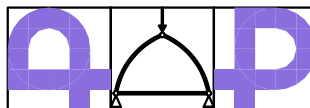




COMUNE DI BORGO SAN LORENZO (FI)  
SERVIZIO TECNICO

Piazza Dante n.2  
50032 - Borgo San Lorenzo (FI)



ING. ANDREA PAGLIAZZI  
INGEGNERE CIVILE

Via di Novoli, 97/D  
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COMUNE DI BORGO SAN LORENZO (FI)  
PROGETTO DI MIGLIORAMENTO SISMICO DELLA SCUOLA PRIMARIA  
"DON MINZONI" SITUATA IN VIA DON MINZONI, LOC. CAPOLUOGO  
CON RIFACIMENTO DELL'ATRIO DI INGRESSO  
PROGETTAZIONE ESECUTIVA

COMMITTENTE

COMUNE DI  
BORGO SAN LORENZO

Servizio Tecnico  
Piazza Dante n.2  
50032 - Borgo San Lorenzo (FI)

ELABORATO

STRUTTURALE

A9 - FASCICOLO DEI CALCOLI

- Allegato 2 Ed. esist.: Verifiche c.a. - Combinazione SLV: Sisma 100X+30Y

IL TECNICO INCARICATO

Ing. Andrea Pagliazzi

Via di Novoli, 97/D  
50127 Firenze  
Tel. 3288264047  
e-mail: a.pagliazzi@gmail.com

TIMBRO



COLLABORAZIONE  
AL PROGETTO  
ARCHITETTONICO

Arch. Paola Guidotti  
Arch. Andrea Sighieri  
Dott.ssa Sandra Gualtieri

FILE	REVIS. N°	DATA	TAV. REL.	SCALA
BSL_ST_675_3	0	FEBBRAIO 2018		-



Rev.	Data	Descrizione / Motivo della revisione	Redatto	Controllato / Approvato
0	Febbraio 2018	Progetto esecutivo	Dott. Ing. Andrea PAGLIAZZI	Dott. Ing. Andrea PAGLIAZZI

E' fatto obbligo alla ditta esecutrice dei lavori verificare le quote riportate nella presente documentazione, confrontarle con quelle del progetto architettonico e del progetto della ditta prefabbricatrice. Eventuali difformità dovranno essere comunicate alla D.L. che provvederà alle eventuali revisioni o chiarimenti.

PROPRIETA' RISERVATA. VIETATA LA RIPRODUZIONE E LA DIFFUSIONE

# **Verifiche C.A.**

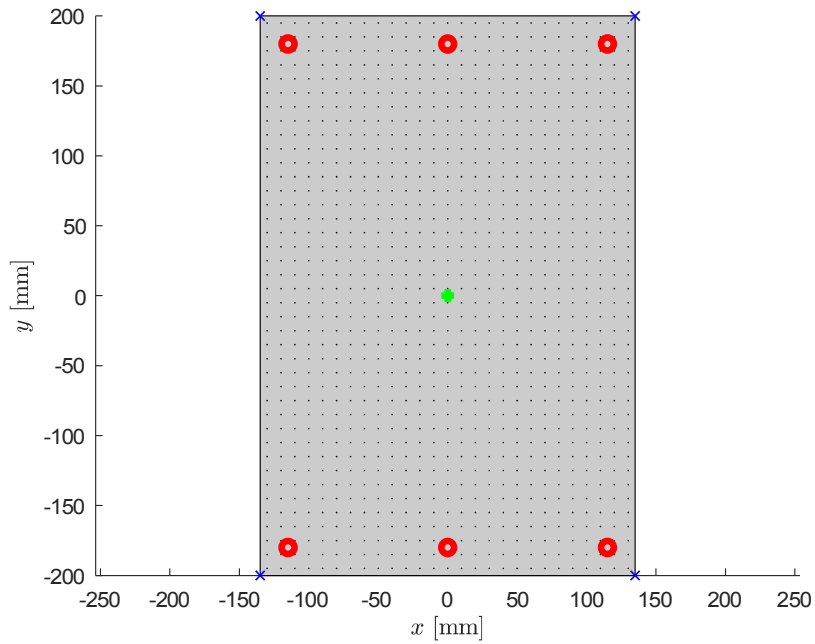
## **Report**

### **SMARTcem**

Combinazione SLV: Sisma 100%X+30%Y

## "2 - Rettangolare b=27 h=40 pilastri"

### Sezione



**Tabella 1.1. Materiali**

Res. Cls 1	Rcm	[MPa]	13
Res. Cls 2	Rcm	[MPa]	0
Res. barre longitudinali	fykl	[MPa]	230
Res. staffe	fyks	[MPa]	230
Fattore di confidenza	FC	-	1.00

**Tabella 2.2. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-135	135
Dimensione	max	[mm]	-200	200
Largh. anima	bw	[mm]	400	270
Altezza utile	d	[mm]	240	370
Area staffe	As	[mm <sup>2</sup> ]	57	57
Passo staffe	s	[mm]	180	180

Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0
Passo f.pieg.	sfp	[mm]	300	200

Tabella 3.3. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	20	20	153.94
2	135	20	153.94
3	250	20	153.94
4	20	380	153.94
5	135	380	153.94
6	250	380	153.94

Verifica SLV (peggiorativa per M)

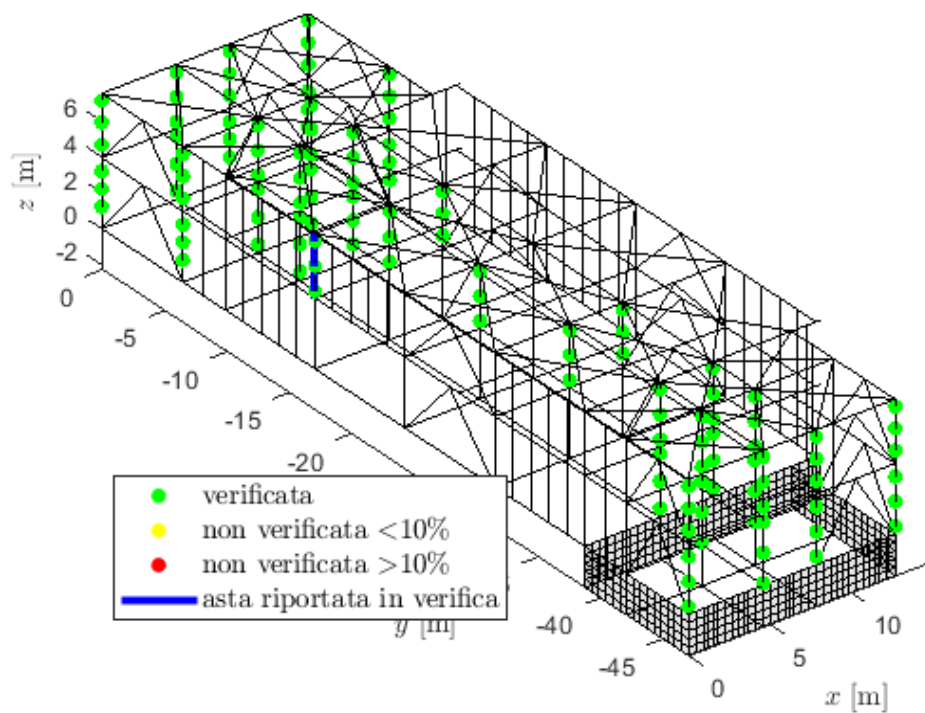


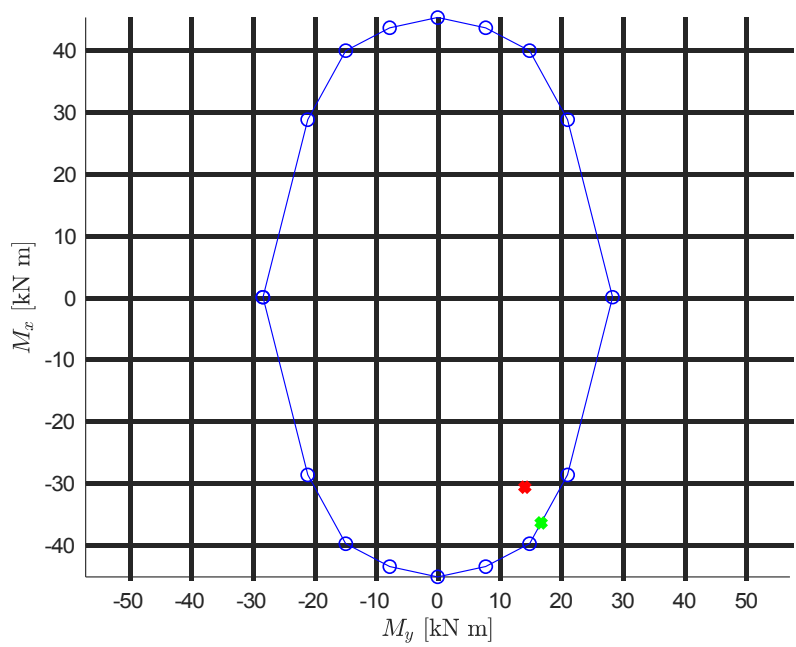
Tabella 4.4. Elemento più sollecitato

Elemento	[n°]	588
Ascissa	[m]	0.40

Tabella 5.5. Sollecitazioni SLV

		min	max
--	--	-----	-----

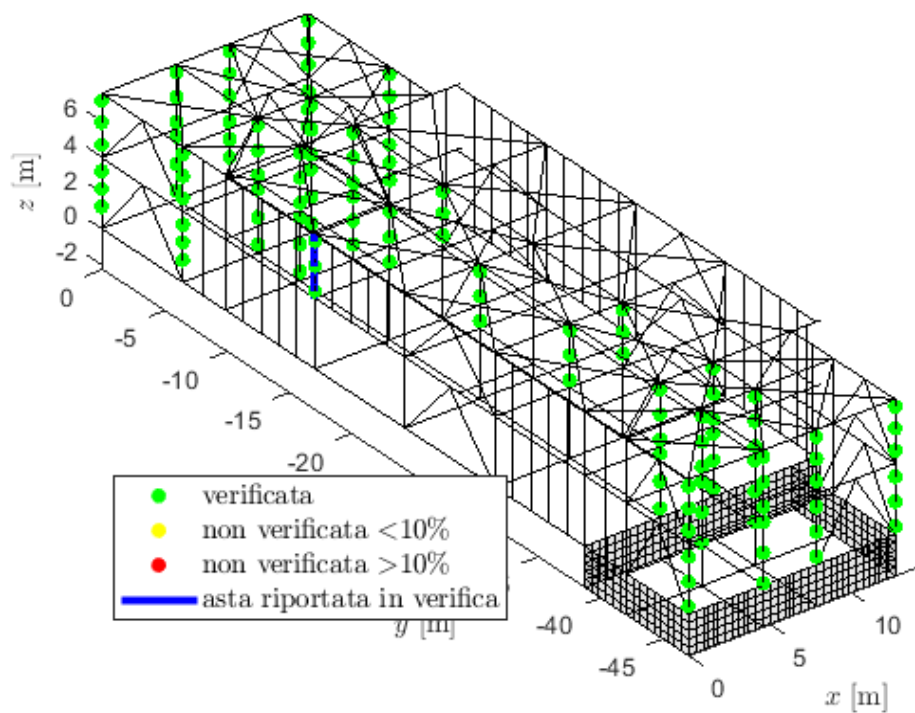
N	[kN]	-84.6	-65.0
M <sub>x</sub>	[kNm]	-30.6	-24.5
M <sub>y</sub>	[kNm]	2.6	14.1
V <sub>x</sub>	[kN]	2.8	9.6
V <sub>y</sub>	[kN]	-21.0	-16.1



$$\max(|\text{MED}|/|\text{MRd}(\text{NEd})|) = 0.842$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

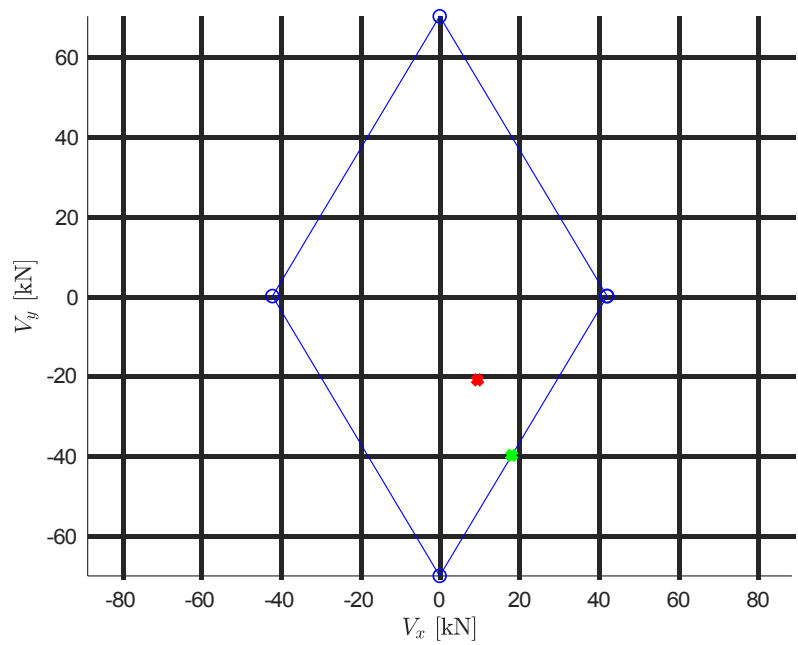


**Tabella 6.6. Elemento più sollecitato**

Elemento	[n°]	588
Ascissa	[m]	3.20

**Tabella 7.7. Sollecitazioni SLV**

		min	max
N	[kN]	-77.2	-57.6
M <sub>x</sub>	[kNm]	20.4	28.2
M <sub>y</sub>	[kNm]	-13.1	-4.5
V <sub>x</sub>	[kN]	2.8	9.6
V <sub>y</sub>	[kN]	-21.0	-16.1

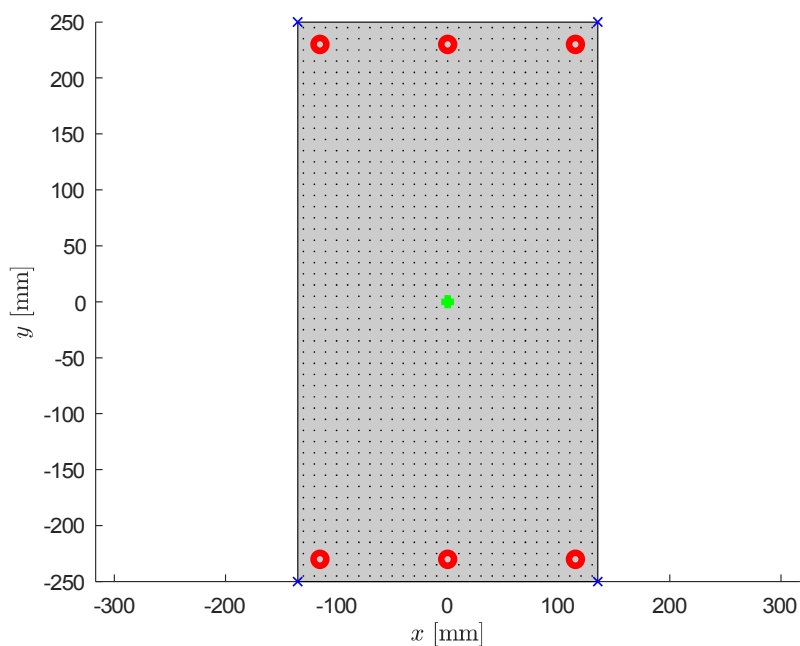


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.526$$

SLU a taglio verificati

## "3 - Rettangolare b=27 h=50 pilastri"

### Sezione



**Tabella 8.8. Materiali**

Res. Cls 1	Rcm	[MPa]	13
Res. Cls 2	Rcm	[MPa]	0
Res. barre longitudinali	fykl	[MPa]	230
Res. staffe	fyks	[MPa]	230
Fattore di confidenza	FC	-	1.00

**Tabella 9.9. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-135	135
Dimensione	max	[mm]	-250	250
Largh. anima	bw	[mm]	500	270
Altezza utile	d	[mm]	240	470
Area staffe	As	[mm <sup>2</sup> ]	57	57
Passo staffe	s	[mm]	180	180
Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0



Passo f.pieg.	sfp	[mm]	300	200
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Tabella 10.10. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	20	20	201.06
2	135	20	201.06
3	250	20	201.06
4	20	480	201.06
5	135	480	201.06
6	250	480	201.06

## Verifica SLV (peggiorativa per M)

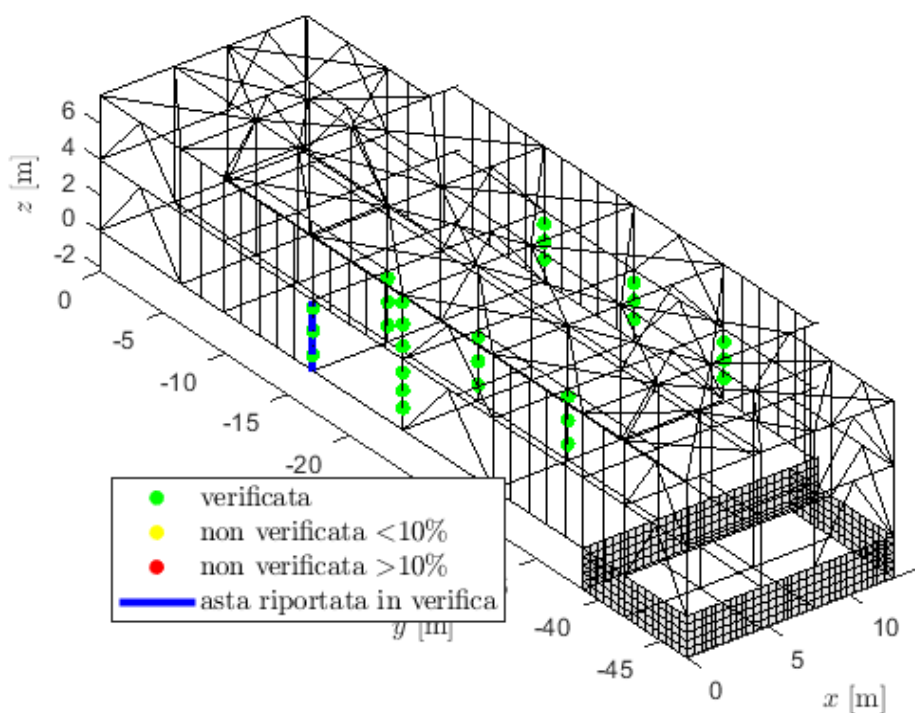


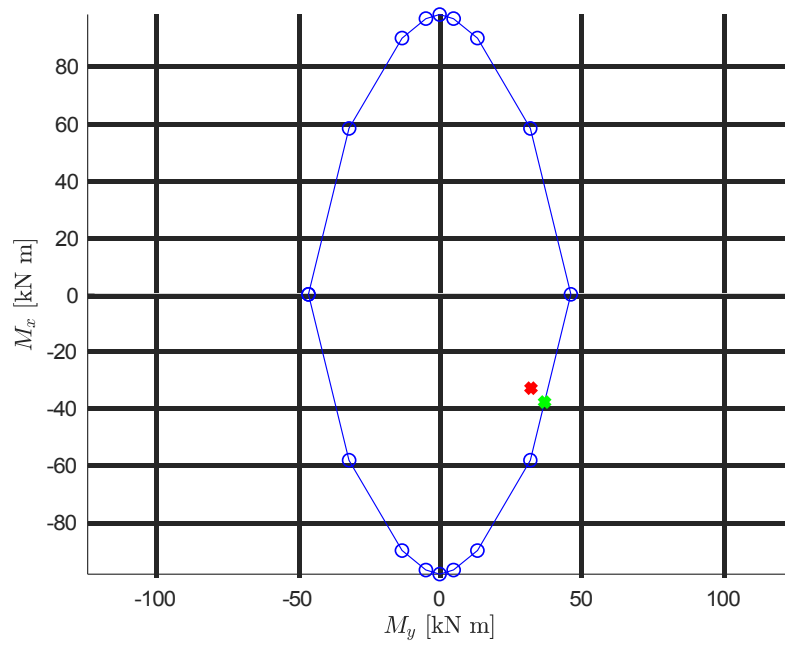
Tabella 11.11. Elemento più sollecitato

Elemento	[n°]	366
Ascissa	[m]	0.90

Tabella 12.12. Sollecitazioni SLV

		min	max
N	[kN]	-247.8	-222.3
M <sub>x</sub>	[kNm]	-32.9	0.3

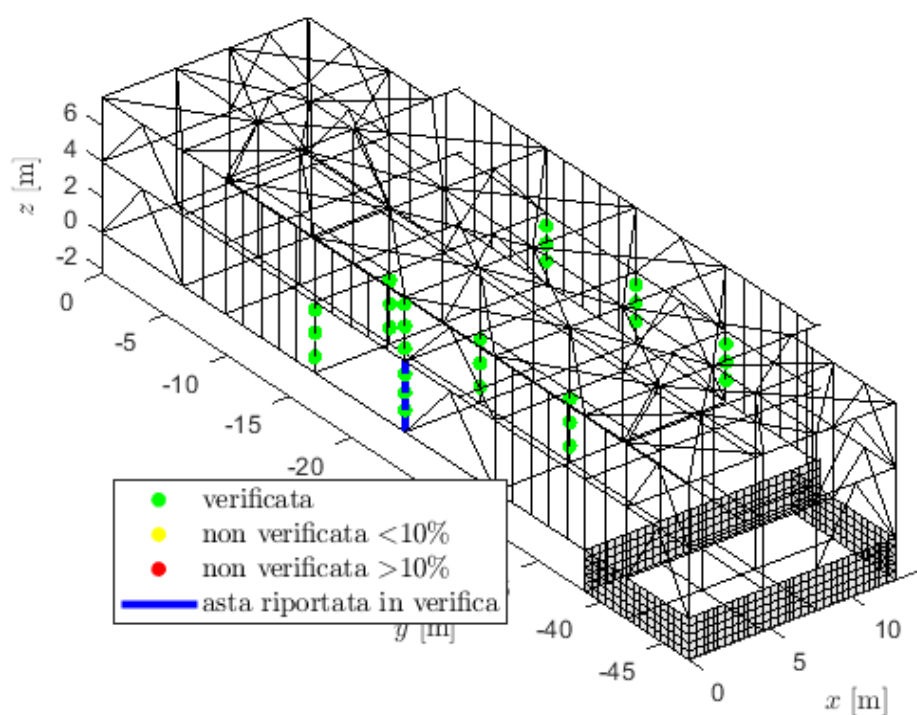
M <sub>y</sub>	[kNm]	-23.3	32.2
V <sub>x</sub>	[kN]	-14.3	22.9
V <sub>y</sub>	[kN]	-29.8	-7.3



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.871$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

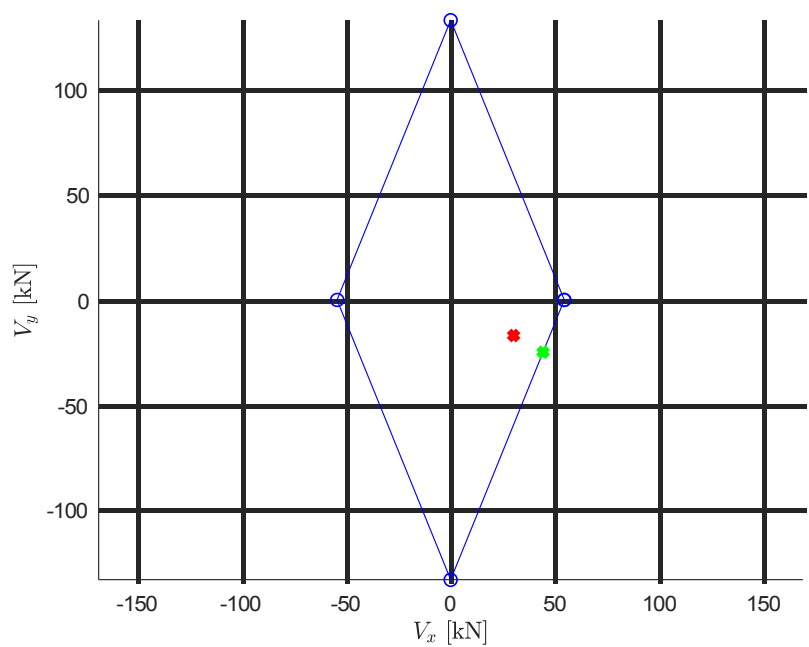


**Tabella 13.13. Elemento più sollecitato**

Elemento	[n°]	762
Ascissa	[m]	3.22

**Tabella 14.14. Sollecitazioni SLV**

		min	max
N	[kN]	-281.1	-213.8
M <sub>x</sub>	[kNm]	6.8	20.1
M <sub>y</sub>	[kNm]	-33.4	2.8
V <sub>x</sub>	[kN]	-8.1	30.1
V <sub>y</sub>	[kN]	-16.9	-0.9

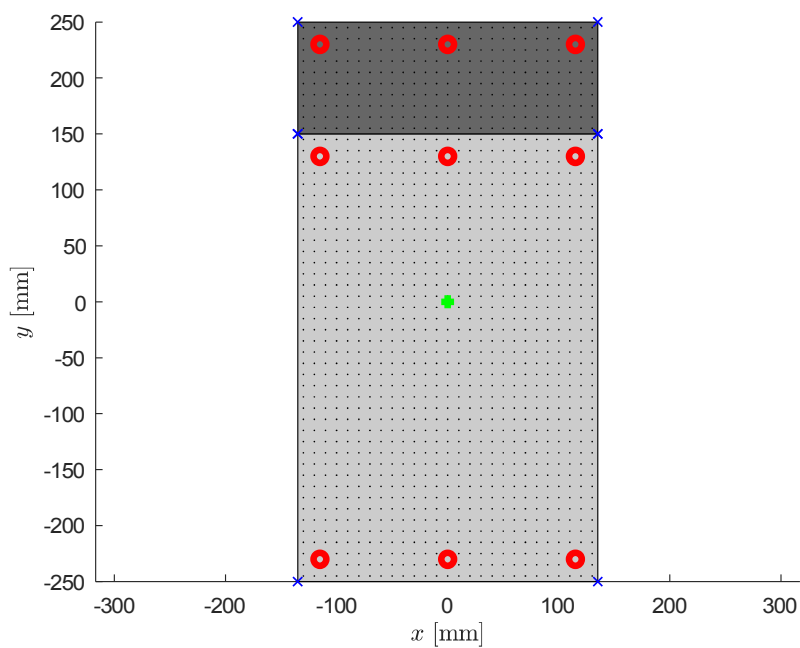


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.681$$

SLU a taglio verificati

# "50x27 rinforzata"

## Sezione



**Tabella 15.15. Materiali**

Res. Cls 1	Rcm	[MPa]	13
Res. Cls 2	Rcm	[MPa]	21
Res. barre longitudinali	fykl	[MPa]	230
Res. staffe	fyks	[MPa]	230
Fattore di confidenza	FC	-	1.00

**Tabella 16.16. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-135	135
Dimensione	max	[mm]	-250	150
Rett. 2 (Cls 2)				
Dimensione	min	[mm]	-135	135
Dimensione	max	[mm]	150	250
Largh. anima	bw	[mm]	500	270
Altezza utile	d	[mm]	240	470
Area staffe	As	[mm2]	57	57

Passo staffe	s	[mm]	180	180
Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0
Passo f.pieg.	sfp	[mm]	300	200

Tabella 17.17. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	20	20	201.06
2	135	20	201.06
3	250	20	201.06
4	20	380	201.06
5	135	380	201.06
6	250	380	201.06
7	20	480	375.90
8	135	480	375.90
9	250	480	375.90

## Verifica SLV (peggiorativa per M)

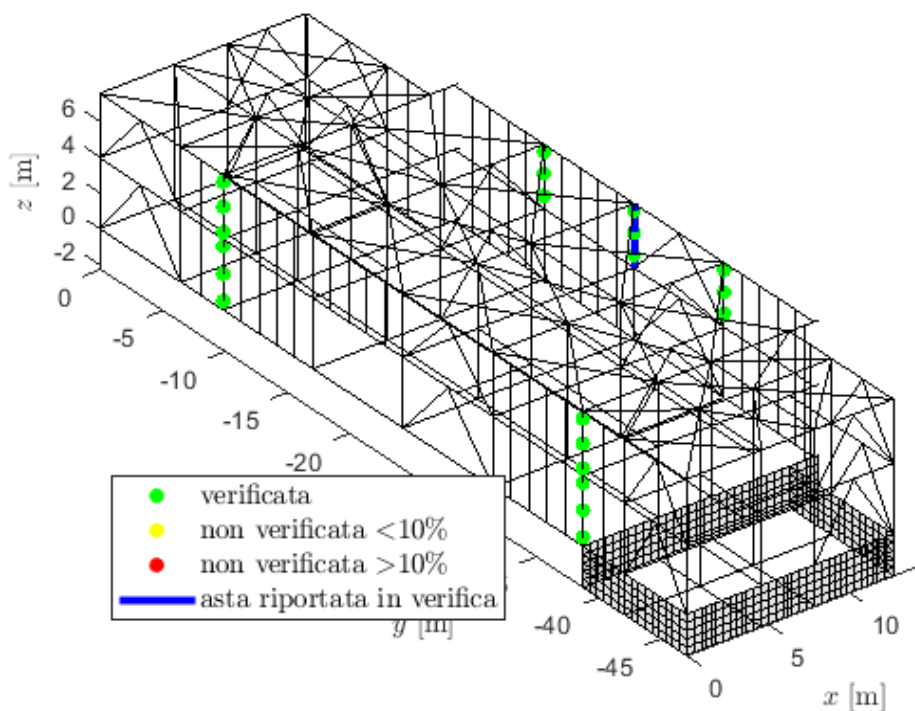
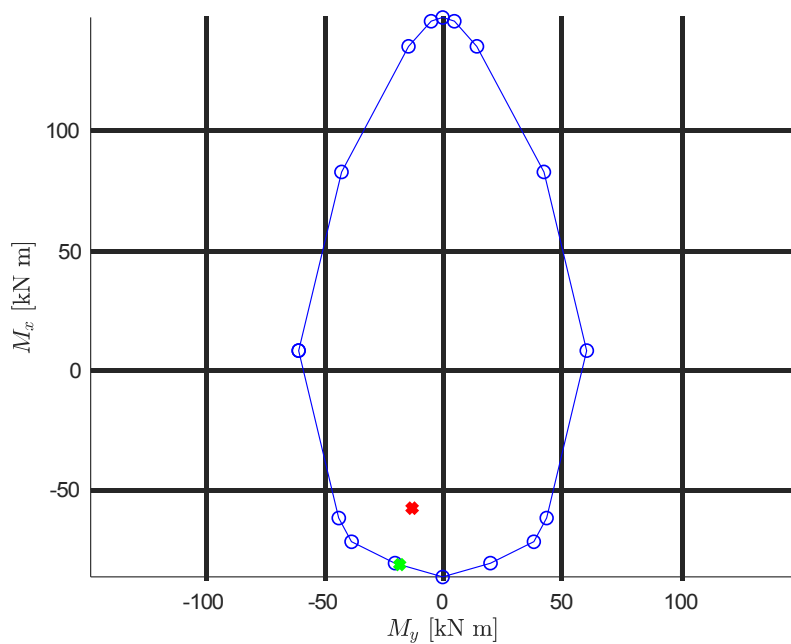


Tabella 18.18. Elemento più sollecitato

Elemento	[n°]	579
Ascissa	[m]	3.20

Tabella 19.19. Sollecitazioni SLV

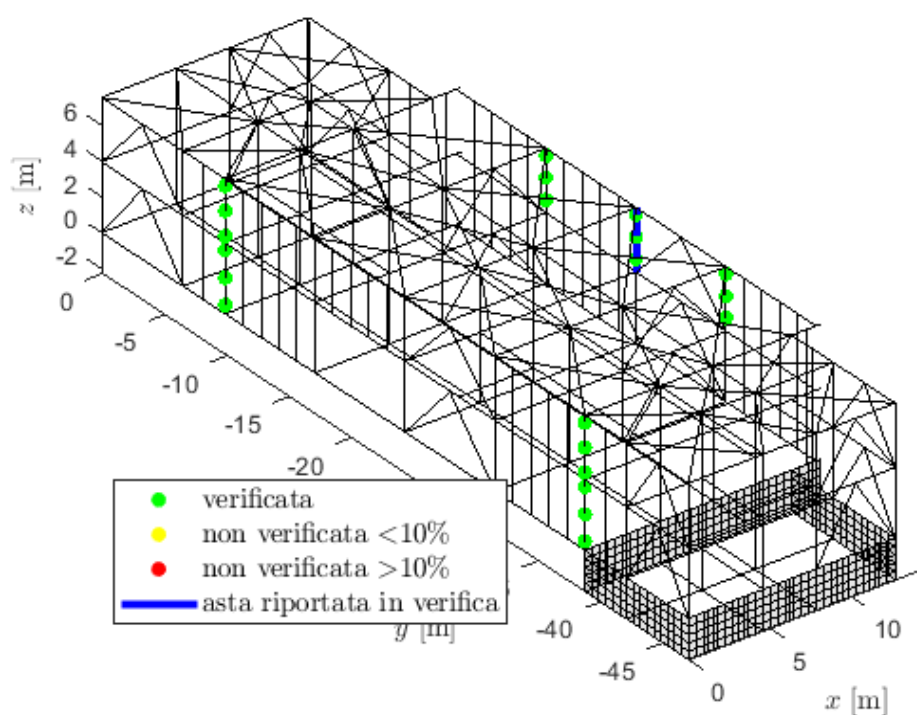
		min	max
N	[kN]	-92.0	-80.9
M <sub>x</sub>	[kNm]	-57.8	-41.1
M <sub>y</sub>	[kNm]	-12.8	-4.1
V <sub>x</sub>	[kN]	2.3	10.6
V <sub>y</sub>	[kN]	34.6	46.9



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.711$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)



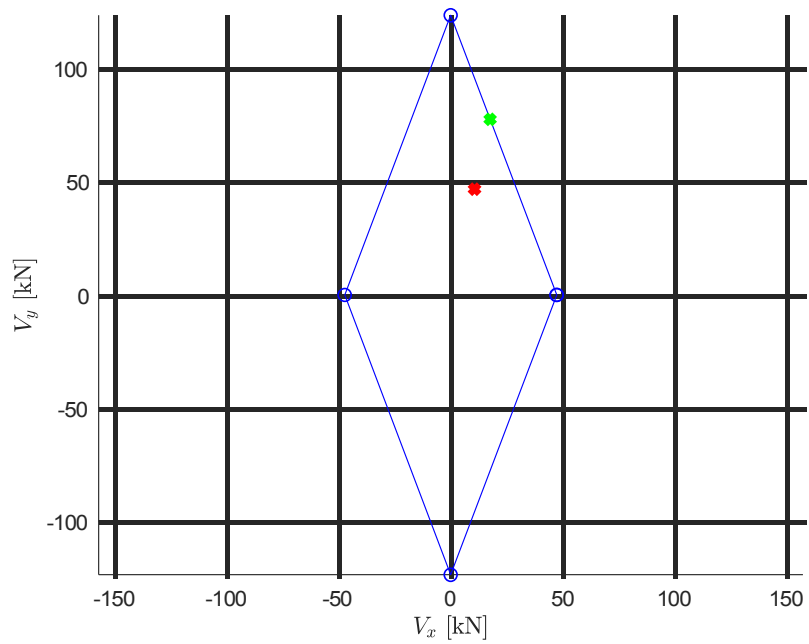
**Tabella 20.20. Elemento più sollecitato**

Elemento	[n°]	579
Ascissa	[m]	3.20

**Tabella 21.21. Sollecitazioni SLV**

		min	max
N	[kN]	-92.0	-80.9
M <sub>x</sub>	[kNm]	-57.8	-41.1
M <sub>y</sub>	[kNm]	-12.8	-4.1
V <sub>x</sub>	[kN]	2.3	10.6
V <sub>y</sub>	[kN]	34.6	46.9



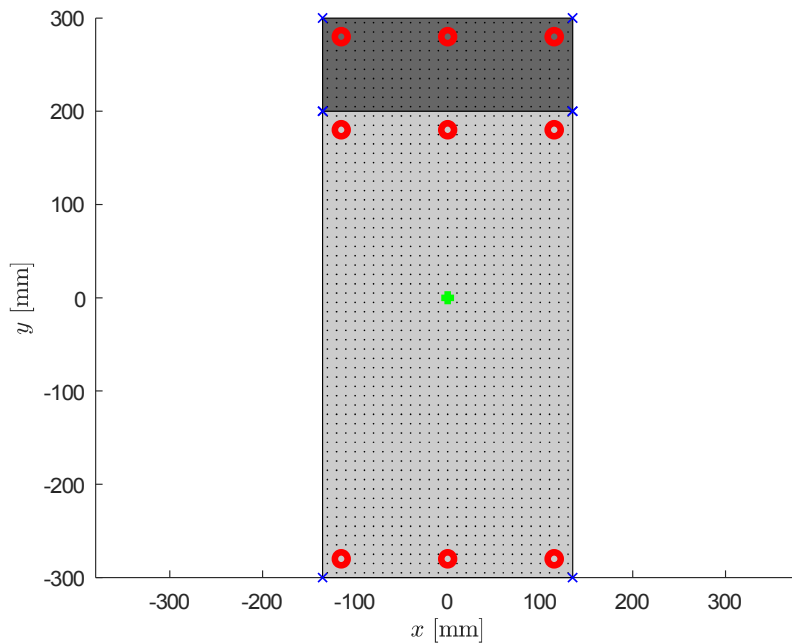


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.603$$

SLU a taglio verificati

# "Rettangolare b=27 h=60 pilastri"

## Sezione



**Tabella 22.22. Materiali**

Res. Cls 1	Rcm	[MPa]	13
Res. Cls 2	Rcm	[MPa]	0
Res. barre longitudinali	fykl	[MPa]	230
Res. staffe	fyks	[MPa]	230
Fattore di confidenza	FC	-	1.00

**Tabella 23.23. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-135	135
Dimensione	max	[mm]	-300	200
Rett. 2 (Cls 2)				
Dimensione	min	[mm]	-135	135
Dimensione	max	[mm]	200	300
Largh. anima	bw	[mm]	500	270
Altezza utile	d	[mm]	240	470
Area staffe	As	[mm2]	57	57

Passo staffe	s	[mm]	180	180
Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0
Passo f.pieg.	sfp	[mm]	300	200

Tabella 24.24. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	20	20	201.06
2	135	20	201.06
3	250	20	201.06
4	20	480	201.06
5	135	480	201.06
6	250	480	201.06
7	20	580	375.90
8	135	580	375.90
9	250	580	375.90

## Verifica SLV (peggiorativa per M)

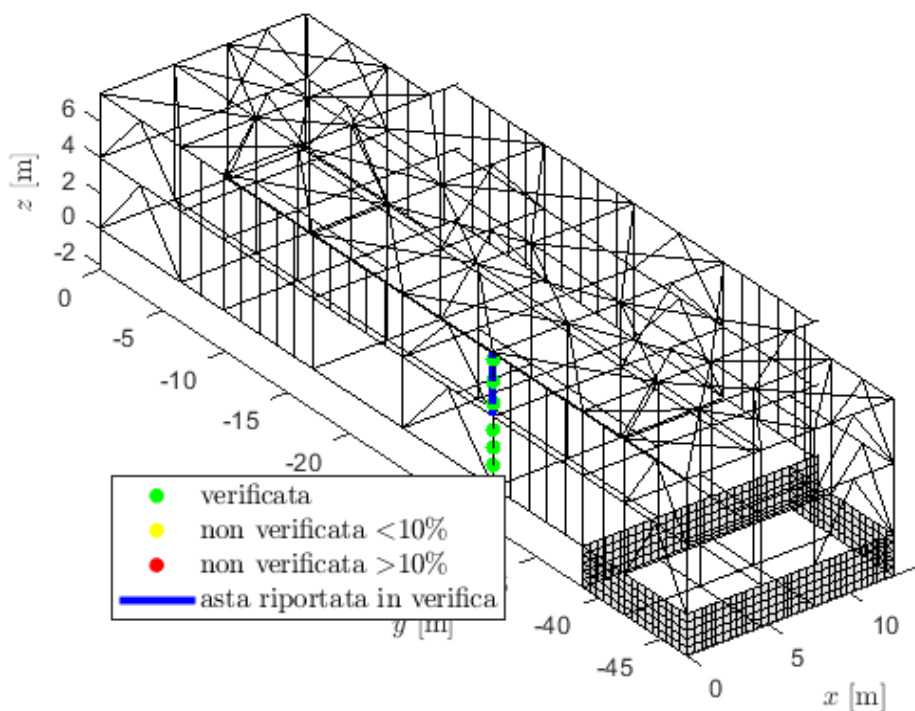
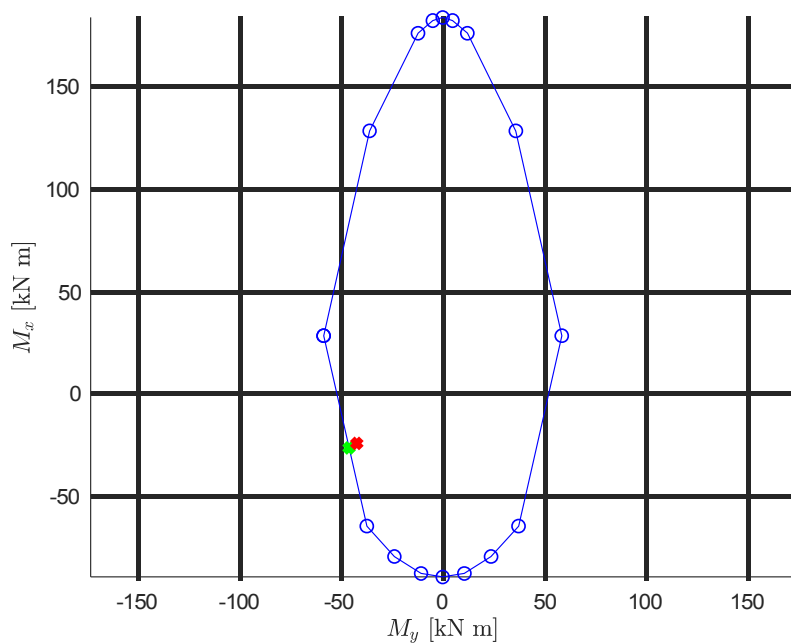


Tabella 25.25. Elemento più sollecitato

Elemento	[n°]	564
Ascissa	[m]	0.73

Tabella 26.26. Sollecitazioni SLV

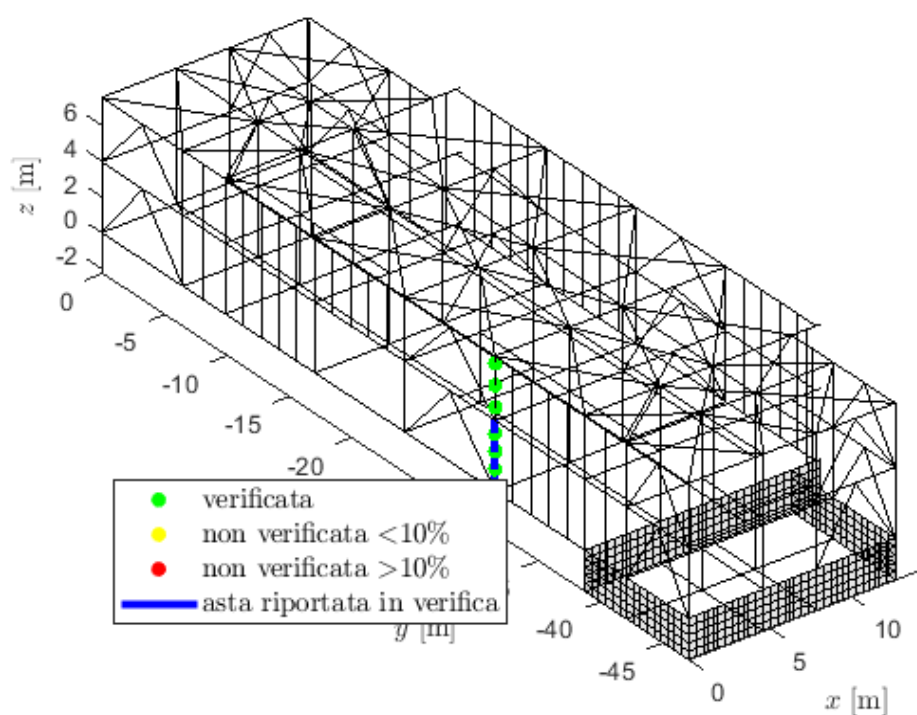
		min	max
N	[kN]	-73.4	-64.3
M <sub>x</sub>	[kNm]	-24.5	-15.2
M <sub>y</sub>	[kNm]	-42.2	-23.3
V <sub>x</sub>	[kN]	-25.6	-15.3
V <sub>y</sub>	[kN]	-25.9	-16.2



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.917$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

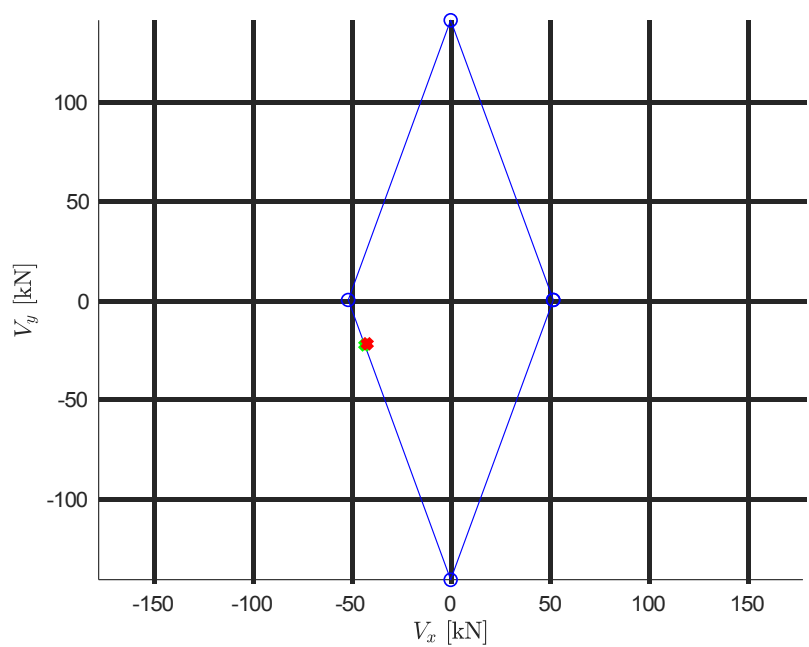


**Tabella 27.27. Elemento più sollecitato**

Elemento	[n°]	350
Ascissa	[m]	3.22

**Tabella 28.28. Sollecitazioni SLV**

		min	max
N	[kN]	-234.7	-173.4
M <sub>x</sub>	[kNm]	-1.5	21.8
M <sub>y</sub>	[kNm]	18.5	50.3
V <sub>x</sub>	[kN]	-42.3	-5.2
V <sub>y</sub>	[kN]	-22.0	6.5

