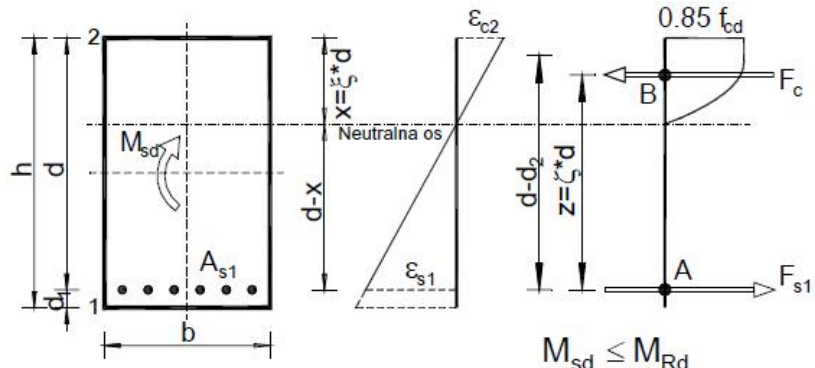
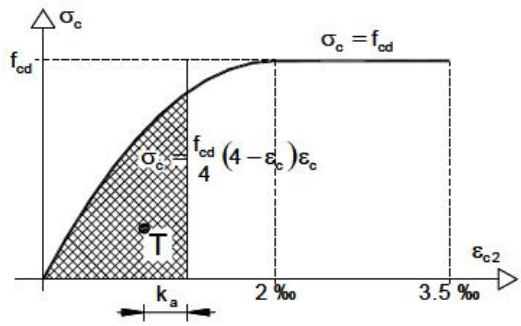
Djelovanje	Parcijalni koeficijenti sigurnosti γ_F		
	Vrsta djelovanja		
	Stalno γ_G	Promjenjivo γ_Q	Prednapinjanje γ_P
Nepovoljno	1.35	1.5	1.0 ili 1.1
Povoljno	1.0	0	1.0 ili 0.9

Vrsta kombinacije	Parcijalni koeficijenti sigurnosti γ_m	
	Beton γ_c	Betonski i prednapeti čelik γ_s
Osnovna kombinacija	1.50	1.15
Slučajna kombinacija	1.30	1.00

Dimenzioniranje na moment savijanja – osnovni izrazi





$$M_{sd} \le M_{Rd}$$

$$F_{s1} = A_{s1} \cdot f_{yd}$$

$$F_c = 0.85 \cdot \alpha_v \cdot x \cdot b \cdot f_{cd} = 0.85 \cdot \alpha_v \cdot \xi \cdot d \cdot b \cdot f_{cd}$$

$$\sum M_{(A)} = 0 \quad \Rightarrow \quad M_{sd} = F_c \cdot z$$

$$z = d - k_a \cdot x = d - k_a \cdot \xi \cdot d = (1 - k_a \cdot \xi) \cdot d = \zeta \cdot d$$

$$M_{sd} = F_c \cdot z = 0.85 \cdot \alpha_v \cdot \xi \cdot d \cdot b \cdot f_{cd} \cdot \zeta \cdot d$$

$$\mu_{sd} = 0.85 \cdot \alpha_v \cdot \xi \cdot \zeta = \frac{M_{sd}}{b \cdot d^2 \cdot f_{cd}}$$

$$\alpha_v = \frac{\varepsilon_{c2}}{12}(6 - \varepsilon_{c2}) \quad 0‰ < \varepsilon_{c2} \le 2‰$$

$$\alpha_v = \frac{3\,\varepsilon_{c2} - 2}{3\,\varepsilon_{c2}} \quad 2‰ < \varepsilon_{c2} \le 3.5‰$$

$$k_a = \frac{8 - \varepsilon_{c2}}{4(6 - \varepsilon_{c2})} \quad 0‰ < \varepsilon_{c2} \le 2‰$$

$$k_a = \frac{\varepsilon_{c2}(3\varepsilon_{c2} - 4) + 2}{2\varepsilon_{c2}(3\varepsilon_{c2} - 2)} \quad 2‰ < \varepsilon_{c2} \le 3.5‰$$

$$\sum M_{(B)} = 0 \quad \Rightarrow \quad M_{sd} = F_{s1} \cdot z$$

$$M_{sd} = A_{s1} \cdot f_{yd} \cdot \zeta \cdot d$$

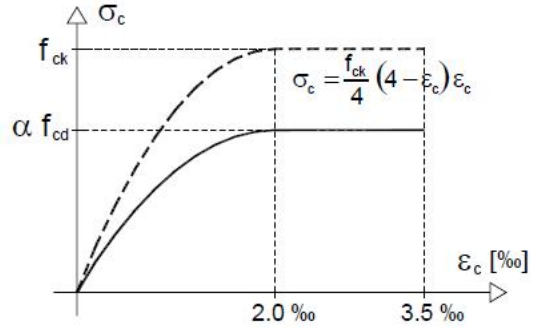
$$A_{s1} = \frac{M_{sd}}{\zeta \cdot d \cdot f_{yd}}$$

$$\sum N = 0 \quad \Rightarrow \quad F_c = F_{s1}$$

$$0.85 \cdot \alpha_v \cdot \xi \cdot d \cdot b \cdot f_{cd} = A_{s1} \cdot f_{yd}$$

$$\omega = 0.85 \cdot \alpha_v \cdot \xi = \frac{A_{s1}}{d \cdot b} \cdot \frac{f_{yd}}{f_{cd}} = \rho \cdot \frac{f_{yd}}{f_{cd}}$$

