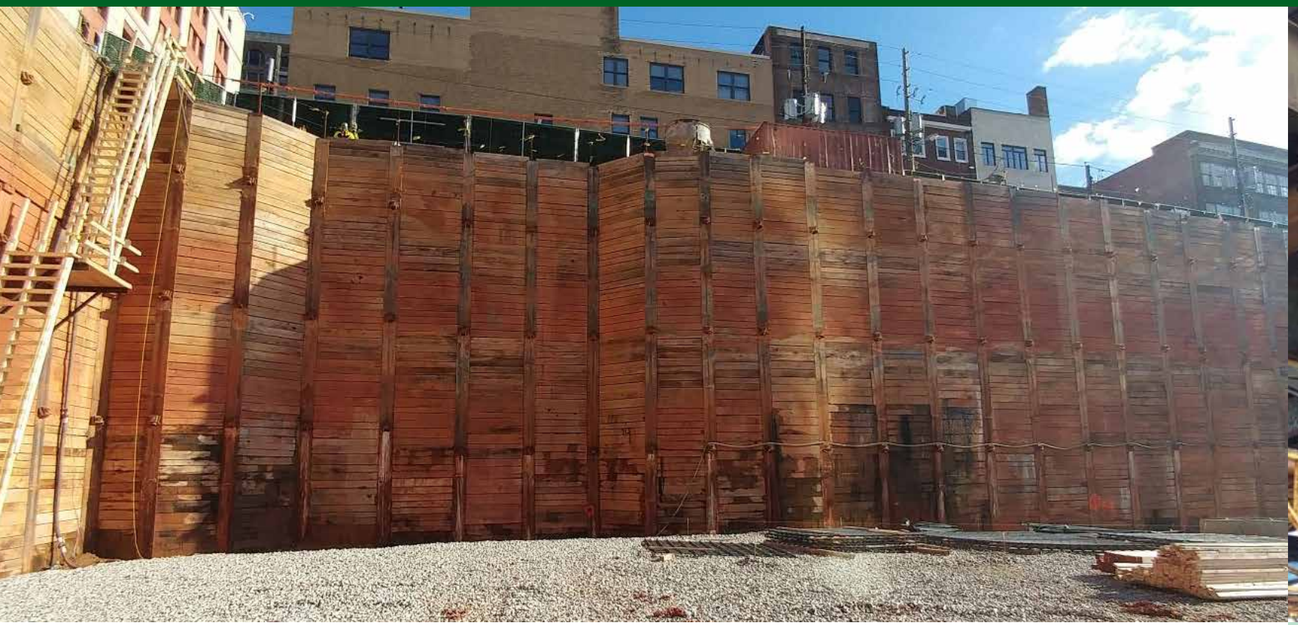
NUCOR®

SKYLINE

Wide Flange



Nucor Skyline, your true project partner

We are a premier steel foundation manufacturer and supplier, serving the North American market. Skyline Steel, LLC (doing business as Nucor Skyline) is a Nucor company, the largest producer of steel in the United States, and this relationship strengthens our ability to service our customers and the industry.

- Over 20 Sales Offices in North America
- Manufacturing, Coating and Fabrication Expertise
- Dozens of Stocking Locations
- Exclusive Engineering Support

Our flagship products include an unparalleled assortment of:

- H-Piles
- Steel Sheet Piles
- Pipe Piles
- Geostructural Products
- Wide Flange and other Structural Sections
- Piling Accessories

Nucor Skyline's knowledgeable engineering team works with owners, engineers, and contractors long before ground is broken. To ensure seamless project coordination and completion, our engineers propose solutions throughout all aspects of design, material selection, installation, and construction sequencing. Skyline's engineering support is extended even further to include provision of onsite assistance after a project has started. Our relationships extends beyond sales – we are your true project partner.

Nucor Skyline is a proven leader in North America's structural and foundation industries as a supplier of wide flange products for various applications. Through its extensive network of manufacturing and fabrication capabilities, we are able to provide wide flange material for any project, public or private.

- Wide range of wide flange sizes and weights
- Custom lengths manufactured according to your specifications
- Fabrication services to meet all your project requirements
- Multiple stocking locations throughout the U.S. and Canada
- Exclusive engineering support throughout the entire project life cycle
- Your all-encompassing structural steel solutions partner

When compared to standard beams, the 'H' design of a wide flange beam provides better distribution of the weight of a structure over a wider area, resulting in the ability to support heavier and larger structures. This allows the project partner the flexibility to build grander constructions, without the risk of weakening beams.

Ease of transportation and use, due to their lightness, is another inherent advantage of using wide flange beams. Their light weight makes them ideal for transporting and installing across the globe.

Wide flange beams are perfect for many structural and foundation applications, including the following:

- Walers & Bracing for Cofferdams
- Secant & Tangent Pile Walls
- W-Z Walls
- Beam & Lagging/Soldier Pile Walls
- Sound Walls
- Falsework for Bridges & Other Structures

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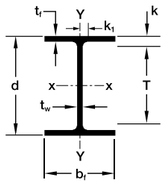
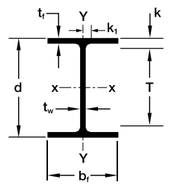
Wide Flange



