



Regione Toscana - Provincia di Pistoia

COMUNE di PISTOIA

Settore: DIR. U.O. EDILIZIA COMUNALE



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PROGETTISTA

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TITOLO DEL PROGETTO

**MIGLIORAMENTO SISMICO
ALLO STADIO MARCELLO MELANI DI PISTOIA**

FASCICOLO

**RELAZIONEDI CALCOLO
integrazione 3**

UBICAZIONE

Via dello Stadio, Pistoia (PT)

DISEGNO N.

A8.4

N.	DATA	OGGETTO REV.
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DATA

DOCUMENTO CAD

ARCHIVIO POSIZ. N.

223

PROGETTISTA

RUP

D.L.

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ANALISI DINAMICA

AZIONE SISMICA ORIZZONTALE + VERTICALE ($0,6A_g - E_x + E_y + E_z$)

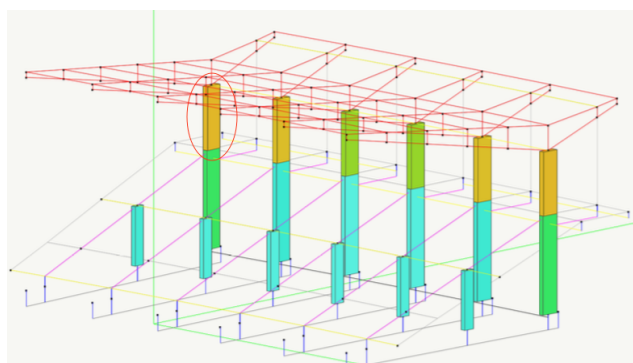
Di seguito sono riportati i risultati ottenuti dall'elaborazione numerica del modello (rappresentante la situazione consolidata) soggetto ad azione sismica verticale con una accelerazione pari a $0,6 a_g$ con $a_g = 0,183 g$. I parametri sismici impiegati sono quelli riportati precedentemente nella relazione di calcolo.

Dall'elaborato sono stati ricavati sia le sollecitazioni che gli spostamenti indotti da questa azione. In particolare è evidente che questa azione incide essenzialmente su due fattori: accentua gli spostamenti orizzontali, soprattutto in copertura, e aumenta sensibilmente, rispetto alla condizione "statica", le sollecitazioni sui pilastri al piano superiore che sorreggono la pensilina di copertura. Dai diagrammi delle sollecitazioni massime sulle membrature del telaio principale (riportati successivamente) si rileva che i valori massimi si ottengono sempre per la condizione statica ad esclusione, appunto, dei pilastri superiori che invece sono maggiormente sollecitati con le combinazioni dinamiche e dei cordoli (le travi perpendicolari ai telai principali) che anch'essi risultano più sollecitati con l'azione sismica, risultando comunque sempre verificati.

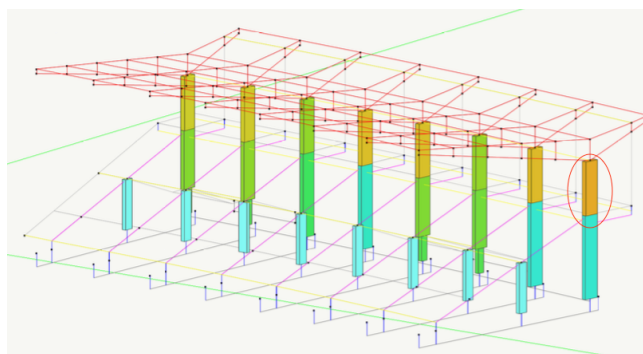
Successivamente agli elaborati numerici per i modelli A e B si riportano le verifiche di controllo (comuni per ambedue i modelli) dei soli elementi maggiormente sollecitati rispetto all'azione statica, rimandando al capitolo delle verifiche statiche per le altre.

Dalle verifiche effettuate sugli elementi che costituiscono la struttura, riportate successivamente, si può rilevare che i risultati sono pressoché gli stessi rispetto al modello senza la componente verticale (le differenze si limitano a frazioni decimali che si perdono negli arrotondamenti) e, come per i modelli precedenti, sono sempre i pilastri esterni del livello superiore che vanno in crisi per prima con una PGA_{SLV} pari a:

- modello A $PGA_{SLV} = 160$ $\zeta_{E,min} = 0,88$ meccanismo di rottura flessionale (elem. duttile);
- modello B $PGA_{SLV} = 149$ $\zeta_{E,min} = 0,83$ meccanismo di rottura flessionale (elem. Duttile).
-



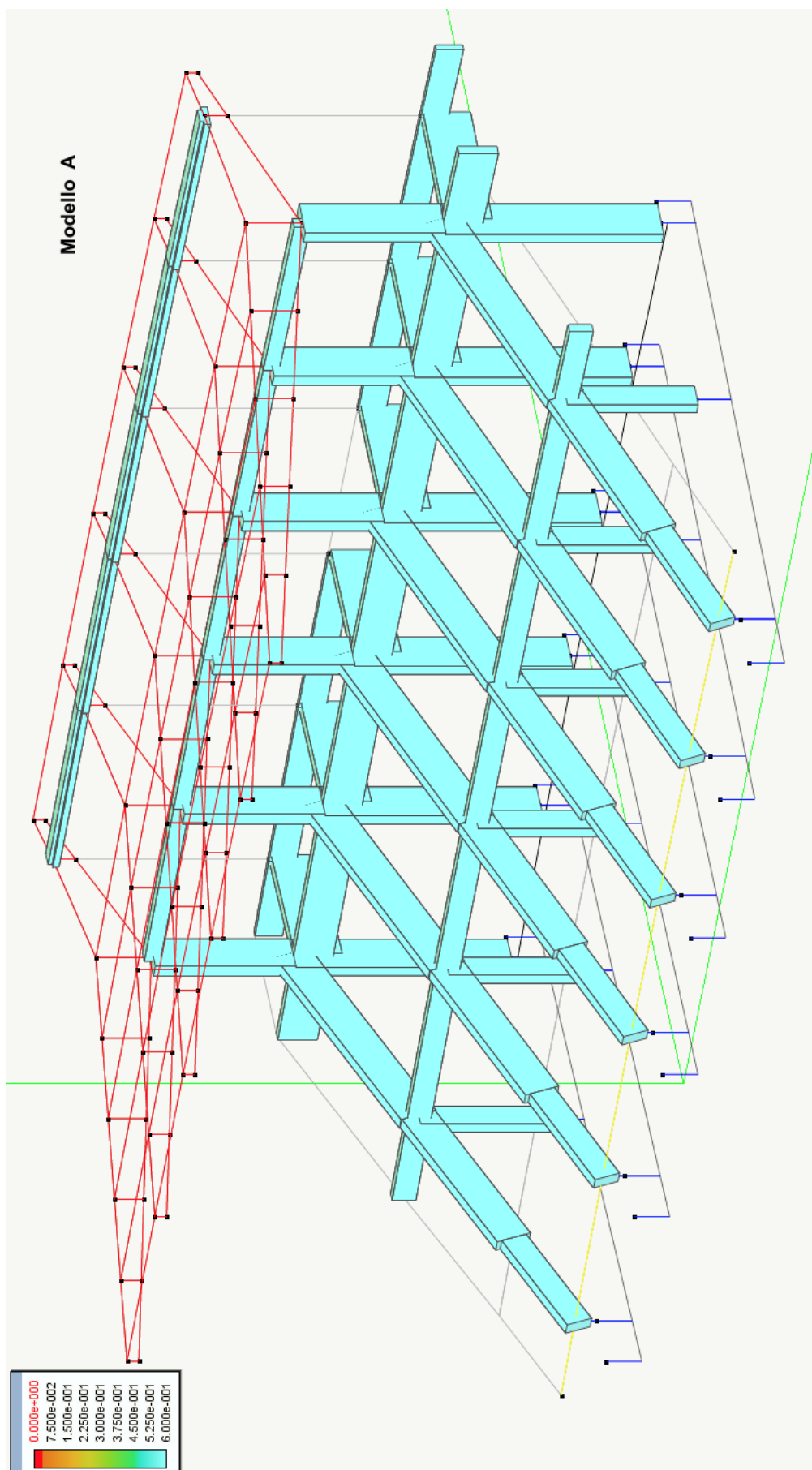
mod. A

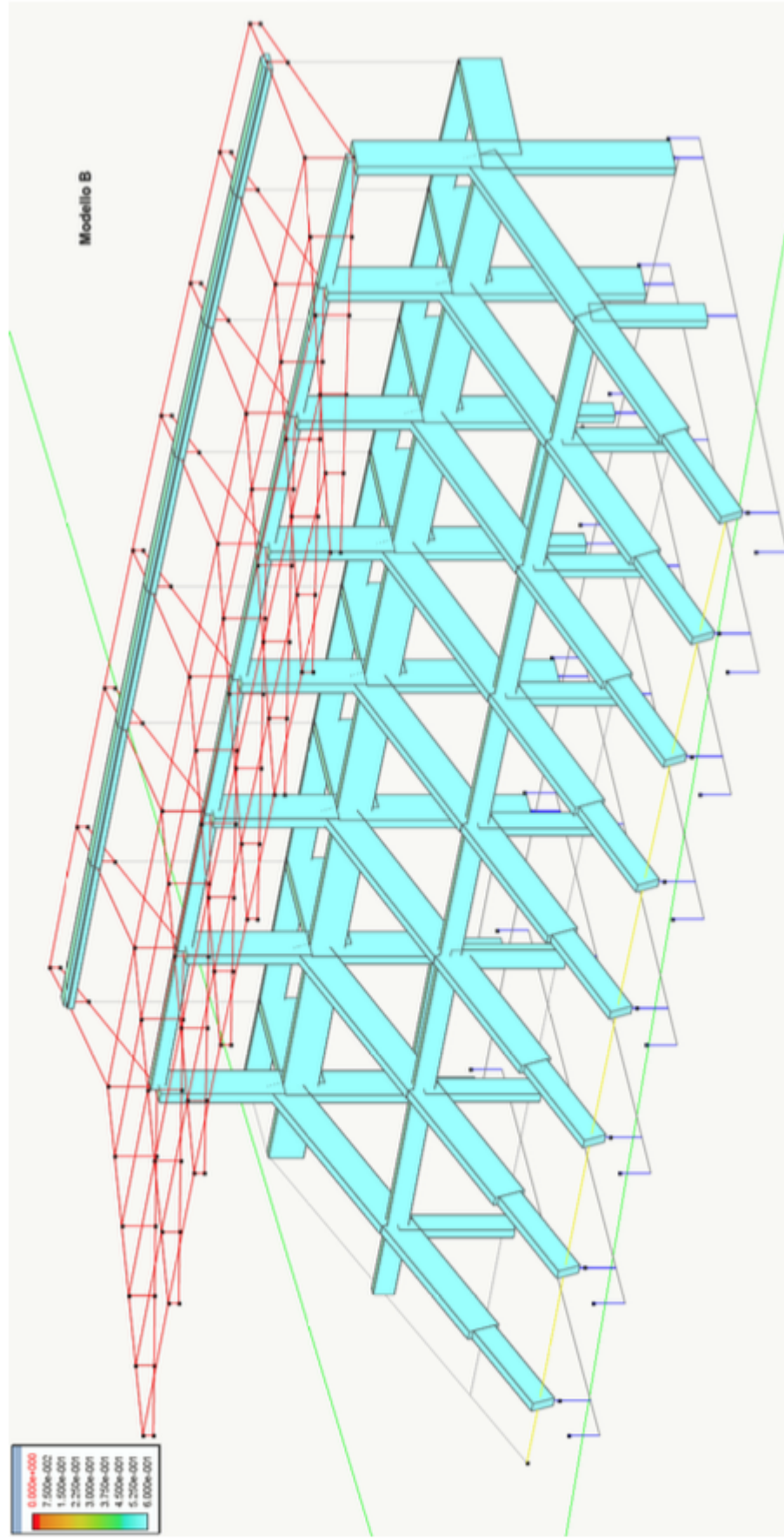


mod. B

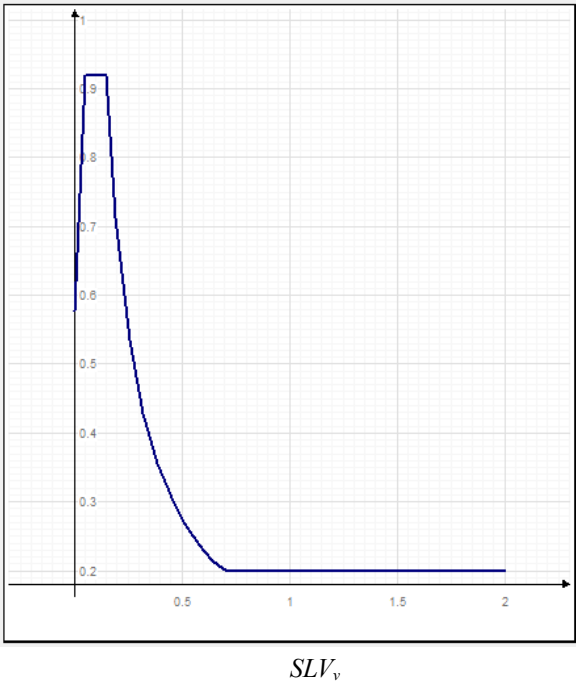
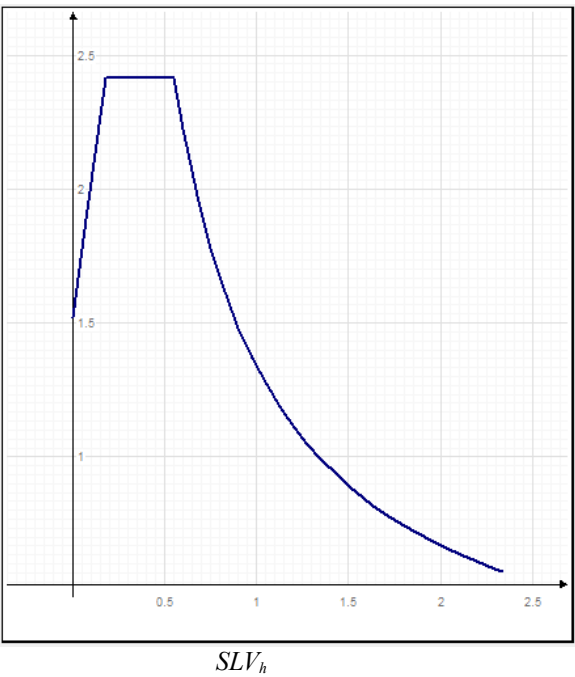
La ζ_E è riferita al valore assoluto della PGA del sito (ossia rispetto al 100% A_g), pertanto i valori riportati di "0,83" e "0,88" stanno ad indicare che ci troviamo ad un valore rispettivamente pari all'83% e all'88% della A_g del sito. In sostanza significa che, con le soluzioni adottate, siamo oltre il valore minimo richiesto del 60%.

Di seguito sono riportate la rappresentazioni degli elementi che hanno una $\zeta_E > 0,60$ sia per i due modelli.





SPETTRI



Di seguito, prima di illustrare le verifiche dei due corpi A e B, si riporta un quadro riassuntivo che mostra i parametri principali delle due strutture caratterizzanti la valutazione della sicurezza, prima e dopo l’intervento.

L’accelerazione al suolo del sito in esame è pari a $PGA_{SLV,suolo} = a_g/g \times 980,665 = 180 \text{ cm/s}^2$ (con $a_g/g = 0,183$). I valori riportati nella parte di tabella di destra fanno riferimento al modello con l’accelerazione uguale a $0,6Ag$. La $\zeta_{E,SLV}$ è riferita al valore assoluto della PGA del sito (100% Ag) quindi i valori 0,83 e 0,88 indicano che siamo rispettivamente all’83% e 88% di Ag .

Corpo	Attuale						Post intervento					
	PGA_{SLV} (g)	ζ_{SLV}	a_g/g	T_R (anni)	T_{int} (anni)	R_{CD}	PGA_{SLV} (cm/s^2)	ζ_{SLV}	a_g/g	T_R (anni)	T_{int} (anni)	R_{CD}
A	65	0,36	0,066	52	4	0,34	160	0,88	0,163	493	35	0,86
B	86	0,47	0,088	98	7	0,44	149	0,83	0,152	406	29	0,79

T_R tempo di ritorno
 T_{int} tempo di intervento
 R_{CD} indice di rischio
 PGA_{SLV} uguale all’accelerazione rilevata moltiplicata per g (980,665 cm/s^2)

TrW A Cons va 0,6Ag Exyz

ELABORATO NUMERICO - MODELLO A Ex + Ey + Ez

All-In-One EWS 47 (29.11.2018) build 7317

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Modello A

Elaborato numerico e verifiche

Azione dinamica Ex + Ey + Ez

Tipi di carico

Nome	Tipo	Grav.	Gamma fav	Gamma sfav.	Gamma sismico	Psi 0	Psi 1	Psi 2	Psi 2 sismico	Phi (coeff. correl.)
Combinazione	combinazione		nd	0.00	0.00	nd	nd	nd	nd	nd
Permanente	permanente	*	1.00	1.30	1.00	nd	nd	nd	nd	nd
Permanente non strutt.	permanente	*	0.00	1.50	1.00	nd	nd	nd	nd	nd
Sismico SLV	sismico		nd	1.00	0.00	nd	nd	nd	nd	nd
Sismico SLD	sismico		nd	1.00	0.00	nd	nd	nd	nd	nd
Sismico SLO	sismico		nd	1.00	0.00	nd	nd	nd	nd	nd
Sismico SLC	sismico		nd	1.00	0.00	nd	nd	nd	nd	nd
Torcente SLV	sismico correlato		nd	1.00	0.00	nd	nd	nd	nd	nd
Torcente SLD	sismico correlato		nd	1.00	0.00	nd	nd	nd	nd	nd
Torcente SLO	sismico correlato		nd	1.00	0.00	nd	nd	nd	nd	nd
Torcente SLC	sismico correlato		nd	1.00	0.00	nd	nd	nd	nd	nd
Cat. A: Residenziale	variabile	*	nd	1.50	1.00	0.70	0.50	0.30	0.30	1.00
Cat. B: Uffici	variabile	*	nd	1.50	1.00	0.70	0.50	0.30	0.30	1.00
Cat. C: Affollamento	variabile	*	nd	1.50	1.00	0.70	0.70	0.60	0.60	1.00
Cat. D: Commerciale	variabile	*	nd	1.50	1.00	0.70	0.70	0.60	0.60	1.00
Cat. E: Magazzini	variabile	*	nd	1.50	1.00	1.00	0.90	0.80	0.80	1.00
Cat. F: Rimesse (<30kN)	variabile	*	nd	1.50	1.00	0.70	0.70	0.60	0.60	1.00
Cat. G: Rimesse (>30kN)	variabile	*	nd	1.50	1.00	0.70	0.50	0.30	0.30	1.00
Cat. H: Copertura	variabile	*	nd	1.50	1.00	0.00	0.00	0.00	0.20	1.00
Neve (q<1000)	variabile	*	nd	1.50	1.00	0.50	0.20	0.00	0.00	1.00
Neve (q>1000)	variabile	*	nd	1.50	1.00	0.70	0.50	0.20	0.00	1.00
Vento	variabile non contemporaneo		nd	1.50	0.00	0.60	0.20	0.00	0.00	1.00
Temperatura	variabile non contemporaneo		nd	1.50	0.00	0.60	0.50	0.00	0.00	1.00

SPETTRI DI RISPOSTA**SLVh**

fattore q automatico	NO
Dir. azione sismica	orizzontale
regolare in pianta	NO
regolare in altezza	NO
numero di intervalli	32
materiale struttura	Calcestruzzo
tipologia struttura	strutture a pendolo inverso
forma dello spettro	Inelastico
categoria del suolo	Profili di terreno costituiti da strati superficiali alluvionali
classe di duttilità	Bassa
categoria topografica	T1
normativa	DM 2018
zona sismica	AgS > 0.075g
classe d'uso	III
tipo di stato limite	SLV
durata totale	2.33
smorzamento	5.00

f0	2.39
Ag/g	0.18
Tc*	0.30
longitudine	10.91
latitudine	43.94
Pv	0.10
Vr	75.00
% quota sul pendio	1.00
Tr	711.84
fattore q effettivo	1.50
fattore n effettivo	1.00
fattore s effettivo	1.52

periodo	risposta
---------	----------

0.00000	1.51840
0.07527	1.88501
0.18458	2.41743
0.22581	2.41743
0.30107	2.41743
0.37634	2.41743
0.45161	2.41743
0.55373	2.41743
0.60215	2.22306
0.67742	1.97605
0.75268	1.77845
0.82795	1.61677
0.90322	1.48204
0.97849	1.36804
1.05376	1.27032
1.12903	1.18563
1.20430	1.11153
1.27956	1.04615
1.35483	0.98803
1.43010	0.93603
1.50537	0.88922
1.58064	0.84688
1.65591	0.80839
1.73118	0.77324
1.80644	0.74102
1.88171	0.71138
1.95698	0.68402
2.03225	0.65868
2.10752	0.63516
2.18279	0.61326
2.25805	0.59282
2.33332	0.57369

SLVv

fattore q automatico	NO
Dir. azione sismica	verticale
regolare in pianta	NO
regolare in altezza	NO
numero di intervalli	32
materiale struttura	Calcestruzzo
tipologia struttura	strutture a pendolo inverso
forma dello spettro	Inelastico
categoria del suolo	Profili di terreno costituiti da strati superficiali alluvionali
classe di duttilità	Bassa
categoria topografica	T1
normativa	DM 2018
zona sismica	AgS > 0.075g
classe d'uso	III
tipo di stato limite	SLV
durata totale	2.00
smorzamento	5.00
f0	2.39
Ag/g	0.18
Tc*	0.30
longitudine	10.91

latitudine 43.94
Pv 0.10
Vr 75.00
% quota sul pendio 1.00
Tr 711.84
fattore q effettivo 1.50
fattore n effettivo 1.00
fattore s effettivo 1.00

periodo	risposta
0.00000	0.57795
0.05000	0.92016
0.15000	0.92016
0.19355	0.71313
0.25806	0.53485
0.32258	0.42788
0.38710	0.35656
0.45161	0.30563
0.51613	0.26742
0.58065	0.23771
0.64516	0.21394
0.70968	0.20000
0.77419	0.20000
0.83871	0.20000
0.90323	0.20000
0.96774	0.20000
1.03226	0.20000
1.09677	0.20000
1.16129	0.20000
1.22581	0.20000
1.29032	0.20000
1.35484	0.20000
1.41935	0.20000
1.48387	0.20000
1.54839	0.20000
1.61290	0.20000
1.67742	0.20000
1.74194	0.20000
1.80645	0.20000
1.87097	0.20000
1.93548	0.20000
2.00000	0.20000

PESI PROPRI TIPO (Fase 1)

Condizione di carico: "G1" Tipo: "Permanente"

Tipo	gm	gx	gy	gz
1	2.5000e-002	0.0000e+000	0.0000e+000	-1.0000e+000

FORZE TIPO (Fase 1)

Condizione di carico: "vento -" Tipo: "Vento"

Tipo	Fx	Fy	Fz	Mx	My	Mz
1	0.0000e+000	0.0000e+000	-2.4000e+003	0.0000e+000	0.0000e+000	0.0000e+000
2	0.0000e+000	0.0000e+000	-4.4750e+003	0.0000e+000	0.0000e+000	0.0000e+000
3	0.0000e+000	0.0000e+000	-4.1250e+003	0.0000e+000	0.0000e+000	0.0000e+000
4	0.0000e+000	0.0000e+000	-4.1250e+003	0.0000e+000	0.0000e+000	0.0000e+000
5	0.0000e+000	0.0000e+000	-4.1250e+003	0.0000e+000	0.0000e+000	0.0000e+000
6	0.0000e+000	0.0000e+000	-4.1250e+003	0.0000e+000	0.0000e+000	0.0000e+000
7	0.0000e+000	0.0000e+000	1.4750e+003	0.0000e+000	0.0000e+000	0.0000e+000
8	0.0000e+000	0.0000e+000	5.0750e+003	0.0000e+000	0.0000e+000	0.0000e+000
9	0.0000e+000	0.0000e+000	1.5250e+003	0.0000e+000	0.0000e+000	0.0000e+000
45	0.0000e+000	0.0000e+000	1.5250e+003	0.0000e+000	0.0000e+000	0.0000e+000

Condizione di carico: "vento +" Tipo: "Vento"

Tipo	Fx	Fy	Fz	Mx	My	Mz
1	0.0000e+000	0.0000e+000	3.5500e+003	0.0000e+000	0.0000e+000	0.0000e+000
2	0.0000e+000	0.0000e+000	6.5750e+003	0.0000e+000	0.0000e+000	0.0000e+000
3	0.0000e+000	0.0000e+000	6.0750e+003	0.0000e+000	0.0000e+000	0.0000e+000

Condizione di carico: "Qk3" Tipo: "Neve (q<1000)"

Condizione di carico: "G2" Tipo: "Permanente"

Tipo	Fx	Fy	Fz	Mx	My	Mz
1	0.0000e+000	0.0000e+000	-2.8150e+003	0.0000e+000	0.0000e+000	0.0000e+000
2	0.0000e+000	0.0000e+000	-4.0650e+003	0.0000e+000	0.0000e+000	0.0000e+000
3	0.0000e+000	0.0000e+000	-3.7500e+003	0.0000e+000	0.0000e+000	0.0000e+000
4	0.0000e+000	0.0000e+000	-3.7500e+003	0.0000e+000	0.0000e+000	0.0000e+000
5	0.0000e+000	0.0000e+000	-3.7500e+003	0.0000e+000	0.0000e+000	0.0000e+000
6	0.0000e+000	0.0000e+000	-3.7500e+003	0.0000e+000	0.0000e+000	0.0000e+000
7	0.0000e+000	0.0000e+000	-4.0650e+003	0.0000e+000	0.0000e+000	0.0000e+000
8	0.0000e+000	0.0000e+000	-3.1250e+003	0.0000e+000	0.0000e+000	0.0000e+000
9	0.0000e+000	0.0000e+000	-6.2500e+002	0.0000e+000	0.0000e+000	0.0000e+000
10	0.0000e+000	0.0000e+000	-1.8750e+003	0.0000e+000	0.0000e+000	0.0000e+000
11	0.0000e+000	0.0000e+000	-1.8750e+003	0.0000e+000	0.0000e+000	0.0000e+000
12	0.0000e+000	0.0000e+000	-2.2500e+003	0.0000e+000	0.0000e+000	0.0000e+000
13	0.0000e+000	0.0000e+000	-3.2500e+003	0.0000e+000	0.0000e+000	0.0000e+000
14	0.0000e+000	0.0000e+000	-3.0000e+003	0.0000e+000	0.0000e+000	0.0000e+000
15	0.0000e+000	0.0000e+000	-3.0000e+003	0.0000e+000	0.0000e+000	0.0000e+000
16	0.0000e+000	0.0000e+000	-3.2500e+003	0.0000e+000	0.0000e+000	0.0000e+000

Condizione di carico: "G1" Tipo: "Permanente"

Condizione di carico: "G1" Tipo: "Permanente"

43	0.0000e+000	0.0000e+000	-3.2500e+002	0.0000e+000	0.0000e+000	0.0000e+000
44	0.0000e+000	0.0000e+000	-3.2500e+002	0.0000e+000	0.0000e+000	0.0000e+000
45	0.0000e+000	0.0000e+000	-4.0000e+002	0.0000e+000	0.0000e+000	0.0000e+000

MASSE TIPO (Fase 1)

Tipo	dn	md	dp
1	2.5484e-005	3.7717e-001	5.0000e-002
2	2.5484e-005	3.2620e-001	5.0000e-002
3	8.0020e-005	2.0387e-003	5.0000e-002
4	2.5484e-005	7.1356e-003	5.0000e-002
5	8.0020e-005	9.1743e-003	5.0000e-002
6	8.0020e-005	1.0194e-002	5.0000e-002
7	8.0020e-005	5.6065e-003	5.0000e-002
8	8.0020e-005	0.0000e+000	5.0000e-002
9	2.5484e-005	0.0000e+000	5.0000e-002
10	8.0020e-005	1.5291e-002	5.0000e-002
11	8.0020e-005	1.6565e-002	5.0000e-002

MASSE NODALI TIPO (Fase 1)

Tipo	Mx	My	Mx	Jx	Jy	Jz
3	4.2300e+000	4.2300e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000
4	4.9600e+000	4.9600e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000
5	1.1850e+001	1.1850e+001	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000
6	2.5000e+000	2.5000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000
7	3.2800e+000	3.2800e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000
8	4.5500e+000	4.5500e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000

Caratteristiche dei materiali

Metamateriali

Cls 24/29 omogeneo	Nome	Cls 24/29 omogeneo
	Tipo	Cemento armato
	Resistenza cubica calcestruzzo	2900.000000
	Resistenza acciaio	22000.000000
	Copriferro	3.0000
	Interferro	2.0000
	Max distanza barre	100000.0000
	Max distanza braccia	100000.0000
	Classe calcestruzzo	C25/30
	Classe acciaio	FeB22
	Coeff. Dil. Termica	0.000012000
	Non strutturale	no
	Max distanza legature	100000.0000
Cls C24/29 Aq 42	Nome	Cls C24/29 Aq 42
	Tipo	Cemento armato
	Resistenza cubica calcestruzzo	2900.000000
	Resistenza acciaio	23000.000000
	Copriferro	3.0000
	Interferro	2.0000
	Max distanza barre	100000.0000
	Max distanza braccia	100000.0000
	Classe calcestruzzo	C25/30
	Classe acciaio	AQ42
	Coeff. Dil. Termica	0.000012000
	Non strutturale	no
	Max distanza legature	100000.0000
Cls C24/29 Aq 42 cons	Nome	Cls C24/29 Aq 42 cons
	Tipo	Cemento armato
	Resistenza cubica calcestruzzo	2900.000000
	Resistenza acciaio	23000.000000
	Copriferro	3.0000
	Interferro	2.0000
	Max distanza barre	100000.0000
	Max distanza braccia	100000.0000
	Classe calcestruzzo	C25/30
	Classe acciaio	AQ42
	Coeff. Dil. Termica	0.000012000
	Non strutturale	no
	Max distanza legature	100000.0000
Cls C24/29 GS	Nome	Cls C24/29 GS
	Tipo	Cemento armato
	Resistenza cubica calcestruzzo	3000.000000
	Resistenza acciaio	36000.000000
	Copriferro	3.0000
	Interferro	2.0000
	Max distanza barre	100000.0000
	Max distanza braccia	10000.0000
	Classe calcestruzzo	C25/30
	Classe acciaio	FeB44
	Coeff. Dil. Termica	0.000012000
	Non strutturale	no
	Max distanza legature	100000.0000

Calcestruzzi

Calcestruzzo Cls 24/29 omogeneo

Denominazione materiale	C25/30
Resistenza cubica	N/cm2 2900.00

Resistenza a compressione	N/cm2	1363.97
Resistenza a trazione frattile 5%	N/cm2	115.95
Tensione di aderenza	N/cm2	260.90

Calcestruzzo CIs C24/29 Aq 42

Denominazione materiale		C25/30
Resistenza cubica	N/cm2	2900.00
Resistenza a compressione	N/cm2	1363.97
Resistenza a trazione frattile 5%	N/cm2	115.95
Tensione di aderenza	N/cm2	260.90

Calcestruzzo CIs C24/29 Aq 42 cons

Denominazione materiale		C25/30
Resistenza cubica	N/cm2	2900.00
Resistenza a compressione	N/cm2	1363.97
Resistenza a trazione frattile 5%	N/cm2	115.95
Tensione di aderenza	N/cm2	260.90

Calcestruzzo CIs C24/29 GS

Denominazione materiale		C25/30
Resistenza cubica	N/cm2	3000.00
Resistenza a compressione	N/cm2	1411.00
Resistenza a trazione frattile 5%	N/cm2	118.60
Tensione di aderenza	N/cm2	266.86

Acciai

Acciaio CIs 24/29 omogeneo

Denominazione materiale		FeB22
Resistenza caratteristica acciaio	N/cm2	22000.00
Resistenza di calcolo	N/cm2	16296.30

Acciaio CIs C24/29 Aq 42

Denominazione materiale		AQ42
Resistenza caratteristica acciaio	N/cm2	23000.00
Resistenza di calcolo	N/cm2	17037.04

Acciaio CIs C24/29 Aq 42 cons

Denominazione materiale		AQ42
Resistenza caratteristica acciaio	N/cm2	23000.00
Resistenza di calcolo	N/cm2	17037.04

Acciaio CIs C24/29 GS

Denominazione materiale		FeB44
Resistenza caratteristica acciaio	N/cm2	36000.00
Resistenza di calcolo	N/cm2	26666.67

Condizioni di carico

(Fase) Nome	Tipo
(2) Dinamica SLVv Z	Sismico SLV
(2) G1	Annulloato
(2) G2	Annulloato
(2) Qk3	Annulloato
(2) vento +	Annulloato
(2) vento -	Annulloato
(1) Dinamica SLVh Y	Sismico SLV
(1) Dinamica SLVh X	Sismico SLV
(1) G1	Permanente
(1) G2	Permanente
(1) Qk1	Cat. C: Affollamento
(1) Qk3	Neve (q<1000)
(1) vento +	Vento
(1) vento -	Vento
(0) 2	Combinazione

Tipi di carico

Nome	Tipo	Grav.	Gamma fav	Gamma sfav.	Gamma sismico	Psi 0	Psi 1	Psi 2	Psi 2 sismico	Phi (coeff. correl.)
Combinazione	combinazione		nd	0.00	0.00	nd	nd	nd	nd	nd

Permanente	permanente	*	1.00	1.30	1.00	nd	nd	nd	nd	nd
Permanente non strutt.	permanente	*	0.00	1.50	1.00	nd	nd	nd	nd	nd
Sismico SLV	sismico		nd	1.00	0.00	nd	nd	nd	nd	nd
Sismico SLD	sismico		nd	1.00	0.00	nd	nd	nd	nd	nd
Sismico SLO	sismico		nd	1.00	0.00	nd	nd	nd	nd	nd
Sismico SLC	sismico		nd	1.00	0.00	nd	nd	nd	nd	nd
Torcente SLV	sismico correlato		nd	1.00	0.00	nd	nd	nd	nd	nd
Torcente SLD	sismico correlato		nd	1.00	0.00	nd	nd	nd	nd	nd
Torcente SLO	sismico correlato		nd	1.00	0.00	nd	nd	nd	nd	nd
Torcente SLC	sismico correlato		nd	1.00	0.00	nd	nd	nd	nd	nd
Cat. A: Residenziale	variabile	*	nd	1.50	1.00	0.70	0.50	0.30	0.30	1.00
Cat. B: Uffici	variabile	*	nd	1.50	1.00	0.70	0.50	0.30	0.30	1.00
Cat. C: Affollamento	variabile	*	nd	1.50	1.00	0.70	0.70	0.60	0.60	1.00
Cat. D: Commerciale	variabile	*	nd	1.50	1.00	0.70	0.70	0.60	0.60	1.00
Cat. E: Magazzini	variabile	*	nd	1.50	1.00	1.00	0.90	0.80	0.80	1.00
Cat. F: Rimesse (<30kN)	variabile	*	nd	1.50	1.00	0.70	0.70	0.60	0.60	1.00
Cat. G: Rimesse (>30kN)	variabile	*	nd	1.50	1.00	0.70	0.50	0.30	0.30	1.00
Cat. H: Copertura	variabile	*	nd	1.50	1.00	0.00	0.00	0.00	0.20	1.00
Neve (q<1000)	variabile	*	nd	1.50	1.00	0.50	0.20	0.00	0.00	1.00
Neve (q>1000)	variabile	*	nd	1.50	1.00	0.70	0.50	0.20	0.00	1.00
Vento	variabile non contemporaneo		nd	1.50	0.00	0.60	0.20	0.00	0.00	1.00
Temperatura	variabile non contemporaneo		nd	1.50	0.00	0.60	0.50	0.00	0.00	1.00

Combinazioni di carico di stato limite ultimo

1	-0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
2	-0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
3	-0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
4	-0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
5	0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
6	0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
7	0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
8	0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
9	-0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
10	-0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
11	-0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
12	-0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
13	0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
14	0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
15	0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
16	0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y

17	-0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
18	-0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
19	-0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
20	-0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
21	0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
22	0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
23	0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
24	0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
25	1.50 * (1) vento - + 0.75 * (1) Qk3 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
26	1.50 * (1) vento + + 0.75 * (1) Qk3 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
27	0.90 * (1) vento - + 1.50 * (1) Qk3 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
28	0.90 * (1) vento + + 1.50 * (1) Qk3 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
29	0.90 * (1) vento - + 0.75 * (1) Qk3 + 1.50 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
30	0.90 * (1) vento + + 0.75 * (1) Qk3 + 1.50 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
31	1.00 * (1) G2 + 1.00 * (1) G1
32	1.50 * (1) vento - + 0.75 * (1) Qk3 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
33	1.50 * (1) vento + + 0.75 * (1) Qk3 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
34	0.90 * (1) vento - + 1.50 * (1) Qk3 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
35	0.90 * (1) vento + + 1.50 * (1) Qk3 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
36	0.90 * (1) vento - + 0.75 * (1) Qk3 + 1.50 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
37	0.90 * (1) vento + + 0.75 * (1) Qk3 + 1.50 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
38	1.30 * (1) G2 + 1.30 * (1) G1

Elementi

Elemento	Dal nodo	Al nodo	Offset estremo sinistro (cm)			Offset estremo destro (cm)			Lunghezza (cm)
			x	y	z	x	y	z	
85	53	146	0.00	0.00	0.00	0.00	0.00	0.00	491.69
96	145	48	0.00	0.00	0.00	0.00	0.00	0.00	497.68
99	73	134	12.11	53.65	0.00	0.00	0.00	0.00	243.70
100	62	130	0.00	0.00	0.00	0.00	0.00	0.00	255.38
101	61	129	0.00	-50.00	0.00	0.00	-50.00	0.00	260.56
102	75	128	0.00	-35.00	0.00	0.00	-35.00	0.00	245.50
115	8	73	0.00	55.00	0.00	0.00	55.00	0.00	483.25
116	45	8	0.00	55.00	0.00	0.00	55.00	0.00	483.25
119	12	79	0.00	0.00	0.00	0.00	0.00	0.00	505.56
120	53	12	0.00	0.00	0.00	0.00	0.00	0.00	505.56
121	11	76	0.00	0.00	0.00	0.00	0.00	0.00	511.59
122	48	11	0.00	0.00	0.00	0.00	0.00	0.00	511.59
134	10	75	0.00	-35.00	0.00	0.00	-35.00	0.00	511.59
135	47	10	0.00	-35.00	0.00	0.00	-35.00	0.00	511.59
136	5	61	0.00	-50.00	0.00	0.00	-50.00	0.00	505.56
137	43	5	0.00	-50.00	0.00	0.00	-50.00	0.00	505.56
138	7	62	0.00	0.00	0.00	0.00	0.00	0.00	495.63
139	44	7	0.00	0.00	0.00	0.00	0.00	0.00	495.63
163	43	53	0.00	0.00	0.00	0.00	0.00	0.00	355.00
165	43	47	0.00	-65.00	0.00	0.00	-65.00	0.00	365.30
166	46	44	0.00	0.00	-0.00	0.00	0.00	0.00	484.11
167	45	46	26.59	48.14	0.00	0.00	0.00	-0.00	314.23
168	44	43	0.00	0.00	0.00	0.00	0.00	0.00	639.79
170	166	44	0.00	0.00	0.00	0.00	0.00	0.00	330.00
171	165	43	0.00	0.00	0.00	0.00	0.00	0.00	550.00
198	5	12	0.00	0.00	0.00	0.00	0.00	0.00	355.00
200	5	10	0.00	-65.00	0.00	0.00	-65.00	0.00	365.30
201	9	7	0.00	0.00	-0.00	0.00	0.00	0.00	484.11
202	8	9	26.59	48.14	0.00	0.00	0.00	-0.00	314.23

203	7	5	0.00	0.00	0.00	0.00	0.00	0.00	639.79
205	2	7	0.00	0.00	0.00	0.00	0.00	0.00	330.00
206	1	5	0.00	0.00	0.00	0.00	0.00	0.00	550.00
233	61	79	0.00	0.00	0.00	0.00	0.00	0.00	355.00
235	61	75	0.00	-65.00	0.00	0.00	-65.00	0.00	365.30
236	74	62	0.00	0.00	-0.00	0.00	0.00	0.00	484.11
237	73	74	26.59	48.14	0.00	0.00	0.00	-0.00	314.23
238	62	61	0.00	0.00	0.00	0.00	0.00	0.00	639.79
240	58	62	0.00	0.00	0.00	0.00	0.00	0.00	330.00
241	21	61	0.00	0.00	0.00	0.00	0.00	0.00	550.00
244	34	28	12.11	53.65	0.00	0.00	0.00	0.00	243.70
245	33	26	0.00	0.00	0.00	0.00	0.00	0.00	255.38
246	32	25	0.00	-50.00	0.00	0.00	-50.00	0.00	260.56
247	36	24	0.00	-35.00	0.00	0.00	-35.00	0.00	245.50
260	43	140	0.00	-50.00	0.00	0.00	-50.00	0.00	491.69
261	44	141	0.00	0.00	0.00	0.00	0.00	0.00	481.83
262	45	142	0.00	55.00	0.00	0.00	55.00	0.00	469.54
263	88	34	0.00	55.00	0.00	0.00	55.00	0.00	483.25
264	142	88	0.00	55.00	0.00	0.00	55.00	0.00	483.25
267	92	38	0.00	0.00	0.00	0.00	0.00	0.00	505.56
268	146	92	0.00	0.00	0.00	0.00	0.00	0.00	505.56
269	91	37	0.00	0.00	0.00	0.00	0.00	0.00	511.59
270	145	91	0.00	0.00	0.00	0.00	0.00	0.00	511.59
282	90	36	0.00	-35.00	0.00	0.00	-35.00	0.00	511.59
283	144	90	0.00	-35.00	0.00	0.00	-35.00	0.00	511.59
284	86	32	0.00	-50.00	0.00	0.00	-50.00	0.00	505.56
285	140	86	0.00	-50.00	0.00	0.00	-50.00	0.00	505.56
286	87	33	0.00	0.00	0.00	0.00	0.00	0.00	495.63
287	141	87	0.00	0.00	0.00	0.00	0.00	0.00	495.63
310	140	146	0.00	0.00	0.00	0.00	0.00	0.00	355.00
312	140	144	0.00	-65.00	0.00	0.00	-65.00	0.00	365.30
313	143	141	0.00	0.00	-0.00	0.00	0.00	0.00	484.11
314	142	143	26.59	48.14	0.00	0.00	0.00	-0.00	314.23
315	141	140	0.00	0.00	0.00	0.00	0.00	0.00	639.79
317	139	141	0.00	0.00	0.00	0.00	0.00	0.00	330.00
318	138	140	0.00	0.00	0.00	0.00	0.00	0.00	550.00
345	86	92	0.00	0.00	0.00	0.00	0.00	0.00	355.00
347	86	90	0.00	-65.00	0.00	0.00	-65.00	0.00	365.30
348	89	87	0.00	0.00	-0.00	0.00	0.00	0.00	484.11
349	88	89	26.59	48.14	0.00	0.00	0.00	-0.00	314.23
350	87	86	0.00	0.00	0.00	0.00	0.00	0.00	639.79
352	85	87	0.00	0.00	0.00	0.00	0.00	0.00	330.00
353	84	86	0.00	0.00	0.00	0.00	0.00	0.00	550.00
380	32	38	0.00	0.00	0.00	0.00	0.00	0.00	355.00
382	32	36	0.00	-65.00	0.00	0.00	-65.00	0.00	365.30
383	35	33	0.00	0.00	-0.00	0.00	0.00	0.00	484.11
384	34	35	26.59	48.14	0.00	0.00	0.00	-0.00	314.23
385	33	32	0.00	0.00	0.00	0.00	0.00	0.00	639.79
387	31	33	0.00	0.00	0.00	0.00	0.00	0.00	330.00
388	30	32	0.00	0.00	0.00	0.00	0.00	0.00	550.00

