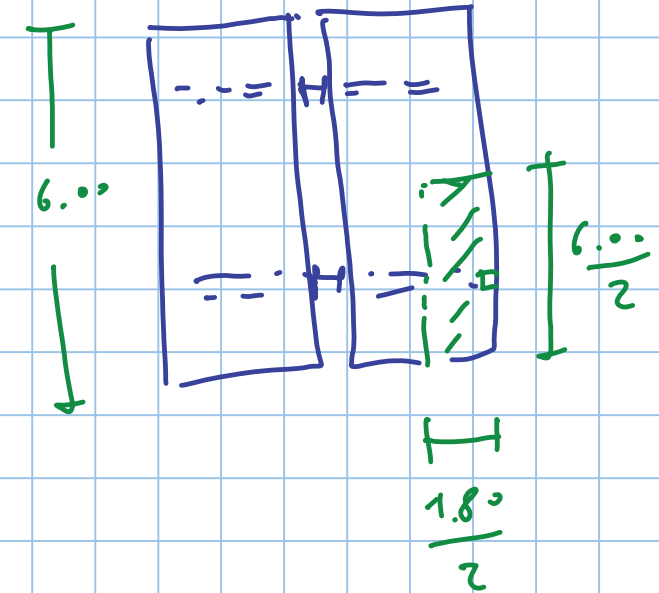


$$g_1 + q_1 = 7.3 \text{ kN/m}^2$$

$$g_{nt} + q_k = 5 \text{ kN/m}^2$$



$$F_A = 3 \times 0.90 \times 7.3 \text{ kN}$$

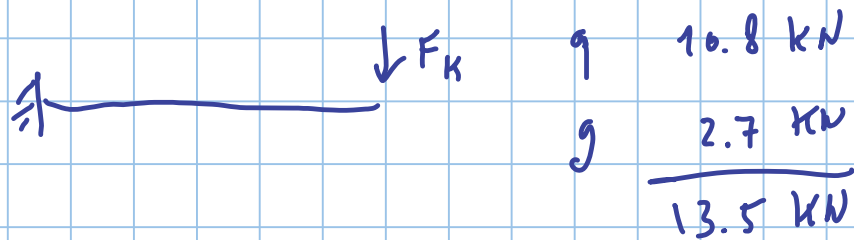
$$= 19.7 \text{ kN}$$

$$M_{EL} \approx 19.7 \times 1.8 =$$

$$= 35.5 \text{ kNm}$$

$$M_{Ed} = W_{pl} \frac{f_y}{\gamma_{m0}} \quad W_{pl} \geq \frac{M_{Ed} \gamma_{m0}}{f_y} = \frac{35.5 \times 10^4 \times 1.05}{235} = 158.6 \times 10^3 \text{ mm}^3$$

S 235



use in profile
HE 180 A

$$\delta = \frac{F L^3}{3 E I} \leq \frac{L}{250 - 300} \text{ [mm]}$$

$$I \geq \frac{F L^3}{3 E} = \frac{250 \times 13.5 \times 1.8^3 \times 10^6}{3 \times 210000} = 1740 \times 10^6 \text{ mm}^4$$