Karakteristika betona		C12/15	C16/20	C20/25	C25/30	C30/37	C35/45	C40/50	C45/55	C50/60
f_{ck} (MPa)	Čvrstoća na valjku	12	16	20	25	30	35	40	45	50
$f_{c,cub}$ (MPa)	Čvrstoća na kocki	15 (MB 15)	20 (MB 20)	25 (MB 25)	30 (MB 30)	37 (MB 40)	45 (MB 45)	50 (MB 50)	55 (MB 55)	60 (MB 60)
$f_{ct,m}$ (MPa)	Srednja vlačna čvrstoća	1.6	1.9	2.2	2.6	2.9	3.2	3.5	3.8	4.1
τ_{Rd} (MPa)	Posmična čvrstoća	0.18	0.22	0.26	0.30	0.34	0.37	0.41	0.44	0.48
E_{cm} (MPa)	Početni modul elastičnosti	26000	27500	29000	30500	32000	33500	35000	36000	37000



$$E_{cm} = 9500 \cdot \sqrt[3]{f_{ck}+8} \quad [\text{MPa}] \quad ; \quad f_{ck}\ [\text{MPa}]$$

$$f_{ct,m} \approx 0.3 \cdot (f_{ck})^{2/3} \quad [\text{MPa}] \quad ; \quad f_{ck}\ [\text{MPa}]$$

$$f_{cd} = \frac{f_{ck}}{\gamma_c}$$

Koeficijenti sigurnosti na materijal

Materijal / Kombinacija	**Beton** (γ_c)	**Čelik** (γ_s)
Uobičajena kombinacija	**1.50**	1.15
Izvanredna kombinacija	**1.30**	1.00

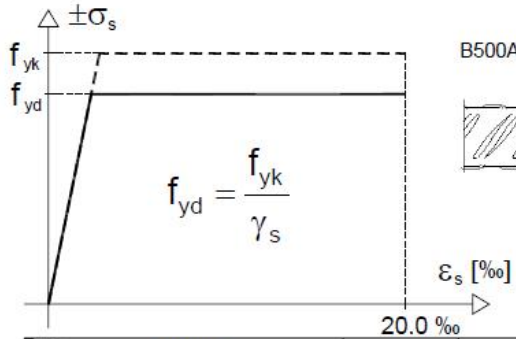
Koeficijentom "α" uzima se u obzir nepovoljno djelovanje dugotrajnog opterećenja i dinamičkih učinaka. Za "α" se uzima:

α = 0.85 za presjeke oblika pravokutnika

α = 0.80 za presjeke oblika trokuta ili trapeza

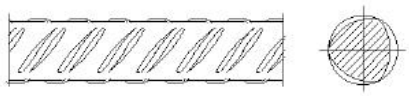
Svojstva čelika za armiranje:

	Šipkasta armatura (nHRN EN 10080-2, nHRN EN 10080-3 i nHRN EN 10080-4)			Mrežasta armatura (nHRN EN 10080-5)		
Naziv i oznaka (broj) čelika	B500A (1.0438)	B500B (1.0439)	B450C (1.04…)	B500A (1.0438)	B500B (1.0439)	B450C (1.04…)
Nazivni promjer, d (mm)	Namot: 4-16 Šipke: 6-40	Namot: 6-16 Šipke: 6-40	Namot: 6-16	5-16	6-16	6-16
Granica razvlačenja f_{yk} (MPa)	≥ 500	≥ 500	≥ 450	≥ 500	≥ 500	≥ 450
Omjer vlačne čvrstoće i granice razvlačenja	≥ 1.05	≥ 1.08	≥ 1.15 ≤ 1.35	≥ 1.05	≥ 1.08	≥ 1.15 ≤ 1.35

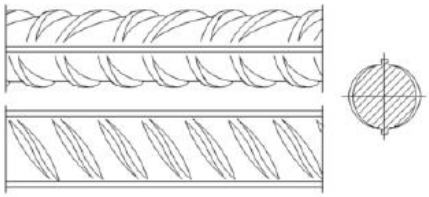


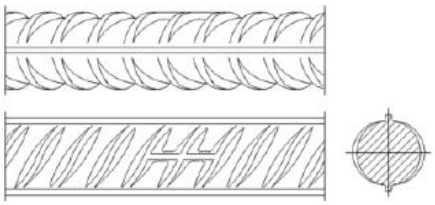
Materijal / Kombinacija	**Beton** (γ_c)	**Čelik** (γ_s)
Uobičajena komb.	1.50	**1.15**
Izvanredna komb.	1.30	**1.00**

B500A – tri reda poprečnih rebara



B450C – dva reda poprečnih rebara; s jedne strane rebra pod različitim kutovima u odnosu na os





B500B – dva reda poprečnih rebara; s obje strane rebra su paralelna (pod istim kutom u odnosu na os)