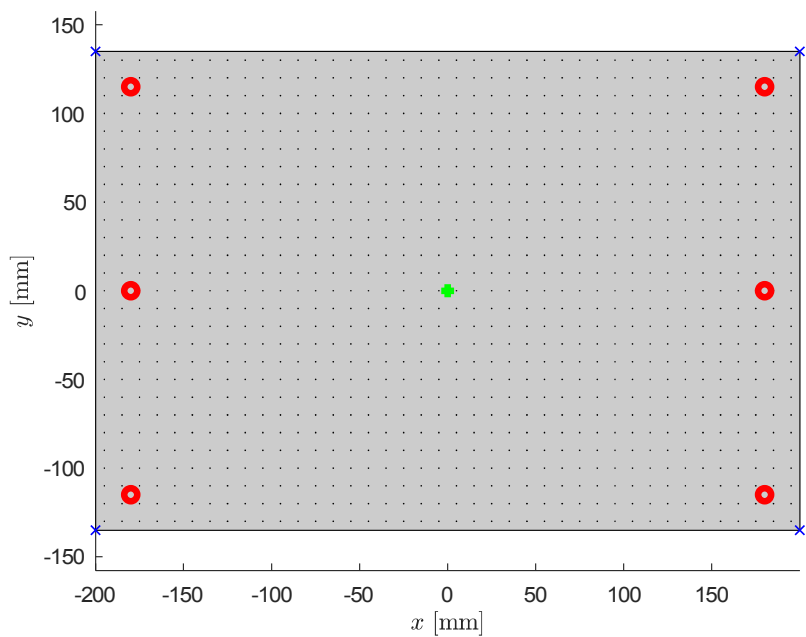


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.972$$

SLU a taglio verificati

## "4 - Rettangolare b=40 h=27 pilastri"

### Sezione



**Tabella 29.29. Materiali**

Res.Cls 1	Rcm	[MPa ]	13
Res. Cls 2	Rcm	[MPa ]	0
Res. barre longitudinali	fykl	[MPa ]	230
Res. staffe	fyks	[MPa ]	230
Fattore di confidenza	FC	-	1.00

**Tabella 30.30. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-200	200
Dimensione	max	[mm]	-135	135
Largh. anima	bw	[mm]	270	400
Altezza utile	d	[mm]	370	240
Area staffe	As	[mm2 ]	57	57
Passo staffe	s	[mm]	180	180
Area f.pieg.	Asfp	[mm2 ]	0	0

Passo f.pieg.	sfp	[mm]	300	200
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Tabella 31.31. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	20	20	153.94
2	20	135	153.94
3	380	20	153.94
4	20	250	153.94
5	380	135	153.94
6	380	250	153.94

## Verifica SLV (peggiorativa per M)

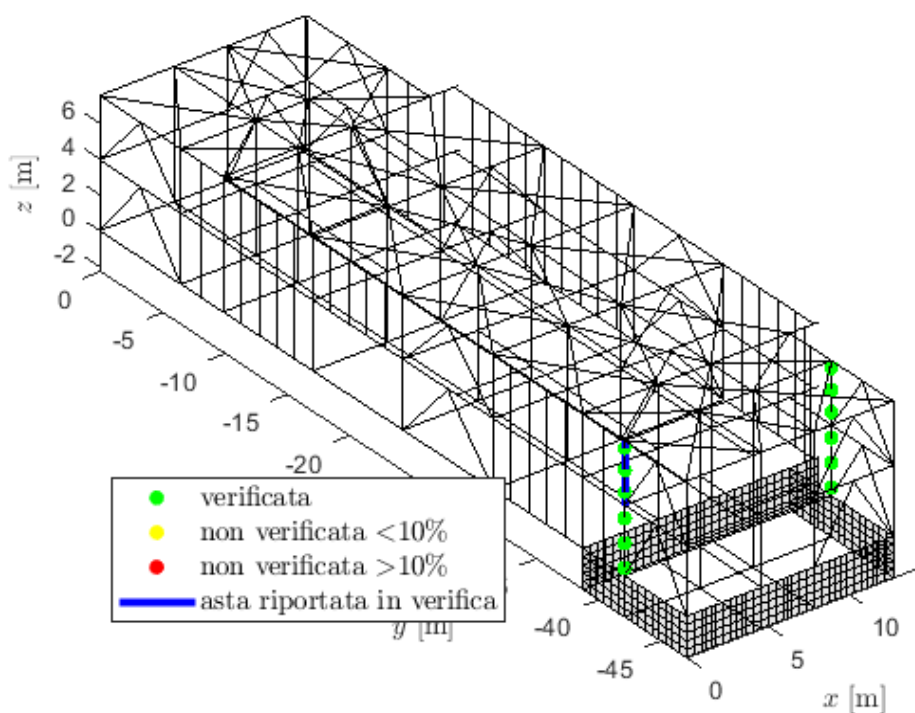


Tabella 32.32. Elemento più sollecitato

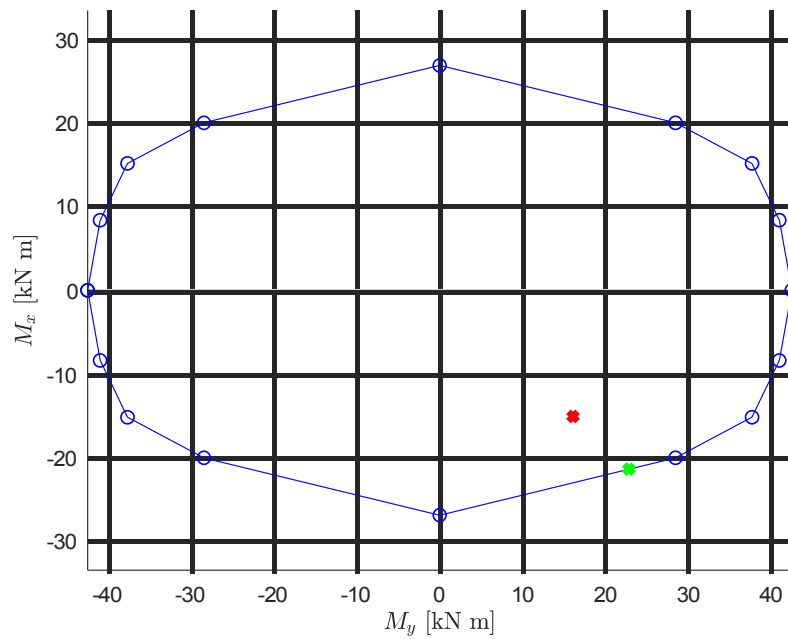
Elemento	[n°]	547
Ascissa	[m]	0.73

Tabella 33.33. Sollecitazioni SLV

		min	max
N	[kN]	-56.6	-49.4
M <sub>x</sub>	[kNm]	-15.1	-7.4



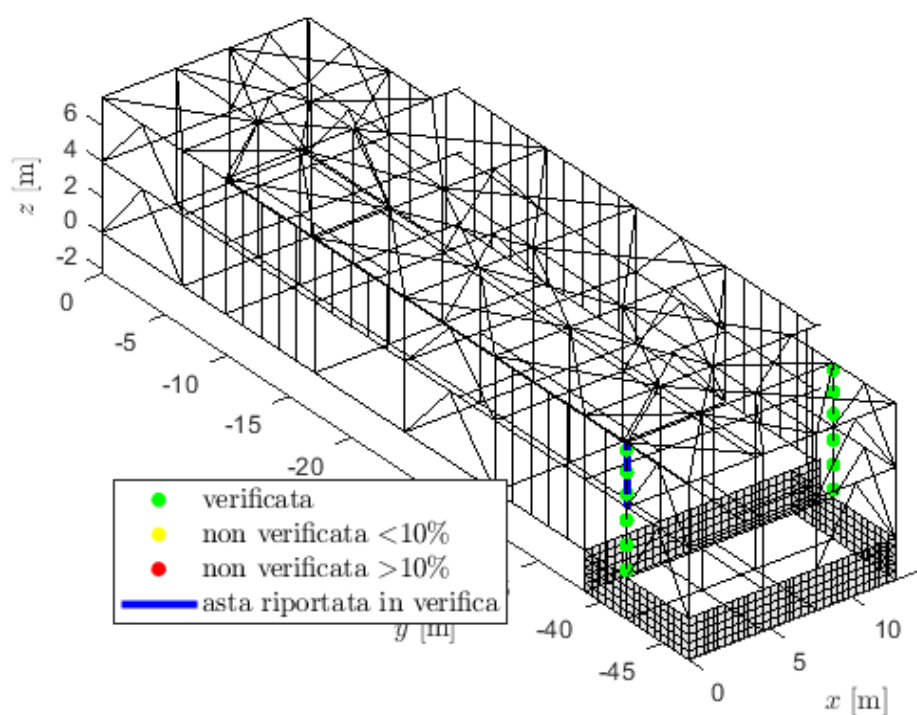
M <sub>y</sub>	[kNm]	-3.7	16.1
V <sub>x</sub>	[kN]	-0.6	10.1
V <sub>y</sub>	[kN]	-12.5	-6.0



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.705$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

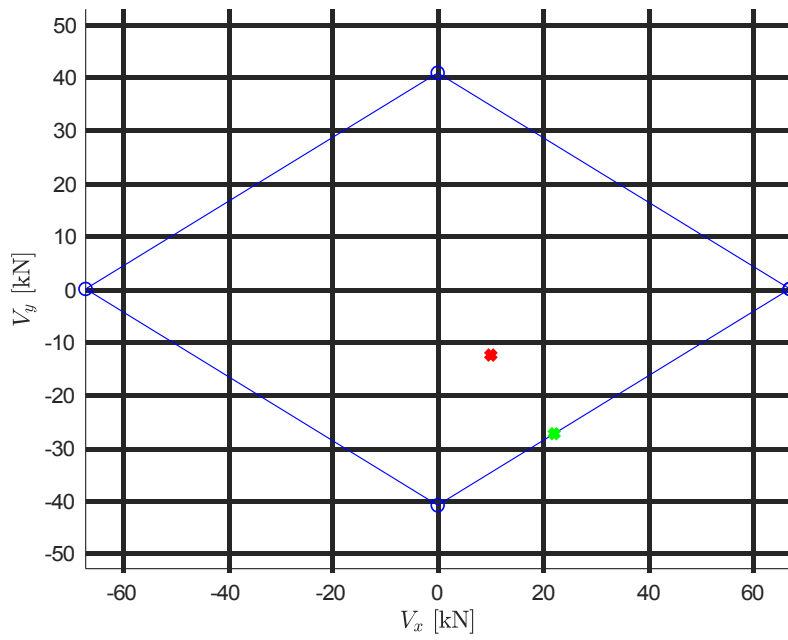


**Tabella 34.34. Elemento più sollecitato**

Elemento	[n°]	547
Ascissa	[m]	3.20

**Tabella 35.35. Sollecitazioni SLV**

		min	max
N	[kN]	-50.1	-42.9
M <sub>x</sub>	[kNm]	7.5	15.7
M <sub>y</sub>	[kNm]	-11.9	0.6
V <sub>x</sub>	[kN]	-0.6	10.1
V <sub>y</sub>	[kN]	-12.5	-6.0

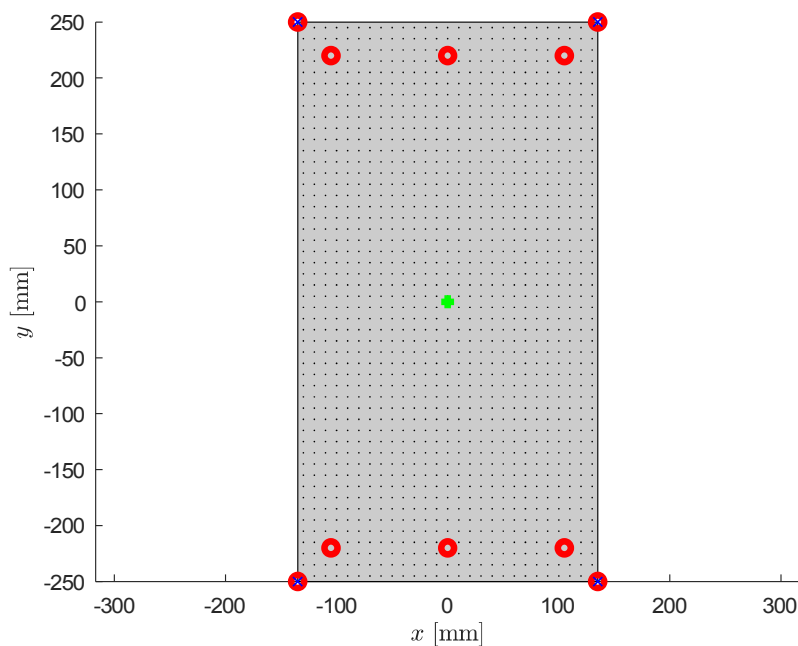


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.456$$

SLU a taglio verificati

## "2 - 50x27 calastrellata"

### Sezione



**Tabella 36.36. Materiali**

Res. Cls 1	Rcm	[MPa]	17
Res. Cls 2	Rcm	[MPa]	0
Res. barre longitudinali	fykl	[MPa]	230
Res. staffe	fyks	[MPa]	138
Fattore di confidenza	FC	-	1.00

**Tabella 37.37. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-135	135
Dimensione	max	[mm]	-250	250
Largh. anima	bw	[mm]	500	270
Altezza utile	d	[mm]	270	500
Area staffe	As	[mm <sup>2</sup> ]	2000	2000
Passo staffe	s	[mm]	350	350
Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0
Passo f.pieg.	sfp	[mm]	300	200

Tabella 38.38. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	201.06
2	135	30	201.06
3	240	30	201.06
4	30	470	201.06
5	135	470	201.06
6	240	470	201.06
7	0	0	1135.87
8	270	0	1135.87
9	0	500	1135.87
10	270	500	1135.87

## 111139.1. Verifica SLV (peggiorativa per M)

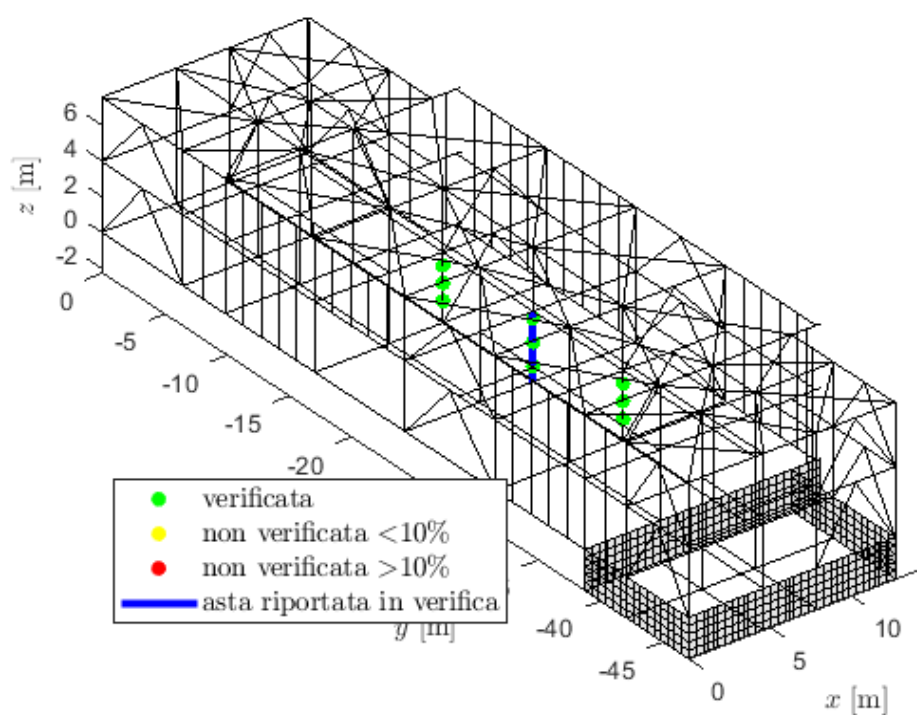


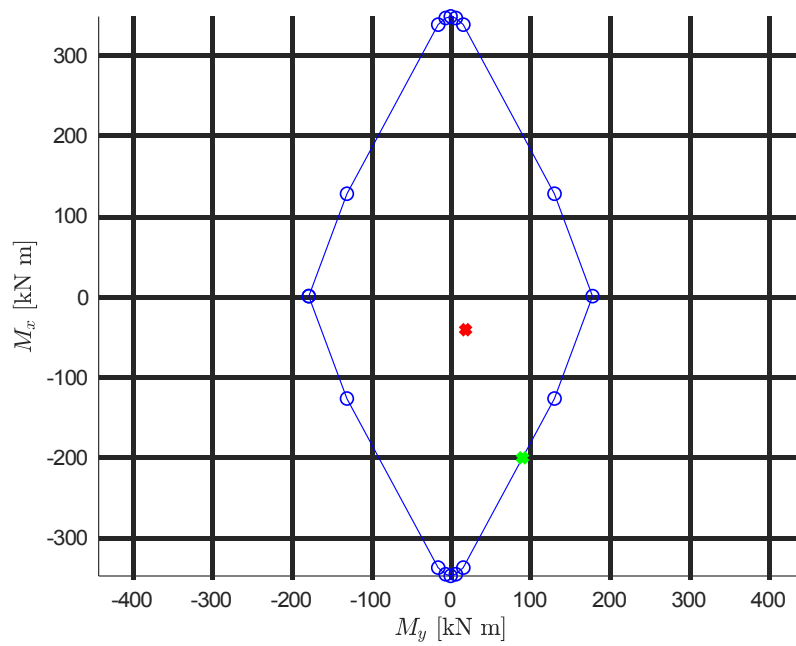
Tabella 40.39. Elemento più sollecitato

Elemento	[n°]	863
Ascissa	[m]	0.90

Tabella 41.40. Sollecitazioni SLV

		min	max
N	[kN]	-420.1	-412.2

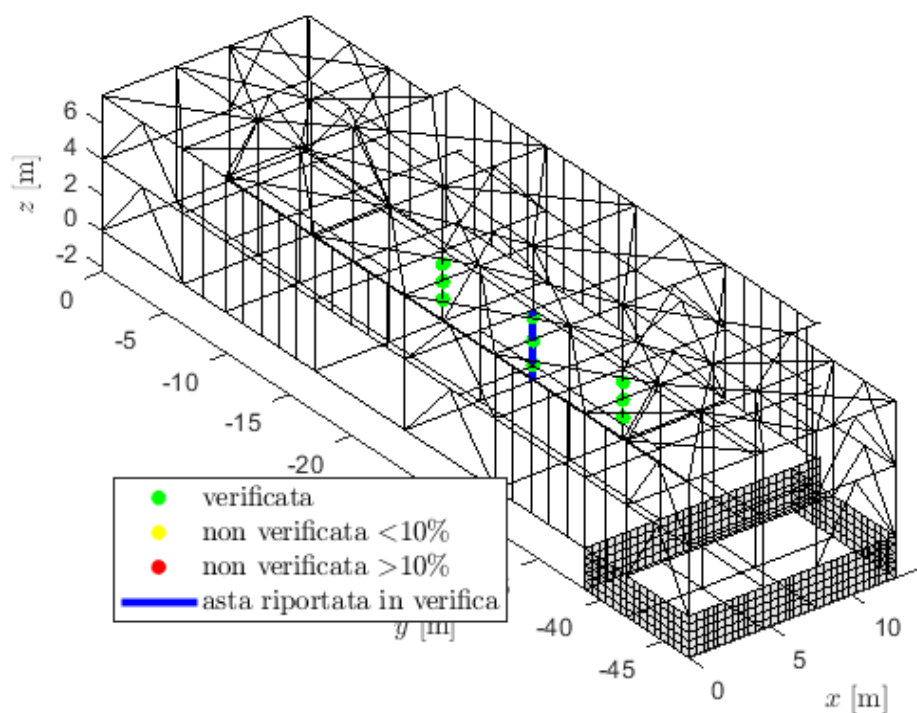
M <sub>x</sub>	[kNm]	-41.9	-13.9
M <sub>y</sub>	[kNm]	-17.3	18.7
V <sub>x</sub>	[kN]	-8.8	9.7
V <sub>y</sub>	[kN]	-37.9	-19.9



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.208$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

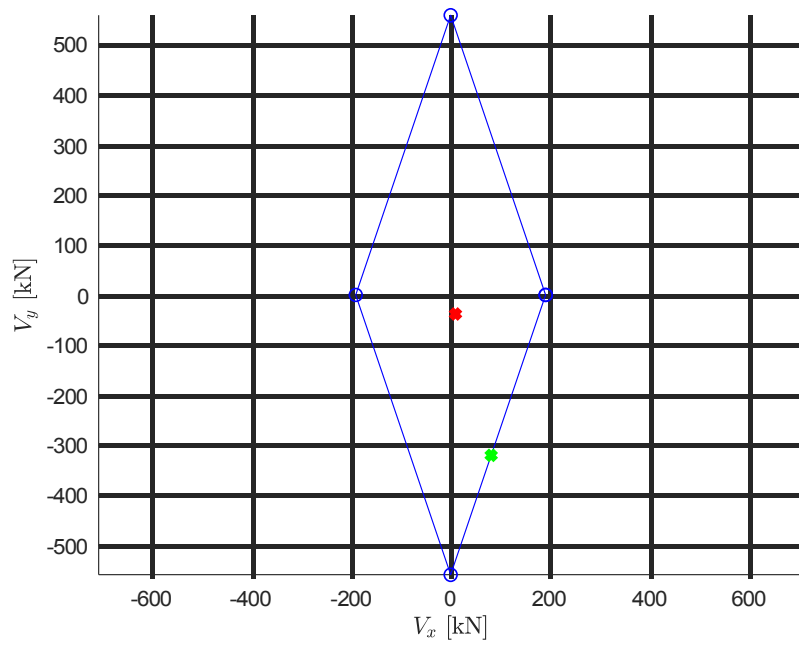


**Tabella 42.41. Elemento più sollecitato**

Elemento	[n°]	863
Ascissa	[m]	3.55

**Tabella 43.42. Sollecitazioni SLV**

		min	max
N	[kN]	-411.3	-403.5
M <sub>x</sub>	[kNm]	39.0	58.7
M <sub>y</sub>	[kNm]	-7.1	6.3
V <sub>x</sub>	[kN]	-8.8	9.7
V <sub>y</sub>	[kN]	-37.9	-19.9



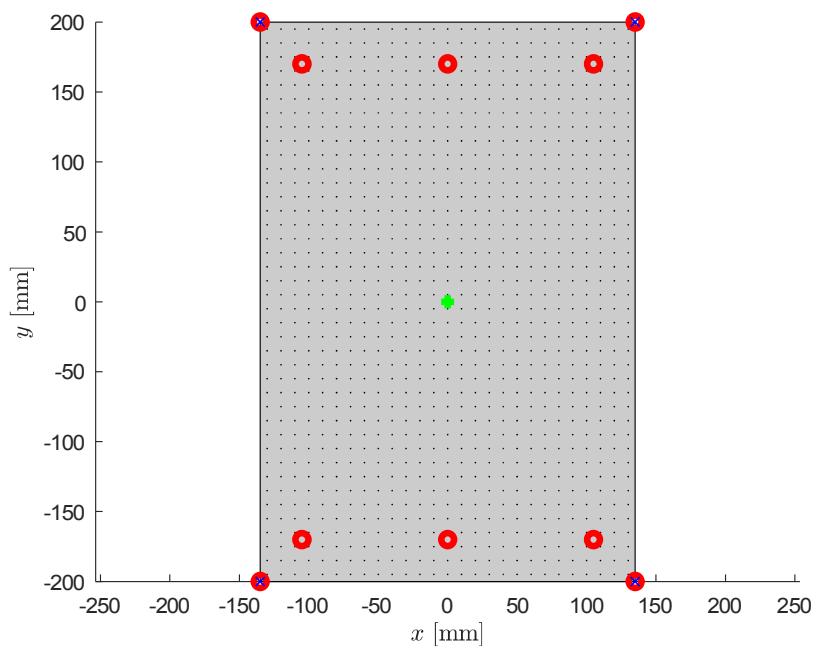
$$\max(|V_{Ed}|/|V_{Rd}|) = 0.118$$

SLU a taglio verificati



## "2 - 40x27 calastrellata"

### Sezione



**Tabella 44.43. Materiali**

Res. Cls 1	Rcm	[MPa]	17
Res. Cls 2	Rcm	[MPa]	0
Res. barre longitudinali	fykl	[MPa]	230
Res. staffe	fyks	[MPa]	138
Fattore di confidenza	FC	-	1.00

**Tabella 45.44. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-135	135
Dimensione	max	[mm]	-200	200
Largh. anima	bw	[mm]	500	270
Altezza utile	d	[mm]	270	500
Area staffe	As	[mm <sup>2</sup> ]	2000	2000
Passo staffe	s	[mm]	350	350
Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0
Passo f.pieg.	sfp	[mm]	300	200

Tabella 46.45. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	201.06
2	135	30	201.06
3	240	30	201.06
4	30	370	201.06
5	135	370	201.06
6	240	370	201.06
7	0	0	1135.87
8	270	0	1135.87
9	0	400	1135.87
10	270	400	1135.87

## Verifica SLV (peggiorativa per M)

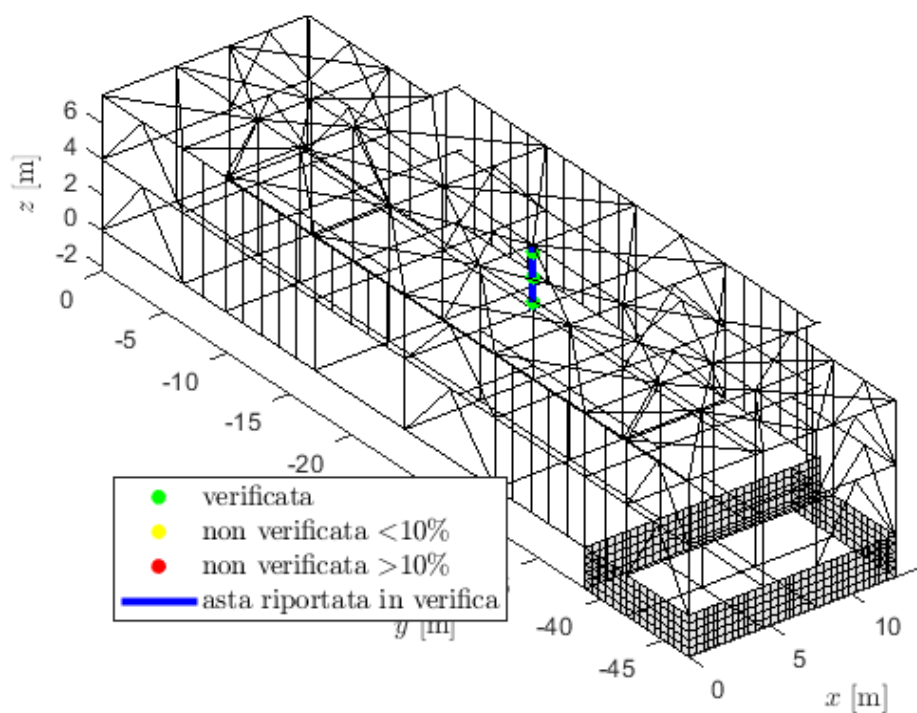


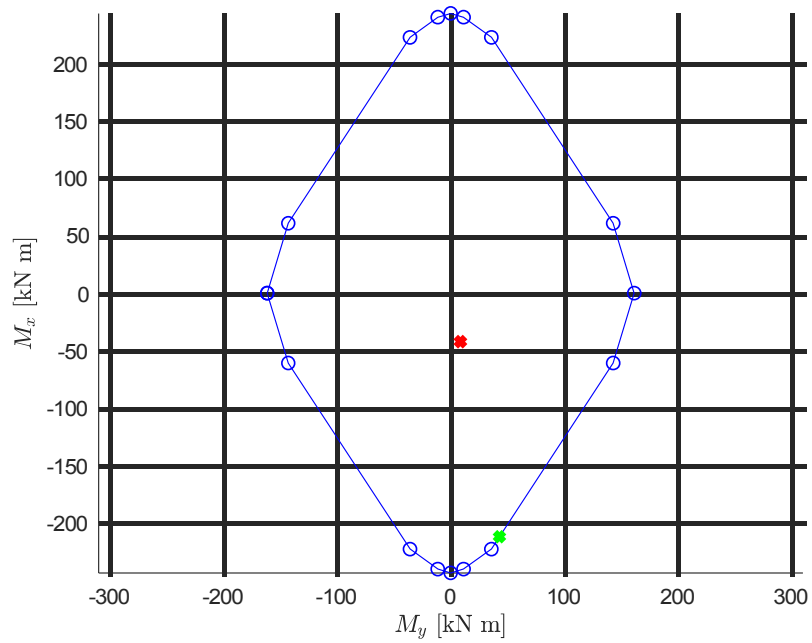
Tabella 47.46. Elemento più sollecitato

Elemento	[n°]	578
Ascissa	[m]	0.40

Tabella 48.47. Sollecitazioni SLV

		min	max
N	[kN]	-125.5	-122.1

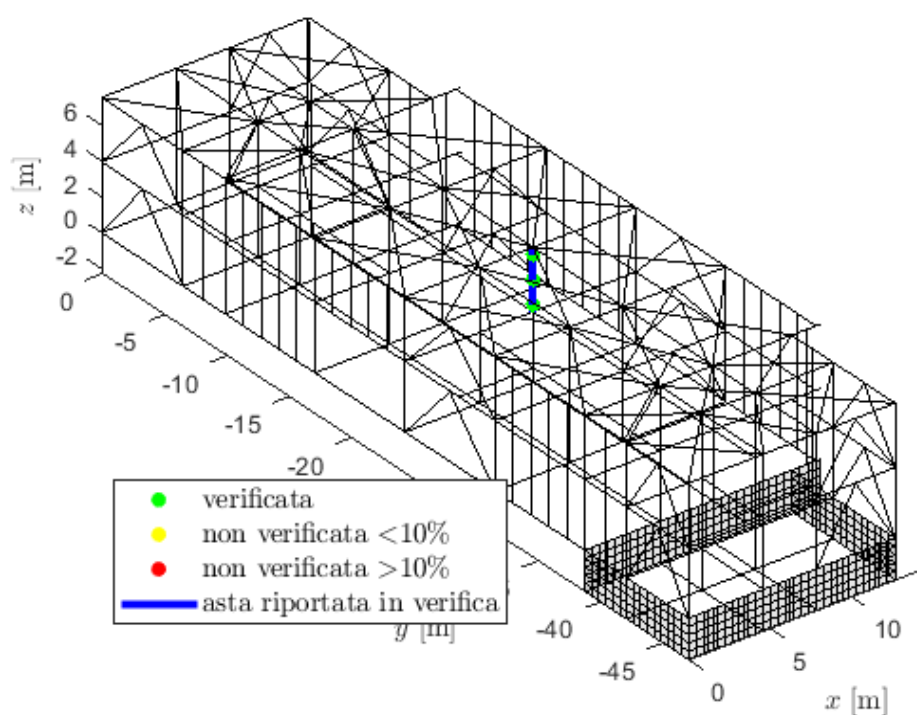
M <sub>x</sub>	[kNm]	-42.3	-26.9
M <sub>y</sub>	[kNm]	-7.5	8.5
V <sub>x</sub>	[kN]	-2.4	2.9
V <sub>y</sub>	[kN]	-29.2	-17.0



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.199$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

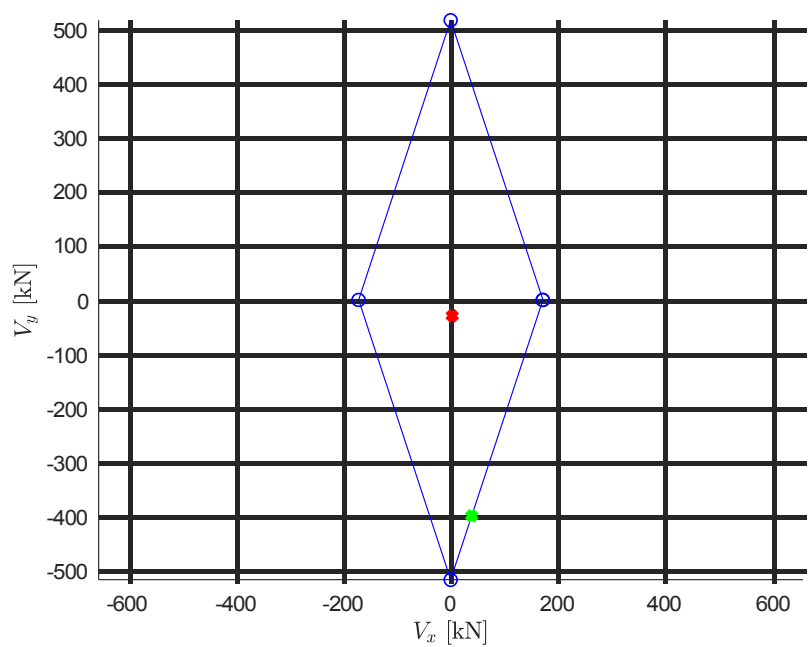


**Tabella 49.48. Elemento più sollecitato**

Elemento	[n°]	578
Ascissa	[m]	3.20

**Tabella 50.49. Sollecitazioni SLV**

		min	max
N	[kN]	-118.1	-114.7
M <sub>x</sub>	[kNm]	20.8	39.6
M <sub>y</sub>	[kNm]	-1.6	1.0
V <sub>x</sub>	[kN]	-2.4	2.9
V <sub>y</sub>	[kN]	-29.2	-17.0

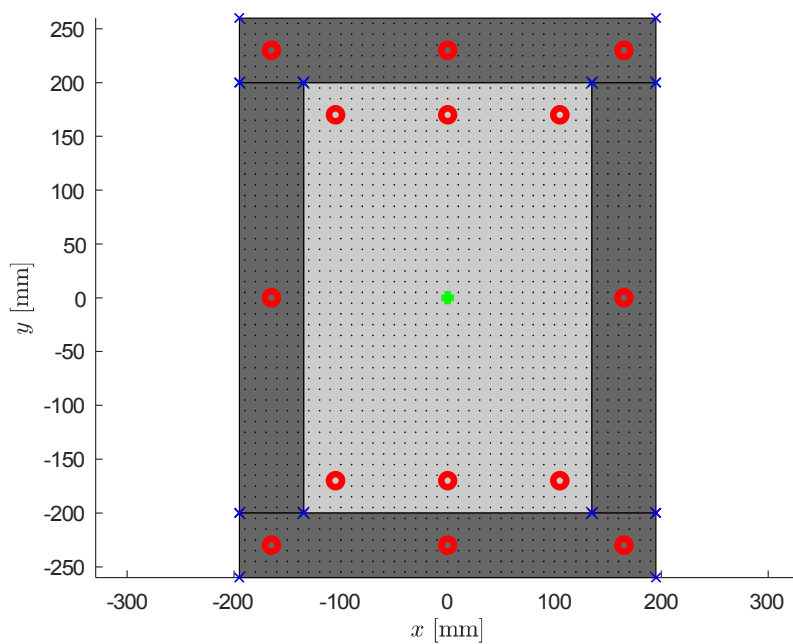


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.073$$

SLU a taglio verificati

## "27- Rettangolare b=39 h=52"

### Sezione



**Tabella 51.50. Materiali**

Res. Cls 1	Rcm	[MPa]	13
Res. Cls 2	Rcm	[MPa]	38
Res. barre longitudinali	fykl	[MPa]	430
Res. staffe	fyks	[MPa]	430
Fattore di confidenza	FC	-	1.00

**Tabella 52.51. Geometria della sezione**

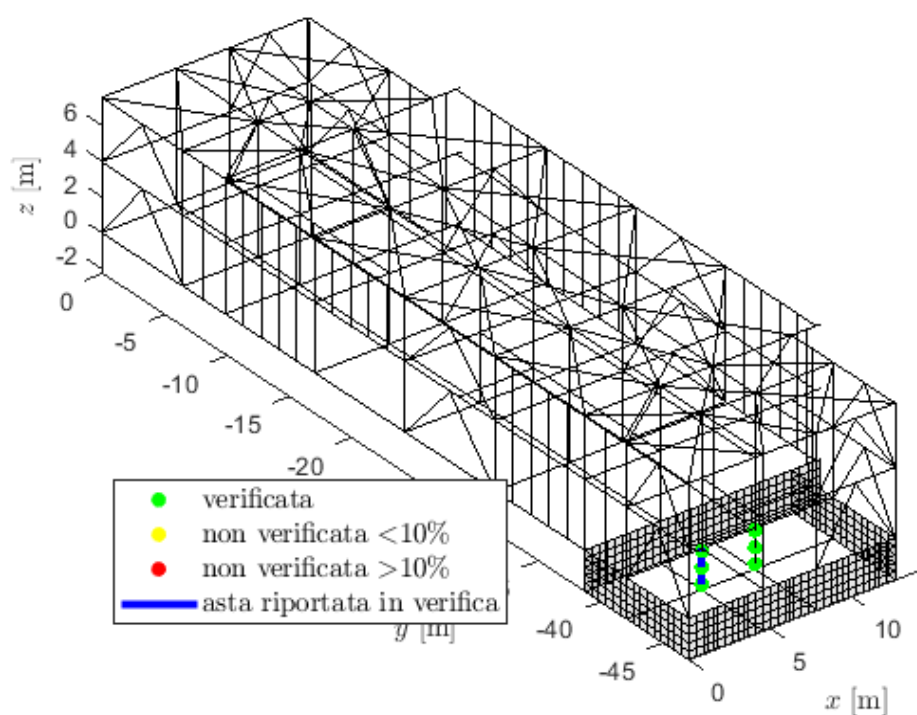
			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-135	135
Dimensione	max	[mm]	-200	200
Rett. 2 (Cls 2)				
Dimensione	min	[mm]	-195	-135
Dimensione	max	[mm]	-	200

			200	
Rett. 3 (Cls 2)				
Dimensione	min	[mm]	135	195
Dimensione	max	[mm]	- 200	200
Rett. 4 (Cls 2)				
Dimensione	min	[mm]	- 195	195
Dimensione	max	[mm]	- 260	-200
Rett. 5 (Cls 2)				
Dimensione	min	[mm]	- 195	195
Dimensione	max	[mm]	200	260
Largh. anima	bw	[mm]	520	390
Altezza utile	d	[mm]	360	490
Area staffe	As	[mm <sup>2</sup> ]	101	101
Passo staffe	s	[mm]	100	100
Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0
Passo f.pieg.	sfp	[mm]	300	200

Tabella 53.52. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	82.34
2	135	30	82.34
3	240	30	82.34
4	30	370	82.34
5	135	370	82.34
6	240	370	82.34
7	-30	-30	153.94
8	-30	200	153.94
9	-30	430	153.94
10	135	-30	153.94
11	135	430	153.94
12	300	-30	153.94
13	300	200	153.94
14	300	430	153.94

## Verifica SLV (peggiorativa per M)



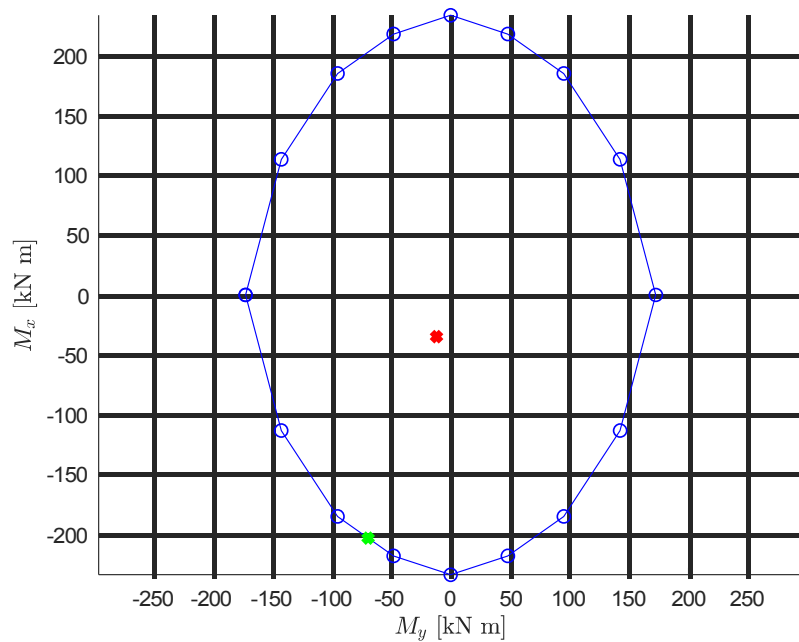
**Tabella 54.53. Elemento più sollecitato**

Elemento	[n°]	101
Ascissa	[m]	2.18

**Tabella 55.54. Sollecitazioni SLV**

		min	max
N	[kN]	-427.5	-423.8
M <sub>x</sub>	[kNm]	-34.8	-24.0
M <sub>y</sub>	[kNm]	-11.9	6.1
V <sub>x</sub>	[kN]	-2.7	10.7
V <sub>y</sub>	[kN]	17.4	25.0

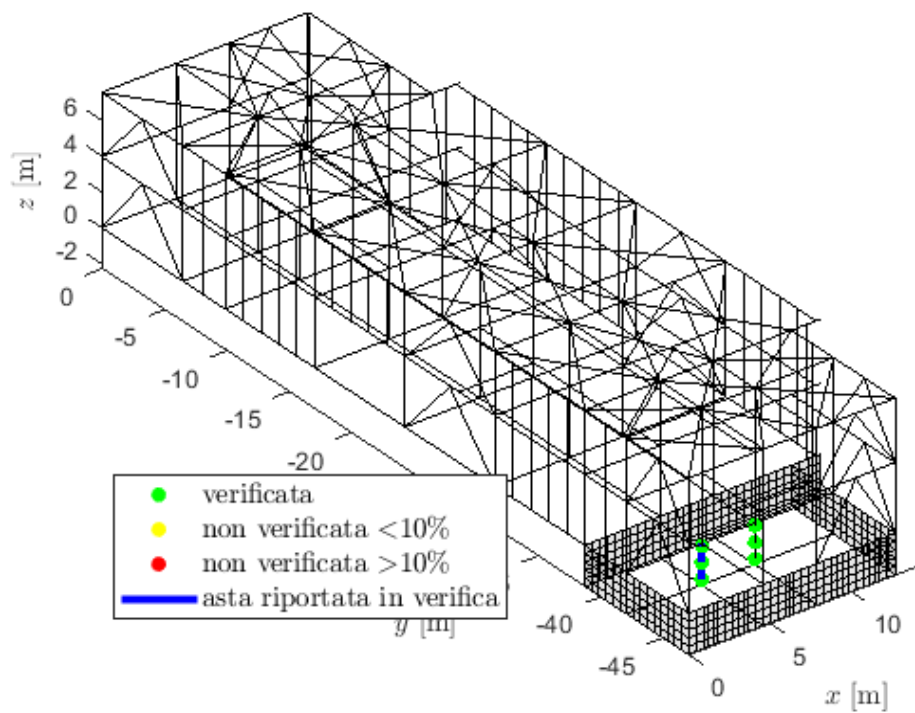




$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.171$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

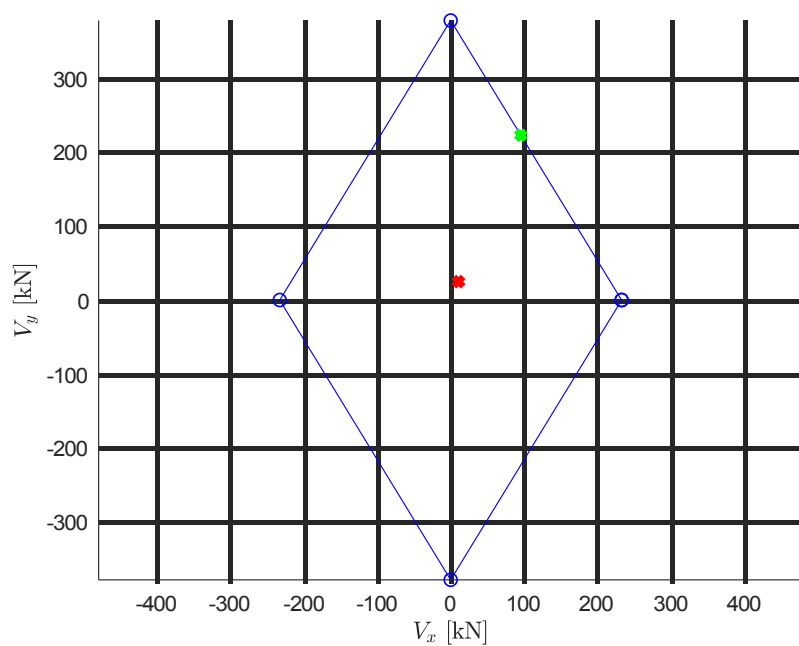


**Tabella 56.55. Elemento più sollecitato**

Elemento	[n°]	101
Ascissa	[m]	2.18

Tabella 57.56. Sollecitazioni SLV

		min	max
N	[kN]	-427.5	-423.8
M <sub>x</sub>	[kNm]	-34.8	-24.0
M <sub>y</sub>	[kNm]	-11.9	6.1
V <sub>x</sub>	[kN]	-2.7	10.7
V <sub>y</sub>	[kN]	17.4	25.0

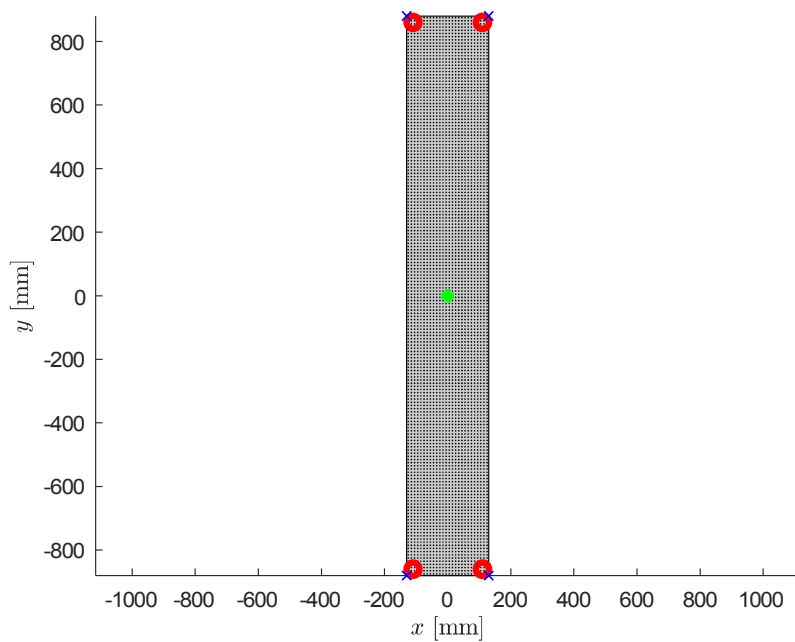


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.112$$

SLU a taglio verificati

“setto”

## Sezione



**Tabella 58.57. Materiali**

Res.Cls 1	Rcm	[MPa]	12
Res.Cls 2	Rcm	[MPa]	0
Res. barre longitudinali	fykl	[MPa]	230
Res. staffe	fyks	[MPa]	230
Fattore di confidenza	FC	-	1.00

**Tabella 59.58. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-130	130
Dimensione	max	[mm]	-880	880
Largh. anima	bw	[mm]	260	1760
Altezza utile	d	[mm]	230	1730
Area staffe	As	[mm <sup>2</sup> ]	57	57
Passo staffe	s	[mm]	300	300
Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0
Passo f.pieg.	sfp	[mm]	1	1

Tabella 60.59. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	20	20	153.94
2	240	1740	153.94
3	20	1740	153.94
4	240	20	153.94

