

Regione Lombardia

Direzione Generale Infrastrutture, Trasporti e Mobilità sostenibile



CODICE
COMMESSA

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LIVELLO
PROGETTAZIONE

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D.P.R.
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PROGRESSIVO
ELABORATO

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CATEGORIA
OPERA

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NUMERO
OPERA

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REVISIONE

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SCALA

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AMMODERNAMENTO E POTENZIAMENTO DEL
NODO DI BOVISA - COMUNE DI MILANO
Progetto definitivo

RELAZIONE DI CALCOLO
FABBRICATO VIAGGIATORI

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	2				
	1	Apr. 2022	NUOVO LAYOUT FABBRICATO VIAGGIATORI		
	0	Ott. 2020	PRIMA EMISSIONE		

NORD_ING

FERROVIENORD

Progettista



Collaborazione



Via Squero, 12 - 35042 Monselice (PD)

REDATTO	CONTROLLATO	APPROVATO	DATA
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1. INTRODUZIONE

Nella presente relazione di calcolo saranno verificati agli SLU e SLE gli elementi verticali e le strutture orizzontali, sia esistenti (laddove è nota l'armatura) che nuovi, presenti nell'unità strutturale denominata "Fabbricato Viaggiatori" a seguito dell'adeguamento sismico della struttura dovuto all'ampliamento della stessa.

Si ricorda che la descrizione delle strutture e degli interventi di adeguamento è riportata nella relazione tecnica generale.

Si ricorda, inoltre, che le caratteristiche dei materiali, sia degli elementi esistenti che degli elementi nuovi, sono indicate nella relazione specifica dei materiali, così come i carichi utilizzati sono riportati nella relazione tecnica generale.

Sul corpo in esame sono presenti alcune pensiline metalliche che sono verificate nella relativa relazione di calcolo.

La struttura è stata progettata come non dissipativa.

1.1. Modello di calcolo

Il modello di calcolo è stato realizzato con il programma agli elementi finiti DOLMEN versione 20.

La struttura è modellata con il metodo degli elementi finiti, applicato a sistemi tridimensionali. Gli elementi utilizzati sono sia monodimensionali (pilastri e travi con eventuali sconnessioni interne), che bidimensionali (piastre e membrane triangolari e quadrangolari). I vincoli sono considerati puntuali ed inseriti tramite le sei costanti di rigidezza elastica.

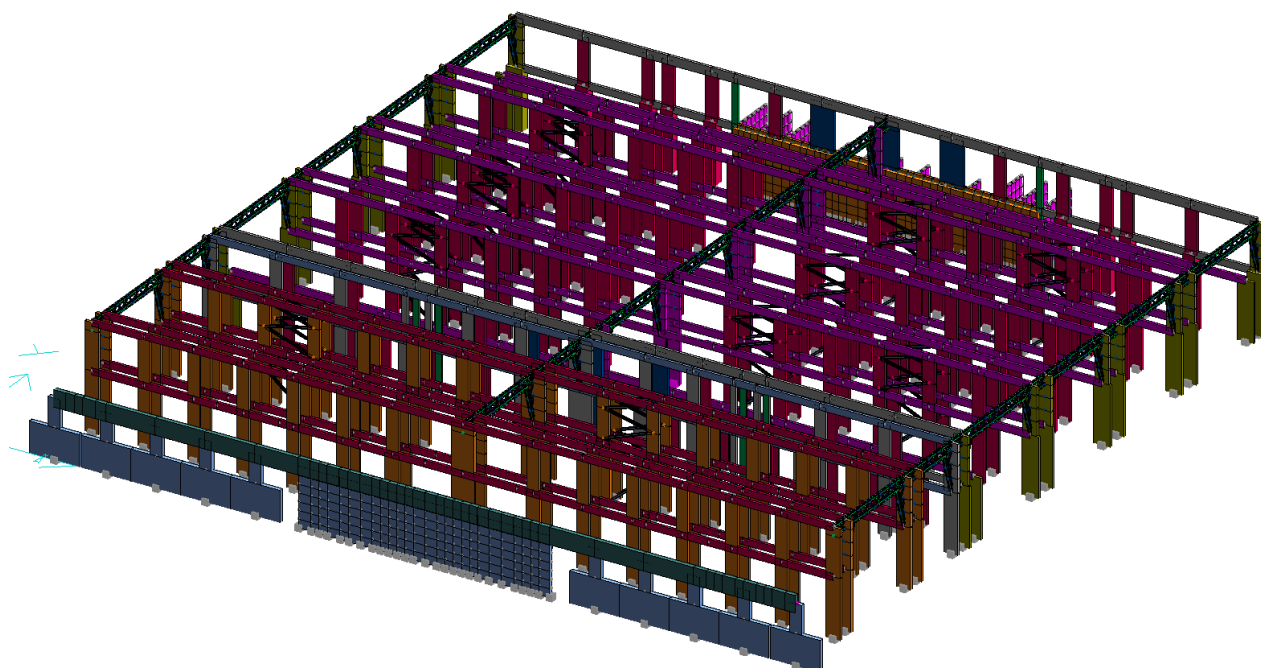


Figura 1 – Immagine 3D modello

Il solaio di copertura del piazzale non è stato modellato come infinitamente rigido in quanto, come indicato dal capitolo C7.2.6 delle circolari amministrative alle NTC18, si hanno degli spostamenti dei punti appartenenti allo stesso piano che differiscono tra di loro di più del 10%. I solai del piano ingressi e di copertura sono stati pertanto modellati con la loro reale rigidezza creando dei gusci avente spessore rispettivamente pari a 10 cm e 5 cm (si ricorda che dagli intervenienti descritti in relazione tecnica generale si prevede di realizzare una soletta collaborante di 10 cm sopra il solaio del piano ingressi e di una soletta collaborante di 5 cm sopra al solaio di copertura)

Di seguito viene riportata la mappa degli spostamenti (sotto l'azione del sisma in direzione X longitudinale ai binari del treno) dei punti appartenenti al piano ingressi e al piano di copertura dalle quali si può osservare come non venga rispettato il vincolo di piano rigido suggerito dalla normativa.

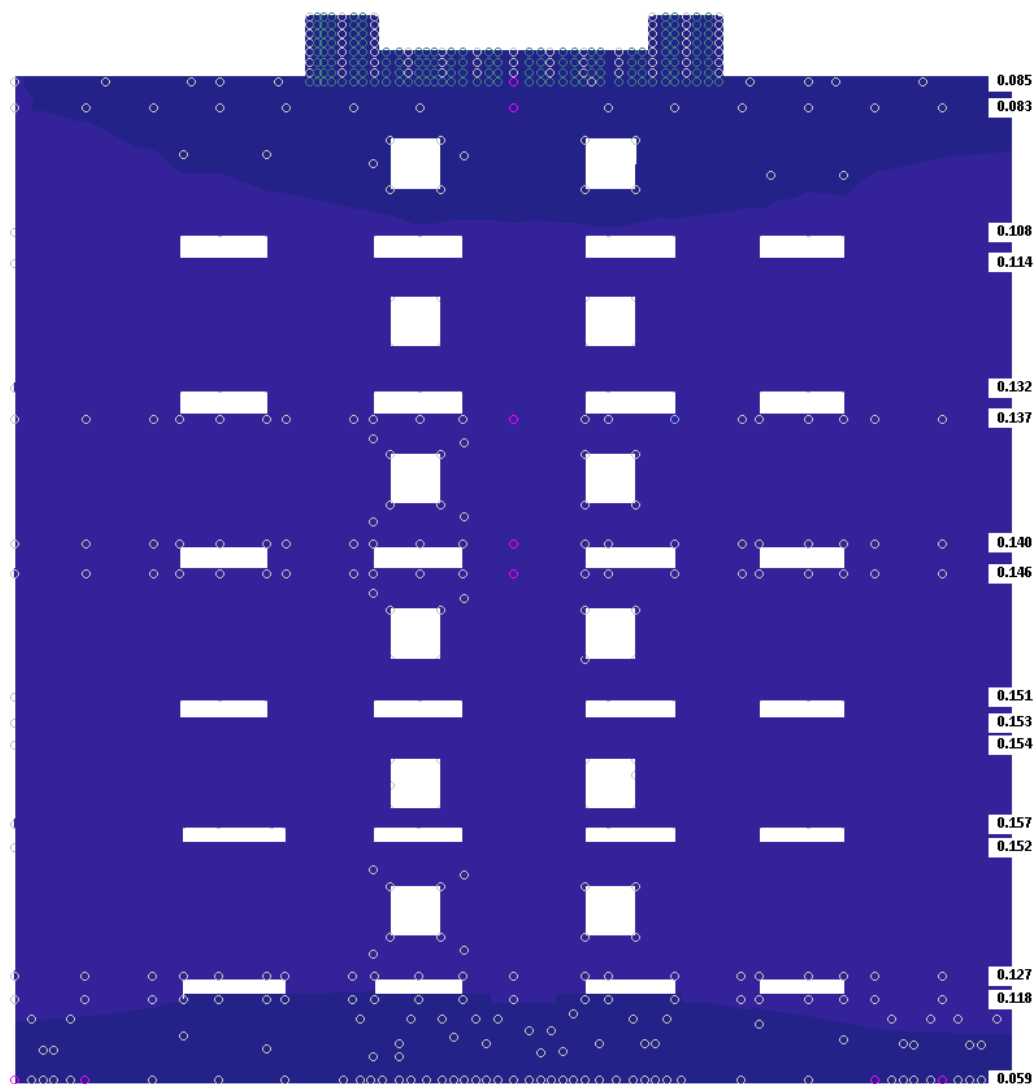


Figura 2 – Spostamenti punti del piano in direzione X – piano ingressi



Figura 3 – Spostamenti punti del piano in direzione X – piano copertura

Per ripartire i carichi di piano sulle travi di spina e di bordo, vista la monodirezionalità del solaio prefabbricato, e avendo modellato i solai con elementi guscio, sono stati calcolati i carichi di competenza di ciascuna trave, sulla base dell'analisi dei carichi riportata nella relazione tecnica generale, e successivamente sono stati applicati come carichi lineari sulle aste rappresentanti le travi.

Le travi sono state modellate con le loro dimensioni effettive. Esse sono state modellate svincolate alle estremità per realizzare uno schema statico di appoggio-appoggio.

Al piano ingressi, le travi di spina per la parte esistente e per la parte nuova, e la trave di bordo sul muro controterra della zona nuova sono state modellate con la sezione a L, mentre la trave di bordo della parte esistente è stata modellata con sezione rettangolare; le travi del coperto sono state tutte modellate con sezione ad L.

Come descritto in relazione tecnica generale, il muro controterra di nuova realizzazione sul lato ovest ha alcune aperture; nelle parti in cui sono presenti le aperture il muro è stato modellato con elementi aste verticali e orizzontali schematizzando una struttura a pilastri e trave in testa. L'elemento orizzontale in testa ai pilastri che si vengono a generare nel muro controterra è stato modellato come una trave ad L in continuità con gli elementi verticali in quanto si prevede di gettare il muro in opera (verifica come nei telai con finestre a nastro).

Nell'immagine seguente viene riportato lo schema delle travi appena descritte.

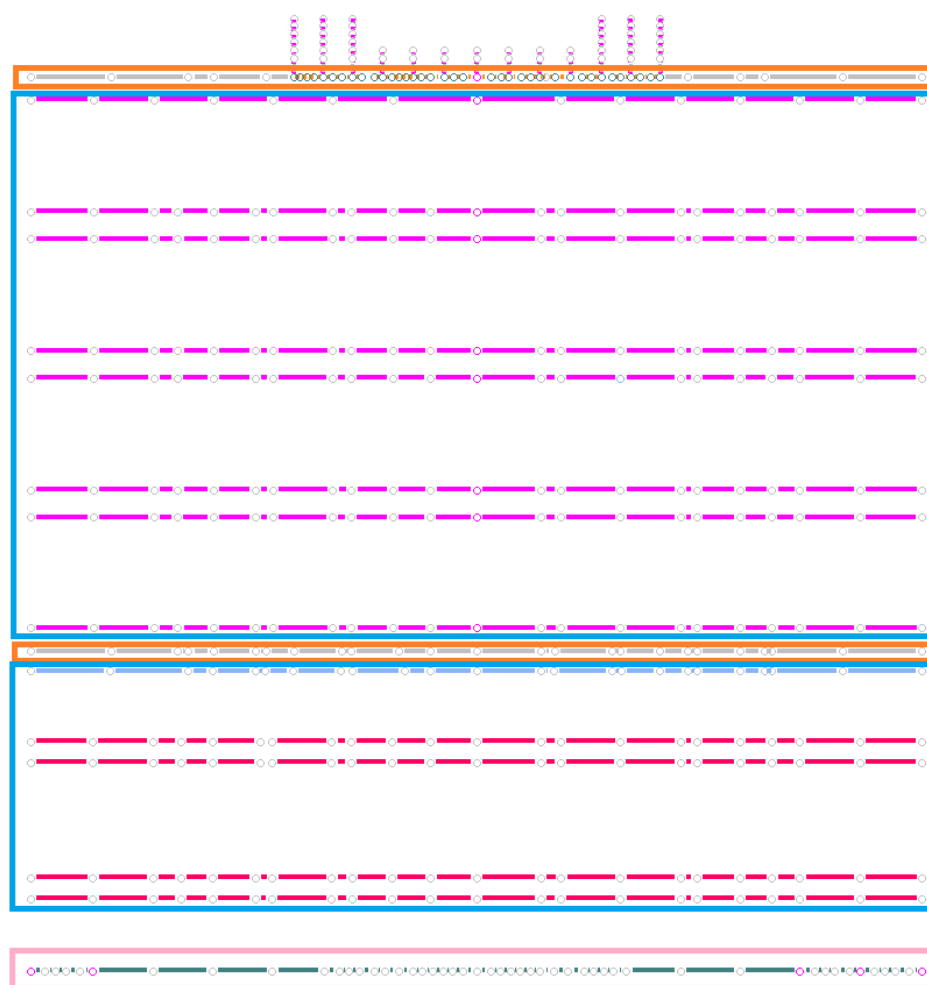
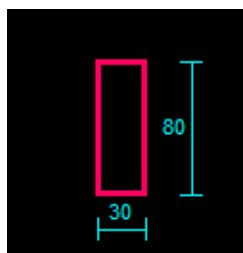
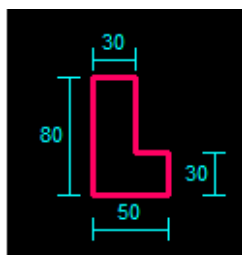


Figura 4 – Travi modello – piano ingressi

Travi riquadro arancione:



Travi riquadro azzurre:



Travi riquadro rosa:

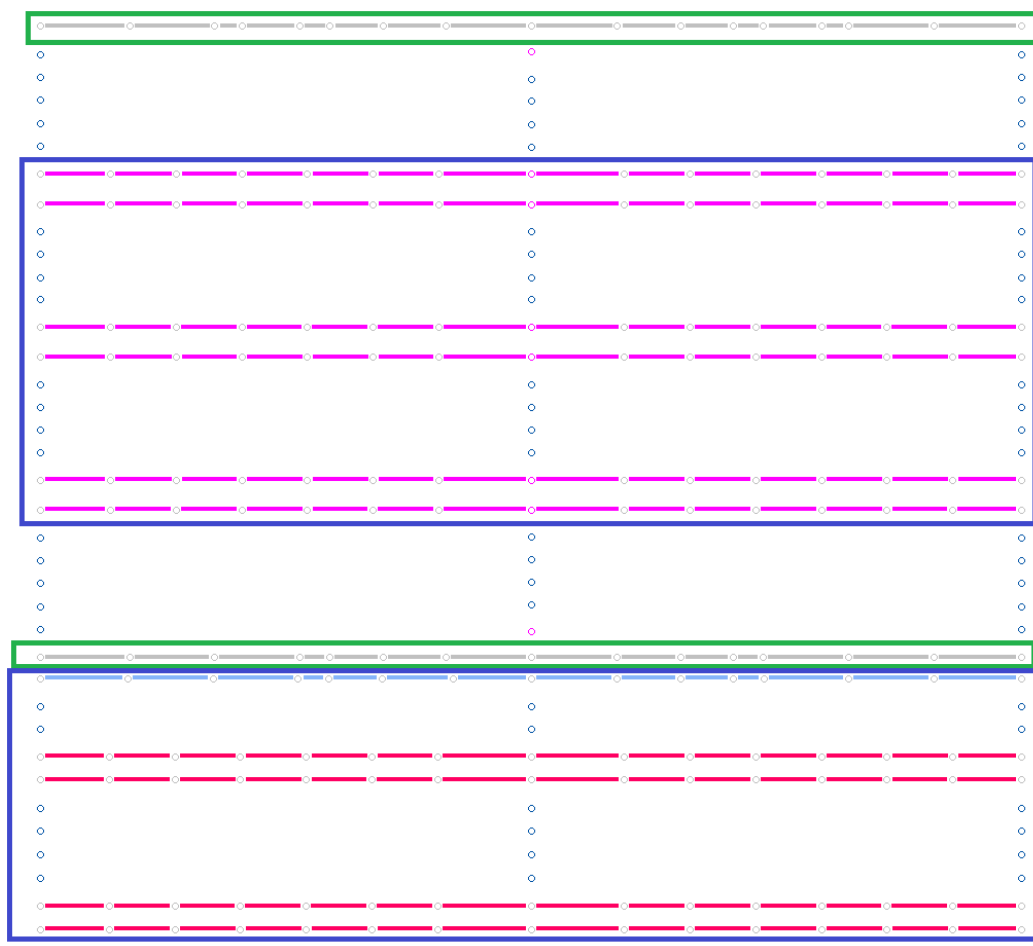
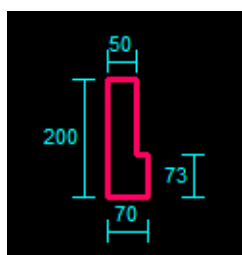
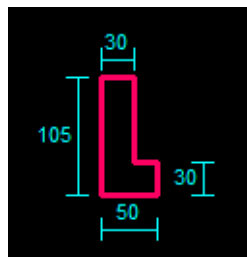
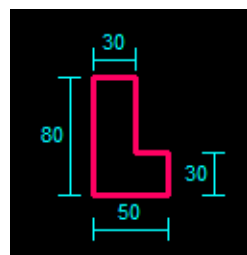


Figura 5 – Travi modello – piano copertura

Travi riquadro verdi:



Travi riquadro blu:



Gli elementi verticali nel modello sono costituiti da pilastri e pareti. I pilastri sono modellati come aste aventi diverse sezioni, in particolare i pilastri esistenti hanno dimensioni 30x70, 30x145, 30x170, 30x200, 30x280; quelli che in corrispondenza dell'allineamento con le pareti sul lato est sono stati portati ad uno spessore di 100 cm; i nuovi pilastri avranno le stesse sezioni di quelli esistenti e seguiranno la stessa disposizione per dare continuità e uniformità al fabbricato nel suo complesso.

Come detto in precedenza, il muro controterra di nuova realizzazione sul lato ovest viene modellato con elementi aste nella zona in cui si prevede di realizzare le finestre; in questo modo gli elementi verticali risultano essere pilastri di sezione 50x145 cm, mentre nelle zone "piene" il muro è stato modellato con elementi plate di spessore 50 cm. Per modellare la rigidità delle parti "piene" sotto le finestre è stata data alle aste una sezione 50x600 cm.

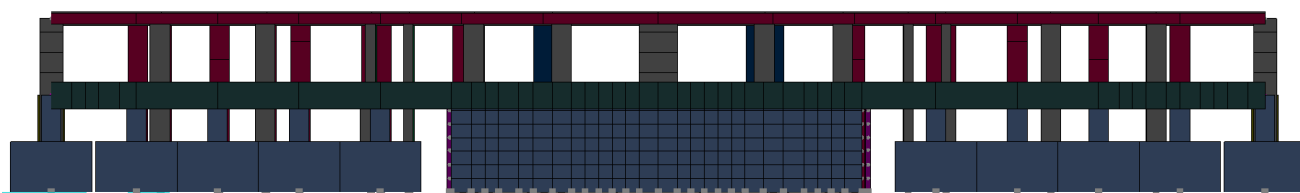


Figura 6 – Schematizzazione muro lato ovest

Sul lato est, il muro controterra esistente è stato modellato con elementi plate di spessore 100 cm. Le pareti di irrigidimento in direzione trasversale ai binari presenti sul lato est sono state modellate con elementi plate di spessore 40 cm.

Tutti gli elementi plate utilizzati per gli elementi verticali sono stati modellati solamente con lo spessore di membrana in modo che essi lavorino nel proprio piano e non siano sollecitati fuori piano. Le uniche pareti verticali modellate anche con spessore di piastra sono quelle della parete controterra ad ovest in quanto su di essa è stata modellata la spinta della terra che la sollecita fuori piano.

Nell'immagine seguente viene riportato il modello 3D da cui è possibile vedere gli elementi verticali del fabbricato.

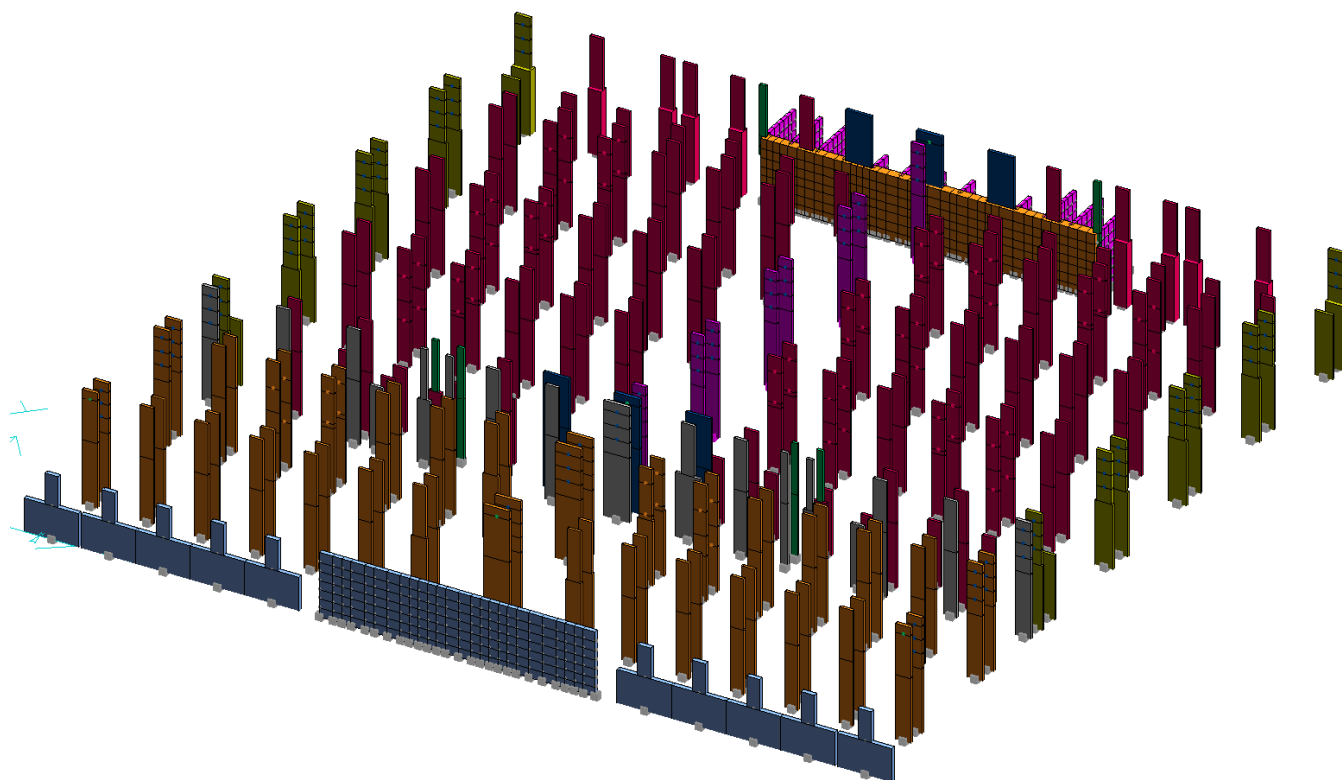


Figura 7 – Elementi verticali modello

Oltre ai nuovi pilastri e pareti, nel modello 3D sono state modellate le strutture di controventamento in acciaio disposte in entrambe le direzioni; in particolare, lungo la direzione longitudinale l'asse dei binari, sono stati inseriti dei controventi a K con profili HEB 240, mentre nella direzione trasversale sono state inserite delle strutture reticolari tipo "Warren", utilizzando profili HEB 340, profili UPN 400 accoppiati, e tubolari quadrati 150x150x15; i montanti verticali sono stati tenuti in conto in termini di rigidezza, anche se non modellati, aumentando di 5 cm lo spessore del pilastro su cui verranno inghisati, per considerare la sezione equivalente composta acciaio-calcestruzzo. Le aste sono state tutte considerate incernierate alle estremità per trasmettere solo sforzo normale; inoltre non vengono direttamente caricate dal solaio, ma lavorano solo sotto l'azione sismica.

Si riportano di seguito alcune immagini inerenti alla modellazione dei controventi metallici.

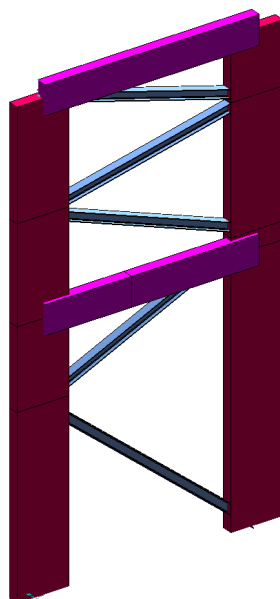


Figura 8 – Strutture di controventamento in acciaio – direzione longitudinale all'asse dei binari



Figura 9 – Strutture di controventamento in acciaio – direzione trasversale all'asse dei binari

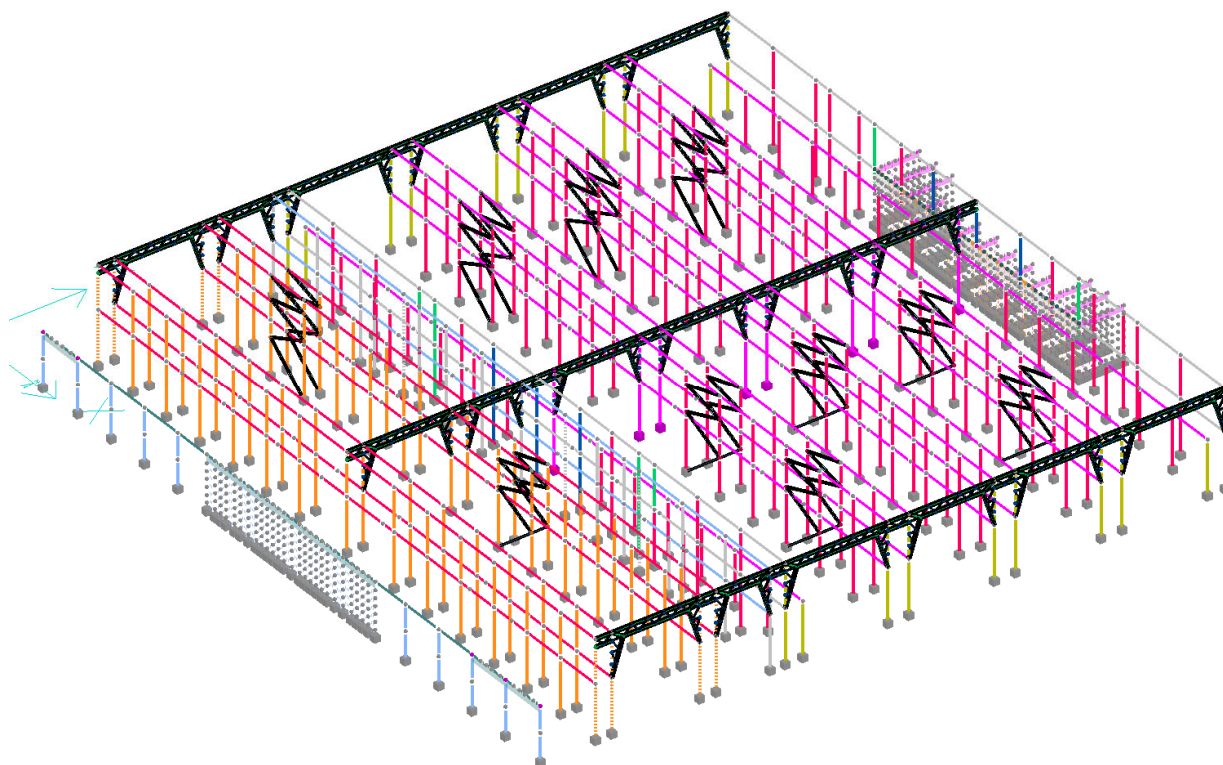


Figura 10 – Disposizione delle strutture di controventamento in acciaio

Per il calcolo degli elementi verticali, il modello è stato incastrato alla base.

Si è realizzato un secondo modello nel quale sono state modellate le fondazioni per la verifica delle stesse.

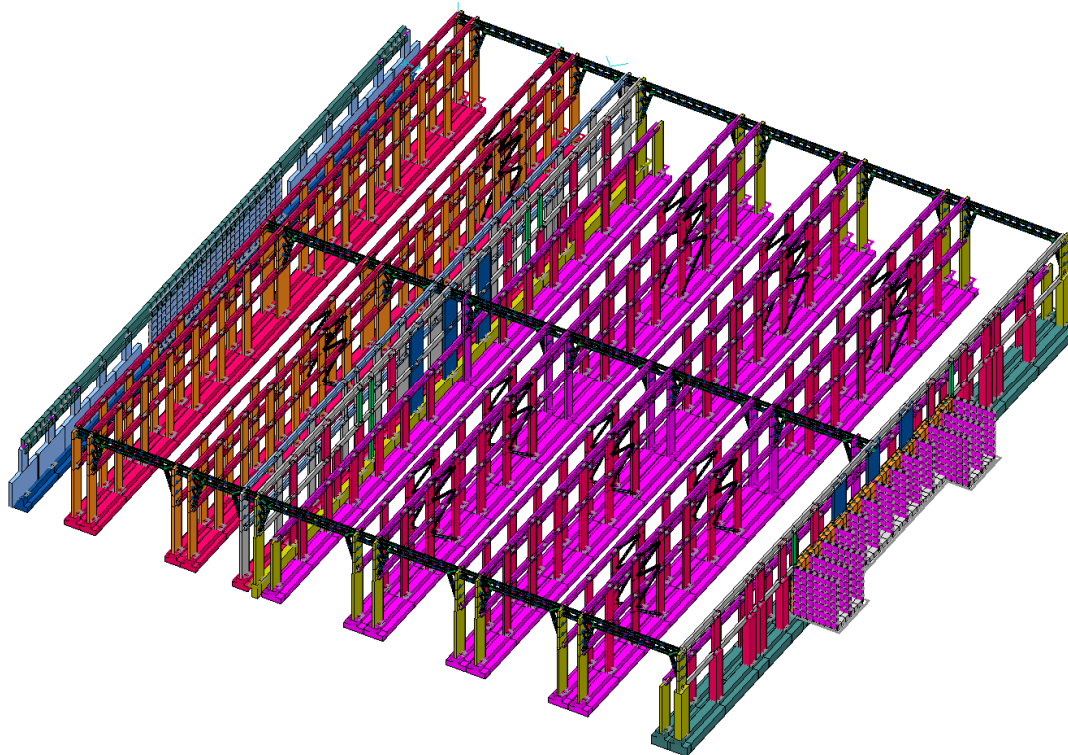


Figura 11 – Modello 3D fondazioni

Le fondazioni delle strutture esistenti sono delle travi a pi greco rovesciato; tale tipologia è stata adottata anche per le nuove fondazioni, ad eccezione della parete sul lato ovest, per cui è stata adottata una fondazione a trave a T rovescia, e delle pareti sul lato est, per cui è stata prevista una platea di spessore 125 cm. Le travi sono state tutte modellate come aste aventi sezioni a T rovescia, mentre la platea è stata modellata con elementi plate di spessore 125 cm.

Tutti gli elementi di fondazione sono stati modellati su suolo alla Winkler con costante pari a 10 daN/cm³. Sui nodi degli elementi di fondazione, inoltre, è stato posto un vincolo di blocco orizzontale che blocca gli spostamenti in direzione X e Y degli elementi.

Nell'immagine seguente è riportata la schematizzazione delle fondazioni appena descritte.

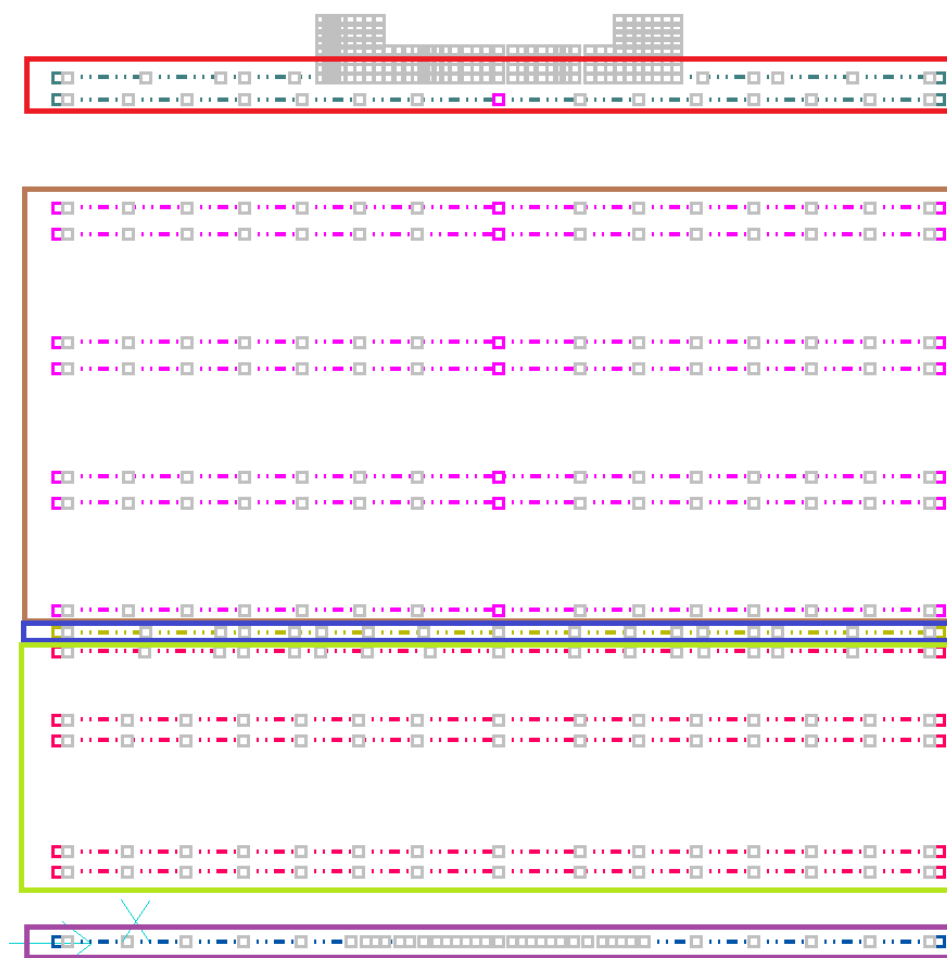
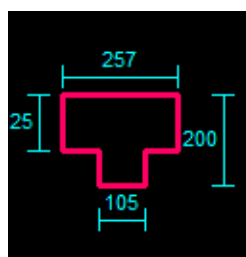
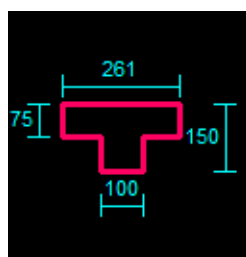


Figura 12 – Fondazioni modello

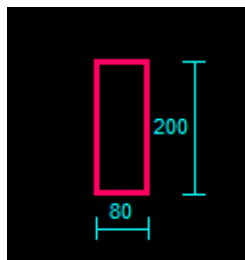
Travi riquadro rosse:



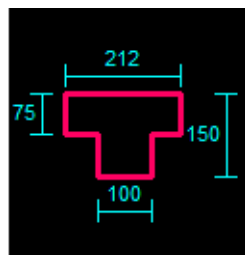
Travi riquadro marroni:



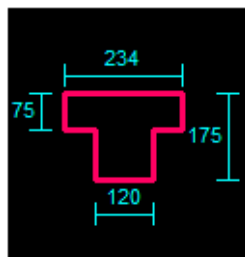
Travi riquadro blu:



Travi riquadro verde:



Travi riquadro viola:



1.2. Rigidezze

Si è eseguito il controllo delle rigidezze della struttura per valutare se la struttura è deformabile torsionalmente e se è necessario tenere in considerazione gli effetti del secondo ordine.

Il programma di calcolo determina per ogni piano le rigidezze degli elementi verticali nelle due direzioni (Rigidezza K_x e K_y), il baricentro delle rigidezze e quello geometrico, ed i raggi di rigidezza nella due direzioni. Il programma valuta, inoltre, se una struttura è deformabile torsionalmente controllando se $\min(r_x, r_y) / l_s < 1$ e se è regolare in pianta controllando che $(x_g - x_k) / r_x > 0.3$ e $(y_g - y_k) / r_y > 0.3$.

Il programma, inoltre, valuta piano per piano la necessità o meno di tenere in conto delle non-linearità geometriche della struttura calcolando θ , se questo valore è inferiore di 0,1 (10%), non è necessario valutarne gli effetti.

CONTROLLO RIGIDEZZE STRUTTURALI

Quota del piano		710.0		1275.0	[cm]
Rigidezza K_x (/1000)		13082.373		4259.599	[daN/cm]
Rigidezza K_y (/1000)		4509.117		1291.252	[daN/cm]
Rigidezza K_{tors} (/1e6)		471920572		46307497	[daNcm]

Xk (centro rigidzze)		5771.5		5741.4		[cm]
Yk (centro rigidzze)		6726.6		4974.0		[cm]
Xg (baricentro)		5761.7		5748.7		[cm]
Yg (baricentro)		4651.5		4761.1		[cm]
dimensione X		8955		8955		[cm]
dimensione Y		9566		8252		[cm]
raggio rigidzza (rx)		10230		5989		[cm]
raggio rigidzza (ry)		6006		3297		[cm]
raggio giratorio (ls)		3732		3515		[cm]
MIN(rx , ry) / ls		1.6093		0.9380		< 1 !!!!
(Xg - Xk) / rx		0.0010		0.0012		ok (< 0.3)
(Yg - Yk) / ry		0.3455		0.0646		> 0.3 !!!!
2° ordine (theta X)		0.27		0.30		[%] ok (< 10%)
2° ordine (theta Y)		0.79		0.98		[%] ok (< 10%)
Percentuale dinamica X		52.39		47.61		[%]
Percentuale dinamica Y		50.55		49.45		[%]

Come è possibile osservare il rapporto $\min(r_x, r_y)/l_s$ risulta minore di 1 per tanto la struttura è deformabile torsionalmente. Inoltre, il controllo del fattore θ minore del 10% risulta superato; perciò, è possibile trascurare gli effetti delle non linearità geometriche.

1.3. Condizioni di carico

Si riporta di seguito l'elenco delle condizioni di carico utilizzate nel modello 3D della struttura.

CONDIZIONI DI CARICO	num. =
Nome	46
1 Peso_proprio_travi N. carichi: 1485 Lista carichi: 12-65, 6330-6477, 8448-9730	
2 Permanente N. carichi: 635 Lista carichi: 6478-7112	
3 C:_Stazione N. carichi: 451 Lista carichi: 7113-7563	
4 Neve_(<1000m_slm) N. carichi: 184 Lista carichi: 7564-7747	
5 Peso_proprio_solai N. carichi: 635 Lista carichi: 7748-8382	
6 Tamponamenti N. carichi: 28 Lista carichi: 1-11, 8383-8399	
7 Spinta_statica_terr N. carichi: 24 Lista carichi: 8400-8423	
8 Spinta_sismica_terr N. carichi: 24 Lista carichi: 8424-8447	
9 G1_giunti N. carichi: 0 Lista carichi:	
10 G2_giunti N. carichi: 0 Lista carichi:	
11 C_giunti N. carichi: 0 Lista carichi:	
12 Neve_giunti N. carichi: 0 Lista carichi:	

13	Autovett_001_(X)	N. carichi:	68
	Lista carichi:	66-133	
14	Autovett_001_(Y)	N. carichi:	68
	Lista carichi:	134-201	
15	Autovett_002_(X)	N. carichi:	68
	Lista carichi:	202-269	
16	Autovett_002_(Y)	N. carichi:	68
	Lista carichi:	270-337	
17	Autovett_003_(X)	N. carichi:	68
	Lista carichi:	338-405	
18	Autovett_003_(Y)	N. carichi:	68
	Lista carichi:	406-473	
19	Autovett_004_(X)	N. carichi:	68
	Lista carichi:	474-541	
20	Autovett_004_(Y)	N. carichi:	68
	Lista carichi:	542-609	
21	Autovett_005_(X)	N. carichi:	68
	Lista carichi:	610-677	
22	Autovett_005_(Y)	N. carichi:	68
	Lista carichi:	678-745	
23	Autovett_006_(X)	N. carichi:	68
	Lista carichi:	746-813	
24	Autovett_006_(Y)	N. carichi:	68
	Lista carichi:	814-881	
25	Autovett_014_(X)	N. carichi:	68
	Lista carichi:	882-949	
26	Autovett_014_(Y)	N. carichi:	68
	Lista carichi:	950-1017	
27	Autovett_015_(X)	N. carichi:	68
	Lista carichi:	1018-1085	
28	Autovett_015_(Y)	N. carichi:	68
	Lista carichi:	1086-1153	
29	Autovett_016_(X)	N. carichi:	68
	Lista carichi:	1154-1221	
30	Autovett_016_(Y)	N. carichi:	68
	Lista carichi:	1222-1289	
31	Autovett_017_(X)	N. carichi:	68
	Lista carichi:	1290-1357	
32	Autovett_017_(Y)	N. carichi:	68
	Lista carichi:	1358-1425	
33	Autovett_018_(X)	N. carichi:	68
	Lista carichi:	1426-1493	
34	Autovett_018_(Y)	N. carichi:	68
	Lista carichi:	1494-1561	
35	Autovett_019_(X)	N. carichi:	68
	Lista carichi:	1562-1629	
36	Autovett_019_(Y)	N. carichi:	68
	Lista carichi:	1630-1697	
37	Autovett_021_(X)	N. carichi:	68
	Lista carichi:	1698-1765	
38	Autovett_021_(Y)	N. carichi:	68
	Lista carichi:	1766-1833	
39	Autovett_025_(X)	N. carichi:	68
	Lista carichi:	1834-1901	
40	Autovett_025_(Y)	N. carichi:	68
	Lista carichi:	1902-1969	
41	Autovett_028_(X)	N. carichi:	68
	Lista carichi:	1970-2037	
42	Autovett_028_(Y)	N. carichi:	68
	Lista carichi:	2038-2105	
43	Sisma_X	N. carichi:	1116

Lista carichi: 2106-3221

44 Sisma_Y N. carichi: 1116
Lista carichi: 3222-4337

45 Torcente_add._X N. carichi: 876
Lista carichi: 4338-5213

46 Torcente_add._Y N. carichi: 1116
Lista carichi: 5214-6329

Di seguito la risultante dei carichi applicati in ognuna delle condizioni sopra riportata.

RISULTANTI DEI CARICHI (punto di applicazione nell'origine degli assi):

cond.	FX	FY	FZ	MX	MY	MZ
1	0.000000E+00	0.000000E+00	-8.111709E+06	-3.812068E+10	4.669043E+10	0.000000E+00
2	0.000000E+00	0.000000E+00	-5.627003E+06	-2.622119E+10	3.234710E+10	0.000000E+00
3	0.000000E+00	0.000000E+00	-4.179921E+06	-1.918385E+10	2.402856E+10	0.000000E+00
4	0.000000E+00	0.000000E+00	-8.946045E+05	-4.335813E+09	5.142634E+09	0.000000E+00
5	0.000000E+00	0.000000E+00	-8.642520E+06	-4.058443E+10	4.968187E+10	0.000000E+00
6	0.000000E+00	0.000000E+00	-1.249021E+05	-2.649735E+08	8.902326E+08	0.000000E+00
7	0.000000E+00	1.329971E+05	0.000000E+00	-2.517245E+07	0.000000E+00	7.943947E+08
8	0.000000E+00	1.647659E+05	0.000000E+00	-3.084831E+07	0.000000E+00	9.830434E+08
9	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
10	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
11	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
12	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
13	1.930600E+02	0.000000E+00	0.000000E+00	0.000000E+00	2.742207E+05	1.821817E+06
14	0.000000E+00	3.770212E+06	0.000000E+00	-3.867098E+09	0.000000E+00	2.326847E+10
15	1.043141E+06	0.000000E+00	0.000000E+00	0.000000E+00	1.139440E+09	-1.907317E+09
16	0.000000E+00	1.627300E+05	0.000000E+00	-1.013908E+08	0.000000E+00	-5.685678E+08
17	2.641481E+06	0.000000E+00	0.000000E+00	0.000000E+00	2.742385E+09	-1.291036E+10
18	0.000000E+00	2.436005E+05	0.000000E+00	-1.130299E+08	0.000000E+00	-1.920453E+08
19	2.489808E+05	0.000000E+00	0.000000E+00	0.000000E+00	2.439746E+08	-1.727617E+09
20	0.000000E+00	8.759365E+05	0.000000E+00	-3.104458E+08	0.000000E+00	5.719395E+09
21	8.197408E+04	0.000000E+00	0.000000E+00	0.000000E+00	7.902042E+07	-6.220270E+08
22	0.000000E+00	3.542420E+03	0.000000E+00	-1.298713E+06	0.000000E+00	2.741916E+08
23	1.655559E+05	0.000000E+00	0.000000E+00	0.000000E+00	1.277622E+08	-2.228401E+09
24	0.000000E+00	1.008000E+02	0.000000E+00	1.233796E+05	0.000000E+00	1.704011E+07
25	9.478517E+04	0.000000E+00	0.000000E+00	0.000000E+00	3.232158E+07	-6.077743E+08
26	0.000000E+00	2.570036E+04	0.000000E+00	-1.626261E+07	0.000000E+00	2.152952E+08
27	1.015172E+05	0.000000E+00	0.000000E+00	0.000000E+00	4.333366E+07	-5.167159E+08
28	0.000000E+00	4.059382E+04	0.000000E+00	-3.084515E+07	0.000000E+00	1.675589E+08
29	4.857730E+04	0.000000E+00	0.000000E+00	0.000000E+00	2.688228E+07	-5.028794E+08
30	0.000000E+00	8.744940E+03	0.000000E+00	-7.414962E+06	0.000000E+00	1.669208E+07
31	8.145455E+04	0.000000E+00	0.000000E+00	0.000000E+00	4.554268E+07	-5.027802E+08
32	0.000000E+00	2.998994E+04	0.000000E+00	-2.187149E+07	0.000000E+00	1.837666E+08
33	7.141447E+04	0.000000E+00	0.000000E+00	0.000000E+00	3.070795E+07	-6.848618E+08
34	0.000000E+00	1.301450E+03	0.000000E+00	-5.088223E+05	0.000000E+00	4.628576E+06
35	2.933917E+05	0.000000E+00	0.000000E+00	0.000000E+00	1.408866E+08	-1.532134E+09
36	0.000000E+00	2.586620E+03	0.000000E+00	-1.514134E+06	0.000000E+00	1.650731E+07
37	3.612349E+04	0.000000E+00	0.000000E+00	0.000000E+00	1.325213E+07	9.421752E+07
38	0.000000E+00	5.855260E+03	0.000000E+00	-4.603489E+06	0.000000E+00	3.942221E+07
39	8.934498E+04	0.000000E+00	0.000000E+00	0.000000E+00	5.569967E+07	-5.161560E+08
40	0.000000E+00	8.888240E+03	0.000000E+00	-6.328781E+06	0.000000E+00	2.544671E+07
41	4.371870E+04	0.000000E+00	0.000000E+00	0.000000E+00	2.386865E+07	-2.239542E+08
42	0.000000E+00	3.286100E+02	0.000000E+00	-4.274990E+04	0.000000E+00	6.321615E+06
43	6.578704E+06	0.000000E+00	0.000000E+00	0.000000E+00	6.225493E+09	-3.096734E+10
44	0.000000E+00	6.578704E+06	0.000000E+00	-6.225493E+09	0.000000E+00	3.787442E+10
45	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	-8.953593E+03	-2.940048E+09
46	0.000000E+00	0.000000E+00	0.000000E+00	6.992389E+03	0.000000E+00	2.936761E+09

1.4. Parametri azione sismica

Sulla struttura è stata svolta una analisi dinamica lineare come previsto dal capitolo 7.3.3.1.

Come indicato nel capitolo introduttivo alla presente relazione di calcolo, la struttura è stata progettata come non dissipativa; la normativa attuale (NTC18 capitolo 7.3.1) dispone che per le strutture progettate come non dissipative si possa utilizzare un fattore di struttura come indicato di seguito:

$$1 \leq \frac{2}{3} q_{CD"B"} \leq 1.5$$

Nella forma riportata $q_{CD"B"}$ si riferisce al valore del fattore di struttura per l'edificio in esame in classe di duttilità "B". Nel caso in esame, utilizzando la tabella 7.3.II delle NTC18, la struttura può essere

1	0.583394	0.004	71.778	0.000	0.043	0.022	0.017	0.009	0.006	0.006	0.005	0.004	0.004
0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
0.002	0.002	0.002	0.002	0.002	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002
2	0.368672	16.610	2.591	0.000	0.240	0.119	0.037	0.022	0.018	0.014	0.011	0.010	0.009
0.008	0.008	0.007	0.007	0.006	0.006	0.006	0.006	0.005	0.005	0.005	0.005	0.005	0.004
0.004	0.004	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	0.308804	42.060	3.879	0.000	0.536	0.086	0.043	0.033	0.025	0.019	0.017	0.014	0.013
0.012	0.011	0.010	0.010	0.009	0.009	0.008	0.008	0.008	0.007	0.007	0.007	0.006	0.006
0.006	0.006	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	0.281383	3.964	13.947	0.000	0.159	0.067	0.049	0.035	0.026	0.023	0.019	0.017	0.016
0.014	0.013	0.013	0.012	0.011	0.010	0.010	0.010	0.009	0.009	0.008	0.008	0.008	0.008
0.007	0.007	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.223820	1.305	0.056	0.000	0.340	0.195	0.109	0.070	0.057	0.043	0.039	0.035	0.030
0.027	0.026	0.024	0.024	0.022	0.018	0.018	0.017	0.016	0.015	0.015	0.014	0.013	0.013
0.013	0.013	0.013	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.194811	2.636	0.002	0.000	0.714	0.320	0.167	0.127	0.085	0.076	0.066	0.054	0.047
0.046	0.041	0.040	0.036	0.032	0.029	0.027	0.025	0.024	0.022	0.021	0.020	0.020	0.019
7	0.182871	0.125	0.066	0.000	0.598	0.284	0.204	0.127	0.111	0.095	0.075	0.064	0.062
0.055	0.053	0.048	0.041	0.037	0.034	0.031	0.030	0.028	0.026	0.025	0.024	0.023	0.023
8	0.168481	0.002	0.029	0.000	0.630	0.432	0.238	0.200	0.164	0.123	0.101	0.097	0.085
0.081	0.071	0.061	0.054	0.053	0.048	0.043	0.041	0.038	0.036	0.034	0.033	0.031	0.031
9	0.156074	0.073	0.358	0.000	0.874	0.491	0.398	0.313	0.218	0.172	0.163	0.138	0.130
0.111	0.092	0.079	0.079	0.070	0.062	0.058	0.054	0.050	0.047	0.045	0.042	0.042	0.042
10	0.150261	0.167	0.101	0.000	0.711	0.581	0.453	0.305	0.234	0.220	0.183	0.171	0.144
0.116	0.099	0.098	0.086	0.076	0.071	0.065	0.060	0.056	0.053	0.050	0.042	0.042	0.042
11	0.140988	0.347	0.825	0.000	0.957	0.825	0.569	0.423	0.394	0.317	0.291	0.238	0.184
0.152	0.150	0.128	0.110	0.102	0.092	0.084	0.078	0.073	0.068	0.068	0.068	0.068	0.068
12	0.138043	0.741	0.253	0.000	0.941	0.698	0.522	0.487	0.388	0.355	0.287	0.218	0.178
0.176	0.149	0.127	0.117	0.104	0.096	0.088	0.082	0.076	0.076	0.076	0.076	0.076	0.076
13	0.134640	0.001	0.917	0.000	0.857	0.667	0.624	0.498	0.454	0.363	0.271	0.218	0.215
0.180	0.151	0.139	0.123	0.112	0.103	0.095	0.087	0.087	0.087	0.087	0.087	0.087	0.087
14	0.129259	1.715	0.465	0.000	0.919	0.881	0.738	0.679	0.544	0.399	0.313	0.308	0.252
0.208	0.189	0.164	0.148	0.134	0.124	0.112	0.112	0.112	0.112	0.112	0.112	0.112	0.112
15	0.125469	1.867	0.747	0.000	0.995	0.918	0.868	0.725	0.537	0.417	0.410	0.330	0.268
0.242	0.207	0.185	0.167	0.153	0.137	0.137	0.137	0.137	0.137	0.137	0.137	0.137	0.137
16	0.124591	0.897	0.161	0.000	0.951	0.907	0.770	0.575	0.447	0.439	0.353	0.285	0.257
0.220	0.196	0.176	0.161	0.144	0.144	0.144	0.144	0.144	0.144	0.144	0.144	0.144	0.144
17	0.121787	1.523	0.561	0.000	0.992	0.908	0.715	0.561	0.552	0.442	0.353	0.316	0.268
0.236	0.211	0.192	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171
18	0.120671	1.342	0.024	0.000	0.951	0.775	0.614	0.605	0.484	0.386	0.345	0.291	0.256
0.228	0.206	0.184	0.184	0.184	0.184	0.184	0.184	0.184	0.184	0.184	0.184	0.184	0.184
19	0.117977	5.581	0.049	0.000	0.911	0.757	0.747	0.606	0.483	0.430	0.360	0.314	0.277
0.250	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220
20	0.114349	0.019	0.671	0.000	0.940	0.932	0.805	0.658	0.587	0.490	0.425	0.372	0.332
0.290	0.290	0.290	0.290	0.290	0.290	0.290	0.290	0.290	0.290	0.290	0.290	0.290	0.290
21	0.111492	0.708	0.115	0.000	1.000	0.946	0.821	0.745	0.630	0.548	0.478	0.425	0.368
22	0.111307	0.397	0.016	0.000	0.953	0.831	0.756	0.640	0.557	0.486	0.432	0.374	0.374
23	0.108857	0.044	0.000	0.000	0.951	0.893	0.783	0.691	0.607	0.540	0.466	0.466	0.466
24	0.106410	0.018	0.001	0.000	0.986	0.918	0.837	0.750	0.675	0.585	0.585	0.585	0.585
25	0.105165	1.805	0.180	0.000	0.968	0.905	0.826	0.750	0.656	0.656	0.656	0.656	0.656
26	0.103281	0.081	0.006	0.000	0.980	0.928	0.865	0.773	0.773	0.773	0.773	0.773	0.773
27	0.101819	0.055	0.040	0.000	0.982	0.940	0.862	0.862	0.862	0.862	0.862	0.862	0.862
28	0.100447	0.904	0.007	0.000	0.986	0.935	0.935	0.935	0.935	0.935	0.935	0.935	0.935
29	0.099278	0.005	0.006	0.000	0.979	0.979	0.979	0.979	0.979	0.979	0.979	0.979	0.979
30	0.097832	0.395	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MASSA TOTALE					85.393	97.883	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MASSA TOTALE					86.102	96.267	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Di seguito vengono riportate le immagini dei modi di vibrare principali della struttura.

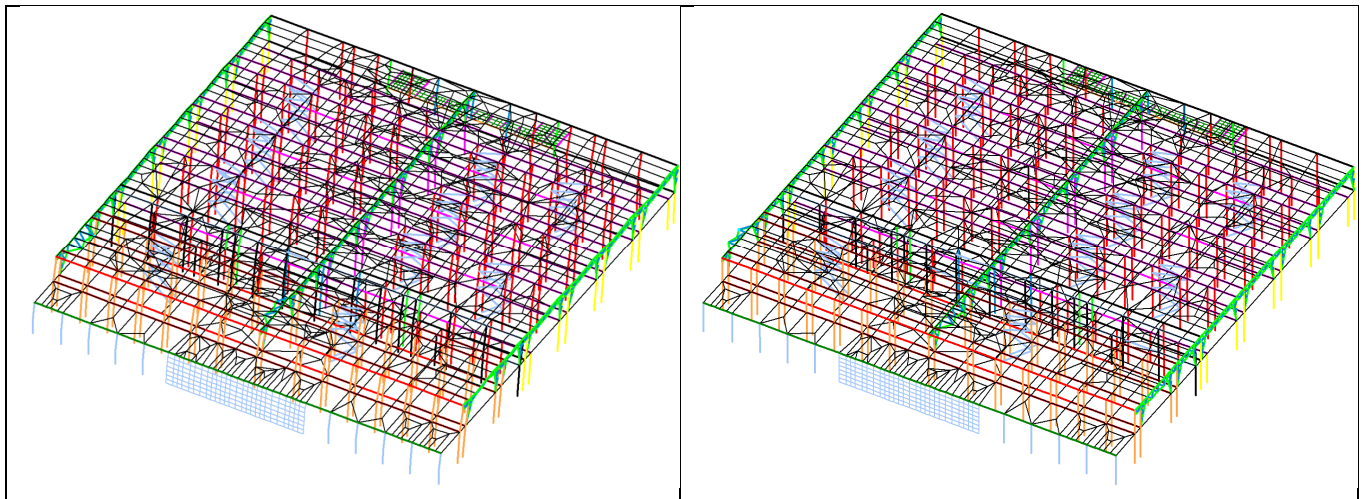


Figura 13 – Sx: Modo1; Dx: Modo3

Di seguito si riportano le sollecitazioni di torcente addizionale ottenute dall'analisi statica lineare.

Analisi sismica - Statica lineare - (NTC 2018)

DATI PROGETTO

Edificio sito in località Stazione Milano Nord-Bovisa (long. 9.150 lat. 45.500000)

Categoria del suolo di fondazione = C

Coeff. di amplificazione stratigrafica $S_s = 1.500$

Coeff. di amplificazione topografica $S_T = 1.000$

$S = 1.500$

Vita nominale dell'opera $V_N = 100$ anni

Coefficiente d'uso $C_U = 2.0$

Periodo di riferimento $V_R = 200.0$

PVR : probabilit? di superamento in $V_R = 10$ %

Tempo di ritorno = 1898

Coeff. di smorzamento viscoso = 5.0

Valori risultanti per :

ag 0.678 [g/10]

Fo 2.771

TC* 0.313

Fattore di comportamento $q = 1.070$

Rapporto spettro di esercizio / spettro di progetto = 0.477

Coeff. λ = 1.0000

$S_d = 0.263$

Numero condizioni generanti carichi sismici : 8

Cond. 001 :	Peso_proprio_travi_e	con coeff.	1.000
Cond. 002 :	Permanente	con coeff.	1.000
Cond. 003 :	C:_Stazione	con coeff.	0.600
Cond. 005 :	Peso_proprio_solai	con coeff.	1.000
Cond. 006 :	Tamponamenti	con coeff.	1.000
Cond. 009 :	G1_giunti	con coeff.	1.000
Cond. 010 :	G2_giunti	con coeff.	1.000
Cond. 011 :	C_giunti	con coeff.	0.600

Massa sismica totale 25014083 daN

Condizioni di carico sismico generate:

Cond. 043 :	Sisma X
Cond. 044 :	Sisma Y
Cond. 045 :	Torcente add. X
Cond. 046 :	Torcente add. Y

Carichi sismici :

Piani	Pesi	C. distr.	Forze piano	Torc. piano X	Torc. piano Y	Bar. X	Bar. Y
cm	daN		daN	daNcm	daNcm	cm	cm
0.0	1154088	0.0000	0	0	0	5754.8	4304.6
370.0	169563	0.1174	19899	4	8909876	5748.5	25.0
490.0	107550	0.1554	16715	5754722	5432433	5374.4	6369.3
600.0	63709	0.1903	12124	0	2229821	4588.9	9000.6
710.0	16462571	0.2252	3707324	1773143353	1659954394	5769.3	4669.6
875.0	87649	0.2775	24325	9778317	10891656	5749.1	4553.3
975.0	144919	0.3092	44816	18015219	20066394	5721.1	4884.9
1105.0	56224	0.3505	19705	5451943	5221948	5561.4	5335.4
1175.0	98731	0.3727	36795	15181119	16475169	5749.3	4182.1
1275.0	6669082	0.4044	2696999	1112731205	1207581309	5750.3	4764.8
25014083			6578704				

1.5. Casi di carico

Di seguito si riportano le combinazioni di carico utilizzate nel modello

NOME	DESCRIZIONE	VERIFICA	TIPO	CONDIZ. INSERITE			CASI INSERITI	
				Num.	Coeff.	Segno	Num.	Coeff.
1	SLU SENZA SISMA	S.L.U.	somma	1	1.300	+		
				2	1.500	+		
				3	1.500	+		
				4	1.500	+		
				5	1.300	+		
				6	1.500	+		
				7	1.500	+		
				8	1.500	+		
				9	1.300	+		
				10	1.500	+		
				11	1.500	+		
				12	1.500	+		
2	SISMAX SLU	nessuna	somma	13	1.000	quadr.		
				15	1.000	quadr.		
				17	1.000	quadr.		
				19	1.000	quadr.		
				21	1.000	quadr.		
				23	1.000	quadr.		
				25	1.000	quadr.		
				27	1.000	quadr.		
				29	1.000	quadr.		
				31	1.000	quadr.		
				33	1.000	quadr.		
				35	1.000	quadr.		
				37	1.000	quadr.		
				39	1.000	quadr.		
				41	1.000	quadr.		
				45	1.000	±		
3	SISMAY SLU	nessuna	somma	14	1.000	quadr.		
				16	1.000	quadr.		
				18	1.000	quadr.		
				20	1.000	quadr.		
				22	1.000	quadr.		
				24	1.000	quadr.		
				26	1.000	quadr.		
				28	1.000	quadr.		
				30	1.000	quadr.		
				32	1.000	quadr.		
				34	1.000	quadr.		
				36	1.000	quadr.		
				38	1.000	quadr.		
				40	1.000	quadr.		
				42	1.000	quadr.		
				46	1.000	±		
4	SLU con SISMAX PRINC	S.L.U.	somma	1	1.000	+	2	1.000
				2	1.000	+	3	0.300
				3	0.600	+		
				5	1.000	+		
				6	1.000	+		
				7	1.000	+		
				8	1.000	+		
				9	1.000	+		
				10	1.000	+		
				11	0.600	+		
5	SLU con SISMAY PRINC	S.L.U.	somma	1	1.000	+	3	1.000
				2	1.000	+	2	0.300
				3	0.600	+		
				5	1.000	+		
				6	1.000	+		
				7	1.000	+		
				8	1.000	+		
				9	1.000	+		
				10	1.000	+		
				11	0.600	+		
6	SLD con SISMAX PRINC	S.L.Danno	somma	1	1.000	+	2	0.477
				2	1.000	+	3	0.143
				3	0.600	+		
				5	1.000	+		
				6	1.000	+		
				7	1.000	+		
				8	1.000	+		
				9	1.000	+		
				10	1.000	+		
				11	0.600	+		
7	SLD con SISMAY PRINC	S.L.Danno	somma	1	1.000	+	3	0.477
				2	1.000	+	2	0.143
				3	0.600	+		

				5	1.000	+		
				6	1.000	+		
				7	1.000	+		
				8	1.000	+		
				9	1.000	+		
				10	1.000	+		
				11	0.600	+		
8	Rara	Rara	somma	1	1.000	+		
				2	1.000	+		
				3	1.000	+		
				4	1.000	+		
				5	1.000	+		
				6	1.000	+		
				7	1.000	+		
				8	1.000	+		
				9	1.000	+		
				10	1.000	+		
				11	1.000	+		
				12	1.000	+		
9	Frequente	Freq.	somma	1	1.000	+		
				2	1.000	+		
				3	0.700	+		
				4	0.200	+		
				5	1.000	+		
				6	1.000	+		
				7	1.000	+		
				8	1.000	+		
				9	1.000	+		
				10	1.000	+		
				11	0.700	+		
				12	0.200	+		
10	Quasi Perm	QuasiPerm.	somma	1	1.000	+		
				2	1.000	+		
				3	0.600	+		
				5	1.000	+		
				6	1.000	+		
				7	1.000	+		
				8	1.000	+		
				9	1.000	+		
				10	1.000	+		
				11	0.600	+		

2. VERIFICHE IN SPOSTAMENTO

Le verifiche in spostamento della struttura sono state eseguite considerando un modulo elastico del cls ridotto del 50% per tenere in considerazione la fessurazione del calcestruzzo.

2.1. Spostamento SLO

Si è eseguito il controllo degli spostamenti della struttura in accordo con quanto indicato al paragrafo 7.3.6.1 delle NTC18. La struttura in esame ricade in CU IV per tanto ci si è riferiti agli spostamenti ottenuti allo Stato Limite di Operatività ed i limiti indicati in normativa sono stati moltiplicati per 2/3; per tanto, considerando la presenza di tamponature fragili, lo spostamento di interpiano può raggiungere un valore massimo di:

$$qd_r \leq \frac{2}{3} * 0.005h = 0.0033h$$

Si riporta di seguito la verifica dello spostamento di interpiano eseguita per ogni piano della struttura.

VERIFICA SPOSTAMENTI SISMICI DI ESERCIZIO (NTC 7.3.6.1)

spostamento limite interpiano = 0.333% dell'altezza

CASO n. 6 - SLD con SISMAX PRINC:

Zinf	Zsup	h	spost.max	%h	nodo	sest.	ver.
[cm]	[cm]	[cm]	[cm]				
0.00	710.00	710.00	0.278015	0.039	2031	5	SI
710.00	1275.00	565.00	0.652564	0.115	441	12	SI

CASO n. 7 - SLD con SISMAX PRINC:

Zinf	Zsup	h	spost.max	%h	nodo	sest.	ver.
[cm]	[cm]	[cm]	[cm]				
0.00	710.00	710.00	0.646614	0.091	347	4	SI
710.00	1275.00	565.00	1.182375	0.209	3812	4	SI

2.2. Spostamenti SLV

Di seguito vengono riportati gli spostamenti sismici allo SLV per effettuare la verifica di martellamento con le US adiacenti in accordo con quanto indicato al 7.2.1 delle NCT18. I valori degli spostamenti sono stati ottenuti con le formule 7.3.8 e 7.3.9 del NTC18.

VERIFICA SPOSTAMENTI SISMICI DI S.L.V. (NTC 7.3.3.3)

Fattore Mud = 1.070

Quota	DX max	nodo	DY max	nodo
[cm]	[cm]		[cm]	
710.00	0.350808	48	1.429648	347
1275.00	1.300801	439	3.372133	439

Per la verifica a martellamento con l'edificio della stazione adiacente è necessario controllare gli spostamenti in direzione X alla quota del piano ingressi; lo spostamento del "Piazzale Milano" è di 1.39 cm, mentre lo spostamento del "Corpo centrale" della stazione è di 0.35 cm; la somma dei due spostamenti risulta pari a 1.74 cm, ed è inferiore alla dimensione del giunto strutturale pari a 2.5 cm. Lo spostamento del "Piazzale Saronno" è di 0.60 cm, mentre lo spostamento del "Corpo centrale" della stazione è di 0.35 cm; la somma dei due spostamenti risulta pari a 0.95 cm, ed è inferiore alla dimensione del giunto strutturale pari a 2.5 cm.

3. VERIFICHE STRUTTURE ESISTENTI

Di seguito vengono eseguite le verifiche sugli elementi esistenti di cui è nota l'armatura. Tali elementi, in accordo con quanto indicato al paragrafo C8.4.3 nelle circolari amministrative alle NTC18, devono superare le verifiche indicate al capitolo 7 delle NTC18 per elementi di nuova realizzazione ma non è necessario che essi rispettino i dettagli costruttivi previsti dall'attuale normativa.

3.1. Solai

Dei solai esistenti è nota solo la geometria, riportata di seguito, ma non l'armatura; tali elementi non verranno pertanto verificati.

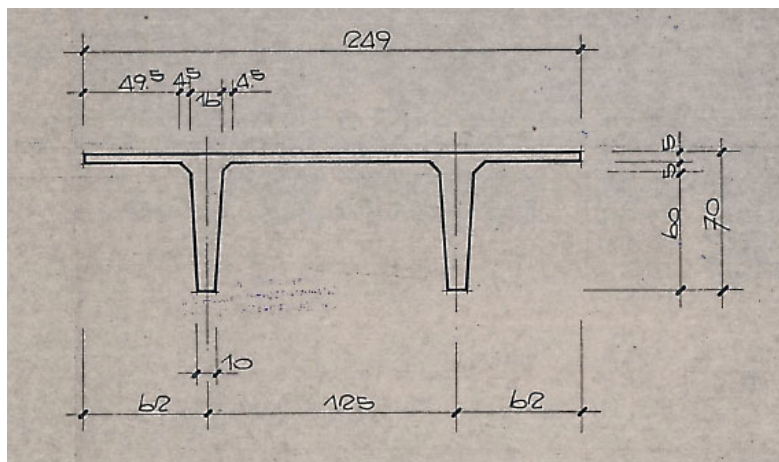


Figura 14 – Geometria degli elementi prefabbricati a omega utilizzati per i solai del piano ingressi e della copertura.

3.2. Travi

Delle travi è nota la geometria, riportata di seguito, ma non l'armatura; tali elementi non verranno pertanto verificati.

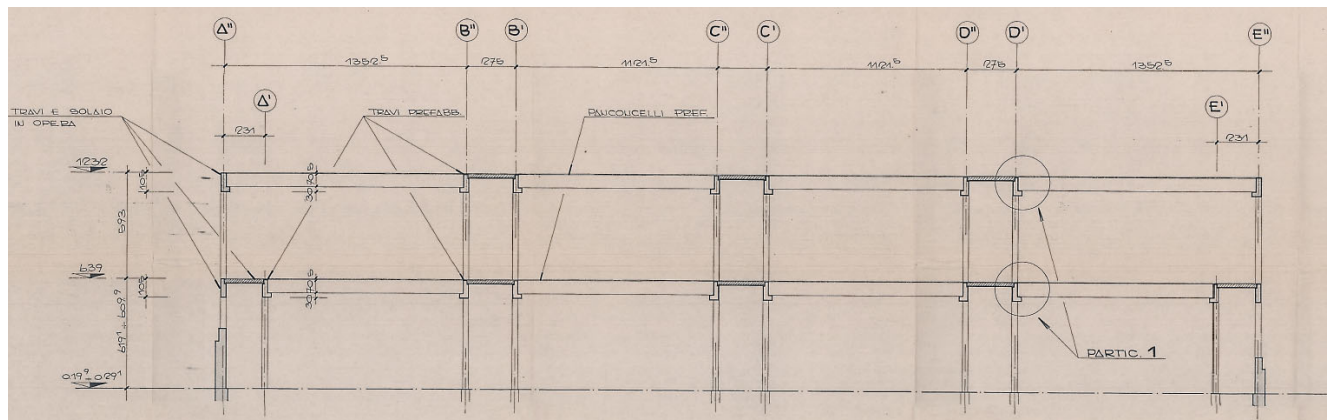


Figura 15 – Sezione trasversale tipo del fabbricato viaggiatori

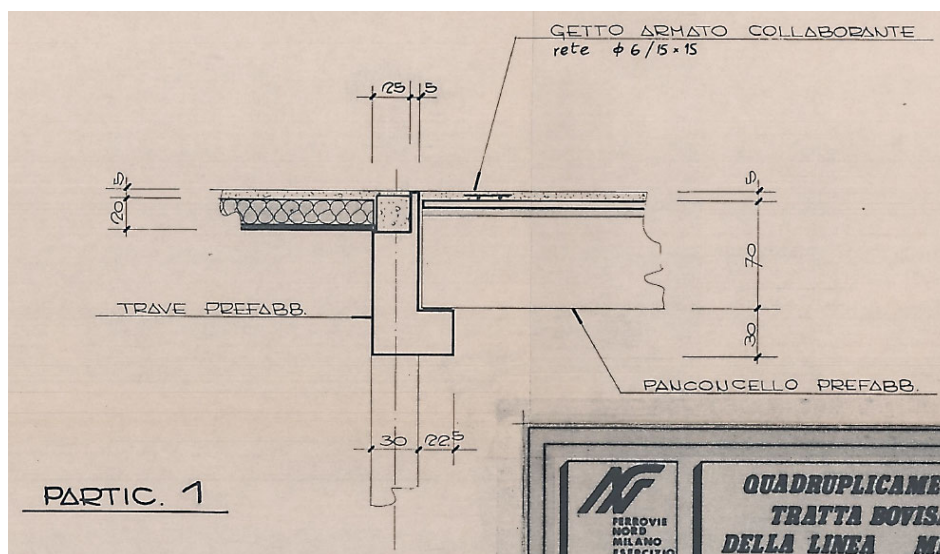


Figura 16 – Particolare della sezione delle travi

3.3. Pilastri

Nel presente capitolo verranno svolte le verifiche sui pilastri esistenti del corpo centrale di cui è nota l'armatura longitudinale, ovvero i pilastri 30x145. Alcuni di questi pilastri, ovvero quelli dove verranno posizionati i controventi, verranno rinforzati tramite incamiciatura in calcestruzzo e inserimento di armatura integrativa.

Questo tipo di rinforzo è stato adottato anche per gli altri pilastri su cui verranno posizionate le reticolari, pertanto, pur non conoscendo l'armatura presente, verranno verificati considerando il contributo della sola armatura aggiuntiva.

Per tutti i casi di verifica sono state considerate, a favore di sicurezza, le caratteristiche del calcestruzzo esistente.

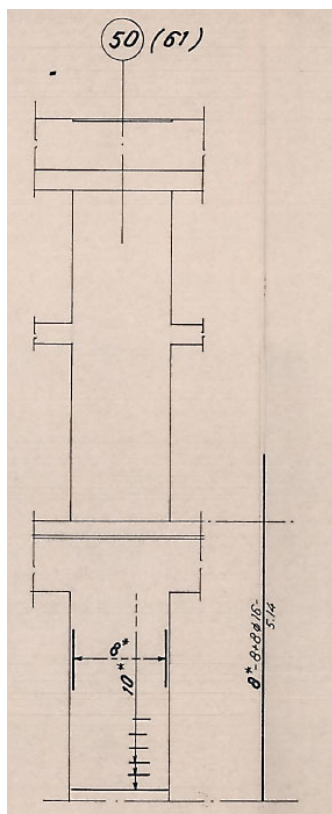


Figura 17 – Particolare armatura pilastri centrali 30x145.

Per completezza si riportano le sollecitazioni di tutti i pilastri della parte esistente.

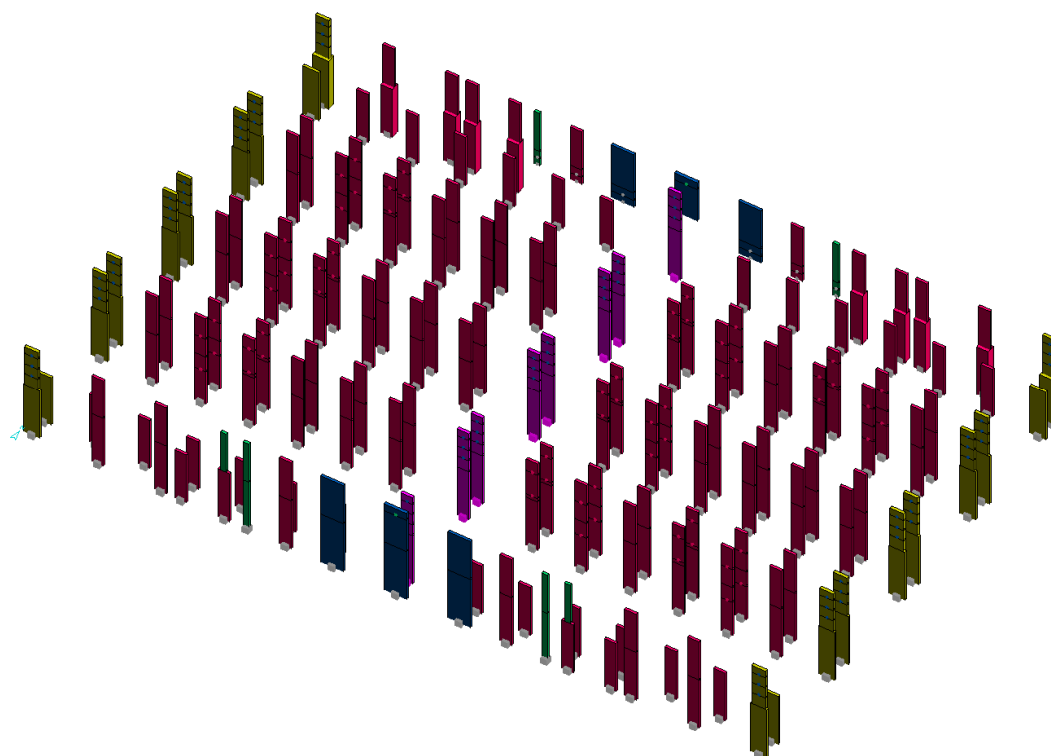


Figura 18 – Vista solida pilastri esistenti

Si riportano di seguito le sollecitazioni agenti sulle travi esistenti nell'involuppo dei casi SLU ed SLV (caso 1).

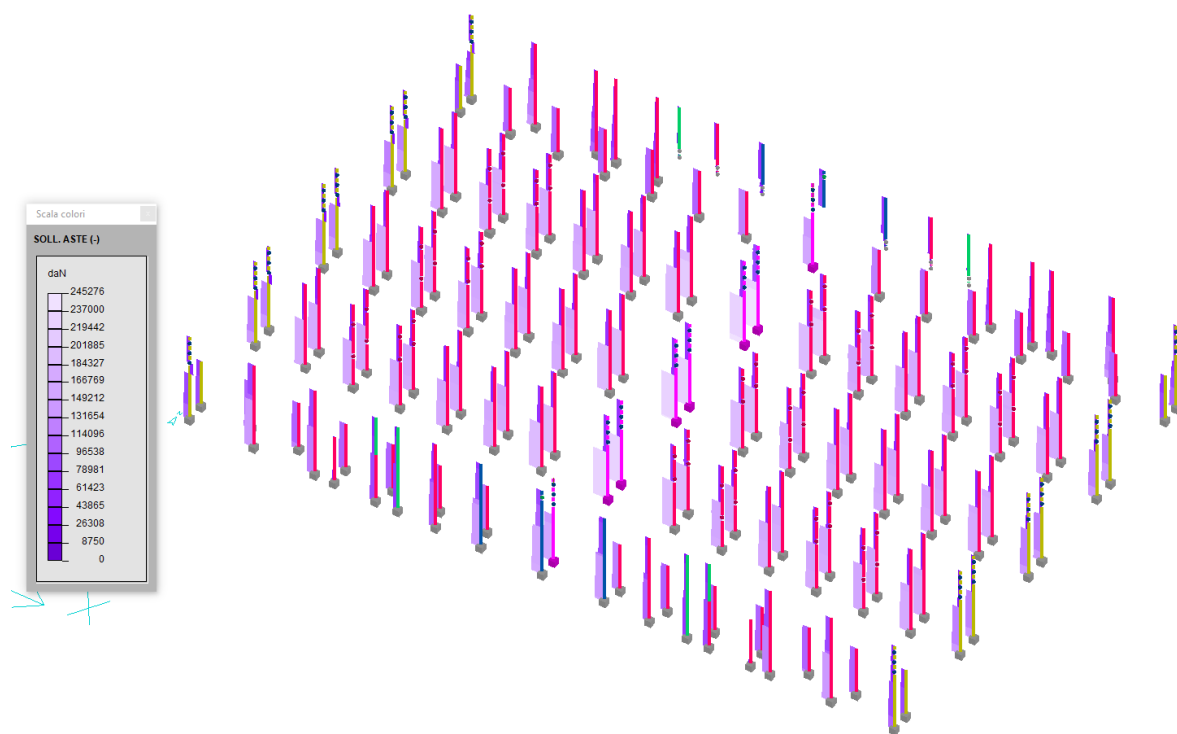


Figura 39 – SLU N

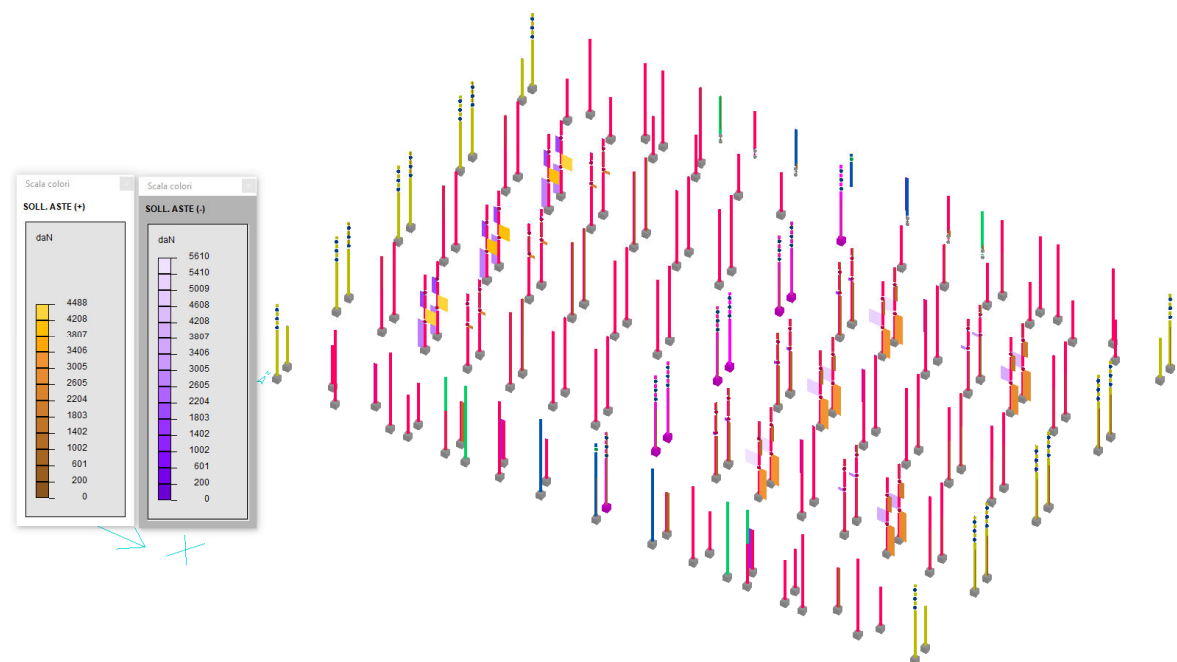


Figura 20 – SLU Ty

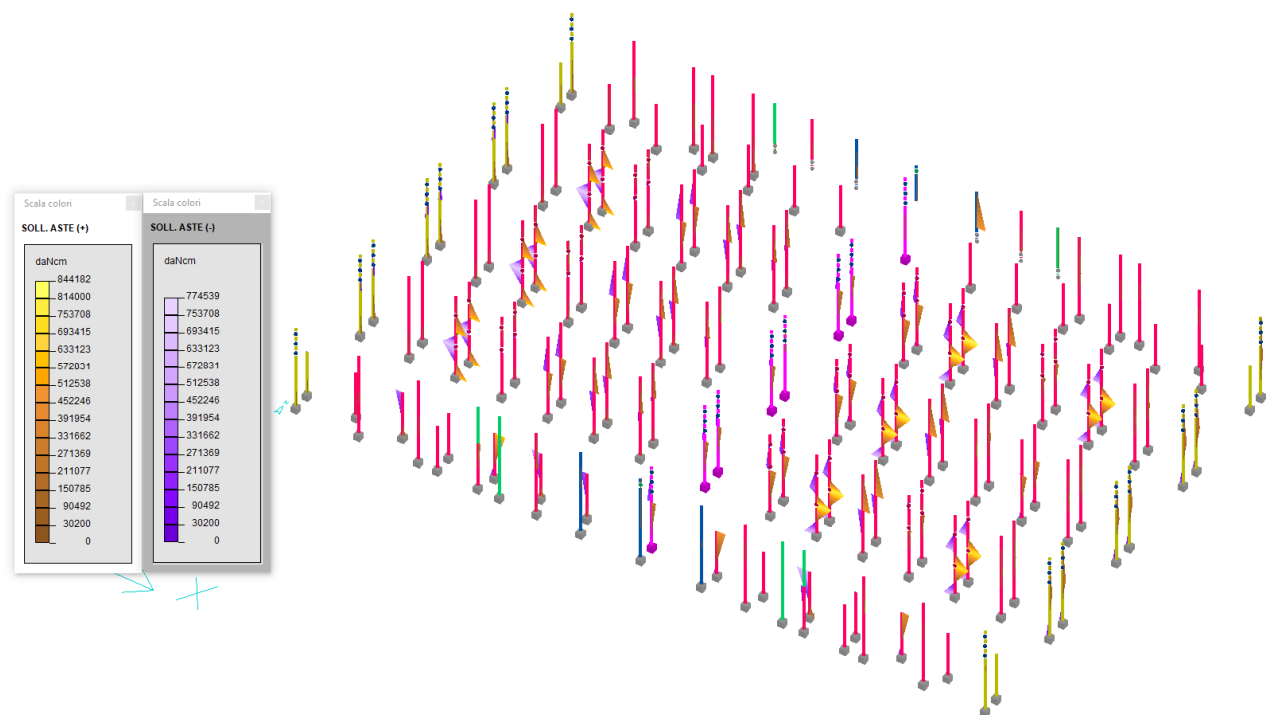


Figura 21 – SLU Mz

Si riportano di seguito le sollecitazioni agenti sui pilastri esistenti nell'involuppo dei casi SLV (involuppo casi 4, 5)

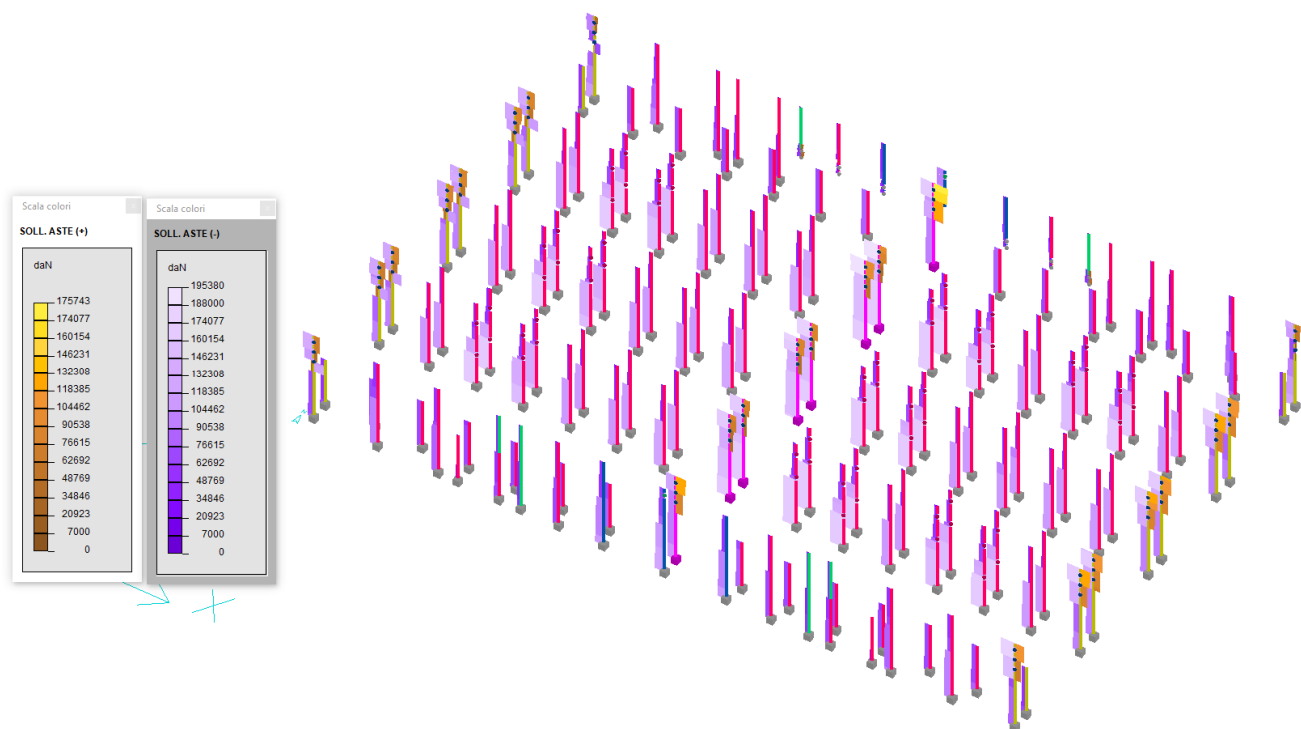


Figura 22 – SLV N

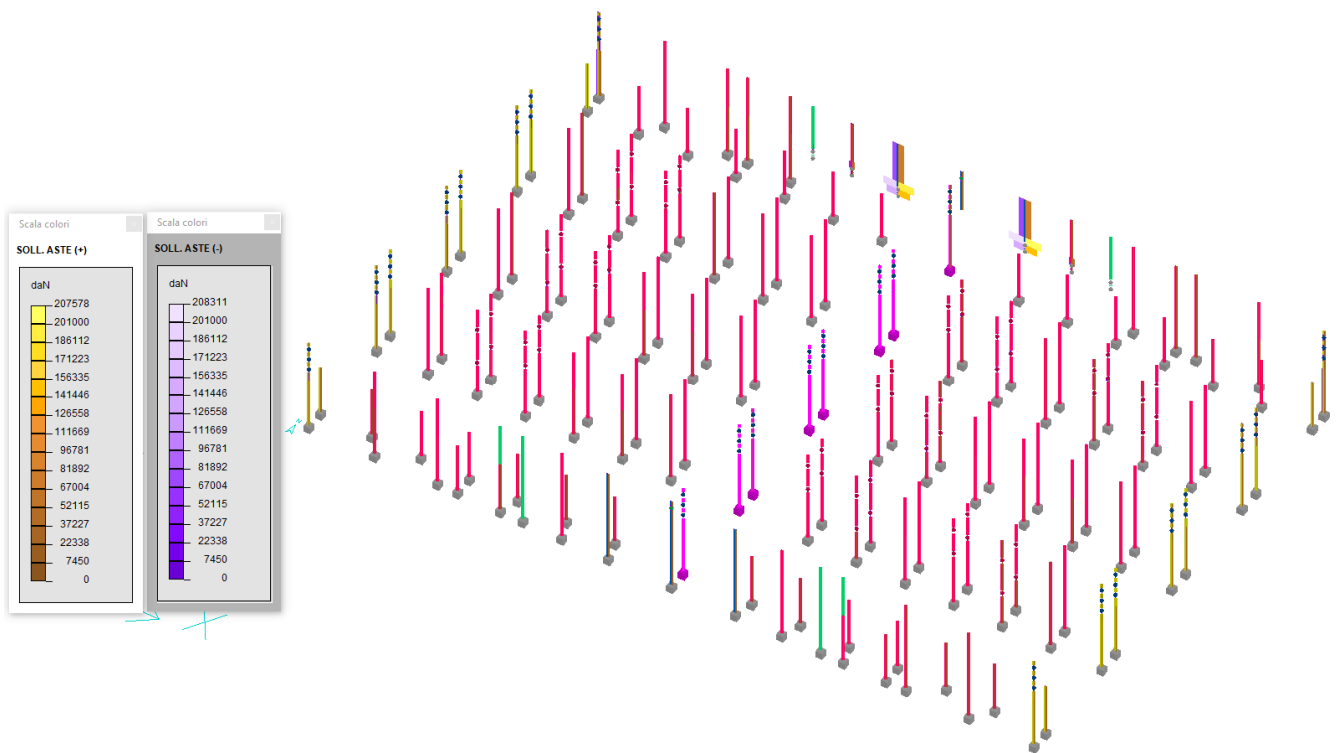


Figura 23 – SLV Ty

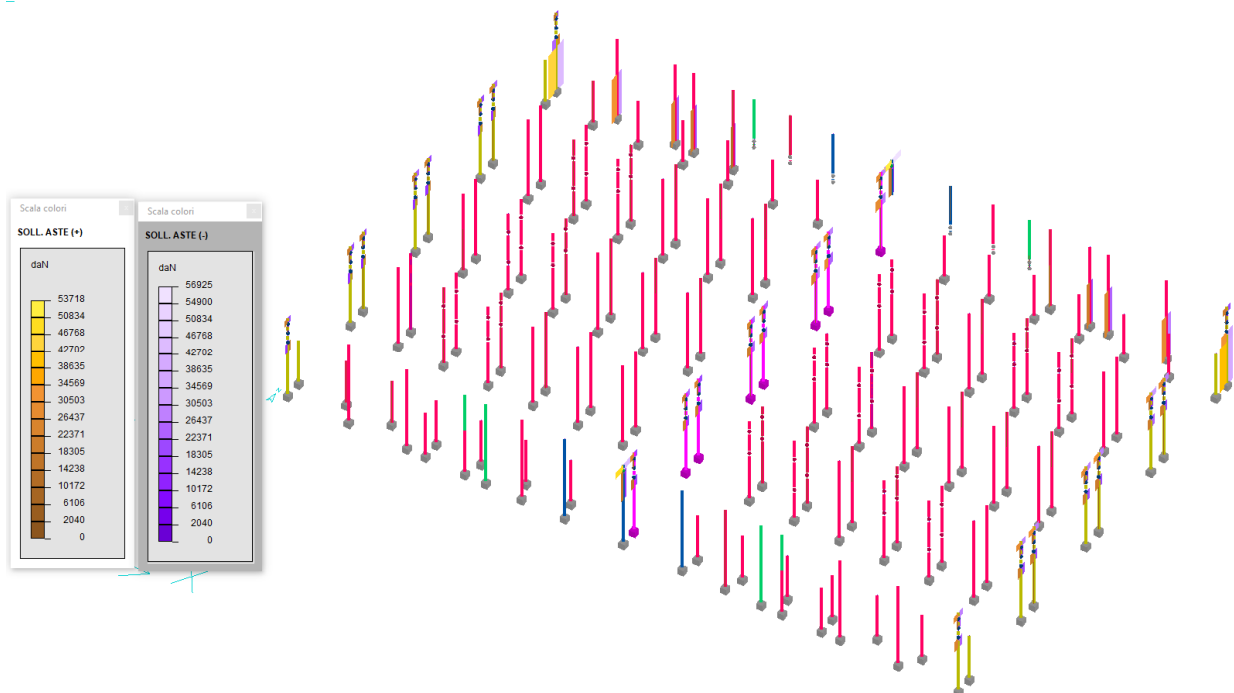


Figura 24 – SLV Tz

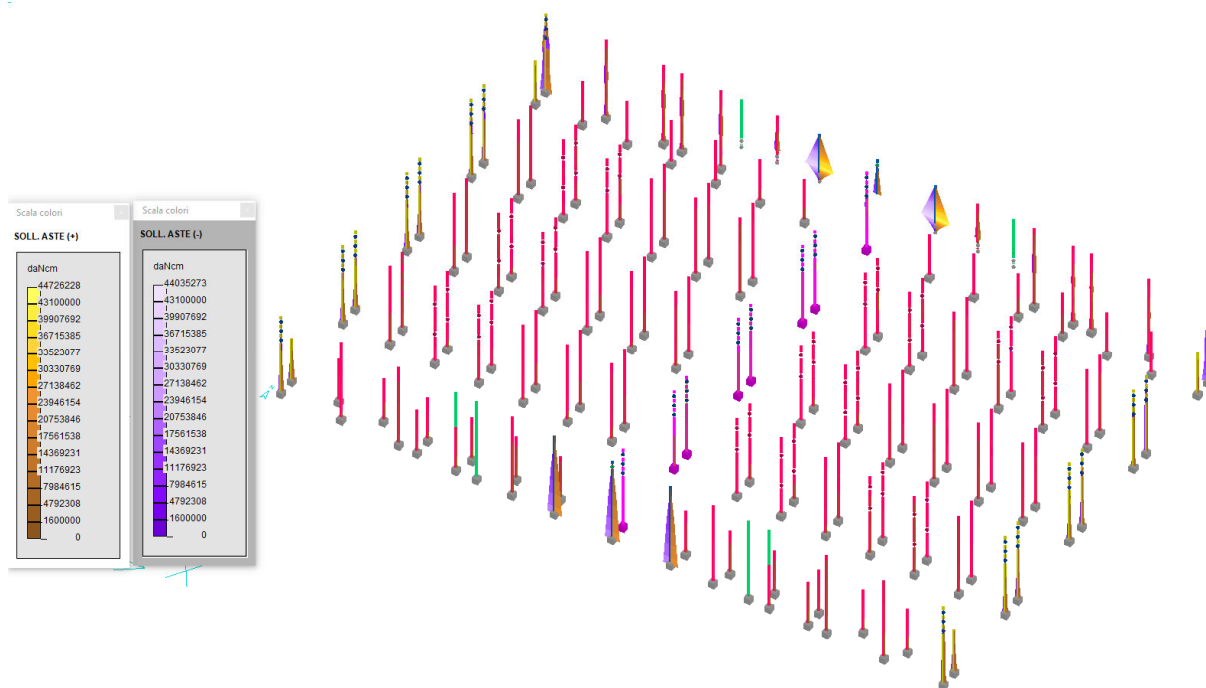


Figura 4 – SLV Mz

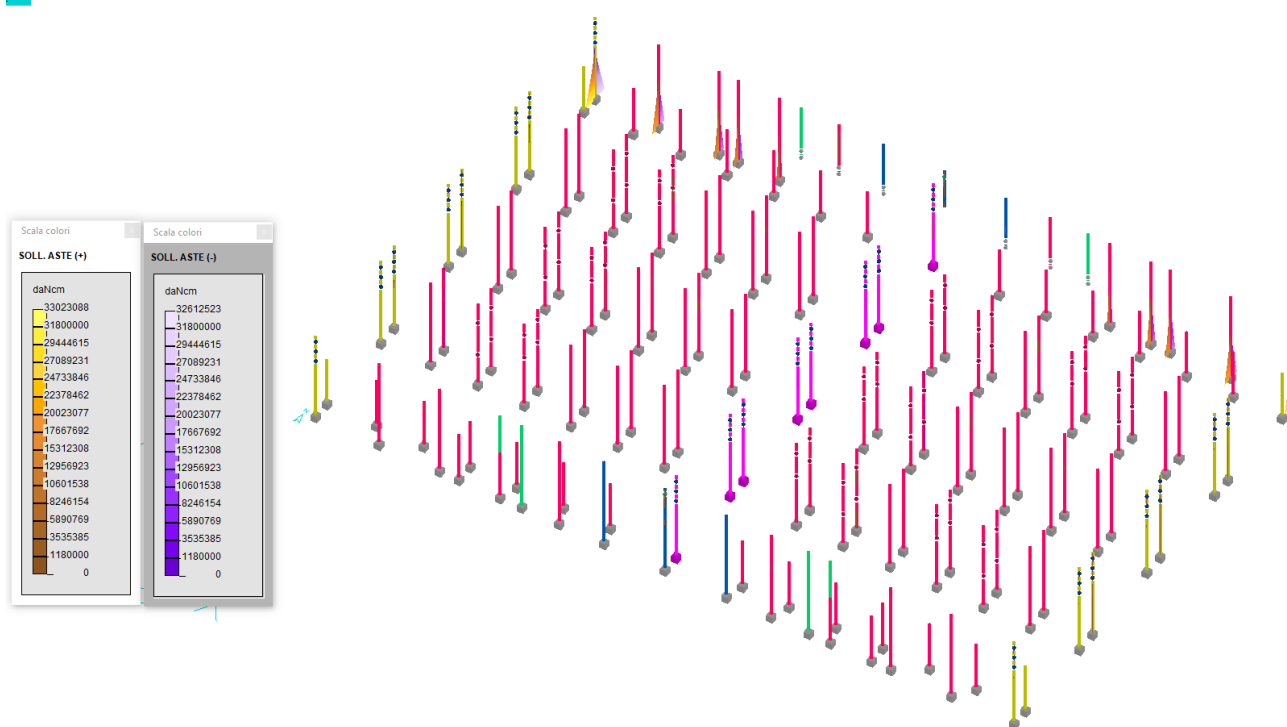


Figura 26 – SLV My

3.3.1. Pilastri rettangolari 30x145 non rinforzati

I pilastri 30x145 cm risultano armati con 8+8Φ16 a flessione, mentre non è stato possibile verificare l'armatura a taglio presente; pertanto, nelle verifiche seguenti si omette la verifica a taglio ed il

controllo di fessurazione, che vengono rimandati ad una fase successiva di progettazione nella quale sia stato possibile valutare l'entità dell'armatura a taglio nei pilastri.

Di seguito si riporta la verifica dei pilastri più sollecitati eseguita con l'applicativo "Verifica sezioni" di DOLMEN.

VERIFICA SEZIONE

Descrizione : Sezione asta 1672
 Nome lavoro : 686C04
 Nome file : Vs_nuovo.VSE
 Tipo verifica : stati limite - pressoflessione deviata.
 Unità di misura generiche: daN; cm; daNcm; daN/cm²; d in mm; deformazioni*1000.
 ferri : diametri in mm; aree in cm².

Simboli:

Vert. = contorno_vertice del CLS; d = diametro;
 S = Sigma (tensioni sui materiali);
 D = Deformazioni x 1000 (epsilon);
 Ve = colonna che indica se la verifica e' soddisfatta;

MATERIALI

Calcestruzzo: Rck = 300. ; fck = 249. ; fcd = 124.5 (.35%)
 Acciaio : Tipo= B450C ; ftk = 5400. ; fyk = 4500. ; ftd = 3913.04 (0.163%)

SEZIONE

L'asse Z e' rivolto verso destra, l'asse Y e' rivolto verso l'alto.

Tipo sezione: Rettangolare

Cls:				Acciaio lento:			
vert.	Z	Y		ferro	Z	Y	d[mm] Af[cm ²]
1- 1	-15.	145.		1	-9.	139.	16. 2.0106
1- 2	15.	145.		2	-9.	120.	16. 2.0106
1- 3	15.	0.		3	-9.	101.	16. 2.0106
1- 4	-15.	0.		4	-9.	82.	16. 2.0106
				5	-9.	63.	16. 2.0106
				6	-9.	44.	16. 2.0106
				7	-9.	25.	16. 2.0106
				8	-9.	6.	16. 2.0106
				9	9.	139.	16. 2.0106
				10	9.	120.	16. 2.0106
				11	9.	101.	16. 2.0106
				12	9.	82.	16. 2.0106
				13	9.	63.	16. 2.0106
				14	9.	44.	16. 2.0106
				15	9.	25.	16. 2.0106
				16	9.	6.	16. 2.0106

SOLLECITAZIONI AGENTI

Sforzi normali applicati in z= 0. ; y= 72.5 (baricentro CLS)

Convenzioni: N + trazione; Mz + fib.inferiori tese; My + fib.sinistra tese.

N.	N	Mz	My	Descrizione	Sol: ultima/agente = fs (>=1 OK)
1	-167666.	-10094168.	263896.	Caso 4.5-A1714- P1	Mz-:-10094168./-4734107.=2.1322
2	-168137.	10045088.	283962.	Caso 4.10-A1681- P1	Mz+:10045088./5177293.=1.9402
3	-40901.	-647920.	-1433481.	Caso 5.15-A3129- P1	My+:-1433481./-1307036.=1.0967
4	-44993.	1877421.	1308242.	Caso 5.2-A3130- P1	My+:1308242./1251633.=1.0452
5	-582193.	1132136.	-70839.	Caso 4.13-A1747- P1	N -:-582193./-179939.=3.2355
6	36421.	-1717895.	-235628.	Caso 4.4-A3127- P9	N +:36421./5173.=7.0406

RISULTATI

Piani di equilibrio ($\epsilon_{ps} = \mu_z * y + \mu_y * z + \lambda_m$):

Sol.	μ_z	μ_y	λ_m
1.	.00002183906	-.00001503215	-.00162527942
2.	-.00002161074	-.00001608335	.00151860674
3.	.00000184543	.00010616529	.00041773683
4.	-.00000515518	-.00009255484	.00082821152
5.	-.00000280345	.00000409985	-.00120258632
6.	.00001023461	.00002917972	-.00005484565

Deformazioni massime sui materiali:

Cls				Acciaio lento				
sol	vert.	D cls	S cls	Ve	ferro	D ferri	S ferri	Ve
1	1- 3	-1.8508	-123.8	si	1.	1.5456	3091.3	si
2	1- 2	-1.8562	-123.9	si	8.	1.5337	3067.4	si
3	1- 4	-1.1747	-103.3	si	9.	1.6297	3259.5	si
4	1- 2	-1.3076	-109.6	si	8.	1.6303	3260.5	si
5	1- 1	-1.6706	-121.1	si	16.	-1.1825	-2365.	si
6	1- 4	-.4925	-53.8	si	9.	1.6304	3260.8	si

3.3.2. Pilastri rettangolari 30x145 rinforzati

I pilastri 30x145 cm risultano armati con 8+8 Φ 16 a flessione, mentre non è stato possibile verificare l'armatura a taglio presente; poiché verranno incamiciati, verrà effettuata la verifica inserendo l'armatura integrativa (armatura longitudinale e staffe).

Di seguito si riportano le verifiche dei pilastri più sollecitati eseguita con l'applicativo "Pilastri" di DOLMEN.

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P02 (ID=4)
 Aste : 1681; 6642; 3068; 6640
 Metodo di verifica : stati limite - NTC18 ($q=1.07$; $\mu_{phi}=2.01$) ->
 Duttilita' : non prevista (struttura non dissipativa).
 : dettagli costruttivi del capito 7 non attivi.
 Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm²; deform. %; 1/r ‰(permille)
 Unita' particolari : fessure [wk]:mm - ferri:mm e cm² - sezioni:cm e derivate.
 Copriferrì (assi) : longitudinali= 3.5 ; staffe= 2.5
 Imperfezioni : M minimo = N * e₀ ; M aggiunto = N * e_i
 Instabilita' : snellezza limite [EC2 5.8.3.1]

MATERIALI

CLS : C25/30; R_{ck}=300; f_{ck}=249; f_{ctk}=17.91; f_{ctm}=25.58; E_{cm}=314472;
 g_c=1.7; f_{cd}=124.5; f_{bd}=23.7; f_{ctd}=10.53; E_{c2}=0.2%; E_{cu}=0.35%
 ACCIAIO: B450C; f_{tk}=5175; f_{yk}=4500; E_s=2100000; g_s=1.38; f_{yd}=3260.9;
 f_{td}=3750; f_{ud}=3700.1; E_{yd}=0.1553%; E_{ud}=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.
 CLS : S_{cls}(rara)=149.4; S_{cls}(quasi permanente)=112; f_{bd}(esercizio)=23.7
 ACCIAIO: S_{acc}(rara)=3600; Coeff.omogeneizzazione=15

CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAX PRINC	SLU (sismico)	16
5	SLU con SISMAX PRINC	SLU (sismico)	16
8	Rara	RARA	1
9	Frequente	FREQUENTE	1
10	Quasi Perm	QUASI PERMAN.	1

<-

SEZIONI UTILIZZATE

1) Rettangolare: base=40; alt.=155; Acls=6200; iy=11.55; iz=44.74

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	eiz	eiy	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm
1	1	2.45	2.45	1.63	1.63	490.	490.	145.	145.	32.17	.519 16016
2	1	2.	2.	.73	.73	220.	140.	0.	0.	32.17	.519 16016
3	1	2.	2.	.88	.88	265.	265.	0.	0.	32.17	.519 16016
4	1	2.	2.	1.	1.	300.	220.	0.	0.	32.17	.519 16016

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (incluse le imperfezioni):

Asta	Caso	NEd	MEyd	MEzd	E c/s	Sc/s	E acc	Sacc	VE
> 1	4- 7	-46445.	-313050.	1.32	-4430982.	1.02	-.055	-58.7	.081 1692.5 SI
1	4- 7	-43781.	-144419.	1.	-2484164.	1.	-.025	-29.5	.021 433.4 SI
1	1- 1	-160303.	-654570.	20.5	-1016291.	1.35	-.037	-42.1	-.006 -116.4 SI
> 2	1- 1	-165104.	-451285.	14.1	-875539.	1.16	-.033	-38.2	-.01 -206. SI
2	1- 1	-163549.	-47543.	1.	-290663.	1.	-.023	-26.9	-.018 -387.1 SI
2	1- 1	-161994.	-442783.	7.02	442783.	2.56	-.031	-35.3	-.012 -244. SI
> 3	4- 7	-16509.	-235642.	1.07	1720637.	1.01	-.025	-29.3	.038 801.4 SI
3	5- 5	-29453.	377052.	1.	-574052.	1.	-.015	-18.1	.009 179.5 SI
3	4- 6	-12637.	47287.	1.31	-838902.	1.01	-.009	-10.5	.009 189.6 SI
> 4	4-11	-44188.	-132565.	59.	963429.	1.05	-.012	-14.7	.001 18.1 SI
4	4-11	-42557.	38500.	1.	450261.	1.	-.008	-9.7	-.003 -54.7 SI
4	1- 1	-52780.	-158341.	192.	158341.	367.	-.01	-12.	-.003 -72.9 SI

SNELLEZZA LIMITE Y [EC2 5.8.3.1]:

Asta	Caso	NEd	MEyd inf	MEyd sup	10	A	B	C	nu	L lim	Lambd	VE
1	4-10	-168137.1	283962.5	-32871.8	490.	.7	1.13	1.82	.218	61.43	42.44	SI
2	1- 1	-165104.2	-31987.6	-63097.8	220.	.7	1.13	1.19	.214	40.73	19.05	SI
3	4-12	-63036.	-8243.9	-5444.5	265.	.7	1.13	1.04	.082	57.44	22.95	SI
4	1- 1	-57021.7	27364.6	-826.2	300.	.7	1.13	1.73	.074	100.5	25.98	SI

SNELLEZZA LIMITE Z [EC2 5.8.3.1]:

Asta	Caso	NEd	MEzd inf	MEzd sup	10	A	B	C	nu	L lim	Lambd	VE
1	4- 9	-167984.6	5152414.	-189377.	490.	.7	1.13	1.74	.218	58.78	10.95	SI
2	5- 7	-114545.4	-586237.	-773830.	220.	.7	1.13	.942	.148	38.63	4.92	SI
3	5-11	-48010.8	745470.5	654571.	265.	.7	1.13	.822	.062	52.03	5.92	SI
4	5- 3	-38304.9	-28377.4	-18256.2	300.	.7	1.13	1.06	.05	74.89	6.7	SI

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	4-10	-11313.1	111745.1	111745.1	142574.	1.01	10.	2.5	SI
1 C	4-10	-11313.1	111745.1	111745.1	142169.9	1.01	10.	2.5	SI
1 S	4-10	-11313.1	111745.1	111745.1	141765.8	1.01	10.	2.5	SI
2 I	4- 4	6859.9	111745.1	111745.1	129427.	1.01	10.	2.5	SI
2 C	4- 4	6859.9	111745.1	111745.1	129245.5	1.01	10.	2.5	SI
2 S	4- 4	6859.9	111745.1	111745.1	129064.1	1.01	10.	2.5	SI
3 I	4- 8	-4124.7	111745.1	111745.1	119552.7	1.01	10.	2.5	SI

3 C	4- 8	-4124.7	111745.1	111745.1	119334.1	1.01	10.	2.5	SI
3 S	4- 8	-4124.7	111745.1	111745.1	119115.6	1.01	10.	2.5	SI
4 I	4-11	-3127.2	111745.1	111745.1	123774.9	1.01	10.	2.5	SI
4 C	4-11	-3127.2	111745.1	111745.1	123527.5	1.01	10.	2.5	SI
4 S	4-11	-3127.2	111745.1	111745.1	123280.1	1.01	10.	2.5	SI

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	5- 5	1753.1	26922.1	26922.1	123264.4	1.01	10.	2.5	SI
1 C	5- 5	1753.1	26922.1	26922.1	122887.1	1.01	10.	2.5	SI
1 S	5- 5	1753.1	26922.1	26922.1	122509.8	1.01	10.	2.5	SI
2 I	5- 5	1652.	26922.1	26922.1	123542.2	1.01	10.	2.5	SI
2 C	5- 5	1652.	26922.1	26922.1	123372.8	1.01	10.	2.5	SI
2 S	5- 5	1652.	26922.1	26922.1	123203.4	1.01	10.	2.5	SI
3 I	5- 7	1324.9	26922.1	26922.1	115627.6	1.01	10.	2.5	SI
3 C	5- 7	1324.9	26922.1	26922.1	115423.5	1.01	10.	2.5	SI
3 S	5- 7	1324.9	26922.1	26922.1	115219.5	1.01	10.	2.5	SI
4 I	5- 7	1194.2	26922.1	26922.1	114708.4	1.01	10.	2.5	SI
4 C	5- 7	1194.2	26922.1	26922.1	114477.4	1.01	10.	2.5	SI
4 S	5- 7	1194.2	26922.1	26922.1	114246.4	1.01	10.	2.5	SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	Sc1s	Sacc	VE
1 I	8- 1	-120356.9	25836.1	462383.4	-21.3	-226.6	SI
1 C	8- 1	-117692.5	1653.2	-39391.2	-18.	-261.8	SI
1 S	8- 1	-115028.1	-22529.7	-541165.7	-20.9	-209.	SI
2 I	8- 1	-118483.9	-22529.7	-541165.7	-21.4	-216.8	SI
2 C	8- 1	-117287.6	-33387.3	-206453.6	-19.5	-238.8	SI
2 S	8- 1	-116091.4	-44244.9	128258.5	-19.1	-239.7	SI
3 I	8- 1	-44361.6	37004.3	445681.2	-10.	-53.7	SI
3 C	8- 1	-42920.7	28194.4	248706.7	-8.5	-69.	SI
3 S	8- 1	-41479.7	19384.5	51732.2	-6.9	-84.2	SI
4 I	8- 1	-41733.1	19384.5	51732.2	-7.	-84.8	SI
4 C	8- 1	-40101.8	9411.	26020.1	-6.4	-85.9	SI
4 S	8- 1	-38470.6	-562.4	308.	-5.8	-86.6	SI

Frequenti:

Asta	Caso	NEd	MEyd	MEzd	Sc1s	Sacc	VE
1 I	9- 1	-110313.9	24007.3	423028.7	-19.5	-207.7	SI
1 C	9- 1	-107649.5	1678.3	-35792.5	-16.4	-239.4	SI
1 S	9- 1	-104985.2	-20650.8	-494613.7	-19.1	-190.7	SI
2 I	9- 1	-108145.9	-20650.8	-494613.7	-19.5	-197.8	SI
2 C	9- 1	-106949.7	-30676.1	-188859.7	-17.8	-217.7	SI
2 S	9- 1	-105753.4	-40701.4	116894.3	-17.4	-218.3	SI
3 I	9- 1	-40357.5	33482.2	406252.5	-9.1	-48.8	SI
3 C	9- 1	-38916.6	25513.5	226809.6	-7.7	-62.4	SI
3 S	9- 1	-37475.6	17544.8	47366.8	-6.3	-76.	SI
4 I	9- 1	-37706.1	17544.8	47366.8	-6.3	-76.6	SI
4 C	9- 1	-36074.9	8523.6	23822.6	-5.7	-77.2	SI
4 S	9- 1	-34443.6	-497.5	278.4	-5.2	-77.5	SI

Quasi permanenti:

Asta	Caso	NEd	MEyd	MEzd	Sc1s	Sacc	VE
1 I	10- 1	-107291.2	23386.4	411086.1	-19.	-202.	SI
1 C	10- 1	-104626.9	1683.	-34700.1	-16.	-232.7	SI
1 S	10- 1	-101962.5	-20020.5	-480486.3	-18.5	-185.2	SI
2 I	10- 1	-105034.	-20020.5	-480486.3	-19.	-192.1	SI
2 C	10- 1	-103837.8	-29764.9	-183199.3	-17.3	-211.4	SI
2 S	10- 1	-102641.5	-39509.4	114087.7	-16.9	-211.8	SI
3 I	10- 1	-39356.8	32322.6	394075.2	-8.9	-47.9	SI

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3 C| 10- 1| -37915.9| 24630.7| 219912.9| -7.5| -61. |SI|
3 S| 10- 1| -36475. | 16938.9| 45750.7| -6.1| -74.1|SI|
4 I| 10- 1| -36699.3| 16938.9| 45750.7| -6.1| -74.6|SI|
4 C| 10- 1| -35068. | 8231.1| 23010.1| -5.6| -75.1|SI|
4 S| 10- 1| -33436.8| -476.6| 269.6| -5. | -75.3|SI|

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VERIFICA PILASTRO IN CEMENTO ARMATO

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Nome pilastro      : P01 (ID=5)
Aste               : 1714; 6674; 3101; 6676
Metodo di verifica : stati limite - NTC18 (q=1.07 ; muphi=2.01) ->
Duttilita'        : non prevista (struttura non dissipativa).
                  : dettagli costruttivi del capito 7 non attivi.
Unita' di misura   : cm; daN; daN/cm; daNcm; daN/cm2; deform. %; 1/r %(permille)
Unita' particolari : fessure [wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
Copriferriferri (assi) : longitudinali= 3.5 ; staffe= 2.5
Imperfezioni       : M minimo = N * e0 ; M aggiunto = N * ei
Instabilita'       : curvatura nominale [EC2 5.8.8]; c=10 nba1=0.4 fief=3

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MATERIALI

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CLS      : C25/30; Rck=300; fck=249; fctk=17.91; fctm=25.58; Ecm=314472;
          gc=1.7; fcd=124.5; fbd=23.7; fctd=10.53; Ec2=0.2%; Ecu=0.35%
ACCIAIO: B450C; ftk=5175; fyk=4500; Es=2100000; gs=1.38; fyd=3260.9;
          ftd=3750; fud=3700.1; Eyd=0.1553%; Eud=6.75%

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TENSIONI MASSIME IN ESERCIZIO

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GRUPPO : ordinario.
CLS     : Sc1s(rara)=149.4; Sc1s(quasi permanente)=112; fbd(esercizio)=23.7
ACCIAIO: Sacc(rara)=3600; Coeff.Omogeneizzazione=15

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CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAX PRINC	SLU (sismico)	16
5	SLU con SISMAX PRINC	SLU (sismico)	16
8	Rara	RARA	1
9	Frequente	FREQUENTE	1
10	Quasi Perm	QUASI PERMAN.	1

<-

SEZIONI UTILIZZATE

1) Rettangolare: base=40; alt.=155; Ac1s=6200; iy=11.55; iz=44.74

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	leiz	leiy	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm
1	1	2.45	2.45	1.63	1.63	490.	490.	145.	145.	32.17	.519 160 16
2	1	2.	2.	.73	.73	220.	140.	0.	0.	32.17	.519 160 16
3	1	2.	2.	.88	.88	265.	265.	0.	0.	32.17	.519 160 16
4	1	2.	2.	1.	1.	300.	220.	0.	0.	32.17	.519 160 16

VERIFICHE ALLO STATO LIMITE ULTIMO

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PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):
Asta Caso | NEd | MEyD | MEzD | E c1s| Sc1s | E acc| Sacc |VE|
> 1| 4-12| -46545.| -453419.|2.15| 4042330.|1.04|-0.055| -59.1| .074|1556.7|SI|
  1| 4-12| -43881.| -314706.|2.12| 2475137.|1.03|-0.031| -35.2| .027| 558.1|SI|
  1| 1- 1|-159996.| -1250000.|36.5| 1255039.|1.67|-0.051| -54.9| .005| 114.9|SI|
> 2| 1- 1|-164603.| -603746.|17.6| 923104.|1.23|-0.036| -41.3| -.007|-152.6|SI|

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2	1-	1	-163048.		-205169.		4.		347482.		1.17	-.026	-30.2	-.016	-330.5	SI
2	1-	1	-161493.		-595244.		8.7		-492166.		3.11	-.034	-38.4	-.009	-190.5	SI
> 3	5-	4	-30390.		781683.		1.09	863822.		1.05	-.033	-37.7	.041	863.9	SI	
3	4-	10	-9614.		103406.		1.16	1139060.		1.	-.015	-17.7	.025	524.2	SI	
3	4-	10	-8173.		77292.		1.39	1101401.		1.01	-.014	-16.3	.025	527.3	SI	
> 4	4-	5	-45243.		256572.		1.86	-1194851.		1.06	-.016	-19.5	.005	96.5	SI	
4	4-	8	-44191.		107579.		3.23	-568078.		1.05	-.01	-12.	-.001	-27.5	SI	
4	1-	1	-52719.		-250426.		90.8	-190311.		537.	-.012	-14.	-.002	-42.6	SI	

INSTABILITA' - CURVATURA NOMINALE Y [EC2 5.8.8]:

Asta	Caso	d	l0	Kfi	Kr	1/r	e2	Mca1	M0Ed	MEd	nu
1 I	4-12	36.5	490.	1.575	1.	.1489	3.57	-211016.	-287040.	-453419.	.06
2 I	1-	136.5	220.	2.042	1.	.1931	.93	-34245.	-449915.	-603746.	.213
3 I	5-	436.5	265.	1.965	1.	.1857	1.3	715202.	742047.	781683.	.039
4 I	4-	536.5	300.	1.904	1.	.18	1.62	138038.	183281.	256572.	.059

INSTABILITA' - CURVATURA NOMINALE Z [EC2 5.8.8]:

Asta	Caso	d	l0	Kfi	Kr	1/r	e2	Mca1	M0Ed	MEd	nu
1 I	4-12	126.	490.	2.204	1.	.0604	1.45	3898807.	3974831.	4042330.	.06
2 I	1- 1	126.	220.	2.325	1.	.0637	.31	751643.	872352.	923104.	.213
3 I	5- 4	126.	265.	2.305	1.	.0632	.44	823499.	850344.	863822.	.039
4 I	4- 5	126.	300.	2.289	1.	.0627	.56	-1124066	-1169309	-1194851.	.059

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT VE
1 I	4- 6	9777.6	111745.1	111745.1	142483.1	1.01	10.	2.5 SI
1 C	4- 6	9777.6	111745.1	111745.1	142079.	1.01	10.	2.5 SI
1 S	4- 6	9777.6	111745.1	111745.1	141674.9	1.01	10.	2.5 SI
2 I	5-14	-7946.6	111745.1	111745.1	134935.3	1.01	10.	2.5 SI
2 C	5-14	-7946.6	111745.1	111745.1	134753.9	1.01	10.	2.5 SI
2 S	5-14	-7946.6	111745.1	111745.1	134572.5	1.01	10.	2.5 SI
3 I	5-16	4811.5	111745.1	111745.1	121957.5	1.01	10.	2.5 SI
3 C	5-16	4811.5	111745.1	111745.1	121738.9	1.01	10.	2.5 SI
3 S	5-16	4811.5	111745.1	111745.1	121520.4	1.01	10.	2.5 SI
4 I	4- 7	3964.1	111745.1	111745.1	124032.3	1.01	10.	2.5 SI
4 C	4- 7	3964.1	111745.1	111745.1	123784.9	1.01	10.	2.5 SI
4 S	4- 7	3964.1	111745.1	111745.1	123537.5	1.01	10.	2.5 SI

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT VE
1 I	5- 4	1384.8	26922.1	26922.1	121709.8	1.01	10.	2.5 SI
1 C	5- 4	1384.8	26922.1	26922.1	121332.5	1.01	10.	2.5 SI
1 S	5- 4	1384.8	26922.1	26922.1	120955.2	1.01	10.	2.5 SI
2 I	5- 4	1256.8	26922.1	26922.1	122317.	1.01	10.	2.5 SI
2 C	5- 4	1256.8	26922.1	26922.1	122147.6	1.01	10.	2.5 SI
2 S	5- 4	1256.8	26922.1	26922.1	121978.2	1.01	10.	2.5 SI
3 I	5- 2	1800.	26922.1	26922.1	115903.	1.01	10.	2.5 SI
3 C	5- 2	1800.	26922.1	26922.1	115698.9	1.01	10.	2.5 SI
3 S	5- 2	1800.	26922.1	26922.1	115494.9	1.01	10.	2.5 SI
4 I	5- 2	1666.5	26922.1	26922.1	114728.4	1.01	10.	2.5 SI
4 C	5- 2	1666.5	26922.1	26922.1	114497.4	1.01	10.	2.5 SI
4 S	5- 2	1666.5	26922.1	26922.1	114266.4	1.01	10.	2.5 SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	Sc1s	Sacc	VE
1 I	8- 1	-120149.9	28997.5	-470339.2	-21.4	-224.7	SI
1 C	8- 1	-117485.5	2463.9	34520.7	-17.9	-261.5	SI
1 S	8- 1	-114821.2	-24069.8	539380.6	-20.9	-208.3	SI
2 I	8- 1	-118130.5	-24069.8	539380.6	-21.4	-215.7	SI
2 C	8- 1	-116934.2	-35982.9	211176.8	-19.6	-237.	SI

2 S	8- 1	-115738.	-47896.	-117027.	-19.1	-238.9	SI
3 I	8- 1	-44248.	40397.2	-390931.8	-9.8	-57.1	SI
3 C	8- 1	-42807.	30460.	-212748.1	-8.3	-71.1	SI
3 S	8- 1	-41366.1	20522.9	-34564.4	-6.9	-85.1	SI
4 I	8- 1	-41689.	20522.9	-34564.4	-6.9	-85.8	SI
4 C	8- 1	-40057.7	9273.3	-17409.1	-6.3	-86.5	SI
4 S	8- 1	-38426.5	-1976.3	-253.9	-5.8	-86.1	SI

Frequenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	9- 1	-110123.1	27091.9	-429904.1	-19.6	-205.9	SI
1 C	9- 1	-107458.8	2496.1	31445.6	-16.4	-239.1	SI
1 S	9- 1	-104794.4	-22099.8	492795.4	-19.1	-190.	SI
2 I	9- 1	-107824.3	-22099.8	492795.4	-19.5	-196.8	SI
2 C	9- 1	-106628.1	-33142.8	193035.7	-17.8	-216.	SI
2 S	9- 1	-105431.8	-44185.8	-106723.9	-17.4	-217.5	SI
3 I	9- 1	-40255.9	36562.3	-356485.8	-8.9	-51.9	SI
3 C	9- 1	-38815.	27571.	-194268.7	-7.5	-64.4	SI
3 S	9- 1	-37374.1	18579.7	-32051.5	-6.2	-76.8	SI
4 I	9- 1	-37666.7	18579.7	-32051.5	-6.2	-77.5	SI
4 C	9- 1	-36035.5	8400.9	-16139.4	-5.7	-77.8	SI
4 S	9- 1	-34404.2	-1777.9	-227.3	-5.2	-77.1	SI

Quasi permanenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	10- 1	-107105.7	26440.	-417649.6	-19.1	-200.3	SI
1 C	10- 1	-104441.3	2503.2	30514.3	-15.9	-232.4	SI
1 S	10- 1	-101777.	-21433.5	478678.1	-18.5	-184.5	SI
2 I	10- 1	-104722.5	-21433.5	478678.1	-19.	-191.2	SI
2 C	10- 1	-103526.2	-32180.6	187263.9	-17.3	-209.7	SI
2 S	10- 1	-102330.	-42927.7	-104150.3	-16.9	-211.	SI
3 I	10- 1	-39258.8	35294.2	-345863.8	-8.6	-50.8	SI
3 C	10- 1	-37817.9	26614.	-188436.2	-7.3	-62.8	SI
3 S	10- 1	-36377.	17933.8	-31008.5	-6.	-74.8	SI
4 I	10- 1	-36661.3	17933.8	-31008.5	-6.1	-75.5	SI
4 C	10- 1	-35030.	8107.2	-15614.2	-5.5	-75.6	SI
4 S	10- 1	-33398.8	-1719.5	-219.9	-5.1	-74.9	SI

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P03 (ID=1)
 Aste : 1740; 3127; 6577; 6579
 Metodo di verifica : stati limite - NTC18 (q=1.07 ; muphi=2.01) ->
 Duttilita' : non prevista (struttura non dissipativa).
 : dettagli costruttivi del capito 7 non attivi.
 Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %; 1/r %(permille)
 Unita' particolari : fessure [wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
 Copriferrri (assi) : longitudinali= 3.5 ; staffe= 2.5
 Imperfezioni : M minimo = N * e0 ; M aggiunto = N * ei
 Instabilita' : curvatura nominale [EC2 5.8.8]; c=10 nbal=0.4 fief=3

MATERIALI

CLS : C25/30; Rck=300; fck=249; fctk=17.91; fctm=25.58; Ecm=314472;
 gc=1.7; fcd=124.5; fbd=23.7; fctd=10.53; Ec2=0.2%; Ecu=0.35%
 ACCIAIO: B450C; ftk=6210; fyk=4500; Es=2100000; gs=1.15; fyd=3913;
 ftd=5400; fud=5247.5; Eyd=0.1863%; Eud=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.

CLS : ScIs(rara)=149.4; ScIs(quasi permanente)=112; fbd(esercizio)=23.7
ACCIAIO: Sacc(rara)=3600; Coeff.Omogeneizzazione=15

CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAX PRINC	SLU (sismico)	16
5	SLU con SISMAX PRINC	SLU (sismico)	16
8	Rara	RARA	1
9	Frequente	FREQUENTE	1
10	Quasi Perm	QUASI PERMAN.	1

<-

SEZIONI UTILIZZATE

1) Rettangolare: base=30; alt.=145; AcIs=4350; iy=8.66; iz=41.86

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	eiz	eiy	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm
1	1	3.55	3.55	2.37	2.37	710.	630.	145.	145.	32.17	.74
2	1	2.	2.	.16	.16	48.	48.	0.	0.	32.17	.74
3	1	2.	2.	1.16	1.16	347.	347.	0.	0.	32.17	.74
4	1	2.	2.	.57	.57	170.	90.	0.	0.	32.17	.74

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

Asta	Caso	NEd	MEy	MEz	E cIs	ScIs	E acc	Sacc	VE
> 1	4-15	-149692.	-2064776.	15.	3312673.	1.38	-185	-123.8	.143 3011.7 SI
1	4-13	-150305.	1310558.	13.6	2587085.	1.28	-109	-99.	.049 1023.1 SI
1	4-13	-146444.	2080805.	12.1	3149599.	1.41	-183	-123.7	.145 3050.2 SI
> 2	5-13	-16362.	-875475.	1.	-1521783.	1.	-075	-75.5	.117 2461.3 SI
2	5-13	-16101.	-824163.	1.	-1425358.	1.	-07	-71.6	.109 2287.7 SI
2	5-13	-15840.	-778005.	1.01	-1335375.	1.	-065	-68.	.101 2131.4 SI
> 3	5-13	-29179.	-896914.	1.16	-1394187.	1.05	-072	-73.9	.098 2065.6 SI
3	5-13	-27293.	-525802.	1.2	-975618.	1.03	-042	-47.2	.046 971.4 SI
3	4-13	-53375.	342903.	21.2	535556.	1.28	-025	-28.7	.004 82.5 SI
> 4	1- 1	-55200.	-192304.	13.3	-154828.	2.42	-017	-19.7	-.004 -76. SI
4	1- 1	-53998.	-57077.	8.85	-45220.	1.41	-011	-13.6	-.007 -155.8 SI
4	1- 1	-52796.	186135.	123.	-148660.	600.	-016	-19.	-.003 -71.5 SI

INSTABILITA' - CURVATURA NOMINALE Y [EC2 5.8.8]:

Asta	Caso	d	l0	Kfi	Kr	1/r	e2	Mca	M0Ed	MEd	nu
1 S	4-13	26.5	710.	1.	1.	.1563	7.88	171737.	866463.	2080805.	.285
2 I	5-13	26.5	48.	2.313	1.	.3614	.08	-871495.	-874113.	-875475.	.03
3 I	5-13	26.5	347.	1.622	1.	.2535	3.05	-774108.	-807859.	-896914.	.054
4 I	1- 1	26.5	170.	2.031	1.	.3173	.92	-14417.	-141679.	-192304.	.102

INSTABILITA' - CURVATURA NOMINALE Z [EC2 5.8.8]:

Asta	Caso	d	l0	Kfi	Kr	1/r	e2	Mca	M0Ed	MEd	nu
1 S	4-13	118.	710.	2.084	1.	.0733	3.7	2233022.	2579607.	3149599.	.285
2 I	5-13	118.	48.	2.401	1.	.0845	.02	-1518846	-1521464	-1521783.	.03
3 I	5-13	118.	347.	2.258	1.	.0794	.96	-1332523	-1366273	-1394187.	.054
4 I	1- 1	118.	170.	2.342	1.	.0824	.24	-63894.	-141679.	-154828.	.102

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	4- 5	3272.1	105204.1	105204.1	106474.1	1.01	10.	2.1	SI
1 C	4- 5	3272.1	105204.1	105204.1	105816.	1.01	10.	2.1	SI
1 S	4- 5	3272.1	105158.	105204.1	105158.	1.01	10.	2.1	SI
2 I	4-13	-12790.8	105204.1	105204.1	106685.6	1.01	10.	2.1	SI

2 C	4-13	-12790.8	105204.1	105204.1	106641.1	1.01	10.	2.1 SI
2 S	4-13	-12790.8	105204.1	105204.1	106596.6	1.01	10.	2.1 SI
3 I	4-13	-4024.6	102699.3	102699.3	103602.2	1.01	10.	2.05 SI
3 C	4-13	-4024.6	102699.3	102699.3	103275.7	1.01	10.	2.05 SI
3 S	4-13	-4024.6	102699.3	102699.3	102949.2	1.01	10.	2.05 SI
4 I	5-13	3318.1	100194.4	100194.4	101520.2	1.01	10.	2. SI
4 C	5-13	3318.1	100194.4	100194.4	101357.8	1.01	10.	2. SI
4 S	5-13	3318.1	100194.4	100194.4	101195.4	1.01	10.	2. SI

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT VE
1 I	5-16	-734.8	23455.4	23455.4	89329.1	1.01	10.	2.5 SI
1 C	5-16	-734.8	23455.4	23455.4	88799.9	1.01	10.	2.5 SI
1 S	5-16	-734.8	23455.4	23455.4	88270.7	1.01	10.	2.5 SI
2 I	5-15	-2084.7	23455.4	23455.4	79412.7	1.01	10.	2.5 SI
2 C	5-15	-2084.7	23455.4	23455.4	79376.9	1.01	10.	2.5 SI
2 S	5-15	-2084.7	23455.4	23455.4	79341.1	1.01	10.	2.5 SI
3 I	5-15	-2000.9	23455.4	23455.4	79401.7	1.01	10.	2.5 SI
3 C	5-15	-2000.9	23455.4	23455.4	79143.1	1.01	10.	2.5 SI
3 S	5-15	-2000.9	23455.4	23455.4	78884.4	1.01	10.	2.5 SI
4 I	5-11	-1951.9	23455.4	23455.4	79214.5	1.01	10.	2.5 SI
4 C	5-11	-1951.9	23455.4	23455.4	79087.8	1.01	10.	2.5 SI
4 S	5-11	-1951.9	23455.4	23455.4	78961.1	1.01	10.	2.5 SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	8- 1	-122992.	-14689.	-73017.2	-26.8	-368.9	SI
1 C	8- 1	-119131.3	11000.6	11785.9	-25.3	-365.9	SI
1 S	8- 1	-115270.7	36690.2	96589.1	-26.3	-332.1	SI
2 I	8- 1	-44879.9	-36237.1	150418.	-12.	-105.8	SI
2 C	8- 1	-44618.9	-34651.2	100914.2	-11.5	-111.7	SI
2 S	8- 1	-44357.9	-33065.3	51410.3	-11.	-117.6	SI
3 I	8- 1	-44237.2	-33065.3	51410.3	-10.9	-117.2	SI
3 C	8- 1	-42350.4	-21600.3	2547.9	-9.7	-122.4	SI
3 S	8- 1	-40463.6	-10135.4	-46314.5	-9.2	-116.3	SI
4 I	8- 1	-40331.3	-10135.4	-46314.5	-9.2	-115.9	SI
4 C	8- 1	-39406.9	-4518.6	-23244.7	-8.6	-118.3	SI
4 S	8- 1	-38482.6	1098.3	-174.9	-8.1	-119.7	SI

Frequenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	9- 1	-112729.	-13030.1	-66858.6	-24.6	-338.3	SI
1 C	9- 1	-108868.4	10102.7	10801.8	-23.2	-334.4	SI
1 S	9- 1	-105007.8	33235.5	88462.3	-23.9	-302.5	SI
2 I	9- 1	-40833.	-33113.7	137525.3	-11.	-96.1	SI
2 C	9- 1	-40572.	-31666.	92514.4	-10.5	-101.4	SI
2 S	9- 1	-40311.	-30218.2	47503.5	-10.	-106.7	SI
3 I	9- 1	-40198.5	-30218.2	47503.5	-10.	-106.3	SI
3 C	9- 1	-38311.6	-19752.5	2977.1	-8.8	-110.5	SI
3 S	9- 1	-36424.8	-9286.7	-41549.4	-8.3	-104.6	SI
4 I	9- 1	-36303.	-9286.7	-41549.4	-8.3	-104.3	SI
4 C	9- 1	-35378.6	-4159.3	-20856.1	-7.7	-106.2	SI
4 S	9- 1	-34454.3	968.	-162.8	-7.2	-107.2	SI

Quasi permanenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	10- 1	-109644.9	-12489.4	-65077.	-23.9	-329.1	SI
1 C	10- 1	-105784.3	9804.1	10547.	-22.5	-324.9	SI
1 S	10- 1	-101923.6	32097.5	86171.	-23.2	-293.7	SI
2 I	10- 1	-39820.8	-32062.5	133649.3	-10.7	-93.9	SI

2 C| 10- 1| -39559.8| -30661.1| 89921.1| -10.2| -99. |SI|
 2 S| 10- 1| -39298.8| -29259.7| 46192.9| -9.7| -104.1|SI|
 3 I| 10- 1| -39188.7| -29259.7| 46192.9| -9.7| -103.8|SI|
 3 C| 10- 1| -37301.9| -19128.8| 2974.1| -8.5| -107.6|SI|
 3 S| 10- 1| -35415.1| -8997.9| -40244.7| -8.1| -101.8|SI|
 4 I| 10- 1| -35295.9| -8997.9| -40244.7| -8. | -101.4|SI|
 4 C| 10- 1| -34371.6| -4034.6| -20201.7| -7.5| -103.2|SI|
 4 S| 10- 1| -33447.2| 928.7| -158.6| -7. | -104.1|SI|

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P05 (ID=3)
 Aste : 1745; 6556; 3132; 6552
 Metodo di verifica : stati limite - NTC18 (q=1.07 ; muphi=2.01) ->
 Duttilita' : non prevista (struttura non dissipativa).
 : dettagli costruttivi del capito 7 non attivi.
 Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %; 1/r %(permille)
 Unita' particolari : fessure [wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
 Copriferrri (assi) : longitudinali= 3.5 ; staffe= 2.5
 Imperfezioni : M minimo = N * e0 ; M aggiunto = N * ei
 Instabilita' : snellezza limite [EC2 5.8.3.1]

MATERIALI

CLS : C25/30; Rck=300; fck=249; fctk=17.91; fctm=25.58; Ecm=314472;
 gc=1.7; fcd=124.5; fbd=23.7; fctd=10.53; Ec2=0.2%; Ecu=0.35%
 ACCIAIO: B450C; ftk=6210; fyk=4500; Es=2100000; gs=1.15; fyd=3913;
 ftd=5400; fud=5247.5; Eyd=0.1863%; Eud=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.
 CLS : ScIs(rara)=149.4; ScIs(quasi permanente)=112; fbd(esercizio)=23.7
 ACCIAIO: Sacc(rara)=3600; Coeff.omogeneizzazione=15

CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAX PRINC	SLU (sismico)	16
5	SLU con SISMAX PRINC	SLU (sismico)	16
8	Rara	RARA	1
9	Frequente	FREQUENTE	1
10	Quasi Perm	QUASI PERMAN.	1

<-

SEZIONI UTILIZZATE

1) Rettangolare: base=40; alt.=155; AcIs=6200; iy=11.55; iz=44.74

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	eiz	eiY	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm
1	1	2.45	2.45	1.63	1.63	490.	490.	145.	145.	32.17	.519 16016
2	1	2.	2.	.73	.73	220.	140.	0.	0.	32.17	.519 16016
3	1	2.	2.	.88	.88	265.	265.	0.	0.	32.17	.519 16016
4	1	2.	2.	1.	1.	300.	220.	0.	0.	32.17	.519 16016

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (incluse le imperfezioni):

Asta	Caso	NEd	MEyd	MEzd	E cIs	ScIs	E acc	Sacc	VE
> 1	4- 2	-167796.	685168.	14.9	-3229130.	1.09	-.051	-55.2	.005 105.6 SI

1	4- 2	-165132.	62431.	1.	-1609645.	1.	-.03	-34.6	-.012	-254.3	SI
1	1- 1	-168354.	687445.	171.	1119160.	1.33	-.04	-44.4	-.006	-116.8	SI
> 2	1- 1	-172580.	471717.	118.	970740.	1.15	-.035	-40.2	-.01	-209.8	SI
2	5-13	-127047.	-493823.	1.	-1549158.	1.	-.032	-37.	-.001	-28.	SI
2	5-13	-125851.	-684558.	1.16	-3199907.	1.03	-.046	-50.7	.012	255.6	SI
> 3	5- 4	-24118.	1060704.	1.02	2953655.	1.01	-.072	-73.1	.116	2439.6	SI
3	4-13	-9089.	209324.	1.	2483760.	1.	-.034	-38.8	.075	1583.5	SI
3	4-13	-7648.	131191.	1.05	1947142.	1.	-.025	-29.2	.057	1187.6	SI
> 4	4-13	-29693.	154129.	1.24	1970079.	1.02	-.022	-26.	.023	482.6	SI
4	4- 4	-50968.	-31528.	1.	-1003273.	1.	-.011	-13.9	-.001	-26.3	SI
4	1- 1	-59987.	-179960.	336.	179960.	384.	-.011	-13.6	-.004	-82.9	SI

SNELLEZZA LIMITE Y [EC2 5.8.3.1]:

Asta	Caso	NEd	MEyd inf	MEyd sup	l0	A	B	C	nu	L lim	Lambd	VE
1	4- 1	-164304.3	56737.6	126310.6	490.	.7	1.15	1.25	.213	43.71	42.44	SI
2	1- 1	-172579.6	4009.9	5595.3	220.	.7	1.15	.983	.224	33.53	19.05	SI
3	4- 4	-78039.2	-294101.	-124700.	265.	.7	1.15	1.28	.101	64.7	22.95	SI
4	1- 1	-64227.8	-285.1	-535.1	300.	.7	1.15	1.17	.083	65.23	25.98	SI

SNELLEZZA LIMITE Z [EC2 5.8.3.1]:

Asta	Caso	NEd	MEzd inf	MEzd sup	l0	A	B	C	nu	L lim	Lambd	VE
1	4- 9	-75930.9	1297683.	1078366.	490.	.7	1.15	.869	.098	44.67	10.95	SI
2	4-11	-88987.8	1187351.	1007180.	220.	.7	1.15	.852	.115	40.44	4.92	SI
3	4- 5	-62035.2	-1188583	-1085075	265.	.7	1.15	.787	.08	44.76	5.92	SI
4	1- 1	-64227.8	-72747.1	468.6	300.	.7	1.15	1.71	.083	95.38	6.7	SI

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	4- 1	5701.8	134094.1	134094.1	141992.7	1.01	10.	2.5	SI
1 C	4- 1	5701.8	134094.1	134094.1	141588.6	1.01	10.	2.5	SI
1 S	4- 1	5701.8	134094.1	134094.1	141184.5	1.01	10.	2.5	SI
2 I	5-13	-14207.1	134094.1	134094.1	136523.4	1.01	10.	2.5	SI
2 C	5-13	-14207.1	134094.1	134094.1	136342.	1.01	10.	2.5	SI
2 S	5-13	-14207.1	134094.1	134094.1	136160.6	1.01	10.	2.5	SI
3 I	5-13	8394.1	128730.3	128730.3	130601.	1.01	10.	2.4	SI
3 C	5-13	8394.1	128730.3	128730.3	130376.	1.01	10.	2.4	SI
3 S	5-13	8394.1	128730.3	128730.3	130151.	1.01	10.	2.4	SI
4 I	4- 4	6844.8	128730.3	128730.3	128750.3	1.01	10.	2.4	SI
4 C	4- 4	6844.8	128495.6	128730.3	128495.6	1.01	10.	2.4	SI
4 S	4- 4	6844.8	128240.9	128730.3	128240.9	1.01	10.	2.4	SI

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	5- 6	-937.9	32306.5	32306.5	128596.6	1.01	10.	2.5	SI
1 C	5- 6	-937.9	32306.5	32306.5	128219.4	1.01	10.	2.5	SI
1 S	5- 6	-937.9	32306.5	32306.5	127842.1	1.01	10.	2.5	SI
2 I	5- 2	-945.5	32306.5	32306.5	124368.3	1.01	10.	2.5	SI
2 C	5- 2	-945.5	32306.5	32306.5	124198.9	1.01	10.	2.5	SI
2 S	5- 2	-945.5	32306.5	32306.5	124029.5	1.01	10.	2.5	SI
3 I	5- 2	2293.3	32306.5	32306.5	114899.9	1.01	10.	2.5	SI
3 C	5- 2	2293.3	32306.5	32306.5	114695.9	1.01	10.	2.5	SI
3 S	5- 2	2293.3	32306.5	32306.5	114491.8	1.01	10.	2.5	SI
4 I	5- 2	2233.1	32306.5	32306.5	114961.2	1.01	10.	2.5	SI
4 C	5- 2	2233.1	32306.5	32306.5	114730.2	1.01	10.	2.5	SI
4 S	5- 2	2233.1	32306.5	32306.5	114499.3	1.01	10.	2.5	SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	8- 1	-126180.3	104.5	-509046.4	-21.9	-242.6	SI
1 C	8- 1	-123515.9	1454.2	48576.7	-18.9	-274.2	SI

1 S	8- 1	-120851.5	2803.9	606199.8	-21.7	-221.9 SI
2 I	8- 1	-123892.5	2803.9	606199.8	-22.2	-228.8 SI
2 C	8- 1	-122696.2	3409.9	162386.9	-19.5	-262.5 SI
2 S	8- 1	-121500.	4015.9	-281426.	-20.	-249.8 SI
3 I	8- 1	-50126.1	-85.9	-283466.6	-9.2	-89.7 SI
3 C	8- 1	-48685.2	-143.6	-167075.1	-8.3	-96. SI
3 S	8- 1	-47244.3	-201.2	-50683.5	-7.4	-102.3 SI
4 I	8- 1	-46945.4	-201.2	-50683.5	-7.4	-101.7 SI
4 C	8- 1	-45314.2	-266.5	-25174.7	-7.	-100.1 SI
4 S	8- 1	-43682.9	-331.8	334.1	-6.6	-98.4 SI

Frequenti:

Asta	Caso	NEd	MEyd	MEzd	Sc s	Sacc	VE
1 I	9- 1	-115462.8	261.8	-464294.4	-20.	-222.1	SI
1 C	9- 1	-112798.5	1421.4	44186.5	-17.2	-250.4	SI
1 S	9- 1	-110134.1	2581.	552667.4	-19.8	-202.2	SI
2 I	9- 1	-112919.8	2581.	552667.4	-20.2	-208.5	SI
2 C	9- 1	-111723.6	3101.7	148777.3	-17.7	-238.9	SI
2 S	9- 1	-110527.3	3622.3	-255112.7	-18.2	-227.3	SI
3 I	9- 1	-45455.7	9.1	-256884.5	-8.3	-81.4	SI
3 C	9- 1	-44014.7	-73.6	-151653.3	-7.5	-86.8	SI
3 S	9- 1	-42573.8	-156.3	-46422.1	-6.7	-92.2	SI
4 I	9- 1	-42307.3	-156.3	-46422.1	-6.6	-91.6	SI
4 C	9- 1	-40676.1	-249.9	-23061.7	-6.3	-89.8	SI
4 S	9- 1	-39044.8	-343.5	298.7	-5.9	-88.	SI

Quasi permanenti:

Asta	Caso	NEd	MEyd	MEzd	Sc s	Sacc	VE
1 I	10- 1	-112267.4	301.1	-450965.4	-19.5	-216.	SI
1 C	10- 1	-109603.	1406.5	42878.5	-16.8	-243.3	SI
1 S	10- 1	-106938.6	2511.8	536722.4	-19.2	-196.3	SI
2 I	10- 1	-109647.7	2511.8	536722.4	-19.6	-202.4	SI
2 C	10- 1	-108451.4	3008.1	144604.7	-17.2	-231.9	SI
2 S	10- 1	-107255.2	3504.4	-247513.	-17.6	-220.6	SI
3 I	10- 1	-44284.4	55.1	-249196.6	-8.1	-79.3	SI
3 C	10- 1	-42843.4	-38.6	-147001.1	-7.3	-84.5	SI
3 S	10- 1	-41402.5	-132.2	-44805.7	-6.5	-89.7	SI
4 I	10- 1	-41146.2	-132.2	-44805.7	-6.4	-89.1	SI
4 C	10- 1	-39515.	-238.3	-22258.8	-6.1	-87.2	SI
4 S	10- 1	-37883.7	-344.3	288.1	-5.7	-85.3	SI

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P04 (ID=2)
 Aste : 1747; 3134; 6555; 6550
 Metodo di verifica : stati limite - NTC18 (q=1.07 ; muphi=2.01) ->
 Duttilita' : non prevista (struttura non dissipativa).
 : dettagli costruttivi del capito 7 non attivi.
 Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %; 1/r %(permille)
 Unita' particolari : fessure [wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
 Copriferrri (assi) : longitudinali= 3.5 ; staffe= 2.5
 Imperfezioni : M minimo = N * e0 ; M aggiunto = N * ei
 Instabilita' : curvatura nominale [EC2 5.8.8]; c=10 nba1=0.4 fief=3

MATERIALI

CLS : C25/30; Rck=300; fck=249; fctk=17.91; fctm=25.58; Ecm=314472;
 gc=1.7; fcd=124.5; fbd=23.7; fctd=10.53; Ec2=0.2%; Ecu=0.35%
 ACCIAIO: B450C; ftk=6210; fyk=4500; Es=2100000; gs=1.15; fyd=3913;
 ftd=5400; fud=5247.5; Eyd=0.1863%; Eud=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.