Lom po betonu:					
e_{c2} ‰	e_{s1} ‰	x=x/d	z=z/d	w_1 %	m_{sd}
3.50	20.00	0.149	0.938	0.103	0.096
3.50	19.75	0.151	0.937	0.104	0.097
3.50	19.50	0.152	0.937	0.105	0.098
3.50	19.25	0.154	0.936	0.106	0.099
3.50	19.00	0.156	0.935	0.107	0.100
3.50	18.75	0.157	0.935	0.108	0.101
3.50	18.50	0.159	0.934	0.110	0.102
3.50	18.25	0.161	0.933	0.111	0.103
3.50	18.00	0.163	0.932	0.112	0.104
3.50	17.75	0.165	0.931	0.113	0.106
3.50	17.50	0.167	0.931	0.115	0.107
3.50	17.25	0.169	0.930	0.116	0.108
3.50	17.00	0.171	0.929	0.118	0.109
3.50	16.75	0.173	0.928	0.119	0.110
3.50	16.50	0.175	0.927	0.120	0.112
3.50	16.25	0.177	0.926	0.122	0.113
3.50	16.00	0.179	0.925	0.124	0.114
3.50	15.75	0.182	0.924	0.125	0.116
3.50	15.50	0.184	0.923	0.127	0.117
3.50	15.25	0.187	0.922	0.129	0.119
3.50	15.00	0.189	0.921	0.130	0.120
3.50	14.75	0.192	0.920	0.132	0.122
3.50	14.50	0.194	0.919	0.134	0.123
3.50	14.25	0.197	0.918	0.136	0.125
3.50	14.00	0.200	0.917	0.138	0.126
3.50	13.75	0.203	0.916	0.140	0.128
3.50	13.50	0.206	0.914	0.142	0.130
3.50	13.25	0.209	0.913	0.144	0.131
3.50	13.00	0.212	0.912	0.146	0.133
3.50	12.75	0.215	0.910	0.148	0.135
3.50	12.50	0.219	0.909	0.151	0.137
3.50	12.25	0.222	0.908	0.153	0.139
3.50	12.00	0.226	0.906	0.155	0.141
3.50	11.75	0.230	0.905	0.158	0.143
3.50	11.50	0.233	0.903	0.161	0.145
3.50	11.25	0.237	0.901	0.163	0.147
3.50	11.00	0.241	0.900	0.166	0.150
3.50	10.75	0.246	0.898	0.169	0.152
3.50	10.50	0.250	0.896	0.172	0.154
3.50	10.25	0.255	0.894	0.175	0.157
3.50	10.00	0.259	0.892	0.179	0.159
3.50	9.75	0.264	0.890	0.182	0.162
3.50	9.50	0.269	0.888	0.185	0.165
3.50	9.25	0.275	0.886	0.189	0.167
3.50	9.00	0.280	0.884	0.193	0.170
3.50	8.75	0.286	0.881	0.197	0.173
3.50	8.50	0.292	0.879	0.201	0.176
3.50	8.25	0.298	0.876	0.205	0.180
3.50	8.00	0.304	0.873	0.210	0.183
3.50	7.75	0.311	0.871	0.214	0.186
3.50	7.50	0.318	0.868	0.219	0.190
3.50	7.25	0.326	0.865	0.224	0.194
3.50	7.00	0.333	0.861	0.230	0.198
3.50	6.75	0.341	0.858	0.235	0.202
3.50	**6.50**	**0.350**	**0.854**	**0.241**	**0.206**
3.50	6.25	0.359	0.851	0.247	0.210
3.50	6.00	0.368	0.847	0.254	0.215
3.50	5.75	0.378	0.843	0.261	0.220
3.50	5.50	0.389	0.838	0.268	0.224
3.50	5.25	0.400	0.834	0.275	0.230
3.50	5.00	0.412	0.829	0.284	0.235
3.50	4.75	0.424	0.824	0.292	0.241
3.50	**4.277**	**0.450**	**0.813**	**0.310**	**0.252**
3.50	4.25	0.452	0.812	0.311	0.253
3.50	4.25	0.452	0.812	0.311	0.253
3.50	4.00	0.467	0.806	0.321	0.259
3.50	3.75	0.483	0.799	0.332	0.266
3.50	3.50	0.500	0.792	0.344	0.273
3.50	3.25	0.519	0.784	0.357	0.280
3.50	3.00	0.538	0.776	0.371	0.288
3.50	2.75	0.560	0.767	0.386	0.296
3.50	2.50	0.583	0.757	0.402	0.304
3.50	2.25	0.609	0.747	0.419	0.313
3.50	2.00	0.636	0.735	0.438	0.322
3.50	1.75	0.667	0.723	0.459	0.332
3.50	1.50	0.700	0.709	0.482	0.342
3.50	1.25	0.737	0.693	0.507	0.352
3.50	1.00	0.778	0.676	0.536	0.362
3.50	0.75	0.824	0.657	0.567	0.373
3.50	0.50	0.875	0.636	0.602	0.383
3.50	0.25	0.933	0.612	0.643	0.393
3.50	0.00	1.000	0.584	0.689	0.402

