

2.1.11.

Givet:

Stålwire

Last \hat{a} 2 kN

$\tau_{cr} = 80 \text{ MPa}$

$L = 3 \text{ m}$

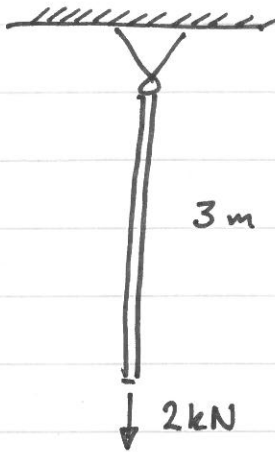
$E = 206 \text{ GPa}$

Sökt:

• Area för $\tau \leq \tau_{cr}$

• δ

Lösning:



$$\left[\tau = \frac{P}{A} \right]$$

dä $\tau = \tau_{cr} = 80 \text{ MPa}$ och $P = 2 \text{ kN}$

$$\text{fäs } A = \frac{P}{\tau_{cr}} = \frac{2000}{80} = \underline{\underline{2.5 \text{ mm}^2}}$$

$$\Rightarrow A = \frac{\pi d^2}{4} \rightarrow \underline{\underline{d = 1.78 \text{ mm}}}$$

$$\left[\delta = \frac{PL}{EA} \right]$$

$$\Rightarrow \delta = \frac{2 \cdot 3}{206 \cdot 10^6 \cdot 2.5 \cdot 10^{-6}} = 0.01165 \text{ m} \approx \underline{\underline{11.7 \text{ mm}}}$$

δ