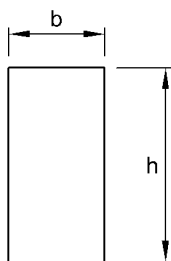


# RECTANGULAR BEAMS

Normal Weight Concrete



$f'_c = 5,000$  psi  
 $f_{pu} = 270,000$  psi  
 1/2 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.	S 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	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

1. Check local area for availability of other sizes.
2. Safe loads shown include 50% superimposed 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**

- 3553 – Safe superimposed service load, plf.
- 0.4 – Estimated camber at erection, in.
- 0.2 – Estimated long-time camber, in.

**Table of safe superimposed service load (plf) and cambers (in.)**

Designation	No. Strand	y <sub>s</sub> (end) in. y <sub>s</sub> (center) in.	Span, ft																		
			16	18	20	22	24	26	28	30	32	34	36	40	42	44	46	48	50	52	
12RB16	58-S	3.00	3553	2772	2212	1799	1484	1239	1045												
		3.00	0.4	0.5	0.6	0.8	0.9	1.0	1.1												
			0.2	0.2	0.2	0.2	0.3	0.3	0.3												
12RB20	88-S	3.00	6163	4825	3867	3159	2620	2201	1868	1600	1380	1198	1046								
		3.00	0.4	0.5	0.6	0.7	0.9	1.0	1.1	1.3	1.4	1.5	1.7								
			0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5								
12RB24	108-S	3.60	8950	7018	5636	4613	3835	3230	2749	2362	2045	1782	1562	1375	1216	1079	960				
		3.60	0.4	0.4	0.5	0.7	0.8	0.9	1.0	1.1	1.3	1.4	1.5	1.6	1.8	1.9	2.0				
			0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.6			
12RB28	128-S	4.00	9781	7866	6448	5370	4532	3866	3329	2890	2525	2220	1962	1741	1552	1387	1244	1118	1006		
		4.00	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.3	1.4	1.5	1.7	1.8	1.9	2.0	2.1	2.2		
			0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	
12RB32	138-S	4.77	8320	6936	5859	5005	4316	3752	3284	2892	2561	2278	2034	1823	1639	1477	1334				
		4.77	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	1.8	1.9				
			0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6			
12RB36	158-S	5.07	9015	7624	6521	5631	4902	4298	3792	3364	2999	2684	2411	2173	1964	1780					
		5.07	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	1.8					
			0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7			
16RB24	138-S	3.54	9397	7547	6177	5136	4325	3682	3164	2739	2387	2092	1843	1629	1446	1287	1149	1027			
		3.54	0.4	0.5	0.6	0.8	0.9	1.0	1.1	1.2	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1			
			0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.5		
16RB28	148-S	3.71	8730	7272	6137	5237	4510	3915	3423	3010	2660	2362	2105	1883	1688	1518	1368				
		3.71	0.5	0.6	0.7	0.8	0.9	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	1.9				
			0.2	0.2	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	0.4	0.4		
16RB32	188-S	4.67	9340	7891	6741	5813	5054	4425	3897	3451	3070	2742	2458	2210	1992	1800					
		4.67	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.5	1.6	1.7	1.8	1.9	2.0					
			0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7			
16RB36	208-S	5.40	9946	8505	7343	6391	5603	4942	4383	3905	3494	3138	2827	2555	2314						
		5.40	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8						
			0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6		
16RB40	228-S	6.00	9122	7949	6976	6160	5470	4881	4374	3935	3552	3215	2918								
		6.00	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7								
			0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6		