Lom po armaturi:					
e_{c2} ‰	e_{s1} ‰	x=x/d	z=z/d	w_1 %	m_{sd}
3.50	20.00	0.149	0.938	0.102	0.096
3.45	20.00	0.147	0.939	0.101	0.095
3.40	20.00	0.145	0.940	0.099	0.093
3.35	20.00	0.143	0.941	0.098	0.092
3.30	20.00	0.142	0.942	0.096	0.090
3.25	20.00	0.140	0.943	0.094	0.089
3.20	20.00	0.138	0.944	0.093	0.088
3.15	20.00	0.136	0.944	0.091	0.086
3.10	20.00	0.134	0.945	0.090	0.085
3.05	20.00	0.132	0.946	0.088	0.083
3.00	20.00	0.130	0.947	0.086	0.082
2.95	20.00	0.129	0.948	0.085	0.080
2.90	20.00	0.127	0.949	0.083	0.079
2.85	20.00	0.125	0.950	0.081	0.077
2.80	20.00	0.123	0.951	0.080	0.076
2.75	20.00	0.121	0.952	0.078	0.074
2.70	20.00	0.119	0.953	0.076	0.073
2.65	20.00	0.117	0.954	0.074	0.071
2.60	20.00	0.115	0.955	0.073	0.069
2.55	20.00	0.113	0.956	0.071	0.068
2.50	20.00	0.111	0.957	0.069	0.066
2.45	20.00	0.109	0.958	0.068	0.065
2.40	20.00	0.107	0.958	0.066	0.063
2.35	20.00	0.105	0.959	0.064	0.061
2.30	20.00	0.103	0.960	0.062	0.060
2.25	20.00	0.101	0.961	0.060	0.058
2.20	20.00	0.099	0.962	0.059	0.056
2.15	20.00	0.097	0.963	0.057	0.055
2.10	20.00	0.095	0.964	0.055	0.053
2.05	20.00	0.093	0.965	0.053	0.051
2.00	20.00	0.091	0.966	0.052	0.050
1.95	20.00	0.089	0.967	0.050	0.048
1.90	20.00	0.087	0.968	0.048	0.046
1.85	20.00	0.085	0.969	0.046	0.045
1.80	20.00	0.083	0.970	0.044	0.043
1.75	20.00	0.080	0.970	0.042	0.041
1.70	20.00	0.078	0.971	0.040	0.039
1.65	20.00	0.076	0.972	0.039	0.038
1.60	20.00	0.074	0.973	0.037	0.036
1.55	20.00	0.072	0.974	0.035	0.034
1.50	20.00	0.070	0.974	0.033	0.032
1.45	20.00	0.068	0.975	0.031	0.030
1.40	20.00	0.065	0.976	0.029	0.028
1.35	20.00	0.063	0.976	0.027	0.027
1.30	20.00	0.061	0.977	0.025	0.025
1.25	20.00	0.059	0.977	0.023	0.023
1.20	20.00	0.057	0.978	0.021	0.021
1.15	20.00	0.054	0.978	0.019	0.019
1.10	20.00	0.052	0.978	0.017	0.017
1.05	20.00	0.050	0.977	0.015	0.015
1.00	20.00	0.048	0.976	0.013	0.013
0.95	20.00	0.045	0.975	0.011	0.011
0.90	20.00	0.043	0.972	0.009	0.009
0.85	20.00	0.041	0.967	0.007	0.007
0.80	20.00	0.038	0.957	0.005	0.005
0.75	20.00	0.036	0.934	0.003	0.003
0.70	20.00	0.034	0.838	0.001	0.001
0.65	20.00	0.031	1.323	-0.001	-0.001
0.60	20.00	0.029	1.083	-0.003	-0.003
0.55	20.00	0.027	1.049	-0.005	-0.005
0.50	20.00	0.024	0.992	0.005	0.005
0.45	20.00	0.022	0.993	0.004	0.004
0.40	20.00	0.020	0.993	0.003	0.003
0.35	20.00	0.017	0.994	0.002	0.002
0.30	20.00	0.015	0.995	0.002	0.002
0.25	20.00	0.012	0.996	0.001	0.001
0.20	20.00	0.010	0.997	0.001	0.001
0.15	20.00	0.007	0.998	0.000	0.000
0.10	20.00	0.005	0.998	0.000	0.000
0.05	20.00	0.002	0.999	0.000	0.000

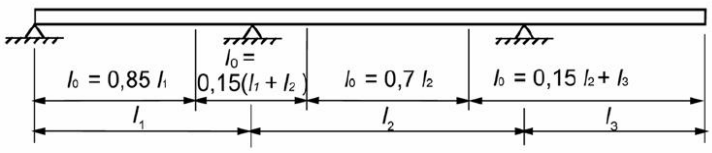
$b_{eff} = \sum b_{eff,i} + b_w \le b$

gde je:

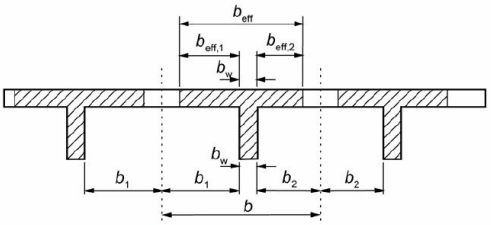
$b_{eff,i} = 0{,}2\, b_i + 0{,}1\, l_0 \le 0{,}2\, l_0$

