

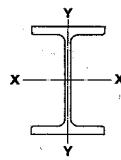
# **HANDBOOK OF STEEL CONSTRUCTION**

**FIRST EDITION  
SECOND PRINTING DECEMBER 1967**



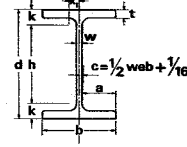
**CANADIAN  
INSTITUTE OF STEEL CONSTRUCTION  
1815 Yonge Street, Toronto 7, Ontario**

**WIDE FLANGE SHAPES**  
**36 WF - 27WF**  
**PROPERTIES**



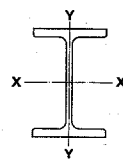
Nominal Size and Weight per Foot	Total Area	Area dw	h/w	d/A <sub>f</sub>	Axis X-X				Axis Y-Y		
					I <sub>x</sub>	S <sub>x</sub>	r <sub>x</sub>	Z <sub>x</sub>	I <sub>y</sub>	S <sub>y</sub>	r <sub>y</sub>
Lb.	In. <sup>2</sup>	In. <sup>2</sup>		In. <sup>-1</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.	In. <sup>3</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.
<b>36 x 16½</b>											
*300	88.17	34.70	32.9	1.31	20290	1105	15.17	1255	1225	147	3.73
*280	82.32	32.30	35.1	1.40	18819	1031	15.12	1167	1128	136	3.70
*260	76.56	30.62	36.8	1.52	17234	951	15.00	1076	1021	123	3.65
*245	72.03	28.92	38.8	1.62	16092	892	14.95	1008	945	114	3.62
*230	67.73	27.45	40.7	1.73	14988	836	14.88	943	871	106	3.59
<b>36 x 12</b>											
*194	57.11	28.09	41.8	2.39	12103	664	14.56	767	355	58.7	2.49
*182	53.54	26.33	44.4	2.55	11282	621	14.52	717	328	54.3	2.47
*170	49.98	24.59	47.4	2.73	10470	579	14.47	667	301	50.0	2.45
*160	47.09	23.51	49.3	2.94	9739	541	14.38	623	275	45.9	2.42
*150	44.16	22.40	51.5	3.19	9012	503	14.29	580	250	41.8	2.38
*135	39.70	21.26	53.8	3.75	7796	439	14.01	509	207	34.7	2.28
<b>33 x 15½</b>											
*240	70.52	27.81	34.5	1.51	13585	811	13.88	918	874	110	3.52
*220	64.73	25.77	36.9	1.65	12312	741	13.79	836	782	99.0	3.48
*200	58.79	23.60	40.0	1.82	11048	670	13.71	754	692	87.8	3.43
<b>33 x 11½</b>											
*152	44.71	21.27	46.9	2.74	8148	486	13.50	558	256	44.3	2.39
*141	41.51	20.15	49.2	3.01	7442	447	13.39	513	230	39.8	2.35
*130	38.26	19.20	51.3	3.36	6699	405	13.23	466	201	35.0	2.29
*118	34.71	18.20	53.7	3.88	5887	358	13.02	414	170	29.7	2.22
<b>30 x 15</b>											
*210	61.78	23.54	33.2	1.53	9872	650	12.64	734	708	93.7	3.38
*190	55.90	21.39	36.3	1.69	8826	586	12.57	660	625	83.1	3.34
*172	50.65	19.57	39.3	1.87	7892	528	12.48	593	550	73.4	3.30
<b>30 x 10½</b>											
*132	38.83	18.63	43.7	2.87	5753	380	12.17	437	185	35.1	2.18
*124	36.45	17.64	45.9	3.08	5347	355	12.11	407	170	32.3	2.16
*116	34.13	16.92	47.7	3.36	4919	328	12.00	378	153	29.2	2.12
*108	31.77	16.34	49.0	3.74	4461	299	11.85	346	135	25.8	2.06
*99	29.11	15.47	51.5	4.23	3989	269	11.70	312	117	22.4	2.00
<b>27 x 14</b>											
*177	52.10	19.80	31.7	1.63	6729	493	11.36	557	519	73.7	3.16
*160	47.04	17.82	35.0	1.80	6019	444	11.31	504	458	65.3	3.12
*145	42.68	16.13	38.3	1.97	5414	403	11.26	452	407	58.3	3.09

**WIDE FLANGE SHAPES**  
**36 WF - 27 WF**  
**DIMENSIONS**

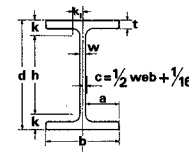


Wt. per Foot	Depth d		Flange				Web Thickness w		Distance				
			Width b		Mean Thickness t				a	h	k	k <sub>1</sub>	c
Lb.	In.		In.		In.		In.	In.	In.	In.	In.	In.	
300	36.72	36%	16.66	16%	1.68	1 1/16	.945	1 5/16	7%	31 1/2	2 13/16	1 1/2	9/16
280	36.50	36 1/2	16.60	16%	1.57	1 1/16	.885	7/8	7%	31 1/2	2 11/16	1 7/16	1/2
260	36.24	36 1/4	16.56	16 1/2	1.44	1 7/16	.845	7/8	7%	31 1/2	2 9/16	1 7/16	1/2
245	36.06	36	16.51	16 1/2	1.35	1 1/2	.802	13/16	7%	31 1/2	2 7/16	1 7/16	7/16
230	35.88	35 1/2	16.48	16 1/2	1.26	1 1/4	.765	3/4	7%	31 1/2	2%	1 1/2	7/16
194	36.48	36 1/2	12.12	12%	1.26	1 1/4	.770	13/16	5%	32 1/4	2%	1 3/16	7/16
182	36.32	36%	12.07	12%	1.18	1 1/16	.725	3/4	5%	32 1/4	2 1/16	1 3/16	7/16
170	36.16	36%	12.03	12	1.10	1 1/8	.680	11/16	5%	32 1/4	1 15/16	1 3/16	7/16
160	36.00	36	12.00	12	1.02	1	.653	1 1/16	5%	32 1/4	1 1/2	1 1/8	3/8
150	35.84	35%	11.97	12	.940	1 1/16	.625	5/8	5%	32 1/4	1 13/16	1 1/8	3/8
135	35.55	35 1/2	11.94	12	.794	1 1/16	.598	5/8	5%	32 1/4	1 1/2	1 1/8	3/8
240	33.50	33 1/2	15.86	15%	1.40	1 1/8	.830	7/8	7 1/2	28%	2 7/16	1 3/8	1/2
220	33.25	33 1/4	15.81	15%	1.28	1 1/4	.775	13/16	7 1/2	28%	2 3/16	1 3/16	7/16
200	33.00	33	15.75	15%	1.15	1 1/8	.715	3/4	7 1/2	28%	2 3/16	1 3/16	7/16
152	33.50	33 1/2	11.56	11%	1.06	1 1/16	.635	5/8	5 1/2	29%	1 3/8	1 1/16	3/8
141	33.31	33 1/4	11.54	11 1/2	.960	1 1/16	.605	5/8	5 1/2	29%	1 3/8	1 1/16	3/8
130	33.10	33%	11.51	11 1/2	.855	7/8	.580	9/16	5 1/2	29%	1 11/16	1 1/16	3/8
118	32.86	32%	11.48	11 1/2	.738	3/4	.554	9/16	5 1/2	29%	1 1/16	1 1/16	5/16
210	30.38	30%	15.10	15%	1.32	1 1/16	.775	13/16	7 1/8	25%	2 5/16	1 5/16	7/16
190	30.12	30%	15.04	15	1.18	1 1/16	.710	3/4	7 1/8	25%	2 3/16	1 5/16	7/16
172	29.88	29%	14.98	15	1.06	1 1/16	.655	11/16	7 1/8	25%	2 1/16	1 1/4	3/8
132	30.30	30 1/4	10.55	10 1/2	1.00	1	.615	5/8	5	26%	1 11/16	1	3/8
124	30.16	30%	10.52	10 1/2	.930	1 1/16	.585	5/8	5	26%	1 1/8	1	3/8
116	30.00	30	10.50	10 1/2	.850	7/8	.564	9/16	5	26%	1 1/8	1	3/8
108	29.82	29%	10.48	10 1/2	.760	3/4	.548	9/16	5	26%	1 1/2	1	3/8
99	29.64	29%	10.46	10 1/2	.670	1 1/16	.522	1/2	5	26%	1 1/8	1	5/16
177	27.31	27%	14.09	14 1/2	1.19	1 3/16	.725	3/4	6%	23	2 1/2	1 1/4	7/16
160	27.08	27 1/2	14.02	14	1.08	1 1/16	.658	11/16	6%	23	2 1/16	1 3/16	3/8
145	26.88	26%	13.96	14	.975	1	.600	5/8	6%	23	1 15/16	1 3/16	3/8

