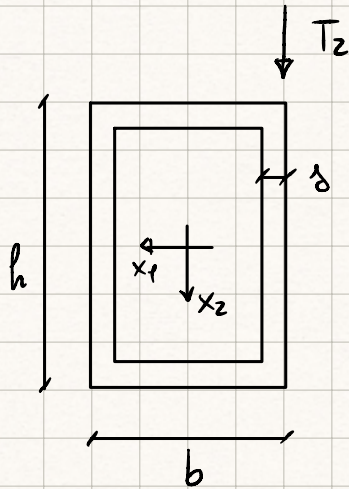


## Esercizio



$$T_2 = 7500 \text{ N}$$

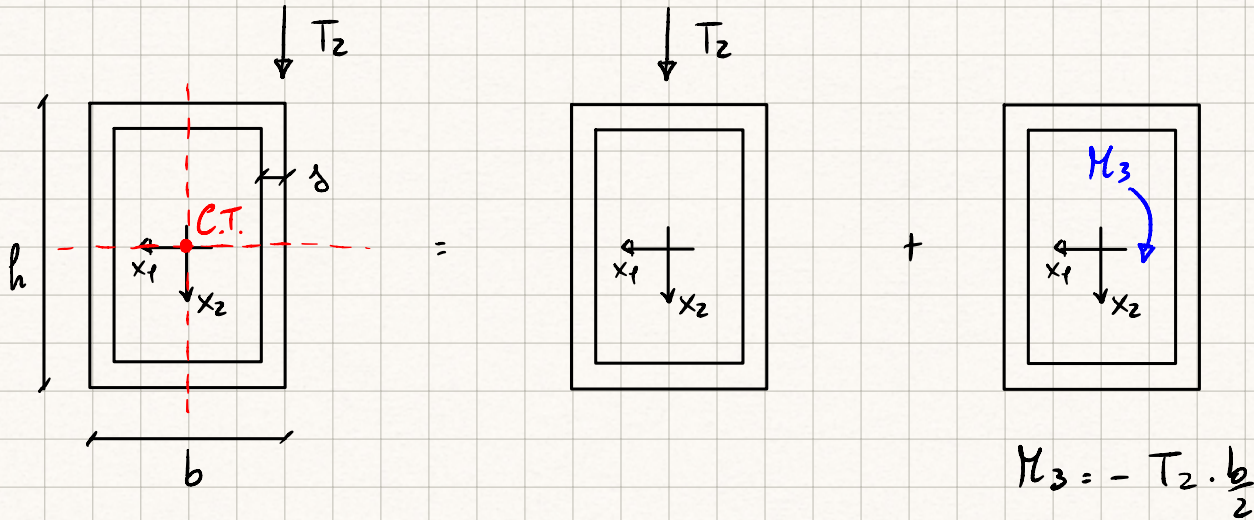
$$b = 50 \text{ mm} \quad h_1 = 100 \text{ mm} \quad \delta = 5 \text{ mm}$$

$$I_1 = 1,74 \cdot 10^6 \text{ mm}^4$$

Svolgimento

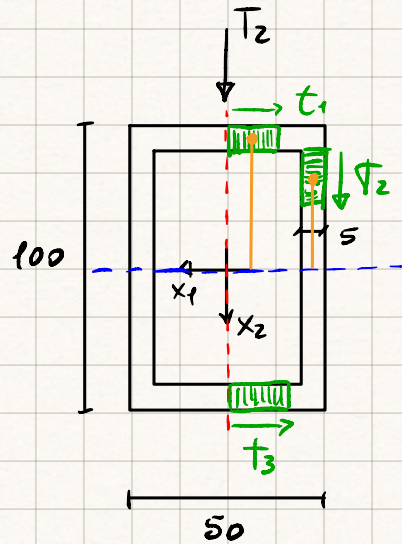
## Problema Taglio

## Torsione



Risolviamo il problema di Taglio.

$$\tilde{z}_{3i} = - \frac{T_2 S_1^*}{I_1 \cdot \delta_j}$$



$$S_1^{*(1)} = -5 T_1 \cdot (50 - 2,5)$$

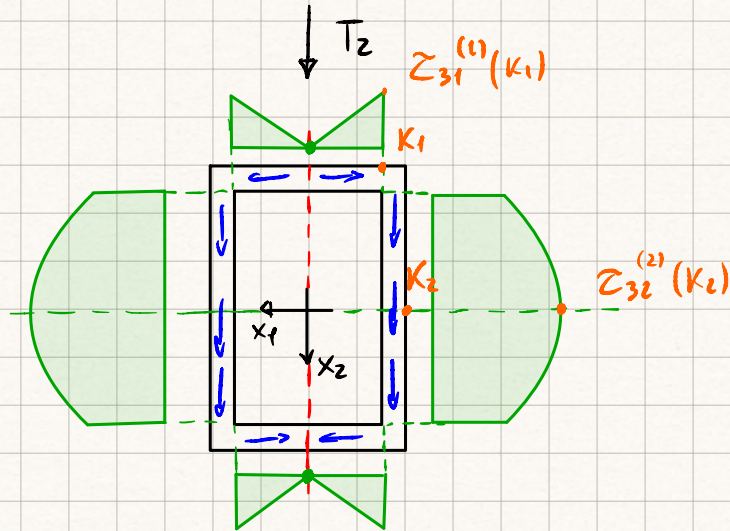
$$S_1^{*(2)} = -5 \cdot 25 \cdot (50 - 2,5) - 5 T_2 (50 - 5 - \frac{T_2}{2})$$

$$S_1^{*(3)} = -S_1^{*(1)}$$

$$\tau_{31}^{(1)} = - \frac{7500 [-5 T_1 (50 - 2,5)]}{1,74 \cdot 10^6 \cdot 5}$$

$$\tau_{32}^{(2)} = - \frac{7500 [-5 \cdot 25 \cdot (50 - 2,5) - 5 T_2 (50 - 5 - \frac{T_2}{2})]}{1,74 \cdot 10^6 \cdot 5}$$

$$\tau_{31}^{(3)} = - \tilde{\tau}_{31}^{(1)}$$



$$\sigma_{31}^{(1)}(K_1) = \frac{7500 [5 \cdot 20 (50 - 2,5)]}{1,74 \cdot 10^6 \cdot 5} = 4,09 \text{ MPa}$$

$$\sigma_{32}^{(2)}(K_2) = - \frac{7500 [-5 \cdot 25 \cdot (50 - 2,5) - 5 \cdot 45 \cdot (50 - 5 - \frac{45}{2})]}{1,74 \cdot 10^6 \cdot 5} = 3,48 \text{ MPa}$$