i

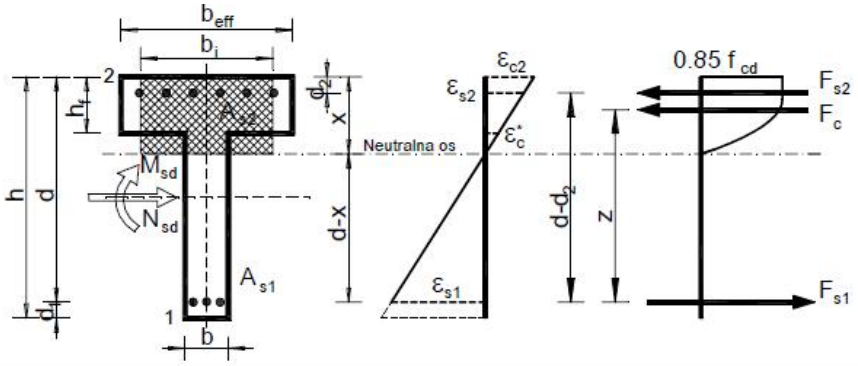
$b_{eff,i} \le b_i$



Slika 5.2: Definicija l_0 za proračun efektivne širine flanše



Slika 5.3: Parametri za efektivnu širinu flanše



h_f/d																						b_{eff}/b							
0.550	0.525	0.500	0.475	0.450	0.425	0.400	0.375	0.350	0.325	0.300	0.275	0.250	0.225	0.200	0.175	0.150	0.125	0.100	0.075	0.050	0.025	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
$\xi = x/d$																						λ_b							
0.550	0.525	0.500	0.475	0.450	0.425	0.400	0.375	0.350	0.325	0.300	0.275	0.250	0.225	0.200	0.175	0.150	0.125	0.100	0.075	0.050	0.025	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	0.550	0.513	0.489	0.464	0.437	0.413	0.386	0.362	0.335	0.309	0.284	0.259	0.232	0.207	0.181	0.155	0.130	0.103	0.078	0.052	0.026	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
		0.550	0.513	0.487	0.461	0.436	0.409	0.383	0.357	0.330	0.303	0.276	0.249	0.221	0.194	0.166	0.139	0.111	0.083	0.056	0.028	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
			0.550	0.513	0.487	0.460	0.434	0.407	0.379	0.351	0.323	0.295	0.266	0.237	0.208	0.178	0.149	0.119	0.090	0.060	0.030	0.99	0.98	0.98	0.98	0.98	0.98	0.98	0.98
				0.550	0.512	0.485	0.459	0.431	0.403	0.374	0.345	0.315	0.285	0.254	0.223	0.192	0.160	0.129	0.097	0.065	0.032	0.98	0.97	0.97	0.97	0.96	0.96	0.96	0.96
					0.550	0.512	0.485	0.457	0.428	0.399	0.368	0.337	0.306	0.273	0.240	0.207	0.173	0.139	0.105	0.070	0.035	0.97	0.96	0.95	0.94	0.94	0.94	0.94	0.93
						0.550	0.511	0.483	0.454	0.425	0.394	0.362	0.329	0.295	0.260	0.224	0.188	0.151	0.114	0.076	0.038	0.96	0.94	0.93	0.92	0.91	0.91	0.91	0.90
							0.550	0.510	0.481	0.451	0.420	0.388	0.354	0.318	0.281	0.243	0.204	0.164	0.124	0.083	0.042	0.95	0.92	0.90	0.89	0.88	0.88	0.87	0.87
								0.550	0.509	0.479	0.448	0.415	0.381	0.344	0.305	0.265	0.223	0.180	0.136	0.091	0.046	0.93	0.90	0.87	0.86	0.85	0.84	0.84	0.83
									0.550	0.508	0.477	0.444	0.409	0.372	0.331	0.289	0.244	0.198	0.150	0.101	0.051	0.91	0.87	0.84	0.83	0.81	0.80	0.80	0.79
										0.550	0.507	0.473	0.439	0.401	0.360	0.316	0.268	0.218	0.166	0.112	0.056	0.90	0.84	0.81	0.79	0.78	0.76	0.76	0.75
											0.550	0.505	0.469	0.432	0.391	0.345	0.295	0.241	0.184	0.125	0.063	0.88	0.82	0.78	0.75	0.74	0.72	0.71	0.70
												0.550	0.502	0.464	0.423	0.378	0.326	0.268	0.206	0.140	0.071	0.86	0.79	0.74	0.72	0.70	0.68	0.67	0.66
													0.550	0.499	0.457	0.412	0.360	0.299	0.232	0.158	0.081	0.84	0.76	0.71	0.68	0.65	0.64	0.62	0.61
														0.550	0.494	0.448	0.397	0.335	0.262	0.181	0.093	0.82	0.73	0.68	0.64	0.61	0.59	0.58	0.57
															0.550	0.488	0.435	0.374	0.298	0.208	0.108	0.80	0.70	0.64	0.60	0.57	0.55	0.53	0.52
																0.550	0.479	0.418	0.342	0.243	0.127	0.78	0.67	0.60	0.56	0.53	0.51	0.49	0.48
																	0.550	0.467	0.392	0.288	0.154	0.76	0.64	0.58	0.53	0.49	0.47	0.45	0.43
																		0.550	0.449	0.347	0.192	0.74	0.62	0.54	0.49	0.45	0.42	0.40	0.38
																			0.550	0.420	0.252	0.72	0.59	0.50	0.45	0.41	0.38	0.36	0.34
																				0.550	0.351	0.71	0.56	0.47	0.41	0.37	0.34	0.31	0.29
																					0.550	0.69	0.53	0.43	0.37	0.33	0.29	0.27	0.25

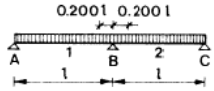
$$b_i = \left[1 - \frac{\alpha_v^*}{\alpha_v}\left(1 - \frac{h_f}{\xi \cdot d}\right) \cdot \left(1 - \frac{b}{b_{eff}}\right)\right] \cdot b_{eff} = \lambda_b \cdot b_{eff}$$

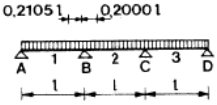
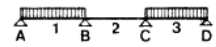
Tablice za odabir armature (grede)

