

$$M_{sd,y} := q_d \cdot l_{oy}^2 \cdot \phi_{ly} \quad M_{sd,y} = 16.441 \text{ kN}\cdot\text{m}$$

$$M_{sd,py} := -\frac{1-\chi_1}{12} \cdot q_d \cdot l_{ox}^2 \quad M_{sd,py} = -12.383 \text{ kN}\cdot\text{m}$$

$$s_{bcx} := \frac{M_{sd,x}}{\alpha \cdot b \cdot d^2 \cdot f_{cd}} \quad s_{bcx} = 0.065 \quad \xi := \frac{1 - \sqrt{1 - 2 \cdot s_{bcx}}}{0.8} \quad \xi = 0.084 \quad x := \xi \cdot d \quad x = 1.338 \text{ cm}$$

$$A_{s1x} := \frac{0.8 \cdot x \cdot b \cdot \alpha \cdot f_{cd}}{f_{yd}} \quad A_{s1x} = 3.6181 \text{ cm}^2 \quad - \text{przyjęto } \phi 12 \text{ co } 12 \text{ cm} - A_{s.obl} = 9.42 \text{ cm}^2$$

$$s_{bcy} := \frac{M_{sd,y}}{\alpha \cdot b \cdot d_y^2 \cdot f_{cd}} \quad s_{bcy} = 0.053 \quad \xi := \frac{1 - \sqrt{1 - 2 \cdot s_{bcy}}}{0.8} \quad \xi = 0.068 \quad x := \xi \cdot d \quad x = 1.087 \text{ cm}$$

$$A_{s1y} := \frac{0.8 \cdot x \cdot b \cdot \alpha \cdot f_{cd}}{f_{yd}} \quad A_{s1y} = 2.9393 \text{ cm}^2 \quad - \text{przyjęto } \phi 12 \text{ co } 12 \text{ cm} - A_{s.obl} = 9.42 \text{ cm}^2$$

-plyta P_21-1,

$$q_d := 12.7 \cdot \frac{\text{kN}}{\text{m}} \quad h := 0.18 \text{ m} \quad d := h - 0.02 \text{ m} \quad d = 16 \text{ cm}$$

$$l_{ox} := 5.875 \text{ m} \quad l_{oy} := 7.225 \text{ m} \quad b := 1 \text{ m} \quad d_y := d - 1.20 \text{ cm} \quad d_y = 14.8 \text{ cm}$$

$$\frac{l_{oy}}{l_{ox}} = 1.23 \quad \phi_{1x} := 0.0550 \quad \phi_{1y} := 0.0248 \quad \chi_1 := 0.708 \quad \alpha := 0.85$$

$$M_{sd,x} := q_d \cdot l_{ox}^2 \cdot \phi_{1x} \quad M_{sd,x} = 24.109 \text{ kN}\cdot\text{m} \quad M_{sd,px} := \frac{-\chi_1}{12} \cdot q_d \cdot l_{ox}^2 \quad M_{sd,px} = -25.863 \text{ kN}\cdot\text{m}$$

$$M_{sd,y} := q_d \cdot l_{oy}^2 \cdot \phi_{1y} \quad M_{sd,y} = 16.441 \text{ kN}\cdot\text{m} \quad M_{sd,py} := -\frac{1-\chi_1}{12} \cdot q_d \cdot l_{ox}^2 \quad M_{sd,py} = -10.666 \text{ kN}\cdot\text{m}$$

$$s_{bcx} := \frac{M_{sd,x}}{\alpha \cdot b \cdot d^2 \cdot f_{cd}} \quad s_{bcx} = 0.066 \quad \xi := \frac{1 - \sqrt{1 - 2 \cdot s_{bcx}}}{0.8} \quad \xi = 0.086 \quad x := \xi \cdot d \quad x = 1.374 \text{ cm}$$

$$A_{s1x} := \frac{0.8 \cdot x \cdot b \cdot \alpha \cdot f_{cd}}{f_{yd}} \quad A_{s1x} = 3.7153 \text{ cm}^2 \quad - \text{przyjęto } \phi 12 \text{ co } 12 \text{ cm} - A_{s.obl} = 9.42 \text{ cm}^2$$

$$s_{bcy} := \frac{M_{sd,y}}{\alpha \cdot b \cdot d_y^2 \cdot f_{cd}} \quad s_{bcy} = 0.053 \quad \xi := \frac{1 - \sqrt{1 - 2 \cdot s_{bcy}}}{0.8} \quad \xi = 0.068 \quad x := \xi \cdot d \quad x = 1.087 \text{ cm}$$

$$A_{s1y} := \frac{0.8 \cdot x \cdot b \cdot \alpha \cdot f_{cd}}{f_{yd}} \quad A_{s1y} = 2.9393 \text{ cm}^2 \quad - \text{przyjęto } \phi 12 \text{ co } 12 \text{ cm} - A_{s.obl} = 9.42 \text{ cm}^2$$

2.3 Tabela zbiorcza

lp.	POZ.	Rozpiętość l_o [m]	Obciążenie obl. [kN/m ²]	Mx [kNm]	My [kNm]	As ^x [cm ²]	As ^y [cm ²]	Przyjęto	
								As ^x [cm ²]	As ^y [cm ²]
1.	P_01-0	5,70x7,345	14,00	26,70	15,56	4,13	2,78	$\phi 12 \text{ co } 12 = 9,42$	$\phi 12 \text{ co } 12 = 9,42$
2.	P_02-0	5,40x7,345	14,00	26,82	8,22	4,15	1,45	$\phi 12 \text{ co } 12 = 9,42$	$\phi 12 \text{ co } 12 = 9,42$
3.	P_03-0	5,70x7,345	14,00	26,70	15,56	4,13	2,78	$\phi 12 \text{ co } 12 = 9,42$	$\phi 12 \text{ co } 12 = 9,42$