si
SLU 69	ini.	158.19	-1045	1.45	0	3625	6344	7816	3698	9969	No	9.54	Si
SLU 69	fin.	-949.35	-3290	1.45	0	3625	6344	7816	3698	9969	No	3.03	Si
SLU 65	ini.	178.02	-1105	1.45	0	3625	6344	7816	3698	9969	No	9.02	Si
SLU 65	fin.	-960.53	-3351	1.45	0	3625	6344	7816	3698	9969	No	2.98	Si
SLU 70	ini.	177.33	-1107	1.45	0	3625	6344	7816	3698	9969	No	9	Si
SLU 70	fin.	-962.08	-3353	1.45	0	3625	6344	7816	3698	9969	No	2.97	Si
SLU 76	ini.	50.74	-448	1.45	0	3625	6344	7816	3698	9969	No	22.25	Si
SLU 76	fin.	-902.17	-3254	1.45	0	3625	6344	7816	3698	9969	No	3.06	Si
SLU 66	ini.	149.82	-1019	1.45	0	3625	6344	7816	3698	9969	No	9.79	Si
SLU 66	fin.	-944.54	-3264	1.45	0	3625	6344	7816	3698	9969	No	3.05	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 5	ini.	2656.03	-781	-0.0005941	0.0003369	0.0035	1.45		7781.38	7781.38		2.93	Si
SLV 5	fin.	-2756.17	-4806	-0.0006207	0.0003369	0.0035	1.45		7791.28	7791.28		2.83	Si
SLV 13	ini.	-2874.37	-6246	-0.0006535	0.0003369	0.0035	1.45		7791.28	7791.28		2.71	Si
SLV 13	fin.	2551.15	-2413	-0.0005658	0.0003369	0.0035	1.45		7781.38	7781.38		3.05	Si
SLV 1	ini.	3962.91	-67	-0.0009865	0.0003369	0.0035	1.45		7781.38	7781.38		1.96	Si
SLV 1	fin.	-4566.42	-6254	-0.0011947	0.0003369	0.0035	1.45		7791.28	7791.28		1.71	Si
SLV 2	ini.	3974.76	-14	-0.0009904	0.0003369	0.0035	1.45		7781.38	7781.38		1.96	Si
SLV 2	fin.	-4539.92	-6178	-0.001185	0.0003369	0.0035	1.45		7791.28	7791.28		1.72	Si
SLV 3	ini.	3033.57	-1302	-0.0006997	0.0003369	0.0035	1.45		7781.38	7781.38		2.57	Si
SLV 3	fin.	-3979.08	-6332	-0.0009904	0.0003369	0.0035	1.45		7791.28	7791.28		1.96	Si
SLV 16	ini.	-3791.86	-7427	-0.0009293	0.0003369	0.0035	1.45		7791.28	7791.28		2.05	Si
SLV 16	fin.	3164.99	-2414	-0.0007379	0.0003369	0.0035	1.45		7781.38	7781.38		2.46	Si
SLV 4	ini.	3045.42	-1249	-0.0007031	0.0003369	0.0035	1.45		7781.38	7781.38		2.56	Si
SLV 4	fin.	-3952.58	-6255	-0.0009816	0.0003369	0.0035	1.45		7791.28	7791.28		1.97	Si
SLV 15	ini.	-3803.71	-7480	-0.0009331	0.0003369	0.0035	1.45		7791.28	7791.28		2.05	Si
SLV 15	fin.	3138.49	-2491	-0.0007301	0.0003369	0.0035	1.45		7781.38	7781.38		2.48	Si
SLV 6	ini.	2664.01	-746	-0.0005962	0.0003369	0.0035	1.45		7781.38	7781.38		2.92	Si
SLV 6	fin.	-2738.33	-4755	-0.0006157	0.0003369	0.0035	1.45		7791.28	7791.28		2.85	Si
SLV 14	ini.	-2862.52	-6193	-0.0006502	0.0003369	0.0035	1.45		7791.28	7791.28		2.72	Si
SLV 14	fin.	2577.65	-2337	-0.0005729	0.0003369	0.0035	1.45		7781.38	7781.38		3.02	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-2874.37	10991	1.45	0	5438	6344	11725	3698	11781		1.07	Si
SLV 13	fin.	2551.15	9224	1.45	0	5438	6344	11725	3698	11781		1.28	Si
SLV 15	ini.	-3803.71	13941	1.45	0	5438	6344	11725	3698	11781		0.85	No
SLV 15	fin.	3138.49	12181	1.45	0	5438	6344	11725	3698	11781		0.97	No
SLV 3	ini.	3033.57	-12348	1.45	0	5438	6344	11725	3698	11781		0.95	No
SLV 3	fin.	-3979.08	-14103	1.45	0	5438	6344	11725	3698	11781		0.84	No
SLV 4	ini.	3045.42	-12308	1.45	0	5438	6344	11725	3698	11781		0.96	No
SLV 4	fin.	-3952.58	-14063	1.45	0	5438	6344	11725	3698	11781		0.84	No
SLV 2	ini.	3974.76	-15258	1.45	0	5438	6344	11725	3698	11781		0.77	No
SLV 2	fin.	-4539.92	-17020	1.45	0	5438	6344	11725	3698	11781		0.69	No
SLV 16	ini.	-3791.86	13980	1.45	0	5438	6344	11725	3698	11781		0.84	No
SLV 16	fin.	3164.99	12220	1.45	0	5438	6344	11725	3698	11781		0.96	No
SLV 1	ini.	3962.91	-15297	1.45	0	5438	6344	11725	3698	11781		0.77	No
SLV 1	fin.	-4566.42	-17059	1.45	0	5438	6344	11725	3698	11781		0.69	No
SLV 5	ini.	2656.03	-9531	1.45	0	5438	6344	11725	3698	11781		1.24	Si
SLV 5	fin.	-2756.17	-11303	1.45	0	5438	6344	11725	3698	11781		1.04	Si
SLV 6	ini.	2664.01	-9504	1.45	0	5438	6344	11725	3698	11781		1.24	Si
SLV 6	fin.	-2738.33	-11276	1.45	0	5438	6344	11725	3698	11781		1.04	Si
SLV 14	ini.	-2862.52	11031	1.45	0	5438	6344	11725	3698	11781		1.07	Si
SLV 14	fin.	2577.65	9264	1.45	0	5438	6344	11725	3698	11781		1.27	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.706	SLV 1	Si
V_SLV	0.691	SLV 1	No
PF_SLU	8.141	SLU 68	Si
V_SLU	2.952	SLU 68	Si

Trave di accoppiamento 88

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-4.168	1.046	7.17	8.62	1.45	-4.968	1.046	7.17	8.62	1.45	0.8	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	818.62	-4041	-0.0001633	0.0002246	0.0035	1.45		7849.88	7849.88	No	9.59	Si
SLU 77	fin.	-1321.65	-5677	-0.0002754	0.0002246	0.0035	1.45		7858.95	7858.95	No	5.95	Si
SLU 74	ini.	839.16	-3926	-0.0001676	0.0002246	0.0035	1.45		7849.88	7849.88	No	9.35	Si
SLU 74	fin.	-1333.3	-5590	-0.0002781	0.0002246	0.0035	1.45		7858.95	7858.95	No	5.89	Si
SLU 83	ini.	842.81	-4080	-0.0001684	0.0002246	0.0035	1.45		7849.88	7849.88	No	9.31	Si
SLU 83	fin.	-1378.15	-5785	-0.0002887	0.0002246	0.0035	1.45		7858.95	7858.95	No	5.7	Si
SLU 81	ini.	863.35	-3965	-0.0001728	0.0002246	0.0035	1.45		7849.88	7849.88	No	9.09	Si
SLU 81	fin.	-1389.79	-5698	-0.0002915	0.0002246	0.0035	1.45		7858.95	7858.95	No	5.65	Si
SLU 84	ini.	847.84	-4069	-0.0001695	0.0002246	0.0035	1.45		7849.88	7849.88	No	9.26	Si
SLU 84	fin.	-1380.1	-5779	-0.0002892	0.0002246	0.0035	1.45		7858.95	7858.95	No	5.69	Si
SLU 82	ini.	868.39	-3954	-0.0001739	0.0002246	0.0035	1.45		7849.88	7849.88	No	9.04	Si
SLU 82	fin.	-1391.75	-5692	-0.000292	0.0002246	0.0035	1.45		7858.95	7858.95	No	5.65	Si
SLU 75	ini.	844.19	-3915	-0.0001687	0.0002246	0.0035	1.45		7849.88	7849.88	No	9.3	Si
SLU 75	fin.	-1335.25	-5584	-0.0002786	0.0002246	0.0035	1.45		7858.95	7858.95	No	5.89	Si
SLU 73	ini.	862.08	-3738	-0.0001725	0.0002246	0.0035	1.45		7849.88	7849.88	No	9.11	Si
SLU 73	fin.	-1336.75	-5425	-0.0002789	0.0002246	0.0035	1.45		7858.95	7858.95	No	5.88	Si
SLU 78	ini.	823.65	-4030	-0.0001643	0.0002246	0.0035	1.45		7849.88	7849.88	No	9.53	Si
SLU 78	fin.	-1323.61	-5671	-0.0002758	0.0002246	0.0035	1.45		7858.95	7858.95	No	5.94	Si
SLU 76	ini.	841.54	-3853	-0.0001682	0.0002246	0.0035	1.45		7849.88	7849.88	No	9.33	Si
SLU 76	fin.	-1325.11	-5511	-0.0002762	0.0002246	0.0035	1.45		7858.95	7858.95	No	5.93	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 81	ini.	863.35	-2866	1.45	0	3625	6344	7816	3698	9969	No	3.48	Si
SLU 81	fin.	-1389.79	-5813	1.45	0	3625	6344	7816	3698	9969	No	1.71	Si
SLU 83	ini.	842.81	-2800	1.45	0	3625	6344	7816	3698	9969	No	3.56	Si
SLU 83	fin.	-1378.15	-5747	1.45	0	3625	6344	7816	3698	9969	No	1.73	Si
SLU 75	ini.	844.19	-2827	1.45	0	3625	6344	7816	3698	9969	No	3.53	Si
SLU 75	fin.	-1335.25	-5551	1.45	0	3625	6344	7816	3698	9969	No	1.8	Si
SLU 73	ini.	862.08	-2867	1.45	0	3625	6344	7816	3698	9969	No	3.48	Si
SLU 73	fin.	-1336.75	-5591	1.45	0	3625	6344	7816	3698	9969	No	1.78	Si
SLU 82	ini.	868.39	-2879	1.45	0	3625	6344	7816	3698	9969	No	3.46	Si
SLU 82	fin.	-1391.75	-5826	1.45	0	3625	6344	7816	3698	9969	No	1.71	Si
SLU 74	ini.	839.16	-2814	1.45	0	3625	6344	7816	3698	9969	No	3.54	Si
SLU 74	fin.	-1333.3	-5538	1.45	0	3625	6344	7816	3698	9969	No	1.8	Si
SLU 76	ini.	841.54	-2801	1.45	0	3625	6344	7816	3698	9969	No	3.56	Si
SLU 76	fin.	-1325.11	-5525	1.45	0	3625	6344	7816	3698	9969	No	1.8	Si
SLU 77	ini.	818.62	-2748	1.45	0	3625	6344	7816	3698	9969	No	3.63	Si
SLU 77	fin.	-1321.65	-5472	1.45	0	3625	6344	7816	3698	9969	No	1.82	Si
SLU 78	ini.	823.65	-2761	1.45	0	3625	6344	7816	3698	9969	No	3.61	Si
SLU 78	fin.	-1323.61	-5485	1.45	0	3625	6344	7816	3698	9969	No	1.82	Si
SLU 84	ini.	847.84	-2813	1.45	0	3625	6344	7816	3698	9969	No	3.54	Si
SLU 84	fin.	-1380.1	-5760	1.45	0	3625	6344	7816	3698	9969	No	1.73	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	4996.84	4087	-0.0013611	0.0003369	0.0035	1.45		7781.38	7781.38		1.56	Si
SLV 3	fin.	-3233.01	-2073	-0.0007569	0.0003369	0.0035	1.45		7791.28	7791.28		2.41	Si
SLV 16	ini.	-4012.01	-9874	-0.0010013	0.0003369	0.0035	1.45		7791.28	7791.28		1.94	Si
SLV 16	fin.	1421.34	-5880	-0.0002894	0.0003369	0.0035	1.45		7781.38	7781.38		5.47	Si
SLD 2	ini.	2591.3	580	-0.0005766	0.0003369	0.0035	1.45		7781.38	7781.38		3	Si
SLD 2	fin.	-1923.56	-2797	-0.0004053	0.0003369	0.0035	1.45		7791.28	7791.28		4.05	Si
SLV 4	ini.	4951.6	4050	-0.0013431	0.0003369	0.0035	1.45		7781.38	7781.38		1.57	Si
SLV 4	fin.	-3213.73	-2048	-0.0007512	0.0003369	0.0035	1.45		7791.28	7791.28		2.42	Si
SLV 1	ini.	5272.87	4811	-0.0014745	0.0003369	0.0035	1.45		7781.38	7781.38		1.48	Si
SLV 1	fin.	-3278.04	-1564	-0.0007702	0.0003369	0.0035	1.45		7791.28	7791.28		2.38	Si
SLD 1	ini.	2610.54	596	-0.0005817	0.0003369	0.0035	1.45		7781.38	7781.38		2.98	Si
SLD 1	fin.	-1931.77	-2807	-0.0004073	0.0003369	0.0035	1.45		7791.28	7791.28		4.03	Si
SLV 2	ini.	5227.64	4774	-0.0014554	0.0003369	0.0035	1.45		7781.38	7781.38		1.49	Si
SLV 2	fin.	-3258.76	-1540	-0.0007645	0.0003369	0.0035	1.45		7791.28	7791.28		2.39	Si
SLV 15	ini.	-3966.78	-9837	-0.0009863	0.0003369	0.0035	1.45		7791.28	7791.28		1.96	Si
SLV 15	fin.	1402.06	-5904	-0.0002851	0.0003369	0.0035	1.45		7781.38	7781.38		5.55	Si
SLV 13	ini.	-3690.74	-9112	-0.000897	0.0003369	0.0035	1.45		7791.28	7791.28		2.11	Si
SLV 13	fin.	1357.02	-5396	-0.0002752	0.0003369	0.0035	1.45		7781.38	7781.38		5.73	Si
SLV 14	ini.	-3735.98	-9149	-0.0009114	0.0003369	0.0035	1.45		7791.28	7791.28		2.09	Si
SLV 14	fin.	1376.31	-5372	-0.0002794	0.0003369	0.0035	1.45		7781.38	7781.38		5.65	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 2	ini.	2591.3	-7781	1.45	0	5438	6344	11725	3698	11781		1.51	Si
SLD 2	fin.	-1923.56	-9486	1.45	0	5438	6344	11725	3698	11781		1.24	Si
SLD 1	ini.	2610.54	-7840	1.45	0	5438	6344	11725	3698	11781		1.5	Si
SLD 1	fin.	-1931.77	-9544	1.45	0	5438	6344	11725	3698	11781		1.23	Si
SLV 16	ini.	-4012.01	11255	1.45	0	5438	6344	11725	3698	11781		1.05	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	fin.	1421.34	9482	1.45	0	5438	6344	11725	3698	11781		1.24	Si
SLV 13	ini.	-3690.74	10462	1.45	0	5438	6344	11725	3698	11781		1.13	Si
SLV 13	fin.	1357.02	8698	1.45	0	5438	6344	11725	3698	11781		1.35	Si
SLV 3	ini.	4996.84	-14853	1.45	0	5438	6344	11725	3698	11781		0.79	No
SLV 3	fin.	-3233.01	-16540	1.45	0	5438	6344	11725	3698	11781		0.71	No
SLV 4	ini.	4951.6	-14717	1.45	0	5438	6344	11725	3698	11781		0.8	No
SLV 4	fin.	-3213.73	-16404	1.45	0	5438	6344	11725	3698	11781		0.72	No
SLV 15	ini.	-3966.78	11118	1.45	0	5438	6344	11725	3698	11781		1.06	Si
SLV 15	fin.	1402.06	9346	1.45	0	5438	6344	11725	3698	11781		1.26	Si
SLV 14	ini.	-3735.98	10598	1.45	0	5438	6344	11725	3698	11781		1.11	Si
SLV 14	fin.	1376.31	8834	1.45	0	5438	6344	11725	3698	11781		1.33	Si
SLV 1	ini.	5272.87	-15509	1.45	0	5438	6344	11725	3698	11781		0.76	No
SLV 1	fin.	-3278.04	-17188	1.45	0	5438	6344	11725	3698	11781		0.69	No
SLV 2	ini.	5227.64	-15373	1.45	0	5438	6344	11725	3698	11781		0.77	No
SLV 2	fin.	-3258.76	-17052	1.45	0	5438	6344	11725	3698	11781		0.69	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.476	SLV 1	Si
V_SLV	0.685	SLV 1	No
PF_SLU	5.647	SLU 82	Si
V_SLU	1.711	SLU 82	Si

Trave di accoppiamento 89

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-17.718	6.651	5.07	5.97	0.9	-16.818	6.651	5.07	5.97	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	ini.	679.97	-2652	-0.0003951	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.33	Si
SLU 82	fin.	-36.92	-2053	-0.0000182	0.0001872	0.0035	0.9		2948.11	2948.11	No	79.85	Si
SLU 83	ini.	700.12	-2715	-0.000409	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.2	Si
SLU 83	fin.	-42.36	-2090	-0.0000209	0.0001872	0.0035	0.9		2948.11	2948.11	No	69.59	Si
SLU 74	ini.	685.53	-2644	-0.0003989	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.29	Si
SLU 74	fin.	-44.54	-2027	-0.0000219	0.0001872	0.0035	0.9		2948.11	2948.11	No	66.19	Si
SLU 75	ini.	675.7	-2630	-0.0003921	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.35	Si
SLU 75	fin.	-33.53	-2043	-0.0000165	0.0001872	0.0035	0.9		2948.11	2948.11	No	87.93	Si
SLU 80	ini.	679.96	-2651	-0.000395	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.33	Si
SLU 80	fin.	-30.83	-2067	-0.0000151	0.0001872	0.0035	0.9		2948.11	2948.11	No	95.62	Si
SLU 78	ini.	686.02	-2678	-0.0003992	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.29	Si
SLU 78	fin.	-27.96	-2096	-0.0000137	0.0001872	0.0035	0.9		2948.11	2948.11	No	105.46	Si
SLU 84	ini.	690.29	-2701	-0.0004022	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.26	Si
SLU 84	fin.	-31.35	-2106	-0.0000154	0.0001872	0.0035	0.9		2948.11	2948.11	No	94.04	Si
SLU 79	ini.	689.79	-2666	-0.0004019	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.27	Si
SLU 79	fin.	-41.85	-2051	-0.0000206	0.0001872	0.0035	0.9		2948.11	2948.11	No	70.45	Si
SLU 77	ini.	695.85	-2693	-0.0004061	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.23	Si
SLU 77	fin.	-38.97	-2080	-0.0000192	0.0001872	0.0035	0.9		2948.11	2948.11	No	75.65	Si
SLU 81	ini.	689.8	-2667	-0.0004019	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.27	Si
SLU 81	fin.	-47.94	-2037	-0.0000236	0.0001872	0.0035	0.9		2948.11	2948.11	No	61.5	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	686.02	-2324	0.9	0	1875	7137	4043	2295	6338	No	2.73	Si
SLU 78	fin.	-27.96	481	0.9	0	1875	7137	4043	2295	6338	No	13.19	Si
SLU 81	ini.	689.8	-2307	0.9	0	1875	7137	4043	2295	6338	No	2.75	Si
SLU 81	fin.	-47.94	366	0.9	0	1875	7137	4043	2295	6338	No	17.29	Si
SLU 74	ini.	685.53	-2321	0.9	0	1875	7137	4043	2295	6338	No	2.73	Si
SLU 74	fin.	-44.54	408	0.9	0	1875	7137	4043	2295	6338	No	15.54	Si
SLU 82	ini.	679.97	-2264	0.9	0	1875	7137	4043	2295	6338	No	2.8	Si
SLU 82	fin.	-36.92	396	0.9	0	1875	7137	4043	2295	6338	No	16	Si
SLU 79	ini.	689.79	-2341	0.9	0	1875	7137	4043	2295	6338	No	2.71	Si
SLU 79	fin.	-41.85	428	0.9	0	1875	7137	4043	2295	6338	No	14.8	Si
SLU 75	ini.	675.7	-2278	0.9	0	1875	7137	4043	2295	6338	No	2.78	Si
SLU 75	fin.	-33.53	437	0.9	0	1875	7137	4043	2295	6338	No	14.49	Si
SLU 84	ini.	690.29	-2310	0.9	0	1875	7137	4043	2295	6338	No	2.74	Si
SLU 84	fin.	-31.35	439	0.9	0	1875	7137	4043	2295	6338	No	14.43	Si
SLU 77	ini.	695.85	-2368	0.9	0	1875	7137	4043	2295	6338	No	2.68	Si
SLU 77	fin.	-38.97	451	0.9	0	1875	7137	4043	2295	6338	No	14.05	Si
SLU 80	ini.	679.96	-2298	0.9	0	1875	7137	4043	2295	6338	No	2.76	Si
SLU 80	fin.	-30.83	458	0.9	0	1875	7137	4043	2295	6338	No	13.84	Si
SLU 83	ini.	700.12	-2354	0.9	0	1875	7137	4043	2295	6338	No	2.69	Si
SLU 83	fin.	-42.36	410	0.9	0	1875	7137	4043	2295	6338	No	15.47	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	2077.26	-3912	-0.0015818	0.0002807	0.0035	0.9		2967.55	2967.55		1.43	Si
SLV 13	fin.	-2093.84	2413	-0.0015971	0.0002807	0.0035	0.9		2973.32	2973.32		1.42	Si
SLV 12	ini.	2284.83	-4417	-0.0018505	0.0002807	0.0035	0.9		2967.55	2967.55		1.3	Si
SLV 12	fin.	-2145.49	1970	-0.0016604	0.0002807	0.0035	0.9		2973.32	2973.32		1.39	Si
SLV 5	ini.	-1332.59	826	-0.0008496	0.0002807	0.0035	0.9		2973.32	2973.32		2.23	Si
SLV 5	fin.	2045.7	-4626	-0.0015445	0.0002807	0.0035	0.9		2967.55	2967.55		1.45	Si
SLV 1	ini.	-2230.02	1908	-0.0017696	0.0002807	0.0035	0.9		2973.32	2973.32		1.33	Si
SLV 1	fin.	3280.09	-7099	-0.0038988	0.0002807	0.0035	0.9		2967.55	2967.55		0.9	No
SLV 14	ini.	2587.8	-4586	-0.0023423	0.0002807	0.0035	0.9		2967.55	2967.55		1.15	Si
SLV 14	fin.	-2735.85	3551	-0.0026257	0.0002807	0.0035	0.9		2973.32	2973.32		1.09	Si
SLV 2	ini.	-1719.47	1234	-0.001195	0.0002807	0.0035	0.9		2973.32	2973.32		1.73	Si
SLV 2	fin.	2638.08	-5962	-0.0024378	0.0002807	0.0035	0.9		2967.55	2967.55		1.12	Si
SLV 15	ini.	2671.71	-4825	-0.0025041	0.0002807	0.0035	0.9		2967.55	2967.55		1.11	Si
SLV 15	fin.	-2737.87	3307	-0.00263	0.0002807	0.0035	0.9		2973.32	2973.32		1.09	Si
SLV 16	ini.	3182.25	-5499	-0.0036843	0.0002807	0.0035	0.9		2967.55	2967.55		0.93	No
SLV 16	fin.	-3379.88	4444	-0.0040965	0.0002807	0.0035	0.9		2973.32	2973.32		0.88	No
SLV 4	ini.	-1125.02	321	-0.0006852	0.0002807	0.0035	0.9		2973.32	2973.32		2.64	Si
SLV 4	fin.	1994.05	-5069	-0.0014852	0.0002807	0.0035	0.9		2967.55	2967.55		1.49	Si
SLV 3	ini.	-1635.57	995	-0.0011151	0.0002807	0.0035	0.9		2973.32	2973.32		1.82	Si
SLV 3	fin.	2636.06	-6206	-0.0024339	0.0002807	0.0035	0.9		2967.55	2967.55		1.13	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	-1635.57	6264	0.9	0	2813	7137	6064	2295	8359		1.33	Si
SLV 3	fin.	2636.06	9964	0.9	0	2813	7137	6064	2295	8359		0.84	No
SLV 15	ini.	2671.71	-10149	0.9	0	2813	7137	6064	2295	8359		0.82	No
SLV 15	fin.	-2737.87	-9085	0.9	0	2813	7137	6064	2295	8359		0.92	No
SLV 11	ini.	1941.09	-7793	0.9	0	2813	7137	6064	2295	8359		1.07	Si
SLV 11	fin.	-1713.25	-4838	0.9	0	2813	7137	6064	2295	8359		1.73	Si
SLV 2	ini.	-1719.47	6925	0.9	0	2813	7137	6064	2295	8359		1.21	Si
SLV 2	fin.	2638.08	9505	0.9	0	2813	7137	6064	2295	8359		0.88	No
SLV 4	ini.	-1125.02	4296	0.9	0	2813	7137	6064	2295	8359		1.95	Si
SLV 4	fin.	1994.05	7742	0.9	0	2813	7137	6064	2295	8359		1.08	Si
SLV 12	ini.	2284.83	-9117	0.9	0	2813	7137	6064	2295	8359		0.92	No
SLV 12	fin.	-2145.49	-6334	0.9	0	2813	7137	6064	2295	8359		1.32	Si
SLV 13	ini.	2077.26	-7521	0.9	0	2813	7137	6064	2295	8359		1.11	Si
SLV 13	fin.	-2093.84	-7322	0.9	0	2813	7137	6064	2295	8359		1.14	Si
SLV 14	ini.	2587.8	-9488	0.9	0	2813	7137	6064	2295	8359		0.88	No
SLV 14	fin.	-2735.85	-9544	0.9	0	2813	7137	6064	2295	8359		0.88	No
SLV 16	ini.	3182.25	-12117	0.9	0	2813	7137	6064	2295	8359		0.69	No
SLV 16	fin.	-3379.88	-11307	0.9	0	2813	7137	6064	2295	8359		0.74	No
SLV 1	ini.	-2230.02	8892	0.9	0	2813	7137	6064	2295	8359		0.94	No
SLV 1	fin.	3280.09	11727	0.9	0	2813	7137	6064	2295	8359		0.71	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.88	SLV 16	No
V_SLV	0.69	SLV 16	No
PF_SLU	4.203	SLU 83	Si
V_SLU	2.677	SLU 77	Si

Trave di accoppiamento 90

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-17.718	6.651	7.77	8.62	0.85	-16.818	6.651	7.77	8.62	0.85	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	13.24	-1075	-0.0000073	0.0001872	0.0035	0.85		2640.4	2640.4	No	199.37	Si
SLU 78	fin.	-660.64	-2975	-0.0004353	0.0001872	0.0035	0.85		2645.85	2645.85	No	4	Si
SLU 81	ini.	30.23	-1020	-0.0000167	0.0001872	0.0035	0.85		2640.4	2640.4	No	87.33	Si
SLU 81	fin.	-661.62	-2951	-0.0004361	0.0001872	0.0035	0.85		2645.85	2645.85	No	4	Si
SLU 77	ini.	22.24	-1062	-0.0000122	0.0001872	0.0035	0.85		2640.4	2640.4	No	118.74	Si
SLU 77	fin.	-668.73	-2998	-0.0004418	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.96	Si
SLU 80	ini.	15.12	-1055	-0.0000083	0.0001872	0.0035	0.85		2640.4	2640.4	No	174.66	Si
SLU 80	fin.	-653.07	-2937	-0.0004294	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.05	Si
SLU 83	ini.	24.21	-1060	-0.0000133	0.0001872	0.0035	0.85		2640.4	2640.4	No	109.04	Si
SLU 83	fin.	-673.52	-3015	-0.0004456	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.93	Si
SLU 79	ini.	24.11	-1042	-0.0000133	0.0001872	0.0035	0.85		2640.4	2640.4	No	109.51	Si
SLU 79	fin.	-661.15	-2960	-0.0004358	0.0001872	0.0035	0.85		2645.85	2645.85	No	4	Si
SLU 84	ini.	15.22	-1074	-0.0000084	0.0001872	0.0035	0.85		2640.4	2640.4	No	173.47	Si
SLU 84	fin.	-665.44	-2992	-0.0004391	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.98	Si
SLU 82	ini.	21.24	-1033	-0.0000117	0.0001872	0.0035	0.85		2640.4	2640.4	No	124.3	Si
SLU 82	fin.	-653.53	-2928	-0.0004297	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.05	Si
SLU 74	ini.	28.26	-1021	-0.0000156	0.0001872	0.0035	0.85		2640.4	2640.4	No	93.45	Si
SLU 74	fin.	-656.82	-2934	-0.0004323	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.03	Si
SLU 75	ini.	19.26	-1035	-0.0000106	0.0001872	0.0035	0.85		2640.4	2640.4	No	137.07	Si
SLU 75	fin.	-648.73	-2911	-0.000426	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.08	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 81	ini.	30.23	941	0.85	0	1771	6740	3818	2168	5985	No	6.36	Si
SLU 81	fin.	-661.62	-5095	0.85	0	1771	6740	3818	2168	5985	No	1.17	Si
SLU 75	ini.	19.26	966	0.85	0	1771	6740	3818	2168	5985	No	6.2	Si
SLU 75	fin.	-648.73	-5006	0.85	0	1771	6740	3818	2168	5985	No	1.2	Si
SLU 83	ini.	24.21	983	0.85	0	1771	6740	3818	2168	5985	No	6.09	Si
SLU 83	fin.	-673.52	-5193	0.85	0	1771	6740	3818	2168	5985	No	1.15	Si
SLU 82	ini.	21.24	975	0.85	0	1771	6740	3818	2168	5985	No	6.14	Si
SLU 82	fin.	-653.53	-5055	0.85	0	1771	6740	3818	2168	5985	No	1.18	Si
SLU 79	ini.	24.11	957	0.85	0	1771	6740	3818	2168	5985	No	6.26	Si
SLU 79	fin.	-661.15	-5086	0.85	0	1771	6740	3818	2168	5985	No	1.18	Si
SLU 80	ini.	15.12	991	0.85	0	1771	6740	3818	2168	5985	No	6.04	Si
SLU 80	fin.	-653.07	-5047	0.85	0	1771	6740	3818	2168	5985	No	1.19	Si
SLU 74	ini.	28.26	932	0.85	0	1771	6740	3818	2168	5985	No	6.42	Si
SLU 74	fin.	-656.82	-5046	0.85	0	1771	6740	3818	2168	5985	No	1.19	Si
SLU 77	ini.	22.24	974	0.85	0	1771	6740	3818	2168	5985	No	6.14	Si
SLU 77	fin.	-668.73	-5145	0.85	0	1771	6740	3818	2168	5985	No	1.16	Si
SLU 84	ini.	15.22	1018	0.85	0	1771	6740	3818	2168	5985	No	5.88	Si
SLU 84	fin.	-665.44	-5154	0.85	0	1771	6740	3818	2168	5985	No	1.16	Si
SLU 78	ini.	13.24	1008	0.85	0	1771	6740	3818	2168	5985	No	5.94	Si
SLU 78	fin.	-660.64	-5105	0.85	0	1771	6740	3818	2168	5985	No	1.17	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 1	ini.	-2479.9	-4832	-0.0027069	0.0002807	0.0035	0.85		2647.52	2647.52		1.07	Si
SLV 1	fin.	1451.56	2983	-0.0011069	0.0002807	0.0035	0.85		2641.96	2641.96		1.82	Si
SLV 14	ini.	2029.93	2827	-0.0018307	0.0002807	0.0035	0.85		2641.96	2641.96		1.3	Si
SLV 14	fin.	-1852.74	-5466	-0.0015713	0.0002807	0.0035	0.85		2647.52	2647.52		1.43	Si
SLV 12	ini.	1685.66	1914	-0.0013666	0.0002807	0.0035	0.85		2641.96	2641.96		1.57	Si
SLV 12	fin.	-1824.56	-5783	-0.0015344	0.0002807	0.0035	0.85		2647.52	2647.52		1.45	Si
SLV 16	ini.	2556.69	3569	-0.0029147	0.0002807	0.0035	0.85		2641.96	2641.96		1.03	Si
SLV 16	fin.	-2342.29	-6898	-0.0023934	0.0002807	0.0035	0.85		2647.52	2647.52		1.13	Si
SLV 2	ini.	-1982.33	-3977	-0.0017525	0.0002807	0.0035	0.85		2647.52	2647.52		1.34	Si
SLV 2	fin.	1089.16	2064	-0.0007592	0.0002807	0.0035	0.85		2641.96	2641.96		2.43	Si
SLV 11	ini.	1350.66	1338	-0.0010043	0.0002807	0.0035	0.85		2641.96	2641.96		1.96	Si
SLV 11	fin.	-1580.57	-5165	-0.0012424	0.0002807	0.0035	0.85		2647.52	2647.52		1.68	Si
SLV 13	ini.	1532.36	1972	-0.0011928	0.0002807	0.0035	0.85		2641.96	2641.96		1.72	Si
SLV 13	fin.	-1490.34	-4548	-0.0011446	0.0002807	0.0035	0.85		2647.52	2647.52		1.78	Si
SLV 15	ini.	2059.11	2714	-0.0018768	0.0002807	0.0035	0.85		2641.96	2641.96		1.28	Si
SLV 15	fin.	-1979.89	-5980	-0.0017489	0.0002807	0.0035	0.85		2647.52	2647.52		1.34	Si
SLV 5	ini.	-1608.87	-3177	-0.0012741	0.0002807	0.0035	0.85		2647.52	2647.52		1.65	Si
SLV 5	fin.	933.83	1868	-0.0006263	0.0002807	0.0035	0.85		2641.96	2641.96		2.83	Si
SLV 3	ini.	-1953.15	-4090	-0.0017099	0.0002807	0.0035	0.85		2647.52	2647.52		1.36	Si
SLV 3	fin.	962.01	1551	-0.0006497	0.0002807	0.0035	0.85		2641.96	2641.96		2.75	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	2059.11	-7154	0.85	0	2656	6740	5727	2168	7894		1.1	Si
SLV 15	fin.	-1979.89	-10631	0.85	0	2656	6740	5727	2168	7894		0.74	No
SLD 16	ini.	1107.75	-3534	0.85	0	2656	6740	5727	2168	7894		2.23	Si
SLD 16	fin.	-1249.36	-7171	0.85	0	2656	6740	5727	2168	7894		1.1	Si
SLV 3	ini.	-1953.15	8165	0.85	0	2656	6740	5727	2168	7894		0.97	No
SLV 3	fin.	962.01	3137	0.85	0	2656	6740	5727	2168	7894		2.52	Si
SLV 13	ini.	1532.36	-5162	0.85	0	2656	6740	5727	2168	7894		1.53	Si
SLV 13	fin.	-1490.34	-8216	0.85	0	2656	6740	5727	2168	7894		0.96	No
SLV 14	ini.	2029.93	-7071	0.85	0	2656	6740	5727	2168	7894		1.12	Si
SLV 14	fin.	-1852.74	-9907	0.85	0	2656	6740	5727	2168	7894		0.8	No
SLV 16	ini.	2556.69	-9062	0.85	0	2656	6740	5727	2168	7894		0.87	No
SLV 16	fin.	-2342.29	-12321	0.85	0	2656	6740	5727	2168	7894		0.64	No
SLV 2	ini.	-1982.33	8248	0.85	0	2656	6740	5727	2168	7894		0.96	No
SLV 2	fin.	1089.16	3861	0.85	0	2656	6740	5727	2168	7894		2.04	Si
SLV 1	ini.	-2479.9	10157	0.85	0	2656	6740	5727	2168	7894		0.78	No
SLV 1	fin.	1451.56	5552	0.85	0	2656	6740	5727	2168	7894		1.42	Si
SLV 11	ini.	1350.66	-4428	0.85	0	2656	6740	5727	2168	7894		1.78	Si
SLV 11	fin.	-1580.57	-8905	0.85	0	2656	6740	5727	2168	7894		0.89	No
SLV 12	ini.	1685.66	-5712	0.85	0	2656	6740	5727	2168	7894		1.38	Si
SLV 12	fin.	-1824.56	-10043	0.85	0	2656	6740	5727	2168	7894		0.79	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.033	SLV 16	Si
V_SLV	0.641	SLV 16	No
PF_SLU	3.928	SLU 83	Si
V_SLU	1.152	SLU 83	Si

Trave di accoppiamento 91

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-12.838	6.651	5.07	5.97	0.9	-11.938	6.651	5.07	5.97	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	662.08	-3596	-0.0003827	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.44	Si
SLU 75	fin.	403.48	-3296	-0.0002163	0.0001872	0.0035	0.9		2942.43	2942.43	No	7.29	Si
SLU 77	ini.	691.83	-3696	-0.0004033	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.25	Si
SLU 77	fin.	397.73	-3341	-0.0002129	0.0001872	0.0035	0.9		2942.43	2942.43	No	7.4	Si
SLU 80	ini.	676.72	-3633	-0.0003928	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.35	Si
SLU 80	fin.	394.89	-3295	-0.0002112	0.0001872	0.0035	0.9		2942.43	2942.43	No	7.45	Si
SLU 83	ini.	690.35	-3717	-0.0004022	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.26	Si
SLU 83	fin.	405.6	-3378	-0.0002176	0.0001872	0.0035	0.9		2942.43	2942.43	No	7.25	Si
SLU 78	ini.	684.47	-3678	-0.0003982	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.3	Si
SLU 78	fin.	402.19	-3342	-0.0002156	0.0001872	0.0035	0.9		2942.43	2942.43	No	7.32	Si
SLU 74	ini.	669.44	-3614	-0.0003878	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.4	Si
SLU 74	fin.	399.01	-3296	-0.0002137	0.0001872	0.0035	0.9		2942.43	2942.43	No	7.37	Si
SLU 82	ini.	660.6	-3616	-0.0003817	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.45	Si
SLU 82	fin.	411.35	-3332	-0.000221	0.0001872	0.0035	0.9		2942.43	2942.43	No	7.15	Si
SLU 84	ini.	682.98	-3698	-0.0003971	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.31	Si
SLU 84	fin.	410.07	-3378	-0.0002203	0.0001872	0.0035	0.9		2942.43	2942.43	No	7.18	Si
SLU 81	ini.	667.96	-3634	-0.0003868	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.41	Si
SLU 81	fin.	406.88	-3332	-0.0002184	0.0001872	0.0035	0.9		2942.43	2942.43	No	7.23	Si
SLU 79	ini.	684.09	-3651	-0.0003979	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.3	Si
SLU 79	fin.	390.42	-3295	-0.0002086	0.0001872	0.0035	0.9		2942.43	2942.43	No	7.54	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	684.47	-2125	0.9	0	1875	7137	4043	2295	6338	No	2.98	Si
SLU 78	fin.	402.19	1252	0.9	0	1875	7137	4043	2295	6338	No	5.06	Si
SLU 80	ini.	676.72	-2097	0.9	0	1875	7137	4043	2295	6338	No	3.02	Si
SLU 80	fin.	394.89	1223	0.9	0	1875	7137	4043	2295	6338	No	5.18	Si
SLU 82	ini.	660.6	-2004	0.9	0	1875	7137	4043	2295	6338	No	3.16	Si
SLU 82	fin.	411.35	1254	0.9	0	1875	7137	4043	2295	6338	No	5.05	Si
SLU 75	ini.	662.08	-2040	0.9	0	1875	7137	4043	2295	6338	No	3.11	Si
SLU 75	fin.	403.48	1253	0.9	0	1875	7137	4043	2295	6338	No	5.06	Si
SLU 77	ini.	691.83	-2156	0.9	0	1875	7137	4043	2295	6338	No	2.94	Si
SLU 77	fin.	397.73	1240	0.9	0	1875	7137	4043	2295	6338	No	5.11	Si
SLU 83	ini.	690.35	-2120	0.9	0	1875	7137	4043	2295	6338	No	2.99	Si
SLU 83	fin.	405.6	1241	0.9	0	1875	7137	4043	2295	6338	No	5.11	Si
SLU 81	ini.	667.96	-2035	0.9	0	1875	7137	4043	2295	6338	No	3.11	Si
SLU 81	fin.	406.88	1242	0.9	0	1875	7137	4043	2295	6338	No	5.1	Si
SLU 84	ini.	682.98	-2090	0.9	0	1875	7137	4043	2295	6338	No	3.03	Si
SLU 84	fin.	410.07	1254	0.9	0	1875	7137	4043	2295	6338	No	5.06	Si
SLU 79	ini.	684.09	-2127	0.9	0	1875	7137	4043	2295	6338	No	2.98	Si
SLU 79	fin.	390.42	1210	0.9	0	1875	7137	4043	2295	6338	No	5.24	Si
SLU 74	ini.	669.44	-2070	0.9	0	1875	7137	4043	2295	6338	No	3.06	Si
SLU 74	fin.	399.01	1240	0.9	0	1875	7137	4043	2295	6338	No	5.11	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	-2475.62	1984	-0.0021367	0.0002807	0.0035	0.9		2973.32	2973.32		1.2	Si
SLV 3	fin.	3192.87	-6981	-0.003708	0.0002807	0.0035	0.9		2967.55	2967.55		0.93	No
SLV 12	ini.	2227.06	-5914	-0.0017711	0.0002807	0.0035	0.9		2967.55	2967.55		1.33	Si
SLV 12	fin.	-1179.19	-650	-0.0007268	0.0002807	0.0035	0.9		2973.32	2973.32		2.52	Si
SLV 14	ini.	3355.91	-6808	-0.0040594	0.0002807	0.0035	0.9		2967.55	2967.55		0.88	No
SLV 14	fin.	-2642.18	2529	-0.0024364	0.0002807	0.0035	0.9		2973.32	2973.32		1.13	Si
SLV 13	ini.	2788.75	-5901	-0.0027513	0.0002807	0.0035	0.9		2967.55	2967.55		1.06	Si
SLV 13	fin.	-2097.17	1690	-0.0016011	0.0002807	0.0035	0.9		2973.32	2973.32		1.42	Si
SLV 1	ini.	-2919.48	3092	-0.0030457	0.0002807	0.0035	0.9		2973.32	2973.32		1.02	Si
SLV 1	fin.	3455.75	-6976	-0.004265	0.0002807	0.0035	0.9		2967.55	2967.55		0.86	No
SLV 16	ini.	3799.76	-7916	-0.0049356	0.0002807	0.0035	0.9		2967.55	2967.55		0.78	No
SLV 16	fin.	-2905.06	2525	-0.0030106	0.0002807	0.0035	0.9		2973.32	2973.32		1.02	Si
SLV 2	ini.	-2352.32	2185	-0.0019422	0.0002807	0.0035	0.9		2973.32	2973.32		1.26	Si
SLV 2	fin.	2910.74	-6137	-0.0030373	0.0002807	0.0035	0.9		2967.55	2967.55		1.02	Si
SLV 4	ini.	-1908.46	1077	-0.0013873	0.0002807	0.0035	0.9		2973.32	2973.32		1.56	Si
SLV 4	fin.	2647.86	-6141	-0.0024569	0.0002807	0.0035	0.9		2967.55	2967.55		1.12	Si
SLV 15	ini.	3232.6	-7009	-0.0037957	0.0002807	0.0035	0.9		2967.55	2967.55		0.92	No
SLV 15	fin.	-2360.05	1686	-0.0019538	0.0002807	0.0035	0.9		2973.32	2973.32		1.26	Si
SLD 16	ini.	1869.85	-4749	-0.00135	0.0002807	0.0035	0.9		2967.55	2967.55		1.59	Si
SLD 16	fin.	-1080.46	-195	-0.0006515	0.0002807	0.0035	0.9		2973.32	2973.32		2.75	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 11	ini.	1845.21	-6747	0.9	0	2813	7137	6064	2295	8359		1.24	Si
SLV 11	fin.	-812.26	-2806	0.9	0	2813	7137	6064	2295	8359		2.98	Si
SLV 1	ini.	-2919.48	10987	0.9	0	2813	7137	6064	2295	8359		0.76	No
SLV 1	fin.	3455.75	12565	0.9	0	2813	7137	6064	2295	8359		0.67	No
SLV 3	ini.	-2475.62	9214	0.9	0	2813	7137	6064	2295	8359		0.91	No

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	fin.	3192.87	11808	0.9	0	2813	7137	6064	2295	8359		0.71	No
SLV 14	ini.	3355.91	-11927	0.9	0	2813	7137	6064	2295	8359		0.7	No
SLV 14	fin.	-2642.18	-10075	0.9	0	2813	7137	6064	2295	8359		0.83	No
SLV 4	ini.	-1908.46	7155	0.9	0	2813	7137	6064	2295	8359		1.17	Si
SLV 4	fin.	2647.86	9784	0.9	0	2813	7137	6064	2295	8359		0.85	No
SLV 16	ini.	3799.76	-13700	0.9	0	2813	7137	6064	2295	8359		0.61	No
SLV 16	fin.	-2905.06	-10832	0.9	0	2813	7137	6064	2295	8359		0.77	No
SLV 2	ini.	-2352.32	8929	0.9	0	2813	7137	6064	2295	8359		0.94	No
SLV 2	fin.	2910.74	10541	0.9	0	2813	7137	6064	2295	8359		0.79	No
SLV 13	ini.	2788.75	-9868	0.9	0	2813	7137	6064	2295	8359		0.85	No
SLV 13	fin.	-2097.17	-8052	0.9	0	2813	7137	6064	2295	8359		1.04	Si
SLV 12	ini.	2227.06	-8133	0.9	0	2813	7137	6064	2295	8359		1.03	Si
SLV 12	fin.	-1179.19	-4169	0.9	0	2813	7137	6064	2295	8359		2.01	Si
SLV 15	ini.	3232.6	-11641	0.9	0	2813	7137	6064	2295	8359		0.72	No
SLV 15	fin.	-2360.05	-8808	0.9	0	2813	7137	6064	2295	8359		0.95	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.781	SLV 16	No
V_SLV	0.61	SLV 16	No
PF_SLU	4.253	SLU 77	Si
V_SLU	2.94	SLU 77	Si

Trave di accoppiamento 92

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-12.838	6.651	7.77	8.62	0.85	-11.938	6.651	7.77	8.62	0.85	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 84	ini.	-538.71	-2544	-0.0003417	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.91	Si
SLU 84	fin.	-598.56	-3027	-0.000387	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.42	Si
SLU 83	ini.	-535.28	-2540	-0.0003392	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.94	Si
SLU 83	fin.	-604.77	-3042	-0.0003917	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.37	Si
SLU 75	ini.	-525.4	-2476	-0.0003318	0.0001872	0.0035	0.85		2645.85	2645.85	No	5.04	Si
SLU 75	fin.	-577.99	-2934	-0.0003713	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.58	Si
SLU 79	ini.	-517.61	-2474	-0.0003261	0.0001872	0.0035	0.85		2645.85	2645.85	No	5.11	Si
SLU 79	fin.	-596.14	-2981	-0.0003851	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.44	Si
SLU 74	ini.	-521.97	-2473	-0.0003293	0.0001872	0.0035	0.85		2645.85	2645.85	No	5.07	Si
SLU 74	fin.	-584.2	-2949	-0.000376	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.53	Si
SLU 80	ini.	-521.04	-2478	-0.0003286	0.0001872	0.0035	0.85		2645.85	2645.85	No	5.08	Si
SLU 80	fin.	-589.93	-2966	-0.0003804	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.48	Si
SLU 81	ini.	-530.78	-2499	-0.0003358	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.98	Si
SLU 81	fin.	-585.42	-2967	-0.0003769	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.52	Si
SLU 78	ini.	-529.9	-2518	-0.0003352	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.99	Si
SLU 78	fin.	-597.34	-3010	-0.000386	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.43	Si
SLU 82	ini.	-534.21	-2502	-0.0003384	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.95	Si
SLU 82	fin.	-579.21	-2951	-0.0003722	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.57	Si
SLU 77	ini.	-526.47	-2514	-0.0003326	0.0001872	0.0035	0.85		2645.85	2645.85	No	5.03	Si
SLU 77	fin.	-603.55	-3025	-0.0003908	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.38	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-530.78	2889	0.85	0	1771	6740	3818	2168	5985	No	2.07	Si
SLU 81	fin.	-585.42	-3315	0.85	0	1771	6740	3818	2168	5985	No	1.81	Si
SLU 84	ini.	-538.71	2933	0.85	0	1771	6740	3818	2168	5985	No	2.04	Si
SLU 84	fin.	-598.56	-3384	0.85	0	1771	6740	3818	2168	5985	No	1.77	Si
SLU 82	ini.	-534.21	2903	0.85	0	1771	6740	3818	2168	5985	No	2.06	Si
SLU 82	fin.	-579.21	-3290	0.85	0	1771	6740	3818	2168	5985	No	1.82	Si
SLU 80	ini.	-521.04	2844	0.85	0	1771	6740	3818	2168	5985	No	2.1	Si
SLU 80	fin.	-589.93	-3320	0.85	0	1771	6740	3818	2168	5985	No	1.8	Si
SLU 79	ini.	-517.61	2830	0.85	0	1771	6740	3818	2168	5985	No	2.11	Si
SLU 79	fin.	-596.14	-3345	0.85	0	1771	6740	3818	2168	5985	No	1.79	Si
SLU 74	ini.	-521.97	2842	0.85	0	1771	6740	3818	2168	5985	No	2.11	Si
SLU 74	fin.	-584.2	-3293	0.85	0	1771	6740	3818	2168	5985	No	1.82	Si
SLU 83	ini.	-535.28	2920	0.85	0	1771	6740	3818	2168	5985	No	2.05	Si
SLU 83	fin.	-604.77	-3409	0.85	0	1771	6740	3818	2168	5985	No	1.76	Si
SLU 77	ini.	-526.47	2872	0.85	0	1771	6740	3818	2168	5985	No	2.08	Si
SLU 77	fin.	-603.55	-3387	0.85	0	1771	6740	3818	2168	5985	No	1.77	Si
SLU 78	ini.	-529.9	2886	0.85	0	1771	6740	3818	2168	5985	No	2.07	Si
SLU 78	fin.	-597.34	-3361	0.85	0	1771	6740	3818	2168	5985	No	1.78	Si
SLU 75	ini.	-525.4	2856	0.85	0	1771	6740	3818	2168	5985	No	2.1	Si
SLU 75	fin.	-577.99	-3267	0.85	0	1771	6740	3818	2168	5985	No	1.83	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	1962.38	3169	-0.0017288	0.0002807	0.0035	0.85		2641.96	2641.96		1.35	Si
SLV 14	fin.	-2881.13	-6222	-0.0037606	0.0002807	0.0035	0.85		2647.52	2647.52		0.92	No
SLV 13	ini.	1512.32	2262	-0.0011712	0.0002807	0.0035	0.85		2641.96	2641.96		1.75	Si
SLV 13	fin.	-2373.41	-5319	-0.0024606	0.0002807	0.0035	0.85		2647.52	2647.52		1.12	Si
SLV 3	ini.	-2661.43	-6448	-0.003186	0.0002807	0.0035	0.85		2647.52	2647.52		0.99	No
SLV 3	fin.	2122.98	2364	-0.0019826	0.0002807	0.0035	0.85		2641.96	2641.96		1.24	Si
SLV 12	ini.	761.65	295	-0.0004889	0.0002807	0.0035	0.85		2641.96	2641.96		3.47	Si
SLV 12	fin.	-1898.57	-5068	-0.0016331	0.0002807	0.0035	0.85		2647.52	2647.52		1.39	Si
SLV 2	ini.	-2395.01	-5719	-0.0025084	0.0002807	0.0035	0.85		2647.52	2647.52		1.11	Si
SLV 2	fin.	1986.34	2387	-0.0017642	0.0002807	0.0035	0.85		2641.96	2641.96		1.33	Si
SLD 16	ini.	714.92	490	-0.0004534	0.0002807	0.0035	0.85		2641.96	2641.96		3.7	Si
SLD 16	fin.	-1602.12	-4147	-0.0012665	0.0002807	0.0035	0.85		2647.52	2647.52		1.65	Si
SLV 1	ini.	-2845.07	-6626	-0.003671	0.0002807	0.0035	0.85		2647.52	2647.52		0.93	No
SLV 1	fin.	2494.06	3290	-0.0027537	0.0002807	0.0035	0.85		2641.96	2641.96		1.06	Si
SLV 15	ini.	1695.96	2440	-0.0013789	0.0002807	0.0035	0.85		2641.96	2641.96		1.56	Si
SLV 15	fin.	-2744.49	-6245	-0.0034112	0.0002807	0.0035	0.85		2647.52	2647.52		0.96	No
SLV 4	ini.	-2211.37	-5541	-0.0021329	0.0002807	0.0035	0.85		2647.52	2647.52		1.2	Si
SLV 4	fin.	1615.26	1461	-0.0012849	0.0002807	0.0035	0.85		2641.96	2641.96		1.64	Si
SLV 16	ini.	2146.02	3347	-0.0020225	0.0002807	0.0035	0.85		2641.96	2641.96		1.23	Si
SLV 16	fin.	-3252.21	-7148	-0.0046125	0.0002807	0.0035	0.85		2647.52	2647.52		0.81	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 16	ini.	714.92	-2531	0.85	0	2656	6740	5727	2168	7894		3.12	Si
SLD 16	fin.	-1602.12	-6884	0.85	0	2656	6740	5727	2168	7894		1.15	Si
SLV 15	ini.	1695.96	-6632	0.85	0	2656	6740	5727	2168	7894		1.19	Si
SLV 15	fin.	-2744.49	-11318	0.85	0	2656	6740	5727	2168	7894		0.7	No
SLV 12	ini.	761.65	-2816	0.85	0	2656	6740	5727	2168	7894		2.8	Si
SLV 12	fin.	-1898.57	-8159	0.85	0	2656	6740	5727	2168	7894		0.97	No
SLV 14	ini.	1962.38	-7677	0.85	0	2656	6740	5727	2168	7894		1.03	Si
SLV 14	fin.	-2881.13	-11755	0.85	0	2656	6740	5727	2168	7894		0.67	No
SLV 3	ini.	-2661.43	11493	0.85	0	2656	6740	5727	2168	7894		0.69	No
SLV 3	fin.	2122.98	7461	0.85	0	2656	6740	5727	2168	7894		1.06	Si
SLV 13	ini.	1512.32	-5806	0.85	0	2656	6740	5727	2168	7894		1.36	Si
SLV 13	fin.	-2373.41	-9797	0.85	0	2656	6740	5727	2168	7894		0.81	No
SLV 1	ini.	-2845.07	12319	0.85	0	2656	6740	5727	2168	7894		0.64	No
SLV 1	fin.	2494.06	8982	0.85	0	2656	6740	5727	2168	7894		0.88	No
SLV 16	ini.	2146.02	-8503	0.85	0	2656	6740	5727	2168	7894		0.93	No
SLV 16	fin.	-3252.21	-13277	0.85	0	2656	6740	5727	2168	7894		0.59	No
SLV 2	ini.	-2395.01	10448	0.85	0	2656	6740	5727	2168	7894		0.76	No
SLV 2	fin.	1986.34	7024	0.85	0	2656	6740	5727	2168	7894		1.12	Si
SLV 4	ini.	-2211.37	9623	0.85	0	2656	6740	5727	2168	7894		0.82	No
SLV 4	fin.	1615.26	5502	0.85	0	2656	6740	5727	2168	7894		1.43	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.814	SLV 16	No
V_SLV	0.595	SLV 16	No
PF_SLU	4.375	SLU 83	Si
V_SLU	1.756	SLU 83	Si

Trave di accoppiamento 93

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-7.958	6.651	5.07	5.97	0.9	-7.058	6.651	5.07	5.97	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-249.08	-1583	-0.0001281	0.0001872	0.0035	0.9		2948.11	2948.11	No	11.84	Si
SLU 80	fin.	863.83	-2942	-0.0005271	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.41	Si
SLU 83	ini.	-262.93	-1624	-0.0001356	0.0001872	0.0035	0.9		2948.11	2948.11	No	11.21	Si
SLU 83	fin.	896.32	-3047	-0.0005514	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.28	Si
SLU 74	ini.	-257.56	-1576	-0.0001327	0.0001872	0.0035	0.9		2948.11	2948.11	No	11.45	Si
SLU 74	fin.	874.95	-2966	-0.0005354	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.36	Si
SLU 82	ini.	-250.23	-1618	-0.0001287	0.0001872	0.0035	0.9		2948.11	2948.11	No	11.78	Si
SLU 82	fin.	875.76	-2998	-0.000536	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.36	Si
SLU 79	ini.	-260.02	-1567	-0.000134	0.0001872	0.0035	0.9		2948.11	2948.11	No	11.34	Si
SLU 79	fin.	874.7	-2959	-0.0005352	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.36	Si
SLU 81	ini.	-261.17	-1602	-0.0001347	0.0001872	0.0035	0.9		2948.11	2948.11	No	11.29	Si
SLU 81	fin.	886.62	-3015	-0.0005441	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.32	Si
SLU 75	ini.	-246.61	-1591	-0.0001267	0.0001872	0.0035	0.9		2948.11	2948.11	No	11.95	Si
SLU 75	fin.	864.08	-2950	-0.0005273	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.41	Si
SLU 78	ini.	-248.37	-1613	-0.0001277	0.0001872	0.0035	0.9		2948.11	2948.11	No	11.87	Si
SLU 78	fin.	873.78	-2982	-0.0005345	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.37	Si
SLU 77	ini.	-259.32	-1597	-0.0001337	0.0001872	0.0035	0.9		2948.11	2948.11	No	11.37	Si
SLU 77	fin.	884.64	-2999	-0.0005427	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.33	Si
SLU 84	ini.	-251.98	-1639	-0.0001296	0.0001872	0.0035	0.9		2948.11	2948.11	No	11.7	Si
SLU 84	fin.	885.46	-3031	-0.0005433	0.0001872	0.0035	0.9		2942.43	2942.43	No	3.32	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-246.61	507	0.9	0	1875	7137	4043	2295	6338	No	12.49	Si
SLU 75	fin.	864.08	3170	0.9	0	1875	7137	4043	2295	6338	No	2	Si
SLU 79	ini.	-260.02	551	0.9	0	1875	7137	4043	2295	6338	No	11.51	Si
SLU 79	fin.	874.7	3207	0.9	0	1875	7137	4043	2295	6338	No	1.98	Si
SLU 74	ini.	-257.56	544	0.9	0	1875	7137	4043	2295	6338	No	11.65	Si
SLU 74	fin.	874.95	3211	0.9	0	1875	7137	4043	2295	6338	No	1.97	Si
SLU 80	ini.	-249.08	514	0.9	0	1875	7137	4043	2295	6338	No	12.33	Si
SLU 80	fin.	863.83	3166	0.9	0	1875	7137	4043	2295	6338	No	2	Si
SLU 77	ini.	-259.32	536	0.9	0	1875	7137	4043	2295	6338	No	11.81	Si
SLU 77	fin.	884.64	3251	0.9	0	1875	7137	4043	2295	6338	No	1.95	Si
SLU 83	ini.	-262.93	573	0.9	0	1875	7137	4043	2295	6338	No	11.07	Si
SLU 83	fin.	896.32	3271	0.9	0	1875	7137	4043	2295	6338	No	1.94	Si
SLU 78	ini.	-248.37	500	0.9	0	1875	7137	4043	2295	6338	No	12.67	Si
SLU 78	fin.	873.78	3210	0.9	0	1875	7137	4043	2295	6338	No	1.97	Si
SLU 82	ini.	-250.23	543	0.9	0	1875	7137	4043	2295	6338	No	11.66	Si
SLU 82	fin.	875.76	3190	0.9	0	1875	7137	4043	2295	6338	No	1.99	Si
SLU 81	ini.	-261.17	580	0.9	0	1875	7137	4043	2295	6338	No	10.93	Si
SLU 81	fin.	886.62	3231	0.9	0	1875	7137	4043	2295	6338	No	1.96	Si
SLU 84	ini.	-251.98	536	0.9	0	1875	7137	4043	2295	6338	No	11.82	Si
SLU 84	fin.	885.46	3230	0.9	0	1875	7137	4043	2295	6338	No	1.96	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	-2604.47	3336	-0.0023645	0.0002807	0.0035	0.9		2973.32	2973.32		1.14	Si
SLV 4	fin.	2766.64	-4579	-0.0027026	0.0002807	0.0035	0.9		2967.55	2967.55		1.07	Si
SLV 16	ini.	2083.27	-5468	-0.001589	0.0002807	0.0035	0.9		2967.55	2967.55		1.42	Si
SLV 16	fin.	-1345.87	37	-0.0008606	0.0002807	0.0035	0.9		2973.32	2973.32		2.21	Si
SLV 13	ini.	2228.81	-5401	-0.0017734	0.0002807	0.0035	0.9		2967.55	2967.55		1.33	Si
SLV 13	fin.	-1566.51	564	-0.0010516	0.0002807	0.0035	0.9		2973.32	2973.32		1.9	Si
SLV 7	ini.	-2160.59	2148	-0.0016793	0.0002807	0.0035	0.9		2973.32	2973.32		1.38	Si
SLV 7	fin.	2460.46	-4502	-0.002119	0.0002807	0.0035	0.9		2967.55	2967.55		1.21	Si
SLV 3	ini.	-3117.14	4320	-0.0035228	0.0002807	0.0035	0.9		2973.32	2973.32		0.95	No
SLV 3	fin.	3203.82	-5040	-0.0037323	0.0002807	0.0035	0.9		2967.55	2967.55		0.93	No
SLV 2	ini.	-1946.26	2418	-0.0014281	0.0002807	0.0035	0.9		2973.32	2973.32		1.53	Si
SLV 2	fin.	2108.83	-3591	-0.0016199	0.0002807	0.0035	0.9		2967.55	2967.55		1.41	Si
SLV 8	ini.	-1815.43	1486	-0.0012903	0.0002807	0.0035	0.9		2973.32	2973.32		1.64	Si
SLV 8	fin.	2166.13	-4191	-0.0016914	0.0002807	0.0035	0.9		2967.55	2967.55		1.37	Si
SLV 14	ini.	2741.49	-6385	-0.0026483	0.0002807	0.0035	0.9		2967.55	2967.55		1.08	Si
SLV 14	fin.	-2003.68	1025	-0.001492	0.0002807	0.0035	0.9		2973.32	2973.32		1.48	Si
SLV 1	ini.	-2458.93	3403	-0.0021091	0.0002807	0.0035	0.9		2973.32	2973.32		1.21	Si
SLV 1	fin.	2546	-4052	-0.0022661	0.0002807	0.0035	0.9		2967.55	2967.55		1.17	Si
SLV 10	ini.	1784.94	-4213	-0.0012628	0.0002807	0.0035	0.9		2967.55	2967.55		1.66	Si
SLV 10	fin.	-1260.33	487	-0.0007909	0.0002807	0.0035	0.9		2973.32	2973.32		2.36	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	2741.49	-10810	0.9	0	2813	7137	6064	2295	8359		0.77	No
SLV 14	fin.	-2003.68	-6896	0.9	0	2813	7137	6064	2295	8359		1.21	Si
SLV 1	ini.	-2458.93	9406	0.9	0	2813	7137	6064	2295	8359		0.89	No
SLV 1	fin.	2546	8820	0.9	0	2813	7137	6064	2295	8359		0.95	No
SLV 10	ini.	1784.94	-6698	0.9	0	2813	7137	6064	2295	8359		1.25	Si
SLV 10	fin.	-1260.33	-4584	0.9	0	2813	7137	6064	2295	8359		1.82	Si
SLV 3	ini.	-3117.14	11632	0.9	0	2813	7137	6064	2295	8359		0.72	No
SLV 3	fin.	3203.82	11311	0.9	0	2813	7137	6064	2295	8359		0.74	No
SLV 13	ini.	2228.81	-8848	0.9	0	2813	7137	6064	2295	8359		0.94	No
SLV 13	fin.	-1566.51	-5386	0.9	0	2813	7137	6064	2295	8359		1.55	Si
SLV 16	ini.	2083.27	-8584	0.9	0	2813	7137	6064	2295	8359		0.97	No
SLV 16	fin.	-1345.87	-4405	0.9	0	2813	7137	6064	2295	8359		1.9	Si
SLV 2	ini.	-1946.26	7444	0.9	0	2813	7137	6064	2295	8359		1.12	Si
SLV 2	fin.	2108.83	7310	0.9	0	2813	7137	6064	2295	8359		1.14	Si
SLV 7	ini.	-2160.59	7520	0.9	0	2813	7137	6064	2295	8359		1.11	Si
SLV 7	fin.	2460.46	8999	0.9	0	2813	7137	6064	2295	8359		0.93	No
SLV 8	ini.	-1815.43	6199	0.9	0	2813	7137	6064	2295	8359		1.35	Si
SLV 8	fin.	2166.13	7982	0.9	0	2813	7137	6064	2295	8359		1.05	Si
SLV 4	ini.	-2604.47	9670	0.9	0	2813	7137	6064	2295	8359		0.86	No
SLV 4	fin.	2766.64	9801	0.9	0	2813	7137	6064	2295	8359		0.85	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.926	SLV 3	No
V_SLV	0.719	SLV 3	No
PF_SLU	3.283	SLU 83	Si
V_SLU	1.938	SLU 83	Si

Trave di accoppiamento 94

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-7.958	6.651	7.77	8.62	0.85	-7.058	6.651	7.77	8.62	0.85	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-834.1	-3398	-0.0005779	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.17	Si
SLU 82	fin.	191.95	-336	-0.0001097	0.0001872	0.0035	0.85		2640.4	2640.4	No	13.76	Si
SLU 75	ini.	-820.43	-3345	-0.0005663	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.22	Si
SLU 75	fin.	190.47	-329	-0.0001089	0.0001872	0.0035	0.85		2640.4	2640.4	No	13.86	Si
SLU 81	ini.	-841.01	-3418	-0.0005838	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.15	Si
SLU 81	fin.	199.49	-323	-0.0001143	0.0001872	0.0035	0.85		2640.4	2640.4	No	13.24	Si
SLU 79	ini.	-823.6	-3351	-0.000569	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.21	Si
SLU 79	fin.	197.73	-311	-0.0001132	0.0001872	0.0035	0.85		2640.4	2640.4	No	13.35	Si
SLU 83	ini.	-849	-3458	-0.0005906	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.12	Si
SLU 83	fin.	198.74	-333	-0.0001138	0.0001872	0.0035	0.85		2640.4	2640.4	No	13.29	Si
SLU 84	ini.	-842.09	-3438	-0.0005847	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.14	Si
SLU 84	fin.	191.2	-346	-0.0001093	0.0001872	0.0035	0.85		2640.4	2640.4	No	13.81	Si
SLU 78	ini.	-828.42	-3385	-0.000573	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.19	Si
SLU 78	fin.	189.72	-339	-0.0001084	0.0001872	0.0035	0.85		2640.4	2640.4	No	13.92	Si
SLU 74	ini.	-827.34	-3364	-0.0005721	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.2	Si
SLU 74	fin.	198.01	-316	-0.0001134	0.0001872	0.0035	0.85		2640.4	2640.4	No	13.33	Si
SLU 77	ini.	-835.33	-3404	-0.0005789	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.17	Si
SLU 77	fin.	197.26	-327	-0.0001129	0.0001872	0.0035	0.85		2640.4	2640.4	No	13.39	Si
SLU 80	ini.	-816.69	-3332	-0.0005631	0.0001872	0.0035	0.85		2645.85	2645.85	No	3.24	Si
SLU 80	fin.	190.19	-324	-0.0001087	0.0001872	0.0035	0.85		2640.4	2640.4	No	13.88	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-816.69	5944	0.85	0	1771	6740	3818	2168	5985	No	1.01	Si
SLU 80	fin.	190.19	-79	0.85	0	1771	6740	3818	2168	5985	No	76.24	Si
SLU 77	ini.	-835.33	6065	0.85	0	1771	6740	3818	2168	5985	No	0.99	No
SLU 77	fin.	197.26	-61	0.85	0	1771	6740	3818	2168	5985	No	98.57	Si
SLU 83	ini.	-849	6171	0.85	0	1771	6740	3818	2168	5985	No	0.97	No
SLU 83	fin.	198.74	-75	0.85	0	1771	6740	3818	2168	5985	No	80.16	Si
SLU 81	ini.	-841.01	6104	0.85	0	1771	6740	3818	2168	5985	No	0.98	No
SLU 81	fin.	199.49	-67	0.85	0	1771	6740	3818	2168	5985	No	89.41	Si
SLU 82	ini.	-834.1	6068	0.85	0	1771	6740	3818	2168	5985	No	0.99	No
SLU 82	fin.	191.95	-95	0.85	0	1771	6740	3818	2168	5985	No	62.96	Si
SLU 79	ini.	-823.6	5980	0.85	0	1771	6740	3818	2168	5985	No	1	Si
SLU 79	fin.	197.73	-50	0.85	0	1771	6740	3818	2168	5985	No	118.78	Si
SLU 84	ini.	-842.09	6135	0.85	0	1771	6740	3818	2168	5985	No	0.98	No
SLU 84	fin.	191.2	-103	0.85	0	1771	6740	3818	2168	5985	No	58.23	Si
SLU 75	ini.	-820.43	5961	0.85	0	1771	6740	3818	2168	5985	No	1	Si
SLU 75	fin.	190.47	-81	0.85	0	1771	6740	3818	2168	5985	No	73.79	Si
SLU 74	ini.	-827.34	5998	0.85	0	1771	6740	3818	2168	5985	No	1	No
SLU 74	fin.	198.01	-53	0.85	0	1771	6740	3818	2168	5985	No	112.94	Si
SLU 78	ini.	-828.42	6028	0.85	0	1771	6740	3818	2168	5985	No	0.99	No
SLU 78	fin.	189.72	-89	0.85	0	1771	6740	3818	2168	5985	No	67.37	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	649.48	540	-0.0004051	0.0002807	0.0035	0.85		2641.96	2641.96		4.07	Si
SLV 16	fin.	-1464.5	-3215	-0.0011174	0.0002807	0.0035	0.85		2647.52	2647.52		1.81	Si
SLV 1	ini.	-1769.38	-5038	-0.0014643	0.0002807	0.0035	0.85		2647.52	2647.52		1.5	Si
SLV 1	fin.	1767.19	2883	-0.0014658	0.0002807	0.0035	0.85		2641.96	2641.96		1.5	Si
SLD 3	ini.	-1252.65	-3940	-0.0009068	0.0002807	0.0035	0.85		2647.52	2647.52		2.11	Si
SLD 3	fin.	1032.46	1453	-0.0007097	0.0002807	0.0035	0.85		2641.96	2641.96		2.56	Si
SLV 2	ini.	-1490.05	-4388	-0.0011443	0.0002807	0.0035	0.85		2647.52	2647.52		1.78	Si
SLV 2	fin.	1389.97	2169	-0.0010437	0.0002807	0.0035	0.85		2641.96	2641.96		1.9	Si
SLV 8	ini.	-1563.85	-4975	-0.001224	0.0002807	0.0035	0.85		2647.52	2647.52		1.69	Si
SLV 8	fin.	1294.67	1799	-0.0009494	0.0002807	0.0035	0.85		2641.96	2641.96		2.04	Si
SLV 7	ini.	-1751.91	-5413	-0.0014426	0.0002807	0.0035	0.85		2647.52	2647.52		1.51	Si
SLV 7	fin.	1548.64	2280	-0.0012106	0.0002807	0.0035	0.85		2641.96	2641.96		1.71	Si
SLV 4	ini.	-1917.76	-5602	-0.0016597	0.0002807	0.0035	0.85		2647.52	2647.52		1.38	Si
SLV 4	fin.	1853.53	2938	-0.0015771	0.0002807	0.0035	0.85		2641.96	2641.96		1.43	Si
SLV 3	ini.	-2197.09	-6252	-0.0021066	0.0002807	0.0035	0.85		2647.52	2647.52		1.21	Si
SLV 3	fin.	2230.75	3653	-0.0021776	0.0002807	0.0035	0.85		2641.96	2641.96		1.18	Si
SLV 13	ini.	797.87	1104	-0.0005169	0.0002807	0.0035	0.85		2641.96	2641.96		3.31	Si
SLV 13	fin.	-1550.84	-3270	-0.0012097	0.0002807	0.0035	0.85		2647.52	2647.52		1.71	Si
SLV 14	ini.	1077.19	1754	-0.0007487	0.0002807	0.0035	0.85		2641.96	2641.96		2.45	Si
SLV 14	fin.	-1928.06	-3984	-0.0016741	0.0002807	0.0035	0.85		2647.52	2647.52		1.37	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	1077.19	-3435	0.85	0	2656	6740	5727	2168	7894		2.3	Si
SLV 14	fin.	-1928.06	-8093	0.85	0	2656	6740	5727	2168	7894		0.98	No
SLV 3	ini.	-2197.09	11494	0.85	0	2656	6740	5727	2168	7894		0.69	No
SLV 3	fin.	2230.75	8140	0.85	0	2656	6740	5727	2168	7894		0.97	No
SLV 1	ini.	-1769.38	9235	0.85	0	2656	6740	5727	2168	7894		0.85	No

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	fin.	1767.19	6414	0.85	0	2656	6740	5727	2168	7894		1.23	Si
SLV 13	ini.	797.87	-2200	0.85	0	2656	6740	5727	2168	7894		3.59	Si
SLV 13	fin.	-1550.84	-6612	0.85	0	2656	6740	5727	2168	7894		1.19	Si
SLV 2	ini.	-1490.05	8000	0.85	0	2656	6740	5727	2168	7894		0.99	No
SLV 2	fin.	1389.97	4932	0.85	0	2656	6740	5727	2168	7894		1.6	Si
SLD 4	ini.	-1133.82	6659	0.85	0	2656	6740	5727	2168	7894		1.19	Si
SLD 4	fin.	871.98	2834	0.85	0	2656	6740	5727	2168	7894		2.79	Si
SLD 3	ini.	-1252.65	7184	0.85	0	2656	6740	5727	2168	7894		1.1	Si
SLD 3	fin.	1032.46	3464	0.85	0	2656	6740	5727	2168	7894		2.28	Si
SLV 4	ini.	-1917.76	10258	0.85	0	2656	6740	5727	2168	7894		0.77	No
SLV 4	fin.	1853.53	6659	0.85	0	2656	6740	5727	2168	7894		1.19	Si
SLV 8	ini.	-1563.85	9094	0.85	0	2656	6740	5727	2168	7894		0.87	No
SLV 8	fin.	1294.67	4356	0.85	0	2656	6740	5727	2168	7894		1.81	Si
SLV 7	ini.	-1751.91	9925	0.85	0	2656	6740	5727	2168	7894		0.8	No
SLV 7	fin.	1548.64	5353	0.85	0	2656	6740	5727	2168	7894		1.47	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.184	SLV 3	Si
V_SLV	0.687	SLV 3	No
PF_SLU	3.116	SLU 83	Si
V_SLU	0.97	SLU 83	No

Trave di accoppiamento 96

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-8.548	-3.359	7.17	8.62	1.45	-9.448	-3.359	7.17	8.62	1.45	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	966.46	-2514	-0.0001951	0.0002246	0.0035	1.45		7849.88	7849.88	No	8.12	Si
SLU 79	fin.	-1236.46	-3486	-0.0002555	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.36	Si
SLU 82	ini.	971.01	-2494	-0.0001961	0.0002246	0.0035	1.45		7849.88	7849.88	No	8.08	Si
SLU 82	fin.	-1243.27	-3453	-0.0002571	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.32	Si
SLU 84	ini.	983.45	-2547	-0.0001989	0.0002246	0.0035	1.45		7849.88	7849.88	No	7.98	Si
SLU 84	fin.	-1257.27	-3518	-0.0002603	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.25	Si
SLU 75	ini.	984.26	-2520	-0.000199	0.0002246	0.0035	1.45		7849.88	7849.88	No	7.98	Si
SLU 75	fin.	-1256.87	-3504	-0.0002602	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.25	Si
SLU 73	ini.	973.72	-2452	-0.0001967	0.0002246	0.0035	1.45		7849.88	7849.88	No	8.06	Si
SLU 73	fin.	-1244.75	-3423	-0.0002574	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.31	Si
SLU 78	ini.	996.7	-2573	-0.0002018	0.0002246	0.0035	1.45		7849.88	7849.88	No	7.88	Si
SLU 78	fin.	-1270.87	-3570	-0.0002635	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.18	Si
SLU 70	ini.	973.03	-2434	-0.0001966	0.0002246	0.0035	1.45		7849.88	7849.88	No	8.07	Si
SLU 70	fin.	-1240.46	-3437	-0.0002564	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.34	Si
SLU 80	ini.	985.75	-2540	-0.0001994	0.0002246	0.0035	1.45		7849.88	7849.88	No	7.96	Si
SLU 80	fin.	-1258.24	-3527	-0.0002605	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.25	Si
SLU 77	ini.	977.41	-2546	-0.0001975	0.0002246	0.0035	1.45		7849.88	7849.88	No	8.03	Si
SLU 77	fin.	-1249.1	-3529	-0.0002584	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.29	Si
SLU 76	ini.	986.17	-2505	-0.0001995	0.0002246	0.0035	1.45		7849.88	7849.88	No	7.96	Si
SLU 76	fin.	-1258.75	-3488	-0.0002607	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.24	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 76	ini.	986.17	-2332	1.45	0	3625	7137	7816	3698	10762	No	4.62	Si
SLU 76	fin.	-1258.75	-4221	1.45	0	3625	7137	7816	3698	10762	No	2.55	Si
SLU 81	ini.	951.72	-2162	1.45	0	3625	7137	7816	3698	10762	No	4.98	Si
SLU 81	fin.	-1221.5	-4169	1.45	0	3625	7137	7816	3698	10762	No	2.58	Si
SLU 82	ini.	971.01	-2218	1.45	0	3625	7137	7816	3698	10762	No	4.85	Si
SLU 82	fin.	-1243.27	-4226	1.45	0	3625	7137	7816	3698	10762	No	2.55	Si
SLU 78	ini.	996.7	-2368	1.45	0	3625	7137	7816	3698	10762	No	4.54	Si
SLU 78	fin.	-1270.87	-4257	1.45	0	3625	7137	7816	3698	10762	No	2.53	Si
SLU 84	ini.	983.45	-2258	1.45	0	3625	7137	7816	3698	10762	No	4.77	Si
SLU 84	fin.	-1257.27	-4265	1.45	0	3625	7137	7816	3698	10762	No	2.52	Si
SLU 75	ini.	984.26	-2328	1.45	0	3625	7137	7816	3698	10762	No	4.62	Si
SLU 75	fin.	-1256.87	-4218	1.45	0	3625	7137	7816	3698	10762	No	2.55	Si
SLU 77	ini.	977.41	-2311	1.45	0	3625	7137	7816	3698	10762	No	4.66	Si
SLU 77	fin.	-1249.1	-4200	1.45	0	3625	7137	7816	3698	10762	No	2.56	Si
SLU 73	ini.	973.72	-2292	1.45	0	3625	7137	7816	3698	10762	No	4.7	Si
SLU 73	fin.	-1244.75	-4181	1.45	0	3625	7137	7816	3698	10762	No	2.57	Si
SLU 80	ini.	985.75	-2333	1.45	0	3625	7137	7816	3698	10762	No	4.61	Si
SLU 80	fin.	-1258.24	-4223	1.45	0	3625	7137	7816	3698	10762	No	2.55	Si
SLU 83	ini.	964.16	-2201	1.45	0	3625	7137	7816	3698	10762	No	4.89	Si
SLU 83	fin.	-1235.5	-4209	1.45	0	3625	7137	7816	3698	10762	No	2.56	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 6	ini.	3670.89	-4536	-0.000892	0.0003369	0.0035	1.45		7781.38	7781.38		2.12	Si
SLV 6	fin.	-4424.7	-7596	-0.0011435	0.0003369	0.0035	1.45		7791.28	7791.28		1.76	Si
SLV 1	ini.	5618.98	-1872	-0.0016278	0.0003369	0.0035	1.45		7781.38	7781.38		1.38	Si
SLV 1	fin.	-6192.87	-6873	-0.0019152	0.0003369	0.0035	1.45		7791.28	7791.28		1.26	Si
SLV 2	ini.	6574.06	-1959	-0.0021456	0.0003369	0.0035	1.45		7781.38	7781.38		1.18	Si
SLV 2	fin.	-7238.8	-7772	-0.0026117	0.0003369	0.0035	1.45		7791.28	7791.28		1.08	Si
SLV 14	ini.	-3587.11	-3385	-0.0008644	0.0003369	0.0035	1.45		7791.28	7791.28		2.17	Si
SLV 14	fin.	3507.16	-211	-0.0008409	0.0003369	0.0035	1.45		7781.38	7781.38		2.22	Si
SLV 16	ini.	-4280.76	-1591	-0.0010928	0.0003369	0.0035	1.45		7791.28	7791.28		1.82	Si
SLV 16	fin.	4465.33	2033	-0.0011599	0.0003369	0.0035	1.45		7781.38	7781.38		1.74	Si
SLV 13	ini.	-4542.19	-3298	-0.0011858	0.0003369	0.0035	1.45		7791.28	7791.28		1.72	Si
SLV 13	fin.	4553.1	688	-0.0011918	0.0003369	0.0035	1.45		7781.38	7781.38		1.71	Si
SLV 4	ini.	5880.4	-165	-0.0017539	0.0003369	0.0035	1.45		7781.38	7781.38		1.32	Si
SLV 4	fin.	-6280.64	-5528	-0.0019646	0.0003369	0.0035	1.45		7791.28	7791.28		1.24	Si
SLV 3	ini.	4925.32	-78	-0.0013328	0.0003369	0.0035	1.45		7781.38	7781.38		1.58	Si
SLV 3	fin.	-5234.7	-4629	-0.0014559	0.0003369	0.0035	1.45		7791.28	7791.28		1.49	Si
SLV 5	ini.	3027.87	-4478	-0.0006981	0.0003369	0.0035	1.45		7781.38	7781.38		2.57	Si
SLV 5	fin.	-3720.51	-6991	-0.0009064	0.0003369	0.0035	1.45		7791.28	7791.28		2.09	Si
SLV 15	ini.	-5235.85	-1504	-0.0014564	0.0003369	0.0035	1.45		7791.28	7791.28		1.49	Si
SLV 15	fin.	5511.26	2932	-0.0015786	0.0003369	0.0035	1.45		7781.38	7781.38		1.41	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	5880.4	-17052	1.45	0	5144	7137	11725	3698	12280		0.72	No
SLV 4	fin.	-6280.64	-18331	1.45	0	5144	7137	11725	3698	12280		0.67	No
SLV 14	ini.	-3587.11	10933	1.45	0	5144	7137	11725	3698	12280		1.12	Si
SLV 14	fin.	3507.16	9698	1.45	0	5144	7137	11725	3698	12280		1.27	Si
SLV 6	ini.	3670.89	-10931	1.45	0	5144	7137	11725	3698	12280		1.12	Si
SLV 6	fin.	-4424.7	-12083	1.45	0	5144	7137	11725	3698	12280		1.02	Si
SLV 15	ini.	-5235.85	16092	1.45	0	5144	7137	11725	3698	12280		0.76	No
SLV 15	fin.	5511.26	14794	1.45	0	5144	7137	11725	3698	12280		0.83	No
SLV 3	ini.	4925.32	-14174	1.45	0	5144	7137	11725	3698	12280		0.87	No
SLV 3	fin.	-5234.7	-15454	1.45	0	5144	7137	11725	3698	12280		0.79	No
SLV 13	ini.	-4542.19	13810	1.45	0	5144	7137	11725	3698	12280		0.89	No
SLV 13	fin.	4553.1	12575	1.45	0	5144	7137	11725	3698	12280		0.98	No
SLV 16	ini.	-4280.76	13214	1.45	0	5144	7137	11725	3698	12280		0.93	No
SLV 16	fin.	4465.33	11917	1.45	0	5144	7137	11725	3698	12280		1.03	Si
SLV 2	ini.	6574.06	-19333	1.45	0	5144	7137	11725	3698	12280		0.64	No
SLV 2	fin.	-7238.8	-20551	1.45	0	5144	7137	11725	3698	12280		0.6	No
SLD 2	ini.	3180.24	-9152	1.45	0	5144	7137	11725	3698	12280		1.34	Si
SLD 2	fin.	-3572.3	-10392	1.45	0	5144	7137	11725	3698	12280		1.18	Si
SLV 1	ini.	5618.98	-16455	1.45	0	5144	7137	11725	3698	12280		0.75	No
SLV 1	fin.	-6192.87	-17673	1.45	0	5144	7137	11725	3698	12280		0.69	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.076	SLV 2	Si
V_SLV	0.598	SLV 2	No
PF_SLU	6.184	SLU 78	Si
V_SLU	2.523	SLU 84	Si

Trave di accoppiamento 98

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-5.158	6.001	5.07	7.07	2	-5.158	6.501	5.07	7.07	2	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 72	ini.	41.79	-735	-0.0000041	0.0001872	0.0035	2		14206.68	14206.68	No	339.92	Si
SLU 72	fin.	-484.65	-506	-0.0000488	0.0001872	0.0035	2		14219.44	14219.44	No	29.34	Si
SLU 66	ini.	37.12	-714	-0.0000037	0.0001872	0.0035	2		14206.68	14206.68	No	382.68	Si
SLU 66	fin.	-469.95	-491	-0.0000473	0.0001872	0.0035	2		14219.44	14219.44	No	30.26	Si
SLU 80	ini.	43.64	-737	-0.0000043	0.0001872	0.0035	2		14206.68	14206.68	No	325.54	Si
SLU 80	fin.	-482.71	-505	-0.0000486	0.0001872	0.0035	2		14219.44	14219.44	No	29.46	Si
SLU 70	ini.	41.39	-734	-0.0000041	0.0001872	0.0035	2		14206.68	14206.68	No	343.25	Si
SLU 70	fin.	-483.68	-505	-0.0000487	0.0001872	0.0035	2		14219.44	14219.44	No	29.4	Si
SLU 77	ini.	51.53	-754	-0.0000051	0.0001872	0.0035	2		14206.68	14206.68	No	275.68	Si
SLU 77	fin.	-495.1	-518	-0.0000499	0.0001872	0.0035	2		14219.44	14219.44	No	28.72	Si
SLU 69	ini.	49.69	-752	-0.0000049	0.0001872	0.0035	2		14206.68	14206.68	No	285.93	Si
SLU 69	fin.	-497.03	-519	-0.0000501	0.0001872	0.0035	2		14219.44	14219.44	No	28.61	Si
SLU 50	ini.	37.78	-707	-0.0000037	0.0001872	0.0035	2		14206.68	14206.68	No	375.99	Si
SLU 50	fin.	-470.17	-491	-0.0000473	0.0001872	0.0035	2		14219.44	14219.44	No	30.24	Si
SLU 79	ini.	51.94	-755	-0.0000051	0.0001872	0.0035	2		14206.68	14206.68	No	273.54	Si
SLU 79	fin.	-496.06	-519	-0.00005	0.0001872	0.0035	2		14219.44	14219.44	No	28.66	Si
SLU 78	ini.	43.24	-736	-0.0000043	0.0001872	0.0035	2		14206.68	14206.68	No	328.58	Si
SLU 78	fin.	-481.74	-503	-0.0000485	0.0001872	0.0035	2		14219.44	14219.44	No	29.52	Si
SLU 71	ini.	50.09	-753	-0.000005	0.0001872	0.0035	2		14206.68	14206.68	No	283.62	Si
SLU 71	fin.	-498	-521	-0.0000502	0.0001872	0.0035	2		14219.44	14219.44	No	28.55	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 74	ini.	38.97	-2206	2	0	4167	3965	8983	5100	8131	No	3.69	Si
SLU 74	fin.	-468.01	-1316	2	0	4167	3965	8983	5100	8131	No	6.18	Si
SLU 80	ini.	43.64	-2269	2	0	4167	3965	8983	5100	8131	No	3.58	Si
SLU 80	fin.	-482.71	-1358	2	0	4167	3965	8983	5100	8131	No	5.99	Si
SLU 72	ini.	41.79	-2210	2	0	4167	3965	8983	5100	8131	No	3.68	Si
SLU 72	fin.	-484.65	-1375	2	0	4167	3965	8983	5100	8131	No	5.91	Si
SLU 79	ini.	51.94	-2336	2	0	4167	3965	8983	5100	8131	No	3.48	Si
SLU 79	fin.	-496.06	-1399	2	0	4167	3965	8983	5100	8131	No	5.81	Si
SLU 71	ini.	50.09	-2277	2	0	4167	3965	8983	5100	8131	No	3.57	Si
SLU 71	fin.	-498	-1416	2	0	4167	3965	8983	5100	8131	No	5.74	Si
SLU 77	ini.	51.53	-2339	2	0	4167	3965	8983	5100	8131	No	3.48	Si
SLU 77	fin.	-495.1	-1396	2	0	4167	3965	8983	5100	8131	No	5.83	Si
SLU 70	ini.	41.39	-2213	2	0	4167	3965	8983	5100	8131	No	3.67	Si
SLU 70	fin.	-483.68	-1372	2	0	4167	3965	8983	5100	8131	No	5.93	Si
SLU 78	ini.	43.24	-2272	2	0	4167	3965	8983	5100	8131	No	3.58	Si
SLU 78	fin.	-481.74	-1354	2	0	4167	3965	8983	5100	8131	No	6	Si
SLU 69	ini.	49.69	-2280	2	0	4167	3965	8983	5100	8131	No	3.57	Si
SLU 69	fin.	-497.03	-1413	2	0	4167	3965	8983	5100	8131	No	5.75	Si
SLU 83	ini.	40.17	-2228	2	0	4167	3965	8983	5100	8131	No	3.65	Si
SLU 83	fin.	-468.15	-1311	2	0	4167	3965	8983	5100	8131	No	6.2	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	657.19	-1969	-0.0000663	0.0002807	0.0035	2		13920.08	13920.08		21.18	Si
SLV 4	fin.	-1464.41	-1540	-0.0001514	0.0002807	0.0035	2		13933.43	13933.43		9.51	Si
SLV 7	ini.	998.83	-2801	-0.0001018	0.0002807	0.0035	2		13920.08	13920.08		13.94	Si
SLV 7	fin.	-2112.22	-2190	-0.0002234	0.0002807	0.0035	2		13933.43	13933.43		6.6	Si
SLV 10	ini.	-964.78	1780	-0.0000981	0.0002807	0.0035	2		13933.43	13933.43		14.44	Si
SLV 10	fin.	1442.74	1491	-0.0001491	0.0002807	0.0035	2		13920.08	13920.08		9.65	Si
SLV 11	ini.	718.64	-2162	-0.0000726	0.0002807	0.0035	2		13920.08	13920.08		19.37	Si
SLV 11	fin.	-1621.81	-1665	-0.0001685	0.0002807	0.0035	2		13933.43	13933.43		8.59	Si
SLV 9	ini.	-875.9	1559	-0.0000888	0.0002807	0.0035	2		13933.43	13933.43		15.91	Si
SLV 9	fin.	1277.67	1314	-0.0001314	0.0002807	0.0035	2		13920.08	13920.08		10.89	Si
SLD 7	ini.	412.91	-1432	-0.0000413	0.0002807	0.0035	2		13920.08	13920.08		33.71	Si
SLD 7	fin.	-1049.78	-1090	-0.000107	0.0002807	0.0035	2		13933.43	13933.43		13.27	Si
SLV 12	ini.	629.77	-1941	-0.0000634	0.0002807	0.0035	2		13920.08	13920.08		22.1	Si
SLV 12	fin.	-1456.74	-1488	-0.0001505	0.0002807	0.0035	2		13933.43	13933.43		9.56	Si
SLV 3	ini.	789.2	-2297	-0.0000799	0.0002807	0.0035	2		13920.08	13920.08		17.64	Si
SLV 3	fin.	-1709.59	-1803	-0.0001782	0.0002807	0.0035	2		13933.43	13933.43		8.15	Si
SLV 14	ini.	-755.14	1276	-0.0000763	0.0002807	0.0035	2		13933.43	13933.43		18.45	Si
SLV 14	fin.	1040.11	1104	-0.0001061	0.0002807	0.0035	2		13920.08	13920.08		13.38	Si
SLV 8	ini.	909.96	-2580	-0.0000925	0.0002807	0.0035	2		13920.08	13920.08		15.3	Si
SLV 8	fin.	-1947.15	-2013	-0.0002047	0.0002807	0.0035	2		13933.43	13933.43		7.16	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 8	ini.	909.96	-9233	2	0	6250	3965	13475	5100	10215		1.11	Si
SLV 8	fin.	-1947.15	-5911	2	0	6250	3965	13475	5100	10215		1.73	Si
SLV 11	ini.	718.64	-7831	2	0	6250	3965	13475	5100	10215		1.3	Si
SLV 11	fin.	-1621.81	-4885	2	0	6250	3965	13475	5100	10215		2.09	Si
SLV 6	ini.	-684.59	4794	2	0	6250	3965	13475	5100	10215		2.13	Si
SLV 6	fin.	952.34	2991	2	0	6250	3965	13475	5100	10215		3.41	Si
SLV 4	ini.	657.19	-6650	2	0	6250	3965	13475	5100	10215		1.54	Si
SLV 4	fin.	-1464.41	-4461	2	0	6250	3965	13475	5100	10215		2.29	Si
SLV 9	ini.	-875.9	6196	2	0	6250	3965	13475	5100	10215		1.65	Si
SLV 9	fin.	1277.67	4017	2	0	6250	3965	13475	5100	10215		2.54	Si
SLV 10	ini.	-964.78	6944	2	0	6250	3965	13475	5100	10215		1.47	Si
SLV 10	fin.	1442.74	4525	2	0	6250	3965	13475	5100	10215		2.26	Si
SLD 7	ini.	412.91	-4922	2	0	6250	3965	13475	5100	10215		2.08	Si
SLD 7	fin.	-1049.78	-3150	2	0	6250	3965	13475	5100	10215		3.24	Si
SLV 12	ini.	629.77	-7083	2	0	6250	3965	13475	5100	10215		1.44	Si
SLV 12	fin.	-1456.74	-4377	2	0	6250	3965	13475	5100	10215		2.33	Si
SLV 7	ini.	998.83	-9981	2	0	6250	3965	13475	5100	10215		1.02	Si
SLV 7	fin.	-2112.22	-6419	2	0	6250	3965	13475	5100	10215		1.59	Si
SLV 3	ini.	789.2	-7761	2	0	6250	3965	13475	5100	10215		1.32	Si
SLV 3	fin.	-1709.59	-5217	2	0	6250	3965	13475	5100	10215		1.96	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	6.597	SLV 7	Si
V_SLV	1.023	SLV 7	Si
PF_SLU	28.553	SLU 71	Si
V_SLU	3.476	SLU 77	Si

Trave di accoppiamento 99

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-5.158	6.001	7.87	8.62	0.75	-5.158	6.501	7.87	8.62	0.75	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-352.93	-908	-0.0002792	0.0001872	0.0035	0.75		2071.83	2071.83	No	5.87	Si
SLU 80	fin.	188.85	-564	-0.0001404	0.0001872	0.0035	0.75		2067.09	2067.09	No	10.95	Si
SLU 70	ini.	-340.27	-874	-0.0002677	0.0001872	0.0035	0.75		2071.83	2071.83	No	6.09	Si
SLU 70	fin.	180.46	-539	-0.0001337	0.0001872	0.0035	0.75		2067.09	2067.09	No	11.45	Si
SLU 78	ini.	-354.44	-913	-0.0002806	0.0001872	0.0035	0.75		2071.83	2071.83	No	5.85	Si
SLU 78	fin.	189.96	-567	-0.0001412	0.0001872	0.0035	0.75		2067.09	2067.09	No	10.88	Si
SLU 69	ini.	-347.59	-883	-0.0002743	0.0001872	0.0035	0.75		2071.83	2071.83	No	5.96	Si
SLU 69	fin.	182.7	-546	-0.0001355	0.0001872	0.0035	0.75		2067.09	2067.09	No	11.31	Si
SLU 77	ini.	-361.75	-923	-0.0002872	0.0001872	0.0035	0.75		2071.83	2071.83	No	5.73	Si
SLU 77	fin.	192.19	-573	-0.000143	0.0001872	0.0035	0.75		2067.09	2067.09	No	10.76	Si
SLU 79	ini.	-360.24	-918	-0.0002858	0.0001872	0.0035	0.75		2071.83	2071.83	No	5.75	Si
SLU 79	fin.	191.09	-570	-0.0001421	0.0001872	0.0035	0.75		2067.09	2067.09	No	10.82	Si
SLU 83	ini.	-344.54	-884	-0.0002716	0.0001872	0.0035	0.75		2071.83	2071.83	No	6.01	Si
SLU 83	fin.	185.84	-554	-0.000138	0.0001872	0.0035	0.75		2067.09	2067.09	No	11.12	Si
SLU 74	ini.	-339.98	-872	-0.0002675	0.0001872	0.0035	0.75		2071.83	2071.83	No	6.09	Si
SLU 74	fin.	182.88	-545	-0.0001356	0.0001872	0.0035	0.75		2067.09	2067.09	No	11.3	Si
SLU 71	ini.	-346.07	-878	-0.000273	0.0001872	0.0035	0.75		2071.83	2071.83	No	5.99	Si
SLU 71	fin.	181.59	-542	-0.0001346	0.0001872	0.0035	0.75		2067.09	2067.09	No	11.38	Si
SLU 72	ini.	-338.76	-869	-0.0002664	0.0001872	0.0035	0.75		2071.83	2071.83	No	6.12	Si
SLU 72	fin.	179.36	-536	-0.0001329	0.0001872	0.0035	0.75		2067.09	2067.09	No	11.53	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 69	ini.	-347.59	1849	0.75	0	1563	3965	3369	1913	5281	No	2.86	Si
SLU 69	fin.	182.7	932	0.75	0	1563	3965	3369	1913	5281	No	5.66	Si
SLU 74	ini.	-339.98	1806	0.75	0	1563	3965	3369	1913	5281	No	2.92	Si
SLU 74	fin.	182.88	922	0.75	0	1563	3965	3369	1913	5281	No	5.73	Si
SLU 71	ini.	-346.07	1841	0.75	0	1563	3965	3369	1913	5281	No	2.87	Si
SLU 71	fin.	181.59	927	0.75	0	1563	3965	3369	1913	5281	No	5.7	Si
SLU 83	ini.	-344.54	1831	0.75	0	1563	3965	3369	1913	5281	No	2.89	Si
SLU 83	fin.	185.84	936	0.75	0	1563	3965	3369	1913	5281	No	5.64	Si
SLU 70	ini.	-340.27	1806	0.75	0	1563	3965	3369	1913	5281	No	2.92	Si
SLU 70	fin.	180.46	921	0.75	0	1563	3965	3369	1913	5281	No	5.74	Si
SLU 78	ini.	-354.44	1881	0.75	0	1563	3965	3369	1913	5281	No	2.81	Si
SLU 78	fin.	189.96	967	0.75	0	1563	3965	3369	1913	5281	No	5.46	Si
SLU 80	ini.	-352.93	1874	0.75	0	1563	3965	3369	1913	5281	No	2.82	Si
SLU 80	fin.	188.85	961	0.75	0	1563	3965	3369	1913	5281	No	5.49	Si
SLU 77	ini.	-361.75	1923	0.75	0	1563	3965	3369	1913	5281	No	2.75	Si
SLU 77	fin.	192.19	979	0.75	0	1563	3965	3369	1913	5281	No	5.4	Si
SLU 79	ini.	-360.24	1916	0.75	0	1563	3965	3369	1913	5281	No	2.76	Si
SLU 79	fin.	191.09	973	0.75	0	1563	3965	3369	1913	5281	No	5.43	Si
SLU 72	ini.	-338.76	1799	0.75	0	1563	3965	3369	1913	5281	No	2.94	Si
SLU 72	fin.	179.36	915	0.75	0	1563	3965	3369	1913	5281	No	5.77	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 7	ini.	-608.22	-1064	-0.000502	0.0002807	0.0035	0.75		2057.16	2057.16		3.38	Si
SLD 7	fin.	249.54	-720	-0.0001852	0.0002807	0.0035	0.75		2052.27	2052.27		8.22	Si
SLV 9	ini.	657.73	571	-0.0005532	0.0002807	0.0035	0.75		2052.27	2052.27		3.12	Si
SLV 9	fin.	-164.06	441	-0.000119	0.0002807	0.0035	0.75		2057.16	2057.16		12.54	Si
SLV 4	ini.	-716.35	-1072	-0.0006124	0.0002807	0.0035	0.75		2057.16	2057.16		2.87	Si
SLV 4	fin.	305.66	-860	-0.0002301	0.0002807	0.0035	0.75		2052.27	2052.27		6.71	Si
SLV 10	ini.	718.42	602	-0.0006163	0.0002807	0.0035	0.75		2052.27	2052.27		2.86	Si
SLV 10	fin.	-189.58	507	-0.0001383	0.0002807	0.0035	0.75		2057.16	2057.16		10.85	Si
SLV 7	ini.	-1175.51	-1778	-0.0011632	0.0002807	0.0035	0.75		2057.16	2057.16		1.75	Si
SLV 7	fin.	437.05	-1244	-0.000342	0.0002807	0.0035	0.75		2052.27	2052.27		4.7	Si
SLV 8	ini.	-1114.83	-1747	-0.0010816	0.0002807	0.0035	0.75		2057.16	2057.16		1.85	Si
SLV 8	fin.	411.53	-1178	-0.0003195	0.0002807	0.0035	0.75		2052.27	2052.27		4.99	Si
SLD 8	ini.	-582.93	-1051	-0.0004771	0.0002807	0.0035	0.75		2057.16	2057.16		3.53	Si
SLD 8	fin.	238.9	-692	-0.0001768	0.0002807	0.0035	0.75		2052.27	2052.27		8.59	Si
SLV 12	ini.	-944.79	-1645	-0.0008685	0.0002807	0.0035	0.75		2057.16	2057.16		2.18	Si
SLV 12	fin.	338.53	-988	-0.0002572	0.0002807	0.0035	0.75		2052.27	2052.27		6.06	Si
SLV 11	ini.	-1005.47	-1676	-0.0009422	0.0002807	0.0035	0.75		2057.16	2057.16		2.05	Si
SLV 11	fin.	364.05	-1055	-0.0002786	0.0002807	0.0035	0.75		2052.27	2052.27		5.64	Si
SLV 3	ini.	-806.48	-1119	-0.0007097	0.0002807	0.0035	0.75		2057.16	2057.16		2.55	Si
SLV 3	fin.	343.57	-958	-0.0002614	0.0002807	0.0035	0.75		2052.27	2052.27		5.97	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 10	ini.	718.42	-4085	0.75	0	2344	3965	5053	1913	6309		1.54	Si
SLV 10	fin.	-189.58	-1025	0.75	0	2344	3965	5053	1913	6309		6.16	Si
SLV 11	ini.	-1005.47	5497	0.75	0	2344	3965	5053	1913	6309		1.15	Si
SLV 11	fin.	364.05	2035	0.75	0	2344	3965	5053	1913	6309		3.1	Si
SLV 12	ini.	-944.79	5132	0.75	0	2344	3965	5053	1913	6309		1.23	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 12	fin.	338.53	1963	0.75	0	2344	3965	5053	1913	6309		3.21	Si
SLV 3	ini.	-806.48	4557	0.75	0	2344	3965	5053	1913	6309		1.38	Si
SLV 3	fin.	343.57	1483	0.75	0	2344	3965	5053	1913	6309		4.25	Si
SLD 8	ini.	-582.93	3187	0.75	0	2344	3965	5053	1913	6309		1.98	Si
SLD 8	fin.	238.9	1240	0.75	0	2344	3965	5053	1913	6309		5.09	Si
SLV 8	ini.	-1114.83	6146	0.75	0	2344	3965	5053	1913	6309		1.03	Si
SLV 8	fin.	411.53	2182	0.75	0	2344	3965	5053	1913	6309		2.89	Si
SLV 7	ini.	-1175.51	6512	0.75	0	2344	3965	5053	1913	6309		0.97	No
SLV 7	fin.	437.05	2254	0.75	0	2344	3965	5053	1913	6309		2.8	Si
SLD 7	ini.	-608.22	3339	0.75	0	2344	3965	5053	1913	6309		1.89	Si
SLD 7	fin.	249.54	1270	0.75	0	2344	3965	5053	1913	6309		4.97	Si
SLV 9	ini.	657.73	-3720	0.75	0	2344	3965	5053	1913	6309		1.7	Si
SLV 9	fin.	-164.06	-953	0.75	0	2344	3965	5053	1913	6309		6.62	Si
SLV 4	ini.	-716.35	4015	0.75	0	2344	3965	5053	1913	6309		1.57	Si
SLV 4	fin.	305.66	1376	0.75	0	2344	3965	5053	1913	6309		4.59	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.75	SLV 7	Si
V_SLV	0.969	SLV 7	No
PF_SLU	5.727	SLU 77	Si
V_SLU	2.746	SLU 77	Si

Trave di accoppiamento 100

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-6.513	-3.359	5.07	5.97	0.9	-7.413	-3.359	5.07	5.97	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 68	ini.	269.33	-1813	-0.0001394	0.0001872	0.0035	0.9		2942.43	2942.43	No	10.93	Si
SLU 68	fin.	61.16	-1096	-0.0000303	0.0001872	0.0035	0.9		2942.43	2942.43	No	48.11	Si
SLU 76	ini.	250.99	-1804	-0.0001294	0.0001872	0.0035	0.9		2942.43	2942.43	No	11.72	Si
SLU 76	fin.	116.75	-1310	-0.0000584	0.0001872	0.0035	0.9		2942.43	2942.43	No	25.2	Si
SLU 67	ini.	262.85	-1796	-0.0001359	0.0001872	0.0035	0.9		2942.43	2942.43	No	11.19	Si
SLU 67	fin.	70.81	-1130	-0.0000351	0.0001872	0.0035	0.9		2942.43	2942.43	No	41.55	Si
SLU 66	ini.	246.03	-1730	-0.0001267	0.0001872	0.0035	0.9		2942.43	2942.43	No	11.96	Si
SLU 66	fin.	86.66	-1170	-0.0000431	0.0001872	0.0035	0.9		2942.43	2942.43	No	33.95	Si
SLU 65	ini.	264.26	-1779	-0.0001366	0.0001872	0.0035	0.9		2942.43	2942.43	No	11.13	Si
SLU 65	fin.	59.23	-1074	-0.0000293	0.0001872	0.0035	0.9		2942.43	2942.43	No	49.68	Si
SLU 69	ini.	251.1	-1764	-0.0001294	0.0001872	0.0035	0.9		2942.43	2942.43	No	11.72	Si
SLU 69	fin.	88.58	-1191	-0.0000441	0.0001872	0.0035	0.9		2942.43	2942.43	No	33.22	Si
SLU 70	ini.	267.92	-1830	-0.0001386	0.0001872	0.0035	0.9		2942.43	2942.43	No	10.98	Si
SLU 70	fin.	72.74	-1151	-0.0000361	0.0001872	0.0035	0.9		2942.43	2942.43	No	40.45	Si
SLU 71	ini.	246.37	-1738	-0.0001268	0.0001872	0.0035	0.9		2942.43	2942.43	No	11.94	Si
SLU 71	fin.	89.49	-1184	-0.0000445	0.0001872	0.0035	0.9		2942.43	2942.43	No	32.88	Si
SLU 78	ini.	249.58	-1821	-0.0001286	0.0001872	0.0035	0.9		2942.43	2942.43	No	11.79	Si
SLU 78	fin.	128.33	-1365	-0.0000644	0.0001872	0.0035	0.9		2942.43	2942.43	No	22.93	Si
SLU 72	ini.	263.18	-1803	-0.000136	0.0001872	0.0035	0.9		2942.43	2942.43	No	11.18	Si
SLU 72	fin.	73.65	-1144	-0.0000365	0.0001872	0.0035	0.9		2942.43	2942.43	No	39.95	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	249.58	-3033	0.9	0	1875	7137	4043	2295	6338	No	2.09	Si
SLU 78	fin.	128.33	1897	0.9	0	1875	7137	4043	2295	6338	No	3.34	Si
SLU 69	ini.	251.1	-2945	0.9	0	1875	7137	4043	2295	6338	No	2.15	Si
SLU 69	fin.	88.58	1646	0.9	0	1875	7137	4043	2295	6338	No	3.85	Si
SLU 68	ini.	269.33	-3015	0.9	0	1875	7137	4043	2295	6338	No	2.1	Si
SLU 68	fin.	61.16	1493	0.9	0	1875	7137	4043	2295	6338	No	4.25	Si
SLU 76	ini.	250.99	-3001	0.9	0	1875	7137	4043	2295	6338	No	2.11	Si
SLU 76	fin.	116.75	1811	0.9	0	1875	7137	4043	2295	6338	No	3.5	Si
SLU 67	ini.	262.85	-2991	0.9	0	1875	7137	4043	2295	6338	No	2.12	Si
SLU 67	fin.	70.81	1547	0.9	0	1875	7137	4043	2295	6338	No	4.1	Si
SLU 70	ini.	267.92	-3048	0.9	0	1875	7137	4043	2295	6338	No	2.08	Si
SLU 70	fin.	72.74	1579	0.9	0	1875	7137	4043	2295	6338	No	4.01	Si
SLU 65	ini.	264.26	-2959	0.9	0	1875	7137	4043	2295	6338	No	2.14	Si
SLU 65	fin.	59.23	1461	0.9	0	1875	7137	4043	2295	6338	No	4.34	Si
SLU 75	ini.	244.51	-2977	0.9	0	1875	7137	4043	2295	6338	No	2.13	Si
SLU 75	fin.	126.4	1865	0.9	0	1875	7137	4043	2295	6338	No	3.4	Si
SLU 80	ini.	244.85	-2989	0.9	0	1875	7137	4043	2295	6338	No	2.12	Si
SLU 80	fin.	129.24	1887	0.9	0	1875	7137	4043	2295	6338	No	3.36	Si
SLU 72	ini.	263.18	-3003	0.9	0	1875	7137	4043	2295	6338	No	2.11	Si
SLU 72	fin.	73.65	1569	0.9	0	1875	7137	4043	2295	6338	No	4.04	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 2	ini.	2245.18	-8539	-0.0017956	0.0002807	0.0035	0.9		2967.55	2967.55		1.32	Si
SLV 2	fin.	-2521.88	6472	-0.0022155	0.0002807	0.0035	0.9		2973.32	2973.32		1.18	Si
SLV 16	ini.	-1559.29	4830	-0.0010451	0.0002807	0.0035	0.9		2973.32	2973.32		1.91	Si
SLV 16	fin.	2249.13	-7075	-0.0018009	0.0002807	0.0035	0.9		2967.55	2967.55		1.32	Si
SLV 13	ini.	-1090.54	2721	-0.0006591	0.0002807	0.0035	0.9		2973.32	2973.32		2.73	Si
SLV 13	fin.	2068.15	-6981	-0.0015709	0.0002807	0.0035	0.9		2967.55	2967.55		1.43	Si
SLV 6	ini.	2093.71	-8720	-0.0016015	0.0002807	0.0035	0.9		2967.55	2967.55		1.42	Si
SLV 6	fin.	-1716.64	3544	-0.0011922	0.0002807	0.0035	0.9		2973.32	2973.32		1.73	Si
SLV 1	ini.	1898.5	-7311	-0.0013804	0.0002807	0.0035	0.9		2967.55	2967.55		1.56	Si
SLV 1	fin.	-2085.82	5237	-0.0015875	0.0002807	0.0035	0.9		2973.32	2973.32		1.43	Si
SLV 15	ini.	-1905.97	6057	-0.0013846	0.0002807	0.0035	0.9		2973.32	2973.32		1.56	Si
SLV 15	fin.	2685.19	-8310	-0.0025313	0.0002807	0.0035	0.9		2967.55	2967.55		1.11	Si
SLV 14	ini.	-743.86	1493	-0.0004155	0.0002807	0.0035	0.9		2973.32	2973.32		4	Si
SLV 14	fin.	1632.09	-5747	-0.0011147	0.0002807	0.0035	0.9		2967.55	2967.55		1.82	Si
SLV 5	ini.	1860.3	-7893	-0.00134	0.0002807	0.0035	0.9		2967.55	2967.55		1.6	Si
SLV 5	fin.	-1423.05	2713	-0.0009255	0.0002807	0.0035	0.9		2973.32	2973.32		2.09	Si
SLV 11	ini.	-1754.51	6238	-0.0012293	0.0002807	0.0035	0.9		2973.32	2973.32		1.69	Si
SLV 11	fin.	1879.95	-5382	-0.0013607	0.0002807	0.0035	0.9		2967.55	2967.55		1.58	Si
SLV 4	ini.	1429.75	-5203	-0.0009335	0.0002807	0.0035	0.9		2967.55	2967.55		2.08	Si
SLV 4	fin.	-1904.83	5143	-0.0013834	0.0002807	0.0035	0.9		2973.32	2973.32		1.56	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-1090.54	4364	0.9	0	2813	7137	6064	2295	8359		1.92	Si
SLV 13	fin.	2068.15	11247	0.9	0	2813	7137	6064	2295	8359		0.74	No
SLV 11	ini.	-1754.51	9302	0.9	0	2813	7137	6064	2295	8359		0.9	No
SLV 11	fin.	1879.95	9343	0.9	0	2813	7137	6064	2295	8359		0.89	No
SLV 2	ini.	2245.18	-13516	0.9	0	2813	7137	6064	2295	8359		0.62	No
SLV 2	fin.	-2521.88	-11262	0.9	0	2813	7137	6064	2295	8359		0.74	No
SLV 1	ini.	1898.5	-11582	0.9	0	2813	7137	6064	2295	8359		0.72	No
SLV 1	fin.	-2085.82	-9206	0.9	0	2813	7137	6064	2295	8359		0.91	No
SLV 6	ini.	2093.71	-13453	0.9	0	2813	7137	6064	2295	8359		0.62	No
SLV 6	fin.	-1716.64	-6778	0.9	0	2813	7137	6064	2295	8359		1.23	Si
SLV 4	ini.	1429.75	-8515	0.9	0	2813	7137	6064	2295	8359		0.98	No
SLV 4	fin.	-1904.83	-8682	0.9	0	2813	7137	6064	2295	8359		0.96	No
SLV 16	ini.	-1559.29	7431	0.9	0	2813	7137	6064	2295	8359		1.12	Si
SLV 16	fin.	2249.13	11771	0.9	0	2813	7137	6064	2295	8359		0.71	No
SLV 5	ini.	1860.3	-12151	0.9	0	2813	7137	6064	2295	8359		0.69	No
SLV 5	fin.	-1423.05	-5394	0.9	0	2813	7137	6064	2295	8359		1.55	Si
SLV 14	ini.	-743.86	2430	0.9	0	2813	7137	6064	2295	8359		3.44	Si
SLV 14	fin.	1632.09	9191	0.9	0	2813	7137	6064	2295	8359		0.91	No
SLV 15	ini.	-1905.97	9365	0.9	0	2813	7137	6064	2295	8359		0.89	No
SLV 15	fin.	2685.19	13827	0.9	0	2813	7137	6064	2295	8359		0.6	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.105	SLV 15	Si
V_SLV	0.605	SLV 15	No
PF_SLU	10.925	SLU 68	Si
V_SLU	2.08	SLU 70	Si