## Verifica SLV (peggiorativa per M)

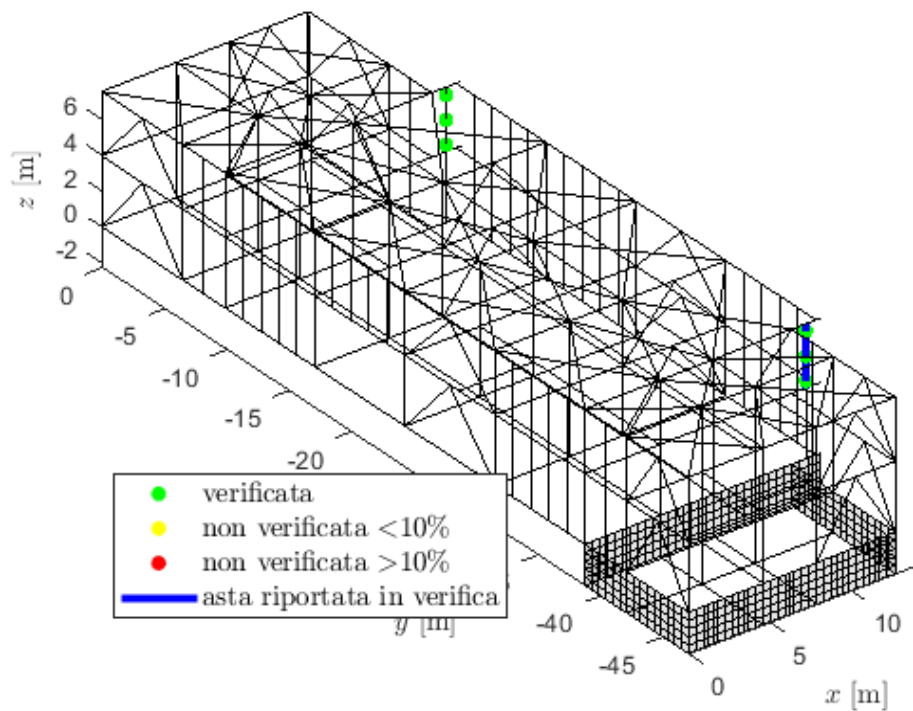
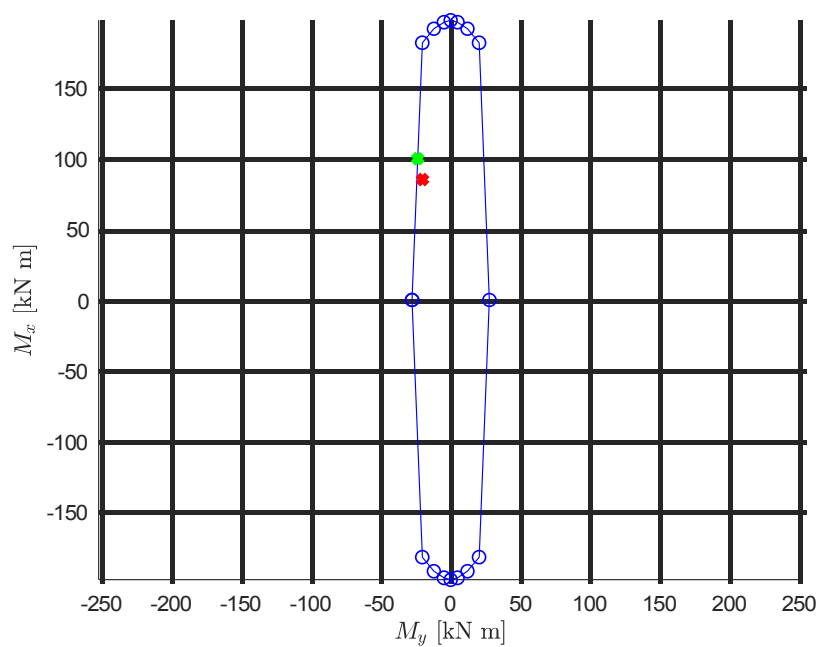


Tabella 61.60. Elemento più sollecitato

Elemento	[n°]	697
Ascissa	[m]	3.20

Tabella 62.61. Sollecitazioni SLV

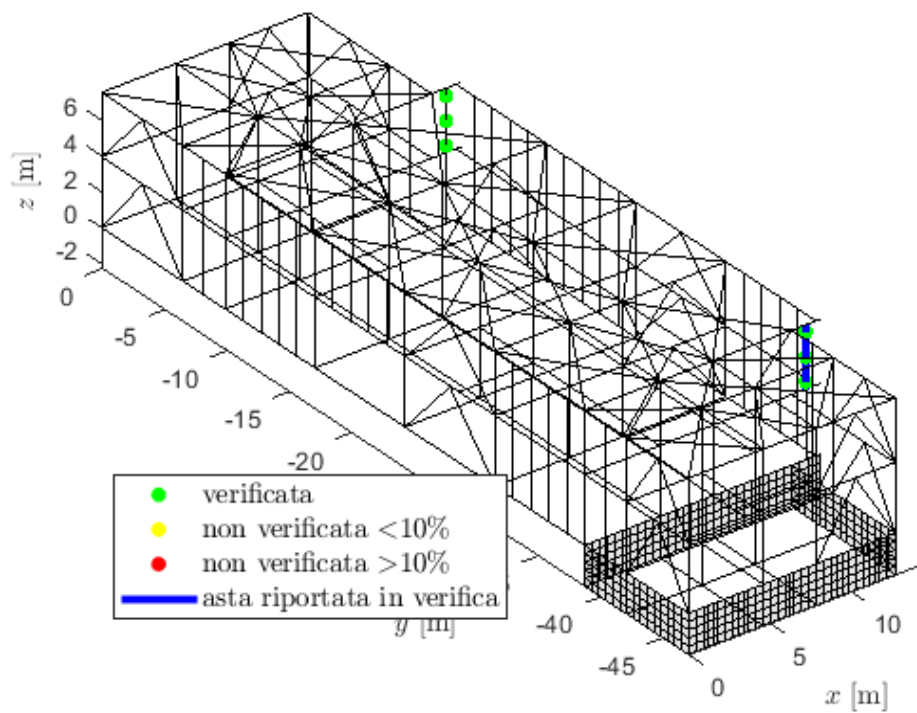
		min	max
N	[kN]	-125.6	-109.6
M <sub>x</sub>	[kNm]	-31.5	85.6
M <sub>y</sub>	[kNm]	-20.2	19.0
V <sub>x</sub>	[kN]	-7.3	8.4
V <sub>y</sub>	[kN]	-58.6	-18.3



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.853$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

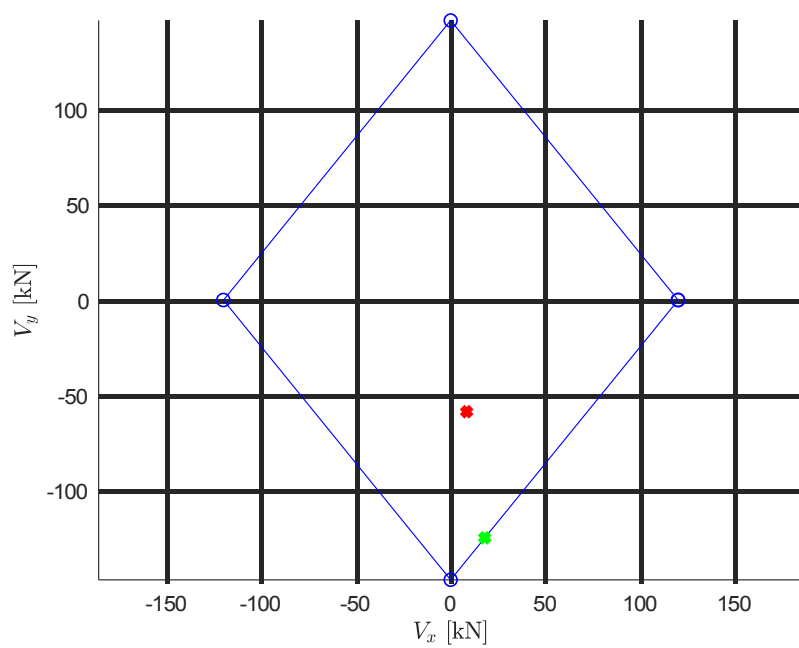


**Tabella 63.62. Elemento più sollecitato**

Element o	[n°]	697
Ascissa	[m]	0.40

Tabella 64.63. Sollecitazioni SLV

		min	max
N	[kN]	-94.1	-78.2
M <sub>x</sub>	[kNm]	-102.1	-53.7
M <sub>y</sub>	[kNm]	-6.1	9.2
V <sub>x</sub>	[kN]	-7.3	8.4
V <sub>y</sub>	[kN]	-58.6	-18.3

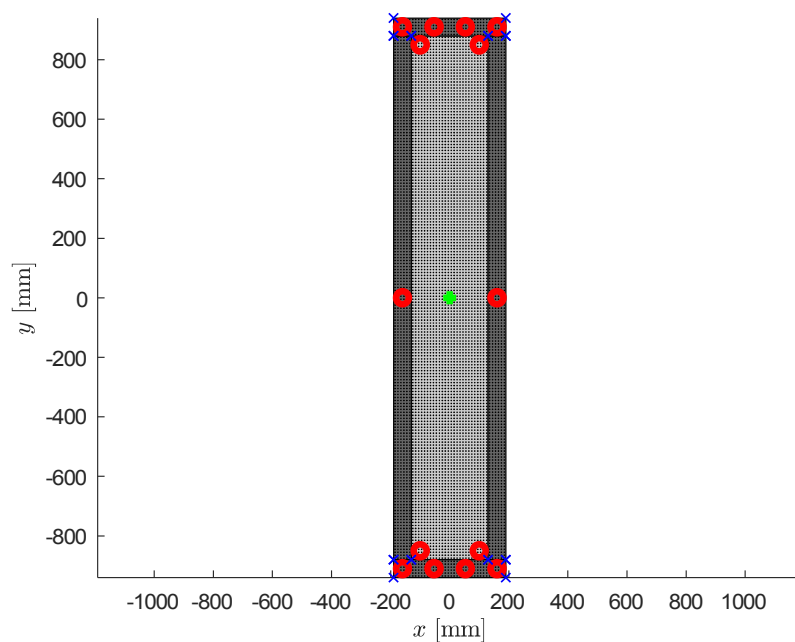


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.469$$

SLU a taglio verificati

# "setto incamiciato"

## Sezione



**Tabella 65.64. Materiali**

Res.Cls 1	Rcm	[MPa	12
Res.Cls 2	Rcm	[MPa	38
Res. barre longitudinali	fykl	[MPa	230
Res. staffe	fyks	[MPa	430
Fattore di confidenza	FC	-	1.00

**Tabella 66.65. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-130	130
Dimensione	max	[mm]	-880	880
Rett. 2 (Cls 2)				
Dimensione	min	[mm]	-190	-130
Dimensione	max	[mm]	-880	880
Rett. 3 (Cls 2)				
Dimensione	min	[mm]	130	190
Dimensione	max	[mm]	-880	880
Rett. 4 (Cls 2)				
Dimensione	min	[mm]	-190	190

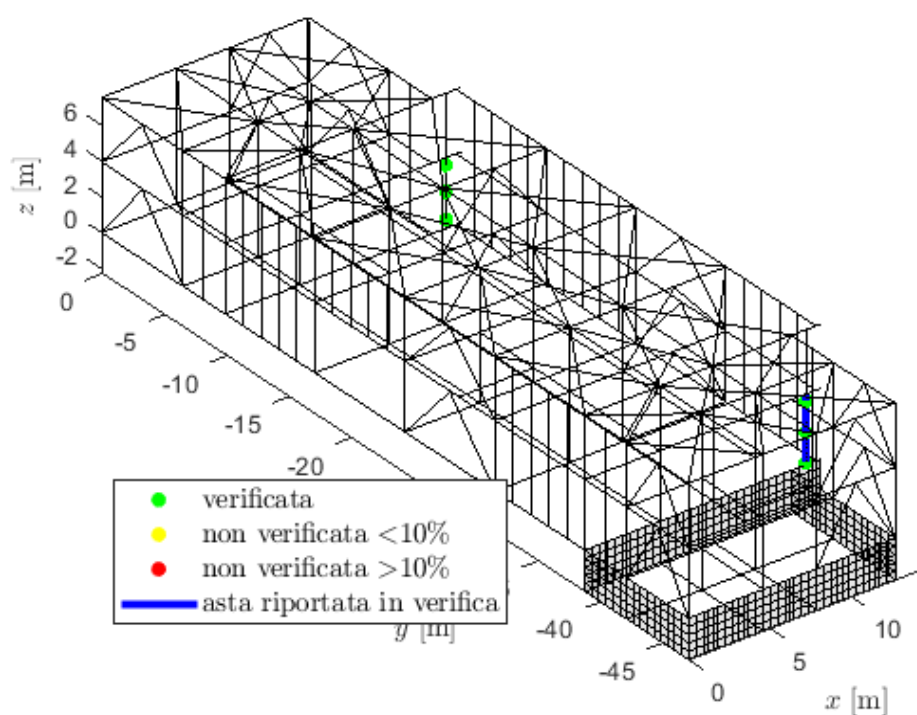
Dimensione	max	[mm]	-940	-880
Rett. 5 (Cls 2)				
Dimensione	min	[mm]	-190	190
Dimensione	max	[mm]	880	940
Largh. anima	bw	[mm]	260	1760
Altezza utile	d	[mm]	230	1730
Area staffe	As	[mm <sup>2</sup> ]	101	101
Passo staffe	s	[mm]	250	250
Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0
Passo f.pieg.	sfp	[mm]	1	1

Tabella 67.66. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	153.94
2	230	1730	153.94
3	30	1730	153.94
4	230	30	153.94
5	-30	-30	475.75
6	77	-30	475.75
7	183	-30	475.75
8	290	-30	475.75
9	-30	1790	475.75
10	77	1790	475.75
11	183	1790	475.75
12	290	1790	475.75
13	-30	880	475.75
14	290	880	475.75



## Verifica SLV (peggiorativa per M)

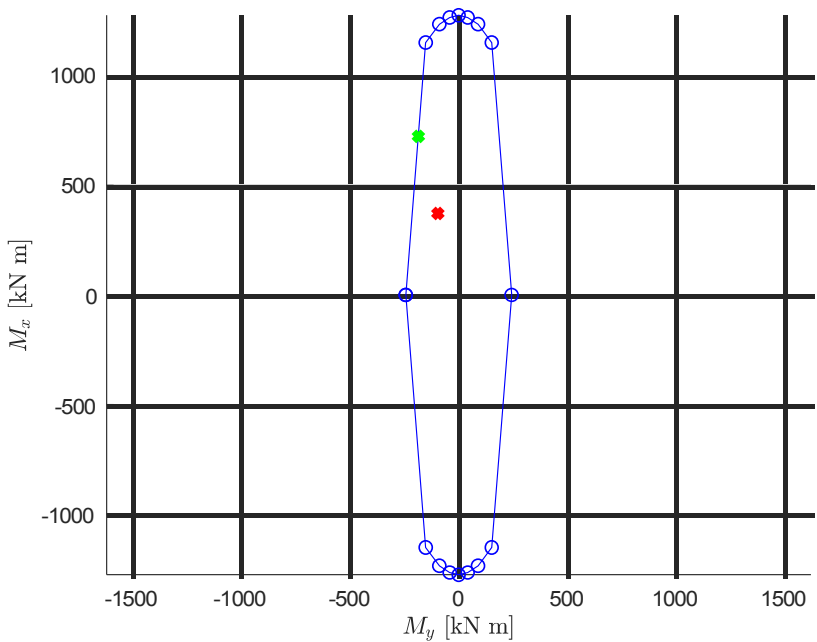


**Tabella 68.67. Elemento più sollecitato**

Elemento	[n°]	698
Ascissa	[m]	3.83

**Tabella 69.68. Sollecitazioni SLV**

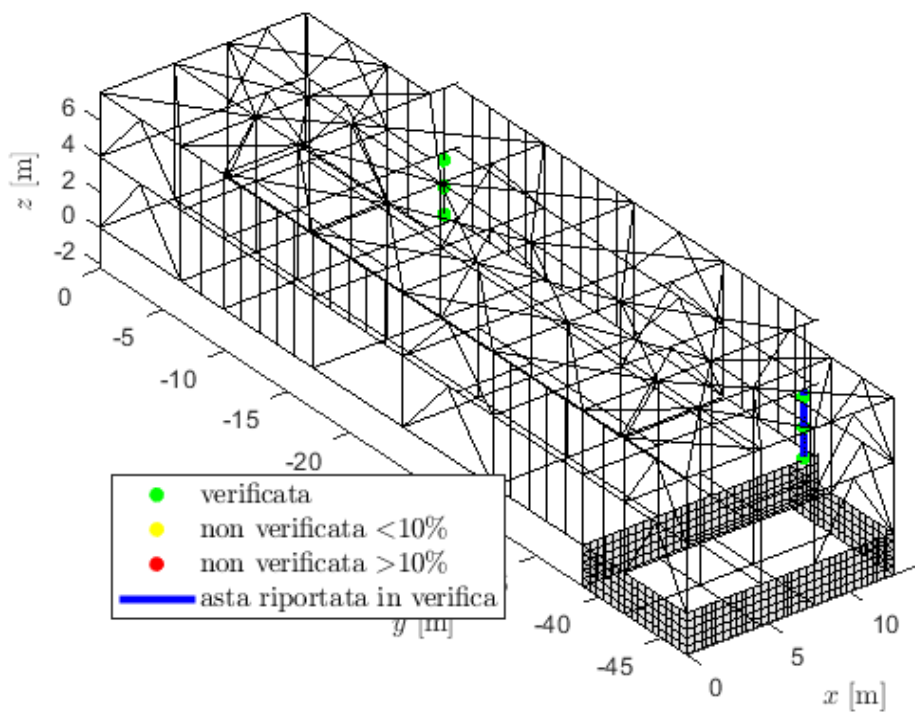
		min	max
N	[kN]	-388.5	-338.6
M <sub>x</sub>	[kNm]	-304.5	372.5
M <sub>y</sub>	[kNm]	-95.7	82.6
V <sub>x</sub>	[kN]	-29.4	33.2
V <sub>y</sub>	[kN]	-153.9	59.7



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.515$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

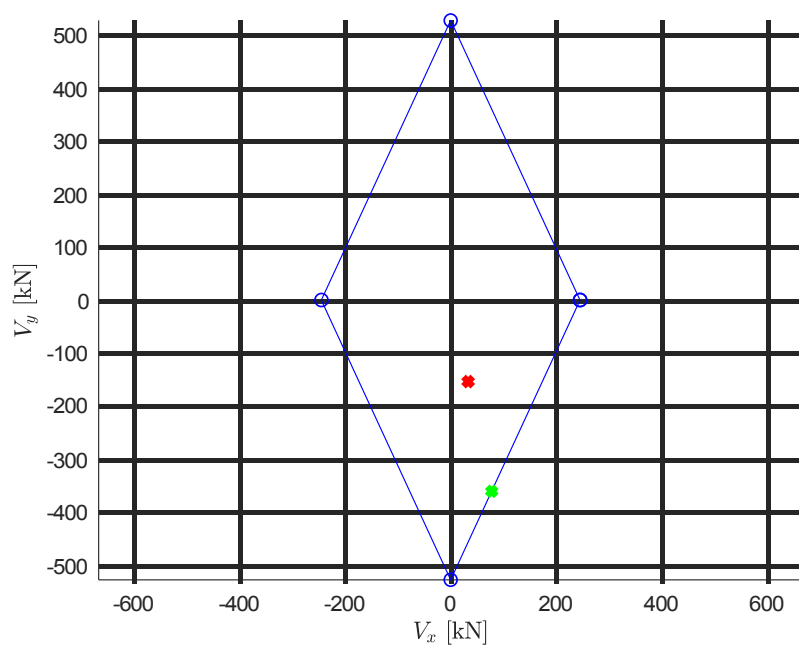


**Tabella 70.69. Elemento più sollecitato**

Element o	[n°]	698
Ascissa	[m]	0.40

Tabella 71.70. Sollecitazioni SLV

		min	max
N	[kN]	-328.4	-278.5
M <sub>x</sub>	[kNm]	-176.5	-72.7
M <sub>y</sub>	[kNm]	-20.6	20.5
V <sub>x</sub>	[kN]	-29.4	33.2
V <sub>y</sub>	[kN]	-153.9	59.7

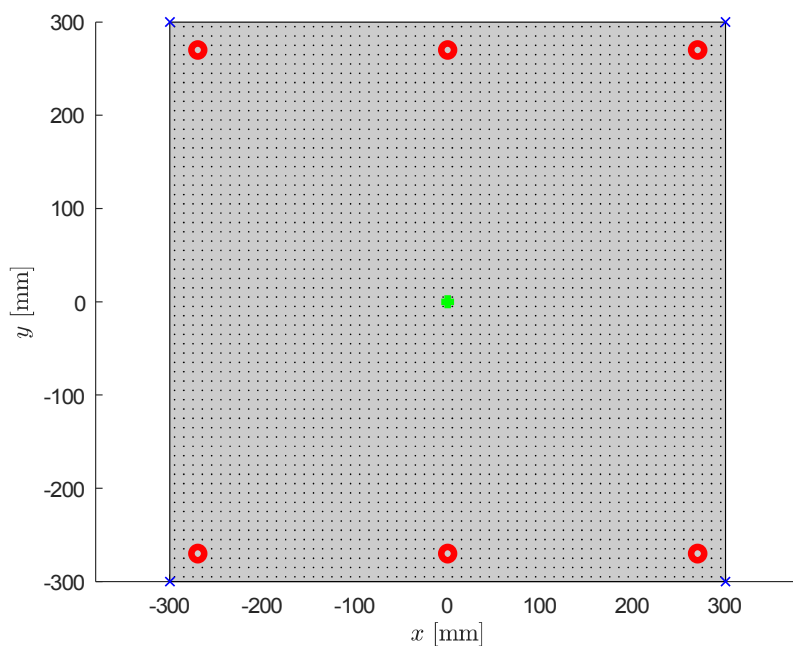


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.427$$

SLU a taglio verificati

## "20- Rettangolare b=60 h=60 fondazione"

### Sezione



**Tabella 72.71. Materiali**

Res. Cls 1	Rcm	[MPa ]	12
Res. Cls 2	Rcm	[MPa ]	0
Res. barre longitudinali	fykl	[MPa ]	230
Res. staffe	fyks	[MPa ]	230
Fattore di confidenza	FC	-	1.35

**Tabella 73.72. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-300	300
Dimensione	max	[mm]	-300	300
Largh. anima	bw	[mm]	600	600
Altezza utile	d	[mm]	570	570
Area staffe	As	[mm2 ]	101	101
Passo staffe	s	[mm]	250	250
Area f.pieg.	Asfp	[mm2 ]	0	0

Passo f.pieg.	sfp	[mm]	300	200
---------------	-----	------	-----	-----

Tabella 74.73. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	254.47
2	300	30	254.47
3	570	30	254.47
4	30	570	254.47
5	300	570	254.47
6	570	570	254.47

## 222275.2. Verifica SLV (peggiorativa per M)

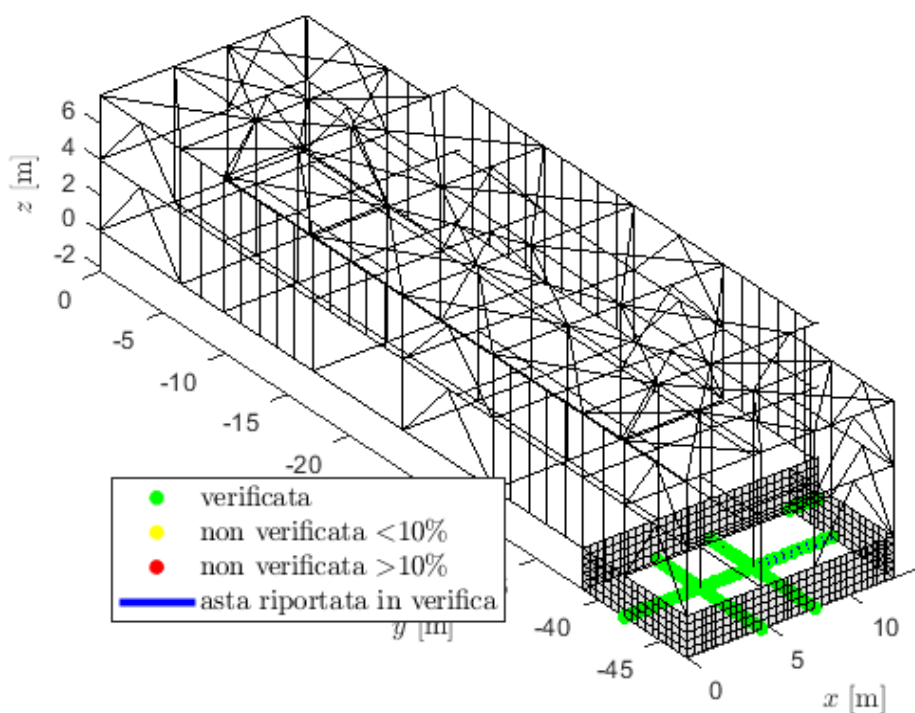


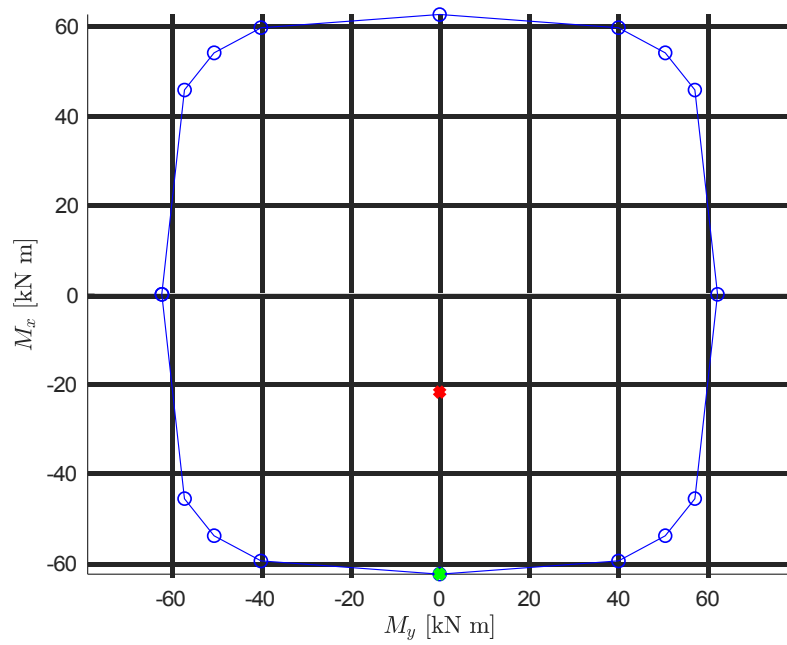
Tabella 76.74. Elemento più sollecitato

Elemento	[n°]	367
Ascissa	[m]	4.84

Tabella 77.75. Sollecitazioni SLV

		min	max
N	[kN]	0.0	0.0
M <sub>x</sub>	[kNm]	-21.8	-19.4

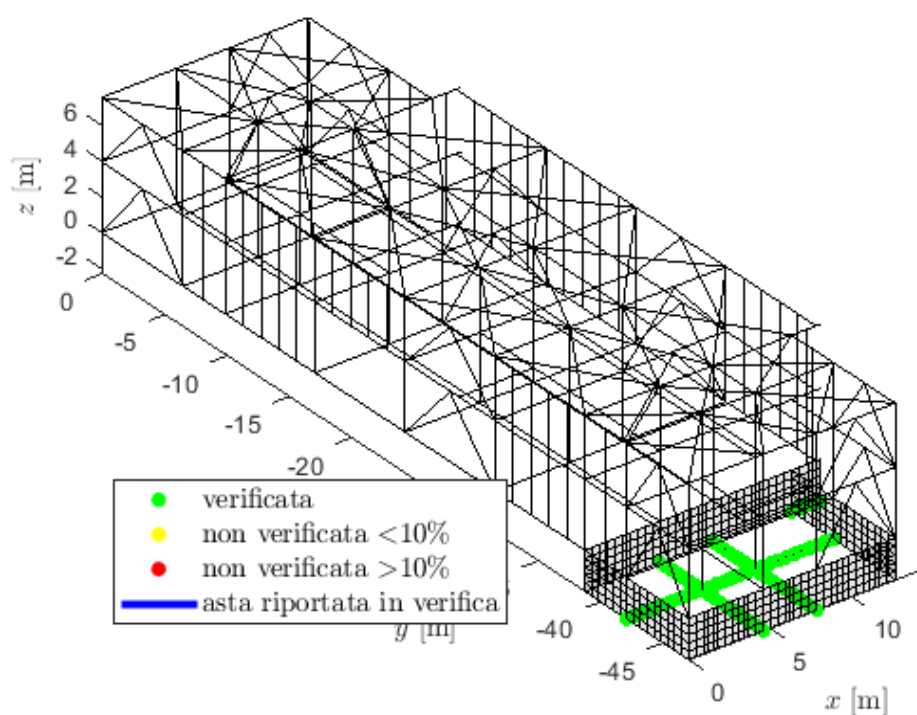
M <sub>y</sub>	[kNm]	0.0	0.0
V <sub>x</sub>	[kN]	-0.0	-0.0
V <sub>y</sub>	[kN]	21.7	22.8



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.349$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

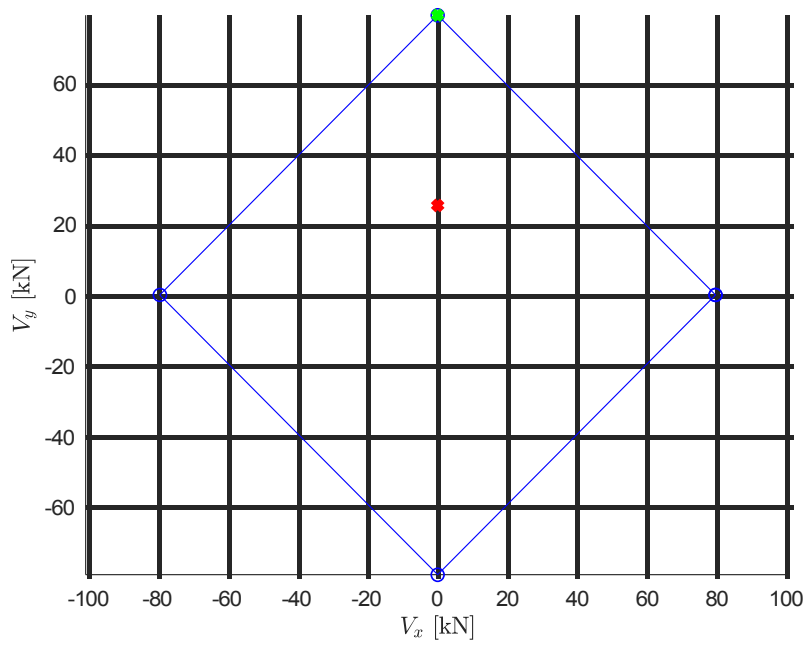


**Tabella 78.76. Elemento più sollecitato**

Elemento	[n°]	769
Ascissa	[m]	0.50

**Tabella 79.77. Sollecitazioni SLV**

		min	max
N	[kN]	0.0	0.0
Mx	[kNm]	-2.1	-0.7
My	[kNm]	-0.0	0.0
Vx	[kN]	0.0	0.1
Vy	[kN]	11.2	25.5



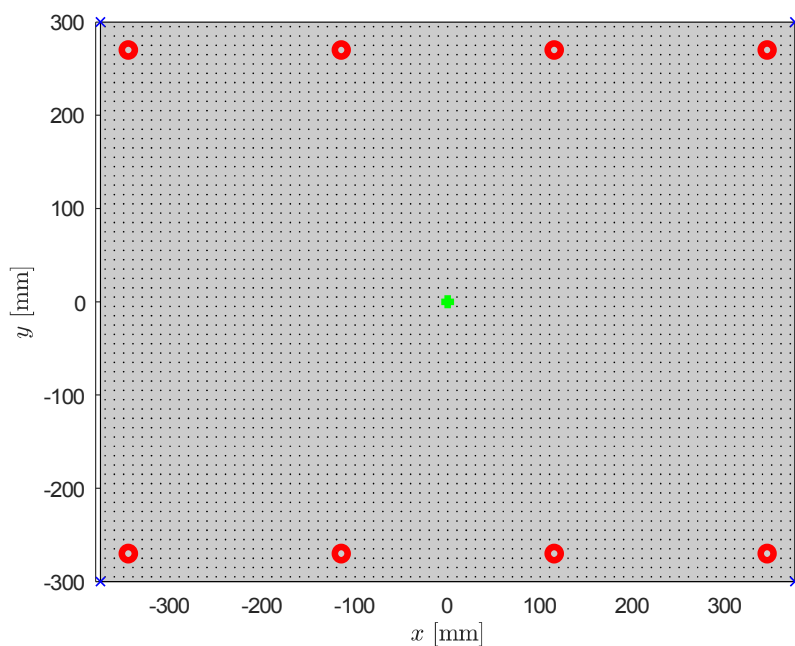
$$\max(|V_{Ed}|/|V_{Rd}|) = 0.320$$

SLU a taglio verificati



## "21- Rettangolare b=75 h=60 fondazione"

### Sezione



**Tabella 80.78. Materiali**

Res. Cls 1	Rcm	[MPa]	12
Res. Cls 2	Rcm	[MPa]	0
Res. barre longitudinali	fykl	[MPa]	230
Res. staffe	fyks	[MPa]	230
Fattore di confidenza	FC	-	1.35

**Tabella 81.79. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-375	375
Dimensione	max	[mm]	-300	300
Largh. anima	bw	[mm]	750	600
Altezza utile	d	[mm]	570	720
Area staffe	As	[mm <sup>2</sup> ]	101	101
Passo staffe	s	[mm]	250	250
Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0

Passo f.pieg.	sfp	[mm]	300	200
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Tabella 82.80. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm2]
1	30	30	201.06
2	260	30	201.06
3	490	30	201.06
4	720	30	201.06
5	30	570	201.06
6	260	570	201.06
7	490	570	201.06
8	720	570	201.06

## Verifica SLV (peggiorativa per M)

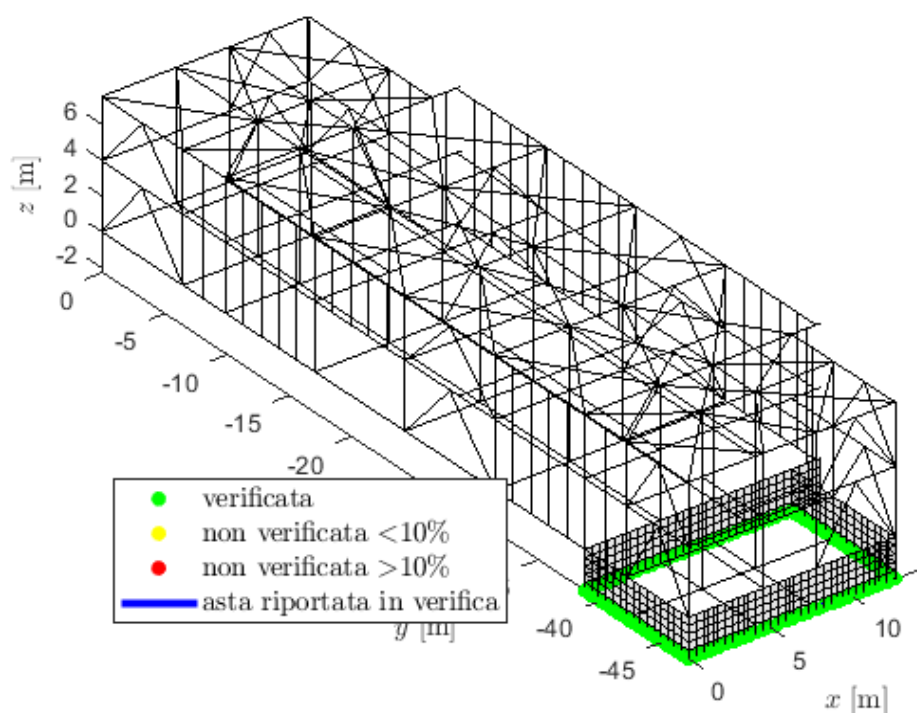


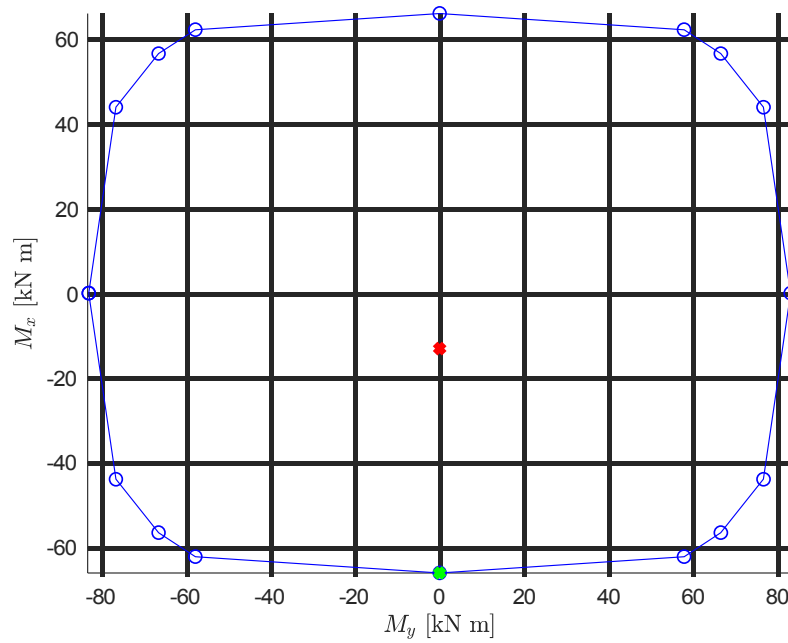
Tabella 83.81. Elemento più sollecitato

Elemento	[n°]	726
Ascissa	[m]	0.48

Tabella 84.82. Sollecitazioni SLV

		min	max
N	[kN]	0.0	0.0

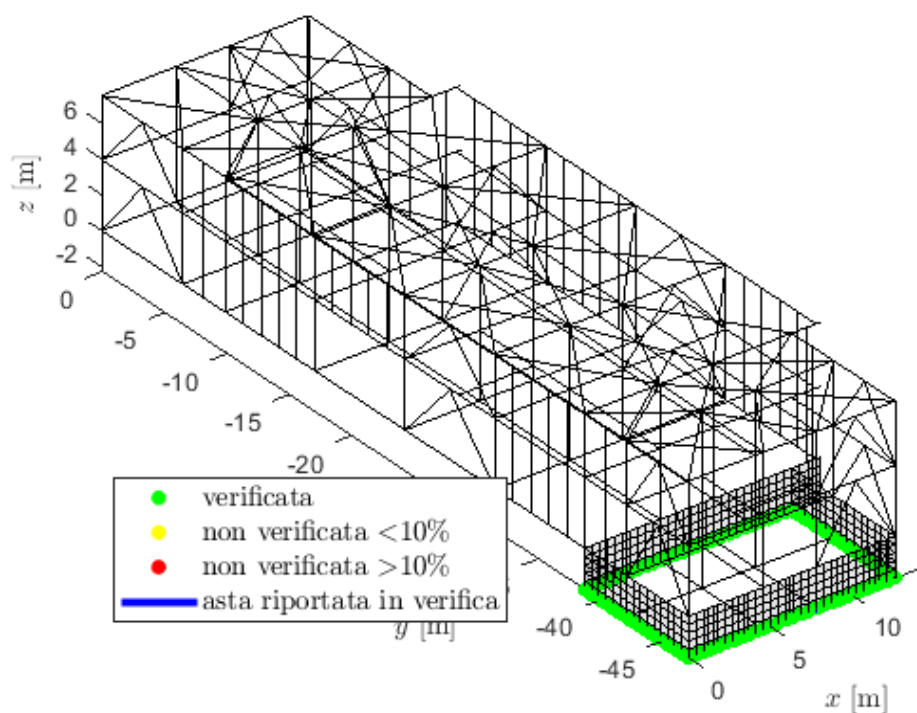
M <sub>x</sub>	[kNm]	-13.1	-11.3
M <sub>y</sub>	[kNm]	-0.0	-0.0
V <sub>x</sub>	[kN]	-0.0	-0.0
V <sub>y</sub>	[kN]	27.6	30.0



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.198$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

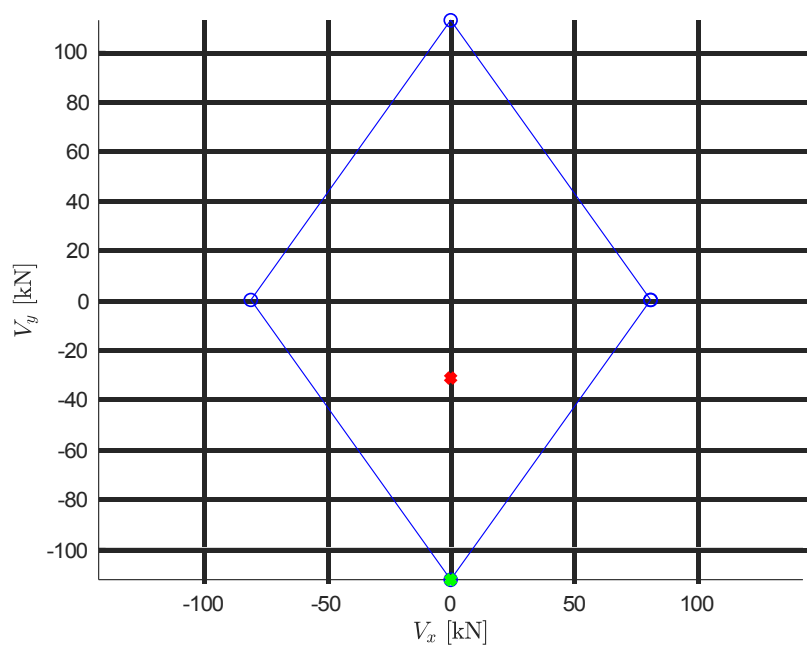


**Tabella 85.83. Elemento più sollecitato**

Elemento	[n°]	727
Ascissa	[m]	0.00

**Tabella 86.84. Sollecitazioni SLV**

		min	max
N	[kN]	0.0	0.0
M <sub>x</sub>	[kNm]	-12.5	-11.5
M <sub>y</sub>	[kNm]	-0.0	-0.0
V <sub>x</sub>	[kN]	0.0	0.0
V <sub>y</sub>	[kN]	-31.4	-29.0

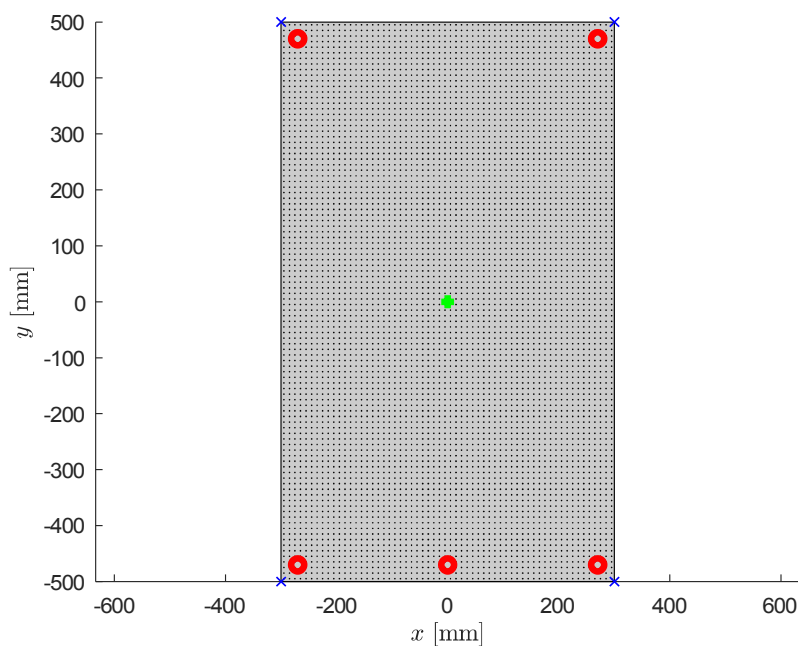


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.279$$

SLU a taglio verificati

# "1 - Rettangolare b=60 h=100 fondazione"

## Sezione



**Tabella 87.85. Materiali**

Res. Cls 1	Rcm	[MPa]	12
Res. Cls 2	Rcm	[MPa]	0
Res. barre longitudinali	fykl	[MPa]	230
Res. staffe	fyks	[MPa]	230
Fattore di confidenza	FC	-	1.35

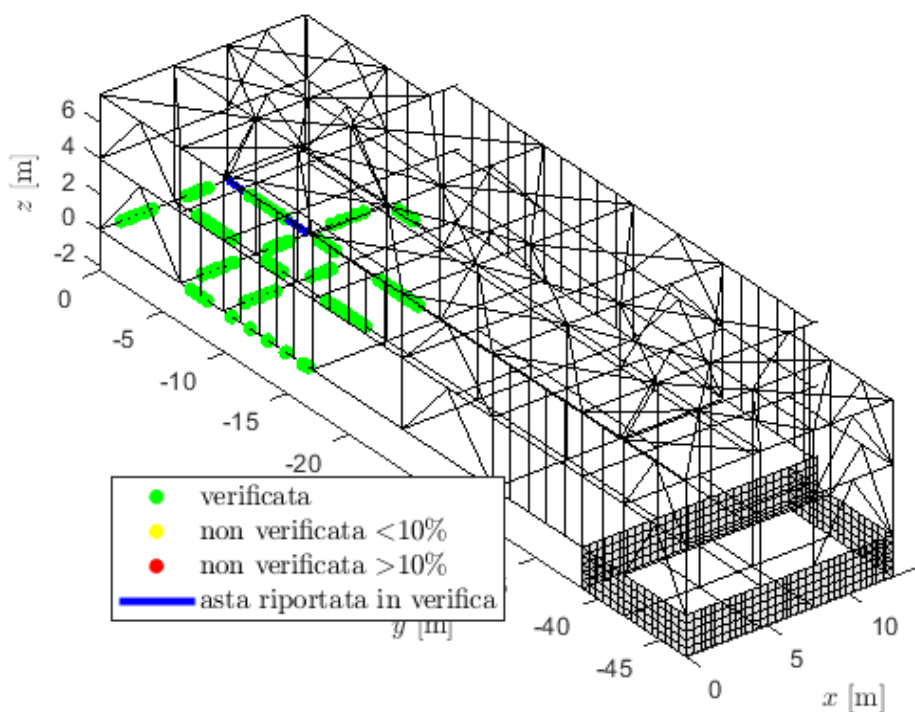
**Tabella 88.86. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-300	300
Dimensione	max	[mm]	-500	500
Largh. anima	bw	[mm]	1000	600
Altezza utile	d	[mm]	570	970
Area staffe	As	[mm <sup>2</sup> ]	101	101
Passo staffe	s	[mm]	250	250
Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0
Passo f.pieg.	sfp	[mm]	300	200

**Tabella 89.87. Armature**

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	254.47
2	570	30	254.47
3	30	970	254.47
4	300	30	254.47
5	570	970	254.47

## Verifica SLV (peggiorativa per M)



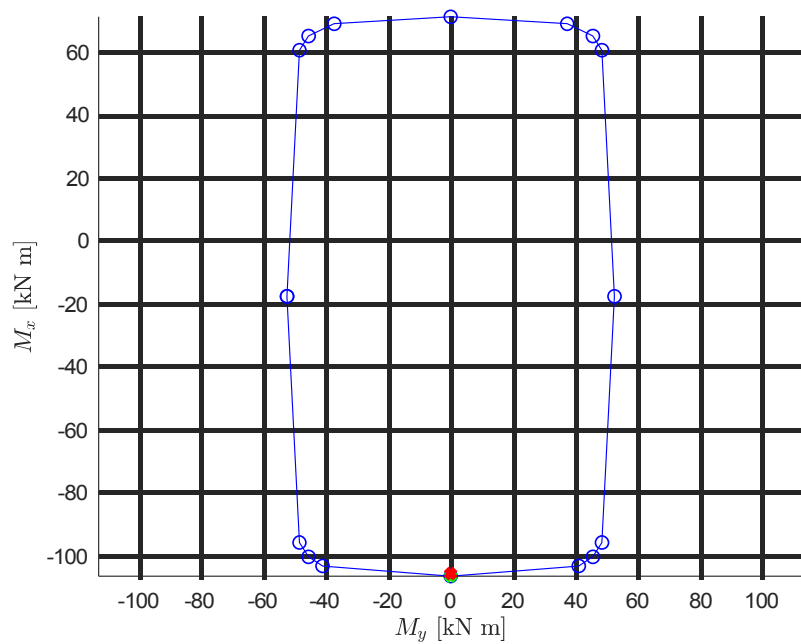
**Tabella 90.88. Elemento più sollecitato**

