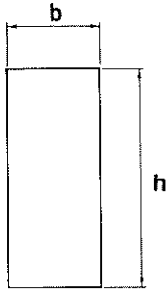


# RECTANGULAR BEAMS

Normal Weight Concrete



$f'_c = 5,000$  psi  
 $f_{pu} = 270,000$  psi  
 ½ in. diameter  
 low-relaxation strand

Section Properties							
Designation	b (in.)	h (in.)	A (in. <sup>2</sup> )	I (in. <sup>4</sup> )	y <sub>b</sub> (in.)	Z (in. <sup>3</sup> )	wt (plf)
12RB16	12	16	192	4,096	8.00	512	200
12RB20	12	20	240	8,000	10.00	800	250
12RB24	12	24	288	13,824	12.00	1,152	300
12RB28	12	28	336	21,952	14.00	1,568	350
12RB32	12	32	384	32,768	16.00	2,048	400
12RB36	12	36	432	46,656	18.00	2,592	450
16RB24	16	24	384	18,432	12.00	1,536	400
16RB28	16	28	448	29,269	14.00	2,091	467
16RB32	16	32	512	43,691	16.00	2,731	533
16RB36	16	36	576	62,208	18.00	3,456	600
16RB40	16	40	640	85,333	20.00	4,267	667

1. Check local area for availability of other sizes.
2. Safe loads shown include 50% dead load and 50% live load. 800 psi top tension has been allowed, therefore additional top reinforcement is required.
3. Safe loads can be significantly increased by use of structural composite topping.

**Key**

- 3,344 — Safe superimposed service load, plf
- 0.4 — Estimated camber at erection, in.
- 0.1 — Estimated long-time camber, in.

**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	3,344	2,605	2,075	1,684	1,386	1,154	970	0.4	0.5	0.6	0.7	0.8	0.9	1.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2																														
12RB20	8	6.60	6,101	4,773	3,823	3,121	2,585	2,166	1,833	1,565	1,345	1,163	1,010	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3																	
12RB24	10	7.76	8,884	6,957	5,578	4,558	3,782	3,178	2,699	2,312	1,996	1,734	1,514	1,328	1,170	1,033	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4											
12RB28	12	8.89	9,502	7,630	6,245	5,192	4,372	3,721	3,197	2,767	2,411	2,113	1,861	1,645	1,460	1,299	1,159	1,035	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4					
12RB32	13	10.48	8,238	6,859	5,785	4,933	4,246	3,683	3,217	2,826	2,495	2,213	1,970	1,760	1,576	1,415	1,272	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.5	1.6	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.3				
12RB36	15	11.64	8,734	7,376	6,298	5,428	4,716	4,126	3,632	3,214	2,856	2,549	2,283	2,050	1,846	1,666	0.5	0.5	0.6	0.7	0.8	0.9	1.0	1.0	1.1	1.2	1.3	1.4	1.5	1.5	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4						
16RB24	13	7.86	9,278	7,439	6,079	5,044	4,239	3,600	3,084	2,662	2,313	2,020	1,772	1,560	1,378	1,220	1,082	961	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.6	1.7	1.8	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	
16RB28	13	8.89	9,022	7,383	6,137	5,167	4,397	3,776	3,267	2,846	2,493	2,194	1,939	1,720	1,530	1,364	1,218	1,089	0.4	0.4	0.5	0.6	0.6	0.7	0.8	0.9	1.0	1.0	1.1	1.2	1.2	1.3	1.3	1.3	1.3	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0
16RB32	18	10.29	9,145	7,713	6,577	5,661	4,911	4,289	3,768	3,327	2,951	2,627	2,346	2,101	1,886	1,697	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.1	1.2	1.3	1.4	1.5	1.6	1.7	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4					
16RB36	20	11.64	9,834	8,397	7,237	6,288	5,502	4,843	4,285	3,809	3,399	3,043	2,733	2,461	2,221	0.5	0.6	0.7	0.8	0.9	1.0	1.0	1.1	1.2	1.3	1.4	1.5	1.5	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4							
16RB40	22	13.00	9,010	7,839	6,867	6,054	5,365	4,777	4,271	3,832	3,449	3,113	2,817	0.6	0.7	0.8	0.9	1.0	1.0	1.1	1.1	1.2	1.3	1.4	1.4	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4										