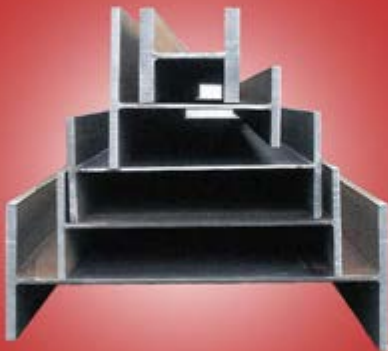


# Welded Wide Flange Beams



Your advantage in steel fabrication - full service from symmetrical structural sections to large, complex assemblies and weldments.

SIS Manufacturing produces high quality steel beams to the strictest dimensional requirements in a variety of grades. With one of the most sophisticated plate mills in North America at our back door, SIS Manufacturing is capable of acquiring rolled plate up to 75mm (3") in thickness, and up to 3850mm (152") wide. Coupled with our state-of-the-art welding gantrys, high speed CNC plasma and flame cutting machines, and technical support in application design, SIS Manufacturing provides our customers the competitive edge.



SIS Manufacturing's technical and commercial representatives can provide you with more detailed information on our Welded Shapes, and to assist in solving forming, welding and other design application issues.

PRODUCT	DEPTH
Symmetrical structural sections (WWF)	350 mm (14") to 1828 mm (72")
Unsymmetrical sections (WRF)	1000 mm (39") to 1800 mm (71")
Welded Special Sections (WSS)	to 1828 mm (72") deep

SIS Manufacturing also offers advanced CNC Plasma cutting, Flame Cutting and Commercial Shot Blasting



Innovation. Done. Right.



# Welded Beams



## WSS SHAPES

SIS Manufacturing's Welded Special Shapes (WSS) provide designers with maximum flexibility in selecting optimum structural steel section for their specific application.



Special Shapes are available in an extensive range of profiles including asymmetric, singly symmetric and doubly symmetric I-shapes, and T-Shapes. These products can also be produced with depths which vary along the length, thus providing the ideal member profile. Hybrid sections are also available, with different steel grades used in the flange and/or web. Upon negotiation, and subject to mill capabilities, these shapes are available in steel strengths levels 230 Mpa to 700 Mpa (33-100 ksi).



Special welding requirements, such as full penetration welds for dynamically loaded members can be accommodated up to maximum web thickness of 16mm (5/8"). Supplementary testing including X-ray, ultra-sonic, magnetic particle and liquid penetrant is available for critical end uses subject to negotiation and acceptance.



Special production requirements, such as camber or extra-long sections can also be accommodated. Cambering is available up to 200mm (8"), while spliced sections can be produced up to 30500mm or (100') in length.




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CWB (Canadian Welding Bureau) certified  
ISO 9001:2008 certified

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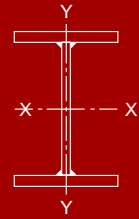
### SIS Manufacturing

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Welded Wide Flange (Three Plate Girders)  
Standard Sections WWF 79 – WWF 43

