



# COMUNE DI VALSAMOGGIA

Città Metropolitana di Bologna

AREA PROGRAMMAZIONE, REALIZZAZIONE, GESTIONE E CURA DEL PATRIMONIO  
SERVIZIO LAVORI PUBBLICI

PROGETTO PER LA REALIZZAZIONE DI NUOVA STRUTTURA  
DA ADIBIRE AD ASILO NIDO PRESSO LA MUNICIPALITA' DI  
SAVIGNO.



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## PROGETTO ESECUTIVO

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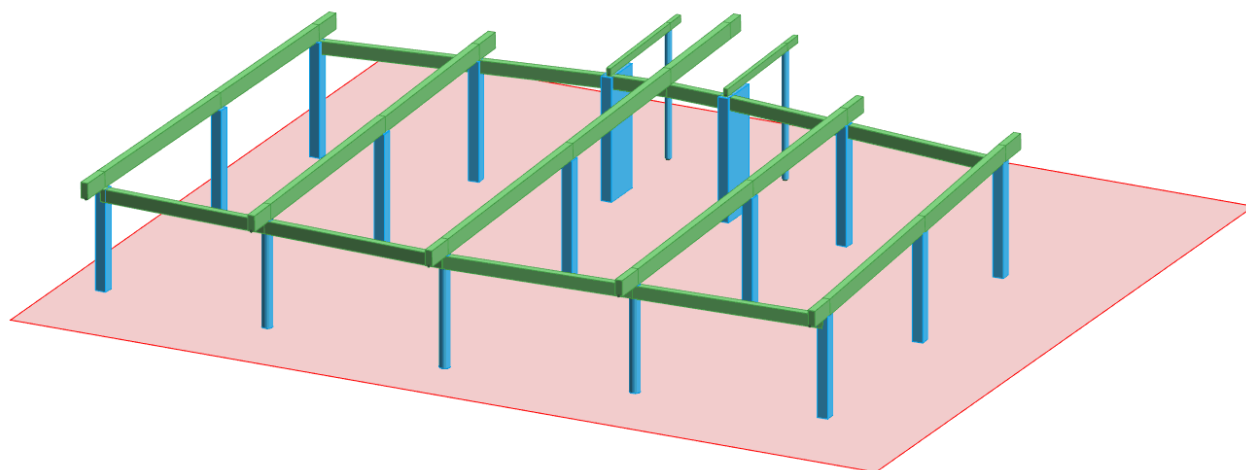
TABULATO DI CALCOLO



COMUNE DI VALSAMOGGIA

PROGETTO ESECUTIVO PER LA REALIZZAZIONE DI NUOVA  
STRUTTURA DA ADIBIRE AD ASILO NIDO PRESSO LA  
MUNICIPALITA' DI SAVIGNO

TABULATO DI CALCOLO  
(Modest 8.29 - Tecnisoft srl)





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## Relazione di calcolo

### Geometria

#### Elenco vincoli nodi

##### Simbologia

Comm. = Commento  
 Kt = Coeff. di sottofondo su suolo elastico alla Winkler  
 Ly = Lunghezza (dir. Y locale)  
 Lz = Larghezza (dir. Z locale)  
 RL = Rotazione libera  
 Rx = Rotazione intorno all'asse X (L=libera, B=bloccata, E=elastica)  
 Ry = Rotazione intorno all'asse Y (L=libera, B=bloccata, E=elastica)  
 Rz = Rotazione intorno all'asse Z (L=libera, B=bloccata, E=elastica)  
 Sx = Spostamento in dir. X (L=libero, B=bloccato, E=elastico)  
 Sy = Spostamento in dir. Y (L=libero, B=bloccato, E=elastico)  
 Sz = Spostamento in dir. Z (L=libero, B=bloccato, E=elastico)  
 Vn = Numero del vincolo nodo

Vn	Comm.	Sx	Sy	Sz	Rx	Ry	Rz	RL	Ly	Lz	Kt
									<m>	<m>	<daN/cmc>
1	Libero	L	L	L	L	L	L				

Vn	Comm.	Sx	Sy	Sz	Rx	Ry	Rz	RL	Ly	Lz	Kt
									<m>	<m>	<daN/cmc>
2	Incastro	B	B	B	B	B	B				

#### Elenco nodi

##### Simbologia

Imp. = Numero dell'impalcato  
 Nodo = Numero del nodo  
 Vn = Numero del vincolo nodo  
 X = Coordinata X del nodo  
 Y = Coordinata Y del nodo  
 Z = Coordinata Z del nodo

Nodo	X	Y	Z	Imp.	Vn
	<m>	<m>	<m>		
-1	5.03	7.25	3.16	0	1
4	0.00	1.12	0.00	0	2
8	10.48	7.25	0.00	0	2
12	20.41	12.45	0.00	0	2
16	12.18	12.94	0.00	0	2
105	20.96	1.12	2.84	0	1
301	15.72	-0.36	2.96	0	1
610	20.66	7.25	3.03	0	1
1009	15.72	7.25	3.18	0	1
1114	20.38	13.38	3.22	0	1
1501	5.03	13.64	3.36	0	1
1801	10.48	12.94	3.50	0	1
2002	12.18	17.00	3.57	0	1

Nodo	X	Y	Z	Imp.	Vn
	<m>	<m>	<m>		
1	10.48	0.00	0.00	0	2
5	20.96	1.12	0.00	0	2
9	15.72	7.25	0.00	0	2
13	5.03	12.71	0.00	0	2
17	8.78	16.40	0.00	0	2
106	-0.03	0.19	2.82	0	1
403	5.03	0.59	2.97	0	1
701	10.48	-0.93	3.10	0	1
1111	0.56	12.45	3.20	0	1
1208	10.48	7.25	3.34	0	1
1601	15.72	13.66	3.36	0	1
1917	8.78	16.40	3.55	0	1
2101	10.48	16.40	3.61	0	1

Nodo	X	Y	Z	Imp.	Vn
	<m>	<m>	<m>		
2	15.72	0.57	0.00	0	2
6	0.30	7.25	0.00	0	2
10	20.66	7.25	0.00	0	2
14	15.72	12.73	0.00	0	2
18	12.18	16.40	0.00	0	2
107	20.99	0.19	2.82	0	1
502	15.72	0.57	2.98	0	1
801	10.48	0.00	3.12	0	1
1112	20.41	12.45	3.20	0	1
1313	5.03	12.71	3.34	0	1
1715	8.78	12.94	3.45	0	1
1918	12.18	16.40	3.55	0	1
2201	10.48	17.00	3.62	0	1

Nodo	X	Y	Z	Imp.	Vn
	<m>	<m>	<m>		
3	5.03	0.59	0.00	0	2
7	5.03	7.25	0.00	0	2
11	0.56	12.45	0.00	0	2
15	8.78	12.94	0.00	0	2
104	-0.00	1.12	2.84	0	1
201	5.03	-0.34	2.96	0	1
606	0.30	7.25	3.03	0	1
907	5.03	7.25	3.17	0	1
1113	0.59	13.38	3.22	0	1
1414	15.72	12.73	3.34	0	1
1716	12.18	12.94	3.45	0	1
2001	8.78	17.00	3.57	0	1

#### Elenco materiali

##### Simbologia

$\alpha$  = Coeff. di dilatazione termica  
 v = Coeff. di Poisson  
 Comm. = Commento  
 E = Modulo elastico  
 G = Modulo elastico tangenziale  
 Mat. = Numero del materiale  
 P = Peso specifico

Mat.	Comm.	P	E	G	v	$\alpha$
		<daN/cm<	<daN/cm<	<daN/cm<		
6	Calcestruzzo classe C28/35	2500	325881.00	148128.00	0.1	1.000000E-05
18	Acciaio	7850	2100000.00	800000.00	0.3	1.000000E-05
20	Legname a media elasticità	460	120000.00	7500.00	0.39	4.000000E-06

#### Elenco sezioni aste

##### Simbologia

B = Base  
 C = Numero del criterio di progetto  
 Comm. = Commento  
 Crit. C.F. = Criterio di progetto collegamento finale  
 Crit. C.I. = Criterio di progetto collegamento iniziale  
 H = Altezza  
 Ma = Numero del materiale  
 Mem. = Membratura  
 T = Trave  
 P = Pilastro  
 R = Raggio  
 Sez. = Numero della sezione  
 Tipo = Tipologia  
 Cir. = Circolare  
 Cir.c = Circolare cava  
 R = Rettangolare  
 Ver. = Verifica prevista  
 C = Cemento armato  
 A = Acciaio  
 L = Legno  
 s = Spessore

Sez.	Comm.	Tipo	Mem.	Ver.	B	H	s	R	Ma	C	Crit. C.I.	Crit. C.F.
------	-------	------	------	------	---	---	---	---	----	---	------------	------------



## Relazione di calcolo

					<cm>	<cm>	<cm>	<cm>				
1	Pilastro 30x30	R	P	C	30.00	30.00			6	1		
2	Pilastro circolare 30 cm	Cir.	P	C				15.00	6	3		
3	Pilastro 30x120	R	P	C	30.00	120.00			6	1		
4	CHS193.7x8	Cir.c	P	A			0.80	9.69	18	1	3	3
5	Trave 20x35	R	T	C	20.00	35.00			6	1		
6	Trave lamellare 20x44	R	T	L	20.00	44.00			20	1		
7	Trave 30x44	R	T	C	20.00	44.00			6	1		
8	Trave lamellare 12x20	R	T	L	12.00	20.00			20	1		

## Elenco vincoli aste

## Simbologia

Comm. = Commento

Kt = Coeff. di sottofondo su suolo elastico alla Winkler

Mxf = Momento intorno all'asse X locale nodo finale (0=sbloccato, 1=bloccato)

Mxi = Momento intorno all'asse X locale nodo iniziale (0=sbloccato, 1=bloccato)

Myf = Momento intorno all'asse Y locale nodo finale (0=sbloccato, 1=bloccato)

Myi = Momento intorno all'asse Y locale nodo iniziale (0=sbloccato, 1=bloccato)

Mzf = Momento intorno all'asse Z locale nodo finale (0=sbloccato, 1=bloccato)

Mzi = Momento intorno all'asse Z locale nodo iniziale (0=sbloccato, 1=bloccato)

Nf = Sforzo normale nodo finale (0=sbloccato, 1=bloccato)

Ni = Sforzo normale nodo iniziale (0=sbloccato, 1=bloccato)

Tipo = Tipologia

SVI = Definizione di vincolamenti interni

ELA = Vincolo su suolo elastico alla Winkler

BIE-RTC = Biella resistente a trazione e a compressione

BIE-RC = Biella resistente solo a compressione

BIE-RT = Biella resistente solo a trazione

Tyf = Taglio in dir. Y locale nodo finale (0=sbloccato, 1=bloccato)

Tyi = Taglio in dir. Y locale nodo iniziale (0=sbloccato, 1=bloccato)

Tzf = Taglio in dir. Z locale nodo finale (0=sbloccato, 1=bloccato)

Tzi = Taglio in dir. Z locale nodo iniziale (0=sbloccato, 1=bloccato)

Va = Numero del vincolo asta

Va	Comm.	Tipo	Ni	Tyi	Tzi	Mxi	Myi	Mzi	Nf	Tyf	Tzf	Mxf	Myf	Mzf	Kt <daN/cmc>
1	Inc+Inc	SVI	1	1	1	1	1	1	1	1	1	1	1	1	
2	Inc+Cer	SVI	1	1	1	1	1	1	1	1	1	0	0	0	
3	Cer+Inc	SVI	1	1	1	0	0	0	1	1	1	1	1	1	

## Carichi

## Elenco tipi CCE

## Simbologia

 $\gamma_{\max}$  = Coeff.  $\gamma_{\max}$  $\gamma_{\min.}$  = Coeff.  $\gamma_{\min.}$  $\psi_0$  = Coeff.  $\psi_0$  $\psi_{0,s}$  = Coeff.  $\psi_0$  sismico (D.M. 96) $\psi_1$  = Coeff.  $\psi_1$  $\psi_2$  = Coeff.  $\psi_2$ 

Comm. = Commento

Durata = Durata del carico

P = Permanente

L = Lunga

M = Media

Tipo = Tipologia

G = Permanente

Qv = Variabile vento

Q = Variabile

Tipo CCE = Tipo condizione di carico elementare

Tipo CCE	Comm.	Tipo	Durata	$\gamma_{\min.}$	$\gamma_{\max}$	$\psi_0$	$\psi_1$	$\psi_2$	$\psi_{0,s}$
1	D.M. 18 Permanenti strutturali	G	P	1.00	1.30				
2	D.M. 18 Permanenti non strutturali	G	L	0.80	1.50				
12	D.M. 18 Variabili Neve (a quota <= 1000 m s.l.m.)	Q	M	0.00	1.50	0.50	0.20	0.00	0.00

## Condizioni di carico elementari

## Simbologia

CCE = Numero della condizione di carico elementare

Comm. = Commento

Dir. = Direzione del vento

Jpx = Moltiplicatore del momento d'inerzia intorno all'asse X

Jpy = Moltiplicatore del momento d'inerzia intorno all'asse Y

Jpz = Moltiplicatore del momento d'inerzia intorno all'asse Z

Mx = Moltiplicatore della massa in dir. X

My = Moltiplicatore della massa in dir. Y

Mz = Moltiplicatore della massa in dir. Z

Sic. = Contributo alla sicurezza

S = a sfavore

Tipo = Tipologia di pressione vento

M = Massimizzata

E = Esterna

I = Interna

Tipo CCE = Tipo di CCE per calcolo agli stati limite

Var. = Tipo di variabilità

B = di base



## Relazione di calcolo

s = Coeff. di riduzione (T.A. o S.L. D.M. 96)

CCE	Comm.	Tipo CCE	Sic.	Var.	s	Dir. <grad>	Tipo	Mx	My	Mz	Jpx	Jpy	Jpz
1	Strutturali		1S	--	1.00	--	--	1.00	1.00	0.00	0.00	0.00	1.00
2	Permanenti		2S	--	1.00	--	--	1.00	1.00	0.00	0.00	0.00	1.00
3	Neve		12S	B	1.00	--	--	1.00	1.00	0.00	0.00	0.00	1.00

## Elenco carichi aste

## Condizione di carico n. 1: Strutturali

## Elenco peso proprio aste

## Simbologia

A = Area

Comm. = Commento

Mat. = Materiale

P = Peso specifico

PL = Peso specifico a metro lineare

Sez. = Numero della sezione

Sez.	Comm.	A <cmq>	Mat.	P <daN/mc>	PL <daN/m>
1	Pilastro 30x30	900.000000	Calcestruzzo classe C28/35	2500.00	225.00
2	Pilastro circolare 30 cm	706.858000	Calcestruzzo classe C28/35	2500.00	176.72
3	Pilastro 30x120	3600.000000	Calcestruzzo classe C28/35	2500.00	900.00
4	CHS193.7x8	46.671500	Acciaio	7850.00	36.64
5	Trave 20x35	700.000000	Calcestruzzo classe C28/35	2500.00	175.00
6	Trave lamellare 20x44	880.000000	Legname a media elasticità	460.00	40.48
7	Trave 30x44	880.000000	Calcestruzzo classe C28/35	2500.00	220.00
8	Trave lamellare 12x20	240.000000	Legname a media elasticità	460.00	11.04

## Condizione di carico n. 1: Strutturali

## Carichi distribuiti

## Simbologia

Asta = Numero dell'asta

DC = Direzione del carico

XG,YG,ZG = secondo gli assi globali

XL,YL,ZL = secondo gli assi locali

E = Elemento provenienza del carico

S = Solaio

T = Tamponatura

N1 = Nodo iniziale

N2 = Nodo finale

NE = Numero elemento di provenienza del carico

Qf = Carico finale

Qi = Carico iniziale

T = Tipo di carico

QA = Primo carico accidentale

QA2 = Secondo carico accidentale

QA3 = Terzo carico accidentale

QPS = Carico permanente strutturale

QPN = Carico permanente non strutturale

VE = Vento

M = Manuale

Xf = Distanza finale

Xi = Distanza iniziale

Asta	N1	N2	E	NE	T	DC	Xi <m>	Qi <daN/m>	Xf <m>	Qf <daN/m>
901	403	201	--	M	ZG	0.00	92.00	0.93	92.00	
1108	104	106	--	M	ZG	0.00	57.00	0.93	57.00	
1108	1111	606	--	M	ZG	0.00	57.00	5.21	57.00	
1109	105	107	--	M	ZG	0.00	58.00	0.93	58.00	
1109	1112	610	--	M	ZG	0.00	58.00	5.21	58.00	
1501	1313	-1	--	M	ZG	0.00	92.00	5.47	92.00	
1605	502	301	--	M	ZG	0.00	92.00	0.93	92.00	
1605	1414	1009	--	M	ZG	0.00	92.00	5.48	92.00	
2002	1917	1715	--	M	ZG	0.00	26.00	3.46	26.00	
2004	1918	1716	--	M	ZG	0.00	26.00	3.46	26.00	
2203	801	701	--	M	ZG	0.00	97.00	0.93	97.00	
2203	1801	1208	--	M	ZG	0.00	97.00	5.69	97.00	
2203	2201	2101	--	M	ZG	0.00	31.00	0.60	31.00	

Asta	N1	N2	E	NE	T	DC	Xi <m>	Qi <daN/m>	Xf <m>	Qf <daN/m>
901	907	403	--	M	ZG	0.00	92.00	6.66	92.00	
1108	606	104	--	M	ZG	0.00	57.00	6.14	57.00	
1108	1113	1111	--	M	ZG	0.00	57.00	0.93	57.00	
1109	610	105	--	M	ZG	0.00	58.00	6.14	58.00	
1109	1114	1112	--	M	ZG	0.00	58.00	0.93	58.00	
1501	1501	1313	--	M	ZG	0.00	92.00	0.93	92.00	
1605	1009	502	--	M	ZG	0.00	92.00	6.68	92.00	
1605	1601	1414	--	M	ZG	0.00	92.00	0.93	92.00	
2002	2001	1917	--	M	ZG	0.00	26.00	0.60	26.00	
2004	2002	1918	--	M	ZG	0.00	26.00	0.60	26.00	
2203	1208	801	--	M	ZG	0.00	97.00	7.25	97.00	
2203	2101	1801	--	M	ZG	0.00	31.00	3.46	31.00	

## Condizione di carico n. 2: Permanenti

## Carichi distribuiti

Asta	N1	N2	E	NE	T	DC	Xi <m>	Qi <daN/m>	Xf <m>	Qf <daN/m>
901	403	201	--	M	ZG	0.00	230.00	0.93	230.00	
1108	104	106	--	M	ZG	0.00	140.00	0.93	140.00	
1108	1111	606	--	M	ZG	0.00	140.00	5.21	140.00	
1109	105	107	--	M	ZG	0.00	145.00	0.93	145.00	
1109	1112	610	--	M	ZG	0.00	145.00	5.21	145.00	
1501	1313	-1	--	M	ZG	0.00	230.00	5.47	230.00	
1605	502	301	--	M	ZG	0.00	230.00	0.93	230.00	
1605	1414	1009	--	M	ZG	0.00	230.00	5.48	230.00	
2002	1917	1715	--	M	ZG	0.00	66.00	3.46	66.00	

Asta	N1	N2	E	NE	T	DC	Xi <m>	Qi <daN/m>	Xf <m>	Qf <daN/m>
901	907	403	--	M	ZG	0.00	230.00	6.66	230.00	
1108	606	104	--	M	ZG	0.00	140.00	6.14	140.00	
1108	1113	1111	--	M	ZG	0.00	140.00	0.93	140.00	
1109	610	105	--	M	ZG	0.00	145.00	6.14	145.00	
1109	1114	1112	--	M	ZG	0.00	145.00	0.93	145.00	
1501	1501	1313	--	M	ZG	0.00	230.00	0.93	230.00	
1605	1009	502	--	M	ZG	0.00	230.00	6.68	230.00	
1605	1601	1414	--	M	ZG	0.00	230.00	0.93	230.00	
2002	2001	1917	--	M	ZG	0.00	66.00	0.60	66.00	



## Relazione di calcolo

2004	1918	1716	--	M	ZG	0.00	66.00	3.46	66.00
2203	801	701	--	M	ZG	0.00	241.00	0.93	241.00
2203	1801	1208	--	M	ZG	0.00	241.00	5.69	241.00
2203	2201	2101	--	M	ZG	0.00	77.00	0.60	77.00

2004	2002	1918	--	M	ZG	0.00	66.00	0.60	66.00
2203	1208	801	--	M	ZG	0.00	241.00	7.25	241.00
2203	2101	1801	--	M	ZG	0.00	77.00	3.46	77.00

## Condizione di carico n. 3: Neve

## Carichi distribuiti

Asta	N1	N2	E	N	T	DC	Xi <m>	Qi <daN/m>	Xf <m>	Qf <daN/m>
901	403	201	--	M	ZG		0.00	662.00	0.93	662.00
1108	104	106	--	M	ZG		0.00	406.00	0.93	406.00
1108	1111	606	--	M	ZG		0.00	406.00	5.21	406.00
1109	105	107	--	M	ZG		0.00	419.00	0.93	419.00
1109	1112	610	--	M	ZG		0.00	419.00	5.21	419.00
1501	1313	-1	--	M	ZG		0.00	662.00	5.47	662.00
1605	502	301	--	M	ZG		0.00	662.00	0.93	662.00
1605	1414	1009	--	M	ZG		0.00	662.00	5.48	662.00
2002	1917	1715	--	M	ZG		0.00	189.00	3.46	189.00
2004	1918	1716	--	M	ZG		0.00	189.00	3.46	189.00
2203	801	701	--	M	ZG		0.00	695.00	0.93	695.00
2203	1801	1208	--	M	ZG		0.00	695.00	5.69	695.00
2203	2201	2101	--	M	ZG		0.00	221.00	0.60	221.00

Asta	N1	N2	E	N	T	DC	Xi <m>	Qi <daN/m>	Xf <m>	Qf <daN/m>
901	907	403	--	M	ZG		0.00	662.00	6.66	662.00
1108	606	104	--	M	ZG		0.00	406.00	6.14	406.00
1108	1113	1111	--	M	ZG		0.00	406.00	0.93	406.00
1109	610	105	--	M	ZG		0.00	419.00	6.14	419.00
1109	1114	1112	--	M	ZG		0.00	419.00	0.93	419.00
1501	1501	1313	--	M	ZG		0.00	662.00	0.93	662.00
1605	1009	502	--	M	ZG		0.00	662.00	6.68	662.00
1605	1601	1414	--	M	ZG		0.00	662.00	0.93	662.00
2002	2001	1917	--	M	ZG		0.00	189.00	0.60	189.00
2004	2002	1918	--	M	ZG		0.00	189.00	0.60	189.00
2203	1208	801	--	M	ZG		0.00	695.00	7.25	695.00
2203	2101	1801	--	M	ZG		0.00	221.00	3.46	221.00

## Risultati del calcolo

## Parametri di calcolo

La modellazione della struttura e la rielaborazione dei risultati del calcolo sono stati effettuati con:

ModeSt ver. 8.24, licenza n. 6598, prodotto da Tecnisoft s.a.s. - Prato

La struttura è stata calcolata utilizzando come solutore agli elementi finiti:

Xfinest ver. 9.3.5, licenza n. 5783, prodotto da Ce.A.S. S.r.l. - Milano

Tipo di normativa: stati limite D.M. 18

Tipo di calcolo: analisi sismica dinamica

Vincoli esterni: Considera sempre vincoli assegnati in modellazione

Schematizzazione piani rigidi: nessun impalcato rigido

Modalità di recupero masse secondarie: mantenere sul nodo masse e forze relative

## Generazione combinazioni

- Lineari: Sì
- Valuta spostamenti e non sollecitazioni: No
- Buckling: No

## Opzioni di calcolo

- Sono state considerate infinitamente rigide le zone di connessione fra travi, pilastri ed elementi bidimensionali con una riduzione del 20%
- Calcolo con offset rigidi dai nodi: No
- Uniformare i carichi variabili: No
- Massimizzare i carichi variabili: No
- Recupero carichi zone rigide: taglio e momento flettente
- Modalità di combinazione momento torcente: disaccoppiare le azioni

## Opzioni del solutore

- Tipo di elemento bidimensionale: QF46
- Calcolo sforzo nei nodi: No
- Trascura deformabilità a taglio delle aste: No
- Analisi dinamica con metodo di Lanczos: Sì
- Check sequenza di Sturm: Sì
- Analisi non lineare con Newton modificato: No
- Usa formulazione secante per buckling: No
- Trascura buckling torsionale: No

## Dati struttura

- Sito di costruzione: LON. 11.07310 LAT. 44.39160
- Contenuto tra ID reticolo: 17170 17171 17392 17393

## Simbologia

Ag = Accelerazione orizzontale massima al sito

Cc = Coefficiente funzione della categoria del suolo

Fo = Valore massimo del fattore di amplificazione dello spettro in accelerazione orizzontale

Ss = Coefficiente di amplificazione stratigrafica

Tr = Periodo di ritorno <anni>

TCC = Tipo di combinazione di carico

SLU = Stato limite ultimo

SLE R = Stato limite d'esercizio, combinazione rara

SLE F = Stato limite d'esercizio, combinazione frequente

SLE Q = Stato limite d'esercizio, combinazione quasi permanente

SLD = Stato limite di danno

SLV = Stato limite di salvaguardia della vita

SND = Stato limite di salvaguardia della vita (non dissipativo)

Tc\* = Periodo di inizio del tratto a velocità costante dello spettro in accelerazione orizzontale <sec>

TCC	Tr	Ag <g>	Fo	Tc*	Ss	Cc
SLD	75	0.0798	2.51	0.27	1.50	1.62
SLV	712	0.1815	2.48	0.30	1.43	1.57



## Relazione di calcolo

- Edificio esistente: No  
 - Tipo di opera: Opera ordinaria  
 - Vita nominale  $V_N$ : 50.00  
 - Classe d'uso: Classe III  
 - SL Esercizio: SLOPvr No, SLDPvr 63.00  
 - SL Ultimi: SLVPvr 10.00, SLCPvr No  
 - Struttura dissipativa: Sì  
 - Classe di duttilità: Classe B  
 - Quota di riferimento: 0.00 <m>  
 - Quota max della struttura: 3.62 <m>  
 - Altezza della struttura: 3.62 <m>  
 - Numero piani edificio: 0  
 - Coefficiente  $\theta$ : 0.00  
 - Edificio regolare in altezza: Sì  
 - Edificio regolare in pianta: Sì  
 - Forze orizzontali convenzionali per stati limite non sismici: No  
 - Genera stati limite per verifiche di resistenza al fuoco: No

## Dati di calcolo

- Categoria del suolo di fondazione: C  
 - Tipologia strutturale: c.a. o prefabbricata a telaio di un piano

Periodo $T_1$	0.1573
Coeff. $\lambda$ SLD	1.00
Coeff. $\lambda$ SLV	1.00
Rapporto di sovraresistenza ( $\alpha_u/\alpha_1$ )	1.10
Valore di riferimento del fattore di comportamento ( $q_0$ )	3.30
Fattore riduttivo ( $K_w$ )	1.00
Fattore riduttivo regolarità in altezza ( $K_R$ )	1.00
Fattore di comportamento dissipativo ( $q$ )	3.30
Fattore di comportamento non dissipativo ( $q_{ND}$ )	1.50
Fattore di comportamento per SLD ( $q_D$ )	1.50

- Categoria topografica: T1 - Superficie pianeggiante, pendii e rilievi isolati con inclinazione media  $i \leq 15^\circ$   
 - Coeff. amplificazione topografica  $S_T$ : 1.00  
 - Fattore di comportamento per sisma verticale ( $q_v$ ): 1.50  
 - Modalità di calcolo modi di vibrare: Autovalori  
 - Numero modi: 18  
 - Modi da considerare: Tali da movimentare una percentuale di massa pari a 85.00%  
 - Trascura modi con massa movimentata minore di: 5.00%  
 - Smorzamento spettro: 5.00%

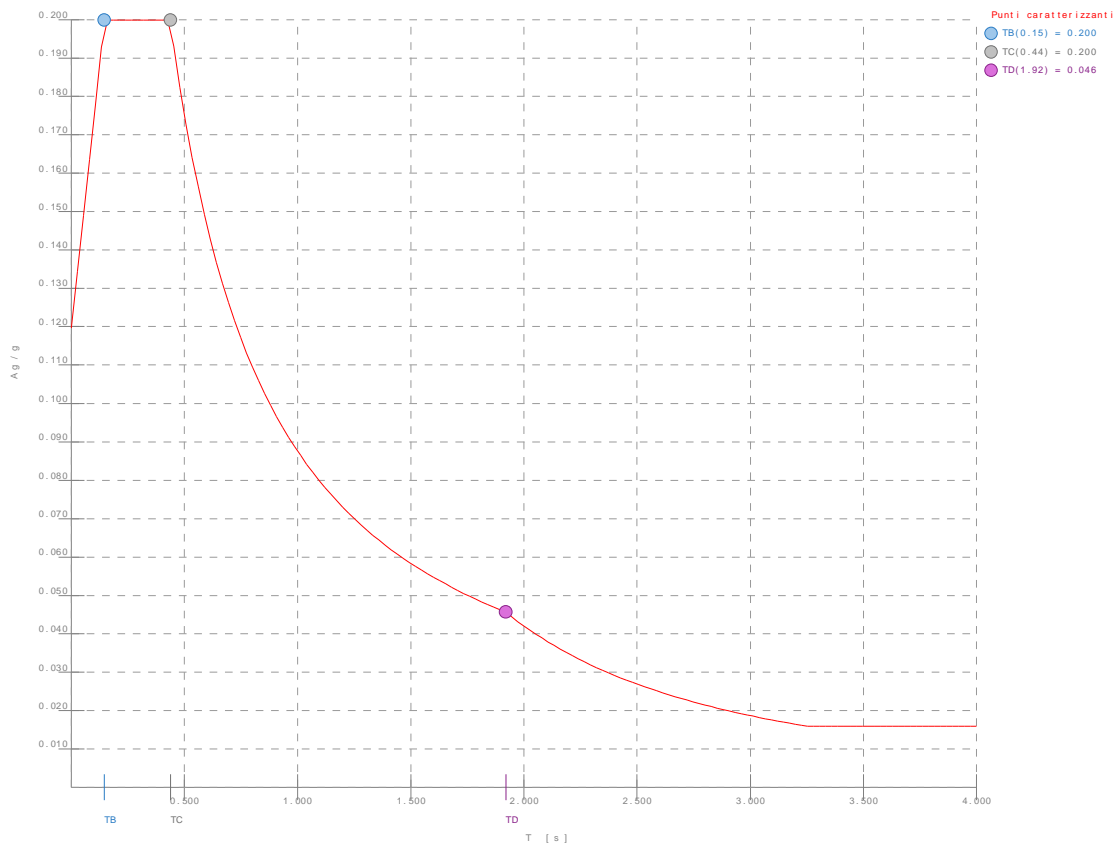


Figura numero 1: Spettro SLD



Relazione di calcolo

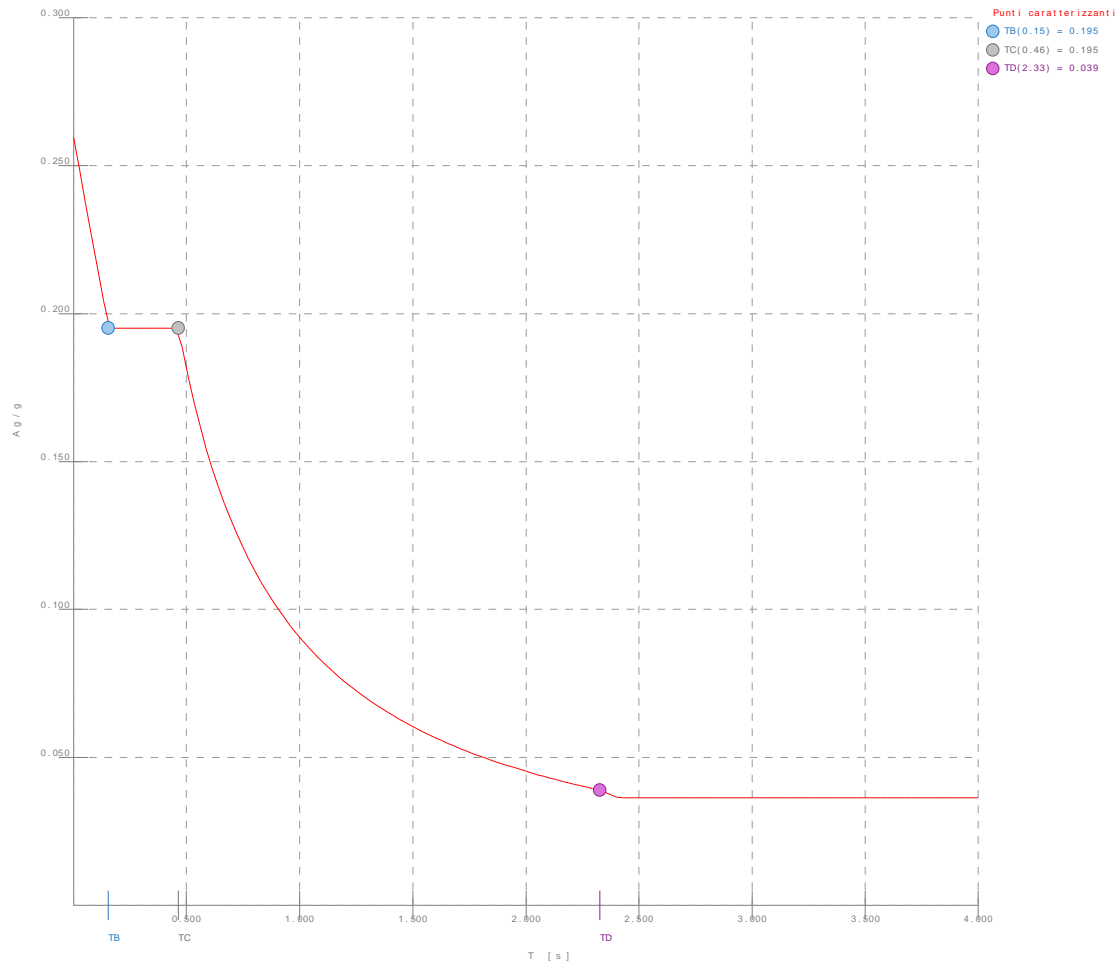
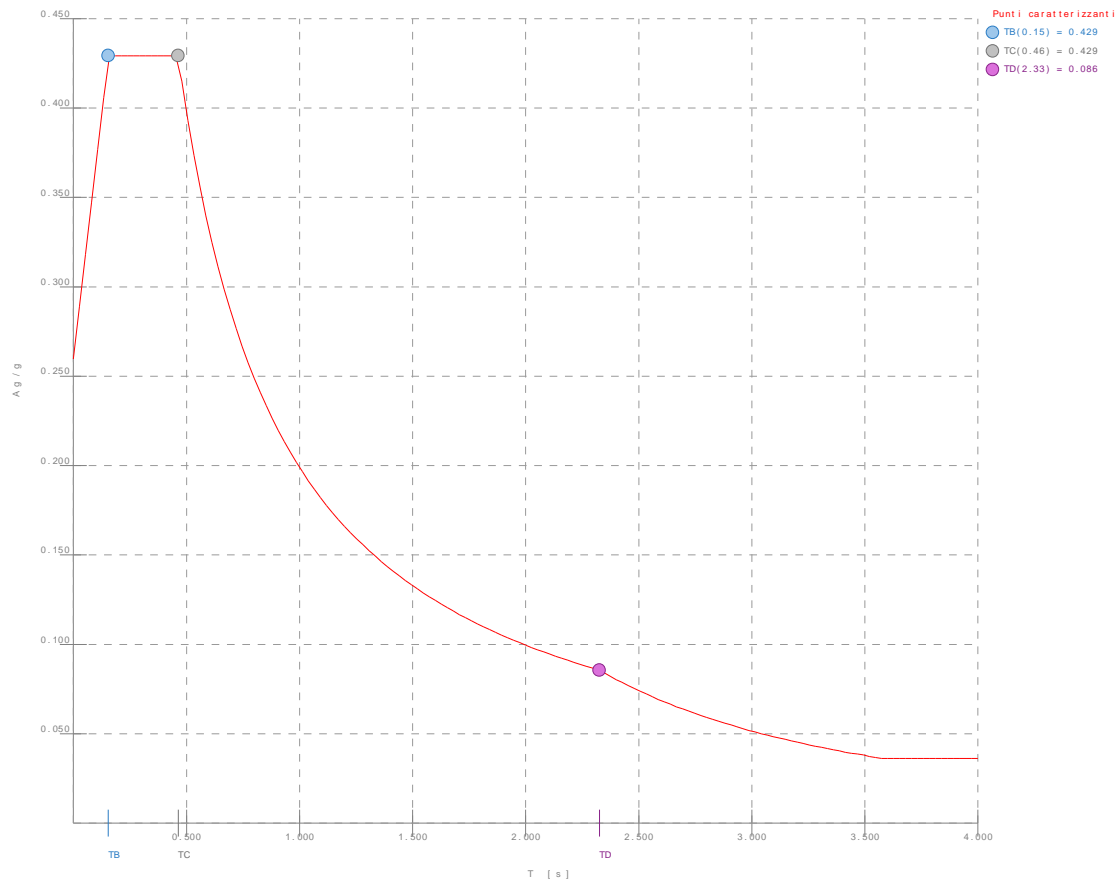


Figura numero 2: Spettro SLV





## Relazione di calcolo

Figura numero 3: Spettro SND

- Angolo di ingresso del sisma: 0.00 &lt;grad&gt;

## Ambienti di carico

## Simbologia

N = Numero

Comm. = Commento

1 = Strutturali

2 = Permanenti

3 = Neve

F = azioni orizzontali convenzionali

SLU = Stato limite ultimo

SLR = Stato limite per combinazioni rare

SLF = Stato limite per combinazioni frequenti

SLQ/D = Stato limite per combinazioni quasi permanenti o di danno

S = Sì

N = No

N	Comm.	1	2	3	SLU	SLR	SLF	SLQ
1	Calcolo sismico	S	S	S	S	N	N	N
2	Calcolo statico	S	S	N	S	S	S	S

## Elenco combinazioni di carico simboliche

## Simbologia

CC = Numero della combinazione delle condizioni di carico elementari

Comm. = Commento

TCC = Tipo di combinazione di carico

SLU = Stato limite ultimo

SLE R = Stato limite d'esercizio, combinazione rara

SLE F = Stato limite d'esercizio, combinazione frequente

SLE Q = Stato limite d'esercizio, combinazione quasi permanente

SLD = Stato limite di danno

SLV = Stato limite di salvaguardia della vita

SND = Stato limite di salvaguardia della vita (non dissipativo)

CC	Comm.	TCC	1	2	3	±S
1	Amb. 1 (Sisma)	SLU S	1	1	$\Psi_2$	1
2	Amb. 2 (SLU)	SLU	$\gamma$ max	$\gamma$ max	$\gamma$ max	-----
3	Amb. 2 (SLE R)	SLE R	1	1	1	-----
4	Amb. 2 (SLE F)	SLE F	1	1	$\Psi_1$	-----
5	Amb. 2 (SLE Q)	SLE Q	1	1	$\Psi_2$	-----

Genera le combinazioni con un solo carico di tipo variabile come di base: No

Considera sollecitazioni dinamiche con segno dei modi principali: No

## Combinazioni delle CCE

## Simbologia

An. = Tipo di analisi

L = Lineare

NL = Non lineare

Bk = Buckling

S = Sì

N = No

CC = Numero della combinazione delle condizioni di carico elementari

Comm. = Commento

TCC = Tipo di combinazione di carico

SLU = Stato limite ultimo

SLE R = Stato limite d'esercizio, combinazione rara

SLE F = Stato limite d'esercizio, combinazione frequente

SLE Q = Stato limite d'esercizio, combinazione quasi permanente

SLD = Stato limite di danno

SLV = Stato limite di salvaguardia della vita

SND = Stato limite di salvaguardia della vita (non dissipativo)

CC	Comm.	TCC	An.	Bk	1	2	3	±S X	±S Y
1	Amb. 1 (SLU S) S +X+0.3Y	SLV+SND	L	N	1.00	1.00	0.00	1.00	0.30
2	Amb. 1 (SLE) S +X+0.3Y	SLD	L	N	1.00	1.00	0.00	1.00	0.30
3	Amb. 1 (SLU S) S +X-0.3Y	SLV+SND	L	N	1.00	1.00	0.00	1.00	-0.30
4	Amb. 1 (SLE) S +X-0.3Y	SLD	L	N	1.00	1.00	0.00	1.00	-0.30
5	Amb. 1 (SLU S) S +0.3X+Y	SLV+SND	L	N	1.00	1.00	0.00	0.30	1.00
6	Amb. 1 (SLE) S +0.3X+Y	SLD	L	N	1.00	1.00	0.00	0.30	1.00
7	Amb. 1 (SLU S) S -0.3X+Y	SLV+SND	L	N	1.00	1.00	0.00	-0.30	1.00
8	Amb. 1 (SLE) S -0.3X+Y	SLD	L	N	1.00	1.00	0.00	-0.30	1.00
9	Amb. 2 (SLU)	SLU	L	N	1.30	1.50	1.50	0.00	0.00
10	Amb. 2 (SLE R)	SLE R	L	N	1.00	1.00	1.00	0.00	0.00
11	Amb. 2 (SLE F)	SLE F	L	N	1.00	1.00	0.20	0.00	0.00
12	Amb. 2 (SLE Q)	SLE Q	L	N	1.00	1.00	0.00	0.00	0.00

## Elenco masse nodi

## Simbologia

Mo = Massa orizzontale

Nodo = Numero del nodo

Nodo	Mo	Nodo	Mo	Nodo	Mo	Nodo	Mo	Nodo	Mo	Nodo	Mo	Nodo	Mo
<kg>	<kg>	<kg>	<kg>	<kg>	<kg>	<kg>	<kg>	<kg>	<kg>	<kg>	<kg>	<kg>	<kg>



## Relazione di calcolo

-1	1374.11	104	2279.30	105	2319.74	106	197.80	107	200.65	201	171.85	301	171.85	403	2611.31
502	2615.61	606	2759.17	610	2793.87	701	179.44	801	2819.05	907	1232.57	1009	2611.70	1111	2072.21
1112	2109.75	1113	197.80	1114	200.65	1208	2879.32	1313	2299.86	1414	2302.77	1501	171.85	1601	171.85
1715	2251.37	1716	2232.60	1801	1662.77	1917	279.68	1918	279.68	2001	31.52	2002	31.52	2101	307.39
2201	45.43														

### Totali masse nodi

Mo
<kg>
43866.00

### Elenco modi di vibrare, masse partecipanti e coefficienti di partecipazione

#### Simbologia

$\Phi_x$  = Coefficiente di partecipazione in dir. X  
 $\Phi_y$  = Coefficiente di partecipazione in dir. Y  
 $\Phi_z$  = Coefficiente di partecipazione in dir. Z  
 $\%J_{pz}$  = Percentuale momento d'inerzia polare partecipante intorno all'asse Z  
 $\%M_x$  = Percentuale massa partecipante in dir. X  
 $\%M_y$  = Percentuale massa partecipante in dir. Y  
 $\%M_z$  = Percentuale massa partecipante in dir. Z  
C = \* indica che il modo è stato considerato  
Diff. = Minima differenza percentuale dagli altri periodi  
Modo = Numero del modo di vibrare  
T = Periodo

Modo	C	T	Diff.	$\Phi_x$	$\Phi_y$	$\Phi_z$	$\%M_x$	$\%M_y$	$\%M_z$	$\%J_{pz}$
1		0.26	3.61	-4.24	-0.00	0.00	0.41	0.00	0.00	0.00
2*		0.25	3.61	-18.31	0.00	0.00	7.64	0.00	0.00	0.00
3*		0.22	0.72	16.60	0.40	0.00	6.28	0.00	0.00	0.00
4*		0.22	0.72	-16.24	0.36	0.00	6.01	0.00	0.00	0.00
5		0.17	0.16	-13.27	0.05	0.00	4.02	0.00	0.00	0.00
6		0.17	0.16	0.06	2.00	0.00	0.00	0.09	0.00	0.00
7*		0.16	1.85	-30.64	0.14	0.00	21.40	0.00	0.00	0.00
8		0.16	0.81	0.82	17.25	0.00	0.02	6.78	0.00	0.00
9		0.16	0.81	-13.83	-1.16	0.00	4.36	0.03	0.00	0.00
10*		0.16	1.30	-0.62	42.74	0.00	0.01	41.64	0.00	0.00
11*		0.14	14.84	28.15	0.00	0.00	18.07	0.00	0.00	0.00
12*		0.11	1.08	-3.12	21.22	0.00	0.22	10.26	0.00	0.00
13*		0.11	1.08	3.51	22.68	0.00	0.28	11.73	0.00	0.00
14*		0.11	5.80	37.04	-0.32	0.00	31.27	0.00	0.00	0.00
15*		0.10	5.80	0.03	-30.64	0.00	0.00	21.40	0.00	0.00
16		0.03	2.64	0.02	1.39	0.00	0.00	0.04	0.00	0.00
17		0.03	0.20	-0.02	-0.13	0.00	0.00	0.00	0.00	0.00
18		0.03	0.20	0.00	-18.10	0.00	0.00	7.47	0.00	0.00
Tot.cons.							91.19	85.04	0.00	0.00

### Elenco coefficienti di risposta

#### Simbologia

Modo = Numero del modo di vibrare  
 $S_x$  = Coefficiente di risposta (moltiplicato per 100) in dir. X  
 $S_y$  = Coefficiente di risposta (moltiplicato per 100) in dir. Y

#### Stato limite di danno

Modo	$S_x$	$S_y$
1	19.99	19.99
2	19.99	19.99
3	19.99	19.99
4	19.99	19.99
5	19.99	19.99
6	19.99	19.99
7	19.99	19.99
8	19.99	19.99
9	19.99	19.99
10	19.99	19.99
11	19.49	19.49
12	18.27	18.27
13	18.20	18.20
14	17.86	17.86
15	17.54	17.54
16	13.68	13.68
17	13.64	13.64
18	13.63	13.63

#### Stato limite di salvaguardia della vita

Modo	$S_x$	$S_y$
1	19.51	19.51
2	19.51	19.51
3	19.51	19.51
4	19.51	19.51
5	19.51	19.51
6	19.51	19.51
7	19.51	19.51
8	19.51	19.51
9	19.51	19.51
10	19.51	19.51



## Relazione di calcolo

11	20.25	20.25
12	21.18	21.18
13	21.23	21.23
14	21.49	21.49
15	21.73	21.73
16	24.66	24.66
17	24.69	24.69
18	24.69	24.69

## Domanda in duttilità di curvatura

Direzione X  $\mu_{\text{Edx}}=25.61$ Direzione Y  $\mu_{\text{Edy}}=17.84$ 

## Spostamenti dei nodi

## Simbologia

CC = Numero della combinazione delle condizioni di carico elementari

Nodo = Numero del nodo

Rx = Rotazione intorno all'asse X

Ry = Rotazione intorno all'asse Y

Rz = Rotazione intorno all'asse Z

Sx = Spostamento in dir. X

Sy = Spostamento in dir. Y

Sz = Spostamento in dir. Z

TCC = Tipo di combinazione di carico

SLU = Stato limite ultimo

SLE R = Stato limite d'esercizio, combinazione rara

SLE F = Stato limite d'esercizio, combinazione frequente

SLE Q = Stato limite d'esercizio, combinazione quasi permanente

SLD = Stato limite di danno

SLV = Stato limite di salvaguardia della vita

SND = Stato limite di salvaguardia della vita (non dissipativo)

I valori degli spostamenti nodali per CC di tipo sismico sono amplificati come da normativa

Nodo		Sx <cm>	CC	TCC	Sy <cm>	CC	TCC	Sz <cm>	CC	TCC	Rx <rad>	CC	TCC	Ry <rad>	CC	TCC	Rz <rad>	CC	TCC
-1	Max	2.56	1	SLV	0.95	5	SLV	-0.00	5	SLV	0.00	5	SLV	0.01	1	SLV	0.00	1	SLV
-1	Min.	-2.57	1	SLV	-0.90	5	SLV	-0.01	9	SLU	-0.00	5	SLV	-0.01	1	SLV	0.00	1	SLV
104	Max	0.84	1	SLV	0.48	5	SLV	0.00	1	SLV	0.00	5	SLV	0.00	1	SLV	0.00	5	SLV
104	Min.	-0.85	1	SLV	-0.47	5	SLV	-0.01	9	SLU	-0.00	5	SLV	-0.00	1	SLV	-0.00	5	SLV
105	Max	0.85	1	SLV	0.50	5	SLV	0.00	1	SLV	0.00	5	SLV	0.00	1	SLV	0.00	5	SLV
105	Min.	-0.85	1	SLV	-0.48	5	SLV	-0.01	9	SLU	-0.00	5	SLV	-0.00	1	SLV	-0.00	5	SLV
106	Max	0.95	1	SLV	0.48	5	SLV	0.12	5	SLV	0.00	5	SLV	0.00	1	SLV	0.00	5	SLV
106	Min.	-0.95	1	SLV	-0.47	5	SLV	-0.08	5	SLV	-0.00	5	SLV	-0.00	1	SLV	-0.00	5	SLV
107	Max	0.95	1	SLV	0.49	5	SLV	0.13	5	SLV	0.00	5	SLV	0.00	1	SLV	0.00	5	SLV
107	Min.	-0.95	1	SLV	-0.48	5	SLV	-0.09	5	SLV	-0.00	5	SLV	-0.00	1	SLV	-0.00	5	SLV
201	Max	0.90	1	SLV	0.95	5	SLV	0.33	5	SLV	0.00	5	SLV	0.00	1	SLV	0.00	1	SLV
201	Min.	-0.90	1	SLV	-0.90	5	SLV	-0.20	5	SLV	-0.00	5	SLV	0.00	1	SLV	0.00	1	SLV
301	Max	0.91	1	SLV	1.14	5	SLV	0.38	5	SLV	0.00	5	SLV	0.00	1	SLV	0.00	1	SLV
301	Min.	-0.92	1	SLV	-1.10	5	SLV	-0.25	5	SLV	-0.00	5	SLV	0.00	1	SLV	0.00	1	SLV
403	Max	0.87	1	SLV	0.96	5	SLV	-0.00	1	SLV	0.00	5	SLV	0.00	1	SLV	0.00	5	SLV
403	Min.	-0.87	1	SLV	-0.91	5	SLV	-0.01	9	SLU	-0.00	5	SLV	0.00	1	SLV	0.00	5	SLV
502	Max	0.89	1	SLV	1.15	5	SLV	-0.00	1	SLV	0.00	5	SLV	0.00	1	SLV	0.00	5	SLV
502	Min.	-0.89	1	SLV	-1.10	5	SLV	-0.01	9	SLU	-0.00	5	SLV	0.00	1	SLV	0.00	5	SLV
606	Max	1.58	1	SLV	0.49	5	SLV	-0.00	5	SLV	0.00	5	SLV	0.01	1	SLV	0.00	1	SLV
606	Min.	-1.57	1	SLV	-0.48	5	SLV	-0.01	9	SLU	0.00	5	SLV	-0.01	1	SLV	-0.00	1	SLV
610	Max	2.05	1	SLV	0.51	5	SLV	-0.00	5	SLV	0.00	1	SLV	0.01	1	SLV	0.00	1	SLV
610	Min.	-2.06	1	SLV	-0.50	5	SLV	-0.01	9	SLU	0.00	1	SLV	-0.01	1	SLV	-0.00	1	SLV
701	Max	0.86	1	SLV	0.51	5	SLV	0.37	9	SLU	0.00	5	SLV	0.00	1	SLV	0.00	1	SLV
701	Min.	-0.86	1	SLV	-0.46	5	SLV	-0.05	5	SLV	-0.00	9	SLU	0.00	1	SLV	-0.00	1	SLV
801	Max	0.84	1	SLV	0.52	5	SLV	-0.00	5	SLV	0.00	5	SLV	0.00	1	SLV	0.00	1	SLV
801	Min.	-0.84	1	SLV	-0.46	5	SLV	-0.01	9	SLU	-0.00	9	SLU	0.00	1	SLV	-0.00	1	SLV
907	Max	2.58	1	SLV	0.95	5	SLV	-0.00	5	SLV	0.00	5	SLV	0.01	1	SLV	0.00	1	SLV
907	Min.	-2.58	1	SLV	-0.91	5	SLV	-0.01	9	SLU	-0.00	5	SLV	-0.01	1	SLV	0.00	1	SLV
1009	Max	2.61	1	SLV	1.15	5	SLV	-0.00	5	SLV	0.01	5	SLV	0.01	1	SLV	0.00	1	SLV
1009	Min.	-2.61	1	SLV	-1.10	5	SLV	-0.01	9	SLU	-0.01	5	SLV	-0.01	1	SLV	0.00	1	SLV
1111	Max	0.64	1	SLV	0.48	5	SLV	0.00	1	SLV	0.00	5	SLV	0.00	1	SLV	0.00	1	SLV
1111	Min.	-0.64	1	SLV	-0.47	5	SLV	-0.01	9	SLU	0.00	5	SLV	-0.00	1	SLV	-0.00	1	SLV
1112	Max	0.64	1	SLV	0.50	5	SLV	0.00	5	SLV	0.00	5	SLV	0.00	1	SLV	0.00	1	SLV
1112	Min.	-0.64	1	SLV	-0.48	5	SLV	-0.01	9	SLU	0.00	5	SLV	-0.00	1	SLV	-0.00	1	SLV
1113	Max	0.74	1	SLV	0.48	5	SLV	0.08	5	SLV	0.00	5	SLV	0.00	1	SLV	0.00	1	SLV
1113	Min.	-0.74	1	SLV	-0.47	5	SLV	-0.07	5	SLV	0.00	5	SLV	-0.00	1	SLV	-0.00	1	SLV
1114	Max	0.76	1	SLV	0.50	5	SLV	0.09	5	SLV	0.00	5	SLV	0.00	1	SLV	0.00	1	SLV
1114	Min.	-0.76	1	SLV	-0.48	5	SLV	-0.07	5	SLV	0.00	5	SLV	-0.00	1	SLV	-0.00	1	SLV
1208	Max	3.45	1	SLV	0.49	5	SLV	-0.00	5	SLV	0.00	5	SLV	0.02	1	SLV	0.00	1	SLV
1208	Min.	-3.45	1	SLV	-0.44	5	SLV	-0.01	9	SLU	-0.00	5	SLV	-0.02	1	SLV	0.00	1	SLV
1313	Max	0.64	1	SLV	0.93	5	SLV	-0.00	1	SLV	0.00	5	SLV	0.00	1	SLV	0.00	1	SLV
1313	Min.	-0.64	1	SLV	-0.89	5	SLV	-0.01	9	SLU	-0.00	5	SLV	0.00	1	SLV	0.00	1	SLV
1414	Max	0.64	1	SLV	1.13	5	SLV	-0.00	1	SLV	0.00	5	SLV	0.00	1	SLV	0.00	5	SLV
1414	Min.	-0.64	1	SLV	-1.09	5	SLV	-0.01	9	SLU	-0.00	5	SLV	0.00	1	SLV	-0.00	5	SLV
1501	Max	0.68	1	SLV	0.94	5	SLV	0.26	5	SLV	0.00	5	SLV	0.00	1	SLV	0.00	1	SLV
1501	Min.	-0.68	1	SLV	-0.90	5	SLV	-0.23	5	SLV	-0.00	5	SLV	0.00	1	SLV	-0.00	1	SLV
1601	Max	0.68	1	SLV	1.14	5	SLV	0.31	5	SLV	0.00	5	SLV	0.00	1	SLV	0.00	1	SLV
1601	Min.	-0.69	1	SLV	-1.10	5	SLV	-0.28	5	SLV	-0.00	5	SLV	0.00	1	SLV	-0.00	1	SLV
1715	Max	0.62	1	SLV	0.08	5	SLV	0.00	1	SLV	0.00	5	SLV	0.00	1	SLV	0.00	5	SLV
1715	Min.	-0.63	1	SLV	-0.07	5	SLV	-0.00	9	SLU	0.00	5	SLV	-0.00	1	SLV	-0.00	5	SLV
1716	Max	0.62	1	SLV	0.08	5	SLV	0.00	1	SLV	0.00	5	SLV	0.00	1	SLV	0.00	5	SLV
1716	Min.	-0.62	1	SLV	-0.07	5	SLV	-0.00	9	SLU	0.00	5	SLV	-0.00	1	SLV	-0.00	5	SLV



## Relazione di calcolo

1801	Max	0.63	1SLV	0.44	5SLV	-0.02	5SLV	0.00	9SLU	0.00	1SLV	0.00	1SLV
1801	Min.	-0.63	1SLV	-0.40	5SLV	-0.09	9SLU	0.00	5SLV	0.00	1SLV	0.00	1SLV
1917	Max	0.79	1SLV	0.08	5SLV	0.00	5SLV	0.00	9SLU	0.00	1SLV	0.00	1SLV
1917	Min.	-0.80	1SLV	-0.07	5SLV	-0.00	9SLU	0.00	5SLV	-0.00	1SLV	-0.00	1SLV
1918	Max	0.87	1SLV	0.08	5SLV	0.00	5SLV	0.00	9SLU	0.00	1SLV	0.00	1SLV
1918	Min.	-0.86	1SLV	-0.07	5SLV	-0.00	9SLU	0.00	5SLV	-0.00	1SLV	-0.00	1SLV
2001	Max	0.96	1SLV	0.08	5SLV	0.01	5SLV	0.00	5SLV	0.00	1SLV	0.00	1SLV
2001	Min.	-0.96	1SLV	-0.07	5SLV	-0.01	5SLV	0.00	5SLV	-0.00	1SLV	-0.00	1SLV
2002	Max	1.05	1SLV	0.08	5SLV	0.01	5SLV	0.00	5SLV	0.00	1SLV	0.00	1SLV
2002	Min.	-1.04	1SLV	-0.08	5SLV	-0.01	5SLV	0.00	5SLV	-0.00	1SLV	-0.00	1SLV
2101	Max	1.73	1SLV	0.45	5SLV	-0.15	5SLV	0.00	5SLV	0.00	1SLV	0.01	1SLV
2101	Min.	-1.73	1SLV	-0.40	5SLV	-0.82	9SLU	-0.00	9SLU	0.00	1SLV	-0.01	1SLV
2201	Max	2.18	1SLV	0.45	5SLV	-0.18	5SLV	0.00	5SLV	0.00	1SLV	0.01	1SLV
2201	Min.	-2.18	1SLV	-0.40	5SLV	-1.00	9SLU	-0.00	9SLU	0.00	1SLV	-0.01	1SLV

Min = -3.45

Max = 3.45

## Reazioni vincolari

## Simbologia

CC = Numero della combinazione delle condizioni di carico elementari

Fx = Reazione vincolare (forza) in dir. X

Fy = Reazione vincolare (forza) in dir. Y

Fz = Reazione vincolare (forza) in dir. Z

Mx = Reazione vincolare (momento) intorno all'asse X

My = Reazione vincolare (momento) intorno all'asse Y

Mz = Reazione vincolare (momento) intorno all'asse Z

Nodo = Numero del nodo

TCC = Tipo di combinazione di carico

SLU = Stato limite ultimo

SLE R = Stato limite d'esercizio, combinazione rara

SLE F = Stato limite d'esercizio, combinazione frequente

SLE Q = Stato limite d'esercizio, combinazione quasi permanente

SLD = Stato limite di danno

SLV = Stato limite di salvaguardia della vita

SND = Stato limite di salvaguardia della vita (non dissipativo)

Nodo		CC	TCC	Fx <daN>	CC	TCC	Fy <daN>	CC	TCC	Fz <daN>	CC	TCC	Mx <daNm>	CC	TCC	My <daNm>	CC	TCC	Mz <daNm>
1	Max	1	SND	639.14	9	SLU	2753.97	9	SLU	9555.21	5	SND	-33.09	1	SND	1077.49	1	SND	90.98
1	Min	1	SND	-653.28	5	SND	375.51	5	SND	3249.14	9	SLU	-2538.11	1	SND	-1089.75	1	SLV	-90.84
2	Max	1	SND	782.80	9	SLU	2204.19	9	SLU	9451.56	5	SND	1401.87	1	SND	1265.08	5	SND	82.36
2	Min	1	SND	-886.38	5	SND	-441.31	1	SND	3109.69	5	SND	-2305.89	5	SND	-1363.35	1	SLV	-83.22
3	Max	1	SND	897.18	9	SLU	2180.73	9	SLU	9422.50	5	SND	1091.84	1	SND	1365.11	5	SND	76.95
3	Min	1	SND	-758.02	5	SND	-282.75	1	SND	3076.15	5	SND	-1979.06	5	SND	-1227.42	1	SLV	-77.17
4	Max	1	SND	1207.91	5	SND	1107.76	9	SLU	5690.03	5	SND	1162.17	1	SND	1998.07	5	SND	265.59
4	Min	1	SND	-884.77	5	SND	-553.28	1	SND	2131.09	5	SND	-1595.21	5	SND	-1677.88	1	SLV	-273.43
5	Max	1	SND	857.88	5	SND	1141.73	9	SLU	5824.13	5	SND	1213.17	1	SND	1661.88	5	SND	298.47
5	Min	1	SND	-1203.33	5	SND	-581.06	1	SND	2190.79	5	SND	-1652.90	5	SND	-1993.45	1	SLV	-291.61
6	Max	1	SND	1075.12	5	SND	799.70	9	SLU	8482.40	5	SND	1639.49	1	SND	2644.82	5	SND	117.04
6	Min	1	SND	-1083.98	5	SND	-1063.28	5	SND	3315.62	5	SND	-1311.09	5	SND	-2694.29	1	SLV	-111.46
7	Max	1	SND	1070.45	5	SND	479.47	9	SLU	8586.63	5	SND	1817.82	1	SND	3389.63	1	SND	3.19
7	Min	1	SND	-1068.81	5	SND	-592.02	5	SND	2528.89	5	SND	-1512.12	1	SND	-3384.45	1	SLV	-3.47
8	Max	1	SND	1224.98	5	SND	122.08	9	SLU	9491.49	5	SND	758.18	1	SND	4088.03	1	SND	3.90
8	Min	1	SND	-1224.92	9	SLU	-246.01	5	SND	2730.02	5	SND	-444.94	1	SND	-4087.84	1	SLV	-3.90
9	Max	1	SND	1071.83	5	SND	587.45	9	SLU	8603.77	5	SND	2165.79	1	SND	3408.45	1	SND	3.85
9	Min	1	SND	-1073.62	5	SND	-704.76	5	SND	2527.38	5	SND	-1857.42	1	SND	-3414.16	1	SLV	-3.51
10	Max	1	SND	1392.72	5	SND	840.10	9	SLU	8659.21	5	SND	1706.18	1	SND	3462.27	5	SND	119.16
10	Min	1	SND	-1383.80	5	SND	-1104.82	5	SND	3349.66	5	SND	-1377.41	5	SND	-3406.62	1	SLV	-123.68
11	Max	1	SND	613.59	5	SND	453.10	9	SLU	5171.41	5	SND	1357.89	1	SND	1081.96	1	SND	209.24
11	Min	1	SND	-433.92	5	SND	-807.91	5	SND	2026.58	5	SND	-925.62	1	SND	-888.79	1	SLV	-238.06
12	Max	1	SND	416.94	5	SND	476.08	9	SLU	5283.52	5	SND	1405.51	1	SND	873.39	1	SND	304.83
12	Min	1	SND	-614.67	5	SND	-833.54	5	SND	2051.52	5	SND	-971.04	1	SND	-1082.82	1	SLV	-276.21
13	Max	1	SND	613.35	5	SND	493.89	9	SLU	7908.98	5	SND	2509.39	1	SND	1091.47	5	SND	108.76
13	Min	1	SND	-661.28	9	SLU	-1702.15	1	SND	2784.95	5	SND	-1449.43	5	SND	-1133.92	1	SLV	-89.84
14	Max	1	SND	675.98	5	SND	689.85	9	SLU	7916.43	5	SND	2939.67	1	SND	1154.68	5	SND	137.78
14	Min	1	SND	-604.78	9	SLU	-1702.21	1	SND	2727.17	5	SND	-1879.07	5	SND	-1084.05	1	SLV	-160.51
15	Max	1	SND	1759.40	5	SND	1264.77	9	SLU	9689.48	5	SND	6683.42	1	SND	3497.80	5	SND	845.42
15	Min	1	SND	-1231.52	5	SND	-1896.02	1	SND	4562.88	5	SND	-4332.28	5	SND	-2880.10	1	SLV	-1163.86
16	Max	1	SND	1244.18	5	SND	1350.19	9	SLU	9673.82	5	SND	7039.36	1	SND	2899.39	5	SND	1243.14
16	Min	1	SND	-1776.49	5	SND	-1991.76	1	SND	4570.99	5	SND	-4659.64	5	SND	-3513.20	1	SLV	-932.82
17	Max	1	SND	47.34	5	SND	-6.31	9	SLU	990.11	9	SLU	94.69	1	SND	167.83	1	SND	50.06
17	Min	1	SND	-45.27	9	SLU	-72.44	5	SND	314.47	5	SND	-1.54	1	SND	-160.80	1	SLV	-48.54
18	Max	1	SND	49.98	5	SND	-5.61	9	SLU	990.20	9	SLU	94.90	1	SND	177.53	1	SND	52.19
18	Min	1	SND	-51.94	9	SLU	-72.53	5	SND	313.71	5	SND	-3.05	1	SND	-184.15	1	SLV	-53.60

## Sollecitazioni aste

## Simbologia

Asta = Numero dell'asta

CC = Numero della combinazione delle condizioni di carico elementari

Mx = Momento torcente intorno all'asse X

My = Momento flettente intorno all'asse Y

Mz = Momento flettente intorno all'asse Z

N = Sforzo normale

N1 = Nodo1

N2 = Nodo2

Ty = Taglio in dir. Y

Tz = Taglio in dir. Z

X = Coordinata progressiva rispetto al nodo iniziale



## Relazione di calcolo

Tipo di combinazione di carico: SLV

Asta	N1	N2		X <cm>	N <daN>	CC	Ty <daN>	CC	Mz <daNm>	CC	Tz <daN>	CC	My <daNm>	CC	Mx <daNm>	CC
1	1	801	Max	0.00	-3269.75	5	852.68	5	-277.98	5	322.58	1	522.88	1	41.53	1
1	1	801	Max	311.98	-2718.43	5	852.68	5	1691.94	5	322.58	1	471.24	1	41.53	1
1	1	801	Min.	0.00	-3325.61	5	500.69	5	-971.86	5	-308.44	1	-535.14	1	-41.67	1
1	1	801	Min.	311.98	-2774.29	5	500.69	5	1280.48	5	-308.44	1	-439.40	1	-41.67	1
2	2	502	Max	0.00	-3205.76	1	975.52	5	391.33	5	458.79	1	590.74	1	42.81	5
2	2	502	Max	298.07	-2679.02	1	975.52	5	1613.03	5	458.79	1	679.38	1	42.81	5
2	2	502	Min.	0.00	-3384.45	1	89.28	5	-1295.35	5	-355.21	1	-689.00	1	-41.96	5
2	2	502	Min.	298.07	-2857.72	1	89.28	5	656.83	5	-355.21	1	-468.91	1	-41.96	5
3	3	403	Max	0.00	-3187.71	1	894.18	5	255.23	5	335.08	1	701.68	1	40.00	5
3	3	403	Max	297.40	-2662.16	1	894.18	5	1517.55	5	335.08	1	433.70	1	40.00	5
3	3	403	Min.	0.00	-3396.96	1	157.64	5	-1142.45	5	-474.24	1	-564.00	1	-39.77	5
3	3	403	Min.	297.40	-2871.41	1	157.64	5	723.33	5	-474.24	1	-709.88	1	-39.77	5
4	4	104	Max	0.00	-2357.85	1	732.77	5	518.36	5	365.12	1	1049.35	1	129.64	5
4	4	104	Max	284.00	-1718.85	1	732.77	5	1114.97	5	365.12	1	289.26	1	129.64	5
4	4	104	Min.	0.00	-2801.77	1	-163.16	5	-966.52	5	-660.79	1	-750.70	1	-121.79	5
4	4	104	Min.	284.00	-2162.77	1	-163.16	5	54.54	5	-660.79	1	-830.30	1	-121.79	5
5	5	105	Max	0.00	-2411.19	1	748.99	5	537.03	5	663.51	1	738.52	1	133.32	5
5	5	105	Max	284.00	-1772.19	1	748.99	5	1135.26	5	663.51	1	839.84	1	133.32	5
5	5	105	Min.	0.00	-2840.15	1	-172.12	5	-992.42	5	-345.86	1	-1048.21	1	-140.19	5
5	5	105	Min.	284.00	-2201.15	1	-172.12	5	47.65	5	-345.86	1	-247.40	1	-140.19	5
6	6	606	Max	0.00	-3334.96	5	364.72	5	945.99	5	492.41	1	1203.83	1	51.75	5
6	6	606	Max	303.19	-2652.78	5	364.72	5	490.24	5	492.41	1	259.05	1	51.75	5
6	6	606	Min.	0.00	-3374.68	5	-628.42	5	-615.56	5	-496.44	1	-1237.19	1	-57.33	5
6	6	606	Min.	303.19	-2692.50	5	-628.42	5	-959.33	5	-496.44	1	-304.63	1	-57.33	5
7	7	-1	Max	0.00	-2542.21	5	187.45	5	910.30	5	485.38	1	1542.16	1	1.72	1
7	7	-1	Max	316.00	-1831.21	5	187.45	5	-12.23	5	485.38	1	3.19	1	1.72	1
7	7	-1	Min.	0.00	-2564.81	5	-300.00	5	-604.60	5	-487.01	1	-1536.98	1	-1.44	1
7	7	-1	Min.	316.00	-1853.81	5	-300.00	5	-37.72	5	-487.01	1	-3.18	1	-1.44	1
7	-1	907	Max	0.00	-970.53	5	-260.78	5	-139.41	5	234.14	1	3.27	1	1.45	1
7	-1	907	Max	1.38	-967.43	5	-260.78	5	-143.12	5	234.14	1	0.04	1	1.45	1
7	-1	907	Min.	0.00	-1058.82	5	-779.42	5	-145.97	5	-234.02	1	-3.27	1	-1.43	1
7	-1	907	Min.	1.38	-1055.72	5	-779.40	5	-156.62	5	-234.01	1	-0.04	1	-1.43	1
8	8	1208	Max	0.00	-2749.84	5	46.44	5	508.71	5	556.77	1	1858.25	1	1.81	1
8	8	1208	Max	333.73	-1998.94	5	46.44	5	-40.37	5	556.77	1	0.05	1	1.81	1
8	8	1208	Min.	0.00	-2804.93	5	-166.98	5	-195.47	5	-556.83	1	-1858.06	1	-1.81	1
8	8	1208	Min.	333.73	-2054.04	5	-166.98	5	-48.64	5	-556.83	1	-0.05	1	-1.81	1
9	9	1009	Max	0.00	-2544.39	5	235.18	5	1069.01	5	488.50	1	1547.74	1	1.56	1
9	9	1009	Max	318.01	-1828.87	5	235.18	5	-12.75	5	488.50	1	0.05	1	1.56	1
9	9	1009	Min.	0.00	-2573.09	5	-352.48	5	-760.64	5	-486.71	1	-1553.45	1	-1.90	1
9	9	1009	Min.	318.01	-1857.57	5	-352.48	5	-51.92	5	-486.71	1	-0.06	1	-1.90	1
10	10	610	Max	0.00	-3370.74	5	381.00	5	972.40	5	636.37	1	1587.16	1	59.81	5
10	10	610	Max	303.19	-2688.56	5	381.00	5	513.87	5	636.37	1	384.29	1	59.81	5
10	10	610	Min.	0.00	-3413.16	5	-645.84	5	-641.31	5	-632.35	1	-1547.64	1	-55.29	5
10	10	610	Min.	303.19	-2730.98	5	-645.84	5	-985.75	5	-632.35	1	-332.57	1	-55.29	5
11	11	1111	Max	0.00	-2205.03	5	169.25	5	828.06	5	199.49	1	672.85	1	120.44	1
11	11	1111	Max	320.35	-1484.24	5	169.25	5	136.76	5	199.49	1	184.93	1	120.44	1
11	11	1111	Min.	0.00	-2614.59	5	-514.86	5	-405.75	5	-396.28	1	-458.79	1	-91.62	1
11	11	1111	Min.	320.35	-1893.81	5	-514.85	5	-821.61	5	-396.28	1	-601.29	1	-91.62	1
12	12	1112	Max	0.00	-2238.28	5	178.00	5	847.29	5	401.69	1	447.87	1	121.02	1
12	12	1112	Max	320.35	-1517.49	5	178.00	5	147.06	5	401.69	1	614.79	1	121.02	1
12	12	1112	Min.	0.00	-2658.08	5	-525.38	5	-423.56	5	-186.74	1	-678.27	1	-149.64	1
12	12	1112	Min.	320.35	-1937.30	5	-525.38	5	-836.18	5	-186.74	1	-156.59	1	-149.64	1
13	13	1313	Max	0.00	-2859.47	1	1.70	5	1428.41	5	403.94	1	565.59	1	38.24	5
13	13	1313	Max	333.77	-2108.49	1	1.70	5	-367.07	5	403.94	1	677.75	1	38.24	5
13	13	1313	Min.	0.00	-3029.48	1	-822.89	5	-372.81	5	-307.34	1	-670.58	1	-57.16	5
13	13	1313	Min.	333.77	-2278.50	1	-822.89	5	-1318.24	5	-307.34	1	-460.30	1	-57.16	5
14	14	1414	Max	0.00	-2830.70	1	91.35	5	1623.36	5	296.51	1	685.75	1	80.48	5
14	14	1414	Max	334.40	-2078.30	1	91.35	5	-263.26	5	296.51	1	439.07	1	80.48	5
14	14	1414	Min.	0.00	-3072.72	1	-911.42	5	-568.79	5	-416.42	1	-552.53	1	-57.75	5
14	14	1414	Min.	334.40	-2320.31	1	-911.42	5	-1424.47	5	-416.42	1	-706.82	1	-57.75	5
15	15	1715	Max	0.00	-4718.80	1	584.75	1	2118.57	1	1209.80	5	1929.46	5	722.20	5
15	15	1715	Max	345.02	-1613.62	1	584.75	1	517.01	1	1209.80	5	-20.13	5	722.20	5
15	15	1715	Min.	0.00	-5126.37	1	-1112.63	1	-1500.88	1	-578.55	5	-4280.59	5	-403.76	5
15	15	1715	Min.	345.02	-2021.19	1	-1112.63	1	-1720.60	1	-578.55	5	-153.06	5	-403.76	5
16	16	1716	Max	0.00	-4711.60	1	1123.35	1	1512.70	1	1250.13	5	2047.50	5	438.35	5
16	16	1716	Max	345.02	-1606.42	1	1123.35	1	1749.60	1	1250.13	5	-0.44	5	438.35	5
16	16	1716	Min.	0.00	-5077.55	1	-591.04	1	-2126.51	1	-608.56	5	-4427.21	5	-748.67	5
16	16	1716	Min.	345.02	-1972.37	1	-591.04	1	-526.85	1	-608.56	5	-165.72	5	-748.67	5
17	17	1917	Max	0.00	-319.90	5	20.16	1	78.77	1	23.84	5	-9.18	5	23.83	1
17	17	1917	Max	355.40	-189.69	5	20.16	1	0.00	5	23.84	5	47.93	5	23.83	1
17	17	1917	Min.	0.00	-333.90	5	-22.24	1	-71.74	1	11.21	5	-36.80	5	-25.35	1
17	17	1917	Min.	355.40	-203.69	5	-22.24	1	-0.36	5	11.21	5	30.67	5	-25.35	1
18	18	1918	Max	0.00	-319.62	5	24.29	1	79.41	1	24.14	5	-8.63	5	26.80	1
18	18	1918	Max	355.40	-189.41	5	24.29	1	0.36	1	24.14	5	48.35	5	26.80	1
18	18	1918	Min.	0.00	-334.22	5	-22.33	1	-86.02	1	10.96	5	-37.46	5	-25.39	1
18	18	1918	Min.	355.40	-204.01	5	-22.33	1	-0.01	1	10.96	5	30.31	5	-25.39	1
806	801	502	Max	14.91	-112.96	1	81.76	5	238.91	5	452.53	1	84.99	1	114.92	5
806	801	502	Max	174.56					45.65	1			307.51	1		
806	801	502	Max	512.37	-135.93	1	81.76	5	206.79	5	-417.73	1	-291.43	1	114.92	5
806	801	502	Min.	14.91	-293.58	1	-95.79	5	-201.70	5	278.82	1	-378.66	1	-29.11	5
806	801	502	Min.	174.56					-30.83	1			120.53	1		
806	801	502	Min.	512.37	-316.54	1	-95.79	5	-239.35	5	-591.43	1	-693.24	1	-29.11	5
806	502	105	Max	14.91	-2.36	1	70.18	5	176.08	5	632.06	1	-52.95	1	165.64	5
806	502	105	Max	375.94					88.24	1			423.09	1		
806	502	105	Max	511.47	-25.55	1	70.1									



## Relazione di calcolo

806	502	105	Min.	511.47	-320.54	1	-58.23	5	-140.50	1	-570.67	1	-731.19	1	27.40	5
807	104	403	Max	15.82	-4.56	1	50.95	5	148.09	1	558.42	1	293.67	1	-38.89	5
807	104	403	Max	132.49					83.03	1			412.61	1		
807	104	403	Max	491.27	17.46	1	50.95	5	151.38	5	-273.32	1	-35.11	1	-38.89	5
807	104	403	Min.	15.82	-318.63	1	-64.49	5	-113.66	1	203.87	1	-713.60	1	-160.97	5
807	104	403	Min.	132.49					-64.39	1			-181.29	1		
807	104	403	Min.	491.27	-296.60	1	-64.49	5	-181.31	5	-627.87	1	-715.00	1	-160.97	5
807	403	801	Max	14.91	-123.28	1	82.60	5	174.31	5	601.40	1	-316.31	1	16.73	5
807	403	801	Max	358.52					42.99	1			331.45	1		
807	403	801	Max	533.47	-99.15	1	82.60	5	222.66	5	-305.76	1	64.03	1	16.73	5
807	403	801	Min.	14.91	-344.49	1	-68.96	5	-207.89	5	440.65	1	-702.99	1	-100.65	5
807	403	801	Min.	358.52					-29.70	1			164.39	1		
807	403	801	Min.	533.47	-320.37	1	-68.96	5	-185.51	5	-466.52	1	-383.85	1	-100.65	5
901	403	201	Max	15.00	36.93	5	28.72	1	22.41	1	283.36	5	-109.83	5	0.00	5
901	403	201	Max	92.63					0.05	5			0.00	5		
901	403	201	Max	93.02	31.46	5	28.72	1	0.00	1	0.61	5	0.00	5	0.00	5
901	403	201	Min.	15.00	-25.99	5	-28.72	1	-22.41	1	282.15	5	-110.78	5	0.00	5
901	403	201	Min.	92.63					-0.05	5			-0.01	5		
901	403	201	Min.	93.02	-31.46	5	-28.72	1	0.00	1	-0.61	5	0.00	5	0.00	5
901	907	403	Max	14.99	-431.63	5	9.57	1	0.00	1	1017.41	5	0.00	1	0.00	1
901	907	403	Max	295.80					14.61	5			1428.47	5		
901	907	403	Max	651.31	-500.80	5	9.57	1	60.92	1	-1288.06	5	-861.12	5	0.00	1
901	907	403	Min.	14.99	-550.70	5	-9.70	1	0.00	1	927.38	5	0.00	1	0.00	1
901	907	403	Min.	295.80					-14.96	5			1175.65	5		
901	907	403	Min.	651.31	-619.86	5	-9.70	1	-61.72	1	-1378.10	5	-1434.00	5	0.00	1
1108	104	106	Max	15.24	40.73	5	36.37	1	28.30	1	325.12	5	-125.73	5	0.00	5
1108	104	106	Max	92.68					0.07	5			0.00	5		
1108	104	106	Max	93.07	34.46	5	36.37	1	0.00	1	0.67	5	0.00	5	0.00	5
1108	104	106	Min.	15.24	-28.18	5	-36.37	1	-28.30	1	323.79	5	-126.77	5	0.00	5
1108	104	106	Min.	92.68					-0.07	5			-0.01	5		
1108	104	106	Min.	93.07	-34.46	5	-36.37	1	0.00	1	-0.67	5	0.00	5	0.00	5
1108	606	104	Max	15.00	-208.75	5	67.74	1	210.89	1	1509.99	5	-1042.96	5	121.09	1
1108	606	104	Max	377.22					42.29	5			1006.35	5		
1108	606	104	Max	598.70	-284.86	5	67.74	1	173.53	1	-922.83	5	-15.47	5	121.09	1
1108	606	104	Min.	15.00	-306.41	5	-61.56	1	-225.17	1	1221.07	5	-1729.37	5	-142.68	1
1108	606	104	Min.	377.22					-34.16	5			645.27	5		
1108	606	104	Min.	598.70	-382.52	5	-61.56	1	-151.69	1	-1211.76	5	-1016.05	5	-142.68	1
1108	1111	606	Max	15.00	-34.29	5	96.58	5	237.40	5	1022.40	5	68.85	5	167.16	1
1108	1111	606	Max	183.21					80.48	5			657.91	5		
1108	1111	606	Max	505.92	-101.73	5	96.58	5	246.06	1	-1023.62	5	-842.76	5	167.16	1
1108	1111	606	Min.	15.00	-245.71	5	-94.49	5	-256.14	5	700.53	5	-840.27	5	-143.36	1
1108	1111	606	Min.	183.21					-95.70	5			289.56	5		
1108	1111	606	Min.	505.92	-313.14	5	-94.49	5	-254.54	1	-1345.49	5	-1514.78	5	-143.36	1
1108	1113	1111	Max	0.00	34.83	5	45.17	1	0.00	5	0.67	5	0.00	5	0.00	1
1108	1113	1111	Max	77.82	28.55	5	45.17	1	35.15	1	-323.78	5	-125.72	5	0.00	1
1108	1113	1111	Min.	0.00	-34.83	5	-45.17	1	0.00	5	-0.67	5	0.00	5	0.00	1
1108	1113	1111	Min.	77.82	-41.10	5	-45.17	1	-35.15	1	-325.13	5	-126.77	5	0.00	1
1109	105	107	Max	15.24	41.36	5	36.94	1	28.75	1	329.80	5	-127.54	5	0.00	1
1109	105	107	Max	92.68					0.08	5			0.00	5		
1109	105	107	Max	93.07	34.99	5	36.94	1	0.00	1	0.68	5	0.00	5	0.00	1
1109	105	107	Min.	15.24	-28.63	5	-36.94	1	-28.75	1	328.45	5	-128.59	5	0.00	1
1109	105	107	Min.	92.68					-0.08	5			-0.01	5		
1109	105	107	Min.	93.07	-34.99	5	-36.94	1	0.00	1	-0.68	5	0.00	5	0.00	1
1109	610	105	Max	15.00	-208.65	1	77.01	1	277.59	1	1534.00	5	-1048.95	5	177.19	1
1109	610	105	Max	377.75					40.10	5			1024.52	5		
1109	610	105	Max	598.70	-285.86	1	77.01	1	189.88	1	-933.83	5	-6.99	5	177.19	1
1109	610	105	Min.	15.00	-312.10	1	-82.81	1	-263.69	1	1234.17	5	-1758.93	5	-151.94	1
1109	610	105	Min.	377.75					-47.24	5			645.68	5		
1109	610	105	Min.	598.70	-389.31	1	-82.81	1	-209.84	1	-1233.66	5	-1047.83	5	-151.94	1
1109	1112	610	Max	15.00	-24.80	5	112.00	1	276.35	5	1041.27	5	81.32	5	184.09	1
1109	1112	610	Max	182.37					104.81	5			672.83	5		
1109	1112	610	Max	505.92	-93.21	5	112.00	1	317.52	1	-1034.19	5	-847.89	5	184.09	1
1109	1112	610	Min.	15.00	-259.98	5	-113.71	1	-259.12	5	706.99	5	-865.87	5	-210.39	1
1109	1112	610	Min.	182.37					-90.44	5			284.39	5		
1109	1112	610	Min.	505.92	-328.39	5	-113.71	1	-308.67	1	-1368.47	5	-1542.96	5	-210.39	1
1109	1114	1112	Max	0.00	35.37	5	46.36	1	0.00	5	0.68	5	0.00	1	0.00	1
1109	1114	1112	Max	77.82	29.01	5	46.36	1	36.08	1	-328.44	5	-127.53	5	0.00	1
1109	1114	1112	Min.	0.00	-35.37	5	-46.36	1	0.00	5	-0.68	5	0.00	1	0.00	1
1109	1114	1112	Min.	77.82	-41.74	5	-46.36	1	-36.08	1	-329.81	5	-128.60	5	0.00	1
1501	1313	-1	Max	15.85	-162.68	5	16.59	1	94.66	1	1174.42	5	-584.11	5	0.00	1
1501	1313	-1	Max	305.06					21.77	5			931.01	5		
1501	1313	-1	Max	531.77	-223.45	5	16.59	1	0.00	1	-694.68	5	0.00	5	0.00	1
1501	1313	-1	Min.	15.85	-693.21	5	-18.35	1	-85.57	1	1047.77	5	-1237.54	5	0.00	1
1501	1313	-1	Min.	305.06					-17.78	5			643.87	5		
1501	1313	-1	Min.	531.77	-753.99	5	-18.35	1	0.00	1	-821.33	5	0.00	5	0.00	1
1501	1501	1313	Max	0.00	31.19	5	36.45	1	0.00	1	0.60	5	0.00	1	0.00	1
1501	1501	1313	Max	77.16	25.78	5	36.45	1	28.13	1	-279.04	5	-107.42	5	0.00	1
1501	1501	1313	Min.	0.00	-31.19	5	-36.45	1	0.00	1	-0.60	5	0.00	1	0.00	1
1501	1501	1313	Min.	77.16	-36.60	5	-36.45	1	-28.13	1	-280.24	5	-108.35	5	0.00	1
1605	502	301	Max	15.00	43.54	5	28.94	1	22.58	1	283.49	5	-109.73	5	0.00	1
1605	502	301	Max	92.63					0.05	5			0.00	5		
1605	502	301	Max	93.02	38.07	5	28.94	1	0.00	1	0.74	5	0.00	5	0.00	1
1605	502	301	Min.	15.00	-32.59	5	-28.94	1	-22.58	1	282.02	5	-110.88	5	0.00	1
1605	502	301	Min.	92.63					-0.05	5			-0.01	5		
1605	502	301	Min.	93.02	-38.07	5	-28.94	1	0.00	1	-0.74	5	0.00	5	0.00	1
1605	1009	502	Max	14.99	-426.00	5	9.85	1	0.00	1	1029.72	5	0.00	1	0.00	1
1605	1009	502	Max	299.19					16.10	5			1463.24	5		
1605	1009	502	Max	653.30	-495.03	5	9.85	1	62.89	1	-1283.00	5	-808.38	5	0.00	1
1605	1009	502	Min.	14.99	-567.18	5	-9.61	1	0.00	1	921.41	5	0.00	1	0.00	1
1605	1009	502	Min.	299.19					-15.41	5			1155.44	5		
1605	1009	502	Min.	653.30	-636.22	5	-9.61	1	-61.35	1	-1391.31	5	-1499.69	5	0.00	1



## Relazione di calcolo

1605	1414	1009	Max	15.85	-104.42	5	19.36	1	89.57	1	1190.19	5	-518.75	5	0.00	1
1605	1414	1009	Max	302.09					22.47	5			965.52	5		
1605	1414	1009	Max	532.95	-160.48	5	19.36	1	0.00	1	-683.35	5	0.00	5	0.00	1
1605	1414	1009	Min.	15.85	-763.00	5	-17.32	1	-100.09	1	1037.09	5	-1310.44	5	0.00	1
1605	1414	1009	Min.	532.69					-0.00	7			1.80	7		
1605	1414	1009	Min.	532.95	-819.07	5	-17.32	1	0.00	1	-836.45	5	0.00	5	0.00	1
1605	1601	1414	Max	0.00	37.96	5	36.44	1	0.00	1	0.73	5	0.00	1	0.00	5
1605	1601	1414	Max	77.16	32.55	5	36.44	1	28.12	1	-278.90	5	-107.32	5	0.00	5
1605	1601	1414	Min.	0.00	-37.96	5	-36.44	1	0.00	1	-0.73	5	0.00	1	0.00	5
1605	1601	1414	Min.	77.16	-43.37	5	-36.44	1	-28.12	1	-280.37	5	-108.45	5	0.00	5
1710	1716	1414	Max	15.85	248.16	1	207.66	5	505.28	5	537.27	1	162.52	1	168.47	5
1710	1716	1414	Max	64.14					225.66	1			182.88	1		
1710	1716	1414	Max	339.78	231.19	1	207.66	5	340.58	5	-29.36	1	113.87	1	168.47	5
1710	1716	1414	Min.	15.85	-378.53	1	-291.35	5	-336.19	5	84.33	1	-709.04	1	-34.12	5
1710	1716	1414	Min.	64.14					-96.99	1			-470.05	1		
1710	1716	1414	Min.	339.78	-395.50	1	-291.35	5	-442.60	5	-482.30	1	-482.31	1	-34.12	5
1710	1414	1112	Max	14.99	120.70	1	147.45	5	282.15	5	528.10	1	-11.47	1	46.02	5
1710	1414	1112	Max	316.53					92.99	1			327.00	1		
1710	1414	1112	Max	452.86	97.77	1	147.45	5	293.88	5	-237.82	1	165.07	1	46.02	5
1710	1414	1112	Min.	14.99	-308.62	1	-119.33	5	-364.55	5	265.59	1	-471.07	1	-99.36	5
1710	1414	1112	Min.	316.53					-90.59	1			-6.75	1		
1710	1414	1112	Min.	452.86	-331.56	1	-119.33	5	-253.14	5	-500.33	1	-526.02	1	-99.36	5
1811	1111	1313	Max	16.52	74.74	1	109.59	5	270.81	5	490.81	1	188.17	1	91.19	5
1811	1111	1313	Max	136.35					86.21	1			313.54	1		
1811	1111	1313	Max	433.34	96.57	1	109.59	5	236.97	5	-238.30	1	16.33	1	91.19	5
1811	1111	1313	Min.	16.52	-288.53	1	-139.54	5	-228.77	5	209.31	1	-510.35	1	-35.03	5
1811	1111	1313	Min.	136.35					-80.06	1			-47.97	1		
1811	1111	1313	Min.	433.34	-266.69	1	-139.54	5	-319.77	5	-519.80	1	-459.36	1	-35.03	5
1811	1313	1715	Max	14.99	206.41	1	221.54	5	264.64	5	475.84	1	104.42	1	15.83	5
1811	1313	1715	Max	286.96					160.16	1			174.25	1		
1811	1313	1715	Max	359.97	224.49	1	221.54	5	405.48	5	-127.61	1	127.68	1	15.83	5
1811	1313	1715	Min.	14.99	-375.40	1	-146.75	5	-363.58	5	66.26	1	-473.09	1	-141.29	5
1811	1313	1715	Min.	286.96					-55.69	1			-362.41	1		
1811	1313	1715	Min.	359.97	-357.32	1	-146.75	5	-246.41	5	-537.18	1	-707.97	1	-141.29	5
1811	1715	1801	Max	14.99	-172.42	1	451.15	5	707.49	5	1593.89	1	-151.36	1	46.18	5
1811	1715	1801	Max	170.08	-164.28	1	451.15	5	397.00	5	1322.62	1	902.55	5	46.18	5
1811	1715	1801	Min.	14.99	-577.88	1	-1033.79	5	-305.92	5	807.35	1	-1369.57	1	37.39	5
1811	1715	1801	Min.	170.08	-569.74	1	-1033.79	5	-899.00	5	536.08	1	879.74	5	37.39	5
1811	1801	1716	Max	0.00	-168.74	1	1037.37	5	396.85	5	-529.00	1	902.27	5	-35.74	5
1811	1801	1716	Max	155.08	-176.88	1	1037.37	5	714.80	5	-800.27	1	-143.33	1	-35.74	5
1811	1801	1716	Min.	0.00	-564.91	1	-453.04	5	-899.00	5	-1316.81	1	880.02	5	-48.02	5
1811	1801	1716	Min.	155.08	-573.05	1	-453.04	5	-310.75	5	-1588.08	1	-1357.62	1	-48.02	5
2002	1917	1715	Max	9.68	-8.83	5	20.33	1	19.06	1	132.21	5	-37.26	5	0.63	1
2002	1917	1715	Max	138.04					5.42	5			31.63	5		
2002	1917	1715	Max	241.20	-15.98	5	20.33	1	26.70	1	-106.25	5	-23.18	5	0.63	1
2002	1917	1715	Min.	9.68	-18.73	5	-18.25	1	-20.39	1	118.46	5	-53.23	5	-0.94	1
2002	1917	1715	Min.	138.04					-4.08	5			29.95	5		
2002	1917	1715	Min.	241.20	-25.88	5	-18.25	1	-23.22	1	-119.99	5	-39.03	5	-0.94	1
2002	2001	1917	Max	0.00	1.09	5	5.02	1	0.00	1	0.03	5	0.00	1	0.00	1
2002	2001	1917	Max	50.35	-0.47	5	5.02	1	2.53	1	-51.82	5	-13.04	5	0.00	1
2002	2001	1917	Min.	0.00	-1.09	5	-5.02	1	0.00	1	-0.03	5	0.00	1	0.00	1
2002	2001	1917	Min.	50.35	-2.65	5	-5.02	1	-2.53	1	-51.89	5	-13.07	5	0.00	1
2004	1918	1716	Max	9.68	-8.81	5	19.48	1	21.52	1	132.54	5	-36.93	5	1.00	1
2004	1918	1716	Max	138.36					4.71	5			31.67	5		
2004	1918	1716	Max	241.20	-15.97	5	19.48	1	24.83	1	-105.92	5	-22.79	5	1.00	1
2004	1918	1716	Min.	9.68	-18.78	5	-21.44	1	-20.29	1	118.17	5	-53.61	5	-0.69	1
2004	1918	1716	Min.	138.36					-6.01	5			29.87	5		
2004	1918	1716	Min.	241.20	-25.94	5	-21.44	1	-28.14	1	-120.28	5	-39.37	5	-0.69	1
2004	2002	1918	Max	0.00	1.10	5	5.38	1	0.00	1	0.03	5	0.00	1	0.00	5
2004	2002	1918	Max	50.35	-0.45	5	5.38	1	2.71	1	-51.82	5	-13.04	5	0.00	5
2004	2002	1918	Min.	0.00	-1.10	5	-5.38	1	0.00	1	-0.03	5	0.00	1	0.00	5
2004	2002	1918	Min.	50.35	-2.66	5	-5.38	1	-2.71	1	-51.89	5	-13.07	5	0.00	5
2203	801	701	Max	15.00	48.67	5	29.11	1	22.71	1	296.07	5	-114.52	5	0.00	1
2203	801	701	Max	92.63					0.04	5			0.00	5		
2203	801	701	Max	93.02	42.96	5	29.11	1	0.00	1	0.83	5	0.00	5	0.00	1
2203	801	701	Min.	15.00	-37.24	5	-29.11	1	-22.71	1	294.40	5	-115.82	5	0.00	1
2203	801	701	Min.	92.63					-0.04	5			-0.01	5		
2203	801	701	Min.	93.02	-42.96	5	-29.11	1	0.00	1	-0.83	5	0.00	5	0.00	1
2203	1208	801	Max	14.99	-82.44	5	9.58	1	0.00	1	1125.85	5	0.00	1	0.00	1
2203	1208	801	Max	312.59					10.63	5			1675.27	5		
2203	1208	801	Max	710.33	-161.36	5	9.58	1	66.60	1	-1504.69	5	-1317.09	5	0.00	1
2203	1208	801	Min.	14.99	-1139.28	5	-9.54	1	0.00	1	1085.66	5	0.00	1	0.00	1
2203	1208	801	Min.	312.59					-10.54	5			1555.67	5		
2203	1208	801	Min.	710.33	-1218.20	5	-9.54	1	-66.37	1	-1544.88	5	-1596.54	5	0.00	1
2203	1801	1208	Max	0.00	516.23	5	20.04	1	111.13	1	1294.08	5	-1281.57	5	0.00	1
2203	1801	1208	Max	338.10					13.14	5			880.82	5		
2203	1801	1208	Max	553.89	455.83	5	20.04	1	0.00	1	-801.42	5	0.00	5	0.00	1
2203	1801	1208	Min.	0.00	-1609.51	5	-20.06	1	-110.99	1	1279.13	5	-1364.39	5	0.00	1
2203	1801	1208	Min.	338.10					-13.08	5			848.55	5		
2203	1801	1208	Min.	553.89	-1669.91	5	-20.06	1	0.00	1	-816.38	5	0.00	5	0.00	1
2203	2101	1801	Max	0.00	71.20	5	39.80	1	4.31	1	-86.85	5	-26.57	5	0.00	1
2203	2101	1801	Max	346.16	55.67	5	39.80	1	141.96	1	-600.59	5	-1216.39	5	0.00	1
2203	2101	1801	Min.	0.00	-76.59	5	-39.80	1	-4.31	1	-91.32	5	-26.91	5	0.00	1
2203	2101	1801	Min.	346.16	-92.12	5	-39.80	1	-141.96	1	-605.06	5	-1232.20	5	0.00	1
2203	2201	2101	Max	0.00	9.53	5	7.18	1	0.00	1	0.29	5	0.00	1	0.00	5
2203	2201	2101	Max	60.03	6.85	5	7.18	1	4.31	1	-88.80	5	-26.57	5	0.00	5
2203	2201	2101	Min.	0.00	-9.53	5	-7.18	1	0.00	1	-0.29	5	0.00	1	0.00	5
2203	2201	2101	Min.	60.03	-12.20	5	-7.18	1	-4.31	1	-89.37	5	-26.91	5	0.00	5

