

Вежба 2

$$H_A = P \Rightarrow \boxed{H_A = 2 \text{ kN}}$$

$$V_A + V_B = q \cdot l = 13 \cdot 5 = 65 \text{ kN}$$

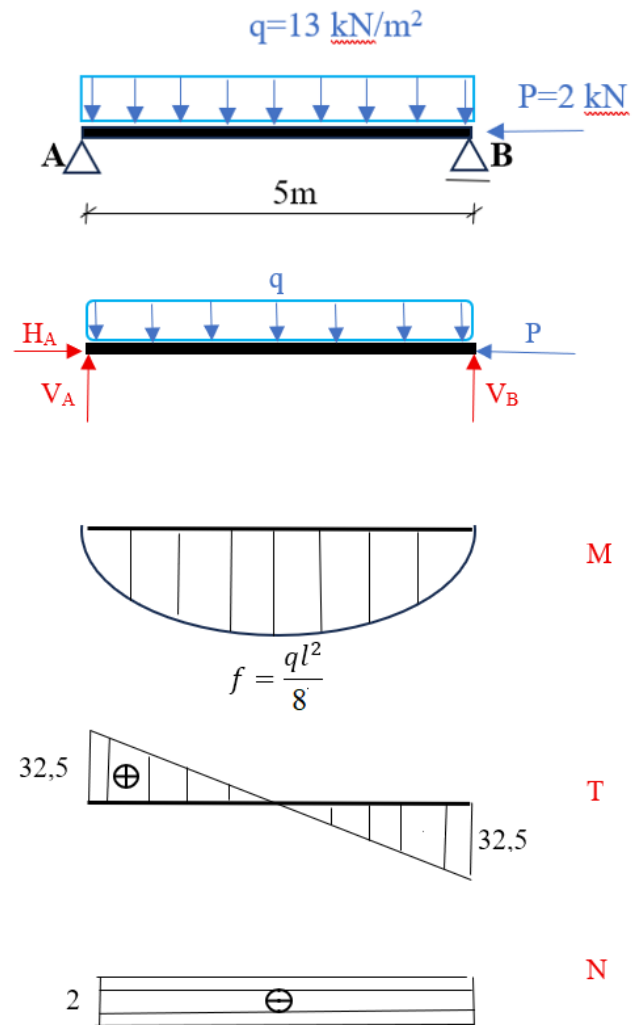
$$\Sigma M_A = 0$$

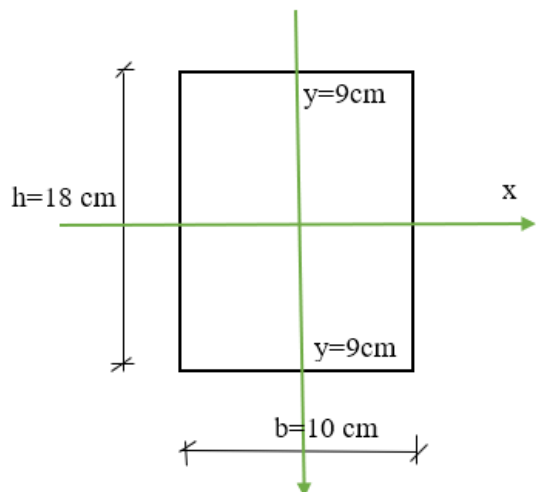
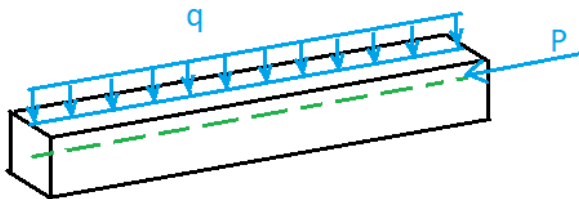
$$q \cdot l \cdot \frac{l}{2} - V_B \cdot l = 0$$

$$V_B = \frac{q \cdot l}{2} = \frac{13 \cdot 5}{2} \Rightarrow \boxed{V_B = 32,5 \text{ kN}}$$

