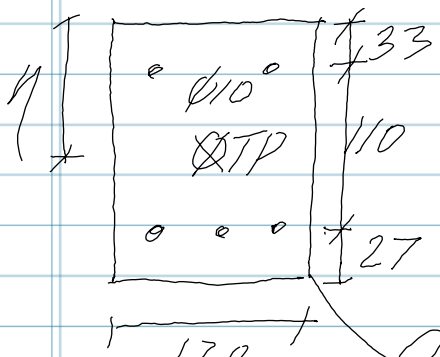
DTU. Betonkonstruktioner



$f_{ck} = 20\ MPa$

$\eta = 86{,}33\ mm$

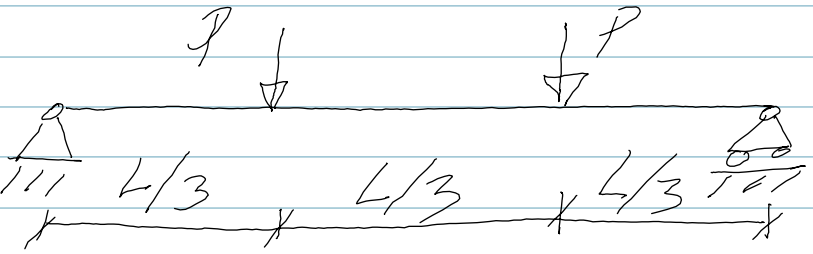
$I_t = 55{,}75 \cdot 10^6\ mm^4$

$$\sigma_{ct} = \frac{M}{I_t}(h-\eta) = f_{ctm}$$

$$f_{ctm} = 0{,}3 \cdot f_{ck}^{2/3} = 0{,}3 \cdot 20^{2/3} = 2{,}2\ MPa$$

$$\Rightarrow M_{revne} = \frac{f_{ctm} \cdot I_t}{h-\eta} = \frac{2{,}2 \cdot 55{,}75 \cdot 10^6}{170 - 86{,}33}$$

$$= 1{,}466 \cdot 10^6\ Nmm = 1{,}466\ kNm$$



$L = 1{,}8\ m$

$$M_{revne} = P_{revne} \cdot L/3 \Rightarrow$$

$$P_{revne} = \frac{3 \cdot M_{revne}}{L} = \frac{3 \cdot 1{,}466}{1{,}8} = 2{,}44\ kN$$