Tipo di combinazione di carico: SND



## Relazione di calcolo

Asta	N1	N2		X <cm>	N <daN>	CC	Ty <daN>	CC	Mz <daNm>	CC	Tz <daN>	CC	My <daNm>	CC	Mx <daNm>	CC
1	1	801	Max	0.00	-3249.14	5	977.86	5	-33.09	5	653.28	1	1077.49	1	90.84	1
1	1	801	Max	311.98	-2697.82	5	977.86	5	1844.01	5	653.28	1	948.36	1	90.84	1
1	1	801	Min.	0.00	-3346.22	5	375.51	5	-1216.74	5	-639.14	1	-1089.75	1	-90.98	1
1	1	801	Min.	311.98	-2794.90	5	375.51	5	1128.40	5	-639.14	1	-916.52	1	-90.98	1
2	2	502	Max	0.00	-3109.69	1	1506.11	5	1401.87	5	886.38	1	1265.08	1	83.22	5
2	2	502	Max	298.07	-2582.96	1	1506.11	5	2184.50	5	886.38	1	1280.32	1	83.22	5
2	2	502	Min.	0.00	-3480.52	1	-441.31	5	-2305.89	5	-782.80	1	-1363.35	1	-82.36	5
2	2	502	Min.	298.07	-2953.78	1	-441.31	5	85.36	5	-782.80	1	-1069.86	1	-82.36	5
3	3	403	Max	0.00	-3076.15	1	1334.57	5	1091.84	5	758.02	1	1365.11	1	77.17	5
3	3	403	Max	297.40	-2550.60	1	1334.57	5	1991.21	5	758.02	1	1029.76	1	77.17	5
3	3	403	Min.	0.00	-3508.52	1	-282.75	5	-1979.06	5	-897.18	1	-1227.42	1	-76.95	5
3	3	403	Min.	297.40	-2982.97	1	-282.75	5	249.68	5	-897.18	1	-1305.93	1	-76.95	5
4	4	104	Max	0.00	-2131.09	1	1112.18	5	1150.25	5	895.18	1	1981.32	1	273.43	5
4	4	104	Max	284.00	-1492.09	1	1112.18	5	1561.29	5	895.18	1	866.72	1	273.43	5
4	4	104	Min.	0.00	-3028.53	1	-542.58	5	-1598.41	5	-1190.85	1	-1682.67	1	-265.59	5
4	4	104	Min.	284.00	-2389.53	1	-542.58	5	-391.77	5	-1190.85	1	-1407.76	1	-265.59	5
5	5	105	Max	0.00	-2190.79	1	1147.15	5	1201.95	5	1185.21	1	1664.53	1	291.61	5
5	5	105	Max	284.00	-1551.79	1	1147.15	5	1601.96	5	1185.21	1	1400.04	1	291.61	5
5	5	105	Min.	0.00	-3060.55	1	-570.28	5	-1657.34	5	-867.56	1	-1974.22	1	-298.47	5
5	5	105	Min.	284.00	-2421.55	1	-570.28	5	-419.05	5	-867.56	1	-807.61	1	-298.47	5
6	6	606	Max	0.00	-3315.62	5	791.87	5	1616.65	5	1080.32	1	2658.72	1	111.46	5
6	6	606	Max	303.19	-2633.44	5	791.87	5	1114.69	5	1080.32	1	589.02	1	111.46	5
6	6	606	Min.	0.00	-3394.02	5	-1055.57	5	-1286.22	5	-1084.35	1	-2692.08	1	-117.04	5
6	6	606	Min.	303.19	-2711.84	5	-1055.57	5	-1583.77	5	-1084.35	1	-634.60	1	-117.04	5
7	7	-1	Max	0.00	-2528.89	5	479.47	5	1817.82	5	1068.81	1	3389.63	1	3.47	1
7	7	-1	Max	316.00	-1817.89	5	479.47	5	3.05	5	1068.81	1	7.02	1	3.47	1
7	7	-1	Min.	0.00	-2578.13	5	-592.02	5	-1512.12	5	-1070.45	1	-3384.45	1	-3.19	1
7	7	-1	Min.	316.00	-1867.13	5	-592.02	5	-53.01	5	-1070.45	1	-7.01	1	-3.19	1
7	-1	907	Max	0.00	-917.59	5	45.59	5	-135.50	5	514.98	1	7.19	1	3.13	1
7	-1	907	Max	1.38	-914.48	5	45.59	5	-135.03	5	514.97	1	0.09	1	3.13	1
7	-1	907	Min.	0.00	-1111.77	5	-1085.79	5	-149.87	5	-514.86	1	-7.19	1	-3.11	1
7	-1	907	Min.	1.38	-1108.66	5	-1085.77	5	-164.71	5	-514.85	1	-0.09	1	-3.11	1
8	8	1208	Max	0.00	-2730.02	5	122.08	5	758.18	5	1224.92	1	4088.03	1	3.90	1
8	8	1208	Max	333.73	-1979.13	5	122.08	5	-37.27	5	1224.92	1	0.11	1	3.90	1
8	8	1208	Min.	0.00	-2824.75	5	-242.61	5	-444.94	5	-1224.98	1	-4087.84	1	-3.90	1
8	8	1208	Min.	333.73	-2073.85	5	-242.61	5	-51.74	5	-1224.98	1	-0.11	1	-3.90	1
9	9	1009	Max	0.00	-2527.38	5	587.45	5	2165.79	5	1073.62	1	3408.45	1	3.51	1
9	9	1009	Max	318.01	-1811.85	5	587.45	5	10.75	5	1073.63	1	0.11	1	3.51	1
9	9	1009	Min.	0.00	-2590.11	5	-704.76	5	-1857.42	5	-1071.83	1	-3414.16	1	-3.85	1
9	9	1009	Min.	318.01	-1874.58	5	-704.76	5	-75.42	5	-1071.83	1	-0.12	1	-3.85	1
10	10	610	Max	0.00	-3349.66	5	832.92	5	1681.45	5	1394.30	1	3462.39	1	123.68	5
10	10	610	Max	303.19	-2667.49	5	832.92	5	1175.05	5	1394.30	1	808.75	1	123.68	5
10	10	610	Min.	0.00	-3434.24	5	-1097.76	5	-1350.35	5	-1390.28	1	-3422.87	1	-119.16	5
10	10	610	Min.	303.19	-2752.06	5	-1097.76	5	-1646.92	5	-1390.28	1	-757.04	1	-119.16	5
11	11	1111	Max	0.00	-2026.58	5	458.58	5	1352.74	5	426.10	1	1101.91	1	238.06	1
11	11	1111	Max	320.35	-1305.79	5	458.58	5	539.40	5	426.10	1	488.04	1	238.06	1
11	11	1111	Min.	0.00	-2793.05	5	-804.19	5	-930.43	5	-622.89	1	-887.86	1	-209.24	1
11	11	1111	Min.	320.35	-2072.26	5	-804.19	5	-1224.25	5	-622.89	1	-904.40	1	-209.24	1
12	12	1112	Max	0.00	-2051.52	5	481.70	5	1399.43	5	625.46	1	874.60	1	276.21	1
12	12	1112	Max	320.35	-1330.73	5	481.70	5	568.35	5	625.46	1	914.35	1	276.21	1
12	12	1112	Min.	0.00	-2844.84	5	-829.09	5	-975.71	5	-410.50	1	-1105.00	1	-304.83	1
12	12	1112	Min.	320.35	-2124.05	5	-829.09	5	-1257.47	5	-410.50	1	-456.14	1	-304.83	1
13	13	1313	Max	0.00	-2784.95	1	495.44	5	2507.28	5	675.72	1	1037.45	1	89.84	5
13	13	1313	Max	333.77	-2033.96	1	495.44	5	202.05	5	675.72	1	1113.13	1	89.84	5
13	13	1313	Min.	0.00	-3104.01	1	-1316.64	5	-1451.68	5	-579.12	1	-1142.44	1	-108.76	5
13	13	1313	Min.	333.77	-2353.03	1	-1316.64	5	-1887.36	5	-579.12	1	-895.67	1	-108.76	5
14	14	1414	Max	0.00	-2727.17	1	692.29	5	2937.33	5	569.18	1	1158.72	1	160.51	5
14	14	1414	Max	334.40	-1974.77	1	692.29	5	432.34	5	569.18	1	877.96	1	160.51	5
14	14	1414	Min.	0.00	-3176.25	1	-1512.35	5	-1882.76	5	-689.08	1	-1025.50	1	-137.78	5
14	14	1414	Min.	334.40	-2423.85	1	-1512.35	5	-2120.07	5	-689.08	1	-1145.71	1	-137.78	5
15	15	1715	Max	0.00	-4562.88	1	1231.52	1	3497.80	1	1896.02	5	4332.28	5	1163.86	5
15	15	1715	Max	345.02	-1457.70	1	1231.52	1	1369.61	1	1896.02	5	56.81	5	1163.86	5
15	15	1715	Min.	0.00	-5282.29	1	-1759.40	1	-2880.10	1	-1264.77	5	-6683.42	5	-845.42	5
15	15	1715	Min.	345.02	-2177.11	1	-1759.40	1	-2573.20	1	-1264.77	5	-230.00	5	-845.42	5
16	16	1716	Max	0.00	-4570.99	1	1776.49	1	2899.39	1	1991.76	5	4659.64	5	932.82	5
16	16	1716	Max	345.02	-1465.81	1	1776.49	1	2616.72	1	1991.76	5	95.91	5	932.82	5
16	16	1716	Min.	0.00	-5218.16	1	-1244.18	1	-3513.20	1	-1350.19	5	-7039.36	5	-1243.14	5
16	16	1716	Min.	345.02	-2112.98	1	-1244.18	1	-1393.97	1	-1350.19	5	-262.07	5	-1243.14	5
17	17	1917	Max	0.00	-314.47	5	45.27	1	167.83	1	28.75	5	1.54	5	48.54	1
17	17	1917	Max	355.40	-184.26	5	45.27	1	0.19	1	28.75	5	54.65	5	48.54	1
17	17	1917	Min.	0.00	-339.33	5	-47.34	1	-160.80	1	6.31	5	-47.53	5	-50.06	1
17	17	1917	Min.	355.40	-209.12	5	-47.34	1	-0.54	1	6.31	5	23.95	5	-50.06	1
18	18	1918	Max	0.00	-313.71	5	51.94	1	177.53	1	29.49	5	3.05	5	53.60	1
18	18	1918	Max	355.40	-183.50	5	51.94	1	0.56	1	29.49	5	55.67	5	53.60	1
18	18	1918	Min.	0.00	-340.13	5	-49.98	1	-184.15	1	5.61	5	-49.14	5	-52.19	1
18	18	1918	Min.	355.40	-209.92	5	-49.98	1	-0.20	1	5.61	5	22.98	5	-52.19	1
806	801	502	Max	14.91	-22.96	1	181.58	5	484.69	5	542.19	1	323.99	1	195.17	5
806	801	502	Max	123.50					130.60	1			426.70	1		
806	801	502	Max	512.37	-45.93	1	181.58	5	459.30	5	-328.07	1	-83.32	1	195.17	5
806	801	502	Min.	14.91	-383.57	1	-195.61	5	-447.47	5	189.16	1	-617.66	1	-109.37	5
806	801	502	Min.	123.50					-108.62	1			-132.46	1		
806	801	502	Min.	512.37	-406.54	1	-195.61	5	-491.86	5	-681.09	1	-901.35	1	-109.37	5
806	502	105	Max	14.91	151.43	1	141.64	5	390.54	5	807.97	1	297.63	1	245.29	5
806	502	105	Max	476.49					306.01	1						



## Relazione di calcolo

807	104	403	Max	25.87					281.65	1			826.00	1		
807	104	403	Max	491.27	179.16	1	112.72	5	334.39	5	-86.86	1	320.93	1	30.27	5
807	104	403	Min.	15.82	-480.32	1	-126.26	5	-258.55	1	17.41	1	-1245.04	1	-230.13	5
807	104	403	Min.	25.87					-248.58	1			-1171.07	1		
807	104	403	Min.	491.27	-458.30	1	-126.26	5	-364.33	5	-814.33	1	-1071.04	1	-230.13	5
807	403	801	Max	14.91	-11.49	1	166.51	5	386.17	5	684.36	1	-116.38	1	79.97	5
807	403	801	Max	405.83					111.61	1			437.31	1		
807	403	801	Max	533.47	12.64	1	166.51	5	448.16	5	-222.80	1	295.12	1	79.97	5
807	403	801	Min.	14.91	-456.29	1	-152.87	5	-419.74	5	357.69	1	-902.91	1	-163.89	5
807	403	801	Min.	405.83					-91.88	1			-56.40	1		
807	403	801	Min.	533.47	-432.16	1	-152.87	5	-411.01	5	-549.48	1	-614.94	1	-163.89	5
901	403	201	Max	15.00	74.43	5	58.51	1	45.65	1	284.09	5	-109.26	5	0.00	5
901	403	201	Max	92.63					0.09	5			0.00	5		
901	403	201	Max	93.02	68.96	5	58.51	1	0.00	1	1.33	5	0.00	5	0.00	5
901	403	201	Min.	15.00	-63.49	5	-58.51	1	-45.65	1	281.42	5	-111.34	5	0.00	5
901	403	201	Min.	92.63					-0.09	5			-0.01	5		
901	403	201	Min.	93.02	-68.96	5	-58.51	1	0.00	1	-1.33	5	0.00	5	0.00	5
901	907	403	Max	14.99	-376.84	5	20.77	1	0.00	1	1071.38	5	0.00	1	0.00	1
901	907	403	Max	310.69					31.74	5			1584.04	5		
901	907	403	Max	651.31	-446.00	5	20.77	1	132.14	1	-1234.09	5	-517.69	5	0.00	1
901	907	403	Min.	14.99	-605.49	5	-20.89	1	0.00	1	873.40	5	0.00	1	0.00	1
901	907	403	Min.	310.69					-32.11	5			998.62	5		
901	907	403	Min.	651.31	-674.65	5	-20.89	1	-132.94	1	-1432.07	5	-1777.43	5	0.00	1
1108	104	106	Max	15.24	69.11	5	73.50	1	57.20	1	325.67	5	-125.30	5	0.00	5
1108	104	106	Max	92.68					0.15	5			0.00	5		
1108	104	106	Max	93.07	62.83	5	73.50	1	0.00	1	1.22	5	0.00	5	0.00	5
1108	104	106	Min.	15.24	-56.55	5	-73.50	1	-57.20	1	323.24	5	-127.19	5	0.00	5
1108	104	106	Min.	92.68					-0.15	5			-0.01	5		
1108	104	106	Min.	93.07	-62.83	5	-73.50	1	0.00	1	-1.22	5	0.00	5	0.00	5
1108	606	104	Max	15.00	-162.65	5	141.67	1	459.79	1	1635.35	5	-747.83	5	273.50	1
1108	606	104	Max	407.26					82.37	5			1184.72	5		
1108	606	104	Max	598.70	-238.76	5	141.67	1	357.90	1	-797.48	5	421.47	5	273.50	1
1108	606	104	Min.	15.00	-352.50	5	-135.48	1	-474.07	1	1095.72	5	-2024.49	5	-295.09	1
1108	606	104	Min.	407.26					-72.38	5			342.66	5		
1108	606	104	Min.	598.70	-428.61	5	-135.48	1	-336.07	1	-1337.11	5	-1452.99	5	-295.09	1
1108	1111	606	Max	15.00	89.48	5	208.48	5	523.89	5	1162.84	5	469.27	5	348.49	1
1108	1111	606	Max	149.57					247.78	5			846.05	5		
1108	1111	606	Max	505.92	22.04	5	208.48	5	531.00	1	-883.18	5	-553.08	5	348.49	1
1108	1111	606	Min.	15.00	-369.48	5	-206.39	5	-542.63	5	560.09	5	-1240.69	5	-324.69	1
1108	1111	606	Min.	149.57					-263.70	5			-53.65	5		
1108	1111	606	Min.	505.92	-436.91	5	-206.39	5	-539.48	1	-1485.93	5	-1804.46	5	-324.69	1
1108	1113	1111	Max	0.00	63.50	5	79.58	1	0.00	5	1.23	5	0.00	5	0.00	1
1108	1113	1111	Max	0.39					0.11	5			0.00	5		
1108	1113	1111	Max	77.82	57.23	5	79.58	1	61.93	1	-323.23	5	-125.29	5	0.00	1
1108	1113	1111	Min.	0.00	-63.50	5	-79.58	1	0.00	5	-1.23	5	0.00	5	0.00	1
1108	1113	1111	Min.	0.39					-0.11	5			-0.01	5		
1108	1113	1111	Min.	77.82	-69.78	5	-79.58	1	-61.93	1	-325.68	5	-127.20	5	0.00	1
1109	105	107	Max	15.24	70.68	5	74.71	1	58.14	1	330.37	5	-127.10	5	0.00	1
1109	105	107	Max	92.68					0.16	5			0.00	5		
1109	105	107	Max	93.07	64.32	5	74.71	1	0.00	1	1.24	5	0.00	5	0.00	1
1109	105	107	Min.	15.24	-57.95	5	-74.71	1	-58.14	1	327.88	5	-129.03	5	0.00	1
1109	105	107	Min.	92.68					-0.16	5			-0.01	5		
1109	105	107	Min.	93.07	-64.32	5	-74.71	1	0.00	1	-1.24	5	0.00	5	0.00	1
1109	610	105	Max	15.00	-151.12	1	170.32	1	593.48	1	1667.32	5	-736.50	5	370.52	1
1109	610	105	Max	409.24					89.37	5			1217.38	5		
1109	610	105	Max	598.70	-228.33	1	170.32	1	421.10	1	-800.51	5	459.16	5	370.52	1
1109	610	105	Min.	15.00	-369.63	1	-176.12	1	-579.58	1	1100.85	5	-2071.38	5	-345.26	1
1109	610	105	Min.	409.24					-98.34	5			316.67	5		
1109	610	105	Min.	598.70	-446.83	1	-176.12	1	-441.06	1	-1366.98	5	-1513.98	5	-345.26	1
1109	1112	610	Max	15.00	113.21	5	243.08	1	590.01	5	1190.72	5	509.16	5	417.14	1
1109	1112	610	Max	147.08					295.16	5			877.29	5		
1109	1112	610	Max	505.92	44.81	5	243.08	1	682.43	1	-884.74	5	-541.30	5	417.14	1
1109	1112	610	Min.	15.00	-398.00	5	-244.79	1	-572.77	5	557.54	5	-1293.71	5	-443.44	1
1109	1112	610	Min.	147.08					-280.18	5			-90.24	5		
1109	1112	610	Min.	505.92	-466.40	5	-244.79	1	-673.58	1	-1517.92	5	-1849.54	5	-443.44	1
1109	1114	1112	Max	0.00	65.02	5	82.00	1	0.00	1	1.26	5	0.00	1	0.00	1
1109	1114	1112	Max	0.39					0.12	5			0.00	5		
1109	1114	1112	Max	77.82	58.66	5	82.00	1	63.81	1	-327.87	5	-127.08	5	0.00	1
1109	1114	1112	Min.	0.00	-65.02	5	-82.00	1	0.00	1	-1.26	5	0.00	1	0.00	1
1109	1114	1112	Min.	0.39					-0.12	5			-0.01	5		
1109	1114	1112	Min.	77.82	-71.39	5	-82.00	1	-63.81	1	-330.38	5	-129.04	5	0.00	1
1501	1313	-1	Max	15.85	148.77	5	37.06	1	200.27	1	1250.35	5	-192.39	5	0.00	1
1501	1313	-1	Max	284.10					48.39	5			1111.10	5		
1501	1313	-1	Max	531.77	87.99	5	37.06	1	0.00	1	-618.75	5	0.00	5	0.00	1
1501	1313	-1	Min.	15.85	-1004.65	5	-38.82	1	-191.18	1	971.84	5	-1629.25	5	0.00	1
1501	1313	-1	Min.	284.10					-44.03	5			421.33	5		
1501	1313	-1	Min.	531.77	-1065.43	5	-38.82	1	0.00	1	-897.26	5	0.00	5	0.00	1
1501	1501	1313	Max	0.00	68.37	5	64.12	1	0.00	1	1.32	5	0.00	1	0.00	1
1501	1501	1313	Max	0.39					0.10	5			0.00	5		
1501	1501	1313	Max	77.16	62.96	5	64.12	1	49.48	1	-278.32	5	-106.86	5	0.00	1
1501	1501	1313	Min.	0.00	-68.37	5	-64.12	1	0.00	1	-1.32	5	0.00	1	0.00	1
1501	1501	1313	Min.	0.39					-0.10	5			-0.01	5		
1501	1501	1313	Min.	77.16	-73.78	5	-64.12	1	-49.48	1	-280.96	5	-108.91	5	0.00	1
1605	502	301	Max	15.00	89.03	5	59.12	1	46.12	1	284.37	5	-109.04	5	0.00	1
1605	502	301	Max	92.63					0.10	5			0.00	5		
1605	502	301	Max	93.02	83.55	5	59.12	1	0.00	1	1.62	5	0.00	5	0.00	1
1605	502	301	Min.	15.00	-78.08	5	-59.12	1	-46.12	1	281.14	5	-111.56	5	0.00	1
1605	502	301	Min.	92.63					-0.10	5			-0.01	5		
1605	502	301	Min.	93.02	-83.55	5	-59.12	1	0.00	1	-1.62	5	0.00	5	0.00	1
1605	1009	502	Max	14.99	-356.26	5	21.18	1	0.00	1	1094.66	5	0.00	1	0.00	1
1605	1009	502	Max	317.12					34.97	5			1653.63	5		



## Relazione di calcolo

1605	1009	502	Max	653.30	-425.29	5	21.18	1	135.17	1	-1218.06	5	-393.83	5	0.00	1
1605	1009	502	Min.	14.99	-636.92	5	-20.94	1	0.00	1	856.47	5	0.00	1	0.00	1
1605	1009	502	Min.	317.12					-34.24	5			933.99	5		
1605	1009	503	Min.	653.30	-705.96	5	-20.94	1	-133.64	1	-1456.25	5	-1914.24	5	0.00	1
1605	1414	1009	Max	15.85	284.84	5	40.95	1	201.24	1	1282.01	5	-43.98	5	0.00	1
1605	1414	1009	Max	276.75					57.16	5			1189.12	5		
1605	1414	1009	Max	532.95	228.77	5	40.95	1	0.00	1	-591.53	5	0.00	5	0.00	1
1605	1414	1009	Min.	15.85	-1152.25	5	-38.92	1	-211.76	1	945.27	5	-1785.22	5	0.00	1
1605	1414	1009	Min.	276.75					-62.37	5			326.40	5		
1605	1414	1009	Min.	532.95	-1208.32	5	-38.92	1	0.00	1	-928.26	5	0.00	5	0.00	1
1605	1601	1414	Max	0.00	83.33	5	64.17	1	0.00	1	1.61	5	0.00	1	0.00	5
1605	1601	1414	Max	0.39					0.09	5			0.00	5		
1605	1601	1414	Max	77.16	77.92	5	64.17	1	49.52	1	-278.02	5	-106.64	5	0.00	5
1605	1601	1414	Min.	0.00	-83.33	5	-64.17	1	0.00	1	-1.61	5	0.00	1	0.00	5
1605	1601	1414	Min.	0.39					-0.09	5			-0.01	5		
1605	1601	1414	Min.	77.16	-88.74	5	-64.17	1	-49.52	1	-281.25	5	-109.13	5	0.00	5
1710	1716	1414	Max	15.85	512.93	1	504.42	5	1002.44	5	709.20	1	493.95	1	289.63	5
1710	1716	1414	Max	122.70					378.97	5			66.32	5		
1710	1716	1414	Max	339.78	495.97	1	504.42	5	806.68	5	142.57	1	339.72	1	289.63	5
1710	1716	1414	Min.	15.85	-643.30	1	-588.11	5	-833.35	5	-87.60	1	-1040.47	1	-155.28	5
1710	1716	1414	Min.	122.70					-299.31	5			-148.37	5		
1710	1716	1414	Min.	339.78	-660.27	1	-588.11	5	-908.70	5	-654.23	1	-708.16	1	-155.28	5
1710	1414	1112	Max	14.99	330.84	1	300.28	5	657.64	5	633.93	1	170.41	1	130.77	5
1710	1414	1112	Max	377.06					273.58	1			497.61	1		
1710	1414	1112	Max	452.86	307.91	1	300.28	5	606.62	5	-131.98	1	447.57	1	130.77	5
1710	1414	1112	Min.	14.99	-518.76	1	-272.15	5	-740.04	5	159.75	1	-652.95	1	-184.11	5
1710	1414	1112	Min.	377.06					-254.16	1			-399.54	1		
1710	1414	1112	Min.	452.86	-541.70	1	-272.15	5	-565.88	5	-606.16	1	-808.52	1	-184.11	5
1811	1111	1313	Max	16.52	245.01	1	250.21	5	551.48	5	602.81	1	469.07	1	163.77	5
1811	1111	1313	Max	72.35					252.36	1			496.26	1		
1811	1111	1313	Max	433.34	266.85	1	250.21	5	555.94	5	-126.30	1	202.89	1	163.77	5
1811	1111	1313	Min.	16.52	-458.80	1	-280.16	5	-509.44	5	97.31	1	-791.26	1	-107.61	5
1811	1111	1313	Min.	72.35					-227.04	1			-482.11	1		
1811	1111	1313	Min.	433.34	-436.97	1	-280.16	5	-638.75	5	-631.80	1	-645.91	1	-107.61	5
1811	1313	1715	Max	14.99	445.51	1	439.39	5	636.54	5	631.53	1	323.66	1	109.64	5
1811	1313	1715	Max	234.75					245.22	5			77.25	5		
1811	1313	1715	Max	359.97	463.58	1	439.39	5	787.28	5	28.09	1	445.70	1	109.64	5
1811	1313	1715	Min.	14.99	-614.49	1	-364.60	5	-735.48	5	-89.43	1	-692.33	1	-235.10	5
1811	1313	1715	Min.	234.75					-179.80	5			-99.37	5		
1811	1313	1715	Min.	359.97	-596.42	1	-364.60	5	-628.21	5	-692.87	1	-1025.99	1	-235.10	5
1811	1715	1801	Max	14.99	-0.32	1	983.75	5	1077.50	5	1893.48	1	312.92	1	50.18	5
1811	1715	1801	Max	170.08	7.81	1	983.75	5	858.11	5	1622.21	1	910.66	5	50.18	5
1811	1715	1801	Min.	14.99	-749.97	1	-1566.38	5	-675.93	5	507.76	1	-1833.85	1	33.39	5
1811	1715	1801	Min.	170.08	-741.83	1	-1566.38	5	-1360.11	5	236.49	1	871.63	5	33.39	5
1811	1801	1716	Max	0.00	-1.82	1	1574.30	5	857.92	5	-228.79	1	910.19	5	-29.17	5
1811	1801	1716	Max	155.08	-9.96	1	1574.30	5	1094.42	5	-500.07	1	319.61	1	-29.17	5
1811	1801	1716	Min.	0.00	-731.84	1	-989.97	5	-1360.07	5	-1617.01	1	872.10	5	-54.58	5
1811	1801	1716	Min.	155.08	-739.98	1	-989.97	5	-690.36	5	-1888.29	1	-1820.56	1	-54.58	5
2002	1917	1715	Max	9.68	-5.29	5	39.56	1	38.74	1	137.56	5	-31.05	5	1.49	1
2002	1917	1715	Max	143.24					11.27	5			32.42	5		
2002	1917	1715	Max	241.20	-12.44	5	39.56	1	51.56	1	-100.90	5	-17.00	5	1.49	1
2002	1917	1715	Min.	9.68	-22.26	5	-37.48	1	-40.07	1	113.11	5	-59.44	5	-1.80	1
2002	1917	1715	Min.	143.24					-9.82	5			28.16	5		
2002	1917	1715	Min.	241.20	-29.42	5	-37.48	1	-48.07	1	-125.34	5	-45.21	5	-1.80	1
2002	2001	1917	Max	0.00	1.88	5	10.33	1	0.00	1	0.06	5	0.00	1	0.00	1
2002	2001	1917	Max	50.35	0.32	5	10.33	1	5.20	1	-51.80	5	-13.03	5	0.00	1
2002	2001	1917	Min.	0.00	-1.88	5	-10.33	1	0.00	1	-0.06	5	0.00	1	0.00	1
2002	2001	1917	Min.	50.35	-3.43	5	-10.33	1	-5.20	1	-51.91	5	-13.08	5	0.00	1
2004	1918	1716	Max	9.68	-5.23	5	40.35	1	42.82	1	138.38	5	-30.15	5	1.93	1
2004	1918	1716	Max	144.03					11.77	5			32.58	5		
2004	1918	1716	Max	241.20	-12.39	5	40.35	1	51.86	1	-100.08	5	-16.04	5	1.93	1
2004	1918	1716	Min.	9.68	-22.36	5	-42.31	1	-41.59	1	112.33	5	-60.38	5	-1.62	1
2004	1918	1716	Min.	144.03					-13.18	5			27.81	5		
2004	1918	1716	Min.	241.20	-29.52	5	-42.31	1	-55.17	1	-126.12	5	-46.12	5	-1.62	1
2004	2002	1918	Max	0.00	1.91	5	11.18	1	0.00	1	0.06	5	0.00	1	0.00	5
2004	2002	1918	Max	50.35	0.35	5	11.18	1	5.63	1	-51.80	5	-13.02	5	0.00	5
2004	2002	1918	Min.	0.00	-1.91	5	-11.18	1	0.00	1	-0.06	5	0.00	1	0.00	5
2004	2002	1918	Min.	50.35	-3.46	5	-11.18	1	-5.63	1	-51.91	5	-13.08	5	0.00	5
2203	801	701	Max	15.00	79.01	5	59.10	1	46.11	1	296.65	5	-114.06	5	0.00	1
2203	801	701	Max	92.63					0.07	5			0.00	5		
2203	801	701	Max	93.02	73.30	5	59.10	1	0.00	1	1.42	5	0.00	5	0.00	1
2203	801	701	Min.	15.00	-67.59	5	-59.10	1	-46.11	1	293.82	5	-116.28	5	0.00	1
2203	801	701	Min.	92.63					-0.07	5			-0.01	5		
2203	801	701	Min.	93.02	-73.30	5	-59.10	1	0.00	1	-1.42	5	0.00	5	0.00	1
2203	1208	801	Max	14.99	327.75	5	21.00	1	0.00	1	1141.02	5	0.00	1	0.00	1
2203	1208	801	Max	316.60					23.58	5			1720.72	5		
2203	1208	801	Max	710.33	248.84	5	21.00	1	146.02	1	-1489.52	5	-1211.62	5	0.00	1
2203	1208	801	Min.	14.99	-1549.48	5	-20.97	1	0.00	1	1070.49	5	0.00	1	0.00	1
2203	1208	801	Min.	316.60					-23.48	5			1508.00	5		
2203	1208	801	Min.	710.33	-1628.40	5	-20.97	1	-145.79	1	-1560.04	5	-1702.02	5	0.00	1
2203	1801	1208	Max	0.00	1287.75	5	43.80	1	242.72	1	1299.61	5	-1250.95	5	0.00	1
2203	1801	1208	Max	336.64					28.85	5			892.79	5		
2203	1801	1208	Max	553.89	1227.36	5	43.80	1	0.00	1	-795.89	5	0.00	5	0.00	1
2203	1801	1208	Min.	0.00	-2381.04	5	-43.82	1	-242.59	1	1273.60	5	-1395.01	5	0.00	1
2203	1801	1208	Min.	336.64					-28.79	5			836.28	5		
2203	1801	1208	Min.	553.89	-2441.43	5	-43.82	1	0.00	1	-821.90	5	0.00	5	0.00	1
2203	2101	1801	Max	0.00	123.36	5	85.37	1	8.87	1	-85.28	5	-26.45	5	0.00	1
2203	2101	1801	Max	346.16	107.83	5	85.37	1	304.17	1	-599.02	5	-1210.81	5	0.00	1
2203	2101	1801	Min.	0.00	-128.75	5	-85.37	1	-8.87	1	-92.90	5	-27.03	5	-0.00	1
2203	2															



## Relazione di calcolo

2203	2201	2101	Max	60.03	13.58	5	14.77	1	8.87	1	-88.60	5	-26.45	5	0.00	5
2203	2201	2101	Min.	0.00	-16.25	5	-14.77	1	0.00	1	-0.49	5	0.00	1	0.00	5
2203	2201	2101	Min.	60.03	-18.93	5	-14.77	1	-8.87	1	-89.58	5	-27.03	5	0.00	5

Tipo di combinazione di carico: SLD

Asta	N1	N2		X <cm>	N <daN>	CC	Ty <daN>	CC	Mz <daNm>	CC	Tz <daN>	CC	My <daNm>	CC	Mx <daNm>	CC
1	1	801	Max	0.00	-3274.72	6	819.10	6	-345.00	6	313.46	2	507.64	2	42.33	2
1	1	801	Max	311.98	-2723.41	6	819.10	6	1655.20	6	313.46	2	458.04	2	42.33	2
1	1	801	Min.	0.00	-3320.63	6	534.27	6	-904.84	6	-299.33	2	-519.90	2	-42.47	2
1	1	801	Min.	311.98	-2769.32	6	534.27	6	1317.22	6	-299.33	2	-426.20	2	-42.47	2
2	2	502	Max	0.00	-3207.49	2	985.92	6	411.41	6	447.04	2	573.11	2	39.28	6
2	2	502	Max	298.07	-2680.76	2	985.92	6	1623.84	6	447.04	2	661.88	2	39.28	6
2	2	502	Min.	0.00	-3382.72	2	78.89	6	-1315.43	6	-343.46	2	-671.38	2	-38.43	6
2	2	502	Min.	298.07	-2855.98	2	78.89	6	646.01	6	-343.46	2	-451.42	2	-38.43	6
3	3	403	Max	0.00	-3190.07	2	902.58	6	271.54	6	322.51	2	682.84	2	36.31	6
3	3	403	Max	297.40	-2664.52	2	902.58	6	1526.12	6	322.51	2	415.30	2	36.31	6
3	3	403	Min.	0.00	-3394.60	2	149.24	6	-1158.76	6	-461.67	2	-545.15	2	-36.09	6
3	3	403	Min.	297.40	-2869.05	2	149.24	6	714.77	6	-461.67	2	-691.47	2	-36.09	6
4	4	104	Max	0.00	-2367.53	2	676.12	6	425.76	6	347.11	2	1018.32	2	129.84	6
4	4	104	Max	284.00	-1728.53	2	676.12	6	1046.76	6	347.11	2	269.38	2	129.84	6
4	4	104	Min.	0.00	-2792.09	2	-106.51	6	-873.92	6	-642.77	2	-719.67	2	-121.99	6
4	4	104	Min.	284.00	-2153.09	2	-106.51	6	122.75	6	-642.77	2	-810.42	2	-121.99	6
5	5	105	Max	0.00	-2420.04	2	694.47	6	448.08	6	645.95	2	708.20	2	134.29	6
5	5	105	Max	284.00	-1781.04	2	694.47	6	1069.44	6	645.95	2	820.41	2	134.29	6
5	5	105	Min.	0.00	-2831.29	2	-117.59	6	-903.48	6	-328.30	2	-1017.89	2	-141.16	6
5	5	105	Min.	284.00	-2192.29	2	-117.59	6	113.47	6	-328.30	2	-227.98	2	-141.16	6
6	6	606	Max	0.00	-3336.39	6	304.69	6	851.20	6	502.47	2	1230.09	2	50.66	6
6	6	606	Max	303.19	-2654.21	6	304.69	6	403.04	6	502.47	2	262.73	2	50.66	6
6	6	606	Min.	0.00	-3373.24	6	-568.39	6	-520.77	6	-506.50	2	-1263.46	2	-56.24	6
6	6	606	Min.	303.19	-2691.06	6	-568.39	6	-872.13	6	-506.50	2	-308.31	2	-56.24	6
7	7	-1	Max	0.00	-2542.03	6	193.24	6	928.28	6	497.31	2	1579.93	2	1.70	2
7	7	-1	Max	316.00	-1831.03	6	193.24	6	-11.92	6	497.31	2	3.27	2	1.70	2
7	7	-1	Min.	0.00	-2564.99	6	-305.79	6	-622.58	6	-498.94	2	-1574.75	2	-1.41	2
7	7	-1	Min.	316.00	-1853.99	6	-305.79	6	-38.03	6	-498.94	2	-3.26	2	-1.41	2
7	-1	907	Max	0.00	-969.46	6	-256.52	6	-139.34	6	239.86	2	3.35	2	1.47	2
7	-1	907	Max	1.38	-966.36	6	-256.51	6	-142.95	6	239.86	2	0.04	2	1.47	2
7	-1	907	Min.	0.00	-1059.89	6	-783.69	6	-146.04	6	-239.74	2	-3.35	2	-1.45	2
7	-1	907	Min.	1.38	-1056.79	6	-783.67	6	-156.78	6	-239.73	2	-0.04	2	-1.45	2
8	8	1208	Max	0.00	-2754.99	6	25.97	6	441.11	6	570.43	2	1903.84	2	1.82	2
8	8	1208	Max	333.73	-2004.10	6	25.97	6	-41.09	6	570.43	2	0.05	2	1.82	2
8	8	1208	Min.	0.00	-2799.77	6	-146.50	6	-127.87	6	-570.49	2	-1903.65	2	-1.82	2
8	8	1208	Min.	333.73	-2048.88	6	-146.50	6	-47.92	6	-570.49	2	-0.05	2	-1.82	2
9	9	1009	Max	0.00	-2544.12	6	242.25	6	1091.03	6	500.46	2	1585.78	2	1.55	2
9	9	1009	Max	318.01	-1828.60	6	242.25	6	-12.27	6	500.46	2	0.05	2	1.55	2
9	9	1009	Min.	0.00	-2573.36	6	-359.56	6	-782.66	6	-498.67	2	-1591.50	2	-1.89	2
9	9	1009	Min.	318.01	-1857.84	6	-359.56	6	-52.40	6	-498.67	2	-0.06	2	-1.89	2
10	10	610	Max	0.00	-3372.09	6	323.61	6	881.71	6	650.66	2	1623.45	2	59.03	6
10	10	610	Max	303.19	-2689.91	6	323.61	6	430.55	6	650.66	2	390.85	2	59.03	6
10	10	610	Min.	0.00	-3411.81	6	-588.45	6	-550.62	6	-646.64	2	-1583.93	2	-54.50	6
10	10	610	Min.	303.19	-2729.64	6	-588.45	6	-902.42	6	-646.64	2	-339.13	2	-54.50	6
11	11	1111	Max	0.00	-2228.95	6	125.82	6	750.95	6	149.89	2	578.04	2	118.93	2
11	11	1111	Max	320.35	-1508.16	6	125.82	6	74.78	6	149.89	2	121.22	2	118.93	2
11	11	1111	Min.	0.00	-2590.67	6	-471.43	6	-328.63	6	-346.68	2	-363.99	2	-90.10	2
11	11	1111	Min.	320.35	-1869.88	6	-471.43	6	-759.62	6	-346.68	2	-537.58	2	-90.10	2
12	12	1112	Max	0.00	-2261.06	6	136.21	6	773.22	6	352.68	2	353.44	2	121.25	2
12	12	1112	Max	320.35	-1540.27	6	136.20	6	87.26	6	352.68	2	553.22	2	121.25	2
12	12	1112	Min.	0.00	-2635.31	6	-483.59	6	-349.50	6	-137.73	2	-583.83	2	-149.87	2
12	12	1112	Min.	320.35	-1914.52	6	-483.59	6	-776.38	6	-137.73	2	-95.02	2	-149.87	2
13	13	1313	Max	0.00	-2869.35	2	11.38	6	1449.71	6	345.24	2	463.36	2	36.98	6
13	13	1313	Max	333.77	-2118.37	2	11.38	6	-356.08	6	345.24	2	584.06	2	36.98	6
13	13	1313	Min.	0.00	-3019.60	2	-832.58	6	-394.11	6	-248.64	2	-568.35	2	-55.90	6
13	13	1313	Min.	333.77	-2268.62	2	-832.58	6	-1329.23	6	-248.64	2	-366.60	2	-55.90	6
14	14	1414	Max	0.00	-2845.88	2	103.34	6	1649.69	6	237.78	2	583.48	2	80.93	6
14	14	1414	Max	334.40	-2093.48	2	103.34	6	-249.50	6	237.78	2	344.95	2	80.93	6
14	14	1414	Min.	0.00	-3057.54	2	-923.41	6	-595.12	6	-357.69	2	-450.26	2	-58.19	6
14	14	1414	Min.	334.40	-2305.14	2	-923.41	6	-1438.23	6	-357.69	2	-612.70	2	-58.19	6
15	15	1715	Max	0.00	-4752.37	2	443.89	2	1818.25	2	1061.18	6	1422.09	6	632.87	6
15	15	1715	Max	345.02	-1647.19	2	443.89	2	331.31	2	1061.18	6	-19.73	6	632.87	6
15	15	1715	Min.	0.00	-5092.80	2	-971.77	2	-1200.55	2	-429.93	6	-3773.23	6	-314.43	6
15	15	1715	Min.	345.02	-1987.62	2	-971.77	2	-1534.90	2	-429.93	6	-153.46	6	-314.43	6
16	16	1716	Max	0.00	-4741.48	2	981.03	2	1210.70	2	1108.12	6	1565.38	6	356.82	6
16	16	1716	Max	345.02	-1636.30	2	981.03	2	1560.55	2	1108.12	6	0.36	6	356.82	6
16	16	1716	Min.	0.00	-5047.67	2	-448.72	2	-1824.51	2	-466.55	6	-3945.10	6	-667.14	6
16	16	1716	Min.	345.02	-1942.49	2	-448.72	2	-337.80	2	-466.55	6	-166.52	6	-667.14	6
17	17	1917	Max	0.00	-321.04	6	20.53	2	80.07	2	22.82	6	-11.43	6	22.34	2
17	17	1917	Max	355.40	-190.83	6	20.53	2	-0.01	2	22.82	6	46.54	6	22.34	2
17	17	1917	Min.	0.00	-332.76	6	-22.61	2	-73.04	2	12.24	6	-34.56	6	-23.86	2
17	17	1917	Min.	355.40	-202.55	6	-22.61	2	-0.35	2	12.24	6	32.06	6	-23.86	2
18	18	1918	Max	0.00	-320.70	6	24.72	2	80.94	2	23.18	6	-10.76	6	25.46	2
18	18	1918	Max	355.40	-190.49	6	24.72	2	0.35	2	23.18	6	47.03	6	25.46	2
18	18	1918	Min.	0.00	-333.14	6	-22.76	2	-87.55	2	11.93	6	-35.34	6	-24.06	2
18	18	1918	Min.	355.40	-202.93	6	-22.76	2	0.00	2	11.93	6	31.63	6	-24.06	2
806	801	502	Max	14.91	-117.75	2	80.98	6	236.12	6	449.38	2	76.39	2	113.95	6
806	801	502	Max	176.43					44.65	2			304.05	2		
806	801	502	Max	512.37	-140.72	2	80.98	6	205.59	6	-420.88	2	-298.37	2	113.95	6
806	801	502	Min.	14.91	-288.78	2	-95.01	6	-198.91	6	281.97	2	-370.06	2	-28.15	6
806	801	502	Min.	176.43					-30.09	2			127.17	2		



## Relazione di calcolo

806	502	105	Max	373.20					86.39	2			416.14	2		
806	502	105	Max	511.47	-30.27	2	69.37	6	172.51	2	-241.31	2	249.30	2	165.92	6
806	502	105	Min.	14.91	-292.63	2	-57.43	6	-202.54	6	302.70	2	-710.67	2	27.11	6
806	502	105	Min.	373.20					-71.16	2			-102.85	2		
806	502	105	Min.	511.47	-315.82	2	-57.43	6	-140.76	2	-565.96	2	-717.73	2	27.11	6
807	104	403	Max	15.82	-10.27	2	49.17	6	146.50	2	553.36	2	279.94	2	-39.15	6
807	104	403	Max	135.38					80.29	2			404.84	2		
807	104	403	Max	491.27	11.75	2	49.17	6	148.31	6	-278.37	2	-45.37	2	-39.15	6
807	104	403	Min.	15.82	-312.92	2	-62.71	6	-112.07	2	208.93	2	-699.87	2	-160.71	6
807	104	403	Min.	135.38					-62.05	2			-163.45	2		
807	104	403	Min.	491.27	-290.89	2	-62.71	6	-178.25	6	-622.81	2	-704.75	2	-160.71	6
807	403	801	Max	14.91	-128.47	2	81.36	6	171.32	6	598.47	2	-323.15	2	14.99	6
807	403	801	Max	356.81					42.30	2			328.41	2		
807	403	801	Max	533.47	-104.34	2	81.36	6	219.11	6	-308.69	2	55.79	2	14.99	6
807	403	801	Min.	14.91	-339.30	2	-67.73	6	-204.90	6	443.58	2	-696.14	2	-98.91	6
807	403	801	Min.	356.81					-29.25	2			170.11	2		
807	403	801	Min.	533.47	-315.17	2	-67.73	6	-181.97	6	-463.59	2	-375.61	2	-98.91	6
901	403	201	Max	15.00	37.60	6	27.75	2	21.65	2	283.38	6	-109.82	6	0.00	6
901	403	201	Max	92.63					0.04	6			0.00	6		
901	403	201	Max	93.02	32.12	6	27.75	2	0.00	2	0.62	6	0.00	6	0.00	6
901	403	201	Min.	15.00	-26.65	6	-27.75	2	-21.65	2	282.13	6	-110.79	6	0.00	6
901	403	201	Min.	92.63					-0.04	6			-0.01	6		
901	403	201	Min.	93.02	-32.12	6	-27.75	2	0.00	2	-0.62	6	0.00	6	0.00	6
901	907	403	Max	14.99	-437.43	6	9.66	2	0.00	2	1018.49	6	0.00	2	0.00	2
901	907	403	Max	296.10					14.03	6			1431.51	6		
901	907	403	Max	651.31	-506.59	6	9.66	2	61.46	2	-1286.98	6	-854.22	6	0.00	2
901	907	403	Min.	14.99	-544.90	6	-9.79	2	0.00	2	926.29	6	0.00	2	0.00	2
901	907	403	Min.	296.10					-14.38	6			1172.33	6		
901	907	403	Min.	651.31	-614.07	6	-9.79	2	-62.27	2	-1379.18	6	-1440.90	6	0.00	2
1108	104	106	Max	15.24	36.03	6	34.90	2	27.16	2	325.03	6	-125.80	6	0.00	6
1108	104	106	Max	92.68					0.07	6			0.00	6		
1108	104	106	Max	93.07	29.75	6	34.90	2	0.00	2	0.58	6	0.00	6	0.00	6
1108	104	106	Min.	15.24	-23.48	6	-34.90	2	-27.16	2	323.88	6	-126.69	6	0.00	6
1108	104	106	Min.	92.68					-0.07	6			-0.01	6		
1108	104	106	Min.	93.07	-29.75	6	-34.90	2	0.00	2	-0.58	6	0.00	6	0.00	6
1108	606	104	Max	15.00	-212.90	6	67.94	2	211.32	2	1492.99	6	-1084.49	6	122.24	2
1108	606	104	Max	373.13					40.79	6			986.69	6		
1108	606	104	Max	598.70	-289.01	6	67.94	2	173.42	2	-939.84	6	-73.16	6	122.24	2
1108	606	104	Min.	15.00	-302.26	6	-61.76	2	-225.60	2	1238.07	6	-1687.83	6	-143.83	2
1108	606	104	Min.	373.13					-32.91	6			676.02	6		
1108	606	104	Min.	598.70	-378.37	6	-61.76	2	-151.59	2	-1194.75	6	-958.36	6	-143.83	2
1108	1111	606	Max	15.00	-33.00	6	97.76	6	239.32	6	1003.80	6	17.89	6	168.82	2
1108	1111	606	Max	187.68					75.95	6			638.67	6		
1108	1111	606	Max	505.92	-100.44	6	97.76	6	245.82	2	-1042.22	6	-883.10	6	168.82	2
1108	1111	606	Min.	15.00	-247.00	6	-95.67	6	-258.06	6	719.13	6	-789.32	6	-145.03	2
1108	1111	606	Min.	187.68					-91.08	6			322.33	6		
1108	1111	606	Min.	505.92	-314.43	6	-95.67	6	-254.30	2	-1326.89	6	-1474.44	6	-145.03	2
1108	1113	1111	Max	0.00	30.07	6	37.67	2	0.00	6	0.58	6	0.00	6	0.00	2
1108	1113	1111	Max	77.82	23.80	6	37.67	2	29.32	2	-323.87	6	-125.80	6	0.00	2
1108	1113	1111	Min.	0.00	-30.07	6	-37.67	2	0.00	6	-0.58	6	0.00	6	0.00	2
1108	1113	1111	Min.	77.82	-36.35	6	-37.67	2	-29.32	2	-325.04	6	-126.70	6	0.00	2
1109	105	107	Max	15.24	36.82	6	35.47	2	27.60	2	329.71	6	-127.61	6	0.00	2
1109	105	107	Max	92.68					0.07	6			0.00	6		
1109	105	107	Max	93.07	30.46	6	35.47	2	0.00	2	0.59	6	0.00	6	0.00	2
1109	105	107	Min.	15.24	-24.09	6	-35.47	2	-27.60	2	328.53	6	-128.52	6	0.00	2
1109	105	107	Min.	92.68					-0.07	6			-0.01	6		
1109	105	107	Min.	93.07	-30.46	6	-35.47	2	0.00	2	-0.59	6	0.00	6	0.00	2
1109	610	105	Max	15.00	-209.28	2	77.98	2	280.78	2	1517.81	6	-1088.65	6	179.75	2
1109	610	105	Max	373.92					39.25	6			1005.85	6		
1109	610	105	Max	598.70	-286.48	2	77.98	2	191.45	2	-950.02	6	-61.76	6	179.75	2
1109	610	105	Min.	15.00	-311.48	2	-83.79	2	-266.88	2	1250.36	6	-1719.23	6	-154.49	2
1109	610	105	Min.	373.92					-46.17	6			675.22	6		
1109	610	105	Min.	598.70	-388.68	2	-83.79	2	-211.41	2	-1217.48	6	-993.06	6	-154.49	2
1109	1112	610	Max	15.00	-23.23	6	112.93	2	279.65	6	1023.57	6	33.02	6	187.36	2
1109	1112	610	Max	186.57					100.88	6			654.53	6		
1109	1112	610	Max	505.92	-91.64	6	112.93	2	320.70	2	-1051.89	6	-886.45	6	187.36	2
1109	1112	610	Min.	15.00	-261.55	6	-114.64	2	-262.41	6	724.69	6	-817.57	6	-213.65	2
1109	1112	610	Min.	186.57					-86.58	6			315.92	6		
1109	1112	610	Min.	505.92	-329.96	6	-114.64	2	-311.86	2	-1350.77	6	-1504.40	6	-213.65	2
1109	1114	1112	Max	0.00	30.79	6	38.80	2	0.00	2	0.60	6	0.00	2	0.00	2
1109	1114	1112	Max	77.82	24.42	6	38.80	2	30.20	2	-328.53	6	-127.60	6	0.00	2
1109	1114	1112	Min.	0.00	-30.79	6	-38.80	2	0.00	2	-0.60	6	0.00	2	0.00	2
1109	1114	1112	Min.	77.82	-37.16	6	-38.80	2	-30.20	2	-329.72	6	-128.53	6	0.00	2
1501	1313	-1	Max	15.85	-159.16	6	16.80	2	95.77	2	1175.95	6	-576.24	6	0.00	2
1501	1313	-1	Max	304.64					21.78	6			934.47	6		
1501	1313	-1	Max	531.77	-219.94	6	16.80	2	0.00	2	-693.15	6	0.00	6	0.00	2
1501	1313	-1	Min.	15.85	-696.73	6	-18.56	2	-86.68	2	1046.24	6	-1245.41	6	0.00	2
1501	1313	-1	Min.	304.64					-17.77	6			639.87	6		
1501	1313	-1	Min.	531.77	-757.50	6	-18.56	2	0.00	2	-822.86	6	0.00	6	0.00	2
1501	1501	1313	Max	0.00	31.85	6	30.36	2	0.00	2	0.62	6	0.00	2	0.00	2
1501	1501	1313	Max	77.16	26.44	6	30.36	2	23.42	2	-279.02	6	-107.41	6	0.00	2
1501	1501	1313	Min.	0.00	-31.85	6	-30.36	2	0.00	2	-0.62	6	0.00	2	0.00	2
1501	1501	1313	Min.	77.16	-37.26	6	-30.36	2	-23.42	2	-280.26	6	-108.36	6	0.00	2
1605	502	301	Max	15.00	44.39	6	28.03	2	21.87	2	283.51	6	-109.72	6	0.00	2
1605	502	301	Max	92.63					0.05	6			0.00	6		
1605	502	301	Max	93.02	38.92	6	28.03	2	0.00	2	0.75	6	0.00	6	0.00	2
1605	502	301	Min.	15.00	-33.45	6	-28.03	2	-21.87	2	282.00	6	-110.89	6	0.00	2
1605	502	301	Min.	92.63					-0.05	6			-0.01	6		
1605	502	301	Min.	93.02	-38.92	6	-28.03	2	0.00	2	-0.75	6	0.00	6	0.00	2
1605	1009	502	Max	14.99	-430.80	6	9.95	2	0.00	2	1031.03	6	0.00	2	0.00	2
1605	1009	502	Max	299.56					15.59	6			1466.97	6		



## Relazione di calcolo

1605	1009	502	Max	653.30	-499.84	6	9.95	2	63.50	2	-1281.69	6	-800.00	6	0.00	2
1605	1009	502	Min.	14.99	-562.38	6	-9.71	2	0.00	2	920.10	6	0.00	2	0.00	2
1605	1009	502	Min.	299.56					-14.90	6			1151.31	6		
1605	1009	502	Min.	653.30	-631.41	6	-9.71	2	-61.96	2	-1392.62	6	-1508.07	6	0.00	2
1605	1414	1009	Max	15.85	-98.90	6	19.63	2	90.97	2	1192.05	6	-509.14	6	0.00	2
1605	1414	1009	Max	301.58					22.81	6			969.81	6		
1605	1414	1009	Max	532.95	-154.97	6	19.63	2	0.00	2	-681.49	6	0.00	6	0.00	2
1605	1414	1009	Min.	15.85	-768.51	6	-17.59	2	-101.48	2	1035.23	6	-1320.06	6	0.00	2
1605	1414	1009	Min.	532.69					-0.00	8			1.80	8		
1605	1414	1009	Min.	532.95	-824.58	6	-17.59	2	0.00	2	-838.31	6	0.00	6	0.00	2
1605	1601	1414	Max	0.00	38.81	6	30.38	2	0.00	2	0.75	6	0.00	2	0.00	6
1605	1601	1414	Max	77.16	33.40	6	30.38	2	23.44	2	-278.88	6	-107.30	6	0.00	6
1605	1601	1414	Min.	0.00	-38.81	6	-30.38	2	0.00	2	-0.75	6	0.00	2	0.00	6
1605	1601	1414	Min.	77.16	-44.23	6	-30.38	2	-23.44	2	-280.39	6	-108.46	6	0.00	6
1710	1716	1414	Max	15.85	207.42	2	212.62	6	512.20	6	499.40	2	89.90	2	170.78	6
1710	1716	1414	Max	85.83					191.36	2			132.66	2		
1710	1716	1414	Max	339.78	190.45	2	212.62	6	348.55	6	-67.23	2	63.83	2	170.78	6
1710	1716	1414	Min.	15.85	-337.78	2	-296.32	6	-343.11	6	122.20	2	-636.42	2	-36.43	6
1710	1716	1414	Min.	85.83					-80.84	2			-329.85	2		
1710	1716	1414	Min.	339.78	-354.75	2	-296.32	6	-450.57	6	-444.42	2	-432.26	2	-36.43	6
1710	1414	1112	Max	14.99	105.29	2	147.60	6	284.68	6	508.83	2	-46.69	2	46.74	6
1710	1414	1112	Max	305.53					84.52	2			305.31	2		
1710	1414	1112	Max	452.86	82.35	2	147.60	6	293.92	6	-257.09	2	116.02	2	46.74	6
1710	1414	1112	Min.	14.99	-293.21	2	-119.48	6	-367.07	6	284.86	2	-435.85	2	-100.08	6
1710	1414	1112	Min.	305.53					-85.21	2			41.57	2		
1710	1414	1112	Min.	452.86	-316.14	2	-119.48	6	-253.18	6	-481.06	2	-476.97	2	-100.08	6
1811	1111	1313	Max	16.52	58.46	2	108.82	6	268.70	6	469.50	2	136.59	2	91.38	6
1811	1111	1313	Max	148.59					75.36	2			288.83	2		
1811	1111	1313	Max	433.34	80.29	2	108.82	6	237.28	6	-259.61	2	-20.85	2	91.38	6
1811	1111	1313	Min.	16.52	-272.25	2	-138.77	6	-226.66	6	230.62	2	-458.77	2	-35.22	6
1811	1111	1313	Min.	148.59					-72.88	2			8.52	2		
1811	1111	1313	Min.	433.34	-250.41	2	-138.77	6	-320.08	6	-498.49	2	-422.18	2	-35.22	6
1811	1313	1715	Max	14.99	165.70	2	224.70	6	270.18	6	441.69	2	56.15	2	17.55	6
1811	1313	1715	Max	267.41					134.86	2			133.00	2		
1811	1313	1715	Max	359.97	183.77	2	224.70	6	409.36	6	-161.75	2	58.16	2	17.55	6
1811	1313	1715	Min.	14.99	-334.68	2	-149.91	6	-369.12	6	100.41	2	-424.82	2	-143.01	6
1811	1313	1715	Min.	267.41					-45.02	2			-247.82	2		
1811	1313	1715	Min.	359.97	-316.61	2	-149.91	6	-250.29	6	-503.03	2	-638.45	2	-143.01	6
1811	1715	1801	Max	14.99	-198.43	2	311.46	6	615.01	6	1528.56	2	-252.42	2	45.72	6
1811	1715	1801	Max	170.08	-190.29	2	311.46	6	273.46	6	1257.29	2	900.37	6	45.72	6
1811	1715	1801	Min.	14.99	-551.87	2	-894.10	6	-213.45	6	872.68	2	-1268.51	2	37.84	6
1811	1715	1801	Min.	170.08	-543.73	2	-894.10	6	-775.46	6	601.41	2	881.92	6	37.84	6
1811	1801	1716	Max	0.00	-194.68	2	898.20	6	273.33	6	-594.38	2	900.15	6	-35.94	6
1811	1801	1716	Max	155.08	-202.82	2	898.20	6	623.48	6	-865.65	2	-244.00	2	-35.94	6
1811	1801	1716	Min.	0.00	-538.98	2	-313.87	6	-775.48	6	-1251.43	2	882.14	6	-47.81	6
1811	1801	1716	Min.	155.08	-547.11	2	-313.87	6	-219.43	6	-1522.70	2	-1256.95	2	-47.81	6
2002	1917	1715	Max	9.68	-9.76	6	19.09	2	17.80	2	131.10	6	-38.55	6	0.61	2
2002	1917	1715	Max	136.96					4.81	6			31.50	6		
2002	1917	1715	Max	241.20	-16.92	6	19.09	2	25.08	2	-107.36	6	-24.45	6	0.61	2
2002	1917	1715	Min.	9.68	-17.79	6	-17.01	2	-19.13	2	119.57	6	-51.94	6	-0.92	2
2002	1917	1715	Min.	136.96					-3.49	6			30.21	6		
2002	1917	1715	Min.	241.20	-24.94	6	-17.01	2	-21.60	2	-118.88	6	-37.75	6	-0.92	2
2002	2001	1917	Max	0.00	0.89	6	4.83	2	0.00	2	0.03	6	0.00	2	0.00	2
2002	2001	1917	Max	50.35	-0.67	6	4.83	2	2.43	2	-51.83	6	-13.04	6	0.00	2
2002	2001	1917	Min.	0.00	-0.89	6	-4.83	2	0.00	2	-0.03	6	0.00	2	0.00	2
2002	2001	1917	Min.	50.35	-2.44	6	-4.83	2	-2.43	2	-51.88	6	-13.07	6	0.00	2
2004	1918	1716	Max	9.68	-9.75	6	18.37	2	20.38	2	131.49	6	-38.15	6	0.99	2
2004	1918	1716	Max	137.34					4.20	6			31.55	6		
2004	1918	1716	Max	241.20	-16.90	6	18.37	2	23.40	2	-106.97	6	-24.00	6	0.99	2
2004	1918	1716	Min.	9.68	-17.85	6	-20.33	2	-19.15	2	119.22	6	-52.39	6	-0.67	2
2004	1918	1716	Min.	137.34					-5.48	6			30.12	6		
2004	1918	1716	Min.	241.20	-25.00	6	-20.33	2	-26.71	2	-119.23	6	-38.16	6	-0.67	2
2004	2002	1918	Max	0.00	0.90	6	5.22	2	0.00	2	0.03	6	0.00	2	0.00	6
2004	2002	1918	Max	50.35	-0.65	6	5.22	2	2.63	2	-51.83	6	-13.04	6	0.00	6
2004	2002	1918	Min.	0.00	-0.90	6	-5.22	2	0.00	2	-0.03	6	0.00	2	0.00	6
2004	2002	1918	Min.	50.35	-2.46	6	-5.22	2	-2.63	2	-51.88	6	-13.07	6	0.00	6
2203	801	701	Max	15.00	40.38	6	28.08	2	21.91	2	295.91	6	-114.65	6	0.00	2
2203	801	701	Max	92.63					0.04	6			0.00	6		
2203	801	701	Max	93.02	34.67	6	28.08	2	0.00	2	0.67	6	0.00	6	0.00	2
2203	801	701	Min.	15.00	-28.95	6	-28.08	2	-21.91	2	294.56	6	-115.69	6	0.00	2
2203	801	701	Min.	92.63					-0.04	6			-0.01	6		
2203	801	701	Min.	93.02	-34.67	6	-28.08	2	0.00	2	-0.67	6	0.00	6	0.00	2
2203	1208	801	Max	14.99	-168.24	6	9.79	2	0.00	2	1122.40	6	0.00	2	0.00	2
2203	1208	801	Max	311.68					10.83	6			1665.02	6		
2203	1208	801	Max	710.33	-247.16	6	9.79	2	68.10	2	-1508.14	6	-1341.09	6	0.00	2
2203	1208	801	Min.	14.99	-1053.49	6	-9.76	2	0.00	2	1089.11	6	0.00	2	0.00	2
2203	1208	801	Min.	311.68					-10.73	6			1566.26	6		
2203	1208	801	Min.	710.33	-1132.40	6	-9.76	2	-67.87	2	-1541.42	6	-1572.55	6	0.00	2
2203	1801	1208	Max	0.00	320.22	6	20.40	2	113.12	2	1292.74	6	-1288.96	6	0.00	2
2203	1801	1208	Max	338.46					13.34	6			877.94	6		
2203	1801	1208	Max	553.89	259.82	6	20.40	2	0.00	2	-802.76	6	0.00	6	0.00	2
2203	1801	1208	Min.	0.00	-1413.50	6	-20.42	2	-112.98	2	1280.46	6	-1357.00	6	0.00	2
2203	1801	1208	Min.	338.46					-13.29	6			851.48	6		
2203	1801	1208	Min.	553.89	-1473.90	6	-20.42	2	0.00	2	-815.04	6	0.00	6	0.00	2
2203	2101	1801	Max	0.00	56.93	6	39.82	2	4.15	2	-87.28	6	-26.60	6	0.00	2
2203	2101	1801	Max	346.16	41.40	6	39.82	2	141.88	2	-601.03	6	-1217.92	6	0.00	2
2203	2101	1801	Min.	0.00	-62.32	6	-39.82	2	-4.15	2	-90.89	6	-26.88	6	0.00	2
2203	2101	1801	Min.	346.16	-77.85	6	-39.82	2	-141.88	2	-604.63	6	-1230.68	6	0.00	2
2203	2201	2101	Max	0.00	7.69	6	6.91	2	0.00	2	0.23	6	0.00	2	0.00	6



## Relazione di calcolo

2203	2201	2101	Min.	60.03	-10.36	6	-6.91	2	-4.15	2	-89.32	6	-26.88	6	0.00	6
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Tipo di combinazione di carico: SLU

Asta	N1	N2		X <cm>	N <daN>	CC	Ty <daN>	CC	Mz <daNm>	CC	Tz <daN>	CC	My <daNm>	CC	Mx <daNm>	CC
1	1	801	Max	0.00	-9555.21	9	2753.97	9	-2538.11	9	12.93	9	-11.45	9	-0.22	9
1	1	801	Max	311.98	-8838.50	9	2753.97	9	6053.73	9	12.93	9	28.87	9	-0.22	9
1	1	801	Min.	0.00	-9555.21	9	2753.97	9	-2538.11	9	12.93	9	-11.45	9	-0.22	9
1	1	801	Min.	311.98	-8838.50	9	2753.97	9	6053.73	9	12.93	9	28.87	9	-0.22	9
2	2	502	Max	0.00	-9451.56	9	2204.19	9	-1875.31	9	263.09	9	-257.08	9	-0.98	9
2	2	502	Max	298.07	-8766.81	9	2204.19	9	4694.72	9	263.09	9	527.12	9	-0.98	9
2	2	502	Min.	0.00	-9451.56	9	2204.19	9	-1875.31	9	263.09	9	-257.08	9	-0.98	9
2	2	502	Min.	298.07	-8766.81	9	2204.19	9	4694.72	9	263.09	9	527.12	9	-0.98	9
3	3	403	Max	0.00	-9422.50	9	2180.73	9	-1844.38	9	-285.91	9	282.56	9	3.37	9
3	3	403	Max	297.40	-8739.28	9	2180.73	9	4641.12	9	-285.91	9	-567.73	9	3.37	9
3	3	403	Min.	0.00	-9422.50	9	2180.73	9	-1844.38	9	-285.91	9	282.56	9	3.37	9
3	3	403	Min.	297.40	-8739.28	9	2180.73	9	4641.12	9	-285.91	9	-567.73	9	3.37	9
4	4	104	Max	0.00	-5690.03	9	833.71	9	-642.27	9	-268.86	9	302.59	9	23.27	9
4	4	104	Max	284.00	-4859.33	9	833.71	9	1725.45	9	-268.86	9	-460.96	9	23.27	9
4	4	104	Min.	0.00	-5690.03	9	833.71	9	-642.27	9	-268.86	9	302.59	9	23.27	9
4	4	104	Min.	284.00	-4859.33	9	833.71	9	1725.45	9	-268.86	9	-460.96	9	23.27	9
5	5	105	Max	0.00	-5824.13	9	851.74	9	-659.74	9	279.55	9	-305.01	9	-20.89	9
5	5	105	Max	284.00	-4993.43	9	851.74	9	1759.21	9	279.55	9	488.90	9	-20.89	9
5	5	105	Min.	0.00	-5824.13	9	851.74	9	-659.74	9	279.55	9	-305.01	9	-20.89	9
5	5	105	Min.	284.00	-4993.43	9	851.74	9	1759.21	9	279.55	9	488.90	9	-20.89	9
6	6	606	Max	0.00	-8482.40	9	-404.01	9	513.71	9	0.63	9	-34.16	9	-16.62	9
6	6	606	Max	303.19	-7595.56	9	-404.01	9	-711.20	9	0.63	9	-32.25	9	-16.62	9
6	6	606	Min.	0.00	-8482.40	9	-404.01	9	513.71	9	0.63	9	-34.16	9	-16.62	9
6	6	606	Min.	303.19	-7595.56	9	-404.01	9	-711.20	9	0.63	9	-32.25	9	-16.62	9
7	7	-1	Max	0.00	-8586.63	9	-230.26	9	623.77	9	-3.38	9	10.69	9	0.53	9
7	7	-1	Max	316.00	-7662.33	9	-230.26	9	-103.85	9	-3.38	9	0.02	9	0.53	9
7	7	-1	Min.	0.00	-8586.63	9	-230.26	9	623.77	9	-3.38	9	10.69	9	0.53	9
7	7	-1	Min.	316.00	-7662.33	9	-230.26	9	-103.85	9	-3.38	9	0.02	9	0.53	9
7	-1	907	Max	0.00	-4214.99	9	-2154.19	9	-594.07	9	0.07	9	0.00	9	0.01	9
7	-1	907	Max	1.38	-4210.96	9	-2154.14	9	-623.80	9	0.07	9	0.00	9	0.01	9
7	-1	907	Min.	0.00	-4214.99	9	-2154.19	9	-594.07	9	0.07	9	0.00	9	0.01	9
7	-1	907	Min.	1.38	-4210.96	9	-2154.14	9	-623.80	9	0.07	9	0.00	9	0.01	9
8	8	1208	Max	0.00	-9491.49	9	-246.01	9	644.42	9	-0.04	9	0.14	9	0.00	9
8	8	1208	Max	333.73	-8515.33	9	-246.01	9	-176.59	9	-0.04	9	0.00	9	0.00	9
8	8	1208	Min.	0.00	-9491.49	9	-246.01	9	644.42	9	-0.04	9	0.14	9	0.00	9
8	8	1208	Min.	333.73	-8515.33	9	-246.01	9	-176.59	9	-0.04	9	0.00	9	0.00	9
9	9	1009	Max	0.00	-8603.77	9	-240.43	9	630.28	9	3.85	9	-12.25	9	-0.66	9
9	9	1009	Max	318.01	-7673.59	9	-240.43	9	-134.32	9	3.85	9	-0.02	9	-0.66	9
9	9	1009	Min.	0.00	-8603.77	9	-240.43	9	630.28	9	3.85	9	-12.25	9	-0.66	9
9	9	1009	Min.	318.01	-7673.59	9	-240.43	9	-134.32	9	3.85	9	-0.02	9	-0.66	9
10	10	610	Max	0.00	-8659.21	9	-407.25	9	516.24	9	-0.75	9	38.16	9	15.15	9
10	10	610	Max	303.19	-7772.38	9	-407.25	9	-718.51	9	-0.75	9	35.89	9	15.15	9
10	10	610	Min.	0.00	-8659.21	9	-407.25	9	516.24	9	-0.75	9	38.16	9	15.15	9
10	10	610	Min.	303.19	-7772.38	9	-407.25	9	-718.51	9	-0.75	9	35.89	9	15.15	9
11	11	1111	Max	0.00	-5171.41	9	-524.88	9	649.07	9	-168.91	9	189.30	9	55.71	9
11	11	1111	Max	320.35	-4234.38	9	-524.88	9	-1032.40	9	-168.91	9	-351.81	9	55.71	9
11	11	1111	Min.	0.00	-5171.41	9	-524.88	9	649.07	9	-168.91	9	189.30	9	55.71	9
11	11	1111	Min.	320.35	-4234.38	9	-524.88	9	-1032.40	9	-168.91	9	-351.81	9	55.71	9
12	12	1112	Max	0.00	-5283.52	9	-531.21	9	655.01	9	181.72	9	-202.30	9	-54.68	9
12	12	1112	Max	320.35	-4346.50	9	-531.21	9	-1046.71	9	181.72	9	379.85	9	-54.68	9
12	12	1112	Min.	0.00	-5283.52	9	-531.21	9	655.01	9	181.72	9	-202.30	9	-54.68	9
12	12	1112	Min.	320.35	-4346.50	9	-531.21	9	-1046.71	9	181.72	9	379.85	9	-54.68	9
13	13	1313	Max	0.00	-7908.98	9	-1697.60	9	2176.53	9	127.11	9	-138.52	9	-36.41	9
13	13	1313	Max	333.77	-6932.70	9	-1697.60	9	-3489.55	9	127.11	9	285.72	9	-36.41	9
13	13	1313	Min.	0.00	-7908.98	9	-1697.60	9	2176.53	9	127.11	9	-138.52	9	-36.41	9
13	13	1313	Min.	333.77	-6932.70	9	-1697.60	9	-3489.55	9	127.11	9	285.72	9	-36.41	9
14	14	1414	Max	0.00	-7916.43	9	-1696.74	9	2176.83	9	-142.83	9	156.40	9	44.38	9
14	14	1414	Max	334.40	-6938.31	9	-1696.74	9	-3497.06	9	-142.83	9	-321.23	9	44.38	9
14	14	1414	Min.	0.00	-7916.43	9	-1696.74	9	2176.83	9	-142.83	9	156.40	9	44.38	9
14	14	1414	Min.	334.40	-6938.31	9	-1696.74	9	-3497.06	9	-142.83	9	-321.23	9	44.38	9
15	15	1715	Max	0.00	-9689.48	9	-1049.96	9	1219.38	9	1312.60	9	-4739.41	9	669.88	9
15	15	1715	Max	345.02	-5652.74	9	-1049.96	9	-2403.20	9	1312.60	9	-210.70	9	669.88	9
15	15	1715	Min.	0.00	-9689.48	9	-1049.96	9	1219.38	9	1312.60	9	-4739.41	9	669.88	9
15	15	1715	Min.	345.02	-5652.74	9	-1049.96	9	-2403.20	9	1312.60	9	-210.70	9	669.88	9
16	16	1716	Max	0.00	-9673.82	9	1051.40	9	-1220.05	9	1334.74	9	-4796.52	9	-652.63	9
16	16	1716	Max	345.02	-5637.08	9	1051.40	9	2407.51	9	1334.74	9	-191.41	9	-652.63	9
16	16	1716	Min.	0.00	-9673.82	9	1051.40	9	-1220.05	9	1334.74	9	-4796.52	9	-652.63	9
16	16	1716	Min.	345.02	-5637.08	9	1051.40	9	2407.51	9	1334.74	9	-191.41	9	-652.63	9
17	17	1917	Max	0.00	-990.11	9	-4.30	9	14.55	9	72.44	9	-94.69	9	-3.10	9
17	17	1917	Max	355.40	-820.84	9	-4.30	9	-0.72	9	72.44	9	162.75	9	-3.10	9
17	17	1917	Min.	0.00	-990.11	9	-4.30	9	14.55	9	72.44	9	-94.69	9	-3.10	9
17	17	1917	Min.	355.40	-820.84	9	-4.30									



## Relazione di calcolo

806	502	105	Min.	14.91	-275.38	9	26.19	9	-60.47	9	577.58	9	-442.58	9	447.49	9
806	502	105	Min.	268.88					6.04	9			290.87	9		
806	502	105	Min.	511.47	-305.52	9	26.19	9	69.57	9	-551.68	9	-378.26	9	447.49	9
807	104	403	Max	15.82	-294.93	9	-29.57	9	75.11	9	525.77	9	-351.07	9	-463.43	9
807	104	403	Max	247.01					6.74	9			256.69	9		
807	104	403	Max	491.27	-266.30	9	-29.57	9	-65.49	9	-555.49	9	-421.73	9	-463.43	9
807	104	403	Min.	15.82	-294.93	9	-29.57	9	75.11	9	525.77	9	-351.07	9	-463.43	9
807	104	403	Min.	247.01					6.74	9			256.69	9		
807	104	403	Min.	491.27	-266.30	9	-29.57	9	-65.49	9	-555.49	9	-421.73	9	-463.43	9
807	403	801	Max	14.91	-585.14	9	28.20	9	-70.67	9	851.51	9	-980.08	9	-165.19	9
807	403	801	Max	389.33					34.93	9			614.03	9		
807	403	801	Max	533.47	-553.77	9	28.20	9	75.58	9	-327.81	9	377.78	9	-165.19	9
807	403	801	Min.	14.91	-585.14	9	28.20	9	-70.67	9	851.51	9	-980.08	9	-165.19	9
807	403	801	Min.	389.33					34.93	9			614.03	9		
807	403	801	Min.	533.47	-553.77	9	28.20	9	75.58	9	-327.81	9	377.78	9	-165.19	9
901	403	201	Max	15.00	22.80	9	0.00	9	0.00	9	1178.06	9	-459.56	9	0.00	9
901	403	201	Max	93.02	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
901	403	201	Min.	15.00	22.80	9	0.00	9	0.00	9	1178.06	9	-459.56	9	0.00	9
901	403	201	Min.	93.02	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
901	907	403	Max	14.99	-2033.73	9	-0.07	9	0.00	9	4047.33	9	0.00	9	0.00	9
901	907	403	Max	283.11					-0.19	9			5425.76	9		
901	907	403	Max	651.31	-2321.90	9	-0.07	9	-0.46	9	-5558.10	9	-4806.63	9	0.00	9
901	907	403	Min.	14.99	-2033.73	9	-0.07	9	0.00	9	4047.33	9	0.00	9	0.00	9
901	907	403	Min.	283.11					-0.19	9			5425.76	9		
901	907	403	Min.	651.31	-2321.90	9	-0.07	9	-0.46	9	-5558.10	9	-4806.63	9	0.00	9
1108	104	106	Max	15.24	17.75	9	0.00	9	0.00	9	917.42	9	-356.98	9	0.00	9
1108	104	106	Max	93.07	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
1108	104	106	Min.	15.24	17.75	9	0.00	9	0.00	9	917.42	9	-356.98	9	0.00	9
1108	104	106	Min.	93.07	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
1108	606	104	Max	15.00	-757.83	9	10.23	9	-17.39	9	3892.21	9	-3977.29	9	-12.33	9
1108	606	104	Max	345.26					16.40	9			2449.95	9		
1108	606	104	Max	598.70	-973.03	9	10.23	9	42.33	9	-2986.80	9	-1334.86	9	-12.33	9
1108	606	104	Min.	15.00	-757.83	9	10.23	9	-17.39	9	3892.21	9	-3977.29	9	-12.33	9
1108	606	104	Min.	345.26					16.40	9			2449.95	9		
1108	606	104	Min.	598.70	-973.03	9	10.23	9	42.33	9	-2986.80	9	-1334.86	9	-12.33	9
1108	1111	606	Max	15.00	-395.40	9	10.75	9	-55.66	9	2427.49	9	-1062.76	9	19.39	9
1108	1111	606	Max	220.99					-33.52	9			1437.42	9		
1108	1111	606	Max	505.92	-586.09	9	10.75	9	-2.89	9	-3357.79	9	-3346.26	9	19.39	9
1108	1111	606	Min.	15.00	-395.40	9	10.75	9	-55.66	9	2427.49	9	-1062.76	9	19.39	9
1108	1111	606	Min.	220.99					-33.52	9			1437.42	9		
1108	1111	606	Min.	505.92	-586.09	9	10.75	9	-2.89	9	-3357.79	9	-3346.26	9	19.39	9
1108	1113	1111	Max	0.00	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
1108	1113	1111	Max	77.82	-17.75	9	0.00	9	0.00	9	-917.42	9	-356.98	9	0.00	9
1108	1113	1111	Min.	0.00	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
1108	1113	1111	Min.	77.82	-17.75	9	0.00	9	0.00	9	-917.42	9	-356.98	9	0.00	9
1109	105	107	Max	15.24	18.17	9	0.00	9	0.00	9	939.44	9	-365.54	9	0.00	9
1109	105	107	Max	93.07	0.00	9	0.00	9	0.00	9	-0.00	9	0.00	9	0.00	9
1109	105	107	Min.	15.24	18.17	9	0.00	9	0.00	9	939.44	9	-365.54	9	0.00	9
1109	105	107	Min.	93.07	0.00	9	0.00	9	0.00	9	-0.00	9	0.00	9	0.00	9
1109	610	105	Max	15.00	-770.16	9	-9.53	9	16.62	9	3980.54	9	-4062.79	9	14.63	9
1109	610	105	Max	344.84					-14.80	9			2501.90	9		
1109	610	105	Max	598.70	-990.53	9	-9.53	9	-38.99	9	-3063.58	9	-1386.66	9	14.63	9
1109	610	105	Min.	15.00	-770.16	9	-9.53	9	16.62	9	3980.54	9	-4062.79	9	14.63	9
1109	610	105	Min.	344.84					-14.80	9			2501.90	9		
1109	610	105	Min.	598.70	-990.53	9	-9.53	9	-38.99	9	-3063.58	9	-1386.66	9	14.63	9
1109	1112	610	Max	15.00	-405.31	9	-10.16	9	53.18	9	2486.36	9	-1090.33	9	-20.77	9
1109	1112	610	Max	221.04					32.24	9			1471.09	9		
1109	1112	610	Max	505.92	-600.57	9	-10.16	9	3.28	9	-3437.78	9	-3425.69	9	-20.77	9
1109	1112	610	Min.	15.00	-405.31	9	-10.16	9	53.18	9	2486.36	9	-1090.33	9	-20.77	9
1109	1112	610	Min.	221.04					32.24	9			1471.09	9		
1109	1112	610	Min.	505.92	-600.57	9	-10.16	9	3.28	9	-3437.78	9	-3425.69	9	-20.77	9
1109	1114	1112	Max	0.00	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
1109	1114	1112	Max	77.82	-18.17	9	0.00	9	0.00	9	-939.44	9	-365.54	9	0.00	9
1109	1114	1112	Min.	0.00	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
1109	1114	1112	Min.	77.82	-18.17	9	0.00	9	0.00	9	-939.44	9	-365.54	9	0.00	9
1501	1313	-1	Max	15.85	-1774.36	9	-3.45	9	17.81	9	4630.67	9	-3802.23	9	0.00	9
1501	1313	-1	Max	322.63					7.22	9			3300.83	9		
1501	1313	-1	Max	531.77	-2027.59	9	-3.45	9	0.00	9	-3156.69	9	0.00	9	0.00	9
1501	1313	-1	Min.	15.85	-1774.36	9	-3.45	9	17.81	9	4630.67	9	-3802.23	9	0.00	9
1501	1313	-1	Min.	322.63					7.22	9			3300.83	9		
1501	1313	-1	Min.	531.77	-2027.59	9	-3.45	9	0.00	9	-3156.69	9	0.00	9	0.00	9
1501	1501	1313	Max	0.00	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
1501	1501	1313	Max	77.16	-22.55	9	0.00	9	0.00	9	-1165.08	9	-449.49	9	0.00	9
1501	1501	1313	Min.	0.00	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
1501	1501	1313	Min.	77.16	-22.55	9	0.00	9	0.00	9	-1165.08	9	-449.49	9	0.00	9
1605	502	301	Max	15.00	22.80	9	0.00	9	0.00	9	1178.06	9	-459.56	9	0.00	9
1605	502	301	Max	93.02	-0.00	9	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
1605	502	301	Min.	15.00	22.80	9	0.00	9	0.00	9	1178.06	9	-459.56	9	0.00	9
1605	502	301	Min.	93.02	-0.00	9	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
1605	1009	502	Max	14.99	-2058.05	9	0.27	9	0.00	9	4060.20	9	0.00	9	0.00	9
1605	1009	502	Max	283.96					0.74	9			5460.30	9		
1605	1009	502	Max	653.30	-2345.67	9	0.27	9	1.75	9	-5575.43	9	-4835.96	9	0.00	9
1605	1009	502	Min.	14.99	-2058.05	9	0.27	9	0.00	9	4060.20	9	0.00	9	0.00	9
1605	1009	502	Min.	283.96					0.74	9			5460.30	9		
1605	1009	502	Min.	653.30	-2345.67	9	0.27	9	1.75	9	-5575.43	9	-4835.96	9	0.00	9
1605	1414	1009	Max	15.85	-1799.81	9	4.12	9	-21.31	9	4641.51	9	-3819.23	9	0.00	9
1605	1414	1009	Max	323.33					-8.64	9			3316.56	9		
1605	1414	1009	Max	532.95	-2033.40	9	4.12	9	0.00	9	-3164.33	9	0.01	9	0.00	9
1605	1414	1009	Min.	15.85	-1799.81	9	4.12	9	-21.31	9	4641.51	9	-3819.23	9	0.00	9
1605	1414	1009	Min.	323.33					-8.64	9			3316.56	9		
1605																



## Relazione di calcolo

1605	1601	1414	Max	0.00	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
1605	1601	1414	Max	77.16	-22.55	9	0.00	9	0.00	9	-1165.07	9	-449.48	9
1605	1601	1414	Min.	0.00	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
1605	1601	1414	Min.	77.16	-22.55	9	0.00	9	0.00	9	-1165.07	9	-449.48	9
1710	1716	1414	Max	15.85	-125.02	9	-175.01	9	352.11	9	564.29	9	-767.12	9
1710	1716	1414	Max	264.00					-82.18	9			-66.98	9
1710	1716	1414	Max	339.78	-147.08	9	-175.01	9	-214.80	9	-172.32	9	-132.27	9
1710	1716	1414	Min.	15.85	-125.02	9	-175.01	9	352.11	9	564.29	9	-767.12	9
1710	1716	1414	Min.	264.00					-82.18	9			-66.98	9
1710	1716	1414	Min.	339.78	-147.08	9	-175.01	9	-214.80	9	-172.32	9	-132.27	9
1710	1414	1112	Max	14.99	-152.04	9	62.45	9	-177.86	9	468.41	9	-176.63	9
1710	1414	1112	Max	220.98					-49.21	9			305.79	9
1710	1414	1112	Max	452.86	-181.86	9	62.45	9	95.60	9	-527.28	9	-305.54	9
1710	1414	1112	Min.	14.99	-152.04	9	62.45	9	-177.86	9	468.41	9	-176.63	9
1710	1414	1112	Min.	220.98					-49.21	9			305.79	9
1710	1414	1112	Min.	452.86	-181.86	9	62.45	9	95.60	9	-527.28	9	-305.54	9
1811	1111	1313	Max	16.52	-167.26	9	-66.50	9	98.28	9	504.68	9	-278.62	9
1811	1111	1313	Max	238.46					-49.31	9			281.42	9
1811	1111	1313	Max	433.34	-138.88	9	-66.50	9	-178.90	9	-443.15	9	-150.40	9
1811	1111	1313	Min.	16.52	-167.26	9	-66.50	9	98.28	9	504.68	9	-278.62	9
1811	1111	1313	Min.	238.46					-49.31	9			281.42	9
1811	1111	1313	Min.	433.34	-138.88	9	-66.50	9	-178.90	9	-443.15	9	-150.40	9
1811	1313	1715	Max	14.99	-148.30	9	156.27	9	-208.03	9	206.61	9	-131.19	9
1811	1313	1715	Max	105.85					-66.04	9			-37.33	9
1811	1313	1715	Max	359.97	-124.80	9	156.27	9	331.06	9	-577.86	9	-771.55	9
1811	1313	1715	Min.	14.99	-148.30	9	156.27	9	-208.03	9	206.61	9	-131.19	9
1811	1313	1715	Min.	105.85					-66.04	9			-37.33	9
1811	1313	1715	Min.	359.97	-124.80	9	156.27	9	331.06	9	-577.86	9	-771.55	9
1811	1715	1801	Max	14.99	-1308.65	9	-1220.65	9	836.03	9	4042.89	9	-2643.24	9
1811	1715	1801	Max	170.08	-1298.07	9	-1220.65	9	-1057.00	9	3690.23	9	3353.15	9
1811	1715	1801	Min.	14.99	-1308.65	9	-1220.65	9	836.03	9	4042.89	9	-2643.24	9
1811	1715	1801	Min.	170.08	-1298.07	9	-1220.65	9	-1057.00	9	3690.23	9	3353.15	9
1811	1801	1716	Max	0.00	-1298.03	9	1224.18	9	-1057.12	9	-3688.23	9	3353.15	9
1811	1801	1716	Max	155.08	-1308.61	9	1224.18	9	841.38	9	-4040.89	9	-2640.14	9
1811	1801	1716	Min.	0.00	-1298.03	9	1224.18	9	-1057.12	9	-3688.23	9	3353.15	9
1811	1801	1716	Min.	155.08	-1308.61	9	1224.18	9	841.38	9	-4040.89	9	-2640.14	9
2002	1917	1715	Max	9.68	-56.79	9	4.30	9	-2.71	9	522.58	9	-187.69	9
2002	1917	1715	Max	131.08					2.51	9			129.52	9
2002	1917	1715	Max	241.20	-86.69	9	4.30	9	7.24	9	-474.02	9	-131.48	9
2002	1917	1715	Min.	9.68	-56.79	9	4.30	9	-2.71	9	522.58	9	-187.69	9
2002	1917	1715	Min.	131.08					2.51	9			129.52	9
2002	1917	1715	Min.	241.20	-86.69	9	4.30	9	7.24	9	-474.02	9	-131.48	9
2002	2001	1917	Max	0.00	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
2002	2001	1917	Max	50.35	-6.50	9	0.00	9	0.00	9	-216.72	9	-54.56	9
2002	2001	1917	Min.	0.00	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
2002	2001	1917	Min.	50.35	-6.50	9	0.00	9	0.00	9	-216.72	9	-54.56	9
2004	1918	1716	Max	9.68	-56.88	9	-4.18	9	2.63	9	522.67	9	-187.80	9
2004	1918	1716	Max	131.10					-2.44	9			129.52	9
2004	1918	1716	Max	241.20	-86.78	9	-4.18	9	-7.04	9	-473.93	9	-131.38	9
2004	1918	1716	Min.	9.68	-56.88	9	-4.18	9	2.63	9	522.67	9	-187.80	9
2004	1918	1716	Min.	131.10					-2.44	9			129.52	9
2004	1918	1716	Min.	241.20	-86.78	9	-4.18	9	-7.04	9	-473.93	9	-131.38	9
2004	2002	1918	Max	0.00	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
2004	2002	1918	Max	50.35	-6.50	9	0.00	9	0.00	9	-216.72	9	-54.56	9
2004	2002	1918	Min.	0.00	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
2004	2002	1918	Min.	50.35	-6.50	9	0.00	9	0.00	9	-216.72	9	-54.56	9
2203	801	701	Max	15.00	23.90	9	0.00	9	0.00	9	1234.61	9	-481.62	9
2203	801	701	Max	93.02	-0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
2203	801	701	Min.	15.00	23.90	9	0.00	9	0.00	9	1234.61	9	-481.62	9
2203	801	701	Min.	93.02	-0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
2203	1208	801	Max	14.99	-2553.67	9	0.02	9	0.00	9	4612.69	9	0.00	9
2203	1208	801	Max	306.56					0.06	9			6724.62	9
2203	1208	801	Max	710.33	-2883.68	9	0.02	9	0.15	9	-6387.67	9	-6171.10	9
2203	1208	801	Min.	14.99	-2553.67	9	0.02	9	0.00	9	4612.69	9	0.00	9
2203	1208	801	Min.	306.56					0.06	9			6724.62	9
2203	1208	801	Min.	710.33	-2883.68	9	0.02	9	0.15	9	-6387.67	9	-6171.10	9
2203	1801	1208	Max	0.00	-2292.27	9	-0.02	9	0.11	9	5328.16	9	-5243.60	9
2203	1801	1208	Max	336.79					0.04	9			3728.60	9
2203	1801	1208	Max	553.89	-2544.85	9	-0.02	9	0.00	9	-3434.79	9	0.01	9
2203	1801	1208	Min.	0.00	-2292.27	9	-0.02	9	0.11	9	5328.16	9	-5243.60	9
2203	1801	1208	Min.	336.79					0.04	9			3728.60	9
2203	1801	1208	Min.	553.89	-2544.85	9	-0.02	9	0.00	9	-3434.79	9	0.01	9
2203	2101	1801	Max	0.00	-9.79	9	0.00	9	0.00	9	-323.95	9	-97.23	9
2203	2101	1801	Max	346.16	-66.27	9	0.00	9	0.00	9	-2192.09	9	-4451.97	9
2203	2101	1801	Min.	0.00	-9.79	9	0.00	9	0.00	9	-323.95	9	-97.23	9
2203	2101	1801	Min.	346.16	-66.27	9	0.00	9	0.00	9	-2192.09	9	-4451.97	9
2203	2201	2101	Max	0.00	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
2203	2201	2101	Max	60.03	-9.72	9	0.00	9	0.00	9	-323.95	9	-97.23	9
2203	2201	2101	Min.	0.00	0.00	9	0.00	9	0.00	9	0.00	9	0.00	9
2203	2201	2101	Min.	60.03	-9.72	9	0.00	9	0.00	9	-323.95	9	-97.23	9

