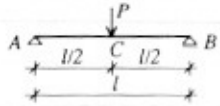
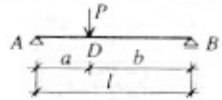
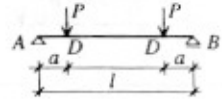
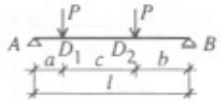
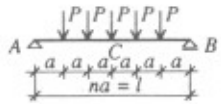
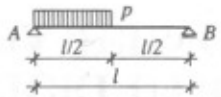
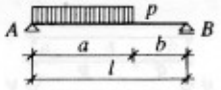
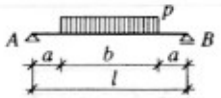
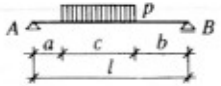
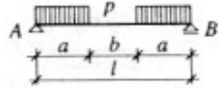
PRILOG 5
KOEFICIJENTI ZA ODREĐIVANJE STATIČKIH UTICAJA ELEMENATA KONSTRUKCIJA

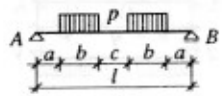
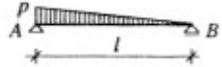
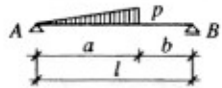
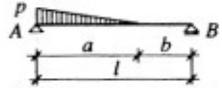
PRILOG 5.1
STATIČKI UTICAJI I DEFORMACIJE GREDA JEDNOG RASPONA

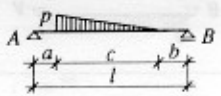
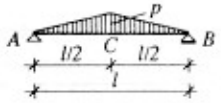
Prosta greda

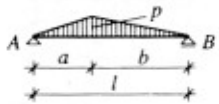
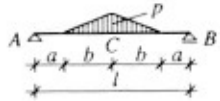
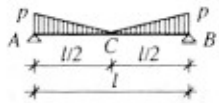
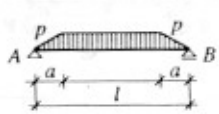
		Oslonačke reakcije R	Ekstremne vrednosti momenata M_{max}	Uglovi nagiba na krajevima Θ	Najveći ugib f_{max}
1.1		$A = B = \frac{P}{2}$	$M_C = \frac{Pl}{4}$	$\Theta_A = \Theta_B = \frac{Pl^2}{16\,EI}$	$f_C = \frac{Pl^3}{48\,EI}$
1.2		$A = P\frac{b}{l}$ $B = P\frac{a}{l}$	$M_D = P\frac{ab}{l}$	$\Theta_A = \frac{Pab}{6\,lEI}(l + b)$ $\Theta_B = \frac{Pab}{6\,lEI}(l + a)$	$f_C = \frac{Pab}{27\,lEI}\sqrt{3b\,(l + a)^3}$ $x_C = l - \sqrt{\frac{b}{3}(l + a)}$, za $a < b$ $f_C = \frac{Pab}{27\,lEI}\sqrt{3a\,(l + b)^3}$ $x_C = \sqrt{\frac{a}{3}(l + b)}$, za $a > b$
1.3		$A = B = P$	$M_D = Pa$	$\Theta_A = \Theta_B = \frac{Pa}{2\,EI}(l - a)$	$f_C = \frac{Pa}{24\,EI}(3\,l^2 - 4\,a^3)$ $x_C = \frac{l}{2}$

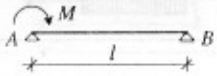
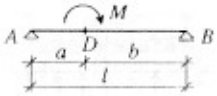
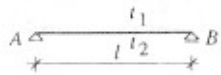
		R	M_{max}	Θ	f_{max}
1.4		$A = \frac{P}{l}(2b + c)$ $B = \frac{P}{l}(2a + c)$	$M_{D1} = \frac{Pa}{l}(2b + c)$, za $a > b$ $M_{D2} = \frac{Pb}{l}(2a + c)$, za $a < b$	$\Theta_A = \frac{P(2b + c)}{6lEI} k_1$ $k_1 = a(l + b) + c(a + b)$ $\Theta_B = \frac{P(2a + c)}{6lEI} k_2$ $k_1 = b(l + a) + c(a + b)$	
1.5		$A = B = \frac{P}{2}(n-1)$	$M_C = \frac{Pl}{8}\frac{n^2-1}{n}$, za n neparno $M_C = \frac{Pl}{8} n$, za n parno	$\Theta_A = \Theta_B = \frac{Pl^2}{24\,EI}\frac{n^2-1}{n}$	$f_C = \frac{Pl^3}{384\,EI} \times \frac{(n^2-1)(5n^2+1)}{n^3}$, za n neparno $f_C = \frac{Pl^3}{384\,EI}\frac{5n^2-4}{n}$, za n parno
1.6		$A = B = \frac{pl}{2}$	$M_C = \frac{pl^2}{8}$ $x_C = \frac{l}{2}$	$\Theta_A = \Theta_B = \frac{pl^3}{24\,EI}$	$f_C = \frac{5pl^4}{384EI}$ $x_C = \frac{l}{2}$
1.7		$A = \frac{3}{8} pl$ $B = \frac{pl}{8}$	$M_D = \frac{9}{128} pl^2$ $x_D = \frac{3}{8} l$	$\Theta_A = \frac{3\,pl^3}{128\,EI}$ $\Theta_B = \frac{7\,pl^3}{384\,EI}$	

		R	M_{max}	Θ	f_{max}
1.8		$A = \frac{pa}{2l}(l+b)$ $B = \frac{p\,a^2}{2l}$	$M_D = \frac{pa^2}{8l^2}(l+b)^2$ $x_D = \frac{a}{2l}(l+b)$	$\Theta_A = \frac{pa^2}{24\,lEI}(l+b)^2$ $\Theta_B = \frac{pa^2}{24\,lEI}(2l^2 - a^2)$	
1.9		$A = B = \frac{pb}{2}$	$M_C = \frac{pb}{8}(2l - b)$ $x_C = \frac{l}{2}$	$\Theta_A = \Theta_B = \frac{pb}{48\,EI} \times (3l^2 - b^2)$	$f_C = \frac{pb}{384\,EI} \times (8l^3 - 4lb^2 + b^3)$ $x_C = \frac{l}{2}$
1.10		$A = \frac{pc}{2l}(2b + c)$ $B = \frac{pc}{2l}(2a + c)$	$M_D = \frac{pc}{8l^2}k$ $k = (2a + c) \times (2b + c)(2l - c)$ $x_D = a + \frac{c}{2l}(2b + c)$	$\Theta_A = \frac{pc}{24\,lEI}(2b + c)k_1$ $k_1 = a(2l - a) + (a + c)(l + b)$ $\Theta_B = \frac{pc}{24\,lEI}(2a + c)k_2$ $k_2 = b(2l - b) + (b + c)(l + a)$	
1.11		$A = B = pa$	$M_C = \frac{pa^2}{2}$ $x_C = \frac{l}{2}$	$\Theta_A = \Theta_B = \frac{pa^2}{12EI}(3l - 2a)$	$f_C = \frac{pa^2}{48\,EI}(3l^2 - 2a^2)$ $x_C = \frac{l}{2}$

		R	M_{max}	Θ	f_{max}
1.12		$A = B = pb$	$M_C = \frac{pb}{2}(2a + b)$ $x_C = \frac{l}{2}$	$\Theta_A = \Theta_B = \frac{pb}{24\,EI}k$ $k = 3l^2 - b^2 - 3(c+b)^2$	
1.13		$A = \frac{pl}{3}$ $B = \frac{pl}{6}$	$M_D = \frac{pl^2}{(9\sqrt{3})}$ $x_D = l - \frac{l}{\sqrt{3}}$	$\Theta_A = \frac{pl^3}{45\,EI}$ $\Theta_B = \frac{7\,pl^3}{360\,EI}$	$f_D = \frac{pl^4k}{360\,EI} \times (7 - 10k^2 + 3k^4)$ $x_D = (1-k)l$ $k = \sqrt{1 - \sqrt{\frac{8}{15}}} = 0.5193$
1.14		$A = \frac{pa}{6l}(3l - 2a)$ $B = \frac{pa^2}{3l}$	$M_D = \frac{pa^2}{27\,l^2} \times \sqrt{3l(3l-2a)^3}$ $x_D = a\sqrt{1 - \frac{2a}{3l}}$	$\Theta_A = \frac{pa^2}{360\,lEI} \times (7l^2 + 19lb + 12b^2)$ $\Theta_B = \frac{pa^2}{90\,lEI}(5l^2 - 3a^2)$	
1.15		$A = \frac{pa}{6l}(3l - a)$ $B = \frac{pa^2}{6l}$	$M_D = \frac{pa^2}{18\,l}k$ $k = 3b + 2a\sqrt{\frac{a}{3l}}$ $x_D = a\left(1 - \sqrt{\frac{a}{3l}}\right)$	$\Theta_A = \frac{pa^2}{360\,lEI}k$ $k = 20l^2 - 15al + 3a^2$ $\Theta_B = \frac{pa^2}{360\,lEI} \times (10l^2 - 3a^2)$	

		R	M_{max}	Θ	f_{max}
1.16		$A = \frac{pc}{6l}(3b + 2c)$ $B = \frac{pc}{6l}(3a + c)$	$M_D = \frac{p}{18l}(3a + c)\,k$ $k = 3b + 2c\sqrt{\frac{3a + c}{3l}}$ $x_D = a + c\left(1 - \sqrt{\frac{3a + c}{3l}}\right)$	$\Theta_A = \frac{pc}{3240\,EI}\,k_1$ $k_1 = 10\,(3b + 2c)\,(3a + c)\,(3l + 3b + 2c) - c^2\,(45b + 28c)$ $\Theta_B = \frac{pc}{3240EI}\,k_2$ $k_2 = 10\,(3a + c)\,(3b + 2c)\,(3l + 3a + c) - c^2\,(45a + 17c)$	
1.17		$A = \frac{1}{6}(2p_A + p_B)$ $B = \frac{1}{6}(p_A + 2p_B)$	$M_D = \frac{l^2}{18}\frac{(k - p_A)}{(p_B - p_A)^2}\,K$ $K = 3\,(p_B^2 - kp_A) - (p_B - p_A)^2$ $x_D = \frac{k - p_A}{p_B - p_A}\,l$ $k = \sqrt{\frac{(p_A + p_B)^2 - p_A p_B}{3}}$	$\Theta_A = \frac{l^3}{360EI}(8p_A + 7p_B)$ $\Theta_B = \frac{pl}{360EI}(7p_A + 8p_B)$	
1.18		$A = B = \frac{pl}{4}$	$M_C = \frac{pl^2}{12}$	$\Theta_A = \Theta_B = \frac{5pl^3}{192EI}$	$f_C = \frac{pl^4}{120EI}$

		R	M_{max}	Θ	f_{max}
1.19		$A = \frac{p}{6}(l+b)$ $B = \frac{p}{6}(l+a)$	$M_D = \frac{p}{9}\sqrt{\frac{b}{3}(l+a)^3}$ $x_D = 1 - \sqrt{\frac{b}{3}(l+a)}$, za $a < b$ $M_D = \frac{p}{9}\sqrt{\frac{a}{3}(l+b)^3}$ $x_D = \sqrt{\frac{a}{3}(l+b)}$ za $a > b$	$\Theta_A = \frac{p}{360EI} k_1$ $k_1 = (l+b)(7l^2 - 3b^2)$ $\Theta_B = \frac{p}{360EI} k_2$ $k_2 = (l+a)(7l^2 - 3a^2)$	
1.20		$A = B = \frac{pb}{2}$	$M_C = \frac{pb}{12}(3l - 2b)$	$\Theta_A = \Theta_B = \frac{pb}{48EI}(3l^2 - 2b^2)$	
1.21		$A = B = \frac{pl}{4}$	$M_C = \frac{pl^2}{24}$	$\Theta_A = \Theta_B = \frac{pl^3}{64EI}$	$f_C = \frac{3pl^4}{640EI}$
1.22		$A = B = \frac{p(l-a)}{2}$	$M_C = \frac{p}{24}(3l^2 - 4a^2)$ $x_C = \frac{l}{2}$	$\Theta_A = \Theta_B = \frac{p}{24EI} k$ $k = l^3 - a^2(2l - a)$	$f_C = \frac{p}{1920EI}(5l^2 - 4a^2)^2$ $x_C = \frac{l}{2}$

		R	M_{max}	Θ	f_{max}
1.23		$A = -\frac{M}{l}$ $B = \frac{M}{l}$	$M_A = M$	$\Theta_A = \frac{Ml}{3EI}$ $\Theta_B = \frac{Ml}{6EI}$	$f_D = \frac{Ml^2}{(9\sqrt{3}\,EI)}$ $x_D = \left(1 - \frac{\sqrt{3}}{3}\right) l$
1.24		$A = -\frac{M}{l}$ $B = \frac{M}{l}$	$M_{D\,\text{levo}} = -\frac{Ma}{l}$ $M_{D\,\text{desno}} = M\left(1 - \frac{a}{l}\right)$	$\Theta_A = \frac{M}{6lEI}\,(3b^2 - l^2)$ $\Theta_B = \frac{M}{6lEI}\,(l^2 - 3a^2)$	$f_C = \frac{M}{27lEI}\sqrt{3\,(l^2 - 3a^2)^3}$ $x_C = l - \sqrt{\frac{1}{3}\,(l^2 - 3a^2)}$, za $a < b$ $f_C = -\frac{M}{27lEI}\sqrt{3\,(l^2 - 3b^2)^3}$ $x_C = \sqrt{\frac{1}{3}(l^2 - 3b^2)}$, za $a > b$
1.25		$A = B = 0$	$M = 0$	$\Theta_A = \Theta_B = \frac{\alpha\,(t_2 - t_1)\,l}{2d}$	$f_C = \frac{\alpha\,(t_2 - t_1)\,l^2}{8d}$ $x_C = \frac{l}{2}$
1.26		$A = B = 0$	$M = 0$	$\Theta_A = -\frac{\Delta}{l}$ $\Theta_B = \frac{\Delta}{l}$	$f_A = \Delta$

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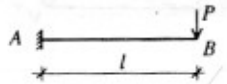
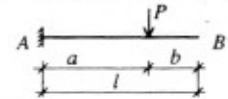
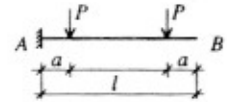
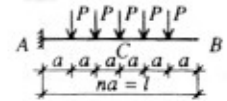
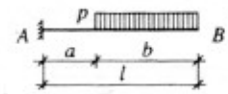
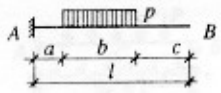
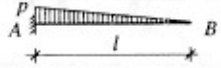
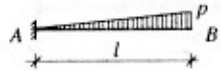
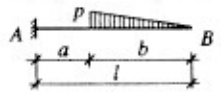
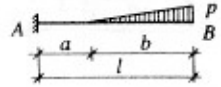
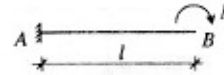
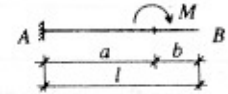
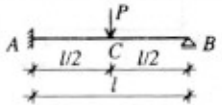
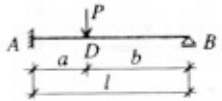
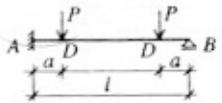
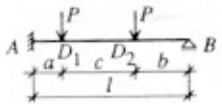
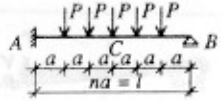
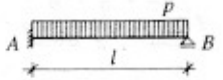
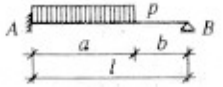
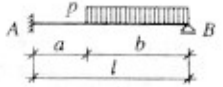
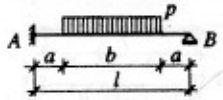
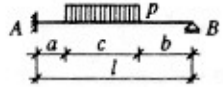
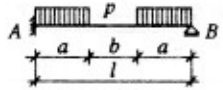
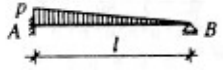
		$R = A$	$M_{max} = M_A$	Θ_B	$f_{max} = f_B$
2.1		P	$-Pl$	$-\frac{Pl^2}{2EI}$	$\frac{Pl^3}{3EI}$
2.2		P	$-Pa$	$-\frac{Pa^2}{2EI}$	$\frac{Pa^2}{6EI}(3l-a)$
2.3		$2P$	$-Pl$	$-\frac{P}{2EI}\left[a^2+(l-a)^2\right]$	$\frac{P}{6EI}\left[2l^2-3a(l-a)\right]$
2.4		$P(n-1)$	$\frac{Pl}{2}(n-1)$	$-\frac{Pl^2}{12EI}\frac{(n-1)(2n-1)}{n}$	$\frac{Pl^3}{24EI}\frac{(n-1)(3n-1)}{n}$
2.5		pl	$-\frac{pl^2}{2}$	$-\frac{pl^3}{6EI}$	$\frac{pl^4}{8EI}$
2.6		pb	$-\frac{pb}{2}(l+a)$	$-\frac{pb}{6EI}(3la+b^2)$	$\frac{pb}{24EI}(2l^3+6al^2+b^3)$

