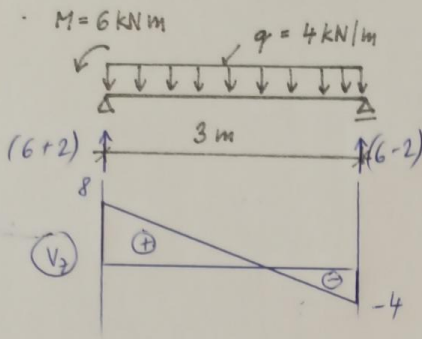


PRŮBĚH τ_{xz} V NEJVÍCE NAMÁHANÉM MÍSTĚ:



$$V_2 = 8 \text{ kN}$$

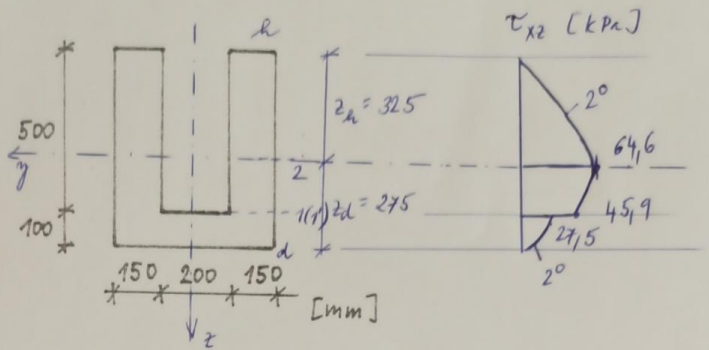
$$\tau_{xz} = \frac{V_2 \cdot \bar{y}_z(z)}{I_y \cdot b(z)}$$

$$\tau_{xz,d} = \tau_{xz,h} = 0 \quad (\bar{y}_z = 0)$$

$$\tau_{xz,1} = \frac{8 \cdot (500 \cdot 100 \cdot 225) \cdot 10^{-9}}{6,5416 \cdot 10^{-3} \cdot 500 \cdot 10^{-3}} = 27,5 \text{ kPa}$$

$$\tau_{xz,1'} = \frac{8 \cdot (500 \cdot 100 \cdot 225) \cdot 10^{-9}}{6,5416 \cdot 10^{-3} \cdot (2 \cdot 150 \cdot 10^{-3})} = 45,9 \text{ kPa}$$

$$\tau_{xz,2} = \frac{8 \cdot (2 \cdot 150 \cdot 325 \cdot \frac{325}{2}) \cdot 10^{-9}}{6,5416 \cdot 10^{-3} \cdot (2 \cdot 150 \cdot 10^{-3})} = 64,6 \text{ kPa}$$

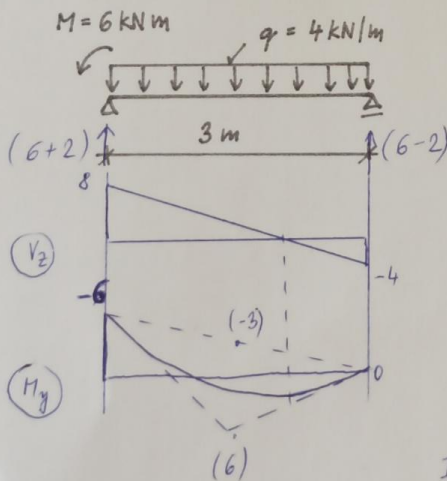


$$z_d = \frac{500 \cdot 100 \cdot 50 + 2 \cdot 150 \cdot 500 \cdot 350}{500 \cdot 100 + 2 \cdot 150 \cdot 500} = 275 \text{ mm}$$

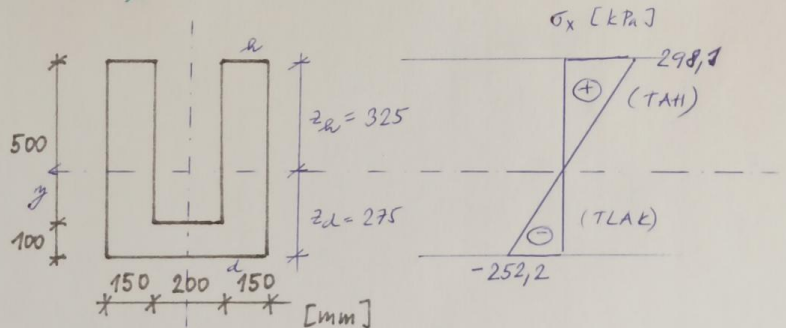
$$I_y = \frac{1}{12} \cdot 500 \cdot 100^3 + 500 \cdot 100 \cdot 225^2 + 2 \cdot \left[\frac{1}{12} \cdot 150 \cdot 500^3 + 150 \cdot 500 \cdot 75^2 \right]$$

$$I_y = 6,5416 \cdot 10^{-3} \text{ m}^4$$

PRŮBĚH σ_x V NEJVÍCE NAMÁHANÉM MÍSTĚ:



$$M_{\max} = -6 \text{ kNm}$$



$$z_d = \frac{500 \cdot 100 \cdot 50 + 2 \cdot 150 \cdot 500 \cdot 350}{500 \cdot 100 + 2 \cdot 150 \cdot 500} = 275 \text{ mm}$$

$$I_y = \frac{1}{12} \cdot 500 \cdot 100^3 + 500 \cdot 100 \cdot 225^2 + 2 \cdot \left[\frac{1}{12} \cdot 150 \cdot 500^3 + 150 \cdot 500 \cdot 75^2 \right]$$

$$I_y = 6,5416 \cdot 10^{-3} \text{ m}^4$$

$$\sigma_x = \frac{M_z}{I_y} \cdot z$$

$$\sigma_{x,d} = \frac{-6}{6,5416 \cdot 10^{-3}} \cdot 0,275 = -252,2 \text{ kPa}$$

$$\sigma_{x,h} = \frac{-6}{6,5416 \cdot 10^{-3}} \cdot (-0,325) = 298,1 \text{ kPa}$$