

# Symbols

A	Cross sectional area, square inches or square millimeters
E	Modulus of Elasticity, 29,000 kips per square inch or 200 000 Newtons per square millimeter (N/mm <sup>2</sup> )
I	Moment of inertia (X & Y axis), inches <sup>4</sup> or millimeters <sup>4</sup>
R	Radius of fillet, inches or millimeters
S	Elastic section modulus (X & Y axis), inches <sup>3</sup> or millimeters <sup>3</sup>
a	Distance from web face to edge of flange, inches or millimeters
b <sub>f</sub>	Flange width, inches or millimeters
d	Depth of flange, inches or millimeters
k	Distance from outside of flange face to intersection of fillet with webs, inches or millimeters
k <sub>1</sub>	Distance from center line of web to intersection of fillet with flange, inches or millimeters
r	Radius of gyration (X & Y axis), inches or millimeters
t <sub>f</sub>	(W and HP shapes) Flange thickness, inches or millimeters (C, MC, S, & L shapes) Average flange thickness, inches or millimeters
t <sub>w</sub>	Web thickness, inches or millimeters

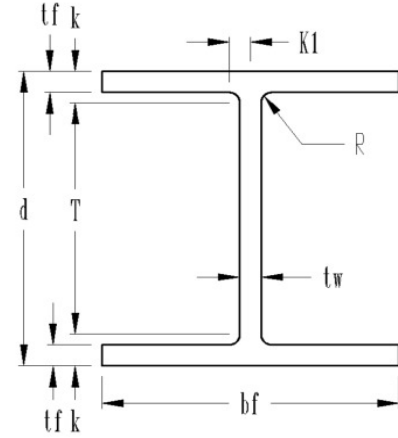
## Symbol & Dimension Notes

Decimal dimensions for  $b_f$ ,  $d$ ,  $t_f$ , and  $t_w$  are in accordance with those listed in ASTM A6/A6M. The method used to determine the approximate dimensions  $T$ ,  $k$ , and  $k_1$ , is in accordance with the American Institute of Steel Construction (AISC). The fillet radius used in calculating  $T$ ,  $k$  and  $k_1$  is the theoretical radius used by Nucor-Yamato Steel and may vary from those of other producers. The method of rounding each value is as follows:

- a (W, HP, & S shapes) Projection of the flange beyond the face of the web, which equals one-half flange width minus one-half web thickness, rounded to the nearest 0.001 inch or 0.1 millimeter  
  
(C & MC shapes) Projection of the flange beyond the face of the web, which equals the flange width minus the web thickness, rounded to the nearest 0.001 inch or 0.1 millimeter
- $b_f$  Flange width, rounded to the nearest 0.001 inch or 1 millimeter
- d Depth of section, rounded to the nearest 0.01 inch or 1 millimeter
- $t_f$ ,  $t_w$  Flange and web thicknesses, rounded to the nearest 0.001 inch or 0.1 millimeter
- T (W & HP shapes) Clear distance on web between fillets which equals (depth minus the ASTM A6/A6M maximum allowable under-tolerance) minus two times (flange thickness plus fillet radius), rounded to the nearest 0.001 inch or 0.1 millimeter  
  
(C, MC, S, & L shapes) Clear distance on web between fillets which equals (depth minus ASTM A6/A6M maximum allowable under-tolerance) minus two times [flange thickness at heel plus fillet radius times the tangent of one-half times (90° minus the flange slope,  $\theta$ )], rounded to the nearest 0.001 inch or 0.1 millimeter
- k Distance from the outside of the flange to the toe of the fillet on the web which equals one-half (depth minus T distance), rounded to the nearest 0.001 inch or 0.1 millimeter
- $k_1$  (W & HP shapes only) Distance from the center of the web to the toe of the fillet on the flange which equals (one-half web thickness plus the fillet radius), rounded to the nearest 0.001 inch or 0.1 millimeters

# Nucor-Yamato Steel

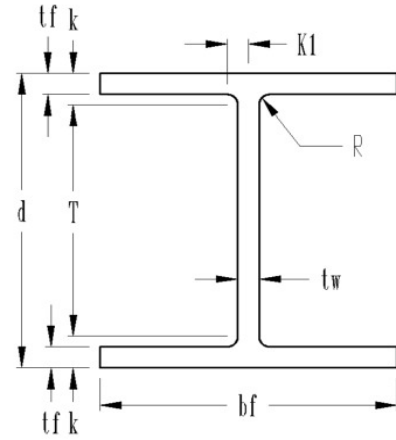
# W44



Prime Section Group	Section Size Inch x lbs/ft	Area A Inch <sup>2</sup>	Depth d Inch	Web Thickness t <sub>w</sub> Inch	Flange		Distance			Fillet Radius R Inch	Elastic Properties						Plastic Modulus	
					Width b <sub>f</sub> Inch	Thick-ness t <sub>f</sub> Inch	T In	k In	k <sub>1</sub> In		X - X			Y - Y			Z <sub>x</sub> Inch <sup>3</sup>	Z <sub>y</sub> Inch <sup>3</sup>
											I <sub>x</sub> Inch <sup>4</sup>	S <sub>x</sub> Inch <sup>3</sup>	r <sub>x</sub> Inch	I <sub>y</sub> Inch <sup>4</sup>	S <sub>y</sub> Inch <sup>3</sup>	r <sub>y</sub> Inch		
					Inch	Inch	Inch	Inch	Inch		Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch
44 x 16	W44 x 335	98.7	44.02	1.025	15.945	1.770	37.993	3.014	1.694	1.18	31300	1420	17.8	1200	151	3.49	1640	237
	W44 x 290	85.8	43.62	0.865	15.825	1.575	37.983	2.819	1.614	1.18	27300	1250	16.6	1040	132	3.64	1430	206
	W44 x 262	77.2	43.31	0.785	15.750	1.415	37.993	2.659	1.574	1.18	24400	1130	16.5	920	117	3.46	1280	278
	W44 x 230	67.9	42.91	0.710	15.750	1.220	37.983	2.464	1.536	1.18	21100	980	16.5	800	101	3.60	1120	157

# Nucor-Yamato Steel

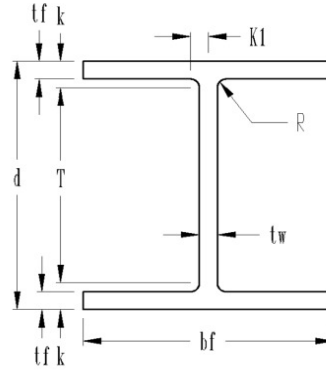
# W40



Prime Section Group	Section Size Inch x lbs/ft	Area A Inch <sup>2</sup>	Depth d Inch	Web Thickness t <sub>w</sub> Inch	Flange		Distance			Fillet Radius R Inch	Elastic Properties						Plastic Modulus	
					Width b <sub>f</sub> Inch	Thick-ness t <sub>f</sub> Inch	T In	k In	k <sub>1</sub> In		X - X			Y - Y			Z <sub>x</sub> Inch <sup>3</sup>	Z <sub>y</sub> Inch <sup>3</sup>
											I <sub>x</sub> Inch <sup>4</sup>	S <sub>x</sub> Inch <sup>3</sup>	r <sub>x</sub> Inch	I <sub>y</sub> Inch <sup>4</sup>	S <sub>y</sub> Inch <sup>3</sup>	r <sub>y</sub> Inch		
40 x 16	W40 x 431	126.7	41.26	1.340	16.220	2.360	34.053	3.604	1.851	1.18	34800	1690	16.6	1690	208	3.65	1960	328
	W40 x 397	117.0	40.95	1.220	16.120	2.200	34.063	3.444	1.791	1.18	32000	1560	16.6	1540	191	3.64	1800	300
	W40 x 372	109.4	40.63	1.160	16.065	2.045	34.053	3.289	1.761	1.18	29600	1460	16.5	1420	177	3.60	1680	278
	W40 x 362	107.0	40.55	1.120	16.020	2.010	34.043	3.254	1.741	1.18	28900	1420	16.5	1380	173	3.60	1640	270
	W40 x 324	95.3	40.16	1.000	15.910	1.810	34.053	3.054	1.681	1.18	25600	1280	16.4	1220	153	3.58	1460	239
	W40 x 297	87.4	39.84	0.930	15.825	1.650	34.053	2.894	1.646	1.18	23200	1170	16.3	1090	138	3.54	1330	215
	W40 x 277	81.3	39.69	0.830	15.830	1.575	34.053	2.819	1.596	1.18	21900	1100	16.4	1040	132	3.58	1250	204
	W40 x 249	73.3	39.38	0.750	15.750	1.420	34.053	2.664	1.556	1.18	19600	993	16.3	926	118	3.55	1120	182
	W40 x 215	63.3	38.98	0.650	15.750	1.220	34.053	2.464	1.506	1.18	16700	859	16.2	796	101	3.54	964	156
	W40 x 199	58.4	38.67	0.650	15.750	1.065	34.053	2.309	1.506	1.18	14900	770	16.0	695	88.2	3.45	869	137
40 x 12	W40 x 327	95.9	40.79	1.180	12.130	2.130	34.043	3.374	1.771	1.18	24500	1200	16.0	640	105	2.58	1410	170
	W40 x 294	86.2	40.39	1.060	12.010	1.930	34.043	3.174	1.711	1.18	21900	1080	15.9	562	93.5	2.55	1267	150
	W40 x 264	77.6	40.00	0.960	11.930	1.730	34.053	2.974	1.661	1.18	19400	971	15.8	493	82.6	2.52	1130	132
	W40 x 235	68.9	39.69	0.830	11.890	1.575	34.053	2.819	1.596	1.18	17400	875	15.9	444	74.6	2.54	1010	118
	W40 x 211	62.0	39.37	0.750	11.810	1.415	34.053	2.659	1.556	1.18	15500	786	15.8	390	66.1	2.51	906	105
	W40 x 183	53.7	38.98	0.650	11.810	1.200	34.093	2.444	1.506	1.18	13300	683	15.7	336	56.9	2.50	783	89.6
	W40 x 167	49.1	38.59	0.650	11.810	1.025	34.053	2.269	1.506	1.18	11600	600	15.3	283	47.9	2.40	693	76.0
	W40 x 149	43.8	38.20	0.630	11.810	0.830	34.053	2.074	1.496	1.18	9800	513	15.0	229	38.8	2.29	598	62.2