Properties

IMPERIAL* Designation	Area in. <sup>2</sup>	Axis X-X				Axis Y-Y				Torsional Constant	Warping Constant	METRIC Designation
		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>	Z <sub>y</sub>	J	C <sub>w</sub>	
		in. <sup>4</sup>	in. <sup>3</sup>	in.	in. <sup>3</sup>	in. <sup>4</sup>	in. <sup>3</sup>	in.	in. <sup>3</sup>	in. <sup>4</sup>	in. <sup>6</sup>	
<b>WWF 79</b>												<b>WWF 2000</b>
+ x490	144.	153 000	3 900	32.6	4 380	3 330	308.	4.80	473.	122.	4 910 000	+ x732
+ x436	128.	130 000	3 310	31.9	3 770	2 670	246.	4.57	381.	68.7	3 970 000	+ x648
+ x408	120.	118 000	3 010	31.5	3 460	2 330	216.	4.41	335.	50.1	3 490 000	+ x607
x364	107.	99 600	2 530	30.5	2 960	1 500	153.	3.75	241.	34.1	2 260 000	x542
<b>WWF 71</b>												<b>WWF 1800</b>
+ x470	138.	121 000	3 420	29.6	3 830	3 330	308.	4.91	472.	121.	3 960 000	+ x700
+ x442	130.	112 000	3 160	29.3	3 550	3 000	277.	4.80	426.	91.2	3 580 000	+ x659
+ x415	122.	103 000	2 890	29.0	3 270	2 670	246.	4.68	380.	67.4	3 200 000	+ x617
+ x388	114.	93 100	2 630	28.6	3 000	2 330	216.	4.53	334.	48.9	2 820 000	+ x575
x344	101.	77 900	2 200	27.8	2 550	1 500	153.	3.86	240.	32.8	1 830 000	x510
<b>WWF 63</b>												<b>WWF 1600</b>
+ x419	123.	90 400	2 870	27.1	3 160	3 330	308.	5.21	467.	115.	3 100 000	+ x622
+ x388	114.	83 200	2 640	27.0	2 910	3 000	277.	5.12	421.	85.2	2 810 000	+ x580
x361	106.	75 800	2 410	26.7	2 670	2 670	246.	5.01	375.	61.4	2 510 000	x538
x333	97.8	68 300	2 170	26.4	2 420	2 330	215.	4.88	329.	42.8	2 210 000	x496
x289	84.9	56 300	1 790	25.8	2 020	1 500	153.	4.21	235.	26.7	1 440 000	x431
<b>WWF 55</b>												<b>WWF 1400</b>
+ x402	118.	67 500	2 450	23.9	2 690	3 330	308.	5.32	467.	114.	2 350 000	+ x597
x344	101.	56 400	2 050	23.6	2 260	2 670	246.	5.13	374.	60.7	1 910 000	x513
x316	92.9	50 800	1 840	23.4	2 040	2 330	215.	5.01	328.	42.1	1 680 000	x471
x272	79.9	41 700	1 510	22.8	1 700	1 500	153.	4.34	234.	26.0	1 090 000	x405
x240	70.6	34 900	1 270	22.2	1 450	770	97.8	3.30	152.	21.7	560 000	x358
<b>WWF 47</b>												<b>WWF 1200</b>
x326	96.3	40 200	1 700	20.4	1 870	2 670	246.	5.26	374.	60.1	1 390 000	x487
x281	82.5	33 300	1 410	20.1	1 560	1 750	178.	4.61	271.	38.0	922 000	x418
x255	75.0	29 500	1 250	19.8	1 390	1 500	153.	4.48	233.	25.4	797 000	x380
x224	65.7	24 600	1 040	19.3	1 180	770	97.8	3.42	151.	21.0	408 000	x333
x203	59.7	21 600	913	19.0	1 040	642	81.5	3.28	127.	13.8	343 000	x302
x176	52.0	17 400	737	18.3	865	271	45.9	2.28	73.2	11.3	145 000	x263
<b>WWF 43</b>												<b>WWF 1100</b>
x307	90.6	32 800	1 510	19.0	1 650	2 670	246.	5.42	372.	58.6	1 160 000	x458
x260	76.8	27 000	1 250	18.7	1 370	1 750	178.	4.78	270.	36.6	770 000	x388
x236	69.3	23 900	1 100	18.6	1 210	1 500	153.	4.66	232.	23.9	666 000	x351
x204	60.0	19 700	912	18.1	1 020	769	97.7	3.58	150.	19.6	341 000	x304
x184	54.0	17 200	795	17.9	895	641	81.4	3.45	125.	12.3	287 000	x273
x157	46.2	13 700	635	17.2	731	271	45.9	2.42	71.9	9.82	121 000	x234

\* Nominal depth in inches and weight in pounds per foot. + Maximum piece weight may limit length.  
~ Welding does not fully develop the web strength for these sections.

Welded Shapes and Profiles

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Request a quote: ralph.sherwin@sisgroup.ca