Sezioni

Sezione a T

Elemento	Materiale	Spessore anima (cm)	Altezza anima (cm)	Spessore ala (cm)	Larghezza ala (cm)
96	ClS 24/29 omogeneo	40.00	10.00	16.00	60.00
121	ClS 24/29 omogeneo	40.00	10.00	16.00	60.00
122	ClS 24/29 omogeneo	40.00	10.00	16.00	60.00
269	ClS 24/29 omogeneo	40.00	10.00	16.00	60.00
270	ClS 24/29 omogeneo	40.00	10.00	16.00	60.00

Sezione rettangolare

Elemento	Materiale	Altezza (cm)	Base (cm)
85	ClS 24/29 omogeneo	40.00	30.00
99	ClS 24/29 omogeneo	45.00	80.00
100	ClS 24/29 omogeneo	60.00	25.00
101	ClS 24/29 omogeneo	100.00	25.00

102	Cls 24/29 omogeneo	70.00	15.00
115	Cls 24/29 omogeneo	45.00	80.00
116	Cls 24/29 omogeneo	45.00	80.00
119	Cls 24/29 omogeneo	40.00	30.00
120	Cls 24/29 omogeneo	40.00	30.00
134	Cls 24/29 omogeneo	70.00	15.00
135	Cls 24/29 omogeneo	70.00	15.00
136	Cls 24/29 omogeneo	100.00	25.00
137	Cls 24/29 omogeneo	100.00	25.00
138	Cls 24/29 omogeneo	60.00	25.00
139	Cls 24/29 omogeneo	60.00	25.00
163	Cls C24/29 Aq 42	100.00	33.00
165	Cls C24/29 GS	120.00	28.00
166	Cls C24/29 GS	95.00	28.00
167	Cls C24/29 GS	70.00	28.00
168	Cls C24/29 GS	100.00	28.00
170	Cls C24/29 Aq 42	65.00	28.00
171	Cls C24/29 Aq 42	105.00	28.00
198	Cls C24/29 Aq 42 cons	100.00	33.00
200	Cls C24/29 GS	120.00	28.00
201	Cls C24/29 GS	95.00	28.00
202	Cls C24/29 GS	70.00	28.00
203	Cls C24/29 GS	100.00	28.00
205	Cls C24/29 Aq 42	65.00	28.00
206	Cls C24/29 Aq 42	105.00	28.00
233	Cls C24/29 Aq 42 cons	100.00	33.00
235	Cls C24/29 GS	120.00	28.00
236	Cls C24/29 GS	95.00	28.00
237	Cls C24/29 GS	70.00	28.00
238	Cls C24/29 GS	100.00	28.00
240	Cls C24/29 Aq 42	65.00	28.00
241	Cls C24/29 Aq 42	105.00	28.00
244	Cls 24/29 omogeneo	45.00	80.00
245	Cls 24/29 omogeneo	60.00	25.00
246	Cls 24/29 omogeneo	100.00	25.00
247	Cls 24/29 omogeneo	70.00	15.00
260	Cls 24/29 omogeneo	100.00	25.00
261	Cls 24/29 omogeneo	60.00	25.00
262	Cls 24/29 omogeneo	45.00	80.00
263	Cls 24/29 omogeneo	45.00	80.00
264	Cls 24/29 omogeneo	45.00	80.00
267	Cls 24/29 omogeneo	40.00	30.00
268	Cls 24/29 omogeneo	40.00	30.00
282	Cls 24/29 omogeneo	70.00	15.00
283	Cls 24/29 omogeneo	70.00	15.00
284	Cls 24/29 omogeneo	100.00	25.00
285	Cls 24/29 omogeneo	100.00	25.00
286	Cls 24/29 omogeneo	60.00	25.00
287	Cls 24/29 omogeneo	60.00	25.00
310	Cls C24/29 Aq 42	100.00	33.00
312	Cls C24/29 GS	120.00	28.00
313	Cls C24/29 GS	95.00	28.00
314	Cls C24/29 GS	70.00	28.00
315	Cls C24/29 GS	100.00	28.00
317	Cls C24/29 Aq 42	65.00	28.00
318	Cls C24/29 Aq 42	105.00	28.00
345	Cls C24/29 Aq 42 cons	100.00	33.00
347	Cls C24/29 GS	120.00	28.00
348	Cls C24/29 GS	95.00	28.00
349	Cls C24/29 GS	70.00	28.00
350	Cls C24/29 GS	100.00	28.00
352	Cls C24/29 Aq 42	65.00	28.00
353	Cls C24/29 Aq 42	105.00	28.00
380	Cls C24/29 Aq 42 cons	100.00	33.00
382	Cls C24/29 GS	120.00	28.00
383	Cls C24/29 GS	95.00	28.00
384	Cls C24/29 GS	70.00	28.00

385	Cls C24/29 GS	100.00	28.00
387	Cls C24/29 Aq 42	65.00	28.00
388	Cls C24/29 Aq 42	105.00	28.00

Armatura longitudinale negli elementi

Elemento	Area (cm2)	Y (cm)	Z (cm)	Ascissa iniz. (cm)	Lunghezza (cm)
85	1.13	-15.20	5.10	95.85	300.00
	1.13	-15.20	-5.10	95.85	300.00
	1.13	15.20	-7.65	0.00	60.00
	1.13	15.20	-7.65	431.69	60.00
	1.13	15.20	7.65	0.00	60.00
	1.13	15.20	7.65	431.69	60.00
	1.13	15.20	-5.10	0.00	60.00
	1.13	15.20	-5.10	431.69	60.00
	1.13	15.20	5.10	0.00	60.00
	1.13	15.20	5.10	431.69	60.00
	1.13	0.00	10.20	0.00	491.69
	1.13	-0.00	-10.20	0.00	491.69
	1.13	-15.20	0.00	0.00	491.69
	1.13	15.20	-0.00	0.00	491.69
	1.13	-15.20	-10.20	4.80	482.09
	1.13	-15.20	10.20	4.80	482.09
	1.13	15.20	10.20	4.80	482.09
	1.13	15.20	-10.20	4.80	482.09
96	2.54	-7.02	0.00	0.00	497.68
	2.54	9.38	-0.00	0.00	497.68
	2.54	-7.02	-25.20	4.80	488.08
	2.54	-7.02	25.20	4.80	488.08
	2.54	-0.62	25.20	4.80	488.08
	2.54	-0.62	-25.20	4.80	488.08
	2.54	-7.02	-15.20	4.80	488.08
	2.54	-7.02	15.20	4.80	488.08
	2.54	9.38	15.20	4.80	488.08
99	2.54	9.38	-15.20	4.80	488.08
	2.54	19.50	-37.00	3.00	237.70
	2.54	19.50	37.00	3.00	237.70
	2.54	-19.50	37.00	3.00	237.70
	2.54	-19.50	-37.00	3.00	237.70
	2.54	19.50	0.00	143.70	100.00
	2.54	19.50	0.00	0.00	100.00
	2.54	-19.50	0.00	0.00	243.70
100	2.54	27.00	-9.50	3.00	249.38
	2.54	27.00	9.50	3.00	249.38
	2.54	-27.00	9.50	3.00	249.38
	2.54	-27.00	-9.50	3.00	249.38
	2.54	27.00	0.00	155.38	100.00
	2.54	27.00	0.00	0.00	100.00
	2.54	-27.00	0.00	2.69	250.00
101	2.54	-47.00	0.00	5.28	250.00
	2.54	47.00	-4.75	0.00	100.00
	2.54	47.00	-4.75	160.56	100.00
	2.54	47.00	4.75	0.00	100.00
	2.54	47.00	4.75	160.56	100.00
	1.13	47.00	0.00	0.00	260.56
	2.54	-47.00	-9.50	3.00	254.56
	2.54	-47.00	9.50	3.00	254.56
	2.54	47.00	9.50	3.00	254.56
	2.54	47.00	-9.50	3.00	254.56
102	2.54	32.00	-4.50	3.00	239.50
	2.54	32.00	4.50	3.00	239.50
	2.54	-32.00	4.50	3.00	239.50
	2.54	-32.00	-4.50	3.00	239.50
	2.54	32.00	-0.00	0.00	245.50

	2.54	-32.00	0.00	0.00	245.50
115	2.54	19.50	-37.00	3.00	477.25
	2.54	19.50	37.00	3.00	477.25
	2.54	-19.50	37.00	3.00	477.25
	2.54	-19.50	-37.00	3.00	477.25
	2.54	19.50	0.00	383.25	100.00
	2.54	19.50	0.00	0.00	100.00
	2.54	-19.50	0.00	116.62	250.00
116	2.54	19.50	-37.00	3.00	477.25
	2.54	19.50	37.00	3.00	477.25
	2.54	-19.50	37.00	3.00	477.25
	2.54	-19.50	-37.00	3.00	477.25
	2.54	19.50	0.00	383.25	100.00
	2.54	19.50	0.00	0.00	100.00
	2.54	-19.50	0.00	116.62	250.00
119	1.13	-15.20	5.10	102.78	300.00
	1.13	-15.20	-5.10	102.78	300.00
	1.13	15.20	-7.65	0.00	60.00
	1.13	15.20	-7.65	445.56	60.00
	1.13	15.20	7.65	0.00	60.00
	1.13	15.20	7.65	445.56	60.00
	1.13	15.20	-5.10	0.00	60.00
	1.13	15.20	-5.10	445.56	60.00
	1.13	15.20	5.10	0.00	60.00
	1.13	15.20	5.10	445.56	60.00
	1.13	0.00	10.20	0.00	505.56
	1.13	-0.00	-10.20	0.00	505.56
	1.13	-15.20	0.00	0.00	505.56
	1.13	-15.20	-10.20	4.80	495.96
	1.13	-15.20	10.20	4.80	495.96
	1.13	15.20	10.20	4.80	495.96
	1.13	15.20	-10.20	4.80	495.96
120	1.13	-15.20	5.10	102.78	300.00
	1.13	-15.20	-5.10	102.78	300.00
	1.13	15.20	-7.65	0.00	60.00
	1.13	15.20	-7.65	445.56	60.00
	1.13	15.20	7.65	0.00	60.00
	1.13	15.20	7.65	445.56	60.00
	1.13	15.20	-5.10	0.00	60.00
	1.13	15.20	-5.10	445.56	60.00
	1.13	15.20	5.10	0.00	60.00
	1.13	15.20	5.10	445.56	60.00
	1.13	0.00	10.20	0.00	505.56
	1.13	-0.00	-10.20	0.00	505.56
	1.13	-15.20	0.00	0.00	505.56
	1.13	15.20	-0.00	0.00	505.56
	1.13	-15.20	-10.20	4.80	495.96
	1.13	-15.20	10.20	4.80	495.96
	1.13	15.20	10.20	4.80	495.96
	1.13	15.20	-10.20	4.80	495.96
121	2.54	-7.02	0.00	0.00	511.59
	2.54	9.38	-0.00	0.00	511.59
	2.54	-7.02	-25.20	4.80	501.99
	2.54	-7.02	25.20	4.80	501.99
	2.54	-0.62	25.20	4.80	501.99
	2.54	-0.62	-25.20	4.80	501.99
	2.54	-7.02	-15.20	4.80	501.99
	2.54	-7.02	15.20	4.80	501.99
	2.54	9.38	15.20	4.80	501.99
	2.54	9.38	-15.20	4.80	501.99
122	2.54	-7.02	0.00	0.00	511.59
	2.54	9.38	-0.00	0.00	511.59
	2.54	-7.02	-25.20	4.80	501.99

	2.54	-7.02	25.20	4.80	501.99
	2.54	-0.62	25.20	4.80	501.99
	2.54	-0.62	-25.20	4.80	501.99
	2.54	-7.02	-15.20	4.80	501.99
	2.54	-7.02	15.20	4.80	501.99
	2.54	9.38	15.20	4.80	501.99
	2.54	9.38	-15.20	4.80	501.99
134	2.54	32.00	-4.50	3.00	505.59
	2.54	32.00	4.50	3.00	505.59
	2.54	-32.00	4.50	3.00	505.59
	2.54	-32.00	-4.50	3.00	505.59
	2.54	32.00	-0.00	0.00	511.59
	2.54	-32.00	0.00	0.00	511.59
135	2.54	32.00	-4.50	3.00	505.59
	2.54	32.00	4.50	3.00	505.59
	2.54	-32.00	4.50	3.00	505.59
	2.54	-32.00	-4.50	3.00	505.59
	2.54	32.00	-0.00	0.00	511.59
	2.54	-32.00	0.00	0.00	511.59
136	2.54	-47.00	0.00	127.78	250.00
	2.54	47.00	-4.75	0.00	100.00
	2.54	47.00	-4.75	405.56	100.00
	2.54	47.00	4.75	0.00	100.00
	2.54	47.00	4.75	405.56	100.00
	1.13	47.00	0.00	0.00	505.56
	2.54	-47.00	-9.50	3.00	499.56
	2.54	-47.00	9.50	3.00	499.56
	2.54	47.00	9.50	3.00	499.56
	2.54	47.00	-9.50	3.00	499.56
137	2.54	-47.00	0.00	127.78	250.00
	2.54	47.00	-4.75	0.00	100.00
	2.54	47.00	-4.75	405.56	100.00
	2.54	47.00	4.75	0.00	100.00
	2.54	47.00	4.75	405.56	100.00
	1.13	47.00	0.00	0.00	505.56
	2.54	-47.00	-9.50	3.00	499.56
	2.54	-47.00	9.50	3.00	499.56
	2.54	47.00	9.50	3.00	499.56
	2.54	47.00	-9.50	3.00	499.56
138	2.54	27.00	-9.50	3.00	489.63
	2.54	27.00	9.50	3.00	489.63
	2.54	-27.00	9.50	3.00	489.63
	2.54	-27.00	-9.50	3.00	489.63
	2.54	27.00	0.00	395.63	100.00
	2.54	27.00	0.00	0.00	100.00
	2.54	-27.00	0.00	122.82	250.00
139	2.54	27.00	-9.50	3.00	489.63
	2.54	27.00	9.50	3.00	489.63
	2.54	-27.00	9.50	3.00	489.63
	2.54	-27.00	-9.50	3.00	489.63
	2.54	27.00	0.00	395.63	100.00
	2.54	27.00	0.00	0.00	100.00
	2.54	-27.00	0.00	122.82	250.00
163	2.54	0.00	12.00	0.00	355.00
	2.54	23.50	12.00	0.00	355.00
	2.54	-23.50	12.00	0.00	355.00
	2.54	0.00	-12.00	0.00	355.00
	2.54	-23.50	-12.00	0.00	355.00
	2.54	23.50	-12.00	0.00	355.00
	3.14	-47.00	0.00	0.00	355.00
	3.14	47.00	0.00	0.00	355.00
	3.14	-47.00	-12.00	3.00	349.00

	3.14	-47.00	12.00	3.00	349.00
	3.14	47.00	12.00	3.00	349.00
	3.14	47.00	-12.00	3.00	349.00
165	5.31	57.00	-11.00	3.00	359.30
	5.31	57.00	11.00	3.00	359.30
	5.31	-57.00	11.00	3.00	359.30
	5.31	-57.00	-11.00	3.00	359.30
	5.31	57.00	6.60	0.00	250.00
	5.31	57.00	-6.60	0.00	250.00
	5.31	57.00	2.20	0.00	250.00
	5.31	57.00	-2.20	0.00	250.00
	5.31	-57.00	-5.50	0.00	300.00
	5.31	-57.00	5.50	0.00	300.00
	5.31	-57.00	0.00	0.00	300.00
166	3.80	44.50	-11.00	3.00	478.11
	3.80	44.50	11.00	3.00	478.11
	3.80	-44.50	11.00	3.00	478.11
	3.80	-44.50	-11.00	3.00	478.11
	3.80	-44.50	-3.67	0.00	484.11
	3.80	-44.50	3.67	0.00	484.11
	3.80	44.50	0.00	384.11	100.00
	3.80	44.50	5.50	384.11	100.00
	3.80	44.50	-5.50	384.11	100.00
	3.80	44.50	8.25	384.11	100.00
	3.80	-44.50	-7.33	0.00	200.00
	3.80	-44.50	7.33	0.00	200.00
167	3.80	32.00	-11.00	3.00	308.23
	3.80	32.00	11.00	3.00	308.23
	3.80	-32.00	11.00	3.00	308.23
	3.80	-32.00	-11.00	3.00	308.23
	3.80	-32.00	-3.67	0.00	314.23
	3.80	-32.00	3.67	0.00	314.23
	3.80	32.00	3.67	0.00	125.00
	3.80	32.00	-3.67	0.00	125.00
	3.80	-32.00	0.00	164.23	150.00
	3.80	-32.00	-5.50	164.23	150.00
168	3.80	47.00	-11.00	3.00	633.79
	3.80	47.00	11.00	3.00	633.79
	3.80	-47.00	11.00	3.00	633.79
	3.80	-47.00	-11.00	3.00	633.79
	3.80	-47.00	-3.67	0.00	639.79
	3.80	-47.00	3.67	0.00	639.79
	3.80	47.00	0.00	0.00	125.00
	3.80	47.00	5.50	0.00	125.00
	3.80	47.00	-5.50	0.00	125.00
	3.80	47.00	8.25	0.00	125.00
	3.80	47.00	2.75	514.79	125.00
	3.80	47.00	-2.75	514.79	125.00
	3.80	-47.00	-7.33	194.89	250.00
	3.80	-47.00	7.33	194.89	250.00
170	3.80	29.50	-11.00	3.00	324.00
	3.80	29.50	11.00	3.00	324.00
	3.80	-29.50	11.00	3.00	324.00
	3.80	-29.50	-11.00	3.00	324.00
	3.80	29.50	0.00	0.00	330.00
	3.80	-29.50	0.00	0.00	330.00
	1.13	0.00	-11.00	0.00	330.00
	1.13	0.00	11.00	0.00	330.00
171	3.80	49.50	-11.00	3.00	544.00
	3.80	49.50	11.00	3.00	544.00
	3.80	-49.50	11.00	3.00	544.00
	3.80	-49.50	-11.00	3.00	544.00
	3.80	49.50	0.00	0.00	550.00

	3.80	-49.50	-3.67	0.00	550.00
	3.80	-49.50	3.67	0.00	550.00
	1.13	0.00	-11.00	0.00	550.00
	1.13	0.00	11.00	0.00	550.00
	3.80	-49.50	0.00	250.00	300.00
	3.80	-49.50	-5.50	250.00	300.00
198	2.54	0.00	12.00	0.00	355.00
	2.54	23.50	12.00	0.00	355.00
	2.54	-23.50	12.00	0.00	355.00
	2.54	0.00	-12.00	0.00	355.00
	2.54	-23.50	-12.00	0.00	355.00
	2.54	23.50	-12.00	0.00	355.00
	2.54	-47.00	0.00	0.00	355.00
	2.54	47.00	0.00	0.00	355.00
	2.54	-47.00	-12.00	3.00	349.00
	2.54	-47.00	12.00	3.00	349.00
	2.54	47.00	12.00	3.00	349.00
	2.54	47.00	-12.00	3.00	349.00
200	5.31	57.00	-11.00	3.00	359.30
	5.31	57.00	11.00	3.00	359.30
	5.31	-57.00	11.00	3.00	359.30
	5.31	-57.00	-11.00	3.00	359.30
	5.31	57.00	6.60	0.00	250.00
	5.31	57.00	-6.60	0.00	250.00
	5.31	57.00	2.20	0.00	250.00
	5.31	57.00	-2.20	0.00	250.00
	5.31	-57.00	-5.50	0.00	300.00
	5.31	-57.00	5.50	0.00	300.00
	5.31	-57.00	0.00	0.00	300.00
201	3.80	44.50	-11.00	3.00	478.11
	3.80	44.50	11.00	3.00	478.11
	3.80	-44.50	11.00	3.00	478.11
	3.80	-44.50	-11.00	3.00	478.11
	3.80	-44.50	-3.67	0.00	484.11
	3.80	-44.50	3.67	0.00	484.11
	3.80	44.50	0.00	384.11	100.00
	3.80	44.50	5.50	384.11	100.00
	3.80	44.50	-5.50	384.11	100.00
	3.80	44.50	8.25	384.11	100.00
	3.80	-44.50	-7.33	0.00	200.00
	3.80	-44.50	7.33	0.00	200.00
202	3.80	32.00	-11.00	3.00	308.23
	3.80	32.00	11.00	3.00	308.23
	3.80	-32.00	11.00	3.00	308.23
	3.80	-32.00	-11.00	3.00	308.23
	3.80	-32.00	-3.67	0.00	314.23
	3.80	-32.00	3.67	0.00	314.23
	3.80	32.00	3.67	0.00	125.00
	3.80	32.00	-3.67	0.00	125.00
	3.80	-32.00	0.00	164.23	150.00
	3.80	-32.00	-5.50	164.23	150.00
203	3.80	47.00	-11.00	3.00	633.79
	3.80	47.00	11.00	3.00	633.79
	3.80	-47.00	11.00	3.00	633.79
	3.80	-47.00	-11.00	3.00	633.79
	3.80	-47.00	-3.67	0.00	639.79
	3.80	-47.00	3.67	0.00	639.79
	3.80	47.00	0.00	0.00	125.00
	3.80	47.00	5.50	0.00	125.00
	3.80	47.00	-5.50	0.00	125.00
	3.80	47.00	8.25	0.00	125.00
	3.80	47.00	2.75	514.79	125.00
	3.80	47.00	-2.75	514.79	125.00

	3.80	-47.00	-7.33	194.89	250.00
	3.80	-47.00	7.33	194.89	250.00
205	3.80	29.50	-11.00	3.00	324.00
	3.80	29.50	11.00	3.00	324.00
	3.80	-29.50	11.00	3.00	324.00
	3.80	-29.50	-11.00	3.00	324.00
	3.80	29.50	0.00	0.00	330.00
	3.80	-29.50	0.00	0.00	330.00
	1.13	0.00	-11.00	0.00	330.00
	1.13	0.00	11.00	0.00	330.00
206	3.80	49.50	-11.00	3.00	544.00
	3.80	49.50	11.00	3.00	544.00
	3.80	-49.50	11.00	3.00	544.00
	3.80	-49.50	-11.00	3.00	544.00
	3.80	49.50	0.00	0.00	550.00
	3.80	-49.50	-3.67	0.00	550.00
	3.80	-49.50	3.67	0.00	550.00
	1.13	0.00	-11.00	0.00	550.00
	1.13	0.00	11.00	0.00	550.00
	3.80	-49.50	0.00	250.00	300.00
	3.80	-49.50	-5.50	250.00	300.00
233	2.54	0.00	12.00	0.00	355.00
	2.54	23.50	12.00	0.00	355.00
	2.54	-23.50	12.00	0.00	355.00
	2.54	0.00	-12.00	0.00	355.00
	2.54	-23.50	-12.00	0.00	355.00
	2.54	23.50	-12.00	0.00	355.00
	2.54	-47.00	0.00	0.00	355.00
	2.54	47.00	0.00	0.00	355.00
	2.54	-47.00	-12.00	3.00	349.00
	2.54	-47.00	12.00	3.00	349.00
	2.54	47.00	12.00	3.00	349.00
	2.54	47.00	-12.00	3.00	349.00
235	5.31	57.00	-11.00	3.00	359.30
	5.31	57.00	11.00	3.00	359.30
	5.31	-57.00	11.00	3.00	359.30
	5.31	-57.00	-11.00	3.00	359.30
	5.31	57.00	6.60	0.00	250.00
	5.31	57.00	-6.60	0.00	250.00
	5.31	57.00	2.20	0.00	250.00
	5.31	57.00	-2.20	0.00	250.00
	5.31	-57.00	-5.50	0.00	300.00
	5.31	-57.00	5.50	0.00	300.00
	5.31	-57.00	0.00	0.00	300.00
236	3.80	44.50	-11.00	3.00	478.11
	3.80	44.50	11.00	3.00	478.11
	3.80	-44.50	11.00	3.00	478.11
	3.80	-44.50	-11.00	3.00	478.11
	3.80	-44.50	-3.67	0.00	484.11
	3.80	-44.50	3.67	0.00	484.11
	3.80	44.50	0.00	384.11	100.00
	3.80	44.50	5.50	384.11	100.00
	3.80	44.50	-5.50	384.11	100.00
	3.80	44.50	8.25	384.11	100.00
	3.80	-44.50	-7.33	0.00	200.00
	3.80	-44.50	7.33	0.00	200.00
237	3.80	32.00	-11.00	3.00	308.23
	3.80	32.00	11.00	3.00	308.23
	3.80	-32.00	11.00	3.00	308.23
	3.80	-32.00	-11.00	3.00	308.23
	3.80	-32.00	-3.67	0.00	314.23
	3.80	-32.00	3.67	0.00	314.23
	3.80	32.00	3.67	0.00	125.00

	3.80	32.00	-3.67	0.00	125.00
	3.80	-32.00	0.00	164.23	150.00
	3.80	-32.00	-5.50	164.23	150.00
238	3.80	47.00	-11.00	3.00	633.79
	3.80	47.00	11.00	3.00	633.79
	3.80	-47.00	11.00	3.00	633.79
	3.80	-47.00	-11.00	3.00	633.79
	3.80	-47.00	-3.67	0.00	639.79
	3.80	-47.00	3.67	0.00	639.79
	3.80	47.00	0.00	0.00	125.00
	3.80	47.00	5.50	0.00	125.00
	3.80	47.00	-5.50	0.00	125.00
	3.80	47.00	8.25	0.00	125.00
	3.80	47.00	2.75	514.79	125.00
	3.80	47.00	-2.75	514.79	125.00
	3.80	-47.00	-7.33	194.89	250.00
	3.80	-47.00	7.33	194.89	250.00
240	3.80	29.50	-11.00	3.00	324.00
	3.80	29.50	11.00	3.00	324.00
	3.80	-29.50	11.00	3.00	324.00
	3.80	-29.50	-11.00	3.00	324.00
	3.80	29.50	0.00	0.00	330.00
	3.80	-29.50	0.00	0.00	330.00
	1.13	0.00	-11.00	0.00	330.00
	1.13	0.00	11.00	0.00	330.00
241	3.80	49.50	-11.00	3.00	544.00
	3.80	49.50	11.00	3.00	544.00
	3.80	-49.50	11.00	3.00	544.00
	3.80	-49.50	-11.00	3.00	544.00
	3.80	49.50	0.00	0.00	550.00
	3.80	-49.50	-3.67	0.00	550.00
	3.80	-49.50	3.67	0.00	550.00
	1.13	0.00	-11.00	0.00	550.00
	1.13	0.00	11.00	0.00	550.00
	3.80	-49.50	0.00	250.00	300.00
	3.80	-49.50	-5.50	250.00	300.00
244	2.54	19.50	-37.00	3.00	237.70
	2.54	19.50	37.00	3.00	237.70
	2.54	-19.50	37.00	3.00	237.70
	2.54	-19.50	-37.00	3.00	237.70
	2.54	19.50	0.00	143.70	100.00
	2.54	19.50	0.00	0.00	100.00
	2.54	-19.50	0.00	0.00	243.70
245	2.54	27.00	-9.50	3.00	249.38
	2.54	27.00	9.50	3.00	249.38
	2.54	-27.00	9.50	3.00	249.38
	2.54	-27.00	-9.50	3.00	249.38
	2.54	27.00	0.00	155.38	100.00
	2.54	27.00	0.00	0.00	100.00
	2.54	-27.00	0.00	2.69	250.00
246	2.54	-47.00	0.00	5.28	250.00
	2.54	47.00	-4.75	0.00	100.00
	2.54	47.00	-4.75	160.56	100.00
	2.54	47.00	4.75	0.00	100.00
	2.54	47.00	4.75	160.56	100.00
	1.13	47.00	0.00	0.00	260.56
	2.54	-47.00	-9.50	3.00	254.56
	2.54	-47.00	9.50	3.00	254.56
	2.54	47.00	9.50	3.00	254.56
	2.54	47.00	-9.50	3.00	254.56
247	2.54	32.00	-4.50	3.00	239.50
	2.54	32.00	4.50	3.00	239.50

	2.54	-32.00	4.50	3.00	239.50
	2.54	-32.00	-4.50	3.00	239.50
	2.54	32.00	-0.00	0.00	245.50
	2.54	-32.00	0.00	0.00	245.50
260	2.54	-47.00	0.00	120.85	250.00
	2.54	47.00	-4.75	0.00	100.00
	2.54	47.00	-4.75	391.69	100.00
	2.54	47.00	4.75	0.00	100.00
	2.54	47.00	4.75	391.69	100.00
	1.13	47.00	0.00	0.00	491.69
	2.54	-47.00	-9.50	3.00	485.69
	2.54	-47.00	9.50	3.00	485.69
	2.54	47.00	9.50	3.00	485.69
	2.54	47.00	-9.50	3.00	485.69
261	2.54	27.00	-9.50	3.00	475.83
	2.54	27.00	9.50	3.00	475.83
	2.54	-27.00	9.50	3.00	475.83
	2.54	-27.00	-9.50	3.00	475.83
	2.54	27.00	0.00	381.83	100.00
	2.54	27.00	0.00	0.00	100.00
	2.54	-27.00	0.00	115.92	250.00
262	2.54	19.50	-37.00	3.00	463.54
	2.54	19.50	37.00	3.00	463.54
	2.54	-19.50	37.00	3.00	463.54
	2.54	-19.50	-37.00	3.00	463.54
	2.54	19.50	0.00	369.54	100.00
	2.54	19.50	0.00	0.00	100.00
	2.54	-19.50	0.00	109.77	250.00
263	2.54	19.50	-37.00	3.00	477.25
	2.54	19.50	37.00	3.00	477.25
	2.54	-19.50	37.00	3.00	477.25
	2.54	-19.50	-37.00	3.00	477.25
	2.54	19.50	0.00	383.25	100.00
	2.54	19.50	0.00	0.00	100.00
	2.54	-19.50	0.00	116.62	250.00
264	2.54	19.50	-37.00	3.00	477.25
	2.54	19.50	37.00	3.00	477.25
	2.54	-19.50	37.00	3.00	477.25
	2.54	-19.50	-37.00	3.00	477.25
	2.54	19.50	0.00	383.25	100.00
	2.54	19.50	0.00	0.00	100.00
	2.54	-19.50	0.00	116.62	250.00
267	1.13	-15.20	5.10	102.78	300.00
	1.13	-15.20	-5.10	102.78	300.00
	1.13	15.20	-7.65	0.00	60.00
	1.13	15.20	-7.65	445.56	60.00
	1.13	15.20	7.65	0.00	60.00
	1.13	15.20	7.65	445.56	60.00
	1.13	15.20	-5.10	0.00	60.00
	1.13	15.20	-5.10	445.56	60.00
	1.13	15.20	5.10	0.00	60.00
	1.13	15.20	5.10	445.56	60.00
	1.13	0.00	10.20	0.00	505.56
	1.13	-0.00	-10.20	0.00	505.56
	1.13	-15.20	0.00	0.00	505.56
	1.13	15.20	-0.00	0.00	505.56
	1.13	-15.20	-10.20	4.80	495.96
	1.13	-15.20	10.20	4.80	495.96
	1.13	15.20	10.20	4.80	495.96
	1.13	15.20	-10.20	4.80	495.96
268	1.13	-15.20	5.10	102.78	300.00
	1.13	-15.20	-5.10	102.78	300.00

	1.13	15.20	-7.65	0.00	60.00
	1.13	15.20	-7.65	445.56	60.00
	1.13	15.20	7.65	0.00	60.00
	1.13	15.20	7.65	445.56	60.00
	1.13	15.20	-5.10	0.00	60.00
	1.13	15.20	-5.10	445.56	60.00
	1.13	15.20	5.10	0.00	60.00
	1.13	15.20	5.10	445.56	60.00
	1.13	0.00	10.20	0.00	505.56
	1.13	-0.00	-10.20	0.00	505.56
	1.13	-15.20	0.00	0.00	505.56
	1.13	15.20	-0.00	0.00	505.56
	1.13	-15.20	-10.20	4.80	495.96
	1.13	-15.20	10.20	4.80	495.96
	1.13	15.20	10.20	4.80	495.96
	1.13	15.20	-10.20	4.80	495.96
269	2.54	-7.02	0.00	0.00	511.59
	2.54	9.38	-0.00	0.00	511.59
	2.54	-7.02	-25.20	4.80	501.99
	2.54	-7.02	25.20	4.80	501.99
	2.54	-0.62	25.20	4.80	501.99
	2.54	-0.62	-25.20	4.80	501.99
	2.54	-7.02	-15.20	4.80	501.99
	2.54	-7.02	15.20	4.80	501.99
	2.54	9.38	15.20	4.80	501.99
	2.54	9.38	-15.20	4.80	501.99
270	2.54	-7.02	0.00	0.00	511.59
	2.54	9.38	-0.00	0.00	511.59
	2.54	-7.02	-25.20	4.80	501.99
	2.54	-7.02	25.20	4.80	501.99
	2.54	-0.62	25.20	4.80	501.99
	2.54	-0.62	-25.20	4.80	501.99
	2.54	-7.02	-15.20	4.80	501.99
	2.54	-7.02	15.20	4.80	501.99
	2.54	9.38	15.20	4.80	501.99
	2.54	9.38	-15.20	4.80	501.99
282	2.54	32.00	-4.50	3.00	505.59
	2.54	32.00	4.50	3.00	505.59
	2.54	-32.00	4.50	3.00	505.59
	2.54	-32.00	-4.50	3.00	505.59
	2.54	32.00	-0.00	0.00	511.59
	2.54	-32.00	0.00	0.00	511.59
283	2.54	32.00	-4.50	3.00	505.59
	2.54	32.00	4.50	3.00	505.59
	2.54	-32.00	4.50	3.00	505.59
	2.54	-32.00	-4.50	3.00	505.59
	2.54	32.00	-0.00	0.00	511.59
	2.54	-32.00	0.00	0.00	511.59
284	2.54	-47.00	0.00	127.78	250.00
	2.54	47.00	-4.75	0.00	100.00
	2.54	47.00	-4.75	405.56	100.00
	2.54	47.00	4.75	0.00	100.00
	2.54	47.00	4.75	405.56	100.00
	1.13	47.00	0.00	0.00	505.56
	2.54	-47.00	-9.50	3.00	499.56
	2.54	-47.00	9.50	3.00	499.56
	2.54	47.00	9.50	3.00	499.56
	2.54	47.00	-9.50	3.00	499.56
285	2.54	-47.00	0.00	127.78	250.00
	2.54	47.00	-4.75	0.00	100.00
	2.54	47.00	-4.75	405.56	100.00
	2.54	47.00	4.75	0.00	100.00
	2.54	47.00	4.75	405.56	100.00

	1.13	47.00	0.00	0.00	505.56
	2.54	-47.00	-9.50	3.00	499.56
	2.54	-47.00	9.50	3.00	499.56
	2.54	47.00	9.50	3.00	499.56
	2.54	47.00	-9.50	3.00	499.56
286	2.54	27.00	-9.50	3.00	489.63
	2.54	27.00	9.50	3.00	489.63
	2.54	-27.00	9.50	3.00	489.63
	2.54	-27.00	-9.50	3.00	489.63
	2.54	27.00	0.00	395.63	100.00
	2.54	27.00	0.00	0.00	100.00
	2.54	-27.00	0.00	122.82	250.00
287	2.54	27.00	-9.50	3.00	489.63
	2.54	27.00	9.50	3.00	489.63
	2.54	-27.00	9.50	3.00	489.63
	2.54	-27.00	-9.50	3.00	489.63
	2.54	27.00	0.00	395.63	100.00
	2.54	27.00	0.00	0.00	100.00
	2.54	-27.00	0.00	122.82	250.00
310	2.54	0.00	12.00	0.00	355.00
	2.54	23.50	12.00	0.00	355.00
	2.54	-23.50	12.00	0.00	355.00
	2.54	0.00	-12.00	0.00	355.00
	2.54	-23.50	-12.00	0.00	355.00
	2.54	23.50	-12.00	0.00	355.00
	3.14	-47.00	0.00	0.00	355.00
	3.14	47.00	0.00	0.00	355.00
	3.14	-47.00	-12.00	3.00	349.00
	3.14	-47.00	12.00	3.00	349.00
	3.14	47.00	12.00	3.00	349.00
	3.14	47.00	-12.00	3.00	349.00
312	5.31	57.00	-11.00	3.00	359.30
	5.31	57.00	11.00	3.00	359.30
	5.31	-57.00	11.00	3.00	359.30
	5.31	-57.00	-11.00	3.00	359.30
	5.31	57.00	6.60	0.00	250.00
	5.31	57.00	-6.60	0.00	250.00
	5.31	57.00	2.20	0.00	250.00
	5.31	57.00	-2.20	0.00	250.00
	5.31	-57.00	-5.50	0.00	300.00
	5.31	-57.00	5.50	0.00	300.00
	5.31	-57.00	0.00	0.00	300.00
313	3.80	44.50	-11.00	3.00	478.11
	3.80	44.50	11.00	3.00	478.11
	3.80	-44.50	11.00	3.00	478.11
	3.80	-44.50	-11.00	3.00	478.11
	3.80	-44.50	-3.67	0.00	484.11
	3.80	-44.50	3.67	0.00	484.11
	3.80	44.50	0.00	384.11	100.00
	3.80	44.50	5.50	384.11	100.00
	3.80	44.50	-5.50	384.11	100.00
	3.80	44.50	8.25	384.11	100.00
	3.80	-44.50	-7.33	0.00	200.00
	3.80	-44.50	7.33	0.00	200.00
314	3.80	32.00	-11.00	3.00	308.23
	3.80	32.00	11.00	3.00	308.23
	3.80	-32.00	11.00	3.00	308.23
	3.80	-32.00	-11.00	3.00	308.23
	3.80	-32.00	-3.67	0.00	314.23
	3.80	-32.00	3.67	0.00	314.23
	3.80	32.00	3.67	0.00	125.00
	3.80	32.00	-3.67	0.00	125.00
	3.80	-32.00	0.00	164.23	150.00

	3.80	-32.00	-5.50	164.23	150.00
315	3.80	47.00	-11.00	3.00	633.79
	3.80	47.00	11.00	3.00	633.79
	3.80	-47.00	11.00	3.00	633.79
	3.80	-47.00	-11.00	3.00	633.79
	3.80	-47.00	-3.67	0.00	639.79
	3.80	-47.00	3.67	0.00	639.79
	3.80	47.00	0.00	0.00	125.00
	3.80	47.00	5.50	0.00	125.00
	3.80	47.00	-5.50	0.00	125.00
	3.80	47.00	8.25	0.00	125.00
	3.80	47.00	2.75	514.79	125.00
	3.80	47.00	-2.75	514.79	125.00
	3.80	-47.00	-7.33	194.89	250.00
	3.80	-47.00	7.33	194.89	250.00
317	3.80	29.50	-11.00	3.00	324.00
	3.80	29.50	11.00	3.00	324.00
	3.80	-29.50	11.00	3.00	324.00
	3.80	-29.50	-11.00	3.00	324.00
	3.80	29.50	0.00	0.00	330.00
	3.80	-29.50	0.00	0.00	330.00
	1.13	0.00	-11.00	0.00	330.00
	1.13	0.00	11.00	0.00	330.00
318	3.80	49.50	-11.00	3.00	544.00
	3.80	49.50	11.00	3.00	544.00
	3.80	-49.50	11.00	3.00	544.00
	3.80	-49.50	-11.00	3.00	544.00
	3.80	49.50	0.00	0.00	550.00
	3.80	-49.50	-3.67	0.00	550.00
	3.80	-49.50	3.67	0.00	550.00
	1.13	0.00	-11.00	0.00	550.00
	1.13	0.00	11.00	0.00	550.00
	3.80	-49.50	0.00	250.00	300.00
	3.80	-49.50	-5.50	250.00	300.00
345	2.54	0.00	12.00	0.00	355.00
	2.54	23.50	12.00	0.00	355.00
	2.54	-23.50	12.00	0.00	355.00
	2.54	0.00	-12.00	0.00	355.00
	2.54	-23.50	-12.00	0.00	355.00
	2.54	23.50	-12.00	0.00	355.00
	2.54	-47.00	0.00	0.00	355.00
	2.54	47.00	0.00	0.00	355.00
	2.54	-47.00	-12.00	3.00	349.00
	2.54	-47.00	12.00	3.00	349.00
	2.54	47.00	12.00	3.00	349.00
	2.54	47.00	-12.00	3.00	349.00
347	5.31	57.00	-11.00	3.00	359.30
	5.31	57.00	11.00	3.00	359.30
	5.31	-57.00	11.00	3.00	359.30
	5.31	-57.00	-11.00	3.00	359.30
	5.31	57.00	6.60	0.00	250.00
	5.31	57.00	-6.60	0.00	250.00
	5.31	57.00	2.20	0.00	250.00
	5.31	57.00	-2.20	0.00	250.00
	5.31	-57.00	-5.50	0.00	300.00
	5.31	-57.00	5.50	0.00	300.00
	5.31	-57.00	0.00	0.00	300.00
348	3.80	44.50	-11.00	3.00	478.11
	3.80	44.50	11.00	3.00	478.11
	3.80	-44.50	11.00	3.00	478.11
	3.80	-44.50	-11.00	3.00	478.11
	3.80	-44.50	-3.67	0.00	484.11
	3.80	-44.50	3.67	0.00	484.11