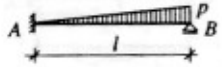
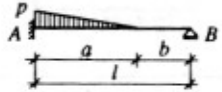
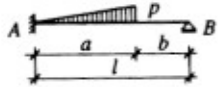
		$R = A$	$M_{max} = M_A$	Θ_B	$f_{max} = f_B$
2.7		pb	$-\frac{pb}{2}(b + 2a)$	$-\frac{pb}{6EI}(3a^2 + 3ab + b^2)$	$\frac{Pb}{24EI}[2(a+b)^2(4a+b) + b^3 + 4c(3a^2 + 3ab + b^2)]$
2.8		$\frac{pl}{2}$	$-\frac{pl^2}{6}$	$-\frac{pl^3}{24EI}$	$\frac{pl^4}{30EI}$
2.9		$\frac{pl}{2}$	$-\frac{pl^2}{3}$	$-\frac{pl^3}{8EI}$	$\frac{11pl^4}{120EI}$
2.10		$\frac{pb}{2}$	$-\frac{pb}{6}(l + 2a)$	$-\frac{pb}{24EI}[(l+a)^2 + 2a^2]$	$\frac{pb}{30EI}(5l^2a + b^3)$
2.11		$\frac{pb}{2}$	$-\frac{pb}{6}(2l + a)$	$-\frac{pb}{24EI}[2l^2 + (l+a)^2]$	$\frac{pb}{120EI}[10l^2(l+a) + b^3]$
2.12		0	$-M$	$-\frac{Ml}{EI}$	$\frac{Ml^2}{2EI}$
2.13		0	$-M$	$-\frac{Ma}{EI}$	$\frac{Ma}{2EI}(l + b)$

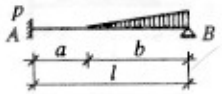
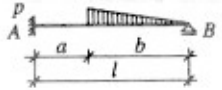
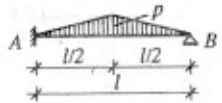
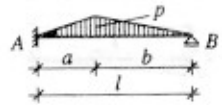
Jednostrano uklještena greda

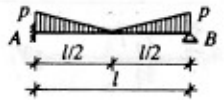
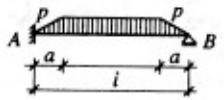
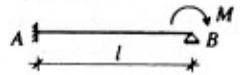
		R	M_{max}	Θ_B	f_{max}
3.1		$A = \frac{11}{16} P$ $B = \frac{5}{16} P$	$M_A = -\frac{3}{16} Pl$ $M_C = \frac{5}{32} Pl$	$\frac{Pl^2}{32EI}$	$f_D = \frac{Pl^3}{48\sqrt{5}\,EI}$ $x_D = l\left(1 - \frac{1}{\sqrt{5}}\right)$
3.2		$A = \frac{Pb}{2l^3}(3l^2 - b^2)$ $B = \frac{Pa^2}{2l^3}(3l - a)$	$M_A = -\frac{Pab}{2l^2}(l + b)$ $M_D = \frac{Pa^2b}{2l^3}(2l + b)$	$\frac{Pa^2b}{4lEI}$	$f_C = \frac{Pa^2b}{6EI}\sqrt{\frac{b}{2l + b}}$ $x_C = l\left(1 - \sqrt{\frac{b}{2l + b}}\right)$
3.3		$A = \frac{P}{2l^2}(2l^2 + 3al - 3a^2)$ $B = \frac{P}{2l^2}(2l^2 - 3al + 3a^2)$	$M_A = -\frac{3Pa}{2l}(l - a)$ $M_{D2} = \frac{Pa}{2l^2} k$ $k = 2l^2 - 3al + 3a^2$	$\frac{Pa(l - a)}{4EI}$	
3.4		$A = \frac{P}{l}(2b + c) - \frac{M_A}{l}$ $B = \frac{P}{l}(2a + c) + \frac{M_A}{l}$	$M_A = -\frac{P(2b + c)}{12l^2} k$ $k = a(l + b) + c(a + b)$	$\frac{P}{4lEI}\left[a^2(b + c) + b(a + c)^2\right]$	

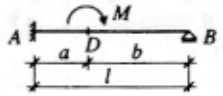
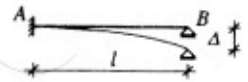
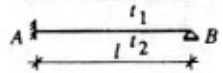
		R	M_{max}	Θ_B	f_{max}
3.5		$A = \frac{P}{8}\frac{(n-1)}{n} \times (5n+1)$ $B = \frac{P}{8}\frac{(n-1)}{n} \times (3n-1)$	$M_A = -\frac{Pl}{8}\frac{n^2-1}{n}$	$\frac{Pl^2}{48EI}\frac{n^2-1}{n}$	
3.6		$A = \frac{5}{8}pl$ $B = \frac{3}{8}pl$	$M_A = -\frac{pl^2}{8}$ $M_D = \frac{9}{128}pl^2$ $x_D = \frac{5}{8}l$	$\frac{pl^3}{48EI}$	$f_D = 0.005416\frac{pl^4}{EI}$ $x_D = \frac{l}{16}(15-\sqrt{33})$
3.7		$A = \frac{pa}{8l^3}(8l^3 - 4a^2l + a^3)$ $B = \frac{pa^3}{8l^3}(4l-a)$	$M_A = -\frac{pa^2}{8l^2}(l+b)^2$ $M_D = B\left(b + \frac{B}{2p}\right)$ $x_D = a - \frac{B}{p}$	$\frac{pa^3}{48lEI}(4l-3a)$	
3.8		$A = \frac{pb^2}{8l^3}(6l^2-b^2)$ $B = \frac{pb}{8l^3}(8l^3 - 6bl^2 + b^3)$	$M_A = -\frac{pb^2}{8l^2}(2l^2-b^2)$ $M_D = \frac{B^2}{2p}$ $x_D = l - \frac{B}{p}$	$\frac{pb^2}{48lEI}(2a^2+4la+b^2)$	

		R	M_{max}	Θ_B	f_{max}
3.9		$A = \frac{pb}{16l^2}(11l^2 - b^2)$ $B = \frac{pb}{16l^2}(5l^2 + b^2)$	$M_A = -\frac{pb}{16l}(3l^2 - b^2)$ $M_D = B\left(a + \frac{B}{2p}\right)$ $x_D = l - a - \frac{B}{p}$	$\frac{pb}{96EI}(3l^2 - b^2)$	
3.10		$A = \frac{pc}{2l}(2b + c) - \frac{M_A}{l}$ $B = \frac{pc}{2l}(2a + c) + \frac{M_A}{l}$	$M_A = -\frac{pc}{16l^2}(2b + c)k$ $k = (2a + c) \times (2l + 2b + c) - c^2$ $M_D = B\left(b + \frac{B}{2p}\right)$ $x_D = l - b - \frac{B}{p}$		
3.11		$A = \frac{pa}{4l^2}(4l^2 + 3al - 2a^2)$ $B = \frac{pa}{4l^2}(4l^2 - 3al + 2a^2)$	$M_A = -\frac{pa^2}{4l}(3l - 2a)$ $M_D = \frac{B^2}{2p}$ $x_D = l - \frac{B}{p}$	$\frac{pa^2}{24EI}(3l - 2a)$	
3.12		$A = \frac{2}{5}pl$ $B = \frac{pl}{10}$	$M_A = -\frac{pl^2}{15}$ $M_D = \frac{pl^2}{15\sqrt{5}}$ $x_D = l\left(1 - \frac{1}{\sqrt{5}}\right)$	$\frac{pl^3}{120EI}$	$f_D = \frac{2pl^4}{375\sqrt{5}EI}$ $x_D = l\left(1 - \frac{1}{\sqrt{5}}\right)$

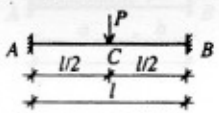
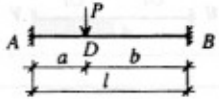
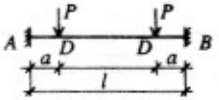
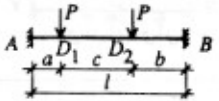
		R	M_{max}	Θ_B	f_{max}
3.13		$A = \frac{9}{40}\,pl$ $B = \frac{11}{40}\,pl$	$M_A = -\frac{7}{120}\,pl^2$ $M_D = \frac{15\sqrt{5} - 14}{240}\,pl^2$ $x_D = \frac{3l}{2\sqrt{5}}$	$\frac{pl^3}{80EI}$	$f_D = 0.003048\,\frac{pl^4}{EI}$ $x_D = 0.5975\,l$
3.14		$A = \frac{pa}{40l^3}\,(20l^3 - 5a^2l + a^2)$ $B = \frac{pa^3}{40l^3}\,(5l - a)$	$M_A = -\frac{pa^2}{120l^2}\,k$ $k = 20l^2 - 15al + 3a^2$ $M_D = B\left(b + \frac{2}{3}\sqrt{\frac{2aB}{p}}\right)$ $x_D = a\left(1 - \frac{a}{2l}\sqrt{1 - \frac{a}{5l}}\right)$	$\frac{pa^3}{240lEI}\,(5b + 2a)$	
3.15		$A = \frac{pa}{40l^3}\,(20l^3 - 15a^2l + 4a^3)$ $B = \frac{pa^3}{40l^3}\,(15b + 11a)$	$M_A = -\frac{pa^2}{120l^2}\,k$ $k = 40l^2 - 45al + 12a^2$ $M_D = \frac{2A}{3}\,x_D + M_A$ $x_D = \sqrt{\frac{2aA}{p}}$	$\frac{pa^3}{80lEI}\,(5b + a)$	

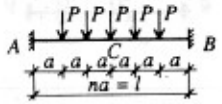
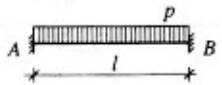
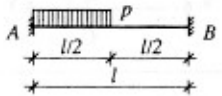
		R	M_{max}	Θ_B	f_{max}
3.16		$A = \frac{pb^2}{40l^3}(10l^2 - b^2)$ $B = \frac{pb}{40l^3}(20l^3 - 10l^2b + b^3)$	$M_A = -\frac{pb^2}{120l^2}(10l^2 - 3b^2)$ $M_D = \frac{A}{3}(a + 2x_D) + M_A$ $x_D = a + \sqrt{\frac{2bA}{p}}$	$\frac{pb^2}{240lEI}(10la + 3b^2)$	
3.17		$A = \frac{pb^2}{10l^3}(5l^2 - b^2)$ $B = \frac{pb}{10l^3}(5al^2 + b^3)$	$M_A = -\frac{pb^2}{30l^2}(5l^2 - 3b^2)$ $M_D = \frac{2B}{3}\sqrt{\frac{2bB}{p}}$ $x_D = l - \sqrt{\frac{2bB}{p}}$	$\frac{pb^2}{120lEI}(10l^2 - 15bl + 6b^2)$	
3.18		$A = \frac{21}{64}pl$ $B = \frac{11}{64}pl$	$M_A = -\frac{5}{64}pl^2$ $M_D = \frac{11\sqrt{11}}{768}pl^2$ $x_D = l\left(1 - \frac{\sqrt{11}}{8}\right)$	$\frac{5pl^2}{384EI}$	
3.19		$A = \frac{p(l+b)}{40l^2} \times (9l^2 - b^2)$ $B = \frac{p}{40l^2}(4l^3 + 4l^2a + 4la^2 - a^3)$	$M_A = -\frac{p(l+b)}{120l} \times (7l^2 - 3b^2)$ $M_D = \frac{2B}{3}\sqrt{\frac{2bB}{p}}$ $x_D = l - \sqrt{\frac{2bB}{p}}$	$\frac{p}{240lEI}(2l^3 + 2al^2 + 2la^2 - 3a^3)$	

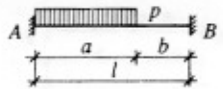
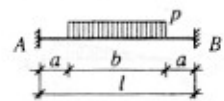
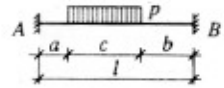
		R	M_{max}	Θ_B	f_{max}
3.20		$A = \frac{19}{64}\,pl$ $B = \frac{13}{64}\,pl$	$M_A = -\frac{3}{64}\,pl^2$ $M_D = \frac{14+3\sqrt{3}}{768}\,pl^2$ $x_D = \frac{l}{8}\,(4+\sqrt{3})$	$\frac{pl^3}{128EI}$	
3.21		$A = \frac{p}{8l^2}\,k_1$ $k_1 = l^2\,(5l-4a) + a^2\,(a-2l)$ $B = \frac{p}{8l^2}\,k_2$ $k_2 = l^2\,(3l-4a) - a^2\,(a-2l)$	$M_A = -\frac{p}{8l}\,k$ $k = l^3 - a^2\,(2l-a)$ $M_D = \frac{2B}{3}\sqrt{\frac{2aB}{p}}$ $x_D = l - \sqrt{\frac{2aB}{p}}$, za $a > 0.408\,l$ $M_D = \frac{B^2}{2a} + Ba + \frac{7a^2p}{12}$ $x_D = l - \frac{a}{2} - \frac{B}{p}$, za $a < 0.408\,l$	$\frac{p}{48EI}\,[l^3 - a^2\,(2l-a)]$	
3.22		$A = -\frac{3M}{2l}$ $B = \frac{3M}{2l}$	$M_A = \frac{M}{2}$ $M_B = -M$	$-\frac{Ml}{4EI}$	$f_D = -\frac{Ml^2}{27EI}$ $x_D = \frac{2l}{3}$

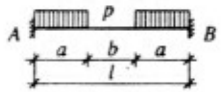
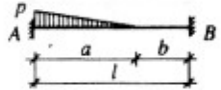
		R	M_{max}	Θ_B	f_{max}
3.23		$A = -\frac{3M}{2l}\left(1-\frac{b^2}{l^2}\right)$ $B = \frac{3M}{2l}\left(1-\frac{b^2}{l^2}\right)$	$M_A = \frac{M}{2}\left(3\frac{b^2}{l^2}-1\right)$ $M_{D\,desno} = \frac{3Mb}{2l} \times \left(1-\frac{b^2}{l^2}\right)$ $M_{D\,levo} = \frac{M}{2l^3} \times [3ab\,(l+b) - 2l^3]$	$\frac{Ma}{4lEI}\,(2b-a)$	
3.24		$A = \frac{3EI\Delta}{l^3}$ $B = -\frac{3EI\Delta}{l^3}$	$M_A = -\frac{3EI\Delta}{l^2}$	$-\frac{3\Delta}{2l}$	$f_B = \Delta$
3.25		$A = -\frac{3EI\varphi}{l^2}$ $B = \frac{3EI\varphi}{l^2}$	$M_A = \frac{3EI\varphi}{l}$	$\Theta_B = \frac{\varphi}{2}$ $\Theta_A = \varphi$	$f_D = \frac{l\varphi}{3\sqrt{3}}$ $x_D = l\left(1-\frac{\sqrt{3}}{3}\right)$
3.26		$A = \frac{3\alpha(t_2-t_1)\,EI}{2ld}$ $B = \frac{3\alpha(t_1-t_2)\,EI}{2ld}$	$M_A = \frac{3\alpha(t_1-t_2)\,EI}{2d}$	$\frac{\alpha\,(t_2-t_1)\,l}{4\,d}$	

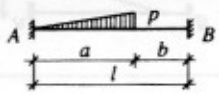
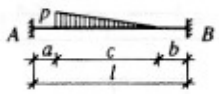
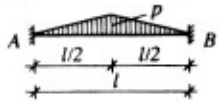
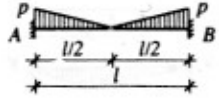
Ukliještena greda

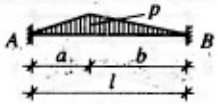
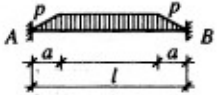
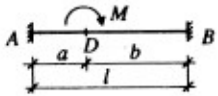
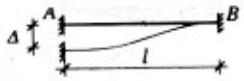
		R	M_{max}	f_{max}
4.1		$A = B = \frac{P}{2}$	$M_A = M_B = -\frac{Pl}{8}$ $M_C = \frac{Pl}{8}$	$f_C = \frac{Pl^3}{192EI}$
4.2		$A = \frac{Pb^2}{l^3}(l + 2a)$ $B = \frac{Pa^2}{l^3}(l + 2b)$	$M_A = -P\frac{ab^2}{l^2}$ $M_B = -P\frac{a^2b}{l^2}$ $M_D = 2P\frac{a^2b^2}{l^3}$	$f_C = \frac{2Pa^2c^3}{3(l + 2b)^2}$ $x_C = \frac{l^2}{l + 2b},\ a < b$ $f_C = \frac{2Pa^2b^3}{3(l + 2a)^2}$ $x_C = \frac{2al}{l + 2a},\ a > b$
4.3		$A = B = P$	$M_A = M_B = -\frac{Pa}{l}(l - a)$ $M_C = \frac{Pa^2}{l}$	$f_C = \frac{Pa^2}{24EI}(3l - 4a)$ $x_C = \frac{l}{2}$
4.4		$A = \frac{P}{l}(2b + c) + \frac{M_B - M_A}{l}$ $B = \frac{P}{l}(2a + c) + \frac{M_A - M_B}{l}$	$M_A = -\frac{P}{l^2}k_1$ $k_1 = a(b + c)^2 + (a + c)b^2$ $M_B = -\frac{P}{l^2}k_2$ $k_2 = b(l - b)^2 + a^2(l - a)$	