Tipo di combinazione di carico: SLE R

Asta	N1	N2		X <cm>	N <daN>	CC	Ty <daN>	CC	Mz <daNm>	CC	Tz <daN>	CC	My <daNm>	CC	Mx <daNm>	CC
1	1	801	Max	0.00	-6654.63	10	1870.98	10	-1724.55	10	9.45	10	-8.35	10	-0.15	10
1	1	801	Max	311.98	-6103.31	10	1870.98	10	4112.54	10	9.45	10	21.13	10	-0.15	10
1	1	801	Min.	0.00	-6654.63	10	1870.98	10	-1724.55	10	9.45	10	-8.35	10	-0.15	10
1	1	801	Min.	311.98	-6103.31	10	1870.98	10	4112.54	10	9.45	10	21.13	10	-0.15	10
2	2	502	Max	0.00	-6587.86	10	1495.83	10	-1272.47	10	176.53	10	-172.24	10	-0.55	10
2	2	502	Max	298.07	-6061.13	10	1495.83	10	3186.13	10	176.53	10	353.93	10	-0.55	10



## Relazione di calcolo

2	2	502Min.	0.00	-6587.86	10	1495.83	10	-1272.47	10	176.53	10	-172.24	10	-0.55	10
2	2	502Min.	298.07	-6061.13	10	1495.83	10	3186.13	10	176.53	10	353.93	10	-0.55	10
3	3	403Max	0.00	-6568.87	10	1479.76	10	-1251.32	10	-194.12	10	191.86	10	2.17	10
3	3	403Max	297.40	-6043.31	10	1479.76	10	3149.50	10	-194.12	10	-385.45	10	2.17	10
3	3	403Min.	0.00	-6568.87	10	1479.76	10	-1251.32	10	-194.12	10	191.86	10	2.17	10
3	3	403Min.	297.40	-6043.31	10	1479.76	10	3149.50	10	-194.12	10	-385.45	10	2.17	10
4	4	104Max	0.00	-4068.87	10	580.18	10	-447.77	10	-196.69	10	218.44	10	15.50	10
4	4	104Max	284.00	-3429.87	10	580.18	10	1199.95	10	-196.69	10	-340.16	10	15.50	10
4	4	104Min.	0.00	-4068.87	10	580.18	10	-447.77	10	-196.69	10	218.44	10	15.50	10
4	4	104Min.	284.00	-3429.87	10	580.18	10	1199.95	10	-196.69	10	-340.16	10	15.50	10
5	5	105Max	0.00	-4161.96	10	592.26	10	-459.49	10	205.38	10	-220.93	10	-13.90	10
5	5	105Max	284.00	-3522.96	10	592.26	10	1222.53	10	205.38	10	362.37	10	-13.90	10
5	5	105Min.	0.00	-4161.96	10	592.26	10	-459.49	10	205.38	10	-220.93	10	-13.90	10
5	5	105Min.	284.00	-3522.96	10	592.26	10	1222.53	10	205.38	10	362.37	10	-13.90	10
6	6	606Max	0.00	-5981.46	10	-280.09	10	355.72	10	0.06	10	-24.63	10	-11.07	10
6	6	606Max	303.19	-5299.28	10	-280.09	10	-493.48	10	0.06	10	-24.46	10	-11.07	10
6	6	606Min.	0.00	-5981.46	10	-280.09	10	355.72	10	0.06	10	-24.63	10	-11.07	10
6	6	606Min.	303.19	-5299.28	10	-280.09	10	-493.48	10	0.06	10	-24.46	10	-11.07	10
7	7	-1Max	0.00	-5909.43	10	-156.38	10	423.69	10	-2.29	10	7.26	10	0.36	10
7	7	-1Max	316.00	-5198.43	10	-156.38	10	-70.46	10	-2.29	10	0.01	10	0.36	10
7	7	-1Min.	0.00	-5909.43	10	-156.38	10	423.69	10	-2.29	10	7.26	10	0.36	10
7	7	-1Min.	316.00	-5198.43	10	-156.38	10	-70.46	10	-2.29	10	0.01	10	0.36	10
7	-1	907Max	0.00	-2859.81	10	-1461.85	10	-403.01	10	0.06	10	0.00	10	0.01	10
7	-1	907Max	1.38	-2856.71	10	-1461.82	10	-423.19	10	0.06	10	0.00	10	0.01	10
7	-1	907Min.	0.00	-2859.81	10	-1461.85	10	-403.01	10	0.06	10	0.00	10	0.01	10
7	-1	907Min.	1.38	-2856.71	10	-1461.82	10	-423.19	10	0.06	10	0.00	10	0.01	10
8	8	1208Max	0.00	-6524.75	10	-167.10	10	437.50	10	-0.03	10	0.11	10	0.00	10
8	8	1208Max	333.73	-5773.86	10	-167.10	10	-120.16	10	-0.03	10	0.00	10	0.00	10
8	8	1208Min.	0.00	-6524.75	10	-167.10	10	437.50	10	-0.03	10	0.11	10	0.00	10
8	8	1208Min.	333.73	-5773.86	10	-167.10	10	-120.16	10	-0.03	10	0.00	10	0.00	10
9	9	1009Max	0.00	-5921.25	10	-163.26	10	428.06	10	2.60	10	-8.30	10	-0.45	10
9	9	1009Max	318.01	-5205.73	10	-163.26	10	-91.14	10	2.60	10	-0.01	10	-0.45	10
9	9	1009Min.	0.00	-5921.25	10	-163.26	10	428.06	10	2.60	10	-8.30	10	-0.45	10
9	9	1009Min.	318.01	-5205.73	10	-163.26	10	-91.14	10	2.60	10	-0.01	10	-0.45	10
10	10	610Max	0.00	-6100.10	10	-282.24	10	357.37	10	-0.13	10	27.71	10	10.04	10
10	10	610Max	303.19	-5417.92	10	-282.24	10	-498.35	10	-0.13	10	27.31	10	10.04	10
10	10	610Min.	0.00	-6100.10	10	-282.24	10	357.37	10	-0.13	10	27.71	10	10.04	10
10	10	610Min.	303.19	-5417.92	10	-282.24	10	-498.35	10	-0.13	10	27.31	10	10.04	10
11	11	1111Max	0.00	-3709.16	10	-364.15	10	449.87	10	-124.52	10	138.99	10	37.97	10
11	11	1111Max	320.35	-2988.38	10	-364.15	10	-716.69	10	-124.52	10	-259.90	10	37.97	10
11	11	1111Min.	0.00	-3709.16	10	-364.15	10	449.87	10	-124.52	10	138.99	10	37.97	10
11	11	1111Min.	320.35	-2988.38	10	-364.15	10	-716.69	10	-124.52	10	-259.90	10	37.97	10
12	12	1112Max	0.00	-3786.99	10	-368.31	10	453.75	10	134.24	10	-148.67	10	-37.30	10
12	12	1112Max	320.35	-3066.21	10	-368.31	10	-726.13	10	134.24	10	281.36	10	-37.30	10
12	12	1112Min.	0.00	-3786.99	10	-368.31	10	453.75	10	134.24	10	-148.67	10	-37.30	10
12	12	1112Min.	320.35	-3066.21	10	-368.31	10	-726.13	10	134.24	10	281.36	10	-37.30	10
13	13	1313Max	0.00	-5544.79	10	-1152.13	10	1477.41	10	89.28	10	-97.27	10	-24.82	10
13	13	1313Max	333.77	-4793.80	10	-1152.13	10	-2368.07	10	89.28	10	200.72	10	-24.82	10
13	13	1313Min.	0.00	-5544.79	10	-1152.13	10	1477.41	10	89.28	10	-97.27	10	-24.82	10
13	13	1313Min.	333.77	-4793.80	10	-1152.13	10	-2368.07	10	89.28	10	200.72	10	-24.82	10
14	14	1414Max	0.00	-5550.78	10	-1151.49	10	1477.51	10	-101.30	10	111.08	10	30.23	10
14	14	1414Max	334.40	-4798.38	10	-1151.49	10	-2373.05	10	-101.30	10	-227.66	10	30.23	10
14	14	1414Min.	0.00	-5550.78	10	-1151.49	10	1477.51	10	-101.30	10	111.08	10	30.23	10
14	14	1414Min.	334.40	-4798.38	10	-1151.49	10	-2373.05	10	-101.30	10	-227.66	10	30.23	10
15	15	1715Max	0.00	-7018.82	10	-714.31	10	829.97	10	890.57	10	-3221.55	10	454.18	10
15	15	1715Max	345.02	-3913.64	10	-714.31	10	-1634.55	10	890.57	10	-148.91	10	454.18	10
15	15	1715Min.	0.00	-7018.82	10	-714.31	10	829.97	10	890.57	10	-3221.55	10	454.18	10
15	15	1715Min.	345.02	-3913.64	10	-714.31	10	-1634.55	10	890.57	10	-148.91	10	454.18	10
16	16	1716Max	0.00	-7004.03	10	715.61	10	-830.06	10	905.56	10	-3260.39	10	-442.49	10
16	16	1716Max	345.02	-3898.85	10	715.61	10	1638.94	10	905.56	10	-136.01	10	-442.49	10
16	16	1716Min.	0.00	-7004.03	10	715.61	10	-830.06	10	905.56	10	-3260.39	10	-442.49	10
16	16	1716Min.	345.02	-3898.85	10	715.61	10	1638.94	10	905.56	10	-136.01	10	-442.49	10
17	17	1917Max	0.00	-686.90	10	-2.92	10	9.87	10	49.16	10	-64.27	10	-2.11	10
17	17	1917Max	355.40	-556.69	10	-2.92	10	-0.49	10	49.16	10	110.43	10	-2.11	10
17	17	1917Min.	0.00	-686.90	10	-2.92	10	9.87	10	49.16	10	-64.27	10	-2.11	10
17	17	1917Min.	355.40	-556.69	10	-2.92	10	-0.49	10	49.16	10	110.43	10	-2.11	10
18	18	1918Max	0.00	-686.96	10	2.83	10	-9.58	10	49.22	10	-64.41	10	2.04	10
18	18	1918Max	355.40	-556.75	10	2.83	10	0.49	10	49.22	10	110.51	10	2.04	10
18	18	1918Min.	0.00	-686.96	10	2.83	10	-9.58	10	49.22	10	-64.41	10	2.04	10
18	18	1918Min.	355.40	-556.75	10	2.83	10	0.49	10	49.22	10	110.51	10	2.04	10
806	801	502Max	14.91	-380.09	10	-19.63	10	51.25	10	248.40	10	230.77	10	114.01	10
806	801	502Max	156.90					23.39	10			407.12	10		
806	801	502Max	512.37	-403.05	10	-19.63	10	-46.38	10	-621.86	10	-698.14	10	114.01	10
806	801	502Min.	14.91	-380.09	10	-19.63	10	51.25	10	248.40	10	230.77	10	114.01	10
806	801	502Min.	156.90					23.39	10			407.12	10		
806	801	502Min.	512.37	-403.05	10	-19.63	10	-46.38	10	-621.86	10	-698.14	10	114.01	10
806	502	105Max	14.91	-201.19	10	17.71	10	-40.89	10	447.86	10	-348.38	10	301.69	10
806	502	105Max	270.92					4.45	10			224.89	10		
806	502	105Max	511.47	-224.38	10	17.71	10	47.05	10	-420.81	10	-281.23	10	301.69	10
806	502	105Min.	14.91	-201.19	10	17.71	10	-40.89	10	447.86	10	-348.38	10	301.69	10
806	502	105Min.	270.92					4.45	10			224.89	10		
806	502	105Min.	511.47	-224.38	10	17.71	10	47.05	10	-420.81	10	-281.23	10	301.69	10
807	104	403Max	15.82	-215.66	10	-20.00	10	50.81	10	400.44	10	-259.74	10	-312.42	10
807	104	403Max	244.72					5.02	10			198.56	10		
807	104	403Max	491.27	-193.64	10	-20.00	10	-44.29	10	-431.30	10	-333.11	10	-312.42	10
807	104	403Min.	15.82	-215.66	10	-20.00	10	50.81	10	400.44	10	-259.74	10	-312.42	10
807	104	403Min.	244.72												



## Relazione di calcolo

807	403	801	Min.	14.91	-412.99	10	19.14	10	-47.91	10	632.01	10	-711.98	10	-112.48	10
807	403	801	Min.	376.18					21.24	10			429.67	10		
807	403	801	Min.	533.47	-388.86	10	19.14	10	51.34	10	-275.16	10	213.27	10	-112.48	10
901	403	201	Max	15.00	15.47	10	0.00	10	0.00	10	799.15	10	-311.75	10	0.00	10
901	403	201	Max	93.02	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
901	403	201	Min.	15.00	15.47	10	0.00	10	0.00	10	799.15	10	-311.75	10	0.00	10
901	403	201	Min.	93.02	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
901	907	403	Max	14.99	-1380.14	10	-0.06	10	0.00	10	2745.72	10	0.00	10	0.00	10
901	907	403	Max	283.12					-0.15	10			3681.08	10		
901	907	403	Max	651.31	-1575.62	10	-0.06	10	-0.36	10	-3770.24	10	-3259.58	10	0.00	10
901	907	403	Min.	14.99	-1380.14	10	-0.06	10	0.00	10	2745.72	10	0.00	10	0.00	10
901	907	403	Min.	283.12					-0.15	10			3681.08	10		
901	907	403	Min.	651.31	-1575.62	10	-0.06	10	-0.36	10	-3770.24	10	-3259.58	10	0.00	10
1108	104	106	Max	15.24	12.39	10	0.00	10	0.00	10	640.35	10	-249.16	10	0.00	10
1108	104	106	Max	93.07	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
1108	104	106	Min.	15.24	12.39	10	0.00	10	0.00	10	640.35	10	-249.16	10	0.00	10
1108	104	106	Min.	93.07	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
1108	606	104	Max	15.00	-527.15	10	7.05	10	-12.31	10	2714.83	10	-2772.58	10	-9.71	10
1108	606	104	Max	345.03					10.96	10			1707.31	10		
1108	606	104	Max	598.70	-677.36	10	7.05	10	28.84	10	-2086.65	10	-939.25	10	-9.71	10
1108	606	104	Min.	15.00	-527.15	10	7.05	10	-12.31	10	2714.83	10	-2772.58	10	-9.71	10
1108	606	104	Min.	345.03					10.96	10			1707.31	10		
1108	606	104	Min.	598.70	-677.36	10	7.05	10	28.84	10	-2086.65	10	-939.25	10	-9.71	10
1108	1111	606	Max	15.00	-276.01	10	7.03	10	-37.07	10	1694.88	10	-743.49	10	14.40	10
1108	1111	606	Max	221.05					-22.59	10			1002.66	10		
1108	1111	606	Max	505.92	-409.11	10	7.03	10	-2.57	10	-2343.19	10	-2334.85	10	14.40	10
1108	1111	606	Min.	15.00	-276.01	10	7.03	10	-37.07	10	1694.88	10	-743.49	10	14.40	10
1108	1111	606	Min.	221.05					-22.59	10			1002.66	10		
1108	1111	606	Min.	505.92	-409.11	10	7.03	10	-2.57	10	-2343.19	10	-2334.85	10	14.40	10
1108	1113	1111	Max	0.00	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
1108	1113	1111	Max	77.82	-12.39	10	0.00	10	0.00	10	-640.35	10	-249.16	10	0.00	10
1108	1113	1111	Min.	0.00	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
1108	1113	1111	Min.	77.82	-12.39	10	0.00	10	0.00	10	-640.35	10	-249.16	10	0.00	10
1109	105	107	Max	15.24	12.67	10	0.00	10	0.00	10	655.13	10	-254.92	10	0.00	10
1109	105	107	Max	93.07	0.00	10	0.00	10	0.00	10	-0.00	10	0.00	10	0.00	10
1109	105	107	Min.	15.24	12.67	10	0.00	10	0.00	10	655.13	10	-254.92	10	0.00	10
1109	105	107	Min.	93.07	0.00	10	0.00	10	0.00	10	-0.00	10	0.00	10	0.00	10
1109	610	105	Max	15.00	-535.46	10	-6.57	10	11.78	10	2774.09	10	-2829.91	10	11.49	10
1109	610	105	Max	344.62					-9.87	10			1742.15	10		
1109	610	105	Max	598.70	-689.14	10	-6.57	10	-26.55	10	-2138.23	10	-974.17	10	11.49	10
1109	610	105	Min.	15.00	-535.46	10	-6.57	10	11.78	10	2774.09	10	-2829.91	10	11.49	10
1109	610	105	Min.	344.62					-9.87	10			1742.15	10		
1109	610	105	Min.	598.70	-689.14	10	-6.57	10	-26.55	10	-2138.23	10	-974.17	10	11.49	10
1109	1112	610	Max	15.00	-282.72	10	-6.62	10	35.36	10	1734.43	10	-762.13	10	-15.49	10
1109	1112	610	Max	221.10					21.71	10			1025.20	10		
1109	1112	610	Max	505.92	-418.88	10	-6.62	10	2.85	10	-2396.87	10	-2388.15	10	-15.49	10
1109	1112	610	Min.	15.00	-282.72	10	-6.62	10	35.36	10	1734.43	10	-762.13	10	-15.49	10
1109	1112	610	Min.	221.10					21.71	10			1025.20	10		
1109	1112	610	Min.	505.92	-418.88	10	-6.62	10	2.85	10	-2396.87	10	-2388.15	10	-15.49	10
1109	1114	1112	Max	0.00	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
1109	1114	1112	Max	77.82	-12.67	10	0.00	10	0.00	10	-655.13	10	-254.92	10	0.00	10
1109	1114	1112	Min.	0.00	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
1109	1114	1112	Min.	77.82	-12.67	10	0.00	10	0.00	10	-655.13	10	-254.92	10	0.00	10
1501	1313	-1	Max	15.85	-1204.02	10	-2.35	10	12.13	10	3141.22	10	-2578.99	10	0.00	10
1501	1313	-1	Max	322.63					4.92	10			2239.28	10		
1501	1313	-1	Max	531.77	-1375.81	10	-2.35	10	0.00	10	-2141.44	10	0.00	10	0.00	10
1501	1313	-1	Min.	15.85	-1204.02	10	-2.35	10	12.13	10	3141.22	10	-2578.99	10	0.00	10
1501	1313	-1	Min.	322.63					4.92	10			2239.28	10		
1501	1313	-1	Min.	531.77	-1375.81	10	-2.35	10	0.00	10	-2141.44	10	0.00	10	0.00	10
1501	1501	1313	Max	0.00	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
1501	1501	1313	Max	77.16	-15.30	10	0.00	10	0.00	10	-790.35	10	-304.92	10	0.00	10
1501	1501	1313	Min.	0.00	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
1501	1501	1313	Min.	77.16	-15.30	10	0.00	10	0.00	10	-790.35	10	-304.92	10	0.00	10
1605	502	301	Max	15.00	15.47	10	0.00	10	0.00	10	799.15	10	-311.75	10	0.00	10
1605	502	301	Max	93.02	-0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
1605	502	301	Min.	15.00	15.47	10	0.00	10	0.00	10	799.15	10	-311.75	10	0.00	10
1605	502	301	Min.	93.02	-0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
1605	1009	502	Max	14.99	-1396.56	10	0.20	10	0.00	10	2754.47	10	0.00	10	0.00	10
1605	1009	502	Max	283.98					0.53	10			3704.55	10		
1605	1009	502	Max	653.30	-1591.68	10	0.20	10	1.25	10	-3781.99	10	-3279.38	10	0.00	10
1605	1009	502	Min.	14.99	-1396.56	10	0.20	10	0.00	10	2754.47	10	0.00	10	0.00	10
1605	1009	502	Min.	283.98					0.53	10			3704.55	10		
1605	1009	502	Min.	653.30	-1591.68	10	0.20	10	1.25	10	-3781.99	10	-3279.38	10	0.00	10
1605	1414	1009	Max	15.85	-1221.23	10	2.80	10	-14.48	10	3148.56	10	-2590.47	10	0.00	10
1605	1414	1009	Max	323.32					-5.87	10			2249.98	10		
1605	1414	1009	Max	532.95	-1379.69	10	2.80	10	0.00	10	-2146.64	10	0.00	10	0.00	10
1605	1414	1009	Min.	15.85	-1221.23	10	2.80	10	-14.48	10	3148.56	10	-2590.47	10	0.00	10
1605	1414	1009	Min.	323.32					-5.87	10			2249.98	10		
1605	1414	1009	Min.	532.95	-1379.69	10	2.80	10	0.00	10	-2146.64	10	0.00	10	0.00	10
1605	1601	1414	Max	0.00	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
1605	1601	1414	Max	77.16	-15.30	10	0.00	10	0.00	10	-790.34	10	-304.91	10	0.00	10
1605	1601	1414	Min.	0.00	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
1605	1601	1414	Min.	77.16	-15.30	10	0.00	10	0.00	10	-790.34	10	-304.91	10	0.00	10
1710	1716	1414	Max	15.85	-90.85	10	-118.70	10	238.87	10	412.90	10	-535.70	10	189.54	10
1710	1716	1414	Max	251.90					-41.31	10			-48.36	10		
1710	1716	1414	Max	339.78	-107.82	10	-118.70	10	-145.62	10	-153.72	10	-115.91	10	189.54	10
1710	1716	1414	Min.	15.85	-90.85	10	-118.70	10	2							



## Relazione di calcolo

1710	1414	1112	Max	452.86	-135.95	10	42.21	10	64.41	10	-399.33	10	-225.66	10	-93.32	10
1710	1414	1112	Min.	14.99	-113.01	10	42.21	10	-120.40	10	366.58	10	-153.97	10	-93.32	10
1710	1414	1112	Min.	224.56					-31.95	10			230.16	10		
1710	1414	1112	Min.	452.86	-135.95	10	42.21	10	64.41	10	-399.33	10	-225.66	10	-93.32	10
1811	1111	1313	Max	16.52	-124.92	10	-44.94	10	66.23	10	381.67	10	-205.19	10	98.02	10
1811	1111	1313	Max	234.71					-31.83	10			211.19	10		
1811	1111	1313	Max	433.34	-103.09	10	-44.94	10	-121.10	10	-347.44	10	-133.86	10	98.02	10
1811	1111	1313	Min.	16.52	-124.92	10	-44.94	10	66.23	10	381.67	10	-205.19	10	98.02	10
1811	1111	1313	Min.	234.71					-31.83	10			211.19	10		
1811	1111	1313	Min.	433.34	-103.09	10	-44.94	10	-121.10	10	-347.44	10	-133.86	10	98.02	10
1811	1313	1715	Max	14.99	-109.00	10	105.99	10	-141.04	10	178.18	10	-115.24	10	-176.93	10
1811	1313	1715	Max	116.86					-33.08	10			-24.49	10		
1811	1313	1715	Max	359.97	-90.92	10	105.99	10	224.60	10	-425.26	10	-541.42	10	-176.93	10
1811	1313	1715	Min.	14.99	-109.00	10	105.99	10	-141.04	10	178.18	10	-115.24	10	-176.93	10
1811	1313	1715	Min.	116.86					-33.08	10			-24.49	10		
1811	1313	1715	Min.	359.97	-90.92	10	105.99	10	224.60	10	-425.26	10	-541.42	10	-176.93	10
1811	1715	1801	Max	14.99	-898.23	10	-827.80	10	567.18	10	2782.11	10	-1814.74	10	239.29	10
1811	1715	1801	Max	170.08	-890.10	10	-827.80	10	-716.61	10	2510.83	10	2289.50	10	239.29	10
1811	1715	1801	Min.	14.99	-898.23	10	-827.80	10	567.18	10	2782.11	10	-1814.74	10	239.29	10
1811	1715	1801	Min.	170.08	-890.10	10	-827.80	10	-716.61	10	2510.83	10	2289.50	10	239.29	10
1811	1801	1716	Max	0.00	-890.04	10	830.20	10	-716.70	10	-2508.45	10	2289.50	10	-239.53	10
1811	1801	1716	Max	155.08	-898.18	10	830.20	10	570.80	10	-2779.73	10	-1811.05	10	-239.53	10
1811	1801	1716	Min.	0.00	-890.04	10	830.20	10	-716.70	10	-2508.45	10	2289.50	10	-239.53	10
1811	1801	1716	Min.	155.08	-898.18	10	830.20	10	570.80	10	-2779.73	10	-1811.05	10	-239.53	10
2002	1917	1715	Max	9.68	-38.54	10	2.92	10	-1.84	10	354.43	10	-127.34	10	-0.43	10
2002	1917	1715	Max	131.10					1.70	10			87.84	10		
2002	1917	1715	Max	241.20	-58.82	10	2.92	10	4.91	10	-321.40	10	-89.10	10	-0.43	10
2002	1917	1715	Min.	9.68	-38.54	10	2.92	10	-1.84	10	354.43	10	-127.34	10	-0.43	10
2002	1917	1715	Min.	131.10					1.70	10			87.84	10		
2002	1917	1715	Min.	241.20	-58.82	10	2.92	10	4.91	10	-321.40	10	-89.10	10	-0.43	10
2002	2001	1917	Max	0.00	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
2002	2001	1917	Max	50.35	-4.41	10	0.00	10	0.00	10	-146.97	10	-37.00	10	0.00	10
2002	2001	1917	Min.	0.00	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
2002	2001	1917	Min.	50.35	-4.41	10	0.00	10	0.00	10	-146.97	10	-37.00	10	0.00	10
2004	1918	1716	Max	9.68	-38.61	10	-2.83	10	1.78	10	354.50	10	-127.41	10	0.42	10
2004	1918	1716	Max	131.12					-1.66	10			87.84	10		
2004	1918	1716	Max	241.20	-58.88	10	-2.83	10	-4.77	10	-321.34	10	-89.03	10	0.42	10
2004	1918	1716	Min.	9.68	-38.61	10	-2.83	10	1.78	10	354.50	10	-127.41	10	0.42	10
2004	1918	1716	Min.	131.12					-1.66	10			87.84	10		
2004	1918	1716	Min.	241.20	-58.88	10	-2.83	10	-4.77	10	-321.34	10	-89.03	10	0.42	10
2004	2002	1918	Max	0.00	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
2004	2002	1918	Max	50.35	-4.41	10	0.00	10	0.00	10	-146.97	10	-37.00	10	0.00	10
2004	2002	1918	Min.	0.00	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
2004	2002	1918	Min.	50.35	-4.41	10	0.00	10	0.00	10	-146.97	10	-37.00	10	0.00	10
2203	801	701	Max	15.00	16.21	10	0.00	10	0.00	10	837.38	10	-326.66	10	0.00	10
2203	801	701	Max	93.02	-0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
2203	801	701	Min.	15.00	16.21	10	0.00	10	0.00	10	837.38	10	-326.66	10	0.00	10
2203	801	701	Min.	93.02	-0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
2203	1208	801	Max	14.99	-1732.05	10	0.02	10	0.00	10	3129.01	10	0.00	10	0.00	10
2203	1208	801	Max	306.61					0.05	10			4562.32	10		
2203	1208	801	Max	710.33	-1955.88	10	0.02	10	0.12	10	-4331.96	10	-4182.31	10	0.00	10
2203	1208	801	Min.	14.99	-1732.05	10	0.02	10	0.00	10	3129.01	10	0.00	10	0.00	10
2203	1208	801	Min.	306.61					0.05	10			4562.32	10		
2203	1208	801	Min.	710.33	-1955.88	10	0.02	10	0.12	10	-4331.96	10	-4182.31	10	0.00	10
2203	1801	1208	Max	0.00	-1554.47	10	-0.02	10	0.08	10	3615.92	10	-3568.15	10	0.00	10
2203	1801	1208	Max	336.98					0.03	10			2524.34	10		
2203	1801	1208	Max	553.89	-1725.77	10	-0.02	10	0.00	10	-2327.53	10	0.00	10	0.00	10
2203	1801	1208	Min.	0.00	-1554.47	10	-0.02	10	0.08	10	3615.92	10	-3568.15	10	0.00	10
2203	1801	1208	Min.	336.98					0.03	10			2524.34	10		
2203	1801	1208	Min.	553.89	-1725.77	10	-0.02	10	0.00	10	-2327.53	10	0.00	10	0.00	10
2203	2101	1801	Max	0.00	-6.70	10	0.00	10	0.00	10	-221.69	10	-66.54	10	0.00	10
2203	2101	1801	Max	346.16	-45.35	10	0.00	10	0.00	10	-1500.09	10	-3046.56	10	0.00	10
2203	2101	1801	Min.	0.00	-6.70	10	0.00	10	0.00	10	-221.69	10	-66.54	10	0.00	10
2203	2101	1801	Min.	346.16	-45.35	10	0.00	10	0.00	10	-1500.09	10	-3046.56	10	0.00	10
2203	2201	2101	Max	0.00	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
2203	2201	2101	Max	60.03	-6.65	10	0.00	10	0.00	10	-221.69	10	-66.54	10	0.00	10
2203	2201	2101	Min.	0.00	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10	0.00	10
2203	2201	2101	Min.	60.03	-6.65	10	0.00	10	0.00	10	-221.69	10	-66.54	10	0.00	10

Tipo di combinazione di carico: SLE F

Asta	N1	N2		X <cm>	N <daN>	CC	Ty <daN>	CC	Mz <daNm>	CC	Tz <daN>	CC	My <daNm>	CC	Mx <daNm>	CC
1	1	801	Max	0.00	-3969.07	11	915.54	11	-844.84	11	7.54	11	-6.58	11	-0.09	11
1	1	801	Max	311.98	-3417.75	11	915.54	11	2011.47	11	7.54	11	16.96	11	-0.09	11
1	1	801	Min.	0.00	-3969.07	11	915.54	11	-844.84	11	7.54	11	-6.58	11	-0.09	11
1	1	801	Min.	311.98	-3417.75	11	915.54	11	2011.47	11	7.54	11	16.96	11	-0.09	11
2	2	502	Max	0.00	-3953.66	11	725.09	11	-616.10	11	76.74	11	-73.76	11	0.23	11
2	2	502	Max	298.07	-3426.92	11	725.09	11	1545.17	11	76.74	11	154.97	11	0.23	11
2	2	502	Min.	0.00	-3953.66	11	725.09	11	-616.10	11	76.74	11	-73.76	11	0.23	11
2	2	502	Min.	298.07	-3426.92	11	725.09	11	1545.17	11	76.74	11	154.97	11	0.23	11
3	3	403	Max	0.00	-3947.64	11	716.68	11	-605.15	11	-94.49	11	93.45	11	0.52	11
3	3	403	Max	297.40	-3422.09	11	716.68	11	1526.25	11	-94.49	11	-187.56	11	0.52	11
3	3	403	Min.	0.00	-3947.64	11	716.68	11	-605.15	11	-94.49	11	93.45	11	0.52	11
3	3	403	Min.	297.40	-3422.09	11	716.68	11	1526.25	11	-94.49	11	-187.56	11	0.52	11
4	4	104	Max	0.00	-2877.62	11	343.88	11	-268.82	11	-157.60	11	163.15	11	6.24	11
4	4	104	Max	284.00	-2238.62	11	343.88	11	707.80	11	-157.60	11	-284.45	11	6.24	11
4	4	104	Min.	0.00	-2877.62	11	343.88	11	-268.82	11	-157.60	11	163.15	11	6.24	11
4	4	104	Min.	284.00	-2238.62	11	343.88	11	707.80	11	-157.60	11	-284.45	11	6.24	11
5	5	105	Max	0.00	-2932.92	11	349.20	11	-274.06	11	168.14	11	-168.06	11	-5.53	11
5	5	105	Max	284.00	-2293.92	11	349.20	11	717.67	11	168.14	11	309.45	11	-5.53	11



## Relazione di calcolo

5	5	105	Min.	0.00	-2932.92	11	349.20	11	-274.06	11	168.14	11	-168.06	11	-5.53	11
5	5	105	Min.	284.00	-2293.92	11	349.20	11	717.67	11	168.14	11	309.45	11	-5.53	11
6	6	606	Max	0.00	-3880.15	11	-161.50	11	203.32	11	-1.60	11	-18.27	11	-4.45	11
6	6	606	Max	303.19	-3197.97	11	-161.50	11	-286.33	11	-1.60	11	-23.12	11	-4.45	11
6	6	606	Min.	0.00	-3880.15	11	-161.50	11	203.32	11	-1.60	11	-18.27	11	-4.45	11
6	6	606	Min.	303.19	-3197.97	11	-161.50	11	-286.33	11	-1.60	11	-23.12	11	-4.45	11
7	7	-1	Max	0.00	-3224.69	11	-76.29	11	207.02	11	-1.11	11	3.52	11	0.19	11
7	7	-1	Max	316.00	-2513.69	11	-76.29	11	-34.07	11	-1.11	11	0.01	11	0.19	11
7	7	-1	Min.	0.00	-3224.69	11	-76.29	11	207.02	11	-1.11	11	3.52	11	0.19	11
7	7	-1	Min.	316.00	-2513.69	11	-76.29	11	-34.07	11	-1.11	11	0.01	11	0.19	11
7	-1	907	Max	0.00	-1383.70	11	-708.45	11	-194.75	11	0.06	11	0.00	11	0.01	11
7	-1	907	Max	1.38	-1380.60	11	-708.44	11	-204.53	11	0.06	11	0.00	11	0.01	11
7	-1	907	Min.	0.00	-1383.70	11	-708.45	11	-194.75	11	0.06	11	0.00	11	0.01	11
7	-1	907	Min.	1.38	-1380.60	11	-708.44	11	-204.53	11	0.06	11	0.00	11	0.01	11
8	8	1208	Max	0.00	-3526.86	11	-81.63	11	212.80	11	-0.03	11	0.10	11	0.00	11
8	8	1208	Max	333.73	-2775.96	11	-81.63	11	-59.63	11	-0.03	11	0.00	11	0.00	11
8	8	1208	Min.	0.00	-3526.86	11	-81.63	11	212.80	11	-0.03	11	0.10	11	0.00	11
8	8	1208	Min.	333.73	-2775.96	11	-81.63	11	-59.63	11	-0.03	11	0.00	11	0.00	11
9	9	1009	Max	0.00	-3231.24	11	-79.58	11	208.96	11	1.24	11	-3.94	11	-0.23	11
9	9	1009	Max	318.01	-2515.72	11	-79.58	11	-44.10	11	1.24	11	-0.01	11	-0.23	11
9	9	1009	Min.	0.00	-3231.24	11	-79.58	11	208.96	11	1.24	11	-3.94	11	-0.23	11
9	9	1009	Min.	318.01	-2515.72	11	-79.58	11	-44.10	11	1.24	11	-0.01	11	-0.23	11
10	10	610	Max	0.00	-3933.58	11	-162.38	11	203.91	11	1.58	11	21.35	11	3.82	11
10	10	610	Max	303.19	-3251.40	11	-162.38	11	-288.42	11	1.58	11	26.15	11	3.82	11
10	10	610	Min.	0.00	-3933.58	11	-162.38	11	203.91	11	1.58	11	21.35	11	3.82	11
10	10	610	Min.	303.19	-3251.40	11	-162.38	11	-288.42	11	1.58	11	26.15	11	3.82	11
11	11	1111	Max	0.00	-2669.68	11	-211.07	11	258.90	11	-103.62	11	113.42	11	19.12	11
11	11	1111	Max	320.35	-1948.89	11	-211.07	11	-417.28	11	-103.62	11	-218.52	11	19.12	11
11	11	1111	Min.	0.00	-2669.68	11	-211.07	11	258.90	11	-103.62	11	113.42	11	19.12	11
11	11	1111	Min.	320.35	-1948.89	11	-211.07	11	-417.28	11	-103.62	11	-218.52	11	19.12	11
12	12	1112	Max	0.00	-2715.94	11	-212.62	11	260.24	11	112.83	11	-121.89	11	-18.91	11
12	12	1112	Max	320.35	-1995.16	11	-212.62	11	-420.87	11	112.83	11	239.55	11	-18.91	11
12	12	1112	Min.	0.00	-2715.94	11	-212.62	11	260.24	11	112.83	11	-121.89	11	-18.91	11
12	12	1112	Min.	320.35	-1995.16	11	-212.62	11	-420.87	11	112.83	11	239.55	11	-18.91	11
13	13	1313	Max	0.00	-3464.54	11	-558.91	11	717.72	11	56.50	11	-61.45	11	-12.53	11
13	13	1313	Max	333.77	-2713.56	11	-558.91	11	-1147.74	11	56.50	11	127.13	11	-12.53	11
13	13	1313	Min.	0.00	-3464.54	11	-558.91	11	717.72	11	56.50	11	-61.45	11	-12.53	11
13	13	1313	Min.	333.77	-2713.56	11	-558.91	11	-1147.74	11	56.50	11	127.13	11	-12.53	11
14	14	1414	Max	0.00	-3471.52	11	-558.32	11	717.33	11	-68.22	11	75.50	11	15.14	11
14	14	1414	Max	334.40	-2719.12	11	-558.32	11	-1149.70	11	-68.22	11	-152.63	11	15.14	11
14	14	1414	Min.	0.00	-3471.52	11	-558.32	11	717.33	11	-68.22	11	75.50	11	15.14	11
14	14	1414	Min.	334.40	-2719.12	11	-558.32	11	-1149.70	11	-68.22	11	-152.63	11	15.14	11
15	15	1715	Max	0.00	-5341.83	11	-354.01	11	413.07	11	430.61	11	-1584.76	11	218.21	11
15	15	1715	Max	345.02	-2236.65	11	-354.01	11	-808.35	11	430.61	11	-99.06	11	218.21	11
15	15	1715	Min.	0.00	-5341.83	11	-354.01	11	413.07	11	430.61	11	-1584.76	11	218.21	11
15	15	1715	Min.	345.02	-2236.65	11	-354.01	11	-808.35	11	430.61	11	-99.06	11	218.21	11
16	16	1716	Max	0.00	-5316.47	11	356.04	11	-411.54	11	437.74	11	-1603.96	11	-212.63	11
16	16	1716	Max	345.02	-2211.29	11	356.04	11	816.89	11	437.74	11	-93.67	11	-212.63	11
16	16	1716	Min.	0.00	-5316.47	11	356.04	11	-411.54	11	437.74	11	-1603.96	11	-212.63	11
16	16	1716	Min.	345.02	-2211.29	11	356.04	11	816.89	11	437.74	11	-93.67	11	-212.63	11
17	17	1917	Max	0.00	-398.90	11	-1.41	11	4.79	11	23.85	11	-31.25	11	-1.03	11
17	17	1917	Max	355.40	-268.69	11	-1.41	11	-0.24	11	23.85	11	53.53	11	-1.03	11
17	17	1917	Min.	0.00	-398.90	11	-1.41	11	4.79	11	23.85	11	-31.25	11	-1.03	11
17	17	1917	Min.	355.40	-268.69	11	-1.41	11	-0.24	11	23.85	11	53.53	11	-1.03	11
18	18	1918	Max	0.00	-398.93	11	1.35	11	-4.56	11	23.88	11	-31.32	11	0.97	11
18	18	1918	Max	355.40	-268.72	11	1.35	11	0.24	11	23.88	11	53.57	11	0.97	11
18	18	1918	Min.	0.00	-398.93	11	1.35	11	-4.56	11	23.88	11	-31.32	11	0.97	11
18	18	1918	Min.	355.40	-268.72	11	1.35	11	0.24	11	23.88	11	53.57	11	0.97	11
806	801	502	Max	14.91	-238.63	11	-9.54	11	25.14	11	342.22	11	-71.31	11	57.12	11
806	801	502	Max	210.53					6.48	11			263.41	11		
806	801	502	Max	512.37	-261.60	11	-9.54	11	-22.30	11	-528.03	11	-533.50	11	57.12	11
806	801	502	Min.	14.91	-238.63	11	-9.54	11	25.14	11	342.22	11	-71.31	11	57.12	11
806	801	502	Min.	210.53					6.48	11			263.41	11		
806	801	502	Min.	512.37	-261.60	11	-9.54	11	-22.30	11	-528.03	11	-533.50	11	57.12	11
806	502	105	Max	14.91	-160.12	11	8.32	11	-19.20	11	461.59	11	-378.99	11	137.55	11
806	502	105	Max	278.77					2.75	11			229.99	11		
806	502	105	Max	511.47	-183.31	11	8.32	11	22.11	11	-407.07	11	-243.62	11	137.55	11
806	502	105	Min.	14.91	-160.12	11	8.32	11	-19.20	11	461.59	11	-378.99	11	137.55	11
806	502	105	Min.	278.77					2.75	11			229.99	11		
806	502	105	Min.	511.47	-183.31	11	8.32	11	22.11	11	-407.07	11	-243.62	11	137.55	11
807	104	403	Max	15.82	-172.41	11	-9.42	11	23.94	11	385.00	11	-219.92	11	-142.43	11
807	104	403	Max	235.90					3.21	11			203.74	11		
807	104	403	Max	491.27	-150.38	11	-9.42	11	-20.83	11	-446.73	11	-366.67	11	-142.43	11
807	104	403	Min.	15.82	-172.41	11	-9.42	11	23.94	11	385.00	11	-219.92	11	-142.43	11
807	104	403	Min.	235.90					3.21	11			203.74	11		
807	104	403	Min.	491.27	-150.38	11	-9.42	11	-20.83	11	-446.73	11	-366.67	11	-142.43	11
807	403	801	Max	14.91	-269.71	11	9.28	11	-23.01	11	543.22	11	-550.11	11	-56.06	11
807	403	801	Max	325.43					5.81	11			293.30	11		
807	403	801	Max	533.47	-245.58	11	9.28	11	25.13	11	-363.94	11	-85.27	11	-56.06	11
807	403	801	Min.	14.91	-269.71	11	9.28	11	-23.01	11	543.22	11	-550.11	11	-56.06	11
807	403	801	Min.	325.43					5.81	11			293.30	11		
807	403	801	Min.	533.47	-245.58	11	9.28	11	25.13	11	-363.94	11	-85.27	11	-56.06	11
901	403	201	Max	15.00	7.47	11	0.00	11	0.00	11	386.03	11	-150.59	11	0.00	11
901	403	201	Max	93.02	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
901	403	201	Min.	15.00	7.47	11	0.00	11	0.00	11	386.03	11	-150.59	1		



## Relazione di calcolo

901	907	403	Min.	651.31	-763.39	11	-0.06	11	-0.39	11	-1820.51	11	-1569.96	11	0.00	11
1108	104	106	Max	15.24	7.50	11	0.00	11	0.00	11	387.63	11	-150.83	11	0.00	11
1108	104	106	Max	93.07	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
1108	104	106	Min.	15.24	7.50	11	0.00	11	0.00	11	387.63	11	-150.83	11	0.00	11
1108	104	106	Min.	93.07	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
1108	606	104	Max	15.00	-311.49	11	3.88	11	-8.17	11	1635.39	11	-1663.44	11	-10.58	11
1108	606	104	Max	343.42					4.58	11			1022.03	11		
1108	606	104	Max	598.70	-402.42	11	3.88	11	14.50	11	-1271.17	11	-600.46	11	-10.58	11
1108	606	104	Min.	15.00	-311.49	11	3.88	11	-8.17	11	1635.39	11	-1663.44	11	-10.58	11
1108	606	104	Min.	343.42					4.58	11			1022.03	11		
1108	606	104	Min.	598.70	-402.42	11	3.88	11	14.50	11	-1271.17	11	-600.46	11	-10.58	11
1108	1111	606	Max	15.00	-167.20	11	2.24	11	-14.91	11	1028.15	11	-457.27	11	12.40	11
1108	1111	606	Max	221.48					-10.28	11			604.21	11		
1108	1111	606	Max	505.92	-247.77	11	2.24	11	-3.91	11	-1416.28	11	-1409.98	11	12.40	11
1108	1111	606	Min.	15.00	-167.20	11	2.24	11	-14.91	11	1028.15	11	-457.27	11	12.40	11
1108	1111	606	Min.	221.48					-10.28	11			604.21	11		
1108	1111	606	Min.	505.92	-247.77	11	2.24	11	-3.91	11	-1416.28	11	-1409.98	11	12.40	11
1108	1113	1111	Max	0.00	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
1108	1113	1111	Max	77.82	-7.50	11	0.00	11	0.00	11	-387.63	11	-150.83	11	0.00	11
1108	1113	1111	Min.	0.00	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
1108	1113	1111	Min.	77.82	-7.50	11	0.00	11	0.00	11	-387.63	11	-150.83	11	0.00	11
1109	105	107	Max	15.24	7.63	11	0.00	11	0.00	11	394.32	11	-153.44	11	0.00	11
1109	105	107	Max	93.07	0.00	11	0.00	11	0.00	11	-0.00	11	0.00	11	0.00	11
1109	105	107	Min.	15.24	7.63	11	0.00	11	0.00	11	394.32	11	-153.44	11	0.00	11
1109	105	107	Min.	93.07	0.00	11	0.00	11	0.00	11	-0.00	11	0.00	11	0.00	11
1109	610	105	Max	15.00	-315.39	11	-3.63	11	7.92	11	1662.09	11	-1689.13	11	12.40	11
1109	610	105	Max	343.12					-4.01	11			1037.66	11		
1109	610	105	Max	598.70	-407.89	11	-3.63	11	-13.29	11	-1294.64	11	-616.76	11	12.40	11
1109	610	105	Min.	15.00	-315.39	11	-3.63	11	7.92	11	1662.09	11	-1689.13	11	12.40	11
1109	610	105	Min.	343.12					-4.01	11			1037.66	11		
1109	610	105	Min.	598.70	-407.89	11	-3.63	11	-13.29	11	-1294.64	11	-616.76	11	12.40	11
1109	1112	610	Max	15.00	-170.46	11	-2.01	11	13.97	11	1046.19	11	-466.25	11	-13.61	11
1109	1112	610	Max	221.54					9.82	11			614.16	11		
1109	1112	610	Max	505.92	-252.41	11	-2.01	11	4.11	11	-1440.44	11	-1433.97	11	-13.61	11
1109	1112	610	Min.	15.00	-170.46	11	-2.01	11	13.97	11	1046.19	11	-466.25	11	-13.61	11
1109	1112	610	Min.	221.54					9.82	11			614.16	11		
1109	1112	610	Min.	505.92	-252.41	11	-2.01	11	4.11	11	-1440.44	11	-1433.97	11	-13.61	11
1109	1114	1112	Max	0.00	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
1109	1114	1112	Max	77.82	-7.63	11	0.00	11	0.00	11	-394.32	11	-153.44	11	0.00	11
1109	1114	1112	Min.	0.00	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
1109	1114	1112	Min.	77.82	-7.63	11	0.00	11	0.00	11	-394.32	11	-153.44	11	0.00	11
1501	1313	-1	Max	15.85	-583.16	11	-1.17	11	6.06	11	1517.12	11	-1244.46	11	0.00	11
1501	1313	-1	Max	322.58					2.46	11			1082.24	11		
1501	1313	-1	Max	531.77	-666.14	11	-1.17	11	0.00	11	-1034.69	11	0.00	11	0.00	11
1501	1313	-1	Min.	15.85	-583.16	11	-1.17	11	6.06	11	1517.12	11	-1244.46	11	0.00	11
1501	1313	-1	Min.	322.58					2.46	11			1082.24	11		
1501	1313	-1	Min.	531.77	-666.14	11	-1.17	11	0.00	11	-1034.69	11	0.00	11	0.00	11
1501	1501	1313	Max	0.00	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
1501	1501	1313	Max	77.16	-7.39	11	0.00	11	0.00	11	-381.78	11	-147.29	11	0.00	11
1501	1501	1313	Min.	0.00	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
1501	1501	1313	Min.	77.16	-7.39	11	0.00	11	0.00	11	-381.78	11	-147.29	11	0.00	11
1605	502	301	Max	15.00	7.47	11	0.00	11	0.00	11	386.03	11	-150.59	11	0.00	11
1605	502	301	Max	93.02	-0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
1605	502	301	Min.	15.00	7.47	11	0.00	11	0.00	11	386.03	11	-150.59	11	0.00	11
1605	502	301	Min.	93.02	-0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
1605	1009	502	Max	14.99	-676.58	11	0.14	11	0.00	11	1331.35	11	0.00	11	0.00	11
1605	1009	502	Max	284.14					0.36	11			1791.62	11		
1605	1009	502	Max	653.30	-770.84	11	0.14	11	0.86	11	-1826.12	11	-1579.10	11	0.00	11
1605	1009	502	Min.	14.99	-676.58	11	0.14	11	0.00	11	1331.35	11	0.00	11	0.00	11
1605	1009	502	Min.	284.14					0.36	11			1791.62	11		
1605	1009	502	Min.	653.30	-770.84	11	0.14	11	0.86	11	-1826.12	11	-1579.10	11	0.00	11
1605	1414	1009	Max	15.85	-591.21	11	1.37	11	-7.10	11	1520.63	11	-1249.77	11	0.00	11
1605	1414	1009	Max	323.26					-2.88	11			1087.50	11		
1605	1414	1009	Max	532.95	-667.76	11	1.37	11	0.00	11	-1037.25	11	0.00	11	0.00	11
1605	1414	1009	Min.	15.85	-591.21	11	1.37	11	-7.10	11	1520.63	11	-1249.77	11	0.00	11
1605	1414	1009	Min.	323.26					-2.88	11			1087.50	11		
1605	1414	1009	Min.	532.95	-667.76	11	1.37	11	0.00	11	-1037.25	11	0.00	11	0.00	11
1605	1601	1414	Max	0.00	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
1605	1601	1414	Max	77.16	-7.39	11	0.00	11	0.00	11	-381.78	11	-147.29	11	0.00	11
1605	1601	1414	Min.	0.00	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
1605	1601	1414	Min.	77.16	-7.39	11	0.00	11	0.00	11	-381.78	11	-147.29	11	0.00	11
1710	1716	1414	Max	15.85	-70.32	11	-57.22	11	115.41	11	331.22	11	-325.75	11	91.65	11
1710	1716	1414	Max	205.21					7.07	11			-12.16	11		
1710	1716	1414	Max	339.78	-87.29	11	-57.22	11	-69.93	11	-235.41	11	-170.56	11	91.65	11
1710	1716	1414	Min.	15.85	-70.32	11	-57.22	11	115.41	11	331.22	11	-325.75	11	91.65	11
1710	1716	1414	Min.	205.21					7.07	11			-12.16	11		
1710	1716	1414	Min.	339.78	-87.29	11	-57.22	11	-69.93	11	-235.41	11	-170.56	11	91.65	11
1710	1414	1112	Max	14.99	-97.77	11	19.69	11	-57.04	11	390.79	11	-223.81	11	-40.00	11
1710	1414	1112	Max	238.40					-13.05	11			212.72	11		
1710	1414	1112	Max	452.86	-120.70	11	19.69	11	29.18	11	-375.13	11	-189.51	11	-40.00	11
1710	1414	1112	Min.	14.99	-97.77	11	19.69	11	-57.04	11	390.79	11	-223.81	11	-40.00	11
1710	1414	1112	Min.	238.40					-13.05	11			212.72	11		
1710	1414	1112	Min.	452.86	-120.70	11	19.69	11	29.18	11	-375.13	11	-189.51	11	-40.00	11
1811	1111	1313	Max	16.52	-110.50	11	-20.97	11	30.06	11	356.38	11	-169.91	11	42.07	11
1811	1111	1313	Max	220.26					-12.66	11			193.12	11		
1811	1111	1313	Max	433.34	-88.67	11	-20.97	11	-57.34	11	-372.73	11	-203.98	11	42.07	11
1811	1111	1313	Min.	16.52	-110.50	11	-20.97	11	30.06	11	356.3					



## Relazione di calcolo

1811	1313	1715	Max	359.97	-71.32	11	51.11	11	108.55	11	-350.96	11	-340.40	11	-85.57	11
1811	1313	1715	Min.	14.99	-89.39	11	51.11	11	-67.78	11	252.48	11	-170.52	11	-85.57	11
1811	1313	1715	Min.	159.33					5.99	11			11.69	11		
1811	1313	1715	Min.	359.97	-71.32	11	51.11	11	108.55	11	-350.96	11	-340.40	11	-85.57	11
1811	1715	1801	Max	14.99	-479.76	11	-398.61	11	274.06	11	1516.92	11	-971.32	11	81.28	11
1811	1715	1801	Max	170.08	-471.63	11	-398.61	11	-344.12	11	1245.64	11	1170.82	11	81.28	11
1811	1715	1801	Min.	14.99	-479.76	11	-398.61	11	274.06	11	1516.92	11	-971.32	11	81.28	11
1811	1715	1801	Min.	170.08	-471.63	11	-398.61	11	-344.12	11	1245.64	11	1170.82	11	81.28	11
1811	1801	1716	Max	0.00	-471.47	11	399.77	11	-344.20	11	-1240.01	11	1170.81	11	-81.41	11
1811	1801	1716	Max	155.08	-479.61	11	399.77	11	275.78	11	-1511.29	11	-962.59	11	-81.41	11
1811	1801	1716	Min.	0.00	-471.47	11	399.77	11	-344.20	11	-1240.01	11	1170.81	11	-81.41	11
1811	1801	1716	Min.	155.08	-479.61	11	399.77	11	275.78	11	-1511.29	11	-962.59	11	-81.41	11
2002	1917	1715	Max	9.68	-18.73	11	1.41	11	-0.90	11	171.15	11	-61.66	11	-0.21	11
2002	1917	1715	Max	131.26					0.82	11			42.38	11		
2002	1917	1715	Max	241.20	-28.51	11	1.41	11	2.38	11	-154.78	11	-42.70	11	-0.21	11
2002	1917	1715	Min.	9.68	-18.73	11	1.41	11	-0.90	11	171.15	11	-61.66	11	-0.21	11
2002	1917	1715	Min.	131.26					0.82	11			42.38	11		
2002	1917	1715	Min.	241.20	-28.51	11	1.41	11	2.38	11	-154.78	11	-42.70	11	-0.21	11
2002	2001	1917	Max	0.00	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
2002	2001	1917	Max	50.35	-2.13	11	0.00	11	0.00	11	-70.88	11	-17.84	11	0.00	11
2002	2001	1917	Min.	0.00	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
2002	2001	1917	Min.	50.35	-2.13	11	0.00	11	0.00	11	-70.88	11	-17.84	11	0.00	11
2004	1918	1716	Max	9.68	-18.76	11	-1.35	11	0.85	11	171.18	11	-61.70	11	0.21	11
2004	1918	1716	Max	131.28					-0.79	11			42.38	11		
2004	1918	1716	Max	241.20	-28.54	11	-1.35	11	-2.28	11	-154.75	11	-42.67	11	0.21	11
2004	1918	1716	Min.	9.68	-18.76	11	-1.35	11	0.85	11	171.18	11	-61.70	11	0.21	11
2004	1918	1716	Min.	131.28					-0.79	11			42.38	11		
2004	1918	1716	Min.	241.20	-28.54	11	-1.35	11	-2.28	11	-154.75	11	-42.67	11	0.21	11
2004	2002	1918	Max	0.00	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
2004	2002	1918	Max	50.35	-2.13	11	0.00	11	0.00	11	-70.88	11	-17.84	11	0.00	11
2004	2002	1918	Min.	0.00	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
2004	2002	1918	Min.	50.35	-2.13	11	0.00	11	0.00	11	-70.88	11	-17.84	11	0.00	11
2203	801	701	Max	15.00	7.81	11	0.00	11	0.00	11	403.66	11	-157.47	11	0.00	11
2203	801	701	Max	93.02	-0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
2203	801	701	Min.	15.00	7.81	11	0.00	11	0.00	11	403.66	11	-157.47	11	0.00	11
2203	801	701	Min.	93.02	-0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
2203	1208	801	Max	14.99	-835.10	11	0.02	11	0.00	11	1510.41	11	0.00	11	0.00	11
2203	1208	801	Max	307.00					0.05	11			2205.26	11		
2203	1208	801	Max	710.33	-943.00	11	0.02	11	0.12	11	-2086.22	11	-2001.92	11	0.00	11
2203	1208	801	Min.	14.99	-835.10	11	0.02	11	0.00	11	1510.41	11	0.00	11	0.00	11
2203	1208	801	Min.	307.00					0.05	11			2205.26	11		
2203	1208	801	Min.	710.33	-943.00	11	0.02	11	0.12	11	-2086.22	11	-2001.92	11	0.00	11
2203	1801	1208	Max	0.00	-748.21	11	-0.01	11	0.07	11	1752.47	11	-1772.01	11	0.00	11
2203	1801	1208	Max	338.80					0.03	11			1196.62	11		
2203	1801	1208	Max	553.89	-830.79	11	-0.01	11	0.00	11	-1112.63	11	0.00	11	0.00	11
2203	1801	1208	Min.	0.00	-748.21	11	-0.01	11	0.07	11	1752.47	11	-1772.01	11	0.00	11
2203	1801	1208	Min.	338.80					0.03	11			1196.62	11		
2203	1801	1208	Min.	553.89	-830.79	11	-0.01	11	0.00	11	-1112.63	11	0.00	11	0.00	11
2203	2101	1801	Max	0.00	-3.49	11	0.00	11	0.00	11	-115.61	11	-34.70	11	0.00	11
2203	2101	1801	Max	346.16	-23.65	11	0.00	11	0.00	11	-782.28	11	-1588.75	11	0.00	11
2203	2101	1801	Min.	0.00	-3.49	11	0.00	11	0.00	11	-115.61	11	-34.70	11	0.00	11
2203	2101	1801	Min.	346.16	-23.65	11	0.00	11	0.00	11	-782.28	11	-1588.75	11	0.00	11
2203	2201	2101	Max	0.00	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
2203	2201	2101	Max	60.03	-3.47	11	0.00	11	0.00	11	-115.61	11	-34.70	11	0.00	11
2203	2201	2101	Min.	0.00	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11	0.00	11
2203	2201	2101	Min.	60.03	-3.47	11	0.00	11	0.00	11	-115.61	11	-34.70	11	0.00	11

Tipo di combinazione di carico: SLE Q

Asta	N1	N2		X <cm>	N <daN>	CC	Ty <daN>	CC	Mz <daNm>	CC	Tz <daN>	CC	My <daNm>	CC	Mx <daNm>	CC
1	1	801	Max	0.00	-3297.68	12	676.69	12	-624.92	12	7.07	12	-6.13	12	-0.07	12
1	1	801	Max	311.98	-2746.36	12	676.69	12	1486.21	12	7.07	12	15.92	12	-0.07	12
1	1	801	Min.	0.00	-3297.68	12	676.69	12	-624.92	12	7.07	12	-6.13	12	-0.07	12
1	1	801	Min.	311.98	-2746.36	12	676.69	12	1486.21	12	7.07	12	15.92	12	-0.07	12
2	2	502	Max	0.00	-3295.10	12	532.40	12	-452.01	12	51.79	12	-49.13	12	0.43	12
2	2	502	Max	298.07	-2768.37	12	532.40	12	1134.93	12	51.79	12	105.23	12	0.43	12
2	2	502	Min.	0.00	-3295.10	12	532.40	12	-452.01	12	51.79	12	-49.13	12	0.43	12
2	2	502	Min.	298.07	-2768.37	12	532.40	12	1134.93	12	51.79	12	105.23	12	0.43	12
3	3	403	Max	0.00	-3292.33	12	525.91	12	-443.61	12	-69.58	12	68.84	12	0.11	12
3	3	403	Max	297.40	-2766.78	12	525.91	12	1120.44	12	-69.58	12	-138.09	12	0.11	12
3	3	403	Min.	0.00	-3292.33	12	525.91	12	-443.61	12	-69.58	12	68.84	12	0.11	12
3	3	403	Min.	297.40	-2766.78	12	525.91	12	1120.44	12	-69.58	12	-138.09	12	0.11	12
4	4	104	Max	0.00	-2579.81	12	284.80	12	-224.08	12	-147.83	12	149.32	12	3.92	12
4	4	104	Max	284.00	-1940.81	12	284.80	12	584.76	12	-147.83	12	-270.52	12	3.92	12
4	4	104	Min.	0.00	-2579.81	12	284.80	12	-224.08	12	-147.83	12	149.32	12	3.92	12
4	4	104	Min.	284.00	-1940.81	12	284.80	12	584.76	12	-147.83	12	-270.52	12	3.92	12
5	5	105	Max	0.00	-2625.67	12	288.44	12	-227.70	12	158.82	12	-154.84	12	-3.43	12
5	5	105	Max	284.00	-1986.67	12	288.44	12	591.46	12	158.82	12	296.22	12	-3.43	12
5	5	105	Min.	0.00	-2625.67	12	288.44	12	-227.70	12	158.82	12	-154.84	12	-3.43	12
5	5	105	Min.	284.00	-1986.67	12	288.44	12	591.46	12	158.82	12	296.22	12	-3.43	12
6	6	606	Max	0.00	-3354.82	12	-131.85	12	165.22	12	-2.01	12	-16.68	12	-2.79	12
6	6	606	Max	303.19	-2672.64	12	-131.85	12	-234.54	12	-2.01	12	-22.79	12	-2.79	12
6	6	606	Min.	0.00	-3354.82	12	-131.85	12	165.22	12	-2.01	12	-16.68	12	-2.79	12
6	6	606	Min.	303.19	-2672.64	12	-131.85	12	-234.54	12	-2.01	12	-22.79	12	-2.79	12
7	7	-1	Max	0.00	-2553.51	12	-56.27	12	152.85	12	-0.82	12	2.59	12	0.14	12
7	7	-1	Max	316.00	-1842.51	12	-56.27	12	-24.98	12	-0.82	12	0.00	12	0.14	12
7	7	-1	Min.	0.00	-2553.51	12	-56.27	12	152.85	12	-0.82	12	2.59	12	0.14	12
7	7	-1	Min.	316.00	-1842.51	12	-56.27	12	-24.98	12	-0.82	12	0.00	12	0.14	12
7	-1	907	Max	0.00	-1014.68	12	-520.10	12	-142.69	12	0.06	12	0.00	12	0.01	12
7	-1	907	Max	1.38	-1011.57	12	-520.09	12	-149.87	12	0.06	12	0.00	12	0.01	12



## Relazione di calcolo

7	-1	907	Min.	0.00	-1014.68	12	-520.10	12	-142.69	12	0.06	12	0.00	12	0.01	12
7	-1	907	Min.	1.38	-1011.57	12	-520.09	12	-149.87	12	0.06	12	0.00	12	0.01	12
8	8	1208	Max	0.00	-2777.38	12	-60.27	12	156.62	12	-0.03	12	0.10	12	0.00	12
8	8	1208	Max	333.73	-2026.49	12	-60.27	12	-44.50	12	-0.03	12	0.00	12	0.00	12
8	8	1208	Min.	0.00	-2777.38	12	-60.27	12	156.62	12	-0.03	12	0.10	12	0.00	12
8	8	1208	Min.	333.73	-2026.49	12	-60.27	12	-44.50	12	-0.03	12	0.00	12	0.00	12
9	9	1009	Max	0.00	-2558.74	12	-58.65	12	154.19	12	0.90	12	-2.86	12	-0.17	12
9	9	1009	Max	318.01	-1843.22	12	-58.65	12	-32.34	12	0.90	12	-0.01	12	-0.17	12
9	9	1009	Min.	0.00	-2558.74	12	-58.65	12	154.19	12	0.90	12	-2.86	12	-0.17	12
9	9	1009	Min.	318.01	-1843.22	12	-58.65	12	-32.34	12	0.90	12	-0.01	12	-0.17	12
10	10	610	Max	0.00	-3391.95	12	-132.42	12	165.55	12	2.01	12	19.76	12	2.26	12
10	10	610	Max	303.19	-2709.77	12	-132.42	12	-235.94	12	2.01	12	25.86	12	2.26	12
10	10	610	Min.	0.00	-3391.95	12	-132.42	12	165.55	12	2.01	12	19.76	12	2.26	12
10	10	610	Min.	303.19	-2709.77	12	-132.42	12	-235.94	12	2.01	12	25.86	12	2.26	12
11	11	1111	Max	0.00	-2409.81	12	-172.81	12	211.16	12	-98.39	12	107.03	12	14.41	12
11	11	1111	Max	320.35	-1689.02	12	-172.81	12	-342.42	12	-98.39	12	-208.18	12	14.41	12
11	11	1111	Min.	0.00	-2409.81	12	-172.81	12	211.16	12	-98.39	12	107.03	12	14.41	12
11	11	1111	Min.	320.35	-1689.02	12	-172.81	12	-342.42	12	-98.39	12	-208.18	12	14.41	12
12	12	1112	Max	0.00	-2448.18	12	-173.69	12	211.86	12	107.48	12	-115.20	12	-14.31	12
12	12	1112	Max	320.35	-1727.39	12	-173.69	12	-344.56	12	107.48	12	229.10	12	-14.31	12
12	12	1112	Min.	0.00	-2448.18	12	-173.69	12	211.86	12	107.48	12	-115.20	12	-14.31	12
12	12	1112	Min.	320.35	-1727.39	12	-173.69	12	-344.56	12	107.48	12	229.10	12	-14.31	12
13	13	1313	Max	0.00	-2944.48	12	-410.60	12	527.80	12	48.30	12	-52.49	12	-9.46	12
13	13	1313	Max	333.77	-2193.49	12	-410.60	12	-842.65	12	48.30	12	108.73	12	-9.46	12
13	13	1313	Min.	0.00	-2944.48	12	-410.60	12	527.80	12	48.30	12	-52.49	12	-9.46	12
13	13	1313	Min.	333.77	-2193.49	12	-410.60	12	-842.65	12	48.30	12	108.73	12	-9.46	12
14	14	1414	Max	0.00	-2951.71	12	-410.03	12	527.28	12	-59.95	12	66.61	12	11.37	12
14	14	1414	Max	334.40	-2199.31	12	-410.03	12	-843.87	12	-59.95	12	-133.87	12	11.37	12
14	14	1414	Min.	0.00	-2951.71	12	-410.03	12	527.28	12	-59.95	12	66.61	12	11.37	12
14	14	1414	Min.	334.40	-2199.31	12	-410.03	12	-843.87	12	-59.95	12	-133.87	12	11.37	12
15	15	1715	Max	0.00	-4922.58	12	-263.94	12	308.85	12	315.62	12	-1175.57	12	159.22	12
15	15	1715	Max	345.02	-1817.40	12	-263.94	12	-601.79	12	315.62	12	-86.60	12	159.22	12
15	15	1715	Min.	0.00	-4922.58	12	-263.94	12	308.85	12	315.62	12	-1175.57	12	159.22	12
15	15	1715	Min.	345.02	-1817.40	12	-263.94	12	-601.79	12	315.62	12	-86.60	12	159.22	12
16	16	1716	Max	0.00	-4894.57	12	266.15	12	-306.90	12	320.79	12	-1189.86	12	-155.16	12
16	16	1716	Max	345.02	-1789.39	12	266.15	12	611.38	12	320.79	12	-83.08	12	-155.16	12
16	16	1716	Min.	0.00	-4894.57	12	266.15	12	-306.90	12	320.79	12	-1189.86	12	-155.16	12
16	16	1716	Min.	345.02	-1789.39	12	266.15	12	611.38	12	320.79	12	-83.08	12	-155.16	12
17	17	1917	Max	0.00	-326.90	12	-1.04	12	3.52	12	17.53	12	-22.99	12	-0.76	12
17	17	1917	Max	355.40	-196.69	12	-1.04	12	-0.18	12	17.53	12	39.30	12	-0.76	12
17	17	1917	Min.	0.00	-326.90	12	-1.04	12	3.52	12	17.53	12	-22.99	12	-0.76	12
17	17	1917	Min.	355.40	-196.69	12	-1.04	12	-0.18	12	17.53	12	39.30	12	-0.76	12
18	18	1918	Max	0.00	-326.92	12	0.98	12	-3.31	12	17.55	12	-23.05	12	0.70	12
18	18	1918	Max	355.40	-196.71	12	0.98	12	0.18	12	17.55	12	39.33	12	0.70	12
18	18	1918	Min.	0.00	-326.92	12	0.98	12	-3.31	12	17.55	12	-23.05	12	0.70	12
18	18	1918	Min.	355.40	-196.71	12	0.98	12	0.18	12	17.55	12	39.33	12	0.70	12
806	801	502	Max	14.91	-203.27	12	-7.01	12	18.61	12	365.67	12	-146.84	12	42.90	12
806	801	502	Max	223.94					3.95	12			235.35	12		
806	801	502	Max	512.37	-226.24	12	-7.01	12	-16.28	12	-504.58	12	-492.34	12	42.90	12
806	801	502	Min.	14.91	-203.27	12	-7.01	12	18.61	12	365.67	12	-146.84	12	42.90	12
806	801	502	Min.	223.94					3.95	12			235.35	12		
806	801	502	Min.	512.37	-226.24	12	-7.01	12	-16.28	12	-504.58	12	-492.34	12	42.90	12
806	502	105	Max	14.91	-149.86	12	5.97	12	-13.78	12	465.03	12	-386.64	12	96.52	12
806	502	105	Max	280.74					2.10	12			231.44	12		
806	502	105	Max	511.47	-173.04	12	5.97	12	15.87	12	-403.63	12	-234.22	12	96.52	12
806	502	105	Min.	14.91	-149.86	12	5.97	12	-13.78	12	465.03	12	-386.64	12	96.52	12
806	502	105	Min.	280.74					2.10	12			231.44	12		
806	502	105	Min.	511.47	-173.04	12	5.97	12	15.87	12	-403.63	12	-234.22	12	96.52	12
807	104	403	Max	15.82	-161.59	12	-6.77	12	17.22	12	381.14	12	-209.96	12	-99.93	12
807	104	403	Max	233.69					2.47	12			205.24	12		
807	104	403	Max	491.27	-139.57	12	-6.77	12	-14.97	12	-450.59	12	-375.06	12	-99.93	12
807	104	403	Min.	15.82	-161.59	12	-6.77	12	17.22	12	381.14	12	-209.96	12	-99.93	12
807	104	403	Min.	233.69					2.47	12			205.24	12		
807	104	403	Min.	491.27	-139.57	12	-6.77	12	-14.97	12	-450.59	12	-375.06	12	-99.93	12
807	403	801	Max	14.91	-233.89	12	6.82	12	-16.79	12	521.02	12	-509.65	12	-41.96	12
807	403	801	Max	312.74					3.52	12			266.25	12		
807	403	801	Max	533.47	-209.76	12	6.82	12	18.57	12	-386.14	12	-159.91	12	-41.96	12
807	403	801	Min.	14.91	-233.89	12	6.82	12	-16.79	12	521.02	12	-509.65	12	-41.96	12
807	403	801	Min.	312.74					3.52	12			266.25	12		
807	403	801	Min.	533.47	-209.76	12	6.82	12	18.57	12	-386.14	12	-159.91	12	-41.96	12
901	403	201	Max	15.00	5.47	12	0.00	12	0.00	12	282.75	12	-110.30	12	0.00	12
901	403	201	Max	93.02	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
901	403	201	Min.	15.00	5.47	12	0.00	12	0.00	12	282.75	12	-110.30	12	0.00	12
901	403	201	Min.	93.02	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
901	907	403	Max	14.99	-491.17	12	-0.06	12	0.00	12	972.39	12	0.00	12	0.00	12
901	907	403	Max	283.37					-0.17	12			1304.86	12		
901	907	403	Max	651.31	-560.33	12	-0.06	12	-0.40	12	-1333.08	12	-1147.56	12	0.00	12
901	907	403	Min.	14.99	-491.17	12	-0.06	12	0.00	12	972.39	12	0.00	12	0.00	12
901	907	403	Min.	283.37					-0.17	12			1304.86	12		
901	907	403	Min.	651.31	-560.33	12	-0.06	12	-0.40	12	-1333.08	12	-1147.56	12	0.00	12
1108	104	106	Max	15.24	6.28	12	0.00	12	0.00	12	324.45	12	-126.25	12	0.00	12
1108	104	106	Max	93.07	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
1108	104	106	Min.	15.24	6.28	12	0.00	12	0.00	12	324.45	12	-126.25	12	0.00	12
1108	104	106	Min.	93.07	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
1108	606	104	Max	15.00	-257.58	12	3.09	12	-7.14	12	1365.53	12	-1386.16	12	-10.79	12
1108	606	104	Max													



## Relazione di calcolo

1108	1111	606	Max	221.70					-7.21	12			504.61	12		
1108	1111	606	Max	505.92	-207.44	12	1.04	12	-4.24	12	-1184.56	12	-1178.77	12	11.90	12
1108	1111	606	Min.	15.00	-140.00	12	1.04	12	-9.37	12	861.46	12	-385.71	12	11.90	12
1108	1111	606	Min.	221.70					-7.21	12			504.61	12		
1108	1111	606	Min.	505.92	-207.44	12	1.04	12	-4.24	12	-1184.56	12	-1178.77	12	11.90	12
1108	1113	1111	Max	0.00	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
1108	1113	1111	Max	77.82	-6.28	12	0.00	12	0.00	12	-324.45	12	-126.25	12	0.00	12
1108	1113	1111	Min.	0.00	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
1108	1113	1111	Min.	77.82	-6.28	12	0.00	12	0.00	12	-324.45	12	-126.25	12	0.00	12
1109	105	107	Max	15.24	6.37	12	0.00	12	0.00	12	329.12	12	-128.06	12	0.00	12
1109	105	107	Max	93.07	0.00	12	0.00	12	0.00	12	-0.00	12	0.00	12	0.00	12
1109	105	107	Min.	15.24	6.37	12	0.00	12	0.00	12	329.12	12	-128.06	12	0.00	12
1109	105	107	Min.	93.07	0.00	12	0.00	12	0.00	12	-0.00	12	0.00	12	0.00	12
1109	610	105	Max	15.00	-260.38	12	-2.90	12	6.95	12	1384.08	12	-1403.94	12	12.63	12
1109	610	105	Max	342.37					-2.55	12			861.58	12		
1109	610	105	Max	598.70	-337.58	12	-2.90	12	-9.98	12	-1083.75	12	-527.41	12	12.63	12
1109	610	105	Min.	15.00	-260.38	12	-2.90	12	6.95	12	1384.08	12	-1403.94	12	12.63	12
1109	610	105	Min.	342.37					-2.55	12			861.58	12		
1109	610	105	Min.	598.70	-337.58	12	-2.90	12	-9.98	12	-1083.75	12	-527.41	12	12.63	12
1109	1112	610	Max	15.00	-142.39	12	-0.85	12	8.62	12	874.13	12	-392.27	12	-13.15	12
1109	1112	610	Max	221.76					6.85	12			511.41	12		
1109	1112	610	Max	505.92	-210.80	12	-0.85	12	4.42	12	-1201.33	12	-1195.42	12	-13.15	12
1109	1112	610	Min.	15.00	-142.39	12	-0.85	12	8.62	12	874.13	12	-392.27	12	-13.15	12
1109	1112	610	Min.	221.76					6.85	12			511.41	12		
1109	1112	610	Min.	505.92	-210.80	12	-0.85	12	4.42	12	-1201.33	12	-1195.42	12	-13.15	12
1109	1114	1112	Max	0.00	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
1109	1114	1112	Max	77.82	-6.37	12	0.00	12	0.00	12	-329.12	12	-128.06	12	0.00	12
1109	1114	1112	Min.	0.00	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
1109	1114	1112	Min.	77.82	-6.37	12	0.00	12	0.00	12	-329.12	12	-128.06	12	0.00	12
1501	1313	-1	Max	15.85	-427.94	12	-0.88	12	4.55	12	1111.10	12	-910.82	12	0.00	12
1501	1313	-1	Max	322.54					1.84	12			792.98	12		
1501	1313	-1	Max	531.77	-488.72	12	-0.88	12	0.00	12	-758.01	12	0.00	12	0.00	12
1501	1313	-1	Min.	15.85	-427.94	12	-0.88	12	4.55	12	1111.10	12	-910.82	12	0.00	12
1501	1313	-1	Min.	322.54					1.84	12			792.98	12		
1501	1313	-1	Min.	531.77	-488.72	12	-0.88	12	0.00	12	-758.01	12	0.00	12	0.00	12
1501	1501	1313	Max	0.00	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
1501	1501	1313	Max	77.16	-5.41	12	0.00	12	0.00	12	-279.64	12	-107.89	12	0.00	12
1501	1501	1313	Min.	0.00	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
1501	1501	1313	Min.	77.16	-5.41	12	0.00	12	0.00	12	-279.64	12	-107.89	12	0.00	12
1605	502	301	Max	15.00	5.47	12	0.00	12	0.00	12	282.75	12	-110.30	12	0.00	12
1605	502	301	Max	93.02	-0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
1605	502	301	Min.	15.00	5.47	12	0.00	12	0.00	12	282.75	12	-110.30	12	0.00	12
1605	502	301	Min.	93.02	-0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
1605	1009	502	Max	14.99	-496.59	12	0.12	12	0.00	12	975.57	12	0.00	12	0.00	12
1605	1009	502	Max	284.25					0.32	12			1313.38	12		
1605	1009	502	Max	653.30	-565.62	12	0.12	12	0.77	12	-1337.15	12	-1154.03	12	0.00	12
1605	1009	502	Min.	14.99	-496.59	12	0.12	12	0.00	12	975.57	12	0.00	12	0.00	12
1605	1009	502	Min.	284.25					0.32	12			1313.38	12		
1605	1009	502	Min.	653.30	-565.62	12	0.12	12	0.77	12	-1337.15	12	-1154.03	12	0.00	12
1605	1414	1009	Max	15.85	-433.71	12	1.02	12	-5.26	12	1113.64	12	-914.60	12	0.00	12
1605	1414	1009	Max	323.22					-2.13	12			796.88	12		
1605	1414	1009	Max	532.95	-489.77	12	1.02	12	0.00	12	-759.90	12	0.00	12	0.00	12
1605	1414	1009	Min.	15.85	-433.71	12	1.02	12	-5.26	12	1113.64	12	-914.60	12	0.00	12
1605	1414	1009	Min.	323.22					-2.13	12			796.88	12		
1605	1414	1009	Min.	532.95	-489.77	12	1.02	12	0.00	12	-759.90	12	0.00	12	0.00	12
1605	1601	1414	Max	0.00	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
1605	1601	1414	Max	77.16	-5.41	12	0.00	12	0.00	12	-279.64	12	-107.88	12	0.00	12
1605	1601	1414	Min.	0.00	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
1605	1601	1414	Min.	77.16	-5.41	12	0.00	12	0.00	12	-279.64	12	-107.88	12	0.00	12
1710	1716	1414	Max	15.85	-65.18	12	-41.85	12	84.54	12	310.80	12	-273.26	12	67.17	12
1710	1716	1414	Max	193.53					10.19	12			2.86	12		
1710	1716	1414	Max	339.78	-82.15	12	-41.85	12	-51.01	12	-255.82	12	-184.22	12	67.17	12
1710	1716	1414	Min.	15.85	-65.18	12	-41.85	12	84.54	12	310.80	12	-273.26	12	67.17	12
1710	1716	1414	Min.	193.53					10.19	12			2.86	12		
1710	1716	1414	Min.	339.78	-82.15	12	-41.85	12	-51.01	12	-255.82	12	-184.22	12	67.17	12
1710	1414	1112	Max	14.99	-93.96	12	14.06	12	-41.20	12	396.84	12	-241.27	12	-26.67	12
1710	1414	1112	Max	241.86					-9.30	12			208.89	12		
1710	1414	1112	Max	452.86	-116.89	12	14.06	12	20.37	12	-369.07	12	-180.48	12	-26.67	12
1710	1414	1112	Min.	14.99	-93.96	12	14.06	12	-41.20	12	396.84	12	-241.27	12	-26.67	12
1710	1414	1112	Min.	241.86					-9.30	12			208.89	12		
1710	1414	1112	Min.	452.86	-116.89	12	14.06	12	20.37	12	-369.07	12	-180.48	12	-26.67	12
1811	1111	1313	Max	16.52	-106.89	12	-14.98	12	21.02	12	350.06	12	-161.09	12	28.08	12
1811	1111	1313	Max	216.64					-8.95	12			189.18	12		
1811	1111	1313	Max	433.34	-85.06	12	-14.98	12	-41.40	12	-379.05	12	-221.51	12	28.08	12
1811	1111	1313	Min.	16.52	-106.89	12	-14.98	12	21.02	12	350.06	12	-161.09	12	28.08	12
1811	1111	1313	Min.	216.64					-8.95	12			189.18	12		
1811	1111	1313	Min.	433.34	-85.06	12	-14.98	12	-41.40	12	-379.05	12	-221.51	12	28.08	12
1811	1313	1715	Max	14.99	-84.49	12	37.39	12	-49.47	12	271.05	12	-184.34	12	-62.73	12
1811	1313	1715	Max	169.95					8.48	12			25.67	12		
1811	1313	1715	Max	359.97	-66.42	12	37.39	12	79.54	12	-332.39	12	-290.14	12	-62.73	12
1811	1313	1715	Min.	14.99	-84.49	12	37.39	12	-49.47	12	271.05	12	-184.34	12	-62.73	12
1811	1313	1715	Min.	169.95					8.48	12			25.67	12		
1811	1313	1715	Min.	359.97	-66.42	12	37.39	12	79.54	12	-332.39	12	-290.14	12	-62.73	12
1811	1715	1801	Max	14.99	-375.15	12	-291.32	12	200.78	12	1200.62	12	-760.47	12	41.78	12
1811	1715	1801	Max	170.08	-367.01	12	-291.32	12	-251.00	12	929.35	12	891.14	12	41.78	12
1811	1715	1801	Min.	14.99	-375.15	12	-291.32	12	200.78	12	1200.62	12	-760.47	12	41.78	12
1811	1715	1801	Min.	170.08	-367.01	12	-291.32	12	-251.00	12	929.35	12				



## Relazione di calcolo

2002	1917	1715	Max	9.68	-13.78	12	1.04	12	-0.66	12	125.33	12	-45.24	12	-0.15	12
2002	1917	1715	Max	131.37					0.60	12			31.02	12		
2002	1917	1715	Max	241.20	-20.93	12	1.04	12	1.74	12	-113.12	12	-31.10	12	-0.15	12
2002	1917	1715	Min.	9.68	-13.78	12	1.04	12	-0.66	12	125.33	12	-45.24	12	-0.15	12
2002	1917	1715	Min.	131.37					0.60	12			31.02	12		
2002	1917	1715	Min.	241.20	-20.93	12	1.04	12	1.74	12	-113.12	12	-31.10	12	-0.15	12
2002	2001	1917	Max	0.00	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
2002	2001	1917	Max	50.35	-1.56	12	0.00	12	0.00	12	-51.85	12	-13.05	12	0.00	12
2002	2001	1917	Min.	0.00	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
2002	2001	1917	Min.	50.35	-1.56	12	0.00	12	0.00	12	-51.85	12	-13.05	12	0.00	12
2004	1918	1716	Max	9.68	-13.80	12	-0.98	12	0.61	12	125.36	12	-45.27	12	0.16	12
2004	1918	1716	Max	131.39					-0.58	12			31.02	12		
2004	1918	1716	Max	241.20	-20.95	12	-0.98	12	-1.66	12	-113.10	12	-31.08	12	0.16	12
2004	1918	1716	Min.	9.68	-13.80	12	-0.98	12	0.61	12	125.36	12	-45.27	12	0.16	12
2004	1918	1716	Min.	131.39					-0.58	12			31.02	12		
2004	1918	1716	Min.	241.20	-20.95	12	-0.98	12	-1.66	12	-113.10	12	-31.08	12	0.16	12
2004	2002	1918	Max	0.00	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
2004	2002	1918	Max	50.35	-1.56	12	0.00	12	0.00	12	-51.85	12	-13.05	12	0.00	12
2004	2002	1918	Min.	0.00	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
2004	2002	1918	Min.	50.35	-1.56	12	0.00	12	0.00	12	-51.85	12	-13.05	12	0.00	12
2203	801	701	Max	15.00	5.71	12	0.00	12	0.00	12	295.24	12	-115.17	12	0.00	12
2203	801	701	Max	93.02	-0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
2203	801	701	Min.	15.00	5.71	12	0.00	12	0.00	12	295.24	12	-115.17	12	0.00	12
2203	801	701	Min.	93.02	-0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
2203	1208	801	Max	14.99	-610.87	12	0.02	12	0.00	12	1105.76	12	0.00	12	0.00	12
2203	1208	801	Max	307.28					0.05	12			1616.00	12		
2203	1208	801	Max	710.33	-689.78	12	0.02	12	0.12	12	-1524.78	12	-1456.82	12	0.00	12
2203	1208	801	Min.	14.99	-610.87	12	0.02	12	0.00	12	1105.76	12	0.00	12	0.00	12
2203	1208	801	Min.	307.28					0.05	12			1616.00	12		
2203	1208	801	Min.	710.33	-689.78	12	0.02	12	0.12	12	-1524.78	12	-1456.82	12	0.00	12
2203	1801	1208	Max	0.00	-546.64	12	-0.01	12	0.07	12	1286.60	12	-1322.98	12	0.00	12
2203	1801	1208	Max	340.08					0.03	12			864.76	12		
2203	1801	1208	Max	553.89	-607.04	12	-0.01	12	0.00	12	-808.90	12	0.00	12	0.00	12
2203	1801	1208	Min.	0.00	-546.64	12	-0.01	12	0.07	12	1286.60	12	-1322.98	12	0.00	12
2203	1801	1208	Min.	340.08					0.03	12			864.76	12		
2203	1801	1208	Min.	553.89	-607.04	12	-0.01	12	0.00	12	-808.90	12	0.00	12	0.00	12
2203	2101	1801	Max	0.00	-2.69	12	0.00	12	0.00	12	-89.09	12	-26.74	12	0.00	12
2203	2101	1801	Max	346.16	-18.22	12	0.00	12	0.00	12	-602.83	12	-1224.30	12	0.00	12
2203	2101	1801	Min.	0.00	-2.69	12	0.00	12	0.00	12	-89.09	12	-26.74	12	0.00	12
2203	2101	1801	Min.	346.16	-18.22	12	0.00	12	0.00	12	-602.83	12	-1224.30	12	0.00	12
2203	2201	2101	Max	0.00	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
2203	2201	2101	Max	60.03	-2.67	12	0.00	12	0.00	12	-89.09	12	-26.74	12	0.00	12
2203	2201	2101	Min.	0.00	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12	0.00	12
2203	2201	2101	Min.	60.03	-2.67	12	0.00	12	0.00	12	-89.09	12	-26.74	12	0.00	12

## Verifiche e armature travi

## Simbologia

$\Delta_{sm}$	= Distanza media tra le fessure
$\Phi_{eq}$	= Diametro equivalente delle barre
$\epsilon_{sm}$	= Deformazione unitaria media dell'armatura (*1000)
$\sigma_c$	= Tensione nel calcestruzzo
$\sigma_f$ inf	= Tensione nel ferro - inferiore
$\sigma_f$ sup	= Tensione nel ferro - superiore
$\sigma_s$	= Tensione nell'acciaio nella sezione fessurata
$A_{c\ eff}$	= Area di calcestruzzo efficace
$A_s$	= Area complessiva dei ferri nell'area di calcestruzzo efficace
AfE I	= Area di ferro effettiva totale presente nel punto di verifica, inferiore
AfE S	= Area di ferro effettiva totale presente nel punto di verifica, superiore
AfE St.	= Area di ferro effettiva della staffatura (d'anima per travi a T o L)
AfEP I	= Area di ferro effettiva parziale presente nella CC considerata, per la sollecitazione indicata, inferiore
AfEP S	= Area di ferro effettiva parziale presente nella CC considerata, per la sollecitazione indicata, superiore
B	= Base
CC	= Combinazione delle condizioni di carico elementari
c	= momento fittizio in campata
a	= momento fittizio agli appoggi
T	= momento traslato per taglio
e	= eccentricità aggiuntiva in caso di compressione o pressoflessione
TG	= taglio da gerarchia delle resistenze
TGND	= taglio non dissipativo limitante la gerarchia
TG (Li)	= taglio da gerarchia delle resistenze, limite inferiore
TG (Ls)	= taglio da gerarchia delle resistenze, limite superiore
Caso	= Caso di verifica
Cf inf	= Copriferro inferiore
Cf sup	= Copriferro superiore
Cls	= Tipo di calcestruzzo
El	= Elemento (asta) in cui viene effettuato il progetto/verifica (progressivo sul numero di aste)
Fcd	= Resistenza di calcolo a compressione del calcestruzzo
Fck	= Resistenza caratteristica cilindrica a compressione del calcestruzzo
Fctd	= Resistenza di calcolo a trazione del calcestruzzo
Fctk	= Resistenza caratteristica a trazione del calcestruzzo
Fyd	= Resistenza di calcolo dell'acciaio
Fyk	= Tensione caratteristica di snervamento dell'acciaio
H	= Altezza
K <sub>2</sub>	= Coefficiente per distribuzione deformazioni
Lung.	= Lunghezza del tratto di progettazione
MRdy	= Momento resistente allo stato limite ultimo intorno all'asse Y
My	= Momento flettente intorno all'asse Y
Sez.	= Numero della sezione
Sic.	= Sicurezza
Staff.	= Staffatura adottata
TCC	= Tipo di combinazione di carico
SLU	= Stato limite ultimo
SLE R	= Stato limite d'esercizio, combinazione rara
SLE F	= Stato limite d'esercizio, combinazione frequente
SLE Q	= Stato limite d'esercizio, combinazione quasi permanente
SLD	= Stato limite di danno



Relazione di calcolo

	SLV = Stato limite di salvaguardia della vita
	SND = Stato limite di salvaguardia della vita (non dissipativo)
Tipo	= Tipologia
	Cir. = Circolare
	Cir.c = Circolare cava
	R = Rettangolare
Tp	= Tipo di acciaio
VRcd	= Taglio ultimo lato calcestruzzo
VRsd	= Taglio ultimo lato armatura
Vrdu	= Taglio ultimo resistente
Vsdu	= Taglio agente nella direzione del momento ultimo
Wk	= Ampiezza caratteristica delle fessure
X	= Coordinata progressiva rispetto al nodo iniziale
X0	= Coordinata progressiva (dal nodo iniziale) dell'inizio del tratto
X1	= Coordinata progressiva (dal nodo iniziale) della fine del tratto
Xg	= Coordinata progressiva (dal primo nodo) in cui viene effettuato il progetto/verifica
bw	= Larghezza membratura resistente al taglio
c	= Ricoprimento dell'armatura
ctgθ	= Cotangente dell'angolo di inclinazione dei puntoni di calcestruzzo
s	= Distanza massima tra le barre