Trave di accoppiamento 101

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-6.513	-3.359	7.77	8.62	0.85	-7.413	-3.359	7.77	8.62	0.85	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 60	ini.	-208.57	-1495	-0.0001195	0.0001872	0.0035	0.85		2645.85	2645.85	No	12.69	Si
SLU 60	fin.	-142.05	-1115	-0.0000801	0.0001872	0.0035	0.85		2645.85	2645.85	No	18.63	Si
SLU 77	ini.	-214.38	-1605	-0.000123	0.0001872	0.0035	0.85		2645.85	2645.85	No	12.34	Si
SLU 77	fin.	-177.83	-1309	-0.0001011	0.0001872	0.0035	0.85		2645.85	2645.85	No	14.88	Si
SLU 84	ini.	-220.5	-1647	-0.0001267	0.0001872	0.0035	0.85		2645.85	2645.85	No	12	Si
SLU 84	fin.	-176.28	-1314	-0.0001002	0.0001872	0.0035	0.85		2645.85	2645.85	No	15.01	Si
SLU 78	ini.	-204.21	-1572	-0.0001169	0.0001872	0.0035	0.85		2645.85	2645.85	No	12.96	Si
SLU 78	fin.	-190.03	-1346	-0.0001084	0.0001872	0.0035	0.85		2645.85	2645.85	No	13.92	Si
SLU 79	ini.	-213.15	-1593	-0.0001223	0.0001872	0.0035	0.85		2645.85	2645.85	No	12.41	Si
SLU 79	fin.	-174.02	-1290	-0.0000988	0.0001872	0.0035	0.85		2645.85	2645.85	No	15.2	Si
SLU 81	ini.	-226.19	-1652	-0.0001302	0.0001872	0.0035	0.85		2645.85	2645.85	No	11.7	Si
SLU 81	fin.	-160.06	-1251	-0.0000906	0.0001872	0.0035	0.85		2645.85	2645.85	No	16.53	Si
SLU 83	ini.	-230.66	-1680	-0.0001329	0.0001872	0.0035	0.85		2645.85	2645.85	No	11.47	Si
SLU 83	fin.	-164.07	-1277	-0.000093	0.0001872	0.0035	0.85		2645.85	2645.85	No	16.13	Si
SLU 62	ini.	-213.05	-1523	-0.0001222	0.0001872	0.0035	0.85		2645.85	2645.85	No	12.42	Si
SLU 62	fin.	-146.07	-1140	-0.0000824	0.0001872	0.0035	0.85		2645.85	2645.85	No	18.11	Si
SLU 74	ini.	-209.9	-1577	-0.0001203	0.0001872	0.0035	0.85		2645.85	2645.85	No	12.61	Si
SLU 74	fin.	-173.81	-1284	-0.0000987	0.0001872	0.0035	0.85		2645.85	2645.85	No	15.22	Si
SLU 82	ini.	-216.02	-1620	-0.000124	0.0001872	0.0035	0.85		2645.85	2645.85	No	12.25	Si
SLU 82	fin.	-172.26	-1288	-0.0000978	0.0001872	0.0035	0.85		2645.85	2645.85	No	15.36	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-226.19	3629	0.85	0	1771	6740	3818	2168	5985	No	1.65	Si
SLU 81	fin.	-160.06	-2857	0.85	0	1771	6740	3818	2168	5985	No	2.09	Si
SLU 83	ini.	-230.66	3688	0.85	0	1771	6740	3818	2168	5985	No	1.62	Si
SLU 83	fin.	-164.07	-2909	0.85	0	1771	6740	3818	2168	5985	No	2.06	Si
SLU 75	ini.	-199.73	3443	0.85	0	1771	6740	3818	2168	5985	No	1.74	Si
SLU 75	fin.	-186.01	-2957	0.85	0	1771	6740	3818	2168	5985	No	2.02	Si
SLU 77	ini.	-214.38	3552	0.85	0	1771	6740	3818	2168	5985	No	1.69	Si
SLU 77	fin.	-177.83	-2946	0.85	0	1771	6740	3818	2168	5985	No	2.03	Si
SLU 74	ini.	-209.9	3493	0.85	0	1771	6740	3818	2168	5985	No	1.71	Si
SLU 74	fin.	-173.81	-2894	0.85	0	1771	6740	3818	2168	5985	No	2.07	Si
SLU 82	ini.	-216.02	3579	0.85	0	1771	6740	3818	2168	5985	No	1.67	Si
SLU 82	fin.	-172.26	-2920	0.85	0	1771	6740	3818	2168	5985	No	2.05	Si
SLU 79	ini.	-213.15	3524	0.85	0	1771	6740	3818	2168	5985	No	1.7	Si
SLU 79	fin.	-174.02	-2908	0.85	0	1771	6740	3818	2168	5985	No	2.06	Si
SLU 84	ini.	-220.5	3638	0.85	0	1771	6740	3818	2168	5985	No	1.65	Si
SLU 84	fin.	-176.28	-2972	0.85	0	1771	6740	3818	2168	5985	No	2.01	Si
SLU 80	ini.	-202.98	3473	0.85	0	1771	6740	3818	2168	5985	No	1.72	Si
SLU 80	fin.	-186.22	-2971	0.85	0	1771	6740	3818	2168	5985	No	2.01	Si
SLU 78	ini.	-204.21	3502	0.85	0	1771	6740	3818	2168	5985	No	1.71	Si
SLU 78	fin.	-190.03	-3009	0.85	0	1771	6740	3818	2168	5985	No	1.99	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-1848.01	-6919	-0.0015651	0.0002807	0.0035	0.85		2647.52	2647.52		1.43	Si
SLV 15	fin.	1153.16	2797	-0.0008166	0.0002807	0.0035	0.85		2641.96	2641.96		2.29	Si
SLV 2	ini.	1591.23	4879	-0.0012578	0.0002807	0.0035	0.85		2641.96	2641.96		1.66	Si
SLV 2	fin.	-1413.99	-4614	-0.0010653	0.0002807	0.0035	0.85		2647.52	2647.52		1.87	Si
SLV 16	ini.	-1558.72	-5981	-0.0012183	0.0002807	0.0035	0.85		2647.52	2647.52		1.7	Si
SLV 16	fin.	920.46	2099	-0.0006152	0.0002807	0.0035	0.85		2641.96	2641.96		2.87	Si
SLV 6	ini.	1062.63	3068	-0.0007359	0.0002807	0.0035	0.85		2641.96	2641.96		2.49	Si
SLV 6	fin.	-1526.81	-5433	-0.0011836	0.0002807	0.0035	0.85		2647.52	2647.52		1.73	Si
SLV 11	ini.	-1319.41	-5108	-0.000971	0.0002807	0.0035	0.85		2647.52	2647.52		2.01	Si
SLV 11	fin.	1265.98	3616	-0.0009218	0.0002807	0.0035	0.85		2641.96	2641.96		2.09	Si
SLV 14	ini.	-1149.18	-4568	-0.000811	0.0002807	0.0035	0.85		2647.52	2647.52		2.3	Si
SLV 14	fin.	282.28	-65	-0.0001621	0.0002807	0.0035	0.85		2641.96	2641.96		9.36	Si
SLV 4	ini.	1181.69	3466	-0.0008428	0.0002807	0.0035	0.85		2641.96	2641.96		2.24	Si
SLV 4	fin.	-775.81	-2450	-0.0004986	0.0002807	0.0035	0.85		2647.52	2647.52		3.41	Si
SLV 5	ini.	867.85	2437	-0.0005724	0.0002807	0.0035	0.85		2641.96	2641.96		3.04	Si
SLV 5	fin.	-1370.14	-4964	-0.001021	0.0002807	0.0035	0.85		2647.52	2647.52		1.93	Si
SLV 1	ini.	1301.94	3941	-0.0009565	0.0002807	0.0035	0.85		2641.96	2641.96		2.03	Si
SLV 1	fin.	-1181.29	-3917	-0.0008403	0.0002807	0.0035	0.85		2647.52	2647.52		2.24	Si
SLV 13	ini.	-1438.48	-5506	-0.0010904	0.0002807	0.0035	0.85		2647.52	2647.52		1.84	Si
SLV 13	fin.	514.98	632	-0.0003106	0.0002807	0.0035	0.85		2641.96	2641.96		5.13	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-1848.01	10717	0.85	0	2656	6740	5727	2168	7894		0.74	No
SLV 15	fin.	1153.16	5298	0.85	0	2656	6740	5727	2168	7894		1.49	Si
SLV 5	ini.	867.85	-2918	0.85	0	2656	6740	5727	2168	7894		2.71	Si
SLV 5	fin.	-1370.14	-8832	0.85	0	2656	6740	5727	2168	7894		0.89	No
SLV 13	ini.	-1438.48	8501	0.85	0	2656	6740	5727	2168	7894		0.93	No
SLV 13	fin.	514.98	1840	0.85	0	2656	6740	5727	2168	7894		4.29	Si
SLV 12	ini.	-1124.63	7472	0.85	0	2656	6740	5727	2168	7894		1.06	Si
SLV 12	fin.	1109.31	4797	0.85	0	2656	6740	5727	2168	7894		1.65	Si
SLV 14	ini.	-1149.18	7068	0.85	0	2656	6740	5727	2168	7894		1.12	Si
SLV 14	fin.	282.28	555	0.85	0	2656	6740	5727	2168	7894		14.21	Si
SLV 11	ini.	-1319.41	8437	0.85	0	2656	6740	5727	2168	7894		0.94	No
SLV 11	fin.	1265.98	5662	0.85	0	2656	6740	5727	2168	7894		1.39	Si
SLV 1	ini.	1301.94	-4730	0.85	0	2656	6740	5727	2168	7894		1.67	Si
SLV 1	fin.	-1181.29	-8049	0.85	0	2656	6740	5727	2168	7894		0.98	No
SLV 2	ini.	1591.23	-6163	0.85	0	2656	6740	5727	2168	7894		1.28	Si
SLV 2	fin.	-1413.99	-9333	0.85	0	2656	6740	5727	2168	7894		0.85	No
SLV 16	ini.	-1558.72	9284	0.85	0	2656	6740	5727	2168	7894		0.85	No
SLV 16	fin.	920.46	4014	0.85	0	2656	6740	5727	2168	7894		1.97	Si
SLV 6	ini.	1062.63	-3883	0.85	0	2656	6740	5727	2168	7894		2.03	Si
SLV 6	fin.	-1526.81	-9697	0.85	0	2656	6740	5727	2168	7894		0.81	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.433	SLV 15	Si
V_SLV	0.737	SLV 15	No
PF_SLU	11.471	SLU 83	Si
V_SLU	1.623	SLU 83	Si

Trave di accoppiamento 102

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-5.508	-3.359	5.07	7.07	2	-6.008	-3.359	5.07	7.07	2	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	1500.15	-3855	-0.0001583	0.0001872	0.0035	2		14206.68	14206.68	No	9.47	Si
SLU 79	fin.	-1567.35	-3855	-0.0001659	0.0001872	0.0035	2		14219.44	14219.44	No	9.07	Si
SLU 73	ini.	1511.25	-3842	-0.0001596	0.0001872	0.0035	2		14206.68	14206.68	No	9.4	Si
SLU 73	fin.	-1586.16	-3842	-0.000168	0.0001872	0.0035	2		14219.44	14219.44	No	8.96	Si
SLU 83	ini.	1542.69	-3872	-0.0001632	0.0001872	0.0035	2		14206.68	14206.68	No	9.21	Si
SLU 83	fin.	-1574.55	-3872	-0.0001667	0.0001872	0.0035	2		14219.44	14219.44	No	9.03	Si
SLU 80	ini.	1513.97	-3923	-0.0001599	0.0001872	0.0035	2		14206.68	14206.68	No	9.38	Si
SLU 80	fin.	-1597.78	-3923	-0.0001693	0.0001872	0.0035	2		14219.44	14219.44	No	8.9	Si
SLU 76	ini.	1517.21	-3905	-0.0001603	0.0001872	0.0035	2		14206.68	14206.68	No	9.36	Si
SLU 76	fin.	-1602.11	-3905	-0.0001698	0.0001872	0.0035	2		14219.44	14219.44	No	8.88	Si
SLU 82	ini.	1550.55	-3877	-0.0001641	0.0001872	0.0035	2		14206.68	14206.68	No	9.16	Si
SLU 82	fin.	-1589.03	-3877	-0.0001683	0.0001872	0.0035	2		14219.44	14219.44	No	8.95	Si
SLU 75	ini.	1516.78	-3905	-0.0001602	0.0001872	0.0035	2		14206.68	14206.68	No	9.37	Si
SLU 75	fin.	-1596.45	-3905	-0.0001692	0.0001872	0.0035	2		14219.44	14219.44	No	8.91	Si
SLU 77	ini.	1508.93	-3901	-0.0001593	0.0001872	0.0035	2		14206.68	14206.68	No	9.42	Si
SLU 77	fin.	-1581.97	-3901	-0.0001675	0.0001872	0.0035	2		14219.44	14219.44	No	8.99	Si
SLU 84	ini.	1556.51	-3940	-0.0001648	0.0001872	0.0035	2		14206.68	14206.68	No	9.13	Si
SLU 84	fin.	-1604.98	-3940	-0.0001702	0.0001872	0.0035	2		14219.44	14219.44	No	8.86	Si
SLU 78	ini.	1522.74	-3968	-0.0001609	0.0001872	0.0035	2		14206.68	14206.68	No	9.33	Si
SLU 78	fin.	-1612.4	-3968	-0.000171	0.0001872	0.0035	2		14219.44	14219.44	No	8.82	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 76	ini.	1517.21	-5889	2	0	4167	3965	8983	5100	8131	No	1.38	Si
SLU 76	fin.	-1602.11	-6509	2	0	4167	3965	8983	5100	8131	No	1.25	Si
SLU 77	ini.	1508.93	-5833	2	0	4167	3965	8983	5100	8131	No	1.39	Si
SLU 77	fin.	-1581.97	-6452	2	0	4167	3965	8983	5100	8131	No	1.26	Si
SLU 78	ini.	1522.74	-5921	2	0	4167	3965	8983	5100	8131	No	1.37	Si
SLU 78	fin.	-1612.4	-6540	2	0	4167	3965	8983	5100	8131	No	1.24	Si
SLU 83	ini.	1542.69	-5885	2	0	4167	3965	8983	5100	8131	No	1.38	Si
SLU 83	fin.	-1574.55	-6505	2	0	4167	3965	8983	5100	8131	No	1.25	Si
SLU 73	ini.	1511.25	-5846	2	0	4167	3965	8983	5100	8131	No	1.39	Si
SLU 73	fin.	-1586.16	-6465	2	0	4167	3965	8983	5100	8131	No	1.26	Si
SLU 80	ini.	1513.97	-5874	2	0	4167	3965	8983	5100	8131	No	1.38	Si
SLU 80	fin.	-1597.78	-6494	2	0	4167	3965	8983	5100	8131	No	1.25	Si
SLU 75	ini.	1516.78	-5877	2	0	4167	3965	8983	5100	8131	No	1.38	Si
SLU 75	fin.	-1596.45	-6497	2	0	4167	3965	8983	5100	8131	No	1.25	Si
SLU 81	ini.	1536.73	-5841	2	0	4167	3965	8983	5100	8131	No	1.39	Si
SLU 81	fin.	-1558.6	-6461	2	0	4167	3965	8983	5100	8131	No	1.26	Si
SLU 82	ini.	1550.55	-5930	2	0	4167	3965	8983	5100	8131	No	1.37	Si
SLU 82	fin.	-1589.03	-6549	2	0	4167	3965	8983	5100	8131	No	1.24	Si
SLU 84	ini.	1556.51	-5974	2	0	4167	3965	8983	5100	8131	No	1.36	Si
SLU 84	fin.	-1604.98	-6593	2	0	4167	3965	8983	5100	8131	No	1.23	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 6	ini.	1644.52	-10328	-0.0001712	0.0002807	0.0035	2		13920.08	13920.08		8.46	Si
SLV 6	fin.	-4307.83	-10325	-0.0005016	0.0002807	0.0035	2		13933.43	13933.43		3.23	Si
SLV 1	ini.	2890.79	-8362	-0.0003158	0.0002807	0.0035	2		13920.08	13920.08		4.82	Si
SLV 1	fin.	-4629.63	-8470	-0.0005471	0.0002807	0.0035	2		13933.43	13933.43		3.01	Si
SLV 4	ini.	3629.6	-6089	-0.0004099	0.0002807	0.0035	2		13920.08	13920.08		3.84	Si
SLV 4	fin.	-4285.57	-6219	-0.0004985	0.0002807	0.0035	2		13933.43	13933.43		3.25	Si
SLV 5	ini.	1255.38	-9491	-0.000129	0.0002807	0.0035	2		13920.08	13920.08		11.09	Si
SLV 5	fin.	-3765.62	-9489	-0.0004276	0.0002807	0.0035	2		13933.43	13933.43		3.7	Si
SLD 2	ini.	2088.56	-5592	-0.0002209	0.0002807	0.0035	2		13920.08	13920.08		6.66	Si
SLD 2	fin.	-2944.83	-5638	-0.0003221	0.0002807	0.0035	2		13933.43	13933.43		4.73	Si
SLD 1	ini.	1842.67	-5064	-0.0001932	0.0002807	0.0035	2		13920.08	13920.08		7.55	Si
SLD 1	fin.	-2602.22	-5110	-0.0002806	0.0002807	0.0035	2		13933.43	13933.43		5.35	Si
SLV 3	ini.	3051.62	-4847	-0.0003357	0.0002807	0.0035	2		13920.08	13920.08		4.56	Si
SLV 3	fin.	-3480.23	-4977	-0.00039	0.0002807	0.0035	2		13933.43	13933.43		4	Si
SLV 2	ini.	3468.77	-9604	-0.0003889	0.0002807	0.0035	2		13920.08	13920.08		4.01	Si
SLV 2	fin.	-5434.98	-9712	-0.0006663	0.0002807	0.0035	2		13933.43	13933.43		2.56	Si
SLD 4	ini.	2155.65	-4194	-0.0002286	0.0002807	0.0035	2		13920.08	13920.08		6.46	Si
SLD 4	fin.	-2489.48	-4250	-0.0002672	0.0002807	0.0035	2		13933.43	13933.43		5.6	Si
SLV 15	ini.	-1354.63	4226	-0.0001395	0.0002807	0.0035	2		13933.43	13933.43		10.29	Si
SLV 15	fin.	3195.64	4334	-0.0003538	0.0002807	0.0035	2		13920.08	13920.08		4.36	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	ini.	1255.38	-9655	2	0	6250	3965	13475	5100	10215		1.06	Si
SLV 5	fin.	-3765.62	-10014	2	0	6250	3965	13475	5100	10215		1.02	Si
SLD 1	ini.	1842.67	-8622	2	0	6250	3965	13475	5100	10215		1.18	Si
SLD 1	fin.	-2602.22	-9075	2	0	6250	3965	13475	5100	10215		1.13	Si
SLV 2	ini.	3468.77	-17539	2	0	6250	3965	13475	5100	10215		0.58	No

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	fin.	-5434.98	-17965	2	0	6250	3965	13475	5100	10215		0.57	No
SLV 15	ini.	-1354.63	9365	2	0	6250	3965	13475	5100	10215		1.09	Si
SLV 15	fin.	3195.64	8845	2	0	6250	3965	13475	5100	10215		1.15	Si
SLV 1	ini.	2890.79	-14772	2	0	6250	3965	13475	5100	10215		0.69	No
SLV 1	fin.	-4629.63	-15198	2	0	6250	3965	13475	5100	10215		0.67	No
SLV 6	ini.	1644.52	-11518	2	0	6250	3965	13475	5100	10215		0.89	No
SLV 6	fin.	-4307.83	-11876	2	0	6250	3965	13475	5100	10215		0.86	No
SLD 2	ini.	2088.56	-9799	2	0	6250	3965	13475	5100	10215		1.04	Si
SLD 2	fin.	-2944.83	-10252	2	0	6250	3965	13475	5100	10215		1	No
SLV 4	ini.	3629.6	-15640	2	0	6250	3965	13475	5100	10215		0.65	No
SLV 4	fin.	-4285.57	-16133	2	0	6250	3965	13475	5100	10215		0.63	No
SLV 3	ini.	3051.62	-12874	2	0	6250	3965	13475	5100	10215		0.79	No
SLV 3	fin.	-3480.23	-13366	2	0	6250	3965	13475	5100	10215		0.76	No
SLD 4	ini.	2155.65	-9059	2	0	6250	3965	13475	5100	10215		1.13	Si
SLD 4	fin.	-2489.48	-9539	2	0	6250	3965	13475	5100	10215		1.07	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.564	SLV 2	Si
V_SLV	0.569	SLV 2	No
PF_SLU	8.819	SLU 78	Si
V_SLU	1.233	SLU 84	Si

Trave di accoppiamento 103

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-5.508	-3.359	7.87	8.62	0.75	-6.008	-3.359	7.87	8.62	0.75	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 68	ini.	362.21	-767	-0.0002884	0.0001872	0.0035	0.75		2067.09	2067.09	No	5.71	Si
SLU 68	fin.	-248.11	-1324	-0.000188	0.0001872	0.0035	0.75		2071.83	2071.83	No	8.35	Si
SLU 77	ini.	363.41	-1048	-0.0002895	0.0001872	0.0035	0.75		2067.09	2067.09	No	5.69	Si
SLU 77	fin.	-292.88	-1643	-0.0002259	0.0001872	0.0035	0.75		2071.83	2071.83	No	7.07	Si
SLU 82	ini.	368.44	-1050	-0.0002941	0.0001872	0.0035	0.75		2067.09	2067.09	No	5.61	Si
SLU 82	fin.	-299.01	-1664	-0.0002312	0.0001872	0.0035	0.75		2071.83	2071.83	No	6.93	Si
SLU 73	ini.	369.66	-945	-0.0002952	0.0001872	0.0035	0.75		2067.09	2067.09	No	5.59	Si
SLU 73	fin.	-281.76	-1543	-0.0002163	0.0001872	0.0035	0.75		2071.83	2071.83	No	7.35	Si
SLU 78	ini.	371.42	-1018	-0.0002969	0.0001872	0.0035	0.75		2067.09	2067.09	No	5.57	Si
SLU 78	fin.	-290.31	-1618	-0.0002237	0.0001872	0.0035	0.75		2071.83	2071.83	No	7.14	Si
SLU 84	ini.	370.61	-1072	-0.0002961	0.0001872	0.0035	0.75		2067.09	2067.09	No	5.58	Si
SLU 84	fin.	-301.62	-1687	-0.0002335	0.0001872	0.0035	0.75		2071.83	2071.83	No	6.87	Si
SLU 80	ini.	368.66	-1009	-0.0002943	0.0001872	0.0035	0.75		2067.09	2067.09	No	5.61	Si
SLU 80	fin.	-288.69	-1606	-0.0002223	0.0001872	0.0035	0.75		2071.83	2071.83	No	7.18	Si
SLU 75	ini.	369.25	-996	-0.0002949	0.0001872	0.0035	0.75		2067.09	2067.09	No	5.6	Si
SLU 75	fin.	-287.7	-1595	-0.0002214	0.0001872	0.0035	0.75		2071.83	2071.83	No	7.2	Si
SLU 83	ini.	362.6	-1102	-0.0002887	0.0001872	0.0035	0.75		2067.09	2067.09	No	5.7	Si
SLU 83	fin.	-304.18	-1712	-0.0002357	0.0001872	0.0035	0.75		2071.83	2071.83	No	6.81	Si
SLU 76	ini.	371.83	-967	-0.0002972	0.0001872	0.0035	0.75		2067.09	2067.09	No	5.56	Si
SLU 76	fin.	-284.37	-1566	-0.0002186	0.0001872	0.0035	0.75		2071.83	2071.83	No	7.29	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	368.66	-869	0.75	0	1563	3965	3369	1913	5281	No	6.08	Si
SLU 80	fin.	-288.69	-4199	0.75	0	1563	3965	3369	1913	5281	No	1.26	Si
SLU 77	ini.	363.41	-857	0.75	0	1563	3965	3369	1913	5281	No	6.16	Si
SLU 77	fin.	-292.88	-4220	0.75	0	1563	3965	3369	1913	5281	No	1.25	Si
SLU 81	ini.	360.42	-884	0.75	0	1563	3965	3369	1913	5281	No	5.97	Si
SLU 81	fin.	-301.57	-4222	0.75	0	1563	3965	3369	1913	5281	No	1.25	Si
SLU 74	ini.	361.23	-862	0.75	0	1563	3965	3369	1913	5281	No	6.13	Si
SLU 74	fin.	-290.27	-4163	0.75	0	1563	3965	3369	1913	5281	No	1.27	Si
SLU 83	ini.	362.6	-880	0.75	0	1563	3965	3369	1913	5281	No	6	Si
SLU 83	fin.	-304.18	-4280	0.75	0	1563	3965	3369	1913	5281	No	1.23	Si
SLU 79	ini.	360.65	-856	0.75	0	1563	3965	3369	1913	5281	No	6.17	Si
SLU 79	fin.	-291.25	-4182	0.75	0	1563	3965	3369	1913	5281	No	1.26	Si
SLU 82	ini.	368.44	-897	0.75	0	1563	3965	3369	1913	5281	No	5.89	Si
SLU 82	fin.	-299.01	-4239	0.75	0	1563	3965	3369	1913	5281	No	1.25	Si
SLU 84	ini.	370.61	-893	0.75	0	1563	3965	3369	1913	5281	No	5.92	Si
SLU 84	fin.	-301.62	-4297	0.75	0	1563	3965	3369	1913	5281	No	1.23	Si
SLU 78	ini.	371.42	-870	0.75	0	1563	3965	3369	1913	5281	No	6.07	Si
SLU 78	fin.	-290.31	-4238	0.75	0	1563	3965	3369	1913	5281	No	1.25	Si
SLU 75	ini.	369.25	-874	0.75	0	1563	3965	3369	1913	5281	No	6.04	Si
SLU 75	fin.	-287.7	-4180	0.75	0	1563	3965	3369	1913	5281	No	1.26	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-863.64	-4914	-0.0007739	0.0002807	0.0035	0.75		2057.16	2057.16		2.38	Si
SLV 16	fin.	-508.04	-4694	-0.0004057	0.0002807	0.0035	0.75		2057.16	2057.16		4.05	Si
SLV 5	ini.	822.25	1999	-0.0007292	0.0002807	0.0035	0.75		2052.27	2052.27		2.5	Si
SLV 5	fin.	168.99	1838	-0.000123	0.0002807	0.0035	0.75		2052.27	2052.27		12.14	Si
SLV 3	ini.	1203.21	2624	-0.0012052	0.0002807	0.0035	0.75		2052.27	2052.27		1.71	Si
SLV 3	fin.	-67.6	1290	-0.000048	0.0002807	0.0035	0.75		2057.16	2057.16		30.43	Si
SLV 1	ini.	1385.7	3628	-0.0014792	0.0002807	0.0035	0.75		2052.27	2052.27		1.48	Si
SLV 1	fin.	115.4	2563	-0.000083	0.0002807	0.0035	0.75		2052.27	2052.27		17.78	Si
SLV 13	ini.	-964.92	-4782	-0.0008927	0.0002807	0.0035	0.75		2057.16	2057.16		2.13	Si
SLV 13	fin.	-355.93	-4040	-0.0002711	0.0002807	0.0035	0.75		2057.16	2057.16		5.78	Si
SLD 2	ini.	859.73	1539	-0.0007716	0.0002807	0.0035	0.75		2052.27	2052.27		2.39	Si
SLD 2	fin.	-52.69	731	-0.0000373	0.0002807	0.0035	0.75		2057.16	2057.16		39.04	Si
SLV 4	ini.	1486.98	3496	-0.0016509	0.0002807	0.0035	0.75		2052.27	2052.27		1.38	Si
SLV 4	fin.	-36.71	1909	-0.0000259	0.0002807	0.0035	0.75		2057.16	2057.16		56.04	Si
SLV 15	ini.	-1147.41	-5787	-0.001125	0.0002807	0.0035	0.75		2057.16	2057.16		1.79	Si
SLV 15	fin.	-538.93	-5313	-0.0004348	0.0002807	0.0035	0.75		2057.16	2057.16		3.82	Si
SLV 2	ini.	1669.47	4501	-0.0020154	0.0002807	0.0035	0.75		2052.27	2052.27		1.23	Si
SLV 2	fin.	146.3	3182	-0.0001059	0.0002807	0.0035	0.75		2052.27	2052.27		14.03	Si
SLV 6	ini.	1013.3	2587	-0.0009546	0.0002807	0.0035	0.75		2052.27	2052.27		2.03	Si
SLV 6	fin.	189.79	2255	-0.0001388	0.0002807	0.0035	0.75		2052.27	2052.27		10.81	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 2	ini.	859.73	-1878	0.75	0	2344	3965	5053	1913	6309		3.36	Si
SLD 2	fin.	-52.69	-3859	0.75	0	2344	3965	5053	1913	6309		1.63	Si
SLD 1	ini.	739.01	-1574	0.75	0	2344	3965	5053	1913	6309		4.01	Si
SLD 1	fin.	-65.83	-3595	0.75	0	2344	3965	5053	1913	6309		1.75	Si
SLV 5	ini.	822.25	-594	0.75	0	2344	3965	5053	1913	6309		10.61	Si
SLV 5	fin.	168.99	-3698	0.75	0	2344	3965	5053	1913	6309		1.71	Si
SLD 4	ini.	787.99	-2031	0.75	0	2344	3965	5053	1913	6309		3.11	Si
SLD 4	fin.	-125.51	-3747	0.75	0	2344	3965	5053	1913	6309		1.68	Si
SLD 3	ini.	667.27	-1727	0.75	0	2344	3965	5053	1913	6309		3.65	Si
SLD 3	fin.	-138.65	-3483	0.75	0	2344	3965	5053	1913	6309		1.81	Si
SLV 4	ini.	1486.98	-3919	0.75	0	2344	3965	5053	1913	6309		1.61	Si
SLV 4	fin.	-36.71	-4934	0.75	0	2344	3965	5053	1913	6309		1.28	Si
SLV 2	ini.	1669.47	-3549	0.75	0	2344	3965	5053	1913	6309		1.78	Si
SLV 2	fin.	146.3	-5224	0.75	0	2344	3965	5053	1913	6309		1.21	Si
SLV 1	ini.	1385.7	-2835	0.75	0	2344	3965	5053	1913	6309		2.23	Si
SLV 1	fin.	115.4	-4603	0.75	0	2344	3965	5053	1913	6309		1.37	Si
SLV 3	ini.	1203.21	-3205	0.75	0	2344	3965	5053	1913	6309		1.97	Si
SLV 3	fin.	-67.6	-4314	0.75	0	2344	3965	5053	1913	6309		1.46	Si
SLV 6	ini.	1013.3	-1075	0.75	0	2344	3965	5053	1913	6309		5.87	Si
SLV 6	fin.	189.79	-4116	0.75	0	2344	3965	5053	1913	6309		1.53	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.229	SLV 2	Si
V_SLV	1.208	SLV 2	Si
PF_SLU	5.559	SLU 76	Si
V_SLU	1.229	SLU 84	Si

Trave di accoppiamento 104

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-2.283	-3.359	5.07	5.97	0.9	-3.183	-3.359	5.07	5.97	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 70	ini.	446.64	-1901	-0.0002425	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.59	Si
SLU 70	fin.	93.71	-1615	-0.0000467	0.0001872	0.0035	0.9		2942.43	2942.43	No	31.4	Si
SLU 47	ini.	447.46	-1750	-0.000243	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.58	Si
SLU 47	fin.	19.32	-1312	-0.0000095	0.0001872	0.0035	0.9		2942.43	2942.43	No	152.32	Si
SLU 68	ini.	453.41	-1887	-0.0002466	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.49	Si
SLU 68	fin.	72.38	-1548	-0.0000359	0.0001872	0.0035	0.9		2942.43	2942.43	No	40.65	Si
SLU 67	ini.	450.15	-1891	-0.0002446	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.54	Si
SLU 67	fin.	80.84	-1574	-0.0000402	0.0001872	0.0035	0.9		2942.43	2942.43	No	36.4	Si
SLU 72	ini.	442.74	-1883	-0.0002401	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.65	Si
SLU 72	fin.	91.31	-1596	-0.0000455	0.0001872	0.0035	0.9		2942.43	2942.43	No	32.23	Si
SLU 44	ini.	450.97	-1740	-0.0002451	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.52	Si
SLU 44	fin.	6.44	-1271	-0.0000032	0.0001872	0.0035	0.9		2942.43	2942.43	No	456.66	Si
SLU 65	ini.	456.93	-1877	-0.0002488	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.44	Si
SLU 65	fin.	59.51	-1507	-0.0000294	0.0001872	0.0035	0.9		2942.43	2942.43	No	49.45	Si
SLU 66	ini.	439.42	-1871	-0.0002381	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.7	Si
SLU 66	fin.	89.92	-1584	-0.0000448	0.0001872	0.0035	0.9		2942.43	2942.43	No	32.72	Si
SLU 46	ini.	444.2	-1754	-0.000241	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.62	Si
SLU 46	fin.	27.78	-1338	-0.0000137	0.0001872	0.0035	0.9		2942.43	2942.43	No	105.93	Si
SLU 49	ini.	440.68	-1764	-0.0002388	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.68	Si
SLU 49	fin.	40.65	-1378	-0.00002	0.0001872	0.0035	0.9		2942.43	2942.43	No	72.38	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 44	ini.	450.97	-1322	0.9	0	1875	7137	4043	2295	6338	No	4.8	Si
SLU 44	fin.	6.44	33	0.9	0	1875	7137	4043	2295	6338	No	189.55	Si
SLU 68	ini.	453.41	-1280	0.9	0	1875	7137	4043	2295	6338	No	4.95	Si
SLU 68	fin.	72.38	263	0.9	0	1875	7137	4043	2295	6338	No	24.14	Si
SLU 49	ini.	440.68	-1285	0.9	0	1875	7137	4043	2295	6338	No	4.93	Si
SLU 49	fin.	40.65	177	0.9	0	1875	7137	4043	2295	6338	No	35.86	Si
SLU 51	ini.	436.79	-1269	0.9	0	1875	7137	4043	2295	6338	No	4.99	Si
SLU 51	fin.	38.24	163	0.9	0	1875	7137	4043	2295	6338	No	38.77	Si
SLU 46	ini.	444.2	-1297	0.9	0	1875	7137	4043	2295	6338	No	4.89	Si
SLU 46	fin.	27.78	122	0.9	0	1875	7137	4043	2295	6338	No	51.91	Si
SLU 45	ini.	433.46	-1254	0.9	0	1875	7137	4043	2295	6338	No	5.05	Si
SLU 45	fin.	36.86	153	0.9	0	1875	7137	4043	2295	6338	No	41.35	Si
SLU 47	ini.	447.46	-1309	0.9	0	1875	7137	4043	2295	6338	No	4.84	Si
SLU 47	fin.	19.32	88	0.9	0	1875	7137	4043	2295	6338	No	71.96	Si
SLU 67	ini.	450.15	-1267	0.9	0	1875	7137	4043	2295	6338	No	5	Si
SLU 67	fin.	80.84	297	0.9	0	1875	7137	4043	2295	6338	No	21.37	Si
SLU 65	ini.	456.93	-1292	0.9	0	1875	7137	4043	2295	6338	No	4.91	Si
SLU 65	fin.	59.51	208	0.9	0	1875	7137	4043	2295	6338	No	30.48	Si
SLU 70	ini.	446.64	-1255	0.9	0	1875	7137	4043	2295	6338	No	5.05	Si
SLU 70	fin.	93.71	351	0.9	0	1875	7137	4043	2295	6338	No	18.05	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-1711.95	2179	-0.0011877	0.0002807	0.0035	0.9		2973.32	2973.32		1.74	Si
SLV 16	fin.	2156.57	-3969	-0.0016792	0.0002807	0.0035	0.9		2967.55	2967.55		1.38	Si
SLV 5	ini.	2278.71	-5410	-0.0018419	0.0002807	0.0035	0.9		2967.55	2967.55		1.3	Si
SLV 5	fin.	-1611.49	275	-0.0010928	0.0002807	0.0035	0.9		2973.32	2973.32		1.85	Si
SLV 6	ini.	2681.08	-6123	-0.0025229	0.0002807	0.0035	0.9		2967.55	2967.55		1.11	Si
SLV 6	fin.	-2023.77	820	-0.0015149	0.0002807	0.0035	0.9		2973.32	2973.32		1.47	Si
SLV 2	ini.	2972.02	-6054	-0.0031878	0.0002807	0.0035	0.9		2967.55	2967.55		1	No
SLV 2	fin.	-2641.38	2416	-0.0024348	0.0002807	0.0035	0.9		2973.32	2973.32		1.13	Si
SLV 11	ini.	-2018.64	3309	-0.001509	0.0002807	0.0035	0.9		2973.32	2973.32		1.47	Si
SLV 11	fin.	2151.31	-3183	-0.0016726	0.0002807	0.0035	0.9		2967.55	2967.55		1.38	Si
SLV 15	ini.	-2309.58	3239	-0.0018798	0.0002807	0.0035	0.9		2973.32	2973.32		1.29	Si
SLV 15	fin.	2768.92	-4779	-0.0027075	0.0002807	0.0035	0.9		2967.55	2967.55		1.07	Si
SLV 12	ini.	-1616.27	2595	-0.0010972	0.0002807	0.0035	0.9		2973.32	2973.32		1.84	Si
SLV 12	fin.	1739.03	-2638	-0.0012172	0.0002807	0.0035	0.9		2967.55	2967.55		1.71	Si
SLV 13	ini.	-1356.12	1179	-0.0008691	0.0002807	0.0035	0.9		2973.32	2973.32		2.19	Si
SLV 13	fin.	2002.96	-4270	-0.0014953	0.0002807	0.0035	0.9		2967.55	2967.55		1.48	Si
SLV 4	ini.	2018.56	-3993	-0.0015131	0.0002807	0.0035	0.9		2967.55	2967.55		1.47	Si
SLV 4	fin.	-1875.42	1907	-0.0013523	0.0002807	0.0035	0.9		2973.32	2973.32		1.59	Si
SLV 1	ini.	2374.39	-4994	-0.0019821	0.0002807	0.0035	0.9		2967.55	2967.55		1.25	Si
SLV 1	fin.	-2029.03	1606	-0.0015209	0.0002807	0.0035	0.9		2973.32	2973.32		1.47	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-1711.95	6702	0.9	0	2813	7137	6064	2295	8359		1.25	Si
SLV 16	fin.	2156.57	7913	0.9	0	2813	7137	6064	2295	8359		1.06	Si
SLV 11	ini.	-2018.64	8141	0.9	0	2813	7137	6064	2295	8359		1.03	Si
SLV 11	fin.	2151.31	7448	0.9	0	2813	7137	6064	2295	8359		1.12	Si
SLV 2	ini.	2972.02	-10767	0.9	0	2813	7137	6064	2295	8359		0.78	No
SLV 2	fin.	-2641.38	-9684	0.9	0	2813	7137	6064	2295	8359		0.86	No
SLV 13	ini.	-1356.12	5197	0.9	0	2813	7137	6064	2295	8359		1.61	Si
SLV 13	fin.	2002.96	7589	0.9	0	2813	7137	6064	2295	8359		1.1	Si
SLV 6	ini.	2681.08	-9967	0.9	0	2813	7137	6064	2295	8359		0.84	No
SLV 6	fin.	-2023.77	-7008	0.9	0	2813	7137	6064	2295	8359		1.19	Si
SLV 5	ini.	2278.71	-8459	0.9	0	2813	7137	6064	2295	8359		0.99	No
SLV 5	fin.	-1611.49	-5519	0.9	0	2813	7137	6064	2295	8359		1.51	Si
SLV 4	ini.	2018.56	-7022	0.9	0	2813	7137	6064	2295	8359		1.19	Si
SLV 4	fin.	-1875.42	-7149	0.9	0	2813	7137	6064	2295	8359		1.17	Si
SLV 1	ini.	2374.39	-8527	0.9	0	2813	7137	6064	2295	8359		0.98	No
SLV 1	fin.	-2029.03	-7473	0.9	0	2813	7137	6064	2295	8359		1.12	Si
SLV 15	ini.	-2309.58	8942	0.9	0	2813	7137	6064	2295	8359		0.93	No
SLV 15	fin.	2768.92	10124	0.9	0	2813	7137	6064	2295	8359		0.83	No
SLV 12	ini.	-1616.27	6633	0.9	0	2813	7137	6064	2295	8359		1.26	Si
SLV 12	fin.	1739.03	5959	0.9	0	2813	7137	6064	2295	8359		1.4	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.998	SLV 2	No
V_SLV	0.776	SLV 2	No
PF_SLU	6.44	SLU 65	Si
V_SLU	4.795	SLU 44	Si

Trave di accoppiamento 105

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-2.283	-3.359	7.77	8.62	0.85	-3.183	-3.359	7.77	8.62	0.85	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 67	ini.	-105.73	-1039	-0.0000591	0.0001872	0.0035	0.85		2645.85	2645.85	No	25.02	Si
SLU 67	fin.	-558.54	-1865	-0.0003566	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.74	Si
SLU 78	ini.	-165.45	-1326	-0.0000938	0.0001872	0.0035	0.85		2645.85	2645.85	No	15.99	Si
SLU 78	fin.	-553.26	-2006	-0.0003526	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.78	Si
SLU 73	ini.	-137.88	-1202	-0.0000776	0.0001872	0.0035	0.85		2645.85	2645.85	No	19.19	Si
SLU 73	fin.	-562.48	-1956	-0.0003595	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.7	Si
SLU 72	ini.	-113.03	-1067	-0.0000633	0.0001872	0.0035	0.85		2645.85	2645.85	No	23.41	Si
SLU 72	fin.	-551.21	-1864	-0.0003511	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.8	Si
SLU 75	ini.	-155.53	-1281	-0.0000879	0.0001872	0.0035	0.85		2645.85	2645.85	No	17.01	Si
SLU 75	fin.	-555.77	-1986	-0.0003545	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.76	Si
SLU 82	ini.	-164.32	-1322	-0.0000931	0.0001872	0.0035	0.85		2645.85	2645.85	No	16.1	Si
SLU 82	fin.	-552.28	-1994	-0.0003519	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.79	Si
SLU 68	ini.	-98.01	-1005	-0.0000547	0.0001872	0.0035	0.85		2645.85	2645.85	No	27	Si
SLU 68	fin.	-562.74	-1856	-0.0003597	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.7	Si
SLU 70	ini.	-115.65	-1085	-0.0000648	0.0001872	0.0035	0.85		2645.85	2645.85	No	22.88	Si
SLU 70	fin.	-556.03	-1886	-0.0003547	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.76	Si
SLU 76	ini.	-147.81	-1247	-0.0000834	0.0001872	0.0035	0.85		2645.85	2645.85	No	17.9	Si
SLU 76	fin.	-559.97	-1977	-0.0003576	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.72	Si
SLU 65	ini.	-88.09	-960	-0.000049	0.0001872	0.0035	0.85		2645.85	2645.85	No	30.04	Si
SLU 65	fin.	-565.25	-1836	-0.0003616	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.68	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-165.45	1882	0.85	0	1771	6740	3818	2168	5985	No	3.18	Si
SLU 78	fin.	-553.26	-2456	0.85	0	1771	6740	3818	2168	5985	No	2.44	Si
SLU 80	ini.	-162.82	1858	0.85	0	1771	6740	3818	2168	5985	No	3.22	Si
SLU 80	fin.	-548.45	-2435	0.85	0	1771	6740	3818	2168	5985	No	2.46	Si
SLU 77	ini.	-173.09	1926	0.85	0	1771	6740	3818	2168	5985	No	3.11	Si
SLU 77	fin.	-539.73	-2411	0.85	0	1771	6740	3818	2168	5985	No	2.48	Si
SLU 68	ini.	-98.01	1370	0.85	0	1771	6740	3818	2168	5985	No	4.37	Si
SLU 68	fin.	-562.74	-2419	0.85	0	1771	6740	3818	2168	5985	No	2.47	Si
SLU 84	ini.	-174.24	1958	0.85	0	1771	6740	3818	2168	5985	No	3.06	Si
SLU 84	fin.	-549.77	-2455	0.85	0	1771	6740	3818	2168	5985	No	2.44	Si
SLU 73	ini.	-137.88	1693	0.85	0	1771	6740	3818	2168	5985	No	3.54	Si
SLU 73	fin.	-562.48	-2465	0.85	0	1771	6740	3818	2168	5985	No	2.43	Si
SLU 82	ini.	-164.32	1890	0.85	0	1771	6740	3818	2168	5985	No	3.17	Si
SLU 82	fin.	-552.28	-2454	0.85	0	1771	6740	3818	2168	5985	No	2.44	Si
SLU 65	ini.	-88.09	1302	0.85	0	1771	6740	3818	2168	5985	No	4.6	Si
SLU 65	fin.	-565.25	-2418	0.85	0	1771	6740	3818	2168	5985	No	2.48	Si
SLU 76	ini.	-147.81	1761	0.85	0	1771	6740	3818	2168	5985	No	3.4	Si
SLU 76	fin.	-559.97	-2465	0.85	0	1771	6740	3818	2168	5985	No	2.43	Si
SLU 75	ini.	-155.53	1814	0.85	0	1771	6740	3818	2168	5985	No	3.3	Si
SLU 75	fin.	-555.77	-2456	0.85	0	1771	6740	3818	2168	5985	No	2.44	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 11	ini.	-1346.17	-4639	-0.0009972	0.0002807	0.0035	0.85		2647.52	2647.52		1.97	Si
SLV 11	fin.	1891.9	2143	-0.001629	0.0002807	0.0035	0.85		2641.96	2641.96		1.4	Si
SLV 12	ini.	-1105.15	-3856	-0.0007715	0.0002807	0.0035	0.85		2647.52	2647.52		2.4	Si
SLV 12	fin.	1509.07	1645	-0.0011677	0.0002807	0.0035	0.85		2641.96	2641.96		1.75	Si
SLV 16	ini.	-1282.94	-4628	-0.0009357	0.0002807	0.0035	0.85		2647.52	2647.52		2.06	Si
SLV 16	fin.	1492.05	1132	-0.0011495	0.0002807	0.0035	0.85		2641.96	2641.96		1.77	Si
SLV 15	ini.	-1640.92	-5792	-0.0013106	0.0002807	0.0035	0.85		2647.52	2647.52		1.61	Si
SLV 15	fin.	2060.66	1872	-0.0018793	0.0002807	0.0035	0.85		2641.96	2641.96		1.28	Si
SLV 6	ini.	1182.3	3068	-0.0008433	0.0002807	0.0035	0.85		2641.96	2641.96		2.23	Si
SLV 6	fin.	-2714.21	-4903	-0.0033299	0.0002807	0.0035	0.85		2647.52	2647.52		0.98	No
SLV 1	ini.	1119.06	3057	-0.0007859	0.0002807	0.0035	0.85		2641.96	2641.96		2.36	Si
SLV 1	fin.	-2314.36	-3891	-0.0023349	0.0002807	0.0035	0.85		2647.52	2647.52		1.14	Si
SLV 10	ini.	498.64	835	-0.0002996	0.0002807	0.0035	0.85		2641.96	2641.96		5.3	Si
SLV 10	fin.	-1689.58	-3650	-0.0013674	0.0002807	0.0035	0.85		2647.52	2647.52		1.57	Si
SLV 2	ini.	1477.05	4221	-0.0011336	0.0002807	0.0035	0.85		2641.96	2641.96		1.79	Si
SLV 2	fin.	-2882.97	-4631	-0.0037651	0.0002807	0.0035	0.85		2647.52	2647.52		0.92	No
SLV 5	ini.	941.28	2284	-0.0006324	0.0002807	0.0035	0.85		2641.96	2641.96		2.81	Si
SLV 5	fin.	-2331.38	-4404	-0.0023704	0.0002807	0.0035	0.85		2647.52	2647.52		1.14	Si
SLV 4	ini.	995.91	2813	-0.0006784	0.0002807	0.0035	0.85		2641.96	2641.96		2.65	Si
SLV 4	fin.	-1923.37	-3043	-0.0016676	0.0002807	0.0035	0.85		2647.52	2647.52		1.38	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	995.91	-4950	0.85	0	2656	6740	5727	2168	7894		1.59	Si
SLV 4	fin.	-1923.37	-6819	0.85	0	2656	6740	5727	2168	7894		1.16	Si
SLV 15	ini.	-1640.92	9681	0.85	0	2656	6740	5727	2168	7894		0.82	No
SLV 15	fin.	2060.66	6577	0.85	0	2656	6740	5727	2168	7894		1.2	Si
SLV 6	ini.	1182.3	-5748	0.85	0	2656	6740	5727	2168	7894		1.37	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 6	fin.	-2714.21	-9687	0.85	0	2656	6740	5727	2168	7894		0.81	No
SLV 5	ini.	941.28	-4416	0.85	0	2656	6740	5727	2168	7894		1.79	Si
SLV 5	fin.	-2331.38	-8389	0.85	0	2656	6740	5727	2168	7894		0.94	No
SLV 16	ini.	-1282.94	7701	0.85	0	2656	6740	5727	2168	7894		1.03	Si
SLV 16	fin.	1492.05	4649	0.85	0	2656	6740	5727	2168	7894		1.7	Si
SLV 12	ini.	-1105.15	6585	0.85	0	2656	6740	5727	2168	7894		1.2	Si
SLV 12	fin.	1509.07	4825	0.85	0	2656	6740	5727	2168	7894		1.64	Si
SLV 13	ini.	-1159.79	7119	0.85	0	2656	6740	5727	2168	7894		1.11	Si
SLV 13	fin.	1101.06	3255	0.85	0	2656	6740	5727	2168	7894		2.43	Si
SLV 11	ini.	-1346.17	7918	0.85	0	2656	6740	5727	2168	7894		1	No
SLV 11	fin.	1891.9	6123	0.85	0	2656	6740	5727	2168	7894		1.29	Si
SLV 1	ini.	1119.06	-5532	0.85	0	2656	6740	5727	2168	7894		1.43	Si
SLV 1	fin.	-2314.36	-8213	0.85	0	2656	6740	5727	2168	7894		0.96	No
SLV 2	ini.	1477.05	-7511	0.85	0	2656	6740	5727	2168	7894		1.05	Si
SLV 2	fin.	-2882.97	-10141	0.85	0	2656	6740	5727	2168	7894		0.78	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.918	SLV 2	No
V_SLV	0.778	SLV 2	No
PF_SLU	4.681	SLU 65	Si
V_SLU	2.428	SLU 76	Si

Trave di accoppiamento 106

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-2.063	5.951	5.07	5.97	0.9	-2.963	5.951	5.07	5.97	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 71	ini.	588.22	-1983	-0.0003329	0.0001872	0.0035	0.9		2942.43	2942.43	No	5	Si
SLU 71	fin.	-228.84	-824	-0.0001171	0.0001872	0.0035	0.9		2948.11	2948.11	No	12.88	Si
SLU 80	ini.	572.94	-2029	-0.0003228	0.0001872	0.0035	0.9		2942.43	2942.43	No	5.14	Si
SLU 80	fin.	-196.81	-949	-0.0001	0.0001872	0.0035	0.9		2948.11	2948.11	No	14.98	Si
SLU 69	ini.	591.74	-1998	-0.0003353	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.97	Si
SLU 69	fin.	-228.76	-834	-0.0001171	0.0001872	0.0035	0.9		2948.11	2948.11	No	12.89	Si
SLU 78	ini.	576.46	-2044	-0.0003252	0.0001872	0.0035	0.9		2942.43	2942.43	No	5.1	Si
SLU 78	fin.	-196.73	-960	-0.0001	0.0001872	0.0035	0.9		2948.11	2948.11	No	14.99	Si
SLU 74	ini.	583.79	-2029	-0.00033	0.0001872	0.0035	0.9		2942.43	2942.43	No	5.04	Si
SLU 74	fin.	-214.78	-902	-0.0001096	0.0001872	0.0035	0.9		2948.11	2948.11	No	13.73	Si
SLU 66	ini.	583.15	-1951	-0.0003296	0.0001872	0.0035	0.9		2942.43	2942.43	No	5.05	Si
SLU 66	fin.	-234.2	-787	-0.00012	0.0001872	0.0035	0.9		2948.11	2948.11	No	12.59	Si
SLU 77	ini.	592.38	-2076	-0.0003357	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.97	Si
SLU 77	fin.	-209.34	-949	-0.0001067	0.0001872	0.0035	0.9		2948.11	2948.11	No	14.08	Si
SLU 79	ini.	588.86	-2061	-0.0003334	0.0001872	0.0035	0.9		2942.43	2942.43	No	5	Si
SLU 79	fin.	-209.41	-938	-0.0001067	0.0001872	0.0035	0.9		2948.11	2948.11	No	14.08	Si
SLU 70	ini.	575.82	-1966	-0.0003247	0.0001872	0.0035	0.9		2942.43	2942.43	No	5.11	Si
SLU 70	fin.	-216.16	-846	-0.0001103	0.0001872	0.0035	0.9		2948.11	2948.11	No	13.64	Si
SLU 83	ini.	580.55	-2048	-0.0003279	0.0001872	0.0035	0.9		2942.43	2942.43	No	5.07	Si
SLU 83	fin.	-206.53	-940	-0.0001052	0.0001872	0.0035	0.9		2948.11	2948.11	No	14.27	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 72	ini.	572.3	-2230	0.9	0	1875	7137	4043	2295	6338	No	2.84	Si
SLU 72	fin.	-216.23	-424	0.9	0	1875	7137	4043	2295	6338	No	14.95	Si
SLU 79	ini.	588.86	-2279	0.9	0	1875	7137	4043	2295	6338	No	2.78	Si
SLU 79	fin.	-209.41	-396	0.9	0	1875	7137	4043	2295	6338	No	16	Si
SLU 71	ini.	588.22	-2297	0.9	0	1875	7137	4043	2295	6338	No	2.76	Si
SLU 71	fin.	-228.84	-459	0.9	0	1875	7137	4043	2295	6338	No	13.79	Si
SLU 74	ini.	583.79	-2251	0.9	0	1875	7137	4043	2295	6338	No	2.81	Si
SLU 74	fin.	-214.78	-431	0.9	0	1875	7137	4043	2295	6338	No	14.71	Si
SLU 78	ini.	576.46	-2233	0.9	0	1875	7137	4043	2295	6338	No	2.84	Si
SLU 78	fin.	-196.73	-352	0.9	0	1875	7137	4043	2295	6338	No	18	Si
SLU 77	ini.	592.38	-2299	0.9	0	1875	7137	4043	2295	6338	No	2.76	Si
SLU 77	fin.	-209.34	-387	0.9	0	1875	7137	4043	2295	6338	No	16.36	Si
SLU 70	ini.	575.82	-2250	0.9	0	1875	7137	4043	2295	6338	No	2.82	Si
SLU 70	fin.	-216.16	-415	0.9	0	1875	7137	4043	2295	6338	No	15.26	Si
SLU 69	ini.	591.74	-2317	0.9	0	1875	7137	4043	2295	6338	No	2.74	Si
SLU 69	fin.	-228.76	-451	0.9	0	1875	7137	4043	2295	6338	No	14.06	Si
SLU 66	ini.	583.15	-2269	0.9	0	1875	7137	4043	2295	6338	No	2.79	Si
SLU 66	fin.	-234.2	-494	0.9	0	1875	7137	4043	2295	6338	No	12.82	Si
SLU 83	ini.	580.55	-2224	0.9	0	1875	7137	4043	2295	6338	No	2.85	Si
SLU 83	fin.	-206.53	-412	0.9	0	1875	7137	4043	2295	6338	No	15.38	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 7	ini.	2643.15	-5744	-0.0024477	0.0002807	0.0035	0.9		2967.55	2967.55		1.12	Si
SLV 7	fin.	-2003.37	1341	-0.0014916	0.0002807	0.0035	0.9		2973.32	2973.32		1.48	Si
SLV 3	ini.	2643.89	-4954	-0.0024491	0.0002807	0.0035	0.9		2967.55	2967.55		1.12	Si
SLV 3	fin.	-2317.69	2688	-0.0018914	0.0002807	0.0035	0.9		2973.32	2973.32		1.28	Si
SLV 1	ini.	1691.03	-2916	-0.0011706	0.0002807	0.0035	0.9		2967.55	2967.55		1.75	Si
SLV 1	fin.	-1604.27	2178	-0.0010861	0.0002807	0.0035	0.9		2973.32	2973.32		1.85	Si
SLV 4	ini.	2102.14	-4097	-0.0016117	0.0002807	0.0035	0.9		2967.55	2967.55		1.41	Si
SLV 4	fin.	-1788.71	1874	-0.0012633	0.0002807	0.0035	0.9		2973.32	2973.32		1.66	Si
SLV 13	ini.	-1234.41	1220	-0.0007702	0.0002807	0.0035	0.9		2973.32	2973.32		2.41	Si
SLV 13	fin.	1424.97	-2991	-0.0009294	0.0002807	0.0035	0.9		2967.55	2967.55		2.08	Si
SLV 11	ini.	1765.52	-4503	-0.0012434	0.0002807	0.0035	0.9		2967.55	2967.55		1.68	Si
SLV 11	fin.	-1094.6	-210	-0.0006621	0.0002807	0.0035	0.9		2973.32	2973.32		2.72	Si
SLV 10	ini.	-1775.42	2866	-0.00125	0.0002807	0.0035	0.9		2973.32	2973.32		1.67	Si
SLV 10	fin.	1639.62	-2458	-0.0011218	0.0002807	0.0035	0.9		2967.55	2967.55		1.81	Si
SLV 14	ini.	-1776.16	2076	-0.0012507	0.0002807	0.0035	0.9		2973.32	2973.32		1.67	Si
SLV 14	fin.	1953.95	-3805	-0.0014405	0.0002807	0.0035	0.9		2967.55	2967.55		1.52	Si
SLV 8	ini.	2278.41	-5167	-0.0018415	0.0002807	0.0035	0.9		2967.55	2967.55		1.3	Si
SLV 8	fin.	-1647.23	793	-0.0011261	0.0002807	0.0035	0.9		2973.32	2973.32		1.81	Si
SLV 9	ini.	-1410.67	2290	-0.000915	0.0002807	0.0035	0.9		2973.32	2973.32		2.11	Si
SLV 9	fin.	1283.48	-1910	-0.0008114	0.0002807	0.0035	0.9		2967.55	2967.55		2.31	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 7	ini.	2643.15	-10732	0.9	0	2813	7137	6064	2295	8359		0.78	No
SLV 7	fin.	-2003.37	-5858	0.9	0	2813	7137	6064	2295	8359		1.43	Si
SLV 1	ini.	1691.03	-6124	0.9	0	2813	7137	6064	2295	8359		1.37	Si
SLV 1	fin.	-1604.27	-5834	0.9	0	2813	7137	6064	2295	8359		1.43	Si
SLV 4	ini.	2102.14	-8099	0.9	0	2813	7137	6064	2295	8359		1.03	Si
SLV 4	fin.	-1788.71	-5918	0.9	0	2813	7137	6064	2295	8359		1.41	Si
SLV 9	ini.	-1410.67	6008	0.9	0	2813	7137	6064	2295	8359		1.39	Si
SLV 9	fin.	1283.48	3789	0.9	0	2813	7137	6064	2295	8359		2.21	Si
SLV 14	ini.	-1776.16	6833	0.9	0	2813	7137	6064	2295	8359		1.22	Si
SLV 14	fin.	1953.95	6907	0.9	0	2813	7137	6064	2295	8359		1.21	Si
SLV 10	ini.	-1775.42	7399	0.9	0	2813	7137	6064	2295	8359		1.13	Si
SLV 10	fin.	1639.62	5020	0.9	0	2813	7137	6064	2295	8359		1.67	Si
SLV 12	ini.	1400.78	-6074	0.9	0	2813	7137	6064	2295	8359		1.38	Si
SLV 12	fin.	-738.46	-1354	0.9	0	2813	7137	6064	2295	8359		6.18	Si
SLV 11	ini.	1765.52	-7465	0.9	0	2813	7137	6064	2295	8359		1.12	Si
SLV 11	fin.	-1094.6	-2584	0.9	0	2813	7137	6064	2295	8359		3.23	Si
SLV 3	ini.	2643.89	-10166	0.9	0	2813	7137	6064	2295	8359		0.82	No
SLV 3	fin.	-2317.69	-7746	0.9	0	2813	7137	6064	2295	8359		1.08	Si
SLV 8	ini.	2278.41	-9341	0.9	0	2813	7137	6064	2295	8359		0.89	No
SLV 8	fin.	-1647.23	-4628	0.9	0	2813	7137	6064	2295	8359		1.81	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.122	SLV 3	Si
V_SLV	0.779	SLV 7	No
PF_SLU	4.967	SLU 77	Si
V_SLU	2.736	SLU 69	Si

Trave di accoppiamento 107

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-2.063	5.951	7.77	8.62	0.85	-2.963	5.951	7.77	8.62	0.85	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-22.8	-774	-0.0000125	0.0001872	0.0035	0.85		2645.85	2645.85	No	116.04	Si
SLU 78	fin.	-520.89	-1754	-0.0003285	0.0001872	0.0035	0.85		2645.85	2645.85	No	5.08	Si
SLU 80	ini.	-20.9	-762	-0.0000115	0.0001872	0.0035	0.85		2645.85	2645.85	No	126.61	Si
SLU 80	fin.	-518.1	-1739	-0.0003265	0.0001872	0.0035	0.85		2645.85	2645.85	No	5.11	Si
SLU 83	ini.	-19.33	-761	-0.0000106	0.0001872	0.0035	0.85		2645.85	2645.85	No	136.88	Si
SLU 83	fin.	-524.09	-1751	-0.0003309	0.0001872	0.0035	0.85		2645.85	2645.85	No	5.05	Si
SLU 81	ini.	-11.78	-718	-0.0000065	0.0001872	0.0035	0.85		2645.85	2645.85	No	224.58	Si
SLU 81	fin.	-515.59	-1702	-0.0003246	0.0001872	0.0035	0.85		2645.85	2645.85	No	5.13	Si
SLU 79	ini.	-11.9	-743	-0.0000065	0.0001872	0.0035	0.85		2645.85	2645.85	No	222.3	Si
SLU 79	fin.	-530.1	-1760	-0.0003353	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.99	Si
SLU 74	ini.	-6.26	-712	-0.0000034	0.0001872	0.0035	0.85		2645.85	2645.85	No	422.87	Si
SLU 74	fin.	-524.39	-1726	-0.0003311	0.0001872	0.0035	0.85		2645.85	2645.85	No	5.05	Si
SLU 71	ini.	23.04	-601	-0.0000127	0.0001872	0.0035	0.85		2640.4	2640.4	No	114.6	Si
SLU 71	fin.	-524.3	-1668	-0.000331	0.0001872	0.0035	0.85		2645.85	2645.85	No	5.05	Si
SLU 66	ini.	28.69	-571	-0.0000158	0.0001872	0.0035	0.85		2640.4	2640.4	No	92.05	Si
SLU 66	fin.	-518.59	-1634	-0.0003268	0.0001872	0.0035	0.85		2645.85	2645.85	No	5.1	Si
SLU 77	ini.	-13.8	-755	-0.0000076	0.0001872	0.0035	0.85		2645.85	2645.85	No	191.66	Si
SLU 77	fin.	-532.88	-1775	-0.0003374	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.97	Si
SLU 69	ini.	21.14	-613	-0.0000116	0.0001872	0.0035	0.85		2640.4	2640.4	No	124.92	Si
SLU 69	fin.	-527.08	-1683	-0.0003331	0.0001872	0.0035	0.85		2645.85	2645.85	No	5.02	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-13.8	1307	0.85	0	1771	6740	3818	2168	5985	No	4.58	Si
SLU 77	fin.	-532.88	-3022	0.85	0	1771	6740	3818	2168	5985	No	1.98	Si
SLU 79	ini.	-11.9	1287	0.85	0	1771	6740	3818	2168	5985	No	4.65	Si
SLU 79	fin.	-530.1	-3002	0.85	0	1771	6740	3818	2168	5985	No	1.99	Si
SLU 83	ini.	-19.33	1352	0.85	0	1771	6740	3818	2168	5985	No	4.43	Si
SLU 83	fin.	-524.09	-3003	0.85	0	1771	6740	3818	2168	5985	No	1.99	Si
SLU 84	ini.	-28.33	1388	0.85	0	1771	6740	3818	2168	5985	No	4.31	Si
SLU 84	fin.	-512.09	-2955	0.85	0	1771	6740	3818	2168	5985	No	2.03	Si
SLU 80	ini.	-20.9	1324	0.85	0	1771	6740	3818	2168	5985	No	4.52	Si
SLU 80	fin.	-518.1	-2954	0.85	0	1771	6740	3818	2168	5985	No	2.03	Si
SLU 74	ini.	-6.26	1249	0.85	0	1771	6740	3818	2168	5985	No	4.79	Si
SLU 74	fin.	-524.39	-2969	0.85	0	1771	6740	3818	2168	5985	No	2.02	Si
SLU 81	ini.	-11.78	1294	0.85	0	1771	6740	3818	2168	5985	No	4.63	Si
SLU 81	fin.	-515.59	-2950	0.85	0	1771	6740	3818	2168	5985	No	2.03	Si
SLU 75	ini.	-15.25	1286	0.85	0	1771	6740	3818	2168	5985	No	4.65	Si
SLU 75	fin.	-512.39	-2921	0.85	0	1771	6740	3818	2168	5985	No	2.05	Si
SLU 82	ini.	-20.78	1330	0.85	0	1771	6740	3818	2168	5985	No	4.5	Si
SLU 82	fin.	-503.6	-2902	0.85	0	1771	6740	3818	2168	5985	No	2.06	Si
SLU 78	ini.	-22.8	1343	0.85	0	1771	6740	3818	2168	5985	No	4.46	Si
SLU 78	fin.	-520.89	-2974	0.85	0	1771	6740	3818	2168	5985	No	2.01	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 11	ini.	716.8	838	-0.0004548	0.0002807	0.0035	0.85		2641.96	2641.96		3.69	Si
SLV 11	fin.	-1451.07	-3297	-0.0011034	0.0002807	0.0035	0.85		2647.52	2647.52		1.82	Si
SLD 3	ini.	618.16	941	-0.0003825	0.0002807	0.0035	0.85		2641.96	2641.96		4.27	Si
SLD 3	fin.	-1091.09	-2269	-0.0007591	0.0002807	0.0035	0.85		2647.52	2647.52		2.43	Si
SLV 4	ini.	1059.65	1924	-0.0007333	0.0002807	0.0035	0.85		2641.96	2641.96		2.49	Si
SLV 4	fin.	-1625.27	-3092	-0.0012927	0.0002807	0.0035	0.85		2647.52	2647.52		1.63	Si
SLV 1	ini.	917.09	1795	-0.0006124	0.0002807	0.0035	0.85		2641.96	2641.96		2.88	Si
SLV 1	fin.	-1318.32	-2355	-0.0009699	0.0002807	0.0035	0.85		2647.52	2647.52		2.01	Si
SLV 3	ini.	1429.29	2772	-0.0010838	0.0002807	0.0035	0.85		2641.96	2641.96		1.85	Si
SLV 3	fin.	-2064.36	-3756	-0.0018788	0.0002807	0.0035	0.85		2647.52	2647.52		1.28	Si
SLV 14	ini.	-1375.15	-3570	-0.001026	0.0002807	0.0035	0.85		2647.52	2647.52		1.93	Si
SLV 14	fin.	1292.96	1361	-0.0009478	0.0002807	0.0035	0.85		2641.96	2641.96		2.04	Si
SLV 10	ini.	-1239.43	-2990	-0.0008943	0.0002807	0.0035	0.85		2647.52	2647.52		2.14	Si
SLV 10	fin.	1331.34	1818	-0.0009852	0.0002807	0.0035	0.85		2641.96	2641.96		1.98	Si
SLV 7	ini.	1293.58	2193	-0.0009484	0.0002807	0.0035	0.85		2641.96	2641.96		2.04	Si
SLV 7	fin.	-2102.73	-4213	-0.0019415	0.0002807	0.0035	0.85		2647.52	2647.52		1.26	Si
SLV 8	ini.	1044.71	1622	-0.0007203	0.0002807	0.0035	0.85		2641.96	2641.96		2.53	Si
SLV 8	fin.	-1807.11	-3766	-0.0015119	0.0002807	0.0035	0.85		2647.52	2647.52		1.47	Si
SLV 12	ini.	467.93	267	-0.0002792	0.0002807	0.0035	0.85		2641.96	2641.96		5.65	Si
SLV 12	fin.	-1155.45	-2850	-0.0008167	0.0002807	0.0035	0.85		2647.52	2647.52		2.29	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 7	ini.	1293.58	-4524	0.85	0	2656	6740	5727	2168	7894		1.75	Si
SLV 7	fin.	-2102.73	-8867	0.85	0	2656	6740	5727	2168	7894		0.89	No
SLV 12	ini.	467.93	-956	0.85	0	2656	6740	5727	2168	7894		8.26	Si
SLV 12	fin.	-1155.45	-5317	0.85	0	2656	6740	5727	2168	7894		1.48	Si
SLV 8	ini.	1044.71	-3457	0.85	0	2656	6740	5727	2168	7894		2.28	Si
SLV 8	fin.	-1807.11	-7739	0.85	0	2656	6740	5727	2168	7894		1.02	Si
SLV 14	ini.	-1375.15	6685	0.85	0	2656	6740	5727	2168	7894		1.18	Si
SLV 14	fin.	1292.96	4252	0.85	0	2656	6740	5727	2168	7894		1.86	Si
SLV 11	ini.	716.8	-2023	0.85	0	2656	6740	5727	2168	7894		3.9	Si
SLV 11	fin.	-1451.07	-6445	0.85	0	2656	6740	5727	2168	7894		1.22	Si
SLV 3	ini.	1429.29	-5297	0.85	0	2656	6740	5727	2168	7894		1.49	Si
SLV 3	fin.	-2064.36	-8483	0.85	0	2656	6740	5727	2168	7894		0.93	No
SLV 4	ini.	1059.65	-3713	0.85	0	2656	6740	5727	2168	7894		2.13	Si
SLV 4	fin.	-1625.27	-6808	0.85	0	2656	6740	5727	2168	7894		1.16	Si
SLV 10	ini.	-1239.43	5912	0.85	0	2656	6740	5727	2168	7894		1.34	Si
SLV 10	fin.	1331.34	4636	0.85	0	2656	6740	5727	2168	7894		1.7	Si
SLV 1	ini.	917.09	-3236	0.85	0	2656	6740	5727	2168	7894		2.44	Si
SLV 1	fin.	-1318.32	-5497	0.85	0	2656	6740	5727	2168	7894		1.44	Si
SLV 13	ini.	-1005.5	5100	0.85	0	2656	6740	5727	2168	7894		1.55	Si
SLV 13	fin.	853.88	2576	0.85	0	2656	6740	5727	2168	7894		3.06	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.259	SLV 7	Si
V_SLV	0.89	SLV 7	No
PF_SLU	4.965	SLU 77	Si
V_SLU	1.981	SLU 77	Si

Trave di accoppiamento 108

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-21.813	5.951	8.62	9.52	0.9	-22.713	5.951	8.62	9.52	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 71	ini.	-64.16	-830	-0.0000317	0.0001872	0.0035	0.9		2948.11	2948.11	No	45.95	Si
SLU 71	fin.	316.74	-1365	-0.0001659	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.29	Si
SLU 48	ini.	-92.45	-707	-0.000046	0.0001872	0.0035	0.9		2948.11	2948.11	No	31.89	Si
SLU 48	fin.	314.51	-1303	-0.0001646	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.36	Si
SLU 50	ini.	-96.5	-687	-0.000048	0.0001872	0.0035	0.9		2948.11	2948.11	No	30.55	Si
SLU 50	fin.	312.76	-1289	-0.0001636	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.41	Si
SLU 64	ini.	-69.03	-802	-0.0000342	0.0001872	0.0035	0.9		2948.11	2948.11	No	42.71	Si
SLU 64	fin.	313.82	-1337	-0.0001642	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.38	Si
SLU 69	ini.	-60.11	-850	-0.0000297	0.0001872	0.0035	0.9		2948.11	2948.11	No	49.05	Si
SLU 69	fin.	318.49	-1380	-0.0001669	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.24	Si
SLU 45	ini.	-94.88	-693	-0.0000472	0.0001872	0.0035	0.9		2948.11	2948.11	No	31.07	Si
SLU 45	fin.	313.05	-1289	-0.0001638	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.4	Si
SLU 77	ini.	-28.83	-956	-0.0000142	0.0001872	0.0035	0.9		2948.11	2948.11	No	102.27	Si
SLU 77	fin.	312.57	-1405	-0.0001635	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.41	Si
SLU 70	ini.	-50.6	-861	-0.0000249	0.0001872	0.0035	0.9		2948.11	2948.11	No	58.26	Si
SLU 70	fin.	311.05	-1362	-0.0001627	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.46	Si
SLU 74	ini.	-31.26	-942	-0.0000154	0.0001872	0.0035	0.9		2948.11	2948.11	No	94.3	Si
SLU 74	fin.	311.11	-1391	-0.0001627	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.46	Si
SLU 66	ini.	-62.54	-836	-0.0000309	0.0001872	0.0035	0.9		2948.11	2948.11	No	47.14	Si
SLU 66	fin.	317.03	-1366	-0.0001661	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.28	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 71	ini.	-64.16	-3	0.9	0	1875	7137	4043	2295	6338	No	2465.63	Si
SLU 71	fin.	316.74	1680	0.9	0	1875	7137	4043	2295	6338	No	3.77	Si
SLU 70	ini.	-50.6	-56	0.9	0	1875	7137	4043	2295	6338	No	112.77	Si
SLU 70	fin.	311.05	1660	0.9	0	1875	7137	4043	2295	6338	No	3.82	Si
SLU 48	ini.	-92.45	101	0.9	0	1875	7137	4043	2295	6338	No	63.05	Si
SLU 48	fin.	314.51	1684	0.9	0	1875	7137	4043	2295	6338	No	3.76	Si
SLU 50	ini.	-96.5	126	0.9	0	1875	7137	4043	2295	6338	No	50.38	Si
SLU 50	fin.	312.76	1664	0.9	0	1875	7137	4043	2295	6338	No	3.81	Si
SLU 66	ini.	-62.54	0	0.9	0	1875	7137	4043	2295	6338	No	17059.26	Si
SLU 66	fin.	317.03	1664	0.9	0	1875	7137	4043	2295	6338	No	3.81	Si
SLU 77	ini.	-28.83	-120	0.9	0	1875	7137	4043	2295	6338	No	52.76	Si
SLU 77	fin.	312.57	1627	0.9	0	1875	7137	4043	2295	6338	No	3.9	Si
SLU 45	ini.	-94.88	128	0.9	0	1875	7137	4043	2295	6338	No	49.52	Si
SLU 45	fin.	313.05	1648	0.9	0	1875	7137	4043	2295	6338	No	3.84	Si
SLU 69	ini.	-60.11	-28	0.9	0	1875	7137	4043	2295	6338	No	227.59	Si
SLU 69	fin.	318.49	1700	0.9	0	1875	7137	4043	2295	6338	No	3.73	Si
SLU 49	ini.	-82.94	72	0.9	0	1875	7137	4043	2295	6338	No	87.82	Si
SLU 49	fin.	307.07	1644	0.9	0	1875	7137	4043	2295	6338	No	3.85	Si
SLU 72	ini.	-54.65	-31	0.9	0	1875	7137	4043	2295	6338	No	204.95	Si
SLU 72	fin.	309.31	1640	0.9	0	1875	7137	4043	2295	6338	No	3.86	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 8	ini.	-872.52	303	-0.0005019	0.0002807	0.0035	0.9		2973.32	2973.32		3.41	Si
SLV 8	fin.	888.52	-2683	-0.0005142	0.0002807	0.0035	0.9		2967.55	2967.55		3.34	Si
SLV 5	ini.	1327.78	-2099	-0.0008477	0.0002807	0.0035	0.9		2967.55	2967.55		2.23	Si
SLV 5	fin.	-903.96	1878	-0.0005238	0.0002807	0.0035	0.9		2973.32	2973.32		3.29	Si
SLV 15	ini.	-1062.94	433	-0.0006385	0.0002807	0.0035	0.9		2973.32	2973.32		2.8	Si
SLV 15	fin.	1109.15	-3212	-0.0006747	0.0002807	0.0035	0.9		2967.55	2967.55		2.68	Si
SLV 6	ini.	1049.91	-1819	-0.0006302	0.0002807	0.0035	0.9		2967.55	2967.55		2.83	Si
SLV 6	fin.	-657.03	1265	-0.0003599	0.0002807	0.0035	0.9		2973.32	2973.32		4.53	Si
SLV 11	ini.	-1152.45	587	-0.0007062	0.0002807	0.0035	0.9		2973.32	2973.32		2.58	Si
SLV 11	fin.	1134.7	-3303	-0.0006941	0.0002807	0.0035	0.9		2967.55	2967.55		2.62	Si
SLV 16	ini.	-1475.66	849	-0.0009709	0.0002807	0.0035	0.9		2973.32	2973.32		2.01	Si
SLV 16	fin.	1475.93	-4123	-0.0009735	0.0002807	0.0035	0.9		2967.55	2967.55		2.01	Si
SLV 1	ini.	1373.12	-2081	-0.0008854	0.0002807	0.0035	0.9		2967.55	2967.55		2.16	Si
SLV 1	fin.	-998.26	2085	-0.0005909	0.0002807	0.0035	0.9		2973.32	2973.32		2.98	Si
SLV 12	ini.	-1430.32	867	-0.0009317	0.0002807	0.0035	0.9		2973.32	2973.32		2.08	Si
SLV 12	fin.	1381.64	-3917	-0.0008925	0.0002807	0.0035	0.9		2967.55	2967.55		2.15	Si
SLV 14	ini.	-898.93	212	-0.0005203	0.0002807	0.0035	0.9		2973.32	2973.32		3.31	Si
SLV 14	fin.	1012.27	-2939	-0.0006025	0.0002807	0.0035	0.9		2967.55	2967.55		2.93	Si
SLV 2	ini.	960.41	-1665	-0.0005649	0.0002807	0.0035	0.9		2967.55	2967.55		3.09	Si
SLV 2	fin.	-631.48	1174	-0.0003439	0.0002807	0.0035	0.9		2973.32	2973.32		4.71	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-898.93	3338	0.9	0	2813	7137	6064	2295	8359		2.5	Si
SLV 14	fin.	1012.27	4273	0.9	0	2813	7137	6064	2295	8359		1.96	Si
SLV 7	ini.	-594.65	1418	0.9	0	2813	7137	6064	2295	8359		5.9	Si
SLV 7	fin.	641.58	3974	0.9	0	2813	7137	6064	2295	8359		2.1	Si
SLV 1	ini.	1373.12	-4991	0.9	0	2813	7137	6064	2295	8359		1.67	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	fin.	-998.26	-4473	0.9	0	2813	7137	6064	2295	8359		1.87	Si
SLV 11	ini.	-1152.45	3480	0.9	0	2813	7137	6064	2295	8359		2.4	Si
SLV 11	fin.	1134.7	6111	0.9	0	2813	7137	6064	2295	8359		1.37	Si
SLV 16	ini.	-1475.66	5075	0.9	0	2813	7137	6064	2295	8359		1.65	Si
SLV 16	fin.	1475.93	6899	0.9	0	2813	7137	6064	2295	8359		1.21	Si
SLV 8	ini.	-872.52	2396	0.9	0	2813	7137	6064	2295	8359		3.49	Si
SLV 8	fin.	888.52	5069	0.9	0	2813	7137	6064	2295	8359		1.65	Si
SLV 12	ini.	-1430.32	4459	0.9	0	2813	7137	6064	2295	8359		1.87	Si
SLV 12	fin.	1381.64	7205	0.9	0	2813	7137	6064	2295	8359		1.16	Si
SLV 6	ini.	1049.91	-3396	0.9	0	2813	7137	6064	2295	8359		2.46	Si
SLV 6	fin.	-657.03	-3685	0.9	0	2813	7137	6064	2295	8359		2.27	Si
SLV 15	ini.	-1062.94	3622	0.9	0	2813	7137	6064	2295	8359		2.31	Si
SLV 15	fin.	1109.15	5274	0.9	0	2813	7137	6064	2295	8359		1.58	Si
SLV 5	ini.	1327.78	-4375	0.9	0	2813	7137	6064	2295	8359		1.91	Si
SLV 5	fin.	-903.96	-4779	0.9	0	2813	7137	6064	2295	8359		1.75	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.011	SLV 16	Si
V_SLV	1.16	SLV 12	Si
PF_SLU	9.239	SLU 69	Si
V_SLU	3.729	SLU 69	Si

Trave di accoppiamento 109

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-21.813	5.951	11.32	12.17	0.85	-22.713	5.951	11.32	12.17	0.85	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 50	ini.	-278.28	-750	-0.0001625	0.0001872	0.0035	0.85		2645.85	2645.85	No	9.51	Si
SLU 50	fin.	25.9	-154	-0.0000143	0.0001872	0.0035	0.85		2640.4	2640.4	No	101.94	Si
SLU 64	ini.	-276.79	-802	-0.0001615	0.0001872	0.0035	0.85		2645.85	2645.85	No	9.56	Si
SLU 64	fin.	0.03	-242	0	0.0001872	0.0035	0.85		2640.4	2640.4	No	86507.17	Si
SLU 46	ini.	-270.94	-742	-0.0001579	0.0001872	0.0035	0.85		2645.85	2645.85	No	9.77	Si
SLU 46	fin.	19.39	-167	-0.0000107	0.0001872	0.0035	0.85		2640.4	2640.4	No	136.19	Si
SLU 48	ini.	-278.08	-763	-0.0001623	0.0001872	0.0035	0.85		2645.85	2645.85	No	9.51	Si
SLU 48	fin.	21.3	-172	-0.0000117	0.0001872	0.0035	0.85		2640.4	2640.4	No	123.95	Si
SLU 71	ini.	-275.69	-826	-0.0001608	0.0001872	0.0035	0.85		2645.85	2645.85	No	9.6	Si
SLU 71	fin.	-8.06	-286	-0.0000044	0.0001872	0.0035	0.85		2645.85	2645.85	No	328.42	Si
SLU 69	ini.	-275.48	-839	-0.0001607	0.0001872	0.0035	0.85		2645.85	2645.85	No	9.6	Si
SLU 69	fin.	-12.66	-305	-0.0000069	0.0001872	0.0035	0.85		2645.85	2645.85	No	209.06	Si
SLU 66	ini.	-276.03	-827	-0.0001611	0.0001872	0.0035	0.85		2645.85	2645.85	No	9.59	Si
SLU 66	fin.	-8.61	-283	-0.0000047	0.0001872	0.0035	0.85		2645.85	2645.85	No	307.21	Si
SLU 51	ini.	-270.59	-741	-0.0001576	0.0001872	0.0035	0.85		2645.85	2645.85	No	9.78	Si
SLU 51	fin.	19.94	-170	-0.000011	0.0001872	0.0035	0.85		2640.4	2640.4	No	132.39	Si
SLU 43	ini.	-279.38	-726	-0.0001632	0.0001872	0.0035	0.85		2645.85	2645.85	No	9.47	Si
SLU 43	fin.	33.99	-110	-0.0000187	0.0001872	0.0035	0.85		2640.4	2640.4	No	77.69	Si
SLU 45	ini.	-278.63	-751	-0.0001627	0.0001872	0.0035	0.85		2645.85	2645.85	No	9.5	Si
SLU 45	fin.	25.35	-151	-0.0000139	0.0001872	0.0035	0.85		2640.4	2640.4	No	104.18	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-265.12	1684	0.85	0	1771	6740	3818	2168	5985	No	3.55	Si
SLU 81	fin.	-41.31	-901	0.85	0	1771	6740	3818	2168	5985	No	6.64	Si
SLU 83	ini.	-264.57	1697	0.85	0	1771	6740	3818	2168	5985	No	3.53	Si
SLU 83	fin.	-45.35	-940	0.85	0	1771	6740	3818	2168	5985	No	6.37	Si
SLU 69	ini.	-275.48	1666	0.85	0	1771	6740	3818	2168	5985	No	3.59	Si
SLU 69	fin.	-12.66	-717	0.85	0	1771	6740	3818	2168	5985	No	8.35	Si
SLU 75	ini.	-260.18	1664	0.85	0	1771	6740	3818	2168	5985	No	3.6	Si
SLU 75	fin.	-43.51	-910	0.85	0	1771	6740	3818	2168	5985	No	6.58	Si
SLU 84	ini.	-256.88	1668	0.85	0	1771	6740	3818	2168	5985	No	3.59	Si
SLU 84	fin.	-51.31	-966	0.85	0	1771	6740	3818	2168	5985	No	6.19	Si
SLU 74	ini.	-267.87	1693	0.85	0	1771	6740	3818	2168	5985	No	3.54	Si
SLU 74	fin.	-37.55	-884	0.85	0	1771	6740	3818	2168	5985	No	6.77	Si
SLU 78	ini.	-259.63	1677	0.85	0	1771	6740	3818	2168	5985	No	3.57	Si
SLU 78	fin.	-47.55	-949	0.85	0	1771	6740	3818	2168	5985	No	6.31	Si
SLU 79	ini.	-267.52	1693	0.85	0	1771	6740	3818	2168	5985	No	3.54	Si
SLU 79	fin.	-37	-891	0.85	0	1771	6740	3818	2168	5985	No	6.72	Si
SLU 80	ini.	-259.83	1664	0.85	0	1771	6740	3818	2168	5985	No	3.6	Si
SLU 80	fin.	-42.95	-917	0.85	0	1771	6740	3818	2168	5985	No	6.53	Si
SLU 77	ini.	-267.32	1706	0.85	0	1771	6740	3818	2168	5985	No	3.51	Si
SLU 77	fin.	-41.59	-923	0.85	0	1771	6740	3818	2168	5985	No	6.48	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 8	ini.	-954.15	-1517	-0.0006416	0.0002807	0.0035	0.85		2647.52	2647.52		2.77	Si
SLV 8	fin.	563.51	1362	-0.0003439	0.0002807	0.0035	0.85		2641.96	2641.96		4.69	Si
SLD 16	ini.	-721.93	-1351	-0.0004576	0.0002807	0.0035	0.85		2647.52	2647.52		3.67	Si
SLD 16	fin.	340.37	679	-0.0001977	0.0002807	0.0035	0.85		2641.96	2641.96		7.76	Si
SLV 6	ini.	698.04	566	-0.0004408	0.0002807	0.0035	0.85		2641.96	2641.96		3.78	Si
SLV 6	fin.	-667.77	-1978	-0.0004175	0.0002807	0.0035	0.85		2647.52	2647.52		3.96	Si
SLV 14	ini.	-924.15	-1733	-0.0006168	0.0002807	0.0035	0.85		2647.52	2647.52		2.86	Si
SLV 14	fin.	438.42	865	-0.0002599	0.0002807	0.0035	0.85		2641.96	2641.96		6.03	Si
SLV 16	ini.	-1419.8	-2358	-0.0010712	0.0002807	0.0035	0.85		2647.52	2647.52		1.86	Si
SLV 16	fin.	807.8	1867	-0.0005247	0.0002807	0.0035	0.85		2641.96	2641.96		3.27	Si
SLV 15	ini.	-998.22	-1755	-0.0006787	0.0002807	0.0035	0.85		2647.52	2647.52		2.65	Si
SLV 15	fin.	528.7	1158	-0.0003199	0.0002807	0.0035	0.85		2641.96	2641.96		5	Si
SLV 5	ini.	981.88	971	-0.0006665	0.0002807	0.0035	0.85		2641.96	2641.96		2.69	Si
SLV 5	fin.	-855.68	-2455	-0.0005613	0.0002807	0.0035	0.85		2647.52	2647.52		3.09	Si
SLV 1	ini.	997.51	1133	-0.0006797	0.0002807	0.0035	0.85		2641.96	2641.96		2.65	Si
SLV 1	fin.	-809.36	-2241	-0.0005247	0.0002807	0.0035	0.85		2647.52	2647.52		3.27	Si
SLV 12	ini.	-1404.17	-2196	-0.0010553	0.0002807	0.0035	0.85		2647.52	2647.52		1.89	Si
SLV 12	fin.	854.11	2081	-0.0005614	0.0002807	0.0035	0.85		2641.96	2641.96		3.09	Si
SLV 11	ini.	-1120.34	-1791	-0.0007851	0.0002807	0.0035	0.85		2647.52	2647.52		2.36	Si
SLV 11	fin.	666.21	1603	-0.0004173	0.0002807	0.0035	0.85		2641.96	2641.96		3.97	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	ini.	981.88	-3132	0.85	0	2656	6740	5727	2168	7894		2.52	Si
SLV 5	fin.	-855.68	-4269	0.85	0	2656	6740	5727	2168	7894		1.85	Si
SLV 14	ini.	-924.15	3466	0.85	0	2656	6740	5727	2168	7894		2.28	Si
SLV 14	fin.	438.42	1818	0.85	0	2656	6740	5727	2168	7894		4.34	Si
SLV 6	ini.	698.04	-2173	0.85	0	2656	6740	5727	2168	7894		3.63	Si
SLV 6	fin.	-667.77	-3351	0.85	0	2656	6740	5727	2168	7894		2.36	Si
SLV 11	ini.	-1120.34	4658	0.85	0	2656	6740	5727	2168	7894		1.69	Si
SLV 11	fin.	666.21	2416	0.85	0	2656	6740	5727	2168	7894		3.27	Si
SLV 1	ini.	997.51	-2876	0.85	0	2656	6740	5727	2168	7894		2.75	Si
SLV 1	fin.	-809.36	-4328	0.85	0	2656	6740	5727	2168	7894		1.82	Si
SLV 16	ini.	-1419.8	5361	0.85	0	2656	6740	5727	2168	7894		1.47	Si
SLV 16	fin.	807.8	3393	0.85	0	2656	6740	5727	2168	7894		2.33	Si
SLV 7	ini.	-670.31	3183	0.85	0	2656	6740	5727	2168	7894		2.48	Si
SLV 7	fin.	375.6	981	0.85	0	2656	6740	5727	2168	7894		8.05	Si
SLV 12	ini.	-1404.17	5618	0.85	0	2656	6740	5727	2168	7894		1.41	Si
SLV 12	fin.	854.11	3334	0.85	0	2656	6740	5727	2168	7894		2.37	Si
SLV 15	ini.	-998.22	3935	0.85	0	2656	6740	5727	2168	7894		2.01	Si
SLV 15	fin.	528.7	2030	0.85	0	2656	6740	5727	2168	7894		3.89	Si
SLV 8	ini.	-954.15	4143	0.85	0	2656	6740	5727	2168	7894		1.91	Si
SLV 8	fin.	563.51	1899	0.85	0	2656	6740	5727	2168	7894		4.16	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.865	SLV 16	Si
V_SLV	1.405	SLV 12	Si
PF_SLU	9.47	SLU 43	Si
V_SLU	3.508	SLU 77	Si

Trave di accoppiamento 110

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-21.593	-3.359	8.62	9.52	0.9	-22.493	-3.359	8.62	9.52	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 69	ini.	-17.11	-1000	-0.0000084	0.0001872	0.0035	0.9		2948.11	2948.11	No	172.29	Si
SLU 69	fin.	329.68	-1558	-0.0001732	0.0001872	0.0035	0.9		2942.43	2942.43	No	8.93	Si
SLU 51	ini.	-69.67	-833	-0.0000345	0.0001872	0.0035	0.9		2948.11	2948.11	No	42.32	Si
SLU 51	fin.	332.16	-1507	-0.0001747	0.0001872	0.0035	0.9		2942.43	2942.43	No	8.86	Si
SLU 47	ini.	-83.31	-791	-0.0000413	0.0001872	0.0035	0.9		2948.11	2948.11	No	35.39	Si
SLU 47	fin.	332.64	-1491	-0.0001749	0.0001872	0.0035	0.9		2942.43	2942.43	No	8.85	Si
SLU 72	ini.	-29.07	-974	-0.0000143	0.0001872	0.0035	0.9		2948.11	2948.11	No	101.43	Si
SLU 72	fin.	333.63	-1560	-0.0001755	0.0001872	0.0035	0.9		2942.43	2942.43	No	8.82	Si
SLU 49	ini.	-64.91	-852	-0.0000321	0.0001872	0.0035	0.9		2948.11	2948.11	No	45.42	Si
SLU 49	fin.	333.39	-1519	-0.0001754	0.0001872	0.0035	0.9		2942.43	2942.43	No	8.83	Si
SLU 46	ini.	-73.76	-815	-0.0000365	0.0001872	0.0035	0.9		2948.11	2948.11	No	39.97	Si
SLU 46	fin.	330.41	-1494	-0.0001737	0.0001872	0.0035	0.9		2942.43	2942.43	No	8.91	Si
SLU 67	ini.	-33.15	-956	-0.0000163	0.0001872	0.0035	0.9		2948.11	2948.11	No	88.93	Si
SLU 67	fin.	331.88	-1547	-0.0001745	0.0001872	0.0035	0.9		2942.43	2942.43	No	8.87	Si
SLU 65	ini.	-51.55	-895	-0.0000254	0.0001872	0.0035	0.9		2948.11	2948.11	No	57.19	Si
SLU 65	fin.	331.13	-1520	-0.0001741	0.0001872	0.0035	0.9		2942.43	2942.43	No	8.89	Si
SLU 70	ini.	-24.31	-993	-0.0000119	0.0001872	0.0035	0.9		2948.11	2948.11	No	121.27	Si
SLU 70	fin.	334.86	-1573	-0.0001762	0.0001872	0.0035	0.9		2942.43	2942.43	No	8.79	Si
SLU 68	ini.	-42.71	-932	-0.000021	0.0001872	0.0035	0.9		2948.11	2948.11	No	69.03	Si
SLU 68	fin.	334.11	-1545	-0.0001758	0.0001872	0.0035	0.9		2942.43	2942.43	No	8.81	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 51	ini.	-69.67	603	0.9	0	1875	7137	4043	2295	6338	No	10.51	Si
SLU 51	fin.	332.16	1998	0.9	0	1875	7137	4043	2295	6338	No	3.17	Si
SLU 72	ini.	-29.07	516	0.9	0	1875	7137	4043	2295	6338	No	12.28	Si
SLU 72	fin.	333.63	1993	0.9	0	1875	7137	4043	2295	6338	No	3.18	Si
SLU 68	ini.	-42.71	554	0.9	0	1875	7137	4043	2295	6338	No	11.44	Si
SLU 68	fin.	334.11	1977	0.9	0	1875	7137	4043	2295	6338	No	3.21	Si
SLU 48	ini.	-57.72	567	0.9	0	1875	7137	4043	2295	6338	No	11.18	Si
SLU 48	fin.	328.21	1987	0.9	0	1875	7137	4043	2295	6338	No	3.19	Si
SLU 70	ini.	-24.31	503	0.9	0	1875	7137	4043	2295	6338	No	12.6	Si
SLU 70	fin.	334.86	2009	0.9	0	1875	7137	4043	2295	6338	No	3.16	Si
SLU 49	ini.	-64.91	590	0.9	0	1875	7137	4043	2295	6338	No	10.74	Si
SLU 49	fin.	333.39	2014	0.9	0	1875	7137	4043	2295	6338	No	3.15	Si
SLU 67	ini.	-33.15	526	0.9	0	1875	7137	4043	2295	6338	No	12.05	Si
SLU 67	fin.	331.88	1975	0.9	0	1875	7137	4043	2295	6338	No	3.21	Si
SLU 47	ini.	-83.31	641	0.9	0	1875	7137	4043	2295	6338	No	9.88	Si
SLU 47	fin.	332.64	1982	0.9	0	1875	7137	4043	2295	6338	No	3.2	Si
SLU 69	ini.	-17.11	480	0.9	0	1875	7137	4043	2295	6338	No	13.2	Si
SLU 69	fin.	329.68	1981	0.9	0	1875	7137	4043	2295	6338	No	3.2	Si
SLU 46	ini.	-73.76	613	0.9	0	1875	7137	4043	2295	6338	No	10.34	Si
SLU 46	fin.	330.41	1980	0.9	0	1875	7137	4043	2295	6338	No	3.2	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-1496.17	595	-0.0009889	0.0002807	0.0035	0.9		2973.32	2973.32		1.99	Si
SLV 13	fin.	1405.7	-4680	-0.000913	0.0002807	0.0035	0.9		2967.55	2967.55		2.11	Si
SLV 14	ini.	-1083.92	207	-0.0006541	0.0002807	0.0035	0.9		2973.32	2973.32		2.74	Si
SLV 14	fin.	1087.6	-3723	-0.0006584	0.0002807	0.0035	0.9		2967.55	2967.55		2.73	Si
SLV 7	ini.	991.1	-1382	-0.0005871	0.0002807	0.0035	0.9		2967.55	2967.55		2.99	Si
SLV 7	fin.	-628.49	1678	-0.0003421	0.0002807	0.0035	0.9		2973.32	2973.32		4.73	Si
SLV 9	ini.	-1324.03	252	-0.0008426	0.0002807	0.0035	0.9		2973.32	2973.32		2.25	Si
SLV 9	fin.	1331.14	-4593	-0.0008504	0.0002807	0.0035	0.9		2967.55	2967.55		2.23	Si
SLV 10	ini.	-1046.48	-9	-0.0006263	0.0002807	0.0035	0.9		2973.32	2973.32		2.84	Si
SLV 10	fin.	1116.97	-3949	-0.0006806	0.0002807	0.0035	0.9		2967.55	2967.55		2.66	Si
SLV 15	ini.	-982.64	273	-0.0005797	0.0002807	0.0035	0.9		2973.32	2973.32		3.03	Si
SLV 15	fin.	957.94	-3219	-0.0005632	0.0002807	0.0035	0.9		2967.55	2967.55		3.1	Si
SLV 3	ini.	1028.54	-1598	-0.0006144	0.0002807	0.0035	0.9		2967.55	2967.55		2.89	Si
SLV 3	fin.	-599.12	1452	-0.000324	0.0002807	0.0035	0.9		2973.32	2973.32		4.96	Si
SLV 2	ini.	927.26	-1665	-0.0005413	0.0002807	0.0035	0.9		2967.55	2967.55		3.2	Si
SLV 2	fin.	-469.46	948	-0.0002473	0.0002807	0.0035	0.9		2973.32	2973.32		6.33	Si
SLV 4	ini.	1440.79	-1987	-0.000943	0.0002807	0.0035	0.9		2967.55	2967.55		2.06	Si
SLV 4	fin.	-917.22	2409	-0.0005331	0.0002807	0.0035	0.9		2973.32	2973.32		3.24	Si
SLV 8	ini.	1268.65	-1644	-0.0007994	0.0002807	0.0035	0.9		2967.55	2967.55		2.34	Si
SLV 8	fin.	-842.66	2322	-0.0004815	0.0002807	0.0035	0.9		2973.32	2973.32		3.53	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-982.64	3699	0.9	0	2813	7137	6064	2295	8359		2.26	Si
SLV 15	fin.	957.94	4645	0.9	0	2813	7137	6064	2295	8359		1.8	Si
SLV 5	ini.	-720.68	2824	0.9	0	2813	7137	6064	2295	8359		2.96	Si
SLV 5	fin.	864.02	5208	0.9	0	2813	7137	6064	2295	8359		1.6	Si
SLV 10	ini.	-1046.48	4003	0.9	0	2813	7137	6064	2295	8359		2.09	Si
SLV 10	fin.	1116.97	6343	0.9	0	2813	7137	6064	2295	8359		1.32	Si
SLV 13	ini.	-1496.17	5504	0.9	0	2813	7137	6064	2295	8359		1.52	Si
SLV 13	fin.	1405.7	7249	0.9	0	2813	7137	6064	2295	8359		1.15	Si
SLV 9	ini.	-1324.03	4929	0.9	0	2813	7137	6064	2295	8359		1.7	Si
SLV 9	fin.	1331.14	7431	0.9	0	2813	7137	6064	2295	8359		1.12	Si
SLV 4	ini.	1440.79	-4693	0.9	0	2813	7137	6064	2295	8359		1.78	Si
SLV 4	fin.	-917.22	-4381	0.9	0	2813	7137	6064	2295	8359		1.91	Si
SLD 13	ini.	-649.1	2564	0.9	0	2813	7137	6064	2295	8359		3.26	Si
SLD 13	fin.	735.15	3887	0.9	0	2813	7137	6064	2295	8359		2.15	Si
SLV 6	ini.	-443.13	1898	0.9	0	2813	7137	6064	2295	8359		4.4	Si
SLV 6	fin.	649.85	4120	0.9	0	2813	7137	6064	2295	8359		2.03	Si
SLV 8	ini.	1268.65	-4118	0.9	0	2813	7137	6064	2295	8359		2.03	Si
SLV 8	fin.	-842.66	-4563	0.9	0	2813	7137	6064	2295	8359		1.83	Si
SLV 14	ini.	-1083.92	4128	0.9	0	2813	7137	6064	2295	8359		2.02	Si
SLV 14	fin.	1087.6	5634	0.9	0	2813	7137	6064	2295	8359		1.48	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.987	SLV 13	Si
V_SLV	1.125	SLV 9	Si
PF_SLU	8.787	SLU 70	Si
V_SLU	3.147	SLU 49	Si

Trave di accoppiamento 111

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-21.593	-3.359	11.32	12.17	0.85	-22.493	-3.359	11.32	12.17	0.85	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 69	ini.	-334.45	-1536	-0.0001985	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.91	Si
SLU 69	fin.	25.14	-505	-0.0000138	0.0001872	0.0035	0.85		2640.4	2640.4	No	105.01	Si
SLU 65	ini.	-330.92	-1474	-0.0001962	0.0001872	0.0035	0.85		2645.85	2645.85	No	8	Si
SLU 65	fin.	45.24	-334	-0.000025	0.0001872	0.0035	0.85		2640.4	2640.4	No	58.37	Si
SLU 80	ini.	-330.39	-1555	-0.0001959	0.0001872	0.0035	0.85		2645.85	2645.85	No	8.01	Si
SLU 80	fin.	11.46	-638	-0.0000063	0.0001872	0.0035	0.85		2640.4	2640.4	No	230.35	Si
SLU 78	ini.	-332.76	-1572	-0.0001974	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.95	Si
SLU 78	fin.	8.92	-662	-0.0000049	0.0001872	0.0035	0.85		2640.4	2640.4	No	296.09	Si
SLU 67	ini.	-334.76	-1516	-0.0001987	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.9	Si
SLU 67	fin.	34.65	-427	-0.0000191	0.0001872	0.0035	0.85		2640.4	2640.4	No	76.21	Si
SLU 68	ini.	-335.98	-1510	-0.0001995	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.88	Si
SLU 68	fin.	40.1	-386	-0.0000221	0.0001872	0.0035	0.85		2640.4	2640.4	No	65.85	Si
SLU 72	ini.	-337.46	-1536	-0.0002005	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.84	Si
SLU 72	fin.	32.05	-456	-0.0000177	0.0001872	0.0035	0.85		2640.4	2640.4	No	82.38	Si
SLU 49	ini.	-330.16	-1456	-0.0001957	0.0001872	0.0035	0.85		2645.85	2645.85	No	8.01	Si
SLU 49	fin.	49.05	-273	-0.0000271	0.0001872	0.0035	0.85		2640.4	2640.4	No	53.83	Si
SLU 70	ini.	-339.82	-1553	-0.000202	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.79	Si
SLU 70	fin.	29.51	-480	-0.0000162	0.0001872	0.0035	0.85		2640.4	2640.4	No	89.49	Si
SLU 71	ini.	-332.08	-1519	-0.000197	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.97	Si
SLU 71	fin.	27.69	-480	-0.0000152	0.0001872	0.0035	0.85		2640.4	2640.4	No	95.36	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-325.02	2616	0.85	0	1771	6740	3818	2168	5985	No	2.29	Si
SLU 79	fin.	7.1	-1665	0.85	0	1771	6740	3818	2168	5985	No	3.59	Si
SLU 69	ini.	-334.45	2584	0.85	0	1771	6740	3818	2168	5985	No	2.32	Si
SLU 69	fin.	25.14	-1376	0.85	0	1771	6740	3818	2168	5985	No	4.35	Si
SLU 72	ini.	-337.46	2586	0.85	0	1771	6740	3818	2168	5985	No	2.31	Si
SLU 72	fin.	32.05	-1298	0.85	0	1771	6740	3818	2168	5985	No	4.61	Si
SLU 77	ini.	-327.38	2644	0.85	0	1771	6740	3818	2168	5985	No	2.26	Si
SLU 77	fin.	4.56	-1710	0.85	0	1771	6740	3818	2168	5985	No	3.5	Si
SLU 78	ini.	-332.76	2673	0.85	0	1771	6740	3818	2168	5985	No	2.24	Si
SLU 78	fin.	8.92	-1677	0.85	0	1771	6740	3818	2168	5985	No	3.57	Si
SLU 76	ini.	-328.91	2603	0.85	0	1771	6740	3818	2168	5985	No	2.3	Si
SLU 76	fin.	19.51	-1511	0.85	0	1771	6740	3818	2168	5985	No	3.96	Si
SLU 84	ini.	-322.3	2610	0.85	0	1771	6740	3818	2168	5985	No	2.29	Si
SLU 84	fin.	7.78	-1676	0.85	0	1771	6740	3818	2168	5985	No	3.57	Si
SLU 75	ini.	-327.69	2611	0.85	0	1771	6740	3818	2168	5985	No	2.29	Si
SLU 75	fin.	14.06	-1578	0.85	0	1771	6740	3818	2168	5985	No	3.79	Si
SLU 80	ini.	-330.39	2646	0.85	0	1771	6740	3818	2168	5985	No	2.26	Si
SLU 80	fin.	11.46	-1632	0.85	0	1771	6740	3818	2168	5985	No	3.67	Si
SLU 70	ini.	-339.82	2613	0.85	0	1771	6740	3818	2168	5985	No	2.29	Si
SLU 70	fin.	29.51	-1343	0.85	0	1771	6740	3818	2168	5985	No	4.46	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 6	ini.	-641.25	-2425	-0.0003982	0.0002807	0.0035	0.85		2647.52	2647.52		4.13	Si
SLV 6	fin.	293.45	1148	-0.0001688	0.0002807	0.0035	0.85		2641.96	2641.96		9	Si
SLV 13	ini.	-1207.02	-4224	-0.000864	0.0002807	0.0035	0.85		2647.52	2647.52		2.19	Si
SLV 13	fin.	681.26	3067	-0.0004283	0.0002807	0.0035	0.85		2641.96	2641.96		3.88	Si
SLV 10	ini.	-1008.63	-3615	-0.0006875	0.0002807	0.0035	0.85		2647.52	2647.52		2.62	Si
SLV 10	fin.	538.75	2390	-0.0003268	0.0002807	0.0035	0.85		2641.96	2641.96		4.9	Si
SLV 14	ini.	-912.86	-3279	-0.0006075	0.0002807	0.0035	0.85		2647.52	2647.52		2.9	Si
SLV 14	fin.	467.86	1948	-0.0002791	0.0002807	0.0035	0.85		2641.96	2641.96		5.65	Si
SLV 4	ini.	719.99	2032	-0.0004572	0.0002807	0.0035	0.85		2641.96	2641.96		3.67	Si
SLV 4	fin.	-626.01	-3657	-0.0003872	0.0002807	0.0035	0.85		2647.52	2647.52		4.23	Si
SLV 15	ini.	-798.76	-2879	-0.0005164	0.0002807	0.0035	0.85		2647.52	2647.52		3.31	Si
SLV 15	fin.	405.07	1602	-0.0002384	0.0002807	0.0035	0.85		2641.96	2641.96		6.52	Si
SLV 8	ini.	719.64	2059	-0.000457	0.0002807	0.0035	0.85		2641.96	2641.96		3.67	Si
SLV 8	fin.	-627.18	-3733	-0.0003881	0.0002807	0.0035	0.85		2647.52	2647.52		4.22	Si
SLD 13	ini.	-650.52	-2417	-0.0004049	0.0002807	0.0035	0.85		2647.52	2647.52		4.07	Si
SLD 13	fin.	303.84	1125	-0.0001752	0.0002807	0.0035	0.85		2641.96	2641.96		8.7	Si
SLV 9	ini.	-1206.68	-4251	-0.0008637	0.0002807	0.0035	0.85		2647.52	2647.52		2.19	Si
SLV 9	fin.	682.43	3143	-0.0004292	0.0002807	0.0035	0.85		2641.96	2641.96		3.87	Si
SLV 5	ini.	-839.3	-3062	-0.0005483	0.0002807	0.0035	0.85		2647.52	2647.52		3.15	Si
SLV 5	fin.	437.12	1900	-0.000259	0.0002807	0.0035	0.85		2641.96	2641.96		6.04	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	719.99	-3098	0.85	0	2656	6740	5727	2168	7894		2.55	Si
SLV 4	fin.	-626.01	-5893	0.85	0	2656	6740	5727	2168	7894		1.34	Si
SLV 15	ini.	-798.76	4546	0.85	0	2656	6740	5727	2168	7894		1.74	Si
SLV 15	fin.	405.07	2204	0.85	0	2656	6740	5727	2168	7894		3.58	Si
SLV 13	ini.	-1207.02	6793	0.85	0	2656	6740	5727	2168	7894		1.16	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	fin.	681.26	4133	0.85	0	2656	6740	5727	2168	7894		1.91	Si
SLV 10	ini.	-1008.63	5994	0.85	0	2656	6740	5727	2168	7894		1.32	Si
SLV 10	fin.	538.75	2780	0.85	0	2656	6740	5727	2168	7894		2.84	Si
SLV 14	ini.	-912.86	5262	0.85	0	2656	6740	5727	2168	7894		1.5	Si
SLV 14	fin.	467.86	2550	0.85	0	2656	6740	5727	2168	7894		3.1	Si
SLV 9	ini.	-1206.68	7025	0.85	0	2656	6740	5727	2168	7894		1.12	Si
SLV 9	fin.	682.43	3846	0.85	0	2656	6740	5727	2168	7894		2.05	Si
SLV 7	ini.	521.59	-2299	0.85	0	2656	6740	5727	2168	7894		3.43	Si
SLV 7	fin.	-483.51	-4539	0.85	0	2656	6740	5727	2168	7894		1.74	Si
SLV 5	ini.	-839.3	5192	0.85	0	2656	6740	5727	2168	7894		1.52	Si
SLV 5	fin.	437.12	1892	0.85	0	2656	6740	5727	2168	7894		4.17	Si
SLV 8	ini.	719.64	-3330	0.85	0	2656	6740	5727	2168	7894		2.37	Si
SLV 8	fin.	-627.18	-5605	0.85	0	2656	6740	5727	2168	7894		1.41	Si
SLV 3	ini.	425.83	-1566	0.85	0	2656	6740	5727	2168	7894		5.04	Si
SLV 3	fin.	-412.61	-4309	0.85	0	2656	6740	5727	2168	7894		1.83	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.193	SLV 13	Si
V_SLV	1.124	SLV 9	Si
PF_SLU	7.786	SLU 70	Si
V_SLU	2.239	SLU 78	Si

Trave di accoppiamento 112

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-18.868	-3.359	8.62	10.62	2	-19.368	-3.359	8.62	10.62	2	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-729.45	-2582	-0.0000742	0.0001872	0.0035	2		14219.44	14219.44	No	19.49	Si
SLU 78	fin.	364.05	-3259	-0.0000365	0.0001872	0.0035	2		14206.68	14206.68	No	39.02	Si
SLU 66	ini.	-709.89	-2413	-0.0000722	0.0001872	0.0035	2		14219.44	14219.44	No	20.03	Si
SLU 66	fin.	343.39	-3030	-0.0000344	0.0001872	0.0035	2		14206.68	14206.68	No	41.37	Si
SLU 69	ini.	-734.09	-2509	-0.0000747	0.0001872	0.0035	2		14219.44	14219.44	No	19.37	Si
SLU 69	fin.	349.33	-3138	-0.000035	0.0001872	0.0035	2		14206.68	14206.68	No	40.67	Si
SLU 80	ini.	-722.22	-2536	-0.0000735	0.0001872	0.0035	2		14219.44	14219.44	No	19.69	Si
SLU 80	fin.	363.9	-3210	-0.0000365	0.0001872	0.0035	2		14206.68	14206.68	No	39.04	Si
SLU 68	ini.	-732.18	-2427	-0.0000745	0.0001872	0.0035	2		14219.44	14219.44	No	19.42	Si
SLU 68	fin.	347.81	-3036	-0.0000349	0.0001872	0.0035	2		14206.68	14206.68	No	40.85	Si
SLU 77	ini.	-711.74	-2546	-0.0000724	0.0001872	0.0035	2		14219.44	14219.44	No	19.98	Si
SLU 77	fin.	361.31	-3226	-0.0000362	0.0001872	0.0035	2		14206.68	14206.68	No	39.32	Si
SLU 71	ini.	-726.86	-2463	-0.000074	0.0001872	0.0035	2		14219.44	14219.44	No	19.56	Si
SLU 71	fin.	349.18	-3088	-0.000035	0.0001872	0.0035	2		14206.68	14206.68	No	40.69	Si
SLU 70	ini.	-751.8	-2544	-0.0000766	0.0001872	0.0035	2		14219.44	14219.44	No	18.91	Si
SLU 70	fin.	352.08	-3171	-0.0000353	0.0001872	0.0035	2		14206.68	14206.68	No	40.35	Si
SLU 72	ini.	-744.57	-2498	-0.0000758	0.0001872	0.0035	2		14219.44	14219.44	No	19.1	Si
SLU 72	fin.	351.92	-3121	-0.0000353	0.0001872	0.0035	2		14206.68	14206.68	No	40.37	Si
SLU 67	ini.	-727.6	-2449	-0.000074	0.0001872	0.0035	2		14219.44	14219.44	No	19.54	Si
SLU 67	fin.	346.14	-3064	-0.0000347	0.0001872	0.0035	2		14206.68	14206.68	No	41.04	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-722.22	3174	2	0	4167	3965	8983	5100	8131	No	2.56	Si
SLU 80	fin.	363.9	5026	2	0	4167	3965	8983	5100	8131	No	1.62	Si
SLU 84	ini.	-688.44	3128	2	0	4167	3965	8983	5100	8131	No	2.6	Si
SLU 84	fin.	363.09	4969	2	0	4167	3965	8983	5100	8131	No	1.64	Si
SLU 70	ini.	-751.8	3143	2	0	4167	3965	8983	5100	8131	No	2.59	Si
SLU 70	fin.	352.08	4899	2	0	4167	3965	8983	5100	8131	No	1.66	Si
SLU 75	ini.	-705.25	3120	2	0	4167	3965	8983	5100	8131	No	2.61	Si
SLU 75	fin.	358.11	4942	2	0	4167	3965	8983	5100	8131	No	1.65	Si
SLU 74	ini.	-687.54	3085	2	0	4167	3965	8983	5100	8131	No	2.64	Si
SLU 74	fin.	355.36	4905	2	0	4167	3965	8983	5100	8131	No	1.66	Si
SLU 83	ini.	-670.73	3092	2	0	4167	3965	8983	5100	8131	No	2.63	Si
SLU 83	fin.	360.34	4932	2	0	4167	3965	8983	5100	8131	No	1.65	Si
SLU 79	ini.	-704.51	3139	2	0	4167	3965	8983	5100	8131	No	2.59	Si
SLU 79	fin.	361.15	4989	2	0	4167	3965	8983	5100	8131	No	1.63	Si
SLU 78	ini.	-729.45	3185	2	0	4167	3965	8983	5100	8131	No	2.55	Si
SLU 78	fin.	364.05	5074	2	0	4167	3965	8983	5100	8131	No	1.6	Si
SLU 76	ini.	-709.83	3133	2	0	4167	3965	8983	5100	8131	No	2.6	Si
SLU 76	fin.	359.79	4918	2	0	4167	3965	8983	5100	8131	No	1.65	Si
SLU 77	ini.	-711.74	3149	2	0	4167	3965	8983	5100	8131	No	2.58	Si
SLU 77	fin.	361.31	5037	2	0	4167	3965	8983	5100	8131	No	1.61	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	2337.87	2295	-0.0002496	0.0002807	0.0035	2		13920.08	13920.08		5.95	Si
SLV 4	fin.	-988.88	2293	-0.0001006	0.0002807	0.0035	2		13933.43	13933.43		14.09	Si
SLV 15	ini.	-2524.93	-3465	-0.0002714	0.0002807	0.0035	2		13933.43	13933.43		5.52	Si
SLV 15	fin.	1525.67	-4703	-0.0001582	0.0002807	0.0035	2		13920.08	13920.08		9.12	Si
SLV 13	ini.	-3339.45	-5698	-0.0003718	0.0002807	0.0035	2		13933.43	13933.43		4.17	Si
SLV 13	fin.	1502.1	-6623	-0.0001556	0.0002807	0.0035	2		13920.08	13920.08		9.27	Si
SLV 14	ini.	-2700.4	-4887	-0.0002923	0.0002807	0.0035	2		13933.43	13933.43		5.16	Si
SLV 14	fin.	1147.36	-5634	-0.0001175	0.0002807	0.0035	2		13920.08	13920.08		12.13	Si
SLV 16	ini.	-1885.88	-2654	-0.0001978	0.0002807	0.0035	2		13933.43	13933.43		7.39	Si
SLV 16	fin.	1170.93	-3714	-0.00012	0.0002807	0.0035	2		13920.08	13920.08		11.89	Si
SLV 3	ini.	1698.82	1484	-0.0001772	0.0002807	0.0035	2		13920.08	13920.08		8.19	Si
SLV 3	fin.	-634.14	1304	-0.0000638	0.0002807	0.0035	2		13933.43	13933.43		21.97	Si
SLV 10	ini.	-2276.76	-5892	-0.0002423	0.0002807	0.0035	2		13933.43	13933.43		6.12	Si
SLV 10	fin.	421.88	-5933	-0.0000422	0.0002807	0.0035	2		13920.08	13920.08		33	Si
SLV 9	ini.	-2707.01	-6438	-0.0002931	0.0002807	0.0035	2		13933.43	13933.43		5.15	Si
SLV 9	fin.	660.72	-6599	-0.0000666	0.0002807	0.0035	2		13920.08	13920.08		21.07	Si
SLV 8	ini.	1705.43	3036	-0.0001779	0.0002807	0.0035	2		13920.08	13920.08		8.16	Si
SLV 8	fin.	-147.5	2269	-0.0000146	0.0002807	0.0035	2		13933.43	13933.43		94.47	Si
SLD 13	ini.	-1703.87	-3380	-0.0001776	0.0002807	0.0035	2		13933.43	13933.43		8.18	Si
SLD 13	fin.	790.97	-4046	-0.0000801	0.0002807	0.0035	2		13920.08	13920.08		17.6	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-2700.4	9416	2	0	6250	3965	13475	5100	10215		1.08	Si
SLV 14	fin.	1147.36	9896	2	0	6250	3965	13475	5100	10215		1.03	Si
SLV 2	ini.	1523.35	-6741	2	0	6250	3965	13475	5100	10215		1.52	Si
SLV 2	fin.	-1012.44	-4124	2	0	6250	3965	13475	5100	10215		2.48	Si
SLV 13	ini.	-3339.45	11797	2	0	6250	3965	13475	5100	10215		0.87	No
SLV 13	fin.	1502.1	12155	2	0	6250	3965	13475	5100	10215		0.84	No
SLV 9	ini.	-2707.01	6430	2	0	6250	3965	13475	5100	10215		1.59	Si
SLV 9	fin.	660.72	8202	2	0	6250	3965	13475	5100	10215		1.25	Si
SLV 4	ini.	2337.87	-7321	2	0	6250	3965	13475	5100	10215		1.4	Si
SLV 4	fin.	-988.88	-5258	2	0	6250	3965	13475	5100	10215		1.94	Si
SLD 13	ini.	-1703.87	6322	2	0	6250	3965	13475	5100	10215		1.62	Si
SLD 13	fin.	790.97	7160	2	0	6250	3965	13475	5100	10215		1.43	Si
SLD 15	ini.	-1375.94	6083	2	0	6250	3965	13475	5100	10215		1.68	Si
SLD 15	fin.	798.35	6701	2	0	6250	3965	13475	5100	10215		1.52	Si
SLV 10	ini.	-2276.76	4827	2	0	6250	3965	13475	5100	10215		2.12	Si
SLV 10	fin.	421.88	6681	2	0	6250	3965	13475	5100	10215		1.53	Si
SLV 16	ini.	-1885.88	8835	2	0	6250	3965	13475	5100	10215		1.16	Si
SLV 16	fin.	1170.93	8762	2	0	6250	3965	13475	5100	10215		1.17	Si
SLV 15	ini.	-2524.93	11216	2	0	6250	3965	13475	5100	10215		0.91	No
SLV 15	fin.	1525.67	11021	2	0	6250	3965	13475	5100	10215		0.93	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	4.172	SLV 13	Si
V_SLV	0.84	SLV 13	No
PF_SLU	18.914	SLU 70	Si
V_SLU	1.602	SLU 78	Si