Welded Wide Flange (Three Plate Girders)  
Standard Sections WWF 39 – WWF 24



Dimensions And Surface Areas

IMPERIAL* Designation	Nominal Weight	Depth		F lrange Width		F lrange Thickness		W eb Thickness		Distances					Surface Area (ft.2) per foot of length		METRIC Designation	
		d		b		t		w		a	T	k	k1	d-2t	Total	Minus Top of Top Flange		
		lb./ft.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.				in.
<b>WWF 39</b>																		
x300	300	39.37	39 3/8	21.65	21 5/8	1.575	1 9/16	0.551	9/16	10 1/2	35 1/4	2 1/8	11/16	36 1/4	13.7	11.9	WWF 1000	x447
x253	253	39.37	39 3/8	19.69	19 5/8	1.378	1 3/8	0.551	9/16	9 5/8	35 3/4	1 13/16	5/8	36 5/8	13.0	11.4	x377	
x228	228	39.37	39 3/8	19.69	19 5/8	1.181	1 3/16	0.551	9/16	9 5/8	36 1/4	1 5/8	5/8	37	13.0	11.4	x340	
x197	197	39.37	39 3/8	15.75	15 3/4	1.181	1 3/16	0.551	9/16	7 5/8	36 1/4	1 5/8	5/8	37	11.7	10.4	x293	
x176	176	39.37	39 3/8	15.75	15 3/4	0.984	1	0.551	9/16	7 5/8	36 5/8	1 7/16	5/8	37 3/8	11.7	10.4	x262	
x150	150	39.37	39 3/8	11.81	11 3/4	0.984	1	0.551	9/16	5 5/8	36 5/8	1 7/16	5/8	37 3/8	10.4	9.42	x223	
x134	134	39.37	39 3/8	11.81	11 3/4	0.787	13/16	0.551	9/16	5 5/8	37	1 1/4	5/8	37 3/4	10.4	9.42	x200	
<b>WWF 35</b>																		
x279	279	35.43	35 3/8	21.65	21 5/8	1.575	1 9/16	0.433	7/16	10 5/8	31 1/4	2 1/16	5/8	32 1/4	13.1	11.2	WWF 900	x417
x233	233	35.43	35 3/8	19.69	19 5/8	1.378	1 3/8	0.433	7/16	9 5/8	31 7/8	1 3/4	9/16	32 5/8	12.4	10.8	x347	
x208	208	35.43	35 3/8	19.69	19 5/8	1.181	1 3/16	0.433	7/16	9 5/8	32 1/4	1 9/16	9/16	33 1/8	12.4	10.8	x309	
x176	176	35.43	35 3/8	15.75	15 3/4	1.181	1 3/16	0.433	7/16	7 5/8	32 1/4	1 9/16	9/16	33 7/8	11.1	9.77	x262	
x156	156	35.43	35 3/8	15.75	15 3/4	0.984	1	0.433	7/16	7 5/8	32 5/8	1 3/8	9/16	33 1/2	11.1	9.77	x231	
x128	128	35.43	35 3/8	11.81	11 3/4	0.984	1	0.433	7/16	5 3/4	32 5/8	1 3/8	9/16	33 1/2	9.77	8.79	x192	
x113	113	35.43	35 3/8	11.81	11 3/4	0.787	13/16	0.433	7/16	5 3/4	33	1 3/16	9/16	33 7/8	9.77	8.79	x169	
<b>WWF 31</b>																		
x228	228	31.50	31 1/2	19.69	19 5/8	1.378	1 3/8	0.433	7/16	9 5/8	27 7/8	1 13/16	9/16	28 3/4	11.7	10.1	WWF 800	x339
x202	202	31.50	31 1/2	19.69	19 5/8	1.181	1 3/16	0.433	7/16	9 5/8	28 3/8	1 9/16	9/16	29 1/8	11.7	10.1	x300	