Beam Size		Area A	Depth d	Web Thickness t_w	Web $t_w/2$	Flange b_f	Flange t_f	Distance k k_{des}	Distance k k_{det}	Distance k_1	Distance T	Distance Workable Gage	Compact Section Criteria $b_f/2_{tf}$	Compact Section Criteria h/t_w
		in² mm²	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	$b_f/2_{tf}$	h/t_w
W44 W1100	x 335 x 499	98.5 63500	44.0 1120	1.03 26.2	½ 12.7	15.9 404	1.77 45.0	2.56 65.0	2 5/8 66.7	1 9/16 33.3	38 3/4 984.25	5 ½ 139.7	4.50 4.50	38.0 38.0
	x 290 x 433	85.4 55100	43.6 1110	0.865 22.0	7/16 11.1	15.8 401	1.58 40.1	2.36 59.9	2 7/16 61.9	1 1/4 31.8			5.02 5.02	45.0 45.0
	x 262 x 390	77.2 49800	43.3 1100	0.785 19.9	7/16 11.1	15.8 401	1.42 36.1	2.20 55.9	2 1/4 57.2	1 9/16 30.2			5.57 5.57	49.6 49.6
	x 230 x 343	67.8 43700	42.9 1090	0.710 18.0	3/8 9.52	15.8 401	1.22 31.0	2.01 51.1	2 1/16 52.4	1 9/16 30.2			6.45 6.45	54.8 54.8
W40 W1000	x 593 x 883	174 112000	43.0 1090	1.79 45.5	15/16 23.8	16.7 424	3.23 82.0	4.41 112	4 1/2 114	2 1/8 54.0	34 863.6	7 ½ 190.5	2.58 2.58	19.1 19.1
	x 503 x 748	148 95500	42.1 1070	1.54 39.1	15/16 20.6	16.4 417	2.76 70.1	3.94 100	4 102	2 50.8			2.98 2.98	22.3 22.3
	x 431 x 642	127 81900	41.3 1050	1.34 34.0	11/16 17.5	16.2 411	2.36 59.9	3.54 89.9	3 5/8 92.1	1 7/8 47.6			3.44 3.44	25.5 25.5
	x 397 x 591	117 75500	41.0 1040	1.22 31.0	5/8 15.9	16.1 409	2.20 55.9	3.38 85.9	3 1/2 88.9	1 13/16 46.0			3.66 3.66	28.0 28.0
	x 372 x 554	110 71000	40.6 1030	1.16 29.5	5/8 15.9	16.1 409	2.05 52.1	3.23 82.0	3 3/16 84.1	1 13/16 46.0			3.93 3.93	29.5 29.5
	x 362 x 539	106 68400	40.6 1030	1.12 28.4	9/16 14.3	16.0 406	2.01 51.1	3.19 81.0	3 1/4 82.6	1 3/4 44.5			3.99 3.99	30.5 30.5
	x 324 x 483	95.3 61500	40.2 1020	1.00 25.4	½ 12.7	15.9 404	1.81 46.0	2.99 75.9	3 1/16 77.8	1 11/16 42.9			4.40 4.40	34.2 34.2
	x 297 x 443	87.3 56300	39.8 1010	0.930 23.6	½ 12.7	15.8 401	1.65 41.9	2.83 71.9	2 15/16 74.6	1 11/16 42.9			4.80 4.80	36.8 36.8