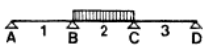
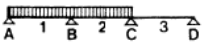
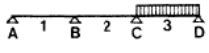
Fi(mm)	kg/m	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
8	0,405	0,50	1,01	1,51	2,01	2,51	3,02	3,52	4,02	4,52	5,03	5,53	6,03	6,54	7,04	7,54
10	0,634	0,79	1,57	2,36	3,14	3,93	4,71	5,50	6,20	7,07	7,85	8,64	9,42	10,21	11,00	11,78
12	0,911	1,13	2,26	3,39	4,52	5,66	6,79	7,92	9,05	10,18	11,31	12,44	13,57	14,70	15,83	16,97
14	1,242	1,54	3,08	4,62	6,16	7,70	9,24	10,78	12,32	13,86	15,39	16,93	18,47	20,01	21,55	23,09
16	1,621	2,01	4,02	6,03	8,04	10,05	12,06	14,07	16,09	18,10	20,11	22,12	24,13	26,14	28,15	30,16
18	2,170	2,54	5,09	7,63	10,18	12,72	15,27	17,81	20,36	22,90	25,45	27,99	30,54	33,08	35,63	38,17
19	2,288	2,84	5,67	8,51	11,34	14,18	17,01	19,85	22,68	25,52	28,35	31,19	34,02	36,86	39,69	42,53
20	2,536	3,14	6,28	9,43	12,57	15,71	18,85	21,99	25,13	28,27	31,42	34,56	37,70	40,84	43,98	47,12
22	3,058	3,80	7,60	11,40	15,21	19,01	22,81	26,64	30,41	34,21	38,01	41,81	45,62	49,42	53,22	57,02
24	3,652	4,52	9,05	13,57	18,10	22,62	27,14	31,67	36,19	40,72	45,24	49,76	54,29	58,81	63,34	67,86
25	3,951	4,91	9,82	14,73	19,64	24,54	29,45	34,36	39,27	44,18	49,09	54,00	58,90	63,81	68,72	73,63
28	4,956	6,16	12,32	18,47	24,63	30,79	36,95	43,10	49,26	55,42	61,58	67,73	73,88	80,05	86,21	92,36
32	6,474	8,04	16,09	24,13	32,17	40,21	48,26	56,30	64,34	72,38	80,42	88,47	96,50	104,55	112,60	120,64
36	8,200	10,18	20,36	30,54	40,72	50,89	61,07	71,25	81,43	91,61	101,79	111,97	122,15	132,32	142,50	152,68
razmak armature/m		100,00	50,00	33,34	25,00	20,00	16,67	14,30	12,50	11,11	10,00	9,10	8,33	7,70	7,14	6,67

Tip	Profili (mm)	Razmaci (mm)	Dimenzije (m)	kg/m2	kg/kom
R 131	5,0x4,2	150x250	6,00x2,20	1,50	19,80
R 131	5,0x4,6	150x250	6,00x2,20	1,63	21,50
R 139	4,2x4,2	100x250	6,00x2,20	1,55	20,50
R 166	4,6x4,2	100x250	6,00x2,20	1,76	23,30
R 166	4,6x4,6	100x250	6,00x2,20	1,85	24,50
R 188	6,0x4,2	150x250	6,00x2,20	1,96	26,00
R 188	6,0x4,6	150x250	6,00x2,20	2,08	27,50
R 196	5,0x4,2	150x250	6,00x2,20	2,00	26,50
R 226	6,0x4,2	125x250	6,00x2,20	2,27	30,00
R 257	7,0x5,0	150x250	6,00x2,20	2,72	35,80
R 283	6,0x4,6	100x250	6,00x2,20	2,77	36,60
R 283	6,0x5,0	100x250	6,00x2,20	2,88	38,00
R 335	8,0x5,0	150x250	6,00x2,20	3,33	44,00
R 335	8,0x6,0	150x250	6,00x2,20	3,63	48,00
R 385	7,0x5,0	100x250	6,00x2,20	3,68	48,60
R 424	9,0x6,0	150x250	6,00x2,20	4,34	57,30
R 503	8,0x5,0	100x200	6,00x2,20	4,77	63,00
R 503	8,0x5,0	100x250	6,00x2,20	4,58	60,50
R 503	8,0x6,0	100x250	6,00x2,20	4,89	64,60
R 524	10,0x6,0	150x250	6,00x2,15	5,15	68,00
R 636	9,0x6,0	100x250	6,00x2,15	5,95	78,50
R 785	10,0x6,0	100x250	6,00x2,15	7,35	97,00
R 785	10,0x6,0	100x200	6,00x2,20	7,39	97,50

Tip	Profili (mm)	Razmaci (mm)	Dimenzije (m)	kg/m2	kg/kom
Q 069	4,2x4,2	200x200	6,00x2,20	1,10	14,50
Q 131	5,0x5,0	150x150	6,00x2,20	2,12	28,00
Q 139	4,2x4,2	100x100	6,00x2,20	2,20	29,05
Q 166	4,6x4,6	100x100	6,00x2,20	2,64	34,90
Q 188	6,0x6,0	150x150	6,00x2,20	3,06	40,40
Q 196	5,0x5,0	100x100	6,00x2,15	3,07	40,50
Q 226	6,0x6,0	125x125	6,00x2,20	3,63	48,00
Q 257	7,0x7,0	150x150	6,00x2,20	4,16	55,00
Q 283	6,0x6,0	100x100	6,00x2,20	4,48	59,15
Q 335	8,0x8,0	150x150	6,00x2,20	5,45	72,00
Q 385	7,0x7,0	100x100	6,00x2,20	6,10	80,60
Q 424	9,0x9,0	150x150	6,00x2,20	6,81	90,00
Q 503	8,0x8,0	100x100	6,00x2,20	8,03	106,00
Q 524	10,0x10,0	150x150	6,00x2,20	8,40	110,90
Q 636	9,0x9,0	100x100	6,00x2,20	10,08	133,05
Q 785	10,0x10,0	100x100	6,00x2,20	12,46	164,50