Elemento	[n°]	280
Ascissa	[m]	2.79

**Tabella 91.89. Sollecitazioni SLV**

		min	max
N	[kN]	-1.9	1.8
M <sub>x</sub>	[kNm]	-106.0	-78.8
M <sub>y</sub>	[kNm]	-1.2	1.3
V <sub>x</sub>	[kN]	-0.7	0.6

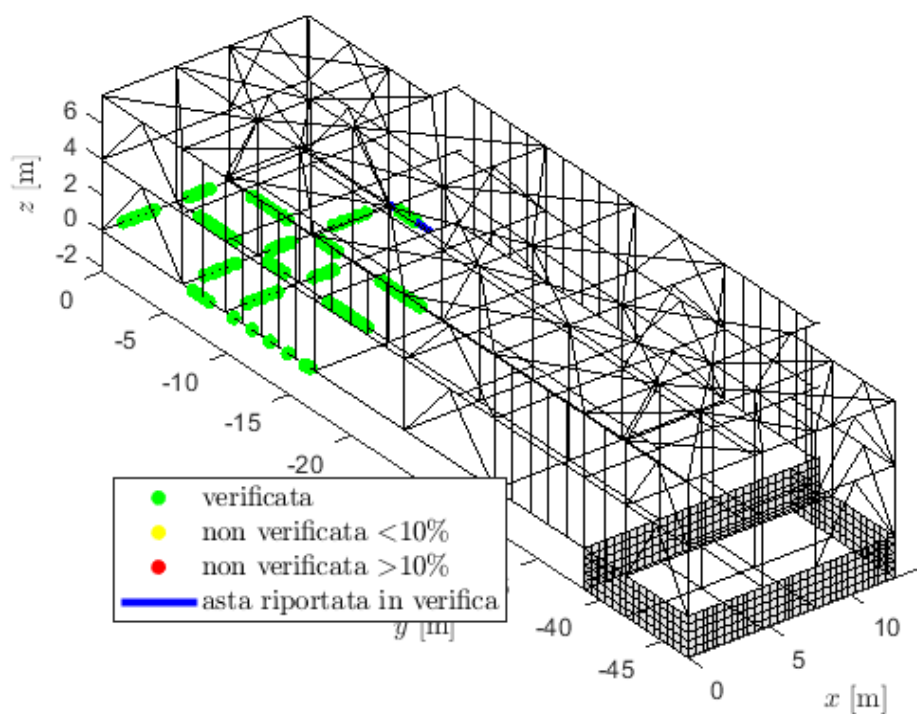
$V_y$	[kN]	14.1	27.6
-------	------	------	------



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.993$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)



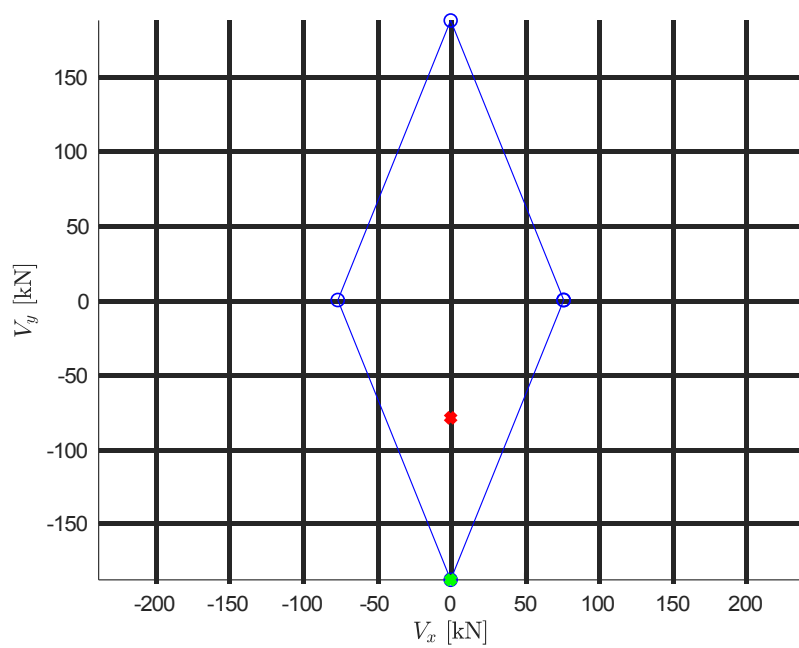


**Tabella 92.90. Elemento più sollecitato**

Elemento	[n°]	423
Ascissa	[m]	2.12

**Tabella 93.91. Sollecitazioni SLV**

		min	max
N	[kN]	-0.9	0.8
Mx	[kNm]	14.4	52.1
My	[kNm]	-0.0	0.0
Vx	[kN]	-0.3	0.3
Vy	[kN]	-79.1	3.2

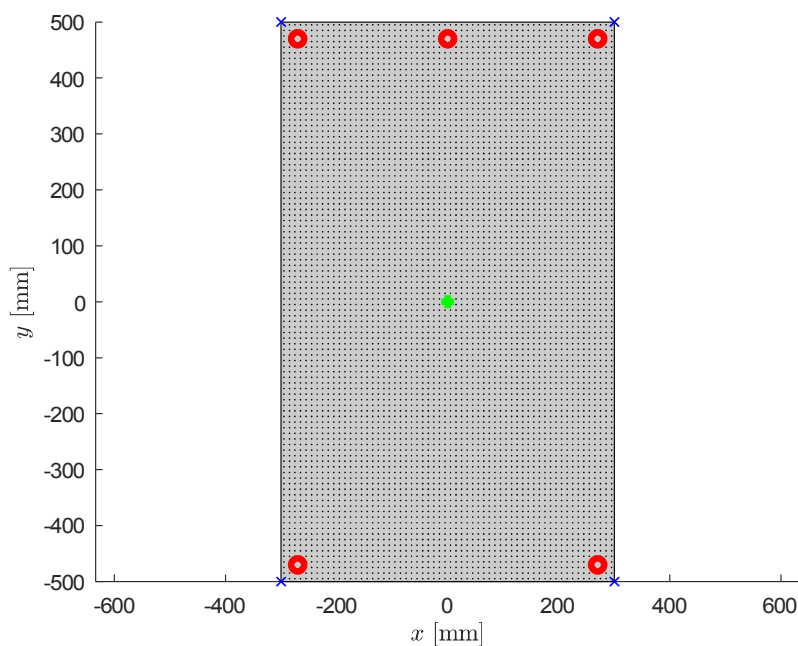


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.421$$

SLU a taglio verificati

# "1 - Rettangolare b=60 h=100 fondazione"

## Sezione



**Tabella 94.92. Materiali**

Res. Cls 1	Rcm	[MPa]	12
Res. Cls 2	Rcm	[MPa]	0
Res. barre longitudinali	fykl	[MPa]	230
Res. staffe	fyks	[MPa]	230
Fattore di confidenza	FC	-	1.35

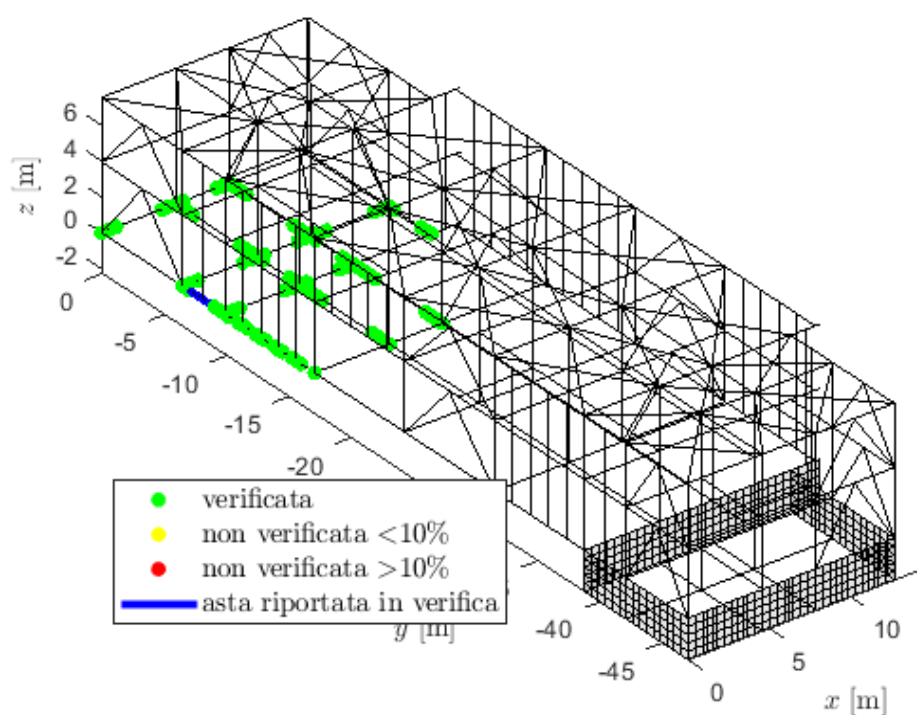
**Tabella 95.93. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-300	300
Dimensione	max	[mm]	-500	500
Largh. anima	bw	[mm]	1000	600
Altezza utile	d	[mm]	570	970
Area staffe	As	[mm <sup>2</sup> ]	101	101
Passo staffe	s	[mm]	250	250
Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0
Passo f.pieg.	sfp	[mm]	300	200

**Tabella 96.94. Armature**

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	254.47
2	570	30	254.47
3	30	970	254.47
4	300	970	254.47
5	570	970	254.47

## Verifica SLV (peggiorativa per M)



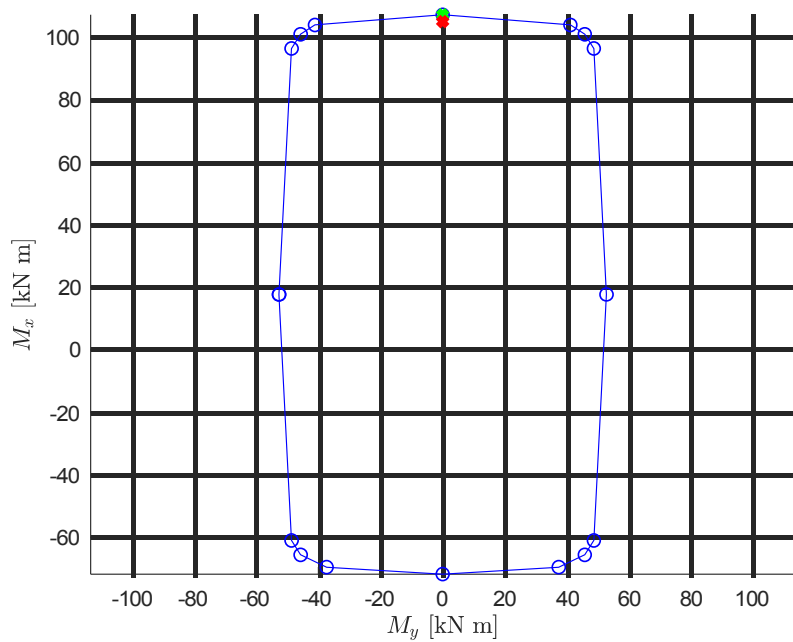
**Tabella 97.95. Elemento più sollecitato**

Elemento	[n°]	356
Ascissa	[m]	0.00

**Tabella 98.96. Sollecitazioni SLV**

		min	max
N	[kN]	-0.9	0.8
M <sub>x</sub>	[kNm]	-51.2	105.0
M <sub>y</sub>	[kNm]	-0.1	0.1
V <sub>x</sub>	[kN]	-0.3	0.3

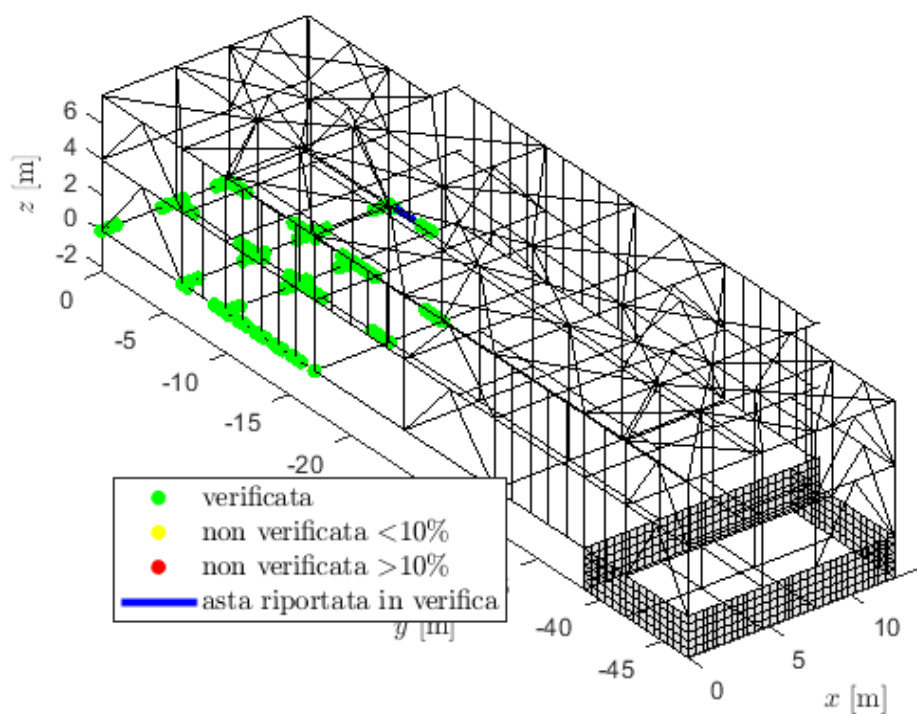
$V_y$	[kN]	-17.4	52.3
-------	------	-------	------



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.979$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

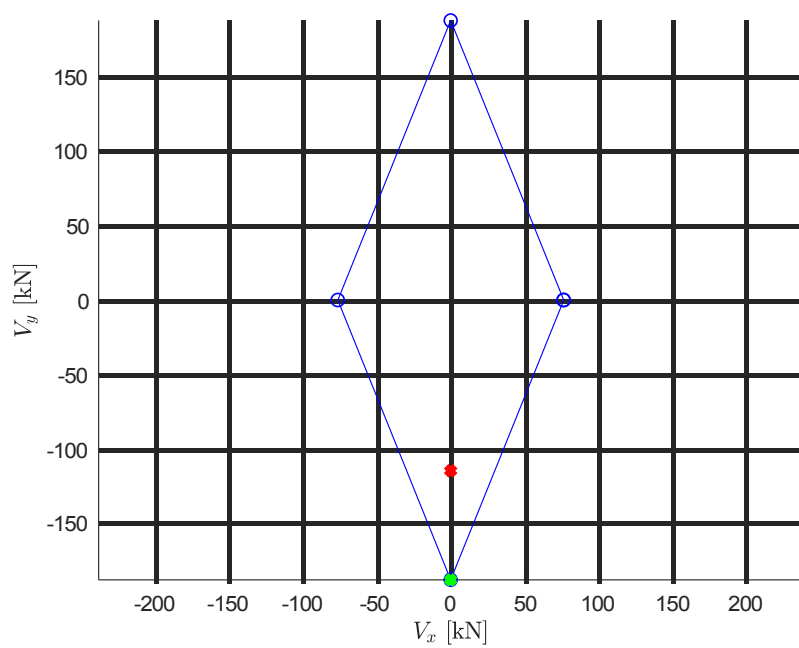


**Tabella 99.97. Elemento più sollecitato**

Elemento	[n°]	423
Ascissa	[m]	2.96

**Tabella 100.98. Sollecitazioni SLV**

		min	max
N	[kN]	-0.8	0.9
M <sub>x</sub>	[kNm]	35.1	126.1
M <sub>y</sub>	[kNm]	-0.0	0.0
V <sub>x</sub>	[kN]	-0.3	0.3
V <sub>y</sub>	[kN]	-114.7	-34.2

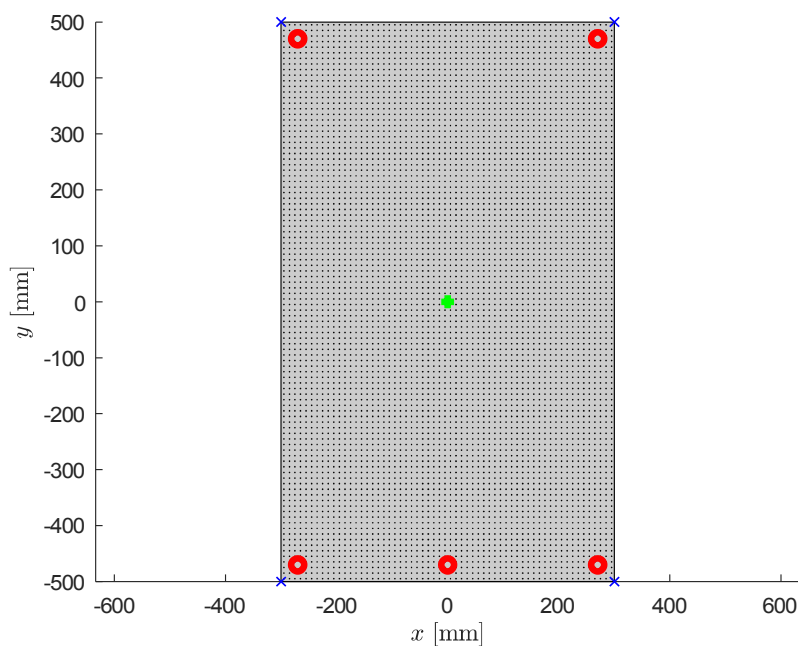


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.610$$

SLU a taglio verificati

# "1 - Rettangolare b=60 h=100 fondazione (5+2/2+4)"

## Sezione



**Tabella 101.99. Materiali**

Res. Cls 1	Rcm	[MPa]	12
Res. Cls 2	Rcm	[MPa]	0
Res. barre longitudinali	fykl	[MPa]	230
Res. staffe	fyks	[MPa]	230
Fattore di confidenza	FC	-	1.35

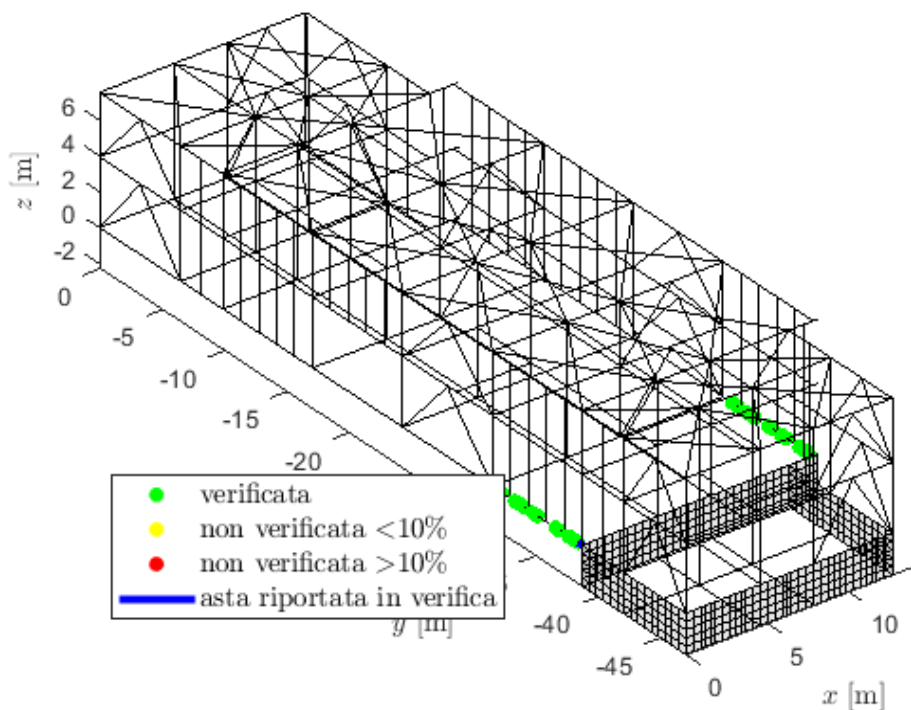
**Tabella 102.100. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-300	300
Dimensione	max	[mm]	-500	500
Largh. anima	bw	[mm]	1000	600
Altezza utile	d	[mm]	570	970
Area staffe	As	[mm <sup>2</sup> ]	101	101
Passo staffe	s	[mm]	250	250
Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0
Passo f.pieg.	sfp	[mm]	300	200

**Tabella 103.101. Armature**

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	254.47
2	570	30	254.47
3	30	970	254.47
4	300	30	763.41
5	570	970	254.47

## Verifica SLV (peggiorativa per M)



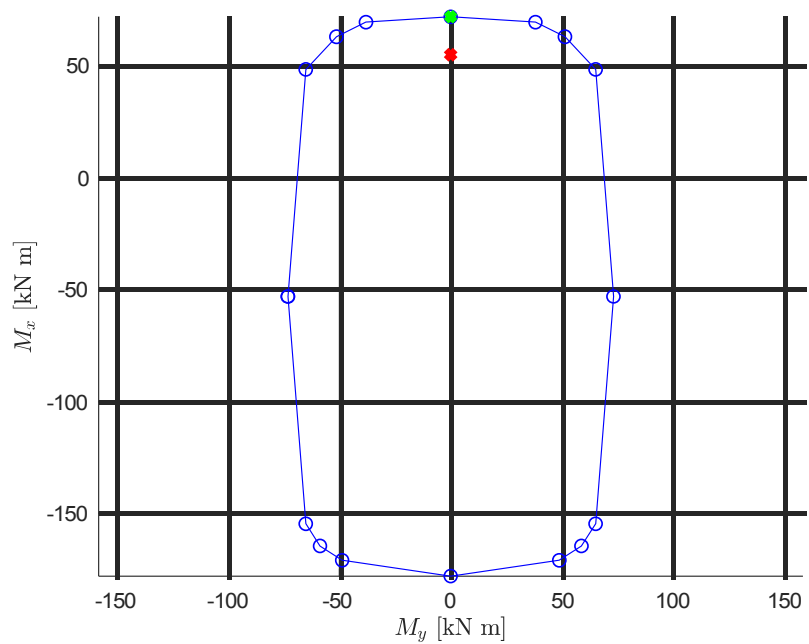
**Tabella 104.102. Elemento più sollecitato**

Elemento	[n°]	402
Ascissa	[m]	1.08

**Tabella 105.103. Sollecitazioni SLV**

		min	max
N	[kN]	-0.7	0.7
M <sub>x</sub>	[kNm]	14.3	54.8
M <sub>y</sub>	[kNm]	-0.0	0.0
V <sub>x</sub>	[kN]	-0.2	0.2

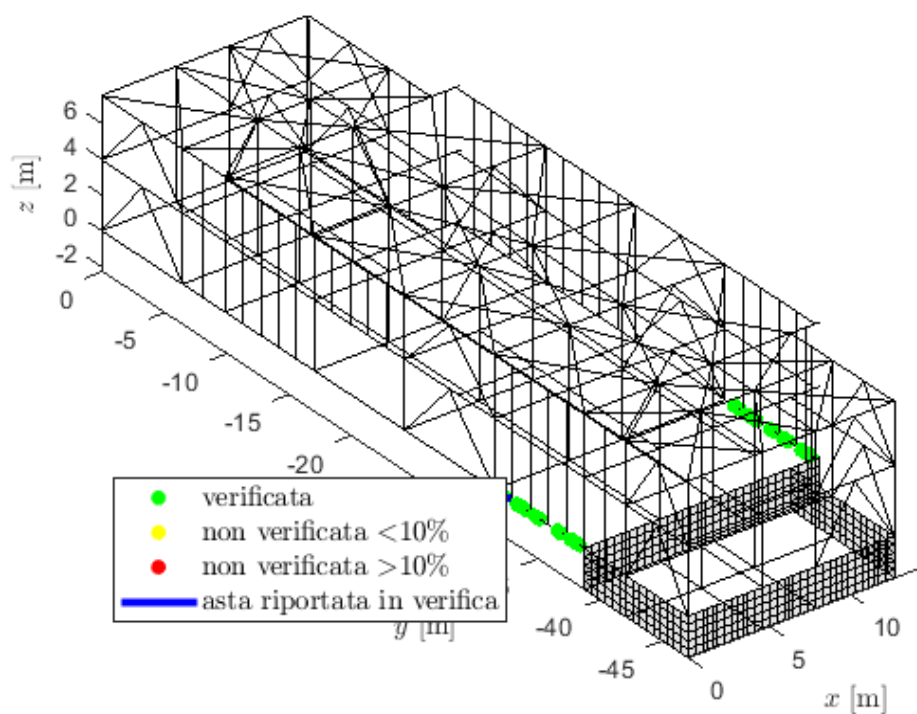
$V_y$	[kN]	-75.8	-67.0
-------	------	-------	-------



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.764$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)



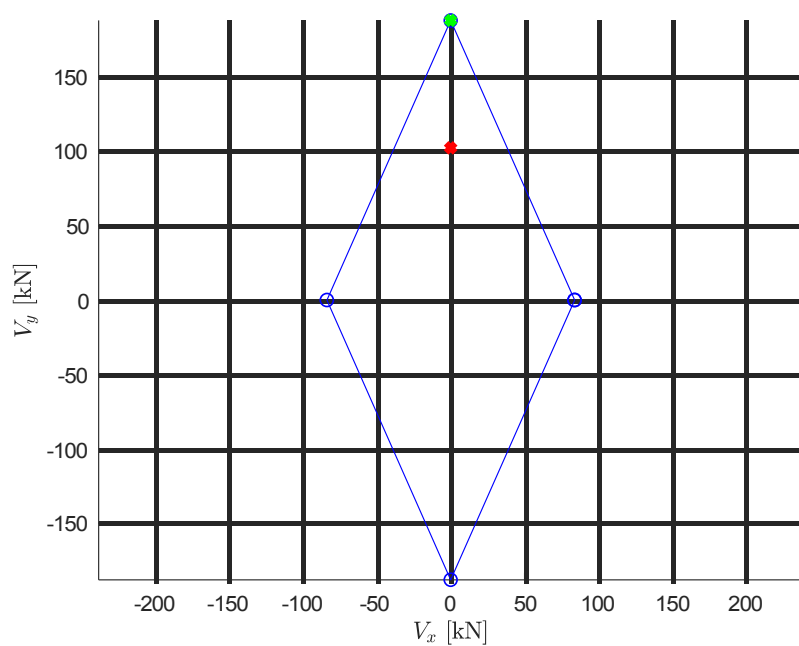


**Tabella 106.104. Elemento più sollecitato**

Elemento	[n°]	398
Ascissa	[m]	0.72

**Tabella 107.105. Sollecitazioni SLV**

		min	max
N	[kN]	-0.7	0.7
Mx	[kNm]	-8.9	72.7
My	[kNm]	-0.1	0.1
Vx	[kN]	-0.2	0.2
Vy	[kN]	56.4	102.3

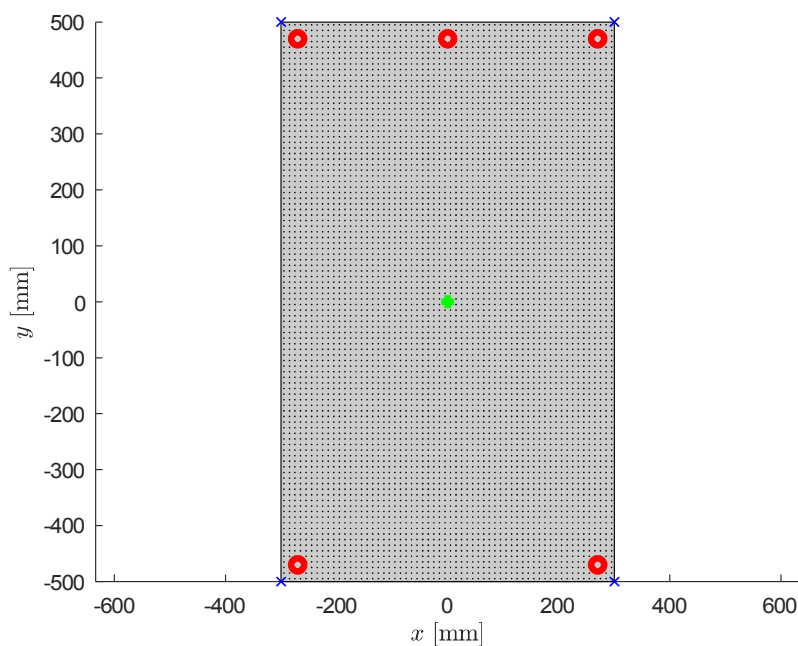


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.544$$

SLU a taglio verificati

# "1 - Rettangolare b=60 h=100 fondazione (5+2/2+4)"

## Sezione



**Tabella 108.106. Materiali**

Res. Cls 1	Rcm	[MPa]	12
Res. Cls 2	Rcm	[MPa]	0
Res. barre longitudinali	fykl	[MPa]	230
Res. staffe	fyks	[MPa]	230
Fattore di confidenza	FC	-	1.35

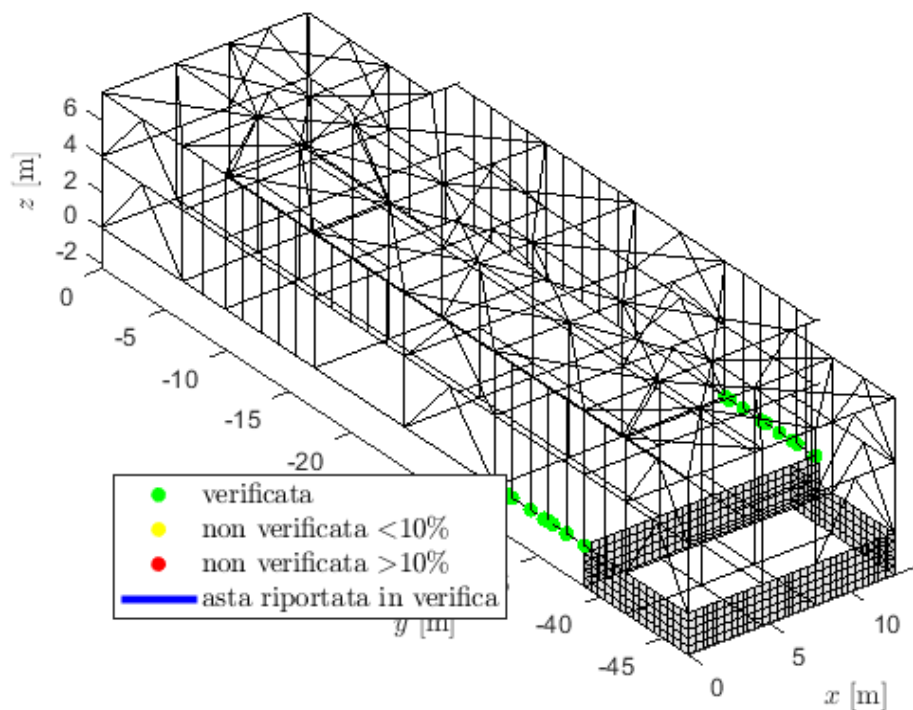
**Tabella 109.107. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-300	300
Dimensione	max	[mm]	-500	500
Largh. anima	bw	[mm]	1000	600
Altezza utile	d	[mm]	570	970
Area staffe	As	[mm <sup>2</sup> ]	101	101
Passo staffe	s	[mm]	250	250
Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0
Passo f.pieg.	sfp	[mm]	300	200

**Tabella 110.108. Armature**

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	254.47
2	570	30	254.47
3	30	970	254.47
4	300	970	508.94
5	570	970	254.47

## Verifica SLV (peggiorativa per M)



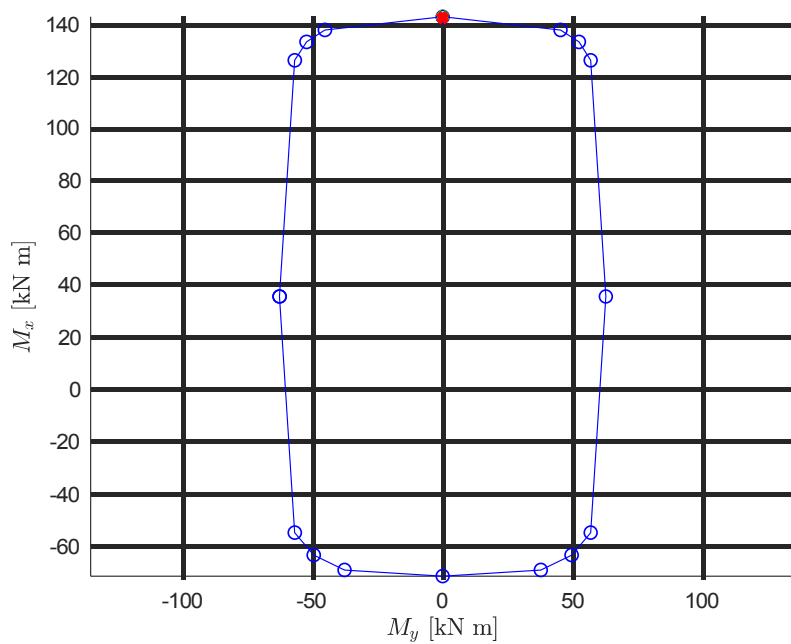
**Tabella 111.109. Elemento più sollecitato**

Elemento	[n°]	398
Ascissa	[m]	0.00

**Tabella 112.110. Sollecitazioni SLV**

		min	max
N	[kN]	-0.7	0.7
Mx	[kNm]	28.8	142.4
My	[kNm]	-0.1	0.1
Vx	[kN]	-0.2	0.2

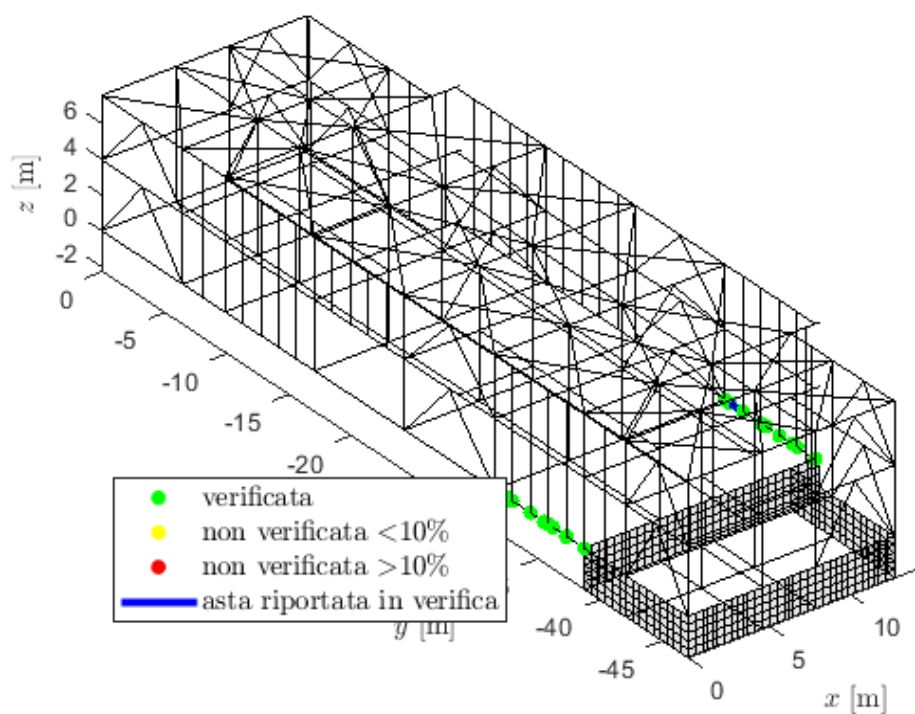
Vy	[kN]	45.8	91.7
----	------	------	------



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.998$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

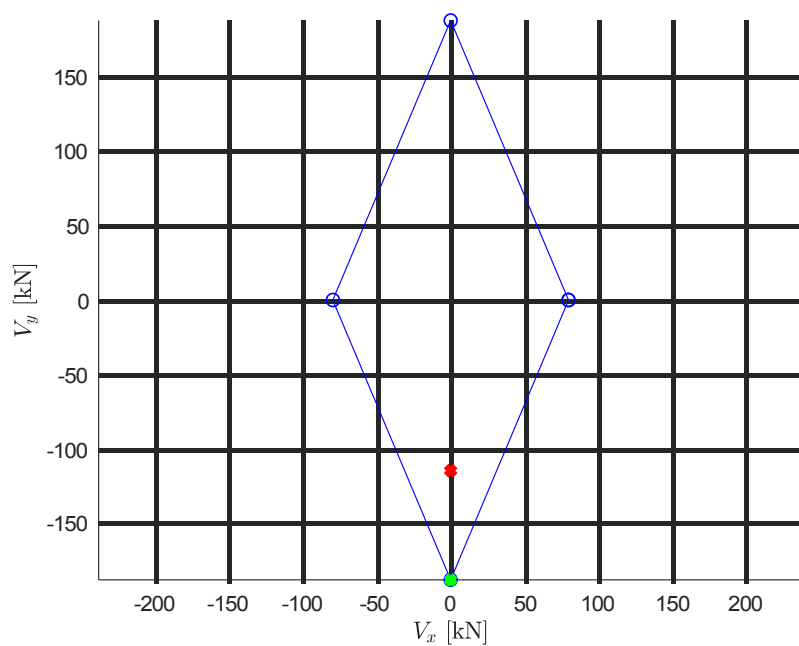


**Tabella 113.111. Elemento più sollecitato**

Elemento	[n°]	407
Ascissa	[m]	1.08

**Tabella 114.112. Sollecitazioni SLV**

		min	max
N	[kN]	-0.7	0.7
M <sub>x</sub>	[kNm]	23.5	147.8
M <sub>y</sub>	[kNm]	-0.0	0.0
V <sub>x</sub>	[kN]	-0.2	0.2
V <sub>y</sub>	[kN]	-114.6	-52.8

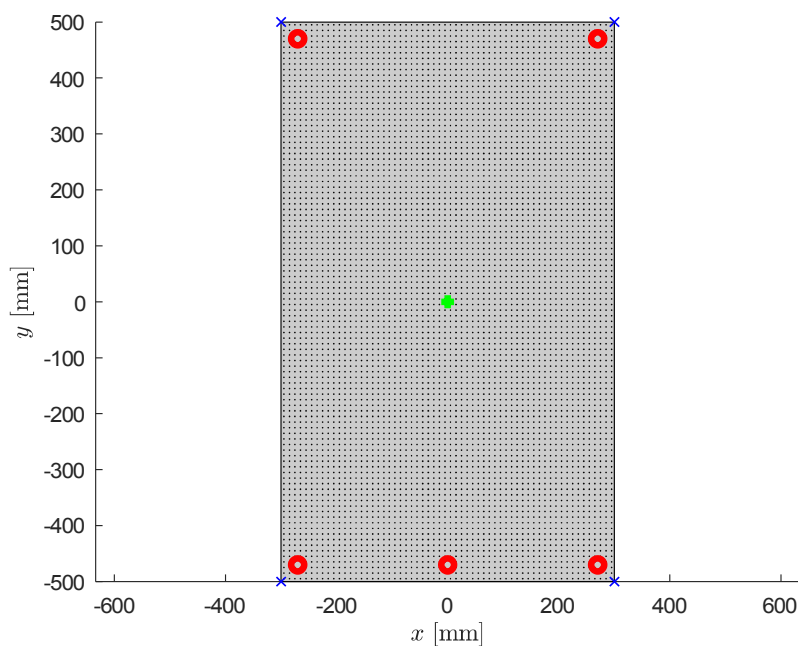


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.610$$

SLU a taglio verificati

# "1 - Rettangolare b=60 h=100 fondazione (5+2/2+3)"

## Sezione



**Tabella 115.113. Materiali**

Res. Cls 1	Rcm	[MPa]	12
Res. Cls 2	Rcm	[MPa]	0
Res. barre longitudinali	fykl	[MPa]	230
Res. staffe	fyks	[MPa]	230
Fattore di confidenza	FC	-	1.35

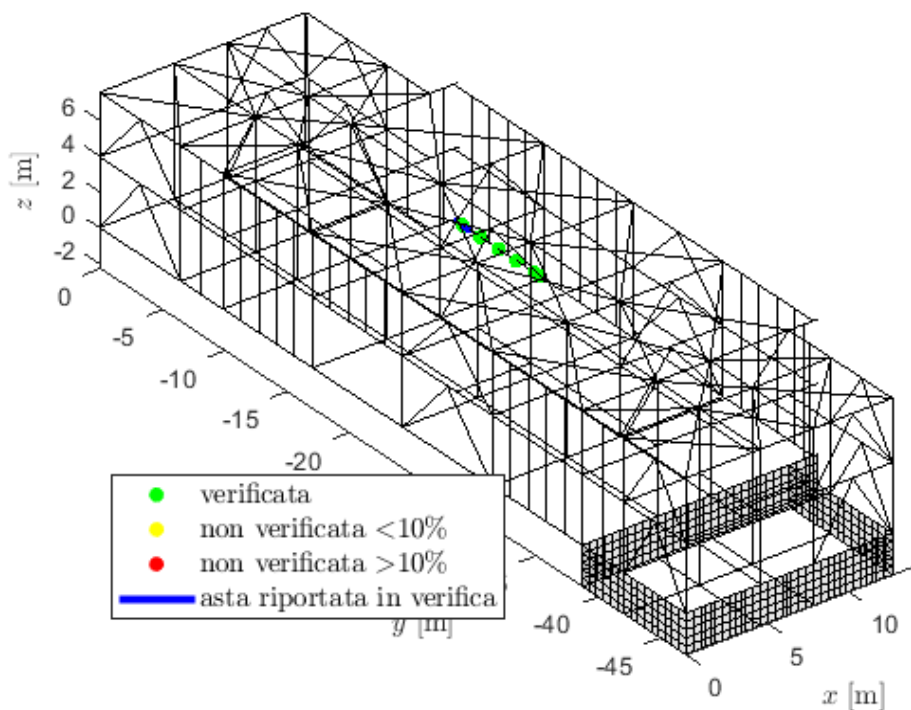
**Tabella 116.114. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-300	300
Dimensione	max	[mm]	-500	500
Largh. anima	bw	[mm]	1000	600
Altezza utile	d	[mm]	570	970
Area staffe	As	[mm <sup>2</sup> ]	101	101
Passo staffe	s	[mm]	250	250
Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0
Passo f.pieg.	sfp	[mm]	300	200

**Tabella 117.115. Armature**

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	254.47
2	570	30	254.47
3	30	970	254.47
4	300	30	763.41
5	570	970	254.47

## Verifica SLV (peggiorativa per M)



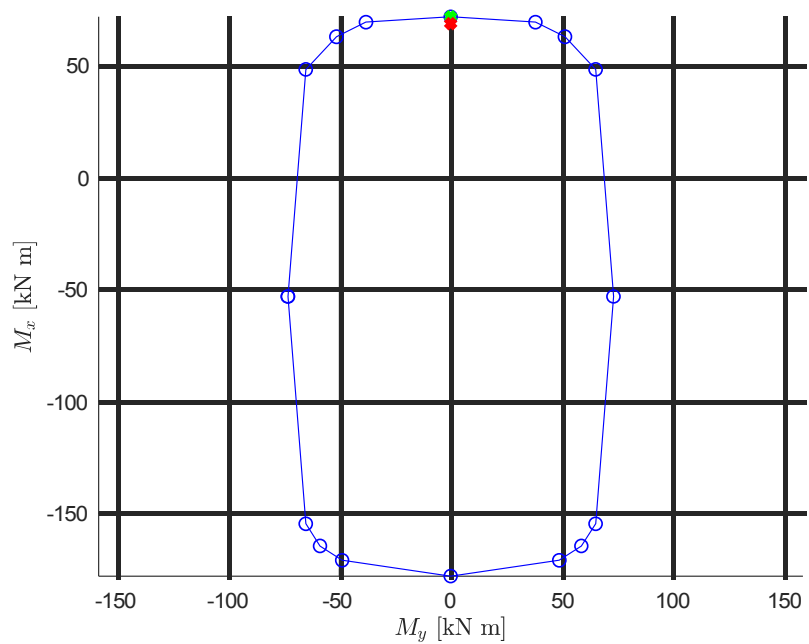
**Tabella 118.116. Elemento più sollecitato**

Elemento	[n°]	412
Ascissa	[m]	0.72

**Tabella 119.117. Sollecitazioni SLV**

		min	max
N	[kN]	-0.7	0.7
Mx	[kNm]	19.1	68.7
My	[kNm]	-0.1	0.1
Vx	[kN]	-0.3	0.3

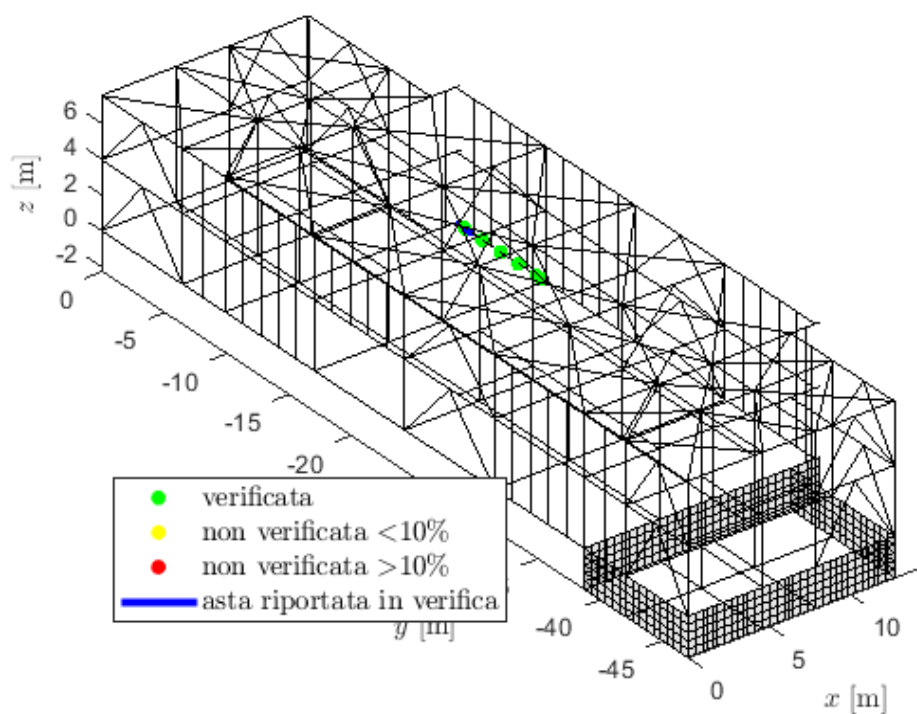
Vy	[kN]	82.3	122.1
----	------	------	-------



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.957$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)