CLS : ScIs(rara)=149.4; ScIs(quasi permanente)=112; fbd(esercizio)=23.7

ACCIAIO: Sacc(rara)=3600; Coeff.Omogeneizzazione=15

CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAX PRINC	SLU (sismico)	16
5	SLU con SISMAX PRINC	SLU (sismico)	16
8	Rara	RARA	1
9	Frequente	FREQUENTE	1
10	Quasi Perm	QUASI PERMAN.	1

<-

SEZIONI UTILIZZATE

1) Rettangolare: base=40; alt.=155; AcIs=6200; iy=11.55; iz=44.74

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	eiz	eiy	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm
1	1	3.55	3.55	2.37	2.37	710.	630.	145.	145.	32.17	.519 16016
2	1	2.	2.	.16	.16	48.	48.	0.	0.	32.17	.519 16016
3	1	2.	2.	1.16	1.16	347.	347.	0.	0.	32.17	.519 16016
4	1	2.	2.	.57	.57	170.	90.	0.	0.	32.17	.519 16016

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

Asta	Caso	Ned	MEyd	MEzd	E cIs	ScIs	E acc	Sacc	VE
> 1	1- 1	-209860.	-2674347.	423.	-1974225.	10.9	-.106	-96.7	.049 1028.7 SI
1	4-13	-176078.	1326984.	13.5	2707212.	1.3	-.064	-66.6	.014 292.8 SI
1	5- 4	-155633.	2298076.	2.82	3488597.	1.37	-.107	-97.6	.076 1594.2 SI
> 2	4- 4	-4723.	-273248.	1.	-3340599.	1.	-.047	-51.4	.115 2424.8 SI
2	4- 4	-4462.	-258015.	1.	-2866553.	1.	-.041	-45.8	.099 2084.3 SI
2	4- 4	-4201.	-244209.	1.	-2395880.	1.	-.035	-40.	.083 1749.1 SI
> 3	5-13	-36691.	-938982.	1.17	-1979756.	1.04	-.051	-55.2	.065 1355.6 SI
3	5-13	-34805.	-552548.	1.2	-1274239.	1.03	-.028	-31.9	.024 509.7 SI
3	1- 1	-73640.	-427998.	117.	-302993.	3.87	-.018	-21.3	-.002 -32.7 SI
> 4	1- 1	-74292.	-242542.	66.5	-207255.	2.65	-.014	-17.1	-.005 -98.5 SI
4	1- 1	-73091.	-53983.	25.4	-55351.	1.43	-.01	-12.3	-.008 -166.1 SI
4	1- 1	-71889.	-236373.	391.	201086.	271.	-.014	-16.6	-.005 -94.7 SI

INSTABILITA' - CURVATURA NOMINALE Y [EC2 5.8.8]:

Asta	Caso	d	l0	Kfi	Kr	1/r	e2	McaI	M0Ed	MEd	nu
1 S	5- 4	36.5	710.	1.194	1.	.1354	6.83	814554.	1182886.	2298076.	.212
2 I	4- 4	36.5	48.	2.34	1.	.2655	.06	-272203.	-272959.	-273248.	.006
3 I	5-13	36.5	347.	1.822	1.	.2068	2.49	-805199.	-847639.	-938982.	.048
4 I	1- 1	36.5	170.	2.129	1.	.2415	.7	-3646.	-190684.	-242542.	.096

INSTABILITA' - CURVATURA NOMINALE Z [EC2 5.8.8]:

Asta	Caso	d	l0	Kfi	Kr	1/r	e2	McaI	M0Ed	MEd	nu
1 S	5- 4	126.	710.	2.106	1.	.0692	3.49	2550048.	2918380.	3488597.	.212
2 I	4- 4	126.	48.	2.402	1.	.079	.02	-3339758.	-3340513.	-3340599.	.006
3 I	5-13	126.	347.	2.268	1.	.0746	.9	-1904367.	-1946807.	-1979756.	.048
4 I	1- 1	126.	170.	2.348	1.	.0772	.22	-78302.	-190684.	-207255.	.096

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	4-13	4488.5	134094.1	134094.1	144364.	1.01	10.	2.5	SI
1 C	4-13	4488.5	134094.1	134094.1	143778.4	1.01	10.	2.5	SI

1 S	4-13	4488.5	134094.1	134094.1	143192.9	1.01	10.	2.5	SI
2 I	4-15	-22006.9	131412.2	131412.2	132582.9	1.01	10.	2.45	SI
2 C	4-15	-22006.9	131412.2	131412.2	132542.8	1.01	10.	2.45	SI
2 S	4-15	-22006.9	131412.2	131412.2	132502.6	1.01	10.	2.45	SI
3 I	4- 4	6116.7	126048.5	126048.5	127157.6	1.01	10.	2.35	SI
3 C	4- 4	6116.7	126048.5	126048.5	126858.6	1.01	10.	2.35	SI
3 S	4- 4	6116.7	126048.5	126048.5	126559.6	1.01	10.	2.35	SI
4 I	5-13	3542.4	127732.2	128730.3	127732.2	1.01	10.	2.4	SI
4 C	5-13	3542.4	127587.8	128730.3	127587.8	1.01	10.	2.4	SI
4 S	5-13	3542.4	127443.5	128730.3	127443.5	1.01	10.	2.4	SI

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	5- 4	-1403.4	32306.5	32306.5	132427.2	1.01	10.	2.5	SI
1 C	5- 4	-1403.4	32306.5	32306.5	131880.5	1.01	10.	2.5	SI
1 S	5- 4	-1403.4	32306.5	32306.5	131333.9	1.01	10.	2.5	SI
2 I	5-15	-2024.1	32306.5	32306.5	115365.5	1.01	10.	2.5	SI
2 C	5-15	-2024.1	32306.5	32306.5	115328.6	1.01	10.	2.5	SI
2 S	5-15	-2024.1	32306.5	32306.5	115291.6	1.01	10.	2.5	SI
3 I	5-15	-1997.7	32306.5	32306.5	115750.5	1.01	10.	2.5	SI
3 C	5-15	-1997.7	32306.5	32306.5	115483.4	1.01	10.	2.5	SI
3 S	5-15	-1997.7	32306.5	32306.5	115216.2	1.01	10.	2.5	SI
4 I	5-11	-1955.7	32306.5	32306.5	115825.2	1.01	10.	2.5	SI
4 C	5-11	-1955.7	32306.5	32306.5	115694.3	1.01	10.	2.5	SI
4 S	5-11	-1955.7	32306.5	32306.5	115563.4	1.01	10.	2.5	SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	8- 1	-150913.3	-4638.3	-128531.3	-23.5	-328.6	SI
1 C	8- 1	-147052.7	4139.7	63210.5	-22.6	-325.4	SI
1 S	8- 1	-143192.1	12917.7	254952.3	-23.3	-298.6	SI
2 I	8- 1	-57198.1	-7618.5	-101304.5	-9.3	-118.7	SI
2 C	8- 1	-56937.1	-7311.2	-128540.	-9.5	-115.9	SI
2 S	8- 1	-56676.1	-7003.9	-155775.5	-9.6	-113.2	SI
3 I	8- 1	-57514.	-7003.9	-155775.5	-9.7	-115.1	SI
3 C	8- 1	-55627.2	-4782.3	-106112.5	-9.1	-115.5	SI
3 S	8- 1	-53740.4	-2560.7	-56449.6	-8.5	-115.9	SI
4 I	8- 1	-54206.4	-2560.7	-56449.6	-8.5	-116.9	SI
4 C	8- 1	-53282.	-1472.3	-27961.6	-8.2	-117.5	SI
4 S	8- 1	-52357.6	-383.9	526.3	-7.9	-117.9	SI

Frequenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	9- 1	-137888.8	-4160.1	-117359.1	-21.5	-300.3	SI
1 C	9- 1	-134028.1	3846.2	57707.8	-20.6	-296.5	SI
1 S	9- 1	-130167.5	11852.6	232774.6	-21.2	-271.3	SI
2 I	9- 1	-51767.3	-6852.8	-92013.5	-8.5	-107.4	SI
2 C	9- 1	-51506.3	-6578.5	-116669.8	-8.6	-104.8	SI
2 S	9- 1	-51245.3	-6304.2	-141326.1	-8.7	-102.3	SI
3 I	9- 1	-52000.	-6304.2	-141326.1	-8.8	-104.	SI
3 C	9- 1	-50113.2	-4321.2	-96012.4	-8.2	-104.	SI
3 S	9- 1	-48226.4	-2338.2	-50698.7	-7.6	-104.	SI
4 I	9- 1	-48645.1	-2338.2	-50698.7	-7.7	-104.9	SI
4 C	9- 1	-47720.7	-1366.7	-25109.1	-7.3	-105.2	SI
4 S	9- 1	-46796.3	-395.2	480.5	-7.	-105.4	SI

Quasi permanenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	10- 1	-134006.4	-4015.3	-113829.8	-20.9	-291.8	SI
1 C	10- 1	-130145.7	3749.2	55954.4	-20.	-288.	SI

1 S	10- 1	-126285.1	11513.7	225738.6	-20.5	-263.2	SI
2 I	10- 1	-50416.2	-6583.4	-88562.6	-8.2	-104.7	SI
2 C	10- 1	-50155.2	-6320.6	-112572.4	-8.3	-102.2	SI
2 S	10- 1	-49894.2	-6057.8	-136582.1	-8.4	-99.7	SI
3 I	10- 1	-50623.8	-6057.8	-136582.1	-8.5	-101.3	SI
3 C	10- 1	-48737.	-4158.1	-92833.2	-8.	-101.2	SI
3 S	10- 1	-46850.2	-2258.3	-49084.3	-7.4	-101.	SI
4 I	10- 1	-47254.7	-2258.3	-49084.3	-7.4	-101.9	SI
4 C	10- 1	-46330.4	-1327.6	-24309.	-7.1	-102.1	SI
4 S	10- 1	-45406.	-396.9	466.3	-6.8	-102.3	SI

3.3.3. Pilastri rettangolari 30x200 e 30x170 rinforzati

Dei pilastri 30x200 cm, che rastremano in 30x170 cm, non risulta nota l'armatura; tuttavia, poiché verranno incamiciati, verrà effettuata la verifica inserendo l'armatura integrativa (armatura longitudinale e staffe).

Di seguito si riportano le verifiche dei pilastri più sollecitati eseguita con l'applicativo "Pilastri" di DOLMEN.

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P19 (ID=13)
Aste : 1535; 5798; 5799; 5800; 5801
Metodo di verifica : stati limite - NTC18 (q=1.07 ; muphi=2.01) ->
Duttilita' : non prevista (struttura non dissipativa).
: dettagli costruttivi del capito 7 non attivi.
Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %; 1/r ‰(permille)
Unita' particolari : fessure [wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
Copriferri (assi) : longitudinali= 3.5 ; staffe= 2.5
Imperfezioni : M minimo = N * e0 ; M aggiunto = N * ei
Instabilita' : snellezza limite [EC2 5.8.3.1]

MATERIALI

CLS : C25/30; Rck=300; fck=249; fctk=17.91; fctm=25.58; Ecm=314472;
gc=1.7; fcd=124.5; fbd=23.7; fctd=10.53; Ec2=0.2%; Ecu=0.35%
ACCIAIO: B450C; ftk=5175; fyk=4500; Es=2100000; gs=1.38; fyd=3260.9;
ftd=3750; fud=3700.1; Eyd=0.1553%; Eud=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.
CLS : scl(rara)=149.4; scl(quasi permanente)=112; fbd(esercizio)=23.7
ACCIAIO: Sacc(rara)=3600; Coeff.Omogeneizzazione=15

CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAX PRINC	SLU (sismico)	16
5	SLU con SISMAY PRINC	SLU (sismico)	16
8	Rara	RARA	1
9	Frequente	FREQUENTE	1
10	Quasi Perm	QUASI PERMAN.	1

<-

SEZIONI UTILIZZATE

- 1) Rettangolare: base=40; alt.=220; Acl=8800; iy=11.55; iz=63.51
 2) Rettangolare: base=40; alt.=180; Acl=7200; iy=11.55; iz=51.96

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	eiz	eiy	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm	
1	1	3.55	3.55	2.37	2.37	710.	630.	200.	200.	112.59	1.279	56016
2	2	2.	2.	.55	.55	165.	150.	0.	0.	96.51	1.34	48016
3	2	2.	2.	.5	.5	150.	135.	0.	0.	96.51	1.34	48016
4	2	2.	2.	.5	.5	150.	110.	0.	0.	96.51	1.34	48016
5	2	2.	2.	.33	.33	100.	20.	0.	0.	96.51	1.34	48016

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (incluse le imperfezioni):

Asta	Caso	NEd	MEyd	MEzd	E cls	Sc ls	E acc	Sacc	VE		
> 1	4- 2	-93627.	553962.	2.26	-6040162.	1.04	-.029	-34.	.016	344.3	SI
1	4-13	-88846.	202795.	1.	5072535.	1.	-.021	-24.9	.008	163.9	SI
1	5- 4	-84291.	1621321.	1.14	5139796.	1.04	-.043	-48.2	.036	746.5	SI
> 2	5-13	71883.	-2127917.	1.02	-4420317.	1.01	-.061	-64.5	.145	3047.1	SI
2	5-13	73110.	-529691.	1.	-3739578.	1.	-.026	-30.8	.102	2140.8	SI
2	5-13	74337.	1197354.	1.04	-3139262.	1.01	-.035	-40.2	.111	2329.4	SI
> 3	5-13	74337.	1193637.	1.03	-3135545.	1.01	-.035	-40.1	.111	2326.8	SI
3	5-13	75453.	1084706.	1.	-2518583.	1.	-.028	-32.8	.102	2140.8	SI
3	5-13	76568.	1051616.	1.04	-1977079.	1.02	-.023	-26.9	.095	2004.8	SI
> 4	5-13	106380.	1066521.	1.05	-1991985.	1.03	-.016	-19.	.114	2398.3	SI
4	5-13	107495.	1931287.	1.	-1362435.	1.	-.027	-31.3	.127	2663.1	SI
4	5-15	115679.	3064178.	1.02	-413787.	1.16	-.035	-40.	.152	3190.	SI
> 5	5-15	115664.	3044893.	1.01	-394503.	1.11	-.035	-39.4	.151	3174.	SI
5	5-15	116408.	1518672.	1.	-191240.	1.	-.001	-.9	.106	2223.1	SI
5	5-15	117151.	273353.	8.81	-273353.	9.49	.043	0.	.07	1475.9	SI

SNELLEZZA LIMITE Y [EC2 5.8.3.1]:

Asta	Caso	NEd	MEyd inf	MEyd sup	l0	A	B	C	nu	L lim	Lambd	VE
1	4-16	-93337.1	-290513.	-460661.	710.	.7	1.29	1.07	.085	66.29	61.49	SI
2	5- 2	-141031.3	2261450.	-1368292	165.	.7	1.31	2.31	.157	106.2	14.29	SI
3	5- 2	-138577.	-1368292	-1129906	150.	.7	1.31	.874	.155	40.61	12.99	SI
4	5- 2	-170602.	-1129906	-2951566	150.	.7	1.31	1.32	.19	55.15	12.99	SI
5	5- 2	-169260.4	-2951566	-31141.6	100.	.7	1.31	1.69	.189	71.01	8.66	SI

SNELLEZZA LIMITE Z [EC2 5.8.3.1]:

Asta	Caso	NEd	MEzd inf	MEzd sup	l0	A	B	C	nu	L lim	Lambd	VE
1	4- 7	-92603.8	-3481944	-3727137	710.	.7	1.29	.766	.085	47.66	11.18	SI
2	5- 5	-123893.8	215366.8	169406.6	165.	.7	1.31	.913	.138	44.88	3.18	SI
3	5- 5	-121439.4	169406.6	121408.3	150.	.7	1.31	.983	.135	48.8	2.89	SI
4	5- 5	-148855.1	121408.3	66637.8	150.	.7	1.31	1.15	.166	51.6	2.89	SI
5	5- 5	-147765.7	66637.8	28736.5	100.	.7	1.31	1.27	.165	57.08	1.92	SI

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	5- 2	8152.	159688.5	159688.5	181768.3	1.01	10.	2.5	SI
1 C	5- 2	8152.	159688.5	159688.5	180955.1	1.01	10.	2.5	SI
1 S	5- 2	8152.	159688.5	159688.5	180142.	1.01	10.	2.5	SI
2 I	4-13	-10515.1	130184.9	130184.9	145297.1	1.01	10.	2.5	SI
2 C	4-13	-10515.1	130184.9	130184.9	145110.4	1.01	10.	2.5	SI
2 S	4-13	-10515.1	130184.9	130184.9	144923.6	1.01	10.	2.5	SI
3 I	4-13	-10376.7	130184.9	130184.9	144923.6	1.01	10.	2.5	SI
3 C	4-13	-10376.7	130184.9	130184.9	144753.9	1.01	10.	2.5	SI
3 S	4-13	-10376.7	130184.9	130184.9	144584.1	1.01	10.	2.5	SI

4 I	4-13	-10224.9	130184.9	130184.9	146079.6	1.01	10.	2.5	SI
4 C	4-13	-10224.9	130184.9	130184.9	145909.8	1.01	10.	2.5	SI
4 S	4-13	-10224.9	130184.9	130184.9	145740.1	1.01	10.	2.5	SI
5 I	4- 4	9648.1	172856.6	177051.4	172856.6	1.01	5.	1.7	SI
5 C	4- 4	9648.1	172856.6	177051.4	172856.6	1.01	5.	1.7	SI
5 S	4- 4	9648.1	172856.6	177051.4	172856.6	1.01	5.	1.7	SI

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	5- 8	-2227.9	26922.1	26922.1	168592.8	1.01	10.	2.5	SI
1 C	5- 8	-2227.9	26922.1	26922.1	167838.8	1.01	10.	2.5	SI
1 S	5- 8	-2227.9	26922.1	26922.1	167084.8	1.01	10.	2.5	SI
2 I	5- 2	21854.7	26922.1	26922.1	146894.9	1.01	10.	2.5	SI
2 C	5- 2	21854.7	26922.1	26922.1	146721.1	1.01	10.	2.5	SI
2 S	5- 2	21854.7	26922.1	26922.1	146547.4	1.01	10.	2.5	SI
3 I	5- 2	-1641.3	26922.1	26922.1	146547.4	1.01	10.	2.5	SI
3 C	5- 2	-1641.3	26922.1	26922.1	146389.4	1.01	10.	2.5	SI
3 S	5- 2	-1641.3	26922.1	26922.1	146231.5	1.01	10.	2.5	SI
4 I	5-15	-12932.2	26922.1	26922.1	126925.6	1.01	10.	2.5	SI
4 C	5-15	-12932.2	26922.1	26922.1	126925.6	1.01	10.	2.5	SI
4 S	5-15	-12932.2	26922.1	26922.1	126925.6	1.01	10.	2.5	SI
5 I	5-15	29753.3	53844.2	53844.2	126925.6	1.01	5.	2.5	SI
5 C	5-15	29753.3	53844.2	53844.2	126925.6	1.01	5.	2.5	SI
5 S	5-15	29753.3	53844.2	53844.2	126925.6	1.01	5.	2.5	SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	8- 1	-100809.4	-7536.9	-143339.	-10.2	-139.1	SI
1 C	8- 1	-95484.4	10117.7	2477.5	-9.3	-136.4	SI
1 S	8- 1	-90159.4	27772.2	148294.	-9.4	-120.4	SI
2 I	8- 1	-34531.3	30781.3	140314.5	-5.	-47.	SI
2 C	8- 1	-33304.1	-24009.3	119893.6	-4.7	-47.2	SI
2 S	8- 1	-32076.9	-78799.9	99472.7	-5.3	-36.	SI
3 I	8- 1	-32076.9	-78799.9	99472.7	-5.3	-36.	SI
3 C	8- 1	-30961.3	-56383.6	80908.3	-4.8	-39.3	SI
3 S	8- 1	-29845.7	-33967.3	62343.8	-4.2	-42.5	SI
4 I	8- 1	-31423.9	-33967.3	62343.8	-4.4	-45.3	SI
4 C	8- 1	-30308.3	-1827.4	43779.4	-3.7	-50.4	SI
4 S	8- 1	-29192.7	30312.6	25214.9	-4.	-44.1	SI
5 I	8- 1	-29689.2	30312.6	25214.9	-4.	-45.	SI
5 C	8- 1	-28945.4	15132.7	12838.6	-3.7	-47.2	SI
5 S	8- 1	-28201.7	-47.2	462.3	-3.3	-49.4	SI

Frequenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	9- 1	-95150.9	-6542.	-132307.4	-9.6	-131.5	SI
1 C	9- 1	-89825.9	9482.8	2484.4	-8.8	-128.3	SI
1 S	9- 1	-84500.9	25507.6	137276.2	-8.8	-113.	SI
2 I	9- 1	-32359.1	28595.7	130177.4	-4.7	-44.1	SI
2 C	9- 1	-31131.9	-22514.6	111227.3	-4.4	-44.2	SI
2 S	9- 1	-29904.7	-73624.8	92277.1	-5.	-33.6	SI
3 I	9- 1	-29904.7	-73624.8	92277.1	-5.	-33.6	SI
3 C	9- 1	-28789.1	-52604.8	75049.7	-4.5	-36.5	SI
3 S	9- 1	-27673.5	-31584.7	57822.3	-3.9	-39.4	SI
4 I	9- 1	-29148.2	-31584.7	57822.3	-4.1	-42.	SI
4 C	9- 1	-28032.5	-1816.4	40594.9	-3.5	-46.6	SI
4 S	9- 1	-26916.9	27951.9	23367.4	-3.7	-40.7	SI
5 I	9- 1	-27377.9	27951.9	23367.4	-3.7	-41.5	SI
5 C	9- 1	-26634.2	13948.7	11882.5	-3.4	-43.5	SI
5 S	9- 1	-25890.4	-54.4	397.5	-3.	-45.4	SI

Quasi permanenti:

Asta	Caso	Ned	MEyd	MEzd	ScIs	Sacc	VE
1 I	10- 1	-93462.8	-6307.1	-129011.5	-9.4	-129.2	SI
1 C	10- 1	-88137.8	9313.9	2473.3	-8.6	-125.9	SI
1 S	10- 1	-82812.8	24935.	133958.	-8.6	-110.8	SI
2 I	10- 1	-31814.5	28062.8	127134.4	-4.6	-43.4	SI
2 C	10- 1	-30587.3	-22118.5	108625.8	-4.3	-43.4	SI
2 S	10- 1	-29360.1	-72299.9	90117.2	-4.9	-33.	SI
3 I	10- 1	-29360.1	-72299.9	90117.2	-4.9	-33.	SI
3 C	10- 1	-28244.5	-51634.1	73291.2	-4.4	-35.8	SI
3 S	10- 1	-27128.8	-30968.2	56465.2	-3.9	-38.6	SI
4 I	10- 1	-28577.3	-30968.2	56465.2	-4.	-41.2	SI
4 C	10- 1	-27461.7	-1791.1	39639.2	-3.4	-45.6	SI
4 S	10- 1	-26346.1	27386.	22813.2	-3.6	-39.8	SI
5 I	10- 1	-26798.2	27386.	22813.2	-3.6	-40.6	SI
5 C	10- 1	-26054.5	13664.8	11595.9	-3.3	-42.5	SI
5 S	10- 1	-25310.7	-56.4	378.6	-3.	-44.4	SI

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P09 (ID=8)
 Aste : 1530; 5778; 5779; 5780; 5781
 Metodo di verifica : stati limite - NTC18 (q=1.07 ; muphi=2.01) ->
 Duttilita' : non prevista (struttura non dissipativa).
 : dettagli costruttivi del capito 7 non attivi.
 Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %; 1/r ‰(permille)
 Unita' particolari : fessure [wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
 Copriferrì (assi) : longitudinali= 3.5 ; staffe= 2.5
 Imperfezioni : M minimo = N * e0 ; M aggiunto = N * ei
 Instabilita' : curvatura nominale [EC2 5.8.8]; c=10 nba1=0.4 fief=3

MATERIALI

CLS : C25/30; Rck=300; fck=249; fctk=17.91; fctm=25.58; Ecm=314472;
 gc=1.7; fcd=124.5; fbd=23.7; fctd=10.53; Ec2=0.2%; Ecu=0.35%
 ACCIAIO: B450C; ftk=5175; fyk=4500; Es=2100000; gs=1.38; fyd=3260.9;
 ftd=3750; fud=3700.1; Eyd=0.1553%; Eud=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.
 CLS : ScIs(rara)=149.4; ScIs(quasi permanente)=112; fbd(esercizio)=23.7
 ACCIAIO: Sacc(rara)=3600; Coeff.omogeneizzazione=15

CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAX PRINC	SLU (sismico)	16
5	SLU con SISMAX PRINC	SLU (sismico)	16
8	Rara	RARA	1
9	Frequente	FREQUENTE	1
10	Quasi Perm	QUASI PERMAN.	1

<-

SEZIONI UTILIZZATE

- 1) Rettangolare: base=40; alt.=220; Acls=8800; iy=11.55; iz=63.51
- 2) Rettangolare: base=40; alt.=180; Acls=7200; iy=11.55; iz=51.96

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	eiz	eiy	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm	
1		1		3.55		3.55		2.37		2.37		710. 630. 200. 200. 112.59 1.279 56016
2		2		2.		2.		.55		.55		165. 150. 0. 0. 96.51 1.34 48016
3		2		2.		2.		.5		.5		150. 135. 0. 0. 96.51 1.34 48016
4		2		2.		2.		.5		.5		150. 110. 0. 0. 96.51 1.34 48016
5		2		2.		2.		.33		.33		100. 20. 0. 0. 96.51 1.34 48016

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

Asta	Caso	NEd	MEyd	MEzd	E cIs	ScIs	E acc	Sacc	VE
> 1	4- 5	-91580.	1062848.	6.54	-9779670.	1.04	-.053	-57.1	.051 1073.3 SI
1	4-12	-86413.	-864431.	2.52	5452724.	1.04	-.032	-36.7	.02 428.1 SI
1	5- 4	-77958.	1900452.	1.57	2333447.	1.19	-.038	-42.4	.032 661.6 SI
> 2	5- 4	75339.	1923456.	1.02	2331895.	1.02	-.041	-45.5	.119 2490.7 SI
2	5- 4	76566.	406502.	1.	1951973.	1.	-.008	-9.7	.08 1682.8 SI
2	5- 4	77793.	-1225101.	1.04	1656277.	1.03	-.023	-26.9	.096 2019.4 SI
> 3	5- 4	77793.	-1221212.	1.03	1652387.	1.02	-.023	-26.8	.096 2016.6 SI
3	5- 4	78909.	-1092188.	1.	1305813.	1.	-.017	-20.	.09 1879.7 SI
3	5- 4	80024.	-1042825.	1.04	1038159.	1.04	-.012	-15.1	.086 1797.2 SI
> 4	5- 4	108425.	-1057026.	1.05	1052359.	1.05	-.002	-2.5	.102 2135. SI
4	5- 2	119425.	-2009417.	1.	318612.	1.	-.014	-16.9	.123 2575.2 SI
4	5- 2	120541.	-2997904.	1.02	301352.	1.76	-.032	-36.7	.151 3177.6 SI
> 5	5- 2	120612.	-2977838.	1.01	281427.	1.64	-.031	-36.1	.151 3161.9 SI
5	5- 2	121355.	-1484914.	1.	73315.	1.	.005	0.	.105 2214.2 SI
5	5- 2	122099.	-284898.	8.85	-284898.	9.99	.045	0.	.073 1538.2 SI

INSTABILITA' - CURVATURA NOMINALE Y [EC2 5.8.8]:

Asta	Caso	d	l0	Kfi	Kr	1/r	e2	McaI	M0Ed	MEd	nu
1 I	4- 5	36.5	710.	1.194	1.	.1129	5.69	162474.	541848.	1062848.	.084
2 I	5- 4	36.5	165.	2.138	1.	.2021	.55	1882019.	1923456.	1923456.	.
3 I	5- 4	36.5	150.	2.164	1.	.2046	.46	-1182315	-1221211	-1221212.	.
4 S	5- 2	36.5	150.	2.164	1.	.2046	.46	-2937634	-2997904	-2997904.	.
5 I	5- 2	36.5	100.	2.25	1.	.2127	.21	-2937634	-2977837	-2977838.	.

INSTABILITA' - CURVATURA NOMINALE Z [EC2 5.8.8]:

Asta	Caso	d	l0	Kfi	Kr	1/r	e2	McaI	M0Ed	MEd	nu
1 I	4- 5	174.	710.	2.2	1.	.0437	2.2	-9361205	-9577944	-9779670.	.084
2 I	5- 4	142.	165.	2.36	1.	.0573	.16	2290458.	2331895.	2331895.	.
3 I	5- 4	142.	150.	2.366	1.	.0575	.13	1613490.	1652387.	1652387.	.
4 S	5- 2	142.	150.	2.366	1.	.0575	.13	171121.	301352.	301352.	.
5 I	5- 2	142.	100.	2.385	1.	.0579	.06	171121.	281427.	281427.	.

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	4- 5	11804.5	159688.5	159688.5	181286.9	1.01	10.	2.5	SI
1 C	4- 5	11804.5	159688.5	159688.5	180473.7	1.01	10.	2.5	SI
1 S	4- 5	11804.5	159688.5	159688.5	179660.6	1.01	10.	2.5	SI
2 I	4- 9	-4707.	130184.9	130184.9	138450.7	1.01	10.	2.5	SI
2 C	4- 9	-4707.	130184.9	130184.9	138264.	1.01	10.	2.5	SI
2 S	4- 9	-4707.	130184.9	130184.9	138077.3	1.01	10.	2.5	SI
3 I	4- 9	-4708.2	130184.9	130184.9	138077.3	1.01	10.	2.5	SI
3 C	4- 9	-4708.2	130184.9	130184.9	137907.5	1.01	10.	2.5	SI
3 S	4- 9	-4708.2	130184.9	130184.9	137737.8	1.01	10.	2.5	SI
4 I	4- 9	-4691.5	130184.9	130184.9	137377.7	1.01	10.	2.5	SI
4 C	4- 9	-4691.5	130184.9	130184.9	137208.	1.01	10.	2.5	SI
4 S	4- 9	-4691.5	130184.9	130184.9	137038.2	1.01	10.	2.5	SI
5 I	4- 9	-4706.2	173841.9	177051.4	173841.9	1.01	5.	1.7	SI
5 C	4- 9	-4706.2	173698.4	177051.4	173698.4	1.01	5.	1.7	SI
5 S	4- 9	-4706.2	173555.	177051.4	173555.	1.01	5.	1.7	SI

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	5- 3	2220.3	26922.1	26922.1	167683.4	1.01	10.	2.5	SI
1 C	5- 3	2220.3	26922.1	26922.1	166929.4	1.01	10.	2.5	SI
1 S	5- 3	2220.3	26922.1	26922.1	166175.4	1.01	10.	2.5	SI
2 I	5-15	-21116.9	26922.1	26922.1	146907.4	1.01	10.	2.5	SI
2 C	5-15	-21116.9	26922.1	26922.1	146733.7	1.01	10.	2.5	SI
2 S	5-15	-21116.9	26922.1	26922.1	146559.9	1.01	10.	2.5	SI
3 I	5-15	1783.3	26922.1	26922.1	146559.9	1.01	10.	2.5	SI
3 C	5-15	1783.3	26922.1	26922.1	146401.9	1.01	10.	2.5	SI
3 S	5-15	1783.3	26922.1	26922.1	146244.	1.01	10.	2.5	SI
4 I	5- 2	12379.3	26922.1	26922.1	126925.6	1.01	10.	2.5	SI
4 C	5- 2	12379.3	26922.1	26922.1	126925.6	1.01	10.	2.5	SI
4 S	5- 2	12379.3	26922.1	26922.1	126925.6	1.01	10.	2.5	SI
5 I	5- 2	-29054.4	53844.2	53844.2	126925.6	1.01	5.	2.5	SI
5 C	5- 2	-29054.4	53844.2	53844.2	126925.6	1.01	5.	2.5	SI
5 S	5- 2	-29054.4	53844.2	53844.2	126925.6	1.01	5.	2.5	SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	Sc1s	Sacc	VE
1 I	8- 1	-98682.2	21636.6	-135278.4	-10.1	-134.2	SI
1 C	8- 1	-93357.2	-3747.1	-9288.	-9.1	-134.	SI
1 S	8- 1	-88032.2	-29130.7	116702.3	-9.2	-118.3	SI
2 I	8- 1	-31559.7	-27533.8	112020.9	-4.5	-43.9	SI
2 C	8- 1	-30332.5	16952.3	95742.	-4.2	-44.7	SI
2 S	8- 1	-29105.3	61438.4	79463.2	-4.6	-35.1	SI
3 I	8- 1	-29105.3	61438.4	79463.2	-4.6	-35.1	SI
3 C	8- 1	-27989.7	42221.	64664.3	-4.2	-37.6	SI
3 S	8- 1	-26874.1	23003.6	49865.4	-3.7	-40.1	SI
4 I	8- 1	-28177.3	23003.6	49865.4	-3.8	-42.3	SI
4 C	8- 1	-27061.7	-9165.6	35066.4	-3.4	-43.8	SI
4 S	8- 1	-25946.	-41334.9	20267.5	-3.7	-36.7	SI
5 I	8- 1	-26394.	-41334.9	20267.5	-3.8	-37.5	SI
5 C	8- 1	-25650.3	-20718.2	10401.5	-3.4	-40.5	SI
5 S	8- 1	-24906.5	-101.4	535.6	-2.9	-43.6	SI

Frequenti:

Asta	Caso	NEd	MEyd	MEzd	Sc1s	Sacc	VE
1 I	9- 1	-93282.7	21007.7	-124916.3	-9.6	-126.8	SI
1 C	9- 1	-87957.7	-3494.1	-8726.7	-8.5	-126.3	SI
1 S	9- 1	-82632.7	-27995.9	107463.	-8.6	-111.	SI
2 I	9- 1	-29692.1	-26648.9	103491.	-4.3	-41.3	SI
2 C	9- 1	-28464.9	15480.3	88447.2	-3.9	-42.1	SI
2 S	9- 1	-27237.7	57609.6	73403.5	-4.3	-32.9	SI
3 I	9- 1	-27237.7	57609.6	73403.5	-4.3	-32.9	SI
3 C	9- 1	-26122.1	39566.5	59727.4	-3.9	-35.1	SI
3 S	9- 1	-25006.4	21523.3	46051.2	-3.4	-37.3	SI
4 I	9- 1	-26235.8	21523.3	46051.2	-3.6	-39.4	SI
4 C	9- 1	-25120.2	-8416.8	32375.1	-3.2	-40.7	SI
4 S	9- 1	-24004.6	-38356.9	18699.	-3.5	-33.9	SI
5 I	9- 1	-24425.8	-38356.9	18699.	-3.5	-34.6	SI
5 C	9- 1	-23682.1	-19221.5	9581.5	-3.1	-37.4	SI
5 S	9- 1	-22938.3	-86.1	464.1	-2.7	-40.2	SI

Quasi permanenti:

Asta	Caso	NEd	MEyd	MEzd	Sc1s	Sacc	VE
1 I	10- 1	-91659.2	20831.1	-121804.	-9.4	-124.6	SI
1 C	10- 1	-86334.2	-3435.	-8558.7	-8.4	-123.9	SI
1 S	10- 1	-81009.2	-27701.1	104686.6	-8.4	-108.8	SI
2 I	10- 1	-29225.5	-26450.7	100939.5	-4.2	-40.7	SI
2 C	10- 1	-27998.4	15098.3	86265.3	-3.8	-41.5	SI

2 S	10- 1	-26771.2	56647.4	71591.1	-4.3	-32.4 SI
3 I	10- 1	-26771.2	56647.4	71591.1	-4.3	-32.4 SI
3 C	10- 1	-25655.5	38899.3	58250.9	-3.8	-34.5 SI
3 S	10- 1	-24539.9	21151.3	44910.7	-3.4	-36.6 SI
4 I	10- 1	-25751.	21151.3	44910.7	-3.5	-38.7 SI
4 C	10- 1	-24635.3	-8220.2	31570.5	-3.1	-39.9 SI
4 S	10- 1	-23519.7	-37591.7	18230.4	-3.4	-33.2 SI
5 I	10- 1	-23934.2	-37591.7	18230.4	-3.4	-34. SI
5 C	10- 1	-23190.5	-18836.6	9336.9	-3.	-36.6 SI
5 S	10- 1	-22446.7	-81.6	443.5	-2.6	-39.3 SI

3.4. Pareti

3.4.1. Muro controterra lato est

La verifica della parete esistente viene eseguita in termini di pressoflessione e taglio nel proprio piano. Si riportano di seguito le mappe delle tensioni in direzione Y ed XY nei casi SLU (caso 1).

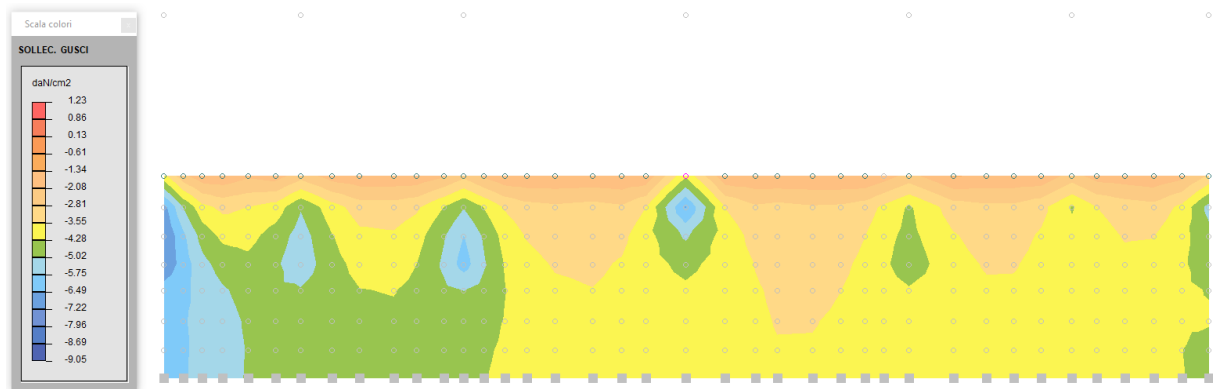


Figura 27 – SLU Sy

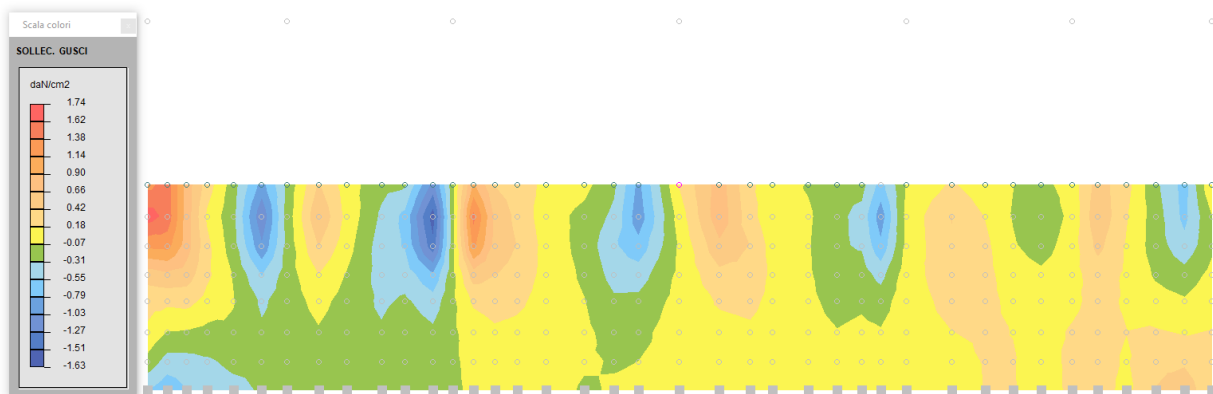


Figura 58 – SLU Sxy

Si riportano di seguito le mappe delle tensioni in direzione Y ed XY nei casi SLV sisma X (caso 6).

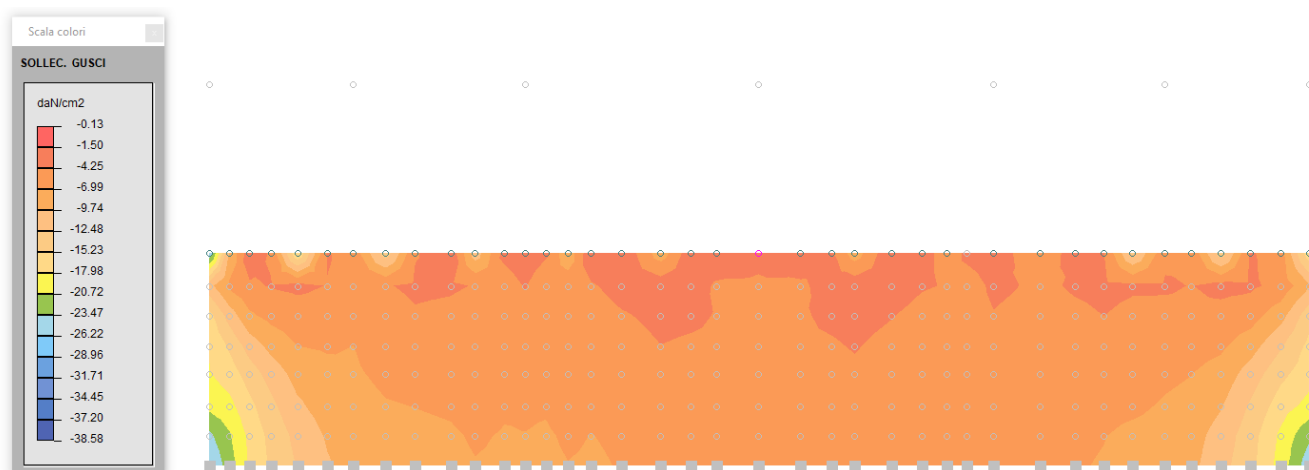


Figura 29 – SLV Sy

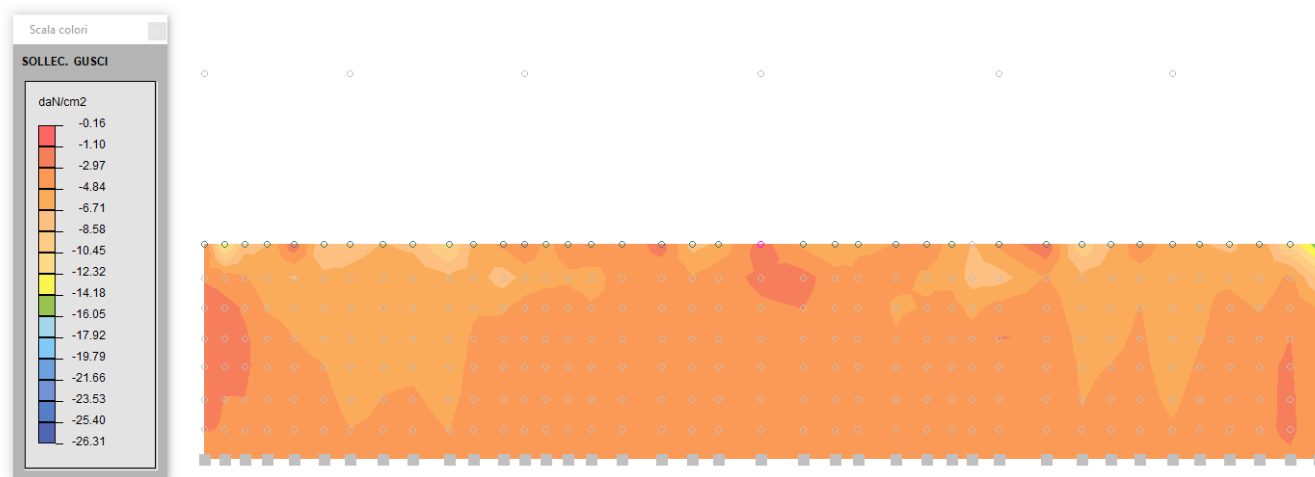


Figura 30 – SLV Sxy

La verifica della parete viene condotta confrontando la tensione di trazione che può essere sopportata dalla parete in base all'armatura integrativa che verrà aggiunta e all'armatura presente (ipotizzata essere uguale a quella presente negli stessi muri dei piazzali) con la tensione di trazione agente nel modello di calcolo.

La sezione di riferimento considerata è quella alla base della parete avente lo spessore di 100 cm; l'armatura che verrà aggiunta sul lato esterno è pari $\Phi 16/10$, mentre quella presente è pari a $\Phi 16/10$ sul lato esterno e $\Phi 16/20$ sul lato interno; considerando una tensione di trazione nelle barre pari a 3667 daN/cm² per mantenerle in campo elastico, la tensione massima di trazione sopportabile dalla sezione è pari a:

$$\sigma_{Rd} = \frac{(20.11 + 20.11 + 10.05) * 3667}{100 * 100} = 18.43 \text{ daN/cm}^2$$

La tensione sollecitante è quella riportata nell'immagine seguente.

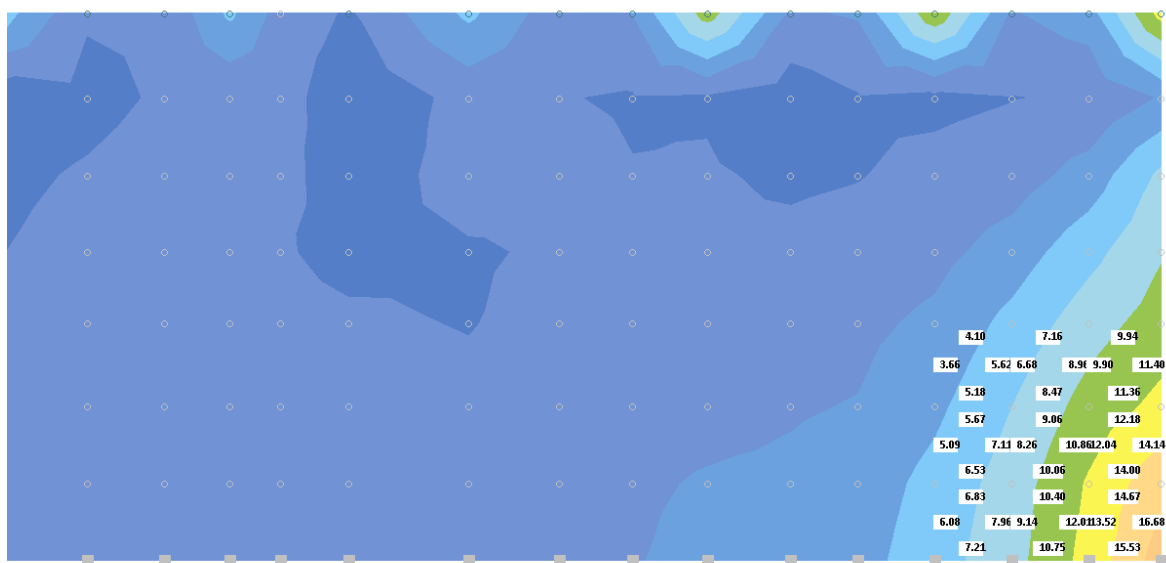


Figura 31 – Tensione di trazione parete

Come si può osservare la tensione massima di trazione agente sulla parete è di 16.68 daN/cm² che risulta inferiore della tensione resistente calcolata in precedenza.

3.5. Fondazioni

Nel presente capitolo si svolgeranno le verifiche sulle fondazioni esistenti della struttura in esame in corrispondenza degli allineamenti B, C, D per cui risulta nota l'armatura.

La fondazione a pi greco è stata considerata come costituita da due sezioni a T rovesce, ciascuna delle quali assorbe le sollecitazioni del proprio allineamento di pilastri di competenza.

Poiché l'azione sismica è presente in entrambe le direzioni, le travi sono soggette a flessione, taglio e torsione; queste ultime due sollecitazioni vengono assorbite dalle staffe, pertanto, la verifica a taglio è stata condotta considerando la metà delle staffe presenti, mentre le rimanenti sono state considerate per soddisfare la verifica a torsione.

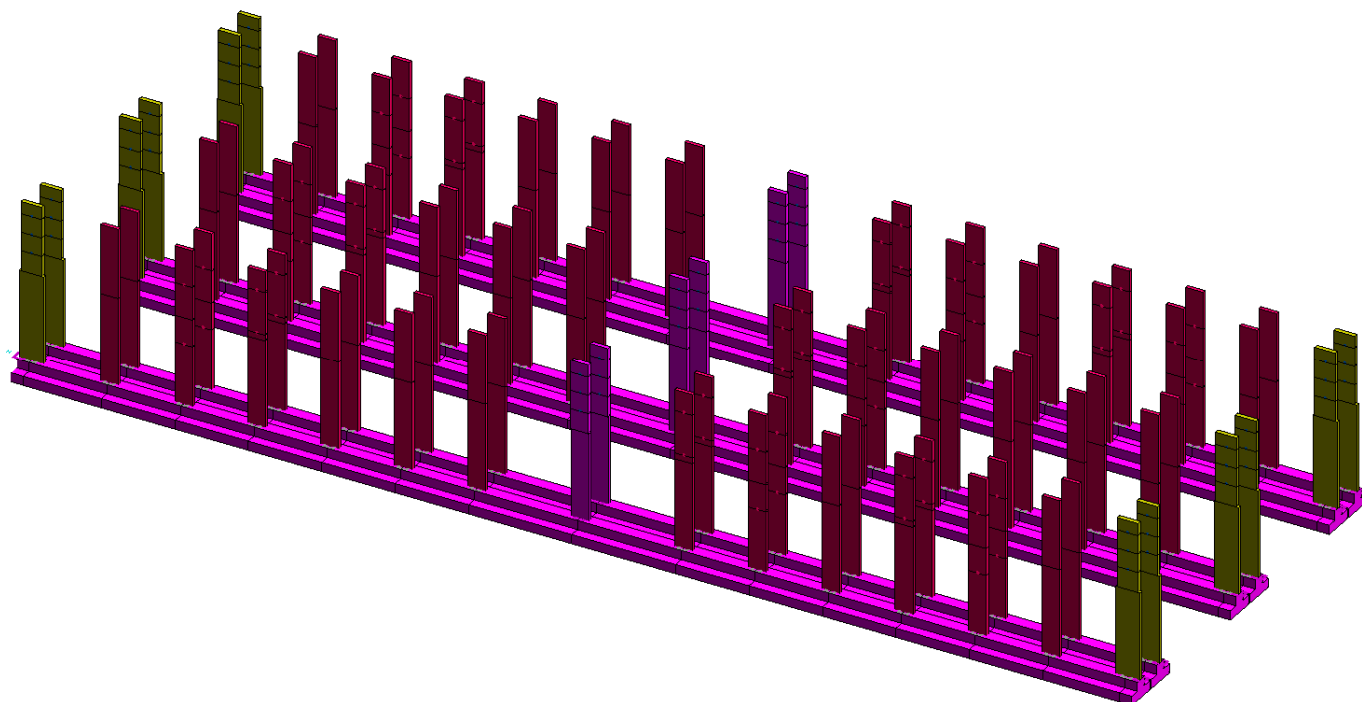


Figura 326 – Vista solida travi di fondazione esistenti – allineamenti B, C, D

Si riportano di seguito le sollecitazioni agenti sulle travi di fondazione esistenti nell'involuppo dei casi SLU (casi 1, 2, 3).

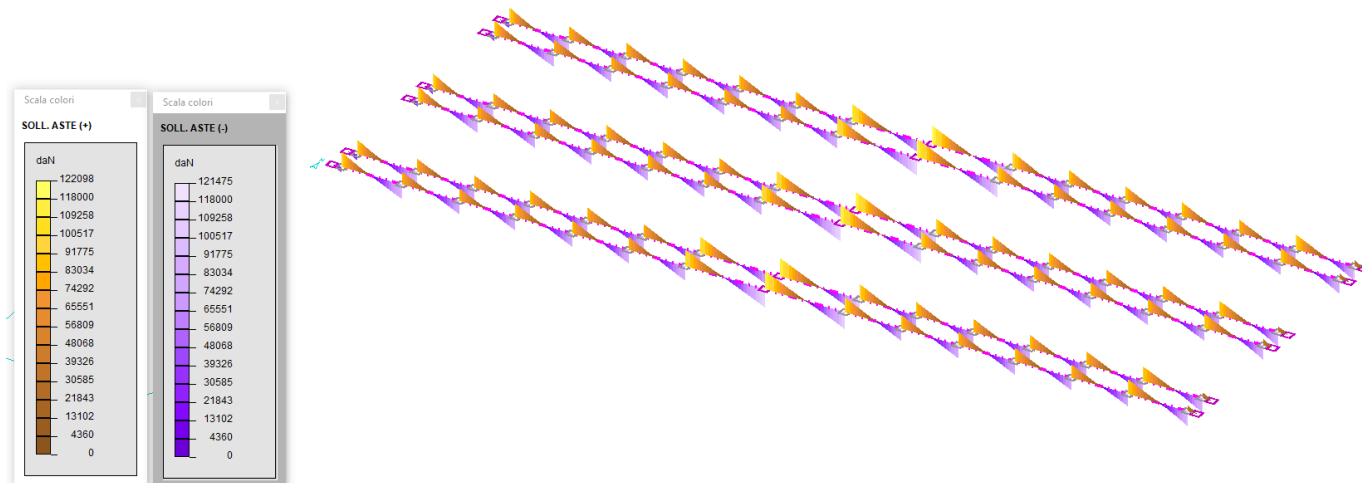


Figura 33 – SLU Ty

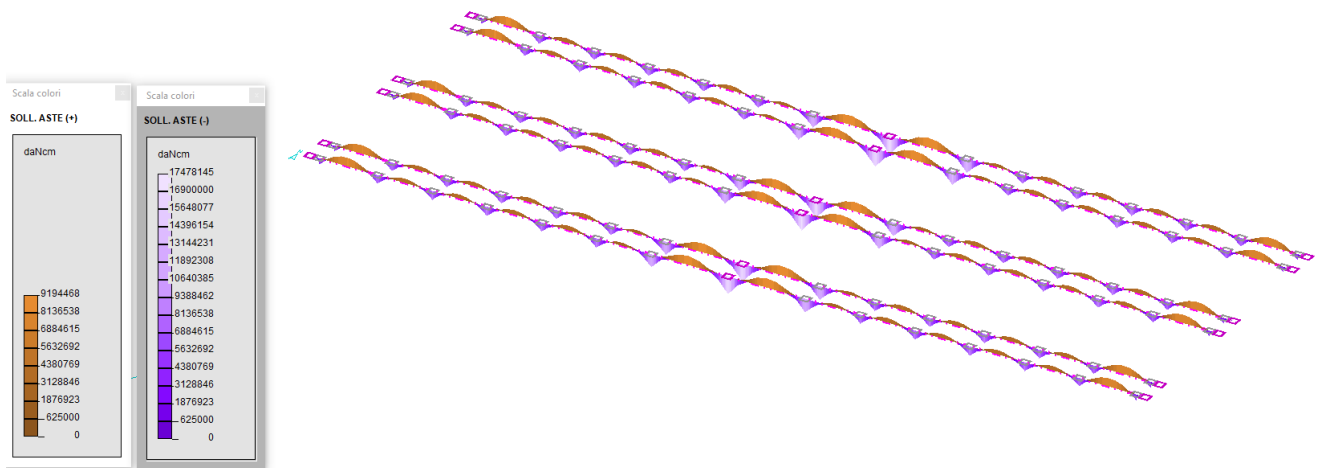


Figura 34 – SLU Mz

Si riportano di seguito le sollecitazioni agenti sulle travi di fondazione esistenti nell'involuppo dei casi SLV (casi 8, 9).

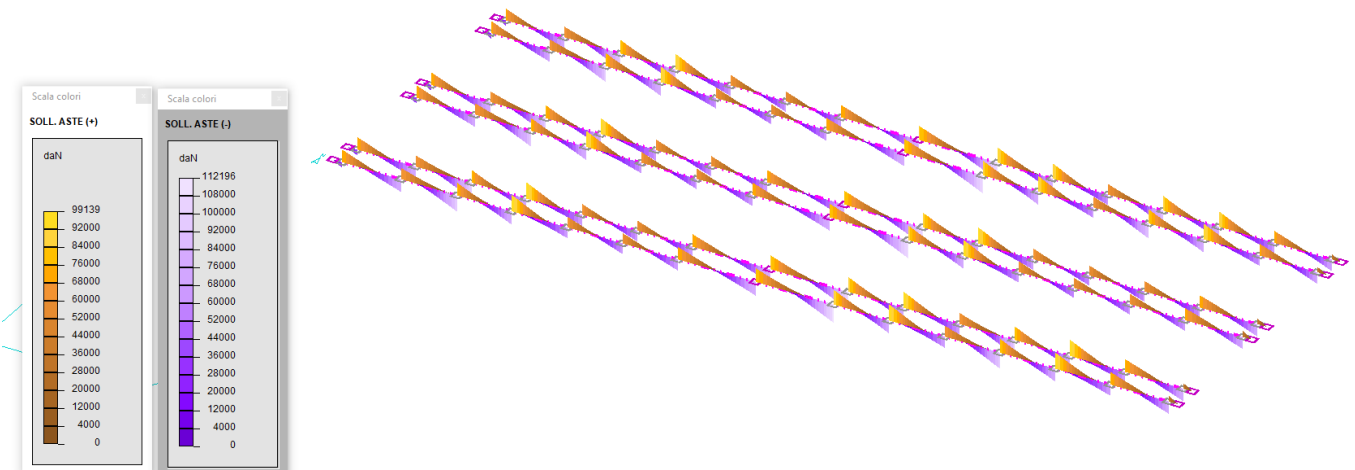


Figura 7 – SLV Ty

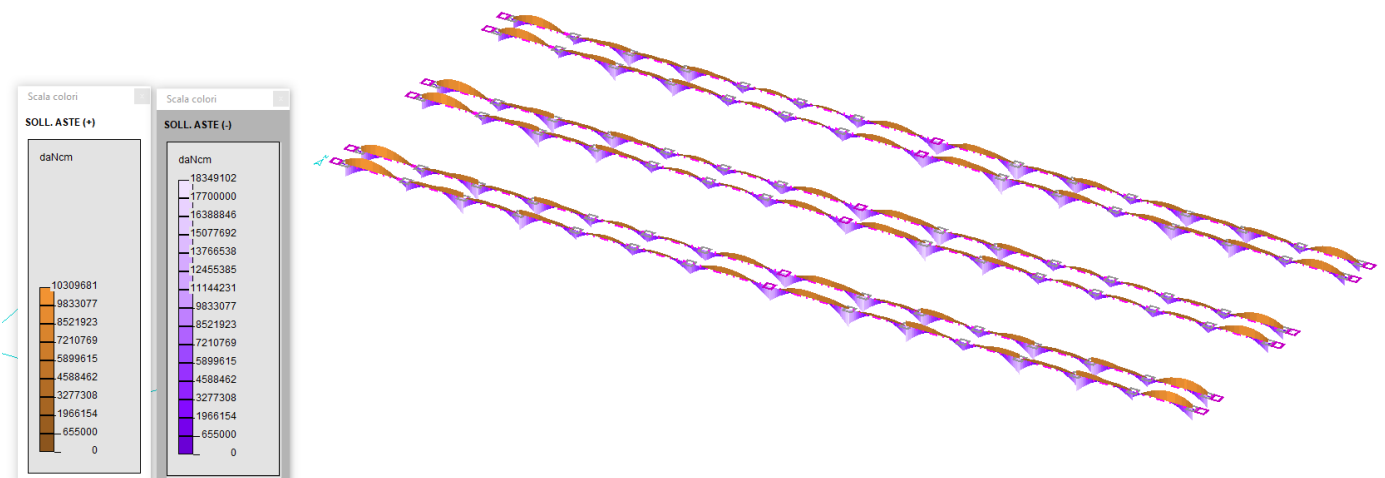


Figura 36 – SLV Mz

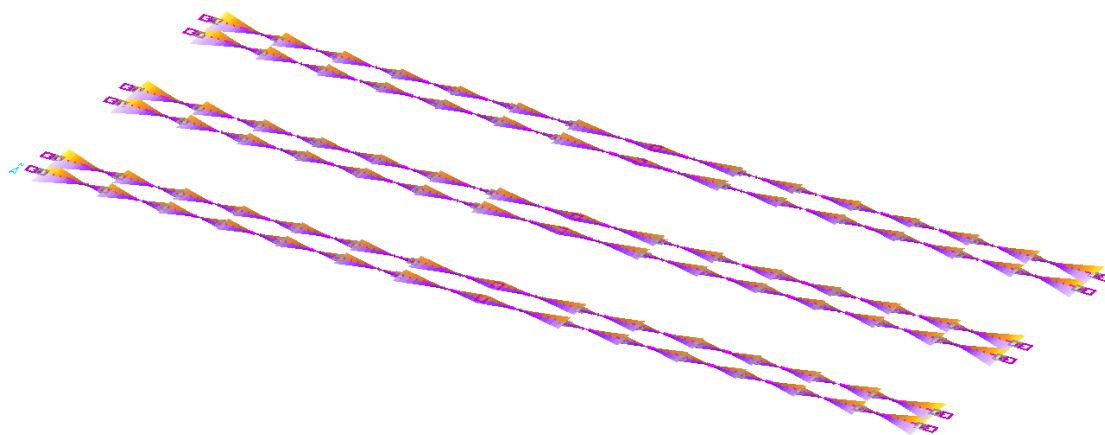
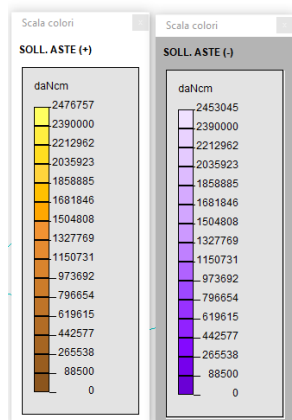


Figura 37 – SLV Mt

3.5.1. Fondazione filo B, C, D

3.5.1.1. VERIFICHE STRUTTURALI

La sezione a T rovescia della trave di fondazione risulta armata con 15 Φ 16+10 Φ 16 inferiori e 9 Φ 20 superiori agli appoggi, e con 10 Φ 16 inferiori e 9 Φ 20 superiori in campata, mentre l'armatura a taglio nella parte centrale è costituita da staffe Φ 20/20 a 4 braccia; per la verifica a taglio sono state considerate staffe Φ 20/40 a 4 braccia

Si riporta di seguito la verifica a flessione e taglio della trave di fondazione più sollecitata eseguita con l'applicativo "trave continua" di DOLMEN.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 14 - Travata T14 (fondazione)
 Metodo di verifica : stati limite (NTC18). ->
 Duttilità : non prevista (struttura non dissipativa).
 : dettagli costruttivi del capitolo 7 non attivi.
 Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm²; deform. %.
 Unita' particolari : fessure [wk]:mm - ferri:mm e cm² - sezioni:cm e derivate.
 Copriferri (assi) : longitudinali= 3 ; staffe= 2

MATERIALI

CLS : Rck =300. ; fck=249. ; fctk= 17.9; fctm= 25.6; Ec= 314472. ;
 gc =1.7 ; fcd=124.5; fbd= 23.7; fctd= 10.5; Ecd=.2% (limit.elastico)
 ACCIAIO : B450C; ftk=5175. ; fyk=4500. ; Es=2100000. ;
 gs =1.38; fyd=3260.9; ftd(k*fyd)=3750. ; fud=3700.1; Eud=.16% (limit.elastico)

TENSIONI E FESSURE MASSIME IN ESERCIZIO

GRUPPO : ordinario.
 CLS : Scls(rara)=149.4; Scls(quasi permanente)=112. ; fbd(esercizio)= 23.7
 ACCIAIO : Sacc(rara)=3600.; Coeff.Omogeneizzazione= 15
 FESSURE : wmax(fre.)=.4 ; wmax(q.p.)=.3 [4.1.2.2.4.5];

kt=.4 [EN 1992-1 7.3.4].

CASI DI CARICO DA MODELLO 3D

Nome	Descrizione	Sest
1.	SLU SENZA SISMA	1.
4.	SLU con SISMAX PRINC16	
5.	SLU con SISMAY PRINC16	
8.	SLU FON con SISMAX P16	
9.	SLU FON con SISMAY P16	

RARE			FREQUENTI			QUASI PERMANENTI		
Nome	Descrizione	Sest	Nome	Descrizione	Sest	Nome	Descrizione	Sest
10.	Rara	1.	11.	Frequente	1.	12.	Quasi Perm	1.

<-

SEZIONI UTILIZZATE

3) A T rovescio: 261/100X150/75; A=27075.; Jg=43192618.; E=314471.6

DESCRIZIONE CAMPATE

Cam.	Descriz.	S.ini	Sez.	S.fin	Incl.	L.assi	L.net.	lambda	K	r.Ar.	lam.max
1	A6992	3	3	3	0	100.	0.	.667	.4	1.	8.
2	A6993	3	3	3	0	637.	465.	4.248	1.5	3.361	178.688
3	A6994	3	3	3	0	605.	460.	4.035	1.5	1.474	78.397
4	A6995	3	3	3	0	595.	450.	3.965	1.5	1.844	98.042
5	A6996	3	3	3	0	600.	455.	4.	1.5	2.187	116.298
6	A6997	3	3	3	0	600.	455.	4.	1.5	2.405	127.884
7	A6998	3	3	3	0	600.	455.	4.	1.5	1.752	93.152
8	A6999	3	3	3	0	842.	697.	5.613	1.5	1.272	67.633
9	A7000	3	3	3	0	848.	703.	5.656	1.5	1.777	94.482
10	A7001	3	3	3	0	600.	455.	4.	1.5	2.078	110.511
11	A7002	3	3	3	0	601.	456.	4.008	1.5	2.214	117.727
12	A7003	3	3	3	0	599.	454.	3.992	1.5	1.603	85.222
13	A7004	3	3	3	0	600.	455.	4.	1.5	2.454	130.502
14	A7005	3	3	3	0	600.	455.	4.	1.5	2.177	115.766
15	A7006	3	3	3	0	628.	455.	4.183	1.5	3.578	190.228
16	A7007	3	3	3	0	100.	0.	.667	.4	1.	8.

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

Progressive	SE	Ar	Msd	Epsc	Epsac	Mrd	Epsc	Epsac	Cam	x/d	Mr/Ms	VE	
33.	33.	3.	2.	0.	0.	0.	-13026075	!-.024	.155	2.	.132	***	SI
67.	67.	3.	2.	2000038	!-.005	.014	22185497	!-.058	.155	2.	.273	11.09	SI
100.	100.	3.	3.	2000038	!-.004	.01	31165810	!-.065	.155	2.	.296	15.58	SI
> 100.	0.	3.	3.	-4875251	!-.006	.029	-25717559	!-.034	.155	2.	.181	5.275	SI
100.	0.	3.	3.	9273645	!-.019	.046	31165810	!-.065	.155	2.	.296	3.361	SI
183.	83.	3.	2.	-7648371	!-.014	.091	-13026075	!-.024	.155	2.	.132	1.703	SI
225.	125.	3.	5.	5576173	!-.02	.094	9169566	!-.032	.155	2.	.173	1.644	SI
250.	150.	3.	5.	4075987	!-.014	.069	9169566	!-.032	.155	2.	.173	2.25	SI
250.	150.	3.	5.	4075987	!-.014	.069	9169566	!-.032	.155	2.	.173	2.25	SI
266.	166.	3.	5.	3332490	!-.012	.056	9169566	!-.032	.155	2.	.173	2.752	SI
312.	212.	3.	5.	1221062	!-.004	.021	9169566	!-.032	.155	2.	.173	7.51	SI
358.	258.	3.	5.	-8749973	!-.017	.105	-12943525	!-.026	.155	2.	.142	1.479	SI
587.	487.	3.	5.	1783016	!-.006	.03	9169566	!-.032	.155	2.	.173	5.143	SI
587.	487.	3.	5.	1783016	!-.006	.03	9169566	!-.032	.155	2.	.173	5.143	SI
599.	499.	3.	5.	2324033	!-.008	.039	9169566	!-.032	.155	2.	.173	3.946	SI
632.	532.	3.	5.	5216872	!-.018	.088	9169566	!-.032	.155	2.	.173	1.758	SI
671.	571.	3.	2.	8665101	!-.022	.06	22185497	!-.058	.155	2.	.273	2.56	SI

704. | 604. | 3. | 4. | -784111. | -.001 | .005 | -25599516 | -.036 | .155 | 2. | .187 | 32.65 | SI |
 737. | 637. | 3. | 3. | 8665101. | -.017 | .043 | 31165810. | -.065 | .155 | 2. | .296 | 3.597 | SI |
 > 737. | 0. | 3. | 3. | -456828. | -.001 | .003 | -25717559 | -.034 | .155 | 2. | .181 | 56.3 | SI |
 737. | 0. | 3. | 3. | 8415259. | -.017 | .042 | 31165810. | -.065 | .155 | 2. | .296 | 3.703 | SI |
 803. | 66. | 3. | 2. | -2081263. | -.004 | .025 | -13026075 | -.024 | .155 | 2. | .132 | 6.259 | SI |
 843. | 106. | 3. | 5. | 6124406. | -.021 | .104 | 9169566. | -.032 | .155 | 2. | .173 | 1.497 | SI |
 876. | 139. | 3. | 5. | 4202530. | -.015 | .071 | 9169566. | -.032 | .155 | 2. | .173 | 2.182 | SI |
 887. | 150. | 3. | 5. | 3680304. | -.013 | .062 | 9169566. | -.032 | .155 | 2. | .173 | 2.492 | SI |
 887. | 150. | 3. | 5. | 3680304. | -.013 | .062 | 9169566. | -.032 | .155 | 2. | .173 | 2.492 | SI |
 931. | 194. | 3. | 5. | 1701537. | -.006 | .029 | 9169566. | -.032 | .155 | 2. | .173 | 5.389 | SI |
 1062. | 324. | 3. | 5. | 590356. | -.002 | .01 | 9169566. | -.032 | .155 | 2. | .173 | 15.53 | SI |
 1105. | 368. | 3. | 5. | 2560917. | -.009 | .043 | 9169566. | -.032 | .155 | 2. | .173 | 3.581 | SI |
 1149. | 412. | 3. | 5. | 5065126. | -.018 | .086 | 9169566. | -.032 | .155 | 2. | .173 | 1.81 | SI |
 1192. | 455. | 3. | 2. | -4751621. | -.008 | .057 | -13026075 | -.024 | .155 | 2. | .132 | 2.741 | SI |
 1276. | 539. | 3. | 2. | 15046578. | -.039 | .105 | 22185497. | -.058 | .155 | 2. | .273 | 1.474 | SI |
 1342. | 605. | 3. | 3. | -4247407. | -.006 | .026 | -25717559 | -.034 | .155 | 2. | .181 | 6.055 | SI |
 1342. | 605. | 3. | 3. | 15046578. | -.031 | .075 | 31165810. | -.065 | .155 | 2. | .296 | 2.071 | SI |
 > 1342. | 0. | 3. | 3. | -1789239. | -.002 | .011 | -25717559 | -.034 | .155 | 2. | .181 | 14.37 | SI |
 1342. | 0. | 3. | 3. | 10811149. | -.022 | .054 | 31165810. | -.065 | .155 | 2. | .296 | 2.883 | SI |
 1409. | 66. | 3. | 2. | -2806834. | -.005 | .033 | -13026075 | -.024 | .155 | 2. | .132 | 4.641 | SI |
 1448. | 106. | 3. | 5. | 7967547. | -.028 | .135 | 9169566. | -.032 | .155 | 2. | .173 | 1.151 | SI |
 1481. | 139. | 3. | 5. | 5581951. | -.02 | .094 | 9169566. | -.032 | .155 | 2. | .173 | 1.643 | SI |
 1492. | 150. | 3. | 5. | 4958060. | -.017 | .084 | 9169566. | -.032 | .155 | 2. | .173 | 1.849 | SI |
 1492. | 150. | 3. | 5. | 4958060. | -.017 | .084 | 9169566. | -.032 | .155 | 2. | .173 | 1.849 | SI |
 1535. | 192. | 3. | 5. | 2664476. | -.009 | .045 | 9169566. | -.032 | .155 | 2. | .173 | 3.441 | SI |
 1577. | 234. | 3. | 5. | 721057. | -.002 | .012 | 9169566. | -.032 | .155 | 2. | .173 | 12.72 | SI |
 1619. | 276. | 3. | 5. | -4104671. | -.008 | .049 | -12943525 | -.026 | .155 | 2. | .142 | 3.153 | SI |
 1703. | 360. | 3. | 5. | 1369979. | -.005 | .023 | 9169566. | -.032 | .155 | 2. | .173 | 6.693 | SI |
 1745. | 403. | 3. | 5. | 3438487. | -.012 | .058 | 9169566. | -.032 | .155 | 2. | .173 | 2.667 | SI |
 1787. | 445. | 3. | 5. | 5868521. | -.021 | .099 | 9169566. | -.032 | .155 | 2. | .173 | 1.563 | SI |
 1787. | 445. | 3. | 5. | 5868521. | -.021 | .099 | 9169566. | -.032 | .155 | 2. | .173 | 1.563 | SI |
 1799. | 456. | 3. | 5. | 6529365. | -.023 | .111 | 9169566. | -.032 | .155 | 2. | .173 | 1.404 | SI |
 1871. | 529. | 3. | 2. | 12031604. | -.031 | .084 | 22185497. | -.058 | .155 | 2. | .273 | 1.844 | SI |
 1937. | 595. | 3. | 3. | -1759251. | -.002 | .011 | -25717559 | -.034 | .155 | 2. | .181 | 14.62 | SI |
 1937. | 595. | 3. | 3. | 12031604. | -.024 | .06 | 31165810. | -.065 | .155 | 2. | .296 | 2.59 | SI |
 > 1937. | 0. | 3. | 3. | -3659921. | -.005 | .022 | -25717559 | -.034 | .155 | 2. | .181 | 7.027 | SI |
 1937. | 0. | 3. | 3. | 14248630. | -.029 | .071 | 31165810. | -.065 | .155 | 2. | .296 | 2.187 | SI |
 2003. | 66. | 3. | 2. | -4225434. | -.008 | .05 | -13026075 | -.024 | .155 | 2. | .132 | 3.083 | SI |
 2003. | 66. | 3. | 2. | 14248630. | -.037 | .1 | 22185497. | -.058 | .155 | 2. | .273 | 1.557 | SI |
 2076. | 139. | 3. | 5. | 8067529. | -.028 | .137 | 9169566. | -.032 | .155 | 2. | .173 | 1.137 | SI |
 2087. | 150. | 3. | 5. | 7310010. | -.026 | .124 | 9169566. | -.032 | .155 | 2. | .173 | 1.254 | SI |
 2087. | 150. | 3. | 5. | 7310010. | -.026 | .124 | 9169566. | -.032 | .155 | 2. | .173 | 1.254 | SI |
 2130. | 193. | 3. | 5. | 4481670. | -.016 | .076 | 9169566. | -.032 | .155 | 2. | .173 | 2.046 | SI |
 2173. | 236. | 3. | 5. | 2074188. | -.007 | .035 | 9169566. | -.032 | .155 | 2. | .173 | 4.421 | SI |
 2216. | 279. | 3. | 5. | -4444016. | -.009 | .053 | -12943525 | -.026 | .155 | 2. | .142 | 2.913 | SI |
 2216. | 279. | 3. | 5. | 222928. | -.001 | .004 | 9169566. | -.032 | .155 | 2. | .173 | 41.13 | SI |
 2301. | 364. | 3. | 5. | 42605. | 0. | .001 | 9169566. | -.032 | .155 | 2. | .173 | 215.2 | SI |
 2344. | 407. | 3. | 5. | 1729602. | -.006 | .029 | 9169566. | -.032 | .155 | 2. | .173 | 5.302 | SI |
 2387. | 450. | 3. | 5. | 3684305. | -.013 | .062 | 9169566. | -.032 | .155 | 2. | .173 | 2.489 | SI |
 2387. | 450. | 3. | 5. | 3684305. | -.013 | .062 | 9169566. | -.032 | .155 | 2. | .173 | 2.489 | SI |
 2399. | 461. | 3. | 5. | 4209759. | -.015 | .071 | 9169566. | -.032 | .155 | 2. | .173 | 2.178 | SI |
 2537. | 600. | 3. | 3. | 8798632. | -.018 | .044 | 31165810. | -.065 | .155 | 2. | .296 | 3.542 | SI |
 > 2537. | 0. | 3. | 3. | 8746229. | -.018 | .043 | 31165810. | -.065 | .155 | 2. | .296 | 3.563 | SI |
 2603. | 66. | 3. | 2. | -728073. | -.001 | .009 | -13026075 | -.024 | .155 | 2. | .132 | 17.89 | SI |
 2676. | 139. | 3. | 5. | 3061899. | -.011 | .052 | 9169566. | -.032 | .155 | 2. | .173 | 2.995 | SI |
 2687. | 150. | 3. | 5. | 2540563. | -.009 | .043 | 9169566. | -.032 | .155 | 2. | .173 | 3.609 | SI |
 2687. | 150. | 3. | 5. | 2540563. | -.009 | .043 | 9169566. | -.032 | .155 | 2. | .173 | 3.609 | SI |
 2730. | 193. | 3. | 5. | 628116. | -.002 | .011 | 9169566. | -.032 | .155 | 2. | .173 | 14.6 | SI |
 2816. | 279. | 3. | 5. | -4410355. | -.009 | .053 | -12943525 | -.026 | .155 | 2. | .142 | 2.935 | SI |
 2944. | 407. | 3. | 5. | 1320977. | -.005 | .022 | 9169566. | -.032 | .155 | 2. | .173 | 6.942 | SI |
 2987. | 450. | 3. | 5. | 3124024. | -.011 | .053 | 9169566. | -.032 | .155 | 2. | .173 | 2.935 | SI |
 2987. | 450. | 3. | 5. | 3124024. | -.011 | .053 | 9169566. | -.032 | .155 | 2. | .173 | 2.935 | SI |

2999. |461. |3. |5. | 3617041. |-.013| .061| 9169566. |-.032| .155|2. | .173|2.535|SI|
 3071. |534. |3. |2. | 9224046. |-.023| .064|22185497. |-.058| .155|2. | .273|2.405|SI|
 3104. |567. |3. |4. | -131195. |0. | .001| -25599516|-.036| .155|2. | .187|195.1|SI|
 3137. |600. |3. |3. | 9224046. |-.019| .046|31165810. |-.065| .155|2. | .296|3.379|SI|
 >3137. | 0. |3. |3. | 8903772. |-.018| .044|31165810. |-.065| .155|2. | .296|3.5 |SI|
 3203. | 66. |3. |2. | -384153. |-.001| .005| -13026075|-.024| .155|2. | .132|33.91|SI|
 3243. |106. |3. |5. | 5934275. |-.021| .1 | 9169566. |-.032| .155|2. | .173|1.545|SI|
 3276. |139. |3. |5. | 3443060. |-.012| .058| 9169566. |-.032| .155|2. | .173|2.663|SI|
 3287. |150. |3. |5. | 2935075. |-.01 | .05 | 9169566. |-.032| .155|2. | .173|3.124|SI|
 3287. |150. |3. |5. | 2935075. |-.01 | .05 | 9169566. |-.032| .155|2. | .173|3.124|SI|
 3330. |193. |3. |5. | 1069751. |-.004| .018| 9169566. |-.032| .155|2. | .173|8.572|SI|
 3416. |279. |3. |5. | -3099486. |-.006| .037| -12943525|-.026| .155|2. | .142|4.176|SI|
 3501. |364. |3. |5. | 708171. |-.002| .012| 9169566. |-.032| .155|2. | .173|12.95|SI|
 3544. |407. |3. |5. | 2787482. |-.01 | .047| 9169566. |-.032| .155|2. | .173|3.29 |SI|
 3587. |450. |3. |5. | 5580170. |-.02 | .094| 9169566. |-.032| .155|2. | .173|1.643|SI|
 3587. |450. |3. |5. | 5580170. |-.02 | .094| 9169566. |-.032| .155|2. | .173|1.643|SI|
 3599. |461. |3. |5. | 6329532. |-.022| .107| 9169566. |-.032| .155|2. | .173|1.449|SI|
 3632. |494. |3. |2. | -316160. |-.001| .004| -13026075|-.024| .155|2. | .132|41.2 |SI|
 3671. |534. |3. |2. |12663192. |-.032| .088|22185497. |-.058| .155|2. | .273|1.752|SI|
 3737. |600. |3. |3. |12663192. |-.026| .063|31165810. |-.065| .155|2. | .296|2.461|SI|
 >3737. | 0. |3. |3. |13129052. |-.027| .065|31165810. |-.065| .155|2. | .296|2.374|SI|
 3803. | 66. |3. |2. | -189792. |0. | .002| -13026075|-.024| .155|2. | .132|68.63|SI|
 3876. |139. |3. |5. | 6148817. |-.022| .104| 9169566. |-.032| .155|2. | .173|1.491|SI|
 3887. |150. |3. |5. | 5061570. |-.018| .086| 9169566. |-.032| .155|2. | .173|1.812|SI|
 3887. |150. |3. |5. | 5061570. |-.018| .086| 9169566. |-.032| .155|2. | .173|1.812|SI|
 3932. |195. |3. |5. | 1852376. |-.006| .031| 9169566. |-.032| .155|2. | .173|4.95 |SI|
 4158. |421. |3. |5. | -9007935. |-.018| .108| -12943525|-.026| .155|2. | .142|1.437|SI|
 4339. |602. |3. |5. | 1615913. |-.006| .027| 9169566. |-.032| .155|2. | .173|5.675|SI|
 4384. |647. |3. |5. | 4619775. |-.016| .078| 9169566. |-.032| .155|2. | .173|1.985|SI|
 4474. |736. |3. |2. | -138633. |0. | .002| -13026075|-.024| .155|2. | .132|93.96|SI|
 4513. |776. |3. |2. |17441356. |-.045| .122|22185497. |-.058| .155|2. | .273|1.272|SI|
 4579. |842. |3. |3. |17441356. |-.036| .087|31165810. |-.065| .155|2. | .296|1.787|SI|
 >4579. | 0. |3. |3. |17538749. |-.036| .087|31165810. |-.065| .155|2. | .296|1.777|SI|
 4645. | 66. |3. |2. |17538749. |-.046| .123|22185497. |-.058| .155|2. | .273|1.265|SI|
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TAGLIO:

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Progressive|Se| vsd | VRd | VRcd | VRsd Asw s ctgT|Ve|
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 6629. | 601. | 3. | 89729. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 >6629. | 0. | 3. | -89229. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 6662. | 33. | 3. | -79333. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 6695. | 66. | 3. | -69437. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 6701. | 72. | 3. | -67537. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 6734. | 106. | 3. | -57631. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 6767. | 139. | 3. | -47726. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 6779. | 150. | 3. | -44337. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 6779. | 150. | 3. | -44337. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 6821. | 193. | 3. | -33015. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 6864. | 235. | 3. | -22939. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 6907. | 278. | 3. | -16525. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 6907. | 278. | 3. | 8927. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 6949. | 321. | 3. | -10386. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 6949. | 321. | 3. | 19216. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 6992. | 363. | 3. | -4522. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 6992. | 363. | 3. | 29788. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 7035. | 406. | 3. | 40701. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 7077. | 449. | 3. | 51730. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 7077. | 449. | 3. | 51730. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 7089. | 460. | 3. | 54734. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 7122. | 493. | 3. | 63497. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 7155. | 526. | 3. | 72261. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 7161. | 533. | 3. | 73949. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 7194. | 566. | 3. | 82737. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 7227. | 599. | 3. | 91526. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 >7227. | 0. | 3. | -91283. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 7261. | 33. | 3. | -81386. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 7294. | 66. | 3. | -71488. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 7300. | 73. | 3. | -69588. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 7333. | 106. | 3. | -61257. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 7366. | 139. | 3. | -53055. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |
 7377. | 150. | 3. | -50240. | 41117. | 305654. | 304948. | 12.57 | 40. | 2.25 | SI |

7377. |150. |3. | -50240. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7420. |193. |3. | -40402. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7463. |236. |3. | -30797. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7463. |236. |3. | 4180. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7506. |279. |3. | -21891. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7506. |279. |3. | 11535. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7549. |321. |3. | -13482. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7549. |321. |3. | 19335. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7592. |364. |3. | -5568. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7592. |364. |3. | 27580. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7635. |407. |3. | 36480. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7677. |450. |3. | 45599. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7677. |450. |3. | 45599. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7689. |461. |3. | 48419. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7722. |494. |3. | 56639. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7755. |527. |3. | 64965. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7761. |534. |3. | 66812. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7794. |567. |3. | 76433. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7827. |600. |3. | 86054. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 >7827. | 0. |3. | -92990. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7861. | 33. |3. | -84542. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7894. | 66. |3. | -76094. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7900. | 72. |3. | -74472. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7933. |106. |3. | -66001. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7966. |139. |3. | -57529. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7977. |150. |3. | -54622. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 7977. |150. |3. | -54622. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8020. |193. |3. | -43881. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8020. |193. |3. | 2230. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8063. |236. |3. | -33246. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8063. |236. |3. | 7392. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8106. |279. |3. | -22930. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8106. |279. |3. | 12825. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8149. |321. |3. | -12883. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8149. |321. |3. | 18497. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8192. |364. |3. | -3104. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8192. |364. |3. | 24407. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8235. |407. |3. | 32691. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8277. |450. |3. | 41766. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8277. |450. |3. | 41766. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8289. |461. |3. | 45001. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8322. |494. |3. | 54427. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8355. |528. |3. | 63852. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8361. |534. |3. | 65659. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8394. |567. |3. | 75069. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8427. |600. |3. | 84479. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 >8427. | 0. |3. | -97676. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8461. | 33. |3. | -88262. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8494. | 66. |3. | -78849. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8500. | 73. |3. | -77042. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8533. |106. |3. | -67588. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8566. |139. |3. | -58125. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8577. |150. |3. | -54877. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8577. |150. |3. | -54877. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8622. |194. |3. | -42017. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8666. |239. |3. | -29351. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8711. |283. |3. | -19150. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8755. |328. |3. | -9284. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8755. |328. |3. | 7147. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8800. |372. |3. | -134. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8800. |372. |3. | 16105. | 41117. |305654. |304948. |12.57|40. |2.25|SI|
 8844. |417. |3. | 27014. | 41117. |305654. |304948. |12.57|40. |2.25|SI|

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8889.|461.|3.| 39488.| 41117.|305654.|304948.|12.57|40.| 2.25|SI|
8905.|478.|3.| 44413.| 41117.|305654.|304948.|12.57|40.| 2.25|SI|
8905.|478.|3.| 44413.| 41117.|305654.|304948.|12.57|40.| 2.25|SI|
8930.|503.|3.| 52864.| 41117.|305654.|304948.|12.57|40.| 2.25|SI|
8955.|528.|3.| 61314.| 41117.|305654.|304948.|12.57|40.| 2.25|SI|
8972.|544.|3.| 67035.| 41117.|305654.|304948.|12.57|40.| 2.25|SI|
8989.|561.|3.| 73048.| 41117.|305654.|304948.|12.57|40.| 2.25|SI|
9022.|594.|3.| 85014.| 41117.|305654.|304948.|12.57|40.| 2.25|SI|
9055.|628.|3.| 96980.| 41117.|305654.|304948.|12.57|40.| 2.25|SI|
>9055.| 0.|3.|-39279.| 41117.|305654.|304948.|12.57|40.| 2.25|SI|
9088.| 33.|3.|-26554.| 41117.|305654.|304948.|12.57|40.| 2.25|SI|
9122.| 67.|3.|-13459.| 41117.|305654.|304948.|12.57|40.| 2.25|SI|
9155.|100.|3.| 0.| 41117.|305654.|304948.|12.57|40.| 2.25|SI|
9155.|100.|3.| 0.| 41117.|305654.|304948.|12.57|40.| 2.25|SI|

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VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

Progressive	Se	Ar	Momento	Sc	Is	Sacc	As	hc,ef	Eps%	Sr,max	wd	Vel
> 0.	0.	3.	1.	0.	0.	0.	0.	0.	0.	0.	0.	SI
100.	100.	3.	3.	1473321.	-3.9	153.7	70.37	7.5	.0044	15.05	.007	SI
404.	304.	3.	5.	-6042220.	-15.4	1517.6	28.27	7.5	.0561	15.82	.089	SI
737.	637.	3.	3.	6149044.	-16.3	641.3	70.37	7.5	.0183	15.05	.028	SI
> 737.	0.	3.	3.	5979350.	-15.9	623.6	70.37	7.5	.0178	15.05	.027	SI
843.	106.	3.	5.	788461.	-3.6	279.9	20.11	7.5	.008	163.81	.131	SI
1018.	281.	3.	5.	-3041267.	-7.8	763.9	28.27	7.5	.0218	15.82	.035	SI
1342.	605.	3.	3.	6557887.	-17.4	683.9	70.37	7.5	.0195	15.05	.029	SI
>1342.	0.	3.	3.	5957264.	-15.8	621.3	70.37	7.5	.0178	15.05	.027	SI
1448.	106.	3.	5.	747733.	-3.5	265.4	20.11	7.5	.0076	163.81	.124	SI
1619.	276.	3.	5.	-2951208.	-7.5	741.3	28.27	7.5	.0212	15.82	.034	SI
1937.	595.	3.	3.	6717963.	-17.8	700.6	70.37	7.5	.02	15.05	.03	SI
>1937.	0.	3.	3.	6557575.	-17.4	683.9	70.37	7.5	.0195	15.05	.029	SI
2259.	321.	3.	5.	-3092734.	-7.9	776.8	28.27	7.5	.0222	15.82	.035	SI
2537.	600.	3.	3.	6335942.	-16.8	660.8	70.37	7.5	.0189	15.05	.028	SI
>2537.	0.	3.	3.	6294306.	-16.7	656.4	70.37	7.5	.0188	15.05	.028	SI
2816.	279.	3.	5.	-3174248.	-8.1	797.3	28.27	7.5	.0228	15.82	.036	SI
3137.	600.	3.	3.	6643006.	-17.6	692.8	70.37	7.5	.0198	15.05	.03	SI
>3137.	0.	3.	3.	6411135.	-17.	668.6	70.37	7.5	.0191	15.05	.029	SI
3416.	279.	3.	5.	-2229664.	-5.7	560.	28.27	7.5	.016	15.82	.025	SI
3599.	461.	3.	5.	1433278.	-6.6	508.7	20.11	7.5	.0145	163.81	.238	SI
3704.	567.	3.	2.	7028486.	-23.2	1027.1	50.27	7.5	.0293	18.07	.053	SI
3737.	600.	3.	3.	9106756.	-24.2	949.8	70.37	7.5	.0284	15.05	.043	SI
>3737.	0.	3.	3.	9440022.	-25.1	984.5	70.37	7.5	.0301	15.05	.045	SI
4158.	421.	3.	5.	-6476156.	-16.6	1626.6	28.27	7.5	.0613	15.82	.097	SI
4579.	842.	3.	3.	12528792.	-33.3	1306.6	70.37	7.5	.0454	15.05	.068	SI
>4579.	0.	3.	3.	12598217.	-33.4	1313.9	70.37	7.5	.0458	15.05	.069	SI
5003.	424.	3.	5.	-6612279.	-16.9	1660.8	28.27	7.5	.0629	15.82	.1	SI
5427.	848.	3.	3.	9864747.	-26.2	1028.8	70.37	7.5	.0322	15.05	.048	SI
>5427.	0.	3.	3.	9601518.	-25.5	1001.4	70.37	7.5	.0309	15.05	.046	SI
5461.	33.	3.	4.	7459000.	-22.	1075.4	50.27	7.5	.0307	18.07	.056	SI
5749.	321.	3.	5.	-2274660.	-5.8	571.3	28.27	7.5	.0163	15.82	.026	SI
6027.	600.	3.	3.	5878918.	-15.6	613.1	70.37	7.5	.0175	15.05	.026	SI
>6027.	0.	3.	3.	6507198.	-17.3	678.6	70.37	7.5	.0194	15.05	.029	SI
6350.	322.	3.	5.	-3174790.	-8.1	797.4	28.27	7.5	.0228	15.82	.036	SI
6629.	601.	3.	3.	6339367.	-16.8	661.1	70.37	7.5	.0189	15.05	.028	SI
>6629.	0.	3.	3.	6383765.	-16.9	665.8	70.37	7.5	.019	15.05	.029	SI
6907.	278.	3.	5.	-3021872.	-7.7	759.	28.27	7.5	.0217	15.82	.034	SI
7194.	566.	3.	4.	4734261.	-14.	682.6	50.27	7.5	.0195	18.07	.035	SI
7227.	599.	3.	3.	6622330.	-17.6	690.7	70.37	7.5	.0197	15.05	.03	SI
>7227.	0.	3.	3.	6809652.	-18.1	710.2	70.37	7.5	.0203	15.05	.031	SI
7261.	33.	3.	4.	4904565.	-14.5	707.1	50.27	7.5	.0202	18.07	.037	SI

7549.	321.	3.	5.		-3059076.!	-7.8	768.4	28.27	7.5	.022	15.82	.035 SI	
7827.	600.	3.	3.		5925409.	-15.7	618.	70.37	7.5	.0177	15.05	.027 SI	
>7827.		0.	3.	3.		6498656.!	-17.3	677.8	70.37	7.5	.0194	15.05	.029 SI
7861.		33.	3.	2.		4660569.	-15.4	681.1	50.27	7.5	.0195	18.07	.035 SI
8149.	321.	3.	5.		-2997191.!	-7.7	752.8	28.27	7.5	.0215	15.82	.034 SI	
8427.	600.	3.	3.		5819307.	-15.5	606.9	70.37	7.5	.0173	15.05	.026 SI	
>8427.		0.	3.	3.		5975397.!	-15.9	623.2	70.37	7.5	.0178	15.05	.027 SI
8755.	328.	3.	5.		-5890460.!	-15.1	1479.5	28.27	7.5	.0543	15.82	.086 SI	
9055.	628.	3.	7.		4022896.	-10.7	419.6	70.37	7.5	.012	15.05	.018 SI	
>9055.		0.	3.	7.		1467546.!	-3.9	153.1	70.37	7.5	.0044	15.05	.007 SI
9155.	100.	3.	1.		0.!	0.	0.	0.	0.	0.	0.	0. SI	

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

Progressive	Se	Ar	Momento	Sc	ls	Sacc	As	hc,ef	Eps%	Sr,max	Wd	Ve	
> 0.		0.	3.	1.		0.!	0.	0.	0.	0.	0.	0. SI	
100.	100.	3.	3.		1392953.!	-3.7	145.3	70.37	7.5	.0042	15.05	.006 SI	
404.	304.	3.	5.		-5664857.!	-14.5	1422.9	28.27	7.5	.0516	15.82	.082 SI	
737.	637.	3.	3.		5510628.!	-14.6	574.7	70.37	7.5	.0164	15.05	.025 SI	
> 737.		0.	3.	3.		5365831.	-14.2	559.6	70.37	7.5	.016	15.05	.024 SI
843.	106.	3.	5.		642560.	-3.	228.1	20.11	7.5	.0065	163.81	.107 SI	
1018.	281.	3.	5.		-2822519.!	-7.2	708.9	28.27	7.5	.0203	15.82	.032 SI	
1342.	605.	3.	3.		6007678.!	-16.	626.5	70.37	7.5	.0179	15.05	.027 SI	
>1342.		0.	3.	3.		5450206.	-14.5	568.4	70.37	7.5	.0162	15.05	.024 SI
1448.	106.	3.	5.		686475.	-3.2	243.7	20.11	7.5	.007	163.81	.114 SI	
1619.	276.	3.	5.		-2695847.!	-6.9	677.1	28.27	7.5	.0193	15.82	.031 SI	
1937.	595.	3.	3.		6151265.!	-16.3	641.5	70.37	7.5	.0183	15.05	.028 SI	
>1937.		0.	3.	3.		5996816.!	-15.9	625.4	70.37	7.5	.0179	15.05	.027 SI
2259.	321.	3.	5.		-2829263.!	-7.2	710.6	28.27	7.5	.0203	15.82	.032 SI	
2537.	600.	3.	3.		5803064.	-15.4	605.2	70.37	7.5	.0173	15.05	.026 SI	
>2537.		0.	3.	3.		5758210.	-15.3	600.5	70.37	7.5	.0172	15.05	.026 SI
2816.	279.	3.	5.		-2903031.!	-7.4	729.2	28.27	7.5	.0208	15.82	.033 SI	
3137.	600.	3.	3.		6085664.!	-16.2	634.7	70.37	7.5	.0181	15.05	.027 SI	
>3137.		0.	3.	3.		5869036.	-15.6	612.1	70.37	7.5	.0175	15.05	.026 SI
3416.	279.	3.	5.		-2038776.!	-5.2	512.1	28.27	7.5	.0146	15.82	.023 SI	
3599.	461.	3.	5.		1307006.	-6.	463.9	20.11	7.5	.0133	163.81	.217 SI	
3704.	567.	3.	2.		6420067.	-21.2	938.2	50.27	7.5	.0268	18.07	.048 SI	
3737.	600.	3.	3.		8319274.!	-22.1	867.6	70.37	7.5	.0248	15.05	.037 SI	
>3737.		0.	3.	3.		8620230.	-22.9	899.	70.37	7.5	.026	15.05	.039 SI
4158.	421.	3.	5.		-5916227.!	-15.1	1486.	28.27	7.5	.0546	15.82	.086 SI	
4579.	842.	3.	3.		11436466.!	-30.4	1192.7	70.37	7.5	.04	15.05	.06 SI	
>4579.		0.	3.	3.		11499786.!	-30.5	1199.3	70.37	7.5	.0403	15.05	.061 SI
5003.	424.	3.	5.		-6040755.!	-15.4	1517.3	28.27	7.5	.0561	15.82	.089 SI	
5427.	848.	3.	3.		9011017.	-23.9	939.8	70.37	7.5	.0279	15.05	.042 SI	
>5427.		0.	3.	3.		8773842.!	-23.3	915.	70.37	7.5	.0268	15.05	.04 SI
5461.		33.	3.	4.		6815621.	-20.1	982.6	50.27	7.5	.0281	18.07	.051 SI
5749.	321.	3.	5.		-2079708.!	-5.3	522.4	28.27	7.5	.0149	15.82	.024 SI	
6027.	600.	3.	3.		5380787.	-14.3	561.2	70.37	7.5	.016	15.05	.024 SI	
>6027.		0.	3.	3.		5957168.!	-15.8	621.3	70.37	7.5	.0178	15.05	.027 SI
6350.	322.	3.	5.		-2903956.!	-7.4	729.4	28.27	7.5	.0208	15.82	.033 SI	
6629.	601.	3.	3.		5800539.	-15.4	604.9	70.37	7.5	.0173	15.05	.026 SI	
>6629.		0.	3.	3.		5846185.	-15.5	609.7	70.37	7.5	.0174	15.05	.026 SI
6907.	278.	3.	5.		-2763948.!	-7.1	694.2	28.27	7.5	.0198	15.82	.031 SI	
7194.	566.	3.	4.		4331484.	-12.8	624.5	50.27	7.5	.0178	18.07	.032 SI	
7227.	599.	3.	3.		6058989.!	-16.1	631.9	70.37	7.5	.0181	15.05	.027 SI	
>7227.		0.	3.	3.		6236337.!	-16.6	650.4	70.37	7.5	.0186	15.05	.028 SI
7261.		33.	3.	4.		4493112.	-13.3	647.8	50.27	7.5	.0185	18.07	.033 SI
7549.	321.	3.	5.		-2794919.!	-7.1	702.	28.27	7.5	.0201	15.82	.032 SI	
7827.	600.	3.	3.		5418509.	-14.4	565.1	70.37	7.5	.0161	15.05	.024 SI	
>7827.		0.	3.	3.		5948806.!	-15.8	620.4	70.37	7.5	.0177	15.05	.027 SI
7861.		33.	3.	2.		4263523.	-14.1	623.1	50.27	7.5	.0178	18.07	.032 SI
8149.	321.	3.	5.		-2784547.!	-7.1	699.4	28.27	7.5	.02	15.82	.032 SI	

8427.	600.	3.	3.		5220260.		-13.9		544.4	70.37		7.5		.0156		15.05		.023	SI		
>8427.		0.	3.	3.		5349825.	!	-14.2	!	557.9	70.37		7.5		.0159		15.05		.024	SI	
8755.	328.	3.	5.		-5523815.	!	-14.1		1387.4	!	28.27		7.5		.0499		15.82		.079	!SI	
9055.	628.	3.	7.		3862755.		-10.3		402.9	70.37		7.5		.0115		15.05		.017	SI		
>9055.		0.	3.	7.		1387663.	!	-3.7	!	144.7	!	70.37		7.5		.0041		15.05		.006	!SI

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

Progressive	Se	Ar	Momento	Sc	ls	Sacc	As	hc,ef	Eps%	Sr,max	wd	Ve									
100.	100.	3.	3.		1368980.	!	-3.6	!	142.8	!	70.37		7.5		.0041		15.05		.006	!SI	
404.	304.	3.	5.		-5552313.	!	-14.2	!	1394.6	!	28.27		7.5		.0502		15.82		.079	!SI	
737.	637.	3.	3.		5320317.	!	-14.1		554.9	70.37		7.5		.0159		15.05		.024	SI		
>737.		0.	3.	3.		5182919.		-13.8		540.5	70.37		7.5		.0154		15.05		.023	SI	
843.	106.	3.	5.		599061.		-2.8		212.6	20.11		7.5		.0061		163.81		.1	!SI		
1018.	281.	3.	5.		-2757326.	!	-7.		692.6	!	28.27		7.5		.0198		15.82		.031	SI	
1342.	605.	3.	3.		5843494.	!	-15.5	!	609.4	70.37		7.5		.0174		15.05		.026	SI		
>1342.		0.	3.	3.		5298923.		-14.1		552.6	70.37		7.5		.0158		15.05		.024	SI	
1448.	106.	3.	5.		668145.		-3.1		237.2	20.11		7.5		.0068		163.81		.111	!SI		
1619.	276.	3.	5.		-2619697.	!	-6.7		658.	!	28.27		7.5		.0188		15.82		.03	SI	
1937.	595.	3.	3.		5982653.	!	-15.9	!	623.9	70.37		7.5		.0178		15.05		.027	SI		
>1937.		0.	3.	3.		5829881.	!	-15.5	!	608.	70.37		7.5		.0174		15.05		.026	SI	
2259.	321.	3.	5.		-2750667.	!	-7.		690.9	!	28.27		7.5		.0197		15.82		.031	!SI	
2537.	600.	3.	3.		5644176.		-15.		588.6	70.37		7.5		.0168		15.05		.025	SI		
>2537.		0.	3.	3.		5598109.		-14.9		583.8	70.37		7.5		.0167		15.05		.025	SI	
2816.	279.	3.	5.		-2822294.	!	-7.2		708.9	!	28.27		7.5		.0203		15.82		.032	!SI	
3137.	600.	3.	3.		5919269.	!	-15.7	!	617.3	70.37		7.5		.0176		15.05		.027	SI		
>3137.		0.	3.	3.		5707336.		-15.2		595.2	70.37		7.5		.017		15.05		.026	SI	
3416.	279.	3.	5.		-1981806.	!	-5.1		497.8	28.27		7.5		.0142		15.82		.022	SI		
3599.	461.	3.	5.		1269545.		-5.9		450.6	20.11		7.5		.0129		163.81		.211	!SI		
3704.	567.	3.	2.		6238974.		-20.6		911.7	!	50.27		7.5		.026		18.07		.047	SI	
3737.	600.	3.	3.		8084837.	!	-21.5	!	843.2	70.37		7.5		.0241		15.05		.036	SI		
>3737.		0.	3.	3.		8376278.		-22.2		873.6	70.37		7.5		.025		15.05		.038	SI	
4158.	421.	3.	5.		-5749092.	!	-14.7	!	1444.	!	28.27		7.5		.0526		15.82		.083	!SI	
4579.	842.	3.	3.		11109603.	!	-29.5	!	1158.6	70.37		7.5		.0384		15.05		.058	SI		
>4579.		0.	3.	3.		11170963.	!	-29.7	!	1165.	70.37		7.5		.0387		15.05		.058	SI	
5003.	424.	3.	5.		-5870147.	!	-15.		1474.4	!	28.27		7.5		.054		15.82		.085	!SI	
5427.	848.	3.	3.		8756798.		-23.2		913.3	70.37		7.5		.0267		15.05		.04	SI		
>5427.		0.	3.	3.		8527214.	!	-22.6	!	889.3	70.37		7.5		.0255		15.05		.038	SI	
5461.	33.	3.	4.		6623925.		-19.6		955.	!	50.27		7.5		.0273		18.07		.049	!SI	
5749.	321.	3.	5.		-2021559.	!	-5.2		507.8	28.27		7.5		.0145		15.82		.023	SI		
6027.	600.	3.	3.		5232238.		-13.9		545.7	70.37		7.5		.0156		15.05		.023	SI		
>6027.		0.	3.	3.		5793200.	!	-15.4	!	604.2	70.37		7.5		.0173		15.05		.026	SI	
6350.	322.	3.	5.		-2823290.	!	-7.2		709.1	!	28.27		7.5		.0203		15.82		.032	!SI	
6629.	601.	3.	3.		5639597.		-15.		588.2	70.37		7.5		.0168		15.05		.025	SI		
>6629.		0.	3.	3.		5685874.		-15.1		593.	70.37		7.5		.0169		15.05		.025	SI	
6907.	278.	3.	5.		-2687023.	!	-6.9		674.9	!	28.27		7.5		.0193		15.82		.031	SI	
7194.	566.	3.	4.		4211604.		-12.4		607.2	50.27		7.5		.0173		18.07		.031	!SI		
7227.	599.	3.	3.		5891271.	!	-15.6	!	614.4	70.37		7.5		.0176		15.05		.026	SI		
>7227.		0.	3.	3.		6065729.	!	-16.1	!	632.6	70.37		7.5		.0181		15.05		.027	SI	
7261.	33.	3.	4.		4370718.		-12.9		630.1	50.27		7.5		.018		18.07		.033	!SI		
7549.	321.	3.	5.		-2716148.	!	-6.9		682.2	!	28.27		7.5		.0195		15.82		.031	SI	
7827.	600.	3.	3.		5267283.		-14.		549.3	70.37		7.5		.0157		15.05		.024	SI		
>7827.		0.	3.	3.		5784738.	!	-15.4	!	603.3	70.37		7.5		.0172		15.05		.026	SI	
7861.	33.	3.	2.		4145027.		-13.7		605.7	50.27		7.5		.0173		18.07		.031	!SI		
8149.	321.	3.	5.		-2721170.	!	-7.		683.5	!	28.27		7.5		.0195		15.82		.031	SI	
8427.	600.	3.	3.		5041667.		-13.4		525.8	70.37		7.5		.015		15.05		.023	SI		
>8427.		0.	3.	3.		5163335.	!	-13.7		538.5	70.37		7.5		.0154		15.05		.023	SI	
8755.	328.	3.	5.		-5414462.	!	-13.8	!	1360.	!	28.27		7.5		.0486		15.82		.077	!SI	
9055.	628.	3.	7.		3814945.		-10.1		397.9	70.37		7.5		.0114		15.05		.017	SI		
>9055.		0.	3.	7.		1363834.	!	-3.6	!	142.2	!	70.37		7.5		.0041		15.05		.006	!SI

ARMATURE LONGITUDINALI (%=100*Af/Ac_{ls} - Ac_{ls}=area intera sezione)

Nro	Totale	%	Super.	%	Barre	Infer.	%	Barre
1	0.	0.	0.	0.		0.	0.	
2	78.54	.29	28.27	.104	9d20	50.27	.186	10d16 +15d16
3	126.9	.469	56.55	.209	9d20 +9d20	70.37	.26	10d16 +10d16 +15d16
4	106.8	.395	56.55	.209	9d20 +9d20	50.27	.186	10d16 +15d16
5	48.38	.179	28.27	.104	9d20	20.11	.074	10d16
6	98.65	.364	28.27	.104	9d20	70.37	.26	10d16 +15d16 +10d16
7	126.9	.469	56.55	.209	9d20 +9d20	70.37	.26	10d16 +15d16 +10d16
8	78.54	.29	28.27	.104	9d20	50.27	.186	15d16 +10d16

Si riporta di seguito la verifica a torsione svolta con foglio excel:

DM 2018									
Elementi senza armature trasversali resistenti a taglio (4.1.2.1.3.1 DM 2018)									
h	150	cm							
b	100	cm							
c	5	cm	copriferro in asse alle armature longitudinali						
Ac	15000	cmq							
u	500	cm	perimetro						
um	380	cm	perimetro medio						
A	8400	cmq	Area racchiusa della fibra media						
Al	78.53981634	cmq	armatura longitudinale per la sola torsione (almeno un ferro per spigolo), 4fi12+2fi16+2fi24						
t	30.00	cm							
A _{sw}	12.56	cmq	staffe per la sola torsione						T _{ed} 12.70 T _m
f _{yd}	3913	daN/cm ²						V _{ed} 0.00	T
s _{min}	40	cm	staffe per la sola torsione						
∅	45		ctg(∅)	1.000	0,4<cot∅<2,5				
α	90		inclinazione armature a taglio				21,8<∅<68		
A _{sw}	12.56	cmq							
f _{cd}	124.5	daN/cm ²							
f' _{cd}	62.3	daN/cm ²							
d	145	cm							
b	100	cm							
∅	45								
∅	questo parametro viene preso 0,5 e messo direttamente dentro ad f' _{cd} =0,5f _{cd}								
f _{ck}	249.0	daN/cm ²							
γ _c	1.7								
f _y	4500	daN/cm ²							
R _{cK}	300	daN/cm ²							
Tr _{cd}	15687000	daNcm	→	156.87	T _m	VERIFICATO			
Tr _{sd}	20642086.96	daNcm	→	206.42	T _m	VERIFICATO			
Tr _{ld}	13587208.5	daNcm	→	135.87	T _m	VERIFICATO			

NOTA BENE: VERIFICARE I VALORI RESISTENTI CON DIVERSE INCLINAZIONI DELLE BIELLE COMPRESSE									
Vrcd	131.70	T	taglio resistente lato calcestruzzo (da calcolare a parte)						
Ted/Trcd + Ved/Vrcd < 1			0.08	VERIFICATO					

In senso trasversale la fondazione, ovvero la parte della ciabatta, è armata con $\Phi 20/20 + \Phi 16/20$ inferiori e $\Phi 16/20$ superiori. Per la verifica della sezione in questa direzione si fa riferimento ad uno schema statico a mensola; la mensola ha una lunghezza di 80.5 cm ad ha una sollecitazione pari alla pressione esercitata sul terreno. Come è possibile osservare nel paragrafo successivo, la pressione sul terreno di fondazione è pari a 1.58 daN/cm² agli SLU.

La ciabatta della fondazione viene trattata con lo schema strutt and tie con la reazione all'incastro pari a $V = 12719$ daN.

Reazione sulla mensola (t):		12.72	
Azioni trasmesse alla mensola :			
P (t)=		12.72	
Azioni di calcolo :			
P= (P) x1.00 =		12.72	alfa = invtg (z/B(P))= 34.99
			B(P)(cm)= 80.00
d(cm) =		70.00	
z(cm)= 0.8xd=		56.00	
Progetto e verifica delle armature:			
Sa,d = Psism,d / tg(alfa)		18.17	f _{yd} (kg/cm ²)= 3826.00
Aa = Sa/f _{yd} =		4.75	utilizzo Ø20/20+Ø16/20
verifica del cls:		B _{men} (cm) = 100.00	R _{ck} (kg/cm ²)= 300.00
		Sc,d = Psism,d/ sen (alfa 22.18 t	f _{cd} (kg/cm ²)= 138.33
		Sc,d,res = Bxdx0.15 f _{cd} :	145.25 t

L'armatura presente è $\Phi 20/20 + \Phi 16/20 = 25.75$ cm²/m che è sufficiente ad assorbire la sollecitazione del tirante.

3.5.1.2. CONTROLLO PRESSIONI

Si riportano di seguito le pressioni agenti sul terreno sotto le travi di fondazione nei casi di carico SLU (casi 1, 4, 5) e SLV (casi 8, 9).

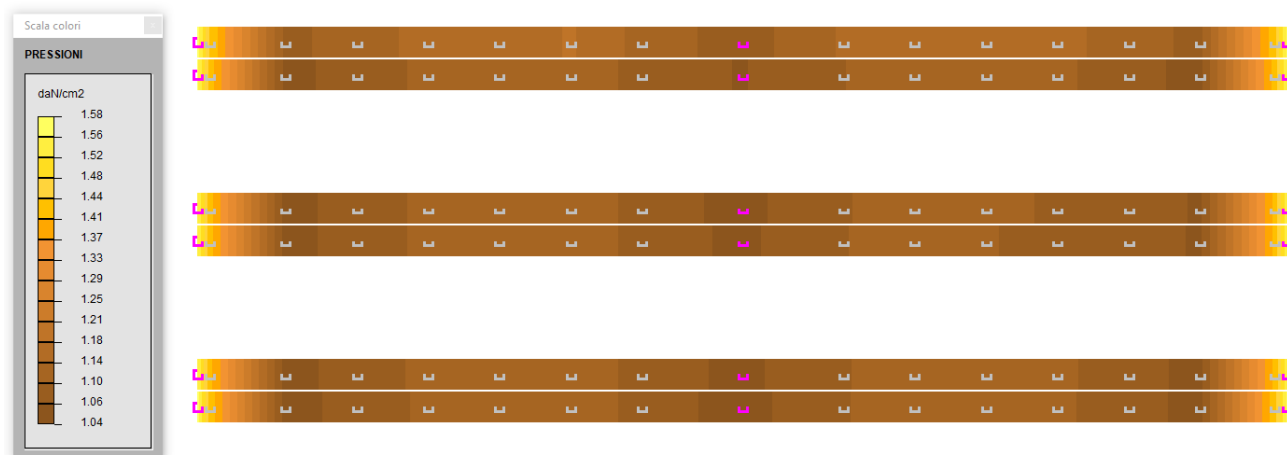


Figura 38 – SLU Pressioni

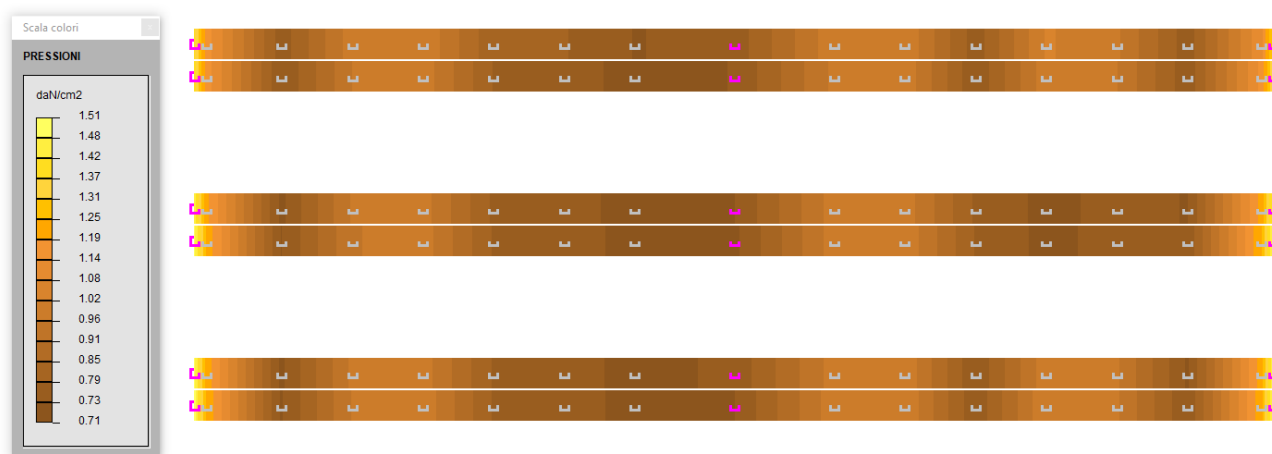


Figura 39 – SLV Pressioni

Come è possibile osservare la pressione massima sul terreno pari a 2.1 daN/cm^2 che risulta essere inferiore alla pressione limite del terreno calcolata in relazione tecnica generale pari a 25.3 daN/cm^2 .

4. VERIFICHE STRUTTURE NUOVE

Di seguito verranno riportate le verifiche ed i controlli effettuati sulle strutture di nuova realizzazione.

4.1. Solaio

Di seguito verrà eseguita la verifica degli elementi prefabbricati di nuova realizzazione per il piano ingressi ed il piano copertura.

4.1.1. Solaio piano ingressi

Il solaio di calpestio della parte di ampliamento del piano ingressi del fabbricato viaggiatori viene realizzato con tegoli a forma di π precompressi. I tegoli hanno una luce massima di calcolo pari a 12.16 m ed hanno le caratteristiche illustrate nell'immagine seguente.

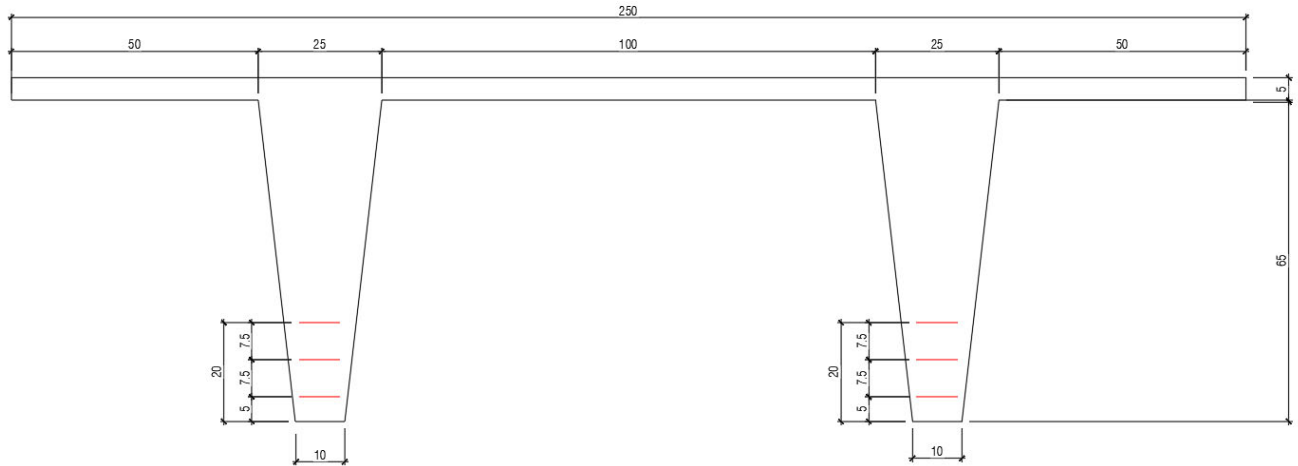


Figura 40 – Dimensioni tegolo

Il tegolo ha le seguenti caratteristiche:

- Area = 3525 cm²
- $Y_G = 47.91$ cm
- $J = 1498007$ cm⁴

L'armatura del tegolo è costituita da 4+4+4 trefoli $\Phi 0.6$ " posti di stanza 7.5 cm tra loro come indicato nella figura precedente.

Si riportano ne seguito i momenti sollecitanti del tegolo:

- $M_{pp} = (A * \gamma) * \frac{12.16^2}{8} = (0.3525 * 2500) * \frac{12.16^2}{8} = 162.88 \text{ kNm}$
- $M_{pp,soletta} = (s * i * \gamma) * \frac{12.16^2}{8} = (0.1 * 2.5 * 2500) * \frac{12.16^2}{8} = 115.52 \text{ kNm}$
- $M_{G2} = (q * i) * \frac{12.16^2}{8} = (480 * 2.5) * \frac{12.16^2}{8} = 221.79 \text{ knNm}$
- $M_Q = (q * i) * \frac{12.16^2}{8} = (500 * 2.5) * \frac{12.16^2}{8} = 231 \text{ knNm}$

La verifica del tegolo precompresso è stata eseguita con l'ausilio di un foglio Excel.

Tegolo L=12.16m

MATERIALS

rheologic conditions

UR (relative humidity) =	80%	-
t' (loading time - girder) =	7	days
t' (loading time - slab) =	28	days

girder cross section

A c (cross section area) =	3525	cm ²
p (moist perimeter) =	481	cm
y (G) c (centroid height) =	47.90	cm
J c (moment of inertia) =	1498007	cm ⁴
h c (cross section height) =	70.00	cm
W top c (elastic modulus - top fibre) =	67783	cm ³
W bot c (elastic modulus - bottom fibre) =	31274	cm ³

slab cross section

b (effective width) =	250	cm
h (height) =	10	cm
A s (cross section area) =	2500	cm ²
p (moist perimeter) =	250	cm
y (G) s (centroid height) =	75.00	cm

slab reinforcement

A s top =	2.51	cm ² /m
d (A s,top) (distance from top edge) =	5.00	cm
A s bot =	0.00	cm ² /m
d (A s,bot) (distance from top edge) =	5.00	cm
A s top+bot =	6.28	cm ²
y (G) (centroid height) =	75.00	cm
J A s (top+bot) =	0.00	cm ⁴

girder

fck,cube =	55	Mpa
Ecm = 22000×[fcm/10]^0.3 =	36400	Mpa
fck =	46	Mpa
fcm = fck + 8 =	53.65	Mpa
fctm = 0.30×fck^2/3 [C<50/60]; 2.12×ln(1+fcm/10) [C>50/60] =	3.83	Mpa
fctk = 0.70×fctm =	2.68	Mpa
fc (compression) = 0.6×fck =	27.39	Mpa
fct (crack opening) = fctm/1.20 =	3.19	Mpa
fct,eff (crack opening design) = 0.5×fctm =	1.92	Mpa
γMc,red1 =	1.50	-
αcc =	0.85	-
fcd = αcc×fck/γMc,red1 =	25.87	Mpa

girder (at strand cutting)

fck,cube =	55	Mpa
Ecm = 22000×[fcm/10]^0.3 =	36400	Mpa
fck =	46	Mpa
fcm = fck + 8 =	53.65	Mpa
βcc(t) =	0.819	-
fcm(t) = βcc(t)×fcm =	43.92	Mpa
Ecm,t = [fcm(t)/fcm]^0.3×Ecm =	34200	Mpa
fck,j = fcm(t) - 8 =	35.92	Mpa
fck,j required =	40.00	Mpa
fctm,j (cl < C50/60) = 0.30×fck,j^2/3 =	3.51	Mpa
fctk,j = 0.70×fctm,j =	2.46	Mpa
fc (compression) = 0.7×fck,j =	28.00	Mpa
fct,j (crack opening) = fctm,j/1.20 =	2.92	Mpa
fct,eff,j (crack opening design) = 0.5×fctm,j =	1.75	Mpa
γMc,red1 =	1.50	-
αcc =	0.85	-
fcd = αcc×fck/γMc,red1 =	25.87	Mpa

slab

fck,cube,28 =	37	Mpa
Ecm = 22000×[fcm/10]^0.3 =	33000	Mpa
fck =	31	Mpa
fcm = fck + 8 =	39	Mpa
fctm (cl < C50/60) = 0.30×fck^2/3 =	2.94	Mpa
fctk = 0.70×fctm =	2.06	Mpa
fc (compression) = 0.6×fck =	18.43	Mpa
fct (crack opening) = fctm/1.20 =	2.45	Mpa
fct,eff (crack opening design) = 0.5×fctm =	1.47	Mpa
γMc,red1 =	1.50	-
αcc =	0.85	-
fcd = αcc×fck/γMc,red1 =	17.40	Mpa

post tensioning strands

f ptk =	1860	Mpa
f p(0.1)k =	1670	Mpa
Es p =	195000	Mpa

reinforcement bars

Es =	210000	Mpa
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HOMOGENEIZATION COEFFICIENTS

Ecs / Ecg n = 0.91

short term loads (ST)

Esp / Ecg n = 5.36
Es / Ecg n = 5.77
Es / Ecs n = 6.36

long term loads (LT)

Esp / Ecg n = 22.48
Es / Ecg n = 24.21
Es / Ecs n = 26.88

STATICAL VALUES

slab homogeneized - short term loads (ST)

As id slab = 2539.93 cm2
y (G) id slab = 75.00 cm
J id slab = 20833 cm4

slab homogeneized - long term loads (LT)

As id slab = 2668.70 cm2
y (G) id slab = 75.00 cm
J id slab = 20833 cm4

girder homogeneized - short term loads (ST)

Ac id = 3614.36 cm2
y (G) cid = 47.02 cm
J id c = 1610568 cm4
h c = 70.00 cm
W top cid = 70100 cm3
W bot cid = 34249 cm3
W eq cable id = 46650 cm3

girder homogeneized - long term loads (LT)

Ac id = 3899.94 cm2
y (G) cid = 44.50 cm
J id c = 1936755 cm4
h c = 70.00 cm
W top cid = 75941 cm3
W bot cid = 43526 cm3
W eq cable id = 60530 cm3

girder+slab homogeneized - (ST)

A (g+s) id = 5917.04 cm2
y (G) (g+s) id = 57.91 cm
J id (g+s) c = 2730252 cm4
h c = 80.00 cm
W g top (g+s) id = 225859 cm3
W g bot (g+s) id = 47145 cm3
W g eq cable (g+s) id = 60122 cm3
W s bot (g+s) id = 225859 cm3
W s top (g+s) id = 123606 cm4
W s reinf top (g+s) id = 159773 cm3
W s reinf bot (g+s) id = 159773 cm4

girder+slab homogeneized - (LT)

A (g+s) id = 6319.37 cm2
y (G) (g+s) id = 56.18 cm
J id (g+s) c = 3344930 cm4
h c = 80.00 cm
W g top (g+s) id = 241950 cm3
W g bot (g+s) id = 59545 cm3
W g eq cable (g+s) id = 76587 cm3
W s bot (g+s) id = 241950 cm3
W s top (g+s) id = 140397 cm4
W s reinf top (g+s) id = 177687 cm3
W s reinf bot (g+s) id = 177687 cm4

prestressing strands

A p,i = 1.39 cm2
 $\sigma_{p,i}$ = 1420 Mpa
A tot p = 16.680 cm2
y (G) p = 12.500 cm
J p = 625.50 cm4
 ρ_{1000} = 2.50%
 $\mu = \sigma_{p,i} / f_{pk}$ = 0.76

Prestressing strands	n°	y (cm)	inactive	A (cm2)	S (cm3)	Aixd2 (cm4)
level 1 (top)	0	0.00	0	0.00	0.00	0.00
level 2	0	0.00	0	0.00	0.00	0.00
level 3	0	0.00	0	0.00	0.00	0.00
level 4	0	0.00	0	0.00	0.00	0.00
level 5	0	20.00	0	0.00	0.00	0.00
level 6	4	20.00	0	5.56	111.20	312.75
level 7	4	12.50	0	5.56	69.50	0.00
level 8 (bottom)	4	5.00	0	5.56	27.80	312.75

stress losses and verification stages

t = first loading, strands cutting (A)
t = slab hardening (B)
t = short term (C)
t = long term (D1: inter g+s + LL)
t = long term (D2: no inter g+s + LL)
t = long term (D3: inter g+s no LL)
t = long term (D4: no inter g+s no LL)

component:	$\Delta\sigma_{sp\ tot}$ [MPa]	$\Delta\sigma_{sp\ (A)}$ [MPa]	$\Delta\sigma_{sp\ (B)}$ [MPa]	$\Delta\sigma_{sp\ (D)}$ [MPa]	$\Delta\sigma_{sp\ tot}$ [MPa]
elastic losses	total 129.01	100% 129.01	0% 0.00	0% 0.00	414.95
shrinkage	total 36.81	25% 9.20	25% 9.20	50% 18.40	$\sigma_{sp\ (LT)}$ 1005.05
creep	total 185.95	0% 0.00	33% 61.98	67% 123.96	
steel strands relaxation	total 73.42	33% 24.23	33% 24.23	33% 24.23	
	63.18	23.84	21.19	18.16	

design forces

	ψ [-]	N [kN]	M [kNm]	Ned [kN]	Med [kNm]	β (width) [-] - [m]
girder selfweight	1.30	0	163	0	212	-
slab selfweight	1.30	0	116	0	151	
superimposed dead loads	1.50	0	221	0	332	
live loads	1.50	0	231	0	347	
other live loads	0.75	0	55	0	41	
			786		1082	

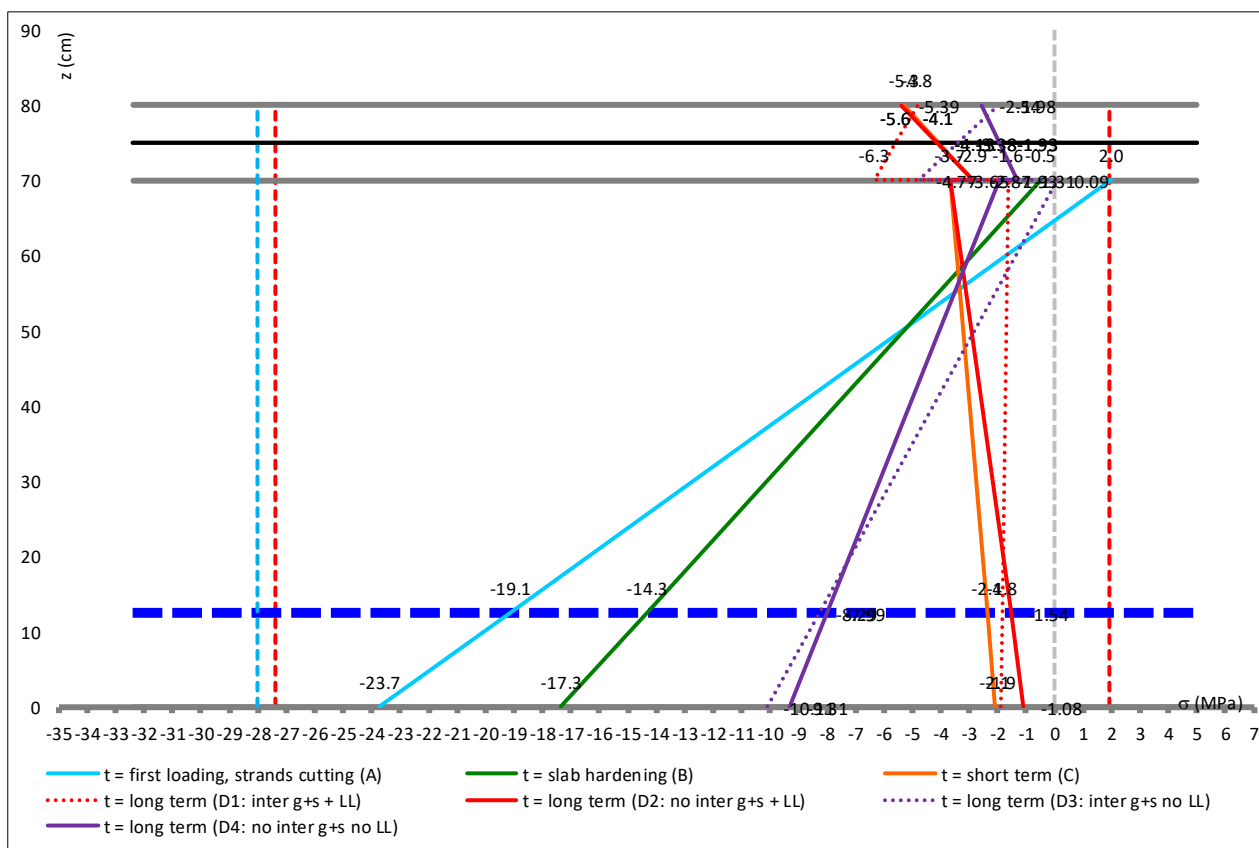
internal forces

	N [kN]	M [kNm]
Initial prestressing =	-2369	-818
ΔT gradient g-s (C) =	0	0

STRESS CHECK

	N [kN]	M [kNm]	$\sigma_{g\ bot}$ [MPa]	$\sigma_{eq\ cable}$ [MPa]	$\sigma_{g\ top}$ [MPa]	$\sigma_{s\ bot}$ [MPa]	$\sigma_{s\ rebar\ bot}$ [MPa]	$\sigma_{s\ rebar\ top}$ [MPa]	$\sigma_{s\ top}$ [MPa]
z (cm) from girder bottom			0.00	12.50	70.00	70.00	75.00	75.00	80.00
initial prestressing	-2369	-818	-30.43	-24.08	5.11				
stress losses - steel relaxation (A)	40	14	0.52	0.41	-0.09				
girder selfweight	0	212	6.19	4.54	-3.02				
t = first loading, strands cutting (A)	-2328	-592	-23.72	-19.13	2.00				
stress losses - steel relaxation (B)	35	12	0.45	0.36	-0.08				
stress losses - creep (B)	103	36	1.33	1.05	-0.22				
stress losses - shrinkage (B)	15	5	0.20	0.16	-0.03				
slab selfweight	0	151	4.40	3.23	-2.15				
t = slab hardening (B)	-2174	-388	-17.34	-14.33	-0.48				
superimposed dead loads	0	332	7.03	5.51	-1.47	-1.33	-1.88	-1.88	-2.43
traffic loads	0	347	7.35	5.76	-1.53	-1.39	-1.97	-1.97	-2.54
other live loads	0	41	0.87	0.69	-0.18	-0.17	-0.23	-0.23	-0.30
ΔT gradient g-s - (g+s)	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ΔT gradient g-s - (s)						0.00	0.00	0.00	0.00
t = short term (C)	-2174	331	-2.08	-2.37	-3.67	-2.89	-4.08	-4.08	-5.28
(rebar stress at the same height):							-25.97	-25.97	
stress losses - steel relaxation (D)	30	14	0.28	0.23	-0.01	-0.01	-0.03	-0.03	-0.05
stress losses - creep (D)	207	94	1.90	1.55	-0.06	-0.06	-0.18	-0.18	-0.31
stress losses - shrinkage (D)	31	14	0.28	0.23	-0.01	-0.01	-0.03	-0.03	-0.05
superimposed dead loads	0	332	5.57	4.33	-1.37	-1.24	-1.69	-1.69	-2.14
traffic loads	0	347	7.35	5.76	-1.53	-1.39	-1.97	-1.97	-2.54
other live loads	0	41	0.87	0.69	-0.18	-0.17	-0.23	-0.23	-0.30
DT gradient g-s - (g+s)	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT gradient g-s - (s)						0.00	0.00	0.00	0.00
g+s interaction for creep and shrinkage			-0.80	-0.29	2.02	-3.46	-1.45	-1.45	0.56
t = long term (D1: inter g+s + LL)			-1.88	-1.84	-1.63	-6.33	-5.58	-5.58	-4.83
(rebar stress at the same height):							-35.49	-35.49	
t = long term (D2: no inter g+s + LL)			-1.08	-1.54	-3.65	-2.87	-4.13	-4.13	-5.39
(rebar stress at the same height):							-26.27	-26.27	
t = long term (D3: inter g+s no LL)			-10.11	-8.29	0.09	-4.77	-3.38	-3.38	-1.98
(rebar stress at the same height):							-90.18	-90.18	
t = long term (D4: no inter g+s no LL)			-9.31	-7.99	-1.93	-1.31	-1.93	-1.93	-2.54
(rebar stress at the same height):							-51.47	-51.47	

STRESS DIAGRAM



4.1.2. Solaio piano copertura

Il solaio di copertura della parte di ampliamento del piano ingressi del fabbricato viaggiatori viene realizzato con tegoli a forma di π precompressi. I tegoli hanno una luce massima di calcolo pari a 12.16 m ed hanno le stesse caratteristiche illustrate nel paragrafo precedente.

Il tegolo ha le seguenti caratteristiche:

- Area = 3525 cm²
- $Y_G = 47.91$ cm
- $J = 1498007$ cm⁴

L'armatura del tegolo è costituita da 4+4 trefoli $\Phi 0.6''$ posti su due file a distanza 7.5 cm tra loro.

Si riportano ne seguito i momenti sollecitanti del tegolo:

- $M_{pp} = (A * \gamma) * \frac{12.16^2}{8} = (0.3525 * 2500) * \frac{12.16^2}{8} = 162.88 \text{ kNm}$
- $M_{pp,soletta} = (s * i * \gamma) * \frac{12.16^2}{8} = (0.05 * 2.5 * 2500) * \frac{12.16^2}{8} = 57.76 \text{ kNm}$
- $M_{G2} = (q * i) * \frac{12.16^2}{8} = (210 * 2.5) * \frac{12.16^2}{8} = 97 \text{ kNm}$
- $M_{Q_{neve}} = (q * i) * \frac{12.16^2}{8} = (120 * 2.5) * \frac{12.16^2}{8} = 55.45 \text{ kNm}$

La verifica del tegolo precompresso è stata eseguita con l'ausilio di un foglio Excel.

Tegolo L=12.16m

MATERIALS

rheologic conditions

UR (relative humidity) =	80%	-
t' (loading time - girder) =	7	days
t' (loading time - slab) =	28	days

girder cross section

A c (cross section area) =	3525	cm ²
p (moist perimeter) =	481	cm
y (G) c (centroid height) =	47.90	cm
J c (moment of inertia) =	1498007	cm ⁴
h c (cross section height) =	70.00	cm
W top c (elastic modulus - top fibre) =	67783	cm ³
W bot c (elastic modulus - bottom fibre) =	31274	cm ³

slab cross section

b (effective width) =	250	cm
h (height) =	10	cm
A s (cross section area) =	2500	cm ²
p (moist perimeter) =	250	cm
y (G) s (centroid height) =	75.00	cm

slab reinforcement

A s top =	2.51	cm ² /m
d (A s,top) (distance from top edge) =	5.00	cm
A s bot =	0.00	cm ² /m
d (A s,bot) (distance from top edge) =	5.00	cm
A s top+bot =	6.28	cm ²
y (G) (centroid height) =	75.00	cm
J A s (top+bot) =	0.00	cm ⁴

girder

fck,cube =	55	Mpa
Ecm = 22000×[fcm/10]^0.3 =	36400	Mpa
fck =	46	Mpa
fcm = fck + 8 =	53.65	Mpa
fctm = 0.30×fck^2/3 [C<50/60]; 2.12×ln(1+fcm/10) [C>50/60] =	3.83	Mpa
fctk = 0.70×fctm =	2.68	Mpa
fc (compression) = 0.6×fck =	27.39	Mpa
fct (crack opening) = fctm/1.20 =	3.19	Mpa
fct,eff (crack opening design) = 0.5×fctm =	1.92	Mpa
γMc,red1 =	1.50	-
αcc =	0.85	-
fcd = αcc×fck/γMc,red1 =	25.87	Mpa

girder (at strand cutting)

fck,cube =	55	Mpa
Ecm = 22000×[fcm/10]^0.3 =	36400	Mpa
fck =	46	Mpa
fcm = fck + 8 =	53.65	Mpa
βcc(t) =	0.819	-
fcm(t) = βcc(t)×fcm =	43.92	Mpa
Ecm,t = [fcm(t)/fcm]^0.3×Ecm =	34200	Mpa
fck,j = fcm(t) - 8 =	35.92	Mpa
fck,j required =	40.00	Mpa
fctm,j (cl < C50/60) = 0.30×fck,j^2/3 =	3.51	Mpa
fctk,j = 0.70×fctm,j =	2.46	Mpa
fc (compression) = 0.7×fck,j =	28.00	Mpa
fct,j (crack opening) = fctm,j/1.20 =	2.92	Mpa
fct,eff,j (crack opening design) = 0.5×fctm,j =	1.75	Mpa
γMc,red1 =	1.50	-
αcc =	0.85	-
fcd = αcc×fck/γMc,red1 =	25.87	Mpa

slab

fck,cube,28 =	37	Mpa
Ecm = 22000×[fcm/10]^0.3 =	33000	Mpa
fck =	31	Mpa
fcm = fck + 8 =	39	Mpa
fctm (cl < C50/60) = 0.30×fck^2/3 =	2.94	Mpa
fctk = 0.70×fctm =	2.06	Mpa
fc (compression) = 0.6×fck =	18.43	Mpa
fct (crack opening) = fctm/1.20 =	2.45	Mpa
fct,eff (crack opening design) = 0.5×fctm =	1.47	Mpa
γMc,red1 =	1.50	-
αcc =	0.85	-
fcd = αcc×fck/γMc,red1 =	17.40	Mpa

post tensioning strands

f ptk =	1860	Mpa
f p(0.1)k =	1670	Mpa
Esp =	195000	Mpa

reinforcement bars

Es =	210000	Mpa
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HOMOGENEIZATION COEFFICIENTS

Ecs / Ecg	n =	0.91
short term loads (ST)		
Esp / Ecg	n =	5.36
Es / Ecg	n =	5.77
Es / Ecs	n =	6.36
long term loads (LT)		
Esp / Ecg	n =	22.48
Es / Ecg	n =	24.21
Es / Ecs	n =	26.88

STATICAL VALUES

slab homogeneized - short term loads (ST)

As id slab =	2539.93	cm2
y(G) id slab =	75.00	cm
J id slab =	20833	cm4

slab homogeneized - long term loads (LT)

As id slab =	2668.70	cm2
y(G) id slab =	75.00	cm
J id slab =	20833	cm4

girder homogeneized - short term loads (ST)

Ac id =	3584.57	cm2
y(G)c id =	47.25	cm
J id c =	1588634	cm4
h c =	70.00	cm
W top c id =	69828	cm3
W bot c id =	33622	cm3
W eq cable id =	41264	cm3

girder homogeneized - long term loads (LT)

Ac id =	3774.96	cm2
y(G) c id =	45.31	cm
J id c =	1859273	cm4
h c =	70.00	cm
W top c id =	75298	cm3
W bot c id =	41037	cm3
W eq cable id =	50859	cm3

girder+slab homogeneized - (ST)

A (g+s) id =	5887.26	cm2
y(G) (g+s) id =	58.10	cm
J id (g+s) c =	2687225	cm4
h c =	80.00	cm
W g top (g+s) id =	225883	cm3
W g bot (g+s) id =	46249	cm3
W g eq cable (g+s) id =	54449	cm3
W s bot (g+s) id =	225883	cm3
W s top (g+s) id =	122724	cm4
W s reinf top (g+s) id =	159040	cm3
W s reinf bot (g+s) id =	159040	cm4

girder+slab homogeneized - (LT)

A (g+s) id =	6194.39	cm2
y(G) (g+s) id =	56.91	cm
J id (g+s) c =	3178076	cm4
h c =	80.00	cm
W g top (g+s) id =	242694	cm3
W g bot (g+s) id =	55849	cm3
W g eq cable (g+s) id =	65997	cm3
W s bot (g+s) id =	242694	cm3
W s top (g+s) id =	137609	cm4
W s reinf top (g+s) id =	175633	cm3
W s reinf bot (g+s) id =	175633	cm4

prestressing strands

A p,i =	1.39	cm2
σsp,i =	1420	Mpa
A tot p =	11.120	cm2
y(G) p =	8.750	cm
J p =	156.38	cm4
ρ 1000 =	2.50%	
μ = σsp,i / fpk =	0.76	

Prestressing strands	n°	y (cm)	inactive	A (cm2)	S (cm3)	Ai×d2 (cm4)
level 1 (top)	0	0.00	0	0.00	0.00	0.00
level 2	0	0.00	0	0.00	0.00	0.00
level 3	0	0.00	0	0.00	0.00	0.00
level 4	0	0.00	0	0.00	0.00	0.00
level 5	0	20.00	0	0.00	0.00	0.00
level 6	0	15.00	0	0.00	0.00	0.00
level 7	4	12.50	0	5.56	69.50	78.19
level 8 (bottom)	4	5.00	0	5.56	27.80	78.19

stress losses and verification stages

t = first loading, strands cutting (A)
t = slab hardening (B)
t = short term (C)
t = long term (D1: inter g+s + LL)
t = long term (D2: no inter g+s + LL)
t = long term (D3: inter g+s no LL)
t = long term (D4: no inter g+s no LL)

component:	$\Delta\sigma_{sp\ tot}$ [MPa]	$\Delta\sigma_{sp\ (A)}$ [MPa]	$\Delta\sigma_{sp\ (B)}$ [MPa]	$\Delta\sigma_{sp\ (D)}$ [MPa]	$\Delta\sigma_{sp\ tot}$ [MPa]
elastic losses	total 102.52	100% 102.52	0% 0.00	0% 0.00	330.16
shrinkage	total 36.81	25% 9.20	25% 9.20	50% 18.40	$\sigma_{sp\ (LT)}$ [MPa]
$\epsilon_{shrinkage\ g\ (t=infinite)} = -1.89E-04$					
creep	total 125.05	0% 0.00	33% 41.68	67% 83.36	1089.84
$\phi_{creep\ g\ (t=infinite)} = 3.196$					
steel strands relaxation	total 73.42	33% 24.23	33% 24.23	33% 24.23	
$\Delta\sigma_{not\ corrected\ for\ creep\ and\ shrinkage}$					
$\Delta\sigma_{corrected\ for\ creep\ and\ shrinkage}$					
	65.78	23.84	22.06	19.89	

design forces

	ψ [-]	N [kN]	M [kNm]	Ned [kN]	Med [kNm]	β (width) [-] - [m]
girder selfweight	1.30	0	163	0	212	-
slab selfweight	1.30	0	58	0	75	
superimposed dead loads	1.50	0	97	0	146	
live loads	1.50	0	55	0	83	
other live loads	0.75	0	0	0	0	
			373		515	

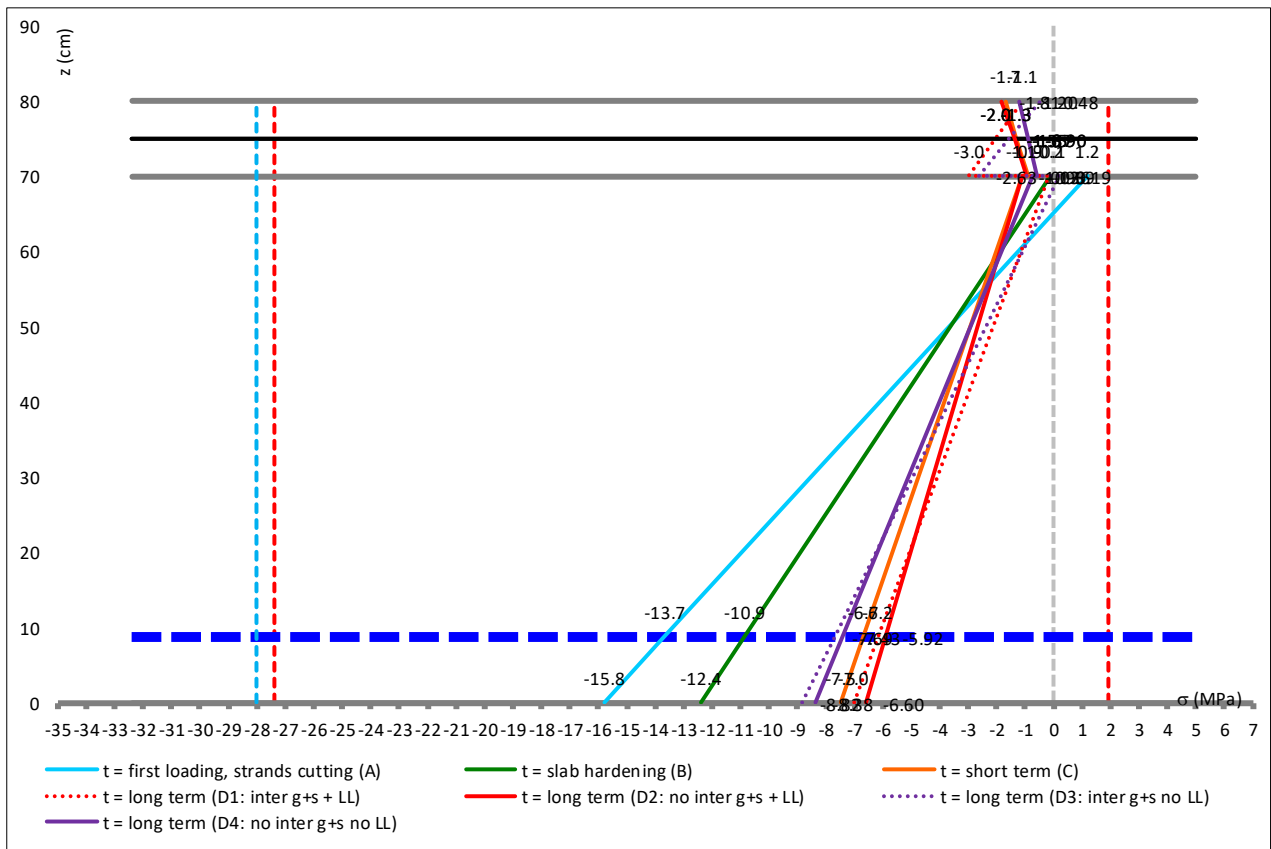
internal forces

		N [kN]	M [kNm]
Initial prestressing =		-1579	-608
ΔT gradient g-s (C°) =	0	0	0

STRESS CHECK

	N [kN]	M [kNm]	$\sigma_{g\ bot}$ [MPa]	$\sigma_{eq\ cable}$ [MPa]	$\sigma_{g\ top}$ [MPa]	$\sigma_{s\ bot}$ [MPa]	$\sigma_{s\ rebar\ bot}$ [MPa]	$\sigma_{s\ rebar\ top}$ [MPa]	$\sigma_{s\ top}$ [MPa]
z (cm) from girder bottom			0.00	8.75	70.00	70.00	75.00	75.00	80.00
initial prestressing	-1579	-608	-22.49	-19.14	4.30				
stress losses - steel relaxation (A)	27	10	0.38	0.33	-0.07				
girder selfweight	0	212	6.30	5.14	-3.03				
t = first loading, strands cutting (A)	-1552	-386	-15.80	-13.68	1.19				
stress losses - steel relaxation (B)	25	9	0.35	0.30	-0.07				
stress losses - creep (B)	46	18	0.66	0.56	-0.13				
stress losses - shrinkage (B)	10	4	0.15	0.12	-0.03				
slab selfweight	0	75	2.24	1.83	-1.08				
t = slab hardening (B)	-1471	-279	-12.40	-10.87	-0.11				
superimposed dead loads	0	146	3.15	2.67	-0.64	-0.58	-0.83	-0.83	-1.07
traffic loads	0	83	1.78	1.52	-0.37	-0.33	-0.47	-0.47	-0.61
other live loads	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ΔT gradient g-s - (g+s)	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ΔT gradient g-s - (s)						0.00	0.00	0.00	0.00
t = short term (C)	-1471	-51	-7.47	-6.68	-1.12	-0.92	-1.30	-1.30	-1.68
(rebar stress at the same height):						-8.27	-8.27		
stress losses - steel relaxation (D)	22	11	0.23	0.20	-0.01	-0.01	-0.02	-0.02	-0.04
stress losses - creep (D)	93	46	0.97	0.84	-0.04	-0.04	-0.10	-0.10	-0.17
stress losses - shrinkage (D)	20	10	0.21	0.19	-0.01	-0.01	-0.02	-0.02	-0.04
superimposed dead loads	0	146	2.61	2.20	-0.60	-0.54	-0.75	-0.75	-0.96
traffic loads	0	83	1.78	1.52	-0.37	-0.33	-0.47	-0.47	-0.61
other live loads	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT gradient g-s - (g+s)	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT gradient g-s - (s)						0.00	0.00	0.00	0.00
g+s interaction for creep and shrinkage			-0.43	-0.26	0.95	-2.04	-0.65	-0.65	0.73
t = long term (D1: inter g+s + LL)			-7.03	-6.18	-0.18	-2.96	-2.02	-2.02	-1.08
(rebar stress at the same height):						-12.87	-12.87		
t = long term (D2: no inter g+s + LL)			-6.60	-5.92	-1.13	-0.93	-1.37	-1.37	-1.81
(rebar stress at the same height):						-8.71	-8.71		
t = long term (D3: inter g+s no LL)			-8.82	-7.69	0.19	-2.63	-1.55	-1.55	-0.48
(rebar stress at the same height):						-41.46	-41.46		
t = long term (D4: no inter g+s no LL)			-8.38	-7.43	-0.76	-0.59	-0.90	-0.90	-1.20
(rebar stress at the same height):						-23.97	-23.97		

STRESS DIAGRAM



4.2. Travi

Nel presente capitolo verranno svolte le verifiche sulle travi di nuova realizzazione della struttura in esame.

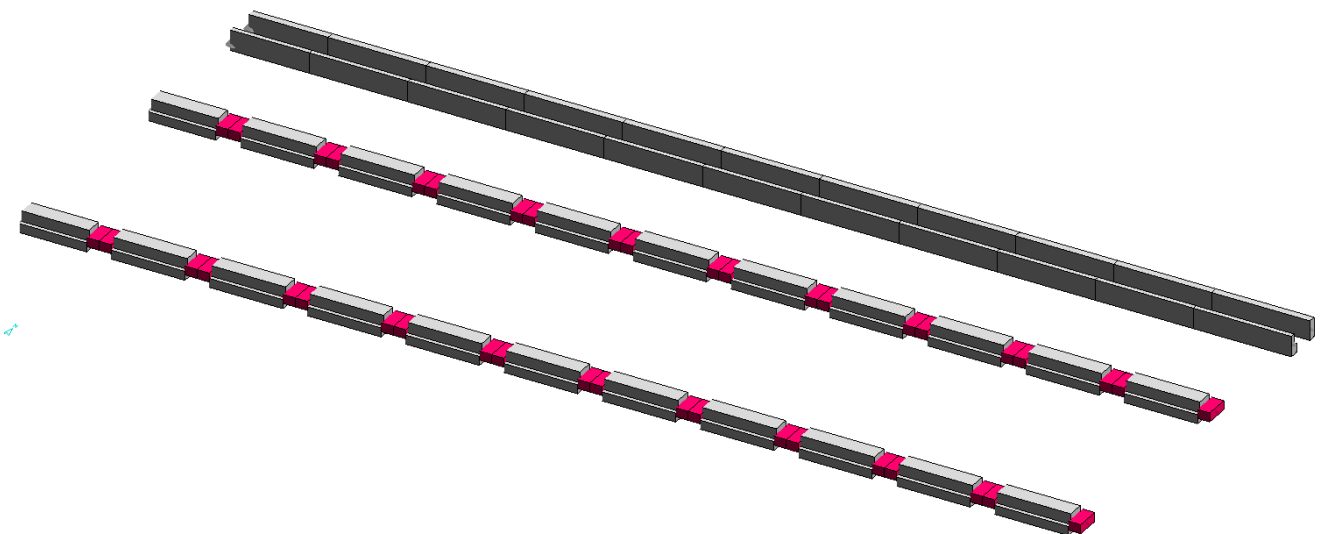


Figura 41 – Vista solida travi

Si riportano di seguito le sollecitazioni agenti sulle travi nell'involuppo dei casi SLU (casi 1, 2, 3).

