

$$s_{bcx} := \frac{M_{sd,x}}{\alpha \cdot b \cdot d^2 \cdot f_{cd}} \quad s_{bcx} = 0.073 \quad \xi := \frac{1 - \sqrt{1 - 2 \cdot s_{bcx}}}{0.8} \quad \xi = 0.095 \quad x := \xi \cdot d \quad x = 1.528 \text{ cm}$$

$$A_{s1x} := \frac{0.8 \cdot x \cdot b \cdot \alpha \cdot f_{cd}}{f_{yd}} \quad A_{s1x} = 4.131 \text{ cm}^2 \quad - \text{przyjęto } \phi 12 \text{ co } 12 \text{ cm} - A_{s.obl} = 9,42 \text{ cm}^2$$

$$s_{bcy} := \frac{M_{sd,y}}{\alpha \cdot b \cdot d_y^2 \cdot f_{cd}} \quad s_{bcy} = 0.05 \quad \xi := \frac{1 - \sqrt{1 - 2 \cdot s_{bcy}}}{0.8} \quad \xi = 0.064 \quad x := \xi \cdot d \quad x = 1.027 \text{ cm}$$

$$A_{s1y} := \frac{0.8 \cdot x \cdot b \cdot \alpha \cdot f_{cd}}{f_{yd}} \quad A_{s1y} = 2.7773 \text{ cm}^2 \quad - \text{przyjęto } \phi 12 \text{ co } 12 \text{ cm} - A_{s.obl} = 9,42 \text{ cm}^2$$

-plyta P_02-0

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

$$l_{ox} := 5.4 \cdot \text{m} \quad l_{oy} := 7.345 \cdot \text{m} \quad b := 1 \cdot \text{m} \quad d_y := d - 1.20 \cdot \text{cm} \quad d_y = 14.8 \text{ cm}$$

$$\frac{l_{oy}}{l_{ox}} = 1.36 \quad \phi_{1x} := 0.0657 \quad \phi_{1y} := 0.01088 \quad \chi_1 := 0.793 \quad \alpha := 0.85$$

$$M_{sd,x} := q_d \cdot l_{ox}^2 \cdot \phi_{1x} \quad M_{sd,x} = 26.821 \text{ kN} \cdot \text{m} \quad M_{sd,px} := \frac{-\chi_1}{12} \cdot q_d \cdot l_{ox}^2 \quad M_{sd,px} = -26.978 \text{ kN} \cdot \text{m}$$

$$M_{sd,y} := q_d \cdot l_{oy}^2 \cdot \phi_{1y} \quad M_{sd,y} = 8.218 \text{ kN} \cdot \text{m} \quad M_{sd,py} := -\frac{1 - \chi_1}{12} \cdot q_d \cdot l_{ox}^2 \quad M_{sd,py} = -7.042 \text{ kN} \cdot \text{m}$$

$$s_{bcx} := \frac{M_{sd,x}}{\alpha \cdot b \cdot d^2 \cdot f_{cd}} \quad s_{bcx} = 0.074 \quad \xi := \frac{1 - \sqrt{1 - 2 \cdot s_{bcx}}}{0.8} \quad \xi = 0.096 \quad x := \xi \cdot d \quad x = 1.535 \text{ cm}$$

$$A_{s1x} := \frac{0.8 \cdot x \cdot b \cdot \alpha \cdot f_{cd}}{f_{yd}} \quad A_{s1x} = 4.1506 \text{ cm}^2 \quad - \text{przyjęto } \phi 12 \text{ co } 12 \text{ cm} - A_{s.obl} = 9,42 \text{ cm}^2$$

$$s_{bcy} := \frac{M_{sd,y}}{\alpha \cdot b \cdot d_y^2 \cdot f_{cd}} \quad s_{bcy} = 0.026 \quad \xi := \frac{1 - \sqrt{1 - 2 \cdot s_{bcy}}}{0.8} \quad \xi = 0.033 \quad x := \xi \cdot d \quad x = 0.536 \text{ cm}$$

$$A_{s1y} := \frac{0.8 \cdot x \cdot b \cdot \alpha \cdot f_{cd}}{f_{yd}} \quad A_{s1y} = 1.4486 \text{ cm}^2 \quad - \text{przyjęto } \phi 12 \text{ co } 12 \text{ cm} - A_{s.obl} = 9,42 \text{ cm}^2$$

-plyta P_03.0

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

$$l_{ox} := 5.70 \cdot \text{m} \quad l_{oy} := 7.345 \cdot \text{m} \quad b := 1 \cdot \text{m} \quad d_y := d - 1.20 \cdot \text{cm} \quad d_y = 14.8 \text{ cm}$$

$$\frac{l_{oy}}{l_{ox}} = 1.289 \quad \phi_{1x} := 0.0587 \quad \phi_{1y} := 0.0206 \quad \chi_1 := 0.741 \quad \alpha := 0.85$$

$$M_{sd,x} := q_d \cdot l_{ox}^2 \cdot \phi_{1x} \quad M_{sd,x} = 26.7 \text{ kN} \cdot \text{m} \quad M_{sd,px} := \frac{-\chi_1}{12} \cdot q_d \cdot l_{ox}^2 \quad M_{sd,px} = -28.088 \text{ kN} \cdot \text{m}$$

$$M_{sd,y} := q_d \cdot l_{oy}^2 \cdot \phi_{1y} \quad M_{sd,y} = 15.559 \text{ kN} \cdot \text{m} \quad M_{sd,py} := -\frac{1 - \chi_1}{12} \cdot q_d \cdot l_{ox}^2 \quad M_{sd,py} = -9.817 \text{ kN} \cdot \text{m}$$