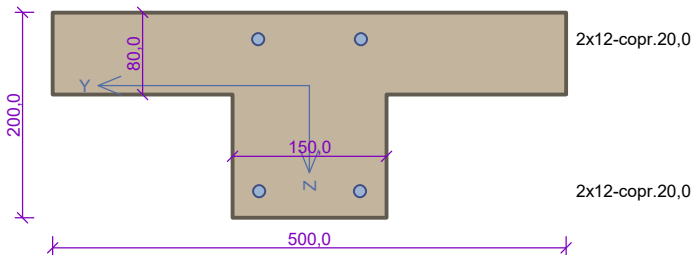
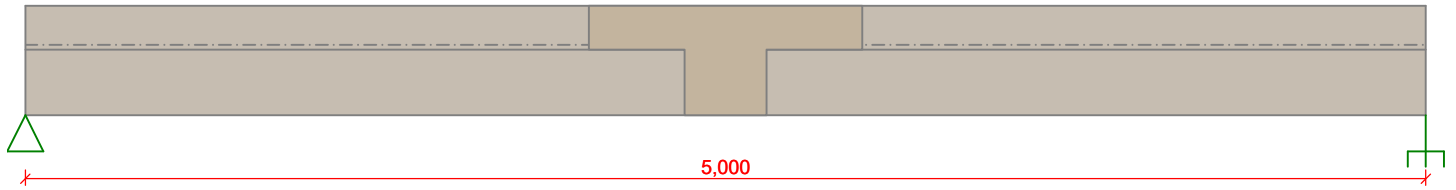
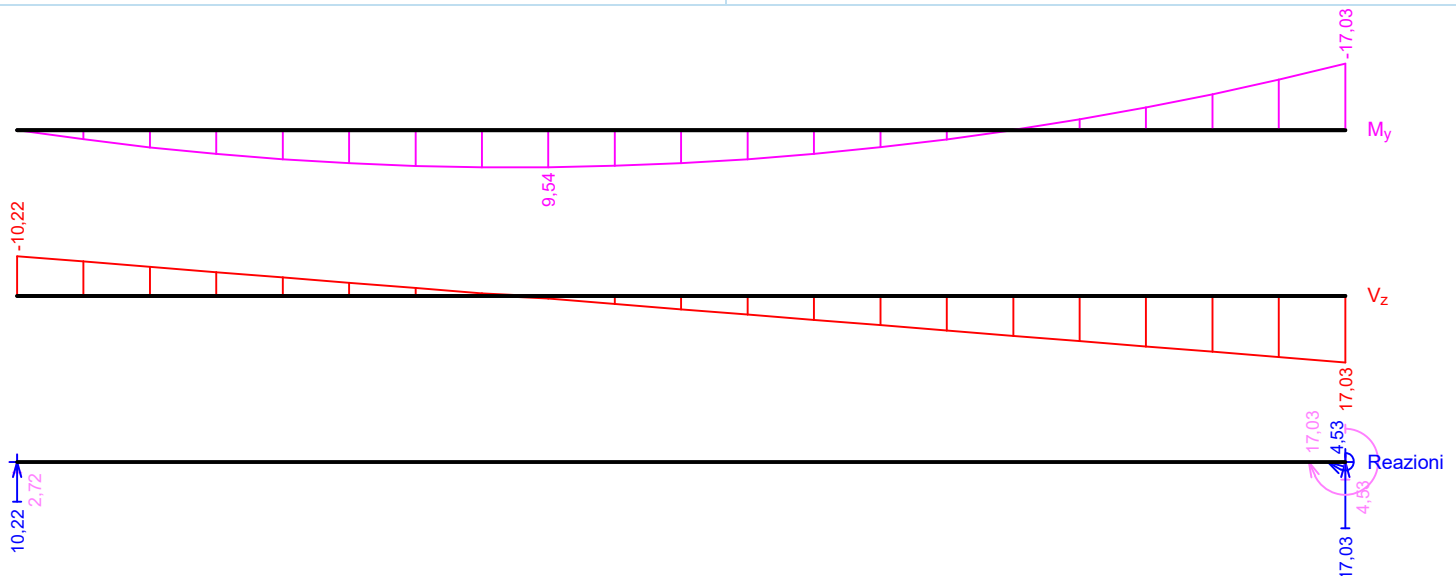