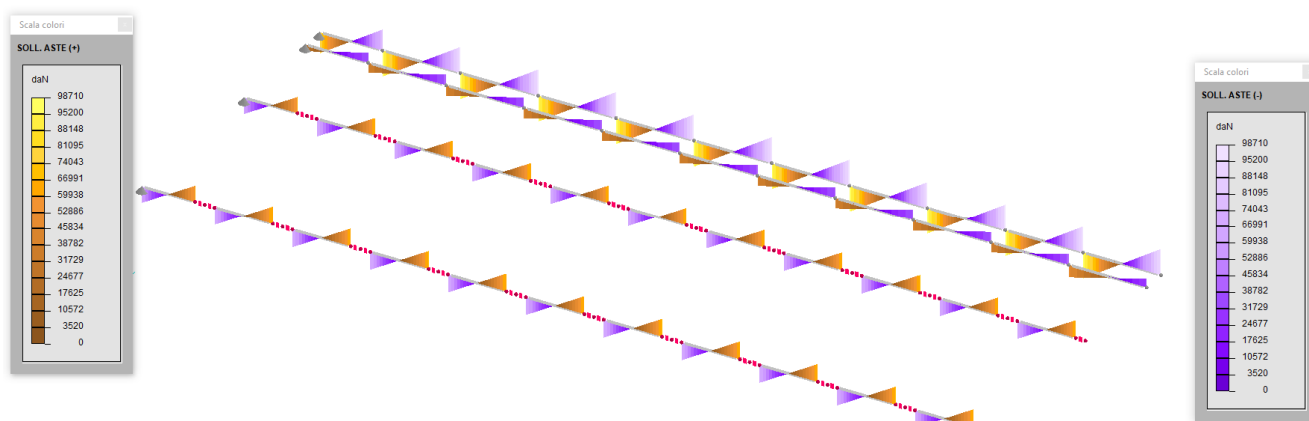


Figura 82 – SLU Ty

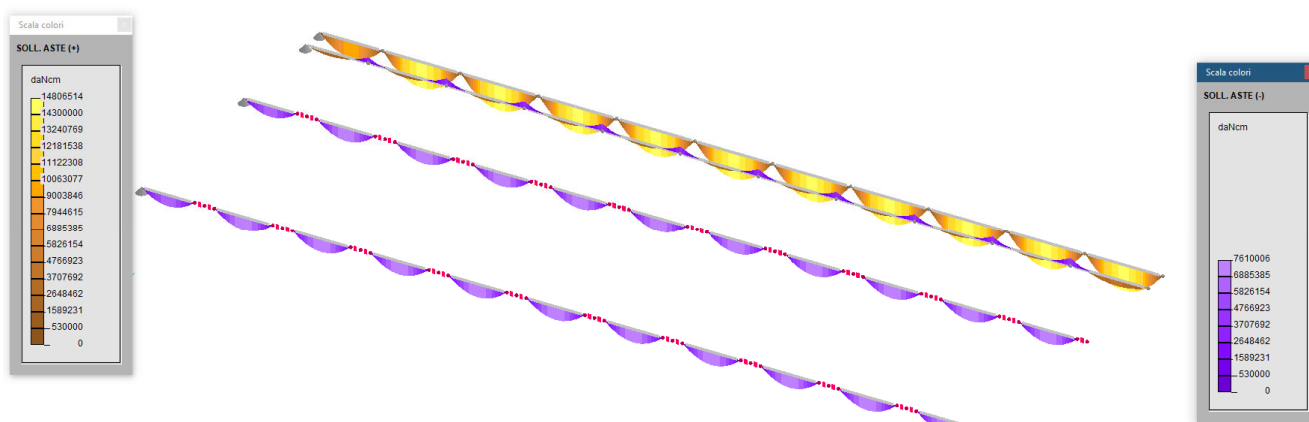


Figura 93 – SLU Mz

Si riportano di seguito le sollecitazioni agenti sulle travi nell'involuppo dei casi SLV (casi 6, 7).

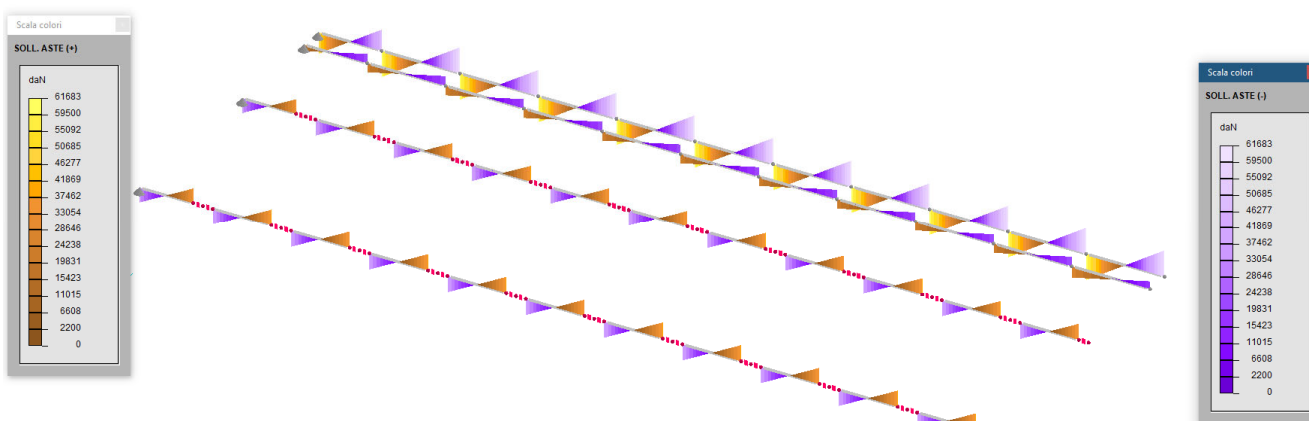


Figura 10 – SLV Ty

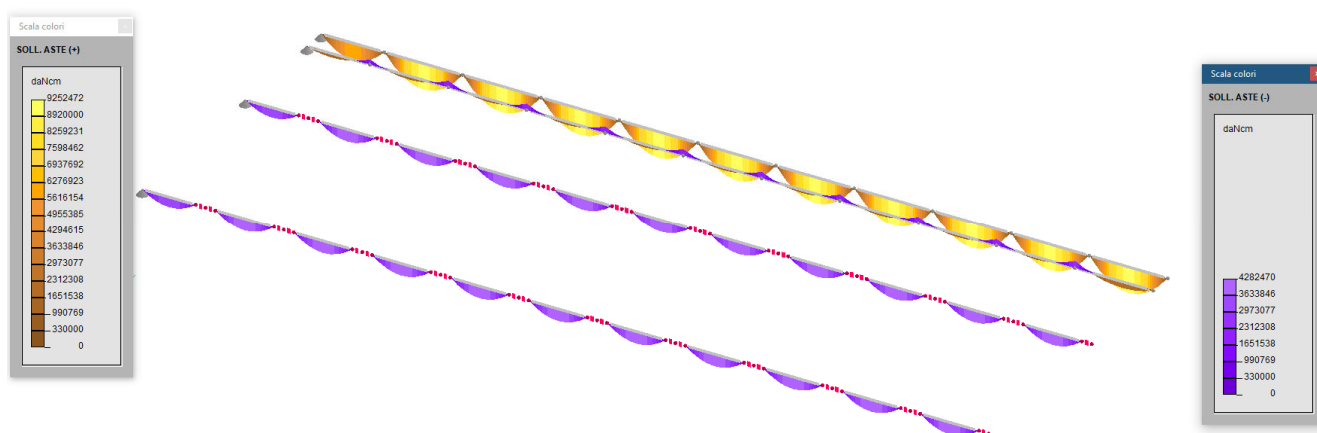


Figura 11 – SLV Mz

4.2.1. Travi di spina – piano ingressi

La trave verrà armata con 12 Φ 26 inferiori e 8 Φ 20 superiori, mentre l'armatura a taglio è costituita da staffe Φ 16/20 a 4 braccia.

Si riporta di seguito la verifica eseguita con l'applicativo “Trave continua” di DOLMEN.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 28 - Travata T002 (trave)
 Metodo di verifica : stati limite (NTC18). ->
 Duttilita' : non prevista (struttura non dissipativa).
 : dettagli costruttivi del capitolo 7 non attivi.
 Unita' di misura : cm; daN; daN/cm; daN/cm²; deform. %.
 Unita' particolari : fessure [Wk]:mm - ferri:mm e cm² - sezioni:cm e derivate.
 Copriferri (assi) : longitudinali= 3 ; staffe= 2

MATERIALI

CLS : Rck =500. ; fck=415. ; fctk= 25.2; fctm= 36. ; Ec= 355471. ;
 gc =1.5 ; fcd=235.2; fbd= 37.8; fctd= 16.8; Ecud=.2% (limit.elastico)
 ACCIAIO : B450C; ftk=5175. ; fyk=4500. ; Es=2100000. ;
 gs =1.15; fyd=3913. ; ftd(k*fyd)=4500. ; fud=4439.8; Eud=.19% (limit.elastico)

TENSIONI E FESSURE MASSIME IN ESERCIZIO

GRUPPO : ordinario.
 CLS : Scls(rara)=249. ; Scls(quasi permanente)=186.8; fbd(esercizio)= 37.8
 ACCIAIO : Sacc(rara)=3600.; Coeff.Omogeneizzazione= 15
 FESSURE : wdmax(fre.)=.4 ; wdmax(q.p.)=.3 [4.1.2.2.4.5];
 kt=.4 [EN 1992-1 7.3.4].

CASI DI CARICO DA MODELLO 3D

Nome	Descrizione	Sest
1.	SLU SENZA SISMA	1.
4.	SLU con SISMAX PRINC16	
5.	SLU con SISMAX PRINC16	

RARE

FREQUENTI

QUASI PERMANENTI

Nome	Descrizione	Sest	Nome	Descrizione	Sest	Nome	Descrizione	Sest
8.	Rara	1.	9.	Frequente	1.	10.	Quasi Perm	1.

<-

SEZIONI UTILIZZATE

3) Sezione a L (4): 50/30X80/30; A=3000.; Jg=1625000.; E=355471.1

DESCRIZIONE CAMPATE

Cam.	Descriz.	s.ini Sez.	s.fin Incl.	L.assi L.net.	lambda	K	r.Ar.	lam.max
1 A604		3 3	3 0	852. 627.	10.645	1.	1.172	17.507

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

Progressive SE Ar	Msd	Epsc	Epsac	Mrd	Epsc	Epsac	Cam x/d	Mr/Ms VE
> 0. 0. 3. 1.	-6578310.	-.046	.171	-7165835.	-.05	.186 2.	.211 1.089	SI
0. 0. 3. 1.	2174526.	-.019	.024	16685683.!	-.176	.186 2.	.486 7.673	SI
258. 258. 3. 2.	-13788. 0.	.001	-3625240.	-.031	.186 2.	.143 262.9	SI	
258. 258. 3. 2.	12299687.	-.147	.141	15414249.	-.2	-.185 3.	.527 1.253	SI
445. 445. 3. 2.	13156619.!	-.16	.152	15414249.	-.2	-.185 3.	.527 1.172	SI
852. 852. 3. 1.	-6578310.!	-.046	.171	-7165835.!	-.05	.186 2.	.211 1.089	SI
852. 852. 3. 1.	2141609.	-.019	.024	16685683.!	-.176	.186 2.	.486 7.791	SI

TAGLIO:

Progressive Se	Vsd	VRd	VRcd	VRsd	Asw	s	ctgT Ve
> 0. 0. 3.	66888.!	14901.	102260.	100867.	4.02 20.	1.85	SI
305. 305. 3.	15537.	18254.!	102260.	100867.	4.02 20.	1.85	SI
852. 852. 3.	-66641.!	14901.	102260.!	100867.!	4.02 20.	1.85	SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

Progressive Se Ar	Momento	Sc s	Sacc	As	hc,ef	Eps%	Sr,max	wd	Ve
17. 17. 3. 1.	767849.	-12.4	178.6	63.71	7.5	.0051	8.38	.004	SI
445. 445. 3. 2.	9291995.!	-179.3	2235.2	63.71	7.5	.0984	8.38	.082	SI
852. 852. 3. 1.	-4645998.!	-53.	2538.8	25.13	7.5	.1107	9.84	.109	SI

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

Progressive Se Ar	Momento	Sc s	Sacc	As	hc,ef	Eps%	Sr,max	wd	Ve
17. 17. 3. 1.	700088.	-11.3	162.8	63.71	7.5	.0047	8.38	.004	SI
445. 445. 3. 2.	8472562.!	-163.5	2038.1	63.71	7.5	.089	8.38	.075	SI
852. 852. 3. 1.	-4236281.!	-48.3	2314.9	25.13	7.5	.1001	9.84	.098	SI

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

Progressive Se Ar	Momento	Sc s	Sacc	As	hc,ef	Eps%	Sr,max	wd	Ve
17. 17. 3. 1.	677500.	-11.	157.6	63.71	7.5	.0045	8.38	.004	SI
445. 445. 3. 2.	8199397.!	-158.2	1972.4	63.71	7.5	.0858	8.38	.072	SI
852. 852. 3. 1.	-4099698.!	-46.7	2240.3	25.13	7.5	.0965	9.84	.095	SI

ARMATURE LONGITUDINALI (%=100*Af/Acl's - Acl's=area intera sezione)

Nro Totale	% Super.	%	Barre	Infer.	%	Barre	
1 88.84 2.961 25.13	.838 4d20	+4d20		63.71 2.124 12d26			
2 76.28 2.543 12.57	.419 4d20			63.71 2.124 12d26			

4.2.2. Trave di bordo lato ovest – piano ingressi

La trave verrà armata con 8Φ26 inferiori e 8Φ20 superiori, mentre l'armatura a taglio è costituita da staffe Φ16/20 a 4 braccia.

Si riporta di seguito la verifica eseguita con l'applicativo "Trave continua" di DOLMEN.

VERIFICA TRAVATA IN CEMENTO ARMATO

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 27 - Travata T001 (trave)
 Metodo di verifica : stati limite (NTC18). ->
 Duttilita' : non prevista (struttura non dissipativa).
 : dettagli costruttivi del capitolo 7 non attivi.
 Unita' di misura : cm; daN; daN/cm; daN/cm²; deform. %.
 Unita' particolari : fessure [wk]:mm - ferri:mm e cm² - sezioni:cm e derivate.
 Copriferri (assi) : longitudinali= 3 ; staffe= 2

MATERIALI

CLS : Rck =500. ; fck=415. ; fctk= 25.2; fctm= 36. ; Ec= 355471. ;
 gc =1.5 ; fcd=235.2; fbd= 37.8; fctd= 16.8; Ecud=.2% (limit.elastico)
 ACCIAIO : B450C; ftk=5175. ; fyk=4500. ; Es=2100000. ;
 gs =1.15; fyd=3913. ; ftd(k*fyd)=4500. ; fud=4439.8; Eud=.19% (limit.elastico)

TENSIONI E FESSURE MASSIME IN ESERCIZIO

GRUPPO : ordinario.
 CLS : Scls(rara)=249. ; Scls(quasi permanente)=186.8; fbd(esercizio)= 37.8
 ACCIAIO : Sacc(rara)=3600.; Coeff.Omogeneizzazione= 15
 FESSURE : wmax(fre.)=.4 ; wmax(q.p.)=.3 [4.1.2.2.4.5];
 kt=.4 [EN 1992-1 7.3.4].

CASI DI CARICO DA MODELLO 3D

SLU			RARE			FREQUENTI			QUASI PERMANENTI		
Nome	Descrizione	Sest	Nome	Descrizione	Sest	Nome	Descrizione	Sest	Nome	Descrizione	Sest
1.	SLU SENZA SISMA	1.	8.	Rara	1.	9.	Frequente	1.	10.	Quasi Perm	1.
4.	SLU con SISMAX PRINC16										
5.	SLU con SISMAX PRINC16										

SEZIONI UTILIZZATE

3) Sezione a L (4): 70/50X200/73; A=11460.; Jg=39118767.; E=355471.1

DESCRIZIONE CAMPATE

Cam.	Descriz.	S.ini	Sez.	S.fin	Incl.	L.assi	L.net.	lambda	K	r.Ar.	lam.max
1	A6464	3	3	3	0	628.	482.	3.138	1.3	3.578	111.372
2	A2055	3	3	3	0	600.	455.	3.	1.5	5.	179.599
3	A2057	3	3	3	0	600.	455.	3.	1.5	5.	179.599
4	A2059	3	3	3	0	600.	455.	3.	1.5	5.	179.599
5	A2070	3	3	3	0	4100.	3955.	20.5	1.5	5.	179.599
6	A2072	3	3	3	0	600.	455.	3.	1.5	5.	179.599
7	A2074	3	3	3	0	600.	455.	3.	1.5	5.	179.599

8 A6479		3	3	3	0	600.	455.	3.	1.5 5.	179.599
9 A6486		3	3	3	0	628.	482.	3.138	1.3 3.926	122.229

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

Progressive	SE	Ar	Msd	Epsc	Epsac	Mrd	Epsc	Epsac	Cam	x/d	Mr/Ms	VE		
> 0.	0.	3.	1.	1.	-5854271.	-.01	.059	-18585030	-.032	.186	2.	.147	3.175	SI
0.	0.	3.	1.	1.	4696133.	-.008	.029	30487882.	-.057	.186	2.	.233	6.492	SI
272.	272.	3.	1.	1.	8521933.	-.015	.052	30487882.	-.057	.186	2.	.233	3.578	SI
300.	300.	3.	1.	1.	-42512.	0.	0.	-18585030	-.032	.186	2.	.147	437.2	SI
591.	591.	3.	3.	3.	4852041.	-.006	.015	60020877.	-.082	.186	2.	.305	12.37	SI
628.	628.	3.	3.	3.	-7377005.	-.009	.037	-36942912.	-.044	.186	2.	.19	5.008	SI
628.	628.	3.	3.	3.	3532022.	-.004	.011	60020877.	-.082	.186	2.	.305	16.99	SI
> 628.	0.	3.	3.	3.	-8609682.	-.01	.043	-36942912.	-.044	.186	2.	.19	4.291	SI
628.	0.	3.	3.	3.	2595178.	-.003	.008	60020877.	-.082	.186	2.	.305	23.13	SI
664.	36.	3.	3.	3.	2506949.	-.003	.008	60020877.	-.082	.186	2.	.305	23.94	SI
700.	72.	3.	2.	2.	-8609682.	-.011	.044	-36425457.	-.05	.186	2.	.211	4.231	SI
826.	198.	3.	1.	1.	-5672302.	-.01	.057	-18585030	-.032	.186	2.	.147	3.276	SI
1139.	511.	3.	2.	2.	3129894.	-.005	.019	30914440.	-.051	.186	2.	.215	9.877	SI
1227.	600.	3.	3.	3.	-6579849.	-.008	.033	-36942912.	-.044	.186	2.	.19	5.615	SI
1227.	600.	3.	3.	3.	3129894.	-.004	.01	60020877.	-.082	.186	2.	.305	19.18	SI
>1227.	0.	3.	3.	3.	-6538286.	-.008	.033	-36942912.	-.044	.186	2.	.19	5.65	SI
1227.	0.	3.	3.	3.	3080122.	-.004	.01	60020877.	-.082	.186	2.	.305	19.49	SI
1300.	72.	3.	2.	2.	-6538286.	-.009	.033	-36425457.	-.05	.186	2.	.211	5.571	SI
1426.	198.	3.	1.	1.	-3863067.	-.007	.039	-18585030	-.032	.186	2.	.147	4.811	SI
1527.	300.	3.	1.	1.	-856874.	-.001	.009	-18585030	-.032	.186	2.	.147	21.69	SI
1666.	439.	3.	2.	2.	3338089.	-.005	.02	30914440.	-.051	.186	2.	.215	9.261	SI
1827.	600.	3.	3.	3.	-6306350.	-.007	.032	-36942912.	-.044	.186	2.	.19	5.858	SI
1827.	600.	3.	3.	3.	3291276.	-.004	.01	60020877.	-.082	.186	2.	.305	18.24	SI
>1827.	0.	3.	3.	3.	-6100694.	-.007	.031	-36942912.	-.044	.186	2.	.19	6.056	SI
1827.	0.	3.	3.	3.	3060260.	-.004	.009	60020877.	-.082	.186	2.	.305	19.61	SI
1864.	36.	3.	3.	3.	3095665.	-.004	.01	60020877.	-.082	.186	2.	.305	19.39	SI
1900.	72.	3.	2.	2.	-6100694.	-.008	.031	-36425457.	-.05	.186	2.	.211	5.971	SI
2026.	198.	3.	1.	1.	-3747118.	-.006	.038	-18585030	-.032	.186	2.	.147	4.96	SI
2427.	600.	3.	3.	3.	-4493684.	-.005	.023	-36942912.	-.044	.186	2.	.19	8.221	SI
2427.	600.	3.	3.	3.	1645924.	-.002	.005	60020877.	-.082	.186	2.	.305	36.47	SI
>2427.	0.	3.	3.	3.	-7335160.	-.008	.037	-36942912.	-.044	.186	2.	.19	5.036	SI
2427.	0.	3.	3.	3.	3973408.	-.005	.012	60020877.	-.082	.186	2.	.305	15.11	SI
3490.	1062	3.	1.	1.	-1148947.	-.002	.012	-18585030	-.032	.186	2.	.147	16.18	SI
4231.	1803	3.	1.	1.	19798.	0.	0.	30487882.	-.057	.186	2.	.233	1540.	SI
6008.	3581	3.	2.	2.	5497314.	-.009	.033	30914440.	-.051	.186	2.	.215	5.624	SI
6439.	4011	3.	2.	2.	-8030461.	-.011	.041	-36425457.	-.05	.186	2.	.211	4.536	SI
6527.	4100	3.	3.	3.	-8030461.	-.009	.04	-36942912.	-.044	.186	2.	.19	4.6	SI
6527.	4100	3.	3.	3.	4443226.	-.006	.014	60020877.	-.082	.186	2.	.305	13.51	SI
>6527.	0.	3.	3.	3.	-4981239.	-.006	.025	-36942912.	-.044	.186	2.	.19	7.416	SI
6527.	0.	3.	3.	3.	1966238.	-.002	.006	60020877.	-.082	.186	2.	.305	30.53	SI
6564.	36.	3.	3.	3.	1907662.	-.002	.006	60020877.	-.082	.186	2.	.305	31.46	SI
6726.	198.	3.	1.	1.	-2522065.	-.004	.025	-18585030	-.032	.186	2.	.147	7.369	SI
6929.	402.	3.	1.	1.	-4305786.	-.007	.043	-18585030	-.032	.186	2.	.147	4.316	SI
7039.	511.	3.	2.	2.	-6819873.	-.009	.035	-36425457.	-.05	.186	2.	.211	5.341	SI
7039.	511.	3.	2.	2.	3449466.	-.005	.021	30914440.	-.051	.186	2.	.215	8.962	SI
7127.	600.	3.	3.	3.	-6819873.	-.008	.034	-36942912.	-.044	.186	2.	.19	5.417	SI
7127.	600.	3.	3.	3.	3449466.	-.004	.011	60020877.	-.082	.186	2.	.305	17.4	SI
>7127.	0.	3.	3.	3.	-7113510.	-.008	.036	-36942912.	-.044	.186	2.	.19	5.193	SI
7127.	0.	3.	3.	3.	3889888.	-.005	.012	60020877.	-.082	.186	2.	.305	15.43	SI
7326.	198.	3.	1.	1.	-4415058.	-.007	.044	-18585030	-.032	.186	2.	.147	4.209	SI
7529.	402.	3.	1.	1.	-5105998.	-.009	.051	-18585030	-.032	.186	2.	.147	3.64	SI
7639.	511.	3.	2.	2.	-8072411.	-.011	.041	-36425457.	-.05	.186	2.	.211	4.512	SI
7691.	564.	3.	3.	3.	2854162.	-.004	.009	60020877.	-.082	.186	2.	.305	21.03	SI
7727.	600.	3.	3.	3.	-8072411.	-.009	.041	-36942912.	-.044	.186	2.	.19	4.576	SI

```

7727.|600.|3.|3.| 2866635.|-.004| .009|60020877.|-.082| .186|2.| .305|20.94|SI|
>7727.| 0.|3.|3.| -8157424.|-.009| .041|-36942912|-.044| .186|2.| .19 |4.529|SI|
7727.| 0.|3.|3.| 4727363.|-.006| .015|60020877.|-.082| .186|2.| .305|12.7 |SI|
7926.|198.|3.|1.| -3731597.|-.006| .037|-18585030|-.032| .186|2.| .147|4.98 |SI|
8000.|272.|3.|1.| -341599.|-.001| .003|-18585030|-.032| .186|2.| .147|54.41|SI|
8129.|402.|3.|1.| -5635436.|-.01 | .056!-18585030|-.032| .186|2.| .147|3.298|SI|
8129.|402.|3.|1.| 5299203.|-.009| .032|30487882.|-.057| .186|2.| .233|5.753|SI|
8239.|511.|3.|2.| -10251871|-.014! .052|-36425457|-.05 | .186|2.| .211|3.553|SI|
8327.|600.|3.|3.| -10251871|-.012| .052|-36942912|-.044| .186|2.| .19 |3.604|SI|
8327.|600.|3.|3.| 4691797.|-.006| .014|60020877.|-.082| .186|2.| .305|12.79|SI|
>8327.| 0.|3.|3.| -8982275.|-.01 | .045|-36942912|-.044| .186|2.| .19 |4.113|SI|
8327.| 0.|3.|3.| 3277380.|-.004| .01 |60020877.|-.082| .186|2.| .305|18.31|SI|
8682.|355.|3.|1.| -505121.|-.001| .005|-18585030|-.032| .186|2.| .147|36.79|SI|
8682.|355.|3.|1.| 7764958.|-.014! .047|30487882.|-.057| .186|2.| .233|3.926|SI|
8955.|628.|3.|1.| -5751996.|-.01 | .058!-18585030|-.032| .186|2.| .147|3.231|SI|
8955.|628.|3.|1.| 4415906.|-.008| .027|30487882.|-.057| .186|2.| .233|6.904|SI|

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TAGLIO:

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Progressive|Se| Vsd | VRd | VRcd | VRsd Asw s ctgT|Ve|
> 0.| 0.|3.| 72792.! 33629.|359440.|348733.| 4.02|20.|2.5 |SI|
272.|272.|3.| -8784.| 40768.!359440.|348733.| 4.02|20.|2.5 |SI|
628.|628.|3.|-68281.! 33629.|359440.!348733.! 4.02|20.|2.5 |SI|
> 628.| 0.|3.| 45778.! 33629.|359440.|348733.| 4.02|20.|2.5 |SI|
826.|198.|3.| -9189.| 34226.!359440.|348733.| 4.02|20.|2.5 |SI|
1227.|600.|3.|-35116.! 33629.|359440.!348733.! 4.02|20.|2.5 |SI|
>1227.| 0.|3.| 42204.! 33629.|359440.|348733.| 4.02|20.|2.5 |SI|
1426.|198.|3.| -9635.| 34226.!359440.|348733.| 4.02|20.|2.5 |SI|
1827.|600.|3.|-35562.! 33629.|359440.!348733.! 4.02|20.|2.5 |SI|
>1827.| 0.|3.| 37820.! 33629.|359440.|348733.| 4.02|20.|2.5 |SI|
2026.|198.|3.| -5778.| 34226.!359440.|348733.| 4.02|20.|2.5 |SI|
2427.|600.|3.|-31705.! 33629.|359440.!348733.! 4.02|20.|2.5 |SI|
>2427.| 0.|3.| -4249.| 33629.|359440.|348733.| 4.02|20.|2.5 |SI|
2427.| 0.|3.| 47631.| 33629.|359440.|348733.| 4.02|20.|2.5 |SI|
2626.|198.|3.|-14152.| 40768.!359440.|348733.| 4.02|20.|2.5 |SI|
3095.|668.|3.|-44574.! 40768.|359440.|348733.| 4.02|20.|2.5 |SI|
5860.|3432|3.| 50014.! 40768.|359440.|348733.| 4.02|20.|2.5 |SI|
6527.|4100|3.|-44137.| 33629.|359440.!348733.! 4.02|20.|2.5 |SI|
>6527.| 0.|3.| 39260.! 33629.|359440.|348733.| 4.02|20.|2.5 |SI|
6726.|198.|3.| -8371.| 34226.!359440.|348733.| 4.02|20.|2.5 |SI|
7127.|600.|3.|-34298.! 33629.|359440.!348733.! 4.02|20.|2.5 |SI|
>7127.| 0.|3.| -4632.| 33629.|359440.|348733.| 4.02|20.|2.5 |SI|
7127.| 0.|3.| 42521.! 33629.|359440.|348733.| 4.02|20.|2.5 |SI|
7326.|198.|3.|-14537.| 34226.!359440.|348733.| 4.02|20.|2.5 |SI|
7727.|600.|3.|-40464.! 33629.|359440.!348733.! 4.02|20.|2.5 |SI|
>7727.| 0.|3.| 72025.! 33629.|359440.|348733.| 4.02|20.|2.5 |SI|
7926.|198.|3.| -9850.| 34226.!359440.|348733.| 4.02|20.|2.5 |SI|
8327.|600.|3.|-62451.! 33629.|359440.!348733.! 4.02|20.|2.5 |SI|
>8327.| 0.|3.| 86525.! 33629.|359440.|348733.| 4.02|20.|2.5 |SI|
8526.|198.|3.| 40439.| 34226.!359440.|348733.| 4.02|20.|2.5 |SI|
8955.|628.|3.|-69431.! 33629.|359440.!348733.! 4.02|20.|2.5 |SI|

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VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

```

Progressive|Se|Ar Momento scIs Sacc | As hc,ef Eps% sr,max wd |Ve|
> 0.| 0.|3.|1.| -4368221.! -13.2| 924.2|25.13| 7.5 | .0297| 11.87| .035|SI|
36.| 36.|3.|1.| -2514942.| -7.6| 532.1|25.13| 7.5 | .0152| 11.87| .018|SI|
72.| 72.|3.|1.| -890776.| -2.7| 188.5|25.13| 7.5 | .0054| 11.87| .006|SI|
272.|272.|3.|1.| 6371801.! -20.8! 824.5|42.47| 7.5 | .0268| 11.24| .03 |SI|
628.|628.|3.|3.| -3350671.| -6.8| 355.9|50.27| 7.5 | .0102| 9.34| .009|SI|

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> 628.	0.	3.	3.	-3226201.!	-6.5!	342.7!	50.27	7.5		.0098	9.34	.009!	SI
927.	300.	3.	1.	1940584.!	-6.3	251.1	42.47	7.5		.0072	11.24	.008	SI
1227.	600.	3.	3.	-1900047.	-3.8	201.8	50.27	7.5		.0058	9.34	.005	SI
>1227.	0.	3.	3.	-1918899.!	-3.9	203.8	50.27	7.5		.0058	9.34	.005	SI
1527.	300.	3.	1.	1935469.!	-6.3!	250.5!	42.47	7.5		.0072	11.24	.008!	SI
1827.	600.	3.	3.	-1667747.	-3.4	177.2	50.27	7.5		.0051	9.34	.005	SI
>1827.	0.	3.	3.	-1811493.!	-3.7	192.4	50.27	7.5		.0055	9.34	.005	SI
2127.	300.	3.	1.	1941887.!	-6.3!	251.3!	42.47	7.5		.0072	11.24	.008!	SI
2427.	600.	3.	3.	-1688405.	-3.4	179.4	50.27	7.5		.0051	9.34	.005	SI
>2427.	0.	3.	3.	-1849660.	-3.7	196.5	50.27	7.5		.0056	9.34	.005	SI
6206.	3778	3.	2.	2238200.!	-6.4!	284.5!	42.47	7.5		.0081	11.24	.009!	SI
6527.	4100	3.	3.	-1972542.!	-4.	209.5	50.27	7.5		.006	9.34	.006	SI
>6527.	0.	3.	3.	-1721475.	-3.5	182.9	50.27	7.5		.0052	9.34	.005	SI
6827.	300.	3.	1.	1938431.!	-6.3!	250.8!	42.47	7.5		.0072	11.24	.008!	SI
7127.	600.	3.	3.	-1928594.!	-3.9	204.9	50.27	7.5		.0059	9.34	.005	SI
>7127.	0.	3.	3.	-1790777.	-3.6	190.2	50.27	7.5		.0054	9.34	.005	SI
7427.	300.	3.	1.	1950011.!	-6.4!	252.3!	42.47	7.5		.0072	11.24	.008!	SI
7727.	600.	3.	3.	-2759743.!	-5.6	293.2!	50.27	7.5		.0084	9.34	.008	SI
>7727.	0.	3.	3.	-2656513.	-5.4	282.2	50.27	7.5		.0081	9.34	.008	SI
8027.	300.	3.	1.	3988875.!	-13.	516.2!	42.47	7.5		.0147	11.24	.017!	SI
8327.	600.	3.	3.	-4101077.!	-8.3	435.7	50.27	7.5		.0124	9.34	.012	SI
>8327.	0.	3.	3.	-4248665.	-8.6	451.3	50.27	7.5		.0129	9.34	.012	SI
8682.	355.	3.	1.	5787475.!	-18.9!	748.9!	42.47	7.5		.0231	11.24	.026	SI
8955.	628.	3.	1.	-4289062.!	-13.	907.4!	25.13	7.5		.0289	11.87	.034!	SI

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

Progressive	Se	Ar	Momento	Sc	ls	Sacc	As	hc,ef	Eps%	Sr,max	wd	Vel	
> 0.	0.	3.	1.	-4235936.!	-12.8	896.2!	25.13	7.5		.0284	11.87	.034!	SI
36.	36.	3.	1.	-2437030.	-7.4	515.6	25.13	7.5		.0147	11.87	.017	SI
72.	72.	3.	1.	-860155.	-2.6	182.	25.13	7.5		.0052	11.87	.006	SI
272.	272.	3.	1.	6192754.!	-20.2!	801.4!	42.47	7.5		.0256	11.24	.029	SI
628.	628.	3.	3.	-3220598.	-6.5	342.1	50.27	7.5		.0098	9.34	.009	SI
> 628.	0.	3.	3.	-3099997.!	-6.3!	329.3!	50.27	7.5		.0094	9.34	.009!	SI
927.	300.	3.	1.	1826642.!	-6.	236.4	42.47	7.5		.0068	11.24	.008	SI
1227.	600.	3.	3.	-1788851.	-3.6	190.	50.27	7.5		.0054	9.34	.005	SI
>1227.	0.	3.	3.	-1805773.!	-3.7	191.8	50.27	7.5		.0055	9.34	.005	SI
1527.	300.	3.	1.	1812779.!	-5.9!	234.6!	42.47	7.5		.0067	11.24	.008!	SI
1827.	600.	3.	3.	-1558478.	-3.2	165.6	50.27	7.5		.0047	9.34	.004	SI
>1827.	0.	3.	3.	-1698061.!	-3.4	180.4	50.27	7.5		.0052	9.34	.005	SI
2127.	300.	3.	1.	1817968.!	-5.9!	235.2!	42.47	7.5		.0067	11.24	.008!	SI
2427.	600.	3.	3.	-1587058.	-3.2	168.6	50.27	7.5		.0048	9.34	.004	SI
>2427.	0.	3.	3.	-1745131.	-3.5	185.4	50.27	7.5		.0053	9.34	.005	SI
6206.	3778	3.	2.	2100584.!	-6.	267.	42.47	7.5		.0076	11.24	.009!	SI
6527.	4100	3.	3.	-1861358.!	-3.8	197.7	50.27	7.5		.0056	9.34	.005	SI
>6527.	0.	3.	3.	-1615051.	-3.3	171.6	50.27	7.5		.0049	9.34	.005	SI
6827.	300.	3.	1.	1813316.!	-5.9!	234.6!	42.47	7.5		.0067	11.24	.008!	SI
7127.	600.	3.	3.	-1814815.!	-3.7	192.8	50.27	7.5		.0055	9.34	.005	SI
>7127.	0.	3.	3.	-1682044.	-3.4	178.7	50.27	7.5		.0051	9.34	.005	SI
7427.	300.	3.	1.	1836901.!	-6.	237.7	42.47	7.5		.0068	11.24	.008!	SI
7727.	600.	3.	3.	-2646790.!	-5.4	281.2!	50.27	7.5		.008	9.34	.008	SI
>7727.	0.	3.	3.	-2545598.	-5.1	270.4	50.27	7.5		.0077	9.34	.007	SI
8027.	300.	3.	1.	3828238.!	-12.5!	495.4!	42.47	7.5		.0142	11.24	.016!	SI
8327.	600.	3.	3.	-3974833.!	-8.	422.3	50.27	7.5		.0121	9.34	.011	SI
>8327.	0.	3.	3.	-4118860.	-8.3	437.6	50.27	7.5		.0125	9.34	.012	SI
8682.	355.	3.	1.	5608498.!	-18.3!	725.8!	42.47	7.5		.022	11.24	.025	SI
8955.	628.	3.	1.	-4156812.!	-12.6	879.5!	25.13	7.5		.0276	11.87	.033!	SI

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

Progressive	Se	Ar	Momento	Sc	ls	Sacc	As	hc,ef	Eps%	Sr,max	wd	Ve
> 0.	0.	3.	1.	-4191843.!	-12.7	886.9!	25.13	7.5	.028	11.87	.033	SI

36.		36.		3.		1.		-2411061.		-7.3		510.1		25.13		7.5		.0146		11.87		.017		SI
72.		72.		3.		1.		-849948.		-2.6		179.8		25.13		7.5		.0051		11.87		.006		SI
272.		272.		3.		1.		6133068.		-20.		793.6		42.47		7.5		.0253		11.24		.028		SI
628.		628.		3.		3.		-3177259.		-6.4		337.5		50.27		7.5		.0096		9.34		.009		SI
> 628.		0.		3.		3.		-3057907.		-6.2		324.8		50.27		7.5		.0093		9.34		.009		SI
927.		300.		3.		1.		1777392.		-5.8		230.		42.47		7.5		.0066		11.24		.007		SI
1227.		600.		3.		3.		-1751803.		-3.5		186.1		50.27		7.5		.0053		9.34		.005		SI
>1227.		0.		3.		3.		-1768050.		-3.6		187.8		50.27		7.5		.0054		9.34		.005		SI
1527.		300.		3.		3.		-1522070.		-5.8		229.3		42.47		7.5		.0066		11.24		.007		SI
1827.		600.		3.		3.		-1522070.		-3.1		161.7		50.27		7.5		.0046		9.34		.004		SI
>1827.		0.		3.		3.		-1660238.		-3.4		176.4		50.27		7.5		.005		9.34		.005		SI
2127.		300.		3.		1.		1776663.		-5.8		229.9		42.47		7.5		.0066		11.24		.007		SI
2427.		600.		3.		3.		-1553283.		-3.1		165.		50.27		7.5		.0047		9.34		.004		SI
>2427.		0.		3.		3.		-1710282.		-3.5		181.7		50.27		7.5		.0052		9.34		.005		SI
6206.		3778		3.		2.		2054710.		-5.8		261.2		42.47		7.5		.0075		11.24		.008		SI
6527.		4100		3.		3.		-1824288.		-3.7		193.8		50.27		7.5		.0055		9.34		.005		SI
>6527.		0.		3.		3.		-1579585.		-3.2		167.8		50.27		7.5		.0048		9.34		.004		SI
6827.		300.		3.		1.		1795887.		-5.9		232.4		42.47		7.5		.0066		11.24		.007		SI
7127.		600.		3.		3.		-1776878.		-3.6		188.8		50.27		7.5		.0054		9.34		.005		SI
>7127.		0.		3.		3.		-1645811.		-3.3		174.8		50.27		7.5		.005		9.34		.005		SI
7427.		300.		3.		1.		1788888.		-5.8		231.5		42.47		7.5		.0066		11.24		.007		SI
7727.		600.		3.		3.		-2609124.		-5.3		277.2		50.27		7.5		.0079		9.34		.007		SI
>7727.		0.		3.		3.		-2508640.		-5.1		266.5		50.27		7.5		.0076		9.34		.007		SI
8027.		300.		3.		1.		3791535.		-12.4		490.6		42.47		7.5		.014		11.24		.016		SI
8327.		600.		3.		3.		-3932733.		-8.		417.8		50.27		7.5		.0119		9.34		.011		SI
>8327.		0.		3.		3.		-4075607.		-8.2		433.		50.27		7.5		.0124		9.34		.012		SI
8682.		355.		3.		1.		5548837.		-18.1		718.		42.47		7.5		.0217		11.24		.024		SI
8955.		628.		3.		1.		-4112730.		-12.4		870.1		25.13		7.5		.0272		11.87		.032		SI

ARMATURE LONGITUDINALI (%=100*Af/Acl's - Acl's=area intera sezione)

Nro	Totale	%	Super.	%	Barre	Infer.	%	Barre
1	67.61	.59	25.13	.219	8d20	42.47	.371	8d26
2	92.74	.809	50.27	.439	8d20 +8d20	42.47	.371	8d26
3	135.2	1.18	50.27	.439	8d20 +8d20	84.95	.741	8d26 +8d26

4.2.3. Trave di copertura

La trave verrà armata con 8Φ26 inferiori e 6Φ20 superiori, mentre l'armatura a taglio è costituita da staffe Φ16/20 a 4 braccia.

Si riporta di seguito la verifica eseguita con l'applicativo "Trave continua" di DOLMEN.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 29 - Travata T003 (trave)
 Metodo di verifica : stati limite (NTC18). ->
 Duttilita' : non prevista (struttura non dissipativa).
 : dettagli costruttivi del capitolo 7 non attivi.
 Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %.
 Unita' particolari : fessure [wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
 Copriferri (assi) : longitudinali= 3 ; staffe= 2

MATERIALI

CLS : Rck =500. ; fck=415. ; fctk= 25.2; fctm= 36. ; Ec= 355471. ;
 gc =1.5 ; fcd=235.2; fbd= 37.8; fctd= 16.8; Ecud=.2% (limit.elastico)
 ACCIAIO : B450C; ftk=5175. ; fyk=4500. ; Es=2100000. ;
 gs =1.15; fyd=3913. ; ftd(k*fyd)=4500. ; fud=4439.8; Eud=.19% (limit.elastico)

TENSIONI E FESSURE MASSIME IN ESERCIZIO

GRUPPO : ordinario.

CLS : ScIs(rara)=249. ; ScIs(quasi permanente)=186.8; fbd(esercizio)= 37.8

ACCIAIO : Sacc(rara)=3600.; Coeff.Omogeneizzazione= 15

FESSURE : wdmax(fre.)=.4 ; wdmax(q.p.)=.3 [4.1.2.2.4.5];

kt=.4 [EN 1992-1 7.3.4].

CASI DI CARICO DA MODELLO 3D

Nome	Descrizione	Sest
1.	SLU SENZA SISMA	1.
4.	SLU con SISMAX PRINC16	
5.	SLU con SISMAX PRINC16	

RARE			FREQUENTI			QUASI PERMANENTI		
Nome	Descrizione	Sest	Nome	Descrizione	Sest	Nome	Descrizione	Sest
8.	Rara	1.	9.	Frequente	1.	10.	Quasi Perm	1.

<-

SEZIONI UTILIZZATE

3) Sezione a L (4): 50/30X80/30; A=3000.; Jg=1625000.; E=355471.1

DESCRIZIONE CAMPATE

Cam.	Descriz.	s.ini Sez.	s.fin Incl.	L.assi L.net.	lambda	K	r.Ar.	lam.max
1.	A4125	3	3	0	852.	639.	10.645	1. 1.4 22.385

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

Progressive	SE Ar	Msd	Epsc	Epsac	Mrd	Epsc	Epsac	Cam x/d	Mr/Ms VE
> 0.	0.	3.	1.	-3964289.	-.035	.138	-5366775.	-.047	.186 2. .202 1.354 SI
0.	0.	3.	1.	1137057.	-.012	.019	11294564.	-.134	.186 2. .418 9.933 SI
240.	240.	3.	2.	-320848.	-.003	.017	-3608498.	-.036	.186 2. .162 11.25 SI
240.	240.	3.	2.	6851444.	-.083	.114	11097966.	-.145	.186 2. .438 1.62 SI
414.	414.	3.	2.	7928578.	-.098	.132	11097966.	-.145	.186 2. .438 1.4 SI
588.	588.	3.	1.	-27907.	0.	.001	-5366775.	-.047	.186 2. .202 192.3 SI
852.	852.	3.	1.	-3964289.	-.035	.138	-5366775.	-.047	.186 2. .202 1.354 SI
852.	852.	3.	1.	1137057.	-.012	.019	11294564.	-.134	.186 2. .418 9.933 SI

TAGLIO:

Progressive	Se	Vsd	VRd	VRcd	VRsd	Asw	s	ctgT	Ve
> 0.	0.	3.	1.	37504.	9661.	102260.	100867.	4.02	20. 1.85 SI
283.	283.	3.	1.	12564.	17750.	102260.	100867.	4.02	20. 1.85 SI
852.	852.	3.	1.	-37504.	13539.	102260.	100867.	4.02	20. 1.85 SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

Progressive	Se Ar	Momento	ScIs	Sacc	As	hc,ef	Eps%	Sr,max	wd	Ve
17.	17.	3.	1.	414391.	-7.9	143.3	42.47	7.5	.0041	9.68 .004 SI
414.	414.	3.	2.	5779004.	!-121.9	2032.8	42.47	7.5	.0867	9.68 .084 SI
852.	852.	3.	1.	-2889502.	!-42.3	2111.2	18.85	7.5	.0883	10.86 .096 SI

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

Progressive	Se Ar	Momento	ScIs	Sacc	As	hc,ef	Eps%	Sr,max	wd	Ve
-------------	-------	---------	------	------	----	-------	------	--------	----	----

17.	17.	3.	1.	371015.	-7.1	128.3	42.47	7.5	.0037	9.68	.004	SI
414.	414.	3.	2.	5174099.	-109.1	1820.	42.47	7.5	.0766	9.68	.074	SI
852.	852.	3.	1.	-2587050.	-37.9	1890.2	18.85	7.5	.0778	10.86	.084	SI

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

Progressive	Se	Ar	Momento	Sc	ls	Sacc	As	hc,ef	Eps%	Sr,max	wd	Ve
17.	17.	3.	1.	360171.	-6.9	124.6	42.47	7.5	.0036	9.68	.003	SI
414.	414.	3.	2.	5022873.	-105.9	1766.8	42.47	7.5	.074	9.68	.072	SI
852.	852.	3.	1.	-2511436.	-36.8	1835.	18.85	7.5	.0752	10.86	.082	SI

ARMATURE LONGITUDINALI (%=100*Af/Ac_{ls} - Ac_{ls}=area intera sezione)

Nro	Totale	%	Super.	%	Barre	Infer.	%	Barre
1	61.32	2.044	18.85	.628	2d20 +4d20	42.47	1.416	8d26
2	55.04	1.835	12.57	.419	4d20	42.47	1.416	8d26

4.3. Pilastri

Nel presente capitolo verranno svolte le verifiche sui pilastri esistenti della struttura in esame.

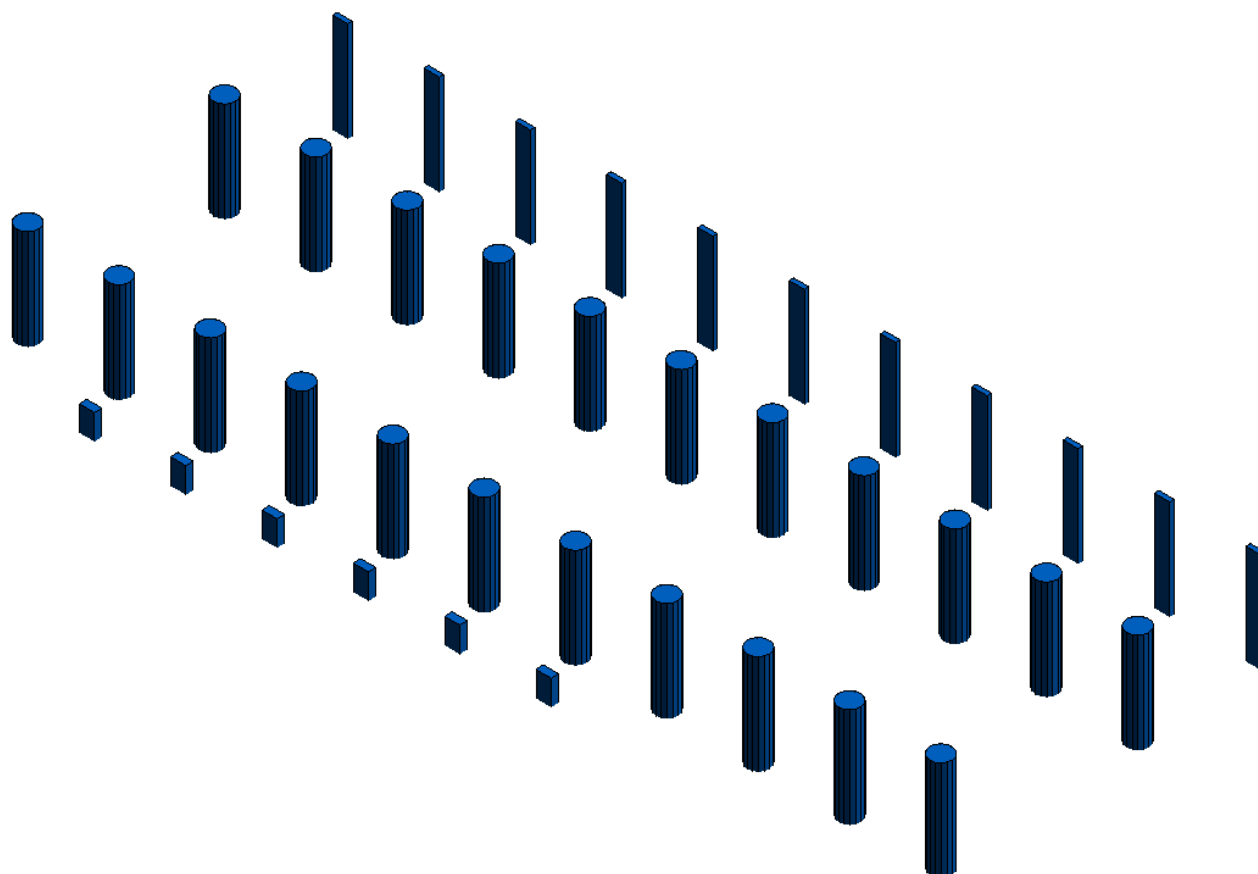


Figura 126 – Vista solida pilastri

Si riportano di seguito le sollecitazioni agenti sui pilastri nell'involuppo dei casi SLU (casi 1, 2, 3).

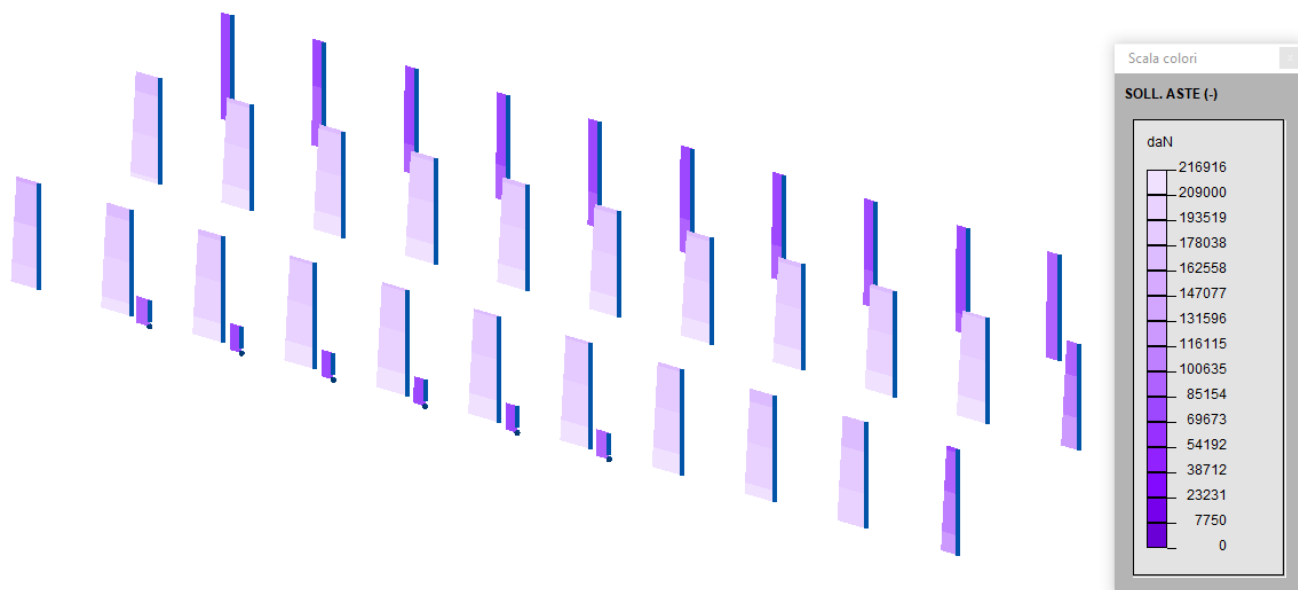


Figura 47 – SLU N

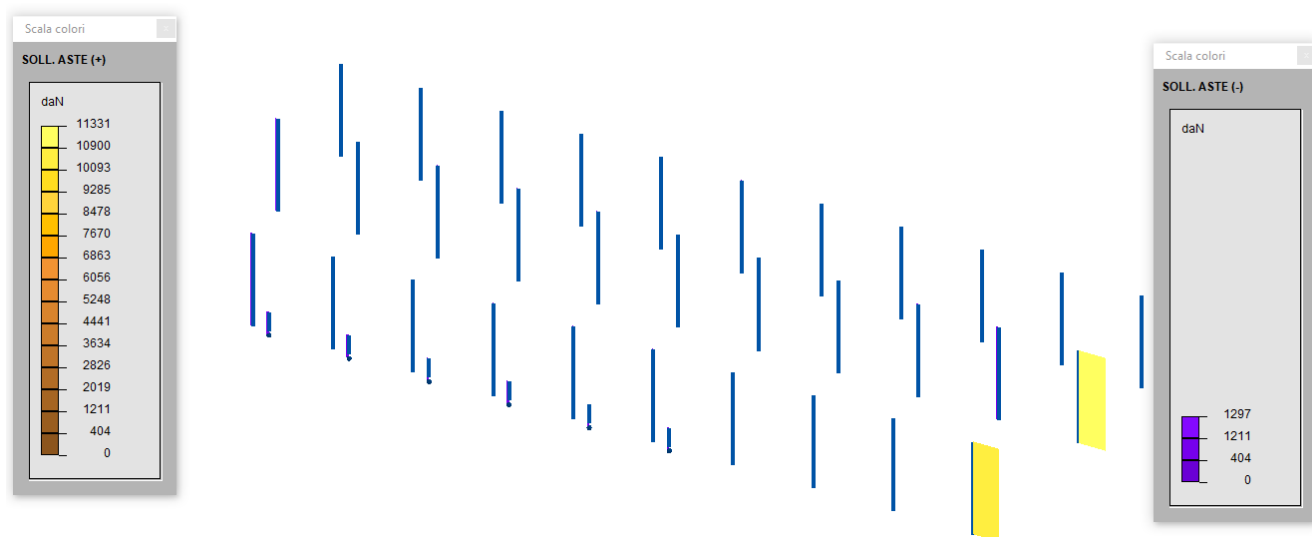


Figura 138 – SLU Ty

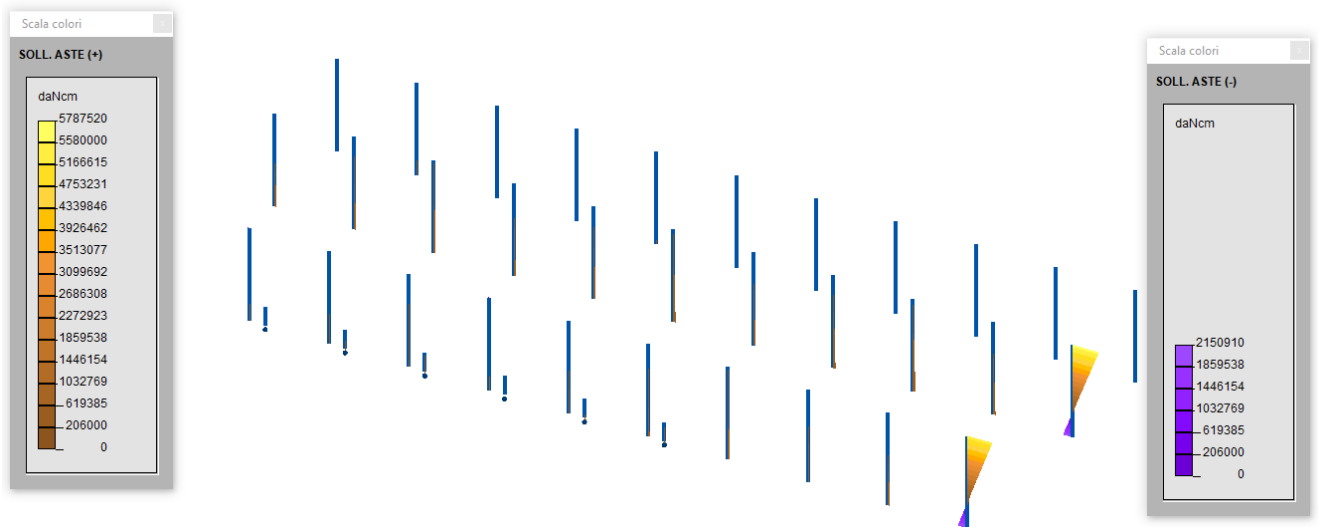


Figura 49 – SLU Mz

Si riportano di seguito le sollecitazioni agenti sui pilastri nell'involuppo dei casi SLV (casi 6, 7).

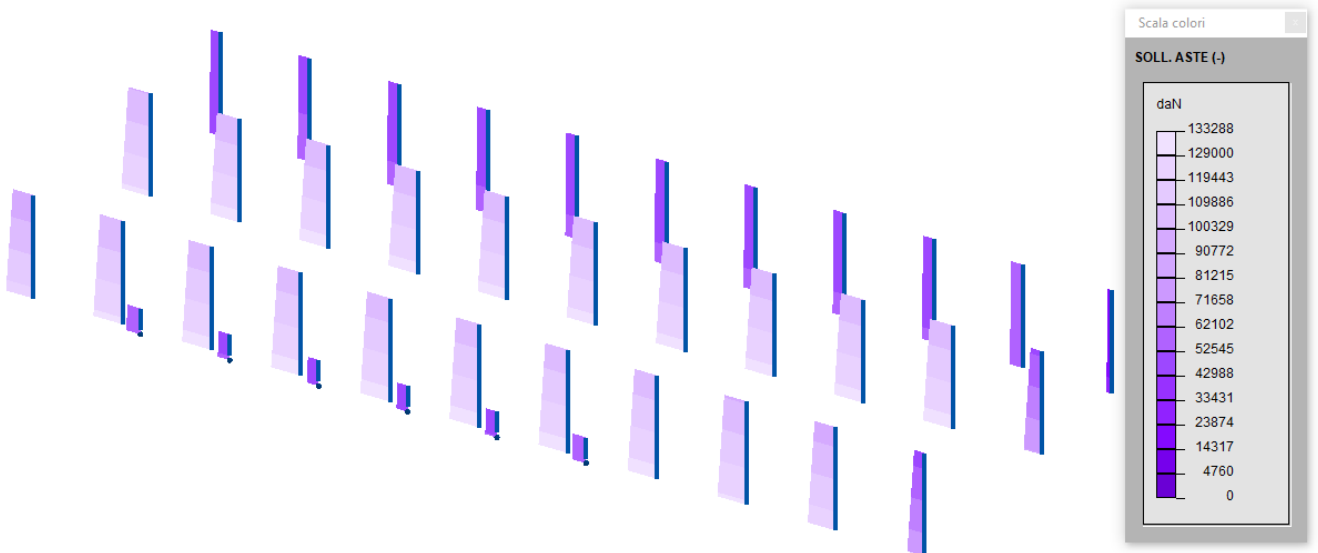


Figura 5014 – SLV N

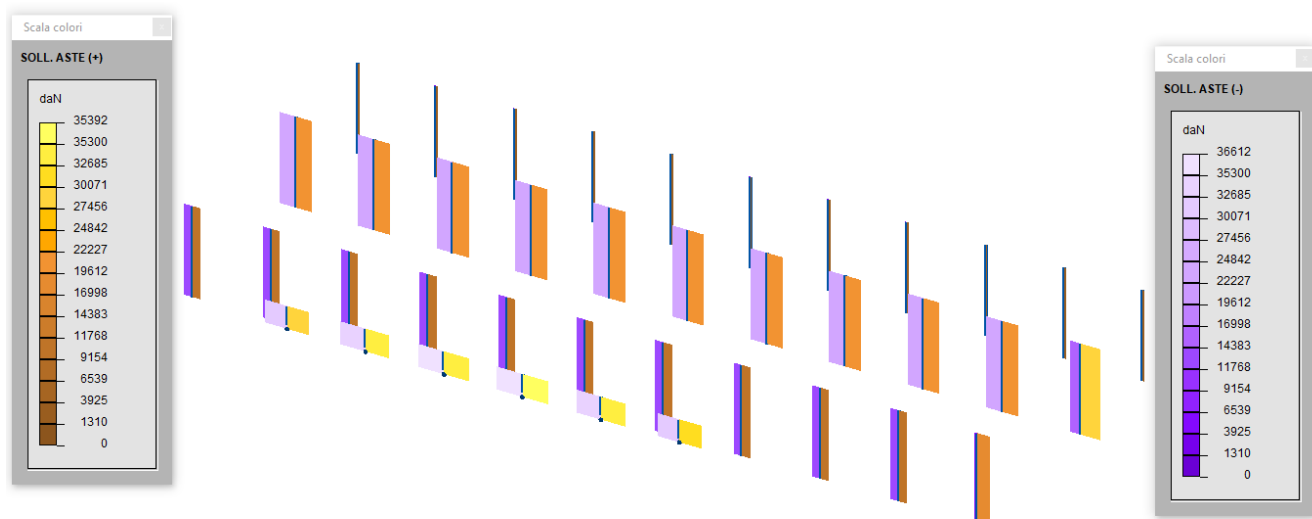


Figura 51 – SLV Ty

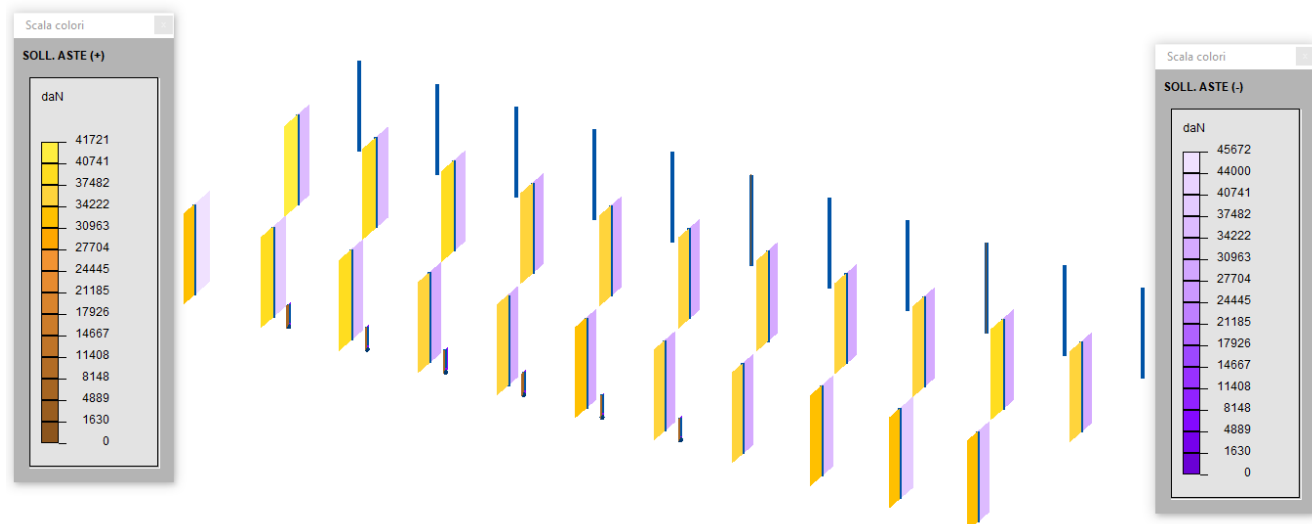


Figura 52 – SLV Tz

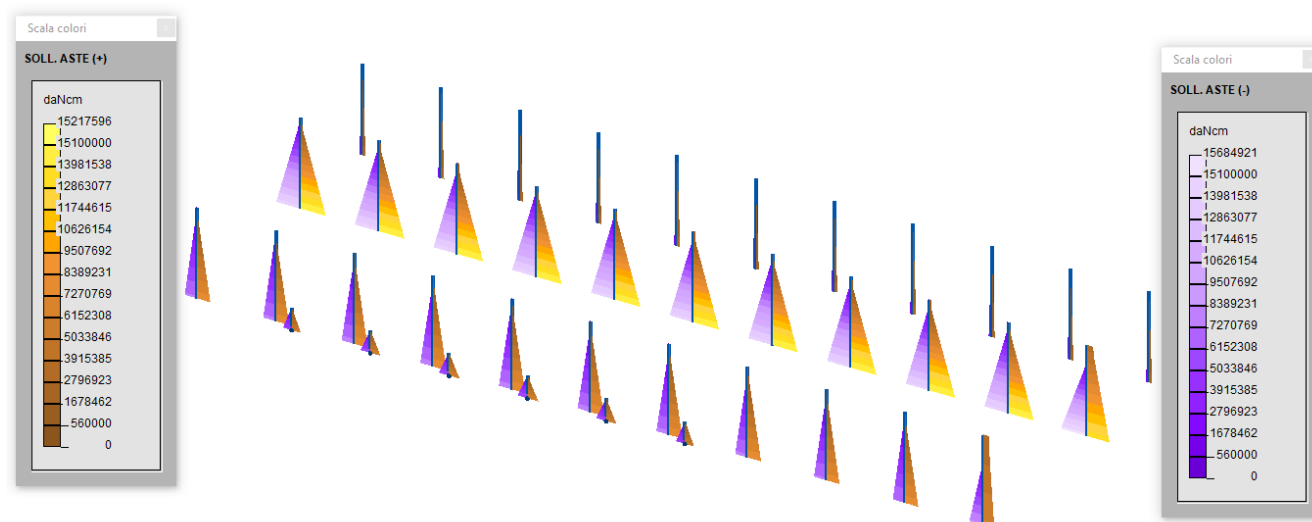


Figura 153 – SLV Mz

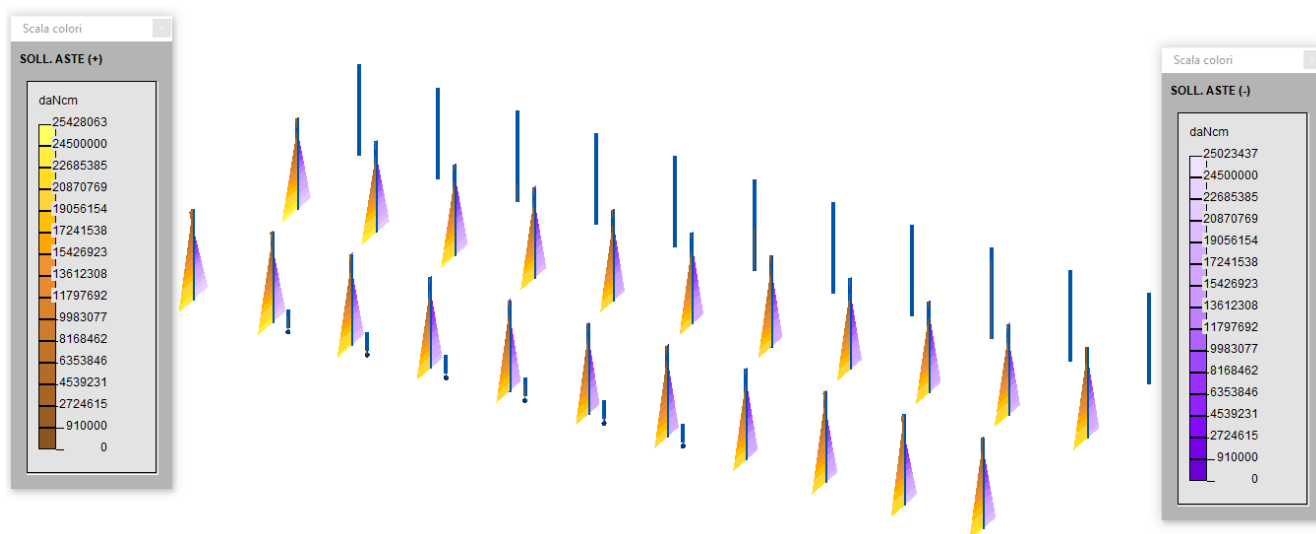


Figura 54 – SLV My

4.3.1. Pilastri 30x170

I pilastri 30x170 cm risultano armati con 16+16Φ24 a flessione mentre hanno staffe Φ16/20.

Di seguito si riporta la verifica dei pilastri più sollecitati eseguita con l'applicativo "Pilastri" di DOLMEN.

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P24 (ID=31)
 Aste : 82; 5772; 5773
 Metodo di verifica : stati limite - NTC18 (q=1.07 ; muphi=2.01) ->
 Duttilita' : non prevista (struttura non dissipativa).
 : dettagli costruttivi del capito 7 non attivi.
 Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %; 1/r %(permille)
 Unita' particolari : fessure [wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
 Copriferri (assi) : longitudinali= 4 ; staffe= 6
 Imperfezioni : M minimo = N * Max(e0;ei)
 Instabilita' : snellezza limite [EC2 5.8.3.1]

MATERIALI

CLS : C40/50; Rck=500; fck=415; fctk=25.17; fctm=35.96; Ecm=355471;
 gc=1.5; fcd=235.2; fbd=37.76; fctd=16.78; Ec2=0.2%; Ecu=0.35%
 ACCIAIO: B450C; ftk=5175; fyk=4500; Es=2100000; gs=1.15; fyd=3913;
 ftd=4500; fud=4439.8; Eyd=0.1863%; Eud=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.
 CLS : Scls(rara)=249; Scls(quasi permanente)=186.8; fbd(esercizio)=37.76
 ACCIAIO: Sacc(rara)=3600; Coeff.Omogeneizzazione=15

CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAX PRINC	SLU (sismico)	16
5	SLU con SISMAY PRINC	SLU (sismico)	16
8	Rara	RARA	1

9|Frequente |FREQUENTE | 1|
10|Quasi Perm |QUASI PERMAN. | 1|

<-

SEZIONI UTILIZZATE

1) Rettangolare: base=35; alt.=170; Acl=5950; iy=10.1; iz=49.07

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	eiz	eiy	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm
1	1	3.55	3.55	2.37	2.37	710.	630.	170.	170.	144.76	2.433 32024
2	1	2.33	2.33	1.55	1.55	465.	425.	170.	170.	144.76	2.433 32024
3	1	2.	2.	.33	.33	100.	20.	0.	0.	144.76	2.433 32024

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (incluse le imperfezioni):

Asta	Caso	NEd	MEyd	MEzd	E c/s	Sc/s	E acc	Sacc	VE
> 1	5- 4	-25741.	1591024.	1.	-1264451.	1.	-.031	-67.5	.04 833.7 SI
1	4- 5	-38488.	456589.	1.	-7592575.	1.	-.037	-79.7	.052 1091.3 SI
1	4-10	-61207.	-1197587.	1.	15211541.	1.	-.084	-155.9	.117 2458.4 SI
> 2	4- 5	4744.	1746561.	1.	-14254428	1.	-.092	-167.1	.147 3081.4 SI
2	4- 5	8203.	-174414.	1.	-8376929.	1.	-.035	-74.2	.073 1535.5 SI
2	5- 2	33648.	-3864409.	1.	-711468.	1.	-.064	-125.8	.117 2466.9 SI
> 3	5- 2	34129.	-3864409.	1.	-711468.	1.	-.064	-125.7	.118 2470.3 SI
3	5- 2	34872.	-1953422.	1.	-346518.	1.	-.03	-65.9	.065 1366.8 SI
3	5- 2	35616.	-71232.	1.68	-71232.	1.38	.008	0.	.015 305.3 SI

SNELLEZZA LIMITE Y [EC2 5.8.3.1]:

Asta	Caso	NEd	MEyd inf	MEyd sup	l0	A	B	C	nu	L lim	Lambd	VE
1	4-16	-94045.6	16573.6	-247781.	710.	.7	1.35	1.77	.067	128.4	70.27	SI
2	4-14	-17872.5	-138161.	-196965.	465.	.7	1.35	.999	.013	166.4	46.02	SI
3	5-15	-62568.3	3944011.	45417.9	100.	.7	1.35	1.69	.045	150.4	9.9	SI

SNELLEZZA LIMITE Z [EC2 5.8.3.1]:

Asta	Caso	NEd	MEzd inf	MEzd sup	l0	A	B	C	nu	L lim	Lambd	VE
1	5-12	-115918.3	475924.7	458740.7	710.	.7	1.35	.736	.083	48.17	14.47	SI
2	5-15	-69268.6	4157391.	722549.1	465.	.7	1.35	1.53	.05	129.2	9.48	SI
3	5-12	-55621.3	95476.	50363.3	100.	.7	1.35	1.17	.04	110.8	2.04	SI

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	4-10	21761.5	247170.4	252716.5	247170.4	4.02	20.	2.15	SI
1 C	4-10	21761.5	246839.4	246839.4	250004.4	4.02	20.	2.1	SI
1 S	4-10	21761.5	246839.4	246839.4	249103.7	4.02	20.	2.1	SI
2 I	4-10	-26988.6	242490.3	246839.4	242490.3	4.02	20.	2.1	SI
2 C	4-10	-26988.6	241900.4	246839.4	241900.4	4.02	20.	2.1	SI
2 S	4-10	-26988.6	241310.5	246839.4	241310.5	4.02	20.	2.1	SI
3 I	4-10	-26701.9	241263.2	246839.4	241263.2	4.02	20.	2.1	SI
3 C	4-10	-26701.9	241136.4	246839.4	241136.4	4.02	20.	2.1	SI
3 S	4-10	-26701.9	241009.5	246839.4	241009.5	4.02	20.	2.1	SI

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	5- 3	3267.1	54876.8	54876.8	196044.3	4.02	20.	2.5	SI
1 C	5- 3	3267.1	54876.8	54876.8	195318.5	4.02	20.	2.5	SI
1 S	5- 3	3267.1	54876.8	54876.8	194592.8	4.02	20.	2.5	SI
2 I	5-15	-14302.4	54876.8	54876.8	201829.7	4.02	20.	2.5	SI
2 C	5-15	-14302.4	54876.8	54876.8	201354.4	4.02	20.	2.5	SI
2 S	5-15	-14302.4	54876.8	54876.8	200879.1	4.02	20.	2.5	SI
3 I	5-15	38986.	54876.8	54876.8	200908.9	4.02	20.	2.5	SI
3 C	5-15	38986.	54876.8	54876.8	200806.6	4.02	20.	2.5	SI

3 S| 5-15| 38986. | 54876.8| 54876.8|200704.4| 4.02|20. |2.5 |SI|

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	8- 1	-74985.9	32006.2	-54304.4	-10.3	-131.3	SI
1 C	8- 1	-69705.3	2596.4	-13087.3	-8.8	-129.8	SI
1 S	8- 1	-64424.7	-26813.4	28129.9	-8.7	-114.1	SI
2 I	8- 1	-21872.9	-43237.4	23221.	-3.7	-31.2	SI
2 C	8- 1	-18414.5	450.1	14576.4	-2.4	-33.6	SI
2 S	8- 1	-14956.1	44137.7	5931.8	-2.8	-19.1	SI
3 I	8- 1	-14812.3	44137.7	5931.8	-2.8	-18.8	SI
3 C	8- 1	-14068.5	22913.1	4072.7	-2.2	-21.7	SI
3 S	8- 1	-13324.8	1688.5	2213.7	-1.7	-24.6	SI

Frequenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	9- 1	-72189.2	31725.8	-52150.4	-9.9	-126.3	SI
1 C	9- 1	-66908.6	2658.5	-13069.3	-8.5	-124.5	SI
1 S	9- 1	-61628.	-26408.7	26011.7	-8.4	-109.1	SI
2 I	9- 1	-21391.4	-42142.3	22523.	-3.6	-30.5	SI
2 C	9- 1	-17932.9	-706.3	14077.4	-2.3	-32.7	SI
2 S	9- 1	-14474.5	40729.6	5631.8	-2.7	-18.8	SI
3 I	9- 1	-14340.3	40729.6	5631.8	-2.6	-18.6	SI
3 C	9- 1	-13596.5	21129.5	3815.5	-2.1	-21.2	SI
3 S	9- 1	-12852.8	1529.4	1999.3	-1.7	-23.7	SI

Quasi permanenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	10- 1	-71295.	31613.	-51461.6	-9.8	-124.6	SI
1 C	10- 1	-66014.4	2671.9	-13056.7	-8.4	-122.8	SI
1 S	10- 1	-60733.8	-26269.3	25348.2	-8.3	-107.5	SI
2 I	10- 1	-21268.5	-41840.2	22277.9	-3.6	-30.4	SI
2 C	10- 1	-17810.1	-1019.4	13909.2	-2.3	-32.4	SI
2 S	10- 1	-14351.6	39801.4	5540.6	-2.6	-18.8	SI
3 I	10- 1	-14219.8	39801.4	5540.6	-2.6	-18.6	SI
3 C	10- 1	-13476.	20644.	3740.8	-2.1	-21.	SI
3 S	10- 1	-12732.3	1486.7	1941.1	-1.6	-23.5	SI

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P25 (ID=30)
Aste : 67; 5774; 5775; 5776; 5777
Metodo di verifica : stati limite - NTC18 (q=1.07 ; muphi=2.01) ->
Duttilita' : non prevista (struttura non dissipativa).
: dettagli costruttivi del capito 7 non attivi.
Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %; 1/r %(permille)
Unita' particolari : fessure [wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
Copriferri (assi) : longitudinali= 4 ; staffe= 6
Imperfezioni : M minimo = N * Max(e0;ei)
Instabilita' : rigidezza nominale [EC2 5.8.7]; fief=3

MATERIALI

CLS : C40/50; Rck=500; fck=415; fctk=25.17; fctm=35.96; Ecm=355471;
gc=1.5; fcd=235.2; fbd=37.76; fctd=16.78; Ec2=0.2%; Ecu=0.35%
ACCIAIO: B450C; ftk=5175; fyk=4500; Es=2100000; gs=1.15; fyd=3913;
ftd=4500; fud=4439.8; Eyd=0.1863%; Eud=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.

CLS : ScIs(rara)=249; ScIs(quasi permanente)=186.8; fbd(esercizio)=37.76

ACCIAIO: Sacc(rara)=3600; Coeff.Omogeneizzazione=15

CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAX PRINC	SLU (sismico)	16
5	SLU con SISMAX PRINC	SLU (sismico)	16
8	Rara	RARA	1
9	Frequente	FREQUENTE	1
10	Quasi Perm	QUASI PERMAN.	1

<-

SEZIONI UTILIZZATE

1) Rettangolare: base=35; alt.=170; AcIs=5950; iy=10.1; iz=49.07

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	eiz	eiy	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm
1	1	3.55	3.55	2.37	2.37	710.	630.	170.	170.	144.76	2.433 32024
2	1	2.	2.	.55	.55	165.	150.	0.	0.	144.76	2.433 32024
3	1	2.	2.	.5	.5	150.	135.	0.	0.	144.76	2.433 32024
4	1	2.	2.	.5	.5	150.	110.	0.	0.	144.76	2.433 32024
5	1	2.	2.	.33	.33	100.	20.	0.	0.	144.76	2.433 32024

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

Asta	Caso	NEd	MEyd	MEzd	E cIs	ScIs	E acc	Sacc	VE
> 1	5- 3	-93012.	1622452.	1.13	-678634.	1.01	-.029	-64.	.019 388.7 SI
1	4-12	-81680.	-631287.	1.12	7450740.	1.01	-.039	-82.7	.037 784.
1	4-12	-76399.	-1770910.	1.12	12855845.	1.01	-.085	-157.4	.102 2150.8 SI
> 2	4-12	30355.	-1870810.	1.	12941048.	1.	-.09	-163.7	.15 3142.7 SI
2	4-12	31582.	-658681.	1.	11029596.	1.	-.055	-112.	.112 2359.
2	4-12	32809.	615410.	1.	9118136.	1.	-.047	-97.3	.097 2031.9 SI
> 3	4-12	32809.	615410.	1.	9118136.	1.	-.047	-97.3	.097 2031.9 SI
3	4-12	33925.	652640.	1.	7392478.	1.	-.041	-86.7	.084 1767.6 SI
3	5-15	94792.	1363410.	1.	1508543.	1.	-.025	-54.2	.079 1658.1 SI
> 4	5-15	131087.	1363410.	1.	1508543.	1.	-.021	-47.8	.093 1962.3 SI
4	5-15	132203.	2411806.	1.	1060326.	1.	-.036	-76.7	.116 2426.8 SI
4	5-15	133318.	3460226.	1.	611397.	1.	-.05	-103.4	.14 2945.6 SI
> 5	5-15	134212.	3460226.	1.	611397.	1.	-.05	-103.3	.141 2952.1 SI
5	5-15	134955.	1751750.	1.	311578.	1.	-.019	-42.9	.095 1990.8 SI
5	5-15	135699.	271398.	6.27	-271398.	4.17	.03	0.	.055 1163.2 SI

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

Asta	Caso	NB	l0	Jn	JcIs/Jn	McaI	M0Ed	MEd	nu
1 S	4-12	-794442.6	710.	114149.8	5.321	-1577065.	-1577065.	-1770910.	.062
2 I	4-12	-14575021	165.	113102.7	5.3703	-1870810.	-1870810.	-1870810.	.
3 I	4-12	-17635775	150.	113102.7	5.3703	615410.	615410.	615410.	.
4 S	5-15	-17635775	150.	113102.7	5.3703	3460226.	3460226.	3460226.	.
5 I	5-15	-39680494	100.	113102.7	5.3703	3460226.	3460226.	3460226.	.

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

Asta	Caso	NB	l0	Jn	JcIs/Jn	McaI	M0Ed	MEd	nu
1 S	4-12	-14068562	710.	2021447.	7.0888	12776380.	12776380.	12855845.	.062
2 I	4-12	-.25984E9	165.	2016362.	7.1067	12941048.	12941048.	12941048.	.
3 I	4-12	-.31441E9	150.	2016362.	7.1067	9118136.	9118136.	9118136.	.
4 S	5-15	-.31441E9	150.	2016362.	7.1067	611397.	611397.	611397.	.
5 I	5-15	-.70741E9	100.	2016362.	7.1067	611397.	611397.	611397.	.

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	4-10	18001.2	250032.4	252716.5	250032.4	4.02	20.	2.15	SI
1 C	4-10	18001.2	249145.1	252716.5	249145.1	4.02	20.	2.15	SI
1 S	4-10	18001.2	248257.8	252716.5	248257.8	4.02	20.	2.15	SI
2 I	4- 7	25030.6	242861.	246839.4	242861.	4.02	20.	2.1	SI
2 C	4- 7	25030.6	242651.7	246839.4	242651.7	4.02	20.	2.1	SI
2 S	4- 7	25030.6	242442.3	246839.4	242442.3	4.02	20.	2.1	SI
3 I	4- 7	24870.	242442.3	246839.4	242442.3	4.02	20.	2.1	SI
3 C	4- 7	24870.	242252.	246839.4	242252.	4.02	20.	2.1	SI
3 S	4- 7	24870.	242061.8	246839.4	242061.8	4.02	20.	2.1	SI
4 I	4-10	-24743.1	243069.6	246839.4	243069.6	4.02	20.	2.1	SI
4 C	4-10	-24743.1	242879.3	246839.4	242879.3	4.02	20.	2.1	SI
4 S	4-10	-24743.1	242689.	246839.4	242689.	4.02	20.	2.1	SI
5 I	4-10	-24624.	242503.2	246839.4	242503.2	4.02	20.	2.1	SI
5 C	4-10	-24624.	242376.4	246839.4	242376.4	4.02	20.	2.1	SI
5 S	4-10	-24624.	242249.5	246839.4	242249.5	4.02	20.	2.1	SI

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	5- 3	3667.2	54876.8	54876.8	205093.	4.02	20.	2.5	SI
1 C	5- 3	3667.2	54876.8	54876.8	204367.2	4.02	20.	2.5	SI
1 S	5- 3	3667.2	54876.8	54876.8	203641.5	4.02	20.	2.5	SI
2 I	5- 2	25918.6	54876.8	54876.8	212418.3	4.02	20.	2.5	SI
2 C	5- 2	25918.6	54876.8	54876.8	212249.7	4.02	20.	2.5	SI
2 S	5- 2	25918.6	54876.8	54876.8	212081.	4.02	20.	2.5	SI
3 I	5- 3	-1317.4	54876.8	54876.8	209997.3	4.02	20.	2.5	SI
3 C	5- 3	-1317.4	54876.8	54876.8	209843.9	4.02	20.	2.5	SI
3 S	5- 3	-1317.4	54876.8	54876.8	209690.6	4.02	20.	2.5	SI
4 I	5-15	-13979.2	54876.8	54876.8	192309.6	4.02	20.	2.5	SI
4 C	5-15	-13979.2	54876.8	54876.8	192309.6	4.02	20.	2.5	SI
4 S	5-15	-13979.2	54876.8	54876.8	192309.6	4.02	20.	2.5	SI
5 I	5-15	34169.5	54876.8	54876.8	192309.6	4.02	20.	2.5	SI
5 C	5-15	34169.5	54876.8	54876.8	192309.6	4.02	20.	2.5	SI
5 S	5-15	34169.5	54876.8	54876.8	192309.6	4.02	20.	2.5	SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	8- 1	-97035.7	19432.1	-52938.8	-12.8	-175.4	SI
1 C	8- 1	-91755.1	8203.4	-13445.6	-11.7	-170.1	SI
1 S	8- 1	-86474.5	-3025.2	26047.6	-11.	-160.4	SI
2 I	8- 1	-30257.7	-11660.8	25845.8	-4.1	-53.	SI
2 C	8- 1	-29030.5	-33171.8	21832.	-4.4	-46.7	SI
2 S	8- 1	-27803.3	-54682.9	17818.1	-4.7	-40.4	SI
3 I	8- 1	-27803.3	-54682.9	17818.1	-4.7	-40.4	SI
3 C	8- 1	-26687.7	-35491.9	14169.2	-4.1	-42.3	SI
3 S	8- 1	-25572.1	-16300.9	10520.3	-3.6	-44.2	SI
4 I	8- 1	-26479.7	-16300.9	10520.3	-3.7	-45.9	SI
4 C	8- 1	-25364.1	27202.5	6871.3	-3.8	-41.9	SI
4 S	8- 1	-24248.5	70705.8	3222.4	-4.5	-31.5	SI
5 I	8- 1	-24681.	70705.8	3222.4	-4.5	-32.3	SI
5 C	8- 1	-23937.3	36125.3	789.7	-3.7	-37.8	SI
5 S	8- 1	-23193.5	1544.8	-1642.9	-2.9	-43.2	SI

Frequenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	9- 1	-91806.3	20303.3	-50972.1	-12.1	-165.5	SI
1 C	9- 1	-86525.7	7687.2	-13195.5	-11.1	-160.4	SI
1 S	9- 1	-81245.1	-4929.	24581.1	-10.4	-150.3	SI

2 I	9- 1	-28531.2	-12249.9	24125.9	-3.9	-49.7	SI
2 C	9- 1	-27304.	-31906.	20384.3	-4.2	-43.8	SI
2 S	9- 1	-26076.8	-51562.	16642.6	-4.4	-37.8	SI
3 I	9- 1	-26076.8	-51562.	16642.6	-4.4	-37.8	SI
3 C	9- 1	-24961.2	-33371.3	13241.2	-3.9	-39.5	SI
3 S	9- 1	-23845.6	-15180.5	9839.7	-3.3	-41.2	SI
4 I	9- 1	-24691.2	-15180.5	9839.7	-3.4	-42.8	SI
4 C	9- 1	-23575.6	24787.9	6438.2	-3.5	-39.	SI
4 S	9- 1	-22460.	64756.3	3036.8	-4.1	-29.3	SI
5 I	9- 1	-22851.6	64756.3	3036.8	-4.2	-30.	SI
5 C	9- 1	-22107.8	33075.1	769.1	-3.4	-35.	SI
5 S	9- 1	-21364.1	1393.8	-1498.5	-2.7	-39.8	SI

Quasi permanenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	10- 1	-90227.3	20492.6	-50344.	-11.9	-162.5	SI
1 C	10- 1	-84946.7	7548.8	-13116.5	-10.9	-157.4	SI
1 S	10- 1	-79666.1	-5395.	24111.1	-10.2	-147.3	SI
2 I	10- 1	-28102.2	-12334.7	23603.8	-3.9	-49.	SI
2 C	10- 1	-26875.1	-31560.2	19943.9	-4.1	-43.1	SI
2 S	10- 1	-25647.9	-50785.6	16284.	-4.3	-37.2	SI
3 I	10- 1	-25647.9	-50785.6	16284.	-4.3	-37.2	SI
3 C	10- 1	-24532.2	-32847.5	12956.8	-3.8	-38.9	SI
3 S	10- 1	-23416.6	-14909.4	9629.6	-3.3	-40.5	SI
4 I	10- 1	-24247.2	-14909.4	9629.6	-3.4	-42.1	SI
4 C	10- 1	-23131.6	24138.2	6302.4	-3.4	-38.4	SI
4 S	10- 1	-22016.	63185.8	2975.2	-4.	-28.8	SI
5 I	10- 1	-22397.2	63185.8	2975.2	-4.1	-29.5	SI
5 C	10- 1	-21653.4	32269.3	757.1	-3.4	-34.3	SI
5 S	10- 1	-20909.7	1352.9	-1461.	-2.7	-39.	SI

4.3.2. Pilastri 30x145

I pilastri 30x145 cm risultano armati con 12+12 Φ 20 a flessione mentre hanno staffe Φ 12/20.

Di seguito si riporta la verifica dei pilastri più sollecitati eseguita con l'applicativo "Pilastri" di DOLMEN.

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P26 (ID=34)
Aste : 81; 229
Metodo di verifica : stati limite - NTC18 (q=1.07 ; muphi=2.01) ->
Duttilita' : non prevista (struttura non dissipativa).
: dettagli costruttivi del capito 7 non attivi.
Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %; 1/r ‰(permille)
Unita' particolari : fessure [wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
Copriferri (assi) : longitudinali= 4 ; staffe= 6
Imperfezioni : M minimo = N * Max(e0;ei)
Instabilita' : rigidezza nominale [EC2 5.8.7]; fief=3

MATERIALI

CLS : C40/50; Rck=500; fck=415; fctk=25.17; fctm=35.96; Ecm=355471;
gc=1.5; fcd=235.2; fbd=37.76; fctd=16.78; Ec2=0.2%; Ecu=0.35%
ACCIAIO: B450C; ftk=5175; fyk=4500; Es=2100000; gs=1.15; fyd=3913;
ftd=4500; fud=4439.8; Eyd=0.1863%; Eud=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.

CLS : ScIs(rara)=249; ScIs(quasi permanente)=186.8; fbd(esercizio)=37.76

ACCIAIO: Sacc(rara)=3600; Coeff.Omogeneizzazione=15

CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAT PRINC	SLU (sismico)	16
5	SLU con SISMAT PRINC	SLU (sismico)	16
8	Rara	RARA	1
9	Frequente	FREQUENTE	1
10	Quasi Perm	QUASI PERMAN.	1

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SEZIONI UTILIZZATE

1) Rettangolare: base=30; alt.=145; AcIs=4350; iy=8.66; iz=41.86

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	leiz	leiy	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm
1	1	3.55	3.55	2.37	2.37	710.	630.	145.	145.	75.4	1.733 24020
2	1	2.82	2.82	1.88	1.88	565.	485.	145.	145.	75.4	1.733 24020

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

Asta	Caso	NEd	MEyD	MEzD	E cIs	ScIs	E acc	Sacc	VE
> 1	5- 4	-64028.	1760394.	1.33	-737222.	1.01	-0.64	-127.1	.074 1550.6 SI
1	4- 5	-62900.	134552.	1.35	-4080115.	1.01	-0.31	-67.1	.028 583.2 SI
1	4- 7	-62362.	555208.	1.38	-8544223.	1.01	-0.83	-155.3	.115 2424.3 SI
> 2	4-12	-16358.	-767030.	1.04	8166403.	1.	-0.93	-167.7	.153 3205.8 SI
2	4-12	-13286.	-331662.	1.04	4076542.	1.	-0.42	-88.3	.069 1449.4 SI
2	5- 2	-7463.	-198015.	1.04	-21117.	1.17	-0.06	-14.6	.007 157. SI

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

Asta	Caso	NB	l0	Jn	JcIs/Jn	McaI	M0Ed	MEd	nu
1 S	4- 7	-256135.1	710.	36802.9	8.8648	403293.	403293.	555208.	.069
2 I	4-12	-397999.5	565.	36213.9	9.009	-735504.	-735504.	-767030.	.016

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

Asta	Caso	NB	l0	Jn	JcIs/Jn	McaI	M0Ed	MEd	nu
1 S	4- 7	-5424827.	710.	779468.6	9.7779	-8433841.	-8433841.	-8544223.	.069
2 I	4-12	-8535260.	565.	776621.9	9.8137	8150752.	8150752.	8166403.	.016

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	4-10	12638.6	140400.5	140400.5	164809.2	2.26	20.	2.5	SI
1 C	4-10	12638.6	140400.5	140400.5	164226.6	2.26	20.	2.5	SI
1 S	4-10	12638.6	140400.5	140400.5	163644.1	2.26	20.	2.5	SI
2 I	4-10	-15525.4	140400.5	140400.5	156674.3	2.26	20.	2.5	SI
2 C	4-10	-15525.4	124800.5	124800.5	156210.7	1.01	10.	2.5	SI
2 S	4-10	-15525.4	140400.5	140400.5	155747.1	2.26	20.	2.5	SI

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	5-14	-3228.1	25889.5	25889.5	147682.1	2.26	20.	2.5	SI
1 C	5-14	-3228.1	25889.5	25889.5	147162.9	2.26	20.	2.5	SI
1 S	5-14	-3228.1	25889.5	25889.5	146643.7	2.26	20.	2.5	SI
2 I	5-15	-3000.8	25889.5	25889.5	139907.1	2.26	20.	2.5	SI
2 C	5-15	-3000.8	23012.8	23012.8	139494.	1.01	10.	2.5	SI
2 S	5-15	-3000.8	25889.5	25889.5	139080.8	2.26	20.	2.5	SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	8- 1	-76535.8	573.5	-27036.5	-14.4	-209.3	SI
1 C	8- 1	-72675.2	9555.	-7770.7	-13.9	-197.7	SI
1 S	8- 1	-68814.5	18536.5	11495.	-13.5	-183.7	SI
2 I	8- 1	-16291.8	-41599.7	14903.2	-4.6	-30.	SI
2 C	8- 1	-13219.6	-16576.4	7971.2	-3.1	-30.4	SI
2 S	8- 1	-10147.4	8446.9	1039.1	-2.2	-25.3	SI

Frequenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	9- 1	-71345.5	1340.8	-25947.1	-13.4	-194.8	SI
1 C	9- 1	-67484.9	9112.2	-7677.3	-12.9	-183.5	SI
1 S	9- 1	-63624.3	16883.5	10592.4	-12.5	-169.9	SI
2 I	9- 1	-15645.4	-39912.	14119.5	-4.5	-28.8	SI
2 C	9- 1	-12573.2	-16142.	7526.3	-3.	-28.8	SI
2 S	9- 1	-9501.1	7628.	933.2	-2.	-23.8	SI

Quasi permanenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	10- 1	-69671.1	1539.8	-25598.2	-13.1	-190.1	SI
1 C	10- 1	-65810.5	8984.9	-7644.5	-12.6	-178.9	SI
1 S	10- 1	-61949.9	16430.	10309.2	-12.1	-165.4	SI
2 I	10- 1	-15483.7	-39434.2	13861.	-4.4	-28.6	SI
2 C	10- 1	-12411.5	-16013.7	7382.1	-2.9	-28.4	SI
2 S	10- 1	-9339.3	7406.7	903.2	-2.	-23.4	SI

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P27 (ID=33)
Aste : 79; 227
Metodo di verifica : stati limite - NTC18 (q=1.07 ; muphi=2.01) ->
Duttilita' : non prevista (struttura non dissipativa).
: dettagli costruttivi del capito 7 non attivi.
Unita' di misura : cm; dan; dan/cm; dan/cm; dan/cm2; deform. %; 1/r ‰(permille)
Unita' particolari : fessure [wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
Copriferrì (assi) : longitudinali= 4 ; staffe= 6
Imperfezioni : M minimo = N * Max(e0;ei)
Instabilita' : rigidezza nominale [EC2 5.8.7]; fief=3

MATERIALI

CLS : C40/50; Rck=500; fck=415; fctk=25.17; fctm=35.96; Ecm=355471;
gc=1.5; fcd=235.2; fbd=37.76; fctd=16.78; Ec2=0.2%; Ecu=0.35%
ACCIAIO: B450C; ftk=5175; fyk=4500; Es=2100000; gs=1.15; fyd=3913;
ftd=4500; fud=4439.8; Eyd=0.1863%; Eud=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.
CLS : ScIs(rara)=249; ScIs(quasi permanente)=186.8; fbd(esercizio)=37.76
ACCIAIO: Sacc(rara)=3600; Coeff.Omogeneizzazione=15

CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAX PRINC	SLU (sismico)	16

5|SLU con SISMAY PRINC |SLU (sismico) | 16|
8|Rara |RARA | 1|
9|Frequente |FREQUENTE | 1|
10|Quasi Perm |QUASI PERMAN. | 1|

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SEZIONI UTILIZZATE

1) Rettangolare: base=30; alt.=145; Acl_s=4350; i_y=8.66; i_z=41.86

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	leiz	leiy	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm
1	1	3.55	3.55	2.37	2.37	710.	630.	145.	145.	75.4	1.733 24020
2	1	2.82	2.82	1.88	1.88	565.	485.	145.	145.	75.4	1.733 24020

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

Asta	Caso	NEd	MEyd	MEzd	E c _{ls}	Sc _{ls}	E acc	Sacc	VE	
> 1	5-14	-68834.	-1313171.	1.37	436129.	1.01	-0.045	-94.8	.042	874.5 SI
1	4- 5	-66028.	209968.	1.38	-4106533.	1.01	-0.033	-71.9	.028	593.3 SI
1	4- 5	-62167.	-303513.	20.3	-9439926.	1.01	-0.08	-150.8	.123	2590.5 SI
> 2	4-12	-16003.	-428360.	1.04	9525992.	1.	-0.088	-161.6	.165	3458.4 SI
2	4-12	-12931.	-171552.	1.04	4751972.	1.	-0.04	-84.9	.076	1590.4 SI
2	5- 2	-7325.	-192706.	1.04	20726.	1.33	-0.006	-14.2	.007	152.1 SI

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

Asta	Caso	NB	l0	Jn	Jc _{ls} /Jn	Mca	M0Ed	MEd	nu
1 S	4- 5	-256121.1	710.	36800.9	8.8653	-14955.	-220693.	-303513.	.068
2 I	4-12	-397967.4	565.	36211.	9.0097	-411135.	-411135.	-428360.	.016

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

Asta	Caso	NB	l0	Jn	Jc _{ls} /Jn	Mca	M0Ed	MEd	nu
1 S	4- 5	-5424760.	710.	779458.9	9.778	-9318309.	-9318309.	-9439926.	.068
2 I	4-12	-8535105.	565.	776607.8	9.8139	9508131.	9508131.	9525992.	.016

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	4-12	14863.6	62400.2	62400.2	164858.3	1.01	20.	2.5	SI
1 C	4-12	14863.6	62400.2	62400.2	164275.7	1.01	20.	2.5	SI
1 S	4-12	14863.6	62400.2	62400.2	163693.2	1.01	20.	2.5	SI
2 I	4-12	-16867.5	62400.2	62400.2	156773.3	1.01	20.	2.5	SI
2 C	4-12	-16867.5	62400.2	62400.2	156309.8	1.01	20.	2.5	SI
2 S	4-12	-16867.5	62400.2	62400.2	155846.2	1.01	20.	2.5	SI

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	5-14	-1934.8	11506.4	11506.4	146829.5	1.01	20.	2.5	SI
1 C	5-14	-1934.8	11506.4	11506.4	146310.3	1.01	20.	2.5	SI
1 S	5-14	-1934.8	11506.4	11506.4	145791.1	1.01	20.	2.5	SI
2 I	5-15	-1892.4	11506.4	11506.4	139872.6	1.01	20.	2.5	SI
2 C	5-15	-1892.4	11506.4	11506.4	139459.4	1.01	20.	2.5	SI
2 S	5-15	-1892.4	11506.4	11506.4	139046.3	1.01	20.	2.5	SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	Sc _{ls}	Sacc	VE
1 I	8- 1	-76376.9	-9606.6	-11699.6	-14.6	-207.6	SI
1 C	8- 1	-72516.3	14371.2	-10491.	-14.	-195.4	SI
1 S	8- 1	-68655.6	38348.9	-9282.4	-14.2	-177.	SI
2 I	8- 1	-16077.6	-59994.8	14323.5	-5.3	-23.4	SI

2 C| 8- 1| -13005.4| -25022.6| 7144.8| -3.4| -27.1|SI|
 2 S| 8- 1| -9933.2| 9949.7| -33.9| -2.2| -24.3|SI|

Frequenti:

Asta| Caso | NEd | MEyd | MEzd | ScIs | Sacc |VE|
 1 I| 9- 1| -71357. | -7845.2| -11035.1| -13.6| -194.3|SI|
 1 C| 9- 1| -67496.3| 13405.7| -10109.9| -13.1| -181.8|SI|
 1 S| 9- 1| -63635.7| 34656.7| -9184.7| -13.1| -164.3|SI|
 2 I| 9- 1| -15444.8| -56307. | 12557.4| -5. | -23.1|SI|
 2 C| 9- 1| -12372.6| -23644.4| 6265. | -3.2| -25.9|SI|
 2 S| 9- 1| -9300.4| 9018.1| -27.5| -2. | -22.8|SI|

Quasi permanenti:

Asta| Caso | NEd | MEyd | MEzd | ScIs | Sacc |VE|
 1 I| 10- 1| -69736.3| -7277. | -10822.9| -13.2| -190. |SI|
 1 C| 10- 1| -65875.7| 13086.3| -9983.9| -12.7| -177.5|SI|
 1 S| 10- 1| -62015.1| 33449.6| -9144.8| -12.8| -160.2|SI|
 2 I| 10- 1| -15286.4| -55095.7| 11976.1| -4.9| -23.1|SI|
 2 C| 10- 1| -12214.2| -23167.6| 5975.4| -3.1| -25.7|SI|
 2 S| 10- 1| -9142. | 8760.4| -25.3| -2. | -22.5|SI|

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P28 (ID=35)
 Aste : 40; 6734; 195; 6714
 Metodo di verifica : stati limite - NTC18 (q=1.07 ; muphi=2.01) ->
 Duttilita' : non prevista (struttura non dissipativa).
 : dettagli costruttivi del capito 7 non attivi.
 Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %; 1/r ‰(permille)
 Unita' particolari : fessure [wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
 Copriferrì (assi) : longitudinali= 4 ; staffe= 6
 Imperfezioni : M minimo = N * Max(e0;ei)
 Instabilita' : snellezza limite [NTC18 4.1.2.3.9.2]

MATERIALI

CLS : C40/50; Rck=500; fck=415; fctk=25.17; fctm=35.96; Ecm=355471;
 gc=1.5; fcd=235.2; fbd=37.76; fctd=16.78; Ec2=0.2%; Ecu=0.35%
 ACCIAIO: B450C; ftk=5175; fyk=4500; Es=2100000; gs=1.15; fyd=3913;
 ftd=4500; fud=4439.8; Eyd=0.1863%; Eud=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.
 CLS : ScIs(rara)=249; ScIs(quasi permanente)=186.8; fbd(esercizio)=37.76
 ACCIAIO: Sacc(rara)=3600; Coeff.omogeneizzazione=15

CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAX PRINC	SLU (sismico)	16
5	SLU con SISMAX PRINC	SLU (sismico)	16
8	Rara	RARA	1
9	Frequente	FREQUENTE	1
10	Quasi Perm	QUASI PERMAN.	1

<-

SEZIONI UTILIZZATE

1) Rettangolare: base=30; alt.=145; AcIs=4350; iy=8.66; iz=41.86

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	eiz	eiy	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm	
1		1		2.45		2.45		1.63		1.63		490. 490. 145. 145. 75.4 1.733 24020
2		1		2. 2.	.73		.73		220. 140.	0.	0.	75.4 1.733 24020
3		1		2. 2.	.88		.88		265. 265.	0.	0.	75.4 1.733 24020
4		1		2. 2.	1. 1.	300. 220.	0.	0.	75.4 1.733 24020			

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (incluse le imperfezioni):

Asta	Caso	NEd	MEyd	MEzd	E c/s	Sc/s	E acc	Sacc	VE
> 1		4- 5		-34002.	313009. 1.	-4037182. 1.	-.039	-83.3	.052 1082.6 SI
1		4- 5		-31338.	137527. 1.	-2778242. 1.	-.023	-51.3	.027 571.1 SI
1		4-12		-189234.	463624. 6.21	795893. 1.	-.029	-62.3	-.009 -189.7 SI
> 2		1- 1		-175618.	-351237. 15.	-696525. 1.	-.025	-54.5	-.009 -196.8 SI
2		4-12		-154548.	121310. 1.	2078071. 1.	-.024	-52.6	-.005 -109.4 SI
2		4-12		-153352.	306704. 1.65	3370347. 1.	-.032	-69.8	.002 33.6 SI
> 3		4- 5		3851.	-12360. 1.	-3138618. 1.	-.022	-48.3	.057 1192.7 SI
3		4- 5		5292.	-228173. 1.	-2710524. 1.	-.029	-62.6	.058 1209.7 SI
3		4- 5		6733.	-136268. 1.	-2298042. 1.	-.022	-48.3	.049 1022.7 SI
> 4		4- 5		-22604.	-136268. 1.	-2298042. 1.	-.02	-45.	.025 533.7 SI
4		4- 5		-20973.	-43507. 1.	-1118199. 1.	-.008	-18.9	.006 118.3 SI
4		1- 1		-52632.	-105264. 13.6	105264. 277.	-.007	-15.7	-.003 -65.6 SI

SNELLEZZA LIMITE Y [NTC18 4.1.2.3.9.2]:

Asta	Caso	NEd	l0	nu	L lim	Lambd	VE
1		4-12		-194563.2 490.	.19	57.32 56.58 SI	
2		1- 1		-175618.3 220.	.172	60.34 25.4 SI	
3		4-12		-82164.6 265.	.08	88.21 30.6 SI	
4		1- 1		-56873.3 300.	.056	106. 34.64 SI	

SNELLEZZA LIMITE Z [NTC18 4.1.2.3.9.2]:

Asta	Caso	NEd	l0	nu	L lim	Lambd	VE
1		4-12		-194563.2 490.	.19	57.32 11.71 SI	
2		1- 1		-175618.3 220.	.172	60.34 5.26 SI	
3		4-12		-82164.6 265.	.08	88.21 6.33 SI	
4		1- 1		-56873.3 300.	.056	106. 7.17 SI	

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	4-10	-8626.3	140400.5	140400.5	182421.3	2.26	20.	2.5	SI
1 C	4-10	-8626.3	140400.5	140400.5	182019.3	2.26	20.	2.5	SI
1 S	4-10	-8626.3	140400.5	140400.5	181617.3	2.26	20.	2.5	SI
2 I	4-12	11797.2	140400.5	140400.5	177859.1	2.26	20.	2.5	SI
2 C	4-12	11797.2	140400.5	140400.5	177678.6	2.26	20.	2.5	SI
2 S	4-12	11797.2	140400.5	140400.5	177498.1	2.26	20.	2.5	SI
3 I	4-12	-5723.8	140400.5	140400.5	166756.5	2.26	20.	2.5	SI
3 C	4-12	-5723.8	140400.5	140400.5	166539.1	2.26	20.	2.5	SI
3 S	4-12	-5723.8	140400.5	140400.5	166321.6	2.26	20.	2.5	SI
4 I	4-12	-8145.5	140400.5	140400.5	161993.6	2.26	20.	2.5	SI
4 C	4-12	-8145.5	140400.5	140400.5	161747.4	2.26	20.	2.5	SI
4 S	4-12	-8145.5	140400.5	140400.5	161501.3	2.26	20.	2.5	SI

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	5- 6	2211.4	25889.5	25889.5	148742.3	2.26	20.	2.5	SI
1 C	5- 6	2211.4	25889.5	25889.5	148384.	2.26	20.	2.5	SI
1 S	5- 6	2211.4	25889.5	25889.5	148025.7	2.26	20.	2.5	SI
2 I	5- 6	2109.8	25889.5	25889.5	149966.9	2.26	20.	2.5	SI
2 C	5- 6	2109.8	25889.5	25889.5	149806.	2.26	20.	2.5	SI
2 S	5- 6	2109.8	25889.5	25889.5	149645.2	2.26	20.	2.5	SI
3 I	5- 7	1431.2	25889.5	25889.5	143917.8	2.26	20.	2.5	SI

3 C	5- 7	1431.2	25889.5	25889.5	143724.	2.26	20.	2.5	SI
3 S	5- 7	1431.2	25889.5	25889.5	143530.2	2.26	20.	2.5	SI
4 I	5- 7	1299.8	25889.5	25889.5	142754.	2.26	20.	2.5	SI
4 C	5- 7	1299.8	25889.5	25889.5	142534.6	2.26	20.	2.5	SI
4 S	5- 7	1299.8	25889.5	25889.5	142315.2	2.26	20.	2.5	SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	Sc1s	Sacc	VE
1 I	8- 1	-127332.5	23140.7	412049.3	-27.6	-302.3	SI
1 C	8- 1	-124668.1	3437.1	-43576.	-23.5	-340.2	SI
1 S	8- 1	-122003.7	-16266.5	-499201.3	-27.	-280.6	SI
2 I	8- 1	-125463.6	-16266.5	-499201.3	-27.6	-290.2	SI
2 C	8- 1	-124267.4	-25113.1	-173919.3	-25.2	-318.3	SI
2 S	8- 1	-123071.1	-33959.6	151362.8	-25.2	-314.4	SI
3 I	8- 1	-44163.4	22104.1	393333.7	-12.	-73.8	SI
3 C	8- 1	-42722.4	15644.4	220506.7	-10.2	-90.2	SI
3 S	8- 1	-41281.5	9184.7	47679.8	-8.3	-106.5	SI
4 I	8- 1	-41630.5	9184.7	47679.8	-8.4	-107.5	SI
4 C	8- 1	-39999.3	1871.8	23972.7	-7.7	-107.9	SI
4 S	8- 1	-38368.	-5441.1	265.6	-7.3	-104.7	SI

Frequenti:

Asta	Caso	NEd	MEyd	MEzd	Sc1s	Sacc	VE
1 I	9- 1	-117301.1	22028.6	376880.3	-25.4	-278.5	SI
1 C	9- 1	-114636.7	3427.5	-40109.9	-21.6	-312.8	SI
1 S	9- 1	-111972.3	-15173.7	-457100.1	-24.8	-257.5	SI
2 I	9- 1	-115172.5	-15173.7	-457100.1	-25.4	-266.4	SI
2 C	9- 1	-113976.3	-23525.2	-159655.9	-23.2	-291.7	SI
2 S	9- 1	-112780.	-31876.7	137788.3	-23.1	-288.	SI
3 I	9- 1	-40158.	19684.5	359948.4	-10.9	-67.	SI
3 C	9- 1	-38717.	13927.	201822.8	-9.2	-81.6	SI
3 S	9- 1	-37276.1	8169.5	43697.2	-7.5	-96.2	SI
4 I	9- 1	-37607.4	8169.5	43697.2	-7.6	-97.1	SI
4 C	9- 1	-35976.2	1651.6	21979.5	-6.9	-97.	SI
4 S	9- 1	-34344.9	-4866.3	261.7	-6.5	-93.7	SI

Quasi permanenti:

Asta	Caso	NEd	MEyd	MEzd	Sc1s	Sacc	VE
1 I	10- 1	-114282.6	21656.4	366218.9	-24.7	-271.4	SI
1 C	10- 1	-111618.2	3419.3	-39062.7	-21.1	-304.5	SI
1 S	10- 1	-108953.8	-14817.9	-444344.4	-24.1	-250.6	SI
2 I	10- 1	-112075.6	-14817.9	-444344.4	-24.7	-259.3	SI
2 C	10- 1	-110879.3	-23006.	-155094.5	-22.5	-283.8	SI
2 S	10- 1	-109683.1	-31194.1	134155.4	-22.5	-280.	SI
3 I	10- 1	-39156.9	18930.2	349731.2	-10.6	-65.6	SI
3 C	10- 1	-37716.	13388.6	195983.1	-9.	-79.6	SI
3 S	10- 1	-36275.	7847.	42235.	-7.3	-93.6	SI
4 I	10- 1	-36601.7	7847.	42235.	-7.4	-94.5	SI
4 C	10- 1	-34970.4	1573.5	21247.8	-6.7	-94.3	SI
4 S	10- 1	-33339.2	-4700.	260.5	-6.3	-90.9	SI

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P29 (ID=32)

Aste : 27; 184; 6697; 6695

Metodo di verifica : stati limite - NTC18 (q=1.07 ; muphi=2.01) ->

Duttilita' : non prevista (struttura non dissipativa).

: dettagli costruttivi del capito 7 non attivi.

Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %; 1/r ‰(permille)

Unita' particolari : fessure [wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.

Copriferri (assi) : longitudinali= 4 ; staffe= 6
 Imperfezioni : M minimo = N * Max(e0;ei)
 Instabilita' : rigidezza nominale [EC2 5.8.7]; fief=3

MATERIALI

CLS : C40/50; Rck=500; fck=415; fctk=25.17; fctm=35.96; Ecm=355471;
 gc=1.5; fcd=235.2; fbd=37.76; fctd=16.78; Ec2=0.2%; Ecu=0.35%
 ACCIAIO: B450C; ftk=5175; fyk=4500; Es=2100000; gs=1.15; fyd=3913;
 ftd=4500; fud=4439.8; Eyd=0.1863%; Eud=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.
 CLS : ScIs(rara)=249; ScIs(quasi permanente)=186.8; fbd(esercizio)=37.76
 ACCIAIO: Sacc(rara)=3600; Coeff.Omogeneizzazione=15

CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAX PRINC	SLU (sismico)	16
5	SLU con SISMAY PRINC	SLU (sismico)	16
8	Rara	RARA	1
9	Frequente	FREQUENTE	1
10	Quasi Perm	QUASI PERMAN.	1

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SEZIONI UTILIZZATE

1) Rettangolare: base=30; alt.=145; AcIs=4350; iy=8.66; iz=41.86

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	leiz	leiy	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm
1	1	3.55	3.55	2.37	2.37	710.	630.	145.	145.	75.4	1.733 24020
2	1	2.	2.	.16	.16	48.	48.	0.	0.	75.4	1.733 24020
3	1	2.	2.	1.16	1.16	347.	347.	0.	0.	75.4	1.733 24020
4	1	2.	2.	.57	.57	170.	90.	0.	0.	75.4	1.733 24020

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

Asta	Caso	NEd	MEyd	MEzd	E cIs	ScIs	E acc	Sacc	VE
> 1	4-10	-30162.	271677.	1.14	3711306.	1.01	-.035	-76.	.048 999.9 SI
1	4-12	-21678.	-51732.	1.11	2978147.	1.	-.022	-49.	.035 739.7 SI
1	4-12	-17817.	240635.	1.11	2556150.	1.	-.026	-58.1	.037 769.5 SI
> 2	4-12	28322.	-73383.	1.	2692573.	1.	-.021	-46.8	.071 1497.7 SI
2	4-12	28583.	-70285.	1.	2423251.	1.	-.019	-42.4	.067 1405.3 SI
2	4-12	28844.	-67193.	1.	2154719.	1.	-.017	-38.1	.063 1313.5 SI
> 3	4-12	-6459.	-67608.	1.01	2155335.	1.	-.017	-39.1	.033 700.3 SI
3	4-12	-4572.	126761.	1.01	1381702.	1.	-.014	-32.8	.024 495.8 SI
3	4-12	-2685.	27563.	1.01	608976.	1.	-.005	-12.	.009 187.9 SI
> 4	4-12	-25341.	50976.	1.86	608966.	1.	-.005	-12.3 0.	8.7 SI
4	5- 6	-25611.	-92584.	1.01	-115659.	1.	-.004	-9.8 -.001	-18.4 SI
4	5- 7	-24791.	-185912.	1.01	49596.	11.3	-.006	-13.5 0.	7.7 SI

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

Asta	Caso	NB	l0	Jn	JcIs/Jn	McaI	M0Ed	MEd	nu
1 I	4-10	-253267.6	710.	36390.9	8.9652	239323.	239323.	271677.	.029
2 I	4-12	-54939248	48.	36079.6	9.0425	-73383.	-73383.	-73383.	.
3 I	4-12	-1052200.	347.	36112.1	9.0344	-67193.	-67193.	-67608.	.006
4 S	5- 7	-4387923.	170.	36145.4	9.026	-184783.	-184783.	-185912.	.026

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

Asta	Caso	NB	l0	Jn	JcIs/Jn	McaI	M0Ed	MEd	nu
1 I	4-10	-5410968.	710.	777477.2	9.8029	3690618.	3690618.	3711306.	.029
2 I	4-12	-.1182E10	48.	775972.6	9.8219	2692573.	2692573.	2692573.	.
3 I	4-12	-22614111	347.	776130.	9.82	2154719.	2154719.	2155335.	.006
4 S	5- 7	-94238974	170.	776290.7	9.8179	4401.	49582.	49596.	.026

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	4-10	-2970.6	140400.5	140400.5	158909.8	2.26	20.	2.5	SI
1 C	4-10	-2970.6	140400.5	140400.5	158327.2	2.26	20.	2.5	SI
1 S	4-10	-2970.6	140400.5	140400.5	157744.7	2.26	20.	2.5	SI
2 I	4- 5	13374.4	140400.5	140400.5	167618.9	2.26	20.	2.5	SI
2 C	4- 5	13374.4	140400.5	140400.5	167579.5	2.26	20.	2.5	SI
2 S	4- 5	13374.4	140400.5	140400.5	167540.2	2.26	20.	2.5	SI
3 I	4- 5	4663.4	140400.5	140400.5	162205.8	2.26	20.	2.5	SI
3 C	4- 5	4663.4	140400.5	140400.5	161921.1	2.26	20.	2.5	SI
3 S	4- 5	4663.4	140400.5	140400.5	161636.4	2.26	20.	2.5	SI
4 I	4-12	-3726.2	140400.5	140400.5	158182.3	2.26	20.	2.5	SI
4 C	4-12	-3726.2	140400.5	140400.5	158042.8	2.26	20.	2.5	SI
4 S	4-12	-3726.2	140400.5	140400.5	157903.3	2.26	20.	2.5	SI

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	5- 6	1882.8	25889.5	25889.5	151432.1	2.26	20.	2.5	SI
1 C	5- 6	1882.8	25889.5	25889.5	150912.9	2.26	20.	2.5	SI
1 S	5- 6	1882.8	25889.5	25889.5	150393.7	2.26	20.	2.5	SI
2 I	5-10	-1496.1	25889.5	25889.5	143145.7	2.26	20.	2.5	SI
2 C	5-10	-1496.1	25889.5	25889.5	143110.6	2.26	20.	2.5	SI
2 S	5-10	-1496.1	25889.5	25889.5	143075.5	2.26	20.	2.5	SI
3 I	5-10	-1411.	25889.5	25889.5	141942.4	2.26	20.	2.5	SI
3 C	5-10	-1411.	25889.5	25889.5	141688.6	2.26	20.	2.5	SI
3 S	5-10	-1411.	25889.5	25889.5	141434.9	2.26	20.	2.5	SI
4 I	5-14	-1389.1	25889.5	25889.5	140853.9	2.26	20.	2.5	SI
4 C	5-14	-1389.1	25889.5	25889.5	140729.6	2.26	20.	2.5	SI
4 S	5-14	-1389.1	25889.5	25889.5	140605.3	2.26	20.	2.5	SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	8- 1	-92520.4	4348.8	23587.3	-17.5	-252.8	SI
1 C	8- 1	-88659.8	3414.	-4781.	-16.6	-244.4	SI
1 S	8- 1	-84799.1	2479.3	-33149.3	-16.	-231.	SI
2 I	8- 1	-33080.3	-9598.	-59438.7	-6.9	-82.4	SI
2 C	8- 1	-32819.3	-9380.3	-32136.9	-6.7	-84.6	SI
2 S	8- 1	-32558.3	-9162.7	-4835.1	-6.4	-86.8	SI
3 I	8- 1	-32535.8	-9162.7	-4835.1	-6.4	-86.8	SI
3 C	8- 1	-30649.	-7589.2	14872.6	-6.1	-81.	SI
3 S	8- 1	-28762.2	-6015.8	34580.2	-5.8	-74.2	SI
4 I	8- 1	-28779.8	-6015.8	34580.2	-5.8	-74.2	SI
4 C	8- 1	-27855.4	-5244.9	17498.4	-5.5	-73.7	SI
4 S	8- 1	-26931.	-4474.	416.5	-5.1	-73.2	SI

Frequenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	9- 1	-85490.8	4691.6	21568.4	-16.2	-233.4	SI
1 C	9- 1	-81630.2	3163.9	-4549.1	-15.3	-225.	SI
1 S	9- 1	-77769.6	1636.3	-30666.6	-14.7	-212.	SI
2 I	9- 1	-30439.	-9247.8	-55050.1	-6.4	-75.6	SI
2 C	9- 1	-30178.	-9023.4	-29962.9	-6.1	-77.6	SI

2 S	9- 1	-29917.	-8799.	-4875.8	-5.9	-79.6 SI
3 I	9- 1	-29892.8	-8799.	-4875.8	-5.9	-79.6 SI
3 C	9- 1	-28006.	-7176.6	13267.1	-5.5	-74. SI
3 S	9- 1	-26119.2	-5554.2	31409.9	-5.3	-67.3 SI
4 I	9- 1	-26134.3	-5554.2	31409.9	-5.3	-67.4 SI
4 C	9- 1	-25209.9	-4759.4	15898.6	-5.	-66.7 SI
4 S	9- 1	-24285.6	-3964.5	387.3	-4.6	-66. SI

Quasi permanenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	10- 1	-83368.	4802.3	20987.8	-15.8	-227.6 SI	
1 C	10- 1	-79507.4	3075.4	-4500.8	-14.9	-219.1 SI	
1 S	10- 1	-75646.7	1348.5	-29989.4	-14.3	-206.3 SI	
2 I	10- 1	-29779.	-9085.2	-53749.4	-6.3	-74. SI	
2 C	10- 1	-29518.	-8861.4	-29287.5	-6.	-75.9 SI	
2 S	10- 1	-29257.	-8637.7	-4825.6	-5.8	-77.8 SI	
3 I	10- 1	-29232.3	-8637.7	-4825.6	-5.8	-77.8 SI	
3 C	10- 1	-27345.5	-7020.5	12855.7	-5.4	-72.2 SI	
3 S	10- 1	-25458.7	-5403.3	30537.1	-5.1	-65.7 SI	
4 I	10- 1	-25472.7	-5403.3	30537.1	-5.1	-65.7 SI	
4 C	10- 1	-24548.3	-4611.	15457.2	-4.8	-65. SI	
4 S	10- 1	-23624.	-3818.7	377.4	-4.5	-64.3 SI	

4.3.3. Pilastri 30x70

I pilastri 30x70 cm risultano armati con 6+6Φ16 a flessione mentre hanno staffe Φ12/20.

Di seguito si riporta la verifica dei pilastri più sollecitati eseguita con l'applicativo "Pilastri" di DOLMEN.

VERIFICA PILASTRO IN CEMENTO ARMATO

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P36 (ID=36)
Aste : 16; 179
Metodo di verifica : stati limite - NTC18 (q=1.07 ; muphi=2.01) ->
Duttilita' : non prevista (struttura non dissipativa).
: dettagli costruttivi del capito 7 non attivi.
Unita' di misura : cm; daN; daN/cm; daN/cm2; deform. %; 1/r ‰(permille)
Unita' particolari : fessure [Wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
Copriferrì (assi) : longitudinali= 4 ; staffe= 6
Imperfezioni : M minimo = N * Max(e0;ei)
Instabilita' : rigidezza nominale [EC2 5.8.7]; fief=3

MATERIALI

CLS : C40/50; Rck=500; fck=415; fctk=25.17; fctm=35.96; Ecm=355471;
gc=1.5; fcd=235.2; fbd=37.76; fctd=16.78; Ec2=0.2%; Ecu=0.35%
ACCIAIO: B450C; ftk=5175; fyk=4500; Es=2100000; gs=1.15; fyd=3913;
ftd=4500; fud=4439.8; Eyd=0.1863%; Eud=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.

CLS : ScIs(rara)=249; ScIs(quasi permanente)=186.8; fbd(esercizio)=37.76
ACCIAIO: Sacc(rara)=3600; Coeff.Omogeneizzazione=15

CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAX PRINC	SLU (sismico)	16
5	SLU con SISMAX PRINC	SLU (sismico)	16
8	Rara	RARA	1
9	Frequente	FREQUENTE	1
10	Quasi Perm	QUASI PERMAN.	1

<-

SEZIONI UTILIZZATE

1) Rettangolare: base=30; alt.=70; Acls=2100; iy=8.66; iz=20.21

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	eiz	eiy	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm
1	1	3.55	3.55	2.37	2.37	710.	630.	105.	105.	24.13	1.149 12016
2	1	2.82	2.82	1.88	1.88	565.	485.	81.	81.	24.13	1.149 12016

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

Asta	Caso	NEd	MEyd	MEzd	E c/s	Sc/s	E acc	Sacc	VE
> 1	1- 1	-71969.	1612168.	320.	311306.	2.45	-0.16	-225.7	.182 3813.
1	5-10	-48726.	-220742.	2.51	-65731.	1.15	-0.019	-42.3	-0.003 -69.1
1	1- 1	-67123.	-1503618.	664.	-314221.	1.22	-0.147	-218.8	.169 3546.5
> 2	4-12	-17960.	-134397.	1.16	1591019.	1.03	-0.072	-138.8	.128 2687.2
2	4-12	-16477.	-50354.	1.16	751120.	1.03	-0.029	-63.9	.04 847.6
2	5-12	-15811.	156864.	1.17	-80266.	1.03	-0.012	-28.4	.005 111.7

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

Asta	Caso	NB	l0	Jn	Jc/s/Jn	Mca	M0Ed	MEd	nu
1 I	1- 1	-85521.8	710.	12288.2	12.8171	5039.	255489.	1612168.	.146
2 I	4-12	-128508.5	565.	11693.	13.4696	-115614.	-115614.	-134397.	.036

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

Asta	Caso	NB	l0	Jn	Jc/s/Jn	Mca	M0Ed	MEd	nu
1 I	1- 1	-401390.7	710.	57674.	14.8681	127163.	255489.	311306.	.146
2 I	4-12	-618585.8	565.	56285.	15.235	1544824.	1544824.	1591019.	.036

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	4-10	-3152.9	69178.3	69178.3	78315.3	2.26	19.	2.5	SI
1 C	4-10	-3152.9	69178.3	69178.3	78042.6	2.26	19.	2.5	SI
1 S	4-10	-3152.9	69178.3	69178.3	77769.9	2.26	19.	2.5	SI
2 I	4-12	-2888.	69178.3	69178.3	74880.6	2.26	19.	2.5	SI
2 C	4-12	-2888.	69178.3	69178.3	74663.7	2.26	19.	2.5	SI
2 S	4-12	-2888.	69178.3	69178.3	74446.7	2.26	19.	2.5	SI

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	5- 5	1239.2	27252.1	27252.1	72473.4	2.26	19.	2.5	SI
1 C	5- 5	1239.2	27252.1	27252.1	72222.7	2.26	19.	2.5	SI
1 S	5- 5	1239.2	27252.1	27252.1	71972.1	2.26	19.	2.5	SI
2 I	5-10	-1233.1	27252.1	27252.1	68956.1	2.26	19.	2.5	SI
2 C	5-10	-1233.1	27252.1	27252.1	68756.6	2.26	19.	2.5	SI
2 S	5-10	-1233.1	27252.1	27252.1	68557.2	2.26	19.	2.5	SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	Sc/s	Sacc	VE
1 I	8- 1	-51980.5	3108.9	90252.4	-24.8	-277.9	SI

1 C	8- 1	-50116.8	1002.6	-46434.9	-22.3	-287.2	SI
1 S	8- 1	-48253.	-1103.8	-183122.2	-26.4	-215.6	SI
2 I	8- 1	-20061.8	-4430.2	175741.1	-14.8	-43.	SI
2 C	8- 1	-18578.7	-529.6	85503.1	-10.7	-76.4	SI
2 S	8- 1	-17095.6	3371.	-4734.8	-7.5	-100.6	SI

Frequenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	9- 1	-47866.	3191.8	82565.1	-22.8	-255.9	SI
1 C	9- 1	-46002.2	918.2	-42505.3	-20.4	-263.7	SI
1 S	9- 1	-44138.5	-1355.4	-167575.7	-24.1	-197.	SI
2 I	9- 1	-18382.	-4081.1	160791.3	-13.6	-39.5	SI
2 C	9- 1	-16898.8	-541.9	78235.4	-9.7	-69.2	SI
2 S	9- 1	-15415.7	2997.2	-4320.5	-6.7	-90.8	SI

Quasi permanenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	10- 1	-46629.7	3187.5	80048.6	-22.2	-249.4	SI
1 C	10- 1	-44766.	903.1	-41216.8	-19.9	-256.7	SI
1 S	10- 1	-42902.2	-1381.4	-162482.3	-23.5	-191.6	SI
2 I	10- 1	-17962.3	-4030.3	155898.9	-13.2	-39.1	SI
2 C	10- 1	-16479.1	-555.2	75850.4	-9.5	-67.7	SI
2 S	10- 1	-14996.	2919.8	-4198.2	-6.5	-88.3	SI

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P35 (ID=37)
 Aste : 17; 180
 Metodo di verifica : stati limite - NTC18 (q=1.07 ; muphi=2.01) ->
 Duttilita' : non prevista (struttura non dissipativa).
 : dettagli costruttivi del capito 7 non attivi.
 Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %; 1/r %(permille)
 Unita' particolari : fessure [wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
 Copriferri (assi) : longitudinali= 4 ; staffe= 6
 Imperfezioni : M minimo = N * Max(e0;ei)
 Instabilita' : rigidezza nominale [EC2 5.8.7]; fief=3

MATERIALI

CLS : C40/50; Rck=500; fck=415; fctk=25.17; fctm=35.96; Ecm=355471;
 gc=1.5; fcd=235.2; fbd=37.76; fctd=16.78; Ec2=0.2%; Ecu=0.35%
 ACCIAIO: B450C; ftk=5175; fyk=4500; Es=2100000; gs=1.15; fyd=3913;
 ftd=4500; fud=4439.8; Eyd=0.1863%; Eud=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.
 CLS : ScIs(rara)=249; ScIs(quasi permanente)=186.8; fbd(esercizio)=37.76
 ACCIAIO: Sacc(rara)=3600; Coeff.Omogeneizzazione=15

CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAX PRINC	SLU (sismico)	16
5	SLU con SISMAY PRINC	SLU (sismico)	16
8	Rara	RARA	1
9	Frequente	FREQUENTE	1
10	Quasi Perm	QUASI PERMAN.	1

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SEZIONI UTILIZZATE

1) Rettangolare: base=30; alt.=70; Acl=2100; iy=8.66; iz=20.21

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	eiz	eiy	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm	
1	1	3.55	3.55	2.37	2.37	710.	630.	105.	105.	24.13	1.149	12016
2	1	2.82	2.82	1.88	1.88	565.	485.	81.	81.	24.13	1.149	12016

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

Asta	Caso	NEd	MEyd	MEzd	E c/s	Sc/s	E acc	Sacc	VE
> 1	1- 1	-72215.	1645800.	428.	-312598.	2.36	-0.164	-227.7	.188 3913.2 SI
1	5-15	-51241.	-364784.	2.71	58979.	1.15	-0.026	-57.5	.001 23.7 SI
1	1- 1	-67369.	1535365.	1019	324527.	1.22	-0.152	-221.4	.175 3679. SI
> 2	4- 5	-17455.	211706.	1.16	-1569029.	1.03	-0.08	-150.1	.134 2804.2 SI
2	4- 5	-15972.	78693.	1.16	-791411.	1.03	-0.034	-72.6	.047 995.1 SI
2	5- 4	-13890.	-184978.	1.15	-55577.	1.03	-0.015	-33.1	.011 223.3 SI

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

Asta	Caso	NB	l0	Jn	Jc/s/Jn	Mca	M0Ed	MEd	nu
1 I	1- 1	-85539.5	710.	12290.8	12.8145	3849.	256364.	1645800.	.146
2 I	4- 5	-128462.9	565.	11688.8	13.4744	182941.	182941.	211706.	.035

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

Asta	Caso	NB	l0	Jn	Jc/s/Jn	Mca	M0Ed	MEd	nu
1 I	1- 1	-401432.	710.	57679.9	14.8665	-132181.	-256364.	-312598.	.146
2 I	4- 5	-618479.3	565.	56275.3	15.2376	-1524748.	-1524748.	-1569029.	.035

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	4- 5	3140.3	69178.3	69178.3	78307.9	2.26	19.	2.5	SI
1 C	4- 5	3140.3	69178.3	69178.3	78035.2	2.26	19.	2.5	SI
1 S	4- 5	3140.3	69178.3	69178.3	77762.5	2.26	19.	2.5	SI
2 I	4- 7	2877.7	69178.3	69178.3	74901.5	2.26	19.	2.5	SI
2 C	4- 7	2877.7	69178.3	69178.3	74684.5	2.26	19.	2.5	SI
2 S	4- 7	2877.7	69178.3	69178.3	74467.5	2.26	19.	2.5	SI

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	5- 4	918.9	27252.1	27252.1	72134.9	2.26	19.	2.5	SI
1 C	5- 4	918.9	27252.1	27252.1	71884.3	2.26	19.	2.5	SI
1 S	5- 4	918.9	27252.1	27252.1	71633.7	2.26	19.	2.5	SI
2 I	5-15	-1225.1	27252.1	27252.1	68983.4	2.26	19.	2.5	SI
2 C	5-15	-1225.1	27252.1	27252.1	68783.9	2.26	19.	2.5	SI
2 S	5-15	-1225.1	27252.1	27252.1	68584.4	2.26	19.	2.5	SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	Sc/s	Sacc	VE
1 I	8- 1	-52156.2	2212.2	-94013.5	-24.9	-278.	SI
1 C	8- 1	-50292.4	1922.3	47563.4	-22.5	-287.2	SI
1 S	8- 1	-48428.7	1632.5	189140.3	-26.7	-213.7	SI
2 I	8- 1	-20038.9	-7410.1	-179925.9	-15.2	-38.8	SI
2 C	8- 1	-18555.7	-1918.4	-88548.7	-10.9	-73.9	SI
2 S	8- 1	-17072.6	3573.4	2828.5	-7.4	-101.2	SI

Frequenti:

Asta	Caso	NEd	MEyd	MEzd	Sc/s	Sacc	VE
1 I	9- 1	-48026.9	2438.5	-86096.3	-22.9	-255.9	SI
1 C	9- 1	-46163.2	1770.3	43551.1	-20.6	-263.6	SI

1 S	9- 1	-44299.4	1102.1	173198.5	-24.4	-195.7 SI
2 I	9- 1	-18361.4	-6830.1	-164866.6	-13.9	-35.6 SI
2 C	9- 1	-16878.3	-1823.4	-81146.2	-9.9	-66.9 SI
2 S	9- 1	-15395.2	3183.2	2574.2	-6.7	-91.3 SI

Quasi permanenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	10- 1	-46785.6	2479.9	-83497.3	-22.3	-249.4 SI	
1 C	10- 1	-44921.9	1733.7	42230.8	-20.1	-256.6 SI	
1 S	10- 1	-43058.1	987.4	167958.8	-23.7	-190.4 SI	
2 I	10- 1	-17942.3	-6705.5	-159911.5	-13.6	-35.2 SI	
2 C	10- 1	-16459.2	-1802.6	-78704.6	-9.7	-65.4 SI	
2 S	10- 1	-14976.	3100.3	2502.4	-6.5	-88.8 SI	

4.3.4. Pilastri 30x280

I pilastri 30x280 cm risultano armati con 26+26 Φ 24 a flessione mentre hanno staffe Φ 16/20.

Di seguito si riporta la verifica dei pilastri più sollecitati eseguita con l'applicativo "Pilastri" di DOLMEN.

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P34 (ID=38)
 Aste : 19; 6078; 6453; 6079; 6080
 Metodo di verifica : stati limite - NTC18 (q=1.07 ; muphi=2.01) ->
 Duttilita' : non prevista (struttura non dissipativa).
 : dettagli costruttivi del capito 7 non attivi.
 Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm²; deform. %; 1/r ‰(permille)
 Unita' particolari : fessure [wk]:mm - ferri:mm e cm² - sezioni:cm e derivate.
 Copriferri (assi) : longitudinali= 4 ; staffe= 6
 Imperfezioni : M minimo = N * Max(e0;ei)
 Instabilita' : snellezza limite [NTC18 4.1.2.3.9.2]

MATERIALI

CLS : C40/50; Rck=500; fck=415; fctk=25.17; fctm=35.96; Ecm=355471;
 gc=1.5; fcd=235.2; fbd=37.76; fctd=16.78; Ec2=0.2%; Ecu=0.35%
 ACCIAIO: B450C; ftk=5175; fyk=4500; Es=2100000; gs=1.15; fyd=3913;
 ftd=4500; fud=4439.8; Eyd=0.1863%; Eud=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.
 CLS : ScIs(rara)=249; ScIs(quasi permanente)=186.8; fbd(esercizio)=37.76
 ACCIAIO: Sacc(rara)=3600; Coeff.Omogeneizzazione=15

CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAX PRINC	SLU (sismico)	16
5	SLU con SISMAY PRINC	SLU (sismico)	16
8	Rara	RARA	1
9	Frequente	FREQUENTE	1
10	Quasi Perm	QUASI PERMAN.	1

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SEZIONI UTILIZZATE

- 1) Rettangolare: base=30; alt.=280; AcIs=8400; iy=8.66; iz=80.83
- 2) Rettangolare: base=35; alt.=280; AcIs=9800; iy=10.1; iz=80.83

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	eiz	eiy	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm	
1	1	3.55	3.55	2.37	2.37	710.	630.	0.	0.	235.24	2.801	52024
2	2	2.	2.	.55	.55	165.	150.	0.	0.	235.24	2.4	52024
3	2	2.	2.	.5	.5	150.	135.	0.	0.	235.24	2.4	52024
4	2	2.	2.	.5	.5	150.	110.	0.	0.	235.24	2.4	52024
5	2	2.	2.	.33	.33	100.	20.	0.	0.	235.24	2.4	52024

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (incluse le imperfezioni):

Asta	Caso	NEd	MEyd	MEzd	E c/s	Sc/s	E acc	Sacc	VE		
> 1	4- 7	-106920.	-379567.	1.14	-26465598	1.	-.047	-97.4	.06	1261.5	SI
1	4-12	-97685.	-271625.	1.	18923534.	1.	-.033	-71.2	.038	793.1	SI
1	5-15	-65291.	-1652887.	1.	5728302.	1.	-.032	-69.8	.031	646.	SI
> 2	5- 2	36838.	3202439.	1.	-8450152.	1.	-.046	-95.3	.077	1622.	SI
2	4- 5	-16507.	186403.	1.	-15047190	1.	-.023	-50.5	.043	902.6	SI
2	5- 2	40881.	-1554815.	1.	-5954135.	1.	-.025	-55.6	.047	992.4	SI
> 3	5- 2	40881.	-1554815.	1.	-5954135.	1.	-.025	-55.6	.047	992.4	SI
3	5- 2	42718.	-1874830.	1.	-4822094.	1.	-.026	-57.2	.05	1042.7	SI
3	5- 2	44556.	-2199976.	1.	-3690053.	1.	-.027	-58.8	.053	1105.2	SI
> 4	5- 2	79073.	-2199976.	1.	-3690053.	1.	-.026	-57.2	.06	1269.6	SI
4	5- 2	80911.	-3243662.	1.	-2561776.	1.	-.034	-72.2	.075	1571.7	SI
4	5- 2	82748.	-4287553.	1.	-1433506.	1.	-.041	-87.	.09	1883.8	SI
> 5	5- 2	87595.	-4287553.	1.	-1433506.	1.	-.041	-86.7	.091	1905.3	SI
5	5- 2	88820.	-2186421.	1.	-682392.	1.	-.019	-42.3	.056	1166.1	SI
5	5- 8	91183.	-182366.	2.09	-182366.	11.4	.013	0.	.022	471.1	SI

SNELLEZZA LIMITE Y [NTC18 4.1.2.3.9.2]:

Asta	Caso	NEd	l0	nu	L lim	Lambd	VE
1	1- 1	-176956.6	710.	.09	83.53	81.98	SI
2	5-13	-119418.8	165.	.052	109.8	16.33	SI
3	5-13	-115376.3	150.	.05	111.7	14.85	SI
4	5- 9	-149904.1	150.	.065	98.02	14.85	SI
5	5- 9	-152143.9	100.	.066	97.3	9.9	SI

SNELLEZZA LIMITE Z [NTC18 4.1.2.3.9.2]:

Asta	Caso	NEd	l0	nu	L lim	Lambd	VE
1	1- 1	-176956.6	710.	.09	83.53	8.78	SI
2	5-13	-119418.8	165.	.052	109.8	2.04	SI
3	5-13	-115376.3	150.	.05	111.7	1.86	SI
4	5- 9	-149904.1	150.	.065	98.02	1.86	SI
5	5- 9	-152143.9	100.	.066	97.3	1.24	SI

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	4-10	-22655.5	122145.1	122145.1	321573.2	1.01	20.	2.5	SI
1 C	4-10	-22655.5	122145.1	122145.1	320432.9	1.01	20.	2.5	SI
1 S	4-10	-22655.5	122145.1	122145.1	319292.6	1.01	20.	2.5	SI
2 I	sollecitazioni o staffe assenti								
2 C	sollecitazioni o staffe assenti								
2 S	sollecitazioni o staffe assenti								
3 I	sollecitazioni o staffe assenti								
3 C	sollecitazioni o staffe assenti								
3 S	sollecitazioni o staffe assenti								
4 I	sollecitazioni o staffe assenti								
4 C	sollecitazioni o staffe assenti								
4 S	sollecitazioni o staffe assenti								
5 I	sollecitazioni o staffe assenti								
5 C	sollecitazioni o staffe assenti								

5 S| sollecitazioni o staffe assenti

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	5-14	-2917.4	11506.4	11506.4	276513.1	1.01	20.	2.5	SI
1 C	5-14	-2917.4	11506.4	11506.4	275510.5	1.01	20.	2.5	SI
1 S	5-14	-2917.4	11506.4	11506.4	274508.	1.01	20.	2.5	SI
2 I	sollecitazioni o staffe assenti								
2 C	sollecitazioni o staffe assenti								
2 S	sollecitazioni o staffe assenti								
3 I	sollecitazioni o staffe assenti								
3 C	sollecitazioni o staffe assenti								
3 S	sollecitazioni o staffe assenti								
4 I	sollecitazioni o staffe assenti								
4 C	sollecitazioni o staffe assenti								
4 S	sollecitazioni o staffe assenti								
5 I	sollecitazioni o staffe assenti								
5 C	sollecitazioni o staffe assenti								
5 S	sollecitazioni o staffe assenti								

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	8- 1	-128723.4	-2837.4	78240.5	-11.2	-162.6	SI
1 C	8- 1	-121268.4	11266.2	-95095.6	-10.7	-151.4	SI
1 S	8- 1	-113813.4	25369.8	-268431.6	-10.7	-135.1	SI
2 I	8- 1	-44941.4	-204249.5	297161.1	-6.4	-19.9	SI
2 C	8- 1	-42920.1	-92267.7	253908.5	-4.8	-32.1	SI
2 S	8- 1	-40898.9	19714.1	210655.9	-3.7	-39.5	SI
3 I	8- 1	-40898.9	19714.1	210655.9	-3.7	-39.5	SI
3 C	8- 1	-39061.4	25204.8	171335.4	-3.6	-37.7	SI
3 S	8- 1	-37223.9	30695.6	132014.9	-3.4	-35.8	SI
4 I	8- 1	-39041.1	30695.6	132014.9	-3.6	-37.9	SI
4 C	8- 1	-37203.6	35062.6	92694.4	-3.4	-36.2	SI
4 S	8- 1	-35366.1	39429.7	53373.9	-3.3	-34.5	SI
5 I	8- 1	-35857.8	39429.7	53373.9	-3.3	-35.1	SI
5 C	8- 1	-34632.8	20193.4	27160.2	-2.9	-36.6	SI
5 S	8- 1	-33407.8	957.1	946.5	-2.6	-38.1	SI

Frequenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	9- 1	-119670.2	-1442.8	70809.7	-10.4	-151.4	SI
1 C	9- 1	-112215.2	10418.5	-87990.2	-9.9	-140.1	SI
1 S	9- 1	-104760.2	22279.7	-246790.2	-9.8	-124.5	SI
2 I	9- 1	-41773.5	-188716.7	269635.5	-5.9	-18.8	SI
2 C	9- 1	-39752.3	-85280.7	230390.7	-4.5	-29.9	SI
2 S	9- 1	-37731.	18155.2	191145.9	-3.4	-36.5	SI
3 I	9- 1	-37731.	18155.2	191145.9	-3.4	-36.5	SI
3 C	9- 1	-35893.5	23091.2	155468.9	-3.3	-34.7	SI
3 S	9- 1	-34056.	28027.2	119791.8	-3.1	-32.8	SI
4 I	9- 1	-35737.9	28027.2	119791.8	-3.3	-34.8	SI
4 C	9- 1	-33900.4	31781.2	84114.7	-3.1	-33.	SI
4 S	9- 1	-32062.9	35535.1	48437.6	-3.	-31.3	SI
5 I	9- 1	-32525.4	35535.1	48437.6	-3.	-31.9	SI
5 C	9- 1	-31300.4	18190.1	24652.9	-2.7	-33.1	SI
5 S	9- 1	-30075.4	845.	868.2	-2.3	-34.3	SI

Quasi permanenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	10- 1	-116957.6	-944.2	68211.5	-10.1	-148.1	SI
1 C	10- 1	-109502.6	10108.4	-85544.8	-9.7	-136.7	SI

1	S	10- 1	-102047.6	21161.	-239301.2	-9.5	-121.4	SI
2	I	10- 1	-40999.4	-183810.7	260428.	-5.8	-18.8	SI
2	C	10- 1	-38978.1	-82888.	222524.2	-4.4	-29.5	SI
2	S	10- 1	-36956.9	18034.7	184620.5	-3.3	-35.8	SI
3	I	10- 1	-36956.9	18034.7	184620.5	-3.3	-35.8	SI
3	C	10- 1	-35119.4	22697.7	150162.5	-3.2	-34.	SI
3	S	10- 1	-33281.9	27360.8	115704.5	-3.1	-32.1	SI
4	I	10- 1	-34926.6	27360.8	115704.5	-3.2	-34.	SI
4	C	10- 1	-33089.1	30782.7	81246.5	-3.	-32.3	SI
4	S	10- 1	-31251.6	34204.6	46788.5	-2.9	-30.6	SI
5	I	10- 1	-31705.5	34204.6	46788.5	-2.9	-31.1	SI
5	C	10- 1	-30480.5	17521.2	23816.5	-2.6	-32.3	SI
5	S	10- 1	-29255.5	837.7	844.5	-2.2	-33.4	SI

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P33 (ID=40)
 Aste : 31; 6085; 6086; 6087; 6088
 Metodo di verifica : stati limite - NTC18 (q=1.07 ; muphi=2.01) ->
 Duttilita' : non prevista (struttura non dissipativa).
 : dettagli costruttivi del capito 7 non attivi.
 Unita' di misura : cm; dan; dan/cm; dan/cm2; deform. %; 1/r ‰(permille)
 Unita' particolari : fessure [wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
 Copriferrì (assi) : longitudinali= 4 ; staffe= 6
 Imperfezioni : M minimo = N * Max(e0;ei)
 Instabilita' : rigidezza nominale [EC2 5.8.7]; fief=3

MATERIALI

CLS : C40/50; Rck=500; fck=415; fctk=25.17; fctm=35.96; Ecm=355471;
 gc=1.5; fcd=235.2; fbd=37.76; fctd=16.78; Ec2=0.2%; Ecu=0.35%
 ACCIAIO: B450C; ftk=5175; fyk=4500; Es=2100000; gs=1.15; fyd=3913;
 ftd=4500; fud=4439.8; Eyd=0.1863%; Eud=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.
 CLS : Scls(rara)=249; Scls(quasi permanente)=186.8; fbd(esercizio)=37.76
 ACCIAIO: Sacc(rara)=3600; Coeff.Omogeneizzazione=15

CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAX PRINC	SLU (sismico)	16
5	SLU con SISMAX PRINC	SLU (sismico)	16
8	Rara	RARA	1
9	Frequente	FREQUENTE	1
10	Quasi Perm	QUASI PERMAN.	1

<-

SEZIONI UTILIZZATE

1) Rettangolare: base=30; alt.=280; Acls=8400; iy=8.66; iz=80.83
 2) Rettangolare: base=35; alt.=280; Acls=9800; iy=10.1; iz=80.83

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	eiz	eiy	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm	
1	1	3.55	3.55	2.37	2.37	710.	630.	0.	0.	276.08	3.287	52026
2	2	2.	2.	.55	.55	165.	150.	0.	0.	276.08	2.817	52026
3	2	2.	2.	.5	.5	150.	135.	0.	0.	276.08	2.817	52026
4	2	2.	2.	.5	.5	150.	110.	0.	0.	276.08	2.817	52026

5| 2|2. |2. | .33| .33|100. | 20. | 0. | 0. |276.08|2.817|52026 |

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

Asta	Caso	NEd	MEyd	MEzd	E c/s	Sc/s	E acc	Sacc	VE
> 1	4- 5	-121172.	494751.	1.69 -24475000	1. -.042	-89.2	.046	965.4	SI
1	4- 5	-113717.	349909.	1.15 -21596613	1. -.036	-77.1	.038	804.7	SI
1	5- 2	-79895.	1962077.	1.11 -10488133	1. -.042	-87.9	.039	816.5	SI
> 2	5-15	30782.	-2923960.	1. 10615186.	1. -.043	-90.3	.066	1396.1	SI
2	4-12	-22424.	146848.	1. 16567185.	1. -.023	-50.3	.04	839.	SI
2	5-15	34824.	1528965.	1. 7498127.	1. -.025	-55.8	.043	902.4	SI
> 3	5-15	34824.	1528965.	1. 7498127.	1. -.025	-55.8	.043	902.4	SI
3	5-15	36662.	1808201.	1. 6084971.	1. -.025	-55.9	.044	914.	SI
3	5-15	38499.	2093089.	1. 4671816.	1. -.025	-55.9	.045	939.5	SI
> 4	5-15	71039.	2093089.	1. 4671816.	1. -.025	-54.7	.051	1073.7	SI
4	5-15	72876.	3000570.	1. 3263869.	1. -.03	-65.3	.061	1277.7	SI
4	5-15	74714.	3908353.	1. 1855924.	1. -.035	-75.8	.071	1491.5	SI
> 5	5-15	79761.	3908353.	1. 1855924.	1. -.035	-75.5	.072	1510.5	SI
5	5-15	80986.	1997937.	1. 918992.	1. -.016	-36.8	.044	924.1	SI
5	5- 9	83199.	166399.	1.88 166399.	24.5 .01	0.	.017	366.3	SI

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

Asta	Caso	NB	l0	Jn	Jc/s/Jn	McaI	M0Ed	MEd	nu
1 I	4- 5	-928152.	710.	133361.9	4.724	293195.	430160.	494751.	.061
2 I	5-15	-27796285	165.	215700.3	4.638	-2923959.	-2923959.	-2923960.	.
3 S	5-15	-33633505	150.	215700.3	4.638	2093089.	2093089.	2093089.	.
4 S	5-15	-33633505	150.	215700.3	4.638	3908353.	3908353.	3908353.	.
5 I	5-15	-75675386	100.	215700.3	4.638	3908353.	3908353.	3908353.	.

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

Asta	Caso	NB	l0	Jn	Jc/s/Jn	McaI	M0Ed	MEd	nu
1 I	4- 5	-73457290	710.	10554742	5.1996 -24434627	-24434627	-24475000	.061	
2 I	5-15	-.1359E10	165.	10543070	6.0729 10615185.	10615185.	10615186.	.	
3 S	5-15	-.1644E10	150.	10543070	6.0729 4671816.	4671816.	4671816.	.	
4 S	5-15	-.1644E10	150.	10543070	6.0729 1855924.	1855924.	1855924.	.	
5 I	5-15	-.3699E10	100.	10543070	6.0729 1855924.	1855924.	1855924.	.	