	3.80	44.50	0.00	384.11	100.00
	3.80	44.50	5.50	384.11	100.00
	3.80	44.50	-5.50	384.11	100.00
	3.80	44.50	8.25	384.11	100.00
	3.80	-44.50	-7.33	0.00	200.00
	3.80	-44.50	7.33	0.00	200.00
349	3.80	32.00	-11.00	3.00	308.23
	3.80	32.00	11.00	3.00	308.23
	3.80	-32.00	11.00	3.00	308.23
	3.80	-32.00	-11.00	3.00	308.23
	3.80	-32.00	-3.67	0.00	314.23
	3.80	-32.00	3.67	0.00	314.23
	3.80	32.00	3.67	0.00	125.00
	3.80	32.00	-3.67	0.00	125.00
	3.80	-32.00	0.00	164.23	150.00
	3.80	-32.00	-5.50	164.23	150.00
350	3.80	47.00	-11.00	3.00	633.79
	3.80	47.00	11.00	3.00	633.79
	3.80	-47.00	11.00	3.00	633.79
	3.80	-47.00	-11.00	3.00	633.79
	3.80	-47.00	-3.67	0.00	639.79
	3.80	-47.00	3.67	0.00	639.79
	3.80	47.00	0.00	0.00	125.00
	3.80	47.00	5.50	0.00	125.00
	3.80	47.00	-5.50	0.00	125.00
	3.80	47.00	8.25	0.00	125.00
	3.80	47.00	2.75	514.79	125.00
	3.80	47.00	-2.75	514.79	125.00
	3.80	-47.00	-7.33	194.89	250.00
	3.80	-47.00	7.33	194.89	250.00
352	3.80	29.50	-11.00	3.00	324.00
	3.80	29.50	11.00	3.00	324.00
	3.80	-29.50	11.00	3.00	324.00
	3.80	-29.50	-11.00	3.00	324.00
	3.80	29.50	0.00	0.00	330.00
	3.80	-29.50	0.00	0.00	330.00
	1.13	0.00	-11.00	0.00	330.00
	1.13	0.00	11.00	0.00	330.00
353	3.80	49.50	-11.00	3.00	544.00
	3.80	49.50	11.00	3.00	544.00
	3.80	-49.50	11.00	3.00	544.00
	3.80	-49.50	-11.00	3.00	544.00
	3.80	49.50	0.00	0.00	550.00
	3.80	-49.50	-3.67	0.00	550.00
	3.80	-49.50	3.67	0.00	550.00
	1.13	0.00	-11.00	0.00	550.00
	1.13	0.00	11.00	0.00	550.00
	3.80	-49.50	0.00	250.00	300.00
	3.80	-49.50	-5.50	250.00	300.00
380	2.54	0.00	12.00	0.00	355.00
	2.54	23.50	12.00	0.00	355.00
	2.54	-23.50	12.00	0.00	355.00
	2.54	0.00	-12.00	0.00	355.00
	2.54	-23.50	-12.00	0.00	355.00
	2.54	23.50	-12.00	0.00	355.00
	2.54	-47.00	0.00	0.00	355.00
	2.54	47.00	0.00	0.00	355.00
	2.54	-47.00	-12.00	3.00	349.00
	2.54	-47.00	12.00	3.00	349.00
	2.54	47.00	12.00	3.00	349.00
	2.54	47.00	-12.00	3.00	349.00
382	5.31	57.00	-11.00	3.00	359.30
	5.31	57.00	11.00	3.00	359.30

	5.31	-57.00	11.00	3.00	359.30
	5.31	-57.00	-11.00	3.00	359.30
	5.31	57.00	6.60	0.00	250.00
	5.31	57.00	-6.60	0.00	250.00
	5.31	57.00	2.20	0.00	250.00
	5.31	57.00	-2.20	0.00	250.00
	5.31	-57.00	-5.50	0.00	300.00
	5.31	-57.00	5.50	0.00	300.00
	5.31	-57.00	0.00	0.00	300.00
383	3.80	44.50	-11.00	3.00	478.11
	3.80	44.50	11.00	3.00	478.11
	3.80	-44.50	11.00	3.00	478.11
	3.80	-44.50	-11.00	3.00	478.11
	3.80	-44.50	-3.67	0.00	484.11
	3.80	-44.50	3.67	0.00	484.11
	3.80	44.50	0.00	384.11	100.00
	3.80	44.50	5.50	384.11	100.00
	3.80	44.50	-5.50	384.11	100.00
	3.80	44.50	8.25	384.11	100.00
	3.80	-44.50	-7.33	0.00	200.00
	3.80	-44.50	7.33	0.00	200.00
384	3.80	32.00	-11.00	3.00	308.23
	3.80	32.00	11.00	3.00	308.23
	3.80	-32.00	11.00	3.00	308.23
	3.80	-32.00	-11.00	3.00	308.23
	3.80	-32.00	-3.67	0.00	314.23
	3.80	-32.00	3.67	0.00	314.23
	3.80	32.00	3.67	0.00	125.00
	3.80	32.00	-3.67	0.00	125.00
	3.80	-32.00	0.00	164.23	150.00
	3.80	-32.00	-5.50	164.23	150.00
385	3.80	47.00	-11.00	3.00	633.79
	3.80	47.00	11.00	3.00	633.79
	3.80	-47.00	11.00	3.00	633.79
	3.80	-47.00	-11.00	3.00	633.79
	3.80	-47.00	-3.67	0.00	639.79
	3.80	-47.00	3.67	0.00	639.79
	3.80	47.00	0.00	0.00	125.00
	3.80	47.00	5.50	0.00	125.00
	3.80	47.00	-5.50	0.00	125.00
	3.80	47.00	8.25	0.00	125.00
	3.80	47.00	2.75	514.79	125.00
	3.80	47.00	-2.75	514.79	125.00
	3.80	-47.00	-7.33	194.89	250.00
	3.80	-47.00	7.33	194.89	250.00
387	3.80	29.50	-11.00	3.00	324.00
	3.80	29.50	11.00	3.00	324.00
	3.80	-29.50	11.00	3.00	324.00
	3.80	-29.50	-11.00	3.00	324.00
	3.80	29.50	0.00	0.00	330.00
	3.80	-29.50	0.00	0.00	330.00
	1.13	0.00	-11.00	0.00	330.00
	1.13	0.00	11.00	0.00	330.00
388	3.80	49.50	-11.00	3.00	544.00
	3.80	49.50	11.00	3.00	544.00
	3.80	-49.50	11.00	3.00	544.00
	3.80	-49.50	-11.00	3.00	544.00
	3.80	49.50	0.00	0.00	550.00
	3.80	-49.50	-3.67	0.00	550.00
	3.80	-49.50	3.67	0.00	550.00
	1.13	0.00	-11.00	0.00	550.00
	1.13	0.00	11.00	0.00	550.00
	3.80	-49.50	0.00	250.00	300.00

3.80 -49.50 -5.50 250.00 300.00

Armatura trasversale negli elementi

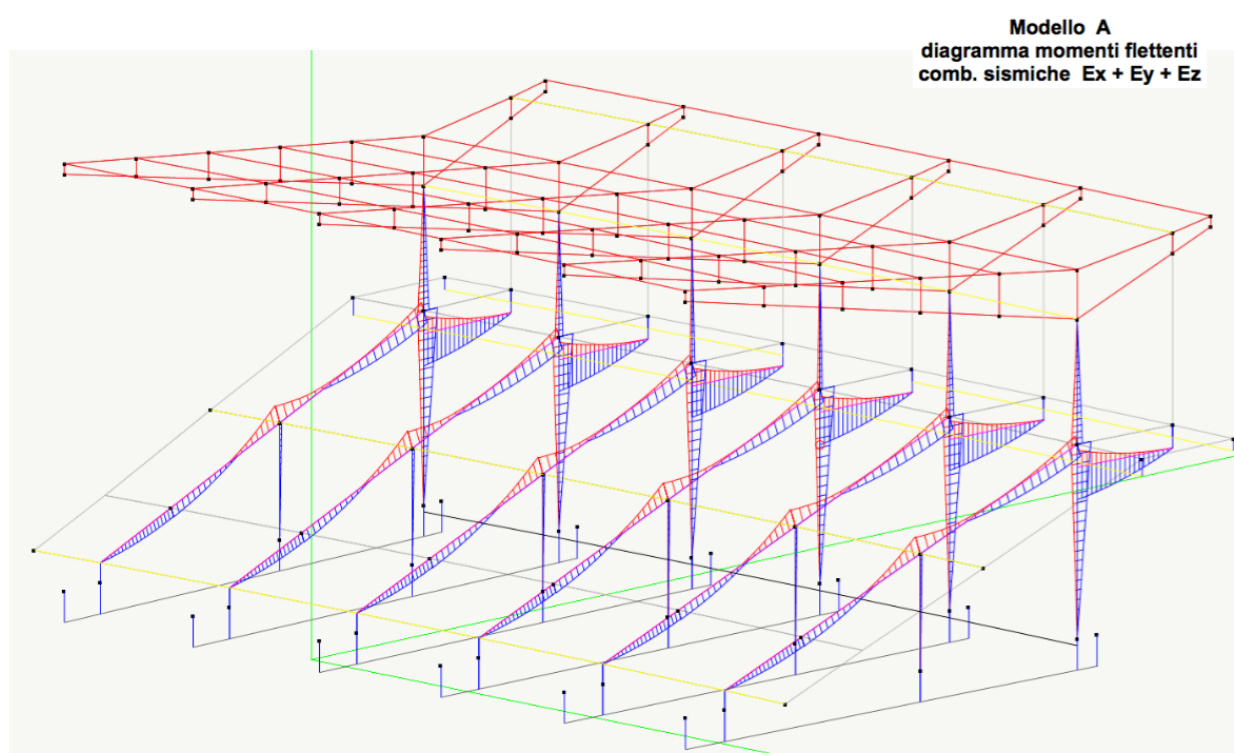
Elemento	Ascissa iniz. (cm)	Lunghezza tratto (cm)	Area orizz. (cm2)	Area vert. (cm2)	Passo (cm)
85	0.00	491.69	0.57	0.57	10.00
96	0.00	497.68	1.13	0.85	20.00
99	0.00	243.70	0.57	0.57	20.00
100	0.00	255.38	0.57	0.57	20.00
101	0.00	260.56	0.57	0.57	20.00
102	0.00	245.50	0.57	0.57	20.00
115	0.00	483.25	0.57	0.57	20.00
116	0.00	483.25	0.57	0.57	20.00
119	0.00	505.56	0.57	0.57	10.00
120	0.00	505.56	0.57	0.57	10.00
121	0.00	511.59	1.13	0.85	20.00
122	0.00	511.59	1.13	0.85	20.00
134	0.00	511.59	0.57	0.57	20.00
135	0.00	511.59	0.57	0.57	20.00
136	0.00	505.56	0.57	0.57	20.00
137	0.00	505.56	0.57	0.57	20.00
138	0.00	495.63	0.57	0.57	20.00
139	0.00	495.63	0.57	0.57	20.00
163	0.00	355.00	1.01	1.01	15.00
165	0.00	365.30	1.57	1.57	11.00
166	0.00	484.11	1.01	1.01	18.00
167	0.00	150.00	1.57	1.57	10.00
	150.23	164.00	1.01	1.01	18.00
168	0.00	639.79	1.01	1.01	18.00
170	0.00	60.00	1.57	1.57	10.00
	60.00	270.00	1.01	1.01	20.00
171	0.00	60.00	1.01	1.01	10.00
	60.00	490.00	1.01	1.01	20.00
198	0.00	355.00	1.01	1.01	15.00
200	0.00	365.30	1.57	1.57	11.00
201	0.00	484.11	1.01	1.01	18.00
202	0.00	150.00	1.57	1.57	10.00
	150.23	164.00	1.01	1.01	18.00
203	0.00	639.79	1.01	1.01	18.00
205	0.00	60.00	1.57	1.57	10.00
	60.00	270.00	1.01	1.01	20.00
206	0.00	60.00	1.01	1.01	10.00
	60.00	490.00	1.01	1.01	20.00
233	0.00	355.00	1.01	1.01	15.00
235	0.00	365.30	1.57	1.57	11.00

236	0.00	484.11	1.01	1.01	18.00
237	0.00	150.00	1.57	1.57	10.00
	150.23	164.00	1.01	1.01	18.00
238	0.00	639.79	1.01	1.01	18.00
240	0.00	60.00	1.57	1.57	10.00
	60.00	270.00	1.01	1.01	20.00
241	0.00	60.00	1.01	1.01	10.00
	60.00	490.00	1.01	1.01	20.00
244	0.00	243.70	0.57	0.57	20.00
245	0.00	255.38	0.57	0.57	20.00
246	0.00	260.56	0.57	0.57	20.00
247	0.00	245.50	0.57	0.57	20.00
260	0.00	491.69	0.57	0.57	20.00
261	0.00	481.83	0.57	0.57	20.00
262	0.00	469.54	0.57	0.57	20.00
263	0.00	483.25	0.57	0.57	20.00
264	0.00	483.25	0.57	0.57	20.00
267	0.00	505.56	0.57	0.57	10.00
268	0.00	505.56	0.57	0.57	10.00
269	0.00	511.59	1.13	0.85	20.00
270	0.00	511.59	1.13	0.85	20.00
282	0.00	511.59	0.57	0.57	20.00
283	0.00	511.59	0.57	0.57	20.00
284	0.00	505.56	0.57	0.57	20.00
285	0.00	505.56	0.57	0.57	20.00
286	0.00	495.63	0.57	0.57	20.00
287	0.00	495.63	0.57	0.57	20.00
310	0.00	355.00	1.01	1.01	15.00
312	0.00	365.30	1.57	1.57	11.00
313	0.00	484.11	1.01	1.01	18.00
314	0.00	150.00	1.57	1.57	10.00
	150.23	164.00	1.01	1.01	18.00
315	0.00	639.79	1.01	1.01	18.00
317	0.00	60.00	1.57	1.57	10.00
	60.00	270.00	1.01	1.01	20.00
318	0.00	60.00	1.01	1.01	10.00
	60.00	490.00	1.01	1.01	20.00
345	0.00	355.00	1.01	1.01	15.00
347	0.00	365.30	1.57	1.57	11.00
348	0.00	484.11	1.01	1.01	18.00
349	0.00	150.00	1.57	1.57	10.00
	150.23	164.00	1.01	1.01	18.00
350	0.00	639.79	1.01	1.01	18.00
352	0.00	60.00	1.57	1.57	10.00

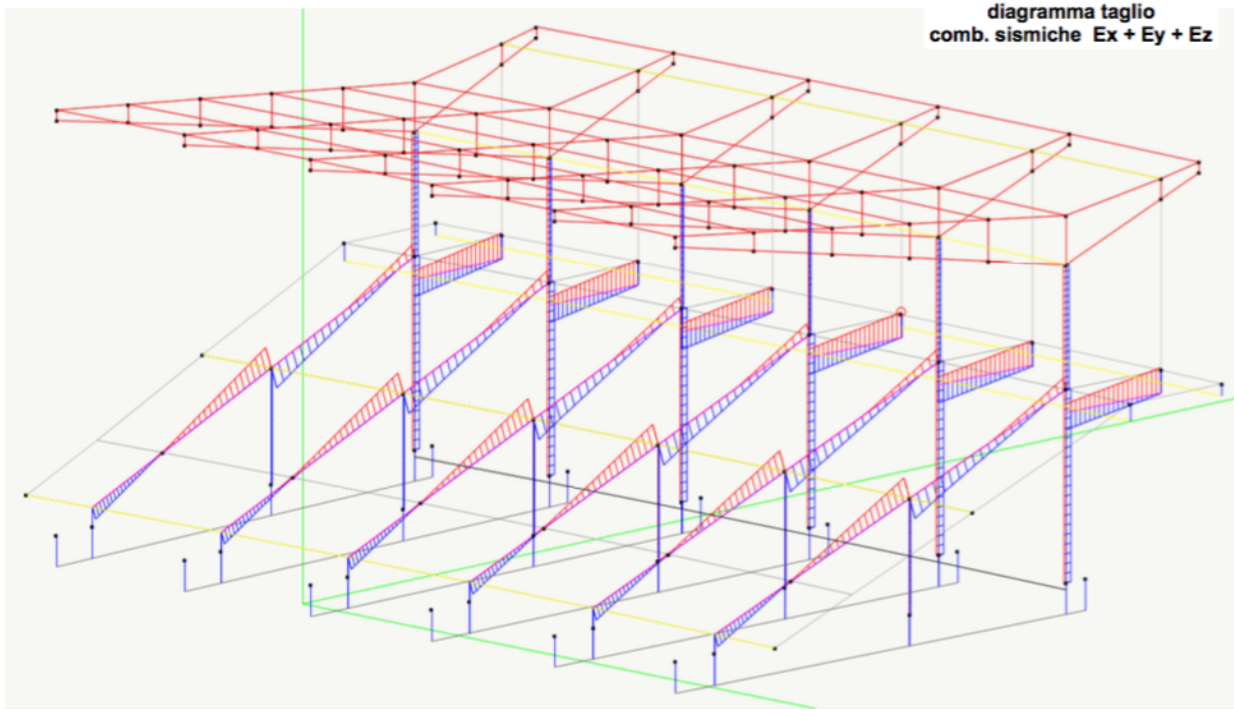
	60.00	270.00	1.01	1.01	20.00
353	0.00	60.00	1.01	1.01	10.00
	60.00	490.00	1.01	1.01	20.00
380	0.00	355.00	1.01	1.01	15.00
382	0.00	365.30	1.57	1.57	11.00
383	0.00	484.11	1.01	1.01	18.00
384	0.00	150.00	1.57	1.57	10.00
	150.23	164.00	1.01	1.01	18.00
385	0.00	639.79	1.01	1.01	18.00
387	0.00	60.00	1.57	1.57	10.00
	60.00	270.00	1.01	1.01	20.00
388	0.00	60.00	1.01	1.01	10.00
	60.00	490.00	1.01	1.01	20.00

**Rappresentazione dei diagrammi delle sollecitazioni M, N e T massime
(solo combinazioni sismiche) ricavate dall'elaborato numerico.**

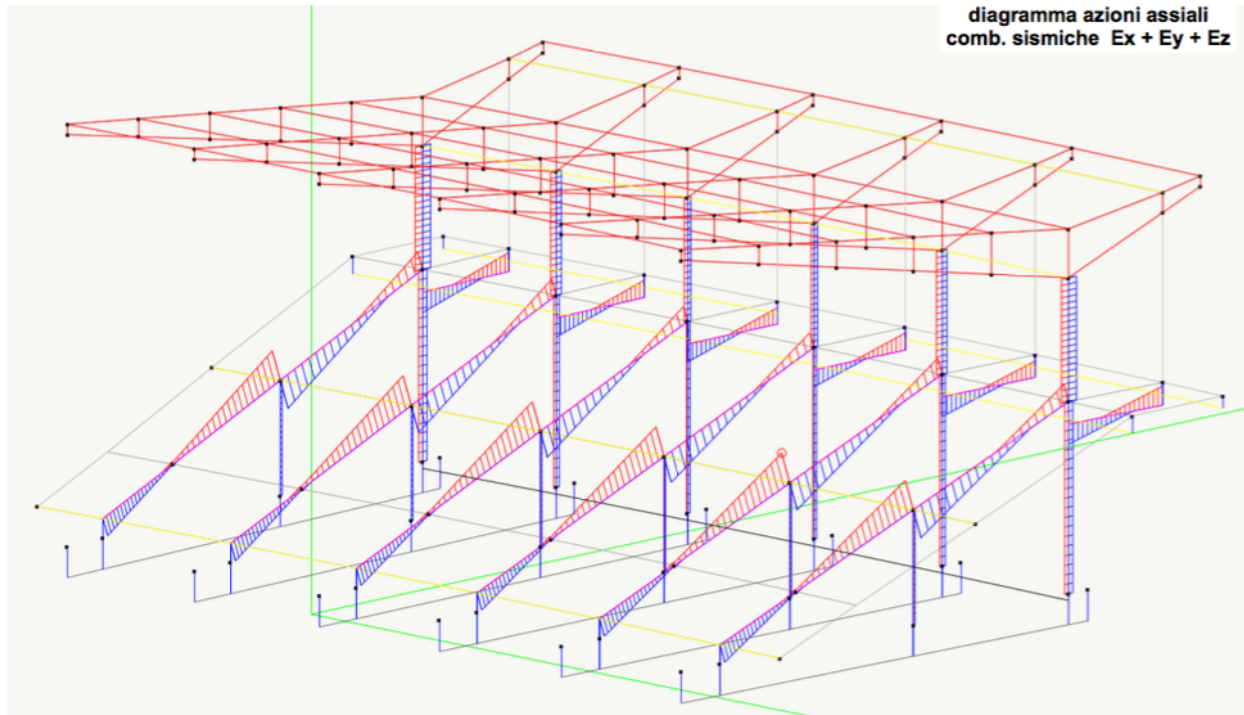
Azione sismica: $E_x + E_y + E_z$



Modello A
diagramma taglio
comb. sismiche $E_x + E_y + E_z$



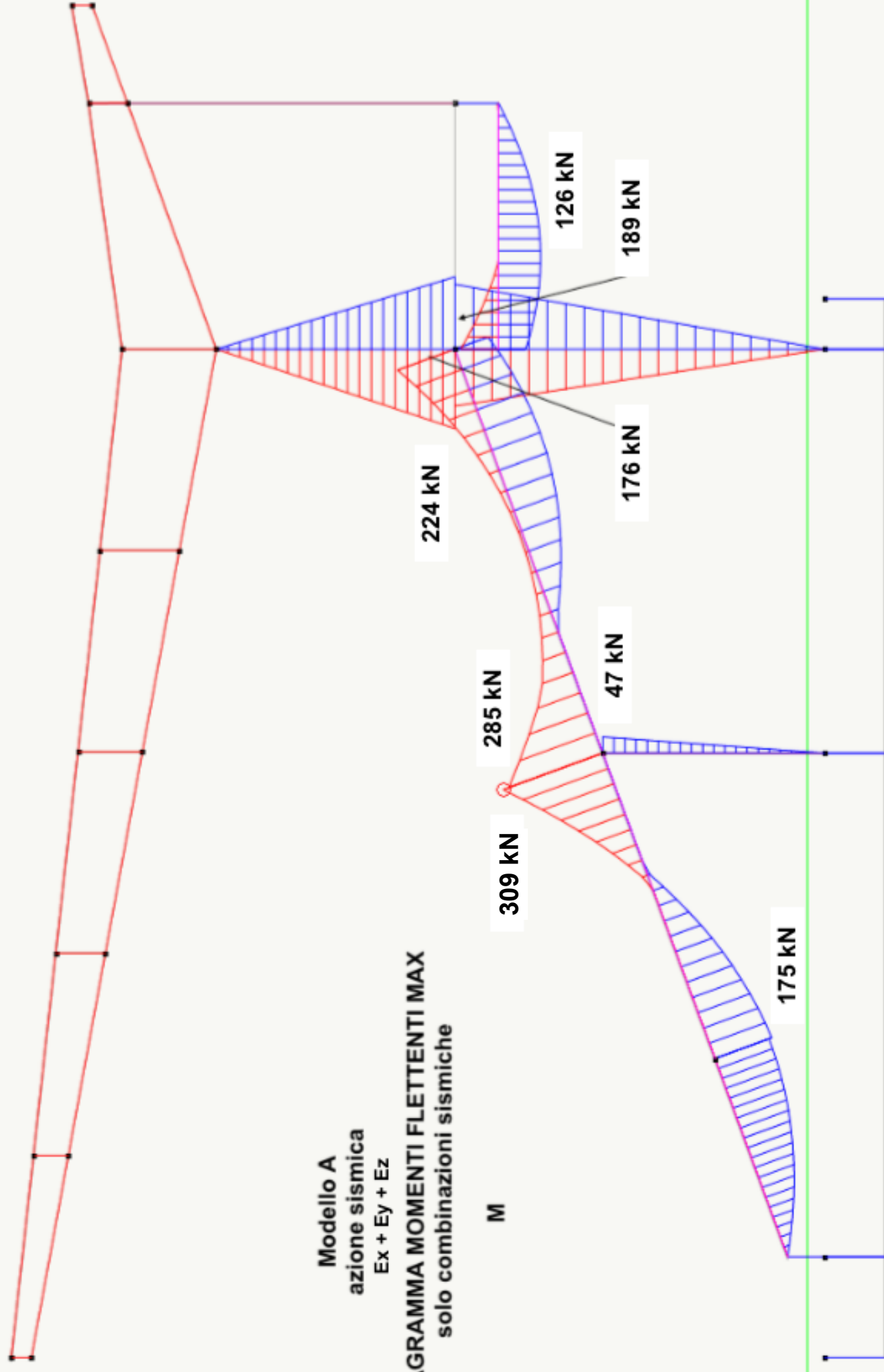
Modello A
diagramma azioni assiali
comb. sismiche $E_x + E_y + E_z$



Modello A
azione sismica
 $E_x + E_y + E_z$

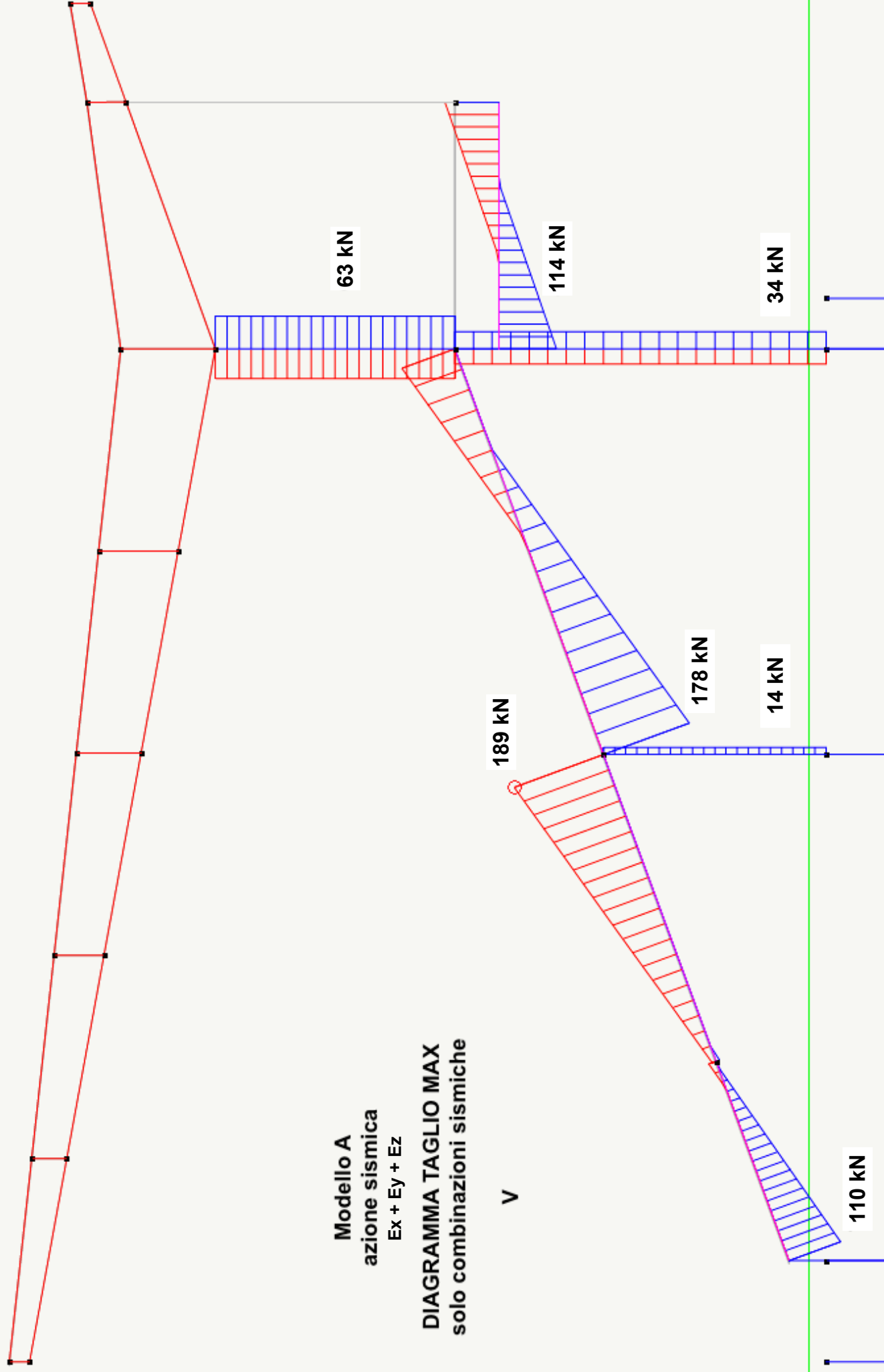
DIAGRAMMA MOMENTI FLETTENTI MAX
solo combinazioni sismiche

M



Modello A
azione sismica
 $E_x + E_y + E_z$
DIAGRAMMA TAGLIO MAX
solo combinazioni sismiche

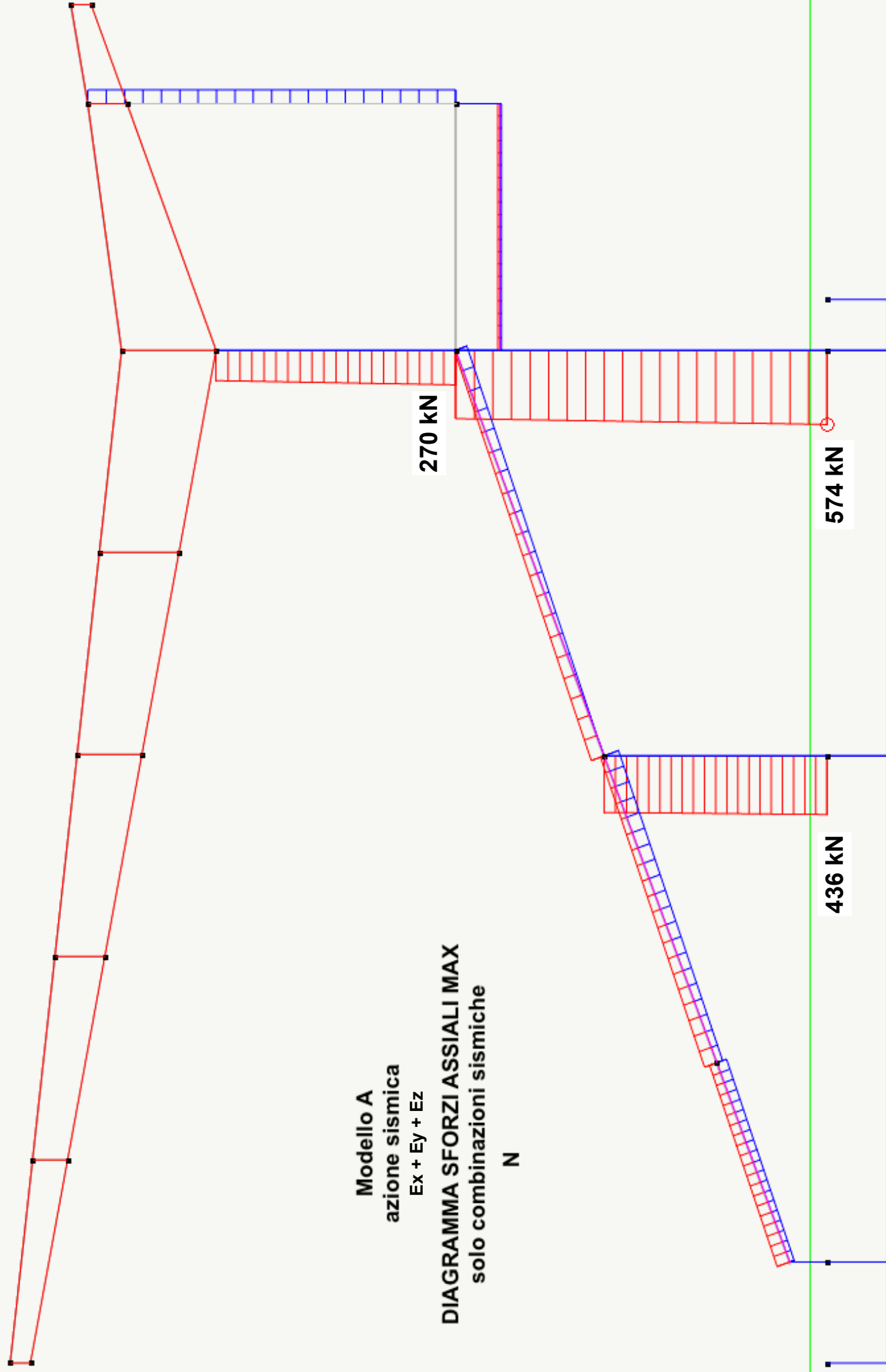
V



Modello A
azione sismica
 $E_x + E_y + E_z$

DIAGRAMMA SFORZI ASSIALI MAX
solo combinazioni sismiche

N



TrW A Cons va 0,6Ag

MODELLO A - VERIFICA PILASTRI Ex+Ey+Ez

All-In-One EWS 47 (29.11.2018) build 7317

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Verifiche

Parametri verifica strutture esistenti

Le verifiche nel
seguito sono
effettuate
secondo i
requisiti previsti
dal Decreto 17
gennaio 2018
per le strutture
esistenti
analizzate con:

Spettro di
progetto con $q =$
1.500000
scalato a 1.5 per
elementi fragili

Il fattore di
confidenza
adottato è $CF =$
1.350000

I valori di
resistenza dei
materiali sono
opportunamente
ridotti del fattore
di confidenza

Classificazione membrature

Elem	P/T	Q.ta	R	Vpy (N)	Vpz (N)	Vuy (N)	Vuz (N)	Fs	Duttilità
163	P			326194.35	98240.64	411291.97	364992.62	1.26	Duttile
170	P			199337.34	79005.65	277208.25	260293.45	1.39	Duttile
171	P			292934.80	66505.29	403315.60	373984.22	1.38	Duttile
198	P			302639.22	91904.94	404273.70	356091.36	1.34	Duttile
205	P			199337.34	79005.65	277123.68	260214.29	1.39	Duttile
206	P			295444.48	66784.14	404920.96	375459.74	1.37	Duttile
233	P			300115.46	90643.06	403071.98	354965.10	1.34	Duttile
240	P			199337.34	79005.65	277252.93	260335.28	1.39	Duttile
241	P			295165.63	66784.14	404816.92	375364.11	1.37	Duttile
310	P			327035.61	98319.51	411452.28	365142.85	1.26	Duttile
317	P			199337.34	79005.65	277326.25	260403.91	1.39	Duttile
318	P			292795.37	66435.58	402974.98	373671.16	1.38	Duttile
345	P			302639.22	91904.94	404105.24	355933.48	1.34	Duttile
352	P			199337.34	79005.65	277028.25	260124.96	1.39	Duttile
353	P			295444.48	67080.43	405199.77	375716.00	1.37	Duttile
380	P			300115.46	90643.06	403133.02	355022.31	1.34	Duttile
387	P			199337.34	79005.65	277265.14	260346.70	1.39	Duttile
388	P			295165.63	66784.14	404802.27	375350.65	1.37	Duttile

Vengono calcolati i tagli **Vpy** e **Vpz** dovuti a fenomeni anelastici e i tagli ultimi **Vuy** e **Vuz**. Il minor fattore di sicurezza **Fs** tra i due valori nei due piani determina se l'elemento è **Duttile** o **Fragile**. Nel caso gli elementi siano rinforzati, viene riportata un **R** nella colonna omonima e le caratteristiche del rinforzo vengono riportate nella apposita tabella.

Combinazioni di carico di stato limite ultimo

1	-0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
2	-0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
3	-0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
4	-0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
5	0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
6	0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
7	0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
8	0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
9	-0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y

10	-0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
11	-0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
12	-0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
13	0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
14	0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
15	0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
16	0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
17	-0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
18	-0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
19	-0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
20	-0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
21	0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
22	0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
23	0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
24	0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
25	1.50 * (1) vento - + 0.75 * (1) Qk3 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
26	1.50 * (1) vento + + 0.75 * (1) Qk3 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
27	0.90 * (1) vento - + 1.50 * (1) Qk3 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
28	0.90 * (1) vento + + 1.50 * (1) Qk3 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
29	0.90 * (1) vento - + 0.75 * (1) Qk3 + 1.50 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
30	0.90 * (1) vento + + 0.75 * (1) Qk3 + 1.50 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
31	1.00 * (1) G2 + 1.00 * (1) G1
32	1.50 * (1) vento - + 0.75 * (1) Qk3 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
33	1.50 * (1) vento + + 0.75 * (1) Qk3 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
34	0.90 * (1) vento - + 1.50 * (1) Qk3 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
35	0.90 * (1) vento + + 1.50 * (1) Qk3 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
36	0.90 * (1) vento - + 0.75 * (1) Qk3 + 1.50 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
37	0.90 * (1) vento + + 0.75 * (1) Qk3 + 1.50 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
38	1.30 * (1) G2 + 1.30 * (1) G1

Verifica a taglio

Elem	P/T	Q.ta	R	Cmb	Vdy (N)	Vdz (N)	Vuy (N)	Vuz (N)	Fs	Esito	PGA collasso
163	P			13	27563.70	4454.16	218706.38	194862.98	6.72	verificato	901.98
170	P			14	-11578.58	441.65	163699.12	153632.15	>10.0	verificato	4818.76
171	P			15	-18056.38	193.20	226756.40	207270.64	>10.0	verificato	1653.15
198	P			13	44400.29	5448.45	216226.25	191391.08	4.28	verificato	545.76
205	P			14	-12715.58	237.14	163614.55	153552.98	>10.0	verificato	3542.61
206	P			15	-25489.73	136.45	228361.77	208746.16	8.91	verificato	1080.71
233	P			10	-63333.90	-4344.05	215024.52	190264.82	3.15	verificato	378.31
240	P			14	-14306.97	1244.12	163743.80	153673.97	>10.0	verificato	2771.56
241	P			15	-34357.52	95.69	228257.72	208650.54	6.62	verificato	755.14
310	P			16	-27462.61	4041.80	218866.68	195013.22	6.84	verificato	900.61
317	P			10	-11455.67	-468.29	163817.12	153742.60	>10.0	verificato	4861.07
318	P			11	-18898.73	-202.49	226415.79	206957.58	>10.0	verificato	1657.77
345	P			9	45570.19	-5659.17	216057.78	191233.20	4.16	verificato	549.17
352	P			10	-12730.47	-248.15	163519.12	153463.66	>10.0	verificato	3586.75
353	P			11	-24261.40	-153.99	228640.58	209002.42	9.36	verificato	1108.25
380	P			14	-62424.81	4590.69	215085.57	190322.03	3.18	verificato	386.53
387	P			10	-14148.88	-1242.21	163756.01	153685.39	>10.0	verificato	2840.91
388	P			11	-33788.82	-96.76	228243.07	208637.07	6.73	verificato	770.76
Minimo fattore di sicurezza:		3.150854	>= 1.00								

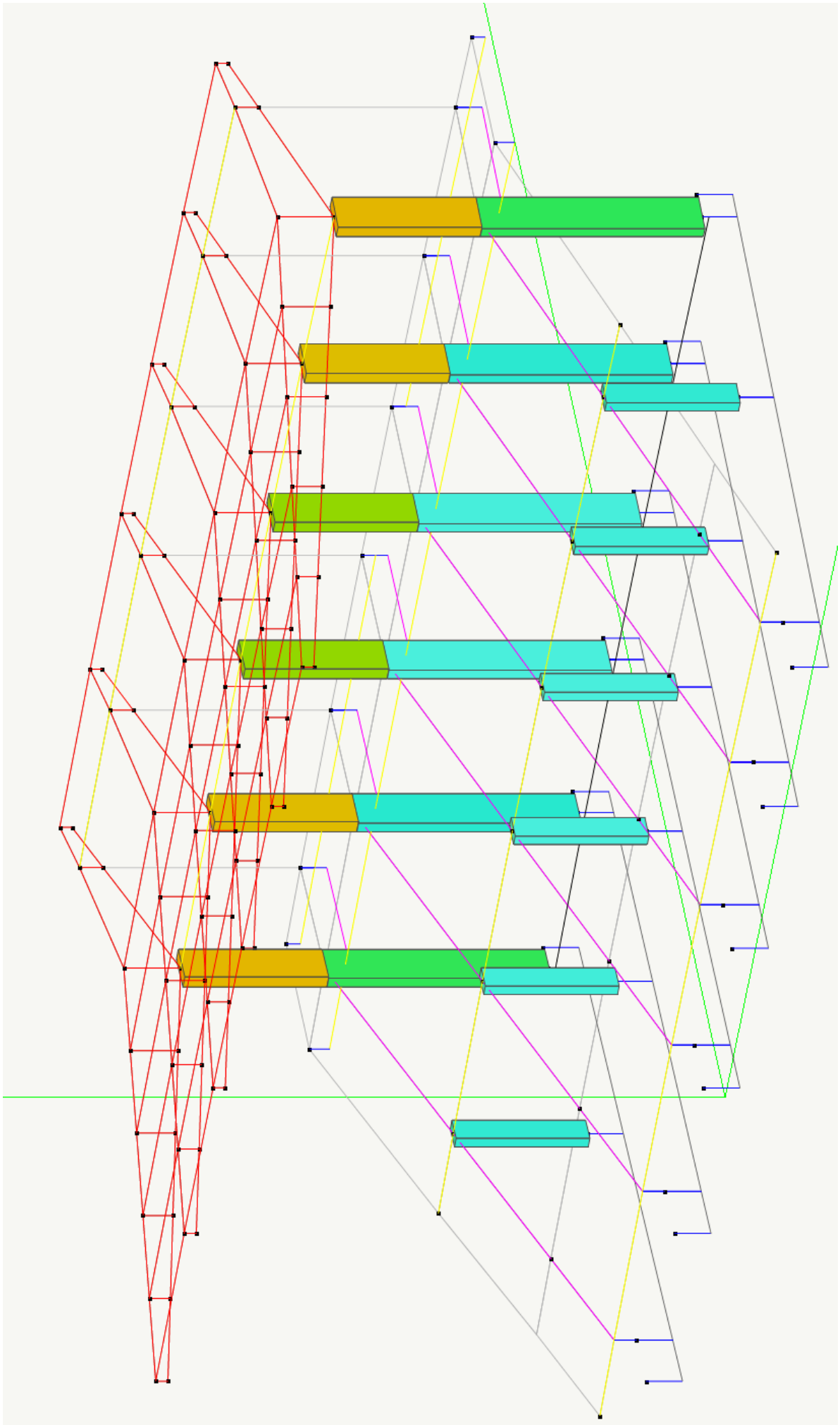
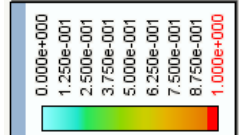
Verifica flessionale

Elem	P/T	Q.ta	R	Cmb	Asc. (cm)	Mdy (Nxcn)	Mdz (Nxcn)	Mr (Nxcn)	Fs	Esito	PGA collasso
163	P			6	53.25	127961.66	-5013268.37	11051036.31	2.20	verificato	238.25

170	P	14	276.75	-3204405.36	122226.63	23198616.99	7.23	verificato	2329.95
171	P	15	425.00	-7673960.62	82112.11	56737790.94	7.39	verificato	962.62
198	P	7	53.25	8425667.88	6714920.59	16087838.06	1.49	verificato	158.80
205	P	14	276.75	-3519074.82	65628.00	23435642.95	6.66	verificato	1742.96
206	P	15	425.00	-10833136.53	57991.60	56737790.94	5.24	verificato	625.83
233	P	7	53.25	15474613.34	6270185.34	24265233.83	1.45	verificato	159.13
240	P	6	276.75	-3738710.69	489371.59	21302409.27	5.65	verificato	1361.29
241	P	10	425.00	12876777.74	-12962.18	47019726.40	3.65	verificato	376.07
310	P	7	53.25	967900.68	4975742.11	11169549.30	2.20	verificato	240.98
317	P	10	276.75	-3170390.54	-129600.31	23198616.99	7.31	verificato	2347.93
318	P	11	425.00	-8031958.35	-86057.72	56737790.94	7.06	verificato	963.76
345	P	8	53.25	7800418.46	-6691928.52	15510087.27	1.51	verificato	158.28
352	P	10	276.75	-3523195.27	-68675.92	23435642.95	6.65	verificato	1764.48
353	P	14	425.00	8428667.12	46032.82	45597570.62	5.41	verificato	535.96
380	P	8	53.25	15394419.76	-6287314.67	24146720.84	1.45	verificato	159.49
387	P	5	276.75	-3731630.19	-489503.87	21302409.27	5.66	verificato	1365.11
388	P	14	425.00	12547375.73	24505.69	46901213.42	3.74	verificato	383.45

Minimo fattore di
sicurezza:

1.452098
>=
1.00



TrW A Cons va 0,6Ag

MODELLO A - VERIFICA TRAVI Ex+Ey+Ez

All-In-One EWS 47 (29.11.2018) build 7317

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Classificazione membrature

Elem	P/T	Q.ta	R	Vpy (N)	Vpz (N)	Vuy (N)	Vuz (N)	Fs	Duttilità
165	T			624632.82	102912.77	751920.02	381840.93	1.34	Duttile
166	T			242760.16	62618.84	187543.77	150731.22	0.48	Fragile
167	T			315918.33	73371.57	148356.81	125820.49	0.69	Fragile
168	T			334356.95	53832.59	391031.26	310915.40	1.24	Duttile
200	T			624632.82	102987.95	752164.65	382064.95	1.34	Duttile
201	T			242760.16	62618.84	187610.94	150793.14	0.48	Fragile
202	T			315918.33	73371.57	148306.38	125773.45	0.69	Fragile
203	T			334356.95	53832.59	391031.26	310915.40	1.24	Duttile
235	T			624064.50	102760.62	751920.02	381840.93	1.34	Duttile
236	T			242496.50	62355.17	187005.00	150234.49	0.49	Fragile
237	T			316451.96	73638.38	148793.39	126227.75	0.69	Fragile
238	T			334141.19	53724.70	391031.26	310915.40	1.24	Duttile
312	T			624253.94	102760.62	751920.02	381840.93	1.34	Duttile
313	T			242760.16	62618.84	187504.02	150694.57	0.48	Fragile
314	T			315918.33	73371.57	148353.15	125817.07	0.69	Fragile
315	T			334356.95	53832.59	391031.26	310915.40	1.24	Duttile
347	T			624632.82	102987.95	752242.33	382136.09	1.34	Duttile
348	T			242760.16	62618.84	187634.12	150814.51	0.48	Fragile
349	T			315918.33	73371.57	148306.38	125773.45	0.69	Fragile
350	T			334788.49	53832.59	391031.26	310915.40	1.24	Duttile
382	T			624064.50	102760.62	751920.02	381840.93	1.34	Duttile
383	T			242496.50	62355.17	186993.54	150223.92	0.49	Fragile
384	T			316451.96	73638.38	148785.13	126220.04	0.69	Fragile
385	T			334141.19	53616.82	391031.26	310915.40	1.24	Duttile

Vengono calcolati i tagli **Vpy** e **Vpz** dovuti a fenomeni anelastici e i tagli ultimi **Vuy** e **Vuz**. Il minor fattore di sicurezza **Fs** tra i due valori nei due piani determina se l'elemento è **Duttile** o **Fragile**. Nel caso gli elementi siano rinforzati, viene riportata un **R** nella colonna omonima e le caratteristiche del rinforzo vengono riportate nella apposita tabella.

