

DIMENZIONISANJE ELEMENATA NATM PRIMARNE PODGRADE ZA GORNJU POLOVINU PROFILA

$$Pe^* = 560,06 \text{ kN/m}^2$$

$$a = 4,4 \text{ m}$$

$$\varphi = 45^\circ$$

$$c = 2,5 \cdot 700 = 1750 \text{ kN/m}^2$$

$$Pe = 0,4 \cdot 560,06 = 224,024 \text{ kN/m}^2$$

$$Pe = Pe_b + Pe_a + Pe_s$$

- EKUIVALENTNI PRITISAK STIŽENSKJE OBLOGE

$$Pe_b = \frac{\tau_b \cdot d_b \cdot 1,0}{a \cos \varphi \sin \varphi} = 2 \tau_b \cdot \frac{d_b}{a} \cdot \frac{1}{\cos \varphi}$$

$$Pe_b = 15\% Pe = 33,6036 \text{ kN/m}^2$$

$$MB30 \Rightarrow f_b = 2,05 \text{ kN/cm}^2 = 2,05 \cdot 10^4 \text{ kN/m}^2$$

$$\frac{2 \tau_b \cdot d_b \cdot 1,0}{a \cos \varphi} = 33,6036 \Rightarrow d_b = \frac{33,6036 \cdot 4,4 \cdot \cos 45}{2 \cdot 0,41 \cdot 10^4} = 0,0125 \text{ m} = 1,25 \text{ cm}$$

? je zahtev

USVAJAMO $d_b = 5 \text{ cm}$

$$Pe_b = 131,78 \text{ kN/m}^2$$

- EKUIVALENTNI PRITISAK ARMATURE

$$Pe_a = 5\% Pe = 11,2 \text{ kN/m}^2$$

$$Pe_a = \frac{2 f_a \cdot \tau_b \cdot \frac{E_a}{E_b}}{a \cos \varphi}$$

$$\frac{E_a}{E_b} = 10$$

$$11,2 = \frac{2 f_a \tau_b \cdot \frac{E_a}{E_b}}{a \cos \varphi} \Rightarrow f_a = 4,25 \text{ cm}^2/\text{m}$$

— i po parast
— i po zahtevu
USVOJENO $R\varnothing 8/10$ ($5 \text{ cm}^2/\text{m}$)
OBAVEZNO!

$$Pe_a = 13,18 \text{ kN/m}^2$$

- EKUIVALENTNI OTPOR SIDRA

$$Pe_s = Pe - Pe_b - Pe_a = 79,064 \text{ kN/m}^2$$

$$P_{es} = \frac{S}{e_n \cdot e_l} = \frac{f_s \cdot \sigma_z^{doz}}{e_n \cdot e_l}$$

$$e_n = e_l = 1 \text{ m}$$

$$f_s = \frac{P_{es}}{\sigma_z^{doz}} = \frac{79,064}{28} = 2,82 \text{ cm}^2$$

$$\sigma_z^{doz} = 280 \text{ MPa}$$

USVAJENO RØ19 (2,84 cm²)

POTREBNA DUŽINA SPRA

$$l_s = d_b + r_0 - a + e_n \cdot \frac{r_0}{\alpha} \cdot \frac{1}{2}$$

$$r_0 = a \left[\frac{2(\lambda - 1)P_0 + \sigma_c}{(\lambda - 1)P_c + \sigma_c} \right] \frac{1}{\lambda - 1}$$

$$r_0 = 8,5 \text{ m}$$

$$l_s = 0,05 + 8,5 - 4,4 + 1 \cdot \frac{8,5}{4,4} \cdot \frac{1}{2}$$

$$l_s = 5,1 \text{ m}$$

$$\lambda = 5,83$$

$$P = 3600 \text{ kN/m}^2$$

$$\sigma_c = 3379,8 \text{ kN/m}^2$$

LOŠA SKICA