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT VE
1 I	4- 8	11820.6	381092.8	381092.8	381626.7	4.02	20.	1.95 SI
1 C	4- 8	11820.6	380284.	381092.8	380284.	4.02	20.	1.95 SI
1 S	4- 8	11820.6	378941.3	381092.8	378941.3	4.02	20.	1.95 SI
2 I	4-12	-34693.1	401023.3	410407.6	401023.3	4.02	20.	2.1 SI
2 C	4-12	-34693.1	400675.3	410407.6	400675.3	4.02	20.	2.1 SI
2 S	4-12	-34693.1	400636.	400636.	406382.4	4.02	20.	2.05 SI
3 I	4-12	-34529.1	400636.	400636.	406382.4	4.02	20.	2.05 SI
3 C	4-12	-34529.1	400636.	400636.	406061.3	4.02	20.	2.05 SI
3 S	4-12	-34529.1	400636.	400636.	405740.1	4.02	20.	2.05 SI
4 I	4-12	-34297.6	400636.	400636.	404215.7	4.02	20.	2.05 SI
4 C	4-12	-34297.6	400636.	400636.	403894.5	4.02	20.	2.05 SI
4 S	4-12	-34297.6	400636.	400636.	403573.4	4.02	20.	2.05 SI
5 I	4-12	-34184.7	400636.	400636.	403322.9	4.02	20.	2.05 SI
5 C	4-12	-34184.7	400636.	400636.	403108.7	4.02	20.	2.05 SI
5 S	4-12	-34184.7	400636.	400636.	402894.6	4.02	20.	2.05 SI

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT VE
1 I	5-16	-3138.3	46025.7	46025.7	288372.	4.02	20.	2.5 SI
1 C	5-16	-3138.3	46025.7	46025.7	287369.4	4.02	20.	2.5 SI
1 S	5-16	-3138.3	46025.7	46025.7	286366.9	4.02	20.	2.5 SI
2 I	5- 8	26971.6	54876.8	54876.8	333953.1	4.02	20.	2.5 SI

2 C	5- 8	26971.6	54876.8	54876.8	333675.3	4.02	20.	2.5	SI
2 S	5- 8	26971.6	54876.8	54876.8	333397.5	4.02	20.	2.5	SI
3 I	5- 9	-4090.6	54876.8	54876.8	316745.2	4.02	20.	2.5	SI
3 C	5- 9	-4090.6	54876.8	54876.8	316745.2	4.02	20.	2.5	SI
3 S	5- 9	-4090.6	54876.8	54876.8	316745.2	4.02	20.	2.5	SI
4 I	5-10	-12248.3	54876.8	54876.8	316745.2	4.02	20.	2.5	SI
4 C	5-10	-12248.3	54876.8	54876.8	316745.2	4.02	20.	2.5	SI
4 S	5-10	-12248.3	54876.8	54876.8	316745.2	4.02	20.	2.5	SI
5 I	5-10	38593.3	54876.8	54876.8	316745.2	4.02	20.	2.5	SI
5 C	5-10	38593.3	54876.8	54876.8	316745.2	4.02	20.	2.5	SI
5 S	5-10	38593.3	54876.8	54876.8	316745.2	4.02	20.	2.5	SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	8- 1	-145633.7	-23138.7	-45073.8	-12.3	-173.7	SI
1 C	8- 1	-138178.7	22117.8	-697.3	-11.6	-165.8	SI
1 S	8- 1	-130723.7	67374.4	43679.1	-11.8	-149.1	SI
2 I	8- 1	-51661.4	-99552.6	-94977.2	-5.1	-43.2	SI
2 C	8- 1	-49640.1	-106595.4	-81126.	-5.	-40.5	SI
2 S	8- 1	-47618.9	-113638.3	-67274.7	-4.9	-37.8	SI
3 I	8- 1	-47618.9	-113638.3	-67274.7	-4.9	-37.8	SI
3 C	8- 1	-45781.4	-79864.3	-54682.7	-4.4	-39.9	SI
3 S	8- 1	-43943.9	-46090.4	-42090.6	-3.8	-42.	SI
4 I	8- 1	-44878.1	-46090.4	-42090.6	-3.9	-43.1	SI
4 C	8- 1	-43040.6	-17173.	-29498.6	-3.4	-44.6	SI
4 S	8- 1	-41203.1	11744.3	-16906.5	-3.2	-43.5	SI
5 I	8- 1	-41240.1	11744.3	-16906.5	-3.2	-43.5	SI
5 C	8- 1	-40015.1	4139.6	-8511.8	-3.	-43.3	SI
5 S	8- 1	-38790.1	-3465.2	-117.1	-2.9	-42.2	SI

Frequenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	9- 1	-135059.4	-19860.4	-42089.8	-11.4	-161.3	SI
1 C	9- 1	-127604.4	20307.7	-2399.5	-10.7	-153.1	SI
1 S	9- 1	-120149.4	60475.9	37290.8	-10.8	-137.3	SI
2 I	9- 1	-47881.9	-92535.5	-89719.7	-4.7	-40.	SI
2 C	9- 1	-45860.6	-98542.7	-76634.	-4.6	-37.4	SI
2 S	9- 1	-43839.4	-104550.	-63548.2	-4.5	-34.8	SI
3 I	9- 1	-43839.4	-104550.	-63548.2	-4.5	-34.8	SI
3 C	9- 1	-42001.9	-73193.9	-51652.1	-4.	-36.6	SI
3 S	9- 1	-40164.4	-41837.9	-39756.	-3.5	-38.4	SI
4 I	9- 1	-41022.2	-41837.9	-39756.	-3.5	-39.4	SI
4 C	9- 1	-39184.7	-14781.8	-27859.9	-3.1	-40.7	SI
4 S	9- 1	-37347.2	12274.3	-15963.8	-2.9	-39.2	SI
5 I	9- 1	-37385.3	12274.3	-15963.8	-2.9	-39.3	SI
5 C	9- 1	-36160.3	4590.3	-8033.1	-2.7	-39.	SI
5 S	9- 1	-34935.3	-3093.6	-102.3	-2.6	-38.	SI

Quasi permanenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	10- 1	-131856.6	-18882.4	-41124.8	-11.1	-157.5	SI
1 C	10- 1	-124401.6	19751.3	-2951.8	-10.5	-149.2	SI
1 S	10- 1	-116946.6	58385.1	35221.3	-10.5	-133.8	SI
2 I	10- 1	-46923.3	-89907.2	-87903.8	-4.6	-39.3	SI
2 C	10- 1	-44902.1	-95944.7	-75082.7	-4.5	-36.6	SI
2 S	10- 1	-42880.8	-101982.3	-62261.5	-4.4	-34.	SI
3 I	10- 1	-42880.8	-101982.3	-62261.5	-4.4	-34.	SI
3 C	10- 1	-41043.3	-71335.7	-50605.9	-3.9	-35.8	SI
3 S	10- 1	-39205.8	-40689.2	-38950.3	-3.4	-37.5	SI
4 I	10- 1	-40047.1	-40689.2	-38950.3	-3.5	-38.4	SI

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4 C| 10- 1| -38209.6| -14105.7| -27294.7| -3. | -39.7|SI|
4 S| 10- 1| -36372.1| 12477.7| -15639.1| -2.8| -38.1|SI|
5 I| 10- 1| -36412.9| 12477.7| -15639.1| -2.8| -38.2|SI|
5 C| 10- 1| -35187.9| 4743.6| -7868.7| -2.6| -37.9|SI|
5 S| 10- 1| -33962.9| -2990.5| -98.3| -2.5| -36.9|SI|

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VERIFICA PILASTRO IN CEMENTO ARMATO

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Nome pilastro      : P32 (ID=39)
Aste               : 45; 6081; 6082; 6083; 6084
Metodo di verifica : stati limite - NTC18 (q=1.07 ; muphi=2.01) ->
Duttilita'        : non prevista (struttura non dissipativa).
                  : dettagli costruttivi del capito 7 non attivi.
Unita' di misura   : cm; daN; daN/cm; daNcm; daN/cm2; deform. %; 1/r %(permille)
Unita' particolari : fessure [wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
Copriferrì (assi)  : longitudinali= 4 ; staffe= 6
Imperfezioni       : M minimo = N * Max(e0;ei)
Instabilita'       : rigidezza nominale [EC2 5.8.7]; fief=3

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MATERIALI

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CLS      : C40/50; Rck=500; fck=415; fctk=25.17; fctm=35.96; Ecm=355471;
          gc=1.5; fcd=235.2; fbd=37.76; fctd=16.78; Ec2=0.2%; Ecu=0.35%
ACCIAIO: B450C; ftk=5175; fyk=4500; Es=2100000; gs=1.15; fyd=3913;
          ftd=4500; fud=4439.8; Eyd=0.1863%; Eud=6.75%

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TENSIONI MASSIME IN ESERCIZIO

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GRUPPO : ordinario.
CLS     : ScIs(rara)=249; ScIs(quasi permanente)=186.8; fbd(esercizio)=37.76
ACCIAIO: Sacc(rara)=3600; Coeff.Omogeneizzazione=15

```

CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAX PRINC	SLU (sismico)	16
5	SLU con SISMAY PRINC	SLU (sismico)	16
8	Rara	RARA	1
9	Frequente	FREQUENTE	1
10	Quasi Perm	QUASI PERMAN.	1

<-

SEZIONI UTILIZZATE

- 1) Rettangolare: base=30; alt.=280; AcIs=8400; iy=8.66; iz=80.83
- 2) Rettangolare: base=35; alt.=280; AcIs=9800; iy=10.1; iz=80.83

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	leiz	leiy	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm
1	1	3.55	3.55	2.37	2.37	710.	630.	0.	0.	276.08	3.287
2	2	2.	2.	.55	.55	165.	150.	0.	0.	276.08	2.817
3	2	2.	2.	.5	.5	150.	135.	0.	0.	276.08	2.817
4	2	2.	2.	.5	.5	150.	110.	0.	0.	276.08	2.817
5	2	2.	2.	.33	.33	100.	20.	0.	0.	276.08	2.817

VERIFICHE ALLO STATO LIMITE ULTIMO

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PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):
Asta Caso | NEd | MEYd | MEZd | E cIs | ScIs | E acc | Sacc | VE |
> 1| 4- 5|-160658.| 689281.|1.81|-22912516|1. | -.043| -89.6| .036| 765.5|SI|
  1| 4- 5|-153203.| 312136.|1.21|-22244385|1. | -.037| -78.2| .032| 681.7|SI|

```


1	4- 5	-145748.	625312.	1.79	-21848969	1.	-.04	-85.	.036	750.1	SI
> 2	5- 2	41530.	2844867.	1.	-13310953	1.	-.047	-97.1	.074	1548.9	SI
2	4- 5	-26310.	-119834.	1.	-19055524	1.	-.026	-56.4	.046	955.7	SI
2	5- 2	45572.	-1268929.	1.	-9403726.	1.	-.026	-56.7	.047	992.1	SI
> 3	5- 2	45572.	-1268929.	1.	-9403726.	1.	-.026	-56.7	.047	992.1	SI
3	5- 2	47410.	-1571821.	1.	-7631755.	1.	-.026	-56.9	.047	977.8	SI
3	5- 2	49247.	-1881824.	1.	-5859783.	1.	-.025	-56.1	.047	977.6	SI
> 4	5- 2	77948.	-1881824.	1.	-5859783.	1.	-.025	-55.2	.053	1102.6	SI
4	5- 2	79786.	-3014436.	1.	-4093452.	1.	-.032	-68.3	.064	1343.5	SI
4	5- 2	81623.	-4147330.	1.	-2327122.	1.	-.038	-81.3	.076	1606.2	SI
> 5	5- 2	83185.	-4147330.	1.	-2327122.	1.	-.038	-81.2	.077	1612.1	SI
5	5- 2	84410.	-2106945.	1.	-1151459.	1.	-.018	-39.6	.047	978.6	SI
5	5- 7	86964.	-173929.	2.56	-173929.	30.	.01	0.	.018	382.8	SI

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

Asta	Caso	NB	l0	Jn	JcIs/Jn	McaI	M0Ed	Med	nu
1 I	4- 5	-930988.2	710.	133769.4	4.7096	379847.	570334.	689281.	.081
2 I	5- 2	-27796285	165.	215700.3	4.638	2844866.	2844866.	2844867.	.
3 I	5- 2	-33633505	150.	215700.3	4.638	-1268929.	-1268929.	-1268929.	.
4 S	5- 2	-33633505	150.	215700.3	4.638	-4147330.	-4147330.	-4147330.	.
5 I	5- 2	-75675386	100.	215700.3	4.638	-4147330.	-4147330.	-4147330.	.

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

Asta	Caso	NB	l0	Jn	JcIs/Jn	McaI	M0Ed	Med	nu
1 I	4- 5	-73483762	710.	10558545	5.1977	-22862423	-22862423	-22912516	.081
2 I	5- 2	-.1359E10	165.	10543070	6.0729	-13310953	-13310953	-13310953	.
3 I	5- 2	-.1644E10	150.	10543070	6.0729	-9403726.	-9403726.	-9403726.	.
4 S	5- 2	-.1644E10	150.	10543070	6.0729	-2327122.	-2327122.	-2327122.	.
5 I	5- 2	-.3699E10	100.	10543070	6.0729	-2327122.	-2327122.	-2327122.	.

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT VE
1 I	4- 8	9345.9	381092.8	381092.8	385554.2	4.02	20.	1.95 SI
1 C	4- 8	9345.9	381092.8	381092.8	384211.5	4.02	20.	1.95 SI
1 S	4- 8	9345.9	381092.8	381092.8	382868.8	4.02	20.	1.95 SI
2 I	4- 5	39882.2	401692.5	410407.6	401692.5	4.02	20.	2.1 SI
2 C	4- 5	39882.2	401344.5	410407.6	401344.5	4.02	20.	2.1 SI
2 S	4- 5	39882.2	400996.4	410407.6	400996.4	4.02	20.	2.1 SI
3 I	4- 5	39702.7	400996.4	410407.6	400996.4	4.02	20.	2.1 SI
3 C	4- 5	39702.7	400680.1	410407.6	400680.1	4.02	20.	2.1 SI
3 S	4- 5	39702.7	400636.	400636.	406419.4	4.02	20.	2.05 SI
4 I	4- 5	39452.	400636.	400636.	405080.7	4.02	20.	2.05 SI
4 C	4- 5	39452.	400636.	400636.	404759.5	4.02	20.	2.05 SI
4 S	4- 5	39452.	400636.	400636.	404438.4	4.02	20.	2.05 SI
5 I	4- 5	39326.1	400636.	400636.	404418.5	4.02	20.	2.05 SI
5 C	4- 5	39326.1	400636.	400636.	404204.4	4.02	20.	2.05 SI
5 S	4- 5	39326.1	400636.	400636.	403990.2	4.02	20.	2.05 SI

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT VE
1 I	5- 1	3183.7	46025.7	46025.7	286541.8	4.02	20.	2.5 SI
1 C	5- 1	3183.7	46025.7	46025.7	285539.2	4.02	20.	2.5 SI
1 S	5- 1	3183.7	46025.7	46025.7	284536.6	4.02	20.	2.5 SI
2 I	5- 7	24737.4	54876.8	54876.8	316745.2	4.02	20.	2.5 SI
2 C	5- 7	24737.4	54876.8	54876.8	316745.2	4.02	20.	2.5 SI
2 S	5- 7	24737.4	54876.8	54876.8	316745.2	4.02	20.	2.5 SI
3 I	5- 8	4431.8	54876.8	54876.8	316745.2	4.02	20.	2.5 SI
3 C	5- 8	4431.8	54876.8	54876.8	316745.2	4.02	20.	2.5 SI
3 S	5- 8	4431.8	54876.8	54876.8	316745.2	4.02	20.	2.5 SI
4 I	5- 8	15233.6	54876.8	54876.8	316745.2	4.02	20.	2.5 SI
4 C	5- 8	15233.6	54876.8	54876.8	316745.2	4.02	20.	2.5 SI
4 S	5- 8	15233.6	54876.8	54876.8	316745.2	4.02	20.	2.5 SI

5 I| 5- 8|-41170.8| 54876.8| 54876.8|316745.2| 4.02|20. |2.5 |SI|
 5 C| 5- 8|-41170.8| 54876.8| 54876.8|316745.2| 4.02|20. |2.5 |SI|
 5 S| 5- 8|-41170.8| 54876.8| 54876.8|316745.2| 4.02|20. |2.5 |SI|

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	8- 1	-181714.9	63314.9	-72782.5	-16.	-211.3	SI
1 C	8- 1	-174259.9	-21237.6	18199.9	-14.6	-209.6	SI
1 S	8- 1	-166804.9	-105790.	109182.2	-15.5	-186.1	SI
2 I	8- 1	-62933.	186094.4	-178360.5	-7.	-43.8	SI
2 C	8- 1	-60911.8	155633.3	-152337.6	-6.5	-45.7	SI
2 S	8- 1	-58890.5	125172.3	-126314.6	-6.	-47.5	SI
3 I	8- 1	-58890.5	125172.3	-126314.6	-6.	-47.5	SI
3 C	8- 1	-57053.	74278.6	-102657.4	-5.2	-51.8	SI
3 S	8- 1	-55215.5	23384.9	-79000.2	-4.4	-56.2	SI
4 I	8- 1	-55915.4	23384.9	-79000.2	-4.5	-56.9	SI
4 C	8- 1	-54077.9	-59573.9	-55343.1	-4.7	-51.3	SI
4 S	8- 1	-52240.4	-142532.8	-31685.9	-5.5	-40.4	SI
5 I	8- 1	-52596.7	-142532.8	-31685.9	-5.5	-40.8	SI
5 C	8- 1	-51371.7	-72317.7	-15914.4	-4.6	-47.8	SI
5 S	8- 1	-50146.7	-2102.7	-142.9	-3.7	-54.8	SI

Frequenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	9- 1	-167354.9	59112.7	-67174.9	-14.7	-194.5	SI
1 C	9- 1	-159899.9	-19289.7	14461.3	-13.4	-192.4	SI
1 S	9- 1	-152444.9	-97692.1	96097.4	-14.2	-170.	SI
2 I	9- 1	-57751.5	167780.6	-165821.8	-6.4	-40.5	SI
2 C	9- 1	-55730.2	140913.5	-141627.4	-5.9	-41.9	SI
2 S	9- 1	-53709.	114046.5	-117433.	-5.4	-43.3	SI
3 I	9- 1	-53709.	114046.5	-117433.	-5.4	-43.3	SI
3 C	9- 1	-51871.5	67725.4	-95438.	-4.7	-47.1	SI
3 S	9- 1	-50034.	21404.3	-73443.1	-4.	-50.8	SI
4 I	9- 1	-50685.6	21404.3	-73443.1	-4.1	-51.5	SI
4 C	9- 1	-48848.1	-53634.3	-51448.2	-4.3	-46.3	SI
4 S	9- 1	-47010.6	-128672.8	-29453.2	-5.	-36.3	SI
5 I	9- 1	-47336.2	-128672.8	-29453.2	-5.	-36.6	SI
5 C	9- 1	-46111.2	-65260.1	-14789.9	-4.2	-42.8	SI
5 S	9- 1	-44886.2	-1847.3	-126.6	-3.3	-49.1	SI

Quasi permanenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	10- 1	-163034.1	57780.6	-65332.9	-14.3	-189.5	SI
1 C	10- 1	-155579.1	-18685.5	13229.6	-13.	-187.3	SI
1 S	10- 1	-148124.1	-95151.6	91792.2	-13.8	-165.2	SI
2 I	10- 1	-56456.4	161544.8	-161596.2	-6.3	-39.9	SI
2 C	10- 1	-54435.1	136245.3	-138018.	-5.8	-41.1	SI
2 S	10- 1	-52413.9	110945.8	-114439.8	-5.3	-42.3	SI
3 I	10- 1	-52413.9	110945.8	-114439.8	-5.3	-42.3	SI
3 C	10- 1	-50576.4	65964.6	-93005.	-4.6	-45.9	SI
3 S	10- 1	-48738.9	20983.4	-71570.3	-3.9	-49.5	SI
4 I	10- 1	-49385.5	20983.4	-71570.3	-4.	-50.2	SI
4 C	10- 1	-47548.	-51871.9	-50135.6	-4.2	-45.1	SI
4 S	10- 1	-45710.5	-124727.1	-28700.8	-4.8	-35.3	SI
5 I	10- 1	-46031.5	-124727.1	-28700.8	-4.9	-35.6	SI
5 C	10- 1	-44806.5	-63248.7	-14411.	-4.	-41.6	SI
5 S	10- 1	-43581.5	-1770.4	-121.2	-3.2	-47.6	SI

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P31 (ID=41)
 Aste : 60; 6089; 6090; 6091; 6092
 Metodo di verifica : stati limite - NTC18 (q=1.07 ; muphi=2.01) ->
 Duttilita' : non prevista (struttura non dissipativa).
 : dettagli costruttivi del capito 7 non attivi.
 Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %; 1/r ‰(permille)
 Unita' particolari : fessure [Wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
 Copriferri (assi) : longitudinali= 4 ; staffe= 6
 Imperfezioni : M minimo = N * Max(e0;ei)
 Instabilita' : rigidezza nominale [EC2 5.8.7]; fief=3

MATERIALI

CLS : C40/50; Rck=500; fck=415; fctk=25.17; fctm=35.96; Ecm=355471;
 gc=1.5; fcd=235.2; fbd=37.76; fctd=16.78; Ec2=0.2%; Ecu=0.35%
 ACCIAIO: B450C; ftk=5175; fyk=4500; Es=2100000; gs=1.15; fyd=3913;
 ftd=4500; fud=4439.8; Eyd=0.1863%; Eud=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.
 CLS : Scls(rara)=249; Scls(quasi permanente)=186.8; fbd(esercizio)=37.76
 ACCIAIO: Sacc(rara)=3600; Coeff.omogeneizzazione=15

CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAX PRINC	SLU (sismico)	16
5	SLU con SISMAX PRINC	SLU (sismico)	16
8	Rara	RARA	1
9	Frequente	FREQUENTE	1
10	Quasi Perm	QUASI PERMAN.	1

<-

SEZIONI UTILIZZATE

1) Rettangolare: base=30; alt.=280; Acls=8400; iy=8.66; iz=80.83
 2) Rettangolare: base=35; alt.=280; Acls=9800; iy=10.1; iz=80.83

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	leiz	leiy	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm	
1	1	3.55	3.55	2.37	2.37	710.	630.	0.	0.	276.08	3.287	52026
2	2	2.	2.	.55	.55	165.	150.	0.	0.	276.08	2.817	52026
3	2	2.	2.	.5	.5	150.	135.	0.	0.	276.08	2.817	52026
4	2	2.	2.	.5	.5	150.	110.	0.	0.	276.08	2.817	52026
5	2	2.	2.	.33	.33	100.	20.	0.	0.	276.08	2.817	52026

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

Asta	Caso	NEd	MEyd	MEzd	E cls	Scls	E acc	Sacc	VE	
> 1	5-10	-152066.	-1476430.	1.2	-3648997.	1.	-.024	-53.9	.008	176.7
1	4-12	-151987.	-305382.	1.21	25799836.	1.	-.042	-88.2	.042	880.3
1	4-12	-144532.	-619129.	1.65	42984708.	1.	-.073	-140.3	.093	1956.9
> 2	4-12	-26975.	-869366.	1.	42893195.	1.	-.067	-130.4	.116	2426.2
2	4-12	-24953.	125769.	1.	36591736.	1.	-.049	-100.8	.093	1946.2
2	4-12	-22932.	281635.	1.	30290278.	1.	-.042	-88.8	.077	1626.8
> 3	4-12	-22932.	281554.	1.	30290099.	1.	-.042	-88.8	.077	1626.8
3	5-15	49348.	1519112.	1.	15449422.	1.	-.037	-78.6	.066	1384.9
3	5-15	51186.	1806492.	1.	11870794.	1.	-.035	-74.6	.06	1269.6
> 4	5-15	78931.	1806492.	1.	11870794.	1.	-.035	-74.2	.067	1402.9

4	5-15	80768.	2839001.	1.	8300156.	1.	-.038	-80.3	.071	1481.3	SI
4	5-15	82606.	3871831.	1.	4729518.	1.	-.04	-85.1	.077	1627.3	SI
> 5	5-15	84214.	3871831.	1.	4729518.	1.	-.04	-85.	.078	1633.6	SI
5	5-15	85439.	1984291.	1.	2352035.	1.	-.019	-42.5	.048	1000.1	SI
5	5-10	88011.	176023.	1.8	176023.	17.8	.011	0.	.018	387.4	SI

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

Asta	Caso	NB	l0	Jn	JcIs/Jn	McaI	M0Ed	MEd	nu
1 S	4-12	-930900.9	710.	133756.9	4.71	-374204.	-513087.	-619129.	.081
2 I	4-12	-27806012	165.	215775.7	4.6364	-868522.	-868522.	-869366.	.012
3 I	4-12	-33642601	150.	215758.6	4.6367	281362.	281362.	281554.	.01
4 S	5-15	-33633505	150.	215700.3	4.638	3871831.	3871831.	3871831.	.
5 I	5-15	-75675386	100.	215700.3	4.638	3871831.	3871831.	3871831.	.

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

Asta	Caso	NB	l0	Jn	JcIs/Jn	McaI	M0Ed	MEd	nu
1 S	4-12	-73482947	710.	10558428	5.1977	42891440.	42891440.	42984708.	.081
2 I	4-12	-.1359E10	165.	10543673	6.0725	42892343.	42892343.	42893195.	.012
3 I	4-12	-.1644E10	150.	10543536	6.0726	30289676.	30289676.	30290099.	.01
4 S	5-15	-.1644E10	150.	10543070	6.0729	4729518.	4729518.	4729518.	.
5 I	5-15	-.3699E10	100.	10543070	6.0729	4729518.	4729518.	4729518.	.

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	4-12	48523.6	381092.8	381092.8	384500.1	4.02	20.	1.95	SI
1 C	4-12	48523.6	381092.8	381092.8	383157.4	4.02	20.	1.95	SI
1 S	4-12	48523.6	381092.8	381092.8	381814.7	4.02	20.	1.95	SI
2 I	4-12	-76379.8	401458.9	410407.6	401458.9	4.02	20.	2.1	SI
2 C	4-12	-76379.8	401110.9	410407.6	401110.9	4.02	20.	2.1	SI
2 S	4-12	-76379.8	400762.9	410407.6	400762.9	4.02	20.	2.1	SI
3 I	4-12	-76115.2	400762.9	410407.6	400762.9	4.02	20.	2.1	SI
3 C	4-12	-76115.2	400636.	400636.	406503.5	4.02	20.	2.05	SI
3 S	4-12	-76115.2	400636.	400636.	406182.3	4.02	20.	2.05	SI
4 I	4-12	-75760.1	400636.	400636.	404902.8	4.02	20.	2.05	SI
4 C	4-12	-75760.1	400636.	400636.	404581.7	4.02	20.	2.05	SI
4 S	4-12	-75760.1	400636.	400636.	404260.5	4.02	20.	2.05	SI
5 I	4-12	-75564.	400636.	400636.	404262.1	4.02	20.	2.05	SI
5 C	4-12	-75564.	400636.	400636.	404048.	4.02	20.	2.05	SI
5 S	4-12	-75564.	400636.	400636.	403833.9	4.02	20.	2.05	SI

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
1 I	5-15	-3229.3	46025.7	46025.7	286113.	4.02	20.	2.5	SI
1 C	5-15	-3229.3	46025.7	46025.7	285110.4	4.02	20.	2.5	SI
1 S	5-15	-3229.3	46025.7	46025.7	284107.8	4.02	20.	2.5	SI
2 I	5-10	-23782.1	54876.8	54876.8	316745.2	4.02	20.	2.5	SI
2 C	5-10	-23782.1	54876.8	54876.8	316745.2	4.02	20.	2.5	SI
2 S	5-10	-23782.1	54876.8	54876.8	316745.2	4.02	20.	2.5	SI
3 I	5-10	-4199.5	54876.8	54876.8	316745.2	4.02	20.	2.5	SI
3 C	5-10	-4199.5	54876.8	54876.8	316745.2	4.02	20.	2.5	SI
3 S	5-10	-4199.5	54876.8	54876.8	316745.2	4.02	20.	2.5	SI
4 I	5-10	-13901.3	54876.8	54876.8	316745.2	4.02	20.	2.5	SI
4 C	5-10	-13901.3	54876.8	54876.8	316745.2	4.02	20.	2.5	SI
4 S	5-10	-13901.3	54876.8	54876.8	316745.2	4.02	20.	2.5	SI
5 I	5-10	38110.2	54876.8	54876.8	316745.2	4.02	20.	2.5	SI
5 C	5-10	38110.2	54876.8	54876.8	316745.2	4.02	20.	2.5	SI
5 S	5-10	38110.2	54876.8	54876.8	316745.2	4.02	20.	2.5	SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
------	------	-----	------	------	------	------	----

1 I	8- 1	-180995.7	-26396.8	-58097.8	-15.3	-216.1 SI
1 C	8- 1	-173540.7	23659.2	-518.8	-14.5	-208.8 SI
1 S	8- 1	-166085.7	73715.1	57060.1	-14.8	-191.1 SI
2 I	8- 1	-61573.7	-178774.7	-233583.	-6.9	-41.9 SI
2 C	8- 1	-59552.5	-150818.2	-199507.	-6.4	-43.7 SI
2 S	8- 1	-57531.2	-122861.6	-165431.	-5.9	-45.4 SI
3 I	8- 1	-57531.2	-122861.6	-165431.	-5.9	-45.4 SI
3 C	8- 1	-55693.7	-72212.5	-134452.8	-5.1	-49.9 SI
3 S	8- 1	-53856.2	-21563.4	-103474.6	-4.4	-54.3 SI
4 I	8- 1	-54609.9	-21563.4	-103474.6	-4.4	-55.1 SI
4 C	8- 1	-52772.4	73952.4	-72496.4	-4.8	-47.9 SI
4 S	8- 1	-50934.9	169468.3	-41518.2	-5.8	-35.6 SI
5 I	8- 1	-51507.4	169468.3	-41518.2	-5.8	-36.3 SI
5 C	8- 1	-50282.4	87190.3	-20866.	-4.7	-44.8 SI
5 S	8- 1	-49057.4	4912.3	-213.9	-3.6	-53.3 SI

Frequenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	9- 1	-166740.9	-22619.	-53125.2	-14.	-199.3	SI
1 C	9- 1	-159285.9	21652.5	-4046.8	-13.3	-191.6	SI
1 S	9- 1	-151830.9	65923.9	45031.6	-13.5	-175.1	SI
2 I	9- 1	-56554.9	-162995.2	-219548.7	-6.4	-38.5	SI
2 C	9- 1	-54533.7	-137778.2	-187518.2	-5.9	-39.9	SI
2 S	9- 1	-52512.4	-112561.2	-155487.6	-5.4	-41.3	SI
3 I	9- 1	-52512.4	-112561.2	-155487.6	-5.4	-41.3	SI
3 C	9- 1	-50674.9	-66276.2	-126369.	-4.7	-45.2	SI
3 S	9- 1	-48837.4	-19991.1	-97250.3	-4.	-49.1	SI
4 I	9- 1	-49531.	-19991.1	-97250.3	-4.	-49.9	SI
4 C	9- 1	-47693.5	65987.9	-68131.6	-4.4	-43.3	SI
4 S	9- 1	-45856.	151966.8	-39013.	-5.2	-32.1	SI
5 I	9- 1	-46366.3	151966.8	-39013.	-5.2	-32.7	SI
5 C	9- 1	-45141.3	78177.3	-19600.5	-4.2	-40.2	SI
5 S	9- 1	-43916.3	4387.7	-188.1	-3.3	-47.7	SI

Quasi permanenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	10- 1	-162441.	-21471.5	-51489.3	-13.7	-194.3 SI	
1 C	10- 1	-154986.	21025.9	-5216.5	-13.	-186.4 SI	
1 S	10- 1	-147531.	63523.4	41056.3	-13.1	-170.3 SI	
2 I	10- 1	-55300.3	-157640.7	-214866.8	-6.2	-37.9 SI	
2 C	10- 1	-53279.1	-133661.7	-183518.6	-5.7	-39.1 SI	
2 S	10- 1	-51257.8	-109682.6	-152170.5	-5.3	-40.3 SI	
3 I	10- 1	-51257.8	-109682.6	-152170.5	-5.3	-40.3 SI	
3 C	10- 1	-49420.3	-64657.7	-123672.3	-4.6	-44.1 SI	
3 S	10- 1	-47582.8	-19632.8	-95174.	-3.9	-47.8 SI	
4 I	10- 1	-48267.	-19632.8	-95174.	-3.9	-48.6 SI	
4 C	10- 1	-46429.5	63781.2	-66675.7	-4.2	-42.2 SI	
4 S	10- 1	-44592.	147195.2	-38177.4	-5.	-31.3 SI	
5 I	10- 1	-45089.2	147195.2	-38177.4	-5.1	-31.8 SI	
5 C	10- 1	-43864.2	75719.6	-19178.6	-4.1	-39.1 SI	
5 S	10- 1	-42639.2	4243.9	-179.7	-3.2	-46.3 SI	

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P30 (ID=42)
 Aste : 75; 6093; 6094
 Metodo di verifica : stati limite - NTC18 (q=1.07 ; muphi=2.01) ->
 Duttilita' : non prevista (struttura non dissipativa).
 : dettagli costruttivi del capito 7 non attivi.
 Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %; 1/r ‰(permille)
 Unita' particolari : fessure [wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
 Copriferrì (assi) : longitudinali= 4 ; staffe= 6

Imperfezioni : $M_{\min} = N \cdot \max(e_0; e_i)$
 Instabilita' : snellezza limite [NTC18 4.1.2.3.9.2]

MATERIALI

CLS : C40/50; $R_{ck}=500$; $f_{ck}=415$; $f_{ctk}=25.17$; $f_{ctm}=35.96$; $E_{cm}=355471$;
 $g_c=1.5$; $f_{cd}=235.2$; $f_{bd}=37.76$; $f_{ctd}=16.78$; $E_{c2}=0.2\%$; $E_{cu}=0.35\%$
 ACCIAIO: B450C; $f_{tk}=5175$; $f_{yk}=4500$; $E_s=2100000$; $g_s=1.15$; $f_{yd}=3913$;
 $f_{td}=4500$; $f_{ud}=4439.8$; $E_{yd}=0.1863\%$; $E_{ud}=6.75\%$

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.
 CLS : $\sigma_{cls}(rara)=249$; $\sigma_{cls}(quasi\ permanente)=186.8$; $f_{bd}(esercizio)=37.76$
 ACCIAIO: $\sigma_{acc}(rara)=3600$; Coeff.Omogeneizzazione=15

CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAX PRINC	SLU (sismico)	16
5	SLU con SISMAX PRINC	SLU (sismico)	16
8	Rara	RARA	1
9	Frequente	FREQUENTE	1
10	Quasi Perm	QUASI PERMAN.	1

<-

SEZIONI UTILIZZATE

- 1) Rettangolare: base=30; alt.=280; $A_{cls}=8400$; $i_y=8.66$; $i_z=80.83$
- 2) Rettangolare: base=35; alt.=280; $A_{cls}=9800$; $i_y=10.1$; $i_z=80.83$

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	leiz	leiy	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm	
1	1	3.55	3.55	2.37	2.37	710.	630.	0.	0.	276.08	3.287	52026
2	2	2.33	2.33	1.55	1.55	465.	425.	0.	0.	276.08	2.817	52026
3	2	2.	2.	.33	.33	100.	20.	0.	0.	276.08	2.817	52026

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (incluse le imperfezioni):

Asta	Caso	NEd	MEyd	MEzd	E cls	Sc ls	E acc	Sacc	VE		
> 1	5- 3	-60093.	1492739.	1.	2780468.	1.	-.023	-51.7	.02	423.8	SI
1	4- 5	-87707.	217152.	1.	-26299785	1.	-.041	-86.4	.055	1151.3	SI
1	4- 5	-80252.	-430031.	1.	-50071527	1.	-.08	-150.8	.124	2605.2	SI
> 2	4- 5	-16435.	833785.	1.	-50391942	1.	-.077	-145.6	.138	2895.6	SI
2	4- 5	-10739.	-174349.	1.	-29629268	1.	-.04	-84.5	.077	1626.	SI
2	5- 2	27656.	-4255997.	1.	-5725022.	1.	-.047	-97.	.075	1566.1	SI
> 3	5- 2	27979.	-4255997.	1.	-5725022.	1.	-.047	-97.	.075	1567.4	SI
3	5- 2	29204.	-2173649.	1.	-2855413.	1.	-.023	-51.1	.041	851.8	SI
3	5- 3	30879.	-92243.	1.	61757.	9.33	.003	0.	.007	145.5	SI

SNELLEZZA LIMITE Y [NTC18 4.1.2.3.9.2]:

Asta	Caso	NEd	l0	nu	L lim	Lambd	VE
1	1- 1	-163587.	710.	.083	86.87	81.98	SI
2	5-10	-75618.6	465.	.033	138.	46.02	SI
3	5-10	-64253.1	100.	.028	149.7	9.9	SI

SNELLEZZA LIMITE Z [NTC18 4.1.2.3.9.2]:

Asta	Caso	NEd	l0	nu	L lim	Lambd	VE
1	1- 1	-163587.	710.	.083	86.87	8.78	SI
2	5-10	-75618.6	465.	.033	138.	5.75	SI

3| 5-10| -64253.1|100. | .028|149.7| 1.24|SI|

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT VE
1 I	4- 5	-67049.6	372922.8	381092.8	372922.8	4.02	20.	1.95 SI
1 C	4- 5	-67049.6	371580.2	381092.8	371580.2	4.02	20.	1.95 SI
1 S	4- 5	-67049.6	371321.2	371321.2	375807.8	4.02	20.	1.9 SI
2 I	4- 5	89301.8	400636.	400636.	405689.1	4.02	20.	2.05 SI
2 C	4- 5	89301.8	400636.	400636.	404693.5	4.02	20.	2.05 SI
2 S	4- 5	89301.8	400636.	400636.	403697.8	4.02	20.	2.05 SI
3 I	4- 5	88829.5	400636.	400636.	403659.3	4.02	20.	2.05 SI
3 C	4- 5	88829.5	400636.	400636.	403445.2	4.02	20.	2.05 SI
3 S	4- 5	88829.5	400636.	400636.	403231.1	4.02	20.	2.05 SI

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT VE
1 I	5- 2	3139.1	46025.7	46025.7	273807.9	4.02	20.	2.5 SI
1 C	5- 2	3139.1	46025.7	46025.7	272805.3	4.02	20.	2.5 SI
1 S	5- 2	3139.1	46025.7	46025.7	271802.7	4.02	20.	2.5 SI
2 I	5-10	-16142.	54876.8	54876.8	327138.1	4.02	20.	2.5 SI
2 C	5-10	-16142.	54876.8	54876.8	326355.2	4.02	20.	2.5 SI
2 S	5-10	-16142.	54876.8	54876.8	325572.3	4.02	20.	2.5 SI
3 I	5-10	43375.1	54876.8	54876.8	325576.	4.02	20.	2.5 SI
3 C	5-10	43375.1	54876.8	54876.8	325407.6	4.02	20.	2.5 SI
3 S	5-10	43375.1	54876.8	54876.8	325239.3	4.02	20.	2.5 SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	8- 1	-118786.6	27124.3	-19022.	-10.1	-140.9	SI
1 C	8- 1	-111331.6	-3235.9	-30886.6	-9.2	-134.9	SI
1 S	8- 1	-103876.6	-33596.	-42751.2	-9.1	-121.2	SI
2 I	8- 1	-30975.7	-13953.7	-152597.1	-2.7	-29.	SI
2 C	8- 1	-25279.4	31494.	-89681.5	-2.4	-22.1	SI
2 S	8- 1	-19583.2	76941.7	-26765.8	-2.4	-12.1	SI
3 I	8- 1	-19426.2	76941.7	-26765.8	-2.4	-11.9	SI
3 C	8- 1	-18201.2	41253.3	-13235.6	-1.8	-15.	SI
3 S	8- 1	-16976.2	5564.9	294.7	-1.3	-18.	SI

Frequenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	9- 1	-111266.4	26146.2	-17073.7	-9.5	-131.9	SI
1 C	9- 1	-103811.4	-2851.7	-31809.9	-8.6	-125.8	SI
1 S	9- 1	-96356.4	-31849.5	-46546.1	-8.4	-112.1	SI
2 I	9- 1	-29748.7	-12152.6	-147432.9	-2.5	-27.9	SI
2 C	9- 1	-24052.5	27788.6	-86652.	-2.2	-21.3	SI
2 S	9- 1	-18356.2	67729.8	-25871.2	-2.2	-11.8	SI
3 I	9- 1	-18214.1	67729.8	-25871.2	-2.2	-11.7	SI
3 C	9- 1	-16989.1	36347.	-12800.1	-1.7	-14.2	SI
3 S	9- 1	-15764.1	4964.2	271.1	-1.2	-16.7	SI

Quasi permanenti:

Asta	Caso	NEd	MEyd	MEzd	ScIs	Sacc	VE
1 I	10- 1	-108856.6	25830.1	-16431.1	-9.3	-129.	SI
1 C	10- 1	-101401.6	-2742.4	-32122.3	-8.4	-122.8	SI
1 S	10- 1	-93946.6	-31314.8	-47813.5	-8.2	-109.2	SI
2 I	10- 1	-29435.3	-11788.7	-145686.3	-2.5	-27.7	SI
2 C	10- 1	-23739.	26755.6	-85627.3	-2.2	-21.1	SI
2 S	10- 1	-18042.8	65299.8	-25568.4	-2.1	-11.8	SI
3 I	10- 1	-17904.4	65299.8	-25568.4	-2.1	-11.6	SI
3 C	10- 1	-16679.4	35051.3	-12652.5	-1.6	-14.	SI

3 S| 10- 1| -15454.4| 4802.8| 263.4| -1.2| -16.4|SI|

4.3.5. Pilastri 50x145

I pilastri 50x145 cm risultano armati con 13+13 Φ 24 a flessione mentre hanno staffe Φ 12/10. Tali armature proseguono continue all'interno della parete, le cui verifiche verranno riportate successivamente.

Di seguito si riporta la verifica dei pilastri più sollecitati eseguita con l'applicativo "Pilastri" di DOLMEN.

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P37 (ID=44)
 Aste : 6492; 6491
 Metodo di verifica : stati limite - NTC18 (q=1.07 ; muphi=2.01) ->
 Duttilita' : non prevista (struttura non dissipativa).
 : dettagli costruttivi del capito 7 non attivi.
 Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %; 1/r ‰(permille)
 Unita' particolari : fessure [Wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
 Copriferri (assi) : longitudinali= 4 ; staffe= 6
 Imperfezioni : M minimo = N * Max(e0;ei)
 Instabilita' : snellezza limite [NTC18 4.1.2.3.9.2]

MATERIALI

CLS : C25/30; Rck=300; fck=249; fctk=17.91; fctm=25.58; Ecm=314472;
 gc=1.5; fcd=141.1; fbd=26.86; fctd=11.94; Ec2=0.2%; Ecu=0.35%
 ACCIAIO: B450C; ftk=5175; fyk=4500; Es=2100000; gs=1.15; fyd=3913;
 ftd=4500; fud=4439.8; Eyd=0.1863%; Eud=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.
 CLS : ScIs(rara)=149.4; ScIs(quasi permanente)=112; fbd(esercizio)=26.86
 ACCIAIO: Sacc(rara)=3600; Coeff.Omogeneizzazione=15

CASI DI CARICO

Nome	Descrizione	Tipo	Ses
1	SLU SENZA SISMA	SLU (statico)	1
4	SLU con SISMAX PRINC	SLU (sismico)	16
5	SLU con SISMAY PRINC	SLU (sismico)	16
8	Rara	RARA	1
9	Frequente	FREQUENTE	1
10	Quasi Perm	QUASI PERMAN.	1

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SEZIONI UTILIZZATE

2) Rettangolare: base=50; alt.=145; AcIs=7250; iy=14.43; iz=41.86

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

As	Se	e0z	e0y	eiZ	eiY	Lassi	Lnet	Lcr.I	Lcr.S	Af	% arm	
2	2	2	2	1.13	1.13	340.	140.	0.	0.	117.62	1.622	26 Φ 24

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (incluse le imperfezioni):

> 2	5-15	-60413.	-6556568.	1.	7513845.	1.	-.143	-129.7	.177	3710.8	SI
2	5-15	-57332.	-3536983.	1.	3558753.	1.	-.07	-81.3	.079	1654.6	SI
2	5- 2	-63798.	259644.	1.	450046.	1.	-.009	-12.3	-.002	-43.2	SI

SNELLEZZA LIMITE Y [NTC18 4.1.2.3.9.2]:

Asta	Caso	NEd	10	nu	L	lim	Lambd	VE
2	1- 1	-89014.8	340.	.087	84.75	23.56	SI	

SNELLEZZA LIMITE Z [NTC18 4.1.2.3.9.2]:

Asta	Caso	NEd	10	nu	L	lim	Lambd	VE
2	1- 1	-89014.8	340.	.087	84.75	8.12	SI	

TAGLIO Y:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
2 I	4- 5	33315.1	175500.6	175500.6	177976.1	1.57	10.	2.25	SI
2 C	4- 5	33315.1	175500.6	175500.6	177475.7	1.57	10.	2.25	SI
2 S	4- 5	33315.1	175500.6	175500.6	176975.3	1.57	10.	2.25	SI

TAGLIO Z:

Asta	Caso	VEd	VRd	VRsd	VRcd	Asw	s	ctgT	VE
2 I	5- 4	18071.	63617.3	63617.3	155546.2	1.57	10.	2.5	SI
2 C	5-13	-20601.9	63617.3	63617.3	154702.8	1.57	10.	2.5	SI
2 S	5-13	-20601.9	63617.3	63617.3	154262.9	1.57	10.	2.5	SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

Asta	Caso	NEd	MEyd	MEzd	Sc1s	Sacc	VE
2 I	8- 1	-67048.	-923359.6	-222250.6	-20.2	44.	SI
2 C	8- 1	-63966.7	-600291.5	-105144.6	-14.8	-19.8	SI
2 S	8- 1	-60885.5	7639.3	11961.4	-7.	-100.9	SI

Frequenti:

Asta	Caso	NEd	MEyd	MEzd	Sc1s	Sacc	VE
2 I	9- 1	-65652.	-923727.2	-218699.2	-20.1	48.	SI
2 C	9- 1	-62570.7	-600682.4	-103718.4	-14.7	-17.4	SI
2 S	9- 1	-59489.5	7225.	11262.3	-6.8	-98.6	SI

Quasi permanenti:

Asta	Caso	NEd	MEyd	MEzd	Sc1s	Sacc	VE
2 I	10- 1	-65186.6	-923909.8	-217479.6	-20.1	49.4	SI
2 C	10- 1	-62105.4	-600845.5	-103228.6	-14.6	-16.5	SI
2 S	10- 1	-59024.1	7081.5	11022.4	-6.8	-97.8	SI

4.4. Pareti

Di seguito verranno eseguite le verifiche sulle pareti di nuova realizzazione.

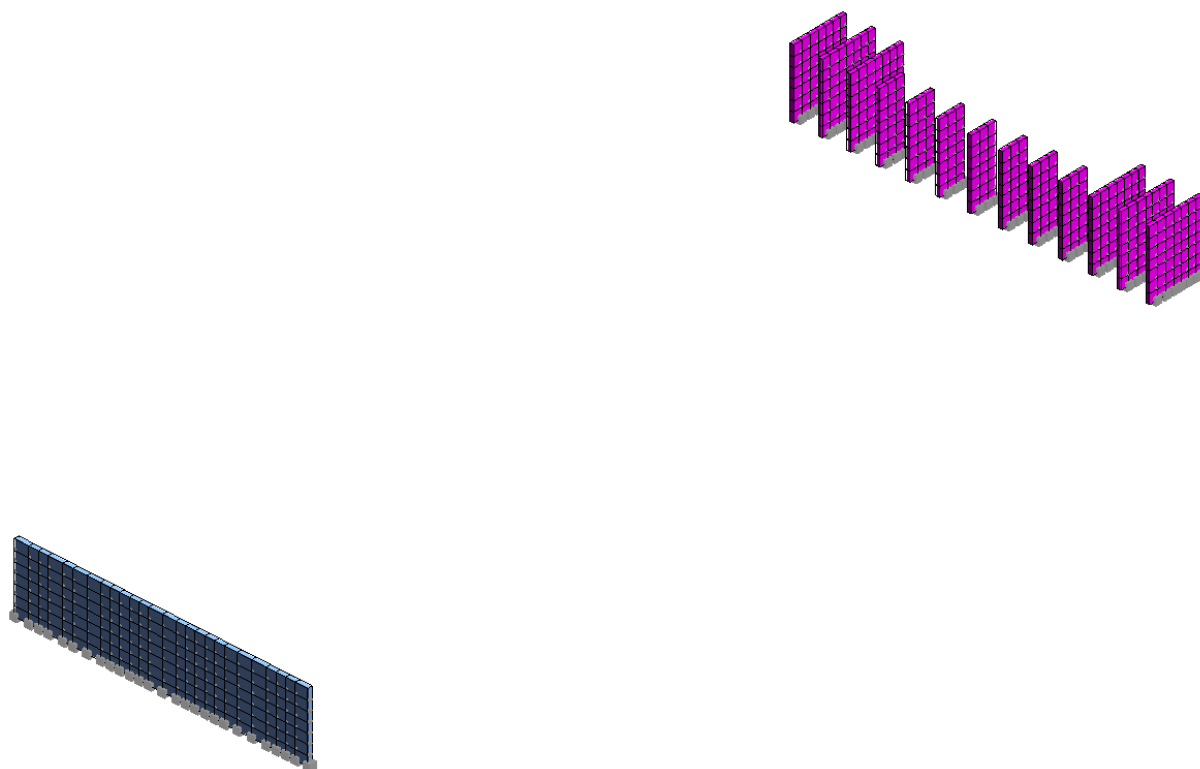


Figura 165 – Vista solida pareti

Si riportano di seguito le mappe delle tensioni in direzione Y ed XY nei casi SLU (caso 1).

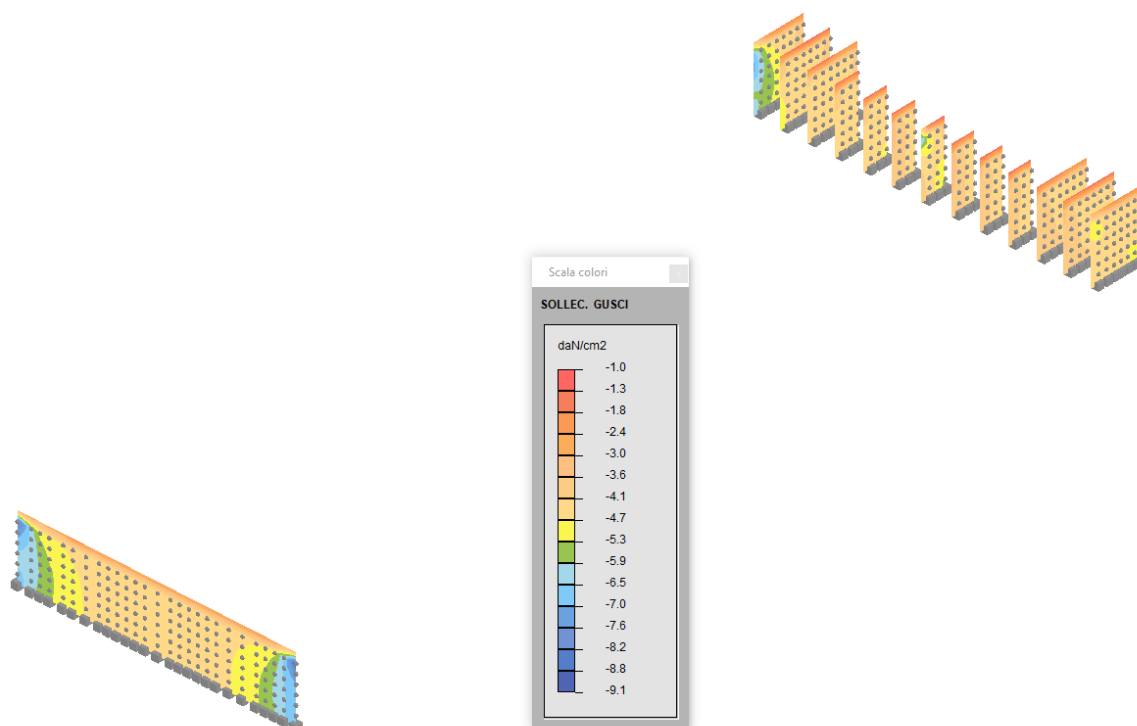


Figura 56 – SLU Sy

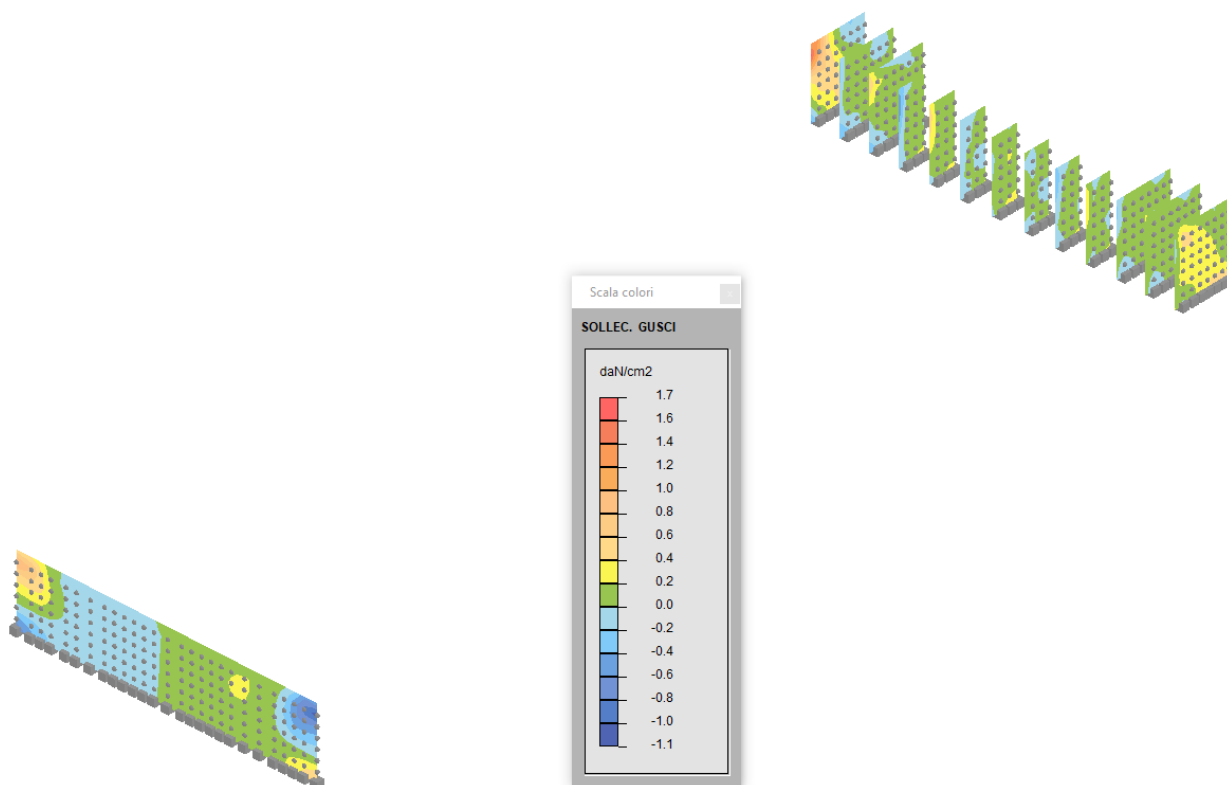


Figura 177 – SLU Sxy

Si riportano di seguito le mappe delle tensioni in direzione Y ed XY nei casi SLV sisma X (caso 5).

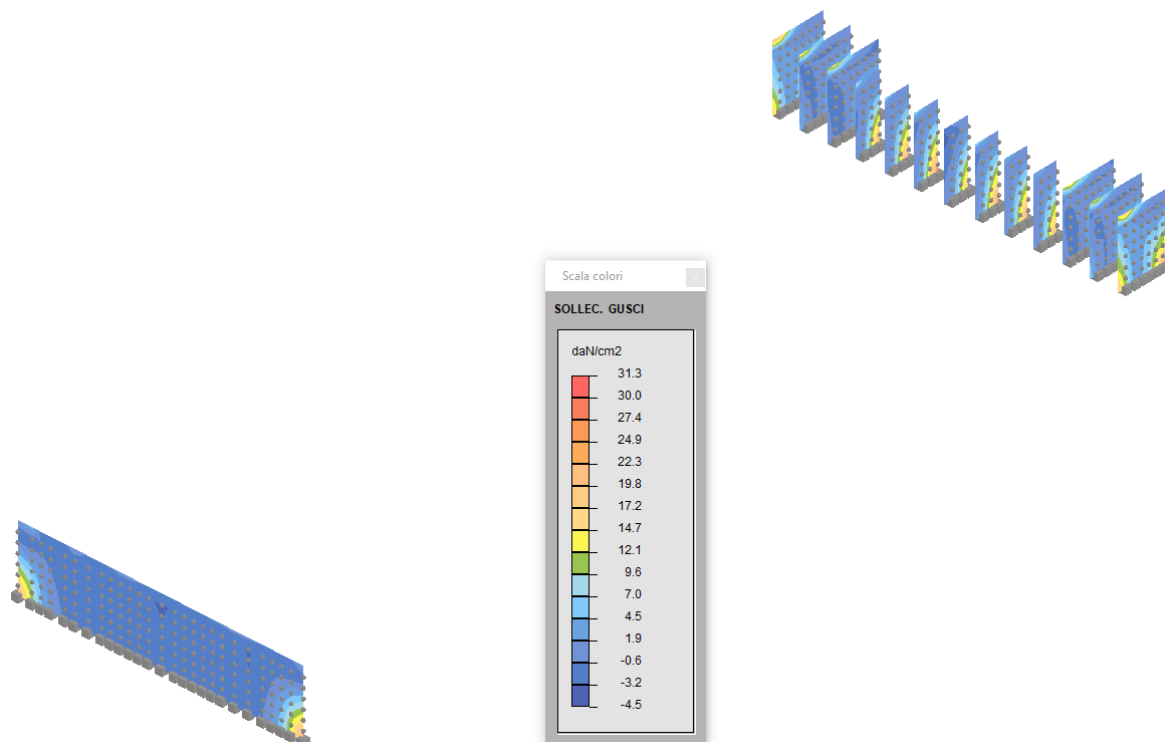


Figura 18 – SLV Sy

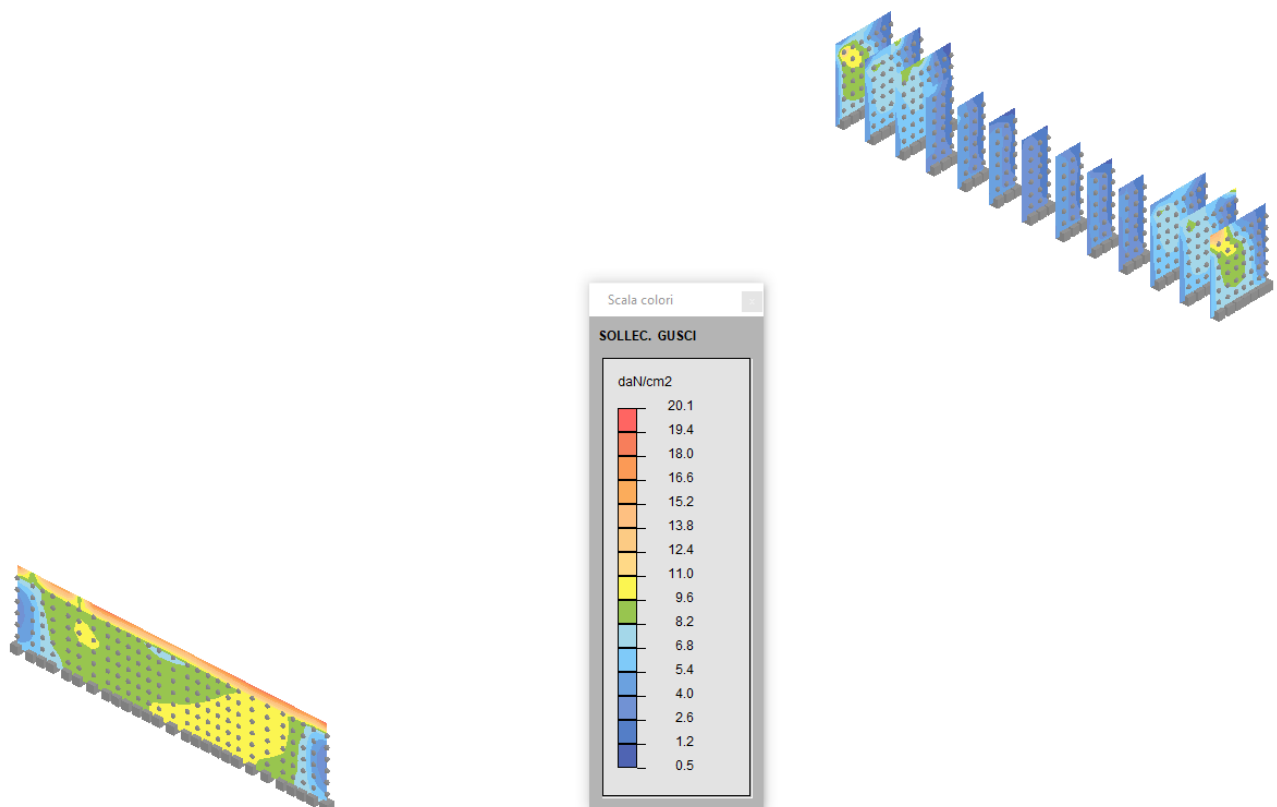


Figura 59 – SLVx Sxy

Si riportano di seguito le mappe delle tensioni in direzione Y ed XY nei casi SLV sisma Y (caso 6).

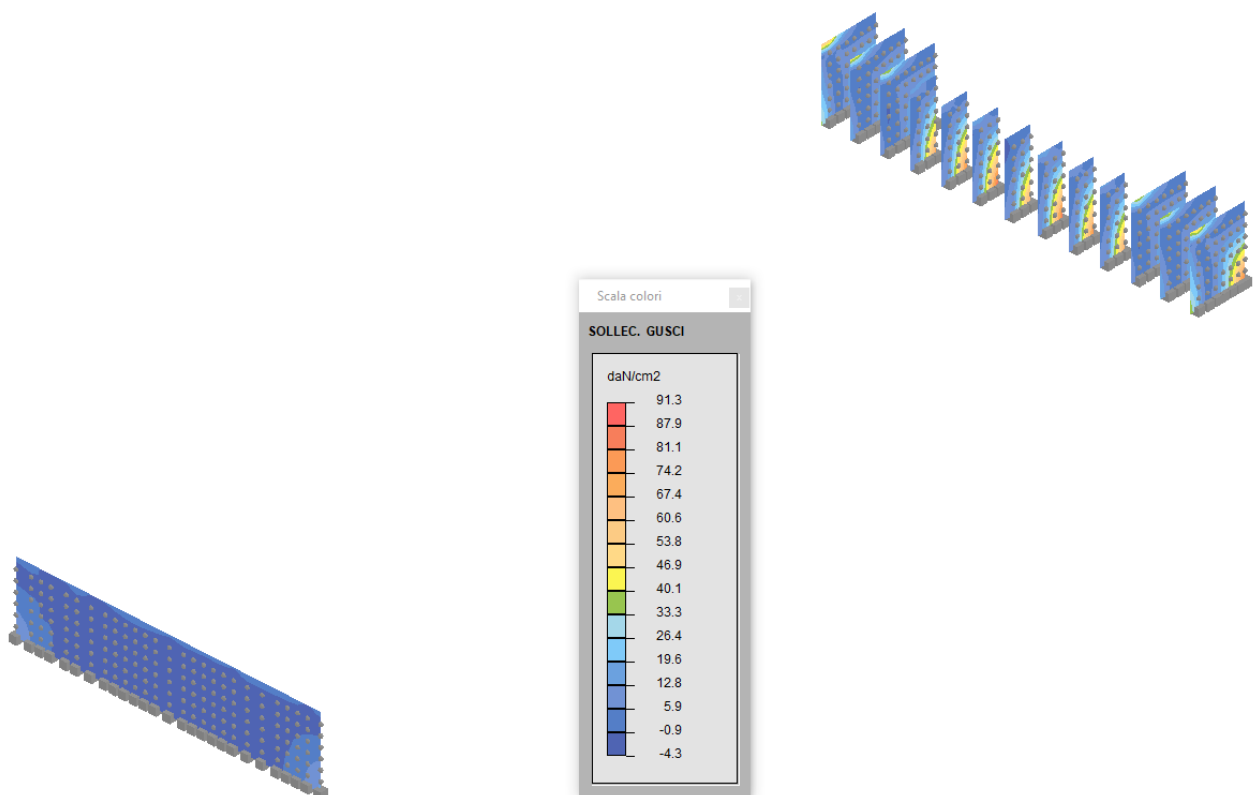


Figura 60 – SLVy Sy

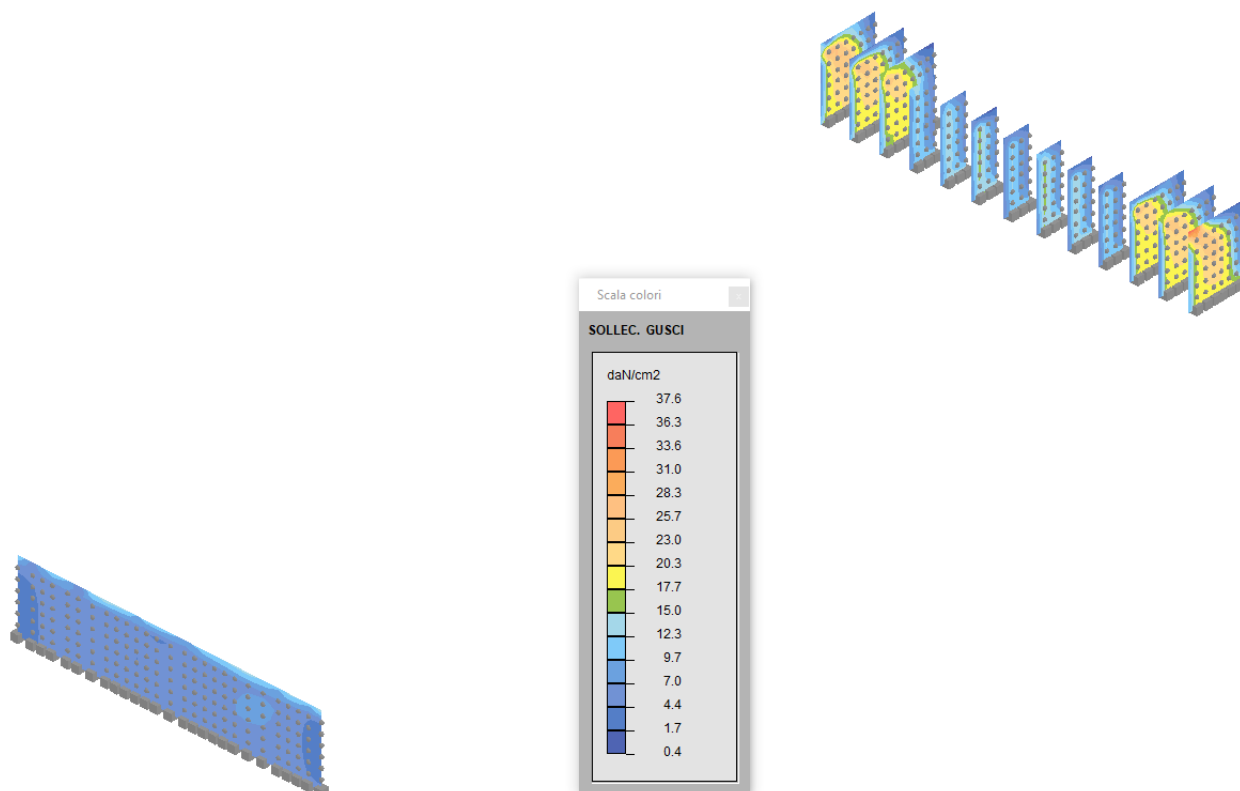


Figura 19 – SLV_y S_{xy}

4.4.1. Muro controterra lato ovest

Il muro controterra sul lato ovest ha spessore 50 cm è viene armato in verticale con ferri $\Phi 20/15$ ed in orizzontale $\Phi 16/20$.

Si riportano di seguito le verifiche SLU e SLE eseguite con l'applicativo “piastre e setti” di DOLMEN.

MACROGUSCIO guscio_50

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

CASI DI CARICO: ->

Nome	Descrizione
1	SLU SENZA SISMA
4	SLU con SISMAX PRINC
5	SLU con SISMAY PRINC

DATI:

tensione di snervamento acciaio (fyk):	4500	daN/cm2
coefficiente sicurezza acciaio	: 1.15	
deformazione ultima acciaio	: 1.96	per mille
deformazione ultima cls	: 3.5	per mille
rapporto rottura/snervamento (k):	1	
resistenza cilindrica cls (fck):	249	daN/cm2
coefficiente sicurezza cls	: 1.5	
coefficiente riduttivo (alfa):	0.85	
copriferro inferiore (asse armatura):	4	cm
copriferro superiore (asse armatura):	4	cm
moltiplicatore sollecitazioni	: 1	

LEGENDA:

spess = spessore guscio. Verifica effettuata su sezione BxH, con B=1 cm e H="spess" cm
 Af = area disposta al lembo teso, in cm2 al metro
 Afc = area disposta al lembo compresso, in cm2 al metro
 Mom = momento flettente [daNcm/cm]
 Nor = sforzo normale [daN]
 epsC = deformazione cls [per mille]
 epsF = deformazione acciaio [per mille]

<-

L'armatura è sufficiente se le deformazioni dei materiali sono ovunque minori delle corrispondenti deformazioni ultime.

Per gli elementi non dissipativi la permanenza in campo elastico è ottenuta limitando la deformazione dell'acciaio alla deformazione di snervamento (1.96 per mille) e quella del calcestruzzo al 2 per mille.

GUSCI	spess	Af	Afc	Mom	Nor	epsC	epsF	Af	Afc	Mom	Nor	epsC	epsF
458	50	11.47	11.47	50.	-19.	0.00	0.01	21.02	21.02	529.	-395.	0.06	-0.03
460	50	11.47	11.47	65.	-11.	0.00	0.01	21.02	21.02	9513.	191.	0.05	0.76
462	50	11.47	11.47	90.	-3.	0.00	0.01	21.02	21.02	13150.	339.	0.11	1.14
464	50	11.47	11.47	26.	-2.	0.00	0.00	21.02	21.02	16620.	501.	0.15	1.52
472	50	11.47	11.47	264.	736.	0.00	1.63	21.02	21.02	352.	-283.	0.04	-0.02
474	50	11.47	11.47	30.	-25.	0.00	0.00	21.02	21.02	9352.	204.	0.04	0.77
476	50	11.47	11.47	38.	-19.	0.00	0.00	21.02	21.02	12387.	316.	0.07	1.07
478	50	11.47	11.47	0.	-19.	0.00	0.00	21.02	21.02	16091.	427.	0.15	1.41
480	50	11.47	11.47	0.	-22.	0.00	0.00	21.02	21.02	20012.	537.	0.26	1.76
486	50	11.47	11.47	118.	773.	0.00	1.70	21.02	21.02	237.	-248.	0.04	-0.02
488	50	11.47	11.47	0.	-19.	0.00	0.00	21.02	21.02	142.	-268.	0.04	-0.03
490	50	11.47	11.47	2.	-22.	0.00	0.00	21.02	21.02	12451.	262.	0.14	1.03
492	50	11.47	11.47	0.	-33.	0.00	0.00	21.02	21.02	15872.	344.	0.17	1.30
494	50	11.47	11.47	0.	-34.	0.00	0.00	21.02	21.02	19833.	371.	0.29	1.55
496	50	11.47	11.47	0.	-42.	0.01	-0.01	21.02	21.02	24044.	373.	0.41	1.79
500	50	11.47	11.47	26.	802.	0.00	1.75	21.02	21.02	174.	-244.	0.03	-0.02
502	50	11.47	11.47	0.	646.	0.00	1.41	21.02	21.02	9125.	189.	0.03	0.74
504	50	11.47	11.47	0.	-36.	0.00	0.00	21.02	21.02	12657.	182.	0.12	0.93
506	50	11.47	11.47	0.	-39.	0.01	-0.01	21.02	21.02	15787.	272.	0.23	1.21
508	50	11.47	11.47	0.	-39.	0.01	-0.01	21.02	21.02	19813.	273.	0.34	1.44
510	50	11.47	11.47	0.	-44.	0.01	-0.01	21.02	21.02	24106.	270.	0.44	1.67
514	50	11.47	11.47	0.	812.	0.00	1.77	21.02	21.02	172.	-230.	0.03	-0.02
516	50	11.47	11.47	0.	684.	0.00	1.49	21.02	21.02	8451.	210.	0.03	0.73
518	50	11.47	11.47	0.	-35.	0.00	0.00	21.02	21.02	12336.	200.	0.13	0.93
520	50	11.47	11.47	0.	-38.	0.01	-0.01	21.02	21.02	16277.	183.	0.24	1.13
522	50	11.47	11.47	0.	-41.	0.01	-0.01	21.02	21.02	20300.	162.	0.35	1.34
524	50	11.47	11.47	0.	-43.	0.01	-0.01	21.02	21.02	24405.	142.	0.45	1.54
528	50	11.47	11.47	0.	784.	0.00	1.71	21.02	21.02	128.	-223.	0.03	-0.03
530	50	11.47	11.47	0.	685.	0.00	1.49	21.02	21.02	3.	-225.	0.03	-0.03
532	50	11.47	11.47	0.	591.	0.00	1.29	21.02	21.02	12213.	175.	0.15	0.90
534	50	11.47	11.47	0.	-35.	0.00	0.00	21.02	21.02	16187.	162.	0.25	1.10
536	50	11.47	11.47	0.	-39.	0.01	-0.01	21.02	21.02	20179.	149.	0.35	1.31
538	50	11.47	11.47	0.	-41.	0.01	-0.01	21.02	21.02	24178.	140.	0.45	1.53
540	50	11.47	11.47	288.	811.	0.00	1.80	21.02	21.02	289.	-224.	0.03	-0.02
542	50	11.47	11.47	0.	741.	0.00	1.61	21.02	21.02	39.	-222.	0.03	-0.03
544	50	11.47	11.47	0.	665.	0.00	1.45	21.02	21.02	0.	-221.	0.03	-0.03
546	50	11.47	11.47	0.	592.	0.00	1.29	21.02	21.02	12116.	144.	0.15	0.85
548	50	11.47	11.47	0.	-33.	0.00	0.00	21.02	21.02	16044.	134.	0.25	1.06
550	50	11.47	11.47	0.	-37.	0.00	0.00	21.02	21.02	19973.	125.	0.35	1.28
552	50	11.47	11.47	0.	-39.	0.01	-0.01	21.02	21.02	23888.	120.	0.45	1.49
555	50	11.47	11.47	221.	-22.	0.01	0.02	21.02	21.02	383.	-232.	0.04	-0.03
557	50	11.47	11.47	97.	-24.	0.01	0.01	21.02	21.02	0.	-229.	0.03	-0.03
559	50	11.47	11.47	39.	-28.	0.00	0.00	21.02	21.02	0.	-227.	0.03	-0.03
561	50	11.47	11.47	0.	-32.	0.00	0.00	21.02	21.02	11637.	136.	0.14	0.82
563	50	11.47	11.47	0.	-36.	0.00	0.00	21.02	21.02	15543.	141.	0.23	1.04

565		50		11.47	11.47	0.	-39.	0.01	-0.01		21.02	21.02	19449.	144.	0.33	1.27	
567		50		11.47	11.47	0.	-42.	0.01	-0.01		21.02	21.02	23361.	144.	0.43	1.49	
569		50		11.47	11.47	0.	-19.	0.00	0.00		21.02	21.02	0.	-230.	0.03	-0.03	
571		50		11.47	11.47	0.	-23.	0.00	0.00		21.02	21.02	0.	-227.	0.03	-0.03	
573		50		11.47	11.47	0.	-27.	0.00	0.00		21.02	21.02	0.	-225.	0.03	-0.03	
575		50		11.47	11.47	0.	-31.	0.00	0.00		21.02	21.02	12030.	122.	0.15	0.82	
577		50		11.47	11.47	0.	-34.	0.00	0.00		21.02	21.02	15612.	126.	0.24	1.03	
579		50		11.47	11.47	0.	-37.	0.00	0.00		21.02	21.02	19295.	126.	0.33	1.24	
581		50		11.47	11.47	0.	-40.	0.01	-0.01		21.02	21.02	23043.	133.	0.42	1.46	
583		50		11.47	11.47	0.	-17.	0.00	0.00		21.02	21.02	0.	-227.	0.03	-0.03	
585		50		11.47	11.47	0.	-21.	0.00	0.00		21.02	21.02	0.	-225.	0.03	-0.03	
587		50		11.47	11.47	0.	-25.	0.00	0.00		21.02	21.02	0.	-223.	0.03	-0.03	
589		50		11.47	11.47	0.	-29.	0.00	0.00		21.02	21.02	12190.	117.	0.16	0.83	
591		50		11.47	11.47	0.	-33.	0.00	0.00		21.02	21.02	15743.	120.	0.25	1.03	
593		50		11.47	11.47	0.	-37.	0.00	0.00		21.02	21.02	19359.	119.	0.33	1.24	
595		50		11.47	11.47	0.	-39.	0.01	-0.01		21.02	21.02	23131.	119.	0.43	1.45	
597		50		11.47	11.47	0.	620.	0.00	1.35		21.02	21.02	0.	-228.	0.03	-0.03	
599		50		11.47	11.47	0.	600.	0.00	1.31		21.02	21.02	0.	-224.	0.03	-0.03	
601		50		11.47	11.47	0.	-24.	0.00	0.00		21.02	21.02	0.	-222.	0.03	-0.03	
603		50		11.47	11.47	0.	-28.	0.00	0.00		21.02	21.02	12258.	115.	0.16	0.83	
605		50		11.47	11.47	0.	-32.	0.00	0.00		21.02	21.02	15813.	116.	0.25	1.03	
607		50		11.47	11.47	0.	-36.	0.00	0.00		21.02	21.02	19437.	115.	0.34	1.23	
609		50		11.47	11.47	0.	-38.	0.01	-0.01		21.02	21.02	23208.	114.	0.43	1.45	
610		50		11.47	11.47	0.	746.	0.00	1.63		21.02	21.02	106.	-222.	0.03	-0.03	
611		50		11.47	11.47	0.	683.	0.00	1.49		21.02	21.02	0.	-226.	0.03	-0.03	
612		50		11.47	11.47	0.	691.	0.00	1.51		21.02	21.02	0.	-222.	0.03	-0.03	
613		50		11.47	11.47	0.	645.	0.00	1.41		21.02	21.02	0.	-223.	0.03	-0.03	
614		50		11.47	11.47	0.	636.	0.00	1.39		21.02	21.02	0.	-221.	0.03	-0.03	
615		50		11.47	11.47	0.	606.	0.00	1.32		21.02	21.02	0.	-221.	0.03	-0.03	
616		50		11.47	11.47	0.	-27.	0.00	0.00		21.02	21.02	12377.	120.	0.16	0.84	
617		50		11.47	11.47	0.	-28.	0.00	0.00		21.02	21.02	12324.	116.	0.16	0.83	
618		50		11.47	11.47	0.	-32.	0.00	0.00		21.02	21.02	15956.	116.	0.25	1.04	
619		50		11.47	11.47	0.	-32.	0.00	0.00		21.02	21.02	15886.	114.	0.25	1.03	
620		50		11.47	11.47	0.	-36.	0.00	0.00		21.02	21.02	19613.	115.	0.34	1.24	
621		50		11.47	11.47	0.	-36.	0.00	0.00		21.02	21.02	19523.	113.	0.34	1.24	
622		50		11.47	11.47	0.	-38.	0.01	-0.01		21.02	21.02	23419.	112.	0.44	1.45	
623		50		11.47	11.47	0.	-38.	0.01	-0.01		21.02	21.02	23299.	111.	0.43	1.45	
640		50		11.47	11.47	55.	-12.	0.00	0.01		21.02	21.02	449.	-376.	0.06	-0.03	
642		50		11.47	11.47	73.	-8.	0.00	0.01		21.02	21.02	190.	-338.	0.05	-0.04	
644		50		11.47	11.47	88.	-5.	0.00	0.01		21.02	21.02	12891.	285.	0.13	1.06	
646		50		11.47	11.47	23.	-4.	0.00	0.00		21.02	21.02	16326.	448.	0.17	1.45	
648		50		11.47	11.47	0.	-6.	0.00	0.00		21.02	21.02	20280.	657.	0.26	1.92	
652		50		11.47	11.47	430.	821.	0.00	1.83		21.02	21.02	417.	-236.	0.04	-0.01	
654		50		11.47	11.47	129.	656.	0.00	1.44		21.02	21.02	197.	-267.	0.04	-0.03	
656		50		11.47	11.47	0.	-26.	0.00	0.00		21.02	21.02	8719.	208.	0.04	0.74	
658		50		11.47	11.47	36.	-16.	0.00	0.00		21.02	21.02	12456.	254.	0.18	1.02	
660		50		11.47	11.47	0.	-21.	0.00	0.00		21.02	21.02	15656.	373.	0.15	1.32	
662		50		11.47	11.47	0.	-25.	0.00	0.00		21.02	21.02	19196.	457.	0.25	1.62	
664		50		11.47	11.47	0.	-39.	0.01	-0.01		21.02	21.02	22914.	444.	0.37	1.81	
666		50		11.47	11.47	282.	825.	0.00	1.83		21.02	21.02	209.	-232.	0.03	-0.02	
668		50		11.47	11.47	0.	669.	0.00	1.46		21.02	21.02	97.	-241.	0.03	-0.03	
670		50		11.47	11.47	0.	-19.	0.00	0.00		21.02	21.02	35.	-259.	0.03	-0.03	
672		50		11.47	11.47	0.	-22.	0.00	0.00		21.02	21.02	12272.	134.	0.15	0.85	
674		50		11.47	11.47	0.	-33.	0.00	0.00		21.02	21.02	15508.	307.	0.24	1.24	
676		50		11.47	11.47	0.	-36.	0.00	0.00		21.02	21.02	19147.	323.	0.33	1.46	
678		50		11.47	11.47	0.	-44.	0.01	-0.01		21.02	21.02	22961.	323.	0.43	1.67	
680		50		11.47	11.47	251.	821.	0.00	1.81		21.02	21.02	55.	-234.	0.03	-0.03	
682		50		11.47	11.47	0.	697.	0.00	1.52		21.02	21.02	18.	-244.	0.03	-0.03	
684		50		11.47	11.47	0.	588.	0.00	1.28		21.02	21.02	0.	-252.	0.03	-0.03	
686		50		11.47	11.47	0.	-35.	0.00	0.00		21.02	21.02	12227.	159.	0.14	0.88	
688		50		11.47	11.47	0.	-40.	0.01	-0.01		21.02	21.02	15641.	150.	0.24	1.06	
690		50		11.47	11.47	0.	-42.	0.01	-0.01		21.02	21.02	19569.	135.	0.34	1.26	

692		50		11.47	11.47	0.	-46.	0.01	-0.01		21.02	21.02	23427.	118.	0.44	1.46	
722		50		11.47	11.47	422.	788.	0.00	1.76		21.02	21.02	0.	-230.	0.03	-0.03	
724		50		11.47	11.47	0.	697.	0.00	1.52		21.02	21.02	0.	-232.	0.03	-0.03	
726		50		11.47	11.47	0.	606.	0.00	1.32		21.02	21.02	0.	-237.	0.03	-0.03	
728		50		11.47	11.47	0.	-37.	0.00	0.00		21.02	21.02	12071.	143.	0.14	0.85	
730		50		11.47	11.47	0.	-40.	0.01	-0.01		21.02	21.02	15501.	135.	0.23	1.04	
732		50		11.47	11.47	0.	-43.	0.01	-0.01		21.02	21.02	19379.	127.	0.33	1.24	
734		50		11.47	11.47	0.	-46.	0.01	-0.01		21.02	21.02	23076.	116.	0.43	1.44	
736		50		11.47	11.47	390.	725.	0.00	1.62		21.02	21.02	412.	-226.	0.04	-0.03	
738		50		11.47	11.47	0.	681.	0.00	1.48		21.02	21.02	35.	-227.	0.03	-0.03	
740		50		11.47	11.47	0.	607.	0.00	1.32		21.02	21.02	0.	-229.	0.03	-0.03	
742		50		11.47	11.47	0.	-34.	0.00	0.00		21.02	21.02	12222.	146.	0.14	0.86	
744		50		11.47	11.47	0.	-38.	0.01	-0.01		21.02	21.02	15905.	136.	0.24	1.06	
746		50		11.47	11.47	0.	-42.	0.01	-0.01		21.02	21.02	19605.	125.	0.34	1.25	
748		50		11.47	11.47	0.	-44.	0.01	-0.01		21.02	21.02	23289.	116.	0.43	1.45	
750		50		11.47	11.47	0.	708.	0.00	1.54		21.02	21.02	430.	-225.	0.04	-0.03	
752		50		11.47	11.47	0.	651.	0.00	1.42		21.02	21.02	0.	-225.	0.03	-0.03	
754		50		11.47	11.47	0.	592.	0.00	1.29		21.02	21.02	0.	-225.	0.03	-0.03	
756		50		11.47	11.47	0.	-32.	0.00	0.00		21.02	21.02	11786.	136.	0.15	0.83	
758		50		11.47	11.47	0.	-37.	0.00	0.00		21.02	21.02	15683.	118.	0.25	1.03	
760		50		11.47	11.47	0.	-40.	0.01	-0.01		21.02	21.02	19489.	114.	0.34	1.24	
762		50		11.47	11.47	0.	-43.	0.01	-0.01		21.02	21.02	23265.	115.	0.43	1.45	
764		50		11.47	11.47	0.	628.	0.00	1.37		21.02	21.02	0.	-228.	0.03	-0.03	
766		50		11.47	11.47	0.	618.	0.00	1.35		21.02	21.02	0.	-225.	0.03	-0.03	
768		50		11.47	11.47	0.	-26.	0.00	0.00		21.02	21.02	0.	-225.	0.03	-0.03	
770		50		11.47	11.47	0.	-32.	0.00	0.00		21.02	21.02	12216.	121.	0.16	0.83	
772		50		11.47	11.47	0.	-36.	0.00	0.00		21.02	21.02	15704.	119.	0.25	1.03	
774		50		11.47	11.47	0.	-40.	0.01	-0.01		21.02	21.02	19275.	116.	0.33	1.23	
776		50		11.47	11.47	0.	-42.	0.01	-0.01		21.02	21.02	23016.	115.	0.43	1.44	
778		50		11.47	11.47	336.	603.	0.00	1.35		21.02	21.02	0.	-233.	0.03	-0.03	
780		50		11.47	11.47	0.	-22.	0.00	0.00		21.02	21.02	0.	-228.	0.03	-0.03	
782		50		11.47	11.47	0.	-27.	0.00	0.00		21.02	21.02	0.	-226.	0.03	-0.03	
784		50		11.47	11.47	0.	-32.	0.00	0.00		21.02	21.02	12216.	120.	0.16	0.83	
786		50		11.47	11.47	0.	-36.	0.00	0.00		21.02	21.02	15720.	119.	0.25	1.03	
788		50		11.47	11.47	0.	-40.	0.01	-0.01		21.02	21.02	19288.	120.	0.33	1.23	
790		50		11.47	11.47	0.	-42.	0.01	-0.01		21.02	21.02	23070.	119.	0.43	1.44	
792		50		11.47	11.47	161.	-23.	0.01	0.01		21.02	21.02	0.	-241.	0.03	-0.03	
794		50		11.47	11.47	0.	-24.	0.00	0.00		21.02	21.02	0.	-231.	0.03	-0.03	
796		50		11.47	11.47	0.	-28.	0.00	0.00		21.02	21.02	0.	-228.	0.03	-0.03	
798		50		11.47	11.47	0.	-33.	0.00	0.00		21.02	21.02	12190.	120.	0.16	0.83	
800		50		11.47	11.47	0.	-37.	0.00	0.00		21.02	21.02	15705.	122.	0.24	1.03	
802		50		11.47	11.47	0.	-40.	0.01	-0.01		21.02	21.02	19276.	164.	0.33	1.28	
804		50		11.47	11.47	0.	-43.	0.01	-0.01		21.02	21.02	23053.	163.	0.42	1.49	
806		50		11.47	11.47	44.	-20.	0.00	0.00		21.02	21.02	0.	-231.	0.03	-0.03	
808		50		11.47	11.47	0.	-26.	0.00	0.00		21.02	21.02	0.	-231.	0.03	-0.03	
810		50		11.47	11.47	0.	-30.	0.00	0.00		21.02	21.02	0.	-229.	0.03	-0.03	
812		50		11.47	11.47	0.	-34.	0.00	0.00		21.02	21.02	12092.	156.	0.13	0.87	
814		50		11.47	11.47	0.	-38.	0.01	-0.01		21.02	21.02	15616.	160.	0.22	1.07	
816		50		11.47	11.47	0.	-41.	0.01	-0.01		21.02	21.02	19248.	164.	0.31	1.28	
818		50		11.47	11.47	0.	-44.	0.01	-0.01		21.02	21.02	23107.	160.	0.41	1.49	
819		50		11.47	11.47	265.	-19.	0.01	0.02		21.02	21.02	367.	-231.	0.04	-0.03	
820		50		11.47	11.47	0.	-24.	0.00	0.00		21.02	21.02	0.	-234.	0.03	-0.03	
821		50		11.47	11.47	92.	-25.	0.01	0.01		21.02	21.02	0.	-231.	0.03	-0.03	
822		50		11.47	11.47	0.	-28.	0.00	0.00		21.02	21.02	0.	-232.	0.03	-0.03	
823		50		11.47	11.47	37.	-28.	0.00	0.00		21.02	21.02	0.	-230.	0.03	-0.03	
824		50		11.47	11.47	0.	-31.	0.00	0.00		21.02	21.02	0.	-230.	0.03	-0.03	
825		50		11.47	11.47	0.	-34.	0.00	0.00		21.02	21.02	11709.	146.	0.13	0.83	
826		50		11.47	11.47	0.	-35.	0.00	0.00		21.02	21.02	12114.	149.	0.13	0.86	
827		50		11.47	11.47	0.	-38.	0.01	-0.01		21.02	21.02	15552.	152.	0.23	1.06	
828		50		11.47	11.47	0.	-39.	0.01	-0.01		21.02	21.02	15647.	154.	0.22	1.07	
829		50		11.47	11.47	0.	-41.	0.01	-0.01		21.02	21.02	19519.	154.	0.32	1.28	
830		50		11.47	11.47	0.	-42.	0.01	-0.01		21.02	21.02	19221.	160.	0.31	1.27	

831		50		11.47	11.47	0.	-43.	0.01	-0.01		21.02	21.02	23440.	155.	0.42	1.51	
832		50		11.47	11.47	0.	-45.	0.01	-0.01		21.02	21.02	23083.	160.	0.41	1.49	

SUPERIORE ORIZZONTALE										SUPERIORE VERTICALE							
GUSCI		spess		Af	Afc	Mom	Nor	epsC	epsF		Af	Afc	Mom	Nor	epsC	epsF	
458		50		11.47	11.47	0.	-19.	0.00	0.00		21.02	21.02	0.	-395.	0.05	-0.05	
460		50		11.47	11.47	65.	-7.	0.00	0.01		21.02	21.02	0.	-351.	0.04	-0.04	
462		50		11.47	11.47	84.	-7.	0.00	0.01		21.02	21.02	3993.	470.	0.04	0.78	
464		50		11.47	11.47	91.	-4.	0.00	0.01		21.02	21.02	5172.	674.	0.00	1.09	
466		50		11.47	11.47	98.	-7.	0.00	0.01		21.02	21.02	6526.	948.	0.00	1.50	
472		50		11.47	11.47	0.	736.	0.00	1.60		21.02	21.02	0.	-283.	0.04	-0.04	
474		50		11.47	11.47	23.	-25.	0.00	0.00		21.02	21.02	0.	-298.	0.04	-0.04	
476		50		11.47	11.47	87.	-19.	0.00	0.01		21.02	21.02	3741.	450.	0.04	0.74	
478		50		11.47	11.47	114.	-19.	0.01	0.01		21.02	21.02	5014.	589.	0.00	0.98	
480		50		11.47	11.47	129.	-21.	0.01	0.01		21.02	21.02	19283.	-62.	0.41	1.22	
482		50		11.47	11.47	131.	-37.	0.01	0.01		21.02	21.02	23281.	-57.	0.49	1.29	
486		50		11.47	11.47	47.	773.	0.00	1.69		21.02	21.02	0.	-248.	0.03	-0.03	
488		50		11.47	11.47	436.	581.	0.00	1.31		21.02	21.02	0.	-268.	0.03	-0.03	
490		50		11.47	11.47	85.	-22.	0.01	0.01		21.02	21.02	12287.	43.	0.22	0.75	
492		50		11.47	11.47	96.	-33.	0.01	0.01		21.02	21.02	16067.	-72.	0.34	0.87	
494		50		11.47	11.47	123.	-32.	0.01	0.01		21.02	21.02	20263.	-100.	0.43	1.08	
496		50		11.47	11.47	119.	-42.	0.01	0.01		21.02	21.02	24653.	-134.	0.53	1.29	
500		50		11.47	11.47	320.	802.	0.00	1.78		21.02	21.02	0.	-244.	0.03	-0.03	
502		50		11.47	11.47	566.	646.	0.00	1.47		21.02	21.02	0.	-255.	0.03	-0.03	
504		50		11.47	11.47	84.	-35.	0.01	0.00		21.02	21.02	12857.	116.	0.18	0.86	
506		50		11.47	11.47	85.	-39.	0.01	0.01		21.02	21.02	16614.	99.	0.34	1.06	
508		50		11.47	11.47	112.	-37.	0.01	0.01		21.02	21.02	20416.	83.	0.43	1.25	
510		50		11.47	11.47	110.	-43.	0.01	0.01		21.02	21.02	24745.	-109.	0.53	1.47	
514		50		11.47	11.47	457.	812.	0.00	1.82		21.02	21.02	0.	-230.	0.03	-0.03	
516		50		11.47	11.47	643.	684.	0.00	1.56		21.02	21.02	46.	-235.	0.03	-0.03	
518		50		11.47	11.47	814.	568.	0.01	1.32		21.02	21.02	12402.	173.	0.14	0.90	
520		50		11.47	11.47	90.	-37.	0.01	0.00		21.02	21.02	16497.	162.	0.26	1.12	
522		50		11.47	11.47	96.	-40.	0.01	0.00		21.02	21.02	20596.	147.	0.37	1.34	
524		50		11.47	11.47	89.	-42.	0.01	0.00		21.02	21.02	24686.	131.	0.49	1.55	
528		50		11.47	11.47	466.	762.	0.00	1.74		21.02	21.02	0.	-223.	0.03	-0.03	
530		50		11.47	11.47	539.	685.	0.00	1.55		21.02	21.02	8395.	226.	0.03	0.74	
532		50		11.47	11.47	863.	591.	0.01	1.38		21.02	21.02	12364.	217.	0.10	0.96	
534		50		11.47	11.47	87.	-35.	0.01	0.00		21.02	21.02	16414.	213.	0.22	1.18	
536		50		11.47	11.47	90.	-38.	0.01	0.00		21.02	21.02	20418.	204.	0.34	1.39	
538		50		11.47	11.47	88.	-40.	0.01	0.00		21.02	21.02	24380.	193.	0.46	1.60	
540		50		11.47	11.47	288.	811.	0.00	1.80		21.02	21.02	125.	-223.	0.03	-0.03	
542		50		11.47	11.47	317.	741.	0.00	1.65		21.02	21.02	87.	-222.	0.03	-0.03	
544		50		11.47	11.47	596.	665.	0.00	1.51		21.02	21.02	8783.	235.	0.03	0.77	
546		50		11.47	11.47	820.	592.	0.01	1.37		21.02	21.02	12357.	236.	0.08	0.98	
548		50		11.47	11.47	93.	-33.	0.01	0.01		21.02	21.02	16368.	230.	0.20	1.19	
550		50		11.47	11.47	86.	-37.	0.01	0.00		21.02	21.02	20363.	217.	0.32	1.41	
552		50		11.47	11.47	83.	-38.	0.01	0.00		21.02	21.02	24324.	201.	0.43	1.62	
555		50		11.47	11.47	177.	-19.	0.01	0.02		21.02	21.02	197.	-232.	0.03	-0.03	
557		50		11.47	11.47	0.	-25.	0.00	0.00		21.02	21.02	141.	-228.	0.03	-0.03	
559		50		11.47	11.47	8.	-29.	0.00	0.00		21.02	21.02	165.	-227.	0.03	-0.02	
561		50		11.47	11.47	20.	-32.	0.00	0.00		21.02	21.02	11908.	182.	0.11	0.89	
563		50		11.47	11.47	29.	-36.	0.01	0.00		21.02	21.02	15817.	194.	0.21	1.12	
565		50		11.47	11.47	38.	-39.	0.01	0.00		21.02	21.02	19728.	202.	0.31	1.35	
567		50		11.47	11.47	43.	-42.	0.01	0.00		21.02	21.02	23629.	208.	0.42	1.58	
569		50		11.47	11.47	104.	-19.	0.01	0.01		21.02	21.02	262.	-228.	0.03	-0.02	
571		50		11.47	11.47	45.	-23.	0.00	0.01		21.02	21.02	172.	-225.	0.03	-0.02	
573		50		11.47	11.47	52.	-27.	0.01	0.00		21.02	21.02	177.	-225.	0.03	-0.02	
575		50		11.47	11.47	49.	-31.	0.01	0.00		21.02	21.02	12260.	192.	0.11	0.92	
577		50		11.47	11.47	46.	-34.	0.01	0.00		21.02	21.02	15851.	202.	0.20	1.13	
579		50		11.47	11.47	45.	-37.	0.01	0.00		21.02	21.02	19551.	214.	0.30	1.35	
581		50		11.47	11.47	46.	-40.	0.01	0.00		21.02	21.02	23340.	219.	0.40	1.57	
583		50		11.47	11.47	98.	-17.	0.01	0.01		21.02	21.02	293.	-225.	0.03	-0.02	

585		50		11.47	11.47	79.	-21.	0.01	0.01		21.02	21.02	209.	-224.	0.03	-0.02	
587		50		11.47	11.47	77.	-25.	0.01	0.01		21.02	21.02	8805.	188.	0.03	0.72	
589		50		11.47	11.47	64.	-29.	0.01	0.00		21.02	21.02	12396.	205.	0.10	0.94	
591		50		11.47	11.47	52.	-33.	0.01	0.00		21.02	21.02	15971.	215.	0.19	1.15	
593		50		11.47	11.47	46.	-37.	0.01	0.00		21.02	21.02	19623.	224.	0.29	1.37	
595		50		11.47	11.47	44.	-39.	0.01	0.00		21.02	21.02	23404.	228.	0.40	1.59	
597		50		11.47	11.47	601.	620.	0.00	1.41		21.02	21.02	441.	-228.	0.04	-0.02	
599		50		11.47	11.47	622.	600.	0.01	1.37		21.02	21.02	234.	-224.	0.03	-0.02	
601		50		11.47	11.47	757.	574.	0.01	1.33		21.02	21.02	8872.	201.	0.03	0.74	
603		50		11.47	11.47	902.	545.	0.01	1.28		21.02	21.02	12473.	217.	0.09	0.96	
605		50		11.47	11.47	68.	-32.	0.01	0.00		21.02	21.02	16054.	226.	0.19	1.17	
607		50		11.47	11.47	56.	-36.	0.01	0.00		21.02	21.02	19720.	232.	0.29	1.38	
609		50		11.47	11.47	46.	-38.	0.01	0.00		21.02	21.02	23497.	233.	0.40	1.60	
610		50		11.47	11.47	197.	746.	0.00	1.65		21.02	21.02	510.	-224.	0.04	-0.02	
611		50		11.47	11.47	342.	683.	0.00	1.52		21.02	21.02	558.	-226.	0.04	-0.01	
612		50		11.47	11.47	524.	691.	0.00	1.56		21.02	21.02	189.	-222.	0.03	-0.02	
613		50		11.47	11.47	546.	645.	0.00	1.46		21.02	21.02	251.	-223.	0.03	-0.02	
614		50		11.47	11.47	720.	636.	0.00	1.46		21.02	21.02	8985.	225.	0.03	0.77	
615		50		11.47	11.47	716.	606.	0.00	1.40		21.02	21.02	8949.	214.	0.03	0.76	
616		50		11.47	11.47	901.	581.	0.01	1.36		21.02	21.02	12629.	236.	0.09	0.99	
617		50		11.47	11.47	884.	565.	0.01	1.32		21.02	21.02	12557.	228.	0.09	0.98	
618		50		11.47	11.47	95.	-32.	0.01	0.01		21.02	21.02	16248.	239.	0.19	1.20	
619		50		11.47	11.47	86.	-32.	0.01	0.01		21.02	21.02	16150.	234.	0.19	1.19	
620		50		11.47	11.47	80.	-36.	0.01	0.00		21.02	21.02	19959.	234.	0.30	1.40	
621		50		11.47	11.47	68.	-36.	0.01	0.00		21.02	21.02	19836.	236.	0.29	1.40	
622		50		11.47	11.47	77.	-37.	0.01	0.00		21.02	21.02	23784.	226.	0.41	1.61	
623		50		11.47	11.47	66.	-37.	0.01	0.00		21.02	21.02	23620.	233.	0.40	1.61	
640		50		11.47	11.47	17.	-17.	0.00	0.00		21.02	21.02	0.	-376.	0.05	-0.05	
642		50		11.47	11.47	81.	-11.	0.00	0.01		21.02	21.02	0.	-338.	0.04	-0.04	
644		50		11.47	11.47	96.	-8.	0.00	0.01		21.02	21.02	3935.	446.	0.04	0.75	
646		50		11.47	11.47	94.	-5.	0.00	0.01		21.02	21.02	4895.	652.	0.00	1.05	
648		50		11.47	11.47	102.	-6.	0.00	0.01		21.02	21.02	6121.	922.	0.00	1.44	
652		50		11.47	11.47	0.	821.	0.00	1.79		21.02	21.02	0.	-236.	0.03	-0.03	
654		50		11.47	11.47	0.	656.	0.00	1.43		21.02	21.02	0.	-267.	0.03	-0.03	
656		50		11.47	11.47	65.	-26.	0.01	0.01		21.02	21.02	1.	-283.	0.04	-0.04	
658		50		11.47	11.47	99.	-16.	0.00	0.01		21.02	21.02	3674.	422.	0.04	0.71	
660		50		11.47	11.47	116.	-21.	0.01	0.01		21.02	21.02	4703.	541.	0.00	0.91	
662		50		11.47	11.47	117.	-25.	0.01	0.01		21.02	21.02	18410.	-53.	0.39	1.10	
664		50		11.47	11.47	104.	-39.	0.01	0.01		21.02	21.02	21970.	-48.	0.46	1.23	
666		50		11.47	11.47	0.	825.	0.00	1.80		21.02	21.02	64.	-230.	0.03	-0.03	
668		50		11.47	11.47	89.	669.	0.00	1.47		21.02	21.02	0.	-241.	0.03	-0.03	
670		50		11.47	11.47	86.	-19.	0.00	0.01		21.02	21.02	22.	-259.	0.03	-0.03	
672		50		11.47	11.47	98.	-22.	0.01	0.01		21.02	21.02	12351.	48.	0.22	0.76	
674		50		11.47	11.47	112.	-33.	0.01	0.01		21.02	21.02	15604.	43.	0.29	0.95	
676		50		11.47	11.47	107.	-35.	0.01	0.01		21.02	21.02	19454.	34.	0.39	1.15	
678		50		11.47	11.47	92.	-44.	0.01	0.01		21.02	21.02	23464.	18.	0.48	1.35	
680		50		11.47	11.47	0.	821.	0.00	1.79		21.02	21.02	91.	-234.	0.03	-0.03	
682		50		11.47	11.47	283.	697.	0.00	1.55		21.02	21.02	4.	-244.	0.03	-0.03	
684		50		11.47	11.47	514.	588.	0.01	1.34		21.02	21.02	53.	-252.	0.03	-0.03	
686		50		11.47	11.47	89.	-35.	0.01	0.00		21.02	21.02	12414.	104.	0.18	0.83	
688		50		11.47	11.47	93.	-39.	0.01	0.00		21.02	21.02	15862.	114.	0.27	1.03	
690		50		11.47	11.47	87.	-41.	0.01	0.00		21.02	21.02	19760.	104.	0.38	1.24	
692		50		11.47	11.47	73.	-46.	0.01	0.00		21.02	21.02	23806.	91.	0.48	1.45	
722		50		11.47	11.47	0.	788.	0.00	1.72		21.02	21.02	232.	-229.	0.03	-0.03	
724		50		11.47	11.47	357.	697.	0.00	1.55		21.02	21.02	76.	-231.	0.03	-0.03	
726		50		11.47	11.47	481.	606.	0.01	1.37		21.02	21.02	79.	-237.	0.03	-0.03	
728		50		11.47	11.47	67.	-36.	0.01	0.00		21.02	21.02	12225.	165.	0.12	0.89	
730		50		11.47	11.47	77.	-39.	0.01	0.00		21.02	21.02	15742.	153.	0.23	1.07	
732		50		11.47	11.47	76.	-42.	0.01	0.00		21.02	21.02	19740.	123.	0.34	1.27	
734		50		11.47	11.47	76.	-44.	0.01	0.00		21.02	21.02	23318.	130.	0.44	1.47	
736		50		11.47	11.47	101.	745.	0.00	1.63		21.02	21.02	146.	-227.	0.03	-0.03	
738		50		11.47	11.47	512.	681.	0.00	1.54		21.02	21.02	105.	-225.	0.03	-0.03	

740		50		11.47	11.47	705.	607.	0.00	1.39		21.02	21.02	8912.	187.	0.03	0.72	
742		50		11.47	11.47	46.	-34.	0.01	0.00		21.02	21.02	12423.	181.	0.12	0.91	
744		50		11.47	11.47	63.	-38.	0.01	0.00		21.02	21.02	16187.	170.	0.23	1.11	
746		50		11.47	11.47	65.	-41.	0.01	0.00		21.02	21.02	19946.	155.	0.33	1.31	
748		50		11.47	11.47	64.	-43.	0.01	0.00		21.02	21.02	23560.	165.	0.43	1.52	
750		50		11.47	11.47	373.	708.	0.00	1.58		21.02	21.02	259.	-227.	0.03	-0.03	
752		50		11.47	11.47	554.	651.	0.00	1.48		21.02	21.02	133.	-225.	0.03	-0.03	
754		50		11.47	11.47	669.	592.	0.00	1.36		21.02	21.02	190.	-225.	0.03	-0.02	
756		50		11.47	11.47	63.	-32.	0.01	0.00		21.02	21.02	12055.	190.	0.10	0.91	
758		50		11.47	11.47	69.	-37.	0.01	0.00		21.02	21.02	15888.	192.	0.20	1.12	
760		50		11.47	11.47	64.	-40.	0.01	0.00		21.02	21.02	19726.	190.	0.31	1.34	
762		50		11.47	11.47	61.	-42.	0.01	0.00		21.02	21.02	23547.	187.	0.42	1.55	
764		50		11.47	11.47	401.	628.	0.01	1.41		21.02	21.02	311.	-228.	0.04	-0.02	
766		50		11.47	11.47	532.	618.	0.00	1.40		21.02	21.02	227.	-225.	0.03	-0.02	
768		50		11.47	11.47	692.	571.	0.01	1.32		21.02	21.02	8886.	192.	0.03	0.73	
770		50		11.47	11.47	91.	-32.	0.01	0.01		21.02	21.02	12383.	198.	0.10	0.93	
772		50		11.47	11.47	79.	-36.	0.01	0.00		21.02	21.02	15895.	200.	0.20	1.13	
774		50		11.47	11.47	64.	-40.	0.01	0.00		21.02	21.02	19498.	197.	0.30	1.33	
776		50		11.47	11.47	61.	-41.	0.01	0.00		21.02	21.02	23258.	196.	0.40	1.54	
778		50		11.47	11.47	828.	603.	0.01	1.40		21.02	21.02	996.	-227.	0.05	0.02	
780		50		11.47	11.47	621.	583.	0.01	1.33		21.02	21.02	303.	-228.	0.04	-0.02	
782		50		11.47	11.47	124.	-27.	0.01	0.01		21.02	21.02	8870.	184.	0.03	0.72	
784		50		11.47	11.47	96.	-32.	0.01	0.01		21.02	21.02	12397.	194.	0.11	0.93	
786		50		11.47	11.47	75.	-36.	0.01	0.01		21.02	21.02	15915.	199.	0.20	1.13	
788		50		11.47	11.47	57.	-40.	0.01	0.00		21.02	21.02	19514.	198.	0.30	1.33	
790		50		11.47	11.47	41.	-42.	0.01	0.00		21.02	21.02	23299.	199.	0.40	1.55	
792		50		11.47	11.47	1110.	537.	0.02	1.29		21.02	21.02	947.	-236.	0.05	-0.02	
794		50		11.47	11.47	167.	-24.	0.01	0.02		21.02	21.02	321.	-231.	0.04	-0.02	
796		50		11.47	11.47	155.	-24.	0.01	0.01		21.02	21.02	227.	-228.	0.03	-0.02	
798		50		11.47	11.47	78.	-33.	0.01	0.01		21.02	21.02	12400.	188.	0.11	0.92	
800		50		11.47	11.47	60.	-37.	0.01	0.00		21.02	21.02	15918.	195.	0.20	1.13	
802		50		11.47	11.47	46.	-40.	0.01	0.00		21.02	21.02	19492.	199.	0.32	1.33	
804		50		11.47	11.47	37.	-43.	0.01	0.00		21.02	21.02	23278.	200.	0.42	1.55	
806		50		11.47	11.47	128.	-21.	0.01	0.01		21.02	21.02	325.	-230.	0.04	-0.02	
808		50		11.47	11.47	88.	-26.	0.01	0.01		21.02	21.02	266.	-230.	0.03	-0.02	
810		50		11.47	11.47	96.	-30.	0.01	0.01		21.02	21.02	223.	-228.	0.03	-0.02	
812		50		11.47	11.47	79.	-34.	0.01	0.01		21.02	21.02	12292.	148.	0.14	0.87	
814		50		11.47	11.47	62.	-38.	0.01	0.00		21.02	21.02	15823.	155.	0.23	1.08	
816		50		11.47	11.47	49.	-41.	0.01	0.00		21.02	21.02	19491.	159.	0.32	1.29	
818		50		11.47	11.47	39.	-44.	0.01	0.00		21.02	21.02	23352.	168.	0.42	1.52	
819		50		11.47	11.47	236.	-22.	0.01	0.02		21.02	21.02	331.	-234.	0.04	-0.03	
820		50		11.47	11.47	174.	-22.	0.01	0.01		21.02	21.02	372.	-234.	0.04	-0.02	
821		50		11.47	11.47	40.	-26.	0.00	0.00		21.02	21.02	158.	-231.	0.03	-0.03	
822		50		11.47	11.47	121.	-24.	0.01	0.01		21.02	21.02	227.	-230.	0.03	-0.02	
823		50		11.47	11.47	35.	-30.	0.00	0.00		21.02	21.02	193.	-230.	0.03	-0.02	
824		50		11.47	11.47	69.	-31.	0.01	0.00		21.02	21.02	211.	-229.	0.03	-0.02	
825		50		11.47	11.47	37.	-34.	0.01	0.00		21.02	21.02	11918.	157.	0.12	0.86	
826		50		11.47	11.47	66.	-35.	0.01	0.00		21.02	21.02	12308.	152.	0.14	0.87	
827		50		11.47	11.47	43.	-38.	0.01	0.00		21.02	21.02	15768.	177.	0.22	1.10	
828		50		11.47	11.47	59.	-39.	0.01	0.00		21.02	21.02	15853.	161.	0.22	1.09	
829		50		11.47	11.47	46.	-41.	0.01	0.00		21.02	21.02	19684.	186.	0.32	1.33	
830		50		11.47	11.47	52.	-42.	0.01	0.00		21.02	21.02	19481.	171.	0.31	1.30	
831		50		11.47	11.47	42.	-43.	0.01	0.00		21.02	21.02	23616.	192.	0.42	1.56	
832		50		11.47	11.47	42.	-45.	0.01	0.00		21.02	21.02	23368.	177.	0.41	1.53	

*** VERIFICHE A TAGLIO SECONDO NTC2018 (cap. 7.4.4.5.1) ***

Vr_{cd} = compressione cls d'anima

Vr_{sd} = trazione armatura trasversale

Vr_{d,s} = scorrimento in zona dissipativa

Quota	Sezione	Af long.	Af trasv.	Taglio	Vr _{cd}	Vr _{sd}	alfas	Vr _{d,s}
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[cm]	[cm ²]	[cm ²]	[cm ²]	[daN]	[daN]	[daN]		[daN]
20.0	151700	1275.49	695.94	1269426	4372555	2178594	-	-
60.0	151700	1275.49	695.94	1269426	4372555	2178594	-	-
100.0	151700	1275.49	695.94	1271016	4375102	2178594	-	-
140.0	151700	1275.49	695.94	1271016	4375102	2178594	-	-
180.0	151700	1275.49	695.94	1271205	4379749	2178594	-	-
220.0	151700	1275.49	695.94	1271205	4379749	2178594	-	-
260.0	151700	1275.49	695.94	1271205	4379749	2178594	-	-
300.0	151700	1275.49	695.94	1269109	4384623	2178594	-	-
340.0	151700	1275.49	695.94	1269109	4384623	2178594	-	-

MACROGUSCIO guscio_50

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

CASI DI CARICO: ->

Nome	Descrizione
8	Rara (RARA)
9	Frequente (FREQUENTE)
10	Quasi Perm (QUASI PERMANENTE)

DATI:

copriferro inferiore (asse armatura): 4 cm
copriferro superiore (asse armatura): 4 cm

Af = area effettiva tesa (cm² al metro)

Afc = area effettiva compressa (cm² al metro)

Mom = momento flettente [daNcm/cm]

Nor = sforzo normale [daN]

sigC = tensione calcestruzzo [daN/cm²]

valore max per combinazione rara = 149.4 daN/cm²

'' '' '' '' quasi permanente = 112 daN/cm²

sigF = tensione acciaio [daN/cm²]

valore max per combinazione rara = 3600 daN/cm²

wkF = apertura caratteristica per combinazione frequente (mm) - valore max = 0.3 mm

wkP = '' '' '' '' quasi permanente (mm) - '' '' = 0.2 mm

<-

ARMATURA INFERIORE ORIZZONTALE

	COMBINAZIONE RARA						COMB. FREQUENTE			COMB. QUASI PERMANENTE			
GUSCI	Af	Afc	Mom	Nor	sigC	sigF	Mom	Nor	wkF	Mom	Nor	sigC	wkP
456	11.47	11.47	128	-16	0.57	-1.	131	-15	0.000	132	-15	0.56	0.000
458	11.47	11.47	36	-10	0.27	-2.	38	-10	0.000	38	-9	0.26	0.000
460	11.47	11.47	46	-6	0.20	0.	46	-5	0.000	46	-5	0.20	0.000
462	11.47	11.47	44	-4	0.17	0.	45	-4	0.000	45	-4	0.17	0.000
464	11.47	11.47	0.	-3	0.06	-1.	0.	-4	0.000	0.	-4	0.07	0.000
466	11.47	11.47	0.	-2	0.04	-1.	0.	-2	0.000	0.	-2	0.03	0.000
468	11.47	11.47	0.	-4	0.07	-1.	0.	-3	0.000	0.	-3	0.06	0.000
470	11.47	11.47	68	-20	0.52	-4.	71	-19	0.000	72	-19	0.50	0.000
472	11.47	11.47	11	-21	0.41	-6.	13	-20	0.000	14	-19	0.39	0.000
474	11.47	11.47	19	-17	0.35	-4.	20	-16	0.000	20	-15	0.33	0.000
476	11.47	11.47	22	-3	0.09	0.	23	-3	0.000	23	-3	0.11	0.000
478	11.47	11.47	0.	-14	0.25	-4.	0.	-14	0.000	0.	-14	0.25	0.000
480	11.47	11.47	0.	-14	0.27	-4.	0.	-13	0.000	0.	-13	0.24	0.000
482	11.47	11.47	0.	-17	0.32	-5.	0.	-16	0.000	0.	-15	0.29	0.000
484	11.47	11.47	37	-8	0.22	-1.	39	-8	0.000	40	-7	0.22	0.000
486	11.47	11.47	0.	-11	0.21	-3.	0.	-11	0.000	1	-11	0.21	0.000
488	11.47	11.47	0.	-12	0.23	-3.	0.	-12	0.000	0.	-12	0.22	0.000
490	11.47	11.47	5	-15	0.29	-4.	7	-15	0.000	7	-15	0.29	0.000
492	11.47	11.47	0.	-23	0.43	-7.	0.	-22	0.000	0.	-22	0.41	0.000
494	11.47	11.47	0.	-23	0.43	-7.	0.	-22	0.000	0.	-21	0.40	0.000
496	11.47	11.47	0.	-25	0.47	-7.	0.	-24	0.000	0.	-23	0.43	0.000

498		11.47	11.47	17	-12	0.26	-3.	19	-12	0.000	20	-12	0.26	0.000
500		11.47	11.47	0.	-19	0.35	-5.	0.	-18	0.000	0.	-18	0.34	0.000
502		11.47	11.47	0.	-22	0.42	-6.	0.	-22	0.000	0.	-21	0.40	0.000
504		11.47	11.47	0.	-25	0.48	-7.	0.	-25	0.000	0.	-24	0.46	0.000
506		11.47	11.47	0.	-27	0.51	-8.	0.	-25	0.000	0.	-25	0.47	0.000
508		11.47	11.47	0.	-28	0.52	-8.	0.	-26	0.000	0.	-25	0.48	0.000
510		11.47	11.47	0.	-29	0.54	-8.	0.	-27	0.000	0.	-27	0.50	0.000
512		11.47	11.47	32	-5	0.16	-1.	31	-5	0.000	31	-5	0.16	0.000
514		11.47	11.47	21	-12	0.27	-3.	19	-12	0.000	18	-11	0.25	0.000
516		11.47	11.47	6	-20	0.38	-5.	5	-19	0.000	4	-18	0.35	0.000
518		11.47	11.47	0.	-24	0.45	-7.	0.	-23	0.000	0.	-22	0.42	0.000
520		11.47	11.47	0.	-27	0.50	-7.	0.	-25	0.000	0.	-25	0.46	0.000
522		11.47	11.47	0.	-29	0.54	-8.	0.	-27	0.000	0.	-27	0.50	0.000
524		11.47	11.47	0.	-30	0.56	-8.	0.	-28	0.000	0.	-28	0.52	0.000
526		11.47	11.47	70	-3	0.26	3.	65	-3	0.000	63	-3	0.23	0.000
528		11.47	11.47	40	-9	0.24	-1.	35	-8	0.000	34	-8	0.23	0.000
530		11.47	11.47	14	-15	0.31	-4.	11	-14	0.000	10	-14	0.29	0.000
532		11.47	11.47	0.	-21	0.38	-6.	0.	-20	0.000	0.	-19	0.36	0.000
534		11.47	11.47	0.	-25	0.46	-7.	0.	-23	0.000	0.	-23	0.43	0.000
536		11.47	11.47	0.	-28	0.52	-8.	0.	-26	0.000	0.	-26	0.49	0.000
538		11.47	11.47	0.	-29	0.54	-8.	0.	-28	0.000	0.	-27	0.51	0.000
540		11.47	11.47	63	-5	0.24	0.	58	-5	0.000	56	-5	0.22	0.000
542		11.47	11.47	21	-9	0.21	-2.	18	-9	0.000	17	-9	0.20	0.000
544		11.47	11.47	0.	-14	0.26	-4.	0.	-14	0.000	0.	-13	0.25	0.000
546		11.47	11.47	0.	-19	0.36	-5.	0.	-18	0.000	0.	-18	0.34	0.000
548		11.47	11.47	0.	-23	0.43	-7.	0.	-22	0.000	0.	-22	0.41	0.000
550		11.47	11.47	0.	-26	0.49	-7.	0.	-25	0.000	0.	-25	0.47	0.000
552		11.47	11.47	0.	-28	0.52	-8.	0.	-27	0.000	0.	-26	0.49	0.000
555		11.47	11.47	74	-16	0.46	-3.	67	-16	0.000	65	-16	0.43	0.000
557		11.47	11.47	32	-18	0.40	-4.	28	-17	0.000	27	-17	0.38	0.000
559		11.47	11.47	15	-20	0.41	-5.	12	-20	0.000	11	-19	0.39	0.000
561		11.47	11.47	0.	-23	0.43	-6.	0.	-22	0.000	0.	-22	0.41	0.000
563		11.47	11.47	0.	-26	0.48	-7.	0.	-25	0.000	0.	-24	0.46	0.000
565		11.47	11.47	0.	-28	0.52	-8.	0.	-27	0.000	0.	-27	0.50	0.000
567		11.47	11.47	0.	-29	0.55	-8.	0.	-28	0.000	0.	-28	0.53	0.000
569		11.47	11.47	0.	-14	0.26	-4.	0.	-13	0.000	0.	-13	0.25	0.000
571		11.47	11.47	0.	-16	0.30	-4.	0.	-15	0.000	0.	-15	0.29	0.000
573		11.47	11.47	0.	-19	0.35	-5.	0.	-18	0.000	0.	-18	0.34	0.000
575		11.47	11.47	0.	-22	0.41	-6.	0.	-21	0.000	0.	-21	0.39	0.000
577		11.47	11.47	0.	-24	0.46	-7.	0.	-24	0.000	0.	-23	0.44	0.000
579		11.47	11.47	0.	-27	0.50	-8.	0.	-26	0.000	0.	-26	0.48	0.000
581		11.47	11.47	0.	-28	0.53	-8.	0.	-27	0.000	0.	-27	0.51	0.000
583		11.47	11.47	0.	-13	0.24	-4.	0.	-12	0.000	0.	-12	0.23	0.000
585		11.47	11.47	0.	-15	0.28	-4.	0.	-14	0.000	0.	-14	0.27	0.000
587		11.47	11.47	0.	-18	0.33	-5.	0.	-17	0.000	0.	-17	0.32	0.000
589		11.47	11.47	0.	-21	0.39	-6.	0.	-20	0.000	0.	-20	0.37	0.000
591		11.47	11.47	0.	-24	0.44	-7.	0.	-23	0.000	0.	-23	0.42	0.000
593		11.47	11.47	0.	-26	0.49	-7.	0.	-25	0.000	0.	-25	0.47	0.000
595		11.47	11.47	0.	-28	0.52	-8.	0.	-27	0.000	0.	-27	0.50	0.000
597		11.47	11.47	0.	-11	0.21	-3.	0.	-11	0.000	0.	-11	0.21	0.000
599		11.47	11.47	0.	-14	0.25	-4.	0.	-13	0.000	0.	-13	0.24	0.000
601		11.47	11.47	0.	-17	0.31	-5.	0.	-16	0.000	0.	-16	0.30	0.000
603		11.47	11.47	0.	-20	0.37	-6.	0.	-19	0.000	0.	-19	0.36	0.000
605		11.47	11.47	0.	-23	0.43	-6.	0.	-22	0.000	0.	-22	0.41	0.000
607		11.47	11.47	0.	-26	0.48	-7.	0.	-25	0.000	0.	-25	0.46	0.000
609		11.47	11.47	0.	-27	0.51	-8.	0.	-26	0.000	0.	-26	0.49	0.000
610		11.47	11.47	0.	-7	0.13	-2.	0.	-7	0.000	0.	-7	0.13	0.000
611		11.47	11.47	0.	-9	0.17	-3.	0.	-9	0.000	0.	-9	0.16	0.000
612		11.47	11.47	0.	-10	0.19	-3.	0.	-10	0.000	0.	-10	0.18	0.000
613		11.47	11.47	0.	-12	0.22	-3.	0.	-11	0.000	0.	-11	0.21	0.000
614		11.47	11.47	0.	-14	0.27	-4.	0.	-14	0.000	0.	-14	0.26	0.000
615		11.47	11.47	0.	-15	0.29	-4.	0.	-15	0.000	0.	-15	0.28	0.000

616		11.47	11.47	0.	-19	0.35	-5.	0.	-18	0.000	0.	-18	0.34	0.000
617		11.47	11.47	0.	-19	0.36	-5.	0.	-19	0.000	0.	-18	0.34	0.000
618		11.47	11.47	0.	-23	0.42	-6.	0.	-22	0.000	0.	-22	0.40	0.000
619		11.47	11.47	0.	-23	0.42	-6.	0.	-22	0.000	0.	-22	0.40	0.000
620		11.47	11.47	0.	-26	0.48	-7.	0.	-25	0.000	0.	-24	0.46	0.000
621		11.47	11.47	0.	-26	0.48	-7.	0.	-25	0.000	0.	-24	0.46	0.000
622		11.47	11.47	0.	-27	0.51	-8.	0.	-26	0.000	0.	-26	0.49	0.000
623		11.47	11.47	0.	-27	0.51	-8.	0.	-26	0.000	0.	-26	0.48	0.000
638		11.47	11.47	138	-17	0.60	-1.	138	-16	0.000	138	-16	0.59	0.000
640		11.47	11.47	31	-11	0.27	-2.	32	-10	0.000	33	-10	0.26	0.000
642		11.47	11.47	37	-6	0.20	-1.	37	-6	0.000	37	-6	0.19	0.000
644		11.47	11.47	40	-5	0.18	0.	40	-5	0.000	40	-5	0.17	0.000
646		11.47	11.47	0.	-4	0.08	-1.	0.	-4	0.000	0.	-4	0.08	0.000
648		11.47	11.47	0.	-4	0.07	-1.	0.	-4	0.000	0.	-3	0.06	0.000
650		11.47	11.47	0.	-6	0.10	-2.	0.	-5	0.000	0.	-5	0.09	0.000
652		11.47	11.47	32	-22	0.47	-5.	37	0.	0.000	38	0.	0.15	0.000
654		11.47	11.47	0.	-1	0.01	0.	0.	-1	0.000	0.	-1	0.01	0.000
656		11.47	11.47	0.	-18	0.33	-5.	0.	-17	0.000	0.	-17	0.31	0.000
658		11.47	11.47	1	-4	0.08	-1.	4	-4	0.000	5	-4	0.09	0.000
660		11.47	11.47	0.	-14	0.27	-4.	0.	-14	0.000	0.	-14	0.26	0.000
662		11.47	11.47	0.	-17	0.32	-5.	0.	-16	0.000	0.	-16	0.29	0.000
664		11.47	11.47	0.	-20	0.37	-6.	0.	-19	0.000	0.	-18	0.34	0.000
666		11.47	11.47	17	-10	0.22	-2.	20	-10	0.000	21	-10	0.22	0.000
668		11.47	11.47	0.	-12	0.23	-3.	0.	-12	0.000	0.	-12	0.22	0.000
670		11.47	11.47	0.	-13	0.24	-4.	0.	-12	0.000	0.	-12	0.23	0.000
672		11.47	11.47	0.	-15	0.29	-4.	0.	-15	0.000	0.	-15	0.28	0.000
674		11.47	11.47	0.	-23	0.42	-6.	0.	-22	0.000	0.	-22	0.41	0.000
676		11.47	11.47	0.	-25	0.47	-7.	0.	-24	0.000	0.	-23	0.44	0.000
678		11.47	11.47	0.	-27	0.51	-8.	0.	-26	0.000	0.	-25	0.47	0.000
680		11.47	11.47	0.	-15	0.28	-4.	1	-14	0.000	2	-14	0.27	0.000
682		11.47	11.47	0.	-19	0.36	-5.	0.	-18	0.000	0.	-18	0.34	0.000
684		11.47	11.47	0.	-22	0.42	-6.	0.	-22	0.000	0.	-21	0.40	0.000
686		11.47	11.47	0.	-26	0.48	-7.	0.	-25	0.000	0.	-24	0.45	0.000
688		11.47	11.47	0.	-29	0.54	-8.	0.	-27	0.000	0.	-27	0.50	0.000
690		11.47	11.47	0.	-30	0.55	-8.	0.	-28	0.000	0.	-28	0.52	0.000
692		11.47	11.47	0.	-31	0.58	-9.	0.	-29	0.000	0.	-29	0.54	0.000
722		11.47	11.47	0.	-10	0.18	-3.	0.	-10	0.000	0.	-10	0.18	0.000
724		11.47	11.47	0.	-16	0.29	-4.	0.	-15	0.000	0.	-15	0.28	0.000
726		11.47	11.47	0.	-22	0.41	-6.	0.	-21	0.000	0.	-21	0.38	0.000
728		11.47	11.47	0.	-26	0.49	-7.	0.	-25	0.000	0.	-24	0.46	0.000
730		11.47	11.47	0.	-29	0.53	-8.	0.	-27	0.000	0.	-27	0.50	0.000
732		11.47	11.47	0.	-31	0.57	-9.	0.	-29	0.000	0.	-29	0.54	0.000
734		11.47	11.47	0.	-32	0.60	-9.	0.	-30	0.000	0.	-30	0.56	0.000
736		11.47	11.47	44	-10	0.28	-2.	38	-10	0.000	36	-10	0.26	0.000
738		11.47	11.47	20	-14	0.30	-3.	18	-14	0.000	17	-14	0.29	0.000
740		11.47	11.47	2	-19	0.36	-5.	0.	-19	0.000	0.	-18	0.34	0.000
742		11.47	11.47	0.	-24	0.44	-7.	0.	-23	0.000	0.	-22	0.42	0.000
744		11.47	11.47	0.	-27	0.51	-8.	0.	-26	0.000	0.	-26	0.48	0.000
746		11.47	11.47	0.	-30	0.56	-8.	0.	-29	0.000	0.	-28	0.53	0.000
748		11.47	11.47	0.	-31	0.59	-9.	0.	-30	0.000	0.	-30	0.55	0.000
750		11.47	11.47	93	-10	0.37	0.	86	-10	0.000	83	-10	0.35	0.000
752		11.47	11.47	29	-13	0.31	-3.	26	-13	0.000	25	-13	0.30	0.000
754		11.47	11.47	7	-18	0.35	-5.	4	-18	0.000	4	-17	0.33	0.000
756		11.47	11.47	0.	-22	0.42	-6.	0.	-22	0.000	0.	-21	0.40	0.000
758		11.47	11.47	0.	-26	0.49	-7.	0.	-25	0.000	0.	-25	0.47	0.000
760		11.47	11.47	0.	-29	0.54	-8.	0.	-28	0.000	0.	-28	0.52	0.000
762		11.47	11.47	0.	-30	0.57	-9.	0.	-29	0.000	0.	-29	0.54	0.000
764		11.47	11.47	0.	-12	0.22	-3.	0.	-12	0.000	0.	-12	0.22	0.000
766		11.47	11.47	0.	-14	0.27	-4.	0.	-14	0.000	0.	-14	0.26	0.000
768		11.47	11.47	0.	-18	0.34	-5.	0.	-18	0.000	0.	-17	0.33	0.000
770		11.47	11.47	0.	-22	0.41	-6.	0.	-21	0.000	0.	-21	0.40	0.000
772		11.47	11.47	0.	-26	0.48	-7.	0.	-25	0.000	0.	-25	0.46	0.000

774		11.47	11.47	0.	-29	0.54	-8.		0.	-28	0.000	0.	-27	0.51	0.000
776		11.47	11.47	0.	-30	0.56	-8.		0.	-29	0.000	0.	-29	0.54	0.000
778		11.47	11.47	0.	-12	0.22	-3.		0.	-12	0.000	0.	-12	0.22	0.000
780		11.47	11.47	0.	-15	0.27	-4.		0.	-14	0.000	0.	-14	0.27	0.000
782		11.47	11.47	0.	-19	0.35	-5.		0.	-18	0.000	0.	-18	0.34	0.000
784		11.47	11.47	0.	-22	0.42	-6.		0.	-22	0.000	0.	-22	0.40	0.000
786		11.47	11.47	0.	-26	0.48	-7.		0.	-25	0.000	0.	-25	0.46	0.000
788		11.47	11.47	0.	-29	0.53	-8.		0.	-28	0.000	0.	-27	0.51	0.000
790		11.47	11.47	0.	-30	0.56	-8.		0.	-29	0.000	0.	-29	0.54	0.000
792		11.47	11.47	0.	-16	0.31	-5.		0.	-16	0.000	0.	-16	0.30	0.000
794		11.47	11.47	0.	-18	0.33	-5.		0.	-17	0.000	0.	-17	0.32	0.000
796		11.47	11.47	0.	-20	0.37	-6.		0.	-19	0.000	0.	-19	0.36	0.000
798		11.47	11.47	0.	-23	0.43	-6.		0.	-22	0.000	0.	-22	0.42	0.000
800		11.47	11.47	0.	-26	0.49	-7.		0.	-25	0.000	0.	-25	0.47	0.000
802		11.47	11.47	0.	-29	0.54	-8.		0.	-28	0.000	0.	-28	0.52	0.000
804		11.47	11.47	0.	-30	0.57	-9.		0.	-29	0.000	0.	-29	0.55	0.000
806		11.47	11.47	0.	-17	0.32	-5.		0.	-16	0.000	0.	-16	0.31	0.000
808		11.47	11.47	0.	-19	0.35	-5.		0.	-18	0.000	0.	-18	0.34	0.000
810		11.47	11.47	0.	-21	0.40	-6.		0.	-21	0.000	0.	-21	0.38	0.000
812		11.47	11.47	0.	-24	0.45	-7.		0.	-23	0.000	0.	-23	0.43	0.000
814		11.47	11.47	0.	-27	0.50	-8.		0.	-26	0.000	0.	-26	0.48	0.000
816		11.47	11.47	0.	-29	0.55	-8.		0.	-29	0.000	0.	-28	0.53	0.000
818		11.47	11.47	0.	-31	0.58	-9.		0.	-30	0.000	0.	-30	0.56	0.000
819		11.47	11.47	80	-17	0.49	-3.		72	-17	0.000	70	-17	0.46	0.000
820		11.47	11.47	0.	-17	0.33	-5.		0.	-17	0.000	0.	-17	0.32	0.000
821		11.47	11.47	21	-19	0.41	-5.		19	-19	0.000	18	-19	0.38	0.000
822		11.47	11.47	0.	-20	0.37	-5.		0.	-19	0.000	0.	-19	0.35	0.000
823		11.47	11.47	9	-22	0.43	-6.		7	-21	0.000	6	-21	0.41	0.000
824		11.47	11.47	0.	-22	0.42	-6.		0.	-22	0.000	0.	-21	0.40	0.000
825		11.47	11.47	0.	-25	0.46	-7.		0.	-24	0.000	0.	-23	0.44	0.000
826		11.47	11.47	0.	-25	0.47	-7.		0.	-24	0.000	0.	-24	0.45	0.000
827		11.47	11.47	0.	-27	0.51	-8.		0.	-26	0.000	0.	-26	0.48	0.000
828		11.47	11.47	0.	-28	0.52	-8.		0.	-27	0.000	0.	-27	0.50	0.000
829		11.47	11.47	0.	-29	0.55	-8.		0.	-28	0.000	0.	-28	0.52	0.000
830		11.47	11.47	0.	-30	0.57	-8.		0.	-29	0.000	0.	-29	0.54	0.000
831		11.47	11.47	0.	-31	0.57	-9.		0.	-30	0.000	0.	-29	0.55	0.000
832		11.47	11.47	0.	-32	0.59	-9.		0.	-31	0.000	0.	-30	0.57	0.000

ARMATURA INFERIORE VERTICALE

			COMBINAZIONE RARA				COMB. FREQUENTE			COMB. QUASI PERMANENTE			
GUSCI	Af	Afc	Mom	Nor	sigC	sigF	Mom	Nor	wkF	Mom	Nor	sigC	wkP
456	21.02	21.02	569	-234	5.23	-49.	578	-224	0.000	581	-221	5.03	0.000
458	21.02	21.02	274	-236	4.70	-56.	278	-226	0.000	279	-223	4.49	0.000
460	21.02	21.02	144	-234	4.42	-59.	146	-224	0.000	147	-221	4.21	0.000
462	21.02	21.02	25	-233	4.19	-62.	27	-224	0.000	28	-221	3.98	0.000
464	21.02	21.02	0.	-237	4.21	-63.	0.	-228	0.000	0.	-225	4.00	0.000
466	21.02	21.02	0.	-233	4.15	-62.	0.	-224	0.000	0.	-221	3.93	0.000
468	21.02	21.02	0.	-225	3.99	-60.	0.	-216	0.000	0.	-213	3.78	0.000
470	21.02	21.02	365	-178	3.86	-39.	372	-173	0.000	375	-171	3.75	0.000
472	21.02	21.02	201	-197	3.88	-48.	203	-190	0.000	204	-188	3.73	0.000
474	21.02	21.02	114	-210	3.94	-53.	116	-202	0.000	117	-200	3.77	0.000
476	21.02	21.02	13	-219	3.92	-58.	15	-211	0.000	16	-209	3.74	0.000
478	21.02	21.02	0.	-228	4.05	-61.	0.	-220	0.000	0.	-217	3.86	0.000
480	21.02	21.02	0.	-222	3.94	-59.	0.	-213	0.000	0.	-210	3.74	0.000
482	21.02	21.02	0.	-210	3.73	-56.	0.	-202	0.000	0.	-199	3.54	0.000
484	21.02	21.02	238	-171	3.49	-40.	243	-166	0.000	245	-164	3.38	0.000
486	21.02	21.02	140	-180	3.46	-45.	142	-175	0.000	142	-173	3.34	0.000
488	21.02	21.02	80	-193	3.57	-49.	82	-187	0.000	82	-185	3.43	0.000
490	21.02	21.02	0.	-205	3.64	-55.	0.	-198	0.000	1	-196	3.48	0.000
492	21.02	21.02	0.	-215	3.82	-57.	0.	-207	0.000	0.	-204	3.62	0.000
494	21.02	21.02	0.	-208	3.70	-55.	0.	-200	0.000	0.	-197	3.51	0.000

496		21.02	21.02	0.	-201	3.57	-54.	0.	-193	0.000	0.	-191	3.39	0.000
498		21.02	21.02	172	-172	3.38	-42.	174	-167	0.000	175	-165	3.26	0.000
500		21.02	21.02	114	-180	3.41	-45.	113	-174	0.000	113	-173	3.28	0.000
502		21.02	21.02	50	-187	3.42	-49.	51	-181	0.000	51	-179	3.28	0.000
504		21.02	21.02	0.	-196	3.48	-52.	0.	-190	0.000	0.	-188	3.34	0.000
506		21.02	21.02	0.	-200	3.54	-53.	0.	-192	0.000	0.	-190	3.37	0.000
508		21.02	21.02	0.	-196	3.49	-52.	0.	-189	0.000	0.	-187	3.32	0.000
510		21.02	21.02	0.	-193	3.44	-52.	0.	-186	0.000	0.	-184	3.26	0.000
512		21.02	21.02	195	-167	3.34	-40.	188	-162	0.000	186	-160	3.20	0.000
514		21.02	21.02	95	-171	3.22	-43.	91	-166	0.000	90	-164	3.09	0.000
516		21.02	21.02	16	-177	3.17	-47.	16	-171	0.000	16	-169	3.04	0.000
518		21.02	21.02	0.	-181	3.21	-48.	0.	-175	0.000	0.	-173	3.07	0.000
520		21.02	21.02	0.	-183	3.25	-49.	0.	-176	0.000	0.	-174	3.10	0.000
522		21.02	21.02	0.	-183	3.24	-49.	0.	-176	0.000	0.	-174	3.09	0.000
524		21.02	21.02	0.	-182	3.24	-49.	0.	-176	0.000	0.	-174	3.09	0.000
526		21.02	21.02	211	-166	3.36	-39.	199	-162	0.000	194	-160	3.21	0.000
528		21.02	21.02	54	-166	3.06	-43.	51	-162	0.000	50	-160	2.93	0.000
530		21.02	21.02	0.	-168	2.98	-45.	0.	-163	0.000	0.	-161	2.86	0.000
532		21.02	21.02	0.	-170	3.02	-45.	0.	-165	0.000	0.	-163	2.89	0.000
534		21.02	21.02	0.	-171	3.04	-46.	0.	-166	0.000	0.	-164	2.91	0.000
536		21.02	21.02	0.	-172	3.06	-46.	0.	-167	0.000	0.	-165	2.92	0.000
538		21.02	21.02	0.	-173	3.07	-46.	0.	-167	0.000	0.	-165	2.94	0.000
540		21.02	21.02	124	-167	3.20	-41.	115	-162	0.000	112	-160	3.06	0.000
542		21.02	21.02	0.	-165	2.94	-44.	0.	-160	0.000	0.	-159	2.82	0.000
544		21.02	21.02	0.	-165	2.93	-44.	0.	-160	0.000	0.	-158	2.81	0.000
546		21.02	21.02	0.	-166	2.94	-44.	0.	-160	0.000	0.	-159	2.82	0.000
548		21.02	21.02	0.	-166	2.95	-44.	0.	-161	0.000	0.	-159	2.83	0.000
550		21.02	21.02	0.	-167	2.96	-44.	0.	-161	0.000	0.	-160	2.84	0.000
552		21.02	21.02	0.	-168	2.97	-45.	0.	-162	0.000	0.	-160	2.85	0.000
555		21.02	21.02	84	-172	3.21	-44.	76	-167	0.000	74	-165	3.07	0.000
557		21.02	21.02	0.	-170	3.03	-45.	0.	-165	0.000	0.	-163	2.90	0.000
559		21.02	21.02	0.	-169	3.00	-45.	0.	-164	0.000	0.	-162	2.88	0.000
561		21.02	21.02	0.	-168	2.98	-45.	0.	-163	0.000	0.	-161	2.86	0.000
563		21.02	21.02	0.	-167	2.96	-44.	0.	-162	0.000	0.	-160	2.84	0.000
565		21.02	21.02	0.	-166	2.95	-44.	0.	-161	0.000	0.	-159	2.83	0.000
567		21.02	21.02	0.	-165	2.93	-44.	0.	-160	0.000	0.	-158	2.81	0.000
569		21.02	21.02	0.	-171	3.03	-45.	0.	-165	0.000	0.	-164	2.91	0.000
571		21.02	21.02	0.	-169	3.00	-45.	0.	-164	0.000	0.	-162	2.88	0.000
573		21.02	21.02	0.	-168	2.98	-45.	0.	-162	0.000	0.	-161	2.85	0.000
575		21.02	21.02	0.	-167	2.96	-44.	0.	-161	0.000	0.	-160	2.84	0.000
577		21.02	21.02	0.	-166	2.94	-44.	0.	-161	0.000	0.	-159	2.82	0.000
579		21.02	21.02	0.	-165	2.93	-44.	0.	-160	0.000	0.	-158	2.81	0.000
581		21.02	21.02	0.	-164	2.92	-44.	0.	-159	0.000	0.	-157	2.80	0.000
583		21.02	21.02	0.	-169	3.00	-45.	0.	-164	0.000	0.	-162	2.88	0.000
585		21.02	21.02	0.	-168	2.98	-45.	0.	-163	0.000	0.	-161	2.86	0.000
587		21.02	21.02	0.	-167	2.96	-44.	0.	-161	0.000	0.	-160	2.84	0.000
589		21.02	21.02	0.	-166	2.94	-44.	0.	-160	0.000	0.	-159	2.82	0.000
591		21.02	21.02	0.	-165	2.93	-44.	0.	-160	0.000	0.	-158	2.81	0.000
593		21.02	21.02	0.	-164	2.92	-44.	0.	-159	0.000	0.	-157	2.80	0.000
595		21.02	21.02	0.	-164	2.91	-44.	0.	-159	0.000	0.	-157	2.79	0.000
597		21.02	21.02	0.	-169	3.00	-45.	0.	-164	0.000	0.	-162	2.87	0.000
599		21.02	21.02	0.	-167	2.97	-44.	0.	-162	0.000	0.	-160	2.84	0.000
601		21.02	21.02	0.	-166	2.94	-44.	0.	-161	0.000	0.	-159	2.82	0.000
603		21.02	21.02	0.	-165	2.93	-44.	0.	-160	0.000	0.	-158	2.81	0.000
605		21.02	21.02	0.	-164	2.92	-44.	0.	-159	0.000	0.	-157	2.80	0.000
607		21.02	21.02	0.	-164	2.91	-44.	0.	-159	0.000	0.	-157	2.79	0.000
609		21.02	21.02	0.	-164	2.90	-44.	0.	-158	0.000	0.	-157	2.78	0.000
610		21.02	21.02	0.	-167	2.97	-45.	0.	-162	0.000	0.	-161	2.85	0.000
611		21.02	21.02	0.	-168	2.99	-45.	0.	-163	0.000	0.	-161	2.87	0.000
612		21.02	21.02	0.	-166	2.94	-44.	0.	-161	0.000	0.	-159	2.82	0.000
613		21.02	21.02	0.	-166	2.95	-44.	0.	-161	0.000	0.	-159	2.83	0.000
614		21.02	21.02	0.	-165	2.92	-44.	0.	-160	0.000	0.	-158	2.81	0.000

615		21.02	21.02	0.	-165	2.93	-44.	0.	-160	0.000	0.	-158	2.81	0.000
616		21.02	21.02	0.	-164	2.92	-44.	0.	-159	0.000	0.	-158	2.80	0.000
617		21.02	21.02	0.	-164	2.92	-44.	0.	-159	0.000	0.	-157	2.80	0.000
618		21.02	21.02	0.	-164	2.92	-44.	0.	-159	0.000	0.	-158	2.80	0.000
619		21.02	21.02	0.	-164	2.91	-44.	0.	-159	0.000	0.	-157	2.79	0.000
620		21.02	21.02	0.	-165	2.92	-44.	0.	-159	0.000	0.	-158	2.80	0.000
621		21.02	21.02	0.	-164	2.91	-44.	0.	-159	0.000	0.	-157	2.79	0.000
622		21.02	21.02	0.	-165	2.93	-44.	0.	-160	0.000	0.	-158	2.80	0.000
623		21.02	21.02	0.	-164	2.91	-44.	0.	-159	0.000	0.	-157	2.79	0.000
638		21.02	21.02	509	-225	4.96	-48.	516	-216	0.000	519	-213	4.77	0.000
640		21.02	21.02	203	-228	4.42	-56.	209	-218	0.000	211	-215	4.22	0.000
642		21.02	21.02	96	-226	4.20	-58.	101	-217	0.000	103	-214	4.00	0.000
644		21.02	21.02	4	-226	4.02	-60.	7	-217	0.000	9	-214	3.82	0.000
646		21.02	21.02	0.	-229	4.07	-61.	0.	-221	0.000	0.	-218	3.87	0.000
648		21.02	21.02	0.	-226	4.01	-60.	0.	-217	0.000	0.	-214	3.80	0.000
650		21.02	21.02	0.	-217	3.85	-58.	0.	-208	0.000	0.	-205	3.65	0.000
652		21.02	21.02	198	-164	3.29	-39.	211	-160	0.000	215	-158	3.21	0.000
654		21.02	21.02	90	-186	3.46	-47.	97	-179	0.000	100	-177	3.34	0.000
656		21.02	21.02	51	-200	3.65	-52.	56	-193	0.000	58	-191	3.50	0.000
658		21.02	21.02	0.	-210	3.73	-56.	0.	-203	0.000	0.	-200	3.56	0.000
660		21.02	21.02	0.	-219	3.89	-58.	0.	-211	0.000	0.	-208	3.70	0.000
662		21.02	21.02	0.	-215	3.81	-57.	0.	-206	0.000	0.	-203	3.61	0.000
664		21.02	21.02	0.	-203	3.60	-54.	0.	-195	0.000	0.	-192	3.41	0.000
666		21.02	21.02	110	-170	3.23	-43.	121	-165	0.000	125	-163	3.14	0.000
668		21.02	21.02	39	-178	3.23	-46.	47	-172	0.000	49	-170	3.12	0.000
670		21.02	21.02	6	-189	3.37	-50.	12	-183	0.000	14	-181	3.24	0.000
672		21.02	21.02	0.	-200	3.55	-53.	0.	-193	0.000	0.	-191	3.39	0.000
674		21.02	21.02	0.	-209	3.71	-56.	0.	-202	0.000	0.	-199	3.54	0.000
676		21.02	21.02	0.	-204	3.63	-54.	0.	-196	0.000	0.	-194	3.44	0.000
678		21.02	21.02	0.	-198	3.52	-53.	0.	-190	0.000	0.	-188	3.34	0.000
680		21.02	21.02	12	-174	3.11	-46.	23	-169	0.000	27	-167	3.02	0.000
682		21.02	21.02	0.	-177	3.14	-47.	0.	-172	0.000	0.	-170	3.01	0.000
684		21.02	21.02	0.	-182	3.23	-48.	0.	-176	0.000	0.	-174	3.10	0.000
686		21.02	21.02	0.	-188	3.35	-50.	0.	-183	0.000	0.	-181	3.21	0.000
688		21.02	21.02	0.	-193	3.43	-51.	0.	-186	0.000	0.	-184	3.27	0.000
690		21.02	21.02	0.	-191	3.39	-51.	0.	-184	0.000	0.	-182	3.23	0.000
692		21.02	21.02	0.	-189	3.35	-50.	0.	-182	0.000	0.	-180	3.19	0.000
722		21.02	21.02	0.	-171	3.04	-46.	0.	-166	0.000	0.	-165	2.92	0.000
724		21.02	21.02	0.	-173	3.08	-46.	0.	-168	0.000	0.	-166	2.95	0.000
726		21.02	21.02	0.	-177	3.14	-47.	0.	-171	0.000	0.	-169	3.01	0.000
728		21.02	21.02	0.	-179	3.18	-48.	0.	-173	0.000	0.	-171	3.05	0.000
730		21.02	21.02	0.	-180	3.20	-48.	0.	-174	0.000	0.	-172	3.06	0.000
732		21.02	21.02	0.	-180	3.20	-48.	0.	-174	0.000	0.	-172	3.06	0.000
734		21.02	21.02	0.	-180	3.20	-48.	0.	-174	0.000	0.	-172	3.06	0.000
736		21.02	21.02	85	-169	3.16	-43.	82	-164	0.000	81	-162	3.03	0.000
738		21.02	21.02	0.	-169	3.00	-45.	0.	-164	0.000	0.	-162	2.88	0.000
740		21.02	21.02	0.	-170	3.03	-45.	0.	-165	0.000	0.	-164	2.91	0.000
742		21.02	21.02	0.	-172	3.05	-46.	0.	-167	0.000	0.	-165	2.93	0.000
744		21.02	21.02	0.	-173	3.07	-46.	0.	-168	0.000	0.	-166	2.94	0.000
746		21.02	21.02	0.	-174	3.09	-46.	0.	-168	0.000	0.	-166	2.95	0.000
748		21.02	21.02	0.	-174	3.10	-46.	0.	-169	0.000	0.	-167	2.96	0.000
750		21.02	21.02	124	-168	3.22	-42.	115	-163	0.000	112	-162	3.09	0.000
752		21.02	21.02	0.	-168	2.98	-45.	0.	-163	0.000	0.	-161	2.86	0.000
754		21.02	21.02	0.	-168	2.98	-45.	0.	-163	0.000	0.	-161	2.86	0.000
756		21.02	21.02	0.	-168	2.99	-45.	0.	-163	0.000	0.	-162	2.87	0.000
758		21.02	21.02	0.	-169	3.00	-45.	0.	-164	0.000	0.	-162	2.88	0.000
760		21.02	21.02	0.	-169	3.01	-45.	0.	-164	0.000	0.	-162	2.88	0.000
762		21.02	21.02	0.	-170	3.02	-45.	0.	-164	0.000	0.	-163	2.89	0.000
764		21.02	21.02	0.	-169	3.01	-45.	0.	-164	0.000	0.	-163	2.89	0.000
766		21.02	21.02	0.	-168	2.99	-45.	0.	-163	0.000	0.	-162	2.87	0.000
768		21.02	21.02	0.	-168	2.98	-45.	0.	-163	0.000	0.	-161	2.86	0.000
770		21.02	21.02	0.	-168	2.98	-45.	0.	-162	0.000	0.	-161	2.86	0.000