Combinazioni di carico di stato limite ultimo

1	-0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
2	-0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
3	-0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
4	-0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
5	0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
6	0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
7	0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
8	0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
9	-0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
10	-0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
11	-0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
12	-0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
13	0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
14	0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
15	0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
16	0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
17	-0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
18	-0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
19	-0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
20	-0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
21	0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
22	0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z

	Dinamica SLVv Z
23	0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
24	0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
25	1.50 * (1) vento - + 0.75 * (1) Qk3 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
26	1.50 * (1) vento + + 0.75 * (1) Qk3 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
27	0.90 * (1) vento - + 1.50 * (1) Qk3 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
28	0.90 * (1) vento + + 1.50 * (1) Qk3 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
29	0.90 * (1) vento - + 0.75 * (1) Qk3 + 1.50 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
30	0.90 * (1) vento + + 0.75 * (1) Qk3 + 1.50 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
31	1.00 * (1) G2 + 1.00 * (1) G1
32	1.50 * (1) vento - + 0.75 * (1) Qk3 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
33	1.50 * (1) vento + + 0.75 * (1) Qk3 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
34	0.90 * (1) vento - + 1.50 * (1) Qk3 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
35	0.90 * (1) vento + + 1.50 * (1) Qk3 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
36	0.90 * (1) vento - + 0.75 * (1) Qk3 + 1.50 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
37	0.90 * (1) vento + + 0.75 * (1) Qk3 + 1.50 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
38	1.30 * (1) G2 + 1.30 * (1) G1

Verifica a taglio

Elem	P/T	Q.ta	R	Cmb	Vdy (N)	Vdz (N)	Vuy (N)	Vuz (N)	Fs	Esito	PGA collasso
165	T			14	-100091.12	-37.16	413023.61	215518.70	4.12	verificato	2629.69
166	T			23	186545.88	140.17	193803.94	150731.22	1.04	verificato	182.76
167	T			23	-107888.07	-197.42	260601.31	125820.49	2.41	verificato	1762.34
168	T			9	-163818.11	50.77	206043.00	153538.47	1.26	verificato	486.95
200	T			10	-107474.03	19.39	413268.25	241498.90	3.84	verificato	1767.10
201	T			23	189281.02	116.45	193803.94	150793.14	1.02	verificato	144.89
202	T			23	-110115.71	-176.55	260503.84	125773.45	2.36	verificato	1378.90
203	T			9	-170475.01	-29.48	206435.15	168378.09	1.21	verificato	316.24
235	T			10	-114538.82	122.60	413023.61	215518.70	3.60	verificato	1214.79
236	T			19	186460.11	-43.69	193803.94	150234.49	1.04	verificato	184.86
237	T			23	-108406.73	319.83	261037.89	170196.01	2.40	verificato	1777.14
238	T			9	-177537.74	-25.77	205583.20	153538.47	1.16	verificato	221.58
312	T			15	96608.60	35.27	392645.43	215518.70	4.06	verificato	2652.84
313	T			19	186483.11	-139.94	193803.94	150694.57	1.04	verificato	184.28
314	T			19	-107760.40	174.24	260597.65	125817.07	2.41	verificato	1779.64
315	T			13	-164520.73	-53.98	205790.41	153538.47	1.25	verificato	480.05
347	T			14	-110366.92	-12.39	413345.93	241570.04	3.74	verificato	1858.51
348	T			19	189326.20	-122.19	193803.94	150814.51	1.02	verificato	144.27
349	T			19	-110258.54	179.50	260499.29	125773.45	2.35	verificato	1365.50
350	T			13	-169711.29	-27.33	206577.11	153538.47	1.22	verificato	323.35
382	T			14	-113129.76	-131.06	413023.61	215518.70	3.64	verificato	1239.30
383	T			23	186465.35	44.54	193803.94	150223.92	1.04	verificato	184.82
384	T			19	-108447.65	-321.54	261029.63	170188.30	2.40	verificato	1767.38
385	T			13	-176961.76	27.05	205546.88	153538.47	1.16	verificato	226.73
Minimo fattore di sicurezza:			1.022803	>=		1.00					

Verifica flessionale

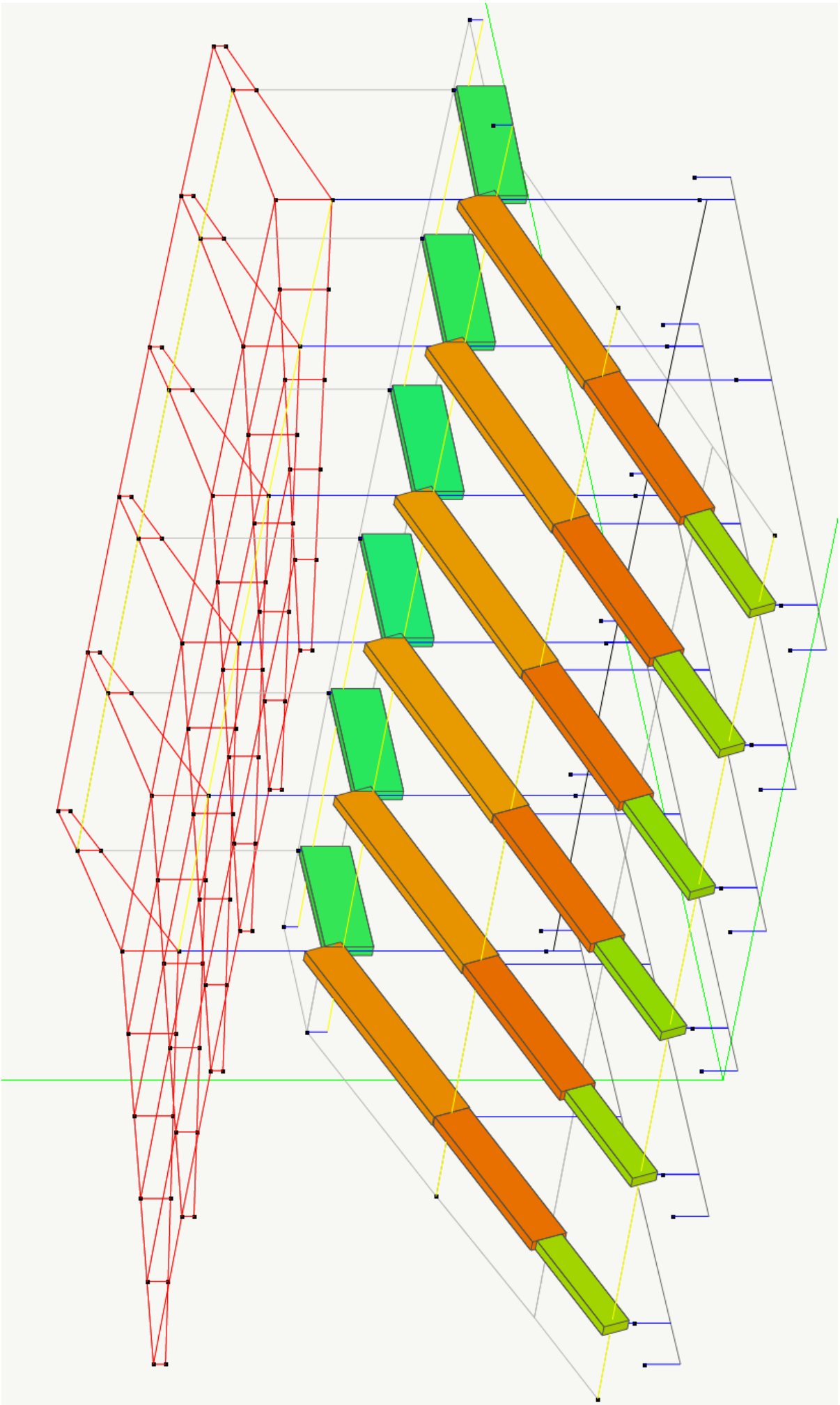
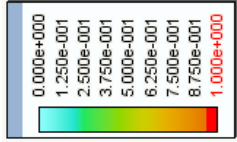
Elem	P/T	Q.ta	R	Cmb	Asc. (cm)	Mdy (Nxcm)	Mdz (Nxcm)	Mr (Nxcm)	Fs	Esito	PGA collasso
165	T			11	206.40	-8687930.28	-1055.63	81388491.24	9.37	verificato	3850.45
166	T			14	449.49	23441170.24	21079.18	49152960.08	2.10	verificato	1858.55
167	T			23	328.14	-16788188.95	47027.47	37360918.36	2.23	verificato	963.20
168	T			17	34.61	21835106.00	9362.54	59345076.55	2.72	verificato	2579.99
200	T			15	206.40	-9543880.78	-2858.18	81151465.27	8.50	verificato	2563.52
201	T			14	449.49	23584767.86	25832.76	48797421.14	2.07	verificato	1710.30
202	T			23	328.14	-17468160.51	43314.01	37064635.90	2.12	verificato	746.20
203	T			17	34.61	22323361.65	14046.26	60293180.41	2.70	verificato	2110.09
235	T			15	52.50	-11216721.01	-23415.09	81388491.24	7.26	verificato	967.03
236	T			14	449.49	23614331.88	-576.92	48204856.23	2.04	verificato	1632.90
237	T			14	328.14	-16793683.98	52439.07	34694376.26	2.07	verificato	899.89
238	T			17	34.61	22114359.56	3809.50	59582102.51	2.69	verificato	2225.85
312	T			15	206.40	-9507272.79	959.64	81388491.24	8.56	verificato	3905.43
313	T			10	449.49	23463050.60	-22247.07	49152960.08	2.09	verificato	1876.66
314	T			19	328.14	-16749218.89	-42340.50	37420174.85	2.23	verificato	976.03
315	T			21	34.61	21863243.67	-9810.65	59345076.55	2.71	verificato	2620.86

347	T	11	206.40	-8816240.02	2895.18	81032952.29	9.19	verificato	2683.35
348	T	10	449.49	23476375.25	-29253.75	48915934.12	2.08	verificato	1801.61
349	T	19	328.14	-17511759.29	-44006.56	37064635.90	2.12	verificato	738.43
350	T	21	34.61	22262856.35	-13290.98	59582102.51	2.68	verificato	2091.94
382	T	11	52.50	-11260379.11	24421.26	81151465.27	7.21	verificato	983.12
383	T	10	449.49	23515383.37	-1970.16	48204856.23	2.05	verificato	1736.39
384	T	5	328.14	-16286152.51	-100464.76	34042554.86	2.09	verificato	1098.30
385	T	21	34.61	22089387.55	-4176.09	59582102.51	2.70	verificato	2264.25

Minimo fattore di
sicurezza:

2.041339

>=
1.00



TrW A Cons va 0,6Ag

MODELLO A - VERIFICA CORDOLI Ex+Ey+Ez

All-In-One EWS 47 (29.11.2018) build 7317

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Classificazione membrature

Elem	P/T	Q.ta	R	Vpy (N)	Vpz (N)	Vuy (N)	Vuz (N)	Fs	Duttilità
85	T			22323.25	16367.76	148604.43	143063.13	6.66	Duttile
96	T			34660.71	55835.26	207413.83	194695.40	3.49	Duttile
99	T			50423.40	73300.22	251026.85	250625.69	3.42	Duttile
100	T			81390.18	30146.60	152620.76	153019.02	1.88	Duttile
101	T			168113.05	37366.18	223043.02	224758.88	1.33	Duttile
102	T			91724.81	16775.02	130367.72	113274.69	1.42	Duttile
115	T			46045.28	44755.37	237434.43	238206.73	5.16	Duttile
116	T			46045.28	44755.37	237449.24	238221.99	5.16	Duttile
119	T			26900.69	14683.66	145383.40	139684.68	5.40	Duttile
120	T			28769.08	15887.45	148633.22	143091.14	5.17	Duttile
121	T			34321.88	54262.91	207413.83	194695.40	3.59	Duttile
122	T			34321.69	54262.02	207413.83	194695.40	3.59	Duttile
134	T			49223.55	8107.78	130508.51	113392.37	2.65	Duttile
135	T			49150.50	8049.86	130396.43	113298.69	2.65	Duttile
136	T			86746.95	16689.98	215121.46	214785.65	2.48	Duttile
137	T			86993.82	16840.45	215121.46	214785.65	2.47	Duttile
138	T			42173.51	13127.66	145787.51	144985.99	3.46	Duttile
139	T			41954.92	13013.62	145673.06	144879.98	3.47	Duttile
244	T			50423.40	73300.23	251024.28	250623.03	3.42	Duttile
245	T			81390.18	30146.60	152618.51	153016.93	1.88	Duttile
246	T			168355.85	37366.18	223043.02	224758.88	1.32	Duttile
247	T			91724.81	16775.02	130365.01	113272.43	1.42	Duttile
260	T			88227.29	17194.56	215121.46	214785.65	2.44	Duttile
261	T			42705.19	13409.27	145660.31	144868.16	3.41	Duttile
262	T			45929.88	45813.86	237145.20	237908.46	5.16	Duttile
263	T			46045.28	44755.37	237434.29	238206.58	5.16	Duttile
264	T			46045.28	44755.37	237446.37	238219.04	5.16	Duttile
267	T			28543.37	15837.29	148442.67	142905.74	5.20	Duttile
268	T			28769.08	15887.45	148637.49	143095.30	5.17	Duttile
269	T			34321.88	54262.91	207413.83	194695.40	3.59	Duttile
270	T			34321.69	54262.02	207413.83	194695.40	3.59	Duttile
282	T			56139.61	9213.93	130447.72	113341.56	2.32	Duttile
284	T			86931.13	16802.84	215121.46	214785.65	2.47	Duttile
285	T			86993.82	16840.45	215121.46	214785.65	2.47	Duttile
286	T			42062.63	13121.33	145773.24	144972.77	3.47	Duttile
287	T			41954.92	13013.62	145674.77	144881.55	3.47	Duttile

Vengono calcolati i tagli **Vpy** e **Vpz** dovuti a fenomeni anelastici e i tagli ultimi **Vuy** e **Vuz**. Il minor fattore di sicurezza **Fs** tra i due valori nei due piani determina se l'elemento è **Duttile** o **Fragile**. Nel caso gli elementi siano rinforzati, viene riportata un **R** nella colonna omonima e le caratteristiche del rinforzo vengono riportate nella apposita tabella.

Combinazioni di carico di stato limite ultimo

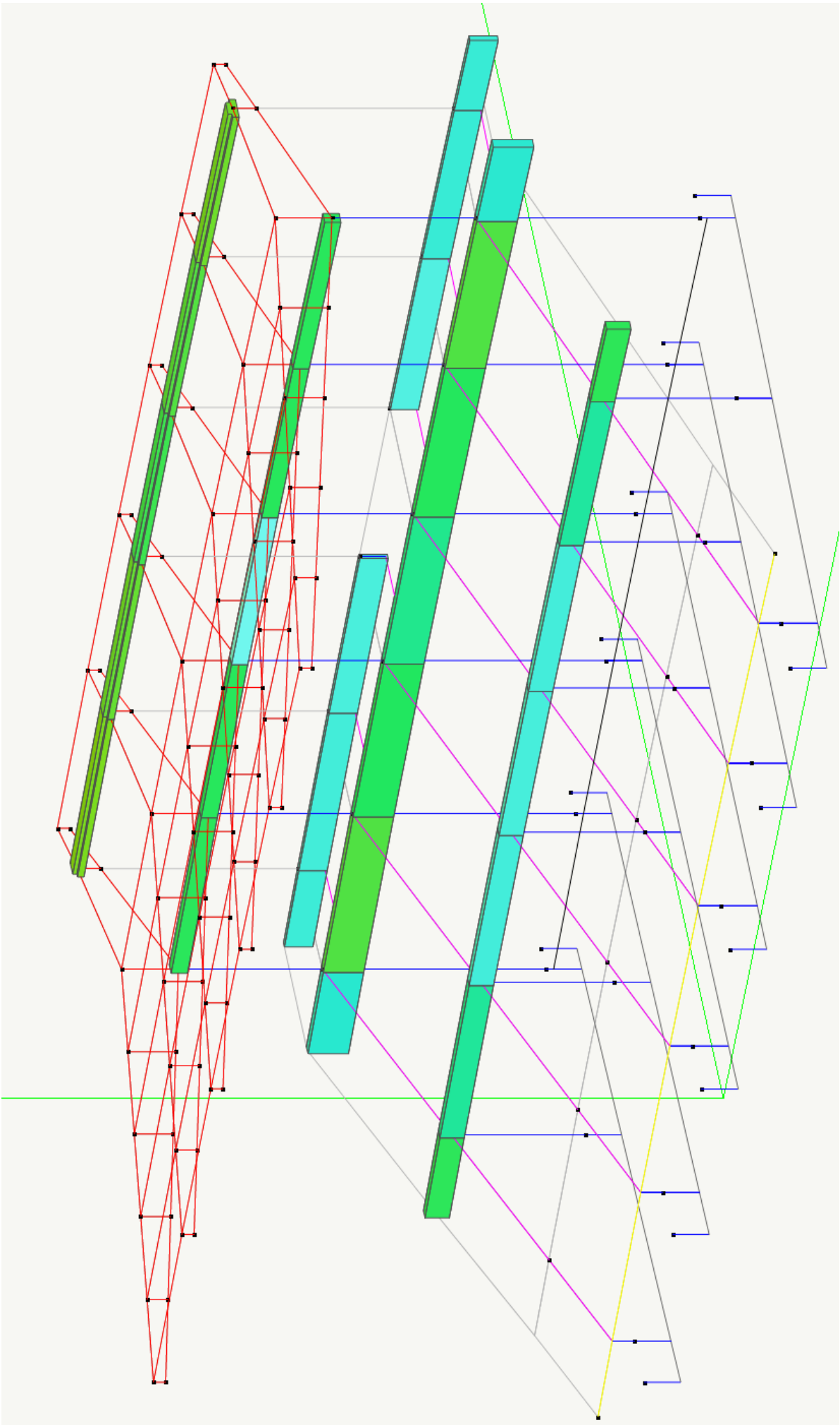
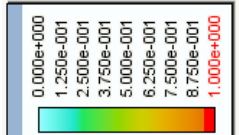
1	-0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
2	-0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
3	-0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
4	-0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
5	0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
6	0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
7	0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
8	0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
9	-0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
10	-0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
11	-0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
12	-0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
13	0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
14	0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
15	0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
16	0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y

	Dinamica SLVh Y
17	-0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
18	-0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
19	-0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
20	-0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
21	0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
22	0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
23	0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
24	0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
25	1.50 * (1) vento - + 0.75 * (1) Qk3 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
26	1.50 * (1) vento + + 0.75 * (1) Qk3 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
27	0.90 * (1) vento - + 1.50 * (1) Qk3 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
28	0.90 * (1) vento + + 1.50 * (1) Qk3 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
29	0.90 * (1) vento - + 0.75 * (1) Qk3 + 1.50 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
30	0.90 * (1) vento + + 0.75 * (1) Qk3 + 1.50 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
31	1.00 * (1) G2 + 1.00 * (1) G1
32	1.50 * (1) vento - + 0.75 * (1) Qk3 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
33	1.50 * (1) vento + + 0.75 * (1) Qk3 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
34	0.90 * (1) vento - + 1.50 * (1) Qk3 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
35	0.90 * (1) vento + + 1.50 * (1) Qk3 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
36	0.90 * (1) vento - + 0.75 * (1) Qk3 + 1.50 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
37	0.90 * (1) vento + + 0.75 * (1) Qk3 + 1.50 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
38	1.30 * (1) G2 + 1.30 * (1) G1

Verifica a taglio

Elem	P/T	Q.ta	R	Cmb	Vdy (N)	Vdz (N)	Vuy (N)	Vuz (N)	Fs	Esito	PGA collasso
85	T			3	0.00	-758.03	70350.71	67447.25	>10.0	verificato	10062.70
96	T			4	-12099.37	3568.33	102426.58	96145.87	6.44	verificato	3544.88
99	T			23	-23384.13	18748.20	138355.06	131631.31	3.21	verificato	1058.52
100	T			19	-12233.71	517.45	75401.40	75595.63	5.91	verificato	2071.89
101	T			6	-20451.35	203.89	110144.70	110992.04	5.33	verificato	1529.96
102	T			17	-8509.97	-20.47	64394.52	55950.99	7.55	verificato	2488.27
115	T			8	-31770.50	2139.47	138355.06	131631.31	4.07	verificato	1283.41
116	T			8	-32740.70	1415.29	138355.06	131631.31	4.04	verificato	1156.30
119	T			14	-7583.38	1396.55	68472.71	65482.86	7.57	verificato	5710.22
120	T			14	-7583.38	819.14	70379.50	67475.27	8.34	verificato	9170.19
121	T			2	-15502.18	-7711.63	102426.58	96145.87	4.32	verificato	3346.16
122	T			7	12961.62	-4276.42	102426.58	96145.87	5.85	verificato	3123.49
134	T			17	8835.72	-6.17	64535.31	56068.67	7.30	verificato	3341.52
135	T			18	8714.18	5.18	64423.23	55974.99	7.39	verificato	4835.88
136	T			5	31228.35	-163.89	106232.82	109206.71	3.38	verificato	662.20
137	T			2	-26500.59	146.19	106232.82	109206.71	3.99	verificato	939.52
138	T			5	11902.44	-146.15	72168.92	71760.20	5.99	verificato	3489.30
139	T			6	-10408.64	120.53	72054.46	71654.18	6.84	verificato	6581.80
244	T			19	-23459.01	-18496.10	138355.06	131631.31	3.23	verificato	1080.34
245	T			23	-12193.94	-515.25	75399.14	75593.54	5.93	verificato	2095.77
246	T			5	-20176.35	-203.77	110144.70	110992.04	5.40	verificato	1589.69
247	T			21	-8754.63	20.23	64391.81	55948.72	7.34	verificato	2366.34
260	T			4	24198.14	147.96	106232.82	109206.71	4.36	verificato	1149.11
261	T			1	-10014.55	-162.00	72041.71	71642.37	7.08	verificato	7065.71
262	T			6	32808.87	-1280.45	138355.06	131631.31	4.05	verificato	1083.14
263	T			7	-31831.90	-2120.22	138355.06	131631.31	4.06	verificato	1275.30
264	T			7	-32798.71	1384.38	138355.06	131631.31	4.04	verificato	1150.57
267	T			10	-7583.38	-1356.62	70188.95	67289.87	7.80	verificato	5909.90
268	T			10	-7583.38	-798.04	70383.77	67479.42	8.36	verificato	9204.92
269	T			1	-15164.97	8091.14	102426.58	96145.87	4.31	verificato	3281.83
270	T			8	12368.32	-3259.47	102426.58	96145.87	6.47	verificato	3219.14
282	T			14	9579.83	4.11	64474.51	56017.85	6.73	verificato	3422.35
284	T			6	31308.57	164.30	106232.82	109206.71	3.38	verificato	663.12
285	T			1	-26897.39	-150.07	106232.82	109206.71	3.93	verificato	936.84
286	T			6	11876.67	145.80	72154.64	71746.98	6.00	verificato	3508.24
287	T			5	-10383.69	-120.83	72056.17	71655.76	6.86	verificato	6550.41
Minimo fattore di sicurezza:		3.210840		>=		1.00					

Verifica flessionale											
Elem	P/T	Q.ta	R	Cmb	Asc. (cm)	Mdy (Nxcm)	Mdz (Nxcm)	Mr (Nxcm)	Fs	Esito	PGA collasso
85	T			5	16.50	0.00	191210.59	2805764.93	>10.0	verificato	1695.44
96	T			6	9.00	1004637.36	327042.37	3647207.10	3.45	verificato	627.00
99	T			17	5.00	3505026.51	-1577009.41	5863399.87	1.53	verificato	292.11
100	T			19	14.00	1850451.59	-110095.12	6956682.13	3.75	verificato	748.73
101	T			6	16.50	2672856.79	-35849.35	17158158.43	6.42	verificato	1200.66
102	T			17	5.00	1275759.50	-2499.11	8103295.23	6.35	verificato	1312.96
115	T			6	5.00	3991253.48	-514023.97	5081214.18	1.26	verificato	156.35
116	T			6	5.00	4215735.12	-340762.37	5199727.17	1.23	verificato	148.56
119	T			2	252.78	-958461.90	-6160.46	3659058.40	3.82	verificato	207874.15
120	T			4	252.78	-958461.90	19910.59	3706463.59	3.87	verificato	14422.21
121	T			2	9.00	1399582.63	1581226.36	5199727.17	2.46	verificato	561.39
122	T			3	502.59	1252670.65	508416.15	3706463.59	2.74	verificato	412.51
134	T			1	506.59	1142063.26	2723.08	7759607.58	6.79	verificato	1596.09
135	T			18	506.59	1039175.76	316.85	7735904.98	7.44	verificato	1623.65
136	T			5	489.06	5358908.04	-46562.25	16502633.49	3.08	verificato	404.89
137	T			2	489.06	-1821986.48	39750.92	8286990.35	4.55	verificato	361.85
138	T			19	481.63	1543117.12	-56619.21	6906314.11	4.47	verificato	995.85
139	T			3	481.63	840080.26	29550.25	6692990.74	7.96	verificato	2607.86
244	T			21	5.00	3493249.02	1615981.22	5913767.88	1.54	verificato	297.47
245	T			23	14.00	1840684.80	109405.81	6906314.11	3.75	verificato	751.39
246	T			5	16.50	2635305.58	35865.73	17169269.02	6.51	verificato	1240.46
247	T			21	5.00	1338475.83	2373.74	8097369.58	6.05	verificato	1243.77
260	T			6	475.19	3316611.19	-28295.46	17272967.88	5.21	verificato	849.60
261	T			5	14.00	852023.48	-34063.49	6906314.11	8.10	verificato	2882.54
262	T			2	464.54	4232220.16	282397.90	5176024.57	1.22	verificato	145.23
263	T			5	5.00	4009287.69	509976.99	5081214.18	1.26	verificato	155.21
264	T			5	5.00	4229184.99	333416.53	5199727.17	1.23	verificato	147.85
267	T			5	252.78	-958461.90	-4307.63	3688686.64	3.85	verificato	44124.49
268	T			7	252.78	-958461.90	-13100.11	3706463.59	3.87	verificato	19080.18
269	T			1	9.00	1305659.15	-1597389.58	5389347.94	2.61	verificato	746.30
270	T			4	502.59	1134424.59	-706668.27	4038299.94	3.02	verificato	463.33
282	T			21	506.59	1320620.73	-432.71	8044038.74	6.09	verificato	1414.13
284	T			6	489.06	5339314.74	46406.01	16561889.98	3.10	verificato	407.22
285	T			1	489.06	-1896170.74	-40469.15	8233659.51	4.34	verificato	357.48
286	T			23	481.63	1527297.70	55952.58	6906314.11	4.52	verificato	1017.10
287	T			4	481.63	847488.05	-29811.22	6692990.74	7.89	verificato	2594.04
Minimo fattore di sicurezza:			1.220291	>=							
				1.00							



TrW B cons va 0,6Ag Exyz**MODELLO B - ELABORATO NUMERICO Ex + Ey + Ez**

All-In-One EWS 47 (29.11.2018) build 7317

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Modello B

Elaborato numerico e verifiche azione dinamica: Ex + Ey + Ez

Tipi di carico										
Nome	Tipo	Grav.	Gamma	Gamma	Gamma	Psi 0	Psi 1	Psi 2	Psi 2	Phi
			fav	sfav.	sismico				sismico	(coeff. correl.)
Combinazione	combinazione		nd	0.00	0.00	nd	nd	nd	nd	nd
Permanente	permanente	*	1.00	1.30	1.00	nd	nd	nd	nd	nd
Permanente non strutt.	permanente	*	0.00	1.50	1.00	nd	nd	nd	nd	nd
Sismico SLV	sismico		nd	1.00	0.00	nd	nd	nd	nd	nd
Sismico SLD	sismico		nd	1.00	0.00	nd	nd	nd	nd	nd
Sismico SLO	sismico		nd	1.00	0.00	nd	nd	nd	nd	nd
Sismico SLC	sismico		nd	1.00	0.00	nd	nd	nd	nd	nd
Torcente SLV	sismico correlato		nd	1.00	0.00	nd	nd	nd	nd	nd
Torcente SLD	sismico correlato		nd	1.00	0.00	nd	nd	nd	nd	nd
Torcente SLO	sismico correlato		nd	1.00	0.00	nd	nd	nd	nd	nd
Torcente SLC	sismico correlato		nd	1.00	0.00	nd	nd	nd	nd	nd
Cat. A: Residenziale	variabile	*	nd	1.50	1.00	0.70	0.50	0.30	0.30	1.00
Cat. B: Uffici	variabile	*	nd	1.50	1.00	0.70	0.50	0.30	0.30	1.00
Cat. C: Affollamento	variabile	*	nd	1.50	1.00	0.70	0.70	0.60	0.60	1.00
Cat. D: Commerciale	variabile	*	nd	1.50	1.00	0.70	0.70	0.60	0.60	1.00
Cat. E: Magazzini	variabile	*	nd	1.50	1.00	1.00	0.90	0.80	0.80	1.00
Cat. F: Rimesse (<30kN)	variabile	*	nd	1.50	1.00	0.70	0.70	0.60	0.60	1.00
Cat. G: Rimesse (>30kN)	variabile	*	nd	1.50	1.00	0.70	0.50	0.30	0.30	1.00
Cat. H: Copertura	variabile	*	nd	1.50	1.00	0.00	0.00	0.00	0.20	1.00
Neve (q<1000)	variabile	*	nd	1.50	1.00	0.50	0.20	0.00	0.00	1.00
Neve (q>1000)	variabile	*	nd	1.50	1.00	0.70	0.50	0.20	0.00	1.00
Vento	variabile non contemporaneo		nd	1.50	0.00	0.60	0.20	0.00	0.00	1.00
Temperatura	variabile non contemporaneo		nd	1.50	0.00	0.60	0.50	0.00	0.00	1.00

SPETTRI DI RISPOSTA	
SLVh	
fattore q automatico	NO
Dir. azione sismica	orizzontale
regolare in pianta	NO
regolare in altezza	NO
numero di intervalli	32
materiale struttura	Calcestruzzo
tipologia struttura	strutture a pendolo inverso
forma dello spettro	Inelastico
categoria del suolo	Profili di terreno costituiti da strati superficiali alluvionali
classe di duttilità	Bassa
categoria topografica	T1
normativa	DM 2018
zona sismica	AgS > 0.075g
classe d'uso	III
tipo di stato limite	SLV
durata totale	2.33
smorzamento	5.00

f0	2.39
Ag/g	0.18
Tc*	0.30
longitudine	10.91
latitudine	43.94
Pv	0.10
Vr	75.00
% quota sul pendio	1.00
Tr	711.84
fattore q effettivo	1.50
fattore n effettivo	1.00
fattore s effettivo	1.52

periodo	risposta
0.00000	1.51852
0.07526	1.88513
0.18459	2.41766
0.22579	2.41766
0.30105	2.41766
0.37631	2.41766
0.45157	2.41766
0.55377	2.41766
0.60210	2.22359
0.67736	1.97652
0.75262	1.77887
0.82788	1.61715
0.90314	1.48239
0.97841	1.36836
1.05367	1.27062
1.12893	1.18591
1.20419	1.11179
1.27946	1.04639
1.35472	0.98826
1.42998	0.93625
1.50524	0.88943
1.58050	0.84708
1.65577	0.80858
1.73103	0.77342
1.80629	0.74120
1.88155	0.71155
1.95681	0.68418
2.03208	0.65884
2.10734	0.63531
2.18260	0.61340
2.25786	0.59296
2.33312	0.57383

SLVv

fattore q automatico	NO
Dir. azione sismica	verticale
regolare in pianta	NO
regolare in altezza	NO
numero di intervalli	32
materiale struttura	Calcestruzzo
tipologia struttura	strutture a pendolo inverso
forma dello spettro	Inelastico
categoria del suolo	Profili di terreno costituiti da strati superficiali alluvionali
classe di duttilità	Bassa
categoria topografica	T1
normativa	DM 2018
zona sismica	AgS > 0.075g
classe d'uso	III
tipo di stato limite	SLV
durata totale	2.00
smorzamento	5.00
f0	2.39
Ag/g	0.18
Tc*	0.30
longitudine	10.91

latitudine	43.94
Pv	0.10
Vr	75.00
% quota sul pendio	1.00
Tr	711.84
fattore q effettivo	1.50
fattore n effettivo	1.00
fattore s effettivo	1.00

periodo	risposta
0.00000	0.57795
0.05000	0.92016
0.15000	0.92016
0.19355	0.71313
0.25806	0.53485
0.32258	0.42788
0.38710	0.35656
0.45161	0.30563
0.51613	0.26742
0.58065	0.23771
0.64516	0.21394
0.70968	0.20000
0.77419	0.20000
0.83871	0.20000
0.90323	0.20000
0.96774	0.20000
1.03226	0.20000
1.09677	0.20000
1.16129	0.20000
1.22581	0.20000
1.29032	0.20000
1.35484	0.20000
1.41935	0.20000
1.48387	0.20000
1.54839	0.20000
1.61290	0.20000
1.67742	0.20000
1.74194	0.20000
1.80645	0.20000
1.87097	0.20000
1.93548	0.20000
2.00000	0.20000

PESI PROPRI TIPO (Fase 1)

Condizione di carico: "G1" Tipo: "Permanente"

Tipo	gm	gx	gy	gz
1	2.5000e-002	0.0000e+000	0.0000e+000	-1.0000e+000

FORZE TIPO (Fase 1)

Condizione di carico: "vento -" Tipo: "Vento"

Tipo	Fx	Fy	Fz	Mx	My	Mz
1	0.0000e+000	0.0000e+000	5.0750e+003	0.0000e+000	0.0000e+000	0.0000e+000
2	0.0000e+000	0.0000e+000	1.5250e+003	0.0000e+000	0.0000e+000	0.0000e+000
3	0.0000e+000	0.0000e+000	5.0750e+003	0.0000e+000	0.0000e+000	0.0000e+000
4	0.0000e+000	0.0000e+000	1.4750e+003	0.0000e+000	0.0000e+000	0.0000e+000
5	0.0000e+000	0.0000e+000	-4.1250e+003	0.0000e+000	0.0000e+000	0.0000e+000
6	0.0000e+000	0.0000e+000	-4.1250e+003	0.0000e+000	0.0000e+000	0.0000e+000
7	0.0000e+000	0.0000e+000	-4.1250e+003	0.0000e+000	0.0000e+000	0.0000e+000
8	0.0000e+000	0.0000e+000	-4.4750e+003	0.0000e+000	0.0000e+000	0.0000e+000
9	0.0000e+000	0.0000e+000	-2.4000e+003	0.0000e+000	0.0000e+000	0.0000e+000
31	0.0000e+000	0.0000e+000	1.1640e+003	0.0000e+000	0.0000e+000	0.0000e+000
32	0.0000e+000	0.0000e+000	3.8800e+003	0.0000e+000	0.0000e+000	0.0000e+000
33	0.0000e+000	0.0000e+000	5.0450e+003	0.0000e+000	0.0000e+000	0.0000e+000
34	0.0000e+000	0.0000e+000	5.0450e+003	0.0000e+000	0.0000e+000	0.0000e+000
35	0.0000e+000	0.0000e+000	-3.2900e+003	0.0000e+000	0.0000e+000	0.0000e+000
36	0.0000e+000	0.0000e+000	1.2000e+003	0.0000e+000	0.0000e+000	0.0000e+000
37	0.0000e+000	0.0000e+000	-3.0380e+003	0.0000e+000	0.0000e+000	0.0000e+000

Condizione di carico: "vento +" Tipo: "Vento"

Condizione di carico: "Qk2" Tipo: "Neve (q<1000)"

[illegible]

26	0.0000e+000	0.0000e+000	-4.0000e+002	0.0000e+000	0.0000e+000	0.0000e+000
27	0.0000e+000	0.0000e+000	-4.0000e+002	0.0000e+000	0.0000e+000	0.0000e+000
28	0.0000e+000	0.0000e+000	-8.0000e+002	0.0000e+000	0.0000e+000	0.0000e+000
29	0.0000e+000	0.0000e+000	-8.5000e+003	0.0000e+000	0.0000e+000	0.0000e+000
30	0.0000e+000	0.0000e+000	-1.0000e+003	0.0000e+000	0.0000e+000	0.0000e+000
31	0.0000e+000	0.0000e+000	-1.0000e+003	0.0000e+000	0.0000e+000	0.0000e+000
32	0.0000e+000	0.0000e+000	-8.5000e+003	0.0000e+000	0.0000e+000	0.0000e+000
33	0.0000e+000	0.0000e+000	-8.0000e+002	0.0000e+000	0.0000e+000	0.0000e+000
34	0.0000e+000	0.0000e+000	-4.0000e+002	0.0000e+000	0.0000e+000	0.0000e+000
35	0.0000e+000	0.0000e+000	-4.0000e+002	0.0000e+000	0.0000e+000	0.0000e+000
36	0.0000e+000	0.0000e+000	-8.0000e+002	0.0000e+000	0.0000e+000	0.0000e+000
37	0.0000e+000	0.0000e+000	-4.0000e+002	0.0000e+000	0.0000e+000	0.0000e+000
38	0.0000e+000	0.0000e+000	-4.0000e+002	0.0000e+000	0.0000e+000	0.0000e+000
39	0.0000e+000	0.0000e+000	-4.0000e+002	0.0000e+000	0.0000e+000	0.0000e+000
40	0.0000e+000	0.0000e+000	-4.0000e+002	0.0000e+000	0.0000e+000	0.0000e+000
41	0.0000e+000	0.0000e+000	-4.0000e+002	0.0000e+000	0.0000e+000	0.0000e+000
42	0.0000e+000	0.0000e+000	-4.0000e+002	0.0000e+000	0.0000e+000	0.0000e+000

MASSE TIPO (Fase 1)

Tipo	dn	md	dp
1	2.5484e-005	2.1345e-001	5.0000e-002
2	2.5484e-005	3.7717e-001	5.0000e-002
3	2.5484e-005	3.2620e-001	5.0000e-002
4	2.5484e-005	1.6310e-001	5.0000e-002
5	8.0020e-005	2.0387e-003	5.0000e-002
6	8.0020e-005	3.8226e-003	5.0000e-002
7	2.5484e-005	1.2742e-002	5.0000e-002
8	8.0020e-005	1.5291e-002	5.0000e-002
9	8.0020e-005	1.6565e-002	5.0000e-002
10	8.0020e-005	8.9195e-003	5.0000e-002
11	8.0020e-005	0.0000e+000	5.0000e-002
12	2.5484e-005	0.0000e+000	5.0000e-002
13	2.5484e-005	1.8858e-001	5.0000e-002
14	2.5484e-005	3.4659e-004	5.0000e-002
15	8.0000e-005	0.0000e+000	5.0000e-002

MASSE NODALI TIPO (Fase 1)

Tipo	Mx	My	Mx	Jx	Jy	Jz
14	3.2800e+000	3.2800e+000	3.2800e+000	0.0000e+000	0.0000e+000	0.0000e+000
15	4.5500e+000	4.5500e+000	4.5500e+000	0.0000e+000	0.0000e+000	0.0000e+000
16	4.2300e+000	4.2300e+000	4.2300e+000	0.0000e+000	0.0000e+000	0.0000e+000
17	4.9600e+000	4.9600e+000	4.9600e+000	0.0000e+000	0.0000e+000	0.0000e+000
18	1.1850e+001	1.1850e+001	1.1850e+001	0.0000e+000	0.0000e+000	0.0000e+000
19	2.5000e+000	2.5000e+000	2.5000e+000	0.0000e+000	0.0000e+000	0.0000e+000

Caratteristiche dei materiali

Metamateriali

Cls C24/29 Aq 42	Nome	Cls C24/29 Aq 42
	Tipo	Cemento armato
	Resistenza cubica calcestruzzo	2900.000000
	Resistenza acciaio	23000.000000
	Copriferro	3.0000
	Interferro	2.0000
	Max distanza barre	100000.0000
	Max distanza braccia	100000.0000
	Classe calcestruzzo	C25/30
	Classe acciaio	AQ42
	Coeff. Dil. Termica	0.000012000
	Non strutturale	no
	Max distanza legature	100000.0000
Cls C24/29 Aq 42 cons	Nome	Cls C24/29 Aq 42 cons
	Tipo	Cemento armato
	Resistenza cubica calcestruzzo	2900.000000
	Resistenza acciaio	23000.000000
	Copriferro	3.0000
	Interferro	2.0000
	Max distanza barre	100000.0000
	Max distanza braccia	100000.0000
	Classe calcestruzzo	C25/30
	Classe acciaio	AQ42
	Coeff. Dil. Termica	0.000012000
	Non strutturale	no
	Max distanza legature	100000.0000
Cls C24/29 GS	Nome	Cls C24/29 GS
	Tipo	Cemento armato
	Resistenza cubica calcestruzzo	2900.000000
	Resistenza acciaio	36000.000000
	Copriferro	3.0000
	Interferro	2.0000
	Max distanza barre	100000.0000
	Max distanza braccia	100000.0000
	Classe calcestruzzo	C25/30
	Classe acciaio	FeB44
	Coeff. Dil. Termica	0.000012000
	Non strutturale	no
	Max distanza legature	100000.0000
Cls C24/29 omogeneo	Nome	Cls C24/29 omogeneo
	Tipo	Cemento armato
	Resistenza cubica calcestruzzo	2900.000000
	Resistenza acciaio	22000.000000
	Copriferro	3.0000
	Interferro	2.0000
	Max distanza barre	100000.0000
	Max distanza braccia	100000.0000
	Classe calcestruzzo	C16/20
	Classe acciaio	FeB22
	Coeff. Dil. Termica	0.000012000
	Non strutturale	no
	Max distanza legature	100000.0000