Trave sezione a T

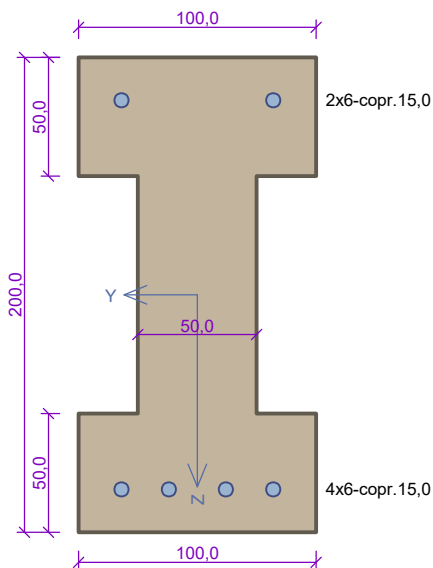
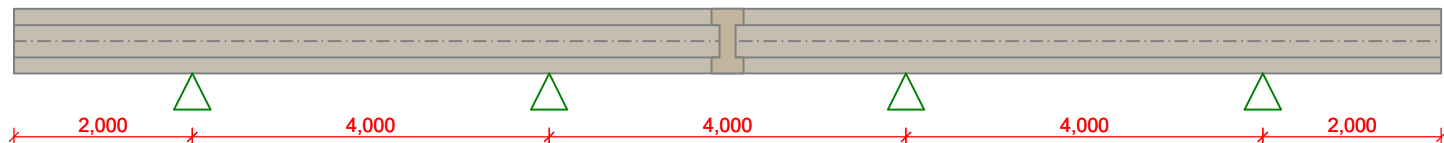
**Calcestruzzo: C 35/45 XC3** $f_{ck} = 35,0 \text{ MPa}$; $f_{ctm} = 3,2 \text{ MPa}$; $E_{cm} = 33500 \text{ MPa}$ **Armatura longitudinale: B500B** ($f_{yk} = 500,0 \text{ MPa}$; $E_s = 200000 \text{ MPa}$)**Armatura trasversale: B500** ($f_{yk} = 500,0 \text{ MPa}$; $E_s = 200000 \text{ MPa}$)

Non è considerata l'armatura a compressione.

Carico $f_{g,1} = 1,450 \text{ kN/m}$ $\gamma_f = 1,35$ $f_{q,2} = 4,000 \text{ kN/m}$ $\gamma_f = 1,5$ **Armatura longitudinale**Armatura superiore $2 \times \phi 12$ - 1000 (4,0;5,0) -copr.20,0 $2 \times \phi 12$ - 5000 (0,0;5,0) -copr.20,0Armatura inferiore $2 \times \phi 12$ - 5000 (0,0;5,0) -copr.20,0**Armatura a taglio** $2 \times \phi 5/120,0$ (0,0;5,0)**Verifica allo Stato Limite Ultimo****Flessione nell'elemento****Taglio nell'elemento****Verifica dello stato limite di esercizio****Ampiezza fessura** $w_k = 0,066 \text{ mm} \leq w_{\max} = 0,400 \text{ mm}$ Verificato**Inflessione elemento** $w_{qp} = 4,7 \text{ mm} \leq w_{qp,lim} = 20,0 \text{ mm}$ Verificato $w_{ch} = 14,3 \text{ mm} \leq w_{ch,lim} = 33,3 \text{ mm}$ Verificato

VERIFICATO

Trave sezione a I



Calcestruzzo: C 30/37 XC1
 $f_{ck} = 30,0 \text{ MPa}$; $f_{ctm} = 2,9 \text{ MPa}$; $E_{cm} = 32000 \text{ MPa}$
Armatura longitudinale: B500B ($f_{yk} = 500,0 \text{ MPa}$; $E_s = 200000 \text{ MPa}$)
Armatura trasversale: B500 ($f_{yk} = 500,0 \text{ MPa}$; $E_s = 200000 \text{ MPa}$)
 Non è considerata l'armatura a compressione.