# Nucor-Yamato Steel

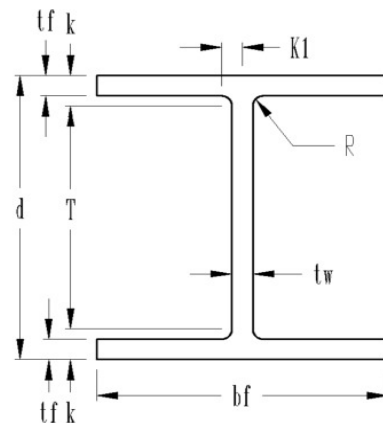
# W36



Prime Section Group	Section Size	Area A	Depth d	Web Thickness t <sub>w</sub>	Flange		Distance			Fillet Radius R	Elastic Properties						Plastic Modulus	
					Width b <sub>f</sub>	Thick-ness t <sub>f</sub>	T	k	k <sub>1</sub>		X - X			Y - Y			Z <sub>x</sub>	Z <sub>y</sub>
											I <sub>x</sub>	S <sub>x</sub>	r <sub>x</sub>	I <sub>y</sub>	S <sub>y</sub>	r <sub>y</sub>		
					Inch x lbs/ft	Inch <sup>2</sup>	Inch	Inch	Inch		Inch	In	In	In	Inch	Inch <sup>4</sup>	Inch <sup>3</sup>	Inch
36 x 16-1/2	W36 x 441	129.7	38.85	1.360	16.965	2.440	31.483	3.684	1.861	1.18	32300	1620	15.8	1990	235	3.92	1870	367
	W36 x 395	116.2	38.37	1.220	16.830	2.200	31.483	3.444	1.791	1.18	27500	1450	15.4	1750	208	3.89	1670	325
	W36 x 361	106.1	37.99	1.120	16.730	2.010	31.483	3.254	1.741	1.18	24800	1320	15.3	1570	188	3.85	1510	292
	W36 x 330	97.0	37.67	1.020	16.630	1.850	31.483	3.094	1.691	1.18	22500	1210	15.5	1420	171	3.83	1380	266
	W36 x 302	88.8	37.33	0.945	16.655	1.680	31.483	2.924	1.654	1.18	20300	1140	15.5	1300	156	3.82	1290	241
	W36 x 282	82.9	37.11	0.885	16.595	1.570	31.483	2.814	1.624	1.18	18900	1030	15.1	1200	144	3.80	1170	223
	W36 x 262	77.0	36.85	0.840	16.550	1.440	31.483	2.684	1.601	1.18	17300	953	15.0	1090	132	3.76	1110	204
	W36 x 247	72.5	36.67	0.800	16.510	1.350	31.483	2.594	1.581	1.18	16100	895	15.2	1010	123	3.74	1010	190
	W36 x 231	68.0	36.49	0.760	16.470	1.260	31.483	2.504	1.561	1.18	15000	837	14.9	940	114	3.72	943	177
36 x 12	W36 x 256	75.4	37.43	0.960	12.215	1.730	32.271	2.580	1.267	0.79	16800	895	14.9	528	86.5	2.65	1040	137
	W36 x 232	68.1	37.12	0.870	12.120	1.570	32.281	2.420	1.222	0.79	15000	809	14.8	468	77.2	2.62	936	122
	W36 x 210	61.8	36.69	0.830	12.180	1.360	32.271	2.210	1.202	0.79	13200	719	14.6	411	67.5	2.58	833	107
	W36 x 194	57.0	36.49	0.765	12.115	1.260	32.271	2.110	1.170	0.79	12100	664	14.6	375	61.9	2.56	767	97.7
	W36 x 182	53.6	36.33	0.725	12.075	1.180	32.271	2.030	1.150	0.79	11300	623	14.5	347	57.6	2.55	718	90.7
	W36 x 170	50.0	36.17	0.680	12.030	1.100	32.271	1.950	1.127	0.79	10500	581	14.5	320	53.2	2.53	668	83.8
	W36 x 160	47.0	36.01	0.650	12.000	1.020	32.271	1.870	1.112	0.79	9760	542	14.4	295	49.1	2.50	624	77.3
	W36 x 150	44.2	35.85	0.625	11.975	0.940	32.271	1.790	1.100	0.79	9040	504	14.3	270	45.1	2.47	581	70.9
W36 x 135	39.7	35.55	0.600	11.950	0.790	32.271	1.640	1.087	0.79	7800	439	14.0	225	37.7	2.38	509	59.7	

# Nucor-Yamato Steel

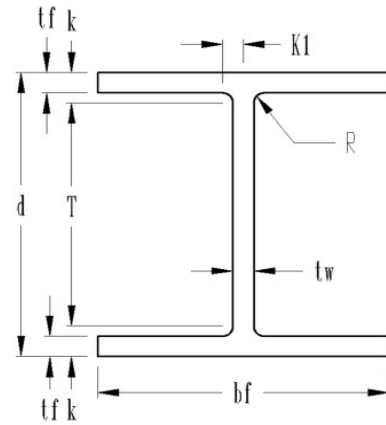
# W33



Prime Section Group	Section Size Inch x lbs/ft	Area A Inch <sup>2</sup>	Depth d Inch	Web Thickness t <sub>w</sub> Inch	Flange		Distance			Fillet Radius R Inch	Elastic Properties						Plastic Modulus	
					Width b <sub>f</sub> Inch	Thick-ness t <sub>f</sub> Inch	T In	k In	k <sub>1</sub> In		X - X			Y - Y			Z <sub>x</sub> Inch <sup>3</sup>	Z <sub>y</sub> Inch <sup>3</sup>
											I <sub>x</sub> Inch <sup>4</sup>	S <sub>x</sub> Inch <sup>3</sup>	r <sub>x</sub> Inch	I <sub>y</sub> Inch <sup>4</sup>	S <sub>y</sub> Inch <sup>3</sup>	r <sub>y</sub> Inch		
33 x 15-3/4	W33 x 387	114.0	35.95	1.260	16.200	2.280	29.691	3.130	1.417	0.79	24300	1350	14.6	1620	200	3.77	1560	312
	W33 x 354	104.1	35.55	1.160	16.100	2.090	29.671	2.940	1.367	0.79	22000	1240	14.5	1460	181	3.74	1420	282
	W33 x 318	93.5	35.16	1.040	15.985	1.890	29.681	2.740	1.307	0.79	19500	1110	14.5	1290	161	3.71	1270	250
	W33 x 291	85.6	34.84	0.960	15.905	1.730	29.681	2.580	1.267	0.79	17700	1020	14.4	1160	146	3.68	1160	226
	W33 x 263	77.4	34.53	0.870	15.805	1.570	29.691	2.420	1.222	0.79	15900	919	14.3	1040	131	3.66	1040	202
	W33 x 241	70.9	34.18	0.830	15.860	1.400	29.681	2.250	1.202	0.79	14200	831	14.1	933	118	3.62	940	182
	W33 x 221	65.0	33.93	0.775	15.805	1.275	29.681	2.125	1.175	0.79	12900	759	14.1	840	106	3.59	857	164
	W33 x 201	59.1	33.68	0.715	15.745	1.150	29.681	2.000	1.145	0.79	11600	686	14.0	749	95.2	3.56	773	147
33 x 11-1/2	W33 x 169	49.5	33.82	0.670	11.500	1.220	29.681	2.070	1.122	0.79	9290	549	13.7	310	53.9	2.50	629	84.4
	W33 x 152	44.7	33.49	0.635	11.565	1.055	29.681	1.905	1.105	0.79	8160	487	13.5	273	47.2	2.47	559	73.9
	W33 x 141	41.6	33.30	0.605	11.535	0.960	29.681	1.810	1.090	0.79	7450	448	13.4	246	42.7	2.43	514	66.9
	W33 x 130	38.3	33.09	0.580	11.510	0.855	29.681	1.705	1.077	0.79	6710	406	13.2	218	37.9	2.39	467	59.5
	W33 x 118	34.7	32.86	0.550	11.480	0.740	29.681	1.590	1.062	0.79	5900	359	13.0	187	32.6	2.32	415	51.3

