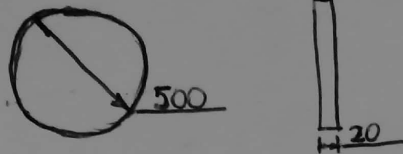


5.11

Disco:



Constante do molde =  $k = 2 \text{ [s/mm}^2\text{]}$

Regra de Chvorinov

$$t_s = k \cdot M^2 \text{ [s]}$$

$$M = \frac{\text{volume}}{\text{superfície}} \text{ [mm]}$$

$$V = \pi \left(\frac{d}{2}\right)^2 \cdot e = \pi \left(\frac{500}{2}\right)^2 \cdot 20 = 3,93 \cdot 10^6 \text{ [mm}^3\text{]}$$

$$S = 2 \cdot \pi \left(\frac{d}{2}\right)^2 + (2\pi \left(\frac{d}{2}\right) e) = \pi d \left(e + \frac{d}{2}\right) = \pi \cdot 500 (20 + 250) = 424102,5 \\ = 4,24 \cdot 10^5 \text{ [mm}^2\text{]}$$

$$M = \frac{V}{S} = 9,27 \text{ [mm]}$$

$$t_s = 2 \cdot (9,27)^2 = \underline{171,86 \text{ s}}$$