x170	170	31.50	31 1/2	15.75	15 3/4	1.181	1 3/16	0.433	7/16	7 5/8	28 3/8	1 9/16	9/16	29 1/8	10.4	9.11	x253	
x150	150	31.50	31 1/2	15.75	15 3/4	0.984	1	0.433	7/16	7 5/8	28 3/4	1 3/8	9/16	29 1/2	10.4	9.11	x223	
x123	123	31.50	31 1/2	11.81	11 3/4	0.984	1	0.433	7/16	5 3/4	28 3/4	1 3/8	9/16	29 1/2	9.11	8.13	x184	
x108	108	31.50	31 1/2	11.81	11 3/4	0.787	13/16	0.433	7/16	5 3/4	29 1/8	1 3/16	9/16	29 7/8	9.11	8.13	x161	
<b>WWF 28</b>																		
x164	164	27.56	27 1/2	15.75	15 3/4	1.181	1 3/16	0.433	7/16	7 5/8	24 3/8	1 9/16	9/16	25 1/4	9.77	8.46	WWF 700	x245
x144	144	27.56	27 1/2	15.75	15 3/4	0.984	1	0.433	7/16	7 5/8	24 3/4	1 3/8	9/16	25 5/8	9.77	8.46	x214	
x132	132	27.56	27 1/2	15.75	15 3/4	0.866	7/8	0.433	7/16	7 5/8	25	1 1/4	9/16	25 7/8	9.77	8.46	x196	
x117	117	27.56	27 1/2	11.81	11 3/4	0.984	1	0.433	7/16	5 3/4	24 3/4	1 3/8	9/16	25 5/8	8.46	7.47	x175	
x102	102	27.56	27 1/2	11.81	11 3/4	0.787	13/16	0.433	7/16	5 3/4	25 1/8	1 3/16	9/16	26	8.46	7.47	x152	
<b>WWF 26</b>																		
~ + x580	580	25.59	25 5/8	25.59	25 5/8	2.362	2 3/8	2.362	2 3/8	11 5/8	19 7/8	2 7/8	1 5/8	20 7/8	12.4	10.3	WWF 650	~ + x864
~ + x497	497	25.59	25 5/8	25.59	25 5/8	2.362	2 3/8	1.181	1 3/16	12 1/4	19 7/8	2 7/8	1	20 7/8	12.6	10.5	~ + x739	
+ x402	402	25.59	25 5/8	25.59	25 5/8	1.969	1 15/16	0.787	13/16	12 3/8	20 5/8	2 1/2	13/16	21 5/8	12.7	10.5	+ x598	
x336	336	25.59	25 5/8	25.59	25 5/8	1.575	1 9/16	0.787	13/16	12 3/8	21 1/2	2 1/16	13/16	22 1/2	12.7	10.5	x499	
x269	269	25.59	25 5/8	25.59	25 5/8	1.181	1 3/16	0.787	13/16	12 3/8	22 1/4	1 11/16	13/16	23 1/4	12.7	10.5	x400	
<b>WWF 24</b>																		
~ + x531	531	23.62	23 5/8	23.62	23 5/8	2.362	2 3/8	2.362	2 3/8	10 5/8	17 7/8	2 7/8	1 5/8	18 7/8	11.4	9.45	WWF 600	~ + x793
~ + x456	456	23.62	23 5/8	23.62	23 5/8	2.362	2 3/8	1.181	1 3/16	11 1/4	17 7/8	2 7/8	1	18 7/8	11.6	9.65	~ + x680	
x371	371	23.62	23 5/8	23.62	23 5/8	1.969	1 15/16	0.787	13/16	11 3/8	18 3/4	2 7/16	13/16	19 5/8	11.7	9.71	x551	
x309	309	23.62	23 5/8	23.62	23 5/8	1.575	1 9/16	0.787	13/16	11 3/8	19 1/2	2 1/16	13/16	20 1/2	11.7	9.71	x460	
x248	248	23.62	23 5/8	23.62	23 5/8	1.181	1 3/16	0.787	13/16	11 3/8	20 1/4	1 11/16	13/16	21 1/4	11.7	9.71	x369	