# Nucor-Yamato Steel

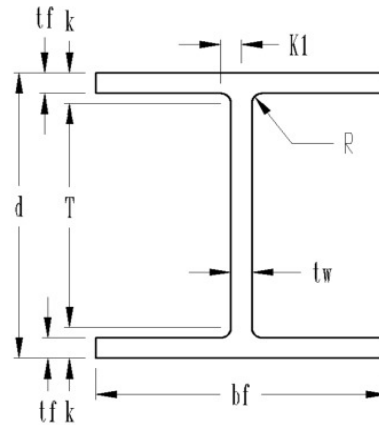
# W30



Prime Section Group	Section Size Inch x lbs/ft	Area A Inch <sup>2</sup>	Depth d Inch	Web Thickness t <sub>w</sub> Inch	Flange		Distance			Fillet Radius R Inch	Elastic Properties						Plastic Modulus	
					Width b <sub>f</sub> Inch	Thick-ness t <sub>f</sub> Inch	T In	k In	k <sub>1</sub> In		X - X			Y - Y			Z <sub>x</sub> Inch <sup>3</sup>	Z <sub>y</sub> Inch <sup>3</sup>
											l <sub>x</sub> Inch <sup>4</sup>	S <sub>x</sub> Inch <sup>3</sup>	r <sub>x</sub> Inch	l <sub>y</sub> Inch <sup>4</sup>	S <sub>y</sub> Inch <sup>3</sup>	r <sub>y</sub> Inch		
					Inch	Inch	In	In	In		Inch <sup>4</sup>	Inch <sup>3</sup>	Inch	Inch <sup>4</sup>	Inch <sup>3</sup>	Inch	Inch <sup>3</sup>	Inch <sup>3</sup>
30 x 15	W30 x 391	115.0	33.19	1.360	15.590	2.440	26.611	3.290	1.467	0.79	20700	1250	13.4	1550	198	3.67	1450	310
	W30 x 357	104.8	32.80	1.240	15.470	2.240	26.621	3.090	1.407	0.79	18700	1140	13.3	1390	179	3.64	1320	279
	W30 x 326	95.7	32.40	1.140	15.370	2.050	26.601	2.900	1.357	0.79	16800	1040	13.2	1240	162	3.61	1190	252
	W30 x 292	85.7	32.01	1.020	15.255	1.850	26.611	2.700	1.297	0.79	14900	930	13.2	1100	144	3.58	1060	223
	W30 x 261	76.7	31.61	0.930	15.155	1.650	26.611	2.500	1.252	0.79	13100	829	13.1	959	127	3.54	943	196
	W30 x 235	69.0	31.30	0.830	15.055	1.500	26.601	2.350	1.202	0.79	11700	748	13.0	855	114	3.52	847	175
	W30 x 211	62.0	30.94	0.775	15.105	1.315	26.611	2.165	1.175	0.79	10300	665	12.9	757	100	3.49	751	155
	W30 x 191	56.1	30.68	0.710	15.040	1.185	26.611	2.035	1.142	0.79	9200	600	12.8	673	89.5	3.46	675	138
	W30 x 173	50.8	30.44	0.655	14.985	1.065	26.611	1.915	1.115	0.79	8230	541	12.7	598	79.8	3.43	607	123
30 x 10-1/2	W30 x 148	43.5	30.67	0.650	10.480	1.180	26.611	2.030	1.112	0.79	6680	436	12.4	227	43.3	2.28	500	68.0
	W30 x 132	38.9	30.31	0.615	10.545	1.000	26.611	1.850	1.095	0.79	5770	380	12.2	196	37.2	2.25	437	58.4
	W30 x 124	36.5	30.17	0.585	10.515	0.930	26.611	1.780	1.080	0.79	5360	355	12.1	181	34.4	2.23	408	54.0
	W30 x 116	34.2	30.01	0.565	10.495	0.850	26.611	1.700	1.070	0.79	4930	329	12.0	164	31.3	2.19	378	49.2
	W30 x 108	31.7	29.83	0.545	10.475	0.760	26.611	1.610	1.060	0.79	4470	299	11.9	146	27.9	2.15	346	43.9
	W30 x 99	29.1	29.65	0.520	10.450	0.670	26.611	1.520	1.047	0.79	3990	269	11.7	128	24.5	2.10	312	38.6
	W30 x 90	26.4	29.53	0.470	10.400	0.610	26.611	1.460	1.022	0.79	3610	245	11.7	115	22.1	2.09	283	34.7

# Nucor-Yamato Steel

# W27

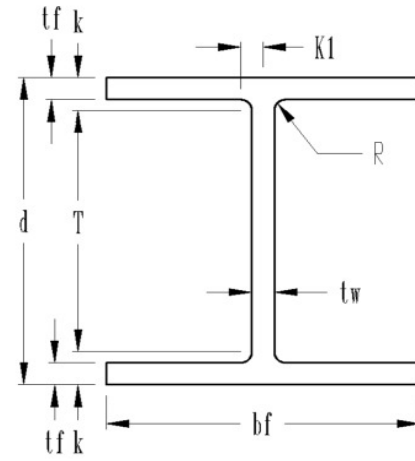


Prime Section Group	Section Size Inch x lbs/ft	Area A Inch <sup>2</sup>	Depth d Inch	Web Thickness t <sub>w</sub> Inch	Flange		Distance			Fillet Radius R Inch	Elastic Properties						Plastic Modulus	
					Width b <sub>f</sub> Inch	Thick-ness t <sub>f</sub> Inch	T In	k In	k <sub>1</sub> In		X - X			Y - Y			Z <sub>x</sub> Inch <sup>3</sup>	Z <sub>y</sub> Inch <sup>3</sup>
											I <sub>x</sub> Inch <sup>4</sup>	S <sub>x</sub> Inch <sup>3</sup>	r <sub>x</sub> Inch	I <sub>y</sub> Inch <sup>4</sup>	S <sub>y</sub> Inch <sup>3</sup>	r <sub>y</sub> Inch		
27 x 14	W27 x 368	108.1	30.39	1.380	14.665	2.480	23.731	3.330	1.477	0.79	16200	1060	12.2	1310	179	3.48	1240	279
	W27 x 336	98.7	30.00	1.260	14.550	2.280	23.741	3.130	1.417	0.79	14600	972	12.2	1180	162	3.45	1130	252
	W27 x 307	90.2	29.61	1.160	14.445	2.090	23.731	2.940	1.367	0.79	13100	887	12.0	1050	146	3.41	1030	227
	W27 x 281	82.6	29.29	1.060	14.350	1.930	23.731	2.780	1.317	0.79	11900	814	12.0	953	133	3.39	936	206
	W27 x 258	75.7	28.98	0.980	14.270	1.770	23.741	2.620	1.277	0.79	10800	745	11.9	859	120	3.36	852	187
	W27 x 235	69.1	28.66	0.910	14.190	1.610	23.741	2.460	1.242	0.79	9700	677	11.8	769	108	3.33	772	168
	W27 x 217	63.8	28.43	0.830	14.115	1.500	23.731	2.350	1.202	0.79	8910	627	11.8	704	99.8	3.32	711	154
	W27 x 194	57.0	28.11	0.750	14.035	1.340	23.731	2.190	1.162	0.79	7860	559	11.7	619	88.1	3.29	631	136
	W27 x 178	52.3	27.81	0.725	14.085	1.190	23.731	2.040	1.150	0.79	7020	505	11.6	555	78.8	3.25	570	122
	W27 x 161	47.4	27.59	0.660	14.020	1.080	23.731	1.930	1.117	0.79	6310	458	11.5	497	70.9	3.23	515	109
	W27 x 146	42.9	27.38	0.605	13.965	0.975	23.731	1.825	1.090	0.79	5660	414	11.5	443	63.5	3.20	464	97.7
27 x 10	W27 x 129	37.8	27.63	0.610	10.010	1.100	23.731	1.950	1.092	0.79	4760	345	11.2	184	36.8	2.21	395	57.6
	W27 x 114	33.5	27.29	0.570	10.070	0.930	23.731	1.780	1.072	0.79	4080	299	11.0	159	31.5	2.18	343	49.3
	W27 x 102	30.0	27.09	0.515	10.015	0.830	23.731	1.680	1.045	0.79	3620	267	11.0	139	27.8	2.15	305	43.4
	W27 x 94	27.7	26.92	0.490	9.990	0.745	23.731	1.595	1.032	0.79	3270	243	10.9	124	24.8	2.12	278	38.8
	W27 x 84	24.8	26.71	0.460	9.960	0.640	23.730	1.490	1.017	0.79	2850	213	10.7	106	21.2	2.07	244	33.2