Način opterećenja	Statička veličina	Način opterećenja u opterećenom polju								
		x = (0,4 ÷ 0,5)l, p	P: 1/2 1/2	P: 1/3 1/3 1/3	P: 1/4 1/2 1/4	P: 1/4 1/4 1/4 1/4	P: 1/6 1/3 1/3 1/6	1/2 1/2	0,4l 0,2l 0,4l	0,3l 0,4l 0,3l
								K = 0,5 · q · l	K = 0,6 · q · l	K = 0,7 · q · l
 Za stalno opterećenje stavlja se G umjesto P, odnosno g, umjesto p	M_{11}	0.070 pl^2	0.156 Fl	0.222 Fl	0.180 Fl	0.258 Fl	0.184 Fl	0.095 Kl	0.094 Kl	0.089 Kl
	M_{12}	-	-	0.111 F	0.039 Fl	0.266 Fl	0.219 Fl	-	-	-
	M_{13}	-	-	-	-	0.023 Fl	-0.080 Fl	-	-	-
	M_{Bmin}	-0.125 pl^2	-0.188 Fl	-0.333 Fl	-0.281 Fl	-0.469 Fl	-0.396 Fl	-0.156 Kl	-0.155 Kl	-0.151 Kl
	$R_A = Q_{1A}$	0.375 pl	0.313 F	0.667F	0.719 F	1.031 F	1.104 F	0.344 K	0.345 K	0.349 K
	R_{Bmax}	1.250 pl	1.375 F	2.667 F	2.563 F	3.938 F	3.792 F	1.3'2 K	1.310 K	1.302 K
	Q_{1Bmin}	-0.625 pl	-0.688 F	-1.333 F	-1.281 F	-1.969 F	-1.896 F	-0.656 K	-0.555 K	-0.651 K
	M_{11max}	0.096 pl^2	0.203 Fl	0.278 Fl	0.215 Fl	0.316 Fl	0.217 Fl	0.129 Kl	0.126 Kl	0.121 Kl
	M_{12max}	-	-	0.222 Fl	0.145 Fl	0.383 FL	0.318 Fl	-	-	-
	M_{13max}	-	-	-	-	0.200 Fl	0.085 Fl	-	-	-
	M_B	-0.063 pl^2	-0.094 Fl	-0.167 Fl	-0.141 Fl	-0.234 Fl	-0.198 Fl	-0.078 Kl	-0.078 Kl	-0.076 Kl
	$R_A = Q_{1Amax}$	0.438 pl	0.406 F	0.833 F	0.859 F	1.266 F	1.302 F	0.422 K	0.422 K	0.424 K
	M_{11min}	-	-0.047 Fl	-0.056 Fl	-0.035 Fl	-0.059 Fl	-0.033 Fl	-0.035 Kl	-0.035 Kl	-0.034 Kl
	M_{12min}	-	-	-0.111 Fl	-0.106 Fl	-0.117 Fl	-0.099 Fl	-	-	-
	M_{13min}	-	-	-	-	-0.176 Fl	-0.165 Fl	-	-	-
	$R_A = Q_{1Amin}$	-0.063 pl	-0.094 F	-0.167 F	-0.141 F	-0.234 F	-0.198 F	-0.078 K	0.078 K	-0.076 K

