

Poz. 201 AB ploča mosta

OPTEREĆENJE

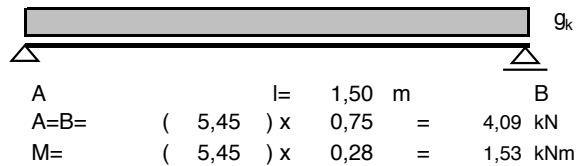
stalno opterećenje

vlastita tež. ploče	20	x	100	5,00 kN/m ²		
asfalt				0,30 kN/m ²		
podgled				0,15 kN/m ²		
				$g_k = 5,45 \text{ kN/m}^2$	x	1 m = 5,45 kN/m

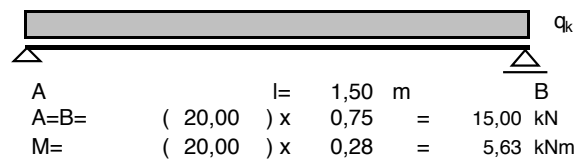
Korisno opterećenje

korisno				$q_k = 20,00 \text{ kN/m}^2$	x	1 m = 20,00 kN/m
---------	--	--	--	------------------------------	---	------------------

Rezne sile - stalno opterećenje



Rezne sile - korisno opterećenje



DIMENZIONIRANJE PRESJEKA

BETON	C 25/30	$f_{ck} = 30,0 \text{ N/mm}^2$
ARMATURA	B500B	$f_{yk} = 500,0 \text{ N/mm}^2$
Osnovna kombinacija opterećenja		
beton	$\gamma_c = 1,50$	$f_{cd} = 20,00 \text{ N/mm}^2$
betonski čelik	$\gamma_s = 1,15$	$f_{yd} = ##### \text{ N/mm}^2$

POPREČNI PRESJEK

b =	100,00 cm
h =	20,00 cm
a =	4,00 cm
d =	16,00 cm

$$M_{Ed} = 10,51 \text{ kNm} \quad \mu_{Ed} = 0,021 < \mu_{lim} = 0,296$$

očitano:

$$\epsilon_c = -1,20 \text{ ‰} \quad \zeta = 0,98$$
$$\epsilon_{s1} = 20,00 \text{ ‰}$$

ARMATURA $A_{s1} = 1,54 \text{ cm}^2$

minimalna armatura

$$A_{s1, \min} = 2,08 \text{ cm}^2$$
$$A_{s1, \min} = 2,16 \text{ cm}^2$$

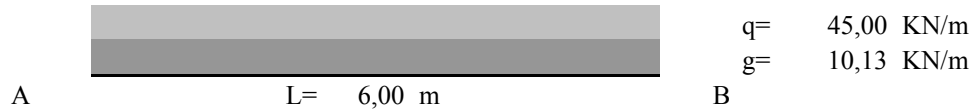
ODBRANO: Q 335 $3,35 \text{ cm}^2$ donja i gornja zona

Nosač POZ 1

Nosač AB ploče

sudjelujuća širina

$$B = 1,50 \text{ m}$$



kombinacija opt. 1

$$A = B = 165,38 \text{ KN}$$

$$M = 248,06 \text{ KNm}$$

Dimenzioniranje

$$M_{ySd} = 248,06 \text{ KNm}$$

$$V_{zSd} = 165,38 \text{ KN}$$

odabrani profil
NPI 400 DIN1025

Čelik:

S235JR

$$f_y = 235 \text{ N/mm}^2$$

$$f_u = 360 \text{ N/mm}^2$$

$$E = 210\,000 \text{ N/mm}^2$$

$$v = 0,3$$

$$\gamma_{M0} = 1,10$$

$$\gamma_{M1} = 1,10$$

$$\gamma_{M2} = 1,25$$

klasifikacija poprečnog presjeka

Poprečni presjek klase 1

otpornost poprečnog presjeka

$$M_{c,Rd} = M_{pl,y} R_d = W_{pl,y} \times f_y / \gamma_{M0} = 1714,00 \text{ cm}^3$$

$$M_{c,Rd} = M_{pl,y} R_d = 366,17 \text{ KNm}$$

$$M_{ySd} = 248,06 < 366,17$$

$$d/t_w = 22,42 < 69 \times 0,81 = 55,89$$

$$V_{pl,z} R_d = A_{v,z} \times f_y / 3 \times \gamma_{M0}$$

$$A_{v,z} = 1,04 \times h \times t_w = 59,90 \text{ cm}^2$$

$$V_{pl,z} R_d = 894,04 \text{ KN}$$

$$V_{zSd} = 165,38 < 894,04$$