# Nucor-Yamato Steel

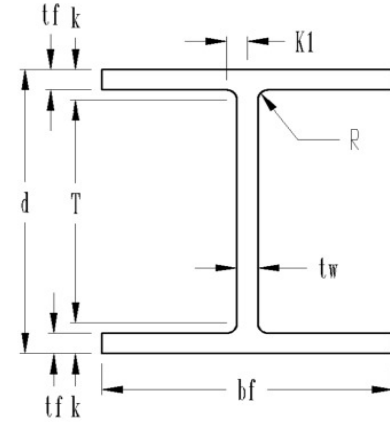
# W24



Prime Section Group	Section Size	Area A	Depth d	Web Thickness t <sub>w</sub>	Flange		Distance			Fillet Radius R	Elastic Properties						Plastic Modulus	
					Width b <sub>f</sub>	Thick-ness t <sub>f</sub>	T	k	k <sub>1</sub>		X - X			Y - Y			Z <sub>x</sub>	Z <sub>y</sub>
											I <sub>x</sub>	S <sub>x</sub>	r <sub>x</sub>	I <sub>y</sub>	S <sub>y</sub>	r <sub>y</sub>		
					Inch	Inch	Inch	Inch	Inch		Inch	Inch <sup>4</sup>	Inch <sup>3</sup>	Inch	Inch <sup>4</sup>	Inch <sup>3</sup>	Inch	Inch <sup>3</sup>
24 x 12-3/4	W24 x 370	108.0	27.99	1.520	13.660	2.720	20.851	3.570	1.547	0.79	13400	957	11.2	1160	170	3.27	1130	267
	W24 x 335	98.4	27.52	1.380	13.520	2.480	20.861	3.330	1.477	0.79	11900	864	11.0	1030	152	3.23	1020	238
	W24 x 306	89.8	27.13	1.260	13.405	2.280	20.871	3.130	1.417	0.79	10700	789	10.9	919	137	3.20	922	214
	W24 x 279	82.0	26.73	1.160	13.305	2.090	20.851	2.940	1.367	0.79	9600	718	10.8	823	124	3.17	835	193
	W24 x 250	73.5	26.34	1.040	13.185	1.890	20.861	2.740	1.307	0.79	8490	644	10.7	724	110	3.14	744	171
	W24 x 229	67.2	26.02	0.960	13.110	1.730	20.861	2.580	1.267	0.79	7650	588	10.7	651	99.4	3.11	675	154
	W24 x 207	60.7	25.71	0.870	13.010	1.570	20.871	2.420	1.222	0.79	6820	531	10.6	578	88.8	3.08	606	137
	W24 x 192	56.3	25.47	0.810	12.950	1.460	20.851	2.310	1.192	0.79	6260	491	10.5	530	81.8	3.07	559	126
	W24 x 176	51.7	25.24	0.750	12.890	1.340	20.861	2.190	1.162	0.79	5680	450	10.5	479	74.3	3.04	511	115
	W24 x 162	47.7	25.00	0.705	12.955	1.220	20.861	2.070	1.140	0.79	5170	414	10.5	443	68.4	3.05	468	105
	W24 x 146	43.0	24.74	0.650	12.900	1.090	20.861	1.940	1.112	0.79	4580	371	10.3	391	60.5	3.01	418	93.2
	W24 x 131	38.5	24.48	0.605	12.855	0.960	20.861	1.810	1.090	0.79	4020	329	10.2	340	53.0	2.97	370	81.5
	W24 x 117	34.4	24.26	0.550	12.800	0.850	20.861	1.700	1.062	0.79	3540	291	10.1	298	46.5	2.94	327	71.4
	W24 x 104	30.6	24.06	0.500	12.750	0.750	20.861	1.600	1.037	0.79	3100	258	10.1	259	40.7	2.91	289	62.4
24 x 9	W24 x 103	30.3	24.53	0.550	9.000	0.980	20.871	1.830	1.062	0.79	3000	245	9.96	119	26.5	1.99	280	41.5
	W24 x 94	27.7	24.31	0.515	9.065	0.875	20.861	1.725	1.045	0.79	2700	222	9.87	109	24.0	1.98	254	37.5
	W24 x 84	24.7	24.10	0.470	9.020	0.770	20.861	1.620	1.022	0.79	2370	196	9.79	94.4	20.9	1.95	224	32.6
	W24 x 76	22.4	23.92	0.440	8.990	0.680	20.861	1.530	1.007	0.79	2100	176	9.69	82.5	18.4	1.92	200	28.6
	W24 x 68	20.1	23.73	0.415	8.965	0.585	20.861	1.435	0.995	0.79	1830	154	9.55	70.4	15.7	1.87	177	24.5
<b>CSA</b>	W24 x 61	18.0	23.56	0.380	8.930	0.500	20.861	1.350	0.977	0.79	1620	137	9.47	59.5	13.3	1.82	157	20.9
<b>CSA</b>	W24 x 56	16.7	23.48	0.355	8.900	0.460	20.861	1.310	0.965	0.79	1490	127	9.44	54.2	12.2	1.80	145	19.1
24 x 7	W24 x 62	18.2	23.74	0.430	7.040	0.590	21.017	1.362	0.924	0.71	1560	132	9.24	34.5	9.8	1.38	154	15.8
	W24 x 55	16.2	23.57	0.395	7.005	0.505	21.017	1.277	0.907	0.71	1360	115	9.13	29.1	8.30	1.34	135	13.4