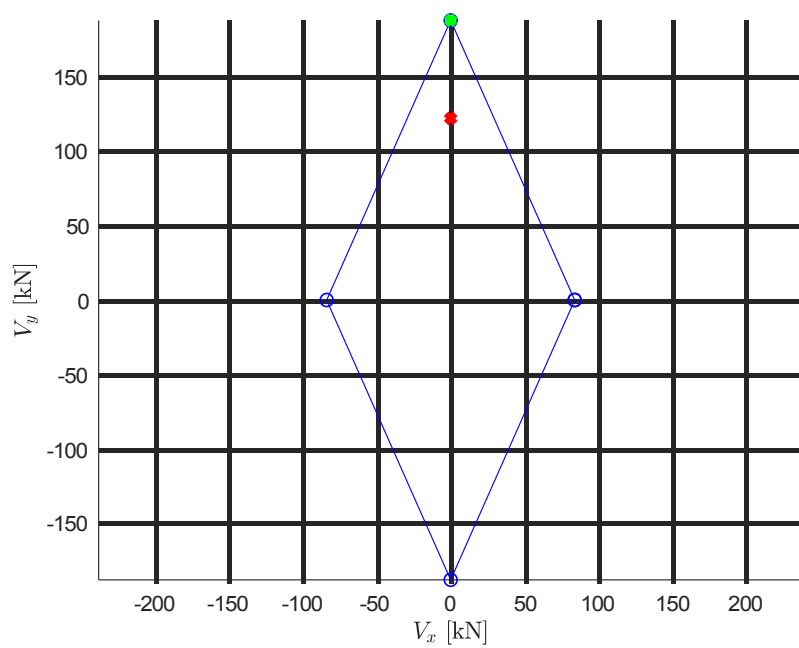


**Tabella 120.118. Elemento più sollecitato**

Elemento	[n°]	412
Ascissa	[m]	0.72

**Tabella 121.119. Sollecitazioni SLV**

		min	max
N	[kN]	-0.7	0.7
Mx	[kNm]	19.1	68.7
My	[kNm]	-0.1	0.1
Vx	[kN]	-0.3	0.3
Vy	[kN]	82.3	122.1

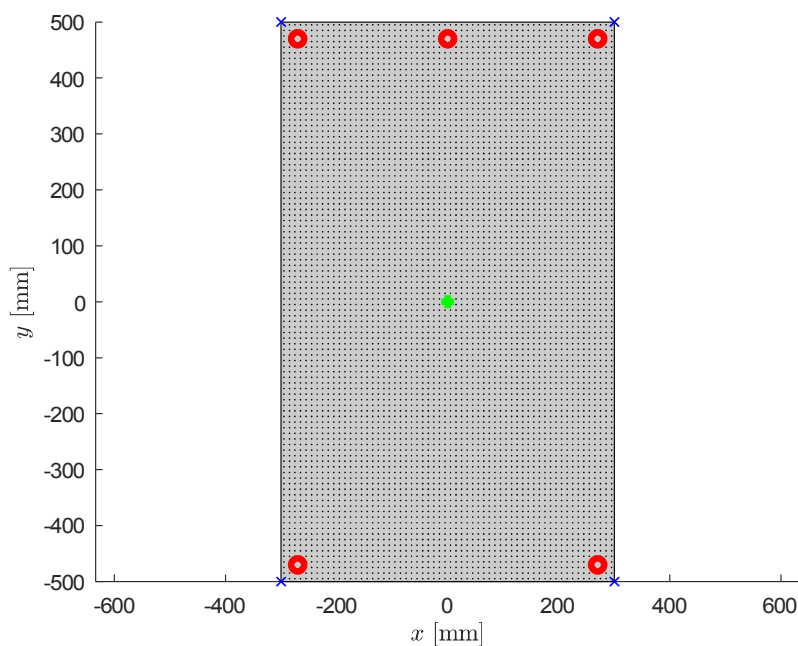


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.650$$

SLU a taglio verificati

# "1 - Rettangolare b=60 h=100 fondazione (5+2/2+3)"

## Sezione



**Tabella 122.120. Materiali**

Res. Cls 1	Rcm	[MPa]	12
Res. Cls 2	Rcm	[MPa]	0
Res. barre longitudinali	fykl	[MPa]	230
Res. staffe	fyks	[MPa]	230
Fattore di confidenza	FC	-	1.35

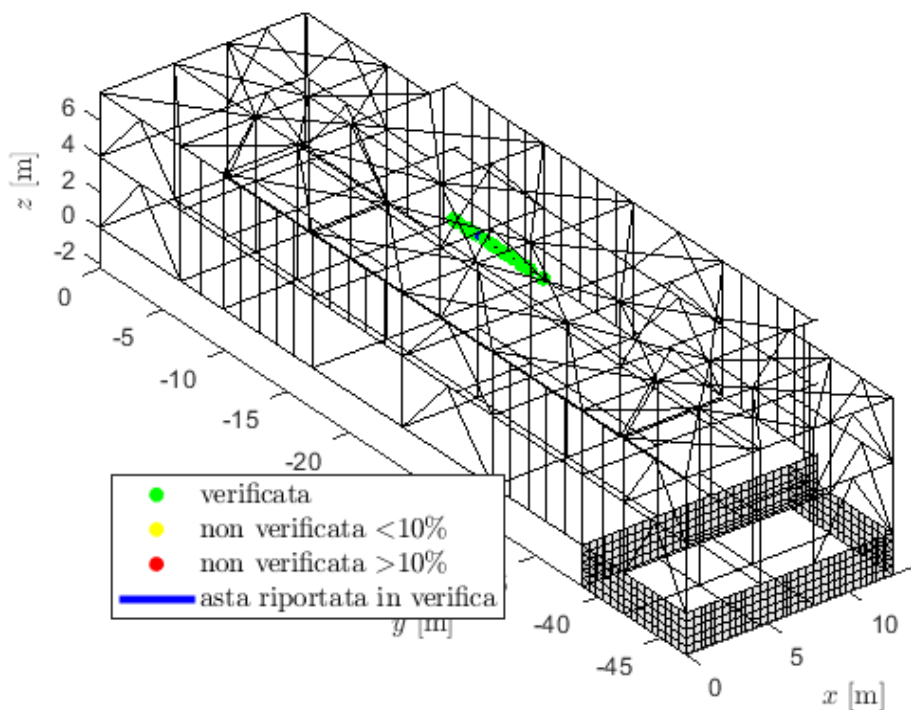
**Tabella 123.121. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-300	300
Dimensione	max	[mm]	-500	500
Largh. anima	bw	[mm]	1000	600
Altezza utile	d	[mm]	570	970
Area staffe	As	[mm <sup>2</sup> ]	101	101
Passo staffe	s	[mm]	250	250
Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0
Passo f.pieg.	sfp	[mm]	300	200

**Tabella 124.122. Armature**

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	254.47
2	570	30	254.47
3	30	970	254.47
4	300	970	254.47
5	570	970	254.47

### 3333125.3. Verifica SLV (peggiorativa per M)



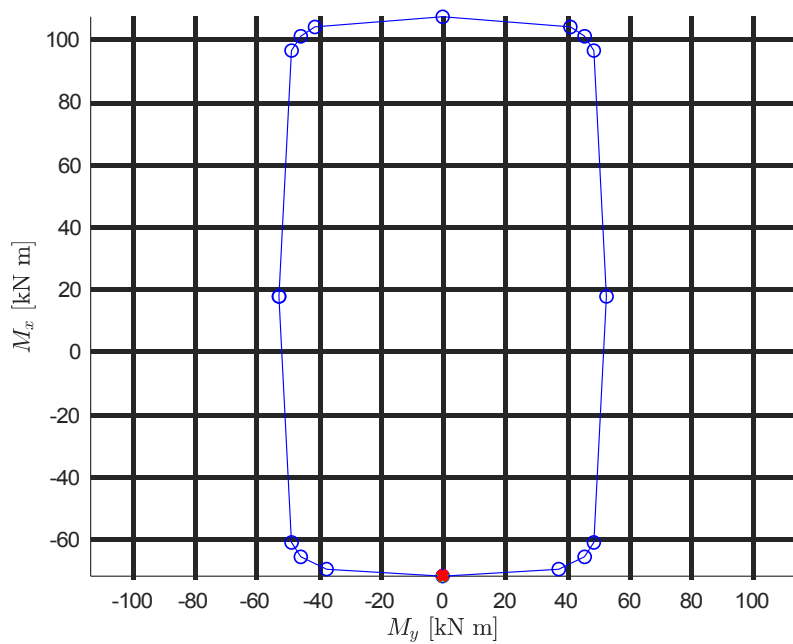
**Tabella 126.123. Elemento più sollecitato**

Elemento	[n°]	414
Ascissa	[m]	1.44

**Tabella 127.124. Sollecitazioni SLV**

		min	max
N	[kN]	-0.7	0.7
M <sub>x</sub>	[kNm]	-71.6	-39.4
M <sub>y</sub>	[kNm]	-0.1	0.1
V <sub>x</sub>	[kN]	-0.3	0.3

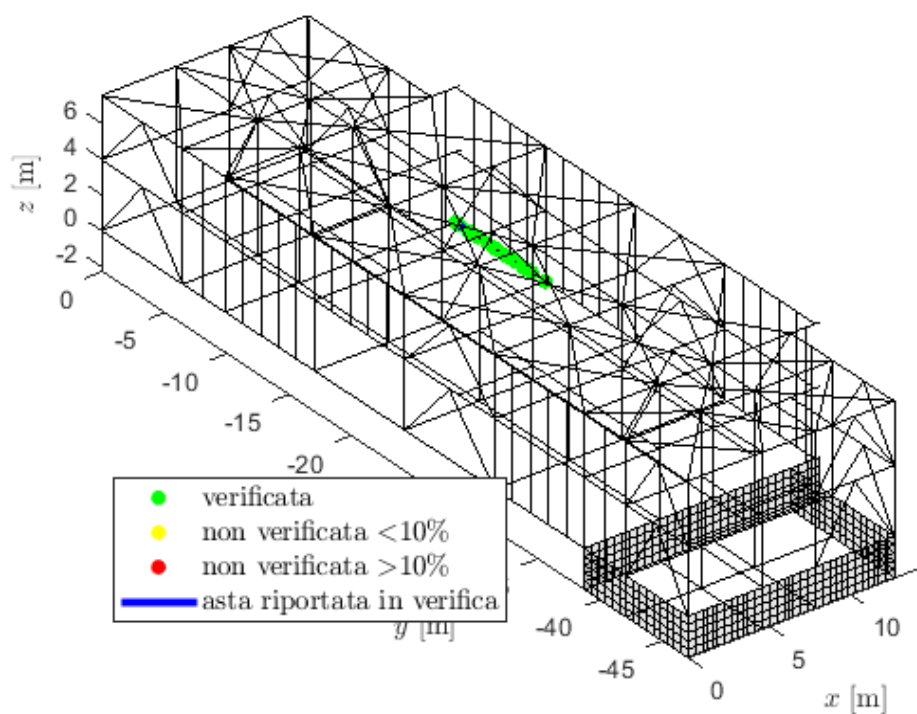
$V_y$	[kN]	17.8	36.5
-------	------	------	------



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.998$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

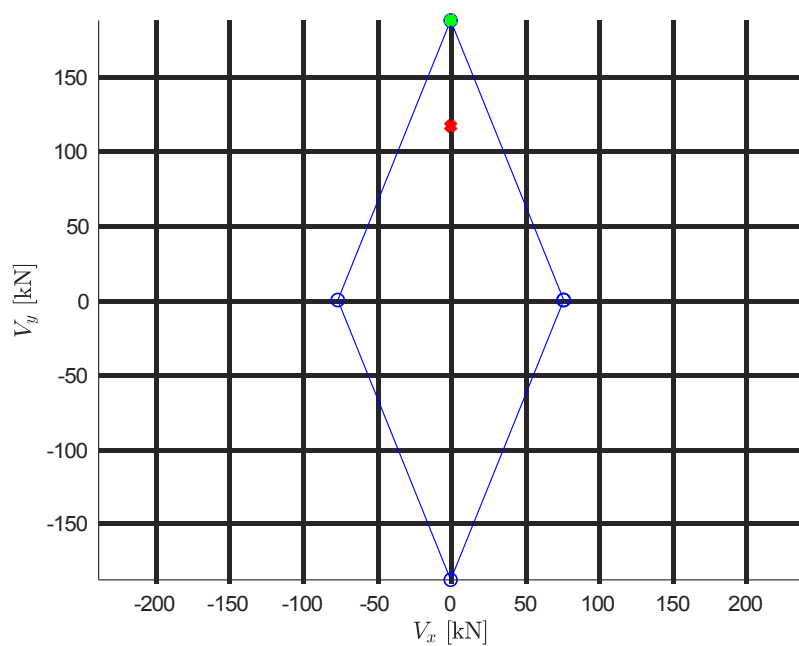


**Tabella 128.125. Elemento più sollecitato**

Elemento	[n°]	412
Ascissa	[m]	0.36

**Tabella 129.126. Sollecitazioni SLV**

		min	max
N	[kN]	-0.7	0.7
Mx	[kNm]	50.5	108.8
My	[kNm]	-0.0	0.0
Vx	[kN]	-0.3	0.3
Vy	[kN]	77.0	116.9

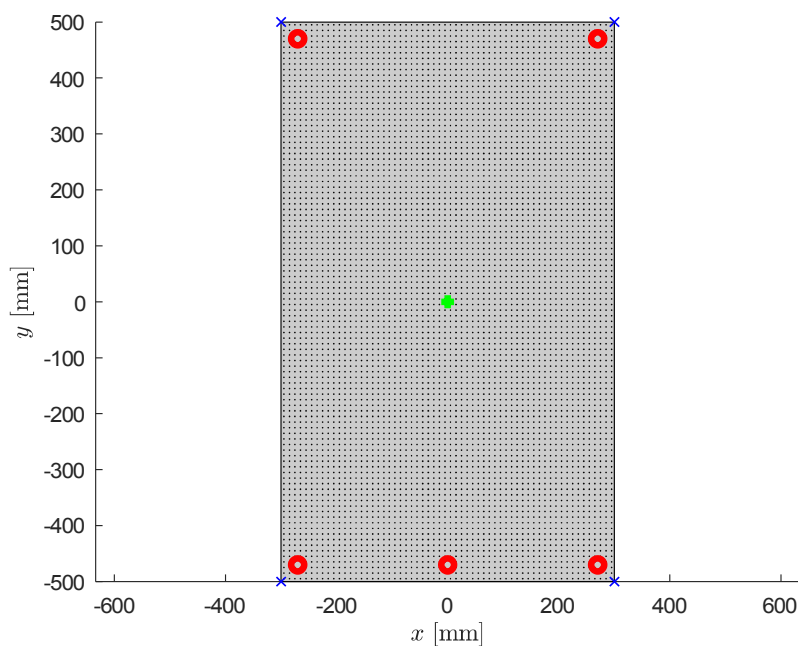


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.622$$

SLU a taglio verificati

# "1 - Rettangolare b=60 h=100 fondazione (5+2/3+5)"

## Sezione



**Tabella 130.127. Materiali**

Res. Cls 1	Rcm	[MPa]	12
Res. Cls 2	Rcm	[MPa]	0
Res. barre longitudinali	fykl	[MPa]	230
Res. staffe	fyks	[MPa]	230
Fattore di confidenza	FC	-	1.35

**Tabella 131.128. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-300	300
Dimensione	max	[mm]	-500	500
Largh. anima	bw	[mm]	1000	600
Altezza utile	d	[mm]	570	970
Area staffe	As	[mm <sup>2</sup> ]	101	101
Passo staffe	s	[mm]	250	250
Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0
Passo f.pieg.	sfp	[mm]	300	200

Tabella 132.129. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	254.47
2	570	30	254.47
3	30	970	254.47
4	300	30	763.41
5	570	970	254.47

## Verifica SLV (peggiorativa per M)

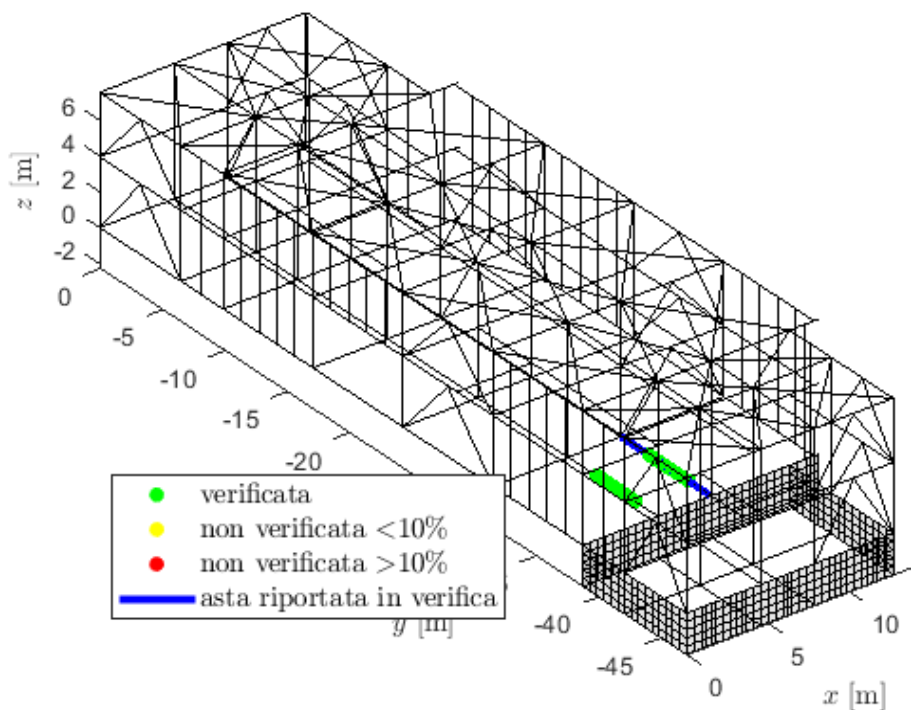


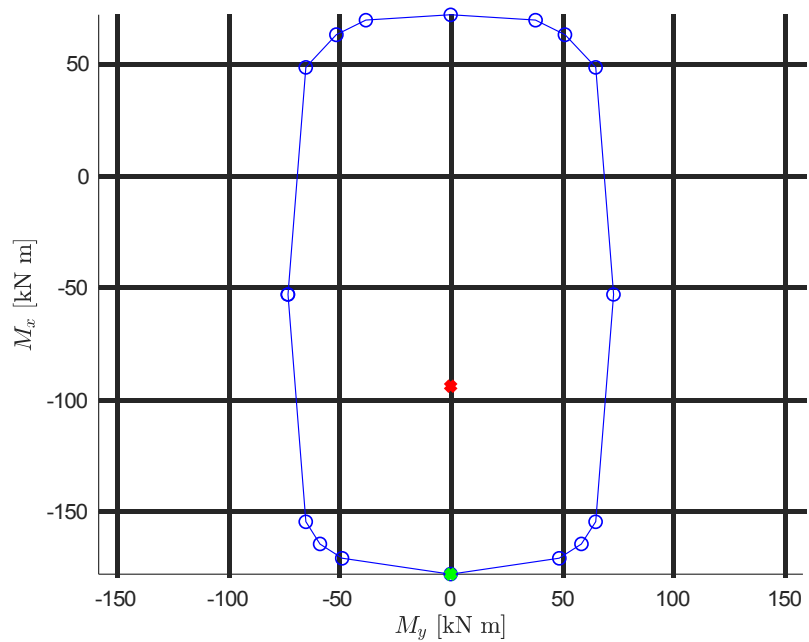
Tabella 133.130. Elemento più sollecitato

Elemento	[n°]	303
Ascissa	[m]	4.50

Tabella 134.131. Sollecitazioni SLV

		min	max
N	[kN]	-0.9	0.9
M <sub>x</sub>	[kNm]	-94.1	-87.7
M <sub>y</sub>	[kNm]	-1.1	1.2
V <sub>x</sub>	[kN]	-0.3	0.3

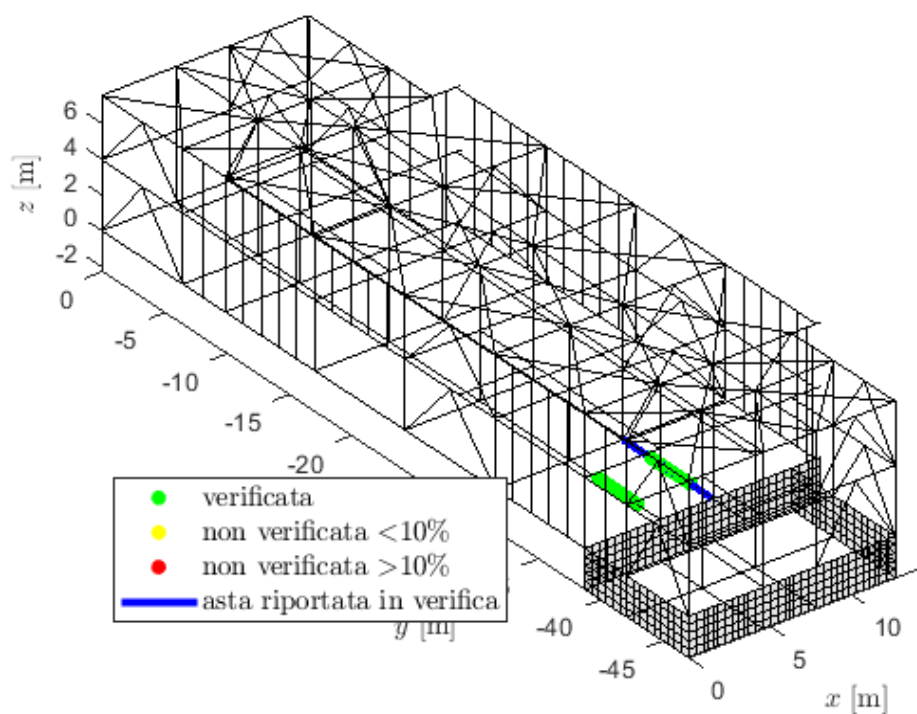
$V_y$	[kN]	1.6	7.2
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$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.529$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)



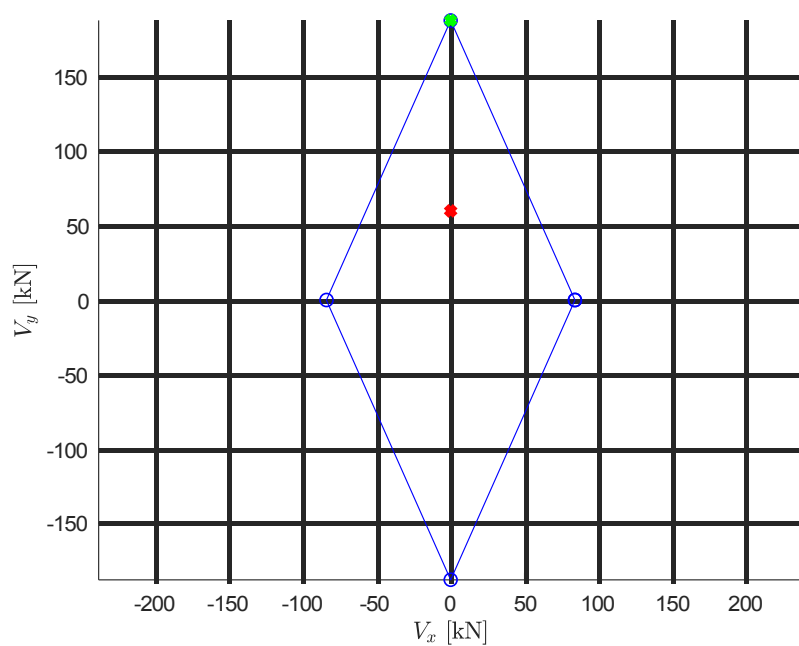


**Tabella 135.132. Elemento più sollecitato**

Elemento	[n°]	303
Ascissa	[m]	2.70

Tabella 136.133. Sollecitazioni SLV

		min	max
N	[kN]	-2.7	2.6
M <sub>x</sub>	[kNm]	-74.9	-69.5
M <sub>y</sub>	[kNm]	-1.1	1.2
V <sub>x</sub>	[kN]	-0.9	0.9
V <sub>y</sub>	[kN]	50.5	59.9

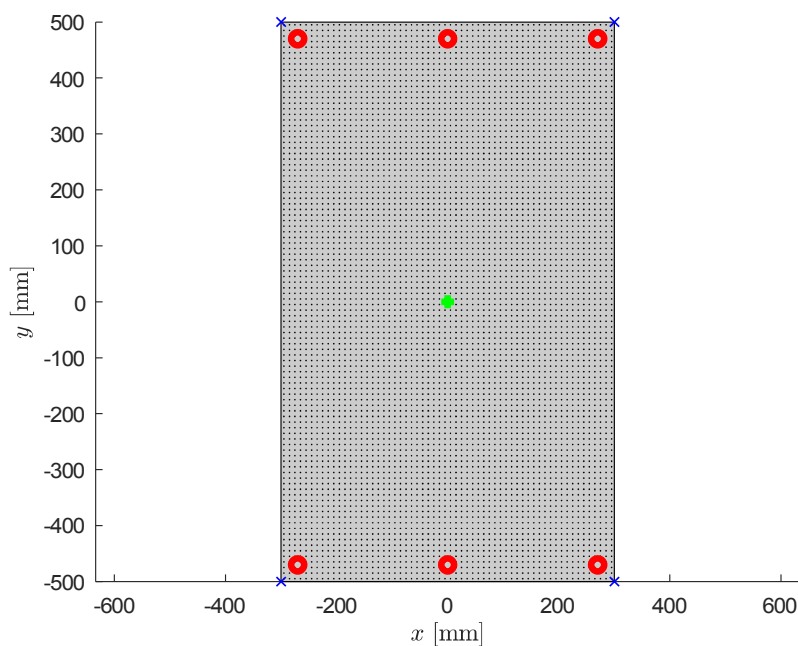


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.319$$

SLU a taglio verificati

# "1 - Rettangolare b=60 h=100 fondazione (5+2/3+5)"

## Sezione



**Tabella 137.134. Materiali**

Res. Cls 1	Rcm	[MPa]	12
Res. Cls 2	Rcm	[MPa]	0
Res. barre longitudinali	fykl	[MPa]	230
Res. staffe	fyks	[MPa]	230
Fattore di confidenza	FC	-	1.35

**Tabella 138.135. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-300	300
Dimensione	max	[mm]	-500	500
Largh. anima	bw	[mm]	1000	600
Altezza utile	d	[mm]	570	970
Area staffe	As	[mm <sup>2</sup> ]	101	101
Passo staffe	s	[mm]	250	250
Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0
Passo f.pieg.	sfp	[mm]	300	200

Tabella 139.136. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	254.47
2	570	30	254.47
3	30	970	254.47
4	300	970	763.41
5	300	30	254.47
6	570	970	254.47

## Verifica SLV (peggiorativa per M)

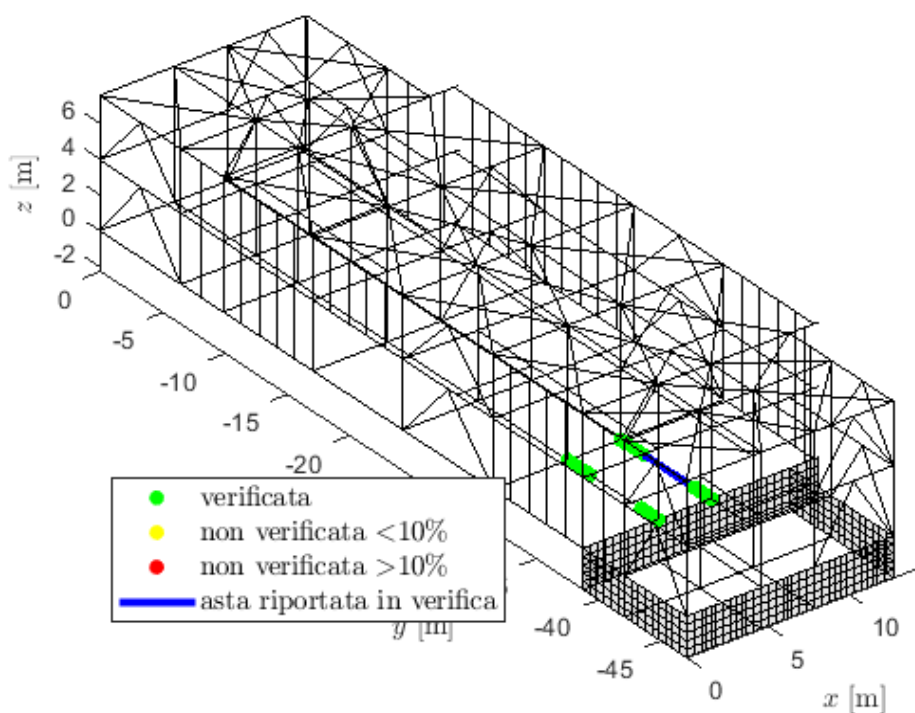


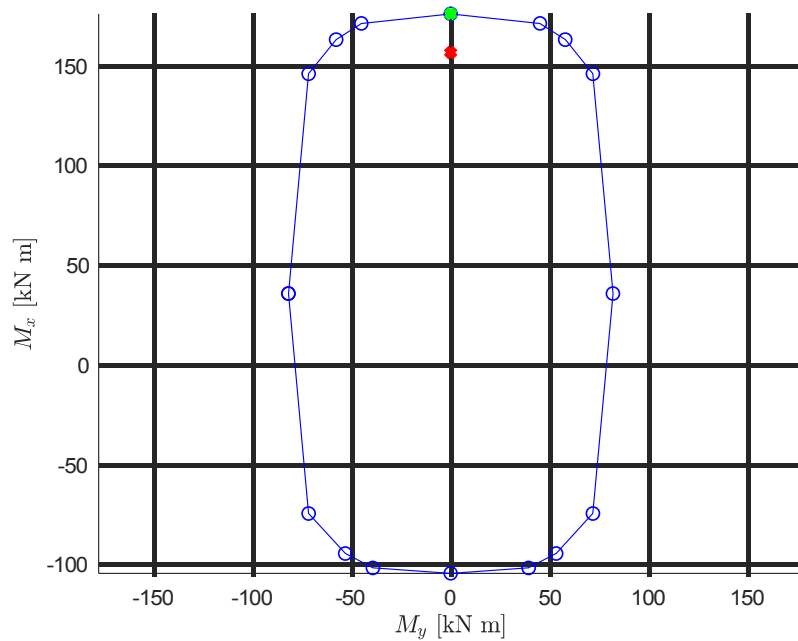
Tabella 140.137. Elemento più sollecitato

Elemento	[n°]	303
Ascissa	[m]	0.00

Tabella 141.138. Sollecitazioni SLV

		min	max
N	[kN]	-6.4	6.1
M <sub>x</sub>	[kNm]	116.7	156.1
M <sub>y</sub>	[kNm]	-2.8	2.6

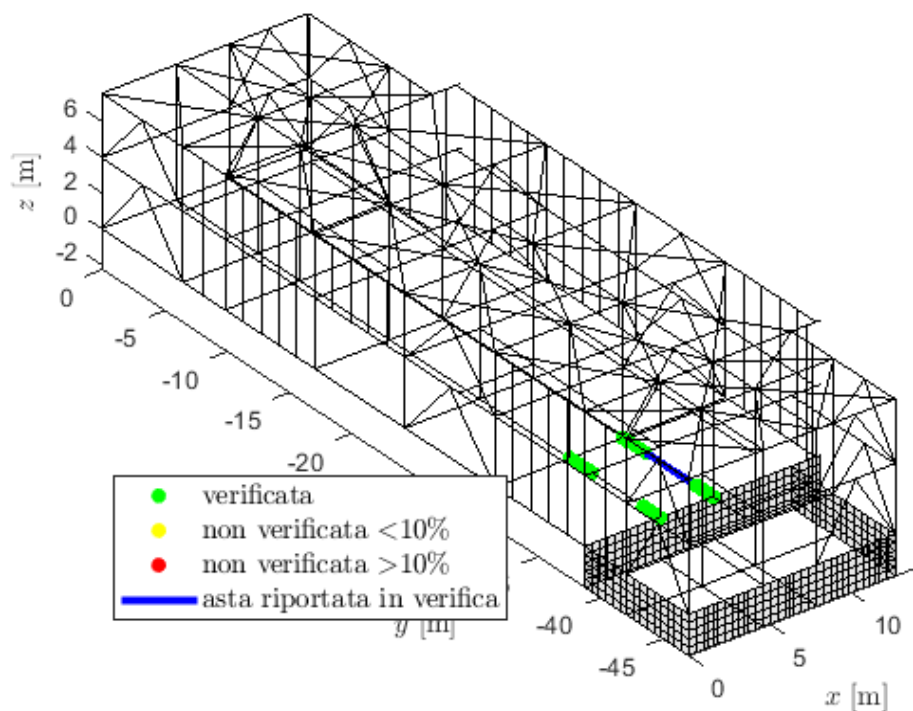
$V_x$	[kN]	-2.1	1.9
$V_y$	[kN]	91.8	108.1



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.889$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

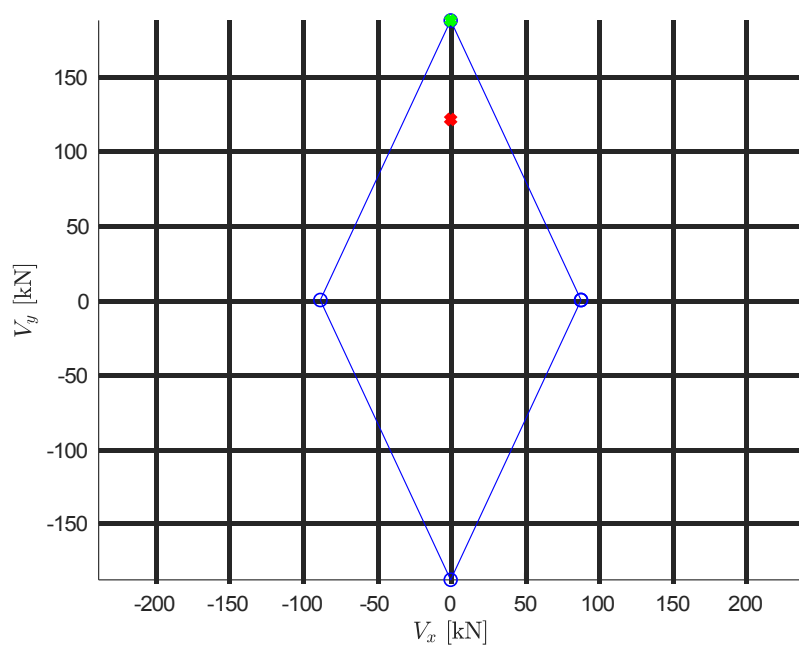


**Tabella 142.139. Elemento più sollecitato**

Elemento	[n°]	303
Ascissa	[m]	0.90

Tabella 143.140. Sollecitazioni SLV

		min	max
N	[kN]	-6.4	6.1
M <sub>x</sub>	[kNm]	27.9	52.8
M <sub>y</sub>	[kNm]	-0.9	0.9
V <sub>x</sub>	[kN]	-2.1	1.9
V <sub>y</sub>	[kN]	105.1	121.4

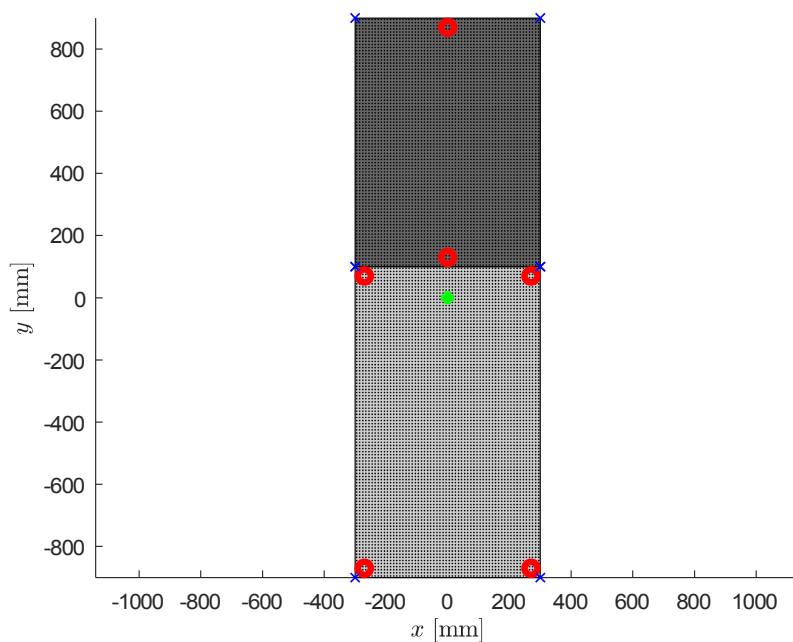


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.646$$

SLU a taglio verificati

# "Fondazione rinforzata"

## Sezione



**Tabella 144.141. Materiali**

Res.Cls 1	Rcm	[MPa]	12
Res.Cls 2	Rcm	[MPa]	21
Res. barre longitudinali	fykl	[MPa]	230
Res. staffe	fyks	[MPa]	430
Fattore di confidenza	FC	-	1.35

**Tabella 145.142. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-300	300
Dimensione	max	[mm]	-900	100
Rett. 2 (Cls 2)				
Dimensione	min	[mm]	-300	300
Dimensione	max	[mm]	100	900
Largh. anima	bw	[mm]	600	1800
Altezza utile	d	[mm]	570	1770
Area staffe	As	[mm <sup>2</sup> ]	101	101
Passo staffe	s	[mm]	250	250

Area f.pieg.	Asfp	[mm2]	0	0
Passo f.pieg.	sfp	[mm]	1	1

Tabella 146.143. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm2]
1	30	30	254.47
2	570	30	254.47
3	30	970	254.47
4	570	970	254.47
5	300	1030	2936.71
6	300	1770	2936.71

## Verifica SLV (peggiorativa per M)

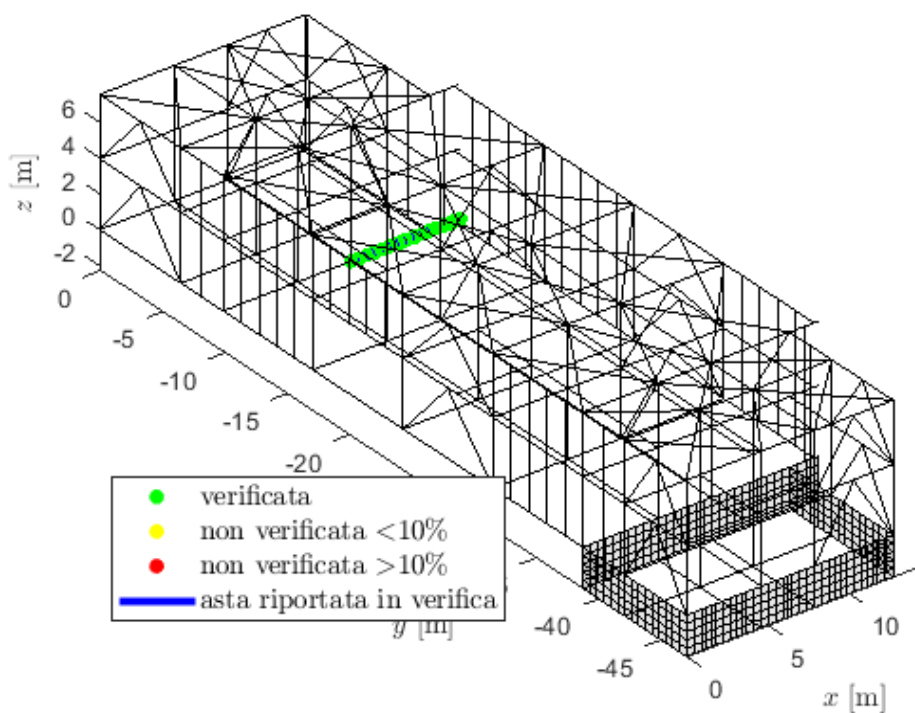


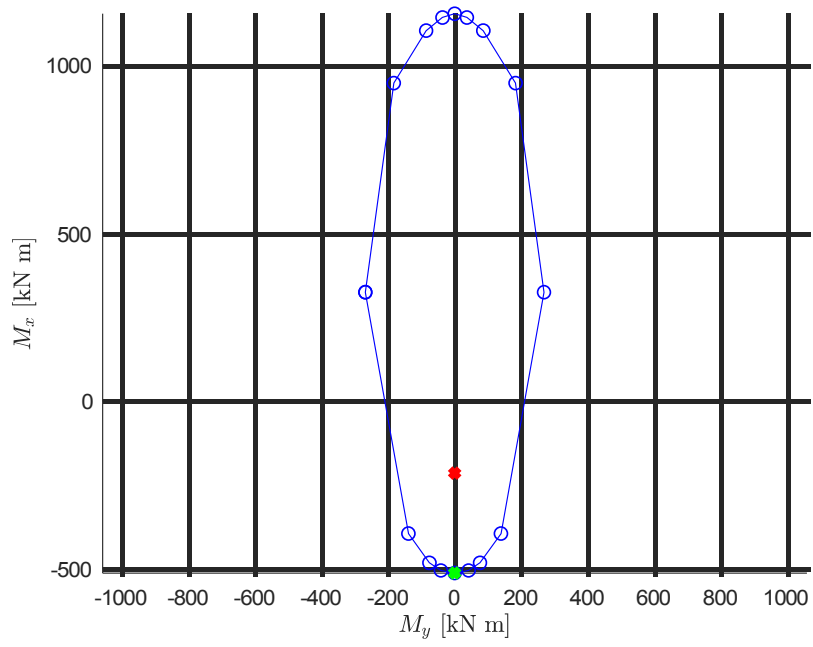
Tabella 147.144. Elemento più sollecitato

Elemento	[n°]	529
Ascissa	[m]	3.87

Tabella 148.145. Sollecitazioni SLV

		min	max
N	[kN]	-1.3	1.3
M	[kNm]	-216.0	115.8

x			
M	[kNm]	-0.0	0.0
y			
V <sub>x</sub>	[kN]	-3.3	3.5
V <sub>y</sub>	[kN]	-53.5	28.3

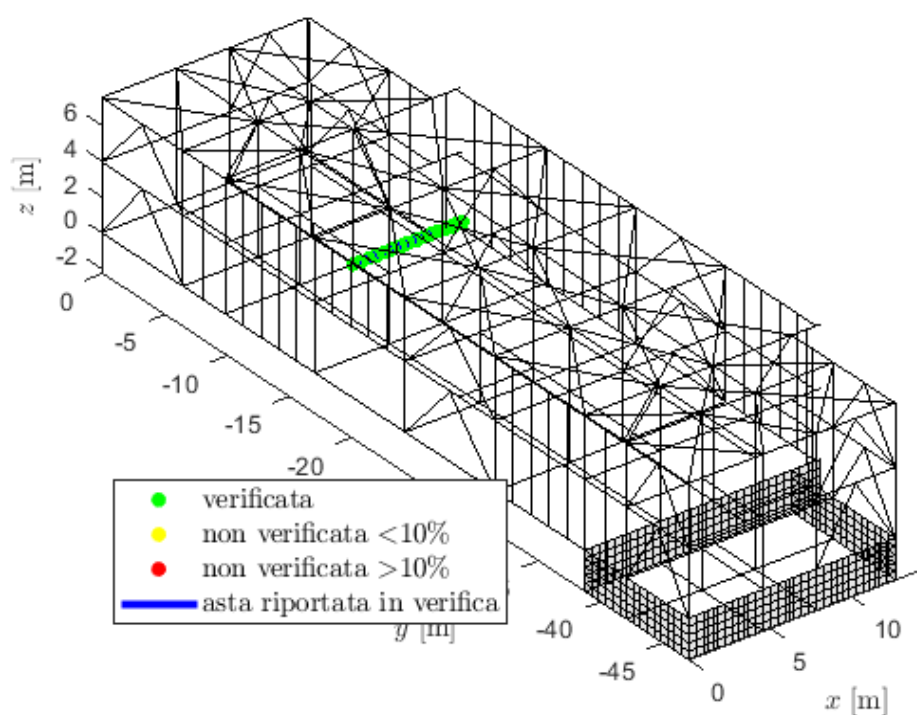


$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.420$$

SLU a flessione verificati



## Verifica SLV (peggiorativa per V)

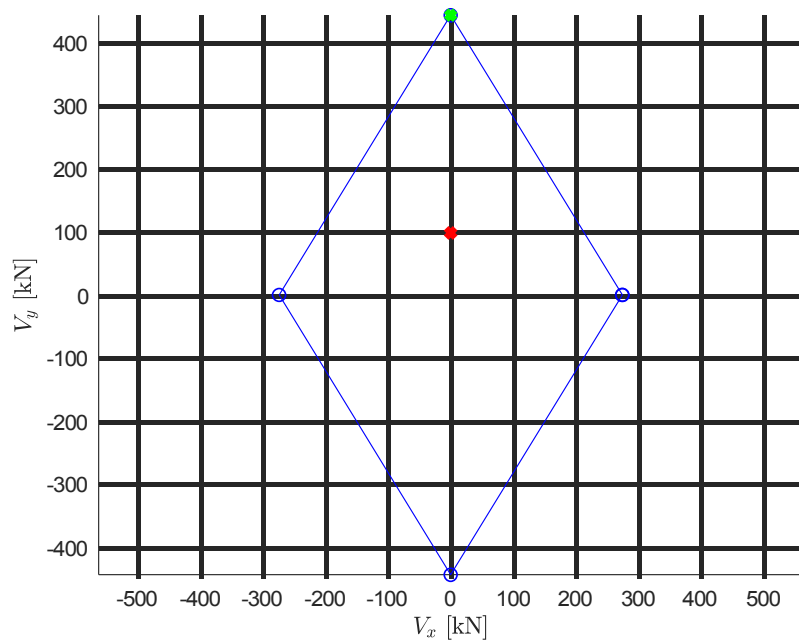


**Tabella 149.146. Elemento più sollecitato**

Elemento	[n°]	529
Ascissa	[m]	0.97

**Tabella 150.147. Sollecitazioni SLV**

		min	max
N	[kN]	-2.6	2.6
M <sub>x</sub>	[kNm]	-101.5	9.4
M <sub>y</sub>	[kNm]	-0.0	0.0
V <sub>x</sub>	[kN]	-7.0	6.7
V <sub>y</sub>	[kN]	27.8	98.5

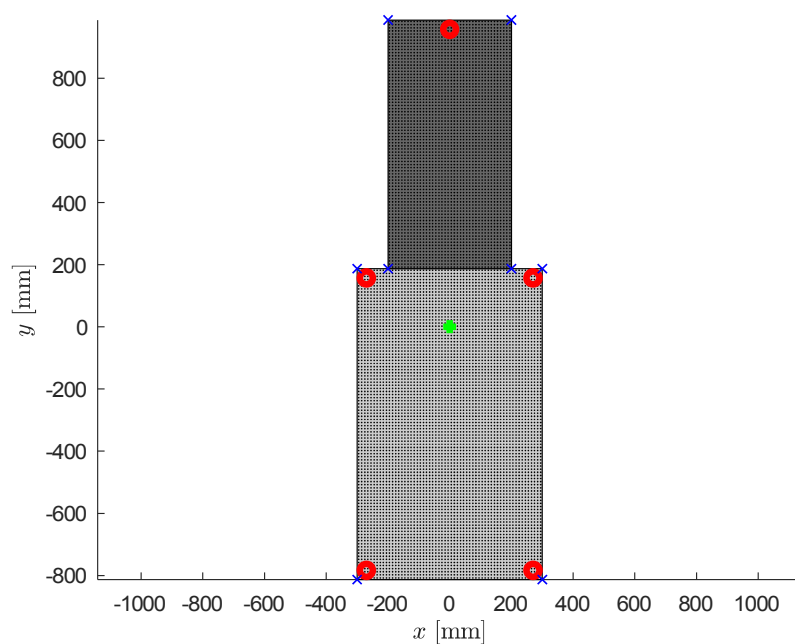


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.222$$

SLU a taglio verificati

# "fondazione rialzata"

## Sezione



**Tabella 151.148. Materiali**

Res. Cls 1	Rcm	[MPa]	12
Res. Cls 2	Rcm	[MPa]	21
Res. barre longitudinali	fykl	[MPa]	230
Res. staffe	fyks	[MPa]	430
Fattore di confidenza	FC	-	1.35