Carico

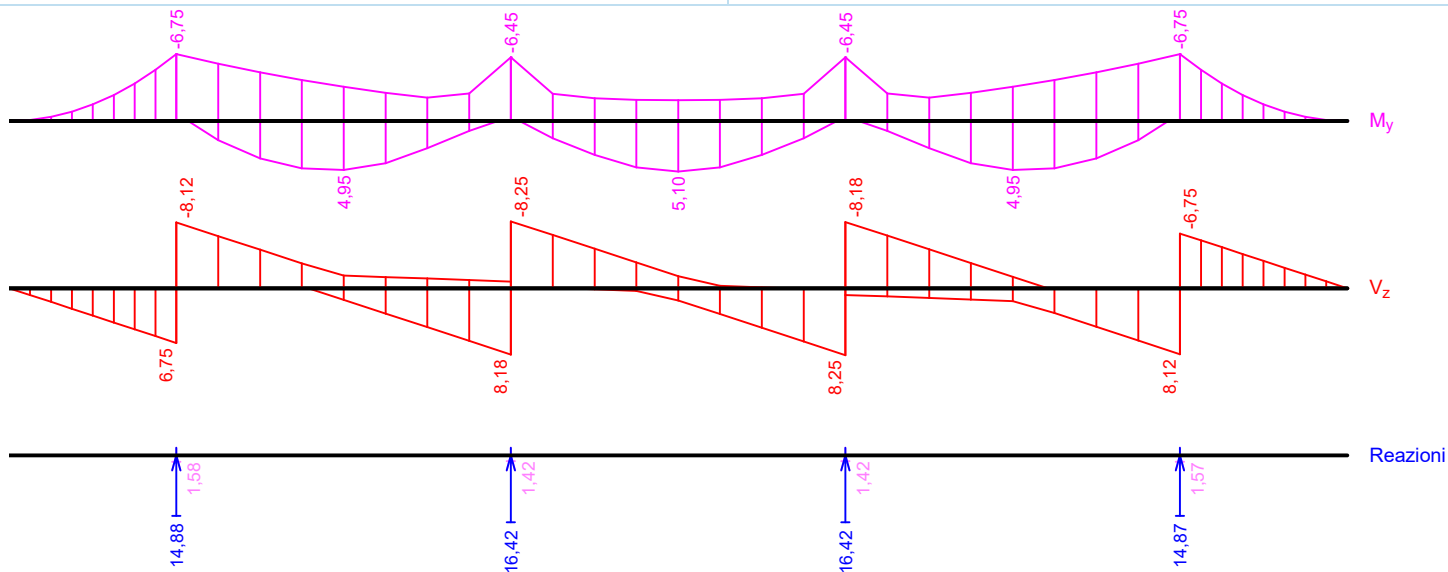
$f_{q,1} = 0,375 \text{ kN/m}$	$\gamma_f = 1,35$
$f_{q,2} = 3,000 \text{ kN/m}$	$\gamma_f = 1,5$
$f_{q,3,1} = 3,000 \text{ kN/m}$ (0,000 - 2,000m)	$\gamma_f = 1,5$
$f_{q,3,2} = 3,000 \text{ kN/m}$ (6,000 - 10,000m)	$\gamma_f = 1,5$
$f_{q,3,3} = 3,000 \text{ kN/m}$ (14,000 - 16,000m)	$\gamma_f = 1,5$
$f_{q,4,1} = 3,000 \text{ kN/m}$ (2,000 - 6,000m)	$\gamma_f = 1,5$
$f_{q,4,2} = 3,000 \text{ kN/m}$ (10,000 - 14,000m)	$\gamma_f = 1,5$
$f_{q,5,1} = 3,000 \text{ kN/m}$ (0,000 - 6,000m)	$\gamma_f = 1,5$
$f_{q,5,2} = 3,000 \text{ kN/m}$ (10,000 - 14,000m)	$\gamma_f = 1,5$
$f_{q,6,1} = 3,000 \text{ kN/m}$ (2,000 - 10,000m)	$\gamma_f = 1,5$
$f_{q,6,2} = 3,000 \text{ kN/m}$ (14,000 - 16,000m)	$\gamma_f = 1,5$
$f_{q,7,1} = 3,000 \text{ kN/m}$ (0,000 - 2,000m)	$\gamma_f = 1,5$
$f_{q,7,2} = 3,000 \text{ kN/m}$ (6,000 - 14,000m)	$\gamma_f = 1,5$
$f_{q,8,1} = 3,000 \text{ kN/m}$ (2,000 - 6,000m)	$\gamma_f = 1,5$
$f_{q,8,2} = 3,000 \text{ kN/m}$ (10,000 - 16,000m)	$\gamma_f = 1,5$