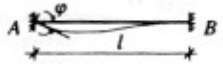
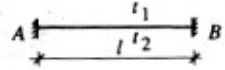
		R	M_{max}	f_{max}
4.5		$A = B = P\,\frac{n-1}{2}$	$M_A = M_B = -\frac{Pl}{12}\,\frac{n^2-1}{n}$ $M_C = \frac{Pl}{24}\,\frac{n^2-1}{n}$, za n – neparno $M_C = \frac{Pl}{24}\,\frac{n^2+1}{n}$, za n – parno	$f_C = \frac{Pl^3}{384EI}\,\frac{n^4-1}{n^3}$, za n – neparno $f_C = \frac{Pl^3 n}{384EI}$, za n – parno $x_C = \frac{l}{2}$
4.6		$A = B = \frac{pl}{2}$	$M_A = M_B = -\frac{pl^2}{12}$ $M_C = \frac{pl^2}{24}$ $x_C = \frac{l}{2}$	$f_C = \frac{pl^4}{384EI}$ $x_C = \frac{l}{2}$
4.7		$A = \frac{13}{32}\,pl$ $B = \frac{3}{32}\,pl$	$M_A = -\frac{11}{192}\,pl^2$ $M_B = -\frac{5}{192}\,pl^2$ $M_D = \frac{155}{6144}\,pl^2$ $x_D = \frac{13}{32}\,l$	

		R	M_{max}	f_{max}
4.8		$A = \frac{pa}{2l^3}\ (a^3 - 2a^2l + 2l^3)$ $B = \frac{pa^3}{2l^3}\ (2l - a)$	$M_A = -\frac{pa^2}{12l^2}\ (6l^2 - 8al + 3a^2)$ $M_B = -\frac{pa^3}{12l^2}\ (4l - 3a)$ $M_D = \frac{A^2}{2p} + M_A$ $x_D = \frac{A}{p}$	
4.9		$A = B = \frac{pb}{2}$	$M_A = M_B = -\frac{pb}{24l}\ (3l^2 - b^2)$ $M_C = \frac{pb}{24l}\ (6la + b^2)$ $x_C = \frac{l}{2}$	
4.10		$A = \frac{pc}{2l}\ (2b + c) + \frac{M_B - M_A}{l}$ $B = \frac{pc}{2l}\ (2a + c) + \frac{M_A - M_B}{l}$	$M_A = -\frac{pc}{24l^2}\ k_1$ $k_1 = 3\ (2a + c)\ (2b + c)^2 - c^2\ (3b - 3a + l)$ $M_B = -\frac{pc}{24l^2}\ k_2$ $k_2 = 3\ (2b + c)\ (2a + c)^2 - c^2 (3a - 3b + l)$ $M_D = A\left(a + \frac{A}{2p}\right) + M_A$ $x_D = a + \frac{A}{p}$	

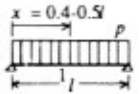
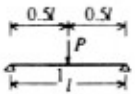
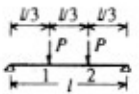
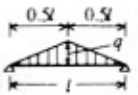
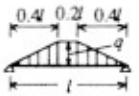
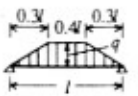
		R	M_{max}	f_{max}
4.11		$A = B = pa$	$M_A = M_B = -\frac{pa^2}{6l}\ (3l - 2a)$ $M_C = \frac{pa^2}{3l}$ $x_C = \frac{l}{2}$	
4.12		$A = \frac{7}{20}\ pl$ $B = \frac{3}{20}\ pl$	$M_A = -\frac{pl^2}{20}$ $M_B = -\frac{pl^2}{30}$ $M_D = \frac{pl^2}{30}\ 0.6432$ $x_D = 0.4523\ l$	$f_D = 0.001309\ \frac{pl^4}{EI}$ $x_D = l\left(\frac{3}{2} - \sqrt{\frac{21}{20}}\right)$
4.13		$A = \frac{pa}{20l^3}(10l^3 - 5a^2l + 2a^3)$ $B = \frac{pa^3}{20l^3}(5l - 2a)$	$M_A = -\frac{pa^2}{60l^2}\ (10lb + 3a^2)$ $M_B = -\frac{pa^3}{60l^2}\ (5l - 3a)$ $M_D = B\left(b + \frac{2}{3}\sqrt{\frac{2aB}{p}}\right) + M_B$ $x_D = a - \sqrt{\frac{2aB}{p}}$	

		R	M_{max}	f_{max}
4.14		$A = \frac{pa}{20l^3}(10l^3 - 15a^2l + 8a^3)$ $B = \frac{pa^3}{20l^3}(15l - 8a)$	$M_A = -\frac{pa^2}{30l^2}\ (10l^2 - 15al + 6a^2)$ $M_B = -\frac{pa^3}{20l^2}\ (l + 4b)$ $M_D = \frac{2A}{3}x_D + M_A$ $x_D = \sqrt{\frac{2aA}{p}}$	
4.15		$A = B - \frac{pc}{2}$ $B = \frac{pc}{540l^3}\ k$ $k = 56c^3 - 45c^2\ (l - 2b) +$ $10\ (3a + c)^2\ (3l + 6b + 4c)$	$M_A = Bl + M_B - \frac{pc}{6}\ (3a + c)$ $M_B = \frac{pc}{540l^2}k$ $k = c^2\ (30l - 45b - 28c) -$ $10(3b + 2c)\ (3a + c)^2$	
4.16		$A = B = \frac{pl}{4}$	$M_A = M_B = -\frac{5}{96}\ pl^2$ $M_C = \frac{pl^2}{32}$	$f_D = \frac{7pl^4}{3840EI}$
4.17		$A = B = \frac{pl}{4}$	$M_A = M_B = -\frac{pl^2}{32}$ $M_C = \frac{pl^2}{96}$	

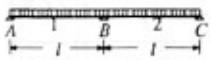
		R	M_{max}	f_{max}
4.18		$A = \frac{p}{20l^2}\ k_1$ $k_1 = 7l^3 - 3la\ (l + a) + 2a^3$ $B = \frac{p}{20l^2}\ k_2$ $k_2 = 3l^3 + 3la\ (l + a) - 2a^3$	$M_A = -\frac{p}{60l}\ (3l^3 - 4la^2 + 3a^3)$ $M_B = -\frac{p}{60l}\ (3l^3 - 4lb^2 + 3b^3)$ $M_C = \frac{2B}{3}\sqrt{\frac{2bB}{p}} + M_B$ $x_D = l - \sqrt{\frac{2bB}{p}}$	
4.19		$A = B = \frac{p\ (l - a)}{2}$	$M_A = M_B = \frac{p}{12l}\ [l^3 - a^2\ (2l - a)]$ $M_C = \frac{p}{24l}\ (l^3 - 2a^3)$	
4.20		$A = -\frac{6Mab}{l^3}$ $B = \frac{6Mab}{l^3}$	$M_A = \frac{Mb}{l^2}\ (2a - b)$ $M_B = -\frac{Ma}{l^2}\ (2b - a)$ $M_{D\ desno} = \frac{Ma}{l^3}\ (6a^2 - 9al + 4l^2)$ MD levo = MD desno – M	
4.21		$A = -\frac{12EI\Delta}{l^3}$ $B = \frac{12EI\Delta}{l^3}$	$M_A = \frac{6EI\Delta}{l^2}$ $M_B = -\frac{6EI\Delta}{l^2}$	$f_A = \Delta$

		R	M_{max}	f_{max}
4.22		$A = -\frac{6EI\varphi}{l^2}$ $B = \frac{6EI\varphi}{l^2}$	$M_A = \frac{4EI\varphi}{l}$ $M_B = -\frac{2EI\varphi}{l}$	$f_D = \frac{4}{27} l\varphi$ $x_D = \frac{l}{3}$ $Q_A = \varphi$
4.23		$A = B = 0$	$M_A = M_B = \frac{\alpha (t_1 - t_2)\, EI}{d}$	0

PRILOG 5.2
STATIČKI UTICAJI KONTINUALNIH NOSAČA JEDNAKIH RASPONA

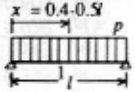
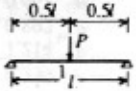
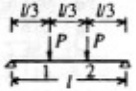
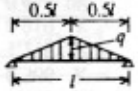
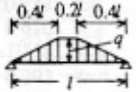
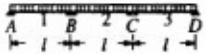
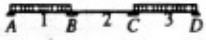
Šema opterećenja	Opterećenje u opterećenim poljima					
						
				$K = 0.5 \times q \times l$	$K = 0.6 \times q \times l$	$K = 0.7 \times q \times l$

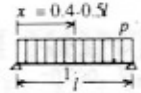
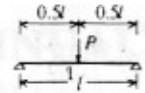
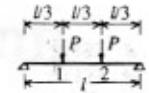
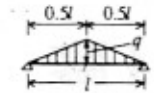
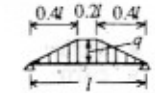
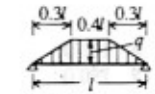
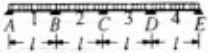
Greda preko dva polja

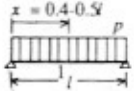
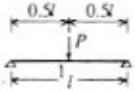
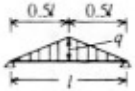
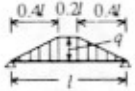
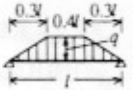


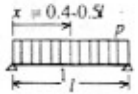
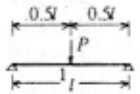
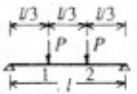
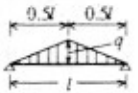
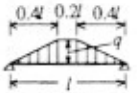
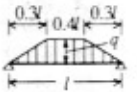
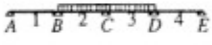
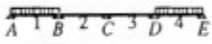
Pri stalnom opterećenju staviti G umesto P, odnosno g umesto p

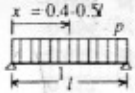
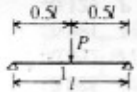
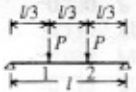
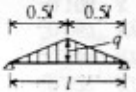
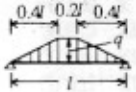
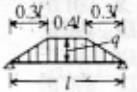
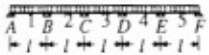
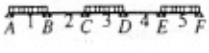
M_{11}	0.070	pl^2	0.156	Pl	0.222	Pl	0.095	Kl	0.094	Kl	0.089	Kl
M_{12}	–		–		0.111	Pl	–		–		–	
$M_{b(min)}$	–0.125	pl^2	–0.188	Pl	–0.333	Pl	–0.156	Kl	–0.155	Kl	–0.151	Kl
$A = T_{1a}$	0.375	pl	0.313	P	0.667	P	0.344	K	0.345	K	0.349	K
$B_{(max)}$	1.250	pl	1.375	P	2.667	P	1.312	K	1.310	K	1.302	K
$T_{1b(min)}$	–0.625	pl	–0.688	P	–1.333	P	–0.656	K	–0.655	K	–0.651	K
$M_{11(max)}$	0.096	pl^2	0.203	Pl	0.278	Pl	0.129	Kl	0.126	Kl	0.121	Kl
$M_{12(max)}$	–		–		0.222	Pl	–		–		–	
M_b	–0.063	pl^2	–0.094	Pl	–0.167	Pl	–0.078	Kl	–0.078	Kl	–0.076	Kl
$A = T_{1a(max)}$	0.438	pl	0.406	P	0.833	P	0.422	K	0.422	K	0.424	K
$M_{11(max)}$	–		–0.047	Pl	–0.056	Pl	–0.035	Kl	–0.035	Kl	–0.034	Kl
$M_{12(max)}$	–		–		–0.111	Pl	–		–		–	
$A = T_{1a(min)}$	–0.063	pl	–0.094	P	–0.167	P	–0.078	K	–0.078	K	–0.076	K

Šema opterećenja		Opterećenje u opterećenim poljima					
							
					$K = 0.5 \times q \times l$	$K = 0.6 \times q \times l$	$K = 0.7 \times q \times l$
		Greda preko tri polja					
 Pri stalnom opterećenju staviti G umesto P, odnosno g umesto p	M_{11}	0.080 pl^2	0.175 Pl	0.244 Pl	0.108 Kl	0.107 Kl	0.102 Kl
	M_{12}	–	–	0.156 Pl	–	–	–
	M_{21}	0.025 pl^2	0.100 Pl	0.067 Pl	0.042 Kl	0.040 Kl	0.036 Kl
	M_{22}	–	–	0.067 Pl	–	–	–
	M_b	–0.100 pl^2	–0.150 Pl	–0.267 Pl	–0.125 Kl	–0.124 Kl	–0.121 Kl
	$A = T_{1a}$	0.400 pl	0.350 P	0.733 P	0.375 K	0.376 K	0.379 K
	B	1.100 pl	1.150 P	2.267 P	1.125 K	1.124 K	1.121 K
	T_{1b}	–0.600 pl	–0.650 P	–1.267 P	–0.625 K	–0.624 K	–0.621 K
	$T_{2b} = -T_{2c}$	0.500 pl	0.500 P	1.000 P	0.500 K	0.500 K	0.500 K
	$M_{11(max)}$	0.101 pl^2	0.213 Pl	0.289 Pl	0.136 Kl	0.134 Kl	0.128 Kl
	$M_{12(max)}$	–	–	0.244 Pl	–	–	–
	$M_{21(min)}$	–0.050 pl^2	–0.075 Pl	–0.133 Pl	–0.063 Kl	–0.062 Kl	–0.061 Kl
	$M_{22(min)}$	–	–	–0.133 Pl	–	–	–
	M_b	–0.050 pl^2	–0.075 Pl	–0.133 Pl	–0.063 Kl	–0.062 Kl	–0.061 Kl
	$A = T_{1a(max)}$	0.450 pl	0.425 P	0.867 P	0.437 K	0.438 K	0.439 K
	$M_{11(min)}$	–	–0.038 Pl	–0.044 Pl	–0.028 Kl	–0.028 Kl	–0.027 Kl
	$M_{12(min)}$	–	–	–0.089 Pl	–	–	–
	$M_{21(max)}$	0.075 pl^2	0.175 Pl	0.200 Pl	0.104 Kl	0.102 Kl	0.096 Kl
	$M_{22(max)}$	–	–	0.200 Pl	–	–	–
	M_b	–0.050 pl^2	–0.075 Pl	–0.133 Pl	–0.063 Kl	–0.062 Kl	–0.061 Kl
	$A = T_{1a(min)}$	–0.050 pl	–0.075 P	–0.133 P	–0.063 K	–0.062 K	–0.061 K

Šema opterećenja		Opterećenje u opterećenim poljima					
							
					$K = 0.5 \times q \times l$	$K = 0.6 \times q \times l$	$K = 0.7 \times q \times l$
		Greda preko tri polja (nastavak)					
	$M_{b(min)}$	−0.117 pl^2	−0.175 Pl	−0.311 Pl	−0.146 Kl	−0.145 Kl	−0.142 Kl
	M_c	−0.033 pl^2	−0.050 Pl	−0.089 Pl	−0.041 Kl	−0.041 Kl	−0.041 Kl
	$B_{(max)}$	1.200 pl	1.300 P	2.533 P	1.251 K	1.249 K	1.244 K
	$T_{1b(min)}$	−0.617 pl	−0.675 P	−1.311 P	−0.646 K	−0.645 K	−0.642 K
	$T_{2b(max)}$	0.583 pl	0.625 P	1.222 P	0.605 K	0.604 K	0.602 K
	$M_{b(max)}$	0.017 pl^2	0.025 Pl	0.044 Pl	0.022 Kl	0.021 Kl	0.021 Kl
	M_c	−0.067 pl^2	−0.100 Pl	−0.178 Pl	−0.083 Kl	−0.083 Kl	−0.081 Kl
	$T_{1b(max)}$	0.017 pl	0.025 P	0.044 P	0.022 K	0.021 K	0.021 K
	$T_{2b(min)}$	−0.083 pl	−0.125 P	−0.222 P	−0.105 K	−0.104 K	−0.102 K
		Greda preko četiri polja					
	M_{11}	0.077 pl^2	0.170 Pl	0.238 Pl	0.104 Kl	0.103 Kl	0.098 Kl
	M_{12}	–	–	0.143 Pl	–	–	–
	M_{21}	0.037 pl^2	0.116 Pl	0.079 Pl	0.056 Kl	0.053 Kl	0.049 Kl
	M_{22}		–	0.111 Pl	–	–	–
	M_b	−0.107 pl^2	−0.161 Pl	−0.286 Pl	−0.134 Kl	−0.133 Kl	−0.130 Kl
Pri stalnom opterećenju staviti G umesto P, odnosno g umesto p	M_c	−0.071 pl^2	−0.107 Pl	−0.190 Pl	−0.089 Kl	−0.088 Kl	−0.086 Kl
	$A = T_{1a}$	0.393 pl	0.339 P	0.714 P	0.366 K	0.367 K	0.370 K
	B	1.143 pl	1.214 P	2.381 P	1.179 K	1.178 K	1.174 K
	C	0.929 pl	0.892 P	1.810 P	0.910 K	0.910 K	0.912 K
	T_{1b}	−0.607 pl	−0.661 P	−1.286 P	−0.634 K	−0.633 K	−0.630 K
	T_{2b}	0.536 pl	0.554 P	1.095 P	0.545 K	0.545 K	0.544 K
	T_{2c}	−0.464 pl	−0.446 P	−0.905 P	−0.455 K	−0.455 K	−0.456 K