**WIDE FLANGE SHAPES**  
**27 WF - 18 WF**  
PROPERTIES



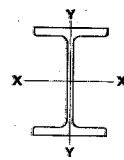
Nominal Size and Weight per Foot	Area	Area dw	h/w	d/A <sub>y</sub>	Axis X-X				Axis Y-Y		
					I <sub>x</sub>	S <sub>x</sub>	r <sub>x</sub>	Z <sub>x</sub>	I <sub>y</sub>	S <sub>y</sub>	r <sub>y</sub>
Lb.	In. <sup>2</sup>	In. <sup>2</sup>		In. <sup>-1</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.	In. <sup>3</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.
<b>27 x 10</b>											
*114	33.53	15.55	42.1	2.91	4080	299	11.03	343	150	29.7	2.11
*102	30.01	14.02	46.3	3.27	3604	266	10.96	304	130	25.9	2.08
* 94	27.65	13.19	49.0	3.61	3267	243	10.87	278	115	23.0	2.04
* 84	24.71	12.36	51.8	4.21	2825	212	10.69	243	95.7	19.2	1.97
<b>24 x 14</b>											
*160	47.04	16.22	31.6	1.55	5110	414	10.42	464	493	69.9	3.23
*145	42.62	14.89	34.1	1.71	4561	372	10.34	416	434	61.8	3.19
*130	38.21	13.70	36.7	1.93	4010	331	10.24	369	375	53.6	3.13
<b>24 x 12</b>											
120	35.29	13.52	37.5	2.16	3635	299	10.15	337	254	42.0	2.68
110	32.36	12.32	40.9	2.34	3315	274	10.12	308	229	38.0	2.66
100	29.43	11.23	44.6	2.58	2987	249	10.08	278	204	33.9	2.63
<b>24 x 9</b>											
94	27.63	12.53	41.4	3.07	2683	221	9.85	253	102	22.6	1.92
84	24.71	11.32	45.5	3.47	2364	196	9.78	224	88.3	19.6	1.89
76	22.37	10.52	48.6	3.90	2096	175	9.68	200	76.5	17.0	1.85
68	20.00	9.86	51.4	4.54	1814	153	9.53	175	63.8	14.2	1.79
<b>21 x 13</b>											
*142	41.76	14.14	26.9	1.49	3403	317	9.03	357	386	58.8	3.04
*127	37.34	12.49	30.2	1.65	3017	284	8.99	318	339	51.8	3.01
*112	32.93	11.07	33.7	1.87	2621	250	8.92	278	290	44.6	2.96
<b>21 x 9</b>											
* 96	28.21	12.16	31.3	2.50	2089	198	8.60	226	109	24.2	1.97
* 82	24.10	10.41	36.1	2.93	1752	168	8.53	192	89.6	20.0	1.93
<b>21 x 8 1/4</b>											
73	21.46	9.66	40.9	3.46	1600	151	8.64	172	66.2	16.0	1.76
68	20.02	9.09	43.3	3.73	1478	140	8.59	160	60.4	14.6	1.74
62	18.23	8.40	46.6	4.15	1327	126	8.53	144	53.1	12.9	1.71
55	16.18	7.80	49.7	4.88	1141	110	8.40	125	44.0	10.7	1.65
50	14.64	6.84	56.4	5.23	1042	101	8.44	114	39.8	9.8	1.68
<b>18 x 11 1/4</b>											
*114	33.51	11.00	25.4	1.58	2034	220	7.79	248	256	43.2	2.76
*105	30.86	10.15	27.3	1.71	1852	202	7.75	226	231	39.2	2.73
* 96	28.22	9.30	29.5	1.86	1675	184	7.70	206	207	35.2	2.71



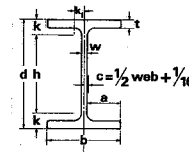
**WIDE FLANGE SHAPES**  
**27 WF - 18 WF**  
DIMENSIONS

Wt. per Foot	Depth d	Flange		Web		Distance							
		Width b	Mean Thickness t	Thickness w		a	h	k	k <sub>f</sub>	c			
Lb.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.			
114	27.28	27%	10.07	10%	.932	1 1/16	.570	3/16	4 3/4	24	1 5/8	1 5/16	3/8
102	27.07	27%	10.02	10	.827	1 3/16	.518	1/2	4 3/4	24	1 1/16	7/8	5/16
94	26.91	26%	9.99	10	.747	3/4	.490	1/2	4 3/4	24	1 7/16	7/8	5/16
84	26.69	26%	9.96	10	.636	3/4	.463	7/16	4 3/4	24	1 3/8	7/8	5/16
160	24.72	24%	14.09	14 1/4	1.14	1 1/8	.656	1 1/16	6 3/4	20 1/2	2	1	3/8
145	24.49	24%	14.04	14	1.02	1	.608	3/8	6 3/4	20 1/2	1 1/8	1	3/8
130	24.25	24%	14.00	14	.900	3/8	.565	3/8	6 3/4	20 1/2	1 3/8	1	3/8
120	24.31	24%	12.09	12 1/2	.930	1 1/16	.556	3/8	5 1/2	20 1/2	1 1 1/16	1	3/8
110	24.16	24%	12.04	12	.855	3/8	.510	1/2	5 1/2	20 1/2	1 1/8	1 1/16	5/16
100	24.00	24	12.00	12	.775	3/8	.468	1/2	5 1/2	20 1/2	1 1/8	1 1/16	5/16
94	24.29	24%	9.06	9	.872	3/8	.516	1/2	4 1/4	21 1/2	1 7/16	1 3/16	5/16
84	24.09	24%	9.02	9	.772	3/8	.470	1/2	4 1/4	21 1/2	1 3/8	1 3/16	5/16
76	23.91	23%	8.98	9	.682	1 1/16	.440	7/16	4 1/4	21 1/2	1 1/4	1 3/16	5/16
68	23.71	23%	8.96	9	.582	3/8	.416	7/16	4 1/4	21 1/2	1 3/8	3/4	1/4
142	21.46	21 1/2	13.13	13 3/8	1.10	1 1/8	.659	1 1/16	6 1/4	17 1/2	1 1/8	1	7/16
127	21.24	21 1/4	13.06	13	.985	1	.588	3/8	6 1/4	17 1/2	1 3/4	1 1/16	3/8
112	21.00	21	13.00	13	.865	3/8	.527	3/8	6 1/4	17 1/2	1 1/8	7/8	5/16
96	21.14	21 1/8	9.04	9	.935	1 1/16	.575	3/8	4 1/4	18	1 1/16	1 1/16	3/8
82	20.86	20%	8.96	9	.795	1 3/16	.499	1/2	4 1/4	18	1 7/16	7/8	5/16
73	21.24	21 1/8	8.30	8 1/4	.740	3/8	.455	1/2	4	18 1/2	1 1/16	1 3/16	5/16
68	21.13	21%	8.27	8 1/4	.685	1 1/16	.430	7/16	4	18 1/2	1 1/4	1 3/16	5/16
62	20.99	21	8.24	8 1/4	.615	3/8	.400	3/8	4	18 1/2	1 3/16	3/4	1/4
55	20.80	20%	8.22	8 1/4	.522	1/2	.375	3/8	4	18 1/2	1 1/16	3/4	1/4
50	20.73	20%	8.17	8 1/4	.485	1/2	.330	5/16	4	18 1/2	1	3/4	1/4
114	18.48	18 1/2	11.83	11 7/8	.991	1	.595	3/8	5 1/2	15 1/2	1 1 1/16	1 1/16	3/8
105	18.32	18%	11.79	11 3/4	.911	1 1/16	.554	3/8	5 1/2	15 1/2	1 1/8	1 1/16	3/8
96	18.16	18%	11.75	11 3/4	.831	1 3/16	.512	1/2	5 1/2	15 1/2	1 1/2	7/8	5/16

**WIDE FLANGE SHAPES**  
**18 WF - 16 WF**  
PROPERTIES



Nominal Size and Weight per Foot	Area	Area dw	h/w	d/A <sub>f</sub>	Axis X-X				Axis Y-Y		
					I <sub>x</sub>	S <sub>x</sub>	r <sub>x</sub>	Z <sub>x</sub>	I <sub>y</sub>	S <sub>y</sub>	r <sub>y</sub>
Lb.	In. <sup>2</sup>	In. <sup>2</sup>		In. <sup>-1</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.	In. <sup>3</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.
<b>18 x 8 3/4</b>											
* 85	24.97	9.64	29.2	2.28	1430	156	7.57	178	99.4	22.5	2.00
* 77	22.63	8.63	32.4	2.49	1287	142	7.54	160	88.6	20.2	1.98
* 70	20.56	7.88	35.1	2.74	1154	128	7.49	145	78.5	17.9	1.95
* 64	18.80	7.20	38.2	2.99	1046	117	7.46	132	70.3	16.1	1.93
<b>18 x 7 1/2</b>											
60	17.64	7.59	38.2	3.48	984	108	7.47	123	47.1	12.5	1.63
55	16.19	7.07	40.7	3.82	890	98.2	7.41	112	42.0	11.1	1.61
50	14.71	6.44	44.3	4.22	801	89.0	7.38	101	37.2	9.9	1.59
45	13.24	5.98	47.4	4.79	704	78.9	7.30	89.8	31.9	8.5	1.55
40	11.73	5.32	52.9	5.42	618	69.7	7.27	78.8	27.3	7.3	1.55
35	10.24	4.66	59.8	6.24	533	60.6	7.23	68.3	22.9	6.2	1.53
<b>16 x 11 1/2</b>											
*96	28.22	8.73	24.5	1.62	1355	166	6.93	186	207	35.9	2.71
*88	25.87	8.14	26.0	1.77	1223	151	6.87	169	185	32.2	2.67
<b>16 x 8 1/2</b>											
*78	22.92	8.63	25.3	2.17	1043	128	6.74	146	87.5	20.4	1.95
*71	20.86	7.85	27.5	2.38	937	116	6.70	132	77.9	18.2	1.93
*64	18.80	7.09	30.2	2.63	834	104	6.66	118	68.4	16.1	1.91
*58	17.04	6.46	32.9	2.91	746	94.1	6.62	106	60.5	14.3	1.88
<b>16 x 7</b>											
50	14.70	6.18	36.8	3.66	655	80.7	6.68	92.7	34.8	9.8	1.54
45	13.24	5.58	40.5	4.07	583	72.4	6.64	82.0	30.5	8.7	1.52
40	11.77	4.91	45.6	4.54	516	64.4	6.62	72.7	26.5	7.6	1.50
36	10.59	4.74	46.8	5.30	446	56.3	6.49	63.9	22.1	6.3	1.45