Trave di accoppiamento 113

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-18.868	-3.359	11.42	12.17	0.75	-19.368	-3.359	11.42	12.17	0.75	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-274.39	-939	-0.0002101	0.0001872	0.0035	0.75		2071.83	2071.83	No	7.55	Si
SLU 74	fin.	39.4	-664	-0.000028	0.0001872	0.0035	0.75		2067.09	2067.09	No	52.47	Si
SLU 80	ini.	-276.39	-927	-0.0002117	0.0001872	0.0035	0.75		2071.83	2071.83	No	7.5	Si
SLU 80	fin.	46.04	-649	-0.0000327	0.0001872	0.0035	0.75		2067.09	2067.09	No	44.9	Si
SLU 75	ini.	-272.86	-920	-0.0002087	0.0001872	0.0035	0.75		2071.83	2071.83	No	7.59	Si
SLU 75	fin.	43.61	-646	-0.000031	0.0001872	0.0035	0.75		2067.09	2067.09	No	47.39	Si
SLU 78	ini.	-278.19	-942	-0.0002133	0.0001872	0.0035	0.75		2071.83	2071.83	No	7.45	Si
SLU 78	fin.	44.96	-666	-0.000032	0.0001872	0.0035	0.75		2067.09	2067.09	No	45.98	Si
SLU 83	ini.	-282.93	-989	-0.0002173	0.0001872	0.0035	0.75		2071.83	2071.83	No	7.32	Si
SLU 83	fin.	33.64	-706	-0.0000238	0.0001872	0.0035	0.75		2067.09	2067.09	No	61.44	Si
SLU 79	ini.	-277.93	-946	-0.0002131	0.0001872	0.0035	0.75		2071.83	2071.83	No	7.45	Si
SLU 79	fin.	41.82	-668	-0.0000297	0.0001872	0.0035	0.75		2067.09	2067.09	No	49.43	Si
SLU 81	ini.	-277.6	-967	-0.0002128	0.0001872	0.0035	0.75		2071.83	2071.83	No	7.46	Si
SLU 81	fin.	32.3	-686	-0.0000229	0.0001872	0.0035	0.75		2067.09	2067.09	No	64	Si
SLU 77	ini.	-279.72	-961	-0.0002146	0.0001872	0.0035	0.75		2071.83	2071.83	No	7.41	Si
SLU 77	fin.	40.74	-684	-0.0000289	0.0001872	0.0035	0.75		2067.09	2067.09	No	50.74	Si
SLU 82	ini.	-276.06	-948	-0.0002115	0.0001872	0.0035	0.75		2071.83	2071.83	No	7.51	Si
SLU 82	fin.	36.52	-667	-0.0000259	0.0001872	0.0035	0.75		2067.09	2067.09	No	56.6	Si
SLU 84	ini.	-281.39	-970	-0.000216	0.0001872	0.0035	0.75		2071.83	2071.83	No	7.36	Si
SLU 84	fin.	37.86	-687	-0.0000269	0.0001872	0.0035	0.75		2067.09	2067.09	No	54.6	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-279.72	1667	0.75	0	1563	3965	3369	1913	5281	No	3.17	Si
SLU 77	fin.	40.74	-443	0.75	0	1563	3965	3369	1913	5281	No	11.91	Si
SLU 83	ini.	-282.93	1647	0.75	0	1563	3965	3369	1913	5281	No	3.21	Si
SLU 83	fin.	33.64	-420	0.75	0	1563	3965	3369	1913	5281	No	12.56	Si
SLU 74	ini.	-274.39	1624	0.75	0	1563	3965	3369	1913	5281	No	3.25	Si
SLU 74	fin.	39.4	-413	0.75	0	1563	3965	3369	1913	5281	No	12.77	Si
SLU 78	ini.	-278.19	1672	0.75	0	1563	3965	3369	1913	5281	No	3.16	Si
SLU 78	fin.	44.96	-438	0.75	0	1563	3965	3369	1913	5281	No	12.07	Si
SLU 75	ini.	-272.86	1629	0.75	0	1563	3965	3369	1913	5281	No	3.24	Si
SLU 75	fin.	43.61	-408	0.75	0	1563	3965	3369	1913	5281	No	12.95	Si
SLU 79	ini.	-277.93	1652	0.75	0	1563	3965	3369	1913	5281	No	3.2	Si
SLU 79	fin.	41.82	-420	0.75	0	1563	3965	3369	1913	5281	No	12.57	Si
SLU 84	ini.	-281.39	1652	0.75	0	1563	3965	3369	1913	5281	No	3.2	Si
SLU 84	fin.	37.86	-415	0.75	0	1563	3965	3369	1913	5281	No	12.73	Si
SLU 80	ini.	-276.39	1656	0.75	0	1563	3965	3369	1913	5281	No	3.19	Si
SLU 80	fin.	46.04	-415	0.75	0	1563	3965	3369	1913	5281	No	12.74	Si
SLU 76	ini.	-270.03	1616	0.75	0	1563	3965	3369	1913	5281	No	3.27	Si
SLU 76	fin.	47.5	-381	0.75	0	1563	3965	3369	1913	5281	No	13.86	Si
SLU 82	ini.	-276.06	1609	0.75	0	1563	3965	3369	1913	5281	No	3.28	Si
SLU 82	fin.	36.52	-385	0.75	0	1563	3965	3369	1913	5281	No	13.72	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-344.12	737	-0.0002612	0.0002807	0.0035	0.75		2057.16	2057.16		5.98	Si
SLV 16	fin.	513.61	1367	-0.000412	0.0002807	0.0035	0.75		2052.27	2052.27		4	Si
SLV 13	ini.	-201.49	2252	-0.0001474	0.0002807	0.0035	0.75		2057.16	2057.16		10.21	Si
SLV 13	fin.	860.53	2825	-0.0007725	0.0002807	0.0035	0.75		2052.27	2052.27		2.38	Si
SLV 3	ini.	-229.19	-2891	-0.0001688	0.0002807	0.0035	0.75		2057.16	2057.16		8.98	Si
SLV 3	fin.	-587.44	-2904	-0.0004815	0.0002807	0.0035	0.75		2057.16	2057.16		3.5	Si
SLV 14	ini.	-148.87	1692	-0.0001076	0.0002807	0.0035	0.75		2057.16	2057.16		13.82	Si
SLV 14	fin.	662.25	2102	-0.0005578	0.0002807	0.0035	0.75		2052.27	2052.27		3.1	Si
SLV 11	ini.	-557.29	-1374	-0.0004523	0.0002807	0.0035	0.75		2057.16	2057.16		3.69	Si
SLV 11	fin.	51.33	-633	-0.0000364	0.0002807	0.0035	0.75		2052.27	2052.27		39.98	Si
SLV 4	ini.	-176.58	-3452	-0.0001284	0.0002807	0.0035	0.75		2057.16	2057.16		11.65	Si
SLV 4	fin.	-785.72	-3627	-0.0006869	0.0002807	0.0035	0.75		2057.16	2057.16		2.62	Si
SLV 9	ini.	93.54	1809	-0.0000669	0.0002807	0.0035	0.75		2052.27	2052.27		21.94	Si
SLV 9	fin.	546.77	1816	-0.0004434	0.0002807	0.0035	0.75		2052.27	2052.27		3.75	Si
SLV 2	ini.	18.67	-2497	-0.0000132	0.0002807	0.0035	0.75		2052.27	2052.27		109.9	Si
SLV 2	fin.	-637.09	-2892	-0.0005308	0.0002807	0.0035	0.75		2057.16	2057.16		3.23	Si
SLV 12	ini.	-521.87	-1752	-0.0004187	0.0002807	0.0035	0.75		2057.16	2057.16		3.94	Si
SLV 12	fin.	-82.17	-1120	-0.0000585	0.0002807	0.0035	0.75		2057.16	2057.16		25.04	Si
SLV 15	ini.	-396.74	1297	-0.0003058	0.0002807	0.0035	0.75		2057.16	2057.16		5.19	Si
SLV 15	fin.	711.9	2090	-0.0006094	0.0002807	0.0035	0.75		2052.27	2052.27		2.88	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 13	ini.	-197.13	1872	0.75	0	2344	3965	5053	1913	6309		3.37	Si
SLD 13	fin.	387.93	730	0.75	0	2344	3965	5053	1913	6309		8.64	Si
SLV 1	ini.	-33.94	-252	0.75	0	2344	3965	5053	1913	6309		25.04	Si
SLV 1	fin.	-438.81	-2210	0.75	0	2344	3965	5053	1913	6309		2.85	Si
SLV 13	ini.	-201.49	2856	0.75	0	2344	3965	5053	1913	6309		2.21	Si
SLV 13	fin.	860.53	1992	0.75	0	2344	3965	5053	1913	6309		3.17	Si
SLV 11	ini.	-557.29	2190	0.75	0	2344	3965	5053	1913	6309		2.88	Si
SLV 11	fin.	51.33	1398	0.75	0	2344	3965	5053	1913	6309		4.51	Si
SLV 2	ini.	18.67	-839	0.75	0	2344	3965	5053	1913	6309		7.51	Si
SLV 2	fin.	-637.09	-2894	0.75	0	2344	3965	5053	1913	6309		2.18	Si
SLV 4	ini.	-176.58	-601	0.75	0	2344	3965	5053	1913	6309		10.5	Si
SLV 4	fin.	-785.72	-2438	0.75	0	2344	3965	5053	1913	6309		2.59	Si
SLV 14	ini.	-148.87	2268	0.75	0	2344	3965	5053	1913	6309		2.78	Si
SLV 14	fin.	662.25	1307	0.75	0	2344	3965	5053	1913	6309		4.83	Si
SLV 15	ini.	-396.74	3095	0.75	0	2344	3965	5053	1913	6309		2.04	Si
SLV 15	fin.	711.9	2448	0.75	0	2344	3965	5053	1913	6309		2.58	Si
SLV 16	ini.	-344.12	2507	0.75	0	2344	3965	5053	1913	6309		2.52	Si
SLV 16	fin.	513.61	1763	0.75	0	2344	3965	5053	1913	6309		3.58	Si
SLD 15	ini.	-275.42	1965	0.75	0	2344	3965	5053	1913	6309		3.21	Si
SLD 15	fin.	327.5	913	0.75	0	2344	3965	5053	1913	6309		6.91	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.385	SLV 13	Si
V_SLV	2.039	SLV 15	Si
PF_SLU	7.323	SLU 83	Si
V_SLU	3.159	SLU 78	Si

Trave di accoppiamento 114

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-17.363	-3.359	8.62	9.52	0.9	-18.263	-3.359	8.62	9.52	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 67	ini.	55.38	-756	-0.0000274	0.0001872	0.0035	0.9		2942.43	2942.43	No	53.13	Si
SLU 67	fin.	151.14	-1212	-0.0000762	0.0001872	0.0035	0.9		2942.43	2942.43	No	19.47	Si
SLU 62	ini.	147.79	-879	-0.0000744	0.0001872	0.0035	0.9		2942.43	2942.43	No	19.91	Si
SLU 62	fin.	65.41	-901	-0.0000324	0.0001872	0.0035	0.9		2942.43	2942.43	No	44.99	Si
SLU 81	ini.	151.02	-923	-0.0000761	0.0001872	0.0035	0.9		2942.43	2942.43	No	19.48	Si
SLU 81	fin.	71.33	-959	-0.0000354	0.0001872	0.0035	0.9		2942.43	2942.43	No	41.25	Si
SLU 60	ini.	152.31	-867	-0.0000768	0.0001872	0.0035	0.9		2942.43	2942.43	No	19.32	Si
SLU 60	fin.	53.91	-841	-0.0000266	0.0001872	0.0035	0.9		2942.43	2942.43	No	54.58	Si
SLU 69	ini.	64.09	-787	-0.0000317	0.0001872	0.0035	0.9		2942.43	2942.43	No	45.91	Si
SLU 69	fin.	150.23	-1227	-0.0000757	0.0001872	0.0035	0.9		2942.43	2942.43	No	19.59	Si
SLU 83	ini.	146.5	-935	-0.0000738	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.09	Si
SLU 83	fin.	82.84	-1019	-0.0000412	0.0001872	0.0035	0.9		2942.43	2942.43	No	35.52	Si
SLU 68	ini.	46.35	-730	-0.0000229	0.0001872	0.0035	0.9		2942.43	2942.43	No	63.49	Si
SLU 68	fin.	155.01	-1215	-0.0000782	0.0001872	0.0035	0.9		2942.43	2942.43	No	18.98	Si
SLU 71	ini.	63.87	-776	-0.0000316	0.0001872	0.0035	0.9		2942.43	2942.43	No	46.07	Si
SLU 71	fin.	145.83	-1201	-0.0000734	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.18	Si
SLU 72	ini.	50.64	-756	-0.000025	0.0001872	0.0035	0.9		2942.43	2942.43	No	58.1	Si
SLU 72	fin.	158.24	-1245	-0.0000799	0.0001872	0.0035	0.9		2942.43	2942.43	No	18.59	Si
SLU 70	ini.	50.86	-768	-0.0000251	0.0001872	0.0035	0.9		2942.43	2942.43	No	57.85	Si
SLU 70	fin.	162.64	-1271	-0.0000822	0.0001872	0.0035	0.9		2942.43	2942.43	No	18.09	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 70	ini.	50.86	-871	0.9	0	1875	7137	4043	2295	6338	No	7.28	Si
SLU 70	fin.	162.64	2324	0.9	0	1875	7137	4043	2295	6338	No	2.73	Si
SLU 67	ini.	55.38	-869	0.9	0	1875	7137	4043	2295	6338	No	7.29	Si
SLU 67	fin.	151.14	2224	0.9	0	1875	7137	4043	2295	6338	No	2.85	Si
SLU 80	ini.	105.32	-1119	0.9	0	1875	7137	4043	2295	6338	No	5.66	Si
SLU 80	fin.	122.19	2174	0.9	0	1875	7137	4043	2295	6338	No	2.91	Si
SLU 72	ini.	50.64	-857	0.9	0	1875	7137	4043	2295	6338	No	7.39	Si
SLU 72	fin.	158.24	2278	0.9	0	1875	7137	4043	2295	6338	No	2.78	Si
SLU 66	ini.	68.61	-922	0.9	0	1875	7137	4043	2295	6338	No	6.87	Si
SLU 66	fin.	138.73	2155	0.9	0	1875	7137	4043	2295	6338	No	2.94	Si
SLU 78	ini.	105.54	-1132	0.9	0	1875	7137	4043	2295	6338	No	5.6	Si
SLU 78	fin.	126.59	2220	0.9	0	1875	7137	4043	2295	6338	No	2.85	Si
SLU 71	ini.	63.87	-911	0.9	0	1875	7137	4043	2295	6338	No	6.96	Si
SLU 71	fin.	145.83	2209	0.9	0	1875	7137	4043	2295	6338	No	2.87	Si
SLU 69	ini.	64.09	-924	0.9	0	1875	7137	4043	2295	6338	No	6.86	Si
SLU 69	fin.	150.23	2255	0.9	0	1875	7137	4043	2295	6338	No	2.81	Si
SLU 77	ini.	118.77	-1185	0.9	0	1875	7137	4043	2295	6338	No	5.35	Si
SLU 77	fin.	114.18	2152	0.9	0	1875	7137	4043	2295	6338	No	2.95	Si
SLU 68	ini.	46.35	-820	0.9	0	1875	7137	4043	2295	6338	No	7.73	Si
SLU 68	fin.	155.01	2223	0.9	0	1875	7137	4043	2295	6338	No	2.85	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 2	ini.	1493.82	-3356	-0.0009892	0.0002807	0.0035	0.9		2967.55	2967.55		1.99	Si
SLV 2	fin.	-804.49	1750	-0.0004557	0.0002807	0.0035	0.9		2973.32	2973.32		3.7	Si
SLV 14	ini.	-1570.98	2284	-0.0010557	0.0002807	0.0035	0.9		2973.32	2973.32		1.89	Si
SLV 14	fin.	1338.74	-4822	-0.0008567	0.0002807	0.0035	0.9		2967.55	2967.55		2.22	Si
SLV 7	ini.	1444.84	-2647	-0.0009465	0.0002807	0.0035	0.9		2967.55	2967.55		2.05	Si
SLV 7	fin.	-1262.03	3997	-0.0007922	0.0002807	0.0035	0.9		2973.32	2973.32		2.36	Si
SLV 13	ini.	-1980.42	3026	-0.0014659	0.0002807	0.0035	0.9		2973.32	2973.32		1.5	Si
SLV 13	fin.	1638.23	-5781	-0.0011205	0.0002807	0.0035	0.9		2967.55	2967.55		1.81	Si
SLV 10	ini.	-1300.87	1447	-0.0008236	0.0002807	0.0035	0.9		2973.32	2973.32		2.29	Si
SLV 10	fin.	1422.74	-5559	-0.0009275	0.0002807	0.0035	0.9		2967.55	2967.55		2.09	Si
SLV 4	ini.	2124.4	-4226	-0.001639	0.0002807	0.0035	0.9		2967.55	2967.55		1.4	Si
SLV 4	fin.	-1477.52	4219	-0.0009725	0.0002807	0.0035	0.9		2973.32	2973.32		2.01	Si
SLV 3	ini.	1714.95	-3484	-0.0011937	0.0002807	0.0035	0.9		2967.55	2967.55		1.73	Si
SLV 3	fin.	-1178.03	3259	-0.0007259	0.0002807	0.0035	0.9		2973.32	2973.32		2.52	Si
SLV 8	ini.	1720.51	-3147	-0.0011991	0.0002807	0.0035	0.9		2967.55	2967.55		1.72	Si
SLV 8	fin.	-1463.66	4643	-0.0009605	0.0002807	0.0035	0.9		2973.32	2973.32		2.03	Si
SLV 15	ini.	-1349.84	2156	-0.0008639	0.0002807	0.0035	0.9		2973.32	2973.32		2.2	Si
SLV 15	fin.	965.21	-3312	-0.0005684	0.0002807	0.0035	0.9		2967.55	2967.55		3.07	Si
SLV 9	ini.	-1576.53	1946	-0.0010607	0.0002807	0.0035	0.9		2973.32	2973.32		1.89	Si
SLV 9	fin.	1624.38	-6205	-0.0011075	0.0002807	0.0035	0.9		2967.55	2967.55		1.83	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	1714.95	-7778	0.9	0	2813	7137	6064	2295	8359		1.07	Si
SLV 3	fin.	-1178.03	-4646	0.9	0	2813	7137	6064	2295	8359		1.8	Si
SLV 5	ini.	-657.09	2131	0.9	0	2813	7137	6064	2295	8359		3.92	Si
SLV 5	fin.	981.4	6718	0.9	0	2813	7137	6064	2295	8359		1.24	Si
SLV 14	ini.	-1570.98	6257	0.9	0	2813	7137	6064	2295	8359		1.34	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	fin.	1338.74	7585	0.9	0	2813	7137	6064	2295	8359		1.1	Si
SLV 2	ini.	1493.82	-6901	0.9	0	2813	7137	6064	2295	8359		1.21	Si
SLV 2	fin.	-804.49	-2418	0.9	0	2813	7137	6064	2295	8359		3.46	Si
SLV 9	ini.	-1576.53	6078	0.9	0	2813	7137	6064	2295	8359		1.38	Si
SLV 9	fin.	1624.38	9719	0.9	0	2813	7137	6064	2295	8359		0.86	No
SLV 10	ini.	-1300.87	4934	0.9	0	2813	7137	6064	2295	8359		1.69	Si
SLV 10	fin.	1422.74	8699	0.9	0	2813	7137	6064	2295	8359		0.96	No
SLV 13	ini.	-1980.42	7956	0.9	0	2813	7137	6064	2295	8359		1.05	Si
SLV 13	fin.	1638.23	9101	0.9	0	2813	7137	6064	2295	8359		0.92	No
SLV 7	ini.	1444.84	-6455	0.9	0	2813	7137	6064	2295	8359		1.29	Si
SLV 7	fin.	-1262.03	-5760	0.9	0	2813	7137	6064	2295	8359		1.45	Si
SLV 4	ini.	2124.4	-9477	0.9	0	2813	7137	6064	2295	8359		0.88	No
SLV 4	fin.	-1477.52	-6162	0.9	0	2813	7137	6064	2295	8359		1.36	Si
SLV 8	ini.	1720.51	-7599	0.9	0	2813	7137	6064	2295	8359		1.1	Si
SLV 8	fin.	-1463.66	-6780	0.9	0	2813	7137	6064	2295	8359		1.23	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.397	SLV 4	Si
V_SLV	0.86	SLV 9	No
PF_SLU	18.092	SLU 70	Si
V_SLU	2.727	SLU 70	Si

Trave di accoppiamento 115

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-17.363	-3.359	11.32	12.17	0.85	-18.263	-3.359	11.32	12.17	0.85	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-36.65	-534	-0.0000202	0.0001872	0.0035	0.85		2645.85	2645.85	No	72.19	Si
SLU 83	fin.	-201.96	-1279	-0.0001155	0.0001872	0.0035	0.85		2645.85	2645.85	No	13.1	Si
SLU 74	ini.	-52.08	-563	-0.0000288	0.0001872	0.0035	0.85		2645.85	2645.85	No	50.8	Si
SLU 74	fin.	-185.57	-1214	-0.0001057	0.0001872	0.0035	0.85		2645.85	2645.85	No	14.26	Si
SLU 60	ini.	-17.68	-422	-0.0000097	0.0001872	0.0035	0.85		2645.85	2645.85	No	149.67	Si
SLU 60	fin.	-184.79	-1129	-0.0001052	0.0001872	0.0035	0.85		2645.85	2645.85	No	14.32	Si
SLU 62	ini.	-25.92	-460	-0.0000142	0.0001872	0.0035	0.85		2645.85	2645.85	No	102.09	Si
SLU 62	fin.	-187.43	-1160	-0.0001068	0.0001872	0.0035	0.85		2645.85	2645.85	No	14.12	Si
SLU 82	ini.	-37.94	-516	-0.0000209	0.0001872	0.0035	0.85		2645.85	2645.85	No	69.73	Si
SLU 82	fin.	-191.31	-1224	-0.0001091	0.0001872	0.0035	0.85		2645.85	2645.85	No	13.83	Si
SLU 79	ini.	-57.61	-584	-0.0000319	0.0001872	0.0035	0.85		2645.85	2645.85	No	45.92	Si
SLU 79	fin.	-185.01	-1224	-0.0001054	0.0001872	0.0035	0.85		2645.85	2645.85	No	14.3	Si
SLU 81	ini.	-28.41	-496	-0.0000156	0.0001872	0.0035	0.85		2645.85	2645.85	No	93.11	Si
SLU 81	fin.	-199.31	-1248	-0.0001139	0.0001872	0.0035	0.85		2645.85	2645.85	No	13.27	Si
SLU 78	ini.	-69.85	-621	-0.0000387	0.0001872	0.0035	0.85		2645.85	2645.85	No	37.88	Si
SLU 78	fin.	-180.2	-1221	-0.0001025	0.0001872	0.0035	0.85		2645.85	2645.85	No	14.68	Si
SLU 77	ini.	-60.32	-601	-0.0000334	0.0001872	0.0035	0.85		2645.85	2645.85	No	43.86	Si
SLU 77	fin.	-188.21	-1245	-0.0001073	0.0001872	0.0035	0.85		2645.85	2645.85	No	14.06	Si
SLU 84	ini.	-46.18	-554	-0.0000255	0.0001872	0.0035	0.85		2645.85	2645.85	No	57.29	Si
SLU 84	fin.	-193.95	-1255	-0.0001107	0.0001872	0.0035	0.85		2645.85	2645.85	No	13.64	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 81	ini.	-28.41	1013	0.85	0	1771	6740	3818	2168	5985	No	5.91	Si
SLU 81	fin.	-199.31	-2473	0.85	0	1771	6740	3818	2168	5985	No	2.42	Si
SLU 78	ini.	-69.85	1211	0.85	0	1771	6740	3818	2168	5985	No	4.94	Si
SLU 78	fin.	-180.2	-2416	0.85	0	1771	6740	3818	2168	5985	No	2.48	Si
SLU 74	ini.	-52.08	1118	0.85	0	1771	6740	3818	2168	5985	No	5.35	Si
SLU 74	fin.	-185.57	-2404	0.85	0	1771	6740	3818	2168	5985	No	2.49	Si
SLU 84	ini.	-46.18	1106	0.85	0	1771	6740	3818	2168	5985	No	5.41	Si
SLU 84	fin.	-193.95	-2485	0.85	0	1771	6740	3818	2168	5985	No	2.41	Si
SLU 83	ini.	-36.65	1067	0.85	0	1771	6740	3818	2168	5985	No	5.61	Si
SLU 83	fin.	-201.96	-2526	0.85	0	1771	6740	3818	2168	5985	No	2.37	Si
SLU 82	ini.	-37.94	1051	0.85	0	1771	6740	3818	2168	5985	No	5.7	Si
SLU 82	fin.	-191.31	-2433	0.85	0	1771	6740	3818	2168	5985	No	2.46	Si
SLU 75	ini.	-61.61	1157	0.85	0	1771	6740	3818	2168	5985	No	5.18	Si
SLU 75	fin.	-177.56	-2363	0.85	0	1771	6740	3818	2168	5985	No	2.53	Si
SLU 80	ini.	-67.14	1188	0.85	0	1771	6740	3818	2168	5985	No	5.04	Si
SLU 80	fin.	-177	-2379	0.85	0	1771	6740	3818	2168	5985	No	2.52	Si
SLU 79	ini.	-57.61	1149	0.85	0	1771	6740	3818	2168	5985	No	5.21	Si
SLU 79	fin.	-185.01	-2419	0.85	0	1771	6740	3818	2168	5985	No	2.47	Si
SLU 77	ini.	-60.32	1173	0.85	0	1771	6740	3818	2168	5985	No	5.1	Si
SLU 77	fin.	-188.21	-2456	0.85	0	1771	6740	3818	2168	5985	No	2.44	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 7	ini.	1021.52	1819	-0.0007003	0.0002807	0.0035	0.85		2641.96	2641.96		2.59	Si
SLV 7	fin.	-982.4	-3546	-0.0006653	0.0002807	0.0035	0.85		2647.52	2647.52		2.69	Si
SLV 4	ini.	997.51	1187	-0.0006797	0.0002807	0.0035	0.85		2641.96	2641.96		2.65	Si
SLV 4	fin.	-1401.96	-4832	-0.001053	0.0002807	0.0035	0.85		2647.52	2647.52		1.89	Si
SLV 9	ini.	-1266.6	-2865	-0.00092	0.0002807	0.0035	0.85		2647.52	2647.52		2.09	Si
SLV 9	fin.	940.99	2548	-0.0006322	0.0002807	0.0035	0.85		2641.96	2641.96		2.81	Si
SLV 3	ini.	763.12	788	-0.00049	0.0002807	0.0035	0.85		2641.96	2641.96		3.46	Si
SLV 3	fin.	-1127.91	-4019	-0.0007919	0.0002807	0.0035	0.85		2647.52	2647.52		2.35	Si
SLV 5	ini.	-883.69	-2421	-0.0005838	0.0002807	0.0035	0.85		2647.52	2647.52		3	Si
SLV 5	fin.	371.67	742	-0.0002172	0.0002807	0.0035	0.85		2641.96	2641.96		7.11	Si
SLV 10	ini.	-1108.79	-2597	-0.0007748	0.0002807	0.0035	0.85		2647.52	2647.52		2.39	Si
SLV 10	fin.	756.48	2001	-0.0004849	0.0002807	0.0035	0.85		2641.96	2641.96		3.49	Si
SLV 8	ini.	1179.32	2088	-0.0008406	0.0002807	0.0035	0.85		2641.96	2641.96		2.24	Si
SLV 8	fin.	-1166.91	-4094	-0.0008271	0.0002807	0.0035	0.85		2647.52	2647.52		2.27	Si
SLV 2	ini.	425.95	-85	-0.0002518	0.0002807	0.0035	0.85		2641.96	2641.96		6.2	Si
SLV 2	fin.	-995.74	-3546	-0.0006766	0.0002807	0.0035	0.85		2647.52	2647.52		2.66	Si
SLV 13	ini.	-1084.78	-1965	-0.0007535	0.0002807	0.0035	0.85		2647.52	2647.52		2.44	Si
SLV 13	fin.	1176.04	3287	-0.0008376	0.0002807	0.0035	0.85		2641.96	2641.96		2.25	Si
SLV 14	ini.	-850.4	-1566	-0.0005571	0.0002807	0.0035	0.85		2647.52	2647.52		3.11	Si
SLV 14	fin.	901.99	2474	-0.0006001	0.0002807	0.0035	0.85		2641.96	2641.96		2.93	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 8	ini.	1179.32	-4359	0.85	0	2656	6740	5727	2168	7894		1.81	Si
SLV 8	fin.	-1166.91	-6883	0.85	0	2656	6740	5727	2168	7894		1.15	Si
SLV 2	ini.	425.95	-1672	0.85	0	2656	6740	5727	2168	7894		4.72	Si
SLV 2	fin.	-995.74	-5075	0.85	0	2656	6740	5727	2168	7894		1.56	Si
SLV 13	ini.	-1084.78	5587	0.85	0	2656	6740	5727	2168	7894		1.41	Si
SLV 13	fin.	1176.04	4226	0.85	0	2656	6740	5727	2168	7894		1.87	Si
SLV 4	ini.	997.51	-3994	0.85	0	2656	6740	5727	2168	7894		1.98	Si
SLV 4	fin.	-1401.96	-7305	0.85	0	2656	6740	5727	2168	7894		1.08	Si
SLV 3	ini.	763.12	-2943	0.85	0	2656	6740	5727	2168	7894		2.68	Si
SLV 3	fin.	-1127.91	-6063	0.85	0	2656	6740	5727	2168	7894		1.3	Si
SLV 9	ini.	-1266.6	5952	0.85	0	2656	6740	5727	2168	7894		1.33	Si
SLV 9	fin.	940.99	3804	0.85	0	2656	6740	5727	2168	7894		2.08	Si
SLV 10	ini.	-1108.79	5244	0.85	0	2656	6740	5727	2168	7894		1.51	Si
SLV 10	fin.	756.48	2968	0.85	0	2656	6740	5727	2168	7894		2.66	Si
SLV 7	ini.	1021.52	-3651	0.85	0	2656	6740	5727	2168	7894		2.16	Si
SLV 7	fin.	-982.4	-6047	0.85	0	2656	6740	5727	2168	7894		1.31	Si
SLV 12	ini.	796.42	-2497	0.85	0	2656	6740	5727	2168	7894		3.16	Si
SLV 12	fin.	-597.59	-4465	0.85	0	2656	6740	5727	2168	7894		1.77	Si
SLV 14	ini.	-850.4	4536	0.85	0	2656	6740	5727	2168	7894		1.74	Si
SLV 14	fin.	901.99	2984	0.85	0	2656	6740	5727	2168	7894		2.65	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.888	SLV 4	Si
V_SLV	1.081	SLV 4	Si
PF_SLU	13.101	SLU 83	Si
V_SLU	2.37	SLU 83	Si

Trave di accoppiamento 117

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-15.433	-3.359	10.72	12.17	1.45	-16.333	-3.359	10.72	12.17	1.45	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 67	ini.	-743.36	-2087	-0.0001472	0.0002246	0.0035	1.45		7858.95	7858.95	No	10.57	Si
SLU 67	fin.	471.33	-1467	-0.0000916	0.0002246	0.0035	1.45		7849.88	7849.88	No	16.65	Si
SLU 69	ini.	-751.18	-2149	-0.0001488	0.0002246	0.0035	1.45		7858.95	7858.95	No	10.46	Si
SLU 69	fin.	478.31	-1519	-0.000093	0.0002246	0.0035	1.45		7849.88	7849.88	No	16.41	Si
SLU 65	ini.	-717.07	-1965	-0.0001417	0.0002246	0.0035	1.45		7858.95	7858.95	No	10.96	Si
SLU 65	fin.	449.09	-1369	-0.0000871	0.0002246	0.0035	1.45		7849.88	7849.88	No	17.48	Si
SLU 71	ini.	-740.15	-2100	-0.0001465	0.0002246	0.0035	1.45		7858.95	7858.95	No	10.62	Si
SLU 71	fin.	468.77	-1481	-0.0000911	0.0002246	0.0035	1.45		7849.88	7849.88	No	16.75	Si
SLU 70	ini.	-773.54	-2180	-0.0001535	0.0002246	0.0035	1.45		7858.95	7858.95	No	10.16	Si
SLU 70	fin.	495.47	-1536	-0.0000964	0.0002246	0.0035	1.45		7849.88	7849.88	No	15.84	Si
SLU 68	ini.	-747.25	-2059	-0.000148	0.0002246	0.0035	1.45		7858.95	7858.95	No	10.52	Si
SLU 68	fin.	473.23	-1438	-0.0000919	0.0002246	0.0035	1.45		7849.88	7849.88	No	16.59	Si
SLU 78	ini.	-683.39	-2128	-0.0001347	0.0002246	0.0035	1.45		7858.95	7858.95	No	11.5	Si
SLU 78	fin.	485.79	-1478	-0.0000945	0.0002246	0.0035	1.45		7849.88	7849.88	No	16.16	Si
SLU 72	ini.	-762.51	-2131	-0.0001512	0.0002246	0.0035	1.45		7858.95	7858.95	No	10.31	Si
SLU 72	fin.	485.92	-1497	-0.0000945	0.0002246	0.0035	1.45		7849.88	7849.88	No	16.15	Si
SLU 66	ini.	-721	-2055	-0.0001425	0.0002246	0.0035	1.45		7858.95	7858.95	No	10.9	Si
SLU 66	fin.	454.18	-1450	-0.0000881	0.0002246	0.0035	1.45		7849.88	7849.88	No	17.28	Si
SLU 28	ini.	-691.88	-1888	-0.0001365	0.0002246	0.0035	1.45		7858.95	7858.95	No	11.36	Si
SLU 28	fin.	458.51	-1306	-0.000089	0.0002246	0.0035	1.45		7849.88	7849.88	No	17.12	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-653.22	2688	1.45	0	3625	7137	7816	3698	10762	No	4	Si
SLU 75	fin.	461.66	781	1.45	0	3625	7137	7816	3698	10762	No	13.79	Si
SLU 69	ini.	-751.18	2680	1.45	0	3625	7137	7816	3698	10762	No	4.02	Si
SLU 69	fin.	478.31	1048	1.45	0	3625	7137	7816	3698	10762	No	10.26	Si
SLU 77	ini.	-661.03	2711	1.45	0	3625	7137	7816	3698	10762	No	3.97	Si
SLU 77	fin.	468.64	804	1.45	0	3625	7137	7816	3698	10762	No	13.38	Si
SLU 80	ini.	-672.37	2736	1.45	0	3625	7137	7816	3698	10762	No	3.93	Si
SLU 80	fin.	476.25	829	1.45	0	3625	7137	7816	3698	10762	No	12.98	Si
SLU 84	ini.	-603.56	2670	1.45	0	3625	7137	7816	3698	10762	No	4.03	Si
SLU 84	fin.	447.96	645	1.45	0	3625	7137	7816	3698	10762	No	16.69	Si
SLU 70	ini.	-773.54	2736	1.45	0	3625	7137	7816	3698	10762	No	3.93	Si
SLU 70	fin.	495.47	1105	1.45	0	3625	7137	7816	3698	10762	No	9.74	Si
SLU 79	ini.	-650.01	2680	1.45	0	3625	7137	7816	3698	10762	No	4.02	Si
SLU 79	fin.	459.09	773	1.45	0	3625	7137	7816	3698	10762	No	13.92	Si
SLU 78	ini.	-683.39	2768	1.45	0	3625	7137	7816	3698	10762	No	3.89	Si
SLU 78	fin.	485.79	860	1.45	0	3625	7137	7816	3698	10762	No	12.51	Si
SLU 76	ini.	-657.1	2694	1.45	0	3625	7137	7816	3698	10762	No	3.99	Si
SLU 76	fin.	463.55	787	1.45	0	3625	7137	7816	3698	10762	No	13.68	Si
SLU 72	ini.	-762.51	2705	1.45	0	3625	7137	7816	3698	10762	No	3.98	Si
SLU 72	fin.	485.92	1074	1.45	0	3625	7137	7816	3698	10762	No	10.02	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	3397.28	2176	-0.0008072	0.0003369	0.0035	1.45		7781.38	7781.38		2.29	Si
SLV 4	fin.	-3360.76	-410	-0.000795	0.0003369	0.0035	1.45		7791.28	7791.28		2.32	Si
SLV 16	ini.	-2607.65	-2602	-0.0005802	0.0003369	0.0035	1.45		7791.28	7791.28		2.99	Si
SLV 16	fin.	2604.65	-301	-0.0005802	0.0003369	0.0035	1.45		7781.38	7781.38		2.99	Si
SLV 8	ini.	2166.96	2177	-0.000466	0.0003369	0.0035	1.45		7781.38	7781.38		3.59	Si
SLV 8	fin.	-1847.41	849	-0.0003871	0.0003369	0.0035	1.45		7791.28	7791.28		4.22	Si
SLV 14	ini.	-3473.74	-4149	-0.0008294	0.0003369	0.0035	1.45		7791.28	7791.28		2.24	Si
SLV 14	fin.	3201.72	-1372	-0.0007487	0.0003369	0.0035	1.45		7781.38	7781.38		2.43	Si
SLV 15	ini.	-3458.67	-3409	-0.0008247	0.0003369	0.0035	1.45		7791.28	7791.28		2.25	Si
SLV 15	fin.	3351.68	-480	-0.0007934	0.0003369	0.0035	1.45		7781.38	7781.38		2.32	Si
SLV 13	ini.	-4324.76	-4957	-0.0011082	0.0003369	0.0035	1.45		7791.28	7791.28		1.8	Si
SLV 13	fin.	3948.75	-1551	-0.0009818	0.0003369	0.0035	1.45		7781.38	7781.38		1.97	Si
SLV 10	ini.	-2521.47	-4414	-0.0005571	0.0003369	0.0035	1.45		7791.28	7791.28		3.09	Si
SLV 10	fin.	1932.45	-2689	-0.000408	0.0003369	0.0035	1.45		7781.38	7781.38		4.03	Si
SLV 9	ini.	-3094.44	-4958	-0.0007163	0.0003369	0.0035	1.45		7791.28	7791.28		2.52	Si
SLV 9	fin.	2435.39	-2810	-0.0005351	0.0003369	0.0035	1.45		7781.38	7781.38		3.2	Si
SLV 2	ini.	2531.19	629	-0.0005604	0.0003369	0.0035	1.45		7781.38	7781.38		3.07	Si
SLV 2	fin.	-2763.69	-1481	-0.0006227	0.0003369	0.0035	1.45		7791.28	7791.28		2.82	Si
SLV 3	ini.	2546.26	1368	-0.0005645	0.0003369	0.0035	1.45		7781.38	7781.38		3.06	Si
SLV 3	fin.	-2613.74	-589	-0.0005818	0.0003369	0.0035	1.45		7791.28	7791.28		2.98	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 10	ini.	-2521.47	7001	1.45	0	5144	7137	11725	3698	12280		1.75	Si
SLV 10	fin.	1932.45	5719	1.45	0	5144	7137	11725	3698	12280		2.15	Si
SLV 2	ini.	2531.19	-6753	1.45	0	5144	7137	11725	3698	12280		1.82	Si
SLV 2	fin.	-2763.69	-8030	1.45	0	5144	7137	11725	3698	12280		1.53	Si
SLD 13	ini.	-2104.05	6314	1.45	0	5144	7137	11725	3698	12280		1.95	Si
SLD 13	fin.	1849.41	5043	1.45	0	5144	7137	11725	3698	12280		2.44	Si
SLV 9	ini.	-3094.44	8537	1.45	0	5144	7137	11725	3698	12280		1.44	Si
SLV 9	fin.	2435.39	7256	1.45	0	5144	7137	11725	3698	12280		1.69	Si
SLV 3	ini.	2546.26	-6533	1.45	0	5144	7137	11725	3698	12280		1.88	Si
SLV 3	fin.	-2613.74	-7803	1.45	0	5144	7137	11725	3698	12280		1.57	Si
SLV 15	ini.	-3458.67	10353	1.45	0	5144	7137	11725	3698	12280		1.19	Si
SLV 15	fin.	3351.68	9088	1.45	0	5144	7137	11725	3698	12280		1.35	Si
SLV 16	ini.	-2607.65	8072	1.45	0	5144	7137	11725	3698	12280		1.52	Si
SLV 16	fin.	2604.65	6806	1.45	0	5144	7137	11725	3698	12280		1.8	Si
SLV 4	ini.	3397.28	-8814	1.45	0	5144	7137	11725	3698	12280		1.39	Si
SLV 4	fin.	-3360.76	-10085	1.45	0	5144	7137	11725	3698	12280		1.22	Si
SLV 13	ini.	-4324.76	12415	1.45	0	5144	7137	11725	3698	12280		0.99	No
SLV 13	fin.	3948.75	11143	1.45	0	5144	7137	11725	3698	12280		1.1	Si
SLV 14	ini.	-3473.74	10133	1.45	0	5144	7137	11725	3698	12280		1.21	Si
SLV 14	fin.	3201.72	8861	1.45	0	5144	7137	11725	3698	12280		1.39	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.802	SLV 13	Si
V_SLV	0.989	SLV 13	No
PF_SLU	10.16	SLU 70	Si
V_SLU	3.888	SLU 78	Si

Trave di accoppiamento 119

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-15.058	1.406	10.72	12.17	1.45	-15.058	2.206	10.72	12.17	1.45	0.8	0.16	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	ini.	909.78	-1760	-0.0001828	0.0002246	0.0035	1.45		7913.67	7913.67	No	8.7	Si
SLU 82	fin.	-1832.89	-3208	-0.0004019	0.0002246	0.0035	1.45		7922.75	7922.75	No	4.32	Si
SLU 84	ini.	946.96	-1833	-0.0001909	0.0002246	0.0035	1.45		7913.67	7913.67	No	8.36	Si
SLU 84	fin.	-1917.47	-3350	-0.000424	0.0002246	0.0035	1.45		7922.75	7922.75	No	4.13	Si
SLU 75	ini.	912.18	-1765	-0.0001833	0.0002246	0.0035	1.45		7913.67	7913.67	No	8.68	Si
SLU 75	fin.	-1820.44	-3215	-0.0003987	0.0002246	0.0035	1.45		7922.75	7922.75	No	4.35	Si
SLU 80	ini.	931.79	-1804	-0.0001876	0.0002246	0.0035	1.45		7913.67	7913.67	No	8.49	Si
SLU 80	fin.	-1868.9	-3293	-0.0004113	0.0002246	0.0035	1.45		7922.75	7922.75	No	4.24	Si
SLU 79	ini.	955.28	-1848	-0.0001927	0.0002246	0.0035	1.45		7913.67	7913.67	No	8.28	Si
SLU 79	fin.	-1938.23	-3386	-0.0004295	0.0002246	0.0035	1.45		7922.75	7922.75	No	4.09	Si
SLU 81	ini.	933.27	-1804	-0.0001879	0.0002246	0.0035	1.45		7913.67	7913.67	No	8.48	Si
SLU 81	fin.	-1902.22	-3301	-0.00042	0.0002246	0.0035	1.45		7922.75	7922.75	No	4.17	Si
SLU 77	ini.	972.85	-1882	-0.0001965	0.0002246	0.0035	1.45		7913.67	7913.67	No	8.13	Si
SLU 77	fin.	-1974.35	-3451	-0.000439	0.0002246	0.0035	1.45		7922.75	7922.75	No	4.01	Si
SLU 78	ini.	949.35	-1838	-0.0001914	0.0002246	0.0035	1.45		7913.67	7913.67	No	8.34	Si
SLU 78	fin.	-1905.03	-3357	-0.0004207	0.0002246	0.0035	1.45		7922.75	7922.75	No	4.16	Si
SLU 74	ini.	935.67	-1809	-0.0001884	0.0002246	0.0035	1.45		7913.67	7913.67	No	8.46	Si
SLU 74	fin.	-1889.77	-3309	-0.0004168	0.0002246	0.0035	1.45		7922.75	7922.75	No	4.19	Si
SLU 83	ini.	970.45	-1877	-0.000196	0.0002246	0.0035	1.45		7913.67	7913.67	No	8.15	Si
SLU 83	fin.	-1986.8	-3443	-0.0004424	0.0002246	0.0035	1.45		7922.75	7922.75	No	3.99	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	ini.	912.18	-4486	1.45	0	1933	6344	4169	3698	7866	No	1.75	Si
SLU 75	fin.	-1820.44	-4961	1.45	0	1933	6344	4169	3698	7866	No	1.59	Si
SLU 80	ini.	931.79	-4607	1.45	0	1933	6344	4169	3698	7866	No	1.71	Si
SLU 80	fin.	-1868.9	-5081	1.45	0	1933	6344	4169	3698	7866	No	1.55	Si
SLU 81	ini.	933.27	-4657	1.45	0	1933	6344	4169	3698	7866	No	1.69	Si
SLU 81	fin.	-1902.22	-5132	1.45	0	1933	6344	4169	3698	7866	No	1.53	Si
SLU 77	ini.	972.85	-4862	1.45	0	1933	6344	4169	3698	7866	No	1.62	Si
SLU 77	fin.	-1974.35	-5337	1.45	0	1933	6344	4169	3698	7866	No	1.47	Si
SLU 78	ini.	949.35	-4701	1.45	0	1933	6344	4169	3698	7866	No	1.67	Si
SLU 78	fin.	-1905.03	-5176	1.45	0	1933	6344	4169	3698	7866	No	1.52	Si
SLU 82	ini.	909.78	-4496	1.45	0	1933	6344	4169	3698	7866	No	1.75	Si
SLU 82	fin.	-1832.89	-4971	1.45	0	1933	6344	4169	3698	7866	No	1.58	Si
SLU 74	ini.	935.67	-4647	1.45	0	1933	6344	4169	3698	7866	No	1.69	Si
SLU 74	fin.	-1889.77	-5122	1.45	0	1933	6344	4169	3698	7866	No	1.54	Si
SLU 84	ini.	946.96	-4711	1.45	0	1933	6344	4169	3698	7866	No	1.67	Si
SLU 84	fin.	-1917.47	-5186	1.45	0	1933	6344	4169	3698	7866	No	1.52	Si
SLU 83	ini.	970.45	-4872	1.45	0	1933	6344	4169	3698	7866	No	1.61	Si
SLU 83	fin.	-1986.8	-5347	1.45	0	1933	6344	4169	3698	7866	No	1.47	Si
SLU 79	ini.	955.28	-4768	1.45	0	1933	6344	4169	3698	7866	No	1.65	Si
SLU 79	fin.	-1938.23	-5242	1.45	0	1933	6344	4169	3698	7866	No	1.5	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	-1395.81	3981	-0.0002834	0.0003369	0.0035	1.45		8145.22	8145.22		5.84	Si
SLV 10	fin.	6029.83	8152	-0.0018307	0.0003369	0.0035	1.45		8135.93	8135.93		1.35	Si
SLV 5	ini.	-1537.55	4080	-0.0003151	0.0003369	0.0035	1.45		8145.22	8145.22		5.3	Si
SLV 5	fin.	6389.61	8544	-0.0020323	0.0003369	0.0035	1.45		8135.93	8135.93		1.27	Si
SLV 12	ini.	2709.17	-6340	-0.0006086	0.0003369	0.0035	1.45		8135.93	8135.93		3	Si
SLV 12	fin.	-8660.5	-12627	-0.0038443	0.0003369	0.0035	1.45		8145.22	8145.22		0.94	No
SLD 11	ini.	1432.77	-3210	-0.000292	0.0003369	0.0035	1.45		8135.93	8135.93		5.68	Si
SLD 11	fin.	-4140.84	-6270	-0.0010447	0.0003369	0.0035	1.45		8145.22	8145.22		1.97	Si
SLV 11	ini.	2706.97	-6340	-0.000608	0.0003369	0.0035	1.45		8135.93	8135.93		3.01	Si
SLV 11	fin.	-8660.98	-12629	-0.0038446	0.0003369	0.0035	1.45		8145.22	8145.22		0.94	No
SLV 8	ini.	2569.65	-6242	-0.0005707	0.0003369	0.0035	1.45		8135.93	8135.93		3.17	Si
SLV 8	fin.	-8300.24	-12234	-0.003544	0.0003369	0.0035	1.45		8145.22	8145.22		0.98	No
SLV 9	ini.	-1398.02	3981	-0.0002839	0.0003369	0.0035	1.45		8145.22	8145.22		5.83	Si
SLV 9	fin.	6029.35	8150	-0.0018305	0.0003369	0.0035	1.45		8135.93	8135.93		1.35	Si
SLV 7	ini.	2567.44	-6241	-0.0005701	0.0003369	0.0035	1.45		8135.93	8135.93		3.17	Si
SLV 7	fin.	-8300.72	-12236	-0.0035444	0.0003369	0.0035	1.45		8145.22	8145.22		0.98	No
SLD 12	ini.	1433.69	-3210	-0.0002922	0.0003369	0.0035	1.45		8135.93	8135.93		5.67	Si
SLD 12	fin.	-4140.64	-6269	-0.0010446	0.0003369	0.0035	1.45		8145.22	8145.22		1.97	Si
SLV 6	ini.	-1535.34	4080	-0.0003146	0.0003369	0.0035	1.45		8145.22	8145.22		5.31	Si
SLV 6	fin.	6390.09	8545	-0.0020325	0.0003369	0.0035	1.45		8135.93	8135.93		1.27	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 8	ini.	2569.65	-18767	1.45	0	2900	6344	6253	3698	9244		0.49	No
SLV 8	fin.	-8300.24	-19129	1.45	16250	2900	6344	6253	3698	9244		0.48	No
SLD 11	ini.	1432.77	-9507	1.45	0	2900	6344	6253	3698	9244		0.97	No
SLD 11	fin.	-4140.84	-9862	1.45	0	2900	6344	6253	3698	9244		0.94	No
SLV 10	ini.	-1395.81	13179	1.45	0	2900	6344	6253	3698	9244		0.7	No

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 10	fin.	6029.83	12821	1.45	16250	2900	6344	6253	3698	9244		0.72	No
SLV 12	ini.	2709.17	-19606	1.45	0	2900	6344	6253	3698	9244		0.47	No
SLV 12	fin.	-8660.5	-19956	1.45	16250	2900	6344	6253	3698	9244		0.46	No
SLV 11	ini.	2706.97	-19606	1.45	0	2900	6344	6253	3698	9244		0.47	No
SLV 11	fin.	-8660.98	-19956	1.45	16250	2900	6344	6253	3698	9244		0.46	No
SLV 6	ini.	-1535.34	14018	1.45	0	2900	6344	6253	3698	9244		0.66	No
SLV 6	fin.	6390.09	13647	1.45	16250	2900	6344	6253	3698	9244		0.68	No
SLV 5	ini.	-1537.55	14018	1.45	0	2900	6344	6253	3698	9244		0.66	No
SLV 5	fin.	6389.61	13647	1.45	16250	2900	6344	6253	3698	9244		0.68	No
SLD 12	ini.	1433.69	-9507	1.45	0	2900	6344	6253	3698	9244		0.97	No
SLD 12	fin.	-4140.64	-9862	1.45	0	2900	6344	6253	3698	9244		0.94	No
SLV 7	ini.	2567.44	-18767	1.45	0	2900	6344	6253	3698	9244		0.49	No
SLV 7	fin.	-8300.72	-19129	1.45	16250	2900	6344	6253	3698	9244		0.48	No
SLV 9	ini.	-1398.02	13179	1.45	0	2900	6344	6253	3698	9244		0.7	No
SLV 9	fin.	6029.35	12821	1.45	16250	2900	6344	6253	3698	9244		0.72	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.94	SLV 11	No
V_SLV	0.463	SLV 12	No
PF_SLU	3.988	SLU 83	Si
V_SLU	1.471	SLU 83	Si

Trave di accoppiamento 120

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-13.763	-0.228	10.72	12.17	1.45	-13.763	0.672	10.72	12.17	1.45	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 70	ini.	9.94	-1427	-0.0000019	0.0001872	0.0035	1.45		7546.08	7546.08	No	759.51	Si
SLU 70	fin.	442.53	-1111	-0.0000862	0.0001872	0.0035	1.45		7546.08	7546.08	No	17.05	Si
SLU 36	ini.	-82.54	-1483	-0.0000156	0.0001872	0.0035	1.45		7555.42	7555.42	No	91.54	Si
SLU 36	fin.	443.01	-1107	-0.0000863	0.0001872	0.0035	1.45		7546.08	7546.08	No	17.03	Si
SLU 84	ini.	133.19	-1300	-0.0000253	0.0001872	0.0035	1.45		7546.08	7546.08	No	56.66	Si
SLU 84	fin.	435.04	-1135	-0.0000847	0.0001872	0.0035	1.45		7546.08	7546.08	No	17.35	Si
SLU 75	ini.	85.35	-1361	-0.0000162	0.0001872	0.0035	1.45		7546.08	7546.08	No	88.41	Si
SLU 75	fin.	441.63	-1137	-0.000086	0.0001872	0.0035	1.45		7546.08	7546.08	No	17.09	Si
SLU 76	ini.	72.44	-1350	-0.0000137	0.0001872	0.0035	1.45		7546.08	7546.08	No	104.16	Si
SLU 76	fin.	436.79	-1123	-0.000085	0.0001872	0.0035	1.45		7546.08	7546.08	No	17.28	Si
SLU 79	ini.	145.66	-1288	-0.0000277	0.0001872	0.0035	1.45		7546.08	7546.08	No	51.81	Si
SLU 79	fin.	431.5	-1122	-0.000084	0.0001872	0.0035	1.45		7546.08	7546.08	No	17.49	Si
SLU 60	ini.	429.13	-581	-0.0000835	0.0001872	0.0035	1.45		7546.08	7546.08	No	17.58	Si
SLU 60	fin.	275.17	-790	-0.0000529	0.0001872	0.0035	1.45		7546.08	7546.08	No	27.42	Si
SLU 78	ini.	55.32	-1469	-0.0000105	0.0001872	0.0035	1.45		7546.08	7546.08	No	136.41	Si
SLU 78	fin.	467.91	-1195	-0.0000913	0.0001872	0.0035	1.45		7546.08	7546.08	No	16.13	Si
SLU 77	ini.	117.27	-1367	-0.0000223	0.0001872	0.0035	1.45		7546.08	7546.08	No	64.35	Si
SLU 77	fin.	448.97	-1160	-0.0000875	0.0001872	0.0035	1.45		7546.08	7546.08	No	16.81	Si
SLU 80	ini.	83.71	-1390	-0.0000159	0.0001872	0.0035	1.45		7546.08	7546.08	No	90.14	Si
SLU 80	fin.	450.43	-1157	-0.0000878	0.0001872	0.0035	1.45		7546.08	7546.08	No	16.75	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 26	ini.	-110.8	1204	1.45	0	3021	7137	6513	3698	10157	No	8.44	Si
SLU 26	fin.	386.52	480	1.45	0	3021	7137	6513	3698	10157	No	21.18	Si
SLU 30	ini.	-99.53	1211	1.45	0	3021	7137	6513	3698	10157	No	8.39	Si
SLU 30	fin.	400.17	487	1.45	0	3021	7137	6513	3698	10157	No	20.87	Si
SLU 27	ini.	-65.98	1151	1.45	0	3021	7137	6513	3698	10157	No	8.82	Si
SLU 27	fin.	398.7	427	1.45	0	3021	7137	6513	3698	10157	No	23.78	Si
SLU 38	ini.	-54.15	1156	1.45	0	3021	7137	6513	3698	10157	No	8.79	Si
SLU 38	fin.	425.54	431	1.45	0	3021	7137	6513	3698	10157	No	23.55	Si
SLU 36	ini.	-82.54	1240	1.45	0	3021	7137	6513	3698	10157	No	8.19	Si
SLU 36	fin.	443.01	516	1.45	0	3021	7137	6513	3698	10157	No	19.7	Si
SLU 33	ini.	-52.51	1137	1.45	0	3021	7137	6513	3698	10157	No	8.93	Si
SLU 33	fin.	416.74	413	1.45	0	3021	7137	6513	3698	10157	No	24.61	Si
SLU 28	ini.	-127.92	1295	1.45	0	3021	7137	6513	3698	10157	No	7.84	Si
SLU 28	fin.	417.64	571	1.45	0	3021	7137	6513	3698	10157	No	17.79	Si
SLU 34	ini.	-65.41	1149	1.45	0	3021	7137	6513	3698	10157	No	8.84	Si
SLU 34	fin.	411.89	424	1.45	0	3021	7137	6513	3698	10157	No	23.94	Si
SLU 25	ini.	-97.89	1192	1.45	0	3021	7137	6513	3698	10157	No	8.52	Si
SLU 25	fin.	391.37	468	1.45	0	3021	7137	6513	3698	10157	No	21.7	Si
SLU 70	ini.	9.94	1184	1.45	0	3021	7137	6513	3698	10157	No	8.58	Si
SLU 70	fin.	442.53	261	1.45	0	3021	7137	6513	3698	10157	No	38.86	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 5	ini.	-6431.28	-11910	-0.002139	0.0002807	0.0035	1.45		7660.66	7660.66		1.19	Si
SLV 5	fin.	1884.71	-4697	-0.0004043	0.0002807	0.0035	1.45		7650.82	7650.82		4.06	Si
SLV 11	ini.	6935.62	10742	-0.0024995	0.0002807	0.0035	1.45		7650.82	7650.82		1.1	Si
SLV 11	fin.	-1410.85	3399	-0.0002904	0.0002807	0.0035	1.45		7660.66	7660.66		5.43	Si
SLV 8	ini.	7135.87	10939	-0.002659	0.0002807	0.0035	1.45		7650.82	7650.82		1.07	Si
SLV 8	fin.	-1445.09	3453	-0.0002983	0.0002807	0.0035	1.45		7660.66	7660.66		5.3	Si
SLV 9	ini.	-6773.62	-12324	-0.0023728	0.0002807	0.0035	1.45		7660.66	7660.66		1.13	Si
SLV 9	fin.	1953.16	-4811	-0.0004216	0.0002807	0.0035	1.45		7650.82	7650.82		3.92	Si
SLD 8	ini.	2956.85	3950	-0.0006967	0.0002807	0.0035	1.45		7650.82	7650.82		2.59	Si
SLD 8	fin.	-423.28	971	-0.0000815	0.0002807	0.0035	1.45		7660.66	7660.66		18.1	Si
SLV 6	ini.	-6573.37	-12127	-0.0022327	0.0002807	0.0035	1.45		7660.66	7660.66		1.17	Si
SLV 6	fin.	1918.92	-4757	-0.0004129	0.0002807	0.0035	1.45		7650.82	7650.82		3.99	Si
SLD 7	ini.	3016.08	4040	-0.0007143	0.0002807	0.0035	1.45		7650.82	7650.82		2.54	Si
SLD 7	fin.	-437.55	996	-0.0000843	0.0002807	0.0035	1.45		7660.66	7660.66		17.51	Si
SLV 7	ini.	7277.95	11156	-0.0027791	0.0002807	0.0035	1.45		7650.82	7650.82		1.05	Si
SLV 7	fin.	-1479.3	3513	-0.0003062	0.0002807	0.0035	1.45		7660.66	7660.66		5.18	Si
SLV 10	ini.	-6915.7	-12541	-0.0024783	0.0002807	0.0035	1.45		7660.66	7660.66		1.11	Si
SLV 10	fin.	1987.37	-4870	-0.0004302	0.0002807	0.0035	1.45		7650.82	7650.82		3.85	Si
SLV 12	ini.	6793.53	10525	-0.0023929	0.0002807	0.0035	1.45		7650.82	7650.82		1.13	Si
SLV 12	fin.	-1376.64	3340	-0.0002826	0.0002807	0.0035	1.45		7660.66	7660.66		5.56	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 9	ini.	-2594.6	6613	1.45	0	4531	7137	9769	3698	11668		1.76	Si
SLD 9	fin.	931.35	5892	1.45	0	4531	7137	9769	3698	11668		1.98	Si
SLV 8	ini.	7135.87	-15052	1.45	0	4531	7137	9769	3698	11668		0.78	No
SLV 8	fin.	-1445.09	-15713	1.45	0	4531	7137	9769	3698	11668		0.74	No
SLV 9	ini.	-6773.62	15921	1.45	0	4531	7137	9769	3698	11668		0.73	No
SLV 9	fin.	1953.16	15176	1.45	0	4531	7137	9769	3698	11668		0.77	No
SLV 10	ini.	-6915.7	16243	1.45	0	4531	7137	9769	3698	11668		0.72	No
SLV 10	fin.	1987.37	15498	1.45	0	4531	7137	9769	3698	11668		0.75	No
SLV 11	ini.	6935.62	-14662	1.45	0	4531	7137	9769	3698	11668		0.8	No
SLV 11	fin.	-1410.85	-15407	1.45	0	4531	7137	9769	3698	11668		0.76	No
SLV 5	ini.	-6431.28	15209	1.45	0	4531	7137	9769	3698	11668		0.77	No
SLV 5	fin.	1884.71	14547	1.45	0	4531	7137	9769	3698	11668		0.8	No
SLV 7	ini.	7277.95	-15374	1.45	0	4531	7137	9769	3698	11668		0.76	No
SLV 7	fin.	-1479.3	-16036	1.45	0	4531	7137	9769	3698	11668		0.73	No
SLV 6	ini.	-6573.37	15531	1.45	0	4531	7137	9769	3698	11668		0.75	No
SLV 6	fin.	1918.92	14869	1.45	0	4531	7137	9769	3698	11668		0.78	No
SLV 12	ini.	6793.53	-14340	1.45	0	4531	7137	9769	3698	11668		0.81	No
SLV 12	fin.	-1376.64	-15084	1.45	0	4531	7137	9769	3698	11668		0.77	No
SLD 10	ini.	-2653.82	6747	1.45	0	4531	7137	9769	3698	11668		1.73	Si
SLD 10	fin.	945.61	6026	1.45	0	4531	7137	9769	3698	11668		1.94	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.051	SLV 7	Si
V_SLV	0.718	SLV 10	No
PF_SLU	16.127	SLU 78	Si
V_SLU	7.842	SLU 28	Si

Trave di accoppiamento 121

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-19.868	1.046	10.72	12.17	1.45	-20.668	1.046	10.72	12.17	1.45	0.8	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 84	ini.	-1173.94	-4216	-0.0002412	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.69	Si
SLU 84	fin.	387.63	-2942	-0.0000749	0.0002246	0.0035	1.45		7849.88	7849.88	No	20.25	Si
SLU 81	ini.	-1216.6	-4144	-0.0002509	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.46	Si
SLU 81	fin.	452.13	-2787	-0.0000877	0.0002246	0.0035	1.45		7849.88	7849.88	No	17.36	Si
SLU 82	ini.	-1222.45	-4151	-0.0002523	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.43	Si
SLU 82	fin.	455.73	-2786	-0.0000884	0.0002246	0.0035	1.45		7849.88	7849.88	No	17.22	Si
SLU 76	ini.	-1144.67	-4099	-0.0002345	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.87	Si
SLU 76	fin.	376.13	-2859	-0.0000726	0.0002246	0.0035	1.45		7849.88	7849.88	No	20.87	Si
SLU 78	ini.	-1117.5	-4260	-0.0002284	0.0002246	0.0035	1.45		7858.95	7858.95	No	7.03	Si
SLU 78	fin.	321.28	-3081	-0.0000618	0.0002246	0.0035	1.45		7849.88	7849.88	No	24.43	Si
SLU 73	ini.	-1193.17	-4034	-0.0002456	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.59	Si
SLU 73	fin.	444.22	-2702	-0.0000861	0.0002246	0.0035	1.45		7849.88	7849.88	No	17.67	Si
SLU 74	ini.	-1160.16	-4188	-0.000238	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.77	Si
SLU 74	fin.	385.78	-2926	-0.0000745	0.0002246	0.0035	1.45		7849.88	7849.88	No	20.35	Si
SLU 65	ini.	-1115.78	-3750	-0.000228	0.0002246	0.0035	1.45		7858.95	7858.95	No	7.04	Si
SLU 65	fin.	411.78	-2509	-0.0000797	0.0002246	0.0035	1.45		7849.88	7849.88	No	19.06	Si
SLU 83	ini.	-1168.1	-4210	-0.0002398	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.73	Si
SLU 83	fin.	384.04	-2943	-0.0000742	0.0002246	0.0035	1.45		7849.88	7849.88	No	20.44	Si
SLU 75	ini.	-1166.01	-4194	-0.0002394	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.74	Si
SLU 75	fin.	389.38	-2925	-0.0000752	0.0002246	0.0035	1.45		7849.88	7849.88	No	20.16	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-1168.1	4537	1.45	0	3625	6344	7816	3698	9969	No	2.2	Si
SLU 83	fin.	384.04	1570	1.45	0	3625	6344	7816	3697	9969	No	6.35	Si
SLU 75	ini.	-1166.01	4432	1.45	0	3625	6344	7816	3698	9969	No	2.25	Si
SLU 75	fin.	389.38	1689	1.45	0	3625	6344	7816	3697	9969	No	5.9	Si
SLU 61	ini.	-1110.35	4214	1.45	0	3625	6344	7816	3698	9969	No	2.37	Si
SLU 61	fin.	419.17	1784	1.45	0	3625	6344	7816	3697	9969	No	5.59	Si
SLU 82	ini.	-1222.45	4784	1.45	0	3625	6344	7816	3698	9969	No	2.08	Si
SLU 82	fin.	455.73	1817	1.45	0	3625	6344	7816	3697	9969	No	5.49	Si
SLU 78	ini.	-1117.5	4204	1.45	0	3625	6344	7816	3698	9969	No	2.37	Si
SLU 78	fin.	321.28	1460	1.45	0	3625	6344	7816	3697	9969	No	6.83	Si
SLU 84	ini.	-1173.94	4556	1.45	0	3625	6344	7816	3698	9969	No	2.19	Si
SLU 84	fin.	387.63	1589	1.45	0	3625	6344	7816	3697	9969	No	6.27	Si
SLU 74	ini.	-1160.16	4413	1.45	0	3625	6344	7816	3698	9969	No	2.26	Si
SLU 74	fin.	385.78	1670	1.45	0	3625	6344	7816	3697	9969	No	5.97	Si
SLU 81	ini.	-1216.6	4765	1.45	0	3625	6344	7816	3698	9969	No	2.09	Si
SLU 81	fin.	452.13	1798	1.45	0	3625	6344	7816	3697	9969	No	5.54	Si
SLU 73	ini.	-1193.17	4591	1.45	0	3625	6344	7816	3698	9969	No	2.17	Si
SLU 73	fin.	444.22	1847	1.45	0	3625	6344	7816	3697	9969	No	5.4	Si
SLU 76	ini.	-1144.67	4363	1.45	0	3625	6344	7816	3698	9969	No	2.29	Si
SLU 76	fin.	376.13	1619	1.45	0	3625	6344	7816	3697	9969	No	6.16	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 2	ini.	1422.98	-1620	-0.0002898	0.0003369	0.0035	1.45		7781.38	7781.38		5.47	Si
SLV 2	fin.	-2118.95	-4249	-0.0004533	0.0003369	0.0035	1.45		7791.28	7791.28		3.68	Si
SLV 10	ini.	-2068.01	-3680	-0.0004407	0.0003369	0.0035	1.45		7791.28	7791.28		3.77	Si
SLV 10	fin.	1431.35	-923	-0.0002916	0.0003369	0.0035	1.45		7781.38	7781.38		5.44	Si
SLV 3	ini.	1778.33	-1340	-0.0003712	0.0003369	0.0035	1.45		7781.38	7781.38		4.38	Si
SLV 3	fin.	-2407.23	-4478	-0.000527	0.0003369	0.0035	1.45		7791.28	7791.28		3.24	Si
SLV 9	ini.	-2013.75	-3655	-0.0004273	0.0003369	0.0035	1.45		7791.28	7791.28		3.87	Si
SLV 9	fin.	1362.79	-991	-0.0002764	0.0003369	0.0035	1.45		7781.38	7781.38		5.71	Si
SLV 1	ini.	1503.58	-1584	-0.0003078	0.0003369	0.0035	1.45		7781.38	7781.38		5.18	Si
SLV 1	fin.	-2220.78	-4350	-0.0004789	0.0003369	0.0035	1.45		7791.28	7791.28		3.51	Si
SLV 15	ini.	-3119.53	-4080	-0.0007236	0.0003369	0.0035	1.45		7791.28	7791.28		2.5	Si
SLV 15	fin.	2745.71	434	-0.0006186	0.0003369	0.0035	1.45		7781.38	7781.38		2.83	Si
SLV 14	ini.	-3474.89	-4361	-0.0008297	0.0003369	0.0035	1.45		7791.28	7791.28		2.24	Si
SLV 14	fin.	3033.99	663	-0.0006998	0.0003369	0.0035	1.45		7781.38	7781.38		2.56	Si
SLV 16	ini.	-3200.14	-4117	-0.0007472	0.0003369	0.0035	1.45		7791.28	7791.28		2.43	Si
SLV 16	fin.	2847.54	535	-0.0006469	0.0003369	0.0035	1.45		7781.38	7781.38		2.73	Si
SLV 13	ini.	-3394.29	-4324	-0.0008051	0.0003369	0.0035	1.45		7791.28	7791.28		2.3	Si
SLV 13	fin.	2932.15	562	-0.0006708	0.0003369	0.0035	1.45		7781.38	7781.38		2.65	Si
SLV 4	ini.	1697.73	-1377	-0.0003523	0.0003369	0.0035	1.45		7781.38	7781.38		4.58	Si
SLV 4	fin.	-2305.4	-4377	-0.0005006	0.0003369	0.0035	1.45		7791.28	7791.28		3.38	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-3394.29	12983	1.45	0	5438	6344	11725	3698	11781		0.91	No
SLV 13	fin.	2932.15	11278	1.45	0	5437	6344	11725	3697	11781		1.04	Si
SLV 4	ini.	1697.73	-6683	1.45	0	5438	6344	11725	3698	11781		1.76	Si
SLV 4	fin.	-2305.4	-8459	1.45	0	5437	6344	11725	3697	11781		1.39	Si
SLV 14	ini.	-3474.89	13336	1.45	0	5438	6344	11725	3698	11781		0.88	No
SLV 14	fin.	3033.99	11631	1.45	0	5437	6344	11725	3697	11781		1.01	Si
SLV 2	ini.	1422.98	-5760	1.45	0	5438	6344	11725	3698	11781		2.05	Si
SLV 2	fin.	-2118.95	-7546	1.45	0	5437	6344	11725	3697	11781		1.56	Si
SLV 10	ini.	-2068.01	7672	1.45	0	5438	6344	11725	3698	11781		1.54	Si
SLV 10	fin.	1431.35	5928	1.45	0	5437	6344	11725	3697	11781		1.99	Si
SLV 3	ini.	1778.33	-7036	1.45	0	5438	6344	11725	3698	11781		1.67	Si
SLV 3	fin.	-2407.23	-8813	1.45	0	5437	6344	11725	3697	11781		1.34	Si
SLV 15	ini.	-3119.53	12060	1.45	0	5438	6344	11725	3698	11781		0.98	No
SLV 15	fin.	2745.71	10365	1.45	0	5437	6344	11725	3697	11781		1.14	Si
SLV 1	ini.	1503.58	-6113	1.45	0	5438	6344	11725	3698	11781		1.93	Si
SLV 1	fin.	-2220.78	-7899	1.45	0	5437	6344	11725	3697	11781		1.49	Si
SLD 14	ini.	-1968.56	7496	1.45	0	5438	6344	11725	3698	11781		1.57	Si
SLD 14	fin.	1474.77	5771	1.45	0	5437	6344	11725	3697	11781		2.04	Si
SLV 16	ini.	-3200.14	12413	1.45	0	5438	6344	11725	3698	11781		0.95	No
SLV 16	fin.	2847.54	10718	1.45	0	5437	6344	11725	3697	11781		1.1	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.242	SLV 14	Si
V_SLV	0.883	SLV 14	No
PF_SLU	6.429	SLU 82	Si
V_SLU	2.084	SLU 82	Si

Trave di accoppiamento 122

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-11.173	1.046	11.12	12.17	1.05	-12.293	1.046	11.12	12.17	1.05	1.12	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-894.71	-3478	-0.0003694	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.61	Si
SLU 75	fin.	-155.95	-2387	-0.000057	0.0002246	0.0035	1.05		4129.05	4129.05	No	26.48	Si
SLU 76	ini.	-889.33	-3434	-0.0003668	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.64	Si
SLU 76	fin.	-151.51	-2339	-0.0000554	0.0002246	0.0035	1.05		4129.05	4129.05	No	27.25	Si
SLU 81	ini.	-876.39	-3319	-0.0003606	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.71	Si
SLU 81	fin.	-168.78	-2273	-0.0000618	0.0002246	0.0035	1.05		4129.05	4129.05	No	24.46	Si
SLU 77	ini.	-889.31	-3550	-0.0003668	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.64	Si
SLU 77	fin.	-188.38	-2527	-0.0000692	0.0002246	0.0035	1.05		4129.05	4129.05	No	21.92	Si
SLU 78	ini.	-912.69	-3602	-0.0003781	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.52	Si
SLU 78	fin.	-168.96	-2508	-0.0000619	0.0002246	0.0035	1.05		4129.05	4129.05	No	24.44	Si
SLU 83	ini.	-894.37	-3443	-0.0003692	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.62	Si
SLU 83	fin.	-181.8	-2394	-0.0000667	0.0002246	0.0035	1.05		4129.05	4129.05	No	22.71	Si
SLU 73	ini.	-871.35	-3311	-0.0003581	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.74	Si
SLU 73	fin.	-138.5	-2218	-0.0000505	0.0002246	0.0035	1.05		4129.05	4129.05	No	29.81	Si
SLU 84	ini.	-917.75	-3495	-0.0003806	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.5	Si
SLU 84	fin.	-162.38	-2375	-0.0000594	0.0002246	0.0035	1.05		4129.05	4129.05	No	25.43	Si
SLU 80	ini.	-891.72	-3523	-0.000368	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.63	Si
SLU 80	fin.	-177.47	-2472	-0.0000651	0.0002246	0.0035	1.05		4129.05	4129.05	No	23.27	Si
SLU 82	ini.	-899.77	-3371	-0.0003719	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.59	Si
SLU 82	fin.	-149.37	-2254	-0.0000546	0.0002246	0.0035	1.05		4129.05	4129.05	No	27.64	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 76	ini.	-889.33	2683	1.05	0	2625	8326	5660	2678	8338	No	3.11	Si
SLU 76	fin.	-151.51	-359	1.05	0	2625	8326	5660	2678	8338	No	23.24	Si
SLU 83	ini.	-894.37	2792	1.05	0	2625	8326	5660	2678	8338	No	2.99	Si
SLU 83	fin.	-181.8	-556	1.05	0	2625	8326	5660	2678	8338	No	14.99	Si
SLU 73	ini.	-871.35	2677	1.05	0	2625	8326	5660	2678	8338	No	3.11	Si
SLU 73	fin.	-138.5	-364	1.05	0	2625	8326	5660	2678	8338	No	22.88	Si
SLU 84	ini.	-917.75	2863	1.05	0	2625	8326	5660	2678	8338	No	2.91	Si
SLU 84	fin.	-162.38	-485	1.05	0	2625	8326	5660	2678	8338	No	17.19	Si
SLU 40	ini.	-830.06	2711	1.05	0	2625	8326	5660	2678	8338	No	3.08	Si
SLU 40	fin.	-97.2	-382	1.05	0	2625	8326	5660	2678	8338	No	21.84	Si
SLU 82	ini.	-899.77	2857	1.05	0	2625	8326	5660	2678	8338	No	2.92	Si
SLU 82	fin.	-149.37	-491	1.05	0	2625	8326	5660	2678	8338	No	17	Si
SLU 78	ini.	-912.69	2687	1.05	0	2625	8326	5660	2678	8338	No	3.1	Si
SLU 78	fin.	-168.96	-354	1.05	0	2625	8326	5660	2678	8338	No	23.53	Si
SLU 81	ini.	-876.39	2786	1.05	0	2625	8326	5660	2678	8338	No	2.99	Si
SLU 81	fin.	-168.78	-562	1.05	0	2625	8326	5660	2678	8338	No	14.84	Si
SLU 42	ini.	-848.04	2717	1.05	0	2625	8326	5660	2678	8338	No	3.07	Si
SLU 42	fin.	-110.21	-376	1.05	0	2625	8326	5660	2678	8338	No	22.17	Si
SLU 75	ini.	-894.71	2681	1.05	0	2625	8326	5660	2678	8338	No	3.11	Si
SLU 75	fin.	-155.95	-360	1.05	0	2625	8326	5660	2678	8338	No	23.16	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-3790.02	-3316	-0.0026023	0.0003369	0.0035	1.05		4078.37	4078.37		1.08	Si
SLV 13	fin.	5948.6	11991	-0.0057894	0.0003369	0.0035	1.05		4071.54	4071.54		0.68	No
SLV 4	ini.	2696.45	-1159	-0.0014206	0.0003369	0.0035	1.05		4071.54	4071.54		1.51	Si
SLV 4	fin.	-6226.47	-15281	-0.0061313	0.0003369	0.0035	1.05		4078.37	4078.37		0.66	No
SLV 2	ini.	1257.43	-4223	-0.0005255	0.0003369	0.0035	1.05		4071.54	4071.54		3.24	Si
SLV 2	fin.	-4994.39	-13956	-0.0045084	0.0003369	0.0035	1.05		4078.37	4078.37		0.82	No
SLV 7	ini.	2590.32	2687	-0.0013391	0.0003369	0.0035	1.05		4071.54	4071.54		1.57	Si
SLV 7	fin.	-3825.39	-7749	-0.002656	0.0003369	0.0035	1.05		4078.37	4078.37		1.07	Si
SLV 8	ini.	2615.74	2751	-0.0013583	0.0003369	0.0035	1.05		4071.54	4071.54		1.56	Si
SLV 8	fin.	-3837.1	-7744	-0.002674	0.0003369	0.0035	1.05		4078.37	4078.37		1.06	Si
SLV 14	ini.	-3752.27	-3220	-0.0025463	0.0003369	0.0035	1.05		4078.37	4078.37		1.09	Si
SLV 14	fin.	5931.2	11998	-0.0057672	0.0003369	0.0035	1.05		4071.54	4071.54		0.69	No
SLV 3	ini.	2658.7	-1255	-0.0013912	0.0003369	0.0035	1.05		4071.54	4071.54		1.53	Si
SLV 3	fin.	-6209.08	-15288	-0.0061092	0.0003369	0.0035	1.05		4078.37	4078.37		0.66	No
SLV 15	ini.	-2351	-252	-0.0011644	0.0003369	0.0035	1.05		4078.37	4078.37		1.73	Si
SLV 15	fin.	4716.51	10666	-0.004119	0.0003369	0.0035	1.05		4071.54	4071.54		0.86	No
SLV 16	ini.	-2313.25	-156	-0.0011386	0.0003369	0.0035	1.05		4078.37	4078.37		1.76	Si
SLV 16	fin.	4699.12	10673	-0.0040932	0.0003369	0.0035	1.05		4071.54	4071.54		0.87	No
SLV 1	ini.	1219.68	-4319	-0.0005067	0.0003369	0.0035	1.05		4071.54	4071.54		3.34	Si
SLV 1	fin.	-4977	-13963	-0.0044839	0.0003369	0.0035	1.05		4078.37	4078.37		0.82	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 8	ini.	2615.74	-9728	1.05	0	2883	8326	8490	2678	11168		1.15	Si
SLV 8	fin.	-3837.1	-11594	1.05	0	2883	8326	8490	2678	11168		0.96	No
SLV 10	ini.	-3683.9	12803	1.05	0	2883	8326	8490	2678	11168		0.87	No
SLV 10	fin.	3547.51	10932	1.05	0	2883	8326	8490	2678	11168		1.02	Si
SLV 13	ini.	-3790.02	16706	1.05	0	2883	8326	8490	2678	11168		0.67	No

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	fin.	5948.6	14841	1.05	0	2883	8326	8490	2678	11168		0.75	No
SLV 3	ini.	2658.7	-13478	1.05	0	2883	8326	8490	2678	11168		0.83	No
SLV 3	fin.	-6209.08	-15352	1.05	0	2883	8326	8490	2678	11168		0.73	No
SLV 16	ini.	-2313.25	12172	1.05	0	2883	8326	8490	2678	11168		0.92	No
SLV 16	fin.	4699.12	10310	1.05	0	2883	8326	8490	2678	11168		1.08	Si
SLV 7	ini.	2590.32	-9667	1.05	0	2883	8326	8490	2678	11168		1.16	Si
SLV 7	fin.	-3825.39	-11533	1.05	0	2883	8326	8490	2678	11168		0.97	No
SLV 4	ini.	2696.45	-13569	1.05	0	2883	8326	8490	2678	11168		0.82	No
SLV 4	fin.	-6226.47	-15443	1.05	0	2883	8326	8490	2678	11168		0.72	No
SLV 14	ini.	-3752.27	16615	1.05	0	2883	8326	8490	2678	11168		0.67	No
SLV 14	fin.	5931.2	14750	1.05	0	2883	8326	8490	2678	11168		0.76	No
SLV 9	ini.	-3709.31	12864	1.05	0	2883	8326	8490	2678	11168		0.87	No
SLV 9	fin.	3559.22	10993	1.05	0	2883	8326	8490	2678	11168		1.02	Si
SLV 15	ini.	-2351	12263	1.05	0	2883	8326	8490	2678	11168		0.91	No
SLV 15	fin.	4716.51	10401	1.05	0	2883	8326	8490	2678	11168		1.07	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.655	SLV 4	No
V_SLV	0.668	SLV 13	No
PF_SLU	4.499	SLU 84	Si
V_SLU	2.912	SLU 84	Si

Trave di accoppiamento 123

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-9.386	1.046	11.12	12.17	1.05	-10.466	1.046	11.12	12.17	1.05	1.08	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 84	ini.	325.35	-1838	-0.0001219	0.0002246	0.0035	1.05		4122.48	4122.48	No	12.67	Si
SLU 84	fin.	-926.66	-3313	-0.0003849	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.46	Si
SLU 83	ini.	313.02	-1838	-0.0001171	0.0002246	0.0035	1.05		4122.48	4122.48	No	13.17	Si
SLU 83	fin.	-904.98	-3258	-0.0003744	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.56	Si
SLU 79	ini.	336.22	-1775	-0.0001262	0.0002246	0.0035	1.05		4122.48	4122.48	No	12.26	Si
SLU 79	fin.	-901.71	-3252	-0.0003728	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.58	Si
SLU 76	ini.	331.31	-1757	-0.0001242	0.0002246	0.0035	1.05		4122.48	4122.48	No	12.44	Si
SLU 76	fin.	-908.46	-3242	-0.0003761	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.55	Si
SLU 74	ini.	319.85	-1787	-0.0001197	0.0002246	0.0035	1.05		4122.48	4122.48	No	12.89	Si
SLU 74	fin.	-891.28	-3223	-0.0003677	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.63	Si
SLU 77	ini.	345.32	-1804	-0.0001298	0.0002246	0.0035	1.05		4122.48	4122.48	No	11.94	Si
SLU 77	fin.	-920.65	-3324	-0.000382	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.48	Si
SLU 80	ini.	348.56	-1775	-0.000131	0.0002246	0.0035	1.05		4122.48	4122.48	No	11.83	Si
SLU 80	fin.	-923.38	-3307	-0.0003833	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.47	Si
SLU 82	ini.	299.88	-1820	-0.000112	0.0002246	0.0035	1.05		4122.48	4122.48	No	13.75	Si
SLU 82	fin.	-897.29	-3212	-0.0003706	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.6	Si
SLU 78	ini.	357.66	-1804	-0.0001346	0.0002246	0.0035	1.05		4122.48	4122.48	No	11.53	Si
SLU 78	fin.	-942.32	-3379	-0.0003926	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.38	Si
SLU 75	ini.	332.19	-1787	-0.0001246	0.0002246	0.0035	1.05		4122.48	4122.48	No	12.41	Si
SLU 75	fin.	-912.96	-3278	-0.0003782	0.0002246	0.0035	1.05		4129.05	4129.05	No	4.52	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	357.66	-1876	1.05	0	2625	8326	5660	2678	8338	No	4.45	Si
SLU 78	fin.	-942.32	-3042	1.05	0	2625	8326	5660	2678	8338	No	2.74	Si
SLU 83	ini.	313.02	-1677	1.05	0	2625	8326	5660	2678	8338	No	4.97	Si
SLU 83	fin.	-904.98	-2986	1.05	0	2625	8326	5660	2678	8338	No	2.79	Si
SLU 75	ini.	332.19	-1780	1.05	0	2625	8326	5660	2678	8338	No	4.68	Si
SLU 75	fin.	-912.96	-2952	1.05	0	2625	8326	5660	2678	8338	No	2.82	Si
SLU 81	ini.	287.55	-1581	1.05	0	2625	8326	5660	2678	8338	No	5.27	Si
SLU 81	fin.	-875.62	-2896	1.05	0	2625	8326	5660	2678	8338	No	2.88	Si
SLU 76	ini.	331.31	-1767	1.05	0	2625	8326	5660	2678	8338	No	4.72	Si
SLU 76	fin.	-908.46	-2946	1.05	0	2625	8326	5660	2678	8338	No	2.83	Si
SLU 79	ini.	336.22	-1769	1.05	0	2625	8326	5660	2678	8338	No	4.71	Si
SLU 79	fin.	-901.71	-2938	1.05	0	2625	8326	5660	2678	8338	No	2.84	Si
SLU 80	ini.	348.56	-1825	1.05	0	2625	8326	5660	2678	8338	No	4.57	Si
SLU 80	fin.	-923.38	-2996	1.05	0	2625	8326	5660	2678	8338	No	2.78	Si
SLU 77	ini.	345.32	-1819	1.05	0	2625	8326	5660	2678	8338	No	4.58	Si
SLU 77	fin.	-920.65	-2983	1.05	0	2625	8326	5660	2678	8338	No	2.79	Si
SLU 82	ini.	299.88	-1638	1.05	0	2625	8326	5660	2678	8338	No	5.09	Si
SLU 82	fin.	-897.29	-2955	1.05	0	2625	8326	5660	2678	8338	No	2.82	Si
SLU 84	ini.	325.35	-1734	1.05	0	2625	8326	5660	2678	8338	No	4.81	Si
SLU 84	fin.	-926.66	-3045	1.05	0	2625	8326	5660	2678	8338	No	2.74	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 6	ini.	2502.41	1696	-0.0012741	0.0003369	0.0035	1.05		4071.54	4071.54		1.63	Si
SLV 6	fin.	-3001.4	-6480	-0.0016738	0.0003369	0.0035	1.05		4078.37	4078.37		1.36	Si
SLV 3	ini.	3301.16	8152	-0.0019783	0.0003369	0.0035	1.05		4071.54	4071.54		1.23	Si
SLV 3	fin.	-750.91	2603	-0.0002914	0.0003369	0.0035	1.05		4078.37	4078.37		5.43	Si
SLV 13	ini.	-2889.07	-10568	-0.0015748	0.0003369	0.0035	1.05		4078.37	4078.37		1.41	Si
SLV 13	fin.	-422.5	-6892	-0.0001579	0.0003369	0.0035	1.05		4078.37	4078.37		9.65	Si
SLV 5	ini.	2524.67	1716	-0.0012903	0.0003369	0.0035	1.05		4071.54	4071.54		1.61	Si
SLV 5	fin.	-3029.93	-6537	-0.0016999	0.0003369	0.0035	1.05		4078.37	4078.37		1.35	Si
SLV 2	ini.	4036.26	8189	-0.0030128	0.0003369	0.0035	1.05		4071.54	4071.54		1.01	Si
SLV 2	fin.	-2030.12	-522	-0.0009549	0.0003369	0.0035	1.05		4078.37	4078.37		2.01	Si
SLV 4	ini.	3268.09	8123	-0.0019423	0.0003369	0.0035	1.05		4071.54	4071.54		1.25	Si
SLV 4	fin.	-708.53	2688	-0.0002735	0.0003369	0.0035	1.05		4078.37	4078.37		5.76	Si
SLV 15	ini.	-3657.23	-10635	-0.0024112	0.0003369	0.0035	1.05		4078.37	4078.37		1.12	Si
SLV 15	fin.	899.09	-3682	-0.0003563	0.0003369	0.0035	1.05		4071.54	4071.54		4.53	Si
SLV 14	ini.	-2922.14	-10598	-0.0016033	0.0003369	0.0035	1.05		4078.37	4078.37		1.4	Si
SLV 14	fin.	-380.12	-6807	-0.0001414	0.0003369	0.0035	1.05		4078.37	4078.37		10.73	Si
SLV 1	ini.	4069.33	8218	-0.0030703	0.0003369	0.0035	1.05		4071.54	4071.54		1	Si
SLV 1	fin.	-2072.5	-607	-0.0009814	0.0003369	0.0035	1.05		4078.37	4078.37		1.97	Si
SLV 16	ini.	-3690.3	-10664	-0.0024573	0.0003369	0.0035	1.05		4078.37	4078.37		1.11	Si
SLV 16	fin.	941.47	-3597	-0.0003753	0.0003369	0.0035	1.05		4071.54	4071.54		4.32	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 12	ini.	-2145.65	6409	1.05	0	2990	8326	8490	2678	11168		1.74	Si
SLV 12	fin.	1898.9	6300	1.05	0	2990	8326	8490	2678	11168		1.77	Si
SLV 16	ini.	-3690.3	7190	1.05	0	2990	8326	8490	2678	11168		1.55	Si
SLV 16	fin.	941.47	6721	1.05	0	2990	8326	8490	2678	11168		1.66	Si
SLV 3	ini.	3301.16	-6115	1.05	0	2990	8326	8490	2678	11168		1.83	Si
SLV 3	fin.	-750.91	-6682	1.05	0	2990	8326	8490	2678	11168		1.67	Si
SLV 6	ini.	2502.41	-8551	1.05	0	2990	8326	8490	2678	11168		1.31	Si
SLV 6	fin.	-3001.4	-9816	1.05	0	2990	8326	8490	2678	11168		1.14	Si
SLV 15	ini.	-3657.23	7064	1.05	0	2990	8326	8490	2678	11168		1.58	Si
SLV 15	fin.	899.09	6596	1.05	0	2990	8326	8490	2678	11168		1.69	Si
SLV 1	ini.	4069.33	-9417	1.05	0	2990	8326	8490	2678	11168		1.19	Si
SLV 1	fin.	-2072.5	-10322	1.05	0	2990	8326	8490	2678	11168		1.08	Si
SLV 4	ini.	3268.09	-5989	1.05	0	2990	8326	8490	2678	11168		1.86	Si
SLV 4	fin.	-708.53	-6557	1.05	0	2990	8326	8490	2678	11168		1.7	Si
SLV 5	ini.	2524.67	-8636	1.05	0	2990	8326	8490	2678	11168		1.29	Si
SLV 5	fin.	-3029.93	-9901	1.05	0	2990	8326	8490	2678	11168		1.13	Si
SLV 11	ini.	-2123.39	6325	1.05	0	2990	8326	8490	2678	11168		1.77	Si
SLV 11	fin.	1870.37	6216	1.05	0	2990	8326	8490	2678	11168		1.8	Si
SLV 2	ini.	4036.26	-9291	1.05	0	2990	8326	8490	2678	11168		1.2	Si
SLV 2	fin.	-2030.12	-10197	1.05	0	2990	8326	8490	2678	11168		1.1	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.001	SLV 1	Si
V_SLV	1.082	SLV 1	Si
PF_SLU	4.382	SLU 78	Si
V_SLU	2.738	SLU 84	Si

Trave di accoppiamento 124

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-6.478	1.046	10.72	12.17	1.45	-7.278	1.046	10.72	12.17	1.45	0.8	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 44	ini.	121.71	-2368	-0.0000231	0.0002246	0.0035	1.45		7849.88	7849.88	No	64.5	Si
SLU 44	fin.	-518.19	-2798	-0.0001009	0.0002246	0.0035	1.45		7858.95	7858.95	No	15.17	Si
SLU 45	ini.	80.75	-2562	-0.0000153	0.0002246	0.0035	1.45		7849.88	7849.88	No	97.21	Si
SLU 45	fin.	-465.74	-2917	-0.0000903	0.0002246	0.0035	1.45		7858.95	7858.95	No	16.87	Si
SLU 48	ini.	84.72	-2645	-0.000016	0.0002246	0.0035	1.45		7849.88	7849.88	No	92.65	Si
SLU 48	fin.	-449.23	-2989	-0.000087	0.0002246	0.0035	1.45		7858.95	7858.95	No	17.49	Si
SLU 46	ini.	98.37	-2546	-0.0000186	0.0002246	0.0035	1.45		7849.88	7849.88	No	79.8	Si
SLU 46	fin.	-481.02	-2926	-0.0000934	0.0002246	0.0035	1.45		7858.95	7858.95	No	16.34	Si
SLU 65	ini.	42.58	-2778	-0.000008	0.0002246	0.0035	1.45		7849.88	7849.88	No	184.34	Si
SLU 65	fin.	-465.26	-3080	-0.0000902	0.0002246	0.0035	1.45		7858.95	7858.95	No	16.89	Si
SLU 47	ini.	125.69	-2450	-0.0000239	0.0002246	0.0035	1.45		7849.88	7849.88	No	62.46	Si
SLU 47	fin.	-501.68	-2870	-0.0000976	0.0002246	0.0035	1.45		7858.95	7858.95	No	15.67	Si
SLU 51	ini.	117.92	-2544	-0.0000224	0.0002246	0.0035	1.45		7849.88	7849.88	No	66.57	Si
SLU 51	fin.	-474.99	-2936	-0.0000922	0.0002246	0.0035	1.45		7858.95	7858.95	No	16.55	Si
SLU 49	ini.	102.35	-2629	-0.0000194	0.0002246	0.0035	1.45		7849.88	7849.88	No	76.7	Si
SLU 49	fin.	-464.51	-2998	-0.0000901	0.0002246	0.0035	1.45		7858.95	7858.95	No	16.92	Si
SLU 50	ini.	100.29	-2560	-0.000019	0.0002246	0.0035	1.45		7849.88	7849.88	No	78.27	Si
SLU 50	fin.	-459.71	-2927	-0.0000891	0.0002246	0.0035	1.45		7858.95	7858.95	No	17.1	Si
SLU 43	ini.	92.34	-2394	-0.0000175	0.0002246	0.0035	1.45		7849.88	7849.88	No	85.01	Si
SLU 43	fin.	-492.73	-2783	-0.0000958	0.0002246	0.0035	1.45		7858.95	7858.95	No	15.95	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 44	ini.	121.71	-387	1.45	0	3625	6344	7816	3698	9969	No	25.76	Si
SLU 44	fin.	-518.19	-2058	1.45	0	3625	6344	7816	3698	9969	No	4.84	Si
SLU 65	ini.	42.58	183	1.45	0	3625	6344	7816	3698	9969	No	54.34	Si
SLU 65	fin.	-465.26	-2062	1.45	0	3625	6344	7816	3698	9969	No	4.83	Si
SLU 72	ini.	38.79	277	1.45	0	3625	6344	7816	3698	9969	No	36.01	Si
SLU 72	fin.	-422.05	-1969	1.45	0	3625	6344	7816	3698	9969	No	5.06	Si
SLU 43	ini.	92.34	-280	1.45	0	3625	6344	7816	3698	9969	No	35.57	Si
SLU 43	fin.	-492.73	-1951	1.45	0	3625	6344	7816	3698	9969	No	5.11	Si
SLU 67	ini.	19.24	305	1.45	0	3625	6344	7816	3698	9969	No	32.73	Si
SLU 67	fin.	-428.09	-1941	1.45	0	3625	6344	7816	3698	9969	No	5.14	Si
SLU 51	ini.	117.92	-294	1.45	0	3625	6344	7816	3698	9969	No	33.95	Si
SLU 51	fin.	-474.99	-1964	1.45	0	3625	6344	7816	3698	9969	No	5.08	Si
SLU 68	ini.	46.56	209	1.45	0	3625	6344	7816	3698	9969	No	47.74	Si
SLU 68	fin.	-448.75	-2037	1.45	0	3625	6344	7816	3698	9969	No	4.89	Si
SLU 64	ini.	13.21	290	1.45	0	3625	6344	7816	3698	9969	No	34.36	Si
SLU 64	fin.	-439.79	-1955	1.45	0	3625	6344	7816	3698	9969	No	5.1	Si
SLU 46	ini.	98.37	-266	1.45	0	3625	6344	7816	3698	9969	No	37.5	Si
SLU 46	fin.	-481.02	-1936	1.45	0	3625	6344	7816	3698	9969	No	5.15	Si
SLU 47	ini.	125.69	-362	1.45	0	3625	6344	7816	3698	9969	No	27.57	Si
SLU 47	fin.	-501.68	-2032	1.45	0	3625	6344	7816	3698	9969	No	4.91	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	2407.37	723	-0.0005277	0.0003369	0.0035	1.45		7781.38	7781.38		3.23	Si
SLV 4	fin.	-2470.61	-2570	-0.0005436	0.0003369	0.0035	1.45		7791.28	7791.28		3.15	Si
SLV 15	ini.	-3288.96	-5905	-0.0007735	0.0003369	0.0035	1.45		7791.28	7791.28		2.37	Si
SLV 15	fin.	2546.04	-1754	-0.0005644	0.0003369	0.0035	1.45		7781.38	7781.38		3.06	Si
SLV 3	ini.	2430.55	696	-0.0005338	0.0003369	0.0035	1.45		7781.38	7781.38		3.2	Si
SLV 3	fin.	-2528.5	-2651	-0.000559	0.0003369	0.0035	1.45		7791.28	7791.28		3.08	Si
SLV 1	ini.	3283.69	1550	-0.000773	0.0003369	0.0035	1.45		7781.38	7781.38		2.37	Si
SLV 1	fin.	-3243.21	-2988	-0.0007599	0.0003369	0.0035	1.45		7791.28	7791.28		2.4	Si
SLV 16	ini.	-3312.15	-5877	-0.0007804	0.0003369	0.0035	1.45		7791.28	7791.28		2.35	Si
SLV 16	fin.	2603.92	-1674	-0.00058	0.0003369	0.0035	1.45		7781.38	7781.38		2.99	Si
SLV 13	ini.	-2435.83	-5051	-0.0005345	0.0003369	0.0035	1.45		7791.28	7791.28		3.2	Si
SLV 13	fin.	1831.33	-2091	-0.0003837	0.0003369	0.0035	1.45		7781.38	7781.38		4.25	Si
SLV 12	ini.	-2301.86	-4568	-0.0004996	0.0003369	0.0035	1.45		7791.28	7791.28		3.38	Si
SLV 12	fin.	1652.21	-1607	-0.0003417	0.0003369	0.0035	1.45		7781.38	7781.38		4.71	Si
SLV 2	ini.	3260.51	1577	-0.0007661	0.0003369	0.0035	1.45		7781.38	7781.38		2.39	Si
SLV 2	fin.	-3185.33	-2908	-0.0007428	0.0003369	0.0035	1.45		7791.28	7791.28		2.45	Si
SLV 14	ini.	-2459.01	-5023	-0.0005406	0.0003369	0.0035	1.45		7791.28	7791.28		3.17	Si
SLV 14	fin.	1889.21	-2011	-0.0003976	0.0003369	0.0035	1.45		7781.38	7781.38		4.12	Si
SLV 5	ini.	2273.4	240	-0.000493	0.0003369	0.0035	1.45		7781.38	7781.38		3.42	Si
SLV 5	fin.	-2291.5	-3055	-0.000497	0.0003369	0.0035	1.45		7791.28	7791.28		3.4	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	ini.	3260.51	-11063	1.45	0	5438	6344	11725	3698	11781		1.06	Si
SLV 2	fin.	-3185.33	-12815	1.45	0	5438	6344	11725	3698	11781		0.92	No
SLV 13	ini.	-2435.83	8667	1.45	0	5438	6344	11725	3698	11781		1.36	Si
SLV 13	fin.	1831.33	6897	1.45	0	5438	6344	11725	3698	11781		1.71	Si
SLV 1	ini.	3283.69	-11213	1.45	0	5438	6344	11725	3698	11781		1.05	Si
SLV 1	fin.	-3243.21	-12964	1.45	0	5438	6344	11725	3698	11781		0.91	No
SLV 3	ini.	2430.55	-8170	1.45	0	5438	6344	11725	3698	11781		1.44	Si
SLV 3	fin.	-2528.5	-9923	1.45	0	5438	6344	11725	3698	11781		1.19	Si
SLV 16	ini.	-3312.15	11859	1.45	0	5438	6344	11725	3698	11781		0.99	No
SLV 16	fin.	2603.92	10088	1.45	0	5438	6344	11725	3698	11781		1.17	Si
SLV 4	ini.	2407.37	-8021	1.45	0	5438	6344	11725	3698	11781		1.47	Si
SLV 4	fin.	-2470.61	-9774	1.45	0	5438	6344	11725	3698	11781		1.21	Si
SLV 5	ini.	2273.4	-7780	1.45	0	5438	6344	11725	3698	11781		1.51	Si
SLV 5	fin.	-2291.5	-9536	1.45	0	5438	6344	11725	3698	11781		1.24	Si
SLV 14	ini.	-2459.01	8816	1.45	0	5438	6344	11725	3698	11781		1.34	Si
SLV 14	fin.	1889.21	7047	1.45	0	5438	6344	11725	3698	11781		1.67	Si
SLV 6	ini.	2257.79	-7680	1.45	0	5438	6344	11725	3698	11781		1.53	Si
SLV 6	fin.	-2252.53	-9436	1.45	0	5438	6344	11725	3698	11781		1.25	Si
SLV 15	ini.	-3288.96	11709	1.45	0	5438	6344	11725	3698	11781		1.01	Si
SLV 15	fin.	2546.04	9939	1.45	0	5438	6344	11725	3698	11781		1.19	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.352	SLV 16	Si
V_SLV	0.909	SLV 1	No
PF_SLU	15.166	SLU 44	Si
V_SLU	4.834	SLU 65	Si

Trave di accoppiamento 125

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-4.168	1.046	10.72	12.17	1.45	-4.968	1.046	10.72	12.17	1.45	0.8	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	361.51	-2494	-0.0000697	0.0002246	0.0035	1.45		7849.88	7849.88	No	21.71	Si
SLU 78	fin.	-804.09	-3387	-0.00016	0.0002246	0.0035	1.45		7858.95	7858.95	No	9.77	Si
SLU 82	ini.	452.32	-2265	-0.0000878	0.0002246	0.0035	1.45		7849.88	7849.88	No	17.35	Si
SLU 82	fin.	-887.52	-3297	-0.0001778	0.0002246	0.0035	1.45		7858.95	7858.95	No	8.85	Si
SLU 75	ini.	413.84	-2354	-0.0000801	0.0002246	0.0035	1.45		7849.88	7849.88	No	18.97	Si
SLU 75	fin.	-836.85	-3313	-0.000167	0.0002246	0.0035	1.45		7858.95	7858.95	No	9.39	Si
SLU 84	ini.	400	-2405	-0.0000773	0.0002246	0.0035	1.45		7849.88	7849.88	No	19.62	Si
SLU 84	fin.	-854.76	-3371	-0.0001708	0.0002246	0.0035	1.45		7858.95	7858.95	No	9.19	Si
SLU 73	ini.	460.19	-2139	-0.0000893	0.0002246	0.0035	1.45		7849.88	7849.88	No	17.06	Si
SLU 73	fin.	-854.46	-3147	-0.0001707	0.0002246	0.0035	1.45		7858.95	7858.95	No	9.2	Si
SLU 77	ini.	353.01	-2509	-0.000068	0.0002246	0.0035	1.45		7849.88	7849.88	No	22.24	Si
SLU 77	fin.	-799.91	-3393	-0.0001591	0.0002246	0.0035	1.45		7858.95	7858.95	No	9.82	Si
SLU 81	ini.	443.82	-2280	-0.0000861	0.0002246	0.0035	1.45		7849.88	7849.88	No	17.69	Si
SLU 81	fin.	-883.34	-3303	-0.0001769	0.0002246	0.0035	1.45		7858.95	7858.95	No	8.9	Si
SLU 83	ini.	391.49	-2420	-0.0000756	0.0002246	0.0035	1.45		7849.88	7849.88	No	20.05	Si
SLU 83	fin.	-850.57	-3376	-0.0001699	0.0002246	0.0035	1.45		7858.95	7858.95	No	9.24	Si
SLU 74	ini.	405.34	-2370	-0.0000784	0.0002246	0.0035	1.45		7849.88	7849.88	No	19.37	Si
SLU 74	fin.	-832.67	-3319	-0.0001661	0.0002246	0.0035	1.45		7858.95	7858.95	No	9.44	Si
SLU 76	ini.	407.87	-2279	-0.0000789	0.0002246	0.0035	1.45		7849.88	7849.88	No	19.25	Si
SLU 76	fin.	-821.7	-3220	-0.0001637	0.0002246	0.0035	1.45		7858.95	7858.95	No	9.56	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 76	ini.	407.87	-980	1.45	0	3625	6344	7816	3698	9969	No	10.17	Si
SLU 76	fin.	-821.7	-3704	1.45	0	3625	6344	7816	3698	9969	No	2.69	Si
SLU 74	ini.	405.34	-998	1.45	0	3625	6344	7816	3698	9969	No	9.99	Si
SLU 74	fin.	-832.67	-3722	1.45	0	3625	6344	7816	3698	9969	No	2.68	Si
SLU 84	ini.	400	-921	1.45	0	3625	6344	7816	3698	9969	No	10.82	Si
SLU 84	fin.	-854.76	-3869	1.45	0	3625	6344	7816	3698	9969	No	2.58	Si
SLU 73	ini.	460.19	-1146	1.45	0	3625	6344	7816	3698	9969	No	8.7	Si
SLU 73	fin.	-854.46	-3871	1.45	0	3625	6344	7816	3698	9969	No	2.58	Si
SLU 78	ini.	361.51	-856	1.45	0	3625	6344	7816	3698	9969	No	11.65	Si
SLU 78	fin.	-804.09	-3580	1.45	0	3625	6344	7816	3698	9969	No	2.78	Si
SLU 75	ini.	413.84	-1022	1.45	0	3625	6344	7816	3698	9969	No	9.75	Si
SLU 75	fin.	-836.85	-3746	1.45	0	3625	6344	7816	3698	9969	No	2.66	Si
SLU 83	ini.	391.49	-897	1.45	0	3625	6344	7816	3698	9969	No	11.11	Si
SLU 83	fin.	-850.57	-3845	1.45	0	3625	6344	7816	3698	9969	No	2.59	Si
SLU 81	ini.	443.82	-1064	1.45	0	3625	6344	7816	3698	9969	No	9.37	Si
SLU 81	fin.	-883.34	-4011	1.45	0	3625	6344	7816	3698	9969	No	2.49	Si
SLU 77	ini.	353.01	-831	1.45	0	3625	6344	7816	3698	9969	No	11.99	Si
SLU 77	fin.	-799.91	-3556	1.45	0	3625	6344	7816	3698	9969	No	2.8	Si
SLU 82	ini.	452.32	-1088	1.45	0	3625	6344	7816	3698	9969	No	9.16	Si
SLU 82	fin.	-887.52	-4035	1.45	0	3625	6344	7816	3698	9969	No	2.47	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 6	ini.	1999.78	1442	-0.0004244	0.0003369	0.0035	1.45		7781.38	7781.38		3.89	Si
SLV 6	fin.	-1364.42	-1034	-0.0002764	0.0003369	0.0035	1.45		7791.28	7791.28		5.71	Si
SLV 2	ini.	3670.81	4137	-0.000892	0.0003369	0.0035	1.45		7781.38	7781.38		2.12	Si
SLV 2	fin.	-2052.57	30	-0.0004368	0.0003369	0.0035	1.45		7791.28	7791.28		3.8	Si
SLV 15	ini.	-2992.34	-7049	-0.0006869	0.0003369	0.0035	1.45		7791.28	7791.28		2.6	Si
SLV 15	fin.	873.51	-4356	-0.000172	0.0003369	0.0035	1.45		7781.38	7781.38		8.91	Si
SLV 14	ini.	-2634.29	-6341	-0.0005874	0.0003369	0.0035	1.45		7791.28	7791.28		2.96	Si
SLV 14	fin.	685.19	-4062	-0.0001335	0.0003369	0.0035	1.45		7781.38	7781.38		11.36	Si
SLV 5	ini.	2059.52	1517	-0.0004391	0.0003369	0.0035	1.45		7781.38	7781.38		3.78	Si
SLV 5	fin.	-1389.92	-1021	-0.0002821	0.0003369	0.0035	1.45		7791.28	7791.28		5.61	Si
SLV 16	ini.	-3081.08	-7160	-0.0007124	0.0003369	0.0035	1.45		7791.28	7791.28		2.53	Si
SLV 16	fin.	911.38	-4375	-0.0001799	0.0003369	0.0035	1.45		7781.38	7781.38		8.54	Si
SLV 3	ini.	3312.76	3429	-0.0007817	0.0003369	0.0035	1.45		7781.38	7781.38		2.35	Si
SLV 3	fin.	-1864.25	-263	-0.0003911	0.0003369	0.0035	1.45		7791.28	7791.28		4.18	Si
SLV 1	ini.	3759.55	4247	-0.0009203	0.0003369	0.0035	1.45		7781.38	7781.38		2.07	Si
SLV 1	fin.	-2090.44	50	-0.0004462	0.0003369	0.0035	1.45		7791.28	7791.28		3.73	Si
SLV 4	ini.	3224.02	3319	-0.0007553	0.0003369	0.0035	1.45		7781.38	7781.38		2.41	Si
SLV 4	fin.	-1826.38	-282	-0.0003821	0.0003369	0.0035	1.45		7791.28	7791.28		4.27	Si
SLV 13	ini.	-2545.55	-6231	-0.0005635	0.0003369	0.0035	1.45		7791.28	7791.28		3.06	Si
SLV 13	fin.	647.33	-4043	-0.0001259	0.0003369	0.0035	1.45		7781.38	7781.38		12.02	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	ini.	2059.52	-5642	1.45	0	5438	6344	11725	3698	11781		2.09	Si
SLV 5	fin.	-1389.92	-7358	1.45	0	5438	6344	11725	3698	11781		1.6	Si
SLV 15	ini.	-2992.34	8033	1.45	0	5438	6344	11725	3698	11781		1.47	Si
SLV 15	fin.	873.51	6256	1.45	0	5438	6344	11725	3698	11781		1.88	Si
SLV 13	ini.	-2545.55	6752	1.45	0	5438	6344	11725	3698	11781		1.74	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	fin.	647.33	4971	1.45	0	5438	6344	11725	3698	11781		2.37	Si
SLV 2	ini.	3670.81	-9835	1.45	0	5438	6344	11725	3698	11781		1.2	Si
SLV 2	fin.	-2052.57	-11510	1.45	0	5438	6344	11725	3698	11781		1.02	Si
SLV 6	ini.	1999.78	-5480	1.45	0	5438	6344	11725	3698	11781		2.15	Si
SLV 6	fin.	-1364.42	-7196	1.45	0	5438	6344	11725	3698	11781		1.64	Si
SLV 14	ini.	-2634.29	6992	1.45	0	5438	6344	11725	3698	11781		1.68	Si
SLV 14	fin.	685.19	5211	1.45	0	5438	6344	11725	3698	11781		2.26	Si
SLV 4	ini.	3224.02	-8554	1.45	0	5438	6344	11725	3698	11781		1.38	Si
SLV 4	fin.	-1826.38	-10224	1.45	0	5438	6344	11725	3698	11781		1.15	Si
SLV 16	ini.	-3081.08	8274	1.45	0	5438	6344	11725	3698	11781		1.42	Si
SLV 16	fin.	911.38	6497	1.45	0	5438	6344	11725	3698	11781		1.81	Si
SLV 1	ini.	3759.55	-10076	1.45	0	5438	6344	11725	3698	11781		1.17	Si
SLV 1	fin.	-2090.44	-11750	1.45	0	5438	6344	11725	3698	11781		1	Si
SLV 3	ini.	3312.76	-8794	1.45	0	5438	6344	11725	3698	11781		1.34	Si
SLV 3	fin.	-1864.25	-10465	1.45	0	5438	6344	11725	3698	11781		1.13	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.07	SLV 1	Si
V_SLV	1.003	SLV 1	Si
PF_SLU	8.855	SLU 82	Si
V_SLU	2.47	SLU 82	Si

Trave di accoppiamento 126

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-17.718	6.651	8.62	9.52	0.9	-16.818	6.651	8.62	9.52	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	423.54	-1866	-0.0002284	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.95	Si
SLU 80	fin.	229.79	-1758	-0.0001178	0.0001872	0.0035	0.9		2942.43	2942.43	No	12.8	Si
SLU 84	ini.	429.06	-1872	-0.0002317	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.86	Si
SLU 84	fin.	223.72	-1738	-0.0001146	0.0001872	0.0035	0.9		2942.43	2942.43	No	13.15	Si
SLU 81	ini.	430.89	-1832	-0.0002329	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.83	Si
SLU 81	fin.	200.86	-1641	-0.0001023	0.0001872	0.0035	0.9		2942.43	2942.43	No	14.65	Si
SLU 77	ini.	436.78	-1909	-0.0002364	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.74	Si
SLU 77	fin.	229.57	-1781	-0.0001177	0.0001872	0.0035	0.9		2942.43	2942.43	No	12.82	Si
SLU 83	ini.	436.37	-1882	-0.0002362	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.74	Si
SLU 83	fin.	216.76	-1721	-0.0001108	0.0001872	0.0035	0.9		2942.43	2942.43	No	13.57	Si
SLU 74	ini.	431.31	-1859	-0.0002331	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.82	Si
SLU 74	fin.	213.67	-1701	-0.0001092	0.0001872	0.0035	0.9		2942.43	2942.43	No	13.77	Si
SLU 79	ini.	430.85	-1876	-0.0002328	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.83	Si
SLU 79	fin.	222.84	-1741	-0.0001141	0.0001872	0.0035	0.9		2942.43	2942.43	No	13.2	Si
SLU 82	ini.	423.58	-1822	-0.0002284	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.95	Si
SLU 82	fin.	207.82	-1658	-0.000106	0.0001872	0.0035	0.9		2942.43	2942.43	No	14.16	Si
SLU 78	ini.	429.47	-1898	-0.000232	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.85	Si
SLU 78	fin.	236.52	-1798	-0.0001215	0.0001872	0.0035	0.9		2942.43	2942.43	No	12.44	Si
SLU 75	ini.	424	-1848	-0.0002287	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.94	Si
SLU 75	fin.	220.62	-1718	-0.0001129	0.0001872	0.0035	0.9		2942.43	2942.43	No	13.34	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 69	ini.	411.11	-1463	0.9	0	1875	7137	4043	2295	6338	No	4.33	Si
SLU 69	fin.	206.63	1427	0.9	0	1875	7137	4043	2295	6338	No	4.44	Si
SLU 80	ini.	423.54	-1466	0.9	0	1875	7137	4043	2295	6338	No	4.32	Si
SLU 80	fin.	229.79	1500	0.9	0	1875	7137	4043	2295	6338	No	4.23	Si
SLU 74	ini.	431.31	-1491	0.9	0	1875	7137	4043	2295	6338	No	4.25	Si
SLU 74	fin.	213.67	1414	0.9	0	1875	7137	4043	2295	6338	No	4.48	Si
SLU 75	ini.	424	-1460	0.9	0	1875	7137	4043	2295	6338	No	4.34	Si
SLU 75	fin.	220.62	1440	0.9	0	1875	7137	4043	2295	6338	No	4.4	Si
SLU 79	ini.	430.85	-1497	0.9	0	1875	7137	4043	2295	6338	No	4.23	Si
SLU 79	fin.	222.84	1474	0.9	0	1875	7137	4043	2295	6338	No	4.3	Si
SLU 83	ini.	436.37	-1490	0.9	0	1875	7137	4043	2295	6338	No	4.25	Si
SLU 83	fin.	216.76	1407	0.9	0	1875	7137	4043	2295	6338	No	4.51	Si
SLU 84	ini.	429.06	-1459	0.9	0	1875	7137	4043	2295	6338	No	4.34	Si
SLU 84	fin.	223.72	1432	0.9	0	1875	7137	4043	2295	6338	No	4.42	Si
SLU 77	ini.	436.78	-1525	0.9	0	1875	7137	4043	2295	6338	No	4.16	Si
SLU 77	fin.	229.57	1522	0.9	0	1875	7137	4043	2295	6338	No	4.16	Si
SLU 81	ini.	430.89	-1456	0.9	0	1875	7137	4043	2295	6338	No	4.35	Si
SLU 81	fin.	200.86	1299	0.9	0	1875	7137	4043	2295	6338	No	4.88	Si
SLU 78	ini.	429.47	-1493	0.9	0	1875	7137	4043	2295	6338	No	4.24	Si
SLU 78	fin.	236.52	1548	0.9	0	1875	7137	4043	2295	6338	No	4.09	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	1856.74	-3268	-0.0013363	0.0002807	0.0035	0.9		2967.55	2967.55		1.6	Si
SLV 15	fin.	-1287.84	2640	-0.0008131	0.0002807	0.0035	0.9		2973.32	2973.32		2.31	Si
SLV 1	ini.	-1641.74	1234	-0.0011209	0.0002807	0.0035	0.9		2973.32	2973.32		1.81	Si
SLV 1	fin.	1910.15	-5808	-0.0013928	0.0002807	0.0035	0.9		2967.55	2967.55		1.55	Si
SLV 12	ini.	1629.6	-3060	-0.0011124	0.0002807	0.0035	0.9		2967.55	2967.55		1.82	Si
SLV 12	fin.	-1101.3	2006	-0.0006672	0.0002807	0.0035	0.9		2973.32	2973.32		2.7	Si
SLV 3	ini.	-1198.45	596	-0.0007419	0.0002807	0.0035	0.9		2973.32	2973.32		2.48	Si
SLV 3	fin.	1498.26	-4817	-0.0009932	0.0002807	0.0035	0.9		2967.55	2967.55		1.98	Si
SLV 11	ini.	1368.06	-2738	-0.0008811	0.0002807	0.0035	0.9		2967.55	2967.55		2.17	Si
SLV 11	fin.	-853.4	1346	-0.0004888	0.0002807	0.0035	0.9		2973.32	2973.32		3.48	Si
SLV 13	ini.	1413.45	-2630	-0.0009196	0.0002807	0.0035	0.9		2967.55	2967.55		2.1	Si
SLV 13	fin.	-875.96	1649	-0.0005043	0.0002807	0.0035	0.9		2973.32	2973.32		3.39	Si
SLV 5	ini.	-1026.13	548	-0.0006113	0.0002807	0.0035	0.9		2973.32	2973.32		2.9	Si
SLV 5	fin.	1355.4	-4194	-0.0008706	0.0002807	0.0035	0.9		2967.55	2967.55		2.19	Si
SLV 16	ini.	2245.2	-3746	-0.0017956	0.0002807	0.0035	0.9		2967.55	2967.55		1.32	Si
SLV 16	fin.	-1656.05	3619	-0.0011344	0.0002807	0.0035	0.9		2973.32	2973.32		1.8	Si
SLV 14	ini.	1801.91	-3108	-0.0012799	0.0002807	0.0035	0.9		2967.55	2967.55		1.65	Si
SLV 14	fin.	-1244.17	2628	-0.000778	0.0002807	0.0035	0.9		2973.32	2973.32		2.39	Si
SLV 2	ini.	-1253.28	756	-0.0007852	0.0002807	0.0035	0.9		2973.32	2973.32		2.37	Si
SLV 2	fin.	1541.94	-4828	-0.0010321	0.0002807	0.0035	0.9		2967.55	2967.55		1.92	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	ini.	-1026.13	4348	0.9	0	2813	7137	6064	2295	8359		1.92	Si
SLV 5	fin.	1355.4	5973	0.9	0	2813	7137	6064	2295	8359		1.4	Si
SLV 3	ini.	-1198.45	4403	0.9	0	2813	7137	6064	2295	8359		1.9	Si
SLV 3	fin.	1498.26	7463	0.9	0	2813	7137	6064	2295	8359		1.12	Si
SLV 12	ini.	1629.6	-6428	0.9	0	2813	7137	6064	2295	8359		1.3	Si
SLV 12	fin.	-1101.3	-4229	0.9	0	2813	7137	6064	2295	8359		1.98	Si
SLV 16	ini.	2245.2	-8401	0.9	0	2813	7137	6064	2295	8359		0.99	No
SLV 16	fin.	-1656.05	-7267	0.9	0	2813	7137	6064	2295	8359		1.15	Si
SLV 4	ini.	-809.99	2949	0.9	0	2813	7137	6064	2295	8359		2.83	Si
SLV 4	fin.	1130.06	5791	0.9	0	2813	7137	6064	2295	8359		1.44	Si
SLV 14	ini.	1801.91	-6483	0.9	0	2813	7137	6064	2295	8359		1.29	Si
SLV 14	fin.	-1244.17	-5719	0.9	0	2813	7137	6064	2295	8359		1.46	Si
SLV 1	ini.	-1641.74	6320	0.9	0	2813	7137	6064	2295	8359		1.32	Si
SLV 1	fin.	1910.15	9011	0.9	0	2813	7137	6064	2295	8359		0.93	No
SLV 2	ini.	-1253.28	4866	0.9	0	2813	7137	6064	2295	8359		1.72	Si
SLV 2	fin.	1541.94	7339	0.9	0	2813	7137	6064	2295	8359		1.14	Si
SLV 15	ini.	1856.74	-6947	0.9	0	2813	7137	6064	2295	8359		1.2	Si
SLV 15	fin.	-1287.84	-5595	0.9	0	2813	7137	6064	2295	8359		1.49	Si
SLV 11	ini.	1368.06	-5449	0.9	0	2813	7137	6064	2295	8359		1.53	Si
SLV 11	fin.	-853.4	-3103	0.9	0	2813	7137	6064	2295	8359		2.69	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.322	SLV 16	Si
V_SLV	0.928	SLV 1	No
PF_SLU	6.737	SLU 77	Si
V_SLU	4.095	SLU 78	Si