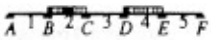
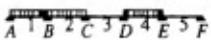
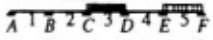
Šema opterećenja		Opterećenje u opterećenim poljima					
		$x = 0.4 \cdot 0.5l$ 					
					$K = 0.5 \times q \times l$	$K = 0.6 \times q \times l$	$K = 0.7 \times q \times l$
		Greda preko četiri polja (nastavak)					
	$M_{11(max)}$	0.100 pl^2	0.210 Pl	0.286 Pl	0.134 Kl	0.132 Kl	0.126 Kl
	$M_{12(max)}$	–	–	0.238 Pl	–	–	–
	$M_{21(min)}$	–	–0.067 Pl	–0.127 Pl	–0.056 Kl	–0.056 Kl	–0.055 Kl
	$M_{22(min)}$	–	–	–0.111 Pl	–	–	–
	M_b	–0.054 pl^2	–0.080 Pl	–0.143 Pl	–0.067 Kl	–0.067 Kl	–0.065 Kl
	M_c	–0.036 pl^2	–0.054 Pl	–0.095 Pl	–0.045 Kl	–0.045 Kl	–0.044 Kl
	$A = T_{1a(max)}$	0.446 pl	0.420 P	0.857 P	0.433 K	0.433 K	0.425 K
	$M_{11(min)}$	–	–0.040 Pl	–0.048 Pl	–0.030 Kl	–0.030 Kl	–0.029 Kl
	$M_{12(min)}$	–	–	–0.095 Pl	–	–	–
	$M_{21(max)}$	0.080 pl^2	0.183 Pl	0.206 Pl	0.111 Kl	0.108 Kl	0.102 Kl
	$M_{22(max)}$	–	–	0.222 Pl	–	–	–
	$M_b = M_d$	–0.054 pl^2	–0.080 Pl	–0.143 Pl	–0.067 Kl	–0.067 Kl	–0.065 Kl
	M_c	–0.036 pl^2	–0.054 Pl	–0.095 Pl	–0.045 Kl	–0.045 Kl	–0.044 Kl
	$A = T_{1a(min)}$	0.054 pl	–0.080 P	–0.143 P	–0.067 K	–0.067 K	–0.065 K
	$M_{b(min)}$	–0.121 pl^2	–0.181 Pl	–0.321 Pl	–0.151 Kl	–0.150 Kl	–0.146 Kl
	M_c	–0.018 pl^2	–0.027 Pl	–0.048 Pl	–0.023 Kl	–0.022 Kl	–0.022 Kl
	M_d	–0.058 pl^2	–0.087 Pl	–0.155 Pl	–0.072 Kl	–0.072 Kl	–0.070 Kl
	$B_{(max)}$	1.223 pl	1.335 P	2.595 P	1.279 K	1.278 K	1.270 K
	$T_{1b(min)}$	–0.621 pl	–0.681 P	–1.321 P	–0.651 K	–0.650 K	–0.646 K
	$T_{2b(max)}$	0.603 pl	0.654 P	1.274 P	0.628 K	0.628 K	0.624 K

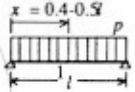
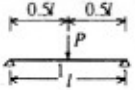
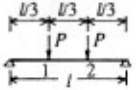
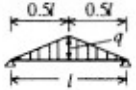
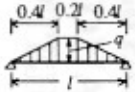
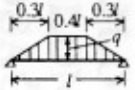
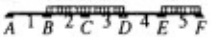
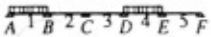
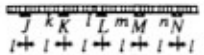
Šema opterećenja		Opterećenje u opterećenim poljima					
							
					$K = 0.5 \times q \times l$	$K = 0.6 \times q \times l$	$K = 0.7 \times q \times l$
		Greda preko četiri polja (nastavak)					
	$M_{b(max)}$	0.013 pl^2	0.020 Pl	0.036 Pl	0.017 Kl	0.017 Kl	0.016 Kl
	M_c	−0.054 pl^2	−0.080 Pl	−0.143 Pl	−0.066 Kl	−0.066 Kl	−0.064 Kl
	M_d	−0.049 pl^2	−0.074 Pl	−0.131 Pl	−0.062 Kl	−0.061 Kl	−0.060 K
	$B_{(min)}$	−0.080 pl	−0.121 P	−0.214 P	−0.100 K	−0.100 K	−0.096 K
	$T_{1b(max)}$	0.013 pl	0.020 P	0.036 P	0.017 K	0.017 K	0.016 K
	$T_{2b(min)}$	−0.067 pl	−0.100 P	−0.178 P	−0.083 K	−0.083 K	−0.080 K
	M_b	−0.036 pl^2	−0.054 Pl	−0.095 Pl	−0.045 Kl	−0.045 Kl	−0.044 Kl
	$M_{c(min)}$	−0.107 pl^2	−0.161 Pl	−0.286 Pl	−0.134 Kl	−0.133 Kl	−0.130 Kl
	$C_{(max)}$	1.143 pl	1.214 P	2.381 P	1.178 K	1.176 K	1.172 K
	$T_{2c(min)}$	−0.571 pl	−0.607 P	−1.191 P	−0.589 K	−0.588 K	−0.586 K
	M_b	−0.071 pl^2	−0.107 Pl	−0.190 Pl	−0.089 Kl	−0.088 Kl	−0.086 Kl
	$M_{c(max)}$	0.036 pl^2	0.054 Pl	0.095 Pl	0.045 Kl	0.045 Kl	0.044 Kl
	$C_{(min)}$	−0.214 pl	−0.321 P	−0.571 P	−0.268 K	−0.266 K	−0.260 K
	$T_{2c(max)}$	0.107 pl	0.161 P	0.286 P	0.134 K	0.133 K	0.130 K

Šema opterećenja		Opterećenje u opterećenim poljima					
							
					$K = 0.5 \times q \times l$	$K = 0.6 \times q \times l$	$K = 0.7 \times q \times l$
		Greda preko pet polja					
	M_{11}	0.078 pl^2	0.171 Pl	0.240 Pl	0.106 Kl	0.104 Kl	0.099 Kl
	M_{12}	–	–	0.146 Pl	–	–	–
	M_{21}	0.033 pl^2	0.112 Pl	0.076 Pl	0.052 Kl	0.050 Kl	0.046 Kl
	M_{22}	–	–	0.099 Pl	–	–	–
	M_{31}	0.046 pl^2	0.132 Pl	0.123 Pl	0.068 Kl	0.066 Kl	0.061 Kl
	M_{33}	–	–	0.123 Pl	–	–	–
	M_b	–0.105 pl^2	–0.158 Pl	–0.281 Pl	–0.131 Kl	–0.130 Kl	–0.127 Kl
Pri stalnom opterećenju staviti G umesto P, odnosno g umesto p	M_c	–0.079 pl^2	–0.118 Pl	–0.211 Pl	–0.099 Kl	–0.098 Kl	–0.096 Kl
	$A = T_{1a}$	0.395 pl	0.342 P	0.719 P	0.369 K	0.370 K	0.373 K
	B	1.132 pl	1.197 P	2.351 P	1.163 K	1.162 K	1.158 K
	C	0.974 pl	0.960 P	1.930 P	0.968 K	0.968 K	0.969 K
	T_{1b}	–0.605 pl	–0.658 P	–1.281 P	–0.631 K	–0.630 K	–0.627 K
	T_{2b}	0.526 pl	0.540 P	1.070 P	0.532 K	0.532 K	0.531 K
	T_{2c}	–0.474 pl	–0.460 P	–0.930 P	–0.468 K	–0.468 K	–0.469 K
	T_{3c}	0.500 pl	0.500 P	1.000 P	0.500 K	0.500 K	0.500 K
	$M_{11(max)}$	0.100 pl^2	0.211 Pl	0.287 Pl	0.135 Kl	0.132 Kl	0.126 Kl
	$M_{12(max)}$	–	–	0.240 Pl	–	–	–
	$M_{21(min)}$	–	–0.069 Pl	–0.129 Pl	–0.058 Kl	–0.058 Kl	–0.056 Kl
	$M_{22(min)}$	–	–	–0.117 Pl	–	–	–
	$M_{31(max)}$	0.086 pl^2	0.191 Pl	0.228 Pl	0.117 Kl	0.114 Kl	0.109 Kl
	$M_{32(max)}$	–	–	0.228 Pl	–	–	–
	M_b	–0.053 pl^2	–0.079 Pl	–0.140 Pl	–0.066 Kl	–0.066 Kl	–0.064 Kl
	Mc	–0.039 pl^2	–0.059 Pl	–0.105 Pl	–0.050 Kl	–0.050 Kl	–0.048 Kl
	$A = T_{1a(max)}$	0.447 pl	0.421 P	0.860 P	0.434 K	0.434 K	0.436 K

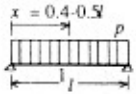
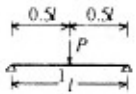
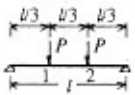
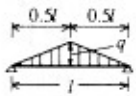
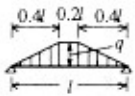
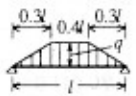
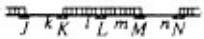
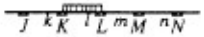
Šema opterećenja		Opterećenje u opterećenim poljima					
		$x = 0.4\text{-}0.5l$	$0.5l$ $0.5l$	$l/3$ $l/3$ $l/3$	$0.5l$ $0.5l$	$0.4l$ $0.2l$ $0.4l$	$0.3l$ $0.4l$ $0.3l$
					$K = 0.5 \times q \times l$	$K = 0.6 \times q \times l$	$K = 0.7 \times q \times l$

Greda preko pet polja (nastavak)

	$M_{11(min)}$	–		–0.039	Pl	–0.047	Pl	–0.030	Kl	–0.030	Kl	–0.029	Kl
	$M_{12(min)}$	–		–		–0.094	Pl	–		–		–	
	$M_{21(max)}$	0.079	pl^2	0.181	Pl	0.205	Pl	0.109	Kl	0.106	Kl	0.101	Kl
	$M_{22(max)}$	–		–		0.216	Pl	–		–		–	
	$M_{31(min)}$	–		–0.059	Pl	–0.105	Pl	–0.050	Kl	–0.050	Kl	–0.048	Kl
	$M_{32(min)}$	–		–		–0.105	Pl	–		–		–	
	M_b	–0.053	pl^2	–0.079	Pl	–0.140	Pl	–0.066	Kl	–0.066	Kl	–0.064	Kl
	M_c	–0.039	pl^2	–0.059	Pl	–0.105	Pl	–0.050	Kl	–0.050	Kl	–0.048	Kl
	$A = T_{1a(min)}$	–0.053	pl	–0.079	P	–0.140	P	–0.066	K	–0.066	K	–0.064	K
	$M_{b(min)}$	–0.120	pl^2	–0.179	Pl	–0.319	Pl	–0.149	Kl	–0.148	Kl	–0.144	Kl
	M_c	–0.022	pl^2	–0.032	Pl	–0.057	Pl	–0.027	Kl	–0.027	Kl	–0.027	Kl
	M_d	–0.044	pl^2	–0.066	Pl	–0.118	Pl	–0.055	Kl	–0.055	Kl	–0.053	Kl
	M_e	–0.051	pl^2	–0.077	Pl	–0.137	Pl	–0.064	Kl	–0.063	Kl	–0.062	Kl
	$B_{(max)}$	1.218	pl	1.327	P	2.581	P	1.271	K	1.269	K	1.261	K
	$T_{1b(min)}$	–0.620	pl	–0.679	P	–1.319	P	–0.649	K	–0.648	K	–0.644	K
	$T_{2b(max)}$	0.598	pl	0.647	P	1.262	P	0.622	K	0.621	K	0.617	K
	$M_{b(max)}$	0.014	pl^2	0.022	Pl	0.038	Pl	0.018	Kl	0.018	Kl	0.017	Kl
	M_c	–0.057	pl^2	–0.086	Pl	–0.153	Pl	–0.072	Kl	–0.071	Kl	–0.069	Kl
	M_d	–0.035	pl^2	–0.052	Pl	–0.093	Pl	–0.044	Kl	–0.043	Kl	–0.043	Kl
	M_e	–0.054	pl^2	–0.081	Pl	–0.144	Pl	–0.067	Kl	–0.067	Kl	–0.065	Kl
	$B_{(min)}$	–0.086	pl	–0.129	P	–0.230	P	–0.108	K	–0.108	K	–0.103	K
	$T_{1b(max)}$	0.014	pl	0.022	P	0.038	P	0.018	K	0.018	K	0.017	K
	$T_{2b(max)}$	–0.072	pl	–0.108	P	–0.191	P	–0.090	K	–0.089	K	–0.086	K

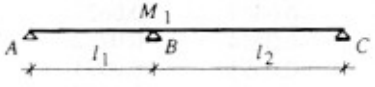
Šema opterećenja		Opterećenje u opterećenim poljima					
							
					$K = 0.5 \times q \times l$	$K = 0.6 \times q \times l$	$K = 0.7 \times q \times l$
		Greda preko pet polja (nastavak)					
	M_b	−0.035 pl^2	−0.052 Pl	−0.093 Pl	−0.044 Kl	−0.043 Kl	−0.042 Kl
	$M_{c(min)}$	−0.111 pl^2	−0.167 Pl	−0.297 Pl	−0.139 Kl	−0.138 Kl	−0.134 Kl
	M_d	−0.020 pl^2	−0.031 Pl	−0.054 Pl	−0.025 Kl	−0.025 Kl	−0.024 Kl
	M_e	−0.057 pl^2	−0.086 Pl	−0.153 Pl	−0.071 Kl	−0.071 Kl	−0.069 Kl
	$C_{(max)}$	1.167 pl	1.251 P	2.447 P	1.209 K	1.208 K	1.202 K
	$T_{2c(min)}$	−0.576 pl	−0.615 P	−1.204 P	−0.595 K	−0.595 K	−0.592 K
	$T_{3c(max)}$	0.591 pl	0.636 P	1.242 P	0.614 K	0.613 K	0.610 K
	M_b	−0.071 pl^2	−0.106 Pl	−0.188 Pl	−0.087 Kl	−0.087 Kl	−0.085 Kl
	$M_{c(max)}$	0.032 pl^2	0.048 Pl	0.086 Pl	0.040 Kl	0.040 Kl	0.038 Kl
	M_d	−0.059 pl^2	−0.088 Pl	−0.156 Pl	−0.074 Kl	−0.073 Kl	−0.072 Kl
	M_e	−0.048 pl^2	−0.072 Pl	−0.128 Pl	−0.060 Kl	−0.059 Kl	−0.058 Kl
	$C_{(min)}$	−0.194 pl^2	−0.291 P	−0.517 P	−0.241 K	−0.240 K	−0.233 K
	$T_{2c(max)}$	0.103 pl	0.154 P	0.274 P	0.127 K	0.127 K	0.123 K
	$T_{3c(min)}$	−0.091 pl	−0.136 P	−0.242 P	−0.114 K	−0.113 K	−0.110 K
		Greda preko *n* polja					
 Pri stalnom opterećenju staviti G umesto P, odnosno g umesto p	$M_J = M_K$ $= M_L = M_M$	−0.083 pl^2	−0.125 Pl	−0.222 Pl	−0.104 Kl	−0.103 Kl	−0.101 Kl
	M_{polja}	0.042 pl^2	0.125 Pl	0.111 Pl	0.062 Kl	0.060 Kl	0.057 Kl
	T	0.500 pl	0.500 P	1.000 P	0.500 K	0.500 K	0.500 K
	Reakcija oslonaca	1.000 pl	1.000 P	2.000 P	1.000 K	1.000 K	1.000 K

Greda preko *n* polja (nastavak)

Šema opterećenja		Opterećenje u opterećenim poljima					
							
					$K = 0.5 \times q \times l$	$K = 0.6 \times q \times l$	$K = 0.7 \times q \times l$
	$M_J = M_K$						
	$= M_L = M_M$	–0.042 pl^2	–0.063 Pl	–0.111 Pl	–0.052 Kl	–0.052 Kl	–0.051 Kl
	$M_{polja\ k}$						
	$= M_{polja\ m}$	0.083 pl^2	0.188 Pl	0.222 Pl	0.115 Kl	0.112 Kl	0.107 Kl
	Reakcija oslonaca	0.500 pl	0.500 P	1.000 P	0.500 K	0.500 K	0.500 K
	M_L	–0.114 pl^2	–0.171 Pl	–0.304 Pl	–0.142 Kl	–1.141 Kl	–0.137 Kl
	$M_K = M_M$	–0.022 pl^2	–0.034 Pl	–0.600 Pl	–0.028 Kl	–0.028 Kl	–0.027 Kl
	Reakcija oslonaca L	1.184 pl	1.274 P	2.488 P	1.229 K	1.227 K	1.221 K
	$M_K = M_L$	–0.054 pl^2	–0.079 Pl	–0.141 Pl	–0.065 Kl	–0.066 Kl	–0.064 Kl
	$M_{polja\ l}$	0.071 pl^2	0.171 Pl	0.192 Pl	0.101 Kl	0.098 Kl	0.093 Kl
	$M_J = M_M$	0.014 pl^2	0.021 Pl	0.037 Pl	0.017 Kl	0.017 Kl	0.017 Kl

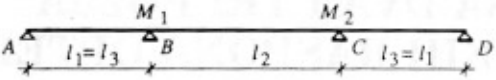
PRILOG 5.3
OSLONAČKI MOMENTI KONTINUALNIH NOSAČA SA DVA I TRI POLJA NEJEDNAKIH RASPONA OPTEREĆENIH JEDNAKO PODELJENIM OPTEREĆENJEM

Nosač preko dva polja



Odnos	Oslonački moment M_1		
	Opterećeno polje		
l_1/l_2	$l_1 + l_2$	l_1	l_2
1:1.0	–0.1250	–0.0625	–0.0625
1:1.1	–0.1389	–0.0596	–0.0793
1:1.2	–0.1550	–0.0568	–0.0982
1:1.3	–0.1737	–0.0544	–0.1192
1:1.4	–0.1951	–0.0521	–0.1430
1:1.5	–0.2187	–0.0500	–0.1687
1:1.6	–0.2450	–0.0481	–0.1969
1:1.7	–0.2739	–0.0463	–0.2277
1:1.8	–0.3051	–0.0447	–0.2604
1:1.9	–0.3388	–0.0431	0.2958
1:2.0	–0.3750	–0.0417	–0.3333
	$\times p l_1^2$	$\times p l_1^2$	$\times p l_1^2$