Travata n. 806

Nodi: 801 502 105

Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	B <cm>	H <cm>	Cf sup <cm>	Cf inf <cm>	Cls	Fck <daN/cmq>	Fctk <daN/cmq>	Fcd <daN/cmq>	Fctd <daN/cmq>	Tp	Fyk <daN/cmq>	Fyd <daN/cmq>
5R		20.00	35.00	4.10	4.10	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	MRdy <daNm>	Sic.
0.15	9	SLU	1	14.92	4.02	4.02	4.02	4.02	538.20	4485.14	8.334
1.08	9	SLU	1	108.19	4.02	4.02	4.02	4.02	647.14	4485.14	6.931
5.12	9	SLU	1	512.35	4.02	4.02	4.02	4.02	-962.90	-4485.14	4.658
5.42	1	SLV	2	14.92	4.02	4.02	4.02	4.02	-720.26	-4485.14	6.227
8.76	1	SLV	2	349.18	4.02	4.02	4.02	4.02	465.40	4485.14	9.637
10.38	1	SLV	2	511.45	4.02	4.02	4.02	4.02	-731.12	-4485.14	6.135

Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	My <daNm>	σ <sub>e</sub> sup <daN/cmq>	σ <sub>e</sub> inf <daN/cmq>	σ <sub>c</sub> <daN/cmq>
0.15	10	SLE R	1	14.92	4.02	4.02	337.23	-80.74	305.64	9.32
0.15	12	SLE Q	1	14.92	4.02	4.02	-146.80	133.05	-35.15	4.06
1.08	10	SLE R	1	108.19	4.02	4.02	445.98	-106.78	404.21	12.33
1.08	12	SLE Q	1	108.19	4.02	4.02	195.86	-46.89	177.52	5.42
5.12	10	SLE R	1	512.35	4.02	4.02	-698.05	632.67	-167.13	19.30
5.12	12	SLE Q	1	512.35	4.02	4.02	-492.26	446.15	-117.86	13.61
5.42	10	SLE R	2	14.92	4.02	4.02	-348.33	315.71	-83.40	9.63
5.42	12	SLE Q	2	14.92	4.02	4.02	-386.59	350.39	-92.56	10.69
8.76	10	SLE R	2	349.18	4.02	4.02	229.18	-54.87	207.71	6.34
8.76	12	SLE Q	2	349.18	4.02	4.02	243.67	-58.34	220.84	6.74
10.38	10	SLE R	2	511.45	4.02	4.02	-281.18	254.84	-67.32	7.77
10.38	12	SLE Q	2	511.45	4.02	4.02	-234.17	212.24	-56.07	6.47

Stato limite d'esercizio - Verifiche a fessurazione

Caso	Xg <m>	CC	TCC	El	Sez.	X <cm>	My <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c eff</sub> <cmq>	σ <sub>s</sub> <daN/cmq>	ε <sub>sm</sub>	Wk <mm>
12	0.15	12	SLE Q	1	5	14.92	-146.80	33.00	118.00	0.50	16.00	133.11	4.02	168.66	133.05	0.04	0.01
14	0.15	11	SLE F	1	5	14.92	-71.28	33.00	118.00	0.50	16.00	133.11	4.02	168.66	64.60	0.02	0.00
28	1.08	12	SLE Q	1	5	108.19	195.86	33.00	118.00	0.50	16.00	133.11	4.02	168.66	177.52	0.05	0.01
29	1.08	11	SLE F	1	5	108.19	245.88	33.00	118.00	0.50	16.00	133.11	4.02	168.66	222.85	0.06	0.01
40	5.12	12	SLE Q	1	5	512.35	-492.26	33.00	118.00	0.50	16.00	133.11	4.02	168.66	446.15	0.13	0.03
41	5.12	11	SLE F	1	5	512.35	-533.42	33.00	118.00	0.50	16.00	133.11	4.02	168.66	483.46	0.14	0.03
54	5.42	12	SLE Q	2	5	14.92	-386.59	33.00	118.00	0.50	16.00	133.11	4.02	168.66	350.39	0.10	0.02
55	5.42	11	SLE F	2	5	14.92	-378.94	33.00	118.00	0.50	16.00	133.11	4.02	168.66	343.45	0.10	0.02
68	8.76	12	SLE Q	2	5	349.18	243.67	33.00	118.00	0.50	16.00	133.11	4.02	168.66	220.84	0.06	0.01
69	8.76	11	SLE F	2	5	349.18	240.77	33.00	118.00	0.50	16.00	133.11	4.02	168.66	218.22	0.06	0.01
81	10.38	12	SLE Q	2	5	511.45	-234.17	33.00	118.00	0.50	16.00	133.11	4.02	168.66	212.24	0.06	0.01
82	10.38	11	SLE F	2	5	511.45	-243.57	33.00	118.00	0.50	16.00	133.11	4.02	168.66	220.76	0.06	0.01

Stato limite ultimo - Verifiche a taglio

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. <cmq/m>	bw <m>	Vsdu <daN>	ctgθ	VRsd <daN>	VRcd <daN>	Vrdu <daN>	Sic.
1 TGND	0.15	0.50	0.35	ø8/ 4 2 br.	25.13	0.20	540.55	1.00	27349.90	22889.90	22889.90	42.345
9 SLU	0.50	4.78	4.27	ø8/24 2 br.	4.19	0.20	762.48	2.50	11395.80	15864.20	11395.80	14.946
9 SLU	4.78	5.13	0.35	ø8/ 4 2 br.	25.13	0.20	839.97	1.00	27349.90	23003.50	23003.50	27.386
1 TGND	5.42	5.77	0.35	ø8/ 4 2 br.	25.13	0.20	806.32	1.00	27349.90	22889.90	22889.90	28.388
1 TGND	5.77	10.04	4.27	ø8/24 2 br.	4.19	0.20	745.09	2.50	11395.80	15786.20	11395.80	15.295
7 TGND	10.04	10.39	0.35	ø8/ 4 2 br.	25.13	0.20	746.56	1.00	27349.90	22889.90	22889.90	30.661

Travata n. 807

Nodi: 104 403 801

Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	B <cm>	H <cm>	Cf sup <cm>	Cf inf <cm>	Cls	Fck <daN/cmq>	Fctk <daN/cmq>	Fcd <daN/cmq>	Fctd <daN/cmq>	Tp	Fyk <daN/cmq>	Fyd <daN/cmq>
5R		20.00	35.00	4.10	4.10	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	MRdy <daNm>	Sic.
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## Relazione di calcolo

0.16	1	SLV	1	15.83	4.02	4.02	4.02	4.02	-713.53	-4485.14	6.286
1.11	1	SLV	1	110.92	4.02	4.02	4.02	4.02	453.87	4485.14	9.882
4.91	1	SLV	1	491.26	4.02	4.02	4.02	4.02	-714.96	-4485.14	6.273
5.21	9	SLU	2	14.92	4.02	4.02	4.02	4.02	-979.99	-4485.14	4.577
8.61	9	SLU	2	354.74	4.02	4.02	4.02	4.02	675.44	4485.14	6.640
10.39	9	SLU	2	533.46	4.02	4.02	4.02	4.02	525.82	4485.14	8.530

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	My <daNm>	σ <sub>e</sub> sup <daN/cm²>	σ <sub>e</sub> inf <daN/cm²>	σ <sub>c</sub> <daN/cm²>
0.16	10	SLE R	1	15.83	4.02	4.02	-259.69	235.37	-62.18	7.18
0.16	12	SLE Q	1	15.83	4.02	4.02	-209.92	190.26	-50.26	5.80
1.11	10	SLE R	1	110.92	4.02	4.02	124.04	-29.70	112.42	3.43
1.11	12	SLE Q	1	110.92	4.02	4.02	151.23	-36.21	137.07	4.18
4.91	10	SLE R	1	491.26	4.02	4.02	-333.08	301.89	-79.75	9.21
4.91	12	SLE Q	1	491.26	4.02	4.02	-375.03	339.90	-89.79	10.37
5.21	10	SLE R	2	14.92	4.02	4.02	-711.91	645.24	-170.45	19.68
5.21	12	SLE Q	2	14.92	4.02	4.02	-509.59	461.87	-122.01	14.09
8.61	10	SLE R	2	354.74	4.02	4.02	472.63	-113.16	428.37	13.07
8.61	12	SLE Q	2	354.74	4.02	4.02	292.38	-70.00	264.99	8.08
10.39	10	SLE R	2	533.46	4.02	4.02	328.21	-78.58	297.48	9.07
10.39	12	SLE Q	2	533.46	4.02	4.02	-159.87	144.90	-38.28	4.42

## Stato limite d'esercizio - Verifiche a fessurazione

Caso	Xg <m>	CC	TCC	El	Sez.	X <cm>	My <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c</sub> eff <cmq>	σ <sub>s</sub> <daN/cm²>	ε <sub>sm</sub>	W <sub>k</sub> <mm>
12	0.16	12	SLE Q	1	5	15.83	-209.92	33.00	118.00	0.50	16.00	133.11	4.02	168.66	190.26	0.06	0.01
13	0.16	11	SLE F	1	5	15.83	-219.88	33.00	118.00	0.50	16.00	133.11	4.02	168.66	199.28	0.06	0.01
28	1.11	12	SLE Q	1	5	110.92	151.23	33.00	118.00	0.50	16.00	133.11	4.02	168.66	137.07	0.04	0.01
30	1.11	11	SLE F	1	5	110.92	145.79	33.00	118.00	0.50	16.00	133.11	4.02	168.66	132.14	0.04	0.01
44	4.91	12	SLE Q	1	5	491.26	-375.03	33.00	118.00	0.50	16.00	133.11	4.02	168.66	339.90	0.10	0.02
45	4.91	11	SLE F	1	5	491.26	-366.64	33.00	118.00	0.50	16.00	133.11	4.02	168.66	332.30	0.10	0.02
56	5.21	12	SLE Q	2	5	14.92	-509.59	33.00	118.00	0.50	16.00	133.11	4.02	168.66	461.87	0.13	0.03
57	5.21	11	SLE F	2	5	14.92	-550.05	33.00	118.00	0.50	16.00	133.11	4.02	168.66	498.54	0.15	0.03
68	8.61	12	SLE Q	2	5	354.74	292.38	33.00	118.00	0.50	16.00	133.11	4.02	168.66	264.99	0.08	0.02
69	8.61	11	SLE F	2	5	354.74	322.63	33.00	118.00	0.50	16.00	133.11	4.02	168.66	292.41	0.09	0.02
81	10.39	12	SLE Q	2	5	533.46	-159.87	33.00	118.00	0.50	16.00	133.11	4.02	168.66	144.90	0.04	0.01
82	10.39	11	SLE F	2	5	533.46	-85.24	33.00	118.00	0.50	16.00	133.11	4.02	168.66	77.25	0.02	0.01

## Stato limite ultimo - Verifiche a taglio

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. <cmq/m>	bw <m>	Vsdu <daN>	ctgθ	VRsd <daN>	VRcd <daN>	Vrdu <daN>	Sic.
1	TGND	0.15	0.50	0.35	ø8/ 4 2 br.	25.13	0.20	744.86	1.00	27349.90	22889.90	22889.90
7	TGND	0.50	4.56	4.05	ø8/24 2 br.	4.19	0.20	751.47	2.50	11395.80	15786.20	11395.80
7	TGND	4.56	4.91	0.35	ø8/ 4 2 br.	25.13	0.20	812.70	1.00	27349.90	22889.90	22889.90
9	SLU	5.20	5.55	0.35	ø8/ 4 2 br.	25.13	0.20	851.48	1.00	27349.90	23006.20	23006.20
9	SLU	5.55	10.04	4.49	ø8/24 2 br.	4.19	0.20	774.00	2.50	11395.80	15866.00	11395.80
7	TGND	10.04	10.39	0.35	ø8/ 4 2 br.	25.13	0.20	547.83	1.00	27349.90	22889.90	22889.90

## Travata n. 1108

Nodi: 106 104 606 1111 1113

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	B <cm>	H <cm>	Cf sup <cm>	Cf inf <cm>	Cls	F <sub>ck</sub> <daN/cm²>	F <sub>ctk</sub> <daN/cm²>	F <sub>cd</sub> <daN/cm²>	F <sub>ctd</sub> <daN/cm²>	Tp	F <sub>yk</sub> <daN/cm²>	F <sub>yd</sub> <daN/cm²>
7R		20.00	44.00	4.10	4.10	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	MRdy <daNm>	Sic.
0.78	9	SLU	1	15.01	4.02	4.02	4.02	4.02	-359.15	-5901.29	16.431
1.08	9	SLU	2	598.68	4.02	4.02	4.02	4.02	-1334.42	-5901.29	4.422
3.23	9	SLU	2	383.64	4.02	4.02	4.02	4.02	2694.94	5901.29	2.190
6.91	9	SLU	2	15.01	8.04	8.04	8.04	8.04	-3976.68	-11529.20	2.899
7.21	9	SLU	3	505.90	8.04	8.04	8.04	8.04	-3345.71	-11529.20	3.446
9.67	9	SLU	3	260.58	4.02	4.02	4.02	4.02	1581.16	5901.29	3.732
12.12	9	SLU	3	15.26	4.02	4.02	4.02	4.02	-1056.52	-5901.29	5.586
12.42	9	SLU	4	77.82	4.02	4.02	4.02	4.02	-356.92	-5901.29	16.534

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	My <daNm>	σ <sub>e</sub> sup <daN/cm²>	σ <sub>e</sub> inf <daN/cm²>	σ <sub>c</sub> <daN/cm²>
0.78	10	SLE R	1	15.01	4.02	4.02	-250.68	172.98	-43.85	4.58
0.78	12	SLE Q	1	15.01	4.02	4.02	-127.02	87.64	-22.22	2.32
1.08	10	SLE R	2	598.68	4.02	4.02	-938.95	647.90	-164.25	17.15
1.08	12	SLE Q	2	598.68	4.02	4.02	-515.60	355.78	-90.19	9.42
3.23	10	SLE R	2	383.64	4.02	4.02	1878.04	-328.52	1295.91	34.30
3.23	12	SLE Q	2	383.64	4.02	4.02	935.83	-163.70	645.75	17.09
6.91	10	SLE R	2	15.01	8.04	8.04	-2772.15	972.05	-368.59	34.81
6.91	12	SLE Q	2	15.01	8.04	8.04	-1385.95	485.98	-184.28	17.40
7.21	10	SLE R	3	505.90	8.04	8.04	-2334.47	818.58	-310.40	29.31
7.21	12	SLE Q	3	505.90	8.04	8.04	-1178.58	413.26	-156.71	14.80
9.67	10	SLE R	3	260.58	4.02	4.02	1102.92	-192.93	761.05	20.15
9.67	12	SLE Q	3	260.58	4.02	4.02	555.07	-97.10	383.01	10.14
12.12	10	SLE R	3	15.26	4.02	4.02	-739.13	510.02	-129.29	13.50
12.12	12	SLE Q	3	15.26	4.02	4.02	-383.50	264.62	-67.08	7.00
12.42	10	SLE R	4	77.82	4.02	4.02	-249.13	171.91	-43.58	4.55
12.42	12	SLE Q	4	77.82	4.02	4.02	-126.23	87.10	-22.08	2.31



## Relazione di calcolo

## Stato limite d'esercizio - Verifiche a fessurazione

Caso	Xg <m>	CC	TCC	El	Sez.	X <cm>	My <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c eff</sub> <cmq>	σ <sub>s</sub> <daN/cmq>	ε <sub>sm</sub>	Wk <mm>
11	0.78	12	SLE Q	1	7	15.01	-127.02	33.00	122.00	0.50	16.00	147.57	4.02	205.00	87.64	0.03	0.01
12	0.78	11	SLE F	1	7	15.01	-151.75	33.00	122.00	0.50	16.00	147.57	4.02	205.00	104.71	0.03	0.01
26	1.08	12	SLE Q	2	7	598.68	-515.60	33.00	118.00	0.50	16.00	147.57	4.02	205.00	355.78	0.10	0.03
27	1.08	11	SLE F	2	7	598.68	-600.27	33.00	118.00	0.50	16.00	147.57	4.02	205.00	414.21	0.12	0.03
38	3.23	12	SLE Q	2	7	383.64	935.83	33.00	118.00	0.50	16.00	147.57	4.02	205.00	645.75	0.19	0.05
39	3.23	11	SLE F	2	7	383.64	1124.24	33.00	118.00	0.50	16.00	147.57	4.02	205.00	775.76	0.23	0.06
50	6.91	12	SLE Q	2	7	15.01	-1385.95	33.00	39.33	0.50	16.00	105.86	8.04	200.38	485.98	0.14	0.03
51	6.91	11	SLE F	2	7	15.01	-1663.19	33.00	39.33	0.50	16.00	105.86	8.04	200.38	583.19	0.17	0.03
62	7.21	12	SLE Q	3	7	505.90	-1178.58	33.00	39.33	0.50	16.00	105.86	8.04	200.38	413.26	0.12	0.02
63	7.21	11	SLE F	3	7	505.90	-1409.75	33.00	39.33	0.50	16.00	105.86	8.04	200.38	494.33	0.14	0.03
74	9.67	12	SLE Q	3	7	260.58	555.07	33.00	118.00	0.50	16.00	147.57	4.02	205.00	383.01	0.11	0.03
75	9.67	11	SLE F	3	7	260.58	664.63	33.00	118.00	0.50	16.00	147.57	4.02	205.00	458.62	0.13	0.03
88	12.12	12	SLE Q	3	7	15.26	-383.50	33.00	118.00	0.50	16.00	147.57	4.02	205.00	264.62	0.08	0.02
89	12.12	11	SLE F	3	7	15.26	-454.62	33.00	118.00	0.50	16.00	147.57	4.02	205.00	313.70	0.09	0.02
100	12.42	12	SLE Q	4	7	77.82	-126.23	33.00	122.00	0.50	16.00	147.57	4.02	205.00	87.10	0.03	0.01
101	12.42	11	SLE F	4	7	77.82	-150.81	33.00	122.00	0.50	16.00	147.57	4.02	205.00	104.06	0.03	0.01

## Stato limite ultimo - Verifiche a taglio

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. <cmq/m>	bw <cm>	Vsdu <daN>	ctgθ	VRsd <daN>	VRcd <daN>	Vrdu <daN>	Sic.
9 SLU	0.06	0.78	0.72	ø6/ 8 2 br.	7.07	0.20	920.21	2.23	22102.00	22102.00	22102.00	24.018
9 SLU	1.07	1.51	0.44	ø8/ 8 2 br.	12.57	0.20	2986.62	1.54	27185.20	27185.20	27185.20	9.102
9 SLU	1.51	6.47	4.96	ø8/28 2 br.	3.59	0.20	3373.47	2.50	12612.80	20518.70	12612.80	3.739
9 SLU	6.47	6.91	0.44	ø8/ 8 2 br.	12.57	0.20	3892.02	1.54	27158.90	27158.90	27158.90	6.978
9 SLU	7.21	7.65	0.44	ø8/ 8 2 br.	12.57	0.20	3357.60	1.54	27133.90	27133.90	27133.90	8.081
9 SLU	7.65	11.67	4.03	ø8/28 2 br.	3.59	0.20	2839.07	2.50	12612.80	20464.10	12612.80	4.443
9 SLU	11.67	12.11	0.44	ø8/ 8 2 br.	12.57	0.20	2424.46	1.54	27110.90	27110.90	27110.90	11.182
9 SLU	12.42	13.14	0.72	ø6/ 8 2 br.	7.07	0.20	917.35	2.23	22103.60	22103.60	22103.60	24.095

## Travata n. 1109

Nodi: 107 105 610 1112 1114

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez. Tipo	B <cm>	H <cm>	Cf sup <cm>	Cf inf <cm>	Cl <sub>s</sub>	Fck <daN/cmq>	Fctk <daN/cmq>	Fcd <daN/cmq>	Fctd <daN/cmq>	TP	Fyk <daN/cmq>	Fyd <daN/cmq>
7R	20.00	44.00	4.10	4.10	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	MRdy <daNm>	Sic.
0.78	9	SLU	1	15.01	4.02	4.02	4.02	4.02	-367.77	-5901.29	16.046
1.08	9	SLU	2	598.68	4.02	4.02	4.02	4.02	-1386.21	-5901.29	4.257
3.23	9	SLU	2	383.64	4.02	4.02	4.02	4.02	2752.09	5901.29	2.144
6.91	9	SLU	2	15.01	4.02	4.02	4.02	4.02	-4062.16	-5901.29	1.453
7.21	9	SLU	3	505.90	4.02	4.02	4.02	4.02	-3425.13	-5901.29	1.723
9.67	9	SLU	3	260.58	4.02	4.02	4.02	4.02	1618.20	5901.29	3.647
12.12	9	SLU	3	15.26	4.02	4.02	4.02	4.02	-1083.94	-5901.29	5.444
12.42	9	SLU	4	77.82	4.02	4.02	4.02	4.02	-365.49	-5901.29	16.146

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	My <daNm>	σ <sub>e</sub> sup <daN/cmq>	σ <sub>e</sub> inf <daN/cmq>	σ <sub>e</sub> <daN/cmq>
0.78	10	SLE R	1	15.01	4.02	4.02	-256.47	176.97	-44.86	4.68
0.78	12	SLE Q	1	15.01	4.02	4.02	-128.84	88.91	-22.54	2.35
1.08	10	SLE R	2	598.68	4.02	4.02	-973.86	671.99	-170.35	17.79
1.08	12	SLE Q	2	598.68	4.02	4.02	-527.25	363.82	-92.23	9.63
3.23	10	SLE R	2	383.64	4.02	4.02	1916.37	-335.23	1322.35	35.00
3.23	12	SLE Q	2	383.64	4.02	4.02	947.73	-165.78	653.97	17.31
6.91	10	SLE R	2	15.01	4.02	4.02	-2829.47	1952.43	-494.95	51.68
6.91	12	SLE Q	2	15.01	4.02	4.02	-1403.72	968.61	-245.55	25.64
7.21	10	SLE R	3	505.90	4.02	4.02	-2387.76	1647.63	-417.68	43.61
7.21	12	SLE Q	3	505.90	4.02	4.02	-1195.23	824.75	-209.08	21.83
9.67	10	SLE R	3	260.58	4.02	4.02	1127.72	-197.27	778.17	20.60
9.67	12	SLE Q	3	260.58	4.02	4.02	562.55	-98.41	388.18	10.28
12.12	10	SLE R	3	15.26	4.02	4.02	-757.67	522.82	-132.54	13.84
12.12	12	SLE Q	3	15.26	4.02	4.02	-390.02	269.13	-68.23	7.12
12.42	10	SLE R	4	77.82	4.02	4.02	-254.88	175.88	-44.59	4.66
12.42	12	SLE Q	4	77.82	4.02	4.02	-128.04	88.36	-22.40	2.34

## Stato limite d'esercizio - Verifiche a fessurazione

Caso	Xg <m>	CC	TCC	El	Sez.	X <cm>	My <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c eff</sub> <cmq>	σ <sub>s</sub> <daN/cmq>	ε <sub>sm</sub>	Wk <mm>
11	0.78	12	SLE Q	1	7	15.01	-128.84	33.00	122.00	0.50	16.00	147.57	4.02	205.00	88.91	0.03	0.01
12	0.78	11	SLE F	1	7	15.01	-154.37	33.00	122.00	0.50	16.00	147.57	4.02	205.00	106.52	0.03	0.01
26	1.08	12	SLE Q	2	7	598.68	-527.25	33.00	118.00	0.50	16.00	147.57	4.02	205.00	363.82	0.11	0.03
27	1.08	11	SLE F	2	7	598.68	-616.57	33.00	118.00	0.50	16.00	147.57	4.02	205.00	425.45	0.12	0.03
38	3.23	12	SLE Q	2	7	383.64	947.73	33.00	118.00	0.50	16.00	147.57	4.02	205.00	653.97	0.19	0.05
39	3.23	11	SLE F	2	7	383.64	1141.43	33.00	118.00	0.50	16.00	147.57	4.02	205.00	787.62	0.23	0.06
50	6.91	12	SLE Q	2	7	15.01	-1403.72	33.00	118.00	0.50	16.00	147.57	4.02	205.00	968.61	0.28	0.07
51	6.91	11	SLE F	2	7	15.01	-1688.87	33.00	118.00	0.50	16.00	147.57	4.02	205.00	1165.38	0.34	0.09
62	7.21	12	SLE Q	3	7	505.90	-1195.23	33.00	118.00	0.50	16.00	147.57	4.02	205.00	824.75	0.24	0.06
63	7.21	11	SLE F	3	7	505.90	-1433.73	33.00	118.00	0.50	16.00	147.57	4.02	205.00	989.32	0.29	0.07
74	9.67	12	SLE Q	3	7	260.58	562.55	33.00	118.00	0.50	16.00	147.57	4.02	205.00	388.18	0.11	0.03
75	9.67	11	SLE F	3	7	260.58	675.58	33.00	118.00	0.50	16.00	147.57	4.02	205.00	466.17	0.14	0.03



## Relazione di calcolo

88	12.12	12	SLE Q	3	7	15.26	-390.02	33.00	118.00	0.50	16.00	147.57	4.02	205.00	269.13	0.08	0.02
89	12.12	11	SLE F	3	7	15.26	-463.55	33.00	118.00	0.50	16.00	147.57	4.02	205.00	319.87	0.09	0.02
100	12.42	12	SLE Q	4	7	77.82	-128.04	33.00	122.00	0.50	16.00	147.57	4.02	205.00	88.36	0.03	0.01
101	12.42	11	SLE F	4	7	77.82	-153.41	33.00	122.00	0.50	16.00	147.57	4.02	205.00	105.86	0.03	0.01

### Stato limite ultimo - Verifiche a taglio

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. <cmq/m>	bw <m>	Vsdu <daN>	ctgθ	VRsd <daN>	VRcd <daN>	Vrdu <daN>	Sic.
9 SLU	0.06	0.78	0.72	ø6/ 8 2 br.	7.07	0.20	942.29	2.23	22102.00	22102.00	22102.00	23.456
9 SLU	1.07	1.51	0.44	ø8/ 8 2 br.	12.57	0.20	3063.40	1.54	27187.60	27187.60	27187.60	8.875
9 SLU	1.51	6.47	4.96	ø8/28 2 br.	3.59	0.20	3449.34	2.50	12612.80	20521.10	12612.80	3.657
9 SLU	6.47	6.91	0.44	ø8/ 8 2 br.	12.57	0.20	3980.35	1.54	27160.50	27160.50	27160.50	6.824
9 SLU	7.21	7.65	0.44	ø8/ 8 2 br.	12.57	0.20	3437.58	1.54	27135.80	27135.80	27135.80	7.894
9 SLU	7.65	11.67	4.03	ø8/28 2 br.	3.59	0.20	2906.61	2.50	12612.80	20466.10	12612.80	4.339
9 SLU	11.67	12.11	0.44	ø8/ 8 2 br.	12.57	0.20	2483.25	1.54	27112.20	27112.20	27112.20	10.918
9 SLU	12.42	13.14	0.72	ø6/ 8 2 br.	7.07	0.20	939.37	2.23	22103.60	22103.60	22103.60	23.530

### Travata n. 1710

Nodi: 1716 1414 1112

#### Caratteristiche delle sezioni e dei materiali utilizzati

Sez. Tipo	B <cm>	H <cm>	Cf sup <cm>	Cf inf <cm>	Cl	Fck <daN/cm²>	Fctk <daN/cm²>	Fcd <daN/cm²>	Fctd <daN/cm²>	TP	Fyk <daN/cm²>	Fyd <daN/cm²>
5R	20.00	35.00	4.10	4.10	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

### Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	MRdy <daNm>	Sic.
0.16	9	SLU	1	15.87	4.02	4.02	4.02	4.02	-767.04	-4485.14	5.847
0.48	9	SLU	1	48.26	4.02	4.02	4.02	4.02	-767.04	-4485.14	5.847
3.40	1	SLV	1	339.77	4.02	4.02	4.02	4.02	-482.24	-4485.14	9.301
3.70	1	SLV	2	15.01	4.02	4.02	4.02	4.02	-471.00	-4485.14	9.523
6.51	1	SLV	2	296.47	4.02	4.02	4.02	4.02	359.70	4485.14	12.469
8.07	1	SLV	2	452.84	4.02	4.02	4.02	4.02	-525.95	-4485.14	8.528

### Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	My <daNm>	σ <sub>f</sub> sup <daN/cm²>	σ <sub>f</sub> inf <daN/cm²>	σ <sub>c</sub> <daN/cm²>
0.16	10	SLE R	1	15.87	4.02	4.02	-535.64	485.47	-128.24	14.81
0.16	12	SLE Q	1	15.87	4.02	4.02	-273.22	247.63	-65.41	7.55
0.48	10	SLE R	1	48.26	4.02	4.02	-535.64	485.47	-128.24	14.81
0.48	12	SLE Q	1	48.26	4.02	4.02	-273.22	247.63	-65.41	7.55
3.40	10	SLE R	1	339.77	4.02	4.02	-115.89	105.03	-27.75	3.20
3.40	12	SLE Q	1	339.77	4.02	4.02	-184.18	166.93	-44.10	5.09
3.70	10	SLE R	2	15.01	4.02	4.02	-153.92	139.50	-36.85	4.26
3.70	12	SLE Q	2	15.01	4.02	4.02	-241.22	218.62	-57.75	6.67
6.51	10	SLE R	2	296.47	4.02	4.02	239.90	-57.44	217.43	6.63
6.51	12	SLE Q	2	296.47	4.02	4.02	225.99	-54.11	204.82	6.25
8.07	10	SLE R	2	452.84	4.02	4.02	-225.60	204.47	-54.02	6.24
8.07	12	SLE Q	2	452.84	4.02	4.02	-180.42	163.52	-43.20	4.99

### Stato limite d'esercizio - Verifiche a fessurazione

Caso	Xg <m>	CC	TCC	El	Sez.	X <cm>	My <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c</sub> eff <cmq>	σ <sub>s</sub> <daN/cm²>	ε <sub>sm</sub>	W <sub>k</sub> <mm>
11	0.16	12	SLE Q	1	5	15.87	-273.22	33.00	118.00	0.50	16.00	133.11	4.02	168.66	247.63	0.07	0.02
12	0.16	11	SLE F	1	5	15.87	-325.70	33.00	118.00	0.50	16.00	133.11	4.02	168.66	295.20	0.09	0.02
23	0.48	12	SLE Q	1	5	48.26	-273.22	33.00	118.00	0.50	16.00	133.11	4.02	168.66	247.63	0.07	0.02
24	0.48	11	SLE F	1	5	48.26	-325.70	33.00	118.00	0.50	16.00	133.11	4.02	168.66	295.20	0.09	0.02
35	3.40	12	SLE Q	1	5	339.77	-184.18	33.00	118.00	0.50	16.00	133.11	4.02	168.66	166.93	0.05	0.01
36	3.40	11	SLE F	1	5	339.77	-170.52	33.00	118.00	0.50	16.00	133.11	4.02	168.66	154.55	0.05	0.01
49	3.70	12	SLE Q	2	5	15.01	-241.22	33.00	118.00	0.50	16.00	133.11	4.02	168.66	218.62	0.06	0.01
50	3.70	11	SLE F	2	5	15.01	-223.76	33.00	118.00	0.50	16.00	133.11	4.02	168.66	202.80	0.06	0.01
63	6.51	12	SLE Q	2	5	296.47	225.99	33.00	118.00	0.50	16.00	133.11	4.02	168.66	204.82	0.06	0.01
64	6.51	11	SLE F	2	5	296.47	228.77	33.00	118.00	0.50	16.00	133.11	4.02	168.66	207.34	0.06	0.01
76	8.07	12	SLE Q	2	5	452.84	-180.42	33.00	118.00	0.50	16.00	133.11	4.02	168.66	163.52	0.05	0.01
77	8.07	11	SLE F	2	5	452.84	-189.46	33.00	118.00	0.50	16.00	133.11	4.02	168.66	171.71	0.05	0.01

### Stato limite ultimo - Verifiche a taglio

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. <cmq/m>	bw <m>	Vsdu <daN>	ctgθ	VRsd <daN>	VRcd <daN>	Vrdu <daN>	Sic.
1 TGND	0.16	0.51	0.35	ø8/ 4 2 br.	25.13	0.20	707.34	1.00	27349.90	22889.90	22889.90	32.361
1 TGND	0.51	3.05	2.54	ø8/24 2 br.	4.19	0.20	646.12	2.50	11395.80	15786.20	11395.80	17.637
7 TGND	3.05	3.40	0.35	ø8/ 4 2 br.	25.13	0.20	654.20	1.00	27349.90	22889.90	22889.90	34.989
1 TGND	3.70	4.05	0.35	ø8/ 4 2 br.	25.13	0.20	632.08	1.00	27349.90	22889.90	22889.90	36.214
1 TGND	4.05	7.73	3.68	ø8/24 2 br.	4.19	0.20	570.85	2.50	11395.80	15786.20	11395.80	19.963
7 TGND	7.73	8.08	0.35	ø8/ 4 2 br.	25.13	0.20	606.14	1.00	27349.90	22889.90	22889.90	37.764

### Travata n. 1811

Nodi: 1111 1313 1715 1801 1716

#### Caratteristiche delle sezioni e dei materiali utilizzati

Sez. Tipo	B <cm>	H <cm>	Cf sup <cm>	Cf inf <cm>	Cl	Fck <daN/cm²>	Fctk <daN/cm²>	Fcd <daN/cm²>	Fctd <daN/cm²>	TP	Fyk <daN/cm²>	Fyd <daN/cm²>
5R	20.00	35.00	4.10	4.10	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

### Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	MRdy <daNm>	Sic.
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## Relazione di calcolo

0.17	1	SLV	1	16.54	4.02	4.02	4.02	4.02	-510.28	-4485.14	8.790
1.13	1	SLV	1	112.72	4.02	4.02	4.02	4.02	344.90	4485.14	13.004
4.33	1	SLV	1	433.33	4.02	4.02	4.02	4.02	-459.28	-4485.14	9.765
4.63	1	SLV	2	15.01	4.02	4.02	4.02	4.02	-473.03	-4485.14	9.482
7.14	9	SLU	2	266.13	4.02	4.02	4.02	4.02	-469.84	-4485.14	9.546
8.09	9	SLU	2	360.82	8.04	4.02	8.04	4.02	-776.44	-8648.04	11.138
8.39	9	SLU	3	15.01	4.02	4.02	4.02	4.02	-2642.69	-4485.14	1.697
9.63	9	SLU	3	139.06	4.02	4.02	4.02	4.02	3688.46	4485.14	1.216
11.49	9	SLU	4	155.07	4.02	4.02	4.02	4.02	-2639.60	-4485.14	1.699

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	My <daNm>	σ <sub>f</sub> sup <daN/cm²>	σ <sub>f</sub> inf <daN/cm²>	σ <sub>c</sub> <daN/cm²>
0.17	10	SLE R	1	16.54	4.02	4.02	-205.13	185.92	-49.11	5.67
0.17	12	SLE Q	1	16.54	4.02	4.02	-161.04	145.96	-38.56	4.45
1.13	10	SLE R	1	112.72	4.02	4.02	159.10	-38.09	144.20	4.40
1.13	12	SLE Q	1	112.72	4.02	4.02	162.07	-38.80	146.90	4.48
4.33	10	SLE R	1	433.33	4.02	4.02	-133.81	121.28	-32.04	3.70
4.33	12	SLE Q	1	433.33	4.02	4.02	-221.46	200.72	-53.02	6.12
4.63	10	SLE R	2	15.01	4.02	4.02	-115.21	104.42	-27.58	3.19
4.63	12	SLE Q	2	15.01	4.02	4.02	-184.30	167.04	-44.13	5.10
7.14	10	SLE R	2	266.13	4.02	4.02	-320.70	290.67	-76.78	8.87
7.14	12	SLE Q	2	266.13	4.02	4.02	-124.30	112.66	-29.76	3.44
8.09	10	SLE R	2	360.82	8.04	4.02	-545.02	254.17	-123.14	12.06
8.09	12	SLE Q	2	360.82	8.04	4.02	-292.96	136.62	-66.19	6.48
8.39	10	SLE R	3	15.01	4.02	4.02	-1814.36	1644.43	-434.40	50.16
8.39	12	SLE Q	3	15.01	4.02	4.02	-760.30	689.10	-182.03	21.02
9.63	10	SLE R	3	139.06	4.02	4.02	2518.45	-602.98	2282.58	69.63
9.63	12	SLE Q	3	139.06	4.02	4.02	980.26	-234.70	888.45	27.10
11.49	10	SLE R	4	155.07	4.02	4.02	-1810.67	1641.09	-433.52	50.06
11.49	12	SLE Q	4	155.07	4.02	4.02	-750.32	680.04	-179.64	20.74

## Stato limite d'esercizio - Verifiche a fessurazione

Caso	Xg <m>	CC	TCC	El	Sez.	X <cm>	My <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c</sub> eff <cmq>	σ <sub>s</sub> <daN/cm²>	ε <sub>sm</sub>	Wk <mm>
12	0.17	12	SLE Q	1	5	16.54	-161.04	33.00	118.00	0.50	16.00	133.11	4.02	168.66	145.96	0.04	0.01
13	0.17	11	SLE F	1	5	16.54	-169.86	33.00	118.00	0.50	16.00	133.11	4.02	168.66	153.95	0.04	0.01
28	1.13	12	SLE Q	1	5	112.72	162.07	33.00	118.00	0.50	16.00	133.11	4.02	168.66	146.90	0.04	0.01
29	1.13	11	SLE F	1	5	112.72	161.48	33.00	118.00	0.50	16.00	133.11	4.02	168.66	146.36	0.04	0.01
40	4.33	12	SLE Q	1	5	433.33	-221.46	33.00	118.00	0.50	16.00	133.11	4.02	168.66	200.72	0.06	0.01
41	4.33	11	SLE F	1	5	433.33	-203.93	33.00	118.00	0.50	16.00	133.11	4.02	168.66	184.83	0.05	0.01
52	4.63	12	SLE Q	2	5	15.01	-184.30	33.00	118.00	0.50	16.00	133.11	4.02	168.66	167.04	0.05	0.01
53	4.63	11	SLE F	2	5	15.01	-170.48	33.00	118.00	0.50	16.00	133.11	4.02	168.66	154.51	0.05	0.01
66	7.14	12	SLE Q	2	5	266.13	-124.30	33.00	118.00	0.50	16.00	133.11	4.02	168.66	112.66	0.03	0.01
67	7.14	11	SLE F	2	5	266.13	-163.58	33.00	118.00	0.50	16.00	133.11	4.02	168.66	148.26	0.04	0.01
78	8.09	12	SLE Q	2	5	360.82	-292.96	33.00	39.33	0.50	16.00	95.38	8.04	147.69	136.62	0.04	0.01
79	8.09	11	SLE F	2	5	360.82	-343.37	33.00	39.33	0.50	16.00	95.38	8.04	147.69	160.13	0.05	0.01
92	8.39	12	SLE Q	3	5	15.01	-760.30	33.00	118.00	0.50	16.00	133.11	4.02	168.66	689.10	0.20	0.05
93	8.39	11	SLE F	3	5	15.01	-971.11	33.00	118.00	0.50	16.00	133.11	4.02	168.66	880.16	0.26	0.06
106	9.63	12	SLE Q	3	5	139.06	980.26	33.00	118.00	0.50	16.00	133.11	4.02	168.66	888.45	0.26	0.06
107	9.63	11	SLE F	3	5	139.06	1287.90	33.00	118.00	0.50	16.00	133.11	4.02	168.66	1167.28	0.34	0.08
120	11.49	12	SLE Q	4	5	155.07	-750.32	33.00	118.00	0.50	16.00	133.11	4.02	168.66	680.04	0.20	0.04
121	11.49	11	SLE F	4	5	155.07	-962.39	33.00	118.00	0.50	16.00	133.11	4.02	168.66	872.25	0.25	0.06

## Stato limite ultimo - Verifiche a taglio

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. <cmq/m>	bw <m>	Vsdu <daN>	ctgθ	VRsd <daN>	VRcd <daN>	Vrdu <daN>	Sic.
1 TGND	0.16	0.51	0.35	ø8/ 4 2 br.	25.13	0.20	602.78	1.00	27349.90	22889.90	22889.90	37.974
7 TGND	0.51	3.98	3.47	ø8/24 2 br.	4.19	0.20	568.72	2.50	11395.80	15786.20	11395.80	20.038
7 TGND	3.98	4.33	0.35	ø8/ 4 2 br.	25.13	0.20	629.94	1.00	27349.90	22889.90	22889.90	36.337
1 TGND	4.63	4.98	0.35	ø8/ 4 2 br.	25.13	0.20	631.50	1.00	27349.90	22889.90	22889.90	36.247
7 TGND	4.98	7.73	2.76	ø8/24 2 br.	4.19	0.20	631.29	2.50	11395.80	15786.20	11395.80	18.052
7 TGND	7.73	8.08	0.35	ø8/ 4 2 br.	25.13	0.20	692.52	1.00	27349.90	22889.90	22889.90	33.053
9 SLU	8.38	8.73	0.35	ø8/ 4 2 br.	25.13	0.20	4042.86	1.00	27349.90	23149.90	23149.90	5.726
9 SLU	8.73	9.58	0.85	ø8/24 2 br.	4.19	0.20	3965.66	2.50	11395.80	15965.10	11395.80	2.874
9 SLU	9.58	9.93	0.35	ø8/24 2 br.	4.19	0.20	3772.21	2.50	11395.80	15964.30	11395.80	3.021
9 SLU	9.94	10.29	0.35	ø8/24 2 br.	4.19	0.20	3770.21	2.50	11395.80	15964.30	11395.80	3.023
9 SLU	10.29	11.14	0.85	ø8/24 2 br.	4.19	0.20	3963.65	2.50	11395.80	15965.10	11395.80	2.875
9 SLU	11.14	11.49	0.35	ø8/ 4 2 br.	25.13	0.20	4040.86	1.00	27349.90	23149.90	23149.90	5.729

## Verifiche e armature pilastri

## Simbologia

Δ <sub>sm</sub>	= Distanza media tra le fessure
E <sub>sy, d</sub>	= Deformazione di snervamento dell'acciaio
Φ <sub>eq</sub>	= Diametro equivalente delle barre
α	= Angolo asse neutro a rottura
α <sub>o</sub>	= Coefficiente di efficacia del confinamento
ε <sub>y</sub>	= Deformazione nell'acciaio (*1000)
ε <sub>sm</sub>	= Deformazione unitaria media dell'armatura (*1000)
μΦ <sub>c</sub>	= Capacità della duttilità di curvatura
μΦ <sub>d</sub>	= Domanda della duttilità di curvatura
vd <sub>s</sub>	= Sforzo normale normalizzato del pilastro superiore (%)
vd <sub>i</sub>	= Sforzo normale normalizzato del pilastro inferiore (%)
σ <sub>c</sub>	= Tensione nel calcestruzzo
σ <sub>f</sub>	= Tensione nel ferro



## Relazione di calcolo

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$\sigma_s$	= Tensione nell'acciaio nella sezione fessurata
$\omega_{nd}$	= Rapporto meccanico dell'armatura trasversale di confinamento all'interno della zona dissipativa
$A_{c\ eff}$	= Area di calcestruzzo efficace
$A_s$	= Area complessiva dei ferri nell'area di calcestruzzo efficace
$A_{fC}$	= Area di ferro compressa
$A_{fT}$	= Area di ferro tesa
$A_{fni}$	= Azione di fessurazione sul nodo integro [7.4.10]
$A_{s1}$	= Area di ferro superiore delle travi incidenti sulla faccia
$A_{s2}$	= Area di ferro inferiore delle travi incidenti sulla faccia
$A_{sh}$	= Area totale della sezione della staffa
$B$	= Base
$B_j$	= Larghezza effettiva utile del nodo
$Br_y$	= Numero bracci in dir. Y locale
$Br_z$	= Numero bracci in dir. Z locale
$Br.$	= Numero bracci
$CC$	= Combinazione delle condizioni di carico elementari e = eccentricità aggiuntiva in caso di compressione o pressoflessione $\alpha$ = amplificazione per gerarchia delle resistenze TG = taglio da gerarchia delle resistenze
$C_f$	= Copriferro
$Cl_s$	= Tipo di calcestruzzo
$Conf.$	= Nodo confinato S = Sì N = No
$E_l$	= Elemento (asta) in cui viene effettuato il progetto/verifica (progressivo sul numero di aste)
$F$	= Identificativo faccia del nodo Y+ = Faccia sul lato positivo Y locale pilastro Z+ = Faccia sul lato positivo Z locale pilastro Y- = Faccia sul lato negativo Y locale pilastro Z- = Faccia sul lato negativo Z locale pilastro
$F_{cd}$	= Resistenza di calcolo a compressione del calcestruzzo
$F_{ck}$	= Resistenza caratteristica cilindrica a compressione del calcestruzzo
$F_{ctd}$	= Resistenza di calcolo a trazione del calcestruzzo
$F_{ctk}$	= Resistenza caratteristica a trazione del calcestruzzo
$F_{yd}$	= Resistenza di calcolo dell'acciaio
$F_{yk}$	= Tensione caratteristica di snervamento dell'acciaio
$H$	= Altezza
$H_{jc}$	= Distanza tra armature pilastro
$H_{jw}$	= Distanza tra armature trave
$K_2$	= Coefficiente per distribuzione deformazioni
$MR_{dy}$	= Momento resistente allo stato limite ultimo intorno all'asse Y
$MR_{dz}$	= Momento resistente allo stato limite ultimo intorno all'asse Z
$Mod.$	= Modalità di verifica faccia I = Interna E = Esterna
$M_y$	= Momento flettente intorno all'asse Y
$M_y\ ver.$	= Momento flettente di verifica intorno all'asse Y
$M_z$	= Momento flettente intorno all'asse Z
$M_z\ ver.$	= Momento flettente di verifica intorno all'asse Z
$N$	= Sforzo normale
$Nodo$	= Numero del nodo
$N_u$	= Sforzo normale ultimo
$R$	= Raggio
$R_{fni}$	= Resistenza a fessurazione nodo integro [7.4.10]
$Sez.$	= Numero della sezione
$Sic.$	= Sicurezza
$Staff.$	= Staffatura adottata
$TCC$	= Tipo di combinazione di carico SLU = Stato limite ultimo SLE R = Stato limite d'esercizio, combinazione rara SLE F = Stato limite d'esercizio, combinazione frequente SLE Q = Stato limite d'esercizio, combinazione quasi permanente SLD = Stato limite di danno SLV = Stato limite di salvaguardia della vita SND = Stato limite di salvaguardia della vita (non dissipativo)
$Tipo$	= Tipologia Cir. = Circolare Cir.c = Circolare cava R = Rettangolare
$T_p$	= Tipo di acciaio
$VR_{cd}$	= Taglio ultimo lato calcestruzzo
$VR_{cd,y}$	= Taglio ultimo lato calcestruzzo in dir. Y
$VR_{cd,z}$	= Taglio ultimo lato calcestruzzo in dir. Z
$VR_{sd}$	= Taglio ultimo lato armatura
$VR_{sd,y}$	= Taglio ultimo lato armatura in dir. Y
$VR_{sd,z}$	= Taglio ultimo lato armatura in dir. Z
$V_c$	= Taglio nel pilastro al di sopra del nodo
$V_{jBR}$	= Resistenza a compressione del nucleo di calcestruzzo [7.4.8]
$V_{jbd}$	= Taglio agente nel nucleo di calcestruzzo [7.4.6/7]
$V_{jwR}$	= Resistenza a trazione diagonale [7.4.11/12]
$V_{jwd}$	= Azione agente di trazione diagonale [7.4.11/12]
$V_{sdu}$	= Taglio agente nella direzione del momento ultimo
$V_{sdu,y}$	= Taglio agente in dir. Y
$V_{sdu,z}$	= Taglio agente in dir. Z
$W_k$	= Ampiezza caratteristica delle fessure
$X$	= Coordinata progressiva rispetto al nodo iniziale
$X_0$	= Coordinata progressiva (dal nodo iniziale) dell'inizio del tratto
$X_1$	= Coordinata progressiva (dal nodo iniziale) della fine del tratto
$X_g$	= Coordinata progressiva (dal primo nodo) in cui viene effettuato il progetto/verifica
$b_c/b_o$	= Rapporto tra la larghezza minima della sezione trasversale lorda e la larghezza del nucleo confinato
$b_w$	= Larghezza membratura resistente al taglio
$b_{w,y}$	= Larghezza membratura resistente al taglio in dir. Y
$b_{w,z}$	= Larghezza membratura resistente al taglio in dir. Z



Relazione di calcolo

c = Ricoprimento dell'armatura  
ctgθ = Cotangente dell'angolo di inclinazione dei puntoni di calcestruzzo  
ctgθ<sub>y</sub> = Cotangente dell'angolo di inclinazione dei puntoni di calcestruzzo in dir. Y  
ctgθ<sub>z</sub> = Cotangente dell'angolo di inclinazione dei puntoni di calcestruzzo in dir. Z  
s = Distanza massima tra le barre  
v<sub>d</sub> = Forza assiale adimensionalizzata di progetto

Pilastrata n. 1

Nodi: 1 801

Caratteristiche delle sezioni e dei materiali utilizzati

Sez. Tipo	R <cm>	Cf <cm>	Cls	Fck <daN/cm²>	Fctk <daN/cm²>	Fcd <daN/cm²>	Fctd <daN/cm²>	Tp	Fyk <daN/cm²>	Fyd <daN/cm²>
2Cir.	15.00	3.90	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	My ver. <daNm>	Mz <daNm>	Mz ver. <daNm>	Nu <daN>	MRdy <daNm>	MRdz <daNm>	α <grad>	ε <sub>r</sub>	Sic.
0.00	9(e)	SLU	1	2	0.00	-9555.21	-11.45	-191.10	-2538.11	-2538.11	-9555.21	-367.88	-6270.21	267.19	4.91	2.468
0.00	9(e)	SLU	1	2	0.00	-9555.21	-11.45	-191.10	-2538.11	-2538.11	-9555.21	-367.88	-6270.21	267.19	4.91	2.468
2.77	9(e)	SLU	1	2	276.99	-8918.88	24.35	178.38	5090.18	5090.18	-8918.88	182.71	6240.44	88.59	4.95	1.226

Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	Mz <daNm>	My <daNm>	AfT <cmq>	AfC <cmq>	σ <sub>c</sub> <daN/cm²>	σ <sub>t</sub> <daN/cm²>
0.00	10	SLE R	1	2	0.00	-6654.63	-1724.55	-8.35	10.05	6.03	77.44	1127.81
0.00	12	SLE Q	1	2	0.00	-3297.68	-624.92	-6.13	10.05	6.03	28.12	352.88
0.00	10	SLE R	1	2	0.00	-6654.63	-1724.55	-8.35	10.05	6.03	77.44	1127.81
0.00	12	SLE Q	1	2	0.00	-3297.68	-624.92	-6.13	10.05	6.03	28.12	352.88
2.77	10	SLE R	1	2	276.99	-6165.14	3457.92	17.82	10.05	6.03	154.32	2737.82
2.77	12	SLE Q	1	2	276.99	-2808.19	1249.45	13.45	10.05	6.03	55.86	949.97

Stato limite d'esercizio - Verifiche a fessurazione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	Mz <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c eff</sub> <cmq>	σ <sub>s</sub> <daN/cm²>	ε <sub>sm</sub>	Wk <mm>
0.00	12	SLE Q	1	2	0.00	-3297.68	-6.13	-624.92	34.00	82.66	0.50	16.00	132.73	2.01	81.35	352.88	0.10	0.02
0.00	11	SLE F	1	2	0.00	-3969.07	-6.58	-844.84	34.00	82.66	0.50	16.00	135.13	2.01	84.36	507.40	0.15	0.03
0.00	12	SLE Q	1	2	0.00	-3297.68	-6.13	-624.92	34.00	82.66	0.50	16.00	132.73	2.01	81.35	352.88	0.10	0.02
0.00	11	SLE F	1	2	0.00	-3969.07	-6.58	-844.84	34.00	82.66	0.50	16.00	135.13	2.01	84.36	507.40	0.15	0.03
2.77	12	SLE Q	1	2	276.99	-2808.19	13.45	1249.45	34.00	216.00	0.50	16.00	144.77	2.01	96.47	949.97	0.28	0.07
2.77	11	SLE F	1	2	276.99	-3479.58	14.32	1691.14	34.00	216.00	0.50	16.00	145.47	2.01	97.35	1307.48	0.38	0.09

Stato limite ultimo - Verifiche a taglio

X0 <m>	X1 <m>	Staff.	CC	TCC	b <sub>w</sub> <m>	V <sub>sdu</sub> <daN>	ctgθ	VR <sub>sd</sub> <daN>	VR <sub>cd</sub> <daN>	Sic.
0.00	0.46	ø6/12	9	SLU	0.21	2754.00	2.50	6975.72	9858.70	2.533
0.00	0.46	ø6/12	7(TG)	SLV	0.21	4768.03	2.50	6975.72	9331.48	1.463
0.46	2.31	ø6/18	9	SLU	0.21	2754.00	2.50	4650.48	9850.39	1.689
0.46	2.31	ø6/18	1(TG)	SLV	0.21	4648.94	2.50	4650.48	9331.48	1.000
2.31	2.77	ø6/12	9	SLU	0.21	2754.00	2.50	6975.72	9817.18	2.533
2.31	2.77	ø6/12	7(TG)	SLV	0.21	4768.03	2.50	6975.72	9331.48	1.463

Dettagli costruttivi per la duttilità

- CC=5 α<sub>e</sub>=0.5776 ω<sub>hd</sub>=0.09413 μΦ<sub>d</sub>=30.7263 v<sub>d</sub>=0.029056 E<sub>gy, d</sub>=0.0018995 b<sub>c</sub>/b<sub>0</sub>=1.22951 μΦ<sub>c</sub>=43.8996 0.05437 >= 0.02755 [7.4.29]  
- CC=5 α<sub>e</sub>=0.5776 ω<sub>hd</sub>=0.09413 μΦ<sub>d</sub>=21.404 v<sub>d</sub>=0.029056 E<sub>gy, d</sub>=0.0018995 b<sub>c</sub>/b<sub>0</sub>=1.22951 μΦ<sub>c</sub>=43.8996 0.05437 >= 0.00857 [7.4.29]

Caratteristiche nodi trave-pilastro

Nodo	Conf.	Staff.	F	Mod.	Br.	As1 <cmq>	As2 <cmq>	Bj <m>	Hjc <m>	Hjw <m>	Ash <cmq>
801N		ø8/ 4	Z+ I	2		4.00	4.00	0.30	0.22	0.27	9.05
			Z- I	2		4.00	4.00	0.30	0.22	0.27	9.05

Verifiche nodi trave-pilastro

Nodo	F	CC	TCC	Vc <daN>	Vjbd <daN>	vd <sub>s</sub>	vd <sub>i</sub>	Vjbr <daNm>	Afni <daN/mq>	Rfni <daN/mq>	Vjwd <daN>	VjwR <daN>
801	Z+	1	SLV	0.00	34403.50	0.00	2.40	57089.40	1959380.00	440353.00	34403.50	35404.40
	Z-	1	SLV	0.00	34403.50	0.00	2.40	57089.40	1959380.00	440353.00	34403.50	35404.40

Pilastrata n. 2

Nodi: 2 502

Caratteristiche delle sezioni e dei materiali utilizzati

Sez. Tipo	R <cm>	Cf <cm>	Cls	Fck <daN/cm²>	Fctk <daN/cm²>	Fcd <daN/cm²>	Fctd <daN/cm²>	Tp	Fyk <daN/cm²>	Fyd <daN/cm²>
2Cir.	15.00	3.90	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	My ver. <daNm>	Mz <daNm>	Mz ver. <daNm>	Nu <daN>	MRdy <daNm>	MRdz <daNm>	α <grad>	ε <sub>r</sub>	Sic.
0.00	9	SLU	1	2	0.00	-9451.56	-257.08	-257.08	-1875.31	-1875.31	-9451.56	-913.53	-6263.12	262.97	4.94	3.344
0.00	9	SLU	1	2	0.00	-9451.56	-257.08	-257.08	-1875.31	-1875.31	-9451.56	-913.53	-6263.12	262.97	4.94	3.344
2.63	9	SLU	1	2	263.08	-8847.18	435.07	435.07	3923.52	3923.52	-8847.18	731.47	6241.75	84.38	4.98	1.592

Stato limite d'esercizio - Verifiche tensionali



## Relazione di calcolo

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	Mz <daNm>	My <daNm>	AfT <cmq>	AfC <cmq>	$\sigma_c$ <daN/cmq>	$\sigma_f$ <daN/cmq>
0.00	10	SLE R	1	2	0.00	-6587.86	-1272.47	-172.24	8.04	8.04	57.21	730.59
0.00	12	SLE Q	1	2	0.00	-3295.10	-452.01	-49.13	8.04	8.04	20.37	222.75
0.00	10	SLE R	1	2	0.00	-6587.86	-1272.47	-172.24	8.04	8.04	57.21	730.59
0.00	12	SLE Q	1	2	0.00	-3295.10	-452.01	-49.13	8.04	8.04	20.37	222.75
2.63	10	SLE R	1	2	263.08	-6122.96	2662.78	292.17	10.05	6.03	118.90	2020.16
2.63	12	SLE Q	1	2	263.08	-2830.20	948.65	87.11	10.05	6.03	42.48	675.95

## Stato limite d'esercizio - Verifiche a fessurazione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	Mz <daNm>	c <mm>	s <mm>	K <sub>2</sub>	$\Phi_{eq}$	$\Delta_{sm}$ <mm>	A <sub>s</sub> <cmq>	A <sub>c eff</sub> <cmq>	$\sigma_s$ <daN/cmq>	$\epsilon_{sm}$	W <sub>k</sub> <mm>
0.00	12	SLE Q	1	2	0.00	-3295.10	-49.13	-452.01	34.00	82.66	0.50	16.00	125.31	2.01	72.02	202.92	0.06	0.01
0.00	11	SLE F	1	2	0.00	-3953.66	-73.76	-616.10	34.00	82.66	0.50	16.00	129.44	2.01	77.21	307.52	0.09	0.02
0.00	12	SLE Q	1	2	0.00	-3295.10	-49.13	-452.01	34.00	82.66	0.50	16.00	125.31	2.01	72.02	202.92	0.06	0.01
0.00	11	SLE F	1	2	0.00	-3953.66	-73.76	-616.10	34.00	82.66	0.50	16.00	129.44	2.01	77.21	307.52	0.09	0.02
2.63	12	SLE Q	1	2	263.08	-2830.20	87.11	948.65	34.00	216.00	0.50	16.00	142.88	2.01	94.09	675.95	0.20	0.05
2.63	11	SLE F	1	2	263.08	-3488.75	128.12	1291.48	34.00	216.00	0.50	16.00	144.09	2.01	95.61	944.67	0.28	0.07

## Stato limite ultimo - Verifiche a taglio

X0 <m>	X1 <m>	Staff.	CC	TCC	b <sub>w</sub> <m>	V <sub>sdu</sub> <daN>	ctgθ	VR <sub>sd</sub> <daN>	VR <sub>cd</sub> <daN>	Sic.
0.00	0.45	ø6/12	9	SLU	0.21	2219.84	2.50	6975.72	9850.58	3.142
0.00	0.45	ø6/12	7(TG)	SLV	0.21	5031.91	2.50	6975.72	9336.73	1.386
0.45	2.18	ø6/18	9	SLU	0.21	2219.84	2.50	4650.48	9842.49	2.095
0.45	2.18	ø6/18	1(TG)	SLV	0.21	4358.67	2.50	4650.48	9339.15	1.067
2.18	2.63	ø6/12	9	SLU	0.21	2219.84	2.50	6975.72	9811.35	3.142
2.18	2.63	ø6/12	7(TG)	SLV	0.21	5031.91	2.50	6975.72	9336.73	1.386

## Dettagli costruttivi per la duttilità

- CC=1  $\alpha_e=0.5776$   $\omega_{\text{ad}}=0.09413$   $\mu\Phi_d=30.7263$   $v_d=0.02957$   $E_{sy,d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=43.1364$   
0.05437 >= 0.02866 [7.4.29]

- CC=1  $\alpha_e=0.5776$   $\omega_{\text{ad}}=0.09413$   $\mu\Phi_d=21.404$   $v_d=0.02957$   $E_{sy,d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=43.1364$   
0.05437 >= 0.00935 [7.4.29]

## Caratteristiche nodi trave-pilastro

Nodo	Conf.	Staff.	F	Mod.	Br.	As1 <cmq>	As2 <cmq>	Bj <m>	Hjc <m>	Hjw <m>	Ash <cmq>
502N		ø8/ 4	Z+	I	2	4.00	4.00	0.30	0.22	0.27	9.05
			Z-	I	2	4.00	4.00	0.30	0.22	0.27	9.05

## Verifiche nodi trave-pilastro

Nodo	F	CC	TCC	V <sub>c</sub> <daN>	V <sub>jbd</sub> <daN>	V <sub>ds</sub>	V <sub>di</sub>	V <sub>jbr</sub> <daN>	Af <sub>ni</sub> <daN/mq>	Rf <sub>ni</sub> <daN/mq>	V <sub>jwd</sub> <daN>	V <sub>jwR</sub> <daN>
502Z+	1	SLV	0.00	34408.30	0.00	2.36	57089.40	1959960.00	440353.00	34408.30	35404.40	
	Z-	1	SLV	0.00	34408.30	0.00	2.36	57089.40	1959960.00	440353.00	34408.30	35404.40

## Pilastrata n. 3

Nodi: 3 403

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	R <cm>	Cf <cm>	Cl <sub>s</sub>	F <sub>ck</sub> <daN/cmq>	F <sub>ctk</sub> <daN/cmq>	F <sub>cd</sub> <daN/cmq>	F <sub>ctd</sub> <daN/cmq>	Tp	F <sub>yk</sub> <daN/cmq>	F <sub>yd</sub> <daN/cmq>
2	Cir.	15.00	3.90	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	My ver. <daNm>	Mz <daNm>	Mz ver. <daNm>	Nu <daN>	MR <sub>dy</sub> <daNm>	MR <sub>dz</sub> <daNm>	α <grad>	ε <sub>r</sub>	Sic.
0.00	9	SLU	1	2	0.00	-9422.50	282.56	282.56	-1844.38	-1844.38	-9422.50	913.61	-6262.00	277.03	4.94	3.392
0.00	9	SLU	1	2	0.00	-9422.50	282.56	282.56	-1844.38	-1844.38	-9422.50	913.61	-6262.00	277.03	4.94	3.392
2.62	9	SLU	1	2	262.41	-8819.66	-467.70	-467.70	3878.13	3878.13	-8819.66	-731.53	6240.69	95.62	4.98	1.609

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	Mz <daNm>	My <daNm>	AfT <cmq>	AfC <cmq>	$\sigma_c$ <daN/cmq>	$\sigma_f$ <daN/cmq>
0.00	10	SLE R	1	2	0.00	-6568.87	-1251.32	191.86	8.04	8.04	56.25	714.07
0.00	12	SLE Q	1	2	0.00	-3292.33	-443.61	68.84	8.04	8.04	20.00	219.05
0.00	10	SLE R	1	2	0.00	-6568.87	-1251.32	191.86	8.04	8.04	56.25	714.07
0.00	12	SLE Q	1	2	0.00	-3292.33	-443.61	68.84	8.04	8.04	20.00	219.05
2.62	10	SLE R	1	2	262.41	-6105.14	2631.76	-317.53	10.05	6.03	117.49	1994.06
2.62	12	SLE Q	1	2	262.41	-2828.61	936.44	-113.74	10.05	6.03	41.91	665.91

## Stato limite d'esercizio - Verifiche a fessurazione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	Mz <daNm>	c <mm>	s <mm>	K <sub>2</sub>	$\Phi_{eq}$	$\Delta_{sm}$ <mm>	A <sub>s</sub> <cmq>	A <sub>c eff</sub> <cmq>	$\sigma_s$ <daN/cmq>	$\epsilon_{sm}$	W <sub>k</sub> <mm>
0.00	12	SLE Q	1	2	0.00	-3292.33	68.84	-443.61	34.00	82.66	0.50	16.00	126.01	2.01	72.90	196.94	0.06	0.01
0.00	11	SLE F	1	2	0.00	-3947.64	93.45	-605.15	34.00	82.66	0.50	16.00	129.95	2.01	77.85	299.41	0.09	0.02
0.00	12	SLE Q	1	2	0.00	-3292.33	68.84	-443.61	34.00	82.66	0.50	16.00	126.01	2.01	72.90	196.94	0.06	0.01
0.00	11	SLE F	1	2	0.00	-3947.64	93.45	-605.15	34.00	82.66	0.50	16.00	129.95	2.01	77.85	299.41	0.09	0.02
2.62	12	SLE Q	1	2	262.41	-2828.61	-113.74	936.44	34.00	199.56	0.50	16.00	143.37	2.01	94.71	665.91	0.19	0.05
2.62	11	SLE F	1	2	262.41	-3483.92	-154.50	1275.50	34.00	199.56	0.50	16.00	144.45	2.01	96.07	931.42	0.27	0.07

## Stato limite ultimo - Verifiche a taglio

X0 <m>	X1 <m>	Staff.	CC	TCC	b <sub>w</sub> <m>	V <sub>sdu</sub> <daN>	ctgθ	VR <sub>sd</sub> <daN>	VR <sub>cd</sub> <daN>	Sic.
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Relazione di calcolo

0.00	0.45	ø6/12	9		SLV	0.21	2199.39	2.50	6975.72	9848.30	3.172
0.00	0.45	ø6/12	7(TG)		SLV	0.21	5027.79	2.50	6975.72	9330.44	1.387
0.45	2.17	ø6/18	9		SLV	0.21	2199.39	2.50	4650.48	9840.21	2.114
0.45	2.17	ø6/18	5(TG)		SLV	0.21	4618.78	2.50	4650.48	9340.22	1.007
2.17	2.62	ø6/12	9		SLV	0.21	2199.39	2.50	6975.72	9809.20	3.172
2.17	2.62	ø6/12	7(TG)		SLV	0.21	5027.79	2.50	6975.72	9330.44	1.387

Dettagli costruttivi per la duttilità

- CC=1  $\alpha_e=0.5776$   $\omega_{\text{nd}}=0.09413$   $\mu\Phi_d=30.7263$   $v_d=0.029679$   $E_{sy,d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=42.9776$   
0.05437 >= 0.02889 [7.4.29]
- CC=1  $\alpha_e=0.5776$   $\omega_{\text{nd}}=0.09413$   $\mu\Phi_d=21.404$   $v_d=0.029679$   $E_{sy,d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=42.9776$   
0.05437 >= 0.00951 [7.4.29]

Caratteristiche nodi trave-pilastro

Nodo	Conf.	Staff.	F	Mod.	Br.	As1 <cmq>	As2 <cmq>	Bj <m>	Hjc <m>	Hjw <m>	Ash <cmq>
403N		ø8/ 4	Z+	I	2	4.00	4.00	0.30	0.22	0.27	9.05
			Z-	I	2	4.00	4.00	0.30	0.22	0.27	9.05

Verifiche nodi trave-pilastro

Nodo	F	CC	TCC	Vc <daN>	Vjbd <daN>	vd <sub>s</sub>	vd <sub>i</sub>	Vjbr <daN>	Afni <daN/mq>	Rfni <daN/mq>	Vjwd <daN>	Vjwr <daN>
403Z+	1	SLV		0.00	34408.50	0.00	2.34	57089.60	1959970.00	440353.00	34408.50	35404.40
		1	SLV	0.00	34408.50	0.00	2.34	57089.60	1959970.00	440353.00	34408.50	35404.40

Pilastrata n. 4

Nodi: 4 104

Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	B <cm>	H <cm>	Cf <cm>	Cls	Fck <daN/cmq>	Fctk <daN/cmq>	Fcd <daN/cmq>	Fctd <daN/cmq>	Tp	Fyk <daN/cmq>	Fyd <daN/cmq>
1R		30.00	30.00	4.10	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	My ver. <daNm>	Mz <daNm>	Mz ver. <daNm>	Nu <daN>	MRdy <daNm>	MRdz <daNm>	α <grad>	ε <sub>y</sub>	Sic.
0.001	SLV	1	1	1	0.00	-2357.85	1049.35	1049.35	-547.59	-547.59	-2357.85	5644.79	-3042.46	337.50	6.74	5.418
0.001	SLV	1	1	1	0.00	-2357.85	1049.35	1049.35	-547.59	-547.59	-2357.85	5644.79	-3042.46	337.50	6.74	5.418
2.499	SLU	1	1	1	249.01	-4961.67	-366.90	-366.90	1433.76	1433.76	-4961.67	-1488.42	6147.26	98.44	9.25	4.274

Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	Mz <daNm>	My <daNm>	AfT <cmq>	AfC <cmq>	σ <sub>c</sub> <daN/cmq>	σ <sub>t</sub> <daN/cmq>
0.0010	SLE	R	1	1	0.00	-4068.87	-447.77	218.44	6.28	6.28	17.88	199.35
0.0012	SLE	Q	1	1	0.00	-2579.81	-224.08	149.32	3.14	9.42	9.91	113.18
0.0010	SLE	R	1	1	0.00	-4068.87	-447.77	218.44	6.28	6.28	17.88	199.35
0.0012	SLE	Q	1	1	0.00	-2579.81	-224.08	149.32	3.14	9.42	9.91	113.18
2.4910	SLE	R	1	1	249.01	-3508.59	996.96	-271.34	6.28	6.28	34.95	552.41
2.4912	SLE	Q	1	1	249.01	-2019.53	485.11	-218.79	6.28	6.28	19.57	281.92

Stato limite d'esercizio - Verifiche a fessurazione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	Mz <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c eff</sub> <cmq>	σ <sub>s</sub> <daN/cmq>	ε <sub>sm</sub>	Wk <mm>
2.4912	SLE	Q	1	1	249.01	-2019.53	-218.79	485.11	34.00	212.00	0.50	20.00	116.35	3.14	75.95	281.92	0.08	0.02
2.4911	SLE	F	1	1	249.01	-2317.34	-229.30	587.48	34.00	212.00	0.50	20.00	120.67	3.14	82.73	335.55	0.10	0.02

Stato limite ultimo - Verifiche a taglio

X0 <m>	X1 <m>	Staff.	Br <sub>y</sub>	Br <sub>z</sub>	CC	TCC	b <sub>w,y</sub> <m>	V <sub>sdu,y</sub> <daN>	ctgθ <sub>y</sub>	V <sub>Rsd,y</sub> <daN>	V <sub>Rcd,y</sub> <daN>	b <sub>w,z</sub> <m>	V <sub>sdu,z</sub> <daN>	ctgθ <sub>z</sub>	V <sub>Rsd,z</sub> <daN>	V <sub>Rcd,z</sub> <daN>	Sic.
0.00	0.45	ø6/12	2	29		SLU	0.30	833.71	2.50	10621.30	20371.20	0.30	268.86	2.50	10621.30	20371.20	12.740
0.00	0.45	ø6/12	2	21(TG)	SLV	0.30	3043.44	2.50	10621.30	19914.60	0.30	4897.43	2.50	10621.30	19914.60	2.169	
0.00	0.45	ø6/12	2	27(TG)	SLV	0.30	5194.96	2.50	10621.30	19903.70	0.30	1166.96	2.50	10621.30	19903.70	2.045	
0.45	2.04	ø6/24	2	29	SLU	0.30	833.71	2.50	5310.66	20353.80	0.30	268.86	2.50	5310.66	20353.80	6.370	
0.45	2.04	ø6/24	2	21(TG)	SLV	0.30	3043.44	2.50	5310.66	19914.60	0.30	4897.43	2.50	5310.66	19914.60	1.084	
0.45	2.04	ø6/24	2	27(TG)	SLV	0.30	5194.96	2.50	5310.66	19903.70	0.30	1166.96	2.50	5310.66	19903.70	1.022	
2.04	2.49	ø6/14	2	29	SLU	0.30	833.71	2.50	9103.98	20292.20	0.30	268.86	2.50	9103.98	20292.20	10.920	
2.04	2.49	ø6/14	2	21(TG)	SLV	0.30	3043.44	2.50	9103.98	19914.60	0.30	4897.43	2.50	9103.98	19914.60	1.859	
2.04	2.49	ø6/14	2	27(TG)	SLV	0.30	5194.96	2.50	9103.98	19903.70	0.30	1166.96	2.50	9103.98	19903.70	1.752	

Dettagli costruttivi per la duttilità

- CC=1  $\alpha_e=0.26604$   $\omega_{\text{nd}}=0.09182$   $\mu\Phi_d=30.7075$   $v_d=0.018911$   $E_{sy,d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=44.8508$   
0.02443 >= 0.00569 [7.4.29]
- CC=1  $\alpha_e=0.26604$   $\omega_{\text{nd}}=0.09182$   $\mu\Phi_d=21.4311$   $v_d=0.018911$   $E_{sy,d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=44.8508$   
0.02443 >= -0.0066 [7.4.29]

Caratteristiche nodi trave-pilastro

Nodo	Conf.	Staff.	F	Mod.	Br.	As1 <cmq>	As2 <cmq>	Bj <m>	Hjc <m>	Hjw <m>	Ash <cmq>
104N		ø8/ 5	Y+	I	2	4.02	4.02	0.30	0.21	0.36	9.05
			Y-	I	2	4.02	4.02	0.30	0.21	0.36	9.05
			Z-	E	2	4.01	4.01	0.30	0.21	0.27	7.04

Verifiche nodi trave-pilastro

Nodo	F	CC	TCC	Vc <daN>	Vjbd <daN>	vd <sub>s</sub>	vd <sub>i</sub>	Vjbr <daN>	Afni <daN/mq>	Rfni <daN/mq>	Vjwd <daN>	Vjwr <daN>
104Y+	1	SLV		0.00	34603.50	0.00	1.21	56042.10	2063600.00	329650.00	34603.50	35404.40



## Relazione di calcolo

	Y-	1SLV	0.00	34603.50	0.00	1.21	56042.10	2063600.00	329650.00	34603.50	35404.40
	Z-	1SLV	0.00	17274.90	0.00	1.21	44833.60	414972.00	342497.00	17107.20	27536.70

### Pilastrata n. 5

Nodi: 5 105

Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	B <cm>	H <cm>	Cf <cm>	Cls	Fck <daN/cm²>	Fctk <daN/cm²>	Fcd <daN/cm²>	Fctd <daN/cm²>	Tp	Fyk <daN/cm²>	Fyd <daN/cm²>
1R		30.00	30.00	4.10	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

Stato limite ultimo - Verifiche a flessione/presoflessione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	My ver. <daNm>	Mz <daNm>	Mz ver. <daNm>	Nu <daN>	MRdy <daNm>	MRdz <daNm>	α <grad>	ε <sub>r</sub>	Sic.
0.00	1	SLV	1	1	0.00	-2411.19	-1048.21	-1048.21	-545.88	-545.88	-2411.19	-5650.30	-3041.92	202.50	6.73	5.430
0.00	1	SLV	1	1	0.00	-2411.19	-1048.21	-1048.21	-545.88	-545.88	-2411.19	-5650.30	-3041.92	202.50	6.73	5.430
2.49	9	SLU	1	1	249.01	-5095.76	391.09	391.09	1461.20	1461.20	-5095.76	1663.90	6143.75	80.16	8.78	4.208

Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	Mz <daNm>	My <daNm>	AfT <cmq>	AfC <cmq>	σ <sub>c</sub> <daN/cmq>	σ <sub>t</sub> <daN/cmq>
0.00	10	SLE R	1	1	0.00	-4161.96	-459.49	-220.93	6.28	6.28	18.27	203.65
0.00	12	SLE Q	1	1	0.00	-2625.67	-227.70	-154.84	3.14	9.42	10.15	115.83
0.00	10	SLE R	1	1	0.00	-4161.96	-459.49	-220.93	6.28	6.28	18.27	203.65
0.00	12	SLE Q	1	1	0.00	-2625.67	-227.70	-154.84	3.14	9.42	10.15	115.83
2.49	10	SLE R	1	1	249.01	-3601.68	1015.31	290.50	6.28	6.28	36.02	566.10
2.49	12	SLE Q	1	1	249.01	-2065.39	490.54	240.65	6.28	6.28	20.36	291.87

Stato limite d'esercizio - Verifiche a fessurazione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	Mz <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>S</sub> <cmq>	A <sub>c eff</sub> <cmq>	σ <sub>S</sub> <daN/cmq>	ε <sub>sm</sub>	Wk <mm>
2.49	12	SLE Q	1	1	249.01	-2065.39	240.65	490.54	34.00	212.00	0.50	20.00	114.62	3.14	73.23	291.87	0.09	0.02
2.49	11	SLE F	1	1	249.01	-2372.65	250.62	595.49	34.00	212.00	0.50	20.00	118.67	3.14	79.59	346.07	0.10	0.02

Stato limite ultimo - Verifiche a taglio

X0 <m>	X1 <m>	Staff.	Br <sub>y</sub>	Br <sub>z</sub>	CC	TCC	bw <sub>y</sub> <cm>	Vsdu <sub>y</sub> <daN>	ctgθ <sub>y</sub>	VRsd <sub>y</sub> <daN>	VRcd <sub>y</sub> <daN>	bw <sub>z</sub> <cm>	Vsdu <sub>z</sub> <daN>	ctgθ <sub>z</sub>	VRsd <sub>z</sub> <daN>	VRcd <sub>z</sub> <daN>	Sic.
0.00	0.45	ø6/12	2	29		SLU	0.30	851.74	2.50	10621.30	20389.00	0.30	279.55	2.50	10621.30	20389.00	12.470
0.00	0.45	ø6/12	2	21(TG)		SLV	0.30	3119.00	2.50	10621.30	19919.70	0.30	4869.47	2.50	10621.30	19919.70	2.181
0.00	0.45	ø6/12	2	27(TG)		SLV	0.30	5197.18	2.50	10621.30	19908.10	0.30	1092.59	2.50	10621.30	19908.10	2.044
0.45	2.04	ø6/24	2	29		SLU	0.30	851.74	2.50	5310.66	20371.50	0.30	279.55	2.50	5310.66	20371.50	6.235
0.45	2.04	ø6/24	2	21(TG)		SLV	0.30	3119.00	2.50	5310.66	19919.70	0.30	4869.47	2.50	5310.66	19919.70	1.091
0.45	2.04	ø6/24	2	27(TG)		SLV	0.30	5197.18	2.50	5310.66	19908.10	0.30	1092.59	2.50	5310.66	19908.10	1.022
2.04	2.49	ø6/14	2	29		SLU	0.30	851.74	2.50	9103.98	20309.90	0.30	279.55	2.50	9103.98	20309.90	10.689
2.04	2.49	ø6/14	2	21(TG)		SLV	0.30	3119.00	2.50	9103.98	19919.70	0.30	4869.47	2.50	9103.98	19919.70	1.870
2.04	2.49	ø6/14	2	27(TG)		SLV	0.30	5197.18	2.50	9103.98	19908.10	0.30	1092.59	2.50	9103.98	19908.10	1.752

Dettagli costruttivi per la duttilità

- CC=1 α<sub>e</sub>=0.26604 ω<sub>nd</sub>=0.09182 μΦ<sub>d</sub>=30.7075 v<sub>d</sub>=0.01917 E<sub>gy, d</sub>=0.0018995 b<sub>c</sub>/b<sub>0</sub>=1.22951 μΦ<sub>c</sub>=44.2447  
0.02443 >= 0.00624 [7.4.29]  
- CC=1 α<sub>e</sub>=0.26604 ω<sub>nd</sub>=0.09182 μΦ<sub>d</sub>=21.4311 v<sub>d</sub>=0.01917 E<sub>gy, d</sub>=0.0018995 b<sub>c</sub>/b<sub>0</sub>=1.22951 μΦ<sub>c</sub>=44.2447  
0.02443 >= -0.00621 [7.4.29]

Caratteristiche nodi trave-pilastro

Nodo	Conf.	Staff.	F	Mod.	Br.	As1 <cmq>	As2 <cmq>	Bj <cm>	Hjc <cm>	Hjw <cm>	Ash <cmq>
105N		ø8/ 5	Y+	I	2	4.02	4.02	0.30	0.21	0.36	9.05
			Z+	E	2	4.01	4.01	0.30	0.21	0.27	7.04
			Y-	I	2	4.02	4.02	0.30	0.21	0.36	9.05

Verifiche nodi trave-pilastro

Nodo	F	CC	TCC	Vc <daN>	Vjbd <daN>	vd <sub>s</sub>	vd <sub>i</sub>	Vjbr <daN>	Afni <daN/mq>	Rfni <daN/mq>	Vjwd <daN>	Vjwr <daN>
105Y+	1	SLV	0.00	34603.50	0.00	1.25	56042.30	2063590.00	329649.00	34603.50	35404.40	
	Z+	1	SLV	0.00	17275.20	0.00	1.25	44833.90	414986.00	342497.00	17102.50	27536.70
	Y-	1	SLV	0.00	34603.50	0.00	1.25	56042.30	2063590.00	329649.00	34603.50	35404.40

### Pilastrata n. 6

Nodi: 6 606

Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	B <cm>	H <cm>	Cf <cm>	Cls	Fck <daN/cm²>	Fctk <daN/cm²>	Fcd <daN/cm²>	Fctd <daN/cm²>	Tp	Fyk <daN/cm²>	Fyd <daN/cm²>
1R		30.00	30.00	4.10	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

Stato limite ultimo - Verifiche a flessione/presoflessione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	My ver. <daNm>	Mz <daNm>	Mz ver. <daNm>	Nu <daN>	MRdy <daNm>	MRdz <daNm>	α <grad>	ε <sub>r</sub>	Sic.
0.00	1	SLV	1	1	0.00	-3366.71	-1237.19	-1237.19	505.75	505.75	-3366.71	-5845.88	2506.11	163.12	7.45	4.758
0.00	1	SLV	1	1	0.00	-3366.71	-1237.19	-1237.19	505.75	505.75	-3366.71	-5845.88	2506.11	163.12	7.45	4.758
3.03	5	SLV	1	1	303.19	-2692.50	-264.51	-264.51	-959.33	-959.33	-2692.50	-1518.03	-5904.71	261.56	9.65	6.123

Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	Mz <daNm>	My <daNm>	AfT <cmq>	AfC <cmq>	σ <sub>c</sub> <daN/cmq>	σ <sub>t</sub> <daN/cmq>
0.00	10	SLE R	1	1	0.00	-5981.46	355.72	-24.63	0.00	12.57	11.97	150.96



## Relazione di calcolo

0.00	12	SLE Q	1	1	0.00	-3354.82	165.22	-16.68	0.00	12.57	6.16	78.84
0.00	10	SLE R	1	1	0.00	-5981.46	355.72	-24.63	0.00	12.57	11.97	150.96
0.00	12	SLE Q	1	1	0.00	-3354.82	165.22	-16.68	0.00	12.57	6.16	78.84
3.03	10	SLE R	1	1	303.19	-5299.28	-493.48	-24.46	6.28	6.28	14.57	172.93
3.03	12	SLE Q	1	1	303.19	-2672.64	-234.54	-22.79	6.28	6.28	7.22	86.26

## Stato limite ultimo - Verifiche a taglio

X0 <m>	X1 <m>	Staff.	Br <sub>y</sub>	Br <sub>z</sub>	CC	TCC	b <sub>w,y</sub> <m>	Vsdu <sub>y</sub> <daN>	ctgθ <sub>y</sub>	VRsd <sub>y</sub> <daN>	VRcd <sub>y</sub> <daN>	b <sub>w,z</sub> <m>	Vsdu <sub>z</sub> <daN>	ctgθ <sub>z</sub>	VRsd <sub>z</sub> <daN>	VRcd <sub>z</sub> <daN>	Sic.
0.00	0.51	ø6/12	2	29		SLV	0.30	404.01	2.50	10621.30	20741.00	0.30	0.63	2.50	10621.30	20741.00	26.290
0.00	0.51	ø6/12	2	21(TG)	SLV	0.30	1460.00	2.50	10621.30	19970.10	0.30	4263.22	2.50	10621.30	19970.10	2.491	
0.00	0.51	ø6/12	2	27(TG)	SLV	0.30	4254.95	2.50	10621.30	19970.10	0.30	1408.59	2.50	10621.30	19970.10	2.496	
0.51	2.53	ø6/24	2	29		SLV	0.30	404.01	2.50	5310.66	20721.40	0.30	0.63	2.50	5310.66	20721.40	13.145
0.51	2.53	ø6/24	2	21(TG)	SLV	0.30	1460.00	2.50	5310.66	19970.10	0.30	4263.22	2.50	5310.66	19970.10	1.246	
0.51	2.53	ø6/24	2	27(TG)	SLV	0.30	4254.95	2.50	5310.66	19970.10	0.30	1408.59	2.50	5310.66	19970.10	1.248	
2.53	3.03	ø6/14	2	29		SLV	0.30	404.01	2.50	9103.98	20643.10	0.30	0.63	2.50	9103.98	20643.10	22.534
2.53	3.03	ø6/14	2	21(TG)	SLV	0.30	1460.00	2.50	9103.98	19970.10	0.30	4263.22	2.50	9103.98	19970.10	2.135	
2.53	3.03	ø6/14	2	27(TG)	SLV	0.30	4254.95	2.50	9103.98	19970.10	0.30	1408.59	2.50	9103.98	19970.10	2.140	

## Dettagli costruttivi per la duttilità

- CC=5 α<sub>e</sub>=0.26604 ω<sub>nk</sub>=0.09182 μΦ<sub>d</sub>=30.7075 v<sub>d</sub>=0.022778 E<sub>sy,d</sub>=0.0018995 b<sub>c</sub>/b<sub>0</sub>=1.22951 μΦ<sub>c</sub>=37.2366  
0.02443 >= 0.01401 [7.4.29]

- CC=5 α<sub>e</sub>=0.26604 ω<sub>nk</sub>=0.09182 μΦ<sub>d</sub>=21.4311 v<sub>d</sub>=0.022778 E<sub>sy,d</sub>=0.0018995 b<sub>c</sub>/b<sub>0</sub>=1.22951 μΦ<sub>c</sub>=37.2366  
0.02443 >= -0.0008 [7.4.29]

## Caratteristiche nodi trave-pilastro

Nodo	Conf.	Staff.	F	Mod.	Br.	As1 <cmq>	As2 <cmq>	Bj <m>	Hjc <m>	Hjw <m>	Ash <cmq>
606N		ø8/ 5	Y+	I	2	8.04	8.04	0.30	0.21	0.36	9.05
			Y-	I	2	8.04	8.04	0.30	0.21	0.36	9.05

## Verifiche nodi trave-pilastro

Nodo	F	CC	TCC	Vc <daN>	Vjbd <daN>	vd <sub>s</sub>	vd <sub>i</sub>	Vjbr <daN>	Afni <daN/mq>	Rfni <daN/mq>	Vjwd <daN>	VjwR <daN>
606	Y+	1	SLV	0.00	69199.50	0.00	1.80	56042.20	8649350.00	329650.00	69199.50	35404.40
	Y-	1	SLV	0.00	69199.50	0.00	1.80	56042.20	8649350.00	329650.00	69199.50	35404.40

## Pilastrata n. 7

Nodi: 7 -1 907

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	B <cm>	H <cm>	Cf <cm>	Cls	Fck <daN/cm²>	Fctk <daN/cm²>	Fcd <daN/cm²>	Fctd <daN/cm²>	Tp	Fyk <daN/cm²>	Fyd <daN/cm²>
1R		30.00	30.00	4.10	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04
1R		30.00	30.00	2.50	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	My ver. <daNm>	Mz <daNm>	Mz ver. <daNm>	Nu <daN>	MRdy <daNm>	MRdz <daNm>	α <grad>	ε <sub>r</sub>	Sic.
0.00	1	SLV	1	1	0.00	-2560.74	1542.16	1542.16	594.59	594.59	-2560.74	5808.36	2220.88	14.06	8.14	3.762
0.00	1	SLV	1	1	0.00	-2560.74	1542.16	1542.16	594.59	594.59	-2560.74	5808.36	2220.88	14.06	8.14	3.762
3.16	9(e)	SLU	1	1	316.00	-7662.33	0.02	153.25	-103.85	-153.25	-197328.00	4883.18	-4883.18	315.00	4.84	25.753
3.16	9(e)	SLU	2	1	0.00	-4214.99	-0.00	-84.30	-594.07	-594.07	-4214.99	-858.64	-6108.53	265.78	10.94	10.281
3.17	9(e)	SLU	2	1	1.38	-4210.96	0.00	84.22	-623.80	-623.80	-4210.96	858.68	-6108.11	274.22	10.94	9.799

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	AfT <cmq>	AfC <cmq>	σ <sub>c</sub> <daN/cm²>	σ <sub>t</sub> <daN/cm²>
0.00	10	SLE R	1	1	0.00	-5909.43	423.69	7.26	3.14	9.42	12.93
0.00	12	SLE Q	1	1	0.00	-2553.51	152.85	2.59	0.00	12.57	4.99
0.00	10	SLE R	1	1	0.00	-5909.43	423.69	7.26	3.14	9.42	12.93
0.00	12	SLE Q	1	1	0.00	-2553.51	152.85	2.59	0.00	12.57	4.99
3.16	10	SLE R	1	1	316.00	-5198.43	-70.46	0.01	0.00	12.57	5.97
3.16	12	SLE Q	1	1	316.00	-1842.51	-24.98	0.00	0.00	12.57	2.12
3.16	10	SLE R	2	1	0.00	-2859.81	-403.01	-0.00	6.28	6.28	11.07
3.16	12	SLE Q	2	1	0.00	-1014.68	-142.69	-0.00	6.28	6.28	3.92
3.17	10	SLE R	2	1	1.38	-2856.71	-423.19	0.00	6.28	6.28	11.60
3.17	12	SLE Q	2	1	1.38	-1011.57	-149.87	0.00	6.28	6.28	4.11

## Stato limite d'esercizio - Verifiche a fessurazione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	Mz <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c eff</sub> <cmq>	σ <sub>s</sub> <daN/cm²>	ε <sub>sm</sub>	Wk <mm>
3.16	12	SLE Q	2	1	0.00	-1014.68	-0.00	-142.69	34.00	212.00	0.50	20.00	111.70	6.28	137.30	33.73	0.01	0.00
3.16	11	SLE F	2	1	0.00	-1383.70	-0.00	-194.75	34.00	212.00	0.50	20.00	111.73	6.28	137.38	46.10	0.01	0.00
3.17	12	SLE Q	2	1	1.38	-1011.57	0.00	-149.87	34.00	212.00	0.50	20.00	113.24	6.28	142.13	38.31	0.01	0.00
3.17	11	SLE F	2	1	1.38	-1380.60	0.00	-204.53	34.00	212.00	0.50	20.00	113.24	6.28	142.13	52.28	0.02	0.00

## Stato limite ultimo - Verifiche a taglio

X0 <m>	X1 <m>	Staff.	Br <sub>y</sub>	Br <sub>z</sub>	CC	TCC	b <sub>w,y</sub> <m>	V <sub>sdu,y</sub> <daN>	ctgθ <sub>y</sub>	V <sub>Rsd,y</sub> <daN>	V <sub>Rcd,y</sub> <daN>	b <sub>w,z</sub> <m>	V <sub>sdu,z</sub> <daN>	ctgθ <sub>z</sub>	V <sub>Rsd,z</sub> <daN>	V <sub>Rcd,z</sub> <daN>	Sic.
0.00	0.53	ø6/12	2	29		SLV	0.30	230.26	2.50	10621.30	20754.80	0.30	3.38	2.50	10621.30	20754.80	46.127
0.00	0.53	ø6/12	2	23(TG)		SLV	0.30	2260.78	2.50	10621.30	19755.30	0.30	2321.65	2.50	10621.30	19755.30	4.575
0.00	0.53	ø6/12	2	25(TG)		SLV	0.30	3963.35	2.50	10621.30	19755.30	0.30	1318.96	2.50	10621.30	19755.30	2.680
0.53	2.64	ø6/24	2	29		SLV	0.30	230.26	2.50	5310.66	20734.30	0.30	3.38	2.50	5310.66	20734.30	23.064
0.53	2.64	ø6/24	2	23(TG)		SLV	0.30	2260.78	2.50	5310.66	19755.30	0.30	2321.65	2.50	5310.66	19755.30	2.287
0.53	2.64	ø6/24	2	25(TG)		SLV	0.30	3963.35	2.50	5310.66	19755.30	0.30	1318.96	2.50	5310.66	19755.30	1.340



## Relazione di calcolo

2.64	3.17	ø6/14	2	2	9	SLU	0.30	2154.14	2.50	9103.98	20652.30	0.30	3.38	2.50	9103.98	20652.30	4.226
2.64	3.17	ø6/14	2	2	3(TG)	SLV	0.30	2260.78	2.50	9103.98	19755.30	0.30	2321.65	2.50	9103.98	19755.30	3.921
2.64	3.17	ø6/14	2	2	5(TG)	SLV	0.30	3963.35	2.50	9103.98	19755.30	0.30	1318.96	2.50	9103.98	19755.30	2.297

## Dettagli costruttivi per la duttilità

- CC=5  $\alpha_e=0.26604$   $\omega_{\text{nid}}=0.09182$   $\mu\Phi_d=30.7263$   $v_d=0.017312$   $E_{a,y,d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=48.9944$   
0.02443 >= 0.00227 [7.4.29]  
- CC=5  $\alpha_e=0.26604$   $\omega_{\text{nid}}=0.09182$   $\mu\Phi_d=21.404$   $v_d=0.017312$   $E_{a,y,d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=48.9944$   
0.02443 >= -0.00904 [7.4.29]

