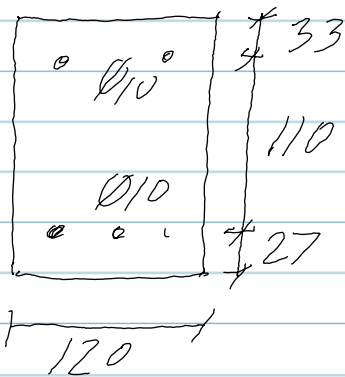


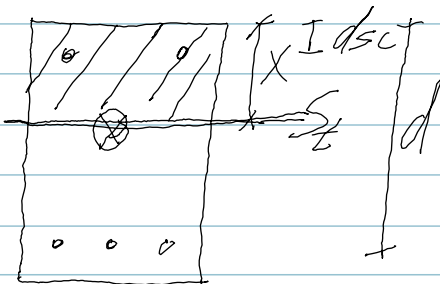
DTU - Betonkorzstruktur



$$\alpha = 6,5$$

$$E_{cm} = 30891 \text{ MPa}$$

REKNET



$$S_t = b x \left(-\frac{x}{2}\right) + A_{sc} (\alpha - 1) (x - d_{sc}) + A_s (\alpha) (d - x)$$

$$= 120(x) \left(-\frac{x}{2}\right) - 2\pi (10/2)^2 (6,5 - 1) (x - 33) + 3\pi (10/2)^2 \cdot 6,5 (143 - x) = \underline{\underline{0}}$$

$$\Rightarrow x = 46,96 \text{ mm}$$

$$\begin{aligned} I_t &= \frac{1}{12} b x^3 + b x \left(\frac{x}{2}\right)^2 + A_{sc} (\alpha - 1) (x - d_{sc})^2 + A_s (\alpha) (d - x)^2 \\ &= \frac{1}{12} \cdot 120 \cdot 46,96^3 + 120 \cdot 46,96 \left(\frac{46,96}{2}\right)^2 \\ &\quad + 2\pi (10/2)^2 (6,5 - 1) (46,96 - 33)^2 \\ &\quad + 3\pi (10/2)^2 \cdot 6,5 (143 - 46,96)^2 = 18,41 \cdot 10^6 \text{ mm}^4 \end{aligned}$$

$$EI_{\text{verm}} = 30891 \cdot 18,41 \cdot 10^6 = 5,687 \cdot 10^{11} \text{ Nmm}^2$$