Nosač preko tri polja



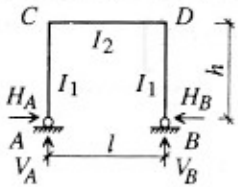
Oslonački moment M_1

Odnos	Opterećeno polje				
l_1/l_2	$l_1 + l_2 + l_3$	l_1	l_2	l_3	$l_1 + l_2$
1:1.0	–0.1000	–0.0667	–0.0500	0.0167	–0.1167
1:1.1	–0.1099	–0.0639	–0.0627	0.0167	–0.1266
1:1.2	–0.1218	–0.0614	–0.0772	0.0167	–0.1386
1.1.3	–0.1355	–0.0591	–0.0931	0.0167	–0.1522
1:1.4	–0.1510	–0.0569	–0.1107	0.0166	–0.1676
1:1.5	–0.1685	–0.0549	–0.1300	0.0165	–0.1849
1:1.6	–0.1873	–0.0530	–0.1506	0.0163	–0.2036
1:1.7	–0.2080	–0.0513	–0.1728	0.0162	–0.2241
1:1.8	–0.2310	–0.0498	–0.1972	0.0160	–0.2470
1:1.9	–0.2552	–0.0483	–0.2228	0.0158	–0.2711
1:2.0	–0.2813	–0.0469	–0.2500	0.0156	–0.2969
	$\times p l_1^2$	$\times p l_1^2$	$\times p l_1^2$	$\times p l_1^2$	$\times p l_1^2$

Oslonački moment M_2

Odnos	Opterećeno polje				
l_1/l_2	$l_1 + l_2 + l_3$	l_1	l_2	l_3	$l_1 + l_2$
1:1.0	–0.1000	0.0167	–0.0500	–0.0667	–0.1167
1:1.1	–0.1099	0.0167	–0.0627	–0.0639	–0.1266
1:1.2	–0.1218	0.0167	–0.0772	–0.0614	–0.1386
1:1.3	–0.1355	0.0167	–0.0931	–0.0591	–0.1522
1:1.4	–0.1510	0.0166	–0.1107	–0.0569	–0.1676
1:1.5	–0.1685	0.0165	–0.1300	–0.0549	–0.1849
1:1.6	–0.1873	0.0163	–0.1506	–0.0530	–0.2036
1:1.7	–0.2080	0.0162	–0.1728	–0.0513	–0.2241
1:1.8	–0.2310	0.0160	–0.1972	–0.0498	–0.2470
1:1.9	–0.2552	0.0158	–0.2228	–0.0483	–0.2711
1:2.0	–0.2813	0.0156	–0.2500	–0.0469	–0.2969
	$\times p l_1^2$	$\times p l_1^2$	$\times p l_1^2$	$\times p l_1^2$	$\times p l_1^2$

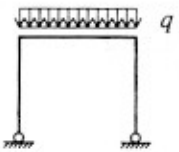
PRILOG 5.4
STATIČKI UTICAJI U JEDNOBRODNIM RAMOVIMA



$$k = \frac{I_2}{I_1}\frac{h}{l}$$

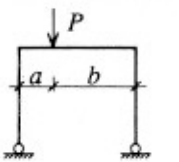
$$M_C = -H_A\, h$$

$$M_D = -H_B\, h$$



$$H_A = H_B = \frac{ql^2}{4h\,(2k+3)}$$

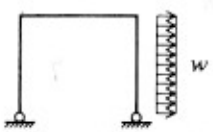
$$V_A = V_B = \frac{ql}{2}$$



$$H_A = H_B = \frac{3}{2}\,\frac{Pab}{hl\,(2k+3)}$$

$$V_A = P\frac{b}{l}$$

$$V_B = P\frac{a}{l}$$

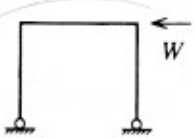


$$H_A = \frac{wh}{8}\,\frac{5k+6}{2k+3}$$

$$H_B = -\frac{wh}{8}\,\frac{11k+18}{2k+3}$$

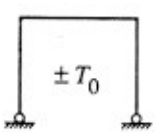
$$V_A = V_B\, P\,\frac{wh^2}{2l}$$

$$M_D = -H_B\, h - 0.5wh^2$$



$$H_A = -H_B = \frac{W}{2}$$

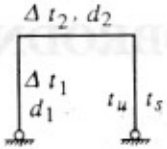
$$V_A = -V_B = \frac{Wh}{l}$$



Jednako zagrevanje celog rama

$$H_A = H_B = \alpha_T T_0\,\frac{EI_2}{h^2}\,\frac{3}{2k+3}$$

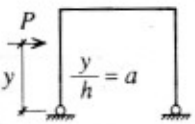
$$V_A = V_B = 0$$



Nejednako zagrevanje celog rama $\Delta t = t_u - t_s$

$$H_A = H_B = \alpha_T \left(\frac{\Delta t_1 \, h}{d_1} + \frac{\Delta t_2 \, l}{d_2} \right) \frac{EI_2}{hl} \; \frac{3}{2k+3}$$

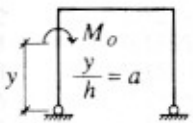
$$V_A = V_B = 0$$



$$H_A = \frac{P}{2} \left[\frac{2 - a\,k(3 - a^2) + 3}{2k+3} \right]$$

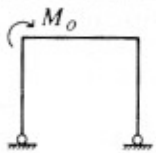
$$V_A = -V_B = -\frac{Py}{l}$$

$$H_B = \frac{P}{2} \; a \frac{k(3 - a^2) + 3}{2k+3}$$



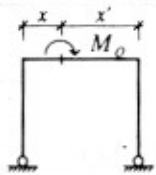
$$H_A = H_B = \frac{3}{2} \; \frac{M_o}{h} \; \frac{1 + k(1 - a^2)}{2k+3}$$

$$V_A = -V_B = -\frac{M_o}{l}$$



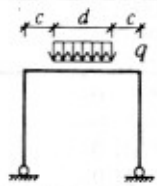
$$H_A = H_B = \frac{3M_o}{2(2k+3)h}$$

$$V_A = -V_B = -\frac{M_o}{l}$$



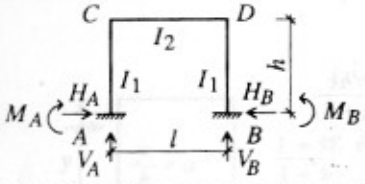
$$H_A = H_B = \frac{3M_o}{2(2k+3)h} \; (2b - 1)$$

$$V_A = -V_B = -\frac{M_o}{l}$$

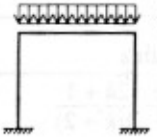


$$H_A = H_B = \frac{qd}{8lh(2k+3)} \; (3l^2 - d^2)$$

$$V_A = V_B = \frac{qd}{2}$$



$$k = \frac{I_2}{I_1}\frac{h}{l}$$

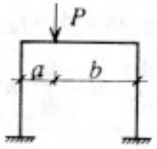


$$H = H_A = H_B = \frac{ql^2}{4h(k+2)}$$

$$V_A = V_B = \frac{ql}{2}$$

$$M_A = M_B = \frac{ql^2}{12(k+2)} = H\frac{h}{3}$$

$$M_C = M_D = \frac{ql^2}{6(k+2)} = -2H\frac{h}{3}$$



$$H = H_A = H_B = \frac{3Pab}{2hl(k+2)}$$

$$V_A = \frac{Pb}{l}\left[1 + \frac{a(b-a)}{l^2(6k+1)}\right]$$

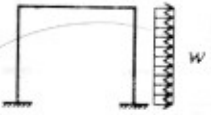
$$V_B = P - V_a$$

$$M_A = \frac{Pab}{2l^2}\,\frac{5kl - l + 2a\,(k+2)}{(k+2)(6k+1)}$$

$$M_B = \frac{Pab}{2l^2}\,\frac{7kl + 3l - 2a\,(k+2)}{(k+2)(6k+1)}$$

$$M_C = M_A - Hh$$

$$M_D = M_E - Hh$$



$$H_A = \frac{wh}{8}\,\frac{2k+3}{k+2}$$

$$H_B = H_A - wh$$

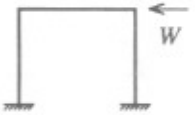
$$V_A = -V_B = \frac{wh^2k}{l(6k+1)}$$

$$M_A = \frac{wh^2}{24}\left(\frac{5k+9}{k+2} - \frac{12k}{6k+1}\right)$$

$$M_B = -\frac{wh^2}{24}\left(12 - \frac{5k+9}{k+2} - \frac{12k}{6k+1}\right)$$

$$M_C = M_A - H_A h$$

$$M_D = M_B - Hh + \frac{wh^2}{2}$$

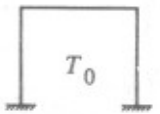


$$H_A = -H_B = \frac{W}{2}$$

$$V_A = -V_B = \frac{3Whk}{l(6k+1)}$$

$$M_A = -M_B = \frac{Wh}{2}\,\frac{3k+1}{6k+1}$$

$$M_C = -M_D = \frac{Wh}{2}\,\frac{3k}{6k+1}$$



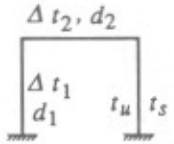
Jednako zagrevanje celog rama

$$H = H_A = H_B = 3\alpha_T T_0 \frac{EI_2}{h^2}\,\frac{2k+1}{k(k+2)}$$

$$V_A = V_B = 0$$

$$M_A = M_B = H\,\frac{h(k+1)}{2k+1}$$

$$M_C = M_D = -H\,\frac{hk}{2k+1}$$



Nejednako zagrevanje celog rama $\Delta t = t_u - t_s$

$$H = H_A = H_B = -\alpha_T \frac{EI_2}{hl}\left(\frac{\Delta t_2}{d_2}\,kl - \frac{\Delta t_1}{d_1}\,h\right)\frac{3}{k(k+2)}$$

$$V_A = V_B = 0$$

$$M_A = M_B = \alpha_T \frac{EI_2}{l}\left(\frac{\Delta t_1}{d_1}\,h\,(k+3) - \frac{\Delta t_2}{d_2}\,kl\right)\frac{1}{k(k+2)}$$

$$M_C = M_D = M_A - Hh$$

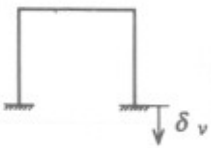
Pomeranje oslonca δ_h

$$H = H_A = H_B = -3\delta_h \frac{EI_2}{h^2 l}\,\frac{2k+1}{k\,(k+2)}$$

$$V_A = V_B = 0$$

$$M_A = M_B = H\,h\,\frac{k+1}{k+2}$$

$$M_C = M_D = -H\,h\,\frac{1}{k+2}$$

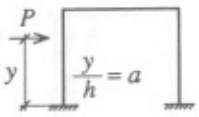


Pomeranje oslonca δ_v

$$H_A = H_B = 0$$

$$V_A = -V_B = 6\delta_v \frac{EI_2}{l^2}\,\frac{1}{6k+1}$$

$$M_A = -M_B = M_C = -M_D = -3\delta_v \frac{EI_2}{l}\,\frac{1}{6k+1} = -V_A \frac{l}{2}$$



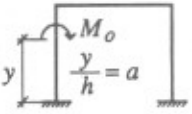
$$H_B = \frac{Pa^2}{2(k+2)}\left[3(k+1) - a\,(2k+1)\right]$$

$$H_A = P - H_B$$

$$V_A = -V_B = -\frac{3Py^2k}{hl\,(6k+1)}$$

$$M_A = -\frac{Pya}{2}\left[\frac{2}{a} - \frac{3+2k-a(k+1)}{k+2} - \frac{3k}{6k+1}\right]$$

$$M_B = -\frac{Pya}{2}\left[\frac{3+2k-a(k+1)}{k+2} - \frac{3}{6k+1}\right]$$

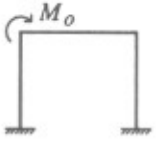


$$H_A = H_B = \frac{3}{4}\,M_o\,a\,\frac{1}{h}\left[2 - a + k\,\frac{2-3a}{k+2}\right]$$

$$V_A = -V_B = -\frac{6M_o ka}{l\,(6k+1)}$$

$$M_A = \frac{M_o}{2}\left[\frac{3}{2}\,a\,(2-a) - 1 + \frac{1}{2}\,k\,a\,\frac{2-3a}{k+2} + \frac{6ka}{6k+1} - 1\right]$$

$$M_B = \frac{M_o}{2}\left[\frac{3}{2}\,a\,(2-a) - 1 + \frac{1}{2}\,k\,a\,\frac{2-3a}{k+2} - \frac{6ka}{6k+1} + 1\right]$$

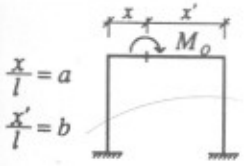


$$H_A = H_B = \frac{3M_o}{2\,(k+2)\,h}$$

$$V_A = -V_B = -\frac{6M_o k}{l\,(6k+1)}$$

$$M_A = \frac{M_o}{2(k+2)} - \frac{M_o}{2(6k+1)}$$

$$M_B = \frac{M_o}{2(k+2)} + \frac{M_o}{2(6k+1)}$$

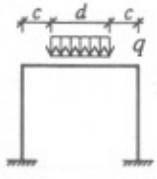


$$H_A = H_B = \frac{3M_o}{2\,(k+2)\,h}\,(b-a)$$

$$V_A = -V_B = -\frac{6M_o}{l\,(6k+1)}\left(k + \frac{ab}{l^2}\right)$$

$$M_A = \frac{M_o}{2}\left[\frac{b-a}{k+2} - \frac{l^2 - 6ab}{(6k+1)l^2}\right]$$

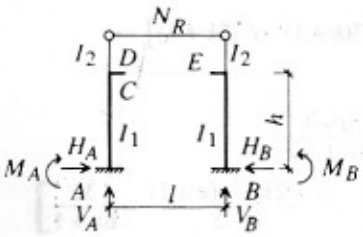
$$M_B = \frac{M_o}{2}\left[\frac{b-a}{k+2} + \frac{l^2 - 6ab}{(6k+1)l^2}\right]$$



$$H_A = H_B = \frac{1}{4}\,\frac{ql^2}{h}\,\frac{1}{k+2}\left(3\,\frac{d}{l} - \frac{d^3}{l^3}\right)$$

$$V_A = V_B = \frac{qb}{2}$$

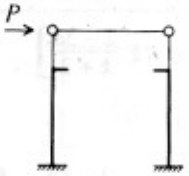
$$M_A = M_B = \frac{ql^2}{12}\,\frac{1}{k+2}\left(3\,\frac{d}{l} - \frac{d^3}{l^3}\right)$$



$$k_1 = \frac{I_1}{I_2}\frac{h_2}{h_1}$$

$$k_2 = \frac{h_2}{h}$$

$$k_3 = 1 + k_2 + k_2^2\,(k_1 + 1)$$



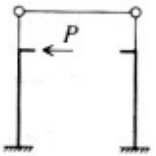
$$N_R = -\frac{P}{2}$$

$$V_A = V_B = 0$$

$$H_A = -H_B = -\frac{P}{2}$$

$$M_A = -M_B = -M_E = -\frac{Ph}{2}$$

$$M_C = M_D = -\frac{Ph_2}{2}$$



$$N_R = \frac{P}{4}\,\frac{h_1}{h}\,\frac{k_2 + 2}{k_3}$$

$$V_A = V_B = 0$$

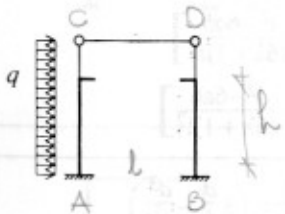
$$H_A = P - N_R$$

$$H_B = -N_R$$

$$M_A = Ph_1 - N_R h$$

$$M_B = -N_R h$$

$$M_C = M_D = M_E = -N_R h_2$$



$$N_R = -\frac{3}{16}\,qh\left(k_2 + \frac{1}{k_3}\right)$$

$$V_A = V_B = 0$$

$$H_A = -qh - N_R$$

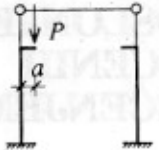
$$H_B = -N_R$$

$$M_A = -\frac{qh^2}{2} - N_R h$$

$$M_B = -N_R h$$

$$M_C = M_D = -\frac{qh_2^2}{2} - N_R h_2$$

$$M_E = -N_R h_2$$



$$N_R = -\frac{3}{4}\frac{Pa}{h}\frac{k_2+1}{k_3}$$

$$V_A = P$$

$$V_B = 0$$

$$H_A = -H_B = -N_R$$

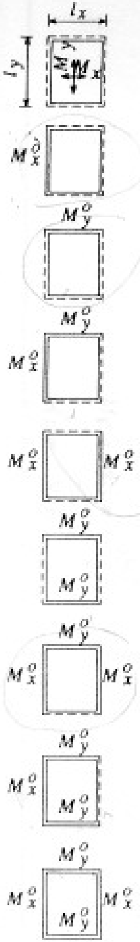
$$M_A = -Pa - N_R h$$

$$M_B = -N_R h$$

$$M_C = -Pa - N_R h_2$$

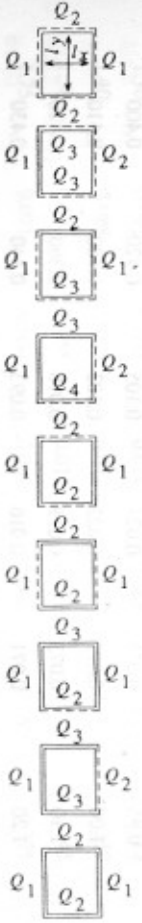
$$M_D = M_E = -N_R h_2$$

PRILOG 5.5
KOEFICIJENTI ZA PRORAČUN MOMENATA SAVIJANJA I REAKCIJA OSLONACA KRSTASTO ARMIRANIH PLOČA OSLONJENIH NA SVE ČETIRI STRANE OPTEREĆENIH JEDNAKO PODELJENIM OPTEREĆENJEM