Calcestruzzi

Calcestruzzo Cls C24/29 Aq 42

Denominazione materiale	C25/30
Resistenza cubica	N/cm2 2900.00

184	92	225	0.00	0.00	0.00	0.00	0.00	0.00	511.59
185	205	92	0.00	0.00	0.00	0.00	0.00	0.00	511.59
186	25	205	0.00	0.00	0.00	0.00	0.00	0.00	511.59
228	62	38	0.00	-35.00	0.00	0.00	-35.00	0.00	511.59
229	116	62	0.00	-35.00	0.00	0.00	-35.00	0.00	511.59
230	170	116	0.00	-35.00	0.00	0.00	-35.00	0.00	511.59
231	224	170	0.00	-35.00	0.00	0.00	-35.00	0.00	511.59
232	91	224	0.00	-35.00	0.00	0.00	-35.00	0.00	511.59
233	204	91	0.00	-35.00	0.00	0.00	-35.00	0.00	511.59
234	24	204	0.00	-35.00	0.00	0.00	-35.00	0.00	511.59
235	138	24	0.00	-35.00	0.00	0.00	-35.00	0.00	262.14
236	58	34	0.00	-50.00	0.00	0.00	-50.00	0.00	505.56
237	112	58	0.00	-50.00	0.00	0.00	-50.00	0.00	505.56
238	166	112	0.00	-50.00	0.00	0.00	-50.00	0.00	505.56
239	220	166	0.00	-50.00	0.00	0.00	-50.00	0.00	505.56
240	83	220	0.00	-50.00	0.00	0.00	-50.00	0.00	505.56
241	198	83	0.00	-50.00	0.00	0.00	-50.00	0.00	505.56
242	20	198	0.00	-50.00	0.00	0.00	-50.00	0.00	505.56
243	134	20	0.00	-50.00	0.00	0.00	-50.00	0.00	256.11
244	135	21	0.00	0.00	0.00	0.00	0.00	0.00	246.19
245	59	35	0.00	0.00	0.00	0.00	0.00	0.00	495.63
246	113	59	0.00	0.00	0.00	0.00	0.00	0.00	495.63
247	167	113	0.00	0.00	0.00	0.00	0.00	0.00	495.63
248	221	167	0.00	0.00	0.00	0.00	0.00	0.00	495.63
249	88	221	0.00	0.00	0.00	0.00	0.00	0.00	495.63
250	199	88	0.00	0.00	0.00	0.00	0.00	0.00	495.63
251	21	199	0.00	0.00	0.00	0.00	0.00	0.00	495.63
283	20	26	0.00	0.00	0.00	0.00	0.00	0.00	355.00
285	20	24	0.00	-60.00	0.00	0.00	-60.00	0.00	365.30
286	23	21	0.00	0.00	-0.00	0.00	0.00	0.00	484.11
287	22	23	26.59	48.14	0.00	0.00	0.00	-0.00	314.23
288	21	20	0.00	0.00	0.00	0.00	0.00	0.00	639.79
290	17	21	0.00	0.00	0.00	0.00	0.00	0.00	330.00
317	198	206	0.00	0.00	0.00	0.00	0.00	0.00	355.00
319	198	204	0.00	-60.00	0.00	0.00	-60.00	0.00	365.30
320	203	199	0.00	0.00	-0.00	0.00	0.00	0.00	484.11
321	200	203	26.59	48.14	0.00	0.00	0.00	-0.00	314.23
322	199	198	0.00	0.00	0.00	0.00	0.00	0.00	639.79
324	197	199	0.00	0.00	0.00	0.00	0.00	0.00	330.00
351	83	95	0.00	0.00	0.00	0.00	0.00	0.00	355.00
353	83	91	0.00	-60.00	0.00	0.00	-60.00	0.00	365.30
354	90	88	0.00	0.00	-0.00	0.00	0.00	0.00	484.11
355	89	90	26.59	48.14	0.00	0.00	0.00	-0.00	314.23
356	88	83	0.00	0.00	0.00	0.00	0.00	0.00	639.79
358	82	88	0.00	0.00	0.00	0.00	0.00	0.00	330.00
359	81	83	0.00	0.00	0.00	0.00	0.00	0.00	550.00
386	220	226	0.00	0.00	0.00	0.00	0.00	0.00	355.00
388	220	224	0.00	-60.00	0.00	0.00	-60.00	0.00	365.30
389	223	221	0.00	0.00	-0.00	0.00	0.00	0.00	484.11
390	222	223	26.59	48.14	0.00	0.00	0.00	-0.00	314.23
391	221	220	0.00	0.00	0.00	0.00	0.00	0.00	639.79
393	219	221	0.00	0.00	0.00	0.00	0.00	0.00	330.00
394	218	220	0.00	0.00	0.00	0.00	0.00	0.00	550.00
421	166	172	0.00	0.00	0.00	0.00	0.00	0.00	355.00
423	166	170	0.00	-60.00	0.00	0.00	-60.00	0.00	365.30
424	169	167	0.00	0.00	-0.00	0.00	0.00	0.00	484.11
425	168	169	26.59	48.14	0.00	0.00	0.00	-0.00	314.23
426	167	166	0.00	0.00	0.00	0.00	0.00	0.00	639.79
428	165	167	0.00	0.00	0.00	0.00	0.00	0.00	330.00
455	112	118	0.00	0.00	0.00	0.00	0.00	0.00	355.00
457	112	116	0.00	-60.00	0.00	0.00	-60.00	0.00	365.30
458	115	113	0.00	0.00	-0.00	0.00	0.00	0.00	484.11
459	114	115	26.59	48.14	0.00	0.00	0.00	-0.00	314.23
460	113	112	0.00	0.00	0.00	0.00	0.00	0.00	639.79
462	111	113	0.00	0.00	0.00	0.00	0.00	0.00	330.00
489	58	64	0.00	0.00	0.00	0.00	0.00	0.00	355.00
491	58	62	0.00	-60.00	0.00	0.00	-60.00	0.00	365.30

492	61	59	0.00	0.00	-0.00	0.00	0.00	0.00	484.11
493	60	61	26.59	48.14	0.00	0.00	0.00	-0.00	314.23
494	59	58	0.00	0.00	0.00	0.00	0.00	0.00	639.79
496	57	59	0.00	0.00	0.00	0.00	0.00	0.00	330.00
497	56	58	0.00	0.00	0.00	0.00	0.00	0.00	550.00
525	34	40	0.00	0.00	0.00	0.00	0.00	0.00	355.00
527	34	38	0.00	-60.00	0.00	0.00	-60.00	0.00	365.30
528	37	35	0.00	0.00	-0.00	0.00	0.00	0.00	484.11
529	36	37	26.59	48.14	0.00	0.00	0.00	-0.00	314.23
530	35	34	0.00	0.00	0.00	0.00	0.00	0.00	639.79
532	3	35	0.00	0.00	0.00	0.00	0.00	0.00	330.00
533	2	34	0.00	0.00	0.00	0.00	0.00	0.00	550.00

Sezioni

Sezione a T

Elemento	Materiale	Spessore anima (cm)	Altezza anima (cm)	Spessore ala (cm)	Larghezza ala (cm)
180	Cls C24/29 omogeneo	40.00	10.00	16.00	60.00
181	Cls C24/29 omogeneo	40.00	10.00	16.00	60.00
182	Cls C24/29 omogeneo	40.00	10.00	16.00	60.00
183	Cls C24/29 omogeneo	40.00	10.00	16.00	60.00
184	Cls C24/29 omogeneo	40.00	10.00	16.00	60.00
185	Cls C24/29 omogeneo	40.00	10.00	16.00	60.00
186	Cls C24/29 omogeneo	40.00	10.00	16.00	60.00

Sezione rettangolare

Elemento	Materiale	Altezza (cm)	Base (cm)
159	Cls C24/29 omogeneo	60.00	25.00
162	Cls C24/29 Aq 42	105.00	28.00
163	Cls C24/29 Aq 42	50.00	28.00
164	Cls C24/29 Aq 42	105.00	28.00
165	Cls C24/29 Aq 42	50.00	28.00
168	Cls C24/29 omogeneo	60.00	25.00
169	Cls C24/29 Aq 42	105.00	28.00
170	Cls C24/29 Aq 42	50.00	28.00
171	Cls C24/29 Aq 42	105.00	28.00
172	Cls C24/29 Aq 42	50.00	28.00
173	Cls C24/29 omogeneo	40.00	30.00
174	Cls C24/29 omogeneo	40.00	30.00
175	Cls C24/29 omogeneo	40.00	30.00
176	Cls C24/29 omogeneo	40.00	30.00
177	Cls C24/29 omogeneo	40.00	30.00
178	Cls C24/29 omogeneo	40.00	30.00
179	Cls C24/29 omogeneo	40.00	30.00
228	Cls C24/29 omogeneo	70.00	15.00
229	Cls C24/29 omogeneo	70.00	15.00
230	Cls C24/29 omogeneo	70.00	15.00
231	Cls C24/29 omogeneo	70.00	15.00
232	Cls C24/29 omogeneo	70.00	15.00
233	Cls C24/29 omogeneo	70.00	15.00
234	Cls C24/29 omogeneo	70.00	15.00
235	Cls C24/29 omogeneo	70.00	15.00
236	Cls C24/29 omogeneo	100.00	25.00
237	Cls C24/29 omogeneo	100.00	25.00
238	Cls C24/29 omogeneo	100.00	25.00
239	Cls C24/29 omogeneo	100.00	25.00
240	Cls C24/29 omogeneo	100.00	25.00
241	Cls C24/29 omogeneo	100.00	25.00
242	Cls C24/29 omogeneo	100.00	25.00
243	Cls C24/29 omogeneo	100.00	25.00
244	Cls C24/29 omogeneo	60.00	25.00
245	Cls C24/29 omogeneo	60.00	25.00
246	Cls C24/29 omogeneo	60.00	25.00
247	Cls C24/29 omogeneo	60.00	25.00
248	Cls C24/29 omogeneo	60.00	25.00
249	Cls C24/29 omogeneo	60.00	25.00
250	Cls C24/29 omogeneo	60.00	25.00

251	Cls C24/29 omogeneo	60.00	25.00
283	Cls C24/29 Aq 42 cons	100.00	33.00
285	Cls C24/29 GS	120.00	28.00
286	Cls C24/29 GS	95.00	28.00
287	Cls C24/29 GS	70.00	28.00
288	Cls C24/29 GS	100.00	28.00
290	Cls C24/29 Aq 42	65.00	28.00
317	Cls C24/29 Aq 42 cons	100.00	33.00
319	Cls C24/29 GS	120.00	28.00
320	Cls C24/29 GS	95.00	28.00
321	Cls C24/29 GS	70.00	28.00
322	Cls C24/29 GS	100.00	28.00
324	Cls C24/29 Aq 42	65.00	28.00
351	Cls C24/29 Aq 42	100.00	33.00
353	Cls C24/29 GS	120.00	28.00
354	Cls C24/29 GS	95.00	28.00
355	Cls C24/29 GS	70.00	28.00
356	Cls C24/29 GS	100.00	28.00
358	Cls C24/29 Aq 42	65.00	28.00
359	Cls C24/29 Aq 42	105.00	28.00
386	Cls C24/29 Aq 42 cons	100.00	33.00
388	Cls C24/29 GS	120.00	28.00
389	Cls C24/29 GS	95.00	28.00
390	Cls C24/29 GS	70.00	28.00
391	Cls C24/29 GS	100.00	28.00
393	Cls C24/29 Aq 42	65.00	28.00
394	Cls C24/29 Aq 42	105.00	28.00
421	Cls C24/29 Aq 42 cons	100.00	33.00
423	Cls C24/29 GS	120.00	28.00
424	Cls C24/29 GS	95.00	28.00
425	Cls C24/29 GS	70.00	28.00
426	Cls C24/29 GS	100.00	28.00
428	Cls C24/29 Aq 42	65.00	28.00
455	Cls C24/29 Aq 42	100.00	33.00
457	Cls C24/29 GS	120.00	28.00
458	Cls C24/29 GS	95.00	28.00
459	Cls C24/29 GS	70.00	28.00
460	Cls C24/29 GS	100.00	28.00
462	Cls C24/29 Aq 42	65.00	28.00
489	Cls C24/29 Aq 42 cons	100.00	33.00
491	Cls C24/29 GS	120.00	28.00
492	Cls C24/29 GS	95.00	28.00
493	Cls C24/29 GS	70.00	28.00
494	Cls C24/29 GS	100.00	28.00
496	Cls C24/29 Aq 42	65.00	28.00
497	Cls C24/29 Aq 42	105.00	28.00
525	Cls C24/29 Aq 42 cons	100.00	33.00
527	Cls C24/29 GS	120.00	28.00
528	Cls C24/29 GS	95.00	28.00
529	Cls C24/29 GS	70.00	28.00
530	Cls C24/29 GS	100.00	28.00
532	Cls C24/29 Aq 42	65.00	28.00
533	Cls C24/29 Aq 42	105.00	28.00

Armatura longitudinale negli elementi

Elemento	Area (cm2)	Y (cm)	Z (cm)	Ascissa iniz. (cm)	Lunghezza (cm)
159	2.54	27.00	-9.50	3.00	499.56
	2.54	27.00	9.50	3.00	499.56
	2.54	-27.00	9.50	3.00	499.56
	2.54	-27.00	-9.50	3.00	499.56
	2.54	27.00	3.17	405.56	100.00
	2.54	27.00	3.17	0.00	100.00
	2.54	27.00	-3.17	405.56	100.00
	2.54	27.00	-3.17	0.00	100.00
	2.54	-27.00	-3.17	0.00	505.56
	2.54	-27.00	3.17	0.00	

					505.56
162	3.80	49.50	-11.00	3.00	381.00
	3.80	49.50	11.00	3.00	381.00
	3.80	-49.50	11.00	3.00	381.00
	3.80	-49.50	-11.00	3.00	381.00
	3.80	49.50	0.00	0.00	387.00
	3.80	-49.50	-3.67	0.00	387.00
	3.80	-49.50	3.67	0.00	387.00
	1.13	0.00	-11.00	0.00	387.00
	1.13	0.00	11.00	0.00	387.00
	3.80	-49.50	0.00	87.00	300.00
	3.80	-49.50	-5.50	87.00	300.00
163	3.80	22.00	-11.00	3.00	157.00
	3.80	22.00	11.00	3.00	157.00
	3.80	-22.00	11.00	3.00	157.00
	3.80	-22.00	-11.00	3.00	157.00
	3.80	22.00	0.00	0.00	163.00
	3.80	-22.00	-3.67	0.00	163.00
	3.80	-22.00	3.67	0.00	163.00
	1.13	0.00	-11.00	0.00	163.00
	1.13	0.00	11.00	0.00	163.00
164	3.80	49.50	-11.00	3.00	381.00
	3.80	49.50	11.00	3.00	381.00
	3.80	-49.50	11.00	3.00	381.00
	3.80	-49.50	-11.00	3.00	381.00
	3.80	49.50	0.00	0.00	387.00
	3.80	-49.50	-3.67	0.00	387.00
	3.80	-49.50	3.67	0.00	387.00
	1.13	0.00	-11.00	0.00	387.00
	1.13	0.00	11.00	0.00	387.00
	3.80	-49.50	0.00	87.00	300.00
	3.80	-49.50	-5.50	87.00	300.00
165	3.80	22.00	-11.00	3.00	157.00
	3.80	22.00	11.00	3.00	157.00
	3.80	-22.00	11.00	3.00	157.00
	3.80	-22.00	-11.00	3.00	157.00
	3.80	22.00	0.00	0.00	163.00
	3.80	-22.00	-3.67	0.00	163.00
	3.80	-22.00	3.67	0.00	163.00
	1.13	0.00	-11.00	0.00	163.00
	1.13	0.00	11.00	0.00	163.00
168	2.54	27.00	-9.50	3.00	499.56
	2.54	27.00	9.50	3.00	499.56
	2.54	-27.00	9.50	3.00	499.56
	2.54	-27.00	-9.50	3.00	499.56
	2.54	27.00	3.17	405.56	100.00
	2.54	27.00	3.17	0.00	100.00
	2.54	27.00	-3.17	405.56	100.00
	2.54	27.00	-3.17	0.00	100.00
	2.54	-27.00	-3.17	0.00	505.56
	2.54	-27.00	3.17	0.00	505.56
169	3.80	49.50	-11.00	3.00	381.00
	3.80	49.50	11.00	3.00	381.00
	3.80	-49.50	11.00	3.00	381.00
	3.80	-49.50	-11.00	3.00	381.00
	3.80	49.50	0.00	0.00	387.00
	3.80	-49.50	-3.67	0.00	387.00
	3.80	-49.50	3.67	0.00	387.00
	1.13	0.00	-11.00	0.00	387.00
	1.13	0.00	11.00	0.00	387.00
	3.80	-49.50	0.00	87.00	300.00
	3.80	-49.50	-5.50	87.00	300.00

170	3.80	22.00	-11.00	3.00	157.00
	3.80	22.00	11.00	3.00	157.00
	3.80	-22.00	11.00	3.00	157.00
	3.80	-22.00	-11.00	3.00	157.00
	3.80	22.00	0.00	0.00	163.00
	3.80	-22.00	-3.67	0.00	163.00
	3.80	-22.00	3.67	0.00	163.00
	1.13	0.00	-11.00	0.00	163.00
171	1.13	0.00	11.00	0.00	163.00
	3.80	49.50	-11.00	3.00	381.00
	3.80	49.50	11.00	3.00	381.00
	3.80	-49.50	11.00	3.00	381.00
	3.80	-49.50	-11.00	3.00	381.00
	3.80	49.50	0.00	0.00	387.00
	3.80	-49.50	-3.67	0.00	387.00
	3.80	-49.50	3.67	0.00	387.00
172	1.13	0.00	-11.00	0.00	387.00
	1.13	0.00	11.00	0.00	387.00
	3.80	-49.50	0.00	87.00	300.00
	3.80	-49.50	-5.50	87.00	300.00
	3.80	22.00	-11.00	3.00	157.00
	3.80	22.00	11.00	3.00	157.00
	3.80	-22.00	11.00	3.00	157.00
	3.80	-22.00	-11.00	3.00	157.00
173	3.80	22.00	0.00	0.00	163.00
	3.80	-22.00	-3.67	0.00	163.00
	3.80	-22.00	3.67	0.00	163.00
	1.13	0.00	-11.00	0.00	163.00
	1.13	0.00	11.00	0.00	163.00
	1.13	17.00	-12.00	3.00	499.56
	1.13	17.00	12.00	3.00	499.56
	1.13	-17.00	12.00	3.00	499.56
174	1.13	-17.00	-12.00	3.00	499.56
	1.13	17.00	0.00	0.00	505.56
	1.13	-17.00	0.00	0.00	505.56
	1.13	0.00	-12.00	0.00	505.56
	1.13	0.00	12.00	0.00	505.56
	1.13	17.00	7.20	405.56	100.00
	1.13	17.00	7.20	0.00	100.00
	1.13	17.00	-7.20	405.56	100.00
175	1.13	17.00	-7.20	0.00	100.00
	1.13	17.00	2.40	405.56	100.00
	1.13	17.00	2.40	0.00	100.00
	1.13	17.00	-2.40	405.56	100.00
	1.13	17.00	-2.40	0.00	100.00
	1.13	-17.00	-6.00	0.00	505.56
	1.13	-17.00	6.00	0.00	505.56
	1.13	17.00	-12.00	3.00	499.56
176	1.13	17.00	12.00	3.00	499.56
	1.13	-17.00	12.00	3.00	499.56
	1.13	-17.00	-12.00	3.00	499.56
	1.13	17.00	0.00	0.00	505.56
	1.13	-17.00	0.00	0.00	505.56
	1.13	0.00	-12.00	0.00	505.56
	1.13	0.00	12.00	0.00	505.56
	1.13	17.00	7.20	405.56	100.00
177	1.13	17.00	7.20	0.00	100.00
	1.13	17.00	-7.20	405.56	100.00
	1.13	17.00	-7.20	0.00	100.00
	1.13	17.00	2.40	405.56	100.00
	1.13	17.00	2.40	0.00	100.00
	1.13	17.00	-2.40	405.56	100.00
	1.13	17.00	-2.40	0.00	100.00
	1.13	-17.00	-6.00	0.00	505.56

[illegible]

	1.13	17.00	7.20	0.00	100.00
	1.13	17.00	-7.20	405.56	100.00
	1.13	17.00	-7.20	0.00	100.00
	1.13	17.00	2.40	405.56	100.00
	1.13	17.00	2.40	0.00	100.00
	1.13	17.00	-2.40	405.56	100.00
	1.13	17.00	-2.40	0.00	100.00
	1.13	-17.00	-6.00	0.00	505.56
	1.13	-17.00	6.00	0.00	505.56
179	1.13	17.00	-12.00	3.00	499.56
	1.13	17.00	12.00	3.00	499.56
	1.13	-17.00	12.00	3.00	499.56
	1.13	-17.00	-12.00	3.00	499.56
	1.13	17.00	0.00	0.00	505.56
	1.13	-17.00	0.00	0.00	505.56
	1.13	0.00	-12.00	0.00	505.56
	1.13	0.00	12.00	0.00	505.56
	1.13	17.00	7.20	405.56	100.00
	1.13	17.00	7.20	0.00	100.00
	1.13	17.00	-7.20	405.56	100.00
	1.13	17.00	-7.20	0.00	100.00
	1.13	17.00	2.40	405.56	100.00
	1.13	17.00	2.40	0.00	100.00
	1.13	17.00	-2.40	405.56	100.00
	1.13	17.00	-2.40	0.00	100.00
	1.13	-17.00	-6.00	0.00	505.56
	1.13	-17.00	6.00	0.00	505.56
180	2.54	11.18	-17.00	3.00	505.59
	2.54	11.18	17.00	3.00	505.59
	2.54	-8.82	17.00	3.00	505.59
	2.54	-8.82	-17.00	3.00	505.59
	2.54	1.18	-27.00	3.00	505.59
	2.54	1.18	27.00	3.00	505.59
	2.54	-8.82	27.00	3.00	505.59
	2.54	-8.82	-27.00	3.00	505.59
	2.54	11.18	0.00	0.00	511.59
	2.54	-8.82	0.00	0.00	511.59
181	2.54	11.18	-17.00	3.00	505.59
	2.54	11.18	17.00	3.00	505.59
	2.54	-8.82	17.00	3.00	505.59
	2.54	-8.82	-17.00	3.00	505.59
	2.54	1.18	-27.00	3.00	505.59
	2.54	1.18	27.00	3.00	505.59
	2.54	-8.82	27.00	3.00	505.59
	2.54	-8.82	-27.00	3.00	505.59
	2.54	11.18	0.00	0.00	511.59
	2.54	-8.82	0.00	0.00	511.59
182	2.54	11.18	-17.00	3.00	505.59
	2.54	11.18	17.00	3.00	505.59
	2.54	-8.82	17.00	3.00	505.59
	2.54	-8.82	-17.00	3.00	505.59
	2.54	1.18	-27.00	3.00	505.59
	2.54	1.18	27.00	3.00	505.59
	2.54	-8.82	27.00	3.00	505.59
	2.54	-8.82	-27.00	3.00	505.59
	2.54	11.18	0.00	0.00	511.59
	2.54	-8.82	0.00	0.00	511.59
183	2.54	11.18	-17.00	3.00	505.59
	2.54	11.18	17.00	3.00	505.59
	2.54	-8.82	17.00	3.00	505.59
	2.54	-8.82	-17.00	3.00	505.59
	2.54	1.18	-27.00	3.00	505.59
	2.54	1.18	27.00	3.00	505.59

	2.54	-8.82	27.00	3.00	505.59
	2.54	-8.82	-27.00	3.00	505.59
	2.54	11.18	0.00	0.00	511.59
	2.54	-8.82	0.00	0.00	511.59
184	2.54	11.18	-17.00	3.00	505.59
	2.54	11.18	17.00	3.00	505.59
	2.54	-8.82	17.00	3.00	505.59
	2.54	-8.82	-17.00	3.00	505.59
	2.54	1.18	-27.00	3.00	505.59
	2.54	1.18	27.00	3.00	505.59
	2.54	-8.82	27.00	3.00	505.59
	2.54	-8.82	-27.00	3.00	505.59
	2.54	11.18	0.00	0.00	511.59
	2.54	-8.82	0.00	0.00	511.59
185	2.54	11.18	-17.00	3.00	505.59
	2.54	11.18	17.00	3.00	505.59
	2.54	-8.82	17.00	3.00	505.59
	2.54	-8.82	-17.00	3.00	505.59
	2.54	1.18	-27.00	3.00	505.59
	2.54	1.18	27.00	3.00	505.59
	2.54	-8.82	27.00	3.00	505.59
	2.54	-8.82	-27.00	3.00	505.59
	2.54	11.18	0.00	0.00	511.59
	2.54	-8.82	0.00	0.00	511.59
186	2.54	11.18	-17.00	3.00	505.59
	2.54	11.18	17.00	3.00	505.59
	2.54	-8.82	17.00	3.00	505.59
	2.54	-8.82	-17.00	3.00	505.59
	2.54	1.18	-27.00	3.00	505.59
	2.54	1.18	27.00	3.00	505.59
	2.54	-8.82	27.00	3.00	505.59
	2.54	-8.82	-27.00	3.00	505.59
	2.54	11.18	0.00	0.00	511.59
	2.54	-8.82	0.00	0.00	511.59
228	2.54	32.00	-4.50	3.00	505.59
	2.54	32.00	4.50	3.00	505.59
	2.54	-32.00	4.50	3.00	505.59
	2.54	-32.00	-4.50	3.00	505.59
	2.54	32.00	-0.00	0.00	511.59
	2.54	-32.00	0.00	0.00	511.59
229	2.54	32.00	-4.50	3.00	505.59
	2.54	32.00	4.50	3.00	505.59
	2.54	-32.00	4.50	3.00	505.59
	2.54	-32.00	-4.50	3.00	505.59
	2.54	32.00	-0.00	0.00	511.59
	2.54	-32.00	0.00	0.00	511.59
230	2.54	32.00	-4.50	3.00	505.59
	2.54	32.00	4.50	3.00	505.59
	2.54	-32.00	4.50	3.00	505.59
	2.54	-32.00	-4.50	3.00	505.59
	2.54	32.00	-0.00	0.00	511.59
	2.54	-32.00	0.00	0.00	511.59
231	2.54	32.00	-4.50	3.00	505.59
	2.54	32.00	4.50	3.00	505.59
	2.54	-32.00	4.50	3.00	505.59
	2.54	-32.00	-4.50	3.00	505.59
	2.54	32.00	-0.00	0.00	511.59
	2.54	-32.00	0.00	0.00	511.59
232	2.54	32.00	-4.50	3.00	505.59
	2.54	32.00	4.50	3.00	505.59
	2.54	-32.00	4.50	3.00	505.59
	2.54	-32.00	-4.50	3.00	505.59

	2.54	32.00	-0.00	0.00	511.59
	2.54	-32.00	0.00	0.00	511.59
233	2.54	32.00	-4.50	3.00	505.59
	2.54	32.00	4.50	3.00	505.59
	2.54	-32.00	4.50	3.00	505.59
	2.54	-32.00	-4.50	3.00	505.59
	2.54	32.00	-0.00	0.00	511.59
	2.54	-32.00	0.00	0.00	511.59
234	2.54	32.00	-4.50	3.00	505.59
	2.54	32.00	4.50	3.00	505.59
	2.54	-32.00	4.50	3.00	505.59
	2.54	-32.00	-4.50	3.00	505.59
	2.54	32.00	-0.00	0.00	511.59
	2.54	-32.00	0.00	0.00	511.59
235	2.54	32.00	-4.50	3.00	256.14
	2.54	32.00	4.50	3.00	256.14
	2.54	-32.00	4.50	3.00	256.14
	2.54	-32.00	-4.50	3.00	256.14
	2.54	32.00	-0.00	0.00	262.14
	2.54	-32.00	0.00	0.00	262.14
236	2.54	47.00	-9.50	3.00	499.56
	2.54	47.00	9.50	3.00	499.56
	2.54	-47.00	9.50	3.00	499.56
	2.54	-47.00	-9.50	3.00	499.56
	2.54	47.00	0.00	405.56	100.00
	2.54	47.00	0.00	0.00	100.00
	2.54	-47.00	0.00	0.00	505.56
237	2.54	47.00	-9.50	3.00	499.56
	2.54	47.00	9.50	3.00	499.56
	2.54	-47.00	9.50	3.00	499.56
	2.54	-47.00	-9.50	3.00	499.56
	2.54	47.00	0.00	405.56	100.00
	2.54	47.00	0.00	0.00	100.00
	2.54	-47.00	0.00	0.00	505.56
238	2.54	47.00	-9.50	3.00	499.56
	2.54	47.00	9.50	3.00	499.56
	2.54	-47.00	9.50	3.00	499.56
	2.54	-47.00	-9.50	3.00	499.56
	2.54	47.00	0.00	405.56	100.00
	2.54	47.00	0.00	0.00	100.00
	2.54	-47.00	0.00	0.00	505.56
239	2.54	47.00	-9.50	3.00	499.56
	2.54	47.00	9.50	3.00	499.56
	2.54	-47.00	9.50	3.00	499.56
	2.54	-47.00	-9.50	3.00	499.56
	2.54	47.00	0.00	405.56	100.00
	2.54	47.00	0.00	0.00	100.00
	2.54	-47.00	0.00	0.00	505.56
240	2.54	47.00	-9.50	3.00	499.56
	2.54	47.00	9.50	3.00	499.56
	2.54	-47.00	9.50	3.00	499.56
	2.54	-47.00	-9.50	3.00	499.56
	2.54	47.00	0.00	405.56	100.00
	2.54	47.00	0.00	0.00	100.00
	2.54	-47.00	0.00	0.00	505.56
241	2.54	47.00	-9.50	3.00	499.56
	2.54	47.00	9.50	3.00	499.56
	2.54	-47.00	9.50	3.00	499.56
	2.54	-47.00	-9.50	3.00	499.56
	2.54	47.00	0.00	405.56	100.00
	2.54	47.00	0.00	0.00	100.00

	2.54	-47.00	0.00	0.00	505.56
242	2.54	47.00	-9.50	3.00	499.56
	2.54	47.00	9.50	3.00	499.56
	2.54	-47.00	9.50	3.00	499.56
	2.54	-47.00	-9.50	3.00	499.56
	2.54	47.00	0.00	405.56	100.00
	2.54	47.00	0.00	0.00	100.00
	2.54	-47.00	0.00	0.00	505.56
243	2.54	47.00	-9.50	3.00	250.11
	2.54	47.00	9.50	3.00	250.11
	2.54	-47.00	9.50	3.00	250.11
	2.54	-47.00	-9.50	3.00	250.11
	2.54	47.00	0.00	156.11	100.00
	2.54	47.00	0.00	0.00	100.00
	2.54	-47.00	0.00	0.00	256.11
244	2.54	27.00	-9.50	3.00	240.19
	2.54	27.00	9.50	3.00	240.19
	2.54	-27.00	9.50	3.00	240.19
	2.54	-27.00	-9.50	3.00	240.19
	2.54	27.00	0.00	0.00	246.19
	2.54	-27.00	0.00	0.00	246.19
245	2.54	27.00	-9.50	3.00	489.63
	2.54	27.00	9.50	3.00	489.63
	2.54	-27.00	9.50	3.00	489.63
	2.54	-27.00	-9.50	3.00	489.63
	2.54	27.00	0.00	0.00	495.63
	2.54	-27.00	0.00	0.00	495.63
246	2.54	27.00	-9.50	3.00	489.63
	2.54	27.00	9.50	3.00	489.63
	2.54	-27.00	9.50	3.00	489.63
	2.54	-27.00	-9.50	3.00	489.63
	2.54	27.00	0.00	0.00	495.63
	2.54	-27.00	0.00	0.00	495.63
247	2.54	27.00	-9.50	3.00	489.63
	2.54	27.00	9.50	3.00	489.63
	2.54	-27.00	9.50	3.00	489.63
	2.54	-27.00	-9.50	3.00	489.63
	2.54	27.00	3.17	395.63	100.00
	2.54	27.00	3.17	0.00	100.00
	2.54	27.00	-3.17	395.63	100.00
	2.54	27.00	-3.17	0.00	100.00
	2.54	-27.00	-3.17	0.00	495.63
	2.54	-27.00	3.17	0.00	495.63
248	2.54	27.00	-9.50	3.00	489.63
	2.54	27.00	9.50	3.00	489.63
	2.54	-27.00	9.50	3.00	489.63
	2.54	-27.00	-9.50	3.00	489.63
	2.54	27.00	0.00	0.00	495.63
	2.54	-27.00	0.00	0.00	495.63
249	2.54	27.00	-9.50	3.00	489.63
	2.54	27.00	9.50	3.00	489.63
	2.54	-27.00	9.50	3.00	489.63
	2.54	-27.00	-9.50	3.00	489.63
	2.54	27.00	0.00	0.00	495.63
	2.54	-27.00	0.00	0.00	495.63
250	2.54	27.00	-9.50	3.00	489.63
	2.54	27.00	9.50	3.00	489.63
	2.54	-27.00	9.50	3.00	489.63
	2.54	-27.00	-9.50	3.00	489.63
	2.54	27.00	0.00	0.00	495.63
	2.54	-27.00	0.00	0.00	

					495.63
251	2.54	27.00	-9.50	3.00	489.63
	2.54	27.00	9.50	3.00	489.63
	2.54	-27.00	9.50	3.00	489.63
	2.54	-27.00	-9.50	3.00	489.63
	2.54	27.00	3.17	395.63	100.00
	2.54	27.00	3.17	0.00	100.00
	2.54	27.00	-3.17	395.63	100.00
	2.54	27.00	-3.17	0.00	100.00
	2.54	-27.00	-3.17	0.00	495.63
	2.54	-27.00	3.17	0.00	495.63
283	2.54	0.00	13.50	0.00	355.00
	2.54	23.50	13.50	0.00	355.00
	2.54	-23.50	13.50	0.00	355.00
	2.54	0.00	-13.50	0.00	355.00
	2.54	-23.50	-13.50	0.00	355.00
	2.54	23.50	-13.50	0.00	355.00
	3.14	-47.00	0.00	0.00	355.00
	3.14	47.00	0.00	0.00	355.00
	3.14	-47.00	-13.50	3.00	349.00
	3.14	-47.00	13.50	3.00	349.00
	3.14	47.00	13.50	3.00	349.00
	3.14	47.00	-13.50	3.00	349.00
285	5.31	57.00	-11.00	3.00	359.30
	5.31	57.00	11.00	3.00	359.30
	5.31	-57.00	11.00	3.00	359.30
	5.31	-57.00	-11.00	3.00	359.30
	5.31	57.00	6.60	0.00	250.00
	5.31	57.00	-6.60	0.00	250.00
	5.31	57.00	2.20	0.00	250.00
	5.31	57.00	-2.20	0.00	250.00
	5.31	-57.00	-5.50	0.00	300.00
	5.31	-57.00	5.50	0.00	300.00
	5.31	-57.00	0.00	0.00	300.00
286	3.80	44.50	-11.00	3.00	478.11
	3.80	44.50	11.00	3.00	478.11
	3.80	-44.50	11.00	3.00	478.11
	3.80	-44.50	-11.00	3.00	478.11
	3.80	-44.50	-3.67	0.00	484.11
	3.80	-44.50	3.67	0.00	484.11
	3.80	44.50	0.00	384.11	100.00
	3.80	44.50	5.50	384.11	100.00
	3.80	44.50	-5.50	384.11	100.00
	3.80	44.50	8.25	384.11	100.00
	3.80	-44.50	-7.33	0.00	200.00
	3.80	-44.50	7.33	0.00	200.00
287	3.80	32.00	-11.00	3.00	308.23
	3.80	32.00	11.00	3.00	308.23
	3.80	-32.00	11.00	3.00	308.23
	3.80	-32.00	-11.00	3.00	308.23
	3.80	-32.00	-3.67	0.00	314.23
	3.80	-32.00	3.67	0.00	314.23
	3.80	32.00	3.67	0.00	125.00
	3.80	32.00	-3.67	0.00	125.00
	3.80	-32.00	0.00	164.23	150.00
	3.80	-32.00	-5.50	164.23	150.00
288	3.80	47.00	-11.00	3.00	633.79
	3.80	47.00	11.00	3.00	633.79
	3.80	-47.00	11.00	3.00	633.79
	3.80	-47.00	-11.00	3.00	633.79
	3.80	-47.00	-3.67	0.00	639.79
	3.80	-47.00	3.67	0.00	639.79
	3.80	47.00	0.00	0.00	125.00

	3.80	47.00	5.50	0.00	125.00
	3.80	47.00	-5.50	0.00	125.00
	3.80	47.00	8.25	0.00	125.00
	3.80	47.00	2.75	514.79	125.00
	3.80	47.00	-2.75	514.79	125.00
	3.80	-47.00	-7.33	194.89	250.00
	3.80	-47.00	7.33	194.89	250.00
290	3.80	29.50	-11.00	3.00	324.00
	3.80	29.50	11.00	3.00	324.00
	3.80	-29.50	11.00	3.00	324.00
	3.80	-29.50	-11.00	3.00	324.00
	3.80	29.50	0.00	0.00	330.00
	3.80	-29.50	0.00	0.00	330.00
	1.13	0.00	-11.00	0.00	330.00
	1.13	0.00	11.00	0.00	330.00
317	2.54	0.00	13.50	0.00	355.00
	2.54	23.50	13.50	0.00	355.00
	2.54	-23.50	13.50	0.00	355.00
	2.54	0.00	-13.50	0.00	355.00
	2.54	-23.50	-13.50	0.00	355.00
	2.54	23.50	-13.50	0.00	355.00
	3.14	-47.00	0.00	0.00	355.00
	3.14	47.00	0.00	0.00	355.00
	3.14	-47.00	-13.50	3.00	349.00
	3.14	-47.00	13.50	3.00	349.00
	3.14	47.00	13.50	3.00	349.00
	3.14	47.00	-13.50	3.00	349.00
319	5.31	57.00	-11.00	3.00	359.30
	5.31	57.00	11.00	3.00	359.30
	5.31	-57.00	11.00	3.00	359.30
	5.31	-57.00	-11.00	3.00	359.30
	5.31	57.00	6.60	0.00	250.00
	5.31	57.00	-6.60	0.00	250.00
	5.31	57.00	2.20	0.00	250.00
	5.31	57.00	-2.20	0.00	250.00
	5.31	-57.00	-5.50	0.00	300.00
	5.31	-57.00	5.50	0.00	300.00
	5.31	-57.00	0.00	0.00	300.00
320	3.80	44.50	-11.00	3.00	478.11
	3.80	44.50	11.00	3.00	478.11
	3.80	-44.50	11.00	3.00	478.11
	3.80	-44.50	-11.00	3.00	478.11
	3.80	-44.50	-3.67	0.00	484.11
	3.80	-44.50	3.67	0.00	484.11
	3.80	44.50	0.00	384.11	100.00
	3.80	44.50	5.50	384.11	100.00
	3.80	44.50	-5.50	384.11	100.00
	3.80	44.50	8.25	384.11	100.00
	3.80	-44.50	-7.33	0.00	200.00
	3.80	-44.50	7.33	0.00	200.00
321	3.80	32.00	-11.00	3.00	308.23
	3.80	32.00	11.00	3.00	308.23
	3.80	-32.00	11.00	3.00	308.23
	3.80	-32.00	-11.00	3.00	308.23
	3.80	-32.00	-3.67	0.00	314.23
	3.80	-32.00	3.67	0.00	314.23
	3.80	32.00	3.67	0.00	125.00
	3.80	32.00	-3.67	0.00	125.00
	3.80	-32.00	0.00	164.23	150.00
	3.80	-32.00	-5.50	164.23	150.00
322	3.80	47.00	-11.00	3.00	633.79
	3.80	47.00	11.00	3.00	633.79
	3.80	-47.00	11.00	3.00	633.79

	3.80	-47.00	-11.00	3.00	633.79
	3.80	-47.00	-3.67	0.00	639.79
	3.80	-47.00	3.67	0.00	639.79
	3.80	47.00	0.00	0.00	125.00
	3.80	47.00	5.50	0.00	125.00
	3.80	47.00	-5.50	0.00	125.00
	3.80	47.00	8.25	0.00	125.00
	3.80	47.00	2.75	514.79	125.00
	3.80	47.00	-2.75	514.79	125.00
	3.80	-47.00	-7.33	194.89	250.00
	3.80	-47.00	7.33	194.89	250.00
324	3.80	29.50	-11.00	3.00	324.00
	3.80	29.50	11.00	3.00	324.00
	3.80	-29.50	11.00	3.00	324.00
	3.80	-29.50	-11.00	3.00	324.00
	3.80	29.50	0.00	0.00	330.00
	3.80	-29.50	0.00	0.00	330.00
	1.13	0.00	-11.00	0.00	330.00
	1.13	0.00	11.00	0.00	330.00
351	2.54	0.00	13.50	0.00	355.00
	2.54	23.50	13.50	0.00	355.00
	2.54	-23.50	13.50	0.00	355.00
	2.54	0.00	-13.50	0.00	355.00
	2.54	-23.50	-13.50	0.00	355.00
	2.54	23.50	-13.50	0.00	355.00
	3.14	-47.00	0.00	0.00	355.00
	3.14	47.00	0.00	0.00	355.00
	3.14	-47.00	-13.50	3.00	349.00
	3.14	-47.00	13.50	3.00	349.00
	3.14	47.00	13.50	3.00	349.00
	3.14	47.00	-13.50	3.00	349.00
353	5.31	57.00	-11.00	3.00	359.30
	5.31	57.00	11.00	3.00	359.30
	5.31	-57.00	11.00	3.00	359.30
	5.31	-57.00	-11.00	3.00	359.30
	5.31	57.00	6.60	0.00	250.00
	5.31	57.00	-6.60	0.00	250.00
	5.31	57.00	2.20	0.00	250.00
	5.31	57.00	-2.20	0.00	250.00
	5.31	-57.00	-5.50	0.00	300.00
	5.31	-57.00	5.50	0.00	300.00
	5.31	-57.00	0.00	0.00	300.00
354	3.80	44.50	-11.00	3.00	478.11
	3.80	44.50	11.00	3.00	478.11
	3.80	-44.50	11.00	3.00	478.11
	3.80	-44.50	-11.00	3.00	478.11
	3.80	-44.50	-3.67	0.00	484.11
	3.80	-44.50	3.67	0.00	484.11
	3.80	44.50	0.00	384.11	100.00
	3.80	44.50	5.50	384.11	100.00
	3.80	44.50	-5.50	384.11	100.00
	3.80	44.50	8.25	384.11	100.00
	3.80	-44.50	-7.33	0.00	200.00
	3.80	-44.50	7.33	0.00	200.00
355	3.80	32.00	-11.00	3.00	308.23
	3.80	32.00	11.00	3.00	308.23
	3.80	-32.00	11.00	3.00	308.23
	3.80	-32.00	-11.00	3.00	308.23
	3.80	-32.00	-3.67	0.00	314.23
	3.80	-32.00	3.67	0.00	314.23
	3.80	32.00	3.67	0.00	125.00
	3.80	32.00	-3.67	0.00	125.00
	3.80	-32.00	0.00	164.23	150.00