## Pilastrata n. 8

Nodi: 8 1208

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez. Tipo	B <cm>	H <cm>	Cf <cm>	Cls	Fck <daN/cm²>	Fctk <daN/cm²>	Fcd <daN/cm²>	Fctd <daN/cm²>	Tp	Fyk <daN/cm²>	Fyd <daN/cm²>
1R	30.00	30.00	4.10	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <cm>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	My ver. <daNm>	Mz <daNm>	Mz ver. <daNm>	Nu <daN>	MRdy <daNm>	MRdz <daNm>	$\alpha$ <grad>	$\epsilon_r$	Sic.
0.00	1(e)	SLV	1	1	0.00	-2785.74	1858.25	1858.25	50.23	55.71	-2785.74	5928.25	114.49	0.70	13.12	3.189
0.00	1(e)	SLV	1	1	0.00	-2785.74	1858.25	1858.25	50.23	55.71	-2785.74	5928.25	114.49	0.70	13.12	3.189
3.34	9(e)	SLU	1	1	333.73	-8515.33	-0.00	-170.31	-176.59	-176.59	-197328.00	-4751.40	-5060.90	226.41	4.78	23.173

## Stato limite d'esercizio - Verifiche tensionali

Xg <cm>	CC	TCC	El	Sez.	X <cm>	N <daN>	Mz <daNm>	My <daNm>	AfT <cmq>	AfC <cmq>	$\sigma_c$ <daN/cm²>	$\sigma_t$ <daN/cm²>
0.00	10	SLE R	1	1	0.00	-6524.75	437.50	0.11	0.00	12.57	13.52	169.31
0.00	12	SLE Q	1	1	0.00	-2777.38	156.62	0.10	0.00	12.57	5.20	66.38
0.00	10	SLE R	1	1	0.00	-6524.75	437.50	0.11	0.00	12.57	13.52	169.31
0.00	12	SLE Q	1	1	0.00	-2777.38	156.62	0.10	0.00	12.57	5.20	66.38
3.34	10	SLE R	1	1	333.73	-5773.86	-120.16	-0.00	0.00	12.57	7.34	101.11
3.34	12	SLE Q	1	1	333.73	-2026.49	-44.50	-0.00	0.00	12.57	2.61	35.91

## Stato limite ultimo - Verifiche a taglio

X0 <cm>	X1 <cm>	Staff.	Br <sub>y</sub>	Br <sub>z</sub>	CC	TCC	bw <sub>y</sub> <cm>	Vsdu <sub>y</sub> <daN>	ctg $\theta_{y,z}$	VRsd <sub>y</sub> <daN>	VRcd <sub>y</sub> <daN>	bw <sub>z</sub> <cm>	Vsdu <sub>z</sub> <daN>	ctg $\theta_{y,z}$	VRsd <sub>z</sub> <daN>	VRcd <sub>z</sub> <daN>	Sic.
0.00	0.56	ø6/12	2	2	9	SLU	0.30	246.01	2.50	10621.30	20874.60	0.30	0.04	2.50	10621.30	20874.60	43.174
0.00	0.56	ø6/12	2	2	1(TG)	SLV	0.30	1900.26	2.50	10621.30	19885.00	0.30	3472.54	2.50	10621.30	19885.00	3.059
0.00	0.56	ø6/12	2	2	5(TG)	SLV	0.30	3078.21	2.50	10621.30	19885.00	0.30	3180.51	2.50	10621.30	19885.00	3.340
0.56	2.78	ø6/24	2	2	9	SLU	0.30	246.01	2.50	5310.66	20853.00	0.30	0.04	2.50	5310.66	20853.00	21.587
0.56	2.78	ø6/24	2	2	1(TG)	SLV	0.30	1900.26	2.50	5310.66	19885.00	0.30	3472.54	2.50	5310.66	19885.00	1.529
0.56	2.78	ø6/24	2	2	5(TG)	SLV	0.30	3078.21	2.50	5310.66	19885.00	0.30	3180.51	2.50	5310.66	19885.00	1.670
2.78	3.34	ø6/14	2	2	9	SLU	0.30	246.01	2.50	9103.98	20766.90	0.30	0.04	2.50	9103.98	20766.90	37.007
2.78	3.34	ø6/14	2	2	1(TG)	SLV	0.30	1900.26	2.50	9103.98	19885.00	0.30	3472.54	2.50	9103.98	19885.00	2.622
2.78	3.34	ø6/14	2	2	5(TG)	SLV	0.30	3078.21	2.50	9103.98	19885.00	0.30	3180.51	2.50	9103.98	19885.00	2.862

## Dettagli costruttivi per la duttilità

- CC=5  $\alpha_e=0.26604$   $\omega_{\text{nid}}=0.09182$   $\mu\Phi_d=30.7263$   $v_d=0.018932$   $E_{a,y,d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=44.8002$   
0.02443 >= 0.00576 [7.4.29]  
- CC=5  $\alpha_e=0.26604$   $\omega_{\text{nid}}=0.09182$   $\mu\Phi_d=21.404$   $v_d=0.018932$   $E_{a,y,d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=44.8002$   
0.02443 >= -0.00661 [7.4.29]

## Pilastrata n. 9

Nodi: 9 1009

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez. Tipo	B <cm>	H <cm>	Cf <cm>	Cls	Fck <daN/cm²>	Fctk <daN/cm²>	Fcd <daN/cm²>	Fctd <daN/cm²>	Tp	Fyk <daN/cm²>	Fyd <daN/cm²>
1R	30.00	30.00	4.10	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	My ver. <daNm>	Mz <daNm>	Mz ver. <daNm>	Nu <daN>	MRdy <daNm>	MRdz <daNm>	α <grad>	ε <sub>r</sub>	Sic.
0.00	1	SLV	1	1	0.00	-2567.11	-1553.45	-1553.45	665.18	665.18	-2567.11	-5763.76	2516.61	163.12	7.56	3.722
0.00	1	SLV	1	1	0.00	-2567.11	-1553.45	-1553.45	665.18	665.18	-2567.11	-5763.76	2516.61	163.12	7.56	3.722
3.18	9(e)	SLU	1	1	318.01	-7673.59	-0.02	-153.47	-134.32	-153.47	-197328.00	-4883.48	-4883.48	225.00	4.84	25.715

## Stato limite d'esercizio - Verifiche tensionali

Xg <cm>	CC	TCC	El	Sez.	X <cm>	N <daN>	Mz <daNm>	My <daNm>	AfT <cmq>	AfC <cmq>	$\sigma_c$ <daN/cm²>	$\sigma_t$ <daN/cm²>
0.00	10	SLE R	1	1	0.00	-5921.25	428.06	-8.30	3.14	9.42	13.05	161.66
0.00	12	SLE Q	1	1	0.00	-2558.74	154.19	-2.86	0.00	12.57	5.02	63.52
0.00	10	SLE R	1	1	0.00	-5921.25	428.06	-8.30	3.14	9.42	13.05	161.66
0.00	12	SLE Q	1	1	0.00	-2558.74	154.19	-2.86	0.00	12.57	5.02	63.52
3.18	10	SLE R	1	1	318.01	-5205.73	-91.14	-0.01	0.00	12.57	6.32	88.08
3.18	12	SLE Q	1	1	318.01	-1843.22	-32.34	-0.01	0.00	12.57	2.24	31.20

## Stato limite ultimo - Verifiche a taglio

X0 <cm>	X1 <cm>	Staff.	Br <sub>y</sub>	Br <sub>z</sub>	CC	TCC	bw <sub>y</sub> <cm>	Vsdu <sub>y</sub> <daN>	ctg $\theta_{y,z}$	VRsd <sub>y</sub> <daN>	VRcd <sub>y</sub> <daN>	bw <sub>z</sub> <cm>	Vsdu <sub>z</sub> <daN>	ctg $\theta_{y,z}$	VRsd <sub>z</sub> <daN>	VRcd <sub>z</sub> <daN>	Sic.
0.00	0.53	ø6/12	2	2	9	SLU	0.30	240.43	2.50	10621.30	20757.00	0.30	3.85	2.50	10621.30	20757.00	44.176
0.00	0.53	ø6/12	2	2	3(TG)	SLV	0.30	1838.84	2.50	10621.30	19860.70	0.30	3686.80	2.50	10621.30	19860.70	2.881
0.00	0.53	ø6/12	2	2	5(TG)	SLV	0.30	3757.45	2.50	10621.30	19860.70	0.30	2606.87	2.50	10621.30	19860.70	2.827
0.53	2.65	ø6/24	2	2	9	SLU	0.30	240.43	2.50	5310.66	20736.50	0.30	3.85	2.50	5310.66	20736.50	22.088
0.53	2.65	ø6/24	2	2	3(TG)	SLV	0.30	1838.84	2.50	5310.66	19860.70	0.30	3686.80	2.50	5310.66	19860.70	1.440
0.53	2.65	ø6/24	2	2	5(TG)	SLV	0.30	3757.45	2.50	5310.66	19860.70	0.30	2606.87	2.50	5310.66	19860.70	1.413



## Relazione di calcolo

2.65	3.18	ø6/14	2	2	9	SLU	0.30	240.43	2.50	9103.98	20654.40	0.30	3.85	2.50	9103.98	20654.40	37.865
2.65	3.18	ø6/14	2	2	3(TG)	SLV	0.30	1838.84	2.50	9103.98	19860.70	0.30	3686.80	2.50	9103.98	19860.70	2.469
2.65	3.18	ø6/14	2	2	5(TG)	SLV	0.30	3757.45	2.50	9103.98	19860.70	0.30	2606.87	2.50	9103.98	19860.70	2.423

## Dettagli costruttivi per la duttilità

- CC=5  $\alpha_e=0.26604$   $\omega_{\text{nid}}=0.09182$   $\mu\Phi_d=30.7263$   $v_d=0.017368$   $E_{a_y, d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=48.8368$   
 0.02443 >= 0.00239 [7.4.29]  
 - CC=5  $\alpha_e=0.26604$   $\omega_{\text{nid}}=0.09182$   $\mu\Phi_d=21.404$   $v_d=0.017368$   $E_{a_y, d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=48.8368$   
 0.02443 >= -0.00895 [7.4.29]

## Pilastrata n. 10

Nodi: 10 610

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez. Tipo	B <cm>	H <cm>	Cf <cm>	Cls	Fck <daN/cm²>	Fctk <daN/cm²>	Fcd <daN/cm²>	Fctd <daN/cm²>	TP	Fyk <daN/cm²>	Fyd <daN/cm²>
1R	30.00	30.00	4.10	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <cm>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	My ver. <daNm>	Mz <daNm>	Mz ver. <daNm>	Nu <daN>	MRdy <daNm>	MRdz <daNm>	$\alpha$ <grad>	$\epsilon_y$	Sic.
0.00	1	SLV	1	1	0.00	-3379.72	1587.16	1587.16	501.70	501.70	-3379.72	5944.89	1871.25	11.25	8.67	3.744
0.00	1	SLV	1	1	0.00	-3379.72	1587.16	1587.16	501.70	501.70	-3379.72	5944.89	1871.25	11.25	8.67	3.744
3.03	5	SLV	1	1	303.19	-2688.56	279.76	279.76	-985.75	-985.75	-2688.56	1695.58	-5892.77	279.84	9.17	5.984

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	Mz <daNm>	My <daNm>	AfT <cmq>	AfC <cmq>	$\sigma_c$ <daN/cmq>	$\sigma_f$ <daN/cmq>
0.00	10	SLE R	1	1	0.00	-6100.10	357.37	27.71	0.00	12.57	12.15	153.40
0.00	12	SLE Q	1	1	0.00	-3391.95	165.55	19.76	0.00	12.57	6.25	79.97
0.00	10	SLE R	1	1	0.00	-6100.10	357.37	27.71	0.00	12.57	12.15	153.40
0.00	12	SLE Q	1	1	0.00	-3391.95	165.55	19.76	0.00	12.57	6.25	79.97
3.03	10	SLE R	1	1	303.19	-5417.92	-498.35	27.31	6.28	6.28	14.80	175.90
3.03	12	SLE Q	1	1	303.19	-2709.77	-235.94	25.86	6.28	6.28	7.34	87.65

## Stato limite ultimo - Verifiche a taglio

X0 <cm>	X1 <cm>	Staff.	Br <sub>y</sub>	Br <sub>z</sub>	CC	TCC	bw <sub>y</sub> <cm>	Vsdu <sub>y</sub> <daN>	ctg $\theta_{y,z}$	VRsd <sub>y</sub> <daN>	VRcd <sub>y</sub> <daN>	bw <sub>z</sub> <cm>	Vsdu <sub>z</sub> <daN>	ctg $\theta_{y,z}$	VRsd <sub>z</sub> <daN>	VRcd <sub>z</sub> <daN>	Sic.
0.00	0.51	ø6/12	2	2	9	SLU	0.30	407.25	2.50	10621.30	20764.40	0.30	0.75	2.50	10621.30	20764.40	26.080
0.00	0.51	ø6/12	2	2	1(TG)	SLV	0.30	1078.67	2.50	10621.30	19978.20	0.30	4311.53	2.50	10621.30	19978.20	2.463
0.00	0.51	ø6/12	2	2	7(TG)	SLV	0.30	4324.46	2.50	10621.30	19978.20	0.30	883.90	2.50	10621.30	19978.20	2.456
0.51	2.53	ø6/24	2	2	9	SLU	0.30	407.25	2.50	5310.66	20744.80	0.30	0.75	2.50	5310.66	20744.80	13.040
0.51	2.53	ø6/24	2	2	1(TG)	SLV	0.30	1078.67	2.50	5310.66	19978.20	0.30	4311.53	2.50	5310.66	19978.20	1.232
0.51	2.53	ø6/24	2	2	7(TG)	SLV	0.30	4324.46	2.50	5310.66	19978.20	0.30	883.90	2.50	5310.66	19978.20	1.228
2.53	3.03	ø6/14	2	2	9	SLU	0.30	407.25	2.50	9103.98	20666.50	0.30	0.75	2.50	9103.98	20666.50	22.355
2.53	3.03	ø6/14	2	2	1(TG)	SLV	0.30	1078.67	2.50	9103.98	19978.20	0.30	4311.53	2.50	9103.98	19978.20	2.112
2.53	3.03	ø6/14	2	2	7(TG)	SLV	0.30	4324.46	2.50	9103.98	19978.20	0.30	883.90	2.50	9103.98	19978.20	2.105

## Dettagli costruttivi per la duttilità

- CC=5  $\alpha_e=0.26604$   $\omega_{\text{nid}}=0.09182$   $\mu\Phi_d=30.7075$   $v_d=0.023038$   $E_{a_y, d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=36.8167$   
 0.02443 >= 0.01457 [7.4.29]  
 - CC=5  $\alpha_e=0.26604$   $\omega_{\text{nid}}=0.09182$   $\mu\Phi_d=21.4311$   $v_d=0.023038$   $E_{a_y, d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=36.8167$   
 0.02443 >= -0.00041 [7.4.29]

## Caratteristiche nodi trave-pilastro

Nodo	Conf.	Staff.	F	Mod.	Br.	As1 <cmq>	As2 <cmq>	Bj <cm>	Hjc <cm>	Hjw <cm>	Ash <cmq>
610	N	ø8/ 5	Y+	I	2	4.02	4.02	0.30	0.21	0.36	9.05
			Y-	I	2	4.02	4.02	0.30	0.21	0.36	9.05

## Verifiche nodi trave-pilastro

Nodo	F	CC	TCC	Vc <daN>	Vjbd <daN>	Vds	vd <sub>i</sub>	Vjbr <daN>	Afni <daN/mq>	Rfni <daN/mq>	Vjwd <daN>	VjwR <daN>
610	Y+	1	SLV	0.00	34599.80	0.00	1.82	56042.40	2063100.00	329649.00	34599.80	35404.40
	Y-	1	SLV	0.00	34599.80	0.00	1.82	56042.40	2063100.00	329649.00	34599.80	35404.40

## Pilastrata n. 11

Nodi: 11 1111

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez. Tipo	B <cm>	H <cm>	Cf <cm>	Cls	Fck <daN/cm²>	Fctk <daN/cm²>	Fcd <daN/cm²>	Fctd <daN/cm²>	TP	Fyk <daN/cm²>	Fyd <daN/cm²>
1R	30.00	30.00	4.10	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <cm>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	My ver. <daNm>	Mz <daNm>	Mz ver. <daNm>	Nu <daN>	MRdy <daNm>	MRdz <daNm>	$\alpha$ <grad>	$\epsilon_y$	Sic.
0.00	5	SLV	1	1	0.00	-2205.03	317.88	317.88	828.06	828.06	-2205.03	2225.58	5774.80	75.94	8.18	6.975
0.00	5	SLV	1	1	0.00	-2205.03	317.88	317.88	828.06	828.06	-2205.03	2225.58	5774.80	75.94	8.18	6.975
2.85	9	SLU	1	1	285.37	-4336.71	-292.71	-292.71	-848.77	-848.77	-4336.71	-2037.04	-6023.84	257.34	8.17	7.083

## Stato limite d'esercizio - Verifiche tensionali

Xg <cm>	CC	TCC	El	Sez.	X <cm>	N <daN>	Mz <daNm>	My <daNm>	AfT <cmq>	AfC <cmq>	$\sigma_c$ <daN/cmq>	$\sigma_t$ <daN/cmq>
0.00	10	SLE R	1	1	0.00	-3709.16	449.87	138.99	6.28	6.28	15.94	176.88
0.00	12	SLE Q	1	1	0.00	-2409.81	211.16	107.03	3.14	9.42	8.49	98.05
0.00	10	SLE R	1	1	0.00	-3709.16	449.87	138.99	6.28	6.28	15.94	176.88



## Relazione di calcolo

0.00	12	SLE Q	1	1	0.00	-2409.81	211.16	107.03	3.14	9.42	8.49	98.05
2.85	10	SLE R	1	1	285.37	-3067.09	-589.30	-216.34	6.28	6.28	22.17	279.17
2.85	12	SLE Q	1	1	285.37	-1767.74	-281.97	-173.76	6.28	6.28	12.52	143.60

## Stato limite d'esercizio - Verifiche a fessurazione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	Mz <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c eff</sub> <cmq>	σ <sub>s</sub> <daN/cmq>	ε <sub>sm</sub>	Wk <mm>
2.85	12	SLE Q	1	1	285.37	-1767.74	-173.76	-281.97	34.00	212.00	0.50	20.00	104.07	3.14	56.66	143.60	0.04	0.01
2.85	11	SLE F	1	1	285.37	-2027.61	-182.27	-343.44	34.00	212.00	0.50	20.00	106.44	3.14	60.37	170.08	0.05	0.01

## Stato limite ultimo - Verifiche a taglio

X0 <m>	X1 <m>	Staff.	Br <sub>y</sub>	Br <sub>z</sub>	CC	TCC	bw <sub>,y</sub> <m>	Vsdu <sub>,y</sub> <daN>	ctgθ <sub>,y</sub>	VRsd <sub>,y</sub> <daN>	VRcd <sub>,y</sub> <daN>	bw <sub>,z</sub> <m>	Vsdu <sub>,z</sub> <daN>	ctgθ <sub>,z</sub>	VRsd <sub>,z</sub> <daN>	VRcd <sub>,z</sub> <daN>	Sic.
0.00	0.48	ø6/12	2	29	SLU	0.30	524.88	2.50	10621.30	20302.50	0.30	168.91	2.50	10621.30	20302.50	20.236	
0.00	0.48	ø6/12	2	23 (TG)	SLV	0.30	2142.69	2.50	10621.30	19862.70	0.30	4331.89	2.50	10621.30	19862.70	2.452	
0.00	0.48	ø6/12	2	27 (TG)	SLV	0.30	4507.54	2.50	10621.30	19862.70	0.30	1137.31	2.50	10621.30	19862.70	2.356	
0.48	2.38	ø6/24	2	29	SLU	0.30	524.88	2.50	5310.66	20284.10	0.30	168.91	2.50	5310.66	20284.10	10.118	
0.48	2.38	ø6/24	2	23 (TG)	SLV	0.30	2142.69	2.50	5310.66	19862.70	0.30	4331.89	2.50	5310.66	19862.70	1.226	
0.48	2.38	ø6/24	2	27 (TG)	SLV	0.30	4507.54	2.50	5310.66	19862.70	0.30	1137.31	2.50	5310.66	19862.70	1.178	
2.38	2.85	ø6/14	2	29	SLU	0.30	524.88	2.50	9103.98	20210.40	0.30	168.91	2.50	9103.98	20210.40	17.345	
2.38	2.85	ø6/14	2	23 (TG)	SLV	0.30	2142.69	2.50	9103.98	19862.70	0.30	4331.89	2.50	9103.98	19862.70	2.102	
2.38	2.85	ø6/14	2	27 (TG)	SLV	0.30	4507.54	2.50	9103.98	19862.70	0.30	1137.31	2.50	9103.98	19862.70	2.020	

## Dettagli costruttivi per la duttilità

- CC=5 α<sub>e</sub>=0.26604 ω<sub>nd</sub>=0.09182 μΦ<sub>d</sub>=30.7075 v<sub>d</sub>=0.017648 E<sub>sy,d</sub>=0.0018995 b<sub>c</sub>/b<sub>0</sub>=1.22951 μΦ<sub>c</sub>=48.0616  
0.02443 >= 0.00297 [7.4.29]

- CC=5 α<sub>e</sub>=0.26604 ω<sub>nd</sub>=0.09182 μΦ<sub>d</sub>=21.4311 v<sub>d</sub>=0.017648 E<sub>sy,d</sub>=0.0018995 b<sub>c</sub>/b<sub>0</sub>=1.22951 μΦ<sub>c</sub>=48.0616  
0.02443 >= -0.0085 [7.4.29]

## Caratteristiche nodi trave-pilastro

Nodo	Conf.	Staff.	F	Mod.	Br.	As1 <cmq>	As2 <cmq>	Bj <m>	Hjc <m>	Hjw <m>	Ash <cmq>
1111	N	ø8/ 5	Y+	I	2	4.02	4.02	0.30	0.21	0.36	9.05
			Y-	I	2	4.02	4.02	0.30	0.21	0.36	9.05
			Z-	E	2	4.00	4.00	0.30	0.21	0.27	7.04

## Verifiche nodi trave-pilastro

Nodo	F	CC	TCC	Vc <daN>	Vjbd <daN>	vd <sub>s</sub>	vd <sub>i</sub>	Vjbr <daN>	Afni <daN/mq>	Rfni <daN/mq>	Vjwd <daN>	VjwR <daN>
1111	Y+	1	SLV	0.00	34602.60	0.00	1.07	56042.10	2063480.00	329650.00	34602.60	35404.40
	Y-	1	SLV	0.00	34602.60	0.00	1.07	56042.10	2063480.00	329650.00	34602.60	35404.40
	Z-	1	SLV	0.00	17200.30	0.00	1.07	44833.70	410256.00	342497.00	17053.00	27536.70
		5	SLV	0.00	17200.30	0.00	1.05	44833.70	410256.00	342497.00	17055.10	27536.70

## Pilastrata n. 12

Nodi: 12 1112

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	B <cm>	H <cm>	Cf <cm>	Cls	Fck <daN/cmq>	Fctk <daN/cmq>	Fcd <daN/cmq>	Fctd <daN/cmq>	Tp	Fyk <daN/cmq>	Fyd <daN/cmq>
1R		30.00	30.00	4.10	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	My ver. <daNm>	Mz <daNm>	Mz ver. <daNm>	Nu <daN>	MRdy <daNm>	MRdz <daNm>	α <grad>	ε <sub>y</sub>	Sic.
0.00	5	SLV	1	1	0.00	-2238.28	-332.45	-332.45	847.29	847.29	-2238.28	-2224.88	5779.76	104.06	8.18	6.799
0.00	5	SLV	1	1	0.00	-2238.28	-332.45	-332.45	847.29	847.29	-2238.28	-2224.88	5779.76	104.06	8.18	6.799
2.85	9	SLU	1	1	285.37	-4448.83	316.27	316.27	-860.87	-860.87	-4448.83	2192.08	-6009.19	284.06	7.84	6.974

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	Mz <daNm>	My <daNm>	AfT <cmq>	AfC <cmq>	σ <sub>c</sub> <daN/cmq>	σ <sub>t</sub> <daN/cmq>
0.00	10	SLE R	1	1	0.00	-3786.99	453.75	-148.67	6.28	6.28	16.29	180.95
0.00	12	SLE Q	1	1	0.00	-2448.18	211.86	-115.20	3.14	9.42	8.71	100.52
0.00	10	SLE R	1	1	0.00	-3786.99	453.75	-148.67	6.28	6.28	16.29	180.95
0.00	12	SLE Q	1	1	0.00	-2448.18	211.86	-115.20	3.14	9.42	8.71	100.52
2.85	10	SLE R	1	1	285.37	-3144.92	-597.28	234.40	6.28	6.28	22.90	286.57
2.85	12	SLE Q	1	1	285.37	-1806.11	-283.80	191.50	6.28	6.28	13.07	150.46

## Stato limite d'esercizio - Verifiche a fessurazione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	Mz <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c eff</sub> <cmq>	σ <sub>s</sub> <daN/cmq>	ε <sub>sm</sub>	Wk <mm>
2.85	12	SLE Q	1	1	285.37	-1806.11	191.50	-283.80	34.00	212.00	0.50	20.00	103.46	3.14	55.71	150.46	0.04	0.01
2.85	11	SLE F	1	1	285.37	-2073.87	200.08	-346.49	34.00	212.00	0.50	20.00	105.47	3.14	58.86	176.86	0.05	0.01

## Stato limite ultimo - Verifiche a taglio

Stato limite ultimo - Verificare a taglio																	
X0 <m>	X1 <m>	Staff.	Br <sub>y</sub>	Br <sub>z</sub>	CC	TCC	bw <sub>,y</sub> <m>	Vsdu <sub>,y</sub> <daN>	ctgθ <sub>,y</sub>	VRsd <sub>,y</sub> <daN>	VRcd <sub>,y</sub> <daN>	bw <sub>,z</sub> <m>	Vsdu <sub>,z</sub> <daN>	ctgθ <sub>,z</sub>	VRsd <sub>,z</sub> <daN>	VRcd <sub>,z</sub> <daN>	Sic.
0.00	0.48	ø6/12	2	29	SLU	0.30	531.21	2.50	10621.30	20317.40	0.30	181.72	2.50	10621.30	20317.40	19.995	
0.00	0.48	ø6/12	2	23(TG)	SLV	0.30	2139.09	2.50	10621.30	19866.00	0.30	4313.75	2.50	10621.30	19866.00	2.462	
0.00	0.48	ø6/12	2	27(TG)	SLV	0.30	4500.38	2.50	10621.30	19879.80	0.30	1196.70	2.50	10621.30	19879.80	2.360	
0.48	2.38	ø6/24	2	29	SLU	0.30	531.21	2.50	5310.66	20299.00	0.30	181.72	2.50	5310.66	20299.00	9.997	
0.48	2.38	ø6/24	2	23(TG)	SLV	0.30	2139.09	2.50	5310.66	19866.00	0.30	4313.75	2.50	5310.66	19866.00	1.231	
0.48	2.38	ø6/24	2	27(TG)	SLV	0.30	4500.38	2.50	5310.66	19879.80	0.30	1196.70	2.50	5310.66	19879.80	1.180	
2.38	2.85	ø6/14	2	29	SLU	0.30	531.21	2.50	9103.98	20225.30	0.30	181.72	2.50	9103.98	20225.30	17.138	
2.38	2.85	ø6/14	2	23(TG)	SLV	0.30	2139.09	2.50	9103.98	19866.00	0.30	4313.75	2.50	9103.98	19866.00	2.110	



## Relazione di calcolo

2.38	2.85	ø6/14	2	2/7(TG)	SLV	0.30	4500.38	2.50	9103.98	19879.80	0.30	1196.70	2.50	9103.98	19879.80	2.023
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## Dettagli costruttivi per la duttilità

- CC=5  $\alpha_e=0.26604$   $\omega_{\text{rid}}=0.09182$   $\mu\Phi_d=30.7075$   $v_d=0.017941$   $E_{sy,d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=47.2752$   
 0.02443  $\geq 0.0036$  [7.4.29]  
 - CC=5  $\alpha_e=0.26604$   $\omega_{\text{rid}}=0.09182$   $\mu\Phi_d=21.4311$   $v_d=0.017941$   $E_{sy,d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=47.2752$   
 0.02443  $\geq -0.00806$  [7.4.29]

## Caratteristiche nodi trave-pilastro

Nodo	Conf.	Staff.	F	Mod.	Br.	As1 <cmq>	As2 <cmq>	Bj <m>	Hjc <m>	Hjw <m>	Ash <cmq>
1112N		ø8/ 5	Y+	I	2	4.02	4.02	0.30	0.21	0.36	9.05
			Z+	E	2	4.00	4.00	0.30	0.21	0.27	7.04
			Y-	I	2	4.02	4.02	0.30	0.21	0.36	9.05

## Verifiche nodi trave-pilastro

Nodo	F	CC	TCC	Vc <daN>	Vjbd <daN>	vd <sub>s</sub>	vd <sub>i</sub>	Vjbr <daN>	Afni <daN/mq>	Rfni <daN/mq>	Vjwd <daN>	Vjwr <daN>
1112	Y+	1	SLV	0.00	34602.60	0.00	1.10	56042.30	2063460.00	329649.00	34602.60	35404.40
	Z+	1	SLV	0.00	17200.40	0.00	1.10	44833.90	410254.00	342497.00	17048.70	27536.70
		5	SLV	0.00	17200.40	0.00	1.08	44833.90	410254.00	342497.00	17052.10	27536.70
	Y-	1	SLV	0.00	34602.60	0.00	1.10	56042.30	2063460.00	329649.00	34602.60	35404.40

## Pilastrata n. 13

Nodi: 13 1313

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	B <cm>	H <cm>	Cf <cm>	Cls	Fck <daN/cmq>	Fctk <daN/cmq>	Fcd <daN/cmq>	Fctd <daN/cmq>	Tp	Fyk <daN/cmq>	Fyd <daN/cmq>
1R		30.00	30.00	4.10	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	My ver. <daNm>	Mz <daNm>	Mz ver. <daNm>	Nu <daN>	MRdy <daNm>	MRdz <daNm>	$\alpha$ <grad>	$\epsilon_r$	Sic.
0.009(e)	SLU	1	1	1	0.00	-7908.98	-138.52	-158.18	2176.53	2176.53	-7908.98	-550.91	6488.92	92.81	10.75	2.984
0.009(e)	SLU	1	1	1	0.00	-7908.98	-138.52	-158.18	2176.53	2176.53	-7908.98	-550.91	6488.92	92.81	10.75	2.984
2.999	SLU	1	1	1	298.79	-7035.03	241.26	241.26	-2895.66	-2895.66	-7035.03	556.49	-6396.99	272.81	10.96	2.210

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	Mz <daNm>	My <daNm>	AfT <cmq>	AfC <cmq>	$\sigma_c$ <daN/cmq>	$\sigma_t$ <daN/cmq>
0.0010	SLE	R	1	1	0.00	-5544.79	1477.41	-97.27	6.28	6.28	42.53	682.50
0.0012	SLE	Q	1	1	0.00	-2944.48	527.80	-52.49	6.28	6.28	15.83	186.61
0.0010	SLE	R	1	1	0.00	-5544.79	1477.41	-97.27	6.28	6.28	42.53	682.50
0.0012	SLE	Q	1	1	0.00	-2944.48	527.80	-52.49	6.28	6.28	15.83	186.61
2.9910	SLE	R	1	1	298.79	-4872.52	-1965.00	169.49	6.28	6.28	57.23	1099.75
2.9912	SLE	Q	1	1	298.79	-2272.21	-699.01	91.83	6.28	6.28	21.47	363.68

## Stato limite d'esercizio - Verifiche a fessurazione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	Mz <daNm>	c <mm>	s <mm>	K <sub>2</sub>	$\Phi_{eq}$	$\Delta_{sm}$ <mm>	A <sub>s</sub> <cmq>	A <sub>c eff</sub> <cmq>	$\sigma_s$ <daN/cmq>	$\epsilon_{sm}$	Wk <mm>
0.0012	SLE	Q	1	1	0.00	-2944.48	-52.49	527.80	34.00	212.00	0.50	20.00	149.44	3.14	127.92	186.61	0.05	0.01
0.0011	SLE	F	1	1	0.00	-3464.54	-61.45	717.72	34.00	212.00	0.50	20.00	158.00	3.14	141.37	284.70	0.08	0.02
0.0012	SLE	Q	1	1	0.00	-2944.48	-52.49	527.80	34.00	212.00	0.50	20.00	149.44	3.14	127.92	186.61	0.05	0.01
0.0011	SLE	F	1	1	0.00	-3464.54	-61.45	717.72	34.00	212.00	0.50	20.00	158.00	3.14	141.37	284.70	0.08	0.02
2.9912	SLE	Q	1	1	298.79	-2272.21	91.83	-699.01	34.00	212.00	0.50	20.00	161.52	3.14	146.90	363.68	0.11	0.03
2.9911	SLE	F	1	1	298.79	-2792.27	107.36	-952.21	34.00	212.00	0.50	20.00	166.93	3.14	155.40	510.75	0.15	0.04

## Stato limite ultimo - Verifiche a taglio

X0 <m>	X1 <m>	Staff.	Br <sub>y</sub>	Br <sub>z</sub>	CC	TCC	bw <sub>y</sub> <cm>	Vsdu <sub>y</sub> <daN>	ctgθ <sub>y</sub>	VRsd <sub>y</sub> <daN>	VRcd <sub>y</sub> <daN>	bw <sub>z</sub> <cm>	Vsdu <sub>z</sub> <daN>	ctgθ <sub>z</sub>	VRsd <sub>z</sub> <daN>	VRcd <sub>z</sub> <daN>	Sic.
0.00	0.50	ø6/12	2	29		SLU	0.30	1697.60	2.50	10621.30	20665.00	0.30	127.11	2.50	10621.30	20665.00	6.257
0.00	0.50	ø6/12	2	21(TG)		SLV	0.30	2272.65	2.50	10621.30	19929.90	0.30	3403.76	2.50	10621.30	19929.90	3.120
0.00	0.50	ø6/12	2	25(TG)		SLV	0.30	4374.54	2.50	10621.30	19929.90	0.30	681.91	2.50	10621.30	19929.90	2.428
0.50	2.49	ø6/24	2	29		SLU	0.30	1697.60	2.50	5310.66	20645.70	0.30	127.11	2.50	5310.66	20645.70	3.128
0.50	2.49	ø6/24	2	21(TG)		SLV	0.30	2272.65	2.50	5310.66	19929.90	0.30	3403.76	2.50	5310.66	19929.90	1.560
0.50	2.49	ø6/24	2	25(TG)		SLV	0.30	4374.54	2.50	5310.66	19929.90	0.30	681.91	2.50	5310.66	19929.90	1.214
2.49	2.99	ø6/14	2	29		SLU	0.30	1697.60	2.50	9103.98	20568.60	0.30	127.11	2.50	9103.98	20568.60	5.363
2.49	2.99	ø6/14	2	21(TG)		SLV	0.30	2272.65	2.50	9103.98	19929.90	0.30	3403.76	2.50	9103.98	19929.90	2.675
2.49	2.99	ø6/14	2	21(TG)		SLV	0.30	2272.66	2.50	9103.98	19929.90	0.30	3403.76	2.50	9103.98	19929.90	2.675
2.49	2.99	ø6/14	2	25(TG)		SLV	0.30	4374.54	2.50	9103.98	19929.90	0.30	681.91	2.50	9103.98	19929.90	2.081

## Dettagli costruttivi per la duttilità

- CC=1  $\alpha_e=0.26604$   $\omega_{\text{rid}}=0.09182$   $\mu\Phi_d=30.6987$   $v_d=0.020448$   $E_{sy,d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=41.4795$   
 0.02443  $\geq 0.00898$  [7.4.29]  
 - CC=1  $\alpha_e=0.26604$   $\omega_{\text{rid}}=0.09182$   $\mu\Phi_d=21.4436$   $v_d=0.020448$   $E_{sy,d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=41.4795$   
 0.02443  $\geq -0.00428$  [7.4.29]

## Caratteristiche nodi trave-pilastro

Nodo	Conf.	Staff.	F	Mod.	Br.	As1 <cmq>	As2 <cmq>	Bj <m>	Hjc <m>	Hjw <m>	Ash <cmq>
1313N		ø8/ 4	Z+	I	2	4.02	4.02	0.30	0.21	0.27	9.05
			Z-	I	2	4.02	4.02	0.30	0.21	0.27	9.05

## Verifiche nodi trave-pilastro



## Relazione di calcolo

Nodo	F	CC	TCC	Vc <daN>	Vjbd <daN>	Vds	Vdi	Vjbr <daN>	Afni <daN/mq>	Rfni <daN/mq>	Vjwd <daN>	VjwR <daN>
1313	Z+	1	SLV	0.00	34602.10	0.00	1.48	56042.10	2063420.00	440353.00	34602.10	35404.40
	Z-	1	SLV	0.00	34602.10	0.00	1.48	56042.10	2063420.00	440353.00	34602.10	35404.40

## Pilastrata n. 14

Nodi: 14 1414

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	B <cm>	H <cm>	Cf <cm>	Cls	Fck <daN/cmq>	Fctk <daN/cmq>	Fcd <daN/cmq>	Fctd <daN/cmq>	Tp	Fyk <daN/cmq>	Fyd <daN/cmq>
1R		30.00	30.00	4.10	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	My ver. <daNm>	Mz <daNm>	Mz ver. <daNm>	Nu <daN>	MRdy <daNm>	MRdz <daNm>	$\alpha$ <grad>	$\epsilon_x$	Sic.
0.00	9(e)	SLU	1	1	0.00	-7916.43	156.40	-158.33	2176.83	2176.83	-7916.43	-550.88	6489.74	92.81	10.75	2.984
0.00	9(e)	SLU	1	1	0.00	-7916.43	156.40	-158.33	2176.83	2176.83	-7916.43	-550.88	6489.74	92.81	10.75	2.984
2.99	9	SLU	1	1	299.42	-7040.64	-271.26	-271.26	-2903.46	-2903.46	-7040.64	-556.50	-6397.59	267.19	10.96	2.202

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	Mz <daNm>	My <daNm>	AfT <cmq>	AfC <cmq>	$\sigma_c$ <daN/cmq>	$\sigma_f$ <daN/cmq>
0.00	10	SLE R	1	1	0.00	-5550.78	1477.51	111.08	6.28	6.28	42.95	686.88
0.00	12	SLE Q	1	1	0.00	-2951.71	527.28	66.61	6.28	6.28	16.21	190.41
0.00	10	SLE R	1	1	0.00	-5550.78	1477.51	111.08	6.28	6.28	42.95	686.88
0.00	12	SLE Q	1	1	0.00	-2951.71	527.28	66.61	6.28	6.28	16.21	190.41
2.99	10	SLE R	1	1	299.42	-4877.10	-1970.21	-192.22	6.28	6.28	58.10	1111.43
2.99	12	SLE Q	1	1	299.42	-2278.02	-700.42	-112.90	6.28	6.28	22.16	371.98

## Stato limite d'esercizio - Verifiche a fessurazione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	Mz <daNm>	C <mm>	S <mm>	K <sub>2</sub>	$\Phi_{eq}$	$\Delta_{sm}$ <mm>	A <sub>s</sub> <cmq>	A <sub>c off</sub> <cmq>	$\sigma_s$ <daN/cmq>	$\epsilon_{sm}$	Wk <mm>
0.00	12	SLE Q	1	1	0.00	-2951.71	66.61	527.28	34.00	212.00	0.50	20.00	144.32	3.14	119.89	190.41	0.06	0.01
0.00	11	SLE F	1	1	0.00	-3471.52	75.50	717.33	34.00	212.00	0.50	20.00	154.34	3.14	135.62	288.65	0.08	0.02
0.00	12	SLE Q	1	1	0.00	-2951.71	66.61	527.28	34.00	212.00	0.50	20.00	144.32	3.14	119.89	190.41	0.06	0.01
0.00	11	SLE F	1	1	0.00	-3471.52	75.50	717.33	34.00	212.00	0.50	20.00	154.34	3.14	135.62	288.65	0.08	0.02
2.99	12	SLE Q	1	1	299.42	-2278.02	-112.90	-700.42	34.00	212.00	0.50	20.00	156.34	3.14	138.76	371.98	0.11	0.03
2.99	11	SLE F	1	1	299.42	-2797.84	-128.76	-954.38	34.00	212.00	0.50	20.00	163.11	3.14	149.40	519.72	0.15	0.04

## Stato limite ultimo - Verifiche a taglio

X0 <m>	X1 <m>	Staff.	Br <sub>y</sub>	Br <sub>z</sub>	CC	TCC	bw <sub>,y</sub> <m>	Vsdu <sub>,y</sub> <daN>	ctg $\theta$ <sub>,y</sub>	VRsd <sub>,y</sub> <daN>	VRcd <sub>,y</sub> <daN>	bw <sub>,z</sub> <m>	Vsdu <sub>,z</sub> <daN>	ctg $\theta$ <sub>,z</sub>	VRsd <sub>,z</sub> <daN>	VRcd <sub>,z</sub> <daN>	Sic.
0.00	0.50	ø6/12		2	29	SLU	0.30	1696.74	2.50	10621.30	20666.00	0.30	142.83	2.50	10621.30	20666.00	6.260
0.00	0.50	ø6/12		2	21(TG)	SLV	0.30	2354.48	2.50	10621.30	19935.40	0.30	3475.24	2.50	10621.30	19935.40	3.056
0.00	0.50	ø6/12		2	25(TG)	SLV	0.30	4371.87	2.50	10621.30	19935.40	0.30	641.47	2.50	10621.30	19935.40	2.429
0.50	2.50	ø6/24		2	29	SLU	0.30	1696.74	2.50	5310.66	20646.70	0.30	142.83	2.50	5310.66	20646.70	3.130
0.50	2.50	ø6/24		2	21(TG)	SLV	0.30	2354.48	2.50	5310.66	19935.40	0.30	3475.24	2.50	5310.66	19935.40	1.528
0.50	2.50	ø6/24		2	25(TG)	SLV	0.30	4371.87	2.50	5310.66	19935.40	0.30	641.47	2.50	5310.66	19935.40	1.215
2.50	2.99	ø6/14		2	29	SLU	0.30	1696.74	2.50	9103.98	20569.40	0.30	142.83	2.50	9103.98	20569.40	5.366
2.50	2.99	ø6/14		2	21(TG)	SLV	0.30	2354.48	2.50	9103.98	19935.40	0.30	3475.24	2.50	9103.98	19935.40	2.620
2.50	2.99	ø6/14		2	25(TG)	SLV	0.30	4371.87	2.50	9103.98	19935.40	0.30	641.47	2.50	9103.98	19935.40	2.082

## Dettagli costruttivi per la duttilità

- CC=1  $\alpha_e=0.26604$   $\omega_{nd}=0.09182$   $\mu\Phi_d=30.6987$   $v_d=0.02074$   $E_{sy,d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=40.8959$   
 0.02443 >= 0.00961 [7.4.29]  
 - CC=1  $\alpha_e=0.26604$   $\omega_{nd}=0.09182$   $\mu\Phi_d=21.4437$   $v_d=0.02074$   $E_{sy,d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=40.8959$   
 0.02443 >= -0.00384 [7.4.29]

## Caratteristiche nodi trave-pilastro

Nodo	Conf.	Staff.	F	Mod.	Br.	As1 <cmq>	As2 <cmq>	Bj <m>	Hjc <m>	Hjw <m>	Ash <cmq>
1414	N	ø8/ 4	Z+	I	2	4.02	4.02	0.30	0.21	0.27	9.05
			Z-	I	2	4.02	4.02	0.30	0.21	0.27	9.05

## Verifiche nodi trave-pilastro

Nodo	F	CC	TCC	Vc <daN>	Vjbd <daN>	Vds	Vdi	Vjbr <daN>	Afni <daN/mq>	Rfni <daN/mq>	Vjwd <daN>	VjwR <daN>
1414	Z+	1	SLV	0.00	34602.10	0.00	1.46	56042.10	2063420.00	440353.00	34602.10	35404.40
	Z-	1	SLV	0.00	34602.10	0.00	1.46	56042.10	2063420.00	440353.00	34602.10	35404.40

## Pilastrata n. 15

Nodi: 15 1715

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	B <cm>	H <cm>	Cf <cm>	Cls	Fck <daN/cmq>	Fctk <daN/cmq>	Fcd <daN/cmq>	Fctd <daN/cmq>	Tp	Fyk <daN/cmq>	Fyd <daN/cmq>
3R		30.00	120.00	3.90	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	Sez.	X <cm>	N <daN>	My <daNm>	My ver. <daNm>	Mz <daNm>	Mz ver. <daNm>	Nu <daN>	MRdy <daNm>	MRdz <daNm>	$\alpha$ <grad>	$\epsilon_x$	Sic.
0.00	1	SLV	1	3	0.00	-4718.80	-2320.66	-2320.66	2118.57	2118.57	-4718.80	-18528.00	17126.70	92.46	10.13	8.030
0.00	1	SLV	1	3	0.00	-4718.80	-2320.66	-2320.66	2118.57	2118.57	-4718.80	-18528.00	17126.70	92.46	10.13	8.030
3.10	9	SLU	1	3	310.04	-6062.06	-669.90	-669.90	-2035.88	-2035.88	-6062.06	-5616.77	-17550.00	269.30	12.82	8.598



## Relazione di calcolo

## Stato limite d'esercizio - Verifiche tensionali

Xg	CC	TCC	El	Sez.	X	N	Mz	My	AfT	AfC	$\sigma_c$	$\sigma_f$
<m>					<cm>	<daN>	<daNm>	<daNm>	<cmq>	<cmq>	<daN/cmq>	<daN/cmq>
0.00	10	SLE R	1	3	0.00	-7018.82	829.97	-3221.55	18.10	18.10	13.11	175.37
0.00	12	SLE Q	1	3	0.00	-4922.58	308.85	-1175.57	12.06	24.13	4.44	57.35
0.00	10	SLE R	1	3	0.00	-7018.82	829.97	-3221.55	18.10	18.10	13.11	175.37
0.00	12	SLE Q	1	3	0.00	-4922.58	308.85	-1175.57	12.06	24.13	4.44	57.35
3.10	10	SLE R	1	3	310.04	-4228.50	-1384.65	-460.46	22.12	14.07	12.58	275.24
3.10	12	SLE Q	1	3	310.04	-2132.26	-509.46	-197.02	20.11	16.09	4.66	86.77

## Stato limite d'esercizio - Verifiche a fessurazione

Xg	CC	TCC	El	Sez.	X	N	My	Mz	C	S	K <sub>2</sub>	$\Phi_{eq}$	$\Delta_{sm}$	A <sub>s</sub>	A <sub>c eff</sub>	$\sigma_s$	$\epsilon_{sm}$	W <sub>k</sub>
<m>					<cm>	<daN>	<daNm>	<daNm>	<mm>	<mm>			<mm>	<cmq>	<cmq>	<daN/cmq>		<mm>
0.00	12	SLE Q	1	3	0.00	-4922.58	-1175.57	308.85	34.00	186.00	0.50	16.00	146.76	2.01	98.97	26.88	0.01	0.00
0.00	11	SLE F	1	3	0.00	-5341.83	-1584.76	413.07	34.00	186.00	0.50	16.00	179.90	2.01	140.61	51.53	0.02	0.00
0.00	12	SLE Q	1	3	0.00	-4922.58	-1175.57	308.85	34.00	186.00	0.50	16.00	146.76	2.01	98.97	26.88	0.01	0.00
0.00	11	SLE F	1	3	0.00	-5341.83	-1584.76	413.07	34.00	186.00	0.50	16.00	179.90	2.01	140.61	51.53	0.02	0.00
3.10	12	SLE Q	1	3	310.04	-2132.26	-197.02	-509.46	34.00	186.00	0.50	16.00	141.68	14.07	648.11	86.77	0.03	0.01
3.10	11	SLE F	1	3	310.04	-2551.51	-249.71	-684.50	34.00	186.00	0.50	16.00	144.51	14.07	672.99	124.35	0.04	0.01

## Stato limite ultimo - Verifiche a taglio

X0	X1	Staff.	Br <sub>y</sub>	Br <sub>z</sub>	CC	TCC	bw <sub>y</sub>	Vsdu <sub>y</sub>	ctgθ <sub>y</sub>	VRsd <sub>y</sub>	VRcd <sub>y</sub>	bw <sub>z</sub>	Vsdu <sub>z</sub>	ctgθ <sub>z</sub>	VRsd <sub>z</sub>	VRcd <sub>z</sub>	Sic.
<m>	<m>						<cm>	<daN>		<daN>	<daN>	<cm>	<daN>		<daN>	<daN>	
0.00	3.10	ø6/ 8	2	29		SLV	1.20	1049.96	2.50	15932.00	79754.10	0.30	1312.60	2.50	71942.80	90034.90	15.174
0.00	3.10	ø6/ 8	2	25(TG)		SLV	1.20	9918.38	2.50	15932.00	78763.40	0.30	32753.00	2.50	71942.80	88916.50	1.606
0.00	3.10	ø6/ 8	2	23(TG)		SLV	1.20	12300.90	2.50	15932.00	78780.40	0.30	4484.27	2.50	71942.80	88935.70	1.295

## Dettagli costruttivi per la duttilità

- CC=1  $\alpha_{s0}=0.15289$   $\omega_{ad}=0.09089$   $\mu\Phi_d=21.404$   $v_d=0.0086504$   $E_{sy,d}=0.0018995$   $b_c/b_0=1.04895$   $\mu\Phi_c=94.5629$   
 0.0139 >= -0.02393 [7.4.29]  
 - CC=1  $\alpha_{s0}=0.15289$   $\omega_{ad}=0.09089$   $\mu\Phi_d=30.7263$   $v_d=0.0086504$   $E_{sy,d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=80.676$   
 0.0139 >= -0.01638 [7.4.29]

## Caratteristiche nodi trave-pilastro

Nodo	Conf.	Staff.	F	Mod.	Br.	As1	As2	Bj	Hjc	Hjw	Ash
						<cmq>	<cmq>	<m>	<m>	<m>	<cmq>
1715N		ø8/ 7	Y+	I	4	8.02	4.02	0.35	0.22	0.27	10.05
			Y-	I	4	4.02	4.01	0.35	0.22	0.27	10.05

## Verifiche nodi trave-pilastro

Nodo	F	CC	TCC	Vc	Vjbd	vd <sub>s</sub>	vd <sub>i</sub>	Vjbr	Afni	Rfni	Vjwd	VjwR
				<daN>	<daN>			<daN>	<daN/mq>	<daN/mq>	<daN>	<daN>
1715	Y+	1	SLV	0.00	51842.80	0.00	0.33	66655.50	3351910.00	419061.00	51842.80	39338.20
	Y-	1	SLV	0.00	34571.90	0.00	0.33	66604.20	1419530.00	419385.00	34571.90	39338.20

## Pilastrata n. 16

Nodi: 16 1716

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	B	H	Cf	Cls	Fck	Fctk	Fcd	Fctd	Tp	Fyk	Fyd
		<cm>	<cm>	<cm>		<daN/cmq>	<daN/cmq>	<daN/cmq>	<daN/cmq>		<daN/cmq>	<daN/cmq>
3R		30.00	120.00	3.90	C28/35	290.50	19.84	164.62	13.23	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg	CC	TCC	El	Sez.	X	N	My	My ver.	Mz	Mz ver.	Nu	MRdy	MRdz	$\alpha$	$\epsilon_y$	Sic.
<m>					<cm>	<daN>	<daNm>	<daNm>	<daNm>	<daNm>	<daN>	<daNm>	<daNm>	<grad>		
0.00	1	SLV	1	3	0.00	-4711.60	-2424.84	-2424.84	-2126.51	-2126.51	-4711.60	-19595.80	-17035.60	267.36	9.90	8.051
0.00	1	SLV	1	3	0.00	-4711.60	-2424.84	-2424.84	-2126.51	-2126.51	-4711.60	-19595.80	-17035.60	267.36	9.90	8.051
3.10	9	SLU	1	3	310.04	-6046.40	-658.36	-658.36	2039.68	2039.68	-6046.40	-5617.08	17548.30	90.70	12.83	8.597

## Stato limite d'esercizio - Verifiche tensionali

Xg	CC	TCC	El	Sez.	X	N	Mz	My	AfT	AfC	$\sigma_c$	$\sigma_f$
<m>					<cm>	<daN>	<daNm>	<daNm>	<cmq>	<cmq>	<daN/cmq>	<daN/cmq>
0.00	10	SLE R	1	3	0.00	-7004.03	-830.06	-3260.39	18.10	18.10	13.20	177.78
0.00	12	SLE Q	1	3	0.00	-4894.57	-306.90	-1189.86	12.06	24.13	4.45	57.51
0.00	10	SLE R	1	3	0.00	-7004.03	-830.06	-3260.39	18.10	18.10	13.20	177.78
0.00	12	SLE Q	1	3	0.00	-4894.57	-306.90	-1189.86	12.06	24.13	4.45	57.51
3.10	10	SLE R	1	3	310.04	-4213.71	1388.59	-452.82	22.12	14.07	12.60	276.44
3.10	12	SLE Q	1	3	310.04	-2104.25	518.26	-195.31	20.11	16.09	4.73	89.80

## Stato limite d'esercizio - Verifiche a fessurazione

Xg	CC	TCC	El	Sez.	X	N	My	Mz	C	S	K <sub>2</sub>	$\Phi_{eq}$	$\Delta_{sm}$	A <sub>s</sub>	A <sub>c eff</sub>	$\sigma_s$	$\epsilon_{sm}$	W <sub>k</sub>
<m>					<cm>	<daN>	<daNm>	<daNm>	<mm>	<mm>			<mm>	<cmq>	<cmq>	<daN/cmq>		<mm>
0.00	12	SLE Q	1	3	0.00	-4894.57	-1189.86	-306.90	34.00	186.00	0.50	16.00	147.96	2.01	100.48	27.40	0.01	0.00
0.00	11	SLE F	1	3	0.00	-5316.47	-1603.96	-411.54	34.00	186.00	0.50	16.00	181.14	2.01	142.18	52.44	0.02	0.00
0.00	12	SLE Q	1	3	0.00	-4894.57	-1189.86	-306.90	34.00	186.00	0.50	16.00	147.96	2.01	100.48	27.40	0.01	0.00
0.00	11	SLE F	1	3	0.00	-5316.47	-1603.96	-411.54	34.00	186.00	0.50	16.00	181.14	2.01	142.18	52.44	0.02	0.00
3.10	12	SLE Q	1	3	310.04	-2104.25	-195.31	518.26	34.00	186.00	0.50	16.00	142.57	14.07	656.00	89.80	0.03	0.01
3.10	11	SLE F	1	3	310.04	-2526.14	-246.81	692.33	34.00	186.00	0.50	16.00	145.11	14.07	678.27	127.03	0.04	0.01

## Stato limite ultimo - Verifiche a taglio

X0	X1	Staff.	Br <sub>y</sub>	Br <sub>z</sub>	CC	TCC	bw <sub>y</sub>	Vsdu <sub>y</sub>	ctgθ <sub>y</sub>	VRsd <sub>y</sub>	VRcd <sub>y</sub>	bw <sub>z</sub>	Vsdu <sub>z</sub>	ctgθ <sub>z</sub>	VRsd <sub>z</sub>	VRcd <sub>z</sub>	Sic.
<m>	<m>						<cm>	<daN>		<daN>	<daN>	<cm>	<daN>		<daN>	<daN>	
0.00	3.10	ø6/ 8	2	29		SLU	1.20	1051.40	2.50	15932.00	79752.00	0.30	1334.74	2.50	71942.80	90032.50	15.153
0.00	3.10	ø6/ 8	2	25(TG)		SLV	1.20	9836.38	2.50	15932.00	78759.00	0.30	33710.40	2.50	71942.80	88911.50	1.620
0.00	3.10	ø6/ 8	2	23(TG)		SLV	1.20	12298.50	2.50	15932.00	78773.90	0.30	4254.84	2.50	71942.80	88928.40	1.295



## Relazione di calcolo

## Dettagli costruttivi per la duttilità

- CC=1  $\alpha_e=0.15289$   $\omega_{\text{rid}}=0.09089$   $\mu\Phi_d=21.404$   $v_d=0.008568$   $E_{\text{ay},d}=0.0018995$   $b_c/b_0=1.04895$   $\mu\Phi_c=95.4721$   
 0.0139 >= -0.02404 [7.4.29]

- CC=1  $\alpha_e=0.15289$   $\omega_{\text{rid}}=0.09089$   $\mu\Phi_d=30.7263$   $v_d=0.008568$   $E_{\text{ay},d}=0.0018995$   $b_c/b_0=1.22951$   $\mu\Phi_c=81.4517$   
 0.0139 >= -0.01656 [7.4.29]

## Caratteristiche nodi trave-pilastro

Nodo	Conf.	Staff.	F	Mod.	Br.	As1 <cmq>	As2 <cmq>	Bj <m>	Hjc <m>	Hjw <m>	Ash <cmq>
1716	N	ø8/ 7	Y+	I	4	4.02	4.01	0.35	0.22	0.27	10.05
			Y-	I	4	4.01	4.02	0.35	0.22	0.27	10.05

## Verifiche nodi trave-pilastro

Nodo	F	CC	TCC	Vc <daN>	Vjbd <daN>	vd <sub>s</sub>	vd <sub>i</sub>	Vjbr <daN/mq>	Afni <daN/mq>	Rfni <daN/mq>	Vjwd <daN>	VjwR <daN>
1716	Y+	1	SLV	0.00	34571.90	0.00	0.32	66604.20	1419530.00	419385.00	34571.90	39338.20
	Y-	1	SLV	0.00	34571.90	0.00	0.32	66655.50	1417140.00	419061.00	34571.90	39338.20

## Verifiche aste in acciaio

## Simbologia

$\Phi_y$		= Coefficiente $\Phi$ per inflessione intorno all'asse y(c)
$\Phi_z$		= Coefficiente $\Phi$ per inflessione intorno all'asse z(e)
$\chi_y$		= Coefficiente $\chi$ di riduzione per instabilità intorno all'asse y(c)
$\chi_z$		= Coefficiente $\chi$ di riduzione per instabilità intorno all'asse z(e)
$\delta$	<cm>	= Spostamento relativo asta
$\lambda_y$		= Snellezza adimensionale per inflessione intorno all'asse y(c)
$\lambda_z$		= Snellezza adimensionale per inflessione intorno all'asse z(e)
$\lambda_{vy}$		= Snellezza per inflessione intorno all'asse y(c)
$\lambda_{vz}$		= Snellezza per inflessione intorno all'asse z(e)
Aeff	<cmq>	= Area effettiva per trazione
Anet	<cmq>	= Area netta per compressione
Area	<cmq>	= Area
Atag,y	<cmq>	= Area resistente a taglio in dir. Y
Atag,z	<cmq>	= Area resistente a taglio in dir. Z
CC		= Numero della combinazione delle condizioni di carico elementari
Cod.		= Codice
Curva		= Curva di instabilità adottata
D	<cm>	= Distanza
Fyk	<daN/cm>	= Tensione caratteristica di snervamento dell'acciaio
Fyt	<daN/cm>	= Tensione caratteristica di rottura
Iy	<cm>	= Raggio giratorio d'inerzia rispetto all'asse Y
Iz	<cm>	= Raggio giratorio d'inerzia rispetto all'asse Z
J0	<cm6>	= Costante di ingobbamento
Jy	<cm4>	= Momento d'inerzia rispetto all'asse Y
Jz	<cm4>	= Momento d'inerzia rispetto all'asse Z
L	<m>	= Lunghezza dell'asta
M	<daNm>	= Momento agente
M,Ed	<daNm>	= Momento flettente di calcolo
M,V,c,Rd	<daNm>	= Resistenza di calcolo a flessione ridotta per taglio
MN,c,Rd	<daNm>	= Resistenza di calcolo a pressoflessione
Mx	<daNm>	= Momento torcente intorno all'asse X
Myeq,Ed	<daNm>	= Valore equivalente del momento flettente intorno all'asse Y
Mzeq,Ed	<daNm>	= Valore equivalente del momento flettente intorno all'asse Z
N	<daN>	= Sforzo normale
N,Ed	<daN>	= Forza assiale di calcolo
Nc,Rd	<daN>	= Resistenza a compressione
Ncr,y	<daN>	= Sforzo normale critico euleriano per inflessione intorno all'asse y(c)
Ncr,z	<daN>	= Sforzo normale critico euleriano per inflessione intorno all'asse z(e)
Sez.		= Numero della sezione
T	<daN>	= Taglio agente
Tipo		= Tipologia
		Cir. = Circolare
		Cir.c = Circolare cava
		R = Rettangolare
Tp		= Tipo di acciaio
V,Ed	<daN>	= Forza di taglio di calcolo
Vc,Rd,Red	<daN>	= Resistenza a taglio ridotta
Wy,plas	<cm>	= Modulo di resistenza plastico intorno all'asse Y
Wymin	<cm>	= Modulo di resistenza minimo rispetto all'asse Y
Wz,plas	<cm>	= Modulo di resistenza plastico intorno all'asse Z
Wzmin	<cm>	= Modulo di resistenza minimo rispetto all'asse Z
Xl	<m>	= Coordinata progressiva (dal nodo iniziale dell'asta) in cui viene effettuato il progetto/verifica

## Caratteristiche profilati utilizzati

Sez.	Cod.	Tipo	D <cm>	Area <cmq>	Anet <cmq>	Aeff <cmq>	Jy <cm4>	Jz <cm4>	Iy <cm>	Iz <cm>	Wymin <cm>	Wzmin <cm>	Tp	Fyk <daN/cm>	Fyt <daN/cm>
4	CHS193.7x8	Cir.c	--	46.67	46.67	46.67	2015.54	2015.54	6.57	6.57	208.11	208.11	S235H UNI EN 10210-1	2350.00	3600.00

## Caratteristiche profilati utilizzati

Sez.	Cod.	Wy,plas <cm>	Wz,plas <cm>	Atag,y <cmq>	Atag,z <cmq>	J0 <cm6>
4	CHS193.7x8	274.96	274.96	29.71	29.71	

Asta n. 17 (17 1917) - Sez. 4 (CHS193.7x8) - Crit. 1

- Verifica a taglio e torsione Dir. Z [4.2.25] - CC 9 SLU Xl=0.00 - Classe 1  
 Sollecitazioni: T=72.56 M<sub>x</sub>=-3.10  
 V,Ed=72.56 Vc,Rd,Red=38371.80 V,Ed/Vc,Rd,Red=0.00

- Verifica a presso o tenso-flessione retta YY (4.2.4.1.2.7) - CC 9 SLU Xl=3.55 - Classe 1  
 Sollecitazioni: N=-820.84 T=72.56 M=162.75 M<sub>x</sub>=-3.10  
 M,Ed=162.75 M,V,c,Rd=6153.83  
 N,Ed=-820.84 Nc,Rd=-104455.00 YY n=N,Ed/Nc,Rd=0.01 MN,c,Rd=6105.47 M,Ed/MN,c,Rd=0.03

- Verifica di stabilità aste presso-inflesse (C4.2.4.1.3.3.1) - CC 9 SLU - Classe 1



## Relazione di calcolo

Sollecitazioni: N,Ed=-990.11 Myeq,Ed=-162.75 Mzeq,Ed=10.91  
 L=3.55  
 $\lambda=54.08$  Ncr,y=330731.00  $\lambda^*_y=0.58$  Curva a:  $\Phi_y=0.71$   $\chi_y=0.90$   
 $\lambda=54.08$  Ncr,z=330731.00  $\lambda^*_z=0.58$  Curva a:  $\Phi_z=0.71$   $\chi_z=0.90$   
 $\chi_{\min}=0.90$   
 Verifica:  $0.01+0.03=0.04$

- Verifica Spostamento relativo massimo per singola asta - CC 10  
 $\delta=0.02$  (L/17666)

Asta n. 18 (18 1918) - Sez. 4 (CHS193.7x8) - Crit. 1

- Verifica a taglio e torsione Dir. Z [4.2.25] - CC 9 SLU Xl=0.00 - Classe 1  
 Sollecitazioni: T=72.65 M<sub>x</sub>=3.02  
 V,Ed=72.65 Vc,Rd,Red=38372.40 V,Ed/Vc,Rd,Red=0.00

- Verifica a presso o tenso-flessione retta YY (4.2.4.1.2.7) - CC 9 SLU Xl=3.55 - Classe 1  
 Sollecitazioni: N=-820.93 T=72.65 M=162.87 M<sub>x</sub>=3.02  
 M,Ed=162.87 M,V,c,Rd=6153.83  
 N,Ed=-820.93 Nc,Rd=-104455.00 YY n=N,Ed/Nc,Rd=0.01 MN,c,Rd=6105.47 M,Ed/MN,c,Rd=0.03

- Verifica di stabilità aste presso-inflesse (C4.2.4.1.3.3.1) - CC 9 SLU - Classe 1  
 Sollecitazioni: N,Ed=-990.20 Myeq,Ed=-162.87 Mzeq,Ed=-10.61  
 L=3.55  
 $\lambda=54.08$  Ncr,y=330731.00  $\lambda^*_y=0.58$  Curva a:  $\Phi_y=0.71$   $\chi_y=0.90$   
 $\lambda=54.08$  Ncr,z=330731.00  $\lambda^*_z=0.58$  Curva a:  $\Phi_z=0.71$   $\chi_z=0.90$   
 $\chi_{\min}=0.90$   
 Verifica:  $0.01+0.03=0.04$

- Verifica Spostamento relativo massimo per singola asta - CC 10  
 $\delta=0.02$  (L/17714)

## Verifiche aste in legno

## Caratteristiche sezioni utilizzate

## Simbologia

Area = Area della sezione  
 Cir. = Circolare  
 Cod. = Codice della sezione  
 I<sub>y</sub>, I<sub>z</sub> = Raggi d'inerzia intorno agli assi Y, Z  
 J<sub>y</sub>, J<sub>z</sub> = Momenti d'inerzia intorno agli assi Y, Z  
 R = Rettangolare  
 Sez. = Numero della sezione  
 Tipo = Tipologia  
 f<sub>c,0,k</sub> = Resistenza caratteristica a compressione parallela alle fibre  
 f<sub>m,k</sub> = Resistenza caratteristica a flessione  
 f<sub>t,0,k</sub> = Resistenza caratteristica a trazione parallela alle fibre  
 f<sub>v,k</sub> = Resistenza caratteristica a taglio  
 W<sub>y</sub>, W<sub>z</sub> = Moduli di resistenza intorno agli assi Y, Z

## Verifiche di resistenza e stabilità

## Simbologia

$\lambda_{rel,m}$  = Snellezza per instabilità flessio-torsionale  
 $\lambda_{rel,y}$ ,  $\lambda_{rel,z}$  = Snellezze per instabilità a compressione intorno agli assi Y e Z  
 $\sigma_{RdY}$ ,  $\sigma_{RdZ}$  <daN/cm<sup>2</sup>> = Tensioni resistenti per momenti M<sub>y</sub> e M<sub>z</sub>  
 $\sigma_{c,0,d}$  <daN/cm<sup>2</sup>> = Tensione a compressione  
 $\sigma_{m,d}$  <daN/cm<sup>2</sup>> = Tensione a flessione  
 $\sigma_{t,0,d}$  <daN/cm<sup>2</sup>> = Tensione a trazione  
 $\tau_d$  <daN/cm<sup>2</sup>> = Tensione a taglio  
 $\tau_{tor,d}$  <daN/cm<sup>2</sup>> = Tensione a torsione  
 El = Elemento (asta) in cui viene effettuato il progetto/verifica (progressivo sul numero di aste)  
 K<sub>c,y</sub>, K<sub>c,z</sub> = Coefficienti di riduzione per stabilità  
 K<sub>cr</sub> = Coefficiente di influenza delle fessurazioni del legno  
 K<sub>crit</sub> = Coefficiente per instabilità flessio-torsionale  
 K<sub>hty</sub>, K<sub>htz</sub> = Coefficienti moltiplicativi per sezioni piccole (flessione)  
 K<sub>l</sub> = Coefficiente moltiplicativo per sezioni piccole (trazione)  
 K<sub>m</sub> = Coefficiente di forma  
 K<sub>mod</sub> = Coefficiente di durata dei carichi/umidità del legno  
 L<sub>torS</sub> <m> = Distanza fra ritegni torsionali (7.3.2.2.1)  
 M<sub>k</sub> <daNm> = Momento torcente  
 M<sub>y</sub>, M<sub>z</sub> <daNm> = Momenti flettenti intorno agli assi Y e Z  
 N <daN> = Sforzo normale  
 T<sub>y</sub>, T<sub>z</sub> <daN> = Tagli in direzione Y e Z  
 Xl <m> = Coordinata progressiva (dal nodo iniziale dell'asta) in cui viene effettuato il progetto/verifica  
 f<sub>c,0,d</sub> <daN/cm<sup>2</sup>> = Tensione resistente per compressione  
 f<sub>c,0,t</sub> <daN/cm<sup>2</sup>> = Tensione resistente per trazione  
 f<sub>v,d</sub> <daN/cm<sup>2</sup>> = Tensione resistente per taglio

## Verifiche di deformabilità

## Simbologia

f<sub>Z,G</sub> <cm> = Freccia in direzione Z globale  
 f<sub>Z,L</sub> <cm> = Freccia in direzione Z locale

## Elenco combinazioni di carico teoriche per calcolo freccia

CC	Comm.	TCC	1	2	3	±S
3	Amb. 2 (SLE R)	SLE R	1	1	1	----

## Caratteristiche sezioni utilizzate

Sez.	Cod.	Tipo	Area <cm <sup>2</sup> >	J <sub>y</sub> <cm <sup>4</sup> >	J <sub>z</sub> <cm <sup>4</sup> >	I <sub>y</sub> <cm>	I <sub>z</sub> <cm>	Wymin <cm <sup>3</sup> >	Wzmin <cm <sup>3</sup> >	f <sub>m,k</sub> <daN/cm <sup>2</sup> >	f <sub>c,0,k</sub> <daN/cm <sup>2</sup> >	f <sub>t,0,k</sub> <daN/cm <sup>2</sup> >	f <sub>v,k</sub> <daN/cm <sup>2</sup> >
6	Trave lamellare 20x44	R	880.00	141973.00	29333.30	12.70	5.77	6453.33	2933.33	320.00	290.00	225.00	38.00
8	Trave lamellare 12x20	R	240.00	8000.00	2880.00	5.77	3.46	800.00	480.00	320.00	290.00	225.00	38.00



## Relazione di calcolo

Asta n. 901 (403 201) Trave lamellare 20x44 Crit. 1

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- Verifica stabilità a tensoflessione (7.27) - CC 9 SLU  $X_l=0.15$   
 Sollecitazioni:  $N=22.80$   $T_x=1178.06$   $M_y=459.56$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $f_{c,0,t}=124.14$   
 $L=93.02$   $\lambda_{rel,y}=0.12$   $\lambda_{rel,z}=0.26$   $K_{c,y}=1.00$   $K_{c,z}=1.00$   
 Tensioni:  $\sigma_{t,0,d}=0.03$   $\sigma_{m,d}=7.12$   $Sfr.=0.04$
- Verifica stabilità a flessione (7.20) - CC 1 SND  $X_l=0.88$   
 Sollecitazioni:  $N=-38.50$   $T_x=18.10$   $M_y=0.00$   $T_y=58.51$   $M_z=3.04$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $Ltors=93.02$   $\lambda_{rel,m}=0.19$   $K_{crit}=1.00$   
 Tensioni:  $\sigma_{m,d}=-0.10$   $Sfr.=0.00$
- Verifica stabilità a flessione (7.26) - CC 1 SND  $X_l=0.15$   
 Sollecitazioni:  $N=-33.39$   $T_x=283.51$   $M_y=110.89$   $T_y=-58.51$   $M_z=45.65$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $Ltors=93.02$   $\lambda_{rel,m}=0.19$   $K_{crit}=1.00$   
 Tensioni:  $\sigma_{m,d}=-3.27$   $Sfr.=0.01$
- Verifica a trazione (4.4.2) - CC 5 SND  $X_l=0.15$   
 Sollecitazioni:  $N=74.43$   $T_x=281.42$   $M_y=109.26$   $T_y=-23.66$   $M_z=18.46$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $K_1=1.00$   $f_{c,0,t}=170.69$   
 Tensioni:  $\sigma_{t,0,d}=0.08$   $Sfr.=0.00$
- Verifica a tensoflessione (4.4.6a/b) - CC 9 SLU  $X_l=0.15$   
 Sollecitazioni:  $N=22.80$   $T_x=1178.06$   $M_y=459.56$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $K_h=1.00$   $f_{c,0,t}=124.14$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 Tensioni:  $\sigma_{t,0,d}=0.03$   $\sigma_{m,d}=7.12$   $Sfr.=0.04$
- Verifica a taglio (4.4.8) - CC 9 SLU  $X_l=0.15$   
 Sollecitazioni:  $N=22.80$   $T_x=1178.06$   $M_y=459.56$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $K_{crit}=0.66$   $K_1=1.00$   $f_{v,d}=20.97$   
 Tensioni:  $\tau_d=3.05$   $Sfr.=0.15$
- Verifica a pressoflessione (4.4.7a/b) - CC 1 SND  $X_l=0.15$   
 Sollecitazioni:  $N=-33.39$   $T_x=283.51$   $M_y=110.89$   $T_y=-58.51$   $M_z=45.65$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $f_{c,0,d}=220.00$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 Tensioni:  $\sigma_{c,0,d}=-0.04$   $\sigma_{m,d}=-3.27$   $Sfr.=0.01$
- Verifica a flessione (4.4.5a/b) - CC 9 SLU  $X_l=0.15$   
 Sollecitazioni:  $N=22.80$   $T_x=1178.06$   $M_y=459.56$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 Tensioni:  $\sigma_{m,d}=-7.12$   $Sfr.=0.04$
- Verifica a compressione (4.4.3) - CC 5 SND  $X_l=0.93$   
 Sollecitazioni:  $N=-68.96$   $T_x=1.33$   $M_y=0.00$   $T_y=23.66$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $f_{c,0,d}=220.00$   
 Tensioni:  $\sigma_{c,0,d}=-0.08$   $Sfr.=0.00$
- Verifica freccia istantanea per carichi totali CC 3 (teorica)  $f_{z,L}=0.19$  (L/403)
- Verifica freccia istantanea per carichi accidentali CC 3 (teorica)  $f_{z,L}=0.12$  (L/627)
- Verifica freccia a lungo termine per carichi totali CC 3 (teorica)  $f_{z,L}=0.23$  (L/332)

Asta n. 901 (907 403) Trave lamellare 20x44 Crit. 1

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- Verifica stabilità a flessione (7.20) - CC 9 SLU  $X_l=2.83$   
 Sollecitazioni:  $N=-2155.15$   $T_x=0.00$   $M_y=-5425.76$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $Ltors=666.30$   $\lambda_{rel,m}=0.52$   $K_{crit}=1.00$   
 Tensioni:  $\sigma_{m,d}=84.08$   $Sfr.=0.48$
- Verifica stabilità a flessione (7.26) - CC 5 SND  $X_l=6.51$   
 Sollecitazioni:  $N=-446.00$   $T_x=-1432.07$   $M_y=1777.43$   $T_y=-10.86$   $M_z=-69.10$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $Ltors=666.30$   $\lambda_{rel,m}=0.52$   $K_{crit}=1.00$   
 Tensioni:  $\sigma_{m,d}=-29.90$   $Sfr.=0.12$
- Verifica a taglio (4.4.8) - CC 9 SLU  $X_l=6.51$   
 Sollecitazioni:  $N=-2321.90$   $T_x=-5558.10$   $M_y=4806.63$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $K_{crit}=0.66$   $K_1=1.00$   $f_{v,d}=20.97$   
 Tensioni:  $\tau_d=14.40$   $Sfr.=0.69$
- Verifica a pressoflessione (4.4.7a/b) - CC 9 SLU  $X_l=2.83$   
 Sollecitazioni:  $N=-2155.15$   $T_x=0.00$   $M_y=-5425.76$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 Tensioni:  $\sigma_{c,0,d}=-2.45$   $\sigma_{m,d}=-84.08$   $Sfr.=0.48$
- Verifica a flessione (4.4.5a/b) - CC 9 SLU  $X_l=2.83$   
 Sollecitazioni:  $N=-2155.15$   $T_x=0.00$   $M_y=-5425.76$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 Tensioni:  $\sigma_{m,d}=84.08$   $Sfr.=0.48$
- Verifica a compressione (4.4.3) - CC 9 SLU  $X_l=6.51$   
 Sollecitazioni:  $N=-2321.90$   $T_x=-5558.10$   $M_y=4806.63$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   
 Tensioni:  $\sigma_{c,0,d}=-2.64$   $Sfr.=0.02$



## Relazione di calcolo

- Verifica freccia istantanea per carichi totali CC 3 (teorica)  $f_{z,L}=0.82$  (L/779)

- Verifica freccia istantanea per carichi accidentali CC 3 (teorica)  $f_{z,L}=0.53$  (L/1210)

- Verifica freccia a lungo termine per carichi totali CC 3 (teorica)  $f_{z,L}=0.99$  (L/642)

Asta n. 1501 (1313 -1) Trave lamellare 20x44 Crit. 1

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- Verifica stabilità a tensoflessione (7.27) - CC 5 SND Xl=0.16  
Sollecitazioni:  $N=148.77$   $T_z=1250.35$   $M_y=1629.25$   $T_y=-19.54$   $M_z=100.81$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $f_{c,0,t}=170.69$   
 $L=546.76$   $\lambda_{rel,y}=0.70$   $\lambda_{rel,z}=1.54$   $K_{c,y}=0.93$   $K_{c,z}=0.39$   
Tensioni:  $\sigma_{t,0,d}=0.17$   $\sigma_{m,d}=28.68$  Sfr.=0.11

- Verifica stabilità a flessione (7.20) - CC 7 SND Xl=4.97  
Sollecitazioni:  $N=-983.21$   $T_z=-747.16$   $M_y=-278.41$   $T_y=1.78$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $Ltors=546.76$   $\lambda_{rel,m}=0.47$   $K_{crit}=1.00$   
Tensioni:  $\sigma_{m,d}=4.31$  Sfr.=0.02

- Verifica stabilità a flessione (7.26) - CC 9 SLU Xl=0.16  
Sollecitazioni:  $N=-1774.36$   $T_z=4630.67$   $M_y=3802.23$   $T_y=-3.45$   $M_z=17.81$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $Ltors=546.76$   $\lambda_{rel,m}=0.47$   $K_{crit}=1.00$   
Tensioni:  $\sigma_{m,d}=-59.53$  Sfr.=0.34

- Verifica a trazione (4.4.2) - CC 5 SND Xl=0.16  
Sollecitazioni:  $N=148.77$   $T_z=971.84$   $M_y=192.39$   $T_y=-19.54$   $M_z=100.81$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $K_t=1.00$   $f_{c,0,t}=170.69$   
Tensioni:  $\sigma_{t,0,d}=0.17$  Sfr.=0.00

- Verifica a tensoflessione (4.4.6a/b) - CC 5 SND Xl=0.16  
Sollecitazioni:  $N=148.77$   $T_z=1250.35$   $M_y=1629.25$   $T_y=-19.54$   $M_z=100.81$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $K_t=1.00$   $f_{c,0,t}=170.69$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{t,0,d}=0.17$   $\sigma_{m,d}=28.68$  Sfr.=0.11

- Verifica a taglio (4.4.8) - CC 9 SLU Xl=0.16  
Sollecitazioni:  $N=-1774.36$   $T_z=4630.67$   $M_y=3802.23$   $T_y=-3.45$   $M_z=17.81$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $K_{cr}=0.66$   $K_t=1.00$   $f_{v,d}=20.97$   
Tensioni:  $\tau_d=12.00$  Sfr.=0.57

- Verifica a pressoflessione (4.4.7a/b) - CC 9 SLU Xl=0.16  
Sollecitazioni:  $N=-1774.36$   $T_z=4630.67$   $M_y=3802.23$   $T_y=-3.45$   $M_z=17.81$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{c,0,d}=-2.02$   $\sigma_{m,d}=-59.53$  Sfr.=0.34

- Verifica a flessione (4.4.5a/b) - CC 9 SLU Xl=0.16  
Sollecitazioni:  $N=-1774.36$   $T_z=4630.67$   $M_y=3802.23$   $T_y=-3.45$   $M_z=17.81$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{m,d}=-59.53$  Sfr.=0.34

- Verifica a compressione (4.4.3) - CC 9 SLU Xl=5.32  
Sollecitazioni:  $N=-2027.59$   $T_z=-3156.69$   $M_y=0.00$   $T_y=-3.45$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   
Tensioni:  $\sigma_{c,0,d}=-2.30$  Sfr.=0.01

- Verifica freccia istantanea per carichi totali CC 3 (teorica)  $f_{z,L}=0.30$  (L/1735)

- Verifica freccia istantanea per carichi accidentali CC 3 (teorica)  $f_{z,L}=0.19$  (L/2683)

- Verifica freccia a lungo termine per carichi totali CC 3 (teorica)  $f_{z,L}=0.36$  (L/1432)

Asta n. 1501 (1501 1313) Trave lamellare 20x44 Crit. 1

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- Verifica stabilità a tensoflessione (7.27) - CC 1 SND Xl=0.77  
Sollecitazioni:  $N=33.24$   $T_z=-280.39$   $M_y=108.46$   $T_y=64.12$   $M_z=49.48$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $f_{c,0,t}=170.69$   
 $L=93.02$   $\lambda_{rel,y}=0.12$   $\lambda_{rel,z}=0.26$   $K_{c,y}=1.00$   $K_{c,z}=1.00$   
Tensioni:  $\sigma_{t,0,d}=0.04$   $\sigma_{m,d}=3.37$  Sfr.=0.01

- Verifica stabilità a flessione (7.20) - CC 9 SLU Xl=0.77  
Sollecitazioni:  $N=-22.55$   $T_z=-1165.08$   $M_y=449.49$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $Ltors=93.02$   $\lambda_{rel,m}=0.19$   $K_{crit}=1.00$   
Tensioni:  $\sigma_{m,d}=-6.97$  Sfr.=0.04

- Verifica stabilità a flessione (7.26) - CC 1 SND Xl=0.77  
Sollecitazioni:  $N=-44.06$   $T_z=-280.39$   $M_y=108.46$   $T_y=64.12$   $M_z=49.48$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $Ltors=93.02$   $\lambda_{rel,m}=0.19$   $K_{crit}=1.00$   
Tensioni:  $\sigma_{m,d}=-3.37$  Sfr.=0.01

- Verifica a trazione (4.4.2) - CC 5 SND Xl=0.00  
Sollecitazioni:  $N=68.37$   $T_z=-1.32$   $M_y=0.00$   $T_y=24.74$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $K_t=1.00$   $f_{c,0,t}=170.69$   
Tensioni:  $\sigma_{t,0,d}=0.08$  Sfr.=0.00

- Verifica a tensoflessione (4.4.6a/b) - CC 1 SND Xl=0.77  
Sollecitazioni:  $N=33.24$   $T_z=-280.39$   $M_y=108.46$   $T_y=64.12$   $M_z=49.48$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $K_t=1.00$   $f_{c,0,t}=170.69$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$



## Relazione di calcolo

Tensioni:  $\sigma_{c,0,d}=0.04$   $\sigma_{m,d}=3.37$  Sfr.=0.01

- Verifica a taglio (4.4.8) - CC 9 SLU  $X_l=0.77$   
 Sollecitazioni:  $N=-22.55$   $T_z=-1165.08$   $M_y=449.49$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $K_{cr}=0.66$   $K_1=1.00$   $f_{v,d}=20.97$   
 Tensioni:  $\tau_d=3.02$  Sfr.=0.14

- Verifica a pressoflessione (4.4.7a/b) - CC 9 SLU  $X_l=0.77$   
 Sollecitazioni:  $N=-22.55$   $T_z=-1165.08$   $M_y=449.49$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 Tensioni:  $\sigma_{c,0,d}=-0.03$   $\sigma_{m,d}=-6.97$  Sfr.=0.04

- Verifica a flessione (4.4.5a/b) - CC 9 SLU  $X_l=0.77$   
 Sollecitazioni:  $N=-22.55$   $T_z=-1165.08$   $M_y=449.49$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 Tensioni:  $\sigma_{m,d}=-6.97$  Sfr.=0.04

- Verifica a compressione (4.4.3) - CC 5 SND  $X_l=0.77$   
 Sollecitazioni:  $N=-73.78$   $T_z=-278.32$   $M_y=106.86$   $T_y=24.74$   $M_z=19.09$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $f_{c,0,d}=220.00$   
 Tensioni:  $\sigma_{c,0,d}=-0.08$  Sfr.=0.00

- Verifica freccia istantanea per carichi totali CC 3 (teorica)  $f_{z,L}=0.05$  (L/1427)

- Verifica freccia istantanea per carichi accidentali CC 3 (teorica)  $f_{z,L}=0.03$  (L/2212)

- Verifica freccia a lungo termine per carichi totali CC 3 (teorica)  $f_{z,L}=0.07$  (L/1177)

Asta n. 1605 (502 301) Trave lamellare 20x44 Crit. 1  
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- Verifica stabilità a tensoflessione (7.27) - CC 9 SLU  $X_l=0.15$   
 Sollecitazioni:  $N=22.80$   $T_z=1178.06$   $M_y=459.56$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $f_{c,0,t}=124.14$   
 $L=93.02$   $\lambda_{rel,y}=0.12$   $\lambda_{rel,z}=0.26$   $K_{c,y}=1.00$   $K_{c,z}=1.00$   
 Tensioni:  $\sigma_{t,0,d}=0.03$   $\sigma_{m,d}=7.12$  Sfr.=0.04

- Verifica stabilità a flessione (7.20) - CC 1 SND  $X_l=0.88$   
 Sollecitazioni:  $N=-44.84$   $T_z=17.98$   $M_y=0.00$   $T_y=59.12$   $M_z=3.07$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $Ltors=93.02$   $\lambda_{rel,m}=0.19$   $K_{crit}=1.00$   
 Tensioni:  $\sigma_{m,d}=-0.10$  Sfr.=0.00

- Verifica stabilità a flessione (7.26) - CC 1 SND  $X_l=0.15$   
 Sollecitazioni:  $N=-39.73$   $T_z=283.63$   $M_y=110.99$   $T_y=-59.12$   $M_z=46.12$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $Ltors=93.02$   $\lambda_{rel,m}=0.19$   $K_{crit}=1.00$   
 Tensioni:  $\sigma_{m,d}=-3.29$  Sfr.=0.01

- Verifica a trazione (4.4.2) - CC 5 SND  $X_l=0.15$   
 Sollecitazioni:  $N=89.03$   $T_z=281.14$   $M_y=109.04$   $T_y=-24.88$   $M_z=19.41$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $K_1=1.00$   $f_{c,0,t}=170.69$   
 Tensioni:  $\sigma_{t,0,d}=0.10$  Sfr.=0.00

- Verifica a tensoflessione (4.4.6a/b) - CC 9 SLU  $X_l=0.15$   
 Sollecitazioni:  $N=22.80$   $T_z=1178.06$   $M_y=459.56$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $K_1=1.00$   $f_{c,0,t}=124.14$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 Tensioni:  $\sigma_{t,0,d}=0.03$   $\sigma_{m,d}=7.12$  Sfr.=0.04

- Verifica a taglio (4.4.8) - CC 9 SLU  $X_l=0.15$   
 Sollecitazioni:  $N=22.80$   $T_z=1178.06$   $M_y=459.56$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $K_{cr}=0.66$   $K_1=1.00$   $f_{v,d}=20.97$   
 Tensioni:  $\tau_d=3.05$  Sfr.=0.15

- Verifica a pressoflessione (4.4.7a/b) - CC 1 SND  $X_l=0.15$   
 Sollecitazioni:  $N=-39.73$   $T_z=283.63$   $M_y=110.99$   $T_y=-59.12$   $M_z=46.12$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $f_{c,0,d}=220.00$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 Tensioni:  $\sigma_{c,0,d}=-0.05$   $\sigma_{m,d}=-3.29$  Sfr.=0.01

- Verifica a flessione (4.4.5a/b) - CC 9 SLU  $X_l=0.15$   
 Sollecitazioni:  $N=22.80$   $T_z=1178.06$   $M_y=459.56$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 Tensioni:  $\sigma_{m,d}=-7.12$  Sfr.=0.04

- Verifica a compressione (4.4.3) - CC 5 SND  $X_l=0.93$   
 Sollecitazioni:  $N=-83.55$   $T_z=1.62$   $M_y=0.00$   $T_y=24.88$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $f_{c,0,d}=220.00$   
 Tensioni:  $\sigma_{c,0,d}=-0.09$  Sfr.=0.00

- Verifica freccia istantanea per carichi totali CC 3 (teorica)  $f_{z,L}=0.20$  (L/399)

- Verifica freccia istantanea per carichi accidentali CC 3 (teorica)  $f_{z,L}=0.13$  (L/620)

- Verifica freccia a lungo termine per carichi totali CC 3 (teorica)  $f_{z,L}=0.24$  (L/328)

Asta n. 1605 (1009 502) Trave lamellare 20x44 Crit. 1  
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- Verifica stabilità a flessione (7.20) - CC 9 SLU  $X_l=2.84$   
 Sollecitazioni:  $N=-2179.24$   $T_z=0.00$   $M_y=-5460.30$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $Ltors=668.30$   $\lambda_{rel,m}=0.52$   $K_{crit}=1.00$   
 Tensioni:  $\sigma_{m,d}=84.61$  Sfr.=0.48



## Relazione di calcolo

- Verifica stabilità a flessione (7.26) - CC 9 SLU  $X_l=6.53$   
Sollecitazioni:  $N=-2345.67$   $T_z=-5575.43$   $M_y=4835.96$   $T_y=0.00$   $M_z=1.75$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $L_{tors}=668.30$   $\lambda_{rel,m}=0.52$   $K_{crit}=1.00$   
Tensioni:  $\sigma_{m,d}=-75.00$   $Sfr.=0.42$
- Verifica a taglio (4.4.8) - CC 9 SLU  $X_l=6.53$   
Sollecitazioni:  $N=-2345.67$   $T_z=-5575.43$   $M_y=4835.96$   $T_y=0.00$   $M_z=1.75$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $K_{cr}=0.66$   $K_1=1.00$   $f_{v,d}=20.97$   
Tensioni:  $\tau_d=14.45$   $Sfr.=0.69$
- Verifica a pressoflessione (4.4.7a/b) - CC 9 SLU  $X_l=2.84$   
Sollecitazioni:  $N=-2179.24$   $T_z=0.00$   $M_y=-5460.30$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{c,0,d}=-2.48$   $\sigma_{m,d}=-84.61$   $Sfr.=0.48$
- Verifica a flessione (4.4.5a/b) - CC 9 SLU  $X_l=2.84$   
Sollecitazioni:  $N=-2179.24$   $T_z=0.00$   $M_y=-5460.30$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{m,d}=84.61$   $Sfr.=0.48$
- Verifica a compressione (4.4.3) - CC 9 SLU  $X_l=6.53$   
Sollecitazioni:  $N=-2345.67$   $T_z=-5575.43$   $M_y=4835.96$   $T_y=0.00$   $M_z=1.75$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   
Tensioni:  $\sigma_{c,0,d}=-2.67$   $Sfr.=0.02$
- Verifica freccia istantanea per carichi totali CC 3 (teorica)  $f_{z,L}=0.83$  (L/772)
- Verifica freccia istantanea per carichi accidentali CC 3 (teorica)  $f_{z,L}=0.53$  (L/1198)
- Verifica freccia a lungo termine per carichi totali CC 3 (teorica)  $f_{z,L}=1.00$  (L/636)
- Asta n. 1605 (1414 1009) Trave lamellare 20x44 Crit. 1  
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- Verifica stabilità a tensoflessione (7.27) - CC 5 SND  $X_l=0.16$   
Sollecitazioni:  $N=284.84$   $T_z=1282.01$   $M_y=1785.22$   $T_y=24.34$   $M_z=-125.88$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $f_{c,0,t}=170.69$   
 $L=547.95$   $\lambda_{rel,y}=0.70$   $\lambda_{rel,z}=1.54$   $K_{c,y}=0.93$   $K_{c,z}=0.39$   
Tensioni:  $\sigma_{t,0,d}=0.32$   $\sigma_{m,d}=31.95$   $Sfr.=0.13$
- Verifica stabilità a flessione (7.20) - CC 7 SND  $X_l=3.95$   
Sollecitazioni:  $N=-1114.24$   $T_z=-400.46$   $M_y=-896.68$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $L_{tors}=547.95$   $\lambda_{rel,m}=0.47$   $K_{crit}=1.00$   
Tensioni:  $\sigma_{m,d}=13.89$   $Sfr.=0.06$
- Verifica stabilità a flessione (7.26) - CC 9 SLU  $X_l=0.16$   
Sollecitazioni:  $N=-1799.81$   $T_z=4641.51$   $M_y=3819.23$   $T_y=4.12$   $M_z=-21.31$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $L_{tors}=547.95$   $\lambda_{rel,m}=0.47$   $K_{crit}=1.00$   
Tensioni:  $\sigma_{m,d}=-59.91$   $Sfr.=0.34$
- Verifica a trazione (4.4.2) - CC 5 SND  $X_l=0.16$   
Sollecitazioni:  $N=284.84$   $T_z=945.27$   $M_y=43.98$   $T_y=-22.31$   $M_z=115.37$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $K_h=1.00$   $f_{c,0,t}=170.69$   
Tensioni:  $\sigma_{t,0,d}=0.32$   $Sfr.=0.00$
- Verifica a tensoflessione (4.4.6a/b) - CC 5 SND  $X_l=0.16$   
Sollecitazioni:  $N=284.84$   $T_z=1282.01$   $M_y=1785.22$   $T_y=24.34$   $M_z=-125.88$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $K_h=1.00$   $f_{c,0,t}=170.69$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{t,0,d}=0.32$   $\sigma_{m,d}=31.95$   $Sfr.=0.13$
- Verifica a taglio (4.4.8) - CC 9 SLU  $X_l=0.16$   
Sollecitazioni:  $N=-1799.81$   $T_z=4641.51$   $M_y=3819.23$   $T_y=4.12$   $M_z=-21.31$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $K_{cr}=0.66$   $K_1=1.00$   $f_{v,d}=20.97$   
Tensioni:  $\tau_d=12.03$   $Sfr.=0.57$
- Verifica a pressoflessione (4.4.7a/b) - CC 9 SLU  $X_l=0.16$   
Sollecitazioni:  $N=-1799.81$   $T_z=4641.51$   $M_y=3819.23$   $T_y=4.12$   $M_z=-21.31$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{c,0,d}=-2.05$   $\sigma_{m,d}=-59.91$   $Sfr.=0.34$
- Verifica a flessione (4.4.5a/b) - CC 9 SLU  $X_l=0.16$   
Sollecitazioni:  $N=-1799.81$   $T_z=4641.51$   $M_y=3819.23$   $T_y=4.12$   $M_z=-21.31$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{m,d}=-59.91$   $Sfr.=0.34$
- Verifica a compressione (4.4.3) - CC 9 SLU  $X_l=5.33$   
Sollecitazioni:  $N=-2033.40$   $T_z=-3164.33$   $M_y=0.00$   $T_y=4.12$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   
Tensioni:  $\sigma_{c,0,d}=-2.31$   $Sfr.=0.01$
- Verifica freccia istantanea per carichi totali CC 3 (teorica)  $f_{z,L}=0.30$  (L/1723)
- Verifica freccia istantanea per carichi accidentali CC 3 (teorica)  $f_{z,L}=0.19$  (L/2665)
- Verifica freccia a lungo termine per carichi totali CC 3 (teorica)  $f_{z,L}=0.36$  (L/1421)
- Asta n. 1605 (1601 1414) Trave lamellare 20x44 Crit. 1  
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## Relazione di calcolo