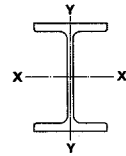


**WIDE FLANGE SHAPES**  
**18 WF - 16 WF**  
DIMENSIONS

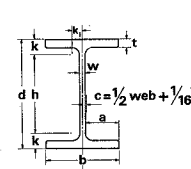
Wt. per Foot	Depth d		Flange		Web Thickness w	Distance							
			Width b	Mean Thickness t		a	h	k	k <sub>1</sub>	c			
Lb.	In.		In.	In.	In.	In.	In.	In.	In.	In.			
85	18.32	18%	8.84	8%	.911	1 5/16	.526	3/16	4 1/2	15%	1 1/2	7/8	5/16
77	18.16	18%	8.79	8%	.831	1 3/16	.475	1/2	4 1/2	15%	1 1/2	7/8	5/16
70	18.00	18	8.75	8%	.751	3/4	.438	7/16	4 1/2	15%	1 1/2	7/8	5/16
64	17.87	17%	8.72	8%	.686	1 1/16	.403	7/16	4 1/2	15%	1 1/4	1 3/16	1/2
60	18.25	18 1/4	7.56	7 1/2	.695	1 1/16	.416	7/16	3%	15%	1 3/16	5/8	1/4
55	18.12	18 1/2	7.53	7 1/2	.630	5/8	.390	3/8	3%	15%	1 1/2	5/8	1/4
50	18.00	18	7.50	7 1/2	.570	9/16	.358	3/8	3%	15%	1 1/16	5/8	1/4
45	17.86	17%	7.48	7 1/2	.499	1/2	.335	3/8	3%	15%	1	5/8	1/4
40	17.74	17 1/4	7.44	7 1/2	.440	7/16	.300	5/16	3%	15%	1 5/16	5/8	3/16
35	17.62	17%	7.41	7%	.381	3/8	.265	1/4	3%	15%	7/8	5/8	3/16
96	16.32	16%	11.53	11 1/2	.875	7/8	.535	9/16	5 1/2	13%	1 5/8	1 5/16	3/8
88	16.16	16%	11.50	11 1/2	.795	1 3/16	.504	1/2	5 1/2	13%	1 1/2	7/8	5/16
78	16.32	16%	8.59	8%	.875	7/8	.529	9/16	4	13%	1 1/2	7/8	5/16
71	16.16	16%	8.54	8 1/2	.795	1 3/16	.486	1/2	4	13%	1 1/2	7/8	5/16
64	16.00	16	8.50	8 1/2	.715	1 1/16	.443	7/16	4	13%	1 5/16	7/8	5/16
58	15.86	15%	8.46	8 1/2	.645	5/8	.407	7/16	4	13%	1 1/4	7/8	5/16
50	16.25	16 1/4	7.07	7%	.628	3/4	.380	3/8	3%	14	1 1/8	5/8	1/4
45	16.12	16 1/2	7.04	7	.563	9/16	.346	3/8	3%	14	1 1/16	5/8	1/4
40	16.00	16	7.00	7	.503	1/2	.307	5/16	3%	14	1	5/8	1/4
36	15.85	15%	6.99	7	.428	7/16	.299	5/16	3%	14	1 5/16	5/8	1/4

# WIDE FLANGE SHAPES 14 WF

## PROPERTIES



Nominal Size and Weight per Foot	Total Area	Area dw	h/w	d/A <sub>f</sub>	Axis X-X				Axis Y-Y		
					I <sub>x</sub>	S <sub>x</sub>	r <sub>x</sub>	Z <sub>x</sub>	I <sub>y</sub>	S <sub>y</sub>	r <sub>y</sub>
Lb.	In. <sup>2</sup>	In. <sup>2</sup>		In. <sup>-1</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.	In. <sup>3</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.
<b>14 x 16</b>											
*730	214.65	68.87	3.7	.256	14371	1281	8.18	1664	4717	527	4.69
*665	195.51	61.24	4.0	.272	12478	1152	7.99	1484	4166	472	4.62
*605	177.85	54.40	4.4	.289	10842	1036	7.81	1320	3681	423	4.55
*550	161.75	48.34	4.7	.308	9443	932	7.64	1176	3257	379	4.49
*500	146.95	42.95	5.2	.330	8234	839	7.48	1049	2883	339	4.43
*455	133.73	38.25	5.7	.352	7215	758	7.35	939	2561	304	4.38
*426	125.25	35.04	6.1	.369	6610	707	7.26	869	2360	283	4.34
*398	116.98	32.41	6.4	.388	6014	657	7.17	803	2170	262	4.31
*370	108.78	29.69	6.9	.410	5454	608	7.08	737	1986	241	4.27
*342	100.59	27.13	7.4	.435	4912	559	6.99	673	1807	221	4.24
*320	94.12	31.77	6.0	.481	4142	493	6.63	592	1635	196	4.17
*314	92.30	24.32	8.0	.464	4399	512	6.90	612	1631	201	4.20
*287	84.37	22.02	8.7	.498	3912	466	6.81	552	1466	182	4.17
*264	77.63	19.88	9.4	.531	3526	427	6.74	502	1331	166	4.14
*246	72.33	18.28	10.1	.562	3229	397	6.68	464	1227	154	4.12
*237	69.69	17.57	10.4	.580	3081	382	6.65	445	1175	148	4.11
*228	67.06	16.72	10.9	.597	2942	368	6.62	427	1125	142	4.10
*219	64.36	15.95	11.3	.618	2798	353	6.59	408	1073	136	4.08
*211	62.07	15.44	11.6	.638	2671	339	6.56	392	1029	130	4.07
*202	59.39	14.54	12.2	.660	2539	325	6.54	374	980	124	4.06
*193	56.73	13.80	12.8	.686	2402	310	6.51	355	930	118	4.05
*184	54.07	12.92	13.5	.713	2275	296	6.49	338	883	113	4.04
*176	51.73	12.51	13.9	.743	2150	282	6.45	321	838	107	4.02
*167	49.09	11.79	14.6	.777	2021	267	6.42	303	790	101	4.01
*158	46.47	10.95	15.6	.812	1901	253	6.40	286	745	95.8	4.00
*150	44.08	10.34	16.4	.850	1787	240	6.37	270	702	90.6	3.99
*142	41.85	10.03	16.7	.895	1672	227	6.32	255	660	85.2	3.97
<b>14 x 14½</b>											
*136	39.98	9.74	17.2	.941	1593	216	6.31	243	568	77.0	3.77
*127	37.33	8.92	18.6	.997	1477	202	6.29	226	528	71.8	3.76
*119	34.99	8.27	20.0	1.06	1373	189	6.26	211	492	67.1	3.75
*111	32.65	7.76	21.1	1.13	1266	176	6.23	196	455	62.2	3.73
*103	30.26	7.05	23.0	1.20	1166	164	6.21	181	420	57.6	3.72
* 95	27.94	6.57	24.5	1.30	1064	151	6.17	167	384	52.8	3.71
* 87	25.56	5.88	27.1	1.40	967	138	6.15	151	350	48.2	3.70

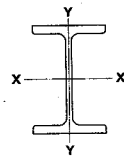


# WIDE FLANGE SHAPES 14 WF

## DIMENSIONS

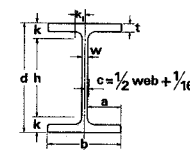
Wt. per Foot	Depth d	Flange		Web Thickness w	Distance								
		Width b	Mean Thickness t		a	h	k	k <sub>1</sub>	c				
Lb.	In.	In.	In.	In.	In.	In.	In.	In.	In.				
730	22.44	22½	17.89	17%	4.91	4½	3.07	3½	7%	11%	5½	2½	1%
665	21.67	21½	17.65	17%	4.52	4½	2.83	3¼	7%	11%	5½	2	1½
605	20.94	21	17.42	17%	4.16	4½	2.60	2¾	7%	11%	4½	1½	1%
550	20.26	20¾	17.21	17¼	3.82	3½	2.39	2¾	7%	11%	4¾	1¾	1¼
500	19.63	19¾	17.01	17	3.50	3½	2.19	2½	7%	11%	4¾	1¾	1¾
455	19.05	19	16.83	16%	3.21	3¾	2.01	2	7%	11%	3¾	1½	1½
426	18.69	18¾	16.70	16%	3.03	3¾	1.88	1¾	7%	11%	3¾	1½	1
398	18.31	18½	16.59	16%	2.84	2¾	1.77	1¾	7%	11%	3¾	1½	1½
370	17.94	18	16.48	16½	2.66	2¾	1.66	1½	7%	11%	3¾	1½	¾
342	17.56	17½	16.36	16%	2.47	2¾	1.54	1½	7%	11%	3¾	1½	¾
320	16.81	16¾	16.71	16%	2.09	2¾	1.89	1½	7%	11%	3¾	1½	¾
314	17.19	17¾	16.24	16%	2.28	2¾	1.42	1½	7%	11%	2¾	1½	¾
287	16.81	16¾	16.13	16%	2.09	2¾	1.31	1½	7%	11%	2¾	1½	¾
264	16.50	16½	16.02	16	1.94	1½	1.20	1½	7%	11%	2¾	1½	¾
246	16.25	16¾	15.94	16	1.81	1½	1.12	1½	7%	11%	2¾	1½	¾
237	16.12	16¾	15.91	15%	1.75	1½	1.09	1½	7%	11%	2¾	1½	¾
228	16.00	16	15.86	15%	1.69	1½	1.04	1½	7%	11%	2¾	1½	¾
219	15.87	15¾	15.82	15%	1.62	1½	1.00	1	7%	11%	2¾	1½	¾
211	15.75	15¾	15.80	15%	1.56	1½	.980	1	7%	11%	2¾	1½	¾
202	15.63	15%	15.75	15%	1.50	1½	.930	1½	7%	11%	2¾	1½	¾
193	15.50	15%	15.71	15%	1.44	1½	.890	¾	7%	11%	2¾	1½	¾
184	15.38	15%	15.66	15%	1.38	1½	.840	¾	7%	11%	2	1½	¾
176	15.25	15%	15.64	15%	1.31	1½	.820	¾	7%	11%	1½	1½	¾
167	15.12	15%	15.60	15%	1.25	1½	.780	¾	7%	11%	1½	1	¾
158	15.00	15	15.55	15½	1.19	1½	.730	¾	7%	11%	1½	1	¾
150	14.88	14¾	15.52	15½	1.13	1½	.695	¾	7%	11%	1½	1	¾
142	14.75	14¾	15.50	15½	1.06	1½	.680	¾	7%	11%	1½	1	¾
136	14.75	14¾	14.74	14¾	1.06	1½	.660	¾	7	11%	1½	1	¾
127	14.62	14¾	14.69	14¾	.998	1	.610	¾	7	11%	1½	1½	¾
119	14.50	14¾	14.65	14¾	.938	1½	.570	¾	7	11%	1½	1½	¾
111	14.37	14¾	14.62	14¾	.873	¾	.540	¾	7	11%	1½	1½	¾
103	14.25	14¾	14.58	14¾	.813	¾	.495	½	7	11%	1½	¾	¾
95	14.12	14¾	14.54	14½	.748	¾	.465	½	7	11%	1½	¾	¾
87	14.00	14	14.50	14½	.688	¾	.420	¾	7	11%	1½	¾	¾