772		21.02	21.02	0.	-168	2.98	-45.	0.	-162	0.000	0.	-161	2.85	0.000
774		21.02	21.02	0.	-168	2.98	-45.	0.	-163	0.000	0.	-161	2.86	0.000
776		21.02	21.02	0.	-168	2.98	-45.	0.	-163	0.000	0.	-161	2.86	0.000
778		21.02	21.02	0.	-172	3.05	-46.	0.	-167	0.000	0.	-165	2.93	0.000
780		21.02	21.02	0.	-170	3.01	-45.	0.	-164	0.000	0.	-163	2.89	0.000
782		21.02	21.02	0.	-168	2.99	-45.	0.	-163	0.000	0.	-162	2.87	0.000
784		21.02	21.02	0.	-168	2.98	-45.	0.	-163	0.000	0.	-161	2.86	0.000
786		21.02	21.02	0.	-167	2.97	-45.	0.	-162	0.000	0.	-161	2.85	0.000
788		21.02	21.02	0.	-167	2.97	-45.	0.	-162	0.000	0.	-160	2.85	0.000
790		21.02	21.02	0.	-167	2.97	-45.	0.	-162	0.000	0.	-160	2.85	0.000
792		21.02	21.02	0.	-173	3.08	-46.	0.	-168	0.000	0.	-166	2.95	0.000
794		21.02	21.02	0.	-171	3.04	-46.	0.	-166	0.000	0.	-164	2.91	0.000
796		21.02	21.02	0.	-170	3.01	-45.	0.	-164	0.000	0.	-163	2.89	0.000
798		21.02	21.02	0.	-169	2.99	-45.	0.	-163	0.000	0.	-162	2.87	0.000
800		21.02	21.02	0.	-168	2.98	-45.	0.	-163	0.000	0.	-161	2.86	0.000
802		21.02	21.02	0.	-167	2.97	-45.	0.	-162	0.000	0.	-161	2.85	0.000
804		21.02	21.02	0.	-167	2.97	-44.	0.	-162	0.000	0.	-160	2.85	0.000
806		21.02	21.02	0.	-173	3.07	-46.	0.	-168	0.000	0.	-166	2.95	0.000
808		21.02	21.02	0.	-172	3.05	-46.	0.	-167	0.000	0.	-165	2.93	0.000
810		21.02	21.02	0.	-171	3.03	-45.	0.	-165	0.000	0.	-164	2.90	0.000
812		21.02	21.02	0.	-169	3.01	-45.	0.	-164	0.000	0.	-163	2.89	0.000
814		21.02	21.02	0.	-169	2.99	-45.	0.	-163	0.000	0.	-162	2.87	0.000
816		21.02	21.02	0.	-168	2.98	-45.	0.	-163	0.000	0.	-161	2.86	0.000
818		21.02	21.02	0.	-167	2.97	-45.	0.	-162	0.000	0.	-160	2.85	0.000
819		21.02	21.02	62	-173	3.19	-45.	56	-168	0.000	54	-166	3.05	0.000
820		21.02	21.02	0.	-174	3.08	-46.	0.	-168	0.000	0.	-166	2.96	0.000
821		21.02	21.02	0.	-172	3.05	-46.	0.	-167	0.000	0.	-165	2.93	0.000
822		21.02	21.02	0.	-172	3.06	-46.	0.	-167	0.000	0.	-165	2.94	0.000
823		21.02	21.02	0.	-171	3.03	-46.	0.	-166	0.000	0.	-164	2.91	0.000
824		21.02	21.02	0.	-171	3.04	-46.	0.	-166	0.000	0.	-164	2.92	0.000
825		21.02	21.02	0.	-170	3.01	-45.	0.	-164	0.000	0.	-163	2.89	0.000
826		21.02	21.02	0.	-170	3.02	-45.	0.	-165	0.000	0.	-163	2.90	0.000
827		21.02	21.02	0.	-169	2.99	-45.	0.	-163	0.000	0.	-162	2.87	0.000
828		21.02	21.02	0.	-169	3.01	-45.	0.	-164	0.000	0.	-162	2.89	0.000
829		21.02	21.02	0.	-168	2.97	-45.	0.	-162	0.000	0.	-161	2.85	0.000
830		21.02	21.02	0.	-168	2.99	-45.	0.	-163	0.000	0.	-162	2.87	0.000
831		21.02	21.02	0.	-167	2.96	-44.	0.	-161	0.000	0.	-160	2.84	0.000
832		21.02	21.02	0.	-168	2.98	-45.	0.	-163	0.000	0.	-161	2.86	0.000

ARMATURA SUPERIORE ORIZZONTALE

GUSCI	Af	Afc	COMBINAZIONE RARA				COMB. FREQUENTE				COMB. QUASI PERMANENTE			
			Mom	Nor	sigC	sigF	Mom	Nor	wkF		Mom	Nor	sigC	wkP
456		11.47	11.47	0.	-16	0.30	-4.	0.	-15	0.000	0.	-15	0.28	0.000
458		11.47	11.47	0.	-10	0.19	-3.	0.	-10	0.000	0.	-9	0.18	0.000
460		11.47	11.47	7	-6	0.09	-2.	6	-5	0.000	6	-5	0.09	0.000
462		11.47	11.47	54	-4	0.20	0.	54	-4	0.000	54	-4	0.20	0.000
464		11.47	11.47	61	-3	0.22	2.	62	-4	0.000	62	-4	0.22	0.000
466		11.47	11.47	65	-2	0.25	5.	65	-2	0.000	65	-2	0.26	0.000
468		11.47	11.47	68	-4	0.25	2.	68	-3	0.000	68	-3	0.25	0.000
470		11.47	11.47	0.	-20	0.38	-6.	0.	-19	0.000	0.	-19	0.35	0.000
472		11.47	11.47	0.	-21	0.39	-6.	0.	-20	0.000	0.	-19	0.36	0.000
474		11.47	11.47	18	-17	0.27	-5.	17	-16	0.000	17	-15	0.25	0.000
476		11.47	11.47	58	-3	0.22	3.	58	-3	0.000	58	-3	0.21	0.000
478		11.47	11.47	73	-14	0.10	-6.	73	-14	0.000	73	-14	0.10	0.000
480		11.47	11.47	83	-14	0.09	-6.	83	-13	0.000	83	-13	0.07	0.000
482		11.47	11.47	87	-17	0.13	-7.	87	-16	0.000	87	-15	0.11	0.000
484		11.47	11.47	8	-8	0.13	-2.	8	-8	0.000	8	-7	0.12	0.000
486		11.47	11.47	11	-11	0.19	-3.	11	-11	0.000	11	-11	0.18	0.000
488		11.47	11.47	25	-12	0.18	-4.	25	-12	0.000	24	-12	0.17	0.000
490		11.47	11.47	58	-15	0.16	-6.	58	-15	0.000	58	-15	0.16	0.000
492		11.47	11.47	72	-23	0.28	-8.	73	-22	0.000	73	-22	0.26	0.000

494		11.47	11.47	80	-23	0.27	-9.		80	-22	0.000	80	-21	0.23	0.000
496		11.47	11.47	82	-25	0.30	-9.		82	-24	0.000	82	-23	0.26	0.000
498		11.47	11.47	4	-12	0.22	-4.		5	-12	0.000	5	-12	0.20	0.000
500		11.47	11.47	11	-19	0.33	-6.		11	-18	0.000	11	-18	0.31	0.000
502		11.47	11.47	22	-22	0.37	-7.		23	-22	0.000	23	-21	0.35	0.000
504		11.47	11.47	49	-25	0.37	-8.		50	-25	0.000	51	-24	0.35	0.000
506		11.47	11.47	65	-27	0.37	-9.		66	-25	0.000	66	-25	0.33	0.000
508		11.47	11.47	71	-28	0.37	-10.		72	-26	0.000	72	-25	0.33	0.000
510		11.47	11.47	71	-29	0.39	-10.		71	-27	0.000	71	-27	0.35	0.000
512		11.47	11.47	0.	-5	0.09	-1.		0.	-5	0.000	0.	-5	0.09	0.000
514		11.47	11.47	0.	-12	0.23	-3.		0.	-12	0.000	0.	-11	0.21	0.000
516		11.47	11.47	5	-20	0.36	-6.		8	-19	0.000	9	-18	0.32	0.000
518		11.47	11.47	33	-24	0.38	-8.		35	-23	0.000	35	-22	0.34	0.000
520		11.47	11.47	52	-27	0.39	-9.		53	-25	0.000	53	-25	0.35	0.000
522		11.47	11.47	60	-29	0.41	-10.		60	-27	0.000	60	-27	0.37	0.000
524		11.47	11.47	60	-30	0.43	-10.		60	-28	0.000	59	-28	0.40	0.000
526		11.47	11.47	0.	-3	0.06	-1.		0.	-3	0.000	0.	-3	0.06	0.000
528		11.47	11.47	0.	-9	0.16	-2.		0.	-8	0.000	0.	-8	0.15	0.000
530		11.47	11.47	2	-15	0.28	-4.		4	-14	0.000	5	-14	0.25	0.000
532		11.47	11.47	33	-21	0.32	-7.		34	-20	0.000	34	-19	0.29	0.000
534		11.47	11.47	51	-25	0.35	-8.		51	-23	0.000	51	-23	0.32	0.000
536		11.47	11.47	57	-28	0.40	-9.		56	-26	0.000	56	-26	0.37	0.000
538		11.47	11.47	57	-29	0.43	-10.		56	-28	0.000	56	-27	0.40	0.000
540		11.47	11.47	39	-5	0.01	-2.		37	-5	0.000	37	-5	0.02	0.000
542		11.47	11.47	13	-9	0.14	-3.		13	-9	0.000	13	-9	0.14	0.000
544		11.47	11.47	28	-14	0.20	-5.		28	-14	0.000	28	-13	0.19	0.000
546		11.47	11.47	53	-19	0.25	-7.		51	-18	0.000	51	-18	0.23	0.000
548		11.47	11.47	60	-23	0.31	-8.		59	-22	0.000	59	-22	0.29	0.000
550		11.47	11.47	58	-26	0.37	-9.		57	-25	0.000	56	-25	0.35	0.000
552		11.47	11.47	53	-28	0.41	-9.		52	-27	0.000	52	-26	0.39	0.000
555		11.47	11.47	2	-16	0.30	-5.		3	-16	0.000	3	-16	0.29	0.000
557		11.47	11.47	0.	-18	0.34	-5.		0.	-17	0.000	0.	-17	0.32	0.000
559		11.47	11.47	0.	-20	0.38	-6.		0.	-20	0.000	0.	-19	0.36	0.000
561		11.47	11.47	7	-23	0.42	-7.		8	-22	0.000	8	-22	0.39	0.000
563		11.47	11.47	15	-26	0.45	-8.		15	-25	0.000	15	-24	0.43	0.000
565		11.47	11.47	20	-28	0.48	-8.		21	-27	0.000	21	-27	0.46	0.000
567		11.47	11.47	24	-29	0.50	-9.		24	-28	0.000	25	-28	0.47	0.000
569		11.47	11.47	63	-14	0.13	-6.		58	-13	0.000	57	-13	0.13	0.000
571		11.47	11.47	43	-16	0.21	-6.		40	-15	0.000	39	-15	0.20	0.000
573		11.47	11.47	35	-19	0.28	-6.		33	-18	0.000	32	-18	0.27	0.000
575		11.47	11.47	34	-22	0.33	-7.		33	-21	0.000	32	-21	0.32	0.000
577		11.47	11.47	32	-24	0.39	-8.		31	-24	0.000	31	-23	0.37	0.000
579		11.47	11.47	30	-27	0.44	-8.		30	-26	0.000	30	-26	0.42	0.000
581		11.47	11.47	30	-28	0.47	-9.		29	-27	0.000	29	-27	0.45	0.000
583		11.47	11.47	67	-13	0.10	-5.		62	-12	0.000	60	-12	0.10	0.000
585		11.47	11.47	56	-15	0.16	-6.		52	-14	0.000	51	-14	0.16	0.000
587		11.47	11.47	51	-18	0.22	-6.		48	-17	0.000	47	-17	0.22	0.000
589		11.47	11.47	48	-21	0.29	-7.		45	-20	0.000	44	-20	0.28	0.000
591		11.47	11.47	39	-24	0.36	-8.		38	-23	0.000	37	-23	0.35	0.000
593		11.47	11.47	33	-26	0.42	-8.		32	-25	0.000	32	-25	0.40	0.000
595		11.47	11.47	30	-28	0.46	-9.		30	-27	0.000	30	-27	0.43	0.000
597		11.47	11.47	91	-11	0.02	-6.		84	-11	0.000	82	-11	0.03	0.000
599		11.47	11.47	78	-14	0.09	-6.		73	-13	0.000	71	-13	0.09	0.000
601		11.47	11.47	71	-17	0.16	-7.		66	-16	0.000	65	-16	0.16	0.000
603		11.47	11.47	59	-20	0.25	-7.		56	-19	0.000	55	-19	0.24	0.000
605		11.47	11.47	50	-23	0.33	-8.		49	-22	0.000	48	-22	0.31	0.000
607		11.47	11.47	41	-26	0.40	-8.		41	-25	0.000	40	-25	0.38	0.000
609		11.47	11.47	35	-27	0.44	-9.		35	-26	0.000	35	-26	0.41	0.000
610		11.47	11.47	129	-7	0.47	4.		119	-7	0.000	116	-7	0.42	0.000
611		11.47	11.47	125	-9	0.45	2.		115	-9	0.000	112	-9	0.41	0.000
612		11.47	11.47	75	-10	0.03	-5.		70	-10	0.000	69	-10	0.04	0.000
613		11.47	11.47	109	-12	0.01	-6.		101	-11	0.000	98	-11	0.01	0.000

614		11.47	11.47	73	-14	0.12	-6.	69	-14	0.000	68	-14	0.12	0.000
615		11.47	11.47	88	-15	0.10	-7.	83	-15	0.000	81	-15	0.11	0.000
616		11.47	11.47	75	-19	0.19	-7.	72	-18	0.000	71	-18	0.19	0.000
617		11.47	11.47	76	-19	0.20	-7.	72	-19	0.000	71	-18	0.19	0.000
618		11.47	11.47	68	-23	0.28	-8.	66	-22	0.000	65	-22	0.27	0.000
619		11.47	11.47	64	-23	0.29	-8.	61	-22	0.000	60	-22	0.28	0.000
620		11.47	11.47	58	-26	0.36	-9.	56	-25	0.000	55	-24	0.34	0.000
621		11.47	11.47	51	-26	0.37	-9.	50	-25	0.000	49	-24	0.35	0.000
622		11.47	11.47	50	-27	0.41	-9.	49	-26	0.000	48	-26	0.38	0.000
623		11.47	11.47	43	-27	0.42	-9.	42	-26	0.000	42	-26	0.40	0.000
638		11.47	11.47	0.	-17	0.32	-5.	0.	-16	0.000	0.	-16	0.30	0.000
640		11.47	11.47	0.	-11	0.20	-3.	0.	-10	0.000	0.	-10	0.19	0.000
642		11.47	11.47	29	-6	0.06	-3.	25	-6	0.000	23	-6	0.06	0.000
644		11.47	11.47	60	-5	0.23	0.	59	-5	0.000	58	-5	0.22	0.000
646		11.47	11.47	64	-4	0.23	1.	63	-4	0.000	63	-4	0.23	0.000
648		11.47	11.47	64	-4	0.23	1.	63	-4	0.000	63	-3	0.23	0.000
650		11.47	11.47	63	-6	0.24	0.	63	-5	0.000	63	-5	0.23	0.000
652		11.47	11.47	68	-22	0.26	-8.	61	0.	0.001	59	0.	0.23	0.001
654		11.47	11.47	40	-1	0.16	6.	36	-1	0.000	35	-1	0.14	0.000
656		11.47	11.47	54	-18	0.22	-6.	48	-17	0.000	46	-17	0.21	0.000
658		11.47	11.47	70	-4	0.25	2.	68	-4	0.000	68	-4	0.24	0.000
660		11.47	11.47	77	-14	0.11	-6.	76	-14	0.000	75	-14	0.10	0.000
662		11.47	11.47	78	-17	0.16	-7.	77	-16	0.000	77	-16	0.13	0.000
664		11.47	11.47	76	-20	0.21	-8.	76	-19	0.000	76	-18	0.18	0.000
666		11.47	11.47	70	-10	0.04	-5.	68	-10	0.000	68	-10	0.04	0.000
668		11.47	11.47	47	-12	0.13	-5.	43	-12	0.000	41	-12	0.13	0.000
670		11.47	11.47	55	-13	0.12	-5.	53	-12	0.000	52	-12	0.12	0.000
672		11.47	11.47	69	-15	0.14	-6.	68	-15	0.000	67	-15	0.14	0.000
674		11.47	11.47	75	-23	0.27	-8.	74	-22	0.000	74	-22	0.26	0.000
676		11.47	11.47	72	-25	0.32	-9.	71	-24	0.000	71	-23	0.29	0.000
678		11.47	11.47	65	-27	0.37	-9.	66	-26	0.000	65	-25	0.33	0.000
680		11.47	11.47	56	-15	0.16	-6.	54	-14	0.000	54	-14	0.15	0.000
682		11.47	11.47	47	-19	0.26	-7.	46	-18	0.000	45	-18	0.24	0.000
684		11.47	11.47	47	-22	0.32	-8.	45	-22	0.000	44	-21	0.31	0.000
686		11.47	11.47	58	-26	0.36	-9.	57	-25	0.000	57	-24	0.34	0.000
688		11.47	11.47	62	-29	0.41	-10.	61	-27	0.000	61	-27	0.37	0.000
690		11.47	11.47	59	-30	0.43	-10.	59	-28	0.000	59	-28	0.39	0.000
692		11.47	11.47	55	-31	0.46	-10.	55	-29	0.000	55	-29	0.43	0.000
722		11.47	11.47	63	-10	0.05	-4.	60	-10	0.000	59	-10	0.06	0.000
724		11.47	11.47	53	-16	0.18	-6.	51	-15	0.000	50	-15	0.17	0.000
726		11.47	11.47	38	-22	0.33	-7.	37	-21	0.000	37	-21	0.31	0.000
728		11.47	11.47	43	-26	0.40	-8.	43	-25	0.000	43	-24	0.37	0.000
730		11.47	11.47	49	-29	0.43	-9.	49	-27	0.000	49	-27	0.40	0.000
732		11.47	11.47	50	-31	0.47	-10.	50	-29	0.000	50	-29	0.43	0.000
734		11.47	11.47	48	-32	0.50	-10.	49	-30	0.000	49	-30	0.46	0.000
736		11.47	11.47	0.	-10	0.18	-3.	0.	-10	0.000	0.	-10	0.18	0.000
738		11.47	11.47	0.	-14	0.26	-4.	0.	-14	0.000	0.	-14	0.25	0.000
740		11.47	11.47	7	-19	0.35	-6.	8	-19	0.000	8	-18	0.33	0.000
742		11.47	11.47	19	-24	0.41	-7.	20	-23	0.000	21	-22	0.38	0.000
744		11.47	11.47	35	-27	0.44	-9.	36	-26	0.000	36	-26	0.41	0.000
746		11.47	11.47	40	-30	0.48	-9.	41	-29	0.000	41	-28	0.45	0.000
748		11.47	11.47	40	-31	0.50	-10.	40	-30	0.000	40	-30	0.47	0.000
750		11.47	11.47	33	-10	0.11	-4.	32	-10	0.000	31	-10	0.11	0.000
752		11.47	11.47	0.	-13	0.25	-4.	0.	-13	0.000	0.	-13	0.24	0.000
754		11.47	11.47	11	-18	0.32	-5.	12	-18	0.000	12	-17	0.30	0.000
756		11.47	11.47	33	-22	0.35	-7.	33	-22	0.000	33	-21	0.33	0.000
758		11.47	11.47	42	-26	0.40	-8.	42	-25	0.000	41	-25	0.38	0.000
760		11.47	11.47	42	-29	0.46	-9.	42	-28	0.000	41	-28	0.43	0.000
762		11.47	11.47	39	-30	0.49	-10.	39	-29	0.000	39	-29	0.46	0.000
764		11.47	11.47	72	-12	0.07	-5.	67	-12	0.000	66	-12	0.08	0.000
766		11.47	11.47	49	-14	0.17	-5.	46	-14	0.000	45	-14	0.17	0.000
768		11.47	11.47	58	-18	0.22	-7.	55	-18	0.000	54	-17	0.21	0.000

770		11.47	11.47	64	-22	0.28	-8.		61	-21	0.000	60	-21	0.27	0.000
772		11.47	11.47	57	-26	0.36	-9.		55	-25	0.000	54	-25	0.35	0.000
774		11.47	11.47	46	-29	0.44	-9.		45	-28	0.000	45	-27	0.42	0.000
776		11.47	11.47	39	-30	0.48	-9.		39	-29	0.000	39	-29	0.46	0.000
778		11.47	11.47	201	-12	0.73	5.		185	-12	0.000	180	-12	0.65	0.000
780		11.47	11.47	130	-15	0.00	-8.		120	-14	0.000	117	-14	0.02	0.000
782		11.47	11.47	99	-19	0.14	-8.		92	-18	0.000	90	-18	0.15	0.000
784		11.47	11.47	77	-22	0.26	-8.		72	-22	0.000	71	-22	0.25	0.000
786		11.47	11.47	58	-26	0.36	-9.		56	-25	0.000	55	-25	0.35	0.000
788		11.47	11.47	43	-29	0.44	-9.		42	-28	0.000	42	-27	0.42	0.000
790		11.47	11.47	35	-30	0.49	-9.		35	-29	0.000	35	-29	0.47	0.000
792		11.47	11.47	176	-16	0.68	0.		162	-16	0.000	157	-16	0.03	0.000
794		11.47	11.47	118	-18	0.08	-8.		109	-17	0.000	106	-17	0.10	0.000
796		11.47	11.47	95	-20	0.17	-8.		89	-19	0.000	86	-19	0.18	0.000
798		11.47	11.47	66	-23	0.29	-8.		62	-22	0.000	61	-22	0.29	0.000
800		11.47	11.47	47	-26	0.39	-9.		45	-25	0.000	45	-25	0.38	0.000
802		11.47	11.47	35	-29	0.47	-9.		35	-28	0.000	35	-28	0.45	0.000
804		11.47	11.47	29	-30	0.51	-9.		29	-29	0.000	29	-29	0.48	0.000
806		11.47	11.47	39	-17	0.23	-6.		36	-16	0.000	35	-16	0.23	0.000
808		11.47	11.47	44	-19	0.26	-6.		42	-18	0.000	41	-18	0.25	0.000
810		11.47	11.47	58	-21	0.28	-8.		54	-21	0.000	53	-21	0.27	0.000
812		11.47	11.47	58	-24	0.33	-8.		55	-23	0.000	54	-23	0.32	0.000
814		11.47	11.47	48	-27	0.40	-9.		45	-26	0.000	45	-26	0.39	0.000
816		11.47	11.47	37	-29	0.47	-9.		36	-29	0.000	35	-28	0.45	0.000
818		11.47	11.47	30	-31	0.52	-9.		30	-30	0.000	30	-30	0.49	0.000
819		11.47	11.47	34	-17	0.25	-6.		32	-17	0.000	31	-17	0.25	0.000
820		11.47	11.47	83	-17	0.15	-7.		76	-17	0.000	74	-17	0.16	0.000
821		11.47	11.47	0.	-19	0.36	-5.		0.	-19	0.000	0.	-19	0.35	0.000
822		11.47	11.47	62	-20	0.24	-7.		57	-19	0.000	56	-19	0.24	0.000
823		11.47	11.47	7	-22	0.40	-6.		8	-21	0.000	8	-21	0.38	0.000
824		11.47	11.47	46	-22	0.32	-7.		43	-22	0.000	42	-21	0.31	0.000
825		11.47	11.47	19	-25	0.42	-7.		19	-24	0.000	19	-23	0.40	0.000
826		11.47	11.47	46	-25	0.37	-8.		44	-24	0.000	43	-24	0.36	0.000
827		11.47	11.47	25	-27	0.45	-8.		25	-26	0.000	25	-26	0.43	0.000
828		11.47	11.47	42	-28	0.43	-9.		40	-27	0.000	39	-27	0.42	0.000
829		11.47	11.47	28	-29	0.49	-9.		28	-28	0.000	27	-28	0.47	0.000
830		11.47	11.47	36	-30	0.49	-9.		35	-29	0.000	35	-29	0.47	0.000
831		11.47	11.47	28	-31	0.51	-9.		28	-30	0.000	28	-29	0.49	0.000
832		11.47	11.47	32	-32	0.53	-10.		32	-31	0.000	31	-30	0.50	0.000

ARMATURA SUPERIORE VERTICALE

GUSCI	Af Afc		COMBINAZIONE RARA				COMB. FREQUENTE				COMB. QUASI PERMANENTE			
			Mom	Nor	sigC	sigF	Mom	Nor	wkF		Mom	Nor	sigC	wkP
456		21.02 21.02	0.	-234	4.15	-62.		0.	-224	0.000	0.	-221	3.93	0.000
458		21.02 21.02	0.	-236	4.18	-63.		0.	-226	0.000	0.	-223	3.96	0.000
460		21.02 21.02	0.	-234	4.15	-62.		0.	-224	0.000	0.	-221	3.93	0.000
462		21.02 21.02	78	-233	3.99	-64.		77	-224	0.000	76	-221	3.79	0.000
464		21.02 21.02	189	-237	3.85	-68.		188	-228	0.000	188	-225	3.65	0.000
466		21.02 21.02	293	-233	3.59	-69.		292	-224	0.000	292	-221	3.38	0.000
468		21.02 21.02	394	-225	3.24	-69.		394	-216	0.000	393	-213	3.04	0.000
470		21.02 21.02	0.	-178	3.17	-48.		0.	-173	0.000	0.	-171	3.04	0.000
472		21.02 21.02	0.	-197	3.50	-53.		0.	-190	0.000	0.	-188	3.34	0.000
474		21.02 21.02	0.	-210	3.73	-56.		0.	-202	0.000	0.	-200	3.55	0.000
476		21.02 21.02	74	-219	3.75	-60.		73	-211	0.000	73	-209	3.57	0.000
478		21.02 21.02	178	-228	3.71	-65.		178	-220	0.000	177	-217	3.52	0.000
480		21.02 21.02	276	-222	3.42	-66.		275	-213	0.000	274	-210	3.22	0.000
482		21.02 21.02	370	-210	3.03	-65.		369	-202	0.000	368	-199	2.84	0.000
484		21.02 21.02	0.	-171	3.04	-46.		0.	-166	0.000	0.	-164	2.92	0.000
486		21.02 21.02	0.	-180	3.20	-48.		0.	-175	0.000	0.	-173	3.07	0.000
488		21.02 21.02	0.	-193	3.42	-51.		0.	-187	0.000	0.	-185	3.28	0.000
490		21.02 21.02	74	-205	3.50	-56.		73	-198	0.000	73	-196	3.34	0.000

492		21.02	21.02		171	-215	3.50	-61.		170	-207	0.000		169	-204	3.30	0.000	
494		21.02	21.02		260	-208	3.20	-62.		258	-200	0.000		258	-197	3.02	0.000	
496		21.02	21.02		339	-201	2.93	-62.		338	-193	0.000		337	-191	2.75	0.000	
498		21.02	21.02		0.	-172	3.06	-46.		0.	-167	0.000		0.	-165	2.93	0.000	
500		21.02	21.02		0.	-180	3.19	-48.		0.	-174	0.000		0.	-173	3.06	0.000	
502		21.02	21.02		0.	-187	3.32	-50.		0.	-181	0.000		0.	-179	3.19	0.000	
504		21.02	21.02		76	-196	3.34	-54.		76	-190	0.000		75	-188	3.19	0.000	
506		21.02	21.02		166	-200	3.23	-57.		165	-192	0.000		164	-190	3.06	0.000	
508		21.02	21.02		245	-196	3.02	-58.		244	-189	0.000		243	-187	2.85	0.000	
510		21.02	21.02		313	-193	2.84	-59.		311	-186	0.000		310	-184	2.68	0.000	
512		21.02	21.02		0.	-167	2.97	-44.		0.	-162	0.000		0.	-160	2.85	0.000	
514		21.02	21.02		0.	-171	3.04	-46.		0.	-166	0.000		0.	-164	2.92	0.000	
516		21.02	21.02		2	-177	3.14	-47.		3	-171	0.000		3	-169	3.00	0.000	
518		21.02	21.02		89	-181	3.05	-50.		88	-175	0.000		88	-173	2.90	0.000	
520		21.02	21.02		164	-183	2.93	-53.		162	-176	0.000		162	-174	2.79	0.000	
522		21.02	21.02		227	-183	2.82	-54.		225	-176	0.000		224	-174	2.67	0.000	
524		21.02	21.02		278	-182	2.71	-55.		276	-176	0.000		275	-174	2.57	0.000	
526		21.02	21.02		0.	-166	2.96	-44.		0.	-162	0.000		0.	-160	2.84	0.000	
528		21.02	21.02		0.	-166	2.96	-44.		0.	-162	0.000		0.	-160	2.84	0.000	
530		21.02	21.02		42	-168	2.91	-46.		41	-163	0.000		41	-161	2.79	0.000	
532		21.02	21.02		111	-170	2.81	-48.		109	-165	0.000		108	-163	2.69	0.000	
534		21.02	21.02		165	-171	2.73	-50.		163	-166	0.000		162	-164	2.61	0.000	
536		21.02	21.02		208	-172	2.67	-51.		206	-167	0.000		205	-165	2.54	0.000	
538		21.02	21.02		241	-173	2.62	-52.		239	-167	0.000		238	-165	2.48	0.000	
540		21.02	21.02		21	-167	2.92	-45.		20	-162	0.000		19	-160	2.81	0.000	
542		21.02	21.02		28	-165	2.88	-45.		26	-160	0.000		26	-159	2.77	0.000	
544		21.02	21.02		87	-165	2.77	-46.		83	-160	0.000		82	-158	2.66	0.000	
546		21.02	21.02		129	-166	2.70	-47.		125	-160	0.000		124	-159	2.58	0.000	
548		21.02	21.02		162	-166	2.64	-48.		159	-161	0.000		158	-159	2.53	0.000	
550		21.02	21.02		188	-167	2.61	-49.		186	-161	0.000		185	-160	2.49	0.000	
552		21.02	21.02		203	-168	2.59	-49.		202	-162	0.000		201	-160	2.46	0.000	
555		21.02	21.02		0.	-172	3.05	-46.		0.	-167	0.000		0.	-165	2.93	0.000	
557		21.02	21.02		70	-170	2.89	-47.		67	-165	0.000		66	-163	2.78	0.000	
559		21.02	21.02		110	-169	2.80	-48.		105	-164	0.000		104	-162	2.68	0.000	
561		21.02	21.02		125	-168	2.75	-48.		121	-163	0.000		119	-161	2.63	0.000	
563		21.02	21.02		129	-167	2.72	-48.		127	-162	0.000		127	-160	2.60	0.000	
565		21.02	21.02		133	-166	2.70	-47.		133	-161	0.000		133	-159	2.58	0.000	
567		21.02	21.02		137	-165	2.67	-47.		138	-160	0.000		138	-158	2.55	0.000	
569		21.02	21.02		158	-171	2.73	-49.		145	-165	0.000		141	-164	2.64	0.000	
571		21.02	21.02		106	-169	2.80	-48.		99	-164	0.000		97	-162	2.69	0.000	
573		21.02	21.02		121	-168	2.75	-48.		116	-162	0.000		114	-161	2.64	0.000	
575		21.02	21.02		126	-167	2.72	-47.		122	-161	0.000		120	-160	2.61	0.000	
577		21.02	21.02		128	-166	2.70	-47.		126	-161	0.000		125	-159	2.58	0.000	
579		21.02	21.02		132	-165	2.68	-47.		131	-160	0.000		131	-158	2.56	0.000	
581		21.02	21.02		135	-164	2.66	-47.		137	-159	0.000		137	-157	2.54	0.000	
583		21.02	21.02		197	-169	2.63	-50.		180	-164	0.000		175	-162	2.55	0.000	
585		21.02	21.02		132	-168	2.73	-48.		123	-163	0.000		120	-161	2.63	0.000	
587		21.02	21.02		124	-167	2.72	-47.		118	-161	0.000		116	-160	2.62	0.000	
589		21.02	21.02		121	-166	2.71	-47.		117	-160	0.000		116	-159	2.60	0.000	
591		21.02	21.02		124	-165	2.69	-47.		123	-160	0.000		122	-158	2.57	0.000	
593		21.02	21.02		132	-164	2.67	-47.		132	-159	0.000		132	-157	2.55	0.000	
595		21.02	21.02		134	-164	2.65	-47.		136	-159	0.000		137	-157	2.53	0.000	
597		21.02	21.02		241	-169	2.54	-51.		221	-164	0.000		214	-162	2.47	0.000	
599		21.02	21.02		152	-167	2.68	-48.		141	-162	0.000		138	-160	2.58	0.000	
601		21.02	21.02		118	-166	2.72	-47.		112	-161	0.000		110	-159	2.61	0.000	
603		21.02	21.02		120	-165	2.70	-47.		117	-160	0.000		116	-158	2.59	0.000	
605		21.02	21.02		131	-164	2.67	-47.		129	-159	0.000		129	-157	2.55	0.000	
607		21.02	21.02		139	-164	2.65	-47.		139	-159	0.000		139	-157	2.53	0.000	
609		21.02	21.02		140	-164	2.64	-47.		142	-158	0.000		142	-157	2.51	0.000	
610		21.02	21.02		209	-167	2.58	-50.		192	-162	0.000		186	-161	2.50	0.000	
611		21.02	21.02		281	-168	2.46	-52.		257	-163	0.000		250	-161	2.39	0.000	
612		21.02	21.02		100	-166	2.75	-47.		93	-161	0.000		91	-159	2.65	0.000	

613		21.02	21.02	140	-166	2.69	-48.	130	-161	0.000	127	-159	2.59	0.000
614		21.02	21.02	113	-165	2.71	-47.	108	-160	0.000	106	-158	2.60	0.000
615		21.02	21.02	119	-165	2.70	-47.	113	-160	0.000	111	-158	2.60	0.000
616		21.02	21.02	132	-164	2.67	-47.	129	-159	0.000	127	-158	2.56	0.000
617		21.02	21.02	127	-164	2.68	-47.	124	-159	0.000	123	-157	2.56	0.000
618		21.02	21.02	152	-164	2.63	-47.	150	-159	0.000	149	-158	2.52	0.000
619		21.02	21.02	141	-164	2.64	-47.	139	-159	0.000	138	-157	2.53	0.000
620		21.02	21.02	168	-165	2.61	-48.	166	-159	0.000	166	-158	2.49	0.000
621		21.02	21.02	152	-164	2.62	-47.	151	-159	0.000	151	-157	2.50	0.000
622		21.02	21.02	172	-165	2.60	-48.	173	-160	0.000	172	-158	2.48	0.000
623		21.02	21.02	153	-164	2.62	-47.	154	-159	0.000	155	-157	2.50	0.000
638		21.02	21.02	0.	-225	4.00	-60.	0.	-216	0.000	0.	-213	3.79	0.000
640		21.02	21.02	0.	-228	4.04	-61.	0.	-218	0.000	0.	-215	3.82	0.000
642		21.02	21.02	0.	-226	4.01	-60.	0.	-217	0.000	0.	-214	3.80	0.000
644		21.02	21.02	102	-226	3.82	-63.	97	-217	0.000	96	-214	3.62	0.000
646		21.02	21.02	183	-229	3.72	-65.	180	-221	0.000	180	-218	3.53	0.000
648		21.02	21.02	257	-226	3.53	-66.	256	-217	0.000	255	-214	3.32	0.000
650		21.02	21.02	328	-217	3.23	-66.	329	-208	0.000	329	-205	3.02	0.000
652		21.02	21.02	0.	-164	2.92	-44.	0.	-160	0.000	0.	-158	2.80	0.000
654		21.02	21.02	0.	-186	3.29	-49.	0.	-179	0.000	0.	-177	3.15	0.000
656		21.02	21.02	13	-200	3.53	-54.	7	-193	0.000	5	-191	3.38	0.000
658		21.02	21.02	98	-210	3.55	-58.	94	-203	0.000	92	-200	3.38	0.000
660		21.02	21.02	169	-219	3.57	-62.	167	-211	0.000	166	-208	3.39	0.000
662		21.02	21.02	233	-215	3.37	-63.	233	-206	0.000	232	-203	3.17	0.000
664		21.02	21.02	292	-203	3.05	-61.	293	-195	0.000	293	-192	2.86	0.000
666		21.02	21.02	31	-170	2.96	-46.	20	-165	0.000	17	-163	2.87	0.000
668		21.02	21.02	0.	-178	3.16	-47.	0.	-172	0.000	0.	-170	3.03	0.000
670		21.02	21.02	27	-189	3.30	-51.	22	-183	0.000	20	-181	3.17	0.000
672		21.02	21.02	98	-200	3.36	-56.	94	-193	0.000	93	-191	3.21	0.000
674		21.02	21.02	162	-209	3.40	-60.	160	-202	0.000	159	-199	3.24	0.000
676		21.02	21.02	218	-204	3.21	-60.	218	-196	0.000	218	-194	3.03	0.000
678		21.02	21.02	263	-198	3.02	-59.	264	-190	0.000	265	-188	2.83	0.000
680		21.02	21.02	60	-174	2.98	-48.	51	-169	0.000	49	-167	2.88	0.000
682		21.02	21.02	24	-177	3.10	-48.	17	-172	0.000	15	-170	2.99	0.000
684		21.02	21.02	47	-182	3.14	-50.	42	-176	0.000	41	-174	3.02	0.000
686		21.02	21.02	100	-188	3.16	-53.	97	-183	0.000	96	-181	3.02	0.000
688		21.02	21.02	152	-193	3.14	-55.	150	-186	0.000	149	-184	2.98	0.000
690		21.02	21.02	196	-191	3.02	-56.	195	-184	0.000	195	-182	2.86	0.000
692		21.02	21.02	227	-189	2.92	-56.	228	-182	0.000	228	-180	2.76	0.000
722		21.02	21.02	88	-171	2.88	-48.	79	-166	0.000	76	-165	2.78	0.000
724		21.02	21.02	47	-173	2.99	-47.	42	-168	0.000	40	-166	2.88	0.000
726		21.02	21.02	56	-177	3.03	-48.	52	-171	0.000	51	-169	2.91	0.000
728		21.02	21.02	103	-179	2.99	-50.	100	-173	0.000	99	-171	2.86	0.000
730		21.02	21.02	145	-180	2.93	-52.	143	-174	0.000	143	-172	2.79	0.000
732		21.02	21.02	178	-180	2.87	-52.	177	-174	0.000	177	-172	2.72	0.000
734		21.02	21.02	199	-180	2.83	-53.	200	-174	0.000	200	-172	2.68	0.000
736		21.02	21.02	0.	-169	3.00	-45.	0.	-164	0.000	0.	-162	2.88	0.000
738		21.02	21.02	48	-169	2.91	-46.	44	-164	0.000	42	-162	2.80	0.000
740		21.02	21.02	76	-170	2.88	-47.	72	-165	0.000	71	-164	2.77	0.000
742		21.02	21.02	117	-172	2.83	-49.	113	-167	0.000	112	-165	2.72	0.000
744		21.02	21.02	147	-173	2.80	-50.	144	-168	0.000	143	-166	2.67	0.000
746		21.02	21.02	168	-174	2.77	-50.	167	-168	0.000	166	-166	2.64	0.000
748		21.02	21.02	180	-174	2.76	-51.	181	-169	0.000	181	-167	2.62	0.000
750		21.02	21.02	0.	-168	2.99	-45.	0.	-163	0.000	0.	-162	2.87	0.000
752		21.02	21.02	62	-168	2.86	-46.	58	-163	0.000	56	-161	2.75	0.000
754		21.02	21.02	116	-168	2.76	-47.	109	-163	0.000	107	-161	2.66	0.000
756		21.02	21.02	137	-168	2.73	-48.	132	-163	0.000	130	-162	2.62	0.000
758		21.02	21.02	150	-169	2.72	-49.	147	-164	0.000	146	-162	2.60	0.000
760		21.02	21.02	157	-169	2.71	-49.	156	-164	0.000	156	-162	2.59	0.000
762		21.02	21.02	158	-170	2.72	-49.	159	-164	0.000	159	-163	2.59	0.000
764		21.02	21.02	235	-169	2.56	-51.	216	-164	0.000	210	-163	2.49	0.000
766		21.02	21.02	134	-168	2.73	-48.	125	-163	0.000	121	-162	2.64	0.000

768		21.02	21.02		140	-168	2.71	-48.		133	-163	0.000		130	-161	2.61	0.000	
770		21.02	21.02		142	-168	2.71	-48.		137	-162	0.000		135	-161	2.60	0.000	
772		21.02	21.02		144	-168	2.70	-48.		141	-162	0.000		140	-161	2.59	0.000	
774		21.02	21.02		144	-168	2.71	-48.		143	-163	0.000		143	-161	2.59	0.000	
776		21.02	21.02		137	-168	2.72	-48.		139	-163	0.000		139	-161	2.59	0.000	
778		21.02	21.02		366	-172	2.36	-55.		335	-167	0.000		325	-165	2.31	0.000	
780		21.02	21.02		174	-170	2.68	-49.		162	-164	0.000		158	-163	2.59	0.000	
782		21.02	21.02		144	-168	2.72	-48.		136	-163	0.000		133	-162	2.62	0.000	
784		21.02	21.02		135	-168	2.72	-48.		130	-163	0.000		129	-161	2.62	0.000	
786		21.02	21.02		134	-167	2.72	-48.		132	-162	0.000		131	-161	2.61	0.000	
788		21.02	21.02		132	-167	2.72	-48.		132	-162	0.000		132	-160	2.60	0.000	
790		21.02	21.02		123	-167	2.74	-47.		126	-162	0.000		127	-160	2.61	0.000	
792		21.02	21.02		329	-173	2.45	-54.		302	-168	0.000		292	-166	2.40	0.000	
794		21.02	21.02		194	-171	2.67	-50.		180	-166	0.000		175	-164	2.58	0.000	
796		21.02	21.02		140	-170	2.75	-49.		132	-164	0.000		130	-163	2.64	0.000	
798		21.02	21.02		124	-169	2.76	-48.		121	-163	0.000		119	-162	2.65	0.000	
800		21.02	21.02		123	-168	2.75	-48.		122	-163	0.000		121	-161	2.63	0.000	
802		21.02	21.02		122	-167	2.74	-48.		122	-162	0.000		122	-161	2.62	0.000	
804		21.02	21.02		115	-167	2.75	-47.		118	-162	0.000		119	-160	2.62	0.000	
806		21.02	21.02		240	-173	2.62	-52.		221	-168	0.000		214	-166	2.54	0.000	
808		21.02	21.02		168	-172	2.73	-50.		156	-167	0.000		152	-165	2.64	0.000	
810		21.02	21.02		147	-171	2.75	-49.		139	-165	0.000		136	-164	2.65	0.000	
812		21.02	21.02		135	-169	2.75	-48.		130	-164	0.000		128	-163	2.64	0.000	
814		21.02	21.02		129	-169	2.75	-48.		126	-163	0.000		125	-162	2.63	0.000	
816		21.02	21.02		124	-168	2.75	-48.		124	-163	0.000		124	-161	2.62	0.000	
818		21.02	21.02		117	-167	2.75	-47.		120	-162	0.000		120	-160	2.62	0.000	
819		21.02	21.02		6	-173	3.06	-46.		6	-168	0.000		6	-166	2.94	0.000	
820		21.02	21.02		223	-174	2.66	-52.		205	-168	0.000		199	-166	2.58	0.000	
821		21.02	21.02		80	-172	2.90	-48.		76	-167	0.000		75	-165	2.79	0.000	
822		21.02	21.02		129	-172	2.82	-49.		121	-167	0.000		118	-165	2.71	0.000	
823		21.02	21.02		126	-171	2.80	-49.		120	-166	0.000		118	-164	2.69	0.000	
824		21.02	21.02		140	-171	2.78	-49.		132	-166	0.000		130	-164	2.67	0.000	
825		21.02	21.02		136	-170	2.76	-48.		131	-164	0.000		129	-163	2.65	0.000	
826		21.02	21.02		139	-170	2.76	-49.		134	-165	0.000		132	-163	2.65	0.000	
827		21.02	21.02		137	-169	2.73	-48.		134	-163	0.000		133	-162	2.62	0.000	
828		21.02	21.02		135	-169	2.75	-48.		132	-164	0.000		131	-162	2.64	0.000	
829		21.02	21.02		135	-168	2.72	-48.		135	-162	0.000		134	-161	2.60	0.000	
830		21.02	21.02		131	-168	2.74	-48.		131	-163	0.000		130	-162	2.62	0.000	
831		21.02	21.02		134	-167	2.70	-48.		135	-161	0.000		136	-160	2.58	0.000	
832		21.02	21.02		124	-168	2.74	-48.		127	-163	0.000		127	-161	2.62	0.000	

4.4.2. Contrafforti 590x40

I contrafforti 590x40 cm vengono armati verticalmente con $\Phi 24/10$ mentre orizzontalmente si utilizza un'armatura $\Phi 16/10$.

Si riportano di seguito le verifiche SLU eseguite con l'applicativo "verifica sezione" di DOLMEN.

NOME SOCIETA' - INDIRIZZO
VERIFICA SEZIONE - 03/05/2022 09:57:31

Descrizione : Sezione in C.A.
Nome lavoro : 686C04
Nome file : 590x40.VSE
Tipo verifica : stati limite - pressoflessione deviata.

Unità di misura generiche: daN; cm; daNcm; daN/cm²; d in mm; deformazioni*1000.
ferri : diametri in mm; aree in cm².

Simboli:

Vert. = contorno_vertice del CLS; d = diametro;
S = Sigma (tensioni sui materiali);
D = Deformazioni x 1000 (epsilon);
Ve = colonna che indica se la verifica e' soddisfatta;

MATERIALI

Calcestruzzo: Rck = 300. ; fck = 249. ; fcd = 141.1 (.35%)
Acciaio : Tipo= B450C ; ftk = 5400. ; fyk = 4500. ; ftd = 4695.65 (0.163%)

SEZIONE

L'asse Z e' rivolto verso destra, l'asse Y e' rivolto verso l'alto.

Tipo sezione: RETTANGOLARE

CLS: Acciaio lento:

vert.	Z	Y	ferro	Z	Y	d[mm]	Af[cm ²]
1-	1 9000.6 -3894.		1	9584.6 -3900.		24.	4.5239
1-	2 9590.6 -3894.		2	9574.3 -3900.		24.	4.5239
1-	3 9590.6 -3934.		3	9564. -3900.		24.	4.5239
1-	4 9000.6 -3934.		4	9553.7 -3900.		24.	4.5239
			5	9543.3 -3900.		24.	4.5239
			6	9533. -3900.		24.	4.5239
			7	9522.7 -3900.		24.	4.5239
			8	9512.4 -3900.		24.	4.5239
			9	9502.1 -3900.		24.	4.5239
			10	9491.7 -3900.		24.	4.5239
			11	9481.4 -3900.		24.	4.5239
			12	9471.1 -3900.		24.	4.5239
			13	9460.8 -3900.		24.	4.5239
			14	9450.4 -3900.		24.	4.5239
			15	9440.1 -3900.		24.	4.5239
			16	9429.8 -3900.		24.	4.5239
			17	9419.5 -3900.		24.	4.5239
			18	9409.2 -3900.		24.	4.5239
			19	9398.8 -3900.		24.	4.5239
			20	9388.5 -3900.		24.	4.5239
			21	9378.2 -3900.		24.	4.5239
			22	9367.9 -3900.		24.	4.5239
			23	9357.6 -3900.		24.	4.5239
			24	9347.2 -3900.		24.	4.5239
			25	9336.9 -3900.		24.	4.5239
			26	9326.6 -3900.		24.	4.5239
			27	9316.3 -3900.		24.	4.5239
			28	9305.9 -3900.		24.	4.5239
			29	9295.6 -3900.		24.	4.5239
			30	9285.3 -3900.		24.	4.5239
			31	9275. -3900.		24.	4.5239
			32	9264.7 -3900.		24.	4.5239
			33	9254.3 -3900.		24.	4.5239
			34	9244. -3900.		24.	4.5239
			35	9233.7 -3900.		24.	4.5239
			36	9223.4 -3900.		24.	4.5239
			37	9213.1 -3900.		24.	4.5239
			38	9202.7 -3900.		24.	4.5239
			39	9192.4 -3900.		24.	4.5239
			40	9182.1 -3900.		24.	4.5239
			41	9171.8 -3900.		24.	4.5239
			42	9161.4 -3900.		24.	4.5239
			43	9151.1 -3900.		24.	4.5239

44	9140.8 -3900.	24.	4.5239
45	9130.5 -3900.	24.	4.5239
46	9120.2 -3900.	24.	4.5239
47	9109.8 -3900.	24.	4.5239
48	9099.5 -3900.	24.	4.5239
49	9089.2 -3900.	24.	4.5239
50	9078.9 -3900.	24.	4.5239
51	9068.6 -3900.	24.	4.5239
52	9058.2 -3900.	24.	4.5239
53	9047.9 -3900.	24.	4.5239
54	9037.6 -3900.	24.	4.5239
55	9027.3 -3900.	24.	4.5239
56	9016.9 -3900.	24.	4.5239
57	9006.6 -3900.	24.	4.5239
58	9006.6 -3928.	24.	4.5239
59	9016.9 -3928.	24.	4.5239
60	9027.3 -3928.	24.	4.5239
61	9037.6 -3928.	24.	4.5239
62	9047.9 -3928.	24.	4.5239
63	9058.2 -3928.	24.	4.5239
64	9068.6 -3928.	24.	4.5239
65	9078.9 -3928.	24.	4.5239
66	9089.2 -3928.	24.	4.5239
67	9099.5 -3928.	24.	4.5239
68	9109.8 -3928.	24.	4.5239
69	9120.2 -3928.	24.	4.5239
70	9130.5 -3928.	24.	4.5239
71	9140.8 -3928.	24.	4.5239
72	9151.1 -3928.	24.	4.5239
73	9161.4 -3928.	24.	4.5239
74	9171.8 -3928.	24.	4.5239
75	9182.1 -3928.	24.	4.5239
76	9192.4 -3928.	24.	4.5239
77	9202.7 -3928.	24.	4.5239
78	9213.1 -3928.	24.	4.5239
79	9223.4 -3928.	24.	4.5239
80	9233.7 -3928.	24.	4.5239
81	9244. -3928.	24.	4.5239
82	9254.3 -3928.	24.	4.5239
83	9264.7 -3928.	24.	4.5239
84	9275. -3928.	24.	4.5239
85	9285.3 -3928.	24.	4.5239
86	9295.6 -3928.	24.	4.5239
87	9305.9 -3928.	24.	4.5239
88	9316.3 -3928.	24.	4.5239
89	9326.6 -3928.	24.	4.5239
90	9336.9 -3928.	24.	4.5239
91	9347.2 -3928.	24.	4.5239
92	9357.6 -3928.	24.	4.5239
93	9367.9 -3928.	24.	4.5239
94	9378.2 -3928.	24.	4.5239
95	9388.5 -3928.	24.	4.5239
96	9398.8 -3928.	24.	4.5239
97	9409.2 -3928.	24.	4.5239
98	9419.5 -3928.	24.	4.5239
99	9429.8 -3928.	24.	4.5239
100	9440.1 -3928.	24.	4.5239
101	9450.4 -3928.	24.	4.5239
102	9460.8 -3928.	24.	4.5239
103	9471.1 -3928.	24.	4.5239
104	9481.4 -3928.	24.	4.5239
105	9491.7 -3928.	24.	4.5239