# Nucor-Yamato Steel

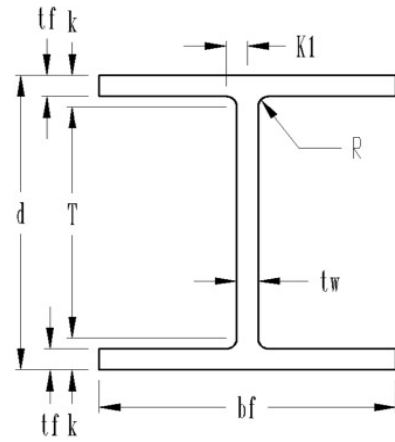
# W21



Prime Section Group	Section Size Inch x lbs/ft	Area A Inch <sup>2</sup>	Depth d Inch	Web Thickness t <sub>w</sub> Inch	Flange		Distance			Fillet Radius R Inch	Elastic Properties						Plastic Modulus	
					Width b <sub>f</sub> Inch	Thick-ness t <sub>f</sub> Inch	T In	k In	k <sub>1</sub> In		X - X			Y - Y			Z <sub>x</sub> Inch <sup>3</sup>	Z <sub>y</sub> Inch <sup>3</sup>
											I <sub>x</sub> Inch <sup>4</sup>	S <sub>x</sub> Inch <sup>3</sup>	r <sub>x</sub> Inch	I <sub>y</sub> Inch <sup>4</sup>	S <sub>y</sub> Inch <sup>3</sup>	r <sub>y</sub> Inch		
21 x 13	W21 x 275	81.1	24.13	1.220	12.890	2.190	18.051	3.040	1.397	0.79	7650	634	9.71	785	122	3.11	743	190
	W21 x 248	73.1	23.74	1.100	12.775	1.990	18.061	2.840	1.337	0.79	6790	572	9.64	694	109	3.08	665	169
21 x 12-1/2	W21 x 223	65.7	23.35	1.000	12.675	1.790	18.071	2.640	1.287	0.79	5980	512	9.54	609	96.2	3.05	592	149
	W21 x 201	59.2	23.03	0.910	12.575	1.630	18.071	2.480	1.242	0.79	5310	461	9.47	542	86.1	3.02	530	133
	W21 x 182	53.7	22.72	0.830	12.500	1.480	18.061	2.330	1.202	0.79	4730	417	9.40	483	77.2	3.00	476	119
	W21 x 166	48.9	22.48	0.750	12.420	1.360	18.061	2.210	1.162	0.79	4280	380	9.36	435	70.0	2.99	432	108
	W21 x 147	43.2	22.06	0.720	12.510	1.150	18.061	2.000	1.147	0.79	3630	329	9.17	376	60.1	2.95	373	92.6
	W21 x 132	38.8	21.83	0.650	12.440	1.035	18.061	1.885	1.112	0.79	3220	295	9.12	333	53.5	2.93	333	82.3
	W21 x 122	35.9	21.68	0.600	12.390	0.960	18.061	1.810	1.087	0.79	2960	273	9.09	305	49.2	2.92	307	75.6
21 x 12-1/4	W21 x 111	32.7	21.51	0.550	12.340	0.875	18.217	1.647	0.984	0.71	2670	249	9.05	274	44.5	2.90	279	68.2
	W21 x 101	29.8	21.36	0.500	12.290	0.800	18.217	1.572	0.959	0.71	2420	227	9.02	248	40.3	2.89	253	61.7
21 x 8-1/4	W21 x 93	27.3	21.62	0.580	8.420	0.930	18.533	1.544	0.841	0.55	2070	192	8.70	92.9	22.1	1.84	221	34.7
	W21 x 83	24.3	21.43	0.515	8.355	0.835	18.533	1.449	0.809	0.55	1830	171	8.67	81.4	19.5	1.83	196	30.5
	W21 x 73	21.5	21.24	0.455	8.295	0.740	18.533	1.354	0.779	0.55	1600	151	8.64	70.6	17.0	1.81	172	26.6
	W21 x 68	20.0	21.13	0.430	8.270	0.685	18.533	1.299	0.766	0.55	1480	140	8.60	64.7	15.7	1.80	160	24.4
	W21 x 62	18.3	20.99	0.400	8.240	0.615	18.533	1.229	0.751	0.55	1330	127	8.54	57.5	14.0	1.77	144	21.7
	W21 x 55	16.2	20.80	0.375	8.220	0.522	18.529	1.136	0.739	0.55	1140	110	8.40	48.4	11.8	1.73	126	18.4
	W21 x 48	14.1	20.62	0.350	8.140	0.430	18.533	1.044	0.726	0.55	959	93	8.24	38.7	9.52	1.66	107	14.9
21 x 6-1/2	W21 x 57	16.7	21.06	0.405	6.555	0.650	18.533	1.264	0.754	0.55	1170	111	8.36	30.6	9.35	1.35	129	14.8
	W21 x 50	14.7	20.83	0.380	6.530	0.535	18.533	1.149	0.741	0.55	984	94.5	8.18	24.9	7.64	1.30	110	12.2
	W21 x 44	13.0	20.66	0.350	6.500	0.450	18.533	1.064	0.726	0.55	843	81.6	8.06	20.7	6.37	1.26	95.4	10.2

# Nucor-Yamato Steel

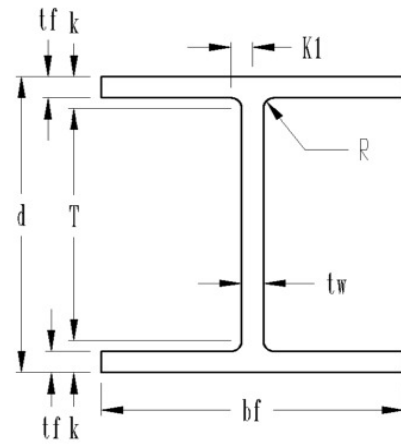
# W18



Prime Section Group	Section Size	Area A	Depth d	Web Thickness tw	Flange		Distance			Fillet Radius R	Elastic Properties						Plastic Modulus	
					Width bf	Thick-ness tf	T	k	k1		X - X			Y - Y			Zx	Zy
											lx	Sx	rx	ly	ly	ry		
					Inch x lbs/ft	Inch <sup>2</sup>	Inch	Inch	Inch		Inch	In	In	In	Inch	Inch <sup>4</sup>	Inch <sup>3</sup>	Inch
18 x 11	W18 x 311	91.5	22.32	1.520	12.005	2.740	15.141	3.590	1.547	0.79	6990	626	8.74	796	133	2.95	756	208
	W18 x 283	83.2	21.85	1.400	11.890	2.500	15.151	3.350	1.487	0.79	6190	567	8.63	705	119	2.91	679	185
	W18 x 258	75.9	21.46	1.280	11.770	2.300	15.161	3.150	1.427	0.79	5540	516	8.54	628	107	2.88	614	167
	W18 x 234	68.8	21.06	1.160	11.650	2.110	15.141	2.960	1.367	0.79	4930	468	8.46	559	95.9	2.85	552	149
	W18 x 211	62.1	20.67	1.060	11.555	1.910	15.151	2.760	1.317	0.79	4360	421	8.38	493	85.3	2.82	494	133
	W18 x 192	56.4	20.35	0.960	11.455	1.750	15.151	2.600	1.267	0.79	3900	383	8.31	440	76.8	2.79	445	119
	W18 x 175	51.3	20.04	0.890	11.375	1.590	15.161	2.440	1.232	0.79	3450	344	8.20	391	68.8	2.76	398	107
	W18 x 158	46.3	19.72	0.810	11.300	1.440	15.141	2.290	1.192	0.79	3060	310	8.12	347	61.5	2.74	356	94.8
	W18 x 143	42.1	19.49	0.730	11.220	1.320	15.151	2.170	1.152	0.79	2750	282	8.09	311	55.5	2.72	322	85.4
	W18 x 130	38.2	19.25	0.670	11.160	1.200	15.151	2.050	1.122	0.79	2460	256	8.03	278	49.9	2.70	290	76.7
	W18 x 119	35.1	18.97	0.655	11.265	1.060	15.151	1.910	1.115	0.79	2190	231	7.90	253	44.9	2.69	262	69.1
	W18 x 106	31.1	18.73	0.590	11.200	0.940	15.151	1.790	1.082	0.79	1910	204	7.84	221	39.4	2.66	230	60.5
	W18 x 97	28.5	18.59	0.535	11.145	0.870	15.151	1.720	1.055	0.79	1750	188	7.82	201	36.1	2.65	211	55.3
	W18 x 86	25.3	18.39	0.480	11.090	0.770	15.151	1.620	1.027	0.79	1530	166	7.77	175	31.6	2.63	186	48.4
	W18 x 76	22.3	18.21	0.425	11.035	0.680	15.151	1.530	1.000	0.79	1330	146	7.73	152	27.6	2.61	163	42.2
18 x 7-1/2	W18 x 71	20.8	18.47	0.495	7.635	0.810	15.543	1.464	0.839	0.59	1170	127	7.50	60.3	15.8	1.70	146	24.7
	W18 x 65	19.1	18.35	0.450	7.590	0.750	15.543	1.404	0.816	0.59	1070	117	7.49	54.8	14.4	1.69	133	22.5
	W18 x 60	17.6	18.24	0.415	7.555	0.695	15.543	1.349	0.799	0.59	984	108	7.47	50.1	13.3	1.68	123	20.6
	W18 x 55	16.2	18.11	0.390	7.530	0.630	15.543	1.284	0.786	0.59	890	98.3	7.41	44.9	11.9	1.67	112	18.5
	W18 x 50	14.7	17.99	0.355	7.495	0.570	15.543	1.224	0.769	0.59	800	88.9	7.38	40.1	10.7	1.65	101	16.6
CSA	W18 x 45	13.5	17.86	0.340	7.480	0.500	15.553	1.154	0.761	0.59	720	80.6	7.30	35.0	9.35	1.61	91.6	14.6
CSA	W18 x 41	12.1	17.70	0.320	7.450	0.430	15.533	1.084	0.751	0.59	626	70.7	7.19	29.7	7.98	1.57	80.5	12.5
18 x 6	W18 x 46	13.5	18.06	0.360	6.060	0.605	15.543	1.259	0.771	0.59	712	78.8	7.25	22.5	7.44	1.29	90.7	11.7
	W18 x 40	11.8	17.90	0.315	6.015	0.525	15.543	1.179	0.749	0.59	612	68.4	7.21	19.1	6.36	1.27	78.4	10.0
	W18 x 35	10.3	17.70	0.300	6.000	0.425	15.543	1.079	0.741	0.59	510	57.6	7.04	15.3	5.12	1.22	66.5	8.06