	x 277 x 412	81.5 52600	39.7 1010	0.830 21.1	7/16 11.1	15.8 401	1.58 40.1	2.76 70.1	2 7/8 73.0	1 5/8 41.3			5.03 5.03	41.2 41.2
	x 249 x 371	73.5 47400	39.4 1000	0.750 19.1	3/8 9.52	15.8 401	1.42 36.1	2.60 66.0	2 11/16 68.3	1 9/16 39.7			5.55 5.55	45.6 45.6
	x 215 x 321	63.5 41000	39.0 991	0.650 16.5	9/16 7.94	15.8 401	1.22 31.0	2.40 61.0	2 1/2 63.5	1 9/16 39.7			6.45 6.45	52.6 52.6
	x 199 x 296	58.8 37900	38.7 983	0.650 16.5	9/16 7.94	15.8 401	1.07 27.2	2.25 57.2	2 3/16 58.7	1 9/16 39.7			7.39 7.39	52.6 52.6
W40 W1000	x 392 x 584	116 74800	41.6 1060	1.42 36.1	¾ 19.0	12.4 315	2.52 64.0	3.70 94.0	3 13/16 96.8	1 15/16 49.2	34 863.6	7 ½ 190.5	2.45 2.45	24.1 24.1
	x 331 x 494	97.7 63000	40.8 1040	1.22 31.0	5/8 15.9	12.2 310	2.13 54.1	3.31 84.1	3 3/8 85.7	1 13/16 46.0			2.86 2.86	28.0 28.0
	x 327 x 486	95.9 61900	40.8 1040	1.18 30.0	5/8 15.9	12.1 307	2.13 54.1	3.31 84.1	3 3/8 85.7	1 13/16 46.0			2.85 2.85	29.0 29.0
	x 294 x 438	86.2 55600	40.4 1030	1.06 26.9	9/16 14.3	12.0 305	1.93 49.0	3.11 79.0	3 3/16 81.0	1 3/4 44.5			3.11 3.11	32.2 32.2
	x 278 x 415	82.3 53100	40.2 1020	1.03 26.2	½ 12.7	12.0 305	1.81 46.0	2.99 75.9	3 1/16 77.8	1 3/4 44.5			3.31 3.31	33.3 33.3
	x 264 x 393	77.4 49900	40.0 1020	0.960 24.4	½ 12.7	11.9 302	1.73 43.9	2.91 73.9	3 76.2	1 11/16 42.9			3.45 3.45	35.6 35.6
	x 235 x 350	69.1 44600	39.7 1010	0.830 21.1	7/16 11.1	11.9 302	1.58 40.1	2.76 70.1	2 7/8 73.0	1 5/8 41.3			3.77 3.77	41.2 41.2
	x 211 x 314	62.1 40100	39.4 1000	0.750 19.1	3/8 9.52	11.8 300	1.42 36.1	2.60 66.0	2 11/16 68.3	1 9/16 39.7			4.17 4.17	45.6 45.6
	x 183 x 272	53.3 34400	39.0 991	0.650 16.5	9/16 7.94	11.8 300	1.20 30.5	2.38 60.5	2 1/2 63.5	1 9/16 39.7			4.92 4.92	52.6 52.6
	x 167 x 249	49.3 31800	38.6 980	0.650 16.5	9/16 7.94	11.8 300	1.03 26.2	2.21 56.1	2 3/16 58.7	1 9/16 39.7			5.76 5.76	52.6 52.6
	x 149 x 222	43.8 28300	38.2 970	0.630 16.0	9/16 7.94	11.8 300	0.830 21.1	2.01 51.1	2 1/8 54.0	1 1/2 38.1			7.11 7.11	54.3 54.3