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- Verifica stabilità a tensoflessione (7.27) - CC 1 SND  $X_l=0.77$   
 Sollecitazioni:  $N=39.85$   $T_z=-280.51$   $M_y=108.56$   $T_y=64.17$   $M_z=49.52$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $f_{c,0,t}=170.69$   
 $L=93.02$   $\lambda_{rel,y}=0.12$   $\lambda_{rel,z}=0.26$   $K_{c,y}=1.00$   $K_{c,z}=1.00$   
 Tensioni:  $\sigma_{t,0,d}=0.05$   $\sigma_{m,d}=3.37$   $Sfr.=0.01$

- Verifica stabilità a flessione (7.20) - CC 9 SLU  $X_l=0.77$   
 Sollecitazioni:  $N=-22.55$   $T_z=-1165.07$   $M_y=449.48$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $Ltors=93.02$   $\lambda_{rel,m}=0.19$   $K_{crit}=1.00$   
 Tensioni:  $\sigma_{m,d}=-6.97$   $Sfr.=0.04$

- Verifica stabilità a flessione (7.26) - CC 1 SND  $X_l=0.77$   
 Sollecitazioni:  $N=-50.67$   $T_z=-280.51$   $M_y=108.56$   $T_y=64.17$   $M_z=49.52$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $Ltors=93.02$   $\lambda_{rel,m}=0.19$   $K_{crit}=1.00$   
 Tensioni:  $\sigma_{m,d}=-3.37$   $Sfr.=0.01$

- Verifica a trazione (4.4.2) - CC 5 SND  $X_l=0.00$   
 Sollecitazioni:  $N=83.33$   $T_z=1.61$   $M_y=0.00$   $T_y=24.23$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $K_h=1.00$   $f_{c,0,t}=170.69$   
 Tensioni:  $\sigma_{t,0,d}=0.09$   $Sfr.=0.00$

- Verifica a tensoflessione (4.4.6a/b) - CC 1 SND  $X_l=0.77$   
 Sollecitazioni:  $N=39.85$   $T_z=-280.51$   $M_y=108.56$   $T_y=64.17$   $M_z=49.52$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $K_h=1.00$   $f_{c,0,t}=170.69$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 Tensioni:  $\sigma_{t,0,d}=0.05$   $\sigma_{m,d}=3.37$   $Sfr.=0.01$

- Verifica a taglio (4.4.8) - CC 9 SLU  $X_l=0.77$   
 Sollecitazioni:  $N=-22.55$   $T_z=-1165.07$   $M_y=449.48$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $K_{ct}=0.66$   $K_1=1.00$   $f_{v,d}=20.97$   
 Tensioni:  $\tau_d=3.02$   $Sfr.=0.14$

- Verifica a pressoflessione (4.4.7a/b) - CC 9 SLU  $X_l=0.77$   
 Sollecitazioni:  $N=-22.55$   $T_z=-1165.07$   $M_y=449.48$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 Tensioni:  $\sigma_{c,0,d}=-0.03$   $\sigma_{m,d}=-6.97$   $Sfr.=0.04$

- Verifica a flessione (4.4.5a/b) - CC 9 SLU  $X_l=0.77$   
 Sollecitazioni:  $N=-22.55$   $T_z=-1165.07$   $M_y=449.48$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 Tensioni:  $\sigma_{m,d}=-6.97$   $Sfr.=0.04$

- Verifica a compressione (4.4.3) - CC 5 SND  $X_l=0.77$   
 Sollecitazioni:  $N=-88.74$   $T_z=-278.02$   $M_y=106.64$   $T_y=24.23$   $M_z=18.69$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $f_{c,0,d}=220.00$   
 Tensioni:  $\sigma_{c,0,d}=-0.10$   $Sfr.=0.00$

- Verifica freccia istantanea per carichi totali CC 3 (teorica)  $f_{z,L}=0.05$  (L/1414)

- Verifica freccia istantanea per carichi accidentali CC 3 (teorica)  $f_{z,L}=0.04$  (L/2194)

- Verifica freccia a lungo termine per carichi totali CC 3 (teorica)  $f_{z,L}=0.07$  (L/1165)

Asta n. 2002 (1917 1715) Trave lamellare 12x20 Crit. 1  
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- Verifica stabilità a flessione (7.20) - CC 9 SLU  $X_l=0.87$   
 Sollecitazioni:  $N=-66.76$   $T_z=190.38$   $M_y=-87.42$   $T_y=4.30$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $Ltors=346.16$   $\lambda_{rel,m}=0.42$   $K_{crit}=1.00$   
 Tensioni:  $\sigma_{m,d}=10.93$   $Sfr.=0.06$

- Verifica stabilità a flessione (7.26) - CC 9 SLU  $X_l=0.10$   
 Sollecitazioni:  $N=-56.79$   $T_z=522.58$   $M_y=187.69$   $T_y=4.30$   $M_z=-2.71$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $Ltors=346.16$   $\lambda_{rel,m}=0.42$   $K_{crit}=1.00$   
 Tensioni:  $\sigma_{m,d}=-24.03$   $Sfr.=0.14$

- Verifica a torsione (4.4.9) - CC 1 SND  $X_l=0.10$   
 Sollecitazioni:  $N=-10.92$   $T_z=120.58$   $M_y=39.73$   $T_y=-37.48$   $M_z=38.74$   $M_x=-1.80$   
 Resistenze:  $K_{mod}=1.10$   
 Tensioni:  $\tau_{tor,d}=0.00$   $Sfr.=0.00$

- Verifica a taglio e torsione (4.4.10) - CC 5 SND  $X_l=0.10$   
 Sollecitazioni:  $N=-5.29$   $T_z=137.56$   $M_y=59.44$   $T_y=28.44$   $M_z=-26.90$   $M_x=-1.14$   
 Resistenze:  $K_{mod}=1.10$   $K_{ct}=0.66$   
 Tensioni:  $\tau_d=1.33$   $\tau_{tor,d}=0.00$   $Sfr.=0.00$

- Verifica a taglio (4.4.8) - CC 9 SLU  $X_l=0.10$   
 Sollecitazioni:  $N=-56.79$   $T_z=522.58$   $M_y=187.69$   $T_y=4.30$   $M_z=-2.71$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $K_{ct}=0.66$   $K_1=1.00$   $f_{v,d}=20.97$   
 Tensioni:  $\tau_d=4.96$   $Sfr.=0.24$

- Verifica a pressoflessione (4.4.7a/b) - CC 9 SLU  $X_l=0.10$   
 Sollecitazioni:  $N=-56.79$   $T_z=522.58$   $M_y=187.69$   $T_y=4.30$   $M_z=-2.71$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 Tensioni:  $\sigma_{c,0,d}=-0.24$   $\sigma_{m,d}=-24.03$   $Sfr.=0.14$

- Verifica a flessione (4.4.5a/b) - CC 9 SLU  $X_l=0.10$   
 Sollecitazioni:  $N=-56.79$   $T_z=522.58$   $M_y=187.69$   $T_y=4.30$   $M_z=-2.71$   $M_x=0.00$



## Relazione di calcolo

Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hY}=1.00$   $K_{hZ}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{m,d}=-24.03$  Sfr.=0.14

- Verifica a compressione (4.4.3) - CC 9 SLU  $X_l=2.41$   
Sollecitazioni:  $N=-86.69$   $T_z=-474.02$   $M_y=131.48$   $T_y=4.30$   $M_z=7.24$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   
Tensioni:  $\sigma_{c,0,d}=-0.36$  Sfr.=0.00

- Verifica freccia istantanea per carichi totali CC 3 (teorica)  $f_{z,L}=0.04$  (L/5284)

- Verifica freccia istantanea per carichi accidentali CC 3 (teorica)  $f_{z,G}=0.03$  (L/8146)

- Verifica freccia a lungo termine per carichi totali CC 3 (teorica)  $f_{z,L}=0.05$  (L/4364)

Asta n. 2002 (2001 1917) Trave lamellare 12x20 Crit. 1  
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- Verifica stabilità a tensoflessione (7.27) - CC 5 SND  $X_l=0.27$   
Sollecitazioni:  $N=1.05$   $T_z=-27.60$   $M_y=3.70$   $T_y=7.05$   $M_z=1.89$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $f_{c,0,t}=170.69$   
 $L=60.03$   $\lambda_{rel,y}=0.17$   $\lambda_{rel,z}=0.28$   $K_{c,y}=1.00$   $K_{c,z}=1.00$   
Tensioni:  $\sigma_{t,0,d}=0.00$   $\sigma_{m,d}=0.86$  Sfr.=0.00

- Verifica stabilità a flessione (7.20) - CC 9 SLU  $X_l=0.50$   
Sollecitazioni:  $N=-6.50$   $T_z=-216.72$   $M_y=54.56$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hY}=1.00$   $K_{hZ}=1.00$   $K_m=0.70$   
 $L_{tors}=60.03$   $\lambda_{rel,m}=0.18$   $K_{crit}=1.00$   
Tensioni:  $\sigma_{m,d}=-6.82$  Sfr.=0.04

- Verifica stabilità a flessione (7.26) - CC 1 SND  $X_l=0.50$   
Sollecitazioni:  $N=0.00$   $T_z=-51.83$   $M_y=13.04$   $T_y=10.33$   $M_z=5.20$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hY}=1.00$   $K_{hZ}=1.00$   $K_m=0.70$   
 $L_{tors}=60.03$   $\lambda_{rel,m}=0.18$   $K_{crit}=1.00$   
Tensioni:  $\sigma_{m,d}=-2.71$  Sfr.=0.01

- Verifica a trazione (4.4.2) - CC 5 SND  $X_l=0.00$   
Sollecitazioni:  $N=1.88$   $T_z=0.00$   $M_y=0.00$   $T_y=7.05$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $K_h=1.00$   $f_{c,0,t}=170.69$   
Tensioni:  $\sigma_{t,0,d}=0.01$  Sfr.=0.00

- Verifica a tensoflessione (4.4.6a/b) - CC 5 SND  $X_l=0.27$   
Sollecitazioni:  $N=1.05$   $T_z=-27.60$   $M_y=3.70$   $T_y=7.05$   $M_z=1.89$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $K_h=1.00$   $f_{c,0,t}=170.69$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hY}=1.00$   $K_{hZ}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{t,0,d}=0.00$   $\sigma_{m,d}=0.86$  Sfr.=0.00

- Verifica a taglio (4.4.8) - CC 9 SLU  $X_l=0.50$   
Sollecitazioni:  $N=-6.50$   $T_z=-216.72$   $M_y=54.56$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $K_{cr}=0.66$   $K_1=1.00$   $f_{v,d}=20.97$   
Tensioni:  $\tau_d=2.06$  Sfr.=0.10

- Verifica a pressoflessione (4.4.7a/b) - CC 9 SLU  $X_l=0.50$   
Sollecitazioni:  $N=-6.50$   $T_z=-216.72$   $M_y=54.56$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hY}=1.00$   $K_{hZ}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{c,0,d}=-0.03$   $\sigma_{m,d}=-6.82$  Sfr.=0.04

- Verifica a flessione (4.4.5a/b) - CC 9 SLU  $X_l=0.50$   
Sollecitazioni:  $N=-6.50$   $T_z=-216.72$   $M_y=54.56$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hY}=1.00$   $K_{hZ}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{m,d}=-6.82$  Sfr.=0.04

- Verifica a compressione (4.4.3) - CC 9 SLU  $X_l=0.50$   
Sollecitazioni:  $N=-6.50$   $T_z=-216.72$   $M_y=54.56$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   
Tensioni:  $\sigma_{c,0,d}=-0.03$  Sfr.=0.00

- Verifica freccia istantanea per carichi totali CC 3 (teorica)  $f_{z,L}=0.01$  (L/8216)

- Verifica freccia istantanea per carichi accidentali CC 3 (teorica)  $f_{z,L}=0.00$  (L/12721)

- Verifica freccia a lungo termine per carichi totali CC 3 (teorica)  $f_{z,G}=0.01$  (L/6768)

Asta n. 2004 (1918 1716) Trave lamellare 12x20 Crit. 1  
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- Verifica stabilità a flessione (7.20) - CC 9 SLU  $X_l=0.87$   
Sollecitazioni:  $N=-66.85$   $T_z=190.47$   $M_y=-87.38$   $T_y=-4.18$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hY}=1.00$   $K_{hZ}=1.00$   $K_m=0.70$   
 $L_{tors}=346.16$   $\lambda_{rel,m}=0.42$   $K_{crit}=1.00$   
Tensioni:  $\sigma_{m,d}=10.92$  Sfr.=0.06

- Verifica stabilità a flessione (7.26) - CC 9 SLU  $X_l=0.10$   
Sollecitazioni:  $N=-56.88$   $T_z=522.67$   $M_y=187.80$   $T_y=-4.18$   $M_z=2.63$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hY}=1.00$   $K_{hZ}=1.00$   $K_m=0.70$   
 $L_{tors}=346.16$   $\lambda_{rel,m}=0.42$   $K_{crit}=1.00$   
Tensioni:  $\sigma_{m,d}=-24.02$  Sfr.=0.14

- Verifica a torsione (4.4.9) - CC 1 SND  $X_l=0.10$   
Sollecitazioni:  $N=-10.86$   $T_z=120.11$   $M_y=39.19$   $T_y=-42.31$   $M_z=42.82$   $M_x=1.93$   
Resistenze:  $K_{mod}=1.10$   
Tensioni:  $\tau_{tor,d}=0.00$  Sfr.=0.00

- Verifica a taglio e torsione (4.4.10) - CC 5 SND  $X_l=0.10$   
Sollecitazioni:  $N=-5.23$   $T_z=138.38$   $M_y=60.38$   $T_y=-33.44$   $M_z=31.93$   $M_x=1.38$



## Relazione di calcolo

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Resistenze:  $K_{mod}=1.10$   $K_{cr}=0.66$   
Tensioni:  $\tau_d=1.35$   $\tau_{tor,d}=0.00$  Sfr.=0.00

- Verifica a taglio (4.4.8) - CC 9 SLU  $X_l=0.10$   
Sollecitazioni:  $N=-56.88$   $T_z=522.67$   $M_y=187.80$   $T_y=-4.18$   $M_z=2.63$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $K_{cr}=0.66$   $K_1=1.00$   $f_{v,d}=20.97$   
Tensioni:  $\tau_d=4.97$  Sfr.=0.24

- Verifica a pressoflessione (4.4.7a/b) - CC 9 SLU  $X_l=0.10$   
Sollecitazioni:  $N=-56.88$   $T_z=522.67$   $M_y=187.80$   $T_y=-4.18$   $M_z=2.63$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{c,0,d}=-0.24$   $\sigma_{m,d}=-24.02$  Sfr.=0.14

- Verifica a flessione (4.4.5a/b) - CC 9 SLU  $X_l=0.10$   
Sollecitazioni:  $N=-56.88$   $T_z=522.67$   $M_y=187.80$   $T_y=-4.18$   $M_z=2.63$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{m,d}=-24.02$  Sfr.=0.14

- Verifica a compressione (4.4.3) - CC 9 SLU  $X_l=2.41$   
Sollecitazioni:  $N=-86.78$   $T_z=-473.93$   $M_y=131.38$   $T_y=-4.18$   $M_z=-7.04$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   
Tensioni:  $\sigma_{c,0,d}=-0.36$  Sfr.=0.00

- Verifica freccia istantanea per carichi totali CC 3 (teorica)  $f_{z,L}=0.04$  (L/5275)

- Verifica freccia istantanea per carichi accidentali CC 3 (teorica)  $f_{z,L}=0.03$  (L/8144)

- Verifica freccia a lungo termine per carichi totali CC 3 (teorica)  $f_{z,L}=0.05$  (L/4355)

Asta n. 2004 (2002 1918) Trave lamellare 12x20 Crit. 1  
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- Verifica stabilità a tensoflessione (7.27) - CC 5 SND  $X_l=0.27$   
Sollecitazioni:  $N=1.08$   $T_z=-27.60$   $M_y=3.70$   $T_y=8.52$   $M_z=2.29$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $f_{c,0,t}=170.69$   
 $L=60.03$   $\lambda_{rel,y}=0.17$   $\lambda_{rel,z}=0.28$   $K_{c,y}=1.00$   $K_{c,z}=1.00$   
Tensioni:  $\sigma_{t,0,d}=0.00$   $\sigma_{m,d}=0.94$  Sfr.=0.00

- Verifica stabilità a flessione (7.20) - CC 9 SLU  $X_l=0.50$   
Sollecitazioni:  $N=-6.50$   $T_z=-216.72$   $M_y=54.56$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $Ltors=60.03$   $\lambda_{rel,m}=0.18$   $K_{crit}=1.00$   
Tensioni:  $\sigma_{m,d}=-6.82$  Sfr.=0.04

- Verifica stabilità a flessione (7.26) - CC 1 SND  $X_l=0.50$   
Sollecitazioni:  $N=0.00$   $T_z=-51.83$   $M_y=13.04$   $T_y=11.18$   $M_z=5.63$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $Ltors=60.03$   $\lambda_{rel,m}=0.18$   $K_{crit}=1.00$   
Tensioni:  $\sigma_{m,d}=-2.80$  Sfr.=0.01

- Verifica a trazione (4.4.2) - CC 5 SND  $X_l=0.00$   
Sollecitazioni:  $N=1.91$   $T_z=0.00$   $M_y=0.00$   $T_y=8.52$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $K_h=1.00$   $f_{c,0,t}=170.69$   
Tensioni:  $\sigma_{t,0,d}=0.01$  Sfr.=0.00

- Verifica a tensoflessione (4.4.6a/b) - CC 5 SND  $X_l=0.27$   
Sollecitazioni:  $N=1.08$   $T_z=-27.60$   $M_y=3.70$   $T_y=8.52$   $M_z=2.29$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $K_h=1.00$   $f_{c,0,t}=170.69$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{t,0,d}=0.00$   $\sigma_{m,d}=0.94$  Sfr.=0.00

- Verifica a taglio (4.4.8) - CC 9 SLU  $X_l=0.50$   
Sollecitazioni:  $N=-6.50$   $T_z=-216.72$   $M_y=54.56$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $K_{cr}=0.66$   $K_1=1.00$   $f_{v,d}=20.97$   
Tensioni:  $\tau_d=2.06$  Sfr.=0.10

- Verifica a pressoflessione (4.4.7a/b) - CC 9 SLU  $X_l=0.50$   
Sollecitazioni:  $N=-6.50$   $T_z=-216.72$   $M_y=54.56$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{c,0,d}=-0.03$   $\sigma_{m,d}=-6.82$  Sfr.=0.04

- Verifica a flessione (4.4.5a/b) - CC 9 SLU  $X_l=0.50$   
Sollecitazioni:  $N=-6.50$   $T_z=-216.72$   $M_y=54.56$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{m,d}=-6.82$  Sfr.=0.04

- Verifica a compressione (4.4.3) - CC 9 SLU  $X_l=0.50$   
Sollecitazioni:  $N=-6.50$   $T_z=-216.72$   $M_y=54.56$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   
Tensioni:  $\sigma_{c,0,d}=-0.03$  Sfr.=0.00

- Verifica freccia istantanea per carichi totali CC 3 (teorica)  $f_{z,L}=0.01$  (L/8216)

- Verifica freccia istantanea per carichi accidentali CC 3 (teorica)  $f_{z,L}=0.00$  (L/12721)

- Verifica freccia a lungo termine per carichi totali CC 3 (teorica)  $f_{z,L}=0.01$  (L/6776)

Asta n. 2203 (801 701) Trave lamellare 20x44 Crit. 1  
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- Verifica stabilità a tensoflessione (7.27) - CC 9 SLU  $X_l=0.15$   
Sollecitazioni:  $N=23.90$   $T_z=1234.61$   $M_y=481.62$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{c,0,t}=124.14$   
 $L=93.02$   $\lambda_{rel,y}=0.12$   $\lambda_{rel,z}=0.26$   $K_{c,y}=1.00$   $K_{c,z}=1.00$



## Relazione di calcolo

Tensioni:  $\sigma_{t,0,d}=0.03$   $\sigma_{m,d}=7.46$  Sfr.=0.04

- Verifica stabilità a flessione (7.20) - CC 1 SND  $X_l=0.88$   
 Sollecitazioni:  $N=-21.72$   $T_z=19.25$   $M_y=0.00$   $T_y=59.10$   $M_z=3.07$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $L_{tors}=93.02$   $\lambda_{rel,m}=0.19$   $K_{crit}=1.00$   
 Tensioni:  $\sigma_{m,d}=-0.10$  Sfr.=0.00

- Verifica stabilità a flessione (7.26) - CC 1 SND  $X_l=0.15$   
 Sollecitazioni:  $N=-16.38$   $T_z=294.81$   $M_y=114.84$   $T_y=-59.10$   $M_z=46.11$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $L_{tors}=93.02$   $\lambda_{rel,m}=0.19$   $K_{crit}=1.00$   
 Tensioni:  $\sigma_{m,d}=-3.35$  Sfr.=0.01

- Verifica a trazione (4.4.2) - CC 5 SND  $X_l=0.15$   
 Sollecitazioni:  $N=79.01$   $T_z=293.82$   $M_y=114.06$   $T_y=-19.01$   $M_z=14.83$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $K_h=1.00$   $f_{c,0,t}=170.69$   
 Tensioni:  $\sigma_{t,0,d}=0.09$  Sfr.=0.00

- Verifica a tensoflessione (4.4.6a/b) - CC 9 SLU  $X_l=0.15$   
 Sollecitazioni:  $N=23.90$   $T_z=1234.61$   $M_y=481.62$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $K_h=1.00$   $f_{c,0,t}=124.14$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 Tensioni:  $\sigma_{t,0,d}=0.03$   $\sigma_{m,d}=7.46$  Sfr.=0.04

- Verifica a taglio (4.4.8) - CC 9 SLU  $X_l=0.15$   
 Sollecitazioni:  $N=23.90$   $T_z=1234.61$   $M_y=481.62$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $K_{cr}=0.66$   $K_1=1.00$   $f_{v,d}=20.97$   
 Tensioni:  $\tau_d=3.20$  Sfr.=0.15

- Verifica a pressoflessione (4.4.7a/b) - CC 1 SND  $X_l=0.15$   
 Sollecitazioni:  $N=-16.38$   $T_z=294.81$   $M_y=114.84$   $T_y=-59.10$   $M_z=46.11$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $f_{c,0,d}=220.00$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 Tensioni:  $\sigma_{c,0,d}=-0.02$   $\sigma_{m,d}=-3.35$  Sfr.=0.01

- Verifica a flessione (4.4.5a/b) - CC 9 SLU  $X_l=0.15$   
 Sollecitazioni:  $N=23.90$   $T_z=1234.61$   $M_y=481.62$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 Tensioni:  $\sigma_{m,d}=-7.46$  Sfr.=0.04

- Verifica a compressione (4.4.3) - CC 5 SND  $X_l=0.93$   
 Sollecitazioni:  $N=-73.30$   $T_z=-1.42$   $M_y=0.00$   $T_y=19.01$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $f_{c,0,d}=220.00$   
 Tensioni:  $\sigma_{c,0,d}=-0.08$  Sfr.=0.00

- Verifica freccia istantanea per carichi totali CC 3 (teorica)  $f_{z,L}=0.26$  (L/302)

- Verifica freccia istantanea per carichi accidentali CC 3 (teorica)  $f_{z,L}=0.16$  (L/473)

- Verifica freccia a lungo termine per carichi totali CC 3 (teorica)  $f_{z,L}=0.31$  (L/248)

Asta n. 2203 (1208 801) Trave lamellare 20x44 Crit. 1  
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- Verifica stabilità a tensoflessione (7.27) - CC 5 SND  $X_l=7.10$   
 Sollecitazioni:  $N=248.84$   $T_z=-1560.04$   $M_y=1702.02$   $T_y=7.82$   $M_z=54.35$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $f_{c,0,t}=170.69$   
 $L=725.33$   $\lambda_{rel,y}=0.93$   $\lambda_{rel,z}=2.04$   $K_{c,y}=0.82$   $K_{c,z}=0.23$   
 Tensioni:  $\sigma_{t,0,d}=0.28$   $\sigma_{m,d}=28.23$  Sfr.=0.12

- Verifica stabilità a flessione (7.20) - CC 9 SLU  $X_l=3.07$   
 Sollecitazioni:  $N=-2692.05$   $T_z=0.00$   $M_y=-6724.62$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $L_{tors}=725.33$   $\lambda_{rel,m}=0.54$   $K_{crit}=1.00$   
 Tensioni:  $\sigma_{m,d}=104.20$  Sfr.=0.59

- Verifica stabilità a flessione (7.26) - CC 5 SND  $X_l=7.10$   
 Sollecitazioni:  $N=-1628.40$   $T_z=-1560.04$   $M_y=1702.02$   $T_y=7.82$   $M_z=54.35$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $L_{tors}=725.33$   $\lambda_{rel,m}=0.54$   $K_{crit}=1.00$   
 Tensioni:  $\sigma_{m,d}=-28.23$  Sfr.=0.11

- Verifica a trazione (4.4.2) - CC 5 SND  $X_l=0.15$   
 Sollecitazioni:  $N=327.75$   $T_z=1070.49$   $M_y=0.00$   $T_y=-7.78$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $K_h=1.00$   $f_{c,0,t}=170.69$   
 Tensioni:  $\sigma_{t,0,d}=0.37$  Sfr.=0.00

- Verifica a tensoflessione (4.4.6a/b) - CC 5 SND  $X_l=7.10$   
 Sollecitazioni:  $N=248.84$   $T_z=-1560.04$   $M_y=1702.02$   $T_y=7.82$   $M_z=54.35$   $M_x=0.00$   
 Resistenze:  $K_{mod}=1.10$   $K_h=1.00$   $f_{c,0,t}=170.69$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 Tensioni:  $\sigma_{t,0,d}=0.28$   $\sigma_{m,d}=28.23$  Sfr.=0.12

- Verifica a taglio (4.4.8) - CC 9 SLU  $X_l=7.10$   
 Sollecitazioni:  $N=-2883.68$   $T_z=-6387.67$   $M_y=6171.10$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $K_{cr}=0.66$   $K_1=1.00$   $f_{v,d}=20.97$   
 Tensioni:  $\tau_d=16.55$  Sfr.=0.79

- Verifica a pressoflessione (4.4.7a/b) - CC 9 SLU  $X_l=3.07$   
 Sollecitazioni:  $N=-2692.05$   $T_z=0.00$   $M_y=-6724.62$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
 Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 Tensioni:  $\sigma_{c,0,d}=-3.06$   $\sigma_{m,d}=-104.20$  Sfr.=0.59



## Relazione di calcolo

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- Verifica a flessione (4.4.5a/b) - CC 9 SLU  $X_l=3.07$   
Sollecitazioni:  $N=-2692.05$   $T_z=0.00$   $M_y=-6724.62$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{m,d}=104.20$   $Sfr.=0.59$
  - Verifica a compressione (4.4.3) - CC 9 SLU  $X_l=7.10$   
Sollecitazioni:  $N=-2883.68$   $T_z=-6387.67$   $M_y=6171.10$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   
Tensioni:  $\sigma_{c,0,d}=-3.28$   $Sfr.=0.02$
  - Verifica freccia istantanea per carichi totali CC 3 (teorica)  $f_{z,L}=1.20$  (L/579)
  - Verifica freccia istantanea per carichi accidentali CC 3 (teorica)  $f_{z,L}=0.77$  (L/899)
  - Verifica freccia a lungo termine per carichi totali CC 3 (teorica)  $f_{z,L}=1.46$  (L/477)

Asta n. 2203 (1801 1208) Trave lamellare 20x44 Crit. 1

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- Verifica stabilità a tensoflessione (7.27) - CC 1 SND  $X_l=0.00$   
Sollecitazioni:  $N=12.03$   $T_z=1290.60$   $M_y=1345.13$   $T_y=-43.82$   $M_z=242.72$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $f_{c,0,t}=170.69$   
 $L=568.89$   $\lambda_{rel,y}=0.73$   $\lambda_{rel,z}=1.60$   $K_{c,y}=0.92$   $K_{c,z}=0.36$   
Tensioni:  $\sigma_{t,0,d}=0.01$   $\sigma_{m,d}=29.12$   $Sfr.=0.11$
- Verifica stabilità a flessione (7.20) - CC 9 SLU  $X_l=0.00$   
Sollecitazioni:  $N=-2292.27$   $T_z=5328.16$   $M_y=5243.60$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $L_tors=568.89$   $\lambda_{rel,m}=0.48$   $K_{crit}=1.00$   
Tensioni:  $\sigma_{m,d}=-81.25$   $Sfr.=0.46$
- Verifica stabilità a flessione (7.26) - CC 1 SND  $X_l=0.00$   
Sollecitazioni:  $N=-1105.31$   $T_z=1290.60$   $M_y=1345.13$   $T_y=-43.82$   $M_z=242.72$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $L_tors=568.89$   $\lambda_{rel,m}=0.48$   $K_{crit}=1.00$   
Tensioni:  $\sigma_{m,d}=-29.12$   $Sfr.=0.11$
- Verifica a trazione (4.4.2) - CC 5 SND  $X_l=0.00$   
Sollecitazioni:  $N=1287.75$   $T_z=1273.60$   $M_y=1250.95$   $T_y=-13.28$   $M_z=73.55$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $K_h=1.00$   $f_{c,0,t}=170.69$   
Tensioni:  $\sigma_{t,0,d}=1.46$   $Sfr.=0.01$
- Verifica a tensoflessione (4.4.6a/b) - CC 1 SND  $X_l=0.00$   
Sollecitazioni:  $N=12.03$   $T_z=1290.60$   $M_y=1345.13$   $T_y=-43.82$   $M_z=242.72$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $K_h=1.00$   $f_{c,0,t}=170.69$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{t,0,d}=0.01$   $\sigma_{m,d}=29.12$   $Sfr.=0.11$
- Verifica a taglio (4.4.8) - CC 9 SLU  $X_l=0.00$   
Sollecitazioni:  $N=-2292.27$   $T_z=5328.16$   $M_y=5243.60$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $K_{cr}=0.66$   $K_1=1.00$   $f_{v,d}=20.97$   
Tensioni:  $\tau_d=13.80$   $Sfr.=0.66$
- Verifica a pressoflessione (4.4.7a/b) - CC 9 SLU  $X_l=0.00$   
Sollecitazioni:  $N=-2292.27$   $T_z=5328.16$   $M_y=5243.60$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{c,0,d}=-2.60$   $\sigma_{m,d}=-81.25$   $Sfr.=0.46$
- Verifica a flessione (4.4.5a/b) - CC 9 SLU  $X_l=0.00$   
Sollecitazioni:  $N=-2292.27$   $T_z=5328.16$   $M_y=5243.60$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
Tensioni:  $\sigma_{m,d}=-81.25$   $Sfr.=0.46$
- Verifica a compressione (4.4.3) - CC 9 SLU  $X_l=5.54$   
Sollecitazioni:  $N=-2544.85$   $T_z=-3434.79$   $M_y=0.00$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{c,0,d}=160.00$   
Tensioni:  $\sigma_{c,0,d}=-2.89$   $Sfr.=0.02$
- Verifica freccia istantanea per carichi totali CC 3 (teorica)  $f_{z,L}=0.38$  (L/1447)
- Verifica freccia istantanea per carichi accidentali CC 3 (teorica)  $f_{z,L}=0.25$  (L/2181)
- Verifica freccia a lungo termine per carichi totali CC 3 (teorica)  $f_{z,L}=0.46$  (L/1204)

Asta n. 2203 (2101 1801) Trave lamellare 20x44 Crit. 1

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- Verifica stabilità a tensoflessione (7.27) - CC 1 SND  $X_l=3.46$   
Sollecitazioni:  $N=19.76$   $T_z=-603.98$   $M_y=1228.36$   $T_y=85.37$   $M_z=304.17$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $f_{c,0,t}=170.69$   
 $L=346.16$   $\lambda_{rel,y}=0.44$   $\lambda_{rel,z}=0.98$   $K_{c,y}=0.98$   $K_{c,z}=0.79$   
Tensioni:  $\sigma_{t,0,d}=0.02$   $\sigma_{m,d}=29.40$   $Sfr.=0.11$
- Verifica stabilità a flessione (7.20) - CC 9 SLU  $X_l=3.46$   
Sollecitazioni:  $N=-66.27$   $T_z=-2192.09$   $M_y=4451.97$   $T_y=0.00$   $M_z=0.00$   $M_x=0.00$   
Resistenze:  $K_{mod}=0.80$   $f_{m,y,d}=176.55$   $f_{m,z,d}=176.55$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $L_tors=346.16$   $\lambda_{rel,m}=0.37$   $K_{crit}=1.00$   
Tensioni:  $\sigma_{m,d}=-68.99$   $Sfr.=0.39$
- Verifica stabilità a flessione (7.26) - CC 1 SND  $X_l=3.46$   
Sollecitazioni:  $N=-56.21$   $T_z=-603.98$   $M_y=1228.36$   $T_y=85.37$   $M_z=304.17$   $M_x=0.00$   
Resistenze:  $K_{mod}=1.10$   $f_{m,y,d}=242.76$   $f_{m,z,d}=242.76$   $K_{hy}=1.00$   $K_{hz}=1.00$   $K_m=0.70$   
 $L_tors=346.16$   $\lambda_{rel,m}=0.37$   $K_{crit}=1.00$



## Relazione di calcolo

- Tensioni:  $\sigma_{m,d} = -29.40$  Sfr.=0.11
- Verifica a trazione (4.4.2) - CC 5 SND  $X_l = 0.00$   
 Sollecitazioni:  $N = 123.36$   $T_z = -85.28$   $M_y = 26.45$   $T_y = 26.07$   $M_z = 2.72$   $M_x = 0.00$   
 Resistenze:  $K_{mod} = 1.10$   $K_h = 1.00$   $f_{c,0,t} = 170.69$   
 Tensioni:  $\sigma_{t,0,d} = 0.14$  Sfr.=0.00
- Verifica a tensoflessione (4.4.6a/b) - CC 1 SND  $X_l = 3.46$   
 Sollecitazioni:  $N = 19.76$   $T_z = -603.98$   $M_y = 1228.36$   $T_y = 85.37$   $M_z = 304.17$   $M_x = 0.00$   
 Resistenze:  $K_{mod} = 1.10$   $K_h = 1.00$   $f_{c,0,t} = 170.69$   $f_{m,y,d} = 242.76$   $f_{m,z,d} = 242.76$   $K_{hy} = 1.00$   $K_{hz} = 1.00$   $K_m = 0.70$   
 Tensioni:  $\sigma_{t,0,d} = 0.02$   $\sigma_{m,d} = 29.40$  Sfr.=0.11
- Verifica a taglio (4.4.8) - CC 9 SLU  $X_l = 3.46$   
 Sollecitazioni:  $N = -66.27$   $T_z = -2192.09$   $M_y = 4451.97$   $T_y = 0.00$   $M_z = 0.00$   $M_x = 0.00$   
 Resistenze:  $K_{mod} = 0.80$   $K_{cr} = 0.66$   $K_1 = 1.00$   $f_{v,d} = 20.97$   
 Tensioni:  $\tau_d = 5.68$  Sfr.=0.27
- Verifica a pressoflessione (4.4.7a/b) - CC 9 SLU  $X_l = 3.46$   
 Sollecitazioni:  $N = -66.27$   $T_z = -2192.09$   $M_y = 4451.97$   $T_y = 0.00$   $M_z = 0.00$   $M_x = 0.00$   
 Resistenze:  $K_{mod} = 0.80$   $f_{c,0,d} = 160.00$   $f_{m,y,d} = 176.55$   $f_{m,z,d} = 176.55$   $K_{hy} = 1.00$   $K_{hz} = 1.00$   $K_m = 0.70$   
 Tensioni:  $\sigma_{c,0,d} = -0.08$   $\sigma_{m,d} = -68.99$  Sfr.=0.39
- Verifica a flessione (4.4.5a/b) - CC 9 SLU  $X_l = 3.46$   
 Sollecitazioni:  $N = -66.27$   $T_z = -2192.09$   $M_y = 4451.97$   $T_y = 0.00$   $M_z = 0.00$   $M_x = 0.00$   
 Resistenze:  $K_{mod} = 0.80$   $f_{m,y,d} = 176.55$   $f_{m,z,d} = 176.55$   $K_{hy} = 1.00$   $K_{hz} = 1.00$   $K_m = 0.70$   
 Tensioni:  $\sigma_{m,d} = -68.99$  Sfr.=0.39
- Verifica a compressione (4.4.3) - CC 5 SND  $X_l = 3.46$   
 Sollecitazioni:  $N = -144.28$   $T_z = -599.02$   $M_y = 1210.81$   $T_y = 26.07$   $M_z = 92.90$   $M_x = 0.00$   
 Resistenze:  $K_{mod} = 1.10$   $f_{c,0,d} = 220.00$   
 Tensioni:  $\sigma_{c,0,d} = -0.16$  Sfr.=0.00
- Verifica freccia istantanea per carichi totali CC 3 (teorica)  $f_{z,L} = 0.51$  (L/672)
- Verifica freccia istantanea per carichi accidentali CC 3 (teorica)  $f_{z,L} = 0.28$  (L/1250)
- Verifica freccia a lungo termine per carichi totali CC 3 (teorica)  $f_{z,L} = 0.66$  (L/526)
- Asta n. 2203 (2201 2101) Trave lamellare 20x44 Crit. 1  
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- Verifica stabilità a tensoflessione (7.27) - CC 3 SND  $X_l = 0.60$   
 Sollecitazioni:  $N = 2.18$   $T_z = -89.23$   $M_y = 26.83$   $T_y = 14.71$   $M_z = 8.83$   $M_x = 0.00$   
 Resistenze:  $K_{mod} = 1.10$   $f_{c,0,t} = 170.69$   
 $L = 60.03$   $\lambda_{rel,y} = 0.08$   $\lambda_{rel,z} = 0.17$   $K_{c,y} = 1.00$   $K_{c,z} = 1.00$   
 Tensioni:  $\sigma_{t,0,d} = 0.00$   $\sigma_{m,d} = 0.72$  Sfr.=0.00
- Verifica stabilità a flessione (7.20) - CC 9 SLU  $X_l = 0.60$   
 Sollecitazioni:  $N = -9.72$   $T_z = -323.95$   $M_y = 97.23$   $T_y = 0.00$   $M_z = 0.00$   $M_x = 0.00$   
 Resistenze:  $K_{mod} = 0.80$   $f_{m,y,d} = 176.55$   $f_{m,z,d} = 176.55$   $K_{hy} = 1.00$   $K_{hz} = 1.00$   $K_m = 0.70$   
 $L_{tors} = 60.03$   $\lambda_{rel,m} = 0.16$   $K_{crit} = 1.00$   
 Tensioni:  $\sigma_{m,d} = -1.51$  Sfr.=0.01
- Verifica stabilità a flessione (7.26) - CC 3 SND  $X_l = 0.60$   
 Sollecitazioni:  $N = -7.52$   $T_z = -89.23$   $M_y = 26.83$   $T_y = 14.71$   $M_z = 8.83$   $M_x = 0.00$   
 Resistenze:  $K_{mod} = 1.10$   $f_{m,y,d} = 242.76$   $f_{m,z,d} = 242.76$   $K_{hy} = 1.00$   $K_{hz} = 1.00$   $K_m = 0.70$   
 $L_{tors} = 60.03$   $\lambda_{rel,m} = 0.16$   $K_{crit} = 1.00$   
 Tensioni:  $\sigma_{m,d} = -0.72$  Sfr.=0.00
- Verifica a trazione (4.4.2) - CC 5 SND  $X_l = 0.00$   
 Sollecitazioni:  $N = 16.25$   $T_z = 0.00$   $M_y = 0.00$   $T_y = 4.53$   $M_z = 0.00$   $M_x = 0.00$   
 Resistenze:  $K_{mod} = 1.10$   $K_h = 1.00$   $f_{c,0,t} = 170.69$   
 Tensioni:  $\sigma_{t,0,d} = 0.02$  Sfr.=0.00
- Verifica a tensoflessione (4.4.6a/b) - CC 3 SND  $X_l = 0.60$   
 Sollecitazioni:  $N = 2.18$   $T_z = -89.23$   $M_y = 26.83$   $T_y = 14.71$   $M_z = 8.83$   $M_x = 0.00$   
 Resistenze:  $K_{mod} = 1.10$   $K_h = 1.00$   $f_{c,0,t} = 170.69$   $f_{m,y,d} = 242.76$   $f_{m,z,d} = 242.76$   $K_{hy} = 1.00$   $K_{hz} = 1.00$   $K_m = 0.70$   
 Tensioni:  $\sigma_{t,0,d} = 0.00$   $\sigma_{m,d} = 0.72$  Sfr.=0.00
- Verifica a taglio (4.4.8) - CC 9 SLU  $X_l = 0.60$   
 Sollecitazioni:  $N = -9.72$   $T_z = -323.95$   $M_y = 97.23$   $T_y = 0.00$   $M_z = 0.00$   $M_x = 0.00$   
 Resistenze:  $K_{mod} = 0.80$   $K_{cr} = 0.66$   $K_1 = 1.00$   $f_{v,d} = 20.97$   
 Tensioni:  $\tau_d = 0.84$  Sfr.=0.04
- Verifica a pressoflessione (4.4.7a/b) - CC 9 SLU  $X_l = 0.60$   
 Sollecitazioni:  $N = -9.72$   $T_z = -323.95$   $M_y = 97.23$   $T_y = 0.00$   $M_z = 0.00$   $M_x = 0.00$   
 Resistenze:  $K_{mod} = 0.80$   $f_{c,0,d} = 160.00$   $f_{m,y,d} = 176.55$   $f_{m,z,d} = 176.55$   $K_{hy} = 1.00$   $K_{hz} = 1.00$   $K_m = 0.70$   
 Tensioni:  $\sigma_{c,0,d} = -0.01$   $\sigma_{m,d} = -1.51$  Sfr.=0.01
- Verifica a flessione (4.4.5a/b) - CC 9 SLU  $X_l = 0.60$   
 Sollecitazioni:  $N = -9.72$   $T_z = -323.95$   $M_y = 97.23$   $T_y = 0.00$   $M_z = 0.00$   $M_x = 0.00$   
 Resistenze:  $K_{mod} = 0.80$   $f_{m,y,d} = 176.55$   $f_{m,z,d} = 176.55$   $K_{hy} = 1.00$   $K_{hz} = 1.00$   $K_m = 0.70$   
 Tensioni:  $\sigma_{m,d} = -1.51$  Sfr.=0.01
- Verifica a compressione (4.4.3) - CC 5 SND  $X_l = 0.60$   
 Sollecitazioni:  $N = -18.93$   $T_z = -88.60$   $M_y = 26.45$   $T_y = 4.53$   $M_z = 2.72$   $M_x = 0.00$   
 Resistenze:  $K_{mod} = 1.10$   $f_{c,0,d} = 220.00$   
 Tensioni:  $\sigma_{c,0,d} = -0.02$  Sfr.=0.00
- Verifica freccia istantanea per carichi totali CC 3 (teorica)  $f_{z,L} = 0.12$  (L/488)
- Verifica freccia istantanea per carichi accidentali CC 3 (teorica)  $f_{z,L} = 0.07$  (L/885)



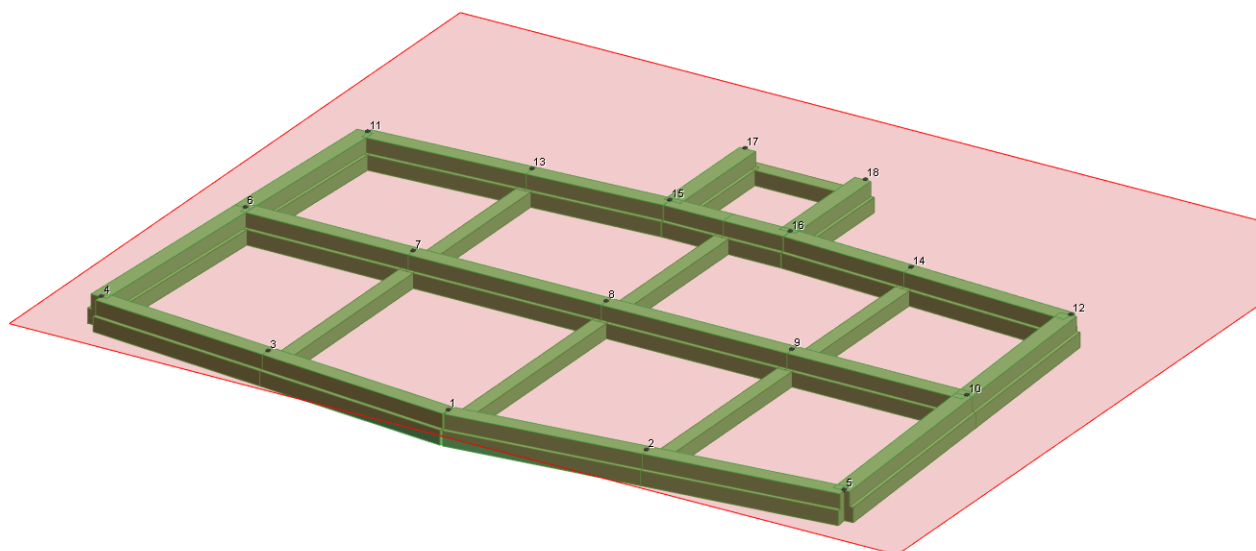
Relazione di calcolo

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- Verifica freccia a lungo termine per carichi totali CC 3 (teorica)  $f_{z,L}=0.16$  (L/384)



## FONDAZIONI





## Relazione di calcolo

## Geometria

## Elenco vincoli nodi

## Simbologia

Comm. = Commento  
 Kt = Coeff. di sottofondo su suolo elastico alla Winkler  
 Ly = Lunghezza (dir. Y locale)  
 Lz = Larghezza (dir. Z locale)  
 RL = Rotazione libera  
 Rx = Rotazione intorno all'asse X (L=libera, B=bloccata, E=elastica)  
 Ry = Rotazione intorno all'asse Y (L=libera, B=bloccata, E=elastica)  
 Rz = Rotazione intorno all'asse Z (L=libera, B=bloccata, E=elastica)  
 Sx = Spostamento in dir. X (L=libero, B=bloccato, E=elastico)  
 Sy = Spostamento in dir. Y (L=libero, B=bloccato, E=elastico)  
 Sz = Spostamento in dir. Z (L=libero, B=bloccato, E=elastico)  
 Vn = Numero del vincolo nodo

Vn	Comm.	Sx	Sy	Sz	Rx	Ry	Rz	RL	Ly	Lz	Kt
		<m>	<m>	<m>					<m>	<m>	<daN/cmc>
1	Libero	L	L	L	L	L	L				

Vn	Comm.	Sx	Sy	Sz	Rx	Ry	Rz	RL	Ly	Lz	Kt
		<m>	<m>	<m>					<m>	<m>	<daN/cmc>
3	El. sew 110001	B	B	L	L	L	B				

## Elenco nodi

## Simbologia

Imp. = Numero dell'impalcato  
 Nodo = Numero del nodo  
 Vn = Numero del vincolo nodo  
 X = Coordinata X del nodo  
 Y = Coordinata Y del nodo  
 Z = Coordinata Z del nodo

Nodo	X	Y	Z	Imp.	Vn
	<m>	<m>	<m>		
-2	5.03	7.25	3.06	0	1
3	5.03	0.59	0.00	0	3
7	5.03	7.25	0.00	0	3
11	0.56	12.45	0.00	0	3
15	8.78	12.94	0.00	0	3
101	-0.03	0.37	2.72	0	1
301	5.03	-0.16	2.86	0	1
706	0.30	7.25	2.93	0	1
1007	5.03	7.25	3.07	0	1
1301	0.59	13.20	3.12	0	1
1614	15.72	12.73	3.24	0	1
1916	12.18	12.94	3.35	0	1
2201	8.78	17.00	3.47	0	1

Nodo	X	Y	Z	Imp.	Vn
	<m>	<m>	<m>		
-1	10.48	12.94	0.00	0	3
4	0.00	1.12	0.00	0	3
8	10.48	7.25	0.00	0	3
12	20.41	12.45	0.00	0	3
16	12.18	12.94	0.00	0	3
102	20.99	0.37	2.72	0	1
401	15.72	-0.18	2.86	0	1
710	20.66	7.25	2.93	0	1
1109	15.72	7.25	3.08	0	1
1302	20.38	13.20	3.12	0	1
1701	5.03	13.46	3.26	0	1
2001	10.48	12.94	3.40	0	1
2202	12.18	17.00	3.47	0	1

Nodo	X	Y	Z	Imp.	Vn
	<m>	<m>	<m>		
1	10.48	0.00	0.00	0	3
5	20.96	1.12	0.00	0	3
9	15.72	7.25	0.00	0	3
13	5.03	12.71	0.00	0	3
17	8.78	16.40	0.00	0	3
204	0.00	1.12	2.74	0	1
503	5.03	0.59	2.87	0	1
801	10.48	-0.75	3.00	0	1
1211	0.56	12.45	3.10	0	1
1408	10.48	7.25	3.24	0	1
1801	15.72	13.48	3.26	0	1
2117	8.78	16.40	3.45	0	1
2301	10.48	16.40	3.51	0	1

Nodo	X	Y	Z	Imp.	Vn
	<m>	<m>	<m>		
2	15.72	0.57	0.00	0	3
6	0.30	7.25	0.00	0	3
10	20.66	7.25	0.00	0	3
14	15.72	12.73	0.00	0	3
18	12.18	16.40	0.00	0	3
205	20.96	1.12	2.74	0	1
602	15.72	0.57	2.88	0	1
901	10.48	0.00	3.02	0	1
1212	20.41	12.45	3.10	0	1
1513	5.03	12.71	3.24	0	1
1915	8.78	12.94	3.35	0	1
2118	12.18	16.40	3.45	0	1
2401	10.48	17.00	3.52	0	1

## Elenco materiali

## Simbologia

$\alpha$  = Coeff. di dilatazione termica  
 v = Coeff. di Poisson  
 Comm. = Commento  
 E = Modulo elastico  
 G = Modulo elastico tangenziale  
 Mat. = Numero del materiale  
 P = Peso specifico

Mat.	Comm.	P	E	G	v	$\alpha$
		<daN/mc>	<daN/cm <sup>2</sup> >	<daN/cm <sup>2</sup> >		
5	Calcestruzzo classe C25/30	2500	314472.00	142942.00	0.1	1.000000E-05
6	Calcestruzzo classe C28/35	2500	325881.00	148128.00	0.1	1.000000E-05
18	Acciaio	7850	2100000.00	800000.00	0.3	1.000000E-05
20	Legname a media elasticità	460	120000.00	7500.00	0.39	4.000000E-06

## Elenco sezioni aste

## Simbologia

B = Base  
 C = Numero del criterio di progetto  
 Comm. = Commento  
 Crit. C.F. = Criterio di progetto collegamento finale  
 Crit. C.I. = Criterio di progetto collegamento iniziale  
 H = Altezza  
 Ma = Numero del materiale  
 Mem. = Membratura  
 T = Trave  
 P = Pilastro  
 R = Raggio  
 Sez. = Numero della sezione  
 Tipo = Tipologia  
 Cir. = Circolare  
 Cir.c = Circolare cava  
 R = Rettangolare  
 T = Sezione a T  
 Ver. = Verifica prevista  
 C = Cemento armato  
 A = Acciaio  
 L = Legno  
 b = Base inferiore



## Relazione di calcolo

h = Altezza parte inf.  
s = Spessore

Sez.	Comm.	Tipo	Mem.	Ver.	B <cm>	b <cm>	H <cm>	h <cm>	s <cm>	R <cm>	Ma	C	Crit. C.I.	Crit. C.F.
1	Pilastro 30x30	R	P	C	30.00		30.00				6	1		
2	Pilastro circolare 30 cm	Cir.	P	C						15.00	6	3		
3	Pilastrio 30x120	R	P	C	30.00		120.00				6	1		
4	CHS193.7x8	Cir.c	P	A					0.80	9.69	18	1	3	3
5	Trave 20x35	R	T	C	20.00		35.00				6	1		
6	Trave lamellare 20x44	R	T	L	20.00		44.00				20	1		
7	Trave 30x44	R	T	C	20.00		44.00				6	1		
8	Trave lamellare 12x20	R	T	L	12.00		20.00				20	1		
9	Trave fondazione	T	T	C	45.00	65.00	40.00	40.00			5	2		
10	Cordolo fondazione	R	T	C	40.00		40.00				5	2		

## Elenco vincoli aste

## Simbologia

Comm. = Commento

Kt = Coeff. di sottofondo su suolo elastico alla Winkler

Mxf = Momento intorno all'asse X locale nodo finale (0=sbloccato, 1=bloccato)

Mxi = Momento intorno all'asse X locale nodo iniziale (0=sbloccato, 1=bloccato)

Myf = Momento intorno all'asse Y locale nodo finale (0=sbloccato, 1=bloccato)

Myi = Momento intorno all'asse Y locale nodo iniziale (0=sbloccato, 1=bloccato)

Mzf = Momento intorno all'asse Z locale nodo finale (0=sbloccato, 1=bloccato)

Mzi = Momento intorno all'asse Z locale nodo iniziale (0=sbloccato, 1=bloccato)

Nf = Sforzo normale nodo finale (0=sbloccato, 1=bloccato)

Ni = Sforzo normale nodo iniziale (0=sbloccato, 1=bloccato)

Tipo = Tipologia

SVI = Definizione di vincolamenti interni

ELA = Vincolo su suolo elastico alla Winkler

BIE-RTC = Biella resistente a trazione e a compressione

BIE-RC = Biella resistente solo a compressione

BIE-RT = Biella resistente solo a trazione

Tyf = Taglio in dir. Y locale nodo finale (0=sbloccato, 1=bloccato)

Tyi = Taglio in dir. Y locale nodo iniziale (0=sbloccato, 1=bloccato)

Tzf = Taglio in dir. Z locale nodo finale (0=sbloccato, 1=bloccato)

Tzi = Taglio in dir. Z locale nodo iniziale (0=sbloccato, 1=bloccato)

Va = Numero del vincolo asta

Va	Comm.	Tipo	Ni	Tyi	Tzi	Mxi	Myi	Mzi	Nf	Tyf	Tzf	Mxf	Myf	Mzf	Kt <daN/cmc>
1	Inc+Inc	SVI	1	1	1	1	1	1	1	1	1	1	1	1	
2	Inc+Cer	SVI	1	1	1	1	1	1	1	1	1	0	0	0	
3	Cer+Inc	SVI	1	1	1	0	0	0	1	1	1	1	1	1	
30	Winkler	ELA													3.00

## Elenco aste

## Simbologia

Asta = Numero dell'asta

Dy1 = Scost. filo fisso Y1

Dy2 = Scost. filo fisso Y2

Dz1 = Scost. filo fisso Z1

Dz2 = Scost. filo fisso Z2

FF = Filo fisso

Kt = Coeff. di sottofondo su suolo elastico alla Winkler

N1 = Nodo iniziale

N2 = Nodo finale

Par. = Numero dei parametri aggiuntivi

Rot. = Rotazione

Sez. = Numero della sezione

Va = Numero del vincolo asta

Asta	N1	N2	Sez.	Va	Par.	Rot. <grad>	FF	Dy1 <cm>	Dy2 <cm>	Dz1 <cm>	Dz2 <cm>	Kt <daN/cmc>
1	1	901	2	1		0.00	55	0.00	0.00	0.00	0.00	
2	2	602	2	1		0.00	55	0.00	0.00	0.00	0.00	
3	3	503	2	1		0.00	55	0.00	0.00	0.00	0.00	
4	4	204	1	1		357.18	55	0.00	0.00	0.00	0.00	
5	5	205	1	1		2.82	55	0.00	0.00	0.00	0.00	
6	6	706	1	1		357.18	55	0.00	0.00	0.00	0.00	
7	7	-2	1	1		0.00	55	0.00	0.00	0.00	0.00	
7	-2	1007	1	1		0.00	55	0.00	0.00	0.00	0.00	
8	8	1408	1	1		0.00	55	0.00	0.00	0.00	0.00	
9	9	1109	1	1		0.00	55	0.00	0.00	0.00	0.00	
10	10	710	1	1		2.82	55	0.00	0.00	0.00	0.00	
11	11	1211	1	1		357.18	55	0.00	0.00	0.00	0.00	
12	12	1212	1	1		2.82	55	0.00	0.00	0.00	0.00	
13	13	1513	1	1		3.39	55	0.00	0.00	0.00	0.00	
14	14	1614	1	1		356.61	55	0.00	0.00	0.00	0.00	
15	15	1915	3	1		90.00	55	0.00	0.00	-45.00	-45.00	
16	16	1916	3	1		90.00	55	0.00	0.00	-45.00	-45.00	
17	17	2117	4	1		90.00	55	0.00	0.00	0.00	0.00	
18	18	2118	4	1		90.00	55	0.00	0.00	0.00	0.00	
908	204	503	5	1		0.00	22	-5.00	-5.00	0.00	0.00	
908	503	901	5	1		0.00	22	-5.00	-5.00	0.00	0.00	
909	901	602	5	1		0.00	22	-5.00	-5.00	0.00	0.00	
909	602	205	5	1		0.00	22	-5.00	-5.00	0.00	0.00	
1003	503	301	6	1		0.00	22	0.00	0.00	44.00	44.00	
1003	1007	503	6	3		0.00	22	0.00	0.00	44.00	44.00	



## Relazione di calcolo

1310	205	102	7	1		0.00	22	5.00	5.00	44.00	44.00	
1310	710	205	7	1		0.00	22	5.00	5.00	44.00	44.00	
1310	1212	710	7	1		0.00	22	5.00	5.00	44.00	44.00	
1310	1302	1212	7	1		0.00	22	5.00	5.00	44.00	44.00	
1311	204	101	7	1		0.00	22	-5.00	-5.00	44.00	44.00	
1311	706	204	7	1		0.00	22	-5.00	-5.00	44.00	44.00	
1311	1211	706	7	1		0.00	22	-5.00	-5.00	44.00	44.00	
1311	1301	1211	7	1		0.00	22	-5.00	-5.00	44.00	44.00	
1703	1513	-2	6	2		0.00	22	0.00	0.00	44.00	44.00	
1703	1701	1513	6	1		0.00	22	0.00	0.00	44.00	44.00	
1807	602	401	6	1		0.00	22	0.00	0.00	44.00	44.00	
1807	1109	602	6	3		0.00	22	0.00	0.00	44.00	44.00	
1807	1614	1109	6	2		0.00	22	0.00	0.00	44.00	44.00	
1807	1801	1614	6	1		0.00	22	0.00	0.00	44.00	44.00	
1912	1916	1614	5	1		0.00	22	5.00	5.00	0.00	0.00	
1912	1614	1212	5	1		0.00	22	5.00	5.00	0.00	0.00	
2013	1211	1513	5	1		0.00	22	5.00	5.00	0.00	0.00	
2013	1513	1915	5	1		0.00	22	5.00	5.00	0.00	0.00	
2013	1915	2001	5	1		0.00	22	5.00	5.00	0.00	0.00	
2013	2001	1916	5	1		0.00	22	5.00	5.00	0.00	0.00	
2204	2117	1915	8	1		0.00	22	0.00	0.00	20.00	20.00	
2204	2201	2117	8	1		0.00	22	0.00	0.00	20.00	20.00	
2206	2118	1916	8	1		0.00	22	0.00	0.00	20.00	20.00	
2206	2202	2118	8	1		0.00	22	0.00	0.00	20.00	20.00	
2405	901	801	6	1		0.00	22	0.00	0.00	44.00	44.00	
2405	1408	901	6	3		0.00	22	0.00	0.00	44.00	44.00	
2405	2001	1408	6	2		0.00	22	0.00	0.00	44.00	44.00	
2405	2301	2001	6	1		0.00	22	0.00	0.00	44.00	44.00	
2405	2401	2301	6	1		0.00	22	0.00	0.00	44.00	44.00	
2601	6	7	9	30		0.00	22	0.00	0.00	0.00	0.00	3.00
2601	7	8	9	30		0.00	22	0.00	0.00	0.00	0.00	3.00
2601	8	9	9	30		0.00	22	0.00	0.00	0.00	0.00	3.00
2601	9	10	9	30		0.00	22	0.00	0.00	0.00	0.00	3.00
2602	17	18	10	30		0.00	22	0.00	0.00	-40.00	-40.00	3.00
2603	7	3	10	30		0.00	22	0.00	0.00	-40.00	-40.00	3.00
2603	13	7	10	30		0.00	22	0.00	0.00	-40.00	-40.00	3.00
2604	17	15	9	30		0.00	22	7.50	7.50	0.00	0.00	3.00
2605	8	1	10	30		0.00	22	0.00	0.00	-40.00	-40.00	3.00
2605	-1	8	10	30		0.00	22	0.00	0.00	-40.00	-40.00	3.00
2606	18	16	9	30		0.00	22	-7.50	-7.50	0.00	0.00	3.00
2607	9	2	10	30		0.00	22	0.00	0.00	-40.00	-40.00	3.00
2607	14	9	10	30		0.00	22	0.00	0.00	-40.00	-40.00	3.00
2608	4	3	9	30		0.00	22	0.00	0.00	0.00	0.00	3.00
2608	3	1	9	30		0.00	22	0.00	0.00	0.00	0.00	3.00
2609	1	2	9	30		0.00	22	0.00	0.00	0.00	0.00	3.00
2609	2	5	9	30		0.00	22	0.00	0.00	0.00	0.00	3.00
2610	10	5	9	30		0.00	22	-7.50	-7.50	0.00	0.00	3.00
2610	12	10	9	30		0.00	22	-7.50	-7.50	0.00	0.00	3.00
2611	6	4	9	30		0.00	22	-7.50	-7.50	0.00	0.00	3.00
2611	11	6	9	30		0.00	22	-7.50	-7.50	0.00	0.00	3.00
2612	16	14	9	30		0.00	22	-7.50	-7.50	0.00	0.00	3.00
2612	14	12	9	30		0.00	22	-7.50	-7.50	0.00	0.00	3.00
2613	11	13	9	30		0.00	22	-7.50	-7.50	0.00	0.00	3.00
2613	13	15	9	30		0.00	22	-7.50	-7.50	0.00	0.00	3.00
2613	15	-1	9	30		0.00	22	-7.50	-7.50	0.00	0.00	3.00
2613	-1	16	9	30		0.00	22	-7.50	-7.50	0.00	0.00	3.00

## Spostamenti dei nodi

## Simbologia

CC = Numero della combinazione delle condizioni di carico elementari

Nodo = Numero del nodo

Rx = Rotazione intorno all'asse X

Ry = Rotazione intorno all'asse Y

Rz = Rotazione intorno all'asse Z

Sx = Spostamento in dir. X

Sy = Spostamento in dir. Y

Sz = Spostamento in dir. Z

TCC = Tipo di combinazione di carico

SLU = Stato limite ultimo

SLE R = Stato limite d'esercizio, combinazione rara

SLE F = Stato limite d'esercizio, combinazione frequente

SLE Q = Stato limite d'esercizio, combinazione quasi permanente

SLD = Stato limite di danno

SLV = Stato limite di salvaguardia della vita

SND = Stato limite di salvaguardia della vita (non dissipativo)

I valori degli spostamenti nodali per CC di tipo sismico sono amplificati come da normativa

Nodo		Sx <cm>	CC	TCC	Sy <cm>	CC	TCC	Sz <cm>	CC	TCC	Rx <rad>	CC	TCC	Ry <rad>	CC	TCC	Rz <rad>	CC	TCC
-2Max	2.53	1	SLV	1.16	5	SLV	-0.05	1	SLV	0.01	5	SLV	0.01	1	SLV	0.00	1	SLV	
-2Min.	-2.54	1	SLV	-1.13	5	SLV	-0.13	9	SLU	-0.01	5	SLV	-0.01	1	SLV	0.00	1	SLV	
-1Max	0.00	1	SLV	0.00	1	SLV	-0.06	5	SLV	0.00	5	SLV	0.00	1	SLV	0.00	1	SLV	
-1Min.	0.00	1	SLV	0.00	1	SLV	-0.16	9	SLU	0.00	5	SLV	0.00	1	SLV	0.00	1	SLV	
1Max	0.00	1	SLV	0.00	1	SLV	-0.07	5	SLV	0.00	9	SLU	0.00	1	SLV	0.00	1	SLV	
1Min.	0.00	1	SLV	0.00	1	SLV	-0.17	9	SLU	0.00	5	SLV	0.00	1	SLV	0.00	1	SLV	
2Max	0.00	1	SLV	0.00	1	SLV	-0.07	5	SLV	0.00	5	SLV	0.00	5	SLV	0.00	1	SLV	
2Min.	0.00	1	SLV	0.00	1	SLV	-0.15	9	SLU	0.00	5	SLV	0.00	5	SLV	0.00	1	SLV	
3Max	0.00	1	SLV	0.00	1	SLV	-0.07	5	SLV	0.00	5	SLV	0.00	5	SLV	0.00	1	SLV	
3Min.	0.00	1	SLV	0.00	1	SLV	-0.15	9	SLU	0.00	5	SLV	0.00	5	SLV	0.00	1	SLV	



## Relazione di calcolo

4	Max	0.00	1SLV	0.00	1SLV	-0.01	1SLV	0.00	5SLV	0.00	1SLV	0.00	1SLV
4	Min.	0.00	1SLV	0.00	1SLV	-0.18	1SLV	0.00	5SLV	0.00	1SLV	0.00	1SLV
5	Max	0.00	1SLV	0.00	1SLV	-0.02	1SLV	0.00	5SLV	0.00	1SLV	0.00	1SLV
5	Min.	0.00	1SLV	0.00	1SLV	-0.18	1SLV	0.00	5SLV	0.00	1SLV	0.00	1SLV
6	Max	0.00	1SLV	0.00	1SLV	-0.06	1SLV	0.00	5SLV	0.00	1SLV	0.00	1SLV
6	Min.	0.00	1SLV	0.00	1SLV	-0.13	9SLU	0.00	5SLV	0.00	1SLV	0.00	1SLV
7	Max	0.00	1SLV	0.00	1SLV	-0.05	1SLV	0.00	5SLV	0.00	1SLV	0.00	1SLV
7	Min.	0.00	1SLV	0.00	1SLV	-0.12	9SLU	0.00	5SLV	0.00	1SLV	0.00	1SLV
8	Max	0.00	1SLV	0.00	1SLV	-0.06	1SLV	0.00	5SLV	0.00	1SLV	0.00	1SLV
8	Min.	0.00	1SLV	0.00	1SLV	-0.13	9SLU	0.00	5SLV	0.00	1SLV	0.00	1SLV
9	Max	0.00	1SLV	0.00	1SLV	-0.04	1SLV	0.00	5SLV	0.00	1SLV	0.00	1SLV
9	Min.	0.00	1SLV	0.00	1SLV	-0.12	9SLU	0.00	5SLV	0.00	1SLV	0.00	1SLV
10	Max	0.00	1SLV	0.00	1SLV	-0.05	1SLV	0.00	5SLV	0.00	1SLV	0.00	1SLV
10	Min.	0.00	1SLV	0.00	1SLV	-0.13	9SLU	0.00	5SLV	0.00	1SLV	0.00	1SLV
11	Max	0.00	1SLV	0.00	1SLV	-0.03	5SLV	0.00	5SLV	0.00	1SLV	0.00	1SLV
11	Min.	0.00	1SLV	0.00	1SLV	-0.16	9SLU	0.00	5SLV	0.00	1SLV	0.00	1SLV
12	Max	0.00	1SLV	0.00	1SLV	-0.03	5SLV	0.00	5SLV	0.00	1SLV	0.00	1SLV
12	Min.	0.00	1SLV	0.00	1SLV	-0.16	5SLV	0.00	5SLV	0.00	1SLV	0.00	1SLV
13	Max	0.00	1SLV	0.00	1SLV	-0.06	1SLV	0.00	5SLV	0.00	5SLV	0.00	1SLV
13	Min.	0.00	1SLV	0.00	1SLV	-0.16	9SLU	0.00	5SLV	0.00	5SLV	0.00	1SLV
14	Max	0.00	1SLV	0.00	1SLV	-0.06	1SLV	0.00	5SLV	0.00	5SLV	0.00	1SLV
14	Min.	0.00	1SLV	0.00	1SLV	-0.16	9SLU	0.00	5SLV	0.00	5SLV	0.00	1SLV
15	Max	0.00	1SLV	0.00	1SLV	-0.06	5SLV	0.00	5SLV	0.00	1SLV	0.00	1SLV
15	Min.	0.00	1SLV	0.00	1SLV	-0.16	9SLU	0.00	5SLV	0.00	1SLV	0.00	1SLV
16	Max	0.00	1SLV	0.00	1SLV	-0.06	5SLV	0.00	5SLV	0.00	1SLV	0.00	1SLV
16	Min.	0.00	1SLV	0.00	1SLV	-0.16	9SLU	0.00	5SLV	0.00	1SLV	0.00	1SLV

## Tensioni sul terreno

## Simbologia

 $\sigma_t$  = Tensione sul terreno

CC = Numero della combinazione delle condizioni di carico elementari

Nodo = Numero del nodo

TCC = Tipo di combinazione di carico

SLU = Stato limite ultimo

SLE R = Stato limite d'esercizio, combinazione rara

SLE F = Stato limite d'esercizio, combinazione frequente

SLE Q = Stato limite d'esercizio, combinazione quasi permanente

SLD = Stato limite di danno

SLV = Stato limite di salvaguardia della vita

SND = Stato limite di salvaguardia della vita (non dissipativo)

Nodo		CC	TCC	$\sigma_t$ <daN/cm <sup>2</sup> >
-1	Max	9	SLU	0.48
2	Max	9	SLU	0.46
4	Max	9	SLU	0.49
6	Max	9	SLU	0.39
8	Max	9	SLU	0.38
10	Max	9	SLU	0.39
12	Max	9	SLU	0.48
14	Max	9	SLU	0.47
16	Max	9	SLU	0.49
18	Max	9	SLU	0.41

Nodo		CC	TCC	$\sigma_t$ <daN/cm <sup>2</sup> >
-1	Min.	5	SND	0.27
2	Min.	5	SND	0.24
4	Min.	1	SND	0.25
6	Min.	1	SND	0.23
8	Min.	1	SND	0.19
10	Min.	1	SND	0.23
12	Min.	5	SND	0.24
14	Min.	1	SND	0.26
16	Min.	5	SND	0.28
18	Min.	5	SND	0.12

Nodo		CC	TCC	$\sigma_t$ <daN/cm <sup>2</sup> >
1	Max	9	SLU	0.52
3	Max	9	SLU	0.45
5	Max	9	SLU	0.49
7	Max	9	SLU	0.36
9	Max	9	SLU	0.36
11	Max	9	SLU	0.48
13	Max	9	SLU	0.47
15	Max	9	SLU	0.49
17	Max	9	SLU	0.41

Nodo		CC	TCC	$\sigma_t$ <daN/cm <sup>2</sup> >
1	Min.	5	SND	0.26
3	Min.	5	SND	0.24
5	Min.	1	SND	0.25
7	Min.	1	SND	0.19
9	Min.	1	SND	0.19
11	Min.	5	SND	0.24
13	Min.	1	SND	0.26
15	Min.	5	SND	0.28
17	Min.	5	SND	0.12

## Sollecitazioni aste

## Simbologia

Asta = Numero dell'asta

CC = Numero della combinazione delle condizioni di carico elementari

Mx = Momento torcente intorno all'asse X

My = Momento flettente intorno all'asse Y

Mz = Momento flettente intorno all'asse Z

N = Sforzo normale

N1 = Nodo1

N2 = Nodo2

Ty = Taglio in dir. Y

Tz = Taglio in dir. Z

X = Coordinata progressiva rispetto al nodo iniziale

Tipo di combinazione di carico: SLV

Asta	N1	N2		X <cm>	N <daN>	CC	Ty <daN>	CC	Mz <daNm>	CC	Tz <daN>	CC	My <daNm>	CC	Mx <daNm>	CC
2601	6	7	Max	15.72	0.00	1	0.00	1	0.00	1	-482.78	1	945.21	1	97.53	5
2601	6	7	Max	155.23									-67.71	1		
2601	6	7	Max	458.00	0.00	1	0.00	1	0.00	1	889.97	1	650.82	1	97.53	5
2601	6	7	Min.	15.72	0.00	1	0.00	1	0.00	1	-1055.60	1	-1154.62	1	-189.59	5
2601	6	7	Min.	155.23									-1472.85	1		
2601	6	7	Min.	458.00	0.00	1	0.00	1	0.00	1	311.68	1	-830.84	1	-189.59	5
2601	7	8	Max	15.00	0.00	1	0.00	1	0.00	1	-132.43	1	677.86	1	73.09	5
2601	7	8	Max	99.41									243.99	1		
2601	7	8	Max	530.00	0.00	1	0.00	1	0.00	1	897.01	1	1427.02	1	73.09	5
2601	7	8	Min.	15.00	0.00	1	0.00	1	0.00	1	-629.70	1	-769.70	1	-101.13	5
2601	7	8	Min.	99.41									-829.64	1		
2601	7	8	Min.	530.00	0.00	1	0.00	1	0.00	1	373.73	1	-209.85	1	-101.13	5
2601	8	9	Max	15.00	0.00	1	0.00	1	0.00	1	-375.91	1	1421.09	1	108.47	5
2601	8	9	Max	237.78									67.47	1		
2601	8	9	Max	509.00	0.00	1	0.00	1	0.00	1	481.44	1	70.18	1	108.47	5
2601	8	9	Min.	15.00	0.00	1	0.00	1	0.00	1	-868.52	1	-198.94	1	-81.29	5
2601	8	9	Min.	237.78									-602.02	1		



## Relazione di calcolo

2601	8	9	Min.	509.00	0.00	1	0.00	1	0.00	1	257.74	1	-93.01	1	-81.29	5
2601	9	10	Max	15.00	0.00	1	0.00	1	0.00	1	-425.92	1	18.46	1	185.59	5
2601	9	10	Max	371.59									316.79	1		
2601	9	10	Max	478.28	0.00	1	0.00	1	0.00	1	1131.79	1	1288.34	1	185.59	5
2601	9	10	Min.	15.00	0.00	1	0.00	1	0.00	1	-821.53	1	-144.97	1	-95.61	5
2601	9	10	Min.	371.59									-1735.22	1		
2601	9	10	Min.	478.28	0.00	1	0.00	1	0.00	1	447.99	1	-1510.43	1	-95.61	5
2602	17	18	Max	9.69	0.00	1	0.00	1	0.00	1	-462.52	5	336.30	5	7.95	1
2602	17	18	Max	168.41									-177.96	5		
2602	17	18	Max	330.31	0.00	1	0.00	1	0.00	1	1090.07	5	353.73	5	7.95	1
2602	17	18	Min.	9.69	0.00	1	0.00	1	0.00	1	-1068.45	5	177.08	5	-8.92	1
2602	17	18	Min.	168.41									-508.57	5		
2602	17	18	Min.	330.31	0.00	1	0.00	1	0.00	1	452.96	5	171.71	5	-8.92	1
2603	7	3	Max	15.00	0.00	1	0.00	1	0.00	1	-820.49	5	1205.29	5	27.25	1
2603	7	3	Max	515.95									-328.16	5		
2603	7	3	Max	651.00	0.00	1	0.00	1	0.00	1	909.58	5	461.87	5	27.25	1
2603	7	3	Min.	15.00	0.00	1	0.00	1	0.00	1	-1071.29	5	623.35	5	-1.84	1
2603	7	3	Min.	515.95									-777.22	5		
2603	7	3	Min.	651.00	0.00	1	0.00	1	0.00	1	504.08	5	-491.71	5	-1.84	1
2603	13	7	Max	15.86	0.00	1	0.00	1	0.00	1	-916.07	5	1297.64	5	45.79	5
2603	13	7	Max	198.97									-346.71	5		
2603	13	7	Max	531.47	0.00	1	0.00	1	0.00	1	1284.80	5	1340.12	5	45.79	5
2603	13	7	Min.	15.86	0.00	1	0.00	1	0.00	1	-1500.37	5	70.13	5	8.48	5
2603	13	7	Min.	198.97									-680.24	5		
2603	13	7	Min.	531.47	0.00	1	0.00	1	0.00	1	877.66	5	511.94	5	8.48	5
2604	17	15	Max	9.68	0.00	1	0.00	1	0.00	1	588.67	5	8.91	5	-232.77	5
2604	17	15	Max	241.00	0.00	1	0.00	1	0.00	1	2448.29	5	3467.83	5	-232.77	5
2604	17	15	Min.	9.68	0.00	1	0.00	1	0.00	1	-1.26	5	-12.42	5	-422.46	5
2604	17	15	Min.	241.00	0.00	1	0.00	1	0.00	1	922.58	5	767.21	5	-422.46	5
2605	8	1	Max	15.00	0.00	1	0.00	1	0.00	1	-832.70	5	1067.21	5	10.84	1
2605	8	1	Max	575.47									-510.17	5		
2605	8	1	Max	710.00	0.00	1	0.00	1	0.00	1	777.25	5	83.62	5	10.84	1
2605	8	1	Min.	15.00	0.00	1	0.00	1	0.00	1	-972.68	5	757.84	5	-12.34	1
2605	8	1	Min.	575.47									-806.29	5		
2605	8	1	Min.	710.00	0.00	1	0.00	1	0.00	1	572.21	5	-486.47	5	-12.34	1
2605	-1	8	Max	0.00	0.00	1	0.00	1	0.00	1	-1516.76	5	2279.21	5	15.84	1
2605	-1	8	Max	308.06									-521.73	5		
2605	-1	8	Max	553.65	0.00	1	0.00	1	0.00	1	1147.77	5	1058.22	5	15.84	1
2605	-1	8	Min.	0.00	0.00	1	0.00	1	0.00	1	-2157.69	5	1207.83	5	-16.11	1
2605	-1	8	Min.	308.06									-610.66	5		
2605	-1	8	Min.	553.65	0.00	1	0.00	1	0.00	1	978.80	5	598.30	5	-16.11	1
2606	18	16	Max	9.68	0.00	1	0.00	1	0.00	1	609.87	5	12.92	5	437.94	5
2606	18	16	Max	241.00	0.00	1	0.00	1	0.00	1	2499.33	5	3559.89	5	437.94	5
2606	18	16	Min.	9.68	0.00	1	0.00	1	0.00	1	-10.56	5	-13.85	5	229.46	5
2606	18	16	Min.	241.00	0.00	1	0.00	1	0.00	1	911.02	5	739.06	5	229.46	5
2607	9	2	Max	15.00	0.00	1	0.00	1	0.00	1	-798.16	5	1229.32	5	-1.89	5
2607	9	2	Max	521.04									-315.61	5		
2607	9	2	Max	653.00	0.00	1	0.00	1	0.00	1	901.95	5	455.59	5	-1.89	5
2607	9	2	Min.	15.00	0.00	1	0.00	1	0.00	1	-1085.62	5	595.81	5	-20.73	5
2607	9	2	Min.	521.04									-791.20	5		
2607	9	2	Min.	653.00	0.00	1	0.00	1	0.00	1	494.43	5	-517.29	5	-20.73	5
2607	14	9	Max	15.86	0.00	1	0.00	1	0.00	1	-917.72	5	1351.73	5	-11.63	5
2607	14	9	Max	199.13									-340.11	5		
2607	14	9	Max	532.70	0.00	1	0.00	1	0.00	1	1280.24	5	1339.33	5	-11.63	5
2607	14	9	Min.	15.86	0.00	1	0.00	1	0.00	1	-1535.38	5	70.94	5	-46.15	5
2607	14	9	Min.	199.13									-680.51	5		
2607	14	9	Min.	532.70	0.00	1	0.00	1	0.00	1	878.47	5	504.74	5	-46.15	5
2608	4	3	Max	15.82	0.00	1	0.00	1	0.00	1	-1152.95	5	624.24	1	723.07	5
2608	4	3	Max	191.52									-839.42	1		
2608	4	3	Max	491.08	0.00	1	0.00	1	0.00	1	1734.72	1	908.88	5	723.07	5
2608	4	3	Min.	15.82	0.00	1	0.00	1	0.00	1	-1590.04	5	-840.19	1	222.32	5
2608	4	3	Min.	191.52									-1957.94	1		
2608	4	3	Min.	491.08	0.00	1	0.00	1	0.00	1	1321.29	1	529.31	5	222.32	5
2608	3	1	Max	14.91	0.00	1	0.00	1	0.00	1	-1162.78	1	1325.00	1	346.94	5
2608	3	1	Max	278.75									-940.76	5		
2608	3	1	Max	533.27	0.00	1	0.00	1	0.00	1	1612.76	1	943.03	1	346.94	5
2608	3	1	Min.	14.91	0.00	1	0.00	1	0.00	1	-1641.69	1	207.22	1	91.74	5
2608	3	1	Min.	278.75									-1275.13	5		
2608	3	1	Min.	533.27	0.00	1	0.00	1	0.00	1	1318.53	1	355.77	1	91.74	5
2609	1	2	Max	14.91	0.00	1	0.00	1	0.00	1	-1287.03	1	939.67	1	-83.40	5
2609	1	2	Max	256.34									-828.47	5		
2609	1	2	Max	512.18	0.00	1	0.00	1	0.00	1	1618.45	1	1332.89	1	-83.40	5
2609	1	2	Min.	14.91	0.00	1	0.00	1	0.00	1	-1563.10	1	375.85	1	-358.93	5
2609	1	2	Min.	256.34									-1137.42	5		
2609	1	2	Min.	512.18	0.00	1	0.00	1	0.00	1	1142.78	1	275.48	1	-358.93	5
2609	2	5	Max	14.92	0.00	1	0.00	1	0.00	1	-1356.40	1	941.56	5	-212.54	5
2609	2	5	Max	326.69									-959.29	1		
2609	2	5	Max	511.28	0.00	1	0.00	1	0.00	1	1645.12	5	635.77	1	-212.54	5
2609	2	5	Min.	14.92	0.00	1	0.00	1	0.00	1	-1763.10	1	535.85	5	-712.59	5
2609	2	5	Min.	326.69									-2043.73	1		
2609	2	5	Min.	511.28	0.00	1	0.00	1	0.00	1	1189.63	5	-852.33	1	-712.59	5
2610	10	5	Max	15.00	0.00	1	0.00	1	0.00	1	-1280.93	5	1509.20	5	71.57	1
2610	10	5	Max	414.62									-1427.07	5		
2610	10	5	Max	598.39	0.00	1	0.00	1	0.00	1	1589.32	1	157.45	5	71.57	1
2610	10	5	Min.	15.00	0.00	1	0.00	1	0.00	1	-1963.66	5	333.87	5	-189.01	1
2610	10	5	Min.	414.62									-2539.37	5		
2610	10	5	Min.	598.39	0.00	1	0.00	1	0.00	1	1134.71	1	-1425.65	5	-189.01	1
2610	12	10	Max	15.00	0.00	1	0.00	1	0.00	1	-1024.97	1	304.22	5	137.58	1
2610	12	10	Max	171.06									-851.06	5		
2610	12	10	Max	505.63	0.00	1	0.00	1	0.00	1	1858.90	5	1479.94	1	137.58	1
2610	12	10	Min.	15.00	0.00	1	0.00	1	0.00	1	-1340.30	1	-1052.28	5	-142.46	1



## Relazione di calcolo

2610	12	10	Min.	171.06								-1910.13	5		
2610	12	10	Min.	505.63	0.00	1	0.00	1	0.00	1	1288.79	5	698.83	1	-142.46
2611	6	4	Max	15.00	0.00	1	0.00	1	0.00	1	-1264.77	5	1498.08	5	173.55
2611	6	4	Max	413.80									-1425.77	5	
2611	6	4	Max	598.39	0.00	1	0.00	1	0.00	1	1586.48	1	139.91	5	173.55
2611	6	4	Min.	15.00	0.00	1	0.00	1	0.00	1	-1961.40	5	309.13	5	-64.60
2611	6	4	Min.	413.80									-2548.58	5	
2611	6	4	Min.	598.39	0.00	1	0.00	1	0.00	1	1134.49	1	-1417.13	5	-64.60
2611	11	6	Max	15.00	0.00	1	0.00	1	0.00	1	-1018.45	1	273.62	5	130.66
2611	11	6	Max	172.37									-881.21	5	
2611	11	6	Max	505.63	0.00	1	0.00	1	0.00	1	1825.48	5	1418.44	1	130.66
2611	11	6	Min.	15.00	0.00	1	0.00	1	0.00	1	-1346.88	1	-1045.23	5	-118.92
2611	11	6	Min.	172.37									-1905.31	5	
2611	11	6	Min.	505.63	0.00	1	0.00	1	0.00	1	1309.81	5	724.91	1	-118.92
2612	16	14	Max	15.86	0.00	1	0.00	1	0.00	1	-1620.99	1	3742.59	1	-709.04
2612	16	14	Max	303.96									240.66	5	
2612	16	14	Max	339.62	0.00	1	0.00	1	0.00	1	880.04	1	490.56	5	-709.04
2612	16	14	Min.	15.86	0.00	1	0.00	1	0.00	1	-2737.10	1	1481.23	1	-1245.68
2612	16	14	Min.	303.96									-273.24	5	
2612	16	14	Min.	339.62	0.00	1	0.00	1	0.00	1	218.77	1	-227.21	5	-1245.68
2612	14	12	Max	15.00	0.00	1	0.00	1	0.00	1	-1196.77	1	402.89	1	446.97
2612	14	12	Max	265.65									-1375.71	1	
2612	14	12	Max	452.63	0.00	1	0.00	1	0.00	1	1636.90	5	242.00	1	446.97
2612	14	12	Min.	15.00	0.00	1	0.00	1	0.00	1	-1880.27	1	-398.61	1	-94.76
2612	14	12	Min.	265.65									-2029.71	1	
2612	14	12	Min.	452.63	0.00	1	0.00	1	0.00	1	1239.76	5	-750.84	1	-94.76
2613	11	13	Max	16.53	0.00	1	0.00	1	0.00	1	-1206.18	5	244.36	1	79.99
2613	11	13	Max	196.66									-1275.49	1	
2613	11	13	Max	433.13	0.00	1	0.00	1	0.00	1	1780.08	1	288.73	5	79.99
2613	11	13	Min.	16.53	0.00	1	0.00	1	0.00	1	-1592.62	5	-744.48	1	-461.57
2613	11	13	Min.	196.66									-1941.16	1	
2613	11	13	Min.	433.13	0.00	1	0.00	1	0.00	1	1139.54	1	-438.40	5	-461.57
2613	13	15	Max	15.00	0.00	1	0.00	1	0.00	1	-300.13	1	427.14	5	1188.65
2613	13	15	Max	54.01									97.30	1	
2613	13	15	Max	359.80	0.00	1	0.00	1	0.00	1	2812.05	1	3770.55	1	1188.65
2613	13	15	Min.	15.00	0.00	1	0.00	1	0.00	1	-968.58	1	-373.73	5	676.32
2613	13	15	Min.	62.12									-455.40	5	
2613	13	15	Min.	359.80	0.00	1	0.00	1	0.00	1	1666.26	1	1441.50	1	676.32
2613	15	-1	Max	15.00	0.00	1	0.00	1	0.00	1	-1890.34	1	2635.74	5	-605.83
2613	15	-1	Max	170.00	0.00	1	0.00	1	0.00	1	-498.06	1	-412.99	5	-605.83
2613	15	-1	Min.	15.00	0.00	1	0.00	1	0.00	1	-2792.00	1	966.49	5	-1147.02
2613	15	-1	Min.	170.00	0.00	1	0.00	1	0.00	1	-1340.08	1	-1036.75	5	-1147.02
2613	-1	16	Max	0.00	0.00	1	0.00	1	0.00	1	1348.02	1	-411.05	5	1155.14
2613	-1	16	Max	155.00	0.00	1	0.00	1	0.00	1	2806.83	1	2680.51	5	1155.14
2613	-1	16	Min.	0.00	0.00	1	0.00	1	0.00	1	488.29	1	-1038.42	5	579.06
2613	-1	16	Min.	155.00	0.00	1	0.00	1	0.00	1	1878.01	1	921.38	5	579.06

Tipo di combinazione di carico: SLD

Asta	N1	N2		X <cm>	N <daN>	CC	Ty <daN>	CC	Mz <daNm>	CC	Tz <daN>	CC	My <daNm>	CC	Mx <daNm>	CC
2601	6	7	Max	15.72	0.00	2	0.00	2	0.00	2	-476.00	2	970.28	2	98.92	6
2601	6	7	Max	153.20									-42.04	2		
2601	6	7	Max	458.00	0.00	2	0.00	2	0.00	2	897.01	2	668.95	2	98.92	6
2601	6	7	Min.	15.72	0.00	2	0.00	2	0.00	2	-1062.39	2	-1179.69	2	-190.98	6
2601	6	7	Min.	153.20									-1489.76	2		
2601	6	7	Min.	458.00	0.00	2	0.00	2	0.00	2	304.64	2	-848.98	2	-190.98	6
2601	7	8	Max	15.00	0.00	2	0.00	2	0.00	2	-126.36	2	695.45	2	72.10	6
2601	7	8	Max	96.09									271.09	2		
2601	7	8	Max	530.00	0.00	2	0.00	2	0.00	2	903.36	2	1447.07	2	72.10	6
2601	7	8	Min.	15.00	0.00	2	0.00	2	0.00	2	-635.77	2	-787.29	2	-100.14	6
2601	7	8	Min.	96.09									-842.81	2		
2601	7	8	Min.	530.00	0.00	2	0.00	2	0.00	2	367.37	2	-229.90	2	-100.14	6
2601	8	9	Max	15.00	0.00	2	0.00	2	0.00	2	-369.94	2	1440.93	2	107.60	6
2601	8	9	Max	234.88									85.89	2		
2601	8	9	Max	509.00	0.00	2	0.00	2	0.00	2	484.10	2	71.91	2	107.60	6
2601	8	9	Min.	15.00	0.00	2	0.00	2	0.00	2	-874.50	2	-218.77	2	-80.42	6
2601	8	9	Min.	234.88									-610.30	2		
2601	8	9	Min.	509.00	0.00	2	0.00	2	0.00	2	255.07	2	-94.74	2	-80.42	6
2601	9	10	Max	15.00	0.00	2	0.00	2	0.00	2	-421.12	2	20.15	2	187.02	6
2601	9	10	Max	374.12									359.76	2		
2601	9	10	Max	478.28	0.00	2	0.00	2	0.00	2	1140.05	2	1322.45	2	187.02	6
2601	9	10	Min.	15.00	0.00	2	0.00	2	0.00	2	-826.32	2	-146.66	2	-97.05	6
2601	9	10	Min.	374.12									-1760.38	2		
2601	9	10	Min.	478.28	0.00	2	0.00	2	0.00	2	439.73	2	-1544.54	2	-97.05	6
2602	17	18	Max	9.69	0.00	2	0.00	2	0.00	2	-474.19	6	331.56	6	7.79	2
2602	17	18	Max	168.25									-182.97	6		
2602	17	18	Max	330.31	0.00	2	0.00	2	0.00	2	1080.42	6	351.29	6	7.79	2
2602	17	18	Min.	9.69	0.00	2	0.00	2	0.00	2	-1056.78	6	181.81	6	-8.77	2
2602	17	18	Min.	168.25									-503.54	6		
2602	17	18	Min.	330.31	0.00	2	0.00	2	0.00	2	462.61	6	174.14	6	-8.77	2
2603	7	3	Max	15.00	0.00	2	0.00	2	0.00	2	-817.45	6	1212.36	6	27.47	2
2603	7	3	Max	517.72									-317.07	6		
2603	7	3	Max	651.00	0.00	2	0.00	2	0.00	2	914.01	6	472.94	6	27.47	2
2603	7	3	Min.	15.00	0.00	2	0.00	2	0.00	2	-1074.32	6	616.28	6	-2.05	2
2603	7	3	Min.	517.72									-782.60	6		
2603	7	3	Min.	651.00	0.00	2	0.00	2	0.00	2	499.65	6	-502.79	6	-2.05	2
2603	13	7	Max	15.86	0.00	2	0.00	2	0.00	2	-913.17	6	1309.80	6	45.42	6
2603	13	7	Max	197.63									-338.23	6		
2603	13	7	Max	531.47	0.00	2	0.00	2	0.00	2	1289.72	6	1350.10	6	45.42	6