# Nucor-Yamato Steel

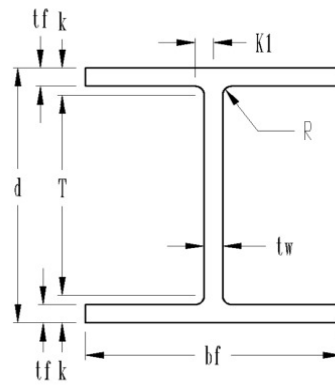
# W16



Prime Section Group	Section Size Inch x lbs/ft	Area A Inch <sup>2</sup>	Depth d Inch	Web Thick- ness t <sub>w</sub> Inch	Flange		Distance			Fillet Radius R Inch	Elastic Properties						Plastic Modulus	
					Width b <sub>f</sub> Inch	Thick- ness t <sub>f</sub> Inch	T In	k In	k <sub>1</sub> In		X - X			Y - Y			Z <sub>x</sub> Inch <sup>3</sup>	Z <sub>y</sub> Inch <sup>3</sup>
											l <sub>x</sub> Inch <sup>4</sup>	S <sub>x</sub> Inch <sup>3</sup>	r <sub>x</sub> Inch	l <sub>y</sub> Inch <sup>4</sup>	S <sub>y</sub> Inch <sup>3</sup>	r <sub>y</sub> Inch		
16 x 10-1/4	W16 x 100	29.4	16.97	0.585	10.425	0.985	13.457	1.757	1.002	0.71	1500	177	7.10	186	35.7	2.50	200	55.0
	W16 x 89	26.2	16.75	0.525	10.365	0.875	13.457	1.647	0.972	0.71	1310	157	7.05	163	31.4	2.48	177	48.2
	W16 x 77	22.6	16.52	0.455	10.295	0.760	13.457	1.532	0.937	0.71	1120	136	7.00	138	26.9	2.46	152	41.2
	W16 x 67	19.7	16.33	0.395	10.235	0.665	13.457	1.437	0.907	0.71	970	119	6.97	119	23.2	2.44	132	35.6
16 x 7	W16 x 57	16.8	16.43	0.430	7.120	0.715	13.693	1.369	0.806	0.59	758	92.2	6.72	43.1	12.1	1.60	105	18.9
	W16 x 50	14.7	16.26	0.380	7.070	0.630	13.693	1.284	0.781	0.59	659	81.0	6.68	37.2	10.5	1.59	92.0	16.3
	W16 x 45	13.3	16.13	0.345	7.035	0.565	13.693	1.219	0.764	0.59	586	72.7	6.65	32.8	9.34	1.57	82.3	14.5
	W16 x 40	11.8	16.01	0.305	6.995	0.505	13.693	1.159	0.744	0.59	518	64.7	6.63	28.9	8.25	1.57	73.0	12.7
	W16 x 36	10.6	15.86	0.295	6.985	0.430	13.693	1.084	0.739	0.59	448	56.5	6.51	24.5	7.00	1.52	64.0	10.8
16 x 5-1/2	W16 x 31	9.12	15.88	0.275	5.525	0.440	13.693	1.094	0.729	0.59	375	47.2	6.41	12.4	4.49	1.17	54.0	7.03
	W16 x 26	7.68	15.69	0.250	5.500	0.345	13.693	0.999	0.716	0.59	301	38.4	6.26	9.59	3.49	1.12	44.2	5.48

# Nucor-Yamato Steel

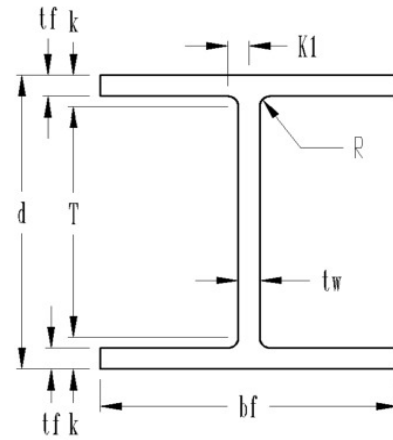
# W14



Prime Section Group	Section Size Inch x lbs/ft	Area Inch <sup>2</sup>	Depth d Inch	Web Thickness t <sub>w</sub> Inch	Flange		Distance			Fillet Radius R Inch	Elastic Properties						Plastic Modulus	
					Width b <sub>f</sub> Inch	Thick-ness t <sub>f</sub> Inch	T In	k In	k <sub>1</sub> In		X - X			Y - Y			Z <sub>x</sub> Inch <sup>3</sup>	Z <sub>y</sub> Inch <sup>3</sup>
											I <sub>x</sub> Inch <sup>4</sup>	S <sub>x</sub> Inch <sup>3</sup>	r <sub>x</sub> Inch	I <sub>y</sub> Inch <sup>4</sup>	S <sub>y</sub> Inch <sup>3</sup>	r <sub>y</sub> Inch		
					A	d	t <sub>w</sub>	b <sub>f</sub>	t <sub>f</sub>		T	k	k <sub>1</sub>	R	I <sub>x</sub>	S <sub>x</sub>	r <sub>x</sub>	I <sub>y</sub>
14x16	W14 x 730	215.0	22.42	3.070	17.890	4.910	11.293	5.564	2.126	0.59	14300	1280	8.17	4720	527	4.68	1660	816
	W14 x 665	196.0	21.64	2.830	17.650	4.520	11.293	5.174	2.006	0.59	12400	1150	7.98	4170	472	4.61	1480	730
	W14 x 605	178.0	20.92	2.595	17.415	4.160	11.293	4.814	1.889	0.59	10800	1040	7.80	3680	423	4.55	1320	652
	W14 x 550	162.0	20.24	2.380	17.200	3.820	11.293	4.474	1.781	0.59	9430	931	7.63	3250	378	4.49	1180	583
	W14 x 500	147.0	19.6	2.190	17.010	3.500	11.293	4.154	1.686	0.59	8210	838	7.48	2880	339	4.43	1050	522
	W14 x 455	134.0	19.02	2.015	16.835	3.210	11.293	3.864	1.599	0.59	7190	756	7.33	2560	304	4.38	936	468
	W14 x 426	125.0	18.67	1.875	16.695	3.035	11.293	3.689	1.529	0.59	6600	706	7.26	2360	283	4.34	869	434
	W14 x 398	117.0	18.29	1.770	16.590	2.845	11.293	3.499	1.476	0.59	6000	656	7.16	2170	262	4.31	801	402
	W14 x 370	109.0	17.92	1.655	16.475	2.660	11.293	3.314	1.419	0.59	5440	607	7.07	1990	241	4.27	736	370
	W14 x 342	100.5	17.54	1.540	16.360	2.470	11.293	3.124	1.361	0.59	4900	558	6.98	1810	221	4.24	672	338
	W14 x 311	91.4	17.12	1.410	16.230	2.260	11.293	2.914	1.296	0.59	4330	506	6.88	1610	199	4.20	603	304
	W14 x 283	83.3	16.74	1.290	16.110	2.070	11.293	2.724	1.236	0.59	3840	459	6.79	1440	179	4.16	542	274
	W14 x 257	75.6	16.38	1.175	15.995	1.890	11.293	2.544	1.179	0.59	3400	415	6.71	1290	161	4.13	487	246
	W14 x 233	68.5	16.04	1.070	15.890	1.720	11.293	2.374	1.126	0.59	3010	375	6.63	1150	145	4.10	436	221
	W14 x 211	62.0	15.72	0.980	15.800	1.560	11.293	2.214	1.081	0.59	2660	338	6.55	1030	130	4.07	390	198
	W14 x 193	56.8	15.48	0.890	15.710	1.440	11.293	2.094	1.036	0.59	2400	310	6.50	931	119	4.05	355	180
	W14 x 176	51.8	15.22	0.830	15.650	1.310	11.293	1.964	1.006	0.59	2140	281	6.43	838	107	4.02	320	163
	W14 x 159	46.7	14.98	0.745	15.565	1.190	11.293	1.844	0.964	0.59	1900	254	6.38	748	96.2	4.00	287	146
	W14 x 145	42.7	14.78	0.680	15.500	1.090	11.293	1.744	0.931	0.59	1710	232	6.33	677	87.3	3.98	260	133
14 x 14-1/2	W14 x 132	38.8	14.66	0.645	14.725	1.030	10.113	2.274	1.504	1.18	1530	209	6.28	548	74.5	3.76	234	113
	W14 x 120	35.3	14.48	0.590	14.670	0.940	10.113	2.184	1.476	1.18	1380	190	6.24	495	67.5	3.74	212	102
	W14 x 109	32.0	14.32	0.525	14.605	0.860	10.113	2.104	1.444	1.18	1240	173	6.22	447	61.2	3.73	192	92.7
	W14 x 99	29.1	14.16	0.485	14.565	0.780	10.113	2.024	1.424	1.18	1110	157	6.17	402	55.2	3.71	173	83.6
	W14 x 90	26.5	14.02	0.440	14.520	0.710	10.113	1.954	1.401	1.18	999	143	6.14	362	49.9	3.70	157	75.6
14 x 10	W14 x 82	24.1	14.31	0.510	10.130	0.855	10.901	1.705	1.042	0.79	881	123	6.05	148	29.3	2.48	140	44.8
	W14 x 74	21.8	14.17	0.450	10.070	0.785	10.901	1.635	1.012	0.79	795	112	6.04	134	26.6	2.48	127	40.5
	W14 x 68	20.0	14.04	0.415	10.035	0.720	10.901	1.570	0.995	0.79	722	103	6.01	121	24.2	2.46	116	36.9
	W14 x 61	17.9	13.89	0.375	9.995	0.645	10.901	1.495	0.975	0.79	640	92.1	5.98	107	21.5	2.45	10.2	32.9
14 x 8	W14 x 53	15.6	13.92	0.370	8.060	0.660	10.901	1.510	0.972	0.79	541	77.8	5.89	57.7	14.3	1.92	87.1	22.1
	W14 x 48	14.1	13.79	0.340	8.030	0.595	10.901	1.445	0.957	0.79	484	70.2	5.85	51.5	12.8	1.91	78.4	19.6
	W14 x 43	12.6	13.66	0.305	7.995	0.530	10.901	1.380	0.940	0.79	428	62.6	5.82	45.2	11.3	1.89	69.6	17.3
14 x 6-3/4	W14 x 38	11.2	14.10	0.310	6.770	0.515	12.079	1.011	0.588	0.43	385	54.6	5.87	26.7	7.88	1.55	61.5	12.1
	W14 x 34	10.0	13.98	0.285	6.745	0.455	12.079	0.951	0.576	0.43	340	48.6	5.83	23.3	6.91	1.53	54.6	10.6
	W14 x 30	8.85	13.84	0.270	6.730	0.385	12.079	0.881	0.568	0.43	291	42.0	5.73	19.6	5.82	1.49	47.3	8.99
14 x 5	W14 x 26	7.69	13.91	0.255	5.025	0.420	12.079	0.916	0.561	0.43	245	35.3	5.65	8.91	3.55	1.08	40.2	5.54
	W14 x 22	6.49	13.74	0.230	5.000	0.335	12.079	0.831	0.548	0.43	199	29.0	5.54	7.00	2.80	1.04	33.2	4.39

