Remarks: See §3.1.4, example 3, pages 85 till 86

Hints:

Convert the angles from degrees to radians.

Answer:

$z_C = 150{,}1 \text{ mm}$

Explanation:

$$\alpha = \frac{73^\circ}{360^\circ} \times 2\pi = 1{,}2741 \text{ rad}$$

$$A = \int_{\frac{1}{2}\pi-\alpha}^{\frac{1}{2}\pi+\alpha} tR\mathrm{d}\varphi = 2Rt\alpha = 12{,}741\times10^3 \text{ mm}^2$$

$$S_z = \int_{\frac{1}{2}\pi-\alpha}^{\frac{1}{2}\pi+\alpha} R\sin\varphi \cdot tR\mathrm{d}\varphi = R^2t(-\cos\varphi)\Big|_{\frac{1}{2}\pi-\alpha}^{\frac{1}{2}\pi+\alpha} = 2R^2t\sin\alpha = 1{,}9126\times10^6 \text{ mm}^3$$

$$z_C = \frac{1{,}9126\times10^6 \text{ mm}^3}{12{,}741\times10^3 \text{ mm}^2} = 150{,}1 \text{ mm}$$