Nominal Weight	Axis X-X I	Axis X-X S	Axis X-X r	Axis X-X Z	Axis Y-Y I	Axis Y-Y S	Axis Y-Y r	Axis Y-Y Z	r_{ts}	h_o	Torsional Properties J	Torsional Properties C_w	Coating Area
lb/ft kg/m	in⁴ mm⁴/10⁶	in³ mm³/10³	in mm	in³ mm³/10³	in⁴ mm⁴/10⁶	in³ mm³/10³	in mm	in³ mm³/10³	in mm	in mm	in⁴ mm⁴/10³	in⁶ mm⁶/10⁹	ft²/ft m²/m
335 499	31100 12900	1410 23100	17.8 452	1620 26500	1200 499	150 2460	3.49 88.6	236 3870	4.24 108	42.2 1070	74.7 31100	535000 144000	12.46 3.80
290 433	27000 11200	1240 20300	17.8 452	1410 23100	1040 433	132 2160	3.49 88.6	205 3360	4.20 107	42.0 1070	50.9 21200	461000 124000	12.39 3.78
262 390	24100 10000	1110 18200	17.7 450	1270 20800	923 384	117 1920	3.47 88.1	182 2980	4.17 106	41.9 1060	37.3 15500	405000 109000	12.35 3.77
230 343	20800 8660	971 15900	17.5 445	1100 18000	796 331	101 1660	3.43 87.1	157 2570	4.13 105	41.7 1060	24.9 10400	346000 92900	12.30 3.75
593 883	50400 21000	2340 38300	17.0 432	2760 45200	2520 1050	302 4950	3.80 96.5	481 7880	4.63 118	39.8 1010	445 185000	997000 268000	12.44 3.79
503 748	41600 17300	1980 32400	16.8 427	2320 38000	2040 849	249 4080	3.72 94.5	394 6460	4.50 114	39.3 998	277 115000	789000 212000	12.23 3.73
431 642	34800 14500	1690 27700	16.6 422	1960 32100	1690 703	208 3410	3.65 92.7	328 5370	4.41 112	38.9 988	177 73700	638000 171000	12.06 3.68
397 591	32000 13300	1560 25600	16.6 422	1800 29500	1540 641	191 3130	3.64 92.5	300 4920	4.38 111	38.8 986	142 59100	579000 155000	12.00 3.66
372 554	29600 12300	1460 23900	16.5 419	1680 27500	1420 591	177 2900	3.60 91.4	277 4540	4.33 110	38.6 980	116 48300	528000 142000	11.94 3.64
362 539	28900 12000	1420 23300	16.5 419	1640 26900	1380 574	173 2830	3.60 91.4	270 4420	4.33 110	38.6 980	109 45400	513000 138000	11.91 3.63
324 483	25600 10700	1280 21000	16.4 417	1460 23900	1220 508	153 2510	3.58 90.9	239 3920	4.27 108	38.4 975	79.4 33000	448000 120000	11.83 3.61
297 443	23200 9660	1170 19200	16.3 414	1330 21800	1090 454	138 2260	3.54 89.9	215 3520	4.22 107	38.2 970	61.2 25500	399000 107000	11.75 3.58
277 412	21900 9120	1100 18000	16.4 417	1250 20500	1040 433	132 2160	3.58 90.9	204 3340	4.25 108	38.1 968	51.5 21400	379000 102000	11.75 3.58
249 371	19600 8160	993 16300	16.3 414	1120 18400	926 385	118 1930	3.55 90.2	182 2980	4.21 107	38.0 965	38.1 15900	334000 89700	11.71 3.57
215 321	16700 6950	859 14100	16.2 411	964 15800	803 334	101 1660	3.54 89.9	156 2560	4.19 106	37.8 960	24.8 10300	284000 76300	11.66 3.55
199 296	14900 6200	770 12600	16.0 406	869 14200	695 289	88.2 1450	3.45 87.6	137 2250	4.12 105	37.6 955	18.3 7620	246000 66100	11.61 3.54
392 584	29900 12400	1440 23600	16.1 409	1710 28000	803 334	130 2130	2.64 67.1	212 3470	3.30 83.8	39.1 993	172 71600	306000 82200	10.83 3.30
331 494	24700 10300	1210 19800	15.9 404	1430 23400	644 268	106 1740	2.57 65.3	172 2820	3.21 81.5	38.7 983	105 43700	241000 64700	10.66 3.25
327 486	24500 10200	1200 19700	16.0 406	1410 23100	640 266	105 1720	2.58 65.5	170 2790	3.21 81.5	38.7 983	103 42900	239000 64200	10.64 3.24
294 438	21900 9120	1080 17700	15.9 404	1270 20800	562 234	93.5 1530	2.55 64.8	150 2460	3.16 80.3	38.5 978	76.6 31900	208000 55900	10.56 3.22
278 415	20500 8530	1020 16700	15.8 401	1190 19500	521 217	87.1 1430	2.52 64.0	140 2290	3.13 79.5	38.4 975	65.0 27100	192000 51600	10.53 3.21
264 393	19400 8070	971 15900	15.8 401	1130 18500	493 205	82.6 1350	2.52 64.0	132 2160	3.12 79.2	38.3 973	56.1 23400	181000 48600	10.47 3.19
235 350	17400 7240	875 14300	15.9 404	1010 16600	444 185	74.6 1220	2.54 64.5	118 1930	3.11 79.0	38.1 968	41.3 17200	161000 43200	10.45 3.18
211 314	15500 6450	786 12900	15.8 401	906 14800	390 162	66.1 1080	2.51 63.8	105 1720	3.07 78.0	38.0 965	30.4 12700	141000 37900	10.38 3.16
183 272	13200 5490	675 11100	15.7 399	774 12700	331 138	56.0 918	2.49 63.2	88.3 1450	3.04 77.2	37.8 960	19.3 8030	118000 31700	10.33 3.15
167 249	11600 4830	600 9830	15.3 389	693 11400	283 118	47.9 785	2.40 61.0	76.0 1250	2.98 75.7	37.6 955	14.0 5830	99700 26800	10.26 3.13
149 222	9800 4080	513 8410	15.0 381	598 9800	229 95.3	38.8 636	2.29 58.2	62.2 1020	2.89 73.4	37.4 950	9.36 3900	80000 21500	10.20 3.11