**Tabella 152.149. Geometria della sezione**

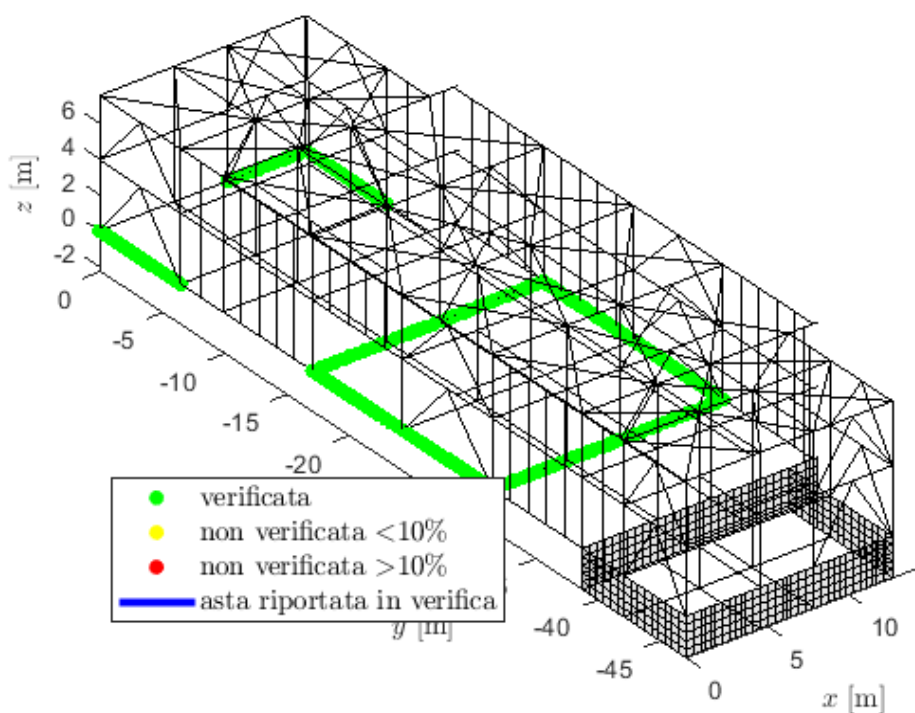
			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-300	300
Dimensione	max	[mm]	-813	187
Rett. 2 (Cls 2)				
Dimensione	min	[mm]	-200	200
Dimensione	max	[mm]	187	987
Largh. anima	bw	[mm]	400	1800
Altezza utile	d	[mm]	570	1770
Area staffe	As	[mm <sup>2</sup> ]	101	101
Passo staffe	s	[mm]	250	250

Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0
Passo f.pieg.	sfp	[mm]	1	1

**Tabella 153.150. Armature**

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	254.47
2	570	30	254.47
3	30	970	254.47
4	570	970	254.47
5	300	1770	3524.05

## Verifica SLV (peggiorativa per M)



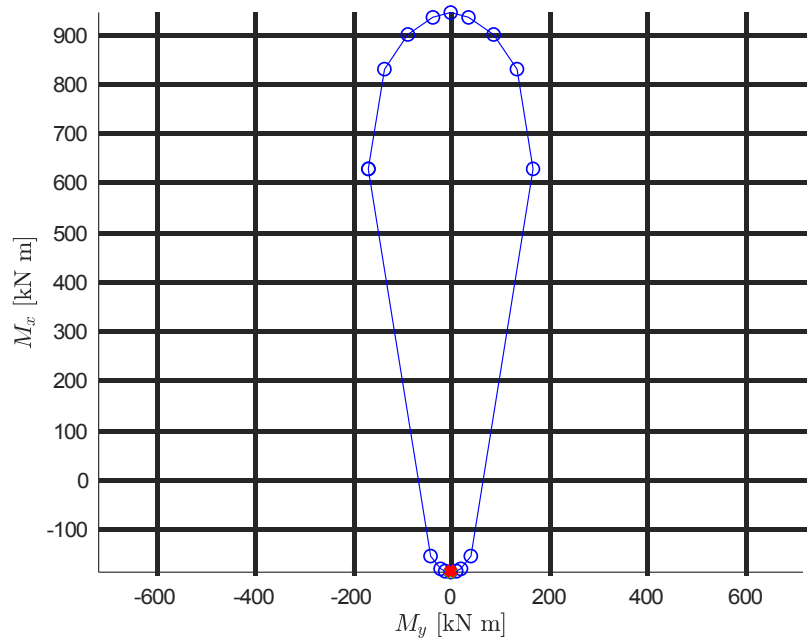
**Tabella 154.151. Elemento più sollecitato**

Elemento	[n°]	82
Ascissa	[m]	5.12

**Tabella 155.152. Sollecitazioni SLV**

		min	max
N	[kN]	-5.5	5.7
M <sub>x</sub>	[kNm]	-185.6	-46.7

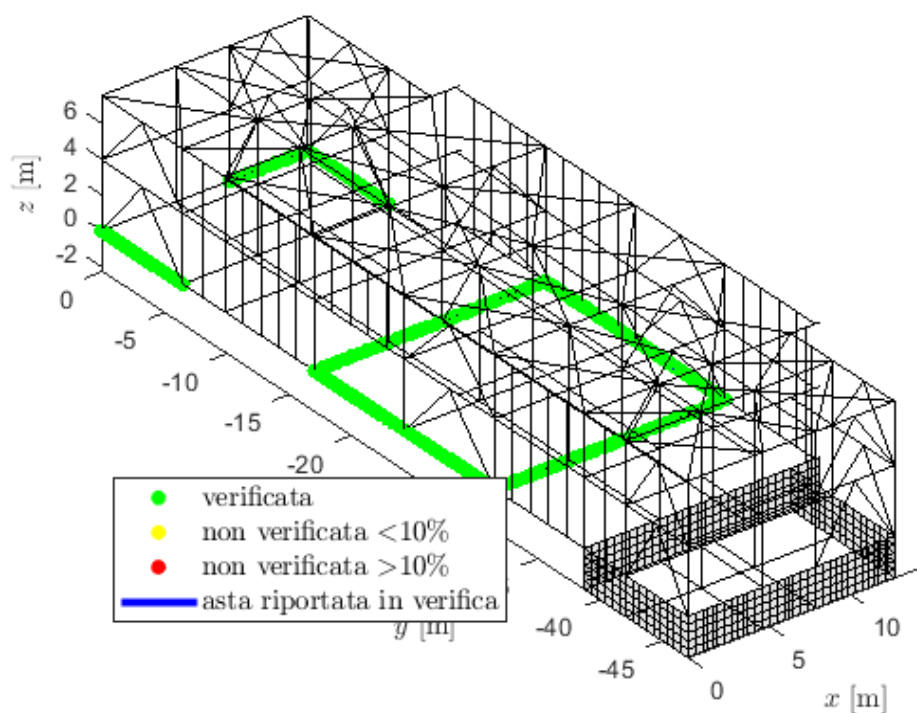
M <sub>y</sub>	[kNm]	-0.1	0.1
V <sub>x</sub>	[kN]	-1.9	2.0
V <sub>y</sub>	[kN]	-71.7	-38.1



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.990$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

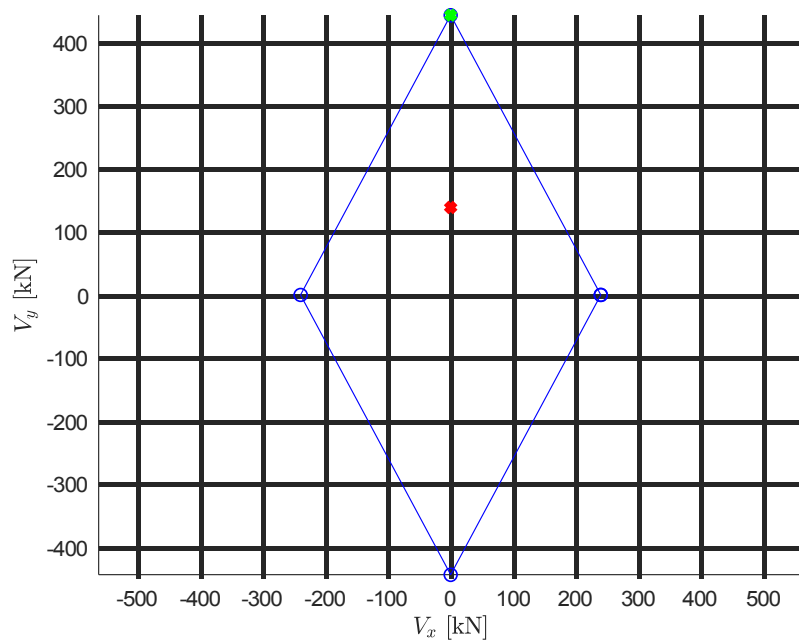


**Tabella 156.153. Elemento più sollecitato**

Elemento	[n°]	27
Ascissa	[m]	0.90

**Tabella 157.154. Sollecitazioni SLV**

		min	max
N	[kN]	-9.2	9.7
M <sub>x</sub>	[kNm]	-19.3	61.0
M <sub>y</sub>	[kNm]	-1.3	1.4
V <sub>x</sub>	[kN]	-2.9	3.1
V <sub>y</sub>	[kN]	73.9	138.9

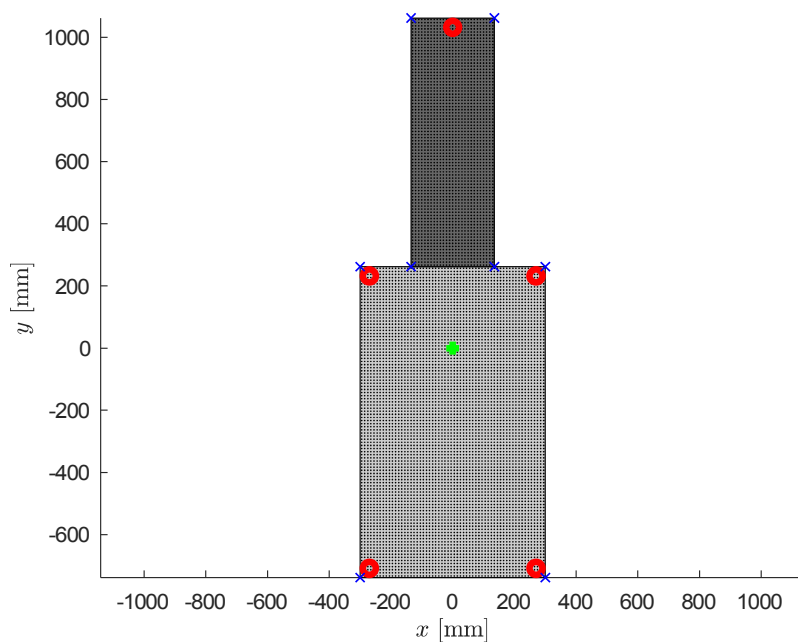


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.313$$

SLU a taglio verificati

# "fondazione rialzata 27"

## Sezione



**Tabella 158.155. Materiali**

Res.Cls 1	Rcm	[MPa]	12
Res.Cls 2	Rcm	[MPa]	21
Res. barre longitudinali	fykl	[MPa]	230
Res. staffe	fyks	[MPa]	430
Fattore di confidenza	FC	-	1.35

**Tabella 159.156. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-300	300
Dimensione	max	[mm]	-738	262
Rett. 2 (Cls 2)				
Dimensione	min	[mm]	-135	135
Dimensione	max	[mm]	262	1062
Largh. anima	bw	[mm]	400	1800
Altezza utile	d	[mm]	570	1770
Area staffe	As	[mm <sup>2</sup> ]	101	101
Passo staffe	s	[mm]	250	250



Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0
Passo f.pieg.	sfp	[mm]	1	1

Tabella 160.157. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	254.47
2	570	30	254.47
3	30	970	254.47
4	570	970	254.47
5	300	1770	2349.36

## Verifica SLV (peggiorativa per M)

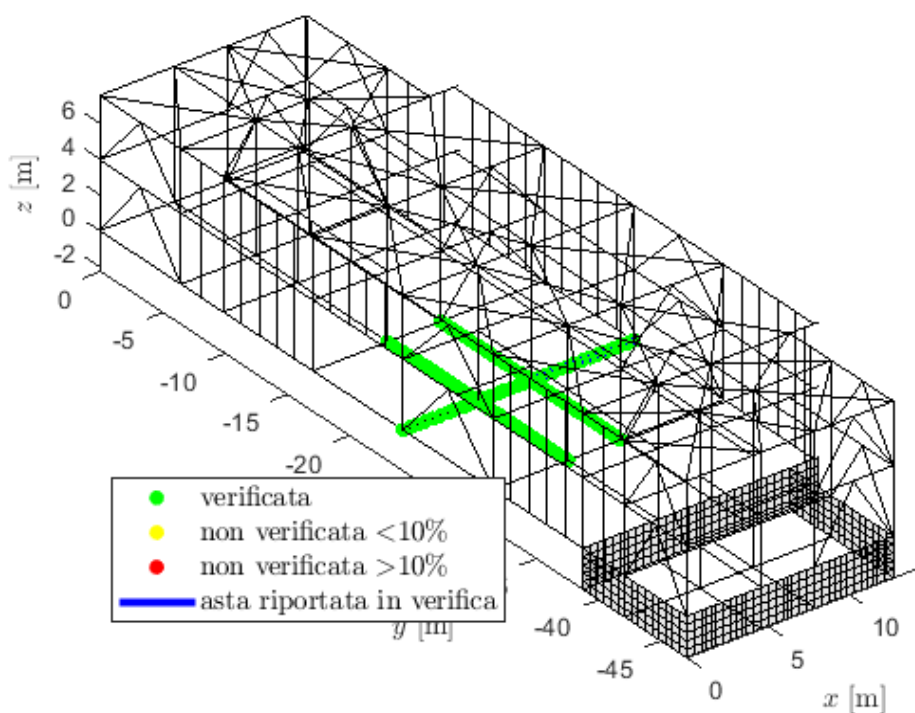


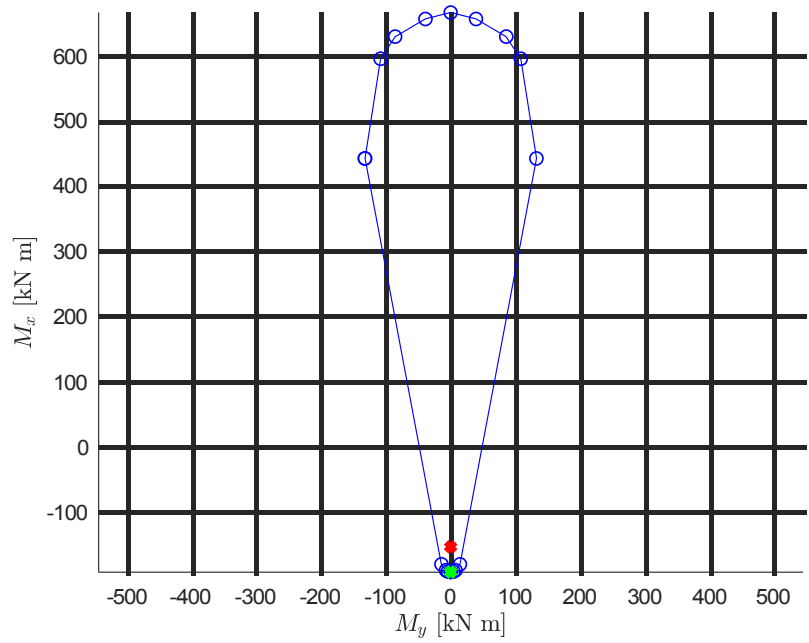
Tabella 161.158. Elemento più sollecitato

Elemento	[n°]	331
Ascissa	[m]	3.62

Tabella 162.159. Sollecitazioni SLV

		min	max
N	[kN]	-0.0	0.0
M <sub>x</sub>	[kNm]	-153.9	-105.6

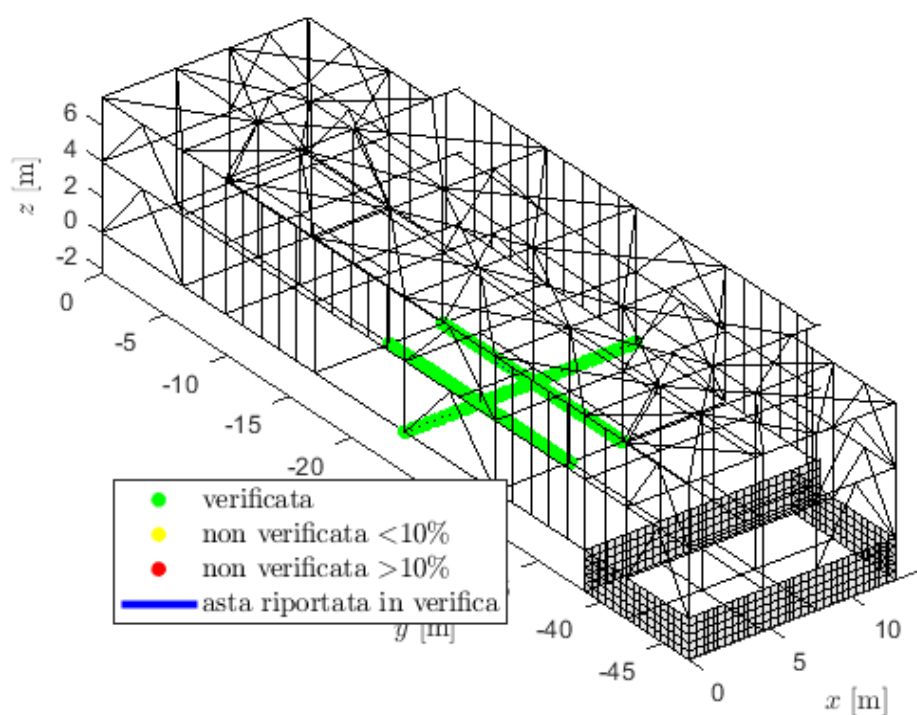
M <sub>y</sub>	[kNm]	-4.1	4.4
V <sub>x</sub>	[kN]	-0.0	0.0
V <sub>y</sub>	[kN]	22.5	36.4



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.800$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

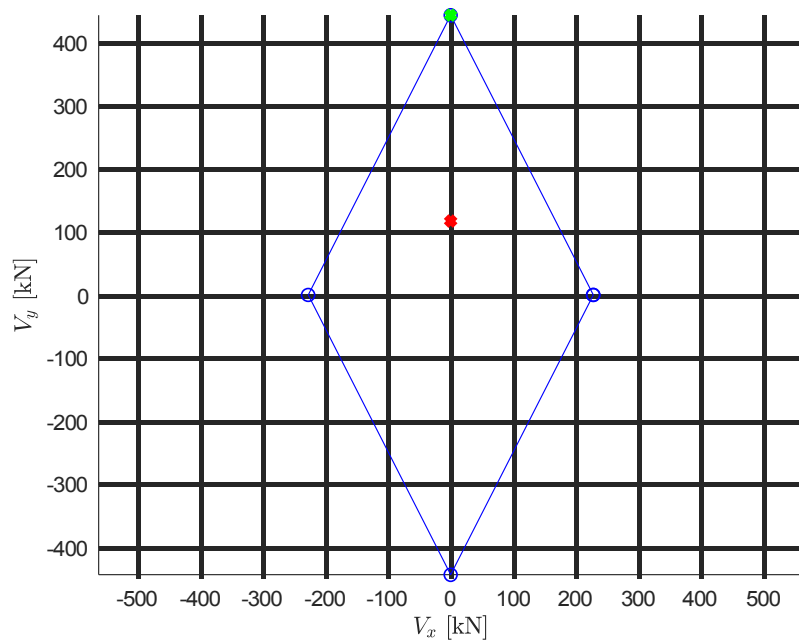


**Tabella 163.160. Elemento più sollecitato**

Elemento	[n°]	298
Ascissa	[m]	0.90

**Tabella 164.161. Sollecitazioni SLV**

		min	max
N	[kN]	-8.7	8.3
M <sub>x</sub>	[kNm]	42.7	69.2
M <sub>y</sub>	[kNm]	-1.2	1.1
V <sub>x</sub>	[kN]	-2.8	2.5
V <sub>y</sub>	[kN]	101.5	117.3

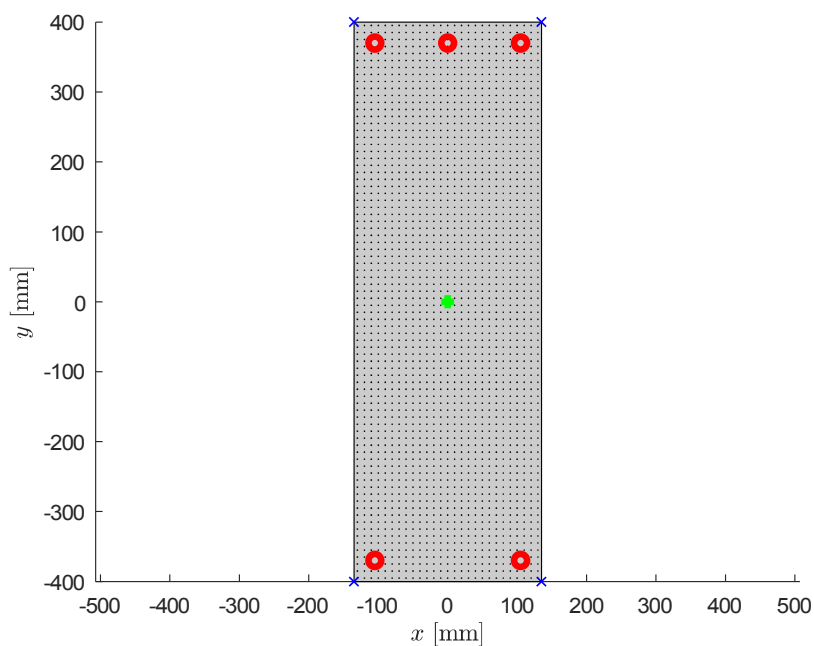


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.264$$

SLU a taglio verificati

## "6 - Rettangolare b=27 h=80 travi p1"

### Sezione



**Tabella 165.162. Materiali**

Res.Cls 1	Rcm	[MPa ]	13
Res.Cls 2	Rcm	[MPa ]	0
Res. barre longitudinali	fykl	[MPa ]	440
Res. staffe	fyks	[MPa ]	230
Fattore di confidenza	FC	-	1.00

**Tabella 166.163. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-135	135
Dimensione	max	[mm]	-400	400
Largh. anima	bw	[mm]	800	270
Altezza utile	d	[mm]	240	770
Area staffe	As	[mm2 ]	101	101
Passo staffe	s	[mm]	300	300
Area f.pieg.	Asfp	[mm2 ]	0	0

Passo f.pieg.	sfp	[mm]	300	200
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Tabella 167.164. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	153.94
2	240	30	153.94
3	135	770	153.94
4	30	770	153.94
5	240	770	153.94

## Verifica SLV (peggiorativa per M)

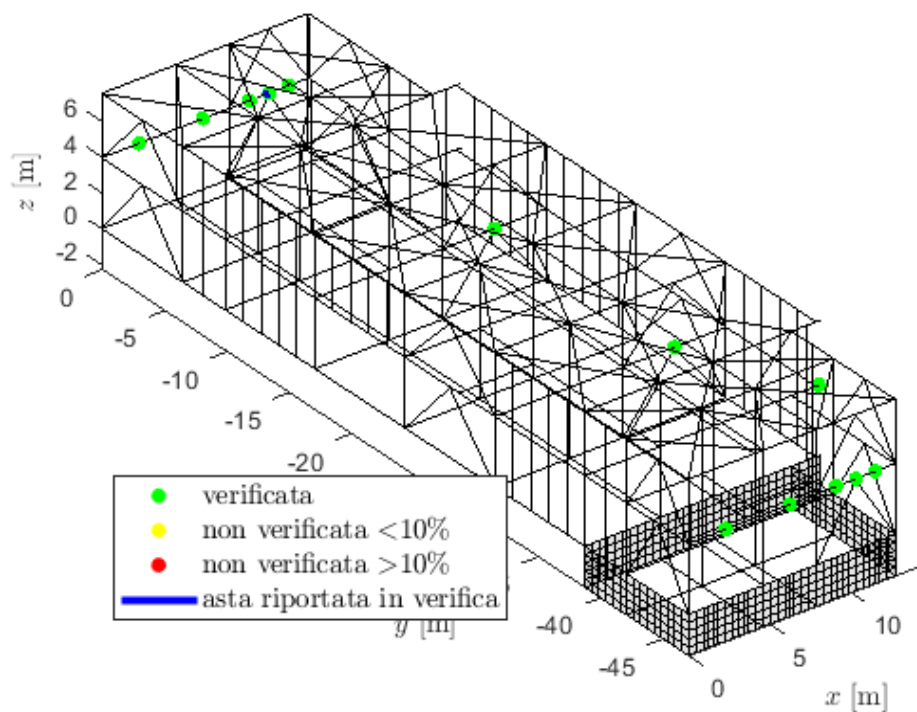


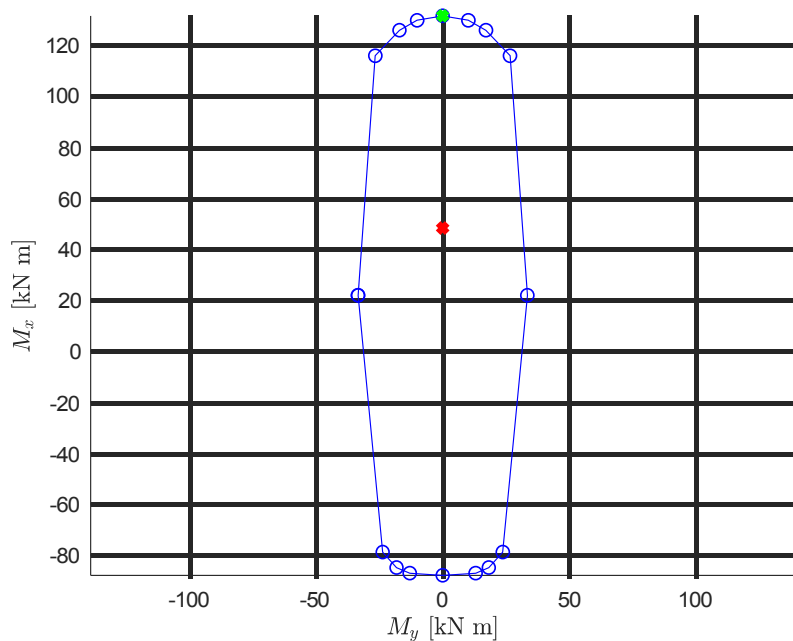
Tabella 168.165. Elemento più sollecitato

Elemento	[n°]	301
Ascissa	[m]	0.30

Tabella 169.166. Sollecitazioni SLV

		min	max
N	[kN]	0.0	0.0
Mx	[kNm]	40.5	48.2
My	[kNm]	-0.0	0.0

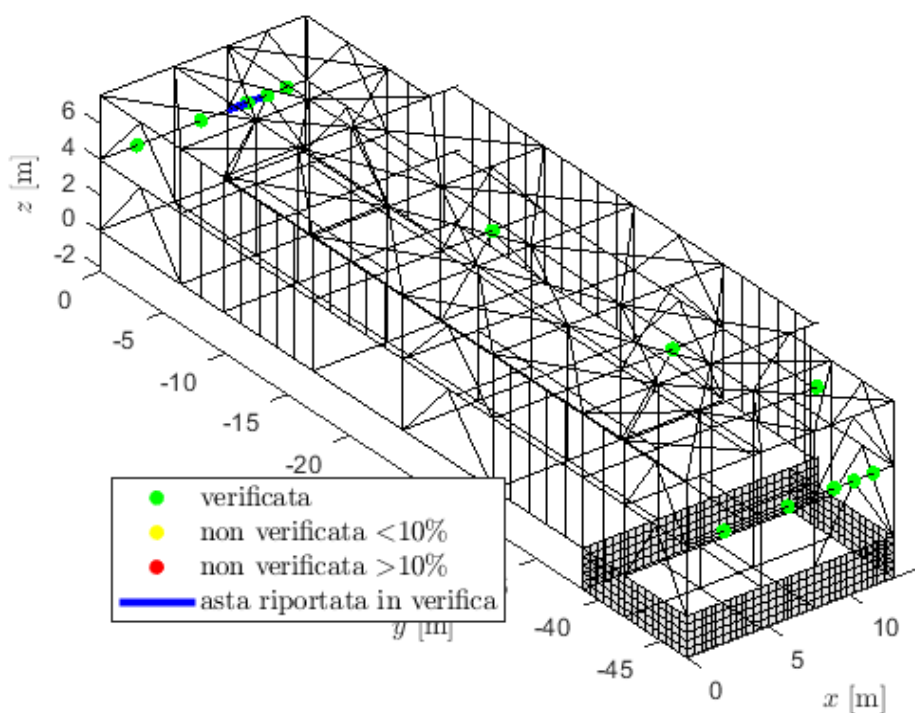
$V_x$	[kN]	-0.0	0.0
$V_y$	[kN]	-10.8	-2.1



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.367$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

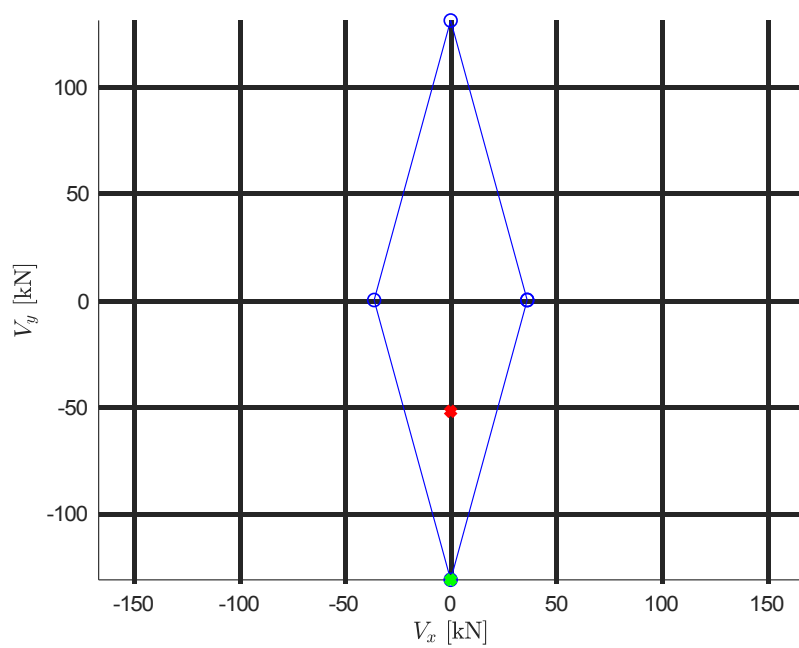


**Tabella 170.167. Elemento più sollecitato**

Element o	[n°]	536
Ascissa	[m]	1.22

Tabella 171.168. Sollecitazioni SLV

		min	max
N	[kN]	0.0	0.0
M <sub>x</sub>	[kNm]	8.9	15.5
M <sub>y</sub>	[kNm]	-0.0	0.0
V <sub>x</sub>	[kN]	-0.0	0.0
V <sub>y</sub>	[kN]	-52.2	-41.7



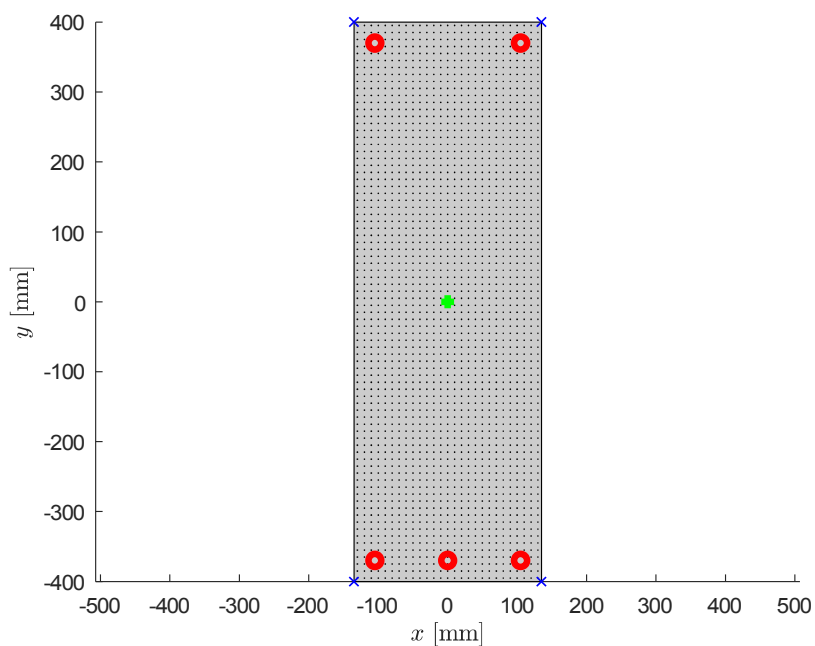
$$\max(|V_{Ed}|/|V_{Rd}|) = 0.397$$

SLU a taglio verificati



## "6 - Rettangolare b=27 h=80 travi p1"

### Sezione



**Tabella 172.169. Materiali**

Res. Cls 1	Rcm	[MPa]	13
Res. Cls 2	Rcm	[MPa]	0
Res. barre longitudinali	fykl	[MPa]	440
Res. staffe	fyks	[MPa]	230
Fattore di confidenza	FC	-	1.00

**Tabella 173.170. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-135	135
Dimensione	max	[mm]	-400	400
Largh. anima	bw	[mm]	800	270
Altezza utile	d	[mm]	240	770
Area staffe	As	[mm <sup>2</sup> ]	101	101
Passo staffe	s	[mm]	300	300
Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0

Passo f.pieg.	sfp	[mm]	300	200
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Tabella 174.171. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm2]
1	30	30	153.94
2	240	30	153.94
3	30	770	153.94
4	135	30	153.94
5	240	770	153.94

## Verifica SLV (peggiorativa per M)

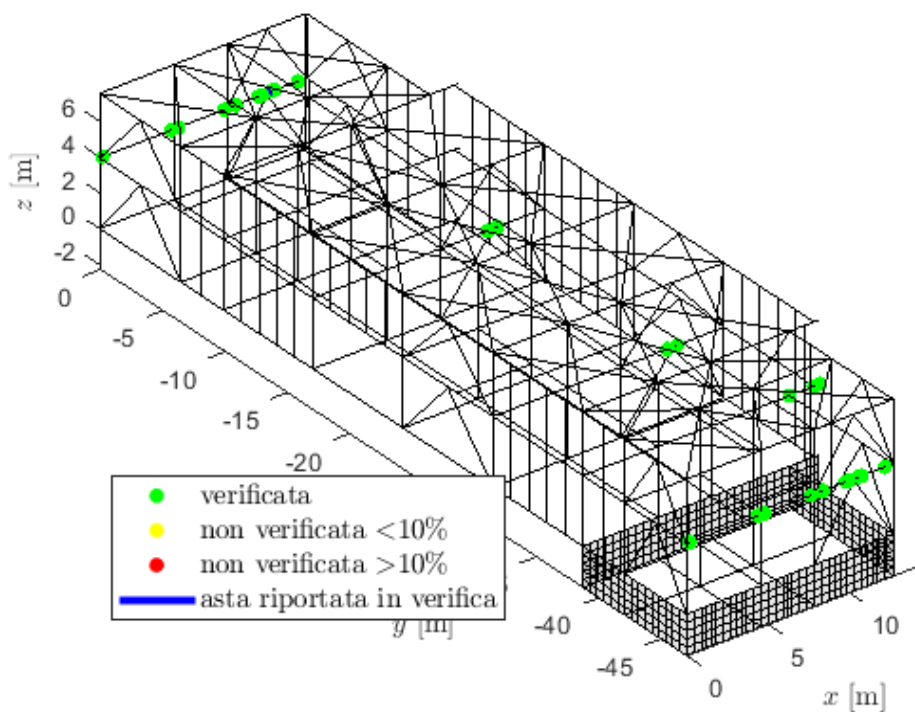


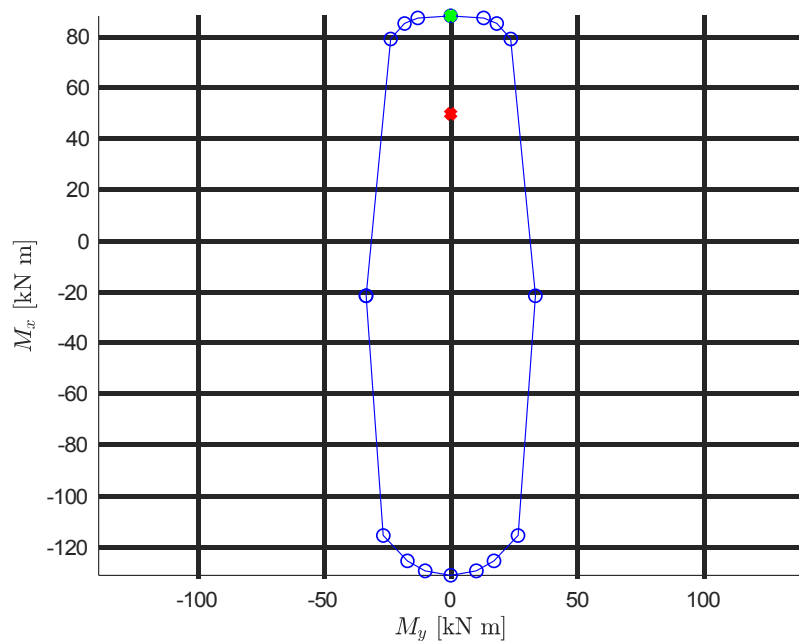
Tabella 175.172. Elemento più sollecitato

Elemento	[n°]	301
Ascissa	[m]	0.60

Tabella 176.173. Sollecitazioni SLV

		min	max
N	[kN]	0.0	0.0
Mx	[kNm]	39.9	49.6
My	[kNm]	-0.0	0.0

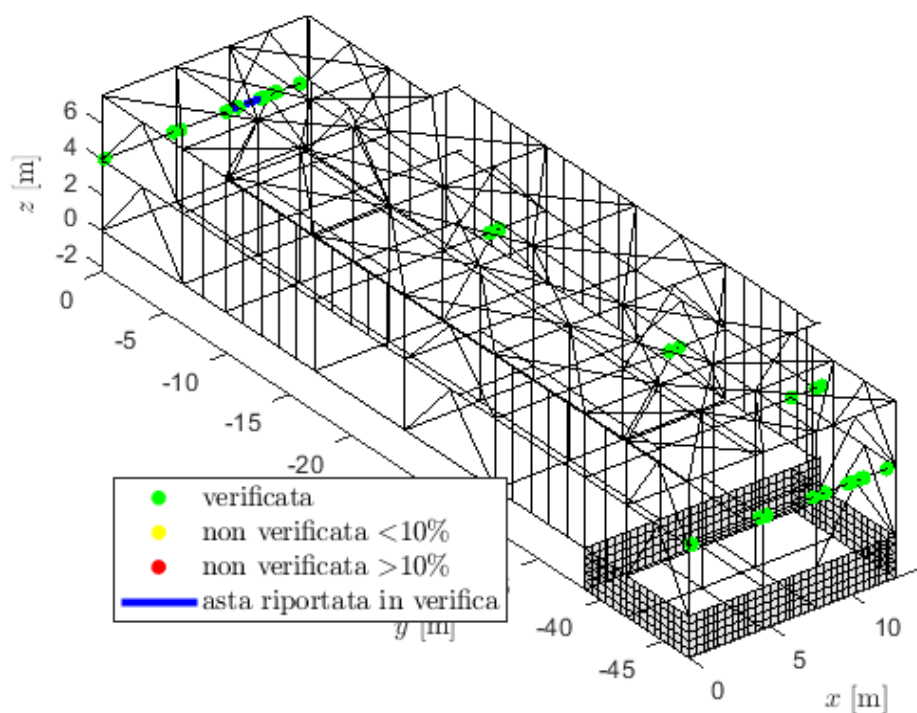
$V_x$	[kN]	-0.0	0.0
$V_y$	[kN]	-0.7	8.0



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.563$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

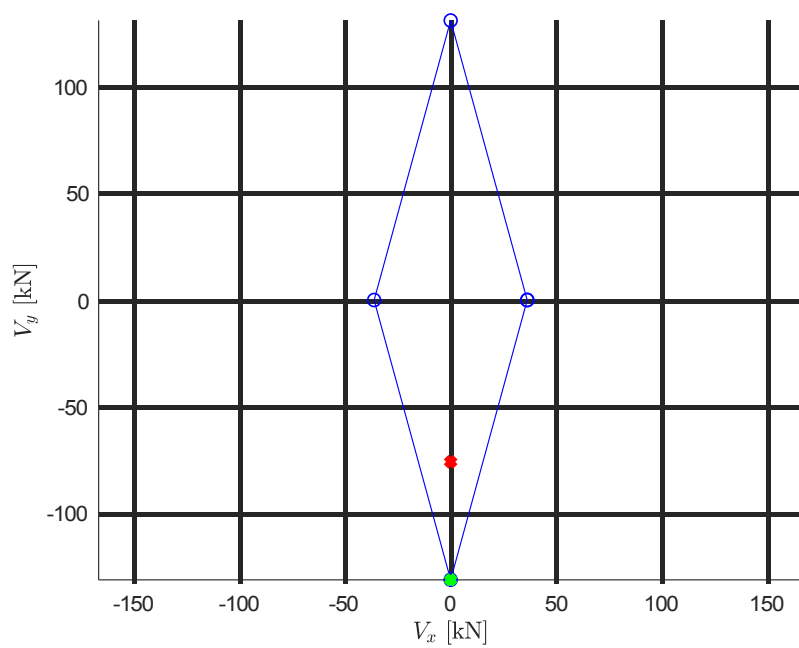


**Tabella 177.174. Elemento più sollecitato**

Elemento	[n°]	536
Ascissa	[m]	0.51

Tabella 178.175. Sollecitazioni SLV

		min	max
N	[kN]	0.0	0.0
M <sub>x</sub>	[kNm]	-35.9	-22.8
M <sub>y</sub>	[kNm]	-0.0	0.0
V <sub>x</sub>	[kN]	-0.0	0.0
V <sub>y</sub>	[kN]	-76.0	-65.5

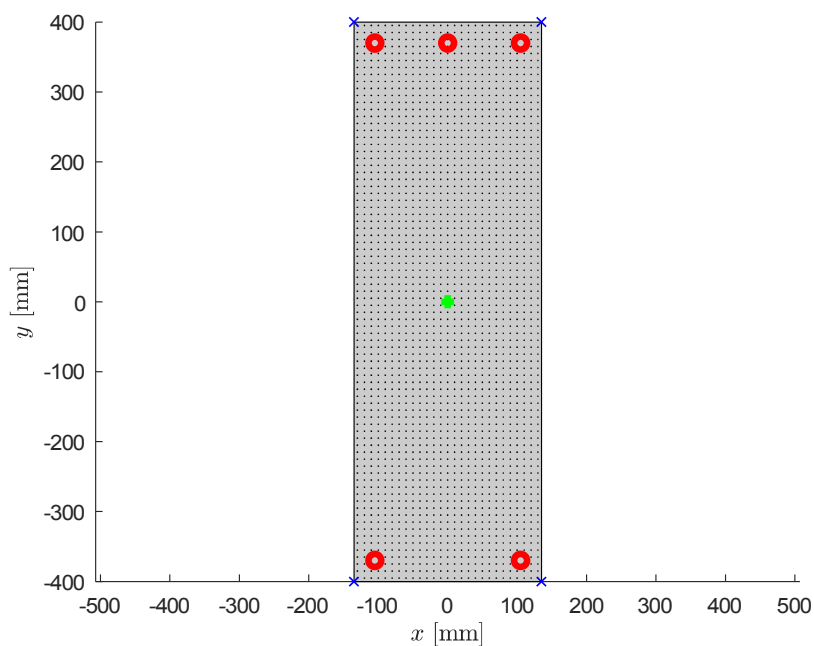


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.578$$

SLU a taglio verificati

## "6 - Rettangolare b=27 h=80 travi p1 (6+2)"

### Sezione



**Tabella 179.176. Materiali**

Res. Cls 1	Rcm	[MPa]	13
Res. Cls 2	Rcm	[MPa]	0
Res. barre longitudinali	fykl	[MPa]	440
Res. staffe	fyks	[MPa]	230
Fattore di confidenza	FC	-	1.00

**Tabella 180.177. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-135	135
Dimensione	max	[mm]	-400	400
Largh. anima	bw	[mm]	800	270
Altezza utile	d	[mm]	240	770
Area staffe	As	[mm2]	101	101
Passo staffe	s	[mm]	300	300
Area f.pieg.	Asfp	[mm2]	0	0

Passo f.pieg.	sfp	[mm]	300	200
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Tabella 181.178. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	153.94
2	240	30	153.94
3	135	770	307.88
4	30	770	307.88
5	240	770	307.88

## Verifica SLV (peggiorativa per M)

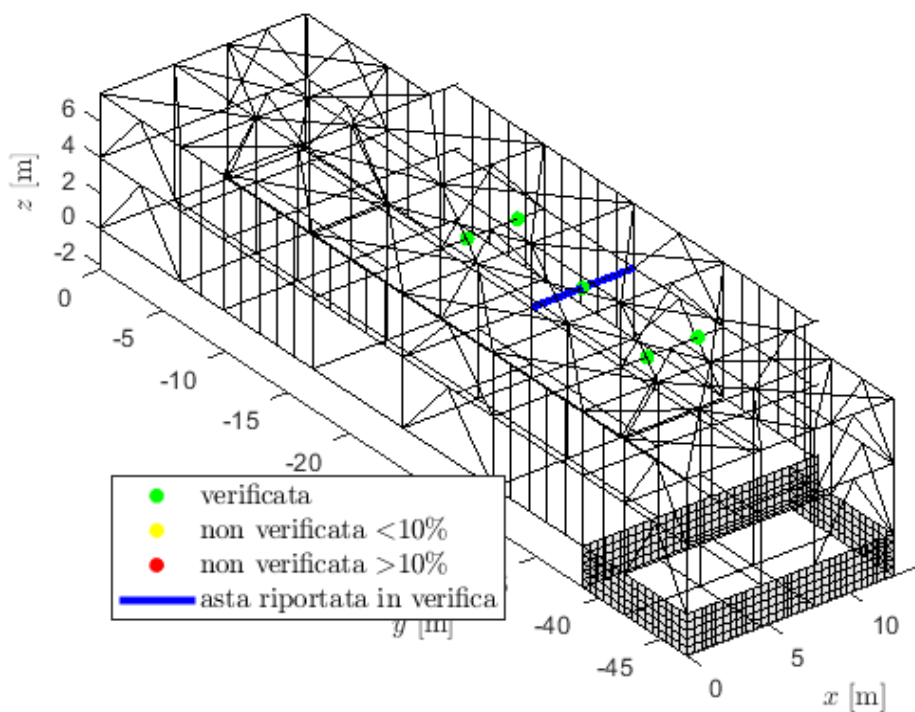


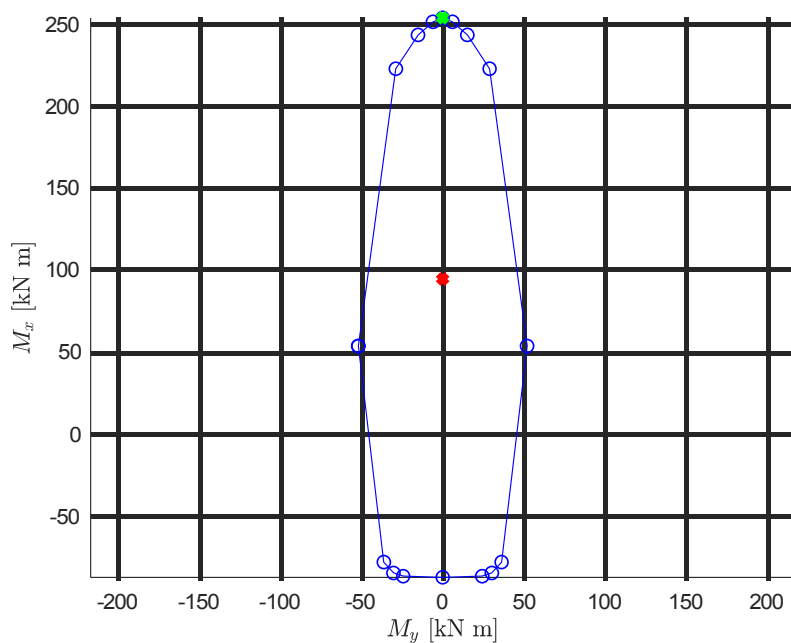
Tabella 182.179. Elemento più sollecitato

