Remarks: See §4.9, pages 203 till 208

Answers 4.66-1:

a. $k_t = 51$ mm
b. $k_b = 85$ mm

Explanation 4.66-1:

$A = 64,8 \times 10^3$ mm^2

$I_{zz} = 743,58 \times 10^6$ mm^4

$$W_{z;t} = \frac{I_{zz}}{e_t} = \frac{743,58 \times 10^6 \text{ mm}^4}{135 \text{ mm}} = 5,508 \times 10^6 \text{ mm}^3$$

$$W_{z;b} = \frac{I_{zz}}{e_b} = \frac{743,58 \times 10^6 \text{ mm}^4}{225 \text{ mm}} = 3,305 \times 10^6 \text{ mm}^3$$

$$k_t = \frac{W_{z;b}}{A} \text{ and } k_b = \frac{W_{z;t}}{A}$$

Answers 4.66-2:

a. $k_t = 78,9$ mm
b. $k_b = 45,7$ mm

Explanation 4.66-2:

$A = 72 \times 10^3$ mm^2

$I_{zz} = 749,952 \times 10^6$ mm^4

$W_{z;t} = 3,289 \times 10^6$ mm^3

$W_{z;b} = 5,681 \times 10^6$ mm^3

Answers 4.66-3:

a. $k_t = 40$ mm
b. $k_b = 80$ mm

Explanation 4.66-3:

$A = 108 \times 10^3$ mm^2

$I_{zz} = 1036,8 \times 10^6$ mm^4

$W_{z;t} = 8,64 \times 10^6$ mm^3

$W_{z;b} = 4,32 \times 10^6$ mm^3