## Relazione di calcolo

2603	13	7Min.	15.86	0.00	2	0.00	2	0.00	2	-1503.27	6	57.97	6	8.84	6
2603	13	7Min.	197.63									-683.57	6		
2603	13	7Min.	531.47	0.00	2	0.00	2	0.00	2	872.74	6	501.96	6	8.84	6
2604	17	15Max	9.68	0.00	2	0.00	2	0.00	2	577.39	6	8.52	2	-237.91	6
2604	17	15Max	241.00	0.00	2	0.00	2	0.00	2	2418.44	6	3415.99	6	-237.91	6
2604	17	15Min.	9.68	0.00	2	0.00	2	0.00	2	10.02	6	-12.03	2	-417.32	6
2604	17	15Min.	241.00	0.00	2	0.00	2	0.00	2	952.43	6	819.05	6	-417.32	6
2605	8	1Max	15.00	0.00	2	0.00	2	0.00	2	-833.46	6	1065.16	6	11.11	2
2605	8	1Max	575.07									-511.88	6		
2605	8	1Max	710.00	0.00	2	0.00	2	0.00	2	775.82	6	81.13	6	11.11	2
2605	8	1Min.	15.00	0.00	2	0.00	2	0.00	2	-971.92	6	759.88	6	-12.62	2
2605	8	1Min.	575.07									-805.31	6		
2605	8	1Min.	710.00	0.00	2	0.00	2	0.00	2	573.64	6	-483.98	6	-12.62	2
2605	-1	8Max	0.00	0.00	2	0.00	2	0.00	2	-1530.09	6	2258.02	6	15.75	2
2605	-1	8Max	307.43									-524.41	6		
2605	-1	8Max	553.65	0.00	2	0.00	2	0.00	2	1146.05	6	1051.91	6	15.75	2
2605	-1	8Min.	0.00	0.00	2	0.00	2	0.00	2	-2144.36	6	1229.02	6	-16.03	2
2605	-1	8Min.	307.43									-609.03	6		
2605	-1	8Min.	553.65	0.00	2	0.00	2	0.00	2	980.52	6	604.60	6	-16.03	2
2606	18	16Max	9.68	0.00	2	0.00	2	0.00	2	600.56	6	12.85	6	434.83	6
2606	18	16Max	241.00	0.00	2	0.00	2	0.00	2	2474.85	6	3517.48	6	434.83	6
2606	18	16Min.	9.68	0.00	2	0.00	2	0.00	2	-1.25	6	-13.78	6	232.56	6
2606	18	16Min.	241.00	0.00	2	0.00	2	0.00	2	935.51	6	781.47	6	232.56	6
2607	9	2Max	15.00	0.00	2	0.00	2	0.00	2	-794.68	6	1237.02	6	-1.84	6
2607	9	2Max	522.86									-303.92	6		
2607	9	2Max	653.00	0.00	2	0.00	2	0.00	2	906.45	6	466.99	6	-1.84	6
2607	9	2Min.	15.00	0.00	2	0.00	2	0.00	2	-1089.10	6	588.11	6	-20.78	6
2607	9	2Min.	522.86									-796.95	6		
2607	9	2Min.	653.00	0.00	2	0.00	2	0.00	2	489.93	6	-528.70	6	-20.78	6
2607	14	9Max	15.86	0.00	2	0.00	2	0.00	2	-914.70	6	1364.32	6	-11.99	6
2607	14	9Max	197.73									-331.06	6		
2607	14	9Max	532.70	0.00	2	0.00	2	0.00	2	1285.10	6	1349.39	6	-11.99	6
2607	14	9Min.	15.86	0.00	2	0.00	2	0.00	2	-1538.40	6	58.35	6	-45.79	6
2607	14	9Min.	197.73									-683.93	6		
2607	14	9Min.	532.70	0.00	2	0.00	2	0.00	2	873.60	6	494.68	6	-45.79	6
2608	4	3Max	15.82	0.00	2	0.00	2	0.00	2	-1176.00	6	588.57	2	724.27	6
2608	4	3Max	192.21									-869.23	2		
2608	4	3Max	491.08	0.00	2	0.00	2	0.00	2	1727.77	2	887.32	6	724.27	6
2608	4	3Min.	15.82	0.00	2	0.00	2	0.00	2	-1566.99	6	-804.53	2	221.12	6
2608	4	3Min.	192.21									-1930.17	2		
2608	4	3Min.	491.08	0.00	2	0.00	2	0.00	2	1328.23	2	550.87	6	221.12	6
2608	3	1Max	14.91	0.00	2	0.00	2	0.00	2	-1172.21	2	1295.10	2	343.84	6
2608	3	1Max	279.91									-943.69	6		
2608	3	1Max	533.27	0.00	2	0.00	2	0.00	2	1606.30	2	930.52	2	343.84	6
2608	3	1Min.	14.91	0.00	2	0.00	2	0.00	2	-1632.25	2	237.12	2	94.84	6
2608	3	1Min.	279.91									-1272.70	6		
2608	3	1Min.	533.27	0.00	2	0.00	2	0.00	2	1325.00	2	368.29	2	94.84	6
2609	1	2Max	14.91	0.00	2	0.00	2	0.00	2	-1293.51	2	928.82	2	-86.18	6
2609	1	2Max	254.83									-831.71	6		
2609	1	2Max	512.18	0.00	2	0.00	2	0.00	2	1610.24	2	1306.68	2	-86.18	6
2609	1	2Min.	14.91	0.00	2	0.00	2	0.00	2	-1556.61	2	386.69	2	-356.14	6
2609	1	2Min.	254.83									-1134.53	6		
2609	1	2Min.	512.18	0.00	2	0.00	2	0.00	2	1151.00	2	301.69	2	-356.14	6
2609	2	5Max	14.92	0.00	2	0.00	2	0.00	2	-1363.73	2	920.70	6	-210.95	6
2609	2	5Max	325.91									-989.30	2		
2609	2	5Max	511.28	0.00	2	0.00	2	0.00	2	1622.72	6	600.93	2	-210.95	6
2609	2	5Min.	14.92	0.00	2	0.00	2	0.00	2	-1755.77	2	556.71	6	-714.18	6
2609	2	5Min.	325.91									-2016.02	2		
2609	2	5Min.	511.28	0.00	2	0.00	2	0.00	2	1212.02	6	-817.49	2	-714.18	6
2610	10	5Max	15.00	0.00	2	0.00	2	0.00	2	-1302.41	6	1466.85	6	66.32	2
2610	10	5Max	411.68									-1484.64	6		
2610	10	5Max	598.39	0.00	2	0.00	2	0.00	2	1579.14	2	88.79	6	66.32	2
2610	10	5Min.	15.00	0.00	2	0.00	2	0.00	2	-1942.18	6	376.23	6	-183.76	2
2610	10	5Min.	411.68									-2492.31	6		
2610	10	5Min.	598.39	0.00	2	0.00	2	0.00	2	1144.89	2	-1356.99	6	-183.76	2
2610	12	10Max	15.00	0.00	2	0.00	2	0.00	2	-1051.27	2	254.09	6	135.72	2
2610	12	10Max	172.78									-894.55	6		
2610	12	10Max	505.63	0.00	2	0.00	2	0.00	2	1832.82	6	1455.25	2	135.72	2
2610	12	10Min.	15.00	0.00	2	0.00	2	0.00	2	-1314.00	2	-1002.15	6	-140.60	2
2610	12	10Min.	172.78									-1871.61	6		
2610	12	10Min.	505.63	0.00	2	0.00	2	0.00	2	1314.87	6	723.52	2	-140.60	2
2611	6	4Max	15.00	0.00	2	0.00	2	0.00	2	-1284.48	6	1457.26	6	166.77	2
2611	6	4Max	410.85									-1481.57	6		
2611	6	4Max	598.39	0.00	2	0.00	2	0.00	2	1575.20	2	70.76	6	166.77	2
2611	6	4Min.	15.00	0.00	2	0.00	2	0.00	2	-1941.70	6	349.95	6	-57.83	2
2611	6	4Min.	410.85									-2503.08	6		
2611	6	4Min.	598.39	0.00	2	0.00	2	0.00	2	1145.77	2	-1347.97	6	-57.83	2
2611	11	6Max	15.00	0.00	2	0.00	2	0.00	2	-1045.84	2	222.36	6	126.07	6
2611	11	6Max	174.20									-925.94	6		
2611	11	6Max	505.63	0.00	2	0.00	2	0.00	2	1796.88	6	1386.95	2	126.07	6
2611	11	6Min.	15.00	0.00	2	0.00	2	0.00	2	-1319.48	2	-993.97	6	-114.33	6
2611	11	6Min.	174.20									-1865.59	6		
2611	11	6Min.	505.63	0.00	2	0.00	2	0.00	2	1338.42	6	756.40	2	-114.33	6
2612	16	14Max	15.86	0.00	2	0.00	2	0.00	2	-1677.10	6	3572.48	2	-732.05	6
2612	16	14Max	303.30									228.17	6		
2612	16	14Max	339.62	0.00	2	0.00	2	0.00	2	844.43	6	479.61	6	-732.05	6
2612	16	14Min.	15.86	0.00	2	0.00	2	0.00	2	-2681.00	6	1651.34	2	-1222.66	6
2612	16	14Min.	303.30									-264.42	6		
2612	16	14Min.	339.62	0.00	2	0.00	2	0.00	2	254.38	6	-216.26	6	-1222.66	6
2612	14	12Max	15.00	0.00	2	0.00	2	0.00	2	-1248.97	2	362.98	6	450.07	6
2612	14	12Max	261.59									-1433.89	2		



## Relazione di calcolo

2612	14	12	Max	452.63	0.00	2	0.00	2	0.00	2	1612.07	6	160.42	2	450.07	6
2612	14	12	Min.	15.00	0.00	2	0.00	2	0.00	2	-1828.06	2	-358.69	6	-97.87	6
2612	14	12	Min.	261.59									-1982.12	2		
2612	14	12	Min.	452.63	0.00	2	0.00	2	0.00	2	1264.58	6	-669.27	2	-97.87	6
2613	11	13	Max	16.53	0.00	2	0.00	2	0.00	2	-1231.61	6	162.66	2	82.55	6
2613	11	13	Max	200.55									-1336.72	2		
2613	11	13	Max	433.13	0.00	2	0.00	2	0.00	2	1730.67	2	269.18	6	82.55	6
2613	11	13	Min.	16.53	0.00	2	0.00	2	0.00	2	-1567.20	6	-662.78	2	-464.12	6
2613	11	13	Min.	200.55									-1889.68	2		
2613	11	13	Min.	433.13	0.00	2	0.00	2	0.00	2	1188.94	2	-418.85	6	-464.12	6
2613	13	15	Max	15.00	0.00	2	0.00	2	0.00	2	-344.12	2	411.06	6	1166.20	6
2613	13	15	Max	62.88									59.53	6		
2613	13	15	Max	359.80	0.00	2	0.00	2	0.00	2	2746.42	6	3597.33	2	1166.20	6
2613	13	15	Min.	15.00	0.00	2	0.00	2	0.00	2	-924.60	2	-357.65	6	698.77	6
2613	13	15	Min.	62.88									-442.66	6		
2613	13	15	Min.	359.80	0.00	2	0.00	2	0.00	2	1731.90	6	1614.72	2	698.77	
2613	15	-1	Max	15.00	0.00	2	0.00	2	0.00	2	-1944.92	6	2587.54	6	-618.04	6
2613	15	-1	Max	170.00	0.00	2	0.00	2	0.00	2	-566.41	2	-413.56	6	-618.04	6
2613	15	-1	Min.	15.00	0.00	2	0.00	2	0.00	2	-2737.41	6	1014.68	6	-1134.80	6
2613	15	-1	Min.	170.00	0.00	2	0.00	2	0.00	2	-1271.73	2	-1036.18	6	-1134.80	6
2613	-1	16	Max	0.00	0.00	2	0.00	2	0.00	2	1280.91	2	-411.92	6	1146.37	6
2613	-1	16	Max	155.00	0.00	2	0.00	2	0.00	2	2762.34	6	2635.78	6	1146.37	6
2613	-1	16	Min.	0.00	0.00	2	0.00	2	0.00	2	555.40	2	-1037.54	6	587.83	6
2613	-1	16	Min.	155.00	0.00	2	0.00	2	0.00	2	1922.50	6	966.12	6	587.83	6

Tipo di combinazione di carico: SLU

Asta	N1	N2		X <cm>	N <daN>	CC	Ty <daN>	CC	Mz <daNm>	CC	Tz <daN>	CC	My <daNm>	CC	Mx <daNm>	CC
2601	6	7	Max	15.72	0.00	9	0.00	9	0.00	9	-1739.91	9	-372.83	9	-139.04	9
2601	6	7	Max	189.65									-1846.31	9		
2601	6	7	Max	458.00	0.00	9	0.00	9	0.00	9	2453.50	9	1445.63	9	-139.04	9
2601	6	7	Min.	15.72	0.00	9	0.00	9	0.00	9	-1739.91	9	-372.83	9	-139.04	9
2601	6	7	Min.	189.65									-1846.31	9		
2601	6	7	Min.	458.00	0.00	9	0.00	9	0.00	9	2453.50	9	1445.63	9	-139.04	9
2601	7	8	Max	15.00	0.00	9	0.00	9	0.00	9	-2151.85	9	1456.77	9	-53.32	9
2601	7	8	Max	249.78									-1061.75	9		
2601	7	8	Max	530.00	0.00	9	0.00	9	0.00	9	2712.02	9	2667.76	9	-53.32	9
2601	7	8	Min.	15.00	0.00	9	0.00	9	0.00	9	-2151.85	9	1456.77	9	-53.32	9
2601	7	8	Min.	249.78									-1061.75	9		
2601	7	8	Min.	530.00	0.00	9	0.00	9	0.00	9	2712.02	9	2667.76	9	-53.32	9
2601	8	9	Max	15.00	0.00	9	0.00	9	0.00	9	-2652.95	9	2677.92	9	52.09	9
2601	8	9	Max	285.05									-852.90	9		
2601	8	9	Max	509.00	0.00	9	0.00	9	0.00	9	2090.50	9	1488.05	9	52.09	9
2601	8	9	Min.	15.00	0.00	9	0.00	9	0.00	9	-2652.95	9	2677.92	9	52.09	9
2601	8	9	Min.	285.05									-852.90	9		
2601	8	9	Min.	509.00	0.00	9	0.00	9	0.00	9	2090.50	9	1488.05	9	52.09	9
2601	9	10	Max	15.00	0.00	9	0.00	9	0.00	9	-2519.72	9	1454.79	9	135.71	9
2601	9	10	Max	292.97									-2037.41	9		
2601	9	10	Max	478.28	0.00	9	0.00	9	0.00	9	1843.27	9	-383.43	9	135.71	9
2601	9	10	Min.	15.00	0.00	9	0.00	9	0.00	9	-2519.72	9	1454.79	9	135.71	9
2601	9	10	Min.	292.97									-2037.41	9		
2601	9	10	Min.	478.28	0.00	9	0.00	9	0.00	9	1843.27	9	-383.43	9	135.71	9
2602	17	18	Max	9.69	0.00	9	0.00	9	0.00	9	-1615.11	9	452.58	9	-0.29	9
2602	17	18	Max	169.83									-810.17	9		
2602	17	18	Max	330.31	0.00	9	0.00	9	0.00	9	1626.99	9	462.43	9	-0.29	9
2602	17	18	Min.	9.69	0.00	9	0.00	9	0.00	9	-1615.11	9	452.58	9	-0.29	9
2602	17	18	Min.	169.83									-810.17	9		
2602	17	18	Min.	330.31	0.00	9	0.00	9	0.00	9	1626.99	9	462.43	9	-0.29	9
2603	7	3	Max	15.00	0.00	9	0.00	9	0.00	9	-2103.46	9	2071.46	9	36.17	9
2603	7	3	Max	481.65									-1467.04	9		
2603	7	3	Max	651.00	0.00	9	0.00	9	0.00	9	1230.06	9	-628.00	9	36.17	9
2603	7	3	Min.	15.00	0.00	9	0.00	9	0.00	9	-2103.46	9	2071.46	9	36.17	9
2603	7	3	Min.	481.65									-1467.04	9		
2603	7	3	Min.	651.00	0.00	9	0.00	9	0.00	9	1230.06	9	-628.00	9	36.17	9
2603	13	7	Max	15.86	0.00	9	0.00	9	0.00	9	-1996.43	9	598.31	9	12.79	9
2603	13	7	Max	220.95									-1234.13	9		
2603	13	7	Max	531.47	0.00	9	0.00	9	0.00	9	2497.64	9	2388.11	9	12.79	9
2603	13	7	Min.	15.86	0.00	9	0.00	9	0.00	9	-1996.43	9	598.31	9	12.79	9
2603	13	7	Min.	220.95									-1234.13	9		
2603	13	7	Min.	531.47	0.00	9	0.00	9	0.00	9	2497.64	9	2388.11	9	12.79	9
2604	17	15	Max	9.68	0.00	9	0.00	9	0.00	9	435.02	9	-68.62	9	-608.01	9
2604	17	15	Max	241.00	0.00	9	0.00	9	0.00	9	3794.43	9	4632.80	9	-608.01	9
2604	17	15	Min.	9.68	0.00	9	0.00	9	0.00	9	435.02	9	-68.62	9	-608.01	9
2604	17	15	Min.	241.00	0.00	9	0.00	9	0.00	9	3794.43	9	4632.80	9	-608.01	9
2605	8	1	Max	15.00	0.00	9	0.00	9	0.00	9	-2144.81	9	2187.66	9	-1.74	9
2605	8	1	Max	579.12									-1796.56	9		
2605	8	1	Max	710.00	0.00	9	0.00	9	0.00	9	1217.91	9	-1134.60	9	-1.74	9
2605	8	1	Min.	15.00	0.00	9	0.00	9	0.00	9	-2144.81	9	2187.66	9	-1.74	9
2605	8	1	Min.	579.12									-1796.56	9		
2605	8	1	Min.	710.00	0.00	9	0.00	9	0.00	9	1217.91	9	-1134.60	9	-1.74	9
2605	-1	8	Max	0.00	0.00	9	0.00	9	0.00	9	-2985.40	9	2509.61	9	-0.26	9
2605	-1	8	Max	268.96									-1110.99	9		
2605	-1	8	Max	553.65	0.00	9	0.00	9	0.00	9	2576.60	9	2388.23	9	-0.26	9
2605	-1	8	Min.	0.00	0.00	9	0.00	9	0.00	9	-2985.40	9	2509.61	9	-0.26	9
2605	-1	8	Min.	268.96									-1110.99	9		
2605	-1	8	Min.	553.65	0.00	9	0.00	9	0.00	9	2576.60	9	2388.23	9	-0.26	9
2606	18	16	Max	9.68	0.00	9	0.00	9	0.00	9	446.73	9	-67.52	9	618.06	9
2606	18	16	Max	241.00	0.00	9	0.00	9	0.00	9	3845.92	9	4707.91	9	618.06	9
2606	18	16	Min.	9.68	0.00	9	0.00	9	0.00	9	446.73	9	-67.52	9	618.06	9
2606	18	16	Min.	241.00	0.00	9	0.00	9	0.00	9	3845.92	9	4707.91	9	618.06	9



## Relazione di calcolo

2607	9	2	Max	15.00	0.00	9	0.00	9	0.00	9	-2107.42	9	2079.74	9	-33.36	9
2607	9	2	Max	486.76									-1484.13	9		
2607	9	2	Max	653.00	0.00	9	0.00	9	0.00	9	1218.57	9	-666.81	9	-33.36	9
2607	9	2	Min.	15.00	0.00	9	0.00	9	0.00	9	-2107.42	9	2079.74	9	-33.36	9
2607	9	2	Min.	486.76									-1484.13	9		
2607	9	2	Min.	653.00	0.00	9	0.00	9	0.00	9	1218.57	9	-666.81	9	-33.36	9
2607	14	9	Max	15.86	0.00	9	0.00	9	0.00	9	-2023.97	9	639.98	9	-14.98	9
2607	14	9	Max	222.60									-1233.13	9		
2607	14	9	Max	532.70	0.00	9	0.00	9	0.00	9	2506.38	9	2397.40	9	-14.98	9
2607	14	9	Min.	15.86	0.00	9	0.00	9	0.00	9	-2023.97	9	639.98	9	-14.98	9
2607	14	9	Min.	222.60									-1233.13	9		
2607	14	9	Min.	532.70	0.00	9	0.00	9	0.00	9	2506.38	9	2397.40	9	-14.98	9
2608	4	3	Max	15.82	0.00	9	0.00	9	0.00	9	-2931.52	9	-400.25	9	1345.33	9
2608	4	3	Max	202.04									-3058.56	9		
2608	4	3	Max	491.08	0.00	9	0.00	9	0.00	9	4259.70	9	3048.06	9	1345.33	9
2608	4	3	Min.	15.82	0.00	9	0.00	9	0.00	9	-2931.52	9	-400.25	9	1345.33	9
2608	4	3	Min.	202.04									-3058.56	9		
2608	4	3	Min.	491.08	0.00	9	0.00	9	0.00	9	4259.70	9	3048.06	9	1345.33	9
2608	3	1	Max	14.91	0.00	9	0.00	9	0.00	9	-4201.27	9	2941.02	9	659.04	9
2608	3	1	Max	289.10									-2835.02	9		
2608	3	1	Max	533.27	0.00	9	0.00	9	0.00	9	4262.95	9	2177.55	9	659.04	9
2608	3	1	Min.	14.91	0.00	9	0.00	9	0.00	9	-4201.27	9	2941.02	9	659.04	9
2608	3	1	Min.	289.10									-2835.02	9		
2608	3	1	Min.	533.27	0.00	9	0.00	9	0.00	9	4262.95	9	2177.55	9	659.04	9
2609	1	2	Max	14.91	0.00	9	0.00	9	0.00	9	-4147.76	9	2197.44	9	-659.26	9
2609	1	2	Max	248.32									-2490.92	9		
2609	1	2	Max	512.18	0.00	9	0.00	9	0.00	9	4143.67	9	3009.57	9	-659.26	9
2609	1	2	Min.	14.91	0.00	9	0.00	9	0.00	9	-4147.76	9	2197.44	9	-659.26	9
2609	1	2	Min.	248.32									-2490.92	9		
2609	1	2	Min.	512.18	0.00	9	0.00	9	0.00	9	4143.67	9	3009.57	9	-659.26	9
2609	2	5	Max	14.92	0.00	9	0.00	9	0.00	9	-4357.03	9	3089.69	9	-1323.25	9
2609	2	5	Max	313.91									-3335.42	9		
2609	2	5	Max	511.28	0.00	9	0.00	9	0.00	9	3064.53	9	-400.95	9	-1323.25	9
2609	2	5	Min.	14.92	0.00	9	0.00	9	0.00	9	-4357.03	9	3089.69	9	-1323.25	9
2609	2	5	Min.	313.91									-3335.42	9		
2609	2	5	Min.	511.28	0.00	9	0.00	9	0.00	9	3064.53	9	-400.95	9	-1323.25	9
2610	10	5	Max	15.00	0.00	9	0.00	9	0.00	9	-3851.12	9	2595.35	9	-126.59	9
2610	10	5	Max	390.83									-4571.80	9		
2610	10	5	Max	598.39	0.00	9	0.00	9	0.00	9	2804.11	9	-1876.19	9	-126.59	9
2610	10	5	Min.	15.00	0.00	9	0.00	9	0.00	9	-3851.12	9	2595.35	9	-126.59	9
2610	10	5	Min.	390.83									-4571.80	9		
2610	10	5	Min.	598.39	0.00	9	0.00	9	0.00	9	2804.11	9	-1876.19	9	-126.59	9
2610	12	10	Max	15.00	0.00	9	0.00	9	0.00	9	-2430.94	9	-1241.44	9	68.40	9
2610	12	10	Max	181.70									-3185.26	9		
2610	12	10	Max	505.63	0.00	9	0.00	9	0.00	9	3830.73	9	3145.57	9	68.40	9
2610	12	10	Min.	15.00	0.00	9	0.00	9	0.00	9	-2430.94	9	-1241.44	9	68.40	9
2610	12	10	Min.	181.70									-3185.26	9		
2610	12	10	Min.	505.63	0.00	9	0.00	9	0.00	9	3830.73	9	3145.57	9	68.40	9
2611	6	4	Max	15.00	0.00	9	0.00	9	0.00	9	-3811.82	9	2520.48	9	122.96	9
2611	6	4	Max	390.41									-4572.62	9		
2611	6	4	Max	598.39	0.00	9	0.00	9	0.00	9	2803.41	9	-1874.85	9	122.96	9
2611	6	4	Min.	15.00	0.00	9	0.00	9	0.00	9	-3811.82	9	2520.48	9	122.96	9
2611	6	4	Min.	390.41									-4572.62	9		
2611	6	4	Min.	598.39	0.00	9	0.00	9	0.00	9	2803.41	9	-1874.85	9	122.96	9
2611	11	6	Max	15.00	0.00	9	0.00	9	0.00	9	-2433.41	9	-1266.53	9	-69.09	9
2611	11	6	Max	181.91									-3212.82	9		
2611	11	6	Max	505.63	0.00	9	0.00	9	0.00	9	3799.77	9	3070.71	9	-69.09	9
2611	11	6	Min.	15.00	0.00	9	0.00	9	0.00	9	-2433.41	9	-1266.53	9	-69.09	9
2611	11	6	Min.	181.91									-3212.82	9		
2611	11	6	Min.	505.63	0.00	9	0.00	9	0.00	9	3799.77	9	3070.71	9	-69.09	9
2612	16	14	Max	15.86	0.00	9	0.00	9	0.00	9	-3398.69	9	3787.78	9	-1910.34	9
2612	16	14	Max	208.29									532.02	9		
2612	16	14	Max	339.62	0.00	9	0.00	9	0.00	9	2242.72	9	2017.51	9	-1910.34	9
2612	16	14	Min.	15.86	0.00	9	0.00	9	0.00	9	-3398.69	9	3787.78	9	-1910.34	9
2612	16	14	Min.	208.29									532.02	9		
2612	16	14	Min.	339.62	0.00	9	0.00	9	0.00	9	2242.72	9	2017.51	9	-1910.34	9
2612	14	12	Max	15.00	0.00	9	0.00	9	0.00	9	-3889.71	9	1694.69	9	609.69	9
2612	14	12	Max	266.98									-3121.38	9		
2612	14	12	Max	452.63	0.00	9	0.00	9	0.00	9	2907.25	9	-470.36	9	609.69	9
2612	14	12	Min.	15.00	0.00	9	0.00	9	0.00	9	-3889.71	9	1694.69	9	609.69	9
2612	14	12	Min.	266.98									-3121.38	9		
2612	14	12	Min.	452.63	0.00	9	0.00	9	0.00	9	2907.25	9	-470.36	9	609.69	9
2613	11	13	Max	16.53	0.00	9	0.00	9	0.00	9	-2793.79	9	-451.35	9	-648.57	9
2613	11	13	Max	192.69									-2874.83	9		
2613	11	13	Max	433.13	0.00	9	0.00	9	0.00	9	3743.84	9	1566.31	9	-648.57	9
2613	11	13	Min.	16.53	0.00	9	0.00	9	0.00	9	-2793.79	9	-451.35	9	-648.57	9
2613	11	13	Min.	192.69									-2874.83	9		
2613	11	13	Min.	433.13	0.00	9	0.00	9	0.00	9	3743.84	9	1566.31	9	-648.57	9
2613	13	15	Max	15.00	0.00	9	0.00	9	0.00	9	-2402.92	9	1848.93	9	1821.54	9
2613	13	15	Max	157.22									127.16	9		
2613	13	15	Max	359.80	0.00	9	0.00	9	0.00	9	3538.38	9	3692.66	9	1821.54	9
2613	13	15	Min.	15.00	0.00	9	0.00	9	0.00	9	-2402.92	9	1848.93	9	1821.54	9
2613	13	15	Min.	157.22									127.16	9		
2613	13	15	Min.	359.80	0.00	9	0.00	9	0.00	9	3538.38	9	3692.66	9	1821.54	9
2613	15	-1	Max	15.00	0.00	9	0.00	9	0.00	9	-4140.07	9	1768.27	9	-1261.74	9
2613	15	-1	Max	170.00	0.00	9	0.00	9	0.00	9	-1470.95	9	-2571.06	9	-1261.74	9
2613	15	-1	Min.	15.00	0.00	9	0.00	9	0.00	9	-4140.07	9	1768.27	9	-1261.74	9
2613	15	-1	Min.	170.00	0.00	9	0.00	9	0.00	9	-1470.95	9	-2571.06	9	-1261.74	9
2613	-1	16	Max	0.00	0.00	9	0.00	9	0.00	9	1514.45	9	-2570.81	9	1247.87	9
2613	-1	16	Max	155.00	0.00	9	0.00	9	0.00	9	4193.38	9	1841.07	9	1247.87	9
2613	-1	16	Min.	0.00	0.00	9	0.00	9	0.00	9	1514.45	9	-2570.81	9	1247.87	9



## Relazione di calcolo

2613	-1	16	Min.	155.00	0.00	9	0.00	9	0.00	9	4193.38	9	1841.07	9	1247.87	9
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Tipo di combinazione di carico: SLE R

Asta	N1	N2		X <cm>	N <daN>	CC	Ty <daN>	CC	Mz <daNm>	CC	Tz <daN>	CC	My <daNm>	CC	Mx <daNm>	CC
2601	6	7	Max	15.72	0.00	10	0.00	10	0.00	10	-1240.84	10	-255.56	10	-96.49	10
2601	6	7	Max	192.26									-1318.19	10		
2601	6	7	Max	458.00	0.00	10	0.00	10	0.00	10	1666.44	10	905.38	10	-96.49	10
2601	6	7	Min.	15.72	0.00	10	0.00	10	0.00	10	-1240.84	10	-255.56	10	-96.49	10
2601	6	7	Min.	192.26									-1318.19	10		
2601	6	7	Min.	458.00	0.00	10	0.00	10	0.00	10	1666.44	10	905.38	10	-96.49	10
2601	7	8	Max	15.00	0.00	10	0.00	10	0.00	10	-1436.43	10	920.06	10	-36.38	10
2601	7	8	Max	247.48									-742.53	10		
2601	7	8	Max	530.00	0.00	10	0.00	10	0.00	10	1837.21	10	1804.49	10	-36.38	10
2601	7	8	Min.	15.00	0.00	10	0.00	10	0.00	10	-1436.43	10	920.06	10	-36.38	10
2601	7	8	Min.	247.48									-742.53	10		
2601	7	8	Min.	530.00	0.00	10	0.00	10	0.00	10	1837.21	10	1804.49	10	-36.38	10
2601	8	9	Max	15.00	0.00	10	0.00	10	0.00	10	-1797.30	10	1811.39	10	35.53	10
2601	8	9	Max	287.21									-599.75	10		
2601	8	9	Max	509.00	0.00	10	0.00	10	0.00	10	1395.39	10	946.01	10	35.53	10
2601	8	9	Min.	15.00	0.00	10	0.00	10	0.00	10	-1797.30	10	1811.39	10	35.53	10
2601	8	9	Min.	287.21									-599.75	10		
2601	8	9	Min.	509.00	0.00	10	0.00	10	0.00	10	1395.39	10	946.01	10	35.53	10
2601	9	10	Max	15.00	0.00	10	0.00	10	0.00	10	-1712.55	10	915.91	10	94.19	10
2601	9	10	Max	291.00									-1448.68	10		
2601	9	10	Max	478.28	0.00	10	0.00	10	0.00	10	1310.17	10	-263.39	10	94.19	10
2601	9	10	Min.	15.00	0.00	10	0.00	10	0.00	10	-1712.55	10	915.91	10	94.19	10
2601	9	10	Min.	291.00									-1448.68	10		
2601	9	10	Min.	478.28	0.00	10	0.00	10	0.00	10	1310.17	10	-263.39	10	94.19	10
2602	17	18	Max	9.69	0.00	10	0.00	10	0.00	10	-1160.47	10	332.42	10	-0.27	10
2602	17	18	Max	169.81									-575.13	10		
2602	17	18	Max	330.31	0.00	10	0.00	10	0.00	10	1169.07	10	339.74	10	-0.27	10
2602	17	18	Min.	9.69	0.00	10	0.00	10	0.00	10	-1160.47	10	332.42	10	-0.27	10
2602	17	18	Min.	169.81									-575.13	10		
2602	17	18	Min.	330.31	0.00	10	0.00	10	0.00	10	1169.07	10	339.74	10	-0.27	10
2603	7	3	Max	15.00	0.00	10	0.00	10	0.00	10	-1502.65	10	1476.84	10	25.23	10
2603	7	3	Max	476.70									-1036.86	10		
2603	7	3	Max	651.00	0.00	10	0.00	10	0.00	10	905.10	10	-402.72	10	25.23	10
2603	7	3	Min.	15.00	0.00	10	0.00	10	0.00	10	-1502.65	10	1476.84	10	25.23	10
2603	7	3	Min.	476.70									-1036.86	10		
2603	7	3	Min.	651.00	0.00	10	0.00	10	0.00	10	905.10	10	-402.72	10	25.23	10
2603	13	7	Max	15.86	0.00	10	0.00	10	0.00	10	-1479.49	10	498.64	10	12.80	10
2603	13	7	Max	224.25									-880.28	10		
2603	13	7	Max	531.47	0.00	10	0.00	10	0.00	10	1777.04	10	1680.62	10	12.80	10
2603	13	7	Min.	15.86	0.00	10	0.00	10	0.00	10	-1479.49	10	498.64	10	12.80	10
2603	13	7	Min.	224.25									-880.28	10		
2603	13	7	Min.	531.47	0.00	10	0.00	10	0.00	10	1777.04	10	1680.62	10	12.80	10
2604	17	15	Max	9.68	0.00	10	0.00	10	0.00	10	327.65	10	-44.01	10	-443.63	10
2604	17	15	Max	241.00	0.00	10	0.00	10	0.00	10	2706.99	10	3315.40	10	-443.63	10
2604	17	15	Min.	9.68	0.00	10	0.00	10	0.00	10	327.65	10	-44.01	10	-443.63	10
2604	17	15	Min.	241.00	0.00	10	0.00	10	0.00	10	2706.99	10	3315.40	10	-443.63	10
2605	8	1	Max	15.00	0.00	10	0.00	10	0.00	10	-1521.60	10	1550.60	10	-1.24	10
2605	8	1	Max	574.31									-1257.54	10		
2605	8	1	Max	710.00	0.00	10	0.00	10	0.00	10	891.85	10	-757.55	10	-1.24	10
2605	8	1	Min.	15.00	0.00	10	0.00	10	0.00	10	-1521.60	10	1550.60	10	-1.24	10
2605	8	1	Min.	574.31									-1257.54	10		
2605	8	1	Min.	710.00	0.00	10	0.00	10	0.00	10	891.85	10	-757.55	10	-1.24	10
2605	-1	8	Max	0.00	0.00	10	0.00	10	0.00	10	-2217.60	10	1898.36	10	-0.19	10
2605	-1	8	Max	271.47									-805.38	10		
2605	-1	8	Max	553.65	0.00	10	0.00	10	0.00	10	1824.29	10	1663.93	10	-0.19	10
2605	-1	8	Min.	0.00	0.00	10	0.00	10	0.00	10	-2217.60	10	1898.36	10	-0.19	10
2605	-1	8	Min.	271.47									-805.38	10		
2605	-1	8	Min.	553.65	0.00	10	0.00	10	0.00	10	1824.29	10	1663.93	10	-0.19	10
2606	18	16	Max	9.68	0.00	10	0.00	10	0.00	10	336.13	10	-43.09	10	451.08	10
2606	18	16	Max	241.00	0.00	10	0.00	10	0.00	10	2743.19	10	3368.75	10	451.08	10
2606	18	16	Min.	9.68	0.00	10	0.00	10	0.00	10	336.13	10	-43.09	10	451.08	10
2606	18	16	Min.	241.00	0.00	10	0.00	10	0.00	10	2743.19	10	3368.75	10	451.08	10
2607	9	2	Max	15.00	0.00	10	0.00	10	0.00	10	-1504.48	10	1481.82	10	-23.20	10
2607	9	2	Max	481.49									-1047.98	10		
2607	9	2	Max	653.00	0.00	10	0.00	10	0.00	10	896.29	10	-430.19	10	-23.20	10
2607	9	2	Min.	15.00	0.00	10	0.00	10	0.00	10	-1504.48	10	1481.82	10	-23.20	10
2607	9	2	Min.	481.49									-1047.98	10		
2607	9	2	Min.	653.00	0.00	10	0.00	10	0.00	10	896.29	10	-430.19	10	-23.20	10
2607	14	9	Max	15.86	0.00	10	0.00	10	0.00	10	-1500.18	10	529.90	10	-14.50	10
2607	14	9	Max	225.99									-879.66	10		
2607	14	9	Max	532.70	0.00	10	0.00	10	0.00	10	1782.29	10	1685.84	10	-14.50	10
2607	14	9	Min.	15.86	0.00	10	0.00	10	0.00	10	-1500.18	10	529.90	10	-14.50	10
2607	14	9	Min.	225.99									-879.66	10		
2607	14	9	Min.	532.70	0.00	10	0.00	10	0.00	10	1782.29	10	1685.84	10	-14.50	10
2608	4	3	Max	15.82	0.00	10	0.00	10	0.00	10	-2103.55	10	-273.55	10	938.34	10
2608	4	3	Max	203.44									-2191.37	10		
2608	4	3	Max	491.08	0.00	10	0.00	10	0.00	10	2976.48	10	2065.32	10	938.34	10
2608	4	3	Min.	15.82	0.00	10	0.00	10	0.00	10	-2103.55	10	-273.55	10	938.34	10
2608	4	3	Min.	203.44									-2191.37	10		
2608	4	3	Min.	491.08	0.00	10	0.00	10	0.00	10	2976.48	10	2065.32	10	938.34	10
2608	3	1	Max	14.91	0.00	10	0.00	10	0.00	10	-2917.59	10	2005.20	10	457.60	10
2608	3	1	Max	288.64									-1996.63	10		
2608	3	1	Max	533.27	0.00	10	0.00	10	0.00	10	2967.95	10	1499.11	10	457.60	10
2608	3	1	Min.	14.91	0.00	10	0.00	10	0.00	10	-2917.59	10	2005.20	10	457.60	10
2608	3	1	Min.	288.64									-1996.63	10		



## Relazione di calcolo

2608	3	1	Min.	533.27	0.00	10	0.00	10	0.00	10	2967.95	10	1499.11	10	457.60	10
2609	1	2	Max	14.91	0.00	10	0.00	10	0.00	10	-2887.57	10	1513.22	10	-458.06	10
2609	1	2	Max	248.72									-1755.84	10		
2609	1	2	Max	512.18	0.00	10	0.00	10	0.00	10	2877.19	10	2055.51	10	-458.06	10
2609	1	2	Min.	14.91	0.00	10	0.00	10	0.00	10	-2887.57	10	1513.22	10	-458.06	10
2609	1	2	Min.	248.72									-1755.84	10		
2609	1	2	Min.	512.18	0.00	10	0.00	10	0.00	10	2877.19	10	2055.51	10	-458.06	10
2609	2	5	Max	14.92	0.00	10	0.00	10	0.00	10	-3043.93	10	2095.31	10	-922.54	10
2609	2	5	Max	312.73									-2385.66	10		
2609	2	5	Max	511.28	0.00	10	0.00	10	0.00	10	2196.07	10	-274.05	10	-922.54	10
2609	2	5	Min.	14.92	0.00	10	0.00	10	0.00	10	-3043.93	10	2095.31	10	-922.54	10
2609	2	5	Min.	312.73									-2385.66	10		
2609	2	5	Min.	511.28	0.00	10	0.00	10	0.00	10	2196.07	10	-274.05	10	-922.54	10
2610	10	5	Max	15.00	0.00	10	0.00	10	0.00	10	-2732.49	10	1812.04	10	-90.74	10
2610	10	5	Max	389.39									-3258.81	10		
2610	10	5	Max	598.39	0.00	10	0.00	10	0.00	10	2020.62	10	-1304.34	10	-90.74	10
2610	10	5	Min.	15.00	0.00	10	0.00	10	0.00	10	-2732.49	10	1812.04	10	-90.74	10
2610	10	5	Min.	389.39									-3258.81	10		
2610	10	5	Min.	598.39	0.00	10	0.00	10	0.00	10	2020.62	10	-1304.34	10	-90.74	10
2610	12	10	Max	15.00	0.00	10	0.00	10	0.00	10	-1752.04	10	-855.23	10	43.17	10
2610	12	10	Max	183.32									-2268.93	10		
2610	12	10	Max	505.63	0.00	10	0.00	10	0.00	10	2711.17	10	2191.44	10	43.17	10
2610	12	10	Min.	15.00	0.00	10	0.00	10	0.00	10	-1752.04	10	-855.23	10	43.17	10
2610	12	10	Min.	183.32									-2268.93	10		
2610	12	10	Min.	505.63	0.00	10	0.00	10	0.00	10	2711.17	10	2191.44	10	43.17	10
2611	6	4	Max	15.00	0.00	10	0.00	10	0.00	10	-2706.03	10	1761.40	10	87.71	10
2611	6	4	Max	389.00									-3259.93	10		
2611	6	4	Max	598.39	0.00	10	0.00	10	0.00	10	2020.02	10	-1304.29	10	87.71	10
2611	6	4	Min.	15.00	0.00	10	0.00	10	0.00	10	-2706.03	10	1761.40	10	87.71	10
2611	6	4	Min.	389.00									-3259.93	10		
2611	6	4	Min.	598.39	0.00	10	0.00	10	0.00	10	2020.02	10	-1304.29	10	87.71	10
2611	11	6	Max	15.00	0.00	10	0.00	10	0.00	10	-1753.70	10	-873.26	10	-43.02	10
2611	11	6	Max	183.50									-2288.45	10		
2611	11	6	Max	505.63	0.00	10	0.00	10	0.00	10	2690.53	10	2140.87	10	-43.02	10
2611	11	6	Min.	15.00	0.00	10	0.00	10	0.00	10	-1753.70	10	-873.26	10	-43.02	10
2611	11	6	Min.	183.50									-2288.45	10		
2611	11	6	Min.	505.63	0.00	10	0.00	10	0.00	10	2690.53	10	2140.87	10	-43.02	10
2612	16	14	Max	15.86	0.00	10	0.00	10	0.00	10	-2539.61	10	2861.80	10	-1385.01	10
2612	16	14	Max	214.63									349.56	10		
2612	16	14	Max	339.62	0.00	10	0.00	10	0.00	10	1523.27	10	1307.99	10	-1385.01	10
2612	16	14	Min.	15.86	0.00	10	0.00	10	0.00	10	-2539.61	10	2861.80	10	-1385.01	10
2612	16	14	Min.	214.63									349.56	10		
2612	16	14	Min.	339.62	0.00	10	0.00	10	0.00	10	1523.27	10	1307.99	10	-1385.01	10
2612	14	12	Max	15.00	0.00	10	0.00	10	0.00	10	-2742.51	10	1080.04	10	418.68	10
2612	14	12	Max	264.54									-2281.27	10		
2612	14	12	Max	452.63	0.00	10	0.00	10	0.00	10	2099.43	10	-343.36	10	418.68	10
2612	14	12	Min.	15.00	0.00	10	0.00	10	0.00	10	-2742.51	10	1080.04	10	418.68	10
2612	14	12	Min.	264.54									-2281.27	10		
2612	14	12	Min.	452.63	0.00	10	0.00	10	0.00	10	2099.43	10	-343.36	10	418.68	10
2613	11	13	Max	16.53	0.00	10	0.00	10	0.00	10	-2020.55	10	-330.50	10	-445.97	10
2613	11	13	Max	195.28									-2107.43	10		
2613	11	13	Max	433.13	0.00	10	0.00	10	0.00	10	2636.08	10	984.93	10	-445.97	10
2613	11	13	Min.	16.53	0.00	10	0.00	10	0.00	10	-2020.55	10	-330.50	10	-445.97	10
2613	11	13	Min.	195.28									-2107.43	10		
2613	11	13	Min.	433.13	0.00	10	0.00	10	0.00	10	2636.08	10	984.93	10	-445.97	10
2613	13	15	Max	15.00	0.00	10	0.00	10	0.00	10	-1639.92	10	1182.47	10	1320.73	10
2613	13	15	Max	150.98									60.56	10		
2613	13	15	Max	359.80	0.00	10	0.00	10	0.00	10	2638.96	10	2800.16	10	1320.73	10
2613	13	15	Min.	15.00	0.00	10	0.00	10	0.00	10	-1639.92	10	1182.47	10	1320.73	10
2613	13	15	Min.	150.98									60.56	10		
2613	13	15	Min.	359.80	0.00	10	0.00	10	0.00	10	2638.96	10	2800.16	10	1320.73	10
2613	15	-1	Max	15.00	0.00	10	0.00	10	0.00	10	-3039.80	10	1435.84	10	-954.40	10
2613	15	-1	Max	170.00	0.00	10	0.00	10	0.00	10	-1095.01	10	-1762.65	10	-954.40	10
2613	15	-1	Min.	15.00	0.00	10	0.00	10	0.00	10	-3039.80	10	1435.84	10	-954.40	10
2613	15	-1	Min.	170.00	0.00	10	0.00	10	0.00	10	-1095.01	10	-1762.65	10	-954.40	10
2613	-1	16	Max	0.00	0.00	10	0.00	10	0.00	10	1122.59	10	-1762.46	10	943.96	10
2613	-1	16	Max	155.00	0.00	10	0.00	10	0.00	10	3074.00	10	1482.23	10	943.96	10
2613	-1	16	Min.	0.00	0.00	10	0.00	10	0.00	10	1122.59	10	-1762.46	10	943.96	10
2613	-1	16	Min.	155.00	0.00	10	0.00	10	0.00	10	3074.00	10	1482.23	10	943.96	10

## Criteri di progetto utilizzati

## Pilastri in c.a.

Generali	
Parametri di progetto	
Pilastro prefabbricato	No
Progettazione dell'armatura con sollecitazioni più gravose	Si
Disaccoppia sovrareistenza	No
Limita fattore di sovrareistenza al massimo valore di struttura	No
Tipo verifica di stabilità	
-Per N*Ω-M e per N-c*M (standard)	Si
-Per N*Ω-c*M (doppia)	No
-Per N*Ω (sforzo normale e momento nullo)	No
-Per c*M (momento e sforzo normale nullo)	No
Max angolo di piegatura ferri <grad>	20.00
Progettazione armatura di ripresa	Si
Minimizzazione armatura di ripresa	No
Minimizzazione area di ferro totale nella sezione	No



## Relazione di calcolo

Non progettare riprese ma estendi solo i ferri	Si
Verifiche in relazione	Minimizzate
<b>Ancoraggi</b>	
Lunghezza ancoraggi	
-Lunghezza minima come multiplo del diametro	40.00
Ancoraggi tutti uguali	Si
Piegatura ancoraggi per discontinuità	Si
Piegatura ancoraggi ferri di ripresa	Si
<b>Armatura a taglio</b>	
Staffatura a spirale pilastri circolari	Si
Cambiare le staffe nei nodi appartenenti all'impalcato 0 se sul nodo incidono elementi	Si
Considera solo la zona critica alla base della pilastrata (strutture pendolari)	No
Progetta a taglio con traliccio ad inclinazione variabile	Si
-Classe A	
-In zona critica limita $\text{ctg } \theta$ a	1.00
-In zona non critica limita $\text{ctg } \theta$ a	2.50
-Classe B	
-In zona critica limita $\text{ctg } \theta$ a	2.50
-In zona non critica limita $\text{ctg } \theta$ a	2.50
Estendi nel nodo staffe sottostanti anche se non richiesto dalla normativa	No
<b>Parametri di disegno</b>	
Scala disegno sezioni pilastri	25.00
Scala disegno viste pilastri	50.00
Creazione tabelle pilastri	Si
-Tipo di tabella	Armature disposte dal basso verso l'alto
-Max lunghezza tavole <cm>	70.00
-Max altezza tavole <cm>	50.00
Creazione viste pilastri	
-Disegno ferri dentro pilastro in vista	Si
-Disegno staffe dentro pilastro in vista	Si
-Modalità di individuazione ferri	
-Modalità di indicazione ferri	Mediante una tabella
-Minimizzazione riferimenti	Si
-Modalità di individuazione ferri	Per posizione
-Modalità di indicazione ferri	Mediante una tabella
-Minimizzazione riferimenti	Si

Specifici	1	3
<b>Materiali</b>		
-Considera come elemento esistente	No	No
-Calcestruzzo		
-Livello di conoscenza	LC2	LC2
-Fattore di confidenza	1.20	1.20
-Tipo di calcestruzzo	C28/35	C28/35
-Rck calcestruzzo	350.00	350.00
-Modulo elastico <daN/cm <sup>2</sup> >	325881.00	325881.00
-Resistenza caratteristica cilindrica (Fck)	290.50	290.50
-Resistenza caratteristica a trazione (Fctk)	19.84	19.84
-Resistenza media (Fcm) <daN/cm <sup>2</sup> >	370.50	370.50
-Resistenza media a trazione (Fctm) <daN/cm <sup>2</sup> >	28.35	28.35
- $\sigma$ amm. calcestruzzo <daN/cm <sup>2</sup> >	110.00	110.00
- $\tau_{c0}$ <daN/cm <sup>2</sup> >	6.70	6.70
- $\tau_{c1}$ <daN/cm <sup>2</sup> >	19.70	19.70
-Riduci Fcd per tutte le verifiche secondo il D.M. 18	Si	Si
- $\gamma_s$ per stati limite ultimi		
-Automatico	x	x
-Pari a		
-Acciaio		
-Livello di conoscenza	LC2	LC2
-Fattore di confidenza	1.20	1.20
-Tipo di acciaio	B450C	B450C
-Modulo elastico <daN/cm <sup>2</sup> >	2060000.00	2060000.00
-Tensione caratteristica di snervamento (Fyk) <daN/cm <sup>2</sup> >	4500.00	4500.00
-Tensione media di snervamento (Fym) <daN/cm <sup>2</sup> >	4500.00	4500.00
-Sigma amm. acciaio <daN/cm <sup>2</sup> >	2600.00	2600.00
-Sigma amm. reti e tralici <daN/cm <sup>2</sup> >	2600.00	2600.00
-Allungamento per verifiche di duttilità (Agt) <%>	4.00	4.00
- $\gamma_s$ per stati limite ultimi		
-Automatico	x	x
-Pari a		
-Coeff. di omogeneizzazione	15.00	15.00
<b>Parametri per analisi pushover</b>		
Numero fibre	200.00	200.00
Fattore di confinamento nucleo interno	1.00	1.00
Fattore di incrudimento acciaio <%>	0.10	0.10
<b>Parametri per verifiche di duttilità</b>		
Considera formulazione per pareti	No	No
Considera rotazione massima di esercizio per determinare SLO e SLD	No	No
Modalità di calcolo luce di taglio Lv		
-Lv=L/2	x	x
-Lv=M/V		
-Lv=Punto di nullo del momento flettente		



## Relazione di calcolo

Capacità di rotazione alla corda al collasso		
-Formula C8.7.2.1 con fattore di riduzione pari a		
-Formula C8.7.2.5	x	x
Sforzo normale di verifica per analisi pushover		
-Gravitazionale		
-Dal calcolo	x	x
<b>Parametri di calcolo</b>		
Strategia di progetto	RETTANG	CERCHIO
Copriferro reale al bordo staffa <cm>	2.50	2.50
Diametro staffa teorica <mm>	9.00	9.00
Continuità dei ferri nei nodi appartenenti all'impalcato 0	Si	Si
Coeff. $\beta$ in direzione Z locale	1.00	1.00
Coeff. $\beta$ in direzione Y locale	1.00	1.00
Armatura secondo Circ. 65 del 10/04/97	No	No
-Raffittimento staffe in testa e al piede del pilastro	No	No
-Passo <cm>		
Parametri di progetto secondo il D.M. 18		
Elemento dissipativo	Si	Si
Trascura gerarchia	No	No
Verifica a taglio ciclico elementi esistenti	No	No
Limita verifica a pressoflessione ad elemento non dissipativo	Si	Si
Limita verifica a taglio ad elemento non dissipativo	Si	Si
Elemento secondario	No	No
Incremento percentuale per piano debole	No	No
Non progettare e verificare i nodi fra trave e pilastro	No	No
-Progetta e verifica secondo Circolare n.7 del 21/01/2019	No	No
Verifiche a pressoflessione deviata	Si	Si
Per calcoli secondo il D.M. 18 usa espressione 4.1.19	No	No
<b>Verifiche a taglio</b>		
Verifiche a taglio per sezioni circolari		
-Usa formulazione sezioni generiche		
-Considera rettangolo inscritto con B/H pari a	1.00	1.00
Verifiche a taglio per sezioni generiche		
-Considera Vrdu minimo		
-Considera Vrdu calcolato in corrispondenza di bw minimo		
-Considera Vrdu in corrispondenza di bw medio	x	x
-Considera Vrdu in corrispondenza di bw massimo		
-Considera sempre Af Staffe non proiettata in direzione del taglio	Si	Si
<b>Armatura a pressoflessione</b>		
Elenco diametri ferri longitudinali 1 <mm>	16	16
Elenco diametri ferri longitudinali 2 <mm>	20	20
Elenco diametri ferri longitudinali 3 <mm>	22	22
Elenco diametri ferri longitudinali 4 <mm>		
Elenco diametri ferri longitudinali 5 <mm>		
Elenco diametri ferri longitudinali 6 <mm>		
Elenco diametri ferri longitudinali 7 <mm>		
Max distanza fra i ferri su un lato <cm>	25.00	25.00
Min. interferro ammissibile <cm>	7.00	7.00
Distanza fra i ferri di spigolo <cm>	3.00	3.00
Min. numero ferri per pilastri circolari	8.00	8.00
Reggistaffe aggiuntivi sezioni non rettangolari	Si	Si
Fattore di riduzione $\gamma_{c0}$ per ancoraggio ferri	1.00	1.00
<b>Armatura a taglio</b>		
Elenco diametri staffe 1 <mm>	6	6
Elenco diametri staffe 2 <mm>	8	8
Elenco diametri staffe 3 <mm>		
Elenco diametri staffe 4 <mm>		
Elenco diametri staffe 5 <mm>		
Elenco diametri staffe 6 <mm>		
Elenco diametri staffe 7 <mm>		
Mantieni diametro costante nell'interpiano	Si	Si
Passi staffe	4.00	4.00
-Minimo <cm>	Si	Si
-Massimo <cm>	30.00	30.00
-Incremento <cm>	2.00	2.00
Tipo di minimizzazione staffatura		
-Minimizza il numero delle staffe		
-Minimizza il peso delle staffe	x	x
Max distanza fra ferri non collegati <cm>	20.00	20.00
Max numero ferri non collegati	2.00	2.00
Max distanza fra ferri nei nodi non collegati <cm>	7.00	7.00
Max numero ferri nei nodi non collegati	1.00	1.00
Collegamenti ferri		
Con spilli		
Con staffe rettangolari		
Con staffe poligonali	x	x
Ferri orizzontali pareti realizzati con staffe	No	No
<b>Quote di alleggerimento armature pilastri prefabbricati</b>		
Quota di alleggerimento n. 1 <m>	0.00	0.00
Quota di alleggerimento n. 2 <m>	0.00	0.00
Quota di alleggerimento n. 3 <m>	0.00	0.00
Quota di alleggerimento n. 4 <m>	0.00	0.00
Quota di alleggerimento n. 5 <m>	0.00	0.00
Quota di alleggerimento n. 6 <m>	0.00	0.00
Quota di alleggerimento n. 7 <m>	0.00	0.00



## Relazione di calcolo

<b>Dati per progettazione interattiva sezioni</b>		
Distanza fra ferri su più strati <cm>	1.00	1.00
Integrare lo scorrimento lungo il tratto	Si	Si
-Lunghezza del tratto <m>	1.00	1.00
<b>Dati per progettazione agli stati limite</b>		
Gruppo di esigenza		
-Ambiente poco aggressivo	x	x
-Ambiente moderatamente aggressivo		
-Ambiente molto aggressivo		
Usa dominio N-M per flessioni rette	No	No
-Ricerca della sicurezza con sforzo normale costante		
-Ricerca della sicurezza con eccentricità costante		
Controllo rapporto X/D	No	No
Barre da considerare tese per verifiche a taglio		
-Solo le barre con deformazione percentuale rispetto alla barra più tesa non inferiore al <%>	30.00	30.00
-Tutte le barre in trazione		
<b>Dati per verifiche di resistenza al fuoco</b>		
-Tempo di verifica (REI) <minuti>	120.00	120.00
Dimensione MESH <cm>	2.00	2.00
-Passo di calcolo <secondi>	10.00	10.00
-Temperatura ambiente <C°>	20.00	20.00
-Coeff. di convezione a temperatura ambiente <W/mq K>	9.00	9.00
Calcestruzzo		
-Tipo di aggregati	SILICEI	SILICEI
-Massa volumica iniziale <kg/mc>	2300.00	2300.00
-Umidità iniziale <%>	3.00	3.00
-Fattore di interpolazione conducibilità	0.50	0.50
<b>Dati per verifiche FRP</b>		
Rinforzo longitudinale		
Tipo di fibra/resina		
-Vetro/Epossidica		
-Arammidica/Epossidica		
-Carbonio/Epossidica	x	x
Resistenza caratteristica( $f_{fk}$ ) <daN/cm <sup>2</sup> >	49000.00	49000.00
Modulo elastico( $E_c$ ) <daN/cm <sup>2</sup> >	2500000.00	2500000.00
Deformazione caratteristica a rottura per trazione( $\epsilon_{fk}$ ) <%>	2.00	2.00
Spessore equivalente( $t_f$ ) <mm>	0.17	0.17
Sistemi di rinforzo		
-Preformati		
-Impregnati in situ	x	x
Rinforzo trasversale		
Tipo di fibra/resina		
-Vetro/Epossidica		
-Arammidica/Epossidica		
-Carbonio/Epossidica	x	x
Resistenza caratteristica( $f_{fk}$ ) <daN/cm <sup>2</sup> >	49000.00	49000.00
Modulo elastico( $E_c$ ) <daN/cm <sup>2</sup> >	2500000.00	2500000.00
Deformazione caratteristica a rottura per trazione( $\epsilon_{fk}$ ) <%>	2.00	2.00
Spessore equivalente( $t_f$ ) <mm>	0.17	0.17
Sistemi di rinforzo		
-Preformati		
-Impregnati in situ	x	x
Trascura resistenza a taglio dei rinforzi	No	No
Modalità di carico		
-Lungo termine	x	x
-Ciclico		
Coeff. parziale di sicurezza per SLU di distacco( $\gamma_{fd}$ )	1.50	1.50
Fattore di conversione ambientale( $\eta_a$ )	0.95	0.95
Raggio di arrotondamento spigoli( $r_c$ ) <cm>	2.00	2.00
Coeff. condizione di carico( $K_q$ )	1.25	1.25
<b>Dati per verifiche incamiciature in acciaio non CAM</b>		
Resistenza di progetto strisce di collegamento ( $F_{yd}$ ) <daN/cm <sup>2</sup> >	2350.00	2350.00

## Travi in c.a.

Generali	
<b>Parametri di progetto</b>	
Passo di progettazione <m>	0.30
Tipo di sollecitazioni zone rigide	Costanti
Min. angolo per spinte a vuoto <grad>	10.00
Invertire i ferri anche in presenza di pilastro sottostante	Si
Max differenza larghezza travi continue <cm>	5.00
<b>Armatura a taglio</b>	
Progetta a taglio con traliccio ad inclinazione variabile	Si
-Classe A	
-In zona critica limita ctg $\theta$ a	1.00
-In zona non critica limita ctg $\theta$ a	2.50
-Classe B	
-In zona critica limita ctg $\theta$ a	2.50
-In zona non critica limita ctg $\theta$ a	2.50



## Relazione di calcolo

<b>Lunghezze e arrotondamenti</b>	
Max lunghezza barre <m>	12.00
Arrotondamento lunghezza ferri <cm>	50.00
Lunghezza ferri nei muri d'estremità <m>	1.20
Min. interferro ammissibile <cm>	2.00
Elenco diametri minimizzazione interferri <mm>	14 16 18 20 24
Riduzione ancoraggi	
-Nella zona compressa per flessione	No
-Nei punti inferiori della travata	Si
Considerare nel calcolo degli ancoraggi i risvolti specificati nei criteri generali di disegno	No
Risvoltare i ferri per garantire l'ancoraggio agli estremi della trave	No
<b>Reggistaffe</b>	
Interruzione reggistaffe in campata	No
Modalità di sovrapposizione reggistaffe	Per garantire la copertura del momento negativo
Modalità di unificazione reggistaffe	Solo se la geometria della travata e la lunghezza totale delle barre lo consentono
<b>Minimi di regolamento</b>	
Min. percentuale di regolamento	
-Per le travi di fondazione	No
-Per le travi di elevazione	Si
Min. di armatura a taglio (T.A. o S.L. D.M.96)	
-Per le travi di fondazione	No
-Per le travi di elevazione	No
Tipo di armatura per taglio (T.A.)	Mista
Controllo passo e l2Fi	Si
Min. di regolamento a torsione nell'ala	No
Min. di regolamento nell'ala	No
<b>Stampe</b>	
Verifiche a flessione in relazione	Minimizzate
Verifiche a taglio in relazione	Max scorrimento per taglio e torsione
<b>Parametri di disegno</b>	
Scala disegno travi	50.00
Scala disegno sezioni	25.00
Campitura sezioni	Fitta
Disegno sezione travi in falso	Si
Disegna sezioni	Si
-Disegno ferri nelle sezioni	No
Campitura travi in falso	Fitta
Campitura muri	Rada
Tipo di quotatura luci nette trave	Con riferimento ai pilastri superiori
Lunghezza monconi di pilastro	Minimizzata
Linee di riferimento quote	Si
Quotatura zone di staffatura	No
Quotatura zone di staffatura	No
Indicazione numero bracci staffe	Solo se il numero è maggiore di due
<b>Disegno ferri longitudinali</b>	
Disegno ferri dentro la trave	Si
Disegno esploso ferri di parete	No
Distanza fra ferri esplosi <cm>	0.10
Disegno reggistaffe aggiuntivi per travi a T e L	Reggistaffe aggiuntivi tipo 3
<b>Disegno staffe</b>	
Posizione staffe esterne	In automatico
Disegno staffe dentro la sezione	Si

Specifici	1	2
<b>Materiali</b>		
-Considera come elemento esistente	No	No
-Calcestruzzo		
-Livello di conoscenza	LC2	LC2
-Fattore di confidenza	1.20	1.20
-Tipo di calcestruzzo	C28/35	C25/30
-Rck calcestruzzo	350.00	300.00
-Modulo elastico <daN/cm²>	325881.00	314472.00
-Resistenza caratteristica cilindrica (Fck)	290.50	249.00
-Resistenza caratteristica a trazione (Fctk)	19.84	17.91
-Resistenza media (Fcm) <daN/cm²>	370.50	329.00
-Resistenza media a trazione (Fctm) <daN/cm²>	28.35	25.58
-σ amm. calcestruzzo <daN/cm²>	110.00	97.50
-rc0 <daN/cm²>	6.70	6.00
-rc1 <daN/cm²>	19.70	18.30
-Riduci Fcd per tutte le verifiche secondo il D.M. 18	Si	Si
-γc per stati limite ultimi		
-Automatico	x	x
-Pari a		
-Acciaio		
-Livello di conoscenza	LC2	LC2
-Fattore di confidenza	1.20	1.20
-Tipo di acciaio	B450C	B450C
-Modulo elastico <daN/cm²>	2060000.00	2060000.00
-Tensione caratteristica di snervamento (Fyk) <daN/cm²>	4500.00	4500.00
-Tensione media di snervamento (Fym) <daN/cm²>	4500.00	4500.00



## Relazione di calcolo

-Sigma amm. acciaio <daN/cm <sup>2</sup> >	2600.00	2600.00
-Sigma amm. reti e tralicci <daN/cm <sup>2</sup> >	2600.00	2600.00
-Allungamento per verifiche di duttilità (Agt) <%>	4.00	4.00
-γ <sub>s</sub> per stati limite ultimi		
-Automatico	x	x
-Pari a		
-Coeff. di omogeneizzazione	15.00	15.00
<b>Parametri per analisi pushover</b>		
Numero fibre	200.00	200.00
Fattore di confinamento nucleo interno	1.00	1.00
Fattore di incrudimento acciaio <%>	0.10	0.10
<b>Parametri per verifiche di duttilità</b>		
Considera rotazione massima di esercizio per determinare SLO e SLD	No	No
Modalità di calcolo luce di taglio Lv		
-Lv=L/2	x	x
-Lv=M/V		
-Lv=Punto di nullo del momento flettente		
Capacità di rotazione alla corda al collasso		
-Formula C8.7.2.1 con fattore di riduzione pari a		
-Formula C8.7.2.5	x	x
Sforzo normale di verifica per analisi pushover		
-Gravitazionale		
-Dal calcolo	x	x
<b>Parametri di calcolo</b>		
Progetto a pressoflessione	Si	Si
-Per tutte le travi		
-Solo per travi inclinate	x	x
-Min. angolo per pressoflessione <grad>	10.00	10.00
-Compressione massima senza progetto a pressoflessione <%>	10.00	10.00
Progetto a torsione	No	No
-Trazione senza progetto a torsione<%>		
Armatura secondo Circ. 65 del 10/04/97	No	No
Parametri di progetto secondo il D.M. 18		
Elemento dissipativo	Si	Si
Trascura gerarchia	No	No
Verifica a taglio ciclico elementi esistenti	No	No
Limita verifica a taglio ad elemento non dissipativo	Si	Si
Elemento secondario	No	No
Sollecitazioni dissipative amplificate per elementi di fondazione	Si	Si
Escludi dal calcolo sovrarresistenza per pilastri incidenti	No	No
Sollecitazioni complanari ad eventuali elementi bidimensionali	No	No
Copriferro teorico superiore <cm>	4.10	4.10
Copriferro teorico inferiore <cm>	4.10	4.10
Min. momento fittizio agli appoggi	No	No
-Denominatore		
Min. momento fittizio in campata	No	No
-Denominatore		
Incremento percentuale momento in campata <%>	10.00	10.00
Usa taglio max per traslazione momento (S.L.)	Si	Si
Limitare momento traslato al valore max di appoggio (S.L.)	No	No
Limitare momento traslato al valore max di campata (S.L.)	No	No
Taglio da momento resistente in fondazione (S.L.)	No	No
Tipo di progetto in doppia armatura (T.A.)		
-Tensioni pari ai valori amm.		
-Tensioni pari ai valori amm. con AfComp/AfTesa minore o pari a	1.00	1.00
-Con AfComp/AfTesa pari a		
<b>Parametri di progettazione armatura</b>		
Max differenza fra diametri per unificazioni	2.00	2.00
Max distanza fra barre per unificazioni <m>	1.00	1.00
Denominatore per individuazione zona di campata	32.00	32.00
Fattore di copertura appoggi (0+1)	0.00	0.00
Fattore di riduzione per ancoraggio ferri	1.00	1.00
Minimizzazione momenti resistenti di appoggio (stati limite D.M. 18)	Si	Si
-Tolleranza di copertura da sovrapposizione <%>	10.00	0.00
Tipo di distribuzione armatura eccedente in fase di verifica		
-Ripartita proporzionalmente per flessione, torsione e taglio	x	x
-Tutta agente per flessione		
-Tutta agente per taglio		
<b>Armatura a flessione</b>		
Elenco diametri ferri longitudinali 1 <mm>	14	18
Elenco diametri ferri longitudinali 2 <mm>	16	
Elenco diametri ferri longitudinali 3 <mm>	18	
Elenco diametri ferri longitudinali 4 <mm>	20	
Elenco diametri ferri longitudinali 5 <mm>	24	
Elenco diametri ferri longitudinali 6 <mm>		
Elenco diametri ferri longitudinali 7 <mm>		
Max differenza fra diametri nella trave	8.00	8.00
Max differenza fra diametri ferri accoppiati	4.00	4.00
Reggistaffe superiori		
-Numero		
-Automatico		x
-Pari a	2.00	
-Max mutua distanza <cm>		
-Diametro		
-Automatico	x	x
-Pari a <mm>		



## Relazione di calcolo

-Minimo <mm>		
Reggistaffe inferiori		
-Numero		
-Automatico		x
-Pari a	2.00	
-Max mutua distanza <cm>		
-Diametro		
-Automatico	x	x
-Pari a <mm>		
-Minimo <mm>		
<b>Armatura a taglio</b>		
Scorrimento (T.A.)		
-Percentuale assorbita dalle staffe <%>	100.00	100.00
-Percentuale assorbita dai ferri piegati <%>	0.00	0.00
-Percentuale assorbita dai ferri di parete <%>	0	0
-Considerare il valore relativo alle staffe come minimo percentuale da adottare	No	No
Variabilità staffe		
-Staffe uguali a passo costante		
-Staffe diverse in tre parti della trave in funzione delle zone critiche	x	x
-Staffe diverse in tre parti della trave in funzione di un multiplo dell'altezza pari a		
Variabilità staffe ala		
-Passi uguali a passi anima	x	x
-Passi multipli di passi anima		
-Passi indipendenti da passi anima		
Min. lunghezza tratto centrale come multiplo dell'altezza della trave	1.10	1.10
Elenco diametri staffe 1 <mm>	6	8
Elenco diametri staffe 2 <mm>	8	10
Elenco diametri staffe 3 <mm>		
Elenco diametri staffe 4 <mm>		
Elenco diametri staffe 5 <mm>		
Elenco diametri staffe 6 <mm>		
Elenco diametri staffe 7 <mm>		
Elenco numero bracci staffe 1	2	2
Elenco numero bracci staffe 2	4	
Elenco numero bracci staffe 3		
Elenco numero bracci staffe 4		
Elenco numero bracci staffe 5		
Passi staffe		
-Minimo <cm>	4.00	4.00
-Massimo <cm>	32.00	32.00
-Incremento <cm>	4.00	4.00
Elementi costanti		
-Diametro	Si	Si
-Passo	No	No
-Bracci	Si	Si
Tipo di minimizzazione staffatura		
-Minimizza il numero delle staffe	x	x
-Minimizza il peso delle staffe		
Raffittimento staffe all'estremità della trave	No	No
-Passo non superiore a		
Lunghezza max del tratto di calcolo scorrimento		
-Pari al tratto in cui $\tau > \tau_{c0}$	x	x
-Pari a <cm>		
-Come multiplo dell'altezza pari a		
<b>Armatura a taglio e torsione</b>		
Elenco diametri ferri piegati 1 <mm>	12	12
Elenco diametri ferri piegati 2 <mm>	14	14
Elenco diametri ferri piegati 3 <mm>	16	16
Elenco diametri ferri piegati 4 <mm>	18	18
Elenco diametri ferri piegati 5 <mm>	20	20
Elenco diametri ferri piegati 6 <mm>		
Elenco diametri ferri piegati 7 <mm>		
Angolo di piegatura <grad>	45.00	45.00
Posizione primo punto di piegatura		
-Pari al multiplo dell'altezza		
-Distanza <cm>	5.00	5.00
Interasse punti di piegatura		
-Pari al multiplo dell'altezza		
-Distanza <cm>	25.00	25.00
Tipo di ferri piegati		
-Solo sagomati		
-Solo cavallotti		
-Sia sagomati che cavallotti	x	x
Ferri di parete	Si	No
-Max distanza fra le barre <cm>	30.00	0.00
Elenco diametri ferri di parete 1 <mm>	12	12
Elenco diametri ferri di parete 2 <mm>	14	14
Elenco diametri ferri di parete 3 <mm>	16	16
Elenco diametri ferri di parete 4 <mm>	18	18
Elenco diametri ferri di parete 5 <mm>	20	20
Elenco diametri ferri di parete 6 <mm>		
Elenco diametri ferri di parete 7 <mm>		
Elenco diametri staffe orizzontali 1 <mm>	6	6
Elenco diametri staffe orizzontali 2 <mm>	8	8
Elenco diametri staffe orizzontali 3 <mm>		
Elenco diametri staffe orizzontali 4 <mm>		
Elenco diametri staffe orizzontali 5 <mm>		



## Relazione di calcolo

Elenco diametri staffe orizzontali 6 <mm>		
Elenco diametri staffe orizzontali 7 <mm>		
<b>Parametri di disegno</b>		
Copriferro per calcolo lunghezza ferri <cm>	6.00	6.00
Risvolto ferri superiori	Si	Si
-Pari a <cm>	25.00	25.00
-Pari all'altezza della trave		
-Pari alla minima altezza delle travi incidenti		
Risvolto ferri inferiori	Si	Si
-Pari a <cm>	25.00	25.00
-Pari all'altezza della trave		
-Pari alla minima altezza delle travi incidenti		
Risvolto ferri laterali	Si	Si
-Pari a <cm>	25.00	25.00
-Pari alla larghezza della trave		
Magrone	Si	Si
-Allargamento laterale <cm>	0.00	0.00
-Altezza <cm>	20.00	10.00
<b>Dati per progettazione interattiva sezioni</b>		
Copriferro reale al bordo staffa <cm>	2.50	2.50
Diametro staffa teorica <mm>	8.00	8.00
Distanza fra ferri su più strati <cm>	1.00	1.00
Verifiche a pressoflessione	Si	Si
Verifica con barre in posizione teorica	No	No
Verifiche a flessione/pressoflessione retta	Si	Si
-Considera My	x	x
-Considera Mz		
-Considera My e Mz		
Tipo di progetto in doppia armatura (T.A.)		
-Considera Vrdu minimo		
-Considera Vrdu calcolato in corrispondenza di bw minimo		
-Considera Vrdu in corrispondenza di bw medio	x	x
-Considera Vrdu in corrispondenza di bw massimo		
-Considera sempre Af Staffe non proiettata in direzione del taglio	Si	Si
Integrare lo scorrimento lungo il tratto	Si	Si
-Lunghezza del tratto <m>	1.00	1.00
<b>Dati per progettazione agli stati limite</b>		
Gruppo di esigenza		
-Ambiente poco aggressivo	x	x
-Ambiente moderatamente aggressivo		
-Ambiente molto aggressivo		
Usa dominio N-M per flessioni rette	Si	Si
-Ricerca della sicurezza con sforzo normale costante		
-Ricerca della sicurezza con eccentricità costante	x	x
Controllo rapporto X/D	Si	Si
Barre da considerare tese per verifiche a taglio		
-Solo le barre con deformazione percentuale rispetto alla barra più tesa non inferiore al <%>	30.00	30.00
-Tutte le barre in trazione		
<b>Dati per verifiche di resistenza al fuoco</b>		
-Tempo di verifica (REI) <minuti>	120.00	120.00
Dimensione MESH <cm>	2.00	2.00
-Passo di calcolo <secondi>	10.00	10.00
-Temperatura ambiente <C°>	20.00	20.00
-Coeff. di convezione a temperatura ambiente <W/mq K>	9.00	9.00
Calcestruzzo		
-Tipo di aggregati	SILICEI	SILICEI
-Massa volumica iniziale <kg/mc>	2300.00	2300.00
-Umidità iniziale <%>	3.00	3.00
-Fattore di interpolazione conducibilità	0.50	0.50
<b>Dati per verifiche FRP</b>		
Rinforzo longitudinale		
Tipo di fibra/resina		
-Vetro/Epossidica		
-Arammidica/Epossidica		
-Carbonio/Epossidica	x	x
Resistenza caratteristica( $f_{fk}$ ) <daN/cm <sup>2</sup> >	49000.00	49000.00
Modulo elastico( $E_c$ ) <daN/cm <sup>2</sup> >	2500000.00	2500000.00
Deformazione caratteristica a rottura per trazione( $\epsilon_{fk}$ ) <%>	2.00	2.00
Spessore equivalente( $t_f$ ) <mm>	0.17	0.17
Sistemi di rinforzo		
-Preformati		
-Impregnati in situ	x	x
Rinforzo trasversale		
Tipo di fibra/resina		
-Vetro/Epossidica		
-Arammidica/Epossidica		
-Carbonio/Epossidica	x	x
Resistenza caratteristica( $f_{fk}$ ) <daN/cm <sup>2</sup> >	49000.00	49000.00
Modulo elastico( $E_c$ ) <daN/cm <sup>2</sup> >	2500000.00	2500000.00
Deformazione caratteristica a rottura per trazione( $\epsilon_{fk}$ ) <%>	2.00	2.00
Spessore equivalente( $t_f$ ) <mm>	0.17	0.17
Sistemi di rinforzo		
-Preformati		
-Impregnati in situ	x	x



## Relazione di calcolo

Modalità di carico		
-Lungo termine	x	x
-Ciclico		
Coeff. parziale SLU di distacco( $\gamma_{Ed}$ )	1.50	1.50
Fattore di conversione ambientale( $\eta_a$ )	0.95	0.95
Raggio di arrotondamento spigoli( $r_c$ ) <cm>	2.00	2.00
Coeff. condizione di carico( $K_q$ )	1.25	1.25

## Aste in acciaio

<b>Generali</b>	
<b>Verifica aste in acciaio</b>	
Numero punti di verifica	10.00
Numero CC da considerare di tipo I	99.00
<b>Stati limite D.M. 18</b>	
Verifiche con EC3	No
Coeff. amplificativo sollecitazioni per effetti del secondo ordine	1.00
<b>Stampe</b>	
Verifiche da riportare in relazione	Tutte
Stampa dettaglio verifiche	No

<b>Specifici</b>	<b>1</b>
<b>Materiali</b>	
CNR 10011	
Tipo di acciaio	FE360
D.M. 18	
Tipo di acciaio per profilati a sezione aperta	S235
	UNI EN
	10025-2
Tipo di acciaio per profilati a sezione cava	S235H
	UNI EN
	10210-1
EC3	
Tipo di acciaio	S235
-Fy <daN/cm <sup>2</sup> >	2350.00
-Fu <daN/cm <sup>2</sup> >	3600.00
-Fy,40 <daN/cm <sup>2</sup> >	2150.00
-Fu,40 <daN/cm <sup>2</sup> >	3600.00
$\gamma_{M0}$	1.00
$\gamma_{M1}$	1.00
$\gamma_{M2}$	1.25
$\gamma_{Rd}$	1.30
$\gamma_{Ov}$	1.25
-Considera come elemento esistente (S.L. D.M. 18/EC3)	No
-Livello di conoscenza	LC1
-Fattore di confidenza	1.35
<b>Verifiche di resistenza</b>	
Rapporto fra area effettiva e area nominale	1.00
Rapporto fra area netta e area nominale	1.00
Coeff. di forma intorno all'asse Y	1.00
Coeff. di forma intorno all'asse Z	1.00
Verifica le bielle solo con sollecitazioni di trazione moltiplicate per	Si
Valutare la $\tau$ per torsione nei punti di spigolo (CNR 10011)	No
-Pari a	
Stati limite D.M. 18/EC3	
-Elemento dissipativo	Si
-Effettua le verifiche della gerarchia delle resistenze per strutture intelaiate	No
-Usa classe 1 in pressoflessione deviata se non presente in archivio	No
-Verifica in campo plastico elemento non dissipativo	No
Stati limite D.M. 18	
-Usa prescrizioni EC3 quando più dettagliate	Si
-Considera prescrizioni relative ai ponti	No
<b>Verifiche di resistenza sezioni generiche</b>	
Spessore nominale <cm>	0.00
Momento di inerzia torsionale <cm <sup>4</sup> >	0.00
Costante di ingobbamento <cm <sup>6</sup> >	0.00
Riduzione resistenza flessionale come per sezioni a I	No
Area resistente a taglio in dir. Y locale <cm <sup>2</sup> >	0.00
Area resistente a taglio in dir. Z locale <cm <sup>2</sup> >	0.00
<b>Verifiche di deformabilità</b>	
Max valore del rapporto tra la luce e la freccia (totale)	250.00
Max valore del rapporto tra la luce e la freccia (solo accidentali)	300.00
Max valore del rapporto tra altezza e spostamento orizz. (aste)	300.00
Max valore del rapporto tra altezza e spostamento orizz. (membrature)	500.00
Considerare anche spostamento relativo nodi per calcolo freccia	No
Considerare solo la verifica di deformabilità delle membrature	Si
Trascura deformazione dovuta al sisma (T.A.)	No
<b>Verifiche di stabilità</b>	
Riduzione lunghezza libera d'inflessione	
-Distanza fra i nodi dell'asta	x



## Relazione di calcolo

-Distanza ridotta delle zone rigide moltiplicate per il valore	
Tipo di accoppiamento aste composte	
-Separate	
-Calastrellate	
-Imbottite	
-Automatico	x
Calcolo momento medio usando valori assoluti	Si
Interasse calastrelli o imbottiture	
-Distanza pari a <m>	
-Interasse da normativa moltiplicato per il valore	0.80
-Aste rigidamente collegate	
Curva di stabilità (D.M. 18/EC3)	Automatica
Aste laminate	Si
Sigma max amm. senza verifiche di stabilità (CNR 10011) <%>	2.00
Verifica nei piani principali	Si
Carichi sull'estradosso (CNR 10011)	Si
<b>Verifiche di stabilità asta</b>	
Verifiche di stabilità globale nel piano XZ locale	Si
-Coeff. $\beta$ intorno all'asse Y	1.00
Verifiche di stabilità globale nel piano XY locale	Si
-Coeff. $\beta$ intorno all'asse Z	1.00
Verifiche di stabilità flesso - torsionale	Si
-Coeff. per calcolo interasse ritegni torsionali	1.00
Eeguire anche le verifiche al punto 7.3.2 (CNR 10011)	Si
Aste inflesse (D.M. 18/EC3)	
-Coeff. $\Psi$ per calcolo momento critico	
-Valuta in base ai momenti dell'asta	x
-Utilizza valore imposto	
-Fattore correttivo di distribuzione $K_c$	0.94
-Snellezza di riferimento $\lambda_{LT,0}$	0.40
-Coeff. $\beta$	0.75
Aste pressoinflesse (D.M. 18/EC3)	
-Considera come molto deformabile a torsione	No
-Fattore correttivo di distribuzione $\alpha_{mY}/C_{mY}$	0.95
-Fattore correttivo di distribuzione $\alpha_{mZ}/C_{mZ}$	0.95
-Fattore correttivo di distribuzione $\alpha_{mLT}/C_{mLT}$	0.95
Verifiche di stabilità all'imbozzamento (CNR 10011)	
-Numero irrigidimenti orizzontali anima	0.00
-Interasse irrigidimenti verticali anima	
-Numero di suddivisioni	
-Distanza non inferiore a <cm>	
-Pari alla lunghezza dell'asta	x
-Modalità di calcolo $\sigma_{cr,id}$	
-Normativa	
-Massonet	x
-Ballio	
<b>Verifiche di stabilità membratura</b>	
Massimo numero aste costituenti unica membratura	1.00
Sforzo normale di verifica	
-Massimo valore fra tutte le aste	x
-Media aritmetica dei valori di tutte le aste	
-Media pesata di tutte le aste	
Contributo eventuali sforzi di trazione	No
Incremento snellezza	Si
Verifiche di stabilità globale nel piano XZ locale	Si
-Coeff. $\beta$ intorno all'asse Y calcolato in funzione dello sforzo normale	
-Coeff. $\beta$ intorno all'asse Y	1.00
Verifiche di stabilità globale nel piano XY locale	Si
-Coeff. $\beta$ intorno all'asse Z calcolato in funzione dello sforzo normale	
-Coeff. $\beta$ intorno all'asse Z	1.00
Verifiche di stabilità flesso - torsionale	Si
-Coeff. per calcolo interasse ritegni torsionali	1.00
Membrature inflesse (D.M. 18/EC3)	
-Coeff. $\Psi$ per calcolo momento critico	
-Valuta in base ai momenti della membratura	x
-Utilizza valore imposto	
-Fattore correttivo di distribuzione $K_c$	0.94
-Snellezza di riferimento $\lambda_{LT,0}$	0.40
-Coeff. $\beta$	0.75
Membrature pressoinflesse (D.M. 18/EC3)	
-Considera come molto deformabile a torsione	No
-Fattore correttivo di distribuzione $\alpha_{mY}/C_{mY}$	0.95
-Fattore correttivo di distribuzione $\alpha_{mZ}/C_{mZ}$	0.95
-Fattore correttivo di distribuzione $\alpha_{mLT}/C_{mLT}$	0.95
<b>Dati per verifiche di resistenza al fuoco</b>	
-Tempo di verifica (REI) <minuti>	120.00
-Fattore di momento uniforme equivalente $\beta_{M,y}$	1.10
-Fattore di momento uniforme equivalente $\beta_{M,z}$	1.10
-Fattore di momento uniforme equivalente $\beta_{M,LT}$	1.10

## Aste in legno

<b>Generali</b>	



## Relazione di calcolo

<b>Verifica aste in legno</b>	
Numero punti interni per controllo Sigma	15.00
Numero CC da considerare di tipo H	99.00
Tensione di compressione per considerare l'elemento compresso <%>	2.00
Usa momenti equivalenti per verifiche di stabilità a presso-flessione	Si
Trascura sisma per verifiche di deformazione alle T.A.	Si
-Considera azioni sismiche di durata	Molto breve/Istantanea
<b>Stampe</b>	
Verifiche da riportare in relazione	Tutte

<b>Specifici</b>	<b>1</b>
<b>Caratteristiche legno</b>	
Tipo di legno	
-Lamellare	x
-Massiccio	
Verifiche Tensioni Ammissibili (DIN 1052)	Si
Classificazione per verifiche di stabilità	BS16
-Moduli di elasticità	
-Flessionale (E) <daN/cm <sup>2</sup> >	120000.00
-Assiale parallelo alle fibre (E <sub>0</sub> ) <daN/cm <sup>2</sup> >	130000.00
-Tangenziale (G) <daN/cm <sup>2</sup> >	6500.00
-Torsionale (G <sub>T</sub> ) <daN/cm <sup>2</sup> >	2670.00
-Tensioni ammissibili	
-Flessione (σ <sub>m</sub> ) <daN/cm <sup>2</sup> >	160.00
-Compressione parallela alle fibre (σ <sub>a</sub> ) <daN/cm <sup>2</sup> >	115.00
-Trazione parallela alle fibre (σ <sub>t</sub> ) <daN/cm <sup>2</sup> >	110.00
-Taglio (τ) <daN/cm <sup>2</sup> >	13.00
Verifiche Stati Limite (EC5/D.M. 18)	Si
-Considera come elemento esistente	No
-Livello di conoscenza	LC1
-Fattore di confidenza	1.35
-Moduli di elasticità	
-Medio parallelo alle fibre (E <sub>0,mean</sub> ) <daN/cm <sup>2</sup> >	137000.00
-Caratteristico parallelo alle fibre (E <sub>0,05</sub> ) <daN/cm <sup>2</sup> >	111000.00
-Tangenziale medio (G <sub>mean</sub> ) <daN/cm <sup>2</sup> >	8500.00
-Resistenze caratteristiche	
-Flessione (f <sub>m,k</sub> ) <daN/cm <sup>2</sup> >	320.00
-Compressione parallela alle fibre (f <sub>c,0,k</sub> ) <daN/cm <sup>2</sup> >	290.00
-Trazione parallela alle fibre (f <sub>t,0,k</sub> ) <daN/cm <sup>2</sup> >	225.00
-Taglio (f <sub>v,k</sub> ) <daN/cm <sup>2</sup> >	38.00
Considera incremento per sezioni piccole	No
<b>Parametri di calcolo</b>	
DIN 1052	
-Percentuale di umidità u	
-<= 18%	x
-> 18%	
EC5/D.M. 18	
-Classe di servizio	
-Classe di servizio 1	x
-Classe di servizio 2	
-Classe di servizio 3	
-Coeff. γ <sub>m</sub> (EC5)	1.30
-Coeff. γ <sub>m</sub> (D.M. 18)	1.45
Max valore del rapporto tra luce e freccia istantanea (totale)	250.00
Max valore del rapporto tra luce e freccia istantanea (solo accidentali)	300.00
Max valore del rapporto tra luce e freccia finale	200.00
Considerare anche spostamento relativo nodi per calcolo freccia	Si
Considerare solo la verifica di deformabilità delle membrature	Si
<b>Verifiche di stabilità asta</b>	
Riduzione lunghezza libera d'inflessione	
-Distanza fra i nodi dell'asta	x
-Distanza ridotta delle zone rigide moltiplicate per il valore	
Verifiche di stabilità globale in dir. Y locale	Si
-Coeff. β intorno all'asse Y	1.00
Verifiche di stabilità globale in dir. Z locale	Si
-Coeff. β intorno all'asse Z	1.00
Verifiche di stabilità laterale	Si
-Coeff. per calcolo interasse ritegni torsionali	1.00
<b>Verifiche di stabilità membratura</b>	
Massimo numero aste costituenti unica membratura	1.00
Sforzo normale di verifica	
-Massimo valore fra tutte le aste	x
-Media aritmetica dei valori di tutte le aste	
-Media pesata di tutte le aste	
Contributo eventuali sforzi di trazione	No
Verifiche di stabilità globale in dir. Y locale	Si
-Coeff. β intorno all'asse Y	1.00
Verifiche di stabilità globale in dir. Z locale	Si
-Coeff. β intorno all'asse Z	1.00
Verifiche di stabilità laterale	Si
-Coeff. per calcolo interasse ritegni torsionali	1.00
<b>Dati per verifiche di resistenza al fuoco</b>	



## Relazione di calcolo

Tempo di verifica (REI) <minuti>	120.00
Velocità di carbonizzazione convenzionale	0.70

## Verifiche e armature travi

## Simbologia

$\Delta_{sm}$	=Distanza media tra le fessure
$\Phi_{eq}$	=Diametro equivalente delle barre
$\epsilon_{sm}$	=Deformazione unitaria media dell'armatura (*1000)
$\sigma_c$	=Tensione nel calcestruzzo
$\sigma_f$ inf	=Tensione nel ferro - inferiore
$\sigma_f$ sup	=Tensione nel ferro - superiore
$\sigma_s$	=Tensione nell'acciaio nella sezione fessurata
$A_c$ eff	=Area di calcestruzzo efficace
$A_s$	=Area complessiva dei ferri nell'area di calcestruzzo efficace
AfE I	=Area di ferro effettiva totale presente nel punto di verifica, inferiore
AfE S	=Area di ferro effettiva totale presente nel punto di verifica, superiore
AfE St.	=Area di ferro effettiva della staffatura (d'anima per travi a T o L)
AfE St. ala	=Area di ferro effettiva della staffatura d'ala
AfEP I	=Area di ferro effettiva parziale presente nella CC considerata, per la sollecitazione indicata, inferiore
AfEP S	=Area di ferro effettiva parziale presente nella CC considerata, per la sollecitazione indicata, superiore
AfT St. ala	=Area di ferro teorica della staffatura d'ala
B	=Base
CC	=Combinazione delle condizioni di carico elementari c = momento fittizio in campata a = momento fittizio agli appoggi T = momento traslato per taglio e = eccentricità aggiuntiva in caso di compressione o pressoflessione TG = taglio da gerarchia delle resistenze TGND = taglio non dissipativo limitante la gerarchia TG (Li) = taglio da gerarchia delle resistenze, limite inferiore TG (Ls) = taglio da gerarchia delle resistenze, limite superiore
Caso	=Caso di verifica
Cf inf	=Copriferro inferiore
Cf sup	=Copriferro superiore
Cls	=Tipo di calcestruzzo
El	=Elemento (asta) in cui viene effettuato il progetto/verifica (progressivo sul numero di aste)
Fcd	=Resistenza di calcolo a compressione del calcestruzzo
Fck	=Resistenza caratteristica cilindrica a compressione del calcestruzzo
Fctd	=Resistenza di calcolo a trazione del calcestruzzo
Fctk	=Resistenza caratteristica a trazione del calcestruzzo
Fyd	=Resistenza di calcolo dell'acciaio
Fyk	=Tensione caratteristica di snervamento dell'acciaio
H	=Altezza
K <sub>2</sub>	=Coefficiente per distribuzione deformazioni
Lung.	=Lunghezza del tratto di progettazione
M'ydy	=Momento resistente massimo in campo sostanzialmente elastico intorno all'asse Y
MRdy	=Momento resistente allo stato limite ultimo intorno all'asse Y
My	=Momento flettente intorno all'asse Y
Sez.	=Numero della sezione
Sic.	=Sicurezza
Staff.	=Staffatura adottata
TCC	=Tipo di combinazione di carico SLU = Stato limite ultimo SLE R = Stato limite d'esercizio, combinazione rara SLE F = Stato limite d'esercizio, combinazione frequente SLE Q = Stato limite d'esercizio, combinazione quasi permanente SLD = Stato limite di danno SLV = Stato limite di salvaguardia della vita SND = Stato limite di salvaguardia della vita (non dissipativo)
Tipo	=Tipologia Cir. = Circolare Cir.c = Circolare cava R = Rettangolare T = Sezione a T
Tp	=Tipo di acciaio
VRcd	=Taglio ultimo lato calcestruzzo
VRsd	=Taglio ultimo lato armatura
Vrdu	=Taglio ultimo resistente
Vsdu	=Taglio agente nella direzione del momento ultimo
Wk	=Ampiezza caratteristica delle fessure
X	=Coordinata progressiva rispetto al nodo iniziale
X0	=Coordinata progressiva (dal nodo iniziale) dell'inizio del tratto
X1	=Coordinata progressiva (dal nodo iniziale) della fine del tratto
Xg	=Coordinata progressiva (dal primo nodo) in cui viene effettuato il progetto/verifica
b	=Base inferiore
bw	=Larghezza membratura resistente al taglio
c	=Ricoprimento dell'armatura
ctg $\theta$	=Cotangente dell'angolo di inclinazione dei puntoni di calcestruzzo
h	=Altezza parte inf.
s	=Distanza massima tra le barre