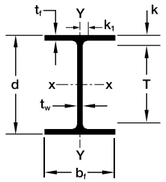
Wide Flange



Beam Size		Area A	Depth d	Web Thickness t_w	Web $t_w/2$	Flange b_f	Flange t_f	Distance k k_{des}	Distance k k_{det}	Distance k_1	Distance T	Distance Workable Gage	Compact Section Criteria $b_f/2_{tf}$	Compact Section Criteria h/t_w
		in² / mm²	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm		
W36 / W920	x 652 / x 970	192 / 124000	41.1 / 1040	1.97 / 50.0	1 / 25.4	17.6 / 447	3.54 / 89.9	4.49 / 114	4 13/16 / 122	2 9/16 / 55.6	31 5/8 / 796.93	7 1/2 / 190.5	2.48 / 2.48	16.3 / 16.3
	x 529 / x 787	156 / 101000	39.8 / 1010	1.61 / 40.9	13/16 / 20.6	17.2 / 437	2.91 / 73.9	3.86 / 98.0	4 7/16 / 106	2 / 50.8			2.96 / 2.96	19.9 / 19.9
	x 487 / x 725	143 / 92300	39.3 / 998	1.50 / 38.1	3/4 / 19.0	17.1 / 434	2.68 / 68.1	3.63 / 92.2	4 / 102	1 7/8 / 47.6			3.19 / 3.19	21.4 / 21.4
	x 441 / x 656	130 / 83900	38.9 / 988	1.36 / 34.5	11/16 / 17.5	17.0 / 432	2.44 / 62.0	3.39 / 86.1	3 3/4 / 95.3	1 7/8 / 47.6			3.48 / 3.48	23.6 / 23.6
	x 395 / x 588	116 / 74800	38.4 / 975	1.22 / 31.0	5/8 / 15.9	16.8 / 427	2.20 / 55.9	3.15 / 80.0	3 7/16 / 87.3	1 13/16 / 46.0			3.83 / 3.83	26.3 / 26.3
	x 361 / x 537	106 / 68400	38.0 / 965	1.12 / 28.4	9/16 / 14.3	16.7 / 424	2.01 / 51.1	2.96 / 75.2	3 5/16 / 84.1	1 3/4 / 44.5			4.16 / 4.16	28.6 / 28.6
	x 330 / x 491	96.9 / 62500	37.7 / 958	1.02 / 25.9	1/2 / 12.7	16.6 / 422	1.85 / 47.0	2.80 / 71.1	3 1/8 / 79.4	1 3/4 / 44.5			4.49 / 4.49	31.4 / 31.4
	x 302 / x 449	89.0 / 57400	37.3 / 947	0.945 / 24.0	1/2 / 12.7	16.7 / 424	1.68 / 42.7	2.63 / 66.8	3 / 76.2	1 11/16 / 42.9			4.96 / 4.96	33.9 / 33.9
	x 282 / x 420	82.9 / 53500	37.1 / 942	0.885 / 22.5	7/16 / 11.1	16.6 / 422	1.57 / 39.9	2.52 / 64.0	2 7/8 / 73.0	1 5/8 / 41.3			5.29 / 5.29	36.2 / 36.2
	x 262 / x 390	77.2 / 49800	36.9 / 937	0.840 / 21.3	7/16 / 11.1	16.6 / 422	1.44 / 36.6	2.39 / 60.7	2 3/4 / 69.9	1 5/8 / 41.3			5.75 / 5.75	38.2 / 38.2
	x 247 / x 368	72.5 / 46800	36.7 / 932	0.800 / 20.3	7/16 / 11.1	16.5 / 419	1.35 / 34.3	2.30 / 58.4	2 5/8 / 66.7	1 5/8 / 41.3			6.11 / 6.11	40.1 / 40.1
	x 231 / x 344	68.2 / 44000	36.5 / 927	0.760 / 19.3	3/8 / 9.52	16.5 / 419	1.26 / 32.0	2.21 / 56.1	2 9/16 / 65.1	1 9/16 / 39.7			6.54 / 6.54	42.2 / 42.2
W36 / W920	x 256 / x 381	75.3 / 48600	37.4 / 951	0.960 / 24.4	1/2 / 12.7	12.2 / 310	1.73 / 43.9	2.48 / 63.0	2 5/8 / 66.7	1 9/16 / 33.3	32 1/8 / 815.96	5 1/2 / 139.7	3.53 / 3.53	33.8 / 33.8
	x 232 / x 345	68.0 / 43900	37.1 / 943	0.870 / 22.1	7/16 / 11.1	12.1 / 307	1.57 / 39.9	2.32 / 58.9	2 7/16 / 61.9	1 1/4 / 31.8			3.86 / 3.86	37.3 / 37.3
	x 210 / x 313	61.9 / 39900	36.7 / 932	0.830 / 21.1	7/16 / 11.1	12.2 / 310	1.36 / 34.5	2.11 / 53.6	2 5/16 / 58.7	1 1/4 / 31.8			4.48 / 4.48	39.1 / 39.1
	x 194 / x 289	57.0 / 36800	36.5 / 927	0.765 / 19.4	3/8 / 9.52	12.1 / 307	1.26 / 32.0	2.01 / 51.1	2 3/16 / 55.6	1 3/16 / 30.2			4.81 / 4.81	42.4 / 42.4
	x 182 / x 271	53.6 / 34600	36.3 / 922	0.725 / 18.4	3/8 / 9.52	12.1 / 307	1.18 / 30.0	1.93 / 49.0	2 1/8 / 54.0	1 3/16 / 30.2			5.12 / 5.12	44.8 / 44.8
	x 170 / x 253	50.0 / 32300	36.2 / 919	0.680 / 17.3	3/8 / 9.52	12.0 / 305	1.10 / 27.9	1.85 / 47.0	2 / 50.8	1 3/16 / 30.2			5.47 / 5.47	47.7 / 47.7
	x 160 / x 238	47.0 / 30300	36.0 / 914	0.650 / 16.5	5/16 / 7.94	12.0 / 305	1.02 / 25.9	1.77 / 45.0	1 15/16 / 49.2	1 1/8 / 28.6			5.88 / 5.88	49.9 / 49.9
	x 150 / x 223	44.3 / 28600	35.9 / 912	0.625 / 15.9	5/16 / 7.94	12.0 / 305	0.940 / 23.9	1.69 / 42.9	1 7/8 / 47.6	1 1/8 / 28.6			6.37 / 6.37	51.9 / 51.9
	x 135 / x 201	39.9 / 25700	35.6 / 904	0.600 / 15.2	5/16 / 7.94	12.0 / 305	0.790 / 20.1	1.54 / 39.1	1 11/16 / 42.9	1 1/8 / 28.6			7.56 / 7.56	54.1 / 54.1