Trave di accoppiamento 127

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-17.718	6.651	11.32	12.17	0.85	-16.818	6.651	11.32	12.17	0.85	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-172.97	-868	-0.0000982	0.0001872	0.0035	0.85		2645.85	2645.85	No	15.3	Si
SLU 75	fin.	-373.7	-1537	-0.0002246	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.08	Si
SLU 82	ini.	-160.57	-817	-0.0000909	0.0001872	0.0035	0.85		2645.85	2645.85	No	16.48	Si
SLU 82	fin.	-373.4	-1503	-0.0002244	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.09	Si
SLU 74	ini.	-165.97	-852	-0.0000941	0.0001872	0.0035	0.85		2645.85	2645.85	No	15.94	Si
SLU 74	fin.	-382.29	-1551	-0.0002304	0.0001872	0.0035	0.85		2645.85	2645.85	No	6.92	Si
SLU 84	ini.	-177.99	-883	-0.0001012	0.0001872	0.0035	0.85		2645.85	2645.85	No	14.86	Si
SLU 84	fin.	-377.02	-1554	-0.0002268	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.02	Si
SLU 77	ini.	-183.4	-919	-0.0001044	0.0001872	0.0035	0.85		2645.85	2645.85	No	14.43	Si
SLU 77	fin.	-385.91	-1602	-0.0002328	0.0001872	0.0035	0.85		2645.85	2645.85	No	6.86	Si
SLU 78	ini.	-190.4	-935	-0.0001086	0.0001872	0.0035	0.85		2645.85	2645.85	No	13.9	Si
SLU 78	fin.	-377.32	-1588	-0.000227	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.01	Si
SLU 79	ini.	-177.73	-891	-0.000101	0.0001872	0.0035	0.85		2645.85	2645.85	No	14.89	Si
SLU 79	fin.	-378.88	-1566	-0.0002281	0.0001872	0.0035	0.85		2645.85	2645.85	No	6.98	Si
SLU 83	ini.	-170.99	-867	-0.0000971	0.0001872	0.0035	0.85		2645.85	2645.85	No	15.47	Si
SLU 83	fin.	-385.62	-1568	-0.0002326	0.0001872	0.0035	0.85		2645.85	2645.85	No	6.86	Si
SLU 80	ini.	-184.73	-907	-0.0001052	0.0001872	0.0035	0.85		2645.85	2645.85	No	14.32	Si
SLU 80	fin.	-370.29	-1552	-0.0002223	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.15	Si
SLU 81	ini.	-153.56	-801	-0.0000868	0.0001872	0.0035	0.85		2645.85	2645.85	No	17.23	Si
SLU 81	fin.	-382	-1517	-0.0002302	0.0001872	0.0035	0.85		2645.85	2645.85	No	6.93	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-172.97	1273	0.85	0	1771	6740	3818	2168	5985	No	4.7	Si
SLU 75	fin.	-373.7	-2239	0.85	0	1771	6740	3818	2168	5985	No	2.67	Si
SLU 78	ini.	-190.4	1368	0.85	0	1771	6740	3818	2168	5985	No	4.38	Si
SLU 78	fin.	-377.32	-2281	0.85	0	1771	6740	3818	2168	5985	No	2.62	Si
SLU 84	ini.	-177.99	1314	0.85	0	1771	6740	3818	2168	5985	No	4.56	Si
SLU 84	fin.	-377.02	-2273	0.85	0	1771	6740	3818	2168	5985	No	2.63	Si
SLU 82	ini.	-160.57	1219	0.85	0	1771	6740	3818	2168	5985	No	4.91	Si
SLU 82	fin.	-373.4	-2231	0.85	0	1771	6740	3818	2168	5985	No	2.68	Si
SLU 81	ini.	-153.56	1192	0.85	0	1771	6740	3818	2168	5985	No	5.02	Si
SLU 81	fin.	-382	-2266	0.85	0	1771	6740	3818	2168	5985	No	2.64	Si
SLU 74	ini.	-165.97	1245	0.85	0	1771	6740	3818	2168	5985	No	4.81	Si
SLU 74	fin.	-382.29	-2273	0.85	0	1771	6740	3818	2168	5985	No	2.63	Si
SLU 77	ini.	-183.4	1340	0.85	0	1771	6740	3818	2168	5985	No	4.47	Si
SLU 77	fin.	-385.91	-2315	0.85	0	1771	6740	3818	2168	5985	No	2.59	Si
SLU 80	ini.	-184.73	1335	0.85	0	1771	6740	3818	2168	5985	No	4.48	Si
SLU 80	fin.	-370.29	-2242	0.85	0	1771	6740	3818	2168	5985	No	2.67	Si
SLU 79	ini.	-177.73	1307	0.85	0	1771	6740	3818	2168	5985	No	4.58	Si
SLU 79	fin.	-378.88	-2277	0.85	0	1771	6740	3818	2168	5985	No	2.63	Si
SLU 83	ini.	-170.99	1286	0.85	0	1771	6740	3818	2168	5985	No	4.65	Si
SLU 83	fin.	-385.62	-2308	0.85	0	1771	6740	3818	2168	5985	No	2.59	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	969.15	2049	-0.0006557	0.0002807	0.0035	0.85		2641.96	2641.96		2.73	Si
SLV 14	fin.	-1513.72	-3030	-0.0011695	0.0002807	0.0035	0.85		2647.52	2647.52		1.75	Si
SLV 2	ini.	-1245.01	-3221	-0.0008996	0.0002807	0.0035	0.85		2647.52	2647.52		2.13	Si
SLV 2	fin.	1131.15	1258	-0.0007967	0.0002807	0.0035	0.85		2641.96	2641.96		2.34	Si
SLV 5	ini.	-1238.9	-3161	-0.0008938	0.0002807	0.0035	0.85		2647.52	2647.52		2.14	Si
SLV 5	fin.	1145.11	1282	-0.0008093	0.0002807	0.0035	0.85		2641.96	2641.96		2.31	Si
SLV 13	ini.	642.38	1260	-0.0003999	0.0002807	0.0035	0.85		2641.96	2641.96		4.11	Si
SLV 13	fin.	-1131.04	-2427	-0.0007947	0.0002807	0.0035	0.85		2647.52	2647.52		2.34	Si
SLV 3	ini.	-1147.11	-3046	-0.0008091	0.0002807	0.0035	0.85		2647.52	2647.52		2.31	Si
SLV 3	fin.	982.83	987	-0.0006673	0.0002807	0.0035	0.85		2641.96	2641.96		2.69	Si
SLV 15	ini.	1067.05	2224	-0.0007398	0.0002807	0.0035	0.85		2641.96	2641.96		2.48	Si
SLV 15	fin.	-1662.04	-3301	-0.0013351	0.0002807	0.0035	0.85		2647.52	2647.52		1.59	Si
SLV 1	ini.	-1571.78	-4010	-0.0012327	0.0002807	0.0035	0.85		2647.52	2647.52		1.68	Si
SLV 1	fin.	1513.83	1861	-0.0011728	0.0002807	0.0035	0.85		2641.96	2641.96		1.75	Si
SLV 12	ini.	1060.94	2164	-0.0007344	0.0002807	0.0035	0.85		2641.96	2641.96		2.49	Si
SLV 12	fin.	-1676.01	-3325	-0.0013514	0.0002807	0.0035	0.85		2647.52	2647.52		1.58	Si
SLV 16	ini.	1393.82	3012	-0.0010476	0.0002807	0.0035	0.85		2641.96	2641.96		1.9	Si
SLV 16	fin.	-2044.72	-3904	-0.0018476	0.0002807	0.0035	0.85		2647.52	2647.52		1.29	Si
SLV 11	ini.	840.93	1632	-0.0005509	0.0002807	0.0035	0.85		2641.96	2641.96		3.14	Si
SLV 11	fin.	-1418.36	-2919	-0.0010697	0.0002807	0.0035	0.85		2647.52	2647.52		1.87	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	-1147.11	5420	0.85	0	2656	6740	5727	2168	7894		1.46	Si
SLV 3	fin.	982.83	3137	0.85	0	2656	6740	5727	2168	7894		2.52	Si
SLV 1	ini.	-1571.78	7083	0.85	0	2656	6740	5727	2168	7894		1.11	Si
SLV 1	fin.	1513.83	5277	0.85	0	2656	6740	5727	2168	7894		1.5	Si
SLV 2	ini.	-1245.01	5665	0.85	0	2656	6740	5727	2168	7894		1.39	Si
SLV 2	fin.	1131.15	3809	0.85	0	2656	6740	5727	2168	7894		2.07	Si
SLV 13	ini.	642.38	-2562	0.85	0	2656	6740	5727	2168	7894		3.08	Si
SLV 13	fin.	-1131.04	-4762	0.85	0	2656	6740	5727	2168	7894		1.66	Si
SLV 5	ini.	-1238.9	5416	0.85	0	2656	6740	5727	2168	7894		1.46	Si
SLV 5	fin.	1145.11	4019	0.85	0	2656	6740	5727	2168	7894		1.96	Si
SLV 16	ini.	1393.82	-5644	0.85	0	2656	6740	5727	2168	7894		1.4	Si
SLV 16	fin.	-2044.72	-8369	0.85	0	2656	6740	5727	2168	7894		0.94	No
SLV 15	ini.	1067.05	-4225	0.85	0	2656	6740	5727	2168	7894		1.87	Si
SLV 15	fin.	-1662.04	-6901	0.85	0	2656	6740	5727	2168	7894		1.14	Si
SLV 12	ini.	1060.94	-3977	0.85	0	2656	6740	5727	2168	7894		1.99	Si
SLV 12	fin.	-1676.01	-7111	0.85	0	2656	6740	5727	2168	7894		1.11	Si
SLV 14	ini.	969.15	-3980	0.85	0	2656	6740	5727	2168	7894		1.98	Si
SLV 14	fin.	-1513.72	-6230	0.85	0	2656	6740	5727	2168	7894		1.27	Si
SLV 11	ini.	840.93	-3022	0.85	0	2656	6740	5727	2168	7894		2.61	Si
SLV 11	fin.	-1418.36	-6123	0.85	0	2656	6740	5727	2168	7894		1.29	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.295	SLV 16	Si
V_SLV	0.943	SLV 16	No
PF_SLU	6.856	SLU 77	Si
V_SLU	2.585	SLU 77	Si

Trave di accoppiamento 128

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-12.838	6.651	8.62	9.52	0.9	-11.938	6.651	8.62	9.52	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	474.28	-2437	-0.0002596	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.2	Si
SLU 83	fin.	311.58	-2261	-0.000163	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.44	Si
SLU 77	ini.	490.06	-2491	-0.0002695	0.0001872	0.0035	0.9		2942.43	2942.43	No	6	Si
SLU 77	fin.	312.1	-2290	-0.0001633	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.43	Si
SLU 80	ini.	476.54	-2433	-0.000261	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.17	Si
SLU 80	fin.	306.46	-2241	-0.0001601	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.6	Si
SLU 69	ini.	450.96	-2301	-0.0002451	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.52	Si
SLU 69	fin.	291.29	-2123	-0.0001516	0.0001872	0.0035	0.9		2942.43	2942.43	No	10.1	Si
SLU 75	ini.	460.1	-2391	-0.0002508	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.4	Si
SLU 75	fin.	316.03	-2245	-0.0001655	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.31	Si
SLU 78	ini.	484.58	-2480	-0.000266	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.07	Si
SLU 78	fin.	315.97	-2293	-0.0001655	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.31	Si
SLU 74	ini.	465.57	-2403	-0.0002542	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.32	Si
SLU 74	fin.	312.17	-2242	-0.0001633	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.43	Si
SLU 81	ini.	449.8	-2348	-0.0002444	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.54	Si
SLU 81	fin.	311.65	-2213	-0.000163	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.44	Si
SLU 84	ini.	468.81	-2425	-0.0002562	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.28	Si
SLU 84	fin.	315.45	-2265	-0.0001652	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.33	Si
SLU 79	ini.	482.01	-2445	-0.0002644	0.0001872	0.0035	0.9		2942.43	2942.43	No	6.1	Si
SLU 79	fin.	302.6	-2238	-0.0001579	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.72	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 79	ini.	482.01	-2016	0.9	0	1875	7137	4043	2295	6338	No	3.14	Si
SLU 79	fin.	302.6	1357	0.9	0	1875	7137	4043	2295	6338	No	4.67	Si
SLU 83	ini.	474.28	-1964	0.9	0	1875	7137	4043	2295	6338	No	3.23	Si
SLU 83	fin.	311.58	1374	0.9	0	1875	7137	4043	2295	6338	No	4.61	Si
SLU 70	ini.	445.49	-1895	0.9	0	1875	7137	4043	2295	6338	No	3.35	Si
SLU 70	fin.	295.16	1343	0.9	0	1875	7137	4043	2295	6338	No	4.72	Si
SLU 78	ini.	484.58	-2031	0.9	0	1875	7137	4043	2295	6338	No	3.12	Si
SLU 78	fin.	315.97	1415	0.9	0	1875	7137	4043	2295	6338	No	4.48	Si
SLU 75	ini.	460.1	-1920	0.9	0	1875	7137	4043	2295	6338	No	3.3	Si
SLU 75	fin.	316.03	1401	0.9	0	1875	7137	4043	2295	6338	No	4.52	Si
SLU 84	ini.	468.81	-1940	0.9	0	1875	7137	4043	2295	6338	No	3.27	Si
SLU 84	fin.	315.45	1386	0.9	0	1875	7137	4043	2295	6338	No	4.57	Si
SLU 77	ini.	490.06	-2054	0.9	0	1875	7137	4043	2295	6338	No	3.08	Si
SLU 77	fin.	312.1	1403	0.9	0	1875	7137	4043	2295	6338	No	4.52	Si
SLU 69	ini.	450.96	-1918	0.9	0	1875	7137	4043	2295	6338	No	3.3	Si
SLU 69	fin.	291.29	1331	0.9	0	1875	7137	4043	2295	6338	No	4.76	Si
SLU 80	ini.	476.54	-1992	0.9	0	1875	7137	4043	2295	6338	No	3.18	Si
SLU 80	fin.	306.46	1369	0.9	0	1875	7137	4043	2295	6338	No	4.63	Si
SLU 74	ini.	465.57	-1944	0.9	0	1875	7137	4043	2295	6338	No	3.26	Si
SLU 74	fin.	312.17	1389	0.9	0	1875	7137	4043	2295	6338	No	4.56	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	1950.6	-4247	-0.0014368	0.0002807	0.0035	0.9		2967.55	2967.55		1.52	Si
SLV 13	fin.	-1469.13	1341	-0.0009652	0.0002807	0.0035	0.9		2973.32	2973.32		2.02	Si
SLV 15	ini.	2277.56	-4956	-0.0018403	0.0002807	0.0035	0.9		2967.55	2967.55		1.3	Si
SLV 15	fin.	-1693.94	1517	-0.0011704	0.0002807	0.0035	0.9		2973.32	2973.32		1.76	Si
SLV 1	ini.	-2138.33	2570	-0.0016514	0.0002807	0.0035	0.9		2973.32	2973.32		1.39	Si
SLV 1	fin.	2572.68	-5255	-0.0023144	0.0002807	0.0035	0.9		2967.55	2967.55		1.15	Si
SLV 5	ini.	-1012.96	882	-0.0006016	0.0002807	0.0035	0.9		2973.32	2973.32		2.94	Si
SLV 5	fin.	1346.58	-3032	-0.0008632	0.0002807	0.0035	0.9		2967.55	2967.55		2.2	Si
SLV 4	ini.	-1348	1078	-0.0008624	0.0002807	0.0035	0.9		2973.32	2973.32		2.21	Si
SLV 4	fin.	1896.48	-4348	-0.0013782	0.0002807	0.0035	0.9		2967.55	2967.55		1.56	Si
SLV 14	ini.	2413.97	-5031	-0.0020437	0.0002807	0.0035	0.9		2967.55	2967.55		1.23	Si
SLV 14	fin.	-1920.53	2072	-0.0014002	0.0002807	0.0035	0.9		2973.32	2973.32		1.55	Si
SLV 16	ini.	2740.93	-5740	-0.0026471	0.0002807	0.0035	0.9		2967.55	2967.55		1.08	Si
SLV 16	fin.	-2145.34	2248	-0.0016602	0.0002807	0.0035	0.9		2973.32	2973.32		1.39	Si
SLV 3	ini.	-1811.37	1862	-0.0012862	0.0002807	0.0035	0.9		2973.32	2973.32		1.64	Si
SLV 3	fin.	2347.87	-5079	-0.001942	0.0002807	0.0035	0.9		2967.55	2967.55		1.26	Si
SLV 12	ini.	1615.56	-4052	-0.0010993	0.0002807	0.0035	0.9		2967.55	2967.55		1.84	Si
SLV 12	fin.	-919.24	25	-0.0005345	0.0002807	0.0035	0.9		2973.32	2973.32		3.23	Si
SLV 2	ini.	-1674.96	1786	-0.0011522	0.0002807	0.0035	0.9		2973.32	2973.32		1.78	Si
SLV 2	fin.	2121.29	-4524	-0.0016352	0.0002807	0.0035	0.9		2967.55	2967.55		1.4	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 16	ini.	1340.31	-5362	0.9	0	2813	7137	6064	2295	8359		1.56	Si
SLD 16	fin.	-792.27	-2886	0.9	0	2813	7137	6064	2295	8359		2.9	Si
SLV 1	ini.	-2138.33	8365	0.9	0	2813	7137	6064	2295	8359		1	No
SLV 1	fin.	2572.68	9938	0.9	0	2813	7137	6064	2295	8359		0.84	No
SLV 16	ini.	2740.93	-10892	0.9	0	2813	7137	6064	2295	8359		0.77	No

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	fin.	-2145.34	-8041	0.9	0	2813	7137	6064	2295	8359		1.04	Si
SLV 4	ini.	-1348	5191	0.9	0	2813	7137	6064	2295	8359		1.61	Si
SLV 4	fin.	1896.48	7481	0.9	0	2813	7137	6064	2295	8359		1.12	Si
SLV 2	ini.	-1674.96	6544	0.9	0	2813	7137	6064	2295	8359		1.28	Si
SLV 2	fin.	2121.29	8204	0.9	0	2813	7137	6064	2295	8359		1.02	Si
SLV 15	ini.	2277.56	-9070	0.9	0	2813	7137	6064	2295	8359		0.92	No
SLV 15	fin.	-1693.94	-6308	0.9	0	2813	7137	6064	2295	8359		1.33	Si
SLV 14	ini.	2413.97	-9539	0.9	0	2813	7137	6064	2295	8359		0.88	No
SLV 14	fin.	-1920.53	-7318	0.9	0	2813	7137	6064	2295	8359		1.14	Si
SLV 3	ini.	-1811.37	7012	0.9	0	2813	7137	6064	2295	8359		1.19	Si
SLV 3	fin.	2347.87	9215	0.9	0	2813	7137	6064	2295	8359		0.91	No
SLV 13	ini.	1950.6	-7717	0.9	0	2813	7137	6064	2295	8359		1.08	Si
SLV 13	fin.	-1469.13	-5584	0.9	0	2813	7137	6064	2295	8359		1.5	Si
SLV 12	ini.	1615.56	-6544	0.9	0	2813	7137	6064	2295	8359		1.28	Si
SLV 12	fin.	-919.24	-3169	0.9	0	2813	7137	6064	2295	8359		2.64	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.083	SLV 16	Si
V_SLV	0.767	SLV 16	No
PF_SLU	6.004	SLU 77	Si
V_SLU	3.085	SLU 77	Si

Trave di accoppiamento 129

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-12.838	6.651	11.32	12.17	0.85	-11.938	6.651	11.32	12.17	0.85	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 76	ini.	-338.17	-1543	-0.000201	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.82	Si
SLU 76	fin.	-359.13	-1805	-0.0002148	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.37	Si
SLU 75	ini.	-346.22	-1583	-0.0002063	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.64	Si
SLU 75	fin.	-369.94	-1858	-0.000222	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.15	Si
SLU 83	ini.	-345.68	-1593	-0.0002059	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.65	Si
SLU 83	fin.	-382.81	-1899	-0.0002307	0.0001872	0.0035	0.85		2645.85	2645.85	No	6.91	Si
SLU 81	ini.	-339.86	-1547	-0.0002021	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.79	Si
SLU 81	fin.	-361.72	-1815	-0.0002165	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.31	Si
SLU 84	ini.	-349.01	-1599	-0.0002081	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.58	Si
SLU 84	fin.	-378.15	-1889	-0.0002276	0.0001872	0.0035	0.85		2645.85	2645.85	No	7	Si
SLU 77	ini.	-348.7	-1623	-0.0002079	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.59	Si
SLU 77	fin.	-395.69	-1953	-0.0002395	0.0001872	0.0035	0.85		2645.85	2645.85	No	6.69	Si
SLU 78	ini.	-352.04	-1629	-0.0002101	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.52	Si
SLU 78	fin.	-391.03	-1943	-0.0002363	0.0001872	0.0035	0.85		2645.85	2645.85	No	6.77	Si
SLU 79	ini.	-338.42	-1578	-0.0002011	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.82	Si
SLU 79	fin.	-387.99	-1907	-0.0002342	0.0001872	0.0035	0.85		2645.85	2645.85	No	6.82	Si
SLU 74	ini.	-342.88	-1577	-0.0002041	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.72	Si
SLU 74	fin.	-374.6	-1869	-0.0002252	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.06	Si
SLU 80	ini.	-341.76	-1584	-0.0002033	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.74	Si
SLU 80	fin.	-383.32	-1897	-0.0002311	0.0001872	0.0035	0.85		2645.85	2645.85	No	6.9	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-348.7	2066	0.85	0	1771	6740	3818	2168	5985	No	2.9	Si
SLU 77	fin.	-395.69	-2392	0.85	0	1771	6740	3818	2168	5985	No	2.5	Si
SLU 80	ini.	-341.76	2031	0.85	0	1771	6740	3818	2168	5985	No	2.95	Si
SLU 80	fin.	-383.32	-2328	0.85	0	1771	6740	3818	2168	5985	No	2.57	Si
SLU 74	ini.	-342.88	2027	0.85	0	1771	6740	3818	2168	5985	No	2.95	Si
SLU 74	fin.	-374.6	-2284	0.85	0	1771	6740	3818	2168	5985	No	2.62	Si
SLU 78	ini.	-352.04	2080	0.85	0	1771	6740	3818	2168	5985	No	2.88	Si
SLU 78	fin.	-391.03	-2373	0.85	0	1771	6740	3818	2168	5985	No	2.52	Si
SLU 79	ini.	-338.42	2017	0.85	0	1771	6740	3818	2168	5985	No	2.97	Si
SLU 79	fin.	-387.99	-2348	0.85	0	1771	6740	3818	2168	5985	No	2.55	Si
SLU 81	ini.	-339.86	2014	0.85	0	1771	6740	3818	2168	5985	No	2.97	Si
SLU 81	fin.	-361.72	-2227	0.85	0	1771	6740	3818	2168	5985	No	2.69	Si
SLU 82	ini.	-343.2	2028	0.85	0	1771	6740	3818	2168	5985	No	2.95	Si
SLU 82	fin.	-357.06	-2208	0.85	0	1771	6740	3818	2168	5985	No	2.71	Si
SLU 75	ini.	-346.22	2041	0.85	0	1771	6740	3818	2168	5985	No	2.93	Si
SLU 75	fin.	-369.94	-2264	0.85	0	1771	6740	3818	2168	5985	No	2.64	Si
SLU 83	ini.	-345.68	2053	0.85	0	1771	6740	3818	2168	5985	No	2.92	Si
SLU 83	fin.	-382.81	-2336	0.85	0	1771	6740	3818	2168	5985	No	2.56	Si
SLU 84	ini.	-349.01	2067	0.85	0	1771	6740	3818	2168	5985	No	2.9	Si
SLU 84	fin.	-378.15	-2317	0.85	0	1771	6740	3818	2168	5985	No	2.58	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	1173.14	2063	-0.0008349	0.0002807	0.0035	0.85		2641.96	2641.96		2.25	Si
SLV 15	fin.	-1794.92	-4288	-0.0014964	0.0002807	0.0035	0.85		2647.52	2647.52		1.48	Si
SLV 13	ini.	981.68	1693	-0.0006663	0.0002807	0.0035	0.85		2641.96	2641.96		2.69	Si
SLV 13	fin.	-1520.39	-3649	-0.0011767	0.0002807	0.0035	0.85		2647.52	2647.52		1.74	Si
SLV 5	ini.	-1112.94	-2901	-0.0007785	0.0002807	0.0035	0.85		2647.52	2647.52		2.38	Si
SLV 5	fin.	845.12	1096	-0.0005542	0.0002807	0.0035	0.85		2641.96	2641.96		3.13	Si
SLV 1	ini.	-1989.32	-4915	-0.0017629	0.0002807	0.0035	0.85		2647.52	2647.52		1.33	Si
SLV 1	fin.	1728.03	2704	-0.0014175	0.0002807	0.0035	0.85		2641.96	2641.96		1.53	Si
SLV 3	ini.	-1797.86	-4545	-0.0015001	0.0002807	0.0035	0.85		2647.52	2647.52		1.47	Si
SLV 3	fin.	1453.5	2064	-0.0011089	0.0002807	0.0035	0.85		2641.96	2641.96		1.82	Si
SLV 12	ini.	663.44	857	-0.0004152	0.0002807	0.0035	0.85		2641.96	2641.96		3.98	Si
SLV 12	fin.	-1317.57	-3475	-0.0009692	0.0002807	0.0035	0.85		2647.52	2647.52		2.01	Si
SLV 2	ini.	-1622.64	-4107	-0.0012897	0.0002807	0.0035	0.85		2647.52	2647.52		1.63	Si
SLV 2	fin.	1322.47	1909	-0.0009765	0.0002807	0.0035	0.85		2641.96	2641.96		2	Si
SLV 16	ini.	1539.82	2871	-0.0012009	0.0002807	0.0035	0.85		2641.96	2641.96		1.72	Si
SLV 16	fin.	-2200.48	-5082	-0.0021128	0.0002807	0.0035	0.85		2647.52	2647.52		1.2	Si
SLV 14	ini.	1348.36	2501	-0.001002	0.0002807	0.0035	0.85		2641.96	2641.96		1.96	Si
SLV 14	fin.	-1925.95	-4443	-0.0016712	0.0002807	0.0035	0.85		2647.52	2647.52		1.37	Si
SLV 4	ini.	-1431.18	-3737	-0.0010829	0.0002807	0.0035	0.85		2647.52	2647.52		1.85	Si
SLV 4	fin.	1047.93	1270	-0.0007231	0.0002807	0.0035	0.85		2641.96	2641.96		2.52	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	ini.	-1112.94	5148	0.85	0	2656	6740	5727	2168	7894		1.53	Si
SLV 5	fin.	845.12	3045	0.85	0	2656	6740	5727	2168	7894		2.59	Si
SLV 13	ini.	981.68	-3796	0.85	0	2656	6740	5727	2168	7894		2.08	Si
SLV 13	fin.	-1520.39	-6695	0.85	0	2656	6740	5727	2168	7894		1.18	Si
SLV 14	ini.	1348.36	-5363	0.85	0	2656	6740	5727	2168	7894		1.47	Si
SLV 14	fin.	-1925.95	-8353	0.85	0	2656	6740	5727	2168	7894		0.95	No
SLV 16	ini.	1539.82	-6188	0.85	0	2656	6740	5727	2168	7894		1.28	Si
SLV 16	fin.	-2200.48	-9522	0.85	0	2656	6740	5727	2168	7894		0.83	No
SLV 3	ini.	-1797.86	8051	0.85	0	2656	6740	5727	2168	7894		0.98	No
SLV 3	fin.	1453.5	5437	0.85	0	2656	6740	5727	2168	7894		1.45	Si
SLV 1	ini.	-1989.32	8876	0.85	0	2656	6740	5727	2168	7894		0.89	No
SLV 1	fin.	1728.03	6607	0.85	0	2656	6740	5727	2168	7894		1.19	Si
SLV 12	ini.	663.44	-2460	0.85	0	2656	6740	5727	2168	7894		3.21	Si
SLV 12	fin.	-1317.57	-5960	0.85	0	2656	6740	5727	2168	7894		1.32	Si
SLV 4	ini.	-1431.18	6484	0.85	0	2656	6740	5727	2168	7894		1.22	Si
SLV 4	fin.	1047.93	3779	0.85	0	2656	6740	5727	2168	7894		2.09	Si
SLV 15	ini.	1173.14	-4621	0.85	0	2656	6740	5727	2168	7894		1.71	Si
SLV 15	fin.	-1794.92	-7864	0.85	0	2656	6740	5727	2168	7894		1	Si
SLV 2	ini.	-1622.64	7309	0.85	0	2656	6740	5727	2168	7894		1.08	Si
SLV 2	fin.	1322.47	4949	0.85	0	2656	6740	5727	2168	7894		1.6	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.203	SLV 16	Si
V_SLV	0.829	SLV 16	No
PF_SLU	6.687	SLU 77	Si
V_SLU	2.502	SLU 77	Si

Trave di accoppiamento 130

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-7.958	6.651	8.62	9.52	0.9	-7.058	6.651	8.62	9.52	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 80	ini.	62.89	-1339	-0.0000311	0.0001872	0.0035	0.9		2942.43	2942.43	No	46.78	Si
SLU 80	fin.	574.61	-2016	-0.0003239	0.0001872	0.0035	0.9		2942.43	2942.43	No	5.12	Si
SLU 79	ini.	58.72	-1331	-0.0000291	0.0001872	0.0035	0.9		2942.43	2942.43	No	50.11	Si
SLU 79	fin.	581.21	-2027	-0.0003283	0.0001872	0.0035	0.9		2942.43	2942.43	No	5.06	Si
SLU 78	ini.	67	-1376	-0.0000332	0.0001872	0.0035	0.9		2942.43	2942.43	No	43.92	Si
SLU 78	fin.	585.83	-2060	-0.0003314	0.0001872	0.0035	0.9		2942.43	2942.43	No	5.02	Si
SLU 83	ini.	47.01	-1312	-0.0000232	0.0001872	0.0035	0.9		2942.43	2942.43	No	62.59	Si
SLU 83	fin.	602.63	-2073	-0.0003425	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.88	Si
SLU 74	ini.	49.44	-1307	-0.0000244	0.0001872	0.0035	0.9		2942.43	2942.43	No	59.52	Si
SLU 74	fin.	594.33	-2048	-0.000337	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.95	Si
SLU 84	ini.	51.18	-1320	-0.0000253	0.0001872	0.0035	0.9		2942.43	2942.43	No	57.49	Si
SLU 84	fin.	596.03	-2062	-0.0003381	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.94	Si
SLU 82	ini.	37.8	-1258	-0.0000186	0.0001872	0.0035	0.9		2942.43	2942.43	No	77.85	Si
SLU 82	fin.	597.94	-2039	-0.0003394	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.92	Si
SLU 75	ini.	53.61	-1315	-0.0000265	0.0001872	0.0035	0.9		2942.43	2942.43	No	54.88	Si
SLU 75	fin.	587.73	-2037	-0.0003326	0.0001872	0.0035	0.9		2942.43	2942.43	No	5.01	Si
SLU 81	ini.	33.63	-1250	-0.0000166	0.0001872	0.0035	0.9		2942.43	2942.43	No	87.51	Si
SLU 81	fin.	604.53	-2050	-0.0003438	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.87	Si
SLU 77	ini.	62.82	-1368	-0.0000311	0.0001872	0.0035	0.9		2942.43	2942.43	No	46.84	Si
SLU 77	fin.	592.43	-2071	-0.0003357	0.0001872	0.0035	0.9		2942.43	2942.43	No	4.97	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 84	ini.	51.18	-776	0.9	0	1875	7137	4043	2295	6338	No	8.17	Si
SLU 84	fin.	596.03	2130	0.9	0	1875	7137	4043	2295	6338	No	2.98	Si
SLU 83	ini.	47.01	-759	0.9	0	1875	7137	4043	2295	6338	No	8.35	Si
SLU 83	fin.	602.63	2154	0.9	0	1875	7137	4043	2295	6338	No	2.94	Si
SLU 74	ini.	49.44	-787	0.9	0	1875	7137	4043	2295	6338	No	8.06	Si
SLU 74	fin.	594.33	2140	0.9	0	1875	7137	4043	2295	6338	No	2.96	Si
SLU 80	ini.	62.89	-841	0.9	0	1875	7137	4043	2295	6338	No	7.53	Si
SLU 80	fin.	574.61	2058	0.9	0	1875	7137	4043	2295	6338	No	3.08	Si
SLU 81	ini.	33.63	-678	0.9	0	1875	7137	4043	2295	6338	No	9.35	Si
SLU 81	fin.	604.53	2161	0.9	0	1875	7137	4043	2295	6338	No	2.93	Si
SLU 79	ini.	58.72	-825	0.9	0	1875	7137	4043	2295	6338	No	7.69	Si
SLU 79	fin.	581.21	2082	0.9	0	1875	7137	4043	2295	6338	No	3.04	Si
SLU 77	ini.	62.82	-868	0.9	0	1875	7137	4043	2295	6338	No	7.3	Si
SLU 77	fin.	592.43	2134	0.9	0	1875	7137	4043	2295	6338	No	2.97	Si
SLU 82	ini.	37.8	-694	0.9	0	1875	7137	4043	2295	6338	No	9.13	Si
SLU 82	fin.	597.94	2136	0.9	0	1875	7137	4043	2295	6338	No	2.97	Si
SLU 75	ini.	53.61	-803	0.9	0	1875	7137	4043	2295	6338	No	7.89	Si
SLU 75	fin.	587.73	2116	0.9	0	1875	7137	4043	2295	6338	No	3	Si
SLU 78	ini.	67	-884	0.9	0	1875	7137	4043	2295	6338	No	7.17	Si
SLU 78	fin.	585.83	2109	0.9	0	1875	7137	4043	2295	6338	No	3	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	-1377.75	2912	-0.0008872	0.0002807	0.0035	0.9		2973.32	2973.32		2.16	Si
SLV 3	fin.	2164.64	-3603	-0.0016895	0.0002807	0.0035	0.9		2967.55	2967.55		1.37	Si
SLV 8	ini.	-658.92	716	-0.000361	0.0002807	0.0035	0.9		2973.32	2973.32		4.51	Si
SLV 8	fin.	1419.78	-2919	-0.000925	0.0002807	0.0035	0.9		2967.55	2967.55		2.09	Si
SLV 1	ini.	-1118.68	2384	-0.0006804	0.0002807	0.0035	0.9		2973.32	2973.32		2.66	Si
SLV 1	fin.	1744.65	-2914	-0.0012227	0.0002807	0.0035	0.9		2967.55	2967.55		1.7	Si
SLV 2	ini.	-845.03	1628	-0.0004831	0.0002807	0.0035	0.9		2973.32	2973.32		3.52	Si
SLV 2	fin.	1424.91	-2544	-0.0009294	0.0002807	0.0035	0.9		2967.55	2967.55		2.08	Si
SLV 4	ini.	-1104.1	2155	-0.0006693	0.0002807	0.0035	0.9		2973.32	2973.32		2.69	Si
SLV 4	fin.	1844.9	-3233	-0.001324	0.0002807	0.0035	0.9		2967.55	2967.55		1.61	Si
SLV 13	ini.	1144.6	-3839	-0.0007017	0.0002807	0.0035	0.9		2967.55	2967.55		2.59	Si
SLV 13	fin.	-1019.2	450	-0.0006062	0.0002807	0.0035	0.9		2973.32	2973.32		2.92	Si
SLD 3	ini.	-572.88	754	-0.0003081	0.0002807	0.0035	0.9		2973.32	2973.32		5.19	Si
SLD 3	fin.	1154.94	-2326	-0.0007097	0.0002807	0.0035	0.9		2967.55	2967.55		2.57	Si
SLV 14	ini.	1418.25	-4595	-0.0009237	0.0002807	0.0035	0.9		2967.55	2967.55		2.09	Si
SLV 14	fin.	-1338.94	820	-0.0008549	0.0002807	0.0035	0.9		2973.32	2973.32		2.22	Si
SLV 7	ini.	-843.16	1225	-0.0004818	0.0002807	0.0035	0.9		2973.32	2973.32		3.53	Si
SLV 7	fin.	1635.05	-3168	-0.0011175	0.0002807	0.0035	0.9		2967.55	2967.55		1.81	Si
SLV 16	ini.	1159.17	-4068	-0.000713	0.0002807	0.0035	0.9		2967.55	2967.55		2.56	Si
SLV 16	fin.	-918.95	131	-0.0005343	0.0002807	0.0035	0.9		2973.32	2973.32		3.24	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	-1377.75	6533	0.9	0	2813	7137	6064	2295	8359		1.28	Si
SLV 3	fin.	2164.64	7678	0.9	0	2813	7137	6064	2295	8359		1.09	Si
SLV 15	ini.	885.52	-4969	0.9	0	2813	7137	6064	2295	8359		1.68	Si
SLV 15	fin.	-599.21	-2030	0.9	0	2813	7137	6064	2295	8359		4.12	Si
SLV 13	ini.	1144.6	-6102	0.9	0	2813	7137	6064	2295	8359		1.37	Si
SLV 13	fin.	-1019.2	-3599	0.9	0	2813	7137	6064	2295	8359		2.32	Si
SLV 2	ini.	-845.03	4038	0.9	0	2813	7137	6064	2295	8359		2.07	Si
SLV 2	fin.	1424.91	4993	0.9	0	2813	7137	6064	2295	8359		1.67	Si
SLV 7	ini.	-843.16	3606	0.9	0	2813	7137	6064	2295	8359		2.32	Si
SLV 7	fin.	1635.05	5928	0.9	0	2813	7137	6064	2295	8359		1.41	Si
SLV 1	ini.	-1118.68	5400	0.9	0	2813	7137	6064	2295	8359		1.55	Si
SLV 1	fin.	1744.65	6109	0.9	0	2813	7137	6064	2295	8359		1.37	Si
SLV 14	ini.	1418.25	-7463	0.9	0	2813	7137	6064	2295	8359		1.12	Si
SLV 14	fin.	-1338.94	-4715	0.9	0	2813	7137	6064	2295	8359		1.77	Si
SLV 8	ini.	-658.92	2690	0.9	0	2813	7137	6064	2295	8359		3.11	Si
SLV 8	fin.	1419.78	5177	0.9	0	2813	7137	6064	2295	8359		1.61	Si
SLV 4	ini.	-1104.1	5171	0.9	0	2813	7137	6064	2295	8359		1.62	Si
SLV 4	fin.	1844.9	6562	0.9	0	2813	7137	6064	2295	8359		1.27	Si
SLV 16	ini.	1159.17	-6331	0.9	0	2813	7137	6064	2295	8359		1.32	Si
SLV 16	fin.	-918.95	-3146	0.9	0	2813	7137	6064	2295	8359		2.66	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.371	SLV 3	Si
V_SLV	1.089	SLV 3	Si
PF_SLU	4.867	SLU 81	Si
V_SLU	2.933	SLU 81	Si

Trave di accoppiamento 131

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-7.958	6.651	11.32	12.17	0.85	-7.058	6.651	11.32	12.17	0.85	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-523.69	-1741	-0.0003306	0.0001872	0.0035	0.85		2645.85	2645.85	No	5.05	Si
SLU 79	fin.	-24.38	-532	-0.0000134	0.0001872	0.0035	0.85		2645.85	2645.85	No	108.54	Si
SLU 74	ini.	-542.79	-1773	-0.0003448	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.87	Si
SLU 74	fin.	-11.73	-501	-0.0000064	0.0001872	0.0035	0.85		2645.85	2645.85	No	225.61	Si
SLU 81	ini.	-556.06	-1774	-0.0003547	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.76	Si
SLU 81	fin.	4.42	-447	-0.0000024	0.0001872	0.0035	0.85		2640.4	2640.4	No	596.78	Si
SLU 75	ini.	-536.83	-1761	-0.0003403	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.93	Si
SLU 75	fin.	-15.46	-509	-0.0000085	0.0001872	0.0035	0.85		2645.85	2645.85	No	171.12	Si
SLU 84	ini.	-544.02	-1779	-0.0003457	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.86	Si
SLU 84	fin.	-14.92	-509	-0.0000082	0.0001872	0.0035	0.85		2645.85	2645.85	No	177.35	Si
SLU 77	ini.	-536.72	-1791	-0.0003402	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.93	Si
SLU 77	fin.	-27.34	-555	-0.000015	0.0001872	0.0035	0.85		2645.85	2645.85	No	96.79	Si
SLU 73	ini.	-525.91	-1685	-0.0003322	0.0001872	0.0035	0.85		2645.85	2645.85	No	5.03	Si
SLU 73	fin.	0.62	-436	-0.0000003	0.0001872	0.0035	0.85		2640.4	2640.4	No	4291.86	Si
SLU 78	ini.	-530.76	-1779	-0.0003358	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.99	Si
SLU 78	fin.	-31.07	-563	-0.0000171	0.0001872	0.0035	0.85		2645.85	2645.85	No	85.16	Si
SLU 83	ini.	-549.98	-1791	-0.0003501	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.81	Si
SLU 83	fin.	-11.18	-501	-0.0000061	0.0001872	0.0035	0.85		2645.85	2645.85	No	236.57	Si
SLU 82	ini.	-550.1	-1762	-0.0003502	0.0001872	0.0035	0.85		2645.85	2645.85	No	4.81	Si
SLU 82	fin.	0.69	-455	-0.0000004	0.0001872	0.0035	0.85		2640.4	2640.4	No	3827.1	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-536.72	2818	0.85	0	1771	6740	3818	2168	5985	No	2.12	Si
SLU 77	fin.	-27.34	-612	0.85	0	1771	6740	3818	2168	5985	No	9.77	Si
SLU 75	ini.	-536.83	2816	0.85	0	1771	6740	3818	2168	5985	No	2.13	Si
SLU 75	fin.	-15.46	-569	0.85	0	1771	6740	3818	2168	5985	No	10.52	Si
SLU 78	ini.	-530.76	2794	0.85	0	1771	6740	3818	2168	5985	No	2.14	Si
SLU 78	fin.	-31.07	-628	0.85	0	1771	6740	3818	2168	5985	No	9.53	Si
SLU 73	ini.	-525.91	2755	0.85	0	1771	6740	3818	2168	5985	No	2.17	Si
SLU 73	fin.	0.62	-493	0.85	0	1771	6740	3818	2168	5985	No	12.14	Si
SLU 84	ini.	-544.02	2863	0.85	0	1771	6740	3818	2168	5985	No	2.09	Si
SLU 84	fin.	-14.92	-584	0.85	0	1771	6740	3818	2168	5985	No	10.24	Si
SLU 82	ini.	-550.1	2885	0.85	0	1771	6740	3818	2168	5985	No	2.07	Si
SLU 82	fin.	0.69	-525	0.85	0	1771	6740	3818	2168	5985	No	11.4	Si
SLU 79	ini.	-523.69	2751	0.85	0	1771	6740	3818	2168	5985	No	2.18	Si
SLU 79	fin.	-24.38	-586	0.85	0	1771	6740	3818	2168	5985	No	10.22	Si
SLU 81	ini.	-556.06	2909	0.85	0	1771	6740	3818	2168	5985	No	2.06	Si
SLU 81	fin.	4.42	-510	0.85	0	1771	6740	3818	2168	5985	No	11.75	Si
SLU 83	ini.	-549.98	2887	0.85	0	1771	6740	3818	2168	5985	No	2.07	Si
SLU 83	fin.	-11.18	-569	0.85	0	1771	6740	3818	2168	5985	No	10.52	Si
SLU 74	ini.	-542.79	2840	0.85	0	1771	6740	3818	2168	5985	No	2.11	Si
SLU 74	fin.	-11.73	-553	0.85	0	1771	6740	3818	2168	5985	No	10.82	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	-1782.71	-3637	-0.001481	0.0002807	0.0035	0.85		2647.52	2647.52		1.49	Si
SLV 3	fin.	1094.69	2298	-0.0007641	0.0002807	0.0035	0.85		2641.96	2641.96		2.41	Si
SLV 2	ini.	-1113.23	-2398	-0.0007787	0.0002807	0.0035	0.85		2647.52	2647.52		2.38	Si
SLV 2	fin.	620.41	1208	-0.0003841	0.0002807	0.0035	0.85		2641.96	2641.96		4.26	Si
SLV 1	ini.	-1397.24	-2865	-0.0010483	0.0002807	0.0035	0.85		2647.52	2647.52		1.89	Si
SLV 1	fin.	851.91	1777	-0.0005596	0.0002807	0.0035	0.85		2641.96	2641.96		3.1	Si
SLV 13	ini.	750.86	813	-0.0004806	0.0002807	0.0035	0.85		2641.96	2641.96		3.52	Si
SLV 13	fin.	-841.83	-2280	-0.0005503	0.0002807	0.0035	0.85		2647.52	2647.52		3.14	Si
SLD 4	ini.	-849.35	-2019	-0.0005562	0.0002807	0.0035	0.85		2647.52	2647.52		3.12	Si
SLD 4	fin.	371.8	575	-0.0002173	0.0002807	0.0035	0.85		2641.96	2641.96		7.11	Si
SLD 3	ini.	-970.17	-2218	-0.000655	0.0002807	0.0035	0.85		2647.52	2647.52		2.73	Si
SLD 3	fin.	470.29	816	-0.0002807	0.0002807	0.0035	0.85		2641.96	2641.96		5.62	Si
SLV 8	ini.	-1243	-2860	-0.0008977	0.0002807	0.0035	0.85		2647.52	2647.52		2.13	Si
SLV 8	fin.	591.46	1010	-0.0003635	0.0002807	0.0035	0.85		2641.96	2641.96		4.47	Si
SLV 7	ini.	-1434.21	-3174	-0.001086	0.0002807	0.0035	0.85		2647.52	2647.52		1.85	Si
SLV 7	fin.	747.32	1393	-0.0004779	0.0002807	0.0035	0.85		2641.96	2641.96		3.54	Si
SLV 4	ini.	-1498.71	-3170	-0.0011535	0.0002807	0.0035	0.85		2647.52	2647.52		1.77	Si
SLV 4	fin.	863.2	1729	-0.0005686	0.0002807	0.0035	0.85		2641.96	2641.96		3.06	Si
SLV 14	ini.	1034.87	1280	-0.0007118	0.0002807	0.0035	0.85		2641.96	2641.96		2.55	Si
SLV 14	fin.	-1073.33	-2849	-0.0007435	0.0002807	0.0035	0.85		2647.52	2647.52		2.47	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	ini.	-1113.23	4628	0.85	0	2656	6740	5727	2168	7894		1.71	Si
SLV 2	fin.	620.41	2518	0.85	0	2656	6740	5727	2168	7894		3.14	Si
SLV 14	ini.	1034.87	-3380	0.85	0	2656	6740	5727	2168	7894		2.34	Si
SLV 14	fin.	-1073.33	-5124	0.85	0	2656	6740	5727	2168	7894		1.54	Si
SLV 1	ini.	-1397.24	5694	0.85	0	2656	6740	5727	2168	7894		1.39	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	fin.	851.91	3563	0.85	0	2656	6740	5727	2168	7894		2.22	Si
SLD 3	ini.	-970.17	4187	0.85	0	2656	6740	5727	2168	7894		1.89	Si
SLD 3	fin.	470.29	1775	0.85	0	2656	6740	5727	2168	7894		4.45	Si
SLV 3	ini.	-1782.71	7255	0.85	0	2656	6740	5727	2168	7894		1.09	Si
SLV 3	fin.	1094.69	4563	0.85	0	2656	6740	5727	2168	7894		1.73	Si
SLV 4	ini.	-1498.71	6189	0.85	0	2656	6740	5727	2168	7894		1.28	Si
SLV 4	fin.	863.2	3518	0.85	0	2656	6740	5727	2168	7894		2.24	Si
SLV 13	ini.	750.86	-2314	0.85	0	2656	6740	5727	2168	7894		3.41	Si
SLV 13	fin.	-841.83	-4079	0.85	0	2656	6740	5727	2168	7894		1.94	Si
SLV 7	ini.	-1434.21	6100	0.85	0	2656	6740	5727	2168	7894		1.29	Si
SLV 7	fin.	747.32	2885	0.85	0	2656	6740	5727	2168	7894		2.74	Si
SLV 8	ini.	-1243	5382	0.85	0	2656	6740	5727	2168	7894		1.47	Si
SLV 8	fin.	591.46	2181	0.85	0	2656	6740	5727	2168	7894		3.62	Si
SLV 16	ini.	649.39	-1818	0.85	0	2656	6740	5727	2168	7894		4.34	Si
SLV 16	fin.	-830.55	-4124	0.85	0	2656	6740	5727	2168	7894		1.91	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.485	SLV 3	Si
V_SLV	1.088	SLV 3	Si
PF_SLU	4.758	SLU 81	Si
V_SLU	2.058	SLU 81	Si

Trave di accoppiamento 133

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-8.548	-3.359	10.72	12.17	1.45	-9.448	-3.359	10.72	12.17	1.45	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 69	ini.	924.21	-1534	-0.0001859	0.0002246	0.0035	1.45		7849.88	7849.88	No	8.49	Si
SLU 69	fin.	-1270.11	-2445	-0.0002633	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.19	Si
SLU 68	ini.	922.8	-1466	-0.0001856	0.0002246	0.0035	1.45		7849.88	7849.88	No	8.51	Si
SLU 68	fin.	-1267.7	-2367	-0.0002627	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.2	Si
SLU 78	ini.	969.26	-1521	-0.0001957	0.0002246	0.0035	1.45		7849.88	7849.88	No	8.1	Si
SLU 78	fin.	-1296.28	-2453	-0.0002694	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.06	Si
SLU 76	ini.	948.07	-1439	-0.0001911	0.0002246	0.0035	1.45		7849.88	7849.88	No	8.28	Si
SLU 76	fin.	-1270.59	-2346	-0.0002634	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.19	Si
SLU 75	ini.	949.71	-1463	-0.0001915	0.0002246	0.0035	1.45		7849.88	7849.88	No	8.27	Si
SLU 75	fin.	-1272.72	-2375	-0.0002639	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.17	Si
SLU 80	ini.	954.44	-1488	-0.0001925	0.0002246	0.0035	1.45		7849.88	7849.88	No	8.22	Si
SLU 80	fin.	-1278.63	-2405	-0.0002653	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.15	Si
SLU 70	ini.	943.99	-1548	-0.0001902	0.0002246	0.0035	1.45		7849.88	7849.88	No	8.32	Si
SLU 70	fin.	-1293.38	-2474	-0.0002687	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.08	Si
SLU 67	ini.	924.43	-1490	-0.000186	0.0002246	0.0035	1.45		7849.88	7849.88	No	8.49	Si
SLU 67	fin.	-1269.83	-2396	-0.0002632	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.19	Si
SLU 77	ini.	949.48	-1507	-0.0001914	0.0002246	0.0035	1.45		7849.88	7849.88	No	8.27	Si
SLU 77	fin.	-1273	-2424	-0.000264	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.17	Si
SLU 72	ini.	929.16	-1515	-0.000187	0.0002246	0.0035	1.45		7849.88	7849.88	No	8.45	Si
SLU 72	fin.	-1275.74	-2426	-0.0002646	0.0002246	0.0035	1.45		7858.95	7858.95	No	6.16	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	954.44	-2582	1.45	0	3625	7137	7816	3698	10762	No	4.17	Si
SLU 80	fin.	-1278.63	-4018	1.45	0	3625	7137	7816	3698	10762	No	2.68	Si
SLU 79	ini.	934.66	-2518	1.45	0	3625	7137	7816	3698	10762	No	4.27	Si
SLU 79	fin.	-1255.36	-3958	1.45	0	3625	7137	7816	3698	10762	No	2.72	Si
SLU 75	ini.	949.71	-2562	1.45	0	3625	7137	7816	3698	10762	No	4.2	Si
SLU 75	fin.	-1272.72	-4003	1.45	0	3625	7137	7816	3698	10762	No	2.69	Si
SLU 77	ini.	949.48	-2570	1.45	0	3625	7137	7816	3698	10762	No	4.19	Si
SLU 77	fin.	-1273	-4004	1.45	0	3625	7137	7816	3698	10762	No	2.69	Si
SLU 76	ini.	948.07	-2553	1.45	0	3625	7137	7816	3698	10762	No	4.22	Si
SLU 76	fin.	-1270.59	-3997	1.45	0	3625	7137	7816	3698	10762	No	2.69	Si
SLU 74	ini.	929.93	-2498	1.45	0	3625	7137	7816	3698	10762	No	4.31	Si
SLU 74	fin.	-1249.45	-3943	1.45	0	3625	7137	7816	3698	10762	No	2.73	Si
SLU 78	ini.	969.26	-2634	1.45	0	3625	7137	7816	3698	10762	No	4.09	Si
SLU 78	fin.	-1296.28	-4063	1.45	0	3625	7137	7816	3698	10762	No	2.65	Si
SLU 83	ini.	925.93	-2406	1.45	0	3625	7137	7816	3698	10762	No	4.47	Si
SLU 83	fin.	-1233.04	-3969	1.45	0	3625	7137	7816	3698	10762	No	2.71	Si
SLU 82	ini.	926.15	-2398	1.45	0	3625	7137	7816	3698	10762	No	4.49	Si
SLU 82	fin.	-1232.76	-3968	1.45	0	3625	7137	7816	3698	10762	No	2.71	Si
SLU 84	ini.	945.71	-2470	1.45	0	3625	7137	7816	3698	10762	No	4.36	Si
SLU 84	fin.	-1256.32	-4028	1.45	0	3625	7137	7816	3698	10762	No	2.67	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-3966.38	-1254	-0.0009862	0.0003369	0.0035	1.45		7791.28	7791.28		1.96	Si
SLV 15	fin.	3668.03	1622	-0.0008911	0.0003369	0.0035	1.45		7781.38	7781.38		2.12	Si
SLV 2	ini.	5236.57	-804	-0.0014592	0.0003369	0.0035	1.45		7781.38	7781.38		1.49	Si
SLV 2	fin.	-5425.08	-4923	-0.0015375	0.0003369	0.0035	1.45		7791.28	7791.28		1.44	Si
SLV 6	ini.	3317.87	-2423	-0.0007833	0.0003369	0.0035	1.45		7781.38	7781.38		2.35	Si
SLV 6	fin.	-3847.29	-4956	-0.0009472	0.0003369	0.0035	1.45		7791.28	7791.28		2.03	Si
SLV 16	ini.	-3204.92	-1287	-0.0007486	0.0003369	0.0035	1.45		7791.28	7791.28		2.43	Si
SLV 16	fin.	2883.77	1012	-0.0006571	0.0003369	0.0035	1.45		7781.38	7781.38		2.7	Si
SLV 4	ini.	4471.59	156	-0.0011622	0.0003369	0.0035	1.45		7781.38	7781.38		1.74	Si
SLV 4	fin.	-4463.47	-3465	-0.0011574	0.0003369	0.0035	1.45		7791.28	7791.28		1.75	Si
SLV 13	ini.	-3201.39	-2214	-0.0007475	0.0003369	0.0035	1.45		7791.28	7791.28		2.43	Si
SLV 13	fin.	2706.42	164	-0.0006078	0.0003369	0.0035	1.45		7781.38	7781.38		2.88	Si
SLD 2	ini.	2589.54	-918	-0.0005761	0.0003369	0.0035	1.45		7781.38	7781.38		3	Si
SLD 2	fin.	-2806.64	-3027	-0.0006346	0.0003369	0.0035	1.45		7791.28	7791.28		2.78	Si
SLV 5	ini.	2805.21	-2401	-0.0006351	0.0003369	0.0035	1.45		7781.38	7781.38		2.77	Si
SLV 5	fin.	-3319.28	-4546	-0.0007825	0.0003369	0.0035	1.45		7791.28	7791.28		2.35	Si
SLV 3	ini.	3710.13	189	-0.0009045	0.0003369	0.0035	1.45		7781.38	7781.38		2.1	Si
SLV 3	fin.	-3679.22	-2856	-0.0008933	0.0003369	0.0035	1.45		7791.28	7791.28		2.12	Si
SLV 1	ini.	4475.11	-771	-0.0011634	0.0003369	0.0035	1.45		7781.38	7781.38		1.74	Si
SLV 1	fin.	-4640.82	-4313	-0.0012221	0.0003369	0.0035	1.45		7791.28	7791.28		1.68	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-3201.39	9270	1.45	0	5144	7137	11725	3698	12280		1.32	Si
SLV 13	fin.	2706.42	7748	1.45	0	5144	7137	11725	3698	12280		1.58	Si
SLV 4	ini.	4471.59	-12789	1.45	0	5144	7137	11725	3698	12280		0.96	No
SLV 4	fin.	-4463.47	-13173	1.45	0	5144	7137	11725	3698	12280		0.93	No
SLV 3	ini.	3710.13	-10483	1.45	0	5144	7137	11725	3698	12280		1.17	Si
SLV 3	fin.	-3679.22	-10990	1.45	0	5144	7137	11725	3698	12280		1.12	Si
SLV 5	ini.	2805.21	-8480	1.45	0	5144	7137	11725	3698	12280		1.45	Si
SLV 5	fin.	-3319.28	-8968	1.45	0	5144	7137	11725	3698	12280		1.37	Si
SLV 2	ini.	5236.57	-15284	1.45	0	5144	7137	11725	3698	12280		0.8	No
SLV 2	fin.	-5425.08	-15474	1.45	0	5144	7137	11725	3698	12280		0.79	No
SLD 2	ini.	2589.54	-7501	1.45	0	5144	7137	11725	3698	12280		1.64	Si
SLD 2	fin.	-2806.64	-8131	1.45	0	5144	7137	11725	3698	12280		1.51	Si
SLV 16	ini.	-3204.92	9459	1.45	0	5144	7137	11725	3698	12280		1.3	Si
SLV 16	fin.	2883.77	7866	1.45	0	5144	7137	11725	3698	12280		1.56	Si
SLV 1	ini.	4475.11	-12979	1.45	0	5144	7137	11725	3698	12280		0.95	No
SLV 1	fin.	-4640.82	-13291	1.45	0	5144	7137	11725	3698	12280		0.92	No
SLV 15	ini.	-3966.38	11765	1.45	0	5144	7137	11725	3698	12280		1.04	Si
SLV 15	fin.	3668.03	10049	1.45	0	5144	7137	11725	3698	12280		1.22	Si
SLV 6	ini.	3317.87	-10032	1.45	0	5144	7137	11725	3698	12280		1.22	Si
SLV 6	fin.	-3847.29	-10438	1.45	0	5144	7137	11725	3698	12280		1.18	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.436	SLV 2	Si
V_SLV	0.794	SLV 2	No
PF_SLU	6.063	SLU 78	Si
V_SLU	2.649	SLU 78	Si

Trave di accoppiamento 135

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-5.158	6.001	8.62	10.62	2	-5.158	6.501	8.62	10.62	2	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-163.95	-625	-0.0000163	0.0001872	0.0035	2		14219.44	14219.44	No	86.73	Si
SLU 78	fin.	-417.05	-440	-0.0000419	0.0001872	0.0035	2		14219.44	14219.44	No	34.1	Si
SLU 70	ini.	-142.81	-575	-0.0000142	0.0001872	0.0035	2		14219.44	14219.44	No	99.57	Si
SLU 70	fin.	-396.47	-418	-0.0000398	0.0001872	0.0035	2		14219.44	14219.44	No	35.86	Si
SLU 79	ini.	-156.51	-625	-0.0000156	0.0001872	0.0035	2		14219.44	14219.44	No	90.85	Si
SLU 79	fin.	-417.05	-440	-0.0000419	0.0001872	0.0035	2		14219.44	14219.44	No	34.1	Si
SLU 80	ini.	-159.76	-617	-0.0000159	0.0001872	0.0035	2		14219.44	14219.44	No	89.01	Si
SLU 80	fin.	-413.83	-436	-0.0000416	0.0001872	0.0035	2		14219.44	14219.44	No	34.36	Si
SLU 71	ini.	-135.37	-575	-0.0000134	0.0001872	0.0035	2		14219.44	14219.44	No	105.04	Si
SLU 71	fin.	-396.48	-418	-0.0000398	0.0001872	0.0035	2		14219.44	14219.44	No	35.86	Si
SLU 84	ini.	-188.55	-618	-0.0000188	0.0001872	0.0035	2		14219.44	14219.44	No	75.42	Si
SLU 84	fin.	-399.21	-421	-0.0000401	0.0001872	0.0035	2		14219.44	14219.44	No	35.62	Si
SLU 83	ini.	-185.3	-625	-0.0000184	0.0001872	0.0035	2		14219.44	14219.44	No	76.74	Si
SLU 83	fin.	-402.44	-424	-0.0000404	0.0001872	0.0035	2		14219.44	14219.44	No	35.33	Si
SLU 74	ini.	-180.43	-611	-0.000018	0.0001872	0.0035	2		14219.44	14219.44	No	78.81	Si
SLU 74	fin.	-396.84	-418	-0.0000398	0.0001872	0.0035	2		14219.44	14219.44	No	35.83	Si
SLU 77	ini.	-160.7	-633	-0.000016	0.0001872	0.0035	2		14219.44	14219.44	No	88.48	Si
SLU 77	fin.	-420.27	-443	-0.0000422	0.0001872	0.0035	2		14219.44	14219.44	No	33.83	Si
SLU 69	ini.	-139.56	-583	-0.0000139	0.0001872	0.0035	2		14219.44	14219.44	No	101.89	Si
SLU 69	fin.	-399.7	-422	-0.0000401	0.0001872	0.0035	2		14219.44	14219.44	No	35.58	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 71	ini.	-135.37	-1074	2	0	4167	3965	8983	5100	8131	No	7.57	Si
SLU 71	fin.	-396.48	-912	2	0	4167	3965	8983	5100	8131	No	8.92	Si
SLU 77	ini.	-160.7	-1156	2	0	4167	3965	8983	5100	8131	No	7.03	Si
SLU 77	fin.	-420.27	-964	2	0	4167	3965	8983	5100	8131	No	8.44	Si
SLU 35	ini.	-127.65	-1052	2	0	4167	3965	8983	5100	8131	No	7.73	Si
SLU 35	fin.	-362.18	-830	2	0	4167	3965	8983	5100	8131	No	9.8	Si
SLU 83	ini.	-185.3	-1063	2	0	4167	3965	8983	5100	8131	No	7.65	Si
SLU 83	fin.	-402.44	-921	2	0	4167	3965	8983	5100	8131	No	8.83	Si
SLU 79	ini.	-156.51	-1149	2	0	4167	3965	8983	5100	8131	No	7.08	Si
SLU 79	fin.	-417.05	-958	2	0	4167	3965	8983	5100	8131	No	8.49	Si
SLU 80	ini.	-159.76	-1106	2	0	4167	3965	8983	5100	8131	No	7.35	Si
SLU 80	fin.	-413.83	-946	2	0	4167	3965	8983	5100	8131	No	8.59	Si
SLU 78	ini.	-163.95	-1114	2	0	4167	3965	8983	5100	8131	No	7.3	Si
SLU 78	fin.	-417.05	-952	2	0	4167	3965	8983	5100	8131	No	8.54	Si
SLU 37	ini.	-123.45	-1045	2	0	4167	3965	8983	5100	8131	No	7.78	Si
SLU 37	fin.	-358.96	-824	2	0	4167	3965	8983	5100	8131	No	9.87	Si
SLU 69	ini.	-139.56	-1081	2	0	4167	3965	8983	5100	8131	No	7.52	Si
SLU 69	fin.	-399.7	-917	2	0	4167	3965	8983	5100	8131	No	8.86	Si
SLU 70	ini.	-142.81	-1039	2	0	4167	3965	8983	5100	8131	No	7.83	Si
SLU 70	fin.	-396.47	-906	2	0	4167	3965	8983	5100	8131	No	8.98	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 7	ini.	-36.96	-804	-0.0000037	0.0002807	0.0035	2		13933.43	13933.43		376.94	Si
SLD 7	fin.	-458.18	-458	-0.0000459	0.0002807	0.0035	2		13933.43	13933.43		30.41	Si
SLV 8	ini.	159.78	-1282	-0.0000159	0.0002807	0.0035	2		13920.08	13920.08		87.12	Si
SLV 8	fin.	-754.32	-733	-0.0000762	0.0002807	0.0035	2		13933.43	13933.43		18.47	Si
SLD 11	ini.	4.09	-680	-0.0000004	0.0002807	0.0035	2		13920.08	13920.08		3407.41	Si
SLD 11	fin.	-462.78	-463	-0.0000464	0.0002807	0.0035	2		13933.43	13933.43		30.11	Si
SLV 7	ini.	115.47	-1399	-0.0000115	0.0002807	0.0035	2		13920.08	13920.08		120.55	Si
SLV 7	fin.	-750.41	-728	-0.0000758	0.0002807	0.0035	2		13933.43	13933.43		18.57	Si
SLD 8	ini.	-18.5	-755	-0.0000018	0.0002807	0.0035	2		13933.43	13933.43		753.3	Si
SLD 8	fin.	-459.81	-460	-0.0000461	0.0002807	0.0035	2		13933.43	13933.43		30.3	Si
SLV 6	ini.	-486.01	296	-0.0000487	0.0002807	0.0035	2		13933.43	13933.43		28.67	Si
SLV 6	fin.	232.32	182	-0.0000231	0.0002807	0.0035	2		13920.08	13920.08		59.92	Si
SLV 12	ini.	255.76	-991	-0.0000255	0.0002807	0.0035	2		13920.08	13920.08		54.43	Si
SLV 12	fin.	-765.78	-745	-0.0000774	0.0002807	0.0035	2		13933.43	13933.43		18.2	Si
SLV 11	ini.	211.45	-1108	-0.000021	0.0002807	0.0035	2		13920.08	13920.08		65.83	Si
SLV 11	fin.	-761.87	-740	-0.000077	0.0002807	0.0035	2		13933.43	13933.43		18.29	Si
SLD 12	ini.	22.55	-631	-0.0000022	0.0002807	0.0035	2		13920.08	13920.08		617.2	Si
SLD 12	fin.	-464.41	-465	-0.0000465	0.0002807	0.0035	2		13933.43	13933.43		30	Si
SLV 5	ini.	-530.32	179	-0.0000532	0.0002807	0.0035	2		13933.43	13933.43		26.27	Si
SLV 5	fin.	236.23	186	-0.0000235	0.0002807	0.0035	2		13920.08	13920.08		58.93	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 12	ini.	255.76	-4544	2	0	6250	3965	13475	5100	10215		2.25	Si
SLV 12	fin.	-765.78	-1953	2	0	6250	3965	13475	5100	10215		5.23	Si
SLV 3	ini.	-233.28	-3943	2	0	6250	3965	13475	5100	10215		2.59	Si
SLV 3	fin.	-390.77	-1474	2	0	6250	3965	13475	5100	10215		6.93	Si
SLV 4	ini.	-167.47	-3400	2	0	6250	3965	13475	5100	10215		3	Si
SLV 4	fin.	-396.58	-1367	2	0	6250	3965	13475	5100	10215		7.47	Si
SLV 7	ini.	115.47	-5908	2	0	6250	3965	13475	5100	10215		1.73	Si
SLV 7	fin.	-750.41	-2245	2	0	6250	3965	13475	5100	10215		4.55	Si
SLV 11	ini.	211.45	-4909	2	0	6250	3965	13475	5100	10215		2.08	Si
SLV 11	fin.	-761.87	-2025	2	0	6250	3965	13475	5100	10215		5.04	Si
SLV 9	ini.	-434.34	4289	2	0	6250	3965	13475	5100	10215		2.38	Si
SLV 9	fin.	224.77	964	2	0	6250	3965	13475	5100	10215		10.6	Si
SLV 6	ini.	-486.01	3655	2	0	6250	3965	13475	5100	10215		2.79	Si
SLV 6	fin.	232.32	815	2	0	6250	3965	13475	5100	10215		12.53	Si
SLV 8	ini.	159.78	-5543	2	0	6250	3965	13475	5100	10215		1.84	Si
SLV 8	fin.	-754.32	-2173	2	0	6250	3965	13475	5100	10215		4.7	Si
SLV 5	ini.	-530.32	3290	2	0	6250	3965	13475	5100	10215		3.11	Si
SLV 5	fin.	236.23	743	2	0	6250	3965	13475	5100	10215		13.74	Si
SLV 10	ini.	-390.04	4654	2	0	6250	3965	13475	5100	10215		2.19	Si
SLV 10	fin.	220.87	1036	2	0	6250	3965	13475	5100	10215		9.86	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	18.195	SLV 12	Si
V_SLV	1.729	SLV 7	Si
PF_SLU	33.834	SLU 77	Si
V_SLU	7.034	SLU 77	Si

Trave di accoppiamento 136

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-5.158	6.001	11.42	12.17	0.75	-5.158	6.501	11.42	12.17	0.75	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-309.66	-1331	-0.0002405	0.0001872	0.0035	0.75		2071.83	2071.83	No	6.69	Si
SLU 79	fin.	175.47	-505	-0.0001298	0.0001872	0.0035	0.75		2067.09	2067.09	No	11.78	Si
SLU 84	ini.	-287.96	-1245	-0.0002217	0.0001872	0.0035	0.75		2071.83	2071.83	No	7.19	Si
SLU 84	fin.	163.12	-469	-0.0001202	0.0001872	0.0035	0.75		2067.09	2067.09	No	12.67	Si
SLU 77	ini.	-309.4	-1331	-0.0002403	0.0001872	0.0035	0.75		2071.83	2071.83	No	6.7	Si
SLU 77	fin.	175.36	-504	-0.0001297	0.0001872	0.0035	0.75		2067.09	2067.09	No	11.79	Si
SLU 70	ini.	-300.28	-1290	-0.0002323	0.0001872	0.0035	0.75		2071.83	2071.83	No	6.9	Si
SLU 70	fin.	169.92	-489	-0.0001255	0.0001872	0.0035	0.75		2067.09	2067.09	No	12.16	Si
SLU 69	ini.	-299.3	-1284	-0.0002315	0.0001872	0.0035	0.75		2071.83	2071.83	No	6.92	Si
SLU 69	fin.	169.34	-487	-0.000125	0.0001872	0.0035	0.75		2067.09	2067.09	No	12.21	Si
SLU 83	ini.	-286.97	-1240	-0.0002208	0.0001872	0.0035	0.75		2071.83	2071.83	No	7.22	Si
SLU 83	fin.	162.54	-467	-0.0001197	0.0001872	0.0035	0.75		2067.09	2067.09	No	12.72	Si
SLU 72	ini.	-300.53	-1290	-0.0002325	0.0001872	0.0035	0.75		2071.83	2071.83	No	6.89	Si
SLU 72	fin.	170.04	-489	-0.0001256	0.0001872	0.0035	0.75		2067.09	2067.09	No	12.16	Si
SLU 78	ini.	-310.39	-1336	-0.0002412	0.0001872	0.0035	0.75		2071.83	2071.83	No	6.68	Si
SLU 78	fin.	175.93	-506	-0.0001302	0.0001872	0.0035	0.75		2067.09	2067.09	No	11.75	Si
SLU 71	ini.	-299.55	-1284	-0.0002317	0.0001872	0.0035	0.75		2071.83	2071.83	No	6.92	Si
SLU 71	fin.	169.46	-488	-0.0001251	0.0001872	0.0035	0.75		2067.09	2067.09	No	12.2	Si
SLU 80	ini.	-310.64	-1336	-0.0002414	0.0001872	0.0035	0.75		2071.83	2071.83	No	6.67	Si
SLU 80	fin.	176.05	-506	-0.0001303	0.0001872	0.0035	0.75		2067.09	2067.09	No	11.74	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 69	ini.	-299.3	2686	0.75	0	1563	3965	3369	1913	5281	No	1.97	Si
SLU 69	fin.	169.34	889	0.75	0	1563	3965	3369	1913	5281	No	5.94	Si
SLU 71	ini.	-299.55	2689	0.75	0	1563	3965	3369	1913	5281	No	1.96	Si
SLU 71	fin.	169.46	889	0.75	0	1563	3965	3369	1913	5281	No	5.94	Si
SLU 77	ini.	-309.4	2779	0.75	0	1563	3965	3369	1913	5281	No	1.9	Si
SLU 77	fin.	175.36	923	0.75	0	1563	3965	3369	1913	5281	No	5.72	Si
SLU 72	ini.	-300.53	2697	0.75	0	1563	3965	3369	1913	5281	No	1.96	Si
SLU 72	fin.	170.04	893	0.75	0	1563	3965	3369	1913	5281	No	5.91	Si
SLU 80	ini.	-310.64	2791	0.75	0	1563	3965	3369	1913	5281	No	1.89	Si
SLU 80	fin.	176.05	927	0.75	0	1563	3965	3369	1913	5281	No	5.7	Si
SLU 79	ini.	-309.66	2782	0.75	0	1563	3965	3369	1913	5281	No	1.9	Si
SLU 79	fin.	175.47	923	0.75	0	1563	3965	3369	1913	5281	No	5.72	Si
SLU 83	ini.	-286.97	2577	0.75	0	1563	3965	3369	1913	5281	No	2.05	Si
SLU 83	fin.	162.54	855	0.75	0	1563	3965	3369	1913	5281	No	6.18	Si
SLU 70	ini.	-300.28	2694	0.75	0	1563	3965	3369	1913	5281	No	1.96	Si
SLU 70	fin.	169.92	893	0.75	0	1563	3965	3369	1913	5281	No	5.91	Si
SLU 84	ini.	-287.96	2586	0.75	0	1563	3965	3369	1913	5281	No	2.04	Si
SLU 84	fin.	163.12	859	0.75	0	1563	3965	3369	1913	5281	No	6.15	Si
SLU 78	ini.	-310.39	2788	0.75	0	1563	3965	3369	1913	5281	No	1.89	Si
SLU 78	fin.	175.93	927	0.75	0	1563	3965	3369	1913	5281	No	5.69	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	-232.91	-1142	-0.0001717	0.0002807	0.0035	0.75		2057.16	2057.16		8.83	Si
SLV 10	fin.	128.6	-392	-0.0000927	0.0002807	0.0035	0.75		2052.27	2052.27		15.96	Si
SLD 14	ini.	-205.57	-894	-0.0001506	0.0002807	0.0035	0.75		2057.16	2057.16		10.01	Si
SLD 14	fin.	112.37	-325	-0.0000808	0.0002807	0.0035	0.75		2052.27	2052.27		18.26	Si
SLV 5	ini.	-202.03	-1035	-0.0001478	0.0002807	0.0035	0.75		2057.16	2057.16		10.18	Si
SLV 5	fin.	117.54	-362	-0.0000846	0.0002807	0.0035	0.75		2052.27	2052.27		17.46	Si
SLV 14	ini.	-232.77	-1019	-0.0001716	0.0002807	0.0035	0.75		2057.16	2057.16		8.84	Si
SLV 14	fin.	122.75	-357	-0.0000884	0.0002807	0.0035	0.75		2052.27	2052.27		16.72	Si
SLD 9	ini.	-198.82	-921	-0.0001454	0.0002807	0.0035	0.75		2057.16	2057.16		10.35	Si
SLD 9	fin.	111.95	-331	-0.0000804	0.0002807	0.0035	0.75		2052.27	2052.27		18.33	Si
SLV 13	ini.	-210.37	-941	-0.0001543	0.0002807	0.0035	0.75		2057.16	2057.16		9.78	Si
SLV 13	fin.	113.24	-329	-0.0000814	0.0002807	0.0035	0.75		2052.27	2052.27		18.12	Si
SLV 9	ini.	-217.83	-1089	-0.00016	0.0002807	0.0035	0.75		2057.16	2057.16		9.44	Si
SLV 9	fin.	122.19	-373	-0.000088	0.0002807	0.0035	0.75		2052.27	2052.27		16.8	Si
SLV 6	ini.	-217.11	-1088	-0.0001595	0.0002807	0.0035	0.75		2057.16	2057.16		9.48	Si
SLV 6	fin.	123.95	-380	-0.0000893	0.0002807	0.0035	0.75		2052.27	2052.27		16.56	Si
SLD 10	ini.	-205.1	-942	-0.0001502	0.0002807	0.0035	0.75		2057.16	2057.16		10.03	Si
SLD 10	fin.	114.62	-339	-0.0000824	0.0002807	0.0035	0.75		2052.27	2052.27		17.9	Si
SLV 16	ini.	-213.71	-848	-0.0001568	0.0002807	0.0035	0.75		2057.16	2057.16		9.63	Si
SLV 16	fin.	111.76	-311	-0.0000803	0.0002807	0.0035	0.75		2052.27	2052.27		18.36	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 10	ini.	-232.91	2112	0.75	0	2344	3965	5053	1913	6309		2.99	Si
SLV 10	fin.	128.6	769	0.75	0	2344	3965	5053	1913	6309		8.2	Si
SLD 10	ini.	-205.1	1847	0.75	0	2344	3965	5053	1913	6309		3.41	Si
SLD 10	fin.	114.62	637	0.75	0	2344	3965	5053	1913	6309		9.9	Si
SLD 14	ini.	-205.57	1851	0.75	0	2344	3965	5053	1913	6309		3.41	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 14	fin.	112.37	602	0.75	0	2344	3965	5053	1913	6309		10.49	Si
SLV 5	ini.	-202.03	1838	0.75	0	2344	3965	5053	1913	6309		3.43	Si
SLV 5	fin.	117.54	697	0.75	0	2344	3965	5053	1913	6309		9.05	Si
SLV 9	ini.	-217.83	1996	0.75	0	2344	3965	5053	1913	6309		3.16	Si
SLV 9	fin.	122.19	725	0.75	0	2344	3965	5053	1913	6309		8.7	Si
SLV 6	ini.	-217.11	1954	0.75	0	2344	3965	5053	1913	6309		3.23	Si
SLV 6	fin.	123.95	741	0.75	0	2344	3965	5053	1913	6309		8.52	Si
SLV 14	ini.	-232.77	2108	0.75	0	2344	3965	5053	1913	6309		2.99	Si
SLV 14	fin.	122.75	681	0.75	0	2344	3965	5053	1913	6309		9.26	Si
SLV 16	ini.	-213.71	1921	0.75	0	2344	3965	5053	1913	6309		3.28	Si
SLV 16	fin.	111.76	569	0.75	0	2344	3965	5053	1913	6309		11.08	Si
SLV 13	ini.	-210.37	1935	0.75	0	2344	3965	5053	1913	6309		3.26	Si
SLV 13	fin.	113.24	617	0.75	0	2344	3965	5053	1913	6309		10.23	Si
SLD 9	ini.	-198.82	1799	0.75	0	2344	3965	5053	1913	6309		3.51	Si
SLD 9	fin.	111.95	619	0.75	0	2344	3965	5053	1913	6309		10.19	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	8.832	SLV 10	Si
V_SLV	2.987	SLV 10	Si
PF_SLU	6.67	SLU 80	Si
V_SLU	1.892	SLU 80	Si

Trave di accoppiamento 137

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-6.513	-3.359	8.62	9.52	0.9	-7.413	-3.359	8.62	9.52	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 76	ini.	271.22	-1683	-0.0001405	0.0001872	0.0035	0.9		2942.43	2942.43	No	10.85	Si
SLU 76	fin.	-76.35	-598	-0.0000378	0.0001872	0.0035	0.9		2948.11	2948.11	No	38.61	Si
SLU 66	ini.	274.36	-1676	-0.0001422	0.0001872	0.0035	0.9		2942.43	2942.43	No	10.72	Si
SLU 66	fin.	-89.04	-533	-0.0000442	0.0001872	0.0035	0.9		2948.11	2948.11	No	33.11	Si
SLU 69	ini.	281.72	-1724	-0.0001463	0.0001872	0.0035	0.9		2942.43	2942.43	No	10.44	Si
SLU 69	fin.	-89.54	-554	-0.0000445	0.0001872	0.0035	0.9		2948.11	2948.11	No	32.93	Si
SLU 70	ini.	294.61	-1772	-0.0001534	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.99	Si
SLU 70	fin.	-102.99	-521	-0.0000513	0.0001872	0.0035	0.9		2948.11	2948.11	No	28.62	Si
SLU 72	ini.	288.81	-1739	-0.0001502	0.0001872	0.0035	0.9		2942.43	2942.43	No	10.19	Si
SLU 72	fin.	-100.71	-514	-0.0000501	0.0001872	0.0035	0.9		2948.11	2948.11	No	29.27	Si
SLU 67	ini.	287.25	-1724	-0.0001493	0.0001872	0.0035	0.9		2942.43	2942.43	No	10.24	Si
SLU 67	fin.	-102.5	-500	-0.0000511	0.0001872	0.0035	0.9		2948.11	2948.11	No	28.76	Si
SLU 68	ini.	290.05	-1723	-0.0001509	0.0001872	0.0035	0.9		2942.43	2942.43	No	10.14	Si
SLU 68	fin.	-109.19	-471	-0.0000545	0.0001872	0.0035	0.9		2948.11	2948.11	No	27	Si
SLU 78	ini.	275.77	-1732	-0.000143	0.0001872	0.0035	0.9		2942.43	2942.43	No	10.67	Si
SLU 78	fin.	-70.16	-647	-0.0000347	0.0001872	0.0035	0.9		2948.11	2948.11	No	42.02	Si
SLU 71	ini.	275.92	-1691	-0.0001431	0.0001872	0.0035	0.9		2942.43	2942.43	No	10.66	Si
SLU 71	fin.	-87.26	-547	-0.0000433	0.0001872	0.0035	0.9		2948.11	2948.11	No	33.79	Si
SLU 65	ini.	282.7	-1675	-0.0001468	0.0001872	0.0035	0.9		2942.43	2942.43	No	10.41	Si
SLU 65	fin.	-108.69	-451	-0.0000542	0.0001872	0.0035	0.9		2948.11	2948.11	No	27.12	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 69	ini.	281.72	-2906	0.9	0	1875	7137	4043	2295	6338	No	2.18	Si
SLU 69	fin.	-89.54	713	0.9	0	1875	7137	4043	2295	6338	No	8.89	Si
SLU 78	ini.	275.77	-2921	0.9	0	1875	7137	4043	2295	6338	No	2.17	Si
SLU 78	fin.	-70.16	845	0.9	0	1875	7137	4043	2295	6338	No	7.5	Si
SLU 70	ini.	294.61	-2984	0.9	0	1875	7137	4043	2295	6338	No	2.12	Si
SLU 70	fin.	-102.99	648	0.9	0	1875	7137	4043	2295	6338	No	9.78	Si
SLU 72	ini.	288.81	-2927	0.9	0	1875	7137	4043	2295	6338	No	2.17	Si
SLU 72	fin.	-100.71	639	0.9	0	1875	7137	4043	2295	6338	No	9.92	Si
SLU 68	ini.	290.05	-2898	0.9	0	1875	7137	4043	2295	6338	No	2.19	Si
SLU 68	fin.	-109.19	564	0.9	0	1875	7137	4043	2295	6338	No	11.23	Si
SLU 75	ini.	268.42	-2841	0.9	0	1875	7137	4043	2295	6338	No	2.23	Si
SLU 75	fin.	-69.66	814	0.9	0	1875	7137	4043	2295	6338	No	7.78	Si
SLU 80	ini.	269.98	-2864	0.9	0	1875	7137	4043	2295	6338	No	2.21	Si
SLU 80	fin.	-67.88	836	0.9	0	1875	7137	4043	2295	6338	No	7.58	Si
SLU 77	ini.	262.88	-2844	0.9	0	1875	7137	4043	2295	6338	No	2.23	Si
SLU 77	fin.	-56.7	910	0.9	0	1875	7137	4043	2295	6338	No	6.96	Si
SLU 67	ini.	287.25	-2904	0.9	0	1875	7137	4043	2295	6338	No	2.18	Si
SLU 67	fin.	-102.5	617	0.9	0	1875	7137	4043	2295	6338	No	10.27	Si
SLU 71	ini.	275.92	-2849	0.9	0	1875	7137	4043	2295	6338	No	2.22	Si
SLU 71	fin.	-87.26	704	0.9	0	1875	7137	4043	2295	6338	No	9	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 5	ini.	1631.39	-6598	-0.0011141	0.0002807	0.0035	0.9		2967.55	2967.55		1.82	Si
SLV 5	fin.	-1499.17	3073	-0.0009915	0.0002807	0.0035	0.9		2973.32	2973.32		1.98	Si
SLV 15	ini.	-1552.5	4717	-0.001039	0.0002807	0.0035	0.9		2973.32	2973.32		1.92	Si
SLV 15	fin.	2105.92	-6338	-0.0016163	0.0002807	0.0035	0.9		2967.55	2967.55		1.41	Si
SLV 4	ini.	1228.46	-4349	-0.0007673	0.0002807	0.0035	0.9		2967.55	2967.55		2.42	Si
SLV 4	fin.	-1566.56	4038	-0.0010517	0.0002807	0.0035	0.9		2973.32	2973.32		1.9	Si
SLV 13	ini.	-853.04	1997	-0.0004886	0.0002807	0.0035	0.9		2973.32	2973.32		3.49	Si
SLV 13	fin.	1462.77	-4886	-0.0009621	0.0002807	0.0035	0.9		2967.55	2967.55		2.03	Si
SLV 6	ini.	1824.01	-7250	-0.0013025	0.0002807	0.0035	0.9		2967.55	2967.55		1.63	Si
SLV 6	fin.	-1741.99	3735	-0.001217	0.0002807	0.0035	0.9		2973.32	2973.32		1.71	Si
SLV 1	ini.	1641.82	-6100	-0.0011238	0.0002807	0.0035	0.9		2967.55	2967.55		1.81	Si
SLV 1	fin.	-1849.04	4505	-0.0013248	0.0002807	0.0035	0.9		2973.32	2973.32		1.61	Si
SLV 12	ini.	-1255.97	4246	-0.0007874	0.0002807	0.0035	0.9		2973.32	2973.32		2.37	Si
SLV 12	fin.	1395.38	-3921	-0.0009042	0.0002807	0.0035	0.9		2967.55	2967.55		2.13	Si
SLV 16	ini.	-1266.4	3748	-0.0007958	0.0002807	0.0035	0.9		2973.32	2973.32		2.35	Si
SLV 16	fin.	1745.25	-5354	-0.0012233	0.0002807	0.0035	0.9		2967.55	2967.55		1.7	Si
SLV 11	ini.	-1448.59	4899	-0.0009474	0.0002807	0.0035	0.9		2973.32	2973.32		2.05	Si
SLV 11	fin.	1638.21	-4584	-0.0011204	0.0002807	0.0035	0.9		2967.55	2967.55		1.81	Si
SLV 2	ini.	1927.91	-7069	-0.001412	0.0002807	0.0035	0.9		2967.55	2967.55		1.54	Si
SLV 2	fin.	-2209.71	5489	-0.0017426	0.0002807	0.0035	0.9		2973.32	2973.32		1.35	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-1266.4	6121	0.9	0	2813	7137	6064	2295	8359		1.37	Si
SLV 16	fin.	1745.25	9578	0.9	0	2813	7137	6064	2295	8359		0.87	No
SLV 1	ini.	1641.82	-10093	0.9	0	2813	7137	6064	2295	8359		0.83	No
SLV 1	fin.	-1849.04	-8460	0.9	0	2813	7137	6064	2295	8359		0.99	No
SLV 13	ini.	-853.04	3483	0.9	0	2813	7137	6064	2295	8359		2.4	Si
SLV 13	fin.	1462.77	8383	0.9	0	2813	7137	6064	2295	8359		1	No
SLV 6	ini.	1824.01	-11653	0.9	0	2813	7137	6064	2295	8359		0.72	No
SLV 6	fin.	-1741.99	-7490	0.9	0	2813	7137	6064	2295	8359		1.12	Si
SLV 10	ini.	1075.55	-7580	0.9	0	2813	7137	6064	2295	8359		1.1	Si
SLV 10	fin.	-748.45	-2437	0.9	0	2813	7137	6064	2295	8359		3.43	Si
SLV 5	ini.	1631.39	-10566	0.9	0	2813	7137	6064	2295	8359		0.79	No
SLV 5	fin.	-1499.17	-6303	0.9	0	2813	7137	6064	2295	8359		1.33	Si
SLV 15	ini.	-1552.5	7735	0.9	0	2813	7137	6064	2295	8359		1.08	Si
SLV 15	fin.	2105.92	11341	0.9	0	2813	7137	6064	2295	8359		0.74	No
SLV 4	ini.	1228.46	-7455	0.9	0	2813	7137	6064	2295	8359		1.12	Si
SLV 4	fin.	-1566.56	-7266	0.9	0	2813	7137	6064	2295	8359		1.15	Si
SLV 11	ini.	-1448.59	7681	0.9	0	2813	7137	6064	2295	8359		1.09	Si
SLV 11	fin.	1638.21	8607	0.9	0	2813	7137	6064	2295	8359		0.97	No
SLV 2	ini.	1927.91	-11707	0.9	0	2813	7137	6064	2295	8359		0.71	No
SLV 2	fin.	-2209.71	-10223	0.9	0	2813	7137	6064	2295	8359		0.82	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.346	SLV 2	Si
V_SLV	0.714	SLV 2	No
PF_SLU	9.988	SLU 70	Si
V_SLU	2.124	SLU 70	Si

Trave di accoppiamento 138

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-6.513	-3.359	11.32	12.17	0.85	-7.413	-3.359	11.32	12.17	0.85	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 72	ini.	-102.16	-454	-0.000057	0.0001872	0.0035	0.85		2645.85	2645.85	No	25.9	Si
SLU 72	fin.	-205.4	-809	-0.0001176	0.0001872	0.0035	0.85		2645.85	2645.85	No	12.88	Si
SLU 76	ini.	-132.42	-544	-0.0000745	0.0001872	0.0035	0.85		2645.85	2645.85	No	19.98	Si
SLU 76	fin.	-187.57	-760	-0.0001069	0.0001872	0.0035	0.85		2645.85	2645.85	No	14.11	Si
SLU 78	ini.	-150.71	-603	-0.0000851	0.0001872	0.0035	0.85		2645.85	2645.85	No	17.56	Si
SLU 78	fin.	-191.34	-789	-0.0001092	0.0001872	0.0035	0.85		2645.85	2645.85	No	13.83	Si
SLU 65	ini.	-78.38	-376	-0.0000435	0.0001872	0.0035	0.85		2645.85	2645.85	No	33.76	Si
SLU 65	fin.	-200.44	-771	-0.0001146	0.0001872	0.0035	0.85		2645.85	2645.85	No	13.2	Si
SLU 66	ini.	-106.22	-462	-0.0000594	0.0001872	0.0035	0.85		2645.85	2645.85	No	24.91	Si
SLU 66	fin.	-194.16	-781	-0.0001108	0.0001872	0.0035	0.85		2645.85	2645.85	No	13.63	Si
SLU 67	ini.	-96.68	-435	-0.0000539	0.0001872	0.0035	0.85		2645.85	2645.85	No	27.37	Si
SLU 67	fin.	-204.22	-800	-0.0001169	0.0001872	0.0035	0.85		2645.85	2645.85	No	12.96	Si
SLU 69	ini.	-114.93	-492	-0.0000644	0.0001872	0.0035	0.85		2645.85	2645.85	No	23.02	Si
SLU 69	fin.	-199.99	-806	-0.0001143	0.0001872	0.0035	0.85		2645.85	2645.85	No	13.23	Si
SLU 71	ini.	-111.7	-481	-0.0000625	0.0001872	0.0035	0.85		2645.85	2645.85	No	23.69	Si
SLU 71	fin.	-195.34	-790	-0.0001115	0.0001872	0.0035	0.85		2645.85	2645.85	No	13.54	Si
SLU 68	ini.	-87.09	-406	-0.0000485	0.0001872	0.0035	0.85		2645.85	2645.85	No	30.38	Si
SLU 68	fin.	-206.27	-797	-0.0001181	0.0001872	0.0035	0.85		2645.85	2645.85	No	12.83	Si
SLU 70	ini.	-105.39	-465	-0.0000589	0.0001872	0.0035	0.85		2645.85	2645.85	No	25.11	Si
SLU 70	fin.	-210.05	-826	-0.0001204	0.0001872	0.0035	0.85		2645.85	2645.85	No	12.6	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 68	ini.	-87.09	1168	0.85	0	1771	6740	3818	2168	5985	No	5.12	Si
SLU 68	fin.	-206.27	-1807	0.85	0	1771	6740	3818	2168	5985	No	3.31	Si
SLU 71	ini.	-111.7	1306	0.85	0	1771	6740	3818	2168	5985	No	4.58	Si
SLU 71	fin.	-195.34	-1794	0.85	0	1771	6740	3818	2168	5985	No	3.34	Si
SLU 75	ini.	-142.01	1531	0.85	0	1771	6740	3818	2168	5985	No	3.91	Si
SLU 75	fin.	-185.51	-1794	0.85	0	1771	6740	3818	2168	5985	No	3.34	Si
SLU 72	ini.	-102.16	1258	0.85	0	1771	6740	3818	2168	5985	No	4.76	Si
SLU 72	fin.	-205.4	-1828	0.85	0	1771	6740	3818	2168	5985	No	3.27	Si
SLU 80	ini.	-147.49	1564	0.85	0	1771	6740	3818	2168	5985	No	3.83	Si
SLU 80	fin.	-186.69	-1808	0.85	0	1771	6740	3818	2168	5985	No	3.31	Si
SLU 67	ini.	-96.68	1225	0.85	0	1771	6740	3818	2168	5985	No	4.89	Si
SLU 67	fin.	-204.22	-1814	0.85	0	1771	6740	3818	2168	5985	No	3.3	Si
SLU 70	ini.	-105.39	1282	0.85	0	1771	6740	3818	2168	5985	No	4.67	Si
SLU 70	fin.	-210.05	-1859	0.85	0	1771	6740	3818	2168	5985	No	3.22	Si
SLU 77	ini.	-160.25	1636	0.85	0	1771	6740	3818	2168	5985	No	3.66	Si
SLU 77	fin.	-181.28	-1804	0.85	0	1771	6740	3818	2168	5985	No	3.32	Si
SLU 78	ini.	-150.71	1588	0.85	0	1771	6740	3818	2168	5985	No	3.77	Si
SLU 78	fin.	-191.34	-1839	0.85	0	1771	6740	3818	2168	5985	No	3.26	Si
SLU 69	ini.	-114.93	1330	0.85	0	1771	6740	3818	2168	5985	No	4.5	Si
SLU 69	fin.	-199.99	-1824	0.85	0	1771	6740	3818	2168	5985	No	3.28	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 11	ini.	-1362.86	-4122	-0.0010138	0.0002807	0.0035	0.85		2647.52	2647.52		1.94	Si
SLV 11	fin.	1220.77	2384	-0.000879	0.0002807	0.0035	0.85		2641.96	2641.96		2.16	Si
SLV 13	ini.	-1221.3	-3688	-0.0008773	0.0002807	0.0035	0.85		2647.52	2647.52		2.17	Si
SLV 13	fin.	454.15	248	-0.0002701	0.0002807	0.0035	0.85		2641.96	2641.96		5.82	Si
SLV 5	ini.	1006.49	2898	-0.0006874	0.0002807	0.0035	0.85		2641.96	2641.96		2.62	Si
SLV 5	fin.	-1327.92	-3146	-0.0009793	0.0002807	0.0035	0.85		2647.52	2647.52		1.99	Si
SLV 2	ini.	1542.74	4425	-0.0012041	0.0002807	0.0035	0.85		2641.96	2641.96		1.71	Si
SLV 2	fin.	-1339.31	-2758	-0.0009905	0.0002807	0.0035	0.85		2647.52	2647.52		1.98	Si
SLV 4	ini.	1055.25	2980	-0.0007295	0.0002807	0.0035	0.85		2641.96	2641.96		2.5	Si
SLV 4	fin.	-715.5	-1328	-0.0004528	0.0002807	0.0035	0.85		2647.52	2647.52		3.7	Si
SLV 1	ini.	1260.05	3659	-0.0009162	0.0002807	0.0035	0.85		2641.96	2641.96		2.1	Si
SLV 1	fin.	-1110.29	-2287	-0.0007761	0.0002807	0.0035	0.85		2647.52	2647.52		2.38	Si
SLV 12	ini.	-1172.54	-3606	-0.0008323	0.0002807	0.0035	0.85		2647.52	2647.52		2.26	Si
SLV 12	fin.	1066.57	2066	-0.0007394	0.0002807	0.0035	0.85		2641.96	2641.96		2.48	Si
SLV 15	ini.	-1708.79	-5133	-0.0013903	0.0002807	0.0035	0.85		2647.52	2647.52		1.55	Si
SLV 15	fin.	1077.96	1678	-0.0007494	0.0002807	0.0035	0.85		2641.96	2641.96		2.45	Si
SLV 16	ini.	-1426.09	-4367	-0.0010777	0.0002807	0.0035	0.85		2647.52	2647.52		1.86	Si
SLV 16	fin.	848.94	1207	-0.0005572	0.0002807	0.0035	0.85		2641.96	2641.96		3.11	Si
SLV 6	ini.	1196.82	3414	-0.0008567	0.0002807	0.0035	0.85		2641.96	2641.96		2.21	Si
SLV 6	fin.	-1482.11	-3463	-0.0011359	0.0002807	0.0035	0.85		2647.52	2647.52		1.79	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	1260.05	-4839	0.85	0	2656	6740	5727	2168	7894		1.63	Si
SLV 1	fin.	-1110.29	-5989	0.85	0	2656	6740	5727	2168	7894		1.32	Si
SLV 6	ini.	1196.82	-5361	0.85	0	2656	6740	5727	2168	7894		1.47	Si
SLV 6	fin.	-1482.11	-6920	0.85	0	2656	6740	5727	2168	7894		1.14	Si
SLV 13	ini.	-1221.3	5405	0.85	0	2656	6740	5727	2168	7894		1.46	Si
SLV 13	fin.	454.15	2063	0.85	0	2656	6740	5727	2168	7894		3.83	Si
SLV 16	ini.	-1426.09	6766	0.85	0	2656	6740	5727	2168	7894		1.17	Si
SLV 16	fin.	848.94	3476	0.85	0	2656	6740	5727	2168	7894		2.27	Si
SLV 4	ini.	1055.25	-3478	0.85	0	2656	6740	5727	2168	7894		2.27	Si
SLV 4	fin.	-715.5	-4576	0.85	0	2656	6740	5727	2168	7894		1.73	Si
SLV 11	ini.	-1362.86	7288	0.85	0	2656	6740	5727	2168	7894		1.08	Si
SLV 11	fin.	1220.77	4407	0.85	0	2656	6740	5727	2168	7894		1.79	Si
SLV 15	ini.	-1708.79	8024	0.85	0	2656	6740	5727	2168	7894		0.98	No
SLV 15	fin.	1077.96	4524	0.85	0	2656	6740	5727	2168	7894		1.74	Si
SLV 12	ini.	-1172.54	6441	0.85	0	2656	6740	5727	2168	7894		1.23	Si
SLV 12	fin.	1066.57	3701	0.85	0	2656	6740	5727	2168	7894		2.13	Si
SLV 5	ini.	1006.49	-4514	0.85	0	2656	6740	5727	2168	7894		1.75	Si
SLV 5	fin.	-1327.92	-6214	0.85	0	2656	6740	5727	2168	7894		1.27	Si
SLV 2	ini.	1542.74	-6097	0.85	0	2656	6740	5727	2168	7894		1.29	Si
SLV 2	fin.	-1339.31	-7037	0.85	0	2656	6740	5727	2168	7894		1.12	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.549	SLV 15	Si
V_SLV	0.984	SLV 15	No
PF_SLU	12.596	SLU 70	Si
V_SLU	3.221	SLU 70	Si

Trave di accoppiamento 139

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-5.508	-3.359	8.62	10.62	2	-6.008	-3.359	8.62	10.62	2	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 81	ini.	572.61	-2875	-0.0000579	0.0001872	0.0035	2		14206.68	14206.68	No	24.81	Si
SLU 81	fin.	-214.81	-2131	-0.0000214	0.0001872	0.0035	2		14219.44	14219.44	No	66.19	Si
SLU 80	ini.	568.06	-3053	-0.0000575	0.0001872	0.0035	2		14206.68	14206.68	No	25.01	Si
SLU 80	fin.	-266.27	-2305	-0.0000266	0.0001872	0.0035	2		14219.44	14219.44	No	53.4	Si
SLU 83	ini.	574.64	-2955	-0.0000581	0.0001872	0.0035	2		14206.68	14206.68	No	24.72	Si
SLU 83	fin.	-219.56	-2200	-0.0000219	0.0001872	0.0035	2		14219.44	14219.44	No	64.76	Si
SLU 82	ini.	577.06	-2919	-0.0000584	0.0001872	0.0035	2		14206.68	14206.68	No	24.62	Si
SLU 82	fin.	-235.69	-2173	-0.0000235	0.0001872	0.0035	2		14219.44	14219.44	No	60.33	Si
SLU 77	ini.	565.7	-3061	-0.0000572	0.0001872	0.0035	2		14206.68	14206.68	No	25.11	Si
SLU 77	fin.	-250.25	-2308	-0.000025	0.0001872	0.0035	2		14219.44	14219.44	No	56.82	Si
SLU 75	ini.	568.13	-3024	-0.0000575	0.0001872	0.0035	2		14206.68	14206.68	No	25.01	Si
SLU 75	fin.	-266.38	-2280	-0.0000266	0.0001872	0.0035	2		14219.44	14219.44	No	53.38	Si
SLU 84	ini.	579.08	-2999	-0.0000586	0.0001872	0.0035	2		14206.68	14206.68	No	24.53	Si
SLU 84	fin.	-240.44	-2243	-0.000024	0.0001872	0.0035	2		14219.44	14219.44	No	59.14	Si
SLU 78	ini.	570.15	-3105	-0.0000577	0.0001872	0.0035	2		14206.68	14206.68	No	24.92	Si
SLU 78	fin.	-271.13	-2350	-0.0000271	0.0001872	0.0035	2		14219.44	14219.44	No	52.45	Si
SLU 76	ini.	569	-3001	-0.0000576	0.0001872	0.0035	2		14206.68	14206.68	No	24.97	Si
SLU 76	fin.	-275.44	-2263	-0.0000275	0.0001872	0.0035	2		14219.44	14219.44	No	51.62	Si
SLU 73	ini.	566.98	-2920	-0.0000574	0.0001872	0.0035	2		14206.68	14206.68	No	25.06	Si
SLU 73	fin.	-270.69	-2193	-0.000027	0.0001872	0.0035	2		14219.44	14219.44	No	52.53	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	565.7	-3406	2	0	4167	3965	8983	5100	8131	No	2.39	Si
SLU 77	fin.	-250.25	-1512	2	0	4167	3965	8983	5100	8131	No	5.38	Si
SLU 78	ini.	570.15	-3461	2	0	4167	3965	8983	5100	8131	No	2.35	Si
SLU 78	fin.	-271.13	-1564	2	0	4167	3965	8983	5100	8131	No	5.2	Si
SLU 70	ini.	539.71	-3374	2	0	4167	3965	8983	5100	8131	No	2.41	Si
SLU 70	fin.	-320.32	-1604	2	0	4167	3965	8983	5100	8131	No	5.07	Si
SLU 84	ini.	579.08	-3411	2	0	4167	3965	8983	5100	8131	No	2.38	Si
SLU 84	fin.	-240.44	-1558	2	0	4167	3965	8983	5100	8131	No	5.22	Si
SLU 73	ini.	566.98	-3360	2	0	4167	3965	8983	5100	8131	No	2.42	Si
SLU 73	fin.	-270.69	-1621	2	0	4167	3965	8983	5100	8131	No	5.02	Si
SLU 79	ini.	563.61	-3369	2	0	4167	3965	8983	5100	8131	No	2.41	Si
SLU 79	fin.	-245.39	-1513	2	0	4167	3965	8983	5100	8131	No	5.37	Si
SLU 82	ini.	577.06	-3360	2	0	4167	3965	8983	5100	8131	No	2.42	Si
SLU 82	fin.	-235.69	-1569	2	0	4167	3965	8983	5100	8131	No	5.18	Si
SLU 75	ini.	568.13	-3411	2	0	4167	3965	8983	5100	8131	No	2.38	Si
SLU 75	fin.	-266.38	-1575	2	0	4167	3965	8983	5100	8131	No	5.16	Si
SLU 80	ini.	568.06	-3425	2	0	4167	3965	8983	5100	8131	No	2.37	Si
SLU 80	fin.	-266.27	-1564	2	0	4167	3965	8983	5100	8131	No	5.2	Si
SLU 76	ini.	569	-3411	2	0	4167	3965	8983	5100	8131	No	2.38	Si
SLU 76	fin.	-275.44	-1609	2	0	4167	3965	8983	5100	8131	No	5.05	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 11	ini.	-1.84	3694	-0.0000002	0.0002807	0.0035	2		13933.43	13933.43		7554.41	Si
SLV 11	fin.	2365.74	4009	-0.0002529	0.0002807	0.0035	2		13920.08	13920.08		5.88	Si
SLV 3	ini.	1692.86	-4148	-0.0001765	0.0002807	0.0035	2		13920.08	13920.08		8.22	Si
SLV 3	fin.	-1482.65	-2970	-0.0001534	0.0002807	0.0035	2		13933.43	13933.43		9.4	Si
SLV 16	ini.	-779.62	2544	-0.0000788	0.0002807	0.0035	2		13933.43	13933.43		17.87	Si
SLV 16	fin.	2153.18	2462	-0.0002283	0.0002807	0.0035	2		13920.08	13920.08		6.46	Si
SLV 4	ini.	2124.25	-5157	-0.000225	0.0002807	0.0035	2		13920.08	13920.08		6.55	Si
SLV 4	fin.	-1974.6	-3741	-0.0002078	0.0002807	0.0035	2		13933.43	13933.43		7.06	Si
SLV 1	ini.	1588	-6721	-0.000165	0.0002807	0.0035	2		13920.08	13920.08		8.77	Si
SLV 1	fin.	-2550.39	-5604	-0.0002744	0.0002807	0.0035	2		13933.43	13933.43		5.46	Si
SLV 12	ini.	288.59	3014	-0.0000288	0.0002807	0.0035	2		13920.08	13920.08		48.23	Si
SLV 12	fin.	2034.52	3490	-0.0002148	0.0002807	0.0035	2		13920.08	13920.08		6.84	Si
SLV 15	ini.	-1211	3553	-0.0001241	0.0002807	0.0035	2		13933.43	13933.43		11.51	Si
SLV 15	fin.	2645.13	3233	-0.000286	0.0002807	0.0035	2		13920.08	13920.08		5.26	Si
SLV 2	ini.	2019.39	-7730	-0.000213	0.0002807	0.0035	2		13920.08	13920.08		6.89	Si
SLV 2	fin.	-3042.34	-6375	-0.0003342	0.0002807	0.0035	2		13933.43	13933.43		4.58	Si
SLV 5	ini.	519.79	-7191	-0.0000522	0.0002807	0.0035	2		13920.08	13920.08		26.78	Si
SLV 5	fin.	-2431.74	-6632	-0.0002604	0.0002807	0.0035	2		13933.43	13933.43		5.73	Si
SLV 6	ini.	810.23	-7871	-0.0000821	0.0002807	0.0035	2		13920.08	13920.08		17.18	Si
SLV 6	fin.	-2762.95	-7151	-0.0002999	0.0002807	0.0035	2		13933.43	13933.43		5.04	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	2124.25	-11041	2	0	6250	3965	13475	5100	10215		0.93	No
SLV 4	fin.	-1974.6	-11210	2	0	6250	3965	13475	5100	10215		0.91	No
SLV 1	ini.	1588	-10676	2	0	6250	3965	13475	5100	10215		0.96	No
SLV 1	fin.	-2550.39	-10122	2	0	6250	3965	13475	5100	10215		1.01	Si
SLV 2	ini.	2019.39	-12981	2	0	6250	3965	13475	5100	10215		0.79	No

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	fin.	-3042.34	-12521	2	0	6250	3965	13475	5100	10215		0.82	No
SLV 6	ini.	810.23	-8940	2	0	6250	3965	13475	5100	10215		1.14	Si
SLV 6	fin.	-2762.95	-7007	2	0	6250	3965	13475	5100	10215		1.46	Si
SLV 3	ini.	1692.86	-8736	2	0	6250	3965	13475	5100	10215		1.17	Si
SLV 3	fin.	-1482.65	-8811	2	0	6250	3965	13475	5100	10215		1.16	Si
SLV 15	ini.	-1211	8199	2	0	6250	3965	13475	5100	10215		1.25	Si
SLV 15	fin.	2645.13	10193	2	0	6250	3965	13475	5100	10215		1	Si
SLV 13	ini.	-1315.86	6259	2	0	6250	3965	13475	5100	10215		1.63	Si
SLV 13	fin.	1577.39	8882	2	0	6250	3965	13475	5100	10215		1.15	Si
SLD 2	ini.	1095.96	-6885	2	0	6250	3965	13475	5100	10215		1.48	Si
SLD 2	fin.	-1397.55	-5995	2	0	6250	3965	13475	5100	10215		1.7	Si
SLV 5	ini.	519.79	-7389	2	0	6250	3965	13475	5100	10215		1.38	Si
SLV 5	fin.	-2431.74	-5392	2	0	6250	3965	13475	5100	10215		1.89	Si
SLV 16	ini.	-779.62	5894	2	0	6250	3965	13475	5100	10215		1.73	Si
SLV 16	fin.	2153.18	7794	2	0	6250	3965	13475	5100	10215		1.31	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	4.58	SLV 2	Si
V_SLV	0.787	SLV 2	No
PF_SLU	24.533	SLU 84	Si
V_SLU	2.349	SLU 78	Si

Trave di accoppiamento 140

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-5.508	-3.359	11.42	12.17	0.75	-6.008	-3.359	11.42	12.17	0.75	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	219.61	-427	-0.000165	0.0001872	0.0035	0.75		2067.09	2067.09	No	9.41	Si
SLU 75	fin.	-103.89	-702	-0.0000749	0.0001872	0.0035	0.75		2071.83	2071.83	No	19.94	Si
SLU 76	ini.	222.23	-399	-0.0001671	0.0001872	0.0035	0.75		2067.09	2067.09	No	9.3	Si
SLU 76	fin.	-101.66	-676	-0.0000733	0.0001872	0.0035	0.75		2071.83	2071.83	No	20.38	Si
SLU 65	ini.	223.67	-248	-0.0001683	0.0001872	0.0035	0.75		2067.09	2067.09	No	9.24	Si
SLU 65	fin.	-84.18	-509	-0.0000604	0.0001872	0.0035	0.75		2071.83	2071.83	No	24.61	Si
SLU 68	ini.	227	-274	-0.000171	0.0001872	0.0035	0.75		2067.09	2067.09	No	9.11	Si
SLU 68	fin.	-86.49	-537	-0.0000621	0.0001872	0.0035	0.75		2071.83	2071.83	No	23.96	Si
SLU 78	ini.	222.94	-453	-0.0001677	0.0001872	0.0035	0.75		2067.09	2067.09	No	9.27	Si
SLU 78	fin.	-106.2	-730	-0.0000767	0.0001872	0.0035	0.75		2071.83	2071.83	No	19.51	Si
SLU 67	ini.	224.38	-302	-0.0001689	0.0001872	0.0035	0.75		2067.09	2067.09	No	9.21	Si
SLU 67	fin.	-88.71	-562	-0.0000637	0.0001872	0.0035	0.75		2071.83	2071.83	No	23.35	Si
SLU 69	ini.	221.07	-353	-0.0001662	0.0001872	0.0035	0.75		2067.09	2067.09	No	9.35	Si
SLU 69	fin.	-93.29	-613	-0.0000671	0.0001872	0.0035	0.75		2071.83	2071.83	No	22.21	Si
SLU 80	ini.	221.14	-442	-0.0001662	0.0001872	0.0035	0.75		2067.09	2067.09	No	9.35	Si
SLU 80	fin.	-105.48	-719	-0.0000761	0.0001872	0.0035	0.75		2071.83	2071.83	No	19.64	Si
SLU 72	ini.	225.91	-316	-0.0001701	0.0001872	0.0035	0.75		2067.09	2067.09	No	9.15	Si
SLU 72	fin.	-90.31	-580	-0.0000649	0.0001872	0.0035	0.75		2071.83	2071.83	No	22.94	Si
SLU 70	ini.	227.71	-327	-0.0001716	0.0001872	0.0035	0.75		2067.09	2067.09	No	9.08	Si
SLU 70	fin.	-91.02	-591	-0.0000654	0.0001872	0.0035	0.75		2071.83	2071.83	No	22.76	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 84	ini.	215.76	-335	0.75	0	1563	3965	3369	1913	5281	No	15.77	Si
SLU 84	fin.	-109.68	-2240	0.75	0	1563	3965	3369	1913	5281	No	2.36	Si
SLU 78	ini.	222.94	-331	0.75	0	1563	3965	3369	1913	5281	No	15.94	Si
SLU 78	fin.	-106.2	-2273	0.75	0	1563	3965	3369	1913	5281	No	2.32	Si
SLU 79	ini.	214.5	-324	0.75	0	1563	3965	3369	1913	5281	No	16.29	Si
SLU 79	fin.	-107.75	-2229	0.75	0	1563	3965	3369	1913	5281	No	2.37	Si
SLU 76	ini.	222.23	-344	0.75	0	1563	3965	3369	1913	5281	No	15.33	Si
SLU 76	fin.	-101.66	-2181	0.75	0	1563	3965	3369	1913	5281	No	2.42	Si
SLU 80	ini.	221.14	-335	0.75	0	1563	3965	3369	1913	5281	No	15.76	Si
SLU 80	fin.	-105.48	-2239	0.75	0	1563	3965	3369	1913	5281	No	2.36	Si
SLU 83	ini.	209.12	-324	0.75	0	1563	3965	3369	1913	5281	No	16.31	Si
SLU 83	fin.	-111.94	-2229	0.75	0	1563	3965	3369	1913	5281	No	2.37	Si
SLU 75	ini.	219.61	-333	0.75	0	1563	3965	3369	1913	5281	No	15.84	Si
SLU 75	fin.	-103.89	-2208	0.75	0	1563	3965	3369	1913	5281	No	2.39	Si
SLU 74	ini.	212.97	-322	0.75	0	1563	3965	3369	1913	5281	No	16.39	Si
SLU 74	fin.	-106.15	-2197	0.75	0	1563	3965	3369	1913	5281	No	2.4	Si
SLU 77	ini.	216.3	-320	0.75	0	1563	3965	3369	1913	5281	No	16.49	Si
SLU 77	fin.	-108.46	-2262	0.75	0	1563	3965	3369	1913	5281	No	2.33	Si
SLU 82	ini.	212.43	-337	0.75	0	1563	3965	3369	1913	5281	No	15.68	Si
SLU 82	fin.	-107.36	-2175	0.75	0	1563	3965	3369	1913	5281	No	2.43	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 1	ini.	1036.61	3278	-0.0009838	0.0002807	0.0035	0.75		2052.27	2052.27		1.98	Si
SLV 1	fin.	208	2689	-0.0001528	0.0002807	0.0035	0.75		2052.27	2052.27		9.87	Si
SLV 5	ini.	724.57	2557	-0.0006228	0.0002807	0.0035	0.75		2052.27	2052.27		2.83	Si
SLV 5	fin.	271.85	2350	-0.0002029	0.0002807	0.0035	0.75		2052.27	2052.27		7.55	Si
SLD 2	ini.	634.29	1562	-0.0005294	0.0002807	0.0035	0.75		2052.27	2052.27		3.24	Si
SLD 2	fin.	55.91	1105	-0.0000397	0.0002807	0.0035	0.75		2052.27	2052.27		36.71	Si
SLV 15	ini.	-967.96	-4533	-0.0008963	0.0002807	0.0035	0.75		2057.16	2057.16		2.13	Si
SLV 15	fin.	-372.46	-4119	-0.0002851	0.0002807	0.0035	0.75		2057.16	2057.16		5.52	Si
SLV 16	ini.	-722.68	-3779	-0.0006191	0.0002807	0.0035	0.75		2057.16	2057.16		2.85	Si
SLV 16	fin.	-349.14	-3581	-0.0002654	0.0002807	0.0035	0.75		2057.16	2057.16		5.89	Si
SLV 2	ini.	1281.89	4032	-0.0013186	0.0002807	0.0035	0.75		2052.27	2052.27		1.6	Si
SLV 2	fin.	231.33	3228	-0.0001709	0.0002807	0.0035	0.75		2052.27	2052.27		8.87	Si
SLV 6	ini.	889.71	3065	-0.0008061	0.0002807	0.0035	0.75		2052.27	2052.27		2.31	Si
SLV 6	fin.	287.55	2713	-0.0002155	0.0002807	0.0035	0.75		2052.27	2052.27		7.14	Si
SLV 4	ini.	1051.46	2787	-0.0010027	0.0002807	0.0035	0.75		2052.27	2052.27		1.95	Si
SLV 4	fin.	57.8	1938	-0.0000411	0.0002807	0.0035	0.75		2052.27	2052.27		35.51	Si
SLV 13	ini.	-737.53	-3287	-0.0006348	0.0002807	0.0035	0.75		2057.16	2057.16		2.79	Si
SLV 13	fin.	-198.93	-2830	-0.0001455	0.0002807	0.0035	0.75		2057.16	2057.16		10.34	Si
SLV 3	ini.	806.18	2032	-0.0007113	0.0002807	0.0035	0.75		2052.27	2052.27		2.55	Si
SLV 3	fin.	34.47	1400	-0.0000244	0.0002807	0.0035	0.75		2052.27	2052.27		59.54	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	1036.61	-1755	0.75	0	2344	3965	5053	1913	6309		3.6	Si
SLV 1	fin.	208	-2330	0.75	0	2344	3965	5053	1913	6309		2.71	Si
SLV 4	ini.	1051.46	-2338	0.75	0	2344	3965	5053	1913	6309		2.7	Si
SLV 4	fin.	57.8	-2827	0.75	0	2344	3965	5053	1913	6309		2.23	Si
SLD 3	ini.	439.03	-880	0.75	0	2344	3965	5053	1913	6309		7.17	Si
SLD 3	fin.	-23.21	-1850	0.75	0	2344	3965	5053	1913	6309		3.41	Si
SLD 4	ini.	543.38	-1144	0.75	0	2344	3965	5053	1913	6309		5.51	Si
SLD 4	fin.	-13.29	-2061	0.75	0	2344	3965	5053	1913	6309		3.06	Si
SLV 3	ini.	806.18	-1718	0.75	0	2344	3965	5053	1913	6309		3.67	Si
SLV 3	fin.	34.47	-2332	0.75	0	2344	3965	5053	1913	6309		2.71	Si
SLV 2	ini.	1281.89	-2375	0.75	0	2344	3965	5053	1913	6309		2.66	Si
SLV 2	fin.	231.33	-2825	0.75	0	2344	3965	5053	1913	6309		2.23	Si
SLV 8	ini.	121.6	-937	0.75	0	2344	3965	5053	1913	6309		6.73	Si
SLV 8	fin.	-290.9	-1983	0.75	0	2344	3965	5053	1913	6309		3.18	Si
SLV 15	ini.	-967.96	1873	0.75	0	2344	3965	5053	1913	6309		3.37	Si
SLV 15	fin.	-372.46	-144	0.75	0	2344	3965	5053	1913	6309		43.74	Si
SLD 2	ini.	634.29	-1158	0.75	0	2344	3965	5053	1913	6309		5.45	Si
SLD 2	fin.	55.91	-2056	0.75	0	2344	3965	5053	1913	6309		3.07	Si
SLV 6	ini.	889.71	-1060	0.75	0	2344	3965	5053	1913	6309		5.95	Si
SLV 6	fin.	287.55	-1976	0.75	0	2344	3965	5053	1913	6309		3.19	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.601	SLV 2	Si
V_SLV	2.231	SLV 4	Si
PF_SLU	9.078	SLU 70	Si
V_SLU	2.324	SLU 78	Si

Trave di accoppiamento 141

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-2.283	-3.359	8.62	9.52	0.9	-3.183	-3.359	8.62	9.52	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