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106|9502.1|-3928.| 24. | 4.5239|
107|9512.4|-3928.| 24. | 4.5239|
108|9522.7|-3928.| 24. | 4.5239|
109|9533. |-3928.| 24. | 4.5239|
110|9543.3|-3928.| 24. | 4.5239|
111|9553.7|-3928.| 24. | 4.5239|
112|9564. |-3928.| 24. | 4.5239|
113|9574.3|-3928.| 24. | 4.5239|
114|9584.6|-3928.| 24. | 4.5239|

```

SOLLECITAZIONI AGENTI

sforzi normali applicati in z=9295.62; y=-3914.2

Convenzioni: N + trazione; Mz + fib.inferiori tese; My + fib.sinistra tese.

N.	N	Mz	My	Descrizione	Sol: ultima/agente =fs (>=1 OK)
1	316443.	1340.	-169133489.	Caso 5.12	My+: -169133489./-140020356.=1.2079
2	-489124.	-1220.	290646870.	Caso 5.5	My+: 290646870./137392145.=2.1155
3	-3714987.	-646.	133524113.	Caso 5.8	N -: -3714987./-559025.=6.6455
4	514185.	766.	-136152324.	Caso 5.9	N +: 514185./386344.=1.3309

RISULTATI

Piani di equilibrio (eps= muz * y +muy * z + lam):

sol.	muz	muy	lambda
1.	-.00000000444	.00000379825	-.03479260818
2.	.00000000366	-.00000491949	.04595168139
3.	.00000000161	-.00000182638	.01588156739
4.	-.00000000272	.00000349391	-.03186778508

Deformazioni massime sui materiali:

sol	cls			Acciaio lento		
	vert.	D cls	S cls Ve	ferro	D ferri	S ferri Ve
1	1- 1	-.5887	-70.8 si	114.	1.6296	3259.3 si
2	1- 3	-1.2437	-120.9 si	57.	1.6294	3258.8 si
3	1- 3	-1.6409	-136.6 si	57.	-.5743	-1148.5 si
4	1- 1	-.4098	-51.9 si	114.	1.6308	3261.5 si

Si riporta di seguito la verifica SLU a taglio eseguita foglio di calcolo excel.

VERIFICA A TAGLIO PARETI IN CA						
I	275	cm				
s	40	cm				
Rck	300	kg/cmq				
f _{cd}	141.1	kg/cmq				
f _{ck}	249	kg/cmq				
f _{yk}	4500	kg/cmq				
f _{yd}	3913	kg/cmq				
Ves	143864	kg				
ψ	1.00	1,5<ψ<q	fattore di sovreresistenza			
Ved	143864	kg				
Ned	0	kg				
Med	0	kgcm				
A _{sl}	7	cmq	area totale armature longitudinali nelle zone critiche			

μ_f	0.6					
η	0.54					
ξ	31.80			asse neutro		
ξ	0.000			x/l asse neutro normalizzato		
VERIFICA A TAGLIO COMPRESSIONE DELL'ARMATURA DELL'ANIMA						
Vrd	310420	Kg		OK		
VERIFICA A TAGLIO TRAZIONE DELL'ARMATURA DELL'ANIMA						
A_{sw}/s	0.1671147	cmq/cm				
A_{sw}	4.02	cmq		$\Phi 16$ 2 bracci		
s	20	cm				
A_{sw}/s	0.2010619	cmq/cm		OK		

4.4.3. Contrafforti 275x40

I contrafforti 275x40 cm vengono armati verticalmente con $\Phi 24/10$ mentre orizzontalmente si utilizza un'armatura $\Phi 16/20$.

Si riportano di seguito le verifiche SLU eseguite con l'applicativo "verifica sezione" di DOLMEN.

VERIFICA SEZIONE - 03/05/2022 10:20:31

Descrizione : Sezione in C.A.
Nome lavoro : 686C04
Nome file : 275x40_1.VSE
Tipo verifica : stati limite - pressoflessione deviata.
Unità di misura generiche: daN; cm; daN/cm²; d in mm; deformazioni*1000.
ferri : diametri in mm; aree in cm².

Simboli:

Vert. = contorno_vertice del CLS; d = diametro;
S = Sigma (tensioni sui materiali);
D = Deformazioni x 1000 (epsilon);
Ve = colonna che indica se la verifica e' soddisfatta;

MATERIALI

Calcestruzzo: Rck = 300. ; fck = 249. ; fcd = 141.1 (.35%)
Acciaio : Tipo= B450C ; ftk = 5400. ; fyk = 4500. ; ftd = 4695.65 (0.163%)

SEZIONE

L'asse Z e' rivolto verso destra, l'asse Y e' rivolto verso l'alto.

Tipo sezione: RETTANGOLARE

cls:	Acciaio lento:			
vert. Z Y	ferro Z Y	d[mm]	Af[cm ²]	
1- 1 9000.6 -5730.	1 9269.6 -5736.	24.	4.5239	
1- 2 9275.6 -5730.	2 9259.1 -5736.	24.	4.5239	
1- 3 9275.6 -5770.	3 9248.6 -5736.	24.	4.5239	

1- 4 9000.6 -5770.	4 9238.1 -5736.	24.		4.5239
	5 9227.5 -5736.	24.		4.5239
	6 9217. -5736.	24.		4.5239
	7 9206.5 -5736.	24.		4.5239
	8 9196. -5736.	24.		4.5239
	9 9185.5 -5736.	24.		4.5239
	10 9174.9 -5736.	24.		4.5239
	11 9164.4 -5736.	24.		4.5239
	12 9153.9 -5736.	24.		4.5239
	13 9143.4 -5736.	24.		4.5239
	14 9132.9 -5736.	24.		4.5239
	15 9122.3 -5736.	24.		4.5239
	16 9111.8 -5736.	24.		4.5239
	17 9101.3 -5736.	24.		4.5239
	18 9090.8 -5736.	24.		4.5239
	19 9080.3 -5736.	24.		4.5239
	20 9069.7 -5736.	24.		4.5239
	21 9059.2 -5736.	24.		4.5239
	22 9048.7 -5736.	24.		4.5239
	23 9038.2 -5736.	24.		4.5239
	24 9027.7 -5736.	24.		4.5239
	25 9017.1 -5736.	24.		4.5239
	26 9006.6 -5736.	24.		4.5239
	27 9269.6 -5764.	24.		4.5239
	28 9259.1 -5764.	24.		4.5239
	29 9248.6 -5764.	24.		4.5239
	30 9238.1 -5764.	24.		4.5239
	31 9227.5 -5764.	24.		4.5239
	32 9217. -5764.	24.		4.5239
	33 9206.5 -5764.	24.		4.5239
	34 9196. -5764.	24.		4.5239
	35 9185.5 -5764.	24.		4.5239
	36 9174.9 -5764.	24.		4.5239
	37 9164.4 -5764.	24.		4.5239
	38 9153.9 -5764.	24.		4.5239
	39 9143.4 -5764.	24.		4.5239
	40 9132.9 -5764.	24.		4.5239
	41 9122.3 -5764.	24.		4.5239
	42 9111.8 -5764.	24.		4.5239
	43 9101.3 -5764.	24.		4.5239
	44 9090.8 -5764.	24.		4.5239
	45 9080.3 -5764.	24.		4.5239
	46 9069.7 -5764.	24.		4.5239
	47 9059.2 -5764.	24.		4.5239
	48 9048.7 -5764.	24.		4.5239
	49 9038.2 -5764.	24.		4.5239
	50 9027.7 -5764.	24.		4.5239
	51 9017.1 -5764.	24.		4.5239
	52 9006.6 -5764.	24.		4.5239

SOLLECITAZIONI AGENTI

Sforzi normali applicati in z=9138.12; y=-5750.1

Convenzioni: N + trazione; Mz + fib.inferiori tese; My + fib.sinistra tese.

N.	N	Mz	My	Descrizione	Sol: ultima/agente =fs (>=1 OK)
1	72116.	-388.	-42200541.	Caso 4.4	My+:-42200541./-6279870.=6.72
2	-141820.	419.	57430812.	Caso 4.13	My+:57430812./6841287.=8.3947
3	-1855672.	307.	21643323.	Caso 5.4	N -:-1855672./-384513.=4.826
4	341690.	-276.	-21081906.	Caso 5.13	N +:341690./314809.=1.0854

RISULTATI

Piani di equilibrio (eps= muz * y +muy * z + lam):

sol.	muz	muy	lambda
1.	.0000000027	.00000878616	-.07979826084
2.	-.00000000277	-.00001018848	.09337796495
3.	-.00000000176	-.00000318914	.02792139924
4.	.0000000025	.00000668577	-.06033009186

Deformazioni massime sui materiali:

cls				Acciaio lento			
sol	vert.	D cls	S cls Ve	ferro	D ferri	S ferri Ve	
1	1- 4	-.733	-84.5 si	1.	1.6306	3261.2 si	
2	1- 2	-1.1107	-113.2 si	52.	1.6301	3260.3 si	
3	1- 2	-1.6498	-136.8 si	52.	-.7918	-1583.6 si	
4	1- 4	-.1684	-22.8 si	1.	1.6302	3260.3 si	

Si riporta di seguito la verifica SLU a taglio eseguita foglio di calcolo excel.

VERIFICA A TAGLIO PARETI IN CA						
I	590	cm				
s	40	cm				
Rck	300	kg/cmq				
f _{cd}	141.1	kg/cmq				
f _{ck}	249	kg/cmq				
f _{yk}	4500	kg/cmq				
f _{yd}	3913	kg/cmq				
Ves	433254	kg				
ψ	1.00	1,5<ψ<q	fattore di sovraresistenza			
Ved	433254	kg				
Ned	0	kg				
Med	0	kgcm				
A _{sl}	7	cmq	area totale armature longitudinali nelle zone critiche			
μ _f	0.6					
η	0.54					
ξ	31.80		asse neutro			
ξ	0.000		x/l asse neutro norma- lizzato			
VERIFICA A TAGLIO COMPRESSIONE DELL'ARMATURA DELL'ANIMA						
Vrd	665992	Kg	OK			
VERIFICA A TAGLIO TRAZIONE DELL'ARMATURA DELL'ANIMA						
A _{sw/s}	0.2345773	cmq/cm				
A _{sw}	4.02	cmq	Φ16 2 bracci			
s	10	cm				

A_{sw}/s	0.4021239	cmq/cm	OK			

4.5. Fondazioni

Nel presente capitolo si svolgeranno le verifiche sulle fondazioni nuove della struttura in esame, in particolare per gli allineamenti F e G, progettate con la stessa forma e dimensione delle fondazioni esistenti.

La fondazione a pi greco è stata considerata come costituita da due sezioni a T rovesce, ciascuna delle quali assorbe le sollecitazioni del proprio allineamento di pilastri di competenza.

Poiché l'azione sismica è presente in entrambe le direzioni, le travi sono soggette a flessione, taglio e torsione; queste ultime due sollecitazioni vengono assorbite dalle staffe, pertanto, la verifica a taglio è stata condotta considerando la metà delle staffe presenti, mentre le rimanenti sono state considerate per soddisfare la verifica a torsione.

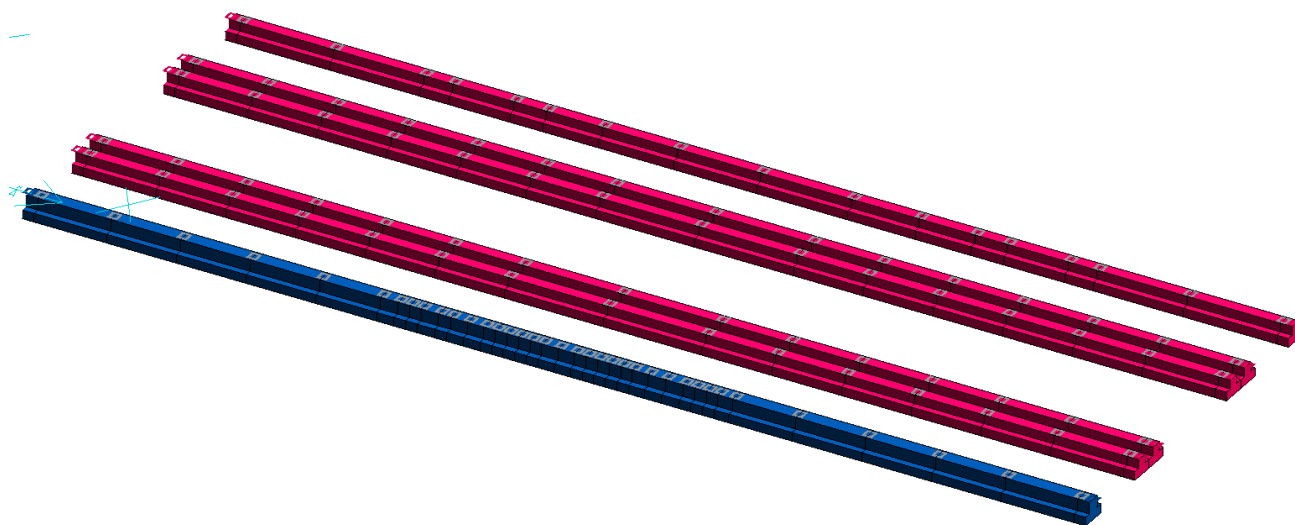


Figura 202 – Vista solida fondazioni

Si riportano di seguito le sollecitazioni agenti sulle travi di fondazione esistenti nell'involuppo dei casi SLU (caso 1).

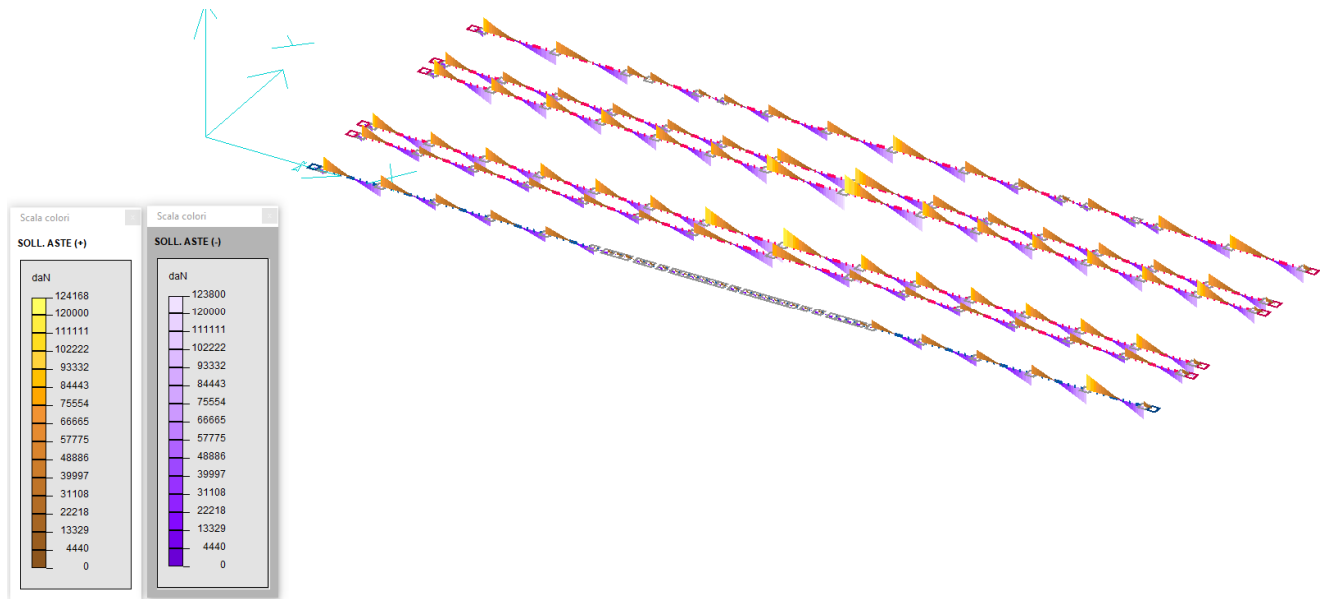


Figura 63 – SLU Ty

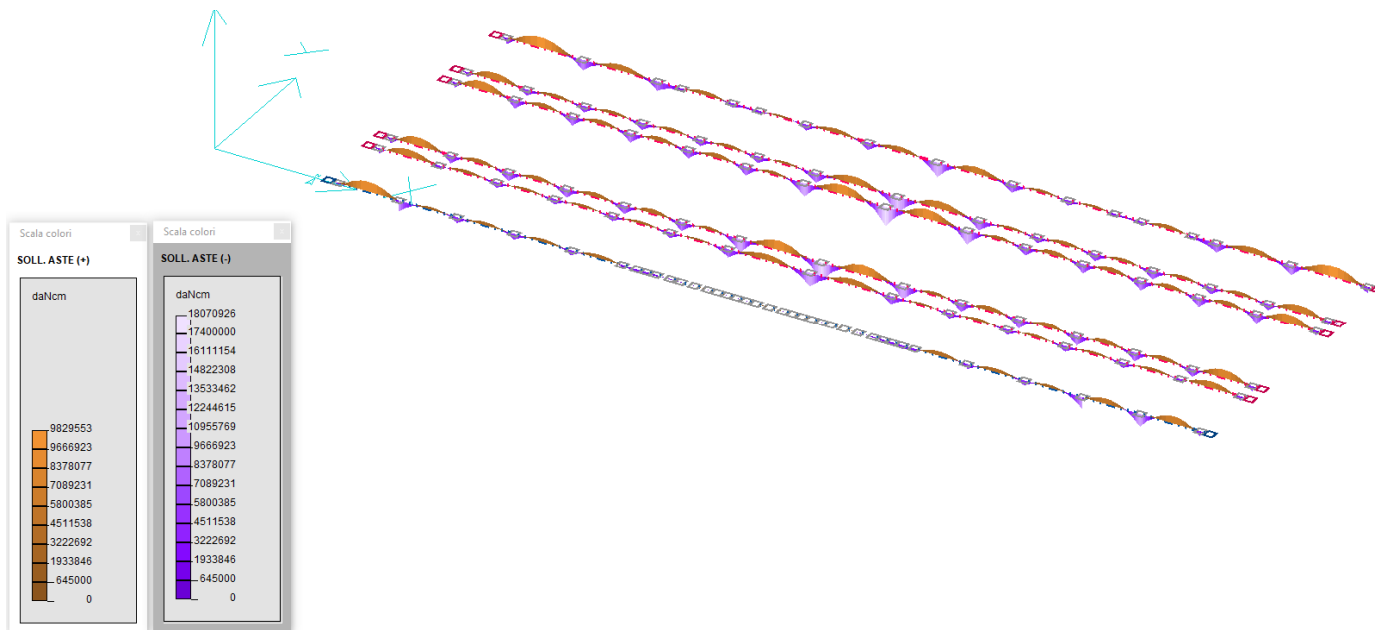


Figura 64 – SLU Mz

Si riportano di seguito le sollecitazioni agenti sulle travi di fondazione esistenti nell'involuppo dei casi SLV (casi 4, 5).

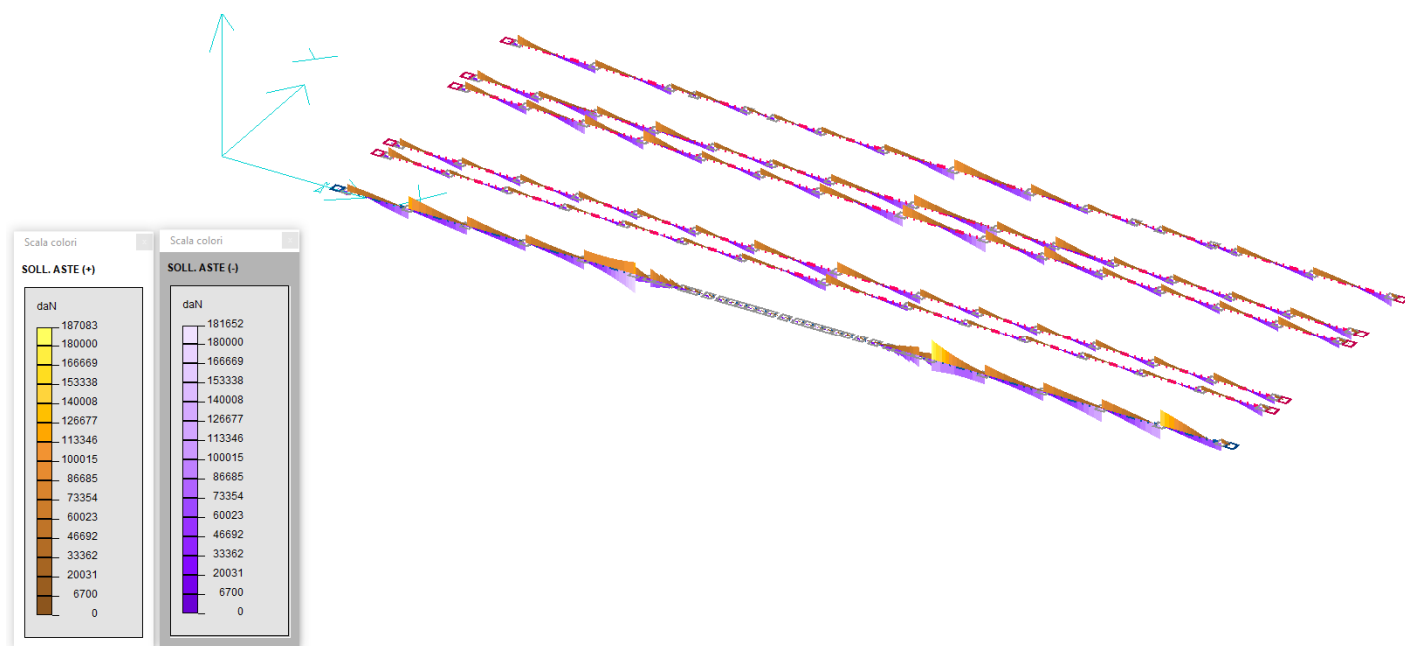


Figura 65 – SLV Ty

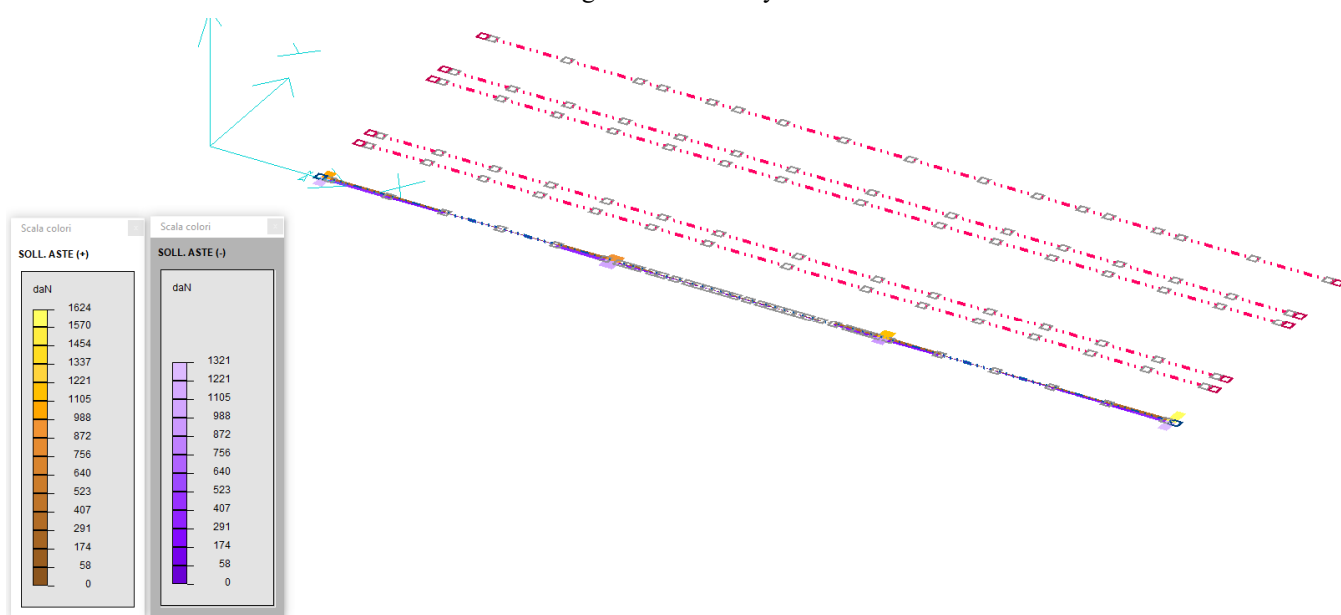


Figura 66 – SLV Tz

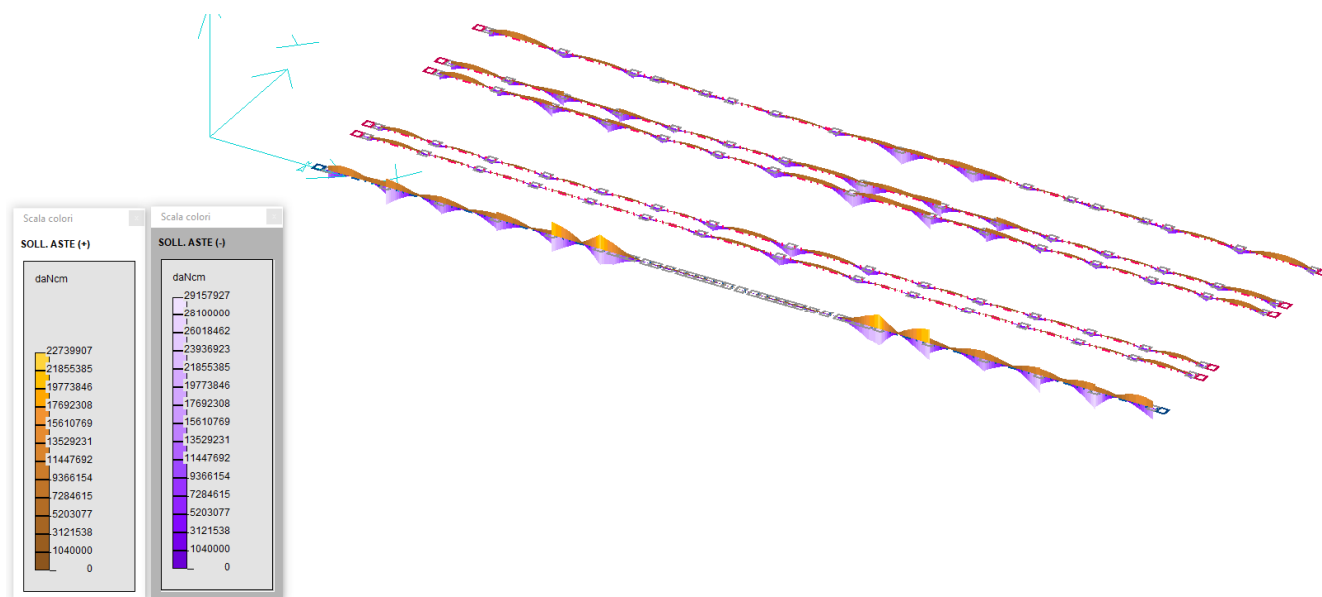


Figura 67 – SLV Mz

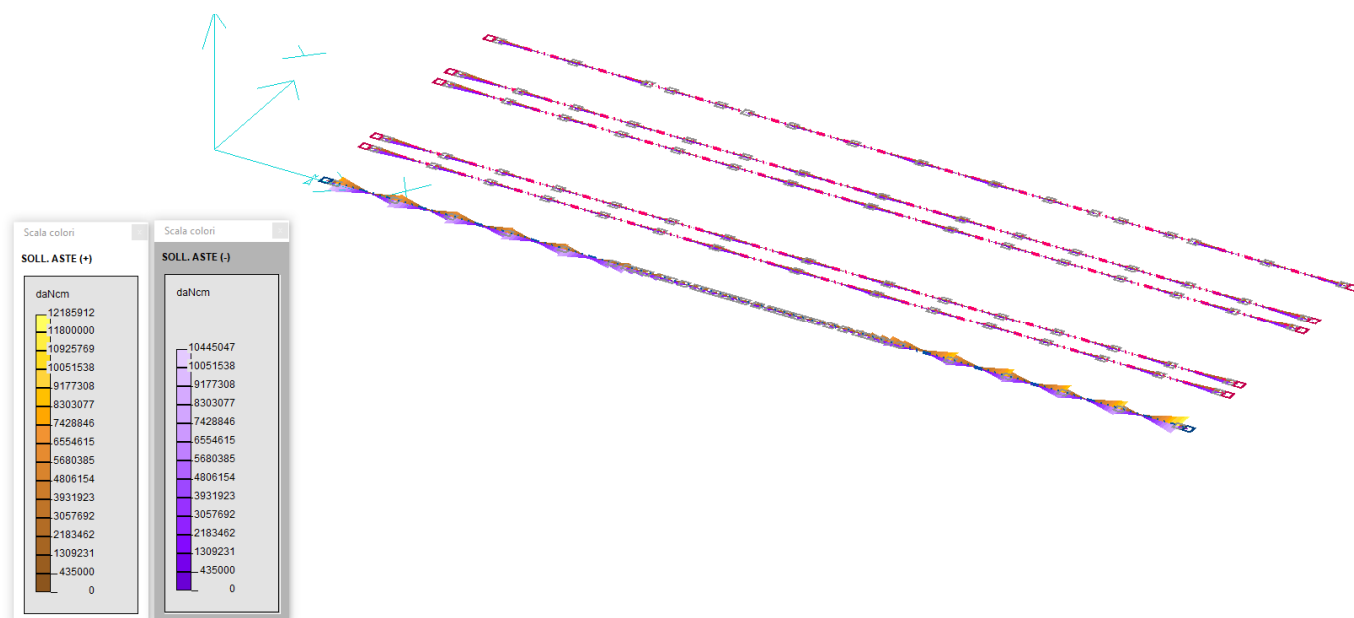


Figura 68 – SLV Mt

4.5.1. Fondazione filo F, G

4.5.1.1. VERIFICHE STRUTTURALI

La sezione a T rovescia della trave di fondazione risulta armata con $20\Phi 16 + 10\Phi 20$ inferiori e $9\Phi 20$ superiori agli appoggi, e con $10\Phi 20$ inferiori e $9\Phi 20$ superiori in campata, mentre l'armatura a taglio nella parte centrale è costituita da staffe $\Phi 20/20$ a 4 braccia; per la verifica a taglio sono state considerate staffe $\Phi 20/40$ a 4 braccia

Si riporta di seguito la verifica a flessione e taglio della trave di fondazione più sollecitata eseguita con l'applicativo “trave continua” di DOLMEN.

Si riporta di seguito la verifica della trave di fondazione più sollecitata eseguita con l'applicativo "trave continua" di DOLMEN.

VERIFICA TRAVATA IN CEMENTO ARMATO

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 5 - Travata T05 (fondazione)
 Metodo di verifica : stati limite (NTC18). ->
 Duttilita' : non prevista (struttura non dissipativa).
 : dettagli costruttivi del capitolo 7 non attivi.
 Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %.
 Unita' particolari : fessure [wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
 Copriferri (assi) : longitudinali= 3 ; staffe= 2

MATERIALI

CLS : Rck =300. ; fck=249. ; fctk= 17.9; fctm= 25.6; Ec= 314472. ;
 gc =1.5 ; fcd=141.1; fbd= 26.9; fctd= 11.9; Ecud=.2% (limit.elastico)
 ACCIAIO : B450C; ftk=5175. ; fyk=4500. ; Es=2100000. ;
 gs =1.15; fyd=3913. ; ftd(k*fyd)=4500. ; fud=4439.8; Eud=.19% (limit.elastico)

TENSIONI E FESSURE MASSIME IN ESERCIZIO

GRUPPO : ordinario.
 CLS : Scls(rara)=149.4; Scls(quasi permanente)=112. ; fbd(esercizio)= 26.9
 ACCIAIO : Sacc(rara)=3600.; Coeff.Omogeneizzazione= 15
 FESSURE : wmax(fre.)=.4 ; wmax(q.p.)=.3 [4.1.2.2.4.5];
 kt=.4 [EN 1992-1 7.3.4].

CASI DI CARICO DA MODELLO 3D

Nome	Descrizione	Sest
1.	SLU SENZA SISMA	1.
4.	SLU con SISMAX PRINC16	
5.	SLU con SISMAY PRINC16	
8.	SLU FON con SISMAX P16	
9.	SLU FON con SISMAY P16	

RARE			FREQUENTI			QUASI PERMANENTI		
Nome	Descrizione	Sest	Nome	Descrizione	Sest	Nome	Descrizione	Sest
10.	Rara	1.	11.	Frequente	1.	12.	Quasi Perm	1.

<-

SEZIONI UTILIZZATE

3) A T rovescio: 212/100x150/75; A=23400.; Jg=39634615.; E=314471.6

DESCRIZIONE CAMPATE

Cam.	Descriz.	S.ini	Sez.	S.fin	Incl.	L.assi	L.net.	lambda	K	r.Ar.	lam.max
1	A6844	3	3	3	0	100.	15.	.667	.4	1.	18.627
2	A6845	3	3	3	0	628.	470.	4.183	1.5	4.793	204.856
3	A6846	3	3	3	0	600.	455.	4.	1.5	2.209	94.388
4	A6847	3	3	3	0	600.	455.	4.	1.5	3.152	134.696
5	A6848	3	3	3	0	600.	455.	4.	1.5	3.315	141.672
6	A6849	3	3	3	0	600.	455.	4.	1.5	5.	213.684
7	A6850	3	3	3	0	600.	442.	4.	1.5	3.817	163.132
8	A6851	3	3	3	0	852.	627.	5.677	1.5	2.374	101.464
9	A6852	3	3	3	0	848.	623.	5.656	1.5	2.227	95.172
10	A6853	3	3	3	0	600.	442.	4.	1.5	4.318	184.537

11 A6854		3	3	3	0	600.	455.	4.	1.5 3.202 136.86
12 A6855		3	3	3	0	600.	455.	4.	1.5 4.438 189.645
13 A6856		3	3	3	0	600.	455.	4.	1.5 5. 213.684
14 A6857		3	3	3	0	600.	455.	4.	1.5 5. 213.684
15 A6858		3	3	3	0	628.	470.	4.183 1.5 4.817 205.857	
16 A6859		3	3	3	0	100.	15.	.667 .4 1.	18.627

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

Progressive	SE Ar	Ms	Epsc	Epsac	Mrd	Epsc	Epsac	Cam	x/d	Mr/Ms	VE
> 15.	15. 3. 1.	0.!	0.	-15673162	-.028	.186 2.	.13	! ***	SI		
15.	15. 3. 1.	1200081.	-0.002	.006 37354664.	-0.084	.186 2.	.311 31.13	!	SI		
43.	43. 3. 1.	1758538.	! -0.004	.009 37354664.	-0.084	.186 2.	.311 21.24	!	SI		
100.	100. 3. 2.	1758538.	-0.003	.006 52555544.	! -0.109	.186 2.	.369 29.89	!	SI		
> 100.	0. 3. 2.	-6105860.	-0.01	.072 -15739666	-0.026	.186 2.	.12	!2.578	SI		
100.	0. 3. 2.	10964066.	! -0.021	.038 52555544.	-0.109	.186 2.	.369 4.793	!	SI		
166.	66. 3. 3.	10964066.	-0.019	.038 53739191.	! -0.098	.186 2.	.345 4.901	!	SI		
217.	117. 3. 4.	7550431.	-0.021	.083 16985367.	-0.049	.186 2.	.208 2.25	!	SI		
333.	233. 3. 4.	-8595584.	! -0.017	.103 !-15549238	-0.031	.186 2.	.143 1.809	!	SI		
374.	274. 3. 4.	583176.	-0.002	.006 16985367.	-0.049	.186 2.	.208 29.13	!	SI		
727.	627. 3. 7.	-1868893.	-0.002	.011 -31023112	! -0.04	.186 2.	.177 16.6	!	SI		
727.	627. 3. 7.	6744291.	-0.011	.023 53739191.	-0.098	.186 2.	.345 7.968	!	SI		
> 727.	0. 3. 7.	-2637513.	-0.003	.016 -31023112	-0.04	.186 2.	.177 11.76	!	SI		
727.	0. 3. 7.	8707002.	-0.015	.03 53739191.	! -0.098	.186 2.	.345 6.172	!	SI		
761.	33. 3. 6.	-2960720.	-0.005	.035 -15739666	-0.026	.186 2.	.12	!5.316	SI		
761.	33. 3. 6.	8707002.	-0.016	.031 52555544.	-0.109	.186 2.	.369 6.036	!	SI		
1006.	279. 3. 4.	442619.	-0.001	.005 16985367.	-0.049	.186 2.	.208 38.38	!	SI		
1261.	534. 3. 5.	-8618822.	-0.015	.102 !-15673162	-0.028	.186 2.	.13	!1.818	SI		
1261.	534. 3. 5.	16913339.	! -0.036	.084 37354664.	-0.084	.186 2.	.311 2.209	!	SI		
1327.	600. 3. 7.	-8618822.	! -0.011	.052 -31023112	! -0.04	.186 2.	.177 3.599	!	SI		
1327.	600. 3. 7.	16913339.	-0.029	.058 53739191.	-0.098	.186 2.	.345 3.177	!	SI		
>1327.	0. 3. 7.	-3407718.	-0.004	.02 -31023112	-0.04	.186 2.	.177 9.104	!	SI		
1327.	0. 3. 7.	10658777.	-0.018	.037 53739191.	! -0.098	.186 2.	.345 5.042	!	SI		
1361.	33. 3. 5.	-3470330.	-0.006	.041 -15673162	-0.028	.186 2.	.13	!4.516	SI		
1466.	139. 3. 4.	5952712.	-0.017	.065 16985367.	-0.049	.186 2.	.208 2.853	!	SI		
1606.	279. 3. 4.	9513.	!0.	0.	16985367.	-0.049	.186 2.	.208 1786.	!	SI	
1777.	450. 3. 5.	-3616488.	! -0.006	.043 -15673162	-0.028	.186 2.	.13	!4.334	SI		
1861.	534. 3. 5.	11852053.	! -0.025	.059 37354664.	-0.084	.186 2.	.311 3.152	!	SI		
1927.	600. 3. 7.	-3412618.	-0.004	.02 -31023112	! -0.04	.186 2.	.177 9.091	!	SI		
1927.	600. 3. 7.	11852053.	-0.02	.041 53739191.	-0.098	.186 2.	.345 4.534	!	SI		
>1927.	0. 3. 7.	-7551626.	! -0.01	.045 -31023112	-0.04	.186 2.	.177 4.108	!	SI		
1927.	0. 3. 7.	16210947.	! -0.028	.056 53739191.	! -0.098	.186 2.	.345 3.315	!	SI		
1961.	33. 3. 6.	-7551626.	-0.012	.089 -15739666	-0.026	.186 2.	.12	!2.084	SI		
1961.	33. 3. 6.	16210947.	-0.031	.057 52555544.	-0.109	.186 2.	.369 3.242	!	SI		
1994.	66. 3. 5.	-7551626.	-0.013	.09 !-15673162	-0.028	.186 2.	.13	!2.075	SI		
1994.	66. 3. 5.	16210947.	-0.035	.08 37354664.	-0.084	.186 2.	.311 2.304	!	SI		
2249.	321. 3. 4.	253482.	-0.001	.003 16985367.	-0.049	.186 2.	.208 67.01	!	SI		
2527.	600. 3. 7.	-1574162.	-0.002	.009 -31023112	! -0.04	.186 2.	.177 19.71	!	SI		
2527.	600. 3. 7.	8173385.	-0.014	.028 53739191.	-0.098	.186 2.	.345 6.575	!	SI		
>2527.	0. 3. 7.	6214973.	-0.01	.021 53739191.	! -0.098	.186 2.	.345 8.647	!	SI		
2561.	33. 3. 5.	-14298.	!0.	0.	-15673162	-0.028	.186 2.	.13	!1096.	!	SI
2849.	321. 3. 4.	-3242365.	! -0.006	.039 !-15549238	-0.031	.186 2.	.143 4.796	!	SI		
3061.	534. 3. 5.	7424569.	! -0.016	.037 37354664.	-0.084	.186 2.	.311 5.031	!	SI		
3094.	567. 3. 8.	-1364343.	-0.002	.016 -15739666	-0.026	.186 2.	.12	!11.54	SI		
3094.	567. 3. 8.	7424569.	-0.014	.026 52555544.	-0.109	.186 2.	.369 7.079	!	SI		
3127.	600. 3. 9.	-657238.	-0.001	.004 -31023112	! -0.04	.186 2.	.177 47.2	!	SI		
3127.	600. 3. 9.	7424569.	-0.012	.026 53739191.	-0.098	.186 2.	.345 7.238	!	SI		
>3127.	0. 3. 9.	6463109.	-0.011	.022 53739191.	! -0.098	.186 2.	.345 8.315	!	SI		
3448.	321. 3. 4.	-2362546.	! -0.005	.028 !-15549238	-0.031	.186 2.	.143 6.582	!	SI		
3661.	534. 3. 1.	9786034.	! -0.021	.049 37354664.	-0.084	.186 2.	.311 3.817	!	SI		

3694. | 567. | 3. | 2. | -870788. | -.001 | .01 | -15739666 | -.026 | .186 | 2. | .12 | 18.08 | SI |
 3694. | 567. | 3. | 2. | 9786034. | -.018 | .034 | 52555544. | -.109 | .186 | 2. | .369 | 5.37 | SI |
 3727. | 600. | 3. | 3. | -221931. | 0. | .001 | -31023112 | -.04 | .186 | 2. | .177 | 139.8 | SI |
 3727. | 600. | 3. | 3. | 9786034. | -.016 | .034 | 53739191. | -.098 | .186 | 2. | .345 | 5.491 | SI |
 >3727. | 0. | 3. | 3. | -1501274. | -.002 | .009 | -31023112 | -.04 | .186 | 2. | .177 | 20.67 | SI |
 3727. | 0. | 3. | 3. | 11598185. | -.02 | .04 | 53739191. | -.098 | .186 | 2. | .345 | 4.633 | SI |
 3761. | 33. | 3. | 2. | -2543435. | -.004 | .03 | -15739666 | -.026 | .186 | 2. | .12 | 6.188 | SI |
 3761. | 33. | 3. | 2. | 11598185. | -.022 | .041 | 52555544. | -.109 | .186 | 2. | .369 | 4.531 | SI |
 4013. | 286. | 3. | 4. | 217043. | -.001 | .002 | 16985367. | -.049 | .186 | 2. | .208 | 78.26 | SI |
 4148. | 421. | 3. | 4. | -7098139. | -.014 | .085 | -15549238 | -.031 | .186 | 2. | .143 | 2.191 | SI |
 4476. | 749. | 3. | 1. | 18720952. | -.04 | .093 | 37354664. | -.084 | .186 | 2. | .311 | 1.995 | SI |
 4513. | 785. | 3. | 2. | 22136502. | -.043 | .078 | 52555544. | -.109 | .186 | 2. | .369 | 2.374 | SI |
 4579. | 852. | 3. | 3. | -3584034. | -.004 | .022 | -31023112 | -.04 | .186 | 2. | .177 | 8.656 | SI |
 4579. | 852. | 3. | 3. | 22136502. | -.038 | .076 | 53739191. | -.098 | .186 | 2. | .345 | 2.428 | SI |
 >4579. | 0. | 3. | 3. | -5550009. | -.007 | .033 | -31023112 | -.04 | .186 | 2. | .177 | 5.59 | SI |
 4579. | 0. | 3. | 3. | 24131404. | -.042 | .083 | 53739191. | -.098 | .186 | 2. | .345 | 2.227 | SI |
 4612. | 33. | 3. | 2. | -6400006. | -.01 | .076 | -15739666 | -.026 | .186 | 2. | .12 | 2.459 | SI |
 4612. | 33. | 3. | 2. | 24131404. | -.047 | .085 | 52555544. | -.109 | .186 | 2. | .369 | 2.178 | SI |
 4964. | 385. | 3. | 4. | 1315426. | -.004 | .014 | 16985367. | -.049 | .186 | 2. | .208 | 12.91 | SI |
 5361. | 782. | 3. | 1. | 21213926. | -.046 | .105 | 37354664. | -.084 | .186 | 2. | .311 | 1.761 | SI |
 5427. | 848. | 3. | 3. | -8498208. | -.011 | .051 | -31023112 | -.04 | .186 | 2. | .177 | 3.651 | SI |
 5427. | 848. | 3. | 3. | 21213926. | -.036 | .073 | 53739191. | -.098 | .186 | 2. | .345 | 2.533 | SI |
 >5427. | 0. | 3. | 3. | -1296261. | -.002 | .008 | -31023112 | -.04 | .186 | 2. | .177 | 23.93 | SI |
 5427. | 0. | 3. | 3. | 12445415. | -.021 | .043 | 53739191. | -.098 | .186 | 2. | .345 | 4.318 | SI |
 5461. | 33. | 3. | 2. | -1646918. | -.003 | .019 | -15739666 | -.026 | .186 | 2. | .12 | 9.557 | SI |
 5461. | 33. | 3. | 2. | 12445415. | -.023 | .044 | 52555544. | -.109 | .186 | 2. | .369 | 4.223 | SI |
 5494. | 66. | 3. | 1. | 12445415. | -.026 | .062 | 37354664. | -.084 | .186 | 2. | .311 | 3.001 | SI |
 5749. | 322. | 3. | 4. | 259951. | -.001 | .003 | 16985367. | -.049 | .186 | 2. | .208 | 65.34 | SI |
 5889. | 461. | 3. | 5. | -3666065. | -.006 | .044 | -15673162 | -.028 | .186 | 2. | .13 | 4.275 | SI |
 6027. | 600. | 3. | 9. | -3648698. | -.005 | .022 | -31023112 | -.04 | .186 | 2. | .177 | 8.503 | SI |
 6027. | 600. | 3. | 9. | 10557388. | -.018 | .036 | 53739191. | -.098 | .186 | 2. | .345 | 5.09 | SI |
 >6027. | 0. | 3. | 9. | -9194642. | -.012 | .055 | -31023112 | -.04 | .186 | 2. | .177 | 3.374 | SI |
 6027. | 0. | 3. | 9. | 16780968. | -.029 | .058 | 53739191. | -.098 | .186 | 2. | .345 | 3.202 | SI |
 6061. | 33. | 3. | 8. | -9194642. | -.015 | .109 | -15739666 | -.026 | .186 | 2. | .12 | 1.712 | SI |
 6061. | 33. | 3. | 8. | 16780968. | -.032 | .059 | 52555544. | -.109 | .186 | 2. | .369 | 3.132 | SI |
 6094. | 66. | 3. | 1. | -9194642. | -.016 | .109 | -15673162 | -.028 | .186 | 2. | .13 | 1.705 | SI |
 6094. | 66. | 3. | 1. | 16780968. | -.036 | .083 | 37354664. | -.084 | .186 | 2. | .311 | 2.226 | SI |
 6349. | 321. | 3. | 4. | 170842. | 0. | .002 | 16985367. | -.049 | .186 | 2. | .208 | 99.42 | SI |
 6627. | 600. | 3. | 3. | -1259814. | -.002 | .008 | -31023112 | -.04 | .186 | 2. | .177 | 24.63 | SI |
 6627. | 600. | 3. | 3. | 8847428. | -.015 | .03 | 53739191. | -.098 | .186 | 2. | .345 | 6.074 | SI |
 >6627. | 0. | 3. | 3. | 7076159. | -.012 | .024 | 53739191. | -.098 | .186 | 2. | .345 | 7.594 | SI |
 6661. | 33. | 3. | 2. | 7076159. | -.013 | .025 | 52555544. | -.109 | .186 | 2. | .369 | 7.427 | SI |
 6949. | 321. | 3. | 4. | -3365538. | -.007 | .04 | -15549238 | -.031 | .186 | 2. | .143 | 4.62 | SI |
 7161. | 534. | 3. | 5. | 8417917. | -.018 | .042 | 37354664. | -.084 | .186 | 2. | .311 | 4.438 | SI |
 7194. | 567. | 3. | 6. | -1140412. | -.002 | .013 | -15739666 | -.026 | .186 | 2. | .12 | 13.8 | SI |
 7227. | 600. | 3. | 7. | -234163. | 0. | .001 | -31023112 | -.04 | .186 | 2. | .177 | 132.5 | SI |
 7227. | 600. | 3. | 7. | 8417917. | -.014 | .029 | 53739191. | -.098 | .186 | 2. | .345 | 6.384 | SI |
 >7227. | 0. | 3. | 7. | 8246563. | -.014 | .028 | 53739191. | -.098 | .186 | 2. | .345 | 6.517 | SI |
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3277. | 150. | 3. | -29488. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
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 3534. | 406. | 3. | 29653. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
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 3577. | 450. | 3. | 37177. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
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 3642. | 515. | 3. | 51373. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 3661. | 534. | 3. | 55450. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 3694. | 567. | 3. | 62526. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
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 4429. | 702. | 3. | 73851. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
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 4513. | 785. | 3. | 89926. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 4546. | 819. | 3. | 96044. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
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 4682. | 103. | 3. | -83159. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 4719. | 140. | 3. | -76300. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
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4875. | 295. | 3. | -48786. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
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 4964. | 385. | 3. | -35640. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
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 5545. | 118. | 3. | -52531. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 5577. | 150. | 3. | -45982. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
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 5579. | 151. | 3. | -45776. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 5621. | 194. | 3. | -38134. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 5664. | 237. | 3. | -30802. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
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 5877. | 450. | 3. | -4691. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
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5961. | 534. | 3. | 57577. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 5994. | 567. | 3. | 65222. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
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 6177. | 150. | 3. | 19130. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
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7227. | 600. | 3. | 75460. ! 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 >7227. | 0. | 3. | -76230. ! 41117. ! 321854. ! 146375. ! 4.52 | 40. | 2.5 | SI |
 7261. | 33. | 3. | -68001. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7294. | 66. | 3. | -59772. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7300. | 73. | 3. | -58192. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7333. | 106. | 3. | -49990. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7366. | 139. | 3. | -41791. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7377. | 150. | 3. | -38978. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7377. | 150. | 3. | -38978. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7420. | 193. | 3. | -28423. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7463. | 236. | 3. | -18826. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7506. | 279. | 3. | -12102. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7506. | 279. | 3. | 2211. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7549. | 321. | 3. | -5507. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7549. | 321. | 3. | 9232. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7592. | 364. | 3. | 16273. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7635. | 407. | 3. | 24832. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7677. | 450. | 3. | 33898. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7677. | 450. | 3. | 33898. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7689. | 461. | 3. | 36589. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7722. | 494. | 3. | 44432. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7755. | 528. | 3. | 52270. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7761. | 534. | 3. | 53763. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7794. | 567. | 3. | 61543. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7827. | 600. | 3. | 69323. ! 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 >7827. | 0. | 3. | -70746. ! 41117. ! 321854. ! 146375. ! 4.52 | 40. | 2.5 | SI |
 7861. | 33. | 3. | -63015. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7894. | 66. | 3. | -55284. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7900. | 73. | 3. | -53800. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7933. | 106. | 3. | -46113. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7966. | 139. | 3. | -38430. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7977. | 150. | 3. | -35794. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 7977. | 150. | 3. | -35794. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8020. | 193. | 3. | -27181. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8063. | 236. | 3. | -19227. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8106. | 279. | 3. | -13249. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8106. | 279. | 3. | 4567. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8149. | 321. | 3. | -7372. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8149. | 321. | 3. | 11431. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8192. | 364. | 3. | -1594. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8192. | 364. | 3. | 18365. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8235. | 407. | 3. | 25595. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8277. | 450. | 3. | 32923. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8277. | 450. | 3. | 32923. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8289. | 461. | 3. | 35503. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8322. | 494. | 3. | 43020. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8355. | 528. | 3. | 50539. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8361. | 534. | 3. | 51984. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8394. | 567. | 3. | 59512. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8427. | 600. | 3. | 67039. ! 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 >8427. | 0. | 3. | -78614. ! 41117. ! 321854. ! 146375. ! 4.52 | 40. | 2.5 | SI |
 8461. | 33. | 3. | -71046. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8494. | 66. | 3. | -63479. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8500. | 73. | 3. | -62026. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8533. | 106. | 3. | -54379. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8566. | 139. | 3. | -46716. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8577. | 150. | 3. | -44086. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8577. | 150. | 3. | -44086. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8618. | 191. | 3. | -37397. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8659. | 232. | 3. | -31268. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8700. | 272. | 3. | -25139. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |
 8700. | 272. | 3. | 6306. | 41117. | 321854. | 146375. | 4.52 | 40. | 2.5 | SI |

8741.	313.	3.	-19011.		41117.	321854.	146375.		4.52 40.		2.5	SI
8741.	313.	3.	13570.		41117.	321854.	146375.		4.52 40.		2.5	SI
8781.	354.	3.	-12689.		41117.	321854.	146375.		4.52 40.		2.5	SI
8781.	354.	3.	21331.		41117.	321854.	146375.		4.52 40.		2.5	SI
8822.	395.	3.	-6445.		41117.	321854.	146375.		4.52 40.		2.5	SI
8822.	395.	3.	29234.		41117.	321854.	146375.		4.52 40.		2.5	SI
8863.	436.	3.	-1399.		41117.	321854.	146375.		4.52 40.		2.5	SI
8863.	436.	3.	39156.		41117.	321854.	146375.		4.52 40.		2.5	SI
8904.	476.	3.	49304.		41117.	321854.	146375.		4.52 40.		2.5	SI
8905.	478.	3.	49629.		41117.	321854.	146375.		4.52 40.		2.5	SI
8905.	478.	3.	49629.		41117.	321854.	146375.		4.52 40.		2.5	SI
8937.	510.	3.	58812.		41117.	321854.	146375.		4.52 40.		2.5	SI
8970.	543.	3.	67995.		41117.	321854.	146375.		4.52 40.		2.5	SI
8989.	561.	3.	73675.		41117.	321854.	146375.		4.52 40.		2.5	SI
9022.	594.	3.	83974.		41117.	321854.	146375.		4.52 40.		2.5	SI
9055.	628.	3.	94272.	!	41117.	321854.	146375.		4.52 40.		2.5	SI
>9055.		0.	3.	-37015.	!	41117.	!321854.	!146375.	!	4.52 40.		2.5 SI
9083.		28.	3.	-26996.		41117.	321854.	146375.		4.52 40.		2.5 SI
9112.		57.	3.	-16603.		41117.	321854.	146375.		4.52 40.		2.5 SI
9140.		85.	3.	-5845.		41117.	321854.	146375.		4.52 40.		2.5 SI
9155.	100.	3.		0.	!	41117.	321854.	146375.		4.52 40.		2.5 SI

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

Progressive	Se	Ar	Momento	Sc	ls	Sacc	As	hc,ef	Eps%	Sr,max	wd	Ve			
> 15.	15.	3.	1.		32400.	!	-.1		3.4 71.63		7.5		.0001 13.42 0.	SI	
100.	100.	3.	2.		1264941.	!	-3.3	!	93.1 103.		7.5		.0027 11.58	.003 SI	
414.	314.	3.	4.		-5087872.	!	-14.	!	1279.4 28.27		7.5		.0447 15.82	.071 SI	
727.	627.	3.	7.		4152823.	!	-9.8		300.8 103.		7.5		.0086 11.58	.01 SI	
> 727.		0.	3.	7.		4148312.		-9.8		300.5 103.		7.5		.0086 11.58	.01 SI
1006.	279.	3.	4.		-2421838.	!	-6.7		609. 28.27		7.5		.0174 15.82	.028 SI	
1327.	600.	3.	7.		4619583.	!	-10.9	!	334.6 103.		7.5		.0096 11.58	.011 SI	
>1327.		0.	3.	7.		4244135.		-10.		307.4 103.		7.5		.0088 11.58	.01 SI
1606.	279.	3.	4.		-2243876.	!	-6.2		564.2 28.27		7.5		.0161 15.82	.026 SI	
1927.	600.	3.	7.		4923534.	!	-11.6	!	356.6 103.		7.5		.0102 11.58	.012 SI	
>1927.		0.	3.	7.		4804435.	!	-11.4	!	348. 103.		7.5		.0099 11.58	.012 SI
2249.	321.	3.	4.		-2215415.	!	-6.1		557.1 28.27		7.5		.0159 15.82	.025 SI	
2527.	600.	3.	7.		4540695.		-10.7		328.9 103.		7.5		.0094 11.58	.011 SI	
>2527.		0.	3.	7.		4494351.		-10.6		325.5 103.		7.5		.0093 11.58	.011 SI
2806.	279.	3.	4.		-2287965.	!	-6.3		575.3 28.27		7.5		.0164 15.82	.026 SI	
3127.	600.	3.	9.		4813665.	!	-11.4	!	348.7 103.		7.5		.01 11.58	.012 SI	
>3127.		0.	3.	9.		4655606.		-11.		337.2 103.		7.5		.0096 11.58	.011 SI
3406.	278.	3.	4.		-1660308.	!	-4.6		417.5 28.27		7.5		.0119 15.82	.019 SI	
3727.	600.	3.	3.		6301943.	!	-14.9	!	456.5 103.		7.5		.013 11.58	.015 SI	
>3727.		0.	3.	3.		6854131.		-16.2		496.5 103.		7.5		.0142 11.58	.016 SI
4148.	421.	3.	4.		-5140055.	!	-14.2	!	1292.5 28.27		7.5		.0454 15.82	.072 SI	
4579.	852.	3.	3.		11150929.	!	-26.4	!	807.7 103.		7.5		.0277 11.58	.032 SI	
>4579.		0.	3.	3.		11188203.	!	-26.4	!	810.4 103.		7.5		.0278 11.58	.032 SI
5008.	429.	3.	4.		-5113771.	!	-14.1	!	1285.9 28.27		7.5		.0451 15.82	.071 SI	
5427.	848.	3.	3.		7080861.		-16.7		512.9 103.		7.5		.0147 11.58	.017 SI	
>5427.		0.	3.	3.		6747373.	!	-15.9	!	488.7 103.		7.5		.014 11.58	.016 SI
5749.	322.	3.	4.		-1813741.	!	-5.		456.1 28.27		7.5		.013 15.82	.021 SI	
6027.	600.	3.	9.		3959757.		-9.4		286.8 103.		7.5		.0082 11.58	.009 SI	
>6027.		0.	3.	9.		4240549.		-10.		307.2 103.		7.5		.0088 11.58	.01 SI
6306.	279.	3.	4.		-2478652.	!	-6.8		623.3 28.27		7.5		.0178 15.82	.028 SI	
6627.	600.	3.	3.		5179323.	!	-12.2	!	375.2 103.		7.5		.0107 11.58	.012 SI	
>6627.		0.	3.	3.		5083316.		-12.		368.2 103.		7.5		.0105 11.58	.012 SI
6906.	279.	3.	4.		-2316758.	!	-6.4		582.6 28.27		7.5		.0166 15.82	.026 SI	
7227.	600.	3.	7.		5746100.	!	-13.6	!	416.2 103.		7.5		.0119 11.58	.014 SI	
>7227.		0.	3.	7.		5868641.	!	-13.9	!	425.1 103.		7.5		.0121 11.58	.014 SI

7549.	321.	3.	4.		-2378058.!	-6.6	598.!	28.27	7.5	.0171	15.82	.027!SI	
7827.	600.	3.	7.		4792596.!	-11.3	347.1	103.	7.5	.0099	11.58	.011 SI	
>7827.		0.	3.	7.		5049421.!	-11.9!	365.7	103.	7.5	.0104	11.58	.012 SI
8149.	321.	3.	4.		-2612421.!	-7.2	656.9!	28.27	7.5	.0188	15.82	.03 !SI	
8427.	600.	3.	7.		4289603.!	-10.1	310.7	103.	7.5	.0089	11.58	.01 SI	
>8427.		0.	3.	7.		4371763.!	-10.3	316.7	103.	7.5	.009	11.58	.01 SI
8741.	313.	3.	4.		-5138309.!	-14.2!	1292.1!	28.27	7.5	.0453	15.82	.072!SI	
9055.	628.	3.	7.		3517125.!	-8.3	254.8	103.	7.5	.0073	11.58	.008 SI	
>9055.		0.	3.	7.		1250682.!	-3. !	90.6!	103.	7.5	.0026	11.58	.003!SI
9140.		85.	3.	5.		32014.!	-.1	3.3	71.63	7.5	.0001	13.42	0. SI

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

Progressive	Se Ar	Momento	Sc s	Sacc	As	hc,ef	Eps%	Sr,max	wd	Ve			
> 15.	15.	3.	1.		30933.!	-.1	3.2	71.63	7.5	.0001	13.42	0. SI	
100.	100.	3.	2.		1207120.!	-3.1!	88.9!	103.	7.5	.0025	11.58	.003!SI	
414.	314.	3.	4.		-4827866.!	-13.3!	1214.!	28.27	7.5	.0416	15.82	.066!SI	
727.	627.	3.	7.		3759845.!	-8.9	272.3	103.	7.5	.0078	11.58	.009 SI	
> 727.		0.	3.	7.		3772783.!	-8.9	273.3	103.	7.5	.0078	11.58	.009 SI
1006.	279.	3.	4.		-2278415.!	-6.3	572.9!	28.27	7.5	.0164	15.82	.026!SI	
1327.	600.	3.	7.		4256914.!	-10.1!	308.3	103.	7.5	.0088	11.58	.01 SI	
>1327.		0.	3.	7.		3907702.!	-9.2	283.	103.	7.5	.0081	11.58	.009 SI
1606.	279.	3.	4.		-2073502.!	-5.7	521.4!	28.27	7.5	.0149	15.82	.024!SI	
1927.	600.	3.	7.		4554016.!	-10.8!	329.9	103.	7.5	.0094	11.58	.011 SI	
>1927.		0.	3.	7.		4439787.!	-10.5!	321.6	103.	7.5	.0092	11.58	.011 SI
2249.	321.	3.	4.		-2044725.!	-5.6	514.2!	28.27	7.5	.0147	15.82	.023!SI	
2527.	600.	3.	7.		4192708.!	-9.9	303.7	103.	7.5	.0087	11.58	.01 SI	
>2527.		0.	3.	7.		4147714.!	-9.8	300.4	103.	7.5	.0086	11.58	.01 SI
2806.	279.	3.	4.		-2112827.!	-5.8	531.3!	28.27	7.5	.0152	15.82	.024!SI	
3127.	600.	3.	9.		4443047.!	-10.5!	321.8	103.	7.5	.0092	11.58	.011 SI	
>3127.		0.	3.	9.		4296325.!	-10.2	311.2	103.	7.5	.0089	11.58	.01 SI
3406.	278.	3.	4.		-1534698.!	-4.2	385.9	28.27	7.5	.011	15.82	.017!SI	
3727.	600.	3.	3.		5813023.!	-13.7!	421.1!	103.	7.5	.012	11.58	.014 SI	
>3727.		0.	3.	3.		6320583.!	-14.9	457.8	103.	7.5	.0131	11.58	.015 SI
4148.	421.	3.	4.		-4754808.!	-13.1!	1195.6!	28.27	7.5	.0408	15.82	.064!SI	
4579.	852.	3.	3.		10346618.!	-24.5!	749.4	103.	7.5	.0249	11.58	.029 SI	
>4579.		0.	3.	3.		10384072.!	-24.5!	752.2	103.	7.5	.025	11.58	.029 SI
5008.	429.	3.	4.		-4729638.!	-13.	1189.3!	28.27	7.5	.0405	15.82	.064!SI	
5427.	848.	3.	3.		6525340.!	-15.4	472.7	103.	7.5	.0135	11.58	.016 SI	
>5427.		0.	3.	3.		6221579.!	-14.7!	450.7!	103.	7.5	.0129	11.58	.015 SI
5749.	322.	3.	4.		-1684289.!	-4.6	423.5	28.27	7.5	.0121	15.82	.019!SI	
6027.	600.	3.	9.		3641105.!	-8.6	263.7	103.	7.5	.0075	11.58	.009 SI	
>6027.		0.	3.	9.		3896957.!	-9.2	282.3	103.	7.5	.0081	11.58	.009 SI
6306.	279.	3.	4.		-2304270.!	-6.4	579.4!	28.27	7.5	.0166	15.82	.026!SI	
6627.	600.	3.	3.		4819721.!	-11.4!	349.1	103.	7.5	.01	11.58	.012 SI	
>6627.		0.	3.	3.		4724698.!	-11.2	342.2	103.	7.5	.0098	11.58	.011 SI
6906.	279.	3.	4.		-2147578.!	-5.9	540.!	28.27	7.5	.0154	15.82	.024!SI	
7227.	600.	3.	7.		5399805.!	-12.8!	391.1	103.	7.5	.0112	11.58	.013 SI	
>7227.		0.	3.	7.		5519050.!	-13. !	399.8	103.	7.5	.0114	11.58	.013 SI
7549.	321.	3.	4.		-2211582.!	-6.1	556.1!	28.27	7.5	.0159	15.82	.025!SI	
7827.	600.	3.	7.		4429265.!	-10.5	320.8	103.	7.5	.0092	11.58	.011 SI	
>7827.		0.	3.	7.		4678287.!	-11.1!	338.9	103.	7.5	.0097	11.58	.011 SI
8149.	321.	3.	4.		-2467651.!	-6.8	620.5!	28.27	7.5	.0177	15.82	.028!SI	
8427.	600.	3.	7.		3916780.!	-9.3	283.7	103.	7.5	.0081	11.58	.009 SI	
>8427.		0.	3.	7.		3980882.!	-9.4	288.4	103.	7.5	.0082	11.58	.01 SI
8741.	313.	3.	4.		-4877231.!	-13.5!	1226.4!	28.27	7.5	.0422	15.82	.067!SI	
9055.	628.	3.	7.		3391136.!	-8.	245.6	103.	7.5	.007	11.58	.008 SI	
>9055.		0.	3.	7.		1192925.!	-2.8!	86.4!	103.	7.5	.0025	11.58	.003!SI
9140.		85.	3.	5.		30549.!	-.1	3.2	71.63	7.5	.0001	13.42	0. SI

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

Progressive	Se	Ar	Momento	Sc	ls	Sacc	As	hc,ef	Eps%	Sr,max	wd	Vel	
> 15.	15.	3.	1.	30491.	!	-1.	3.2	71.63	7.5	.0001	13.42	0.	SI
100.	100.	3.	2.	1189703.	!	-3.1	87.6	103.	7.5	.0025	11.58	.003	SI
414.	314.	3.	4.	-4749482.	!	-13.1	1194.3	28.27	7.5	.0407	15.82	.064	SI
727.	627.	3.	7.	3640976.	!	-8.6	263.7	103.	7.5	.0075	11.58	.009	SI
> 727.	0.	3.	7.	3659190.	!	-8.6	265.	103.	7.5	.0076	11.58	.009	SI
1006.	279.	3.	4.	-2235149.	!	-6.2	562.1	28.27	7.5	.0161	15.82	.025	SI
1327.	600.	3.	7.	4147259.	!	-9.8	300.4	103.	7.5	.0086	11.58	.01	SI
>1327.	0.	3.	7.	3805988.	!	-9.	275.7	103.	7.5	.0079	11.58	.009	SI
1606.	279.	3.	4.	-2022006.	!	-5.6	508.5	28.27	7.5	.0145	15.82	.023	SI
1927.	600.	3.	7.	4442472.	!	-10.5	321.8	103.	7.5	.0092	11.58	.011	SI
>1927.	0.	3.	7.	4329661.	!	-10.2	313.6	103.	7.5	.009	11.58	.01	SI
2249.	321.	3.	4.	-1993111.	!	-5.5	501.2	28.27	7.5	.0143	15.82	.023	SI
2527.	600.	3.	7.	4087580.	!	-9.7	296.1	103.	7.5	.0085	11.58	.01	SI
>2527.	0.	3.	7.	4042906.	!	-9.6	292.8	103.	7.5	.0084	11.58	.01	SI
2806.	279.	3.	4.	-2059979.	!	-5.7	518.	28.27	7.5	.0148	15.82	.023	SI
3127.	600.	3.	9.	4330778.	!	-10.2	313.7	103.	7.5	.009	11.58	.01	SI
>3127.	0.	3.	9.	4187630.	!	-9.9	303.3	103.	7.5	.0087	11.58	.01	SI
3406.	278.	3.	4.	-1496730.	!	-4.1	376.4	28.27	7.5	.0108	15.82	.017	SI
3727.	600.	3.	3.	5665560.	!	-13.4	410.4	103.	7.5	.0117	11.58	.014	SI
>3727.	0.	3.	3.	6159771.	!	-14.6	446.2	103.	7.5	.0127	11.58	.015	SI
4148.	421.	3.	4.	-4638381.	!	-12.8	1166.4	28.27	7.5	.0394	15.82	.062	SI
4579.	852.	3.	3.	10103309.	!	-23.9	731.8	103.	7.5	.0241	11.58	.028	SI
>4579.	0.	3.	3.	10140695.	!	-24.	734.5	103.	7.5	.0242	11.58	.028	SI
5008.	429.	3.	4.	-4613524.	!	-12.7	1160.1	28.27	7.5	.0391	15.82	.062	SI
5427.	848.	3.	3.	6357859.	!	-15.	460.5	103.	7.5	.0132	11.58	.015	SI
>5427.	0.	3.	3.	6062659.	!	-14.3	439.1	103.	7.5	.0125	11.58	.015	SI
5749.	322.	3.	4.	-1645204.	!	-4.5	413.7	28.27	7.5	.0118	15.82	.019	SI
6027.	600.	3.	9.	3544806.	!	-8.4	256.8	103.	7.5	.0073	11.58	.008	SI
>6027.	0.	3.	9.	3793163.	!	-9.	274.8	103.	7.5	.0079	11.58	.009	SI
6306.	279.	3.	4.	-2251611.	!	-6.2	566.2	28.27	7.5	.0162	15.82	.026	SI
6627.	600.	3.	3.	4710793.	!	-11.1	341.2	103.	7.5	.0097	11.58	.011	SI
>6627.	0.	3.	3.	4616263.	!	-10.9	334.4	103.	7.5	.0096	11.58	.011	SI
6906.	279.	3.	4.	-2096436.	!	-5.8	527.2	28.27	7.5	.0151	15.82	.024	SI
7227.	600.	3.	7.	5295274.	!	-12.5	383.6	103.	7.5	.011	11.58	.013	SI
>7227.	0.	3.	7.	5413548.	!	-12.8	392.1	103.	7.5	.0112	11.58	.013	SI
7549.	321.	3.	4.	-2161249.	!	-6.	543.5	28.27	7.5	.0155	15.82	.025	SI
7827.	600.	3.	7.	4319504.	!	-10.2	312.9	103.	7.5	.0089	11.58	.01	SI
>7827.	0.	3.	7.	4566097.	!	-10.8	330.7	103.	7.5	.0094	11.58	.011	SI
8149.	321.	3.	4.	-2423988.	!	-6.7	609.5	28.27	7.5	.0174	15.82	.028	SI
8427.	600.	3.	7.	3804010.	!	-9.	275.5	103.	7.5	.0079	11.58	.009	SI
>8427.	0.	3.	7.	3862638.	!	-9.1	279.8	103.	7.5	.008	11.58	.009	SI
8741.	313.	3.	4.	-4798513.	!	-13.2	1206.6	28.27	7.5	.0413	15.82	.065	SI
9055.	628.	3.	7.	3353282.	!	-7.9	242.9	103.	7.5	.0069	11.58	.008	SI
>9055.	0.	3.	7.	1175525.	!	-2.8	85.1	103.	7.5	.0024	11.58	.003	SI
9140.	85.	3.	5.	30107.	!	-1.	3.1	71.63	7.5	.0001	13.42	0.	SI

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

Nro	Totale	%	Super.	%	Barre	Infer.	%	Barre
1	99.9	.427	28.27	.121	9d20	71.63	.306	20d16 +10d20
2	131.3	.561	28.27	.121	9d20	103.	.44	20d16 +10d20 +10d20
3	159.6	.682	56.55	.242	9d20 +9d20	103.	.44	20d16 +10d20 +10d20
4	59.69	.255	28.27	.121	9d20	31.42	.134	10d20
5	99.9	.427	28.27	.121	9d20	71.63	.306	10d20 +20d16
6	131.3	.561	28.27	.121	9d20	103.	.44	10d20 +10d20 +20d16
7	159.6	.682	56.55	.242	9d20 +9d20	103.	.44	10d20 +10d20 +20d16
8	131.3	.561	28.27	.121	9d20	103.	.44	10d20 +20d16 +10d20
9	159.6	.682	56.55	.242	9d20 +9d20	103.	.44	10d20 +20d16 +10d20
10	128.2	.548	56.55	.242	9d20 +9d20	71.63	.306	10d20 +20d16

Si riporta di seguito la verifica a torsione svolta con foglio excel:

DM 2018											
Elementi senza armature trasversali resistenti a taglio (4.1.2.1.3.1 DM 2018)											
h	150	cm									
b	100	cm									
c	5	cm	copriferro in asse alle armature longitudinali								
Ac	15000	cmq									
u	500	cm	perimetro								
um	380	cm	perimetro medio								
A	8400	cmq	Area racchiusa della fibra media								
Al	78.53981634	cmq	armatura longitudinale per la sola torsione (almeno un ferro per spigolo), 4fi12+2fi16+2fi24								
t	30.00	cm									
Asw	12.56	cmq	staffe per la sola torsione						Te d	121.0 0	T m
f _{yd}	3913	daN/c mq						Ve d	0.00	T	
s _{min}	40	cm	staffe per la sola torsione								
∅	45		ctg(∅)			1.000	0,4<cot∅< 2,5				
α	90	inclinazione armature a taglio					21,8<∅<68				
Asw	12.56	cmq									
f _{cd}	141.1	daN/c mq									
f' _{cd}	70.6	daN/c mq									
d	145	cm									
b	100	cm									
∅	45										
∅	questo parametro viene preso 0,5 e messo direttamente dentro ad f'cd=0,5fcd										
f _{ck}	249.0	daN/c mq									
γ _c	1.5										
f _y	4500	daN/c mq									
RcK	300	daN/c mq									
Trcd	17778600	daNcm	→	177.79	T m	VERIFICA- TO					
Trsd	20642086.96	daNcm	→	206.42	T m	VERIFICA- TO					
Trld	13587208.5	daNcm	→	135.87	T m	VERIFICA- TO					
NOTA BENE: VERIFICARE I VALORI RESISTENTI CON DIVERSE INCLINAZIONI DELLE BIELLE COM-											

PRESSE									
Vrc	131.70	T	taglio resistente lato calcestruzzo (da calcolare a parte)						
Ted/Trcd + Ved/Vrcd	< 1		0.68	VERIFI- CATO					

Nel tabulato di calcolo appena riportato si è seguita la verifica della fondazione in senso longitudinale. In senso trasversale la fondazione, ovvero la parte della ciabatta, è armata con $\Phi 20/20 + \Phi 16/20$ inferiori e $\Phi 16/20$ superiori. Per la verifica della sezione in questa direzione si fa riferimento ad uno schema statico a mensola; la mensola ha una lunghezza di 210 cm ed ha una sollecitazione pari alla pressione esercitata sul terreno. Come è possibile osservare nel paragrafo successivo, la pressione sul terreno di fondazione è pari a 3.3 daN/cm^2 agli SLU. Si considera una sezione di larghezza 100 cm.

In senso trasversale la fondazione, ovvero la parte della ciabatta, è armata con $\Phi 20/20 + \Phi 16/20$ inferiori e $\Phi 16/20$ superiori. Per la verifica della sezione in questa direzione si fa riferimento ad uno schema statico a mensola; la mensola ha una lunghezza di 80.5 cm ed ha una sollecitazione pari alla pressione esercitata sul terreno. Come è possibile osservare nel paragrafo successivo, la pressione sul terreno di fondazione è pari a 1.58 daN/cm^2 agli SLU.

La ciabatta della fondazione viene trattata con lo schema strutt and tie con la reazione all'incastro pari a $V = 12719 \text{ daN}$.

Reazione sulla mensola (t):	12.72		
Azioni trasmesse alla mensola :			
P (t)=	12.72		
Azioni di calcolo :			
P= (P) x 1.00 =	12.72	alfa = invtg (z/B(P))=	34.99
		B(P)(cm)=	80.00
d(cm) =	70.00		
z(cm)= 0.8xd=	56.00		
Progetto e verifica delle armature:			
Sa,d = Psism,d / tg(alfa)	18.17	fyd (kg/cm ²)=	3826.00
Aa = Sa/fyd =	4.75	utilizzo Ø20/20+Ø16/20	
verifica del cls:			
Bmen (cm) =	100.00	Rck (kg/cm ²)=	300.00
Sc,d = Psism,d/ sen (alfa	22.18 t	fcd(kg/cm ²)=	138.33
Sc,d,res = Bxdx0.15 fcd :	145.25 t		

L'armatura presente è Ø20/20+Ø16/20 =25.75 cm²/m che è sufficiente ad assorbire la sollecitazione del tirante.

4.5.1.2. CONTROLLO PRESSIONI

Si riportano di seguito le pressioni agenti sul terreno sotto le travi di fondazione nei casi di carico SLU (caso 1) e SLV (casi 4, 5).

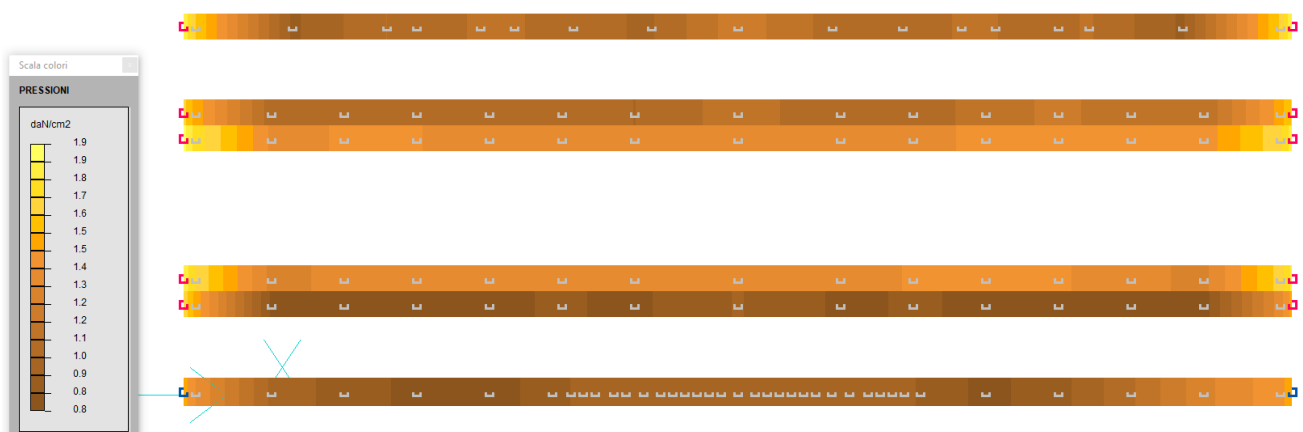


Figura 21 – SLU pressioni

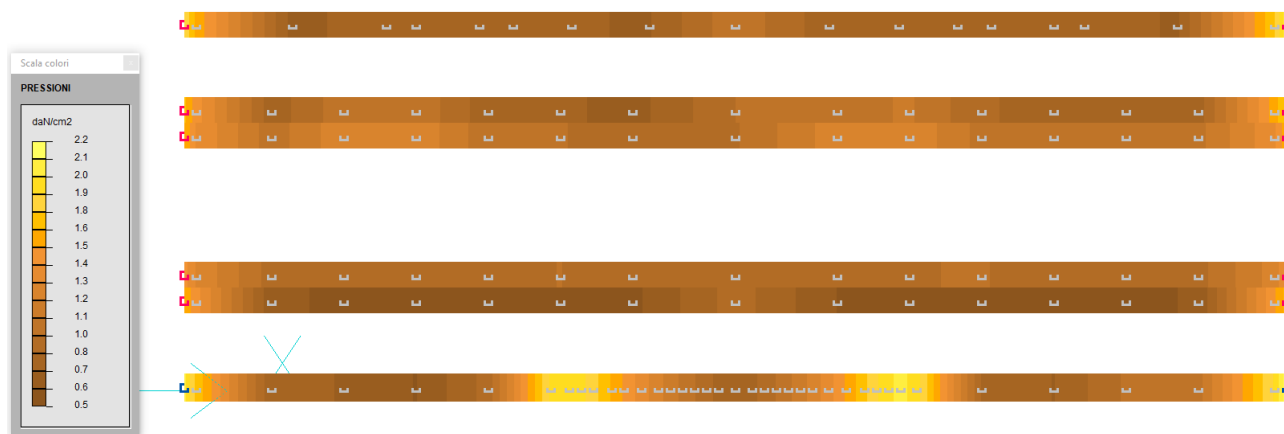


Figura 22 – SLV pressioni

Come è possibile osservare la pressione massima sul terreno pari a 2.2 daN/cm^2 che risulta essere inferiore alla pressione limite del terreno calcolata in relazione tecnica generale pari a 25.3 daN/cm^2 .

4.6. Controventi e reticolari in acciaio

Si riportano di seguito gli andamenti delle sollecitazioni allo SLV (casi 4,5).

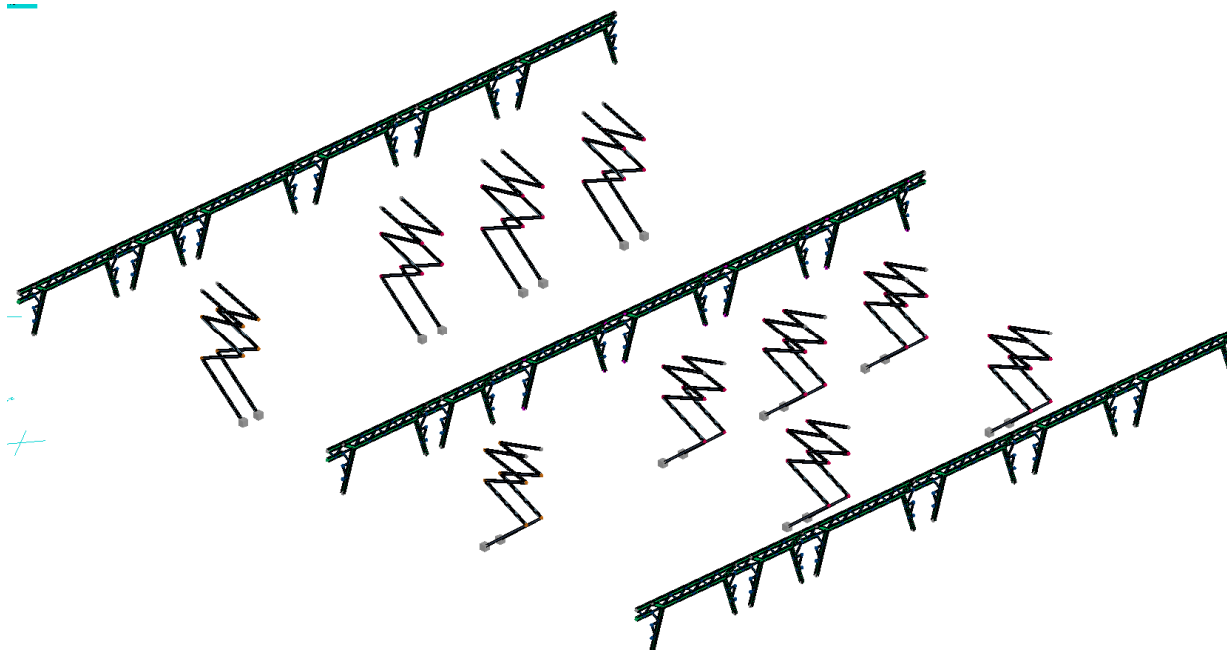


Figura 71 Elementi reticolari e di controvento

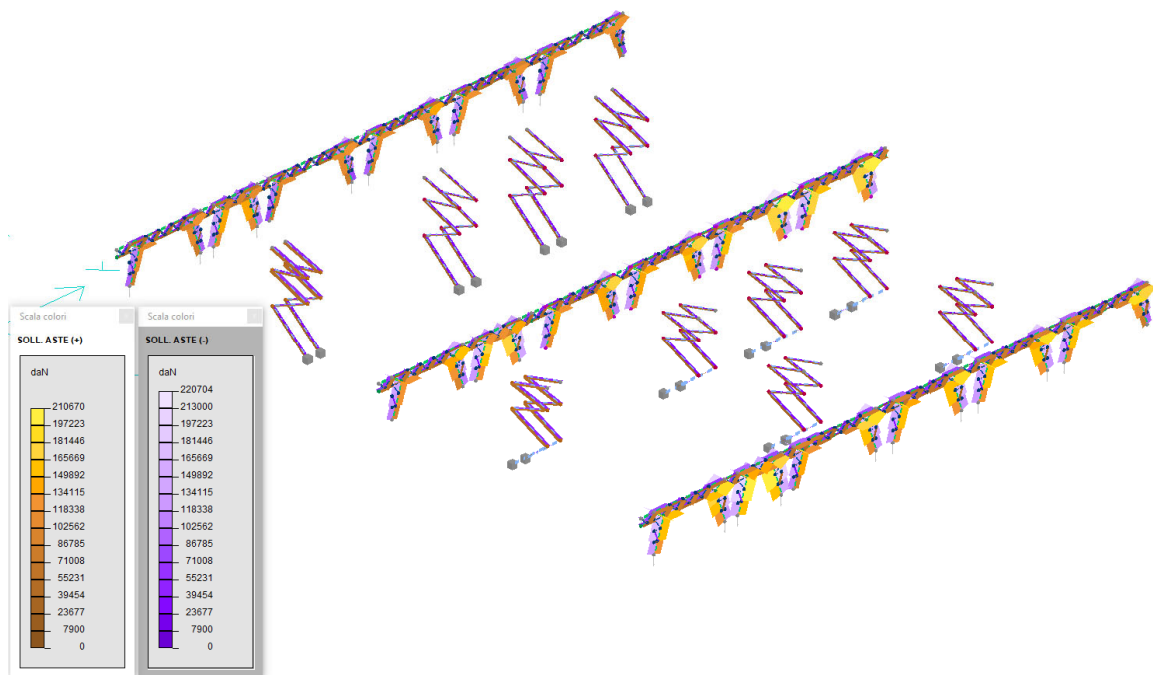


Figura 72 – SLV – N

4.6.1. Verifiche dei controventi più sollecitati

VERIFICA ELEMENTI IN ACCIAIO

lavoro : 686C04

data : 2022_04_29_18_34

Unità di misura:

Lunghezze: cm

Prop.Sez.: cm

Forze: daN

Momenti: daNcm

Tensioni: daN/cm²

MATERIALI

S275 (EN 10025-2): Mod.EI.= 2100000.0; gM = 1.050;

f_{yk} = 2750.0(2550.0 per sp>40 mm); f_{yd} = 2619.0(2428.6 per sp>40 mm).

CASI DI CARICO

N	Descrizione	Soll.
1	SLU SENZA SISMA	1
2	SISMAX SLU	4
3	SISMAY SLU	4
4	SLU con SISMAX PRINC	16
5	SLU con SISMAY PRINC	16
6	SLD con SISMAX PRINC	16
7	SLD con SISMAY PRINC	16
8	Rara	1
9	Frequente	1
10	Quasi Perm	1

CARATTERISTICHE GEOMETRICHE

P_HEB240_S024 (24) :

A =106.2124E+00 Jz= 11.2800E+03 Jy= 3.9231E+03 Jt= 81.9642E+00

P_HEB240_S024 (24) stato limite ultimo - ASTA (9044- 451) 6708
----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-53861.4	0.0	0.0
5-15	0.0	0.0	0.0	-24892.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	si	-507.1	0.0	0.0	507.1
5-15	si	5	Tz		-234.4	0.0	0.0	234.4
5-15	si	9	Ty		-234.4	0.0	0.0	234.4

----- PROGR. 78.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-53861.4	0.0	0.0
5-15	0.0	0.0	0.0	-24892.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	si	-507.1	0.0	0.0	507.1
5-15	si	5	Tz		-234.4	0.0	0.0	234.4
5-15	si	9	Ty		-234.4	0.0	0.0	234.4

----- PROGR. 156.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-53861.4	0.0	0.0
5-15	0.0	0.0	0.0	-24892.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	si	-507.1	0.0	0.0	507.1
5-15	si	5	Tz		-234.4	0.0	0.0	234.4
5-15	si	9	Ty		-234.4	0.0	0.0	234.4

----- PROGR. 234.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-53861.4	0.0	0.0
5-15	0.0	0.0	0.0	-24892.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	si	-507.1	0.0	0.0	507.1
5-15	si	5	Tz		-234.4	0.0	0.0	234.4
5-15	si	9	Ty		-234.4	0.0	0.0	234.4

----- PROGR. 312.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-53861.4	0.0	0.0
5-15	0.0	0.0	0.0	-24892.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	si	-507.1	0.0	0.0	507.1
5-15	si	5	Tz		-234.4	0.0	0.0	234.4
5-15	si	9	Ty		-234.4	0.0	0.0	234.4

----- PROGR. 390.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-53861.4	0.0	0.0
5-15	0.0	0.0	0.0	-24892.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	si	-507.1	0.0	0.0	507.1
5-15	si	5	Tz		-234.4	0.0	0.0	234.4
5-15	si	9	Ty		-234.4	0.0	0.0	234.4

----- PROGR. 468.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-53861.4	0.0	0.0
5-15	0.0	0.0	0.0	-24892.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	Si	-507.1	0.0	0.0	507.1
5-15	si	5	Tz		-234.4	0.0	0.0	234.4
5-15	si	9	Ty		-234.4	0.0	0.0	234.4

----- PROGR. 546.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-53861.4	0.0	0.0
5-15	0.0	0.0	0.0	-24892.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	Si	-507.1	0.0	0.0	507.1
5-15	si	5	Tz		-234.4	0.0	0.0	234.4
5-15	si	9	Ty		-234.4	0.0	0.0	234.4

----- PROGR. 624.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-53861.4	0.0	0.0
5-15	0.0	0.0	0.0	-24892.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	Si	-507.1	0.0	0.0	507.1
5-15	si	5	Tz		-234.4	0.0	0.0	234.4
5-15	si	9	Ty		-234.4	0.0	0.0	234.4

VERIFICA STABILITA` :

|L0 = 624. |

Z |Lc = 624. |Ro = 10.31 |Im = 60.5 |Ncr= 601160.4 |alfa(b)=0.3400 |ki=0.7854 |

Y |Lc = 624. |Ro = 6.08 |Im = 102.6 |Ncr= 209079.9 |alfa(c)=0.4900 |ki=0.4425 |

Caso 4-12 - Nodo 1 - Asse Y

Ned = -53861.4 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -1146.1 (0.438)

P_HEB240_S024 (24) stato limite ultimo - ASTA (9044- 9045) 6709

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	47157.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	Si	444.0	0.0	0.0	444.0

----- PROGR. 77.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	47157.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	Si	444.0	0.0	0.0	444.0

----- PROGR. 153.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	47157.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	Si	444.0	0.0	0.0	444.0

----- PROGR. 230.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	47157.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
4-12	si	1	Sx	Si	444.0	0.0	0.0	0.0	444.0
								PROGR.	307.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	47157.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
4-12	si	1	Sx	Si	444.0	0.0	0.0	0.0	444.0
								PROGR.	384.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	47157.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
4-12	si	1	Sx	Si	444.0	0.0	0.0	0.0	444.0
								PROGR.	460.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	47157.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
4-12	si	1	Sx	Si	444.0	0.0	0.0	0.0	444.0
								PROGR.	537.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	47157.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
4-12	si	1	Sx	Si	444.0	0.0	0.0	0.0	444.0
								PROGR.	614.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	47157.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
4-12	si	1	Sx	Si	444.0	0.0	0.0	0.0	444.0

VERIFICA STABILITA` :

|L0 = 614. |
 Z |Lc = 614. |Ro = 10.31 |Im = 59.6 |Ncr= 620300.5 |alfa(b)=0.3400 |ki=0.7914 |
 Y |Lc = 614. |Ro = 6.08 |Im = 101.0 |Ncr= 215736.7 |alfa(c)=0.4900 |ki=0.4515 |
 Caso 4- 5 - Nodo 1 - Asse Y
 Ned = -46587.6 |Mzeq = 0.0 |Myeq = 0.0 |ss = -971.4 (0.371)

P_HEB240_S024 (24) stato limite ultimo - ASTA (9046- 9045) 6710
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-55189.6	0.0	0.0
5- 2	0.0	0.0	0.0	25002.7	0.0	0.0
4- 5	0.0	0.0	0.0	53938.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
4-12	si	1	Sx	Si	-519.6	0.0	0.0	0.0	519.6
5- 2	si	6	Tz		235.4	0.0	0.0	0.0	235.4

4- 5 si 9	Ty	507.8	0.0	0.0	0.0	507.8
						PROGR. 80.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-55189.6	0.0	0.0
5- 2	0.0	0.0	0.0	25002.7	0.0	0.0
4- 5	0.0	0.0	0.0	53938.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12 si 1 Sx	Si	-519.6	0.0	0.0	0.0	519.6
5- 2 si 6 Tz		235.4	0.0	0.0	0.0	235.4
4- 5 si 9 Ty		507.8	0.0	0.0	0.0	507.8
						PROGR. 160.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-55189.6	0.0	0.0
5- 2	0.0	0.0	0.0	25002.7	0.0	0.0
4- 5	0.0	0.0	0.0	53938.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12 si 1 Sx	Si	-519.6	0.0	0.0	0.0	519.6
5- 2 si 6 Tz		235.4	0.0	0.0	0.0	235.4
4- 5 si 9 Ty		507.8	0.0	0.0	0.0	507.8
						PROGR. 239.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-55189.6	0.0	0.0
5- 2	0.0	0.0	0.0	25002.7	0.0	0.0
4- 5	0.0	0.0	0.0	53938.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12 si 1 Sx	Si	-519.6	0.0	0.0	0.0	519.6
5- 2 si 6 Tz		235.4	0.0	0.0	0.0	235.4
4- 5 si 9 Ty		507.8	0.0	0.0	0.0	507.8
						PROGR. 319.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-55189.6	0.0	0.0
5- 2	0.0	0.0	0.0	25002.7	0.0	0.0
4- 5	0.0	0.0	0.0	53938.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12 si 1 Sx	Si	-519.6	0.0	0.0	0.0	519.6
5- 2 si 6 Tz		235.4	0.0	0.0	0.0	235.4
4- 5 si 9 Ty		507.8	0.0	0.0	0.0	507.8
						PROGR. 399.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-55189.6	0.0	0.0
5- 2	0.0	0.0	0.0	25002.7	0.0	0.0
4- 5	0.0	0.0	0.0	53938.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12 si 1 Sx	Si	-519.6	0.0	0.0	0.0	519.6
5- 2 si 6 Tz		235.4	0.0	0.0	0.0	235.4
4- 5 si 9 Ty		507.8	0.0	0.0	0.0	507.8
						PROGR. 479.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-55189.6	0.0	0.0
5- 2	0.0	0.0	0.0	25002.7	0.0	0.0
4- 5	0.0	0.0	0.0	53938.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	si	-519.6	0.0	0.0	519.6
5- 2	si	6	Tz		235.4	0.0	0.0	235.4
4- 5	si	9	Ty		507.8	0.0	0.0	507.8

----- PROGR. 558.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-55189.6	0.0	0.0
5- 2	0.0	0.0	0.0	25002.7	0.0	0.0
4- 5	0.0	0.0	0.0	53938.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	si	-519.6	0.0	0.0	519.6
5- 2	si	6	Tz		235.4	0.0	0.0	235.4
4- 5	si	9	Ty		507.8	0.0	0.0	507.8

----- PROGR. 638.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-55189.6	0.0	0.0
5- 2	0.0	0.0	0.0	25002.7	0.0	0.0
4- 5	0.0	0.0	0.0	53938.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	si	-519.6	0.0	0.0	519.6
5- 2	si	6	Tz		235.4	0.0	0.0	235.4
4- 5	si	9	Ty		507.8	0.0	0.0	507.8

VERIFICA STABILITA` :

|L0 = 638. |

Z |Lc = 638. |Ro = 10.31 |Im = 61.9 |Ncr= 574300.1 |alfa(b)=0.3400 |ki=0.7762 |

Y |Lc = 638. |Ro = 6.08 |Im = 105.0 |Ncr= 199738.0 |alfa(c)=0.4900 |ki=0.4294 |

Caso 4-12 - Nodo 1 - Asse Y

Ned = -55189.6 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -1210.2 (0.462)

P_HEB240_S024 (24) stato limite ultimo - ASTA (9046- 9047) 6711

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 5	0.0	0.0	0.0	-45889.6	0.0	0.0
5-15	0.0	0.0	0.0	21411.9	0.0	0.0
4-12	0.0	0.0	0.0	45835.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4- 5	si	1	Sx	si	-432.1	0.0	0.0	432.1
5-15	si	5	Tz		201.6	0.0	0.0	201.6
4-12	si	9	Ty		431.5	0.0	0.0	431.5

----- PROGR. 82.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 5	0.0	0.0	0.0	-45889.6	0.0	0.0
5-15	0.0	0.0	0.0	21411.9	0.0	0.0
4-12	0.0	0.0	0.0	45835.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4- 5	si	1	Sx	si	-432.1	0.0	0.0	432.1
5-15	si	5	Tz		201.6	0.0	0.0	201.6
4-12	si	9	Ty		431.5	0.0	0.0	431.5

----- PROGR. 164.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 5	0.0	0.0	0.0	-45889.6	0.0	0.0
5-15	0.0	0.0	0.0	21411.9	0.0	0.0
4-12	0.0	0.0	0.0	45835.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4- 5	si	1	Sx	Si	-432.1	0.0	0.0	432.1
5-15	si	5	Tz		201.6	0.0	0.0	201.6
4-12	si	9	Ty		431.5	0.0	0.0	431.5

----- PROGR. 246.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 5	0.0	0.0	0.0	-45889.6	0.0	0.0
5-15	0.0	0.0	0.0	21411.9	0.0	0.0
4-12	0.0	0.0	0.0	45835.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4- 5	si	1	Sx	Si	-432.1	0.0	0.0	432.1
5-15	si	5	Tz		201.6	0.0	0.0	201.6
4-12	si	9	Ty		431.5	0.0	0.0	431.5

----- PROGR. 329.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 5	0.0	0.0	0.0	-45889.6	0.0	0.0
5-15	0.0	0.0	0.0	21411.9	0.0	0.0
4-12	0.0	0.0	0.0	45835.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4- 5	si	1	Sx	Si	-432.1	0.0	0.0	432.1
5-15	si	5	Tz		201.6	0.0	0.0	201.6
4-12	si	9	Ty		431.5	0.0	0.0	431.5

----- PROGR. 411.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 5	0.0	0.0	0.0	-45889.6	0.0	0.0
5-15	0.0	0.0	0.0	21411.9	0.0	0.0
4-12	0.0	0.0	0.0	45835.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4- 5	si	1	Sx	Si	-432.1	0.0	0.0	432.1
5-15	si	5	Tz		201.6	0.0	0.0	201.6
4-12	si	9	Ty		431.5	0.0	0.0	431.5

----- PROGR. 493.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 5	0.0	0.0	0.0	-45889.6	0.0	0.0
5-15	0.0	0.0	0.0	21411.9	0.0	0.0
4-12	0.0	0.0	0.0	45835.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4- 5	si	1	Sx	Si	-432.1	0.0	0.0	432.1
5-15	si	5	Tz		201.6	0.0	0.0	201.6
4-12	si	9	Ty		431.5	0.0	0.0	431.5

----- PROGR. 575.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 5	0.0	0.0	0.0	-45889.6	0.0	0.0
5-15	0.0	0.0	0.0	21411.9	0.0	0.0
4-12	0.0	0.0	0.0	45835.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4- 5	si	3	Sx	Si	-432.1	0.0	0.0	432.1

5-15 si 5	Tz	201.6	0.0	0.0	0.0	201.6
4-12 si 9	Ty	431.5	0.0	0.0	0.0	431.5
						PROGR. 657.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 5	0.0	0.0	0.0	-45889.6	0.0	0.0
5-15	0.0	0.0	0.0	21411.9	0.0	0.0
4-12	0.0	0.0	0.0	45835.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4- 5 si 3	Sx Si	-432.1	0.0	0.0	0.0	432.1
5-15 si 5	Tz	201.6	0.0	0.0	0.0	201.6
4-12 si 9	Ty	431.5	0.0	0.0	0.0	431.5

VERIFICA STABILITA` :

L0 = 657. |
 Z |Lc = 657. |Ro = 10.31|Im = 63.8|Ncr= 541404.1|alfa(b)=0.3400|ki=0.7639|
 Y |Lc = 657. |Ro = 6.08|Im = 108.1|Ncr= 188297.0|alfa(c)=0.4900|ki=0.4126|
 Caso 4- 5 - Nodo 1 - Asse Y
 Ned = -45889.6|Mzeq = 0.0|Myeq = 0.0|Ss = -1047.0 (0.400)

P_HEB240_S024 (24) stato limite ultimo - ASTA (63- 9047) 6712
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-36637.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12 si 1	Sx Si	-344.9	0.0	0.0	0.0	344.9
						PROGR. 97.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-36637.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12 si 1	Sx Si	-344.9	0.0	0.0	0.0	344.9
						PROGR. 194.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-36637.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12 si 1	Sx Si	-344.9	0.0	0.0	0.0	344.9
						PROGR. 290.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-36637.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12 si 1	Sx Si	-344.9	0.0	0.0	0.0	344.9
						PROGR. 387.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-36637.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12 si 1	Sx Si	-344.9	0.0	0.0	0.0	344.9
						PROGR. 484.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
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4-12	0.0	0.0	0.0	-36637.0	0.0	0.0
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TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	Si	-344.9	0.0	0.0	344.9
								PROGR. 581.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-36637.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	Si	-344.9	0.0	0.0	344.9
								PROGR. 678.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-36637.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	Si	-344.9	0.0	0.0	344.9
								PROGR. 775.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-36637.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	Si	-344.9	0.0	0.0	344.9

VERIFICA STABILITA` :

L0 = 775. |
 Z | Lc = 775. | Ro = 10.31 | lm = 75.2 | Ncr = 389587.2 | alfa(b) = 0.3400 | ki = 0.6831 |
 Y | Lc = 775. | Ro = 6.08 | lm = 127.5 | Ncr = 135496.0 | alfa(c) = 0.4900 | ki = 0.3251 |
 Caso 4-12 - Nodo 1 - Asse Y
 Ned = -36637.0 | Mzeq = 0.0 | Myeq = 0.0 | Ss = -1061.2 (0.405)

P_HEB240_S024 (24) stato limite ultimo - ASTA (91- 9060) 6737
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-35497.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	Si	-334.2	0.0	0.0	334.2
								PROGR. 97.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-35497.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	Si	-334.2	0.0	0.0	334.2
								PROGR. 194.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-35497.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	Si	-334.2	0.0	0.0	334.2
								PROGR. 290.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-35497.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	si	-334.2	0.0	0.0	334.2
----- PROGR.								387.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-35497.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	si	-334.2	0.0	0.0	334.2
----- PROGR.								484.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-35497.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	si	-334.2	0.0	0.0	334.2
----- PROGR.								581.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-35497.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	si	-334.2	0.0	0.0	334.2
----- PROGR.								678.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-35497.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	si	-334.2	0.0	0.0	334.2
----- PROGR.								775.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-35497.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	si	-334.2	0.0	0.0	334.2

VERIFICA STABILITA` :

|L0 = 775. |
 Z |Lc = 775. |Ro = 10.31 |Im = 75.2 |Ncr= 389587.2 |alfa(b)=0.3400 |ki=0.6831 |
 Y |Lc = 775. |Ro = 6.08 |Im = 127.5 |Ncr= 135496.0 |alfa(c)=0.4900 |ki=0.3251 |
 Caso 4-12 - Nodo 1 - Asse Y
 Ned = -35497.3 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -1028.2 (0.393)

P_HEB240_S024 (24) stato limite ultimo - ASTA (9059- 9060) 6738
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 5	0.0	0.0	0.0	-44590.9	0.0	0.0
5-15	0.0	0.0	0.0	19898.7	0.0	0.0
4-12	0.0	0.0	0.0	44419.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4- 5	si	1	Sx	si	-419.8	0.0	0.0	419.8
5-15	si	5	Tz		187.3	0.0	0.0	187.3
4-12	si	9	Ty		418.2	0.0	0.0	418.2
----- PROGR.								82.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
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4- 5	0.0	0.0	0.0	-44590.9	0.0	0.0
5-15	0.0	0.0	0.0	19898.7	0.0	0.0
4-12	0.0	0.0	0.0	44419.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4- 5	si 1 Sx Si	-419.8	0.0	0.0	0.0	419.8
5-15	si 5 Tz	187.3	0.0	0.0	0.0	187.3
4-12	si 9 Ty	418.2	0.0	0.0	0.0	418.2
-----						PROGR. 164.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 5	0.0	0.0	0.0	-44590.9	0.0	0.0
5-15	0.0	0.0	0.0	19898.7	0.0	0.0
4-12	0.0	0.0	0.0	44419.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4- 5	si 1 Sx Si	-419.8	0.0	0.0	0.0	419.8
5-15	si 5 Tz	187.3	0.0	0.0	0.0	187.3
4-12	si 9 Ty	418.2	0.0	0.0	0.0	418.2
-----						PROGR. 246.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 5	0.0	0.0	0.0	-44590.9	0.0	0.0
5-15	0.0	0.0	0.0	19898.7	0.0	0.0
4-12	0.0	0.0	0.0	44419.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4- 5	si 1 Sx Si	-419.8	0.0	0.0	0.0	419.8
5-15	si 5 Tz	187.3	0.0	0.0	0.0	187.3
4-12	si 9 Ty	418.2	0.0	0.0	0.0	418.2
-----						PROGR. 329.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 5	0.0	0.0	0.0	-44590.9	0.0	0.0
5-15	0.0	0.0	0.0	19898.7	0.0	0.0
4-12	0.0	0.0	0.0	44419.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4- 5	si 1 Sx Si	-419.8	0.0	0.0	0.0	419.8
5-15	si 5 Tz	187.3	0.0	0.0	0.0	187.3
4-12	si 9 Ty	418.2	0.0	0.0	0.0	418.2
-----						PROGR. 411.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 5	0.0	0.0	0.0	-44590.9	0.0	0.0
5-15	0.0	0.0	0.0	19898.7	0.0	0.0
4-12	0.0	0.0	0.0	44419.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4- 5	si 1 Sx Si	-419.8	0.0	0.0	0.0	419.8
5-15	si 5 Tz	187.3	0.0	0.0	0.0	187.3
4-12	si 9 Ty	418.2	0.0	0.0	0.0	418.2
-----						PROGR. 493.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 5	0.0	0.0	0.0	-44590.9	0.0	0.0
5-15	0.0	0.0	0.0	19898.7	0.0	0.0
4-12	0.0	0.0	0.0	44419.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4- 5	si 1 Sx Si	-419.8	0.0	0.0	0.0	419.8
5-15	si 5 Tz	187.3	0.0	0.0	0.0	187.3

4-12 si 9	Ty	418.2	0.0	0.0	0.0	418.2
-----						PROGR. 575.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 5	0.0	0.0	0.0	-44590.9	0.0	0.0
5-15	0.0	0.0	0.0	19898.7	0.0	0.0
4-12	0.0	0.0	0.0	44419.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4- 5 si 1	Sx Si	-419.8	0.0	0.0	0.0	419.8
5-15 si 5	Tz	187.3	0.0	0.0	0.0	187.3
4-12 si 9	Ty	418.2	0.0	0.0	0.0	418.2
-----						PROGR. 657.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4- 5	0.0	0.0	0.0	-44590.9	0.0	0.0
5-15	0.0	0.0	0.0	19898.7	0.0	0.0
4-12	0.0	0.0	0.0	44419.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4- 5 si 3	Sx Si	-419.8	0.0	0.0	0.0	419.8
5-15 si 5	Tz	187.3	0.0	0.0	0.0	187.3
4-12 si 9	Ty	418.2	0.0	0.0	0.0	418.2

VERIFICA STABILITA` :

L0 = 657. |
Z |Lc = 657. |Ro = 10.31|Im = 63.8|Ncr= 541404.1|alfa(b)=0.3400|ki=0.7639|
Y |Lc = 657. |Ro = 6.08|Im = 108.1|Ncr= 188297.0|alfa(c)=0.4900|ki=0.4126|
Caso 4- 5 - Nodo 1 - Asse Y
Ned = -44590.9|Mzeq = 0.0|Myeq = 0.0|ss = -1017.4 (0.388)

P_HEB240_S024 (24) stato limite ultimo - ASTA (9059- 9058) 6739

PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-59401.6	0.0	0.0
5- 2	0.0	0.0	0.0	28629.4	0.0	0.0
4- 5	0.0	0.0	0.0	57510.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12 si 1	Sx Si	-559.3	0.0	0.0	0.0	559.3
5- 2 si 6	Tz	269.5	0.0	0.0	0.0	269.5
4- 5 si 9	Ty	541.5	0.0	0.0	0.0	541.5
-----						PROGR. 80.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-59401.6	0.0	0.0
5- 2	0.0	0.0	0.0	28629.4	0.0	0.0
4- 5	0.0	0.0	0.0	57510.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12 si 1	Sx Si	-559.3	0.0	0.0	0.0	559.3
5- 2 si 6	Tz	269.5	0.0	0.0	0.0	269.5
4- 5 si 9	Ty	541.5	0.0	0.0	0.0	541.5
-----						PROGR. 160.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-59401.6	0.0	0.0
5- 2	0.0	0.0	0.0	28629.4	0.0	0.0
4- 5	0.0	0.0	0.0	57510.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	Si	-559.3	0.0	0.0	559.3
5- 2	si	6	Tz		269.5	0.0	0.0	269.5
4- 5	si	9	Ty		541.5	0.0	0.0	541.5

----- PROGR. 239.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-59401.6	0.0	0.0
5- 2	0.0	0.0	0.0	28629.4	0.0	0.0
4- 5	0.0	0.0	0.0	57510.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	Si	-559.3	0.0	0.0	559.3
5- 2	si	6	Tz		269.5	0.0	0.0	269.5
4- 5	si	9	Ty		541.5	0.0	0.0	541.5

----- PROGR. 319.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-59401.6	0.0	0.0
5- 2	0.0	0.0	0.0	28629.4	0.0	0.0
4- 5	0.0	0.0	0.0	57510.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	Si	-559.3	0.0	0.0	559.3
5- 2	si	6	Tz		269.5	0.0	0.0	269.5
4- 5	si	9	Ty		541.5	0.0	0.0	541.5

----- PROGR. 399.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-59401.6	0.0	0.0
5- 2	0.0	0.0	0.0	28629.4	0.0	0.0
4- 5	0.0	0.0	0.0	57510.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	Si	-559.3	0.0	0.0	559.3
5- 2	si	6	Tz		269.5	0.0	0.0	269.5
4- 5	si	9	Ty		541.5	0.0	0.0	541.5

----- PROGR. 479.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-59401.6	0.0	0.0
5- 2	0.0	0.0	0.0	28629.4	0.0	0.0
4- 5	0.0	0.0	0.0	57510.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	Si	-559.3	0.0	0.0	559.3
5- 2	si	6	Tz		269.5	0.0	0.0	269.5
4- 5	si	9	Ty		541.5	0.0	0.0	541.5

----- PROGR. 558.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-59401.6	0.0	0.0
5- 2	0.0	0.0	0.0	28629.4	0.0	0.0
4- 5	0.0	0.0	0.0	57510.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si	1	Sx	Si	-559.3	0.0	0.0	559.3
5- 2	si	6	Tz		269.5	0.0	0.0	269.5
4- 5	si	9	Ty		541.5	0.0	0.0	541.5

----- PROGR. 638.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-59401.6	0.0	0.0
5- 2	0.0	0.0	0.0	28629.4	0.0	0.0
4- 5	0.0	0.0	0.0	57510.4	0.0	0.0
TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si 1 Sx si	-559.3	0.0	0.0	0.0	559.3
5- 2	si 6 Tz	269.5	0.0	0.0	0.0	269.5
4- 5	si 9 Ty	541.5	0.0	0.0	0.0	541.5

VERIFICA STABILITA` :

|L0 = 638. |
Z |Lc = 638. |Ro = 10.31|Im = 61.9|Ncr= 574300.1|alfa(b)=0.3400|ki=0.7762|
Y |Lc = 638. |Ro = 6.08|Im = 105.0|Ncr= 199738.0|alfa(c)=0.4900|ki=0.4294|
Caso 4-12 - Nodo 1 - Asse Y
Ned = -59401.6|Mzeq = 0.0|Myeq = 0.0|ss = -1302.5 (0.497)

P_HEB240_S024 (24) stato limite ultimo - ASTA (9057- 9058) 6740
----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	50746.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si 1 Sx si	477.8	0.0	0.0	0.0	477.8

----- PROGR. 77.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	50746.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si 1 Sx si	477.8	0.0	0.0	0.0	477.8

----- PROGR. 153.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	50746.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si 1 Sx si	477.8	0.0	0.0	0.0	477.8

----- PROGR. 230.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	50746.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si 1 Sx si	477.8	0.0	0.0	0.0	477.8

----- PROGR. 307.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	50746.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si 1 Sx si	477.8	0.0	0.0	0.0	477.8

----- PROGR. 384.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	50746.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si 1 Sx si	477.8	0.0	0.0	0.0	477.8

----- PROGR. 460.

SOLLECITAZIONI :
 | Caso | MZ | MY | MT | N | TZ | TY |
 | 4-12 | 0.0 | 0.0 | 0.0 | 50746.0 | 0.0 | 0.0 |
 TENSIONI (Sz= 0.00) :
 | Caso | Ve | No | massimi | Sx | Tz | Ty | Tau tot. | Si |
 | 4-12 | si | 1 | Sx | Si | 477.8 | 0.0 | 0.0 | 0.0 | 477.8 |

----- PROGR. 537.

SOLLECITAZIONI :
 | Caso | MZ | MY | MT | N | TZ | TY |
 | 4-12 | 0.0 | 0.0 | 0.0 | 50746.0 | 0.0 | 0.0 |
 TENSIONI (Sz= 0.00) :
 | Caso | Ve | No | massimi | Sx | Tz | Ty | Tau tot. | Si |
 | 4-12 | si | 1 | Sx | Si | 477.8 | 0.0 | 0.0 | 0.0 | 477.8 |

----- PROGR. 614.

SOLLECITAZIONI :
 | Caso | MZ | MY | MT | N | TZ | TY |
 | 4-12 | 0.0 | 0.0 | 0.0 | 50746.0 | 0.0 | 0.0 |
 TENSIONI (Sz= 0.00) :
 | Caso | Ve | No | massimi | Sx | Tz | Ty | Tau tot. | Si |
 | 4-12 | si | 1 | Sx | Si | 477.8 | 0.0 | 0.0 | 0.0 | 477.8 |

 VERIFICA STABILITA` :

|L0 = 614. |
 Z |Lc = 614. |Ro = 10.31 |Im = 59.6 |Ncr= 620300.5 |alfa(b)=0.3400 |ki=0.7914 |
 Y |Lc = 614. |Ro = 6.08 |Im = 101.0 |Ncr= 215736.7 |alfa(c)=0.4900 |ki=0.4515 |
 Caso 4- 5 - Nodo 1 - Asse Y
 Ned = -50433.4 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -1051.6 (0.402)

P_HEB240_S024 (24) stato limite ultimo - ASTA (9057- 466) 6741

----- PROGR. 0.

SOLLECITAZIONI :
Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-59327.9	0.0	0.0
5- 2	0.0	0.0	0.0	29528.2	0.0	0.0
TENSIONI (Sz= 0.00) :						
Caso	Ve	No	massimi	Sx	Tz	Ty
4-12	si	1	Sx	Si	-558.6	0.0
5- 2	si	5	Tz	278.0	0.0	0.0
5- 2	si	9	Ty	278.0	0.0	0.0

----- PROGR. 78.

SOLLECITAZIONI :
Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-59327.9	0.0	0.0
5- 2	0.0	0.0	0.0	29528.2	0.0	0.0
TENSIONI (Sz= 0.00) :						
Caso	Ve	No	massimi	Sx	Tz	Ty
4-12	si	1	Sx	Si	-558.6	0.0
5- 2	si	5	Tz	278.0	0.0	0.0
5- 2	si	9	Ty	278.0	0.0	0.0

----- PROGR. 156.

SOLLECITAZIONI :
Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-59327.9	0.0	0.0
5- 2	0.0	0.0	0.0	29528.2	0.0	0.0
TENSIONI (Sz= 0.00) :						
Caso	Ve	No	massimi	Sx	Tz	Ty
4-12	si	1	Sx	Si	-558.6	0.0
5- 2	si	5	Tz	278.0	0.0	0.0
5- 2	si	9	Ty	278.0	0.0	0.0

----- PROGR. 234.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-59327.9	0.0	0.0
5- 2	0.0	0.0	0.0	29528.2	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si 1 Sx si	-558.6	0.0	0.0	0.0	558.6
5- 2	si 5 Tz	278.0	0.0	0.0	0.0	278.0
5- 2	si 9 Ty	278.0	0.0	0.0	0.0	278.0

----- PROGR. 312.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-59327.9	0.0	0.0
5- 2	0.0	0.0	0.0	29528.2	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si 1 Sx si	-558.6	0.0	0.0	0.0	558.6
5- 2	si 5 Tz	278.0	0.0	0.0	0.0	278.0
5- 2	si 9 Ty	278.0	0.0	0.0	0.0	278.0

----- PROGR. 390.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-59327.9	0.0	0.0
5- 2	0.0	0.0	0.0	29528.2	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si 1 Sx si	-558.6	0.0	0.0	0.0	558.6
5- 2	si 5 Tz	278.0	0.0	0.0	0.0	278.0
5- 2	si 9 Ty	278.0	0.0	0.0	0.0	278.0

----- PROGR. 468.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-59327.9	0.0	0.0
5- 2	0.0	0.0	0.0	29528.2	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si 1 Sx si	-558.6	0.0	0.0	0.0	558.6
5- 2	si 5 Tz	278.0	0.0	0.0	0.0	278.0
5- 2	si 9 Ty	278.0	0.0	0.0	0.0	278.0

----- PROGR. 546.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-59327.9	0.0	0.0
5- 2	0.0	0.0	0.0	29528.2	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si 1 Sx si	-558.6	0.0	0.0	0.0	558.6
5- 2	si 5 Tz	278.0	0.0	0.0	0.0	278.0
5- 2	si 9 Ty	278.0	0.0	0.0	0.0	278.0

----- PROGR. 624.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
4-12	0.0	0.0	0.0	-59327.9	0.0	0.0
5- 2	0.0	0.0	0.0	29528.2	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
4-12	si 1 Sx si	-558.6	0.0	0.0	0.0	558.6
5- 2	si 5 Tz	278.0	0.0	0.0	0.0	278.0
5- 2	si 9 Ty	278.0	0.0	0.0	0.0	278.0

VERIFICA STABILITA` :

|L0 = 624.|
 Z |Lc = 624.|Ro = 10.31|Im = 60.5|Ncr= 601160.4|alfa(b)=0.3400|ki=0.7854|
 Y |Lc = 624.|Ro = 6.08|Im = 102.6|Ncr= 209079.9|alfa(c)=0.4900|ki=0.4425|
 Caso 4-12 - Nodo 1 - Asse Y
 Ned = -59327.9|Mzeq = 0.0|Myeq = 0.0|Ss = -1262.4 (0.482)

4.6.2. Verifiche delle reticolari più sollecitate

Riassunto delle verifiche:

VERIFICA ASTE IN ACCIAIO

RIASSUNTO DELLE ASTE VERIFICATE CON L'ULTIMO CALCOLO EFFETTUATO

Rapporti di tensioni:

asta	sez	profilo	Tau %	Sx %	Si %	Ss %	Caso	Max %
5540	23	P_HEB400_S023	0	41	41	42	5- 4	42 Ss
5541	23	P_HEB400_S023	0	36	36	37	5- 9	37 Ss
5564	22	CASSONE_S022	0	4	4	3	5-15	4 Si
5565	22	CASSONE_S022	0	7	7	6	5-15	7 Si
5572	22	CASSONE_S022	0	34	34	35	5- 4	35 Ss
5573	22	CASSONE_S022	0	34	34	34	3- 4	34 Ss
5574	22	CASSONE_S022	0	35	35	35	5- 4	35 Ss
5575	22	CASSONE_S022	0	35	35	35	3- 4	35 Ss
5576	22	CASSONE_S022	0	35	35	35	5- 4	35 Ss
5577	22	CASSONE_S022	0	35	35	35	3- 4	35 Ss
5578	22	CASSONE_S022	0	34	34	35	5- 4	35 Ss
5579	22	CASSONE_S022	0	34	34	35	3- 4	35 Ss
5614	23	P_HEB400_S023	0	3	3	3	5- 2	3 Ss
5623	22	CASSONE_S022	0	25	25	26	5-13	26 Ss
5624	22	CASSONE_S022	0	26	26	27	3- 1	27 Ss
5625	22	CASSONE_S022	0	26	26	27	5-14	27 Ss
5664	22	CASSONE_S022	0	3	3	3	5- 6	3 Ss
5665	22	CASSONE_S022	0	1	1	1	5- 7	1 Si
5666	22	CASSONE_S022	0	21	21	21	5- 8	21 Ss
5667	22	CASSONE_S022	0	14	14	13	5- 8	14 Si
5680	22	CASSONE_S022	0	4	4	4	5-13	4 Ss
5681	22	CASSONE_S022	0	2	2	2	5-15	2 Si
5682	22	CASSONE_S022	0	22	22	23	5-14	23 Ss
5683	22	CASSONE_S022	0	15	15	14	5-14	15 Si
5699	23	P_HEB400_S023	0	39	39	40	5-10	40 Ss
5701	23	P_HEB400_S023	0	42	42	43	5- 3	43 Ss
5702	22	CASSONE_S022	0	3	3	2	5-15	3 Si
5703	22	CASSONE_S022	0	4	4	4	5-10	4 Ss
5704	22	CASSONE_S022	0	2	2	2	5-10	2 Si
5705	22	CASSONE_S022	0	24	24	25	3- 4	25 Ss
5706	22	CASSONE_S022	0	16	16	16	5- 3	16 Si
5707	22	CASSONE_S022	0	6	6	4	5-15	6 Si
5708	22	CASSONE_S022	0	3	3	3	5- 7	3 Ss
5709	22	CASSONE_S022	0	2	2	1	5- 7	2 Si
5710	22	CASSONE_S022	0	23	23	24	5- 7	24 Ss
5711	22	CASSONE_S022	0	15	15	14	5- 7	15 Si
5712	22	CASSONE_S022	0	36	36	37	5- 3	37 Ss
5713	22	CASSONE_S022	0	36	36	37	3- 4	37 Ss
5714	22	CASSONE_S022	0	37	37	38	5- 3	38 Ss
5715	22	CASSONE_S022	0	37	37	38	3- 4	38 Ss
5716	22	CASSONE_S022	0	37	37	38	5- 3	38 Ss

5717	22	CASSONE_S022		0	37	37	38	3- 4	38	ss
5718	22	CASSONE_S022		0	36	36	37	5- 3	37	ss
5719	22	CASSONE_S022		0	37	37	37	3- 4	37	ss
6074	23	P_HEB400_S023		0	2	2	2	5- 2	2	ss
6076	22	CASSONE_S022		0	39	39	38	5- 3	39	si
6077	22	CASSONE_S022		0	39	39	40	5- 3	40	ss
6133	23	P_HEB400_S023		0	14	14	15	5- 4	15	ss
6134	23	P_HEB400_S023		0	9	9	9	3- 1	9	ss
6135	23	P_HEB400_S023		0	3	3	3	3- 1	3	ss
6136	23	P_HEB400_S023		0	3	3	3	5- 7	3	si
6137	23	P_HEB400_S023		0	7	7	8	3- 3	8	ss
6138	23	P_HEB400_S023		0	27	27	28	5- 9	28	ss
6139	23	P_HEB400_S023		0	7	7	7	5-10	7	ss
6140	23	P_HEB400_S023		0	15	15	16	5- 4	16	ss
6141	23	P_HEB400_S023		0	35	35	37	5- 4	37	ss
6170	23	P_HEB400_S023		2	12	12	11	5-13	12	si
6171	23	P_HEB400_S023		1	9	9	8	5- 7	9	si
6172	23	P_HEB400_S023		1	11	11	11	5-13	11	si
6173	32	P_HEB340_S032		1	33	33	33	5- 4	33	si
6174	32	P_HEB340_S032		1	51	51	50	5- 3	51	si
6175	32	P_HEB340_S032		1	52	52	48	5- 3	52	si
6176	32	P_HEB340_S032		1	30	30	29	5-13	30	si
6177	32	P_HEB340_S032		1	48	48	47	5-13	48	si
6178	32	P_HEB340_S032		2	48	48	44	5- 9	48	si
6191	23	P_HEB400_S023		0	15	15	16	5- 4	16	ss
6192	23	P_HEB400_S023		0	8	8	9	5- 4	9	ss
6193	23	P_HEB400_S023		0	1	1	1	5- 2	1	ss
6194	23	P_HEB400_S023		0	6	6	6	5-10	6	ss
6195	23	P_HEB400_S023		0	14	14	15	5-10	15	ss
6196	23	P_HEB400_S023		0	30	30	31	5-10	31	ss
6197	23	P_HEB400_S023		0	9	9	10	5-10	10	ss
6198	23	P_HEB400_S023		0	14	14	14	5- 4	14	ss
6199	23	P_HEB400_S023		0	35	35	36	5- 3	36	ss
6200	32	P_HEB340_S032		1	33	33	32	5- 3	33	si
6201	32	P_HEB340_S032		1	54	54	53	5- 3	54	si
6202	32	P_HEB340_S032		2	55	55	51	5- 3	55	si
6203	32	P_HEB340_S032		1	32	32	32	5- 3	32	si
6204	32	P_HEB340_S032		1	52	52	51	5-14	52	si
6205	32	P_HEB340_S032		2	53	53	48	5-14	53	si
6229	23	P_HEB400_S023		1	10	10	9	5- 7	10	si
6230	23	P_HEB400_S023		1	15	15	15	5- 3	15	si

Tabulato esteso delle verifiche:

VERIFICA ELEMENTI IN ACCIAIO

lavoro : 686C04

data : 2022_05_04_11_50

Unità di misura:

Lunghezze: cm

Prop.Sez.: cm

Forze: daN

Momenti: daNcm

Tensioni: daN/cm2

MATERIALI

S275 (EN 10025-2): Mod.EI.= 2100000.0; gM = 1.050;

fyk = 2750.0(2550.0 per sp>40 mm); fyd = 2619.0(2428.6 per sp>40 mm).

CASI DI CARICO

N	Descrizione	sol1.
1	SLU SENZA SISMA	1

2 SISMAX SLU	4
3 SISMAY SLU	4
4 SLU con SISMAX PRINC	16
5 SLU con SISMAY PRINC	16
6 SLD con SISMAX PRINC	16
7 SLD con SISMAY PRINC	16
8 Rara	1
9 Frequente	1
10 Quasi Perm	1

CARATTERISTICHE GEOMETRICHE

P_HEB400_S023 (23) :

A =198.1527E+00 Jz= 57.7842E+03 Jy= 10.8203E+03 Jt=291.4140E+00

CASSONE_S022 (22) :

A = 81.0000E+00 Jz= 2.4908E+03 Jy= 2.4908E+03 Jt= 3.6906E+03

base= 15. ; alt= 15. ; spsup= 2. ; spsx= 2. ; spdx= 2. ; spinf= 2.

P_HEB340_S032 (32) :

A =171.2727E+00 Jz= 36.7287E+03 Jy= 9.6911E+03 Jt=206.8989E+00

P_HEB400_S023 (23) stato limite ultimo - ASTA (7588- 6527) 5540
----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-209828.6	0.0	0.0
5- 3	0.0	0.0	0.0	-209826.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si 1 Sx Si	-1058.9	0.0	0.0	0.0	1058.9
5- 3	si 5 Tz	-1058.9	0.0	0.0	0.0	1058.9
5- 3	si 9 Ty	-1058.9	0.0	0.0	0.0	1058.9

----- PROGR. 23.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-209828.6	0.0	0.0
5- 3	0.0	0.0	0.0	-209826.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si 1 Sx Si	-1058.9	0.0	0.0	0.0	1058.9
5- 3	si 5 Tz	-1058.9	0.0	0.0	0.0	1058.9
5- 3	si 9 Ty	-1058.9	0.0	0.0	0.0	1058.9

----- PROGR. 45.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-209828.6	0.0	0.0
5- 3	0.0	0.0	0.0	-209826.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si 1 Sx Si	-1058.9	0.0	0.0	0.0	1058.9
5- 3	si 5 Tz	-1058.9	0.0	0.0	0.0	1058.9
5- 3	si 9 Ty	-1058.9	0.0	0.0	0.0	1058.9

----- PROGR. 68.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-209828.6	0.0	0.0
5- 3	0.0	0.0	0.0	-209826.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si 1 Sx Si	-1058.9	0.0	0.0	0.0	1058.9
5- 3	si 5 Tz	-1058.9	0.0	0.0	0.0	1058.9

5- 3 si 9	Ty	-1058.9	0.0	0.0	0.0	1058.9
						PROGR. 90.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-209828.6	0.0	0.0
5- 3	0.0	0.0	0.0	-209826.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx	si	-1058.9	0.0	0.0	0.0	1058.9
5- 3 si 5	Tz	-1058.9	0.0	0.0	0.0	1058.9
5- 3 si 9	Ty	-1058.9	0.0	0.0	0.0	1058.9
						PROGR. 113.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-209828.6	0.0	0.0
5- 3	0.0	0.0	0.0	-209826.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx	si	-1058.9	0.0	0.0	0.0	1058.9
5- 3 si 5	Tz	-1058.9	0.0	0.0	0.0	1058.9
5- 3 si 9	Ty	-1058.9	0.0	0.0	0.0	1058.9
						PROGR. 135.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-209828.6	0.0	0.0
5- 3	0.0	0.0	0.0	-209826.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx	si	-1058.9	0.0	0.0	0.0	1058.9
5- 3 si 5	Tz	-1058.9	0.0	0.0	0.0	1058.9
5- 3 si 9	Ty	-1058.9	0.0	0.0	0.0	1058.9
						PROGR. 158.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-209828.6	0.0	0.0
5- 3	0.0	0.0	0.0	-209826.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx	si	-1058.9	0.0	0.0	0.0	1058.9
5- 3 si 5	Tz	-1058.9	0.0	0.0	0.0	1058.9
5- 3 si 9	Ty	-1058.9	0.0	0.0	0.0	1058.9
						PROGR. 180.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-209828.6	0.0	0.0
5- 3	0.0	0.0	0.0	-209826.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx	si	-1058.9	0.0	0.0	0.0	1058.9
5- 3 si 5	Tz	-1058.9	0.0	0.0	0.0	1058.9
5- 3 si 9	Ty	-1058.9	0.0	0.0	0.0	1058.9

VERIFICA STABILITA` :

L0 = 180. |
 Z |Lc = 180. |Ro = 17.08 |Im = 10.6 |Ncr= 36850645.3 |alfa(a)=0.2100 |ki=1.0000 |
 Y |Lc = 180. |Ro = 7.39 |Im = 24.4 |Ncr= 6900431.2 |alfa(b)=0.3400 |ki=0.9710 |
 Caso 5- 4 - Nodo 3 - Asse Y
 Ned = -209828.6 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -1090.5 (0.416)

P_HEB400_S023 (23) stato limite ultimo - ASTA (6528- 7587) 5541

----- PROGR.							0.
SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 9	0.0	0.0	0.0	-182162.0	0.0	0.0	
5-13	0.0	0.0	0.0	-182112.9	0.0	0.0	
TENSIONI (Sz= 0.00) :							
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 9	si 1 Sx Si	-919.3	0.0	0.0	0.0	919.3	
5-13	si 5 Tz	-919.1	0.0	0.0	0.0	919.1	
5-13	si 9 Ty	-919.1	0.0	0.0	0.0	919.1	
----- PROGR.							23.
SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 9	0.0	0.0	0.0	-182162.0	0.0	0.0	
5-13	0.0	0.0	0.0	-182112.9	0.0	0.0	
TENSIONI (Sz= 0.00) :							
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 9	si 1 Sx Si	-919.3	0.0	0.0	0.0	919.3	
5-13	si 5 Tz	-919.1	0.0	0.0	0.0	919.1	
5-13	si 9 Ty	-919.1	0.0	0.0	0.0	919.1	
----- PROGR.							45.
SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 9	0.0	0.0	0.0	-182162.0	0.0	0.0	
5-13	0.0	0.0	0.0	-182112.9	0.0	0.0	
TENSIONI (Sz= 0.00) :							
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 9	si 1 Sx Si	-919.3	0.0	0.0	0.0	919.3	
5-13	si 5 Tz	-919.1	0.0	0.0	0.0	919.1	
5-13	si 9 Ty	-919.1	0.0	0.0	0.0	919.1	
----- PROGR.							68.
SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 9	0.0	0.0	0.0	-182162.0	0.0	0.0	
5-13	0.0	0.0	0.0	-182112.9	0.0	0.0	
TENSIONI (Sz= 0.00) :							
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 9	si 1 Sx Si	-919.3	0.0	0.0	0.0	919.3	
5-13	si 5 Tz	-919.1	0.0	0.0	0.0	919.1	
5-13	si 9 Ty	-919.1	0.0	0.0	0.0	919.1	
----- PROGR.							90.
SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 9	0.0	0.0	0.0	-182162.0	0.0	0.0	
5-13	0.0	0.0	0.0	-182112.9	0.0	0.0	
TENSIONI (Sz= 0.00) :							
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 9	si 1 Sx Si	-919.3	0.0	0.0	0.0	919.3	
5-13	si 5 Tz	-919.1	0.0	0.0	0.0	919.1	
5-13	si 9 Ty	-919.1	0.0	0.0	0.0	919.1	
----- PROGR.							113.
SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 9	0.0	0.0	0.0	-182162.0	0.0	0.0	
5-13	0.0	0.0	0.0	-182112.9	0.0	0.0	
TENSIONI (Sz= 0.00) :							
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 9	si 1 Sx Si	-919.3	0.0	0.0	0.0	919.3	
5-13	si 5 Tz	-919.1	0.0	0.0	0.0	919.1	
5-13	si 9 Ty	-919.1	0.0	0.0	0.0	919.1	
----- PROGR.							135.
SOLLECITAZIONI :							

Caso	MZ	MY	MT	N	TZ	TY
5- 9	0.0	0.0	0.0	-182162.0	0.0	0.0
5-13	0.0	0.0	0.0	-182112.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 9	si	1	Sx	si	-919.3	0.0	0.0	0.0	919.3
5-13	si	5	Tz		-919.1	0.0	0.0	0.0	919.1
5-13	si	9	Ty		-919.1	0.0	0.0	0.0	919.1

----- PROGR. 158.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 9	0.0	0.0	0.0	-182162.0	0.0	0.0
5-13	0.0	0.0	0.0	-182112.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 9	si	1	Sx	si	-919.3	0.0	0.0	0.0	919.3
5-13	si	5	Tz		-919.1	0.0	0.0	0.0	919.1
5-13	si	9	Ty		-919.1	0.0	0.0	0.0	919.1

----- PROGR. 180.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 9	0.0	0.0	0.0	-182162.0	0.0	0.0
5-13	0.0	0.0	0.0	-182112.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 9	si	1	Sx	si	-919.3	0.0	0.0	0.0	919.3
5-13	si	5	Tz		-919.1	0.0	0.0	0.0	919.1
5-13	si	9	Ty		-919.1	0.0	0.0	0.0	919.1

VERIFICA STABILITA` :

L0 = 180. |
 Z |Lc = 180. |Ro = 17.08 |Im = 10.6 |Ncr= 36850645.3 |alfa(a)=0.2100 |ki=1.0000 |
 Y |Lc = 180. |Ro = 7.39 |Im = 24.4 |Ncr= 6900431.2 |alfa(b)=0.3400 |ki=0.9710 |
 Caso 5- 9 - Nodo 1 - Asse Y
 Ned = -182162.0 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -946.7 (0.361)

CASSONE_S022 (22) stato limite ultimo - ASTA (7588- 7605) 5564
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	7922.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-15	si	1	Sx	si	97.8	0.0	0.0	0.0	97.8

----- PROGR. 19.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	7922.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-15	si	1	Sx	si	97.8	0.0	0.0	0.0	97.8

----- PROGR. 38.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	7922.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-15	si	1	Sx	si	97.8	0.0	0.0	0.0	97.8

----- PROGR. 56.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	7922.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-15	si	1	Sx	Si	97.8	0.0	0.0	97.8

----- PROGR. 75.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	7922.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-15	si	1	Sx	Si	97.8	0.0	0.0	97.8

----- PROGR. 94.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	7922.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-15	si	1	Sx	Si	97.8	0.0	0.0	97.8

----- PROGR. 112.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	7922.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-15	si	1	Sx	Si	97.8	0.0	0.0	97.8

----- PROGR. 131.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	7922.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-15	si	1	Sx	Si	97.8	0.0	0.0	97.8

----- PROGR. 150.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	7922.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-15	si	1	Sx	Si	97.8	0.0	0.0	97.8

VERIFICA STABILITA` :

|L0 = 150.|

Z |Lc = 150.|Ro = 5.55|Im = 27.1|Ncr= 2294386.9|alfa(a)=0.2100|ki=0.9748|

Y |Lc = 150.|Ro = 5.55|Im = 27.1|Ncr= 2294386.9|alfa(a)=0.2100|ki=0.9748|

Caso 3- 1 - Nodo 1 - Asse Z

Ned = -5490.1|Mzeq = 0.0|Myeq = 0.0|Ss = -69.5 (0.027)

CASSONE_S022 (22) stato limite ultimo - ASTA (7606- 7587) 5565

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	13126.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-15	si	1	Sx	Si	162.1	0.0	0.0	162.1

----- PROGR. 19.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	13126.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-15	si	1	Sx	si	162.1	0.0	0.0	0.0	162.1
								PROGR.	38.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	13126.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-15	si	1	Sx	si	162.1	0.0	0.0	0.0	162.1
								PROGR.	56.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	13126.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-15	si	1	Sx	si	162.1	0.0	0.0	0.0	162.1
								PROGR.	75.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	13126.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-15	si	1	Sx	si	162.1	0.0	0.0	0.0	162.1
								PROGR.	94.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	13126.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-15	si	1	Sx	si	162.1	0.0	0.0	0.0	162.1
								PROGR.	112.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	13126.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-15	si	1	Sx	si	162.1	0.0	0.0	0.0	162.1
								PROGR.	131.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	13126.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-15	si	1	Sx	si	162.1	0.0	0.0	0.0	162.1
								PROGR.	150.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	13126.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-15	si	1	Sx	si	162.1	0.0	0.0	0.0	162.1

VERIFICA STABILITA` :

|L0 = 150. |
 Z |Lc = 150. |Ro = 5.55 |Im = 27.1 |Ncr= 2294386.9 |alfa(a)=0.2100 |ki=0.9748 |
 Y |Lc = 150. |Ro = 5.55 |Im = 27.1 |Ncr= 2294386.9 |alfa(a)=0.2100 |ki=0.9748 |
 Caso 3- 1 - Nodo 1 - Asse Z
 Ned = -10735.3 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -136.0 (0.052)

CASSONE_S022 (22) stato limite ultimo - ASTA (7613- 7588) 5572
----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-71139.9	0.0	0.0
4-13	0.0	0.0	0.0	-21982.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	1	Sx	Si	-878.3	0.0	0.0	0.0	878.3
4-13	si	7	Tz		-271.4	0.0	0.0	0.0	271.4
4-13	si	9	Ty		-271.4	0.0	0.0	0.0	271.4

----- PROGR. 18.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-71139.9	0.0	0.0
4-13	0.0	0.0	0.0	-21982.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	1	Sx	Si	-878.3	0.0	0.0	0.0	878.3
4-13	si	7	Tz		-271.4	0.0	0.0	0.0	271.4
4-13	si	9	Ty		-271.4	0.0	0.0	0.0	271.4

----- PROGR. 35.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-71139.9	0.0	0.0
4-13	0.0	0.0	0.0	-21982.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	1	Sx	Si	-878.3	0.0	0.0	0.0	878.3
4-13	si	7	Tz		-271.4	0.0	0.0	0.0	271.4
4-13	si	9	Ty		-271.4	0.0	0.0	0.0	271.4

----- PROGR. 53.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-71139.9	0.0	0.0
4-13	0.0	0.0	0.0	-21982.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	4	Sx	Si	-878.3	0.0	0.0	0.0	878.3
4-13	si	7	Tz		-271.4	0.0	0.0	0.0	271.4
4-13	si	9	Ty		-271.4	0.0	0.0	0.0	271.4

----- PROGR. 71.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-71139.9	0.0	0.0
4-13	0.0	0.0	0.0	-21982.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	4	Sx	Si	-878.3	0.0	0.0	0.0	878.3
4-13	si	7	Tz		-271.4	0.0	0.0	0.0	271.4
4-13	si	9	Ty		-271.4	0.0	0.0	0.0	271.4

----- PROGR. 89.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-71139.9	0.0	0.0
4-13	0.0	0.0	0.0	-21982.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	4	Sx	Si	-878.3	0.0	0.0	0.0	878.3
4-13	si	7	Tz		-271.4	0.0	0.0	0.0	271.4
4-13	si	9	Ty		-271.4	0.0	0.0	0.0	271.4

----- PROGR. 106.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-71139.9	0.0	0.0
4-13	0.0	0.0	0.0	-21982.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	4	Sx	si	-878.3	0.0	0.0	0.0	878.3
4-13	si	7	Tz		-271.4	0.0	0.0	0.0	271.4
4-13	si	9	Ty		-271.4	0.0	0.0	0.0	271.4

----- PROGR. 124.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-71139.9	0.0	0.0
4-13	0.0	0.0	0.0	-21982.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	4	Sx	si	-878.3	0.0	0.0	0.0	878.3
4-13	si	7	Tz		-271.4	0.0	0.0	0.0	271.4
4-13	si	9	Ty		-271.4	0.0	0.0	0.0	271.4

----- PROGR. 142.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-71139.9	0.0	0.0
4-13	0.0	0.0	0.0	-21982.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	4	Sx	si	-878.3	0.0	0.0	0.0	878.3
4-13	si	7	Tz		-271.4	0.0	0.0	0.0	271.4
4-13	si	9	Ty		-271.4	0.0	0.0	0.0	271.4

VERIFICA STABILITA` :

|L0 = 142. |

Z |Lc = 142. |Ro = 5.55 |Im = 25.6 |Ncr= 2560914.4 |alfa(a)=0.2100 |ki=0.9787 |

Y |Lc = 142. |Ro = 5.55 |Im = 25.6 |Ncr= 2560914.4 |alfa(a)=0.2100 |ki=0.9787 |

Caso 5- 4 - Nodo 4 - Asse Z

Ned = -71139.9 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -897.4 (0.343)

CASSONE_S022 (22) stato limite ultimo - ASTA (7614- 7613) 5573

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	70697.1	0.0	0.0
4-13	0.0	0.0	0.0	21836.2	0.0	0.0
4- 4	0.0	0.0	0.0	-21407.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	1	Sx	si	872.8	0.0	0.0	0.0	872.8
4-13	si	7	Tz		269.6	0.0	0.0	0.0	269.6
4- 4	si	9	Ty		-264.3	0.0	0.0	0.0	264.3

----- PROGR. 18.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	70697.1	0.0	0.0
4-13	0.0	0.0	0.0	21836.2	0.0	0.0
4- 4	0.0	0.0	0.0	-21407.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	1	Sx	si	872.8	0.0	0.0	0.0	872.8
4-13	si	7	Tz		269.6	0.0	0.0	0.0	269.6
4- 4	si	9	Ty		-264.3	0.0	0.0	0.0	264.3

----- PROGR. 35.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	70697.1	0.0	0.0
4-13	0.0	0.0	0.0	21836.2	0.0	0.0
4- 4	0.0	0.0	0.0	-21407.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	Si	872.8	0.0	0.0	872.8
4-13	si	7	Tz		269.6	0.0	0.0	269.6
4- 4	si	9	Ty		-264.3	0.0	0.0	264.3

----- PROGR. 53.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	70697.1	0.0	0.0
4-13	0.0	0.0	0.0	21836.2	0.0	0.0
4- 4	0.0	0.0	0.0	-21407.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	Si	872.8	0.0	0.0	872.8
4-13	si	7	Tz		269.6	0.0	0.0	269.6
4- 4	si	9	Ty		-264.3	0.0	0.0	264.3

----- PROGR. 71.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	70697.1	0.0	0.0
4-13	0.0	0.0	0.0	21836.2	0.0	0.0
4- 4	0.0	0.0	0.0	-21407.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	Si	872.8	0.0	0.0	872.8
4-13	si	7	Tz		269.6	0.0	0.0	269.6
4- 4	si	9	Ty		-264.3	0.0	0.0	264.3

----- PROGR. 89.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	70697.1	0.0	0.0
4-13	0.0	0.0	0.0	21836.2	0.0	0.0
4- 4	0.0	0.0	0.0	-21407.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	4	Sx	Si	872.8	0.0	0.0	872.8
4-13	si	7	Tz		269.6	0.0	0.0	269.6
4- 4	si	9	Ty		-264.3	0.0	0.0	264.3

----- PROGR. 106.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	70697.1	0.0	0.0
4-13	0.0	0.0	0.0	21836.2	0.0	0.0
4- 4	0.0	0.0	0.0	-21407.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	4	Sx	Si	872.8	0.0	0.0	872.8
4-13	si	7	Tz		269.6	0.0	0.0	269.6
4- 4	si	9	Ty		-264.3	0.0	0.0	264.3

----- PROGR. 124.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	70697.1	0.0	0.0
4-13	0.0	0.0	0.0	21836.2	0.0	0.0
4- 4	0.0	0.0	0.0	-21407.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	4	Sx	872.8	0.0	0.0	0.0	872.8
4-13	si	7	Tz	269.6	0.0	0.0	0.0	269.6
4- 4	si	9	Ty	-264.3	0.0	0.0	0.0	264.3
----- PROGR.								142.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	70697.1	0.0	0.0
4-13	0.0	0.0	0.0	21836.2	0.0	0.0
4- 4	0.0	0.0	0.0	-21407.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	4	Sx	872.8	0.0	0.0	0.0	872.8
4-13	si	7	Tz	269.6	0.0	0.0	0.0	269.6
4- 4	si	9	Ty	-264.3	0.0	0.0	0.0	264.3

VERIFICA STABILITA` :

|L0 = 142. |
 Z |Lc = 142. |Ro = 5.55 |Im = 25.6 |Ncr= 2560914.4 |alfa(a)=0.2100 |ki=0.9787 |
 Y |Lc = 142. |Ro = 5.55 |Im = 25.6 |Ncr= 2560914.4 |alfa(a)=0.2100 |ki=0.9787 |
 Caso 3- 4 - Nodo 4 - Asse Z
 Ned = -70325.6 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -887.1 (0.339)

CASSONE_S022 (22) stato limite ultimo - ASTA (7615- 7614) 5574
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-72232.9	0.0	0.0
4-13	0.0	0.0	0.0	-22310.6	0.0	0.0
4- 4	0.0	0.0	0.0	21872.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	-891.8	0.0	0.0	0.0	891.8
4-13	si	7	Tz	-275.4	0.0	0.0	0.0	275.4
4- 4	si	10	Ty	270.0	0.0	0.0	0.0	270.0

----- PROGR. 18.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-72232.9	0.0	0.0
4-13	0.0	0.0	0.0	-22310.6	0.0	0.0
4- 4	0.0	0.0	0.0	21872.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	-891.8	0.0	0.0	0.0	891.8
4-13	si	7	Tz	-275.4	0.0	0.0	0.0	275.4
4- 4	si	10	Ty	270.0	0.0	0.0	0.0	270.0

----- PROGR. 36.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-72232.9	0.0	0.0
4-13	0.0	0.0	0.0	-22310.6	0.0	0.0
4- 4	0.0	0.0	0.0	21872.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	2	Sx	-891.8	0.0	0.0	0.0	891.8
4-13	si	7	Tz	-275.4	0.0	0.0	0.0	275.4
4- 4	si	10	Ty	270.0	0.0	0.0	0.0	270.0

----- PROGR. 54.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
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5- 4	0.0	0.0	0.0	-72232.9	0.0	0.0
4-13	0.0	0.0	0.0	-22310.6	0.0	0.0
4- 4	0.0	0.0	0.0	21872.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 2 Sx Si	-891.8	0.0	0.0	0.0	891.8
4-13 si 7 Tz	-275.4	0.0	0.0	0.0	275.4
4- 4 si 10 Ty	270.0	0.0	0.0	0.0	270.0
-----					PROGR. 72.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-72232.9	0.0	0.0
4-13	0.0	0.0	0.0	-22310.6	0.0	0.0
4- 4	0.0	0.0	0.0	21872.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx Si	-891.8	0.0	0.0	0.0	891.8
4-13 si 7 Tz	-275.4	0.0	0.0	0.0	275.4
4- 4 si 10 Ty	270.0	0.0	0.0	0.0	270.0
-----					PROGR. 91.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-72232.9	0.0	0.0
4-13	0.0	0.0	0.0	-22310.6	0.0	0.0
4- 4	0.0	0.0	0.0	21872.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx Si	-891.8	0.0	0.0	0.0	891.8
4-13 si 7 Tz	-275.4	0.0	0.0	0.0	275.4
4- 4 si 10 Ty	270.0	0.0	0.0	0.0	270.0
-----					PROGR. 109.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-72232.9	0.0	0.0
4-13	0.0	0.0	0.0	-22310.6	0.0	0.0
4- 4	0.0	0.0	0.0	21872.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx Si	-891.8	0.0	0.0	0.0	891.8
4-13 si 7 Tz	-275.4	0.0	0.0	0.0	275.4
4- 4 si 10 Ty	270.0	0.0	0.0	0.0	270.0
-----					PROGR. 127.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-72232.9	0.0	0.0
4-13	0.0	0.0	0.0	-22310.6	0.0	0.0
4- 4	0.0	0.0	0.0	21872.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx Si	-891.8	0.0	0.0	0.0	891.8
4-13 si 7 Tz	-275.4	0.0	0.0	0.0	275.4
4- 4 si 10 Ty	270.0	0.0	0.0	0.0	270.0
-----					PROGR. 145.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-72232.9	0.0	0.0
4-13	0.0	0.0	0.0	-22310.6	0.0	0.0
4- 4	0.0	0.0	0.0	21872.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx Si	-891.8	0.0	0.0	0.0	891.8
4-13 si 7 Tz	-275.4	0.0	0.0	0.0	275.4

| 4- 4|si|10| Ty | 270.0| 0.0| 0.0| 0.0| 270.0|

VERIFICA STABILITA` :

|L0 = 145.|
 Z |Lc = 145.|Ro = 5.55|Im = 26.1|Ncr= 2455348.7|alfa(a)=0.2100|ki=0.9772|
 Y |Lc = 145.|Ro = 5.55|Im = 26.1|Ncr= 2455348.7|alfa(a)=0.2100|ki=0.9772|
 Caso 5- 4 - Nodo 3 - Asse Z
 Ned = -72232.9|Mzeq = 0.0|Myeq = 0.0|ss = -912.6 (0.348)

CASSONE_S022 (22) stato limite ultimo - ASTA (7616- 7615) 5575
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	72341.3	0.0	0.0
4-13	0.0	0.0	0.0	22344.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 1 Sx Si	893.1	0.0	0.0	0.0	0.0	893.1
4-13 si 7 Tz	275.9	0.0	0.0	0.0	0.0	275.9
4-13 si 9 Ty	275.9	0.0	0.0	0.0	0.0	275.9

----- PROGR. 18.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	72341.3	0.0	0.0
4-13	0.0	0.0	0.0	22344.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 1 Sx Si	893.1	0.0	0.0	0.0	0.0	893.1
4-13 si 7 Tz	275.9	0.0	0.0	0.0	0.0	275.9
4-13 si 9 Ty	275.9	0.0	0.0	0.0	0.0	275.9

----- PROGR. 36.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	72341.3	0.0	0.0
4-13	0.0	0.0	0.0	22344.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 2 Sx Si	893.1	0.0	0.0	0.0	0.0	893.1
4-13 si 7 Tz	275.9	0.0	0.0	0.0	0.0	275.9
4-13 si 9 Ty	275.9	0.0	0.0	0.0	0.0	275.9

----- PROGR. 54.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	72341.3	0.0	0.0
4-13	0.0	0.0	0.0	22344.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 2 Sx Si	893.1	0.0	0.0	0.0	0.0	893.1
4-13 si 7 Tz	275.9	0.0	0.0	0.0	0.0	275.9
4-13 si 9 Ty	275.9	0.0	0.0	0.0	0.0	275.9

----- PROGR. 72.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	72341.3	0.0	0.0
4-13	0.0	0.0	0.0	22344.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 2 Sx Si	893.1	0.0	0.0	0.0	0.0	893.1
4-13 si 7 Tz	275.9	0.0	0.0	0.0	0.0	275.9
4-13 si 9 Ty	275.9	0.0	0.0	0.0	0.0	275.9

----- PROGR. 91.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	72341.3	0.0	0.0
4-13	0.0	0.0	0.0	22344.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	2	Sx	Si	893.1	0.0	0.0	0.0	893.1
4-13	si	7	Tz		275.9	0.0	0.0	0.0	275.9
4-13	si	9	Ty		275.9	0.0	0.0	0.0	275.9

----- PROGR. 109.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	72341.3	0.0	0.0
4-13	0.0	0.0	0.0	22344.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	2	Sx	Si	893.1	0.0	0.0	0.0	893.1
4-13	si	7	Tz		275.9	0.0	0.0	0.0	275.9
4-13	si	9	Ty		275.9	0.0	0.0	0.0	275.9

----- PROGR. 127.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	72341.3	0.0	0.0
4-13	0.0	0.0	0.0	22344.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	2	Sx	Si	893.1	0.0	0.0	0.0	893.1
4-13	si	7	Tz		275.9	0.0	0.0	0.0	275.9
4-13	si	9	Ty		275.9	0.0	0.0	0.0	275.9

----- PROGR. 145.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	72341.3	0.0	0.0
4-13	0.0	0.0	0.0	22344.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	2	Sx	Si	893.1	0.0	0.0	0.0	893.1
4-13	si	7	Tz		275.9	0.0	0.0	0.0	275.9
4-13	si	9	Ty		275.9	0.0	0.0	0.0	275.9

VERIFICA STABILITA` :

|L0 = 145.|

Z |Lc = 145.|Ro = 5.55|lm = 26.1|Ncr= 2455348.7|alfa(a)=0.2100|ki=0.9772|

Y |Lc = 145.|Ro = 5.55|lm = 26.1|Ncr= 2455348.7|alfa(a)=0.2100|ki=0.9772|

Caso 3- 4 - Nodo 2 - Asse Z

Ned = -71960.0|Mzeq = 0.0|Myeq = 0.0|Ss = -909.1 (0.347)

CASSONE_S022 (22) stato limite ultimo - ASTA (7617- 7616) 5576

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-72341.3	0.0	0.0
4-13	0.0	0.0	0.0	-22344.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	1	Sx	Si	-893.1	0.0	0.0	0.0	893.1
4-13	si	7	Tz		-275.9	0.0	0.0	0.0	275.9
4-13	si	10	Ty		-275.9	0.0	0.0	0.0	275.9

----- PROGR. 18.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-72341.3	0.0	0.0
4-13	0.0	0.0	0.0	-22344.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	1	Sx	si	-893.1	0.0	0.0	0.0	893.1
4-13	si	7	Tz		-275.9	0.0	0.0	0.0	275.9
4-13	si	10	Ty		-275.9	0.0	0.0	0.0	275.9

----- PROGR. 36.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-72341.3	0.0	0.0
4-13	0.0	0.0	0.0	-22344.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	2	Sx	si	-893.1	0.0	0.0	0.0	893.1
4-13	si	7	Tz		-275.9	0.0	0.0	0.0	275.9
4-13	si	10	Ty		-275.9	0.0	0.0	0.0	275.9

----- PROGR. 54.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-72341.3	0.0	0.0
4-13	0.0	0.0	0.0	-22344.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	3	Sx	si	-893.1	0.0	0.0	0.0	893.1
4-13	si	7	Tz		-275.9	0.0	0.0	0.0	275.9
4-13	si	10	Ty		-275.9	0.0	0.0	0.0	275.9

----- PROGR. 72.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-72341.3	0.0	0.0
4-13	0.0	0.0	0.0	-22344.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	3	Sx	si	-893.1	0.0	0.0	0.0	893.1
4-13	si	7	Tz		-275.9	0.0	0.0	0.0	275.9
4-13	si	10	Ty		-275.9	0.0	0.0	0.0	275.9

----- PROGR. 91.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-72341.3	0.0	0.0
4-13	0.0	0.0	0.0	-22344.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	3	Sx	si	-893.1	0.0	0.0	0.0	893.1
4-13	si	7	Tz		-275.9	0.0	0.0	0.0	275.9
4-13	si	10	Ty		-275.9	0.0	0.0	0.0	275.9

----- PROGR. 109.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-72341.3	0.0	0.0
4-13	0.0	0.0	0.0	-22344.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	3	Sx	si	-893.1	0.0	0.0	0.0	893.1
4-13	si	7	Tz		-275.9	0.0	0.0	0.0	275.9
4-13	si	10	Ty		-275.9	0.0	0.0	0.0	275.9

----- PROGR. 127.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
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5- 4	0.0	0.0	0.0	-72341.3	0.0	0.0
4-13	0.0	0.0	0.0	-22344.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx Si	-893.1	0.0	0.0	0.0	893.1
4-13 si 7 Tz	-275.9	0.0	0.0	0.0	275.9
4-13 si 10 Ty	-275.9	0.0	0.0	0.0	275.9

----- PROGR. 145.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-72341.3	0.0	0.0
4-13	0.0	0.0	0.0	-22344.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx Si	-893.1	0.0	0.0	0.0	893.1
4-13 si 7 Tz	-275.9	0.0	0.0	0.0	275.9
4-13 si 10 Ty	-275.9	0.0	0.0	0.0	275.9

VERIFICA STABILITA` :

|L0 = 145.|

Z |Lc = 145.|Ro = 5.55|lm = 26.1|Ncr= 2455348.7|alfa(a)=0.2100|ki=0.9772|

Y |Lc = 145.|Ro = 5.55|lm = 26.1|Ncr= 2455348.7|alfa(a)=0.2100|ki=0.9772|

Caso 5- 4 - Nodo 3 - Asse Z

Ned = -72341.3|Mzeq = 0.0|Myeq = 0.0|Ss = -913.9 (0.349)

CASSONE_S022 (22) stato limite ultimo - ASTA (7618- 7617) 5577

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	72246.0	0.0	0.0
4-13	0.0	0.0	0.0	22313.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 1 Sx Si	891.9	0.0	0.0	0.0	891.9
4-13 si 7 Tz	275.5	0.0	0.0	0.0	275.5
4-13 si 9 Ty	275.5	0.0	0.0	0.0	275.5

----- PROGR. 18.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	72246.0	0.0	0.0
4-13	0.0	0.0	0.0	22313.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 2 Sx Si	891.9	0.0	0.0	0.0	891.9
4-13 si 7 Tz	275.5	0.0	0.0	0.0	275.5
4-13 si 9 Ty	275.5	0.0	0.0	0.0	275.5

----- PROGR. 36.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	72246.0	0.0	0.0
4-13	0.0	0.0	0.0	22313.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 2 Sx Si	891.9	0.0	0.0	0.0	891.9
4-13 si 7 Tz	275.5	0.0	0.0	0.0	275.5
4-13 si 9 Ty	275.5	0.0	0.0	0.0	275.5

----- PROGR. 54.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	72246.0	0.0	0.0

| 4-13| 0.0| 0.0| 0.0| 22313.6| 0.0| 0.0|

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	2	Sx	891.9	0.0	0.0	0.0	891.9
4-13	si	7	Tz	275.5	0.0	0.0	0.0	275.5
4-13	si	9	Ty	275.5	0.0	0.0	0.0	275.5

----- PROGR. 72.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	72246.0	0.0	0.0
4-13	0.0	0.0	0.0	22313.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	2	Sx	891.9	0.0	0.0	0.0	891.9
4-13	si	7	Tz	275.5	0.0	0.0	0.0	275.5
4-13	si	9	Ty	275.5	0.0	0.0	0.0	275.5

----- PROGR. 91.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	72246.0	0.0	0.0
4-13	0.0	0.0	0.0	22313.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	2	Sx	891.9	0.0	0.0	0.0	891.9
4-13	si	7	Tz	275.5	0.0	0.0	0.0	275.5
4-13	si	9	Ty	275.5	0.0	0.0	0.0	275.5

----- PROGR. 109.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	72246.0	0.0	0.0
4-13	0.0	0.0	0.0	22313.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	2	Sx	891.9	0.0	0.0	0.0	891.9
4-13	si	7	Tz	275.5	0.0	0.0	0.0	275.5
4-13	si	9	Ty	275.5	0.0	0.0	0.0	275.5

----- PROGR. 127.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	72246.0	0.0	0.0
4-13	0.0	0.0	0.0	22313.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	2	Sx	891.9	0.0	0.0	0.0	891.9
4-13	si	7	Tz	275.5	0.0	0.0	0.0	275.5
4-13	si	9	Ty	275.5	0.0	0.0	0.0	275.5

----- PROGR. 145.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	72246.0	0.0	0.0
4-13	0.0	0.0	0.0	22313.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	2	Sx	891.9	0.0	0.0	0.0	891.9
4-13	si	7	Tz	275.5	0.0	0.0	0.0	275.5
4-13	si	9	Ty	275.5	0.0	0.0	0.0	275.5

VERIFICA STABILITA` :

|L0 = 145.|

Z |Lc = 145.|Ro = 5.55|Im = 26.1|Ncr= 2455348.7|alfa(a)=0.2100|ki=0.9772|

Y |Lc = 145.|Ro = 5.55|lm = 26.1|Ncr= 2455348.7|alfa(a)=0.2100|ki=0.9772|
 Caso 3- 4 - Nodo 2 - Asse Z
 Ned = -71866.8|Mzeq = 0.0|Myeq = 0.0|Ss = -907.9 (0.347)

CASSONE_S022 (22) stato limite ultimo - ASTA (7619- 7618) 5578
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-70745.4	0.0	0.0
4-13	0.0	0.0	0.0	-21850.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 1 Sx	Si	-873.4	0.0	0.0	0.0	873.4
4-13 si 7 Tz		-269.8	0.0	0.0	0.0	269.8
4-13 si 10 Ty		-269.8	0.0	0.0	0.0	269.8

----- PROGR. 18.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-70745.4	0.0	0.0
4-13	0.0	0.0	0.0	-21850.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 1 Sx	Si	-873.4	0.0	0.0	0.0	873.4
4-13 si 7 Tz		-269.8	0.0	0.0	0.0	269.8
4-13 si 10 Ty		-269.8	0.0	0.0	0.0	269.8

----- PROGR. 35.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-70745.4	0.0	0.0
4-13	0.0	0.0	0.0	-21850.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 1 Sx	Si	-873.4	0.0	0.0	0.0	873.4
4-13 si 7 Tz		-269.8	0.0	0.0	0.0	269.8
4-13 si 10 Ty		-269.8	0.0	0.0	0.0	269.8

----- PROGR. 53.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-70745.4	0.0	0.0
4-13	0.0	0.0	0.0	-21850.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 1 Sx	Si	-873.4	0.0	0.0	0.0	873.4
4-13 si 7 Tz		-269.8	0.0	0.0	0.0	269.8
4-13 si 10 Ty		-269.8	0.0	0.0	0.0	269.8

----- PROGR. 71.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-70745.4	0.0	0.0
4-13	0.0	0.0	0.0	-21850.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 1 Sx	Si	-873.4	0.0	0.0	0.0	873.4
4-13 si 7 Tz		-269.8	0.0	0.0	0.0	269.8
4-13 si 10 Ty		-269.8	0.0	0.0	0.0	269.8

----- PROGR. 89.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-70745.4	0.0	0.0
4-13	0.0	0.0	0.0	-21850.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
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5- 4 si 1 Sx	Si	-873.4	0.0	0.0	0.0	873.4
4-13 si 7 Tz		-269.8	0.0	0.0	0.0	269.8
4-13 si 10 Ty		-269.8	0.0	0.0	0.0	269.8
						PROGR. 106.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-70745.4	0.0	0.0
4-13	0.0	0.0	0.0	-21850.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4 si 1 Sx	Si	-873.4	0.0	0.0	0.0	873.4
4-13 si 7 Tz		-269.8	0.0	0.0	0.0	269.8
4-13 si 10 Ty		-269.8	0.0	0.0	0.0	269.8
						PROGR. 124.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-70745.4	0.0	0.0
4-13	0.0	0.0	0.0	-21850.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4 si 1 Sx	Si	-873.4	0.0	0.0	0.0	873.4
4-13 si 7 Tz		-269.8	0.0	0.0	0.0	269.8
4-13 si 10 Ty		-269.8	0.0	0.0	0.0	269.8
						PROGR. 142.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-70745.4	0.0	0.0
4-13	0.0	0.0	0.0	-21850.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4 si 1 Sx	Si	-873.4	0.0	0.0	0.0	873.4
4-13 si 7 Tz		-269.8	0.0	0.0	0.0	269.8
4-13 si 10 Ty		-269.8	0.0	0.0	0.0	269.8

VERIFICA STABILITA` :

|L0 = 142. |
Z |Lc = 142. |Ro = 5.55 |Im = 25.6 |Ncr= 2560914.4 |alfa(a)=0.2100 |ki=0.9787 |
Y |Lc = 142. |Ro = 5.55 |Im = 25.6 |Ncr= 2560914.4 |alfa(a)=0.2100 |ki=0.9787 |
Caso 5- 4 - Nodo 1 - Asse Z
Ned = -70745.4 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -892.4 (0.341)

CASSONE_S022 (22) stato limite ultimo - ASTA (7587- 7619) 5579
PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	71097.4	0.0	0.0
4-13	0.0	0.0	0.0	21949.9	0.0	0.0
4- 4	0.0	0.0	0.0	-21545.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4 si 1 Sx	Si	877.7	0.0	0.0	0.0	877.7
4-13 si 7 Tz		271.0	0.0	0.0	0.0	271.0
4- 4 si 10 Ty		-266.0	0.0	0.0	0.0	266.0
						PROGR. 18.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	71097.4	0.0	0.0
4-13	0.0	0.0	0.0	21949.9	0.0	0.0
4- 4	0.0	0.0	0.0	-21545.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	Si	877.7	0.0	0.0	877.7
4-13	si	7	Tz		271.0	0.0	0.0	271.0
4- 4	si	10	Ty		-266.0	0.0	0.0	266.0

----- PROGR. 35.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	71097.4	0.0	0.0
4-13	0.0	0.0	0.0	21949.9	0.0	0.0
4- 4	0.0	0.0	0.0	-21545.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	Si	877.7	0.0	0.0	877.7
4-13	si	7	Tz		271.0	0.0	0.0	271.0
4- 4	si	10	Ty		-266.0	0.0	0.0	266.0

----- PROGR. 53.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	71097.4	0.0	0.0
4-13	0.0	0.0	0.0	21949.9	0.0	0.0
4- 4	0.0	0.0	0.0	-21545.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	Si	877.7	0.0	0.0	877.7
4-13	si	7	Tz		271.0	0.0	0.0	271.0
4- 4	si	10	Ty		-266.0	0.0	0.0	266.0

----- PROGR. 71.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	71097.4	0.0	0.0
4-13	0.0	0.0	0.0	21949.9	0.0	0.0
4- 4	0.0	0.0	0.0	-21545.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	Si	877.7	0.0	0.0	877.7
4-13	si	7	Tz		271.0	0.0	0.0	271.0
4- 4	si	10	Ty		-266.0	0.0	0.0	266.0

----- PROGR. 89.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	71097.4	0.0	0.0
4-13	0.0	0.0	0.0	21949.9	0.0	0.0
4- 4	0.0	0.0	0.0	-21545.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	Si	877.7	0.0	0.0	877.7
4-13	si	7	Tz		271.0	0.0	0.0	271.0
4- 4	si	10	Ty		-266.0	0.0	0.0	266.0

----- PROGR. 106.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	71097.4	0.0	0.0
4-13	0.0	0.0	0.0	21949.9	0.0	0.0
4- 4	0.0	0.0	0.0	-21545.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	Si	877.7	0.0	0.0	877.7
4-13	si	7	Tz		271.0	0.0	0.0	271.0
4- 4	si	10	Ty		-266.0	0.0	0.0	266.0

----- PROGR. 124.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
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5- 4	0.0	0.0	0.0	71097.4	0.0	0.0
4-13	0.0	0.0	0.0	21949.9	0.0	0.0
4- 4	0.0	0.0	0.0	-21545.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 1 Sx Si	877.7	0.0	0.0	0.0	877.7
4-13 si 7 Tz	271.0	0.0	0.0	0.0	271.0
4- 4 si 10 Ty	-266.0	0.0	0.0	0.0	266.0

----- PROGR. 142.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	71097.4	0.0	0.0
4-13	0.0	0.0	0.0	21949.9	0.0	0.0
4- 4	0.0	0.0	0.0	-21545.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 1 Sx Si	877.7	0.0	0.0	0.0	877.7
4-13 si 7 Tz	271.0	0.0	0.0	0.0	271.0
4- 4 si 10 Ty	-266.0	0.0	0.0	0.0	266.0

VERIFICA STABILITA` :

|L0 = 142. |
Z |Lc = 142. |Ro = 5.55|Im = 25.6|Ncr= 2560914.4|alfa(a)=0.2100|ki=0.9787|
Y |Lc = 142. |Ro = 5.55|Im = 25.6|Ncr= 2560914.4|alfa(a)=0.2100|ki=0.9787|
Caso 3- 4 - Nodo 1 - Asse Z
Ned = -70737.4|Mzeq = 0.0|Myeq = 0.0|Ss = -892.3 (0.341)

P_HEB400_S023 (23) stato limite ultimo - ASTA (6527- 6526) 5614
----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-13188.3	0.0	0.0
5- 3	0.0	0.0	0.0	-12464.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2 si 1 Sx Si	-66.6	0.0	0.0	0.0	66.6
5- 3 si 5 Tz	-62.9	0.0	0.0	0.0	62.9
5- 3 si 9 Ty	-62.9	0.0	0.0	0.0	62.9

----- PROGR. 34.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-13188.3	0.0	0.0
5- 3	0.0	0.0	0.0	-12464.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2 si 1 Sx Si	-66.6	0.0	0.0	0.0	66.6
5- 3 si 5 Tz	-62.9	0.0	0.0	0.0	62.9
5- 3 si 9 Ty	-62.9	0.0	0.0	0.0	62.9

----- PROGR. 69.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-13188.3	0.0	0.0
5- 3	0.0	0.0	0.0	-12464.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2 si 1 Sx Si	-66.6	0.0	0.0	0.0	66.6
5- 3 si 5 Tz	-62.9	0.0	0.0	0.0	62.9
5- 3 si 9 Ty	-62.9	0.0	0.0	0.0	62.9

----- PROGR. 103.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-13188.3	0.0	0.0
5- 3	0.0	0.0	0.0	-12464.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2	si	1	Sx	Si	-66.6	0.0	0.0	66.6
5- 3	si	5	Tz		-62.9	0.0	0.0	62.9
5- 3	si	9	Ty		-62.9	0.0	0.0	62.9
----- PROGR.								137.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-13188.3	0.0	0.0
5- 3	0.0	0.0	0.0	-12464.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2	si	1	Sx	Si	-66.6	0.0	0.0	66.6
5- 3	si	5	Tz		-62.9	0.0	0.0	62.9
5- 3	si	9	Ty		-62.9	0.0	0.0	62.9
----- PROGR.								172.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-13188.3	0.0	0.0
5- 3	0.0	0.0	0.0	-12464.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 2	si	1	Sx	Si	-66.6	0.0	0.0	0.0	66.6
5- 3	si	5	Tz		-62.9	0.0	0.0	0.0	62.9
5- 3	si	9	Ty		-62.9	0.0	0.0	0.0	62.9
----- PROGR.								206.	

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-13188.3	0.0	0.0
5- 3	0.0	0.0	0.0	-12464.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2	si	1	Sx	Si	-66.6	0.0	0.0	66.6
5- 3	si	5	Tz		-62.9	0.0	0.0	62.9
5- 3	si	9	Ty		-62.9	0.0	0.0	62.9
-----							PROGR.	241.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-13188.3	0.0	0.0
5- 3	0.0	0.0	0.0	-12464.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2	si	1	Sx	Si	-66.6	0.0	0.0	66.6
5- 3	si	5	Tz		-62.9	0.0	0.0	62.9
5- 3	si	9	Ty		-62.9	0.0	0.0	62.9
----- PROGR.								275.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-13188.3	0.0	0.0
5- 3	0.0	0.0	0.0	-12464.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2	si	1	Sx Si	-66.6	0.0	0.0	0.0	66.6
5- 3	si	5	Tz	-62.9	0.0	0.0	0.0	62.9
5- 3	si	9	Ty	-62.9	0.0	0.0	0.0	62.9

VERIFICA STABILITA` :

|L0 = 275. |
 Z |Lc = 275. |Ro = 17.08 |Im = 16.1 |Ncr= 15836641.4 |alfa(a)=0.2100 |ki=1.0000 |
 Y |Lc = 275. |Ro = 7.39 |Im = 37.2 |Ncr= 2965474.6 |alfa(b)=0.3400 |ki=0.9145 |
 Caso 5- 2 - Nodo 1 - Asse Y
 Ned = -13188.3 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -72.8 (0.028)

CASSONE_S022 (22) stato limite ultimo - ASTA (7647- 6528) 5623
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	-51297.6	0.0	0.0
5- 4	0.0	0.0	0.0	50664.3	0.0	0.0

 TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	1	Sx	Si	-633.3	0.0	0.0	633.3
5- 4	si	14	Tz		625.5	0.0	0.0	625.5
5- 4	si	10	Ty		625.5	0.0	0.0	625.5

 ----- PROGR. 21.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	-51297.6	0.0	0.0
5- 4	0.0	0.0	0.0	50664.3	0.0	0.0

 TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	1	Sx	Si	-633.3	0.0	0.0	633.3
5- 4	si	14	Tz		625.5	0.0	0.0	625.5
5- 4	si	10	Ty		625.5	0.0	0.0	625.5

 ----- PROGR. 43.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	-51297.6	0.0	0.0
5- 4	0.0	0.0	0.0	50664.3	0.0	0.0

 TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	1	Sx	Si	-633.3	0.0	0.0	633.3
5- 4	si	14	Tz		625.5	0.0	0.0	625.5
5- 4	si	10	Ty		625.5	0.0	0.0	625.5

 ----- PROGR. 64.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	-51297.6	0.0	0.0
5- 4	0.0	0.0	0.0	50664.3	0.0	0.0

 TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	1	Sx	Si	-633.3	0.0	0.0	633.3
5- 4	si	14	Tz		625.5	0.0	0.0	625.5
5- 4	si	10	Ty		625.5	0.0	0.0	625.5

 ----- PROGR. 85.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	-51297.6	0.0	0.0
5- 4	0.0	0.0	0.0	50664.3	0.0	0.0

 TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	1	Sx	Si	-633.3	0.0	0.0	633.3
5- 4	si	14	Tz		625.5	0.0	0.0	625.5
5- 4	si	10	Ty		625.5	0.0	0.0	625.5

 ----- PROGR. 106.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	-51297.6	0.0	0.0
5- 4	0.0	0.0	0.0	50664.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	1	Sx	Si	-633.3	0.0	0.0	633.3
5- 4	si	14	Tz		625.5	0.0	0.0	625.5
5- 4	si	10	Ty		625.5	0.0	0.0	625.5
-----								PROGR. 128.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	-51297.6	0.0	0.0
5- 4	0.0	0.0	0.0	50664.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	1	Sx	Si	-633.3	0.0	0.0	633.3
5- 4	si	14	Tz		625.5	0.0	0.0	625.5
5- 4	si	10	Ty		625.5	0.0	0.0	625.5
-----								PROGR. 149.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	-51297.6	0.0	0.0
5- 4	0.0	0.0	0.0	50664.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	1	Sx	Si	-633.3	0.0	0.0	633.3
5- 4	si	14	Tz		625.5	0.0	0.0	625.5
5- 4	si	10	Ty		625.5	0.0	0.0	625.5
-----								PROGR. 170.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	-51297.6	0.0	0.0
5- 4	0.0	0.0	0.0	50664.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	3	Sx	Si	-633.3	0.0	0.0	633.3
5- 4	si	14	Tz		625.5	0.0	0.0	625.5
5- 4	si	10	Ty		625.5	0.0	0.0	625.5

VERIFICA STABILITA` :

|L0 = 170.|

Z |Lc = 170.|Ro = 5.55|lm = 30.7|Ncr= 1785901.2|alfa(a)=0.2100|ki=0.9647|

Y |Lc = 170.|Ro = 5.55|lm = 30.7|Ncr= 1785901.2|alfa(a)=0.2100|ki=0.9647|

Caso 5-13 - Nodo 1 - Asse Z

Ned = -51297.6|Mzeq = 0.0|Myeq = 0.0|Ss = -656.5 (0.251)

CASSONE_S022 (22) stato limite ultimo - ASTA (6527- 7648) 5624

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	54521.9	0.0	0.0
4-13	0.0	0.0	0.0	-16213.0	0.0	0.0
5- 4	0.0	0.0	0.0	-53757.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx	Si	673.1	0.0	0.0	673.1
4-13	si	7	Tz		-200.2	0.0	0.0	200.2
5- 4	si	5	Ty		-663.7	0.0	0.0	663.7
-----								PROGR. 21.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	54521.9	0.0	0.0
4-13	0.0	0.0	0.0	-16213.0	0.0	0.0

5- 4	0.0	0.0	0.0	-53757.4	0.0	0.0
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TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14 si 1 Sx Si	673.1	0.0	0.0	0.0	673.1
4-13 si 7 Tz	-200.2	0.0	0.0	0.0	200.2
5- 4 si 5 Ty	-663.7	0.0	0.0	0.0	663.7

----- PROGR. 43.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	54521.9	0.0	0.0
4-13	0.0	0.0	0.0	-16213.0	0.0	0.0
5- 4	0.0	0.0	0.0	-53757.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14 si 1 Sx Si	673.1	0.0	0.0	0.0	673.1
4-13 si 7 Tz	-200.2	0.0	0.0	0.0	200.2
5- 4 si 5 Ty	-663.7	0.0	0.0	0.0	663.7

----- PROGR. 64.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	54521.9	0.0	0.0
4-13	0.0	0.0	0.0	-16213.0	0.0	0.0
5- 4	0.0	0.0	0.0	-53757.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14 si 1 Sx Si	673.1	0.0	0.0	0.0	673.1
4-13 si 7 Tz	-200.2	0.0	0.0	0.0	200.2
5- 4 si 5 Ty	-663.7	0.0	0.0	0.0	663.7

----- PROGR. 85.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	54521.9	0.0	0.0
4-13	0.0	0.0	0.0	-16213.0	0.0	0.0
5- 4	0.0	0.0	0.0	-53757.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14 si 1 Sx Si	673.1	0.0	0.0	0.0	673.1
4-13 si 7 Tz	-200.2	0.0	0.0	0.0	200.2
5- 4 si 5 Ty	-663.7	0.0	0.0	0.0	663.7

----- PROGR. 106.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	54521.9	0.0	0.0
4-13	0.0	0.0	0.0	-16213.0	0.0	0.0
5- 4	0.0	0.0	0.0	-53757.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14 si 1 Sx Si	673.1	0.0	0.0	0.0	673.1
4-13 si 7 Tz	-200.2	0.0	0.0	0.0	200.2
5- 4 si 5 Ty	-663.7	0.0	0.0	0.0	663.7

----- PROGR. 128.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	54521.9	0.0	0.0
4-13	0.0	0.0	0.0	-16213.0	0.0	0.0
5- 4	0.0	0.0	0.0	-53757.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14 si 1 Sx Si	673.1	0.0	0.0	0.0	673.1
4-13 si 7 Tz	-200.2	0.0	0.0	0.0	200.2
5- 4 si 5 Ty	-663.7	0.0	0.0	0.0	663.7

----- PROGR. 149.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	54521.9	0.0	0.0
4-13	0.0	0.0	0.0	-16213.0	0.0	0.0
5- 4	0.0	0.0	0.0	-53757.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx	Si	673.1	0.0	0.0	673.1
4-13	si	7	Tz		-200.2	0.0	0.0	200.2
5- 4	si	5	Ty		-663.7	0.0	0.0	663.7
----- PROGR.								170.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	54521.9	0.0	0.0
4-13	0.0	0.0	0.0	-16213.0	0.0	0.0
5- 4	0.0	0.0	0.0	-53757.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx	Si	673.1	0.0	0.0	673.1
4-13	si	7	Tz		-200.2	0.0	0.0	200.2
5- 4	si	5	Ty		-663.7	0.0	0.0	663.7

VERIFICA STABILITA` :

|L0 = 170.|

Z |Lc = 170.|Ro = 5.55|Im = 30.7|Ncr= 1785901.2|alfa(a)=0.2100|ki=0.9647|

Y |Lc = 170.|Ro = 5.55|Im = 30.7|Ncr= 1785901.2|alfa(a)=0.2100|ki=0.9647|

Caso 3- 1 - Nodo 1 - Asse Z

Ned = -54023.0|Mzeq = 0.0|Myeq = 0.0|Ss = -691.3 (0.264)

CASSONE_S022 (22) stato limite ultimo - ASTA (7648- 6526) 5625

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	-54069.9	0.0	0.0
5- 4	0.0	0.0	0.0	51487.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx	Si	-667.5	0.0	0.0	667.5
5- 4	si	14	Tz		635.7	0.0	0.0	635.7
5- 4	si	10	Ty		635.7	0.0	0.0	635.7
----- PROGR.								21.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	-54069.9	0.0	0.0
5- 4	0.0	0.0	0.0	51487.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx	Si	-667.5	0.0	0.0	667.5
5- 4	si	14	Tz		635.7	0.0	0.0	635.7
5- 4	si	10	Ty		635.7	0.0	0.0	635.7
----- PROGR.								43.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	-54069.9	0.0	0.0
5- 4	0.0	0.0	0.0	51487.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx	Si	-667.5	0.0	0.0	667.5
5- 4	si	14	Tz		635.7	0.0	0.0	635.7
5- 4	si	10	Ty		635.7	0.0	0.0	635.7

----- PROGR. 64.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	-54069.9	0.0	0.0
5- 4	0.0	0.0	0.0	51487.7	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si 1 Sx si	-667.5	0.0	0.0	0.0	667.5
5- 4	si 14 Tz	635.7	0.0	0.0	0.0	635.7
5- 4	si 10 Ty	635.7	0.0	0.0	0.0	635.7

----- PROGR. 85.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	-54069.9	0.0	0.0
5- 4	0.0	0.0	0.0	51487.7	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si 1 Sx si	-667.5	0.0	0.0	0.0	667.5
5- 4	si 14 Tz	635.7	0.0	0.0	0.0	635.7
5- 4	si 10 Ty	635.7	0.0	0.0	0.0	635.7

----- PROGR. 106.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	-54069.9	0.0	0.0
5- 4	0.0	0.0	0.0	51487.7	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si 1 Sx si	-667.5	0.0	0.0	0.0	667.5
5- 4	si 14 Tz	635.7	0.0	0.0	0.0	635.7
5- 4	si 10 Ty	635.7	0.0	0.0	0.0	635.7

----- PROGR. 128.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	-54069.9	0.0	0.0
5- 4	0.0	0.0	0.0	51487.7	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si 1 Sx si	-667.5	0.0	0.0	0.0	667.5
5- 4	si 14 Tz	635.7	0.0	0.0	0.0	635.7
5- 4	si 10 Ty	635.7	0.0	0.0	0.0	635.7

----- PROGR. 149.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	-54069.9	0.0	0.0
5- 4	0.0	0.0	0.0	51487.7	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si 3 Sx si	-667.5	0.0	0.0	0.0	667.5
5- 4	si 14 Tz	635.7	0.0	0.0	0.0	635.7
5- 4	si 10 Ty	635.7	0.0	0.0	0.0	635.7

----- PROGR. 170.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	-54069.9	0.0	0.0
5- 4	0.0	0.0	0.0	51487.7	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si 3 Sx si	-667.5	0.0	0.0	0.0	667.5
5- 4	si 14 Tz	635.7	0.0	0.0	0.0	635.7
5- 4	si 10 Ty	635.7	0.0	0.0	0.0	635.7

VERIFICA STABILITA` :

|L0 = 170. |
 Z |Lc = 170. |Ro = 5.55 |Im = 30.7 |Ncr= 1785901.2 |alfa(a)=0.2100 |ki=0.9647 |
 Y |Lc = 170. |Ro = 5.55 |Im = 30.7 |Ncr= 1785901.2 |alfa(a)=0.2100 |ki=0.9647 |
 Caso 5-14 - Nodo 1 - Asse Z
 Ned = -54069.9 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -691.9 (0.264)

CASSONE_S022 (22) stato limite ultimo - ASTA (7676- 7606) 5664
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 6	0.0	0.0	0.0	-4901.5	0.0	0.0

 TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 6	si	1	Sx	Si	-60.5	0.0	0.0	60.5

 ----- PROGR. 23.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 6	0.0	0.0	0.0	-4901.5	0.0	0.0

 TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 6	si	1	Sx	Si	-60.5	0.0	0.0	60.5

 ----- PROGR. 45.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 6	0.0	0.0	0.0	-4901.5	0.0	0.0

 TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 6	si	1	Sx	Si	-60.5	0.0	0.0	60.5

 ----- PROGR. 68.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 6	0.0	0.0	0.0	-4901.5	0.0	0.0

 TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 6	si	1	Sx	Si	-60.5	0.0	0.0	60.5

 ----- PROGR. 91.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 6	0.0	0.0	0.0	-4901.5	0.0	0.0

 TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 6	si	1	Sx	Si	-60.5	0.0	0.0	60.5

 ----- PROGR. 113.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 6	0.0	0.0	0.0	-4901.5	0.0	0.0

 TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 6	si	1	Sx	Si	-60.5	0.0	0.0	60.5

 ----- PROGR. 136.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 6	0.0	0.0	0.0	-4901.5	0.0	0.0

 TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 6	si	1	Sx	Si	-60.5	0.0	0.0	60.5

 ----- PROGR. 159.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 6	0.0	0.0	0.0	-4901.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 6	si	1	Sx	si	-60.5	0.0	0.0	60.5
-----								PROGR. 181.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 6	0.0	0.0	0.0	-4901.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 6	si	1	Sx	si	-60.5	0.0	0.0	60.5

VERIFICA STABILITA` :

|L0 = 181. |
 Z |Lc = 181. |Ro = 5.55 |Im = 32.7 |Ncr= 1572686.1 |alfa(a)=0.2100 |ki=0.9589 |
 Y |Lc = 181. |Ro = 5.55 |Im = 32.7 |Ncr= 1572686.1 |alfa(a)=0.2100 |ki=0.9589 |
 Caso 5- 6 - Nodo 1 - Asse Z
 Ned = -4901.5 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -63.1 (0.024)

CASSONE_S022 (22) stato limite ultimo - ASTA (7677- 7676) 5665

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	1821.7	0.0	0.0
4-13	0.0	0.0	0.0	1087.4	0.0	0.0
4- 4	0.0	0.0	0.0	384.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	1	Sx	si	22.5	0.0	0.0	22.5
4-13	si	7	Tz		13.4	0.0	0.0	13.4
4- 4	si	9	Ty		4.7	0.0	0.0	4.7
-----								PROGR. 13.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	1821.7	0.0	0.0
4-13	0.0	0.0	0.0	1087.4	0.0	0.0
4- 4	0.0	0.0	0.0	384.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	2	Sx	si	22.5	0.0	0.0	22.5
4-13	si	7	Tz		13.4	0.0	0.0	13.4
4- 4	si	9	Ty		4.7	0.0	0.0	4.7
-----								PROGR. 25.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	1821.7	0.0	0.0
4-13	0.0	0.0	0.0	1087.4	0.0	0.0
4- 4	0.0	0.0	0.0	384.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	2	Sx	si	22.5	0.0	0.0	22.5
4-13	si	7	Tz		13.4	0.0	0.0	13.4
4- 4	si	9	Ty		4.7	0.0	0.0	4.7
-----								PROGR. 38.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	1821.7	0.0	0.0
4-13	0.0	0.0	0.0	1087.4	0.0	0.0
4- 4	0.0	0.0	0.0	384.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	2	Sx	si	22.5	0.0	0.0	22.5
4-13	si	7	Tz		13.4	0.0	0.0	13.4
4- 4	si	9	Ty		4.7	0.0	0.0	4.7

5- 7 si 2 Sx	Si	22.5	0.0	0.0	0.0	22.5
4-13 si 7 Tz		13.4	0.0	0.0	0.0	13.4
4- 4 si 9 Ty		4.7	0.0	0.0	0.0	4.7
----- PROGR.						51.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	1821.7	0.0	0.0
4-13	0.0	0.0	0.0	1087.4	0.0	0.0
4- 4	0.0	0.0	0.0	384.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	2	Sx Si	22.5	0.0	0.0	0.0	22.5
4-13	si	7	Tz	13.4	0.0	0.0	0.0	13.4
4- 4	si	9	Ty	4.7	0.0	0.0	0.0	4.7
-----							PROGR.	64.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	1821.7	0.0	0.0
4-13	0.0	0.0	0.0	1087.4	0.0	0.0
4- 4	0.0	0.0	0.0	384.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	2	Sx Si	22.5	0.0	0.0	0.0	22.5
4-13	si	7	Tz	13.4	0.0	0.0	0.0	13.4
4- 4	si	9	Ty	4.7	0.0	0.0	0.0	4.7
-----							PROGR.	76.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	1821.7	0.0	0.0
4-13	0.0	0.0	0.0	1087.4	0.0	0.0
4- 4	0.0	0.0	0.0	384.0	0.0	0.0

TENSIONI (Sz= 0.00) :

	Caso		Ve		No		massimi		Sx		Tz		Ty		Tau tot.		Si	
	5- 7		si		2		Sx		Si		22.5		0.0		0.0		22.5	
	4-13		si		7		Tz				13.4		0.0		0.0		13.4	
	4- 4		si		9		Ty				4.7		0.0		0.0		4.7	
-----																PROGR.	89.	

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	1821.7	0.0	0.0
4-13	0.0	0.0	0.0	1087.4	0.0	0.0
4- 4	0.0	0.0	0.0	384.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si 2 Sx	Si 22.5	0.0	0.0	0.0	22.5
4-13	si 7 Tz	13.4	0.0	0.0	0.0	13.4
4- 4	si 9 Ty	4.7	0.0	0.0	0.0	4.7
----- PROGR.						102.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	1821.7	0.0	0.0
4-13	0.0	0.0	0.0	1087.4	0.0	0.0
4- 4	0.0	0.0	0.0	384.0	0.0	0.0

TENSIONI (Sz= 0.00) :

	Caso		Ve		No		massimi		Sx		Tz		Ty		Tau tot.		Si	
	5- 7		si		2		Sx		Si		22.5		0.0		0.0		0.0	
	4-13		si		7		Tz		13.4		0.0		0.0		0.0		13.4	
	4- 4		si		9		Ty		4.7		0.0		0.0		0.0		4.7	

VERIFICA STABILITA` :

|L0 = 102. |
 Z |Lc = 102. |Ro = 5.55 |Im = 18.3 |Ncr= 4999786.5 |alfa(a)=0.2100 |ki=0.9976 |
 Y |Lc = 102. |Ro = 5.55 |Im = 18.3 |Ncr= 4999786.5 |alfa(a)=0.2100 |ki=0.9976 |
 Caso 3- 3 - Nodo 2 - Asse Z
 Ned = -1076.3 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -13.3 (0.005)

CASSONE_S022 (22) stato limite ultimo - ASTA (7678- 7677) 5666
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 8	0.0	0.0	0.0	-42756.7	0.0	0.0
5-13	0.0	0.0	0.0	39292.6	0.0	0.0
5- 9	0.0	0.0	0.0	39311.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 8 si 1	Sx	Si	-527.9	0.0	0.0	0.0	527.9	
5-13 si 14	Tz	485.1	0.0	0.0	0.0	485.1		
5- 9 si 5	Ty	485.3	0.0	0.0	0.0	485.3		

----- PROGR. 20.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 8	0.0	0.0	0.0	-42756.7	0.0	0.0
5-13	0.0	0.0	0.0	39292.6	0.0	0.0
5- 9	0.0	0.0	0.0	39311.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 8 si 1	Sx	Si	-527.9	0.0	0.0	0.0	527.9	
5-13 si 14	Tz	485.1	0.0	0.0	0.0	485.1		
5- 9 si 5	Ty	485.3	0.0	0.0	0.0	485.3		

----- PROGR. 40.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 8	0.0	0.0	0.0	-42756.7	0.0	0.0
5-13	0.0	0.0	0.0	39292.6	0.0	0.0
5- 9	0.0	0.0	0.0	39311.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 8 si 1	Sx	Si	-527.9	0.0	0.0	0.0	527.9	
5-13 si 14	Tz	485.1	0.0	0.0	0.0	485.1		
5- 9 si 5	Ty	485.3	0.0	0.0	0.0	485.3		

----- PROGR. 60.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 8	0.0	0.0	0.0	-42756.7	0.0	0.0
5-13	0.0	0.0	0.0	39292.6	0.0	0.0
5- 9	0.0	0.0	0.0	39311.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 8 si 1	Sx	Si	-527.9	0.0	0.0	0.0	527.9	
5-13 si 14	Tz	485.1	0.0	0.0	0.0	485.1		
5- 9 si 5	Ty	485.3	0.0	0.0	0.0	485.3		

----- PROGR. 80.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 8	0.0	0.0	0.0	-42756.7	0.0	0.0
5-13	0.0	0.0	0.0	39292.6	0.0	0.0
5- 9	0.0	0.0	0.0	39311.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 8 si 1	Sx	Si	-527.9	0.0	0.0	0.0	527.9	
5-13 si 14	Tz	485.1	0.0	0.0	0.0	485.1		
5- 9 si 5	Ty	485.3	0.0	0.0	0.0	485.3		

----- PROGR. 99.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 8	0.0	0.0	0.0	-42756.7	0.0	0.0
5-13	0.0	0.0	0.0	39292.6	0.0	0.0
5- 9	0.0	0.0	0.0	39311.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 8	si	1	Sx	Si	-527.9	0.0	0.0	527.9
5-13	si	14	Tz		485.1	0.0	0.0	485.1
5- 9	si	5	Ty		485.3	0.0	0.0	485.3

----- PROGR. 119.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 8	0.0	0.0	0.0	-42756.7	0.0	0.0
5-13	0.0	0.0	0.0	39292.6	0.0	0.0
5- 9	0.0	0.0	0.0	39311.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 8	si	1	Sx	Si	-527.9	0.0	0.0	527.9
5-13	si	14	Tz		485.1	0.0	0.0	485.1
5- 9	si	5	Ty		485.3	0.0	0.0	485.3

----- PROGR. 139.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 8	0.0	0.0	0.0	-42756.7	0.0	0.0
5-13	0.0	0.0	0.0	39292.6	0.0	0.0
5- 9	0.0	0.0	0.0	39311.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 8	si	1	Sx	Si	-527.9	0.0	0.0	527.9
5-13	si	14	Tz		485.1	0.0	0.0	485.1
5- 9	si	5	Ty		485.3	0.0	0.0	485.3

----- PROGR. 159.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 8	0.0	0.0	0.0	-42756.7	0.0	0.0
5-13	0.0	0.0	0.0	39292.6	0.0	0.0
5- 9	0.0	0.0	0.0	39311.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 8	si	1	Sx	Si	-527.9	0.0	0.0	527.9
5-13	si	14	Tz		485.1	0.0	0.0	485.1
5- 9	si	5	Ty		485.3	0.0	0.0	485.3

VERIFICA STABILITA` :

|L0 = 159. |

Z |Lc = 159. |Ro = 5.55 |Im = 28.7 |Ncr= 2037805.8 |alfa(a)=0.2100 |ki=0.9702 |

Y |Lc = 159. |Ro = 5.55 |Im = 28.7 |Ncr= 2037805.8 |alfa(a)=0.2100 |ki=0.9702 |

Caso 5- 8 - Nodo 1 - Asse Z

Ned = -42756.7 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -544.1 (0.208)

CASSONE_S022 (22) stato limite ultimo - ASTA (7679- 7678) 5667

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 8	0.0	0.0	0.0	27640.1	0.0	0.0
4-13	0.0	0.0	0.0	9088.8	0.0	0.0
5- 4	0.0	0.0	0.0	27626.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 8	si	1	Sx	341.2	0.0	0.0	0.0	341.2
4-13	si	7	Tz	112.2	0.0	0.0	0.0	112.2
5- 4	si	9	Ty	341.1	0.0	0.0	0.0	341.1
----- PROGR.								7.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 8	0.0	0.0	0.0	27640.1	0.0	0.0
4-13	0.0	0.0	0.0	9088.8	0.0	0.0
5- 4	0.0	0.0	0.0	27626.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 8	si	4	Sx	341.2	0.0	0.0	0.0	341.2
4-13	si	7	Tz	112.2	0.0	0.0	0.0	112.2
5- 4	si	9	Ty	341.1	0.0	0.0	0.0	341.1
----- PROGR.								13.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 8	0.0	0.0	0.0	27640.1	0.0	0.0
4-13	0.0	0.0	0.0	9088.8	0.0	0.0
5- 4	0.0	0.0	0.0	27626.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 8	si	4	Sx	341.2	0.0	0.0	0.0	341.2
4-13	si	7	Tz	112.2	0.0	0.0	0.0	112.2
5- 4	si	9	Ty	341.1	0.0	0.0	0.0	341.1
----- PROGR.								20.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 8	0.0	0.0	0.0	27640.1	0.0	0.0
4-13	0.0	0.0	0.0	9088.8	0.0	0.0
5- 4	0.0	0.0	0.0	27626.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 8	si	4	Sx	341.2	0.0	0.0	0.0	341.2
4-13	si	7	Tz	112.2	0.0	0.0	0.0	112.2
5- 4	si	9	Ty	341.1	0.0	0.0	0.0	341.1
----- PROGR.								27.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 8	0.0	0.0	0.0	27640.1	0.0	0.0
4-13	0.0	0.0	0.0	9088.8	0.0	0.0
5- 4	0.0	0.0	0.0	27626.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 8	si	4	Sx	341.2	0.0	0.0	0.0	341.2
4-13	si	7	Tz	112.2	0.0	0.0	0.0	112.2
5- 4	si	9	Ty	341.1	0.0	0.0	0.0	341.1
----- PROGR.								33.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 8	0.0	0.0	0.0	27640.1	0.0	0.0
4-13	0.0	0.0	0.0	9088.8	0.0	0.0
5- 4	0.0	0.0	0.0	27626.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 8	si	4	Sx	341.2	0.0	0.0	0.0	341.2
4-13	si	7	Tz	112.2	0.0	0.0	0.0	112.2
5- 4	si	9	Ty	341.1	0.0	0.0	0.0	341.1
----- PROGR.								40.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
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5- 8	0.0	0.0	0.0	27640.1	0.0	0.0
4-13	0.0	0.0	0.0	9088.8	0.0	0.0
5- 4	0.0	0.0	0.0	27626.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 8 si 4 Sx Si	341.2	0.0	0.0	0.0	341.2
4-13 si 7 Tz	112.2	0.0	0.0	0.0	112.2
5- 4 si 9 Ty	341.1	0.0	0.0	0.0	341.1

----- PROGR. 47.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 8	0.0	0.0	0.0	27640.1	0.0	0.0
4-13	0.0	0.0	0.0	9088.8	0.0	0.0
5- 4	0.0	0.0	0.0	27626.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 8 si 4 Sx Si	341.2	0.0	0.0	0.0	341.2
4-13 si 7 Tz	112.2	0.0	0.0	0.0	112.2
5- 4 si 9 Ty	341.1	0.0	0.0	0.0	341.1

----- PROGR. 53.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 8	0.0	0.0	0.0	27640.1	0.0	0.0
4-13	0.0	0.0	0.0	9088.8	0.0	0.0
5- 4	0.0	0.0	0.0	27626.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 8 si 4 Sx Si	341.2	0.0	0.0	0.0	341.2
4-13 si 7 Tz	112.2	0.0	0.0	0.0	112.2
5- 4 si 9 Ty	341.1	0.0	0.0	0.0	341.1

VERIFICA STABILITA` :

|L0 = 53.|

Z |Lc = 53.|Ro = 5.55|Im = 9.6|Ncr= 18222362.7|alfa(a)=0.2100|ki=1.0000|

Y |Lc = 53.|Ro = 5.55|Im = 9.6|Ncr= 18222362.7|alfa(a)=0.2100|ki=1.0000|

Caso 3- 3 - Nodo 4 - Asse Z

Ned = -26695.9|Mzeq = 0.0|Myeq = 0.0|Ss = -329.6 (0.126)

CASSONE_S022 (22) stato limite ultimo - ASTA (7688- 7605) 5680

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	-6670.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-13 si 1 Sx Si	-82.3	0.0	0.0	0.0	82.3

----- PROGR. 23.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	-6670.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-13 si 1 Sx Si	-82.3	0.0	0.0	0.0	82.3

----- PROGR. 45.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	-6670.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-13 si 1 Sx Si	-82.3	0.0	0.0	0.0	82.3

-----							PROGR.	68.
SOLLECITAZIONI :								
Caso	MZ	MY	MT	N	TZ	TY		
5-13	0.0	0.0	0.0	-6670.0	0.0	0.0		
TENSIONI (Sz= 0.00) :								
Caso	ve No massimi	Sx	Tz	Ty	Tau tot.	Si		
5-13	si 1 Sx Si	-82.3	0.0	0.0	0.0	82.3		
-----							PROGR.	91.
SOLLECITAZIONI :								
Caso	MZ	MY	MT	N	TZ	TY		
5-13	0.0	0.0	0.0	-6670.0	0.0	0.0		
TENSIONI (Sz= 0.00) :								
Caso	ve No massimi	Sx	Tz	Ty	Tau tot.	Si		
5-13	si 1 Sx Si	-82.3	0.0	0.0	0.0	82.3		
-----							PROGR.	113.
SOLLECITAZIONI :								
Caso	MZ	MY	MT	N	TZ	TY		
5-13	0.0	0.0	0.0	-6670.0	0.0	0.0		
TENSIONI (Sz= 0.00) :								
Caso	ve No massimi	Sx	Tz	Ty	Tau tot.	Si		
5-13	si 1 Sx Si	-82.3	0.0	0.0	0.0	82.3		
-----							PROGR.	136.
SOLLECITAZIONI :								
Caso	MZ	MY	MT	N	TZ	TY		
5-13	0.0	0.0	0.0	-6670.0	0.0	0.0		
TENSIONI (Sz= 0.00) :								
Caso	ve No massimi	Sx	Tz	Ty	Tau tot.	Si		
5-13	si 1 Sx Si	-82.3	0.0	0.0	0.0	82.3		
-----							PROGR.	159.
SOLLECITAZIONI :								
Caso	MZ	MY	MT	N	TZ	TY		
5-13	0.0	0.0	0.0	-6670.0	0.0	0.0		
TENSIONI (Sz= 0.00) :								
Caso	ve No massimi	Sx	Tz	Ty	Tau tot.	Si		
5-13	si 1 Sx Si	-82.3	0.0	0.0	0.0	82.3		
-----							PROGR.	181.
SOLLECITAZIONI :								
Caso	MZ	MY	MT	N	TZ	TY		
5-13	0.0	0.0	0.0	-6670.0	0.0	0.0		
TENSIONI (Sz= 0.00) :								
Caso	ve No massimi	Sx	Tz	Ty	Tau tot.	Si		
5-13	si 1 Sx Si	-82.3	0.0	0.0	0.0	82.3		

VERIFICA STABILITA` :

|L0 = 181. |
Z |Lc = 181. |Ro = 5.55 |Im = 32.7 |Ncr= 1572686.1 |alfa(a)=0.2100 |ki=0.9589 |
Y |Lc = 181. |Ro = 5.55 |Im = 32.7 |Ncr= 1572686.1 |alfa(a)=0.2100 |ki=0.9589 |
Caso 5-13 - Nodo 1 - Asse Z
Ned = -6670.0 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -85.9 (0.033)

CASSONE_S022 (22) stato limite ultimo - ASTA (7688- 7689) 5681

PROGR. 0.

SOLLECITAZIONI :									
Caso	MZ		MY	MT	N	TZ	TY		
5-15	0.0		0.0	0.0	3353.9	0.0	0.0		
4-13	0.0		0.0	0.0	132.5	0.0	0.0		
TENSIONI (Sz= 0.00) :									
Caso ve No massimi	Sx		Tz	Ty	Tau tot.		Si		
5-15 si 1 Sx Si	41.4		0.0	0.0	0.0		41.4		
4-13 si 7 Tz	1.6		0.0	0.0	0.0		1.6		

4-13 si 10	Ty		1.6	0.0	0.0	0.0	1.6
							----- PROGR. 13.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5-15	0.0		0.0		0.0		3353.9		0.0		0.0	
4-13	0.0		0.0		0.0		132.5		0.0		0.0	

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5-15 si 3 Sx	Si		41.4		0.0		0.0		0.0		41.4	
4-13 si 7	Tz		1.6		0.0		0.0		0.0		1.6	
4-13 si 10	Ty		1.6		0.0		0.0		0.0		1.6	
												----- PROGR. 25.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5-15	0.0		0.0		0.0		3353.9		0.0		0.0	
4-13	0.0		0.0		0.0		132.5		0.0		0.0	

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5-15 si 3 Sx	Si		41.4		0.0		0.0		0.0		41.4	
4-13 si 7	Tz		1.6		0.0		0.0		0.0		1.6	
4-13 si 10	Ty		1.6		0.0		0.0		0.0		1.6	
												----- PROGR. 38.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5-15	0.0		0.0		0.0		3353.9		0.0		0.0	
4-13	0.0		0.0		0.0		132.5		0.0		0.0	

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5-15 si 3 Sx	Si		41.4		0.0		0.0		0.0		41.4	
4-13 si 7	Tz		1.6		0.0		0.0		0.0		1.6	
4-13 si 10	Ty		1.6		0.0		0.0		0.0		1.6	
												----- PROGR. 51.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5-15	0.0		0.0		0.0		3353.9		0.0		0.0	
4-13	0.0		0.0		0.0		132.5		0.0		0.0	

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5-15 si 3 Sx	Si		41.4		0.0		0.0		0.0		41.4	
4-13 si 7	Tz		1.6		0.0		0.0		0.0		1.6	
4-13 si 10	Ty		1.6		0.0		0.0		0.0		1.6	
												----- PROGR. 64.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5-15	0.0		0.0		0.0		3353.9		0.0		0.0	
4-13	0.0		0.0		0.0		132.5		0.0		0.0	

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5-15 si 3 Sx	Si		41.4		0.0		0.0		0.0		41.4	
4-13 si 7	Tz		1.6		0.0		0.0		0.0		1.6	
4-13 si 10	Ty		1.6		0.0		0.0		0.0		1.6	
												----- PROGR. 76.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5-15	0.0		0.0		0.0		3353.9		0.0		0.0	
4-13	0.0		0.0		0.0		132.5		0.0		0.0	

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5-15 si 3 Sx	Si		41.4		0.0		0.0		0.0		41.4	
4-13 si 7	Tz		1.6		0.0		0.0		0.0		1.6	
4-13 si 10	Ty		1.6		0.0		0.0		0.0		1.6	
												----- PROGR. 89.

SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5-15	0.0	0.0	0.0	3353.9	0.0	0.0	
4-13	0.0	0.0	0.0	132.5	0.0	0.0	
TENSIONI (Sz= 0.00) :							
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5-15	si 3 Sx si	41.4	0.0	0.0	0.0	41.4	
4-13	si 7 Tz	1.6	0.0	0.0	0.0	1.6	
4-13	si 10 Ty	1.6	0.0	0.0	0.0	1.6	
-----							PROGR. 102.

SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5-15	0.0	0.0	0.0	3353.9	0.0	0.0	
4-13	0.0	0.0	0.0	132.5	0.0	0.0	
TENSIONI (Sz= 0.00) :							
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5-15	si 3 Sx si	41.4	0.0	0.0	0.0	41.4	
4-13	si 7 Tz	1.6	0.0	0.0	0.0	1.6	
4-13	si 10 Ty	1.6	0.0	0.0	0.0	1.6	

VERIFICA STABILITA` :

|L0 = 102. |
 Z |Lc = 102. |Ro = 5.55 |Im = 18.3 |Ncr= 4999786.5 |alfa(a)=0.2100 |ki=0.9976 |
 Y |Lc = 102. |Ro = 5.55 |Im = 18.3 |Ncr= 4999786.5 |alfa(a)=0.2100 |ki=0.9976 |
 Caso 3- 1 - Nodo 3 - Asse Z
 Ned = -2503.8 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -31.0 (0.012)

CASSONE_S022 (22) stato limite ultimo - ASTA (7690- 7689) 5682

SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5-14	0.0	0.0	0.0	-46523.8	0.0	0.0	
5- 4	0.0	0.0	0.0	43053.3	0.0	0.0	
5- 3	0.0	0.0	0.0	43054.0	0.0	0.0	
TENSIONI (Sz= 0.00) :							
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5-14	si 1 Sx si	-574.4	0.0	0.0	0.0	574.4	
5- 4	si 14 Tz	531.5	0.0	0.0	0.0	531.5	
5- 3	si 5 Ty	531.5	0.0	0.0	0.0	531.5	
-----							PROGR. 20.

SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5-14	0.0	0.0	0.0	-46523.8	0.0	0.0	
5- 4	0.0	0.0	0.0	43053.3	0.0	0.0	
5- 3	0.0	0.0	0.0	43054.0	0.0	0.0	
TENSIONI (Sz= 0.00) :							
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5-14	si 1 Sx si	-574.4	0.0	0.0	0.0	574.4	
5- 4	si 14 Tz	531.5	0.0	0.0	0.0	531.5	
5- 3	si 5 Ty	531.5	0.0	0.0	0.0	531.5	
-----							PROGR. 40.

SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5-14	0.0	0.0	0.0	-46523.8	0.0	0.0	
5- 4	0.0	0.0	0.0	43053.3	0.0	0.0	
5- 3	0.0	0.0	0.0	43054.0	0.0	0.0	
TENSIONI (Sz= 0.00) :							
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5-14	si 1 Sx si	-574.4	0.0	0.0	0.0	574.4	
5- 4	si 14 Tz	531.5	0.0	0.0	0.0	531.5	

5- 3 si 5	Ty	531.5	0.0	0.0	0.0	531.5
-----						PROGR. 60.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	-46523.8	0.0	0.0
5- 4	0.0	0.0	0.0	43053.3	0.0	0.0
5- 3	0.0	0.0	0.0	43054.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14 si 1 Sx	Si	-574.4	0.0	0.0	0.0	574.4
5- 4 si 14	Tz	531.5	0.0	0.0	0.0	531.5
5- 3 si 5	Ty	531.5	0.0	0.0	0.0	531.5
-----						PROGR. 80.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	-46523.8	0.0	0.0
5- 4	0.0	0.0	0.0	43053.3	0.0	0.0
5- 3	0.0	0.0	0.0	43054.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14 si 1 Sx	Si	-574.4	0.0	0.0	0.0	574.4
5- 4 si 14	Tz	531.5	0.0	0.0	0.0	531.5
5- 3 si 5	Ty	531.5	0.0	0.0	0.0	531.5
-----						PROGR. 99.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	-46523.8	0.0	0.0
5- 4	0.0	0.0	0.0	43053.3	0.0	0.0
5- 3	0.0	0.0	0.0	43054.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14 si 1 Sx	Si	-574.4	0.0	0.0	0.0	574.4
5- 4 si 14	Tz	531.5	0.0	0.0	0.0	531.5
5- 3 si 5	Ty	531.5	0.0	0.0	0.0	531.5
-----						PROGR. 119.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	-46523.8	0.0	0.0
5- 4	0.0	0.0	0.0	43053.3	0.0	0.0
5- 3	0.0	0.0	0.0	43054.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14 si 1 Sx	Si	-574.4	0.0	0.0	0.0	574.4
5- 4 si 14	Tz	531.5	0.0	0.0	0.0	531.5
5- 3 si 5	Ty	531.5	0.0	0.0	0.0	531.5
-----						PROGR. 139.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	-46523.8	0.0	0.0
5- 4	0.0	0.0	0.0	43053.3	0.0	0.0
5- 3	0.0	0.0	0.0	43054.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14 si 1 Sx	Si	-574.4	0.0	0.0	0.0	574.4
5- 4 si 14	Tz	531.5	0.0	0.0	0.0	531.5
5- 3 si 5	Ty	531.5	0.0	0.0	0.0	531.5
-----						PROGR. 159.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	-46523.8	0.0	0.0
5- 4	0.0	0.0	0.0	43053.3	0.0	0.0
5- 3	0.0	0.0	0.0	43054.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx	si	-574.4	0.0	0.0	574.4
5- 4	si	14	Tz		531.5	0.0	0.0	531.5
5- 3	si	5	Ty		531.5	0.0	0.0	531.5

VERIFICA STABILITA` :

L0 = 159. |
 Z |Lc = 159. |Ro = 5.55 |Im = 28.7 |Ncr= 2037805.8 |alfa(a)=0.2100 |ki=0.9702 |
 Y |Lc = 159. |Ro = 5.55 |Im = 28.7 |Ncr= 2037805.8 |alfa(a)=0.2100 |ki=0.9702 |
 Caso 5-14 - Nodo 1 - Asse Z
 Ned = -46523.8 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -592.0 (0.226)

CASSONE_S022 (22) stato limite ultimo - ASTA (7690- 7691) 5683
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	29896.1	0.0	0.0
4-13	0.0	0.0	0.0	-7971.1	0.0	0.0
5- 4	0.0	0.0	0.0	-28068.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx	si	369.1	0.0	0.0	369.1
4-13	si	7	Tz		-98.4	0.0	0.0	98.4
5- 4	si	10	Ty		-346.5	0.0	0.0	346.5

----- PROGR. 7.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	29896.1	0.0	0.0
4-13	0.0	0.0	0.0	-7971.1	0.0	0.0
5- 4	0.0	0.0	0.0	-28068.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx	si	369.1	0.0	0.0	369.1
4-13	si	7	Tz		-98.4	0.0	0.0	98.4
5- 4	si	10	Ty		-346.5	0.0	0.0	346.5

----- PROGR. 13.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	29896.1	0.0	0.0
4-13	0.0	0.0	0.0	-7971.1	0.0	0.0
5- 4	0.0	0.0	0.0	-28068.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx	si	369.1	0.0	0.0	369.1
4-13	si	7	Tz		-98.4	0.0	0.0	98.4
5- 4	si	10	Ty		-346.5	0.0	0.0	346.5

----- PROGR. 20.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	29896.1	0.0	0.0
4-13	0.0	0.0	0.0	-7971.1	0.0	0.0
5- 4	0.0	0.0	0.0	-28068.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx	si	369.1	0.0	0.0	369.1
4-13	si	7	Tz		-98.4	0.0	0.0	98.4
5- 4	si	10	Ty		-346.5	0.0	0.0	346.5

----- PROGR. 27.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	29896.1	0.0	0.0
4-13	0.0	0.0	0.0	-7971.1	0.0	0.0
5- 4	0.0	0.0	0.0	-28068.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx	Si	369.1	0.0	0.0	369.1
4-13	si	7	Tz		-98.4	0.0	0.0	98.4
5- 4	si	10	Ty		-346.5	0.0	0.0	346.5

----- PROGR. 33.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	29896.1	0.0	0.0
4-13	0.0	0.0	0.0	-7971.1	0.0	0.0
5- 4	0.0	0.0	0.0	-28068.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx	Si	369.1	0.0	0.0	369.1
4-13	si	7	Tz		-98.4	0.0	0.0	98.4
5- 4	si	10	Ty		-346.5	0.0	0.0	346.5

----- PROGR. 40.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	29896.1	0.0	0.0
4-13	0.0	0.0	0.0	-7971.1	0.0	0.0
5- 4	0.0	0.0	0.0	-28068.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx	Si	369.1	0.0	0.0	369.1
4-13	si	7	Tz		-98.4	0.0	0.0	98.4
5- 4	si	10	Ty		-346.5	0.0	0.0	346.5

----- PROGR. 47.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	29896.1	0.0	0.0
4-13	0.0	0.0	0.0	-7971.1	0.0	0.0
5- 4	0.0	0.0	0.0	-28068.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx	Si	369.1	0.0	0.0	369.1
4-13	si	7	Tz		-98.4	0.0	0.0	98.4
5- 4	si	10	Ty		-346.5	0.0	0.0	346.5

----- PROGR. 53.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	29896.1	0.0	0.0
4-13	0.0	0.0	0.0	-7971.1	0.0	0.0
5- 4	0.0	0.0	0.0	-28068.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx	Si	369.1	0.0	0.0	369.1
4-13	si	7	Tz		-98.4	0.0	0.0	98.4
5- 4	si	10	Ty		-346.5	0.0	0.0	346.5

VERIFICA STABILITA` :

|L0 = 53.

Z |Lc = 53. |Ro = 5.55 |Im = 9.6 |Ncr= 18222362.7 |alfa(a)=0.2100 |ki=1.0000 |

Y |Lc = 53. |Ro = 5.55 |Im = 9.6 |Ncr= 18222362.7 |alfa(a)=0.2100 |ki=1.0000 |

Caso 3- 1 - Nodo 1 - Asse Z

Ned = -28919.0 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -357.0 (0.136)

P_HEB400_S023 (23) stato limite ultimo - ASTA (6526- 7574) 5699
----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-200688.2	0.0	0.0
5-14	0.0	0.0	0.0	-200686.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-10	si	1	Sx	si	-1012.8	0.0	0.0	0.0	1012.8
5-14	si	5	Tz		-1012.8	0.0	0.0	0.0	1012.8
5-14	si	9	Ty		-1012.8	0.0	0.0	0.0	1012.8

----- PROGR. 23.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-200688.2	0.0	0.0
5-14	0.0	0.0	0.0	-200686.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-10	si	1	Sx	si	-1012.8	0.0	0.0	0.0	1012.8
5-14	si	5	Tz		-1012.8	0.0	0.0	0.0	1012.8
5-14	si	9	Ty		-1012.8	0.0	0.0	0.0	1012.8

----- PROGR. 45.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-200688.2	0.0	0.0
5-14	0.0	0.0	0.0	-200686.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-10	si	1	Sx	si	-1012.8	0.0	0.0	0.0	1012.8
5-14	si	5	Tz		-1012.8	0.0	0.0	0.0	1012.8
5-14	si	9	Ty		-1012.8	0.0	0.0	0.0	1012.8

----- PROGR. 68.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-200688.2	0.0	0.0
5-14	0.0	0.0	0.0	-200686.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-10	si	1	Sx	si	-1012.8	0.0	0.0	0.0	1012.8
5-14	si	5	Tz		-1012.8	0.0	0.0	0.0	1012.8
5-14	si	9	Ty		-1012.8	0.0	0.0	0.0	1012.8

----- PROGR. 90.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-200688.2	0.0	0.0
5-14	0.0	0.0	0.0	-200686.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-10	si	1	Sx	si	-1012.8	0.0	0.0	0.0	1012.8
5-14	si	5	Tz		-1012.8	0.0	0.0	0.0	1012.8
5-14	si	9	Ty		-1012.8	0.0	0.0	0.0	1012.8

----- PROGR. 113.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-200688.2	0.0	0.0
5-14	0.0	0.0	0.0	-200686.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-10	si	1	Sx	si	-1012.8	0.0	0.0	0.0	1012.8
5-14	si	5	Tz		-1012.8	0.0	0.0	0.0	1012.8
5-14	si	9	Ty		-1012.8	0.0	0.0	0.0	1012.8

----- PROGR. 135.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-200688.2	0.0	0.0
5-14	0.0	0.0	0.0	-200686.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-10	si	1	Sx	Si	-1012.8	0.0	0.0	0.0	1012.8
5-14	si	5	Tz		-1012.8	0.0	0.0	0.0	1012.8
5-14	si	9	Ty		-1012.8	0.0	0.0	0.0	1012.8

----- PROGR. 158.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-200688.2	0.0	0.0
5-14	0.0	0.0	0.0	-200686.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-10	si	1	Sx	Si	-1012.8	0.0	0.0	0.0	1012.8
5-14	si	5	Tz		-1012.8	0.0	0.0	0.0	1012.8
5-14	si	9	Ty		-1012.8	0.0	0.0	0.0	1012.8

----- PROGR. 180.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-200688.2	0.0	0.0
5-14	0.0	0.0	0.0	-200686.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-10	si	1	Sx	Si	-1012.8	0.0	0.0	0.0	1012.8
5-14	si	5	Tz		-1012.8	0.0	0.0	0.0	1012.8
5-14	si	9	Ty		-1012.8	0.0	0.0	0.0	1012.8

VERIFICA STABILITA` :

|L0 = 180.|

Z |Lc = 180.|Ro = 17.08|Im = 10.6|Ncr= 36850645.3|alfa(a)=0.2100|ki=1.0000|

Y |Lc = 180.|Ro = 7.39|Im = 24.4|Ncr= 6900431.2|alfa(b)=0.3400|ki=0.9710|

Caso 5-10 - Nodo 1 - Asse Y

Ned = -200688.2|Mzeq = 0.0|Myeq = 0.0|Ss = -1043.0 (0.398)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7696- 6533) 5701

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-214923.5	0.0	0.0
5-14	0.0	0.0	0.0	205216.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	-1084.6	0.0	0.0	1084.6
5-14	si	5	Tz		1035.6	0.0	0.0	1035.6
5-14	si	9	Ty		1035.6	0.0	0.0	1035.6

----- PROGR. 23.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-214923.5	0.0	0.0
5-14	0.0	0.0	0.0	205216.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	sx Si	-1084.6	0.0	0.0	0.0	1084.6
5-14	si	5	Tz	1035.6	0.0	0.0	0.0	1035.6
5-14	si	9	Ty	1035.6	0.0	0.0	0.0	1035.6

----- PROGR. 45.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-214923.5	0.0	0.0
5-14	0.0	0.0	0.0	205216.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1	Sx si	-1084.6	0.0	0.0	0.0	1084.6
5-14 si 5	Tz	1035.6	0.0	0.0	0.0	1035.6
5-14 si 9	Ty	1035.6	0.0	0.0	0.0	1035.6

----- PROGR. 68.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-214923.5	0.0	0.0
5-14	0.0	0.0	0.0	205216.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 3	Sx si	-1084.6	0.0	0.0	0.0	1084.6
5-14 si 5	Tz	1035.6	0.0	0.0	0.0	1035.6
5-14 si 9	Ty	1035.6	0.0	0.0	0.0	1035.6

----- PROGR. 90.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-214923.5	0.0	0.0
5-14	0.0	0.0	0.0	205216.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 3	Sx si	-1084.6	0.0	0.0	0.0	1084.6
5-14 si 5	Tz	1035.6	0.0	0.0	0.0	1035.6
5-14 si 9	Ty	1035.6	0.0	0.0	0.0	1035.6

----- PROGR. 113.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-214923.5	0.0	0.0
5-14	0.0	0.0	0.0	205216.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 3	Sx si	-1084.6	0.0	0.0	0.0	1084.6
5-14 si 5	Tz	1035.6	0.0	0.0	0.0	1035.6
5-14 si 9	Ty	1035.6	0.0	0.0	0.0	1035.6

----- PROGR. 135.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-214923.5	0.0	0.0
5-14	0.0	0.0	0.0	205216.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 3	Sx si	-1084.6	0.0	0.0	0.0	1084.6
5-14 si 5	Tz	1035.6	0.0	0.0	0.0	1035.6
5-14 si 9	Ty	1035.6	0.0	0.0	0.0	1035.6

----- PROGR. 158.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-214923.5	0.0	0.0
5-14	0.0	0.0	0.0	205216.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 3	Sx si	-1084.6	0.0	0.0	0.0	1084.6
5-14 si 5	Tz	1035.6	0.0	0.0	0.0	1035.6
5-14 si 9	Ty	1035.6	0.0	0.0	0.0	1035.6

----- PROGR. 180.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
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5- 3	0.0	0.0	0.0	-214923.5	0.0	0.0
5-14	0.0	0.0	0.0	205216.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 3 Sx Si	-1084.6	0.0	0.0	0.0	1084.6
5-14 si 5 Tz	1035.6	0.0	0.0	0.0	1035.6
5-14 si 9 Ty	1035.6	0.0	0.0	0.0	1035.6

VERIFICA STABILITA` :

L0 = 180. |
 Z |Lc = 180. |Ro = 17.08|Im = 10.6|Ncr= 36850645.7|alfa(a)=0.2100|ki=1.0000|
 Y |Lc = 180. |Ro = 7.39|Im = 24.4|Ncr= 6900431.2|alfa(b)=0.3400|ki=0.9710|
 Caso 5- 3 - Nodo 3 - Asse Y
 Ned = -214923.5|Mzeq = 0.0|Myeq = 0.0|Ss = -1117.0 (0.426)

CASSONE_S022 (22) stato limite ultimo - ASTA (7696- 7697) 5702
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	6343.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-15 si 1 Sx Si	78.3	0.0	0.0	0.0	78.3

----- PROGR. 19.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	6343.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-15 si 1 Sx Si	78.3	0.0	0.0	0.0	78.3

----- PROGR. 38.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	6343.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-15 si 1 Sx Si	78.3	0.0	0.0	0.0	78.3

----- PROGR. 56.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	6343.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-15 si 1 Sx Si	78.3	0.0	0.0	0.0	78.3

----- PROGR. 75.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	6343.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-15 si 1 Sx Si	78.3	0.0	0.0	0.0	78.3

----- PROGR. 94.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	6343.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-15 si 1 Sx Si	78.3	0.0	0.0	0.0	78.3

----- PROGR. 112.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	6343.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-15	si	1	Sx	Si	78.3	0.0	0.0	78.3
								PROGR. 131.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	6343.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-15	si	1	Sx	Si	78.3	0.0	0.0	78.3
								PROGR. 150.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	6343.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-15	si	1	Sx	Si	78.3	0.0	0.0	78.3

VERIFICA STABILITA` :

L0 = 150.
 Z |Lc = 150.|Ro = 5.55|Im = 27.1|Ncr= 2294386.9|alfa(a)=0.2100|ki=0.9748|
 Y |Lc = 150.|Ro = 5.55|Im = 27.1|Ncr= 2294386.9|alfa(a)=0.2100|ki=0.9748|
 Caso 3- 1 - Nodo 1 - Asse Z
 Ned = -2810.4|Mzeq = 0.0|Myeq = 0.0|Ss = -35.6 (0.014)

CASSONE_S022 (22) stato limite ultimo - ASTA (7698- 7697) 5703
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-7481.5	0.0	0.0
5- 4	0.0	0.0	0.0	6912.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	Si	-92.4	0.0	0.0	92.4
5- 4	si	14	Tz		85.3	0.0	0.0	85.3
5- 4	si	10	Ty		85.3	0.0	0.0	85.3
								PROGR. 23.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-7481.5	0.0	0.0
5- 4	0.0	0.0	0.0	6912.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	Si	-92.4	0.0	0.0	92.4
5- 4	si	14	Tz		85.3	0.0	0.0	85.3
5- 4	si	10	Ty		85.3	0.0	0.0	85.3
								PROGR. 45.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-7481.5	0.0	0.0
5- 4	0.0	0.0	0.0	6912.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	Si	-92.4	0.0	0.0	92.4
5- 4	si	14	Tz		85.3	0.0	0.0	85.3
5- 4	si	10	Ty		85.3	0.0	0.0	85.3
								PROGR. 68.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-7481.5	0.0	0.0
5- 4	0.0	0.0	0.0	6912.8	0.0	0.0
TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si 1 Sx Si	-92.4	0.0	0.0	0.0	92.4
5- 4	si 14 Tz	85.3	0.0	0.0	0.0	85.3
5- 4	si 10 Ty	85.3	0.0	0.0	0.0	85.3
----- PROGR.						91.

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-7481.5	0.0	0.0
5- 4	0.0	0.0	0.0	6912.8	0.0	0.0
TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si 1 Sx Si	-92.4	0.0	0.0	0.0	92.4
5- 4	si 14 Tz	85.3	0.0	0.0	0.0	85.3
5- 4	si 10 Ty	85.3	0.0	0.0	0.0	85.3
----- PROGR.						113.

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-7481.5	0.0	0.0
5- 4	0.0	0.0	0.0	6912.8	0.0	0.0
TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si 1 Sx Si	-92.4	0.0	0.0	0.0	92.4
5- 4	si 14 Tz	85.3	0.0	0.0	0.0	85.3
5- 4	si 10 Ty	85.3	0.0	0.0	0.0	85.3
----- PROGR.						136.

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-7481.5	0.0	0.0
5- 4	0.0	0.0	0.0	6912.8	0.0	0.0
TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si 1 Sx Si	-92.4	0.0	0.0	0.0	92.4
5- 4	si 14 Tz	85.3	0.0	0.0	0.0	85.3
5- 4	si 10 Ty	85.3	0.0	0.0	0.0	85.3
----- PROGR.						159.

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-7481.5	0.0	0.0
5- 4	0.0	0.0	0.0	6912.8	0.0	0.0
TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si 1 Sx Si	-92.4	0.0	0.0	0.0	92.4
5- 4	si 14 Tz	85.3	0.0	0.0	0.0	85.3
5- 4	si 10 Ty	85.3	0.0	0.0	0.0	85.3
----- PROGR.						181.

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-7481.5	0.0	0.0
5- 4	0.0	0.0	0.0	6912.8	0.0	0.0
TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si 1 Sx Si	-92.4	0.0	0.0	0.0	92.4
5- 4	si 14 Tz	85.3	0.0	0.0	0.0	85.3
5- 4	si 10 Ty	85.3	0.0	0.0	0.0	85.3

VERIFICA STABILITA` :

|L0 = 181. |
 Z |Lc = 181. |Ro = 5.55 |Im = 32.7 |Ncr= 1572686.1 |alfa(a)=0.2100 |ki=0.9589 |
 Y |Lc = 181. |Ro = 5.55 |Im = 32.7 |Ncr= 1572686.1 |alfa(a)=0.2100 |ki=0.9589 |
 Caso 5-10 - Nodo 1 - Asse Z
 Ned = -7481.5 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -96.3 (0.037)

CASSONE_S022 (22) stato limite ultimo - ASTA (7698- 7699) 5704

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	3730.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	46.1	0.0	0.0	0.0	46.1

----- PROGR. 13.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	3730.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	46.1	0.0	0.0	0.0	46.1

----- PROGR. 25.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	3730.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	46.1	0.0	0.0	0.0	46.1

----- PROGR. 38.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	3730.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	46.1	0.0	0.0	0.0	46.1

----- PROGR. 51.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	3730.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	46.1	0.0	0.0	0.0	46.1

----- PROGR. 64.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	3730.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	46.1	0.0	0.0	0.0	46.1

----- PROGR. 76.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	3730.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	46.1	0.0	0.0	0.0	46.1

----- PROGR. 89.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	3730.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx					

5-10	si	1	Sx	Si	46.1	0.0	0.0	0.0	46.1
									PROGR.
									102.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	3730.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	Si	46.1	0.0	0.0	46.1

VERIFICA STABILITA` :

L0 = 102.

Z | Lc = 102. | Ro = 5.55 | lm = 18.3 | Ncr = 4999786.5 | alfa(a) = 0.2100 | ki = 0.9976 |

Y | Lc = 102. | Ro = 5.55 | lm = 18.3 | Ncr = 4999786.5 | alfa(a) = 0.2100 | ki = 0.9976 |

Caso 3- 2 - Nodo 1 - Asse Z

Ned = -3356.6 | Mzeq = 0.0 | Myeq = 0.0 | Ss = -41.5 (0.016)

CASSONE_S022 (22)	stato limite ultimo - ASTA (7700- 7699)	5705
		PROGR.
		0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	50571.6	0.0	0.0
5- 4	0.0	0.0	0.0	50562.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	624.3	0.0	0.0	624.3
5- 4	si	14	Tz		624.2	0.0	0.0	624.2
5- 3	si	5	Ty		624.3	0.0	0.0	624.3

PROGR. 20.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	50571.6	0.0	0.0
5- 4	0.0	0.0	0.0	50562.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	624.3	0.0	0.0	624.3
5- 4	si	14	Tz		624.2	0.0	0.0	624.2
5- 3	si	5	Ty		624.3	0.0	0.0	624.3

PROGR. 40.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	50571.6	0.0	0.0
5- 4	0.0	0.0	0.0	50562.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	624.3	0.0	0.0	624.3
5- 4	si	14	Tz		624.2	0.0	0.0	624.2
5- 3	si	5	Ty		624.3	0.0	0.0	624.3

PROGR. 60.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	50571.6	0.0	0.0
5- 4	0.0	0.0	0.0	50562.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	624.3	0.0	0.0	624.3
5- 4	si	14	Tz		624.2	0.0	0.0	624.2
5- 3	si	5	Ty		624.3	0.0	0.0	624.3

PROGR. 80.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
------	----	----	----	---	----	----

5- 3	0.0	0.0	0.0	50571.6	0.0	0.0
5- 4	0.0	0.0	0.0	50562.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx Si	624.3	0.0	0.0	0.0	624.3
5- 4 si 14 Tz	624.2	0.0	0.0	0.0	624.2
5- 3 si 5 Ty	624.3	0.0	0.0	0.0	624.3

----- PROGR. 99.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	50571.6	0.0	0.0
5- 4	0.0	0.0	0.0	50562.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx Si	624.3	0.0	0.0	0.0	624.3
5- 4 si 14 Tz	624.2	0.0	0.0	0.0	624.2
5- 3 si 5 Ty	624.3	0.0	0.0	0.0	624.3

----- PROGR. 119.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	50571.6	0.0	0.0
5- 4	0.0	0.0	0.0	50562.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx Si	624.3	0.0	0.0	0.0	624.3
5- 4 si 14 Tz	624.2	0.0	0.0	0.0	624.2
5- 3 si 5 Ty	624.3	0.0	0.0	0.0	624.3

----- PROGR. 139.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	50571.6	0.0	0.0
5- 4	0.0	0.0	0.0	50562.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx Si	624.3	0.0	0.0	0.0	624.3
5- 4 si 14 Tz	624.2	0.0	0.0	0.0	624.2
5- 3 si 5 Ty	624.3	0.0	0.0	0.0	624.3

----- PROGR. 159.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	50571.6	0.0	0.0
5- 4	0.0	0.0	0.0	50562.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx Si	624.3	0.0	0.0	0.0	624.3
5- 4 si 14 Tz	624.2	0.0	0.0	0.0	624.2
5- 3 si 5 Ty	624.3	0.0	0.0	0.0	624.3

VERIFICA STABILITA` :

|L0 = 159. |
Z |Lc = 159. |Ro = 5.55 |Im = 28.7 |Ncr= 2037805.8 |alfa(a)=0.2100 |ki=0.9702 |
Y |Lc = 159. |Ro = 5.55 |Im = 28.7 |Ncr= 2037805.8 |alfa(a)=0.2100 |ki=0.9702 |
Caso 3- 4 - Nodo 1 - Asse Z
Ned = -49548.3 |Mzeq = 0.0 |Myeq = 0.0 |ss = -630.5 (0.241)

CASSONE_S022 (22) stato limite ultimo - ASTA (7700- 7701) 5706
----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-32975.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	-407.1	0.0	0.0	407.1

----- PROGR. 7.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-32975.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	-407.1	0.0	0.0	407.1

----- PROGR. 13.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-32975.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	-407.1	0.0	0.0	407.1

----- PROGR. 20.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-32975.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	-407.1	0.0	0.0	407.1

----- PROGR. 27.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-32975.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	-407.1	0.0	0.0	407.1

----- PROGR. 33.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-32975.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	-407.1	0.0	0.0	407.1

----- PROGR. 40.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-32975.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	-407.1	0.0	0.0	407.1

----- PROGR. 47.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-32975.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	-407.1	0.0	0.0	407.1

----- PROGR. 53.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-32975.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	-407.1	0.0	0.0	407.1

VERIFICA STABILITA` :

|L0 = 53. |
 Z |Lc = 53. |Ro = 5.55 |Im = 9.6 |Ncr= 18222362.7 |alfa(a)=0.2100 |ki=1.0000 |
 Y |Lc = 53. |Ro = 5.55 |Im = 9.6 |Ncr= 18222362.7 |alfa(a)=0.2100 |ki=1.0000 |
 Caso 5- 3 - Nodo 1 - Asse Z
 Ned = -32975.4 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -407.1 (0.155)

CASSONE_S022 (22) stato limite ultimo - ASTA (7577- 7574) 5707
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	11117.5	0.0	0.0

 TENSIONI (Sz= 0.00) :

Caso	ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-15	si	1	Sx	137.3	0.0	0.0	0.0	137.3

 ----- PROGR. 19.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	11117.5	0.0	0.0

 TENSIONI (Sz= 0.00) :

Caso	ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-15	si	1	Sx	137.3	0.0	0.0	0.0	137.3

 ----- PROGR. 38.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	11117.5	0.0	0.0

 TENSIONI (Sz= 0.00) :

Caso	ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-15	si	1	Sx	137.3	0.0	0.0	0.0	137.3

 ----- PROGR. 56.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	11117.5	0.0	0.0

 TENSIONI (Sz= 0.00) :

Caso	ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-15	si	1	Sx	137.3	0.0	0.0	0.0	137.3

 ----- PROGR. 75.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	11117.5	0.0	0.0

 TENSIONI (Sz= 0.00) :

Caso	ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-15	si	1	Sx	137.3	0.0	0.0	0.0	137.3

 ----- PROGR. 94.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	11117.5	0.0	0.0

 TENSIONI (Sz= 0.00) :

Caso	ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-15	si	1	Sx	137.3	0.0	0.0	0.0	137.3

 ----- PROGR. 112.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	11117.5	0.0	0.0

 TENSIONI (Sz= 0.00) :

Caso	ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-15	si	1	Sx	137.3	0.0	0.0	0.0	137.3

 ----- PROGR. 131.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	11117.5	0.0	0.0

 TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-15	si	1	Sx	Si	137.3	0.0	0.0	137.3
-----								PROGR. 150.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-15	0.0	0.0	0.0	11117.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-15	si	1	Sx	Si	137.3	0.0	0.0	137.3

VERIFICA STABILITA` :

L0 = 150.

Z |Lc = 150. |Ro = 5.55 |Im = 27.1 |Ncr= 2294386.9 |alfa(a)=0.2100 |ki=0.9748 |

Y |Lc = 150. |Ro = 5.55 |Im = 27.1 |Ncr= 2294386.9 |alfa(a)=0.2100 |ki=0.9748 |

Caso 3- 1 - Nodo 1 - Asse Z

Ned = -7318.3 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -92.7 (0.035)

CASSONE_S022 (22) stato limite ultimo - ASTA (7684- 7577) 5708

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	-6059.9	0.0	0.0
5-12	0.0	0.0	0.0	4103.1	0.0	0.0
5-14	0.0	0.0	0.0	4112.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	1	Sx	Si	-74.8	0.0	0.0	74.8
5-12	si	13	Tz		50.7	0.0	0.0	50.7
5-14	si	5	Ty		50.8	0.0	0.0	50.8

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	-6059.9	0.0	0.0
5-12	0.0	0.0	0.0	4103.1	0.0	0.0
5-14	0.0	0.0	0.0	4112.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	2	Sx	Si	-74.8	0.0	0.0	74.8
5-12	si	13	Tz		50.7	0.0	0.0	50.7
5-14	si	5	Ty		50.8	0.0	0.0	50.8

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	-6059.9	0.0	0.0
5-12	0.0	0.0	0.0	4103.1	0.0	0.0
5-14	0.0	0.0	0.0	4112.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	2	Sx	Si	-74.8	0.0	0.0	74.8
5-12	si	13	Tz		50.7	0.0	0.0	50.7
5-14	si	5	Ty		50.8	0.0	0.0	50.8

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	-6059.9	0.0	0.0
5-12	0.0	0.0	0.0	4103.1	0.0	0.0
5-14	0.0	0.0	0.0	4112.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	2	Sx	Si	-74.8	0.0	0.0	74.8

5-12 si 13	Tz		50.7	0.0	0.0	0.0	50.7
5-14 si 5	Ty		50.8	0.0	0.0	0.0	50.8
----- PROGR.							91.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 7	0.0		0.0		0.0		-6059.9		0.0		0.0	
5-12	0.0		0.0		0.0		4103.1		0.0		0.0	
5-14	0.0		0.0		0.0		4112.8		0.0		0.0	

TENSIONI (Sz= 0.00) :

Caso	ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5- 7 si 2 Sx	si		-74.8		0.0		0.0		0.0		74.8	
5-12 si 13	Tz		50.7		0.0		0.0		0.0		50.7	
5-14 si 5	Ty		50.8		0.0		0.0		0.0		50.8	
----- PROGR.												113.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 7	0.0		0.0		0.0		-6059.9		0.0		0.0	
5-12	0.0		0.0		0.0		4103.1		0.0		0.0	
5-14	0.0		0.0		0.0		4112.8		0.0		0.0	

TENSIONI (Sz= 0.00) :

Caso	ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5- 7 si 2 Sx	si		-74.8		0.0		0.0		0.0		74.8	
5-12 si 13	Tz		50.7		0.0		0.0		0.0		50.7	
5-14 si 5	Ty		50.8		0.0		0.0		0.0		50.8	
----- PROGR.												136.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 7	0.0		0.0		0.0		-6059.9		0.0		0.0	
5-12	0.0		0.0		0.0		4103.1		0.0		0.0	
5-14	0.0		0.0		0.0		4112.8		0.0		0.0	

TENSIONI (Sz= 0.00) :

Caso	ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5- 7 si 2 Sx	si		-74.8		0.0		0.0		0.0		74.8	
5-12 si 13	Tz		50.7		0.0		0.0		0.0		50.7	
5-14 si 5	Ty		50.8		0.0		0.0		0.0		50.8	
----- PROGR.												159.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 7	0.0		0.0		0.0		-6059.9		0.0		0.0	
5-12	0.0		0.0		0.0		4103.1		0.0		0.0	
5-14	0.0		0.0		0.0		4112.8		0.0		0.0	

TENSIONI (Sz= 0.00) :

Caso	ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5- 7 si 2 Sx	si		-74.8		0.0		0.0		0.0		74.8	
5-12 si 13	Tz		50.7		0.0		0.0		0.0		50.7	
5-14 si 5	Ty		50.8		0.0		0.0		0.0		50.8	
----- PROGR.												181.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 7	0.0		0.0		0.0		-6059.9		0.0		0.0	
5-12	0.0		0.0		0.0		4103.1		0.0		0.0	
5-14	0.0		0.0		0.0		4112.8		0.0		0.0	

TENSIONI (Sz= 0.00) :

Caso	ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5- 7 si 2 Sx	si		-74.8		0.0		0.0		0.0		74.8	
5-12 si 13	Tz		50.7		0.0		0.0		0.0		50.7	
5-14 si 5	Ty		50.8		0.0		0.0		0.0		50.8	

VERIFICA STABILITA` :

|L0 = 181.|

Z |Lc = 181.|Ro = 5.55|lm = 32.7|Ncr= 1572686.1|alfa(a)=0.2100|ki=0.9589|
Y |Lc = 181.|Ro = 5.55|lm = 32.7|Ncr= 1572686.1|alfa(a)=0.2100|ki=0.9589|
Caso 5- 7 - Nodo 2 - Asse Z
Ned = -6059.9|Mzeq = 0.0|Myeq = 0.0|Ss = -78.0 (0.030)

CASSONE_S022 (22) stato limite ultimo - ASTA (7685- 7684) 5709
----- PROGR. 0.

SOLLECITAZIONI :
| Caso | MZ | MY | MT | N | TZ | TY |
| 5- 7 | 0.0 | 0.0 | 0.0 | 2666.6 | 0.0 | 0.0 |
TENSIONI (Sz= 0.00) :
| Caso |Ve|No|massimi | Sx | Tz | Ty | Tau tot. | Si |
| 5- 7 |si| 1|Sx | Si | 32.9 | 0.0 | 0.0 | 0.0 | 32.9 |
----- PROGR. 13.

SOLLECITAZIONI :
| Caso | MZ | MY | MT | N | TZ | TY |
| 5- 7 | 0.0 | 0.0 | 0.0 | 2666.6 | 0.0 | 0.0 |
TENSIONI (Sz= 0.00) :
| Caso |Ve|No|massimi | Sx | Tz | Ty | Tau tot. | Si |
| 5- 7 |si| 1|Sx | Si | 32.9 | 0.0 | 0.0 | 0.0 | 32.9 |
----- PROGR. 25.

SOLLECITAZIONI :
| Caso | MZ | MY | MT | N | TZ | TY |
| 5- 7 | 0.0 | 0.0 | 0.0 | 2666.6 | 0.0 | 0.0 |
TENSIONI (Sz= 0.00) :
| Caso |Ve|No|massimi | Sx | Tz | Ty | Tau tot. | Si |
| 5- 7 |si| 1|Sx | Si | 32.9 | 0.0 | 0.0 | 0.0 | 32.9 |
----- PROGR. 38.

SOLLECITAZIONI :
| Caso | MZ | MY | MT | N | TZ | TY |
| 5- 7 | 0.0 | 0.0 | 0.0 | 2666.6 | 0.0 | 0.0 |
TENSIONI (Sz= 0.00) :
| Caso |Ve|No|massimi | Sx | Tz | Ty | Tau tot. | Si |
| 5- 7 |si| 1|Sx | Si | 32.9 | 0.0 | 0.0 | 0.0 | 32.9 |
----- PROGR. 51.

SOLLECITAZIONI :
| Caso | MZ | MY | MT | N | TZ | TY |
| 5- 7 | 0.0 | 0.0 | 0.0 | 2666.6 | 0.0 | 0.0 |
TENSIONI (Sz= 0.00) :
| Caso |Ve|No|massimi | Sx | Tz | Ty | Tau tot. | Si |
| 5- 7 |si| 1|Sx | Si | 32.9 | 0.0 | 0.0 | 0.0 | 32.9 |
----- PROGR. 64.

SOLLECITAZIONI :
| Caso | MZ | MY | MT | N | TZ | TY |
| 5- 7 | 0.0 | 0.0 | 0.0 | 2666.6 | 0.0 | 0.0 |
TENSIONI (Sz= 0.00) :
| Caso |Ve|No|massimi | Sx | Tz | Ty | Tau tot. | Si |
| 5- 7 |si| 1|Sx | Si | 32.9 | 0.0 | 0.0 | 0.0 | 32.9 |
----- PROGR. 76.

SOLLECITAZIONI :
| Caso | MZ | MY | MT | N | TZ | TY |
| 5- 7 | 0.0 | 0.0 | 0.0 | 2666.6 | 0.0 | 0.0 |
TENSIONI (Sz= 0.00) :
| Caso |Ve|No|massimi | Sx | Tz | Ty | Tau tot. | Si |
| 5- 7 |si| 1|Sx | Si | 32.9 | 0.0 | 0.0 | 0.0 | 32.9 |
----- PROGR. 89.

SOLLECITAZIONI :
| Caso | MZ | MY | MT | N | TZ | TY |
| 5- 7 | 0.0 | 0.0 | 0.0 | 2666.6 | 0.0 | 0.0 |
TENSIONI (Sz= 0.00) :
| Caso |Ve|No|massimi | Sx | Tz | Ty | Tau tot. | Si |
| 5- 7 |si| 1|Sx | Si | 32.9 | 0.0 | 0.0 | 0.0 | 32.9 |

----- PROGR. 102.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	2666.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	1	Sx	Si	32.9	0.0	0.0	32.9

VERIFICA STABILITA` :

|L0 = 102. |

Z |Lc = 102. |Ro = 5.55 |Im = 18.3 |Ncr= 4999786.5 |alfa(a)=0.2100 |ki=0.9976 |

Y |Lc = 102. |Ro = 5.55 |Im = 18.3 |Ncr= 4999786.5 |alfa(a)=0.2100 |ki=0.9976 |

Caso 3- 3 - Nodo 1 - Asse Z

Ned = -1726.9 |Mzeq = 0.0 |Myeq = 0.0 |ss = -21.4 (0.008)

CASSONE_S022 (22) stato limite ultimo - ASTA (7686- 7685) 5710

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	-47597.3	0.0	0.0
5-12	0.0	0.0	0.0	43230.9	0.0	0.0
5-14	0.0	0.0	0.0	43404.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	1	Sx	Si	-587.6	0.0	0.0	587.6
5-12	si	13	Tz		533.7	0.0	0.0	533.7
5-14	si	5	Ty		535.9	0.0	0.0	535.9

----- PROGR. 20.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	-47597.3	0.0	0.0
5-12	0.0	0.0	0.0	43230.9	0.0	0.0
5-14	0.0	0.0	0.0	43404.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	3	Sx	Si	-587.6	0.0	0.0	587.6
5-12	si	13	Tz		533.7	0.0	0.0	533.7
5-14	si	5	Ty		535.9	0.0	0.0	535.9

----- PROGR. 40.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	-47597.3	0.0	0.0
5-12	0.0	0.0	0.0	43230.9	0.0	0.0
5-14	0.0	0.0	0.0	43404.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	3	Sx	Si	-587.6	0.0	0.0	587.6
5-12	si	13	Tz		533.7	0.0	0.0	533.7
5-14	si	5	Ty		535.9	0.0	0.0	535.9

----- PROGR. 60.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	-47597.3	0.0	0.0
5-12	0.0	0.0	0.0	43230.9	0.0	0.0
5-14	0.0	0.0	0.0	43404.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	3	Sx	Si	-587.6	0.0	0.0	587.6
5-12	si	13	Tz		533.7	0.0	0.0	533.7
5-14	si	5	Ty		535.9	0.0	0.0	535.9

----- PROGR. 80.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	-47597.3	0.0	0.0
5-12	0.0	0.0	0.0	43230.9	0.0	0.0
5-14	0.0	0.0	0.0	43404.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	3	Sx	Si	-587.6	0.0	0.0	587.6
5-12	si	13	Tz		533.7	0.0	0.0	533.7
5-14	si	5	Ty		535.9	0.0	0.0	535.9

----- PROGR. 99.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	-47597.3	0.0	0.0
5-12	0.0	0.0	0.0	43230.9	0.0	0.0
5-14	0.0	0.0	0.0	43404.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	3	Sx	Si	-587.6	0.0	0.0	587.6
5-12	si	13	Tz		533.7	0.0	0.0	533.7
5-14	si	5	Ty		535.9	0.0	0.0	535.9

----- PROGR. 119.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	-47597.3	0.0	0.0
5-12	0.0	0.0	0.0	43230.9	0.0	0.0
5-14	0.0	0.0	0.0	43404.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	3	Sx	Si	-587.6	0.0	0.0	587.6
5-12	si	13	Tz		533.7	0.0	0.0	533.7
5-14	si	5	Ty		535.9	0.0	0.0	535.9

----- PROGR. 139.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	-47597.3	0.0	0.0
5-12	0.0	0.0	0.0	43230.9	0.0	0.0
5-14	0.0	0.0	0.0	43404.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	3	Sx	Si	-587.6	0.0	0.0	587.6
5-12	si	13	Tz		533.7	0.0	0.0	533.7
5-14	si	5	Ty		535.9	0.0	0.0	535.9

----- PROGR. 159.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	-47597.3	0.0	0.0
5-12	0.0	0.0	0.0	43230.9	0.0	0.0
5-14	0.0	0.0	0.0	43404.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	3	Sx	Si	-587.6	0.0	0.0	587.6
5-12	si	13	Tz		533.7	0.0	0.0	533.7
5-14	si	5	Ty		535.9	0.0	0.0	535.9

VERIFICA STABILITA` :

|L0 = 159. |

Z |Lc = 159. |Ro = 5.55 |Im = 28.7 |Ncr= 2037805.8 |alfa(a)=0.2100 |ki=0.9702 |

Y |Lc = 159. |Ro = 5.55 |Im = 28.7 |Ncr= 2037805.8 |alfa(a)=0.2100 |ki=0.9702 |

Caso 5- 7 - Nodo 3 - Asse Z

Ned = -47597.3|Mzeq = 0.0|Myeq = 0.0|ss = -605.7 (0.231)

CASSONE_S022 (22) stato limite ultimo - ASTA (7687- 7686) 5711
----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	30616.8	0.0	0.0
5- 5	0.0	0.0	0.0	30498.3	0.0	0.0
5- 3	0.0	0.0	0.0	30610.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 1 Sx	Si	378.0	0.0	0.0	0.0	378.0
5- 5 si 14 Tz		376.5	0.0	0.0	0.0	376.5
5- 3 si 5 Ty		377.9	0.0	0.0	0.0	377.9

----- PROGR. 7.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	30616.8	0.0	0.0
5- 5	0.0	0.0	0.0	30498.3	0.0	0.0
5- 3	0.0	0.0	0.0	30610.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 3 Sx	Si	378.0	0.0	0.0	0.0	378.0
5- 5 si 14 Tz		376.5	0.0	0.0	0.0	376.5
5- 3 si 5 Ty		377.9	0.0	0.0	0.0	377.9

----- PROGR. 13.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	30616.8	0.0	0.0
5- 5	0.0	0.0	0.0	30498.3	0.0	0.0
5- 3	0.0	0.0	0.0	30610.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 3 Sx	Si	378.0	0.0	0.0	0.0	378.0
5- 5 si 14 Tz		376.5	0.0	0.0	0.0	376.5
5- 3 si 5 Ty		377.9	0.0	0.0	0.0	377.9

----- PROGR. 20.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	30616.8	0.0	0.0
5- 5	0.0	0.0	0.0	30498.3	0.0	0.0
5- 3	0.0	0.0	0.0	30610.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 3 Sx	Si	378.0	0.0	0.0	0.0	378.0
5- 5 si 14 Tz		376.5	0.0	0.0	0.0	376.5
5- 3 si 5 Ty		377.9	0.0	0.0	0.0	377.9

----- PROGR. 27.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	30616.8	0.0	0.0
5- 5	0.0	0.0	0.0	30498.3	0.0	0.0
5- 3	0.0	0.0	0.0	30610.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 3 Sx	Si	378.0	0.0	0.0	0.0	378.0
5- 5 si 14 Tz		376.5	0.0	0.0	0.0	376.5
5- 3 si 5 Ty		377.9	0.0	0.0	0.0	377.9

----- PROGR. 33.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
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5- 7	0.0	0.0	0.0	30616.8	0.0	0.0
5- 5	0.0	0.0	0.0	30498.3	0.0	0.0
5- 3	0.0	0.0	0.0	30610.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 3 Sx Si	378.0	0.0	0.0	0.0	0.0	378.0
5- 5 si 14 Tz	376.5	0.0	0.0	0.0	0.0	376.5
5- 3 si 5 Ty	377.9	0.0	0.0	0.0	0.0	377.9

----- PROGR. 40.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	30616.8	0.0	0.0
5- 5	0.0	0.0	0.0	30498.3	0.0	0.0
5- 3	0.0	0.0	0.0	30610.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 3 Sx Si	378.0	0.0	0.0	0.0	0.0	378.0
5- 5 si 14 Tz	376.5	0.0	0.0	0.0	0.0	376.5
5- 3 si 5 Ty	377.9	0.0	0.0	0.0	0.0	377.9

----- PROGR. 47.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	30616.8	0.0	0.0
5- 5	0.0	0.0	0.0	30498.3	0.0	0.0
5- 3	0.0	0.0	0.0	30610.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 3 Sx Si	378.0	0.0	0.0	0.0	0.0	378.0
5- 5 si 14 Tz	376.5	0.0	0.0	0.0	0.0	376.5
5- 3 si 5 Ty	377.9	0.0	0.0	0.0	0.0	377.9

----- PROGR. 53.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	30616.8	0.0	0.0
5- 5	0.0	0.0	0.0	30498.3	0.0	0.0
5- 3	0.0	0.0	0.0	30610.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 3 Sx Si	378.0	0.0	0.0	0.0	0.0	378.0
5- 5 si 14 Tz	376.5	0.0	0.0	0.0	0.0	376.5
5- 3 si 5 Ty	377.9	0.0	0.0	0.0	0.0	377.9

VERIFICA STABILITA` :

|L0 = 53.|

Z |Lc = 53.|Ro = 5.55|lm = 9.6|Ncr= 18222362.7|alfa(a)=0.2100|ki=1.0000|

Y |Lc = 53.|Ro = 5.55|lm = 9.6|Ncr= 18222362.7|alfa(a)=0.2100|ki=1.0000|

Caso 3- 3 - Nodo 3 - Asse Z

Ned = -29461.9|Mzeq = 0.0|Myeq = 0.0|Ss = -363.7 (0.139)

CASSONE_S022 (22) stato limite ultimo - ASTA (7702- 7696) 5712

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-76184.4	0.0	0.0
4-13	0.0	0.0	0.0	-23458.4	0.0	0.0
4- 4	0.0	0.0	0.0	23005.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx Si	-940.5	0.0	0.0	0.0	0.0	940.5
4-13 si 7 Tz	-289.6	0.0	0.0	0.0	0.0	289.6

4- 4 si 9	Ty	284.0	0.0	0.0	0.0	284.0
-----						PROGR. 18.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-76184.4	0.0	0.0
4-13	0.0	0.0	0.0	-23458.4	0.0	0.0
4- 4	0.0	0.0	0.0	23005.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx	si	-940.5	0.0	0.0	0.0	940.5
4-13 si 7	Tz	-289.6	0.0	0.0	0.0	289.6
4- 4 si 9	Ty	284.0	0.0	0.0	0.0	284.0
-----						PROGR. 35.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-76184.4	0.0	0.0
4-13	0.0	0.0	0.0	-23458.4	0.0	0.0
4- 4	0.0	0.0	0.0	23005.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx	si	-940.5	0.0	0.0	0.0	940.5
4-13 si 7	Tz	-289.6	0.0	0.0	0.0	289.6
4- 4 si 9	Ty	284.0	0.0	0.0	0.0	284.0
-----						PROGR. 53.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-76184.4	0.0	0.0
4-13	0.0	0.0	0.0	-23458.4	0.0	0.0
4- 4	0.0	0.0	0.0	23005.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx	si	-940.5	0.0	0.0	0.0	940.5
4-13 si 7	Tz	-289.6	0.0	0.0	0.0	289.6
4- 4 si 9	Ty	284.0	0.0	0.0	0.0	284.0
-----						PROGR. 71.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-76184.4	0.0	0.0
4-13	0.0	0.0	0.0	-23458.4	0.0	0.0
4- 4	0.0	0.0	0.0	23005.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx	si	-940.5	0.0	0.0	0.0	940.5
4-13 si 7	Tz	-289.6	0.0	0.0	0.0	289.6
4- 4 si 9	Ty	284.0	0.0	0.0	0.0	284.0
-----						PROGR. 89.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-76184.4	0.0	0.0
4-13	0.0	0.0	0.0	-23458.4	0.0	0.0
4- 4	0.0	0.0	0.0	23005.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx	si	-940.5	0.0	0.0	0.0	940.5
4-13 si 7	Tz	-289.6	0.0	0.0	0.0	289.6
4- 4 si 9	Ty	284.0	0.0	0.0	0.0	284.0
-----						PROGR. 106.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-76184.4	0.0	0.0
4-13	0.0	0.0	0.0	-23458.4	0.0	0.0
4- 4	0.0	0.0	0.0	23005.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	-940.5	0.0	0.0	940.5
4-13	si	7	Tz		-289.6	0.0	0.0	289.6
4- 4	si	9	Ty		284.0	0.0	0.0	284.0
-----							PROGR.	124.

----- PROGR. 124.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-76184.4	0.0	0.0
4-13	0.0	0.0	0.0	-23458.4	0.0	0.0
4- 4	0.0	0.0	0.0	23005.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	4	Sx	Si	-940.5	0.0	0.0	940.5
4-13	si	7	Tz		-289.6	0.0	0.0	289.6
4- 4	si	9	Ty		284.0	0.0	0.0	284.0

----- PROGR. 142.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-76184.4	0.0	0.0
4-13	0.0	0.0	0.0	-23458.4	0.0	0.0
4- 4	0.0	0.0	0.0	23005.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	4	Sx	Si	-940.5	0.0	0.0	940.5
4-13	si	7	Tz		-289.6	0.0	0.0	289.6
4- 4	si	9	Ty		284.0	0.0	0.0	284.0

VERIFICA STABILITA` :

|L0 = 142.|

Z |Lc = 142.|Ro = 5.55|lm = 25.5|Ncr= 2573483.8|alfa(a)=0.2100|ki=0.9788|

Y |Lc = 142.|Ro = 5.55|lm = 25.5|Ncr= 2573483.8|alfa(a)=0.2100|ki=0.9788|

Caso 5- 3 - Nodo 1 - Asse Z

Ned = -76184.4|Mzeq = 0.0|Myeq = 0.0|Ss = -960.9 (0.367)

CASSONE_S022 (22) stato limite ultimo - ASTA (7703- 7702) 5713

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	75685.8	0.0	0.0
5- 2	0.0	0.0	0.0	75366.7	0.0	0.0
5- 4	0.0	0.0	0.0	75673.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx Si	934.4	0.0	0.0	0.0	934.4
5- 2	si	13	Tz	930.5	0.0	0.0	0.0	930.5
5- 4	si	5	Ty	934.2	0.0	0.0	0.0	934.2

----- PROGR. 18.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	75685.8	0.0	0.0
5- 2	0.0	0.0	0.0	75366.7	0.0	0.0
5- 4	0.0	0.0	0.0	75673.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	934.4	0.0	0.0	934.4
5- 2	si	13	Tz		930.5	0.0	0.0	930.5
5- 4	si	5	Ty		934.2	0.0	0.0	934.2

----- PROGR. 35.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	75685.8	0.0	0.0
5- 2	0.0	0.0	0.0	75366.7	0.0	0.0
5- 4	0.0	0.0	0.0	75673.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	934.4	0.0	0.0	934.4
5- 2	si	13	Tz		930.5	0.0	0.0	930.5
5- 4	si	5	Ty		934.2	0.0	0.0	934.2

----- PROGR. 53.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	75685.8	0.0	0.0
5- 2	0.0	0.0	0.0	75366.7	0.0	0.0
5- 4	0.0	0.0	0.0	75673.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	934.4	0.0	0.0	934.4
5- 2	si	13	Tz		930.5	0.0	0.0	930.5
5- 4	si	5	Ty		934.2	0.0	0.0	934.2

----- PROGR. 71.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	75685.8	0.0	0.0
5- 2	0.0	0.0	0.0	75366.7	0.0	0.0
5- 4	0.0	0.0	0.0	75673.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	934.4	0.0	0.0	934.4
5- 2	si	13	Tz		930.5	0.0	0.0	930.5
5- 4	si	5	Ty		934.2	0.0	0.0	934.2

----- PROGR. 89.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	75685.8	0.0	0.0
5- 2	0.0	0.0	0.0	75366.7	0.0	0.0
5- 4	0.0	0.0	0.0	75673.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	934.4	0.0	0.0	934.4
5- 2	si	13	Tz		930.5	0.0	0.0	930.5
5- 4	si	5	Ty		934.2	0.0	0.0	934.2

----- PROGR. 106.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	75685.8	0.0	0.0
5- 2	0.0	0.0	0.0	75366.7	0.0	0.0
5- 4	0.0	0.0	0.0	75673.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	934.4	0.0	0.0	934.4
5- 2	si	13	Tz		930.5	0.0	0.0	930.5
5- 4	si	5	Ty		934.2	0.0	0.0	934.2

----- PROGR. 124.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	75685.8	0.0	0.0
5- 2	0.0	0.0	0.0	75366.7	0.0	0.0
5- 4	0.0	0.0	0.0	75673.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	934.4	0.0	0.0	934.4

5- 2 si 13	Tz	930.5	0.0	0.0	0.0	930.5
5- 4 si 5	Ty	934.2	0.0	0.0	0.0	934.2
-----						PROGR. 142.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	75685.8	0.0	0.0
5- 2	0.0	0.0	0.0	75366.7	0.0	0.0
5- 4	0.0	0.0	0.0	75673.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx	Si	934.4	0.0	0.0	0.0	934.4
5- 2 si 13	Tz	930.5	0.0	0.0	0.0	930.5
5- 4 si 5	Ty	934.2	0.0	0.0	0.0	934.2

VERIFICA STABILITA` :

|L0 = 142.|

Z |Lc = 142.|Ro = 5.55|lm = 25.5|Ncr= 2573483.8|alfa(a)=0.2100|ki=0.9788|

Y |Lc = 142.|Ro = 5.55|lm = 25.5|Ncr= 2573483.8|alfa(a)=0.2100|ki=0.9788|

Caso 3- 4 - Nodo 1 - Asse Z

Ned = -75311.4|Mzeq = 0.0|Myeq = 0.0|Ss = -949.9 (0.363)

CASSONE_S022 (22) stato limite ultimo - ASTA (7704- 7703) 5714

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-77484.7	0.0	0.0
5- 2	0.0	0.0	0.0	-77158.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx	Si	-956.6	0.0	0.0	0.0	956.6
5- 2 si 13	Tz	-952.6	0.0	0.0	0.0	952.6
5- 3 si 5	Ty	-956.6	0.0	0.0	0.0	956.6

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-77484.7	0.0	0.0
5- 2	0.0	0.0	0.0	-77158.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx	Si	-956.6	0.0	0.0	0.0	956.6
5- 2 si 13	Tz	-952.6	0.0	0.0	0.0	952.6
5- 3 si 5	Ty	-956.6	0.0	0.0	0.0	956.6

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-77484.7	0.0	0.0
5- 2	0.0	0.0	0.0	-77158.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx	Si	-956.6	0.0	0.0	0.0	956.6
5- 2 si 13	Tz	-952.6	0.0	0.0	0.0	952.6
5- 3 si 5	Ty	-956.6	0.0	0.0	0.0	956.6

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-77484.7	0.0	0.0
5- 2	0.0	0.0	0.0	-77158.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 3 Sx	Si	-956.6	0.0	0.0	0.0	956.6

5- 2 si 13	Tz	-952.6	0.0	0.0	0.0	952.6
5- 3 si 5	Ty	-956.6	0.0	0.0	0.0	956.6
-----						PROGR. 72.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-77484.7	0.0	0.0
5- 2	0.0	0.0	0.0	-77158.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 3 Sx	si	-956.6	0.0	0.0	0.0	956.6
5- 2 si 13	Tz	-952.6	0.0	0.0	0.0	952.6
5- 3 si 5	Ty	-956.6	0.0	0.0	0.0	956.6
-----						PROGR. 91.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-77484.7	0.0	0.0
5- 2	0.0	0.0	0.0	-77158.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 3 Sx	si	-956.6	0.0	0.0	0.0	956.6
5- 2 si 13	Tz	-952.6	0.0	0.0	0.0	952.6
5- 3 si 5	Ty	-956.6	0.0	0.0	0.0	956.6
-----						PROGR. 109.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-77484.7	0.0	0.0
5- 2	0.0	0.0	0.0	-77158.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 3 Sx	si	-956.6	0.0	0.0	0.0	956.6
5- 2 si 13	Tz	-952.6	0.0	0.0	0.0	952.6
5- 3 si 5	Ty	-956.6	0.0	0.0	0.0	956.6
-----						PROGR. 127.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-77484.7	0.0	0.0
5- 2	0.0	0.0	0.0	-77158.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 3 Sx	si	-956.6	0.0	0.0	0.0	956.6
5- 2 si 13	Tz	-952.6	0.0	0.0	0.0	952.6
5- 3 si 5	Ty	-956.6	0.0	0.0	0.0	956.6
-----						PROGR. 145.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-77484.7	0.0	0.0
5- 2	0.0	0.0	0.0	-77158.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 3 Sx	si	-956.6	0.0	0.0	0.0	956.6
5- 2 si 13	Tz	-952.6	0.0	0.0	0.0	952.6
5- 3 si 5	Ty	-956.6	0.0	0.0	0.0	956.6

VERIFICA STABILITA` :

|L0 = 145. |
Z |Lc = 145. |Ro = 5.55|Im = 26.1|Ncr= 2455348.7|alfa(a)=0.2100|ki=0.9772|
Y |Lc = 145. |Ro = 5.55|Im = 26.1|Ncr= 2455348.7|alfa(a)=0.2100|ki=0.9772|
Caso 5- 3 - Nodo 3 - Asse Z
Ned = -77484.7|Mzeq = 0.0|Myeq = 0.0|Ss = -978.9 (0.374)

CASSONE_S022 (22) stato limite ultimo - ASTA (7705- 7704) 5715
----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	77635.0	0.0	0.0
5- 2	0.0	0.0	0.0	77307.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	958.5	0.0	0.0	0.0	958.5
5- 2	si	13	Tz	954.4	0.0	0.0	0.0	954.4
5- 3	si	5	Ty	958.5	0.0	0.0	0.0	958.5

----- PROGR. 18.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	77635.0	0.0	0.0
5- 2	0.0	0.0	0.0	77307.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	958.5	0.0	0.0	0.0	958.5
5- 2	si	13	Tz	954.4	0.0	0.0	0.0	954.4
5- 3	si	5	Ty	958.5	0.0	0.0	0.0	958.5

----- PROGR. 36.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	77635.0	0.0	0.0
5- 2	0.0	0.0	0.0	77307.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	958.5	0.0	0.0	0.0	958.5
5- 2	si	13	Tz	954.4	0.0	0.0	0.0	954.4
5- 3	si	5	Ty	958.5	0.0	0.0	0.0	958.5

----- PROGR. 54.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	77635.0	0.0	0.0
5- 2	0.0	0.0	0.0	77307.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	958.5	0.0	0.0	0.0	958.5
5- 2	si	13	Tz	954.4	0.0	0.0	0.0	954.4
5- 3	si	5	Ty	958.5	0.0	0.0	0.0	958.5

----- PROGR. 72.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	77635.0	0.0	0.0
5- 2	0.0	0.0	0.0	77307.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	958.5	0.0	0.0	0.0	958.5
5- 2	si	13	Tz	954.4	0.0	0.0	0.0	954.4
5- 3	si	5	Ty	958.5	0.0	0.0	0.0	958.5

----- PROGR. 91.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	77635.0	0.0	0.0
5- 2	0.0	0.0	0.0	77307.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	958.5	0.0	0.0	0.0	958.5
5- 2	si	13	Tz	954.4	0.0	0.0	0.0	954.4
5- 3	si	5	Ty	958.5	0.0	0.0	0.0	958.5

----- PROGR. 109.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	77635.0	0.0	0.0
5- 2	0.0	0.0	0.0	77307.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	958.5	0.0	0.0	0.0	958.5
5- 2	si	13	Tz	954.4	0.0	0.0	0.0	954.4
5- 3	si	5	Ty	958.5	0.0	0.0	0.0	958.5

----- PROGR. 127.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	77635.0	0.0	0.0
5- 2	0.0	0.0	0.0	77307.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	958.5	0.0	0.0	0.0	958.5
5- 2	si	13	Tz	954.4	0.0	0.0	0.0	954.4
5- 3	si	5	Ty	958.5	0.0	0.0	0.0	958.5

----- PROGR. 145.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	77635.0	0.0	0.0
5- 2	0.0	0.0	0.0	77307.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	958.5	0.0	0.0	0.0	958.5
5- 2	si	13	Tz	954.4	0.0	0.0	0.0	954.4
5- 3	si	5	Ty	958.5	0.0	0.0	0.0	958.5

VERIFICA STABILITA` :

|L0 = 145. |

Z |Lc = 145. |Ro = 5.55 |Im = 26.1 |Ncr= 2455348.7 |alfa(a)=0.2100 |ki=0.9772 |

Y |Lc = 145. |Ro = 5.55 |Im = 26.1 |Ncr= 2455348.7 |alfa(a)=0.2100 |ki=0.9772 |

Caso 3- 4 - Nodo 1 - Asse Z

Ned = -77249.1 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -975.9 (0.373)

CASSONE_S022 (22) stato limite ultimo - ASTA (7706- 7705) 5716

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-77635.0	0.0	0.0
5- 2	0.0	0.0	0.0	-77307.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	-958.5	0.0	0.0	0.0	958.5
5- 2	si	13	Tz	-954.4	0.0	0.0	0.0	954.4
5- 3	si	5	Ty	-958.5	0.0	0.0	0.0	958.5

----- PROGR. 18.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-77635.0	0.0	0.0
5- 2	0.0	0.0	0.0	-77307.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	-958.5	0.0	0.0	0.0	958.5
5- 2	si	13	Tz	-954.4	0.0	0.0	0.0	954.4
5- 3	si	5	Ty	-958.5	0.0	0.0	0.0	958.5

----- PROGR. 36.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-77635.0	0.0	0.0
5- 2	0.0	0.0	0.0	-77307.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	3	Sx	Si	-958.5	0.0	0.0	958.5
5- 2	si	13	Tz		-954.4	0.0	0.0	954.4
5- 3	si	5	Ty		-958.5	0.0	0.0	958.5

----- PROGR. 54.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-77635.0	0.0	0.0
5- 2	0.0	0.0	0.0	-77307.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	3	Sx Si	-958.5	0.0	0.0	0.0	958.5
5- 2	si	13	Tz	-954.4	0.0	0.0	0.0	954.4
5- 3	si	5	Ty	-958.5	0.0	0.0	0.0	958.5

----- PROGR. 72.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-77635.0	0.0	0.0
5- 2	0.0	0.0	0.0	-77307.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	3	Sx	Si	-958.5	0.0	0.0	958.5
5- 2	si	13	Tz		-954.4	0.0	0.0	954.4
5- 3	si	5	Ty		-958.5	0.0	0.0	958.5

----- PROGR. 91.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-77635.0	0.0	0.0
5- 2	0.0	0.0	0.0	-77307.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	3	Sx Si	-958.5	0.0	0.0	0.0	958.5
5- 2	si	13	Tz	-954.4	0.0	0.0	0.0	954.4
5- 3	si	5	Ty	-958.5	0.0	0.0	0.0	958.5

----- PROGR. 109.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-77635.0	0.0	0.0
5- 2	0.0	0.0	0.0	-77307.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	3	Sx Si	-958.5	0.0	0.0	0.0	958.5
5- 2	si	13	Tz	-954.4	0.0	0.0	0.0	954.4
5- 3	si	5	Ty	-958.5	0.0	0.0	0.0	958.5

----- PROGR. 127.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-77635.0	0.0	0.0
5- 2	0.0	0.0	0.0	-77307.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	3	sx Si	-958.5	0.0	0.0	0.0	958.5
5- 2	si	13	Tz	-954.4	0.0	0.0	0.0	954.4
5- 3	si	5	Ty	-958.5	0.0	0.0	0.0	958.5

----- PROGR. 145.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-77635.0	0.0	0.0

5- 2	0.0	0.0	0.0	-77307.6	0.0	0.0
TENSIONI (Sz= 0.00) :						
Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3 si 3 Sx si	-958.5	0.0	0.0	0.0	958.5	
5- 2 si 13 Tz	-954.4	0.0	0.0	0.0	954.4	
5- 3 si 5 Ty	-958.5	0.0	0.0	0.0	958.5	

VERIFICA STABILITA` :

|L0 = 145. |
 Z |Lc = 145. |Ro = 5.55 |Im = 26.1 |Ncr= 2455348.7 |alfa(a)=0.2100 |ki=0.9772 |
 Y |Lc = 145. |Ro = 5.55 |Im = 26.1 |Ncr= 2455348.7 |alfa(a)=0.2100 |ki=0.9772 |
 Caso 5- 3 - Nodo 3 - Asse Z
 Ned = -77635.0 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -980.8 (0.374)

CASSONE_S022 (22) stato limite ultimo - ASTA (7707- 7706) 5717
 ----- PROGR. 0.

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	77289.0	0.0	0.0
5- 7	0.0	0.0	0.0	77278.7	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3 si 1 Sx si	954.2	0.0	0.0	0.0	954.2	
5- 7 si 13 Tz	954.1	0.0	0.0	0.0	954.1	
5- 3 si 5 Ty	954.2	0.0	0.0	0.0	954.2	

----- PROGR. 18.

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	77289.0	0.0	0.0
5- 7	0.0	0.0	0.0	77278.7	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3 si 1 Sx si	954.2	0.0	0.0	0.0	954.2	
5- 7 si 13 Tz	954.1	0.0	0.0	0.0	954.1	
5- 3 si 5 Ty	954.2	0.0	0.0	0.0	954.2	

----- PROGR. 36.

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	77289.0	0.0	0.0
5- 7	0.0	0.0	0.0	77278.7	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3 si 1 Sx si	954.2	0.0	0.0	0.0	954.2	
5- 7 si 13 Tz	954.1	0.0	0.0	0.0	954.1	
5- 3 si 5 Ty	954.2	0.0	0.0	0.0	954.2	

----- PROGR. 54.

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	77289.0	0.0	0.0
5- 7	0.0	0.0	0.0	77278.7	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3 si 1 Sx si	954.2	0.0	0.0	0.0	954.2	
5- 7 si 13 Tz	954.1	0.0	0.0	0.0	954.1	
5- 3 si 5 Ty	954.2	0.0	0.0	0.0	954.2	

----- PROGR. 72.

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	77289.0	0.0	0.0
5- 7	0.0	0.0	0.0	77278.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	954.2	0.0	0.0	0.0	954.2
5- 7	si	13	Tz	954.1	0.0	0.0	0.0	954.1
5- 3	si	5	Ty	954.2	0.0	0.0	0.0	954.2

----- PROGR. 91.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	77289.0	0.0	0.0
5- 7	0.0	0.0	0.0	77278.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	954.2	0.0	0.0	0.0	954.2
5- 7	si	13	Tz	954.1	0.0	0.0	0.0	954.1
5- 3	si	5	Ty	954.2	0.0	0.0	0.0	954.2

----- PROGR. 109.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	77289.0	0.0	0.0
5- 7	0.0	0.0	0.0	77278.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	954.2	0.0	0.0	0.0	954.2
5- 7	si	13	Tz	954.1	0.0	0.0	0.0	954.1
5- 3	si	5	Ty	954.2	0.0	0.0	0.0	954.2

----- PROGR. 127.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	77289.0	0.0	0.0
5- 7	0.0	0.0	0.0	77278.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	954.2	0.0	0.0	0.0	954.2
5- 7	si	13	Tz	954.1	0.0	0.0	0.0	954.1
5- 3	si	5	Ty	954.2	0.0	0.0	0.0	954.2

----- PROGR. 145.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	77289.0	0.0	0.0
5- 7	0.0	0.0	0.0	77278.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	954.2	0.0	0.0	0.0	954.2
5- 7	si	13	Tz	954.1	0.0	0.0	0.0	954.1
5- 3	si	5	Ty	954.2	0.0	0.0	0.0	954.2

VERIFICA STABILITA` :

|L0 = 145.|

Z |Lc = 145.|Ro = 5.55|lm = 26.1|Ncr= 2455348.7|alfa(a)=0.2100|ki=0.9772|

Y |Lc = 145.|Ro = 5.55|lm = 26.1|Ncr= 2455348.7|alfa(a)=0.2100|ki=0.9772|

Caso 3- 4 - Nodo 1 - Asse Z

Ned = -76898.0|Mzeq = 0.0|Myeq = 0.0|Ss = -971.5 (0.371)

CASSONE_S022 (22) stato limite ultimo - ASTA (7708- 7707) 5718

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-75494.7	0.0	0.0
5- 2	0.0	0.0	0.0	-75176.5	0.0	0.0
5- 7	0.0	0.0	0.0	-75484.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	si	-932.0	0.0	0.0	932.0
5- 2	si	13	Tz		-928.1	0.0	0.0	928.1
5- 7	si	5	Ty		-931.9	0.0	0.0	931.9

----- PROGR. 18.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-75494.7	0.0	0.0
5- 2	0.0	0.0	0.0	-75176.5	0.0	0.0
5- 7	0.0	0.0	0.0	-75484.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	si	-932.0	0.0	0.0	932.0
5- 2	si	13	Tz		-928.1	0.0	0.0	928.1
5- 7	si	5	Ty		-931.9	0.0	0.0	931.9

----- PROGR. 35.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-75494.7	0.0	0.0
5- 2	0.0	0.0	0.0	-75176.5	0.0	0.0
5- 7	0.0	0.0	0.0	-75484.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	si	-932.0	0.0	0.0	932.0
5- 2	si	13	Tz		-928.1	0.0	0.0	928.1
5- 7	si	5	Ty		-931.9	0.0	0.0	931.9

----- PROGR. 53.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-75494.7	0.0	0.0
5- 2	0.0	0.0	0.0	-75176.5	0.0	0.0
5- 7	0.0	0.0	0.0	-75484.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	si	-932.0	0.0	0.0	932.0
5- 2	si	13	Tz		-928.1	0.0	0.0	928.1
5- 7	si	5	Ty		-931.9	0.0	0.0	931.9

----- PROGR. 71.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-75494.7	0.0	0.0
5- 2	0.0	0.0	0.0	-75176.5	0.0	0.0
5- 7	0.0	0.0	0.0	-75484.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	3	Sx	si	-932.0	0.0	0.0	932.0
5- 2	si	13	Tz		-928.1	0.0	0.0	928.1
5- 7	si	5	Ty		-931.9	0.0	0.0	931.9

----- PROGR. 89.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-75494.7	0.0	0.0
5- 2	0.0	0.0	0.0	-75176.5	0.0	0.0
5- 7	0.0	0.0	0.0	-75484.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	3	Sx	si	-932.0	0.0	0.0	932.0
5- 2	si	13	Tz		-928.1	0.0	0.0	928.1
5- 7	si	5	Ty		-931.9	0.0	0.0	931.9

----- PROGR. 106.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-75494.7	0.0	0.0
5- 2	0.0	0.0	0.0	-75176.5	0.0	0.0
5- 7	0.0	0.0	0.0	-75484.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	3	Sx	Si	-932.0	0.0	0.0	932.0
5- 2	si	13	Tz		-928.1	0.0	0.0	928.1
5- 7	si	5	Ty		-931.9	0.0	0.0	931.9

----- PROGR. 124.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-75494.7	0.0	0.0
5- 2	0.0	0.0	0.0	-75176.5	0.0	0.0
5- 7	0.0	0.0	0.0	-75484.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	3	Sx	Si	-932.0	0.0	0.0	932.0
5- 2	si	13	Tz		-928.1	0.0	0.0	928.1
5- 7	si	5	Ty		-931.9	0.0	0.0	931.9

----- PROGR. 142.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-75494.7	0.0	0.0
5- 2	0.0	0.0	0.0	-75176.5	0.0	0.0
5- 7	0.0	0.0	0.0	-75484.5	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	3	Sx	Si	-932.0	0.0	0.0	932.0
5- 2	si	13	Tz		-928.1	0.0	0.0	928.1
5- 7	si	5	Ty		-931.9	0.0	0.0	931.9

VERIFICA STABILITA` :

|L0 = 142. |

Z |Lc = 142. |Ro = 5.55 |Im = 25.5 |Ncr= 2573483.8 |alfa(a)=0.2100 |ki=0.9788 |

Y |Lc = 142. |Ro = 5.55 |Im = 25.5 |Ncr= 2573483.8 |alfa(a)=0.2100 |ki=0.9788 |

Caso 5- 3 - Nodo 3 - Asse Z

Ned = -75494.7 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -952.2 (0.364)

CASSONE_S022 (22) stato limite ultimo - ASTA (7574- 7708) 5719

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	76511.9	0.0	0.0
4-15	0.0	0.0	0.0	-22160.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	944.6	0.0	0.0	944.6
4-15	si	7	Tz		-273.6	0.0	0.0	273.6
4-15	si	9	Ty		-273.6	0.0	0.0	273.6

----- PROGR. 18.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	76511.9	0.0	0.0
4-15	0.0	0.0	0.0	-22160.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	944.6	0.0	0.0	944.6
4-15	si	7	Tz		-273.6	0.0	0.0	273.6
4-15	si	9	Ty		-273.6	0.0	0.0	273.6

----- PROGR. 35.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	76511.9	0.0	0.0
4-15	0.0	0.0	0.0	-22160.6	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 1 Sx si	944.6	0.0	0.0	0.0	944.6
4-15	si 7 Tz	-273.6	0.0	0.0	0.0	273.6
4-15	si 9 Ty	-273.6	0.0	0.0	0.0	273.6

----- PROGR. 53.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	76511.9	0.0	0.0
4-15	0.0	0.0	0.0	-22160.6	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 1 Sx si	944.6	0.0	0.0	0.0	944.6
4-15	si 7 Tz	-273.6	0.0	0.0	0.0	273.6
4-15	si 9 Ty	-273.6	0.0	0.0	0.0	273.6

----- PROGR. 71.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	76511.9	0.0	0.0
4-15	0.0	0.0	0.0	-22160.6	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 1 Sx si	944.6	0.0	0.0	0.0	944.6
4-15	si 7 Tz	-273.6	0.0	0.0	0.0	273.6
4-15	si 9 Ty	-273.6	0.0	0.0	0.0	273.6

----- PROGR. 89.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	76511.9	0.0	0.0
4-15	0.0	0.0	0.0	-22160.6	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 1 Sx si	944.6	0.0	0.0	0.0	944.6
4-15	si 7 Tz	-273.6	0.0	0.0	0.0	273.6
4-15	si 9 Ty	-273.6	0.0	0.0	0.0	273.6

----- PROGR. 106.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	76511.9	0.0	0.0
4-15	0.0	0.0	0.0	-22160.6	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 2 Sx si	944.6	0.0	0.0	0.0	944.6
4-15	si 7 Tz	-273.6	0.0	0.0	0.0	273.6
4-15	si 9 Ty	-273.6	0.0	0.0	0.0	273.6

----- PROGR. 124.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	76511.9	0.0	0.0
4-15	0.0	0.0	0.0	-22160.6	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 2 Sx si	944.6	0.0	0.0	0.0	944.6
4-15	si 7 Tz	-273.6	0.0	0.0	0.0	273.6
4-15	si 9 Ty	-273.6	0.0	0.0	0.0	273.6

----- PROGR. 142.						
SOLLECITAZIONI	:					

Caso	MZ	MY	MT	N	TZ	TY		
5- 3	0.0	0.0	0.0	76511.9	0.0	0.0		
4-15	0.0	0.0	0.0	-22160.6	0.0	0.0		
TENSIONI (Sz= 0.00) :								
Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	2	Sx	Si	944.6	0.0	0.0	944.6
4-15	si	7	Tz		-273.6	0.0	0.0	273.6
4-15	si	9	Ty		-273.6	0.0	0.0	273.6

VERIFICA STABILITA` :

L0 = 142.
 Z | Lc = 142. | Ro = 5.55 | lm = 25.5 | Ncr = 2573483.8 | alfa(a)=0.2100 | ki=0.9788 |
 Y | Lc = 142. | Ro = 5.55 | lm = 25.5 | Ncr = 2573483.8 | alfa(a)=0.2100 | ki=0.9788 |
 Caso 3- 4 - Nodo 1 - Asse Z
 Ned = -76161.0 | Mzeq = 0.0 | Myeq = 0.0 | Ss = -960.6 (0.367)

P_HEB400_S023 (23) stato limite ultimo - ASTA (6533- 3843) 6074
 ----- PROGR. 0.

SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 2	0.0	0.0	0.0	-8230.4	0.0	0.0	
5-15	0.0	0.0	0.0	6895.6	0.0	0.0	
5-10	0.0	0.0	0.0	6613.3	0.0	0.0	
TENSIONI (Sz= 0.00) :							
Caso	Ve No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2	si 1	Sx Si	-41.5	0.0	0.0	0.0	41.5
5-15	si 5	Tz	34.8	0.0	0.0	0.0	34.8
5-10	si 9	Ty	33.4	0.0	0.0	0.0	33.4
-----							PROGR. 29

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-8230.4	0.0	0.0
5-15	0.0	0.0	0.0	6895.6	0.0	0.0
5-10	0.0	0.0	0.0	6613.3	0.0	0.0
TENSIONI (Sz= 0.00) :						
Caso	Ve No	massimi	Sx	Tz	Ty	Tau tot.
5- 2	si 1	Sx Si	-41.5	0.0	0.0	0.0
5-15	si 5	Tz	34.8	0.0	0.0	0.0
5-10	si 9	Ty	33.4	0.0	0.0	0.0
-----						PROGR. 58.

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-8230.4	0.0	0.0
5-15	0.0	0.0	0.0	6895.6	0.0	0.0
5-10	0.0	0.0	0.0	6613.3	0.0	0.0
TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2	si 1 Sx Si	-41.5	0.0	0.0	0.0	41.5
5-15	si 5 Tz	34.8	0.0	0.0	0.0	34.8
5-10	si 9 Ty	33.4	0.0	0.0	0.0	33.4
----- PROGR.						87.

SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 2	0.0	0.0	0.0	-8230.4	0.0	0.0	
5-15	0.0	0.0	0.0	6895.6	0.0	0.0	
5-10	0.0	0.0	0.0	6613.3	0.0	0.0	
TENSIONI (Sz= 0.00) :							
Caso	Ve No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2	si 1	Sx Si	-41.5	0.0	0.0	0.0	41.5
5-15	si 5	Tz	34.8	0.0	0.0	0.0	34.8

5-10 si 9	Ty	33.4	0.0	0.0	0.0	33.4
						PROGR. 115.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-8230.4	0.0	0.0
5-15	0.0	0.0	0.0	6895.6	0.0	0.0
5-10	0.0	0.0	0.0	6613.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2 si 1 Sx	Si	-41.5	0.0	0.0	0.0	41.5
5-15 si 5	Tz	34.8	0.0	0.0	0.0	34.8
5-10 si 9	Ty	33.4	0.0	0.0	0.0	33.4
						PROGR. 144.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-8230.4	0.0	0.0
5-15	0.0	0.0	0.0	6895.6	0.0	0.0
5-10	0.0	0.0	0.0	6613.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2 si 1 Sx	Si	-41.5	0.0	0.0	0.0	41.5
5-15 si 5	Tz	34.8	0.0	0.0	0.0	34.8
5-10 si 9	Ty	33.4	0.0	0.0	0.0	33.4
						PROGR. 173.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-8230.4	0.0	0.0
5-15	0.0	0.0	0.0	6895.6	0.0	0.0
5-10	0.0	0.0	0.0	6613.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2 si 1 Sx	Si	-41.5	0.0	0.0	0.0	41.5
5-15 si 5	Tz	34.8	0.0	0.0	0.0	34.8
5-10 si 9	Ty	33.4	0.0	0.0	0.0	33.4
						PROGR. 202.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-8230.4	0.0	0.0
5-15	0.0	0.0	0.0	6895.6	0.0	0.0
5-10	0.0	0.0	0.0	6613.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2 si 1 Sx	Si	-41.5	0.0	0.0	0.0	41.5
5-15 si 5	Tz	34.8	0.0	0.0	0.0	34.8
5-10 si 9	Ty	33.4	0.0	0.0	0.0	33.4
						PROGR. 231.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-8230.4	0.0	0.0
5-15	0.0	0.0	0.0	6895.6	0.0	0.0
5-10	0.0	0.0	0.0	6613.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2 si 1 Sx	Si	-41.5	0.0	0.0	0.0	41.5
5-15 si 5	Tz	34.8	0.0	0.0	0.0	34.8
5-10 si 9	Ty	33.4	0.0	0.0	0.0	33.4

VERIFICA STABILITA` :

|L0 = 231. |
Z |Lc = 231. |Ro = 17.08 |Im = 13.5 |Ncr= 22445111.8 |alfa(a)=0.2100 |ki=1.0000 |

Y | Lc = 231. | Ro = 7.39 | lm = 31.3 | Ncr = 4202937.2 | alfa(b) = 0.3400 | ki = 0.9416 |
 Caso 5- 2 - Nodo 1 - Asse Y
 Ned = -8230.4 | Mzeq = 0.0 | Myeq = 0.0 | Ss = -44.1 (0.017)

CASSONE_S022 (22) stato limite ultimo - ASTA (7795- 3843) 6076
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	81620.1	0.0	0.0
5-13	0.0	0.0	0.0	-72473.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3	si	1	Sx	Si	1007.7	0.0	0.0	0.0	1007.7
5-13	si	14	Tz		-894.7	0.0	0.0	0.0	894.7
5-13	si	10	Ty		-894.7	0.0	0.0	0.0	894.7

----- PROGR. 19.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	81620.1	0.0	0.0
5-13	0.0	0.0	0.0	-72473.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3	si	1	Sx	Si	1007.7	0.0	0.0	0.0	1007.7
5-13	si	14	Tz		-894.7	0.0	0.0	0.0	894.7
5-13	si	10	Ty		-894.7	0.0	0.0	0.0	894.7

----- PROGR. 38.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	81620.1	0.0	0.0
5-13	0.0	0.0	0.0	-72473.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3	si	3	Sx	Si	1007.7	0.0	0.0	0.0	1007.7
5-13	si	14	Tz		-894.7	0.0	0.0	0.0	894.7
5-13	si	10	Ty		-894.7	0.0	0.0	0.0	894.7

----- PROGR. 57.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	81620.1	0.0	0.0
5-13	0.0	0.0	0.0	-72473.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3	si	3	Sx	Si	1007.7	0.0	0.0	0.0	1007.7
5-13	si	14	Tz		-894.7	0.0	0.0	0.0	894.7
5-13	si	10	Ty		-894.7	0.0	0.0	0.0	894.7

----- PROGR. 76.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	81620.1	0.0	0.0
5-13	0.0	0.0	0.0	-72473.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3	si	3	Sx	Si	1007.7	0.0	0.0	0.0	1007.7
5-13	si	14	Tz		-894.7	0.0	0.0	0.0	894.7
5-13	si	10	Ty		-894.7	0.0	0.0	0.0	894.7

----- PROGR. 95.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	81620.1	0.0	0.0
5-13	0.0	0.0	0.0	-72473.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
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5- 3 si 3 Sx	Si	1007.7	0.0	0.0	0.0	1007.7
5-13 si 14 Tz		-894.7	0.0	0.0	0.0	894.7
5-13 si 10 Ty		-894.7	0.0	0.0	0.0	894.7
						PROGR. 115.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	81620.1	0.0	0.0
5-13	0.0	0.0	0.0	-72473.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3 si 3 Sx	Si	1007.7	0.0	0.0	0.0	
5-13 si 14 Tz		-894.7	0.0	0.0	0.0	
5-13 si 10 Ty		-894.7	0.0	0.0	0.0	
						PROGR. 134.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	81620.1	0.0	0.0
5-13	0.0	0.0	0.0	-72473.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3 si 3 Sx	Si	1007.7	0.0	0.0	0.0	
5-13 si 14 Tz		-894.7	0.0	0.0	0.0	
5-13 si 10 Ty		-894.7	0.0	0.0	0.0	
						PROGR. 153.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	81620.1	0.0	0.0
5-13	0.0	0.0	0.0	-72473.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 3 Sx	Si	1007.7	0.0	0.0	0.0
5-13 si 14 Tz		-894.7	0.0	0.0	0.0
5-13 si 10 Ty		-894.7	0.0	0.0	0.0

VERIFICA STABILITA` :

|L0 = 153.
 Z |Lc = 153.|Ro = 5.55|Im = 27.6|Ncr= 2211839.2|alfa(a)=0.2100|ki=0.9734|
 Y |Lc = 153.|Ro = 5.55|Im = 27.6|Ncr= 2211839.2|alfa(a)=0.2100|ki=0.9734|
 Caso 3- 4 - Nodo 3 - Asse Z
 Ned = -76887.1|Mzeq = 0.0|Myeq = 0.0|Ss = -975.2 (0.372)

CASSONE_S022 (22) stato limite ultimo - ASTA (6533- 7795) 6077
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-81213.2	0.0	0.0
5-13	0.0	0.0	0.0	71479.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3 si 1 Sx	Si	-1002.6	0.0	0.0	0.0	
5-13 si 13 Tz		882.5	0.0	0.0	0.0	
5-13 si 9 Ty		882.5	0.0	0.0	0.0	
						PROGR. 19.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-81213.2	0.0	0.0
5-13	0.0	0.0	0.0	71479.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx	Si	-1002.6	0.0	0.0	0.0

5-13 si 13	Tz		882.5	0.0	0.0	0.0	882.5
5-13 si 9	Ty		882.5	0.0	0.0	0.0	882.5
-----							PROGR. 38.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 3	0.0		0.0		0.0		-81213.2		0.0		0.0	
5-13	0.0		0.0		0.0		71479.7		0.0		0.0	

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5- 3 si 1	Sx Si		-1002.6		0.0		0.0		0.0		1002.6	
5-13 si 13	Tz		882.5		0.0		0.0		0.0		882.5	
5-13 si 9	Ty		882.5		0.0		0.0		0.0		882.5	
-----												PROGR. 57.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 3	0.0		0.0		0.0		-81213.2		0.0		0.0	
5-13	0.0		0.0		0.0		71479.7		0.0		0.0	

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5- 3 si 2	Sx Si		-1002.6		0.0		0.0		0.0		1002.6	
5-13 si 13	Tz		882.5		0.0		0.0		0.0		882.5	
5-13 si 9	Ty		882.5		0.0		0.0		0.0		882.5	
-----												PROGR. 76.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 3	0.0		0.0		0.0		-81213.2		0.0		0.0	
5-13	0.0		0.0		0.0		71479.7		0.0		0.0	

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5- 3 si 2	Sx Si		-1002.6		0.0		0.0		0.0		1002.6	
5-13 si 13	Tz		882.5		0.0		0.0		0.0		882.5	
5-13 si 9	Ty		882.5		0.0		0.0		0.0		882.5	
-----												PROGR. 95.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 3	0.0		0.0		0.0		-81213.2		0.0		0.0	
5-13	0.0		0.0		0.0		71479.7		0.0		0.0	

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5- 3 si 2	Sx Si		-1002.6		0.0		0.0		0.0		1002.6	
5-13 si 13	Tz		882.5		0.0		0.0		0.0		882.5	
5-13 si 9	Ty		882.5		0.0		0.0		0.0		882.5	
-----												PROGR. 115.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 3	0.0		0.0		0.0		-81213.2		0.0		0.0	
5-13	0.0		0.0		0.0		71479.7		0.0		0.0	

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5- 3 si 2	Sx Si		-1002.6		0.0		0.0		0.0		1002.6	
5-13 si 13	Tz		882.5		0.0		0.0		0.0		882.5	
5-13 si 9	Ty		882.5		0.0		0.0		0.0		882.5	
-----												PROGR. 134.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 3	0.0		0.0		0.0		-81213.2		0.0		0.0	
5-13	0.0		0.0		0.0		71479.7		0.0		0.0	

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5- 3 si 2	Sx Si		-1002.6		0.0		0.0		0.0		1002.6	
5-13 si 13	Tz		882.5		0.0		0.0		0.0		882.5	
5-13 si 9	Ty		882.5		0.0		0.0		0.0		882.5	


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----- PROGR.      153.
SOLLECITAZIONI      :
| Caso |      MZ |      MY |      MT |      N |      TZ |      TY |
| 5- 3 |      0.0|      0.0|      0.0| -81213.2|      0.0|      0.0|
| 5-13 |      0.0|      0.0|      0.0|  71479.7|      0.0|      0.0|
TENSIONI (Sz=      0.00) :
| Caso |Ve|No|massimi |      Sx |      Tz |      Ty | Tau tot. |      Si |
| 5- 3 |si| 2|Sx  si| -1002.6|      0.0|      0.0|      0.0| 1002.6|
| 5-13 |si|13| Tz  |      882.5|      0.0|      0.0|      0.0| 882.5|
| 5-13 |si| 9|  Ty |      882.5|      0.0|      0.0|      0.0| 882.5|