**WIDE FLANGE SHAPES**  
**14 WF - 12 WF**  
**PROPERTIES**



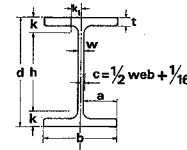
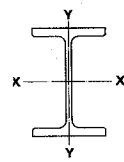
Nominal Size and Weight per Foot	Total Area	Area dw	h/w	d/A <sub>f</sub>	Axis X-X				Axis Y-Y		
					I <sub>x</sub>	S <sub>x</sub>	r <sub>x</sub>	Z <sub>x</sub>	I <sub>y</sub>	S <sub>y</sub>	r <sub>y</sub>
Lb.	In. <sup>2</sup>	In. <sup>2</sup>		In. <sup>-1</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.	In. <sup>3</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.
<b>14 x 12</b>											
*84	24.71	6.40	25.2	1.52	928	131	6.13	145	226	37.5	3.02
*78	22.94	6.02	26.6	1.63	851	121	6.09	134	207	34.5	3.00
<b>14 x 10</b>											
*74	21.76	6.39	25.3	1.80	797	112	6.05	126	134	26.5	2.48
*68	20.00	5.88	27.2	1.95	724	103	6.02	115	121	24.1	2.46
*61	17.94	5.26	30.1	2.16	642	92.2	5.98	102	107	21.5	2.45
<b>14 x 8</b>											
53	15.59	5.16	30.7	2.63	542	77.8	5.90	87.1	57.5	14.3	1.92
48	14.11	4.68	33.6	2.90	485	70.2	5.86	78.5	51.3	12.8	1.91
43	12.65	4.21	36.9	3.24	429	62.7	5.82	69.7	45.1	11.3	1.89
<b>14 x 6 3/4</b>											
38	11.17	4.42	38.7	4.06	385	54.6	5.87	61.5	24.6	7.3	1.49
34	10.00	4.02	42.2	4.58	339	48.5	5.83	54.5	21.3	6.3	1.46
30	8.81	3.74	44.9	5.37	290	41.8	5.73	47.1	17.5	5.2	1.41
<b>12 x 12</b>											
190	55.86	15.24	9.2	.654	1892	263	5.82	312	590	93.1	3.25
161	47.38	12.56	10.8	.746	1542	222	5.70	259	486	77.7	3.20
133	39.11	10.10	12.9	.875	1221	182	5.59	210	390	63.1	3.16
120	35.31	9.32	13.7	.963	1072	163	5.51	186	345	56.0	3.13
106	31.19	7.99	15.7	1.07	931	144	5.46	163	301	49.2	3.11
99	29.09	7.40	16.8	1.14	858	135	5.43	152	278	45.7	3.09
92	27.06	6.88	17.9	1.21	789	125	5.40	140	256	42.2	3.08
85	24.98	6.19	19.7	1.30	723	116	5.38	129	236	38.9	3.07
79	23.22	5.82	20.7	1.39	663	107	5.34	119	216	35.8	3.05
72	21.16	5.27	22.7	1.52	597	97.5	5.31	108	195	32.4	3.04
65	19.11	4.73	25.0	1.67	533	88.0	5.28	97.0	175	29.1	3.02
<b>12 x 10</b>											
58	17.06	4.38	27.2	1.90	476	78.1	5.28	86.5	107	21.4	2.51
53	15.59	4.16	28.3	2.09	426	70.7	5.23	78.2	96.1	19.2	2.48
<b>12 x 8</b>											
50	14.71	4.52	26.3	2.35	394	64.7	5.18	72.6	56.4	14.0	1.96
45	13.24	4.05	29.0	2.60	351	58.2	5.15	64.9	50.0	12.4	1.94
40	11.77	3.51	33.2	2.89	310	51.9	5.13	57.6	44.1	11.0	1.94

**WIDE FLANGE SHAPES**  
**14 WF - 12 WF**  
**DIMENSIONS**



Wt. per Foot	Depth d		Flange		Web Thickness w		Distance						
			Width b				Mean Thickness t	a	h	k	k <sub>1</sub>	c	
Lb.	In.		In.		In.	In.	In.	In.	In.	In.	In.		
84	14.18	14 1/4	12.02	12	.778	3/4	.451	7/16	5 3/4	11 1/4	1 3/8	7/8	5/16
78	14.06	14	12.00	12	.718	1 1/16	.428	7/16	5 1/2	11 1/8	1 1/2	7/8	5/16
74	14.19	14 1/4	10.07	10 1/2	.783	1 1/16	.450	7/16	4 3/4	11 1/8	1 3/8	7/8	5/16
68	14.06	14	10.04	10	.718	1 1/16	.418	7/16	4 3/4	11 1/8	1 1/2	7/8	5/16
61	13.91	13 3/4	10.00	10	.643	5/8	.378	3/4	4 1/2	11 1/8	1 1/4	1 1/2	1/2
53	13.94	14	8.06	8	.658	1 1/16	.370	3/8	3 3/4	11 1/8	1 1/4	1 3/16	1/4
48	13.81	13 3/4	8.03	8	.593	7/16	.339	3/8	3 3/4	11 1/8	1 3/16	1 3/16	1/4
43	13.68	13 3/4	8.00	8	.528	1/2	.308	5/16	3 3/4	11 1/8	1 1/8	1 3/16	1/4
38	14.12	14 1/8	6.78	6 3/4	.513	1/2	.313	5/16	3 3/4	12 1/8	1	5/8	1/4
34	14.00	14	6.75	6 3/4	.453	7/16	.287	5/16	3 3/4	12 1/8	1 1/16	5/8	1/4
30	13.86	13 3/4	6.73	6 3/4	.383	3/8	.270	5/16	3 3/4	12 1/8	7/8	5/16	3/8
190	14.38	14 3/4	12.67	12 1/2	1.74	1 1/4	1.06	1 1/16	5 3/4	9 3/4	2 5/16	1 3/16	5/8
161	13.88	13 3/4	12.52	12 1/2	1.49	1 1/2	.905	1 1/16	5 3/4	9 3/4	2 1/16	1 1/16	1/2
133	13.38	13 3/4	12.36	12 1/2	1.24	1 1/4	.755	3/4	5 3/4	9 3/4	1 13/16	1	7/16
120	13.12	13 3/4	12.32	12 1/2	1.11	1 1/8	.710	3/4	5 3/4	9 3/4	1 11/16	1	7/16
106	12.88	12 3/4	12.23	12 1/2	.986	1	.620	5/8	5 3/4	9 3/4	1 1/16	1 1/16	3/8
99	12.75	12 3/4	12.19	12 1/2	.921	1 1/16	.580	5/8	5 3/4	9 3/4	1 1/2	1 1/16	3/8
92	12.62	12 3/4	12.16	12 1/2	.856	7/8	.545	5/8	5 3/4	9 3/4	1 7/16	1 1/16	3/8
85	12.50	12 1/2	12.10	12 1/2	.796	1 3/16	.495	1/2	5 3/4	9 3/4	1 3/8	7/8	5/16
79	12.38	12 1/2	12.08	12 1/2	.736	3/4	.470	1/2	5 3/4	9 3/4	1 1/16	7/8	5/16
72	12.25	12 1/2	12.04	12	.671	1 1/16	.430	7/16	5 3/4	9 3/4	1 1/4	7/8	5/16
65	12.12	12 1/2	12.00	12	.606	5/8	.390	3/4	5 3/4	9 3/4	1 3/16	1 3/16	1/4
58	12.19	12 1/2	10.01	10	.641	5/8	.359	3/8	4 3/4	9 3/4	1 1/4	1 3/16	1/4
53	12.06	12	10.00	10	.576	7/16	.345	3/8	4 3/4	9 3/4	1 3/16	1 3/16	1/4
50	12.19	12 1/4	8.08	8 3/8	.641	5/8	.371	3/8	3 3/4	9 3/4	1 1/4	1 3/16	1/4
45	12.06	12	8.04	8	.576	7/16	.336	3/8	3 3/4	9 3/4	1 3/16	1 3/16	1/4
40	11.94	12	8.00	8	.516	1/2	.294	5/16	3 3/4	9 3/4	1 1/8	1 3/16	1/4