												εlim,conv / ε,CNR DT-200						CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 68	ini.	260.73	-1331	-0.0001347	0.0001872	0.0035	0.9		2942.43	2942.43	No	11.29	Si
SLU 68	fin.	59.16	-1087	-0.0000293	0.0001872	0.0035	0.9		2942.43	2942.43	No	49.74	Si
SLU 65	ini.	265.83	-1332	-0.0001375	0.0001872	0.0035	0.9		2942.43	2942.43	No	11.07	Si
SLU 65	fin.	39.3	-1040	-0.0000194	0.0001872	0.0035	0.9		2942.43	2942.43	No	74.88	Si
SLU 45	ini.	255.22	-1275	-0.0001317	0.0001872	0.0035	0.9		2942.43	2942.43	No	11.53	Si
SLU 45	fin.	27	-963	-0.0000133	0.0001872	0.0035	0.9		2942.43	2942.43	No	108.99	Si
SLU 44	ini.	271.48	-1299	-0.0001406	0.0001872	0.0035	0.9		2942.43	2942.43	No	10.84	Si
SLU 44	fin.	-18.01	-872	-0.0000088	0.0001872	0.0035	0.9		2948.11	2948.11	No	163.68	Si
SLU 49	ini.	258.05	-1296	-0.0001332	0.0001872	0.0035	0.9		2942.43	2942.43	No	11.4	Si
SLU 49	fin.	34.71	-997	-0.0000171	0.0001872	0.0035	0.9		2942.43	2942.43	No	84.78	Si
SLU 43	ini.	258.26	-1261	-0.0001333	0.0001872	0.0035	0.9		2942.43	2942.43	No	11.39	Si
SLU 43	fin.	2.24	-894	-0.0000011	0.0001872	0.0035	0.9		2942.43	2942.43	No	1312.02	Si
SLU 51	ini.	255.99	-1280	-0.0001321	0.0001872	0.0035	0.9		2942.43	2942.43	No	11.49	Si
SLU 51	fin.	29.81	-975	-0.0000147	0.0001872	0.0035	0.9		2942.43	2942.43	No	98.71	Si
SLU 67	ini.	257.5	-1331	-0.0001329	0.0001872	0.0035	0.9		2942.43	2942.43	No	11.43	Si
SLU 67	fin.	72.15	-1118	-0.0000358	0.0001872	0.0035	0.9		2942.43	2942.43	No	40.78	Si
SLU 47	ini.	266.38	-1297	-0.0001378	0.0001872	0.0035	0.9		2942.43	2942.43	No	11.05	Si
SLU 47	fin.	1.85	-919	-0.0000009	0.0001872	0.0035	0.9		2942.43	2942.43	No	1591.94	Si
SLU 46	ini.	263.15	-1298	-0.000136	0.0001872	0.0035	0.9		2942.43	2942.43	No	11.18	Si
SLU 46	fin.	14.85	-949	-0.0000073	0.0001872	0.0035	0.9		2942.43	2942.43	No	198.21	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 46	ini.	263.15	-1614	0.9	0	1875	7137	4043	2295	6338	No	3.93	Si
SLU 46	fin.	14.85	100	0.9	0	1875	7137	4043	2295	6338	No	63.51	Si
SLU 45	ini.	255.22	-1573	0.9	0	1875	7137	4043	2295	6338	No	4.03	Si
SLU 45	fin.	27	140	0.9	0	1875	7137	4043	2295	6338	No	45.37	Si
SLU 47	ini.	266.38	-1620	0.9	0	1875	7137	4043	2295	6338	No	3.91	Si
SLU 47	fin.	1.85	50	0.9	0	1875	7137	4043	2295	6338	No	126.04	Si
SLU 67	ini.	257.5	-1571	0.9	0	1875	7137	4043	2295	6338	No	4.03	Si
SLU 67	fin.	72.15	293	0.9	0	1875	7137	4043	2295	6338	No	21.6	Si
SLU 48	ini.	250.12	-1564	0.9	0	1875	7137	4043	2295	6338	No	4.05	Si
SLU 48	fin.	46.86	218	0.9	0	1875	7137	4043	2295	6338	No	29.12	Si
SLU 51	ini.	255.99	-1583	0.9	0	1875	7137	4043	2295	6338	No	4	Si
SLU 51	fin.	29.81	155	0.9	0	1875	7137	4043	2295	6338	No	40.94	Si
SLU 65	ini.	265.83	-1586	0.9	0	1875	7137	4043	2295	6338	No	3.99	Si
SLU 65	fin.	39.3	166	0.9	0	1875	7137	4043	2295	6338	No	38.18	Si
SLU 44	ini.	271.48	-1629	0.9	0	1875	7137	4043	2295	6338	No	3.89	Si
SLU 44	fin.	-18.01	-28	0.9	0	1875	7137	4043	2295	6338	No	229.13	Si
SLU 49	ini.	258.05	-1605	0.9	0	1875	7137	4043	2295	6338	No	3.95	Si
SLU 49	fin.	34.71	178	0.9	0	1875	7137	4043	2295	6338	No	35.66	Si
SLU 68	ini.	260.73	-1577	0.9	0	1875	7137	4043	2295	6338	No	4.02	Si
SLU 68	fin.	59.16	244	0.9	0	1875	7137	4043	2295	6338	No	25.98	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-625.4	1353	-0.0003401	0.0002807	0.0035	0.9		2973.32	2973.32		4.75	Si
SLV 13	fin.	1310.08	-2257	-0.0008331	0.0002807	0.0035	0.9		2967.55	2967.55		2.27	Si
SLV 1	ini.	1290.79	-4324	-0.0008174	0.0002807	0.0035	0.9		2967.55	2967.55		2.3	Si
SLV 1	fin.	-1536.21	754	-0.0010244	0.0002807	0.0035	0.9		2973.32	2973.32		1.94	Si
SLV 5	ini.	1392.5	-4829	-0.0009018	0.0002807	0.0035	0.9		2967.55	2967.55		2.13	Si
SLV 5	fin.	-1579.32	557	-0.0010633	0.0002807	0.0035	0.9		2973.32	2973.32		1.88	Si
SLV 15	ini.	-1241.3	3351	-0.0007757	0.0002807	0.0035	0.9		2973.32	2973.32		2.4	Si
SLV 15	fin.	2131.67	-2917	-0.001648	0.0002807	0.0035	0.9		2967.55	2967.55		1.39	Si
SLV 2	ini.	1620.38	-5307	-0.0011038	0.0002807	0.0035	0.9		2967.55	2967.55		1.83	Si
SLV 2	fin.	-2030.72	1282	-0.0015229	0.0002807	0.0035	0.9		2973.32	2973.32		1.46	Si
SLV 6	ini.	1614.41	-5492	-0.0010982	0.0002807	0.0035	0.9		2967.55	2967.55		1.84	Si
SLV 6	fin.	-1912.25	912	-0.0013913	0.0002807	0.0035	0.9		2973.32	2973.32		1.55	Si
SLV 11	ini.	-1235.33	3536	-0.0007709	0.0002807	0.0035	0.9		2973.32	2973.32		2.41	Si
SLV 11	fin.	2013.2	-2547	-0.001507	0.0002807	0.0035	0.9		2967.55	2967.55		1.47	Si
SLV 4	ini.	1004.48	-3309	-0.0005968	0.0002807	0.0035	0.9		2967.55	2967.55		2.95	Si
SLV 4	fin.	-1209.13	621	-0.0007503	0.0002807	0.0035	0.9		2973.32	2973.32		2.46	Si
SLV 16	ini.	-911.71	2367	-0.0005292	0.0002807	0.0035	0.9		2973.32	2973.32		3.26	Si
SLV 16	fin.	1637.16	-2389	-0.0011195	0.0002807	0.0035	0.9		2967.55	2967.55		1.81	Si
SLV 12	ini.	-1013.43	2873	-0.000602	0.0002807	0.0035	0.9		2973.32	2973.32		2.93	Si
SLV 12	fin.	1680.26	-2192	-0.0011602	0.0002807	0.0035	0.9		2967.55	2967.55		1.77	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 12	ini.	-1013.43	5382	0.9	0	2813	7137	6064	2295	8359		1.55	Si
SLV 12	fin.	1680.26	5482	0.9	0	2813	7137	6064	2295	8359		1.52	Si
SLV 10	ini.	1039.55	-6083	0.9	0	2813	7137	6064	2295	8359		1.37	Si
SLV 10	fin.	-1058.36	-3214	0.9	0	2813	7137	6064	2295	8359		2.6	Si
SLV 2	ini.	1620.38	-8114	0.9	0	2813	7137	6064	2295	8359		1.03	Si
SLV 2	fin.	-2030.72	-6967	0.9	0	2813	7137	6064	2295	8359		1.2	Si
SLV 15	ini.	-1241.3	5837	0.9	0	2813	7137	6064	2295	8359		1.43	Si
SLV 15	fin.	2131.67	7351	0.9	0	2813	7137	6064	2295	8359		1.14	Si
SLV 6	ini.	1614.41	-8750	0.9	0	2813	7137	6064	2295	8359		0.96	No
SLV 6	fin.	-1912.25	-6225	0.9	0	2813	7137	6064	2295	8359		1.34	Si
SLV 16	ini.	-911.71	4217	0.9	0	2813	7137	6064	2295	8359		1.98	Si
SLV 16	fin.	1637.16	5678	0.9	0	2813	7137	6064	2295	8359		1.47	Si
SLV 1	ini.	1290.79	-6494	0.9	0	2813	7137	6064	2295	8359		1.29	Si
SLV 1	fin.	-1536.21	-5295	0.9	0	2813	7137	6064	2295	8359		1.58	Si
SLV 9	ini.	817.65	-4992	0.9	0	2813	7137	6064	2295	8359		1.67	Si
SLV 9	fin.	-725.43	-2088	0.9	0	2813	7137	6064	2295	8359		4	Si
SLV 11	ini.	-1235.33	6473	0.9	0	2813	7137	6064	2295	8359		1.29	Si
SLV 11	fin.	2013.2	6608	0.9	0	2813	7137	6064	2295	8359		1.26	Si
SLV 5	ini.	1392.5	-7659	0.9	0	2813	7137	6064	2295	8359		1.09	Si
SLV 5	fin.	-1579.32	-5099	0.9	0	2813	7137	6064	2295	8359		1.64	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.392	SLV 15	Si
V_SLV	0.955	SLV 6	No
PF_SLU	10.839	SLU 44	Si
V_SLU	3.89	SLU 44	Si

Trave di accoppiamento 142

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-2.283	-3.359	11.32	12.17	0.85	-3.183	-3.359	11.32	12.17	0.85	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 47	ini.	-13.11	-384	-0.0000072	0.0001872	0.0035	0.85		2645.85	2645.85	No	201.75	Si
SLU 47	fin.	-341.11	-971	-0.0002029	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.76	Si
SLU 67	ini.	-65.85	-627	-0.0000365	0.0001872	0.0035	0.85		2645.85	2645.85	No	40.18	Si
SLU 67	fin.	-326.53	-1066	-0.0001934	0.0001872	0.0035	0.85		2645.85	2645.85	No	8.1	Si
SLU 65	ini.	-40.97	-523	-0.0000226	0.0001872	0.0035	0.85		2645.85	2645.85	No	64.58	Si
SLU 65	fin.	-341.93	-1040	-0.0002034	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.74	Si
SLU 49	ini.	-38	-489	-0.0000209	0.0001872	0.0035	0.85		2645.85	2645.85	No	69.64	Si
SLU 49	fin.	-325.71	-996	-0.0001928	0.0001872	0.0035	0.85		2645.85	2645.85	No	8.12	Si
SLU 44	ini.	2.17	-321	-0.0000012	0.0001872	0.0035	0.85		2640.4	2640.4	No	1214.37	Si
SLU 44	fin.	-350.76	-955	-0.0002093	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.54	Si
SLU 43	ini.	-12.03	-368	-0.0000066	0.0001872	0.0035	0.85		2645.85	2645.85	No	219.94	Si
SLU 43	fin.	-329.83	-931	-0.0001955	0.0001872	0.0035	0.85		2645.85	2645.85	No	8.02	Si
SLU 51	ini.	-34.09	-467	-0.0000188	0.0001872	0.0035	0.85		2645.85	2645.85	No	77.62	Si
SLU 51	fin.	-323.09	-977	-0.0001911	0.0001872	0.0035	0.85		2645.85	2645.85	No	8.19	Si
SLU 45	ini.	-31.23	-454	-0.0000172	0.0001872	0.0035	0.85		2645.85	2645.85	No	84.72	Si
SLU 45	fin.	-322.8	-966	-0.0001909	0.0001872	0.0035	0.85		2645.85	2645.85	No	8.2	Si
SLU 68	ini.	-56.26	-586	-0.0000311	0.0001872	0.0035	0.85		2645.85	2645.85	No	47.03	Si
SLU 68	fin.	-332.28	-1056	-0.0001971	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.96	Si
SLU 46	ini.	-22.71	-425	-0.0000125	0.0001872	0.0035	0.85		2645.85	2645.85	No	116.52	Si
SLU 46	fin.	-335.36	-981	-0.0001991	0.0001872	0.0035	0.85		2645.85	2645.85	No	7.89	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 44	ini.	2.17	563	0.85	0	1771	6740	3818	2168	5985	No	10.64	Si
SLU 44	fin.	-350.76	-1574	0.85	0	1771	6740	3818	2168	5985	No	3.8	Si
SLU 67	ini.	-65.85	1088	0.85	0	1771	6740	3818	2168	5985	No	5.5	Si
SLU 67	fin.	-326.53	-1576	0.85	0	1771	6740	3818	2168	5985	No	3.8	Si
SLU 73	ini.	-84.4	1246	0.85	0	1771	6740	3818	2168	5985	No	4.8	Si
SLU 73	fin.	-311.77	-1549	0.85	0	1771	6740	3818	2168	5985	No	3.86	Si
SLU 68	ini.	-56.26	1023	0.85	0	1771	6740	3818	2168	5985	No	5.85	Si
SLU 68	fin.	-332.28	-1589	0.85	0	1771	6740	3818	2168	5985	No	3.77	Si
SLU 47	ini.	-13.11	666	0.85	0	1771	6740	3818	2168	5985	No	8.98	Si
SLU 47	fin.	-341.11	-1556	0.85	0	1771	6740	3818	2168	5985	No	3.85	Si
SLU 70	ini.	-81.14	1192	0.85	0	1771	6740	3818	2168	5985	No	5.02	Si
SLU 70	fin.	-316.88	-1558	0.85	0	1771	6740	3818	2168	5985	No	3.84	Si
SLU 77	ini.	-133.09	1564	0.85	0	1771	6740	3818	2168	5985	No	3.83	Si
SLU 77	fin.	-274.16	-1458	0.85	0	1771	6740	3818	2168	5985	No	4.1	Si
SLU 46	ini.	-22.71	731	0.85	0	1771	6740	3818	2168	5985	No	8.19	Si
SLU 46	fin.	-335.36	-1544	0.85	0	1771	6740	3818	2168	5985	No	3.88	Si
SLU 83	ini.	-132.51	1565	0.85	0	1771	6740	3818	2168	5985	No	3.82	Si
SLU 83	fin.	-268.26	-1435	0.85	0	1771	6740	3818	2168	5985	No	4.17	Si
SLU 65	ini.	-40.97	920	0.85	0	1771	6740	3818	2168	5985	No	6.51	Si
SLU 65	fin.	-341.93	-1606	0.85	0	1771	6740	3818	2168	5985	No	3.73	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 5	ini.	942.07	2667	-0.0006331	0.0002807	0.0035	0.85		2641.96	2641.96		2.8	Si
SLV 5	fin.	-1862.18	-2940	-0.0015839	0.0002807	0.0035	0.85		2647.52	2647.52		1.42	Si
SLV 12	ini.	-1032.81	-3560	-0.0007083	0.0002807	0.0035	0.85		2647.52	2647.52		2.56	Si
SLV 12	fin.	1381.68	1401	-0.0010353	0.0002807	0.0035	0.85		2641.96	2641.96		1.91	Si
SLV 15	ini.	-1156.21	-3891	-0.0008174	0.0002807	0.0035	0.85		2647.52	2647.52		2.29	Si
SLV 15	fin.	1528.33	1548	-0.0011885	0.0002807	0.0035	0.85		2641.96	2641.96		1.73	Si
SLV 9	ini.	520.61	1383	-0.0003144	0.0002807	0.0035	0.85		2641.96	2641.96		5.07	Si
SLV 9	fin.	-1196.15	-2062	-0.000854	0.0002807	0.0035	0.85		2647.52	2647.52		2.21	Si
SLV 1	ini.	773.64	2062	-0.0004981	0.0002807	0.0035	0.85		2641.96	2641.96		3.41	Si
SLV 1	fin.	-1556.48	-2530	-0.0012159	0.0002807	0.0035	0.85		2647.52	2647.52		1.7	Si
SLV 6	ini.	1138.55	3297	-0.0008034	0.0002807	0.0035	0.85		2641.96	2641.96		2.32	Si
SLV 6	fin.	-2166.73	-3315	-0.0020517	0.0002807	0.0035	0.85		2647.52	2647.52		1.22	Si
SLV 10	ini.	717.09	2013	-0.000455	0.0002807	0.0035	0.85		2641.96	2641.96		3.68	Si
SLV 10	fin.	-1500.7	-2437	-0.0011556	0.0002807	0.0035	0.85		2647.52	2647.52		1.76	Si
SLV 2	ini.	1065.47	2998	-0.0007384	0.0002807	0.0035	0.85		2641.96	2641.96		2.48	Si
SLV 2	fin.	-2008.83	-3087	-0.0017922	0.0002807	0.0035	0.85		2647.52	2647.52		1.32	Si
SLV 11	ini.	-1229.29	-4190	-0.0008848	0.0002807	0.0035	0.85		2647.52	2647.52		2.15	Si
SLV 11	fin.	1686.23	1776	-0.0013673	0.0002807	0.0035	0.85		2641.96	2641.96		1.57	Si
SLV 4	ini.	540.51	1326	-0.000328	0.0002807	0.0035	0.85		2641.96	2641.96		4.89	Si
SLV 4	fin.	-1144.12	-1935	-0.0008064	0.0002807	0.0035	0.85		2647.52	2647.52		2.31	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 10	ini.	717.09	-3136	0.85	0	2656	6740	5727	2168	7894		2.52	Si
SLV 10	fin.	-1500.7	-5553	0.85	0	2656	6740	5727	2168	7894		1.42	Si
SLV 11	ini.	-1229.29	6995	0.85	0	2656	6740	5727	2168	7894		1.13	Si
SLV 11	fin.	1686.23	5442	0.85	0	2656	6740	5727	2168	7894		1.45	Si
SLV 2	ini.	1065.47	-5194	0.85	0	2656	6740	5727	2168	7894		1.52	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	fin.	-2008.83	-7088	0.85	0	2656	6740	5727	2168	7894		1.11	Si
SLV 12	ini.	-1032.81	5943	0.85	0	2656	6740	5727	2168	7894		1.33	Si
SLV 12	fin.	1381.68	4412	0.85	0	2656	6740	5727	2168	7894		1.79	Si
SLV 5	ini.	942.07	-4382	0.85	0	2656	6740	5727	2168	7894		1.8	Si
SLV 5	fin.	-1862.18	-6726	0.85	0	2656	6740	5727	2168	7894		1.17	Si
SLV 6	ini.	1138.55	-5435	0.85	0	2656	6740	5727	2168	7894		1.45	Si
SLV 6	fin.	-2166.73	-7756	0.85	0	2656	6740	5727	2168	7894		1.02	Si
SLV 16	ini.	-864.38	5191	0.85	0	2656	6740	5727	2168	7894		1.52	Si
SLV 16	fin.	1075.99	3245	0.85	0	2656	6740	5727	2168	7894		2.43	Si
SLV 7	ini.	-807.82	4697	0.85	0	2656	6740	5727	2168	7894		1.68	Si
SLV 7	fin.	1020.2	3239	0.85	0	2656	6740	5727	2168	7894		2.44	Si
SLV 15	ini.	-1156.21	6755	0.85	0	2656	6740	5727	2168	7894		1.17	Si
SLV 15	fin.	1528.33	4774	0.85	0	2656	6740	5727	2168	7894		1.65	Si
SLV 1	ini.	773.64	-3630	0.85	0	2656	6740	5727	2168	7894		2.17	Si
SLV 1	fin.	-1556.48	-5559	0.85	0	2656	6740	5727	2168	7894		1.42	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.222	SLV 6	Si
V_SLV	1.018	SLV 6	Si
PF_SLU	7.543	SLU 44	Si
V_SLU	3.726	SLU 65	Si

Trave di accoppiamento 143

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-2.063	5.951	8.62	9.52	0.9	-2.963	5.951	8.62	9.52	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 48	ini.	307.25	-1203	-0.0001605	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.58	Si
SLU 48	fin.	-65.62	-779	-0.0000324	0.0001872	0.0035	0.9		2948.11	2948.11	No	44.93	Si
SLU 45	ini.	302.81	-1176	-0.000158	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.72	Si
SLU 45	fin.	-72.06	-742	-0.0000357	0.0001872	0.0035	0.9		2948.11	2948.11	No	40.91	Si
SLU 50	ini.	305.81	-1193	-0.0001597	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.62	Si
SLU 50	fin.	-69.01	-763	-0.0000341	0.0001872	0.0035	0.9		2948.11	2948.11	No	42.72	Si
SLU 71	ini.	307.72	-1256	-0.0001608	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.56	Si
SLU 71	fin.	-31.28	-915	-0.0000154	0.0001872	0.0035	0.9		2948.11	2948.11	No	94.26	Si
SLU 70	ini.	300.52	-1245	-0.0001568	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.79	Si
SLU 70	fin.	-17	-944	-0.0000083	0.0001872	0.0035	0.9		2948.11	2948.11	No	173.37	Si
SLU 72	ini.	299.07	-1235	-0.0001559	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.84	Si
SLU 72	fin.	-20.4	-927	-0.00001	0.0001872	0.0035	0.9		2948.11	2948.11	No	144.54	Si
SLU 66	ini.	304.72	-1240	-0.0001591	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.66	Si
SLU 66	fin.	-34.33	-894	-0.0000169	0.0001872	0.0035	0.9		2948.11	2948.11	No	85.89	Si
SLU 49	ini.	298.61	-1182	-0.0001557	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.85	Si
SLU 49	fin.	-54.74	-791	-0.000027	0.0001872	0.0035	0.9		2948.11	2948.11	No	53.86	Si
SLU 69	ini.	309.17	-1266	-0.0001616	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.52	Si
SLU 69	fin.	-27.88	-931	-0.0000137	0.0001872	0.0035	0.9		2948.11	2948.11	No	105.72	Si
SLU 64	ini.	298.83	-1203	-0.0001558	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.85	Si
SLU 64	fin.	-44.16	-841	-0.0000217	0.0001872	0.0035	0.9		2948.11	2948.11	No	66.76	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 45	ini.	302.81	-1462	0.9	0	1875	7137	4043	2295	6338	No	4.34	Si
SLU 45	fin.	-72.06	27	0.9	0	1875	7137	4043	2295	6338	No	235.23	Si
SLU 71	ini.	307.72	-1503	0.9	0	1875	7137	4043	2295	6338	No	4.22	Si
SLU 71	fin.	-31.28	217	0.9	0	1875	7137	4043	2295	6338	No	29.18	Si
SLU 48	ini.	307.25	-1515	0.9	0	1875	7137	4043	2295	6338	No	4.18	Si
SLU 48	fin.	-65.62	84	0.9	0	1875	7137	4043	2295	6338	No	75.59	Si
SLU 69	ini.	309.17	-1520	0.9	0	1875	7137	4043	2295	6338	No	4.17	Si
SLU 69	fin.	-27.88	240	0.9	0	1875	7137	4043	2295	6338	No	26.4	Si
SLU 70	ini.	300.52	-1476	0.9	0	1875	7137	4043	2295	6338	No	4.29	Si
SLU 70	fin.	-17	272	0.9	0	1875	7137	4043	2295	6338	No	23.26	Si
SLU 50	ini.	305.81	-1499	0.9	0	1875	7137	4043	2295	6338	No	4.23	Si
SLU 50	fin.	-69.01	61	0.9	0	1875	7137	4043	2295	6338	No	103.91	Si
SLU 51	ini.	297.16	-1455	0.9	0	1875	7137	4043	2295	6338	No	4.36	Si
SLU 51	fin.	-58.13	93	0.9	0	1875	7137	4043	2295	6338	No	67.86	Si
SLU 72	ini.	299.07	-1459	0.9	0	1875	7137	4043	2295	6338	No	4.34	Si
SLU 72	fin.	-20.4	250	0.9	0	1875	7137	4043	2295	6338	No	25.39	Si
SLU 49	ini.	298.61	-1471	0.9	0	1875	7137	4043	2295	6338	No	4.31	Si
SLU 49	fin.	-54.74	116	0.9	0	1875	7137	4043	2295	6338	No	54.52	Si
SLU 66	ini.	304.72	-1466	0.9	0	1875	7137	4043	2295	6338	No	4.32	Si
SLU 66	fin.	-34.33	183	0.9	0	1875	7137	4043	2295	6338	No	34.6	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	-1059.84	2282	-0.0006362	0.0002807	0.0035	0.9		2973.32	2973.32		2.81	Si
SLV 10	fin.	1514.1	-2227	-0.0010072	0.0002807	0.0035	0.9		2967.55	2967.55		1.96	Si
SLV 13	ini.	-670.83	1305	-0.0003686	0.0002807	0.0035	0.9		2973.32	2973.32		4.43	Si
SLV 13	fin.	1042.52	-1774	-0.0006247	0.0002807	0.0035	0.9		2967.55	2967.55		2.85	Si
SLV 4	ini.	1121.91	-3130	-0.0006844	0.0002807	0.0035	0.9		2967.55	2967.55		2.65	Si
SLV 4	fin.	-1103.93	483	-0.0006692	0.0002807	0.0035	0.9		2973.32	2973.32		2.69	Si
SLV 14	ini.	-1004.08	2120	-0.0005952	0.0002807	0.0035	0.9		2973.32	2973.32		2.96	Si
SLV 14	fin.	1435.19	-2175	-0.0009382	0.0002807	0.0035	0.9		2967.55	2967.55		2.07	Si
SLV 11	ini.	1042.11	-2954	-0.0006244	0.0002807	0.0035	0.9		2967.55	2967.55		2.85	Si
SLV 11	fin.	-1017.85	346	-0.0006052	0.0002807	0.0035	0.9		2973.32	2973.32		2.92	Si
SLV 3	ini.	1455.16	-3945	-0.0009554	0.0002807	0.0035	0.9		2967.55	2967.55		2.04	Si
SLV 3	fin.	-1496.6	884	-0.0009892	0.0002807	0.0035	0.9		2973.32	2973.32		1.99	Si
SLV 8	ini.	1286.55	-3558	-0.0008139	0.0002807	0.0035	0.9		2967.55	2967.55		2.31	Si
SLV 8	fin.	-1311.14	666	-0.000832	0.0002807	0.0035	0.9		2973.32	2973.32		2.27	Si
SLV 6	ini.	-591.03	1129	-0.0003191	0.0002807	0.0035	0.9		2973.32	2973.32		5.03	Si
SLV 6	fin.	956.44	-1637	-0.0005621	0.0002807	0.0035	0.9		2967.55	2967.55		3.1	Si
SLV 9	ini.	-835.47	1733	-0.0004766	0.0002807	0.0035	0.9		2973.32	2973.32		3.56	Si
SLV 9	fin.	1249.72	-1957	-0.0007842	0.0002807	0.0035	0.9		2967.55	2967.55		2.37	Si
SLV 7	ini.	1510.92	-4107	-0.0010044	0.0002807	0.0035	0.9		2967.55	2967.55		1.96	Si
SLV 7	fin.	-1575.51	936	-0.0010598	0.0002807	0.0035	0.9		2973.32	2973.32		1.89	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-1004.08	4427	0.9	0	2813	7137	6064	2295	8359		1.89	Si
SLV 14	fin.	1435.19	5122	0.9	0	2813	7137	6064	2295	8359		1.63	Si
SLV 9	ini.	-835.47	4391	0.9	0	2813	7137	6064	2295	8359		1.9	Si
SLV 9	fin.	1249.72	3923	0.9	0	2813	7137	6064	2295	8359		2.13	Si
SLV 8	ini.	1286.55	-6477	0.9	0	2813	7137	6064	2295	8359		1.29	Si
SLV 8	fin.	-1311.14	-3762	0.9	0	2813	7137	6064	2295	8359		2.22	Si
SLV 13	ini.	-670.83	2984	0.9	0	2813	7137	6064	2295	8359		2.8	Si
SLV 13	fin.	1042.52	3770	0.9	0	2813	7137	6064	2295	8359		2.22	Si
SLV 12	ini.	817.74	-4517	0.9	0	2813	7137	6064	2295	8359		1.85	Si
SLV 12	fin.	-753.48	-1734	0.9	0	2813	7137	6064	2295	8359		4.82	Si
SLV 4	ini.	1121.91	-5069	0.9	0	2813	7137	6064	2295	8359		1.65	Si
SLV 4	fin.	-1103.93	-3610	0.9	0	2813	7137	6064	2295	8359		2.32	Si
SLV 7	ini.	1510.92	-7449	0.9	0	2813	7137	6064	2295	8359		1.12	Si
SLV 7	fin.	-1575.51	-4673	0.9	0	2813	7137	6064	2295	8359		1.79	Si
SLV 10	ini.	-1059.84	5363	0.9	0	2813	7137	6064	2295	8359		1.56	Si
SLV 10	fin.	1514.1	4833	0.9	0	2813	7137	6064	2295	8359		1.73	Si
SLV 11	ini.	1042.11	-5489	0.9	0	2813	7137	6064	2295	8359		1.52	Si
SLV 11	fin.	-1017.85	-2644	0.9	0	2813	7137	6064	2295	8359		3.16	Si
SLV 3	ini.	1455.16	-6513	0.9	0	2813	7137	6064	2295	8359		1.28	Si
SLV 3	fin.	-1496.6	-4962	0.9	0	2813	7137	6064	2295	8359		1.68	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.887	SLV 7	Si
V_SLV	1.122	SLV 7	Si
PF_SLU	9.517	SLU 69	Si
V_SLU	4.17	SLU 69	Si

Trave di accoppiamento 144

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-2.063	5.951	11.32	12.17	0.85	-2.963	5.951	11.32	12.17	0.85	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 45	ini.	-12.34	-325	-0.0000068	0.0001872	0.0035	0.85		2645.85	2645.85	No	214.42	Si
SLU 45	fin.	-238.25	-750	-0.0001376	0.0001872	0.0035	0.85		2645.85	2645.85	No	11.11	Si
SLU 71	ini.	-62.28	-509	-0.0000345	0.0001872	0.0035	0.85		2645.85	2645.85	No	42.48	Si
SLU 71	fin.	-232.94	-837	-0.0001343	0.0001872	0.0035	0.85		2645.85	2645.85	No	11.36	Si
SLU 69	ini.	-66.56	-527	-0.0000369	0.0001872	0.0035	0.85		2645.85	2645.85	No	39.75	Si
SLU 69	fin.	-233.17	-849	-0.0001345	0.0001872	0.0035	0.85		2645.85	2645.85	No	11.35	Si
SLU 43	ini.	3.38	-263	-0.0000018	0.0001872	0.0035	0.85		2640.4	2640.4	No	781.76	Si
SLU 43	fin.	-239.52	-713	-0.0001384	0.0001872	0.0035	0.85		2645.85	2645.85	No	11.05	Si
SLU 49	ini.	-31.46	-389	-0.0000173	0.0001872	0.0035	0.85		2645.85	2645.85	No	84.1	Si
SLU 49	fin.	-228.08	-762	-0.0001313	0.0001872	0.0035	0.85		2645.85	2645.85	No	11.6	Si
SLU 66	ini.	-55.13	-482	-0.0000305	0.0001872	0.0035	0.85		2645.85	2645.85	No	48	Si
SLU 66	fin.	-234.67	-824	-0.0001354	0.0001872	0.0035	0.85		2645.85	2645.85	No	11.28	Si
SLU 48	ini.	-23.78	-370	-0.0000131	0.0001872	0.0035	0.85		2645.85	2645.85	No	111.29	Si
SLU 48	fin.	-236.76	-774	-0.0001367	0.0001872	0.0035	0.85		2645.85	2645.85	No	11.18	Si
SLU 64	ini.	-39.41	-420	-0.0000217	0.0001872	0.0035	0.85		2645.85	2645.85	No	67.14	Si
SLU 64	fin.	-235.93	-788	-0.0001362	0.0001872	0.0035	0.85		2645.85	2645.85	No	11.21	Si
SLU 50	ini.	-19.49	-352	-0.0000107	0.0001872	0.0035	0.85		2645.85	2645.85	No	135.73	Si
SLU 50	fin.	-236.52	-762	-0.0001365	0.0001872	0.0035	0.85		2645.85	2645.85	No	11.19	Si
SLU 46	ini.	-20.02	-344	-0.000011	0.0001872	0.0035	0.85		2645.85	2645.85	No	132.13	Si
SLU 46	fin.	-229.57	-737	-0.0001323	0.0001872	0.0035	0.85		2645.85	2645.85	No	11.53	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 71	ini.	-62.28	1119	0.85	0	1771	6740	3818	2168	5985	No	5.35	Si
SLU 71	fin.	-232.94	-1565	0.85	0	1771	6740	3818	2168	5985	No	3.82	Si
SLU 69	ini.	-66.56	1149	0.85	0	1771	6740	3818	2168	5985	No	5.21	Si
SLU 69	fin.	-233.17	-1576	0.85	0	1771	6740	3818	2168	5985	No	3.8	Si
SLU 79	ini.	-100.51	1370	0.85	0	1771	6740	3818	2168	5985	No	4.37	Si
SLU 79	fin.	-218.98	-1578	0.85	0	1771	6740	3818	2168	5985	No	3.79	Si
SLU 77	ini.	-104.8	1400	0.85	0	1771	6740	3818	2168	5985	No	4.27	Si
SLU 77	fin.	-219.21	-1589	0.85	0	1771	6740	3818	2168	5985	No	3.77	Si
SLU 70	ini.	-74.25	1182	0.85	0	1771	6740	3818	2168	5985	No	5.06	Si
SLU 70	fin.	-224.49	-1543	0.85	0	1771	6740	3818	2168	5985	No	3.88	Si
SLU 66	ini.	-55.13	1064	0.85	0	1771	6740	3818	2168	5985	No	5.62	Si
SLU 66	fin.	-234.67	-1551	0.85	0	1771	6740	3818	2168	5985	No	3.86	Si
SLU 78	ini.	-112.48	1433	0.85	0	1771	6740	3818	2168	5985	No	4.18	Si
SLU 78	fin.	-210.53	-1556	0.85	0	1771	6740	3818	2168	5985	No	3.85	Si
SLU 80	ini.	-108.2	1403	0.85	0	1771	6740	3818	2168	5985	No	4.27	Si
SLU 80	fin.	-210.3	-1545	0.85	0	1771	6740	3818	2168	5985	No	3.87	Si
SLU 74	ini.	-93.36	1315	0.85	0	1771	6740	3818	2168	5985	No	4.55	Si
SLU 74	fin.	-220.71	-1564	0.85	0	1771	6740	3818	2168	5985	No	3.83	Si
SLU 83	ini.	-105.46	1393	0.85	0	1771	6740	3818	2168	5985	No	4.3	Si
SLU 83	fin.	-214.49	-1559	0.85	0	1771	6740	3818	2168	5985	No	3.84	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 9	ini.	-894.55	-2344	-0.0005926	0.0002807	0.0035	0.85		2647.52	2647.52		2.96	Si
SLV 9	fin.	849.67	955	-0.0005578	0.0002807	0.0035	0.85		2641.96	2641.96		3.11	Si
SLV 11	ini.	711.76	1466	-0.000451	0.0002807	0.0035	0.85		2641.96	2641.96		3.71	Si
SLV 11	fin.	-1046.54	-1874	-0.0007201	0.0002807	0.0035	0.85		2647.52	2647.52		2.53	Si
SLV 3	ini.	872.59	1677	-0.0005762	0.0002807	0.0035	0.85		2641.96	2641.96		3.03	Si
SLV 3	fin.	-1303.34	-2383	-0.0009553	0.0002807	0.0035	0.85		2647.52	2647.52		2.03	Si
SLV 4	ini.	585.96	1032	-0.0003596	0.0002807	0.0035	0.85		2641.96	2641.96		4.51	Si
SLV 4	fin.	-949.19	-1827	-0.0006375	0.0002807	0.0035	0.85		2647.52	2647.52		2.79	Si
SLV 10	ini.	-1087.53	-2778	-0.0007559	0.0002807	0.0035	0.85		2647.52	2647.52		2.43	Si
SLV 10	fin.	1088.1	1329	-0.0007583	0.0002807	0.0035	0.85		2641.96	2641.96		2.43	Si
SLV 7	ini.	1023.86	2130	-0.0007023	0.0002807	0.0035	0.85		2641.96	2641.96		2.58	Si
SLV 7	fin.	-1444.67	-2524	-0.0010968	0.0002807	0.0035	0.85		2647.52	2647.52		1.83	Si
SLV 12	ini.	518.78	1032	-0.0003132	0.0002807	0.0035	0.85		2641.96	2641.96		5.09	Si
SLV 12	fin.	-808.11	-1500	-0.0005237	0.0002807	0.0035	0.85		2647.52	2647.52		3.28	Si
SLV 14	ini.	-936.26	-2325	-0.0006268	0.0002807	0.0035	0.85		2647.52	2647.52		2.83	Si
SLV 14	fin.	946.77	1188	-0.000637	0.0002807	0.0035	0.85		2641.96	2641.96		2.79	Si
SLV 6	ini.	-775.43	-2114	-0.0004983	0.0002807	0.0035	0.85		2647.52	2647.52		3.41	Si
SLV 6	fin.	689.97	680	-0.0004348	0.0002807	0.0035	0.85		2641.96	2641.96		3.83	Si
SLV 8	ini.	830.88	1696	-0.0005429	0.0002807	0.0035	0.85		2641.96	2641.96		3.18	Si
SLV 8	fin.	-1206.24	-2150	-0.0008633	0.0002807	0.0035	0.85		2647.52	2647.52		2.19	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	872.59	-3362	0.85	0	2656	6740	5727	2168	7894		2.35	Si
SLV 3	fin.	-1303.34	-5151	0.85	0	2656	6740	5727	2168	7894		1.53	Si
SLV 12	ini.	518.78	-1384	0.85	0	2656	6740	5727	2168	7894		5.7	Si
SLV 12	fin.	-808.11	-3772	0.85	0	2656	6740	5727	2168	7894		2.09	Si
SLV 14	ini.	-936.26	4828	0.85	0	2656	6740	5727	2168	7894		1.64	Si
SLV 14	fin.	946.77	2851	0.85	0	2656	6740	5727	2168	7894		2.77	Si
SLV 10	ini.	-1087.53	5207	0.85	0	2656	6740	5727	2168	7894		1.52	Si
SLV 10	fin.	1088.1	3673	0.85	0	2656	6740	5727	2168	7894		2.15	Si
SLV 9	ini.	-894.55	4318	0.85	0	2656	6740	5727	2168	7894		1.83	Si
SLV 9	fin.	849.67	2825	0.85	0	2656	6740	5727	2168	7894		2.79	Si
SLV 11	ini.	711.76	-2274	0.85	0	2656	6740	5727	2168	7894		3.47	Si
SLV 11	fin.	-1046.54	-4621	0.85	0	2656	6740	5727	2168	7894		1.71	Si
SLV 6	ini.	-775.43	3740	0.85	0	2656	6740	5727	2168	7894		2.11	Si
SLV 6	fin.	689.97	2321	0.85	0	2656	6740	5727	2168	7894		3.4	Si
SLV 4	ini.	585.96	-2040	0.85	0	2656	6740	5727	2168	7894		3.87	Si
SLV 4	fin.	-949.19	-3891	0.85	0	2656	6740	5727	2168	7894		2.03	Si
SLV 7	ini.	1023.86	-3741	0.85	0	2656	6740	5727	2168	7894		2.11	Si
SLV 7	fin.	-1444.67	-5973	0.85	0	2656	6740	5727	2168	7894		1.32	Si
SLV 8	ini.	830.88	-2851	0.85	0	2656	6740	5727	2168	7894		2.77	Si
SLV 8	fin.	-1206.24	-5125	0.85	0	2656	6740	5727	2168	7894		1.54	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.833	SLV 7	Si
V_SLV	1.322	SLV 7	Si
PF_SLU	11.047	SLU 43	Si
V_SLU	3.766	SLU 77	Si

Trave di accoppiamento 145

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-0.123	0.146	8.62	10.62	2	-0.123	0.646	8.62	10.62	2	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 45	ini.	-58.17	-2528	-0.0000058	0.0001872	0.0035	2		14219.44	14219.44	No	244.45	Si
SLU 45	fin.	-331.49	-2432	-0.0000332	0.0001872	0.0035	2		14219.44	14219.44	No	42.9	Si
SLU 43	ini.	-65.99	-2393	-0.0000065	0.0001872	0.0035	2		14219.44	14219.44	No	215.47	Si
SLU 43	fin.	-312.9	-2310	-0.0000313	0.0001872	0.0035	2		14219.44	14219.44	No	45.44	Si
SLU 51	ini.	-51.21	-2559	-0.0000051	0.0001872	0.0035	2		14219.44	14219.44	No	277.68	Si
SLU 51	fin.	-337.03	-2461	-0.0000337	0.0001872	0.0035	2		14219.44	14219.44	No	42.19	Si
SLU 46	ini.	-69.39	-2501	-0.0000069	0.0001872	0.0035	2		14219.44	14219.44	No	204.91	Si
SLU 46	fin.	-311.61	-2425	-0.0000312	0.0001872	0.0035	2		14219.44	14219.44	No	45.63	Si
SLU 71	ini.	-80.9	-2882	-0.000008	0.0001872	0.0035	2		14219.44	14219.44	No	175.76	Si
SLU 71	fin.	-317.74	-2815	-0.0000318	0.0001872	0.0035	2		14219.44	14219.44	No	44.75	Si
SLU 50	ini.	-39.98	-2586	-0.000004	0.0001872	0.0035	2		14219.44	14219.44	No	355.62	Si
SLU 50	fin.	-356.91	-2468	-0.0000358	0.0001872	0.0035	2		14219.44	14219.44	No	39.84	Si
SLU 47	ini.	-71.7	-2445	-0.0000071	0.0001872	0.0035	2		14219.44	14219.44	No	198.33	Si
SLU 47	fin.	-301.77	-2377	-0.0000302	0.0001872	0.0035	2		14219.44	14219.44	No	47.12	Si
SLU 49	ini.	-56.39	-2597	-0.0000056	0.0001872	0.0035	2		14219.44	14219.44	No	252.17	Si
SLU 49	fin.	-333.62	-2504	-0.0000334	0.0001872	0.0035	2		14219.44	14219.44	No	42.62	Si
SLU 69	ini.	-86.08	-2920	-0.0000085	0.0001872	0.0035	2		14219.44	14219.44	No	165.18	Si
SLU 69	fin.	-314.33	-2858	-0.0000314	0.0001872	0.0035	2		14219.44	14219.44	No	45.24	Si
SLU 48	ini.	-45.16	-2624	-0.0000045	0.0001872	0.0035	2		14219.44	14219.44	No	314.84	Si
SLU 48	fin.	-353.5	-2511	-0.0000354	0.0001872	0.0035	2		14219.44	14219.44	No	40.23	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 50	ini.	-39.98	-2542	2	0	4167	3965	8983	5100	8131	No	3.2	Si
SLU 50	fin.	-356.91	-718	2	0	4167	3965	8983	5100	8131	No	11.33	Si
SLU 48	ini.	-45.16	-2550	2	0	4167	3965	8983	5100	8131	No	3.19	Si
SLU 48	fin.	-353.5	-683	2	0	4167	3965	8983	5100	8131	No	11.91	Si
SLU 72	ini.	-92.13	-2462	2	0	4167	3965	8983	5100	8131	No	3.3	Si
SLU 72	fin.	-297.86	-288	2	0	4167	3965	8983	5100	8131	No	28.19	Si
SLU 49	ini.	-56.39	-2448	2	0	4167	3965	8983	5100	8131	No	3.32	Si
SLU 49	fin.	-333.62	-581	2	0	4167	3965	8983	5100	8131	No	14.01	Si
SLU 51	ini.	-51.21	-2441	2	0	4167	3965	8983	5100	8131	No	3.33	Si
SLU 51	fin.	-337.03	-616	2	0	4167	3965	8983	5100	8131	No	13.21	Si
SLU 69	ini.	-86.08	-2571	2	0	4167	3965	8983	5100	8131	No	3.16	Si
SLU 69	fin.	-314.33	-356	2	0	4167	3965	8983	5100	8131	No	22.85	Si
SLU 79	ini.	-127.06	-2423	2	0	4167	3965	8983	5100	8131	No	3.36	Si
SLU 79	fin.	-255.8	3	2	0	4167	3965	8983	5100	8131	No	3125.73	Si
SLU 71	ini.	-80.9	-2563	2	0	4167	3965	8983	5100	8131	No	3.17	Si
SLU 71	fin.	-317.74	-391	2	0	4167	3965	8983	5100	8131	No	20.81	Si
SLU 77	ini.	-132.24	-2431	2	0	4167	3965	8983	5100	8131	No	3.34	Si
SLU 77	fin.	-252.39	38	2	0	4167	3965	8983	5100	8131	No	216.11	Si
SLU 70	ini.	-97.31	-2470	2	0	4167	3965	8983	5100	8131	No	3.29	Si
SLU 70	fin.	-294.45	-253	2	0	4167	3965	8983	5100	8131	No	32.09	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 8	ini.	993.51	-3945	-0.0001012	0.0002807	0.0035	2		13920.08	13920.08		14.01	Si
SLV 8	fin.	-3153.4	-1597	-0.0003482	0.0002807	0.0035	2		13933.43	13933.43		4.42	Si
SLV 6	ini.	-1176.01	401	-0.0001204	0.0002807	0.0035	2		13933.43	13933.43		11.85	Si
SLV 6	fin.	3073.11	-2171	-0.0003384	0.0002807	0.0035	2		13920.08	13920.08		4.53	Si
SLD 7	ini.	394.42	-2905	-0.0000395	0.0002807	0.0035	2		13920.08	13920.08		35.29	Si
SLD 7	fin.	-1514.86	-1846	-0.0001569	0.0002807	0.0035	2		13933.43	13933.43		9.2	Si
SLV 12	ini.	881.52	-4248	-0.0000895	0.0002807	0.0035	2		13920.08	13920.08		15.79	Si
SLV 12	fin.	-3138.63	-1918	-0.0003463	0.0002807	0.0035	2		13933.43	13933.43		4.44	Si
SLV 5	ini.	-1054.39	143	-0.0001075	0.0002807	0.0035	2		13933.43	13933.43		13.21	Si
SLV 5	fin.	2735.68	-2151	-0.0002969	0.0002807	0.0035	2		13920.08	13920.08		5.09	Si
SLD 11	ini.	346.54	-3036	-0.0000346	0.0002807	0.0035	2		13920.08	13920.08		40.17	Si
SLD 11	fin.	-1508.3	-1984	-0.0001561	0.0002807	0.0035	2		13933.43	13933.43		9.24	Si
SLV 9	ini.	-1166.38	-160	-0.0001194	0.0002807	0.0035	2		13933.43	13933.43		11.95	Si
SLV 9	fin.	2750.45	-2472	-0.0002987	0.0002807	0.0035	2		13920.08	13920.08		5.06	Si
SLV 10	ini.	-1287.99	98	-0.0001324	0.0002807	0.0035	2		13933.43	13933.43		10.82	Si
SLV 10	fin.	3087.88	-2493	-0.0003402	0.0002807	0.0035	2		13920.08	13920.08		4.51	Si
SLV 7	ini.	1115.12	-4203	-0.000114	0.0002807	0.0035	2		13920.08	13920.08		12.48	Si
SLV 7	fin.	-3490.82	-1576	-0.0003914	0.0002807	0.0035	2		13933.43	13933.43		3.99	Si
SLV 11	ini.	1003.14	-4506	-0.0001022	0.0002807	0.0035	2		13920.08	13920.08		13.88	Si
SLV 11	fin.	-3476.05	-1898	-0.0003894	0.0002807	0.0035	2		13933.43	13933.43		4.01	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	ini.	-1054.39	11106	2	0	6250	3965	13475	5100	10215		0.92	No
SLV 5	fin.	2735.68	12536	2	0	6250	3965	13475	5100	10215		0.81	No
SLD 11	ini.	346.54	-7384	2	0	6250	3965	13475	5100	10215		1.38	Si
SLD 11	fin.	-1508.3	-5754	2	0	6250	3965	13475	5100	10215		1.78	Si
SLV 9	ini.	-1166.38	11034	2	0	6250	3965	13475	5100	10215		0.93	No

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 9	fin.	2750.45	12959	2	0	6250	3965	13475	5100	10215		0.79	No
SLV 10	ini.	-1287.99	12521	2	0	6250	3965	13475	5100	10215		0.82	No
SLV 10	fin.	3087.88	14437	2	0	6250	3965	13475	5100	10215		0.71	No
SLV 6	ini.	-1176.01	12593	2	0	6250	3965	13475	5100	10215		0.81	No
SLV 6	fin.	3073.11	14014	2	0	6250	3965	13475	5100	10215		0.73	No
SLV 7	ini.	1115.12	-15892	2	0	6250	3965	13475	5100	10215		0.64	No
SLV 7	fin.	-3490.82	-14676	2	0	6250	3965	13475	5100	10215		0.7	No
SLV 12	ini.	881.52	-14477	2	0	6250	3965	13475	5100	10215		0.71	No
SLV 12	fin.	-3138.63	-12776	2	0	6250	3965	13475	5100	10215		0.8	No
SLV 11	ini.	1003.14	-15963	2	0	6250	3965	13475	5100	10215		0.64	No
SLV 11	fin.	-3476.05	-14253	2	0	6250	3965	13475	5100	10215		0.72	No
SLD 7	ini.	394.42	-7354	2	0	6250	3965	13475	5100	10215		1.39	Si
SLD 7	fin.	-1514.86	-5936	2	0	6250	3965	13475	5100	10215		1.72	Si
SLV 8	ini.	993.51	-14405	2	0	6250	3965	13475	5100	10215		0.71	No
SLV 8	fin.	-3153.4	-13199	2	0	6250	3965	13475	5100	10215		0.77	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.991	SLV 7	Si
V_SLV	0.64	SLV 11	No
PF_SLU	39.84	SLU 50	Si
V_SLU	3.163	SLU 69	Si

Trave di accoppiamento 146

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-0.123	0.146	11.42	12.17	0.75	-0.123	0.646	11.42	12.17	0.75	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 71	ini.	-36.96	-709	-0.0000262	0.0001872	0.0035	0.75		2071.83	2071.83	No	56.05	Si
SLU 71	fin.	-68.43	-824	-0.0000489	0.0001872	0.0035	0.75		2071.83	2071.83	No	30.28	Si
SLU 49	ini.	-23.94	-601	-0.0000169	0.0001872	0.0035	0.75		2071.83	2071.83	No	86.54	Si
SLU 49	fin.	-78.18	-741	-0.000056	0.0001872	0.0035	0.75		2071.83	2071.83	No	26.5	Si
SLU 51	ini.	-21.28	-577	-0.000015	0.0001872	0.0035	0.75		2071.83	2071.83	No	97.36	Si
SLU 51	fin.	-82.83	-726	-0.0000594	0.0001872	0.0035	0.75		2071.83	2071.83	No	25.01	Si
SLU 8	ini.	-18.2	-477	-0.0000128	0.0001872	0.0035	0.75		2071.83	2071.83	No	113.83	Si
SLU 8	fin.	-70.21	-603	-0.0000502	0.0001872	0.0035	0.75		2071.83	2071.83	No	29.51	Si
SLU 82	ini.	-69.49	-866	-0.0000496	0.0001872	0.0035	0.75		2071.83	2071.83	No	29.82	Si
SLU 82	fin.	8.62	-817	-0.0000061	0.0001872	0.0035	0.75		2067.09	2067.09	No	239.75	Si
SLU 40	ini.	-69.27	-778	-0.0000495	0.0001872	0.0035	0.75		2071.83	2071.83	No	29.91	Si
SLU 40	fin.	30.02	-688	-0.0000212	0.0001872	0.0035	0.75		2067.09	2067.09	No	68.86	Si
SLU 84	ini.	-67.63	-876	-0.0000483	0.0001872	0.0035	0.75		2071.83	2071.83	No	30.63	Si
SLU 84	fin.	-4.07	-852	-0.0000029	0.0001872	0.0035	0.75		2071.83	2071.83	No	509.51	Si
SLU 45	ini.	-22.93	-579	-0.0000162	0.0001872	0.0035	0.75		2071.83	2071.83	No	90.35	Si
SLU 45	fin.	-74.27	-711	-0.0000531	0.0001872	0.0035	0.75		2071.83	2071.83	No	27.9	Si
SLU 50	ini.	-18.42	-565	-0.000013	0.0001872	0.0035	0.75		2071.83	2071.83	No	112.5	Si
SLU 50	fin.	-91.61	-732	-0.0000658	0.0001872	0.0035	0.75		2071.83	2071.83	No	22.62	Si
SLU 48	ini.	-21.07	-589	-0.0000148	0.0001872	0.0035	0.75		2071.83	2071.83	No	98.31	Si
SLU 48	fin.	-86.96	-746	-0.0000624	0.0001872	0.0035	0.75		2071.83	2071.83	No	23.83	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 84	ini.	-67.63	1471	0.75	0	1563	3965	3369	1913	5281	No	3.59	Si
SLU 84	fin.	-4.07	-283	0.75	0	1563	3965	3369	1913	5281	No	18.68	Si
SLU 81	ini.	-66.62	1439	0.75	0	1563	3965	3369	1913	5281	No	3.67	Si
SLU 81	fin.	-0.16	-260	0.75	0	1563	3965	3369	1913	5281	No	20.35	Si
SLU 82	ini.	-69.49	1476	0.75	0	1563	3965	3369	1913	5281	No	3.58	Si
SLU 82	fin.	8.62	-223	0.75	0	1563	3965	3369	1913	5281	No	23.64	Si
SLU 77	ini.	-57.78	1381	0.75	0	1563	3965	3369	1913	5281	No	3.82	Si
SLU 77	fin.	-33.75	-417	0.75	0	1563	3965	3369	1913	5281	No	12.66	Si
SLU 78	ini.	-60.65	1418	0.75	0	1563	3965	3369	1913	5281	No	3.72	Si
SLU 78	fin.	-24.97	-381	0.75	0	1563	3965	3369	1913	5281	No	13.86	Si
SLU 83	ini.	-64.77	1435	0.75	0	1563	3965	3369	1913	5281	No	3.68	Si
SLU 83	fin.	-12.85	-319	0.75	0	1563	3965	3369	1913	5281	No	16.56	Si
SLU 73	ini.	-63.61	1405	0.75	0	1563	3965	3369	1913	5281	No	3.76	Si
SLU 73	fin.	1.61	-254	0.75	0	1563	3965	3369	1913	5281	No	20.8	Si
SLU 76	ini.	-61.76	1400	0.75	0	1563	3965	3369	1913	5281	No	3.77	Si
SLU 76	fin.	-11.08	-313	0.75	0	1563	3965	3369	1913	5281	No	16.86	Si
SLU 75	ini.	-62.51	1423	0.75	0	1563	3965	3369	1913	5281	No	3.71	Si
SLU 75	fin.	-12.28	-322	0.75	0	1563	3965	3369	1913	5281	No	16.42	Si
SLU 74	ini.	-59.64	1386	0.75	0	1563	3965	3369	1913	5281	No	3.81	Si
SLU 74	fin.	-21.06	-358	0.75	0	1563	3965	3369	1913	5281	No	14.76	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 5	ini.	-437.61	-2494	-0.0003416	0.0002807	0.0035	0.75		2057.16	2057.16		4.7	Si
SLV 5	fin.	1079.35	-69	-0.0010385	0.0002807	0.0035	0.75		2052.27	2052.27		1.9	Si
SLV 8	ini.	415.87	1546	-0.0003233	0.0002807	0.0035	0.75		2052.27	2052.27		4.93	Si
SLV 8	fin.	-1135.61	-916	-0.0011092	0.0002807	0.0035	0.75		2057.16	2057.16		1.81	Si
SLV 11	ini.	424.51	1676	-0.0003309	0.0002807	0.0035	0.75		2052.27	2052.27		4.83	Si
SLV 11	fin.	-1272.77	-1126	-0.001301	0.0002807	0.0035	0.75		2057.16	2057.16		1.62	Si
SLV 10	ini.	-532.39	-2853	-0.0004286	0.0002807	0.0035	0.75		2057.16	2057.16		3.86	Si
SLV 10	fin.	1210.5	-181	-0.0012154	0.0002807	0.0035	0.75		2052.27	2052.27		1.7	Si
SLV 12	ini.	372.81	1431	-0.000286	0.0002807	0.0035	0.75		2052.27	2052.27		5.5	Si
SLV 12	fin.	-1138.62	-1077	-0.0011132	0.0002807	0.0035	0.75		2057.16	2057.16		1.81	Si
SLD 11	ini.	149.33	348	-0.0001082	0.0002807	0.0035	0.75		2052.27	2052.27		13.74	Si
SLD 11	fin.	-525.64	-796	-0.0004222	0.0002807	0.0035	0.75		2057.16	2057.16		3.91	Si
SLV 7	ini.	467.58	1790	-0.0003695	0.0002807	0.0035	0.75		2052.27	2052.27		4.39	Si
SLV 7	fin.	-1269.76	-965	-0.0012966	0.0002807	0.0035	0.75		2057.16	2057.16		1.62	Si
SLV 9	ini.	-480.68	-2609	-0.0003805	0.0002807	0.0035	0.75		2057.16	2057.16		4.28	Si
SLV 9	fin.	1076.35	-230	-0.0010346	0.0002807	0.0035	0.75		2052.27	2052.27		1.91	Si
SLV 6	ini.	-489.32	-2738	-0.0003884	0.0002807	0.0035	0.75		2057.16	2057.16		4.2	Si
SLV 6	fin.	1213.5	-20	-0.0012197	0.0002807	0.0035	0.75		2052.27	2052.27		1.69	Si
SLD 7	ini.	167.86	397	-0.0001221	0.0002807	0.0035	0.75		2052.27	2052.27		12.23	Si
SLD 7	fin.	-524.39	-727	-0.000421	0.0002807	0.0035	0.75		2057.16	2057.16		3.92	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-278.36	3171	0.75	0	2344	3965	5053	1913	6309		1.99	Si
SLV 14	fin.	417.35	1640	0.75	0	2344	3965	5053	1913	6309		3.85	Si
SLV 10	ini.	-532.39	6535	0.75	0	2344	3965	5053	1913	6309		0.97	No
SLV 10	fin.	1210.5	5056	0.75	0	2344	3965	5053	1913	6309		1.25	Si
SLV 8	ini.	415.87	-4203	0.75	0	2344	3965	5053	1913	6309		1.5	Si
SLV 8	fin.	-1135.61	-5118	0.75	0	2344	3965	5053	1913	6309		1.23	Si
SLD 10	ini.	-232.67	3132	0.75	0	2344	3965	5053	1913	6309		2.01	Si
SLD 10	fin.	465.13	1824	0.75	0	2344	3965	5053	1913	6309		3.46	Si
SLV 7	ini.	467.58	-4798	0.75	0	2344	3965	5053	1913	6309		1.31	Si
SLV 7	fin.	-1269.76	-5700	0.75	0	2344	3965	5053	1913	6309		1.11	Si
SLV 11	ini.	424.51	-4632	0.75	0	2344	3965	5053	1913	6309		1.36	Si
SLV 11	fin.	-1272.77	-5698	0.75	0	2344	3965	5053	1913	6309		1.11	Si
SLV 6	ini.	-489.32	6369	0.75	0	2344	3965	5053	1913	6309		0.99	No
SLV 6	fin.	1213.5	5053	0.75	0	2344	3965	5053	1913	6309		1.25	Si
SLV 5	ini.	-437.61	5775	0.75	0	2344	3965	5053	1913	6309		1.09	Si
SLV 5	fin.	1079.35	4471	0.75	0	2344	3965	5053	1913	6309		1.41	Si
SLV 9	ini.	-480.68	5940	0.75	0	2344	3965	5053	1913	6309		1.06	Si
SLV 9	fin.	1076.35	4473	0.75	0	2344	3965	5053	1913	6309		1.41	Si
SLV 12	ini.	372.81	-4038	0.75	0	2344	3965	5053	1913	6309		1.56	Si
SLV 12	fin.	-1138.62	-5115	0.75	0	2344	3965	5053	1913	6309		1.23	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.616	SLV 11	Si
V_SLV	0.965	SLV 10	No
PF_SLU	22.616	SLU 50	Si
V_SLU	3.578	SLU 82	Si

Trave di accoppiamento 147

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-21.813	5.951	12.17	13.07	0.9	-22.713	5.951	12.17	13.07	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 48	ini.	-150.45	-68	-0.0000757	0.0001872	0.0035	0.9		2948.11	2948.11	No	19.6	Si
SLU 48	fin.	129.42	-451	-0.0000649	0.0001872	0.0035	0.9		2942.43	2942.43	No	22.74	Si
SLU 44	ini.	-141.58	-76	-0.0000711	0.0001872	0.0035	0.9		2948.11	2948.11	No	20.82	Si
SLU 44	fin.	129.15	-457	-0.0000648	0.0001872	0.0035	0.9		2942.43	2942.43	No	22.78	Si
SLU 51	ini.	-147	-67	-0.0000739	0.0001872	0.0035	0.9		2948.11	2948.11	No	20.05	Si
SLU 51	fin.	127.57	-447	-0.000064	0.0001872	0.0035	0.9		2942.43	2942.43	No	23.07	Si
SLU 47	ini.	-141.88	-74	-0.0000712	0.0001872	0.0035	0.9		2948.11	2948.11	No	20.78	Si
SLU 47	fin.	126.69	-448	-0.0000635	0.0001872	0.0035	0.9		2942.43	2942.43	No	23.23	Si
SLU 49	ini.	-143.2	-77	-0.0000719	0.0001872	0.0035	0.9		2948.11	2948.11	No	20.59	Si
SLU 49	fin.	124.41	-440	-0.0000624	0.0001872	0.0035	0.9		2942.43	2942.43	No	23.65	Si
SLU 71	ini.	-127.69	-109	-0.0000639	0.0001872	0.0035	0.9		2948.11	2948.11	No	23.09	Si
SLU 71	fin.	112.74	-420	-0.0000564	0.0001872	0.0035	0.9		2942.43	2942.43	No	26.1	Si
SLU 46	ini.	-142.91	-78	-0.0000718	0.0001872	0.0035	0.9		2948.11	2948.11	No	20.63	Si
SLU 46	fin.	126.87	-448	-0.0000636	0.0001872	0.0035	0.9		2942.43	2942.43	No	23.19	Si
SLU 43	ini.	-153.66	-61	-0.0000773	0.0001872	0.0035	0.9		2948.11	2948.11	No	19.19	Si
SLU 43	fin.	137.49	-476	-0.0000691	0.0001872	0.0035	0.9		2942.43	2942.43	No	21.4	Si
SLU 45	ini.	-150.15	-69	-0.0000755	0.0001872	0.0035	0.9		2948.11	2948.11	No	19.63	Si
SLU 45	fin.	131.88	-460	-0.0000662	0.0001872	0.0035	0.9		2942.43	2942.43	No	22.31	Si
SLU 50	ini.	-154.25	-58	-0.0000777	0.0001872	0.0035	0.9		2948.11	2948.11	No	19.11	Si
SLU 50	fin.	132.57	-459	-0.0000666	0.0001872	0.0035	0.9		2942.43	2942.43	No	22.19	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 43	ini.	-153.66	443	0.9	0	1875	7137	4043	2295	6338	No	14.3	Si
SLU 43	fin.	137.49	793	0.9	0	1875	7137	4043	2295	6338	No	7.99	Si
SLU 44	ini.	-141.58	405	0.9	0	1875	7137	4043	2295	6338	No	15.66	Si
SLU 44	fin.	129.15	752	0.9	0	1875	7137	4043	2295	6338	No	8.43	Si
SLU 51	ini.	-147	361	0.9	0	1875	7137	4043	2295	6338	No	17.58	Si
SLU 51	fin.	127.57	825	0.9	0	1875	7137	4043	2295	6338	No	7.68	Si
SLU 47	ini.	-141.88	375	0.9	0	1875	7137	4043	2295	6338	No	16.91	Si
SLU 47	fin.	126.69	780	0.9	0	1875	7137	4043	2295	6338	No	8.12	Si
SLU 48	ini.	-150.45	345	0.9	0	1875	7137	4043	2295	6338	No	18.35	Si
SLU 48	fin.	129.42	861	0.9	0	1875	7137	4043	2295	6338	No	7.36	Si
SLU 69	ini.	-123.89	256	0.9	0	1875	7137	4043	2295	6338	No	24.8	Si
SLU 69	fin.	109.58	752	0.9	0	1875	7137	4043	2295	6338	No	8.43	Si
SLU 46	ini.	-142.91	352	0.9	0	1875	7137	4043	2295	6338	No	18	Si
SLU 46	fin.	126.87	808	0.9	0	1875	7137	4043	2295	6338	No	7.84	Si
SLU 50	ini.	-154.25	384	0.9	0	1875	7137	4043	2295	6338	No	16.52	Si
SLU 50	fin.	132.57	849	0.9	0	1875	7137	4043	2295	6338	No	7.46	Si
SLU 49	ini.	-143.2	322	0.9	0	1875	7137	4043	2295	6338	No	19.66	Si
SLU 49	fin.	124.41	836	0.9	0	1875	7137	4043	2295	6338	No	7.58	Si
SLU 45	ini.	-150.15	375	0.9	0	1875	7137	4043	2295	6338	No	16.89	Si
SLU 45	fin.	131.88	833	0.9	0	1875	7137	4043	2295	6338	No	7.61	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 9	ini.	658.2	-825	-0.0003613	0.0002807	0.0035	0.9		2967.55	2967.55		4.51	Si
SLV 9	fin.	-513.1	1196	-0.0002726	0.0002807	0.0035	0.9		2973.32	2973.32		5.79	Si
SLV 5	ini.	939.25	-1297	-0.0005498	0.0002807	0.0035	0.9		2967.55	2967.55		3.16	Si
SLV 5	fin.	-645.52	1432	-0.0003526	0.0002807	0.0035	0.9		2973.32	2973.32		4.61	Si
SLV 8	ini.	-850.2	654	-0.0004866	0.0002807	0.0035	0.9		2973.32	2973.32		3.5	Si
SLV 8	fin.	691.11	-1858	-0.0003822	0.0002807	0.0035	0.9		2967.55	2967.55		4.29	Si
SLV 6	ini.	685.32	-908	-0.0003785	0.0002807	0.0035	0.9		2967.55	2967.55		4.33	Si
SLV 6	fin.	-500.95	1136	-0.0002655	0.0002807	0.0035	0.9		2973.32	2973.32		5.94	Si
SLV 16	ini.	-983.33	1223	-0.0005801	0.0002807	0.0035	0.9		2973.32	2973.32		3.02	Si
SLV 16	fin.	595.87	-1395	-0.0003227	0.0002807	0.0035	0.9		2967.55	2967.55		4.98	Si
SLV 15	ini.	-606.17	646	-0.0003283	0.0002807	0.0035	0.9		2973.32	2973.32		4.91	Si
SLV 15	fin.	381.14	-955	-0.0001979	0.0002807	0.0035	0.9		2967.55	2967.55		7.79	Si
SLV 1	ini.	791.33	-1395	-0.0004478	0.0002807	0.0035	0.9		2967.55	2967.55		3.75	Si
SLV 1	fin.	-417.86	732	-0.000218	0.0002807	0.0035	0.9		2973.32	2973.32		7.12	Si
SLV 11	ini.	-877.33	737	-0.0005053	0.0002807	0.0035	0.9		2973.32	2973.32		3.39	Si
SLV 11	fin.	678.96	-1799	-0.0003745	0.0002807	0.0035	0.9		2967.55	2967.55		4.37	Si
SLV 12	ini.	-1131.25	1126	-0.0006899	0.0002807	0.0035	0.9		2973.32	2973.32		2.63	Si
SLV 12	fin.	823.53	-2095	-0.0004695	0.0002807	0.0035	0.9		2967.55	2967.55		3.6	Si
SLV 7	ini.	-596.27	265	-0.0003223	0.0002807	0.0035	0.9		2973.32	2973.32		4.99	Si
SLV 7	fin.	546.54	-1563	-0.0002929	0.0002807	0.0035	0.9		2967.55	2967.55		5.43	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-606.17	1898	0.9	0	2813	7137	6064	2295	8359		4.4	Si
SLV 15	fin.	381.14	2144	0.9	0	2813	7137	6064	2295	8359		3.9	Si
SLV 9	ini.	658.2	-2134	0.9	0	2813	7137	6064	2295	8359		3.92	Si
SLV 9	fin.	-513.1	-2366	0.9	0	2813	7137	6064	2295	8359		3.53	Si
SLV 7	ini.	-596.27	1907	0.9	0	2813	7137	6064	2295	8359		4.38	Si
SLV 7	fin.	546.54	2594	0.9	0	2813	7137	6064	2295	8359		3.22	Si
SLV 6	ini.	685.32	-2226	0.9	0	2813	7137	6064	2295	8359		3.76	Si
SLV 6	fin.	-500.95	-2402	0.9	0	2813	7137	6064	2295	8359		3.48	Si
SLV 1	ini.	791.33	-2507	0.9	0	2813	7137	6064	2295	8359		3.33	Si
SLV 1	fin.	-417.86	-2291	0.9	0	2813	7137	6064	2295	8359		3.65	Si
SLV 16	ini.	-983.33	3067	0.9	0	2813	7137	6064	2295	8359		2.73	Si
SLV 16	fin.	595.87	3295	0.9	0	2813	7137	6064	2295	8359		2.54	Si
SLV 5	ini.	939.25	-3012	0.9	0	2813	7137	6064	2295	8359		2.77	Si
SLV 5	fin.	-645.52	-3177	0.9	0	2813	7137	6064	2295	8359		2.63	Si
SLV 12	ini.	-1131.25	3572	0.9	0	2813	7137	6064	2295	8359		2.34	Si
SLV 12	fin.	823.53	4181	0.9	0	2813	7137	6064	2295	8359		2	Si
SLV 11	ini.	-877.33	2786	0.9	0	2813	7137	6064	2295	8359		3	Si
SLV 11	fin.	678.96	3406	0.9	0	2813	7137	6064	2295	8359		2.45	Si
SLV 8	ini.	-850.2	2694	0.9	0	2813	7137	6064	2295	8359		3.1	Si
SLV 8	fin.	691.11	3370	0.9	0	2813	7137	6064	2295	8359		2.48	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.628	SLV 12	Si
V_SLV	1.999	SLV 12	Si
PF_SLU	19.113	SLU 50	Si
V_SLU	7.362	SLU 48	Si

Trave di accoppiamento 148

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-21.813	5.951	14.87	15.32	0.45	-22.713	5.951	14.87	15.32	0.45	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 50	ini.	-124	-54	-0.0002713	0.0001872	0.0035	0.45		744.65	744.65	No	6.01	Si
SLU 50	fin.	36.32	262	-0.0000729	0.0001872	0.0035	0.45		741.81	741.81	No	20.42	Si
SLU 71	ini.	-116.64	-14	-0.000253	0.0001872	0.0035	0.45		744.65	744.65	No	6.38	Si
SLU 71	fin.	9.82	233	-0.0000193	0.0001872	0.0035	0.45		741.81	741.81	No	75.51	Si
SLU 51	ini.	-120.49	-48	-0.0002625	0.0001872	0.0035	0.45		744.65	744.65	No	6.18	Si
SLU 51	fin.	32.75	255	-0.0000656	0.0001872	0.0035	0.45		741.81	741.81	No	22.65	Si
SLU 69	ini.	-117.84	-2	-0.0002559	0.0001872	0.0035	0.45		744.65	744.65	No	6.32	Si
SLU 69	fin.	0.11	228	-0.0000002	0.0001872	0.0035	0.45		741.81	741.81	No	6909.14	Si
SLU 72	ini.	-113.13	-7	-0.0002444	0.0001872	0.0035	0.45		744.65	744.65	No	6.58	Si
SLU 72	fin.	6.25	225	-0.0000122	0.0001872	0.0035	0.45		741.81	741.81	No	118.75	Si
SLU 45	ini.	-114.05	-38	-0.0002466	0.0001872	0.0035	0.45		744.65	744.65	No	6.53	Si
SLU 45	fin.	23.97	235	-0.0000477	0.0001872	0.0035	0.45		741.81	741.81	No	30.94	Si
SLU 49	ini.	-121.69	-35	-0.0002655	0.0001872	0.0035	0.45		744.65	744.65	No	6.12	Si
SLU 49	fin.	23.03	250	-0.0000457	0.0001872	0.0035	0.45		741.81	741.81	No	32.21	Si
SLU 70	ini.	-114.33	5	-0.0002473	0.0001872	0.0035	0.45		744.65	744.65	No	6.51	Si
SLU 70	fin.	-3.47	221	-0.0000068	0.0001872	0.0035	0.45		744.65	744.65	No	214.59	Si
SLU 46	ini.	-110.55	-32	-0.0002381	0.0001872	0.0035	0.45		744.65	744.65	No	6.74	Si
SLU 46	fin.	20.39	228	-0.0000404	0.0001872	0.0035	0.45		741.81	741.81	No	36.37	Si
SLU 48	ini.	-125.2	-42	-0.0002743	0.0001872	0.0035	0.45		744.65	744.65	No	5.95	Si
SLU 48	fin.	26.61	258	-0.000053	0.0001872	0.0035	0.45		741.81	741.81	No	27.88	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 71	ini.	-116.64	616	0.45	0	856	3568	2021	1148	3169	No	5.14	Si
SLU 71	fin.	9.82	-218	0.45	0	856	3568	2021	1148	3169	No	14.51	Si
SLU 48	ini.	-125.2	633	0.45	0	856	3568	2021	1148	3169	No	5.01	Si
SLU 48	fin.	26.61	-154	0.45	0	856	3568	2021	1148	3169	No	20.57	Si
SLU 70	ini.	-114.33	625	0.45	0	856	3568	2021	1148	3169	No	5.07	Si
SLU 70	fin.	-3.47	-277	0.45	0	856	3568	2021	1148	3169	No	11.45	Si
SLU 51	ini.	-120.49	601	0.45	0	856	3568	2021	1148	3169	No	5.27	Si
SLU 51	fin.	32.75	-118	0.45	0	856	3568	2021	1148	3169	No	26.78	Si
SLU 49	ini.	-121.69	621	0.45	0	856	3568	2021	1148	3169	No	5.1	Si
SLU 49	fin.	23.03	-165	0.45	0	856	3568	2021	1148	3169	No	19.17	Si
SLU 50	ini.	-124	613	0.45	0	856	3568	2021	1148	3169	No	5.17	Si
SLU 50	fin.	36.32	-107	0.45	0	856	3568	2021	1148	3169	No	29.6	Si
SLU 45	ini.	-114.05	582	0.45	0	856	3568	2021	1148	3169	No	5.44	Si
SLU 45	fin.	23.97	-146	0.45	0	856	3568	2021	1148	3169	No	21.65	Si
SLU 69	ini.	-117.84	636	0.45	0	856	3568	2021	1148	3169	No	4.98	Si
SLU 69	fin.	0.11	-265	0.45	0	856	3568	2021	1148	3169	No	11.94	Si
SLU 66	ini.	-106.7	586	0.45	0	856	3568	2021	1148	3169	No	5.41	Si
SLU 66	fin.	-2.53	-258	0.45	0	856	3568	2021	1148	3169	No	12.29	Si
SLU 72	ini.	-113.13	605	0.45	0	856	3568	2021	1148	3169	No	5.24	Si
SLU 72	fin.	6.25	-230	0.45	0	856	3568	2021	1148	3169	No	13.8	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	224.8	702	-0.00052	0.0002807	0.0035	0.45		742.08	742.08		3.3	Si
SLV 13	fin.	-297.82	-504	-0.0007321	0.0002807	0.0035	0.45		745.02	745.02		2.5	Si
SLV 9	ini.	420.07	1036	-0.0011561	0.0002807	0.0035	0.45		742.08	742.08		1.77	Si
SLV 9	fin.	-486.72	-865	-0.0014194	0.0002807	0.0035	0.45		745.02	745.02		1.53	Si
SLV 11	ini.	-408.36	-703	-0.0011064	0.0002807	0.0035	0.45		745.02	745.02		1.82	Si
SLV 11	fin.	334.05	772	-0.0008517	0.0002807	0.0035	0.45		742.08	742.08		2.22	Si
SLV 8	ini.	-558.01	-1045	-0.0017591	0.0002807	0.0035	0.45		745.02	745.02		1.34	Si
SLV 8	fin.	494.49	1143	-0.0014613	0.0002807	0.0035	0.45		742.08	742.08		1.5	Si
SLV 4	ini.	-362.74	-711	-0.0009439	0.0002807	0.0035	0.45		745.02	745.02		2.05	Si
SLV 4	fin.	305.59	783	-0.0007599	0.0002807	0.0035	0.45		742.08	742.08		2.43	Si
SLV 12	ini.	-494.83	-837	-0.0014549	0.0002807	0.0035	0.45		745.02	745.02		1.51	Si
SLV 12	fin.	430.16	1011	-0.0011948	0.0002807	0.0035	0.45		742.08	742.08		1.73	Si
SLV 5	ini.	356.9	828	-0.0009284	0.0002807	0.0035	0.45		742.08	742.08		2.08	Si
SLV 5	fin.	-422.4	-732	-0.001159	0.0002807	0.0035	0.45		745.02	745.02		1.76	Si
SLV 10	ini.	333.6	901	-0.0008502	0.0002807	0.0035	0.45		742.08	742.08		2.22	Si
SLV 10	fin.	-390.61	-625	-0.0010417	0.0002807	0.0035	0.45		745.02	745.02		1.91	Si
SLV 7	ini.	-471.54	-910	-0.0013548	0.0002807	0.0035	0.45		745.02	745.02		1.58	Si
SLV 7	fin.	398.37	904	-0.0010751	0.0002807	0.0035	0.45		742.08	742.08		1.86	Si
SLV 6	ini.	270.43	694	-0.0006518	0.0002807	0.0035	0.45		742.08	742.08		2.74	Si
SLV 6	fin.	-326.28	-493	-0.0008224	0.0002807	0.0035	0.45		745.02	745.02		2.28	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 8	ini.	-558.01	1982	0.45	0	1156	3568	3032	1148	4179		2.11	Si
SLV 8	fin.	494.49	1456	0.45	0	1156	3568	3032	1148	4179		2.87	Si
SLV 7	ini.	-471.54	1694	0.45	0	1156	3568	3032	1148	4179		2.47	Si
SLV 7	fin.	398.37	1164	0.45	0	1156	3568	3032	1148	4179		3.59	Si
SLV 9	ini.	420.07	-1225	0.45	0	1156	3568	3032	1148	4179		3.41	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 9	fin.	-486.72	-1753	0.45	0	1156	3568	3032	1148	4179		2.38	Si
SLV 13	ini.	224.8	-724	0.45	0	1156	3568	3032	1148	4179		5.77	Si
SLV 13	fin.	-297.82	-1252	0.45	0	1156	3568	3032	1148	4179		3.34	Si
SLV 11	ini.	-408.36	1397	0.45	0	1156	3568	3032	1148	4179		2.99	Si
SLV 11	fin.	334.05	868	0.45	0	1156	3568	3032	1148	4179		4.81	Si
SLV 6	ini.	270.43	-640	0.45	0	1156	3568	3032	1148	4179		6.53	Si
SLV 6	fin.	-326.28	-1166	0.45	0	1156	3568	3032	1148	4179		3.59	Si
SLV 5	ini.	356.9	-929	0.45	0	1156	3568	3032	1148	4179		4.5	Si
SLV 5	fin.	-422.4	-1458	0.45	0	1156	3568	3032	1148	4179		2.87	Si
SLV 12	ini.	-494.83	1686	0.45	0	1156	3568	3032	1148	4179		2.48	Si
SLV 12	fin.	430.16	1160	0.45	0	1156	3568	3032	1148	4179		3.6	Si
SLV 4	ini.	-362.74	1481	0.45	0	1156	3568	3032	1148	4179		2.82	Si
SLV 4	fin.	305.59	954	0.45	0	1156	3568	3032	1148	4179		4.38	Si
SLV 10	ini.	333.6	-937	0.45	0	1156	3568	3032	1148	4179		4.46	Si
SLV 10	fin.	-390.61	-1462	0.45	0	1156	3568	3032	1148	4179		2.86	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.335	SLV 8	Si
V_SLV	2.108	SLV 8	Si
PF_SLU	5.948	SLU 48	Si
V_SLU	4.982	SLU 69	Si

Trave di accoppiamento 149

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-21.593	-3.359	12.17	13.07	0.9	-22.493	-3.359	12.17	13.07	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 44	ini.	-39.31	-202	-0.0000193	0.0001872	0.0035	0.9		2948.11	2948.11	No	74.99	Si
SLU 44	fin.	150.3	-913	-0.0000757	0.0001872	0.0035	0.9		2942.43	2942.43	No	19.58	Si
SLU 50	ini.	-0.85	-361	-0.0000004	0.0001872	0.0035	0.9		2948.11	2948.11	No	3455.22	Si
SLU 50	fin.	143.23	-931	-0.0000721	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.54	Si
SLU 65	ini.	-5.45	-326	-0.0000027	0.0001872	0.0035	0.9		2948.11	2948.11	No	540.79	Si
SLU 65	fin.	144.89	-874	-0.0000729	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.31	Si
SLU 47	ini.	-24.09	-270	-0.0000118	0.0001872	0.0035	0.9		2948.11	2948.11	No	122.4	Si
SLU 47	fin.	149.48	-932	-0.0000753	0.0001872	0.0035	0.9		2942.43	2942.43	No	19.69	Si
SLU 46	ini.	-14.59	-308	-0.0000071	0.0001872	0.0035	0.9		2948.11	2948.11	No	202.11	Si
SLU 46	fin.	146.21	-925	-0.0000736	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.12	Si
SLU 68	ini.	9.77	-394	-0.0000048	0.0001872	0.0035	0.9		2942.43	2942.43	No	301.02	Si
SLU 68	fin.	144.06	-893	-0.0000725	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.42	Si
SLU 43	ini.	-31.31	-225	-0.0000154	0.0001872	0.0035	0.9		2948.11	2948.11	No	94.17	Si
SLU 43	fin.	144.87	-892	-0.0000729	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.31	Si
SLU 45	ini.	-9.78	-321	-0.0000048	0.0001872	0.0035	0.9		2948.11	2948.11	No	301.38	Si
SLU 45	fin.	142.96	-913	-0.0000719	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.58	Si
SLU 49	ini.	0.64	-376	-0.0000003	0.0001872	0.0035	0.9		2942.43	2942.43	No	4599.69	Si
SLU 49	fin.	145.39	-944	-0.0000732	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.24	Si
SLU 51	ini.	-5.66	-347	-0.0000028	0.0001872	0.0035	0.9		2948.11	2948.11	No	521.09	Si
SLU 51	fin.	146.48	-943	-0.0000738	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.09	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 70	ini.	34.5	-338	0.9	0	1875	7137	4043	2295	6338	No	18.74	Si
SLU 70	fin.	139.98	1248	0.9	0	1875	7137	4043	2295	6338	No	5.08	Si
SLU 46	ini.	-14.59	-87	0.9	0	1875	7137	4043	2295	6338	No	72.62	Si
SLU 46	fin.	146.21	1308	0.9	0	1875	7137	4043	2295	6338	No	4.85	Si
SLU 47	ini.	-24.09	-19	0.9	0	1875	7137	4043	2295	6338	No	333.19	Si
SLU 47	fin.	149.48	1301	0.9	0	1875	7137	4043	2295	6338	No	4.87	Si
SLU 51	ini.	-5.66	-146	0.9	0	1875	7137	4043	2295	6338	No	43.44	Si
SLU 51	fin.	146.48	1337	0.9	0	1875	7137	4043	2295	6338	No	4.74	Si
SLU 48	ini.	5.44	-222	0.9	0	1875	7137	4043	2295	6338	No	28.57	Si
SLU 48	fin.	142.14	1338	0.9	0	1875	7137	4043	2295	6338	No	4.74	Si
SLU 49	ini.	0.64	-199	0.9	0	1875	7137	4043	2295	6338	No	31.89	Si
SLU 49	fin.	145.39	1357	0.9	0	1875	7137	4043	2295	6338	No	4.67	Si
SLU 44	ini.	-39.31	92	0.9	0	1875	7137	4043	2295	6338	No	68.54	Si
SLU 44	fin.	150.3	1252	0.9	0	1875	7137	4043	2295	6338	No	5.06	Si
SLU 45	ini.	-9.78	-110	0.9	0	1875	7137	4043	2295	6338	No	57.44	Si
SLU 45	fin.	142.96	1289	0.9	0	1875	7137	4043	2295	6338	No	4.92	Si
SLU 69	ini.	39.31	-361	0.9	0	1875	7137	4043	2295	6338	No	17.54	Si
SLU 69	fin.	136.72	1229	0.9	0	1875	7137	4043	2295	6338	No	5.16	Si
SLU 50	ini.	-0.85	-169	0.9	0	1875	7137	4043	2295	6338	No	37.51	Si
SLU 50	fin.	143.23	1318	0.9	0	1875	7137	4043	2295	6338	No	4.81	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-527.53	1085	-0.000281	0.0002807	0.0035	0.9		2973.32	2973.32		5.64	Si
SLV 13	fin.	580.9	-2870	-0.0003136	0.0002807	0.0035	0.9		2967.55	2967.55		5.11	Si
SLV 11	ini.	399.07	-1230	-0.0002078	0.0002807	0.0035	0.9		2967.55	2967.55		7.44	Si
SLV 11	fin.	-203.82	889	-0.0001025	0.0002807	0.0035	0.9		2973.32	2973.32		14.59	Si
SLV 8	ini.	707.46	-2031	-0.0003927	0.0002807	0.0035	0.9		2967.55	2967.55		4.19	Si
SLV 8	fin.	-481.74	2168	-0.0002543	0.0002807	0.0035	0.9		2973.32	2973.32		6.17	Si
SLV 12	ini.	561.64	-1666	-0.0003019	0.0002807	0.0035	0.9		2967.55	2967.55		5.28	Si
SLV 12	fin.	-335.3	1484	-0.0001723	0.0002807	0.0035	0.9		2973.32	2973.32		8.87	Si
SLV 10	ini.	-541.48	1076	-0.0002893	0.0002807	0.0035	0.9		2973.32	2973.32		5.49	Si
SLV 10	fin.	560.04	-2850	-0.000301	0.0002807	0.0035	0.9		2967.55	2967.55		5.3	Si
SLV 5	ini.	-558.23	1148	-0.0002993	0.0002807	0.0035	0.9		2973.32	2973.32		5.33	Si
SLV 5	fin.	545.09	-2762	-0.000292	0.0002807	0.0035	0.9		2967.55	2967.55		5.44	Si
SLV 9	ini.	-704.05	1513	-0.0003897	0.0002807	0.0035	0.9		2973.32	2973.32		4.22	Si
SLV 9	fin.	691.52	-3445	-0.0003825	0.0002807	0.0035	0.9		2967.55	2967.55		4.29	Si
SLV 4	ini.	530.94	-1602	-0.0002836	0.0002807	0.0035	0.9		2967.55	2967.55		5.59	Si
SLV 4	fin.	-371.11	1592	-0.0001919	0.0002807	0.0035	0.9		2973.32	2973.32		8.01	Si
SLV 6	ini.	-395.66	712	-0.0002055	0.0002807	0.0035	0.9		2973.32	2973.32		7.51	Si
SLV 6	fin.	413.61	-2166	-0.000216	0.0002807	0.0035	0.9		2967.55	2967.55		7.17	Si
SLV 7	ini.	544.89	-1594	-0.0002919	0.0002807	0.0035	0.9		2967.55	2967.55		5.45	Si
SLV 7	fin.	-350.26	1572	-0.0001805	0.0002807	0.0035	0.9		2973.32	2973.32		8.49	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 10	ini.	-541.48	2586	0.9	0	2813	7137	6064	2295	8359		3.23	Si
SLV 10	fin.	560.04	3942	0.9	0	2813	7137	6064	2295	8359		2.12	Si
SLV 7	ini.	544.89	-2690	0.9	0	2813	7137	6064	2295	8359		3.11	Si
SLV 7	fin.	-350.26	-2302	0.9	0	2813	7137	6064	2295	8359		3.63	Si
SLV 14	ini.	-286.07	1593	0.9	0	2813	7137	6064	2295	8359		5.25	Si
SLV 14	fin.	385.61	2425	0.9	0	2813	7137	6064	2295	8359		3.45	Si
SLV 4	ini.	530.94	-2955	0.9	0	2813	7137	6064	2295	8359		2.83	Si
SLV 4	fin.	-371.11	-1992	0.9	0	2813	7137	6064	2295	8359		4.2	Si
SLV 12	ini.	561.64	-2643	0.9	0	2813	7137	6064	2295	8359		3.16	Si
SLV 12	fin.	-335.3	-2356	0.9	0	2813	7137	6064	2295	8359		3.55	Si
SLV 8	ini.	707.46	-3537	0.9	0	2813	7137	6064	2295	8359		2.36	Si
SLV 8	fin.	-481.74	-3115	0.9	0	2813	7137	6064	2295	8359		2.68	Si
SLV 13	ini.	-527.53	2852	0.9	0	2813	7137	6064	2295	8359		2.93	Si
SLV 13	fin.	580.9	3632	0.9	0	2813	7137	6064	2295	8359		2.3	Si
SLV 5	ini.	-558.23	2539	0.9	0	2813	7137	6064	2295	8359		3.29	Si
SLV 5	fin.	545.09	3996	0.9	0	2813	7137	6064	2295	8359		2.09	Si
SLV 9	ini.	-704.05	3433	0.9	0	2813	7137	6064	2295	8359		2.43	Si
SLV 9	fin.	691.52	4754	0.9	0	2813	7137	6064	2295	8359		1.76	Si
SLV 6	ini.	-395.66	1692	0.9	0	2813	7137	6064	2295	8359		4.94	Si
SLV 6	fin.	413.61	3184	0.9	0	2813	7137	6064	2295	8359		2.63	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	4.195	SLV 8	Si
V_SLV	1.758	SLV 9	Si
PF_SLU	19.578	SLU 44	Si
V_SLU	4.671	SLU 49	Si

Trave di accoppiamento 150

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-21.593	-3.359	14.87	15.32	0.45	-22.493	-3.359	14.87	15.32	0.45	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 49	ini.	-71.05	-885	-0.0001467	0.0001872	0.0035	0.45		744.65	744.65	No	10.48	Si
SLU 49	fin.	28.44	51	-0.0000567	0.0001872	0.0035	0.45		741.81	741.81	No	26.09	Si
SLU 51	ini.	-70.4	-857	-0.0001452	0.0001872	0.0035	0.45		744.65	744.65	No	10.58	Si
SLU 51	fin.	30.34	76	-0.0000606	0.0001872	0.0035	0.45		741.81	741.81	No	24.45	Si
SLU 50	ini.	-67.98	-838	-0.0001399	0.0001872	0.0035	0.45		744.65	744.65	No	10.95	Si
SLU 50	fin.	27.71	57	-0.0000552	0.0001872	0.0035	0.45		741.81	741.81	No	26.77	Si
SLU 44	ini.	-75.71	-804	-0.000157	0.0001872	0.0035	0.45		744.65	744.65	No	9.84	Si
SLU 44	fin.	48.26	239	-0.0000979	0.0001872	0.0035	0.45		741.81	741.81	No	15.37	Si
SLU 46	ini.	-72.89	-851	-0.0001507	0.0001872	0.0035	0.45		744.65	744.65	No	10.22	Si
SLU 46	fin.	36.52	126	-0.0000734	0.0001872	0.0035	0.45		741.81	741.81	No	20.31	Si
SLU 65	ini.	-68.61	-804	-0.0001413	0.0001872	0.0035	0.45		744.65	744.65	No	10.85	Si
SLU 65	fin.	32.82	103	-0.0000657	0.0001872	0.0035	0.45		741.81	741.81	No	22.6	Si
SLU 47	ini.	-73.86	-837	-0.0001529	0.0001872	0.0035	0.45		744.65	744.65	No	10.08	Si
SLU 47	fin.	40.17	164	-0.0000809	0.0001872	0.0035	0.45		741.81	741.81	No	18.46	Si
SLU 43	ini.	-71.67	-772	-0.000148	0.0001872	0.0035	0.45		744.65	744.65	No	10.39	Si
SLU 43	fin.	43.88	208	-0.0000887	0.0001872	0.0035	0.45		741.81	741.81	No	16.91	Si
SLU 45	ini.	-70.47	-832	-0.0001454	0.0001872	0.0035	0.45		744.65	744.65	No	10.57	Si
SLU 45	fin.	33.89	107	-0.0000679	0.0001872	0.0035	0.45		741.81	741.81	No	21.89	Si
SLU 48	ini.	-68.63	-866	-0.0001413	0.0001872	0.0035	0.45		744.65	744.65	No	10.85	Si
SLU 48	fin.	25.81	32	-0.0000514	0.0001872	0.0035	0.45		741.81	741.81	No	28.75	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 69	ini.	-61.53	1513	0.45	0	856	3568	2021	1148	3169	No	2.09	Si
SLU 69	fin.	10.37	-756	0.45	0	856	3568	2021	1148	3169	No	4.19	Si
SLU 70	ini.	-63.95	1529	0.45	0	856	3568	2021	1148	3169	No	2.07	Si
SLU 70	fin.	13	-741	0.45	0	856	3568	2021	1148	3169	No	4.28	Si
SLU 48	ini.	-68.63	1406	0.45	0	856	3568	2021	1148	3169	No	2.25	Si
SLU 48	fin.	25.81	-546	0.45	0	856	3568	2021	1148	3169	No	5.8	Si
SLU 49	ini.	-71.05	1422	0.45	0	856	3568	2021	1148	3169	No	2.23	Si
SLU 49	fin.	28.44	-530	0.45	0	856	3568	2021	1148	3169	No	5.98	Si
SLU 78	ini.	-51.2	1445	0.45	0	856	3568	2021	1148	3169	No	2.19	Si
SLU 78	fin.	-0.82	-824	0.45	0	856	3568	2021	1148	3169	No	3.84	Si
SLU 67	ini.	-65.8	1396	0.45	0	856	3568	2021	1148	3169	No	2.27	Si
SLU 67	fin.	21.08	-598	0.45	0	856	3568	2021	1148	3169	No	5.3	Si
SLU 77	ini.	-48.77	1429	0.45	0	856	3568	2021	1148	3169	No	2.22	Si
SLU 77	fin.	-3.45	-840	0.45	0	856	3568	2021	1148	3169	No	3.77	Si
SLU 66	ini.	-63.38	1380	0.45	0	856	3568	2021	1148	3169	No	2.3	Si
SLU 66	fin.	18.45	-614	0.45	0	856	3568	2021	1148	3169	No	5.16	Si
SLU 71	ini.	-60.88	1442	0.45	0	856	3568	2021	1148	3169	No	2.2	Si
SLU 71	fin.	12.27	-687	0.45	0	856	3568	2021	1148	3169	No	4.61	Si
SLU 72	ini.	-63.3	1458	0.45	0	856	3568	2021	1148	3169	No	2.17	Si
SLU 72	fin.	14.9	-671	0.45	0	856	3568	2021	1148	3169	No	4.72	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 9	ini.	-191.04	-1654	-0.0004266	0.0002807	0.0035	0.45		745.02	745.02		3.9	Si
SLD 9	fin.	158.08	1041	-0.0003441	0.0002807	0.0035	0.45		742.08	742.08		4.69	Si
SLV 12	ini.	250.42	1709	-0.0005928	0.0002807	0.0035	0.45		742.08	742.08		2.96	Si
SLV 12	fin.	-270.44	-2062	-0.0006489	0.0002807	0.0035	0.45		745.02	745.02		2.75	Si
SLV 6	ini.	-262.79	-2205	-0.0006263	0.0002807	0.0035	0.45		745.02	745.02		2.83	Si
SLV 6	fin.	232.8	1594	-0.0005424	0.0002807	0.0035	0.45		742.08	742.08		3.19	Si
SLV 7	ini.	222.37	1472	-0.0005132	0.0002807	0.0035	0.45		742.08	742.08		3.34	Si
SLV 7	fin.	-234.92	-1792	-0.000546	0.0002807	0.0035	0.45		745.02	745.02		3.17	Si
SLV 4	ini.	190.36	1219	-0.0004266	0.0002807	0.0035	0.45		742.08	742.08		3.9	Si
SLV 4	fin.	-195.11	-1485	-0.0004373	0.0002807	0.0035	0.45		745.02	745.02		3.82	Si
SLV 13	ini.	-285.54	-2352	-0.0006944	0.0002807	0.0035	0.45		745.02	745.02		2.61	Si
SLV 13	fin.	237.76	1596	-0.0005565	0.0002807	0.0035	0.45		742.08	742.08		3.12	Si
SLV 5	ini.	-345.59	-2841	-0.0008859	0.0002807	0.0035	0.45		745.02	745.02		2.16	Si
SLV 5	fin.	313.08	2173	-0.0007837	0.0002807	0.0035	0.45		742.08	742.08		2.37	Si
SLV 10	ini.	-317.55	-2604	-0.0007943	0.0002807	0.0035	0.45		745.02	745.02		2.35	Si
SLV 10	fin.	277.57	1903	-0.0006733	0.0002807	0.0035	0.45		742.08	742.08		2.67	Si
SLV 8	ini.	305.18	2109	-0.0007586	0.0002807	0.0035	0.45		742.08	742.08		2.43	Si
SLV 8	fin.	-315.2	-2371	-0.0007868	0.0002807	0.0035	0.45		745.02	745.02		2.36	Si
SLV 9	ini.	-400.35	-3241	-0.001077	0.0002807	0.0035	0.45		745.02	745.02		1.86	Si
SLV 9	fin.	357.85	2482	-0.0009316	0.0002807	0.0035	0.45		742.08	742.08		2.07	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 10	ini.	-317.55	2515	0.45	0	1156	3568	3032	1148	4179		1.66	Si
SLV 10	fin.	277.57	1352	0.45	0	1156	3568	3032	1148	4179		3.09	Si
SLV 7	ini.	222.37	-800	0.45	0	1156	3568	3032	1148	4179		5.23	Si
SLV 7	fin.	-234.92	-1926	0.45	0	1156	3568	3032	1148	4179		2.17	Si
SLV 12	ini.	250.42	-1013	0.45	0	1156	3568	3032	1148	4179		4.13	Si
SLV 12	fin.	-270.44	-2139	0.45	0	1156	3568	3032	1148	4179		1.95	Si
SLV 6	ini.	-262.79	2212	0.45	0	1156	3568	3032	1148	4179		1.89	Si
SLV 6	fin.	232.8	1054	0.45	0	1156	3568	3032	1148	4179		3.96	Si
SLD 9	ini.	-191.04	1742	0.45	0	1156	3568	3032	1148	4179		2.4	Si
SLD 9	fin.	158.08	587	0.45	0	1156	3568	3032	1148	4179		7.12	Si
SLV 13	ini.	-285.54	2276	0.45	0	1156	3568	3032	1148	4179		1.84	Si
SLV 13	fin.	237.76	1113	0.45	0	1156	3568	3032	1148	4179		3.76	Si
SLV 9	ini.	-400.35	3032	0.45	0	1156	3568	3032	1148	4179		1.38	Si
SLV 9	fin.	357.85	1863	0.45	0	1156	3568	3032	1148	4179		2.24	Si
SLV 5	ini.	-345.59	2729	0.45	0	1156	3568	3032	1148	4179		1.53	Si
SLV 5	fin.	313.08	1566	0.45	0	1156	3568	3032	1148	4179		2.67	Si
SLV 4	ini.	190.36	-560	0.45	0	1156	3568	3032	1148	4179		7.46	Si
SLV 4	fin.	-195.11	-1686	0.45	0	1156	3568	3032	1148	4179		2.48	Si
SLV 8	ini.	305.18	-1316	0.45	0	1156	3568	3032	1148	4179		3.18	Si
SLV 8	fin.	-315.2	-2437	0.45	0	1156	3568	3032	1148	4179		1.71	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.861	SLV 9	Si
V_SLV	1.378	SLV 9	Si
PF_SLU	9.836	SLU 44	Si
V_SLU	2.073	SLU 70	Si

Trave di accoppiamento 151

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-18.868	-3.359	12.17	14.17	2	-19.368	-3.359	12.17	14.17	2	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 69	ini.	-467.01	-1432	-0.000047	0.0001872	0.0035	2		14219.44	14219.44	No	30.45	Si
SLU 69	fin.	423.54	-1889	-0.0000426	0.0001872	0.0035	2		14206.68	14206.68	No	33.54	Si
SLU 68	ini.	-464.51	-1282	-0.0000468	0.0001872	0.0035	2		14219.44	14219.44	No	30.61	Si
SLU 68	fin.	393.5	-1706	-0.0000395	0.0001872	0.0035	2		14206.68	14206.68	No	36.1	Si
SLU 80	ini.	-443.3	-1288	-0.0000446	0.0001872	0.0035	2		14219.44	14219.44	No	32.08	Si
SLU 80	fin.	425.47	-1757	-0.0000428	0.0001872	0.0035	2		14206.68	14206.68	No	33.39	Si
SLU 65	ini.	-442.56	-1150	-0.0000445	0.0001872	0.0035	2		14219.44	14219.44	No	32.13	Si
SLU 65	fin.	365.06	-1550	-0.0000366	0.0001872	0.0035	2		14206.68	14206.68	No	38.92	Si
SLU 71	ini.	-464.55	-1373	-0.0000468	0.0001872	0.0035	2		14219.44	14219.44	No	30.61	Si
SLU 71	fin.	416.38	-1822	-0.0000419	0.0001872	0.0035	2		14206.68	14206.68	No	34.12	Si
SLU 67	ini.	-458.21	-1325	-0.0000461	0.0001872	0.0035	2		14219.44	14219.44	No	31.03	Si
SLU 67	fin.	398.44	-1757	-0.00004	0.0001872	0.0035	2		14206.68	14206.68	No	35.66	Si
SLU 78	ini.	-445.76	-1348	-0.0000448	0.0001872	0.0035	2		14219.44	14219.44	No	31.9	Si
SLU 78	fin.	432.63	-1823	-0.0000435	0.0001872	0.0035	2		14206.68	14206.68	No	32.84	Si
SLU 72	ini.	-477.7	-1398	-0.0000481	0.0001872	0.0035	2		14219.44	14219.44	No	29.77	Si
SLU 72	fin.	419.71	-1847	-0.0000422	0.0001872	0.0035	2		14206.68	14206.68	No	33.85	Si
SLU 66	ini.	-445.05	-1300	-0.0000448	0.0001872	0.0035	2		14219.44	14219.44	No	31.95	Si
SLU 66	fin.	395.11	-1732	-0.0000397	0.0001872	0.0035	2		14206.68	14206.68	No	35.96	Si
SLU 70	ini.	-480.16	-1457	-0.0000484	0.0001872	0.0035	2		14219.44	14219.44	No	29.61	Si
SLU 70	fin.	426.88	-1913	-0.0000429	0.0001872	0.0035	2		14206.68	14206.68	No	33.28	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-445.76	2693	2	0	4167	3965	8983	5100	8131	No	3.02	Si
SLU 78	fin.	432.63	2858	2	0	4167	3965	8983	5100	8131	No	2.85	Si
SLU 77	ini.	-432.61	2661	2	0	4167	3965	8983	5100	8131	No	3.06	Si
SLU 77	fin.	429.3	2827	2	0	4167	3965	8983	5100	8131	No	2.88	Si
SLU 72	ini.	-477.7	2685	2	0	4167	3965	8983	5100	8131	No	3.03	Si
SLU 72	fin.	419.71	2832	2	0	4167	3965	8983	5100	8131	No	2.87	Si
SLU 71	ini.	-464.55	2653	2	0	4167	3965	8983	5100	8131	No	3.07	Si
SLU 71	fin.	416.38	2801	2	0	4167	3965	8983	5100	8131	No	2.9	Si
SLU 80	ini.	-443.3	2675	2	0	4167	3965	8983	5100	8131	No	3.04	Si
SLU 80	fin.	425.47	2802	2	0	4167	3965	8983	5100	8131	No	2.9	Si
SLU 69	ini.	-467.01	2670	2	0	4167	3965	8983	5100	8131	No	3.05	Si
SLU 69	fin.	423.54	2857	2	0	4167	3965	8983	5100	8131	No	2.85	Si
SLU 79	ini.	-430.15	2643	2	0	4167	3965	8983	5100	8131	No	3.08	Si
SLU 79	fin.	422.13	2771	2	0	4167	3965	8983	5100	8131	No	2.93	Si
SLU 75	ini.	-423.81	2571	2	0	4167	3965	8983	5100	8131	No	3.16	Si
SLU 75	fin.	404.2	2663	2	0	4167	3965	8983	5100	8131	No	3.05	Si
SLU 67	ini.	-458.21	2580	2	0	4167	3965	8983	5100	8131	No	3.15	Si
SLU 67	fin.	398.44	2693	2	0	4167	3965	8983	5100	8131	No	3.02	Si
SLU 70	ini.	-480.16	2703	2	0	4167	3965	8983	5100	8131	No	3.01	Si
SLU 70	fin.	426.88	2888	2	0	4167	3965	8983	5100	8131	No	2.82	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-1180.92	-1909	-0.0001209	0.0002807	0.0035	2		13933.43	13933.43		11.8	Si
SLV 15	fin.	636.76	-2446	-0.0000642	0.0002807	0.0035	2		13920.08	13920.08		21.86	Si
SLV 10	ini.	-1514.35	-3580	-0.0001568	0.0002807	0.0035	2		13933.43	13933.43		9.2	Si
SLV 10	fin.	287.26	-3576	-0.0000287	0.0002807	0.0035	2		13920.08	13920.08		48.46	Si
SLV 14	ini.	-1333.82	-2791	-0.0001373	0.0002807	0.0035	2		13933.43	13933.43		10.45	Si
SLV 14	fin.	378.64	-3015	-0.0000379	0.0002807	0.0035	2		13920.08	13920.08		36.76	Si
SLV 5	ini.	-1281.5	-3074	-0.0001317	0.0002807	0.0035	2		13933.43	13933.43		10.87	Si
SLV 5	fin.	334.89	-3121	-0.0000334	0.0002807	0.0035	2		13920.08	13920.08		41.57	Si
SLV 6	ini.	-942.99	-2642	-0.0000958	0.0002807	0.0035	2		13933.43	13933.43		14.78	Si
SLV 6	fin.	144.25	-2593	-0.0000143	0.0002807	0.0035	2		13920.08	13920.08		96.5	Si
SLV 9	ini.	-1852.87	-4012	-0.0001941	0.0002807	0.0035	2		13933.43	13933.43		7.52	Si
SLV 9	fin.	477.9	-4104	-0.0000479	0.0002807	0.0035	2		13920.08	13920.08		29.13	Si
SLV 13	ini.	-1836.62	-3433	-0.0001923	0.0002807	0.0035	2		13933.43	13933.43		7.59	Si
SLV 13	fin.	661.79	-3800	-0.0000667	0.0002807	0.0035	2		13920.08	13920.08		21.03	Si
SLV 4	ini.	1226.41	1858	-0.0001259	0.0002807	0.0035	2		13920.08	13920.08		11.35	Si
SLV 4	fin.	-123.09	1614	-0.0000122	0.0002807	0.0035	2		13933.43	13933.43		113.19	Si
SLV 8	ini.	1242.66	2437	-0.0001276	0.0002807	0.0035	2		13920.08	13920.08		11.2	Si
SLV 8	fin.	60.8	1918	-0.000006	0.0002807	0.0035	2		13920.08	13920.08		228.95	Si
SLD 13	ini.	-951.97	-1899	-0.0000968	0.0002807	0.0035	2		13933.43	13933.43		14.64	Si
SLD 13	fin.	438.52	-2235	-0.0000439	0.0002807	0.0035	2		13920.08	13920.08		31.74	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 13	ini.	-951.97	3661	2	0	6250	3965	13475	5100	10215		2.79	Si
SLD 13	fin.	438.52	3363	2	0	6250	3965	13475	5100	10215		3.04	Si
SLV 13	ini.	-1836.62	6166	2	0	6250	3965	13475	5100	10215		1.66	Si
SLV 13	fin.	661.79	5492	2	0	6250	3965	13475	5100	10215		1.86	Si
SLV 10	ini.	-1514.35	3521	2	0	6250	3965	13475	5100	10215		2.9	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 10	fin.	287.26	3492	2	0	6250	3965	13475	5100	10215		2.93	Si
SLV 14	ini.	-1333.82	4272	2	0	6250	3965	13475	5100	10215		2.39	Si
SLV 14	fin.	378.64	3696	2	0	6250	3965	13475	5100	10215		2.76	Si
SLD 15	ini.	-687.82	3302	2	0	6250	3965	13475	5100	10215		3.09	Si
SLD 15	fin.	426.23	2968	2	0	6250	3965	13475	5100	10215		3.44	Si
SLV 5	ini.	-1281.5	3009	2	0	6250	3965	13475	5100	10215		3.4	Si
SLV 5	fin.	334.89	3307	2	0	6250	3965	13475	5100	10215		3.09	Si
SLD 9	ini.	-938.26	3050	2	0	6250	3965	13475	5100	10215		3.35	Si
SLD 9	fin.	360.39	2995	2	0	6250	3965	13475	5100	10215		3.41	Si
SLV 15	ini.	-1180.92	5288	2	0	6250	3965	13475	5100	10215		1.93	Si
SLV 15	fin.	636.76	4524	2	0	6250	3965	13475	5100	10215		2.26	Si
SLV 9	ini.	-1852.87	4796	2	0	6250	3965	13475	5100	10215		2.13	Si
SLV 9	fin.	477.9	4702	2	0	6250	3965	13475	5100	10215		2.17	Si
SLV 16	ini.	-678.13	3395	2	0	6250	3965	13475	5100	10215		3.01	Si
SLV 16	fin.	353.6	2728	2	0	6250	3965	13475	5100	10215		3.75	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	7.52	SLV 9	Si
V_SLV	1.657	SLV 13	Si
PF_SLU	29.614	SLU 70	Si
V_SLU	2.816	SLU 70	Si

Trave di accoppiamento 152

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-18.868	-3.359	14.97	15.32	0.35	-19.368	-3.359	14.97	15.32	0.35	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 71	ini.	-136.27	-201	-0.0005483	0.0001872	0.0035	0.35		460.48	460.48	No	3.38	Si
SLU 71	fin.	127.69	-201	-0.0005094	0.0001872	0.0035	0.35		458.33	458.33	No	3.59	Si
SLU 80	ini.	-141.35	-219	-0.0005735	0.0001872	0.0035	0.35		460.48	460.48	No	3.26	Si
SLU 80	fin.	130.65	-219	-0.0005238	0.0001872	0.0035	0.35		458.33	458.33	No	3.51	Si
SLU 69	ini.	-137.82	-218	-0.000556	0.0001872	0.0035	0.35		460.48	460.48	No	3.34	Si
SLU 69	fin.	128.56	-218	-0.0005136	0.0001872	0.0035	0.35		458.33	458.33	No	3.57	Si
SLU 78	ini.	-142.9	-235	-0.0005813	0.0001872	0.0035	0.35		460.48	460.48	No	3.22	Si
SLU 78	fin.	131.51	-235	-0.000528	0.0001872	0.0035	0.35		458.33	458.33	No	3.49	Si
SLU 75	ini.	-136.7	-209	-0.0005504	0.0001872	0.0035	0.35		460.48	460.48	No	3.37	Si
SLU 75	fin.	126.37	-209	-0.000503	0.0001872	0.0035	0.35		458.33	458.33	No	3.63	Si
SLU 77	ini.	-141.78	-240	-0.0005757	0.0001872	0.0035	0.35		460.48	460.48	No	3.25	Si
SLU 77	fin.	129.79	-240	-0.0005196	0.0001872	0.0035	0.35		458.33	458.33	No	3.53	Si
SLU 70	ini.	-138.93	-213	-0.0005615	0.0001872	0.0035	0.35		460.48	460.48	No	3.31	Si
SLU 70	fin.	130.29	-213	-0.0005221	0.0001872	0.0035	0.35		458.33	458.33	No	3.52	Si
SLU 84	ini.	-136.85	-202	-0.0005512	0.0001872	0.0035	0.35		460.48	460.48	No	3.36	Si
SLU 84	fin.	126.02	-202	-0.0005013	0.0001872	0.0035	0.35		458.33	458.33	No	3.64	Si
SLU 72	ini.	-137.39	-196	-0.0005538	0.0001872	0.0035	0.35		460.48	460.48	No	3.35	Si
SLU 72	fin.	129.42	-196	-0.0005178	0.0001872	0.0035	0.35		458.33	458.33	No	3.54	Si
SLU 79	ini.	-140.24	-224	-0.000568	0.0001872	0.0035	0.35		460.48	460.48	No	3.28	Si
SLU 79	fin.	128.92	-224	-0.0005154	0.0001872	0.0035	0.35		458.33	458.33	No	3.56	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-136.7	588	0.35	0	729	2775	1572	893	2465	No	4.19	Si
SLU 75	fin.	126.37	465	0.35	0	729	2775	1572	893	2465	No	5.3	Si
SLU 69	ini.	-137.82	594	0.35	0	729	2775	1572	893	2465	No	4.15	Si
SLU 69	fin.	128.56	471	0.35	0	729	2775	1572	893	2465	No	5.23	Si
SLU 71	ini.	-136.27	589	0.35	0	729	2775	1572	893	2465	No	4.18	Si
SLU 71	fin.	127.69	467	0.35	0	729	2775	1572	893	2465	No	5.28	Si
SLU 79	ini.	-140.24	600	0.35	0	729	2775	1572	893	2465	No	4.11	Si
SLU 79	fin.	128.92	477	0.35	0	729	2775	1572	893	2465	No	5.17	Si
SLU 78	ini.	-142.9	610	0.35	0	729	2775	1572	893	2465	No	4.04	Si
SLU 78	fin.	131.51	487	0.35	0	729	2775	1572	893	2465	No	5.06	Si
SLU 77	ini.	-141.78	605	0.35	0	729	2775	1572	893	2465	No	4.08	Si
SLU 77	fin.	129.79	482	0.35	0	729	2775	1572	893	2465	No	5.12	Si
SLU 84	ini.	-136.85	587	0.35	0	729	2775	1572	893	2465	No	4.2	Si
SLU 84	fin.	126.02	464	0.35	0	729	2775	1572	893	2465	No	5.31	Si
SLU 70	ini.	-138.93	600	0.35	0	729	2775	1572	893	2465	No	4.11	Si
SLU 70	fin.	130.29	477	0.35	0	729	2775	1572	893	2465	No	5.17	Si
SLU 72	ini.	-137.39	595	0.35	0	729	2775	1572	893	2465	No	4.14	Si
SLU 72	fin.	129.42	472	0.35	0	729	2775	1572	893	2465	No	5.22	Si
SLU 80	ini.	-141.35	605	0.35	0	729	2775	1572	893	2465	No	4.07	Si
SLU 80	fin.	130.65	483	0.35	0	729	2775	1572	893	2465	No	5.11	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 9	ini.	-98.55	248	-0.0003532	0.0002807	0.0035	0.35		450.32	450.32		4.57	Si
SLD 9	fin.	129.46	250	-0.0004887	0.0002807	0.0035	0.35		448.02	448.02		3.46	Si
SLV 15	ini.	-144.03	282	-0.0005525	0.0002807	0.0035	0.35		450.32	450.32		3.13	Si
SLV 15	fin.	179.35	300	-0.000729	0.0002807	0.0035	0.35		448.02	448.02		2.5	Si
SLV 3	ini.	-125.27	-717	-0.0004672	0.0002807	0.0035	0.35		450.32	450.32		3.59	Si
SLV 3	fin.	62.11	-734	-0.0002132	0.0002807	0.0035	0.35		448.02	448.02		7.21	Si
SLV 9	ini.	-101.61	776	-0.0003658	0.0002807	0.0035	0.35		450.32	450.32		4.43	Si
SLV 9	fin.	186.19	780	-0.0007644	0.0002807	0.0035	0.35		448.02	448.02		2.41	Si
SLD 15	ini.	-115.3	59	-0.0004237	0.0002807	0.0035	0.35		450.32	450.32		3.91	Si
SLD 15	fin.	127.63	67	-0.0004804	0.0002807	0.0035	0.35		448.02	448.02		3.51	Si
SLD 13	ini.	-111.27	222	-0.0004064	0.0002807	0.0035	0.35		450.32	450.32		4.05	Si
SLD 13	fin.	139.77	230	-0.0005358	0.0002807	0.0035	0.35		448.02	448.02		3.21	Si
SLV 11	ini.	-139.3	-572	-0.0005306	0.0002807	0.0035	0.35		450.32	450.32		3.23	Si
SLV 11	fin.	89.02	-566	-0.0003164	0.0002807	0.0035	0.35		448.02	448.02		5.03	Si
SLV 5	ini.	-95.98	476	-0.0003427	0.0002807	0.0035	0.35		450.32	450.32		4.69	Si
SLV 5	fin.	151.02	470	-0.0005888	0.0002807	0.0035	0.35		448.02	448.02		2.97	Si
SLV 13	ini.	-132.72	687	-0.0005006	0.0002807	0.0035	0.35		450.32	450.32		3.39	Si
SLV 13	fin.	208.5	704	-0.0008841	0.0002807	0.0035	0.35		448.02	448.02		2.15	Si
SLV 7	ini.	-133.67	-872	-0.0005049	0.0002807	0.0035	0.35		450.32	450.32		3.37	Si
SLV 7	fin.	53.85	-876	-0.000183	0.0002807	0.0035	0.35		448.02	448.02		8.32	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 5	ini.	-96	471	0.35	0	1094	2775	2358	893	3251		6.9	Si
SLD 5	fin.	114.3	424	0.35	0	1094	2775	2358	893	3251		7.66	Si
SLV 15	ini.	-144.03	708	0.35	0	1094	2775	2358	893	3251		4.59	Si
SLV 15	fin.	179.35	626	0.35	0	1094	2775	2358	893	3251		5.2	Si
SLD 15	ini.	-115.3	539	0.35	0	1094	2775	2358	893	3251		6.03	Si
SLD 15	fin.	127.63	451	0.35	0	1094	2775	2358	893	3251		7.2	Si
SLV 11	ini.	-139.3	495	0.35	0	1094	2775	2358	893	3251		6.56	Si
SLV 11	fin.	89.02	280	0.35	0	1094	2775	2358	893	3251		11.61	Si
SLV 5	ini.	-95.98	550	0.35	0	1094	2775	2358	893	3251		5.91	Si
SLV 5	fin.	151.02	576	0.35	0	1094	2775	2358	893	3251		5.64	Si
SLV 13	ini.	-132.72	752	0.35	0	1094	2775	2358	893	3251		4.32	Si
SLV 13	fin.	208.5	752	0.35	0	1094	2775	2358	893	3251		4.32	Si
SLV 9	ini.	-101.61	642	0.35	0	1094	2775	2358	893	3251		5.06	Si
SLV 9	fin.	186.19	701	0.35	0	1094	2775	2358	893	3251		4.64	Si
SLD 13	ini.	-111.27	559	0.35	0	1094	2775	2358	893	3251		5.82	Si
SLD 13	fin.	139.77	503	0.35	0	1094	2775	2358	893	3251		6.46	Si
SLD 9	ini.	-98.55	512	0.35	0	1094	2775	2358	893	3251		6.35	Si
SLD 9	fin.	129.46	478	0.35	0	1094	2775	2358	893	3251		6.8	Si
SLV 10	ini.	-54.81	423	0.35	0	1094	2775	2358	893	3251		7.69	Si
SLV 10	fin.	123.2	481	0.35	0	1094	2775	2358	893	3251		6.76	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.149	SLV 13	Si
V_SLV	4.32	SLV 13	Si
PF_SLU	3.222	SLU 78	Si
V_SLU	4.039	SLU 78	Si

Trave di accoppiamento 153

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-17.363	-3.359	12.17	13.07	0.9	-18.263	-3.359	12.17	13.07	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