$$\Rightarrow \boxed{V_A = 32,5 \text{ kN}}$$

$$f = \frac{q \cdot l^2}{8} = \frac{13 \cdot 5^2}{8} = 40,625 \text{ kNm}$$





Прорачун нормалног напона

$$\sigma_{1,2} = \frac{N}{A} \pm \frac{M_x}{W_x}$$

$$W_x = \frac{I_x}{y_{max}}$$

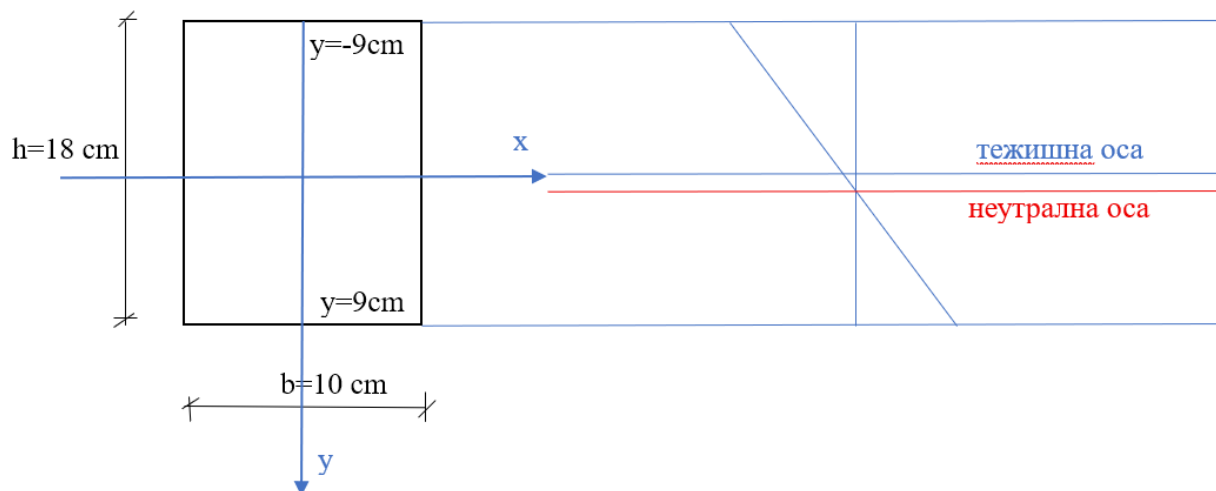
$$\sigma_{1,2} = \frac{N}{A} + \frac{M_x}{I_x} (\pm y_{max})$$

$$I_x = \frac{b \cdot h^3}{12} = \frac{10 \cdot 18^3}{12} = 4860 \text{ cm}^4$$

$$\sigma_1 = \frac{-2}{10 \cdot 18} + \frac{40,625 \cdot 100}{4860} \cdot 9 = 7,512 \frac{\text{kN}}{\text{cm}^2}$$

$$\sigma_2 = \frac{-2}{10 \cdot 18} + \frac{40,625 \cdot 100}{4860} \cdot (-9) = -7,534 \frac{\text{kN}}{\text{cm}^2}$$

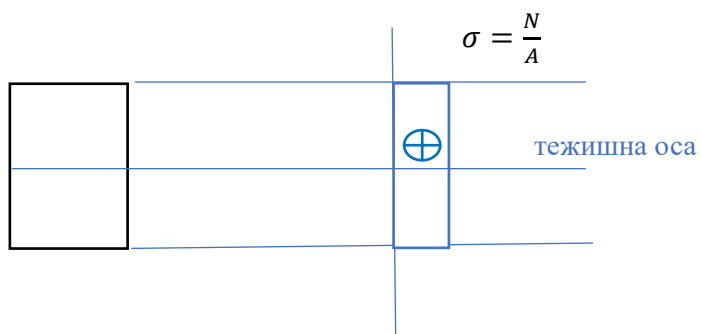
Дијаграм нормалног напона



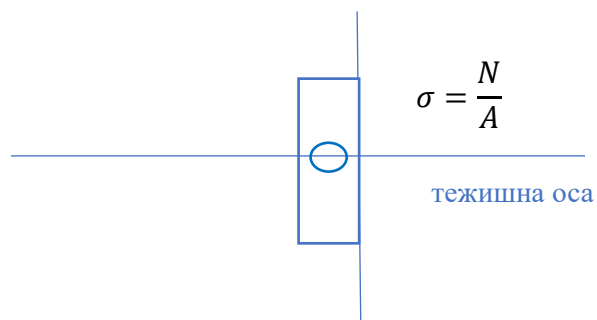
1. $M = 0, N > 0$ – затезање



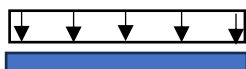
$$A = b \cdot h$$



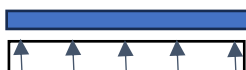
2. $M = 0, N < 0$ – притисак



3. $N = 0, M > 0$

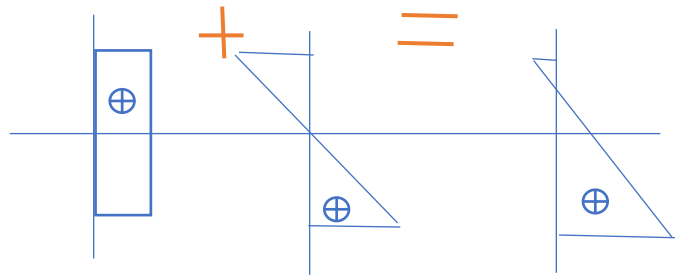
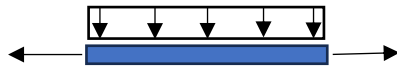


4. $N = 0, M < 0$

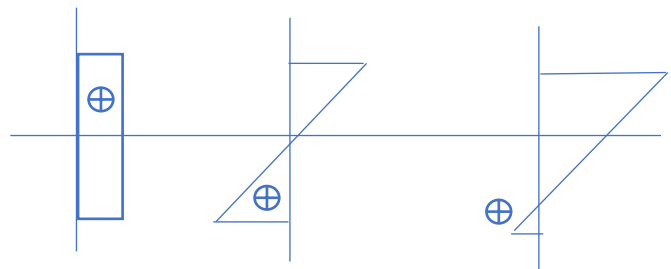


5. $N \neq 0, M \neq 0$

$N > 0, M > 0$



$N > 0, M < 0$



$N < 0, M > 0$