Elemento	[n°]	39
Ascissa	[m]	3.17

Tabella 183.180. Sollecitazioni SLV

		min	max
N	[kN]	0.0	0.0
Mx	[kNm]	92.9	94.3
My	[kNm]	-0.0	0.0

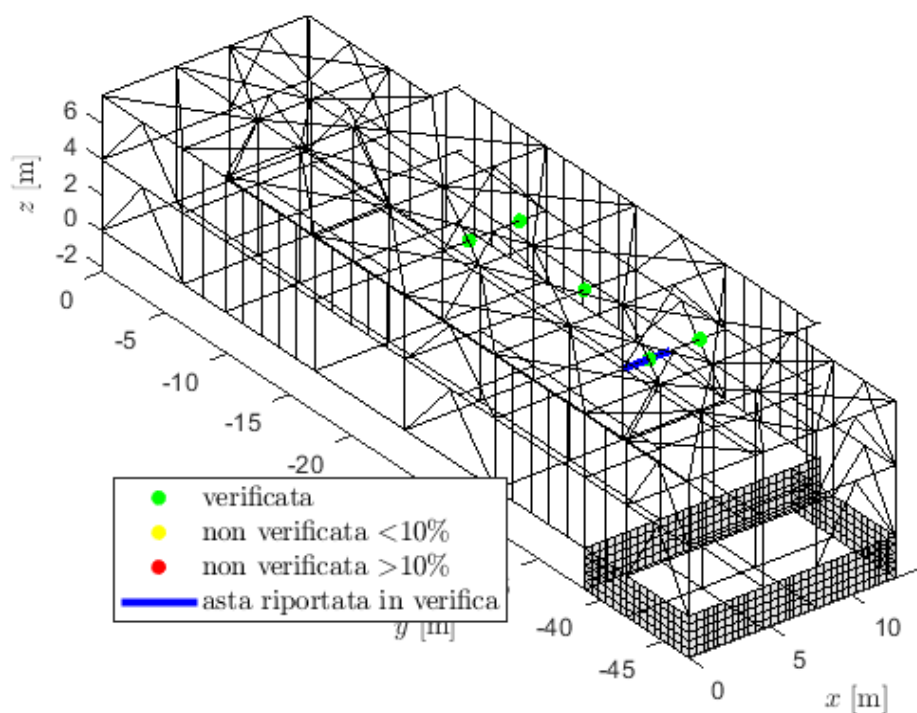
$V_x$	[kN]	-0.0	0.0
$V_y$	[kN]	-7.0	4.9



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.371$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

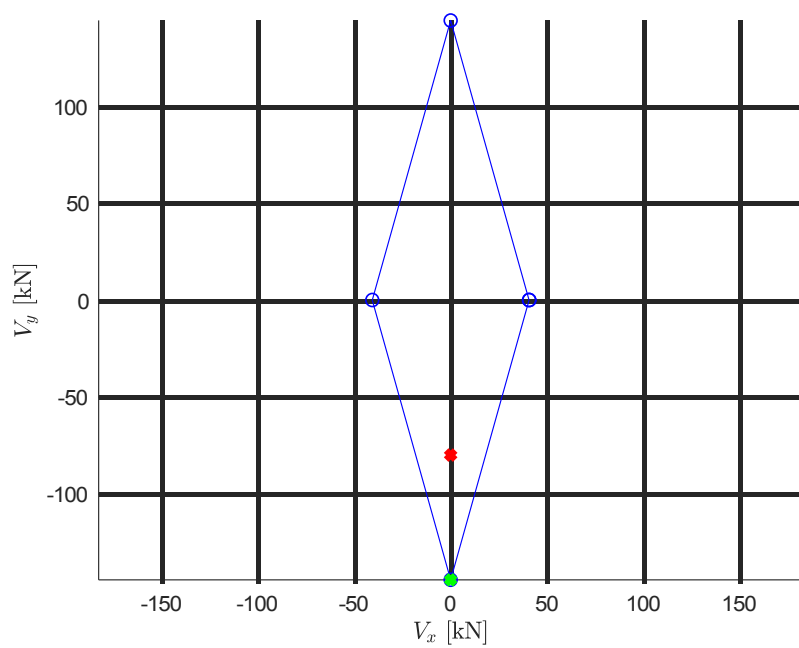


**Tabella 184.181. Elemento più sollecitato**

Element o	[n°]	242
Ascissa	[m]	1.61

Tabella 185.182. Sollecitazioni SLV

		min	max
N	[kN]	0.0	0.0
M <sub>x</sub>	[kNm]	38.9	50.8
M <sub>y</sub>	[kNm]	-0.0	0.0
V <sub>x</sub>	[kN]	-0.0	0.0
V <sub>y</sub>	[kN]	-79.9	-69.8



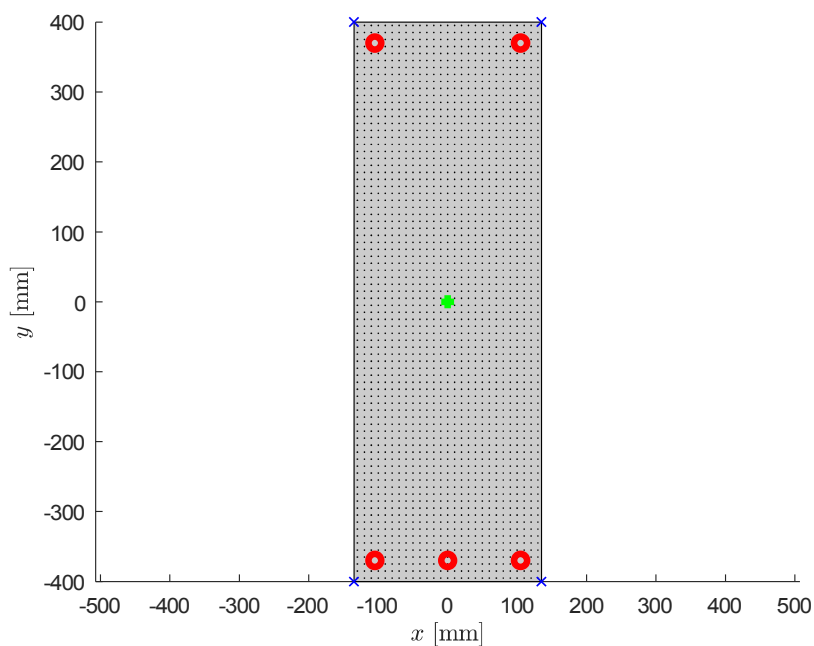
$$\max(|V_{Ed}|/|V_{Rd}|) = 0.554$$

SLU a taglio verificati



## "6 - Rettangolare b=27 h=80 travi p1 (6+2)"

### Sezione



**Tabella 186.183. Materiali**

Res.Cls 1	Rcm	[MPa ]	13
Res. Cls 2	Rcm	[MPa ]	0
Res. barre longitudinali	fykl	[MPa ]	440
Res. staffe	fyks	[MPa ]	230
Fattore di confidenza	FC	-	1.00

**Tabella 187.184. Geometria della sezione**

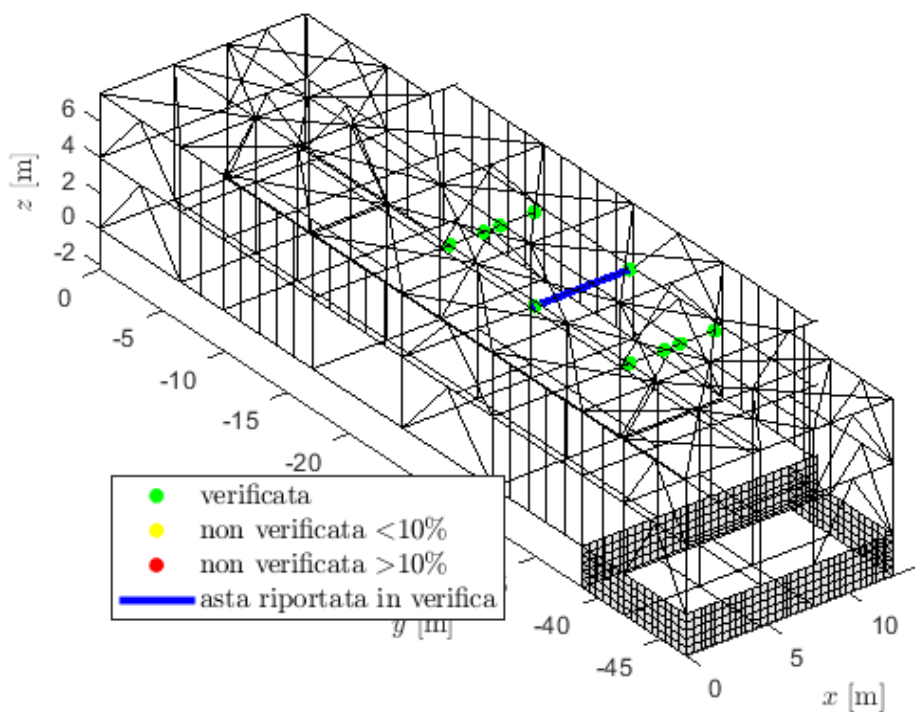
			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-135	135
Dimensione	max	[mm]	-400	400
Largh. anima	bw	[mm]	800	270
Altezza utile	d	[mm]	240	770
Area staffe	As	[mm2 ]	101	101
Passo staffe	s	[mm]	300	300
Area f.pieg.	Asfp	[mm2 ]	0	0

Passo f.pieg.	sfp	[mm]	300	200
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**Tabella 188.185. Armature**

	x	y	A
Barra n°	[mm]	[mm]	[mm2]
1	30	30	307.88
2	240	30	307.88
3	135	30	307.88
4	30	770	153.94
5	240	770	153.94

## Verifica SLV (peggiorativa per M)



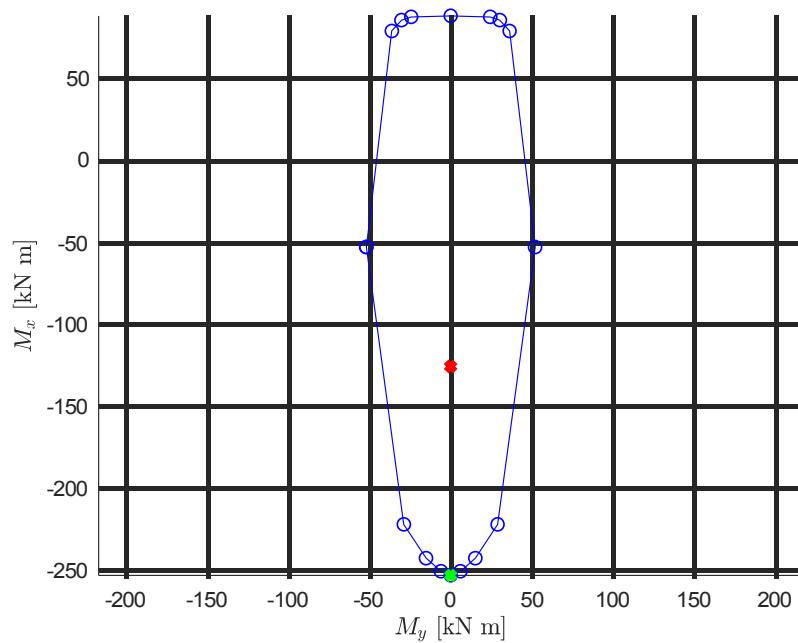
**Tabella 189.186. Elemento più sollecitato**

Elemento	[n°]	39
Ascissa	[m]	0.25

**Tabella 190.187. Sollecitazioni SLV**

		min	max
N	[kN]	0.0	0.0
M <sub>x</sub>	[kNm]	-126.2	-92.6
M <sub>y</sub>	[kNm]	-0.0	0.0

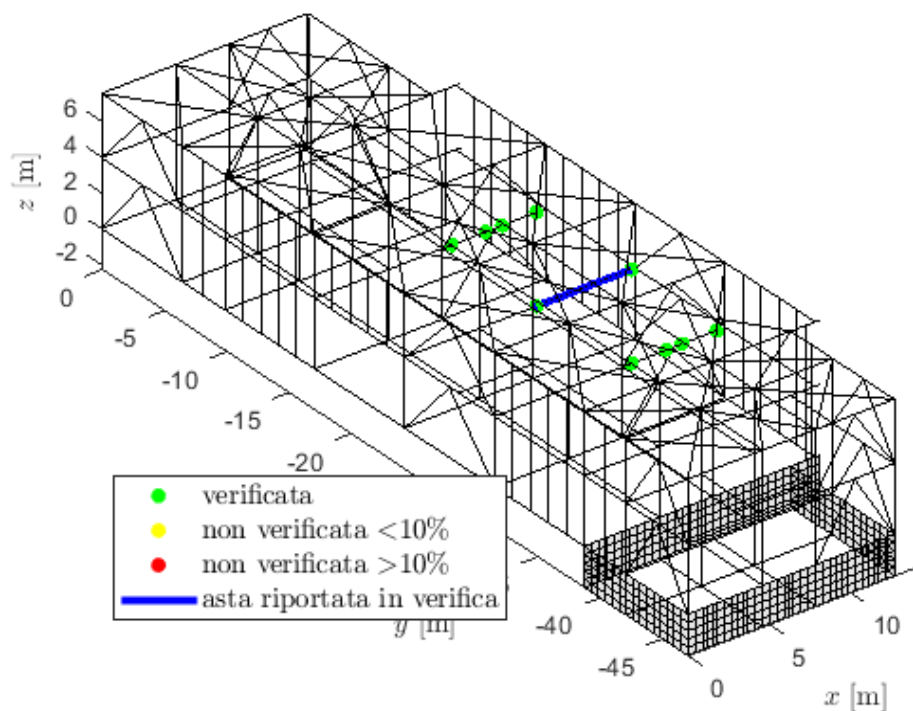
$V_x$	[kN]	-0.0	0.0
$V_y$	[kN]	-144.2	-132.3



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.497$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

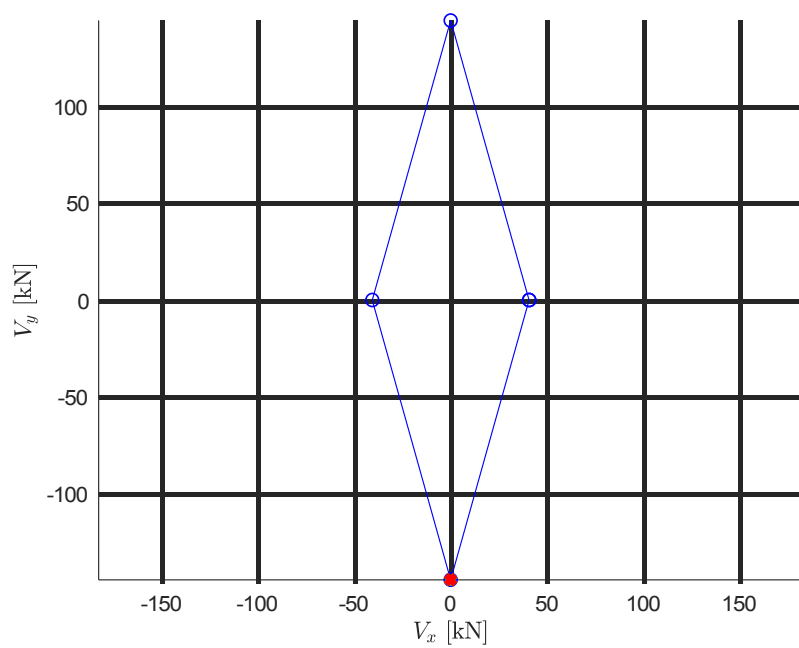


**Tabella 191.188. Elemento più sollecitato**

Elemento	[n°]	39
Ascissa	[m]	0.25

**Tabella 192.189. Sollecitazioni SLV**

		min	max
N	[kN]	0.0	0.0
M <sub>x</sub>	[kNm]	-126.2	-92.6
M <sub>y</sub>	[kNm]	-0.0	0.0
V <sub>x</sub>	[kN]	-0.0	0.0
V <sub>y</sub>	[kN]	-144.2	-132.3

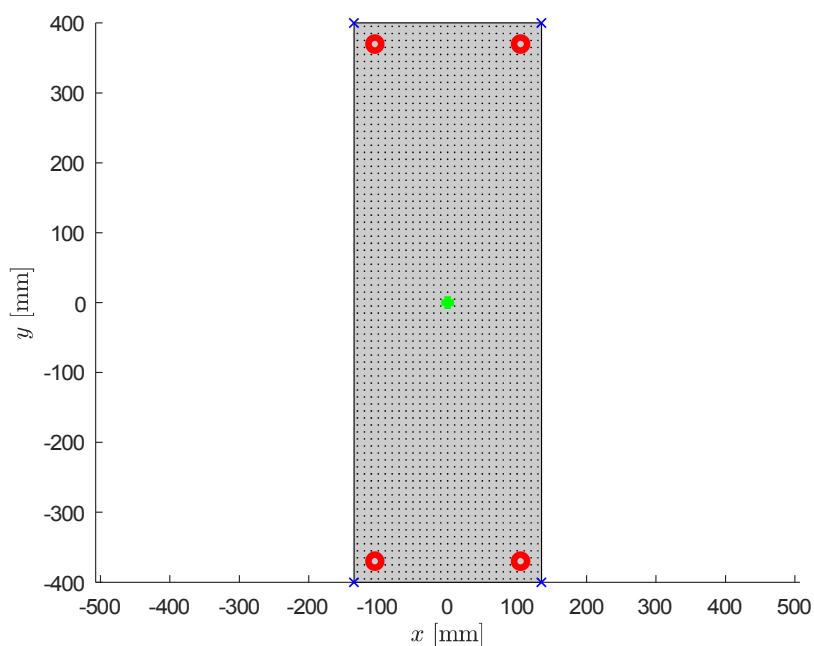


$$\max(|V_{Ed}|/|V_{Rd}|) = 1.000$$

SLU a taglio verificati

# 119044444193."6 - Rettangolare b=27 h=80 travi p1 (4+2)"

## 5555194.5. Sezione



**Tabella 195.191. Materiali**

Res.Cls 1	Rcm	[MPa	13
Res. Cls 2	Rcm	[MPa	0
Res. barre longitudinali	fykl	[MPa	440
Res. staffe	fyks	[MPa	230
Fattore di confidenza	FC	-	1.00

**Tabella 196.192. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-135	135
Dimensione	max	[mm]	-400	400
Largh. anima	bw	[mm]	800	270
Altezza utile	d	[mm]	240	770
Area staffe	As	[mm2	101	101
		]		
Passo staffe	s	[mm]	300	300

Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0
Passo f.pieg.	sfp	[mm]	300	200

Tabella 197.193. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	153.94
2	240	30	153.94
3	30	770	307.88
4	240	770	307.88

## 6666198.6. Verifica SLV (peggiorativa per M)

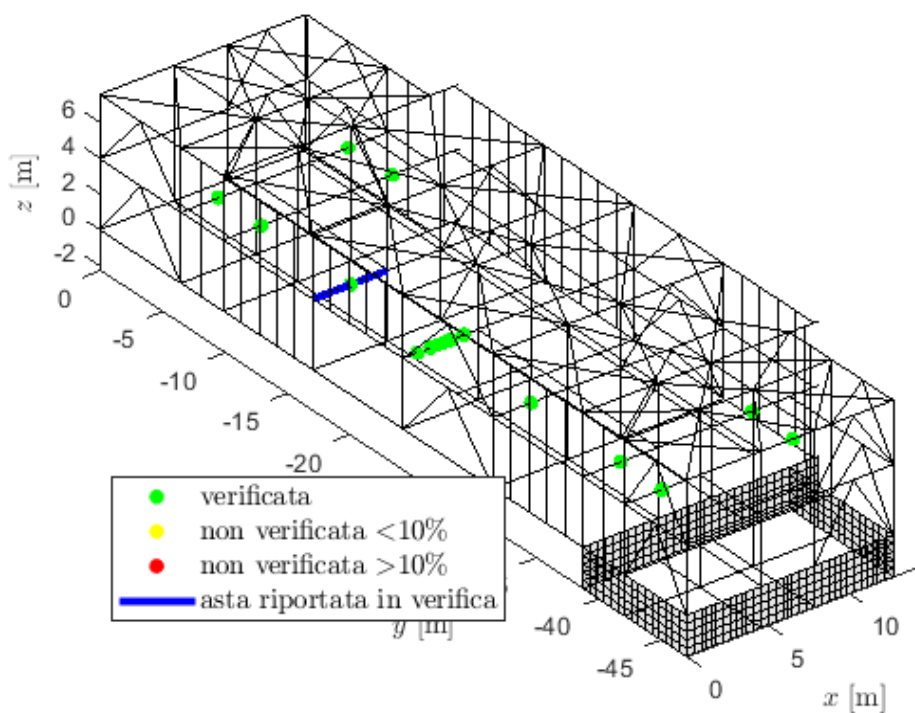


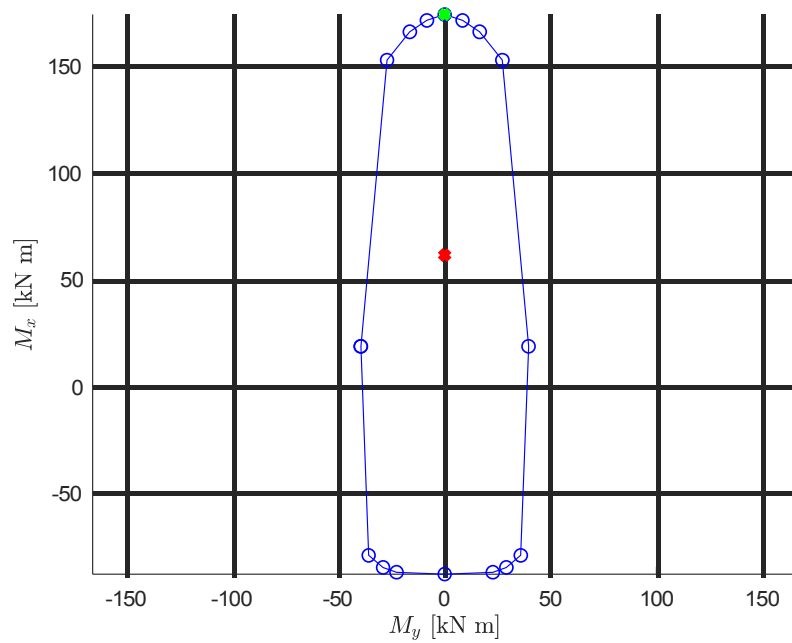
Tabella 199.194. Elemento più sollecitato

Elemento	[n°]	492
Ascissa	[m]	2.31

Tabella 200.195. Sollecitazioni SLV

		min	max
N	[kN]	0.0	0.0
Mx	[kNm]	60.8	61.4

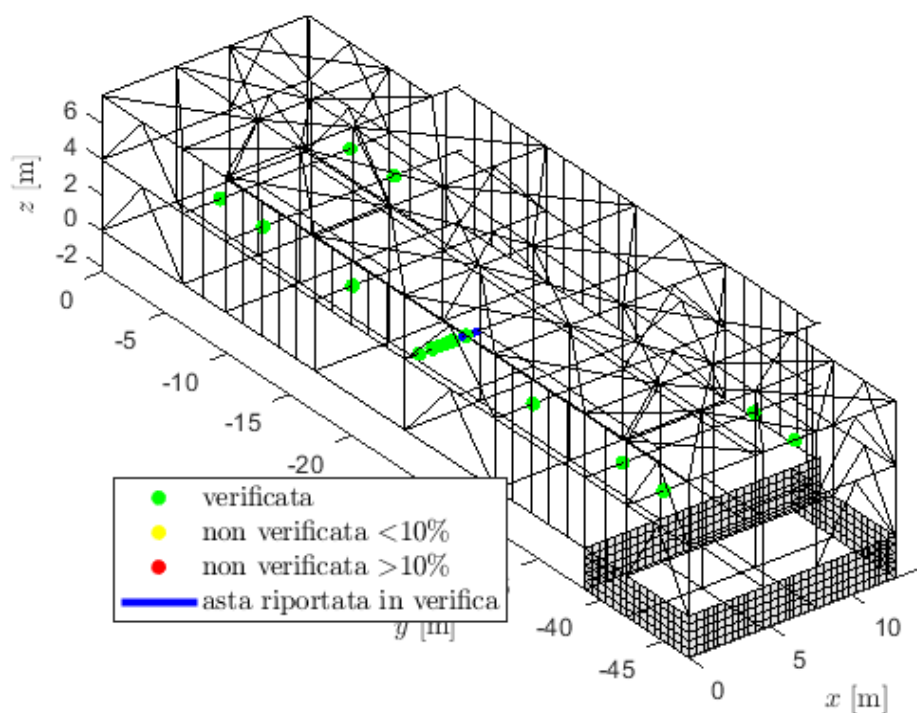
$M_y$	[kNm]	0.0	0.0
$V_x$	[kN]	-0.0	0.0
$V_y$	[kN]	-7.4	10.3



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.353$$

SLU a flessione verificati

## 7777201.7. Verifica SLV (peggiorativa per V)



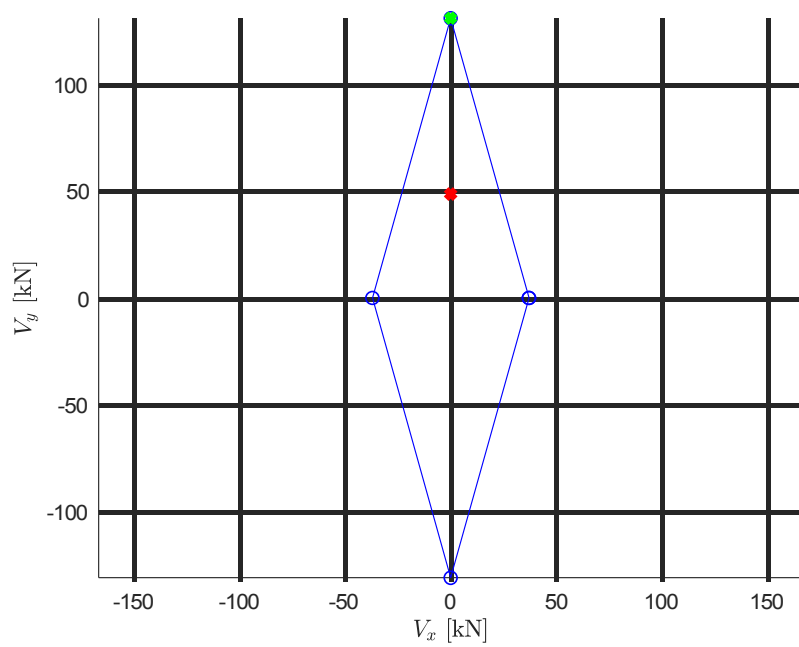
**Tabella 202.196. Elemento più sollecitato**

Elemento	[n°]	478
Ascissa	[m]	0.61

**Tabella 203.197. Sollecitazioni SLV**

		min	max
N	[kN]	0.0	0.0
Mx	[kNm]	-18.1	8.9
My	[kNm]	-0.0	0.0
Vx	[kN]	-0.0	0.0
Vy	[kN]	28.9	48.8



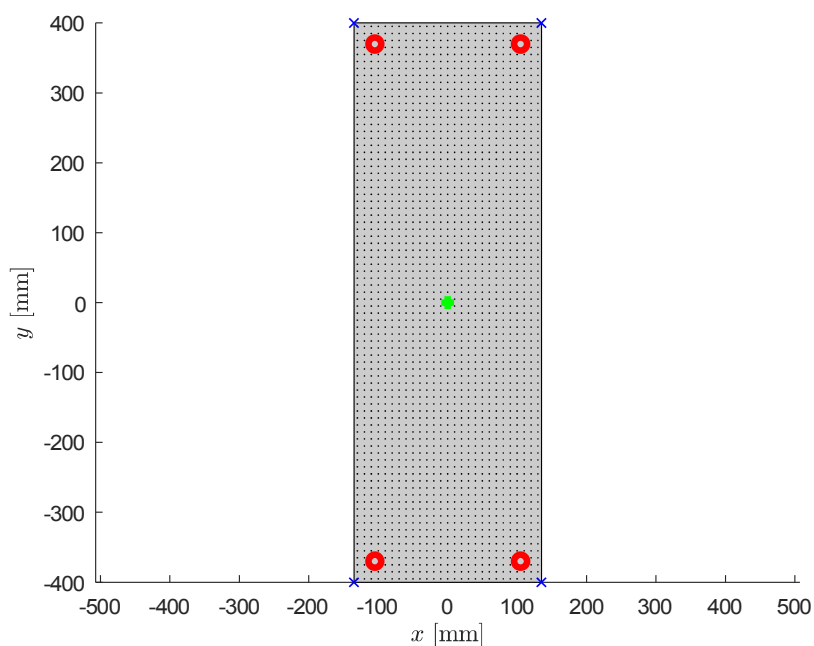


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.372$$

SLU a taglio verificati

# 21988888204."6 - Rettangolare b=27 h=80 travi p1 (4+2)"

## 9999205.9. Sezione



**Tabella 206.199. Materiali**

Res.Cls 1	Rcm	[MPa	13
Res. Cls 2	Rcm	[MPa	0
Res. barre longitudinali	fykl	[MPa	440
Res. staffe	fyks	[MPa	230
Fattore di confidenza	FC	-	1.00

**Tabella 207.200. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-135	135
Dimensione	max	[mm]	-400	400
Largh. anima	bw	[mm]	800	270
Altezza utile	d	[mm]	240	770
Area staffe	As	[mm2	101	101
		]		
Passo staffe	s	[mm]	300	300

Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0
Passo f.pieg.	sfp	[mm]	300	200

Tabella 208.201. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	307.88
2	240	30	307.88
3	30	770	153.94
4	240	770	153.94

## 10101010209.10. Verifica SLV (peggiorativa per M)

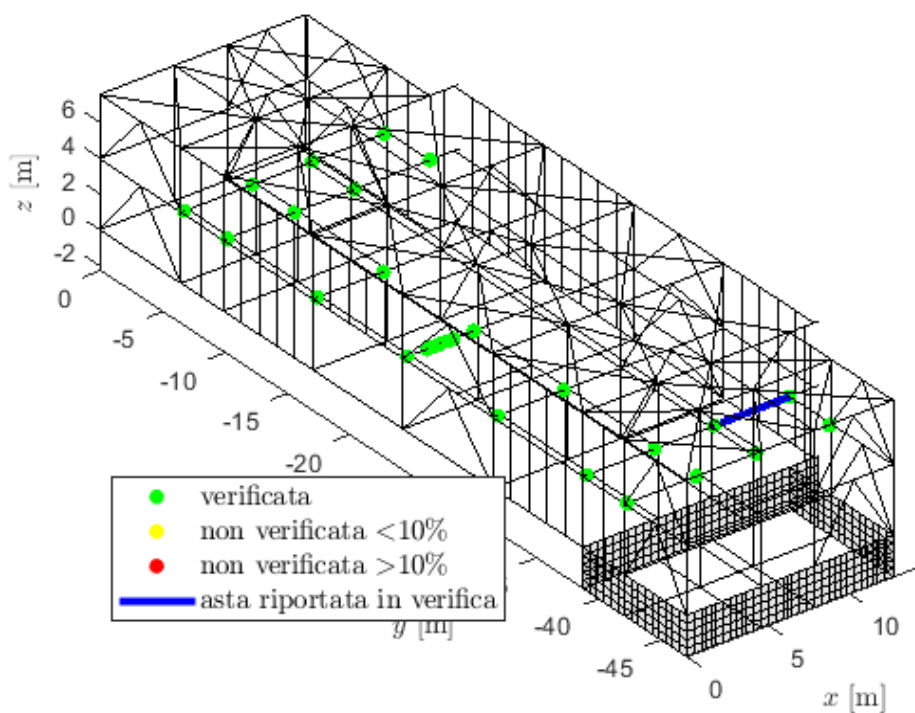


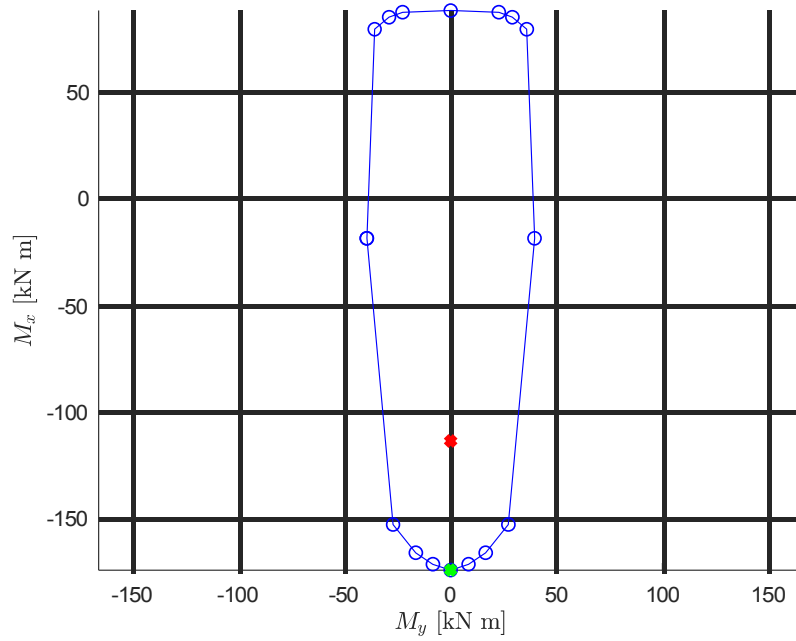
Tabella 210.202. Elemento più sollecitato

Elemento	[n°]	569
Ascissa	[m]	4.84

Tabella 211.203. Sollecitazioni SLV

		min	max
N	[kN]	0.0	0.0
M <sub>x</sub>	[kNm]	-113.7	-60.0

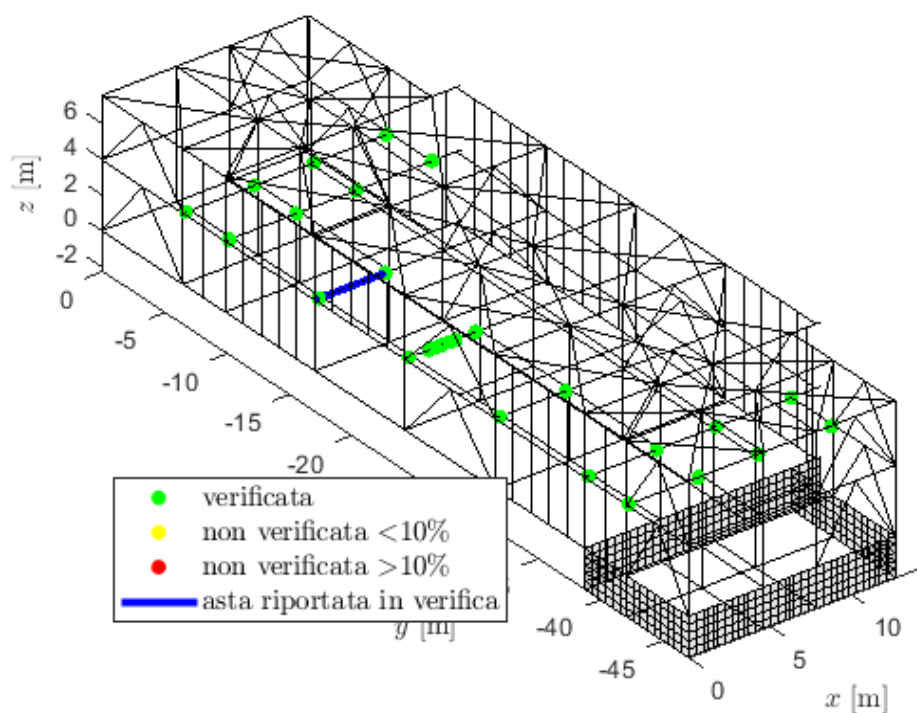
M <sub>y</sub>	[kNm]	-0.0	0.0
V <sub>x</sub>	[kN]	-0.0	0.0
V <sub>y</sub>	[kN]	92.7	112.2



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.653$$

SLU a flessione verificati

## 1111111212.11. Verifica SLV (peggiorativa per V)

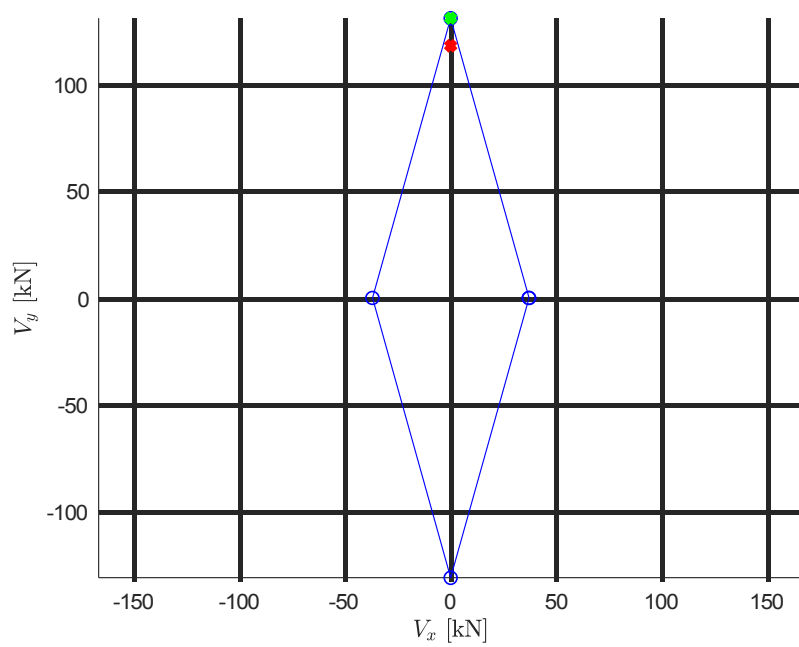


**Tabella 213.204. Elemento più sollecitato**

Elemento	[n°]	492
Ascissa	[m]	4.36

**Tabella 214.205. Sollecitazioni SLV**

		min	max
N	[kN]	0.0	0.0
M <sub>x</sub>	[kNm]	-70.9	-35.1
M <sub>y</sub>	[kNm]	0.0	0.0
V <sub>x</sub>	[kN]	-0.0	0.0
V <sub>y</sub>	[kN]	100.7	118.5

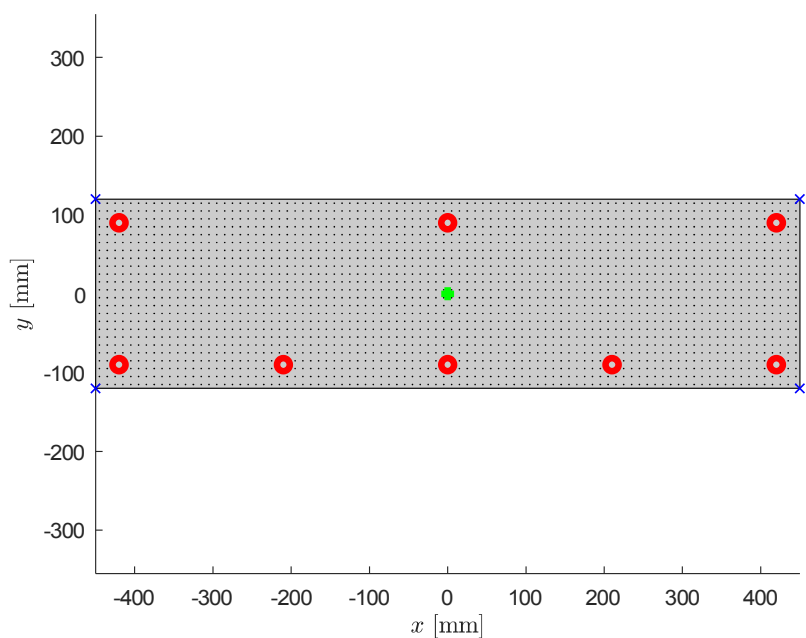


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.902$$

SLU a taglio verificati

## "24- Rettangolare b=90 h=24 travi spessore p1"

### Sezione



**Tabella 215.206. Materiali**

Res. Cls 1	Rcm	[MPa ]	13
Res. Cls 2	Rcm	[MPa ]	0
Res. barre longitudinali	fykl	[MPa ]	440
Res. staffe	fyks	[MPa ]	230
Fattore di confidenza	FC	-	1.00

**Tabella 216.207. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-450	450
Dimensione	max	[mm]	-120	120
Largh. anima	bw	[mm]	240	900
Altezza utile	d	[mm]	870	210
Area staffe	As	[mm2 ]	57	57
Passo staffe	s	[mm]	250	250
Area f.pieg.	Asfp	[mm2 ]	0	0

Passo f.pieg.	sfp	[mm]	300	200
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Tabella 217.208. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm2]
1	30	30	201.06
2	240	30	201.06
3	450	30	201.06
4	660	30	201.06
5	870	30	201.06
6	30	210	201.06
7	450	210	201.06
8	870	210	201.06

## Verifica SLV (peggiorativa per M)

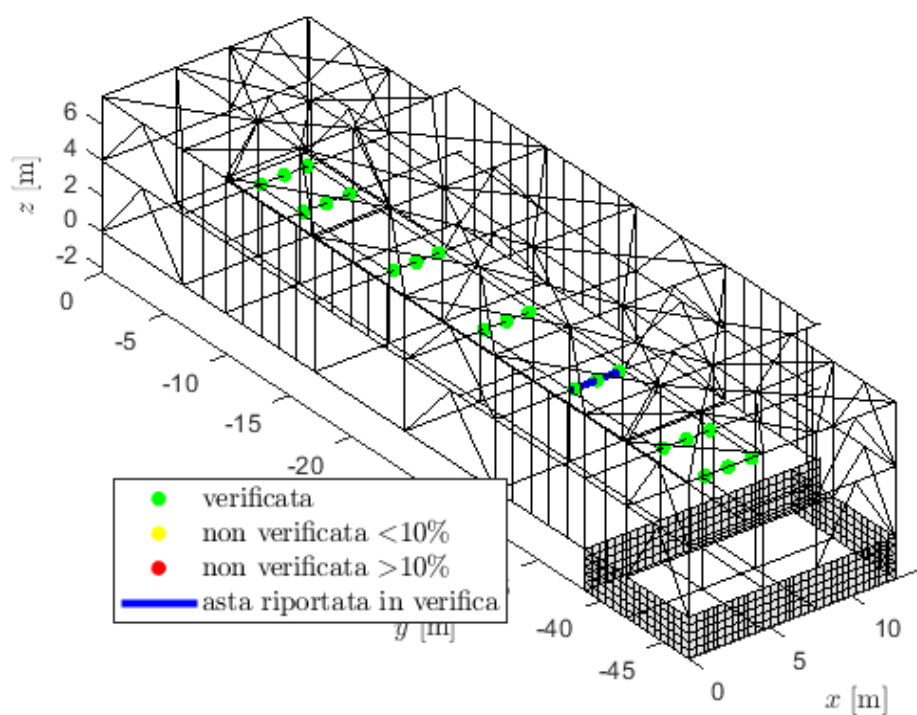


Tabella 218.209. Elemento più sollecitato

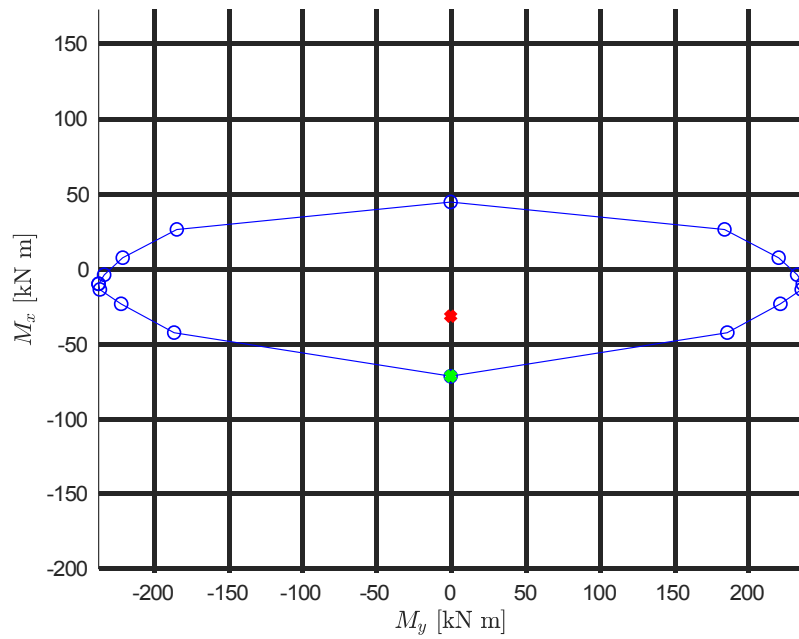
Elemento	[n°]	865
Ascissa	[m]	3.02

Tabella 219.210. Sollecitazioni SLV

		min	max
N	[kN]	0.0	0.0



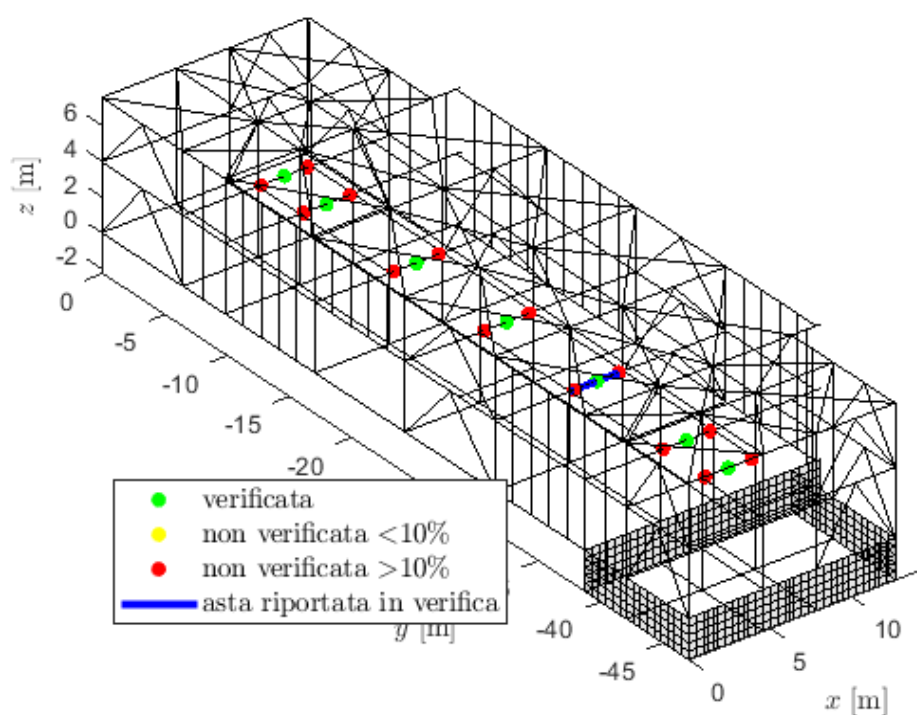
M <sub>x</sub>	[kNm]	-31.9	-24.1
M <sub>y</sub>	[kNm]	-0.0	0.0
V <sub>x</sub>	[kN]	-0.0	0.0
V <sub>y</sub>	[kN]	47.7	53.1



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.444$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

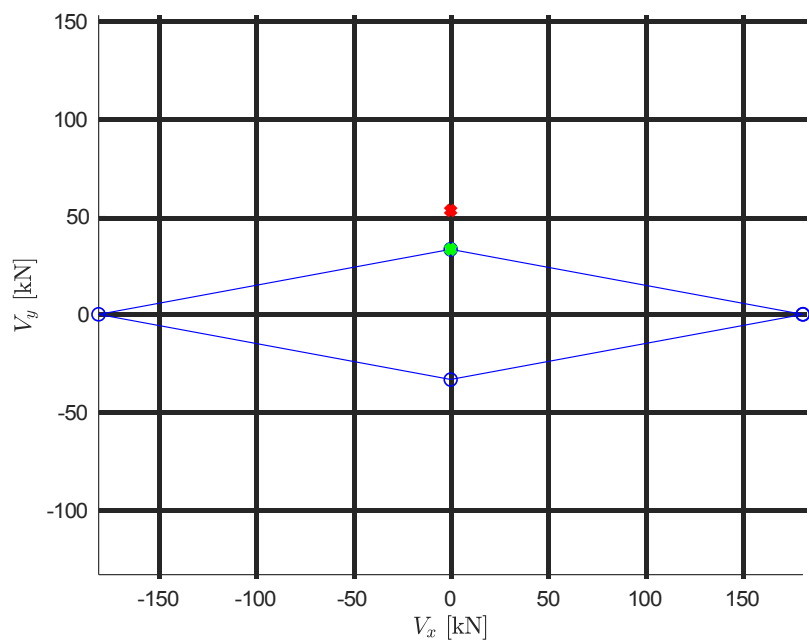


**Tabella 220.211. Elemento più sollecitato**

Elemento	[n°]	865
Ascissa	[m]	3.02

**Tabella 221.212. Sollecitazioni SLV**

		min	max
N	[kN]	0.0	0.0
M <sub>x</sub>	[kNm]	-31.9	-24.1
M <sub>y</sub>	[kNm]	-0.0	0.0
V <sub>x</sub>	[kN]	-0.0	0.0
V <sub>y</sub>	[kN]	47.7	53.1



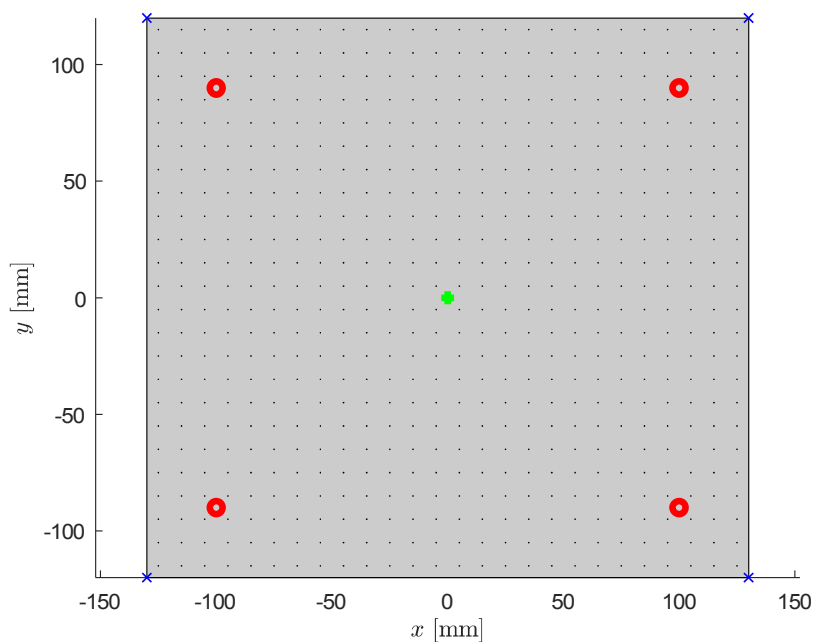
$$\max(|V_{Ed}|/|V_{Rd}|) = 1.595$$

SLU a taglio NON verificati

N.B: La presente non verifica è stata risolta con l'intervento di inserimento di profili metallici UPN160 accoppiati all'intradosso delle travi suddette (vedi Relazione di calcolo A8).