											εlim,conv / ε,CNR DT-200						CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 72	ini.	-60.66	-288	-0.00003	0.0001872	0.0035	0.9		2948.11	2948.11	No	48.6	Si
SLU 72	fin.	133.03	-813	-0.0000668	0.0001872	0.0035	0.9		2942.43	2942.43	No	22.12	Si
SLU 68	ini.	-66.64	-246	-0.000033	0.0001872	0.0035	0.9		2948.11	2948.11	No	44.24	Si
SLU 68	fin.	124.24	-752	-0.0000623	0.0001872	0.0035	0.9		2942.43	2942.43	No	23.68	Si
SLU 67	ini.	-56.82	-280	-0.000028	0.0001872	0.0035	0.9		2948.11	2948.11	No	51.89	Si
SLU 67	fin.	123.4	-765	-0.0000618	0.0001872	0.0035	0.9		2942.43	2942.43	No	23.85	Si
SLU 27	ini.	-47.37	-259	-0.0000233	0.0001872	0.0035	0.9		2948.11	2948.11	No	62.24	Si
SLU 27	fin.	118.45	-714	-0.0000593	0.0001872	0.0035	0.9		2942.43	2942.43	No	24.84	Si
SLU 69	ini.	-46.87	-330	-0.0000231	0.0001872	0.0035	0.9		2948.11	2948.11	No	62.9	Si
SLU 69	fin.	129.06	-816	-0.0000647	0.0001872	0.0035	0.9		2942.43	2942.43	No	22.8	Si
SLU 30	ini.	-61.16	-217	-0.0000302	0.0001872	0.0035	0.9		2948.11	2948.11	No	48.21	Si
SLU 30	fin.	122.42	-711	-0.0000613	0.0001872	0.0035	0.9		2942.43	2942.43	No	24.04	Si
SLU 71	ini.	-48.76	-312	-0.000024	0.0001872	0.0035	0.9		2948.11	2948.11	No	60.47	Si
SLU 71	fin.	123.64	-782	-0.000062	0.0001872	0.0035	0.9		2942.43	2942.43	No	23.8	Si
SLU 70	ini.	-58.77	-307	-0.000029	0.0001872	0.0035	0.9		2948.11	2948.11	No	50.16	Si
SLU 70	fin.	138.44	-846	-0.0000696	0.0001872	0.0035	0.9		2942.43	2942.43	No	21.25	Si
SLU 28	ini.	-59.27	-235	-0.0000293	0.0001872	0.0035	0.9		2948.11	2948.11	No	49.74	Si
SLU 28	fin.	127.83	-745	-0.0000641	0.0001872	0.0035	0.9		2942.43	2942.43	No	23.02	Si
SLU 49	ini.	-36.83	-330	-0.0000181	0.0001872	0.0035	0.9		2948.11	2948.11	No	80.05	Si
SLU 49	fin.	116.23	-762	-0.0000582	0.0001872	0.0035	0.9		2942.43	2942.43	No	25.32	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 66	ini.	-44.92	100	0.9	0	1875	7137	4043	2295	6338	No	63.13	Si
SLU 66	fin.	114.02	1088	0.9	0	1875	7137	4043	2295	6338	No	5.82	Si
SLU 70	ini.	-58.77	154	0.9	0	1875	7137	4043	2295	6338	No	41.1	Si
SLU 70	fin.	138.44	1247	0.9	0	1875	7137	4043	2295	6338	No	5.08	Si
SLU 72	ini.	-60.66	169	0.9	0	1875	7137	4043	2295	6338	No	37.61	Si
SLU 72	fin.	133.03	1201	0.9	0	1875	7137	4043	2295	6338	No	5.28	Si
SLU 28	ini.	-59.27	187	0.9	0	1875	7137	4043	2295	6338	No	33.94	Si
SLU 28	fin.	127.83	1087	0.9	0	1875	7137	4043	2295	6338	No	5.83	Si
SLU 67	ini.	-56.82	153	0.9	0	1875	7137	4043	2295	6338	No	41.43	Si
SLU 67	fin.	123.4	1139	0.9	0	1875	7137	4043	2295	6338	No	5.56	Si
SLU 71	ini.	-48.76	116	0.9	0	1875	7137	4043	2295	6338	No	54.66	Si
SLU 71	fin.	123.64	1150	0.9	0	1875	7137	4043	2295	6338	No	5.51	Si
SLU 68	ini.	-66.64	202	0.9	0	1875	7137	4043	2295	6338	No	31.32	Si
SLU 68	fin.	124.24	1126	0.9	0	1875	7137	4043	2295	6338	No	5.63	Si
SLU 51	ini.	-38.71	50	0.9	0	1875	7137	4043	2295	6338	No	127.1	Si
SLU 51	fin.	110.81	1090	0.9	0	1875	7137	4043	2295	6338	No	5.81	Si
SLU 69	ini.	-46.87	102	0.9	0	1875	7137	4043	2295	6338	No	62.36	Si
SLU 69	fin.	129.06	1197	0.9	0	1875	7137	4043	2295	6338	No	5.3	Si
SLU 49	ini.	-36.83	36	0.9	0	1875	7137	4043	2295	6338	No	178.23	Si
SLU 49	fin.	116.23	1136	0.9	0	1875	7137	4043	2295	6338	No	5.58	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 7	ini.	1104.84	-2145	-0.0006714	0.0002807	0.0035	0.9		2967.55	2967.55		2.69	Si
SLV 7	fin.	-962.15	2918	-0.0005649	0.0002807	0.0035	0.9		2973.32	2973.32		3.09	Si
SLV 8	ini.	1337.28	-2549	-0.0008555	0.0002807	0.0035	0.9		2967.55	2967.55		2.22	Si
SLV 8	fin.	-1131.3	3430	-0.00069	0.0002807	0.0035	0.9		2973.32	2973.32		2.63	Si
SLV 3	ini.	993.22	-1930	-0.0005886	0.0002807	0.0035	0.9		2967.55	2967.55		2.99	Si
SLV 3	fin.	-760.35	2092	-0.0004263	0.0002807	0.0035	0.9		2973.32	2973.32		3.91	Si
SLV 13	ini.	-1379.26	2108	-0.0008884	0.0002807	0.0035	0.9		2973.32	2973.32		2.16	Si
SLV 13	fin.	1126.33	-3693	-0.0006877	0.0002807	0.0035	0.9		2967.55	2967.55		2.63	Si
SLV 5	ini.	-841.5	1218	-0.0004807	0.0002807	0.0035	0.9		2973.32	2973.32		3.53	Si
SLV 5	fin.	842.45	-3075	-0.0004824	0.0002807	0.0035	0.9		2967.55	2967.55		3.52	Si
SLV 14	ini.	-1034.01	1508	-0.0006171	0.0002807	0.0035	0.9		2973.32	2973.32		2.88	Si
SLV 14	fin.	875.09	-2933	-0.0005048	0.0002807	0.0035	0.9		2967.55	2967.55		3.39	Si
SLV 9	ini.	-1378.08	2127	-0.0008874	0.0002807	0.0035	0.9		2973.32	2973.32		2.16	Si
SLV 9	fin.	1246.04	-4271	-0.0007813	0.0002807	0.0035	0.9		2967.55	2967.55		2.38	Si
SLV 10	ini.	-1145.63	1722	-0.0007009	0.0002807	0.0035	0.9		2973.32	2973.32		2.6	Si
SLV 10	fin.	1076.89	-3760	-0.0006503	0.0002807	0.0035	0.9		2967.55	2967.55		2.76	Si
SLV 4	ini.	1338.46	-2530	-0.0008565	0.0002807	0.0035	0.9		2967.55	2967.55		2.22	Si
SLV 4	fin.	-1011.59	2852	-0.0006006	0.0002807	0.0035	0.9		2973.32	2973.32		2.94	Si
SLV 12	ini.	800.71	-1640	-0.0004541	0.0002807	0.0035	0.9		2967.55	2967.55		3.71	Si
SLV 12	fin.	-727.71	2234	-0.000405	0.0002807	0.0035	0.9		2973.32	2973.32		4.09	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 8	ini.	1337.28	-6000	0.9	0	2813	7137	6064	2295	8359		1.39	Si
SLV 8	fin.	-1131.3	-5239	0.9	0	2813	7137	6064	2295	8359		1.6	Si
SLV 9	ini.	-1378.08	6073	0.9	0	2813	7137	6064	2295	8359		1.38	Si
SLV 9	fin.	1246.04	6506	0.9	0	2813	7137	6064	2295	8359		1.28	Si
SLV 5	ini.	-841.5	3712	0.9	0	2813	7137	6064	2295	8359		2.25	Si
SLV 5	fin.	842.45	4695	0.9	0	2813	7137	6064	2295	8359		1.78	Si
SLV 3	ini.	993.22	-4496	0.9	0	2813	7137	6064	2295	8359		1.86	Si
SLV 3	fin.	-760.35	-3131	0.9	0	2813	7137	6064	2295	8359		2.67	Si
SLV 14	ini.	-1034.01	4569	0.9	0	2813	7137	6064	2295	8359		1.83	Si
SLV 14	fin.	875.09	4398	0.9	0	2813	7137	6064	2295	8359		1.9	Si
SLV 7	ini.	1104.84	-5038	0.9	0	2813	7137	6064	2295	8359		1.66	Si
SLV 7	fin.	-962.15	-4405	0.9	0	2813	7137	6064	2295	8359		1.9	Si
SLV 13	ini.	-1379.26	5997	0.9	0	2813	7137	6064	2295	8359		1.39	Si
SLV 13	fin.	1126.33	5636	0.9	0	2813	7137	6064	2295	8359		1.48	Si
SLV 6	ini.	-609.06	2750	0.9	0	2813	7137	6064	2295	8359		3.04	Si
SLV 6	fin.	673.3	3861	0.9	0	2813	7137	6064	2295	8359		2.16	Si
SLV 10	ini.	-1145.63	5111	0.9	0	2813	7137	6064	2295	8359		1.64	Si
SLV 10	fin.	1076.89	5672	0.9	0	2813	7137	6064	2295	8359		1.47	Si
SLV 4	ini.	1338.46	-5925	0.9	0	2813	7137	6064	2295	8359		1.41	Si
SLV 4	fin.	-1011.59	-4369	0.9	0	2813	7137	6064	2295	8359		1.91	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.156	SLV 13	Si
V_SLV	1.285	SLV 9	Si
PF_SLU	21.255	SLU 70	Si
V_SLU	5.081	SLU 70	Si

Trave di accoppiamento 154

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-17.363	-3.359	14.87	15.32	0.45	-18.263	-3.359	14.87	15.32	0.45	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 70	ini.	-50.96	-23	-0.0001033	0.0001872	0.0035	0.45		744.65	744.65	No	14.61	Si
SLU 70	fin.	-37.08	-304	-0.0000742	0.0001872	0.0035	0.45		744.65	744.65	No	20.08	Si
SLU 28	ini.	-48.78	-36	-0.0000986	0.0001872	0.0035	0.45		744.65	744.65	No	15.27	Si
SLU 28	fin.	-32.38	-261	-0.0000646	0.0001872	0.0035	0.45		744.65	744.65	No	23	Si
SLU 77	ini.	-36.36	56	-0.0000727	0.0001872	0.0035	0.45		744.65	744.65	No	20.48	Si
SLU 77	fin.	-49.41	-387	-0.0001	0.0001872	0.0035	0.45		744.65	744.65	No	15.07	Si
SLU 71	ini.	-45.5	-11	-0.0000917	0.0001872	0.0035	0.45		744.65	744.65	No	16.37	Si
SLU 71	fin.	-35.4	-294	-0.0000708	0.0001872	0.0035	0.45		744.65	744.65	No	21.03	Si
SLU 72	ini.	-46.88	-15	-0.0000946	0.0001872	0.0035	0.45		744.65	744.65	No	15.88	Si
SLU 72	fin.	-33.15	-278	-0.0000662	0.0001872	0.0035	0.45		744.65	744.65	No	22.46	Si
SLU 27	ini.	-47.39	-32	-0.0000957	0.0001872	0.0035	0.45		744.65	744.65	No	15.71	Si
SLU 27	fin.	-34.63	-276	-0.0000692	0.0001872	0.0035	0.45		744.65	744.65	No	21.5	Si
SLU 69	ini.	-49.58	-19	-0.0001003	0.0001872	0.0035	0.45		744.65	744.65	No	15.02	Si
SLU 69	fin.	-39.33	-320	-0.0000789	0.0001872	0.0035	0.45		744.65	744.65	No	18.93	Si
SLU 56	ini.	-26.69	67	-0.000053	0.0001872	0.0035	0.45		744.65	744.65	No	27.9	Si
SLU 56	fin.	-47.29	-373	-0.0000955	0.0001872	0.0035	0.45		744.65	744.65	No	15.75	Si
SLU 78	ini.	-37.74	52	-0.0000756	0.0001872	0.0035	0.45		744.65	744.65	No	19.73	Si
SLU 78	fin.	-47.16	-371	-0.0000952	0.0001872	0.0035	0.45		744.65	744.65	No	15.79	Si
SLU 79	ini.	-32.28	63	-0.0000644	0.0001872	0.0035	0.45		744.65	744.65	No	23.07	Si
SLU 79	fin.	-45.49	-361	-0.0000917	0.0001872	0.0035	0.45		744.65	744.65	No	16.37	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-33.67	588	0.45	0	856	3568	2021	1148	3169	No	5.39	Si
SLU 80	fin.	-43.24	-841	0.45	0	856	3568	2021	1148	3169	No	3.77	Si
SLU 36	ini.	-35.56	570	0.45	0	856	3568	2021	1148	3169	No	5.56	Si
SLU 36	fin.	-42.46	-819	0.45	0	856	3568	2021	1148	3169	No	3.87	Si
SLU 35	ini.	-34.17	562	0.45	0	856	3568	2021	1148	3169	No	5.64	Si
SLU 35	fin.	-44.71	-831	0.45	0	856	3568	2021	1148	3169	No	3.81	Si
SLU 78	ini.	-37.74	632	0.45	0	856	3568	2021	1148	3169	No	5.01	Si
SLU 78	fin.	-47.16	-906	0.45	0	856	3568	2021	1148	3169	No	3.5	Si
SLU 75	ini.	-30.09	561	0.45	0	856	3568	2021	1148	3169	No	5.65	Si
SLU 75	fin.	-41.91	-815	0.45	0	856	3568	2021	1148	3169	No	3.89	Si
SLU 69	ini.	-49.58	683	0.45	0	856	3568	2021	1148	3169	No	4.64	Si
SLU 69	fin.	-39.33	-854	0.45	0	856	3568	2021	1148	3169	No	3.71	Si
SLU 70	ini.	-50.96	692	0.45	0	856	3568	2021	1148	3169	No	4.58	Si
SLU 70	fin.	-37.08	-842	0.45	0	856	3568	2021	1148	3169	No	3.76	Si
SLU 77	ini.	-36.36	624	0.45	0	856	3568	2021	1148	3169	No	5.08	Si
SLU 77	fin.	-49.41	-917	0.45	0	856	3568	2021	1148	3169	No	3.45	Si
SLU 79	ini.	-32.28	580	0.45	0	856	3568	2021	1148	3169	No	5.46	Si
SLU 79	fin.	-45.49	-853	0.45	0	856	3568	2021	1148	3169	No	3.71	Si
SLU 74	ini.	-28.71	553	0.45	0	856	3568	2021	1148	3169	No	5.73	Si
SLU 74	fin.	-44.16	-827	0.45	0	856	3568	2021	1148	3169	No	3.83	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 9	ini.	-389.53	-1794	-0.0010378	0.0002807	0.0035	0.45		745.02	745.02		1.91	Si
SLV 9	fin.	354.13	2347	-0.0009189	0.0002807	0.0035	0.45		742.08	742.08		2.1	Si
SLV 8	ini.	354.88	1890	-0.0009215	0.0002807	0.0035	0.45		742.08	742.08		2.09	Si
SLV 8	fin.	-397.27	-2714	-0.0010657	0.0002807	0.0035	0.45		745.02	745.02		1.88	Si
SLV 13	ini.	-324	-1414	-0.000815	0.0002807	0.0035	0.45		745.02	745.02		2.3	Si
SLV 13	fin.	326.35	2130	-0.0008265	0.0002807	0.0035	0.45		742.08	742.08		2.27	Si
SLV 14	ini.	-232.37	-959	-0.0005388	0.0002807	0.0035	0.45		745.02	745.02		3.21	Si
SLV 14	fin.	223.58	1483	-0.0005165	0.0002807	0.0035	0.45		742.08	742.08		3.32	Si
SLV 3	ini.	197.72	1055	-0.0004461	0.0002807	0.0035	0.45		742.08	742.08		3.75	Si
SLV 3	fin.	-266.72	-1850	-0.0006379	0.0002807	0.0035	0.45		745.02	745.02		2.79	Si
SLV 10	ini.	-327.84	-1488	-0.0008275	0.0002807	0.0035	0.45		745.02	745.02		2.27	Si
SLV 10	fin.	284.93	1911	-0.0006957	0.0002807	0.0035	0.45		742.08	742.08		2.6	Si
SLV 5	ini.	-285.06	-1315	-0.0006929	0.0002807	0.0035	0.45		745.02	745.02		2.61	Si
SLV 5	fin.	226.08	1493	-0.0005235	0.0002807	0.0035	0.45		742.08	742.08		3.28	Si
SLV 4	ini.	289.34	1510	-0.0007092	0.0002807	0.0035	0.45		742.08	742.08		2.56	Si
SLV 4	fin.	-369.5	-2497	-0.0009672	0.0002807	0.0035	0.45		745.02	745.02		2.02	Si
SLV 12	ini.	250.41	1411	-0.0005928	0.0002807	0.0035	0.45		742.08	742.08		2.96	Si
SLV 12	fin.	-269.22	-1860	-0.0006453	0.0002807	0.0035	0.45		745.02	745.02		2.77	Si
SLV 7	ini.	293.19	1584	-0.0007211	0.0002807	0.0035	0.45		742.08	742.08		2.53	Si
SLV 7	fin.	-328.07	-2278	-0.0008282	0.0002807	0.0035	0.45		745.02	745.02		2.27	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 10	ini.	-327.84	1876	0.45	0	1156	3568	3032	1148	4179		2.23	Si
SLV 10	fin.	284.93	1229	0.45	0	1156	3568	3032	1148	4179		3.4	Si
SLV 12	ini.	250.41	-950	0.45	0	1156	3568	3032	1148	4179		4.4	Si
SLV 12	fin.	-269.22	-1891	0.45	0	1156	3568	3032	1148	4179		2.21	Si
SLV 5	ini.	-285.06	1634	0.45	0	1156	3568	3032	1148	4179		2.56	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	fin.	226.08	966	0.45	0	1156	3568	3032	1148	4179		4.32	Si
SLV 3	ini.	197.72	-780	0.45	0	1156	3568	3032	1148	4179		5.36	Si
SLV 3	fin.	-266.72	-1714	0.45	0	1156	3568	3032	1148	4179		2.44	Si
SLV 13	ini.	-324	1935	0.45	0	1156	3568	3032	1148	4179		2.16	Si
SLV 13	fin.	326.35	1346	0.45	0	1156	3568	3032	1148	4179		3.11	Si
SLV 8	ini.	354.88	-1510	0.45	0	1156	3568	3032	1148	4179		2.77	Si
SLV 8	fin.	-397.27	-2528	0.45	0	1156	3568	3032	1148	4179		1.65	Si
SLV 9	ini.	-389.53	2194	0.45	0	1156	3568	3032	1148	4179		1.91	Si
SLV 9	fin.	354.13	1603	0.45	0	1156	3568	3032	1148	4179		2.61	Si
SLV 11	ini.	188.72	-632	0.45	0	1156	3568	3032	1148	4179		6.61	Si
SLV 11	fin.	-200.02	-1516	0.45	0	1156	3568	3032	1148	4179		2.76	Si
SLV 4	ini.	289.34	-1251	0.45	0	1156	3568	3032	1148	4179		3.34	Si
SLV 4	fin.	-369.5	-2271	0.45	0	1156	3568	3032	1148	4179		1.84	Si
SLV 7	ini.	293.19	-1193	0.45	0	1156	3568	3032	1148	4179		3.5	Si
SLV 7	fin.	-328.07	-2154	0.45	0	1156	3568	3032	1148	4179		1.94	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.875	SLV 8	Si
V_SLV	1.653	SLV 8	Si
PF_SLU	14.612	SLU 70	Si
V_SLU	3.454	SLU 77	Si

Trave di accoppiamento 155

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-15.433	-3.359	14.27	15.32	1.05	-16.333	-3.359	14.27	15.32	1.05	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-343.71	-1620	-0.0001289	0.0002246	0.0035	1.05		4129.05	4129.05	No	12.01	Si
SLU 79	fin.	244.68	-354	-0.0000907	0.0002246	0.0035	1.05		4122.48	4122.48	No	16.85	Si
SLU 80	ini.	-352.42	-1646	-0.0001323	0.0002246	0.0035	1.05		4129.05	4129.05	No	11.72	Si
SLU 80	fin.	254.12	-357	-0.0000943	0.0002246	0.0035	1.05		4122.48	4122.48	No	16.22	Si
SLU 72	ini.	-351.4	-1603	-0.0001319	0.0002246	0.0035	1.05		4129.05	4129.05	No	11.75	Si
SLU 72	fin.	262.62	-338	-0.0000975	0.0002246	0.0035	1.05		4122.48	4122.48	No	15.7	Si
SLU 78	ini.	-361.77	-1711	-0.000136	0.0002246	0.0035	1.05		4129.05	4129.05	No	11.41	Si
SLU 78	fin.	255.32	-391	-0.0000947	0.0002246	0.0035	1.05		4122.48	4122.48	No	16.15	Si
SLU 67	ini.	-342.71	-1554	-0.0001285	0.0002246	0.0035	1.05		4129.05	4129.05	No	12.05	Si
SLU 67	fin.	256.6	-321	-0.0000952	0.0002246	0.0035	1.05		4122.48	4122.48	No	16.07	Si
SLU 75	ini.	-343.73	-1597	-0.0001289	0.0002246	0.0035	1.05		4129.05	4129.05	No	12.01	Si
SLU 75	fin.	248.09	-341	-0.000092	0.0002246	0.0035	1.05		4122.48	4122.48	No	16.62	Si
SLU 70	ini.	-360.75	-1668	-0.0001356	0.0002246	0.0035	1.05		4129.05	4129.05	No	11.45	Si
SLU 70	fin.	263.83	-371	-0.000098	0.0002246	0.0035	1.05		4122.48	4122.48	No	15.63	Si
SLU 69	ini.	-352.03	-1642	-0.0001322	0.0002246	0.0035	1.05		4129.05	4129.05	No	11.73	Si
SLU 69	fin.	254.38	-368	-0.0000944	0.0002246	0.0035	1.05		4122.48	4122.48	No	16.21	Si
SLU 71	ini.	-342.68	-1577	-0.0001285	0.0002246	0.0035	1.05		4129.05	4129.05	No	12.05	Si
SLU 71	fin.	253.18	-335	-0.0000939	0.0002246	0.0035	1.05		4122.48	4122.48	No	16.28	Si
SLU 77	ini.	-353.06	-1685	-0.0001326	0.0002246	0.0035	1.05		4129.05	4129.05	No	11.7	Si
SLU 77	fin.	245.88	-388	-0.0000911	0.0002246	0.0035	1.05		4122.48	4122.48	No	16.77	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-343.71	2619	1.05	0	2625	7137	5660	2678	8338	No	3.18	Si
SLU 79	fin.	244.68	519	1.05	0	2625	7137	5660	2678	8338	No	16.06	Si
SLU 67	ini.	-342.71	2563	1.05	0	2625	7137	5660	2678	8338	No	3.25	Si
SLU 67	fin.	256.6	539	1.05	0	2625	7137	5660	2678	8338	No	15.47	Si
SLU 72	ini.	-351.4	2646	1.05	0	2625	7137	5660	2678	8338	No	3.15	Si
SLU 72	fin.	262.62	548	1.05	0	2625	7137	5660	2678	8338	No	15.21	Si
SLU 78	ini.	-361.77	2761	1.05	0	2625	7137	5660	2678	8338	No	3.02	Si
SLU 78	fin.	255.32	541	1.05	0	2625	7137	5660	2678	8338	No	15.4	Si
SLU 69	ini.	-352.03	2721	1.05	0	2625	7137	5660	2678	8338	No	3.06	Si
SLU 69	fin.	254.38	503	1.05	0	2625	7137	5660	2678	8338	No	16.57	Si
SLU 77	ini.	-353.06	2728	1.05	0	2625	7137	5660	2678	8338	No	3.06	Si
SLU 77	fin.	245.88	508	1.05	0	2625	7137	5660	2678	8338	No	16.42	Si
SLU 80	ini.	-352.42	2652	1.05	0	2625	7137	5660	2678	8338	No	3.14	Si
SLU 80	fin.	254.12	553	1.05	0	2625	7137	5660	2678	8338	No	15.08	Si
SLU 75	ini.	-343.73	2569	1.05	0	2625	7137	5660	2678	8338	No	3.25	Si
SLU 75	fin.	248.09	544	1.05	0	2625	7137	5660	2678	8338	No	15.34	Si
SLU 71	ini.	-342.68	2612	1.05	0	2625	7137	5660	2678	8338	No	3.19	Si
SLU 71	fin.	253.18	515	1.05	0	2625	7137	5660	2678	8338	No	16.2	Si
SLU 70	ini.	-360.75	2755	1.05	0	2625	7137	5660	2678	8338	No	3.03	Si
SLU 70	fin.	263.83	537	1.05	0	2625	7137	5660	2678	8338	No	15.54	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-857.69	-2690	-0.0003374	0.0003369	0.0035	1.05		4078.37	4078.37		4.76	Si
SLV 14	fin.	1073.48	227	-0.0004362	0.0003369	0.0035	1.05		4071.54	4071.54		3.79	Si
SLV 2	ini.	363.7	621	-0.0001353	0.0003369	0.0035	1.05		4071.54	4071.54		11.19	Si
SLV 2	fin.	-704.57	-725	-0.0002718	0.0003369	0.0035	1.05		4078.37	4078.37		5.79	Si
SLV 13	ini.	-1098.55	-3426	-0.0004473	0.0003369	0.0035	1.05		4078.37	4078.37		3.71	Si
SLV 13	fin.	1435.14	389	-0.0006164	0.0003369	0.0035	1.05		4071.54	4071.54		2.84	Si
SLV 8	ini.	529.39	1152	-0.0002004	0.0003369	0.0035	1.05		4071.54	4071.54		7.69	Si
SLV 8	fin.	-877.63	-391	-0.0003462	0.0003369	0.0035	1.05		4078.37	4078.37		4.65	Si
SLV 10	ini.	-810.14	-2626	-0.0003167	0.0003369	0.0035	1.05		4078.37	4078.37		5.03	Si
SLV 10	fin.	970.34	-67	-0.0003884	0.0003369	0.0035	1.05		4071.54	4071.54		4.2	Si
SLV 3	ini.	414.78	721	-0.0001551	0.0003369	0.0035	1.05		4071.54	4071.54		9.82	Si
SLV 3	fin.	-737.27	-575	-0.0002856	0.0003369	0.0035	1.05		4078.37	4078.37		5.53	Si
SLV 9	ini.	-972.3	-3121	-0.0003886	0.0003369	0.0035	1.05		4078.37	4078.37		4.19	Si
SLV 9	fin.	1213.84	43	-0.0005039	0.0003369	0.0035	1.05		4071.54	4071.54		3.35	Si
SLV 4	ini.	655.64	1457	-0.0002519	0.0003369	0.0035	1.05		4071.54	4071.54		6.21	Si
SLV 4	fin.	-1098.94	-737	-0.0004475	0.0003369	0.0035	1.05		4078.37	4078.37		3.71	Si
SLV 15	ini.	-806.62	-2591	-0.0003152	0.0003369	0.0035	1.05		4078.37	4078.37		5.06	Si
SLV 15	fin.	1040.78	377	-0.0004209	0.0003369	0.0035	1.05		4071.54	4071.54		3.91	Si
SLD 13	ini.	-593.09	-2019	-0.0002258	0.0003369	0.0035	1.05		4078.37	4078.37		6.88	Si
SLD 13	fin.	705.28	67	-0.0002726	0.0003369	0.0035	1.05		4071.54	4071.54		5.77	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	ini.	-605.88	3234	1.05	0	3588	7137	8490	2678	10725		3.32	Si
SLV 5	fin.	680.42	1990	1.05	0	3588	7137	8490	2678	10725		5.39	Si
SLV 9	ini.	-972.3	4905	1.05	0	3588	7137	8490	2678	10725		2.19	Si
SLV 9	fin.	1213.84	3649	1.05	0	3588	7137	8490	2678	10725		2.94	Si
SLV 14	ini.	-857.69	4425	1.05	0	3588	7137	8490	2678	10725		2.42	Si
SLV 14	fin.	1073.48	3153	1.05	0	3588	7137	8490	2678	10725		3.4	Si
SLV 4	ini.	655.64	-2377	1.05	0	3588	7137	8490	2678	10725		4.51	Si
SLV 4	fin.	-1098.94	-3615	1.05	0	3588	7137	8490	2678	10725		2.97	Si
SLD 13	ini.	-593.09	3310	1.05	0	3588	7137	8490	2678	10725		3.24	Si
SLD 13	fin.	705.28	2043	1.05	0	3588	7137	8490	2678	10725		5.25	Si
SLV 10	ini.	-810.14	4108	1.05	0	3588	7137	8490	2678	10725		2.61	Si
SLV 10	fin.	970.34	2855	1.05	0	3588	7137	8490	2678	10725		3.76	Si
SLD 9	ini.	-530.28	2972	1.05	0	3588	7137	8490	2678	10725		3.61	Si
SLD 9	fin.	598.92	1714	1.05	0	3588	7137	8490	2678	10725		6.26	Si
SLV 15	ini.	-806.62	4377	1.05	0	3588	7137	8490	2678	10725		2.45	Si
SLV 15	fin.	1040.78	3094	1.05	0	3588	7137	8490	2678	10725		3.47	Si
SLV 13	ini.	-1098.55	5610	1.05	0	3588	7137	8490	2678	10725		1.91	Si
SLV 13	fin.	1435.14	4332	1.05	0	3588	7137	8490	2678	10725		2.48	Si
SLV 16	ini.	-565.76	3193	1.05	0	3588	7137	8490	2678	10725		3.36	Si
SLV 16	fin.	679.11	1915	1.05	0	3588	7137	8490	2678	10725		5.6	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.837	SLV 13	Si
V_SLV	1.912	SLV 13	Si
PF_SLU	11.414	SLU 78	Si
V_SLU	3.02	SLU 78	Si

Trave di accoppiamento 156

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-15.058	1.406	14.27	15.32	1.05	-15.058	2.206	14.27	15.32	1.05	0.8	0.16	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 84	ini.	-81.71	-331	-0.0000296	0.0002246	0.0035	1.05		4160.03	4160.03	No	50.91	Si
SLU 84	fin.	-1414.36	-2841	-0.0006419	0.0002246	0.0035	1.05		4160.03	4160.03	No	2.94	Si
SLU 75	ini.	-87.29	-344	-0.0000316	0.0002246	0.0035	1.05		4160.03	4160.03	No	47.66	Si
SLU 75	fin.	-1382.14	-2796	-0.0006238	0.0002246	0.0035	1.05		4160.03	4160.03	No	3.01	Si
SLU 80	ini.	-90.65	-362	-0.0000329	0.0002246	0.0035	1.05		4160.03	4160.03	No	45.89	Si
SLU 80	fin.	-1424.09	-2886	-0.0006474	0.0002246	0.0035	1.05		4160.03	4160.03	No	2.92	Si
SLU 81	ini.	-73.57	-300	-0.0000266	0.0002246	0.0035	1.05		4160.03	4160.03	No	56.54	Si
SLU 81	fin.	-1363.71	-2722	-0.0006135	0.0002246	0.0035	1.05		4160.03	4160.03	No	3.05	Si
SLU 79	ini.	-91.87	-365	-0.0000333	0.0002246	0.0035	1.05		4160.03	4160.03	No	45.28	Si
SLU 79	fin.	-1454.05	-2943	-0.0006644	0.0002246	0.0035	1.05		4160.03	4160.03	No	2.86	Si
SLU 77	ini.	-97.86	-379	-0.0000355	0.0002246	0.0035	1.05		4160.03	4160.03	No	42.51	Si
SLU 77	fin.	-1492.7	-3029	-0.0006866	0.0002246	0.0035	1.05		4160.03	4160.03	No	2.79	Si
SLU 74	ini.	-88.5	-346	-0.0000321	0.0002246	0.0035	1.05		4160.03	4160.03	No	47	Si
SLU 74	fin.	-1412.1	-2853	-0.0006406	0.0002246	0.0035	1.05		4160.03	4160.03	No	2.95	Si
SLU 78	ini.	-96.64	-376	-0.0000351	0.0002246	0.0035	1.05		4160.03	4160.03	No	43.05	Si
SLU 78	fin.	-1462.75	-2972	-0.0006694	0.0002246	0.0035	1.05		4160.03	4160.03	No	2.84	Si
SLU 83	ini.	-82.93	-333	-0.00003	0.0002246	0.0035	1.05		4160.03	4160.03	No	50.16	Si
SLU 83	fin.	-1444.32	-2898	-0.0006589	0.0002246	0.0035	1.05		4160.03	4160.03	No	2.88	Si
SLU 35	ini.	-86.99	-331	-0.0000315	0.0002246	0.0035	1.05		4160.03	4160.03	No	47.82	Si
SLU 35	fin.	-1343.97	-2721	-0.0006026	0.0002246	0.0035	1.05		4160.03	4160.03	No	3.1	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-82.93	-3209	1.05	0	1400	6344	3019	2678	5696	No	1.77	Si
SLU 83	fin.	-1444.32	-3554	1.05	0	1400	6344	3019	2678	5696	No	1.6	Si
SLU 75	ini.	-87.29	-3053	1.05	0	1400	6344	3019	2678	5696	No	1.87	Si
SLU 75	fin.	-1382.14	-3398	1.05	0	1400	6344	3019	2678	5696	No	1.68	Si
SLU 78	ini.	-96.64	-3235	1.05	0	1400	6344	3019	2678	5696	No	1.76	Si
SLU 78	fin.	-1462.75	-3581	1.05	0	1400	6344	3019	2678	5696	No	1.59	Si
SLU 80	ini.	-90.65	-3148	1.05	0	1400	6344	3019	2678	5696	No	1.81	Si
SLU 80	fin.	-1424.09	-3493	1.05	0	1400	6344	3019	2678	5696	No	1.63	Si
SLU 81	ini.	-73.57	-3026	1.05	0	1400	6344	3019	2678	5696	No	1.88	Si
SLU 81	fin.	-1363.71	-3371	1.05	0	1400	6344	3019	2678	5696	No	1.69	Si
SLU 82	ini.	-72.36	-2955	1.05	0	1400	6344	3019	2678	5696	No	1.93	Si
SLU 82	fin.	-1333.75	-3300	1.05	0	1400	6344	3019	2678	5696	No	1.73	Si
SLU 77	ini.	-97.86	-3307	1.05	0	1400	6344	3019	2678	5696	No	1.72	Si
SLU 77	fin.	-1492.7	-3652	1.05	0	1400	6344	3019	2678	5696	No	1.56	Si
SLU 74	ini.	-88.5	-3124	1.05	0	1400	6344	3019	2678	5696	No	1.82	Si
SLU 74	fin.	-1412.1	-3469	1.05	0	1400	6344	3019	2678	5696	No	1.64	Si
SLU 79	ini.	-91.87	-3220	1.05	0	1400	6344	3019	2678	5696	No	1.77	Si
SLU 79	fin.	-1454.05	-3565	1.05	0	1400	6344	3019	2678	5696	No	1.6	Si
SLU 84	ini.	-81.71	-3138	1.05	0	1400	6344	3019	2678	5696	No	1.82	Si
SLU 84	fin.	-1414.36	-3483	1.05	0	1400	6344	3019	2678	5696	No	1.64	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 6	ini.	417.49	-155	-0.0001562	0.0003369	0.0035	1.05		4264.1	4264.1		10.21	Si
SLV 6	fin.	2479.29	4763	-0.0012573	0.0003369	0.0035	1.05		4264.1	4264.1		1.72	Si
SLV 10	ini.	446.91	-82	-0.0001677	0.0003369	0.0035	1.05		4264.1	4264.1		9.54	Si
SLV 10	fin.	2371.16	4590	-0.0011809	0.0003369	0.0035	1.05		4264.1	4264.1		1.8	Si
SLV 8	ini.	-552.47	-354	-0.0002094	0.0003369	0.0035	1.05		4270.75	4270.75		7.73	Si
SLV 8	fin.	-4089.9	-8064	-0.0030951	0.0003369	0.0035	1.05		4270.75	4270.75		1.04	Si
SLV 11	ini.	-523.96	-283	-0.0001979	0.0003369	0.0035	1.05		4270.75	4270.75		8.15	Si
SLV 11	fin.	-4209.28	-8260	-0.0033024	0.0003369	0.0035	1.05		4270.75	4270.75		1.01	Si
SLV 5	ini.	416.57	-157	-0.0001558	0.0003369	0.0035	1.05		4264.1	4264.1		10.24	Si
SLV 5	fin.	2468.04	4741	-0.0012492	0.0003369	0.0035	1.05		4264.1	4264.1		1.73	Si
SLV 7	ini.	-553.38	-356	-0.0002098	0.0003369	0.0035	1.05		4270.75	4270.75		7.72	Si
SLV 7	fin.	-4101.16	-8086	-0.0031147	0.0003369	0.0035	1.05		4270.75	4270.75		1.04	Si
SLV 12	ini.	-523.04	-281	-0.0001976	0.0003369	0.0035	1.05		4270.75	4270.75		8.17	Si
SLV 12	fin.	-4198.03	-8237	-0.003283	0.0003369	0.0035	1.05		4270.75	4270.75		1.02	Si
SLD 12	ini.	-238.9	-241	-0.0000876	0.0003369	0.0035	1.05		4270.75	4270.75		17.88	Si
SLD 12	fin.	-2194.91	-4338	-0.0010598	0.0003369	0.0035	1.05		4270.75	4270.75		1.95	Si
SLD 11	ini.	-239.28	-242	-0.0000878	0.0003369	0.0035	1.05		4270.75	4270.75		17.85	Si
SLD 11	fin.	-2199.6	-4347	-0.0010629	0.0003369	0.0035	1.05		4270.75	4270.75		1.94	Si
SLV 9	ini.	446	-84	-0.0001673	0.0003369	0.0035	1.05		4264.1	4264.1		9.56	Si
SLV 9	fin.	2359.91	4568	-0.0011731	0.0003369	0.0035	1.05		4264.1	4264.1		1.81	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 12	ini.	-238.9	-4938	1.05	0	2100	6344	4528	2678	7206		1.46	Si
SLD 12	fin.	-2194.91	-5179	1.05	0	2100	6344	4528	2678	7206		1.39	Si
SLV 10	ini.	446.91	5537	1.05	0	2100	6344	4528	2678	7206		1.3	Si
SLV 10	fin.	2371.16	5236	1.05	0	2100	6344	4528	2678	7206		1.38	Si
SLV 8	ini.	-552.47	-9284	1.05	0	2100	6344	4528	2678	7206		0.78	No
SLV 8	fin.	-4089.9	-9506	1.05	16250	2100	6344	4528	2678	7206		0.76	No
SLV 9	ini.	446	5511	1.05	0	2100	6344	4528	2678	7206		1.31	Si
SLV 9	fin.	2359.91	5210	1.05	0	2100	6344	4528	2678	7206		1.38	Si
SLV 11	ini.	-523.96	-9566	1.05	0	2100	6344	4528	2678	7206		0.75	No
SLV 11	fin.	-4209.28	-9780	1.05	16250	2100	6344	4528	2678	7206		0.74	No
SLV 12	ini.	-523.04	-9540	1.05	0	2100	6344	4528	2678	7206		0.76	No
SLV 12	fin.	-4198.03	-9754	1.05	16250	2100	6344	4528	2678	7206		0.74	No
SLV 5	ini.	416.57	5767	1.05	0	2100	6344	4528	2678	7206		1.25	Si
SLV 5	fin.	2468.04	5458	1.05	0	2100	6344	4528	2678	7206		1.32	Si
SLV 7	ini.	-553.38	-9310	1.05	0	2100	6344	4528	2678	7206		0.77	No
SLV 7	fin.	-4101.16	-9532	1.05	16250	2100	6344	4528	2678	7206		0.76	No
SLD 11	ini.	-239.28	-4949	1.05	0	2100	6344	4528	2678	7206		1.46	Si
SLD 11	fin.	-2199.6	-5189	1.05	0	2100	6344	4528	2678	7206		1.39	Si
SLV 6	ini.	417.49	5793	1.05	0	2100	6344	4528	2678	7206		1.24	Si
SLV 6	fin.	2479.29	5484	1.05	0	2100	6344	4528	2678	7206		1.31	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.015	SLV 11	Si
V_SLV	0.737	SLV 11	No
PF_SLU	2.787	SLU 77	Si
V_SLU	1.56	SLU 77	Si

Trave di accoppiamento 157

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-13.763	-0.228	14.27	15.32	1.05	-13.763	0.672	14.27	15.32	1.05	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 28	ini.	-592.84	-1999	-0.0002351	0.0001872	0.0035	1.05		4000.57	4000.57	No	6.75	Si
SLU 28	fin.	245.61	-1087	-0.0000915	0.0001872	0.0035	1.05		3993.8	3993.8	No	16.26	Si
SLU 77	ini.	-596.47	-2032	-0.0002367	0.0001872	0.0035	1.05		4000.57	4000.57	No	6.71	Si
SLU 77	fin.	245.07	-1130	-0.0000913	0.0001872	0.0035	1.05		3993.8	3993.8	No	16.3	Si
SLU 27	ini.	-574.43	-1942	-0.0002269	0.0001872	0.0035	1.05		4000.57	4000.57	No	6.96	Si
SLU 27	fin.	235.64	-1067	-0.0000876	0.0001872	0.0035	1.05		3993.8	3993.8	No	16.95	Si
SLU 70	ini.	-611.87	-2077	-0.0002436	0.0001872	0.0035	1.05		4000.57	4000.57	No	6.54	Si
SLU 70	fin.	246.82	-1161	-0.0000919	0.0001872	0.0035	1.05		3993.8	3993.8	No	16.18	Si
SLU 69	ini.	-593.46	-2020	-0.0002354	0.0001872	0.0035	1.05		4000.57	4000.57	No	6.74	Si
SLU 69	fin.	236.86	-1141	-0.0000881	0.0001872	0.0035	1.05		3993.8	3993.8	No	16.86	Si
SLU 36	ini.	-595.85	-2011	-0.0002365	0.0001872	0.0035	1.05		4000.57	4000.57	No	6.71	Si
SLU 36	fin.	253.82	-1076	-0.0000946	0.0001872	0.0035	1.05		3993.8	3993.8	No	15.73	Si
SLU 72	ini.	-569.82	-1935	-0.0002249	0.0001872	0.0035	1.05		4000.57	4000.57	No	7.02	Si
SLU 72	fin.	230.84	-1082	-0.0000858	0.0001872	0.0035	1.05		3993.8	3993.8	No	17.3	Si
SLU 35	ini.	-577.44	-1954	-0.0002283	0.0001872	0.0035	1.05		4000.57	4000.57	No	6.93	Si
SLU 35	fin.	243.85	-1056	-0.0000908	0.0001872	0.0035	1.05		3993.8	3993.8	No	16.38	Si
SLU 78	ini.	-614.88	-2089	-0.000245	0.0001872	0.0035	1.05		4000.57	4000.57	No	6.51	Si
SLU 78	fin.	255.03	-1150	-0.0000951	0.0001872	0.0035	1.05		3993.8	3993.8	No	15.66	Si
SLU 80	ini.	-572.83	-1947	-0.0002262	0.0001872	0.0035	1.05		4000.57	4000.57	No	6.98	Si
SLU 80	fin.	239.05	-1072	-0.0000889	0.0001872	0.0035	1.05		3993.8	3993.8	No	16.71	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 28	ini.	-592.84	1702	1.05	0	2188	7137	4716	2678	7394	No	4.34	Si
SLU 28	fin.	245.61	1191	1.05	0	2188	7137	4716	2678	7394	No	6.21	Si
SLU 80	ini.	-572.83	1715	1.05	0	2188	7137	4716	2678	7394	No	4.31	Si
SLU 80	fin.	239.05	1067	1.05	0	2188	7137	4716	2678	7394	No	6.93	Si
SLU 78	ini.	-614.88	1817	1.05	0	2188	7137	4716	2678	7394	No	4.07	Si
SLU 78	fin.	255.03	1168	1.05	0	2188	7137	4716	2678	7394	No	6.33	Si
SLU 70	ini.	-611.87	1791	1.05	0	2188	7137	4716	2678	7394	No	4.13	Si
SLU 70	fin.	246.82	1143	1.05	0	2188	7137	4716	2678	7394	No	6.47	Si
SLU 36	ini.	-595.85	1728	1.05	0	2188	7137	4716	2678	7394	No	4.28	Si
SLU 36	fin.	253.82	1217	1.05	0	2188	7137	4716	2678	7394	No	6.08	Si
SLU 75	ini.	-553.22	1670	1.05	0	2188	7137	4716	2678	7394	No	4.43	Si
SLU 75	fin.	231.75	1022	1.05	0	2188	7137	4716	2678	7394	No	7.24	Si
SLU 72	ini.	-569.82	1689	1.05	0	2188	7137	4716	2678	7394	No	4.38	Si
SLU 72	fin.	230.84	1041	1.05	0	2188	7137	4716	2678	7394	No	7.1	Si
SLU 69	ini.	-593.46	1738	1.05	0	2188	7137	4716	2678	7394	No	4.25	Si
SLU 69	fin.	236.86	1090	1.05	0	2188	7137	4716	2678	7394	No	6.78	Si
SLU 77	ini.	-596.47	1764	1.05	0	2188	7137	4716	2678	7394	No	4.19	Si
SLU 77	fin.	245.07	1115	1.05	0	2188	7137	4716	2678	7394	No	6.63	Si
SLU 35	ini.	-577.44	1675	1.05	0	2188	7137	4716	2678	7394	No	4.42	Si
SLU 35	fin.	243.85	1164	1.05	0	2188	7137	4716	2678	7394	No	6.35	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 9	ini.	-2515.1	-7962	-0.0013228	0.0002807	0.0035	1.05		4047.86	4047.86		1.61	Si
SLV 9	fin.	1177.5	-2944	-0.0004975	0.0002807	0.0035	1.05		4041.09	4041.09		3.43	Si
SLV 6	ini.	-2653.58	-8433	-0.001431	0.0002807	0.0035	1.05		4047.86	4047.86		1.53	Si
SLV 6	fin.	1184.03	-3300	-0.0005009	0.0002807	0.0035	1.05		4041.09	4041.09		3.41	Si
SLV 7	ini.	2001.23	6184	-0.0009678	0.0002807	0.0035	1.05		4041.09	4041.09		2.02	Si
SLV 7	fin.	-978.13	1877	-0.0003989	0.0002807	0.0035	1.05		4047.86	4047.86		4.14	Si
SLD 10	ini.	-1209.76	-3876	-0.000513	0.0002807	0.0035	1.05		4047.86	4047.86		3.35	Si
SLD 10	fin.	558.16	-1550	-0.0002139	0.0002807	0.0035	1.05		4041.09	4041.09		7.24	Si
SLV 5	ini.	-2578.03	-8190	-0.0013712	0.0002807	0.0035	1.05		4047.86	4047.86		1.57	Si
SLV 5	fin.	1145.24	-3210	-0.0004813	0.0002807	0.0035	1.05		4041.09	4041.09		3.53	Si
SLD 6	ini.	-1236.7	-3973	-0.0005268	0.0002807	0.0035	1.05		4047.86	4047.86		3.27	Si
SLD 6	fin.	544.36	-1664	-0.0002082	0.0002807	0.0035	1.05		4041.09	4041.09		7.42	Si
SLV 8	ini.	1925.68	5941	-0.0009199	0.0002807	0.0035	1.05		4041.09	4041.09		2.1	Si
SLV 8	fin.	-939.34	1788	-0.0003806	0.0002807	0.0035	1.05		4047.86	4047.86		4.31	Si
SLV 12	ini.	1988.6	6169	-0.0009597	0.0002807	0.0035	1.05		4041.09	4041.09		2.03	Si
SLV 12	fin.	-907.07	2055	-0.0003656	0.0002807	0.0035	1.05		4047.86	4047.86		4.46	Si
SLV 11	ini.	2064.16	6412	-0.0010085	0.0002807	0.0035	1.05		4041.09	4041.09		1.96	Si
SLV 11	fin.	-945.86	2144	-0.0003837	0.0002807	0.0035	1.05		4047.86	4047.86		4.28	Si
SLV 10	ini.	-2590.65	-8205	-0.001381	0.0002807	0.0035	1.05		4047.86	4047.86		1.56	Si
SLV 10	fin.	1216.29	-3033	-0.0005173	0.0002807	0.0035	1.05		4041.09	4041.09		3.32	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 6	ini.	-2653.58	7183	1.05	0	3281	7137	7074	2678	9752		1.36	Si
SLV 6	fin.	1184.03	6645	1.05	0	3281	7137	7074	2678	9752		1.47	Si
SLV 8	ini.	1925.68	-5092	1.05	0	3281	7137	7074	2678	9752		1.91	Si
SLV 8	fin.	-939.34	-5555	1.05	0	3281	7137	7074	2678	9752		1.76	Si
SLV 10	ini.	-2590.65	7193	1.05	0	3281	7137	7074	2678	9752		1.36	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 10	fin.	1216.29	6669	1.05	0	3281	7137	7074	2678	9752		1.46	Si
SLV 11	ini.	2064.16	-5299	1.05	0	3281	7137	7074	2678	9752		1.84	Si
SLV 11	fin.	-945.86	-5748	1.05	0	3281	7137	7074	2678	9752		1.7	Si
SLV 12	ini.	1988.6	-5082	1.05	0	3281	7137	7074	2678	9752		1.92	Si
SLV 12	fin.	-907.07	-5532	1.05	0	3281	7137	7074	2678	9752		1.76	Si
SLD 10	ini.	-1209.76	3429	1.05	0	3281	7137	7074	2678	9752		2.84	Si
SLD 10	fin.	558.16	2922	1.05	0	3281	7137	7074	2678	9752		3.34	Si
SLV 5	ini.	-2578.03	6967	1.05	0	3281	7137	7074	2678	9752		1.4	Si
SLV 5	fin.	1145.24	6429	1.05	0	3281	7137	7074	2678	9752		1.52	Si
SLV 7	ini.	2001.23	-5309	1.05	0	3281	7137	7074	2678	9752		1.84	Si
SLV 7	fin.	-978.13	-5772	1.05	0	3281	7137	7074	2678	9752		1.69	Si
SLV 9	ini.	-2515.1	6976	1.05	0	3281	7137	7074	2678	9752		1.4	Si
SLV 9	fin.	1177.5	6452	1.05	0	3281	7137	7074	2678	9752		1.51	Si
SLD 6	ini.	-1236.7	3425	1.05	0	3281	7137	7074	2678	9752		2.85	Si
SLD 6	fin.	544.36	2912	1.05	0	3281	7137	7074	2678	9752		3.35	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.525	SLV 6	Si
V_SLV	1.356	SLV 10	Si
PF_SLU	6.506	SLU 78	Si
V_SLU	4.07	SLU 78	Si

Trave di accoppiamento 158

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-19.868	1.046	14.27	15.32	1.05	-20.668	1.046	14.27	15.32	1.05	0.8	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 52	ini.	-147.54	-1365	-0.0000539	0.0002246	0.0035	1.05		4129.05	4129.05	No	27.99	Si
SLU 52	fin.	18.22	-460	-0.0000066	0.0002246	0.0035	1.05		4122.48	4122.48	No	226.3	Si
SLU 44	ini.	-144.23	-1355	-0.0000527	0.0002246	0.0035	1.05		4129.05	4129.05	No	28.63	Si
SLU 44	fin.	6.3	-488	-0.0000023	0.0002246	0.0035	1.05		4122.48	4122.48	No	653.9	Si
SLU 61	ini.	-147.09	-1362	-0.0000537	0.0002246	0.0035	1.05		4129.05	4129.05	No	28.07	Si
SLU 61	fin.	21.41	-453	-0.0000077	0.0002246	0.0035	1.05		4122.48	4122.48	No	192.58	Si
SLU 82	ini.	-157.09	-1560	-0.0000574	0.0002246	0.0035	1.05		4129.05	4129.05	No	26.28	Si
SLU 82	fin.	22.47	-553	-0.0000081	0.0002246	0.0035	1.05		4122.48	4122.48	No	183.43	Si
SLU 60	ini.	-144.28	-1353	-0.0000527	0.0002246	0.0035	1.05		4129.05	4129.05	No	28.62	Si
SLU 60	fin.	18.53	-461	-0.0000067	0.0002246	0.0035	1.05		4122.48	4122.48	No	222.46	Si
SLU 43	ini.	-139.56	-1339	-0.0000509	0.0002246	0.0035	1.05		4129.05	4129.05	No	29.59	Si
SLU 43	fin.	1.51	-501	-0.0000005	0.0002246	0.0035	1.05		4122.48	4122.48	No	2723.99	Si
SLU 65	ini.	-154.24	-1552	-0.0000564	0.0002246	0.0035	1.05		4129.05	4129.05	No	26.77	Si
SLU 65	fin.	7.37	-588	-0.0000027	0.0002246	0.0035	1.05		4122.48	4122.48	No	559.18	Si
SLU 64	ini.	-149.56	-1536	-0.0000546	0.0002246	0.0035	1.05		4129.05	4129.05	No	27.61	Si
SLU 64	fin.	2.58	-601	-0.0000009	0.0002246	0.0035	1.05		4122.48	4122.48	No	1597.1	Si
SLU 81	ini.	-154.29	-1550	-0.0000564	0.0002246	0.0035	1.05		4129.05	4129.05	No	26.76	Si
SLU 81	fin.	19.6	-561	-0.0000071	0.0002246	0.0035	1.05		4122.48	4122.48	No	210.34	Si
SLU 73	ini.	-157.55	-1562	-0.0000576	0.0002246	0.0035	1.05		4129.05	4129.05	No	26.21	Si
SLU 73	fin.	19.29	-560	-0.0000069	0.0002246	0.0035	1.05		4122.48	4122.48	No	213.77	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-117.79	3059	1.05	0	2625	6344	5660	2678	8338	No	2.73	Si
SLU 75	fin.	-37.07	-603	1.05	0	2625	6344	5660	2678	8338	No	13.83	Si
SLU 78	ini.	-56.4	3070	1.05	0	2625	6344	5660	2678	8338	No	2.72	Si
SLU 78	fin.	-104.02	-1023	1.05	0	2625	6344	5660	2678	8338	No	8.15	Si
SLU 69	ini.	-50.28	3023	1.05	0	2625	6344	5660	2678	8338	No	2.76	Si
SLU 69	fin.	-118.81	-1090	1.05	0	2625	6344	5660	2678	8338	No	7.65	Si
SLU 84	ini.	-95.7	2858	1.05	0	2625	6344	5660	2678	8338	No	2.92	Si
SLU 84	fin.	-44.47	-582	1.05	0	2625	6344	5660	2678	8338	No	14.34	Si
SLU 77	ini.	-53.59	3056	1.05	0	2625	6344	5660	2678	8338	No	2.73	Si
SLU 77	fin.	-106.89	-1041	1.05	0	2625	6344	5660	2678	8338	No	8.01	Si
SLU 70	ini.	-53.09	3037	1.05	0	2625	6344	5660	2678	8338	No	2.75	Si
SLU 70	fin.	-115.93	-1071	1.05	0	2625	6344	5660	2678	8338	No	7.78	Si
SLU 74	ini.	-114.98	3045	1.05	0	2625	6344	5660	2678	8338	No	2.74	Si
SLU 74	fin.	-39.95	-622	1.05	0	2625	6344	5660	2678	8338	No	13.41	Si
SLU 67	ini.	-114.48	3026	1.05	0	2625	6344	5660	2678	8338	No	2.76	Si
SLU 67	fin.	-48.98	-652	1.05	0	2625	6344	5660	2678	8338	No	12.8	Si
SLU 66	ini.	-111.67	3012	1.05	0	2625	6344	5660	2678	8338	No	2.77	Si
SLU 66	fin.	-51.86	-670	1.05	0	2625	6344	5660	2678	8338	No	12.44	Si
SLU 80	ini.	-32.9	2855	1.05	0	2625	6344	5660	2678	8338	No	2.92	Si
SLU 80	fin.	-116.52	-1022	1.05	0	2625	6344	5660	2678	8338	No	8.16	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	-605.11	-2769	-0.0002307	0.0003369	0.0035	1.05		4078.37	4078.37		6.74	Si
SLV 14	fin.	654.9	1163	-0.0002516	0.0003369	0.0035	1.05		4071.54	4071.54		6.22	Si
SLV 15	ini.	-444.66	-2193	-0.0001665	0.0003369	0.0035	1.05		4078.37	4078.37		9.17	Si
SLV 15	fin.	484.78	723	-0.0001827	0.0003369	0.0035	1.05		4071.54	4071.54		8.4	Si
SLV 10	ini.	-472.78	-2405	-0.0001776	0.0003369	0.0035	1.05		4078.37	4078.37		8.63	Si
SLV 10	fin.	423.2	624	-0.0001584	0.0003369	0.0035	1.05		4071.54	4071.54		9.62	Si
SLV 9	ini.	-456.71	-2355	-0.0001713	0.0003369	0.0035	1.05		4078.37	4078.37		8.93	Si
SLV 9	fin.	405.53	577	-0.0001515	0.0003369	0.0035	1.05		4071.54	4071.54		10.04	Si
SLV 3	ini.	377.52	486	-0.0001406	0.0003369	0.0035	1.05		4071.54	4071.54		10.78	Si
SLV 3	fin.	-644.59	-2028	-0.0002469	0.0003369	0.0035	1.05		4078.37	4078.37		6.33	Si
SLV 13	ini.	-581.24	-2695	-0.000221	0.0003369	0.0035	1.05		4078.37	4078.37		7.02	Si
SLV 13	fin.	628.66	1095	-0.0002408	0.0003369	0.0035	1.05		4071.54	4071.54		6.48	Si
SLV 2	ini.	217.08	-90	-0.0000796	0.0003369	0.0035	1.05		4071.54	4071.54		18.76	Si
SLV 2	fin.	-474.47	-1587	-0.0001783	0.0003369	0.0035	1.05		4078.37	4078.37		8.6	Si
SLV 16	ini.	-468.53	-2267	-0.0001759	0.0003369	0.0035	1.05		4078.37	4078.37		8.7	Si
SLV 16	fin.	511.02	791	-0.0001931	0.0003369	0.0035	1.05		4071.54	4071.54		7.97	Si
SLV 1	ini.	240.95	-16	-0.0000885	0.0003369	0.0035	1.05		4071.54	4071.54		16.9	Si
SLV 1	fin.	-500.71	-1656	-0.0001887	0.0003369	0.0035	1.05		4078.37	4078.37		8.15	Si
SLV 4	ini.	353.65	412	-0.0001314	0.0003369	0.0035	1.05		4071.54	4071.54		11.51	Si
SLV 4	fin.	-618.35	-1959	-0.0002361	0.0003369	0.0035	1.05		4078.37	4078.37		6.6	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 14	ini.	-322.65	3387	1.05	0	3938	6344	8490	2678	10281		3.04	Si
SLD 14	fin.	281.47	1329	1.05	0	3938	6344	8490	2678	10281		7.74	Si
SLV 13	ini.	-581.24	5054	1.05	0	3938	6344	8490	2678	10281		2.03	Si
SLV 13	fin.	628.66	3167	1.05	0	3938	6344	8490	2678	10281		3.25	Si
SLV 15	ini.	-444.66	4341	1.05	0	3938	6344	8490	2678	10281		2.37	Si
SLV 15	fin.	484.78	2222	1.05	0	3938	6344	8490	2678	10281		4.63	Si
SLV 10	ini.	-472.78	4100	1.05	0	3938	6344	8490	2678	10281		2.51	Si
SLV 10	fin.	423.2	2356	1.05	0	3938	6344	8490	2678	10281		4.36	Si
SLV 3	ini.	377.52	-1022	1.05	0	3938	6344	8490	2678	10281		10.06	Si
SLV 3	fin.	-644.59	-3640	1.05	0	3938	6344	8490	2678	10281		2.82	Si
SLV 4	ini.	353.65	-911	1.05	0	3938	6344	8490	2678	10281		11.28	Si
SLV 4	fin.	-618.35	-3473	1.05	0	3938	6344	8490	2678	10281		2.96	Si
SLV 14	ini.	-605.11	5164	1.05	0	3938	6344	8490	2678	10281		1.99	Si
SLV 14	fin.	654.9	3334	1.05	0	3938	6344	8490	2678	10281		3.08	Si
SLV 16	ini.	-468.53	4452	1.05	0	3938	6344	8490	2678	10281		2.31	Si
SLV 16	fin.	511.02	2389	1.05	0	3938	6344	8490	2678	10281		4.3	Si
SLD 13	ini.	-312.5	3340	1.05	0	3938	6344	8490	2678	10281		3.08	Si
SLD 13	fin.	270.31	1258	1.05	0	3938	6344	8490	2678	10281		8.17	Si
SLV 9	ini.	-456.71	4026	1.05	0	3938	6344	8490	2678	10281		2.55	Si
SLV 9	fin.	405.53	2244	1.05	0	3938	6344	8490	2678	10281		4.58	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	6.217	SLV 14	Si
V_SLV	1.991	SLV 14	Si
PF_SLU	26.208	SLU 73	Si
V_SLU	2.716	SLU 78	Si

Trave di accoppiamento 159

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-11.173	1.046	14.67	15.32	0.65	-12.293	1.046	14.67	15.32	0.65	1.12	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 69	ini.	-368.44	-2220	-0.0004019	0.0002246	0.0035	0.65		1585.1	1585.1	No	4.3	Si
SLU 69	fin.	-245.78	-647	-0.0002523	0.0002246	0.0035	0.65		1585.1	1585.1	No	6.45	Si
SLU 79	ini.	-360.95	-2174	-0.0003923	0.0002246	0.0035	0.65		1585.1	1585.1	No	4.39	Si
SLU 79	fin.	-225.87	-591	-0.0002297	0.0002246	0.0035	0.65		1585.1	1585.1	No	7.02	Si
SLU 78	ini.	-383.24	-2299	-0.0004211	0.0002246	0.0035	0.65		1585.1	1585.1	No	4.14	Si
SLU 78	fin.	-225.82	-588	-0.0002297	0.0002246	0.0035	0.65		1585.1	1585.1	No	7.02	Si
SLU 74	ini.	-354.64	-2121	-0.0003842	0.0002246	0.0035	0.65		1585.1	1585.1	No	4.47	Si
SLU 74	fin.	-204.4	-531	-0.0002059	0.0002246	0.0035	0.65		1585.1	1585.1	No	7.75	Si
SLU 71	ini.	-351.82	-2126	-0.0003806	0.0002246	0.0035	0.65		1585.1	1585.1	No	4.51	Si
SLU 71	fin.	-240.84	-638	-0.0002467	0.0002246	0.0035	0.65		1585.1	1585.1	No	6.58	Si
SLU 77	ini.	-377.58	-2268	-0.0004138	0.0002246	0.0035	0.65		1585.1	1585.1	No	4.2	Si
SLU 77	fin.	-230.81	-600	-0.0002353	0.0002246	0.0035	0.65		1585.1	1585.1	No	6.87	Si
SLU 72	ini.	-357.47	-2157	-0.0003878	0.0002246	0.0035	0.65		1585.1	1585.1	No	4.43	Si
SLU 72	fin.	-235.86	-626	-0.000241	0.0002246	0.0035	0.65		1585.1	1585.1	No	6.72	Si
SLU 75	ini.	-360.3	-2152	-0.0003914	0.0002246	0.0035	0.65		1585.1	1585.1	No	4.4	Si
SLU 75	fin.	-199.41	-519	-0.0002005	0.0002246	0.0035	0.65		1585.1	1585.1	No	7.95	Si
SLU 70	ini.	-374.1	-2252	-0.0004092	0.0002246	0.0035	0.65		1585.1	1585.1	No	4.24	Si
SLU 70	fin.	-240.8	-635	-0.0002466	0.0002246	0.0035	0.65		1585.1	1585.1	No	6.58	Si
SLU 80	ini.	-366.61	-2205	-0.0003996	0.0002246	0.0035	0.65		1585.1	1585.1	No	4.32	Si
SLU 80	fin.	-220.88	-579	-0.0002242	0.0002246	0.0035	0.65		1585.1	1585.1	No	7.18	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-360.95	3759	0.65	0	1434	5154	3504	1658	5161	No	1.37	Si
SLU 79	fin.	-225.87	-1358	0.65	0	1434	5154	3504	1658	5161	No	3.8	Si
SLU 71	ini.	-351.82	3681	0.65	0	1434	5154	3504	1658	5161	No	1.4	Si
SLU 71	fin.	-240.84	-1408	0.65	0	1434	5154	3504	1658	5161	No	3.67	Si
SLU 80	ini.	-366.61	3798	0.65	0	1434	5154	3504	1658	5161	No	1.36	Si
SLU 80	fin.	-220.88	-1340	0.65	0	1434	5154	3504	1658	5161	No	3.85	Si
SLU 77	ini.	-377.58	3927	0.65	0	1434	5154	3504	1658	5161	No	1.31	Si
SLU 77	fin.	-230.81	-1401	0.65	0	1434	5154	3504	1658	5161	No	3.68	Si
SLU 72	ini.	-357.47	3721	0.65	0	1434	5154	3504	1658	5161	No	1.39	Si
SLU 72	fin.	-235.86	-1390	0.65	0	1434	5154	3504	1658	5161	No	3.71	Si
SLU 70	ini.	-374.1	3889	0.65	0	1434	5154	3504	1658	5161	No	1.33	Si
SLU 70	fin.	-240.8	-1433	0.65	0	1434	5154	3504	1658	5161	No	3.6	Si
SLU 75	ini.	-360.3	3698	0.65	0	1434	5154	3504	1658	5161	No	1.4	Si
SLU 75	fin.	-199.41	-1245	0.65	0	1434	5154	3504	1658	5161	No	4.15	Si
SLU 74	ini.	-354.64	3658	0.65	0	1434	5154	3504	1658	5161	No	1.41	Si
SLU 74	fin.	-204.4	-1263	0.65	0	1434	5154	3504	1658	5161	No	4.09	Si
SLU 69	ini.	-368.44	3850	0.65	0	1434	5154	3504	1658	5161	No	1.34	Si
SLU 69	fin.	-245.78	-1451	0.65	0	1434	5154	3504	1658	5161	No	3.56	Si
SLU 78	ini.	-383.24	3967	0.65	0	1434	5154	3504	1658	5161	No	1.3	Si
SLU 78	fin.	-225.82	-1384	0.65	0	1434	5154	3504	1658	5161	No	3.73	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	-914.24	-3769	-0.001188	0.0003369	0.0035	0.65		1573.65	1573.65		1.72	Si
SLV 13	fin.	1605.24	5284	-0.0032837	0.0003369	0.0035	0.65		1569.44	1569.44		0.98	No
SLV 4	ini.	465.26	1089	-0.0005044	0.0003369	0.0035	0.65		1569.44	1569.44		3.37	Si
SLV 4	fin.	-1883.37	-6017	-0.0043938	0.0003369	0.0035	0.65		1573.65	1573.65		0.84	No
SLV 1	ini.	92.46	-973	-0.0000887	0.0003369	0.0035	0.65		1569.44	1569.44		16.97	Si
SLV 1	fin.	-1557.53	-5229	-0.0030489	0.0003369	0.0035	0.65		1573.65	1573.65		1.01	Si
SLV 3	ini.	452.72	1010	-0.0004884	0.0003369	0.0035	0.65		1569.44	1569.44		3.47	Si
SLV 3	fin.	-1873.35	-5995	-0.0043565	0.0003369	0.0035	0.65		1573.65	1573.65		0.84	No
SLV 15	ini.	-553.98	-1786	-0.0006206	0.0003369	0.0035	0.65		1573.65	1573.65		2.84	Si
SLV 15	fin.	1289.42	4517	-0.0020524	0.0003369	0.0035	0.65		1569.44	1569.44		1.22	Si
SLV 8	ini.	531.17	2411	-0.0005914	0.0003369	0.0035	0.65		1569.44	1569.44		2.95	Si
SLV 8	fin.	-1143.22	-3228	-0.0016567	0.0003369	0.0035	0.65		1573.65	1573.65		1.38	Si
SLV 2	ini.	104.99	-894	-0.0001011	0.0003369	0.0035	0.65		1569.44	1569.44		14.95	Si
SLV 2	fin.	-1567.55	-5250	-0.0030944	0.0003369	0.0035	0.65		1573.65	1573.65		1	Si
SLV 14	ini.	-901.71	-3690	-0.0011653	0.0003369	0.0035	0.65		1573.65	1573.65		1.75	Si
SLV 14	fin.	1595.22	5262	-0.0032384	0.0003369	0.0035	0.65		1569.44	1569.44		0.98	No
SLV 16	ini.	-541.45	-1707	-0.0006034	0.0003369	0.0035	0.65		1573.65	1573.65		2.91	Si
SLV 16	fin.	1279.4	4496	-0.0020227	0.0003369	0.0035	0.65		1569.44	1569.44		1.23	Si
SLV 7	ini.	522.73	2358	-0.00058	0.0003369	0.0035	0.65		1569.44	1569.44		3	Si
SLV 7	fin.	-1136.47	-3213	-0.0016409	0.0003369	0.0035	0.65		1573.65	1573.65		1.38	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	ini.	-678.15	5402	0.65	0	1633	5154	5256	1658	6788		1.26	Si
SLV 5	fin.	-83.74	-481	0.65	0	1633	5154	5256	1658	6788		14.1	Si
SLV 3	ini.	452.72	-2355	0.65	0	1633	5154	5256	1658	6788		2.88	Si
SLV 3	fin.	-1873.35	-6446	0.65	0	1633	5154	5256	1658	6788		1.05	Si
SLV 6	ini.	-669.71	5338	0.65	0	1633	5154	5256	1658	6788		1.27	Si
SLV 6	fin.	-90.49	-507	0.65	0	1633	5154	5256	1658	6788		13.39	Si
SLV 14	ini.	-901.71	6977	0.65	0	1633	5154	5256	1658	6788		0.97	No
SLV 14	fin.	1595.22	4771	0.65	0	1633	5154	5256	1658	6788		1.42	Si
SLV 4	ini.	465.26	-2449	0.65	0	1633	5154	5256	1658	6788		2.77	Si
SLV 4	fin.	-1883.37	-6484	0.65	0	1633	5154	5256	1658	6788		1.05	Si
SLV 9	ini.	-980.16	7491	0.65	0	1633	5154	5256	1658	6788		0.91	No
SLV 9	fin.	865.09	2560	0.65	0	1633	5154	5256	1658	6788		2.65	Si
SLV 2	ini.	104.99	13	0.65	0	1633	5154	5256	1658	6788		520.07	Si
SLV 2	fin.	-1567.55	-5366	0.65	0	1633	5154	5256	1658	6788		1.26	Si
SLV 10	ini.	-971.72	7428	0.65	0	1633	5154	5256	1658	6788		0.91	No
SLV 10	fin.	858.34	2534	0.65	0	1633	5154	5256	1658	6788		2.68	Si
SLV 13	ini.	-914.24	7071	0.65	0	1633	5154	5256	1658	6788		0.96	No
SLV 13	fin.	1605.24	4809	0.65	0	1633	5154	5256	1658	6788		1.41	Si
SLV 1	ini.	92.46	107	0.65	0	1633	5154	5256	1658	6788		63.26	Si
SLV 1	fin.	-1557.53	-5328	0.65	0	1633	5154	5256	1658	6788		1.27	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.836	SLV 4	No
V_SLV	0.906	SLV 9	No
PF_SLU	4.136	SLU 78	Si
V_SLU	1.301	SLU 78	Si

Trave di accoppiamento 160

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-9.386	1.046	14.67	15.32	0.65	-10.466	1.046	14.67	15.32	0.65	1.08	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	-19.84	-451	-0.0000187	0.0002246	0.0035	0.65		1585.1	1585.1	No	79.9	Si
SLU 79	fin.	-442.2	-1411	-0.0005	0.0002246	0.0035	0.65		1585.1	1585.1	No	3.58	Si
SLU 78	ini.	-20.03	-496	-0.0000189	0.0002246	0.0035	0.65		1585.1	1585.1	No	79.15	Si
SLU 78	fin.	-466.21	-1504	-0.0005331	0.0002246	0.0035	0.65		1585.1	1585.1	No	3.4	Si
SLU 77	ini.	-22.27	-497	-0.000021	0.0002246	0.0035	0.65		1585.1	1585.1	No	71.17	Si
SLU 77	fin.	-459.89	-1481	-0.0005243	0.0002246	0.0035	0.65		1585.1	1585.1	No	3.45	Si
SLU 72	ini.	-27.41	-481	-0.0000259	0.0002246	0.0035	0.65		1585.1	1585.1	No	57.83	Si
SLU 72	fin.	-440.24	-1404	-0.0004973	0.0002246	0.0035	0.65		1585.1	1585.1	No	3.6	Si
SLU 75	ini.	-10.1	-446	-0.0000095	0.0002246	0.0035	0.65		1585.1	1585.1	No	157.02	Si
SLU 75	fin.	-439.55	-1429	-0.0004963	0.0002246	0.0035	0.65		1585.1	1585.1	No	3.61	Si
SLU 70	ini.	-29.84	-528	-0.0000282	0.0002246	0.0035	0.65		1585.1	1585.1	No	53.11	Si
SLU 70	fin.	-457.93	-1475	-0.0005216	0.0002246	0.0035	0.65		1585.1	1585.1	No	3.46	Si
SLU 69	ini.	-32.09	-529	-0.0000303	0.0002246	0.0035	0.65		1585.1	1585.1	No	49.39	Si
SLU 69	fin.	-451.61	-1451	-0.0005129	0.0002246	0.0035	0.65		1585.1	1585.1	No	3.51	Si
SLU 71	ini.	-29.66	-482	-0.000028	0.0002246	0.0035	0.65		1585.1	1585.1	No	53.45	Si
SLU 71	fin.	-433.92	-1381	-0.0004887	0.0002246	0.0035	0.65		1585.1	1585.1	No	3.65	Si
SLU 74	ini.	-12.34	-447	-0.0000116	0.0002246	0.0035	0.65		1585.1	1585.1	No	128.42	Si
SLU 74	fin.	-433.23	-1405	-0.0004877	0.0002246	0.0035	0.65		1585.1	1585.1	No	3.66	Si
SLU 80	ini.	-17.59	-450	-0.0000165	0.0002246	0.0035	0.65		1585.1	1585.1	No	90.11	Si
SLU 80	fin.	-448.52	-1434	-0.0005086	0.0002246	0.0035	0.65		1585.1	1585.1	No	3.53	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 70	ini.	-29.84	-86	0.65	0	1488	5154	3504	1658	5161	No	60.07	Si
SLU 70	fin.	-457.93	-2278	0.65	0	1488	5154	3504	1658	5161	No	2.27	Si
SLU 78	ini.	-20.03	-190	0.65	0	1488	5154	3504	1658	5161	No	27.22	Si
SLU 78	fin.	-466.21	-2311	0.65	0	1488	5154	3504	1658	5161	No	2.23	Si
SLU 69	ini.	-32.09	-72	0.65	0	1488	5154	3504	1658	5161	No	71.91	Si
SLU 69	fin.	-451.61	-2255	0.65	0	1488	5154	3504	1658	5161	No	2.29	Si
SLU 71	ini.	-29.66	-80	0.65	0	1488	5154	3504	1658	5161	No	64.4	Si
SLU 71	fin.	-433.92	-2182	0.65	0	1488	5154	3504	1658	5161	No	2.37	Si
SLU 79	ini.	-19.84	-184	0.65	0	1488	5154	3504	1658	5161	No	28.08	Si
SLU 79	fin.	-442.2	-2215	0.65	0	1488	5154	3504	1658	5161	No	2.33	Si
SLU 75	ini.	-10.1	-262	0.65	0	1488	5154	3504	1658	5161	No	19.72	Si
SLU 75	fin.	-439.55	-2158	0.65	0	1488	5154	3504	1658	5161	No	2.39	Si
SLU 74	ini.	-12.34	-248	0.65	0	1488	5154	3504	1658	5161	No	20.85	Si
SLU 74	fin.	-433.23	-2135	0.65	0	1488	5154	3504	1658	5161	No	2.42	Si
SLU 77	ini.	-22.27	-175	0.65	0	1488	5154	3504	1658	5161	No	29.42	Si
SLU 77	fin.	-459.89	-2288	0.65	0	1488	5154	3504	1658	5161	No	2.26	Si
SLU 80	ini.	-17.59	-198	0.65	0	1488	5154	3504	1658	5161	No	26.07	Si
SLU 80	fin.	-448.52	-2238	0.65	0	1488	5154	3504	1658	5161	No	2.31	Si
SLU 72	ini.	-27.41	-94	0.65	0	1488	5154	3504	1658	5161	No	54.73	Si
SLU 72	fin.	-440.24	-2205	0.65	0	1488	5154	3504	1658	5161	No	2.34	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-1260.14	-4149	-0.0019578	0.0003369	0.0035	0.65		1573.65	1573.65		1.25	Si
SLV 15	fin.	217.05	-677	-0.0002155	0.0003369	0.0035	0.65		1569.44	1569.44		7.23	Si
SLV 13	ini.	-976.87	-4072	-0.0013049	0.0003369	0.0035	0.65		1573.65	1573.65		1.61	Si
SLV 13	fin.	-195.78	-2124	-0.0001927	0.0003369	0.0035	0.65		1573.65	1573.65		8.04	Si
SLV 4	ini.	956.29	3499	-0.0012703	0.0003369	0.0035	0.65		1569.44	1569.44		1.64	Si
SLV 4	fin.	-358.32	334	-0.0003717	0.0003369	0.0035	0.65		1573.65	1573.65		4.39	Si
SLV 1	ini.	1245.95	3610	-0.0019268	0.0003369	0.0035	0.65		1569.44	1569.44		1.26	Si
SLV 1	fin.	-787.94	-1167	-0.0009708	0.0003369	0.0035	0.65		1573.65	1573.65		2	Si
SLV 5	ini.	797.41	1005	-0.0009896	0.0003369	0.0035	0.65		1569.44	1569.44		1.97	Si
SLV 5	fin.	-1059.56	-3181	-0.0014711	0.0003369	0.0035	0.65		1573.65	1573.65		1.49	Si
SLV 16	ini.	-1266.53	-4183	-0.0019759	0.0003369	0.0035	0.65		1573.65	1573.65		1.24	Si
SLV 16	fin.	233.85	-623	-0.0002334	0.0003369	0.0035	0.65		1569.44	1569.44		6.71	Si
SLV 2	ini.	1239.57	3575	-0.0019091	0.0003369	0.0035	0.65		1569.44	1569.44		1.27	Si
SLV 2	fin.	-771.14	-1113	-0.0009435	0.0003369	0.0035	0.65		1573.65	1573.65		2.04	Si
SLV 3	ini.	962.68	3534	-0.0012825	0.0003369	0.0035	0.65		1569.44	1569.44		1.63	Si
SLV 3	fin.	-375.12	280	-0.0003915	0.0003369	0.0035	0.65		1573.65	1573.65		4.2	Si
SLV 6	ini.	793.11	981	-0.0009825	0.0003369	0.0035	0.65		1569.44	1569.44		1.98	Si
SLV 6	fin.	-1048.25	-3145	-0.0014475	0.0003369	0.0035	0.65		1573.65	1573.65		1.5	Si
SLV 14	ini.	-983.25	-4107	-0.0013172	0.0003369	0.0035	0.65		1573.65	1573.65		1.6	Si
SLV 14	fin.	-178.97	-2070	-0.0001753	0.0003369	0.0035	0.65		1573.65	1573.65		8.79	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-1260.14	4353	0.65	0	1694	5154	5256	1658	6848		1.57	Si
SLV 15	fin.	217.05	505	0.65	0	1694	5154	5256	1658	6848		13.55	Si
SLV 2	ini.	1239.57	-4681	0.65	0	1694	5154	5256	1658	6848		1.46	Si
SLV 2	fin.	-771.14	-3257	0.65	0	1694	5154	5256	1658	6848		2.1	Si
SLV 5	ini.	797.41	-3514	0.65	0	1694	5154	5256	1658	6848		1.95	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	fin.	-1059.56	-4241	0.65	0	1694	5154	5256	1658	6848		1.61	Si
SLV 1	ini.	1245.95	-4725	0.65	0	1694	5154	5256	1658	6848		1.45	Si
SLV 1	fin.	-787.94	-3321	0.65	0	1694	5154	5256	1658	6848		2.06	Si
SLV 10	ini.	126.27	-1151	0.65	0	1694	5154	5256	1658	6848		5.95	Si
SLV 10	fin.	-870.6	-3499	0.65	0	1694	5154	5256	1658	6848		1.96	Si
SLV 9	ini.	130.57	-1181	0.65	0	1694	5154	5256	1658	6848		5.8	Si
SLV 9	fin.	-881.91	-3542	0.65	0	1694	5154	5256	1658	6848		1.93	Si
SLV 16	ini.	-1266.53	4397	0.65	0	1694	5154	5256	1658	6848		1.56	Si
SLV 16	fin.	233.85	569	0.65	0	1694	5154	5256	1658	6848		12.03	Si
SLV 3	ini.	962.68	-3424	0.65	0	1694	5154	5256	1658	6848		2	Si
SLV 3	fin.	-375.12	-1825	0.65	0	1694	5154	5256	1658	6848		3.75	Si
SLV 6	ini.	793.11	-3484	0.65	0	1694	5154	5256	1658	6848		1.97	Si
SLV 6	fin.	-1048.25	-4198	0.65	0	1694	5154	5256	1658	6848		1.63	Si
SLV 4	ini.	956.29	-3380	0.65	0	1694	5154	5256	1658	6848		2.03	Si
SLV 4	fin.	-358.32	-1761	0.65	0	1694	5154	5256	1658	6848		3.89	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.242	SLV 16	Si
V_SLV	1.449	SLV 1	Si
PF_SLU	3.4	SLU 78	Si
V_SLU	2.233	SLU 78	Si

Trave di accoppiamento 161

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-6.478	1.046	14.27	15.32	1.05	-7.278	1.046	14.27	15.32	1.05	0.8	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 49	ini.	-96.46	-1013	-0.000035	0.0002246	0.0035	1.05		4129.05	4129.05	No	42.8	Si
SLU 49	fin.	-185.63	-1185	-0.0000681	0.0002246	0.0035	1.05		4129.05	4129.05	No	22.24	Si
SLU 35	ini.	-196.29	-993	-0.0000721	0.0002246	0.0035	1.05		4129.05	4129.05	No	21.04	Si
SLU 35	fin.	-54.21	-905	-0.0000196	0.0002246	0.0035	1.05		4129.05	4129.05	No	76.17	Si
SLU 36	ini.	-189.14	-980	-0.0000694	0.0002246	0.0035	1.05		4129.05	4129.05	No	21.83	Si
SLU 36	fin.	-63.4	-913	-0.0000229	0.0002246	0.0035	1.05		4129.05	4129.05	No	65.13	Si
SLU 43	ini.	-49.78	-842	-0.000018	0.0002246	0.0035	1.05		4129.05	4129.05	No	82.94	Si
SLU 43	fin.	-187.34	-991	-0.0000688	0.0002246	0.0035	1.05		4129.05	4129.05	No	22.04	Si
SLU 46	ini.	-81.36	-969	-0.0000295	0.0002246	0.0035	1.05		4129.05	4129.05	No	50.75	Si
SLU 46	fin.	-188.44	-1116	-0.0000692	0.0002246	0.0035	1.05		4129.05	4129.05	No	21.91	Si
SLU 44	ini.	-37.86	-820	-0.0000136	0.0002246	0.0035	1.05		4129.05	4129.05	No	109.05	Si
SLU 44	fin.	-202.66	-1003	-0.0000745	0.0002246	0.0035	1.05		4129.05	4129.05	No	20.37	Si
SLU 77	ini.	-195.68	-1157	-0.0000719	0.0002246	0.0035	1.05		4129.05	4129.05	No	21.1	Si
SLU 77	fin.	-102.51	-1124	-0.0000372	0.0002246	0.0035	1.05		4129.05	4129.05	No	40.28	Si
SLU 47	ini.	-52.96	-864	-0.0000191	0.0002246	0.0035	1.05		4129.05	4129.05	No	77.96	Si
SLU 47	fin.	-199.85	-1072	-0.0000735	0.0002246	0.0035	1.05		4129.05	4129.05	No	20.66	Si
SLU 51	ini.	-72.83	-916	-0.0000264	0.0002246	0.0035	1.05		4129.05	4129.05	No	56.69	Si
SLU 51	fin.	-190.92	-1136	-0.0000701	0.0002246	0.0035	1.05		4129.05	4129.05	No	21.63	Si
SLU 78	ini.	-188.53	-1145	-0.0000692	0.0002246	0.0035	1.05		4129.05	4129.05	No	21.9	Si
SLU 78	fin.	-111.7	-1132	-0.0000406	0.0002246	0.0035	1.05		4129.05	4129.05	No	36.97	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-188.53	2346	1.05	0	2625	6344	5660	2678	8338	No	3.55	Si
SLU 78	fin.	-111.7	-1603	1.05	0	2625	6344	5660	2678	8338	No	5.2	Si
SLU 79	ini.	-172.05	2203	1.05	0	2625	6344	5660	2678	8338	No	3.79	Si
SLU 79	fin.	-107.8	-1558	1.05	0	2625	6344	5660	2678	8338	No	5.35	Si
SLU 70	ini.	-142.33	2141	1.05	0	2625	6344	5660	2678	8338	No	3.9	Si
SLU 70	fin.	-166.43	-1812	1.05	0	2625	6344	5660	2678	8338	No	4.6	Si
SLU 36	ini.	-189.14	2150	1.05	0	2625	6344	5660	2678	8338	No	3.88	Si
SLU 36	fin.	-63.4	-1261	1.05	0	2625	6344	5660	2678	8338	No	6.61	Si
SLU 77	ini.	-195.68	2383	1.05	0	2625	6344	5660	2678	8338	No	3.5	Si
SLU 77	fin.	-102.51	-1569	1.05	0	2625	6344	5660	2678	8338	No	5.31	Si
SLU 69	ini.	-149.48	2177	1.05	0	2625	6344	5660	2678	8338	No	3.83	Si
SLU 69	fin.	-157.24	-1778	1.05	0	2625	6344	5660	2678	8338	No	4.69	Si
SLU 80	ini.	-164.9	2166	1.05	0	2625	6344	5660	2678	8338	No	3.85	Si
SLU 80	fin.	-116.99	-1592	1.05	0	2625	6344	5660	2678	8338	No	5.24	Si
SLU 74	ini.	-180.58	2203	1.05	0	2625	6344	5660	2678	8338	No	3.78	Si
SLU 74	fin.	-105.31	-1458	1.05	0	2625	6344	5660	2678	8338	No	5.72	Si
SLU 35	ini.	-196.29	2187	1.05	0	2625	6344	5660	2678	8338	No	3.81	Si
SLU 35	fin.	-54.21	-1228	1.05	0	2625	6344	5660	2678	8338	No	6.79	Si
SLU 75	ini.	-173.43	2167	1.05	0	2625	6344	5660	2678	8338	No	3.85	Si
SLU 75	fin.	-114.5	-1492	1.05	0	2625	6344	5660	2678	8338	No	5.59	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 6	ini.	606.5	1245	-0.0002317	0.0003369	0.0035	1.05		4071.54	4071.54		6.71	Si
SLV 6	fin.	-1238.2	-1278	-0.0005149	0.0003369	0.0035	1.05		4078.37	4078.37		3.29	Si
SLV 12	ini.	-767.9	-2664	-0.0002986	0.0003369	0.0035	1.05		4078.37	4078.37		5.31	Si
SLV 12	fin.	1013.39	-211	-0.0004082	0.0003369	0.0035	1.05		4071.54	4071.54		4.02	Si
SLV 14	ini.	-1052.17	-2282	-0.0004255	0.0003369	0.0035	1.05		4078.37	4078.37		3.88	Si
SLV 14	fin.	668.84	-921	-0.0002574	0.0003369	0.0035	1.05		4071.54	4071.54		6.09	Si
SLV 11	ini.	-759.89	-2674	-0.0002952	0.0003369	0.0035	1.05		4078.37	4078.37		5.37	Si
SLV 11	fin.	1002.35	-235	-0.0004031	0.0003369	0.0035	1.05		4071.54	4071.54		4.06	Si
SLV 16	ini.	-1270.34	-3098	-0.0005309	0.0003369	0.0035	1.05		4078.37	4078.37		3.21	Si
SLV 16	fin.	1159.97	-597	-0.0004776	0.0003369	0.0035	1.05		4071.54	4071.54		3.51	Si
SLV 2	ini.	1105.06	1683	-0.0004512	0.0003369	0.0035	1.05		4071.54	4071.54		3.68	Si
SLV 2	fin.	-1379.42	-879	-0.0005863	0.0003369	0.0035	1.05		4078.37	4078.37		2.96	Si
SLV 15	ini.	-1258.45	-3112	-0.000525	0.0003369	0.0035	1.05		4078.37	4078.37		3.24	Si
SLV 15	fin.	1143.57	-634	-0.0004696	0.0003369	0.0035	1.05		4071.54	4071.54		3.56	Si
SLV 5	ini.	614.51	1235	-0.000235	0.0003369	0.0035	1.05		4071.54	4071.54		6.63	Si
SLV 5	fin.	-1249.24	-1302	-0.0005204	0.0003369	0.0035	1.05		4078.37	4078.37		3.26	Si
SLV 1	ini.	1116.94	1669	-0.0004569	0.0003369	0.0035	1.05		4071.54	4071.54		3.65	Si
SLV 1	fin.	-1395.82	-916	-0.0005948	0.0003369	0.0035	1.05		4078.37	4078.37		2.92	Si
SLV 13	ini.	-1040.28	-2296	-0.0004199	0.0003369	0.0035	1.05		4078.37	4078.37		3.92	Si
SLV 13	fin.	652.44	-958	-0.0002506	0.0003369	0.0035	1.05		4071.54	4071.54		6.24	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	1116.94	-3881	1.05	0	3938	6344	8490	2678	10281		2.65	Si
SLV 1	fin.	-1395.82	-5666	1.05	0	3938	6344	8490	2678	10281		1.81	Si
SLV 14	ini.	-1052.17	4439	1.05	0	3938	6344	8490	2678	10281		2.32	Si
SLV 14	fin.	668.84	1708	1.05	0	3938	6344	8490	2678	10281		6.02	Si
SLV 11	ini.	-759.89	5669	1.05	0	3938	6344	8490	2678	10281		1.81	Si
SLV 11	fin.	1002.35	2809	1.05	0	3938	6344	8490	2678	10281		3.66	Si
SLV 2	ini.	1105.06	-3849	1.05	0	3938	6344	8490	2678	10281		2.67	Si
SLV 2	fin.	-1379.42	-5604	1.05	0	3938	6344	8490	2678	10281		1.83	Si
SLV 13	ini.	-1040.28	4407	1.05	0	3938	6344	8490	2678	10281		2.33	Si
SLV 13	fin.	652.44	1647	1.05	0	3938	6344	8490	2678	10281		6.24	Si
SLV 5	ini.	614.51	-3214	1.05	0	3938	6344	8490	2678	10281		3.2	Si
SLV 5	fin.	-1249.24	-5095	1.05	0	3938	6344	8490	2678	10281		2.02	Si
SLV 12	ini.	-767.9	5690	1.05	0	3938	6344	8490	2678	10281		1.81	Si
SLV 12	fin.	1013.39	2851	1.05	0	3938	6344	8490	2678	10281		3.61	Si
SLV 16	ini.	-1270.34	6358	1.05	0	3938	6344	8490	2678	10281		1.62	Si
SLV 16	fin.	1159.97	3421	1.05	0	3938	6344	8490	2678	10281		3	Si
SLV 6	ini.	606.5	-3193	1.05	0	3938	6344	8490	2678	10281		3.22	Si
SLV 6	fin.	-1238.2	-5054	1.05	0	3938	6344	8490	2678	10281		2.03	Si
SLV 15	ini.	-1258.45	6326	1.05	0	3938	6344	8490	2678	10281		1.63	Si
SLV 15	fin.	1143.57	3360	1.05	0	3938	6344	8490	2678	10281		3.06	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.922	SLV 1	Si
V_SLV	1.617	SLV 16	Si
PF_SLU	20.374	SLU 44	Si
V_SLU	3.499	SLU 77	Si

Trave di accoppiamento 162

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-4.168	1.046	14.27	15.32	1.05	-4.968	1.046	14.27	15.32	1.05	0.8	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 66	ini.	-82.02	-857	-0.0000297	0.0002246	0.0035	1.05		4129.05	4129.05	No	50.34	Si
SLU 66	fin.	-212.64	-1167	-0.0000783	0.0002246	0.0035	1.05		4129.05	4129.05	No	19.42	Si
SLU 81	ini.	-36.02	-668	-0.000013	0.0002246	0.0035	1.05		4129.05	4129.05	No	114.63	Si
SLU 81	fin.	-223.63	-1096	-0.0000825	0.0002246	0.0035	1.05		4129.05	4129.05	No	18.46	Si
SLU 67	ini.	-76.25	-841	-0.0000276	0.0002246	0.0035	1.05		4129.05	4129.05	No	54.15	Si
SLU 67	fin.	-216.26	-1168	-0.0000797	0.0002246	0.0035	1.05		4129.05	4129.05	No	19.09	Si
SLU 82	ini.	-30.25	-651	-0.0000109	0.0002246	0.0035	1.05		4129.05	4129.05	No	136.48	Si
SLU 82	fin.	-227.26	-1097	-0.0000839	0.0002246	0.0035	1.05		4129.05	4129.05	No	18.17	Si
SLU 64	ini.	-28.25	-626	-0.0000102	0.0002246	0.0035	1.05		4129.05	4129.05	No	146.14	Si
SLU 64	fin.	-218.05	-1044	-0.0000804	0.0002246	0.0035	1.05		4129.05	4129.05	No	18.94	Si
SLU 65	ini.	-18.64	-599	-0.0000067	0.0002246	0.0035	1.05		4129.05	4129.05	No	221.47	Si
SLU 65	fin.	-224.09	-1045	-0.0000827	0.0002246	0.0035	1.05		4129.05	4129.05	No	18.43	Si
SLU 52	ini.	-15.24	-512	-0.0000055	0.0002246	0.0035	1.05		4129.05	4129.05	No	271	Si
SLU 52	fin.	-199.54	-915	-0.0000734	0.0002246	0.0035	1.05		4129.05	4129.05	No	20.69	Si
SLU 73	ini.	-24.08	-628	-0.0000087	0.0002246	0.0035	1.05		4129.05	4129.05	No	171.47	Si
SLU 73	fin.	-228	-1082	-0.0000841	0.0002246	0.0035	1.05		4129.05	4129.05	No	18.11	Si
SLU 75	ini.	-81.69	-870	-0.0000296	0.0002246	0.0035	1.05		4129.05	4129.05	No	50.55	Si
SLU 75	fin.	-220.17	-1205	-0.0000812	0.0002246	0.0035	1.05		4129.05	4129.05	No	18.75	Si
SLU 74	ini.	-87.45	-886	-0.0000317	0.0002246	0.0035	1.05		4129.05	4129.05	No	47.21	Si
SLU 74	fin.	-216.54	-1204	-0.0000798	0.0002246	0.0035	1.05		4129.05	4129.05	No	19.07	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-145.89	1102	1.05	0	2625	6344	5660	2678	8338	No	7.56	Si
SLU 77	fin.	-182.75	-2119	1.05	0	2625	6344	5660	2678	8338	No	3.94	Si
SLU 74	ini.	-87.45	800	1.05	0	2625	6344	5660	2678	8338	No	10.42	Si
SLU 74	fin.	-216.54	-2185	1.05	0	2625	6344	5660	2678	8338	No	3.82	Si
SLU 65	ini.	-18.64	428	1.05	0	2625	6344	5660	2678	8338	No	19.46	Si
SLU 65	fin.	-224.09	-2093	1.05	0	2625	6344	5660	2678	8338	No	3.98	Si
SLU 78	ini.	-140.13	1076	1.05	0	2625	6344	5660	2678	8338	No	7.75	Si
SLU 78	fin.	-186.38	-2135	1.05	0	2625	6344	5660	2678	8338	No	3.91	Si
SLU 73	ini.	-24.08	425	1.05	0	2625	6344	5660	2678	8338	No	19.61	Si
SLU 73	fin.	-228	-2096	1.05	0	2625	6344	5660	2678	8338	No	3.98	Si
SLU 75	ini.	-81.69	775	1.05	0	2625	6344	5660	2678	8338	No	10.76	Si
SLU 75	fin.	-220.17	-2200	1.05	0	2625	6344	5660	2678	8338	No	3.79	Si
SLU 69	ini.	-140.46	1105	1.05	0	2625	6344	5660	2678	8338	No	7.54	Si
SLU 69	fin.	-178.84	-2116	1.05	0	2625	6344	5660	2678	8338	No	3.94	Si
SLU 67	ini.	-76.25	778	1.05	0	2625	6344	5660	2678	8338	No	10.72	Si
SLU 67	fin.	-216.26	-2197	1.05	0	2625	6344	5660	2678	8338	No	3.79	Si
SLU 70	ini.	-134.69	1080	1.05	0	2625	6344	5660	2678	8338	No	7.72	Si
SLU 70	fin.	-182.47	-2131	1.05	0	2625	6344	5660	2678	8338	No	3.91	Si
SLU 66	ini.	-82.02	804	1.05	0	2625	6344	5660	2678	8338	No	10.37	Si
SLU 66	fin.	-212.64	-2181	1.05	0	2625	6344	5660	2678	8338	No	3.82	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 6	ini.	757.61	1686	-0.0002947	0.0003369	0.0035	1.05		4071.54	4071.54		5.37	Si
SLV 6	fin.	-614.67	-864	-0.0002346	0.0003369	0.0035	1.05		4078.37	4078.37		6.64	Si
SLV 12	ini.	-814.18	-2650	-0.0003185	0.0003369	0.0035	1.05		4078.37	4078.37		5.01	Si
SLV 12	fin.	299.84	-678	-0.0001108	0.0003369	0.0035	1.05		4071.54	4071.54		13.58	Si
SLV 15	ini.	-1061.25	-3368	-0.0004297	0.0003369	0.0035	1.05		4078.37	4078.37		3.84	Si
SLV 15	fin.	223.36	-1422	-0.0000819	0.0003369	0.0035	1.05		4071.54	4071.54		18.23	Si
SLV 11	ini.	-800.29	-2615	-0.0003125	0.0003369	0.0035	1.05		4078.37	4078.37		5.1	Si
SLV 11	fin.	289.48	-689	-0.0001069	0.0003369	0.0035	1.05		4071.54	4071.54		14.06	Si
SLV 13	ini.	-750.81	-2518	-0.0002913	0.0003369	0.0035	1.05		4078.37	4078.37		5.43	Si
SLV 13	fin.	-0.26	-1609	-0.0000001	0.0003369	0.0035	1.05		4078.37	4078.37		15453.35	Si
SLV 16	ini.	-1081.87	-3420	-0.0004394	0.0003369	0.0035	1.05		4078.37	4078.37		3.77	Si
SLV 16	fin.	238.74	-1405	-0.0000877	0.0003369	0.0035	1.05		4071.54	4071.54		17.05	Si
SLV 14	ini.	-771.43	-2570	-0.0003001	0.0003369	0.0035	1.05		4078.37	4078.37		5.29	Si
SLV 14	fin.	15.12	-1592	-0.0000054	0.0003369	0.0035	1.05		4071.54	4071.54		269.27	Si
SLV 1	ini.	1039.18	2491	-0.0004202	0.0003369	0.0035	1.05		4071.54	4071.54		3.92	Si
SLV 1	fin.	-563.93	-148	-0.000214	0.0003369	0.0035	1.05		4078.37	4078.37		7.23	Si
SLV 2	ini.	1018.56	2438	-0.0004106	0.0003369	0.0035	1.05		4071.54	4071.54		4	Si
SLV 2	fin.	-548.54	-131	-0.0002078	0.0003369	0.0035	1.05		4078.37	4078.37		7.43	Si
SLV 5	ini.	771.49	1721	-0.0003007	0.0003369	0.0035	1.05		4071.54	4071.54		5.28	Si
SLV 5	fin.	-625.02	-876	-0.0002389	0.0003369	0.0035	1.05		4078.37	4078.37		6.53	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 4	ini.	708.12	-1404	1.05	0	3938	6344	8490	2678	10281		7.32	Si
SLV 4	fin.	-324.92	-3504	1.05	0	3938	6344	8490	2678	10281		2.93	Si
SLV 6	ini.	757.61	-2892	1.05	0	3938	6344	8490	2678	10281		3.56	Si
SLV 6	fin.	-614.67	-3795	1.05	0	3938	6344	8490	2678	10281		2.71	Si
SLV 2	ini.	1018.56	-2902	1.05	0	3938	6344	8490	2678	10281		3.54	Si
SLV 2	fin.	-548.54	-4431	1.05	0	3938	6344	8490	2678	10281		2.32	Si
SLV 12	ini.	-814.18	3622	1.05	0	3938	6344	8490	2678	10281		2.84	Si
SLV 12	fin.	299.84	777	1.05	0	3938	6344	8490	2678	10281		13.24	Si
SLV 16	ini.	-1081.87	3664	1.05	0	3938	6344	8490	2678	10281		2.81	Si
SLV 16	fin.	238.74	1436	1.05	0	3938	6344	8490	2678	10281		7.16	Si
SLV 11	ini.	-800.29	3556	1.05	0	3938	6344	8490	2678	10281		2.89	Si
SLV 11	fin.	289.48	729	1.05	0	3938	6344	8490	2678	10281		14.11	Si
SLV 15	ini.	-1061.25	3566	1.05	0	3938	6344	8490	2678	10281		2.88	Si
SLV 15	fin.	223.36	1364	1.05	0	3938	6344	8490	2678	10281		7.53	Si
SLV 1	ini.	1039.18	-2999	1.05	0	3938	6344	8490	2678	10281		3.43	Si
SLV 1	fin.	-563.93	-4503	1.05	0	3938	6344	8490	2678	10281		2.28	Si
SLV 5	ini.	771.49	-2957	1.05	0	3938	6344	8490	2678	10281		3.48	Si
SLV 5	fin.	-625.02	-3843	1.05	0	3938	6344	8490	2678	10281		2.67	Si
SLV 3	ini.	728.75	-1502	1.05	0	3938	6344	8490	2678	10281		6.85	Si
SLV 3	fin.	-340.31	-3576	1.05	0	3938	6344	8490	2678	10281		2.88	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.77	SLV 16	Si
V_SLV	2.283	SLV 1	Si
PF_SLU	18.11	SLU 73	Si
V_SLU	3.789	SLU 75	Si

Trave di accoppiamento 163

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-17.718	6.651	12.17	13.07	0.9	-16.818	6.651	12.17	13.07	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 36	ini.	-39.09	-179	-0.0000192	0.0001872	0.0035	0.9		2948.11	2948.11	No	75.43	Si
SLU 36	fin.	149.81	-645	-0.0000755	0.0001872	0.0035	0.9		2942.43	2942.43	No	19.64	Si
SLU 72	ini.	-4.1	-312	-0.000002	0.0001872	0.0035	0.9		2948.11	2948.11	No	718.56	Si
SLU 72	fin.	140.02	-702	-0.0000704	0.0001872	0.0035	0.9		2942.43	2942.43	No	21.01	Si
SLU 77	ini.	-11.88	-296	-0.0000058	0.0001872	0.0035	0.9		2948.11	2948.11	No	248.15	Si
SLU 77	fin.	144.74	-719	-0.0000729	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.33	Si
SLU 80	ini.	-22.96	-257	-0.0000113	0.0001872	0.0035	0.9		2948.11	2948.11	No	128.41	Si
SLU 80	fin.	146.56	-699	-0.0000738	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.08	Si
SLU 28	ini.	-20.23	-234	-0.0000099	0.0001872	0.0035	0.9		2948.11	2948.11	No	145.73	Si
SLU 28	fin.	143.27	-647	-0.0000721	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.54	Si
SLU 70	ini.	-3.63	-323	-0.0000018	0.0001872	0.0035	0.9		2948.11	2948.11	No	811.18	Si
SLU 70	fin.	146.4	-728	-0.0000737	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.1	Si
SLU 38	ini.	-39.55	-168	-0.0000195	0.0001872	0.0035	0.9		2948.11	2948.11	No	74.53	Si
SLU 38	fin.	143.43	-618	-0.0000722	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.51	Si
SLU 78	ini.	-22.49	-268	-0.000011	0.0001872	0.0035	0.9		2948.11	2948.11	No	131.09	Si
SLU 78	fin.	152.94	-726	-0.0000771	0.0001872	0.0035	0.9		2942.43	2942.43	No	19.24	Si
SLU 35	ini.	-28.48	-207	-0.000014	0.0001872	0.0035	0.9		2948.11	2948.11	No	103.53	Si
SLU 35	fin.	141.62	-638	-0.0000712	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.78	Si
SLU 79	ini.	-12.35	-285	-0.000006	0.0001872	0.0035	0.9		2948.11	2948.11	No	238.74	Si
SLU 79	fin.	138.36	-692	-0.0000696	0.0001872	0.0035	0.9		2942.43	2942.43	No	21.27	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	-22.96	-45	0.9	0	1875	7137	4043	2295	6338	No	142.36	Si
SLU 80	fin.	146.56	779	0.9	0	1875	7137	4043	2295	6338	No	8.14	Si
SLU 28	ini.	-20.23	-97	0.9	0	1875	7137	4043	2295	6338	No	65.04	Si
SLU 28	fin.	143.27	791	0.9	0	1875	7137	4043	2295	6338	No	8.01	Si
SLU 35	ini.	-28.48	-15	0.9	0	1875	7137	4043	2295	6338	No	423.38	Si
SLU 35	fin.	141.62	754	0.9	0	1875	7137	4043	2295	6338	No	8.41	Si
SLU 77	ini.	-11.88	-110	0.9	0	1875	7137	4043	2295	6338	No	57.37	Si
SLU 77	fin.	144.74	791	0.9	0	1875	7137	4043	2295	6338	No	8.02	Si
SLU 78	ini.	-22.49	-68	0.9	0	1875	7137	4043	2295	6338	No	93.08	Si
SLU 78	fin.	152.94	826	0.9	0	1875	7137	4043	2295	6338	No	7.67	Si
SLU 72	ini.	-4.1	-169	0.9	0	1875	7137	4043	2295	6338	No	37.42	Si
SLU 72	fin.	140.02	781	0.9	0	1875	7137	4043	2295	6338	No	8.11	Si
SLU 27	ini.	-9.62	-140	0.9	0	1875	7137	4043	2295	6338	No	45.33	Si
SLU 27	fin.	135.08	756	0.9	0	1875	7137	4043	2295	6338	No	8.38	Si
SLU 70	ini.	-3.63	-193	0.9	0	1875	7137	4043	2295	6338	No	32.85	Si
SLU 70	fin.	146.4	828	0.9	0	1875	7137	4043	2295	6338	No	7.65	Si
SLU 69	ini.	6.98	-235	0.9	0	1875	7137	4043	2295	6338	No	26.93	Si
SLU 69	fin.	138.2	793	0.9	0	1875	7137	4043	2295	6338	No	7.99	Si
SLU 36	ini.	-39.09	27	0.9	0	1875	7137	4043	2295	6338	No	231.25	Si
SLU 36	fin.	149.81	789	0.9	0	1875	7137	4043	2295	6338	No	8.03	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 12	ini.	1558.86	-4274	-0.0010473	0.0002807	0.0035	0.9		2967.55	2967.55		1.9	Si
SLV 12	fin.	-1160.07	741	-0.000712	0.0002807	0.0035	0.9		2973.32	2973.32		2.56	Si
SLV 5	ini.	-1511.74	3766	-0.0010026	0.0002807	0.0035	0.9		2973.32	2973.32		1.97	Si
SLV 5	fin.	1263.54	-1516	-0.0007953	0.0002807	0.0035	0.9		2967.55	2967.55		2.35	Si
SLV 16	ini.	1509.77	-4008	-0.0010033	0.0002807	0.0035	0.9		2967.55	2967.55		1.97	Si
SLV 16	fin.	-1204.89	953	-0.0007469	0.0002807	0.0035	0.9		2973.32	2973.32		2.47	Si
SLV 1	ini.	-1462.65	3500	-0.0009596	0.0002807	0.0035	0.9		2973.32	2973.32		2.03	Si
SLV 1	fin.	1308.36	-1727	-0.0008317	0.0002807	0.0035	0.9		2967.55	2967.55		2.27	Si
SLV 9	ini.	-923.77	2299	-0.0005377	0.0002807	0.0035	0.9		2973.32	2973.32		3.22	Si
SLV 9	fin.	754.54	-954	-0.0004234	0.0002807	0.0035	0.9		2967.55	2967.55		3.93	Si
SLV 2	ini.	-1127.16	2690	-0.0006868	0.0002807	0.0035	0.9		2973.32	2973.32		2.64	Si
SLV 2	fin.	1004.85	-1354	-0.0005971	0.0002807	0.0035	0.9		2967.55	2967.55		2.95	Si
SLV 6	ini.	-1285.86	3221	-0.0008115	0.0002807	0.0035	0.9		2973.32	2973.32		2.31	Si
SLV 6	fin.	1059.2	-1265	-0.0006371	0.0002807	0.0035	0.9		2967.55	2967.55		2.8	Si
SLV 8	ini.	970.89	-2807	-0.0005725	0.0002807	0.0035	0.9		2967.55	2967.55		3.06	Si
SLV 8	fin.	-651.07	179	-0.0003561	0.0002807	0.0035	0.9		2973.32	2973.32		4.57	Si
SLV 11	ini.	1332.98	-3729	-0.000852	0.0002807	0.0035	0.9		2967.55	2967.55		2.23	Si
SLV 11	fin.	-955.72	490	-0.0005603	0.0002807	0.0035	0.9		2973.32	2973.32		3.11	Si
SLV 15	ini.	1174.28	-3198	-0.0007247	0.0002807	0.0035	0.9		2967.55	2967.55		2.53	Si
SLV 15	fin.	-901.37	580	-0.000522	0.0002807	0.0035	0.9		2973.32	2973.32		3.3	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 11	ini.	1332.98	-5421	0.9	0	2813	7137	6064	2295	8359		1.54	Si
SLV 11	fin.	-955.72	-4092	0.9	0	2813	7137	6064	2295	8359		2.04	Si
SLV 1	ini.	-1462.65	5720	0.9	0	2813	7137	6064	2295	8359		1.46	Si
SLV 1	fin.	1308.36	5749	0.9	0	2813	7137	6064	2295	8359		1.45	Si
SLV 16	ini.	1509.77	-6065	0.9	0	2813	7137	6064	2295	8359		1.38	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	fin.	-1204.89	-5137	0.9	0	2813	7137	6064	2295	8359		1.63	Si
SLV 15	ini.	1174.28	-4737	0.9	0	2813	7137	6064	2295	8359		1.76	Si
SLV 15	fin.	-901.37	-3858	0.9	0	2813	7137	6064	2295	8359		2.17	Si
SLV 2	ini.	-1127.16	4392	0.9	0	2813	7137	6064	2295	8359		1.9	Si
SLV 2	fin.	1004.85	4470	0.9	0	2813	7137	6064	2295	8359		1.87	Si
SLV 8	ini.	970.89	-3995	0.9	0	2813	7137	6064	2295	8359		2.09	Si
SLV 8	fin.	-651.07	-2741	0.9	0	2813	7137	6064	2295	8359		3.05	Si
SLV 5	ini.	-1511.74	5970	0.9	0	2813	7137	6064	2295	8359		1.4	Si
SLV 5	fin.	1263.54	5565	0.9	0	2813	7137	6064	2295	8359		1.5	Si
SLV 6	ini.	-1285.86	5076	0.9	0	2813	7137	6064	2295	8359		1.65	Si
SLV 6	fin.	1059.2	4704	0.9	0	2813	7137	6064	2295	8359		1.78	Si
SLV 12	ini.	1558.86	-6315	0.9	0	2813	7137	6064	2295	8359		1.32	Si
SLV 12	fin.	-1160.07	-4953	0.9	0	2813	7137	6064	2295	8359		1.69	Si
SLV 9	ini.	-923.77	3650	0.9	0	2813	7137	6064	2295	8359		2.29	Si
SLV 9	fin.	754.54	3353	0.9	0	2813	7137	6064	2295	8359		2.49	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.904	SLV 12	Si
V_SLV	1.324	SLV 12	Si
PF_SLU	19.24	SLU 78	Si
V_SLU	7.65	SLU 70	Si

Trave di accoppiamento 164

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-17.718	6.651	14.87	15.32	0.45	-16.818	6.651	14.87	15.32	0.45	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-73.4	167	-0.0001519	0.0001872	0.0035	0.45		744.65	744.65	No	10.14	Si
SLU 74	fin.	-106.84	52	-0.0002291	0.0001872	0.0035	0.45		744.65	744.65	No	6.97	Si
SLU 69	ini.	-93.85	141	-0.0001983	0.0001872	0.0035	0.45		744.65	744.65	No	7.93	Si
SLU 69	fin.	-114.6	61	-0.0002479	0.0001872	0.0035	0.45		744.65	744.65	No	6.5	Si
SLU 66	ini.	-69.3	169	-0.0001428	0.0001872	0.0035	0.45		744.65	744.65	No	10.75	Si
SLU 66	fin.	-112.77	25	-0.0002435	0.0001872	0.0035	0.45		744.65	744.65	No	6.6	Si
SLU 71	ini.	-90.71	129	-0.000191	0.0001872	0.0035	0.45		744.65	744.65	No	8.21	Si
SLU 71	fin.	-105.3	67	-0.0002254	0.0001872	0.0035	0.45		744.65	744.65	No	7.07	Si
SLU 48	ini.	-74.18	142	-0.0001536	0.0001872	0.0035	0.45		744.65	744.65	No	10.04	Si
SLU 48	fin.	-106.23	31	-0.0002276	0.0001872	0.0035	0.45		744.65	744.65	No	7.01	Si
SLU 45	ini.	-49.63	171	-0.0001004	0.0001872	0.0035	0.45		744.65	744.65	No	15	Si
SLU 45	fin.	-104.4	-5	-0.0002232	0.0001872	0.0035	0.45		744.65	744.65	No	7.13	Si
SLU 78	ini.	-101.71	131	-0.0002168	0.0001872	0.0035	0.45		744.65	744.65	No	7.32	Si
SLU 78	fin.	-104.22	104	-0.0002228	0.0001872	0.0035	0.45		744.65	744.65	No	7.15	Si
SLU 67	ini.	-73.06	162	-0.0001511	0.0001872	0.0035	0.45		744.65	744.65	No	10.19	Si
SLU 67	fin.	-108.33	41	-0.0002327	0.0001872	0.0035	0.45		744.65	744.65	No	6.87	Si
SLU 70	ini.	-97.61	133	-0.0002071	0.0001872	0.0035	0.45		744.65	744.65	No	7.63	Si
SLU 70	fin.	-110.15	77	-0.0002371	0.0001872	0.0035	0.45		744.65	744.65	No	6.76	Si
SLU 77	ini.	-97.95	138	-0.0002079	0.0001872	0.0035	0.45		744.65	744.65	No	7.6	Si
SLU 77	fin.	-108.66	88	-0.0002335	0.0001872	0.0035	0.45		744.65	744.65	No	6.85	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	-97.95	611	0.45	0	856	3568	2021	1148	3169	No	5.19	Si
SLU 77	fin.	-108.66	-667	0.45	0	856	3568	2021	1148	3169	No	4.75	Si
SLU 67	ini.	-73.06	498	0.45	0	856	3568	2021	1148	3169	No	6.36	Si
SLU 67	fin.	-108.33	-640	0.45	0	856	3568	2021	1148	3169	No	4.95	Si
SLU 69	ini.	-93.85	593	0.45	0	856	3568	2021	1148	3169	No	5.34	Si
SLU 69	fin.	-114.6	-685	0.45	0	856	3568	2021	1148	3169	No	4.63	Si
SLU 66	ini.	-69.3	484	0.45	0	856	3568	2021	1148	3169	No	6.55	Si
SLU 66	fin.	-112.77	-655	0.45	0	856	3568	2021	1148	3169	No	4.84	Si
SLU 78	ini.	-101.71	626	0.45	0	856	3568	2021	1148	3169	No	5.06	Si
SLU 78	fin.	-104.22	-652	0.45	0	856	3568	2021	1148	3169	No	4.86	Si
SLU 71	ini.	-90.71	571	0.45	0	856	3568	2021	1148	3169	No	5.55	Si
SLU 71	fin.	-105.3	-640	0.45	0	856	3568	2021	1148	3169	No	4.95	Si
SLU 70	ini.	-97.61	608	0.45	0	856	3568	2021	1148	3169	No	5.21	Si
SLU 70	fin.	-110.15	-670	0.45	0	856	3568	2021	1148	3169	No	4.73	Si
SLU 48	ini.	-74.18	495	0.45	0	856	3568	2021	1148	3169	No	6.4	Si
SLU 48	fin.	-106.23	-626	0.45	0	856	3568	2021	1148	3169	No	5.06	Si
SLU 72	ini.	-94.47	585	0.45	0	856	3568	2021	1148	3169	No	5.41	Si
SLU 72	fin.	-100.86	-626	0.45	0	856	3568	2021	1148	3169	No	5.07	Si
SLU 74	ini.	-73.4	501	0.45	0	856	3568	2021	1148	3169	No	6.32	Si
SLU 74	fin.	-106.84	-637	0.45	0	856	3568	2021	1148	3169	No	4.98	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 5	ini.	-566.23	-962	-0.0018031	0.0002807	0.0035	0.45		745.02	745.02		1.32	Si
SLV 5	fin.	554.69	2276	-0.0017522	0.0002807	0.0035	0.45		742.08	742.08		1.34	Si
SLV 7	ini.	238.61	657	-0.0005589	0.0002807	0.0035	0.45		742.08	742.08		3.11	Si
SLV 7	fin.	-392.91	-1171	-0.00105	0.0002807	0.0035	0.45		745.02	745.02		1.9	Si
SLV 15	ini.	317.1	838	-0.0007965	0.0002807	0.0035	0.45		742.08	742.08		2.34	Si
SLV 15	fin.	-485.6	-1527	-0.0014146	0.0002807	0.0035	0.45		745.02	745.02		1.53	Si
SLV 1	ini.	-513.28	-879	-0.0015382	0.0002807	0.0035	0.45		745.02	745.02		1.45	Si
SLV 1	fin.	490.22	2042	-0.0014424	0.0002807	0.0035	0.45		742.08	742.08		1.51	Si
SLV 9	ini.	-389.55	-592	-0.0010379	0.0002807	0.0035	0.45		745.02	745.02		1.91	Si
SLV 9	fin.	347.23	1515	-0.0008956	0.0002807	0.0035	0.45		742.08	742.08		2.14	Si
SLV 16	ini.	455.57	1165	-0.0012958	0.0002807	0.0035	0.45		742.08	742.08		1.63	Si
SLV 16	fin.	-639.53	-2048	-0.0022592	0.0002807	0.0035	0.45		745.02	745.02		1.16	Si
SLV 12	ini.	508.52	1247	-0.0015248	0.0002807	0.0035	0.45		742.08	742.08		1.46	Si
SLV 12	fin.	-704	-2282	-0.0027728	0.0002807	0.0035	0.45		745.02	745.02		1.06	Si
SLV 8	ini.	331.84	877	-0.0008444	0.0002807	0.0035	0.45		742.08	742.08		2.24	Si
SLV 8	fin.	-496.54	-1522	-0.0014624	0.0002807	0.0035	0.45		745.02	745.02		1.5	Si
SLV 6	ini.	-472.99	-741	-0.0013609	0.0002807	0.0035	0.45		745.02	745.02		1.58	Si
SLV 6	fin.	451.06	1925	-0.0012775	0.0002807	0.0035	0.45		742.08	742.08		1.65	Si
SLV 11	ini.	415.29	1027	-0.0011379	0.0002807	0.0035	0.45		742.08	742.08		1.79	Si
SLV 11	fin.	-600.37	-1931	-0.0020006	0.0002807	0.0035	0.45		745.02	745.02		1.24	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	317.1	-1075	0.45	0	1156	3568	3032	1148	4179		3.89	Si
SLV 15	fin.	-485.6	-1773	0.45	0	1156	3568	3032	1148	4179		2.36	Si
SLV 16	ini.	455.57	-1594	0.45	0	1156	3568	3032	1148	4179		2.62	Si
SLV 16	fin.	-639.53	-2296	0.45	0	1156	3568	3032	1148	4179		1.82	Si
SLV 9	ini.	-389.55	1639	0.45	0	1156	3568	3032	1148	4179		2.55	Si
SLV 9	fin.	347.23	969	0.45	0	1156	3568	3032	1148	4179		4.31	Si
SLV 8	ini.	331.84	-1132	0.45	0	1156	3568	3032	1148	4179		3.69	Si
SLV 8	fin.	-496.54	-1826	0.45	0	1156	3568	3032	1148	4179		2.29	Si
SLV 5	ini.	-566.23	2313	0.45	0	1156	3568	3032	1148	4179		1.81	Si
SLV 5	fin.	554.69	1651	0.45	0	1156	3568	3032	1148	4179		2.53	Si
SLV 12	ini.	508.52	-1806	0.45	0	1156	3568	3032	1148	4179		2.31	Si
SLV 12	fin.	-704	-2509	0.45	0	1156	3568	3032	1148	4179		1.67	Si
SLV 2	ini.	-374.81	1582	0.45	0	1156	3568	3032	1148	4179		2.64	Si
SLV 2	fin.	336.29	916	0.45	0	1156	3568	3032	1148	4179		4.56	Si
SLV 6	ini.	-472.99	1964	0.45	0	1156	3568	3032	1148	4179		2.13	Si
SLV 6	fin.	451.06	1299	0.45	0	1156	3568	3032	1148	4179		3.22	Si
SLV 11	ini.	415.29	-1457	0.45	0	1156	3568	3032	1148	4179		2.87	Si
SLV 11	fin.	-600.37	-2157	0.45	0	1156	3568	3032	1148	4179		1.94	Si
SLV 1	ini.	-513.28	2101	0.45	0	1156	3568	3032	1148	4179		1.99	Si
SLV 1	fin.	490.22	1439	0.45	0	1156	3568	3032	1148	4179		2.9	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.058	SLV 12	Si
V_SLV	1.666	SLV 12	Si
PF_SLU	6.498	SLU 69	Si
V_SLU	4.629	SLU 69	Si

