

Opmerkingen: Zie §2.2.1, blz. 17 t/m 19

Zie §2.3, blz. 22 t/m 23

Zie §2.6, blz. 32 en verder

Antwoorden:

a. $u_{\text{blok}} = 0,72 \text{ mm} (\downarrow)$

b. $N^{(1)} = N^{(3)} = +24 \text{ kN}$; $N^{(2)} = +15 \text{ kN}$

c. $\sigma^{(1)} = \sigma^{(3)} = 96 \text{ N/mm}^2$; $\sigma^{(2)} = 60 \text{ N/mm}^2$

Toelichting:

b. $\Delta \ell^{(1)} = \Delta \ell^{(2)} = \Delta \ell^{(3)} \Rightarrow N^{(1)} = N^{(3)} = 1,6 \times N^{(2)}$

$$N^{(1)} + N^{(2)} + N^{(3)} = 3,6 \times N^{(2)} = F \Rightarrow N^{(2)} = 15 \text{ kN}$$

$$N^{(1)} = N^{(3)} = 24 \text{ kN}$$

a. $u_{\text{blok}} (\downarrow) = \Delta \ell^{(1)} = \frac{(24 \text{ kN})(1500 \text{ mm})}{(200 \text{ kN/mm}^2)(250 \text{ mm}^2)} = 0,72 \text{ mm}$

c. $\sigma^{(1)} = \sigma^{(3)} = \frac{24 \times 10^3 \text{ N}}{250 \text{ mm}^2} = 96 \text{ N/mm}^2$

$$\sigma^{(2)} = \frac{15 \times 10^3 \text{ N}}{250 \text{ mm}^2} = 60 \text{ N/mm}^2$$