	3.80	-32.00	-5.50	164.23	150.00
356	3.80	47.00	-11.00	3.00	633.79
	3.80	47.00	11.00	3.00	633.79
	3.80	-47.00	11.00	3.00	633.79
	3.80	-47.00	-11.00	3.00	633.79
	3.80	-47.00	-3.67	0.00	639.79
	3.80	-47.00	3.67	0.00	639.79
	3.80	47.00	0.00	0.00	125.00
	3.80	47.00	5.50	0.00	125.00
	3.80	47.00	-5.50	0.00	125.00
	3.80	47.00	8.25	0.00	125.00
	3.80	47.00	2.75	514.79	125.00
	3.80	47.00	-2.75	514.79	125.00
	3.80	-47.00	-7.33	194.89	250.00
	3.80	-47.00	7.33	194.89	250.00
358	3.80	29.50	-11.00	3.00	324.00
	3.80	29.50	11.00	3.00	324.00
	3.80	-29.50	11.00	3.00	324.00
	3.80	-29.50	-11.00	3.00	324.00
	3.80	29.50	0.00	0.00	330.00
	3.80	-29.50	0.00	0.00	330.00
	1.13	0.00	-11.00	0.00	330.00
	1.13	0.00	11.00	0.00	330.00
359	3.80	49.50	-11.00	3.00	544.00
	3.80	49.50	11.00	3.00	544.00
	3.80	-49.50	11.00	3.00	544.00
	3.80	-49.50	-11.00	3.00	544.00
	3.80	49.50	0.00	0.00	550.00
	3.80	-49.50	-3.67	0.00	550.00
	3.80	-49.50	3.67	0.00	550.00
	1.13	0.00	-11.00	0.00	550.00
	1.13	0.00	11.00	0.00	550.00
	3.80	-49.50	0.00	250.00	300.00
	3.80	-49.50	-5.50	250.00	300.00
386	2.54	0.00	13.50	0.00	355.00
	2.54	23.50	13.50	0.00	355.00
	2.54	-23.50	13.50	0.00	355.00
	2.54	0.00	-13.50	0.00	355.00
	2.54	-23.50	-13.50	0.00	355.00
	2.54	23.50	-13.50	0.00	355.00
	3.14	-47.00	0.00	0.00	355.00
	3.14	47.00	0.00	0.00	355.00
	3.14	-47.00	-13.50	3.00	349.00
	3.14	-47.00	13.50	3.00	349.00
	3.14	47.00	13.50	3.00	349.00
	3.14	47.00	-13.50	3.00	349.00
388	5.31	57.00	-11.00	3.00	359.30
	5.31	57.00	11.00	3.00	359.30
	5.31	-57.00	11.00	3.00	359.30
	5.31	-57.00	-11.00	3.00	359.30
	5.31	57.00	6.60	0.00	250.00
	5.31	57.00	-6.60	0.00	250.00
	5.31	57.00	2.20	0.00	250.00
	5.31	57.00	-2.20	0.00	250.00
	5.31	-57.00	-5.50	0.00	300.00
	5.31	-57.00	5.50	0.00	300.00
	5.31	-57.00	0.00	0.00	300.00
389	3.80	44.50	-11.00	3.00	478.11
	3.80	44.50	11.00	3.00	478.11
	3.80	-44.50	11.00	3.00	478.11
	3.80	-44.50	-11.00	3.00	478.11
	3.80	-44.50	-3.67	0.00	484.11
	3.80	-44.50	3.67	0.00	484.11

	3.80	44.50	0.00	384.11	100.00
	3.80	44.50	5.50	384.11	100.00
	3.80	44.50	-5.50	384.11	100.00
	3.80	44.50	8.25	384.11	100.00
	3.80	-44.50	-7.33	0.00	200.00
	3.80	-44.50	7.33	0.00	200.00
390	3.80	32.00	-11.00	3.00	308.23
	3.80	32.00	11.00	3.00	308.23
	3.80	-32.00	11.00	3.00	308.23
	3.80	-32.00	-11.00	3.00	308.23
	3.80	-32.00	-3.67	0.00	314.23
	3.80	-32.00	3.67	0.00	314.23
	3.80	32.00	3.67	0.00	125.00
	3.80	32.00	-3.67	0.00	125.00
	3.80	-32.00	0.00	164.23	150.00
	3.80	-32.00	-5.50	164.23	150.00
391	3.80	47.00	-11.00	3.00	633.79
	3.80	47.00	11.00	3.00	633.79
	3.80	-47.00	11.00	3.00	633.79
	3.80	-47.00	-11.00	3.00	633.79
	3.80	-47.00	-3.67	0.00	639.79
	3.80	-47.00	3.67	0.00	639.79
	3.80	47.00	0.00	0.00	125.00
	3.80	47.00	5.50	0.00	125.00
	3.80	47.00	-5.50	0.00	125.00
	3.80	47.00	8.25	0.00	125.00
	3.80	47.00	2.75	514.79	125.00
	3.80	47.00	-2.75	514.79	125.00
	3.80	-47.00	-7.33	194.89	250.00
	3.80	-47.00	7.33	194.89	250.00
393	3.80	29.50	-11.00	3.00	324.00
	3.80	29.50	11.00	3.00	324.00
	3.80	-29.50	11.00	3.00	324.00
	3.80	-29.50	-11.00	3.00	324.00
	3.80	29.50	0.00	0.00	330.00
	3.80	-29.50	0.00	0.00	330.00
	1.13	0.00	-11.00	0.00	330.00
	1.13	0.00	11.00	0.00	330.00
394	3.80	49.50	-11.00	3.00	544.00
	3.80	49.50	11.00	3.00	544.00
	3.80	-49.50	11.00	3.00	544.00
	3.80	-49.50	-11.00	3.00	544.00
	3.80	49.50	0.00	0.00	550.00
	3.80	-49.50	-3.67	0.00	550.00
	3.80	-49.50	3.67	0.00	550.00
	1.13	0.00	-11.00	0.00	550.00
	1.13	0.00	11.00	0.00	550.00
	3.80	-49.50	0.00	250.00	300.00
	3.80	-49.50	-5.50	250.00	300.00
421	2.54	0.00	13.50	0.00	355.00
	2.54	23.50	13.50	0.00	355.00
	2.54	-23.50	13.50	0.00	355.00
	2.54	0.00	-13.50	0.00	355.00
	2.54	-23.50	-13.50	0.00	355.00
	2.54	23.50	-13.50	0.00	355.00
	3.14	-47.00	0.00	0.00	355.00
	3.14	47.00	0.00	0.00	355.00
	3.14	-47.00	-13.50	3.00	349.00
	3.14	-47.00	13.50	3.00	349.00
	3.14	47.00	13.50	3.00	349.00
	3.14	47.00	-13.50	3.00	349.00
423	5.31	57.00	-11.00	3.00	359.30
	5.31	57.00	11.00	3.00	359.30

	5.31	-57.00	11.00	3.00	359.30
	5.31	-57.00	-11.00	3.00	359.30
	5.31	57.00	6.60	0.00	250.00
	5.31	57.00	-6.60	0.00	250.00
	5.31	57.00	2.20	0.00	250.00
	5.31	57.00	-2.20	0.00	250.00
	5.31	-57.00	-5.50	0.00	300.00
	5.31	-57.00	5.50	0.00	300.00
	5.31	-57.00	0.00	0.00	300.00
424	3.80	44.50	-11.00	3.00	478.11
	3.80	44.50	11.00	3.00	478.11
	3.80	-44.50	11.00	3.00	478.11
	3.80	-44.50	-11.00	3.00	478.11
	3.80	-44.50	-3.67	0.00	484.11
	3.80	-44.50	3.67	0.00	484.11
	3.80	44.50	0.00	384.11	100.00
	3.80	44.50	5.50	384.11	100.00
	3.80	44.50	-5.50	384.11	100.00
	3.80	44.50	8.25	384.11	100.00
	3.80	-44.50	-7.33	0.00	200.00
	3.80	-44.50	7.33	0.00	200.00
425	3.80	32.00	-11.00	3.00	308.23
	3.80	32.00	11.00	3.00	308.23
	3.80	-32.00	11.00	3.00	308.23
	3.80	-32.00	-11.00	3.00	308.23
	3.80	-32.00	-3.67	0.00	314.23
	3.80	-32.00	3.67	0.00	314.23
	3.80	32.00	3.67	0.00	125.00
	3.80	32.00	-3.67	0.00	125.00
	3.80	-32.00	0.00	164.23	150.00
	3.80	-32.00	-5.50	164.23	150.00
426	3.80	47.00	-11.00	3.00	633.79
	3.80	47.00	11.00	3.00	633.79
	3.80	-47.00	11.00	3.00	633.79
	3.80	-47.00	-11.00	3.00	633.79
	3.80	-47.00	-3.67	0.00	639.79
	3.80	-47.00	3.67	0.00	639.79
	3.80	47.00	0.00	0.00	125.00
	3.80	47.00	5.50	0.00	125.00
	3.80	47.00	-5.50	0.00	125.00
	3.80	47.00	8.25	0.00	125.00
	3.80	47.00	2.75	514.79	125.00
	3.80	47.00	-2.75	514.79	125.00
	3.80	-47.00	-7.33	194.89	250.00
	3.80	-47.00	7.33	194.89	250.00
428	3.80	29.50	-11.00	3.00	324.00
	3.80	29.50	11.00	3.00	324.00
	3.80	-29.50	11.00	3.00	324.00
	3.80	-29.50	-11.00	3.00	324.00
	3.80	29.50	0.00	0.00	330.00
	3.80	-29.50	0.00	0.00	330.00
	1.13	0.00	-11.00	0.00	330.00
	1.13	0.00	11.00	0.00	330.00
455	2.54	0.00	13.50	0.00	355.00
	2.54	23.50	13.50	0.00	355.00
	2.54	-23.50	13.50	0.00	355.00
	2.54	0.00	-13.50	0.00	355.00
	2.54	-23.50	-13.50	0.00	355.00
	2.54	23.50	-13.50	0.00	355.00
	3.14	-47.00	0.00	0.00	355.00
	3.14	47.00	0.00	0.00	355.00
	3.14	-47.00	-13.50	3.00	349.00
	3.14	-47.00	13.50	3.00	349.00

	3.14	47.00	13.50	3.00	349.00
	3.14	47.00	-13.50	3.00	349.00
457	5.31	57.00	-11.00	3.00	359.30
	5.31	57.00	11.00	3.00	359.30
	5.31	-57.00	11.00	3.00	359.30
	5.31	-57.00	-11.00	3.00	359.30
	5.31	57.00	6.60	0.00	250.00
	5.31	57.00	-6.60	0.00	250.00
	5.31	57.00	2.20	0.00	250.00
	5.31	57.00	-2.20	0.00	250.00
	5.31	-57.00	-5.50	0.00	300.00
	5.31	-57.00	5.50	0.00	300.00
	5.31	-57.00	0.00	0.00	300.00
458	3.80	44.50	-11.00	3.00	478.11
	3.80	44.50	11.00	3.00	478.11
	3.80	-44.50	11.00	3.00	478.11
	3.80	-44.50	-11.00	3.00	478.11
	3.80	-44.50	-3.67	0.00	484.11
	3.80	-44.50	3.67	0.00	484.11
	3.80	44.50	0.00	384.11	100.00
	3.80	44.50	5.50	384.11	100.00
	3.80	44.50	-5.50	384.11	100.00
	3.80	44.50	8.25	384.11	100.00
	3.80	-44.50	-7.33	0.00	200.00
	3.80	-44.50	7.33	0.00	200.00
459	3.80	32.00	-11.00	3.00	308.23
	3.80	32.00	11.00	3.00	308.23
	3.80	-32.00	11.00	3.00	308.23
	3.80	-32.00	-11.00	3.00	308.23
	3.80	-32.00	-3.67	0.00	314.23
	3.80	-32.00	3.67	0.00	314.23
	3.80	32.00	3.67	0.00	125.00
	3.80	32.00	-3.67	0.00	125.00
	3.80	-32.00	0.00	164.23	150.00
	3.80	-32.00	-5.50	164.23	150.00
460	3.80	47.00	-11.00	3.00	633.79
	3.80	47.00	11.00	3.00	633.79
	3.80	-47.00	11.00	3.00	633.79
	3.80	-47.00	-11.00	3.00	633.79
	3.80	-47.00	-3.67	0.00	639.79
	3.80	-47.00	3.67	0.00	639.79
	3.80	47.00	0.00	0.00	125.00
	3.80	47.00	5.50	0.00	125.00
	3.80	47.00	-5.50	0.00	125.00
	3.80	47.00	8.25	0.00	125.00
	3.80	47.00	2.75	514.79	125.00
	3.80	47.00	-2.75	514.79	125.00
	3.80	-47.00	-7.33	194.89	250.00
	3.80	-47.00	7.33	194.89	250.00
462	3.80	29.50	-11.00	3.00	324.00
	3.80	29.50	11.00	3.00	324.00
	3.80	-29.50	11.00	3.00	324.00
	3.80	-29.50	-11.00	3.00	324.00
	3.80	29.50	0.00	0.00	330.00
	3.80	-29.50	0.00	0.00	330.00
	1.13	0.00	-11.00	0.00	330.00
	1.13	0.00	11.00	0.00	330.00
489	2.54	0.00	13.50	0.00	355.00
	2.54	23.50	13.50	0.00	355.00
	2.54	-23.50	13.50	0.00	355.00
	2.54	0.00	-13.50	0.00	355.00
	2.54	-23.50	-13.50	0.00	355.00
	2.54	23.50	-13.50	0.00	355.00

	3.14	-47.00	0.00	0.00	355.00
	3.14	47.00	0.00	0.00	355.00
	3.14	-47.00	-13.50	3.00	349.00
	3.14	-47.00	13.50	3.00	349.00
	3.14	47.00	13.50	3.00	349.00
	3.14	47.00	-13.50	3.00	349.00
491	5.31	57.00	-11.00	3.00	359.30
	5.31	57.00	11.00	3.00	359.30
	5.31	-57.00	11.00	3.00	359.30
	5.31	-57.00	-11.00	3.00	359.30
	5.31	57.00	6.60	0.00	250.00
	5.31	57.00	-6.60	0.00	250.00
	5.31	57.00	2.20	0.00	250.00
	5.31	57.00	-2.20	0.00	250.00
	5.31	-57.00	-5.50	0.00	300.00
	5.31	-57.00	5.50	0.00	300.00
	5.31	-57.00	0.00	0.00	300.00
492	3.80	44.50	-11.00	3.00	478.11
	3.80	44.50	11.00	3.00	478.11
	3.80	-44.50	11.00	3.00	478.11
	3.80	-44.50	-11.00	3.00	478.11
	3.80	-44.50	-3.67	0.00	484.11
	3.80	-44.50	3.67	0.00	484.11
	3.80	44.50	0.00	384.11	100.00
	3.80	44.50	5.50	384.11	100.00
	3.80	44.50	-5.50	384.11	100.00
	3.80	44.50	8.25	384.11	100.00
	3.80	-44.50	-7.33	0.00	200.00
	3.80	-44.50	7.33	0.00	200.00
493	3.80	32.00	-11.00	3.00	308.23
	3.80	32.00	11.00	3.00	308.23
	3.80	-32.00	11.00	3.00	308.23
	3.80	-32.00	-11.00	3.00	308.23
	3.80	-32.00	-3.67	0.00	314.23
	3.80	-32.00	3.67	0.00	314.23
	3.80	32.00	3.67	0.00	125.00
	3.80	32.00	-3.67	0.00	125.00
	3.80	-32.00	0.00	164.23	150.00
	3.80	-32.00	-5.50	164.23	150.00
494	3.80	47.00	-11.00	3.00	633.79
	3.80	47.00	11.00	3.00	633.79
	3.80	-47.00	11.00	3.00	633.79
	3.80	-47.00	-11.00	3.00	633.79
	3.80	-47.00	-3.67	0.00	639.79
	3.80	-47.00	3.67	0.00	639.79
	3.80	47.00	0.00	0.00	125.00
	3.80	47.00	5.50	0.00	125.00
	3.80	47.00	-5.50	0.00	125.00
	3.80	47.00	8.25	0.00	125.00
	3.80	47.00	2.75	514.79	125.00
	3.80	47.00	-2.75	514.79	125.00
	3.80	-47.00	-7.33	194.89	250.00
	3.80	-47.00	7.33	194.89	250.00
496	3.80	29.50	-11.00	3.00	324.00
	3.80	29.50	11.00	3.00	324.00
	3.80	-29.50	11.00	3.00	324.00
	3.80	-29.50	-11.00	3.00	324.00
	3.80	29.50	0.00	0.00	330.00
	3.80	-29.50	0.00	0.00	330.00
	1.13	0.00	-11.00	0.00	330.00
	1.13	0.00	11.00	0.00	330.00
497	3.80	49.50	-11.00	3.00	544.00
	3.80	49.50	11.00	3.00	544.00

	3.80	-49.50	11.00	3.00	544.00
	3.80	-49.50	-11.00	3.00	544.00
	3.80	49.50	0.00	0.00	550.00
	3.80	-49.50	-3.67	0.00	550.00
	3.80	-49.50	3.67	0.00	550.00
	1.13	0.00	-11.00	0.00	550.00
	1.13	0.00	11.00	0.00	550.00
	3.80	-49.50	0.00	250.00	300.00
	3.80	-49.50	-5.50	250.00	300.00
525	2.54	0.00	13.50	0.00	355.00
	2.54	23.50	13.50	0.00	355.00
	2.54	-23.50	13.50	0.00	355.00
	2.54	0.00	-13.50	0.00	355.00
	2.54	-23.50	-13.50	0.00	355.00
	2.54	23.50	-13.50	0.00	355.00
	3.14	-47.00	0.00	0.00	355.00
	3.14	47.00	0.00	0.00	355.00
	3.14	-47.00	-13.50	3.00	349.00
	3.14	-47.00	13.50	3.00	349.00
	3.14	47.00	13.50	3.00	349.00
	3.14	47.00	-13.50	3.00	349.00
527	5.31	57.00	-11.00	3.00	359.30
	5.31	57.00	11.00	3.00	359.30
	5.31	-57.00	11.00	3.00	359.30
	5.31	-57.00	-11.00	3.00	359.30
	5.31	57.00	6.60	0.00	250.00
	5.31	57.00	-6.60	0.00	250.00
	5.31	57.00	2.20	0.00	250.00
	5.31	57.00	-2.20	0.00	250.00
	5.31	-57.00	-5.50	0.00	300.00
	5.31	-57.00	5.50	0.00	300.00
	5.31	-57.00	0.00	0.00	300.00
528	3.80	44.50	-11.00	3.00	478.11
	3.80	44.50	11.00	3.00	478.11
	3.80	-44.50	11.00	3.00	478.11
	3.80	-44.50	-11.00	3.00	478.11
	3.80	-44.50	-3.67	0.00	484.11
	3.80	-44.50	3.67	0.00	484.11
	3.80	44.50	0.00	384.11	100.00
	3.80	44.50	5.50	384.11	100.00
	3.80	44.50	-5.50	384.11	100.00
	3.80	44.50	8.25	384.11	100.00
	3.80	-44.50	-7.33	0.00	200.00
	3.80	-44.50	7.33	0.00	200.00
529	3.80	32.00	-11.00	3.00	308.23
	3.80	32.00	11.00	3.00	308.23
	3.80	-32.00	11.00	3.00	308.23
	3.80	-32.00	-11.00	3.00	308.23
	3.80	-32.00	-3.67	0.00	314.23
	3.80	-32.00	3.67	0.00	314.23
	3.80	32.00	3.67	0.00	125.00
	3.80	32.00	-3.67	0.00	125.00
	3.80	-32.00	0.00	164.23	150.00
	3.80	-32.00	-5.50	164.23	150.00
530	3.80	47.00	-11.00	3.00	633.79
	3.80	47.00	11.00	3.00	633.79
	3.80	-47.00	11.00	3.00	633.79
	3.80	-47.00	-11.00	3.00	633.79
	3.80	-47.00	-3.67	0.00	639.79
	3.80	-47.00	3.67	0.00	639.79
	3.80	47.00	0.00	0.00	125.00
	3.80	47.00	5.50	0.00	125.00
	3.80	47.00	-5.50	0.00	125.00

	3.80	47.00	8.25	0.00	125.00
	3.80	47.00	2.75	514.79	125.00
	3.80	47.00	-2.75	514.79	125.00
	3.80	-47.00	-7.33	194.89	250.00
	3.80	-47.00	7.33	194.89	250.00
532	3.80	29.50	-11.00	3.00	324.00
	3.80	29.50	11.00	3.00	324.00
	3.80	-29.50	11.00	3.00	324.00
	3.80	-29.50	-11.00	3.00	324.00
	3.80	29.50	0.00	0.00	330.00
	3.80	-29.50	0.00	0.00	330.00
	1.13	0.00	-11.00	0.00	330.00
	1.13	0.00	11.00	0.00	330.00
533	3.80	49.50	-11.00	3.00	544.00
	3.80	49.50	11.00	3.00	544.00
	3.80	-49.50	11.00	3.00	544.00
	3.80	-49.50	-11.00	3.00	544.00
	3.80	49.50	0.00	0.00	550.00
	3.80	-49.50	-3.67	0.00	550.00
	3.80	-49.50	3.67	0.00	550.00
	1.13	0.00	-11.00	0.00	550.00
	1.13	0.00	11.00	0.00	550.00
	3.80	-49.50	0.00	250.00	300.00
	3.80	-49.50	-5.50	250.00	300.00

Armatura trasversale negli elementi

Elemento	Ascissa iniz. (cm)	Lunghezza tratto (cm)	Area orizz. (cm2)	Area vert. (cm2)	Passo (cm)
159	0.00	505.56	0.57	0.57	20.00
162	-103.00	490.00	0.57	0.57	20.00
163	0.00	60.00	1.01	1.01	10.00
	60.00	103.00	0.57	0.57	20.00
164	-103.00	490.00	0.57	0.57	20.00
165	0.00	60.00	1.01	1.01	10.00
	60.00	103.00	0.57	0.57	20.00
168	0.00	505.56	0.57	0.57	20.00
169	-103.00	490.00	0.57	0.57	20.00
170	0.00	60.00	1.01	1.01	10.00
	60.00	103.00	0.57	0.57	20.00
171	-103.00	490.00	0.57	0.57	20.00
172	0.00	60.00	1.01	1.01	10.00
	60.00	103.00	0.57	0.57	20.00
173	0.00	505.56	0.57	0.57	10.00
174	0.00	505.56	0.57	0.57	10.00
175	0.00	505.56	0.57	0.57	10.00
176	0.00	505.56	0.57	0.57	10.00
177	0.00	505.56	0.57	0.57	10.00
178	0.00	505.56	0.57	0.57	10.00
179	0.00	505.56	0.57	0.57	10.00
180	0.00	511.59	1.13	0.85	20.00
181	0.00	511.59	1.13	0.85	20.00
182	0.00	511.59	1.13	0.85	20.00
183	0.00	511.59	1.13	0.85	

					20.00
184	0.00	511.59	1.13	0.85	20.00
185	0.00	511.59	1.13	0.85	20.00
186	0.00	511.59	1.13	0.85	20.00
228	0.00	511.59	0.57	0.57	20.00
229	0.00	511.59	0.57	0.57	20.00
230	0.00	511.59	0.57	0.57	20.00
231	0.00	511.59	0.57	0.57	20.00
232	0.00	511.59	0.57	0.57	20.00
233	0.00	511.59	0.57	0.57	20.00
234	0.00	511.59	0.57	0.57	20.00
235	0.00	262.14	0.57	0.57	20.00
236	0.00	505.56	0.57	0.57	20.00
237	0.00	505.56	0.57	0.57	20.00
238	0.00	505.56	0.57	0.57	20.00
239	0.00	505.56	0.57	0.57	20.00
240	0.00	505.56	0.57	0.57	20.00
241	0.00	505.56	0.57	0.57	20.00
242	0.00	505.56	0.57	0.57	20.00
243	0.00	256.11	0.57	0.57	20.00
244	0.00	246.19	0.57	0.57	20.00
245	0.00	495.63	0.57	0.57	20.00
246	0.00	495.63	0.57	0.57	20.00
247	0.00	495.63	0.57	0.57	20.00
248	0.00	495.63	0.57	0.57	20.00
249	0.00	495.63	0.57	0.57	20.00
250	0.00	495.63	0.57	0.57	20.00
251	0.00	495.63	0.57	0.57	20.00
283	0.00	355.00	1.01	1.01	15.00
285	0.00	365.30	1.57	1.57	11.00
286	0.00	484.11	1.01	1.01	18.00
287	0.00	150.00	1.57	1.57	10.00
	150.23	164.00	1.01	1.01	18.00
288	0.00	639.79	1.01	1.01	18.00
290	0.00	60.00	1.01	1.01	10.00
	60.00	270.00	0.57	0.57	20.00
317	0.00	355.00	1.01	1.01	15.00
319	0.00	365.30	1.57	1.57	11.00
320	0.00	484.11	1.01	1.01	18.00
321	0.00	150.00	1.57	1.57	10.00
	150.23	164.00	1.01	1.01	18.00
322	0.00	639.79	1.01	1.01	18.00

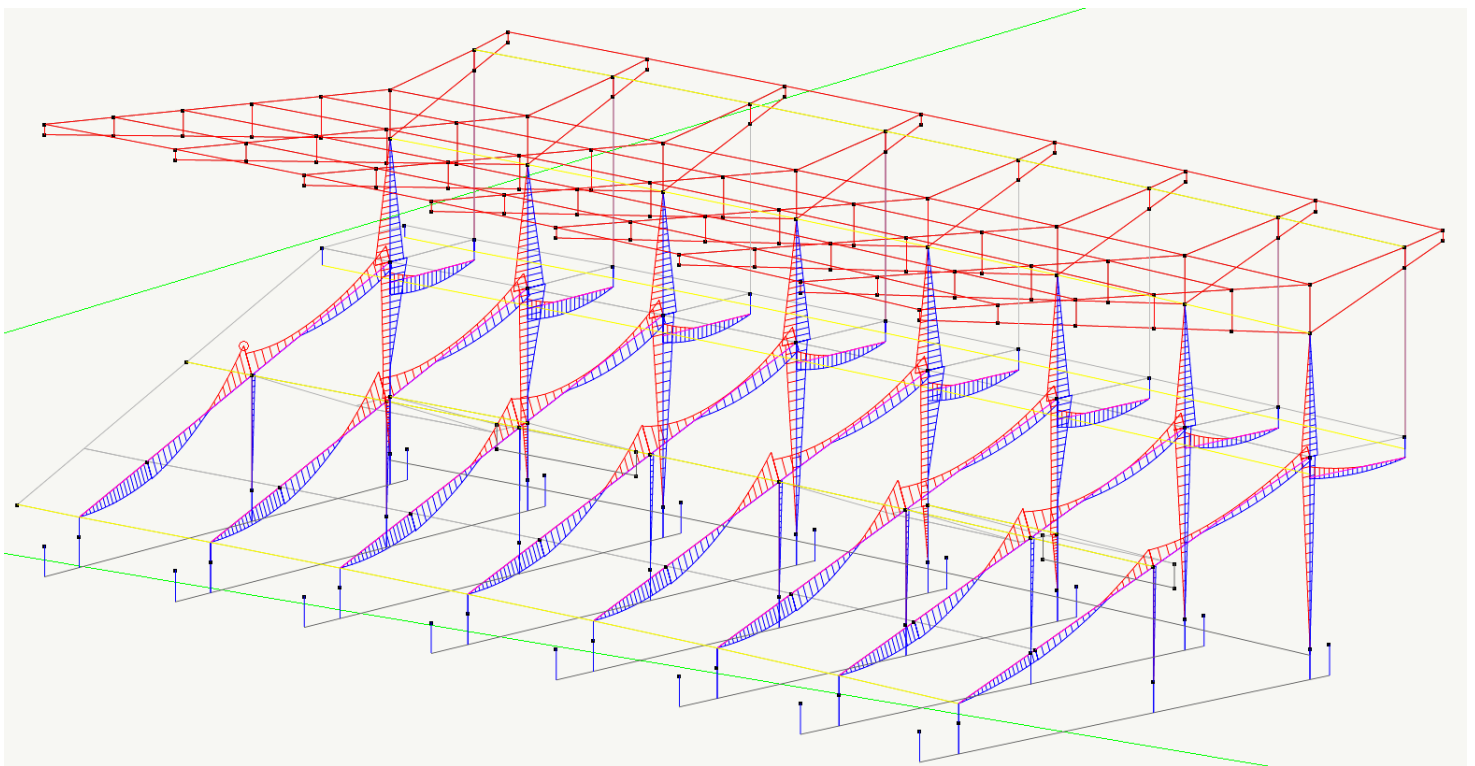
324	0.00	60.00	1.01	1.01	10.00
	60.00	270.00	0.57	0.57	20.00
351	0.00	355.00	1.01	1.01	15.00
353	0.00	365.30	1.57	1.57	11.00
354	0.00	484.11	1.01	1.01	18.00
355	0.00	150.00	1.57	1.57	10.00
	150.23	164.00	1.01	1.01	18.00
356	0.00	639.79	1.01	1.01	18.00
358	0.00	60.00	1.01	1.01	10.00
	60.00	270.00	0.57	0.57	20.00
359	0.00	60.00	1.01	1.01	10.00
	60.00	490.00	0.57	0.57	20.00
386	0.00	355.00	1.01	1.01	15.00
388	0.00	365.30	1.57	1.57	11.00
389	0.00	484.11	1.01	1.01	18.00
390	0.00	150.00	1.57	1.57	10.00
	150.23	164.00	1.01	1.01	18.00
391	0.00	639.79	1.01	1.01	18.00
393	0.00	60.00	1.01	1.01	10.00
	60.00	270.00	0.57	0.57	20.00
394	0.00	60.00	1.01	1.01	10.00
	60.00	490.00	0.57	0.57	20.00
421	0.00	355.00	1.01	1.01	15.00
423	0.00	365.30	1.57	1.57	11.00
424	0.00	484.11	1.01	1.01	18.00
425	0.00	150.00	1.57	1.57	10.00
	150.23	164.00	1.01	1.01	18.00
426	0.00	639.79	1.01	1.01	18.00
428	0.00	60.00	1.01	1.01	10.00
	60.00	270.00	0.57	0.57	20.00
455	0.00	355.00	1.01	1.01	15.00
457	0.00	365.30	1.57	1.57	11.00
458	0.00	484.11	1.01	1.01	18.00
459	0.00	150.00	1.57	1.57	10.00
	150.23	164.00	1.01	1.01	18.00
460	0.00	639.79	1.01	1.01	18.00
462	0.00	60.00	1.01	1.01	10.00
	60.00	270.00	0.57	0.57	20.00
489	0.00	355.00	1.01	1.01	15.00
491	0.00	365.30	1.57	1.57	11.00
492	0.00	484.11	1.01	1.01	18.00
493	0.00	150.00	1.57	1.57	10.00
	150.23	164.00	1.01	1.01	18.00
494	0.00	639.79	1.01	1.01	18.00
496	0.00	60.00	1.01	1.01	10.00
	60.00	270.00	0.57	0.57	20.00

497	0.00	60.00	1.01	1.01	10.00
	60.00	490.00	0.57	0.57	20.00
525	0.00	355.00	1.01	1.01	15.00
527	0.00	365.30	1.57	1.57	11.00
528	0.00	484.11	1.01	1.01	18.00
529	0.00	150.00	1.57	1.57	10.00
	150.23	164.00	1.01	1.01	18.00
530	0.00	639.79	1.01	1.01	18.00
532	0.00	60.00	1.01	1.01	10.00
	60.00	270.00	0.57	0.57	20.00
533	0.00	60.00	1.01	1.01	10.00
	60.00	490.00	0.57	0.57	20.00

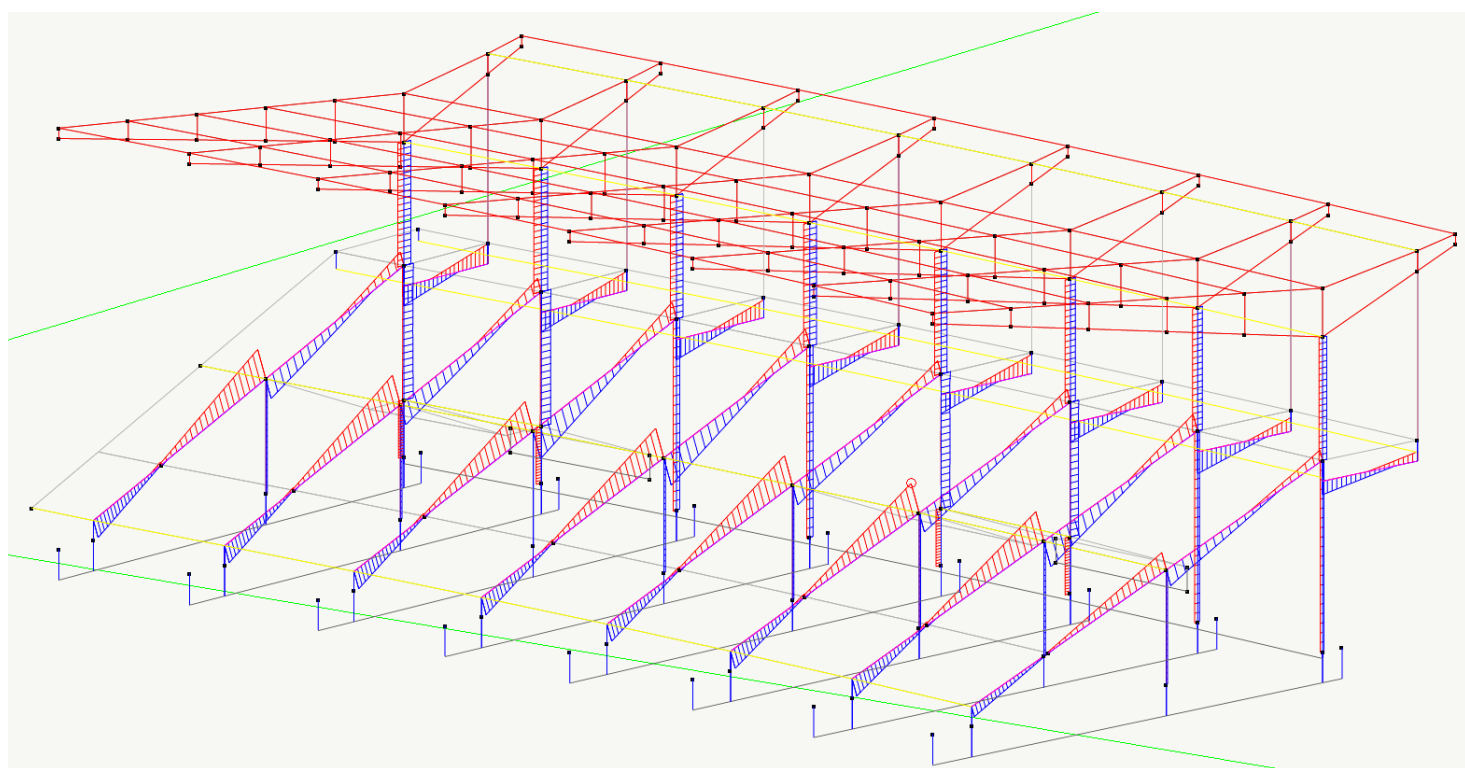
Rappresentazione dei diagrammi delle sollecitazioni M, N e T massime (solo combinazioni sismiche) ricavate dall'elaborato numerico.

Azione sismica: $E_x + E_y + E_z$

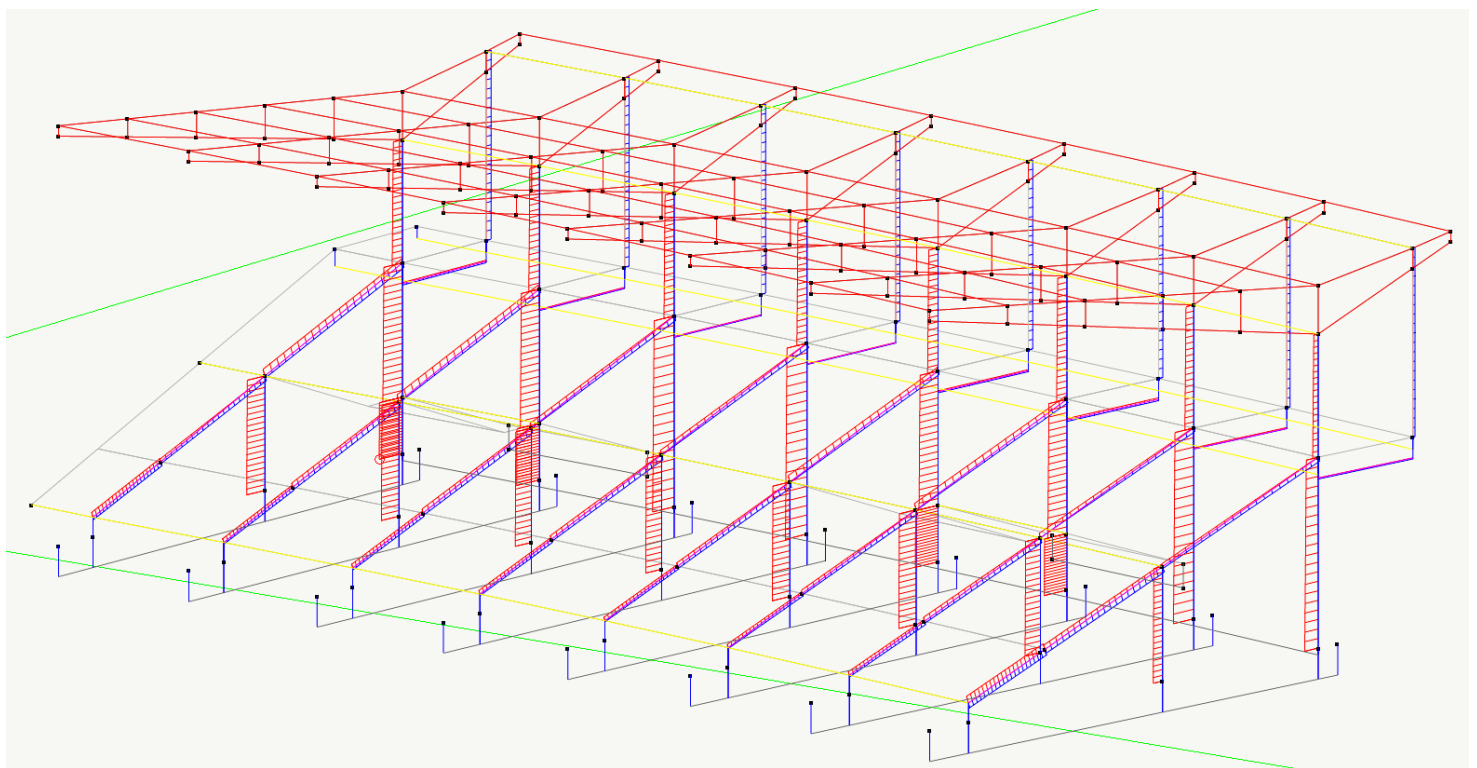
**Modello B
diagramma momenti flettenti
comb. sismiche $E_x + E_y + E_z$**



Modello B
diagramma Taglio
comb. sismiche $E_x + E_y + E_z$

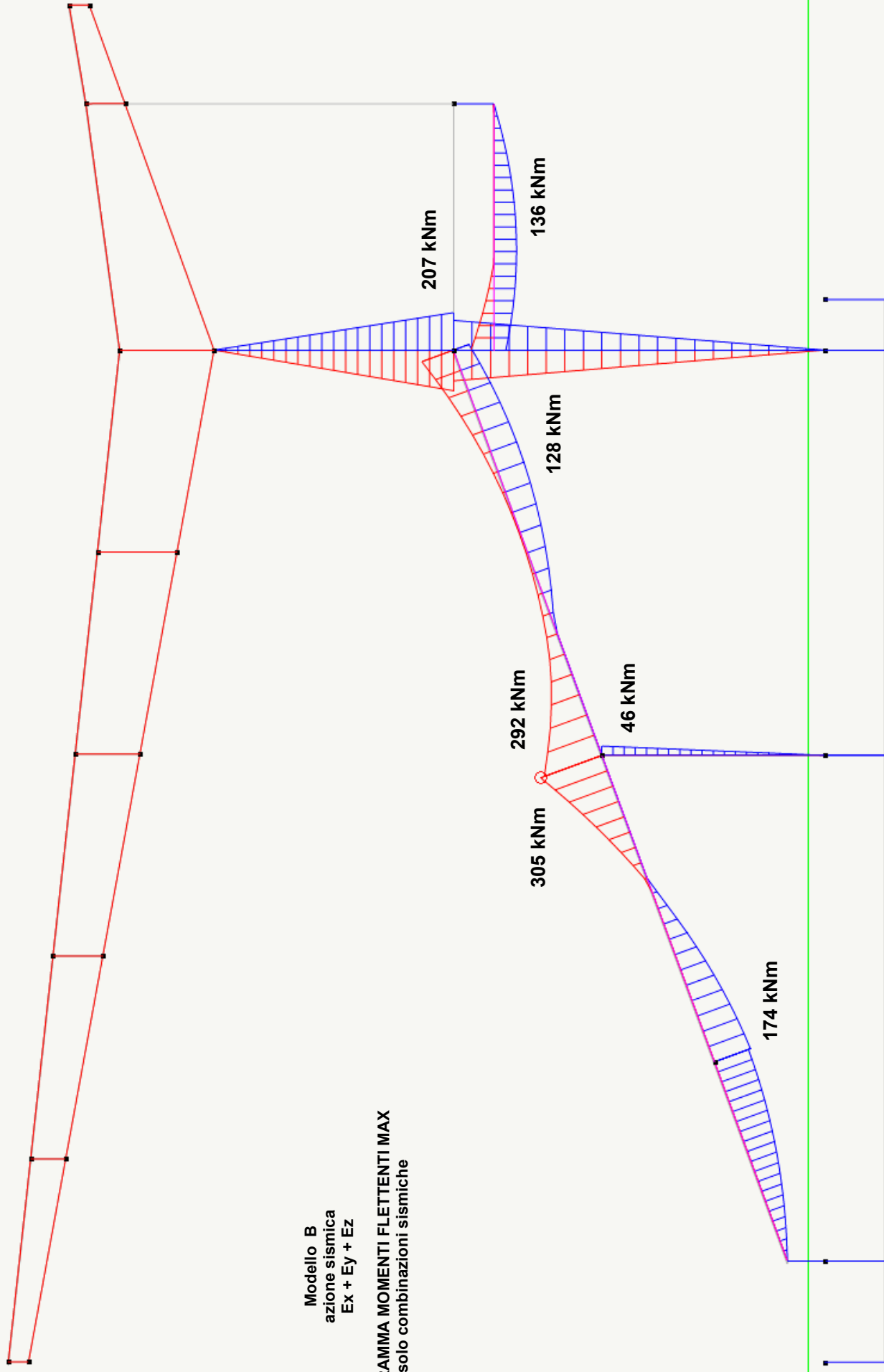


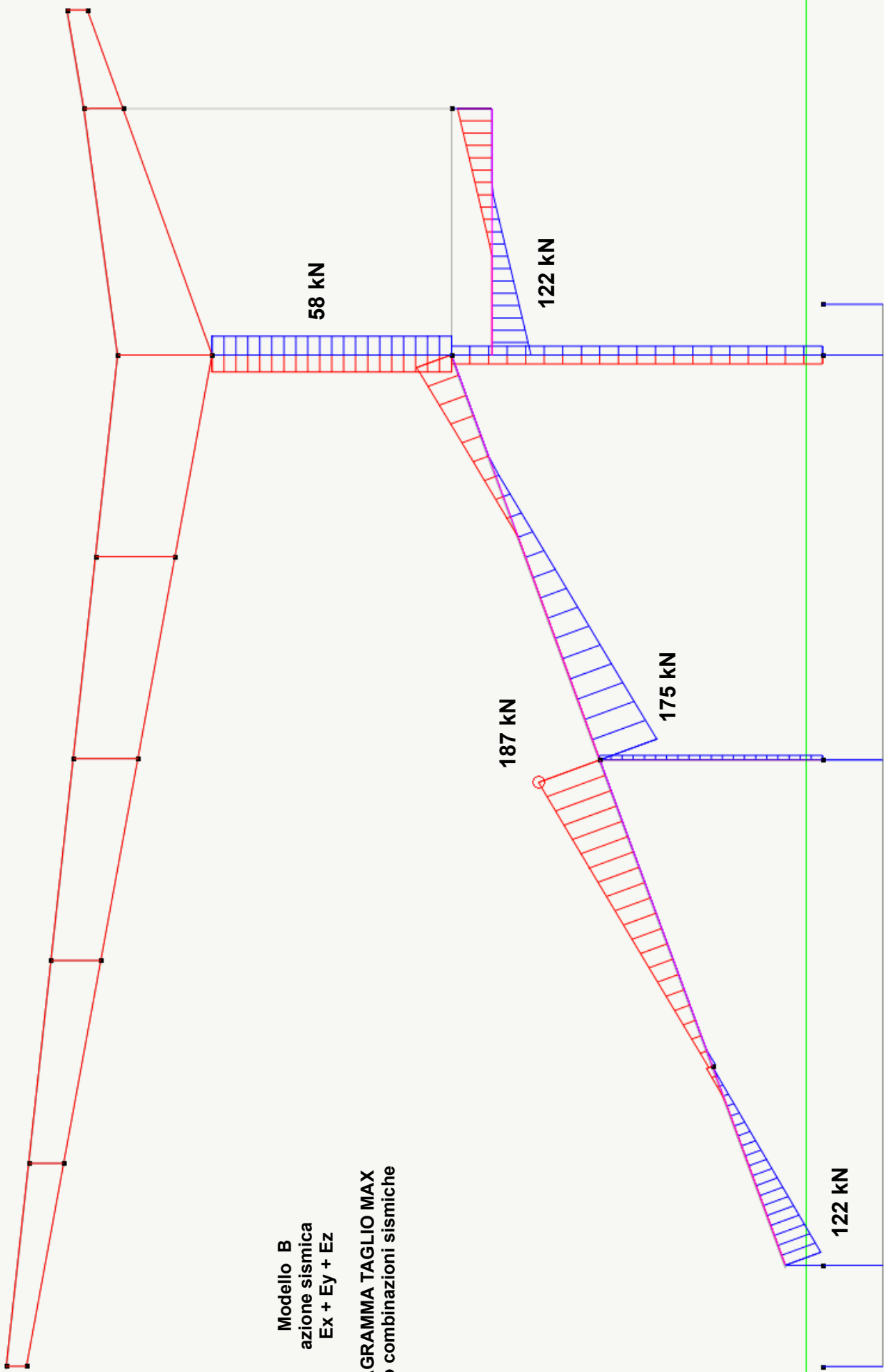
Modello B
diagramma azioni assiali
comb. sismiche $E_x + E_y + E_z$