Armatura longitudinale

Armatura superiore 2x $\phi 6$ - 16000 (0,0;16,0) -copr.15,0
 3x $\phi 6$ - 6000 (1,0;7,0) -copr.15,0
 3x $\phi 6$ - 6000 (9,0;15,0) -copr.15,0
Armatura inferiore 2x $\phi 6$ - 16000 (0,0;16,0) -copr.15,0
 2x $\phi 6$ - 3000 (6,5;9,5) -copr.15,0
 2x $\phi 6$ - 3000 (10,5;13,5) -copr.15,0
 2x $\phi 6$ - 3000 (2,5;5,5) -copr.15,0

Armatura a taglio

2x $\phi 4/120,0$ (0,0;16,0)



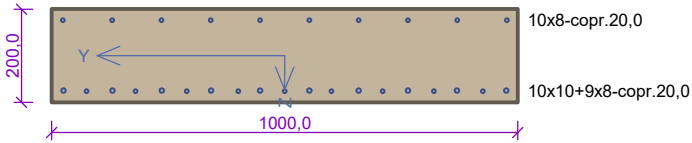
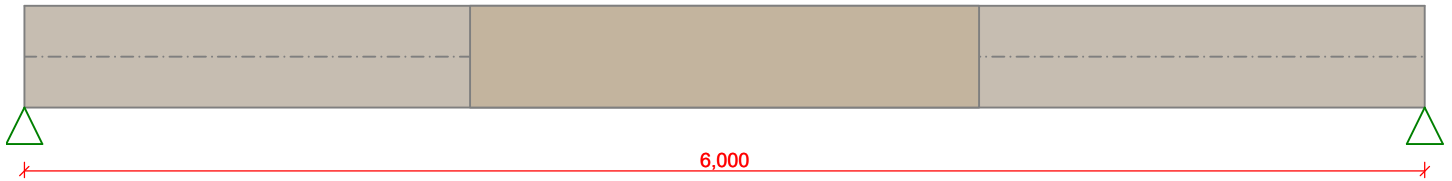
Verifica allo Stato Limite Ultimo
 Flessione nell'elemento
 Taglio nell'elemento

Verifica dello stato limite di esercizio

Ampiezza fessura
 $w_k = 0,027 \text{ mm} \leq w_{max} = 0,400 \text{ mm}$ Verificato
Inflessione elemento
 $w_{qp} = 13,1 \text{ mm} \leq w_{qp,lim} = 22,0 \text{ mm}$ Verificato