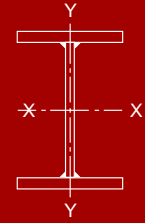
\* Nominal depth in inches and weight in pounds per foot. + Maximum piece weight may limit length.  
~ Welding does not fully develop the web strength for these sections.

Welded Shapes and Profiles

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Request a quote: ralph.sherwin@sisgroup.ca





Welded Wide Flange (Three Plate Girders)  
Standard Sections WWF 39 – WWF 24

Properties

IMPERIAL* Designation	Area in. <sup>2</sup>	AxisXX				AxisYY				Torsional Constant	Warping Constant	METRIC Designation
		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>	Z <sub>y</sub>	J	C <sub>w</sub>	
		in. <sup>4</sup>	in. <sup>3</sup>	in.	in. <sup>3</sup>	in. <sup>4</sup>	in. <sup>3</sup>	in.	in. <sup>3</sup>	in. <sup>4</sup>	in. <sup>6</sup>	
<b>WWF 39</b>												<b>WWF 1000</b>
x300	88.4	26 600	1 350	17.4	1 470	2 670	246.	5.49	372.	58.4	952 000	x447
x253	74.6	21 900	1 110	17.1	1 220	1 750	178.	4.85	270.	36.4	632 000	x377
x228	67.1	19 400	983	17.0	1 080	1 500	153.	4.73	232.	23.7	548 000	x340
x197	57.8	16 000	811	16.6	903	769	97.7	3.65	149.	19.4	281 000	x293
x176	51.8	13 900	706	16.4	791	641	81.4	3.52	125.	12.1	236 000	x262
x150	44.1	11 000	561	15.8	643	271	45.9	2.48	71.6	9.60	99 800	x223
x134	39.6	9 470	481	15.5	559	217	36.7	2.34	57.9	5.95	80 700	x200
<b>WWF 35</b>												<b>WWF 900</b>
x279	82.5	20 800	1 180	15.9	1 270	2 670	246.	5.68	371.	57.3	764 000	x417
x233	68.6	17 000	962	15.8	1 040	1 750	178.	5.05	269.	35.2	508 000	x347
x208	61.0	15 000	847	15.7	918	1 500	153.	4.96	230.	22.5	440 000	x309
x176	51.7	12 300	693	15.4	759	769	97.7	3.86	148.	18.2	226 000	x262
x156	45.7	10 600	599	15.2	658	641	81.4	3.75	124.	10.9	190 000	x231
x128	37.9	8 310	469	14.8	525	271	45.8	2.67	70.3	8.41	80 300	x192
x113	33.5	7 040	397	14.5	450	216	36.7	2.54	56.6	4.76	65 000	x169
<b>WWF 31</b>												<b>WWF 800</b>
x228	66.9	13 200	839	14.1	909	1 750	178.	5.12	268.	35.1	397 000	x339
x202	59.3	11 600	738	14.0	800	1 500	153.	5.03	230.	22.4	345 000	x300
x170	50.0	9 480	602	13.8	659	769	97.7	3.92	148.	18.1	177 000	x253
x150	44.0	8 190	520	13.6	570	641	81.4	3.82	123.	10.8	149 000	x223
x123	36.2	6 380	405	13.3	452	271	45.8	2.73	70.1	8.31	63 000	x184
x108	31.8	5 400	343	13.0	385	216	36.7	2.61	56.4	4.65	51 000	x161
<b>WWF 28</b>												<b>WWF 700</b>
x164	48.3	7 080	514	12.1	562	769	97.7	3.99	148.	18.0	134 000	x245
x144	42.3	6 110	444	12.0	485	641	81.4	3.89	123.	10.7	113 000	x214
x132	38.7	5 510	400	11.9	439	564	71.6	3.82	109.	7.52	100 000	x196
x117	34.5	4 740	344	11.7	382	270	45.8	2.80	69.9	8.20	47 800	x175
x102	30.0	4 000	290	11.5	325	216	36.6	2.68	56.2	4.55	38 800	x152
<b>WWF 26</b>												<b>WWF 650</b>
~ + x580	170.	18 200	1 420	10.3	1 660	6 620	517.	6.23	803.	317.	893 000	~ + x864
~ + x497	146.	17 300	1 350	10.9	1 540	6 600	516.	6.73	781.	236.	890 000	~ + x739
+ x402	118.	14 800	1 160	11.2	1 290	5 500	430.	6.82	648.	134.	767 000	+ x598
x336	98.5	12 400	970	11.2	1 070	4 400	344.	6.68	519.	70.3	634 000	x499
x269	79.0	9 870	771	11.2	847	3 300	258.	6.46	390.	31.9	492 000	x400
<b>WWF 24</b>												<b>WWF 600</b>
~ + x531	157.	14 000	1 190	9.46	1 400	5 210	441.	5.77	686.	291.	589 000	~ + x793
~ + x456	134.	13 400	1 130	10.0	1 290	5 190	440.	6.22	666.	218.	587 000	~ + x680
x371	109.	11 500	970	10.3	1 090	4 330	366.	6.31	552.	123.	507 000	x551
x309	90.8	9 650	817	10.3	905	3 460	293.	6.17	443.	64.8	421 000	x460
x248	72.8	7 690	651	10.3	718	2 600	220.	5.97	333.	29.4	327 000	x369

\* Nominal depth in inches and weight in pounds per foot. + Maximum piece weight may limit length.  
~ Welding does not fully develop the web strength for these sections.

Welded Shapes and Profiles

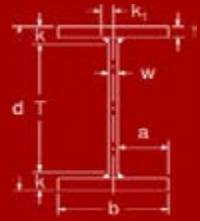
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Request a quote: ralph.sherwin@sisgroup.ca