**WIDE FLANGE SHAPES**  
**12 WF - 8 WF**  
PROPERTIES



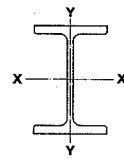
**WIDE FLANGE SHAPES**  
**12 WF - 8 WF**  
DIMENSIONS

Nominal Size and Weight per Foot	Total Area	Area dw	h/w	d/A <sub>f</sub>	Axis X-X				Axis Y-Y		
					I <sub>x</sub>	S <sub>x</sub>	r <sub>x</sub>	Z <sub>x</sub>	I <sub>y</sub>	S <sub>y</sub>	r <sub>y</sub>
Lb.	In. <sup>2</sup>	In. <sup>2</sup>		In. <sup>-1</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.	In. <sup>3</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.
<b>12 x 6 1/2</b>											
36	10.59	3.73	34.0	3.45	281	45.9	5.15	51.4	23.7	7.2	1.50
31	9.12	3.20	39.2	3.98	238	39.4	5.11	44.0	19.8	6.1	1.47
27	7.97	2.87	43.2	4.60	204	34.1	5.06	38.0	16.6	5.1	1.44
<b>10 x 10</b>											
112	32.92	8.59	10.4	.876	719	126	4.67	148	235	45.2	2.67
100	29.43	7.62	11.5	.961	625	112	4.61	130	207	39.9	2.65
89	26.19	6.69	12.8	1.06	542	99.7	4.55	114	181	35.2	2.63
77	22.67	5.68	14.7	1.20	457	86.1	4.49	97.7	153	30.1	2.60
72	21.18	5.36	15.4	1.28	421	80.1	4.46	90.7	142	27.9	2.59
66	19.41	4.74	17.2	1.37	382	73.7	4.44	82.8	129	25.5	2.58
60	17.66	4.25	19.0	1.49	344	67.1	4.41	75.1	116	23.1	2.57
54	15.88	3.72	21.4	1.63	306	60.4	4.39	67.0	104	20.7	2.56
49	14.40	3.40	23.2	1.79	273	54.6	4.35	60.3	93.0	18.6	2.54
<b>10 x 8</b>											
45	13.24	3.54	22.5	2.04	249	49.1	4.33	55.0	53.2	13.3	2.00
39	11.48	3.16	24.8	2.36	210	42.2	4.27	47.0	44.9	11.2	1.98
33	9.71	2.85	27.0	2.83	171	35.0	4.20	38.8	36.5	9.2	1.94
<b>10 x 5 1/2</b>											
29	8.53	2.95	29.4	3.52	157	30.8	4.29	34.7	15.2	5.2	1.34
25	7.35	2.54	33.7	4.08	133	26.4	4.26	29.5	12.7	4.4	1.31
21	6.19	2.38	35.4	5.07	106	21.5	4.14	24.1	9.7	3.4	1.25
<b>8 x 8</b>											
67	19.70	5.18	11.1	1.16	272	60.4	3.71	70.1	88.6	21.4	2.12
58	17.06	4.46	12.5	1.32	227	52.0	3.65	59.9	74.9	18.2	2.10
48	14.11	3.44	15.7	1.53	184	43.2	3.61	49.0	60.9	15.0	2.08
40	11.76	3.01	17.5	1.83	146	35.5	3.53	39.9	49.0	12.1	2.04
35	10.30	2.56	20.2	2.05	126	31.1	3.50	34.7	42.5	10.6	2.03
31	9.12	2.30	22.1	2.31	110	27.4	3.47	30.4	37.0	9.2	2.01
<b>8 x 6 1/2</b>											
28	8.23	2.30	22.4	2.66	97.8	24.3	3.45	27.1	21.6	6.6	1.62
24	7.06	1.94	26.0	3.07	82.5	20.8	3.42	23.1	18.2	5.6	1.61
<b>8 x 5 1/2</b>											
20	5.88	2.02	27.2	4.08	69.2	17.0	3.43	19.1	8.5	3.2	1.20
17	5.00	1.84	29.3	4.95	56.4	14.1	3.36	15.8	6.7	2.6	1.16

Wt. per Foot	Depth d		Flange				Web Thickness w		Distance				
			Width b		Mean Thickness t				a	h	k	k <sub>1</sub>	c
Lb.	In.		In.		In.		In.	In.	In.	In.	In.	In.	
36	12.24	12 1/4	6.56	6%	.540	3/16	.305	3/16	3 3/8	10%	1 1/16	9/16	1/4
31	12.09	12 1/8	6.52	6 1/2	.465	7/16	.265	1/4	3 3/8	10%	7/8	1/2	3/16
27	11.95	12	6.50	6 1/2	.400	3/8	.240	1/4	3 3/8	10%	1 1/16	1/2	3/16
112	11.38	11 1/8	10.42	10%	1.25	1 1/4	.755	3/8	4 7/8	7%	1 3/8	7/8	7/16
100	11.12	11 1/4	10.34	10%	1.12	1 1/8	.685	1 1/16	4 7/8	7%	1 1/8	7/8	7/16
89	10.88	10 3/4	10.28	10%	.998	1	.615	5/8	4 7/8	7%	1 1/2	1 1/16	3/8
77	10.62	10 1/2	10.20	10%	.868	3/4	.535	9/16	4 7/8	7%	1 1/8	1 3/16	3/8
72	10.50	10 1/2	10.17	10%	.808	13/16	.510	1/2	4 7/8	7%	1 3/16	3/4	5/16
66	10.38	10 1/4	10.12	10%	.748	3/4	.457	7/16	4 7/8	7%	1 1/4	3/4	5/16
60	10.25	10 1/4	10.08	10%	.683	1 1/16	.415	7/16	4 7/8	7%	1 3/16	3/4	5/16
54	10.12	10%	10.03	10	.618	5/8	.368	3/8	4 7/8	7%	1 1/8	1 1/16	1/4
49	10.00	10	10.00	10	.558	9/16	.340	3/8	4 7/8	7%	1 1/16	1 1/16	1/4
45	10.12	10%	8.02	8	.618	5/8	.350	3/8	3 3/8	7%	1 1/8	1 1/16	1/4
39	9.94	10	7.99	8	.528	1/2	.318	5/16	3 3/8	7%	1 1/16	1 1/16	1/4
33	9.75	9%	7.96	8	.433	7/16	.292	5/16	3 3/8	7%	1 1/16	1 1/16	1/4
29	10.22	10%	5.80	5%	.500	1/2	.289	5/16	2%	8 1/2	7/8	1/2	1/4
25	10.08	10%	5.76	5%	.430	7/16	.252	1/4	2%	8 1/2	1 3/16	7/16	3/16
21	9.90	9%	5.75	5%	.340	5/16	.240	1/4	2%	8 1/2	1 1/16	7/16	3/16
67	9.00	9	8.29	8 1/4	.933	1 1/16	.575	9/16	3%	6%	1 3/16	1 1/16	3/8
58	8.75	8 3/4	8.22	8 1/4	.808	1 3/16	.510	1/2	3%	6%	1 3/16	5/8	5/16
48	8.50	8 1/2	8.12	8 3/8	.683	1 1/16	.405	7/16	3%	6%	1 1/16	9/16	1/4
40	8.25	8 1/4	8.08	8 1/8	.558	9/16	.365	3/8	3%	6%	1 1/16	9/16	1/4
35	8.12	8 1/8	8.03	8	.493	1/2	.315	5/16	3%	6%	7/8	9/16	1/4
31	8.00	8	8.00	8	.433	7/16	.288	5/16	3%	6%	1 3/16	9/16	1/4
28	8.06	8	6.54	6 1/2	.463	7/16	.285	5/16	3%	6%	1 3/16	1/2	3/16
24	7.93	7 3/4	6.50	6 1/2	.398	3/8	.245	1/4	3%	6%	1 3/16	1/2	3/16
20	8.14	8 1/8	5.27	5%	.378	3/8	.248	1/4	2 1/2	6%	1 1/16	7/16	3/16
17	8.00	8	5.25	5%	.308	5/16	.230	1/4	2 1/2	6%	5/8	7/16	3/16

# MISCELLANEOUS LIGHT SHAPES Wide Flange and H Beam

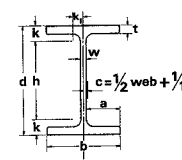
## PROPERTIES



Nominal Size and Weight per Foot	Total Area	Area dw	h/w	d/A <sub>f</sub>	Axis X-X				Axis Y-Y		
					I <sub>x</sub>	S <sub>x</sub>	r <sub>x</sub>	Z <sub>x</sub>	I <sub>y</sub>	S <sub>y</sub>	r <sub>y</sub>
Lb.	In. <sup>2</sup>	In. <sup>2</sup>		In. <sup>-1</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.	In. <sup>3</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.
<b>8 x 8</b>											
*M34.3	10.09	3.00	16.7	2.18	116	28.9	3.40	32.8	35.1	8.8	1.87
<b>6 x 6</b>											
WF25	7.37	2.04	15.2	2.30	53.5	16.8	2.69	19.0	17.1	5.6	1.52
*M25	7.35	1.88	13.6	2.10	47.0	15.7	2.53	17.9	14.9	5.0	1.43
WF20	5.90	1.60	18.9	2.81	41.7	13.4	2.66	15.0	13.3	4.4	1.50
*M20	5.88	1.50	17.5	2.66	38.8	12.9	2.57	14.6	11.4	3.8	1.39
WF15.5	4.62	1.44	20.3	3.72	30.3	10.1	2.56	11.3	9.69	3.2	1.45
<b>5 x 5</b>											
*M18.9	5.56	1.57	10.8	2.40	23.8	9.5	2.08	11.1	7.85	3.1	1.20
*WF18.5	5.45	1.36	13.9	2.43	25.4	9.94	2.16	11.4	8.89	3.54	1.28
*WF16	4.70	1.20	15.4	2.78	21.3	8.53	2.13	9.6	7.51	3.00	1.26
<b>4 x 4</b>											
*WF13	3.82	1.16	10.3	2.97	11.3	5.45	1.72	6.3	3.76	1.85	.99
M13	3.82	1.00	10.0	2.73	10.4	5.2	1.65	6.1	3.39	1.7	.94