VERIFICATO

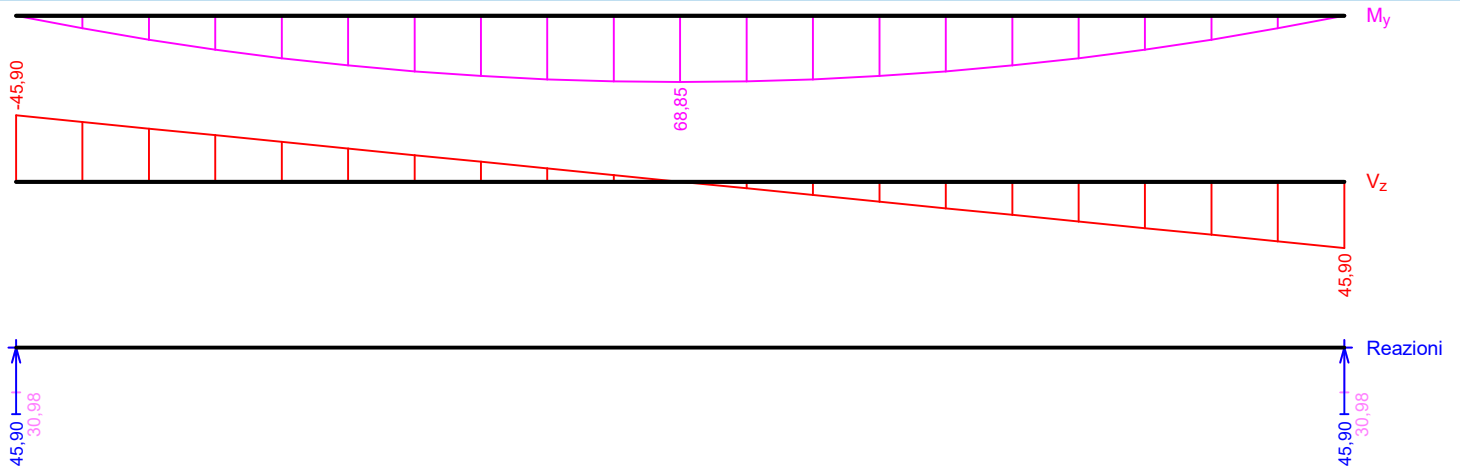
Soletta 200mm

**Calcestruzzo: C 25/30 X0** $f_{ck} = 25,0 \text{ MPa}$; $f_{ctm} = 2,6 \text{ MPa}$; $E_{cm} = 30500 \text{ MPa}$ **Armatura longitudinale: B500B** ($f_{yk} = 500,0 \text{ MPa}$; $E_s = 200000 \text{ MPa}$)**Armatura trasversale: B500** ($f_{yk} = 500,0 \text{ MPa}$; $E_s = 200000 \text{ MPa}$)

Non è considerata l'armatura a compressione.

Carico $f_{g,1} = 5,000 \text{ kN/m}$ $\gamma_f = 1,35$ $f_{g,2} = 4,000 \text{ kN/m}$ $\gamma_f = 1,35$ $f_{q,3} = 3,000 \text{ kN/m}$ $\gamma_f = 1,5$ **Armatura longitudinale**Armatura superiore 10× $\phi 8$ - 6000 (0,0;6,0) -copr.20,0Armatura inferiore 10× $\phi 10$ - 6000 (0,0;6,0) -copr.20,05× $\phi 8$ - 4000 (1,0;5,0) -copr.20,04× $\phi 8$ - 2800 (1,6;4,4) -copr.20,0**Armatura a taglio**

Sezione senza armatura a taglio.

**Verifica allo Stato Limite Ultimo****Flessione nell'elemento**Taglio critico al punto $x = 3,000 \text{ m}$ $M_{Ed} = 68,85 \text{ kNm} \leq M_{Rd} = 84,73 \text{ kNm}$ Verificato**Taglio nell'elemento**Taglio critico al punto $x = 0,000 \text{ m}$ $V_{Ed} = 45,90 \text{ kN} \leq V_{Rd} = 94,03 \text{ kN}$ Verificato**Verifica dello stato limite di esercizio****Ampiezza fessura** $w_k = 0,121 \text{ mm} \leq w_{max} = 0,400 \text{ mm}$ Verificato**Inflessione elemento** $w_{qp} = 47,6 \text{ mm} \leq w_{qp,lim} = 48,0 \text{ mm}$ Verificato

VERIFICATO