## "7 - Rettangolare b=26 h=24 travi p1"

### Sezione



**Tabella 222.213. Materiali**

Res. Cls 1	Rcm	[MPa]	13
Res. Cls 2	Rcm	[MPa]	0
Res. barre longitudinali	fykl	[MPa]	440
Res. staffe	fyks	[MPa]	230
Fattore di confidenza	FC	-	1.00

**Tabella 223.214. Geometria della sezione**

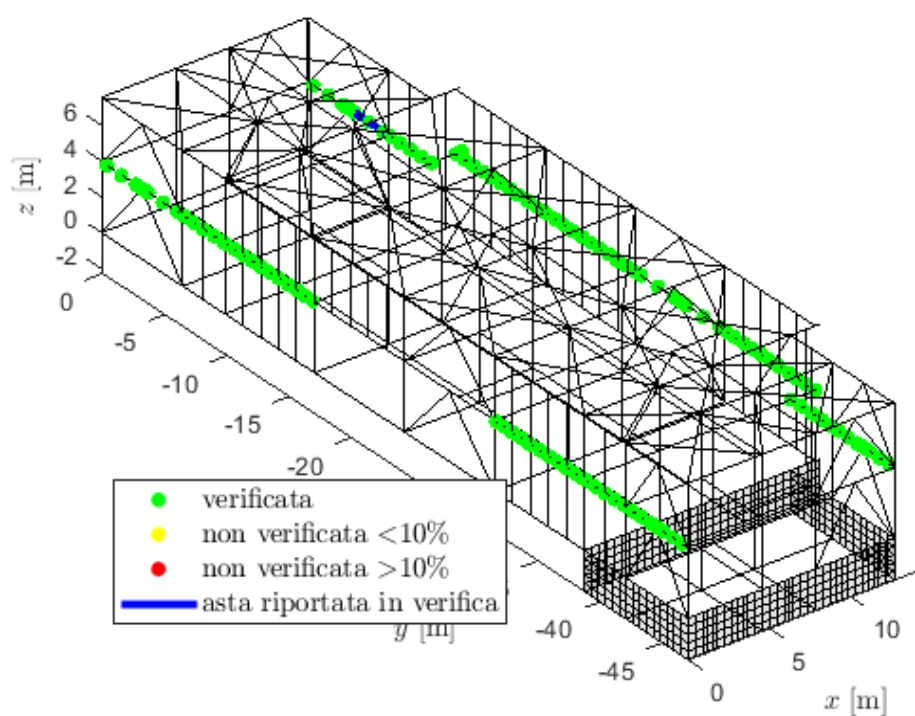
			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-130	130
Dimensione	max	[mm]	-120	120
Largh. anima	bw	[mm]	240	260
Altezza utile	d	[mm]	230	210
Area staffe	As	[mm <sup>2</sup> ]	57	57
Passo staffe	s	[mm]	250	250
Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0

Passo f.pieg.	sfp	[mm]	300	200
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**Tabella 224.215. Armature**

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	153.94
2	230	30	153.94
3	30	210	153.94
4	230	210	153.94

## Verifica SLV (peggiorativa per M)



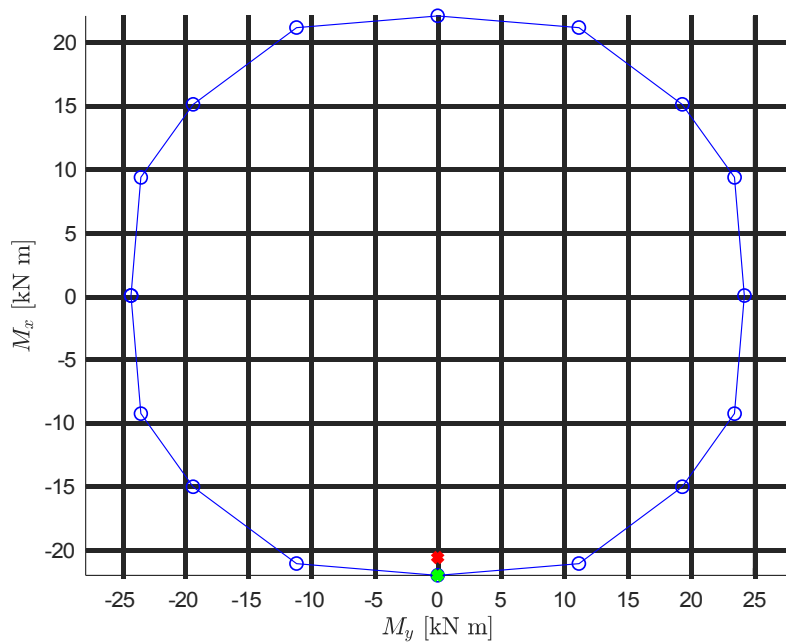
**Tabella 225.216. Elemento più sollecitato**

Elemento	[n°]	65
Ascissa	[m]	0.45

**Tabella 226.217. Sollecitazioni SLV**

		min	max
N	[kN]	0.0	0.0
M <sub>x</sub>	[kNm]	-20.6	-13.4
M <sub>y</sub>	[kNm]	-0.0	0.0

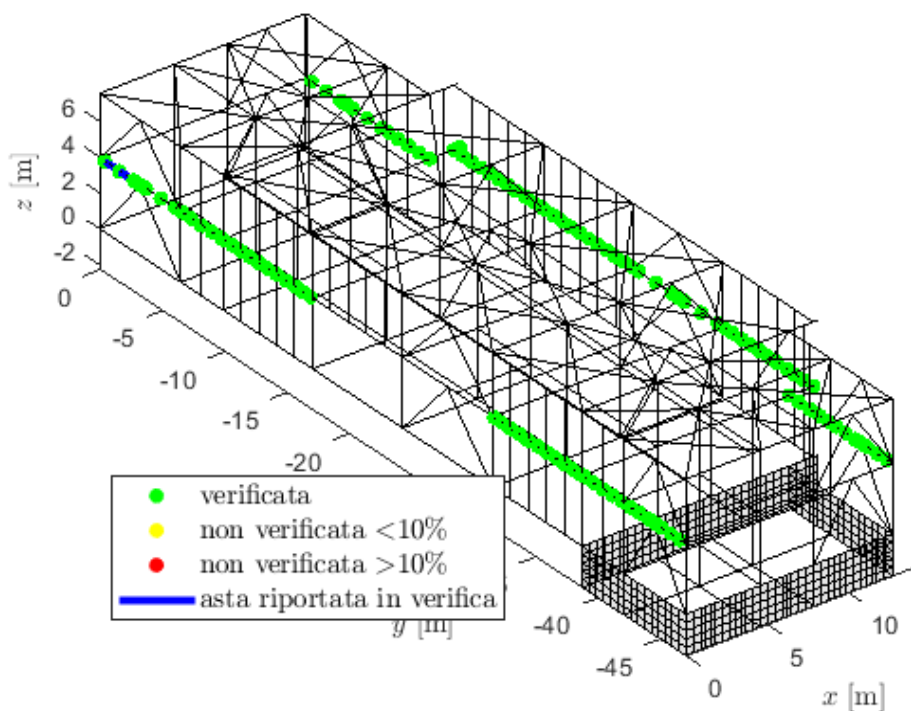
$V_x$	[kN]	-0.0	0.0
$V_y$	[kN]	-26.5	-20.7



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.936$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

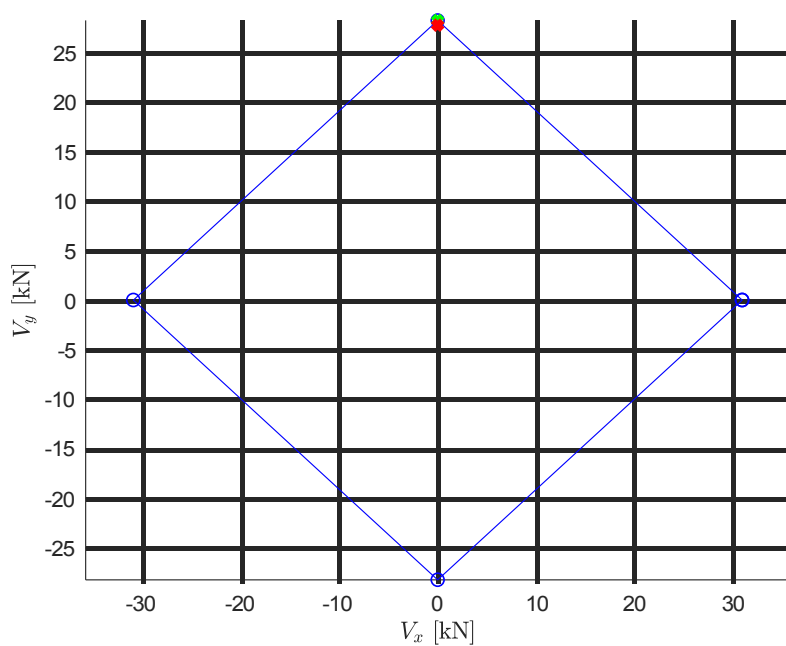


**Tabella 227.218. Elemento più sollecitato**

Elemento	[n°]	64
Ascissa	[m]	2.51

**Tabella 228.219. Sollecitazioni SLV**

		min	max
N	[kN]	0.0	0.0
M <sub>x</sub>	[kNm]	-20.4	-13.4
M <sub>y</sub>	[kNm]	-0.0	0.0
V <sub>x</sub>	[kN]	-0.0	0.0
V <sub>y</sub>	[kN]	19.0	27.8

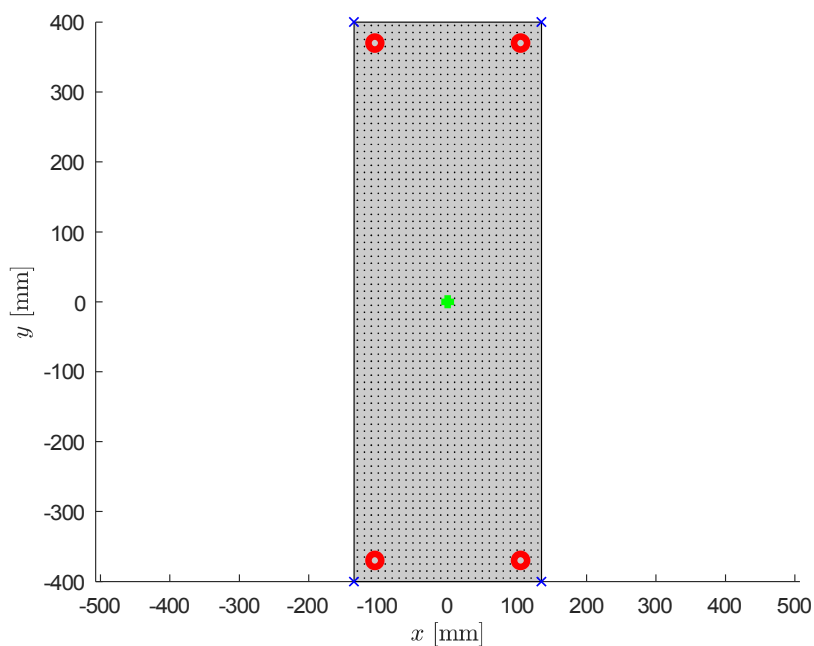


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.983$$

SLU a taglio verificati

## "12 - Rettangolare b=27 h=80 travi p2"

### Sezione



**Tabella 229.220. Materiali**

Res. Cls 1	Rcm	[MPa	12
Res. Cls 2	Rcm	[MPa	0
Res. barre longitudinali	fykl	[MPa	440
Res. staffe	fyks	[MPa	230
Fattore di confidenza	FC	-	1.20

**Tabella 230.221. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-135	135
Dimensione	max	[mm]	-400	400
Largh. anima	bw	[mm]	800	270
Altezza utile	d	[mm]	240	770
Area staffe	As	[mm2	101	101
		]		
Passo staffe	s	[mm]	250	250
Area f.pieg.	Asfp	[mm2	0	0
		]		



Passo f.pieg.	sfp	[mm]	300	200
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Tabella 231.222. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	113.10
2	240	30	113.10
3	30	770	226.19
4	240	770	226.19

## Verifica SLV (peggiorativa per M)

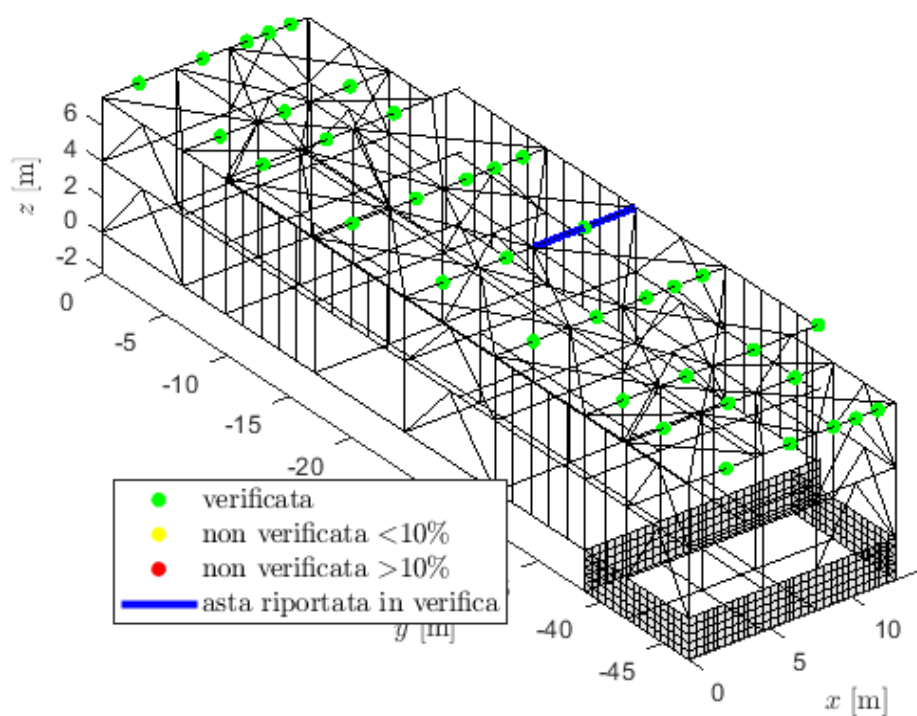


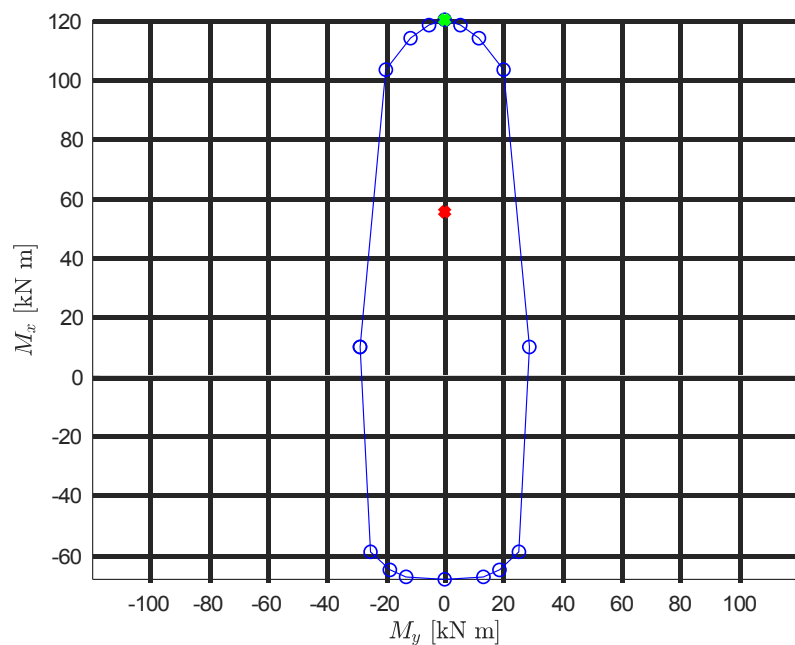
Tabella 232.223. Elemento più sollecitato

Elemento	[n°]	35
Ascissa	[m]	3.19

Tabella 233.224. Sollecitazioni SLV

		min	max
N	[kN]	-41.3	-38.6
M <sub>x</sub>	[kNm]	50.9	55.4
M <sub>y</sub>	[kNm]	-0.4	1.3

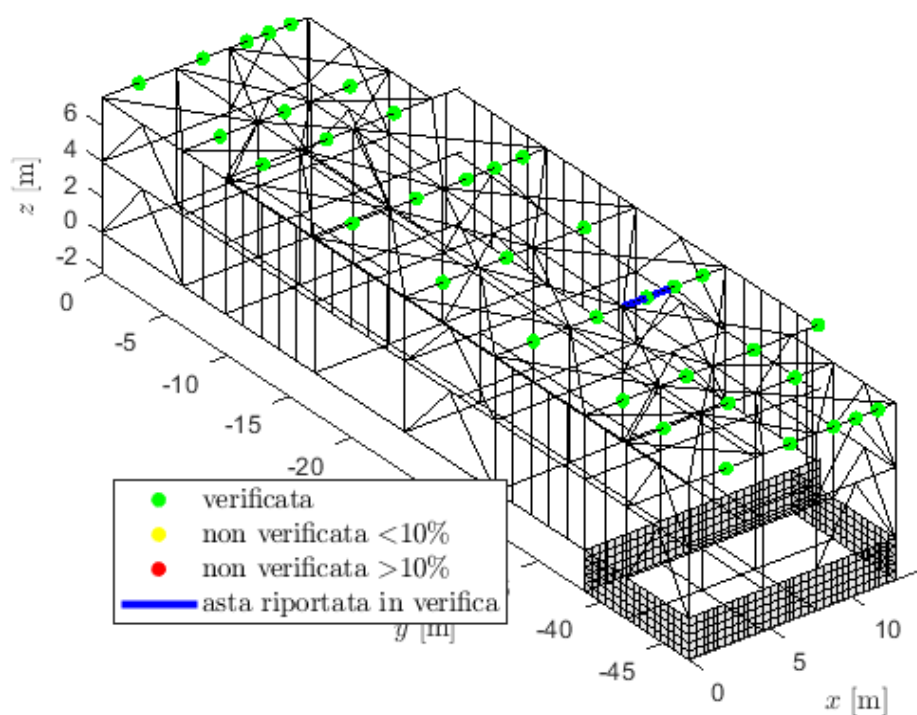
$V_x$	[kN]	-3.6	4.1
$V_y$	[kN]	-0.3	5.1



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.461$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

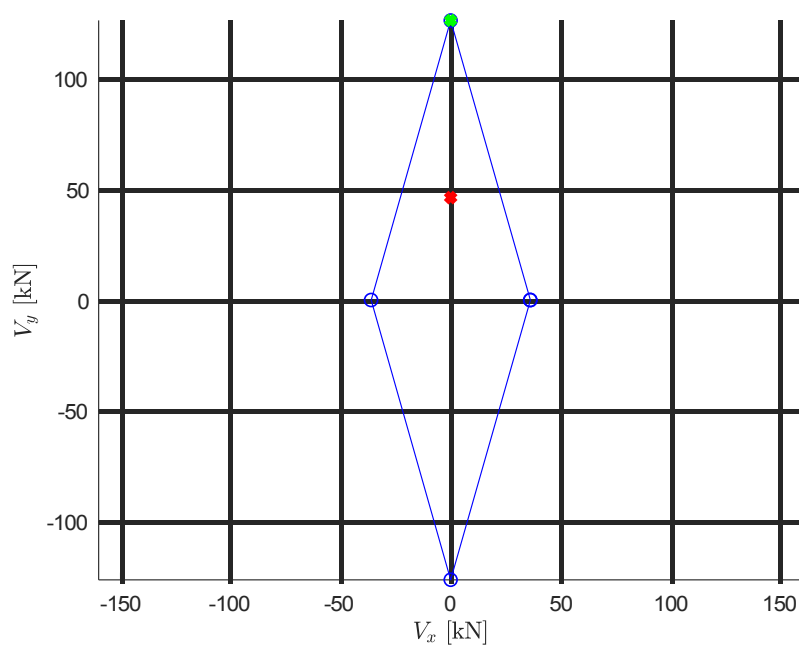


**Tabella 234.225. Elemento più sollecitato**

Element o	[n°]	240
Ascissa	[m]	1.43

Tabella 235.226. Sollecitazioni SLV

		min	max
N	[kN]	-58.0	-15.8
M <sub>x</sub>	[kNm]	19.7	24.6
M <sub>y</sub>	[kNm]	-9.0	9.7
V <sub>x</sub>	[kN]	-6.4	6.3
V <sub>y</sub>	[kN]	42.2	46.2

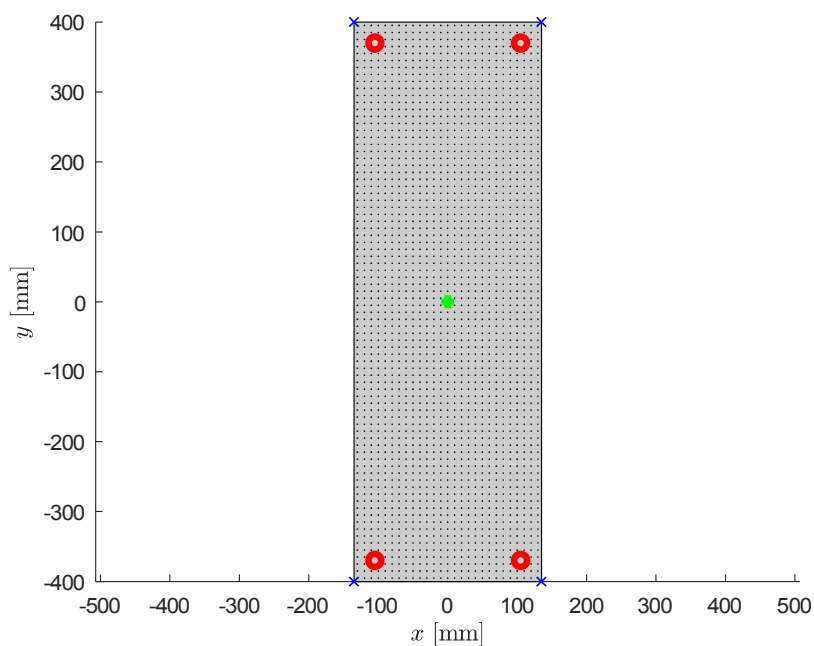


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.366$$

SLU a taglio verificati

## "12 - Rettangolare b=27 h=80 travi p2"

### Sezione



**Tabella 236.227. Materiali**

Res. Cls 1	Rcm	[MPa]	12
Res. Cls 2	Rcm	[MPa]	0
Res. barre longitudinali	fykl	[MPa]	440
Res. staffe	fyks	[MPa]	230
Fattore di confidenza	FC	-	1.20

**Tabella 237.228. Geometria della sezione**

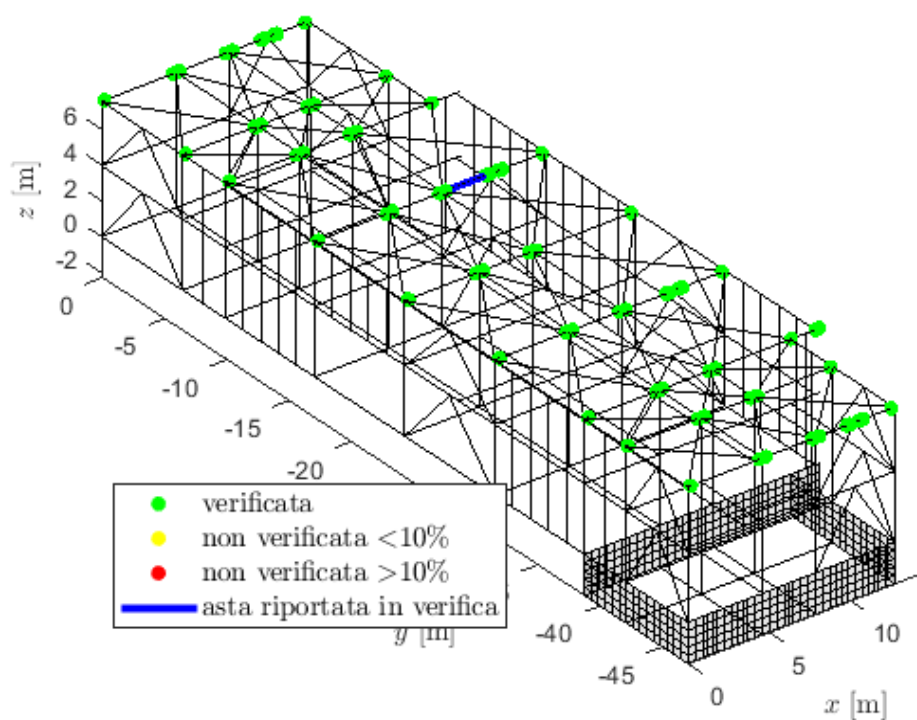
			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-135	135
Dimensione	max	[mm]	-400	400
Largh. anima	bw	[mm]	800	270
Altezza utile	d	[mm]	240	770
Area staffe	As	[mm <sup>2</sup> ]	101	101
Passo staffe	s	[mm]	250	250
Area f.pieg.	Asfp	[mm <sup>2</sup> ]	0	0

Passo f.pieg.	sfp	[mm]	300	200
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**Tabella 238.229. Armature**

	x	y	A
Barra n°	[mm]	[mm]	[mm2]
1	30	30	226.19
2	240	30	226.19
3	30	770	113.10
4	240	770	113.10

## Verifica SLV (peggiorativa per M)



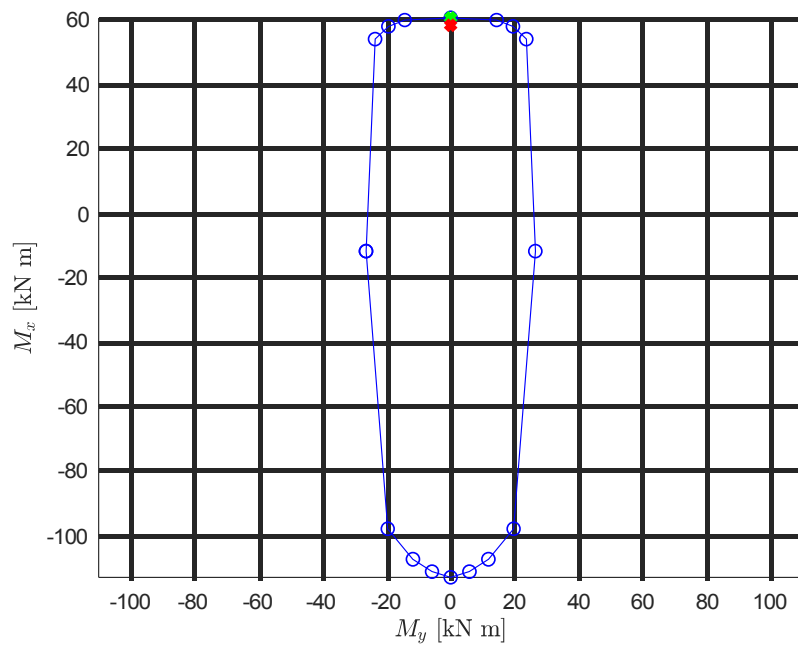
**Tabella 239.230. Elemento più sollecitato**

Elemento	[n°]	250
Ascissa	[m]	0.20

**Tabella 240.231. Sollecitazioni SLV**

		min	max
N	[kN]	-57.4	-17.5
M <sub>x</sub>	[kNm]	52.5	58.2
M <sub>y</sub>	[kNm]	-16.9	17.9

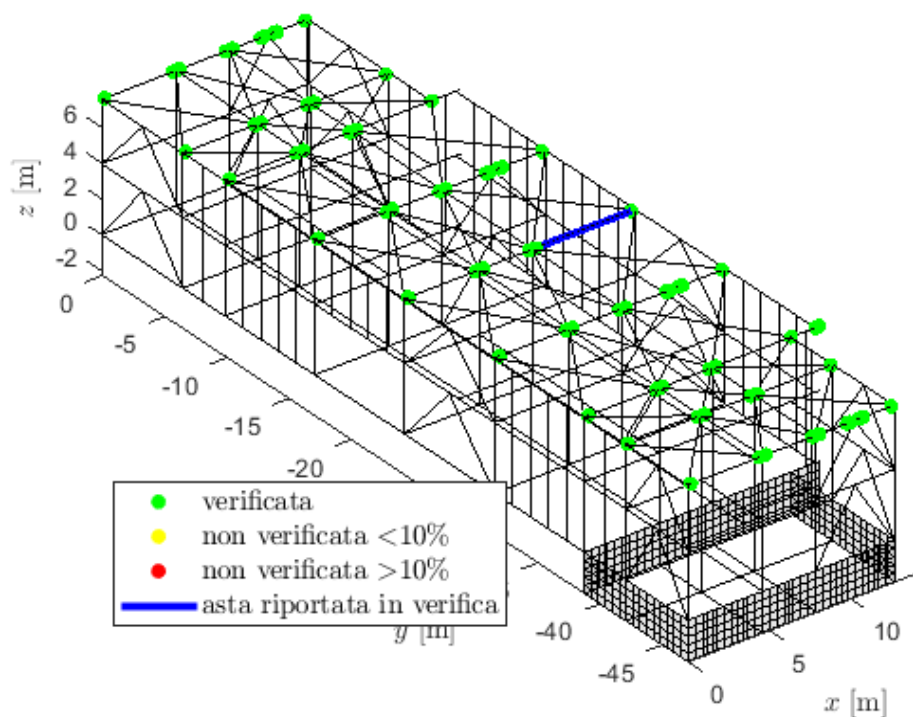
$V_x$	[kN]	-6.4	6.8
$V_y$	[kN]	12.3	14.0



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.961$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

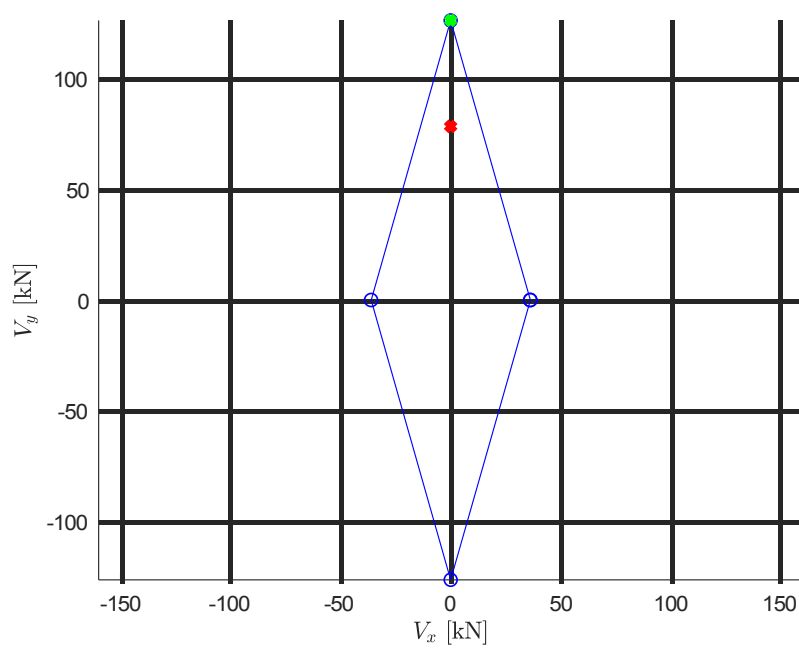


**Tabella 241.232. Elemento più sollecitato**

Element o	[n°]	35
Ascissa	[m]	6.13

**Tabella 242.233. Sollecitazioni SLV**

		min	max
N	[kN]	-41.3	-38.6
M <sub>x</sub>	[kNm]	-67.6	-55.7
M <sub>y</sub>	[kNm]	-11.2	10.7
V <sub>x</sub>	[kN]	-3.6	4.1
V <sub>y</sub>	[kN]	73.0	78.4

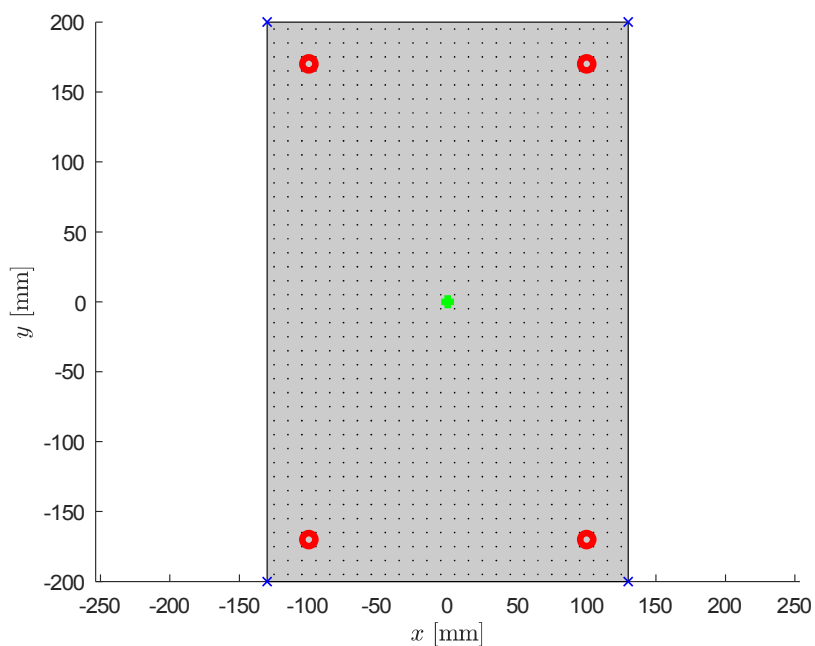


$$\max(|V_{Ed}|/|V_{Rd}|) = 0.621$$

SLU a taglio verificati

## "13 - Rettangolare b=26 h=40 travi p2"

### Sezione



**Tabella 243.234. Materiali**

Res. Cls 1	Rcm	[MPa ]	12
Res. Cls 2	Rcm	[MPa ]	0
Res. barre longitudinali	fykl	[MPa ]	440
Res. staffe	fyks	[MPa ]	230
Fattore di confidenza	FC	-	1.20

**Tabella 244.235. Geometria della sezione**

			x	y
Rett. 1 (Cls 1)				
Dimensione	min	[mm]	-130	130
Dimensione	max	[mm]	-200	200
Largh. anima	bw	[mm]	400	260
Altezza utile	d	[mm]	230	370
Area staffe	As	[mm2 ]	101	101
Passo staffe	s	[mm]	250	250
Area f.pieg.	Asfp	[mm2 ]	0	0



Passo f.pieg.	sfp	[mm]	300	200
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Tabella 245.236. Armature

	x	y	A
Barra n°	[mm]	[mm]	[mm <sup>2</sup> ]
1	30	30	153.94
2	230	30	153.94
3	30	370	153.94
4	230	370	153.94

## Verifica SLV (peggiorativa per M)

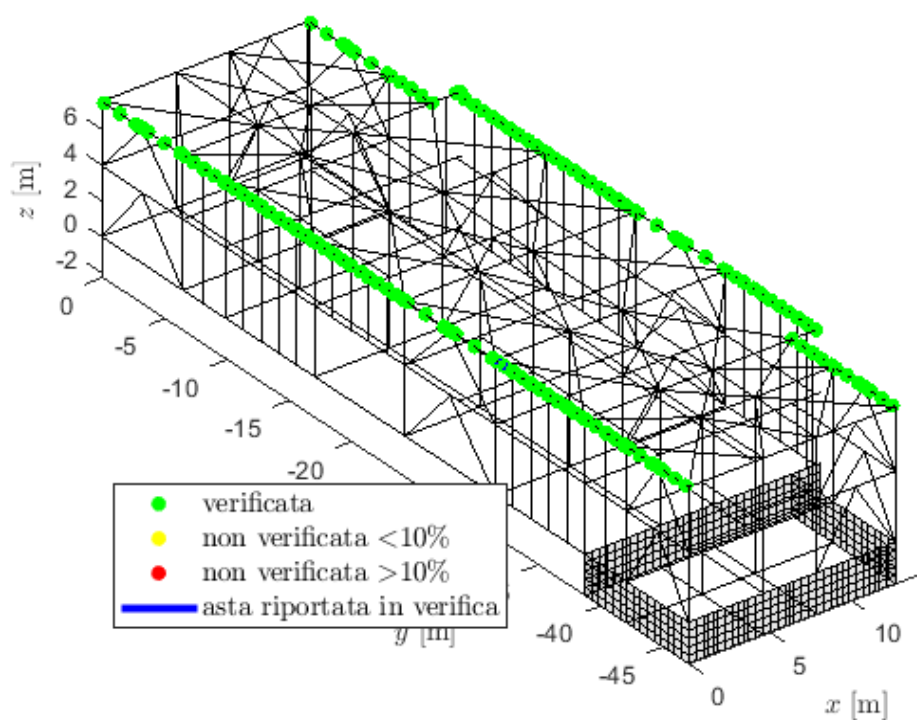


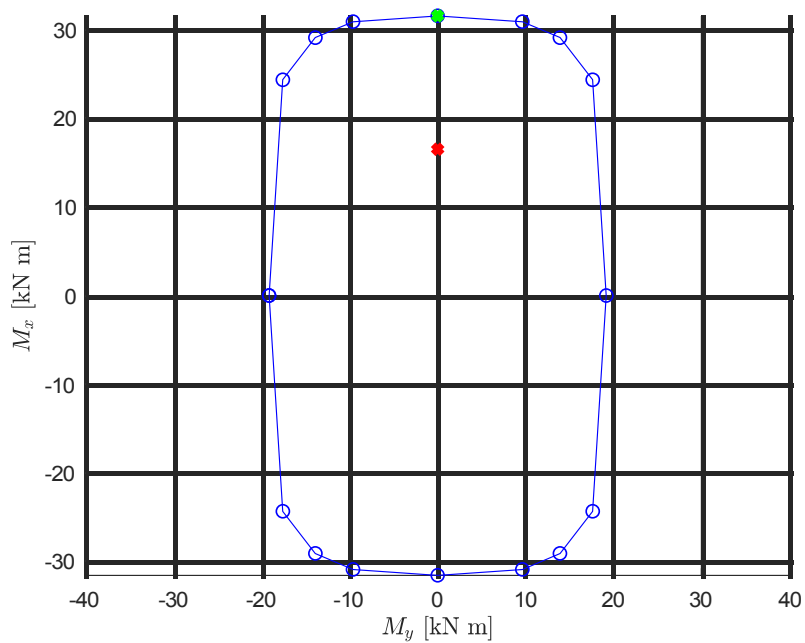
Tabella 246.237. Elemento più sollecitato

Elemento	[n°]	651
Ascissa	[m]	1.31

Tabella 247.238. Sollecitazioni SLV

		min	max
N	[kN]	-2.6	14.1
Mx	[kNm]	7.2	16.5
My	[kNm]	-7.6	6.9

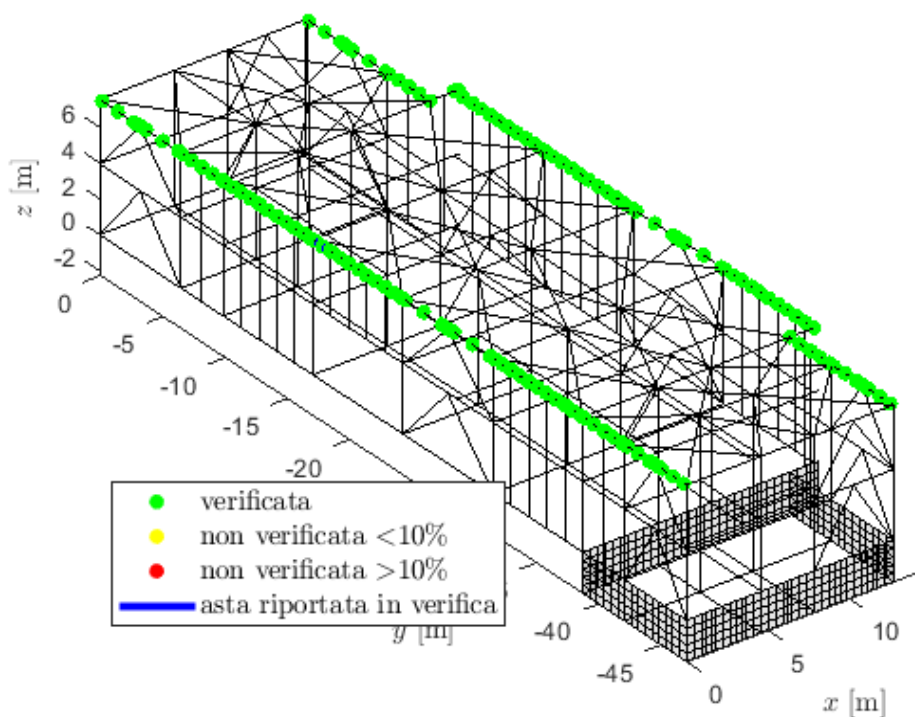
$V_x$	[kN]	-2.3	2.5
$V_y$	[kN]	-14.4	-6.9



$$\max(|M_{Ed}|/|M_{Rd}(N_{Ed})|) = 0.523$$

SLU a flessione verificati

## Verifica SLV (peggiorativa per V)

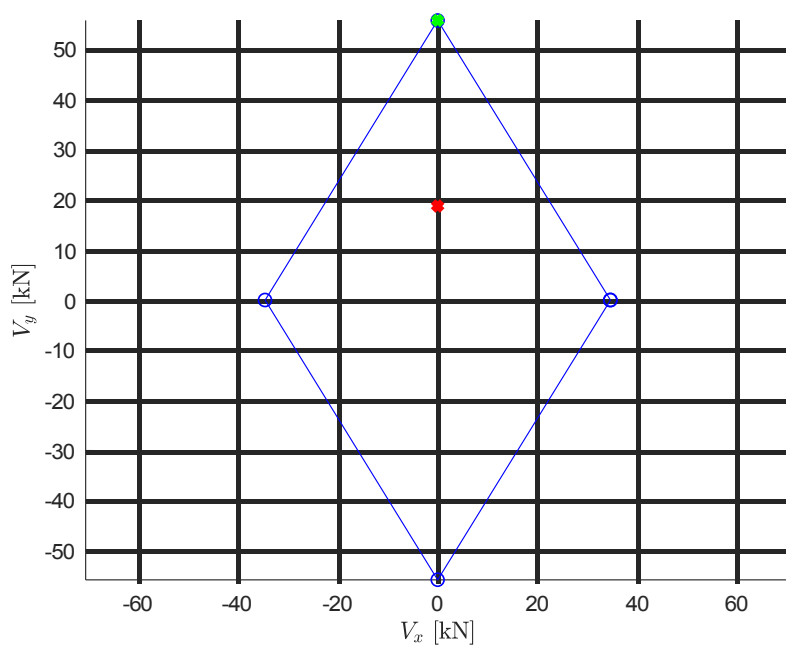


**Tabella 248.239. Elemento più sollecitato**

Element o	[n°]	677
Ascissa	[m]	1.31

Tabella 249.240. Sollecitazioni SLV

		min	max
N	[kN]	-24.3	17.1
Mx	[kNm]	-15.7	-6.9
My	[kNm]	-5.7	8.6
Vx	[kN]	-2.8	2.0
Vy	[kN]	4.3	18.8



$$\max(|V_{Ed}|/|V_{Rd}|) = 0.336$$

SLU a taglio verificati