Welded Wide Flange (Three Plate Girders)  
Standard Sections WWF 22 – WWF 14



Dimensions And Surface Areas

IMPERIAL* Designation	Nominal Weight	Depth		Flange Width		Flange Thickness		Web Thickness		Distances					Surface Area (ft.2) per foot of length		METRIC Designation	
		d		b		t		w		a	T	k	k <sub>1</sub>	d-2t	Total	Minus Top of Top Flange		
		lb./ft.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.		
<b>WWF 22</b>																		
~ + x484	484	21.65	21 5/8	21.65	21 5/8	2.362	2 3/8	2.362	2 3/8	9 5/8	16	2 13/16	1 5/8	16 7/8	10.4	8.63	WWF 550	
~ + x416	416	21.65	21 5/8	21.65	21 5/8	2.362	2 3/8	1.181	1 3/16	10 1/4	16	2 13/16	1	16 7/8	10.6	8.83	~ + x721	
x338	338	21.65	21 5/8	21.65	21 5/8	1.969	1 15/16	0.787	13/16	10 3/8	16 3/4	2 7/16	13/16	17 3/4	10.7	8.89	~ + x620	
x282	282	21.65	21 5/8	21.65	21 5/8	1.575	1 9/16	0.787	13/16	10 3/8	17 1/2	2 1/16	13/16	18 1/2	10.7	8.89	x503	
x188	188	21.65	21 5/8	21.65	21 5/8	0.984	1	0.630	5/8	10 1/2	18 7/8	1 3/8	11/16	19 5/8	10.7	8.92	x420	
																	x280	
<b>WWF 20</b>																		
~ + x437	437	19.69	19 5/8	19.69	19 5/8	2.362	2 3/8	2.362	2 3/8	8 5/8	14	2 13/16	1 5/8	15	9.45	7.81	WWF 500	
~ x377	377	19.69	19 5/8	19.69	19 5/8	2.362	2 3/8	1.181	1 3/16	9 1/4	14	2 13/16	1	15	9.65	8.01	~ + x651	
x306	306	19.69	19 5/8	19.69	19 5/8	1.969	1 15/16	0.787	13/16	9 1/2	14 3/4	2 7/16	13/16	15 3/4	9.71	8.07	~ x561	
x256	256	19.69	19 5/8	19.69	19 5/8	1.575	1 9/16	0.787	13/16	9 1/2	15 1/2	2 1/16	13/16	16 1/2	9.71	8.07	x456	
x230	230	19.69	19 5/8	19.69	19 5/8	1.378	1 3/8	0.787	13/16	9 1/2	16	1 13/16	13/16	16 7/8	9.71	8.07	x381	
x205	205	19.69	19 5/8	19.69	19 5/8	1.181	1 3/16	0.787	13/16	9 1/2	16 3/8	1 5/8	13/16	17 3/8	9.71	8.07	x343	
x185	185	19.69	19 5/8	19.69	19 5/8	1.102	1 1/8	0.630	5/8	9 1/2	16 5/8	1 1/2	11/16	17 1/2	9.74	8.10	x306	
x170	170	19.69	19 5/8	19.69	19 5/8	0.984	1	0.630	5/8	9 1/2	16 7/8	1 3/8	11/16	17 3/4	9.74	8.10	x276	
x150	150	19.69	19 5/8	19.69	19 5/8	0.866	7/8	0.551	9/16	9 5/8	17 1/8	1 1/4	5/8	18	9.75	8.11	x254	
x132	132	19.69	19 5/8	19.69	19 5/8	0.787	13/16	0.433	7/16	9 5/8	17 1/4	1 3/16	9/16	18 1/8	9.77	8.13	x223	
																	x197	
<b>WWF 18</b>																		
~ x337	337	17.72	17 3/4	17.72	17 3/4	2.362	2 3/8	1.181	1 3/16	8 1/4	12	2 7/8	1	13	8.66	7.19	WWF 450	
x275	275	17.72	17 3/4	17.72	17 3/4	1.969	1 15/16	0.787	13/16	8 1/2	12 3/4	2 1/2	13/16	13 3/4	8.73	7.25	~ x503	
x229	229	17.72	17 3/4	17.72	17 3/4	1.575	1 9/16	0.787	13/16	8 1/2	13 5/8	2 1/16	13/16	14 5/8	8.73	7.25	~ x409	