Nominal Weight	Axis X-X I	Axis X-X S	Axis X-X r	Axis X-X Z	Axis Y-Y I	Axis Y-Y S	Axis Y-Y r	Axis Y-Y Z	r_{ts}	h_o	Torsional Properties J	Torsional Properties C_w	Coating Area
lb/ft / kg/m	in⁴ / mm⁴/10⁶	in³ / mm³/10³	in / mm	in³ / mm³/10³	in⁴ / mm⁴/10⁶	in³ / mm³/10³	in / mm	in³ / mm³/10³	in / mm	in / mm	in⁴ / mm⁴/10³	in⁶ / mm⁶/10⁹	ft²/ft / m²/m
652 / 970	50600 / 21100	2460 / 40300	16.2 / 411	2910 / 47700	3230 / 1340	367 / 6010	4.10 / 104	581 / 9520	4.96 / 126	37.6 / 955	593 / 247000	1130000 / 303000	12.39 / 3.78
529 / 787	39600 / 16500	1990 / 32600	16.0 / 406	2330 / 38200	2490 / 1040	289 / 4740	4.00 / 102	454 / 7440	4.80 / 122	36.9 / 937	327 / 136000	846000 / 227000	12.10 / 3.69
487 / 725	36000 / 15000	1830 / 30000	15.8 / 401	2130 / 34900	2250 / 937	263 / 4310	3.96 / 101	412 / 6750	4.74 / 120	36.6 / 930	258 / 107000	754000 / 202000	12.00 / 3.66
441 / 656	32100 / 13400	1650 / 27000	15.7 / 399	1910 / 31300	1990 / 828	235 / 3850	3.92 / 99.6	368 / 6030	4.69 / 119	36.5 / 927	194 / 80700	661000 / 178000	11.92 / 3.63
395 / 588	28500 / 11900	1490 / 24400	15.7 / 399	1710 / 28000	1750 / 728	208 / 3410	3.88 / 98.6	325 / 5330	4.61 / 117	36.2 / 919	142 / 59100	575000 / 154000	11.80 / 3.60
361 / 537	25700 / 10700	1350 / 22100	15.6 / 396	1550 / 25400	1570 / 653	188 / 3080	3.85 / 97.8	293 / 4800	4.58 / 116	36.0 / 914	109 / 45400	509000 / 137000	11.71 / 3.57
330 / 491	23300 / 9700	1240 / 20300	15.5 / 394	1410 / 23100	1420 / 591	171 / 2800	3.83 / 97.3	265 / 4340	4.53 / 115	35.9 / 912	84.3 / 35100	456000 / 122000	11.65 / 3.55
302 / 449	21100 / 8780	1130 / 18500	15.4 / 391	1280 / 21000	1300 / 541	156 / 2560	3.82 / 97.0	241 / 3950	4.53 / 115	35.6 / 904	64.3 / 26800	412000 / 111000	11.63 / 3.54
282 / 420	19600 / 8160	1050 / 17200	15.4 / 391	1190 / 19500	1200 / 499	144 / 2360	3.80 / 96.5	223 / 3650	4.50 / 114	35.5 / 902	52.7 / 21900	378000 / 102000	11.57 / 3.53
262 / 390	17900 / 7450	972 / 15900	15.3 / 389	1100 / 18000	1090 / 454	132 / 2160	3.76 / 95.5	204 / 3340	4.46 / 113	35.5 / 902	41.6 / 17300	342000 / 91800	11.54 / 3.52
247 / 368	16700 / 6950	913 / 15000	15.2 / 386	1030 / 16900	1010 / 420	123 / 2020	3.74 / 95.0	190 / 3110	4.42 / 112	35.4 / 899	34.7 / 14400	316000 / 84900	11.48 / 3.50
231 / 344	15600 / 6490	854 / 14000	15.1 / 384	963 / 15800	940 / 391	114 / 1870	3.71 / 94.2	176 / 2880	4.40 / 112	35.2 / 894	28.7 / 11900	292000 / 78400	11.46 / 3.49
256 / 381	16800 / 6990	895 / 14700	14.9 / 378	1040 / 17000	528 / 220	86.5 / 1420	2.65 / 67.3	137 / 2250	3.24 / 82.3	35.7 / 907	52.9 / 22000	168000 / 45100	10.14 / 3.09
232 / 345	15000 / 6240	809 / 13300	14.8 / 376	936 / 15300	468 / 195	77.2 / 1270	2.62 / 66.5	122 / 2000	3.21 / 81.5	35.5 / 902	39.6 / 16500	148000 / 39700	10.07 / 3.07
210 / 313	13200 / 5490	719 / 11800	14.6 / 371	833 / 13700	411 / 171	67.5 / 1110	2.58 / 65.5	107 / 1750	3.18 / 80.8	35.3 / 897	28.0 / 11700	128000 / 34400	10.05 / 3.06
194 / 289	12100 / 5040	664 / 10900	14.6 / 371	767 / 12600	375 / 156	61.9 / 1010	2.56 / 65.0	97.7 / 1600	3.15 / 80.0	35.2 / 894	22.2 / 9240	116000 / 31200	9.99 / 3.04
182 / 271	11300 / 4700	623 / 10200	14.5 / 368	718 / 11800	347 / 144	57.6 / 944	2.55 / 64.8	90.7 / 1490	3.13 / 79.5	35.1 / 892	18.5 / 7700	107000 / 28700	9.96 / 3.04
170 / 253	10500 / 4370	581 / 9520	14.5 / 368	668 / 10900	320 / 133	53.2 / 872	2.53 / 64.3	83.8 / 1370	3.11 / 79.0	35.1 / 892	15.1 / 6290	98500 / 26500	9.92 / 3.02
160 / 238	9760 / 4060	542 / 8880	14.4 / 366	624 / 10200	295 / 123	49.1 / 805	2.50 / 63.5	77.3 / 1270	3.09 / 78.5	35.0 / 889	12.4 / 5160	90200 / 24200	9.89 / 3.01
150 / 223	9040 / 3760	504 / 8260	14.3 / 363	581 / 9520	270 / 112	45.1 / 739	2.47 / 62.7	70.9 / 1160	3.06 / 77.7	35.0 / 889	10.1 / 4200	82200 / 22100	9.88 / 3.01
135 / 201	7800 / 3250	439 / 7190	14.0 / 356	509 / 8340	225 / 93.7	37.7 / 618	2.38 / 60.5	59.7 / 978	2.99 / 75.9	34.8 / 884	7.00 / 2910	68100 / 18300	9.83 / 3.00