# Nucor-Yamato Steel

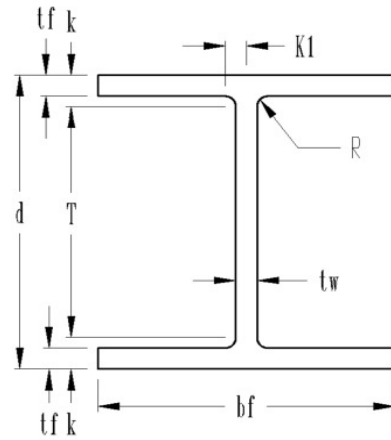
# W12



Prime Section Group	Section Size	Area A Inch <sup>2</sup>	Depth d Inch	Web Thickness t <sub>w</sub> Inch	Flange		Distance			Fillet Radius R Inch	Elastic Properties						Plastic Modulus	
					Width b <sub>f</sub> Inch	Thick-ness t <sub>f</sub> Inch	T In	k In	k <sub>1</sub> In		X - X			Y - Y			Z <sub>x</sub> Inch <sup>3</sup>	Z <sub>y</sub> Inch <sup>3</sup>
											I <sub>x</sub> Inch <sup>4</sup>	S <sub>x</sub> Inch <sup>3</sup>	r <sub>x</sub> Inch	I <sub>y</sub> Inch <sup>4</sup>	S <sub>y</sub> Inch <sup>3</sup>	r <sub>y</sub> Inch		
					Inch x lbs/ft	Inch <sup>2</sup>	Inch	Inch	Inch		Inch	In	In	In	Inch	Inch <sup>4</sup>	Inch <sup>3</sup>	Inch
12 x 12	W12 x 336	98.8	16.82	1.775	13.385	2.955	9.211	3.805	1.675	0.79	4070	484	6.42	1190	177	3.47	603	274
	W12 x 305	89.6	16.32	1.625	13.235	2.705	9.211	3.555	1.600	0.79	3550	435	6.30	1050	159	3.42	537	244
	W12 x 279	81.9	15.85	1.530	13.140	2.470	9.211	3.320	1.552	0.79	3110	394	6.16	937	143	3.38	481	220
	W12 x 252	74.1	15.41	1.395	13.005	2.250	9.211	3.100	1.485	0.79	2720	354	6.06	828	127	3.34	428	196
	W12 x 230	67.7	15.05	1.285	12.895	2.070	9.211	2.920	1.430	0.79	2420	322	5.97	742	115	3.31	386	177
	W12 x 210	61.8	14.71	1.180	12.790	1.900	9.211	2.750	1.377	0.79	2140	292	5.89	664	104	3.28	348	159
	W12 x 190	55.8	14.38	1.060	12.670	1.735	9.211	2.585	1.317	0.79	1890	263	5.82	589	93.1	3.25	311	143
	W12 x 170	50.0	14.03	0.960	12.570	1.560	9.211	2.410	1.267	0.79	1650	235	5.75	517	82.3	3.22	276	126
	W12 x 152	44.7	13.71	0.870	12.480	1.400	9.211	2.250	1.222	0.79	1430	210	5.66	454	72.8	3.19	244	111
	W12 x 136	39.9	13.41	0.790	12.400	1.250	9.211	2.100	1.182	0.79	1240	186	5.58	398	64.2	3.16	215	98.1
	W12 x 120	35.3	13.12	0.710	12.320	1.105	9.211	1.955	1.142	0.79	1080	163	5.51	345	56.0	3.13	186	85.4
	W12 x 106	31.2	12.89	0.610	12.220	0.990	9.211	1.840	1.092	0.79	933	146	5.47	301	49.3	3.11	165	75.2
	W12 x 96	28.2	12.71	0.550	12.160	0.900	9.211	1.750	1.062	0.79	833	131	5.44	270	44.4	3.09	147	67.5
	W12 x 87	25.6	12.53	0.515	12.125	0.810	9.211	1.660	1.045	0.79	740	118	5.38	241	39.7	3.07	132	60.5
	W12 x 79	23.2	12.38	0.470	12.080	0.735	9.211	1.585	1.022	0.79	662	107	5.34	216	35.8	3.05	119	54.3
	W12 x 72	21.1	12.25	0.430	12.040	0.670	9.211	1.520	1.002	0.79	597	97.4	5.31	195	32.4	3.04	108	49.3
W12 x 65	19.1	12.12	0.390	12.000	0.605	9.211	1.455	0.982	0.79	533	87.9	5.28	174	29.1	3.02	96.8	44.2	
12 x 10	W12 x 58	17.0	12.19	0.360	10.010	0.640	9.367	1.412	0.889	0.71	475	78.0	5.28	107	21.4	2.51	86.4	32.5
	W12 x 53	15.6	12.06	0.345	9.995	0.575	9.367	1.347	0.882	0.71	425	70.6	5.23	95.8	19.2	2.48	77.9	29.1
12 x 8	W12 x 50	14.7	12.19	0.370	8.080	0.640	9.367	1.412	0.894	0.71	391	64.2	5.18	56.3	13.9	1.96	71.9	21.3
	W12 x 45	13.2	12.06	0.335	8.045	0.575	9.367	1.347	0.877	0.71	348	57.7	5.15	50.0	12.4	1.95	64.2	19.0
	W12 x 40	11.8	11.94	0.295	8.005	0.515	9.367	1.287	0.857	0.71	307	51.5	5.13	44.1	11.0	1.94	57.0	16.8
12 x 6-1/2	W12 x 35	10.3	12.50	0.300	6.560	0.520	10.547	0.977	0.544	0.39	285	45.6	5.25	24.5	7.47	1.54	51.2	11.5
	W12 x 30	8.79	12.34	0.260	6.520	0.440	10.547	0.897	0.524	0.39	238	38.6	5.23	20.3	6.24	1.52	43.1	9.56
	W12 x 26	7.65	12.22	0.230	6.490	0.380	10.547	0.837	0.509	0.39	204	33.4	5.19	17.3	5.34	1.51	37.2	8.18
12 x 4	W12 x 22	6.48	12.31	0.260	4.030	0.425	10.547	0.882	0.524	0.39	156	25.4	4.91	4.66	2.31	0.85	29.3	3.67
	W12 x 19	5.57	12.16	0.235	4.005	0.350	10.547	0.807	0.512	0.39	132	21.3	4.82	3.77	1.88	0.82	24.7	2.99
	W12 x 16	4.71	11.99	0.220	3.990	0.265	10.547	0.722	0.504	0.39	105	17.1	4.67	2.82	1.41	0.77	20.1	2.26