```

VERIFICA STABILITA` :

```

|L0 = 153.
Z |Lc = 153.|Ro = 5.55|m = 27.6|Ncr= 2211839.2|alfa(a )=0.2100|ki=0.9734|
Y |Lc = 153.|Ro = 5.55|m = 27.6|Ncr= 2211839.2|alfa(a )=0.2100|ki=0.9734|
Caso 5- 3 - Nodo 2 - Asse Z
Ned = -81213.2|Mzeq =      0.0|Myeq =      0.0|ss = -1030.0 ( 0.393)

```

```

P_HEB400_S023 ( 23)      stato limite ultimo - ASTA ( 6528- 7619) 6133
----- PROGR.      0.

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SOLLECITAZIONI      :
| Caso |      MZ |      MY |      MT |      N |      TZ |      TY |
| 5-13 |      0.0|      0.0|      0.0|  71010.0|      0.0|      0.0|
| 5- 9 |      0.0|      0.0|      0.0|  70903.0|      0.0|      0.0|
TENSIONI (Sz=      0.00) :
| Caso |Ve|No|massimi |      Sx |      Tz |      Ty | Tau tot. |      Si |
| 5-13 |si| 1|Sx  si|  358.4|      0.0|      0.0|      0.0|  358.4|
| 5- 9 |si| 5| Tz  |  357.8|      0.0|      0.0|      0.0|  357.8|
| 5- 9 |si| 9|  Ty |  357.8|      0.0|      0.0|      0.0|  357.8|
----- PROGR.      31.

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SOLLECITAZIONI      :
| Caso |      MZ |      MY |      MT |      N |      TZ |      TY |
| 5-13 |      0.0|      0.0|      0.0|  71010.0|      0.0|      0.0|
| 5- 9 |      0.0|      0.0|      0.0|  70903.0|      0.0|      0.0|
TENSIONI (Sz=      0.00) :
| Caso |Ve|No|massimi |      Sx |      Tz |      Ty | Tau tot. |      Si |
| 5-13 |si| 3|Sx  si|  358.4|      0.0|      0.0|      0.0|  358.4|
| 5- 9 |si| 5| Tz  |  357.8|      0.0|      0.0|      0.0|  357.8|
| 5- 9 |si| 9|  Ty |  357.8|      0.0|      0.0|      0.0|  357.8|
----- PROGR.      63.

```

```

SOLLECITAZIONI      :
| Caso |      MZ |      MY |      MT |      N |      TZ |      TY |
| 5-13 |      0.0|      0.0|      0.0|  71010.0|      0.0|      0.0|
| 5- 9 |      0.0|      0.0|      0.0|  70903.0|      0.0|      0.0|
TENSIONI (Sz=      0.00) :
| Caso |Ve|No|massimi |      Sx |      Tz |      Ty | Tau tot. |      Si |
| 5-13 |si| 3|Sx  si|  358.4|      0.0|      0.0|      0.0|  358.4|
| 5- 9 |si| 5| Tz  |  357.8|      0.0|      0.0|      0.0|  357.8|
| 5- 9 |si| 9|  Ty |  357.8|      0.0|      0.0|      0.0|  357.8|
----- PROGR.      94.