# MISCELLANEOUS LIGHT SHAPES Wide Flange and H Beams

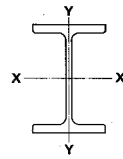
## DIMENSIONS



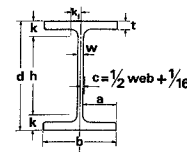
Wt. per Foot	Depth d		Flange				Web Thickness w		Distance					
			Width b		Mean Thickness t				a	h	k	k <sub>1</sub>	c	
Lb.	In.		In.		In.		In.		In.	In.	In.	In.	In.	In.
34.3	8.00	8	8.00	8	.459	7/16	.375	%	3%	6%	7/8	1/2	1/4	1/4
25	6.37	6%	6.08	6	.456	1/2	.320	5/16	2%	4%	3/4	7/16	1/4	1/4
25	6.00	6	5.94	6	.481	1/2	.313	5/16	2 13/16	4%	7/8	1/2	1/4	1/4
20	6.20	6 1/4	6.02	6	.367	3/8	.258	1/4	2%	4%	1 1/16	7/16	3/16	3/16
20	6.00	6	5.94	6	.380	3/8	.250	1/4	2%	4%	1 3/16	7/16	3/16	3/16
15.5	6.00	6	6.00	6	.269	1/4	.240	1/4	2%	4%	9/16	3/8	3/16	3/16
18.9	5.00	5	5.00	5	.417	7/16	.313	5/16	2%	3%	1 3/16	1/2	1/4	1/4
18.5	5.12	5 1/8	5.02	5	.420	7/16	.265	1/4	2%	3 11/16	1 1/16	7/16	3/16	3/16
16	5.00	5	5.00	5	.360	3/8	.240	1/4	2%	3 11/16	1 1/16	7/16	3/16	3/16
13	4.16	4 1/8	4.06	4	.345	3/8	.280	5/16	1%	2%	5/8	7/16	3/16	3/16
13	4.00	4	3.94	4	.372	3/8	.250	1/4	1%	2 1/2	3/4	7/16	3/16	3/16



**LIGHT BEAMS**  
**24 B - 6 B**  
PROPERTIES



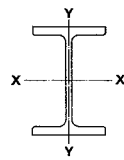
Nominal Size and Weight per Foot	Total Area	Area dw	h/w	d/A <sub>f</sub>	Axis X-X				Axis Y-Y		
					I <sub>x</sub>	S <sub>x</sub>	r <sub>x</sub>	Z <sub>x</sub>	I <sub>y</sub>	S <sub>y</sub>	r <sub>y</sub>
Lb.	In. <sup>2</sup>	In. <sup>2</sup>		In. <sup>-1</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.	In. <sup>3</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.
<b>24 x 7</b>											
*61	17.95	9.94	51.3	5.72	1536	130	9.25	152	34.0	9.69	1.38
*55	16.17	9.33	54.3	6.69	1338	114	9.10	134	28.7	8.19	1.33
<b>21 x 6 1/2</b>											
*49	14.42	7.66	50.9	6.00	970	93.2	8.20	108	24.5	7.52	1.30
*44	12.95	7.19	53.8	7.05	842	81.5	8.06	95.3	20.6	6.33	1.26
<b>18 x 6</b>											
*40	11.76	5.66	50.6	5.68	611	68.3	7.21	78.3	19.0	6.30	1.27
*35	10.30	5.28	53.7	6.88	512	57.9	7.05	66.7	15.4	5.12	1.22
<b>16 x 5 1/2</b>											
31	9.12	4.36	50.9	6.49	372	47.0	6.39	53.9	11.6	4.19	1.13
26	7.65	3.91	56.0	8.25	298	38.1	6.24	43.8	8.71	3.17	1.07
<b>14 x 5</b>											
26	7.65	3.54	47.5	6.61	243	34.9	5.63	39.8	8.26	3.29	1.04
22	6.47	3.16	52.7	8.19	197	28.8	5.52	32.9	6.40	2.56	.99
<b>14 x 4</b>											
*17.2	5.05	2.94	61.3	12.9	147	21.0	5.40	24.4	2.65	1.32	.72
<b>12 x 4</b>											
22	6.47	3.20	41.3	7.20	156	25.3	4.91	29.4	4.55	2.26	.84
19	5.62	2.92	44.8	8.69	130	21.4	4.81	24.8	3.67	1.83	.81
16.5	4.86	2.76	46.7	11.2	105	17.5	4.65	20.6	2.79	1.39	.76
14	4.14	2.38	53.7	13.4	88.2	14.8	4.61	17.4	2.25	1.13	.74
<b>10 x 4</b>											
19	5.61	2.56	35.5	6.47	96.2	18.8	4.14	21.6	4.19	2.08	.86
17	4.98	2.43	37.0	7.67	81.8	16.2	4.05	18.6	3.45	1.72	.83
15	4.40	2.30	38.6	9.29	68.8	13.8	3.95	16.0	2.79	1.39	.80
11.5	3.39	1.78	49.3	12.2	51.9	10.5	3.92	12.1	2.01	1.02	.77
<b>8 x 4</b>											
*15	4.43	1.99	28.1	6.44	48.0	11.8	3.29	13.6	3.30	1.65	.86
*13	3.83	1.84	29.9	7.87	39.5	9.88	3.21	11.4	2.62	1.31	.83
*10	2.95	1.34	40.4	9.83	30.8	7.79	3.23	8.9	1.99	1.01	.82
<b>6 x 4</b>											
*16	4.72	1.63	18.8	3.84	31.7	10.1	2.59	11.6	4.32	2.14	.96
*12	3.53	1.38	21.2	5.38	21.7	7.24	2.48	8.3	2.89	1.44	.90
*8.5	2.50	.99	29.4	7.63	14.8	5.07	2.43	5.7	1.89	.96	.87



**LIGHT BEAMS**  
**24 B - 6 B**  
DIMENSIONS

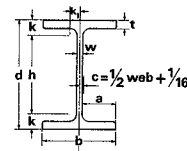
Wt. per Foot	Depth d	Flange		Web Thickness w	Distance								
		Width b	Mean Thickness t		a	h	k	k <sub>1</sub>	c				
Lb.	In.	In.	In.	In.	In.	In.	In.	In.	In.				
61	23.72	23 3/4	7.02	7	.591	7/16	.419	7/16	3 3/4	21 1/2	1 1/8	1 1/16	5/16
55	23.55	23 1/2	7.00	7	.503	1/2	.396	3/8	3 3/8	21 1/2	1	1 1/16	1/4
49	20.82	20 7/8	6.52	6 1/2	.532	7/16	.368	3/8	3 1/8	18 3/4	1 1/16	1 1/16	1/4
44	20.66	20 5/8	6.50	6 1/2	.451	7/16	.348	3/8	3 1/8	18 3/4	1 1/16	1 1/16	1/4
40	17.90	17 7/8	6.02	6	.524	1/2	.316	5/16	2 7/8	16	1 5/16	9/16	1/4
35	17.71	17 3/4	6.00	6	.429	7/16	.298	5/16	2 7/8	16	7/8	9/16	1/4
31	15.84	15 7/8	5.52	5 1/2	.442	7/16	.275	1/2	2 5/8	14	1 9/16	9/16	3/16
26	15.65	15 5/8	5.50	5 1/2	.345	3/8	.250	1/2	2 5/8	14	1 9/16	9/16	3/16
26	13.89	13 7/8	5.02	5	.418	7/16	.255	1/2	2 3/8	12 1/2	7/8	9/16	3/16
22	13.72	13 3/4	5.00	5	.335	5/16	.230	1/2	2 3/8	12 1/2	13/16	9/16	3/16
17.2	14.00	14	4.00	4	.272	1/2	.210	3/16	1 7/8	12 1/2	9/16	7/16	3/16
22	12.31	12 1/4	4.03	4	.424	7/16	.260	1/2	1 7/8	10 3/4	3/4	7/16	3/16
19	12.16	12 1/8	4.01	4	.349	3/8	.240	1/2	1 7/8	10 3/4	11/16	7/16	3/16
16.5	12.00	12	4.00	4	.269	1/2	.230	1/2	1 7/8	10 3/4	3/8	7/16	3/16
14	11.91	11 7/8	3.97	4	.224	1/2	.200	3/16	1 7/8	10 3/4	9/16	7/16	3/16
19	10.25	10 1/4	4.02	4	.394	3/8	.250	1/2	1 7/8	8 7/8	1 1/16	7/16	3/16
17	10.12	10 1/8	4.01	4	.329	5/16	.240	1/2	1 7/8	8 7/8	5/8	7/16	3/16
15	10.00	10	4.00	4	.269	1/2	.230	1/2	1 7/8	8 7/8	9/16	7/16	3/16
11.5	9.87	9 7/8	3.95	4	.204	3/16	.180	3/16	1 7/8	8 7/8	1/2	7/16	3/16
15	8.12	8 1/8	4.02	4	.314	5/16	.245	1/2	1 7/8	6 7/8	3/8	7/16	3/16
13	8.00	8	4.00	4	.254	1/2	.230	1/2	1 7/8	6 7/8	9/16	7/16	3/16
10	7.90	7 7/8	3.94	4	.204	3/16	.170	3/16	1 7/8	6 7/8	1/2	7/16	3/16
16	6.25	6 1/4	4.03	4	.404	3/8	.260	1/2	1 7/8	4 7/8	1 1/16	3/8	3/16
12	6.00	6	4.00	4	.279	1/2	.230	1/2	1 7/8	4 7/8	9/16	3/8	3/16
8.5	5.83	5 7/8	3.94	4	.194	3/16	.170	3/16	1 7/8	5	7/16	3/8	3/16