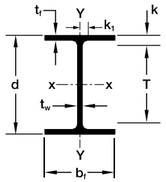
Wide Flange



Beam Size		Area A	Depth d	Web Thickness t_w	Web $t_w/2$	Flange b_f	Flange t_f	Distance k k_{des}	Distance k k_{det}	Distance k_1	Distance T	Distance Workable Gage	Compact Section Criteria $b_f/2_{tf}$	Compact Section Criteria h/t_w
		in² mm²	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm		
W33 W840	x 387 x 576	114 73500	36.0 914	1.26 32.0	⅝ 15.9	16.2 411	2.28 57.9	3.07 78.0	3 9/16 81.0	1 7/16 36.5	29 ⅝ 752.48	5 ½ 139.7	3.55 3.55	23.7 23.7
	x 354 x 527	104 67100	35.6 904	1.16 29.5	⅝ 15.9	16.1 409	2.09 53.1	2.88 73.2	2 13/16 74.6	1 ⅜ 34.9			3.85 3.85	25.7 25.7
	x 318 x 473	93.7 60500	35.2 894	1.04 26.4	9/16 14.3	16.0 406	1.89 48.0	2.68 68.1	2 ¾ 69.9	1 5/16 33.3			4.23 4.23	28.7 28.7
	x 291 x 433	85.6 55200	34.8 884	0.960 24.4	½ 12.7	15.9 404	1.73 43.9	2.52 64.0	2 ⅝ 66.7	1 5/16 33.3			4.60 4.60	31.0 31.0
	x 263 x 392	77.4 49900	34.5 876	0.870 22.1	7/16 11.1	15.8 401	1.57 39.9	2.36 59.9	2 7/16 61.9	1 ¼ 31.8			5.03 5.03	34.3 34.3
	x 241 x 359	71.1 45900	34.2 869	0.830 21.1	7/16 11.1	15.9 404	1.40 35.6	2.19 55.6	2 ¼ 57.2	1 ¼ 31.8			5.66 5.66	35.9 35.9
	x 221 x 329	65.3 42100	33.9 861	0.775 19.7	⅜ 9.52	15.8 401	1.28 32.5	2.06 52.3	2 ⅛ 54.0	1 3/16 30.2			6.20 6.20	38.5 38.5
	x 201 x 299	59.1 38100	33.7 856	0.715 18.2	⅜ 9.52	15.7 399	1.15 29.2	1.94 49.3	2 50.8	1 3/16 30.2			6.85 6.85	41.7 41.7
W33 W840	x 169 x 251	49.5 31900	33.8 859	0.670 17.0	⅜ 9.52	11.5 292	1.22 31.0	1.92 48.8	2 ⅛ 54.0	1 3/16 30.2	29 ⅝ 752.48	5 ½ 139.7	4.71 4.71	44.7 44.7
	x 152 x 226	44.9 29000	33.5 851	0.635 16.1	5/16 7.94	11.6 295	1.06 26.9	1.76 44.7	1 15/16 49.2	1 ⅛ 28.6			5.48 5.48	47.2 47.2
	x 141 x 210	41.5 26800	33.3 846	0.605 15.4	5/16 7.94	11.5 292	0.960 24.4	1.66 42.2	1 13/16 46.0	1 ⅛ 28.6			6.01 6.01	49.6 49.6
	x 130 x 193	38.3 24700	33.1 841	0.580 14.7	5/16 7.94	11.5 292	0.855 21.7	1.56 39.6	1 ¾ 44.5	1 ⅛ 28.6			6.73 6.73	51.7 51.7
	x 118 x 176	34.7 22400	32.9 836	0.550 14.0	5/16 7.94	11.5 292	0.740 18.8	1.44 36.6	1 ⅝ 41.3	1 ⅛ 28.6			7.76 7.76	54.5 54.5
W30 W760	x 391 x 582	115 74200	33.2 843	1.36 34.5	11/16 17.5	15.6 396	2.44 62.0	3.23 82.0	3 ⅜ 85.7	1 ½ 38.1	26 ½ 673.1	5 ½ 139.7	3.19 3.19	19.7 19.7
	x 357 x 531	105 67700	32.8 833	1.24 31.5	⅝ 15.9	15.5 394	2.24 56.9	3.03 77.0	3 ⅛ 79.4	1 7/16 36.5			3.45 3.45	21.6 21.6
	x 326 x 484	95.9 61900	32.4 823	1.14 29.0	9/16 14.3	15.4 391	2.05 52.1	2.84 72.1	2 15/16 74.6	1 ⅜ 34.9			3.75 3.75	23.4 23.4
	x 292 x 434	86.0 55500	32.0 813	1.02 25.9	½ 12.7	15.3 389	1.85 47.0	2.64 67.1	2 ¾ 69.9	1 5/16 33.3			4.12 4.12	26.2 26.2
	x 261 x 389	77.0 49700	31.6 803	0.930 23.6	½ 12.7	15.2 386	1.65 41.9	2.44 62.0	2 9/16 65.1	1 5/16 33.3			4.59 4.59	28.7 28.7
	x 235 x 350	69.3 44700	31.3 795	0.830 21.1	7/16 11.1	15.1 384	1.50 38.1	2.29 58.2	2 ⅜ 60.3	1 ¼ 31.8			5.02 5.02	32.2 32.2
	x 211 x 314	62.3 40200	30.9 785	0.775 19.7	⅜ 9.52	15.1 384	1.32 33.5	2.10 53.3	2 ¼ 57.2	1 5/16 30.2			5.74 5.74	34.5 34.5
	x 191 x 284	56.1 36200	30.7 780	0.710 18.0	⅜ 9.52	15.0 381	1.19 30.2	1.97 50.0	2 1/16 52.4	1 5/16 30.2			6.35 6.35	37.7 37.7
	x 173 x 257	50.9 32800	30.4 772	0.655 16.6	5/16 7.94	15.0 381	1.07 27.2	1.85 47.0	2 50.8	1 ⅛ 28.6			7.04 7.04	40.8 40.8