Modello B
azione sismica
Ex + Ey + Ez

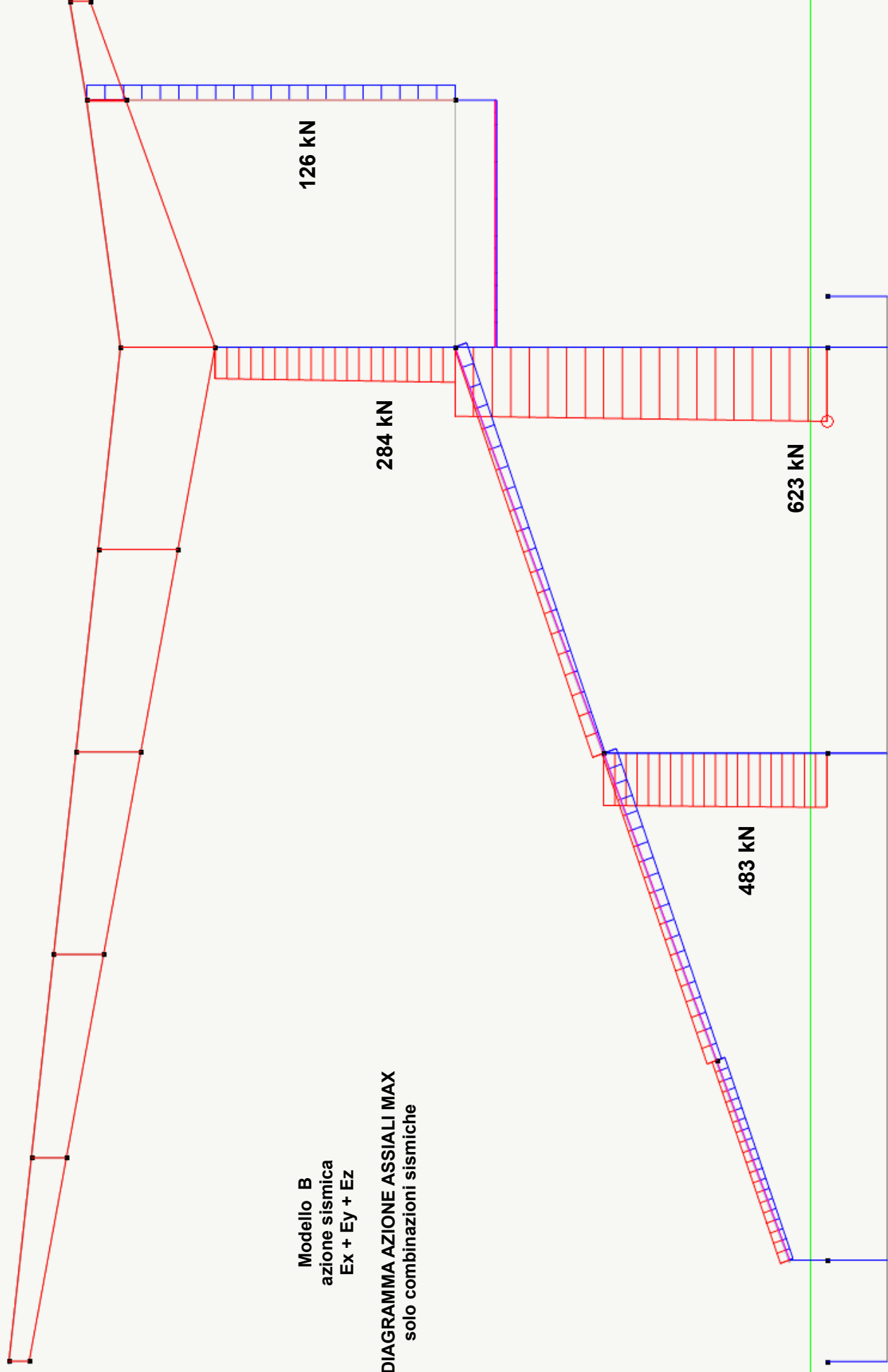
DIAGRAMMA MOMENTI FLETTENTI MAX
solo combinazioni sismiche





Modello B
azione sismica
 $E_x + E_y + E_z$

DIAGRAMMA AZIONE ASSIALI MAX
solo combinazioni sismiche



Verifiche

TrW B cons va 0,6Ag Exyz

MODELLO B - VERIFICA PILASTRI Ex + Ey + Ez

All-In-One EWS 47 (29.11.2018) build 7317

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Parametri verifica strutture esistenti

Le verifiche nel
seguito sono
effettuate
secondo i
requisiti previsti
dal Decreto 17
gennaio 2018
per le strutture
esistenti
analizzate con:

Spettro di
progetto con $q =$
1.500000
scalato a 1.5 per
elementi fragili

Il fattore di
confidenza
adottato è $CF =$
1.350000

I valori di
resistenza dei
materiali sono
opportunamente
ridotti del fattore
di confidenza

Classificazione membrature

Elem	P/T	Q.ta	R	Vpy (N)	Vpz (N)	Vuy (N)	Vuz (N)	Fs	Duttilità
162	P			517304.14	117260.32	200122.68	198246.05	0.39	Fragile
163	P			374692.56	183334.19	158786.66	154929.24	0.42	Fragile
164	P			514803.87	117135.31	199213.87	197410.74	0.39	Fragile
165	P			374024.25	181329.27	157852.84	154042.25	0.42	Fragile
169	P			514803.87	117260.32	199572.11	197740.01	0.39	Fragile
170	P			374247.02	181329.27	158197.34	154369.47	0.42	Fragile
171	P			516866.59	117260.32	199822.57	197970.21	0.39	Fragile
172	P			374692.56	183222.81	158513.76	154670.02	0.42	Fragile
283	P			330400.63	102420.63	413493.22	367055.64	1.25	Duttile
290	P			206188.96	82030.00	254794.14	254350.95	1.24	Duttile
317	P			332924.39	103682.51	414708.88	368194.96	1.25	Duttile
324	P			208115.98	82217.35	255567.48	255074.85	1.23	Duttile
351	P			330400.63	103472.19	413882.27	367420.27	1.25	Duttile
358	P			199337.34	79005.65	249330.31	249236.48	1.25	Duttile
359	P			294765.20	66972.22	361017.37	366403.40	1.22	Duttile
386	P			330400.63	103472.19	413901.13	367437.94	1.25	Duttile
393	P			199337.34	79005.65	248843.03	248780.36	1.25	Duttile
394	P			296005.45	66972.22	361430.61	366783.22	1.22	Duttile
421	P			332924.39	103682.51	414428.41	367932.11	1.24	Duttile
428	P			208115.98	82217.35	255563.70	255071.31	1.23	Duttile
455	P			332503.76	103472.19	414136.79	367658.80	1.25	Duttile
462	P			206188.96	82217.35	255221.46	254750.95	1.24	Duttile
489	P			320305.57	99949.44	408598.47	362468.24	1.28	Duttile
496	P			198480.88	78590.81	247792.43	247796.93	1.25	Duttile
497	P			289804.19	65869.78	357366.47	363047.80	1.23	Duttile
525	P			296750.44	91904.94	397178.31	351765.19	1.34	Duttile
532	P			169361.47	67038.66	226628.06	227985.81	1.34	Duttile
533	P			256730.80	58428.26	333561.97	341168.66	1.30	Duttile

Vengono calcolati i tagli **Vpy** e **Vpz** dovuti a fenomeni anelastici e i tagli ultimi **Vuy** e **Vuz**. Il minor fattore di sicurezza **Fs** tra i due valori nei due piani determina se l'elemento è **Duttile** o **Fragile**. Nel caso gli elementi siano rinforzati, viene riportata un **R** nella colonna omonima e le caratteristiche del rinforzo vengono riportate nella apposita tabella.

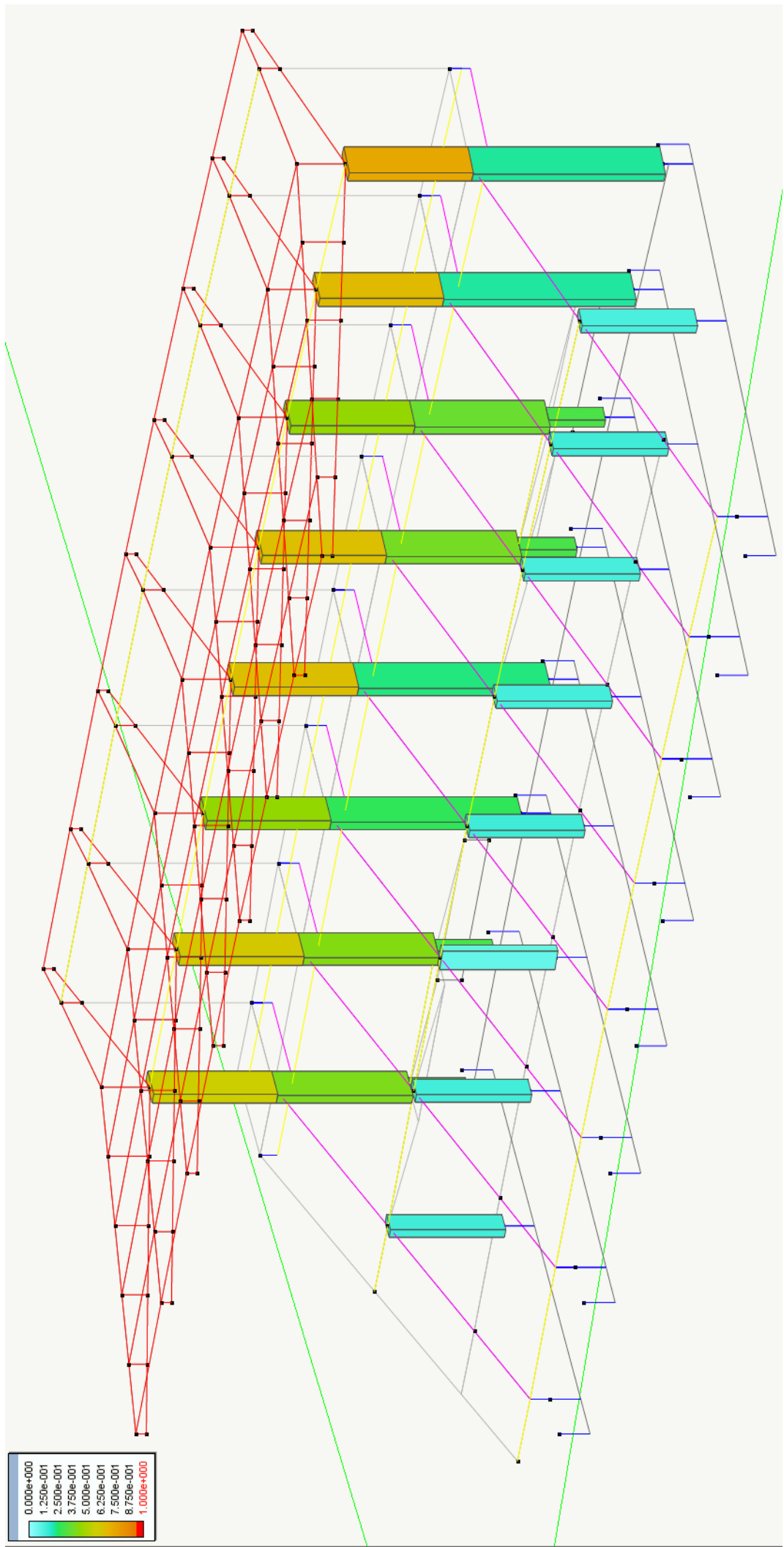
Combinazioni di carico di stato limite ultimo

1	-0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
2	-0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
3	-0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
	-0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1)

4	Dinamica SLVh X
5	0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
6	0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
7	0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
8	0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
9	-0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
10	-0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
11	-0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
12	-0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
13	0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
14	0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
15	0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
16	0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
17	-0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
18	-0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
19	-0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
20	-0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
21	0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
22	0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
23	0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
24	0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
25	1.50 * (1) vento - + 0.75 * (1) Qk2 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
26	1.50 * (1) vento + + 0.75 * (1) Qk2 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
27	0.90 * (1) vento - + 1.50 * (1) Qk2 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
28	0.90 * (1) vento + + 1.50 * (1) Qk2 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
29	0.90 * (1) vento - + 0.75 * (1) Qk2 + 1.50 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
30	0.90 * (1) vento + + 0.75 * (1) Qk2 + 1.50 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
31	1.00 * (1) G2 + 1.00 * (1) G1
32	1.50 * (1) vento - + 0.75 * (1) Qk2 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
33	1.50 * (1) vento + + 0.75 * (1) Qk2 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
34	0.90 * (1) vento - + 1.50 * (1) Qk2 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
35	0.90 * (1) vento + + 1.50 * (1) Qk2 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
36	0.90 * (1) vento - + 0.75 * (1) Qk2 + 1.50 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
37	0.90 * (1) vento + + 0.75 * (1) Qk2 + 1.50 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
38	1.30 * (1) G2 + 1.30 * (1) G1

Verifica a taglio

Elem	P/T	Q.ta	R	Cmb	Vdy (N)	Vdz (N)	Vuy (N)	Vuz (N)	Fs	Esito	PGA collasso
162	P			15	-75505.59	-6541.77	200122.68	198246.05	2.44	verificato	412.25
163	P			6	43318.19	-7863.24	158786.66	154929.24	3.09	verificato	1742.29
164	P			9	-77328.47	7256.31	199213.87	197410.74	2.35	verificato	408.62
165	P			5	40320.16	8450.99	157852.84	154042.25	3.22	verificato	2419.00
169	P			13	-73259.32	-5902.67	199572.11	197740.01	2.52	verificato	450.36
170	P			6	40872.54	-8132.82	158197.34	154369.47	3.21	verificato	2278.74
171	P			9	-67258.52	6831.21	199822.57	197970.21	2.69	verificato	507.79
172	P			5	42028.24	7693.58	158513.76	154670.02	3.18	verificato	1992.72
283	P			14	-54687.09	2758.73	220907.63	196926.00	3.82	verificato	453.42
290	P			14	-12215.30	-167.09	155570.98	153450.11	>10.0	verificato	3973.44
317	P			9	58155.30	-3432.49	222123.28	198065.33	3.58	verificato	433.97
324	P			14	-12491.37	453.64	156344.32	154174.01	>10.0	verificato	3700.22
351	P			14	50980.15	-2353.18	221296.68	197290.63	4.13	verificato	478.12
358	P			2	3939.61	1844.88	150107.15	148335.64	>10.0	verificato	5193.85
359	P			14	-26400.73	-144.99	208014.45	205499.52	7.84	verificato	864.99
386	P			14	-53211.11	1985.05	221315.54	197308.30	3.99	verificato	462.81



TrW B cons va 0,6Ag Exyz
MODELLO B - VERIFICA TRAVI Ex + Ey + Ez
 All-In-One EWS 47 (29.11.2018) build 7317
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Classificazione membrature									
Elem	P/T	Q.ta	R	Vpy (N)	Vpz (N)	Vuy (N)	Vuz (N)	Fs	Duttilità
285	T			624064.50	102476.46	749553.58	378849.96	1.33	Duttile
286	T			240650.85	61630.10	184640.72	147703.22	0.48	Fragile
287	T			315607.05	72571.13	147312.65	124611.18	0.69	Fragile
288	T			307165.72	53832.59	388609.66	307930.02	1.34	Duttile
319	T			624632.82	102571.18	749553.58	378849.96	1.33	Duttile
320	T			241969.17	61844.32	185079.45	148107.71	0.48	Fragile
321	T			313250.21	72571.13	147312.65	124611.18	0.69	Fragile
322	T			309323.38	54587.77	389695.52	308929.53	1.34	Duttile
353	T			624253.94	102476.46	749553.58	378849.96	1.33	Duttile
354	T			239082.07	59522.59	376516.54	301513.73	1.00	Duttile
355	T			313250.21	72571.13	147312.65	124611.18	0.69	Fragile
356	T			329153.45	51635.67	388609.66	307930.02	1.25	Duttile
388	T			624253.94	102571.18	749553.58	378849.96	1.33	Duttile
389	T			242364.67	62190.38	185590.56	148578.94	0.48	Fragile
390	T			313250.21	72571.13	147312.65	124611.18	0.69	Fragile
391	T			332630.82	53198.77	388609.66	307930.02	1.23	Duttile
423	T			624632.82	102571.18	749575.13	378869.69	1.33	Duttile
424	T			241310.01	61696.01	184716.27	147772.87	0.48	Fragile
425	T			314695.44	72571.13	147312.65	124611.18	0.69	Fragile
426	T			308891.85	54425.94	389206.17	308479.09	1.34	Duttile
457	T			624632.82	102741.68	749783.24	379060.27	1.33	Duttile
458	T			242364.67	62173.90	185436.92	148437.29	0.48	Fragile
459	T			314762.15	72571.13	147312.65	124611.18	0.69	Fragile
460	T			308891.85	54425.94	389314.17	308578.50	1.34	Duttile
491	T			627474.41	103063.73	750374.78	379601.98	1.33	Duttile
492	T			242760.16	62289.26	186027.21	148981.52	0.48	Fragile
493	T			312894.46	72482.20	147312.65	124611.18	0.69	Fragile
494	T			334356.95	53724.70	388609.66	307930.02	1.23	Duttile
527	T			593236.25	102102.32	749553.58	378849.96	1.40	Duttile
528	T			270065.95	61860.80	374479.41	299635.55	1.07	Duttile
529	T			292489.00	73193.70	148161.17	125402.71	0.64	Fragile
530	T			289643.02	52753.76	388609.66	307930.02	1.40	Duttile

Vengono calcolati i tagli **Vpy** e **Vpz** dovuti a fenomeni anelastici e i tagli ultimi **Vuy** e **Vuz**. Il minor fattore di sicurezza **Fs** tra i due valori nei due piani determina se l'elemento è **Duttile** o **Fragile**. Nel caso gli elementi siano rinforzati, viene riportata un **R** nella colonna omonima e le caratteristiche del rinforzo vengono riportate nella apposita tabella.

Combinazioni di carico di stato limite ultimo	
1	-0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
2	-0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
3	-0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
4	-0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
5	0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
6	0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
7	0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
8	0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
9	-0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
10	-0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
11	-0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
12	-0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
13	0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
14	0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
15	0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
16	0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
17	-0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z

18	-0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
19	-0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
20	-0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
21	0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
22	0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
23	0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
24	0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
25	1.50 * (1) vento - + 0.75 * (1) Qk2 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
26	1.50 * (1) vento + + 0.75 * (1) Qk2 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
27	0.90 * (1) vento - + 1.50 * (1) Qk2 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
28	0.90 * (1) vento + + 1.50 * (1) Qk2 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
29	0.90 * (1) vento - + 0.75 * (1) Qk2 + 1.50 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
30	0.90 * (1) vento + + 0.75 * (1) Qk2 + 1.50 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
31	1.00 * (1) G2 + 1.00 * (1) G1
32	1.50 * (1) vento - + 0.75 * (1) Qk2 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
33	1.50 * (1) vento + + 0.75 * (1) Qk2 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
34	0.90 * (1) vento - + 1.50 * (1) Qk2 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
35	0.90 * (1) vento + + 1.50 * (1) Qk2 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
36	0.90 * (1) vento - + 0.75 * (1) Qk2 + 1.50 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
37	0.90 * (1) vento + + 0.75 * (1) Qk2 + 1.50 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
38	1.30 * (1) G2 + 1.30 * (1) G1

Verifica a taglio

Elem	P/T	Q.ta	R	Cmb	Vdy (N)	Vdz (N)	Vuy (N)	Vuz (N)	Fs	Esito	PGA collasso
285	T			15	112317.05	-69.36	391237.17	213738.79	3.48	verificato	1229.85
286	T			23	187023.35	-63.47	192549.99	147703.22	1.03	verificato	164.75
287	T			23	-108111.26	369.90	259248.03	168291.09	2.39	verificato	1753.00
288	T			9	-124355.23	-149.54	205485.37	167101.49	1.65	verificato	509.47
319	T			11	108244.38	120.39	391237.17	213738.79	3.61	verificato	1338.66
320	T			23	186056.42	156.90	192549.99	148107.71	1.03	verificato	181.48
321	T			23	-107042.08	-140.00	258790.64	124611.18	2.41	verificato	1901.92
322	T			9	-126256.52	92.16	207448.32	153952.14	1.64	verificato	509.57
353	T			14	-112296.51	-149.74	411386.37	213738.79	3.65	verificato	1471.04
354	T			23	187079.52	50.92	192549.99	148442.61	1.03	verificato	159.83
355	T			23	-109636.83	-137.50	258547.45	124611.18	2.35	verificato	1521.77
356	T			9	-174986.12	-38.76	203729.51	165485.27	1.16	verificato	249.11
388	T			14	-111628.80	134.09	411386.37	213738.79	3.68	verificato	1531.40
389	T			23	186854.71	93.34	192549.99	148578.94	1.03	verificato	167.41
390	T			23	-107796.61	-120.03	258588.46	124611.18	2.39	verificato	1733.90
391	T			9	-173403.59	32.76	203442.15	152064.21	1.17	verificato	251.39
423	T			15	106696.57	80.88	391258.72	239225.27	3.66	verificato	1462.28
424	T			23	186753.57	25.76	192549.99	147772.87	1.03	verificato	169.28
425	T			23	-107492.74	-221.07	258977.57	124611.18	2.40	verificato	1787.21
426	T			13	-123923.06	-202.60	206958.97	153501.71	1.67	verificato	563.22
457	T			11	102361.43	81.42	391466.83	213949.10	3.82	verificato	1579.97
458	T			19	187407.04	-78.64	192549.99	148437.29	1.03	verificato	158.85
459	T			23	-108096.33	-205.20	259093.86	124611.18	2.39	verificato	1681.05
460	T			9	-120467.59	91.87	207066.97	153601.12	1.72	verificato	651.27
491	T			14	-122010.24	-54.94	412207.57	239957.56	3.38	verificato	1971.89
492	T			19	186407.18	-79.49	192549.99	148981.52	1.03	verificato	170.42
493	T			19	-107924.35	-122.55	258024.64	167149.86	2.39	verificato	1719.51
494	T			9	-161892.81	-30.78	205018.53	166671.78	1.27	verificato	388.60
527	T			14	-75470.64	-191.57	411386.37	213738.79	5.42	verificato	2590.17
528	T			23	109180.68	100.75	192549.99	147703.22	1.76	verificato	1835.60
529	T			19	-62767.67	270.14	258789.64	125402.71	4.09	verificato	3748.52
530	T			13	-100399.62	52.32	200104.05	152064.21	1.99	verificato	908.74
Minimo fattore di sicurezza:			1.026884	>=		1.00					

Verifica flessionale

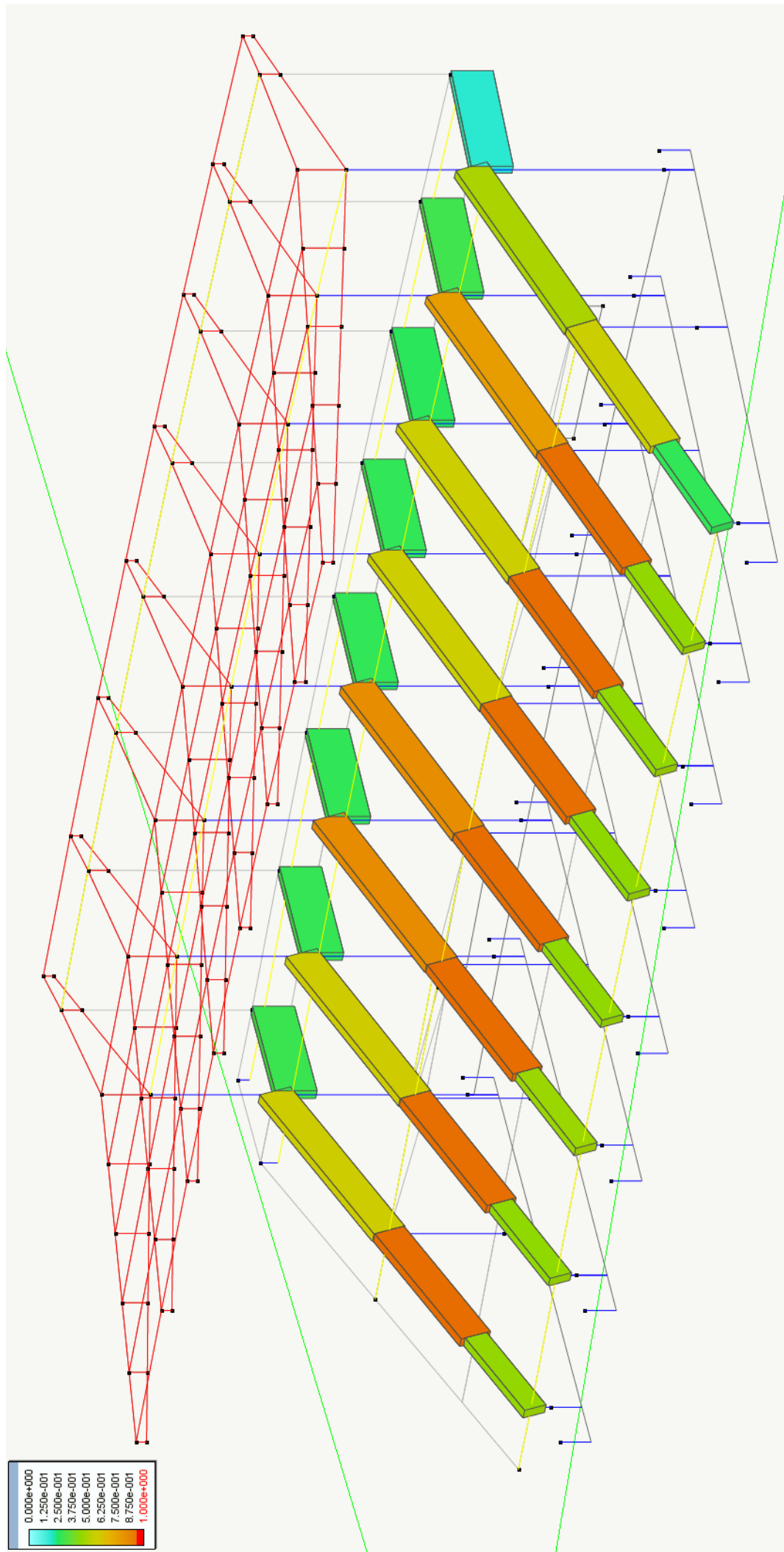
Elem	P/T	Q.ta	R	Cmb	Asc. (cm)	Mdy (Nxcmm)	Mdz (Nxcmm)	Mr (Nxcmm)	Fs	Esito	PGA collasso
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285	T	15	52.50	-12747103.36	7310.73	80440387.38	6.31	verificato	977.89
286	T	14	449.49	23993548.31	-44292.47	50101063.94	2.09	verificato	1628.23
287	T	23	328.14	-16856316.36	51278.71	36946122.92	2.19	verificato	943.69
288	T	14	583.88	11858647.26	-4927.07	33627759.42	2.84	verificato	337.07
319	T	11	52.50	-11531753.25	-22124.14	81032952.29	7.03	verificato	1069.35
320	T	14	449.49	23609187.65	63087.71	49152960.08	2.08	verificato	1929.24
321	T	23	328.14	-16529954.92	16165.78	37064635.90	2.24	verificato	1037.35
322	T	14	583.88	10974301.90	19029.39	34694376.26	3.16	verificato	359.49
353	T	11	206.40	-9941221.30	-6174.09	81032952.29	8.15	verificato	2173.99
354	T	21	469.13	27019250.83	12863.98	51997271.66	1.92	verificato	1330.35
355	T	23	328.14	-17321986.53	9992.41	37064635.90	2.14	verificato	819.80
356	T	21	14.97	26284038.47	-10456.07	58633998.66	2.23	verificato	1865.84
388	T	11	206.40	-9737109.01	3651.81	81032952.29	8.32	verificato	2279.83
389	T	14	449.49	24065945.81	12892.43	49630715.54	2.06	verificato	1513.70
390	T	23	328.14	-16760271.29	16887.16	37316475.99	2.23	verificato	956.15
391	T	17	34.61	22347443.08	8798.71	59137678.83	2.65	verificato	2320.65
423	T	15	206.40	-11060450.75	7357.26	81032952.29	7.33	verificato	2191.89
424	T	10	449.49	23674790.35	-53659.64	49152960.08	2.08	verificato	1884.90
425	T	23	328.14	-16667517.23	15685.22	37538687.83	2.25	verificato	995.89
426	T	21	34.61	18136526.98	-6206.53	60530206.37	3.34	verificato	2760.34
457	T	11	206.40	-10315857.34	-3763.09	81032952.29	7.86	verificato	2362.20
458	T	14	449.49	23552784.71	40514.59	49864037.98	2.12	verificato	2035.82
459	T	23	328.14	-16851759.27	12124.86	37420174.85	2.22	verificato	930.60
460	T	17	34.61	18016859.34	6980.99	60530206.37	3.36	verificato	2855.08
491	T	14	52.50	8599841.56	9940.90	96084101.03	>10.0	verificato	1907.34
492	T	10	449.49	23522701.28	-21141.97	49686268.50	2.11	verificato	1709.39
493	T	19	328.14	-16799261.06	-27774.66	36946122.92	2.20	verificato	932.04
494	T	17	34.61	21152001.52	14925.74	59345076.55	2.81	verificato	2716.06
527	T	14	52.50	6222027.12	14486.62	95610049.10	>10.0	verificato	2180.56
528	T	17	449.49	13871665.37	14563.68	51997271.66	3.75	verificato	4622.44
529	T	5	328.14	-9501877.38	-58332.95	34946216.34	3.68	verificato	3703.90
530	T	21	34.61	13317456.42	-12363.89	57685894.80	4.33	verificato	4370.97

Minimo fattore di sicurezza:

1.924453

>= 1.00



TrW B cons va 0,6Ag Exyz

MODELLO B - VERIFICA CORDOLI Ex + Ey + Ez

All-In-One EWS 47 (29.11.2018) build 7317

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Classificazione membrature									
Elem	P/T	Q.ta	R	Vpy (N)	Vpz (N)	Vuy (N)	Vuz (N)	Fs	Duttilità
159	T			64417.75	21379.26	169877.37	171911.32	2.64	Duttile
168	T			64417.75	21379.26	169864.41	171899.32	2.64	Duttile
173	T			33509.02	19298.20	154842.42	149583.45	4.62	Duttile
174	T			33809.97	19498.83	155493.07	150216.51	4.60	Duttile
175	T			33809.97	19605.42	155536.55	150258.81	4.60	Duttile
176	T			33759.81	19498.83	155304.18	150032.72	4.60	Duttile
177	T			33509.02	19448.68	155112.66	149846.38	4.63	Duttile
178	T			33509.02	19448.68	155116.22	149849.84	4.63	Duttile
179	T			33408.70	19248.04	154652.64	149398.79	4.63	Duttile
180	T			35380.77	54600.90	207413.83	194695.40	3.57	Duttile
181	T			35400.04	54645.49	207413.83	194695.40	3.56	Duttile
182	T			35424.29	54701.58	207413.83	194695.40	3.56	Duttile
183	T			35448.53	54774.26	207413.83	194695.40	3.55	Duttile
184	T			35469.85	54872.13	207413.83	194695.40	3.55	Duttile
185	T			35500.21	55010.98	207413.83	194695.40	3.54	Duttile
186	T			35546.93	55223.31	207413.83	194695.40	3.53	Duttile
228	T			48200.84	7934.04	130337.30	113249.27	2.70	Duttile
229	T			47470.34	7771.88	130337.30	113249.27	2.75	Duttile
230	T			47616.44	7864.54	130337.30	113249.27	2.74	Duttile
231	T			49113.97	8049.86	130337.30	113249.27	2.65	Duttile
232	T			49954.05	8235.19	131393.52	114132.08	2.63	Duttile
234	T			49223.55	8101.99	130481.81	113370.05	2.65	Duttile
235	T			86464.30	15823.33	130505.79	113390.09	1.51	Duttile
236	T			84862.10	16489.35	213114.67	211633.43	2.51	Duttile
237	T			86617.64	16890.61	214345.78	212750.32	2.47	Duttile
238	T			87620.80	17091.25	215174.89	213502.50	2.46	Duttile
239	T			82855.78	16012.85	211566.20	210228.64	2.55	Duttile
240	T			79846.29	15386.65	211336.10	210019.89	2.65	Duttile
241	T			81601.83	15686.82	211336.10	210019.89	2.59	Duttile
242	T			83608.15	16088.08	212036.32	210655.14	2.54	Duttile
243	T			141283.24	31334.77	211426.30	210101.72	1.50	Duttile
244	T			82423.61	30600.09	152555.33	152958.41	1.85	Duttile
245	T			48442.79	15598.63	152841.37	153223.37	3.16	Duttile
246	T			48243.21	15446.57	152555.33	152958.41	3.16	Duttile
247	T			63381.46	21250.17	167666.48	169863.34	2.65	Duttile
248	T			48240.24	15446.57	152555.33	152958.41	3.16	Duttile
249	T			49978.85	16299.44	152924.37	153300.26	3.06	Duttile
250	T			49632.17	16086.54	152555.33	152958.41	3.07	Duttile
251	T			63381.46	21022.08	167221.68	169451.32	2.64	Duttile

Vengono calcolati i tagli **Vpy** e **Vpz** dovuti a fenomeni anelastici e i tagli ultimi **Vuy** e **Vuz**. Il minor fattore di sicurezza **Fs** tra i due valori nei due piani determina se l'elemento è **Duttile** o **Fragile**. Nel caso gli elementi siano rinforzati, viene riportata un **R** nella colonna omonima e le caratteristiche del rinforzo vengono riportate nella apposita tabella.

