

$$\tau_{adm} = 140 \text{ MPa} ; \sigma_{adm} = 240 \text{ MPa}$$

$$\phi_{min} = ?$$

$$V = 1,1 \text{ kN}$$

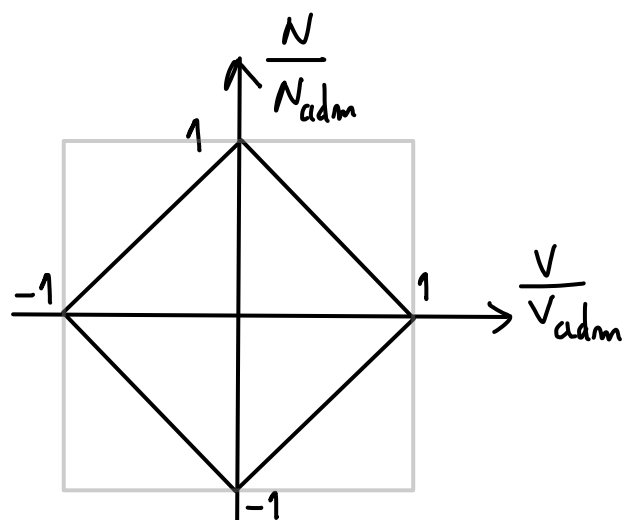
$$M = 1,1 \times 0,25 = 0,275 \text{ kN.m} \Rightarrow N = \frac{0,275}{0,08} = 3,438 \text{ kN}$$

(sem interação N-V)

$$\frac{1100}{\Omega_v} = 140 \Rightarrow \Omega_v = 7,857 \text{ mm}^2$$

$$\frac{3438}{\Omega_N} = 240 \Rightarrow \Omega_N = 14,33 \text{ mm}^2 \Rightarrow \phi > 4,27 \text{ mm}$$

(com interação N-V)



$$\left| \frac{N}{N_{adm}} \right| + \left| \frac{V}{V_{adm}} \right| \leq 1$$

$$\frac{3438}{240} + \frac{1100}{140} \leq \Omega \Rightarrow \Omega \geq 22,18$$

$$\downarrow$$

$$\phi \geq 5,314 \text{ mm}$$