$l_y : l_x$	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
M_x	0.044	0.047	0.049	0.051	0.052	0.052	0.053	0.052	0.052	0.051	0.050
M_y	0.044	0.041	0.038	0.034	0.032	0.029	0.026	0.024	0.022	0.020	0.019
M_x	0.037	0.037	0.038	0.037	0.037	0.035	0.034	0.033	0.032	0.031	0.030
M_y	0.031	0.027	0.023	0.021	0.018	0.016	0.014	0.012	0.011	0.010	0.009
M_x^o	0.084	0.084	0.082	0.079	0.077	0.074	0.071	0.069	0.066	0.063	0.061
M_x	0.031	0.035	0.038	0.041	0.043	0.044	0.045	0.046	0.046	0.046	0.046
M_y	0.037	0.036	0.034	0.032	0.030	0.028	0.026	0.024	0.022	0.021	0.019
M_y^o	0.084	0.084	0.083	0.080	0.078	0.075	0.072	0.069	0.066	0.064	0.061
M_x	0.028	0.030	0.032	0.032	0.032	0.032	0.032	0.031	0.031	0.030	0.029
M_y	0.028	0.025	0.023	0.021	0.019	0.017	0.014	0.014	0.012	0.011	0.010
M_x^o	0.068	0.070	0.071	0.071	0.070	0.069	0.067	0.065	0.063	0.061	0.059
M_y^o	0.068	0.065	0.062	0.059	0.055	0.051	0.049	0.046	0.043	0.041	0.040
M_x	0.032	0.031	0.030	0.029	0.028	0.027	0.026	0.024	0.023	0.022	0.021
M_y	0.022	0.018	0.015	0.013	0.011	0.009	0.008	0.007	0.006	0.005	0.005
M_x^o	0.070	0.067	0.064	0.061	0.058	0.055	0.052	0.050	0.047	0.044	0.042
M_x	0.022	0.026	0.028	0.032	0.035	0.037	0.039	0.040	0.041	0.042	0.043
M_y	0.032	0.032	0.031	0.030	0.029	0.027	0.026	0.024	0.023	0.021	0.020
M_y^o	0.070	0.072	0.073	0.072	0.072	0.070	0.068	0.066	0.064	0.062	0.060
M_x	0.026	0.026	0.027	0.027	0.026	0.025	0.024	0.024	0.022	0.022	0.021
M_y	0.021	0.018	0.016	0.014	0.012	0.010	0.009	0.008	0.007	0.006	0.006
M_x^o	0.060	0.060	0.059	0.057	0.055	0.053	0.050	0.048	0.046	0.044	0.042
M_y^o	0.055	0.052	0.048	0.044	0.041	0.038	0.036	0.034	0.032	0.030	0.029
M_x	0.021	0.024	0.026	0.028	0.029	0.029	0.029	0.029	0.028	0.028	0.028
M_y	0.026	0.025	0.023	0.022	0.019	0.017	0.016	0.014	0.012	0.011	0.011
M_x^o	0.055	0.059	0.062	0.063	0.064	0.063	0.062	0.061	0.059	0.058	0.057
M_y^o	0.060	0.059	0.058	0.055	0.053	0.051	0.048	0.046	0.043	0.041	0.039
M_x	0.021	0.023	0.023	0.024	0.020	0.020	0.023	0.022	0.022	0.021	0.021
M_y	0.021	0.019	0.017	0.015	0.013	0.011	0.010	0.008	0.007	0.006	0.006
M_x^o	0.052	0.054	0.053	0.053	0.052	0.051	0.049	0.048	0.046	0.044	0.042
M_y^o	0.052	0.049	0.047	0.044	0.041	0.038	0.036	0.034	0.032	0.030	0.029

═══ uklještena ivica
- - - - slobodno oslonjena ivica



$l_y:l_x$		1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
Q_2	Q_1	0.250	0.260	0.272	0.280	0.288	0.296	0.304	0.310	0.316	0.322	0.327
	Q_2	0.250	0.240	0.228	0.220	0.212	0.204	0.196	0.190	0.184	0.178	0.173
Q_3	Q_1	0.330	0.346	0.362	0.376	0.387	0.399	0.410	0.418	0.426	0.434	0.442
Q_2	Q_2	0.230	0.240	0.246	0.252	0.257	0.261	0.264	0.270	0.274	0.276	0.278
	Q_3	0.220	0.207	0.196	0.186	0.178	0.170	0.163	0.156	0.150	0.145	0.140
Q_2	Q_1	0.220	0.232	0.244	0.254	0.264	0.273	0.281	0.290	0.296	0.302	0.308
Q_3	Q_2	0.330	0.313	0.298	0.285	0.272	0.262	0.251	0.242	0.234	0.227	0.220
	Q_3	0.230	0.223	0.214	0.207	0.200	0.192	0.187	0.178	0.174	0.169	0.164
Q_3	Q_1	0.292	0.313	0.331	0.346	0.360	0.370	0.380	0.390	0.400	0.410	0.419
Q_4	Q_2	0.208	0.217	0.226	0.233	0.241	0.247	0.252	0.256	0.260	0.263	0.266
	Q_3	0.292	0.274	0.257	0.244	0.230	0.221	0.212	0.204	0.196	0.189	0.182
	Q_4	0.208	0.196	0.186	0.177	0.169	0.162	0.156	0.150	0.144	0.138	0.133
Q_2	Q_1	0.302	0.315	0.326	0.334	0.342	0.350	0.356	0.361	0.367	0.372	0.377
Q_2	Q_2	0.198	0.185	0.174	0.166	0.158	0.150	0.144	0.139	0.133	0.128	0.123
Q_2	Q_1	0.198	0.211	0.223	0.234	0.244	0.254	0.262	0.270	0.278	0.285	0.292
Q_2	Q_2	0.302	0.289	0.277	0.266	0.256	0.246	0.238	0.230	0.222	0.215	0.208
Q_3	Q_1	0.274	0.285	0.297	0.309	0.318	0.326	0.334	0.341	0.347	0.353	0.358
Q_2	Q_2	0.190	0.182	0.174	0.165	0.158	0.152	0.146	0.141	0.136	0.131	0.126
	Q_3	0.262	0.248	0.232	0.217	0.206	0.196	0.186	0.177	0.170	0.163	0.158
Q_3	Q_1	0.262	0.282	0.300	0.316	0.329	0.344	0.354	0.365	0.376	0.386	0.394
Q_3	Q_2	0.190	0.200	0.210	0.218	0.227	0.234	0.240	0.245	0.250	0.254	0.258
	Q_3	0.274	0.259	0.245	0.233	0.222	0.211	0.203	0.195	0.187	0.180	0.174
Q_2	Q_1	0.250	0.266	0.279	0.291	0.302	0.312	0.320	0.327	0.333	0.339	0.345
Q_2	Q_2	0.250	0.234	0.221	0.209	0.198	0.188	0.180	0.173	0.167	0.161	0.155

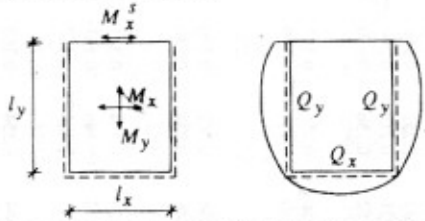
ukliještena ivica

slobodno oslonjena ivica

Približno opterećenje oslonačke grede

$$q = \frac{Q}{l}$$

PRILOG 5.6
KOEFICIJENTI ZA PRORAČUN MOMENATA SAVIJANJA I REAKCIJA OSLONACA KRSTASTO ARMIRANIH PLOČA OSLONJENIH NA TRI STRANE OPTEREĆENIH JEDNAKO PODELJENIM OPTEREĆENJEM

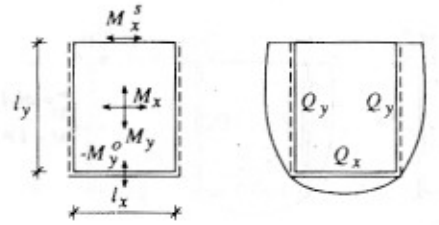


$P = q l_x l_y$

$M = k P$

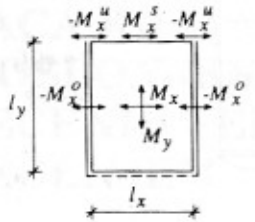
l_y/l_x	M_x	M_y	M_x^s	Q_x	Q_y
0.30	0.037	0.033	0.073	0.800	0.160
0.35	0.043	0.036	0.083	0.760	0.190
0.40	0.049	0.038	0.091	0.720	0.220
0.45	0.054	0.039	0.097	0.680	0.250
0.50	0.059	0.038	0.102	0.640	0.280
0.55	0.063	0.037	0.106	0.615	0.295
0.60	0.066	0.036	0.108	0.590	0.310
0.65	0.069	0.035	0.110	0.565	0.325
0.70	0.070	0.033	0.111	0.540	0.340
0.75	0.072	0.031	0.111	0.515	0.355
0.80	0.073	0.029	0.109	0.490	0.370
0.85	0.073	0.027	0.108	0.465	0.380
0.90	0.073	0.025	0.106	0.440	0.390
0.95	0.073	0.024	0.105	0.420	0.400
1.00	0.073	0.022	0.103	0.400	0.410
1.10	0.073	0.019	0.098	0.360	0.420
1.20	0.071	0.016	0.093	0.340	0.430
1.30	0.069	0.013	0.088	0.320	0.440
1.40	0.067	0.012	0.084	0.300	0.450
1.50	0.065	0.010	0.079	0.280	0.450
1.75	0.060	0.007	0.069	0.260	0.450
2.00	0.055	0.004	0.062	0.240	0.450

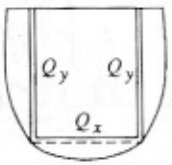
Koeficijenti za proračun momenata savijanja i reakcija oslonaca krstasto armiranih ploča oslonjenih na tri strane opterećenih jednako podeljenim opterećenjem



l_y/l_x	$-M_y^o$	M_x	M_y	M_x^s	Q_x	Q_y
0.30	0.124	0.005	-0.018	0.017	0.700	0.150
0.35	0.134	0.007	-0.012	0.025	0.680	0.160
0.40	0.140	0.011	-0.007	0.033	0.660	0.170
0.45	0.144	0.016	-0.004	0.042	0.640	0.180
0.50	0.147	0.021	0.000	0.051	0.620	0.190
0.55	0.148	0.025	0.004	0.059	0.600	0.200
0.60	0.146	0.029	0.007	0.066	0.580	0.210
0.65	0.144	0.033	0.010	0.072	0.570	0.215
0.70	0.142	0.037	0.012	0.076	0.550	0.225
0.75	0.138	0.040	0.014	0.081	0.530	0.235
0.80	0.135	0.043	0.015	0.085	0.520	0.240
0.85	0.131	0.046	0.016	0.087	0.500	0.250
0.90	0.127	0.048	0.016	0.087	0.490	0.255
0.95	0.122	0.050	0.017	0.088	0.470	0.265
1.00	0.118	0.051	0.017	0.088	0.460	0.270
1.10	0.109	0.053	0.016	0.087	0.430	0.285
1.20	0.102	0.054	0.015	0.085	0.400	0.300
1.30	0.095	0.055	0.014	0.083	0.370	0.315
1.40	0.088	0.055	0.013	0.080	0.340	0.330
1.50	0.083	0.055	0.011	0.077	0.310	0.345
1.75	0.071	0.054	0.009	0.068	0.250	0.375
2.00	0.063	0.051	0.006	0.061	0.200	0.400

Koeficijenti za proračun momenata savijanja i reakcija oslonaca krstasto armiranih ploča oslonjenih na tri strane opterećenih jednako podeljenim opterećenjem



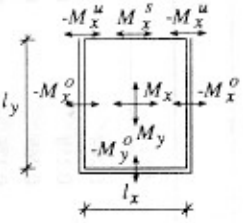


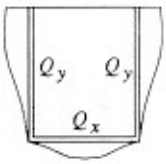
$P = q l_x l_y$

$M = k P$

l_y/l_x	$-M_x^o$	M_x^u	M_x	M_y	M_x^s	Q_x	Q_y
0.30	0.118	0.242	0.034	0.030	0.063	0.420	0.290
0.35	0.116	0.224	0.037	0.027	0.069	0.390	0.310
0.40	0.113	0.209	0.040	0.026	0.070	0.360	0.320
0.45	0.110	0.195	0.041	0.024	0.070	0.330	0.335
0.50	0.107	0.179	0.042	0.023	0.068	0.300	0.350
0.55	0.104	0.164	0.042	0.022	0.066	0.280	0.360
0.60	0.101	0.150	0.042	0.020	0.064	0.260	0.370
0.65	0.098	0.138	0.042	0.018	0.061	0.250	0.375
0.70	0.095	0.128	0.041	0.016	0.058	0.240	0.380
0.75	0.091	0.119	0.040	0.015	0.055	0.230	0.385
0.80	0.088	0.111	0.039	0.013	0.052	0.220	0.390
0.85	0.085	0.103	0.039	0.012	0.049	0.210	0.395
0.90	0.082	0.096	0.037	0.010	0.046	0.210	0.395
0.95	0.079	0.089	0.036	0.009	0.044	0.200	0.400
1.00	0.077	0.084	0.035	0.009	0.042	0.200	0.400
1.10	0.072	0.076	0.035	0.007	0.038	0.190	0.405
1.20	0.066	0.070	0.030	0.005	0.035	0.180	0.410
1.30	0.063	0.064	0.028	0.004	0.032	0.170	0.415
1.40	0.059	0.060	0.027	0.003	0.030	0.160	0.420
1.50	0.055	0.056	0.026	0.002	0.028	0.150	0.425
1.75	0.047	0.048	0.023	0.001	0.024	0.120	0.440
2.00	0.042	0.042	0.021	0.000	0.021	0.100	0.450

Koeficijenti za proračun momenata savijanja i reakcija oslonaca krstasto armiranih ploča oslonjenih na tri strane opterećenih jednako podeljenim opterećenjem



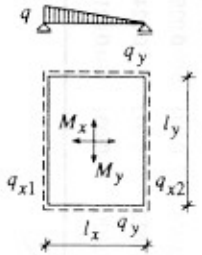


$P = q l_x l_y$

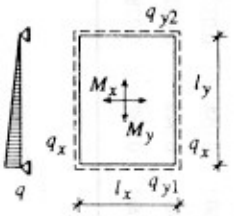
$M = kP$

l_y/l_x	$-M_x^o$	$-M_y^o$	M_x^u	M_x	M_y	M_x^s	Q_x	Q_y
0.30	0.044	0.109	0.127	0.009	-0.013	0.026	0.620	0.190
0.35	0.047	0.113	0.135	0.013	-0.007	0.036	0.580	0.210
0.40	0.052	0.113	0.141	0.017	-0.002	0.043	0.540	0.230
0.45	0.058	0.108	0.146	0.019	0.003	0.047	0.500	0.250
0.50	0.064	0.102	0.148	0.022	0.006	0.049	0.460	0.270
0.55	0.067	0.096	0.143	0.024	0.008	0.051	0.430	0.285
0.60	0.069	0.090	0.136	0.026	0.009	0.052	0.400	0.300
0.65	0.071	0.084	0.129	0.027	0.010	0.052	0.380	0.310
0.70	0.071	0.079	0.123	0.028	0.011	0.051	0.360	0.320
0.75	0.070	0.075	0.116	0.028	0.011	0.050	0.340	0.330
0.80	0.070	0.070	0.109	0.029	0.011	0.048	0.320	0.340
0.85	0.069	0.066	0.103	0.029	0.011	0.047	0.300	0.350
0.90	0.069	0.062	0.097	0.029	0.010	0.045	0.280	0.360
0.95	0.068	0.059	0.092	0.029	0.010	0.043	0.280	0.360
1.00	0.068	0.056	0.087	0.028	0.009	0.041	0.260	0.370
1.10	0.064	0.051	0.078	0.028	0.008	0.038	0.240	0.380
1.20	0.061	0.047	0.071	0.027	0.006	0.035	0.220	0.390
1.30	0.059	0.043	0.065	0.026	0.005	0.032	0.200	0.400
1.40	0.056	0.040	0.060	0.025	0.004	0.030	0.180	0.410
1.50	0.054	0.037	0.056	0.024	0.003	0.028	0.170	0.415
1.75	0.047	0.032	0.048	0.022	0.002	0.024	0.140	0.430
2.00	0.042	0.028	0.042	0.020	0.001	0.021	0.120	0.440

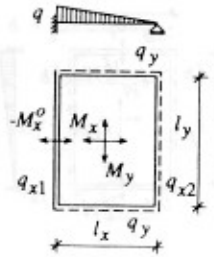
PRILOG 5.7
KOEFICIJENTI ZA PRORAČUN MOMENATA SAVIJANJA I REAKCIJA OSLONACA KRSTASTO ARMIRANIH PLOČA OSLONJENIH NA SVE ČETIRI STRANE OPTEREĆENIH TROUGAONIM OPTEREĆENJEM