# Nucor-Yamato Steel

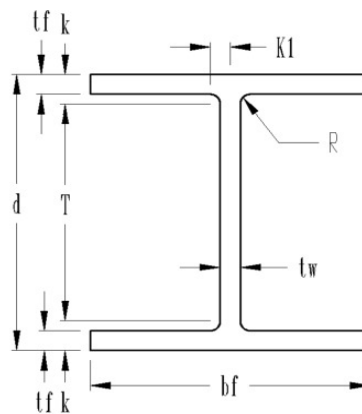
# W10



Prime Section Group	Section Size Inch x lbs/ft	Area A Inch <sup>2</sup>	Depth d Inch	Web Thickness t <sub>w</sub> Inch	Flange		Distance			Fillet Radius R Inch	Elastic Properties						Plastic Modulus	
					Width b <sub>f</sub> Inch	Thick-ness t <sub>f</sub> Inch	T In	k In	k <sub>1</sub> In		X - X			Y - Y			Z <sub>x</sub> Inch <sup>3</sup>	Z <sub>y</sub> Inch <sup>3</sup>
											l <sub>x</sub> Inch <sup>4</sup>	S <sub>x</sub> Inch <sup>3</sup>	r <sub>x</sub> Inch	l <sub>y</sub> Inch <sup>4</sup>	S <sub>y</sub> Inch <sup>3</sup>	r <sub>y</sub> Inch		
10 x 10	W10 x 112	32.9	11.36	0.755	10.415	1.250	7.711	1.825	0.890	0.51	719	126	4.66	236	45.3	2.68	147	69.2
	W10 x 100	29.4	11.10	0.680	10.340	1.120	7.711	1.695	0.852	0.51	623	112	4.60	207	40.0	2.65	130	61.0
	W10 x 88	25.9	10.84	0.605	10.265	0.990	7.711	1.565	0.815	0.51	534	98.5	4.54	179	34.8	2.63	113	53.1
	W10 x 77	22.6	10.60	0.530	10.190	0.870	7.711	1.445	0.777	0.51	455	85.9	4.49	154	30.1	2.60	97.6	45.9
	W10 x 68	20.0	10.40	0.470	10.130	0.770	7.711	1.345	0.747	0.51	394	75.7	4.44	134	26.4	2.59	85.3	40.1
	W10 x 60	17.6	10.22	0.420	10.080	0.680	7.711	1.255	0.722	0.51	341	66.7	4.39	116	23.0	2.57	74.6	35.0
	W10 x 54	15.8	10.09	0.370	10.030	0.615	7.711	1.190	0.697	0.51	303	60.0	4.37	103	20.6	2.56	66.6	31.3
	W10 x 49	14.4	9.98	0.340	10.000	0.560	7.711	1.135	0.682	0.51	272	54.6	4.35	93.4	18.7	2.54	60.4	28.3
10 x 8	W10 x 45	13.3	10.10	0.350	8.020	0.620	7.711	1.195	0.687	0.51	248	49.1	4.32	53.4	13.3	2.01	54.9	20.3
	W10 x 39	11.5	9.92	0.315	7.985	0.530	7.711	1.105	0.670	0.51	209	42.1	4.27	45.0	11.3	1.98	46.8	17.2
	W10 x 33	9.71	9.73	0.290	7.960	0.435	7.711	1.010	0.657	0.51	171	35.0	4.19	36.6	9.20	1.94	38.8	14.0
10 x 5-3/4	W10 x 30	8.84	10.47	0.300	5.810	0.510	8.615	0.928	0.505	0.36	171	32.4	4.38	16.7	5.75	1.37	36.6	8.85
	W10 x 26	7.61	10.33	0.260	5.770	0.440	8.615	0.858	0.485	0.36	144	27.9	4.35	14.1	4.89	1.36	31.3	7.51
	W10 x 22	6.49	10.17	0.240	5.750	0.360	8.615	0.778	0.475	0.36	118	23.4	4.27	11.4	3.97	1.33	26.0	6.10

# Nucor-Yamato Steel

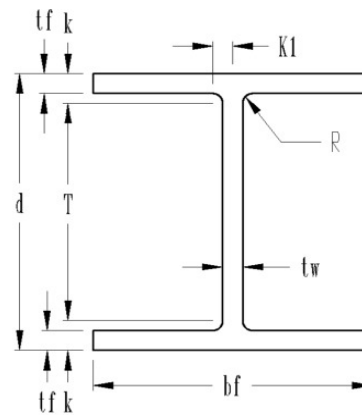
## W6



Prime Section Group	Section Size Inch x lbs/ft	Area Inch <sup>2</sup>	Depth d Inch	Web Thickness t <sub>w</sub> Inch	Flange		Distance			Fillet Radius R Inch	Elastic Properties						Plastic Modulus	
					Width b <sub>f</sub> Inch	Thick-ness t <sub>f</sub> Inch	T	k	k <sub>1</sub>		X - X			Y - Y			Z <sub>x</sub> Inch <sup>3</sup>	Z <sub>y</sub> Inch <sup>3</sup>
											I <sub>x</sub> Inch <sup>4</sup>	S <sub>x</sub> Inch <sup>3</sup>	r <sub>x</sub> Inch	I <sub>y</sub> Inch <sup>4</sup>	S <sub>y</sub> Inch <sup>3</sup>	r <sub>y</sub> Inch		
6 x 6	W6 x 25	7.34	6.38	0.320	6.080	0.455	4.635	0.873	0.515	0.36	53.6	16.9	2.71	17.1	5.61	1.52	19.1	8.58
	W6 x 20	5.87	6.20	0.260	6.020	0.365	4.635	0.783	0.485	0.36	41.5	13.5	2.67	13.3	4.41	1.50	15.1	6.72
	W6 x 15	4.43	5.99	0.230	5.990	0.260	4.635	0.678	0.470	0.36	29.3	9.77	2.58	9.32	3.11	1.45	10.8	4.75

# Nucor-Yamato Steel

## W8



Prime Section Group	Section Size Inch x lbs/ft	Area Inch <sup>2</sup>	Depth d Inch	Web Thickness t <sub>w</sub> Inch	Flange		Distance			Fillet Radius R Inch	Elastic Properties						Plastic Modulus	
					Width b <sub>f</sub> Inch	Thick-ness t <sub>f</sub> Inch	T	k	k <sub>1</sub>		X - X			Y - Y			Z <sub>x</sub> Inch <sup>3</sup>	Z <sub>y</sub> Inch <sup>3</sup>
											I <sub>x</sub> Inch <sup>4</sup>	S <sub>x</sub> Inch <sup>3</sup>	r <sub>x</sub> Inch	I <sub>y</sub> Inch <sup>4</sup>	S <sub>y</sub> Inch <sup>3</sup>	r <sub>y</sub> Inch		
8 x 8	W8 x 67	19.7	9.00	0.570	8.280	0.935	6.217	1.392	0.679	0.39	272	60.4	3.72	88.6	21.4	2.12	70.1	32.7
	W8 x 58	17.1	8.75	0.510	8.220	0.810	6.217	1.267	0.649	0.39	228	52.0	3.65	75.1	18.3	2.10	59.8	27.9
	W8 x 48	14.1	8.50	0.400	8.110	0.685	6.217	1.142	0.594	0.39	184	43.2	3.61	60.9	15.0	2.08	49.0	22.9
	W8 x 40	11.7	8.25	0.360	8.070	0.560	6.217	1.017	0.574	0.39	146	35.5	3.53	49.1	12.2	2.04	39.8	18.5
	W8 x 35	10.3	8.12	0.310	8.020	0.495	6.217	0.952	0.549	0.39	127	31.2	3.51	42.6	10.6	2.03	34.7	16.1
	W8 x 31	9.13	8.00	0.285	7.995	0.435	6.217	0.892	0.537	0.39	110	27.5	3.47	37.1	9.27	2.02	30.4	14.1
8 x 6-1/2	W8 x 28	8.25	8.06	0.285	6.535	0.465	6.217	0.922	0.537	0.39	98.0	24.3	3.45	21.7	6.63	1.62	27.2	10.1
	W8 x 24	7.08	7.93	0.245	6.495	0.400	6.217	0.857	0.517	0.39	82.7	20.9	3.42	18.3	5.63	1.61	23.1	8.57
8 x 5-1/4	W8 x 21	6.16	8.28	0.250	5.270	0.400	6.567	0.857	0.519	0.39	75.3	18.2	3.49	9.77	3.71	1.26	20.4	5.69
	W8 x 18	5.26	8.14	0.230	5.250	0.330	6.567	0.787	0.509	0.39	61.9	15.2	3.43	7.97	3.04	1.23	17.0	4.66