

- płyta P_19.0, P_20.0, P_21.0, P_22.0,

$$q_d := 14.0 \cdot \frac{\text{kN}}{\text{m}} \quad h := 0.18 \cdot \text{m} \quad d := h - 0.02 \text{m} \quad d = 16 \text{ cm}$$

$$l_{ox} := 6.00 \cdot \text{m} \quad l_{oy} := 7.225 \cdot \text{m} \quad b := 1 \cdot \text{m} \quad d_y := d - 1.20 \cdot \text{cm} \quad d_y = 14.8 \text{ cm}$$

$$\frac{l_{oy}}{l_{ox}} = 1.204 \quad \phi_{lx} := 0.0514 \quad \phi_{ly} := 0.0248 \quad \chi_1 := 0.675 \quad \alpha := 0.85$$

$$M_{sd,x} := q_d \cdot l_{ox}^2 \cdot \phi_{lx} \quad M_{sd,x} = 25.906 \text{ kN} \cdot \text{m} \quad M_{sd,px} := \frac{-\chi_1}{12} \cdot q_d \cdot l_{ox}^2 \quad M_{sd,px} = -28.35 \text{ kN} \cdot \text{m}$$

$$M_{sd,y} := q_d \cdot l_{oy}^2 \cdot \phi_{ly} \quad M_{sd,y} = 18.124 \text{ kN} \cdot \text{m} \quad M_{sd,py} := -\frac{1 - \chi_1}{12} \cdot q_d \cdot l_{ox}^2 \quad M_{sd,py} = -13.65 \text{ kN} \cdot \text{m}$$

$$s_{bcx} := \frac{M_{sd,x}}{\alpha \cdot b \cdot d^2 \cdot f_{cd}} \quad s_{bcx} = 0.071 \quad \xi := \frac{1 - \sqrt{1 - 2 \cdot s_{bcx}}}{0.8} \quad \xi = 0.093 \quad x := \xi \cdot d \quad x = 1.481 \text{ cm}$$

$$A_{s1x} := \frac{0.8 \cdot x \cdot b \cdot \alpha \cdot f_{cd}}{f_{yd}} \quad A_{s1x} = 4.0032 \text{ cm}^2 \quad - \text{przyjęto } \phi 12 \text{ co } 12 \text{ cm} - A_{s.obl} = 9.42 \text{ cm}^2$$

$$s_{bcy} := \frac{M_{sd,y}}{\alpha \cdot b \cdot d_y^2 \cdot f_{cd}} \quad s_{bcy} = 0.058 \quad \xi := \frac{1 - \sqrt{1 - 2 \cdot s_{bcy}}}{0.8} \quad \xi = 0.075 \quad x := \xi \cdot d \quad x = 1.202 \text{ cm}$$

$$A_{s1y} := \frac{0.8 \cdot x \cdot b \cdot \alpha \cdot f_{cd}}{f_{yd}} \quad A_{s1y} = 3.2498 \text{ cm}^2 \quad - \text{przyjęto } \phi 12 \text{ co } 12 \text{ cm} - A_{s.obl} = 9.42 \text{ cm}^2$$

- płyta P_23.0

$$q_d := 14.0 \cdot \frac{\text{kN}}{\text{m}} \quad l_o := 3.375 \cdot \text{m} \quad h := 0.18 \cdot \text{m} \quad d := h - 0.02 \text{m} \quad d = 16 \text{ cm} \quad b := 1 \cdot \text{m}$$

$$M_{sd} := \frac{q_d \cdot l_o^2}{8} \quad M_{sd} = 19.934 \text{ kN} \cdot \text{m} \quad \alpha := 0.85$$

$$s_{bc} := \frac{M_{sd}}{\alpha \cdot b \cdot d^2 \cdot f_{cd}} \quad s_{bc} = 0.055 \quad \xi := \frac{1 - \sqrt{1 - 2 \cdot s_{bc}}}{0.8} \quad \xi = 0.071 \quad x := \xi \cdot d \quad x = 1.129 \text{ cm}$$

$$A_{s1} := \frac{0.8 \cdot x \cdot b \cdot \alpha \cdot f_{cd}}{f_{yd}} \quad A_{s1} = 3.0525 \text{ cm}^2 \quad - \text{przyjęto } \phi 12 \text{ co } 12 \text{ cm} - A_{s.obl} = 9.42 \text{ cm}^2$$

- płyta P_24.0

$$q_d := 14.0 \cdot \frac{\text{kN}}{\text{m}} \quad l_o := 2.50 \cdot \text{m} \quad h := 0.18 \cdot \text{m} \quad d := h - 0.02 \text{m} \quad d = 16 \text{ cm} \quad b := 1 \cdot \text{m}$$

$$M_{sd} := \frac{q_d \cdot l_o^2}{8} \quad M_{sd} = 10.938 \text{ kN} \cdot \text{m} \quad \alpha := 0.85$$