**JUNIOR BEAMS**  
12 Jr. - 6 Jr.  
PROPERTIES



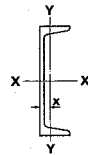
Nominal Size and Weight per Foot	Total Area	Area dw	h/w	d/A <sub>f</sub>	Axis X-X				Axis Y-Y		
					I <sub>x</sub>	S <sub>x</sub>	r <sub>x</sub>	Z <sub>x</sub>	I <sub>y</sub>	S <sub>y</sub>	r <sub>y</sub>
Lb.	In. <sup>2</sup>	In. <sup>2</sup>		In. <sup>-1</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.	In. <sup>3</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.
12 x 3 *11.8	3.45	2.10	62.9	17	72.2	12.0	4.57	14.2	.98	.64	.53
10 x 2 3/4 *9.0	2.64	1.55	58.9	18	39.0	7.8	3.85	9.2	.61	.45	.48
8 x 2 1/4 *6.5	1.92	1.08	53.7	19	18.7	4.7	3.12	5.4	.34	.30	.42
7 x 2 1/2 *5.5	1.61	.88	49.6	19	12.1	3.5	2.74	4.0	.25	.24	.39
6 x 1 1/2 *4.4	1.30	.68	46.1	19	7.3	2.4	2.37	2.8	.17	.18	.36

**JUNIOR BEAMS**  
12 Jr. - 6 Jr.  
DIMENSIONS



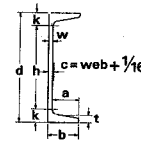
Wt. per Foot	Depth d		Flange				Web Thickness w		Distance				
			Width b		Mean Thickness t				a	h	k	k <sub>1</sub>	c
Lb.	In.		In.		In.		In.	In.	In.	In.	In.	In.	
11.8	12.00	12	3.06	3	.225	1/4	.175	3/16	1 1/2	11	1/2	3/16	
9.0	10.00	10	2.69	2 3/4	.206	3/16	.155	3/16	1 1/4	9 3/4	7/16	1/8	
6.5	8.00	8	2.28	2 1/4	.189	3/16	.135	1/8	1 1/8	7 1/4	3/8	1/8	
5.5	7.00	7	2.08	2 1/8	.180	3/16	.126	1/8	1	6 1/4	3/8	1/8	
4.4	6.00	6	1.84	1 3/4	.171	3/16	.114	1/8	7/8	5 1/4	3/8	1/8	

**JUNIOR CHANNELS**  
12 Jr. - 10 Jr.  
PROPERTIES



Nominal Size and Weight per Foot	Total Area	Area dw	h/w	Axis X-X				Axis Y-Y			
				I <sub>x</sub>	S <sub>x</sub>	r <sub>x</sub>	I <sub>y</sub>	S <sub>y</sub>	r <sub>y</sub>	x	
Lb.	In. <sup>2</sup>	In. <sup>2</sup>		In. <sup>4</sup>	In. <sup>3</sup>	In.	In. <sup>4</sup>	In. <sup>3</sup>	In.	In.	In.
12 x 1 1/2 *10.6	3.12	2.28	56.6	55.8	9.3	4.23	.39	.32	.35	.27	
10 x 1 1/2 *8.4	2.47	1.70	52.9	32.3	6.5	3.61	.33	.28	.37	.29	
10 x 1 1/8 *6.5	1.91	1.50	61.7	22.1	4.4	3.47	.12	.13	.25	.19	

**JUNIOR CHANNELS**  
12 Jr. - 10 Jr.  
DIMENSIONS

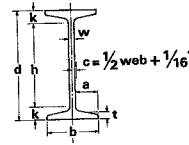
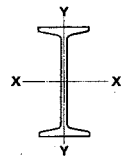


Wt. per Foot	Depth d		Flange				Web Thickness w		Distance				
			Width b		Mean Thickness t				a	h	k	k <sub>1</sub>	c
Lb.	In.		In.		In.		In.	In.	In.	In.	In.	In.	
10.6	12.00	12	1.50	1 1/2	.309	5/16	.190	3/16	1 1/4	10 3/4	5/8	1/4	
8.4	10.00	10	1.50	1 1/2	.280	1/4	.170	3/16	1 1/8	9	1/2	1/4	
6.5	10.00	10	1.12	1 1/8	.201	3/16	.150	3/32	1 1/32	9 1/4	3/8	1/4	

# STANDARD BEAMS

## 24 I - 8 I

### PROPERTIES



# STANDARD BEAMS

## 24 I - 8 I

### DIMENSIONS

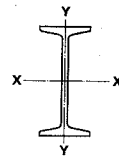
Nominal Size and Weight per Foot	Total Area	Area dw	h/w	d/A <sub>f</sub>	Axis X-X				Axis Y-Y		
					I <sub>x</sub>	S <sub>x</sub>	r <sub>x</sub>	Z <sub>x</sub>	I <sub>y</sub>	S <sub>y</sub>	r <sub>y</sub>
					In. <sup>4</sup>	In. <sup>3</sup>	In.	In. <sup>3</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.
Lb.	In. <sup>2</sup>	In. <sup>2</sup>		In. <sup>-1</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.	In. <sup>3</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.
<b>24 x 7 7/8</b>											
*120.0	35.13	19.15	25.2	2.71	3011	251	9.26	298	84.9	21.1	1.56
*105.9	30.98	15.00	32.2	2.77	2812	234	9.53	273	78.9	20.0	1.60
<b>24 x 7</b>											
*100.0	29.25	17.93	27.8	3.80	2372	198	9.05	239	48.4	13.4	1.29
*90.0	26.30	14.98	33.2	3.87	2230	186	9.21	220	45.5	12.8	1.32
*79.9	23.33	12.00	41.5	3.94	2087	174	9.46	203	42.9	12.2	1.36
<b>20 x 7</b>											
*95.0	27.74	16.00	20.6	3.03	1600	160	7.59	192	50.5	14.0	1.35
*85.0	24.80	13.06	25.3	3.10	1502	150	7.78	177	47.0	13.3	1.38
<b>20 x 6 3/4</b>											
*75.0	21.90	12.82	26.3	3.97	1264	126	7.60	152	30.1	9.4	1.17
*65.4	19.08	10.00	33.7	4.06	1170	117	7.83	137	27.9	8.9	1.21
<b>18 x 6</b>											
*70.0	20.46	12.80	21.4	4.17	918	102	6.70	124	24.5	7.8	1.09
*54.7	15.94	8.28	33.1	4.34	796	88.4	7.07	104	21.2	7.1	1.15
<b>15 x 5 1/2</b>											
*50.0	14.59	8.25	22.7	4.28	481	64.2	5.74	76.5	16.0	5.7	1.05
*42.9	12.49	6.15	30.5	4.38	442	58.9	5.95	68.6	14.6	5.3	1.08
<b>12 x 5 1/4</b>											
*50.0	14.57	8.24	13.6	3.32	302	50.3	4.55	60.7	16.0	5.8	1.05
*40.8	11.84	5.52	20.4	3.47	269	44.8	4.77	52.5	13.8	5.3	1.08
<b>12 x 5</b>											
35.0	10.20	5.14	22.8	4.34	227	37.8	4.72	44.4	10.0	3.9	.99
31.8	9.26	4.20	27.9	4.41	216	36.0	4.83	41.6	9.5	3.8	1.01
<b>10 x 4 3/8</b>											
35.0	10.22	5.94	13.5	4.12	146	29.2	3.78	35.2	8.5	3.4	.91
25.4	7.38	3.10	25.8	4.37	122	24.4	4.07	28.0	6.9	3.0	.97
<b>8 x 4</b>											
23.0	6.71	3.53	14.2	4.51	64.2	16.0	3.09	19.2	4.4	2.1	.81
18.4	5.34	2.16	23.2	4.71	56.9	14.2	3.26	16.3	3.8	1.9	.84

Wt. per Foot	Depth d		Flange				Web Thickness w		Distance					
			Width b		Mean Thickness t				a	h	k	k <sub>l</sub>	c	
			In.	In.	In.	In.								
Lb.	In.		In.		In.		In.		In.	In.	In.	In.	In.	In.
120.0	24.00	24	8.05	8	1.10	1 1/8	.798	1 1/8	3 3/8	20 3/8	11 1/8			1/2
105.9	24.00	24	7.88	7 7/8	1.10	1 1/8	.625	5/8	3 3/8	20 3/8	11 1/8			3/8
100.0	24.00	24	7.25	7 1/4	.871	7/8	.747	3/4	3 3/4	20 3/4	1 1/8			7/16
90.0	24.00	24	7.12	7 1/8	.871	7/8	.624	5/8	3 3/4	20 3/4	1 1/8			3/8
79.9	24.00	24	7.00	7	.871	7/8	.500	1/2	3 3/4	20 3/4	1 1/8			5/16
95.0	20.00	20	7.20	7 1/4	.916	1 1/8	.800	1 1/8	3 3/4	16 1/2	1 3/4			1/2
85.0	20.00	20	7.05	7	.916	1 1/8	.653	1 1/8	3 3/4	16 1/2	1 3/4			3/8
75.0	20.00	20	6.39	6 3/8	.789	1 3/16	.641	5/8	2 7/8	16 7/8	1 1/8			3/8
65.4	20.00	20	6.25	6 1/4	.789	1 3/16	.500	1/2	2 7/8	16 7/8	1 1/8			5/16
70.0	18.00	18	6.25	6 1/4	.691	1 1/16	.711	3/4	2 3/4	15 3/4	1 3/8			7/16
54.7	18.00	18	6.00	6	.691	1 1/16	.460	1/2	2 3/4	15 3/4	1 3/8			5/16
50.0	15.00	15	5.64	5 1/2	.622	5/8	.550	7/16	2 1/2	12 1/2	1 1/4			3/8
42.9	15.00	15	5.50	5 1/2	.622	5/8	.410	7/16	2 1/2	12 1/2	1 1/4			5/16
50.0	12.00	12	5.48	5 1/2	.659	1 1/16	.687	1 1/16	2 3/8	9 3/8	1 5/16			7/16
40.8	12.00	12	5.25	5 1/4	.659	1 1/16	.460	1/2	2 3/8	9 3/8	1 5/16			5/16
35.0	12.00	12	5.08	5 1/8	.544	3/8	.428	7/16	2 3/8	9 3/8	1 3/8			3/16
31.8	12.00	12	5.00	5	.544	3/8	.350	3/8	2 3/8	9 3/8	1 3/8			1/4
35.0	10.00	10	4.94	5	.491	1/2	.594	5/8	2 1/2	8	1			3/8
25.4	10.00	10	4.66	4 3/4	.491	1/2	.310	5/8	2 1/2	8	1			1/4
23.0	8.00	8	4.17	4 1/2	.425	7/16	.441	7/16	1 3/8	6 3/4	7/8			5/16
18.4	8.00	8	4.00	4	.425	7/16	.270	5/16	1 3/8	6 3/4	7/8			3/16