Način opterećenja	Statička veličina	Način opterećenja u opterećenom polju								
		x = (0,4 ÷ 0,5)l, p	P: 1/2 1/2	P: 1/3 1/3 1/3	P: 1/4 1/2 1/4	P: 1/4 1/4 1/4 1/4	P: 1/6 1/3 1/3 1/6	1/2 1/2	0,4l 0,2l 0,4l	0,3l 0,4l 0,3l
								K = 0,5 · q · l	K = 0,6 · q · l	K = 0,7 · q · l
	M_{11}	0.080 pl^2	0.175 Fl	0.244 Fl	0.194 Fl	0.281 Fl	0.197 Fl	0.108 Kl	0.107 Kl	0.102 Kl
	M_{12}	-	-	0.156 Fl	0.081 Fl	0.313 Fl	0.258 Fl	-	-	-
	M_{13}	-	-	-	-	0.094 Fl	-0.014 Fl			
	M_{21}	0.025 pl^2	0.100 Fl	0.067 Fl	0.025 Fl	0	-0.067 Fl	0.042 Kl	0.040 Kl	0.063 Kl
	M_{22}	-	-	0.067 Fl	0.025 Fl	0.125 Fl	0.100 Fl	-	-	-
	M_B	-0.100 pl^2	-0.150 Fl	-0.267 Fl	-0.225 Fl	-0.375 Fl	-0.317 Fl	-0.125 Kl	-0.124 Kl	-0.121 Kl
	$R_A = Q_{1A}$	0.400 pl	0.350 F	0.733 F	0.775 F	1.125 F	1.183 F	0.375 K	0.376 K	0.379 K
	R_B	1.100 pl	1.150 F	2.267 F	2.225 F	3.375 F	3.317 F	1.125 K	1.124 K	1.121 K
	Q_{1B}	-0.600 pl	-0.650 F	-1.267 F	-1.225 F	-1.875 F	-1.817 F	-0.625 K	-0.624 K	-0.621 K
	$Q_{2B} = -Q_{2C}$	0.500 pl	0.500 F	1.000 F	1.000 F	1.500 F	1.500 F	0.500 K	0.500 K	0.500 K
	$M_{11\,max}$	0.101 pl^2	0.213 Fl	0.289 Fl	0.222 Fl	0.328 Fl	0.224 Fl	0.136 Kl	0.134 Kl	0.128 Kl
	$M_{12\,max}$	-	-	0.244 Fl	0.166 Fl	0.406 Fl	0.338 Fl	-	-	-
	$M_{13\,max}$	-	-	-	-	0.234 Fl	0.118 Fl			
	$M_{21\,min}$	-0.050 pl^2	-0.075 Fl	-0.133 Fl	-0.113 Fl	-0.188 Fl	-0.158 Fl* (-0.167 Fl)	-0.063 Kl	-0.062 Kl	-0.061 Kl
	$M_{22\,min}$	-	-	-0.133 Fl	-0.113 Fl	-0.188 Fl	-0.158 Fl	-	-	-
	M_B	-0.050 pl^2	-0.075 Fl	-0.133 Fl	-0.113 Fl	-0.188 Fl	-0.158 Fl	-0.063 Kl	-0.062 Kl	-0.061 Kl
	$R_A = Q_{1A\,max}$	0.450 pl	0.425 F	0.867 F	0.888 F	1.313 F	1.342 F	0.375 K	0.376 K	0.379 K

Način opterećenja	Statička veličina	Način opterećenja u opterećenom polju								
		x = (0,4 ÷ 0,5)l, p	P: 1/2 1/2	P: 1/3 1/3 1/3	P: 1/4 1/2 1/4	P: 1/4 1/4 1/4 1/4	P: 1/6 1/3 1/3 1/6	1/2 1/2	0,4l 0,2l 0,4l	0,3l 0,4l 0,3l
								K = 0,5 · q · l	K = 0,6 · q · l	K = 0,7 · q · l
	M_{11min}	-0.025 pl^2	-0.038 Fl	-0.044 Fl	-0.028 Fl	-0.047 Fl	-0.026 Fl	-0.028 Kl	-0.028 Kl	-0.027 Kl
	$M_{12\,min}$	-	-	-0.089 Fl	-0.084 Fl	-0.094 Fl	-0.079 Fl	-	-	-
	$M_{13\,min}$	-	-	-	-	-0.141 Fl	-0.132 Fl			
	$M_{21\,max}$	0.075 pl^2	0.175 Fl	0.200 Fl	0.138 Fl	0.188 Fl	0.092 Fl* (0.100 Fl)	0.104 Kl	0.102 Kl	0.096 Kl
	$M_{22\,max}$	-	-	0.200 Fl	0.138 Fl	0.313 Fl	0.258 Fl	-		-
	M_B	-0.050 pl^2	-0.075 Fl	-0.133 Fl	-0.113 Fl	-0.188 Fl	-0.158 Fl	-0.063 Kl	-0.062 Kl	-0.061 Kl
	$R_A = Q_{1A\,min}$	-0.050 pl	-0.075 F	-0.133 F	-0.113 F	-0.188 F	-0.158 F	-0.063 K	-0.062 K	-0.061 K
	$M_{B\,min}$	-0.117 pl^2	-0.175 Fl	-0.311 Fl	-0.263 Fl	-0.438 Fl	-0.369 Fl	-0.146 Kl	-0.145 Kl	-0.142 Kl
	M_C	-0.033 pl^2	-0.050 Fl	-0.089 Fl	-0.075 Fl	-0.125 Fl	-0.106 Fl	-0.041 Kl	-0.041 Kl	-0.041 Kl
	$R_{B\,max}$	1.200 pl	1.300 F	2.533 F	2.450 F	3.750 F	3.633 F	1.251 K	1.249 K	1.244 K
	$Q_{1B\,min}$	-0.617 pl	-0.675 F	-1.311 F	-1.263 F	-1.937 F	-1.869 F	-0.646 K	-0.645 K	-0.642 K
	$Q_{2B\,max}$	0.583 pl	0.625 F	1.222 F	1.188 F	1.813 F	1.764 F	0.605 K	0.604 K	0.602 K
	$M_{B\,max}$	0.017 pl^2	0.025 Fl	0.044 Fl	0.038 Fl	0.063 Fl	0.053 Fl	0.022 Kl	0.021 Kl	0.021 Kl
	M_C	-0.067 pl^2	-0.100 Fl	-0.178 Fl	-0.150 Fl	-0.250 Fl	-0.211 Fl	-0.083 Kl	-0.083 Kl	-0.081 Kl
	$Q_{1B\,max}$	0.017 pl	0.025 F	0.044 F	0.038 F	0.063 F	0.053 F	0.022 K	0.021 K	0.021 K
	$Q_{2B\,min}$	-0.083 pl	-0.125 F	-0.222 F	-0.188 F	-0.313 F	-0.264 F	-0.105 K	-0.104 K	-0.102 K