Opmerkingen: Zie §3.2.4 blz. 99 t/m 103, voorbeeld 5

Antwoorden 3.33-1:

b. $I_{zz} = 67500 \text{ mm}^4$

c. $I_{yy} = 67500 \text{ mm}^4$

d. $I_{yz} = 0$

Toelichting 3.33-1:

Alle maten in mm:

$$I_{zz} = 2 \times \left\{ I_{zz(\text{basis})} \right\} = 2 \times \left\{ \tfrac{1}{12} \times 30\sqrt{2} \times \left(15\sqrt{2}\right)^3 \right\} = 67500 \text{ mm}^4$$

De doorsnede is symmetrisch waardoor in dit geval geldt:
$I_{yy} = I_{zz}$ en $I_{yz} = I_{zy} = 0$

Antwoorden 3.33-2:

b. $I_{zz} = 540 \times 10^3 \text{ mm}^4$

c. $I_{yy} = 6,2208 \text{ m}^4$

d. $I_{yz} = -180 \times 10^3 \text{ mm}^4$

Toelichting 3.33-2:

Alle maten in mm:

b. $$I_{zz} = 2 \times \left\{ \tfrac{1}{36} \times 30 \times 60^3 + \tfrac{1}{2} \times 30 \times 60 \times 10^2 \right\} = 540 \times 10^3 \text{ mm}^4$$

c. $$I_{yy} = 2 \times \left\{ I_{zz(\text{basis})} \right\} = 2 \times \left\{ \tfrac{1}{12} \times 60 \times 30^3 \right\} = 270 \times 10^3 \text{ mm}^4$$

c. $$I_{yz} = 2 \times \left\{ \tfrac{1}{2} \times 60 \times 30 \times 10 \times -10 \right\} = -180 \times 10^3 \text{ mm}^4$$