```

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SOLLECITAZIONI      :
| Caso |      MZ |      MY |      MT |      N |      TZ |      TY |
| 5-13 |      0.0|      0.0|      0.0|  71010.0|      0.0|      0.0|
| 5- 9 |      0.0|      0.0|      0.0|  70903.0|      0.0|      0.0|
TENSIONI (Sz=      0.00) :
| Caso |Ve|No|massimi |      Sx |      Tz |      Ty | Tau tot. |      Si |
| 5-13 |si| 3|Sx  si|  358.4|      0.0|      0.0|      0.0|  358.4|
| 5- 9 |si| 5| Tz  |  357.8|      0.0|      0.0|      0.0|  357.8|
| 5- 9 |si| 9|  Ty |  357.8|      0.0|      0.0|      0.0|  357.8|
----- PROGR.      125.

```

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	71010.0	0.0	0.0
5- 9	0.0	0.0	0.0	70903.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	3	Sx	Si	358.4	0.0	0.0	358.4
5- 9	si	5	Tz		357.8	0.0	0.0	357.8
5- 9	si	9	Ty		357.8	0.0	0.0	357.8

----- PROGR. 157.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	71010.0	0.0	0.0
5- 9	0.0	0.0	0.0	70903.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	3	Sx	Si	358.4	0.0	0.0	358.4
5- 9	si	5	Tz		357.8	0.0	0.0	357.8
5- 9	si	9	Ty		357.8	0.0	0.0	357.8

----- PROGR. 188.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	71010.0	0.0	0.0
5- 9	0.0	0.0	0.0	70903.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	3	Sx	Si	358.4	0.0	0.0	358.4
5- 9	si	5	Tz		357.8	0.0	0.0	357.8
5- 9	si	9	Ty		357.8	0.0	0.0	357.8

----- PROGR. 219.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	71010.0	0.0	0.0
5- 9	0.0	0.0	0.0	70903.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	3	Sx	Si	358.4	0.0	0.0	358.4
5- 9	si	5	Tz		357.8	0.0	0.0	357.8
5- 9	si	9	Ty		357.8	0.0	0.0	357.8

----- PROGR. 251.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	71010.0	0.0	0.0
5- 9	0.0	0.0	0.0	70903.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	3	Sx	Si	358.4	0.0	0.0	358.4
5- 9	si	5	Tz		357.8	0.0	0.0	357.8
5- 9	si	9	Ty		357.8	0.0	0.0	357.8

VERIFICA STABILITA` :

|L0 = 251. |

Z |Lc = 251. |Ro = 17.08 |lm = 14.7 |Ncr= 19042038.2 |alfa(a)=0.2100 |ki=1.0000 |

Y |Lc = 251. |Ro = 7.39 |lm = 33.9 |Ncr= 3565698.0 |alfa(b)=0.3400 |ki=0.9297 |

Caso 5- 4 - Nodo 3 - Asse Y

Ned = -70662.9 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -383.6 (0.146)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7619- 7617) 6134

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	43295.2	0.0	0.0
5- 2	0.0	0.0	0.0	-42334.4	0.0	0.0
5- 3	0.0	0.0	0.0	-42811.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	1	Sx	Si	218.5	0.0	0.0	218.5
5- 2	si	6	Tz		-213.6	0.0	0.0	213.6
5- 3	si	9	Ty		-216.1	0.0	0.0	216.1

----- PROGR. 26.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	43295.2	0.0	0.0
5- 2	0.0	0.0	0.0	-42334.4	0.0	0.0
5- 3	0.0	0.0	0.0	-42811.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	3	Sx	Si	218.5	0.0	0.0	218.5
5- 2	si	6	Tz		-213.6	0.0	0.0	213.6
5- 3	si	9	Ty		-216.1	0.0	0.0	216.1

----- PROGR. 51.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	43295.2	0.0	0.0
5- 2	0.0	0.0	0.0	-42334.4	0.0	0.0
5- 3	0.0	0.0	0.0	-42811.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	3	Sx	Si	218.5	0.0	0.0	218.5
5- 2	si	6	Tz		-213.6	0.0	0.0	213.6
5- 3	si	9	Ty		-216.1	0.0	0.0	216.1

----- PROGR. 77.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	43295.2	0.0	0.0
5- 2	0.0	0.0	0.0	-42334.4	0.0	0.0
5- 3	0.0	0.0	0.0	-42811.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	3	Sx	Si	218.5	0.0	0.0	218.5
5- 2	si	6	Tz		-213.6	0.0	0.0	213.6
5- 3	si	9	Ty		-216.1	0.0	0.0	216.1

----- PROGR. 103.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	43295.2	0.0	0.0
5- 2	0.0	0.0	0.0	-42334.4	0.0	0.0
5- 3	0.0	0.0	0.0	-42811.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	3	Sx	Si	218.5	0.0	0.0	218.5
5- 2	si	6	Tz		-213.6	0.0	0.0	213.6
5- 3	si	9	Ty		-216.1	0.0	0.0	216.1

----- PROGR. 129.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	43295.2	0.0	0.0
5- 2	0.0	0.0	0.0	-42334.4	0.0	0.0
5- 3	0.0	0.0	0.0	-42811.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	3	Sx	Si	218.5	0.0	0.0	218.5

5- 2 si 6 Tz	-213.6	0.0	0.0	0.0	213.6
5- 3 si 9 Ty	-216.1	0.0	0.0	0.0	216.1
					PROGR. 154.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	43295.2	0.0	0.0
5- 2	0.0	0.0	0.0	-42334.4	0.0	0.0
5- 3	0.0	0.0	0.0	-42811.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-13 si 3 Sx	Si	218.5	0.0	0.0	0.0	218.5
5- 2 si 6 Tz		-213.6	0.0	0.0	0.0	213.6
5- 3 si 9 Ty		-216.1	0.0	0.0	0.0	216.1
						PROGR. 180.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	43295.2	0.0	0.0
5- 2	0.0	0.0	0.0	-42334.4	0.0	0.0
5- 3	0.0	0.0	0.0	-42811.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-13 si 3 Sx	Si	218.5	0.0	0.0	0.0	218.5
5- 2 si 6 Tz		-213.6	0.0	0.0	0.0	213.6
5- 3 si 9 Ty		-216.1	0.0	0.0	0.0	216.1
						PROGR. 206.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	43295.2	0.0	0.0
5- 2	0.0	0.0	0.0	-42334.4	0.0	0.0
5- 3	0.0	0.0	0.0	-42811.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-13 si 3 Sx	Si	218.5	0.0	0.0	0.0	218.5
5- 2 si 6 Tz		-213.6	0.0	0.0	0.0	213.6
5- 3 si 9 Ty		-216.1	0.0	0.0	0.0	216.1

VERIFICA STABILITA` :

|L0 = 206.|

Z |Lc = 206.|Ro = 17.08|lm = 12.1|Ncr= 28280462.8|alfa(a)=0.2100|ki=1.0000|

Y |Lc = 206.|Ro = 7.39|lm = 27.8|Ncr= 5295630.1|alfa(b)=0.3400|ki=0.9564|

Caso 3- 1 - Nodo 3 - Asse Y

Ned = -42813.6|Mzeq = 0.0|Myeq = 0.0|Ss = -225.9 (0.086)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7617- 7615) 6135
----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	15036.8	0.0	0.0
5- 2	0.0	0.0	0.0	-14070.5	0.0	0.0
5- 3	0.0	0.0	0.0	-14303.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-13 si 1 Sx	Si	75.9	0.0	0.0	0.0	75.9
5- 2 si 6 Tz		-71.0	0.0	0.0	0.0	71.0
5- 3 si 9 Ty		-72.2	0.0	0.0	0.0	72.2
						PROGR. 26.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	15036.8	0.0	0.0
5- 2	0.0	0.0	0.0	-14070.5	0.0	0.0

5- 3	0.0	0.0	0.0	-14303.4	0.0	0.0
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TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	3	Sx	75.9	0.0	0.0	0.0	75.9
5- 2	si	6	Tz	-71.0	0.0	0.0	0.0	71.0
5- 3	si	9	Ty	-72.2	0.0	0.0	0.0	72.2

----- PROGR. 52.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	15036.8	0.0	0.0
5- 2	0.0	0.0	0.0	-14070.5	0.0	0.0
5- 3	0.0	0.0	0.0	-14303.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	3	Sx	75.9	0.0	0.0	0.0	75.9
5- 2	si	6	Tz	-71.0	0.0	0.0	0.0	71.0
5- 3	si	9	Ty	-72.2	0.0	0.0	0.0	72.2

----- PROGR. 79.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	15036.8	0.0	0.0
5- 2	0.0	0.0	0.0	-14070.5	0.0	0.0
5- 3	0.0	0.0	0.0	-14303.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	3	Sx	75.9	0.0	0.0	0.0	75.9
5- 2	si	6	Tz	-71.0	0.0	0.0	0.0	71.0
5- 3	si	9	Ty	-72.2	0.0	0.0	0.0	72.2

----- PROGR. 105.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	15036.8	0.0	0.0
5- 2	0.0	0.0	0.0	-14070.5	0.0	0.0
5- 3	0.0	0.0	0.0	-14303.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	3	Sx	75.9	0.0	0.0	0.0	75.9
5- 2	si	6	Tz	-71.0	0.0	0.0	0.0	71.0
5- 3	si	9	Ty	-72.2	0.0	0.0	0.0	72.2

----- PROGR. 131.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	15036.8	0.0	0.0
5- 2	0.0	0.0	0.0	-14070.5	0.0	0.0
5- 3	0.0	0.0	0.0	-14303.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	4	Sx	75.9	0.0	0.0	0.0	75.9
5- 2	si	6	Tz	-71.0	0.0	0.0	0.0	71.0
5- 3	si	9	Ty	-72.2	0.0	0.0	0.0	72.2

----- PROGR. 158.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	15036.8	0.0	0.0
5- 2	0.0	0.0	0.0	-14070.5	0.0	0.0
5- 3	0.0	0.0	0.0	-14303.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	4	Sx	75.9	0.0	0.0	0.0	75.9
5- 2	si	6	Tz	-71.0	0.0	0.0	0.0	71.0
5- 3	si	9	Ty	-72.2	0.0	0.0	0.0	72.2

----- PROGR. 184.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	15036.8	0.0	0.0
5- 2	0.0	0.0	0.0	-14070.5	0.0	0.0
5- 3	0.0	0.0	0.0	-14303.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-13	si	4	Sx	Si	75.9	0.0	0.0	0.0	75.9
5- 2	si	6	Tz		-71.0	0.0	0.0	0.0	71.0
5- 3	si	9	Ty		-72.2	0.0	0.0	0.0	72.2

----- PROGR. 210.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	15036.8	0.0	0.0
5- 2	0.0	0.0	0.0	-14070.5	0.0	0.0
5- 3	0.0	0.0	0.0	-14303.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5-13	si	4	Sx	Si	75.9	0.0	0.0	0.0	75.9
5- 2	si	6	Tz		-71.0	0.0	0.0	0.0	71.0
5- 3	si	9	Ty		-72.2	0.0	0.0	0.0	72.2

VERIFICA STABILITA` :

L0 = 210.
 Z | Lc = 210. | Ro = 17.08 | lm = 12.3 | Ncr= 27157505.3 | alfa(a)=0.2100 | ki=1.0000 |
 Y | Lc = 210. | Ro = 7.39 | lm = 28.4 | Ncr= 5085351.8 | alfa(b)=0.3400 | ki=0.9540 |
 Caso 3- 1 - Nodo 4 - Asse Y
 Ned = -14552.6 | Mzeq = 0.0 | Myeq = 0.0 | Ss = -77.0 (0.029)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7615- 7613) 6136
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	11052.8	0.0	0.0
5- 9	0.0	0.0	0.0	-10125.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 7	si	1	Sx	Si	55.8	0.0	0.0	0.0	55.8
5- 9	si	5	Tz		-51.1	0.0	0.0	0.0	51.1
5- 9	si	9	Ty		-51.1	0.0	0.0	0.0	51.1

----- PROGR. 26.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	11052.8	0.0	0.0
5- 9	0.0	0.0	0.0	-10125.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 7	si	3	Sx	Si	55.8	0.0	0.0	0.0	55.8
5- 9	si	5	Tz		-51.1	0.0	0.0	0.0	51.1
5- 9	si	9	Ty		-51.1	0.0	0.0	0.0	51.1

----- PROGR. 51.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	11052.8	0.0	0.0
5- 9	0.0	0.0	0.0	-10125.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 7	si	3	Sx	Si	55.8	0.0	0.0	0.0	55.8
5- 9	si	5	Tz		-51.1	0.0	0.0	0.0	51.1
5- 9	si	9	Ty		-51.1	0.0	0.0	0.0	51.1

----- PROGR. 77.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	11052.8	0.0	0.0
5- 9	0.0	0.0	0.0	-10125.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	3	Sx	55.8	0.0	0.0	0.0	55.8
5- 9	si	5	Tz	-51.1	0.0	0.0	0.0	51.1
5- 9	si	9	Ty	-51.1	0.0	0.0	0.0	51.1

----- PROGR. 103.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	11052.8	0.0	0.0
5- 9	0.0	0.0	0.0	-10125.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	3	Sx	55.8	0.0	0.0	0.0	55.8
5- 9	si	5	Tz	-51.1	0.0	0.0	0.0	51.1
5- 9	si	9	Ty	-51.1	0.0	0.0	0.0	51.1

----- PROGR. 129.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	11052.8	0.0	0.0
5- 9	0.0	0.0	0.0	-10125.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	3	Sx	55.8	0.0	0.0	0.0	55.8
5- 9	si	5	Tz	-51.1	0.0	0.0	0.0	51.1
5- 9	si	9	Ty	-51.1	0.0	0.0	0.0	51.1

----- PROGR. 154.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	11052.8	0.0	0.0
5- 9	0.0	0.0	0.0	-10125.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	3	Sx	55.8	0.0	0.0	0.0	55.8
5- 9	si	5	Tz	-51.1	0.0	0.0	0.0	51.1
5- 9	si	9	Ty	-51.1	0.0	0.0	0.0	51.1

----- PROGR. 180.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	11052.8	0.0	0.0
5- 9	0.0	0.0	0.0	-10125.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	3	Sx	55.8	0.0	0.0	0.0	55.8
5- 9	si	5	Tz	-51.1	0.0	0.0	0.0	51.1
5- 9	si	9	Ty	-51.1	0.0	0.0	0.0	51.1

----- PROGR. 206.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	11052.8	0.0	0.0
5- 9	0.0	0.0	0.0	-10125.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	3	Sx	55.8	0.0	0.0	0.0	55.8
5- 9	si	5	Tz	-51.1	0.0	0.0	0.0	51.1
5- 9	si	9	Ty	-51.1	0.0	0.0	0.0	51.1

VERIFICA STABILITA` :

|L0 = 206.|
 Z |Lc = 206.|Ro = 17.08|Im = 12.1|Ncr= 28280462.6|alfa(a)=0.2100|ki=1.0000|
 Y |Lc = 206.|Ro = 7.39|Im = 27.8|Ncr= 5295630.1|alfa(b)=0.3400|ki=0.9564|
 Caso 3- 3 - Nodo 3 - Asse Y
 Ned = -10366.2|Mzeq = 0.0|Myeq = 0.0|Ss = -54.7 (0.021)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7613- 6527) 6137
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	35274.6	0.0	0.0
4- 5	0.0	0.0	0.0	10098.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 1 Sx	Si	178.0	0.0	0.0	0.0	178.0
4- 5 si 5 Tz		51.0	0.0	0.0	0.0	51.0

----- PROGR. 31.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	35274.6	0.0	0.0
4- 5	0.0	0.0	0.0	10098.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 1 Sx	Si	178.0	0.0	0.0	0.0	178.0
4- 5 si 5 Tz		51.0	0.0	0.0	0.0	51.0

----- PROGR. 63.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	35274.6	0.0	0.0
4- 5	0.0	0.0	0.0	10098.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 1 Sx	Si	178.0	0.0	0.0	0.0	178.0
4- 5 si 5 Tz		51.0	0.0	0.0	0.0	51.0

----- PROGR. 94.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	35274.6	0.0	0.0
4- 5	0.0	0.0	0.0	10098.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 1 Sx	Si	178.0	0.0	0.0	0.0	178.0
4- 5 si 5 Tz		51.0	0.0	0.0	0.0	51.0

----- PROGR. 125.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	35274.6	0.0	0.0
4- 5	0.0	0.0	0.0	10098.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 1 Sx	Si	178.0	0.0	0.0	0.0	178.0
4- 5 si 5 Tz		51.0	0.0	0.0	0.0	51.0

----- PROGR. 157.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	35274.6	0.0	0.0
4- 5	0.0	0.0	0.0	10098.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 1 Sx	Si	178.0	0.0	0.0	0.0	178.0

4- 5 si 5 Tz	51.0	0.0	0.0	0.0	51.0
-----					PROGR. 188.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	35274.6	0.0	0.0
4- 5	0.0	0.0	0.0	10098.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 1 Sx si	178.0	0.0	0.0	0.0	178.0
4- 5 si 5 Tz	51.0	0.0	0.0	0.0	51.0
-----					PROGR. 219.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	35274.6	0.0	0.0
4- 5	0.0	0.0	0.0	10098.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 1 Sx si	178.0	0.0	0.0	0.0	178.0
4- 5 si 5 Tz	51.0	0.0	0.0	0.0	51.0
-----					PROGR. 251.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	35274.6	0.0	0.0
4- 5	0.0	0.0	0.0	10098.7	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 1 Sx si	178.0	0.0	0.0	0.0	178.0
4- 5 si 5 Tz	51.0	0.0	0.0	0.0	51.0

VERIFICA STABILITA` :

L0 = 251. |
 Z |Lc = 251. |Ro = 17.08 |Im = 14.7 |Ncr= 19042038.2 |alfa(a)=0.2100 |ki=1.0000 |
 Y |Lc = 251. |Ro = 7.39 |Im = 33.9 |Ncr= 3565698.0 |alfa(b)=0.3400 |ki=0.9297 |
 Caso 3- 3 - Nodo 1 - Asse Y
 Ned = -34461.8 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -187.1 (0.071)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7587- 7618) 6138

 PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 9	0.0	0.0	0.0	-135778.7	0.0	0.0
5- 3	0.0	0.0	0.0	130314.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 9 si 1 Sx si	-685.2	0.0	0.0	0.0	685.2
5- 3 si 5 Tz	657.6	0.0	0.0	0.0	657.6
5- 3 si 9 Ty	657.6	0.0	0.0	0.0	657.6
-----					PROGR. 25.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 9	0.0	0.0	0.0	-135778.7	0.0	0.0
5- 3	0.0	0.0	0.0	130314.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 9 si 1 Sx si	-685.2	0.0	0.0	0.0	685.2
5- 3 si 5 Tz	657.6	0.0	0.0	0.0	657.6
5- 3 si 9 Ty	657.6	0.0	0.0	0.0	657.6
-----					PROGR. 50.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
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5- 9	0.0	0.0	0.0	-135778.7	0.0	0.0
5- 3	0.0	0.0	0.0	130314.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 9	si 1 Sx Si	-685.2	0.0	0.0	0.0	685.2
5- 3	si 5 Tz	657.6	0.0	0.0	0.0	657.6
5- 3	si 9 Ty	657.6	0.0	0.0	0.0	657.6
						----- PROGR. 76.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 9	0.0	0.0	0.0	-135778.7	0.0	0.0
5- 3	0.0	0.0	0.0	130314.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 9	si 1 Sx Si	-685.2	0.0	0.0	0.0	685.2
5- 3	si 5 Tz	657.6	0.0	0.0	0.0	657.6
5- 3	si 9 Ty	657.6	0.0	0.0	0.0	657.6
						----- PROGR. 101.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 9	0.0	0.0	0.0	-135778.7	0.0	0.0
5- 3	0.0	0.0	0.0	130314.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 9	si 1 Sx Si	-685.2	0.0	0.0	0.0	685.2
5- 3	si 5 Tz	657.6	0.0	0.0	0.0	657.6
5- 3	si 9 Ty	657.6	0.0	0.0	0.0	657.6
						----- PROGR. 126.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 9	0.0	0.0	0.0	-135778.7	0.0	0.0
5- 3	0.0	0.0	0.0	130314.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 9	si 1 Sx Si	-685.2	0.0	0.0	0.0	685.2
5- 3	si 5 Tz	657.6	0.0	0.0	0.0	657.6
5- 3	si 9 Ty	657.6	0.0	0.0	0.0	657.6
						----- PROGR. 151.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 9	0.0	0.0	0.0	-135778.7	0.0	0.0
5- 3	0.0	0.0	0.0	130314.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 9	si 1 Sx Si	-685.2	0.0	0.0	0.0	685.2
5- 3	si 5 Tz	657.6	0.0	0.0	0.0	657.6
5- 3	si 9 Ty	657.6	0.0	0.0	0.0	657.6
						----- PROGR. 176.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 9	0.0	0.0	0.0	-135778.7	0.0	0.0
5- 3	0.0	0.0	0.0	130314.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 9	si 1 Sx Si	-685.2	0.0	0.0	0.0	685.2
5- 3	si 5 Tz	657.6	0.0	0.0	0.0	657.6
5- 3	si 9 Ty	657.6	0.0	0.0	0.0	657.6
						----- PROGR. 202.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 9	0.0	0.0	0.0	-135778.7	0.0	0.0
5- 3	0.0	0.0	0.0	130314.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 9	si	1	Sx	Si	-685.2	0.0	0.0	685.2
5- 3	si	5	Tz		657.6	0.0	0.0	657.6
5- 3	si	9	Ty		657.6	0.0	0.0	657.6

VERIFICA STABILITA` :

L0 = 202. |
 Z |Lc = 202. |Ro = 17.08 |Im = 11.8 |Ncr= 29474539.3 |alfa(a)=0.2100 |ki=1.0000 |
 Y |Lc = 202. |Ro = 7.39 |Im = 27.3 |Ncr= 5519225.7 |alfa(b)=0.3400 |ki=0.9589 |
 Caso 5- 9 - Nodo 1 - Asse Y
 Ned = -135778.7 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -714.6 (0.273)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7618- 7616) 6139
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-34084.7	0.0	0.0
5- 4	0.0	0.0	0.0	27954.9	0.0	0.0
5- 3	0.0	0.0	0.0	27960.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	si	-172.0	0.0	0.0	172.0
5- 4	si	6	Tz		141.1	0.0	0.0	141.1
5- 3	si	9	Ty		141.1	0.0	0.0	141.1

----- PROGR. 26.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-34084.7	0.0	0.0
5- 4	0.0	0.0	0.0	27954.9	0.0	0.0
5- 3	0.0	0.0	0.0	27960.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	2	Sx	si	-172.0	0.0	0.0	172.0
5- 4	si	6	Tz		141.1	0.0	0.0	141.1
5- 3	si	9	Ty		141.1	0.0	0.0	141.1

----- PROGR. 52.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-34084.7	0.0	0.0
5- 4	0.0	0.0	0.0	27954.9	0.0	0.0
5- 3	0.0	0.0	0.0	27960.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	2	Sx	si	-172.0	0.0	0.0	172.0
5- 4	si	6	Tz		141.1	0.0	0.0	141.1
5- 3	si	9	Ty		141.1	0.0	0.0	141.1

----- PROGR. 79.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-34084.7	0.0	0.0
5- 4	0.0	0.0	0.0	27954.9	0.0	0.0
5- 3	0.0	0.0	0.0	27960.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	2	Sx	si	-172.0	0.0	0.0	172.0
5- 4	si	6	Tz		141.1	0.0	0.0	141.1
5- 3	si	9	Ty		141.1	0.0	0.0	141.1

----- PROGR. 105.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-34084.7	0.0	0.0
5- 4	0.0	0.0	0.0	27954.9	0.0	0.0
5- 3	0.0	0.0	0.0	27960.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	2	Sx	Si	-172.0	0.0	0.0	172.0
5- 4	si	6	Tz		141.1	0.0	0.0	141.1
5- 3	si	9	Ty		141.1	0.0	0.0	141.1

----- PROGR. 131.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-34084.7	0.0	0.0
5- 4	0.0	0.0	0.0	27954.9	0.0	0.0
5- 3	0.0	0.0	0.0	27960.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	2	Sx	Si	-172.0	0.0	0.0	172.0
5- 4	si	6	Tz		141.1	0.0	0.0	141.1
5- 3	si	9	Ty		141.1	0.0	0.0	141.1

----- PROGR. 158.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-34084.7	0.0	0.0
5- 4	0.0	0.0	0.0	27954.9	0.0	0.0
5- 3	0.0	0.0	0.0	27960.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	2	Sx	Si	-172.0	0.0	0.0	172.0
5- 4	si	6	Tz		141.1	0.0	0.0	141.1
5- 3	si	9	Ty		141.1	0.0	0.0	141.1

----- PROGR. 184.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-34084.7	0.0	0.0
5- 4	0.0	0.0	0.0	27954.9	0.0	0.0
5- 3	0.0	0.0	0.0	27960.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	2	Sx	Si	-172.0	0.0	0.0	172.0
5- 4	si	6	Tz		141.1	0.0	0.0	141.1
5- 3	si	9	Ty		141.1	0.0	0.0	141.1

----- PROGR. 210.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-34084.7	0.0	0.0
5- 4	0.0	0.0	0.0	27954.9	0.0	0.0
5- 3	0.0	0.0	0.0	27960.9	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	2	Sx	Si	-172.0	0.0	0.0	172.0
5- 4	si	6	Tz		141.1	0.0	0.0	141.1
5- 3	si	9	Ty		141.1	0.0	0.0	141.1

VERIFICA STABILITA` :

|L0 = 210. |

Z |Lc = 210. |Ro = 17.08 |Im = 12.3 |Ncr= 27157505.3 |alfa(a)=0.2100 |ki=1.0000 |

Y |Lc = 210. |Ro = 7.39 |Im = 28.4 |Ncr= 5085351.8 |alfa(b)=0.3400 |ki=0.9540 |

Caso 5-10 - Nodo 2 - Asse Y

Ned = -34084.7 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -180.3 (0.069)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7616- 7614) 6140
----- PROGR. 0.

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-77180.9	0.0	0.0
5-15	0.0	0.0	0.0	70032.6	0.0	0.0
5-10	0.0	0.0	0.0	70364.4	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si 1 Sx si	-389.5	0.0	0.0	0.0	389.5
5-15	si 5 Tz	353.4	0.0	0.0	0.0	353.4
5-10	si 9 Ty	355.1	0.0	0.0	0.0	355.1

----- PROGR. 26.

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-77180.9	0.0	0.0
5-15	0.0	0.0	0.0	70032.6	0.0	0.0
5-10	0.0	0.0	0.0	70364.4	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si 3 Sx si	-389.5	0.0	0.0	0.0	389.5
5-15	si 5 Tz	353.4	0.0	0.0	0.0	353.4
5-10	si 9 Ty	355.1	0.0	0.0	0.0	355.1

----- PROGR. 52.

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-77180.9	0.0	0.0
5-15	0.0	0.0	0.0	70032.6	0.0	0.0
5-10	0.0	0.0	0.0	70364.4	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si 3 Sx si	-389.5	0.0	0.0	0.0	389.5
5-15	si 5 Tz	353.4	0.0	0.0	0.0	353.4
5-10	si 9 Ty	355.1	0.0	0.0	0.0	355.1

----- PROGR. 79.

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-77180.9	0.0	0.0
5-15	0.0	0.0	0.0	70032.6	0.0	0.0
5-10	0.0	0.0	0.0	70364.4	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si 3 Sx si	-389.5	0.0	0.0	0.0	389.5
5-15	si 5 Tz	353.4	0.0	0.0	0.0	353.4
5-10	si 9 Ty	355.1	0.0	0.0	0.0	355.1

----- PROGR. 105.

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-77180.9	0.0	0.0
5-15	0.0	0.0	0.0	70032.6	0.0	0.0
5-10	0.0	0.0	0.0	70364.4	0.0	0.0

TENSIONI (Sz= 0.00) :						
Caso	ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si 3 Sx si	-389.5	0.0	0.0	0.0	389.5
5-15	si 5 Tz	353.4	0.0	0.0	0.0	353.4
5-10	si 9 Ty	355.1	0.0	0.0	0.0	355.1

----- PROGR. 131.

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-77180.9	0.0	0.0
5-15	0.0	0.0	0.0	70032.6	0.0	0.0

| 5-10| 0.0| 0.0| 0.0| 70364.4| 0.0| 0.0|
TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	3	Sx	Si	-389.5	0.0	0.0	389.5
5-15	si	5	Tz		353.4	0.0	0.0	353.4
5-10	si	9	Ty		355.1	0.0	0.0	355.1

----- PROGR. 158.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-77180.9	0.0	0.0
5-15	0.0	0.0	0.0	70032.6	0.0	0.0
5-10	0.0	0.0	0.0	70364.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	3	Sx	Si	-389.5	0.0	0.0	389.5
5-15	si	5	Tz		353.4	0.0	0.0	353.4
5-10	si	9	Ty		355.1	0.0	0.0	355.1

----- PROGR. 184.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-77180.9	0.0	0.0
5-15	0.0	0.0	0.0	70032.6	0.0	0.0
5-10	0.0	0.0	0.0	70364.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	3	Sx	Si	-389.5	0.0	0.0	389.5
5-15	si	5	Tz		353.4	0.0	0.0	353.4
5-10	si	9	Ty		355.1	0.0	0.0	355.1

----- PROGR. 210.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-77180.9	0.0	0.0
5-15	0.0	0.0	0.0	70032.6	0.0	0.0
5-10	0.0	0.0	0.0	70364.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	3	Sx	Si	-389.5	0.0	0.0	389.5
5-15	si	5	Tz		353.4	0.0	0.0	353.4
5-10	si	9	Ty		355.1	0.0	0.0	355.1

VERIFICA STABILITA` :

|L0 = 210.|

Z |Lc = 210.|Ro = 17.08|Im = 12.3|Ncr= 27157505.3|alfa(a)=0.2100|ki=1.0000|

Y |Lc = 210.|Ro = 7.39|Im = 28.4|Ncr= 5085351.8|alfa(b)=0.3400|ki=0.9540|

Caso 5- 4 - Nodo 3 - Asse Y

Ned = -77180.9|Mzeq = 0.0|Myeq = 0.0|Ss = -408.3 (0.156)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7614- 7588) 6141

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-179595.9	0.0	0.0
5- 9	0.0	0.0	0.0	172132.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	Si	-906.4	0.0	0.0	906.4
5- 9	si	5	Tz		868.7	0.0	0.0	868.7
5- 9	si	9	Ty		868.7	0.0	0.0	868.7

----- PROGR. 25.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-179595.9	0.0	0.0
5- 9	0.0	0.0	0.0	172132.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	si	-906.4	0.0	0.0	906.4
5- 9	si	5	Tz		868.7	0.0	0.0	868.7
5- 9	si	9	Ty		868.7	0.0	0.0	868.7

----- PROGR. 50.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-179595.9	0.0	0.0
5- 9	0.0	0.0	0.0	172132.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	si	-906.4	0.0	0.0	906.4
5- 9	si	5	Tz		868.7	0.0	0.0	868.7
5- 9	si	9	Ty		868.7	0.0	0.0	868.7

----- PROGR. 76.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-179595.9	0.0	0.0
5- 9	0.0	0.0	0.0	172132.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	si	-906.4	0.0	0.0	906.4
5- 9	si	5	Tz		868.7	0.0	0.0	868.7
5- 9	si	9	Ty		868.7	0.0	0.0	868.7

----- PROGR. 101.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-179595.9	0.0	0.0
5- 9	0.0	0.0	0.0	172132.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	si	-906.4	0.0	0.0	906.4
5- 9	si	5	Tz		868.7	0.0	0.0	868.7
5- 9	si	9	Ty		868.7	0.0	0.0	868.7

----- PROGR. 126.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-179595.9	0.0	0.0
5- 9	0.0	0.0	0.0	172132.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	si	-906.4	0.0	0.0	906.4
5- 9	si	5	Tz		868.7	0.0	0.0	868.7
5- 9	si	9	Ty		868.7	0.0	0.0	868.7

----- PROGR. 151.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-179595.9	0.0	0.0
5- 9	0.0	0.0	0.0	172132.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	si	-906.4	0.0	0.0	906.4
5- 9	si	5	Tz		868.7	0.0	0.0	868.7
5- 9	si	9	Ty		868.7	0.0	0.0	868.7

----- PROGR. 176.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-179595.9	0.0	0.0

| 5- 9| 0.0| 0.0| 0.0| 172132.0| 0.0| 0.0|
TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	-906.4	0.0	0.0	0.0	906.4
5- 9	si	5	Tz	868.7	0.0	0.0	0.0	868.7
5- 9	si	9	Ty	868.7	0.0	0.0	0.0	868.7

----- PROGR. 202.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-179595.9	0.0	0.0
5- 9	0.0	0.0	0.0	172132.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	-906.4	0.0	0.0	0.0	906.4
5- 9	si	5	Tz	868.7	0.0	0.0	0.0	868.7
5- 9	si	9	Ty	868.7	0.0	0.0	0.0	868.7

VERIFICA STABILITA` :

|L0 = 202.|

Z |Lc = 202.|Ro = 17.08|lm = 11.8|Ncr= 29474539.0|alfa(a)=0.2100|ki=1.0000|

Y |Lc = 202.|Ro = 7.39|lm = 27.3|Ncr= 5519225.7|alfa(b)=0.3400|ki=0.9589|

Caso 5- 4 - Nodo 1 - Asse Y

Ned = -179595.9|Mzeq = 0.0|Myeq = 0.0|Ss = -945.2 (0.361)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7647- 7606) 6170

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	-104116.8	0.0	0.0	53768.7	0.0	757.2
5- 2	175847.7	0.0	0.0	-47007.3	0.0	-1278.9

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	2	Sx	307.4	0.0	0.0	0.0	307.4
5- 2	si	5	Tz	-298.1	-4.8	0.0	4.8	298.2
5- 2	si	9	Ty	-237.2	0.0	26.5	26.5	241.6
5-13	si	6	Si	307.4	-2.9	0.0	2.9	307.4

----- PROGR. 17.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	-91102.2	0.0	0.0	53768.7	0.0	757.2
5- 2	153866.7	0.0	0.0	-47007.3	0.0	-1278.9

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	2	Sx	302.9	0.0	0.0	0.0	302.9
5- 2	si	5	Tz	-290.5	-4.8	0.0	4.8	290.6
5- 2	si	9	Ty	-237.2	0.0	26.5	26.5	241.6
5-13	si	6	Si	302.9	-2.9	0.0	2.9	302.9

----- PROGR. 34.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	-78087.6	0.0	0.0	53768.7	0.0	757.2
5- 2	131885.8	0.0	0.0	-47007.3	0.0	-1278.9

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	2	Sx	298.4	0.0	0.0	0.0	298.4
5- 2	si	5	Tz	-282.9	-4.8	0.0	4.8	283.0
5- 2	si	9	Ty	-237.2	0.0	26.5	26.5	241.6
5-13	si	6	Si	298.4	-2.9	0.0	2.9	298.4

----- PROGR. 52.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	-65073.0	0.0	0.0	53768.7	0.0	757.2
5- 2	109904.8	0.0	0.0	-47007.3	0.0	-1278.9

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	2	Sx	293.9	0.0	0.0	0.0	293.9
5- 2	si	5	Tz	-275.3	-4.8	0.0	4.8	275.4
5- 2	si	9	Ty	-237.2	0.0	26.5	26.5	241.6
5-13	si	6	si	293.9	-2.9	0.0	2.9	293.9

----- PROGR. 69.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	-52058.4	0.0	0.0	53768.7	0.0	757.2
5- 2	87923.8	0.0	0.0	-47007.3	0.0	-1278.9

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	2	Sx	289.4	0.0	0.0	0.0	289.4
5- 2	si	5	Tz	-267.7	-4.8	0.0	4.8	267.8
5- 2	si	9	Ty	-237.2	0.0	26.5	26.5	241.6
5-13	si	6	si	289.4	-2.9	0.0	2.9	289.4

----- PROGR. 86.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	-39043.8	0.0	0.0	53768.7	0.0	757.2
5- 2	65942.9	0.0	0.0	-47007.3	0.0	-1278.9

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	2	Sx	284.9	0.0	0.0	0.0	284.9
5- 2	si	5	Tz	-260.1	-4.8	0.0	4.8	260.2
5- 2	si	9	Ty	-237.2	0.0	26.5	26.5	241.6
5-13	si	6	si	284.9	-2.9	0.0	2.9	284.9

----- PROGR. 103.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	-26029.2	0.0	0.0	53768.7	0.0	757.2
5- 2	43961.9	0.0	0.0	-47007.3	0.0	-1278.9

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	2	Sx	280.4	0.0	0.0	0.0	280.4
5- 2	si	5	Tz	-252.4	-4.8	0.0	4.8	252.6
5- 2	si	9	Ty	-237.2	0.0	26.5	26.5	241.6
5-13	si	6	si	280.4	-2.9	0.0	2.9	280.4

----- PROGR. 120.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	-13014.6	0.0	0.0	53768.7	0.0	757.2
5- 2	21981.0	0.0	0.0	-47007.3	0.0	-1278.9

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	2	Sx	275.9	0.0	0.0	0.0	275.9
5- 2	si	5	Tz	-244.8	-4.8	0.0	4.8	245.0
5- 2	si	9	Ty	-237.2	0.0	26.5	26.5	241.6
5-13	si	6	si	275.9	-2.9	0.0	2.9	275.9

----- PROGR. 138.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	53768.7	0.0	757.2
5- 2	0.0	0.0	0.0	-47007.3	0.0	-1278.9

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	2	Sx	271.4	0.0	0.0	0.0	271.4
5- 2	si	5	Tz	-237.2	-4.8	0.0	4.8	237.4

5- 2 si 9	Ty	-237.2	0.0	26.5	26.5	241.6
5-13 si 9	Si	271.4	0.0	-15.7	15.7	272.7

VERIFICA STABILITA` :

|L0 = 138.|
 Z |Lc = 138.|Ro = 17.08|Im = 8.1|Ncr= 63346564.5|alfa(a)=0.2100|ki=1.0000|
 Y |Lc = 138.|Ro = 7.39|Im = 18.6|Ncr= 11861898.3|alfa(b)=0.3400|ki=0.9949|
 Caso 3- 1 - Nodo 2 - Asse Y
 Ned = -50385.9|Mzeq = 83985.8|Myeq = 0.0|Ss = -284.7 (0.109)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7605- 7648) 6171
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	38878.0	0.0	648.3
5- 2	0.0	0.0	0.0	38477.8	0.0	679.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 1 Sx		196.2	0.0	0.0	0.0	196.2
5- 2 si 6 Tz		194.2	-2.6	0.0	2.6	194.2
5- 2 si 9 Ty		194.2	0.0	-14.1	14.1	195.7
5- 7 si 9 Si		196.2	0.0	-13.5	13.5	197.6

----- PROGR. 17.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	11142.0	0.0	0.0	38878.0	0.0	648.3
5- 2	11670.8	0.0	0.0	38477.8	0.0	679.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 4 Sx		200.1	0.0	0.0	0.0	200.1
5- 2 si 6 Tz		190.1	-2.6	0.0	2.6	190.2
5- 2 si 9 Ty		194.2	0.0	-14.1	14.1	195.7
5- 7 si 13 Si		199.1	0.0	-12.2	12.2	200.2

----- PROGR. 34.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	22284.0	0.0	0.0	38878.0	0.0	648.3
5- 2	23341.5	0.0	0.0	38477.8	0.0	679.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 4 Sx		203.9	0.0	0.0	0.0	203.9
5- 2 si 6 Tz		186.1	-2.6	0.0	2.6	186.2
5- 2 si 9 Ty		194.2	0.0	-14.1	14.1	195.7
5- 7 si 7 Si		203.9	-2.5	0.0	2.5	204.0

----- PROGR. 52.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	33425.9	0.0	0.0	38878.0	0.0	648.3
5- 2	35012.3	0.0	0.0	38477.8	0.0	679.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 4 Sx		207.8	0.0	0.0	0.0	207.8
5- 2 si 6 Tz		182.1	-2.6	0.0	2.6	182.1
5- 2 si 9 Ty		194.2	0.0	-14.1	14.1	195.7
5- 7 si 7 Si		207.8	-2.5	0.0	2.5	207.8

----- PROGR. 69.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	44567.9	0.0	0.0	38878.0	0.0	648.3
5- 2	46683.0	0.0	0.0	38477.8	0.0	679.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	4	Sx	211.6	0.0	0.0	0.0	211.6
5- 2	si	6	Tz	178.0	-2.6	0.0	2.6	178.1
5- 2	si	9	Ty	194.2	0.0	-14.1	14.1	195.7
5- 7	si	7	si	211.6	-2.5	0.0	2.5	211.7

----- PROGR. 86.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	55709.9	0.0	0.0	38878.0	0.0	648.3
5- 2	58353.8	0.0	0.0	38477.8	0.0	679.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	4	Sx	215.5	0.0	0.0	0.0	215.5
5- 2	si	6	Tz	174.0	-2.6	0.0	2.6	174.0
5- 2	si	9	Ty	194.2	0.0	-14.1	14.1	195.7
5- 7	si	7	si	215.5	-2.5	0.0	2.5	215.5

----- PROGR. 103.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	66851.9	0.0	0.0	38878.0	0.0	648.3
5- 2	70024.5	0.0	0.0	38477.8	0.0	679.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	4	Sx	219.3	0.0	0.0	0.0	219.3
5- 2	si	6	Tz	169.9	-2.6	0.0	2.6	170.0
5- 2	si	9	Ty	194.2	0.0	-14.1	14.1	195.7
5- 7	si	7	si	219.3	-2.5	0.0	2.5	219.4

----- PROGR. 120.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	77993.8	0.0	0.0	38878.0	0.0	648.3
5- 2	81695.3	0.0	0.0	38477.8	0.0	679.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	4	Sx	223.2	0.0	0.0	0.0	223.2
5- 2	si	6	Tz	165.9	-2.6	0.0	2.6	166.0
5- 2	si	9	Ty	194.2	0.0	-14.1	14.1	195.7
5- 7	si	7	si	223.2	-2.5	0.0	2.5	223.2

----- PROGR. 138.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	89135.8	0.0	0.0	38878.0	0.0	648.3
5- 2	93366.0	0.0	0.0	38477.8	0.0	679.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	4	Sx	227.1	0.0	0.0	0.0	227.1
5- 2	si	6	Tz	161.9	-2.6	0.0	2.6	161.9
5- 2	si	9	Ty	194.2	0.0	-14.1	14.1	195.7
5- 7	si	7	si	227.1	-2.5	0.0	2.5	227.1

VERIFICA STABILITA` :

|L0 = 138. |

Z |Lc = 138. |Ro = 17.08 |Im = 8.1 |Ncr= 63346564.5 |alfa(a)=0.2100 |ki=1.0000 |

Y |Lc = 138. |Ro = 7.39 |Im = 18.6 |Ncr= 11861898.3 |alfa(b)=0.3400 |ki=0.9949 |

Caso 3- 3 - Nodo 4 - Asse Y

Ned = -35386.5 |Mzeq = -32528.9 |Myeq = 0.0 |Ss = -190.8 (0.073)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7648- 7577) 6172

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	-16953.2	0.0	0.0	55860.4	0.0	123.3
5- 2	93366.0	0.0	0.0	-46115.3	0.0	-679.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	2	Sx	287.8	0.0	0.0	0.0	287.8
5- 2	si	6	Tz	-265.0	2.6	0.0	2.6	265.1
5- 2	si	9	Ty	-232.7	0.0	14.1	14.1	234.0
5-13	si	6	Si	287.8	-0.5	0.0	0.5	287.8

----- PROGR. 17.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	-14834.0	0.0	0.0	55860.4	0.0	123.3
5- 2	81695.3	0.0	0.0	-46115.3	0.0	-679.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	2	Sx	287.0	0.0	0.0	0.0	287.0
5- 2	si	6	Tz	-261.0	2.6	0.0	2.6	261.0
5- 2	si	9	Ty	-232.7	0.0	14.1	14.1	234.0
5-13	si	6	Si	287.0	-0.5	0.0	0.5	287.0

----- PROGR. 34.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	-12714.9	0.0	0.0	55860.4	0.0	123.3
5- 2	70024.5	0.0	0.0	-46115.3	0.0	-679.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	2	Sx	286.3	0.0	0.0	0.0	286.3
5- 2	si	6	Tz	-257.0	2.6	0.0	2.6	257.0
5- 2	si	9	Ty	-232.7	0.0	14.1	14.1	234.0
5-13	si	6	Si	286.3	-0.5	0.0	0.5	286.3

----- PROGR. 52.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	-10595.7	0.0	0.0	55860.4	0.0	123.3
5- 2	58353.8	0.0	0.0	-46115.3	0.0	-679.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	2	Sx	285.6	0.0	0.0	0.0	285.6
5- 2	si	6	Tz	-252.9	2.6	0.0	2.6	253.0
5- 2	si	9	Ty	-232.7	0.0	14.1	14.1	234.0
5-13	si	6	Si	285.6	-0.5	0.0	0.5	285.6

----- PROGR. 69.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	-8476.6	0.0	0.0	55860.4	0.0	123.3
5- 2	46683.0	0.0	0.0	-46115.3	0.0	-679.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	2	Sx	284.8	0.0	0.0	0.0	284.8
5- 2	si	6	Tz	-248.9	2.6	0.0	2.6	248.9
5- 2	si	9	Ty	-232.7	0.0	14.1	14.1	234.0
5-13	si	6	Si	284.8	-0.5	0.0	0.5	284.8

----- PROGR. 86.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	-6357.4	0.0	0.0	55860.4	0.0	123.3
5- 2	35012.3	0.0	0.0	-46115.3	0.0	-679.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	2	Sx	284.1	0.0	0.0	0.0	284.1

5- 2 si 6 Tz	-244.8	2.6	0.0	2.6	244.9
5- 2 si 9 Ty	-232.7	0.0	14.1	14.1	234.0
5-13 si 5 Si	284.1	0.5	0.0	0.5	284.1
----- PROGR.					103.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY	
5-13	-4238.3	0.0	0.0	55860.4	0.0	123.3	
5- 2	23341.5	0.0	0.0	-46115.3	0.0	-679.0	

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5-13 si 2 Sx	283.4	0.0	0.0	0.0	283.4	
5- 2 si 6 Tz	-240.8	2.6	0.0	2.6	240.8	
5- 2 si 9 Ty	-232.7	0.0	14.1	14.1	234.0	
5-13 si 5 Si	283.4	0.5	0.0	0.5	283.4	
----- PROGR.					120.	

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY	
5-13	-2119.1	0.0	0.0	55860.4	0.0	123.3	
5- 2	11670.8	0.0	0.0	-46115.3	0.0	-679.0	

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5-13 si 1 Sx	282.6	0.0	0.0	0.0	282.6	
5- 2 si 6 Tz	-236.8	2.6	0.0	2.6	236.8	
5- 2 si 9 Ty	-232.7	0.0	14.1	14.1	234.0	
5-13 si 5 Si	282.6	0.5	0.0	0.5	282.6	
----- PROGR.					138.	

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY	
5-13	0.0	0.0	0.0	55860.4	0.0	123.3	
5- 2	0.0	0.0	0.0	-46115.3	0.0	-679.0	

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5-13 si 1 Sx	281.9	0.0	0.0	0.0	281.9	
5- 2 si 6 Tz	-232.7	2.6	0.0	2.6	232.8	
5- 2 si 9 Ty	-232.7	0.0	14.1	14.1	234.0	
5-13 si 9 Si	281.9	0.0	-2.6	2.6	281.9	

VERIFICA STABILITA` :

|L0 = 138.|

Z |Lc = 138.|Ro = 17.08|Im = 8.1|Ncr= 63346564.5|alfa(a)=0.2100|ki=1.0000|

Y |Lc = 138.|Ro = 7.39|Im = 18.6|Ncr= 11861898.3|alfa(b)=0.3400|ki=0.9949|

Caso 3- 1 - Nodo 2 - Asse Y

Ned = -50977.9|Mzeq = 33020.9|Myeq = 0.0|Ss = -270.0 (0.103)

P_HEB340_S032 (32) stato limite ultimo - ASTA (6515- 7690) 6173
----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY	
5- 4	0.0	0.0	0.0	-128188.2	395.0	0.0	
5-13	0.0	0.0	0.0	115998.2	-567.9	0.0	
4- 9	0.0	0.0	0.0	-43543.9	61.4	0.0	

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4 si 1 Sx	-748.4	0.0	0.0	0.0	748.4	
5-13 si 6 Tz	677.3	-6.3	0.0	6.3	677.4	
4- 9 si 9 Ty	-254.2	0.0	0.0	0.0	254.2	
5- 4 si 5 Si	-748.4	4.4	0.0	4.4	748.5	
----- PROGR.					22.	

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY	
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5- 4	0.0	-8559.7	0.0	-128188.2	395.0	0.0
5-13	0.0	12305.9	0.0	115998.2	-567.9	0.0
4- 9	0.0	-1330.9	0.0	-43543.9	61.4	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 1 Sx Si	-761.7	0.0	0.0	0.0	761.7
5-13 si 6 Tz	673.1	-6.3	0.0	6.3	673.2
4- 9 si 9 Ty	-254.3	0.0	0.0	0.0	254.3

----- PROGR. 43.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	-17119.4	0.0	-128188.2	395.0	0.0
5-13	0.0	24611.8	0.0	115998.2	-567.9	0.0
4- 9	0.0	-2661.8	0.0	-43543.9	61.4	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 4 Sx Si	-774.9	0.0	0.0	0.0	774.9
5-13 si 6 Tz	668.9	-6.3	0.0	6.3	669.0
4- 9 si 9 Ty	-254.4	0.0	0.0	0.0	254.4

----- PROGR. 65.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	-25679.2	0.0	-128188.2	395.0	0.0
5-13	0.0	36917.6	0.0	115998.2	-567.9	0.0
4- 9	0.0	-3992.7	0.0	-43543.9	61.4	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 4 Sx Si	-788.2	0.0	0.0	0.0	788.2
5-13 si 6 Tz	664.7	-6.3	0.0	6.3	664.8
4- 9 si 9 Ty	-254.5	0.0	0.0	0.0	254.5

----- PROGR. 87.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	-34238.9	0.0	-128188.2	395.0	0.0
5-13	0.0	49223.5	0.0	115998.2	-567.9	0.0
4- 9	0.0	-5323.6	0.0	-43543.9	61.4	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 4 Sx Si	-801.4	0.0	0.0	0.0	801.4
5-13 si 6 Tz	660.5	-6.3	0.0	6.3	660.6
4- 9 si 9 Ty	-254.6	0.0	0.0	0.0	254.6

----- PROGR. 108.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	-42798.6	0.0	-128188.2	395.0	0.0
5-13	0.0	61529.4	0.0	115998.2	-567.9	0.0
4- 9	0.0	-6654.4	0.0	-43543.9	61.4	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 4 Sx Si	-814.7	0.0	0.0	0.0	814.7
5-13 si 6 Tz	656.3	-6.3	0.0	6.3	656.4
4- 9 si 9 Ty	-254.6	0.0	0.0	0.0	254.6

----- PROGR. 130.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	-51358.3	0.0	-128188.2	395.0	0.0
5-13	0.0	73835.3	0.0	115998.2	-567.9	0.0
4- 9	0.0	-7985.3	0.0	-43543.9	61.4	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 4 Sx Si	-827.9	0.0	0.0	0.0	827.9
5-13 si 6 Tz	652.1	-6.3	0.0	6.3	652.2

4- 9 si 9	Ty	-254.7	0.0	0.0	0.0	254.7
-----						PROGR. 152.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	-59918.0	0.0	-128188.2	395.0	0.0
5-13	0.0	86141.1	0.0	115998.2	-567.9	0.0
4- 9	0.0	-9316.2	0.0	-43543.9	61.4	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 4 Sx	si	-841.2	0.0	0.0	0.0	841.2
5-13 si 6	Tz	647.9	-6.3	0.0	6.3	648.0
4- 9 si 9	Ty	-254.8	0.0	0.0	0.0	254.8
-----						PROGR. 173.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	-68477.8	0.0	-128188.2	395.0	0.0
5-13	0.0	98447.0	0.0	115998.2	-567.9	0.0
4- 9	0.0	-10647.1	0.0	-43543.9	61.4	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 4 Sx	si	-854.4	0.0	0.0	0.0	854.4
5-13 si 6	Tz	643.7	-6.3	0.0	6.3	643.8
4- 9 si 9	Ty	-254.9	0.0	0.0	0.0	254.9

VERIFICA STABILITA` :

L0 = 173. |
 Z |Lc = 173. |Ro = 14.64 |Im = 11.8 |Ncr= 25325888.5 |alfa(b)=0.3400 |ki=1.0000 |
 Y |Lc = 173. |Ro = 7.52 |Im = 23.0 |Ncr= 6682420.5 |alfa(c)=0.4900 |ki=0.9667 |
 Caso 5- 4 - Nodo 4 - Asse Y
 Ned = -128188.2 |Mzeq = 0.0 |Myeq = -41086.7 |Ss = -839.1 (0.320)

P_HEB340_S032 (32) stato limite ultimo - ASTA (7690- 7688) 6174

 PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	-68477.8	0.0	-170995.3	921.9	0.0
5- 7	0.0	-68305.3	0.0	-170876.5	923.0	0.0
4-13	0.0	-10693.1	0.0	-55533.8	349.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 4 Sx	si	-1104.4	0.0	0.0	0.0	1104.4
5- 7 si 5	Tz	-1020.9	10.2	0.0	10.2	1021.1
4-13 si 9	Ty	-324.9	0.0	0.0	0.0	324.9
-----						PROGR. 20.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	-86550.9	0.0	-170995.3	921.9	0.0
5- 7	0.0	-86400.2	0.0	-170876.5	923.0	0.0
4-13	0.0	-17522.1	0.0	-55533.8	349.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 4 Sx	si	-1132.3	0.0	0.0	0.0	1132.3
5- 7 si 5	Tz	-1027.1	10.2	0.0	10.2	1027.3
4-13 si 9	Ty	-325.3	0.0	0.0	0.0	325.3
-----						PROGR. 39.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	-104648.7	0.0	-170995.3	921.9	0.0
5- 7	0.0	-104520.0	0.0	-170876.5	923.0	0.0
4-13	0.0	-24366.4	0.0	-55533.8	349.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	4	Sx	Si	-1160.4	0.0	0.0	1160.4
5- 7	si	5	Tz		-1033.3	10.2	0.0	1033.4
4-13	si	9	Ty		-325.8	0.0	0.0	325.8

----- PROGR. 59.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	-122762.4	0.0	-170995.3	921.9	0.0
5- 7	0.0	-122655.5	0.0	-170876.5	923.0	0.0
4-13	0.0	-31220.8	0.0	-55533.8	349.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	4	Sx	Si	-1188.4	0.0	0.0	1188.4
5- 7	si	5	Tz		-1039.5	10.2	0.0	1039.6
4-13	si	9	Ty		-326.2	0.0	0.0	326.2

----- PROGR. 79.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	-140886.7	0.0	-170995.3	921.9	0.0
5- 7	0.0	-140801.8	0.0	-170876.5	923.0	0.0
4-13	0.0	-38082.3	0.0	-55533.8	349.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	4	Sx	Si	-1216.4	0.0	0.0	1216.4
5- 7	si	5	Tz		-1045.6	10.2	0.0	1045.8
4-13	si	9	Ty		-326.6	0.0	0.0	326.6

----- PROGR. 99.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	-159018.7	0.0	-170995.3	921.9	0.0
5- 7	0.0	-158955.6	0.0	-170876.5	923.0	0.0
4-13	0.0	-44948.9	0.0	-55533.8	349.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	4	Sx	Si	-1244.5	0.0	0.0	1244.5
5- 7	si	5	Tz		-1051.8	10.2	0.0	1052.0
4-13	si	9	Ty		-327.0	0.0	0.0	327.0

----- PROGR. 118.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	-177173.9	0.0	-170991.6	922.1	0.0
5- 7	0.0	-177114.9	0.0	-170876.5	923.0	0.0
4-13	0.0	-51819.3	0.0	-55533.8	349.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	4	Sx	Si	-1272.6	0.0	0.0	1272.6
5- 7	si	5	Tz		-1058.0	10.2	0.0	1058.1
4-13	si	9	Ty		-327.5	0.0	0.0	327.5

----- PROGR. 138.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	-195320.8	0.0	-170991.6	922.1	0.0
5- 7	0.0	-195278.4	0.0	-170876.5	923.0	0.0
4-13	0.0	-58692.5	0.0	-55533.8	349.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	4	Sx	Si	-1300.7	0.0	0.0	1300.7
5- 7	si	5	Tz		-1064.2	10.2	0.0	1064.3
4-13	si	9	Ty		-327.9	0.0	0.0	327.9

----- PROGR. 158.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY			
5- 3	0.0	-213470.9	0.0	-170991.6	922.1	0.0			
5- 7	0.0	-213445.1	0.0	-170876.5	923.0	0.0			
4-13	0.0	-65567.9	0.0	-55533.8	349.6	0.0			
TENSIONI (Sz= 0.00) :									
Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3	si	4	Sx	Si	-1328.8	0.0	0.0	0.0	1328.8
5- 7	si	5	Tz		-1070.4	10.2	0.0	10.2	1070.5
4-13	si	9	Ty		-328.3	0.0	0.0	0.0	328.3

VERIFICA STABILITA` :

| L0 = 158. |
 Z | Lc = 158. | Ro = 14.64 | Im = 10.8 | Ncr= 30644325.2 | alfa(b)=0.3400 | ki=1.0000 |
 Y | Lc = 158. | Ro = 7.52 | Im = 21.0 | Ncr= 8085728.8 | alfa(c)=0.4900 | ki=0.9790 |
 Caso 5- 4 - Nodo 4 - Asse Y
 Ned = -170995.3 | Mzeq = 0.0 | Myeq = -183182.0 | ss = -1309.5 (0.500)

P_HEB340_S032 (32) stato limite ultimo - ASTA (7688- 7588) 6175
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY		
5- 3	0.0	-213470.9	0.0	-174501.2	-1354.4	0.0		
4-13	0.0	-65567.9	0.0	-56068.5	-416.0	0.0		
TENSIONI (Sz= 0.00) :								
Caso	Ve No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3	si 4	Sx	Si	-1349.3	0.0	0.0	0.0	1349.3
5- 3	si 6	Tz		-946.2	-15.0	0.0	15.0	946.5
4-13	si 9	Ty		-331.4	0.0	0.0	0.0	331.4

----- PROGR. 20.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	-186787.1	0.0	-174501.2	-1354.4	0.0
4-13	0.0	-57372.0	0.0	-56068.5	-416.0	0.0
TENSIONI (Sz= 0.00) :						
Caso	Ve No	massimi	Sx	Tz	Ty	Tau tot.
5- 3	si 4	Sx Si	-1308.0	0.0	0.0	0.0
5- 3	si 6	Tz	-955.2	-15.0	0.0	15.0
4-13	si 9	Ty	-330.9	0.0	0.0	0.0
						330.9

----- PROGR. 39.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY			
5- 3	0.0	-160103.2	0.0	-174501.2	-1354.4	0.0			
4-13	0.0	-49176.0	0.0	-56068.5	-416.0	0.0			
TENSIONI (Sz= 0.00) :									
Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3	si	4	Sx	Si	-1266.7	0.0	0.0	0.0	1266.7
5- 3	si	6	Tz		-964.3	-15.0	0.0	15.0	964.7
4-13	si	9	Ty		-330.4	0.0	0.0	0.0	330.4

----- PROGR. 59.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY			
5- 4	0.0	-133401.6	0.0	-174506.6	-1354.2	0.0			
5- 3	0.0	-133419.3	0.0	-174501.2	-1354.4	0.0			
4-13	0.0	-40980.0	0.0	-56068.5	-416.0	0.0			
TENSIONI (Sz= 0.00) :									
Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4	si	4	Sx	Si	-1225.4	0.0	0.0	0.0	1225.4
5- 3	si	6	Tz		-973.4	-15.0	0.0	15.0	973.8
4-13	si	9	Ty		-329.9	0.0	0.0	0.0	329.9

----- PROGR. 79.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	-106721.3	0.0	-174506.6	-1354.2	0.0
5- 3	0.0	-106735.5	0.0	-174501.2	-1354.4	0.0
4-13	0.0	-32784.0	0.0	-56068.5	-416.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	4	Sx	Si	-1184.1	0.0	0.0	1184.1
5- 3	si	6	Tz		-982.5	-15.0	0.0	982.8
4-13	si	9	Ty		-329.4	0.0	0.0	329.4

----- PROGR. 99.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	-80041.0	0.0	-174506.6	-1354.2	0.0
5- 3	0.0	-80051.6	0.0	-174501.2	-1354.4	0.0
4-13	0.0	-24588.0	0.0	-56068.5	-416.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	4	Sx	Si	-1142.8	0.0	0.0	1142.8
5- 3	si	6	Tz		-991.6	-15.0	0.0	991.9
4-13	si	9	Ty		-328.9	0.0	0.0	328.9

----- PROGR. 118.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	-53360.6	0.0	-174506.6	-1354.2	0.0
5- 3	0.0	-53367.7	0.0	-174501.2	-1354.4	0.0
4-13	0.0	-16392.0	0.0	-56068.5	-416.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	Si	-1101.5	0.0	0.0	1101.5
5- 3	si	6	Tz		-1000.7	-15.0	0.0	1001.0
4-13	si	9	Ty		-328.4	0.0	0.0	328.4

----- PROGR. 138.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	-26680.3	0.0	-174506.6	-1354.2	0.0
5- 3	0.0	-26683.9	0.0	-174501.2	-1354.4	0.0
4-13	0.0	-8196.0	0.0	-56068.5	-416.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	Si	-1060.2	0.0	0.0	1060.2
5- 3	si	6	Tz		-1009.8	-15.0	0.0	1010.1
4-13	si	9	Ty		-327.9	0.0	0.0	327.9

----- PROGR. 158.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-174506.6	-1354.2	0.0
5- 3	0.0	0.0	0.0	-174501.2	-1354.4	0.0
4-13	0.0	0.0	0.0	-56068.5	-416.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	2	Sx		-1018.9	0.0	0.0	1018.9
5- 3	si	6	Tz		-1018.9	-15.0	0.0	1019.2
4-13	si	9	Ty		-327.4	0.0	0.0	327.4
5- 4	si	6	Si		-1018.9	-15.0	0.0	1019.2

VERIFICA STABILITA` :

|L0 = 158. |

Z |Lc = 158. |Ro = 14.64 |Im = 10.8 |Ncr= 30644325.2 |alfa(b)=0.3400 |ki=1.0000 |

Y |Lc = 158. |Ro = 7.52 |Im = 21.0 |Ncr= 8085728.8 |alfa(c)=0.4900 |ki=0.9790 |

Caso 5- 4 - Nodo 4 - Asse Y

Ned = -174506.6|Mzeq = 0.0|Myeq = -128065.6|ss = -1243.4 (0.475)

P_HEB340_S032 (32) stato limite ultimo - ASTA (6514- 7678) 6176
----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	0.0	0.0	-116788.7	316.4	0.0
5- 4	0.0	0.0	0.0	106848.9	-513.5	0.0
4-16	0.0	0.0	0.0	-37613.8	21.9	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-13 si 1 Sx		-681.9	0.0	0.0	0.0	681.9
5- 4 si 5 Tz		623.9	-5.7	0.0	5.7	623.9
4-16 si 9 Ty		-219.6	0.0	0.0	0.0	219.6
5-13 si 5 si		-681.9	3.5	0.0	3.5	681.9

----- PROGR. 22.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	-6856.3	0.0	-116788.7	316.4	0.0
5- 4	0.0	11128.4	0.0	106848.9	-513.5	0.0
4-16	0.0	-473.7	0.0	-37613.8	21.9	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-13 si 1 Sx si		-692.5	0.0	0.0	0.0	692.5
5- 4 si 5 Tz		627.6	-5.7	0.0	5.7	627.7
4-16 si 9 Ty		-219.6	0.0	0.0	0.0	219.6

----- PROGR. 43.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	-13712.6	0.0	-116788.7	316.4	0.0
5- 4	0.0	22256.8	0.0	106848.9	-513.5	0.0
4-16	0.0	-947.4	0.0	-37613.8	21.9	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-13 si 1 Sx si		-703.1	0.0	0.0	0.0	703.1
5- 4 si 5 Tz		631.4	-5.7	0.0	5.7	631.5
4-16 si 9 Ty		-219.7	0.0	0.0	0.0	219.7

----- PROGR. 65.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	-20568.9	0.0	-116788.7	316.4	0.0
5- 4	0.0	33385.2	0.0	106848.9	-513.5	0.0
4-16	0.0	-1421.1	0.0	-37613.8	21.9	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-13 si 1 Sx si		-713.7	0.0	0.0	0.0	713.7
5- 4 si 5 Tz		635.2	-5.7	0.0	5.7	635.3
4-16 si 9 Ty		-219.7	0.0	0.0	0.0	219.7

----- PROGR. 87.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	-27425.3	0.0	-116788.7	316.4	0.0
5- 4	0.0	44513.6	0.0	106848.9	-513.5	0.0
4-16	0.0	-1894.7	0.0	-37613.8	21.9	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-13 si 1 Sx si		-724.3	0.0	0.0	0.0	724.3
5- 4 si 5 Tz		639.0	-5.7	0.0	5.7	639.1
4-16 si 9 Ty		-219.7	0.0	0.0	0.0	219.7

----- PROGR. 108.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	-34281.6	0.0	-116788.7	316.4	0.0
5- 4	0.0	55642.0	0.0	106848.9	-513.5	0.0
4-16	0.0	-2368.4	0.0	-37613.8	21.9	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	1	Sx	Si	-734.9	0.0	0.0	734.9
5- 4	si	5	Tz		642.8	-5.7	0.0	642.9
4-16	si	9	Ty		-219.8	0.0	0.0	219.8

----- PROGR. 130.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	-41137.9	0.0	-116788.7	316.4	0.0
5- 4	0.0	66770.4	0.0	106848.9	-513.5	0.0
4-16	0.0	-2842.1	0.0	-37613.8	21.9	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	1	Sx	Si	-745.6	0.0	0.0	745.6
5- 4	si	5	Tz		646.6	-5.7	0.0	646.7
4-16	si	9	Ty		-219.8	0.0	0.0	219.8

----- PROGR. 152.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	-47994.2	0.0	-116788.7	316.4	0.0
5- 4	0.0	77898.8	0.0	106848.9	-513.5	0.0
4-16	0.0	-3315.8	0.0	-37613.8	21.9	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	1	Sx	Si	-756.2	0.0	0.0	756.2
5- 4	si	5	Tz		650.4	-5.7	0.0	650.5
4-16	si	9	Ty		-219.8	0.0	0.0	219.8

----- PROGR. 173.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	-54850.5	0.0	-116788.7	316.4	0.0
5- 4	0.0	89027.2	0.0	106848.9	-513.5	0.0
4-16	0.0	-3789.5	0.0	-37613.8	21.9	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	1	Sx	Si	-766.8	0.0	0.0	766.8
5- 4	si	5	Tz		654.2	-5.7	0.0	654.2
4-16	si	9	Ty		-219.8	0.0	0.0	219.8

VERIFICA STABILITA` :

|L0 = 173.|

Z |Lc = 173.|Ro = 14.64|lm = 11.8|Ncr= 25325888.5|alfa(b)=0.3400|ki=1.0000|

Y |Lc = 173.|Ro = 7.52|lm = 23.0|Ncr= 6682420.5|alfa(c)=0.4900|ki=0.9667|

Caso 5-13 - Nodo 1 - Asse Y

Ned = -116788.7|Mzeq = 0.0|Myeq = -32910.3|Ss = -757.2 (0.289)

P_HEB340_S032 (32) stato limite ultimo - ASTA (7678- 7676) 6177

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	89027.2	0.0	149241.0	-814.0	0.0
5- 9	0.0	-54739.3	0.0	-155898.1	1025.1	0.0
4-13	0.0	39257.6	0.0	43463.8	-179.5	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	1	Sx	Si	1009.2	0.0	0.0	1009.2

5- 9 si 5 Tz	-928.9	11.3	0.0	11.3	929.1
4-13 si 9 Ty	256.2	0.0	0.0	0.0	256.2
----- PROGR.					20.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY	
5- 4	0.0	104724.2	0.0	149241.0	-814.0	0.0	
5- 9	0.0	-74596.2	0.0	-155898.1	1025.1	0.0	
4-13	0.0	42581.8	0.0	43463.8	-179.5	0.0	

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4 si 1 Sx si	1033.5	0.0	0.0	0.0	1033.5	
5- 9 si 5 Tz	-935.6	11.3	0.0	11.3	935.8	
4-13 si 9 Ty	256.4	0.0	0.0	0.0	256.4	
----- PROGR.					39.	

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY	
5- 4	0.0	120534.5	0.0	149241.0	-814.0	0.0	
5- 9	0.0	-94566.4	0.0	-155898.1	1025.1	0.0	
4-13	0.0	45976.2	0.0	43463.8	-179.5	0.0	

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 4 si 1 Sx si	1057.9	0.0	0.0	0.0	1057.9	
5- 9 si 5 Tz	-942.4	11.3	0.0	11.3	942.6	
4-13 si 9 Ty	256.6	0.0	0.0	0.0	256.6	
----- PROGR.					59.	

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY	
5-13	0.0	-114678.0	0.0	-155901.5	1024.5	0.0	
5- 9	0.0	-114602.5	0.0	-155898.1	1025.1	0.0	
4-13	0.0	49414.0	0.0	43463.8	-179.5	0.0	

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5-13 si 1 Sx si	-1087.8	0.0	0.0	0.0	1087.8	
5- 9 si 5 Tz	-949.3	11.3	0.0	11.3	949.5	
4-13 si 9 Ty	256.8	0.0	0.0	0.0	256.8	
----- PROGR.					79.	

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY	
5-13	0.0	-134743.4	0.0	-155901.5	1024.5	0.0	
5- 9	0.0	-134679.8	0.0	-155898.1	1025.1	0.0	
4-13	0.0	52879.1	0.0	43463.8	-179.5	0.0	

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5-13 si 1 Sx si	-1118.8	0.0	0.0	0.0	1118.8	
5- 9 si 5 Tz	-956.1	11.3	0.0	11.3	956.3	
4-13 si 9 Ty	257.0	0.0	0.0	0.0	257.0	
----- PROGR.					99.	

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY	
5-13	0.0	-154836.1	0.0	-155901.5	1024.5	0.0	
5- 9	0.0	-154784.4	0.0	-155898.1	1025.1	0.0	
4-13	0.0	56362.0	0.0	43463.8	-179.5	0.0	

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5-13 si 1 Sx si	-1149.9	0.0	0.0	0.0	1149.9	
5- 9 si 5 Tz	-962.9	11.3	0.0	11.3	963.1	
4-13 si 9 Ty	257.3	0.0	0.0	0.0	257.3	
----- PROGR.					118.	

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY	
5-13	0.0	-174947.7	0.0	-155901.5	1024.5	0.0	
5- 9	0.0	-174908.0	0.0	-155898.1	1025.1	0.0	

| 4-13| 0.0| 59856.9| 0.0| 43463.8| -179.5| 0.0|
TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	1	Sx	Si	-1181.0	0.0	0.0	1181.0
5- 9	si	5	Tz		-969.8	11.3	0.0	970.0
4-13	si	9	Ty		257.5	0.0	0.0	257.5

----- PROGR. 138.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	-195073.1	0.0	-155901.5	1024.5	0.0
5- 9	0.0	-195045.2	0.0	-155898.1	1025.1	0.0
4-13	0.0	63360.3	0.0	43463.8	-179.5	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	1	Sx	Si	-1212.2	0.0	0.0	1212.2
5- 9	si	5	Tz		-976.6	11.3	0.0	976.8
4-13	si	9	Ty		257.7	0.0	0.0	257.7

----- PROGR. 158.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-13	0.0	-215208.6	0.0	-155901.5	1024.5	0.0
5- 9	0.0	-215192.6	0.0	-155898.1	1025.1	0.0
4-13	0.0	66869.7	0.0	43463.8	-179.5	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-13	si	1	Sx	Si	-1243.4	0.0	0.0	1243.4
5- 9	si	5	Tz		-983.5	11.3	0.0	983.7
4-13	si	9	Ty		257.9	0.0	0.0	257.9

VERIFICA STABILITA` :

|L0 = 158.|

Z |Lc = 158.|Ro = 14.64|lm = 10.8|Ncr= 30644325.2|alfa(b)=0.3400|ki=1.0000|

Y |Lc = 158.|Ro = 7.52|lm = 21.0|Ncr= 8085728.8|alfa(c)=0.4900|ki=0.9790|

Caso 5-13 - Nodo 1 - Asse Y

Ned = -155901.5|Mzeq = 0.0|Myeq = -175276.8|Ss = -1206.4 (0.461)

P_HEB340_S032 (32) stato limite ultimo - ASTA (7676- 7587) 6178

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 9	0.0	-215192.6	0.0	-158025.3	-1365.3	0.0
5- 4	0.0	216201.5	0.0	152742.9	1371.7	0.0
4-14	0.0	66865.0	0.0	45012.5	424.2	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 9	si	1	Sx	Si	-1255.7	0.0	0.0	1255.7
5- 4	si	5	Tz		965.4	15.2	0.0	965.8
4-14	si	9	Ty		267.0	0.0	0.0	267.0

----- PROGR. 20.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 9	0.0	-188293.6	0.0	-158025.3	-1365.3	0.0
5- 4	0.0	189176.3	0.0	152742.9	1371.7	0.0
4-14	0.0	58506.8	0.0	45012.5	424.2	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 9	si	1	Sx	Si	-1214.1	0.0	0.0	1214.1
5- 4	si	5	Tz		956.2	15.2	0.0	956.6
4-14	si	9	Ty		266.4	0.0	0.0	266.4

----- PROGR. 39.

SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 9	0.0	-161394.5	0.0	-158025.3	-1365.3	0.0	
5- 4	0.0	162151.1	0.0	152742.9	1371.7	0.0	
4-14	0.0	50148.7	0.0	45012.5	424.2	0.0	

TENSIONI (Sz= 0.00) :							
Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.
5- 9	si	1	Sx si	-1172.5	0.0	0.0	0.0
5- 4	si	5	Tz	947.0	15.2	0.0	15.2
4-14	si	9	Ty	265.9	0.0	0.0	0.0
----- PROGR.							59.

SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 9	0.0	-134495.4	0.0	-158025.3	-1365.3	0.0	
5- 4	0.0	135125.9	0.0	152742.9	1371.7	0.0	
4-14	0.0	41790.6	0.0	45012.5	424.2	0.0	

TENSIONI (Sz= 0.00) :							
Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.
5- 9	si	1	Sx si	-1130.8	0.0	0.0	0.0
5- 4	si	5	Tz	937.8	15.2	0.0	15.2
4-14	si	9	Ty	265.4	0.0	0.0	0.0
----- PROGR.							79.

SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 9	0.0	-107596.3	0.0	-158025.3	-1365.3	0.0	
5- 4	0.0	108100.8	0.0	152742.9	1371.7	0.0	
4-14	0.0	33432.5	0.0	45012.5	424.2	0.0	

TENSIONI (Sz= 0.00) :							
Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.
5- 9	si	1	Sx si	-1089.2	0.0	0.0	0.0
5- 4	si	5	Tz	928.6	15.2	0.0	15.2
4-14	si	9	Ty	264.9	0.0	0.0	0.0
----- PROGR.							99.

SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 9	0.0	-80697.2	0.0	-158025.3	-1365.3	0.0	
5- 4	0.0	81075.6	0.0	152742.9	1371.7	0.0	
4-14	0.0	25074.4	0.0	45012.5	424.2	0.0	

TENSIONI (Sz= 0.00) :							
Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.
5- 9	si	1	Sx si	-1047.6	0.0	0.0	0.0
5- 4	si	5	Tz	919.4	15.2	0.0	15.2
4-14	si	9	Ty	264.4	0.0	0.0	0.0
----- PROGR.							118.

SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 9	0.0	-53798.2	0.0	-158025.3	-1365.3	0.0	
5- 4	0.0	54050.4	0.0	152742.9	1371.7	0.0	
4-14	0.0	16716.2	0.0	45012.5	424.2	0.0	

TENSIONI (Sz= 0.00) :							
Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.
5- 9	si	1	Sx si	-1005.9	0.0	0.0	0.0
5- 4	si	5	Tz	910.2	15.2	0.0	15.2
4-14	si	9	Ty	263.8	0.0	0.0	0.0
----- PROGR.							138.

SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 9	0.0	-26899.1	0.0	-158025.3	-1365.3	0.0	
5- 4	0.0	27025.2	0.0	152742.9	1371.7	0.0	
4-14	0.0	8358.1	0.0	45012.5	424.2	0.0	

TENSIONI (Sz= 0.00) :							
Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.
5- 9	si	1	Sx si	-1005.9	0.0	0.0	0.0
5- 4	si	5	Tz	910.2	15.2	0.0	15.2
4-14	si	9	Ty	263.8	0.0	0.0	0.0

5- 9 si 1 Sx	Si	-964.3	0.0	0.0	0.0	964.3
5- 4 si 5 Tz		901.0	15.2	0.0	15.2	901.4
4-14 si 9 Ty		263.3	0.0	0.0	0.0	263.3
						PROGR. 158.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 9	0.0	0.0	0.0	-158025.3	-1365.3	0.0
5- 4	0.0	0.0	0.0	152742.9	1371.7	0.0
4-14	0.0	0.0	0.0	45012.5	424.2	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 9 si 2 Sx		-922.7	0.0	0.0	0.0	922.7
5- 4 si 5 Tz		891.8	15.2	0.0	15.2	892.2
4-14 si 9 Ty		262.8	0.0	0.0	0.0	262.8
5- 9 si 6 Si		-922.7	-15.1	0.0	15.1	923.0

VERIFICA STABILITA` :

L0 = 158. |
Z |Lc = 158. |Ro = 14.64 |Im = 10.8 |Ncr= 30644325.2 |alfa(b)=0.3400 |ki=1.0000 |
Y |Lc = 158. |Ro = 7.52 |Im = 21.0 |Ncr= 8085728.8 |alfa(c)=0.4900 |ki=0.9790 |
Caso 5- 9 - Nodo 1 - Asse Y
Ned = -158025.3 |Mzeq = 0.0 |Myeq = -129115.6 |Ss = -1146.3 (0.438)

P_HEB400_S023 (23) stato limite ultimo - ASTA (6526- 7708) 6191
PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-73229.7	0.0	0.0
5-15	0.0	0.0	0.0	72054.2	0.0	0.0
5-14	0.0	0.0	0.0	72618.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 1 Sx	Si	-369.6	0.0	0.0	0.0	369.6
5-15 si 5 Tz		363.6	0.0	0.0	0.0	363.6
5-14 si 9 Ty		366.5	0.0	0.0	0.0	366.5

PROGR. 31.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-73229.7	0.0	0.0
5-15	0.0	0.0	0.0	72054.2	0.0	0.0
5-14	0.0	0.0	0.0	72618.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx	Si	-369.6	0.0	0.0	0.0	369.6
5-15 si 5 Tz		363.6	0.0	0.0	0.0	363.6
5-14 si 9 Ty		366.5	0.0	0.0	0.0	366.5

PROGR. 63.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-73229.7	0.0	0.0
5-15	0.0	0.0	0.0	72054.2	0.0	0.0
5-14	0.0	0.0	0.0	72618.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx	Si	-369.6	0.0	0.0	0.0	369.6
5-15 si 5 Tz		363.6	0.0	0.0	0.0	363.6
5-14 si 9 Ty		366.5	0.0	0.0	0.0	366.5

PROGR. 94.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
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5- 4	0.0	0.0	0.0	-73229.7	0.0	0.0
5-15	0.0	0.0	0.0	72054.2	0.0	0.0
5-14	0.0	0.0	0.0	72618.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx si	-369.6	0.0	0.0	0.0	369.6
5-15 si 5 Tz	363.6	0.0	0.0	0.0	363.6
5-14 si 9 Ty	366.5	0.0	0.0	0.0	366.5

----- PROGR. 125.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-73229.7	0.0	0.0
5-15	0.0	0.0	0.0	72054.2	0.0	0.0
5-14	0.0	0.0	0.0	72618.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx si	-369.6	0.0	0.0	0.0	369.6
5-15 si 5 Tz	363.6	0.0	0.0	0.0	363.6
5-14 si 9 Ty	366.5	0.0	0.0	0.0	366.5

----- PROGR. 156.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-73229.7	0.0	0.0
5-15	0.0	0.0	0.0	72054.2	0.0	0.0
5-14	0.0	0.0	0.0	72618.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx si	-369.6	0.0	0.0	0.0	369.6
5-15 si 5 Tz	363.6	0.0	0.0	0.0	363.6
5-14 si 9 Ty	366.5	0.0	0.0	0.0	366.5

----- PROGR. 188.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-73229.7	0.0	0.0
5-15	0.0	0.0	0.0	72054.2	0.0	0.0
5-14	0.0	0.0	0.0	72618.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx si	-369.6	0.0	0.0	0.0	369.6
5-15 si 5 Tz	363.6	0.0	0.0	0.0	363.6
5-14 si 9 Ty	366.5	0.0	0.0	0.0	366.5

----- PROGR. 219.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-73229.7	0.0	0.0
5-15	0.0	0.0	0.0	72054.2	0.0	0.0
5-14	0.0	0.0	0.0	72618.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx si	-369.6	0.0	0.0	0.0	369.6
5-15 si 5 Tz	363.6	0.0	0.0	0.0	363.6
5-14 si 9 Ty	366.5	0.0	0.0	0.0	366.5

----- PROGR. 250.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-73229.7	0.0	0.0
5-15	0.0	0.0	0.0	72054.2	0.0	0.0
5-14	0.0	0.0	0.0	72618.2	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx si	-369.6	0.0	0.0	0.0	369.6
5-15 si 5 Tz	363.6	0.0	0.0	0.0	363.6

| 5-14|si| 9| Ty | 366.5| 0.0| 0.0| 0.0| 366.5|

VERIFICA STABILITA` :

|L0 = 250.|

Z |Lc = 250.|Ro = 17.08|lm = 14.7|Ncr= 19116609.2|alfa(a)=0.2100|ki=1.0000|

Y |Lc = 250.|Ro = 7.39|lm = 33.9|Ncr= 3579661.8|alfa(b)=0.3400|ki=0.9300|

Caso 5- 4 - Nodo 3 - Asse Y

Ned = -73229.7|Mzeq = 0.0|Myeq = 0.0|Ss = -397.4 (0.152)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7708- 7706) 6192

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-40024.4	0.0	0.0
5- 2	0.0	0.0	0.0	-39641.9	0.0	0.0
5- 3	0.0	0.0	0.0	-39999.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 1 Sx Si	-202.0	0.0	0.0	0.0	0.0	202.0
5- 2 si 6 Tz	-200.1	0.0	0.0	0.0	0.0	200.1
5- 3 si 9 Ty	-201.9	0.0	0.0	0.0	0.0	201.9

----- PROGR. 26.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-40024.4	0.0	0.0
5- 2	0.0	0.0	0.0	-39641.9	0.0	0.0
5- 3	0.0	0.0	0.0	-39999.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx Si	-202.0	0.0	0.0	0.0	0.0	202.0
5- 2 si 6 Tz	-200.1	0.0	0.0	0.0	0.0	200.1
5- 3 si 9 Ty	-201.9	0.0	0.0	0.0	0.0	201.9

----- PROGR. 51.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-40024.4	0.0	0.0
5- 2	0.0	0.0	0.0	-39641.9	0.0	0.0
5- 3	0.0	0.0	0.0	-39999.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx Si	-202.0	0.0	0.0	0.0	0.0	202.0
5- 2 si 6 Tz	-200.1	0.0	0.0	0.0	0.0	200.1
5- 3 si 9 Ty	-201.9	0.0	0.0	0.0	0.0	201.9

----- PROGR. 77.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-40024.4	0.0	0.0
5- 2	0.0	0.0	0.0	-39641.9	0.0	0.0
5- 3	0.0	0.0	0.0	-39999.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 4 Sx Si	-202.0	0.0	0.0	0.0	0.0	202.0
5- 2 si 6 Tz	-200.1	0.0	0.0	0.0	0.0	200.1
5- 3 si 9 Ty	-201.9	0.0	0.0	0.0	0.0	201.9

----- PROGR. 103.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-40024.4	0.0	0.0
5- 2	0.0	0.0	0.0	-39641.9	0.0	0.0
5- 3	0.0	0.0	0.0	-39999.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	4	Sx	si	-202.0	0.0	0.0	202.0
5- 2	si	6	Tz		-200.1	0.0	0.0	200.1
5- 3	si	9	Ty		-201.9	0.0	0.0	201.9

----- PROGR. 128.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-40024.4	0.0	0.0
5- 2	0.0	0.0	0.0	-39641.9	0.0	0.0
5- 3	0.0	0.0	0.0	-39999.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	4	Sx	si	-202.0	0.0	0.0	202.0
5- 2	si	6	Tz		-200.1	0.0	0.0	200.1
5- 3	si	9	Ty		-201.9	0.0	0.0	201.9

----- PROGR. 154.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-40024.4	0.0	0.0
5- 2	0.0	0.0	0.0	-39641.9	0.0	0.0
5- 3	0.0	0.0	0.0	-39999.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	4	Sx	si	-202.0	0.0	0.0	202.0
5- 2	si	6	Tz		-200.1	0.0	0.0	200.1
5- 3	si	9	Ty		-201.9	0.0	0.0	201.9

----- PROGR. 180.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-40024.4	0.0	0.0
5- 2	0.0	0.0	0.0	-39641.9	0.0	0.0
5- 3	0.0	0.0	0.0	-39999.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	4	Sx	si	-202.0	0.0	0.0	202.0
5- 2	si	6	Tz		-200.1	0.0	0.0	200.1
5- 3	si	9	Ty		-201.9	0.0	0.0	201.9

----- PROGR. 205.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-40024.4	0.0	0.0
5- 2	0.0	0.0	0.0	-39641.9	0.0	0.0
5- 3	0.0	0.0	0.0	-39999.8	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	4	Sx	si	-202.0	0.0	0.0	202.0
5- 2	si	6	Tz		-200.1	0.0	0.0	200.1
5- 3	si	9	Ty		-201.9	0.0	0.0	201.9

VERIFICA STABILITA` :

|L0 = 205.

Z |Lc = 205. |Ro = 17.08 |Im = 12.0 |Ncr= 28415516.9 |alfa(a)=0.2100 |ki=1.0000 |

Y |Lc = 205. |Ro = 7.39 |Im = 27.8 |Ncr= 5320919.5 |alfa(b)=0.3400 |ki=0.9567 |

Caso 5- 4 - Nodo 4 - Asse Y

Ned = -40024.4 |Mzeq = 0.0 |Myeq = 0.0 |ss = -211.1 (0.081)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7706- 7704) 6193

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-4164.3	0.0	0.0
5- 3	0.0	0.0	0.0	-3944.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2	si	1	Sx	Si	-21.0	0.0	0.0	21.0
5- 2	si	6	Tz		-21.0	0.0	0.0	21.0
5- 3	si	9	Ty		-19.9	0.0	0.0	19.9

----- PROGR. 26.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-4164.3	0.0	0.0
5- 3	0.0	0.0	0.0	-3944.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2	si	4	Sx	Si	-21.0	0.0	0.0	21.0
5- 2	si	6	Tz		-21.0	0.0	0.0	21.0
5- 3	si	9	Ty		-19.9	0.0	0.0	19.9

----- PROGR. 52.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-4164.3	0.0	0.0
5- 3	0.0	0.0	0.0	-3944.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2	si	4	Sx	Si	-21.0	0.0	0.0	21.0
5- 2	si	6	Tz		-21.0	0.0	0.0	21.0
5- 3	si	9	Ty		-19.9	0.0	0.0	19.9

----- PROGR. 79.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-4164.3	0.0	0.0
5- 3	0.0	0.0	0.0	-3944.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2	si	4	Sx	Si	-21.0	0.0	0.0	21.0
5- 2	si	6	Tz		-21.0	0.0	0.0	21.0
5- 3	si	9	Ty		-19.9	0.0	0.0	19.9

----- PROGR. 105.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-4164.3	0.0	0.0
5- 3	0.0	0.0	0.0	-3944.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2	si	4	Sx	Si	-21.0	0.0	0.0	21.0
5- 2	si	6	Tz		-21.0	0.0	0.0	21.0
5- 3	si	9	Ty		-19.9	0.0	0.0	19.9

----- PROGR. 131.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-4164.3	0.0	0.0
5- 3	0.0	0.0	0.0	-3944.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2	si	4	Sx	Si	-21.0	0.0	0.0	21.0
5- 2	si	6	Tz		-21.0	0.0	0.0	21.0
5- 3	si	9	Ty		-19.9	0.0	0.0	19.9

----- PROGR. 157.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-4164.3	0.0	0.0

5- 3	0.0	0.0	0.0	-3944.6	0.0	0.0
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TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2	si	4	Sx	si	-21.0	0.0	0.0	21.0
5- 2	si	6	Tz		-21.0	0.0	0.0	21.0
5- 3	si	9	Ty		-19.9	0.0	0.0	19.9

----- PROGR. 184.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-4164.3	0.0	0.0
5- 3	0.0	0.0	0.0	-3944.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2	si	4	Sx	si	-21.0	0.0	0.0	21.0
5- 2	si	6	Tz		-21.0	0.0	0.0	21.0
5- 3	si	9	Ty		-19.9	0.0	0.0	19.9

----- PROGR. 210.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 2	0.0	0.0	0.0	-4164.3	0.0	0.0
5- 3	0.0	0.0	0.0	-3944.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 2	si	4	Sx	si	-21.0	0.0	0.0	21.0
5- 2	si	6	Tz		-21.0	0.0	0.0	21.0
5- 3	si	9	Ty		-19.9	0.0	0.0	19.9

VERIFICA STABILITA` :

L0 = 210. |
 Z | Lc = 210. | Ro = 17.08 | lm = 12.3 | Ncr = 27157505.3 | alfa(a) = 0.2100 | ki = 1.0000 |
 Y | Lc = 210. | Ro = 7.39 | lm = 28.4 | Ncr = 5085351.8 | alfa(b) = 0.3400 | ki = 0.9540 |
 Caso 5- 2 - Nodo 4 - Asse Y
 Ned = -4164.3 | Mzeq = 0.0 | Myeq = 0.0 | Ss = -22.0 (0.008)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7704- 7702) 6194
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-27553.8	0.0	0.0
5- 2	0.0	0.0	0.0	27252.9	0.0	0.0
5- 3	0.0	0.0	0.0	27428.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	si	-139.1	0.0	0.0	139.1
5- 2	si	5	Tz		137.5	0.0	0.0	137.5
5- 3	si	9	Ty		138.4	0.0	0.0	138.4

----- PROGR. 26.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-27553.8	0.0	0.0
5- 2	0.0	0.0	0.0	27252.9	0.0	0.0
5- 3	0.0	0.0	0.0	27428.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	3	Sx	si	-139.1	0.0	0.0	139.1
5- 2	si	5	Tz		137.5	0.0	0.0	137.5
5- 3	si	9	Ty		138.4	0.0	0.0	138.4

----- PROGR. 51.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
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5-10	0.0	0.0	0.0	-27553.8	0.0	0.0
5- 2	0.0	0.0	0.0	27252.9	0.0	0.0
5- 3	0.0	0.0	0.0	27428.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	3	Sx	Si	-139.1	0.0	0.0	139.1
5- 2	si	5	Tz		137.5	0.0	0.0	137.5
5- 3	si	9	Ty		138.4	0.0	0.0	138.4

----- PROGR. 77.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-27553.8	0.0	0.0
5- 2	0.0	0.0	0.0	27252.9	0.0	0.0
5- 3	0.0	0.0	0.0	27428.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	3	Sx	Si	-139.1	0.0	0.0	139.1
5- 2	si	5	Tz		137.5	0.0	0.0	137.5
5- 3	si	9	Ty		138.4	0.0	0.0	138.4

----- PROGR. 103.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-27553.8	0.0	0.0
5- 2	0.0	0.0	0.0	27252.9	0.0	0.0
5- 3	0.0	0.0	0.0	27428.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	3	Sx	Si	-139.1	0.0	0.0	139.1
5- 2	si	5	Tz		137.5	0.0	0.0	137.5
5- 3	si	9	Ty		138.4	0.0	0.0	138.4

----- PROGR. 128.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-27553.8	0.0	0.0
5- 2	0.0	0.0	0.0	27252.9	0.0	0.0
5- 3	0.0	0.0	0.0	27428.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	3	Sx	Si	-139.1	0.0	0.0	139.1
5- 2	si	5	Tz		137.5	0.0	0.0	137.5
5- 3	si	9	Ty		138.4	0.0	0.0	138.4

----- PROGR. 154.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-27553.8	0.0	0.0
5- 2	0.0	0.0	0.0	27252.9	0.0	0.0
5- 3	0.0	0.0	0.0	27428.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	3	Sx	Si	-139.1	0.0	0.0	139.1
5- 2	si	5	Tz		137.5	0.0	0.0	137.5
5- 3	si	9	Ty		138.4	0.0	0.0	138.4

----- PROGR. 180.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-27553.8	0.0	0.0
5- 2	0.0	0.0	0.0	27252.9	0.0	0.0
5- 3	0.0	0.0	0.0	27428.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	3	Sx	Si	-139.1	0.0	0.0	139.1
5- 2	si	5	Tz		137.5	0.0	0.0	137.5

5- 3 si 9	Ty	138.4	0.0	0.0	0.0	138.4
-----						PROGR. 205.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-27553.8	0.0	0.0
5- 2	0.0	0.0	0.0	27252.9	0.0	0.0
5- 3	0.0	0.0	0.0	27428.0	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-10 si 3 Sx	si	-139.1	0.0	0.0	0.0	139.1
5- 2 si 5	Tz	137.5	0.0	0.0	0.0	137.5
5- 3 si 9	Ty	138.4	0.0	0.0	0.0	138.4

VERIFICA STABILITA` :

L0 = 205. |
 Z |Lc = 205. |Ro = 17.08 |Im = 12.0 |Ncr= 28415516.9 |alfa(a)=0.2100 |ki=1.0000 |
 Y |Lc = 205. |Ro = 7.39 |Im = 27.8 |Ncr= 5320919.5 |alfa(b)=0.3400 |ki=0.9567 |
 Caso 5-10 - Nodo 3 - Asse Y
 Ned = -27553.8 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -145.3 (0.055)

P_HEB400_S023 (23)	stato limite ultimo - ASTA (7702- 6533)	6195
-----		PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	69004.6	0.0	0.0
5-15	0.0	0.0	0.0	-68423.7	0.0	0.0
5-14	0.0	0.0	0.0	-68795.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 1 Sx	si	348.2	0.0	0.0	0.0	348.2
5-15 si 5	Tz	-345.3	0.0	0.0	0.0	345.3
5-14 si 9	Ty	-347.2	0.0	0.0	0.0	347.2

-----						PROGR. 31.
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SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	69004.6	0.0	0.0
5-15	0.0	0.0	0.0	-68423.7	0.0	0.0
5-14	0.0	0.0	0.0	-68795.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 1 Sx	si	348.2	0.0	0.0	0.0	348.2
5-15 si 5	Tz	-345.3	0.0	0.0	0.0	345.3
5-14 si 9	Ty	-347.2	0.0	0.0	0.0	347.2

-----						PROGR. 63.
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SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	69004.6	0.0	0.0
5-15	0.0	0.0	0.0	-68423.7	0.0	0.0
5-14	0.0	0.0	0.0	-68795.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 3 Sx	si	348.2	0.0	0.0	0.0	348.2
5-15 si 5	Tz	-345.3	0.0	0.0	0.0	345.3
5-14 si 9	Ty	-347.2	0.0	0.0	0.0	347.2

-----						PROGR. 94.
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SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	69004.6	0.0	0.0
5-15	0.0	0.0	0.0	-68423.7	0.0	0.0
5-14	0.0	0.0	0.0	-68795.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 7	si	3	Sx	Si	348.2	0.0	0.0	0.0	348.2
5-15	si	5	Tz		-345.3	0.0	0.0	0.0	345.3
5-14	si	9	Ty		-347.2	0.0	0.0	0.0	347.2
-----								PROGR.	125.

----- PROGR. 125.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	69004.6	0.0	0.0
5-15	0.0	0.0	0.0	-68423.7	0.0	0.0
5-14	0.0	0.0	0.0	-68795.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	3	Sx	Si	348.2	0.0	0.0	348.2
5-15	si	5	Tz		-345.3	0.0	0.0	345.3
5-14	si	9	Ty		-347.2	0.0	0.0	347.2

----- PROGR. 156.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	69004.6	0.0	0.0
5-15	0.0	0.0	0.0	-68423.7	0.0	0.0
5-14	0.0	0.0	0.0	-68795.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	3	Sx	Si	348.2	0.0	0.0	348.2
5-15	si	5	Tz	-345.3	0.0	0.0	0.0	345.3
5-14	si	9	Ty	-347.2	0.0	0.0	0.0	347.2

----- PROGR. 188.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	69004.6	0.0	0.0
5-15	0.0	0.0	0.0	-68423.7	0.0	0.0
5-14	0.0	0.0	0.0	-68795.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	3	Sx	Si	348.2	0.0	0.0	348.2
5-15	si	5	Tz		-345.3	0.0	0.0	345.3
5-14	si	9	Ty		-347.2	0.0	0.0	347.2

----- PROGR. 219.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	69004.6	0.0	0.0
5-15	0.0	0.0	0.0	-68423.7	0.0	0.0
5-14	0.0	0.0	0.0	-68795.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	3	Sx	Si	348.2	0.0	0.0	348.2
5-15	si	5	Tz	-345.3	0.0	0.0	0.0	345.3
5-14	si	9	Ty	-347.2	0.0	0.0	0.0	347.2

----- PROGR. 250.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 7	0.0	0.0	0.0	69004.6	0.0	0.0
5-15	0.0	0.0	0.0	-68423.7	0.0	0.0
5-14	0.0	0.0	0.0	-68795.4	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si	3	Sx Si	348.2	0.0	0.0	0.0	348.2
5-15	si	5	Tz	-345.3	0.0	0.0	0.0	345.3
5-14	si	9	Ty	-347.2	0.0	0.0	0.0	347.2

VERIFICA STABILITA` :

|L0 = 250.|
 Z |Lc = 250.|Ro = 17.08|Im = 14.7|Ncr= 19116609.2|alfa(a)=0.2100|ki=1.0000|
 Y |Lc = 250.|Ro = 7.39|Im = 33.9|Ncr= 3579661.8|alfa(b)=0.3400|ki=0.9300|
 Caso 5-10 - Nodo 3 - Asse Y
 Ned = -68829.9|Mzeq = 0.0|Myeq = 0.0|Ss = -373.5 (0.143)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7574- 7707) 6196
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-153939.7	0.0	0.0
5- 3	0.0	0.0	0.0	153280.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	si	-776.9	0.0	0.0	776.9
5- 3	si	5	Tz		773.5	0.0	0.0	773.5
5- 3	si	9	Ty		773.5	0.0	0.0	773.5

----- PROGR. 25.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-153939.7	0.0	0.0
5- 3	0.0	0.0	0.0	153280.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	si	-776.9	0.0	0.0	776.9
5- 3	si	5	Tz		773.5	0.0	0.0	773.5
5- 3	si	9	Ty		773.5	0.0	0.0	773.5

----- PROGR. 50.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-153939.7	0.0	0.0
5- 3	0.0	0.0	0.0	153280.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	si	-776.9	0.0	0.0	776.9
5- 3	si	5	Tz		773.5	0.0	0.0	773.5
5- 3	si	9	Ty		773.5	0.0	0.0	773.5

----- PROGR. 75.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-153939.7	0.0	0.0
5- 3	0.0	0.0	0.0	153280.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	si	-776.9	0.0	0.0	776.9
5- 3	si	5	Tz		773.5	0.0	0.0	773.5
5- 3	si	9	Ty		773.5	0.0	0.0	773.5

----- PROGR. 100.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-153939.7	0.0	0.0
5- 3	0.0	0.0	0.0	153280.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	si	-776.9	0.0	0.0	776.9
5- 3	si	5	Tz		773.5	0.0	0.0	773.5
5- 3	si	9	Ty		773.5	0.0	0.0	773.5

----- PROGR. 125.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
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5-10	0.0	0.0	0.0	-153939.7	0.0	0.0
5- 3	0.0	0.0	0.0	153280.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	Si	-776.9	0.0	0.0	776.9
5- 3	si	5	Tz		773.5	0.0	0.0	773.5
5- 3	si	9	Ty		773.5	0.0	0.0	773.5

----- PROGR. 150.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-153939.7	0.0	0.0
5- 3	0.0	0.0	0.0	153280.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	Si	-776.9	0.0	0.0	776.9
5- 3	si	5	Tz		773.5	0.0	0.0	773.5
5- 3	si	9	Ty		773.5	0.0	0.0	773.5

----- PROGR. 176.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-153939.7	0.0	0.0
5- 3	0.0	0.0	0.0	153280.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	Si	-776.9	0.0	0.0	776.9
5- 3	si	5	Tz		773.5	0.0	0.0	773.5
5- 3	si	9	Ty		773.5	0.0	0.0	773.5

----- PROGR. 201.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-153939.7	0.0	0.0
5- 3	0.0	0.0	0.0	153280.3	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	Si	-776.9	0.0	0.0	776.9
5- 3	si	5	Tz		773.5	0.0	0.0	773.5
5- 3	si	9	Ty		773.5	0.0	0.0	773.5

VERIFICA STABILITA` :

|L0 = 201.

Z |Lc = 201. |Ro = 17.08 |Im = 11.7 |Ncr= 29763009.1 |alfa(a)=0.2100 |ki=1.0000 |

Y |Lc = 201. |Ro = 7.39 |Im = 27.1 |Ncr= 5573242.9 |alfa(b)=0.3400 |ki=0.9594 |

Caso 5-10 - Nodo 1 - Asse Y

Ned = -153939.7 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -809.7 (0.309)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7707- 7705) 6197

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-45240.6	0.0	0.0
5- 2	0.0	0.0	0.0	43606.8	0.0	0.0
5- 3	0.0	0.0	0.0	43920.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-10	si	1	Sx	Si	-228.3	0.0	0.0	228.3
5- 2	si	6	Tz		220.1	0.0	0.0	220.1
5- 3	si	9	Ty		221.7	0.0	0.0	221.7

----- PROGR. 26.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
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5-10	0.0	0.0	0.0	-45240.6	0.0	0.0
5- 2	0.0	0.0	0.0	43606.8	0.0	0.0
5- 3	0.0	0.0	0.0	43920.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-10 si 1 Sx si	-228.3	0.0	0.0	0.0	228.3
5- 2 si 6 Tz	220.1	0.0	0.0	0.0	220.1
5- 3 si 9 Ty	221.7	0.0	0.0	0.0	221.7

----- PROGR. 52.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-45240.6	0.0	0.0
5- 2	0.0	0.0	0.0	43606.8	0.0	0.0
5- 3	0.0	0.0	0.0	43920.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-10 si 1 Sx si	-228.3	0.0	0.0	0.0	228.3
5- 2 si 6 Tz	220.1	0.0	0.0	0.0	220.1
5- 3 si 9 Ty	221.7	0.0	0.0	0.0	221.7

----- PROGR. 79.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-45240.6	0.0	0.0
5- 2	0.0	0.0	0.0	43606.8	0.0	0.0
5- 3	0.0	0.0	0.0	43920.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-10 si 1 Sx si	-228.3	0.0	0.0	0.0	228.3
5- 2 si 6 Tz	220.1	0.0	0.0	0.0	220.1
5- 3 si 9 Ty	221.7	0.0	0.0	0.0	221.7

----- PROGR. 105.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-45240.6	0.0	0.0
5- 2	0.0	0.0	0.0	43606.8	0.0	0.0
5- 3	0.0	0.0	0.0	43920.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-10 si 1 Sx si	-228.3	0.0	0.0	0.0	228.3
5- 2 si 6 Tz	220.1	0.0	0.0	0.0	220.1
5- 3 si 9 Ty	221.7	0.0	0.0	0.0	221.7

----- PROGR. 131.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-45240.6	0.0	0.0
5- 2	0.0	0.0	0.0	43606.8	0.0	0.0
5- 3	0.0	0.0	0.0	43920.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-10 si 1 Sx si	-228.3	0.0	0.0	0.0	228.3
5- 2 si 6 Tz	220.1	0.0	0.0	0.0	220.1
5- 3 si 9 Ty	221.7	0.0	0.0	0.0	221.7

----- PROGR. 157.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-45240.6	0.0	0.0
5- 2	0.0	0.0	0.0	43606.8	0.0	0.0
5- 3	0.0	0.0	0.0	43920.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-10 si 1 Sx si	-228.3	0.0	0.0	0.0	228.3
5- 2 si 6 Tz	220.1	0.0	0.0	0.0	220.1

5- 3 si 9	Ty	221.7	0.0	0.0	0.0	221.7
-----						PROGR. 184.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-45240.6	0.0	0.0
5- 2	0.0	0.0	0.0	43606.8	0.0	0.0
5- 3	0.0	0.0	0.0	43920.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-10 si 1 Sx	Si	-228.3	0.0	0.0	0.0	228.3
5- 2 si 6 Tz		220.1	0.0	0.0	0.0	220.1
5- 3 si 9 Ty		221.7	0.0	0.0	0.0	221.7
-----						PROGR. 210.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-10	0.0	0.0	0.0	-45240.6	0.0	0.0
5- 2	0.0	0.0	0.0	43606.8	0.0	0.0
5- 3	0.0	0.0	0.0	43920.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-10 si 1 Sx	Si	-228.3	0.0	0.0	0.0	228.3
5- 2 si 6 Tz		220.1	0.0	0.0	0.0	220.1
5- 3 si 9 Ty		221.7	0.0	0.0	0.0	221.7

VERIFICA STABILITA` :

|L0 = 210.|

Z |Lc = 210.|Ro = 17.08|Im = 12.3|Ncr= 27157505.3|alfa(a)=0.2100|ki=1.0000|

Y |Lc = 210.|Ro = 7.39|Im = 28.4|Ncr= 5085351.8|alfa(b)=0.3400|ki=0.9540|

Caso 5-10 - Nodo 1 - Asse Y

Ned = -45240.6|Mzeq = 0.0|Myeq = 0.0|Ss = -239.3 (0.091)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7705- 7703) 6198

PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-68697.4	0.0	0.0
5- 2	0.0	0.0	0.0	-68313.2	0.0	0.0
5- 3	0.0	0.0	0.0	-68692.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 1 Sx	Si	-346.7	0.0	0.0	0.0	346.7
5- 2 si 6 Tz		-344.8	0.0	0.0	0.0	344.8
5- 3 si 9 Ty		-346.7	0.0	0.0	0.0	346.7
-----						PROGR. 26.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-68697.4	0.0	0.0
5- 2	0.0	0.0	0.0	-68313.2	0.0	0.0
5- 3	0.0	0.0	0.0	-68692.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4 si 3 Sx	Si	-346.7	0.0	0.0	0.0	346.7
5- 2 si 6 Tz		-344.8	0.0	0.0	0.0	344.8
5- 3 si 9 Ty		-346.7	0.0	0.0	0.0	346.7
-----						PROGR. 52.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-68697.4	0.0	0.0
5- 2	0.0	0.0	0.0	-68313.2	0.0	0.0
5- 3	0.0	0.0	0.0	-68692.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	3	Sx	si	-346.7	0.0	0.0	346.7
5- 2	si	6	Tz		-344.8	0.0	0.0	344.8
5- 3	si	9	Ty		-346.7	0.0	0.0	346.7

----- PROGR. 79.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-68697.4	0.0	0.0
5- 2	0.0	0.0	0.0	-68313.2	0.0	0.0
5- 3	0.0	0.0	0.0	-68692.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	3	Sx	si	-346.7	0.0	0.0	346.7
5- 2	si	6	Tz		-344.8	0.0	0.0	344.8
5- 3	si	9	Ty		-346.7	0.0	0.0	346.7

----- PROGR. 105.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-68697.4	0.0	0.0
5- 2	0.0	0.0	0.0	-68313.2	0.0	0.0
5- 3	0.0	0.0	0.0	-68692.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	3	Sx	si	-346.7	0.0	0.0	346.7
5- 2	si	6	Tz		-344.8	0.0	0.0	344.8
5- 3	si	9	Ty		-346.7	0.0	0.0	346.7

----- PROGR. 131.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-68697.4	0.0	0.0
5- 2	0.0	0.0	0.0	-68313.2	0.0	0.0
5- 3	0.0	0.0	0.0	-68692.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	3	Sx	si	-346.7	0.0	0.0	346.7
5- 2	si	6	Tz		-344.8	0.0	0.0	344.8
5- 3	si	9	Ty		-346.7	0.0	0.0	346.7

----- PROGR. 158.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-68697.4	0.0	0.0
5- 2	0.0	0.0	0.0	-68313.2	0.0	0.0
5- 3	0.0	0.0	0.0	-68692.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	3	Sx	si	-346.7	0.0	0.0	346.7
5- 2	si	6	Tz		-344.8	0.0	0.0	344.8
5- 3	si	9	Ty		-346.7	0.0	0.0	346.7

----- PROGR. 184.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-68697.4	0.0	0.0
5- 2	0.0	0.0	0.0	-68313.2	0.0	0.0
5- 3	0.0	0.0	0.0	-68692.1	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 4	si	3	Sx	si	-346.7	0.0	0.0	346.7
5- 2	si	6	Tz		-344.8	0.0	0.0	344.8
5- 3	si	9	Ty		-346.7	0.0	0.0	346.7

----- PROGR. 210.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 4	0.0	0.0	0.0	-68697.4	0.0	0.0
5- 2	0.0	0.0	0.0	-68313.2	0.0	0.0
5- 3	0.0	0.0	0.0	-68692.1	0.0	0.0
TENSIONI (Sz= 0.00) :						
Caso	ve No	massimi	Sx	Tz	Ty	Tau tot.
5- 4	si 3	Sx Si	-346.7	0.0	0.0	0.0
5- 2	si 6	Tz	-344.8	0.0	0.0	0.0
5- 3	si 9	Ty	-346.7	0.0	0.0	0.0
						346.7
						344.8
						346.7

VERIFICA STABILITA` :

L0 = 210.
 Z | Lc = 210. | Ro = 17.08 | lm = 12.3 | Ncr = 27157505.3 | alfa(a) = 0.2100 | ki = 1.0000
 Y | Lc = 210. | Ro = 7.39 | lm = 28.4 | Ncr = 5085351.8 | alfa(b) = 0.3400 | ki = 0.9540
 Caso 5- 4 - Nodo 3 - Asse Y
 Ned = -68697.4 | Mzeq = 0.0 | Myeq = 0.0 | Ss = -363.4 (0.139)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7703- 7696) 6199
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-178359.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	-900.1	0.0	0.0	900.1
5- 3	si	5	Tz		-900.1	0.0	0.0	900.1
5- 3	si	9	Ty		-900.1	0.0	0.0	900.1

----- PROGR. 25.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-178359.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	-900.1	0.0	0.0	900.1
5- 3	si	5	Tz		-900.1	0.0	0.0	900.1
5- 3	si	9	Ty		-900.1	0.0	0.0	900.1

----- PROGR. 50.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-178359.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	-900.1	0.0	0.0	900.1
5- 3	si	5	Tz		-900.1	0.0	0.0	900.1
5- 3	si	9	Ty		-900.1	0.0	0.0	900.1

----- PROGR. 75.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-178359.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	1	Sx	Si	-900.1	0.0	0.0	900.1
5- 3	si	5	Tz		-900.1	0.0	0.0	900.1
5- 3	si	9	Ty		-900.1	0.0	0.0	900.1

----- PROGR. 100.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-178359.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
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5- 3 si 1 Sx	Si	-900.1	0.0	0.0	0.0	900.1
5- 3 si 5 Tz		-900.1	0.0	0.0	0.0	900.1
5- 3 si 9 Ty		-900.1	0.0	0.0	0.0	900.1

----- PROGR. 125.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-178359.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3 si 3 Sx	Si	-900.1	0.0	0.0	0.0	900.1
5- 3 si 5 Tz		-900.1	0.0	0.0	0.0	900.1
5- 3 si 9 Ty		-900.1	0.0	0.0	0.0	900.1

----- PROGR. 150.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-178359.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3 si 3 Sx	Si	-900.1	0.0	0.0	0.0	900.1
5- 3 si 5 Tz		-900.1	0.0	0.0	0.0	900.1
5- 3 si 9 Ty		-900.1	0.0	0.0	0.0	900.1

----- PROGR. 176.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-178359.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3 si 3 Sx	Si	-900.1	0.0	0.0	0.0	900.1
5- 3 si 5 Tz		-900.1	0.0	0.0	0.0	900.1
5- 3 si 9 Ty		-900.1	0.0	0.0	0.0	900.1

----- PROGR. 201.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-178359.6	0.0	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3 si 3 Sx	Si	-900.1	0.0	0.0	0.0	900.1
5- 3 si 5 Tz		-900.1	0.0	0.0	0.0	900.1
5- 3 si 9 Ty		-900.1	0.0	0.0	0.0	900.1

VERIFICA STABILITA` :

|L0 = 201. |
 Z |Lc = 201. |Ro = 17.08 |Im = 11.7 |Ncr= 29763008.8 |alfa(a)=0.2100 |ki=1.0000 |
 Y |Lc = 201. |Ro = 7.39 |Im = 27.1 |Ncr= 5573242.8 |alfa(b)=0.3400 |ki=0.9594 |
 Caso 5- 3 - Nodo 3 - Asse Y
 Ned = -178359.6 |Mzeq = 0.0 |Myeq = 0.0 |Ss = -938.2 (0.358)

P_HEB340_S032 (32) stato limite ultimo - ASTA (6517- 7700) 6200
 ----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-125824.7	433.5	0.0
5-13	0.0	0.0	0.0	121154.0	-443.0	0.0
4-13	0.0	0.0	0.0	-40158.1	129.9	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3 si 1 Sx		-734.6	0.0	0.0	0.0	734.6
5-13 si 5 Tz		707.4	-4.9	0.0	4.9	707.4
4-13 si 9 Ty		-234.5	0.0	0.0	0.0	234.5
5- 3 si 5 Si		-734.6	4.8	0.0	4.8	734.7

----- PROGR.							22.
SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 3	0.0	-9393.5	0.0	-125824.7	433.5	0.0	
5-13	0.0	9600.2	0.0	121154.0	-443.0	0.0	
4-13	0.0	-2816.0	0.0	-40158.1	129.9	0.0	
TENSIONI (Sz= 0.00) :							
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3	si 1 Sx Si	-749.2	0.0	0.0	0.0	749.2	
5-13	si 5 Tz	710.6	-4.9	0.0	4.9	710.7	
4-13	si 9 Ty	-234.6	0.0	0.0	0.0	234.6	
----- PROGR.							43.
SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 3	0.0	-18787.0	0.0	-125824.7	433.5	0.0	
5-13	0.0	19200.5	0.0	121154.0	-443.0	0.0	
4-13	0.0	-5632.1	0.0	-40158.1	129.9	0.0	
TENSIONI (Sz= 0.00) :							
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3	si 1 Sx Si	-763.7	0.0	0.0	0.0	763.7	
5-13	si 5 Tz	713.9	-4.9	0.0	4.9	714.0	
4-13	si 9 Ty	-234.8	0.0	0.0	0.0	234.8	
----- PROGR.							65.
SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 3	0.0	-28180.5	0.0	-125824.7	433.5	0.0	
5-13	0.0	28800.7	0.0	121154.0	-443.0	0.0	
4-13	0.0	-8448.1	0.0	-40158.1	129.9	0.0	
TENSIONI (Sz= 0.00) :							
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3	si 1 Sx Si	-778.3	0.0	0.0	0.0	778.3	
5-13	si 5 Tz	717.2	-4.9	0.0	4.9	717.2	
4-13	si 9 Ty	-235.0	0.0	0.0	0.0	235.0	
----- PROGR.							87.
SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 3	0.0	-37574.0	0.0	-125824.7	433.5	0.0	
5-13	0.0	38401.0	0.0	121154.0	-443.0	0.0	
4-13	0.0	-11264.2	0.0	-40158.1	129.9	0.0	
TENSIONI (Sz= 0.00) :							
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3	si 1 Sx Si	-792.8	0.0	0.0	0.0	792.8	
5-13	si 5 Tz	720.5	-4.9	0.0	4.9	720.5	
4-13	si 9 Ty	-235.2	0.0	0.0	0.0	235.2	
----- PROGR.							108.
SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 3	0.0	-46967.5	0.0	-125824.7	433.5	0.0	
5-13	0.0	48001.2	0.0	121154.0	-443.0	0.0	
4-13	0.0	-14080.2	0.0	-40158.1	129.9	0.0	
TENSIONI (Sz= 0.00) :							
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si	
5- 3	si 1 Sx Si	-807.3	0.0	0.0	0.0	807.3	
5-13	si 5 Tz	723.7	-4.9	0.0	4.9	723.8	
4-13	si 9 Ty	-235.3	0.0	0.0	0.0	235.3	
----- PROGR.							130.
SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 3	0.0	-56361.0	0.0	-125824.7	433.5	0.0	
5-13	0.0	57601.5	0.0	121154.0	-443.0	0.0	
4-13	0.0	-16896.3	0.0	-40158.1	129.9	0.0	
TENSIONI (Sz= 0.00) :							

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 1	Sx	Si	-821.9	0.0	0.0	0.0	821.9
5-13	si 5	Tz		727.0	-4.9	0.0	4.9	727.0
4-13	si 9	Ty		-235.5	0.0	0.0	0.0	235.5
----- PROGR.								152.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	-65754.5	0.0	-125824.7	433.5	0.0
5-13	0.0	67201.7	0.0	121154.0	-443.0	0.0
4-13	0.0	-19712.3	0.0	-40158.1	129.9	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 1	Sx	Si	-836.4	0.0	0.0	0.0	836.4
5-13	si 5	Tz		730.3	-4.9	0.0	4.9	730.3
4-13	si 9	Ty		-235.7	0.0	0.0	0.0	235.7
----- PROGR.								173.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	-75148.0	0.0	-125824.7	433.5	0.0
5-13	0.0	76802.0	0.0	121154.0	-443.0	0.0
4-13	0.0	-22528.3	0.0	-40158.1	129.9	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 1	Sx	Si	-851.0	0.0	0.0	0.0	851.0
5-13	si 5	Tz		733.5	-4.9	0.0	4.9	733.6
4-13	si 9	Ty		-235.9	0.0	0.0	0.0	235.9

VERIFICA STABILITA` :

|L0 = 173. |
Z |Lc = 173. |Ro = 14.64 |Im = 11.8 |Ncr= 25325888.6 |alfa(b)=0.3400 |ki=1.0000 |
Y |Lc = 173. |Ro = 7.52 |Im = 23.0 |Ncr= 6682420.5 |alfa(c)=0.4900 |ki=0.9667 |
Caso 5- 3 - Nodo 1 - Asse Y
Ned = -125824.7 |Mzeq = 0.0 |Myeq = -45088.8 |ss = -831.1 (0.317)

P_HEB340_S032 (32) stato limite ultimo - ASTA (7700- 7698) 6201
----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	-75148.0	0.0	-176118.7	1064.0	0.0
5- 7	0.0	-74967.0	0.0	-176030.7	1064.8	0.0
4-13	0.0	-22528.3	0.0	-56190.2	371.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 1	Sx	Si	-1144.6	0.0	0.0	0.0	1144.6
5- 7	si 5	Tz		-1053.3	11.8	0.0	11.8	1053.5
4-13	si 9	Ty		-329.5	0.0	0.0	0.0	329.5
----- PROGR.								20.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	-96096.3	0.0	-176118.7	1064.0	0.0
5- 7	0.0	-95930.0	0.0	-176030.7	1064.8	0.0
4-13	0.0	-29843.4	0.0	-56190.2	371.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 1	Sx	Si	-1177.0	0.0	0.0	0.0	1177.0
5- 7	si 5	Tz		-1060.4	11.8	0.0	11.8	1060.6
4-13	si 9	Ty		-329.9	0.0	0.0	0.0	329.9
----- PROGR.								39.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
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5- 3	0.0	-117049.8	0.0	-176118.7	1064.0	0.0
5- 7	0.0	-116898.2	0.0	-176030.7	1064.8	0.0
4-13	0.0	-37160.5	0.0	-56190.2	371.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 1 Sx Si	-1209.5	0.0	0.0	0.0	1209.5
5- 7	si 5 Tz	-1067.6	11.8	0.0	11.8	1067.8
4-13	si 9 Ty	-330.4	0.0	0.0	0.0	330.4

----- PROGR. 59.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	-138006.2	0.0	-176118.7	1064.0	0.0
5- 7	0.0	-137869.3	0.0	-176030.7	1064.8	0.0
4-13	0.0	-44478.7	0.0	-56190.2	371.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 1 Sx Si	-1241.9	0.0	0.0	0.0	1241.9
5- 7	si 5 Tz	-1074.7	11.8	0.0	11.8	1074.9
4-13	si 9 Ty	-330.8	0.0	0.0	0.0	330.8

----- PROGR. 79.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	-158964.4	0.0	-176118.7	1064.0	0.0
5- 7	0.0	-158842.2	0.0	-176030.7	1064.8	0.0
4-13	0.0	-51797.7	0.0	-56190.2	371.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 1 Sx Si	-1274.3	0.0	0.0	0.0	1274.3
5- 7	si 5 Tz	-1081.9	11.8	0.0	11.8	1082.1
4-13	si 9 Ty	-331.3	0.0	0.0	0.0	331.3

----- PROGR. 99.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	-179923.9	0.0	-176118.7	1064.0	0.0
5- 7	0.0	-179816.3	0.0	-176030.7	1064.8	0.0
4-13	0.0	-59117.2	0.0	-56190.2	371.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 1 Sx Si	-1306.8	0.0	0.0	0.0	1306.8
5- 7	si 5 Tz	-1089.0	11.8	0.0	11.8	1089.2
4-13	si 9 Ty	-331.7	0.0	0.0	0.0	331.7

----- PROGR. 118.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	-200884.1	0.0	-176118.7	1064.0	0.0
5- 7	0.0	-200791.2	0.0	-176030.7	1064.8	0.0
4-13	0.0	-66436.9	0.0	-56190.2	371.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 1 Sx Si	-1339.2	0.0	0.0	0.0	1339.2
5- 7	si 5 Tz	-1096.2	11.8	0.0	11.8	1096.3
4-13	si 9 Ty	-332.2	0.0	0.0	0.0	332.2

----- PROGR. 138.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	-221845.0	0.0	-176118.7	1064.0	0.0
5- 7	0.0	-221766.8	0.0	-176030.7	1064.8	0.0
4-13	0.0	-73757.0	0.0	-56190.2	371.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 1 Sx Si	-1371.7	0.0	0.0	0.0	1371.7
5- 7	si 5 Tz	-1103.3	11.8	0.0	11.8	1103.5

4-13 si 9	Ty		-332.6	0.0	0.0	0.0	332.6
							----- PROGR. 158.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 3	0.0	-242806.3	0.0	-176118.7	1064.0	0.0						
5- 7	0.0	-242742.8	0.0	-176030.7	1064.8	0.0						
4-13	0.0	-81077.2	0.0	-56190.2	371.6	0.0						

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5- 3 si 1	Sx	si	-1404.1	0.0	0.0	0.0	1404.1					
5- 7 si 5	Tz	-1110.4	11.8	0.0	11.8	1110.6						
4-13 si 9	Ty	-333.1	0.0	0.0	0.0	333.1						

VERIFICA STABILITA` :

|L0 = 158. |
Z |Lc = 158. |Ro = 14.64 |Im = 10.8 |Ncr= 30644325.2 |alfa(b)=0.3400 |ki=1.0000 |
Y |Lc = 158. |Ro = 7.52 |Im = 21.0 |Ncr= 8085728.8 |alfa(c)=0.4900 |ki=0.9790 |
Caso 5- 3 - Nodo 1 - Asse Y
Ned = -176118.7 |Mzeq = 0.0 |Myeq = -206658.6 |Ss = -1377.4 (0.526)

P_HEB340_S032 (32)	stato limite ultimo - ASTA (7698- 7696)	6202
		----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 3	0.0	-242806.3	0.0	-181290.3	-1540.5	0.0						
4- 4	0.0	61637.1	0.0	51615.4	391.1	0.0						

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5- 3 si 1	Sx	si	-1434.3	0.0	0.0	0.0	1434.3					
5- 3 si 5	Tz	-1141.2	-17.0	0.0	17.0	1141.6						
4- 4 si 9	Ty	305.2	0.0	0.0	0.0	305.2						

----- PROGR. 20.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 3	0.0	-212455.5	0.0	-181290.3	-1540.5	0.0						
4- 4	0.0	53932.5	0.0	51615.4	391.1	0.0						

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5- 3 si 1	Sx	si	-1387.3	0.0	0.0	0.0	1387.3					
5- 3 si 5	Tz	-1130.8	-17.0	0.0	17.0	1131.2						
4- 4 si 9	Ty	304.7	0.0	0.0	0.0	304.7						

----- PROGR. 39.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 3	0.0	-182104.7	0.0	-181290.3	-1540.5	0.0						
4- 4	0.0	46227.9	0.0	51615.4	391.1	0.0						

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5- 3 si 1	Sx	si	-1340.4	0.0	0.0	0.0	1340.4					
5- 3 si 5	Tz	-1120.5	-17.0	0.0	17.0	1120.9						
4- 4 si 9	Ty	304.2	0.0	0.0	0.0	304.2						

----- PROGR. 59.

SOLLECITAZIONI :

Caso	MZ		MY		MT		N		TZ		TY	
5- 3	0.0	-151753.9	0.0	-181290.3	-1540.5	0.0						
4- 4	0.0	38523.2	0.0	51615.4	391.1	0.0						

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi		Sx		Tz		Ty		Tau tot.		Si	
5- 3 si 1	Sx	si	-1293.4	0.0	0.0	0.0	1293.4					
5- 3 si 5	Tz	-1110.2	-17.0	0.0	17.0	1110.6						

4- 4 si 9	Ty	303.7	0.0	0.0	0.0	303.7
-----						PROGR. 79.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	-121403.1	0.0	-181290.3	-1540.5	0.0
4- 4	0.0	30818.6	0.0	51615.4	391.1	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx	Si	-1246.4	0.0	0.0	0.0	1246.4
5- 3 si 5 Tz		-1099.8	-17.0	0.0	17.0	1100.2
4- 4 si 9 Ty		303.3	0.0	0.0	0.0	303.3
-----						PROGR. 99.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	-91052.3	0.0	-181290.3	-1540.5	0.0
4- 4	0.0	23113.9	0.0	51615.4	391.1	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx	Si	-1199.4	0.0	0.0	0.0	1199.4
5- 3 si 5 Tz		-1089.5	-17.0	0.0	17.0	1089.9
4- 4 si 9 Ty		302.8	0.0	0.0	0.0	302.8
-----						PROGR. 118.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	-60701.6	0.0	-181290.3	-1540.5	0.0
4- 4	0.0	15409.3	0.0	51615.4	391.1	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx	Si	-1152.4	0.0	0.0	0.0	1152.4
5- 3 si 5 Tz		-1079.2	-17.0	0.0	17.0	1079.6
4- 4 si 9 Ty		302.3	0.0	0.0	0.0	302.3
-----						PROGR. 138.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	-30350.8	0.0	-181290.3	-1540.5	0.0
4- 4	0.0	7704.6	0.0	51615.4	391.1	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx	Si	-1105.5	0.0	0.0	0.0	1105.5
5- 3 si 5 Tz		-1068.8	-17.0	0.0	17.0	1069.2
4- 4 si 9 Ty		301.8	0.0	0.0	0.0	301.8
-----						PROGR. 158.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-181290.3	-1540.5	0.0
4- 4	0.0	0.0	0.0	51615.4	391.1	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 1 Sx		-1058.5	0.0	0.0	0.0	1058.5
5- 3 si 5 Tz	Si	-1058.5	-17.0	0.0	17.0	1058.9
4- 4 si 9 Ty		301.4	0.0	0.0	0.0	301.4

VERIFICA STABILITA` :

|L0 = 158.|

Z |Lc = 158.|Ro = 14.64|Im = 10.8|Ncr= 30644325.2|alfa(b)=0.3400|ki=1.0000|

Y |Lc = 158.|Ro = 7.52|Im = 21.0|Ncr= 8085728.8|alfa(c)=0.4900|ki=0.9790|

Caso 5- 3 - Nodo 1 - Asse Y

Ned = -181290.3|Mzeq = 0.0|Myeq = -145683.8|Ss = -1311.9 (0.501)

P_HEB340_S032 (32) stato limite ultimo - ASTA (6516- 7686) 6203

----- PROGR. 0.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	0.0	0.0	-127045.0	319.8	0.0
5- 3	0.0	0.0	0.0	117131.1	-543.5	0.0
4-15	0.0	0.0	0.0	-40694.3	13.7	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si 1 Sx	-741.8	0.0	0.0	0.0	741.8
5- 3	si 6 Tz	683.9	-6.0	0.0	6.0	684.0
4-15	si 9 Ty	-237.6	0.0	0.0	0.0	237.6
5-14	si 5 Si	-741.8	3.5	0.0	3.5	741.8

----- PROGR. 22.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	-6930.9	0.0	-127045.0	319.8	0.0
5- 3	0.0	11779.2	0.0	117131.1	-543.5	0.0
4-15	0.0	-297.0	0.0	-40694.3	13.7	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si 1 Sx Si	-752.5	0.0	0.0	0.0	752.5
5- 3	si 6 Tz	679.9	-6.0	0.0	6.0	680.0
4-15	si 9 Ty	-237.6	0.0	0.0	0.0	237.6

----- PROGR. 43.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	-13861.8	0.0	-127045.0	319.8	0.0
5- 3	0.0	23558.3	0.0	117131.1	-543.5	0.0
4-15	0.0	-594.1	0.0	-40694.3	13.7	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si 4 Sx Si	-763.2	0.0	0.0	0.0	763.2
5- 3	si 6 Tz	675.9	-6.0	0.0	6.0	675.9
4-15	si 9 Ty	-237.6	0.0	0.0	0.0	237.6

----- PROGR. 65.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	-20792.7	0.0	-127045.0	319.8	0.0
5- 3	0.0	35337.5	0.0	117131.1	-543.5	0.0
4-15	0.0	-891.1	0.0	-40694.3	13.7	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si 4 Sx Si	-774.0	0.0	0.0	0.0	774.0
5- 3	si 6 Tz	671.9	-6.0	0.0	6.0	671.9
4-15	si 9 Ty	-237.7	0.0	0.0	0.0	237.7

----- PROGR. 87.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	-27723.6	0.0	-127045.0	319.8	0.0
5- 3	0.0	47116.6	0.0	117131.1	-543.5	0.0
4-15	0.0	-1188.1	0.0	-40694.3	13.7	0.0

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si 4 Sx Si	-784.7	0.0	0.0	0.0	784.7
5- 3	si 6 Tz	667.8	-6.0	0.0	6.0	667.9
4-15	si 9 Ty	-237.7	0.0	0.0	0.0	237.7

----- PROGR. 108.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	-34654.5	0.0	-127045.0	319.8	0.0
5- 3	0.0	58895.8	0.0	117131.1	-543.5	0.0
4-15	0.0	-1485.2	0.0	-40694.3	13.7	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	4	Sx	Si	-795.4	0.0	0.0	795.4
5- 3	si	6	Tz		663.8	-6.0	0.0	663.9
4-15	si	9	Ty		-237.7	0.0	0.0	237.7
-----								PROGR. 130.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	-41585.4	0.0	-127045.0	319.8	0.0
5- 3	0.0	70674.9	0.0	117131.1	-543.5	0.0
4-15	0.0	-1782.2	0.0	-40694.3	13.7	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	4	Sx	Si	-806.1	0.0	0.0	806.1
5- 3	si	6	Tz		659.8	-6.0	0.0	659.9
4-15	si	9	Ty		-237.7	0.0	0.0	237.7
-----								PROGR. 152.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	-48516.3	0.0	-127045.0	319.8	0.0
5- 3	0.0	82454.1	0.0	117131.1	-543.5	0.0
4-15	0.0	-2079.3	0.0	-40694.3	13.7	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	4	Sx	Si	-816.9	0.0	0.0	816.9
5- 3	si	6	Tz		655.8	-6.0	0.0	655.9
4-15	si	9	Ty		-237.7	0.0	0.0	237.7
-----								PROGR. 173.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	94233.2	0.0	117131.1	-543.5	0.0
4-15	0.0	-2376.3	0.0	-40694.3	13.7	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	4	Sx	Si	829.7	0.0	0.0	829.7
5- 3	si	6	Tz		651.8	-6.0	0.0	651.9
4-15	si	9	Ty		-237.7	0.0	0.0	237.7

VERIFICA STABILITA` :

|L0 = 173.|

Z |Lc = 173.|Ro = 14.64|Im = 11.8|Ncr= 25325888.5|alfa(b)=0.3400|ki=1.0000|

Y |Lc = 173.|Ro = 7.52|Im = 23.0|Ncr= 6682420.5|alfa(c)=0.4900|ki=0.9667|

Caso 5-14 - Nodo 4 - Asse Y

Ned = -127045.0|Mzeq = 0.0|Myeq = -33268.3|Ss = -819.8 (0.313)

P_HEB340_S032 (32) stato limite ultimo - ASTA (7686- 7684) 6204

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	94233.2	0.0	164298.6	-878.2	0.0
5-13	0.0	-55442.1	0.0	-170196.5	1124.3	0.0
5- 4	0.0	94228.1	0.0	164276.5	-878.2	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si	4	Sx	Si	1105.1	0.0	0.0	1105.1
5-13	si	5	Tz		-1012.6	12.4	0.0	1012.8
5- 4	si	9	Ty		965.0	0.0	0.0	965.0
-----								PROGR. 20.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
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5- 3	0.0	111384.2	0.0	164298.6	-878.2	0.0
5-13	0.0	-77441.6	0.0	-170196.5	1124.3	0.0
5- 4	0.0	111379.4	0.0	164276.5	-878.2	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 4 Sx si	1131.7	0.0	0.0	0.0	1131.7
5-13 si 5 Tz	-1020.1	12.4	0.0	12.4	1020.3
5- 4 si 9 Ty	966.0	0.0	0.0	0.0	966.0

----- PROGR. 39.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	128585.3	0.0	164298.6	-878.2	0.0
5-13	0.0	-99491.4	0.0	-170196.5	1124.3	0.0
5- 4	0.0	128581.0	0.0	164276.5	-878.2	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 4 Sx si	1158.3	0.0	0.0	0.0	1158.3
5-13 si 5 Tz	-1027.6	12.4	0.0	12.4	1027.8
5- 4 si 9 Ty	967.1	0.0	0.0	0.0	967.1

----- PROGR. 59.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	145815.4	0.0	164298.6	-878.2	0.0
5-13	0.0	-121570.1	0.0	-170196.5	1124.3	0.0
5- 4	0.0	145811.5	0.0	164276.5	-878.2	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 4 Sx si	1185.0	0.0	0.0	0.0	1185.0
5-13 si 5 Tz	-1035.1	12.4	0.0	12.4	1035.3
5- 4 si 9 Ty	968.2	0.0	0.0	0.0	968.2

----- PROGR. 79.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	-143670.2	0.0	-170218.6	1124.3	0.0
5-13	0.0	-143666.7	0.0	-170196.5	1124.3	0.0
5- 4	0.0	163059.8	0.0	164276.5	-878.2	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14 si 4 Sx si	-1216.2	0.0	0.0	0.0	1216.2
5-13 si 5 Tz	-1042.6	12.4	0.0	12.4	1042.9
5- 4 si 9 Ty	969.2	0.0	0.0	0.0	969.2

----- PROGR. 99.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	-165778.2	0.0	-170218.6	1124.3	0.0
5-13	0.0	-165775.0	0.0	-170196.5	1124.3	0.0
5- 4	0.0	180319.9	0.0	164276.5	-878.2	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14 si 4 Sx si	-1250.4	0.0	0.0	0.0	1250.4
5-13 si 5 Tz	-1050.2	12.4	0.0	12.4	1050.4
5- 4 si 9 Ty	970.3	0.0	0.0	0.0	970.3

----- PROGR. 118.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	-187894.2	0.0	-170218.6	1124.3	0.0
5-13	0.0	-187891.4	0.0	-170196.5	1124.3	0.0
5- 4	0.0	197588.1	0.0	164276.5	-878.2	0.0

TENSIONI (Sz= 0.00) :

Caso Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14 si 4 Sx si	-1284.7	0.0	0.0	0.0	1284.7
5-13 si 5 Tz	-1057.7	12.4	0.0	12.4	1057.9

5- 4 si 9	Ty	971.4	0.0	0.0	0.0	971.4
-----						PROGR. 138.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	-210015.9	0.0	-170218.6	1124.3	0.0
5-13	0.0	-210013.5	0.0	-170196.5	1124.3	0.0
5- 4	0.0	214862.0	0.0	164276.5	-878.2	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14 si 4 Sx	Si	-1318.9	0.0	0.0	0.0	1318.9
5-13 si 5	Tz	-1065.2	12.4	0.0	12.4	1065.4
5- 4 si 9	Ty	972.5	0.0	0.0	0.0	972.5
-----						PROGR. 158.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	-232142.0	0.0	-170218.6	1124.3	0.0
5-13	0.0	-232140.0	0.0	-170196.5	1124.3	0.0
5- 4	0.0	232140.2	0.0	164276.5	-878.2	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14 si 4 Sx	Si	-1353.2	0.0	0.0	0.0	1353.2
5-13 si 5	Tz	-1072.8	12.4	0.0	12.4	1073.0
5- 4 si 9	Ty	973.5	0.0	0.0	0.0	973.5

VERIFICA STABILITA` :

L0 = 158.|

Z |Lc = 158.|Ro = 14.64|Im = 10.8|Ncr= 30644325.2|alfa(b)=0.3400|ki=1.0000|

Y |Lc = 158.|Ro = 7.52|Im = 21.0|Ncr= 8085728.8|alfa(c)=0.4900|ki=0.9790|

Caso 5-14 - Nodo 4 - Asse Y

Ned = -170218.6|Mzeq = 0.0|Myeq = -186819.1|Ss = -1310.6 (0.500)

P_HEB340_S032 (32)	stato limite ultimo - ASTA (7684- 7574)	6205
-----		PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	-232142.0	0.0	-172976.9	-1472.8	0.0
5- 3	0.0	232142.2	0.0	168815.3	1472.8	0.0
4-14	0.0	71186.0	0.0	50182.0	451.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14 si 1 Sx	Si	-1369.3	0.0	0.0	0.0	1369.3
5- 3 si 5	Tz	1064.7	16.3	0.0	16.3	1065.1
4-14 si 9	Ty	297.4	0.0	0.0	0.0	297.4
-----						PROGR. 20.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	-203124.2	0.0	-172976.9	-1472.8	0.0
5- 3	0.0	203124.5	0.0	168815.3	1472.8	0.0
4-14	0.0	62287.7	0.0	50182.0	451.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5-14 si 1 Sx	Si	-1324.3	0.0	0.0	0.0	1324.3
5- 3 si 5	Tz	1054.8	16.3	0.0	16.3	1055.2
4-14 si 9	Ty	296.9	0.0	0.0	0.0	296.9
-----						PROGR. 39.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	-174106.5	0.0	-172976.9	-1472.8	0.0
5- 3	0.0	174106.7	0.0	168815.3	1472.8	0.0
4-14	0.0	53389.5	0.0	50182.0	451.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx Si	-1279.4	0.0	0.0	0.0	1279.4
5- 3	si	5	Tz	1044.9	16.3	0.0	16.3	1045.3
4-14	si	9	Ty	296.3	0.0	0.0	0.0	296.3
----- PROGR.								59.

----- PROGR. 59.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	-145088.7	0.0	-172976.9	-1472.8	0.0
5- 3	0.0	145088.9	0.0	168815.3	1472.8	0.0
4-14	0.0	44491.2	0.0	50182.0	451.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx Si	-1234.5	0.0	0.0	0.0	1234.5
5- 3	si	5	Tz	1035.1	16.3	0.0	16.3	1035.4
4-14	si	9	Ty	295.7	0.0	0.0	0.0	295.7

----- PROGR. 79.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	-116071.0	0.0	-172976.9	-1472.8	0.0
5- 3	0.0	116071.1	0.0	168815.3	1472.8	0.0
4-14	0.0	35593.0	0.0	50182.0	451.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx Si	-1189.6	0.0	0.0	0.0	1189.6
5- 3	si	5	Tz	1025.2	16.3	0.0	16.3	1025.6
4-14	si	9	Ty	295.2	0.0	0.0	0.0	295.2

----- PROGR. 99.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	-87053.2	0.0	-172976.9	-1472.8	0.0
5- 3	0.0	87053.3	0.0	168815.3	1472.8	0.0
4-14	0.0	26694.7	0.0	50182.0	451.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx Si	-1144.7	0.0	0.0	0.0	1144.7
5- 3	si	5	Tz	1015.3	16.3	0.0	16.3	1015.7
4-14	si	9	Ty	294.6	0.0	0.0	0.0	294.6

----- PROGR. 118.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	-58035.5	0.0	-172976.9	-1472.8	0.0
5- 3	0.0	58035.6	0.0	168815.3	1472.8	0.0
4-14	0.0	17796.5	0.0	50182.0	451.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx Si	-1099.8	0.0	0.0	0.0	1099.8
5- 3	si	5	Tz	1005.4	16.3	0.0	16.3	1005.8
4-14	si	9	Ty	294.1	0.0	0.0	0.0	294.1

----- PROGR. 138.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5-14	0.0	-29017.7	0.0	-172976.9	-1472.8	0.0
5- 3	0.0	29017.8	0.0	168815.3	1472.8	0.0
4-14	0.0	8898.2	0.0	50182.0	451.6	0.0

TENSIONI (Sz= 0.00) :

Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx Si	-1054.9	0.0	0.0	0.0	1054.9
5- 3	si	5	Tz	995.5	16.3	0.0	16.3	995.9
4-14	si	9	Ty	293.5	0.0	0.0	0.0	293.5

----- PROGR. 158.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY		
5-14	0.0	0.0	0.0	-172976.9	-1472.8	0.0		
5- 3	0.0	0.0	0.0	168815.3	1472.8	0.0		
4-14	0.0	0.0	0.0	50182.0	451.6	0.0		
TENSIONI (Sz= 0.00) :								
Caso	Ve	No	massimi	Sx	Tz	Ty	Tau tot.	Si
5-14	si	1	Sx	-1010.0	0.0	0.0	0.0	1010.0
5- 3	si	5	Tz	985.7	16.3	0.0	16.3	986.1
4-14	si	9	Ty	293.0	0.0	0.0	0.0	293.0
5-14	si	5	Si	-1010.0	-16.3	0.0	16.3	1010.3

VERIFICA STABILITA` :

L0 = 158. |
 Z |Lc = 158. |Ro = 14.64 |Im = 10.8 |Ncr= 30644325.2 |alfa(b)=0.3400 |ki=1.0000 |
 Y |Lc = 158. |Ro = 7.52 |Im = 21.0 |Ncr= 8085728.8 |alfa(c)=0.4900 |ki=0.9790 |
 Caso 5-14 - Nodo 1 - Asse Y
 Ned = -172976.9 |Mzeq = 0.0 |Myeq = -139285.2 |Ss = -1252.0 (0.478)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7697- 7795) 6229
 ----- PROGR. 0.

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	47466.3	0.0	-135.7
5-10	0.0	0.0	0.0	-36975.0	0.0	329.7
TENSIONI (Sz= 0.00) :						
Caso	Ve No	massimi	Sx	Tz	Ty	Tau tot.
5- 3	si 1	Sx	239.5	0.0	0.0	0.0
5-10	si 5	Tz	-186.6	1.2	0.0	1.2
5-10	si 9	Ty	-186.6	0.0	-6.8	6.8
5- 3	si 9	Si	239.5	0.0	2.8	2.8
----- PROGR.						14.

SOLLECITAZIONI :							
Caso	MZ	MY	MT	N	TZ	TY	
5- 7	-1984.3	0.0	0.0	47466.0	0.0	-137.4	
5-10	4760.7	0.0	0.0	-36975.0	0.0	329.7	
TENSIONI (Sz= 0.00) :							
Caso	Ve No	massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si 1	Sx	240.2	0.0	0.0	0.0	240.2
5-10	si 5	Tz	-188.2	1.2	0.0	1.2	188.3
5-10	si 9	Ty	-186.6	0.0	-6.8	6.8	187.0
5- 7	si 5	Si	240.2	-0.5	0.0	0.5	240.2
-----							PROGR. 29.

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5- 7	-3968.7	0.0	0.0	47466.0	0.0	-137.4
5-10	9521.3	0.0	0.0	-36975.0	0.0	329.7
TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7	si 1 Sx	240.9	0.0	0.0	0.0	240.9
5-10	si 5 Tz	-189.9	1.2	0.0	1.2	189.9
5-10	si 9 Ty	-186.6	0.0	-6.8	6.8	187.0
5- 7	si 5 Si	240.9	-0.5	0.0	0.5	240.9
----- PROGR.						43.

SOLLECITAZIONI :						
Caso	MZ	MY	MT	N	TZ	TY
5- 7	-5953.0	0.0	0.0	47466.0	0.0	-137.4
5-10	14282.0	0.0	0.0	-36975.0	0.0	329.7
TENSIONI (Sz= 0.00) :						
Caso	ve No	massimi	Sx	Tz	Ty	Tau tot.
5- 7	si 1	Sx	241.6	0.0	0.0	0.0
						241.6

5-10 si 5 Tz	-191.5	1.2	0.0	1.2	191.6
5-10 si 9 Ty	-186.6	0.0	-6.8	6.8	187.0
5- 7 si 5 si	241.6	-0.5	0.0	0.5	241.6
----- PROGR.					58.

SOLLECITAZIONI :

Caso MZ	MY	MT	N	TZ	TY
5- 7 -7937.3	0.0	0.0	47466.0	0.0	-137.4
5-10 19042.6	0.0	0.0	-36975.0	0.0	329.7

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 1 Sx	242.3	0.0	0.0	0.0	242.3
5-10 si 5 Tz	-193.2	1.2	0.0	1.2	193.2
5-10 si 9 Ty	-186.6	0.0	-6.8	6.8	187.0
5- 7 si 5 Si	242.3	-0.5	0.0	0.5	242.3
----- PROGR.					72.

SOLLECITAZIONI :

Caso MZ	MY	MT	N	TZ	TY
5- 7 -9921.6	0.0	0.0	47466.0	0.0	-137.4
5-10 23803.3	0.0	0.0	-36975.0	0.0	329.7

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 1 Sx	243.0	0.0	0.0	0.0	243.0
5-10 si 5 Tz	-194.8	1.2	0.0	1.2	194.8
5-10 si 9 Ty	-186.6	0.0	-6.8	6.8	187.0
5- 7 si 5 Si	243.0	-0.5	0.0	0.5	243.0
----- PROGR.					87.

SOLLECITAZIONI :

Caso MZ	MY	MT	N	TZ	TY
5- 7 -11906.0	0.0	0.0	47466.0	0.0	-137.4
5-10 28563.9	0.0	0.0	-36975.0	0.0	329.7

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 1 Sx	243.7	0.0	0.0	0.0	243.7
5-10 si 5 Tz	-196.5	1.2	0.0	1.2	196.5
5-10 si 9 Ty	-186.6	0.0	-6.8	6.8	187.0
5- 7 si 5 Si	243.7	-0.5	0.0	0.5	243.7
----- PROGR.					101.

SOLLECITAZIONI :

Caso MZ	MY	MT	N	TZ	TY
5- 7 -13890.3	0.0	0.0	47466.0	0.0	-137.4
5-10 33324.6	0.0	0.0	-36975.0	0.0	329.7

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 1 Sx	244.4	0.0	0.0	0.0	244.4
5-10 si 5 Tz	-198.1	1.2	0.0	1.2	198.1
5-10 si 9 Ty	-186.6	0.0	-6.8	6.8	187.0
5- 7 si 5 Si	244.4	-0.5	0.0	0.5	244.4
----- PROGR.					115.

SOLLECITAZIONI :

Caso MZ	MY	MT	N	TZ	TY
5- 7 -15874.6	0.0	0.0	47466.0	0.0	-137.4
5-10 38085.3	0.0	0.0	-36975.0	0.0	329.7

TENSIONI (Sz= 0.00) :

Caso ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 7 si 1 Sx	245.0	0.0	0.0	0.0	245.0
5-10 si 5 Tz	-199.8	1.2	0.0	1.2	199.8
5-10 si 9 Ty	-186.6	0.0	-6.8	6.8	187.0
5- 7 si 5 Si	245.0	-0.5	0.0	0.5	245.0

VERIFICA STABILITA` :

|L0 = 115.|

Z |Lc = 115.|Ro = 17.08|lm = 6.8|Ncr= 89780448.1|alfa(a)=0.2100|ki=1.0000|

Y |Lc = 115.|Ro = 7.39|lm = 15.6|Ncr= 16811749.1|alfa(b)=0.3400|ki=1.0000|

Caso 3- 3 - Nodo 1 - Asse Y

Ned = -42114.8|Mzeq = 15893.1|Myeq = 0.0|Ss = -218.0 (0.083)

P_HEB400_S023 (23) stato limite ultimo - ASTA (7795- 7794) 6230

----- PROGR. 0.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	-15673.1	0.0	0.0	-75646.7	0.0	135.7
5-10	38085.3	0.0	0.0	71871.7	0.0	-329.7

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 3 Sx		-387.2	0.0	0.0	0.0	387.2
5-10 si 5 Tz		349.5	-1.2	0.0	1.2	349.5
5-10 si 9 Ty		362.7	0.0	6.8	6.8	362.9
5- 3 si 8 Si		-387.2	0.5	0.0	0.5	387.2

----- PROGR. 14.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	-13714.0	0.0	0.0	-75646.7	0.0	135.7
5-10	33324.6	0.0	0.0	71871.7	0.0	-329.7

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 3 Sx		-386.5	0.0	0.0	0.0	386.5
5-10 si 5 Tz		351.2	-1.2	0.0	1.2	351.2
5-10 si 9 Ty		362.7	0.0	6.8	6.8	362.9
5- 3 si 8 Si		-386.5	0.5	0.0	0.5	386.5

----- PROGR. 29.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	-11754.8	0.0	0.0	-75646.7	0.0	135.7
5-10	28563.9	0.0	0.0	71871.7	0.0	-329.7

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 3 Sx		-385.8	0.0	0.0	0.0	385.8
5-10 si 5 Tz		352.8	-1.2	0.0	1.2	352.8
5-10 si 9 Ty		362.7	0.0	6.8	6.8	362.9
5- 3 si 8 Si		-385.8	0.5	0.0	0.5	385.8

----- PROGR. 43.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	-9795.7	0.0	0.0	-75646.7	0.0	135.7
5-10	23803.3	0.0	0.0	71871.7	0.0	-329.7

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 3 Sx		-385.2	0.0	0.0	0.0	385.2
5-10 si 5 Tz		354.5	-1.2	0.0	1.2	354.5
5-10 si 9 Ty		362.7	0.0	6.8	6.8	362.9
5- 3 si 8 Si		-385.2	0.5	0.0	0.5	385.2

----- PROGR. 58.

SOLLECITAZIONI :

Caso	MZ	MY	MT	N	TZ	TY
5- 3	-7836.5	0.0	0.0	-75646.7	0.0	135.7
5-10	19042.6	0.0	0.0	71871.7	0.0	-329.7

TENSIONI (Sz= 0.00) :

Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3 si 3 Sx		-384.5	0.0	0.0	0.0	384.5
5-10 si 5 Tz		356.1	-1.2	0.0	1.2	356.1
5-10 si 9 Ty		362.7	0.0	6.8	6.8	362.9
5- 3 si 8 Si		-384.5	0.5	0.0	0.5	384.5

----- PROGR. 72.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5- 3	-5877.4	0.0	0.0	-75646.7	0.0	135.7
5-10	14282.0	0.0	0.0	71871.7	0.0	-329.7

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 3 Sx	-383.8	0.0	0.0	0.0	383.8
5-10	si 5 Tz	357.8	-1.2	0.0	1.2	357.8
5-10	si 9 Ty	362.7	0.0	6.8	6.8	362.9
5- 3	si 8 Si	-383.8	0.5	0.0	0.5	383.8

----- PROGR. 87.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5- 3	-3918.3	0.0	0.0	-75646.7	0.0	135.7
5-10	9521.3	0.0	0.0	71871.7	0.0	-329.7

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 3 Sx	-383.1	0.0	0.0	0.0	383.1
5-10	si 5 Tz	359.4	-1.2	0.0	1.2	359.4
5-10	si 9 Ty	362.7	0.0	6.8	6.8	362.9
5- 3	si 8 Si	-383.1	0.5	0.0	0.5	383.1

----- PROGR. 101.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5- 3	-1959.1	0.0	0.0	-75646.7	0.0	135.7
5-10	4760.7	0.0	0.0	71871.7	0.0	-329.7

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 3 Sx	-382.4	0.0	0.0	0.0	382.4
5-10	si 5 Tz	361.1	-1.2	0.0	1.2	361.1
5-10	si 9 Ty	362.7	0.0	6.8	6.8	362.9
5- 3	si 8 Si	-382.4	0.5	0.0	0.5	382.4

----- PROGR. 115.						
SOLLECITAZIONI	:					
Caso	MZ	MY	MT	N	TZ	TY
5- 3	0.0	0.0	0.0	-75646.7	0.0	135.7
5-10	0.0	0.0	0.0	71871.7	0.0	-329.7

TENSIONI (Sz= 0.00) :						
Caso	Ve No massimi	Sx	Tz	Ty	Tau tot.	Si
5- 3	si 2 Sx	-381.8	0.0	0.0	0.0	381.8
5-10	si 5 Tz	362.7	-1.2	0.0	1.2	362.7
5-10	si 9 Ty	362.7	0.0	6.8	6.8	362.9
5- 3	si 9 Si	-381.8	0.0	-2.8	2.8	381.8

VERIFICA STABILITA` :

|L0 = 115. |
 Z |Lc = 115. |Ro = 17.08 |Im = 6.8 |Ncr= 89780446.5 |alfa(a)=0.2100 |ki=1.0000 |
 Y |Lc = 115. |Ro = 7.39 |Im = 15.6 |Ncr= 16811748.8 |alfa(b)=0.3400 |ki=1.0000 |
 Caso 5- 3 - Nodo 3 - Asse Y
 Ned = -75646.7 |Mzeq = -9403.9 |Myeq = 0.0 |Ss = -385.0 (0.147)

4.6.3. Verifica ad instabilità corrente inferiore reticolare

Il corrente inferiore delle reticolari è realizzato con due profili UPN 400 accoppiati e distanziati dai profili tubolari 150x150x15 in corrispondenza delle cerniere; per la verifica ad instabilità nel piano si

rimanda al paragrafo precedente, mentre per la verifica ad instabilità fuori dal piano si riporta di seguito il foglio Excel utilizzato, all'interno del quale si è tenuto conto della sezione composta per aumentare l'inerzia fuori dal piano.

DATI PROFILO			
Profilo	HE 600 B		
Peso	g	212.00	kg/m
Area sezione	A	270.00	cm ²
Inerzia a flessione asse principale	I _y	171000.00	cm ⁴
Inerzia a flessione asse secondario	I _z	24828.00	cm ⁴
Modulo resistenza elastico asse principale	W _y	5701.00	cm ³
Modulo resistenza plastico asse principale	W _{ply}	6425.00	cm ³
Modulo resistenza elastico asse secondario	W _z	902.00	cm ³
Modulo resistenza plastico asse secondario	W _{plz}	1391.00	cm ³
Inerzia torsionale	I _t	667.20	cm ⁴
Inerzia torsionale secondaria	I _w	10970000.00	cm ⁶
Modulo elastico acciaio	E	2100000.00	daN/cm ²
Modulo di taglio	G	807692.31	daN/cm ²
Tensione di snervamento caratteristica	f _{yk}	2750.00	daN/cm ²
Lunghezza profilo	L	1050.00	cm
CARICHI			
Sforzo normale	N _{ed}	184775.00	daN
Momento asse principale	M _{y,Ed}	0.00	daNcm
Momento asse secondario	M _{z,Ed}	0.00	daNcm
INSTABILITÀ A COMPRESSIONE (NTC18 4.2.4.1.3.1)			
Asse per il calcolo dell'instabilità a compressione	Asse debole Z		
Rapporto I/I ₀	I/I ₀	1	-
Inerzia di riferimento	I	24828.00	cm ⁴
Carico critico euleriano rispetto asse di riferimento	N _{cr}	466747.69	daN
Coefficiente di imperfezione	α	0.49	-
Snellezza normalizzata	λ	1.26	-
Coefficiente Φ	Φ	1.56	-
Coefficiente χ	χ	0.41	-
Sforzo normale resistente	N _{b,Rd}	286800.37	daN
Fattore di sicurezza	FS	1.55	-

4.7. Solaio predalles

Per la verifica del solaio predalles si rimanda alla relazione di calcolo del Piazzale Milano.

4.8. Collegamento travi prefabbricate ai pilastri

Il collegamento tra le travi prefabbricate con i pilastri, sia nella parte esistente che nuova, viene realizzato mediante barra inghisata.

La barra di collegamento viene dimensionata per sopportare il taglio sismico che deve essere trasmesso dalla trave al pilastro. In particolare, la trave più caricata ha un'area di influenza pari a $A=8.50*12 = 102 \text{ m}^2$, pertanto la massa di riferimento per il dimensionamento del connettore è 141.27 ton. L'accelerazione di riferimento è 0.282g, perciò la forza di taglio orizzontale totale è pari a $V = 39.9 \text{ ton}$.

Considerando 2 connettori per ogni lato della trave, il taglio agente sul singolo connettore è pari 9.96 ton.

Si considera di utilizzare dei connettori realizzati con barre M27 classe 8.8. Tali barre hanno un taglio resistente calcolato in accordo con il capitolo 4.2.8.1.1 delle NTC18 pari a:

$$V_{Rd} = 0.6 * f_{tbk} * \frac{A}{\gamma_{M2}} = 17.6 \text{ ton}$$

Pertanto, la connessione con bulloni M27 risulta verificato.

4.9. Connettori solaio

Il collegamento dei tegoli alla soletta di irrigidimento viene realizzato mediante spezzoni di armatura inghisati.

La barra di collegamento viene dimensionata per sopportare il taglio sismico. I tegoli prefabbricati a forma di π hanno una larghezza di 250 cm e si considera di mettere due connettori per ogni metro lineare in ogni anima; perciò, ogni connettore ha un'area di influenza pari a $A=1*1.25 = 1.25 \text{ m}^2$, per tanto la massa di riferimento per il dimensionamento del connettore è 1732 daN. L'accelerazione di riferimento è 0.282g, perciò la forza di taglio orizzontale totale è pari a $V = 488 \text{ daN}$.

Si considera di utilizzare dei connettori realizzati con spezzoni di armatura $\Phi 12$. Tali barre hanno un taglio resistente calcolato a tranciamento pari a:

$$V_{Rd} = 0.6 * f_{yk} * \frac{A}{\gamma_{M2}} = 2124 \text{ daN}$$

Per tanto la connessione con barre $\Phi 12$ risulta verificata.

4.10. Lucernari

La presente relazione riguarda la progettazione dei profili in acciaio necessari al fine di realizzare i lucernari posti a piano ingressi e a piano copertura a corredo dell'intervento globale di adeguamento e ampliamento della stazione ferroviaria "MILANO BOVISA". I lucernari progettati andranno a

sostituire localmente i tegoli esistenti (nel numero massimo di due tegoli demoliti per lucernario) e collocate in base al progetto architettonico; nello specifico i lucernari sono così individuate:

Piano ingressi

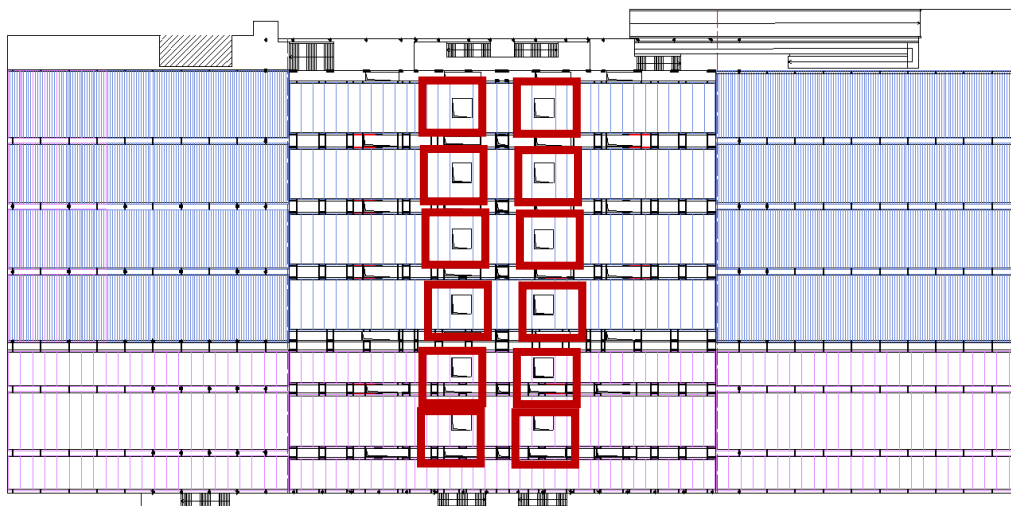


Figura 73: individuazione lucernari piano ingressi

Piano copertura

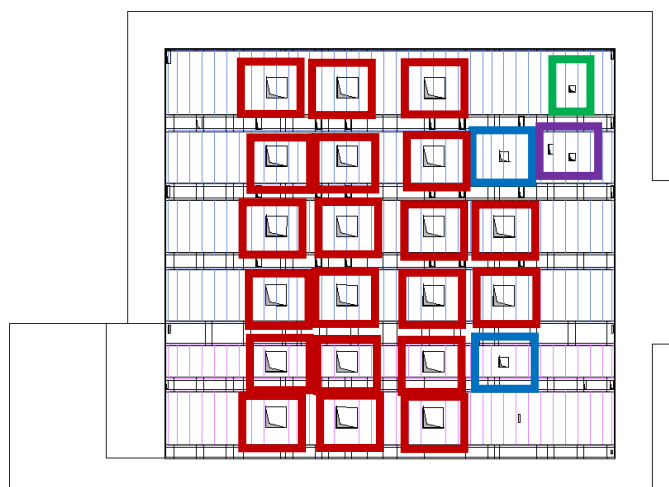


Figura 74: individuazione lucernari piano copertrura

Nello specifico le dimensioni delle nuove forometrie previste sono così suddivise:

Piano ingressi:

Luce massima 420 cm → rimozione di due tegoli [riquadro rosso]

Piano copertura:

Luce massima 420 cm → rimozione di due tegoli [riquadro rosso]

Luce massima 190 cm → rimozione di due tegoli [riquadro blu]

Luce massima 130 cm → rimozione di un tegolo [riquadro verde]

Luce massima $90 + 130 \text{ cm} \rightarrow$ rimozione di tre tegoli [riquadro viola]

La struttura che sostituisce parte dei tegoli è realizzata con profili metallici S355 che sostengono una lamiera grecata con massetto di spessore 10cm a piano ingressi e di 5 cm in copertura.

A seguire si riportano le sezioni dei profili degli elementi strutturali caratterizzanti, nonché le geometrie degli elementi portanti e degli ingombri delle stesse.

4.10.1. Lucernario piano ingressi

Geometria:

- Luce netta foro: $l = 420 \text{ cm}$
- Luce trave secondaria: $L_s = 500 \text{ cm}$

Si decide di analizzare il lucernario che viene realizzato nella campata avente lunghezza maggiore rispetto alle altre; nel caso specifico, la campata massima ha luce netta dei tegoli pari a 1114cm.

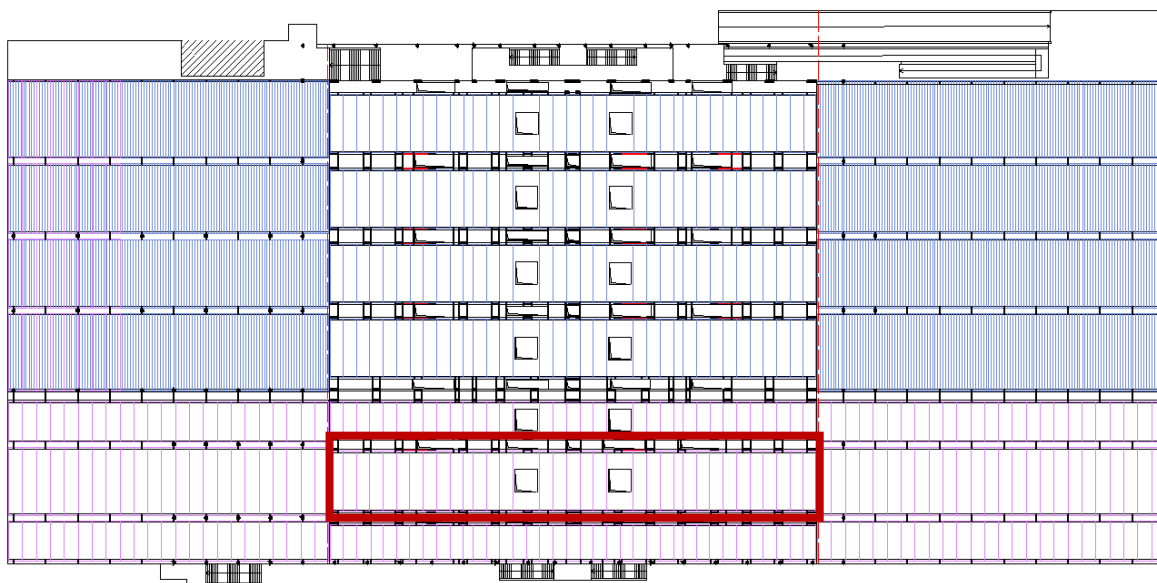


Figura 75: individuazione luce massima campata

LAMIERA GRECATA

Nel piano ingressi le zone demolite e non occupate dai lucernari verrà installata una lamiera grecata con cappa collaborante in getto di calcestruzzo alleggerito armato di spessore ad estradosso lamiera pari a 10cm (ovvero lo spessore medio è pari a 12,75cm) “tipo Medaccia LG55”; le caratteristiche tecniche, desunte dalla scheda tecnico corredata, dipendono dalla luce massima e dal carico sopportato nell’ipotesi di schema cautelativo appoggio – appoggio.

Dall’analisi dei carichi, si individuano i seguenti carichi:

$$G1 = 20 + 10 \times h_{\text{medio}} 12,75 = 150 \text{ kg/mq}$$

$$G2 = 480-125 \text{ (peso soletta esistente rimossa)} = 360 \text{ kg/mq}$$

$$Q_N = 500 \text{ kg/mq}$$

Ovvero, il carico massimo utile uniformemente distribuito è pari a 1010 kg/mq

Dalla scheda tecnico è quindi possibile individuare le caratteristiche dimensionali e di peso:

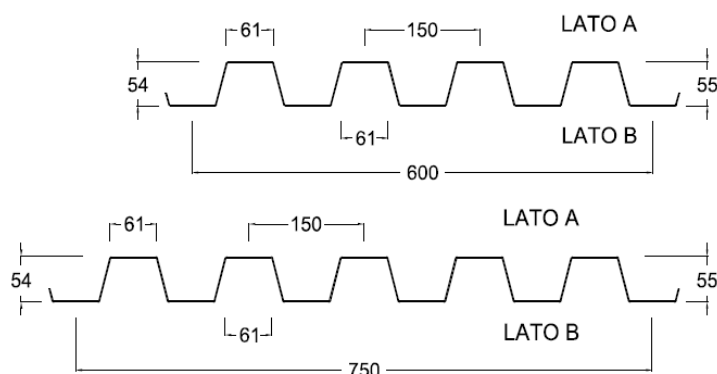
CARATTERISTICHE DIMENSIONALI

Altezza greche mm 55

Passo utile mm 600/750

Interasse greche mm 150

Qualità materiale secondo UNI EN 10326



CARATTERISTICHE DELLA LAMIERA

Spessore lastra	Sp	(mm)	0,6	0,8	1,0	1,2	1,5	
Peso unitario teorico*	P	(Kg/m ²)	7,85	10,47	13,08	15,70	19,63	
Momento d'inerzia	J	(cm ⁴ /ml)	42,19	60,67	79,92	98,39	122,40	
Modulo resistenza efficace	W	(cm ³ /ml)	12,20	18,28	25,01	32,19	42,67	
Tensione di snervamento	f _y	250 N/mm ²	Tensione di rottura	f _t	330 N/mm ²	Freccia massima ammissibile	f _{amm}	1/200 della luce

* Peso calcolato considerando la larghezza utile

Figura 76: schema lamiera grecata e caratteristiche tecniche

PORTATE PER LASTRA SU 2 APPOGGI

Spessore		1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
6/10	q _{u,max}	1410	905	625	460	350	280	225	185	155	130	115	100	85	75	60	55	-
8/10	q _{u,max}	2120	1355	940	690	530	415	335	280	235	200	170	150	130	115	105	95	85
10/10	q _{u,max}	2900	1855	1285	945	725	570	460	380	320	275	235	205	180	160	140	130	115
12/10	q _{u,max}	3730	2390	1660	1215	930	735	595	490	415	350	305	265	230	205	180	165	145
15/10	q _{u,max}	4950	3165	2200	1615	1235	975	790	655	550	465	400	350	305	270	240	220	195

Figura 77: tabella portata lamiera grecata

Come si evince dalla tabella, per poter garantire un carico massimo utile uniformemente distribuito è pari a 1010 kg/mq è necessario impiegare una lamiera grecata tipo “Medaccia LG55” di spessore 10/10 il cui peso a metro quadrato è pari a 13,08 kg/mq.

Si decide di considerare cautelativamente un peso della lamiera pari a 20 kg/mq

Per il calcolo della massima luce per i solai collaboranti si fa riferimento all'altezza della soletta di progetto, oltre alla tipologia di lamiera grecata.

Nello specifico, considerando un'altezza di cappa collaborante pari a 10cm all'estradosso della lamiera, l'altezza complessiva del pacchetto è pari a $100+55 = 155\text{mm}$. In prima analisi, ai fini di individuare la massima distanza tra gli appoggi, si è considerate un'altezza del sistema lamiera + soletta collaborante pari a $120\text{ mm} = 12\text{cm}$.

Dalla tabella, il valore della massima luce ottenuta per una lamiera di spessore 10/10 con altezza $H = 12\text{cm}$ e sovraccarico $Q = 500\text{ kg/mq}$ è:

LUCE MASSIMA IN METRI PER SOLAI COLLABORANTI																	
sp	H soletta	sovraccarico di esercizio utile uniformemente distribuito kN/m ²															
mm	cm	1,50	2,00	2,50	3,00	3,50	4,00	4,50	5,00	5,50	6,00	7,00	8,00	10,00	12,00	15,00	20,00
0,7	12	2,43	2,43	2,43	2,43	2,43	2,43	2,43	2,34	2,25	2,17	2,03	1,91	1,73	1,58	1,42	1,23
		2,73	2,73	2,73	2,73	2,73	2,73	2,73	2,68	2,57	2,48	2,31	2,18	1,96	1,80	1,61	1,40
0,8	12	2,68	2,68	2,68	2,68	2,68	2,68	2,59	2,48	2,39	2,30	2,15	2,03	1,83	1,68	1,52	1,31
		3,00	3,00	3,00	3,00	3,00	3,00	2,96	2,83	2,72	2,62	2,45	2,31	2,08	1,91	1,71	1,49
1,0	12	2,96	2,96	2,96	2,96	2,96	2,96	2,86	2,74	2,64	2,54	2,38	2,29	2,12	1,98	1,68	1,46
		3,48	3,48	3,48	3,48	3,48	3,44	3,25	3,12	3,00	2,89	2,70	2,55	2,33	2,18	2,01	1,65
1,2	12	3,19	3,19	3,19	3,19	3,19	3,19	3,09	2,97	2,90	2,86	2,73	2,60	2,42	2,12	1,83	1,59
		3,85	3,85	3,85	3,85	3,85	3,67	3,51	3,37	3,24	3,13	2,97	2,86	2,76	2,50	2,20	1,80
1,5	12	3,47	3,47	3,47	3,47	3,47	3,47	3,41	3,28	3,16	3,05	2,86	2,70	2,45	2,26	2,04	1,78
		4,11	4,11	4,11	4,11	4,11	4,05	3,87	3,72	3,58	3,46	3,24	3,06	2,77	2,55	2,30	2,00

Come si evince dalla tabella, la massima luce ammissibile è 274 cm; si adotta un interasse non superior a circa 200cm a lato.

Verifica lamiera grecata:

Per la verifica della soletta H15.5cm si utilizza il seguente foglio di calcolo:

CALCOLO SOLAIO IN LAMIERA GRECATA COLLABORANTE

Le caratteristiche della lamiera sono relative alla produzione meTecno s.p.a.

<http://www.metecno.it/> Sistema - Hi-Bond®

I materiali utilizzati sono:

- 1- lamiera in acciaio zincato tipo Fe 37 GZ 2752 UNI5753/75
- 2 - c.l.s. di resistenza non inferiore a 225 Kg/cmq
- 3 - inerti con pezzatura non superiore a 20 mm
- 4 - acciaio aggiuntivo e rete elettrosaldata Fe B 44 K

N.B.: Dati di input in rosso su fondo grigio- dati calcolati in nero su fondo bianco

CARATTERISTICHE SOLETTA

Tipo lamiera:	A55/P 600 S100
tensione ammissibile lamiera	1400 Kg/cmq
Spessore caldana	10 cm
Altezza lamiera	5.5 cm
Altezza totale soletta	15.5 cm
Classe c.l.s.	300 Kg/cmq
Peso specifico c.l.s.	2500 Kg/mc
Luce massima tra gli appoggi	2.00 m

Schema di calcolo Travata continua

N.B. - viene condotta la verifica a soli momenti positivi pari a:

$M=q \cdot L^2/8$ nel caso di travata singola ed $M=q \cdot L^2/10$ nel caso di travata continua

Analisi dei carichi escluso peso proprio (per mq di soletta)

sovraccarico permanente	360 Kg/mq
sovraccarico accidentale	500 Kg/mq
totale	860 Kg/mq
carico mezzi d'opera 1ª fase	50 Kg/mq

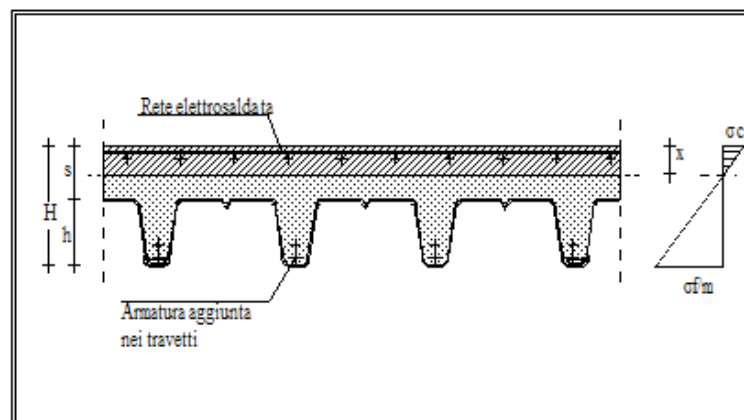
Diametro e passo rete elettr. sup.

omogeneizzazione: 15

Ø (mm)	p (cm)	c (cm)	Af (cmq/m)
5	20	2.5	0.98

N.B. - p=passo della rete; c=copriferro

Coefficiente di omogeneizzazione lamiera 10



CALCOLO SOLLECITAZIONI

Caratteristiche geometriche della lamiera grecata:

Larghezza singolo pannello	600.0 mm
numero moduli per pannello	4
Interasse moduli	150.0 mm
larghezza sagoma superiore	61.5 mm
larghezza sagoma inferiore	61.5 mm
altezza lamiera	55.0 mm

Caratteristiche statiche lamiera grecata (al mq)

Spessore della lamiera	mm	1.00
Peso della lamiera	Kg/mq	13.10
Area della sezione	cmq/m	16.66
Momento d'inerzia ridotto	cm ⁴	70.66
Distanza baricentro dal bordo inf.	cm	2.48
Modulo di resistenza superiore	cm ³	21.08
Modulo di resistenza inferiore	cm ³	29.89

caratteristiche statiche sezione composta

Altezza complessiva soletta	cm	15.50
Peso soletta	Kg/mq	332.85
Coefficiente di omogeneizzazione lamiera		10
Posizione asse neutro	cm	5.07
Momento d'inerzia totale della sezione	cm ⁴	15677.52
Modulo di resistenza superiore	cm ³	3090.99
Modulo di resistenza inferiore	cm ³	1503.41

VERIFICHE:

1° fase - il c.l.s. non ha ancora fatto presa - peso proprio + mezzi d'opera

q'	382.85 Kg/m	
Mmax	153.14 Kgm/m	
Tmax	382.85 Kg/m	
tens. bordo sup. lamiera	726.47 Kg/cm ²	compressione
tens. bordo inf. Lamiera	512.35 Kg/cm ²	trazione
abbassamento	0.322512 cm	=L/620 (max L/250)

2° fase - sezione mista- carico perm. + accidentale - mezzi d'opera

q''	810.00 Kg/m	
Mmax	324.00 Kgm/m	
Tmax	810.00 Kg/m	
tens. nel cls.	10.48 Kg/cm ²	
tens. bordo inf. lamiera	215.51 Kg/cm ²	trazione
abbassamento	0.020715 cm	=L/9654 (max L/500)

tensioni complessive:

c.l.s.	10.48 Kg/cm ²	verificato
lamiera	727.86 Kg/cm ²	verificato

SEZIONE VERIFICATA

PREDIMENSIONAMENTO TRAVI

Trave secondaria:

Si ipotizza di considerare una trave che si appoggia alla trave principale con schema appoggio – appoggio; la luce netta è pari a 500cm ed è posta ad interasse tra le travi di circa 150cm.

I carichi di Progetto sono:

$$G1 = 20 + 10 \cdot x_{h\text{medio}} 12,75 = 150 \text{ kg/mq}$$

$$G2 = 360 \text{ kg/mq}$$

$$Q_N = 500 \text{ kg/mq}$$

Il valore del carico agli SLU è pari a: $q = (1,3 \cdot G_1 + 1,5 \cdot G_2 + 1,5 \cdot Q) \cdot i = 2227,5 \text{ daN/m}^2$

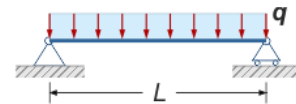
In termini di resistenza il predimensionamento della sezione si riconduce ad una HEB 160

Dati di calcolo

L m = Lunghezza trave

q kg/m = Carico uniformemente distribuito a metro

σ kg/cm² = Tensione ammissibile del materiale



Tensione ammissibile del materiale:
 1600 kg/cm² Acciaio S235 (Fe360)
 1900 kg/cm² Acciaio S275 (Fe430)
 2400 kg/cm² Acciaio S355 (Fe510)

M_{max} kg·m = **Momento flettente massimo**

$$M_{\max} = \frac{q \cdot L^2}{8}$$

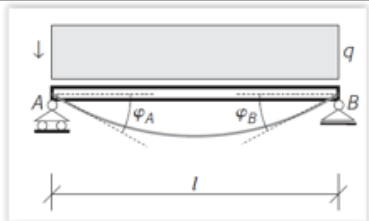
W_{min} cm³ = **Modulo di resistenza minimo**

$$W_{\min} = \frac{M_{\max}}{\sigma}$$

Dimensione occorrente dei comuni profili commerciali e rispettivi moduli di resistenza:

Profilo	IPE	HEA	HEB	HEM	UPN	T	L (lati uguali)	Tubo QUADRO	Tubo RETTANG.	Tubo CIRCOL.
Sezione	IPE240	HEA180	HEB160	HEM140	UPN240	-	-	250x4	300x150x5	-
W _{max}	324.30	293.60	311.50	411.40	300.00	-	-	317.67	353.08	-

In termini di deformazione, invece, si ottiene:

SCHEMA STATICO			
			

DATI			CARICHI				
l =	5	m	G1 =	1.5	kN/mq	γ G1 =	1.3
			G2 =	3.6	kN/mq	γ G2 =	1.5
i =	1.5	m	Q =	5	kN/mq	γ Q =	1.5
			coeff. Comb. Variabili: CAT C		ψ0 =		0.7
					ψ1 =		0.7
					ψ2 =		0.6

CARICO				FRECCIA		VERIFICA				
carico in SLE (rara)	q =	47.160	kN/m	f =	16.23	mm	< l/200 =	20	mm	OK
carico in SLE (frequente)	q =	47.160	kN/m	f =	16.23	mm	< l/200 =	20	mm	OK
carico in SLE (quasi permanente)	q =	44.660	kN/m	f =	15.37	mm	< l/200 =	20	mm	OK

PROFILO SCELTO			
HEB 240	J =	11260	cm4
	P =	83.2	kg/m

Nel caso specifico, il predimensionamento a deformazione indica che è necessario una trave HEB 240

MODELLO DI CALCOLO

Il modello di calcolo è stato realizzato con il programma agli elementi finiti DOLEMEN versione 21.

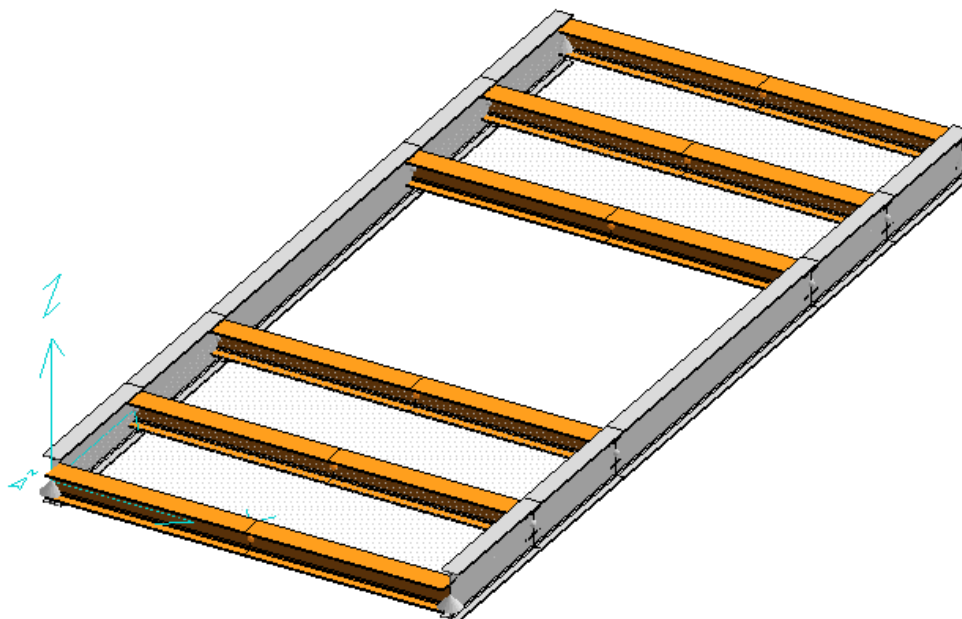


Tabella 78 – Vista 3D modello complessivo

Profili impiegati:

Trave principale: IPE 600

trave secondaria: HEB 300

La struttura è modellata con elementi tipo beam a simulare le aste che costituiscono la struttura e sono state schematizzate cautelativamente con schema con appoggio – appoggio. Ai fini di determinare la massima sollecitazione sulle travi secondarie, la lamiera grecata è stata modellata come elementi “solaio”, non infinitamente rigidi nel piano, senza rigidezza né peso proprio. Tutte le travi che risultano completamente interne, o al limite sul perimetro, e la cui direzione non è parallela a quella del solaio saranno interessate alla ripartizione del carico : questa ripartizione del carico viene effettuata per aree di competenza.

CONDIZIONI DI CARICO

Si riporta nel seguito l’elenco delle condizioni di carico utilizzate nel modello 3D della struttura.

CONDIZIONI DI CARICO----- ----- ----- ----- num.=					3	
Nome						
1	G1	N. carichi:	22			
	Lista carichi: 1-6, 19-34					
2	G2	N. carichi:	6			
	Lista carichi: 7-12					
3	Q_cat_C3	N. carichi:	6			
	Lista carichi: 13-18					
RISULTANTI DEI CARICHI (punto di applicazione nell'origine degli assi):						
cond.	FX	FY	FZ	MX	MY	MZ
1	0.000000E+00	0.000000E+00	-1.341279E+04	-7.456153E+06	3.353198E+06	0.000000E+00
2	0.000000E+00	0.000000E+00	-1.242000E+04	-6.809400E+06	3.105000E+06	0.000000E+00
3	0.000000E+00	0.000000E+00	-1.725000E+04	-9.457500E+06	4.312500E+06	0.000000E+00

CASI DI CARICO

Di seguito si riportano le combinazioni di carico utilizzate nel modello

NOME	DESCRIZIONE	VERIFICA	TIPO	CONDIZ. INSERITE			CASI INSERITI	
				Num.	Coeff.	Segno	Num.	Coeff.
1	SLU SENZA SISMA	S.L.U.	somma	1	1.300	+		
				2	1.500	+		
				3	1.500	+		
2	Rara	Rara	somma	1	1.000	+		
				2	1.000	+		
				3	1.000	+		
3	Frequente	Freq.	somma	1	1.000	+		
				2	1.000	+		
				3	0.700	+		
4	Quasi Perm	QuasiPerm.	somma	1	1.000	+		
				2	1.000	+		
				3	0.600	+		

DESTINAZIONI D'USO E AZIONI AGENTI

Si riportano a seguire i carichi associati agli elementi strutturali e non strutturali utilizzati per il dimensionamento della struttura diversificata per tipologia strutturale analizzata. Il peso proprio degli elementi strutturali portanti è computato direttamente dal programma di calcolo mentre per i carichi portati si considera il peso degli elementi non strutturali gravanti la struttura. Tutti i solai sono adibiti a solaio per atri di stazioni ferroviarie (cat.C3).

I coefficienti adottati per la definizione delle combinazioni di carico (ai sensi del D.M. del Ministero delle Infrastrutture e dei Trasporti del 14-01-08, punto 2.5.3) sono individuati dalla seguente tabella:

Categoria/Azione variabile	Ψ_{0j}	Ψ_{1j}	Ψ_{2j}
Categoria A - Ambienti ad uso residenziale	0,7	0,5	0,3
Categoria B - Uffici	0,7	0,5	0,3
Categoria C - Ambienti suscettibili di affollamento	0,7	0,7	0,6
Categoria D - Ambienti ad uso commerciale	0,7	0,7	0,6
Categoria E - Aree per immagazzinamento, uso commerciale e uso industriale Biblioteche, archivi, magazzini e ambienti ad uso industriale	1,0	0,9	0,8
Categoria F - Rimesse, parcheggi ed aree per il traffico di veicoli (per autoveicoli di peso ≤ 30 kN)	0,7	0,7	0,6
Categoria G - Rimesse, parcheggi ed aree per il traffico di veicoli (per autoveicoli di peso > 30 kN)	0,7	0,5	0,3
Categoria H - Coperture accessibili per sola manutenzione	0,0	0,0	0,0
Categoria I - Coperture praticabili	da valutarsi caso per caso		
Categoria K - Coperture per usi speciali (impianti, eliporti, ...)			
Vento	0,6	0,2	0,0
Neve (a quota ≤ 1000 m s.l.m.)	0,5	0,2	0,0
Neve (a quota > 1000 m s.l.m.)	0,7	0,5	0,2
Variazioni termiche	0,6	0,5	0,0

Tabella 79 – tab 2.5.I – NTC18: valori dei coefficienti di combinazione

Cat. C – ambienti suscettibili di affollamento

($\Psi_{0j} = 0,7$; $\Psi_{1j} = 0,7$; $\Psi_{2j} = 0,6$)

SOLLECITAZIONI

Si riporta a seguire le mappe delle sollecitazioni agenti distinte tra azioni statiche ed azioni sismiche.

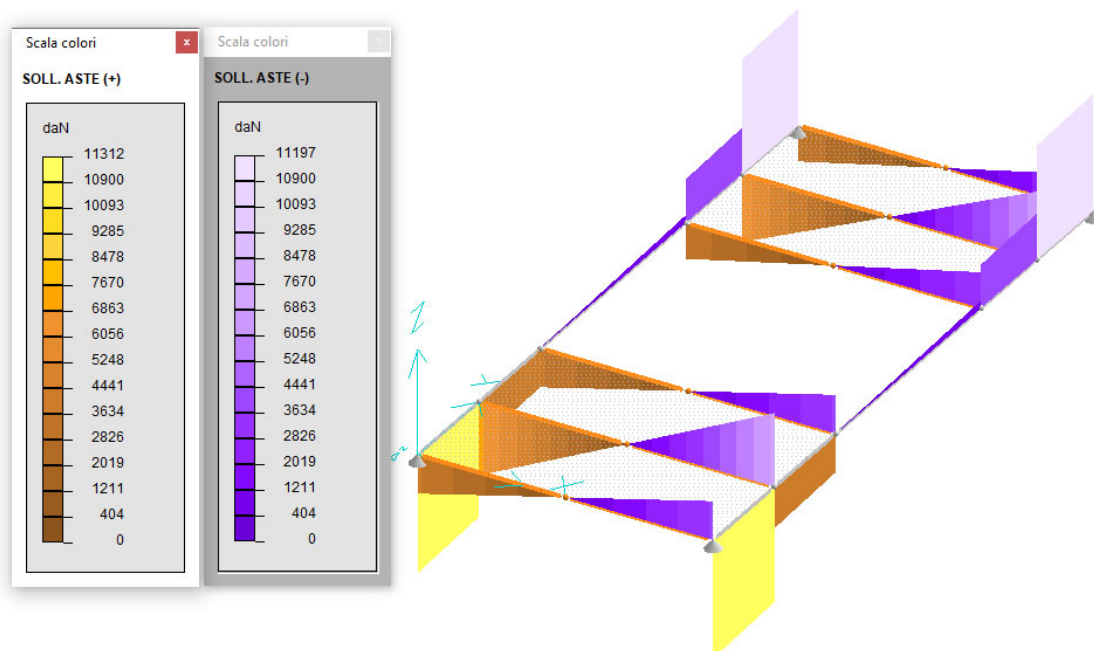


Figura 80: involucro taglio Ty - statica

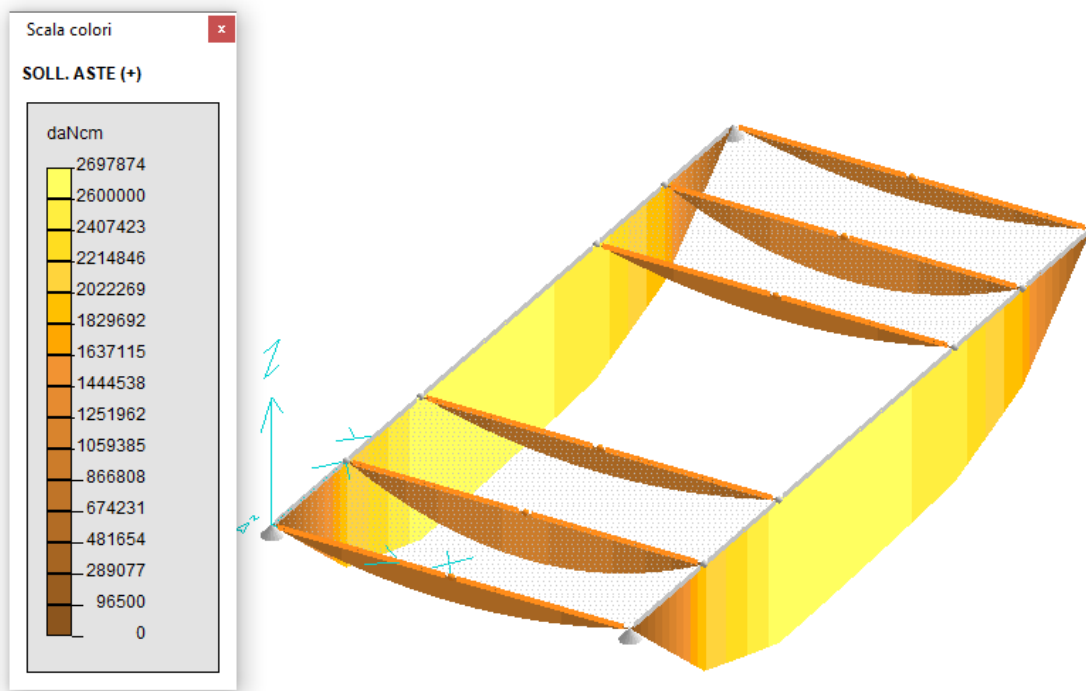


Figura 81: involucro momento Mz – statica

VERIFICA

A seguire si riportano gli estratti delle verifiche delle aste suddivise in elementi strutturali costituenti la struttura; le verifiche sotto riportate evidenziano la percentuale di verifica degli elementi strutturali

MATERIALI

S355 (EN 10025-2): Mod.EI.= 2100000.0; $\gamma_m = 1.050$;
 $f_{yk} = 3550.0$ (3350.0 per $s_p > 40$ mm); $f_{yd} = 3381.0$ (3190.5 per $s_p > 40$ mm).

Il programma esegue la verifica delle aste selezionate. In particolare, vengono controllate, in percentuale:

- la σ normale di tensoflessione (S_x);
- la τ di taglio / torsione (τ);
- la σ ideale combinazione di σ e τ (S_i).
- verifica di stabilità (S_s)

CASI DI CARICO

N	Descrizione	Soll.
1	SLU	1

TRAVI PRINCIPALI IPE 600

CARATTERISTICHE GEOMETRICHE

P_IPE600_S001 (1) :

A =156.2806E+00 Jz= 92.3031E+03 Jy= 3.3881E+03 Jt=127.4898E+00

RIASSUNTO DELLE ASTE VERIFICATE CON L'ULTIMO CALCOLO EFFETTUATO

Rapporti di tensioni:

asta	sez	profilo	Tau %	Sx %	Si %	Ss %	Caso	Max %
5984	1	P_IPE600_S001	1	26	26	0	1- 1	26 Si
5987	1	P_IPE600_S001	1	26	26	0	1- 1	26 Si
5991	1	P_IPE600_S001	10	20	20	0	1- 1	20 Si
5992	1	P_IPE600_S001	4	26	26	0	1- 1	26 Si
5993	1	P_IPE600_S001	4	25	25	0	1- 1	25 Si
5994	1	P_IPE600_S001	10	18	18	0	1- 1	18 Si
5995	1	P_IPE600_S001	10	20	20	0	1- 1	20 Si
5996	1	P_IPE600_S001	4	26	26	0	1- 1	26 Si
5997	1	P_IPE600_S001	4	25	25	0	1- 1	25 Si
5998	1	P_IPE600_S001	10	18	18	0	1- 1	18 Si

TRAVI PRINCIPALI 1 (lato lungo): HEB 300

CARATTERISTICHE GEOMETRICHE

P_HEB300_S002 (2) :

A =149.4527E+00 Jz= 25.2209E+03 Jy= 8.5640E+03 Jt=143.3263E+00

RIASSUNTO DELLE ASTE VERIFICATE CON L'ULTIMO CALCOLO EFFETTUATO

Rapporti di tensioni:

asta	sez	profilo	Tau %	Sx %	Si %	Ss %	Caso	Max %
4354	2	P_HEB300_S002	7	9	9	0	1- 1	9 Si
5977	2	P_HEB300_S002	6	8	8	0	1- 1	8 Si
5981	2	P_HEB300_S002	6	8	8	0	1- 1	8 Si
5982	2	P_HEB300_S002	7	9	9	0	1- 1	9 Si
5989	2	P_HEB300_S002	12	15	15	0	1- 1	15 Si
5990	2	P_HEB300_S002	13	16	16	0	1- 1	16 Si
5999	2	P_HEB300_S002	6	8	8	0	1- 1	8 Si
6000	2	P_HEB300_S002	12	15	15	0	1- 1	15 Si
6001	2	P_HEB300_S002	6	8	8	0	1- 1	8 Si
6002	2	P_HEB300_S002	7	9	9	0	1- 1	9 Si
6003	2	P_HEB300_S002	13	16	16	0	1- 1	16 Si
6004	2	P_HEB300_S002	7	9	9	0	1- 1	9 Si

DEFORMAZIONE

La massima deformazione ottenuta in combinazione SLE rara è individuate in prossimità delle travi secondarie,, come illustrato dal grafico sottostante.

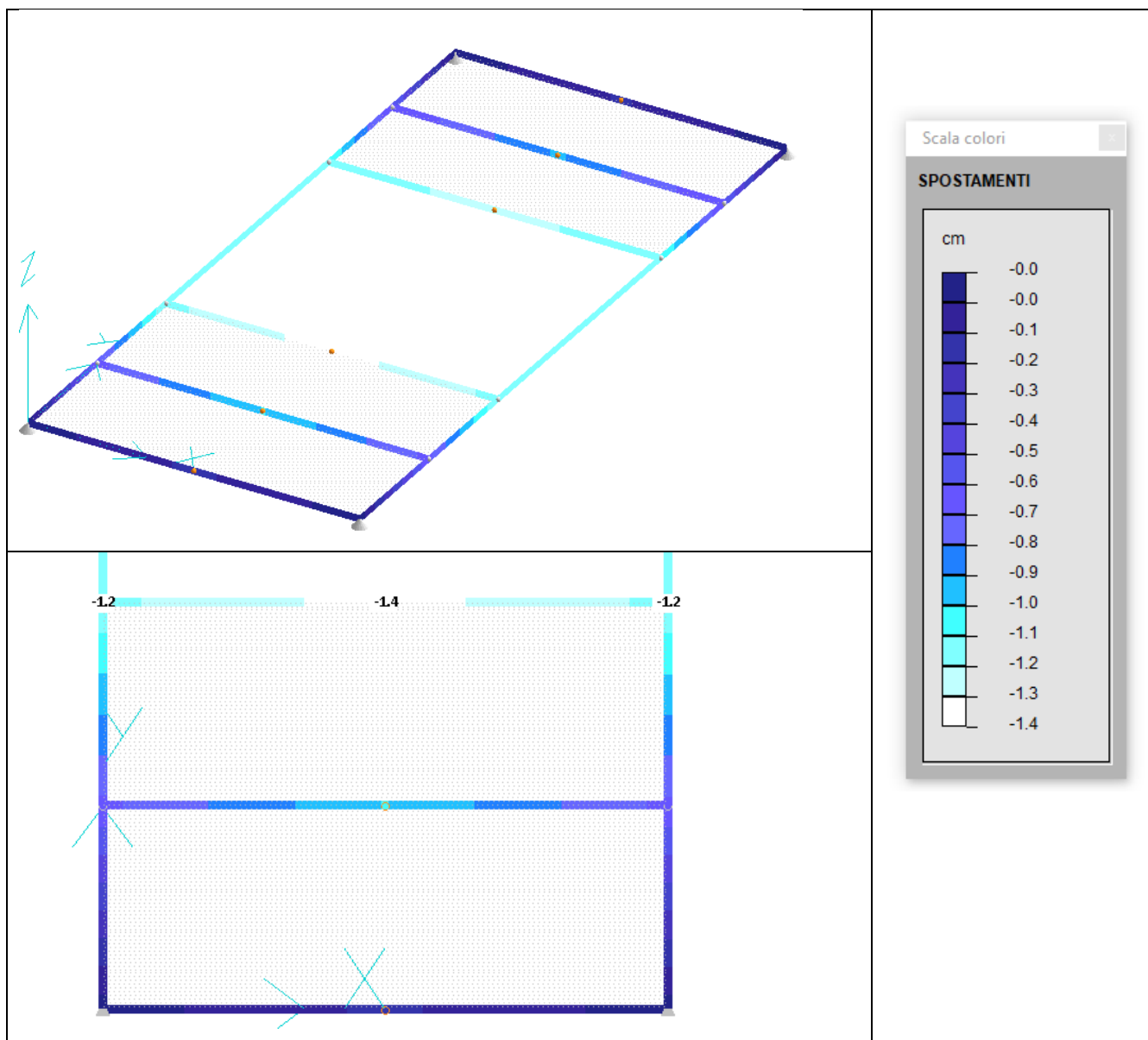


Figura 82: deformazione massima combinazione SLE rara

Il valore della freccia relativa massima della trave secondaria è pari a $1.4 - 1.2 = -0.2\text{cm}$; dal momento che il valore della freccia limite, nel caso di solai in generale, è pari a $L/250 = 500 / 250 = 2\text{ cm}$ tale valore è maggiore rispetto a quanto ottenuto dal calcolo.

Per la trave principale, la freccia massima è pari a -1.2 cm che confrontato con il valore della freccia limite pari a $L/250 = 1114/250 = 4.45\text{cm}$ risulta ben inferiore.

Verificato

4.10.2. Lucernario piano copertura (zona A)

Geometria:

Luce netta foro: $l = 420 \text{ cm}$

Luce trave secondaria: $L_s = 500 \text{ cm}$

Si decide di analizzare il lucernario che viene realizzato nella campata avente lunghezza maggiore rispetto alle altre; nel caso specifico, la campata massima ha luce netta dei tegoli pari a 1306cm.

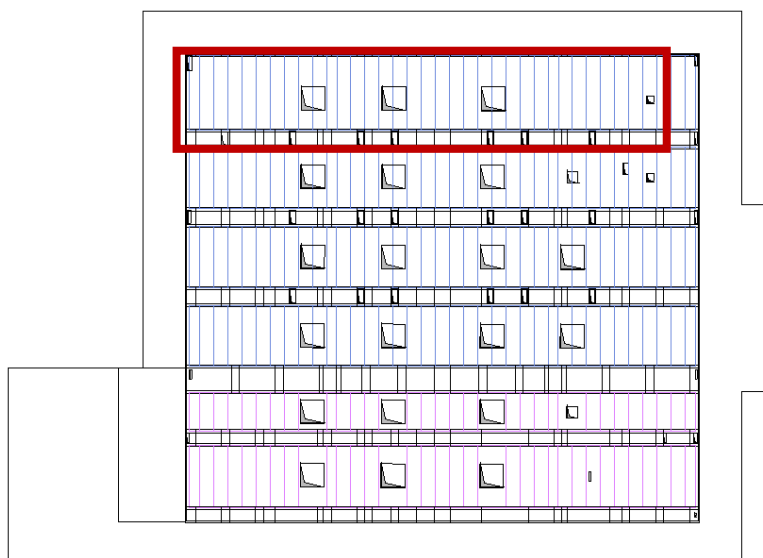


Figura 83: individuazione luce massima campata

LAMIERA GRECATA

Nella copertura le zone demolite e non occupate dai lucernari verrà installata una lamiera grecata con cappa collaborante in getto di calcestruzzo alleggerito armato di spessore ad estradosso lamiera pari a 5cm (ovvero lo spessore medio è pari a 7,75cm) “tipo Medaccia LG55”; le caratteristiche tecniche, desunte dalla scheda tecnico corredata, dipendono dalla luce massima e dal carico sopportato nell’ipotesi di schema cautelativo appoggio – appoggio.

Dall’analisi dei carichi, si individuano i seguenti carichi:

$$G1 = 20 + 10 \times h_{\text{medio}} 7,75 = 100 \text{ kg/mq}$$

$$G2 = 210 \text{ kg/mq}$$

$$Q_N = 120 \text{ kg/mq}$$

Ovvero, il carico massimo utile uniformemente distribuito è pari a 430 kg/mq

Dalla scheda tecnico è quindi possibile individuare le caratteristiche dimensionali e di peso:

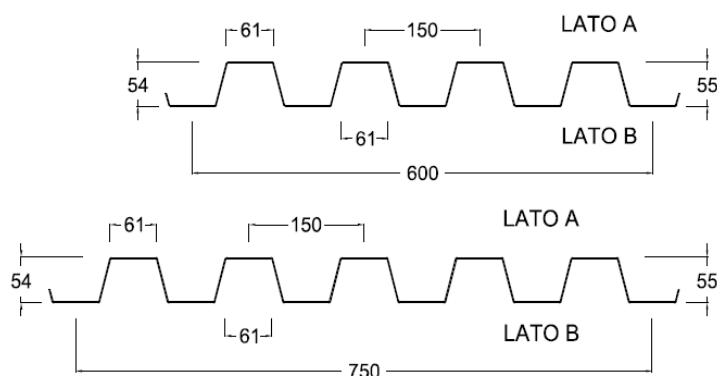
CARATTERISTICHE DIMENSIONALI

Altezza greche mm 55

Passo utile mm 600/750

Interasse greche mm 150

Qualità materiale secondo UNI EN 10326



CARATTERISTICHE DELLA LAMIERA

Spessore lastra	Sp	(mm)	0,6	0,8	1,0	1,2	1,5
Peso unitario teorico*	P	(Kg/m ²)	7,85	10,47	13,08	15,70	19,63
Momento d'inerzia	J	(cm ⁴ /ml)	42,19	60,67	79,92	98,39	122,40
Modulo resistenza efficace	W	(cm ³ /ml)	12,20	18,28	25,01	32,19	42,67

Tensione di snervamento f_y 250 N/mm² Tensione di rottura f_t 330 N/mm² Freccia massima ammissibile f_{amm} 1/200 della luce

* Peso calcolato considerando la larghezza utile

Figura 84: schema lamiera grecata e caratteristiche tecniche

PORTATE PER LASTRA SU 2 APPOGGI

Spessore		1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
6/10	$q_{u,max}$	1410	905	625	460	350	280	225	185	155	130	115	100	85	75	70	60	55
								215	160	125	95	75	65	50	40	35	30	-
8/10	$q_{u,max}$	2120	1355	940	690	530	415	335	280	235	200	170	150	130	115	105	95	85
								310	235	180	140	110	90	75	60	50	45	35
10/10	$q_{u,max}$	2900	1855	1285	945	725	570	460	380	320	275	235	205	180	160	140	130	115
							565	410	310	235	185	150	120	100	80	70	60	50
12/10	$q_{u,max}$	3730	2390	1660	1215	930	735	595	490	415	350	305	265	230	205	180	165	145
							695	505	380	290	230	185	150	120	100	85	70	60
15/10	$q_{u,max}$	4950	3165	2200	1615	1235	975	790	655	550	465	400	350	305	270	240	220	195
							865	630	475	365	285	230	185	150	125	105	90	75

Figura 85: tabella portata lamiera grecata

Come si evince dalla tabella, per poter garantire un carico massimo utile uniformemente distribuito è pari a 430 kg/mq è necessario impiegare una lamiera grecata tipo “Medaccia LG55” di spessore 10/10 il cui peso a metro quadrato è pari a 13,08 kg/mq.

Si decide di considerare cautelativamente un peso della lamiera pari a 20 kg/mq

Per il calcolo della massima luce per i solai collaboranti si fa riferimento all'altezza della soletta di progetto, oltre alla tipologia di lamiera grecata.

Nello specifico, considerando un'altezza di cappa collaborante pari a 5cm all'estradosso della lamiera, l'altezza complessiva del pacchetto è pari a 50+55 = 105mm. In prima analisi, ai fini di individuare la

massima distanza tra gli appoggi, si è considerate un'altezza del sistema lamiera + soletta collaborante pari a 100 mm = 10cm.

Dalla tabella, il valore della massima luce ottenuta per una lamiera di spessore 10/10 con altezza H = 10cm e sovraccarico Q = 120 kg/mq è:

LUCE MASSIMA IN METRI PER SOLAI COLLABORANTI

sp mm	H soletta cm	sovraccarico di esercizio utile uniformemente distribuito kN/m ²															
		1,50	2,00	2,50	3,00	3,50	4,00	4,50	5,00	5,50	6,00	7,00	8,00	10,00	12,00	15,00	20,00
0,7	10	2,62 2,94	2,62 2,94	2,62 2,94	2,59 2,94	2,44 2,78	2,31 2,63	2,20 2,51	2,10 2,39	2,01 2,29	1,94 2,21	1,81 2,05	1,70 1,93	1,53 1,73	1,40 1,59	1,25 1,42	1,09 1,23
0,8	10	2,90 3,22	2,90 3,22	2,90 3,22	2,74 3,12	2,58 2,94	2,45 2,79	2,33 2,65	2,23 2,54	2,14 2,42	2,06 2,34	1,92 2,18	1,81 2,05	1,65 1,84	1,55 1,74	1,34 1,56	1,16 1,34
1,0	10	3,20 3,75	3,20 3,75	3,20 3,67	3,02 3,44	2,85 3,24	2,70 3,08	2,58 2,93	2,47 2,80	2,39 2,69	2,33 2,59	2,21 2,43	2,11 2,35	2,00 2,15	1,77 2,01	1,49 1,81	1,29 1,46
1,2	10	3,44 4,08	3,44 4,08	3,44 3,96	3,26 3,71	3,10 3,51	3,00 3,33	2,90 3,17	2,80 3,06	2,72 2,97	2,64 2,89	2,51 2,80	2,39 2,65	2,21 2,46	1,94 2,29	1,62 1,97	1,41 1,59
1,5	10	3,71 4,34	3,71 4,34	3,71 4,33	3,60 4,09	3,41 3,87	3,24 3,68	3,09 3,51	2,97 3,36	2,85 3,23	2,75 3,11	2,57 2,91	2,42 2,74	2,19 2,47	2,01 2,27	1,81 2,04	1,58 1,78

Come si evince dalla tabella, la massima luce ammissibile è 320 cm; si adotta un interasse non superior a 270cm a lato.

Verifica lamiera grecata:

Per la verifica della soletta H 10.0cm si utilizza il seguente foglio di calcolo:

CALCOLO SOLAIO IN LAMIERA GRECATA COLLABORANTE

Le caratteristiche della lamiera sono relative alla produzione meTecno s.p.a.

<http://www.metecno.it/> Sistema - Hi-Bond®

I materiali utilizzati sono:

- 1- lamiera in acciaio zincato tipo Fe 37 GZ 2752 UNI5753/75
- 2 - c.l.s. di resistenza non inferiore a 225 Kg/cm²
- 3 - inerti con pezzatura non superiore a 20 mm
- 4 - acciaio aggiuntivo e rete elettrosaldata Fe B 44 K

N.B.: Dati di input in rosso su fondo grigio- dati calcolati in nero su fondo bianco

CARATTERISTICHE SOLETTA

Tipo lamiera:	A55/P 600 S100
tensione ammissibile lamiera	1400 Kg/cm ²
Spessore caldana	5 cm
Altezza lamiera	5.5 cm
Altezza totale soletta	10.5 cm
Classe c.l.s.	300 Kg/cm ²
Peso specifico c.l.s.	2500 Kg/mc
Luce massima tra gli appoggi	2.70 m
Schema di calcolo	Travata continua

N.B. - viene condotta la verifica a soli momenti positivi pari a:

$M=q \cdot L^2/8$ nel caso di travata singola ed $M=q \cdot L^2/10$ nel caso di travata continua

Analisi dei carichi escluso peso proprio (per mq di soletta)

sovraccarico permanente	360 Kg/mq
sovraccarico accidentale	160 Kg/mq
totale	520 Kg/mq
carico mezzi d'opera 1 ^a fase	50 Kg/mq

Diametro e passo rete elettr. sup.

omogeneizzazione:

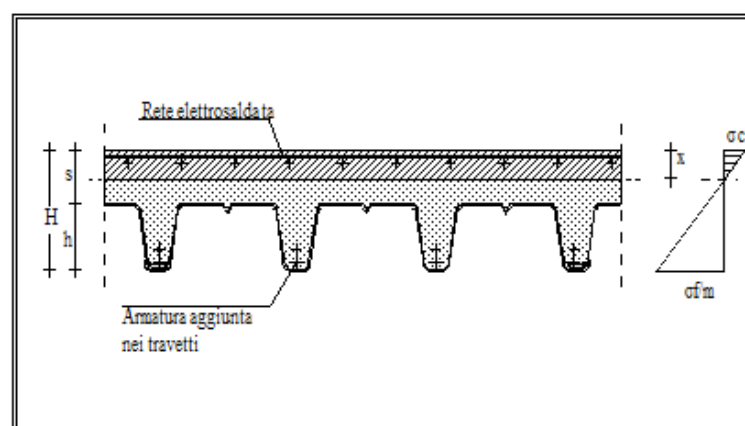
15

N.B. - p=passo della rete; c=copriferro

Coefficiente di omogeneizzazione lamiera

10

Ø (mm)	p (cm)	c (cm)	Af (cmq/m)
5	20	2.5	0.98



CALCOLO SOLLECITAZIONI

Caratteristiche geometriche della lamiera grecata:

Larghezza singolo pannello	600.0 mm
numero moduli per pannello	4
Interasse moduli	150.0 mm
larghezza sagoma superiore	61.5 mm
larghezza sagoma inferiore	61.5 mm
altezza lamiera	55.0 mm

Caratteristiche statiche lamiera grecata (al mq)

Spessore della lamiera	mm	1.00
Peso della lamiera	Kg/mq	13.10
Area della sezione	cmq/m	16.66
Momento d'inerzia ridotto	cm ⁴	70.66
Distanza baricentro dal bordo inf.	cm	2.48
Modulo di resistenza superiore	cm ³	21.08
Modulo di resistenza inferiore	cm ³	29.89

caratteristiche statiche sezione composta

Altezza complessiva soletta	cm	10.50
Peso soletta	Kg/mq	207.85
Coefficiente di omogeneizzazione lamiera		10
Posizione asse neutro	cm	3.73
Momento d'inerzia totale della sezione	cm ⁴	5524.84
Modulo di resistenza superiore	cm ³	1480.50
Modulo di resistenza inferiore	cm ³	816.28

VERIFICHE:

1° fase - il c.l.s. non ha ancora fatto presa - peso proprio + mezzi d'opera

$q' =$	257.85 Kg/m		
$M_{max} =$	187.97 Kgm/m		
$T_{max} =$	348.10 Kg/m		
tens. bordo sup. lamiera	891.71 Kg/cm ²		compressione
tens. bordo inf. Lamiera	628.88 Kg/cm ²		trazione
abbassamento	0.721472 cm	$=L/374$	(max L/250)

2° fase - sezione mista- carico perm. + accidentale - mezzi d'opera

$q'' =$	470.00 Kg/m		
$M_{max} =$	342.63 Kgm/m		
$T_{max} =$	634.50 Kg/m		
tens. nel cls.	23.14 Kg/cm ²		
tens. bordo inf. lamiera	419.74 Kg/cm ²		trazione
abbassamento	0.113290 cm	$=L/2383$	(max L/500)

tensioni complessive:

c.l.s.	23.14 Kg/cm ²	verificato
lamiera	1048.62 Kg/cm ²	verificato

SEZIONE VERIFICATA

MODELLO DI CALCOLO

Il modello di calcolo è stato realizzato con il programma agli elementi finiti DOLEMEN versione 21.

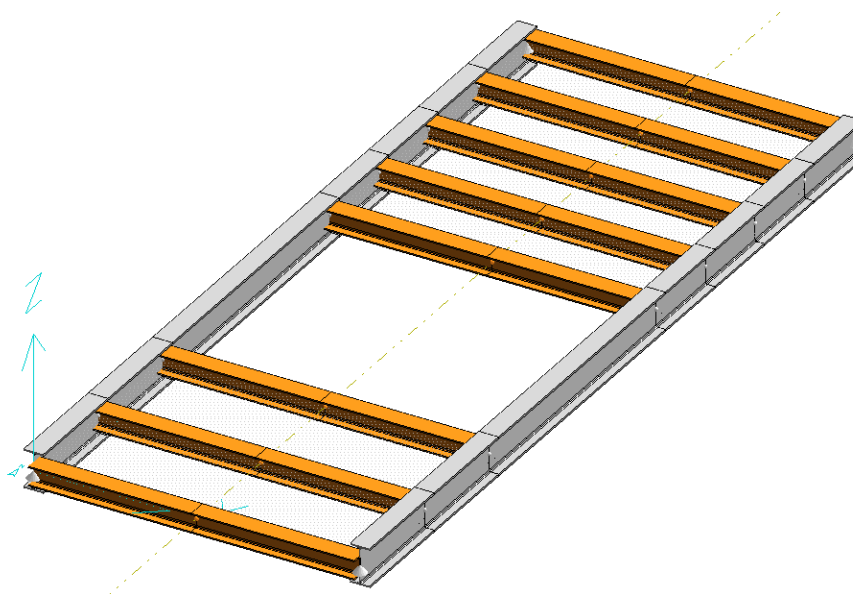


Tabella 86 – Vista 3D modello complessivo

Profili impiegati:

Trave principale: IPE 600

trave secondaria: HEB 300

Si considera infine la presenza in copertura di un muretto di chiusura del foro di sezione 20x68cm in conglomerato cementizio armato che grava direttamente sulle travi; tale carico è stato simulato come carico lineare sulle travi interessate pari a 360 kg/ml.

La struttura è modellata con elementi tipo beam a simulare le aste che costituiscono la struttura e sono state schematizzate cautelativamente con schema con appoggio – appoggio. Ai fini di determinare la massima sollecitazione sulle travi secondarie, la lamiera grecata è stata modellata come elementi “solaio”, non infinitamente rigidi nel piano, senza rigidezza né peso proprio. Tutte le travi che risultano completamente interne, o al limite sul perimetro, e la cui direzione non è parallela a quella del solaio saranno interessate alla ripartizione del carico : questa ripartizione del carico viene effettuata per aree di competenza.

CONDIZIONI DI CARICO

Si riporta nel seguito l’elenco delle condizioni di carico utilizzate nel modello 3D della struttura.

```
CONDIZIONI DI CARICO-----|-----|-----|-----|num.=      3
Nome
1      G1      N. carichi:  46
   Lista carichi: 1-16, 49-78
2      G2      N. carichi:  16
   Lista carichi: 17-32
3      Q_cat_neve      N. carichi:  16
   Lista carichi: 33-48

RISULTANTI DEI CARICHI (punto di applicazione nell'origine degli assi):
cond.  FX      FY      FZ      MX      MY      MZ
1      0.000000E+00  0.000000E+00 -1.673733E+04 -1.156587E+07  4.184333E+06  0.000000E+00
2      0.000000E+00  0.000000E+00 -1.560600E+04 -1.095179E+07  3.901500E+06  0.000000E+00
3      0.000000E+00  0.000000E+00 -5.202000E+03 -3.650596E+06  1.300500E+06  0.000000E+00
```

CASI DI CARICO

Di seguito si riportano le combinazioni di carico utilizzate nel modello

NOME	DESCRIZIONE	VERIFICA	TIPO	CONDIZ. INSERITE			CASI INSERITI	
				Num.	Coeff.	Segno	Num.	Coeff.
1	SLU SENZA SISMA	S.L.U.	somma	1	1.300	+		
				2	1.500	+		
				3	1.500	+		
2	Rara	Rara	somma	1	1.000	+		
				2	1.000	+		
				3	1.000	+		
3	Frequente	Freq.	somma	1	1.000	+		
				2	1.000	+		
				3	0.200	+		
4	Quasi Perm	QuasiPerm.	somma	1	1.000	+		
				2	1.000	+		

DESTINAZIONI D'USO E AZIONI AGENTI

Si riportano a seguire i carichi associati agli elementi strutturali e non strutturali utilizzati per il dimensionamento della struttura diversificata per tipologia strutturale analizzata. Il peso proprio degli elementi strutturali portanti è computato direttamente dal programma di calcolo mentre per i carichi portati si considera il peso degli elementi non strutturali gravanti la struttura. Tutti i solai sono adibiti a solaio per atri di stazioni ferroviarie (cat.C3).

I coefficienti adottati per la definizione delle combinazioni di carico (ai sensi del D.M. del Ministero delle Infrastrutture e dei Trasporti del 14-01-08, punto 2.5.3) sono individuati dalla seguente tabella:

Categoria/Azione variabile	Ψ_{0j}	Ψ_{1j}	Ψ_{2j}
Categoria A - Ambienti ad uso residenziale	0,7	0,5	0,3
Categoria B - Uffici	0,7	0,5	0,3
Categoria C - Ambienti suscettibili di affollamento	0,7	0,7	0,6
Categoria D - Ambienti ad uso commerciale	0,7	0,7	0,6
Categoria E - Aree per immagazzinamento, uso commerciale e uso industriale Biblioteche, archivi, magazzini e ambienti ad uso industriale	1,0	0,9	0,8
Categoria F - Rimesse, parcheggi ed aree per il traffico di veicoli (per autoveicoli di peso ≤ 30 kN)	0,7	0,7	0,6
Categoria G - Rimesse, parcheggi ed aree per il traffico di veicoli (per autoveicoli di peso > 30 kN)	0,7	0,5	0,3
Categoria H - Coperture accessibili per sola manutenzione	0,0	0,0	0,0
Categoria I - Coperture praticabili	da valutarsi caso per caso		
Categoria K - Coperture per usi speciali (impianti, eliporti, ...)			
Vento	0,6	0,2	0,0
Neve (a quota ≤ 1000 m s.l.m.)	0,5	0,2	0,0
Neve (a quota > 1000 m s.l.m.)	0,7	0,5	0,2
Variazioni termiche	0,6	0,5	0,0

Tabella 87 – tab 2.5.I – NTC18: valori dei coefficienti di combinazione

Cat. Neve

$$(\Psi_{0j} = 0,5; \Psi_{1j} = 0,2; \Psi_{2j} = 0,0)$$

SOLLECITAZIONI

Si riporta a seguire le mappe delle sollecitazioni agenti distinte tra azioni statiche ed azioni sismiche.

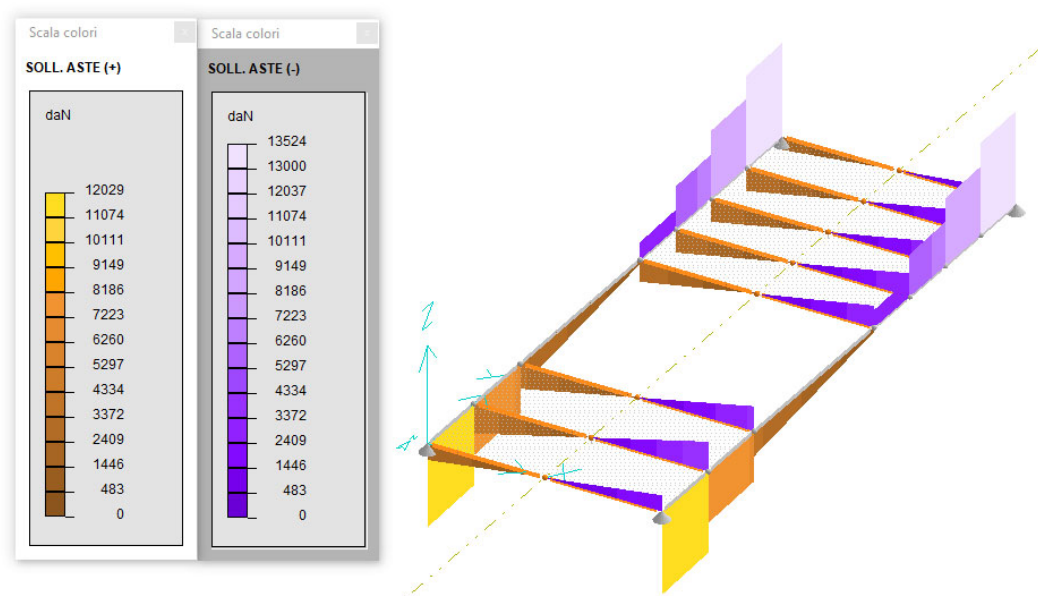


Figura 23: involucro taglio Ty - statica

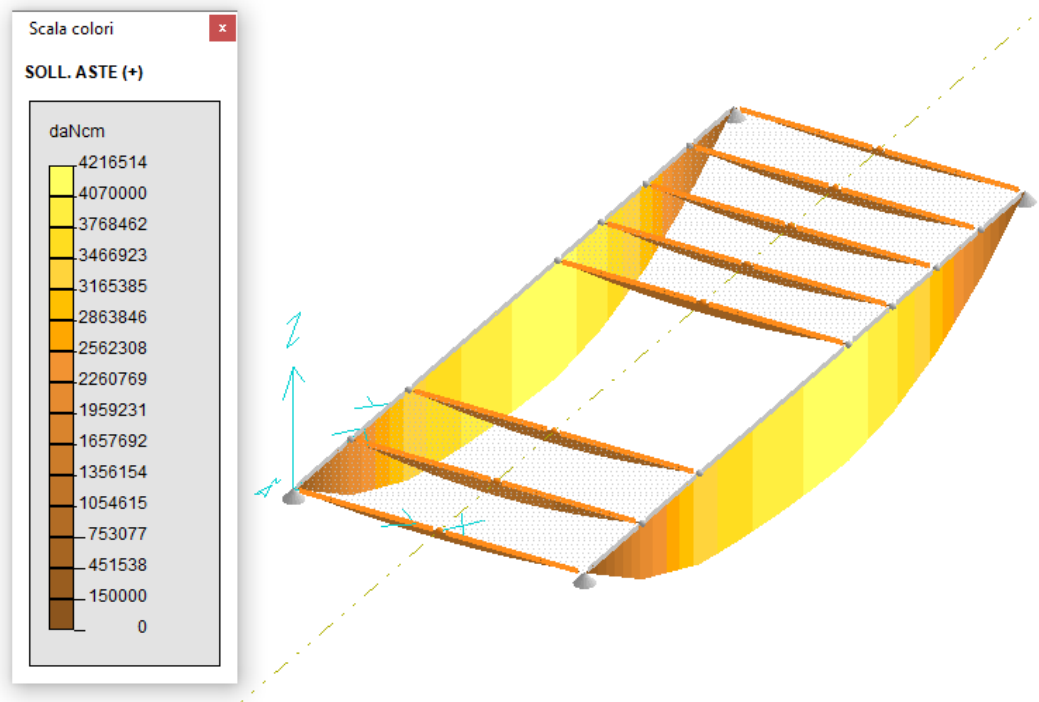


Figura 89: involucro momento M_z – statica

VERIFICA

A seguire si riportano gli estratti delle verifiche delle aste suddivise in elementi strutturali costituenti la struttura; le verifiche sotto riportate evidenziano la percentuale di verifica degli elementi strutturali

MATERIALI

S355 (EN 10025-2): Mod.EI.= 2100000.0; $g_m = 1.050$;
 $f_{yk} = 3550.0$ (3350.0 per $sp > 40$ mm); $f_{yd} = 3381.0$ (3190.5 per $sp > 40$ mm).

Il programma esegue la verifica delle aste selezionate. In particolare, vengono controllate, in percentuale:

- la σ normale di tensoflessione (S_x);
- la τ di taglio / torsione (τ);
- la σ ideale combinazione di σ e τ (S_i).
- verifica di stabilità (S_s)

CASI DI CARICO

N	Descrizione	Soll.
1	SLU	1

TRAVI PRINCIPALI IPE 600

CARATTERISTICHE GEOMETRICHE

P_IPE600_S001 (1) :
 $A = 156.2806E+00$ $J_z = 92.3031E+03$ $J_y = 3.3881E+03$ $J_t = 127.4898E+00$

RIASSUNTO DELLE ASTE VERIFICATE CON L'ULTIMO CALCOLO EFFETTUATO

Rapporti di tensioni:

asta	sez	profilo	Tau %	Sx %	Si %	Ss %	Caso	Max %
5984	1	P_IPE600_S001	3	41	41	0	1- 1	41 Si
5987	1	P_IPE600_S001	3	41	41	0	1- 1	41 Si
5991	1	P_IPE600_S001	10	20	20	0	1- 1	20 Si

5992	1	P_IPE600_S001		7	32	32	0	1- 1	32	si
5993	1	P_IPE600_S001		3	41	41	0	1- 1	41	si
5995	1	P_IPE600_S001		10	20	20	0	1- 1	20	si
5996	1	P_IPE600_S001		7	32	32	0	1- 1	32	si
5997	1	P_IPE600_S001		3	41	41	0	1- 1	41	si
6009	1	P_IPE600_S001		6	38	38	0	1- 1	38	si
6010	1	P_IPE600_S001		9	30	30	0	1- 1	30	si
6011	1	P_IPE600_S001		12	17	18	0	1- 1	18	si
6012	1	P_IPE600_S001		6	38	38	0	1- 1	38	si
6013	1	P_IPE600_S001		9	30	30	0	1- 1	30	si
6014	1	P_IPE600_S001		12	17	18	0	1- 1	18	si

TRAVI PRINCIPALI 1 (lato lungo): HEB 300

CARATTERISTICHE GEOMETRICHE

P_HEB300_S002 (2) :

A =149.4527E+00 Jz= 25.2209E+03 Jy= 8.5640E+03 Jt=143.3263E+00

RIASSUNTO DELLE ASTE VERIFICATE CON L'ULTIMO CALCOLO EFFETTUATO

Rapporti di tensioni:

asta	sez	profilo	Tau %	Sx %	Si %	Ss %	Caso	Max %	
4354	2	P_HEB300_S002		5	6	6	0	1- 1	6 si
5977	2	P_HEB300_S002		4	5	5	0	1- 1	5 si
5981	2	P_HEB300_S002		6	7	7	0	1- 1	7 si
5982	2	P_HEB300_S002		7	8	8	0	1- 1	8 si
5989	2	P_HEB300_S002		6	8	8	0	1- 1	8 si
5990	2	P_HEB300_S002		8	10	10	0	1- 1	10 si
5999	2	P_HEB300_S002		4	5	5	0	1- 1	5 si
6000	2	P_HEB300_S002		6	8	8	0	1- 1	8 si
6001	2	P_HEB300_S002		6	7	7	0	1- 1	7 si
6002	2	P_HEB300_S002		7	8	8	0	1- 1	8 si
6003	2	P_HEB300_S002		8	10	10	0	1- 1	10 si
6004	2	P_HEB300_S002		5	6	6	0	1- 1	6 si
6005	2	P_HEB300_S002		6	8	8	0	1- 1	8 si
6006	2	P_HEB300_S002		6	8	8	0	1- 1	8 si
6007	2	P_HEB300_S002		6	8	8	0	1- 1	8 si
6008	2	P_HEB300_S002		6	8	8	0	1- 1	8 si

DEFORMAZIONE

La massima deformazione ottenuta in combinazione SLE rara è individuate in prossimità delle travi secondarie, come illustrato dal grafico sottostante.

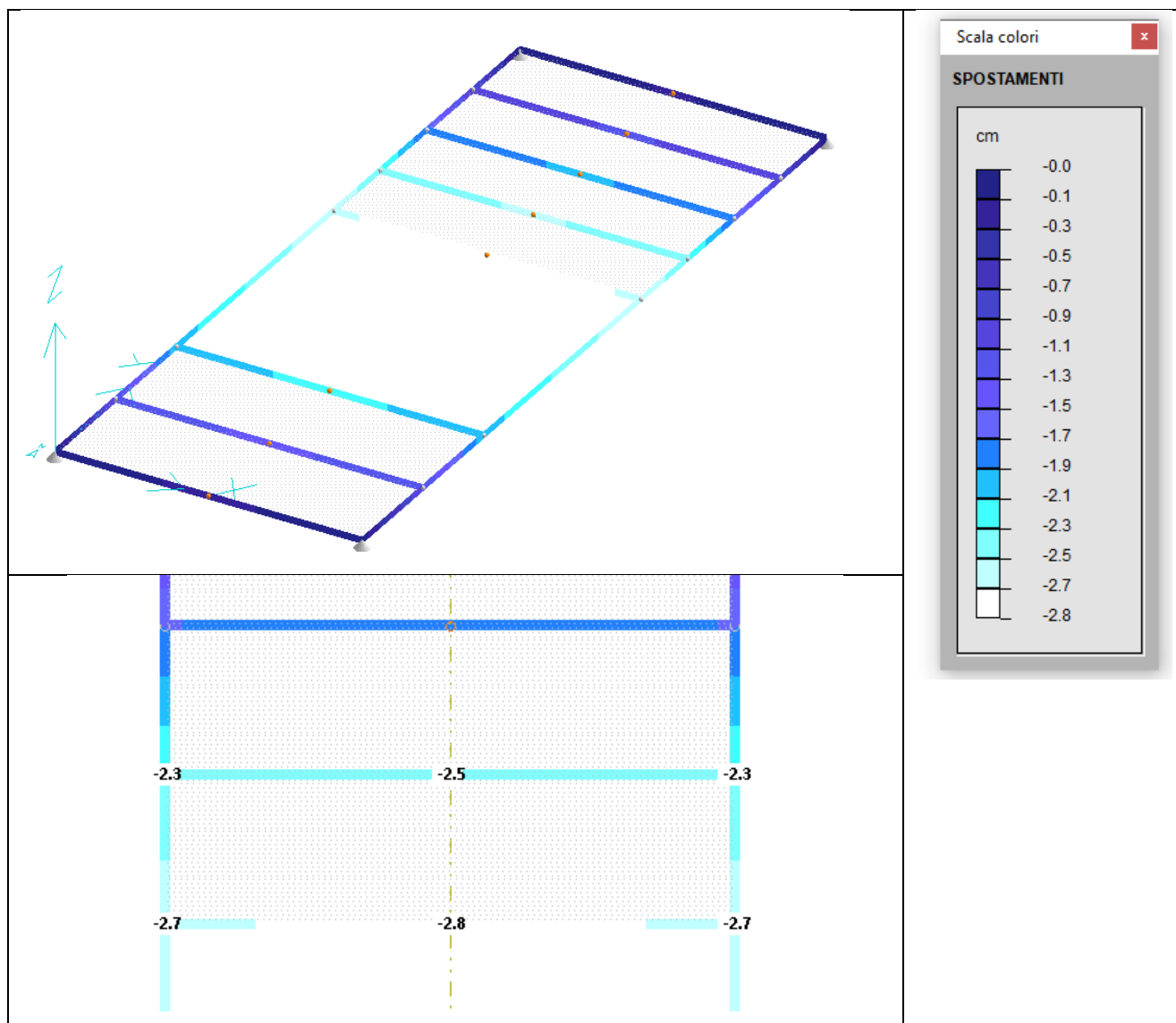


Figura 90: deformazione massima combinazione SLE rara

Il valore della freccia relativa massima della trave secondaria è pari a $2.8 - 2.7 = -0.1$ cm; dal momento che il valore della freccia limite, nel caso di solai in generale, è pari a $L/250 = 500 / 250 = 2$ cm tale valore è maggiore rispetto a quanto ottenuto dal calcolo.

Per la trave principale, la freccia massima è pari a -2.0 cm che confrontato con il valore della freccia limite pari a $L/250 = 1310/250 = 5.24$ cm risulta ben inferiore.

4.10.3. Lucernario piano copertura (zona B)

In tal caso il lucernario analizzato si presenta con due fori avvicinati di dimensioni ridotte rispetto a quanto già studiato in precedenza ma con uno schema diverso (a tre campate) con presenza di travi terziarie a support del muretto di copertura.

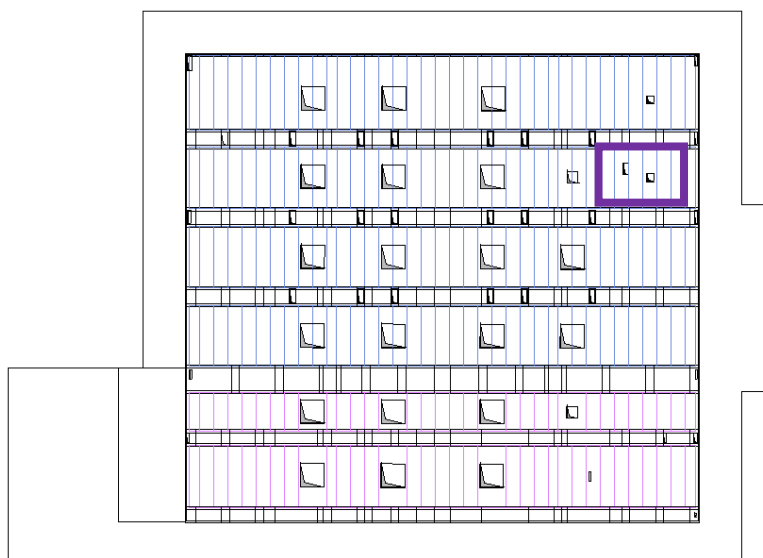


Figura 91: individuazione zona di studio

La lamiera grecata è la medesima di quanto analizzato in precedenza.

MODELLO DI CALCOLO

Il modello di calcolo è stato realizzato con il programma agli elementi finiti DOLEMEN versione 21.

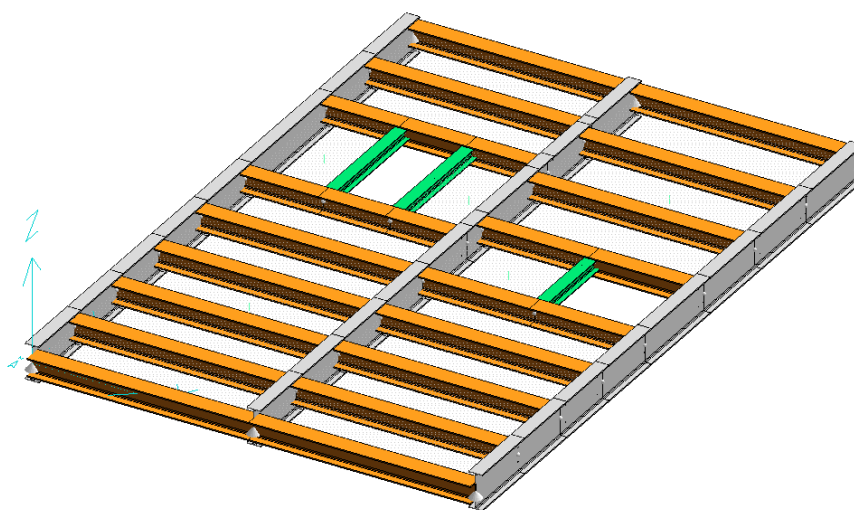


Tabella 92 – Vista 3D modello complessivo

Profili impiegati:

Trave principale: IPE 600

trave secondaria: HEB 300

Trave terziaria: HEA 200

Si considera infine la presenza in copertura di un muretto di chiusura del foro di sezione 20x68cm in conglomerato cementizio armato che grava direttamente sulle travi; tale carico è stato simulato come carico lineare sulle travi interessate pari a 360 kg/ml.

La struttura è modellata con elementi tipo beam a simulare le aste che costituiscono la struttura e sono state schematizzate cautelativamente con schema con appoggio – appoggio. Ai fini di determinare la massima sollecitazione sulle travi secondarie, la lamiera grecata è stata modellata come elementi “solaio”, non infinitamente rigidi nel piano, senza rigidità né peso proprio. Tutte le travi che risultano completamente interne, o al limite sul perimetro, e la cui direzione non è parallela a quella del solaio saranno interessate alla ripartizione del carico : questa ripartizione del carico viene effettuata per aree di competenza.

CONDIZIONI DI CARICO

Si riporta nel seguito l'elenco delle condizioni di carico utilizzate nel modello 3D della struttura.

```
CONDIZIONI DI CARICO-----|-----|-----|-----|num.=      3
Nome
1          G1    N. carichi:   84
  Lista carichi: 1-30, 98-151

2          G2    N. carichi:   37
  Lista carichi: 31-67

3      Q_cat_neve  N. carichi:   30
  Lista carichi: 68-97

RISULTANTI DEI CARICHI (punto di applicazione nell'origine degli assi):
cond.      FX      FY      FZ      MX      MY      MZ
1  0.000000E+00  0.000000E+00 -2.290590E+04 -1.219018E+07  8.259857E+06  0.000000E+00
2  0.000000E+00  0.000000E+00 -3.049102E+04 -1.677690E+07  1.098871E+07  0.000000E+00
3  0.000000E+00  0.000000E+00 -8.794608E+03 -4.699923E+06  3.156456E+06  0.000000E+00
```

CASI DI CARICO

Di seguito si riportano le combinazioni di carico utilizzate nel modello

NOME	DESCRIZIONE	VERIFICA	TIPO	CONDIZ. INSERITE			CASI INSERITI	
				Num.	Coeff.	Segno	Num.	Coeff.
1	SLU SENZA SISMA	S.L.U.	somma	1	1.300	+		
				2	1.500	+		
				3	1.500	+		
2	Rara	Rara	somma	1	1.000	+		
				2	1.000	+		
				3	1.000	+		
3	Frequente	Freq.	somma	1	1.000	+		
				2	1.000	+		
				3	0.200	+		
4	Quasi Perm	QuasiPerm.	somma	1	1.000	+		
				2	1.000	+		

DESTINAZIONI D'USO E AZIONI AGENTI

Si riportano a seguire i carichi associati agli elementi strutturali e non strutturali utilizzati per il dimensionamento della struttura diversificata per tipologia strutturale analizzata. Il peso proprio degli elementi strutturali portanti è computato direttamente dal programma di calcolo mentre per i carichi

portati si considera il peso degli elementi non strutturali gravanti la struttura. Tutti i solai sono adibiti a solaio per atri di stazioni ferroviarie (cat.C3).

I coefficienti adottati per la definizione delle combinazioni di carico (ai sensi del D.M. del Ministero delle Infrastrutture e dei Trasporti del 14-01-08, punto 2.5.3) sono individuati dalla seguente tabella:

Categoria/Azione variabile	Ψ_{0j}	Ψ_{1j}	Ψ_{2j}
Categoria A - Ambienti ad uso residenziale	0,7	0,5	0,3
Categoria B - Uffici	0,7	0,5	0,3
Categoria C - Ambienti suscettibili di affollamento	0,7	0,7	0,6
Categoria D - Ambienti ad uso commerciale	0,7	0,7	0,6
Categoria E - Aree per immagazzinamento, uso commerciale e uso industriale Biblioteche, archivi, magazzini e ambienti ad uso industriale	1,0	0,9	0,8
Categoria F - Rimesse , parcheggi ed aree per il traffico di veicoli (per autoveicoli di peso ≤ 30 kN)	0,7	0,7	0,6
Categoria G - Rimesse, parcheggi ed aree per il traffico di veicoli (per autoveicoli di peso > 30 kN)	0,7	0,5	0,3
Categoria H - Coperture accessibili per sola manutenzione	0,0	0,0	0,0
Categoria I - Coperture praticabili	da valutarsi caso per caso		
Categoria K - Coperture per usi speciali (impianti, eliporti, ...)			
Vento	0,6	0,2	0,0
Neve (a quota ≤ 1000 m s.l.m.)	0,5	0,2	0,0
Neve (a quota > 1000 m s.l.m.)	0,7	0,5	0,2
Variazioni termiche	0,6	0,5	0,0

Tabella 93 – tab 2.5.I – NTC18: valori dei coefficienti di combinazione

Cat. Neve

($\Psi_{0j} = 0,5$; $\Psi_{1j} = 0,2$; $\Psi_{2j} = 0,0$)

SOLLECITAZIONI

Si riporta a seguire le mappe delle sollecitazioni agenti distinte tra azioni statiche ed azioni sismiche.

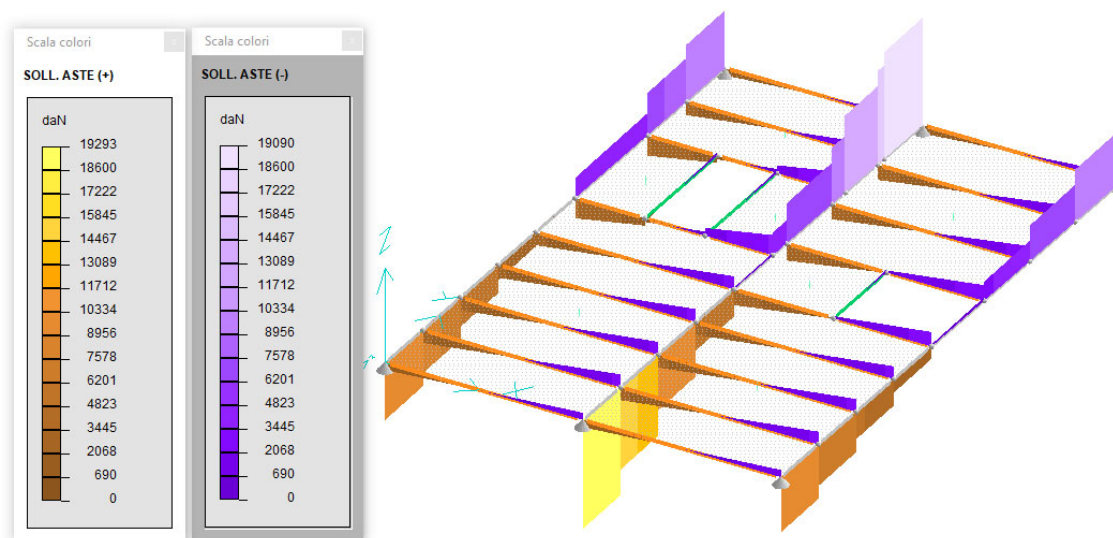


Figura 24: involucro taglio Ty - statica

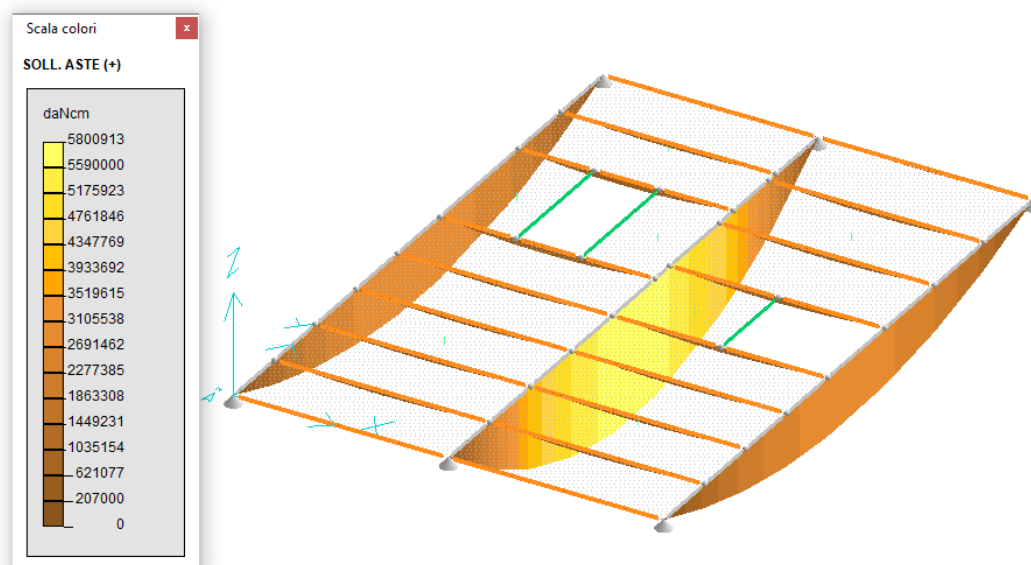


Figura 95: involucro momento M_z – statica

VERIFICA

A seguire si riportano gli estratti delle verifiche delle aste suddivise in elementi strutturali costituenti la struttura; le verifiche sotto riportate evidenziano la percentuale di verifica degli elementi strutturali

MATERIALI

S355 (EN 10025-2): Mod.EI.= 2100000.0; $g_m = 1.050$;
 $f_{yk} = 3550.0$ (3350.0 per $sp > 40$ mm); $f_{yd} = 3381.0$ (3190.5 per $sp > 40$ mm).

Il programma esegue la verifica delle aste selezionate. In particolare, vengono controllate, in percentuale:

- la σ normale di tensoflessione (S_x);
- la τ di taglio / torsione (τ);
- la σ ideale combinazione di σ e τ (S_i).
- verifica di stabilità (S_s)

CASI DI CARICO

N	Descrizione	Soll.
1	SLU	1

TRAVI PRINCIPALI IPE 600

CARATTERISTICHE GEOMETRICHE

P_IPE600_S001 (1) :

A =156.2806E+00 Jz= 92.3031E+03 Jy= 3.3881E+03 Jt=127.4898E+00

RIASSUNTO DELLE ASTE VERIFICATE CON L'ULTIMO CALCOLO EFFETTUATO

Rapporti di tensioni:

asta	sez	profilo	Tau %	Sx %	Si %	Ss %	Caso	Max %
6040	1	P_IPE600_S001	16	23	23	0	1- 1	23 Si
6042	1	P_IPE600_S001	1	56	56	0	1- 1	56 Si
6059	1	P_IPE600_S001	9	12	12	0	1- 1	12 Si
6060	1	P_IPE600_S001	7	21	21	0	1- 1	21 Si
6061	1	P_IPE600_S001	5	27	27	0	1- 1	27 Si
6062	1	P_IPE600_S001	3	30	30	0	1- 1	30 Si

6063	1	P_IPE600_S001		1	30	30	0	1- 1	30	si
6064	1	P_IPE600_S001		4	30	30	0	1- 1	30	si
6065	1	P_IPE600_S001		7	22	22	0	1- 1	22	si
6066	1	P_IPE600_S001		9	13	13	0	1- 1	13	si
6067	1	P_IPE600_S001		4	56	56	0	1- 1	56	si
6068	1	P_IPE600_S001		6	54	54	0	1- 1	54	si
6069	1	P_IPE600_S001		9	44	44	0	1- 1	44	si
6070	1	P_IPE600_S001		12	40	40	0	1- 1	40	si
6071	1	P_IPE600_S001		14	26	27	0	1- 1	27	si
6072	1	P_IPE600_S001		16	23	23	0	1- 1	23	si
6073	1	P_IPE600_S001		12	39	39	0	1- 1	39	si
6074	1	P_IPE600_S001		8	51	51	0	1- 1	51	si
6075	1	P_IPE600_S001		5	56	56	0	1- 1	56	si
6076	1	P_IPE600_S001		8	12	12	0	1- 1	12	si
6077	1	P_IPE600_S001		6	20	20	0	1- 1	20	si
6078	1	P_IPE600_S001		4	26	26	0	1- 1	26	si
6079	1	P_IPE600_S001		2	28	28	0	1- 1	28	si
6080	1	P_IPE600_S001		1	28	28	0	1- 1	28	si
6081	1	P_IPE600_S001		3	27	27	0	1- 1	27	si
6082	1	P_IPE600_S001		6	23	23	0	1- 1	23	si
6083	1	P_IPE600_S001		8	14	14	0	1- 1	14	si

TRAVI SECONDARIE: HEB 300

CARATTERISTICHE GEOMETRICHE

P_HEB300_S002 (2) :

A =149.4527E+00 Jz= 25.2209E+03 Jy= 8.5640E+03 Jt=143.3263E+00

RIASSUNTO DELLE ASTE VERIFICATE CON L'ULTIMO CALCOLO EFFETTUATO

Rapporti di tensioni:

asta	sez	profilo	Tau %	Sx %	Si %	Ss %	Caso	Max %
4354	2	P_HEB300_S002		3	3	3	0	1- 1 3 si
5977	2	P_HEB300_S002		3	3	3	0	1- 1 3 si
6015	2	P_HEB300_S002		3	3	3	0	1- 1 3 si
6029	2	P_HEB300_S002		3	3	3	0	1- 1 3 si
6032	2	P_HEB300_S002		5	4	5	0	1- 1 5 si
6036	2	P_HEB300_S002		5	4	5	0	1- 1 5 si
6047	2	P_HEB300_S002		4	4	4	0	1- 1 4 si
6048	2	P_HEB300_S002		4	4	4	0	1- 1 4 si
6049	2	P_HEB300_S002		4	4	4	0	1- 1 4 si
6051	2	P_HEB300_S002		4	4	4	0	1- 1 4 si
6052	2	P_HEB300_S002		4	4	4	0	1- 1 4 si
6053	2	P_HEB300_S002		4	4	4	0	1- 1 4 si
6056	2	P_HEB300_S002		5	5	5	0	1- 1 5 si
6057	2	P_HEB300_S002		5	5	5	0	1- 1 5 si
6087	2	P_HEB300_S002		7	6	7	0	1- 1 7 si
6088	2	P_HEB300_S002		2	6	6	0	1- 1 6 si
6089	2	P_HEB300_S002		7	6	7	0	1- 1 7 si
6090	2	P_HEB300_S002		7	6	7	0	1- 1 7 si
6091	2	P_HEB300_S002		2	6	6	0	1- 1 6 si
6092	2	P_HEB300_S002		7	6	7	0	1- 1 7 si
6093	2	P_HEB300_S002		6	6	6	0	1- 1 6 si
6094	2	P_HEB300_S002		5	6	6	0	1- 1 6 si
6095	2	P_HEB300_S002		5	5	5	0	1- 1 5 si
6096	2	P_HEB300_S002		5	5	5	0	1- 1 5 si

TRAVI TERZIARE: HEA 200

CARATTERISTICHE GEOMETRICHE

P_HEA200_S003 (3) :

A = 53.9979E+00 Jz= 3.7025E+03 Jy= 1.3357E+03 Jt= 14.4684E+00

RIASSUNTO DELLE ASTE VERIFICATE CON L'ULTIMO CALCOLO EFFETTUATO

Rapporti di tensioni:

asta	sez	profilo	Tau %	Sx %	Si %	Ss %	Caso	Max %	
6084	3	P_HEA200_S003	3	3	3	0	1- 1	3	Si
6085	3	P_HEA200_S003	3	3	3	0	1- 1	3	Si
6086	3	P_HEA200_S003	3	2	3	0	1- 1	3	Si

DEFORMAZIONE

La massima deformazione ottenuta in combinazione SLE rara è individuate in prossimità delle travi secondarie,, come illustrato dal grafico sottostante.

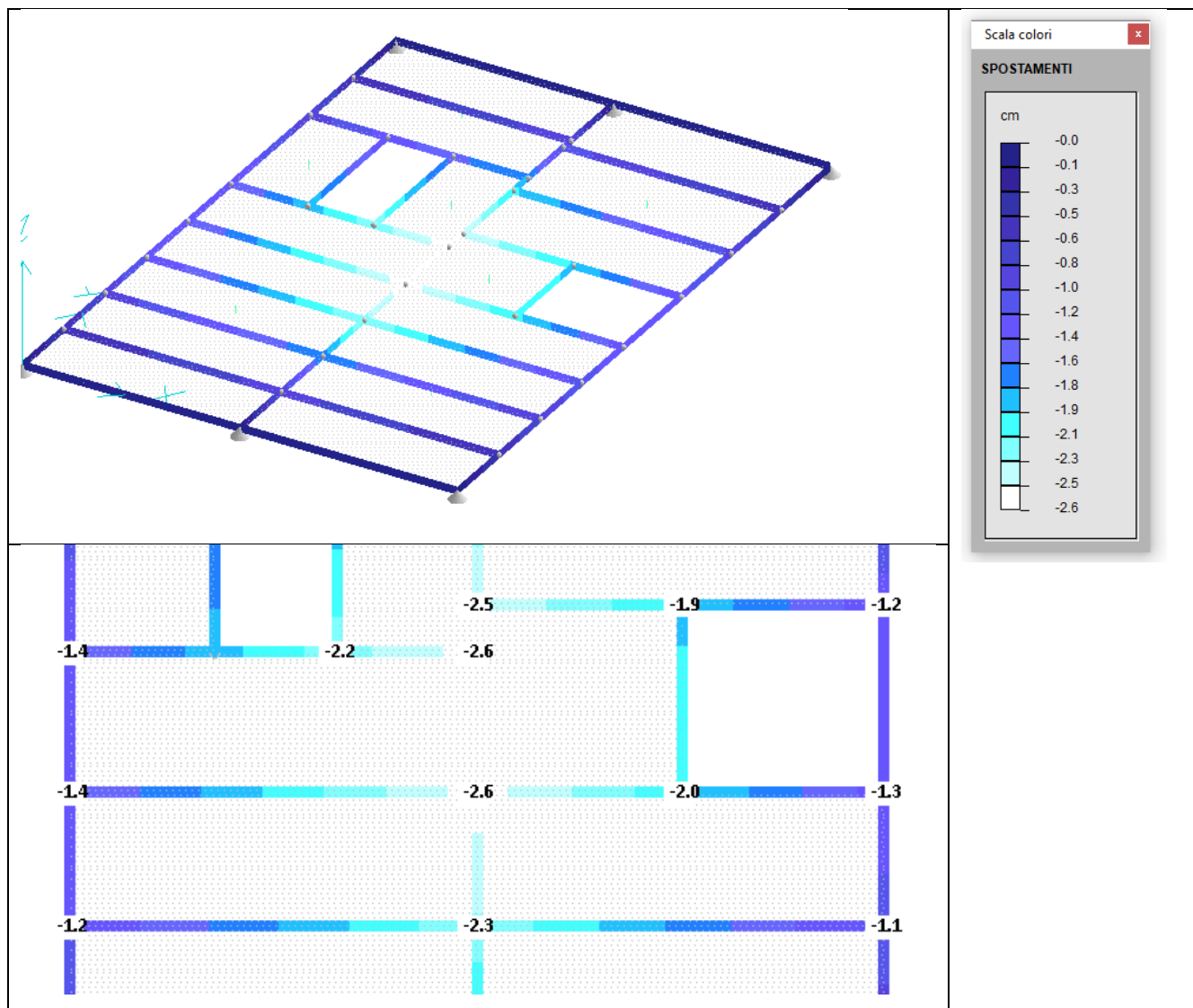


Figura 96: deformazione massima combinazione SLE rara

Il valore della freccia relativa massima della trave principale è pari a $2.6 - 1.4 = -1.2\text{cm}$; dal momento che il valore della freccia limite, nel caso di solai in generale, è pari a $L/250 = 1080 / 250 = 4,32\text{ cm}$ tale valore è maggiore rispetto a quanto ottenuto dal calcolo.