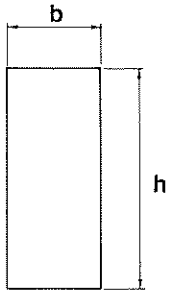
RECTANGULAR BEAMS

Normal Weight Concrete



f'_c = 5000 psi

f_{pu} = 270,000 psi

Section Properties							
Designation	b (in.)	h (in.)	A (in.²)	I (in.⁴)	Y_b (in.)	Z (in.³)	wt (plf)
12RB16	12	16	192	4096	8.00	512	200
12RB20	12	20	240	8000	10.00	800	250
12RB24	12	24	288	13,824	12.00	1152	300
12RB28	12	28	336	21,952	14.00	1568	350
12RB32	12	32	384	32,768	16.00	2048	400
12RB36	12	36	432	46,656	18.00	2592	450
16RB24	16	24	384	18,432	12.00	1536	400
16RB28	16	28	448	29,269	14.00	2091	467
16RB32	16	32	512	43,691	16.00	2731	533
16RB36	16	36	576	62,208	18.00	3456	600
16RB40	16	40	640	85,333	20.00	4267	667

Key

3246 — Safe superimposed service load, plf

0.4 — Estimated camber at erection, in.

0.1 — Estimated long-time camber, in.

Safe loads shown include 50% dead load and 50% live load. 800 psi top tension has been allowed, therefore additional top reinforcement is required.

Table of safe superimposed service load (plf) and cambers

Designation	No. Strand	e	Span, ft.																	
			16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50
12RB16	5	5.67	3246 0.4 0.1	2527 0.5 0.1	2012 0.6 0.2	1632 0.7 0.2	1342 0.7 0.2	1117 0.8 0.2												
12RB20	8	6.60	5816 0.3 0.1	4548 0.4 0.1	3641 0.5 0.1	2970 0.6 0.2	2459 0.7 0.2	2062 0.8 0.2	1747 0.9 0.2	1493 1.0 0.2	1285 1.1 0.2	1112 1.2 0.2								
12RB24	10	7.76	8585 0.3 0.1	6726 0.4 0.1	5397 0.4 0.1	4413 0.5 0.1	3665 0.6 0.1	3083 0.7 0.2	2621 0.8 0.2	2248 0.9 0.2	1940 1.0 0.2	1684 1.1 0.2	1470 1.2 0.2	1288 1.3 0.2	1133 1.3 0.2	1000 1.4 0.1				
12RB28	12	8.89		9074 0.3 0.1	7290 0.4 0.1	5970 0.5 0.1	4966 0.5 0.1	4184 0.6 0.2	3564 0.7 0.2	3064 0.8 0.2	2655 0.9 0.2	2316 1.0 0.2	2031 1.1 0.2	1791 1.1 0.2	1585 1.2 0.2	1409 1.3 0.2	1255 1.4 0.2	1122 1.4 0.1	1002 1.5 0.1	
12RB32	13	10.48			9584 0.3 0.1	7858 0.4 0.1	6545 0.5 0.1	5524 0.5 0.1	4713 0.6 0.2	4059 0.7 0.2	3524 0.8 0.2	3080 0.9 0.2	2708 0.9 0.2	2394 1.0 0.2	2125 1.1 0.2	1894 1.2 0.2	1694 1.2 0.2	1519 1.3 0.1	1365 1.4 0.1	1230 1.4 0.1
12RB36	15	11.64					8450 0.4 0.1	7140 0.5 0.1	6100 0.6 0.1	5261 0.6 0.2	4575 0.7 0.2	4006 0.8 0.2	3530 0.9 0.2	3123 0.9 0.2	2775 1.0 0.2	2475 1.1 0.2	2215 1.2 0.2	1989 1.2 0.2	1790 1.3 0.2	1614 1.4 0.1
16RB24	13	7.86		8847 0.4 0.1	7098 0.4 0.1	5803 0.5 0.1	4819 0.6 0.1	4052 0.7 0.1	3444 0.8 0.2	2954 0.9 0.2	2552 1.0 0.2	2220 1.1 0.2	1941 1.2 0.1	1705 1.2 0.1	1503 1.3 0.1	1330 1.4 0.1	1180 1.5 0.0			
16RB28	13	8.89			9720 0.4 0.1	7959 0.5 0.1	6621 0.5 0.1	5579 0.6 0.2	4752 0.7 0.2	4086 0.8 0.2	3540 0.9 0.2	3087 1.0 0.2	2708 1.1 0.2	2388 1.1 0.2	2114 1.2 0.2	1878 1.3 0.2	1674 1.4 0.2	1496 1.4 0.1	1335 1.5 0.1	1194 1.5 0.1
16RB32	18	10.29					8808 0.5 0.1	7434 0.5 0.1	6343 0.6 0.2	5464 0.7 0.2	4744 0.8 0.2	4147 0.9 0.2	3647 0.9 0.2	3224 1.0 0.2	2863 1.1 0.2	2549 1.2 0.2	2275 1.3 0.2	2036 1.3 0.2	1827 1.4 0.1	1642 1.5 0.1
16RB36	20	11.64						9519 0.5 0.1	8133 0.6 0.1	7015 0.6 0.2	6100 0.7 0.2	5342 0.8 0.2	4706 0.9 0.2	4165 0.9 0.2	3700 1.0 0.2	3300 1.1 0.2	2954 1.2 0.2	2651 1.2 0.2	2386 1.3 0.2	2152 1.4 0.1
16RB40	22	13.00								8647 0.6 0.1	7527 0.6 0.1	6599 0.7 0.1	5821 0.8 0.2	5163 0.9 0.2	4601 0.9 0.2	4117 1.0 0.2	3698 1.1 0.2	3332 1.1 0.1	3011 1.2 0.1	2728 1.3 0.1