Trave di accoppiamento 165

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-12.838	6.651	12.17	13.07	0.9	-11.938	6.651	12.17	13.07	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	218.43	-1197	-0.0001117	0.0001872	0.0035	0.9		2942.43	2942.43	No	13.47	Si
SLU 78	fin.	137.48	-980	-0.0000691	0.0001872	0.0035	0.9		2942.43	2942.43	No	21.4	Si
SLU 70	ini.	214.26	-1184	-0.0001095	0.0001872	0.0035	0.9		2942.43	2942.43	No	13.73	Si
SLU 70	fin.	142.85	-983	-0.0000719	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.6	Si
SLU 80	ini.	211.24	-1152	-0.0001079	0.0001872	0.0035	0.9		2942.43	2942.43	No	13.93	Si
SLU 80	fin.	127.79	-933	-0.0000641	0.0001872	0.0035	0.9		2942.43	2942.43	No	23.02	Si
SLU 56	ini.	200.73	-1085	-0.0001023	0.0001872	0.0035	0.9		2942.43	2942.43	No	14.66	Si
SLU 56	fin.	119.35	-873	-0.0000598	0.0001872	0.0035	0.9		2942.43	2942.43	No	24.65	Si
SLU 74	ini.	198	-1106	-0.0001008	0.0001872	0.0035	0.9		2942.43	2942.43	No	14.86	Si
SLU 74	fin.	130.68	-921	-0.0000656	0.0001872	0.0035	0.9		2942.43	2942.43	No	22.52	Si
SLU 79	ini.	215.41	-1161	-0.0001101	0.0001872	0.0035	0.9		2942.43	2942.43	No	13.66	Si
SLU 79	fin.	123.95	-926	-0.0000621	0.0001872	0.0035	0.9		2942.43	2942.43	No	23.74	Si
SLU 71	ini.	211.25	-1147	-0.0001079	0.0001872	0.0035	0.9		2942.43	2942.43	No	13.93	Si
SLU 71	fin.	129.33	-929	-0.0000649	0.0001872	0.0035	0.9		2942.43	2942.43	No	22.75	Si
SLU 77	ini.	222.6	-1206	-0.000114	0.0001872	0.0035	0.9		2942.43	2942.43	No	13.22	Si
SLU 77	fin.	133.64	-974	-0.0000671	0.0001872	0.0035	0.9		2942.43	2942.43	No	22.02	Si
SLU 69	ini.	218.44	-1192	-0.0001117	0.0001872	0.0035	0.9		2942.43	2942.43	No	13.47	Si
SLU 69	fin.	139.01	-977	-0.0000699	0.0001872	0.0035	0.9		2942.43	2942.43	No	21.17	Si
SLU 72	ini.	207.07	-1139	-0.0001057	0.0001872	0.0035	0.9		2942.43	2942.43	No	14.21	Si
SLU 72	fin.	133.17	-935	-0.0000669	0.0001872	0.0035	0.9		2942.43	2942.43	No	22.1	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	211.24	-882	0.9	0	1875	7137	4043	2295	6338	No	7.19	Si
SLU 80	fin.	127.79	525	0.9	0	1875	7137	4043	2295	6338	No	12.06	Si
SLU 79	ini.	215.41	-900	0.9	0	1875	7137	4043	2295	6338	No	7.04	Si
SLU 79	fin.	123.95	512	0.9	0	1875	7137	4043	2295	6338	No	12.38	Si
SLU 78	ini.	218.43	-924	0.9	0	1875	7137	4043	2295	6338	No	6.86	Si
SLU 78	fin.	137.48	576	0.9	0	1875	7137	4043	2295	6338	No	11	Si
SLU 48	ini.	196.57	-873	0.9	0	1875	7137	4043	2295	6338	No	7.26	Si
SLU 48	fin.	124.72	563	0.9	0	1875	7137	4043	2295	6338	No	11.26	Si
SLU 71	ini.	211.25	-917	0.9	0	1875	7137	4043	2295	6338	No	6.91	Si
SLU 71	fin.	129.33	564	0.9	0	1875	7137	4043	2295	6338	No	11.25	Si
SLU 72	ini.	207.07	-898	0.9	0	1875	7137	4043	2295	6338	No	7.06	Si
SLU 72	fin.	133.17	577	0.9	0	1875	7137	4043	2295	6338	No	10.98	Si
SLU 70	ini.	214.26	-940	0.9	0	1875	7137	4043	2295	6338	No	6.74	Si
SLU 70	fin.	142.85	628	0.9	0	1875	7137	4043	2295	6338	No	10.1	Si
SLU 69	ini.	218.44	-959	0.9	0	1875	7137	4043	2295	6338	No	6.61	Si
SLU 69	fin.	139.01	614	0.9	0	1875	7137	4043	2295	6338	No	10.32	Si
SLU 56	ini.	200.73	-856	0.9	0	1875	7137	4043	2295	6338	No	7.4	Si
SLU 56	fin.	119.35	511	0.9	0	1875	7137	4043	2295	6338	No	12.4	Si
SLU 77	ini.	222.6	-943	0.9	0	1875	7137	4043	2295	6338	No	6.72	Si
SLU 77	fin.	133.64	563	0.9	0	1875	7137	4043	2295	6338	No	11.27	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 12	ini.	982.89	-2341	-0.0005811	0.0002807	0.0035	0.9		2967.55	2967.55		3.02	Si
SLV 12	fin.	-736.85	799	-0.0004109	0.0002807	0.0035	0.9		2973.32	2973.32		4.04	Si
SLV 14	ini.	1269.58	-2752	-0.0008002	0.0002807	0.0035	0.9		2967.55	2967.55		2.34	Si
SLV 14	fin.	-1057.48	1448	-0.0006344	0.0002807	0.0035	0.9		2973.32	2973.32		2.81	Si
SLV 13	ini.	942.08	-2155	-0.0005519	0.0002807	0.0035	0.9		2967.55	2967.55		3.15	Si
SLV 13	fin.	-730.53	863	-0.0004068	0.0002807	0.0035	0.9		2973.32	2973.32		4.07	Si
SLV 2	ini.	-951.13	1244	-0.0005571	0.0002807	0.0035	0.9		2973.32	2973.32		3.13	Si
SLV 2	fin.	1143.23	-2460	-0.0007007	0.0002807	0.0035	0.9		2967.55	2967.55		2.6	Si
SLV 1	ini.	-1278.62	1841	-0.0008056	0.0002807	0.0035	0.9		2973.32	2973.32		2.33	Si
SLV 1	fin.	1470.17	-3044	-0.0009685	0.0002807	0.0035	0.9		2967.55	2967.55		2.02	Si
SLV 15	ini.	1193.19	-2656	-0.0007395	0.0002807	0.0035	0.9		2967.55	2967.55		2.49	Si
SLV 15	fin.	-962.7	1239	-0.0005653	0.0002807	0.0035	0.9		2973.32	2973.32		3.09	Si
SLV 4	ini.	-700.02	743	-0.0003871	0.0002807	0.0035	0.9		2973.32	2973.32		4.25	Si
SLV 4	fin.	911.06	-2084	-0.0005299	0.0002807	0.0035	0.9		2967.55	2967.55		3.26	Si
SLV 3	ini.	-1027.51	1340	-0.0006123	0.0002807	0.0035	0.9		2973.32	2973.32		2.89	Si
SLV 3	fin.	1238.01	-2668	-0.0007749	0.0002807	0.0035	0.9		2967.55	2967.55		2.4	Si
SLV 16	ini.	1520.68	-3253	-0.001013	0.0002807	0.0035	0.9		2967.55	2967.55		1.95	Si
SLV 16	fin.	-1289.65	1824	-0.0008145	0.0002807	0.0035	0.9		2973.32	2973.32		2.31	Si
SLV 5	ini.	-740.83	929	-0.0004135	0.0002807	0.0035	0.9		2973.32	2973.32		4.01	Si
SLV 5	fin.	917.37	-2020	-0.0005344	0.0002807	0.0035	0.9		2967.55	2967.55		3.23	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	1520.68	-6386	0.9	0	2813	7137	6064	2295	8359		1.31	Si
SLV 16	fin.	-1289.65	-4994	0.9	0	2813	7137	6064	2295	8359		1.67	Si
SLV 12	ini.	982.89	-4253	0.9	0	2813	7137	6064	2295	8359		1.97	Si
SLV 12	fin.	-736.85	-2747	0.9	0	2813	7137	6064	2295	8359		3.04	Si
SLV 14	ini.	1269.58	-5241	0.9	0	2813	7137	6064	2295	8359		1.59	Si
SLV 14	fin.	-1057.48	-4157	0.9	0	2813	7137	6064	2295	8359		2.01	Si
SLV 3	ini.	-1027.51	4252	0.9	0	2813	7137	6064	2295	8359		1.97	Si
SLV 3	fin.	1238.01	4892	0.9	0	2813	7137	6064	2295	8359		1.71	Si
SLV 2	ini.	-951.13	4031	0.9	0	2813	7137	6064	2295	8359		2.07	Si
SLV 2	fin.	1143.23	4454	0.9	0	2813	7137	6064	2295	8359		1.88	Si
SLV 4	ini.	-700.02	2887	0.9	0	2813	7137	6064	2295	8359		2.9	Si
SLV 4	fin.	911.06	3617	0.9	0	2813	7137	6064	2295	8359		2.31	Si
SLV 13	ini.	942.08	-3876	0.9	0	2813	7137	6064	2295	8359		2.16	Si
SLV 13	fin.	-730.53	-2883	0.9	0	2813	7137	6064	2295	8359		2.9	Si
SLV 5	ini.	-740.83	3263	0.9	0	2813	7137	6064	2295	8359		2.56	Si
SLV 5	fin.	917.37	3482	0.9	0	2813	7137	6064	2295	8359		2.4	Si
SLV 1	ini.	-1278.62	5396	0.9	0	2813	7137	6064	2295	8359		1.55	Si
SLV 1	fin.	1470.17	5728	0.9	0	2813	7137	6064	2295	8359		1.46	Si
SLV 15	ini.	1193.19	-5020	0.9	0	2813	7137	6064	2295	8359		1.66	Si
SLV 15	fin.	-962.7	-3719	0.9	0	2813	7137	6064	2295	8359		2.25	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.951	SLV 16	Si
V_SLV	1.309	SLV 16	Si
PF_SLU	13.218	SLU 77	Si
V_SLU	6.609	SLU 69	Si

Trave di accoppiamento 166

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-12.838	6.651	14.87	15.32	0.45	-11.938	6.651	14.87	15.32	0.45	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-97.25	-76	-0.0002063	0.0001872	0.0035	0.45		744.65	744.65	No	7.66	Si
SLU 78	fin.	-129.27	-169	-0.0002845	0.0001872	0.0035	0.45		744.65	744.65	No	5.76	Si
SLU 27	ini.	-87.67	-67	-0.000184	0.0001872	0.0035	0.45		744.65	744.65	No	8.49	Si
SLU 27	fin.	-117.39	-154	-0.0002548	0.0001872	0.0035	0.45		744.65	744.65	No	6.34	Si
SLU 69	ini.	-96.95	-74	-0.0002056	0.0001872	0.0035	0.45		744.65	744.65	No	7.68	Si
SLU 69	fin.	-129.32	-169	-0.0002847	0.0001872	0.0035	0.45		744.65	744.65	No	5.76	Si
SLU 70	ini.	-99.2	-81	-0.0002109	0.0001872	0.0035	0.45		744.65	744.65	No	7.51	Si
SLU 70	fin.	-127.1	-162	-0.0002791	0.0001872	0.0035	0.45		744.65	744.65	No	5.86	Si
SLU 77	ini.	-95	-69	-0.000201	0.0001872	0.0035	0.45		744.65	744.65	No	7.84	Si
SLU 77	fin.	-131.48	-176	-0.0002902	0.0001872	0.0035	0.45		744.65	744.65	No	5.66	Si
SLU 80	ini.	-89.62	-67	-0.0001885	0.0001872	0.0035	0.45		744.65	744.65	No	8.31	Si
SLU 80	fin.	-121.99	-162	-0.0002662	0.0001872	0.0035	0.45		744.65	744.65	No	6.1	Si
SLU 35	ini.	-85.73	-62	-0.0001796	0.0001872	0.0035	0.45		744.65	744.65	No	8.69	Si
SLU 35	fin.	-119.56	-161	-0.0002602	0.0001872	0.0035	0.45		744.65	744.65	No	6.23	Si
SLU 72	ini.	-91.57	-72	-0.000193	0.0001872	0.0035	0.45		744.65	744.65	No	8.13	Si
SLU 72	fin.	-119.83	-155	-0.0002609	0.0001872	0.0035	0.45		744.65	744.65	No	6.21	Si
SLU 71	ini.	-89.32	-66	-0.0001878	0.0001872	0.0035	0.45		744.65	744.65	No	8.34	Si
SLU 71	fin.	-122.04	-161	-0.0002664	0.0001872	0.0035	0.45		744.65	744.65	No	6.1	Si
SLU 79	ini.	-87.37	-61	-0.0001833	0.0001872	0.0035	0.45		744.65	744.65	No	8.52	Si
SLU 79	fin.	-124.21	-168	-0.0002718	0.0001872	0.0035	0.45		744.65	744.65	No	6	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 74	ini.	-86.34	491	0.45	0	856	3568	2021	1148	3169	No	6.45	Si
SLU 74	fin.	-114.76	-593	0.45	0	856	3568	2021	1148	3169	No	5.34	Si
SLU 69	ini.	-96.95	545	0.45	0	856	3568	2021	1148	3169	No	5.82	Si
SLU 69	fin.	-129.32	-660	0.45	0	856	3568	2021	1148	3169	No	4.8	Si
SLU 71	ini.	-89.32	508	0.45	0	856	3568	2021	1148	3169	No	6.23	Si
SLU 71	fin.	-122.04	-626	0.45	0	856	3568	2021	1148	3169	No	5.07	Si
SLU 35	ini.	-85.73	477	0.45	0	856	3568	2021	1148	3169	No	6.65	Si
SLU 35	fin.	-119.56	-598	0.45	0	856	3568	2021	1148	3169	No	5.3	Si
SLU 70	ini.	-99.2	553	0.45	0	856	3568	2021	1148	3169	No	5.74	Si
SLU 70	fin.	-127.1	-652	0.45	0	856	3568	2021	1148	3169	No	4.86	Si
SLU 78	ini.	-97.25	545	0.45	0	856	3568	2021	1148	3169	No	5.81	Si
SLU 78	fin.	-129.27	-660	0.45	0	856	3568	2021	1148	3169	No	4.8	Si
SLU 79	ini.	-87.37	501	0.45	0	856	3568	2021	1148	3169	No	6.32	Si
SLU 79	fin.	-124.21	-633	0.45	0	856	3568	2021	1148	3169	No	5.01	Si
SLU 80	ini.	-89.62	509	0.45	0	856	3568	2021	1148	3169	No	6.22	Si
SLU 80	fin.	-121.99	-625	0.45	0	856	3568	2021	1148	3169	No	5.07	Si
SLU 77	ini.	-95	537	0.45	0	856	3568	2021	1148	3169	No	5.9	Si
SLU 77	fin.	-131.48	-668	0.45	0	856	3568	2021	1148	3169	No	4.75	Si
SLU 72	ini.	-91.57	516	0.45	0	856	3568	2021	1148	3169	No	6.14	Si
SLU 72	fin.	-119.83	-618	0.45	0	856	3568	2021	1148	3169	No	5.13	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 2	ini.	-539.46	-1484	-0.0016638	0.0002807	0.0035	0.45		745.02	745.02		1.38	Si
SLV 2	fin.	419.89	1336	-0.0011554	0.0002807	0.0035	0.45		742.08	742.08		1.77	Si
SLV 16	ini.	614.54	1917	-0.0021046	0.0002807	0.0035	0.45		742.08	742.08		1.21	Si
SLV 16	fin.	-727.22	-2014	-0.0029885	0.0002807	0.0035	0.45		745.02	745.02		1.02	Si
SLV 5	ini.	-491.61	-1336	-0.0014407	0.0002807	0.0035	0.45		745.02	745.02		1.52	Si
SLV 5	fin.	370.85	1178	-0.0009766	0.0002807	0.0035	0.45		742.08	742.08		2	Si
SLV 14	ini.	478.08	1516	-0.0013898	0.0002807	0.0035	0.45		742.08	742.08		1.55	Si
SLV 14	fin.	-592.68	-1629	-0.001954	0.0002807	0.0035	0.45		745.02	745.02		1.26	Si
SLV 1	ini.	-717.67	-2004	-0.0028977	0.0002807	0.0035	0.45		745.02	745.02		1.04	Si
SLV 1	fin.	597.26	1849	-0.0019949	0.0002807	0.0035	0.45		742.08	742.08		1.24	Si
SLV 12	ini.	388.48	1249	-0.0010392	0.0002807	0.0035	0.45		742.08	742.08		1.91	Si
SLV 12	fin.	-500.81	-1343	-0.0014814	0.0002807	0.0035	0.45		745.02	745.02		1.49	Si
SLV 15	ini.	436.33	1398	-0.0012189	0.0002807	0.0035	0.45		742.08	742.08		1.7	Si
SLV 15	fin.	-549.85	-1501	-0.0017164	0.0002807	0.0035	0.45		745.02	745.02		1.35	Si
SLV 3	ini.	-581.21	-1603	-0.0018868	0.0002807	0.0035	0.45		745.02	745.02		1.28	Si
SLV 3	fin.	462.72	1464	-0.0013252	0.0002807	0.0035	0.45		742.08	742.08		1.6	Si
SLV 13	ini.	299.87	997	-0.0007419	0.0002807	0.0035	0.45		742.08	742.08		2.47	Si
SLV 13	fin.	-415.31	-1115	-0.0011323	0.0002807	0.0035	0.45		745.02	745.02		1.79	Si
SLV 4	ini.	-403	-1084	-0.0010867	0.0002807	0.0035	0.45		745.02	745.02		1.85	Si
SLV 4	fin.	285.35	950	-0.000697	0.0002807	0.0035	0.45		742.08	742.08		2.6	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	-717.67	2670	0.45	0	1156	3568	3032	1148	4179		1.57	Si
SLV 1	fin.	597.26	2010	0.45	0	1156	3568	3032	1148	4179		2.08	Si
SLV 15	ini.	436.33	-1431	0.45	0	1156	3568	3032	1148	4179		2.92	Si
SLV 15	fin.	-549.85	-2078	0.45	0	1156	3568	3032	1148	4179		2.01	Si
SLV 5	ini.	-491.61	1866	0.45	0	1156	3568	3032	1148	4179		2.24	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	fin.	370.85	1206	0.45	0	1156	3568	3032	1148	4179		3.47	Si
SLV 2	ini.	-539.46	2035	0.45	0	1156	3568	3032	1148	4179		2.05	Si
SLV 2	fin.	419.89	1377	0.45	0	1156	3568	3032	1148	4179		3.04	Si
SLV 14	ini.	478.08	-1581	0.45	0	1156	3568	3032	1148	4179		2.64	Si
SLV 14	fin.	-592.68	-2230	0.45	0	1156	3568	3032	1148	4179		1.87	Si
SLV 4	ini.	-403	1551	0.45	0	1156	3568	3032	1148	4179		2.69	Si
SLV 4	fin.	285.35	896	0.45	0	1156	3568	3032	1148	4179		4.67	Si
SLV 12	ini.	388.48	-1261	0.45	0	1156	3568	3032	1148	4179		3.31	Si
SLV 12	fin.	-500.81	-1907	0.45	0	1156	3568	3032	1148	4179		2.19	Si
SLV 16	ini.	614.54	-2065	0.45	0	1156	3568	3032	1148	4179		2.02	Si
SLV 16	fin.	-727.22	-2711	0.45	0	1156	3568	3032	1148	4179		1.54	Si
SLV 13	ini.	299.87	-946	0.45	0	1156	3568	3032	1148	4179		4.42	Si
SLV 13	fin.	-415.31	-1596	0.45	0	1156	3568	3032	1148	4179		2.62	Si
SLV 3	ini.	-581.21	2186	0.45	0	1156	3568	3032	1148	4179		1.91	Si
SLV 3	fin.	462.72	1529	0.45	0	1156	3568	3032	1148	4179		2.73	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.024	SLV 16	Si
V_SLV	1.542	SLV 16	Si
PF_SLU	5.663	SLU 77	Si
V_SLU	4.745	SLU 77	Si

Trave di accoppiamento 167

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-7.958	6.651	12.17	13.07	0.9	-7.058	6.651	12.17	13.07	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 52	ini.	-50.38	-254	-0.0000248	0.0001872	0.0035	0.9		2948.11	2948.11	No	58.52	Si
SLU 52	fin.	123.87	-445	-0.0000621	0.0001872	0.0035	0.9		2942.43	2942.43	No	23.76	Si
SLU 44	ini.	-39.31	-268	-0.0000193	0.0001872	0.0035	0.9		2948.11	2948.11	No	75	Si
SLU 44	fin.	120.04	-435	-0.0000601	0.0001872	0.0035	0.9		2942.43	2942.43	No	24.51	Si
SLU 43	ini.	-46.83	-264	-0.0000231	0.0001872	0.0035	0.9		2948.11	2948.11	No	62.96	Si
SLU 43	fin.	131.5	-468	-0.000066	0.0001872	0.0035	0.9		2942.43	2942.43	No	22.38	Si
SLU 73	ini.	-49.6	-296	-0.0000244	0.0001872	0.0035	0.9		2948.11	2948.11	No	59.44	Si
SLU 73	fin.	130.53	-477	-0.0000655	0.0001872	0.0035	0.9		2942.43	2942.43	No	22.54	Si
SLU 64	ini.	-46.05	-306	-0.0000227	0.0001872	0.0035	0.9		2948.11	2948.11	No	64.02	Si
SLU 64	fin.	138.17	-500	-0.0000695	0.0001872	0.0035	0.9		2942.43	2942.43	No	21.3	Si
SLU 60	ini.	-62.64	-244	-0.000031	0.0001872	0.0035	0.9		2948.11	2948.11	No	47.06	Si
SLU 60	fin.	136.96	-482	-0.0000688	0.0001872	0.0035	0.9		2942.43	2942.43	No	21.48	Si
SLU 65	ini.	-38.53	-310	-0.000019	0.0001872	0.0035	0.9		2948.11	2948.11	No	76.51	Si
SLU 65	fin.	126.71	-467	-0.0000635	0.0001872	0.0035	0.9		2942.43	2942.43	No	23.22	Si
SLU 81	ini.	-61.86	-286	-0.0000306	0.0001872	0.0035	0.9		2948.11	2948.11	No	47.65	Si
SLU 81	fin.	143.62	-514	-0.0000723	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.49	Si
SLU 61	ini.	-58.13	-247	-0.0000287	0.0001872	0.0035	0.9		2948.11	2948.11	No	50.72	Si
SLU 61	fin.	130.08	-462	-0.0000653	0.0001872	0.0035	0.9		2942.43	2942.43	No	22.62	Si
SLU 82	ini.	-57.35	-288	-0.0000283	0.0001872	0.0035	0.9		2948.11	2948.11	No	51.4	Si
SLU 82	fin.	136.75	-495	-0.0000687	0.0001872	0.0035	0.9		2942.43	2942.43	No	21.52	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 73	ini.	-49.6	63	0.9	0	1875	7137	4043	2295	6338	No	100.86	Si
SLU 73	fin.	130.53	559	0.9	0	1875	7137	4043	2295	6338	No	11.34	Si
SLU 66	ini.	-15.48	-178	0.9	0	1875	7137	4043	2295	6338	No	35.6	Si
SLU 66	fin.	108.75	567	0.9	0	1875	7137	4043	2295	6338	No	11.17	Si
SLU 44	ini.	-39.31	9	0.9	0	1875	7137	4043	2295	6338	No	706.37	Si
SLU 44	fin.	120.04	565	0.9	0	1875	7137	4043	2295	6338	No	11.22	Si
SLU 81	ini.	-61.86	128	0.9	0	1875	7137	4043	2295	6338	No	49.47	Si
SLU 81	fin.	143.62	593	0.9	0	1875	7137	4043	2295	6338	No	10.68	Si
SLU 82	ini.	-57.35	108	0.9	0	1875	7137	4043	2295	6338	No	58.58	Si
SLU 82	fin.	136.75	565	0.9	0	1875	7137	4043	2295	6338	No	11.22	Si
SLU 45	ini.	-16.25	-157	0.9	0	1875	7137	4043	2295	6338	No	40.35	Si
SLU 45	fin.	102.08	544	0.9	0	1875	7137	4043	2295	6338	No	11.65	Si
SLU 65	ini.	-38.53	-12	0.9	0	1875	7137	4043	2295	6338	No	528.81	Si
SLU 65	fin.	126.71	588	0.9	0	1875	7137	4043	2295	6338	No	10.78	Si
SLU 64	ini.	-46.05	21	0.9	0	1875	7137	4043	2295	6338	No	298.72	Si
SLU 64	fin.	138.17	635	0.9	0	1875	7137	4043	2295	6338	No	9.98	Si
SLU 60	ini.	-62.64	149	0.9	0	1875	7137	4043	2295	6338	No	42.52	Si
SLU 60	fin.	136.96	570	0.9	0	1875	7137	4043	2295	6338	No	11.11	Si
SLU 43	ini.	-46.83	42	0.9	0	1875	7137	4043	2295	6338	No	150.28	Si
SLU 43	fin.	131.5	612	0.9	0	1875	7137	4043	2295	6338	No	10.35	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 11	ini.	-412.29	-119	-0.0002148	0.0002807	0.0035	0.9		2973.32	2973.32		7.21	Si
SLV 11	fin.	724.81	-2235	-0.000404	0.0002807	0.0035	0.9		2967.55	2967.55		4.09	Si
SLV 9	ini.	571.43	-534	-0.0003078	0.0002807	0.0035	0.9		2967.55	2967.55		5.19	Si
SLV 9	fin.	-803.63	2261	-0.0004551	0.0002807	0.0035	0.9		2973.32	2973.32		3.7	Si
SLV 4	ini.	-717.6	360	-0.0003984	0.0002807	0.0035	0.9		2973.32	2973.32		4.14	Si
SLV 4	fin.	969.65	-2748	-0.0005716	0.0002807	0.0035	0.9		2967.55	2967.55		3.06	Si
SLV 1	ini.	-642.48	513	-0.0003508	0.0002807	0.0035	0.9		2973.32	2973.32		4.63	Si
SLV 1	fin.	752.38	-2012	-0.000422	0.0002807	0.0035	0.9		2967.55	2967.55		3.94	Si
SLV 8	ini.	-648.94	90	-0.0003548	0.0002807	0.0035	0.9		2973.32	2973.32		4.58	Si
SLV 8	fin.	1015.45	-3022	-0.0006048	0.0002807	0.0035	0.9		2967.55	2967.55		2.92	Si
SLV 10	ini.	719.54	-721	-0.0004005	0.0002807	0.0035	0.9		2967.55	2967.55		4.12	Si
SLV 10	fin.	-966.06	2673	-0.0005677	0.0002807	0.0035	0.9		2973.32	2973.32		3.08	Si
SLV 3	ini.	-937.59	638	-0.0005475	0.0002807	0.0035	0.9		2973.32	2973.32		3.17	Si
SLV 3	fin.	1210.91	-3360	-0.0007534	0.0002807	0.0035	0.9		2967.55	2967.55		2.45	Si
SLV 7	ini.	-797.06	277	-0.0004507	0.0002807	0.0035	0.9		2973.32	2973.32		3.73	Si
SLV 7	fin.	1177.88	-3434	-0.0007275	0.0002807	0.0035	0.9		2967.55	2967.55		2.52	Si
SLV 14	ini.	860.08	-1082	-0.0004945	0.0002807	0.0035	0.9		2967.55	2967.55		3.45	Si
SLV 14	fin.	-999.1	2600	-0.0005916	0.0002807	0.0035	0.9		2973.32	2973.32		2.98	Si
SLV 13	ini.	640.09	-805	-0.00035	0.0002807	0.0035	0.9		2967.55	2967.55		4.64	Si
SLV 13	fin.	-757.84	1987	-0.0004247	0.0002807	0.0035	0.9		2973.32	2973.32		3.92	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 7	ini.	-797.06	3448	0.9	0	2813	7137	6064	2295	8359		2.42	Si
SLV 7	fin.	1177.88	4896	0.9	0	2813	7137	6064	2295	8359		1.71	Si
SLV 9	ini.	571.43	-2721	0.9	0	2813	7137	6064	2295	8359		3.07	Si
SLV 9	fin.	-803.63	-3290	0.9	0	2813	7137	6064	2295	8359		2.54	Si
SLV 8	ini.	-648.94	2806	0.9	0	2813	7137	6064	2295	8359		2.98	Si
SLV 8	fin.	1015.45	4240	0.9	0	2813	7137	6064	2295	8359		1.97	Si
SLV 1	ini.	-642.48	2750	0.9	0	2813	7137	6064	2295	8359		3.04	Si
SLV 1	fin.	752.38	3068	0.9	0	2813	7137	6064	2295	8359		2.72	Si
SLV 3	ini.	-937.59	4080	0.9	0	2813	7137	6064	2295	8359		2.05	Si
SLV 3	fin.	1210.91	4973	0.9	0	2813	7137	6064	2295	8359		1.68	Si
SLV 4	ini.	-717.6	3127	0.9	0	2813	7137	6064	2295	8359		2.67	Si
SLV 4	fin.	969.65	3999	0.9	0	2813	7137	6064	2295	8359		2.09	Si
SLV 13	ini.	640.09	-3042	0.9	0	2813	7137	6064	2295	8359		2.75	Si
SLV 13	fin.	-757.84	-3049	0.9	0	2813	7137	6064	2295	8359		2.74	Si
SLV 11	ini.	-412.29	1710	0.9	0	2813	7137	6064	2295	8359		4.89	Si
SLV 11	fin.	724.81	3061	0.9	0	2813	7137	6064	2295	8359		2.73	Si
SLV 10	ini.	719.54	-3363	0.9	0	2813	7137	6064	2295	8359		2.49	Si
SLV 10	fin.	-966.06	-3945	0.9	0	2813	7137	6064	2295	8359		2.12	Si
SLV 14	ini.	860.08	-3995	0.9	0	2813	7137	6064	2295	8359		2.09	Si
SLV 14	fin.	-999.1	-4023	0.9	0	2813	7137	6064	2295	8359		2.08	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.451	SLV 3	Si
V_SLV	1.681	SLV 3	Si
PF_SLU	20.487	SLU 81	Si
V_SLU	9.977	SLU 64	Si

Trave di accoppiamento 168

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-7.958	6.651	14.87	15.32	0.45	-7.058	6.651	14.87	15.32	0.45	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 69	ini.	-174.46	-143	-0.0004044	0.0001872	0.0035	0.45		744.65	744.65	No	4.27	Si
SLU 69	fin.	42.5	483	-0.0000858	0.0001872	0.0035	0.45		741.81	741.81	No	17.46	Si
SLU 75	ini.	-173.16	-179	-0.0004008	0.0001872	0.0035	0.45		744.65	744.65	No	4.3	Si
SLU 75	fin.	46.42	455	-0.000094	0.0001872	0.0035	0.45		741.81	741.81	No	15.98	Si
SLU 74	ini.	-175.53	-189	-0.0004074	0.0001872	0.0035	0.45		744.65	744.65	No	4.24	Si
SLU 74	fin.	48.18	458	-0.0000978	0.0001872	0.0035	0.45		741.81	741.81	No	15.4	Si
SLU 79	ini.	-166.29	-136	-0.000382	0.0001872	0.0035	0.45		744.65	744.65	No	4.48	Si
SLU 79	fin.	51.43	492	-0.0001046	0.0001872	0.0035	0.45		741.81	741.81	No	14.42	Si
SLU 67	ini.	-170.53	-174	-0.0003936	0.0001872	0.0035	0.45		744.65	744.65	No	4.37	Si
SLU 67	fin.	43.32	444	-0.0000875	0.0001872	0.0035	0.45		741.81	741.81	No	17.12	Si
SLU 83	ini.	-165.86	-178	-0.0003808	0.0001872	0.0035	0.45		744.65	744.65	No	4.49	Si
SLU 83	fin.	55.34	461	-0.000113	0.0001872	0.0035	0.45		741.81	741.81	No	13.4	Si
SLU 77	ini.	-177.09	-149	-0.0004117	0.0001872	0.0035	0.45		744.65	744.65	No	4.2	Si
SLU 77	fin.	45.6	494	-0.0000923	0.0001872	0.0035	0.45		741.81	741.81	No	16.27	Si
SLU 70	ini.	-172.09	-134	-0.0003979	0.0001872	0.0035	0.45		744.65	744.65	No	4.33	Si
SLU 70	fin.	40.73	480	-0.0000821	0.0001872	0.0035	0.45		741.81	741.81	No	18.21	Si
SLU 66	ini.	-172.9	-183	-0.0004001	0.0001872	0.0035	0.45		744.65	744.65	No	4.31	Si
SLU 66	fin.	45.08	447	-0.0000912	0.0001872	0.0035	0.45		741.81	741.81	No	16.45	Si
SLU 78	ini.	-174.72	-139	-0.0004051	0.0001872	0.0035	0.45		744.65	744.65	No	4.26	Si
SLU 78	fin.	43.83	491	-0.0000886	0.0001872	0.0035	0.45		741.81	741.81	No	16.92	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 67	ini.	-170.53	829	0.45	0	856	3568	2021	1148	3169	No	3.82	Si
SLU 67	fin.	43.32	-70	0.45	0	856	3568	2021	1148	3169	No	45.48	Si
SLU 70	ini.	-172.09	853	0.45	0	856	3568	2021	1148	3169	No	3.72	Si
SLU 70	fin.	40.73	-98	0.45	0	856	3568	2021	1148	3169	No	32.29	Si
SLU 75	ini.	-173.16	839	0.45	0	856	3568	2021	1148	3169	No	3.78	Si
SLU 75	fin.	46.42	-59	0.45	0	856	3568	2021	1148	3169	No	53.37	Si
SLU 69	ini.	-174.46	860	0.45	0	856	3568	2021	1148	3169	No	3.68	Si
SLU 69	fin.	42.5	-91	0.45	0	856	3568	2021	1148	3169	No	34.87	Si
SLU 77	ini.	-177.09	870	0.45	0	856	3568	2021	1148	3169	No	3.64	Si
SLU 77	fin.	45.6	-81	0.45	0	856	3568	2021	1148	3169	No	39.33	Si
SLU 78	ini.	-174.72	863	0.45	0	856	3568	2021	1148	3169	No	3.67	Si
SLU 78	fin.	43.83	-88	0.45	0	856	3568	2021	1148	3169	No	36.07	Si
SLU 80	ini.	-163.92	813	0.45	0	856	3568	2021	1148	3169	No	3.9	Si
SLU 80	fin.	49.66	-56	0.45	0	856	3568	2021	1148	3169	No	56.69	Si
SLU 79	ini.	-166.29	821	0.45	0	856	3568	2021	1148	3169	No	3.86	Si
SLU 79	fin.	51.43	-49	0.45	0	856	3568	2021	1148	3169	No	65.18	Si
SLU 74	ini.	-175.53	846	0.45	0	856	3568	2021	1148	3169	No	3.74	Si
SLU 74	fin.	48.18	-52	0.45	0	856	3568	2021	1148	3169	No	60.82	Si
SLU 66	ini.	-172.9	836	0.45	0	856	3568	2021	1148	3169	No	3.79	Si
SLU 66	fin.	45.08	-62	0.45	0	856	3568	2021	1148	3169	No	50.78	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 11	ini.	-335.86	-1103	-0.0008537	0.0002807	0.0035	0.45		745.02	745.02		2.22	Si
SLV 11	fin.	205.02	506	-0.0004657	0.0002807	0.0035	0.45		742.08	742.08		3.62	Si
SLD 7	ini.	-267.63	-771	-0.0006406	0.0002807	0.0035	0.45		745.02	745.02		2.78	Si
SLD 7	fin.	155.95	477	-0.0003388	0.0002807	0.0035	0.45		742.08	742.08		4.76	Si
SLV 4	ini.	-388.68	-1244	-0.0010348	0.0002807	0.0035	0.45		745.02	745.02		1.92	Si
SLV 4	fin.	246.37	629	-0.0005811	0.0002807	0.0035	0.45		742.08	742.08		3.01	Si
SLV 12	ini.	-260.22	-840	-0.0006187	0.0002807	0.0035	0.45		745.02	745.02		2.86	Si
SLV 12	fin.	138.98	356	-0.0002976	0.0002807	0.0035	0.45		742.08	742.08		5.34	Si
SLV 14	ini.	261.81	1315	-0.0006262	0.0002807	0.0035	0.45		742.08	742.08		2.83	Si
SLV 14	fin.	-259.46	-234	-0.0006165	0.0002807	0.0035	0.45		745.02	745.02		2.87	Si
SLV 1	ini.	-349.12	-976	-0.0008977	0.0002807	0.0035	0.45		745.02	745.02		2.13	Si
SLV 1	fin.	231.41	714	-0.0005385	0.0002807	0.0035	0.45		742.08	742.08		3.21	Si
SLV 7	ini.	-485.44	-1673	-0.0014138	0.0002807	0.0035	0.45		745.02	745.02		1.53	Si
SLV 7	fin.	322.85	723	-0.0008151	0.0002807	0.0035	0.45		742.08	742.08		2.3	Si
SLV 3	ini.	-501.04	-1634	-0.0014825	0.0002807	0.0035	0.45		745.02	745.02		1.49	Si
SLV 3	fin.	344.46	853	-0.0008863	0.0002807	0.0035	0.45		742.08	742.08		2.15	Si
SLD 3	ini.	-280.39	-780	-0.0006787	0.0002807	0.0035	0.45		745.02	745.02		2.66	Si
SLD 3	fin.	169.9	540	-0.0003737	0.0002807	0.0035	0.45		742.08	742.08		4.37	Si
SLV 8	ini.	-409.79	-1410	-0.0011117	0.0002807	0.0035	0.45		745.02	745.02		1.82	Si
SLV 8	fin.	256.82	573	-0.0006115	0.0002807	0.0035	0.45		742.08	742.08		2.89	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	-501.04	1799	0.45	0	1156	3568	3032	1148	4179		2.32	Si
SLV 3	fin.	344.46	1203	0.45	0	1156	3568	3032	1148	4179		3.47	Si
SLV 11	ini.	-335.86	1268	0.45	0	1156	3568	3032	1148	4179		3.3	Si
SLV 11	fin.	205.02	685	0.45	0	1156	3568	3032	1148	4179		6.1	Si
SLD 3	ini.	-280.39	1087	0.45	0	1156	3568	3032	1148	4179		3.85	Si
SLD 3	fin.	169.9	512	0.45	0	1156	3568	3032	1148	4179		8.16	Si
SLV 7	ini.	-485.44	1747	0.45	0	1156	3568	3032	1148	4179		2.39	Si
SLV 7	fin.	322.85	1149	0.45	0	1156	3568	3032	1148	4179		3.64	Si
SLV 14	ini.	261.81	-663	0.45	0	1156	3568	3032	1148	4179		6.3	Si
SLV 14	fin.	-259.46	-1187	0.45	0	1156	3568	3032	1148	4179		3.52	Si
SLV 8	ini.	-409.79	1492	0.45	0	1156	3568	3032	1148	4179		2.8	Si
SLV 8	fin.	256.82	899	0.45	0	1156	3568	3032	1148	4179		4.65	Si
SLV 10	ini.	246.2	-611	0.45	0	1156	3568	3032	1148	4179		6.84	Si
SLV 10	fin.	-237.85	-1133	0.45	0	1156	3568	3032	1148	4179		3.69	Si
SLV 1	ini.	-349.12	1312	0.45	0	1156	3568	3032	1148	4179		3.19	Si
SLV 1	fin.	231.41	733	0.45	0	1156	3568	3032	1148	4179		5.7	Si
SLV 4	ini.	-388.68	1420	0.45	0	1156	3568	3032	1148	4179		2.94	Si
SLV 4	fin.	246.37	831	0.45	0	1156	3568	3032	1148	4179		5.03	Si
SLD 7	ini.	-267.63	1045	0.45	0	1156	3568	3032	1148	4179		4	Si
SLD 7	fin.	155.95	470	0.45	0	1156	3568	3032	1148	4179		8.9	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.487	SLV 3	Si
V_SLV	2.323	SLV 3	Si
PF_SLU	4.205	SLU 77	Si
V_SLU	3.641	SLU 77	Si

Trave di accoppiamento 169

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-8.548	-3.359	14.27	15.32	1.05	-9.448	-3.359	14.27	15.32	1.05	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 Intonaco armato_Corti_2

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			258750	13500	30000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 69	ini.	501.16	39	-0.0001929	0.0002246	0.0035	1.05		4122.48	4122.48	No	8.23	Si
SLU 69	fin.	-488.33	-1666	-0.0001872	0.0002246	0.0035	1.05		4129.05	4129.05	No	8.46	Si
SLU 75	ini.	511.19	51	-0.000197	0.0002246	0.0035	1.05		4122.48	4122.48	No	8.06	Si
SLU 75	fin.	-496.18	-1693	-0.0001905	0.0002246	0.0035	1.05		4129.05	4129.05	No	8.32	Si
SLU 76	ini.	508.74	62	-0.000196	0.0002246	0.0035	1.05		4122.48	4122.48	No	8.1	Si
SLU 76	fin.	-491.55	-1662	-0.0001886	0.0002246	0.0035	1.05		4129.05	4129.05	No	8.4	Si
SLU 72	ini.	502.15	47	-0.0001933	0.0002246	0.0035	1.05		4122.48	4122.48	No	8.21	Si
SLU 72	fin.	-488.02	-1648	-0.0001871	0.0002246	0.0035	1.05		4129.05	4129.05	No	8.46	Si
SLU 70	ini.	511.45	31	-0.0001972	0.0002246	0.0035	1.05		4122.48	4122.48	No	8.06	Si
SLU 70	fin.	-501.27	-1706	-0.0001926	0.0002246	0.0035	1.05		4129.05	4129.05	No	8.24	Si
SLU 77	ini.	509.63	28	-0.0001964	0.0002246	0.0035	1.05		4122.48	4122.48	No	8.09	Si
SLU 77	fin.	-499.05	-1734	-0.0001917	0.0002246	0.0035	1.05		4129.05	4129.05	No	8.27	Si
SLU 80	ini.	510.61	36	-0.0001968	0.0002246	0.0035	1.05		4122.48	4122.48	No	8.07	Si
SLU 80	fin.	-498.75	-1716	-0.0001915	0.0002246	0.0035	1.05		4129.05	4129.05	No	8.28	Si
SLU 78	ini.	519.92	21	-0.0002007	0.0002246	0.0035	1.05		4122.48	4122.48	No	7.93	Si
SLU 78	fin.	-512	-1775	-0.000197	0.0002246	0.0035	1.05		4129.05	4129.05	No	8.06	Si
SLU 67	ini.	502.73	62	-0.0001935	0.0002246	0.0035	1.05		4122.48	4122.48	No	8.2	Si
SLU 67	fin.	-485.45	-1625	-0.000186	0.0002246	0.0035	1.05		4129.05	4129.05	No	8.51	Si
SLU 84	ini.	505.51	62	-0.0001947	0.0002246	0.0035	1.05		4122.48	4122.48	No	8.16	Si
SLU 84	fin.	-487.52	-1664	-0.0001869	0.0002246	0.0035	1.05		4129.05	4129.05	No	8.47	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 77	ini.	509.63	-1217	1.05	0	2625	7137	5660	2678	8338	No	6.85	Si
SLU 77	fin.	-499.05	-3299	1.05	0	2625	7137	5660	2678	8338	No	2.53	Si
SLU 80	ini.	510.61	-1252	1.05	0	2625	7137	5660	2678	8338	No	6.66	Si
SLU 80	fin.	-498.75	-3231	1.05	0	2625	7137	5660	2678	8338	No	2.58	Si
SLU 70	ini.	511.45	-1208	1.05	0	2625	7137	5660	2678	8338	No	6.9	Si
SLU 70	fin.	-501.27	-3289	1.05	0	2625	7137	5660	2678	8338	No	2.54	Si
SLU 75	ini.	511.19	-1273	1.05	0	2625	7137	5660	2678	8338	No	6.55	Si
SLU 75	fin.	-496.18	-3170	1.05	0	2625	7137	5660	2678	8338	No	2.63	Si
SLU 72	ini.	502.15	-1199	1.05	0	2625	7137	5660	2678	8338	No	6.96	Si
SLU 72	fin.	-488.02	-3176	1.05	0	2625	7137	5660	2678	8338	No	2.63	Si
SLU 79	ini.	500.32	-1208	1.05	0	2625	7137	5660	2678	8338	No	6.9	Si
SLU 79	fin.	-485.8	-3186	1.05	0	2625	7137	5660	2678	8338	No	2.62	Si
SLU 69	ini.	501.16	-1164	1.05	0	2625	7137	5660	2678	8338	No	7.17	Si
SLU 69	fin.	-488.33	-3245	1.05	0	2625	7137	5660	2678	8338	No	2.57	Si
SLU 78	ini.	519.92	-1261	1.05	0	2625	7137	5660	2678	8338	No	6.61	Si
SLU 78	fin.	-512	-3344	1.05	0	2625	7137	5660	2678	8338	No	2.49	Si
SLU 71	ini.	491.86	-1154	1.05	0	2625	7137	5660	2678	8338	No	7.22	Si
SLU 71	fin.	-475.07	-3131	1.05	0	2625	7137	5660	2678	8338	No	2.66	Si
SLU 74	ini.	500.9	-1229	1.05	0	2625	7137	5660	2678	8338	No	6.78	Si
SLU 74	fin.	-483.23	-3126	1.05	0	2625	7137	5660	2678	8338	No	2.67	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 6	ini.	1756.91	854	-0.0007934	0.0003369	0.0035	1.05		4071.54	4071.54		2.32	Si
SLV 6	fin.	-1348.04	-3679	-0.0005702	0.0003369	0.0035	1.05		4078.37	4078.37		3.03	Si
SLV 4	ini.	1851.45	1560	-0.0008485	0.0003369	0.0035	1.05		4071.54	4071.54		2.2	Si
SLV 4	fin.	-1243.71	-3230	-0.0005177	0.0003369	0.0035	1.05		4078.37	4078.37		3.28	Si
SLV 16	ini.	-1247.04	-1229	-0.0005193	0.0003369	0.0035	1.05		4078.37	4078.37		3.27	Si
SLV 16	fin.	718.46	1441	-0.0002781	0.0003369	0.0035	1.05		4071.54	4071.54		5.67	Si
SLV 1	ini.	1938.61	1394	-0.0009007	0.0003369	0.0035	1.05		4071.54	4071.54		2.1	Si
SLV 1	fin.	-1367.02	-3569	-0.0005799	0.0003369	0.0035	1.05		4078.37	4078.37		2.98	Si
SLD 2	ini.	1189.71	775	-0.000492	0.0003369	0.0035	1.05		4071.54	4071.54		3.42	Si
SLD 2	fin.	-875.74	-2407	-0.0003454	0.0003369	0.0035	1.05		4078.37	4078.37		4.66	Si
SLV 15	ini.	-1646.93	-1543	-0.0007297	0.0003369	0.0035	1.05		4078.37	4078.37		2.48	Si
SLV 15	fin.	979.99	2114	-0.0003928	0.0003369	0.0035	1.05		4071.54	4071.54		4.15	Si
SLV 13	ini.	-1159.88	-1395	-0.0004766	0.0003369	0.0035	1.05		4078.37	4078.37		3.52	Si
SLV 13	fin.	595.15	1102	-0.000227	0.0003369	0.0035	1.05		4071.54	4071.54		6.84	Si
SLV 3	ini.	1451.56	1246	-0.0006251	0.0003369	0.0035	1.05		4071.54	4071.54		2.8	Si
SLV 3	fin.	-982.19	-2557	-0.0003931	0.0003369	0.0035	1.05		4078.37	4078.37		4.15	Si
SLV 5	ini.	1487.68	642	-0.0006442	0.0003369	0.0035	1.05		4071.54	4071.54		2.74	Si
SLV 5	fin.	-1171.96	-3225	-0.0004825	0.0003369	0.0035	1.05		4078.37	4078.37		3.48	Si
SLV 2	ini.	2338.49	1708	-0.0011584	0.0003369	0.0035	1.05		4071.54	4071.54		1.74	Si
SLV 2	fin.	-1628.55	-4242	-0.0007195	0.0003369	0.0035	1.05		4078.37	4078.37		2.5	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 5	ini.	1487.68	-4559	1.05	0	3588	7137	8490	2678	10725		2.35	Si
SLV 5	fin.	-1171.96	-5753	1.05	0	3588	7137	8490	2678	10725		1.86	Si
SLV 6	ini.	1756.91	-5425	1.05	0	3588	7137	8490	2678	10725		1.98	Si
SLV 6	fin.	-1348.04	-6622	1.05	0	3588	7137	8490	2678	10725		1.62	Si
SLD 1	ini.	1019.59	-2951	1.05	0	3588	7137	8490	2678	10725		3.63	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 1	fin.	-764.48	-4143	1.05	0	3588	7137	8490	2678	10725		2.59	Si
SLV 3	ini.	1451.56	-4193	1.05	0	3588	7137	8490	2678	10725		2.56	Si
SLV 3	fin.	-982.19	-5391	1.05	0	3588	7137	8490	2678	10725		1.99	Si
SLD 2	ini.	1189.71	-3498	1.05	0	3588	7137	8490	2678	10725		3.07	Si
SLD 2	fin.	-875.74	-4692	1.05	0	3588	7137	8490	2678	10725		2.29	Si
SLV 15	ini.	-1646.93	5386	1.05	0	3588	7137	8490	2678	10725		1.99	Si
SLV 15	fin.	979.99	4226	1.05	0	3588	7137	8490	2678	10725		2.54	Si
SLV 2	ini.	2338.49	-7098	1.05	0	3588	7137	8490	2678	10725		1.51	Si
SLV 2	fin.	-1628.55	-8306	1.05	0	3588	7137	8490	2678	10725		1.29	Si
SLV 4	ini.	1851.45	-5479	1.05	0	3588	7137	8490	2678	10725		1.96	Si
SLV 4	fin.	-1243.71	-6682	1.05	0	3588	7137	8490	2678	10725		1.6	Si
SLV 1	ini.	1938.61	-5812	1.05	0	3588	7137	8490	2678	10725		1.85	Si
SLV 1	fin.	-1367.02	-7014	1.05	0	3588	7137	8490	2678	10725		1.53	Si
SLV 16	ini.	-1247.04	4100	1.05	0	3588	7137	8490	2678	10725		2.62	Si
SLV 16	fin.	718.46	2935	1.05	0	3588	7137	8490	2678	10725		3.65	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.741	SLV 2	Si
V_SLV	1.291	SLV 2	Si
PF_SLU	7.929	SLU 78	Si
V_SLU	2.493	SLU 78	Si

Trave di accoppiamento 170

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-5.158	6.001	12.17	14.17	2	-5.158	6.501	12.17	14.17	2	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 69	ini.	211.73	-333	-0.0000211	0.0001872	0.0035	2		14206.68	14206.68	No	67.1	Si
SLU 69	fin.	-242.81	-256	-0.0000242	0.0001872	0.0035	2		14219.44	14219.44	No	58.56	Si
SLU 83	ini.	177.32	-339	-0.0000177	0.0001872	0.0035	2		14206.68	14206.68	No	80.12	Si
SLU 83	fin.	-234.9	-248	-0.0000234	0.0001872	0.0035	2		14219.44	14219.44	No	60.53	Si
SLU 72	ini.	220.33	-328	-0.000022	0.0001872	0.0035	2		14206.68	14206.68	No	64.48	Si
SLU 72	fin.	-242.72	-256	-0.0000242	0.0001872	0.0035	2		14219.44	14219.44	No	58.58	Si
SLU 78	ini.	219.96	-356	-0.0000219	0.0001872	0.0035	2		14206.68	14206.68	No	64.59	Si
SLU 78	fin.	-253.87	-268	-0.0000253	0.0001872	0.0035	2		14219.44	14219.44	No	56.01	Si
SLU 70	ini.	213.48	-335	-0.0000213	0.0001872	0.0035	2		14206.68	14206.68	No	66.55	Si
SLU 70	fin.	-243.72	-257	-0.0000243	0.0001872	0.0035	2		14219.44	14219.44	No	58.34	Si
SLU 71	ini.	218.59	-327	-0.0000218	0.0001872	0.0035	2		14206.68	14206.68	No	64.99	Si
SLU 71	fin.	-241.81	-255	-0.0000241	0.0001872	0.0035	2		14219.44	14219.44	No	58.8	Si
SLU 77	ini.	218.22	-354	-0.0000218	0.0001872	0.0035	2		14206.68	14206.68	No	65.1	Si
SLU 77	fin.	-252.96	-267	-0.0000252	0.0001872	0.0035	2		14219.44	14219.44	No	56.21	Si
SLU 80	ini.	226.81	-349	-0.0000226	0.0001872	0.0035	2		14206.68	14206.68	No	62.64	Si
SLU 80	fin.	-252.87	-267	-0.0000252	0.0001872	0.0035	2		14219.44	14219.44	No	56.23	Si
SLU 79	ini.	225.07	-348	-0.0000225	0.0001872	0.0035	2		14206.68	14206.68	No	63.12	Si
SLU 79	fin.	-251.97	-266	-0.0000251	0.0001872	0.0035	2		14219.44	14219.44	No	56.43	Si
SLU 84	ini.	179.07	-340	-0.0000178	0.0001872	0.0035	2		14206.68	14206.68	No	79.34	Si
SLU 84	fin.	-235.81	-249	-0.0000235	0.0001872	0.0035	2		14219.44	14219.44	No	60.3	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 84	ini.	179.07	-1818	2	0	4167	3965	8983	5100	8131	No	4.47	Si
SLU 84	fin.	-235.81	-844	2	0	4167	3965	8983	5100	8131	No	9.64	Si
SLU 71	ini.	218.59	-1922	2	0	4167	3965	8983	5100	8131	No	4.23	Si
SLU 71	fin.	-241.81	-874	2	0	4167	3965	8983	5100	8131	No	9.3	Si
SLU 69	ini.	211.73	-1918	2	0	4167	3965	8983	5100	8131	No	4.24	Si
SLU 69	fin.	-242.81	-874	2	0	4167	3965	8983	5100	8131	No	9.3	Si
SLU 80	ini.	226.81	-2024	2	0	4167	3965	8983	5100	8131	No	4.02	Si
SLU 80	fin.	-252.87	-912	2	0	4167	3965	8983	5100	8131	No	8.91	Si
SLU 77	ini.	218.22	-2012	2	0	4167	3965	8983	5100	8131	No	4.04	Si
SLU 77	fin.	-252.96	-908	2	0	4167	3965	8983	5100	8131	No	8.95	Si
SLU 83	ini.	177.32	-1810	2	0	4167	3965	8983	5100	8131	No	4.49	Si
SLU 83	fin.	-234.9	-840	2	0	4167	3965	8983	5100	8131	No	9.69	Si
SLU 79	ini.	225.07	-2015	2	0	4167	3965	8983	5100	8131	No	4.04	Si
SLU 79	fin.	-251.97	-908	2	0	4167	3965	8983	5100	8131	No	8.95	Si
SLU 78	ini.	219.96	-2020	2	0	4167	3965	8983	5100	8131	No	4.02	Si
SLU 78	fin.	-253.87	-913	2	0	4167	3965	8983	5100	8131	No	8.91	Si
SLU 72	ini.	220.33	-1930	2	0	4167	3965	8983	5100	8131	No	4.21	Si
SLU 72	fin.	-242.72	-878	2	0	4167	3965	8983	5100	8131	No	9.26	Si
SLU 70	ini.	213.48	-1927	2	0	4167	3965	8983	5100	8131	No	4.22	Si
SLU 70	fin.	-243.72	-878	2	0	4167	3965	8983	5100	8131	No	9.26	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 14	ini.	219.75	-256	-0.0000219	0.0002807	0.0035	2		13920.08	13920.08		63.34	Si
SLV 14	fin.	-158.63	-190	-0.0000158	0.0002807	0.0035	2		13933.43	13933.43		87.84	Si
SLV 8	ini.	-163.18	-164	-0.0000162	0.0002807	0.0035	2		13933.43	13933.43		85.38	Si
SLV 8	fin.	-191.07	-118	-0.000019	0.0002807	0.0035	2		13933.43	13933.43		72.92	Si
SLV 13	ini.	213.68	-210	-0.0000213	0.0002807	0.0035	2		13920.08	13920.08		65.14	Si
SLV 13	fin.	-138.61	-169	-0.0000138	0.0002807	0.0035	2		13933.43	13933.43		100.52	Si
SLV 5	ini.	303.71	-280	-0.0000303	0.0002807	0.0035	2		13920.08	13920.08		45.83	Si
SLV 5	fin.	-103.84	-195	-0.0000103	0.0002807	0.0035	2		13933.43	13933.43		134.18	Si
SLV 6	ini.	307.8	-311	-0.0000307	0.0002807	0.0035	2		13920.08	13920.08		45.22	Si
SLV 6	fin.	-117.32	-209	-0.0000116	0.0002807	0.0035	2		13933.43	13933.43		118.77	Si
SLD 9	ini.	189.35	-242	-0.0000188	0.0002807	0.0035	2		13920.08	13920.08		73.52	Si
SLD 9	fin.	-133.65	-175	-0.0000133	0.0002807	0.0035	2		13933.43	13933.43		104.25	Si
SLV 9	ini.	338.7	-275	-0.0000338	0.0002807	0.0035	2		13920.08	13920.08		41.1	Si
SLV 9	fin.	-109.48	-199	-0.0000109	0.0002807	0.0035	2		13933.43	13933.43		127.27	Si
SLV 10	ini.	342.79	-306	-0.0000342	0.0002807	0.0035	2		13920.08	13920.08		40.61	Si
SLV 10	fin.	-122.96	-213	-0.0000122	0.0002807	0.0035	2		13933.43	13933.43		113.32	Si
SLV 12	ini.	-128.2	-159	-0.0000127	0.0002807	0.0035	2		13933.43	13933.43		108.69	Si
SLV 12	fin.	-196.71	-122	-0.0000196	0.0002807	0.0035	2		13933.43	13933.43		70.83	Si
SLD 10	ini.	191.05	-255	-0.000019	0.0002807	0.0035	2		13920.08	13920.08		72.86	Si
SLD 10	fin.	-139.27	-181	-0.0000138	0.0002807	0.0035	2		13933.43	13933.43		100.05	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	219.75	-1514	2	0	6250	3965	13475	5100	10215		6.75	Si
SLV 14	fin.	-158.63	-669	2	0	6250	3965	13475	5100	10215		15.27	Si
SLV 13	ini.	213.68	-1342	2	0	6250	3965	13475	5100	10215		7.61	Si
SLV 13	fin.	-138.61	-604	2	0	6250	3965	13475	5100	10215		16.91	Si
SLV 9	ini.	338.7	-1390	2	0	6250	3965	13475	5100	10215		7.35	Si
SLV 9	fin.	-109.48	-710	2	0	6250	3965	13475	5100	10215		14.38	Si
SLV 10	ini.	342.79	-1506	2	0	6250	3965	13475	5100	10215		6.78	Si
SLV 10	fin.	-122.96	-754	2	0	6250	3965	13475	5100	10215		13.54	Si
SLV 5	ini.	303.71	-1232	2	0	6250	3965	13475	5100	10215		8.29	Si
SLV 5	fin.	-103.84	-683	2	0	6250	3965	13475	5100	10215		14.96	Si
SLD 10	ini.	191.05	-1254	2	0	6250	3965	13475	5100	10215		8.14	Si
SLD 10	fin.	-139.27	-626	2	0	6250	3965	13475	5100	10215		16.31	Si
SLV 16	ini.	78.46	-1339	2	0	6250	3965	13475	5100	10215		7.63	Si
SLV 16	fin.	-180.75	-560	2	0	6250	3965	13475	5100	10215		18.25	Si
SLD 9	ini.	189.35	-1206	2	0	6250	3965	13475	5100	10215		8.47	Si
SLD 9	fin.	-133.65	-608	2	0	6250	3965	13475	5100	10215		16.79	Si
SLD 14	ini.	142.4	-1262	2	0	6250	3965	13475	5100	10215		8.09	Si
SLD 14	fin.	-154.07	-592	2	0	6250	3965	13475	5100	10215		17.27	Si
SLV 6	ini.	307.8	-1348	2	0	6250	3965	13475	5100	10215		7.58	Si
SLV 6	fin.	-117.32	-727	2	0	6250	3965	13475	5100	10215		14.06	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	40.608	SLV 10	Si
V_SLV	6.747	SLV 14	Si
PF_SLU	56.011	SLU 78	Si
V_SLU	4.018	SLU 80	Si

Trave di accoppiamento 171

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-5.158	6.001	14.97	15.32	0.35	-5.158	6.501	14.97	15.32	0.35	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 50	ini.	367.76	3678	-0.0022344	0.0001872	0.0035	0.35		458.33	458.33	No	1.25	Si
SLU 50	fin.	-342.39	3263	-0.0019369	0.0001872	0.0035	0.35		460.48	460.48	No	1.34	Si
SLU 58	ini.	327.07	3382	-0.0018037	0.0001872	0.0035	0.35		458.33	458.33	No	1.4	Si
SLU 58	fin.	-313.17	3082	-0.001667	0.0001872	0.0035	0.35		460.48	460.48	No	1.47	Si
SLU 8	ini.	319.38	3199	-0.0017338	0.0001872	0.0035	0.35		458.33	458.33	No	1.44	Si
SLU 8	fin.	-297.47	2855	-0.0015386	0.0001872	0.0035	0.35		460.48	460.48	No	1.55	Si
SLU 72	ini.	343.13	3563	-0.0019607	0.0001872	0.0035	0.35		458.33	458.33	No	1.34	Si
SLU 72	fin.	-329.71	3262	-0.0018141	0.0001872	0.0035	0.35		460.48	460.48	No	1.4	Si
SLU 49	ini.	327.76	3356	-0.0018102	0.0001872	0.0035	0.35		458.33	458.33	No	1.4	Si
SLU 49	fin.	-311.32	3029	-0.0016513	0.0001872	0.0035	0.35		460.48	460.48	No	1.48	Si
SLU 69	ini.	336.92	3495	-0.0018982	0.0001872	0.0035	0.35		458.33	458.33	No	1.36	Si
SLU 69	fin.	-324.38	3188	-0.0017651	0.0001872	0.0035	0.35		460.48	460.48	No	1.42	Si
SLU 70	ini.	320.03	3368	-0.0017396	0.0001872	0.0035	0.35		458.33	458.33	No	1.43	Si
SLU 70	fin.	-311.51	3108	-0.0016529	0.0001872	0.0035	0.35		460.48	460.48	No	1.48	Si
SLU 51	ini.	350.86	3551	-0.002042	0.0001872	0.0035	0.35		458.33	458.33	No	1.31	Si
SLU 51	fin.	-329.52	3182	-0.0018123	0.0001872	0.0035	0.35		460.48	460.48	No	1.4	Si
SLU 71	ini.	360.03	3689	-0.0021438	0.0001872	0.0035	0.35		458.33	458.33	No	1.27	Si
SLU 71	fin.	-342.58	3342	-0.0019388	0.0001872	0.0035	0.35		460.48	460.48	No	1.34	Si
SLU 48	ini.	344.66	3483	-0.0019764	0.0001872	0.0035	0.35		458.33	458.33	No	1.33	Si
SLU 48	fin.	-324.19	3109	-0.0017634	0.0001872	0.0035	0.35		460.48	460.48	No	1.42	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 69	ini.	336.92	462	0.35	0	729	2775	1572	893	2465	No	5.33	Si
SLU 69	fin.	-324.38	-1656	0.35	0	729	2775	1572	893	2465	No	1.49	Si
SLU 79	ini.	319.34	624	0.35	0	729	2775	1572	893	2465	No	3.95	Si
SLU 79	fin.	-313.36	-1595	0.35	0	729	2775	1572	893	2465	No	1.54	Si
SLU 51	ini.	350.86	296	0.35	0	729	2775	1572	893	2465	No	8.34	Si
SLU 51	fin.	-329.52	-1682	0.35	0	729	2775	1572	893	2465	No	1.47	Si
SLU 70	ini.	320.03	545	0.35	0	729	2775	1572	893	2465	No	4.52	Si
SLU 70	fin.	-311.51	-1588	0.35	0	729	2775	1572	893	2465	No	1.55	Si
SLU 71	ini.	360.03	405	0.35	0	729	2775	1572	893	2465	No	6.08	Si
SLU 71	fin.	-342.58	-1747	0.35	0	729	2775	1572	893	2465	No	1.41	Si
SLU 48	ini.	344.66	270	0.35	0	729	2775	1572	893	2465	No	9.11	Si
SLU 48	fin.	-324.19	-1659	0.35	0	729	2775	1572	893	2465	No	1.49	Si
SLU 49	ini.	327.76	353	0.35	0	729	2775	1572	893	2465	No	6.99	Si
SLU 49	fin.	-311.32	-1591	0.35	0	729	2775	1572	893	2465	No	1.55	Si
SLU 50	ini.	367.76	213	0.35	0	729	2775	1572	893	2465	No	11.56	Si
SLU 50	fin.	-342.39	-1750	0.35	0	729	2775	1572	893	2465	No	1.41	Si
SLU 72	ini.	343.13	488	0.35	0	729	2775	1572	893	2465	No	5.06	Si
SLU 72	fin.	-329.71	-1679	0.35	0	729	2775	1572	893	2465	No	1.47	Si
SLU 58	ini.	327.07	432	0.35	0	729	2775	1572	893	2465	No	5.71	Si
SLU 58	fin.	-313.17	-1598	0.35	0	729	2775	1572	893	2465	No	1.54	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	-2072.8	-15369	-0.0206352	0.0002807	0.0035	0.35		450.32	450.32		0.22	No
SLV 10	fin.	1588.78	-9410	-0.0157926	0.0002807	0.0035	0.35		448.02	448.02		0.28	No
SLV 14	ini.	-1661.35	-12269	-0.0164568	0.0002807	0.0035	0.35		450.32	450.32		0.27	No
SLV 14	fin.	1280.05	-7455	-0.0126099	0.0002807	0.0035	0.35		448.02	448.02		0.35	No
SLV 11	ini.	1686.44	13337	-0.0167931	0.0002807	0.0035	0.35		448.02	448.02		0.27	No
SLV 11	fin.	-1346.85	8976	-0.0132368	0.0002807	0.0035	0.35		450.32	450.32		0.33	No
SLV 8	ini.	2130.42	16723	-0.0213197	0.0002807	0.0035	0.35		448.02	448.02		0.21	No
SLV 8	fin.	-1693.27	11132	-0.0167821	0.0002807	0.0035	0.35		450.32	450.32		0.27	No
SLV 12	ini.	1466.86	11633	-0.01454	0.0002807	0.0035	0.35		448.02	448.02		0.31	No
SLV 12	fin.	-1168.04	7859	-0.0113864	0.0002807	0.0035	0.35		450.32	450.32		0.39	No
SLV 3	ini.	1938.54	15327	-0.0193669	0.0002807	0.0035	0.35		448.02	448.02		0.23	No
SLV 3	fin.	-1563.35	10294	-0.0154569	0.0002807	0.0035	0.35		450.32	450.32		0.29	No
SLV 4	ini.	1612.41	12797	-0.0160348	0.0002807	0.0035	0.35		448.02	448.02		0.28	No
SLV 4	fin.	-1297.77	8635	-0.0127309	0.0002807	0.0035	0.35		450.32	450.32		0.35	No
SLV 9	ini.	-1853.23	-13666	-0.0184086	0.0002807	0.0035	0.35		450.32	450.32		0.24	No
SLV 9	fin.	1409.97	-8293	-0.0139538	0.0002807	0.0035	0.35		448.02	448.02		0.32	No
SLV 6	ini.	-1409.25	-10279	-0.0138786	0.0002807	0.0035	0.35		450.32	450.32		0.32	No
SLV 6	fin.	1063.54	-6137	-0.010346	0.0002807	0.0035	0.35		448.02	448.02		0.42	No
SLV 7	ini.	2349.99	18426	-0.0235501	0.0002807	0.0035	0.35		448.02	448.02		0.19	No
SLV 7	fin.	-1872.08	12249	-0.0186001	0.0002807	0.0035	0.35		450.32	450.32		0.24	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 3	ini.	1938.54	-8133	0.35	0	1094	2775	2358	893	3251		0.4	No
SLV 3	fin.	-1563.35	-8316	0.35	0	1094	2775	2358	893	3251		0.39	No
SLV 14	ini.	-1661.35	8828	0.35	0	1094	2775	2358	893	3251		0.37	No
SLV 14	fin.	1280.05	6837	0.35	0	1094	2775	2358	893	3251		0.48	No
SLV 10	ini.	-2072.8	11027	0.35	0	1094	2775	2358	893	3251		0.29	No
SLV 10	fin.	1588.78	8457	0.35	0	1094	2775	2358	893	3251		0.38	No
SLV 11	ini.	1686.44	-7219	0.35	0	1094	2775	2358	893	3251		0.45	No
SLV 11	fin.	-1346.85	-7136	0.35	0	1094	2775	2358	893	3251		0.46	No
SLV 5	ini.	-1189.67	6978	0.35	0	1094	2775	2358	893	3251		0.47	No
SLV 5	fin.	884.74	4696	0.35	0	1094	2775	2358	893	3251		0.69	No
SLV 9	ini.	-1853.23	10092	0.35	0	1094	2775	2358	893	3251		0.32	No
SLV 9	fin.	1409.97	7496	0.35	0	1094	2775	2358	893	3251		0.43	No
SLV 13	ini.	-1335.21	7438	0.35	0	1094	2775	2358	893	3251		0.44	No
SLV 13	fin.	1014.47	5409	0.35	0	1094	2775	2358	893	3251		0.6	No
SLV 6	ini.	-1409.25	7914	0.35	0	1094	2775	2358	893	3251		0.41	No
SLV 6	fin.	1063.54	5657	0.35	0	1094	2775	2358	893	3251		0.57	No
SLV 8	ini.	2130.42	-9397	0.35	0	1094	2775	2358	893	3251		0.35	No
SLV 8	fin.	-1693.27	-8975	0.35	0	1094	2775	2358	893	3251		0.36	No
SLV 7	ini.	2349.99	-10332	0.35	0	1094	2775	2358	893	3251		0.31	No
SLV 7	fin.	-1872.08	-9936	0.35	0	1094	2775	2358	893	3251		0.33	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.191	SLV 7	No
V_SLV	0.295	SLV 10	No
PF_SLU	1.246	SLU 50	Si
V_SLU	1.408	SLU 50	Si

Trave di accoppiamento 172

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-6.513	-3.359	12.17	13.07	0.9	-7.413	-3.359	12.17	13.07	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 71	ini.	302.15	-1076	-0.0001577	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.74	Si
SLU 71	fin.	-165.87	46	-0.0000837	0.0001872	0.0035	0.9		2948.11	2948.11	No	17.77	Si
SLU 69	ini.	310.66	-1109	-0.0001625	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.47	Si
SLU 69	fin.	-167.44	38	-0.0000845	0.0001872	0.0035	0.9		2948.11	2948.11	No	17.61	Si
SLU 72	ini.	313.42	-1109	-0.000164	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.39	Si
SLU 72	fin.	-181.86	84	-0.0000921	0.0001872	0.0035	0.9		2948.11	2948.11	No	16.21	Si
SLU 65	ini.	292.06	-1004	-0.000152	0.0001872	0.0035	0.9		2942.43	2942.43	No	10.07	Si
SLU 65	fin.	-197.65	169	-0.0001004	0.0001872	0.0035	0.9		2948.11	2948.11	No	14.92	Si
SLU 66	ini.	296.22	-1047	-0.0001543	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.93	Si
SLU 66	fin.	-170	68	-0.0000859	0.0001872	0.0035	0.9		2948.11	2948.11	No	17.34	Si
SLU 78	ini.	292.33	-1037	-0.0001522	0.0001872	0.0035	0.9		2942.43	2942.43	No	10.07	Si
SLU 78	fin.	-169.62	85	-0.0000857	0.0001872	0.0035	0.9		2948.11	2948.11	No	17.38	Si
SLU 70	ini.	321.94	-1141	-0.0001688	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.14	Si
SLU 70	fin.	-183.44	76	-0.0000929	0.0001872	0.0035	0.9		2948.11	2948.11	No	16.07	Si
SLU 80	ini.	283.82	-1005	-0.0001474	0.0001872	0.0035	0.9		2942.43	2942.43	No	10.37	Si
SLU 80	fin.	-168.05	93	-0.0000848	0.0001872	0.0035	0.9		2948.11	2948.11	No	17.54	Si
SLU 67	ini.	307.49	-1079	-0.0001607	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.57	Si
SLU 67	fin.	-186	106	-0.0000943	0.0001872	0.0035	0.9		2948.11	2948.11	No	15.85	Si
SLU 68	ini.	306.5	-1067	-0.0001601	0.0001872	0.0035	0.9		2942.43	2942.43	No	9.6	Si
SLU 68	fin.	-195.09	139	-0.0000991	0.0001872	0.0035	0.9		2948.11	2948.11	No	15.11	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 66	ini.	296.22	-1631	0.9	0	1875	7137	4043	2295	6338	No	3.88	Si
SLU 66	fin.	-170	-648	0.9	0	1875	7137	4043	2295	6338	No	9.78	Si
SLU 72	ini.	313.42	-1722	0.9	0	1875	7137	4043	2295	6338	No	3.68	Si
SLU 72	fin.	-181.86	-706	0.9	0	1875	7137	4043	2295	6338	No	8.98	Si
SLU 67	ini.	307.49	-1692	0.9	0	1875	7137	4043	2295	6338	No	3.74	Si
SLU 67	fin.	-186	-723	0.9	0	1875	7137	4043	2295	6338	No	8.77	Si
SLU 49	ini.	283.56	-1595	0.9	0	1875	7137	4043	2295	6338	No	3.97	Si
SLU 49	fin.	-136.22	-468	0.9	0	1875	7137	4043	2295	6338	No	13.55	Si
SLU 68	ini.	306.5	-1680	0.9	0	1875	7137	4043	2295	6338	No	3.77	Si
SLU 68	fin.	-195.09	-775	0.9	0	1875	7137	4043	2295	6338	No	8.17	Si
SLU 65	ini.	292.06	-1598	0.9	0	1875	7137	4043	2295	6338	No	3.96	Si
SLU 65	fin.	-197.65	-795	0.9	0	1875	7137	4043	2295	6338	No	7.97	Si
SLU 70	ini.	321.94	-1774	0.9	0	1875	7137	4043	2295	6338	No	3.57	Si
SLU 70	fin.	-183.44	-703	0.9	0	1875	7137	4043	2295	6338	No	9.02	Si
SLU 69	ini.	310.66	-1713	0.9	0	1875	7137	4043	2295	6338	No	3.7	Si
SLU 69	fin.	-167.44	-628	0.9	0	1875	7137	4043	2295	6338	No	10.09	Si
SLU 78	ini.	292.33	-1602	0.9	0	1875	7137	4043	2295	6338	No	3.95	Si
SLU 78	fin.	-169.62	-698	0.9	0	1875	7137	4043	2295	6338	No	9.08	Si
SLU 71	ini.	302.15	-1661	0.9	0	1875	7137	4043	2295	6338	No	3.82	Si
SLU 71	fin.	-165.87	-631	0.9	0	1875	7137	4043	2295	6338	No	10.04	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-980.75	2666	-0.0005783	0.0002807	0.0035	0.9		2973.32	2973.32		3.03	Si
SLV 16	fin.	1427.65	-3263	-0.0009317	0.0002807	0.0035	0.9		2967.55	2967.55		2.08	Si
SLV 12	ini.	-1099.71	3113	-0.000666	0.0002807	0.0035	0.9		2973.32	2973.32		2.7	Si
SLV 12	fin.	1431.76	-3263	-0.0009352	0.0002807	0.0035	0.9		2967.55	2967.55		2.07	Si
SLV 6	ini.	1663.1	-4960	-0.0011439	0.0002807	0.0035	0.9		2967.55	2967.55		1.78	Si
SLV 6	fin.	-1913.45	3925	-0.0013926	0.0002807	0.0035	0.9		2973.32	2973.32		1.55	Si
SLV 1	ini.	1367.38	-4019	-0.0008806	0.0002807	0.0035	0.9		2967.55	2967.55		2.17	Si
SLV 1	fin.	-1662.06	3390	-0.00114	0.0002807	0.0035	0.9		2973.32	2973.32		1.79	Si
SLV 11	ini.	-1276.48	3607	-0.0008039	0.0002807	0.0035	0.9		2973.32	2973.32		2.33	Si
SLV 11	fin.	1679.04	-3798	-0.0011591	0.0002807	0.0035	0.9		2967.55	2967.55		1.77	Si
SLV 4	ini.	977.32	-2825	-0.0005771	0.0002807	0.0035	0.9		2967.55	2967.55		3.04	Si
SLV 4	fin.	-1268.44	2552	-0.0007974	0.0002807	0.0035	0.9		2973.32	2973.32		2.34	Si
SLV 2	ini.	1629.94	-4753	-0.0011127	0.0002807	0.0035	0.9		2967.55	2967.55		1.82	Si
SLV 2	fin.	-2029.35	4185	-0.0015213	0.0002807	0.0035	0.9		2973.32	2973.32		1.47	Si
SLV 10	ini.	1075.68	-3313	-0.0006494	0.0002807	0.0035	0.9		2967.55	2967.55		2.76	Si
SLV 10	fin.	-1104.62	2181	-0.0006697	0.0002807	0.0035	0.9		2973.32	2973.32		2.69	Si
SLV 15	ini.	-1243.32	3400	-0.0007773	0.0002807	0.0035	0.9		2973.32	2973.32		2.39	Si
SLV 15	fin.	1794.94	-4057	-0.0012729	0.0002807	0.0035	0.9		2967.55	2967.55		1.65	Si
SLV 5	ini.	1486.33	-4466	-0.0009826	0.0002807	0.0035	0.9		2967.55	2967.55		2	Si
SLV 5	fin.	-1666.17	3390	-0.0011439	0.0002807	0.0035	0.9		2973.32	2973.32		1.78	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	-980.75	4792	0.9	0	2813	7137	6064	2295	8359		1.74	Si
SLV 16	fin.	1427.65	6481	0.9	0	2813	7137	6064	2295	8359		1.29	Si
SLV 11	ini.	-1276.48	6392	0.9	0	2813	7137	6064	2295	8359		1.31	Si
SLV 11	fin.	1679.04	7675	0.9	0	2813	7137	6064	2295	8359		1.09	Si
SLV 2	ini.	1629.94	-8278	0.9	0	2813	7137	6064	2295	8359		1.01	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	fin.	-2029.35	-8977	0.9	0	2813	7137	6064	2295	8359		0.93	No
SLV 5	ini.	1486.33	-7603	0.9	0	2813	7137	6064	2295	8359		1.1	Si
SLV 5	fin.	-1666.17	-7545	0.9	0	2813	7137	6064	2295	8359		1.11	Si
SLV 15	ini.	-1243.32	6152	0.9	0	2813	7137	6064	2295	8359		1.36	Si
SLV 15	fin.	1794.94	8051	0.9	0	2813	7137	6064	2295	8359		1.04	Si
SLV 1	ini.	1367.38	-6919	0.9	0	2813	7137	6064	2295	8359		1.21	Si
SLV 1	fin.	-1662.06	-7408	0.9	0	2813	7137	6064	2295	8359		1.13	Si
SLV 10	ini.	1075.68	-5593	0.9	0	2813	7137	6064	2295	8359		1.49	Si
SLV 10	fin.	-1104.62	-5010	0.9	0	2813	7137	6064	2295	8359		1.67	Si
SLV 4	ini.	977.32	-4957	0.9	0	2813	7137	6064	2295	8359		1.69	Si
SLV 4	fin.	-1268.44	-5488	0.9	0	2813	7137	6064	2295	8359		1.52	Si
SLV 12	ini.	-1099.71	5477	0.9	0	2813	7137	6064	2295	8359		1.53	Si
SLV 12	fin.	1431.76	6619	0.9	0	2813	7137	6064	2295	8359		1.26	Si
SLV 6	ini.	1663.1	-8518	0.9	0	2813	7137	6064	2295	8359		0.98	No
SLV 6	fin.	-1913.45	-8601	0.9	0	2813	7137	6064	2295	8359		0.97	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.465	SLV 2	Si
V_SLV	0.931	SLV 2	No
PF_SLU	9.14	SLU 70	Si
V_SLU	3.572	SLU 70	Si

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Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-6.513	-3.359	14.87	15.32	0.45	-7.413	-3.359	14.87	15.32	0.45	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 66	ini.	-21.36	19	-0.0000422	0.0001872	0.0035	0.45		744.65	744.65	No	34.87	Si
SLU 66	fin.	-72.27	-251	-0.0001494	0.0001872	0.0035	0.45		744.65	744.65	No	10.3	Si
SLU 30	ini.	-23.77	6	-0.0000471	0.0001872	0.0035	0.45		744.65	744.65	No	31.33	Si
SLU 30	fin.	-69.29	-235	-0.0001428	0.0001872	0.0035	0.45		744.65	744.65	No	10.75	Si
SLU 71	ini.	-26.61	-6	-0.0000528	0.0001872	0.0035	0.45		744.65	744.65	No	27.98	Si
SLU 71	fin.	-74.52	-258	-0.0001544	0.0001872	0.0035	0.45		744.65	744.65	No	9.99	Si
SLU 72	ini.	-23.2	11	-0.0000459	0.0001872	0.0035	0.45		744.65	744.65	No	32.09	Si
SLU 72	fin.	-76.81	-267	-0.0001595	0.0001872	0.0035	0.45		744.65	744.65	No	9.69	Si
SLU 67	ini.	-17.95	35	-0.0000354	0.0001872	0.0035	0.45		744.65	744.65	No	41.48	Si
SLU 67	fin.	-74.56	-260	-0.0001544	0.0001872	0.0035	0.45		744.65	744.65	No	9.99	Si
SLU 27	ini.	-33.52	-27	-0.0000669	0.0001872	0.0035	0.45		744.65	744.65	No	22.21	Si
SLU 27	fin.	-71.45	-238	-0.0001476	0.0001872	0.0035	0.45		744.65	744.65	No	10.42	Si
SLU 68	ini.	-9.33	63	-0.0000183	0.0001872	0.0035	0.45		744.65	744.65	No	79.82	Si
SLU 68	fin.	-71.63	-254	-0.0001479	0.0001872	0.0035	0.45		744.65	744.65	No	10.4	Si
SLU 28	ini.	-30.12	-10	-0.0000599	0.0001872	0.0035	0.45		744.65	744.65	No	24.72	Si
SLU 28	fin.	-73.74	-247	-0.0001526	0.0001872	0.0035	0.45		744.65	744.65	No	10.1	Si
SLU 70	ini.	-29.56	-5	-0.0000588	0.0001872	0.0035	0.45		744.65	744.65	No	25.19	Si
SLU 70	fin.	-81.27	-279	-0.0001695	0.0001872	0.0035	0.45		744.65	744.65	No	9.16	Si
SLU 69	ini.	-32.96	-21	-0.0000658	0.0001872	0.0035	0.45		744.65	744.65	No	22.59	Si
SLU 69	fin.	-78.98	-270	-0.0001643	0.0001872	0.0035	0.45		744.65	744.65	No	9.43	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 67	ini.	-17.95	528	0.45	0	856	3568	2021	1148	3169	No	6	Si
SLU 67	fin.	-74.56	-831	0.45	0	856	3568	2021	1148	3169	No	3.81	Si
SLU 28	ini.	-30.12	581	0.45	0	856	3568	2021	1148	3169	No	5.46	Si
SLU 28	fin.	-73.74	-817	0.45	0	856	3568	2021	1148	3169	No	3.88	Si
SLU 78	ini.	-38.65	682	0.45	0	856	3568	2021	1148	3169	No	4.64	Si
SLU 78	fin.	-68.37	-851	0.45	0	856	3568	2021	1148	3169	No	3.72	Si
SLU 72	ini.	-23.2	568	0.45	0	856	3568	2021	1148	3169	No	5.58	Si
SLU 72	fin.	-76.81	-855	0.45	0	856	3568	2021	1148	3169	No	3.71	Si
SLU 71	ini.	-26.61	582	0.45	0	856	3568	2021	1148	3169	No	5.44	Si
SLU 71	fin.	-74.52	-840	0.45	0	856	3568	2021	1148	3169	No	3.77	Si
SLU 77	ini.	-42.05	697	0.45	0	856	3568	2021	1148	3169	No	4.55	Si
SLU 77	fin.	-66.08	-837	0.45	0	856	3568	2021	1148	3169	No	3.79	Si
SLU 70	ini.	-29.56	627	0.45	0	856	3568	2021	1148	3169	No	5.05	Si
SLU 70	fin.	-81.27	-907	0.45	0	856	3568	2021	1148	3169	No	3.49	Si
SLU 27	ini.	-33.52	595	0.45	0	856	3568	2021	1148	3169	No	5.32	Si
SLU 27	fin.	-71.45	-802	0.45	0	856	3568	2021	1148	3169	No	3.95	Si
SLU 66	ini.	-21.36	543	0.45	0	856	3568	2021	1148	3169	No	5.84	Si
SLU 66	fin.	-72.27	-816	0.45	0	856	3568	2021	1148	3169	No	3.88	Si
SLU 69	ini.	-32.96	642	0.45	0	856	3568	2021	1148	3169	No	4.94	Si
SLU 69	fin.	-78.98	-892	0.45	0	856	3568	2021	1148	3169	No	3.55	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 1	ini.	430.62	2353	-0.0011966	0.0002807	0.0035	0.45		742.08	742.08		1.72	Si
SLV 1	fin.	-388.76	-1913	-0.0010351	0.0002807	0.0035	0.45		745.02	745.02		1.92	Si
SLV 6	ini.	543.01	2832	-0.0016916	0.0002807	0.0035	0.45		742.08	742.08		1.37	Si
SLV 6	fin.	-530.09	-2749	-0.0016178	0.0002807	0.0035	0.45		745.02	745.02		1.41	Si
SLV 15	ini.	-560.66	-2839	-0.0017731	0.0002807	0.0035	0.45		745.02	745.02		1.33	Si
SLV 15	fin.	405.54	2151	-0.0011015	0.0002807	0.0035	0.45		742.08	742.08		1.83	Si
SLV 12	ini.	-470.9	-2372	-0.0013521	0.0002807	0.0035	0.45		745.02	745.02		1.58	Si
SLV 12	fin.	383.61	2120	-0.0010217	0.0002807	0.0035	0.45		742.08	742.08		1.93	Si
SLV 16	ini.	-439.85	-2274	-0.0012264	0.0002807	0.0035	0.45		745.02	745.02		1.69	Si
SLV 16	fin.	307.97	1633	-0.0007674	0.0002807	0.0035	0.45		742.08	742.08		2.41	Si
SLV 2	ini.	551.43	2919	-0.0017351	0.0002807	0.0035	0.45		742.08	742.08		1.35	Si
SLV 2	fin.	-486.33	-2431	-0.0014177	0.0002807	0.0035	0.45		745.02	745.02		1.53	Si
SLV 11	ini.	-552.23	-2752	-0.0017288	0.0002807	0.0035	0.45		745.02	745.02		1.35	Si
SLV 11	fin.	449.3	2469	-0.0012704	0.0002807	0.0035	0.45		742.08	742.08		1.65	Si
SLV 5	ini.	461.67	2451	-0.0013208	0.0002807	0.0035	0.45		742.08	742.08		1.61	Si
SLV 5	fin.	-464.4	-2400	-0.0013251	0.0002807	0.0035	0.45		745.02	745.02		1.6	Si
SLV 7	ini.	-325.72	-1555	-0.0008206	0.0002807	0.0035	0.45		745.02	745.02		2.29	Si
SLV 7	fin.	277.81	1611	-0.000674	0.0002807	0.0035	0.45		742.08	742.08		2.67	Si
SLV 10	ini.	316.49	1635	-0.0007946	0.0002807	0.0035	0.45		742.08	742.08		2.34	Si
SLV 10	fin.	-358.6	-1891	-0.0009298	0.0002807	0.0035	0.45		745.02	745.02		2.08	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 1	ini.	430.62	-1694	0.45	0	1156	3568	3032	1148	4179		2.47	Si
SLV 1	fin.	-388.76	-2364	0.45	0	1156	3568	3032	1148	4179		1.77	Si
SLV 12	ini.	-470.9	2562	0.45	0	1156	3568	3032	1148	4179		1.63	Si
SLV 12	fin.	383.61	1700	0.45	0	1156	3568	3032	1148	4179		2.46	Si
SLV 7	ini.	-325.72	1935	0.45	0	1156	3568	3032	1148	4179		2.16	Si
SLV 7	fin.	277.81	1098	0.45	0	1156	3568	3032	1148	4179		3.81	Si
SLV 6	ini.	543.01	-2360	0.45	0	1156	3568	3032	1148	4179		1.77	Si
SLV 6	fin.	-530.09	-3006	0.45	0	1156	3568	3032	1148	4179		1.39	Si
SLV 10	ini.	316.49	-1350	0.45	0	1156	3568	3032	1148	4179		3.1	Si
SLV 10	fin.	-358.6	-2065	0.45	0	1156	3568	3032	1148	4179		2.02	Si
SLV 5	ini.	461.67	-1977	0.45	0	1156	3568	3032	1148	4179		2.11	Si
SLV 5	fin.	-464.4	-2666	0.45	0	1156	3568	3032	1148	4179		1.57	Si
SLV 11	ini.	-552.23	2945	0.45	0	1156	3568	3032	1148	4179		1.42	Si
SLV 11	fin.	449.3	2039	0.45	0	1156	3568	3032	1148	4179		2.05	Si
SLV 2	ini.	551.43	-2262	0.45	0	1156	3568	3032	1148	4179		1.85	Si
SLV 2	fin.	-486.33	-2869	0.45	0	1156	3568	3032	1148	4179		1.46	Si
SLV 16	ini.	-439.85	2279	0.45	0	1156	3568	3032	1148	4179		1.83	Si
SLV 16	fin.	307.97	1398	0.45	0	1156	3568	3032	1148	4179		2.99	Si
SLV 15	ini.	-560.66	2847	0.45	0	1156	3568	3032	1148	4179		1.47	Si
SLV 15	fin.	405.54	1902	0.45	0	1156	3568	3032	1148	4179		2.2	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.329	SLV 15	Si
V_SLV	1.39	SLV 6	Si
PF_SLU	9.163	SLU 70	Si
V_SLU	3.495	SLU 70	Si

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Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-5.508	-3.359	12.17	14.17	2	-6.008	-3.359	12.17	14.17	2	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	491.19	-1876	-0.0000495	0.0001872	0.0035	2		14206.68	14206.68	No	28.92	Si
SLU 77	fin.	-178.53	-1412	-0.0000178	0.0001872	0.0035	2		14219.44	14219.44	No	79.65	Si
SLU 75	ini.	465.13	-1777	-0.0000469	0.0001872	0.0035	2		14206.68	14206.68	No	30.54	Si
SLU 75	fin.	-197.64	-1337	-0.0000197	0.0001872	0.0035	2		14219.44	14219.44	No	71.95	Si
SLU 70	ini.	493.32	-2001	-0.0000498	0.0001872	0.0035	2		14206.68	14206.68	No	28.8	Si
SLU 70	fin.	-234.85	-1547	-0.0000234	0.0001872	0.0035	2		14219.44	14219.44	No	60.55	Si
SLU 69	ini.	485.32	-1968	-0.0000489	0.0001872	0.0035	2		14206.68	14206.68	No	29.27	Si
SLU 69	fin.	-219.97	-1516	-0.0000219	0.0001872	0.0035	2		14219.44	14219.44	No	64.64	Si
SLU 72	ini.	486.14	-1934	-0.000049	0.0001872	0.0035	2		14206.68	14206.68	No	29.22	Si
SLU 72	fin.	-237.79	-1489	-0.0000237	0.0001872	0.0035	2		14219.44	14219.44	No	59.8	Si
SLU 71	ini.	478.13	-1901	-0.0000482	0.0001872	0.0035	2		14206.68	14206.68	No	29.71	Si
SLU 71	fin.	-222.91	-1457	-0.0000222	0.0001872	0.0035	2		14219.44	14219.44	No	63.79	Si
SLU 80	ini.	492.01	-1842	-0.0000496	0.0001872	0.0035	2		14206.68	14206.68	No	28.87	Si
SLU 80	fin.	-196.35	-1384	-0.0000196	0.0001872	0.0035	2		14219.44	14219.44	No	72.42	Si
SLU 78	ini.	499.19	-1909	-0.0000504	0.0001872	0.0035	2		14206.68	14206.68	No	28.46	Si
SLU 78	fin.	-193.4	-1443	-0.0000193	0.0001872	0.0035	2		14219.44	14219.44	No	73.52	Si
SLU 79	ini.	484	-1809	-0.0000488	0.0001872	0.0035	2		14206.68	14206.68	No	29.35	Si
SLU 79	fin.	-181.47	-1353	-0.0000181	0.0001872	0.0035	2		14219.44	14219.44	No	78.36	Si
SLU 76	ini.	463.29	-1732	-0.0000467	0.0001872	0.0035	2		14206.68	14206.68	No	30.66	Si
SLU 76	fin.	-210.51	-1299	-0.000021	0.0001872	0.0035	2		14219.44	14219.44	No	67.55	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	492.01	-2200	2	0	4167	3965	8983	5100	8131	No	3.7	Si
SLU 80	fin.	-196.35	-1680	2	0	4167	3965	8983	5100	8131	No	4.84	Si
SLU 77	ini.	491.19	-2184	2	0	4167	3965	8983	5100	8131	No	3.72	Si
SLU 77	fin.	-178.53	-1624	2	0	4167	3965	8983	5100	8131	No	5.01	Si
SLU 70	ini.	493.32	-2285	2	0	4167	3965	8983	5100	8131	No	3.56	Si
SLU 70	fin.	-234.85	-1703	2	0	4167	3965	8983	5100	8131	No	4.77	Si
SLU 67	ini.	459.26	-2156	2	0	4167	3965	8983	5100	8131	No	3.77	Si
SLU 67	fin.	-239.09	-1645	2	0	4167	3965	8983	5100	8131	No	4.94	Si
SLU 79	ini.	484	-2151	2	0	4167	3965	8983	5100	8131	No	3.78	Si
SLU 79	fin.	-181.47	-1630	2	0	4167	3965	8983	5100	8131	No	4.99	Si
SLU 71	ini.	478.13	-2202	2	0	4167	3965	8983	5100	8131	No	3.69	Si
SLU 71	fin.	-222.91	-1659	2	0	4167	3965	8983	5100	8131	No	4.9	Si
SLU 78	ini.	499.19	-2234	2	0	4167	3965	8983	5100	8131	No	3.64	Si
SLU 78	fin.	-193.4	-1674	2	0	4167	3965	8983	5100	8131	No	4.86	Si
SLU 69	ini.	485.32	-2236	2	0	4167	3965	8983	5100	8131	No	3.64	Si
SLU 69	fin.	-219.97	-1654	2	0	4167	3965	8983	5100	8131	No	4.92	Si
SLU 72	ini.	486.14	-2252	2	0	4167	3965	8983	5100	8131	No	3.61	Si
SLU 72	fin.	-237.79	-1709	2	0	4167	3965	8983	5100	8131	No	4.76	Si
SLU 68	ini.	457.42	-2156	2	0	4167	3965	8983	5100	8131	No	3.77	Si
SLU 68	fin.	-251.95	-1684	2	0	4167	3965	8983	5100	8131	No	4.83	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 9	ini.	297.65	-3251	-0.0000297	0.0002807	0.0035	2		13920.08	13920.08		46.77	Si
SLV 9	fin.	-1176.41	-3031	-0.0001204	0.0002807	0.0035	2		13933.43	13933.43		11.84	Si
SLV 5	ini.	571.2	-4749	-0.0000574	0.0002807	0.0035	2		13920.08	13920.08		24.37	Si
SLV 5	fin.	-1918.44	-4508	-0.0002015	0.0002807	0.0035	2		13933.43	13933.43		7.26	Si
SLV 15	ini.	-413.52	2643	-0.0000414	0.0002807	0.0035	2		13933.43	13933.43		33.69	Si
SLV 15	fin.	1730.97	2814	-0.0001807	0.0002807	0.0035	2		13920.08	13920.08		8.04	Si
SLV 16	ini.	-36.7	1828	-0.0000036	0.0002807	0.0035	2		13933.43	13933.43		379.71	Si
SLV 16	fin.	1330.19	2181	-0.000137	0.0002807	0.0035	2		13920.08	13920.08		10.46	Si
SLV 12	ini.	42.94	2375	-0.0000043	0.0002807	0.0035	2		13920.08	13920.08		324.14	Si
SLV 12	fin.	1594.06	2724	-0.0001656	0.0002807	0.0035	2		13920.08	13920.08		8.73	Si
SLV 10	ini.	551.35	-3799	-0.0000554	0.0002807	0.0035	2		13920.08	13920.08		25.25	Si
SLV 10	fin.	-1446.24	-3457	-0.0001494	0.0002807	0.0035	2		13933.43	13933.43		9.63	Si
SLV 2	ini.	1027.67	-5017	-0.0001048	0.0002807	0.0035	2		13920.08	13920.08		13.55	Si
SLV 2	fin.	-2055.35	-4598	-0.0002169	0.0002807	0.0035	2		13933.43	13933.43		6.78	Si
SLV 11	ini.	-210.76	2923	-0.000021	0.0002807	0.0035	2		13933.43	13933.43		66.11	Si
SLV 11	fin.	1863.9	3150	-0.0001955	0.0002807	0.0035	2		13920.08	13920.08		7.47	Si
SLV 6	ini.	824.91	-5297	-0.0000836	0.0002807	0.0035	2		13920.08	13920.08		16.87	Si
SLV 6	fin.	-2188.28	-4934	-0.0002321	0.0002807	0.0035	2		13933.43	13933.43		6.37	Si
SLV 1	ini.	650.84	-4202	-0.0000656	0.0002807	0.0035	2		13920.08	13920.08		21.39	Si
SLV 1	fin.	-1654.57	-3964	-0.0001721	0.0002807	0.0035	2		13933.43	13933.43		8.42	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-413.52	4223	2	0	6250	3965	13475	5100	10215		2.42	Si
SLV 15	fin.	1730.97	5356	2	0	6250	3965	13475	5100	10215		1.91	Si
SLV 4	ini.	875.15	-5062	2	0	6250	3965	13475	5100	10215		2.02	Si
SLV 4	fin.	-1143.26	-5620	2	0	6250	3965	13475	5100	10215		1.82	Si
SLV 3	ini.	498.32	-3167	2	0	6250	3965	13475	5100	10215		3.23	Si
SLV 3	fin.	-742.48	-3612	2	0	6250	3965	13475	5100	10215		2.83	Si
SLV 6	ini.	824.91	-6556	2	0	6250	3965	13475	5100	10215		1.56	Si
SLV 6	fin.	-2188.28	-6522	2	0	6250	3965	13475	5100	10215		1.57	Si
SLV 11	ini.	-210.76	3690	2	0	6250	3965	13475	5100	10215		2.77	Si
SLV 11	fin.	1863.9	4242	2	0	6250	3965	13475	5100	10215		2.41	Si
SLV 5	ini.	571.2	-5280	2	0	6250	3965	13475	5100	10215		1.93	Si
SLV 5	fin.	-1918.44	-5170	2	0	6250	3965	13475	5100	10215		1.98	Si
SLV 2	ini.	1027.67	-7088	2	0	6250	3965	13475	5100	10215		1.44	Si
SLV 2	fin.	-2055.35	-7636	2	0	6250	3965	13475	5100	10215		1.34	Si
SLD 2	ini.	613.44	-3818	2	0	6250	3965	13475	5100	10215		2.68	Si
SLD 2	fin.	-956.77	-3886	2	0	6250	3965	13475	5100	10215		2.63	Si
SLV 1	ini.	650.84	-5193	2	0	6250	3965	13475	5100	10215		1.97	Si
SLV 1	fin.	-1654.57	-5629	2	0	6250	3965	13475	5100	10215		1.81	Si
SLV 10	ini.	551.35	-4339	2	0	6250	3965	13475	5100	10215		2.35	Si
SLV 10	fin.	-1446.24	-3831	2	0	6250	3965	13475	5100	10215		2.67	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	6.367	SLV 6	Si
V_SLV	1.338	SLV 2	Si
PF_SLU	28.459	SLU 78	Si
V_SLU	3.558	SLU 70	Si

Trave di accoppiamento 175

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-5.508	-3.359	14.97	15.32	0.35	-6.008	-3.359	14.97	15.32	0.35	0.5	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	98.5	-117	-0.0003731	0.0001872	0.0035	0.35		458.33	458.33	No	4.65	Si
SLU 78	fin.	-95.58	-117	-0.0003581	0.0001872	0.0035	0.35		460.48	460.48	No	4.82	Si
SLU 72	ini.	99.61	-80	-0.0003781	0.0001872	0.0035	0.35		458.33	458.33	No	4.6	Si
SLU 72	fin.	-93.41	-80	-0.0003485	0.0001872	0.0035	0.35		460.48	460.48	No	4.93	Si
SLU 80	ini.	98.21	-103	-0.0003718	0.0001872	0.0035	0.35		458.33	458.33	No	4.67	Si
SLU 80	fin.	-94.73	-103	-0.0003543	0.0001872	0.0035	0.35		460.48	460.48	No	4.86	Si
SLU 70	ini.	99.9	-95	-0.0003794	0.0001872	0.0035	0.35		458.33	458.33	No	4.59	Si
SLU 70	fin.	-94.25	-95	-0.0003522	0.0001872	0.0035	0.35		460.48	460.48	No	4.89	Si
SLU 76	ini.	96.04	-67	-0.0003621	0.0001872	0.0035	0.35		458.33	458.33	No	4.77	Si
SLU 76	fin.	-90.31	-67	-0.000335	0.0001872	0.0035	0.35		460.48	460.48	No	5.1	Si
SLU 77	ini.	95.9	-125	-0.0003615	0.0001872	0.0035	0.35		458.33	458.33	No	4.78	Si
SLU 77	fin.	-93.91	-125	-0.0003507	0.0001872	0.0035	0.35		460.48	460.48	No	4.9	Si
SLU 71	ini.	97.01	-88	-0.0003664	0.0001872	0.0035	0.35		458.33	458.33	No	4.72	Si
SLU 71	fin.	-91.73	-88	-0.0003412	0.0001872	0.0035	0.35		460.48	460.48	No	5.02	Si
SLU 69	ini.	97.3	-103	-0.0003677	0.0001872	0.0035	0.35		458.33	458.33	No	4.71	Si
SLU 69	fin.	-92.58	-103	-0.0003449	0.0001872	0.0035	0.35		460.48	460.48	No	4.97	Si
SLU 68	ini.	97.44	-44	-0.0003684	0.0001872	0.0035	0.35		458.33	458.33	No	4.7	Si
SLU 68	fin.	-88.99	-44	-0.0003292	0.0001872	0.0035	0.35		460.48	460.48	No	5.17	Si
SLU 67	ini.	96	-64	-0.0003619	0.0001872	0.0035	0.35		458.33	458.33	No	4.77	Si
SLU 67	fin.	-88.72	-64	-0.0003281	0.0001872	0.0035	0.35		460.48	460.48	No	5.19	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	98.5	-327	0.35	0	729	2775	1572	893	2465	No	7.54	Si
SLU 78	fin.	-95.58	-450	0.35	0	729	2775	1572	893	2465	No	5.48	Si
SLU 72	ini.	99.61	-325	0.35	0	729	2775	1572	893	2465	No	7.59	Si
SLU 72	fin.	-93.41	-447	0.35	0	729	2775	1572	893	2465	No	5.51	Si
SLU 80	ini.	98.21	-324	0.35	0	729	2775	1572	893	2465	No	7.6	Si
SLU 80	fin.	-94.73	-447	0.35	0	729	2775	1572	893	2465	No	5.51	Si
SLU 69	ini.	97.3	-318	0.35	0	729	2775	1572	893	2465	No	7.74	Si
SLU 69	fin.	-92.58	-441	0.35	0	729	2775	1572	893	2465	No	5.59	Si
SLU 77	ini.	95.9	-318	0.35	0	729	2775	1572	893	2465	No	7.75	Si
SLU 77	fin.	-93.91	-441	0.35	0	729	2775	1572	893	2465	No	5.59	Si
SLU 68	ini.	97.44	-311	0.35	0	729	2775	1572	893	2465	No	7.91	Si
SLU 68	fin.	-88.99	-434	0.35	0	729	2775	1572	893	2465	No	5.68	Si
SLU 71	ini.	97.01	-316	0.35	0	729	2775	1572	893	2465	No	7.8	Si
SLU 71	fin.	-91.73	-439	0.35	0	729	2775	1572	893	2465	No	5.62	Si
SLU 76	ini.	96.04	-311	0.35	0	729	2775	1572	893	2465	No	7.92	Si
SLU 76	fin.	-90.31	-434	0.35	0	729	2775	1572	893	2465	No	5.68	Si
SLU 79	ini.	95.61	-316	0.35	0	729	2775	1572	893	2465	No	7.8	Si
SLU 79	fin.	-93.06	-439	0.35	0	729	2775	1572	893	2465	No	5.62	Si
SLU 70	ini.	99.9	-327	0.35	0	729	2775	1572	893	2465	No	7.54	Si
SLU 70	fin.	-94.25	-450	0.35	0	729	2775	1572	893	2465	No	5.48	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 6	ini.	141.61	516	-0.0005444	0.0002807	0.0035	0.35		448.02	448.02		3.16	Si
SLD 6	fin.	-74.04	511	-0.0002566	0.0002807	0.0035	0.35		450.32	450.32		6.08	Si
SLV 4	ini.	146.99	744	-0.0005696	0.0002807	0.0035	0.35		448.02	448.02		3.05	Si
SLV 4	fin.	-52.06	746	-0.0001757	0.0002807	0.0035	0.35		450.32	450.32		8.65	Si
SLV 5	ini.	193.36	1127	-0.0008021	0.0002807	0.0035	0.35		448.02	448.02		2.32	Si
SLV 5	fin.	-55.6	1116	-0.0001884	0.0002807	0.0035	0.35		450.32	450.32		8.1	Si
SLV 2	ini.	226.97	1324	-0.0009885	0.0002807	0.0035	0.35		448.02	448.02		1.97	Si
SLV 2	fin.	-65.21	1320	-0.0002235	0.0002807	0.0035	0.35		450.32	450.32		6.91	Si
SLD 2	ini.	134.1	543	-0.0005097	0.0002807	0.0035	0.35		448.02	448.02		3.34	Si
SLD 2	fin.	-62.97	541	-0.0002153	0.0002807	0.0035	0.35		450.32	450.32		7.15	Si
SLV 6	ini.	252.67	1310	-0.001143	0.0002807	0.0035	0.35		448.02	448.02		1.77	Si
SLV 6	fin.	-92.83	1299	-0.00033	0.0002807	0.0035	0.35		450.32	450.32		4.85	Si
SLV 9	ini.	147.74	573	-0.0005732	0.0002807	0.0035	0.35		448.02	448.02		3.03	Si
SLV 9	fin.	-73.88	563	-0.000256	0.0002807	0.0035	0.35		450.32	450.32		6.1	Si
SLV 1	ini.	138.88	1052	-0.0005317	0.0002807	0.0035	0.35		448.02	448.02		3.23	Si
SLV 1	fin.	-9.9	1048	-0.000032	0.0002807	0.0035	0.35		450.32	450.32		45.48	Si
SLV 10	ini.	207.05	756	-0.0008761	0.0002807	0.0035	0.35		448.02	448.02		2.16	Si
SLV 10	fin.	-111.11	746	-0.0004057	0.0002807	0.0035	0.35		450.32	450.32		4.05	Si
SLV 14	ini.	74.9	-523	-0.0002612	0.0002807	0.0035	0.35		448.02	448.02		5.98	Si
SLV 14	fin.	-126.14	-524	-0.0004711	0.0002807	0.0035	0.35		450.32	450.32		3.57	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	74.9	-292	0.35	0	1094	2775	2358	893	3251		11.12	Si
SLV 14	fin.	-126.14	-438	0.35	0	1094	2775	2358	893	3251		7.42	Si
SLD 2	ini.	134.1	-381	0.35	0	1094	2775	2358	893	3251		8.54	Si
SLD 2	fin.	-62.97	-447	0.35	0	1094	2775	2358	893	3251		7.27	Si
SLD 10	ini.	121.99	-364	0.35	0	1094	2775	2358	893	3251		8.94	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 10	fin.	-81.75	-455	0.35	0	1094	2775	2358	893	3251		7.14	Si
SLV 6	ini.	252.67	-692	0.35	0	1094	2775	2358	893	3251		4.7	Si
SLV 6	fin.	-92.83	-746	0.35	0	1094	2775	2358	893	3251		4.36	Si
SLV 10	ini.	207.05	-594	0.35	0	1094	2775	2358	893	3251		5.47	Si
SLV 10	fin.	-111.11	-684	0.35	0	1094	2775	2358	893	3251		4.76	Si
SLD 6	ini.	141.61	-406	0.35	0	1094	2775	2358	893	3251		8.01	Si
SLD 6	fin.	-74.04	-482	0.35	0	1094	2775	2358	893	3251		6.74	Si
SLV 4	ini.	146.99	-413	0.35	0	1094	2775	2358	893	3251		7.86	Si
SLV 4	fin.	-52.06	-457	0.35	0	1094	2775	2358	893	3251		7.12	Si
SLV 2	ini.	226.97	-616	0.35	0	1094	2775	2358	893	3251		5.28	Si
SLV 2	fin.	-65.21	-645	0.35	0	1094	2775	2358	893	3251		5.04	Si
SLV 9	ini.	147.74	-401	0.35	0	1094	2775	2358	893	3251		8.1	Si
SLV 9	fin.	-73.88	-490	0.35	0	1094	2775	2358	893	3251		6.63	Si
SLV 5	ini.	193.36	-498	0.35	0	1094	2775	2358	893	3251		6.52	Si
SLV 5	fin.	-55.6	-553	0.35	0	1094	2775	2358	893	3251		5.88	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.773	SLV 6	Si
V_SLV	4.359	SLV 6	Si
PF_SLU	4.588	SLU 70	Si
V_SLU	5.48	SLU 70	Si

Trave di accoppiamento 176

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-2.283	-3.359	12.17	13.07	0.9	-3.183	-3.359	12.17	13.07	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 47	ini.	140.11	-684	-0.0000705	0.0001872	0.0035	0.9		2942.43	2942.43	No	21	Si
SLU 47	fin.	-14.86	-495	-0.0000073	0.0001872	0.0035	0.9		2948.11	2948.11	No	198.37	Si
SLU 43	ini.	140.77	-676	-0.0000708	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.9	Si
SLU 43	fin.	-26.98	-456	-0.0000132	0.0001872	0.0035	0.9		2948.11	2948.11	No	109.28	Si
SLU 77	ini.	61.91	-484	-0.0000306	0.0001872	0.0035	0.9		2942.43	2942.43	No	47.53	Si
SLU 77	fin.	146.9	-780	-0.000074	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.03	Si
SLU 37	ini.	23.41	-306	-0.0000115	0.0001872	0.0035	0.9		2942.43	2942.43	No	125.69	Si
SLU 37	fin.	160.67	-681	-0.0000811	0.0001872	0.0035	0.9		2942.43	2942.43	No	18.31	Si
SLU 42	ini.	28.82	-307	-0.0000142	0.0001872	0.0035	0.9		2942.43	2942.43	No	102.11	Si
SLU 42	fin.	140.78	-635	-0.0000708	0.0001872	0.0035	0.9		2942.43	2942.43	No	20.9	Si
SLU 41	ini.	22	-287	-0.0000108	0.0001872	0.0035	0.9		2942.43	2942.43	No	133.78	Si
SLU 41	fin.	151.46	-647	-0.0000763	0.0001872	0.0035	0.9		2942.43	2942.43	No	19.43	Si
SLU 38	ini.	30.23	-325	-0.0000149	0.0001872	0.0035	0.9		2942.43	2942.43	No	97.33	Si
SLU 38	fin.	149.99	-668	-0.0000756	0.0001872	0.0035	0.9		2942.43	2942.43	No	19.62	Si
SLU 44	ini.	152.14	-708	-0.0000767	0.0001872	0.0035	0.9		2942.43	2942.43	No	19.34	Si
SLU 44	fin.	-44.77	-435	-0.000022	0.0001872	0.0035	0.9		2948.11	2948.11	No	65.84	Si
SLU 36	ini.	30.09	-333	-0.0000148	0.0001872	0.0035	0.9		2942.43	2942.43	No	97.79	Si
SLU 36	fin.	157.74	-693	-0.0000796	0.0001872	0.0035	0.9		2942.43	2942.43	No	18.65	Si
SLU 35	ini.	23.27	-314	-0.0000114	0.0001872	0.0035	0.9		2942.43	2942.43	No	126.45	Si
SLU 35	fin.	168.41	-706	-0.0000852	0.0001872	0.0035	0.9		2942.43	2942.43	No	17.47	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 49	ini.	123.4	-720	0.9	0	1875	7137	4043	2295	6338	No	8.8	Si
SLU 49	fin.	29.92	59	0.9	0	1875	7137	4043	2295	6338	No	108.03	Si
SLU 46	ini.	135.43	-755	0.9	0	1875	7137	4043	2295	6338	No	8.39	Si
SLU 46	fin.	0.01	-62	0.9	0	1875	7137	4043	2295	6338	No	101.47	Si
SLU 47	ini.	140.11	-763	0.9	0	1875	7137	4043	2295	6338	No	8.31	Si
SLU 47	fin.	-14.86	-123	0.9	0	1875	7137	4043	2295	6338	No	51.69	Si
SLU 44	ini.	152.14	-798	0.9	0	1875	7137	4043	2295	6338	No	7.94	Si
SLU 44	fin.	-44.77	-244	0.9	0	1875	7137	4043	2295	6338	No	26	Si
SLU 45	ini.	128.61	-721	0.9	0	1875	7137	4043	2295	6338	No	8.78	Si
SLU 45	fin.	10.68	-27	0.9	0	1875	7137	4043	2295	6338	No	237.86	Si
SLU 50	ini.	116.72	-671	0.9	0	1875	7137	4043	2295	6338	No	9.44	Si
SLU 50	fin.	32.85	58	0.9	0	1875	7137	4043	2295	6338	No	108.87	Si
SLU 48	ini.	116.58	-686	0.9	0	1875	7137	4043	2295	6338	No	9.24	Si
SLU 48	fin.	40.6	94	0.9	0	1875	7137	4043	2295	6338	No	67.08	Si
SLU 51	ini.	123.54	-705	0.9	0	1875	7137	4043	2295	6338	No	8.99	Si
SLU 51	fin.	22.17	22	0.9	0	1875	7137	4043	2295	6338	No	282.95	Si
SLU 65	ini.	128.82	-623	0.9	0	1875	7137	4043	2295	6338	No	10.17	Si
SLU 65	fin.	13.21	-68	0.9	0	1875	7137	4043	2295	6338	No	93.41	Si
SLU 43	ini.	140.77	-742	0.9	0	1875	7137	4043	2295	6338	No	8.54	Si
SLU 43	fin.	-26.98	-184	0.9	0	1875	7137	4043	2295	6338	No	34.44	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 12	ini.	-832.09	2454	-0.0004743	0.0002807	0.0035	0.9		2973.32	2973.32		3.57	Si
SLV 12	fin.	1305.58	-1619	-0.0008294	0.0002807	0.0035	0.9		2967.55	2967.55		2.27	Si
SLV 7	ini.	-739.89	2085	-0.0004129	0.0002807	0.0035	0.9		2973.32	2973.32		4.02	Si
SLV 7	fin.	1215.25	-1643	-0.0007568	0.0002807	0.0035	0.9		2967.55	2967.55		2.44	Si
SLV 2	ini.	916.31	-3155	-0.0005336	0.0002807	0.0035	0.9		2967.55	2967.55		3.24	Si
SLV 2	fin.	-1094.76	506	-0.0006623	0.0002807	0.0035	0.9		2973.32	2973.32		2.72	Si
SLV 15	ini.	-743.28	2230	-0.0004151	0.0002807	0.0035	0.9		2973.32	2973.32		4	Si
SLV 15	fin.	1144.59	-1371	-0.0007017	0.0002807	0.0035	0.9		2967.55	2967.55		2.59	Si
SLV 8	ini.	-567.9	1563	-0.0003051	0.0002807	0.0035	0.9		2973.32	2973.32		5.24	Si
SLV 8	fin.	966.85	-1386	-0.0005696	0.0002807	0.0035	0.9		2967.55	2967.55		3.07	Si
SLV 10	ini.	912.92	-3010	-0.0005312	0.0002807	0.0035	0.9		2967.55	2967.55		3.25	Si
SLV 10	fin.	-1165.43	778	-0.0007162	0.0002807	0.0035	0.9		2973.32	2973.32		2.55	Si
SLV 11	ini.	-1004.08	2976	-0.0005952	0.0002807	0.0035	0.9		2973.32	2973.32		2.96	Si
SLV 11	fin.	1553.98	-1876	-0.0010429	0.0002807	0.0035	0.9		2967.55	2967.55		1.91	Si
SLV 5	ini.	1005.12	-3379	-0.0005973	0.0002807	0.0035	0.9		2967.55	2967.55		2.95	Si
SLV 5	fin.	-1255.75	753	-0.0007872	0.0002807	0.0035	0.9		2973.32	2973.32		2.37	Si
SLV 6	ini.	1177.11	-3901	-0.0007269	0.0002807	0.0035	0.9		2967.55	2967.55		2.52	Si
SLV 6	fin.	-1504.16	1010	-0.0009959	0.0002807	0.0035	0.9		2973.32	2973.32		1.98	Si
SLV 9	ini.	740.93	-2488	-0.0004145	0.0002807	0.0035	0.9		2967.55	2967.55		4.01	Si
SLV 9	fin.	-917.03	520	-0.0005329	0.0002807	0.0035	0.9		2973.32	2973.32		3.24	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 9	ini.	740.93	-3958	0.9	0	2813	7137	6064	2295	8359		2.11	Si
SLV 9	fin.	-917.03	-3054	0.9	0	2813	7137	6064	2295	8359		2.74	Si
SLV 7	ini.	-739.89	3979	0.9	0	2813	7137	6064	2295	8359		2.1	Si
SLV 7	fin.	1215.25	3896	0.9	0	2813	7137	6064	2295	8359		2.15	Si
SLV 2	ini.	916.31	-4359	0.9	0	2813	7137	6064	2295	8359		1.92	Si
SLV 2	fin.	-1094.76	-4040	0.9	0	2813	7137	6064	2295	8359		2.07	Si
SLV 5	ini.	1005.12	-5136	0.9	0	2813	7137	6064	2295	8359		1.63	Si
SLV 5	fin.	-1255.75	-4349	0.9	0	2813	7137	6064	2295	8359		1.92	Si
SLV 12	ini.	-832.09	4322	0.9	0	2813	7137	6064	2295	8359		1.93	Si
SLV 12	fin.	1305.58	4332	0.9	0	2813	7137	6064	2295	8359		1.93	Si
SLV 6	ini.	1177.11	-5972	0.9	0	2813	7137	6064	2295	8359		1.4	Si
SLV 6	fin.	-1504.16	-5207	0.9	0	2813	7137	6064	2295	8359		1.61	Si
SLV 15	ini.	-743.28	3545	0.9	0	2813	7137	6064	2295	8359		2.36	Si
SLV 15	fin.	1144.59	4024	0.9	0	2813	7137	6064	2295	8359		2.08	Si
SLV 10	ini.	912.92	-4793	0.9	0	2813	7137	6064	2295	8359		1.74	Si
SLV 10	fin.	-1165.43	-3913	0.9	0	2813	7137	6064	2295	8359		2.14	Si
SLV 11	ini.	-1004.08	5158	0.9	0	2813	7137	6064	2295	8359		1.62	Si
SLV 11	fin.	1553.98	5191	0.9	0	2813	7137	6064	2295	8359		1.61	Si
SLV 8	ini.	-567.9	3144	0.9	0	2813	7137	6064	2295	8359		2.66	Si
SLV 8	fin.	966.85	3037	0.9	0	2813	7137	6064	2295	8359		2.75	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.91	SLV 11	Si
V_SLV	1.4	SLV 6	Si
PF_SLU	17.471	SLU 35	Si
V_SLU	7.941	SLU 44	Si