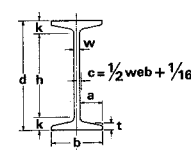
# STANDARD BEAMS

## 7 I - 3 I

### PROPERTIES



Nominal Size and Weight per Foot	Total Area	Area dw	h/w	d/A <sub>f</sub>	Axis X-X				Axis Y-Y		
					I <sub>x</sub>	S <sub>x</sub>	r <sub>x</sub>	Z <sub>x</sub>	I <sub>y</sub>	S <sub>y</sub>	r <sub>y</sub>
Lb.	In. <sup>2</sup>	In. <sup>2</sup>		In. <sup>-1</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.	In. <sup>3</sup>	In. <sup>4</sup>	In. <sup>3</sup>	In.
<b>7 x 3 3/8</b>											
*20.0	5.83	3.15	11.9	4.63	41.9	12.0	2.68	14.4	3.1	1.6	.74
*15.3	4.43	1.75	21.5	4.88	36.2	10.4	2.86	11.9	2.7	1.5	.78
<b>6 x 3 3/8</b>											
17.25	5.02	2.79	9.7	4.69	26.0	8.7	2.28	10.5	2.3	1.3	.68
12.5	3.61	1.38	19.6	5.02	21.8	7.3	2.46	8.4	1.8	1.1	.72
<b>5 x 3</b>											
14.75	4.29	2.47	7.3	4.67	15.0	6.0	1.87	7.4	1.7	1.0	.63
10.0	2.87	1.05	17.3	5.11	12.1	4.8	2.05	5.6	1.2	.82	.65
<b>4 x 2 1/2</b>											
*9.5	2.76	1.30	8.4	4.88	6.7	3.3	1.56	4.0	.91	.65	.58
7.7	2.21	0.76	14.5	5.13	6.0	3.0	1.64	3.5	.77	.58	.59
<b>3 x 2 3/8</b>											
*7.5	2.17	1.05	5.4	4.60	2.9	1.9	1.15	2.3	.59	.47	.52
*5.7	1.64	0.51	11.0	4.95	2.5	1.7	1.23	1.9	.46	.40	.53



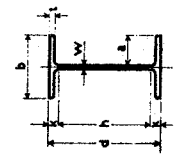
# STANDARD BEAMS

## 7 I - 3 I

### DIMENSIONS

Wt. per Foot	Depth d		Flange				Web Thickness w		Distance					
			Width b		Mean Thickness t				a	h	k	k <sub>1</sub>	c	
Lb.	In.		In.		In.		In.		In.	In.	In.	In.	In.	In.
20.0	7.00	7	3.86	3 3/8	.392	3/8	.450	7/16	1 1/4	5 1/2	1 1/8	5 1/8	1 1/8	5 1/8
15.3	7.00	7	3.66	3 3/8	.392	3/8	.250	1/4	1 1/4	5 1/2	1 1/8	5 1/8	1 1/8	5 1/8
17.25	6.00	6	3.56	3 3/8	.359	3/8	.465	1/2	1 1/2	4 1/2	3/4	4 1/2	3/4	5 1/8
12.5	6.00	6	3.33	3 3/8	.359	3/8	.230	1/4	1 1/2	4 1/2	3/4	4 1/2	3/4	5 1/8
14.75	5.00	5	3.28	3 1/4	.326	5/16	.494	1/2	1 3/8	3 3/8	1 1/8	3 3/8	1 1/8	5 1/8
10.0	5.00	5	3.00	3	.326	5/16	.210	1/4	1 3/8	3 3/8	1 1/8	3 3/8	1 1/8	5 1/8
9.5	4.00	4	2.80	2 3/4	.293	5/16	.326	5/16	1 1/4	2 3/4	5/8	2 3/4	5/8	3 1/4
7.7	4.00	4	2.66	2 3/4	.293	5/16	.190	3/16	1 1/4	2 3/4	5/8	2 3/4	5/8	3 1/4
7.5	3.00	3	2.51	2 1/2	.260	1/4	.349	3/8	1 1/8	1 7/8	3/8	1 7/8	3/8	2 1/4
5.7	3.00	3	2.33	2 1/2	.260	1/4	.170	3/16	1 1/8	1 7/8	3/8	1 7/8	3/8	2 1/4





# H BEARING PILES

## PROPERTIES AND DIMENSIONS



Nominal Size In.	Weight per Foot		Depth d In.	FLANGE		WEB			AXIS X-X			AXIS Y-Y			DISTANCE			
	Lb.	In. <sup>2</sup>		Width b In.	Mean Thickness t In.	b 2t	Clear Depth h In.	Thickness w In.	h w	Area dw In. <sup>2</sup>	I <sub>x</sub> In. <sup>4</sup>	S <sub>x</sub> In. <sup>3</sup>	r <sub>x</sub> In.	I <sub>y</sub> In. <sup>4</sup>	S <sub>y</sub> In. <sup>3</sup>	r <sub>y</sub> In.	d bt In. <sup>-1</sup>	a In.
BP 14 14 x 14 1/2	117	34.44	14.234 14 1/4	14.885 14 1/4	9.2	11 3/4	.805 13/16	14.2	11.46	1228.5	172.6	5.97	443.1	59.5	3.59	1.19	7 1/4	1 1/4
	*102	30.01	14.032 14 1/8	14.784 14 1/8	10.5	11 3/4	.704 11/16	16.2	9.88	1055.1	150.4	5.93	379.6	51.3	3.56	1.35	7 1/4	1 1/4
	* 89	26.19	13.856 13 7/8	14.696 14 1/8	11.9	11 3/4	.616 5/8	18.5	8.54	909.1	131.2	5.89	326.2	44.4	3.53	1.53	7 1/4	1 1/4
BP 12 12 x 12	* 73	21.46	13.636 13 3/8	14.586 14 1/8	14.4	11 3/4	.506 1/2	22.5	6.90	733.1	107.5	5.85	261.9	35.9	3.49	1.85	7 1/4	1 1/4
	102	30.01	12.548 12 9/16	12.625 12 5/8	7.7	9 3/4	.820 13/16	11.9	10.29	812.2	129.4	5.20	275.6	43.6	3.02	1.21	5 1/2	1 3/8
	89	26.19	12.348 12 3/8	12.330 12 3/8	8.6	9 3/4	.720 3/4	13.5	8.89	693.1	112.2	5.15	226.2	36.6	2.96	1.41	5 13/16	1 3/8
BP 10 10 x 10	74	21.76	12.122 12 1/8	12.217 12 3/8	10.1	9 3/4	.607 5/8	16.1	7.36	566.5	93.5	5.10	184.7	30.2	2.91	1.63	5 13/16	1 3/8
	53	15.58	11.780 11 3/8	12.046 12 1/8	13.8	9 3/4	.436 7/16	22.4	5.14	394.8	67.0	5.03	127.3	21.2	2.86	2.24	5 13/16	1 3/8
	57	16.76	10.012 10	10.224 10 1/8	9.1	7 7/8	.564 5/8	14.0	5.65	294.7	58.9	4.19	100.6	19.7	2.45	1.74	4 13/16	1 3/8
BP 8 8 x 8	42	12.35	9.720 9 3/4	10.078 10 1/8	12.1	7 7/8	.418 7/16	18.8	4.06	210.8	43.4	4.13	71.4	14.2	2.40	2.31	4 13/16	1 3/8
	36	10.60	8.026 8	8.158 8 1/8	9.1	6 3/4	.446 7/16	14.3	3.58	119.8	29.9	3.36	40.4	9.9	1.95	2.21	3 13/16	1 3/8

\* Not available from Canadian mills.

## BUILT-UP SECTIONS

Built-up sections fabricated by means of welding, bolting or riveting together rolled steel plates and shapes, in various combinations, can be efficient and economical structural members. The possible combinations and the resulting sections, are virtually limitless. The properties of certain combinations which currently are most frequently used are shown in the tables on page 6-66 to 6-77.

These tables include properties of two channels back to back, two angles back to back, and various combinations of wide flange beams with channels attached to the top flange. No plate girder tables have been included since the Welded Wide Flange Shapes (p. 6-8 to 6-17) provide an extensive range of "girder" sizes suitable for most building applications. The design of a plate girder section is facilitated by using the tables of "Moment of Inertia of Plates" in this book.