## Travata n. 2601

Nodi: 6 7 8 9 10

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	B <cm>	b <cm>	H <cm>	h <cm>	Cf sup <cm>	Cf inf <cm>	Cls	Fck <daN/cmq>	Fctk <daN/cmq>	Fcd <daN/cmq>	Fctd <daN/cmq>	Tp	Fyk <daN/cmq>	Fyd <daN/cmq>
9T		45.00	65.00	40.00	40.00	4.10	4.10	C25/30	249.00	17.91	141.10	11.94	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	MRdy <daNm>	Sic.
0.169		SLU	1	15.72	10.18	10.18	10.18	10.18	-1621.05	-29340.80	18.100
1.109		SLU	1	110.49	10.18	10.18	10.18	10.18	-2030.94	-29340.80	14.447
4.589		SLU	1	458.00	10.18	10.18	10.18	10.18	1445.63	29116.00	20.141
4.889		SLU	2	15.00	10.18	10.18	10.18	10.18	1456.77	29116.00	19.987
6.399		SLU	2	166.47	10.18	10.18	10.18	10.18	-1167.93	-29340.80	25.122
10.039		SLU	2	530.00	10.18	10.18	10.18	10.18	2667.76	29116.00	10.914



## Relazione di calcolo

10.33	9	SLU	3	15.00	10.18	10.18	10.18	10.18	2677.92	29116.00	10.873
12.18	9	SLU	3	200.25	10.18	10.18	10.18	10.18	-938.19	-29340.80	31.274
15.27	9	SLU	3	509.00	10.18	10.18	10.18	10.18	1488.05	29116.00	19.567
15.57	9	SLU	4	15.00	10.18	10.18	10.18	10.18	1454.79	29116.00	20.014
17.73	9	SLU	4	231.20	10.18	10.18	10.18	10.18	-2241.15	-29340.80	13.092
20.20	9	SLU	4	478.28	10.18	10.18	10.18	10.18	-1727.17	-29340.80	16.988

## Stato limite elastico - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	M'ydy <daNm>	Sic.
0.16	1	SLV(E)	1	15.72	10.18	10.18	10.18	10.18	-1732.46	-28205.50	16.281
1.10	1	SLV(E)	1	110.49	10.18	10.18	10.18	10.18	-1782.14	-28205.50	15.827
4.58	1	SLV(E)	1	458.00	10.18	10.18	10.18	10.18	-1350.31	-28205.50	20.888
4.88	1	SLV(E)	2	15.00	10.18	10.18	10.18	10.18	-1003.86	-28205.50	28.097
6.39	1	SLV(E)	2	166.47	10.18	10.18	10.18	10.18	-1003.86	-28205.50	28.097
10.03	1	SLV(E)	2	530.00	10.18	10.18	10.18	10.18	1569.73	27975.30	17.822
10.33	1	SLV(E)	3	15.00	10.18	10.18	10.18	10.18	1563.20	27975.30	17.896
12.18	1	SLV(E)	3	200.25	10.18	10.18	10.18	10.18	736.91	27975.30	37.963
15.27	1	SLV(E)	3	509.00	10.18	10.18	10.18	10.18	-411.41	-28205.50	68.558
15.57	1	SLV(E)	4	15.00	10.18	10.18	10.18	10.18	-898.12	-28205.50	31.405
17.73	1	SLV(E)	4	231.20	10.18	10.18	10.18	10.18	-2039.22	-28205.50	13.832
20.20	1	SLV(E)	4	478.28	10.18	10.18	10.18	10.18	-2089.87	-28205.50	13.496

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	My <daNm>	$\sigma_e$ sup <daN/cm <sup>2</sup> >	$\sigma_e$ inf <daN/cm <sup>2</sup> >	$\sigma_c$ <daN/cm <sup>2</sup> >
0.16	10	SLE R	1	15.72	10.18	10.18	-1146.95	158.71	-29.18	2.66
0.16	12	SLE Q	1	15.72	10.18	10.18	-663.55	91.82	-16.88	1.54
1.10	10	SLE R	1	110.49	10.18	10.18	-1450.01	200.65	-36.89	3.36
1.10	12	SLE Q	1	110.49	10.18	10.18	-911.70	126.16	-23.19	2.11
4.58	10	SLE R	1	458.00	10.18	10.18	905.38	-28.91	126.22	2.52
4.58	12	SLE Q	1	458.00	10.18	10.18	-572.40	79.21	-14.56	1.33
4.88	10	SLE R	2	15.00	10.18	10.18	920.06	-29.38	128.27	2.56
4.88	12	SLE Q	2	15.00	10.18	10.18	-324.30	44.88	-8.25	0.75
6.39	10	SLE R	2	166.47	10.18	10.18	-816.79	113.02	-20.78	1.89
6.39	12	SLE Q	2	166.47	10.18	10.18	-441.48	61.09	-11.23	1.02
10.03	10	SLE R	2	530.00	10.18	10.18	1804.49	-57.63	251.57	5.02
10.03	12	SLE Q	2	530.00	10.18	10.18	608.59	-19.44	84.85	1.69
10.33	10	SLE R	3	15.00	10.18	10.18	1811.39	-57.85	252.54	5.04
10.33	12	SLE Q	3	15.00	10.18	10.18	611.08	-19.52	85.19	1.70
12.18	10	SLE R	3	200.25	10.18	10.18	-659.62	91.28	-16.78	1.53
12.18	12	SLE Q	3	200.25	10.18	10.18	-360.02	49.82	-9.16	0.84
15.27	10	SLE R	3	509.00	10.18	10.18	946.01	-30.21	131.89	2.63
15.27	12	SLE Q	3	509.00	10.18	10.18	-275.58	38.13	-7.01	0.64
15.57	10	SLE R	4	15.00	10.18	10.18	915.91	-29.25	127.69	2.55
15.57	12	SLE Q	4	15.00	10.18	10.18	-565.98	78.32	-14.40	1.31
17.73	10	SLE R	4	231.20	10.18	10.18	-1593.54	220.51	-40.54	3.70
17.73	12	SLE Q	4	231.20	10.18	10.18	-974.69	134.87	-24.79	2.26
20.20	10	SLE R	4	478.28	10.18	10.18	-1218.91	168.67	-31.01	2.83
20.20	12	SLE Q	4	478.28	10.18	10.18	-689.22	95.37	-17.53	1.60

## Stato limite d'esercizio - Verifiche a fessurazione

Caso	Xg <m>	CC	TCC	El	Sez.	X <cm>	My <daNm>	c <mm>	s <mm>	K <sub>2</sub>	$\Phi_{eq}$	$\Delta_{sm}$ <mm>	A <sub>s</sub> <cmq>	A <sub>c eff</sub> <cmq>	$\sigma_s$ <daN/cm <sup>2</sup> >	$\epsilon_{sm}$	Wk <mm>
13	0.16	12	SLE Q	1	9	15.72	-663.55	32.00	120.67	0.50	18.00	145.57	10.18	461.25	91.82	0.03	0.01
14	0.16	11	SLE F	1	9	15.72	-760.23	32.00	120.67	0.50	18.00	145.57	10.18	461.25	105.20	0.03	0.01
29	1.10	12	SLE Q	1	9	110.49	-911.70	32.00	120.67	0.50	18.00	145.57	10.18	461.25	126.16	0.04	0.01
30	1.10	11	SLE F	1	9	110.49	-1019.27	32.00	120.67	0.50	18.00	145.57	10.18	461.25	141.04	0.04	0.01
45	4.58	12	SLE Q	1	9	458.00	-572.40	32.00	120.67	0.50	18.00	145.57	10.18	461.25	79.21	0.02	0.01
47	4.58	11	SLE F	1	9	458.00	-521.62	32.00	120.67	0.50	18.00	145.57	10.18	461.25	72.18	0.02	0.01
62	4.88	12	SLE Q	2	9	15.00	-324.30	32.00	120.67	0.50	18.00	145.57	10.18	461.25	44.88	0.01	0.00
63	4.88	11	SLE F	2	9	15.00	-276.79	32.00	120.67	0.50	18.00	145.57	10.18	461.25	38.30	0.01	0.00
79	6.39	12	SLE Q	2	9	166.47	-441.48	32.00	120.67	0.50	18.00	145.57	10.18	461.25	61.09	0.02	0.00
80	6.39	11	SLE F	2	9	166.47	-510.09	32.00	120.67	0.50	18.00	145.57	10.18	461.25	70.58	0.02	0.01
93	10.03	12	SLE Q	2	9	530.00	608.59	32.00	187.33	0.50	18.00	181.82	10.18	666.25	84.85	0.02	0.01
94	10.03	11	SLE F	2	9	530.00	847.77	32.00	187.33	0.50	18.00	181.82	10.18	666.25	118.19	0.03	0.01
107	10.33	12	SLE Q	3	9	15.00	611.08	32.00	187.33	0.50	18.00	181.82	10.18	666.25	85.19	0.02	0.01
108	10.33	11	SLE F	3	9	15.00	851.14	32.00	187.33	0.50	18.00	181.82	10.18	666.25	118.66	0.03	0.01
125	12.18	12	SLE Q	3	9	200.25	-360.02	32.00	120.67	0.50	18.00	145.57	10.18	461.25	49.82	0.01	0.00
127	12.18	11	SLE F	3	9	200.25	-419.94	32.00	120.67	0.50	18.00	145.57	10.18	461.25	58.11	0.02	0.00
143	15.27	12	SLE Q	3	9	509.00	-275.58	32.00	120.67	0.50	18.00	145.57	10.18	461.25	38.13	0.01	0.00
144	15.27	11	SLE F	3	9	509.00	180.07	32.00	187.33	0.50	18.00	181.82	10.18	666.25	25.10	0.01	0.00
159	15.57	12	SLE Q	4	9	15.00	-565.98	32.00	120.67	0.50	18.00	145.57	10.18	461.25	78.32	0.02	0.01
160	15.57	11	SLE F	4	9	15.00	-522.85	32.00	120.67	0.50	18.00	145.57	10.18	461.25	72.35	0.02	0.01
172	17.73	12	SLE Q	4	9	231.20	-974.69	32.00	120.67	0.50	18.00	145.57	10.18	461.25	134.87	0.04	0.01
173	17.73	11	SLE F	4	9	231.20	-1095.64	32.00	120.67	0.50	18.00	145.57	10.18	461.25	151.61	0.04	0.01
185	20.20	12	SLE Q	4	9	478.28	-689.22	32.00	120.67	0.50	18.00	145.57	10.18	461.25	95.37	0.03	0.01
186	20.20	11	SLE F	4	9	478.28	-795.16	32.00	120.67	0.50	18.00	145.57	10.18	461.25	110.03	0.03	0.01

## Stato limite ultimo - Verifiche a taglio

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. <cmq/m>	bw <m>	Vsdu <daN>	ctgθ	VRsd <daN>	VRcd <daN>	Vrdu <daN>	Sic.
9 SLU	0.16	0.96	0.80	ø10/20 2 br.	7.85	0.45	1739.91	2.50	52484.20	74781.80	52484.20	30.165
9 SLU	0.96	3.78	2.82	ø10/20 2 br.	7.85	0.45	1718.39	2.50	52484.20	74781.80	52484.20	30.543
9 SLU	3.78	4.58	0.80	ø10/20 2 br.	7.85	0.45	2453.50	2.50	52484.20	74781.80	52484.20	21.392
9 SLU	4.88	5.68	0.80	ø10/20 2 br.	7.85	0.45	2151.85	2.50	52484.20	74781.80	52484.20	24.390
9 SLU	5.68	9.23	3.55	ø10/20 2 br.	7.85	0.45	1906.35	2.50	52484.20	74781.80	52484.20	27.531
9 SLU	9.23	10.03	0.80	ø10/20 2 br.	7.85	0.45	2712.02	2.50	52484.20	74781.80	52484.20	19.352



Relazione di calcolo

9 SLU	10.33	11.13	0.80	ø10/20 2 br.	7.85	0.45	2652.95	2.50	52484.20	74781.80	52484.20	19.783
9 SLU	11.13	14.47	3.34	ø10/20 2 br.	7.85	0.45	1843.10	2.50	52484.20	74781.80	52484.20	28.476
9 SLU	14.47	15.27	0.80	ø10/20 2 br.	7.85	0.45	2090.50	2.50	52484.20	74781.80	52484.20	25.106
9 SLU	15.57	16.37	0.80	ø10/20 2 br.	7.85	0.45	2519.72	2.50	52484.20	74781.80	52484.20	20.829
9 SLU	16.37	19.40	3.03	ø10/20 2 br.	7.85	0.45	1784.87	2.50	52484.20	74781.80	52484.20	29.405
9 SLU	19.40	20.20	0.80	ø10/20 2 br.	7.85	0.45	1843.27	2.50	52484.20	74781.80	52484.20	28.473

Staffatura ala, ferri di suola e ferri di fianco - Verifiche armatura

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. ala <cmq/m>	AfT St. ala <cmq/m>
9 SLU	0.16	0.96	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	0.96	3.78	2.82	ø6/20 2 br.	2.83	0.03
9 SLU	3.78	4.58	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	4.88	5.68	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	5.68	9.23	3.55	ø6/20 2 br.	2.83	0.03
9 SLU	9.23	10.03	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	10.33	11.13	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	11.13	14.47	3.34	ø6/20 2 br.	2.83	0.03
9 SLU	14.47	15.27	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	15.57	16.37	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	16.37	19.40	3.03	ø6/20 2 br.	2.83	0.03
9 SLU	19.40	20.20	0.80	ø6/20 2 br.	2.83	0.03

Travata n. 2602

Nodi: 17 18

Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	B <cm>	H <cm>	Cf sup <cm>	Cf inf <cm>	Cls	Fck <daN/cmq>	Fctk <daN/cmq>	Fcd <daN/cmq>	Fctd <daN/cmq>	Tp	Fyk <daN/cmq>	Fyd <daN/cmq>
10R		40.00	40.00	4.10	4.10	C25/30	249.00	17.91	141.10	11.94	B450C	4500.00	3913.04

Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	MRdy <daNm>	Sic.
0.10	9	SLU	1	9.69	5.09	5.09	5.09	5.09	452.58	6783.72	14.989
1.38	9	SLU	1	137.94	5.09	5.09	5.09	5.09	-891.18	-6783.72	7.612
3.30	9	SLU	1	330.31	5.09	5.09	5.09	5.09	462.43	6783.72	14.670

Stato limite elastico - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	M'ydy <daNm>	Sic.
0.10	5	SLV(E)	1	9.69	5.09	5.09	5.09	5.09	369.93	6469.46	17.489
1.38	5	SLV(E)	1	137.94	5.09	5.09	5.09	5.09	-615.37	-6469.46	10.513
3.30	5	SLV(E)	1	330.31	5.09	5.09	5.09	5.09	389.10	6469.46	16.627

Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	My <daNm>	σ <sub>f</sub> sup <daN/cmq>	σ <sub>f</sub> inf <daN/cmq>	σ <sub>c</sub> <daN/cmq>
0.10	10	SLE R	1	9.69	5.09	5.09	332.42	-37.45	199.97	4.54
0.10	12	SLE Q	1	9.69	5.09	5.09	256.69	-28.91	154.41	3.50
1.38	10	SLE R	1	137.94	5.09	5.09	-632.64	380.58	-71.26	8.63
1.38	12	SLE Q	1	137.94	5.09	5.09	-377.63	227.17	-42.54	5.15
3.30	10	SLE R	1	330.31	5.09	5.09	339.74	-38.27	204.37	4.64
3.30	12	SLE Q	1	330.31	5.09	5.09	262.72	-29.59	158.04	3.59

Stato limite d'esercizio - Verifiche a fessurazione

Caso	Xg <m>	CC	TCC	El	Sez.	X <cm>	My <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c</sub> eff <cmq>	σ <sub>s</sub> <daN/cmq>	ε <sub>sm</sub>	Wk <mm>
18	0.10	12	SLE Q	1	10	9.69	256.69	32.00	312.00	0.50	18.00	231.63	5.09	410.00	154.41	0.04	0.02
20	0.10	11	SLE F	1	10	9.69	271.83	32.00	312.00	0.50	18.00	231.63	5.09	410.00	163.53	0.05	0.02
31	1.38	12	SLE Q	1	10	137.94	-377.63	32.00	312.00	0.50	18.00	231.63	5.09	410.00	227.17	0.07	0.03
32	1.38	11	SLE F	1	10	137.94	-428.63	32.00	312.00	0.50	18.00	231.63	5.09	410.00	257.85	0.08	0.03
49	3.30	12	SLE Q	1	10	330.31	262.72	32.00	312.00	0.50	18.00	231.63	5.09	410.00	158.04	0.05	0.02
51	3.30	11	SLE F	1	10	330.31	278.12	32.00	312.00	0.50	18.00	231.63	5.09	410.00	167.31	0.05	0.02

Stato limite ultimo - Verifiche a taglio

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. <cmq/m>	bw <m>	Vsdu <daN>	ctgθ	VRsd <daN>	VRcd <daN>	Vrdu <daN>	Sic.
9 SLU	0.10	0.50	0.40	ø10/24 2 br.	6.54	0.40	1615.11	2.50	20687.10	31441.00	20687.10	12.809
9 SLU	0.50	2.90	2.41	ø10/24 2 br.	6.54	0.40	1195.87	2.50	20687.10	31441.00	20687.10	17.299
9 SLU	2.90	3.30	0.40	ø10/24 2 br.	6.54	0.40	1626.99	2.50	20687.10	31441.00	20687.10	12.715

Travata n. 2603

Nodi: 3 7 13

Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	B <cm>	H <cm>	Cf sup <cm>	Cf inf <cm>	Cls	Fck <daN/cmq>	Fctk <daN/cmq>	Fcd <daN/cmq>	Fctd <daN/cmq>	Tp	Fyk <daN/cmq>	Fyd <daN/cmq>
10R		40.00	40.00	4.10	4.10	C25/30	249.00	17.91	141.10	11.94	B450C	4500.00	3913.04

Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	MRdy <daNm>	Sic.
0.15	9	SLU	1	651.00	5.09	5.09	5.09	5.09	-1137.50	-6783.72	5.964
1.48	9	SLU	1	517.55	5.09	5.09	5.09	5.09	-1613.74	-6783.72	4.204
6.51	9	SLU	1	15.00	5.09	5.09	5.09	5.09	2071.46	6783.72	3.275
6.81	9	SLU	2	531.47	5.09	5.09	5.09	5.09	2388.11	6783.72	2.841



## Relazione di calcolo

9.54	9	SLU	2	258.50	5.09	5.09	5.09	5.09	-1357.55	-6783.72	4.997
11.97	9	SLU	2	15.86	5.09	5.09	5.09	5.09	598.31	6783.72	11.338

## Stato limite elastico - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	Afe S <cmq>	Afe I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	M'ydy <daNm>	Sic.
0.15	5	SLV(E)	1	651.00	5.09	5.09	5.09	5.09	-789.43	-6469.46	8.195
1.48	5	SLV(E)	1	517.55	5.09	5.09	5.09	5.09	-940.43	-6469.46	6.879
6.51	5	SLV(E)	1	15.00	5.09	5.09	5.09	5.09	1325.82	6469.46	4.880
6.81	5	SLV(E)	2	531.47	5.09	5.09	5.09	5.09	1474.14	6469.46	4.389
9.54	5	SLV(E)	2	258.50	5.09	5.09	5.09	5.09	-814.96	-6469.46	7.938
11.97	5	SLV(E)	2	15.86	5.09	5.09	5.09	5.09	1427.40	6469.46	4.532

## Stato limite d'esercizio - Verifiche tensionali

Xg <cm>	CC	TCC	El	X <cm>	Afe S <cmq>	Afe I <cmq>	My <daNm>	σ <sub>e</sub> sup <daN/cm²>	σ <sub>e</sub> inf <daN/cm²>	σ <sub>c</sub> <daN/cm²>
0.15	10	SLE R	1	651.00	5.09	5.09	-773.30	465.19	-87.11	10.55
0.15	12	SLE Q	1	651.00	5.09	5.09	-282.55	169.97	-31.83	3.86
1.48	10	SLE R	1	517.55	5.09	5.09	-1140.55	686.11	-128.48	15.57
1.48	12	SLE Q	1	517.55	5.09	5.09	-655.83	394.53	-73.88	8.95
6.51	10	SLE R	1	15.00	5.09	5.09	1476.84	-166.36	888.42	20.16
6.51	12	SLE Q	1	15.00	5.09	5.09	914.32	-103.00	550.02	12.48
6.81	10	SLE R	2	531.47	5.09	5.09	1680.62	-189.31	1011.00	22.94
6.81	12	SLE Q	2	531.47	5.09	5.09	926.03	-104.31	557.07	12.64
9.54	10	SLE R	2	258.50	5.09	5.09	-968.31	582.50	-109.08	13.22
9.54	12	SLE Q	2	258.50	5.09	5.09	-614.56	369.70	-69.23	8.39
11.97	10	SLE R	2	15.86	5.09	5.09	498.64	-56.17	299.96	6.81
11.97	12	SLE Q	2	15.86	5.09	5.09	683.89	-77.04	411.40	9.33

## Stato limite d'esercizio - Verifiche a fessurazione

Caso	Xg <m>	CC	TCC	El	Sez.	X <cm>	My <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cm²>	A <sub>c</sub> eff <cm²>	σ <sub>s</sub> <daN/cm²>	ε <sub>sm</sub>	W <sub>k</sub> <mm>
13	0.15	12	SLE Q	1	10	651.00	-282.55	32.00	312.00	0.50	18.00	231.63	5.09	410.00	169.97	0.05	0.02
14	0.15	11	SLE F	1	10	651.00	-380.70	32.00	312.00	0.50	18.00	231.63	5.09	410.00	229.02	0.07	0.03
25	1.48	12	SLE Q	1	10	517.55	-655.83	32.00	312.00	0.50	18.00	231.63	5.09	410.00	394.53	0.11	0.05
26	1.48	11	SLE F	1	10	517.55	-752.77	32.00	312.00	0.50	18.00	231.63	5.09	410.00	452.84	0.13	0.05
37	6.51	12	SLE Q	1	10	15.00	914.32	32.00	312.00	0.50	18.00	231.63	5.09	410.00	550.02	0.16	0.06
38	6.51	11	SLE F	1	10	15.00	1026.83	32.00	312.00	0.50	18.00	231.63	5.09	410.00	617.70	0.18	0.07
49	6.81	12	SLE Q	2	10	531.47	926.03	32.00	312.00	0.50	18.00	231.63	5.09	410.00	557.07	0.16	0.06
50	6.81	11	SLE F	2	10	531.47	1076.95	32.00	312.00	0.50	18.00	231.63	5.09	410.00	647.86	0.19	0.07
61	9.54	12	SLE Q	2	10	258.50	-614.56	32.00	312.00	0.50	18.00	231.63	5.09	410.00	369.70	0.11	0.04
62	9.54	11	SLE F	2	10	258.50	-683.04	32.00	312.00	0.50	18.00	231.63	5.09	410.00	410.90	0.12	0.05
77	11.97	12	SLE Q	2	10	15.86	683.89	32.00	312.00	0.50	18.00	231.63	5.09	410.00	411.40	0.12	0.05
78	11.97	11	SLE F	2	10	15.86	646.84	32.00	312.00	0.50	18.00	231.63	5.09	410.00	389.12	0.11	0.04

## Stato limite ultimo - Verifiche a taglio

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	Afe St. <cmq/m>	bw <m>	Vsdu <daN>	ctgθ	VRsd <daN>	VRcd <daN>	Vrdu <daN>	Sic.
9 SLU	0.15	0.55	0.40	ø10/24 2 br.	6.54	0.40	1230.06	2.50	20687.10	31441.00	20687.10	16.818
9 SLU	0.55	6.11	5.56	ø10/24 2 br.	6.54	0.40	1746.52	2.50	20687.10	31441.00	20687.10	11.845
9 SLU	6.11	6.51	0.40	ø10/24 2 br.	6.54	0.40	2103.46	2.50	20687.10	31441.00	20687.10	9.835
9 SLU	6.81	7.21	0.40	ø10/24 2 br.	6.54	0.40	2497.64	2.50	20687.10	31441.00	20687.10	8.283
9 SLU	7.21	11.57	4.36	ø10/24 2 br.	6.54	0.40	2119.50	2.50	20687.10	31441.00	20687.10	9.760
9 SLU	11.57	11.97	0.40	ø10/24 2 br.	6.54	0.40	1996.43	2.50	20687.10	31441.00	20687.10	10.362

## Travata n. 2604

Nodi: 15 17

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	B <cm>	b <cm>	H <cm>	h <cm>	Cf sup <cm>	Cf inf <cm>	Cl <sub>s</sub>	Fck <daN/cm²>	Fctk <daN/cm²>	Fcd <daN/cm²>	Fctd <daN/cm²>	Tp	Fyk <daN/cm²>	Fyd <daN/cm²>
9T		45.00	65.00	40.00	40.00	4.10	4.10	C25/30	249.00	17.91	141.10	11.94	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	Afe S <cmq>	Afe I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	MRdy <daNm>	Sic.
1.05	9	SLU	1	241.00	10.18	10.18	10.18	10.18	4632.80	29116.00	6.285
2.70	9	SLU	1	75.78	10.18	10.18	10.18	10.18	2116.00	29116.00	13.760
3.36	9	SLU	1	9.68	10.18	10.18	10.18	10.18	771.32	29116.00	37.748

## Stato limite elastico - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	Afe S <cmq>	Afe I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	M'ydy <daNm>	Sic.
1.05	5	SLV(E)	1	241.00	10.18	10.18	10.18	10.18	3814.61	27975.30	7.334
2.70	5	SLV(E)	1	75.78	10.18	10.18	10.18	10.18	1959.85	27975.30	14.274
3.36	5	SLV(E)	1	9.68	10.18	10.18	10.18	10.18	863.93	27975.30	32.381

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	X <cm>	Afe S <cmq>	Afe I <cmq>	My <daNm>	σ <sub>e</sub> sup <daN/cm²>	σ <sub>e</sub> inf <daN/cm²>	σ <sub>c</sub> <daN/cm²>
1.05	10	SLE R	1	241.00	10.18	10.18	3315.40	-105.88	462.22	9.22
1.05	12	SLE Q	1	241.00	10.18	10.18	2117.52	-67.62	295.21	5.89
2.70	10	SLE R	1	75.78	10.18	10.18	1521.51	-48.59	212.12	4.23
2.70	12	SLE Q	1	75.78	10.18	10.18	1009.09	-32.23	140.68	2.81
3.36	10	SLE R	1	9.68	10.18	10.18	562.72	-17.97	78.45	1.57
3.36	12	SLE Q	1	9.68	10.18	10.18	414.90	-13.25	57.84	1.15



## Relazione di calcolo

## Stato limite d'esercizio - Verifiche a fessurazione

Caso	Xg <m>	CC	TCC	El	Sez.	X <cm>	My <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c eff</sub> <cmq>	σ <sub>s</sub> <daN/cmq>	ε <sub>sm</sub>	Wk <mm>
11	1.05	12	SLE Q	1	9	241.00	2117.52	32.00	187.33	0.50	18.00	181.82	10.18	666.25	295.21	0.09	0.03
12	1.05	11	SLE F	1	9	241.00	2357.10	32.00	187.33	0.50	18.00	181.82	10.18	666.25	328.62	0.10	0.03
29	2.70	12	SLE Q	1	9	75.78	1009.09	32.00	187.33	0.50	18.00	181.82	10.18	666.25	140.68	0.04	0.01
31	2.70	11	SLE F	1	9	75.78	1111.57	32.00	187.33	0.50	18.00	181.82	10.18	666.25	154.97	0.05	0.01
49	3.36	12	SLE Q	1	9	9.68	414.90	32.00	187.33	0.50	18.00	181.82	10.18	666.25	57.84	0.02	0.01
51	3.36	11	SLE F	1	9	9.68	444.47	32.00	187.33	0.50	18.00	181.82	10.18	666.25	61.97	0.02	0.01

## Stato limite ultimo - Verifiche a taglio

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. <cmq/m>	bw <m>	Vsdu <daN>	ctgθ	VRsd <daN>	VRcd <daN>	Vrdu <daN>	Sic.
9 SLU	1.05	3.36	2.31	ø10/20 2 br.	7.85	0.45	3794.43	2.50	52484.20	74781.80	52484.20	13.832

## Staffatura ala, ferri di suola e ferri di fianco - Verifiche armatura

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. ala <cmq/m>	AfT St. ala <cmq/m>
9 SLU	1.05	3.36	2.31	ø6/20 2 br.	2.83	0.03

## Travata n. 2605

Nodi: 1 8 -1

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	B <cm>	H <cm>	Cf sup <cm>	Cf inf <cm>	Cl <sub>s</sub>	Fck <daN/cmq>	Fctk <daN/cmq>	Fcd <daN/cmq>	Fctd <daN/cmq>	Tp	Fyk <daN/cmq>	Fyd <daN/cmq>
10R		40.00	40.00	4.10	4.10	C25/30	249.00	17.91	141.10	11.94	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	MRdy <daNm>	Sic.
0.15	9	SLU	1	710.00	5.09	5.09	5.09	5.09	-1670.24	-6783.72	4.062
1.06	9	SLU	1	619.35	5.09	5.09	5.09	5.09	-1976.21	-6783.72	3.433
7.10	9	SLU	1	15.00	5.09	5.09	5.09	5.09	2187.66	6783.72	3.101
7.40	9	SLU	2	553.65	5.09	5.09	5.09	5.09	2388.23	6783.72	2.840

## Stato limite elastico - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	M'ydy <daNm>	Sic.
0.15	5	SLV(E)	1	710.00	5.09	5.09	5.09	5.09	-808.40	-6469.46	8.003
1.06	5	SLV(E)	1	619.35	5.09	5.09	5.09	5.09	-975.43	-6469.46	6.632
7.10	5	SLV(E)	1	15.00	5.09	5.09	5.09	5.09	1173.93	6469.46	5.511
7.40	5	SLV(E)	2	553.65	5.09	5.09	5.09	5.09	1164.04	6469.46	5.558

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	My <daNm>	σ <sub>e</sub> sup <daN/cmq>	σ <sub>e</sub> inf <daN/cmq>	σ <sub>c</sub> <daN/cmq>
0.15	10	SLE R	1	710.00	5.09	5.09	-1144.60	688.55	-128.94	15.62
0.15	12	SLE Q	1	710.00	5.09	5.09	-467.93	281.49	-52.71	6.39
1.06	10	SLE R	1	619.35	5.09	5.09	-1382.88	831.89	-155.78	18.87
1.06	12	SLE Q	1	619.35	5.09	5.09	-720.38	433.35	-81.15	9.83
7.10	10	SLE R	1	15.00	5.09	5.09	1550.60	-174.67	932.79	21.16
7.10	12	SLE Q	1	15.00	5.09	5.09	912.52	-102.79	548.94	12.45
7.40	10	SLE R	2	553.65	5.09	5.09	1663.93	-187.44	1000.96	22.71
7.40	12	SLE Q	2	553.65	5.09	5.09	828.26	-93.30	498.25	11.30

## Stato limite d'esercizio - Verifiche a fessurazione

Caso	Xg <m>	CC	TCC	El	Sez.	X <cm>	My <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c eff</sub> <cmq>	σ <sub>s</sub> <daN/cmq>	ε <sub>sm</sub>	Wk <mm>
13	0.15	12	SLE Q	1	10	710.00	-467.93	32.00	312.00	0.50	18.00	231.63	5.09	410.00	281.49	0.08	0.03
14	0.15	11	SLE F	1	10	710.00	-603.26	32.00	312.00	0.50	18.00	231.63	5.09	410.00	362.90	0.11	0.04
25	1.06	12	SLE Q	1	10	619.35	-720.38	32.00	312.00	0.50	18.00	231.63	5.09	410.00	433.35	0.13	0.05
26	1.06	11	SLE F	1	10	619.35	-852.88	32.00	312.00	0.50	18.00	231.63	5.09	410.00	513.06	0.15	0.06
37	7.10	12	SLE Q	1	10	15.00	912.52	32.00	312.00	0.50	18.00	231.63	5.09	410.00	548.94	0.16	0.06
38	7.10	11	SLE F	1	10	15.00	1040.14	32.00	312.00	0.50	18.00	231.63	5.09	410.00	625.71	0.18	0.07
49	7.40	12	SLE Q	2	10	553.65	828.26	32.00	312.00	0.50	18.00	231.63	5.09	410.00	498.25	0.15	0.06
50	7.40	11	SLE F	2	10	553.65	995.39	32.00	312.00	0.50	18.00	231.63	5.09	410.00	598.79	0.17	0.07

## Stato limite ultimo - Verifiche a taglio

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. <cmq/m>	bw <m>	Vsdu <daN>	ctgθ	VRsd <daN>	VRcd <daN>	Vrdu <daN>	Sic.
9 SLU	0.15	0.55	0.40	ø10/24 2 br.	6.54	0.40	1217.91	2.50	20687.10	31441.00	20687.10	16.986
9 SLU	0.55	6.70	6.15	ø10/24 2 br.	6.54	0.40	1767.90	2.50	20687.10	31441.00	20687.10	11.701
9 SLU	6.70	7.10	0.40	ø10/24 2 br.	6.54	0.40	2144.81	2.50	20687.10	31441.00	20687.10	9.645
9 SLU	7.40	7.80	0.40	ø10/24 2 br.	6.54	0.40	2576.60	2.50	20687.10	31441.00	20687.10	8.029
9 SLU	7.80	12.88	5.08	ø10/24 2 br.	6.54	0.40	2900.95	2.50	20687.10	31441.00	20687.10	7.131

## Travata n. 2606

Nodi: 16 18

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	B <cm>	b <cm>	H <cm>	h <cm>	Cf sup <cm>	Cf inf <cm>	Cl <sub>s</sub>	Fck <daN/cmq>	Fctk <daN/cmq>	Fcd <daN/cmq>	Fctd <daN/cmq>	Tp	Fyk <daN/cmq>	Fyd <daN/cmq>
9T		45.00	65.00	40.00	40.00	4.10	4.10	C25/30	249.00	17.91	141.10	11.94	B450C	4500.00	3913.04



## Relazione di calcolo

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	MRdy <daNm>	Sic.
1.05	9	SLU	1	241.00	10.18	10.18	10.18	10.18	4707.91	29116.00	6.184
2.70	9	SLU	1	75.78	10.18	10.18	10.18	10.18	2155.19	29116.00	13.510
3.36	9	SLU	1	9.68	10.18	10.18	10.18	10.18	788.93	29116.00	36.906

## Stato limite elastico - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	M'ydy <daNm>	Sic.
1.05	5	SLV(E)	1	241.00	10.18	10.18	10.18	10.18	3915.88	27975.30	7.144
2.70	5	SLV(E)	1	75.78	10.18	10.18	10.18	10.18	2019.45	27975.30	13.853
3.36	5	SLV(E)	1	9.68	10.18	10.18	10.18	10.18	894.70	27975.30	31.268

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	My <daNm>	$\sigma_f$ sup <daN/cm <sup>2</sup> >	$\sigma_f$ inf <daN/cm <sup>2</sup> >	$\sigma_c$ <daN/cm <sup>2</sup> >
1.05	10	SLE R	1	241.00	10.18	10.18	3368.75	-107.58	469.65	9.37
1.05	12	SLE Q	1	241.00	10.18	10.18	2149.47	-68.64	299.67	5.98
2.70	10	SLE R	1	75.78	10.18	10.18	1549.54	-49.49	216.03	4.31
2.70	12	SLE Q	1	75.78	10.18	10.18	1026.90	-32.79	143.16	2.86
3.36	10	SLE R	1	9.68	10.18	10.18	575.46	-18.38	80.23	1.60
3.36	12	SLE Q	1	9.68	10.18	10.18	423.72	-13.53	59.07	1.18

## Stato limite d'esercizio - Verifiche a fessurazione

Caso	Xg <m>	CC	TCC	El	Sez.	X <cm>	My <daNm>	c <mm>	s <mm>	K <sub>2</sub>	$\Phi_{eq}$	$\Delta_{sm}$ <mm>	A <sub>s</sub> <cmq>	A <sub>c</sub> eff <cmq>	$\sigma_s$ <daN/cm <sup>2</sup> >	$\epsilon_{sm}$	Wk <mm>
11	1.05	12	SLE Q	1	9	241.00	2149.47	32.00	187.33	0.50	18.00	181.82	10.18	666.25	299.67	0.09	0.03
12	1.05	11	SLE F	1	9	241.00	2393.33	32.00	187.33	0.50	18.00	181.82	10.18	666.25	333.67	0.10	0.03
29	2.70	12	SLE Q	1	9	75.78	1026.90	32.00	187.33	0.50	18.00	181.82	10.18	666.25	143.16	0.04	0.01
31	2.70	11	SLE F	1	9	75.78	1131.43	32.00	187.33	0.50	18.00	181.82	10.18	666.25	157.74	0.05	0.01
49	3.36	12	SLE Q	1	9	9.68	423.72	32.00	187.33	0.50	18.00	181.82	10.18	666.25	59.07	0.02	0.01
51	3.36	11	SLE F	1	9	9.68	454.07	32.00	187.33	0.50	18.00	181.82	10.18	666.25	63.30	0.02	0.01

## Stato limite ultimo - Verifiche a taglio

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. <cmq/m>	bw <m>	Vsdu <daN>	ctg $\theta$	VRsd <daN>	VRcd <daN>	Vrdu <daN>	Sic.
9 SLU	1.05	3.36	2.31	ø10/20 2 br.	7.85	0.45	3845.92	2.50	52484.20	74781.80	52484.20	13.647

## Staffatura ala, ferri di suola e ferri di fianco - Verifiche armatura

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. ala <cmq/m>	AfT St. ala <cmq/m>
9 SLU	1.05	3.36	2.31	ø6/20 2 br.	2.83	0.03

## Travata n. 2607

Nodi: 2 9 14

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez. Tipo	B <cm>	H <cm>	Cf sup <cm>	Cf inf <cm>	Cl <sub>s</sub>	F <sub>ck</sub> <daN/cm <sup>2</sup> >	F <sub>ctk</sub> <daN/cm <sup>2</sup> >	F <sub>cd</sub> <daN/cm <sup>2</sup> >	F <sub>ctd</sub> <daN/cm <sup>2</sup> >	T <sub>p</sub>	F <sub>yk</sub> <daN/cm <sup>2</sup> >	F <sub>yd</sub> <daN/cm <sup>2</sup> >
10R	40.00	40.00	4.10	4.10	C25/30	249.00	17.91	141.10	11.94	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	MRdy <daNm>	Sic.
0.15	9	SLU	1	653.00	5.09	5.09	5.09	5.09	-1174.60	-6783.72	5.775
1.45	9	SLU	1	523.04	5.09	5.09	5.09	5.09	-1632.55	-6783.72	4.155
6.53	9	SLU	1	15.00	5.09	5.09	5.09	5.09	2079.75	6783.72	3.262
6.83	9	SLU	2	532.70	5.09	5.09	5.09	5.09	2397.40	6783.72	2.830
9.56	9	SLU	2	259.45	5.09	5.09	5.09	5.09	-1356.45	-6783.72	5.001
12.00	9	SLU	2	15.86	5.09	5.09	5.09	5.09	639.98	6783.72	10.600

## Stato limite elastico - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	M'ydy <daNm>	Sic.
0.15	5	SLV(E)	1	653.00	5.09	5.09	5.09	5.09	-815.84	-6469.46	7.930
1.45	5	SLV(E)	1	523.04	5.09	5.09	5.09	5.09	-957.35	-6469.46	6.758
6.53	5	SLV(E)	1	15.00	5.09	5.09	5.09	5.09	1352.25	6469.46	4.784
6.83	5	SLV(E)	2	532.70	5.09	5.09	5.09	5.09	1473.27	6469.46	4.391
9.56	5	SLV(E)	2	259.45	5.09	5.09	5.09	5.09	-814.75	-6469.46	7.940
12.00	5	SLV(E)	2	15.86	5.09	5.09	5.09	5.09	1486.91	6469.46	4.351

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	My <daNm>	$\sigma_f$ sup <daN/cm <sup>2</sup> >	$\sigma_f$ inf <daN/cm <sup>2</sup> >	$\sigma_c$ <daN/cm <sup>2</sup> >
0.15	10	SLE R	1	653.00	5.09	5.09	-799.30	480.83	-90.04	10.91
0.15	12	SLE Q	1	653.00	5.09	5.09	-296.30	178.24	-33.38	4.04
1.45	10	SLE R	1	523.04	5.09	5.09	-1152.76	693.46	-129.85	15.73
1.45	12	SLE Q	1	523.04	5.09	5.09	-656.99	395.22	-74.01	8.97
6.53	10	SLE R	1	15.00	5.09	5.09	1481.82	-166.92	891.41	20.22
6.53	12	SLE Q	1	15.00	5.09	5.09	912.57	-102.80	548.97	12.46
6.83	10	SLE R	2	532.70	5.09	5.09	1685.84	-189.90	1014.14	23.01
6.83	12	SLE Q	2	532.70	5.09	5.09	922.04	-103.86	554.67	12.58
9.56	10	SLE R	2	259.45	5.09	5.09	-967.62	582.09	-109.00	13.21
9.56	12	SLE Q	2	259.45	5.09	5.09	-614.82	369.85	-69.26	8.39
12.00	10	SLE R	2	15.86	5.09	5.09	529.90	-59.69	318.77	7.23



## Relazione di calcolo

12.00	12	SLE Q	2	15.86	5.09	5.09	711.34	-80.13	427.92	9.71
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## Stato limite d'esercizio - Verifiche a fessurazione

Caso	Xg <m>	CC	TCC	El	Sez.	X <cm>	My <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c eff</sub> <cmq>	σ <sub>s</sub> <daN/cmq>	ε <sub>sm</sub>	Wk <mm>
13	0.15	12	SLE Q	1	10	653.00	-296.30	32.00	312.00	0.50	18.00	231.63	5.09	410.00	178.24	0.05	0.02
14	0.15	11	SLE F	1	10	653.00	-396.90	32.00	312.00	0.50	18.00	231.63	5.09	410.00	238.76	0.07	0.03
25	1.45	12	SLE Q	1	10	523.04	-656.99	32.00	312.00	0.50	18.00	231.63	5.09	410.00	395.22	0.12	0.05
26	1.45	11	SLE F	1	10	523.04	-756.14	32.00	312.00	0.50	18.00	231.63	5.09	410.00	454.87	0.13	0.05
37	6.53	12	SLE Q	1	10	15.00	912.57	32.00	312.00	0.50	18.00	231.63	5.09	410.00	548.97	0.16	0.06
38	6.53	11	SLE F	1	10	15.00	1026.42	32.00	312.00	0.50	18.00	231.63	5.09	410.00	617.46	0.18	0.07
49	6.83	12	SLE Q	2	10	532.70	922.04	32.00	312.00	0.50	18.00	231.63	5.09	410.00	554.67	0.16	0.06
50	6.83	11	SLE F	2	10	532.70	1074.80	32.00	312.00	0.50	18.00	231.63	5.09	410.00	646.56	0.19	0.07
61	9.56	12	SLE Q	2	10	259.45	-614.82	32.00	312.00	0.50	18.00	231.63	5.09	410.00	369.85	0.11	0.04
62	9.56	11	SLE F	2	10	259.45	-683.09	32.00	312.00	0.50	18.00	231.63	5.09	410.00	410.92	0.12	0.05
77	12.00	12	SLE Q	2	10	15.86	711.34	32.00	312.00	0.50	18.00	231.63	5.09	410.00	427.92	0.12	0.05
78	12.00	11	SLE F	2	10	15.86	675.05	32.00	312.00	0.50	18.00	231.63	5.09	410.00	406.09	0.12	0.05

## Stato limite ultimo - Verifiche a taglio

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. <cmq/m>	bw <m>	Vsdu <daN>	ctgθ	VRsd <daN>	VRcd <daN>	Vrdu <daN>	Sic.
9 SLU	0.15	0.55	0.40	ø10/24 2 br.	6.54	0.40	1218.57	2.50	20687.10	31441.00	20687.10	16.977
9 SLU	0.55	6.13	5.58	ø10/24 2 br.	6.54	0.40	1749.34	2.50	20687.10	31441.00	20687.10	11.826
9 SLU	6.13	6.53	0.40	ø10/24 2 br.	6.54	0.40	2107.42	2.50	20687.10	31441.00	20687.10	9.816
9 SLU	6.83	7.23	0.40	ø10/24 2 br.	6.54	0.40	2506.38	2.50	20687.10	31441.00	20687.10	8.254
9 SLU	7.23	11.60	4.37	ø10/24 2 br.	6.54	0.40	2126.78	2.50	20687.10	31441.00	20687.10	9.727
9 SLU	11.60	12.00	0.40	ø10/24 2 br.	6.54	0.40	2023.97	2.50	20687.10	31441.00	20687.10	10.221

## Travata n. 2608

Nodi: 4 3 1

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez. Tipo	B <cm>	b <cm>	H <cm>	h <cm>	Cf sup <cm>	Cf inf <cm>	Cl <sub>s</sub>	Fck <daN/cmq>	Fctk <daN/cmq>	Fcd <daN/cmq>	Fctd <daN/cmq>	TP	Fyk <daN/cmq>	Fyd <daN/cmq>
9T	45.00	65.00	40.00	40.00	4.10	4.10	C25/30	249.00	17.91	141.10	11.94	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	MRdy <daNm>	Sic.
0.16	9	SLU	1	15.82	10.18	10.18	10.18	10.18	-2526.18	-29340.80	11.615
1.43	9	SLU	1	142.56	10.18	10.18	10.18	10.18	-3364.42	-29340.80	8.721
4.91	9	SLU	1	491.09	10.18	10.18	10.18	10.18	3048.22	29116.00	9.552
5.21	9	SLU	2	14.91	10.18	10.18	10.18	10.18	2941.02	29116.00	9.900
7.26	9	SLU	2	220.46	10.18	10.18	10.18	10.18	-3118.52	-29340.80	9.409
10.39	9	SLU	2	533.27	10.18	10.18	10.18	10.18	2177.55	29116.00	13.371

## Stato limite elastico - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	M'ydy <daNm>	Sic.
0.16	1	SLV(E)	1	15.82	10.18	10.18	10.18	10.18	-2023.25	-28205.50	13.941
1.43	1	SLV(E)	1	142.56	10.18	10.18	10.18	10.18	-2369.11	-28205.50	11.905
4.91	5	SLV(E)	1	491.09	10.18	10.18	10.18	10.18	999.83	27975.30	27.980
5.21	1	SLV(E)	2	14.91	10.18	10.18	10.18	10.18	1457.50	27975.30	19.194
7.26	5	SLV(E)	2	220.46	10.18	10.18	10.18	10.18	-1542.91	-28205.50	18.281
10.39	1	SLV(E)	2	533.27	10.18	10.18	10.18	10.18	1037.34	27975.30	26.968

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	My <daNm>	σ <sub>f</sub> sup <daN/cmq>	σ <sub>f</sub> inf <daN/cmq>	σ <sub>c</sub> <daN/cmq>
0.16	10	SLE R	1	15.82	10.18	10.18	-1799.19	248.97	-45.77	4.17
0.16	12	SLE Q	1	15.82	10.18	10.18	-1103.51	152.70	-28.07	2.56
1.43	10	SLE R	1	142.56	10.18	10.18	-2410.51	333.56	-61.32	5.59
1.43	12	SLE Q	1	142.56	10.18	10.18	-1558.54	215.66	-39.65	3.62
4.91	10	SLE R	1	491.09	10.18	10.18	2065.43	-65.96	287.95	5.74
4.91	12	SLE Q	1	491.09	10.18	10.18	719.15	-22.97	100.26	2.00
5.21	10	SLE R	2	14.91	10.18	10.18	2005.20	-64.04	279.56	5.58
5.21	12	SLE Q	2	14.91	10.18	10.18	766.11	-24.47	106.81	2.13
7.26	10	SLE R	2	220.46	10.18	10.18	-2196.29	303.92	-55.87	5.09
7.26	12	SLE Q	2	220.46	10.18	10.18	-1219.38	168.73	-31.02	2.83
10.39	10	SLE R	2	533.27	10.18	10.18	1499.11	-47.87	209.00	4.17
10.39	12	SLE Q	2	533.27	10.18	10.18	649.40	-20.74	90.54	1.81

## Stato limite d'esercizio - Verifiche a fessurazione

Caso	Xg <m>	CC	TCC	El	Sez.	X <cm>	My <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c eff</sub> <cmq>	σ <sub>s</sub> <daN/cmq>	ε <sub>sm</sub>	Wk <mm>
15	0.16	12	SLE Q	1	9	15.82	-1103.51	32.00	120.67	0.50	18.00	145.57	10.18	461.25	152.70	0.04	0.01
16	0.16	11	SLE F	1	9	15.82	-1242.65	32.00	120.67	0.50	18.00	145.57	10.18	461.25	171.95	0.05	0.01
29	1.43	12	SLE Q	1	9	142.56	-1558.54	32.00	120.67	0.50	18.00	145.57	10.18	461.25	215.66	0.06	0.02
30	1.43	11	SLE F	1	9	142.56	-1727.66	32.00	120.67	0.50	18.00	145.57	10.18	461.25	239.07	0.07	0.02
51	4.91	12	SLE Q	1	9	491.09	719.15	32.00	187.33	0.50	18.00	181.82	10.18	666.25	100.26	0.03	0.01
53	4.91	11	SLE F	1	9	491.09	988.40	32.00	187.33	0.50	18.00	181.82	10.18	666.25	137.80	0.04	0.01
74	5.21	12	SLE Q	2	9	14.91	766.11	32.00	187.33	0.50	18.00	181.82	10.18	666.25	106.81	0.03	0.01
76	5.21	11	SLE F	2	9	14.91	1013.93	32.00	187.33	0.50	18.00	181.82	10.18	666.25	141.36	0.04	0.01
87	7.26	12	SLE Q	2	9	220.46	-1219.38	32.00	120.67	0.50	18.00	145.57	10.18	461.25	168.73	0.05	0.01
88	7.26	11	SLE F	2	9	220.46	-1414.55	32.00	120.67	0.50	18.00	145.57	10.18	461.25	195.74	0.06	0.01
109	10.39	12	SLE Q	2	9	533.27	649.40	32.00	187.33	0.50	18.00	181.82	10.18	666.25	90.54	0.03	0.01
111	10.39	11	SLE F	2	9	533.27	819.34	32.00	187.33	0.50	18.00	181.82	10.18	666.25	114.23	0.03	0.01



## Relazione di calcolo

## Stato limite ultimo - Verifiche a taglio

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. <cmq/m>	bw <m>	Vsdu <daN>	ctgθ	VRsd <daN>	VRcd <daN>	Vrdu <daN>	Sic.
9 SLU	0.16	0.96	0.80	ø10/20 2 br.	7.85	0.45	2931.52	2.50	52484.20	74781.80	52484.20	17.903
9 SLU	0.96	4.11	3.15	ø10/20 2 br.	7.85	0.45	3053.38	2.50	52484.20	74781.80	52484.20	17.189
9 SLU	4.11	4.91	0.80	ø10/20 2 br.	7.85	0.45	4259.75	2.50	52484.20	74781.80	52484.20	12.321
9 SLU	5.21	6.01	0.80	ø10/20 2 br.	7.85	0.45	4201.27	2.50	52484.20	74781.80	52484.20	12.492
9 SLU	6.01	9.59	3.58	ø10/20 2 br.	7.85	0.45	2978.24	2.50	52484.20	74781.80	52484.20	17.623
9 SLU	9.59	10.39	0.80	ø10/20 2 br.	7.85	0.45	4262.95	2.50	52484.20	74781.80	52484.20	12.312

## Staffatura ala, ferri di suola e ferri di fianco - Verifiche armatura

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. ala <cmq/m>	AfT St. ala <cmq/m>
9 SLU	0.16	0.96	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	0.96	4.11	3.15	ø6/20 2 br.	2.83	0.03
9 SLU	4.11	4.91	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	5.21	6.01	0.80	ø6/20 2 br.	2.83	0.04
9 SLU	6.01	9.59	3.58	ø6/20 2 br.	2.83	0.04
9 SLU	9.59	10.39	0.80	ø6/20 2 br.	2.83	0.04

## Travata n. 2609

Nodi: 1 2 5

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	B <cm>	b <cm>	H <cm>	h <cm>	Cf sup <cm>	Cf inf <cm>	Cls	Fck <daN/cmq>	Fctk <daN/cmq>	Fcd <daN/cmq>	Fctd <daN/cmq>	Tp	Fyk <daN/cmq>	Fyd <daN/cmq>
9T		45.00	65.00	40.00	40.00	4.10	4.10	C25/30	249.00	17.91	141.10	11.94	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	MRdy <daNm>	Sic.
0.15	9	SLU	1	14.91	10.18	10.18	10.18	10.18	2197.44	29116.00	13.250
1.70	9	SLU	1	170.31	10.18	10.18	10.18	10.18	-2740.01	-29340.80	10.708
5.12	9	SLU	1	512.17	10.18	10.18	10.18	10.18	3009.35	29116.00	9.675
5.42	9	SLU	2	14.92	10.18	10.18	10.18	10.18	3089.69	29116.00	9.424
7.59	9	SLU	2	232.07	10.18	10.18	10.18	10.18	-3668.96	-29340.80	7.997
10.38	9	SLU	2	511.28	10.18	10.18	10.18	10.18	-2654.59	-29340.80	11.053

## Stato limite elastico - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	M'ydy <daNm>	Sic.
0.15	1	SLV(E)	1	14.91	10.18	10.18	10.18	10.18	1033.63	27975.30	27.065
1.70	5	SLV(E)	1	170.31	10.18	10.18	10.18	10.18	-1376.26	-28205.50	20.494
5.12	1	SLV(E)	1	512.17	10.18	10.18	10.18	10.18	1466.09	27975.30	19.082
5.42	5	SLV(E)	2	14.92	10.18	10.18	10.18	10.18	1035.71	27975.30	27.011
7.59	1	SLV(E)	2	232.07	10.18	10.18	10.18	10.18	-2469.60	-28205.50	11.421
10.38	1	SLV(E)	2	511.28	10.18	10.18	10.18	10.18	-2066.07	-28205.50	13.652

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	My <daNm>	σ <sub>t</sub> sup <daN/cmq>	σ <sub>t</sub> inf <daN/cmq>	σ <sub>c</sub> <daN/cmq>
0.15	10	SLE R	1	14.91	10.18	10.18	1513.22	-48.33	210.97	4.21
0.15	12	SLE Q	1	14.91	10.18	10.18	657.76	-21.01	91.70	1.83
1.70	10	SLE R	1	170.31	10.18	10.18	-1931.43	267.26	-49.13	4.48
1.70	12	SLE Q	1	170.31	10.18	10.18	-1081.49	149.65	-27.51	2.51
5.12	10	SLE R	1	512.17	10.18	10.18	2055.36	-65.64	286.55	5.72
5.12	12	SLE Q	1	512.17	10.18	10.18	804.11	-25.68	112.11	2.24
5.42	10	SLE R	2	14.92	10.18	10.18	2095.31	-66.91	292.12	5.83
5.42	12	SLE Q	2	14.92	10.18	10.18	738.70	-23.59	102.99	2.05
7.59	10	SLE R	2	232.07	10.18	10.18	-2624.23	363.13	-66.76	6.09
7.59	12	SLE Q	2	232.07	10.18	10.18	-1672.64	231.45	-42.55	3.88
10.38	10	SLE R	2	511.28	10.18	10.18	-1888.56	261.33	-48.04	4.38
10.38	12	SLE Q	2	511.28	10.18	10.18	-1147.93	158.85	-29.20	2.66

## Stato limite d'esercizio - Verifiche a fessurazione

Caso	Xg <m>	CC	TCC	El	Sez.	X <cm>	My <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c eff</sub> <cmq>	σ <sub>s</sub> <daN/cmq>	ε <sub>sm</sub>	W <sub>k</sub> <mm>
22	0.15	12	SLE Q	1	9	14.91	657.76	32.00	187.33	0.50	18.00	181.82	10.18	666.25	91.70	0.03	0.01
24	0.15	11	SLE F	1	9	14.91	828.85	32.00	187.33	0.50	18.00	181.82	10.18	666.25	115.55	0.03	0.01
37	1.70	12	SLE Q	1	9	170.31	-1081.49	32.00	120.67	0.50	18.00	145.57	10.18	461.25	149.65	0.04	0.01
38	1.70	11	SLE F	1	9	170.31	-1251.31	32.00	120.67	0.50	18.00	145.57	10.18	461.25	173.15	0.05	0.01
55	5.12	12	SLE Q	1	9	512.17	804.11	32.00	187.33	0.50	18.00	181.82	10.18	666.25	112.11	0.03	0.01
57	5.12	11	SLE F	1	9	512.17	1054.36	32.00	187.33	0.50	18.00	181.82	10.18	666.25	146.99	0.04	0.01
80	5.42	12	SLE Q	2	9	14.92	738.70	32.00	187.33	0.50	18.00	181.82	10.18	666.25	102.99	0.03	0.01
82	5.42	11	SLE F	2	9	14.92	1010.02	32.00	187.33	0.50	18.00	181.82	10.18	666.25	140.81	0.04	0.01
93	7.59	12	SLE Q	2	9	232.07	-1672.64	32.00	120.67	0.50	18.00	145.57	10.18	461.25	231.45	0.07	0.02
94	7.59	11	SLE F	2	9	232.07	-1861.94	32.00	120.67	0.50	18.00	145.57	10.18	461.25	257.65	0.08	0.02
109	10.38	12	SLE Q	2	9	511.28	-1147.93	32.00	120.67	0.50	18.00	145.57	10.18	461.25	158.85	0.05	0.01
110	10.38	11	SLE F	2	9	511.28	-1296.06	32.00	120.67	0.50	18.00	145.57	10.18	461.25	179.34	0.05	0.01

## Stato limite ultimo - Verifiche a taglio

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. <cmq/m>	bw <m>	Vsdu <daN>	ctgθ	VRsd <daN>	VRcd <daN>	Vrdu <daN>	Sic.
9 SLU	0.15	0.95	0.80	ø10/20 2 br.	7.85	0.45	4147.76	2.50	52484.20	74781.80	52484.20	12.654
9 SLU	0.95	4.32	3.37	ø10/20 2 br.	7.85	0.45	2900.69	2.50	52484.20	74781.80	52484.20	18.094
9 SLU	4.32	5.12	0.80	ø10/20 2 br.	7.85	0.45	4143.59	2.50	52484.20	74781.80	52484.20	12.666



## Relazione di calcolo

9 SLU	5.42	6.22	0.80	ø10/20 2 br.	7.85	0.45	4357.03	2.50	52484.20	74781.80	52484.20	12.046
9 SLU	6.22	9.58	3.36	ø10/20 2 br.	7.85	0.45	3148.01	2.50	52484.20	74781.80	52484.20	16.672
9 SLU	9.58	10.38	0.80	ø10/20 2 br.	7.85	0.45	3064.53	2.50	52484.20	74781.80	52484.20	17.126

## Staffatura ala, ferri di suola e ferri di fianco - Verifiche armatura

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. ala <cmq/m>	AfT St. ala <cmq/m>
9 SLU	0.15	0.95	0.80	ø6/20 2 br.	2.83	0.04
9 SLU	0.95	4.32	3.37	ø6/20 2 br.	2.83	0.04
9 SLU	4.32	5.12	0.80	ø6/20 2 br.	2.83	0.04
9 SLU	5.42	6.22	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	6.22	9.58	3.36	ø6/20 2 br.	2.83	0.03
9 SLU	9.58	10.38	0.80	ø6/20 2 br.	2.83	0.03

## Travata n. 2610

Nodi: 5 10 12

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez. Tipo	B <cm>	b <cm>	H <cm>	h <cm>	Cf sup <cm>	Cf inf <cm>	Cl <sub>s</sub>	Fck <daN/cm <sup>2</sup> >	Fctk <daN/cm <sup>2</sup> >	Fcd <daN/cm <sup>2</sup> >	Fctd <daN/cm <sup>2</sup> >	TP	Fyk <daN/cm <sup>2</sup> >	Fyd <daN/cm <sup>2</sup> >
9T	45.00	65.00	40.00	40.00	4.10	4.10	C25/30	249.00	17.91	141.10	11.94	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	MRdy <daNm>	Sic.
0.15	9	SLU	1	598.39	10.18	10.18	10.18	10.18	-4063.99	-29340.80	7.220
1.38	9	SLU	1	475.57	10.18	10.18	10.18	10.18	-5028.98	-29340.80	5.834
5.98	9	SLU	1	15.00	10.18	10.18	10.18	10.18	2595.32	29116.00	11.219
6.28	9	SLU	2	505.63	10.18	10.18	10.18	10.18	3145.57	29116.00	9.256
8.74	9	SLU	2	260.32	10.18	10.18	10.18	10.18	-3503.78	-29340.80	8.374
11.19	9	SLU	2	15.00	10.18	10.18	10.18	10.18	-3015.65	-29340.80	9.730

## Stato limite elastico - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	M'ydy <daNm>	Sic.
0.15	5	SLV(E)	1	598.39	10.18	10.18	10.18	10.18	-2709.23	-28205.50	10.411
1.38	5	SLV(E)	1	475.57	10.18	10.18	10.18	10.18	-3072.64	-28205.50	9.180
5.98	5	SLV(E)	1	15.00	10.18	10.18	10.18	10.18	1660.11	27975.30	16.852
6.28	1	SLV(E)	2	505.63	10.18	10.18	10.18	10.18	1627.94	27975.30	17.184
8.74	5	SLV(E)	2	260.32	10.18	10.18	10.18	10.18	-2310.67	-28205.50	12.207
11.19	5	SLV(E)	2	15.00	10.18	10.18	10.18	10.18	-2108.03	-28205.50	13.380

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	My <daNm>	σ <sub>e</sub> sup <daN/cm <sup>2</sup> >	σ <sub>e</sub> inf <daN/cm <sup>2</sup> >	σ <sub>c</sub> <daN/cm <sup>2</sup> >
0.15	10	SLE R	1	598.39	10.18	10.18	-2878.43	398.31	-73.22	6.68
0.15	12	SLE Q	1	598.39	10.18	10.18	-1682.68	232.84	-42.80	3.90
1.38	10	SLE R	1	475.57	10.18	10.18	-3584.67	496.03	-91.19	8.31
1.38	12	SLE Q	1	475.57	10.18	10.18	-2214.80	306.48	-56.34	5.14
5.98	10	SLE R	1	15.00	10.18	10.18	1812.01	-57.87	252.62	5.04
5.98	12	SLE Q	1	15.00	10.18	10.18	921.52	-29.43	128.47	2.56
6.28	10	SLE R	2	505.63	10.18	10.18	2191.44	-69.98	305.52	6.10
6.28	12	SLE Q	2	505.63	10.18	10.18	1089.39	-34.79	151.88	3.03
8.74	10	SLE R	2	260.32	10.18	10.18	-2495.82	345.36	-63.49	5.79
8.74	12	SLE Q	2	260.32	10.18	10.18	-1539.91	213.09	-39.17	3.57
11.19	10	SLE R	2	15.00	10.18	10.18	-2133.67	295.25	-54.28	4.95
11.19	12	SLE Q	2	15.00	10.18	10.18	-1235.58	170.97	-31.43	2.87

## Stato limite d'esercizio - Verifiche a fessurazione

Caso	Xg <m>	CC	TCC	El	Sez.	X <cm>	My <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c eff</sub> <cmq>	σ <sub>s</sub> <daN/cm <sup>2</sup> >	ε <sub>sm</sub>	W <sub>k</sub> <mm>
13	0.15	12	SLE Q	1	9	598.39	-1682.68	32.00	120.67	0.50	18.00	145.57	10.18	461.25	232.84	0.07	0.02
14	0.15	11	SLE F	1	9	598.39	-1921.83	32.00	120.67	0.50	18.00	145.57	10.18	461.25	265.94	0.08	0.02
25	1.38	12	SLE Q	1	9	475.57	-2214.80	32.00	120.67	0.50	18.00	145.57	10.18	461.25	306.48	0.09	0.02
26	1.38	11	SLE F	1	9	475.57	-2488.77	32.00	120.67	0.50	18.00	145.57	10.18	461.25	344.39	0.10	0.02
47	5.98	12	SLE Q	1	9	15.00	921.52	32.00	187.33	0.50	18.00	181.82	10.18	666.25	128.47	0.04	0.01
49	5.98	11	SLE F	1	9	15.00	1099.62	32.00	187.33	0.50	18.00	181.82	10.18	666.25	153.30	0.04	0.01
65	6.28	12	SLE Q	2	9	505.63	1089.39	32.00	187.33	0.50	18.00	181.82	10.18	666.25	151.88	0.04	0.01
67	6.28	11	SLE F	2	9	505.63	1309.80	32.00	187.33	0.50	18.00	181.82	10.18	666.25	182.61	0.05	0.02
79	8.74	12	SLE Q	2	9	260.32	-1539.91	32.00	120.67	0.50	18.00	145.57	10.18	461.25	213.09	0.06	0.02
80	8.74	11	SLE F	2	9	260.32	-1729.74	32.00	120.67	0.50	18.00	145.57	10.18	461.25	239.35	0.07	0.02
93	11.19	12	SLE Q	2	9	15.00	-1235.58	32.00	120.67	0.50	18.00	145.57	10.18	461.25	170.97	0.05	0.01
94	11.19	11	SLE F	2	9	15.00	-1415.20	32.00	120.67	0.50	18.00	145.57	10.18	461.25	195.83	0.06	0.01

## Stato limite ultimo - Verifiche a taglio

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. <cmq/m>	bw <m>	Vsdu <daN>	ctgθ	VRsd <daN>	VRcd <daN>	Vrdu <daN>	Sic.
9 SLU	0.15	0.95	0.80	ø10/20 2 br.	7.85	0.45	2804.11	2.50	52484.20	74781.80	52484.20	18.717
9 SLU	0.95	5.18	4.23	ø10/20 2 br.	7.85	0.45	2985.57	2.50	52484.20	74781.80	52484.20	17.579
9 SLU	5.18	5.98	0.80	ø10/20 2 br.	7.85	0.45	3851.11	2.50	52484.20	74781.80	52484.20	13.628
9 SLU	6.28	7.08	0.80	ø10/20 2 br.	7.85	0.45	3830.73	2.50	52484.20	74781.80	52484.20	13.701
9 SLU	7.08	10.39	3.31	ø10/20 2 br.	7.85	0.45	2918.82	2.50	52484.20	74781.80	52484.20	17.981
9 SLU	10.39	11.19	0.80	ø10/20 2 br.	7.85	0.45	2430.94	2.50	52484.20	74781.80	52484.20	21.590

## Staffatura ala, ferri di suola e ferri di fianco - Verifiche armatura

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. ala <cmq/m>	AfT St. ala <cmq/m>
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## Relazione di calcolo

9 SLU	0.15	0.95	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	0.95	5.18	4.23	ø6/20 2 br.	2.83	0.03
9 SLU	5.18	5.98	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	6.28	7.08	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	7.08	10.39	3.31	ø6/20 2 br.	2.83	0.03
9 SLU	10.39	11.19	0.80	ø6/20 2 br.	2.83	0.03

## Travata n. 2611

Nodi: 4 6 11

## Caratteristiche delle sezioni e dei materiali utilizzati

Sez.	Tipo	B <cm>	b <cm>	H <cm>	h <cm>	Cf sup <cm>	Cf inf <cm>	Cl <sub>s</sub>	F <sub>ck</sub> <daN/cm <sup>2</sup> >	F <sub>ctk</sub> <daN/cm <sup>2</sup> >	F <sub>cd</sub> <daN/cm <sup>2</sup> >	F <sub>ctd</sub> <daN/cm <sup>2</sup> >	Tp	F <sub>yk</sub> <daN/cm <sup>2</sup> >	F <sub>yd</sub> <daN/cm <sup>2</sup> >
9T		45.00	65.00	40.00	40.00	4.10	4.10	C25/30	249.00	17.91	141.10	11.94	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	Afe S <cmq>	Afe I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	MRdy <daNm>	Sic.
0.15	9	SLU	1	598.39	10.18	10.18	10.18	10.18	-4062.13	-29340.80	7.223
1.38	9	SLU	1	475.57	10.18	10.18	10.18	10.18	-5029.88	-29340.80	5.833
5.98	9	SLU	1	15.00	10.18	10.18	10.18	10.18	2520.45	29116.00	11.552
6.28	9	SLU	2	505.63	10.18	10.18	10.18	10.18	3070.71	29116.00	9.482
8.74	9	SLU	2	260.32	10.18	10.18	10.18	10.18	-3534.11	-29340.80	8.302
11.19	9	SLU	2	15.00	10.18	10.18	10.18	10.18	-3044.57	-29340.80	9.637

## Stato limite elastico - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	Afe S <cmq>	Afe I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	M'ydy <daNm>	Sic.
0.15	5	SLV(E)	1	598.39	10.18	10.18	10.18	10.18	-2712.47	-28205.50	10.399
1.38	5	SLV(E)	1	475.57	10.18	10.18	10.18	10.18	-3083.78	-28205.50	9.146
5.98	5	SLV(E)	1	15.00	10.18	10.18	10.18	10.18	1647.87	27975.30	16.977
6.28	1	SLV(E)	2	505.63	10.18	10.18	10.18	10.18	1560.29	27975.30	17.930
8.74	5	SLV(E)	2	260.32	10.18	10.18	10.18	10.18	-2305.17	-28205.50	12.236
11.19	5	SLV(E)	2	15.00	10.18	10.18	10.18	10.18	-2096.50	-28205.50	13.454

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	X <cm>	Afe S <cmq>	Afe I <cmq>	My <daNm>	σ <sub>e</sub> sup <daN/cm <sup>2</sup> >	σ <sub>e</sub> inf <daN/cm <sup>2</sup> >	σ <sub>c</sub> <daN/cm <sup>2</sup> >
0.15	10	SLE R	1	598.39	10.18	10.18	-2877.98	398.24	-73.21	6.68
0.15	12	SLE Q	1	598.39	10.18	10.18	-1686.28	233.34	-42.90	3.91
1.38	10	SLE R	1	475.57	10.18	10.18	-3585.87	496.20	-91.22	8.32
1.38	12	SLE Q	1	475.57	10.18	10.18	-2217.46	306.85	-56.41	5.14
5.98	10	SLE R	1	15.00	10.18	10.18	1761.37	-56.25	245.56	4.90
5.98	12	SLE Q	1	15.00	10.18	10.18	903.59	-28.86	125.97	2.51
6.28	10	SLE R	2	505.63	10.18	10.18	2140.87	-68.37	298.47	5.95
6.28	12	SLE Q	2	505.63	10.18	10.18	1071.68	-34.22	149.41	2.98
8.74	10	SLE R	2	260.32	10.18	10.18	-2517.29	348.33	-64.04	5.84
8.74	12	SLE Q	2	260.32	10.18	10.18	-1551.59	214.70	-39.47	3.60
11.19	10	SLE R	2	15.00	10.18	10.18	-2154.33	298.11	-54.80	5.00
11.19	12	SLE Q	2	15.00	10.18	10.18	-1248.08	172.70	-31.75	2.89

## Stato limite d'esercizio - Verifiche a fessurazione

Caso	Xg <m>	CC	TCC	El	Sez.	X <cm>	My <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c eff</sub> <cmq>	σ <sub>s</sub> <daN/cm <sup>2</sup> >	ε <sub>sm</sub>	W <sub>k</sub> <mm>
13	0.15	12	SLE Q	1	9	598.39	-1686.28	32.00	120.67	0.50	18.00	145.57	10.18	461.25	233.34	0.07	0.02
14	0.15	11	SLE F	1	9	598.39	-1924.62	32.00	120.67	0.50	18.00	145.57	10.18	461.25	266.32	0.08	0.02
25	1.38	12	SLE Q	1	9	475.57	-2217.46	32.00	120.67	0.50	18.00	145.57	10.18	461.25	306.85	0.09	0.02
26	1.38	11	SLE F	1	9	475.57	-2491.15	32.00	120.67	0.50	18.00	145.57	10.18	461.25	344.72	0.10	0.02
47	5.98	12	SLE Q	1	9	15.00	903.59	32.00	187.33	0.50	18.00	181.82	10.18	666.25	125.97	0.04	0.01
49	5.98	11	SLE F	1	9	15.00	1075.15	32.00	187.33	0.50	18.00	181.82	10.18	666.25	149.89	0.04	0.01
65	6.28	12	SLE Q	2	9	505.63	1071.68	32.00	187.33	0.50	18.00	181.82	10.18	666.25	149.41	0.04	0.01
67	6.28	11	SLE F	2	9	505.63	1285.51	32.00	187.33	0.50	18.00	181.82	10.18	666.25	179.22	0.05	0.02
79	8.74	12	SLE Q	2	9	260.32	-1551.59	32.00	120.67	0.50	18.00	145.57	10.18	461.25	214.70	0.06	0.02
80	8.74	11	SLE F	2	9	260.32	-1743.43	32.00	120.67	0.50	18.00	145.57	10.18	461.25	241.25	0.07	0.02
93	11.19	12	SLE Q	2	9	15.00	-1248.08	32.00	120.67	0.50	18.00	145.57	10.18	461.25	172.70	0.05	0.01
94	11.19	11	SLE F	2	9	15.00	-1429.33	32.00	120.67	0.50	18.00	145.57	10.18	461.25	197.78	0.06	0.01

## Stato limite ultimo - Verifiche a taglio

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	Afe St. <cmq/m>	bw <m>	Vsdu <daN>	ctgθ	VRsd <daN>	VRcd <daN>	Vrdu <daN>	Sic.
9 SLU	0.15	0.95	0.80	ø10/20 2 br.	7.85	0.45	2803.41	2.50	52484.20	74781.80	52484.20	18.722
9 SLU	0.95	5.18	4.23	ø10/20 2 br.	7.85	0.45	2955.61	2.50	52484.20	74781.80	52484.20	17.758
9 SLU	5.18	5.98	0.80	ø10/20 2 br.	7.85	0.45	3811.81	2.50	52484.20	74781.80	52484.20	13.769
9 SLU	6.28	7.08	0.80	ø10/20 2 br.	7.85	0.45	3799.77	2.50	52484.20	74781.80	52484.20	13.812
9 SLU	7.08	10.39	3.31	ø10/20 2 br.	7.85	0.45	2897.00	2.50	52484.20	74781.80	52484.20	18.117
9 SLU	10.39	11.19	0.80	ø10/20 2 br.	7.85	0.45	2433.41	2.50	52484.20	74781.80	52484.20	21.568

## Staffatura ala, ferri di suola e ferri di fianco - Verifiche armatura

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	Afe St. ala <cmq/m>	Aft St. ala <cmq/m>
9 SLU	0.15	0.95	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	0.95	5.18	4.23	ø6/20 2 br.	2.83	0.03
9 SLU	5.18	5.98	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	6.28	7.08	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	7.08	10.39	3.31	ø6/20 2 br.	2.83	0.03
9 SLU	10.39	11.19	0.80	ø6/20 2 br.	2.83	0.03



## Relazione di calcolo

## Travata n. 2612

Nodi: 16 14 12

Caratteristiche delle sezioni e dei materiali utilizzati

Sez. Tipo	B <cm>	b <cm>	H <cm>	h <cm>	Cf sup <cm>	Cf inf <cm>	Cls	Fck <daN/cm²>	Fctk <daN/cm²>	Fcd <daN/cm²>	Fctd <daN/cm²>	TP	Fyk <daN/cm²>	Fyd <daN/cm²>
9T	45.00	65.00	40.00	40.00	4.10	4.10	C25/30	249.00	17.91	141.10	11.94	B450C	4500.00	3913.04

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	MRdy <daNm>	Sic.
0.16	9	SLU	1	15.86	10.18	10.18	10.18	10.18	3787.78	29116.00	7.687
2.42	9	SLU	1	242.49	10.18	10.18	10.18	10.18	1765.70	29116.00	16.490
3.40	9	SLU	1	339.62	10.18	10.18	10.18	10.18	2017.51	29116.00	14.432
3.70	9	SLU	2	15.00	10.18	10.18	10.18	10.18	1694.69	29116.00	17.181
5.57	9	SLU	2	202.56	10.18	10.18	10.18	10.18	-3433.52	-29340.80	8.545
8.07	9	SLU	2	452.63	10.18	10.18	10.18	10.18	-2594.36	-29340.80	11.309

## Stato limite elastico - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	M'ydy <daNm>	Sic.
0.16	1	SLV(E)	1	15.86	10.18	10.18	10.18	10.18	4116.84	27975.30	6.795
2.42	1	SLV(E)	1	242.49	10.18	10.18	10.18	10.18	942.39	27975.30	29.685
3.40	5	SLV(E)	1	339.62	10.18	10.18	10.18	10.18	539.61	27975.30	51.844
3.70	5	SLV(E)	2	15.00	10.18	10.18	10.18	10.18	-1570.69	-28205.50	17.957
5.57	1	SLV(E)	2	202.56	10.18	10.18	10.18	10.18	-2455.95	-28205.50	11.485
8.07	1	SLV(E)	2	452.63	10.18	10.18	10.18	10.18	-2003.64	-28205.50	14.077

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	My <daNm>	σ <sub>e</sub> sup <daN/cm²>	σ <sub>e</sub> inf <daN/cm²>	σ <sub>c</sub> <daN/cm²>
0.16	10	SLE R	1	15.86	10.18	10.18	2861.79	-91.39	398.98	7.96
0.16	12	SLE Q	1	15.86	10.18	10.18	2611.91	-83.41	364.14	7.26
2.42	10	SLE R	1	242.49	10.18	10.18	1137.36	-36.32	158.57	3.16
2.42	12	SLE Q	1	242.49	10.18	10.18	435.33	-13.90	60.69	1.21
3.40	10	SLE R	1	339.62	10.18	10.18	1307.99	-41.77	182.35	3.64
3.40	12	SLE Q	1	339.62	10.18	10.18	131.67	-4.21	18.36	0.37
3.70	10	SLE R	2	15.00	10.18	10.18	1080.04	-34.49	150.57	3.00
3.70	12	SLE Q	2	15.00	10.18	10.18	-1157.71	160.20	-29.45	2.69
5.57	10	SLE R	2	202.56	10.18	10.18	-2509.40	347.24	-63.83	5.82
5.57	12	SLE Q	2	202.56	10.18	10.18	-1890.48	261.60	-48.09	4.38
8.07	10	SLE R	2	452.63	10.18	10.18	-1882.68	260.52	-47.89	4.37
8.07	12	SLE Q	2	452.63	10.18	10.18	-1337.30	185.05	-34.02	3.10

## Stato limite d'esercizio - Verifiche a fessurazione

Caso	Xg <m>	CC	TCC	El	Sez.	X <cm>	My <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c</sub> eff <cmq>	σ <sub>s</sub> <daN/cm²>	ε <sub>sm</sub>	Wk <mm>
11	0.16	12	SLE Q	1	9	15.86	2611.91	32.00	187.33	0.50	18.00	181.82	10.18	666.25	364.14	0.11	0.03
12	0.16	11	SLE F	1	9	15.86	2661.88	32.00	187.33	0.50	18.00	181.82	10.18	666.25	371.11	0.11	0.03
27	2.42	12	SLE Q	1	9	242.49	435.33	32.00	187.33	0.50	18.00	181.82	10.18	666.25	60.69	0.02	0.01
28	2.42	11	SLE F	1	9	242.49	459.96	32.00	187.33	0.50	18.00	181.82	10.18	666.25	64.13	0.02	0.01
40	3.40	12	SLE Q	1	9	339.62	131.67	32.00	187.33	0.50	18.00	181.82	10.18	666.25	18.36	0.01	0.00
42	3.40	11	SLE F	1	9	339.62	366.94	32.00	187.33	0.50	18.00	181.82	10.18	666.25	51.16	0.01	0.00
59	3.70	12	SLE Q	2	9	15.00	-1157.71	32.00	120.67	0.50	18.00	145.57	10.18	461.25	160.20	0.05	0.01
61	3.70	11	SLE F	2	9	15.00	-1111.46	32.00	120.67	0.50	18.00	145.57	10.18	461.25	153.80	0.04	0.01
73	5.57	12	SLE Q	2	9	202.56	-1890.48	32.00	120.67	0.50	18.00	145.57	10.18	461.25	261.60	0.08	0.02
74	5.57	11	SLE F	2	9	202.56	-2010.63	32.00	120.67	0.50	18.00	145.57	10.18	461.25	278.22	0.08	0.02
87	8.07	12	SLE Q	2	9	452.63	-1337.30	32.00	120.67	0.50	18.00	145.57	10.18	461.25	185.05	0.05	0.01
88	8.07	11	SLE F	2	9	452.63	-1446.37	32.00	120.67	0.50	18.00	145.57	10.18	461.25	200.14	0.06	0.01

## Stato limite ultimo - Verifiche a taglio

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. <cmq/m>	bw <m>	Vsdu <daN>	ctgθ	VRsd <daN>	VRcd <daN>	Vrdu <daN>	Sic.
9 SLU	0.16	0.96	0.80	ø10/20 2 br.	7.85	0.45	3398.68	2.50	52484.20	74781.80	52484.20	15.443
9 SLU	0.96	2.60	1.64	ø10/20 2 br.	7.85	0.45	1976.53	2.50	52484.20	74781.80	52484.20	26.554
9 SLU	2.60	3.40	0.80	ø10/20 2 br.	7.85	0.45	2242.71	2.50	52484.20	74781.80	52484.20	23.402
9 SLU	3.70	4.50	0.80	ø10/20 2 br.	7.85	0.45	3889.71	2.50	52484.20	74781.80	52484.20	13.493
9 SLU	4.50	7.27	2.78	ø10/20 2 br.	7.85	0.45	2606.42	2.50	52484.20	74781.80	52484.20	20.137
9 SLU	7.27	8.07	0.80	ø10/20 2 br.	7.85	0.45	2907.25	2.50	52484.20	74781.80	52484.20	18.053

## Staffatura ala, ferri di suola e ferri di fianco - Verifiche armatura

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. ala <cmq/m>	AfT St. ala <cmq/m>
9 SLU	0.16	0.96	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	0.96	2.60	1.64	ø6/20 2 br.	2.83	0.03
9 SLU	2.60	3.40	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	3.70	4.50	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	4.50	7.27	2.78	ø6/20 2 br.	2.83	0.03
9 SLU	7.27	8.07	0.80	ø6/20 2 br.	2.83	0.03

## Travata n. 2613

Nodi: 11 13 15 -1 16

Caratteristiche delle sezioni e dei materiali utilizzati

Sez. Tipo	B <cm>	b <cm>	H <cm>	h <cm>	Cf sup <cm>	Cf inf <cm>	Cls	Fck <daN/cm²>	Fctk <daN/cm²>	Fcd <daN/cm²>	Fctd <daN/cm²>	TP	Fyk <daN/cm²>	Fyd <daN/cm²>
9T	45.00	65.00	40.00	40.00	4.10	4.10	C25/30	249.00	17.91	141.10	11.94	B450C	4500.00	3913.04



## Relazione di calcolo

## Stato limite ultimo - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	MRdy <daNm>	Sic.
0.17	9	SLU	1	16.53	10.18	10.18	10.18	10.18	-2462.85	-29340.80	11.913
1.13	9	SLU	1	112.67	10.18	10.18	10.18	10.18	-3162.32	-29340.80	9.278
4.33	9	SLU	1	433.13	10.18	10.18	10.18	10.18	1566.31	29116.00	18.589
4.63	9	SLU	2	15.00	10.18	10.18	10.18	10.18	1848.93	29116.00	15.747
8.09	9	SLU	2	360.65	10.18	10.18	10.18	10.18	3723.13	29116.00	7.820
8.39	9	SLU	3	15.00	10.18	10.18	10.18	10.18	1768.27	29116.00	16.466
9.32	9	SLU	3	108.00	10.18	10.18	10.18	10.18	-2828.17	-29340.80	10.374
11.49	9	SLU	4	155.00	10.18	10.18	10.18	10.18	1841.07	29116.00	15.815

## Stato limite elastico - Verifiche a flessione/pressoflessione

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	AfEP S <cmq>	AfEP I <cmq>	My <daNm>	M'ydy <daNm>	Sic.
0.17	1	SLV(E)	1	16.53	10.18	10.18	10.18	10.18	-1951.33	-28205.50	14.454
1.13	1	SLV(E)	1	112.67	10.18	10.18	10.18	10.18	-2348.80	-28205.50	12.008
4.33	5	SLV(E)	1	433.13	10.18	10.18	10.18	10.18	-1580.14	-28205.50	17.850
4.63	5	SLV(E)	2	15.00	10.18	10.18	10.18	10.18	-551.03	-28205.50	51.187
8.09	1	SLV(E)	2	360.65	10.18	10.18	10.18	10.18	4174.22	27975.30	6.702
8.39	5	SLV(E)	3	15.00	10.18	10.18	10.18	10.18	2899.31	27975.30	9.649
9.32	5	SLV(E)	3	108.00	10.18	10.18	10.18	10.18	2670.72	27975.30	10.475
11.49	5	SLV(E)	4	155.00	10.18	10.18	10.18	10.18	2948.57	27975.30	9.488

## Stato limite d'esercizio - Verifiche tensionali

Xg <m>	CC	TCC	El	X <cm>	AfE S <cmq>	AfE I <cmq>	My <daNm>	σ <sub>e</sub> sup <daN/cm²>	σ <sub>e</sub> inf <daN/cm²>	σ <sub>c</sub> <daN/cm²>
0.17	10	SLE R	1	16.53	10.18	10.18	-1791.58	247.91	-45.57	4.16
0.17	12	SLE Q	1	16.53	10.18	10.18	-1294.36	179.11	-32.93	3.00
1.13	10	SLE R	1	112.67	10.18	10.18	-2318.17	320.78	-58.97	5.38
1.13	12	SLE Q	1	112.67	10.18	10.18	-1771.22	245.09	-45.06	4.11
4.33	10	SLE R	1	433.13	10.18	10.18	984.93	-31.45	137.31	2.74
4.33	12	SLE Q	1	433.13	10.18	10.18	-1170.40	161.96	-29.77	2.71
4.63	10	SLE R	2	15.00	10.18	10.18	1182.47	-37.76	164.85	3.29
4.63	12	SLE Q	2	15.00	10.18	10.18	-264.88	36.65	-6.74	0.61
8.09	10	SLE R	2	360.65	10.18	10.18	2822.89	-90.15	393.55	7.85
8.09	12	SLE Q	2	360.65	10.18	10.18	2625.30	-83.84	366.01	7.30
8.39	10	SLE R	3	15.00	10.18	10.18	1435.84	-45.85	200.18	3.99
8.39	12	SLE Q	3	15.00	10.18	10.18	1801.11	-57.52	251.10	5.01
9.32	10	SLE R	3	108.00	10.18	10.18	-1938.91	268.30	-49.32	4.50
9.32	12	SLE Q	3	108.00	10.18	10.18	1625.55	-51.91	226.63	4.52
11.49	10	SLE R	4	155.00	10.18	10.18	1482.23	-47.34	206.65	4.12
11.49	12	SLE Q	4	155.00	10.18	10.18	1800.95	-57.51	251.08	5.01

## Stato limite d'esercizio - Verifiche a fessurazione

Caso	Xg <m>	CC	TCC	El	Sez.	X <cm>	My <daNm>	c <mm>	s <mm>	K <sub>2</sub>	Φ <sub>eq</sub>	Δ <sub>sm</sub> <mm>	A <sub>s</sub> <cmq>	A <sub>c eff</sub> <cmq>	σ <sub>s</sub> <daN/cm²>	ε <sub>sm</sub>	Wk <mm>
13	0.17	12	SLE Q	1	9	16.53	-1294.36	32.00	120.67	0.50	18.00	145.57	10.18	461.25	179.11	0.05	0.01
14	0.17	11	SLE F	1	9	16.53	-1393.81	32.00	120.67	0.50	18.00	145.57	10.18	461.25	192.87	0.06	0.01
27	1.13	12	SLE Q	1	9	112.67	-1771.22	32.00	120.67	0.50	18.00	145.57	10.18	461.25	245.09	0.07	0.02
28	1.13	11	SLE F	1	9	112.67	-1880.52	32.00	120.67	0.50	18.00	145.57	10.18	461.25	260.22	0.08	0.02
45	4.33	12	SLE Q	1	9	433.13	-1170.40	32.00	120.67	0.50	18.00	145.57	10.18	461.25	161.96	0.05	0.01
47	4.33	11	SLE F	1	9	433.13	-1122.78	32.00	120.67	0.50	18.00	145.57	10.18	461.25	155.37	0.05	0.01
62	4.63	12	SLE Q	2	9	15.00	-264.88	32.00	120.67	0.50	18.00	145.57	10.18	461.25	36.65	0.01	0.00
65	4.63	11	SLE F	2	9	15.00	257.86	32.00	187.33	0.50	18.00	181.82	10.18	666.25	35.95	0.01	0.00
76	8.09	12	SLE Q	2	9	360.65	2625.30	32.00	187.33	0.50	18.00	181.82	10.18	666.25	366.01	0.11	0.03
77	8.09	11	SLE F	2	9	360.65	2664.82	32.00	187.33	0.50	18.00	181.82	10.18	666.25	371.52	0.11	0.03
93	8.39	12	SLE Q	3	9	15.00	1801.11	32.00	187.33	0.50	18.00	181.82	10.18	666.25	251.10	0.07	0.02
95	8.39	11	SLE F	3	9	15.00	1728.06	32.00	187.33	0.50	18.00	181.82	10.18	666.25	240.92	0.07	0.02
117	9.32	12	SLE Q	3	9	108.00	1625.55	32.00	187.33	0.50	18.00	181.82	10.18	666.25	226.63	0.07	0.02
119	9.32	11	SLE F	3	9	108.00	1542.06	32.00	187.33	0.50	18.00	181.82	10.18	666.25	214.99	0.06	0.02
136	11.49	12	SLE Q	4	9	155.00	1800.95	32.00	187.33	0.50	18.00	181.82	10.18	666.25	251.08	0.07	0.02
137	11.49	11	SLE F	4	9	155.00	1737.20	32.00	187.33	0.50	18.00	181.82	10.18	666.25	242.19	0.07	0.02

## Stato limite ultimo - Verifiche a taglio

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. <cmq/m>	bw <m>	Vsdu <daN>	ctgθ	VRsd <daN>	VRcd <daN>	Vrdu <daN>	Sic.
9 SLU	0.17	0.97	0.80	ø10/20 2 br.	7.85	0.45	2793.79	2.50	52484.20	74781.80	52484.20	18.786
9 SLU	0.97	3.53	2.57	ø10/20 2 br.	7.85	0.45	2461.70	2.50	52484.20	74781.80	52484.20	21.320
9 SLU	3.53	4.33	0.80	ø10/20 2 br.	7.85	0.45	3743.84	2.50	52484.20	74781.80	52484.20	14.019
9 SLU	4.63	5.43	0.80	ø10/20 2 br.	7.85	0.45	2402.93	2.50	52484.20	74781.80	52484.20	21.842
9 SLU	5.43	7.29	1.86	ø10/20 2 br.	7.85	0.45	2144.74	2.50	52484.20	74781.80	52484.20	24.471
9 SLU	7.29	8.09	0.80	ø10/20 2 br.	7.85	0.45	3553.48	2.50	52484.20	74781.80	52484.20	14.770
9 SLU	8.39	9.19	0.80	ø10/20 2 br.	7.85	0.45	4140.07	2.50	52484.20	74781.80	52484.20	12.677
9 SLU	9.19	10.69	1.50	ø10/20 2 br.	7.85	0.45	2799.22	2.50	52484.20	74781.80	52484.20	18.750
9 SLU	10.69	11.49	0.80	ø10/20 2 br.	7.85	0.45	4193.38	2.50	52484.20	74781.80	52484.20	12.516

## Staffatura ala, ferri di suola e ferri di fianco - Verifiche armatura

CC	X0 <m>	X1 <m>	Lung. <m>	Staff.	AfE St. ala <cmq/m>	AfT St. ala <cmq/m>
9 SLU	0.17	0.97	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	0.97	3.53	2.57	ø6/20 2 br.	2.83	0.03
9 SLU	3.53	4.33	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	4.63	5.43	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	5.43	7.29	1.86	ø6/20 2 br.	2.83	0.03
9 SLU	7.29	8.09	0.80	ø6/20 2 br.	2.83	0.03



## Relazione di calcolo

9 SLU	8.39	9.19	0.80	ø6/20 2 br.	2.83	0.03
9 SLU	9.19	10.69	1.50	ø6/20 2 br.	2.83	0.03
9 SLU	10.69	11.49	0.80	ø6/20 2 br.	2.83	0.03