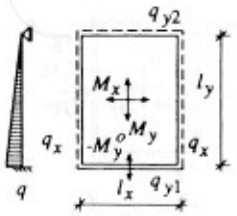
l_y/l_x	M_x	M_y	q_{x1}	q_{x2}	q_y
1.0	0.022	0.018	0.248	0.090	0.191
1.1	0.026	0.018	0.260	0.100	0.195
1.2	0.029	0.017	0.271	0.109	0.197
1.3	0.033	0.016	0.280	0.117	0.199
1.4	0.036	0.015	0.288	0.124	0.200
1.5	0.039	0.014	0.295	0.130	0.201
2.0	0.051	0.012	0.316	0.143	0.204
	ql_x^2		ql_x		



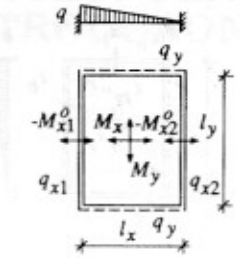
l_y/l_x	M_x	M_y	q_x	q_{y1}	q_{y2}
1.0	0.018	0.022	0.191	0.248	0.090
1.1	0.022	0.023	0.205	0.258	0.088
1.2	0.026	0.023	0.218	0.268	0.086
1.3	0.030	0.023	0.230	0.276	0.083
1.4	0.033	0.023	0.241	0.282	0.079
1.5	0.036	0.023	0.251	0.288	0.076
2.0	0.048	0.023	0.288	0.308	0.061
	ql_x^2		ql_x		



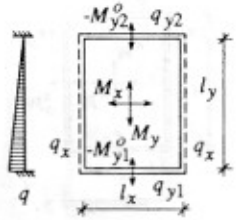
l_y/l_x	M_x^o	M_x	M_y	q_{x1}	q_{x2}	q_y
1.0	0.048	0.016	0.011	0.383	0.076	0.140
1.1	0.052	0.018	0.010	0.394	0.081	0.140
1.2	0.052	0.020	0.009	0.397	0.086	0.139
1.3	0.057	0.021	0.009	0.402	0.090	0.139
1.4	0.060	0.023	0.009	0.403	0.093	0.138
1.5	0.061	0.024	0.008	0.405	0.093	0.138
2.0	0.065	0.028	0.008	0.407	0.100	0.137
		ql_x^2			ql_x	



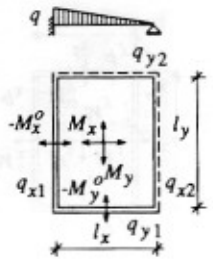
l_y/l_x	M_y^o	M_x	M_y	q_x	q_{y1}	q_{y2}
1.0	0.048	0.011	0.016	0.140	0.383	0.076
1.1	0.054	0.014	0.017	0.154	0.411	0.077
1.2	0.059	0.018	0.017	0.167	0.437	0.076
1.3	0.063	0.021	0.017	0.180	0.457	0.076
1.4	0.068	0.025	0.018	0.192	0.476	0.074
1.5	0.071	0.026	0.018	0.203	0.493	0.072
2.0	0.085	0.042	0.018	0.246	0.555	0.060
		ql_x^2			ql_x	



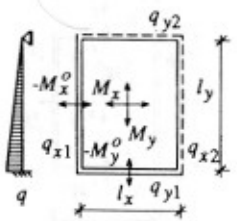
l_y/l_x	M_{x1}^{ϱ}	M_{x2}^{ϱ}	M_x	M_y	q_{x1}	q_{x2}	q_y
1.0	0.043	0.027	0.015	0.008	0.362	0.155	0.133
1.1	0.045	0.029	0.017	0.008	0.362	0.161	0.132
1.2	0.047	0.030	0.018	0.007	0.364	0.164	0.131
1.3	0.048	0.031	0.019	0.007	0.364	0.164	0.131
1.4	0.049	0.032	0.020	0.007	0.362	0.164	0.130
1.5	0.050	0.033	0.020	0.007	0.361	0.164	0.130
2.0	0.050	0.033	0.021	0.007	0.353	0.159	0.130
	ql_x^2				ql_x		



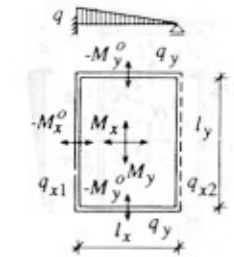
l_y/l_x	M_{y1}^{ϱ}	M_{y2}^{ϱ}	M_x	M_y	q_x	q_{y1}	q_{y2}
1.0	0.043	0.027	0.008	0.015	0.133	0.362	0.155
1.1	0.049	0.030	0.011	0.016	0.147	0.389	0.168
1.2	0.055	0.032	0.014	0.017	0.160	0.417	0.175
1.3	0.060	0.034	0.018	0.018	0.174	0.441	0.181
1.4	0.065	0.035	0.021	0.018	0.186	0.463	0.183
1.5	0.069	0.036	0.025	0.018	0.198	0.483	0.184
2.0	0.084	0.035	0.040	0.018	0.245	0.552	0.189
	ql_x^2				ql_x		



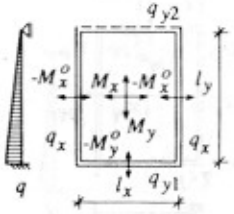
l_y/l_x	M_x^q	M_y^q	M_x	M_y	q_{x1}	q_{x2}	q_{y1}	q_{y2}
1.0	0.042	0.032	0.012	0.012	0.362	0.063	0.254	0.139
1.1	0.046	0.034	0.014	0.011	0.376	0.070	0.259	0.139
1.2	0.050	0.035	0.016	0.010	0.384	0.076	0.264	0.139
1.3	0.053	0.036	0.018	0.010	0.394	0.081	0.267	0.139
1.4	0.056	0.037	0.020	0.009	0.398	0.086	0.268	0.139
1.5	0.058	0.037	0.022	0.009	0.403	0.089	0.269	0.139
2.0	0.064	0.037	0.027	0.008	0.412	0.098	0.270	0.140
	ql_x^2				ql_x			



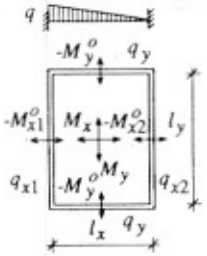
l_y/l_x	M_x^q	M_y^q	M_x	M_y	q_{x1}	q_{x2}	q_{y1}	q_{y2}
1.0	0.032	0.042	0.012	0.012	0.254	0.139	0.361	0.063
1.1	0.037	0.045	0.014	0.012	0.273	0.151	0.382	0.060
1.2	0.041	0.048	0.017	0.012	0.293	0.161	0.398	0.057
1.3	0.045	0.051	0.019	0.012	0.312	0.170	0.412	0.054
1.4	0.048	0.053	0.022	0.012	0.331	0.180	0.423	0.051
1.5	0.052	0.055	0.023	0.012	0.347	0.187	0.435	0.048
2.0	0.065	0.065	0.030	0.012	0.405	0.222	0.472	0.036
	ql_x^2				ql_x			



l_y/l_x	M_x^g	M_y^g	M_x	M_y	q_x	q_{y1}	q_{y2}
1.0	0.035	0.029	0.010	0.011	0.323	0.047	0.244
1.1	0.040	0.031	0.012	0.011	0.342	0.055	0.250
1.2	0.044	0.033	0.013	0.010	0.355	0.063	0.254
1.3	0.047	0.034	0.015	0.010	0.366	0.070	0.260
1.4	0.051	0.035	0.017	0.009	0.375	0.076	0.264
1.5	0.053	0.036	0.019	0.008	0.382	0.081	0.267
2.0	0.062	0.037	0.025	0.006	0.397	0.096	0.270
	ql_x^2				ql_x		

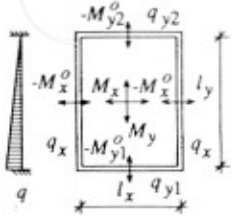


l_y/l_x	M_x^g	M_y^g	M_x	M_y	q_x	q_{y1}	q_{y2}
1.0	0.029	0.035	0.011	0.010	0.244	0.322	0.047
1.1	0.032	0.037	0.012	0.010	0.263	0.335	0.043
1.2	0.035	0.039	0.014	0.010	0.281	0.345	0.039
1.3	0.038	0.040	0.015	0.010	0.296	0.353	0.035
1.4	0.040	0.042	0.017	0.010	0.308	0.361	0.032
1.5	0.042	0.042	0.018	0.010	0.320	0.367	0.029
2.0	0.050	0.046	0.020	0.010	0.355	0.385	0.021
	ql_x^2				ql_x		



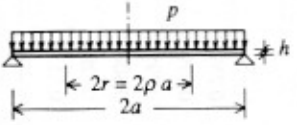
l_y/l_x	M_{x1}^o	M_{x2}^o	M_y^o	M_x	M_y	q_{x1}	q_{x2}	q_y
1.0	0.033	0.018	0.027	0.010	0.009	0.326	0.121	0.242
1.1	0.038	0.021	0.028	0.012	0.008	0.341	0.136	0.243
1.2	0.040	0.024	0.029	0.014	0.008	0.350	0.150	0.246
1.3	0.043	0.026	0.029	0.015	0.007	0.350	0.150	0.246
1.4	0.045	0.028	0.029	0.017	0.006	0.350	0.150	0.247
1.5	0.046	0.030	0.030	0.018	0.006	0.350	0.150	0.247
2.0	0.050	0.033	0.030	0.021	0.005	0.350	0.150	0.246
			ql_x^2				ql_x	

1,8 0,0484 0,0318 0,030 0,0198 0,0054



l_y/l_x	M_x^o	M_{y1}^o	M_{y2}^o	M_x	M_y	q_x	q_{y1}	q_{y2}
1.0	0.027	0.033	0.019	0.009	0.010	0.242	0.326	0.121
1.1	0.030	0.036	0.018	0.011	0.010	0.259	0.345	0.119
1.2	0.034	0.038	0.018	0.013	0.010	0.279	0.357	0.114
1.3	0.036	0.040	0.017	0.014	0.010	0.295	0.364	0.106
1.4	0.039	0.042	0.016	0.016	0.010	0.308	0.370	0.101
1.5	0.042	0.042	0.015	0.017	0.010	0.320	0.379	0.093
2.0	0.050	0.046	0.011	0.020	0.010	0.353	0.402	0.070
			ql_x^2				ql_x	

PRILOG 5.8
STATIČKI UTICAJI I UGIBI KRUŽNIH PLOČA OSLONJENIH PO IVICI



$$K = \frac{Eh}{12\,(1 - \mu^2)}$$

$\rho = \rho$

$$\omega = \frac{pa^4}{64K}\,(1-\rho^2)\left(\frac{5+\mu}{1+\mu} - \rho^2\right)$$

$$M_r = \frac{pa^2}{16}\,(3+\mu)\,(1-\rho^2)$$

$$M_\varphi = \frac{pa^2}{16}\,[3+\mu-(1+3\mu)\,\rho^2]$$

$$Q_r = -\frac{pa}{2}\,\rho$$

$\rho = 0$

$$\omega = \frac{pa^4}{64K}\,\frac{5+\mu}{1+\mu}$$

$$M_r = \frac{pa^2}{16}\,(3+\mu)$$

$$M_\varphi = \frac{pa^2}{16}\,(3+\mu)$$

$$Q_r = 0$$

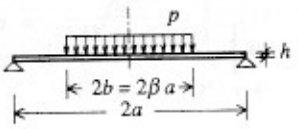
$\rho = 1$

$$\omega = 0$$

$$M_r = 0$$

$$M_\varphi = \frac{pa^2}{8}\,(1-\mu)$$

$$Q_r = -\frac{pa}{2}$$



$$c_1 = 4 - (1 - \mu)\,\beta^2,$$
$$c_2 = \left[c_1 - 4\,(1 + \mu)\ln\beta\right]\beta^2,$$
$$c_3 = 4\,(3 + \mu) - (7 + 3\mu)\,\beta^2 + 4\,(1 + \mu)\,\beta^2 \ln\beta$$

$\rho \le \beta$

$$\omega = \frac{pa^4}{64K}\left\{\left[4 - 5\beta^2 + 4\,(2 + \beta^2)\ln\beta\right]\beta^2 + 2\,\frac{c_2}{1 + \mu}\,(1 - \rho^2) + \rho^4\right\}$$

$$M_r = \frac{pa^2}{16}\left[c_2 - (3 + \mu)\,\rho^2\right]$$

$$M_\varphi = \frac{pa^2}{16}\left[c_2 - (1 + 3\mu)\,\rho^2\right]$$

$$Q_r = -\frac{pa}{2}\,\rho$$

$\rho \ge \beta$

$$\omega = \frac{pa^4}{32K}\,\beta^2\left[\frac{2\,(3 + \mu) - (1 - \mu)\,\beta^2}{1 + \mu}\,(1 - \rho^2) + 2\ln\rho\,(2\rho^2 + \beta^2)\right]$$

$$M_r = \frac{pa^2}{16}\,\beta^2\left[(1 - \mu)\,\beta^2\left(\frac{1}{\rho^2} - 1\right) - 4\,(1 + \mu)\ln\rho\right]$$

$$M_\varphi = \frac{pa^2}{16}\,(1 - \mu)\,\beta^2\left[2\,(2 - \beta^2) - \beta^2\left(\frac{1}{\rho^2} - 1\right) - 4\,\frac{1 + \mu}{1 - \mu}\ln\rho\right]$$

$$Q_r = -\frac{pb}{2}\,\frac{\beta}{\rho}$$

$\rho = 0$

$$\omega = \frac{pa^2b^2}{64K\,(1 + \mu)}\,c_3$$

$$M_r = \frac{pa^2}{16}\,c_2$$

$$M_\varphi = \frac{pa^2}{16}\,c_2$$

$$Q_r = 0$$

$\rho = \beta$

$$\omega = \frac{pa^4}{32K}\beta^2\left[\frac{2(3+\mu)-(1-\mu)\beta^2}{1+\mu}(1-\beta^2)+6\beta^2\ln\beta\right]$$

$$M_r = \frac{pa^2}{16}\left[c^2-(3+\mu)\beta^2\right]$$

$$M_\varphi = \frac{pa^2}{16}\left[c_2-(1+3\mu)\beta^2\right]$$

$$Q_r = -\frac{pb}{2}$$

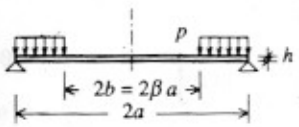
$\rho = 1$

$$\omega = 0$$

$$M_r = 0$$

$$M_\varphi = \frac{pb^2}{8}(1-\mu)(2-\beta^2)$$

$$Q_r = -\frac{pb}{2}\beta$$



$$c_1 = \left[(5+\mu)-(7+3\mu)\beta^2\right](1-\beta^2) - 4(1+\mu)\beta^4\ln\beta$$

$$c_2 = \left[(3+\mu)-(1-\mu)\beta^2\right](1-\beta^2) + 4(1+\mu)\beta^2\ln\beta$$

$\rho \leq \beta$

$$\omega = \frac{pa^4}{64K(1+\mu)}(c_1-2c_2\rho^2)$$

$$M_r = \frac{pa^2}{16}c_2$$

$$M_\varphi = \frac{pa^2}{16}c_2$$

$$Q_r = 0$$

$\rho \geq \beta$

$$\omega = \frac{pa^4}{64K(1+\mu)} \left\{ 2\left[(3+\mu)(1-2\beta^2) + (1-\mu)\beta^4\right] (1-\rho^2) - \right.$$

$$\left. (1+\mu)(1-\rho^4) - 4(1+\mu)(\beta^2+2\rho^3)\beta^2 \ln\rho \right\}$$

$$M_r = \frac{pa^2}{16}\left[(3+\mu)(1-\rho^2) - (1-\mu)\beta^4\left(\frac{1}{\rho^2}-1\right) + 4(1+\mu)\beta^2 \ln\rho\right]$$

$$M_\varphi = \frac{pa^2}{16}\left[(1+3\mu)(1-\rho^2) + (1-\mu)\beta^4\left(\frac{1}{\rho^2}-1\right) + 4(1+\mu)\beta^2 \ln\rho + 2(1-\mu)(1-\beta^2)^2\right]$$

$$Q_r = -\frac{pa}{2}\left(\rho - \frac{\beta^2}{\rho}\right)$$

$\rho = 0$

$$\omega = \frac{pa^4}{64K(1+\mu)} c_1$$

$$M_r = \frac{pa^2}{16} c_2$$

$$M_\varphi = \frac{pa^2}{16} c_2$$

$$Q_r = 0$$

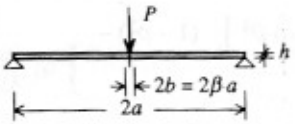
$\rho = 1$

$$\omega = 0$$

$$M_r = 0$$

$$M_\varphi = \frac{pa^2}{8}(1-\mu)(1-\beta^2)^2$$

$$Q_r = -\frac{pa}{2}(1-\beta^2)$$



$\rho = \rho$

$$\omega = \frac{Pa^2}{16\pi K}\left[\frac{3+\mu}{1+\mu}(1-\rho^2)+2\rho^2\ln\rho\right]$$

$$M_r = -\frac{P}{4\pi}(1+\mu)\ln\rho$$

$$M_j = \frac{P}{4\pi}\left[1-\mu-(1+\mu)\ln\rho\right]$$

$$Q_r = -\frac{P}{2a\pi\rho}$$

$\rho = 0$

$$\omega = \frac{Pa^2}{16\pi K}\frac{3+\mu}{1+\mu}$$

$$M_r = +\infty;\ \frac{P}{4\pi}\left[1-(1+\mu)\ln\beta\right]$$

$$M_\varphi = +\infty;\ \frac{P}{4\pi}\left[1-(1+\mu)\ln\beta\right]$$

$$Q_r = -\infty;\ 0$$

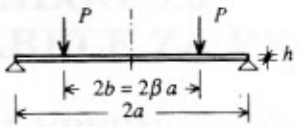
$\rho = 1$

$$\omega = 0$$

$$M_r = 0$$

$$M_\varphi = \frac{P}{4\pi}(1-\mu)$$

$$Q_r = -\frac{P}{2\pi a}$$



$$c_1 = (3 + \mu)(1 - \beta^2) + 2(1 + \mu)\beta^2 \ln\beta,$$
$$c_2 = (1 - \mu)(1 - \beta^2) - 2(1 + \mu)\ln\beta$$