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Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-2.283	-3.359	14.87	15.32	0.45	-3.183	-3.359	14.87	15.32	0.45	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 48	ini.	-37.76	-172	-0.0000756	0.0001872	0.0035	0.45		744.65	744.65	No	19.72	Si
SLU 48	fin.	-115.46	-174	-0.0002501	0.0001872	0.0035	0.45		744.65	744.65	No	6.45	Si
SLU 44	ini.	2.45	72	-0.0000048	0.0001872	0.0035	0.45		741.81	741.81	No	303.16	Si
SLU 44	fin.	-121.6	-263	-0.0002653	0.0001872	0.0035	0.45		744.65	744.65	No	6.12	Si
SLU 45	ini.	-22.98	-84	-0.0000455	0.0001872	0.0035	0.45		744.65	744.65	No	32.41	Si
SLU 45	fin.	-116.49	-205	-0.0002526	0.0001872	0.0035	0.45		744.65	744.65	No	6.39	Si
SLU 70	ini.	-58.51	-302	-0.0001194	0.0001872	0.0035	0.45		744.65	744.65	No	12.73	Si
SLU 70	fin.	-112.68	-140	-0.0002433	0.0001872	0.0035	0.45		744.65	744.65	No	6.61	Si
SLU 67	ini.	-43.73	-214	-0.000088	0.0001872	0.0035	0.45		744.65	744.65	No	17.03	Si
SLU 67	fin.	-113.72	-171	-0.0002458	0.0001872	0.0035	0.45		744.65	744.65	No	6.55	Si
SLU 46	ini.	-19.35	-57	-0.0000382	0.0001872	0.0035	0.45		744.65	744.65	No	38.49	Si
SLU 46	fin.	-122.2	-223	-0.0002668	0.0001872	0.0035	0.45		744.65	744.65	No	6.09	Si
SLU 47	ini.	-12.33	-16	-0.0000242	0.0001872	0.0035	0.45		744.65	744.65	No	60.37	Si
SLU 47	fin.	-120.56	-232	-0.0002627	0.0001872	0.0035	0.45		744.65	744.65	No	6.18	Si
SLU 51	ini.	-29.54	-122	-0.0000588	0.0001872	0.0035	0.45		744.65	744.65	No	25.21	Si
SLU 51	fin.	-115.72	-189	-0.0002507	0.0001872	0.0035	0.45		744.65	744.65	No	6.43	Si
SLU 49	ini.	-34.13	-146	-0.0000682	0.0001872	0.0035	0.45		744.65	744.65	No	21.82	Si
SLU 49	fin.	-121.16	-192	-0.0002642	0.0001872	0.0035	0.45		744.65	744.65	No	6.15	Si
SLU 65	ini.	-21.94	-85	-0.0000434	0.0001872	0.0035	0.45		744.65	744.65	No	33.94	Si
SLU 65	fin.	-113.12	-210	-0.0002443	0.0001872	0.0035	0.45		744.65	744.65	No	6.58	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-75.47	999	0.45	0	856	3568	2021	1148	3169	No	3.17	Si
SLU 78	fin.	-86.97	-568	0.45	0	856	3568	2021	1148	3169	No	5.57	Si
SLU 35	ini.	-84.7	1005	0.45	0	856	3568	2021	1148	3169	No	3.15	Si
SLU 35	fin.	-53.17	-413	0.45	0	856	3568	2021	1148	3169	No	7.67	Si
SLU 77	ini.	-79.1	1022	0.45	0	856	3568	2021	1148	3169	No	3.1	Si
SLU 77	fin.	-81.27	-548	0.45	0	856	3568	2021	1148	3169	No	5.79	Si
SLU 69	ini.	-62.14	915	0.45	0	856	3568	2021	1148	3169	No	3.46	Si
SLU 69	fin.	-106.98	-643	0.45	0	856	3568	2021	1148	3169	No	4.93	Si
SLU 37	ini.	-80.1	943	0.45	0	856	3568	2021	1148	3169	No	3.36	Si
SLU 37	fin.	-47.73	-381	0.45	0	856	3568	2021	1148	3169	No	8.31	Si
SLU 80	ini.	-70.87	936	0.45	0	856	3568	2021	1148	3169	No	3.39	Si
SLU 80	fin.	-81.54	-537	0.45	0	856	3568	2021	1148	3169	No	5.9	Si
SLU 79	ini.	-74.51	959	0.45	0	856	3568	2021	1148	3169	No	3.3	Si
SLU 79	fin.	-75.83	-516	0.45	0	856	3568	2021	1148	3169	No	6.14	Si
SLU 38	ini.	-76.47	919	0.45	0	856	3568	2021	1148	3169	No	3.45	Si
SLU 38	fin.	-53.43	-402	0.45	0	856	3568	2021	1148	3169	No	7.88	Si
SLU 36	ini.	-81.06	982	0.45	0	856	3568	2021	1148	3169	No	3.23	Si
SLU 36	fin.	-58.87	-434	0.45	0	856	3568	2021	1148	3169	No	7.3	Si
SLU 27	ini.	-67.74	898	0.45	0	856	3568	2021	1148	3169	No	3.53	Si
SLU 27	fin.	-78.88	-509	0.45	0	856	3568	2021	1148	3169	No	6.23	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	-310.35	-2109	-0.0007714	0.0002807	0.0035	0.45		745.02	745.02		2.4	Si
SLV 15	fin.	418.16	1565	-0.0011488	0.0002807	0.0035	0.45		742.08	742.08		1.77	Si
SLV 7	ini.	-415.03	-2934	-0.0011313	0.0002807	0.0035	0.45		745.02	745.02		1.8	Si
SLV 7	fin.	560.31	1900	-0.0017822	0.0002807	0.0035	0.45		742.08	742.08		1.32	Si
SLV 6	ini.	442.19	3195	-0.001242	0.0002807	0.0035	0.45		742.08	742.08		1.68	Si
SLV 6	fin.	-833.96	-2619	-0.0039732	0.0002807	0.0035	0.45		745.02	745.02		0.89	No
SLV 9	ini.	296.33	2189	-0.0007309	0.0002807	0.0035	0.45		742.08	742.08		2.5	Si
SLV 9	fin.	-582.94	-1745	-0.0018968	0.0002807	0.0035	0.45		745.02	745.02		1.28	Si
SLV 5	ini.	365.52	2649	-0.0009581	0.0002807	0.0035	0.45		742.08	742.08		2.03	Si
SLV 5	fin.	-708.14	-2208	-0.00281	0.0002807	0.0035	0.45		745.02	745.02		1.05	Si
SLV 10	ini.	373	2735	-0.0009841	0.0002807	0.0035	0.45		742.08	742.08		1.99	Si
SLV 10	fin.	-708.76	-2156	-0.0028156	0.0002807	0.0035	0.45		745.02	745.02		1.05	Si
SLV 8	ini.	-338.36	-2388	-0.0008619	0.0002807	0.0035	0.45		745.02	745.02		2.2	Si
SLV 8	fin.	434.49	1489	-0.0012117	0.0002807	0.0035	0.45		742.08	742.08		1.71	Si
SLV 11	ini.	-484.22	-3394	-0.0014086	0.0002807	0.0035	0.45		745.02	745.02		1.54	Si
SLV 11	fin.	685.52	2363	-0.0026342	0.0002807	0.0035	0.45		742.08	742.08		1.08	Si
SLV 2	ini.	268.32	1911	-0.0006455	0.0002807	0.0035	0.45		742.08	742.08		2.77	Si
SLV 2	fin.	-566.6	-1821	-0.0018052	0.0002807	0.0035	0.45		745.02	745.02		1.31	Si
SLV 12	ini.	-407.55	-2848	-0.0011034	0.0002807	0.0035	0.45		745.02	745.02		1.83	Si
SLV 12	fin.	559.7	1952	-0.0017789	0.0002807	0.0035	0.45		742.08	742.08		1.33	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 10	ini.	373	-2184	0.45	0	1156	3568	3032	1148	4179		1.91	Si
SLV 10	fin.	-708.76	-2722	0.45	0	1156	3568	3032	1148	4179		1.54	Si
SLV 7	ini.	-415.03	2991	0.45	0	1156	3568	3032	1148	4179		1.4	Si
SLV 7	fin.	560.31	1898	0.45	0	1156	3568	3032	1148	4179		2.2	Si
SLV 15	ini.	-310.35	2332	0.45	0	1156	3568	3032	1148	4179		1.79	Si
SLV 15	fin.	418.16	1315	0.45	0	1156	3568	3032	1148	4179		3.18	Si
SLV 2	ini.	268.32	-1525	0.45	0	1156	3568	3032	1148	4179		2.74	Si
SLV 2	fin.	-566.6	-2138	0.45	0	1156	3568	3032	1148	4179		1.95	Si
SLV 11	ini.	-484.22	3460	0.45	0	1156	3568	3032	1148	4179		1.21	Si
SLV 11	fin.	685.52	2319	0.45	0	1156	3568	3032	1148	4179		1.8	Si
SLV 6	ini.	442.19	-2653	0.45	0	1156	3568	3032	1148	4179		1.58	Si
SLV 6	fin.	-833.96	-3143	0.45	0	1156	3568	3032	1148	4179		1.33	Si
SLV 12	ini.	-407.55	2953	0.45	0	1156	3568	3032	1148	4179		1.42	Si
SLV 12	fin.	559.7	1866	0.45	0	1156	3568	3032	1148	4179		2.24	Si
SLV 8	ini.	-338.36	2484	0.45	0	1156	3568	3032	1148	4179		1.68	Si
SLV 8	fin.	434.49	1445	0.45	0	1156	3568	3032	1148	4179		2.89	Si
SLV 9	ini.	296.33	-1677	0.45	0	1156	3568	3032	1148	4179		2.49	Si
SLV 9	fin.	-582.94	-2268	0.45	0	1156	3568	3032	1148	4179		1.84	Si
SLV 5	ini.	365.52	-2146	0.45	0	1156	3568	3032	1148	4179		1.95	Si
SLV 5	fin.	-708.14	-2689	0.45	0	1156	3568	3032	1148	4179		1.55	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.893	SLV 6	No
V_SLV	1.208	SLV 11	Si
PF_SLU	6.094	SLU 46	Si
V_SLU	3.101	SLU 77	Si

Trave di accoppiamento 178

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-2.063	5.951	12.17	13.07	0.9	-2.963	5.951	12.17	13.07	0.9	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 48	ini.	92.69	-501	-0.0000462	0.0001872	0.0035	0.9		2942.43	2942.43	No	31.74	Si
SLU 48	fin.	-21.79	-345	-0.0000107	0.0001872	0.0035	0.9		2948.11	2948.11	No	135.28	Si
SLU 43	ini.	105.72	-477	-0.0000528	0.0001872	0.0035	0.9		2942.43	2942.43	No	27.83	Si
SLU 43	fin.	-65.1	-218	-0.0000322	0.0001872	0.0035	0.9		2948.11	2948.11	No	45.29	Si
SLU 45	ini.	97.28	-485	-0.0000485	0.0001872	0.0035	0.9		2942.43	2942.43	No	30.25	Si
SLU 45	fin.	-42.14	-283	-0.0000207	0.0001872	0.0035	0.9		2948.11	2948.11	No	69.95	Si
SLU 36	ini.	1.79	-282	-0.0000009	0.0001872	0.0035	0.9		2942.43	2942.43	No	1647.75	Si
SLU 36	fin.	83.22	-471	-0.0000414	0.0001872	0.0035	0.9		2942.43	2942.43	No	35.36	Si
SLU 51	ini.	90.25	-497	-0.0000449	0.0001872	0.0035	0.9		2942.43	2942.43	No	32.6	Si
SLU 51	fin.	-15.39	-356	-0.0000075	0.0001872	0.0035	0.9		2948.11	2948.11	No	191.53	Si
SLU 50	ini.	96.54	-509	-0.0000481	0.0001872	0.0035	0.9		2942.43	2942.43	No	30.48	Si
SLU 50	fin.	-24.39	-342	-0.000012	0.0001872	0.0035	0.9		2948.11	2948.11	No	120.85	Si
SLU 46	ini.	90.99	-473	-0.0000453	0.0001872	0.0035	0.9		2942.43	2942.43	No	32.34	Si
SLU 46	fin.	-33.14	-297	-0.0000163	0.0001872	0.0035	0.9		2948.11	2948.11	No	88.95	Si
SLU 47	ini.	90.64	-473	-0.0000451	0.0001872	0.0035	0.9		2942.43	2942.43	No	32.46	Si
SLU 47	fin.	-29.74	-304	-0.0000146	0.0001872	0.0035	0.9		2948.11	2948.11	No	99.12	Si
SLU 49	ini.	86.4	-489	-0.000043	0.0001872	0.0035	0.9		2942.43	2942.43	No	34.06	Si
SLU 49	fin.	-12.79	-360	-0.0000063	0.0001872	0.0035	0.9		2948.11	2948.11	No	230.49	Si
SLU 44	ini.	95.23	-457	-0.0000474	0.0001872	0.0035	0.9		2942.43	2942.43	No	30.9	Si
SLU 44	fin.	-50.1	-241	-0.0000247	0.0001872	0.0035	0.9		2948.11	2948.11	No	58.85	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 45	ini.	97.28	-503	0.9	0	1875	7137	4043	2295	6338	No	12.59	Si
SLU 45	fin.	-42.14	-79	0.9	0	1875	7137	4043	2295	6338	No	79.85	Si
SLU 50	ini.	96.54	-503	0.9	0	1875	7137	4043	2295	6338	No	12.59	Si
SLU 50	fin.	-24.39	-10	0.9	0	1875	7137	4043	2295	6338	No	609.06	Si
SLU 69	ini.	66.97	-382	0.9	0	1875	7137	4043	2295	6338	No	16.58	Si
SLU 69	fin.	16.04	149	0.9	0	1875	7137	4043	2295	6338	No	42.49	Si
SLU 49	ini.	86.4	-483	0.9	0	1875	7137	4043	2295	6338	No	13.11	Si
SLU 49	fin.	-12.79	50	0.9	0	1875	7137	4043	2295	6338	No	126.02	Si
SLU 47	ini.	90.64	-442	0.9	0	1875	7137	4043	2295	6338	No	14.32	Si
SLU 47	fin.	-29.74	-61	0.9	0	1875	7137	4043	2295	6338	No	103.81	Si
SLU 48	ini.	92.69	-514	0.9	0	1875	7137	4043	2295	6338	No	12.34	Si
SLU 48	fin.	-21.79	21	0.9	0	1875	7137	4043	2295	6338	No	306.77	Si
SLU 46	ini.	90.99	-473	0.9	0	1875	7137	4043	2295	6338	No	13.4	Si
SLU 46	fin.	-33.14	-50	0.9	0	1875	7137	4043	2295	6338	No	127.41	Si
SLU 51	ini.	90.25	-473	0.9	0	1875	7137	4043	2295	6338	No	13.4	Si
SLU 51	fin.	-15.39	19	0.9	0	1875	7137	4043	2295	6338	No	329.63	Si
SLU 43	ini.	105.72	-483	0.9	0	1875	7137	4043	2295	6338	No	13.13	Si
SLU 43	fin.	-65.1	-210	0.9	0	1875	7137	4043	2295	6338	No	30.11	Si
SLU 44	ini.	95.23	-432	0.9	0	1875	7137	4043	2295	6338	No	14.67	Si
SLU 44	fin.	-50.1	-161	0.9	0	1875	7137	4043	2295	6338	No	39.34	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 9	ini.	-666.76	1219	-0.000366	0.0002807	0.0035	0.9		2973.32	2973.32		4.46	Si
SLV 9	fin.	937.56	-1602	-0.0005486	0.0002807	0.0035	0.9		2967.55	2967.55		3.17	Si
SLV 12	ini.	648.45	-1678	-0.0003552	0.0002807	0.0035	0.9		2967.55	2967.55		4.58	Si
SLV 12	fin.	-704.64	591	-0.0003901	0.0002807	0.0035	0.9		2973.32	2973.32		4.22	Si
SLV 14	ini.	-487.54	643	-0.0002577	0.0002807	0.0035	0.9		2973.32	2973.32		6.1	Si
SLV 14	fin.	884.14	-1850	-0.0005111	0.0002807	0.0035	0.9		2967.55	2967.55		3.36	Si
SLV 6	ini.	-665.94	1233	-0.0003655	0.0002807	0.0035	0.9		2973.32	2973.32		4.46	Si
SLV 6	fin.	892.89	-1466	-0.0005172	0.0002807	0.0035	0.9		2967.55	2967.55		3.32	Si
SLV 10	ini.	-802.8	1440	-0.0004545	0.0002807	0.0035	0.9		2973.32	2973.32		3.7	Si
SLV 10	fin.	1165.42	-2018	-0.0007178	0.0002807	0.0035	0.9		2967.55	2967.55		2.55	Si
SLV 11	ini.	784.48	-1899	-0.0004432	0.0002807	0.0035	0.9		2967.55	2967.55		3.78	Si
SLV 11	fin.	-932.51	1007	-0.0005439	0.0002807	0.0035	0.9		2973.32	2973.32		3.19	Si
SLV 7	ini.	921.34	-2106	-0.0005372	0.0002807	0.0035	0.9		2967.55	2967.55		3.22	Si
SLV 7	fin.	-1205.04	1559	-0.000747	0.0002807	0.0035	0.9		2973.32	2973.32		2.47	Si
SLV 8	ini.	785.3	-1885	-0.0004438	0.0002807	0.0035	0.9		2967.55	2967.55		3.78	Si
SLV 8	fin.	-977.18	1142	-0.0005757	0.0002807	0.0035	0.9		2973.32	2973.32		3.04	Si
SLV 5	ini.	-529.91	1012	-0.0002824	0.0002807	0.0035	0.9		2973.32	2973.32		5.61	Si
SLV 5	fin.	665.03	-1050	-0.0003657	0.0002807	0.0035	0.9		2967.55	2967.55		4.46	Si
SLV 3	ini.	606.08	-1310	-0.0003289	0.0002807	0.0035	0.9		2967.55	2967.55		4.9	Si
SLV 3	fin.	-923.76	1390	-0.0005377	0.0002807	0.0035	0.9		2973.32	2973.32		3.22	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 11	ini.	784.48	-3690	0.9	0	2813	7137	6064	2295	8359		2.26	Si
SLV 11	fin.	-932.51	-3078	0.9	0	2813	7137	6064	2295	8359		2.72	Si
SLV 5	ini.	-529.91	2509	0.9	0	2813	7137	6064	2295	8359		3.33	Si
SLV 5	fin.	665.03	2199	0.9	0	2813	7137	6064	2295	8359		3.8	Si
SLV 10	ini.	-802.8	4023	0.9	0	2813	7137	6064	2295	8359		2.08	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 10	fin.	1165.42	3843	0.9	0	2813	7137	6064	2295	8359		2.18	Si
SLV 9	ini.	-666.76	3328	0.9	0	2813	7137	6064	2295	8359		2.51	Si
SLV 9	fin.	937.56	3108	0.9	0	2813	7137	6064	2295	8359		2.69	Si
SLV 14	ini.	-487.54	2690	0.9	0	2813	7137	6064	2295	8359		3.11	Si
SLV 14	fin.	884.14	2917	0.9	0	2813	7137	6064	2295	8359		2.87	Si
SLV 12	ini.	648.45	-2996	0.9	0	2813	7137	6064	2295	8359		2.79	Si
SLV 12	fin.	-704.64	-2343	0.9	0	2813	7137	6064	2295	8359		3.57	Si
SLV 8	ini.	785.3	-3815	0.9	0	2813	7137	6064	2295	8359		2.19	Si
SLV 8	fin.	-977.18	-3252	0.9	0	2813	7137	6064	2295	8359		2.57	Si
SLV 3	ini.	606.08	-3177	0.9	0	2813	7137	6064	2295	8359		2.63	Si
SLV 3	fin.	-923.76	-3061	0.9	0	2813	7137	6064	2295	8359		2.73	Si
SLV 7	ini.	921.34	-4510	0.9	0	2813	7137	6064	2295	8359		1.85	Si
SLV 7	fin.	-1205.04	-3987	0.9	0	2813	7137	6064	2295	8359		2.1	Si
SLV 6	ini.	-665.94	3203	0.9	0	2813	7137	6064	2295	8359		2.61	Si
SLV 6	fin.	892.89	2934	0.9	0	2813	7137	6064	2295	8359		2.85	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	2.467	SLV 7	Si
V_SLV	1.854	SLV 7	Si
PF_SLU	27.833	SLU 43	Si
V_SLU	12.338	SLU 48	Si

Trave di accoppiamento 179

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-2.063	5.951	14.87	15.32	0.45	-2.963	5.951	14.87	15.32	0.45	0.9	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 41	ini.	-85.99	-147	-0.0001802	0.0001872	0.0035	0.45		744.65	744.65	No	8.66	Si
SLU 41	fin.	-25.96	131	-0.0000515	0.0001872	0.0035	0.45		744.65	744.65	No	28.68	Si
SLU 80	ini.	-89.14	-91	-0.0001874	0.0001872	0.0035	0.45		744.65	744.65	No	8.35	Si
SLU 80	fin.	-54.64	70	-0.0001111	0.0001872	0.0035	0.45		744.65	744.65	No	13.63	Si
SLU 37	ini.	-89.37	-130	-0.0001879	0.0001872	0.0035	0.45		744.65	744.65	No	8.33	Si
SLU 37	fin.	-40.9	95	-0.0000821	0.0001872	0.0035	0.45		744.65	744.65	No	18.21	Si
SLU 78	ini.	-96.29	-99	-0.000204	0.0001872	0.0035	0.45		744.65	744.65	No	7.73	Si
SLU 78	fin.	-56.48	86	-0.000115	0.0001872	0.0035	0.45		744.65	744.65	No	13.18	Si
SLU 77	ini.	-93.06	-84	-0.0001965	0.0001872	0.0035	0.45		744.65	744.65	No	8	Si
SLU 77	fin.	-59.42	74	-0.0001213	0.0001872	0.0035	0.45		744.65	744.65	No	12.53	Si
SLU 35	ini.	-96.51	-138	-0.0002045	0.0001872	0.0035	0.45		744.65	744.65	No	7.72	Si
SLU 35	fin.	-42.75	111	-0.000086	0.0001872	0.0035	0.45		744.65	744.65	No	17.42	Si
SLU 33	ini.	-88.75	-134	-0.0001865	0.0001872	0.0035	0.45		744.65	744.65	No	8.39	Si
SLU 33	fin.	-32	128	-0.0000638	0.0001872	0.0035	0.45		744.65	744.65	No	23.27	Si
SLU 38	ini.	-92.59	-146	-0.0001954	0.0001872	0.0035	0.45		744.65	744.65	No	8.04	Si
SLU 38	fin.	-37.96	107	-0.000076	0.0001872	0.0035	0.45		744.65	744.65	No	19.62	Si
SLU 42	ini.	-89.21	-163	-0.0001876	0.0001872	0.0035	0.45		744.65	744.65	No	8.35	Si
SLU 42	fin.	-23.02	144	-0.0000456	0.0001872	0.0035	0.45		744.65	744.65	No	32.35	Si
SLU 36	ini.	-99.74	-154	-0.0002121	0.0001872	0.0035	0.45		744.65	744.65	No	7.47	Si
SLU 36	fin.	-39.8	123	-0.0000799	0.0001872	0.0035	0.45		744.65	744.65	No	18.71	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 36	ini.	-99.74	723	0.45	0	856	3568	2021	1148	3169	No	4.38	Si
SLU 36	fin.	-39.8	-460	0.45	0	856	3568	2021	1148	3169	No	6.88	Si
SLU 78	ini.	-96.29	746	0.45	0	856	3568	2021	1148	3169	No	4.25	Si
SLU 78	fin.	-56.48	-575	0.45	0	856	3568	2021	1148	3169	No	5.51	Si
SLU 80	ini.	-89.14	694	0.45	0	856	3568	2021	1148	3169	No	4.56	Si
SLU 80	fin.	-54.64	-548	0.45	0	856	3568	2021	1148	3169	No	5.78	Si
SLU 38	ini.	-92.59	672	0.45	0	856	3568	2021	1148	3169	No	4.72	Si
SLU 38	fin.	-37.96	-434	0.45	0	856	3568	2021	1148	3169	No	7.31	Si
SLU 77	ini.	-93.06	732	0.45	0	856	3568	2021	1148	3169	No	4.33	Si
SLU 77	fin.	-59.42	-589	0.45	0	856	3568	2021	1148	3169	No	5.38	Si
SLU 75	ini.	-85.3	670	0.45	0	856	3568	2021	1148	3169	No	4.73	Si
SLU 75	fin.	-48.68	-511	0.45	0	856	3568	2021	1148	3169	No	6.2	Si
SLU 69	ini.	-75.3	653	0.45	0	856	3568	2021	1148	3169	No	4.85	Si
SLU 69	fin.	-76.08	-666	0.45	0	856	3568	2021	1148	3169	No	4.75	Si
SLU 35	ini.	-96.51	709	0.45	0	856	3568	2021	1148	3169	No	4.47	Si
SLU 35	fin.	-42.75	-474	0.45	0	856	3568	2021	1148	3169	No	6.68	Si
SLU 79	ini.	-85.91	680	0.45	0	856	3568	2021	1148	3169	No	4.66	Si
SLU 79	fin.	-57.58	-562	0.45	0	856	3568	2021	1148	3169	No	5.64	Si
SLU 70	ini.	-78.53	667	0.45	0	856	3568	2021	1148	3169	No	4.75	Si
SLU 70	fin.	-73.14	-652	0.45	0	856	3568	2021	1148	3169	No	4.86	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 7	ini.	331.56	1851	-0.0008435	0.0002807	0.0035	0.45		742.08	742.08		2.24	Si
SLV 7	fin.	-390.14	-1507	-0.00104	0.0002807	0.0035	0.45		745.02	745.02		1.91	Si
SLV 12	ini.	323.5	1662	-0.0008172	0.0002807	0.0035	0.45		742.08	742.08		2.29	Si
SLV 12	fin.	-382.39	-1568	-0.0010124	0.0002807	0.0035	0.45		745.02	745.02		1.95	Si
SLV 8	ini.	265.58	1504	-0.0006373	0.0002807	0.0035	0.45		742.08	742.08		2.79	Si
SLV 8	fin.	-336.2	-1303	-0.0008547	0.0002807	0.0035	0.45		745.02	745.02		2.22	Si
SLV 2	ini.	-288.42	-1006	-0.0007032	0.0002807	0.0035	0.45		745.02	745.02		2.58	Si
SLV 2	fin.	178.67	1054	-0.0003962	0.0002807	0.0035	0.45		742.08	742.08		4.15	Si
SLV 10	ini.	-400.21	-1785	-0.0010764	0.0002807	0.0035	0.45		745.02	745.02		1.86	Si
SLV 10	fin.	306.67	1508	-0.0007633	0.0002807	0.0035	0.45		742.08	742.08		2.42	Si
SLV 6	ini.	-458.13	-1943	-0.0012994	0.0002807	0.0035	0.45		745.02	745.02		1.63	Si
SLV 6	fin.	352.86	1772	-0.0009146	0.0002807	0.0035	0.45		742.08	742.08		2.1	Si
SLV 5	ini.	-392.14	-1596	-0.0010472	0.0002807	0.0035	0.45		745.02	745.02		1.9	Si
SLV 5	fin.	298.91	1569	-0.0007389	0.0002807	0.0035	0.45		742.08	742.08		2.48	Si
SLV 15	ini.	219.77	1072	-0.000506	0.0002807	0.0035	0.45		742.08	742.08		3.38	Si
SLV 15	fin.	-262.15	-1053	-0.0006244	0.0002807	0.0035	0.45		745.02	745.02		2.84	Si
SLV 9	ini.	-334.22	-1438	-0.0008483	0.0002807	0.0035	0.45		745.02	745.02		2.23	Si
SLV 9	fin.	252.72	1304	-0.0005995	0.0002807	0.0035	0.45		742.08	742.08		2.94	Si
SLV 11	ini.	389.48	2009	-0.0010428	0.0002807	0.0035	0.45		742.08	742.08		1.91	Si
SLV 11	fin.	-436.34	-1771	-0.0012126	0.0002807	0.0035	0.45		745.02	745.02		1.71	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 6	ini.	-458.13	2186	0.45	0	1156	3568	3032	1148	4179		1.91	Si
SLV 6	fin.	352.86	1474	0.45	0	1156	3568	3032	1148	4179		2.84	Si
SLV 5	ini.	-392.14	1910	0.45	0	1156	3568	3032	1148	4179		2.19	Si
SLV 5	fin.	298.91	1204	0.45	0	1156	3568	3032	1148	4179		3.47	Si
SLV 2	ini.	-288.42	1372	0.45	0	1156	3568	3032	1148	4179		3.05	Si
SLV 2	fin.	178.67	665	0.45	0	1156	3568	3032	1148	4179		6.28	Si
SLV 10	ini.	-400.21	1974	0.45	0	1156	3568	3032	1148	4179		2.12	Si
SLV 10	fin.	306.67	1262	0.45	0	1156	3568	3032	1148	4179		3.31	Si
SLV 9	ini.	-334.22	1699	0.45	0	1156	3568	3032	1148	4179		2.46	Si
SLV 9	fin.	252.72	992	0.45	0	1156	3568	3032	1148	4179		4.21	Si
SLV 8	ini.	265.58	-1034	0.45	0	1156	3568	3032	1148	4179		4.04	Si
SLV 8	fin.	-336.2	-1731	0.45	0	1156	3568	3032	1148	4179		2.41	Si
SLV 12	ini.	323.5	-1245	0.45	0	1156	3568	3032	1148	4179		3.36	Si
SLV 12	fin.	-382.39	-1943	0.45	0	1156	3568	3032	1148	4179		2.15	Si
SLV 11	ini.	389.48	-1521	0.45	0	1156	3568	3032	1148	4179		2.75	Si
SLV 11	fin.	-436.34	-2214	0.45	0	1156	3568	3032	1148	4179		1.89	Si
SLV 7	ini.	331.56	-1309	0.45	0	1156	3568	3032	1148	4179		3.19	Si
SLV 7	fin.	-390.14	-2002	0.45	0	1156	3568	3032	1148	4179		2.09	Si
SLV 15	ini.	219.77	-707	0.45	0	1156	3568	3032	1148	4179		5.91	Si
SLV 15	fin.	-262.15	-1405	0.45	0	1156	3568	3032	1148	4179		2.98	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	1.626	SLV 6	Si
V_SLV	1.888	SLV 11	Si
PF_SLU	7.466	SLU 36	Si
V_SLU	4.25	SLU 78	Si

Trave di accoppiamento 184

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-13.143	-4.784	2.82	6.18	3.36	-12.933	-4.784	2.82	6.18	3.36	0.21	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 84	ini.	-1480.72	-3533	-0.0000529	0.0001872	0.0035	3.36		39107.13	39107.13	No	26.41	Si
SLU 84	fin.	-1106.68	-3533	-0.0000394	0.0001872	0.0035	3.36		39107.13	39107.13	No	35.34	Si
SLU 78	ini.	-1426.22	-3441	-0.000051	0.0001872	0.0035	3.36		39107.13	39107.13	No	27.42	Si
SLU 78	fin.	-1056.01	-3441	-0.0000375	0.0001872	0.0035	3.36		39107.13	39107.13	No	37.03	Si
SLU 75	ini.	-1417.79	-3417	-0.0000506	0.0001872	0.0035	3.36		39107.13	39107.13	No	27.58	Si
SLU 75	fin.	-1048.15	-3417	-0.0000372	0.0001872	0.0035	3.36		39107.13	39107.13	No	37.31	Si
SLU 83	ini.	-1450.21	-3500	-0.0000518	0.0001872	0.0035	3.36		39107.13	39107.13	No	26.97	Si
SLU 83	fin.	-1078.71	-3500	-0.0000383	0.0001872	0.0035	3.36		39107.13	39107.13	No	36.25	Si
SLU 73	ini.	-1423.19	-3392	-0.0000508	0.0001872	0.0035	3.36		39107.13	39107.13	No	27.48	Si
SLU 73	fin.	-1055.87	-3392	-0.0000375	0.0001872	0.0035	3.36		39107.13	39107.13	No	37.04	Si
SLU 82	ini.	-1472.29	-3508	-0.0000526	0.0001872	0.0035	3.36		39107.13	39107.13	No	26.56	Si
SLU 82	fin.	-1098.82	-3508	-0.0000391	0.0001872	0.0035	3.36		39107.13	39107.13	No	35.59	Si
SLU 81	ini.	-1441.78	-3476	-0.0000515	0.0001872	0.0035	3.36		39107.13	39107.13	No	27.12	Si
SLU 81	fin.	-1070.85	-3476	-0.0000381	0.0001872	0.0035	3.36		39107.13	39107.13	No	36.52	Si
SLU 76	ini.	-1431.62	-3416	-0.0000511	0.0001872	0.0035	3.36		39107.13	39107.13	No	27.32	Si
SLU 76	fin.	-1063.74	-3416	-0.0000378	0.0001872	0.0035	3.36		39107.13	39107.13	No	36.76	Si
SLU 80	ini.	-1419.7	-3419	-0.0000507	0.0001872	0.0035	3.36		39107.13	39107.13	No	27.55	Si
SLU 80	fin.	-1052.95	-3419	-0.0000374	0.0001872	0.0035	3.36		39107.13	39107.13	No	37.14	Si
SLU 77	ini.	-1395.7	-3409	-0.0000498	0.0001872	0.0035	3.36		39107.13	39107.13	No	28.02	Si
SLU 77	fin.	-1028.04	-3409	-0.0000365	0.0001872	0.0035	3.36		39107.13	39107.13	No	38.04	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 82	ini.	-1472.29	1780	3.36	0	7000	1665	15092	8568	8665	No	4.87	Si
SLU 82	fin.	-1098.82	1775	3.36	0	7000	1665	15092	8568	8665	No	4.88	Si
SLU 73	ini.	-1423.19	1751	3.36	0	7000	1665	15092	8568	8665	No	4.95	Si
SLU 73	fin.	-1055.87	1746	3.36	0	7000	1665	15092	8568	8665	No	4.96	Si
SLU 74	ini.	-1387.27	1750	3.36	0	7000	1665	15092	8568	8665	No	4.95	Si
SLU 74	fin.	-1020.18	1744	3.36	0	7000	1665	15092	8568	8665	No	4.97	Si
SLU 83	ini.	-1450.21	1771	3.36	0	7000	1665	15092	8568	8665	No	4.89	Si
SLU 83	fin.	-1078.71	1765	3.36	0	7000	1665	15092	8568	8665	No	4.91	Si
SLU 75	ini.	-1417.79	1762	3.36	0	7000	1665	15092	8568	8665	No	4.92	Si
SLU 75	fin.	-1048.15	1757	3.36	0	7000	1665	15092	8568	8665	No	4.93	Si
SLU 78	ini.	-1426.22	1764	3.36	0	7000	1665	15092	8568	8665	No	4.91	Si
SLU 78	fin.	-1056.01	1759	3.36	0	7000	1665	15092	8568	8665	No	4.93	Si
SLU 76	ini.	-1431.62	1753	3.36	0	7000	1665	15092	8568	8665	No	4.94	Si
SLU 76	fin.	-1063.74	1748	3.36	0	7000	1665	15092	8568	8665	No	4.96	Si
SLU 81	ini.	-1441.78	1768	3.36	0	7000	1665	15092	8568	8665	No	4.9	Si
SLU 81	fin.	-1070.85	1763	3.36	0	7000	1665	15092	8568	8665	No	4.92	Si
SLU 77	ini.	-1395.7	1752	3.36	0	7000	1665	15092	8568	8665	No	4.95	Si
SLU 77	fin.	-1028.04	1747	3.36	0	7000	1665	15092	8568	8665	No	4.96	Si
SLU 84	ini.	-1480.72	1783	3.36	0	7000	1665	15092	8568	8665	No	4.86	Si
SLU 84	fin.	-1106.68	1778	3.36	0	7000	1665	15092	8568	8665	No	4.87	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 10	ini.	-3369.08	-4122	-0.0001223	0.0002807	0.0035	3.36		36059.45	36059.45		10.7	Si
SLV 10	fin.	-3421.75	-4035	-0.0001243	0.0002807	0.0035	3.36		36059.45	36059.45		10.54	Si
SLV 13	ini.	-1638.15	4594	-0.0000583	0.0002807	0.0035	3.36		36059.45	36059.45		22.01	Si
SLV 13	fin.	-5045.36	4604	-0.0001869	0.0002807	0.0035	3.36		36059.45	36059.45		7.15	Si
SLV 9	ini.	-3290.77	-3200	-0.0001194	0.0002807	0.0035	3.36		36059.45	36059.45		10.96	Si
SLV 9	fin.	-3795.3	-3113	-0.0001385	0.0002807	0.0035	3.36		36059.45	36059.45		9.5	Si
SLV 16	ini.	-325.04	5333	-0.0000114	0.0002807	0.0035	3.36		36059.45	36059.45		110.94	Si
SLV 16	fin.	-3362.19	5287	-0.000122	0.0002807	0.0035	3.36		36059.45	36059.45		10.72	Si
SLV 5	ini.	-3261.59	-7581	-0.0001183	0.0002807	0.0035	3.36		36059.45	36059.45		11.06	Si
SLV 5	fin.	-1673.18	-7483	-0.0000596	0.0002807	0.0035	3.36		36059.45	36059.45		21.55	Si
SLV 14	ini.	-1754.46	3225	-0.0000626	0.0002807	0.0035	3.36		36059.45	36059.45		20.55	Si
SLV 14	fin.	-4490.53	3235	-0.0001652	0.0002807	0.0035	3.36		36059.45	36059.45		8.03	Si
SLV 4	ini.	-227.77	-9270	-0.000008	0.0002807	0.0035	3.36		36059.45	36059.45		158.32	Si
SLV 4	fin.	3711.57	-9280	-0.0001353	0.0002807	0.0035	3.36		36037.44	36037.44		9.71	Si
SLV 6	ini.	-3339.9	-8503	-0.0001212	0.0002807	0.0035	3.36		36059.45	36059.45		10.8	Si
SLV 6	fin.	-1299.63	-8405	-0.0000461	0.0002807	0.0035	3.36		36059.45	36059.45		27.75	Si
SLV 15	ini.	-208.73	6702	-0.0000073	0.0002807	0.0035	3.36		36059.45	36059.45		172.76	Si
SLV 15	fin.	-3917.02	6657	-0.0001431	0.0002807	0.0035	3.36		36059.45	36059.45		9.21	Si
SLV 3	ini.	-111.46	-7901	-0.0000039	0.0002807	0.0035	3.36		36059.45	36059.45		323.52	Si
SLV 3	fin.	3156.74	-7911	-0.0001144	0.0002807	0.0035	3.36		36037.44	36037.44		11.42	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 2	ini.	-1220.04	9219	3.36	0	10500	1665	22638	8568	12165		1.32	Si
SLD 2	fin.	737.98	9213	3.36	0	10500	1665	22638	8568	12165		1.32	Si
SLV 4	ini.	-227.77	18815	3.36	0	10500	1665	22638	8568	12165		0.65	No
SLV 4	fin.	3711.57	18808	3.36	0	10500	1665	22638	8568	12165		0.65	No
SLV 13	ini.	-1638.15	-16279	3.36	0	10500	1665	22638	8568	12165		0.75	No
SLV 13	fin.	-5045.36	-16279	3.36	0	10500	1665	22638	8568	12165		0.75	No
SLV 14	ini.	-1754.46	-13084	3.36	0	10500	1665	22638	8568	12165		0.93	No
SLV 14	fin.	-4490.53	-13084	3.36	0	10500	1665	22638	8568	12165		0.93	No
SLV 6	ini.	-3339.9	9161	3.36	0	10500	1665	22638	8568	12165		1.33	Si
SLV 6	fin.	-1299.63	9152	3.36	0	10500	1665	22638	8568	12165		1.33	Si
SLV 16	ini.	-325.04	-14203	3.36	0	10500	1665	22638	8568	12165		0.86	No
SLV 16	fin.	-3362.19	-14200	3.36	0	10500	1665	22638	8568	12165		0.86	No
SLV 15	ini.	-208.73	-17398	3.36	0	10500	1665	22638	8568	12165		0.7	No
SLV 15	fin.	-3917.02	-17395	3.36	0	10500	1665	22638	8568	12165		0.7	No
SLV 1	ini.	-1540.88	16738	3.36	0	10500	1665	22638	8568	12165		0.73	No
SLV 1	fin.	2028.4	16729	3.36	0	10500	1665	22638	8568	12165		0.73	No
SLV 2	ini.	-1657.19	19934	3.36	0	10500	1665	22638	8568	12165		0.61	No
SLV 2	fin.	2583.23	19925	3.36	0	10500	1665	22638	8568	12165		0.61	No
SLV 3	ini.	-111.46	15619	3.36	0	10500	1665	22638	8568	12165		0.78	No
SLV 3	fin.	3156.74	15613	3.36	0	10500	1665	22638	8568	12165		0.78	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	7.147	SLV 13	Si
V_SLV	0.61	SLV 2	No
PF_SLU	26.411	SLU 84	Si
V_SLU	4.861	SLU 84	Si

Trave di accoppiamento 185

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-12.933	-4.784	2.82	3.7	0.88	-11.933	-4.784	2.82	3.7	0.88	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 77	ini.	1155.69	-2678	-0.0008003	0.0001872	0.0035	0.88		2820.13	2820.13	No	2.44	Si
SLU 77	fin.	-429.61	-2678	-0.0002434	0.0001872	0.0035	0.88		2825.68	2825.68	No	6.58	Si
SLU 81	ini.	1183.14	-2741	-0.0008247	0.0001872	0.0035	0.88		2820.13	2820.13	No	2.38	Si
SLU 81	fin.	-439.31	-2741	-0.0002496	0.0001872	0.0035	0.88		2825.68	2825.68	No	6.43	Si
SLU 80	ini.	1155.72	-2693	-0.0008004	0.0001872	0.0035	0.88		2820.13	2820.13	No	2.44	Si
SLU 80	fin.	-426.49	-2693	-0.0002414	0.0001872	0.0035	0.88		2825.68	2825.68	No	6.63	Si
SLU 79	ini.	1150.9	-2663	-0.0007961	0.0001872	0.0035	0.88		2820.13	2820.13	No	2.45	Si
SLU 79	fin.	-428.89	-2663	-0.0002429	0.0001872	0.0035	0.88		2825.68	2825.68	No	6.59	Si
SLU 82	ini.	1187.95	-2771	-0.0008291	0.0001872	0.0035	0.88		2820.13	2820.13	No	2.37	Si
SLU 82	fin.	-436.9	-2771	-0.0002481	0.0001872	0.0035	0.88		2825.68	2825.68	No	6.47	Si
SLU 83	ini.	1196.72	-2763	-0.0008369	0.0001872	0.0035	0.88		2820.13	2820.13	No	2.36	Si
SLU 83	fin.	-447.06	-2763	-0.0002546	0.0001872	0.0035	0.88		2825.68	2825.68	No	6.32	Si
SLU 78	ini.	1160.5	-2708	-0.0008046	0.0001872	0.0035	0.88		2820.13	2820.13	No	2.43	Si
SLU 78	fin.	-427.2	-2708	-0.0002419	0.0001872	0.0035	0.88		2825.68	2825.68	No	6.61	Si
SLU 75	ini.	1146.92	-2686	-0.0007926	0.0001872	0.0035	0.88		2820.13	2820.13	No	2.46	Si
SLU 75	fin.	-419.45	-2686	-0.0002369	0.0001872	0.0035	0.88		2825.68	2825.68	No	6.74	Si
SLU 84	ini.	1201.54	-2793	-0.0008413	0.0001872	0.0035	0.88		2820.13	2820.13	No	2.35	Si
SLU 84	fin.	-444.66	-2793	-0.0002531	0.0001872	0.0035	0.88		2825.68	2825.68	No	6.35	Si
SLU 76	ini.	1145.34	-2691	-0.0007912	0.0001872	0.0035	0.88		2820.13	2820.13	No	2.46	Si
SLU 76	fin.	-417.13	-2691	-0.0002354	0.0001872	0.0035	0.88		2825.68	2825.68	No	6.77	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 84	ini.	1201.54	-1282	0.88	0	1833	6978	3953	2244	6197	No	4.83	Si
SLU 84	fin.	-444.66	-2120	0.88	0	1833	6978	3953	2244	6197	No	2.92	Si
SLU 80	ini.	1155.72	-1218	0.88	0	1833	6978	3953	2244	6197	No	5.09	Si
SLU 80	fin.	-426.49	-2056	0.88	0	1833	6978	3953	2244	6197	No	3.01	Si
SLU 83	ini.	1196.72	-1280	0.88	0	1833	6978	3953	2244	6197	No	4.84	Si
SLU 83	fin.	-447.06	-2118	0.88	0	1833	6978	3953	2244	6197	No	2.93	Si
SLU 78	ini.	1160.5	-1224	0.88	0	1833	6978	3953	2244	6197	No	5.06	Si
SLU 78	fin.	-427.2	-2062	0.88	0	1833	6978	3953	2244	6197	No	3.01	Si
SLU 77	ini.	1155.69	-1222	0.88	0	1833	6978	3953	2244	6197	No	5.07	Si
SLU 77	fin.	-429.61	-2060	0.88	0	1833	6978	3953	2244	6197	No	3.01	Si
SLU 74	ini.	1142.1	-1200	0.88	0	1833	6978	3953	2244	6197	No	5.16	Si
SLU 74	fin.	-421.85	-2038	0.88	0	1833	6978	3953	2244	6197	No	3.04	Si
SLU 79	ini.	1150.9	-1216	0.88	0	1833	6978	3953	2244	6197	No	5.1	Si
SLU 79	fin.	-428.89	-2054	0.88	0	1833	6978	3953	2244	6197	No	3.02	Si
SLU 75	ini.	1146.92	-1203	0.88	0	1833	6978	3953	2244	6197	No	5.15	Si
SLU 75	fin.	-419.45	-2041	0.88	0	1833	6978	3953	2244	6197	No	3.04	Si
SLU 81	ini.	1183.14	-1259	0.88	0	1833	6978	3953	2244	6197	No	4.92	Si
SLU 81	fin.	-439.31	-2097	0.88	0	1833	6978	3953	2244	6197	No	2.96	Si
SLU 82	ini.	1187.95	-1261	0.88	0	1833	6978	3953	2244	6197	No	4.91	Si
SLU 82	fin.	-436.9	-2099	0.88	0	1833	6978	3953	2244	6197	No	2.95	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 13	ini.	3234	-1987	-0.004109	0.0002807	0.0035	0.88		2835.01	2835.01		0.88	No
SLD 13	fin.	-2711.18	-2015	-0.0028403	0.0002807	0.0035	0.88		2840.66	2840.66		1.05	Si
SLV 16	ini.	5322.51	-767	-0.0080111	0.0002807	0.0035	0.88		2835.01	2835.01		0.53	No
SLV 16	fin.	-5098.25	-801	-0.0076033	0.0002807	0.0035	0.88		2840.66	2840.66		0.56	No
SLV 14	ini.	5531.84	-2359	-0.008373	0.0002807	0.0035	0.88		2835.01	2835.01		0.51	No
SLV 14	fin.	-4927.8	-2423	-0.0073039	0.0002807	0.0035	0.88		2840.66	2840.66		0.58	No
SLV 2	ini.	-4794.65	-2944	-0.0070682	0.0002807	0.0035	0.88		2840.66	2840.66		0.59	No
SLV 2	fin.	5576.88	-2910	-0.0084505	0.0002807	0.0035	0.88		2835.01	2835.01		0.51	No
SLV 15	ini.	6332.92	-681	-0.0097377	0.0002807	0.0035	0.88		2835.01	2835.01		0.45	No
SLV 15	fin.	-6134.19	-716	-0.0093823	0.0002807	0.0035	0.88		2840.66	2840.66		0.46	No
SLV 3	ini.	-3993.57	-1267	-0.0056078	0.0002807	0.0035	0.88		2840.66	2840.66		0.71	No
SLV 3	fin.	4370.49	-1202	-0.0063194	0.0002807	0.0035	0.88		2835.01	2835.01		0.65	No
SLD 15	ini.	3146.83	-1351	-0.0039171	0.0002807	0.0035	0.88		2835.01	2835.01		0.9	No
SLD 15	fin.	-2775.7	-1366	-0.0029999	0.0002807	0.0035	0.88		2840.66	2840.66		1.02	Si
SLV 4	ini.	-5003.97	-1352	-0.007438	0.0002807	0.0035	0.88		2840.66	2840.66		0.57	No
SLV 4	fin.	5406.43	-1288	-0.0081565	0.0002807	0.0035	0.88		2835.01	2835.01		0.52	No
SLV 13	ini.	6542.24	-2273	-0.0100902	0.0002807	0.0035	0.88		2835.01	2835.01		0.43	No
SLV 13	fin.	-5963.74	-2338	-0.0090933	0.0002807	0.0035	0.88		2840.66	2840.66		0.48	No
SLV 1	ini.	-3784.25	-2858	-0.0052108	0.0002807	0.0035	0.88		2840.66	2840.66		0.75	No
SLV 1	fin.	4540.93	-2824	-0.0066295	0.0002807	0.0035	0.88		2835.01	2835.01		0.62	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 13	ini.	3234	-5673	0.88	0	2545	6978	5929	2244	8173		1.44	Si
SLD 13	fin.	-2711.18	-6303	0.88	0	2545	6978	5929	2244	8173		1.3	Si
SLD 15	ini.	3146.83	-5639	0.88	0	2545	6978	5929	2244	8173		1.45	Si
SLD 15	fin.	-2775.7	-6285	0.88	0	2545	6978	5929	2244	8173		1.3	Si
SLV 13	ini.	6542.24	-12242	0.88	0	2545	6978	5929	2244	8173		0.67	No

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 13	fin.	-5963.74	-12856	0.88	0	2545	6978	5929	2244	8173		0.64	No
SLV 1	ini.	-3784.25	8594	0.88	0	2545	6978	5929	2244	8173		0.95	No
SLV 1	fin.	4540.93	7959	0.88	0	2545	6978	5929	2244	8173		1.03	Si
SLV 4	ini.	-5003.97	10705	0.88	0	2545	6978	5929	2244	8173		0.76	No
SLV 4	fin.	5406.43	10033	0.88	0	2545	6978	5929	2244	8173		0.81	No
SLV 14	ini.	5531.84	-10196	0.88	0	2545	6978	5929	2244	8173		0.8	No
SLV 14	fin.	-4927.8	-10810	0.88	0	2545	6978	5929	2244	8173		0.76	No
SLV 15	ini.	6332.92	-12178	0.88	0	2545	6978	5929	2244	8173		0.67	No
SLV 15	fin.	-6134.19	-12829	0.88	0	2545	6978	5929	2244	8173		0.64	No
SLV 2	ini.	-4794.65	10640	0.88	0	2545	6978	5929	2244	8173		0.77	No
SLV 2	fin.	5576.88	10006	0.88	0	2545	6978	5929	2244	8173		0.82	No
SLV 3	ini.	-3993.57	8658	0.88	0	2545	6978	5929	2244	8173		0.94	No
SLV 3	fin.	4370.49	7987	0.88	0	2545	6978	5929	2244	8173		1.02	Si
SLV 16	ini.	5322.51	-10132	0.88	0	2545	6978	5929	2244	8173		0.81	No
SLV 16	fin.	-5098.25	-10782	0.88	0	2545	6978	5929	2244	8173		0.76	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.433	SLV 13	No
V_SLV	0.636	SLV 13	No
PF_SLU	2.347	SLU 84	Si
V_SLU	2.922	SLU 84	Si

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Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-12.933	-4.784	5.7	6.18	0.48	-11.933	-4.784	5.7	6.18	0.48	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 78	ini.	-76.72	16	-0.0001391	0.0001872	0.0035	0.48		839.86	839.86	No	10.95	Si
SLU 78	fin.	-456.92	-1528	-0.0011604	0.0001872	0.0035	0.48		839.86	839.86	No	1.84	Si
SLU 79	ini.	-75.58	19	-0.0001369	0.0001872	0.0035	0.48		839.86	839.86	No	11.11	Si
SLU 79	fin.	-451.91	-1509	-0.001143	0.0001872	0.0035	0.48		839.86	839.86	No	1.86	Si
SLU 84	ini.	-76.89	30	-0.0001394	0.0001872	0.0035	0.48		839.86	839.86	No	10.92	Si
SLU 84	fin.	-471.25	-1572	-0.0012109	0.0001872	0.0035	0.48		839.86	839.86	No	1.78	Si
SLU 83	ini.	-76.65	30	-0.000139	0.0001872	0.0035	0.48		839.86	839.86	No	10.96	Si
SLU 83	fin.	-468.78	-1562	-0.0012021	0.0001872	0.0035	0.48		839.86	839.86	No	1.79	Si
SLU 76	ini.	-76.1	15	-0.0001379	0.0001872	0.0035	0.48		839.86	839.86	No	11.04	Si
SLU 76	fin.	-450.88	-1507	-0.0011394	0.0001872	0.0035	0.48		839.86	839.86	No	1.86	Si
SLU 81	ini.	-76.76	28	-0.0001392	0.0001872	0.0035	0.48		839.86	839.86	No	10.94	Si
SLU 81	fin.	-463.63	-1544	-0.0011839	0.0001872	0.0035	0.48		839.86	839.86	No	1.81	Si
SLU 82	ini.	-77	27	-0.0001397	0.0001872	0.0035	0.48		839.86	839.86	No	10.91	Si
SLU 82	fin.	-466.1	-1553	-0.0011926	0.0001872	0.0035	0.48		839.86	839.86	No	1.8	Si
SLU 80	ini.	-75.83	18	-0.0001374	0.0001872	0.0035	0.48		839.86	839.86	No	11.08	Si
SLU 80	fin.	-454.38	-1519	-0.0011515	0.0001872	0.0035	0.48		839.86	839.86	No	1.85	Si
SLU 75	ini.	-76.84	13	-0.0001393	0.0001872	0.0035	0.48		839.86	839.86	No	10.93	Si
SLU 75	fin.	-451.77	-1509	-0.0011425	0.0001872	0.0035	0.48		839.86	839.86	No	1.86	Si
SLU 77	ini.	-76.48	17	-0.0001387	0.0001872	0.0035	0.48		839.86	839.86	No	10.98	Si
SLU 77	fin.	-454.45	-1518	-0.0011518	0.0001872	0.0035	0.48		839.86	839.86	No	1.85	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 76	ini.	-76.1	749	0.48	0	877	3806	2156	1224	3380	No	4.51	Si
SLU 76	fin.	-450.88	-2389	0.48	0	877	3806	2156	1224	3380	No	1.41	Si
SLU 81	ini.	-76.76	765	0.48	0	877	3806	2156	1224	3380	No	4.42	Si
SLU 81	fin.	-463.63	-2458	0.48	0	877	3806	2156	1224	3380	No	1.38	Si
SLU 79	ini.	-75.58	748	0.48	0	877	3806	2156	1224	3380	No	4.52	Si
SLU 79	fin.	-451.91	-2395	0.48	0	877	3806	2156	1224	3380	No	1.41	Si
SLU 75	ini.	-76.84	753	0.48	0	877	3806	2156	1224	3380	No	4.49	Si
SLU 75	fin.	-451.77	-2394	0.48	0	877	3806	2156	1224	3380	No	1.41	Si
SLU 84	ini.	-76.89	770	0.48	0	877	3806	2156	1224	3380	No	4.39	Si
SLU 84	fin.	-471.25	-2495	0.48	0	877	3806	2156	1224	3380	No	1.35	Si
SLU 78	ini.	-76.72	756	0.48	0	877	3806	2156	1224	3380	No	4.47	Si
SLU 78	fin.	-456.92	-2420	0.48	0	877	3806	2156	1224	3380	No	1.4	Si
SLU 82	ini.	-77	767	0.48	0	877	3806	2156	1224	3380	No	4.41	Si
SLU 82	fin.	-466.1	-2470	0.48	0	877	3806	2156	1224	3380	No	1.37	Si
SLU 83	ini.	-76.65	768	0.48	0	877	3806	2156	1224	3380	No	4.4	Si
SLU 83	fin.	-468.78	-2484	0.48	0	877	3806	2156	1224	3380	No	1.36	Si
SLU 80	ini.	-75.83	750	0.48	0	877	3806	2156	1224	3380	No	4.51	Si
SLU 80	fin.	-454.38	-2407	0.48	0	877	3806	2156	1224	3380	No	1.4	Si
SLU 77	ini.	-76.48	753	0.48	0	877	3806	2156	1224	3380	No	4.49	Si
SLU 77	fin.	-454.45	-2408	0.48	0	877	3806	2156	1224	3380	No	1.4	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 3	ini.	-1161.45	-5058	-0.0054331	0.0002807	0.0035	0.48		849.71	849.71		0.73	No
SLV 3	fin.	999.85	3818	-0.0043838	0.0002807	0.0035	0.48		846.58	846.58		0.85	No
SLV 16	ini.	1116.84	5275	-0.0051714	0.0002807	0.0035	0.48		846.58	846.58		0.76	No
SLV 16	fin.	-1462.14	-5276	-0.0072736	0.0002807	0.0035	0.48		849.71	849.71		0.58	No
SLV 9	ini.	283.28	1663	-0.0005905	0.0002807	0.0035	0.48		846.58	846.58		2.99	Si
SLV 9	fin.	-1039.83	-3779	-0.0046358	0.0002807	0.0035	0.48		849.71	849.71		0.82	No
SLD 13	ini.	516.07	2605	-0.0012924	0.0002807	0.0035	0.48		846.58	846.58		1.64	Si
SLD 13	fin.	-967.29	-3467	-0.0041277	0.0002807	0.0035	0.48		849.71	849.71		0.88	No
SLV 15	ini.	1351.03	6339	-0.0066362	0.0002807	0.0035	0.48		846.58	846.58		0.63	No
SLV 15	fin.	-1713.46	-6199	-0.0087371	0.0002807	0.0035	0.48		849.71	849.71		0.5	No
SLV 14	ini.	1047.55	5038	-0.0047124	0.0002807	0.0035	0.48		846.58	846.58		0.81	No
SLV 14	fin.	-1608.49	-5847	-0.0081315	0.0002807	0.0035	0.48		849.71	849.71		0.53	No
SLV 4	ini.	-1395.64	-6122	-0.006877	0.0002807	0.0035	0.48		849.71	849.71		0.61	No
SLV 4	fin.	1251.17	4741	-0.0060207	0.0002807	0.0035	0.48		846.58	846.58		0.68	No
SLV 1	ini.	-1230.74	-5295	-0.0058679	0.0002807	0.0035	0.48		849.71	849.71		0.69	No
SLV 1	fin.	853.5	3247	-0.0032573	0.0002807	0.0035	0.48		846.58	846.58		0.99	No
SLV 13	ini.	1281.74	6102	-0.0062108	0.0002807	0.0035	0.48		846.58	846.58		0.66	No
SLV 13	fin.	-1859.81	-6770	-0.0095716	0.0002807	0.0035	0.48		849.71	849.71		0.46	No
SLV 2	ini.	-1464.93	-6359	-0.0072902	0.0002807	0.0035	0.48		849.71	849.71		0.58	No
SLV 2	fin.	1104.82	4170	-0.0050931	0.0002807	0.0035	0.48		846.58	846.58		0.77	No

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 16	ini.	1116.84	-4175	0.48	0	1145	3806	3234	1224	4458		1.07	Si
SLV 16	fin.	-1462.14	-6963	0.48	0	1145	3806	3234	1224	4458		0.64	No
SLV 14	ini.	1047.55	-3871	0.48	0	1145	3806	3234	1224	4458		1.15	Si
SLV 14	fin.	-1608.49	-7659	0.48	0	1145	3806	3234	1224	4458		0.58	No
SLV 2	ini.	-1464.93	6184	0.48	0	1145	3806	3234	1224	4458		0.72	No
SLV 2	fin.	1104.82	4887	0.48	0	1145	3806	3234	1224	4458		0.91	No
SLV 13	ini.	1281.74	-4808	0.48	0	1145	3806	3234	1224	4458		0.93	No
SLV 13	fin.	-1859.81	-8824	0.48	0	1145	3806	3234	1224	4458		0.51	No
SLV 1	ini.	-1230.74	5247	0.48	0	1145	3806	3234	1224	4458		0.85	No
SLV 1	fin.	853.5	3723	0.48	0	1145	3806	3234	1224	4458		1.2	Si
SLV 4	ini.	-1395.64	5880	0.48	0	1145	3806	3234	1224	4458		0.76	No
SLV 4	fin.	1251.17	5583	0.48	0	1145	3806	3234	1224	4458		0.8	No
SLV 3	ini.	-1161.45	4944	0.48	0	1145	3806	3234	1224	4458		0.9	No
SLV 3	fin.	999.85	4418	0.48	0	1145	3806	3234	1224	4458		1.01	Si
SLD 13	ini.	516.07	-1752	0.48	0	1145	3806	3234	1224	4458		2.54	Si
SLD 13	fin.	-967.29	-4690	0.48	0	1145	3806	3234	1224	4458		0.95	No
SLV 15	ini.	1351.03	-5111	0.48	0	1145	3806	3234	1224	4458		0.87	No
SLV 15	fin.	-1713.46	-8128	0.48	0	1145	3806	3234	1224	4458		0.55	No
SLV 9	ini.	283.28	-781	0.48	0	1145	3806	3234	1224	4458		5.71	Si
SLV 9	fin.	-1039.83	-5053	0.48	0	1145	3806	3234	1224	4458		0.88	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.457	SLV 13	No
V_SLV	0.505	SLV 13	No
PF_SLU	1.782	SLU 84	Si
V_SLU	1.354	SLU 84	Si

Trave di accoppiamento 187

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-11.933	-4.784	2.82	6.18	3.36	-11.743	-4.784	2.82	6.18	3.36	0.19	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 82	ini.	20.06	-5599	-0.0000007	0.0001872	0.0035	3.36		39086	39086	No	1948.81	Si
SLU 82	fin.	-1404.62	-5599	-0.0000502	0.0001872	0.0035	3.36		39107.13	39107.13	No	27.84	Si
SLU 80	ini.	34.27	-5453	-0.0000012	0.0001872	0.0035	3.36		39086	39086	No	1140.51	Si
SLU 80	fin.	-1356.28	-5453	-0.0000484	0.0001872	0.0035	3.36		39107.13	39107.13	No	28.83	Si
SLU 81	ini.	33.96	-5555	-0.0000012	0.0001872	0.0035	3.36		39086	39086	No	1151.01	Si
SLU 81	fin.	-1385.6	-5555	-0.0000495	0.0001872	0.0035	3.36		39107.13	39107.13	No	28.22	Si
SLU 76	ini.	16.65	-5430	-0.0000006	0.0001872	0.0035	3.36		39086	39086	No	2347.49	Si
SLU 76	fin.	-1362.76	-5430	-0.0000486	0.0001872	0.0035	3.36		39107.13	39107.13	No	28.7	Si
SLU 84	ini.	28.41	-5652	-0.000001	0.0001872	0.0035	3.36		39086	39086	No	1375.83	Si
SLU 84	fin.	-1410.82	-5652	-0.0000504	0.0001872	0.0035	3.36		39107.13	39107.13	No	27.72	Si
SLU 78	ini.	37.25	-5485	-0.0000013	0.0001872	0.0035	3.36		39086	39086	No	1049.25	Si
SLU 78	fin.	-1360.22	-5485	-0.0000485	0.0001872	0.0035	3.36		39107.13	39107.13	No	28.75	Si
SLU 73	ini.	8.3	-5377	-0.0000003	0.0001872	0.0035	3.36		39086	39086	No	4710.59	Si
SLU 73	fin.	-1356.55	-5377	-0.0000484	0.0001872	0.0035	3.36		39107.13	39107.13	No	28.83	Si
SLU 77	ini.	51.15	-5440	-0.0000018	0.0001872	0.0035	3.36		39086	39086	No	764.1	Si
SLU 77	fin.	-1341.19	-5440	-0.0000479	0.0001872	0.0035	3.36		39107.13	39107.13	No	29.16	Si
SLU 83	ini.	42.31	-5607	-0.0000015	0.0001872	0.0035	3.36		39086	39086	No	923.78	Si
SLU 83	fin.	-1391.8	-5607	-0.0000497	0.0001872	0.0035	3.36		39107.13	39107.13	No	28.1	Si
SLU 75	ini.	28.9	-5432	-0.000001	0.0001872	0.0035	3.36		39086	39086	No	1352.51	Si
SLU 75	fin.	-1354.01	-5432	-0.0000483	0.0001872	0.0035	3.36		39107.13	39107.13	No	28.88	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 75	ini.	28.9	-7165	3.36	0	7000	1506	15092	8568	8506	No	1.19	Si
SLU 75	fin.	-1354.01	-7846	3.36	0	7000	1506	15092	8568	8506	No	1.08	Si
SLU 76	ini.	16.65	-7146	3.36	0	7000	1506	15092	8568	8506	No	1.19	Si
SLU 76	fin.	-1362.76	-7828	3.36	0	7000	1506	15092	8568	8506	No	1.09	Si
SLU 79	ini.	48.17	-7178	3.36	0	7000	1506	15092	8568	8506	No	1.19	Si
SLU 79	fin.	-1337.25	-7860	3.36	0	7000	1506	15092	8568	8506	No	1.08	Si
SLU 84	ini.	28.41	-7461	3.36	0	7000	1506	15092	8568	8506	No	1.14	Si
SLU 84	fin.	-1410.82	-8143	3.36	0	7000	1506	15092	8568	8506	No	1.04	Si
SLU 77	ini.	51.15	-7214	3.36	0	7000	1506	15092	8568	8506	No	1.18	Si
SLU 77	fin.	-1341.19	-7896	3.36	0	7000	1506	15092	8568	8506	No	1.08	Si
SLU 78	ini.	37.25	-7241	3.36	0	7000	1506	15092	8568	8506	No	1.17	Si
SLU 78	fin.	-1360.22	-7923	3.36	0	7000	1506	15092	8568	8506	No	1.07	Si
SLU 82	ini.	20.06	-7384	3.36	0	7000	1506	15092	8568	8506	No	1.15	Si
SLU 82	fin.	-1404.62	-8066	3.36	0	7000	1506	15092	8568	8506	No	1.05	Si
SLU 81	ini.	33.96	-7357	3.36	0	7000	1506	15092	8568	8506	No	1.16	Si
SLU 81	fin.	-1385.6	-8039	3.36	0	7000	1506	15092	8568	8506	No	1.06	Si
SLU 83	ini.	42.31	-7434	3.36	0	7000	1506	15092	8568	8506	No	1.14	Si
SLU 83	fin.	-1391.8	-8116	3.36	0	7000	1506	15092	8568	8506	No	1.05	Si
SLU 80	ini.	34.27	-7205	3.36	0	7000	1506	15092	8568	8506	No	1.18	Si
SLU 80	fin.	-1356.28	-7887	3.36	0	7000	1506	15092	8568	8506	No	1.08	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 16	ini.	4705.29	-8907	-0.0001736	0.0002807	0.0035	3.36		36037.44	36037.44		7.66	Si
SLV 16	fin.	452	-8901	-0.0000159	0.0002807	0.0035	3.36		36037.44	36037.44		79.73	Si
SLV 15	ini.	5569.93	-10171	-0.0002078	0.0002807	0.0035	3.36		36037.44	36037.44		6.47	Si
SLV 15	fin.	586.4	-10165	-0.0000207	0.0002807	0.0035	3.36		36037.44	36037.44		61.46	Si
SLV 6	ini.	-2708.67	-5295	-0.0000976	0.0002807	0.0035	3.36		36059.45	36059.45		13.31	Si
SLV 6	fin.	-2779.42	-5305	-0.0001002	0.0002807	0.0035	3.36		36059.45	36059.45		12.97	Si
SLV 11	ini.	2761.1	-2037	-0.0000996	0.0002807	0.0035	3.36		36037.44	36037.44		13.05	Si
SLV 11	fin.	946.68	-2027	-0.0000335	0.0002807	0.0035	3.36		36037.44	36037.44		38.07	Si
SLV 13	ini.	4969.66	-12688	-0.000184	0.0002807	0.0035	3.36		36037.44	36037.44		7.25	Si
SLV 13	fin.	-328.19	-12687	-0.0000115	0.0002807	0.0035	3.36		36059.45	36059.45		109.87	Si
SLV 1	ini.	-4652.86	1575	-0.0001715	0.0002807	0.0035	3.36		36059.45	36059.45		7.75	Si
SLV 1	fin.	-2284.74	1569	-0.0000819	0.0002807	0.0035	3.36		36059.45	36059.45		15.78	Si
SLV 4	ini.	-4917.22	5356	-0.0001818	0.0002807	0.0035	3.36		36059.45	36059.45		7.33	Si
SLV 4	fin.	-1504.55	5355	-0.0000535	0.0002807	0.0035	3.36		36059.45	36059.45		23.97	Si
SLV 14	ini.	4105.03	-11423	-0.0001504	0.0002807	0.0035	3.36		36037.44	36037.44		8.78	Si
SLV 14	fin.	-462.59	-11423	-0.0000163	0.0002807	0.0035	3.36		36059.45	36059.45		77.95	Si
SLV 2	ini.	-5517.49	2839	-0.0002056	0.0002807	0.0035	3.36		36059.45	36059.45		6.54	Si
SLV 2	fin.	-2419.15	2833	-0.0000869	0.0002807	0.0035	3.36		36059.45	36059.45		14.91	Si
SLV 3	ini.	-4052.59	4091	-0.0001483	0.0002807	0.0035	3.36		36059.45	36059.45		8.9	Si
SLV 3	fin.	-1370.15	4091	-0.0000487	0.0002807	0.0035	3.36		36059.45	36059.45		26.32	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 15	ini.	2384.58	-13982	3.36	0	10500	1506	22638	8568	12006		0.86	No
SLD 15	fin.	-287.12	-14503	3.36	0	10500	1506	22638	8568	12006		0.83	No
SLV 2	ini.	-5517.49	16418	3.36	0	10500	1506	22638	8568	12006		0.73	No
SLV 2	fin.	-2419.15	15885	3.36	0	10500	1506	22638	8568	12006		0.76	No
SLV 4	ini.	-4917.22	18012	3.36	0	10500	1506	22638	8568	12006		0.67	No
SLV 4	fin.	-1504.55	17485	3.36	0	10500	1506	22638	8568	12006		0.69	No
SLV 16	ini.	4705.29	-22320	3.36	0	10500	1506	22638	8568	12006		0.54	No
SLV 16	fin.	452	-22837	3.36	0	10500	1506	22638	8568	12006		0.53	No
SLV 9	ini.	760.22	-14874	3.36	0	10500	1506	22638	8568	12006		0.81	No
SLV 9	fin.	-2101.97	-15406	3.36	0	10500	1506	22638	8568	12006		0.78	No
SLV 3	ini.	-4052.59	14168	3.36	0	10500	1506	22638	8568	12006		0.85	No
SLV 3	fin.	-1370.15	13641	3.36	0	10500	1506	22638	8568	12006		0.88	No
SLD 13	ini.	2147.99	-14635	3.36	0	10500	1506	22638	8568	12006		0.82	No
SLD 13	fin.	-652.12	-15158	3.36	0	10500	1506	22638	8568	12006		0.79	No
SLV 14	ini.	4105.03	-23914	3.36	0	10500	1506	22638	8568	12006		0.5	No
SLV 14	fin.	-462.59	-24436	3.36	0	10500	1506	22638	8568	12006		0.49	No
SLV 13	ini.	4969.66	-27758	3.36	0	10500	1506	22638	8568	12006		0.43	No
SLV 13	fin.	-328.19	-28280	3.36	0	10500	1506	22638	8568	12006		0.42	No
SLV 15	ini.	5569.93	-26164	3.36	0	10500	1506	22638	8568	12006		0.46	No
SLV 15	fin.	586.4	-26681	3.36	0	10500	1506	22638	8568	12006		0.45	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	6.47	SLV 15	Si
V_SLV	0.425	SLV 13	No
PF_SLU	27.719	SLU 84	Si
V_SLU	1.045	SLU 84	Si

Trave di accoppiamento 188

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-12.933	-4.784	6.18	7.13	0.95	-11.933	-4.784	6.18	7.13	0.95	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 74	ini.	703.4	-2150	-0.0003612	0.0001872	0.0035	0.95		3281.68	3281.68	No	4.67	Si
SLU 74	fin.	-449.37	-749	-0.0002155	0.0001872	0.0035	0.95		3287.74	3287.74	No	7.32	Si
SLU 75	ini.	705.04	-2155	-0.0003622	0.0001872	0.0035	0.95		3281.68	3281.68	No	4.65	Si
SLU 75	fin.	-451.15	-747	-0.0002164	0.0001872	0.0035	0.95		3287.74	3287.74	No	7.29	Si
SLU 84	ini.	739.41	-2248	-0.0003832	0.0001872	0.0035	0.95		3281.68	3281.68	No	4.44	Si
SLU 84	fin.	-473.3	-772	-0.0002284	0.0001872	0.0035	0.95		3287.74	3287.74	No	6.95	Si
SLU 83	ini.	737.78	-2243	-0.0003822	0.0001872	0.0035	0.95		3281.68	3281.68	No	4.45	Si
SLU 83	fin.	-471.52	-773	-0.0002274	0.0001872	0.0035	0.95		3287.74	3287.74	No	6.97	Si
SLU 78	ini.	713.56	-2177	-0.0003674	0.0001872	0.0035	0.95		3281.68	3281.68	No	4.6	Si
SLU 78	fin.	-456.81	-752	-0.0002195	0.0001872	0.0035	0.95		3287.74	3287.74	No	7.2	Si
SLU 81	ini.	729.26	-2221	-0.000377	0.0001872	0.0035	0.95		3281.68	3281.68	No	4.5	Si
SLU 81	fin.	-465.86	-768	-0.0002243	0.0001872	0.0035	0.95		3287.74	3287.74	No	7.06	Si
SLU 80	ini.	710.56	-2167	-0.0003655	0.0001872	0.0035	0.95		3281.68	3281.68	No	4.62	Si
SLU 80	fin.	-454.69	-749	-0.0002183	0.0001872	0.0035	0.95		3287.74	3287.74	No	7.23	Si
SLU 79	ini.	708.92	-2163	-0.0003646	0.0001872	0.0035	0.95		3281.68	3281.68	No	4.63	Si
SLU 79	fin.	-452.91	-750	-0.0002174	0.0001872	0.0035	0.95		3287.74	3287.74	No	7.26	Si
SLU 77	ini.	711.92	-2172	-0.0003664	0.0001872	0.0035	0.95		3281.68	3281.68	No	4.61	Si
SLU 77	fin.	-455.03	-753	-0.0002185	0.0001872	0.0035	0.95		3287.74	3287.74	No	7.23	Si
SLU 82	ini.	730.89	-2226	-0.000378	0.0001872	0.0035	0.95		3281.68	3281.68	No	4.49	Si
SLU 82	fin.	-467.64	-767	-0.0002253	0.0001872	0.0035	0.95		3287.74	3287.74	No	7.03	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 80	ini.	710.56	-2647	0.95	0	1979	7533	4267	2423	6690	No	2.53	Si
SLU 80	fin.	-454.69	-862	0.95	0	1979	7533	4267	2423	6690	No	7.76	Si
SLU 82	ini.	730.89	-2698	0.95	0	1979	7533	4267	2423	6690	No	2.48	Si
SLU 82	fin.	-467.64	-912	0.95	0	1979	7533	4267	2423	6690	No	7.34	Si
SLU 81	ini.	729.26	-2685	0.95	0	1979	7533	4267	2423	6690	No	2.49	Si
SLU 81	fin.	-465.86	-913	0.95	0	1979	7533	4267	2423	6690	No	7.33	Si
SLU 79	ini.	708.92	-2634	0.95	0	1979	7533	4267	2423	6690	No	2.54	Si
SLU 79	fin.	-452.91	-863	0.95	0	1979	7533	4267	2423	6690	No	7.75	Si
SLU 84	ini.	739.41	-2733	0.95	0	1979	7533	4267	2423	6690	No	2.45	Si
SLU 84	fin.	-473.3	-919	0.95	0	1979	7533	4267	2423	6690	No	7.28	Si
SLU 77	ini.	711.92	-2651	0.95	0	1979	7533	4267	2423	6690	No	2.52	Si
SLU 77	fin.	-455.03	-861	0.95	0	1979	7533	4267	2423	6690	No	7.77	Si
SLU 83	ini.	737.78	-2720	0.95	0	1979	7533	4267	2423	6690	No	2.46	Si
SLU 83	fin.	-471.52	-920	0.95	0	1979	7533	4267	2423	6690	No	7.27	Si
SLU 75	ini.	705.04	-2628	0.95	0	1979	7533	4267	2423	6690	No	2.55	Si
SLU 75	fin.	-451.15	-853	0.95	0	1979	7533	4267	2423	6690	No	7.84	Si
SLU 76	ini.	703.12	-2620	0.95	0	1979	7533	4267	2423	6690	No	2.55	Si
SLU 76	fin.	-450.22	-854	0.95	0	1979	7533	4267	2423	6690	No	7.84	Si
SLU 78	ini.	713.56	-2664	0.95	0	1979	7533	4267	2423	6690	No	2.51	Si
SLU 78	fin.	-456.81	-860	0.95	0	1979	7533	4267	2423	6690	No	7.78	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 13	ini.	4844.68	-10316	-0.0059219	0.0002807	0.0035	0.95		3302.53	3302.53		0.68	No
SLV 13	fin.	-3226.04	-580	-0.0029784	0.0002807	0.0035	0.95		3308.64	3308.64		1.03	Si
SLV 15	ini.	4707.31	-10051	-0.0057034	0.0002807	0.0035	0.95		3302.53	3302.53		0.7	No
SLV 15	fin.	-3097.59	-706	-0.0027133	0.0002807	0.0035	0.95		3308.64	3308.64		1.07	Si
SLD 13	ini.	2338.92	-5245	-0.0016047	0.0002807	0.0035	0.95		3302.53	3302.53		1.41	Si
SLD 13	fin.	-1549.32	-551	-0.0008964	0.0002807	0.0035	0.95		3308.64	3308.64		2.14	Si
SLV 14	ini.	4088.36	-8763	-0.0046774	0.0002807	0.0035	0.95		3302.53	3302.53		0.81	No
SLV 14	fin.	-2736.16	-529	-0.0020988	0.0002807	0.0035	0.95		3308.64	3308.64		1.21	Si
SLV 1	ini.	-3008.14	5571	-0.0025441	0.0002807	0.0035	0.95		3308.64	3308.64		1.1	Si
SLV 1	fin.	2005.88	-396	-0.0012758	0.0002807	0.0035	0.95		3302.53	3302.53		1.65	Si
SLV 3	ini.	-3145.52	5837	-0.002809	0.0002807	0.0035	0.95		3308.64	3308.64		1.05	Si
SLV 3	fin.	2134.33	-522	-0.0013959	0.0002807	0.0035	0.95		3302.53	3302.53		1.55	Si
SLV 16	ini.	3950.98	-8498	-0.0044364	0.0002807	0.0035	0.95		3302.53	3302.53		0.84	No
SLV 16	fin.	-2607.71	-656	-0.0019203	0.0002807	0.0035	0.95		3308.64	3308.64		1.27	Si
SLV 4	ini.	-3901.84	7390	-0.0043364	0.0002807	0.0035	0.95		3308.64	3308.64		0.85	No
SLV 4	fin.	2624.21	-472	-0.0019483	0.0002807	0.0035	0.95		3302.53	3302.53		1.26	Si
SLD 15	ini.	2281.65	-5132	-0.0015437	0.0002807	0.0035	0.95		3302.53	3302.53		1.45	Si
SLD 15	fin.	-1496.93	-601	-0.0008572	0.0002807	0.0035	0.95		3308.64	3308.64		2.21	Si
SLV 2	ini.	-3764.47	7124	-0.0040851	0.0002807	0.0035	0.95		3308.64	3308.64		0.88	No
SLV 2	fin.	2495.76	-346	-0.0017843	0.0002807	0.0035	0.95		3302.53	3302.53		1.32	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 9	ini.	2132.9	-6799	0.95	0	2790	7533	6401	2423	8823		1.3	Si
SLV 9	fin.	-1464.7	-3476	0.95	0	2790	7533	6401	2423	8823		2.54	Si
SLV 3	ini.	-3145.52	8085	0.95	0	2790	7533	6401	2423	8823		1.09	Si
SLV 3	fin.	2134.33	7633	0.95	0	2790	7533	6401	2423	8823		1.16	Si
SLD 13	ini.	2338.92	-6811	0.95	0	2790	7533	6401	2423	8823		1.3	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 13	fin.	-1549.32	-4818	0.95	0	2790	7533	6401	2423	8823		1.83	Si
SLV 13	ini.	4844.68	-13596	0.95	0	2790	7533	6401	2423	8823		0.65	No
SLV 13	fin.	-3226.04	-10511	0.95	0	2790	7533	6401	2423	8823		0.84	No
SLV 4	ini.	-3901.84	10072	0.95	0	2790	7533	6401	2423	8823		0.88	No
SLV 4	fin.	2624.21	9391	0.95	0	2790	7533	6401	2423	8823		0.94	No
SLV 16	ini.	3950.98	-10873	0.95	0	2790	7533	6401	2423	8823		0.81	No
SLV 16	fin.	-2607.71	-9015	0.95	0	2790	7533	6401	2423	8823		0.98	No
SLV 14	ini.	4088.36	-11609	0.95	0	2790	7533	6401	2423	8823		0.76	No
SLV 14	fin.	-2736.16	-8753	0.95	0	2790	7533	6401	2423	8823		1.01	Si
SLV 15	ini.	4707.31	-12859	0.95	0	2790	7533	6401	2423	8823		0.69	No
SLV 15	fin.	-3097.59	-10772	0.95	0	2790	7533	6401	2423	8823		0.82	No
SLV 2	ini.	-3764.47	9335	0.95	0	2790	7533	6401	2423	8823		0.95	No
SLV 2	fin.	2495.76	9652	0.95	0	2790	7533	6401	2423	8823		0.91	No
SLV 1	ini.	-3008.14	7349	0.95	0	2790	7533	6401	2423	8823		1.2	Si
SLV 1	fin.	2005.88	7895	0.95	0	2790	7533	6401	2423	8823		1.12	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.682	SLV 13	No
V_SLV	0.649	SLV 13	No
PF_SLU	4.438	SLU 84	Si
V_SLU	2.448	SLU 84	Si

Trave di accoppiamento 189

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-12.933	-4.784	9.13	9.66	0.53	-11.933	-4.784	9.13	9.66	0.53	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 75	ini.	-37.31	288	-0.0000534	0.0001872	0.0035	0.53		1030.41	1030.41	No	27.62	Si
SLU 75	fin.	-182.45	-255	-0.0002905	0.0001872	0.0035	0.53		1030.41	1030.41	No	5.65	Si
SLU 83	ini.	-32.88	326	-0.000047	0.0001872	0.0035	0.53		1030.41	1030.41	No	31.34	Si
SLU 83	fin.	-190.94	-265	-0.0003062	0.0001872	0.0035	0.53		1030.41	1030.41	No	5.4	Si
SLU 81	ini.	-32.74	323	-0.0000468	0.0001872	0.0035	0.53		1030.41	1030.41	No	31.47	Si
SLU 81	fin.	-188.53	-259	-0.0003017	0.0001872	0.0035	0.53		1030.41	1030.41	No	5.47	Si
SLU 78	ini.	-37.45	291	-0.0000536	0.0001872	0.0035	0.53		1030.41	1030.41	No	27.52	Si
SLU 78	fin.	-184.86	-261	-0.000295	0.0001872	0.0035	0.53		1030.41	1030.41	No	5.57	Si
SLU 84	ini.	-33.01	325	-0.0000472	0.0001872	0.0035	0.53		1030.41	1030.41	No	31.21	Si
SLU 84	fin.	-191.67	-268	-0.0003076	0.0001872	0.0035	0.53		1030.41	1030.41	No	5.38	Si
SLU 77	ini.	-37.31	291	-0.0000534	0.0001872	0.0035	0.53		1030.41	1030.41	No	27.62	Si
SLU 77	fin.	-184.14	-258	-0.0002936	0.0001872	0.0035	0.53		1030.41	1030.41	No	5.6	Si
SLU 79	ini.	-36.31	293	-0.000052	0.0001872	0.0035	0.53		1030.41	1030.41	No	28.38	Si
SLU 79	fin.	-183.07	-256	-0.0002917	0.0001872	0.0035	0.53		1030.41	1030.41	No	5.63	Si
SLU 82	ini.	-32.88	323	-0.000047	0.0001872	0.0035	0.53		1030.41	1030.41	No	31.34	Si
SLU 82	fin.	-189.26	-262	-0.0003031	0.0001872	0.0035	0.53		1030.41	1030.41	No	5.44	Si
SLU 76	ini.	-36.4	290	-0.0000521	0.0001872	0.0035	0.53		1030.41	1030.41	No	28.31	Si
SLU 76	fin.	-181.87	-254	-0.0002894	0.0001872	0.0035	0.53		1030.41	1030.41	No	5.67	Si
SLU 80	ini.	-36.44	293	-0.0000522	0.0001872	0.0035	0.53		1030.41	1030.41	No	28.27	Si
SLU 80	fin.	-183.79	-258	-0.000293	0.0001872	0.0035	0.53		1030.41	1030.41	No	5.61	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 84	ini.	-33.01	599	0.53	0	1053	4203	2381	1351	3732	No	6.23	Si
SLU 84	fin.	-191.67	-1311	0.53	0	1053	4203	2381	1352	3732	No	2.85	Si
SLU 79	ini.	-36.31	597	0.53	0	1053	4203	2381	1351	3732	No	6.25	Si
SLU 79	fin.	-183.07	-1258	0.53	0	1053	4203	2381	1352	3732	No	2.97	Si
SLU 83	ini.	-32.88	598	0.53	0	1053	4203	2381	1351	3732	No	6.24	Si
SLU 83	fin.	-190.94	-1307	0.53	0	1053	4203	2381	1352	3732	No	2.85	Si
SLU 78	ini.	-37.45	604	0.53	0	1053	4203	2381	1351	3732	No	6.18	Si
SLU 78	fin.	-184.86	-1269	0.53	0	1053	4203	2381	1352	3732	No	2.94	Si
SLU 77	ini.	-37.31	603	0.53	0	1053	4203	2381	1351	3732	No	6.19	Si
SLU 77	fin.	-184.14	-1265	0.53	0	1053	4203	2381	1352	3732	No	2.95	Si
SLU 82	ini.	-32.88	595	0.53	0	1053	4203	2381	1351	3732	No	6.27	Si
SLU 82	fin.	-189.26	-1297	0.53	0	1053	4203	2381	1352	3732	No	2.88	Si
SLU 81	ini.	-32.74	595	0.53	0	1053	4203	2381	1351	3732	No	6.28	Si
SLU 81	fin.	-188.53	-1293	0.53	0	1053	4203	2381	1352	3732	No	2.89	Si
SLU 75	ini.	-37.31	600	0.53	0	1053	4203	2381	1351	3732	No	6.22	Si
SLU 75	fin.	-182.45	-1254	0.53	0	1053	4203	2381	1352	3732	No	2.98	Si
SLU 74	ini.	-37.17	599	0.53	0	1053	4203	2381	1351	3732	No	6.23	Si
SLU 74	fin.	-181.73	-1250	0.53	0	1053	4203	2381	1352	3732	No	2.98	Si
SLU 80	ini.	-36.44	598	0.53	0	1053	4203	2381	1351	3732	No	6.24	Si
SLU 80	fin.	-183.79	-1261	0.53	0	1053	4203	2381	1352	3732	No	2.96	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 4	ini.	-1610.95	-6832	-0.00641	0.0002807	0.0035	0.53		1035.34	1035.34		0.64	No
SLV 4	fin.	928.67	2779	-0.0025031	0.0002807	0.0035	0.53		1031.9	1031.9		1.11	Si
SLV 15	ini.	1622.71	7515	-0.0064943	0.0002807	0.0035	0.53		1031.9	1031.9		0.64	No
SLV 15	fin.	-1120.47	-2897	-0.0037525	0.0002807	0.0035	0.53		1035.34	1035.34		0.92	No
SLV 13	ini.	1546.81	7175	-0.0061109	0.0002807	0.0035	0.53		1031.9	1031.9		0.67	No
SLV 13	fin.	-1169.92	-3098	-0.0040569	0.0002807	0.0035	0.53		1035.34	1035.34		0.88	No
SLV 3	ini.	-1332.35	-5606	-0.0049746	0.0002807	0.0035	0.53		1035.34	1035.34		0.78	No
SLV 3	fin.	747.88	2268	-0.0016724	0.0002807	0.0035	0.53		1031.9	1031.9		1.38	Si
SLD 2	ini.	-737.83	-2961	-0.0016283	0.0002807	0.0035	0.53		1035.34	1035.34		1.4	Si
SLD 2	fin.	306.92	1012	-0.0005102	0.0002807	0.0035	0.53		1031.9	1031.9		3.36	Si
SLV 1	ini.	-1408.25	-5946	-0.005377	0.0002807	0.0035	0.53		1035.34	1035.34		0.74	No
SLV 1	fin.	698.43	2068	-0.0015021	0.0002807	0.0035	0.53		1031.9	1031.9		1.48	Si
SLD 4	ini.	-708.06	-2827	-0.0015267	0.0002807	0.0035	0.53		1035.34	1035.34		1.46	Si
SLD 4	fin.	327.35	1094	-0.0005515	0.0002807	0.0035	0.53		1031.9	1031.9		3.15	Si
SLV 16	ini.	1344.11	6289	-0.0050601	0.0002807	0.0035	0.53		1031.9	1031.9		0.77	No
SLV 16	fin.	-939.68	-2387	-0.0025503	0.0002807	0.0035	0.53		1035.34	1035.34		1.1	Si
SLV 2	ini.	-1686.85	-7172	-0.006787	0.0002807	0.0035	0.53		1035.34	1035.34		0.61	No
SLV 2	fin.	879.22	2578	-0.0022359	0.0002807	0.0035	0.53		1031.9	1031.9		1.17	Si
SLV 14	ini.	1268.21	5949	-0.0046454	0.0002807	0.0035	0.53		1031.9	1031.9		0.81	No
SLV 14	fin.	-989.13	-2587	-0.0028594	0.0002807	0.0035	0.53		1035.34	1035.34		1.05	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	1268.21	-4650	0.53	0	1320	4203	3571	1351	4922		1.06	Si
SLV 14	fin.	-989.13	-5017	0.53	0	1320	4203	3571	1352	4922		0.98	No
SLV 16	ini.	1344.11	-4914	0.53	0	1320	4203	3571	1351	4922		1	Si
SLV 16	fin.	-939.68	-4799	0.53	0	1320	4203	3571	1352	4922		1.03	Si
SLV 2	ini.	-1686.85	6891	0.53	0	1320	4203	3571	1351	4922		0.71	No
SLV 2	fin.	879.22	3975	0.53	0	1320	4203	3571	1352	4922		1.24	Si
SLV 4	ini.	-1610.95	6627	0.53	0	1320	4203	3571	1351	4922		0.74	No
SLV 4	fin.	928.67	4193	0.53	0	1320	4203	3571	1352	4922		1.17	Si
SLV 1	ini.	-1408.25	5799	0.53	0	1320	4203	3571	1351	4922		0.85	No
SLV 1	fin.	698.43	3112	0.53	0	1320	4203	3571	1352	4922		1.58	Si
SLD 4	ini.	-708.06	3090	0.53	0	1320	4203	3571	1351	4922		1.59	Si
SLD 4	fin.	327.35	1307	0.53	0	1320	4203	3571	1352	4922		3.77	Si
SLV 3	ini.	-1332.35	5535	0.53	0	1320	4203	3571	1351	4922		0.89	No
SLV 3	fin.	747.88	3330	0.53	0	1320	4203	3571	1352	4922		1.48	Si
SLV 13	ini.	1546.81	-5742	0.53	0	1320	4203	3571	1351	4922		0.86	No
SLV 13	fin.	-1169.92	-5880	0.53	0	1320	4203	3571	1352	4922		0.84	No
SLD 2	ini.	-737.83	3193	0.53	0	1320	4203	3571	1351	4922		1.54	Si
SLD 2	fin.	306.92	1217	0.53	0	1320	4203	3571	1352	4922		4.05	Si
SLV 15	ini.	1622.71	-6006	0.53	0	1320	4203	3571	1351	4922		0.82	No
SLV 15	fin.	-1120.47	-5662	0.53	0	1320	4203	3571	1352	4922		0.87	No

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.614	SLV 2	No
V_SLV	0.714	SLV 2	No
PF_SLU	5.376	SLU 84	Si
V_SLU	2.847	SLU 84	Si

Trave di accoppiamento 190

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-12.933	-4.784	9.66	10.61	0.95	-11.933	-4.784	9.66	10.61	0.95	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 79	ini.	406.02	-1422	-0.000193	0.0001872	0.0035	0.95		3281.68	3281.68	No	8.08	Si
SLU 79	fin.	-186.89	-746	-0.0000846	0.0001872	0.0035	0.95		3287.74	3287.74	No	17.59	Si
SLU 75	ini.	401.93	-1412	-0.0001908	0.0001872	0.0035	0.95		3281.68	3281.68	No	8.16	Si
SLU 75	fin.	-185.59	-740	-0.000084	0.0001872	0.0035	0.95		3287.74	3287.74	No	17.71	Si
SLU 81	ini.	427.43	-1478	-0.0002042	0.0001872	0.0035	0.95		3281.68	3281.68	No	7.68	Si
SLU 81	fin.	-198.48	-760	-0.00009	0.0001872	0.0035	0.95		3287.74	3287.74	No	16.56	Si
SLU 74	ini.	403.34	-1415	-0.0001916	0.0001872	0.0035	0.95		3281.68	3281.68	No	8.14	Si
SLU 74	fin.	-185.48	-744	-0.0000839	0.0001872	0.0035	0.95		3287.74	3287.74	No	17.73	Si
SLU 80	ini.	404.61	-1418	-0.0001922	0.0001872	0.0035	0.95		3281.68	3281.68	No	8.11	Si
SLU 80	fin.	-187	-742	-0.0000846	0.0001872	0.0035	0.95		3287.74	3287.74	No	17.58	Si
SLU 77	ini.	405.88	-1425	-0.0001929	0.0001872	0.0035	0.95		3281.68	3281.68	No	8.09	Si
SLU 77	fin.	-186.31	-750	-0.0000843	0.0001872	0.0035	0.95		3287.74	3287.74	No	17.65	Si
SLU 84	ini.	428.56	-1484	-0.0002048	0.0001872	0.0035	0.95		3281.68	3281.68	No	7.66	Si
SLU 84	fin.	-199.42	-763	-0.0000905	0.0001872	0.0035	0.95		3287.74	3287.74	No	16.49	Si
SLU 82	ini.	426.02	-1474	-0.0002035	0.0001872	0.0035	0.95		3281.68	3281.68	No	7.7	Si
SLU 82	fin.	-198.6	-757	-0.0000901	0.0001872	0.0035	0.95		3287.74	3287.74	No	16.55	Si
SLU 78	ini.	404.46	-1421	-0.0001922	0.0001872	0.0035	0.95		3281.68	3281.68	No	8.11	Si
SLU 78	fin.	-186.42	-746	-0.0000844	0.0001872	0.0035	0.95		3287.74	3287.74	No	17.64	Si
SLU 83	ini.	429.97	-1488	-0.0002056	0.0001872	0.0035	0.95		3281.68	3281.68	No	7.63	Si
SLU 83	fin.	-199.31	-766	-0.0000904	0.0001872	0.0035	0.95		3287.74	3287.74	No	16.5	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	429.97	-1060	0.95	0	1979	7533	4267	2423	6690	No	6.31	Si
SLU 83	fin.	-199.31	-695	0.95	0	1979	7533	4267	2423	6690	No	9.62	Si
SLU 77	ini.	405.88	-1023	0.95	0	1979	7533	4267	2423	6690	No	6.54	Si
SLU 77	fin.	-186.31	-617	0.95	0	1979	7533	4267	2423	6690	No	10.85	Si
SLU 79	ini.	406.02	-1018	0.95	0	1979	7533	4267	2423	6690	No	6.57	Si
SLU 79	fin.	-186.89	-625	0.95	0	1979	7533	4267	2423	6690	No	10.7	Si
SLU 75	ini.	401.93	-1010	0.95	0	1979	7533	4267	2423	6690	No	6.62	Si
SLU 75	fin.	-185.59	-617	0.95	0	1979	7533	4267	2423	6690	No	10.84	Si
SLU 80	ini.	404.61	-1019	0.95	0	1979	7533	4267	2423	6690	No	6.57	Si
SLU 80	fin.	-187	-621	0.95	0	1979	7533	4267	2423	6690	No	10.77	Si
SLU 84	ini.	428.56	-1061	0.95	0	1979	7533	4267	2423	6690	No	6.31	Si
SLU 84	fin.	-199.42	-691	0.95	0	1979	7533	4267	2423	6690	No	9.68	Si
SLU 74	ini.	403.34	-1010	0.95	0	1979	7533	4267	2423	6690	No	6.62	Si
SLU 74	fin.	-185.48	-622	0.95	0	1979	7533	4267	2423	6690	No	10.76	Si
SLU 81	ini.	427.43	-1047	0.95	0	1979	7533	4267	2423	6690	No	6.39	Si
SLU 81	fin.	-198.48	-700	0.95	0	1979	7533	4267	2423	6690	No	9.56	Si
SLU 82	ini.	426.02	-1047	0.95	0	1979	7533	4267	2423	6690	No	6.39	Si
SLU 82	fin.	-198.6	-696	0.95	0	1979	7533	4267	2423	6690	No	9.61	Si
SLU 78	ini.	404.46	-1024	0.95	0	1979	7533	4267	2423	6690	No	6.53	Si
SLU 78	fin.	-186.42	-613	0.95	0	1979	7533	4267	2423	6690	No	10.92	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLV 15	ini.	3553.06	-7450	-0.0036894	0.0002807	0.0035	0.95		3302.53	3302.53		0.93	No
SLV 15	fin.	-2305.63	-516	-0.0015648	0.0002807	0.0035	0.95		3308.64	3308.64		1.44	Si
SLV 3	ini.	-2245.18	3994	-0.001502	0.0002807	0.0035	0.95		3308.64	3308.64		1.47	Si
SLV 3	fin.	1617.64	-765	-0.0009509	0.0002807	0.0035	0.95		3302.53	3302.53		2.04	Si
SLV 4	ini.	-2820.58	5142	-0.0022267	0.0002807	0.0035	0.95		3308.64	3308.64		1.17	Si
SLV 4	fin.	1999.65	-784	-0.0012702	0.0002807	0.0035	0.95		3302.53	3302.53		1.65	Si
SLD 15	ini.	1667.71	-3726	-0.0009901	0.0002807	0.0035	0.95		3302.53	3302.53		1.98	Si
SLD 15	fin.	-1054.42	-514	-0.0005528	0.0002807	0.0035	0.95		3308.64	3308.64		3.14	Si
SLV 13	ini.	3354.39	-7061	-0.0032723	0.0002807	0.0035	0.95		3302.53	3302.53		0.98	No
SLV 13	fin.	-2244.39	-256	-0.0015012	0.0002807	0.0035	0.95		3308.64	3308.64		1.47	Si
SLV 16	ini.	2977.66	-6303	-0.0024984	0.0002807	0.0035	0.95		3302.53	3302.53		1.11	Si
SLV 16	fin.	-1923.62	-536	-0.0011997	0.0002807	0.0035	0.95		3308.64	3308.64		1.72	Si
SLV 2	ini.	-3019.26	5531	-0.0025645	0.0002807	0.0035	0.95		3308.64	3308.64		1.1	Si
SLV 2	fin.	2060.9	-525	-0.0013263	0.0002807	0.0035	0.95		3302.53	3302.53		1.6	Si
SLV 14	ini.	2778.98	-5913	-0.0021699	0.0002807	0.0035	0.95		3302.53	3302.53		1.19	Si
SLV 14	fin.	-1862.38	-276	-0.001147	0.0002807	0.0035	0.95		3308.64	3308.64		1.78	Si
SLV 1	ini.	-2443.86	4383	-0.0017177	0.0002807	0.0035	0.95		3308.64	3308.64		1.35	Si
SLV 1	fin.	1678.88	-505	-0.0009989	0.0002807	0.0035	0.95		3302.53	3302.53		1.97	Si
SLV 11	ini.	1661.47	-3712	-0.0009851	0.0002807	0.0035	0.95		3302.53	3302.53		1.99	Si
SLV 11	fin.	-941.53	-909	-0.0004824	0.0002807	0.0035	0.95		3308.64	3308.64		3.51	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 14	ini.	2778.98	-6770	0.95	0	2790	7533	6401	2423	8823		1.3	Si
SLV 14	fin.	-1862.38	-7391	0.95	0	2790	7533	6401	2423	8823		1.19	Si
SLV 1	ini.	-2443.86	5407	0.95	0	2790	7533	6401	2423	8823		1.63	Si
SLV 1	fin.	1678.88	7075	0.95	0	2790	7533	6401	2423	8823		1.25	Si
SLV 16	ini.	2977.66	-6734	0.95	0	2790	7533	6401	2423	8823		1.31	Si
SLV 16	fin.	-1923.62	-7875	0.95	0	2790	7533	6401	2423	8823		1.12	Si
SLV 11	ini.	1661.47	-3081	0.95	0	2790	7533	6401	2423	8823		2.86	Si
SLV 11	fin.	-941.53	-4139	0.95	0	2790	7533	6401	2423	8823		2.13	Si
SLD 15	ini.	1667.71	-3828	0.95	0	2790	7533	6401	2423	8823		2.31	Si
SLD 15	fin.	-1054.42	-4254	0.95	0	2790	7533	6401	2423	8823		2.07	Si
SLV 13	ini.	3354.39	-8110	0.95	0	2790	7533	6401	2423	8823		1.09	Si
SLV 13	fin.	-2244.39	-8960	0.95	0	2790	7533	6401	2423	8823		0.98	No
SLV 2	ini.	-3019.26	6746	0.95	0	2790	7533	6401	2423	8823		1.31	Si
SLV 2	fin.	2060.9	8644	0.95	0	2790	7533	6401	2423	8823		1.02	Si
SLV 15	ini.	3553.06	-8073	0.95	0	2790	7533	6401	2423	8823		1.09	Si
SLV 15	fin.	-2305.63	-9444	0.95	0	2790	7533	6401	2423	8823		0.93	No
SLV 3	ini.	-2245.18	5443	0.95	0	2790	7533	6401	2423	8823		1.62	Si
SLV 3	fin.	1617.64	6592	0.95	0	2790	7533	6401	2423	8823		1.34	Si
SLV 4	ini.	-2820.58	6782	0.95	0	2790	7533	6401	2423	8823		1.3	Si
SLV 4	fin.	1999.65	8160	0.95	0	2790	7533	6401	2423	8823		1.08	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	0.929	SLV 15	No
V_SLV	0.934	SLV 15	No
PF_SLU	7.632	SLU 83	Si
V_SLU	6.308	SLU 84	Si

Trave di accoppiamento 191

Verifiche condotte secondo D.M. 17-01-18 (N.T.C.)

Dati geometrici

X ini.	Y ini.	Z ini.inf.	Z ini.sup.	H ini.	X fin.	Y fin.	Z fin.inf.	Z fin.sup	H fin.	Luce	Spessore	R. Trazione
-12.933	-4.784	12.61	14.841	2.231	-11.933	-4.784	12.61	14.841	2.231	1	0.3	3500

Caratteristiche del materiale

(Circolare 7 21-01-19 C8.5.I) Muratura in mattoni pieni e malta di calce LC2 intonaco solo un lato_Corti

fb_	fhk	fvk0	fhmedio	τ0	fv0	μ	ϕ	fvk,lim	E	G	FC
120000			215600	11200	25000	0.577	0.767	6500	320000000	128000000	1.2

Materiale per FRCM

Materiale	Fu Verticale	Fu Orizzontale	tfv	tfo	E	εu	Tipo fibra
GeoSteel G1200	47200	47200	0.01656	0.01656	19000000000	0.015	Acciaio

Rinforzo a matrice inorganica

									εlim,conv / ε,CNR DT-200							CRM / Fibrenet?			
materiale	lato applicazione	esposizione	ancoraggio verticale iniziale	ancoraggio verticale finale	ancoraggio orizzontale iniziale	ancoraggio orizzontale finale	strati	verifica taglio	αt	α	εlim,conv	ε,fd	γF,d	connettori	tipo di muratura	CRM	intonaco	spessore intonaco	tipo blocco fibrenet
GeoSteel G1200	Sinistro	Interna	100	100	100	100	1	CNR DT215	0.8			0.009				Si	GeoCalce F Antisismico	0.02	

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-78.51	-384	-0.0000062	0.0001872	0.0035	2.2313		17812.01	17812.01	No	226.87	Si
SLU 83	fin.	-874.67	-384	-0.0000715	0.0001872	0.0035	2.2307		17643.62	17643.62	No	20.17	Si
SLU 74	ini.	-120.86	-383	-0.0000096	0.0001872	0.0035	2.2313		17812.01	17812.01	No	147.38	Si
SLU 74	fin.	-859.55	-383	-0.0000702	0.0001872	0.0035	2.2307		17643.62	17643.62	No	20.53	Si
SLU 84	ini.	-83.33	-388	-0.0000066	0.0001872	0.0035	2.2313		17812.01	17812.01	No	213.76	Si
SLU 84	fin.	-868.32	-388	-0.0000709	0.0001872	0.0035	2.2307		17643.62	17643.62	No	20.32	Si
SLU 77	ini.	-143.11	-373	-0.0000114	0.0001872	0.0035	2.2313		17812.01	17812.01	No	124.46	Si
SLU 77	fin.	-876.24	-373	-0.0000716	0.0001872	0.0035	2.2307		17643.62	17643.62	No	20.14	Si
SLU 75	ini.	-125.67	-387	-0.00001	0.0001872	0.0035	2.2313		17812.01	17812.01	No	141.73	Si
SLU 75	fin.	-853.2	-387	-0.0000697	0.0001872	0.0035	2.2307		17643.62	17643.62	No	20.68	Si
SLU 80	ini.	-133.03	-384	-0.0000106	0.0001872	0.0035	2.2313		17812.01	17812.01	No	133.89	Si
SLU 80	fin.	-859.76	-384	-0.0000702	0.0001872	0.0035	2.2307		17643.62	17643.62	No	20.52	Si
SLU 78	ini.	-147.93	-378	-0.0000118	0.0001872	0.0035	2.2313		17812.01	17812.01	No	120.41	Si
SLU 78	fin.	-869.9	-378	-0.0000711	0.0001872	0.0035	2.2307		17643.62	17643.62	No	20.28	Si
SLU 82	ini.	-61.07	-398	-0.0000049	0.0001872	0.0035	2.2313		17812.01	17812.01	No	291.67	Si
SLU 82	fin.	-851.63	-398	-0.0000695	0.0001872	0.0035	2.2307		17643.62	17643.62	No	20.72	Si
SLU 81	ini.	-56.25	-393	-0.0000045	0.0001872	0.0035	2.2313		17812.01	17812.01	No	316.65	Si
SLU 81	fin.	-857.97	-393	-0.0000701	0.0001872	0.0035	2.2307		17643.62	17643.62	No	20.56	Si
SLU 79	ini.	-128.21	-380	-0.0000102	0.0001872	0.0035	2.2313		17812.01	17812.01	No	138.92	Si
SLU 79	fin.	-866.11	-380	-0.0000708	0.0001872	0.0035	2.2307		17643.62	17643.62	No	20.37	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni non sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLU 83	ini.	-78.51	53	2.2313	0	4648	7930	10022	5690	12578	No	238.92	Si
SLU 83	fin.	-874.67	-1454	2.2307	0	4647	7930	10020	5688	12577	No	8.65	Si
SLU 79	ini.	-128.21	111	2.2313	0	4648	7930	10022	5690	12578	No	113.41	Si
SLU 79	fin.	-866.11	-1395	2.2307	0	4647	7930	10020	5688	12577	No	9.01	Si
SLU 75	ini.	-125.67	121	2.2313	0	4648	7930	10022	5690	12578	No	103.72	Si
SLU 75	fin.	-853.2	-1385	2.2307	0	4647	7930	10020	5688	12577	No	9.08	Si
SLU 77	ini.	-143.11	116	2.2313	0	4648	7930	10022	5690	12578	No	108.73	Si
SLU 77	fin.	-876.24	-1390	2.2307	0	4647	7930	10020	5688	12577	No	9.05	Si
SLU 73	ini.	-91.72	118	2.2313	0	4648	7930	10022	5690	12578	No	106.26	Si
SLU 73	fin.	-822.15	-1388	2.2307	0	4647	7930	10020	5688	12577	No	9.06	Si
SLU 80	ini.	-133.03	122	2.2313	0	4648	7930	10022	5690	12578	No	103.04	Si
SLU 80	fin.	-859.76	-1384	2.2307	0	4647	7930	10020	5688	12577	No	9.09	Si
SLU 74	ini.	-120.86	110	2.2313	0	4648	7930	10022	5690	12578	No	114.23	Si
SLU 74	fin.	-859.55	-1396	2.2307	0	4647	7930	10020	5688	12577	No	9.01	Si
SLU 82	ini.	-61.07	58	2.2313	0	4648	7930	10022	5690	12578	No	215.97	Si
SLU 82	fin.	-851.63	-1448	2.2307	0	4647	7930	10020	5688	12577	No	8.69	Si
SLU 84	ini.	-83.33	64	2.2313	0	4648	7930	10022	5690	12578	No	197.12	Si
SLU 84	fin.	-868.32	-1442	2.2307	0	4647	7930	10020	5688	12577	No	8.72	Si
SLU 81	ini.	-56.25	47	2.2313	0	4648	7930	10022	5690	12578	No	267.18	Si
SLU 81	fin.	-857.97	-1459	2.2307	0	4647	7930	10020	5688	12577	No	8.62	Si

Verifica a pressoflessione nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche

Verifica condotta secondo CNR-DT 215

Comb.	Sez.	M	N	εm	εm_	εmu	df	M0d	M1d	MRd	incremento > 50%	c.s.	Verifica
SLD 15	ini.	1637.62	-137	-0.0001353	0.0002807	0.0035	2.2313		17074.82	17074.82		10.43	Si
SLD 15	fin.	-2406.3	-357	-0.0002033	0.0002807	0.0035	2.2307		17111.64	17111.64		7.11	Si
SLV 2	ini.	-4149.46	-742	-0.0003707	0.0002807	0.0035	2.2313		17089.85	17089.85		4.12	Si
SLV 2	fin.	3656.02	-226	-0.0003217	0.0002807	0.0035	2.2307		17096.7	17096.7		4.68	Si
SLV 4	ini.	-3982.55	-795	-0.0003536	0.0002807	0.0035	2.2313		17089.85	17089.85		4.29	Si
SLV 4	fin.	3271.05	-319	-0.0002841	0.0002807	0.0035	2.2307		17096.7	17096.7		5.23	Si
SLV 3	ini.	-3401.27	-771	-0.0002959	0.0002807	0.0035	2.2313		17089.85	17089.85		5.02	Si
SLV 3	fin.	2657.14	-295	-0.0002263	0.0002807	0.0035	2.2307		17096.7	17096.7		6.43	Si
SLV 15	ini.	3962.15	104	-0.0003518	0.0002807	0.0035	2.2313		17074.82	17074.82		4.31	Si
SLV 15	fin.	-4847.39	-412	-0.0004452	0.0002807	0.0035	2.2307		17111.64	17111.64		3.53	Si
SLV 13	ini.	3795.24	157	-0.000335	0.0002807	0.0035	2.2313		17074.82	17074.82		4.5	Si
SLV 13	fin.	-4462.42	-319	-0.000404	0.0002807	0.0035	2.2307		17111.64	17111.64		3.83	Si
SLV 11	ini.	1484.72	-269	-0.0001222	0.0002807	0.0035	2.2313		17074.82	17074.82		11.5	Si
SLV 11	fin.	-2569.65	-484	-0.0002181	0.0002807	0.0035	2.2307		17111.64	17111.64		6.66	Si
SLV 16	ini.	3380.87	80	-0.0002942	0.0002807	0.0035	2.2313		17074.82	17074.82		5.05	Si
SLV 16	fin.	-4233.48	-436	-0.0003801	0.0002807	0.0035	2.2307		17111.64	17111.64		4.04	Si
SLV 14	ini.	3213.97	133	-0.0002781	0.0002807	0.0035	2.2313		17074.82	17074.82		5.31	Si
SLV 14	fin.	-3848.51	-343	-0.0003407	0.0002807	0.0035	2.2307		17111.64	17111.64		4.45	Si
SLV 1	ini.	-3568.18	-717	-0.0003122	0.0002807	0.0035	2.2313		17089.85	17089.85		4.79	Si
SLV 1	fin.	3042.11	-201	-0.0002623	0.0002807	0.0035	2.2307		17096.7	17096.7		5.62	Si

Verifica a taglio nel piano delle sezioni rinforzate con FRCM in combinazioni sismiche CNR DT215

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLD 15	ini.	1637.62	-3418	2.2313	0	6973	7930	15033	5690	14902		4.36	Si
SLD 15	fin.	-2406.3	-4512	2.2307	0	6971	7930	15029	5688	14901		3.3	Si
SLV 1	ini.	-3568.18	7317	2.2313	0	6973	7930	15033	5690	14902		2.04	Si
SLV 1	fin.	3042.11	6026	2.2307	0	6971	7930	15029	5688	14901		2.47	Si
SLV 2	ini.	-4149.46	8512	2.2313	0	6973	7930	15033	5690	14902		1.75	Si

Comb.	Sez.	M	V	df	fvd	Vt	Vt,f	Vt,c	Vt,c int.	Vt,R	incremento > 50%	c.s.	Verifica
SLV 2	fin.	3656.02	7221	2.2307	0	6971	7930	15029	5688	14901		2.06	Si
SLV 13	ini.	3795.24	-7620	2.2313	0	6973	7930	15033	5690	14902		1.96	Si
SLV 13	fin.	-4462.42	-8839	2.2307	0	6971	7930	15029	5688	14901		1.69	Si
SLV 3	ini.	-3401.27	6720	2.2313	0	6973	7930	15033	5690	14902		2.22	Si
SLV 3	fin.	2657.14	5635	2.2307	0	6971	7930	15029	5688	14901		2.64	Si
SLV 16	ini.	3380.87	-7022	2.2313	0	6973	7930	15033	5690	14902		2.12	Si
SLV 16	fin.	-4233.48	-8034	2.2307	0	6971	7930	15029	5688	14901		1.85	Si
SLV 15	ini.	3962.15	-8217	2.2313	0	6973	7930	15033	5690	14902		1.81	Si
SLV 15	fin.	-4847.39	-9229	2.2307	0	6971	7930	15029	5688	14901		1.61	Si
SLV 14	ini.	3213.97	-6425	2.2313	0	6973	7930	15033	5690	14902		2.32	Si
SLV 14	fin.	-3848.51	-7643	2.2307	0	6971	7930	15029	5688	14901		1.95	Si
SLD 13	ini.	1571	-3182	2.2313	0	6973	7930	15033	5690	14902		4.68	Si
SLD 13	fin.	-2255.06	-4361	2.2307	0	6971	7930	15029	5688	14901		3.42	Si
SLV 4	ini.	-3982.55	7916	2.2313	0	6973	7930	15033	5690	14902		1.88	Si
SLV 4	fin.	3271.05	6830	2.2307	0	6971	7930	15029	5688	14901		2.18	Si

Tabella dei coefficienti di sicurezza minimi

Stato limite	Coeff.s.	Comb.	Verifica
PF_SLV	3.53	SLV 15	Si
V_SLV	1.615	SLV 15	Si
PF_SLU	20.136	SLU 77	Si
V_SLU	8.62	SLU 81	Si