x207	207	17.72	17 3/4	17.72	17 3/4	1.378	1 3/8	0.787	13/16	8 1/2	14	1 7/8	13/16	15	8.73	7.25	x342	
x184	184	17.72	17 3/4	17.72	17 3/4	1.181	1 3/16	0.787	13/16	8 1/2	14 3/8	1 11/16	13/16	15 3/8	8.73	7.25	x308	
x166	166	17.72	17 3/4	17.72	17 3/4	1.102	1 1/8	0.630	5/8	8 1/2	14 3/4	1 1/2	11/16	15 1/2	8.75	7.28	x274	
x152	152	17.72	17 3/4	17.72	17 3/4	0.984	1	0.630	5/8	8 1/2	14 7/8	1 7/16	11/16	15 3/4	8.75	7.28	x248	
x134	134	17.72	17 3/4	17.72	17 3/4	0.866	7/8	0.551	9/16	8 5/8	15 1/8	1 5/16	5/8	16	8.77	7.29	x228	
x119	119	17.72	17 3/4	17.72	17 3/4	0.787	13/16	0.433	7/16	8 5/8	15 3/8	1 3/16	9/16	16 1/8	8.79	7.31	x201	
																	x177	
<b>WWF 16</b>																		
~ x298	298	15.75	15 3/4	15.75	15 3/4	2.362	2 3/8	1.181	1 3/16	7 1/4	10	2 7/8	1	11	7.68	6.36	WWF 400	
x243	243	15.75	15 3/4	15.75	15 3/4	1.969	1 15/16	0.787	13/16	7 1/2	10 7/8	2 7/16	13/16	11 3/4	7.74	6.43	~ x444	
x203	203	15.75	15 3/4	15.75	15 3/4	1.575	1 9/16	0.787	13/16	7 1/2	11 5/8	2 1/16	13/16	12 5/8	7.74	6.43	x362	
x183	183	15.75	15 3/4	15.75	15 3/4	1.378	1 3/8	0.787	13/16	7 1/2	12	1 7/8	13/16	13	7.74	6.43	x303	
x163	163	15.75	15 3/4	15.75	15 3/4	1.181	1 3/16	0.787	13/16	7 1/2	12 3/8	1 11/16	13/16	13 3/8	7.74	6.43	x273	
x147	147	15.75	15 3/4	15.75	15 3/4	1.102	1 1/8	0.630	5/8	7 1/2	12 3/4	1 1/2	11/16	13 1/2	7.77	6.46	x243	
x135	135	15.75	15 3/4	15.75	15 3/4	0.984	1	0.630	5/8	7 1/2	13	1 3/8	11/16	13 3/4	7.77	6.46	x220	
x119	119	15.75	15 3/4	15.75	15 3/4	0.866	7/8	0.551	9/16	7 5/8	13 1/4	1 1/4	5/8	14	7.78	6.47	x202	
x105	105	15.75	15 3/4	15.75	15 3/4	0.787	13/16	0.433	7/16	7 5/8	13 3/8	1 3/16	9/16	14 1/8	7.80	6.49	x178	
																	x157	
<b>WWF 14</b>																		
x211	211	13.78	13 3/4	13.78	13 3/4	1.969	1 15/16	0.787	13/16	6 1/2	8 7/8	2 7/16	13/16	9 7/8	6.76	5.61	WWF 350	
x177	177	13.78	13 3/4	13.78	13 3/4	1.575	1 9/16	0.787	13/16	6 1/2	9 5/8	2 1/16	13/16	10 5/8	6.76	5.61	~ x315	
x159	159	13.78	13 3/4	13.78	13 3/4	1.378	1 3/8	0.787	13/16	6 1/2	10	1 7/8	13/16	11	6.76	5.61	x263	
x142	142	13.78	13 3/4	13.78	13 3/4	1.181	1 3/16	0.787	13/16	6 1/2	10 1/2	1 5/8	13/16	11 3/8	6.76	5.61	x238	
x128	128	13.78	13 3/4	13.78	13 3/4	1.102	1 1/8	0.630	5/8	6 1/2	10 3/4	1 1/2	11/16	11 5/8	6.78	5.64	x212	
x118	118	13.78	13 3/4	13.78	13 3/4	0.984	1	0.630	5/8	6 5/8	11	1 3/8	11/16	11 3/4	6.78	5.64	x192	
x104	104	13.78	13 3/4	13.78	13 3/4	0.866	7/8	0.551	9/16	6 5/8	11 1/4	1 1/4	5/8	12	6.80	5.65	x176	
x92	92	13.78	13 3/4	13.78	13 3/4	0.787	13/16	0.433	7/16	6 5/8	11 3/8	1 3/16	9/16	12 1/4	6.82	5.67	x155	
																	x137	