$\rho \leq \beta$

$$\omega = \frac{Pa^2b}{8K(1+\mu)}(c_1 - c_2\rho^2)$$

$$M_r = \frac{Pb}{4} c_2$$

$$M_\varphi = \frac{Pb}{4} c_2$$

$$Q_r = 0$$

$\rho \geq \beta$

$$\omega = \frac{Pa^2b}{8K(1+\mu)}\left\{\left[(3+\mu) - (1-\mu)\beta^2\right](1-\rho^2) + 2(1+\mu)\beta^2 \ln\rho + 2(1+\mu)\rho^2 \ln\rho\right\}$$

$$M_r = \frac{Pb}{4}\left[(1-\mu)\beta^2\left(\frac{1}{\rho^2} - 1\right) - 2(1+\mu)\ln\rho\right]$$

$$M_\varphi = \frac{Pb}{4}\left\{(1-\mu)\left[2 - \beta^2\left(\frac{1}{\rho^2} + 1\right)\right] - 2(1+\mu)\ln\rho\right\}$$

$$Q_r = -P\frac{\beta}{\rho}$$

$\rho = 0$

$$\omega = \frac{Pa^2b}{8K(1+\mu)} c_1$$

$$M_r = \frac{Pb}{4} c_2$$

$$M_\varphi = \frac{Pb}{4} c_2$$

$$Q_r = 0$$

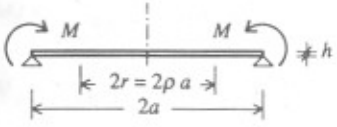
$\rho = 1$

$$\omega = 0$$

$$M_r = 0$$

$$M_\varphi = \frac{Pb}{2}(1-\mu)(1-\beta^2)$$

$$Q_r = -P\beta$$



$\rho = \rho$

$$\omega = \frac{Ma^2}{2K(1+\mu)}(1-\rho^2)$$

$$M_r = M$$

$$M_\varphi = M$$

$$Q_r = 0$$

$\rho = 1$

$$\omega = 0$$

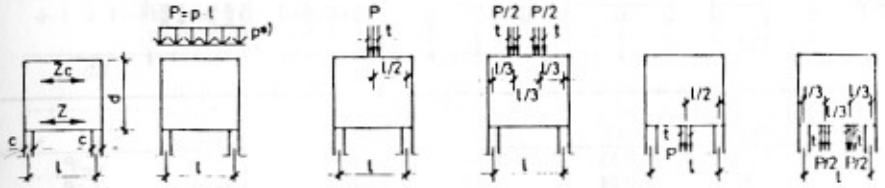
$$M_r = M$$

$$M_\varphi = M$$

$$Q_r = 0$$

PRILOG 5.9
TABELE ZA PRORAČUN ZIDNIH NOSAČA

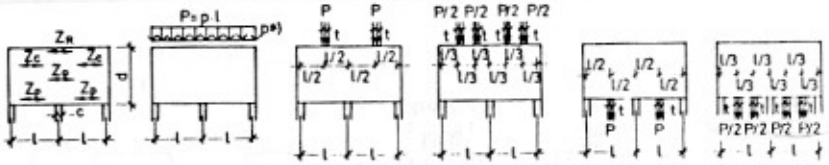
5.9.1 VREDNOSTI SILA ZATEZANJA Z I Z_c U ZIDNIM NOSAČIMA NA DVA OSLONCA



d/l	c/l = t/l							
	–	0.1	≥ 0.2	≥ 0.1	0.1	≥ 0.2	≥ 0.1	
0.5	0.37	0.66	0.64	0.50	0.66	0.64	0.50	Z/P
	–	–	–	–	–	–	–	Zc/P
0.6	0.31	0.55	0.53	0.41	0.55	0.53	0.42	Z/P
	–	–	–	–	–	–	–	Zc/P
0.7	0.27	0.45	0.44	0.35	0.49	0.47	0.36	Z/P
	–	–	–	–	–	–	–	Zc/P
0.8	0.24	0.38	0.37	0.30	0.46	0.44	0.32	Z/P
	–	–	–	–	–	–	–	Zc/P
0.9	0.22	0.32	0.31	0.26	0.43	0.41	0.30	Z/P
	–	–	–	–	–	–	–	Zc/P
1.0	0.21	0.27	0.27	0.23	0.41	0.39	0.29	Z/P
	–	–	–	–	–	–	–	Zc/P
1.1	0.21	0.24	0.24	0.22	0.39	0.37	0.29	Z/P
	–	–	–	–	–	–	–	Zc/P
1.2	0.20	0.22	0.22	0.21	0.38	0.36	0.28	Z/P
	–	0.04	0.03	–	–	–	–	Zc/P
1.5	0.20	0.20	0.20	0.20	0.38	0.36	0.28	Z/P
	–	0.11	0.09	0.02	–	–	–	Zc/P
≥2.0	0.20	0.20	0.20	0.20	0.38	0.36	0.28	Z/P
	–	0.20	0.17	0.07	–	–	–	Zc/P

*) Opterećenje na bilo kojoj visini zida

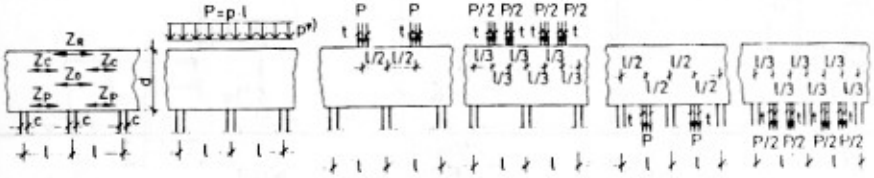
5.9.2 VREDNOSTI SILA ZATEZANJA U ZIDNIM NOSAČIMA NA DVA POLJA, ODNOSNO U KRAJNJIM POLJIMA KONTINUALNOG ZIDNOG NOSAČA SA TRI I VIŠE POLJA



d/l	c/l = t/l					
	≥ 0.1	≥ 0.1	≥ 0.1	≥ 0.1	≥ 0.1	
	0.26	0.55	0.39	0.55	0.39	Z_p/P
0.4	0.27	0.44	0.37	0.44	0.39	Z_o/P
	–	–	–	–	–	Z_c/P
	–	–	–	–	–	Z_R/P
	0.22	0.47	0.35	0.47	0.35	Z_p/P
0.5	0.24	0.31	0.29	0.32	0.32	Z_o/P
	–	–	–	–	–	Z_c/P
	–	–	–	–	–	Z_R/P
	0.19	0.41	0.31	0.43	0.32	Z_p/P
0.6	0.22	0.25	0.24	0.27	0.28	Z_o/P
	–	–	–	–	–	Z_c/P
	–	–	–	–	–	Z_R/P
	0.18	0.36	0.29	0.40	0.30	Z_p/P
0.7	0.21	0.23	0.22	0.27	0.27	Z_o/P
	–	–	–	–	–	Z_c/P
	–	–	–	–	–	Z_R/P
	0.17	0.33	0.27	0.38	0.29	Z_p/P
0.8	0.20	0.24	0.22	0.30	0.28	Z_o/P
	–	–	–	–	–	Z_c/P
	–	0.01	0.01	–	–	Z_R/P
	0.16	0.30	0.25	0.37	0.28	Z_p/P
0.9	0.19	0.25	0.22	0.32	0.30	Z_o/P
	–	–	–	–	–	Z_c/P
	–	0.02	0.02	–	–	Z_R/P
	0.15	0.28	0.23	0.36	0.27	Z_p/P
1.0	0.19	0.26	0.23	0.34	0.31	Z_o/P
	–	0.01	–	–	–	Z_c/P
	–	0.02	0.02	–	–	Z_R/P
	0.14	0.20	0.19	0.36	0.25	Z_p/P
1.5	0.19	0.27	0.24	0.34	0.32	Z_o/P
	–	0.10	0.01	–	–	Z_c/P
	–	0.03	0.03	–	–	Z_R/P
	0.14	0.18	0.17	0.36	0.25	Z_p/P
≥ 2.0	0.19	0.27	0.24	0.34	0.32	Z_o/P
	–	0.15	0.04	–	–	Z_c/P
	–	0.05	0.05	–	–	Z_R/P

*) Opterećenje na bilo kojoj visini zida

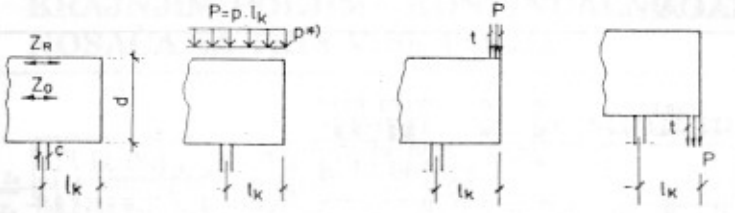
5.9.3 VREDNOSTI SILA ZATEZANJA U UNUTRAŠNJIM (SREDNJIM) POLJIMA KONTINUALNOG ZIDNOG NOSAČA



d/l	c/l = t/l									
	0.05	0.1	≥ 0.2	≥ 0.1	≥ 0.1	0.05	0.1	≥ 0.2	≥ 0.1	
	0.21	0.21	0.21	0.56	0.28	0.59	0.56	0.50	0.28	Z_P/P
0.3	0.38	0.35	0.29	0.56	0.49	0.59	0.56	0.50	0.49	Z_O/P
	–	–	–	–	–	–	–	–	–	Z_C/P
	–	–	–	–	–	–	–	–	–	Z_R/P
	0.16	0.16	0.16	0.37	0.17	0.44	0.42	0.37	0.17	Z_P/P
0.4	0.29	0.27	0.22	0.37	0.29	0.44	0.42	0.37	0.30	Z_O/P
	–	–	–	–	–	–	–	–	–	Z_C/P
	–	–	–	–	–	–	–	–	–	Z_R/P
	0.12	0.12	0.12	0.30	0.14	0.33	0.32	0.29	0.13	Z_P/P
0.5	0.26	0.23	0.19	0.30	0.24	0.33	0.32	0.29	0.26	Z_O/P
	–	–	–	–	–	–	–	–	–	Z_C/P
	–	–	–	–	–	–	–	–	–	Z_R/P
	0.10	0.10	0.10	0.26	0.12	0.31	0.29	0.26	0.12	Z_P/P
0.6	0.25	0.22	0.18	0.26	0.20	0.31	0.29	0.26	0.25	Z_O/P
	–	–	–	–	–	–	–	–	–	Z_C/P
	–	–	–	–	–	–	–	–	–	Z_R/P
	0.09	0.09	0.09	0.23	0.11	0.30	0.28	0.24	0.11	Z_P/P
0.7	0.25	0.21	0.17	0.23	0.18	0.30	0.28	0.24	0.25	Z_O/P
	–	–	–	–	–	–	–	–	–	Z_C/P
	–	–	–	–	–	–	–	–	–	Z_R/P
	0.09	0.09	0.09	0.21	0.10	0.30	0.28	0.24	0.10	Z_P/P
0.8	0.25	0.21	0.16	0.21	0.10	0.30	0.28	0.24	0.25	Z_O/P
	–	–	–	–	–	–	–	–	–	Z_C/P
	–	–	–	–	0.08	–	–	–	–	Z_R/P
	0.09	0.09	0.09	0.10	0.09	0.30	0.28	0.24	0.10	Z_P/P
1.0	0.25	0.21	0.16	0.11	0.14	0.30	0.28	0.24	0.25	Z_O/P
	–	–	–	0.11	0.02	–	–	–	–	Z_C/P
	–	–	–	0.10	0.07	–	–	–	–	Z_R/P
	0.09	0.09	0.09	0.09	0.09	0.30	0.28	0.24	0.10	Z_P/P
1.5	0.25	0.21	0.16	0.19	0.19	0.30	0.28	0.24	0.25	Z_O/P
	–	–	–	0.19	0.02	–	–	–	–	Z_C/P
	–	–	–	0.09	0.06	–	–	–	–	Z_R/P
	0.09	0.09	0.09	0.09	0.09	0.30	0.28	0.24	0.10	Z_P/P
≥ 2.0	0.25	0.21	0.16	0.20	0.20	0.30	0.28	0.24	0.25	Z_O/P
	–	–	–	0.20	0.02	–	–	–	–	Z_C/P
	–	–	–	0.09	0.06	–	–	–	–	Z_R/P

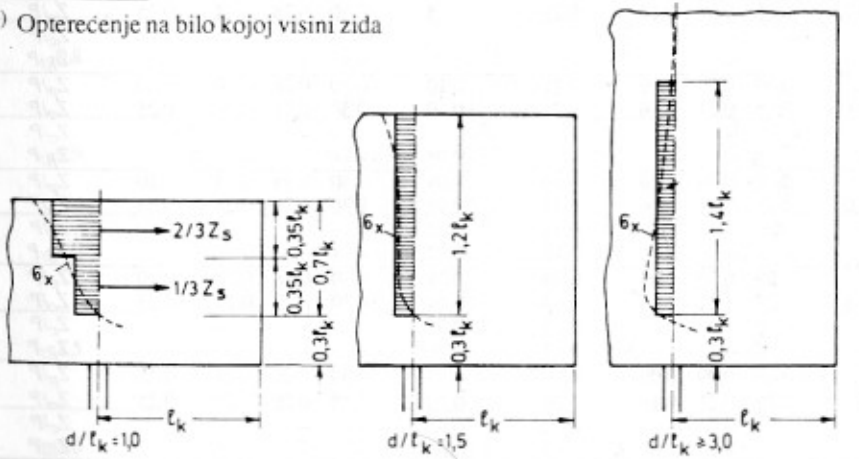
*) Opterećenje na bilo kojoj visini zida

5.9.4 VREDNOSTI SILA ZATEZANJA U KONZOLNIM ZIDNIM NOSAČIMA

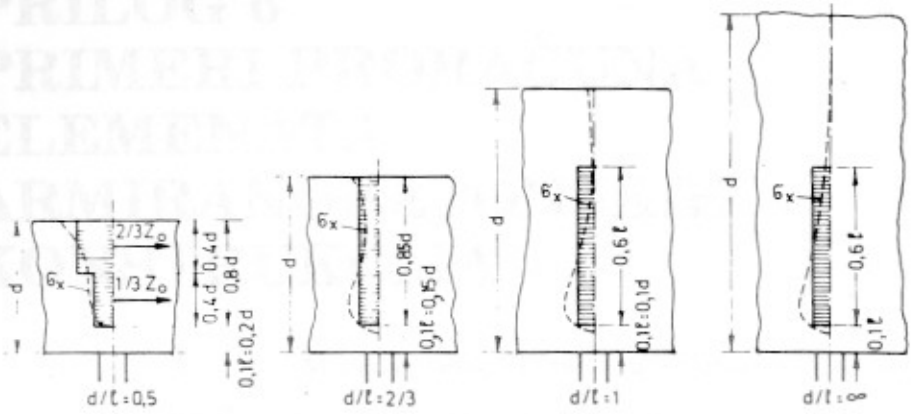


d/l		c/l = t/l		
	≥ 0.2	≥ 0.2	≥ 0.2	
1.0	0.63	–	1.16	Z_o/P
	–	1.16	–	Z_R/P
1.1	0.58	–	1.05	Z_o/P
	–	1.04	–	Z_R/P
1.2	0.56	–	0.98	Z_o/P
	–	0.94	–	Z_R/P
1.5	0.55	–	0.87	Z_o/P
	–	0.71	–	Z_R/P
2.0	0.54	0.13	0.86	Z_o/P
	–	0.48	–	Z_R/P
3.0	0.54	0.35	0.86	Z_o/P
	–	0.38	–	Z_R/P
≥ 4.0	0.54	0.48	0.86	Z_o/P
	–	0.38	–	Z_R/P

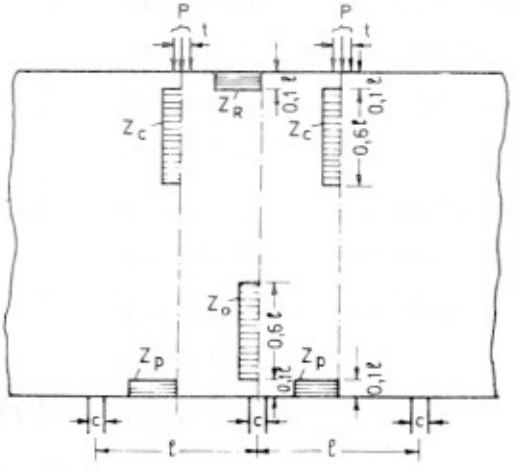
*) Opterećenje na bilo kojoj visini zida



Raspodela glavne (podužne) armature za silu Z_o preko oslonca konzolnog zidnog nosača



Raspodela glavne armature za silu zatezanja Z_o preko oslonca kontinualnog zidnog nosača



Raspodela glavne armature za sile zatezanja Z_p, Z_o, Z_c i Z_R kod kontinualnog zidnog nosača pod koncentrisanim opterećenjem (prikaz za odnos $d/l = 2$)