Combinazioni di carico di stato limite ultimo	
1	-0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
2	-0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
3	-0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
4	-0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
5	0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
6	0.30 * (1) Dinamica SLVh Y + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
7	0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh X
8	0.30 * (1) Dinamica SLVh Y + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh X
9	-0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
10	-0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
11	-0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
12	-0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
13	0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
14	0.30 * (1) Dinamica SLVh X + -0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y

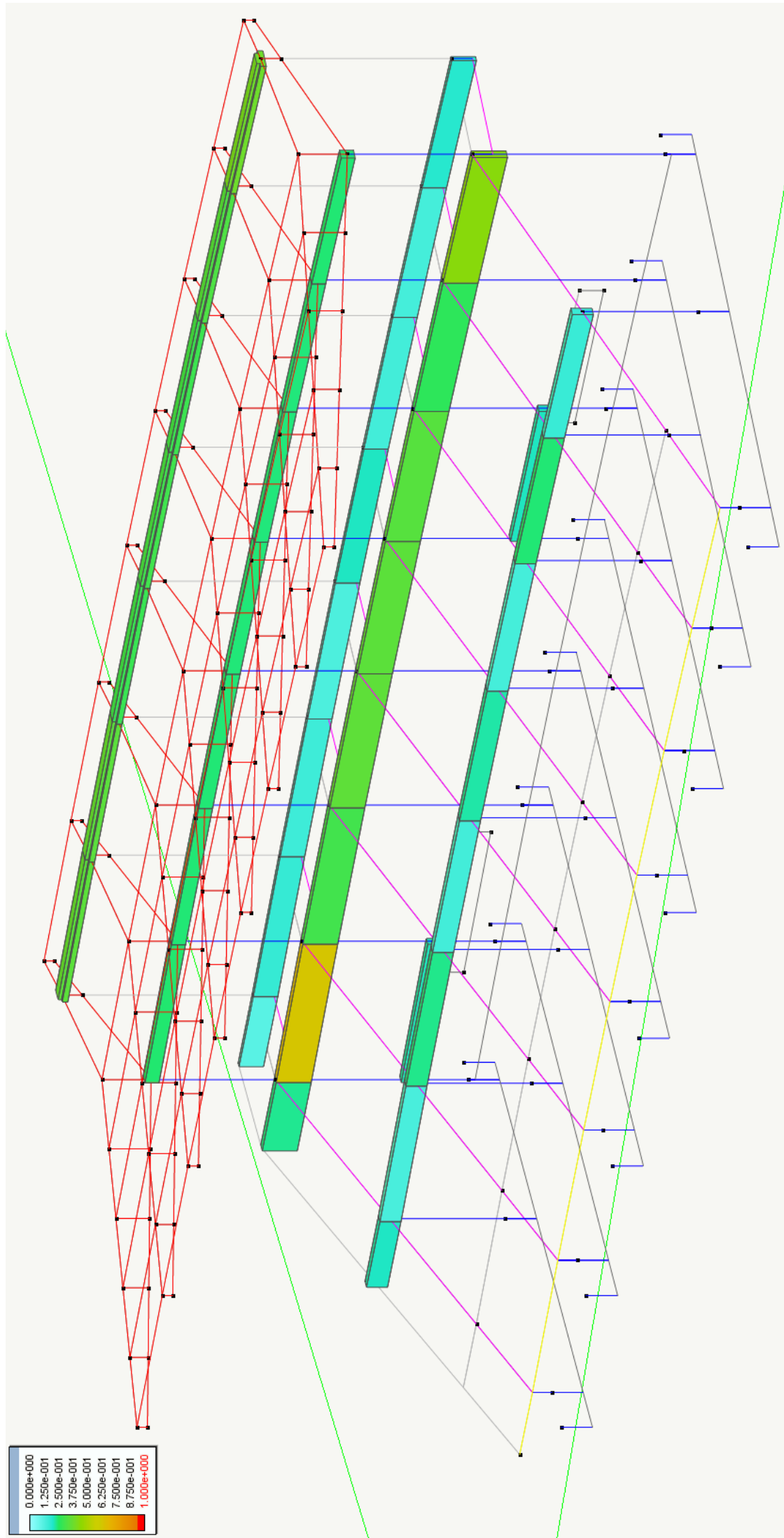
15	0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (1) Dinamica SLVh Y
16	0.30 * (1) Dinamica SLVh X + 0.30 * (2) Dinamica SLVv Z + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (1) Dinamica SLVh Y
17	-0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
18	-0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
19	-0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
20	-0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
21	0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
22	0.30 * (1) Dinamica SLVh X + -0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
23	0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + -1.00 * (2) Dinamica SLVv Z
24	0.30 * (1) Dinamica SLVh X + 0.30 * (1) Dinamica SLVh Y + 0.60 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1 + 1.00 * (2) Dinamica SLVv Z
25	1.50 * (1) vento - + 0.75 * (1) Qk2 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
26	1.50 * (1) vento + + 0.75 * (1) Qk2 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
27	0.90 * (1) vento - + 1.50 * (1) Qk2 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
28	0.90 * (1) vento + + 1.50 * (1) Qk2 + 1.05 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
29	0.90 * (1) vento - + 0.75 * (1) Qk2 + 1.50 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
30	0.90 * (1) vento + + 0.75 * (1) Qk2 + 1.50 * (1) Qk1 + 1.00 * (1) G2 + 1.00 * (1) G1
31	1.00 * (1) G2 + 1.00 * (1) G1
32	1.50 * (1) vento - + 0.75 * (1) Qk2 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
33	1.50 * (1) vento + + 0.75 * (1) Qk2 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
34	0.90 * (1) vento - + 1.50 * (1) Qk2 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
35	0.90 * (1) vento + + 1.50 * (1) Qk2 + 1.05 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
36	0.90 * (1) vento - + 0.75 * (1) Qk2 + 1.50 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
37	0.90 * (1) vento + + 0.75 * (1) Qk2 + 1.50 * (1) Qk1 + 1.30 * (1) G2 + 1.30 * (1) G1
38	1.30 * (1) G2 + 1.30 * (1) G1

Verifica a taglio

Elem	P/T	Q.ta	R	Cmb	Vdy (N)	Vdz (N)	Vuy (N)	Vuz (N)	Fs	Esito	PGA collasso
159	T			2	-11907.45	-56.74	86512.05	87323.28	7.23	verificato	3733.53
168	T			5	11712.38	57.64	86499.09	87311.27	7.35	verificato	3850.71
173	T			6	-7583.38	1210.34	76848.67	74241.29	8.70	verificato	7133.60
174	T			6	-7583.38	1241.60	77499.32	74874.35	8.74	verificato	8577.35
175	T			5	-7583.38	-841.95	77542.79	74916.65	9.17	verificato	10776.89
176	T			1	-7583.38	-1339.95	77310.43	74690.57	8.62	verificato	8279.98
177	T			1	-7583.38	-705.50	77118.91	74504.23	9.28	verificato	11510.30
178	T			2	7583.38	1251.44	77122.46	74507.68	8.69	verificato	8091.12
179	T			2	-7583.38	1194.96	76658.89	74056.64	8.69	verificato	8128.48
180	T			5	-15153.02	6617.78	102426.58	96145.87	4.61	verificato	3767.69
181	T			5	-11927.80	5005.17	102426.58	96145.87	5.93	verificato	3190.14
182	T			1	-12386.22	3371.47	102426.58	96145.87	6.41	verificato	3528.97
183	T			5	-12352.13	-3979.39	102426.58	96145.87	6.17	verificato	3295.33
184	T			2	12399.25	-2704.59	102426.58	96145.87	6.70	verificato	3945.79
185	T			3	-12622.61	-3593.28	102426.58	96145.87	6.23	verificato	3010.88
186	T			2	15328.94	-7926.13	102426.58	96145.87	4.31	verificato	3452.36
228	T			6	10762.28	20.21	64364.10	55925.57	5.97	verificato	1877.50
229	T			7	-9195.95	11.59	64364.10	55925.57	6.99	verificato	2816.09
230	T			5	-9443.52	-10.29	64364.10	55925.57	6.81	verificato	2725.77
231	T			5	-10908.90	-18.21	64364.10	55925.57	5.89	verificato	2621.61
232	T			5	-8286.20	-11.75	65420.32	56808.37	7.88	verificato	4286.12
234	T			5	-10042.37	-7.70	64508.61	56046.35	6.42	verificato	2149.53
235	T			19	6823.96	-25.93	64532.58	56066.39	9.42	verificato	13216.84
236	T			2	32519.61	199.86	106142.07	109206.71	3.24	verificato	617.32
237	T			4	27460.14	-142.39	107373.19	109206.71	3.89	verificato	996.29
238	T			5	-29834.87	-297.18	108202.30	109206.71	3.59	verificato	735.68
239	T			5	-30678.41	-188.08	104593.60	109206.71	3.39	verificato	800.40
240	T			5	-26125.81	-149.97	104363.50	109206.71	3.97	verificato	961.62
241	T			2	28820.60	130.51	104363.50	109206.71	3.61	verificato	937.76
242	T			5	-37223.97	189.44	105063.73	109206.71	2.81	verificato	507.78
243	T			6	17006.75	345.49	104453.71	109206.71	6.02	verificato	2096.83
244	T			19	10343.19	121.68	75335.97	75535.02	7.20	verificato	4482.46
245	T			7	-12068.14	-173.03	75622.01	75799.98	6.18	verificato	3554.08
246	T			5	-13478.78	-117.45	75335.97	75535.02	5.54	verificato	2533.44
247	T			5	-11859.53	195.81	84301.16	85275.29	6.99	verificato	3356.82
248	T			2	12334.91	55.29	75335.97	75535.02	6.08	verificato	2811.85

249	T		2	11030.53	112.94	75705.01	75876.87	6.79	verificato	4580.61
250	T		5	-12972.76	60.40	75335.97	75535.02	5.78	verificato	2254.43
251	T		5	-11448.61	-125.28	83856.36	84863.27	7.25	verificato	3822.95
Minimo fattore di sicurezza:		2.808724	>=		1.00					

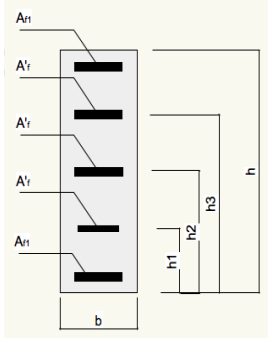
Verifica flessionale											
Elem	P/T	Q.ta	R	Cmb	Asc. (cm)	Mdy (Nxcm)	Mdz (Nxcm)	Mr (Nxcm)	Fs	Esito	PGA collasso
159	T			10	252.78	-2048627.91	-74261.63	9865906.49	4.81	verificato	187816.24
168	T			12	252.78	-2019592.47	-74529.81	9836278.25	4.87	verificato	40813.26
173	T			7	252.78	-958461.90	20013.92	3973117.80	4.14	verificato	20967.86
174	T			5	252.78	-958461.90	-33159.36	4038299.94	4.21	verificato	13280.59
175	T			16	252.78	-958461.90	-28251.56	4038299.94	4.21	verificato	48437.43
176	T			12	252.78	-958461.90	95883.69	4026448.64	4.18	verificato	3594.65
177	T			5	252.78	-958461.90	30581.21	3990894.75	4.16	verificato	41380.25
178	T			8	252.78	-958461.90	-20063.81	3990894.75	4.16	verificato	12834.71
179	T			1	252.78	-958461.90	-26794.66	3943489.55	4.11	verificato	14687.19
180	T			1	5.00	1378622.59	-1623291.97	5578968.71	2.62	verificato	595.27
181	T			4	502.48	1164542.57	-302933.50	3753868.78	3.12	verificato	445.62
182	T			7	5.00	1050545.95	-887291.22	4737526.54	3.45	verificato	638.01
183	T			5	5.00	1083402.77	-368491.45	3836827.87	3.35	verificato	587.84
184	T			5	5.00	1027381.90	-573366.72	4133110.33	3.51	verificato	518.70
185	T			7	5.00	1247078.10	-686460.06	4121259.03	2.90	verificato	451.84
186	T			2	497.17	1250624.72	-1917013.12	6598180.36	2.88	verificato	607.06
228	T			6	506.59	1443154.33	-3597.98	7569986.81	5.25	verificato	870.24
229	T			2	506.59	899595.55	-3901.43	6906314.11	7.68	verificato	1250.33
230	T			7	5.00	1145376.37	-3291.06	8044038.74	7.02	verificato	1344.52
231	T			5	5.00	1579882.81	-2152.57	7724053.69	4.89	verificato	1304.46
232	T			5	5.00	1076641.39	-1534.76	8192179.97	7.61	verificato	2243.66
234	T			5	5.00	1395063.43	2252.09	8286990.35	5.94	verificato	1072.14
235	T			17	257.14	884805.18	-3164.50	8103295.23	9.16	verificato	6455.54
236	T			2	489.06	5098584.43	48845.99	11821370.70	2.32	verificato	275.14
237	T			4	489.06	3577282.46	27734.59	13421295.96	3.75	verificato	529.07
238	T			7	16.50	4299073.57	-67955.30	12769474.55	2.97	verificato	374.61
239	T			5	16.50	4552252.07	-34430.95	13139827.62	2.89	verificato	455.70
240	T			2	489.06	3923390.70	41192.91	11169549.30	2.85	verificato	413.87
241	T			2	489.06	3887647.83	-31487.16	12947244.03	3.33	verificato	593.09
242	T			5	16.50	6769697.39	-39452.39	10695497.37	1.58	verificato	193.40
243	T			5	239.60	2838270.55	16395.44	12473192.10	4.39	verificato	776.10
244	T			19	232.18	1341167.15	32328.33	6586329.06	4.91	verificato	1588.69
245	T			7	14.00	1055930.74	27753.99	7072232.28	6.70	verificato	1769.77
246	T			5	14.00	1776650.27	37017.21	7380366.04	4.15	verificato	917.87
247	T			7	14.00	1004912.58	-53375.89	9561004.91	9.50	verificato	1716.81
248	T			2	481.63	1555121.41	22180.46	7149265.72	4.60	verificato	979.39
249	T			2	481.63	1008639.19	-19986.10	6906314.11	6.85	verificato	2064.58
250	T			5	14.00	1676949.52	27483.05	7285555.65	4.34	verificato	864.32
251	T			4	481.63	900348.87	-33526.85	9371384.14	>10.0	verificato	1893.00
Minimo fattore di sicurezza:		1.579881	>=		1.00						



VERIFICHE COMUNI

VERIFICA SEZIONI (sezioni sollecitate maggiormente sotto azione sismica)

MOD. A e B condizione dinamica $E_x + E_y + E_z$

Elemento	Pilastro piano superiore			Scheda	1d
Sezione	Base pilastro				
Armatura	 h = 100 cm $h_1 = 23$ cm $h_2 = 50$ cm $h_3 = 77$ cm b = 30 cm c = 3 cm Af = 3 ø 20 Af' = 2 ø 18 Af'' = 3 ø 20				
Sollecitazioni	Combinazione	10	Nx =	223	kN
			Ty =	63	kN
			Mz =	224	kN m
			My =	18	kN m

VERIFICA A PRESSO FLESSIONE Comb. 10

Titolo : pilastro piano superiore

N° Vertici Zoom N° barre Zoom

N°	x [cm]	y [cm]
1	0	0
2	33	0
3	33	100
4	0	100

Sollecitazioni
S.L.U. Metodo n

N Ed kN
M xEd kNm
M yEd kNm

Materiali
Aq 42 C24/29

ϵ_{su} ‰ ϵ_{c2} ‰
 f_{yd} N/mm² ϵ_{cu} ‰
 E_s N/mm² f_{cd} N/mm²
 E_s/E_c f_{cc}/f_{cd} ?
 ϵ_{syd} ‰ $\sigma_{c,adm}$ N/mm²
 $\sigma_{s,adm}$ N/mm² τ_{co} N/mm²
 τ_{c1} N/mm²

Tipo Sezione
☐ Rettan.re ☐ Trapezi
☐ a T ☐ Circolare
☐ Rettangoli ☒ Coord.

P.to applicazione N
☒ Centro ☐ Baricentro cls
☐ Coord.[cm] xN yN

Tipo rottura
Lato calcestruzzo - Acciaio snervato

Metodo di calcolo
☒ S.L.U.+ ☐ S.L.U.-
☐ Metodo n

Tipo flessione
☐ Retta ☒ Deviata

N° rett.

Calcola MRd Dominio Mx-My

angolo asse neutro θ°

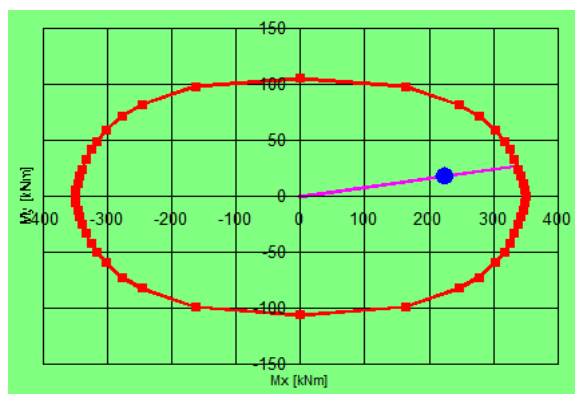
☐ Precompresso

M xRd kN m M yRd kN m

σ_c N/mm² σ_s N/mm²

ϵ_c ‰ ϵ_s ‰

d cm x x/d δ



VERIFICA A TAGLIO

Verifica relativa a:

pilastro piano superiore

dinamico

Sezione:

<u>base</u>	<u>b</u> =	330 mm	
<u>altezza</u>	<u>h</u> =	1000 mm	<u>d</u> = 955 mm
<u>copriferro</u>	<u>c</u> =	45 mm	<u>d*</u> = 859,5 mm
<u>Arm. long.</u>	<u>A_{sl}</u> =	3408 mmq	<u>ρ_l</u> = 0,0108
<u>Arm. trasv.</u>	<u>A_{sw}</u> =	100 mmq	
<u>passo staffe</u>	<u>s</u> =	150 mm	
<u>inclinaz. st.</u>	<u>α</u> =	90	

Materiali:

Acciaio

Omogeneo

f_{yk} = 170,37 MPa

f_{yd} = 148,15 MPa

γ_a = 1,15

Calcestruzzo

C24/29

f_{ck} = 17,93 MPa

f_{cd} = 10,16 MPa

γ_c = 1,5

Sollecitazioni: Sforzo normale agente:

N_{ed} = 218,0 kN

σ_{cp} = 0,66 Mpa

Sforzo di taglio agente:

V_{ed} = 63,0 kN

I) Verifica senza specifica armatura a taglio

Parametri:

k = 1,458

γ_{min} = 0,261

V_{Rdmin} = 113,4 kN

V_{Rsd} = 179,32 kN

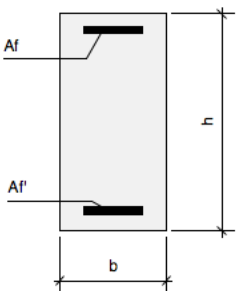
>

V_{ed}

verificato

N.B.: Non è necessaria armatura specifica a taglio

MODELLO A e B dinamico $E_x + E_y + E_z$

Elemento	Cordolo alto					Scheda	2d
Sezione	Estremità						
Armatura			h = 100 cm b = 25 cm c = 3 cm Af = 3 ø 18 armatura superiore Af' = 2 ø 18 armatura inferiore				
Sollecitazioni	Combinazione	5	Nx =	21	kN		
			Ty =	31	kN		
			Mz =	59	kN m		

VERIFICA A FLESSIONE Comb. 5

Titolo : cordolo alto

N° strati barre **Zoom**

N°	b [cm]	h [cm]
1	25	100

N°	As [cm²]	d [cm]
1	7.63	3
2	5.09	97

Tipo Sezione
☒ Rettang. re ☐ Trapezi
☐ a T ☐ Circolare
☐ Rettangoli ☐ Coord.

Sollecitazioni
S.L.U. **Metodo n**

N _{Ed}	21	0 kN
M _{Ed}	-59	0 kNm
M _{yEd}	0	0

P.to applicazione N
☒ Centro ☐ Baricentro cls
☐ Coord.[cm] xN yN

Tipo rottura
 Lato acciaio - Acciaio snervato

Metodo di calcolo
☐ S.L.U. + ☒ S.L.U. -
☐ Metodo n

Tipo flessione
☐ Retta ☒ Devia

Materiali
 Aq 42 C24/29

ϵ_{su}	67.5 ‰	ϵ_{c2}	2 ‰
f_{yd}	170.7 N/mm²	ϵ_{cu}	3.5 ‰
E_s	200.000 N/mm²	f_{cd}	10.16 ‰
E_s / E_c	15	f_{cc} / f_{cd}	0.8 ?
ϵ_{syd}	0.853 ‰	$\sigma_{c,adm}$	9.5
$\sigma_{s,adm}$	140 N/mm²	τ_{co}	0.5867
		τ_{c1}	1.8

M x_{Rd} kN m

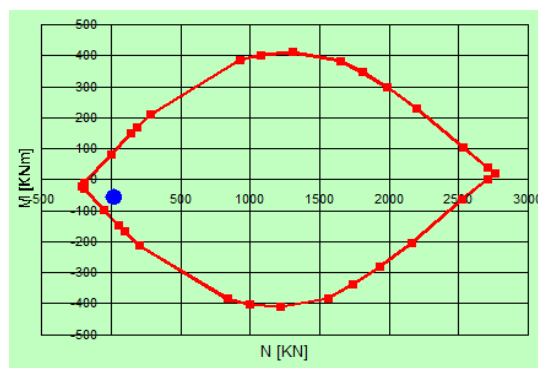
σ_c	-10.16 N/mm²		
σ_s	170.7 N/mm²		
ϵ_c	2.89 ‰		
ϵ_s	67.5 ‰		
d	97 cm		
x	3.983	x/d	0.04106
δ	0.7		

N° rett.

Calcola MRd **Dominio M-N**

L₀ cm **Col. modello**

☐ Precompresso



VERIFICA A TAGLIO

Verifica relativa a:

cordolo alto

dinamico

Sezione:

base	b =	250 mm	
altezza	h =	1000 mm	d = 970 mm
copriferro	c =	30 mm	d* = 873 mm
Arm. long.	A_{sl} =	1270 mmq	ρ_t = 0,0052
Arm. trasv.	A_{sw} =	100 mmq	
passo staffe	s =	200 mm	
inclinaz. st.	α =	90	

Materiali:

Acciaio

Omogeneo

f_{yk} = 170,37 MPa

f_{yd} = 148,15 MPa

γ_s = 1,15

Calcestruzzo

C24/29

f_{ck} = 17,93 MPa

f_{cd} = 10,16 MPa

γ_c = 1,5

Sollecitazioni: Sforzo normale agente:

N_{Ed} = 0,0 kN

σ_{cp} = 0,00 MPa

Sforzo di taglio agente:

V_{Ed} = 31,0 kN

1) Verifica senza specifica armatura a taglio

Parametri:

k = 1,454

V_{min} = 0,260

V_{Rdmin} = 63,0 kN

V_{Rsd} = 89,27 kN

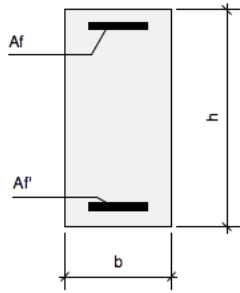
>

V_{Ed}

verificato

N.B.: Non è necessaria armatura specifica a taglio

MODELLO A e B dinamico Ex + Ey + Ez

Elemento	Cordolo metà gradinata			Scheda	3d
Sezione	Estremità				
Armatura	 <h>h = 60 cm</h> <h>b = 25 cm</h> <h>c = 3 cm</h> <h>Af = 3 ø 18 armatura superiore</h> <h>Af' = 2 ø 18 armatura inferiore</h>				
Sollecitazioni	Combinazione	19	Nx = 3	kN	
			Ty = 12	kN	
			Mz = 16	kN m	

VERIFICA A FLESSIONE Comb. 19

Titolo : cordolo metà gradinata

N° strati barre Zoom

N°	b [cm]	h [cm]
1	25	60

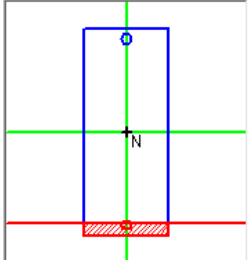
N°	As [cm²]	d [cm]
1	7,63	3
2	5,09	57

Tipo Sezione

☒ Rettan.re ☐ Trapezi

☐ a T ☐ Circolare

☐ Rettangoli ☐ Coord.



Sollecitazioni

S.L.U. **Metodo n**

N _{Ed}	3	0	kN
M _{xEd}	-16	0	kNm
M _{yEd}	0	0	

P.to applicazione N

☒ Centro ☐ Baricentro cls

☐ Coord.[cm] xN yN

Tipo rottura

Lato calcestruzzo - Acciaio snervato

Materiali

Aq 42 C24/29

ε _{su}	67,5 ‰	ε _{c2}	2 ‰
f _{yd}	170,7 N/mm²	ε _{cu}	3,5 ‰
E _s	200.000 N/mm²	f _{cd}	10,16
E _s /E _c	15	f _{cc} /f _{cd}	0,8
ε _{syd}	0,853 ‰	σ _{c,adm}	9,5
σ _{s,adm}	140 N/mm²	τ _{co}	0,5867
		τ _{c1}	1,8

M_{xRd} -72,25 kN m

σ_c -10,16 N/mm²

σ_s 170,7 N/mm²

ε_c 3,5 ‰

ε_s 51,99 ‰

d 57 cm

x 3,595 x/d 0,06307

δ 0,7

Metodo di calcolo

☒ S.L.U.+ ☐ S.L.U.-

☐ Metodo n

Tipo flessione

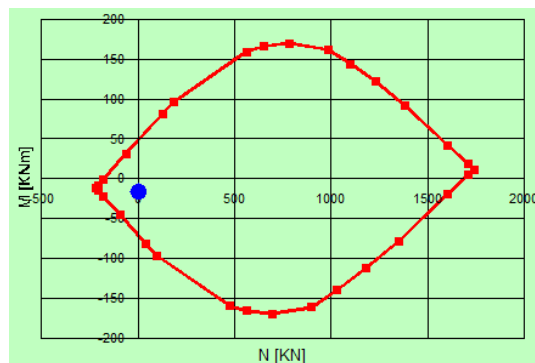
☒ Retta ☐ Deviata

N° rett. 100

Calcola MRd Dominio M-N

L₀ 0 cm Col. modello

☐ Precompresso



VERIFICA A TAGLIO Comb. 3

VERIFICA A TAGLIO					
Verifica relativa a:		cordolo metà gradinata dinamico			
Sezione:		base	b =	250 mm	
		altezza	h =	600 mm	d = 570 mm
		copriferro	c =	30 mm	d* = 513 mm
		Arm. long.	A _{sl} =	1270 mmq	ρ _l = 0,0089
		Arm. trasv.	A _{sw} =	100 mmq	
		passo staffe	s =	200 mm	
		inclinaz. st.	α =	90	
Materiali:		Acciaio	Omogeneo	f _{yk} = 170,37 MPa	f _{yd} = 148,15 MPa
				γ _s = 1,15	
		Calcestruzzo	C24/29	f _{ck} = 17,93 MPa	f _{cd} = 10,16 MPa
				γ _c = 1,5	
Solicitazioni:		Sforzo normale agente:	N _{Ed} =	0,0 kN	σ _{mp} = 0,00 Mpa
		Sforzo di taglio agente:	V _{Ed} =	12,0 kN	
I) Verifica senza specifica armatura a taglio					
Parametri:		k =	1,592		
		γ _{min} =	0,298	V _{Rdmin} =	42,4 kN
		V_{Rsd} = 68,58 kN > V_{Ed} verificato			
N.B.: Non è necessaria armatura specifica a taglio					

VERIFICA GIUNTO TECNICO

Esiste già un giunto tecnico (variabile tra 3 e 5 cm) che però è, in alcuni casi, di dimensioni inadeguate. Nella realizzazione del progetto illustrato verranno pertanto fatti degli interventi in modo da migliorare la situazione attuale al fine di attenuare gli eventuali urti, così come indicato nelle NTC 2018. Nel progetto, come richiesto dall'ufficio Sismico della Regione Toscana, sede di Pistoia, i giunti sono stati dimensionati per una accelerazione pari ad $a_g = 0,183$ (ossia pari a quella del sito per nuove costruzioni di classe III) anziché per $0,6 a_g$ come è stato fatto per il progetto di miglioramento. L'elaborato numerico dei due modelli, relativo al calcolo con azione sismica pari ad a_g è riportato nel fascicolo dei calcoli. Di seguito viene riportata una tabella con gli spostamenti nei punti più significativi della struttura. L'azione dinamica è considerata nelle tre direzioni: Ex + Ey + Ez (combinata tra loro).

Direzione X

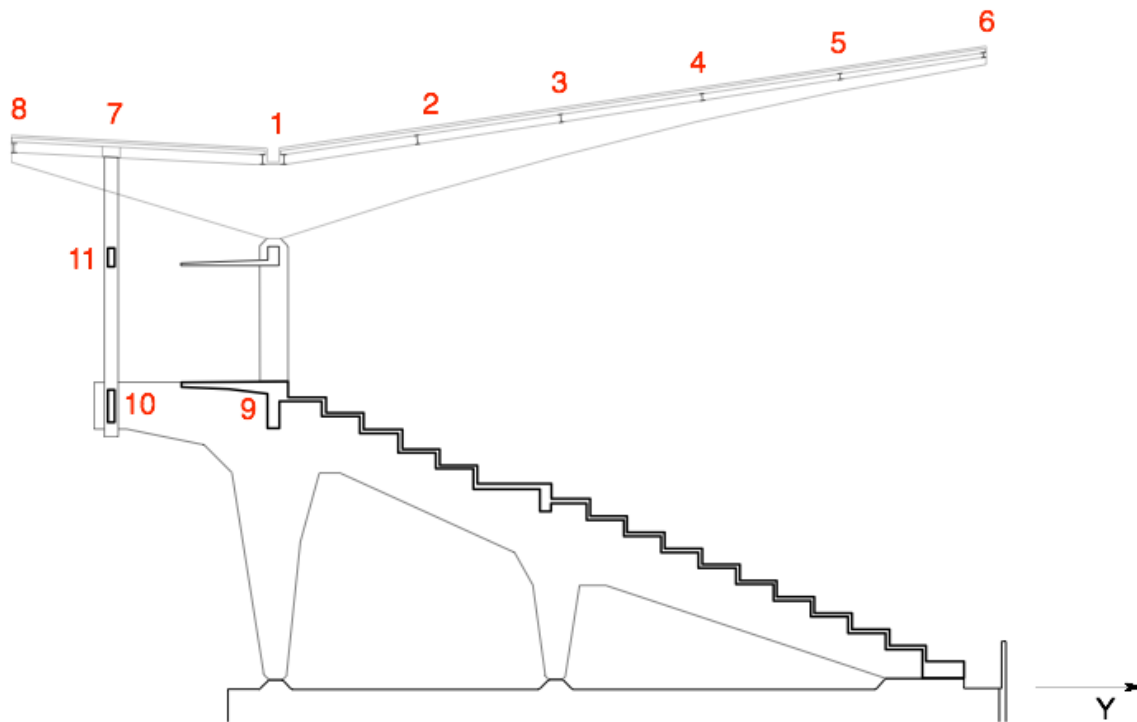
Quota	Modello	A $w [cm]$	B $w [cm]$	$\mu\Delta x_A$ $[cm]$	$\mu\Delta x_B$ $[cm]$	Δw_x $[cm]$
	Nodo					
10,50 m	1	1,9	2,2	2,9	3,3	6,2
	2	4,2	4,4	6,3	6,6	12,9
	3	6,1	6,7	9,2	10,0	19,2
	4	7,7	8,7	11,5	13,1	24,6
	5	8,6	9,9	12,9	14,9	27,8
	6	9,2	10,3	13,8	15,4	29,2
	7	5,1	4,2	7,7	6,3	14,0
	8	5,5	4,3	8,3	6,5	14,8
5,50 m	9	0,8	0,2	1,2	0,3	1,5
	10	0,9	0,2	1,4	0,3	1,7
8,00 m	11	3,0	2,1	4,5	3,2	7,7

Direzione Y

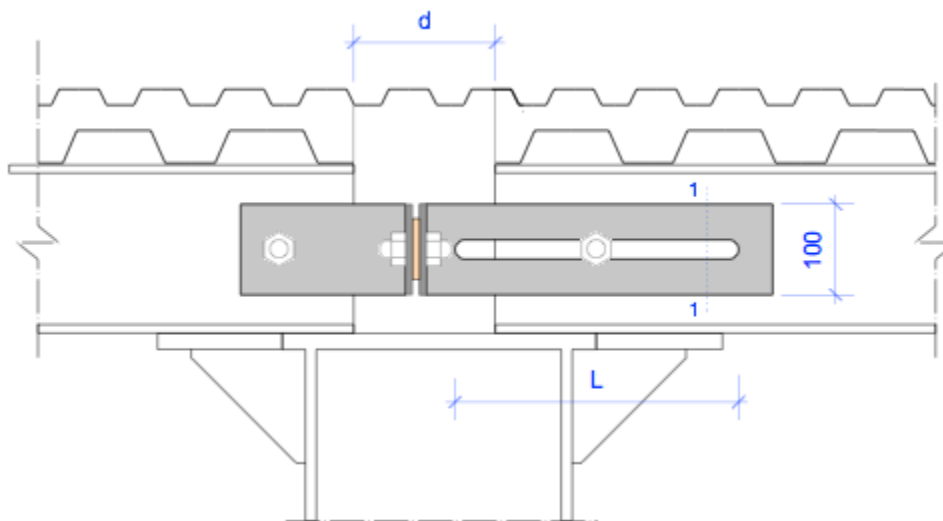
Quota	Modello	A $w [cm]$	B $w [cm]$	$\mu\Delta x_A$ $[cm]$	$\mu\Delta x_B$ $[cm]$	Δw_x $[cm]$
	Nodo					
10,50 m	1	0,8	1,0	1,2	1,5	2,7
	2	0,9	1,1	1,4	1,7	3,1
	3	0,9	1,2	1,4	1,8	3,2
	4	1,0	1,3	1,5	2,0	3,5
	5	1,0	1,3	1,5	2,0	3,5
	6	1,1	1,4	1,7	2,1	3,8
	7	0,9	1,0	1,4	1,5	2,9
	8	0,9	1,0	1,4	1,5	2,9
5,50 m	9	0,2	0,1	0,3	0,2	0,5
	10	0,2	0,1	0,3	0,2	0,5
8,00 m	11	0,6	0,6	0,9	0,9	1,8

Dove: $\Delta w = w_{E,din} + w_{E,st}$ con $w_{E,din} = \mu_d w_{Ee}$ e $w_{Ee} = \text{comb.}[w_{Ex}; w_{Ey}; w_{Ez}]$
 Essendo $T_1 = 1,05 \text{ s}$ e $T_C = 0,554 \text{ s}$ si ha $\mu_d = q = 1,5$

Per tutti i giunti sotto quota 5,50 m è sufficiente una dimensione $\geq 2,0 \text{ cm}$.



Particolare giunto in copertura



Acciaio S235

Spessore piatti = 8 mm

Bulloni M16 cl. 6.8

Dadi cl. 6

$f_{tb} = 600 \text{ N/mm}^2$

Asole: - direz. x $L = 280 \text{ mm}$

- direz. y $L = 40 \text{ mm}$

Verifica bullone:

$$F_{Rd} = 0,5 f_{tb} A_{res} / \gamma_{M2} = 37,7 \text{ kN}$$

$$\text{con: } A_{res} = 157 \text{ mm}^2$$

$$\gamma_{M2} = 1,25$$

$$F_{Ed} = 5,4 \text{ kN} \text{ (max azione del vento sul singolo bullone)}$$

Verifica piastra (sez 1-1):

sez. 8x41,5 mm

$$W_{el} = 2296 \text{ mm}^3$$

$$A_v = 332 \text{ mm}^2$$

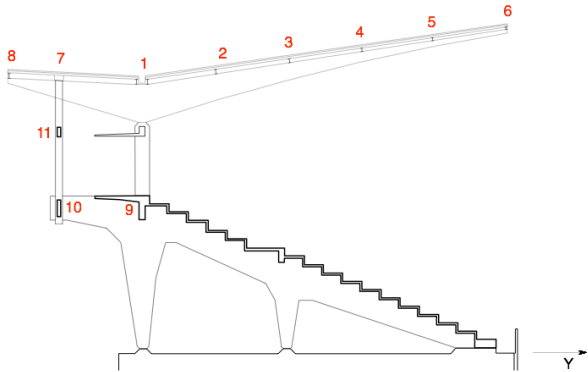
$$V_{Rd} = 37 \text{ kN}$$

$$M_{Rd} = 514 \text{ kN mm}$$

$$V_{Ed} = 2,7 \text{ kN}$$

$$M_{Ed} = 378 \text{ kN mm}$$

<i>Direz. X</i>	Nodo	d (mm)
	1	≥ 40
	2 – 8	≥ 75
	3	≥ 96
	4 – 5 - 6	≥ 146



Nella *direzione Z* gli spostamenti massimi registrati per la sola azione sismica (combinata per le tre direzioni) sono quelli riportati nella tabella sottostante.

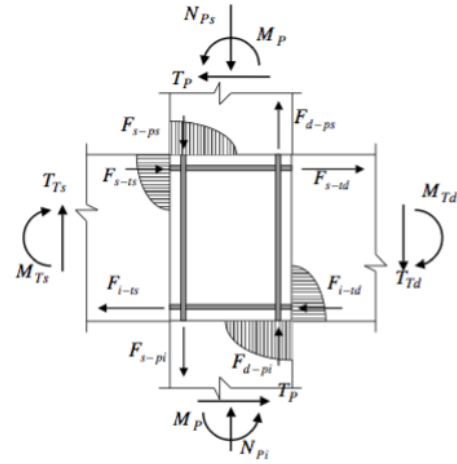
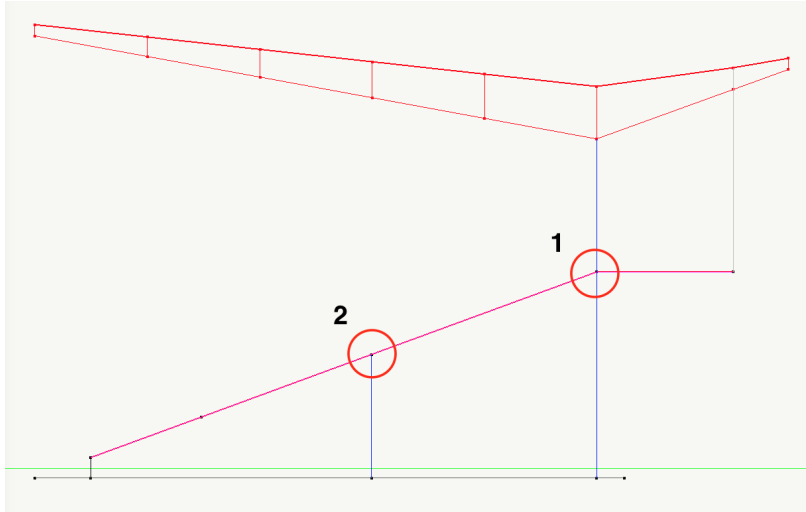
<i>Mod.</i>	<i>nodo</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>
<i>A</i>	w_A [cm]	≈ 0	0,7	1,4	2,2	3,0	4,1	0,9	1,2
	$\mu\Delta z_A$ [cm]	≈ 0	1,0	2,1	3,2	4,5	6,1	1,3	1,7
<i>B</i>	w_B [cm]	≈ 0	0,5	1,0	1,6	2,2	3,0	0,6	0,8
	$\mu\Delta z_B$ [cm]	≈ 0	0,7	1,4	2,0	2,9	3,8	0,8	1,2

VERIFICA NODI TELAIO C.A. Azione dinamica 0,6 Ag - (Ex + Ey)

Si verificano i due nodi della struttura in c.a. In corrispondenza della sommità dei pilastri. I pilastri sono a sezione variabile ed pertanto si prende la sezione mediana dello stesso: nodo 1 sez. 30x200 cm; nodo 2 sezione 30x130 cm.

I nodi verificati sono quelli indicati nella figura sottostante.

Questi nodi non sono confinati in quanto non rispettano le limitazioni di cui al § 7.4.4.3 delle NTC.



La verifica si effettua sulla base di quanto indicato nella Circolare 02/02/2009 n. 617/C §C8.7.2.5. Le sollecitazioni più gravose agenti sul nodo con l'azione sismica (nelle comb. Ex+Ey), ricavate dal modello numerico, sono le seguenti:

<i>nodo 1:</i>	trave sx sez. h 100 cm; trave dx sez. h 130 cm.
comb.:	G1 + G2 + 0,6 Qk1 + SLVx + 0,3 SLVy
	M _{ts} = -171 kNm M _{id} = 78 kNm
	V _n = F _{s,ts} + F _{s,td} - T _p
taglio da traz. presente su armatura sup.	F _{s,ts} + F _{s,td} ≈ -129 kN
taglio da pilastro superiore	T _p ≈ 42 kN
taglio totale agente sul nodo	V _n ≈ -171 kN
taglio da pilastro superiore	N _p ≈ 208 kN
area sezione media nodo	A _g = 6000 cm ²
resistenza a compressione cls	f _c = 24 MPa
fattore di confidenza	FC = 1,35
coefficiente parziale cls	γ _c = 1,5

Resistenza a trazione $\sigma_{nt} = N_p / (2A_g) - [(N_p / (2A_g))^2 + (V_n / A_g)^2]^{0,5} \approx 16 \text{ N/cm}^2 < 0,3 \sqrt{[f_c / (FC \gamma_c)]} = 103 \text{ N/cm}^2 \quad ok$

Resistenza a compressione $\sigma_{nc} = N_p / (2A_g) + [(N_p / (2A_g))^2 + (V_n / A_g)^2]^{0,5} \approx 52 \text{ N/cm}^2 < 0,5 f_c / (FC \gamma_c) = 593 \text{ N/cm}^2 \quad ok$

<i>nodo 2:</i>	trave sx sez. h 130 cm; trave dx sez. h 135 cm.
comb.:	G1 + G2 + 0,6 Qk1 + SLVx + 0,3 SLVy
	M _{ts} = -300 kNm M _{id} = 232 kNm
	V _n = F _{s,ts} + F _{s,td} - T _p
taglio da traz. presente su armatura sup.	F _{s,ts} + F _{s,td} ≈ -68 kN
taglio da pilastro superiore	T _p ≈ 0 kN
taglio totale agente sul nodo	V _n ≈ -68 kN
taglio da pilastro superiore	N _p = 0 kN
area sezione media nodo	A _g = 3900 cm ²
resistenza a compressione cls	f _c = 24 MPa
fattore di confidenza	FC = 1,35

Resistenza a trazione $\sigma_{nt} = N_p / (2A_g) - [(N_p / (2A_g))^2 + (V_n / A_g)^2]^{0,5} = 18 \text{ N/cm}^2 < 0,3 \sqrt{[f_c / (FC \gamma_c)]} = 103 \text{ N/cm}^2 \quad ok$

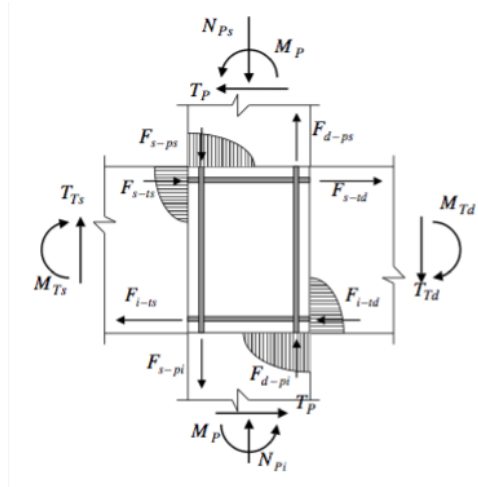
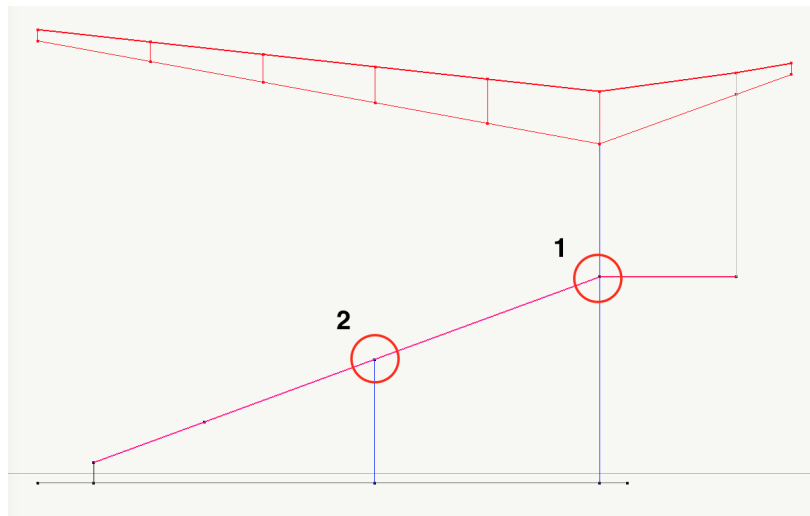
Resistenza a compressione $\sigma_{nc} = N_p / (2A_g) + [(N_p / (2A_g))^2 + (V_n / A_g)^2]^{0,5} = 18 \text{ N/cm}^2 < 0,5 f_c / (FC \gamma_c) = 593 \text{ N/cm}^2 \quad ok$

VERIFICA NODI TELAIO C.A. Azione dinamica 0,6 Ag - (Ex + Ey + Ez)

Si verificano i due nodi della struttura in c.a. In corrispondenza della sommità dei pilastri. I pilastri sono a sezione variabile ed pertanto si prende la sezione mediana dello stesso: nodo 1 sez. 30x200 cm; nodo 2 sezione 30x130 cm.

I nodi verificati sono quelli indicati nella figura sottostante.

Questi nodi non sono confinati in quanto non rispettano le limitazioni di cui al § 7.4.4.3 delle NTC.



La verifica si effettua sulla base di quanto indicato nella Circolare 02/02/2009 n. 617/C §C8.7.2.5. Le sollecitazioni più gravose agenti sul nodo con l'azione sismica (nelle comb. Ex+Ey+Ez), ricavate dal modello numerico, sono le seguenti:

nodo 1:	trave sx sez. h 100 cm; trave dx sez. h 130 cm.
comb.:	$G_1 + G_2 + 0,6 Q_{k1} + SLV_x + 0,3 SLV_y - 0,3 SLV_z$
	$M_{ts} = -175 \text{ kNm}$ $M_{td} = 87 \text{ kNm}$
	$V_n = F_{s,ts} + F_{s,td} - T_p$
taglio da traz. presente su armatura sup.	$F_{s,ts} + F_{s,td} \approx -129 \text{ kN}$
taglio da pilastro superiore	$T_p \approx 43 \text{ kN}$
taglio totale agente sul nodo	$V_n \approx -168 \text{ kN}$
taglio da pilastro superiore	$N_p \approx 213 \text{ kN}$
area sezione media nodo	$A_g = 6000 \text{ cm}^2$
resistenza a compressione cls	$f_c = 24 \text{ MPa}$
fattore di confidenza	$FC = 1,35$
coefficiente parziale cls	$\gamma_c = 1,5$

Resistenza a trazione $\sigma_{nt} = N_p / (2A_g) - [(N_p / (2A_g))^2 + (V_n / A_g)^2]^{0,5} \approx 16 \text{ N/cm}^2 < 0,3 \sqrt{f_c / (FC \gamma_c)} = 103 \text{ N/cm}^2 \quad ok$

Resistenza a compressione $\sigma_{nc} = N_p / (2A_g) + [(N_p / (2A_g))^2 + (V_n / A_g)^2]^{0,5} \approx 51 \text{ N/cm}^2 < 0,5 f_c / (FC \gamma_c) = 593 \text{ N/cm}^2 \quad ok$

nodo 2:	trave sx sez. h 130 cm; trave dx sez. h 135 cm.
comb.:	$G_1 + G_2 + 0,6 Q_{k1} - 0,3 SLV_x + 0,3 SLV_y - SLV_z$
	$M_{ts} = -308 \text{ kNm}$ $M_{td} = 267 \text{ kNm}$
	$V_n = F_{s,ts} + F_{s,td} - T_p$
taglio da traz. presente su armatura sup.	$F_{s,ts} + F_{s,td} \approx -47 \text{ kN}$
taglio da pilastro superiore	$T_p \approx 0 \text{ kN}$
taglio totale agente sul nodo	$V_n \approx -47 \text{ kN}$
taglio da pilastro superiore	$N_p = 0 \text{ kN}$
area sezione media nodo	$A_g = 3900 \text{ cm}^2$
resistenza a compressione cls	$f_c = 24 \text{ MPa}$
fattore di confidenza	$FC = 1,35$
coefficiente parziale cls	$\gamma_c = 1,5$

Resistenza a trazione $\sigma_{nt} = N_p / (2A_g) - [(N_p / (2A_g))^2 + (V_n / A_g)^2]^{0,5} = 12 \text{ N/cm}^2 < 0,3 \sqrt{f_c / (FC \gamma_c)} = 103 \text{ N/cm}^2 \quad ok$

Resistenza a compressione $\sigma_{nc} = N_p / (2A_g) + [(N_p / (2A_g))^2 + (V_n / A_g)^2]^{0,5} = 12 \text{ N/cm}^2 < 0,5 f_c / (FC \gamma_c) = 593 \text{ N/cm}^2 \quad ok$