\* Nominal depth in inches and weight in pounds per foot. + Maximum piece weight may limit length.

~ Welding does not fully develop the web strength for these sections.

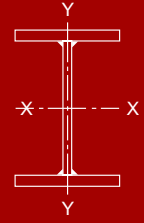
Welded Shapes and Profiles

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Welded Wide Flange (Three Plate Girders)  
Standard Sections WWF 22 – WWF 14

Properties

IMPERIAL* Designation	Area	Axis XX				Axis YY				Torsional Constant	Warping Constant	METRIC Designation
		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>	Z <sub>y</sub>	J	C <sub>w</sub>	
		in. <sup>4</sup>	in. <sup>3</sup>	in.	in. <sup>3</sup>	in. <sup>4</sup>	in. <sup>3</sup>	in.	in. <sup>3</sup>	in. <sup>4</sup>	in. <sup>6</sup>	
<b>WWF 22</b>												
~ + x484	143.	10 500	974	8.60	1 160	4 020	371.	5.31	578.	265.	374 000	WWF 550
~ + x416	123.	10 100	929	9.06	1 070	4 000	369.	5.71	560.	200.	372 000	~ + x721
x338	99.5	8 670	801	9.34	903	3 330	308.	5.79	464.	113.	323 000	~ + x620
x282	83.0	7 330	677	9.39	755	2 670	246.	5.67	372.	59.4	269 000	x503
x188	55.2	4 970	459	9.49	503	1 670	154.	5.49	233.	15.4	178 000	x420
												x280
<b>WWF 20</b>												WWF 500
~ + x437	129.	7 690	782	7.73	940	3 020	307.	4.85	479.	239.	227 000	~ + x651
~ x377	111.	7 360	748	8.15	874	3 010	305.	5.20	463.	181.	225 000	~ x561
x306	90.2	6 380	648	8.41	738	2 500	254.	5.27	384.	103.	196 000	x456
x256	75.3	5 410	550	8.48	618	2 000	203.	5.16	308.	53.9	164 000	x381
x230	67.9	4 890	497	8.49	555	1 750	178.	5.08	270.	37.1	147 000	x343
x205	60.4	4 350	442	8.48	492	1 500	153.	4.99	232.	24.4	129 000	x306
x185	54.6	4 050	411	8.61	453	1 400	142.	5.07	215.	19.0	121 000	x276
x170	50.1	3 700	376	8.59	413	1 250	127.	5.00	193.	14.0	109 000	x254
x150	44.2	3 300	336	8.64	367	1 100	112.	4.99	169.	9.53	97 500	x223
x132	39.0	3 000	305	8.77	330	1 000	102.	5.06	153.	6.90	89 400	x197
												WWF 450
<b>WWF 18</b>												~ x503
~ x337	99.3	5 200	587	7.24	694	2 190	247.	4.70	375.	163.	129 000	~ x409
x275	80.9	4 530	512	7.49	588	1 830	206.	4.75	311.	92.3	113 000	x342
x229	67.5	3 860	436	7.56	494	1 460	165.	4.65	250.	48.5	95 100	x308
x207	60.9	3 500	395	7.58	445	1 280	144.	4.58	219.	33.3	85 300	x274
x184	54.2	3 120	352	7.58	395	1 100	124.	4.49	188.	22.0	74 900	x248
x166	49.0	2 910	328	7.70	364	1 020	115.	4.57	175.	17.1	70 500	x228
x152	45.0	2 660	300	7.69	332	913	103.	4.50	156.	12.6	63 900	x201
x134	39.7	2 380	269	7.74	295	803	90.6	4.50	137.	8.57	57 000	x177
x119	35.1	2 160	244	7.85	266	730	82.4	4.56	124.	6.20	52 300	WWF 400
												~ x444
<b>WWF 16</b>												x362
~ x298	87.7	3 510	445	6.32	535	1 540	195.	4.19	297.	144.	69 000	x303
x243	71.6	3 080	391	6.56	456	1 280	163.	4.23	246.	82.0	60 900	x273
x203	59.8	2 640	336	6.65	384	1 030	130.	4.14	197.	43.1	51 500	x243
x183	53.9	2 400	305	6.68	347	898	114.	4.08	173.	29.6	46 300	x220
x163	48.0	2 150	273	6.69	308	769	97.7	4.00	149.	19.5	40 800	x202
x147	43.4	2 000	255	6.79	284	718	91.2	4.06	138.	15.2	38 500	x178
x135	39.9	1 840	233	6.79	260	641	81.4	4.01	123.	11.2	34 900	x157
x119	35.2	1 650	209	6.84	231	564	71.6	4.00	109.	7.60	31 200	WWF 350
x105	31.1	1 500	191	6.94	209	513	65.1	4.06	98.4	5.51	28 700	x315
												x263
<b>WWF 14</b>												x238
x211	62.3	1 980	287	5.64	341	859	125.	3.71	189.	71.7	30 000	x212
x177	52.0	1 710	248	5.73	289	687	99.7	3.63	151.	37.6	25 600	x192
x159	46.9	1 560	227	5.77	261	601	87.3	3.58	133.	25.8	23 100	x176
x142	41.8	1 400	203	5.79	232	516	74.8	3.51	114.	17.0	20 500	x155
x128	37.9	1 310	190	5.88	215	481	69.8	3.56	106.	13.3	19 300	x137
x118	34.8	1 210	175	5.89	197	429	62.3	3.52	94.7	9.74	17 600	
x104	30.7	1 080	157	5.94	175	378	54.8	3.51	83.2	6.64	15 800	
x92	27.2	989	144	6.03	158	343	49.9	3.55	75.4	4.82	14 500	

\* Nominal depth in inches and weight in pounds per foot. + Maximum piece weight may limit length.  
~ Welding does not fully develop the web strength for these sections.

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