Nominal Weight	Axis X-X I	Axis X-X S	Axis X-X r	Axis X-X Z	Axis Y-Y I	Axis Y-Y S	Axis Y-Y r	Axis Y-Y Z	r_{ts}	h_o	Torsional Properties J	Torsional Properties C_w	Coating Area
lb/ft kg/m	in⁴ mm⁴/10⁶	in³ mm³/10³	in mm	in³ mm³/10³	in⁴ mm⁴/10⁶	in³ mm³/10³	in mm	in³ mm³/10³	in mm	in mm	in⁴ mm⁴/10³	in⁶ mm⁶/10⁹	ft²/ft m²/m
387 576	24300 10100	1350 22100	14.6 371	1560 25600	1620 674	200 3280	3.77 95.8	312 5110	4.49 114	33.7 856	148 61600	459000 123000	11.19 3.41
354 527	22000 9160	1240 20300	14.5 368	1420 23300	1460 608	181 2970	3.74 95.0	282 4620	4.44 113	33.5 851	115 47900	408000 110000	11.11 3.39
318 473	19500 8120	1110 18200	14.5 368	1270 20800	1290 537	161 2640	3.71 94.2	250 4100	4.40 112	33.3 846	84.4 35100	357000 95900	11.03 3.36
291 433	17700 7370	1020 16700	14.4 366	1160 19000	1160 483	146 2390	3.68 93.5	226 3700	4.34 110	33.1 841	65.1 27100	319000 85700	10.94 3.33
263 392	15900 6620	919 15100	14.3 363	1040 17000	1040 433	131 2150	3.66 93.0	202 3310	4.31 109	32.9 836	48.7 20300	281000 75500	10.87 3.31
241 359	14200 5910	831 13600	14.1 358	940 15400	933 388	118 1930	3.62 91.9	182 2980	4.29 109	32.8 833	36.2 15100	251000 67400	10.86 3.31
221 329	12900 5370	759 12400	14.1 358	857 14000	840 350	106 1740	3.59 91.2	164 2690	4.25 108	32.6 828	27.8 11600	224000 60200	10.79 3.29
201 299	11600 4830	686 11200	14.0 356	773 12700	749 312	95.2 1560	3.56 90.4	147 2410	4.21 107	32.6 828	20.8 8660	198000 53200	10.73 3.27
169 251	9290 3870	549 9000	13.7 348	629 10300	310 129	53.9 883	2.50 63.5	84.4 1380	3.03 77.0	32.6 828	17.7 7370	82400 22100	9.36 2.85
152 226	8160 3400	487 7980	13.5 343	559 9160	273 114	47.2 773	2.47 62.7	73.9 1210	3.01 76.5	32.4 823	12.4 5160	71700 19300	9.34 2.85
141 210	7450 3100	448 7340	13.4 340	514 8420	246 102	42.7 700	2.43 61.7	66.9 1100	2.98 75.7	32.3 820	9.70 4040	64400 17300	9.28 2.83
130 193	6710 2790	406 6650	13.2 335	467 7650	218 90.7	37.9 621	2.39 60.7	59.5 975	2.94 74.7	32.2 818	7.37 3070	56600 15200	9.25 2.82
118 176	5900 2460	359 5880	13.0 330	415 6800	187 77.8	32.6 534	2.32 58.9	51.3 841	2.89 73.4	32.2 818	5.30 2210	48300 13000	9.23 2.81
391 582	20700 8620	1250 20500	13.4 340	1450 23800	1550 645	198 3240	3.67 93.2	310 5080	4.37 111	30.8 782	173 72000	366000 98300	10.51 3.20
357 531	18700 7780	1140 18700	13.3 338	1320 21600	1390 579	179 2930	3.64 92.5	279 4570	4.31 109	30.6 777	134 55800	324000 87000	10.43 3.18
326 484	16800 6990	1040 17000	13.2 335	1190 19500	1240 516	162 2650	3.60 91.4	252 4130	4.26 108	30.4 772	103 42900	287000 77100	10.34 3.15
292 434	14900 6200	930 15200	13.2 335	1060 17400	1100 458	144 2360	3.58 90.9	223 3650	4.22 107	30.2 767	75.2 31300	250000 67100	10.26 3.13
261 389	13100 5450	829 13600	13.1 333	943 15500	959 399	127 2080	3.53 89.7	196 3210	4.16 106	30.0 762	54.1 22500	215000 57700	10.18 3.10
235 350	11700 4870	748 12300	13.0 330	847 13900	855 356	114 1870	3.51 89.2	175 2870	4.13 105	29.8 757	40.3 16800	190000 51000	10.11 3.08
211 314	10300 4290	665 10900	12.9 328	751 12300	757 315	100 1640	3.49 88.6	155 2540	4.11 104	29.6 752	28.4 11800	166000 44600	10.05 3.06
191 284	9200 3830	600 9830	12.8 325	675 11100	673 280	89.5 1470	3.46 87.9	138 2260	4.06 103	29.5 749	21.0 8740	146000 39200	10.00 3.05
173 257	8230 3430	541 8870	12.7 323	607 9950	598 249	79.8 1310	3.42 86.9	123 2020	4.03 102	29.3 744	15.6 6490	129000 34600	9.96 3.04

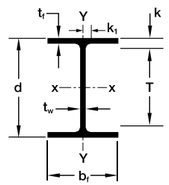
Wide Flange



Beam Size		Area A	Depth d	Web Thickness t_w	Web $t_w/2$	Flange b_f	Flange t_f	Distance k k_{des}	Distance k k_{det}	Distance k_1	Distance T	Distance Workable Gage	Compact Section Criteria $b_f/2_{tf}$	Compact Section Criteria h/t_w
		in² mm²	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm		
W30 W760	x 148 x 220	43.6 28100	30.7 780	0.650 16.5	5/16 7.94	10.5 267	1.18 30.0	1.83 46.5	2 1/16 52.4	1 1/8 28.6	26 1/2 673.1	5 1/2 139.7	4.44 4.44	41.6 41.6
	x 132 x 196	38.8 25000	30.3 770	0.615 15.6	5/16 7.94	10.5 267	1.00 25.4	1.65 41.9	1 7/8 47.6	1 1/8 28.6			5.27 5.27	43.9 43.9
	x 124 x 185	36.5 23500	30.2 767	0.585 14.9	5/16 7.94	10.5 267	0.930 23.6	1.58 40.1	1 13/16 46.0	1 1/8 28.6			5.65 5.65	46.2 46.2
	x 116 x 173	34.2 22100	30.0 762	0.565 14.4	5/16 7.94	10.5 267	0.850 21.6	1.50 38.1	1 3/4 44.5	1 1/8 28.6			6.17 6.17	47.8 47.8
	x 108 x 161	31.7 20500	29.8 757	0.545 13.8	5/16 7.94	10.5 267	0.760 19.3	1.41 35.8	1 11/16 42.9	1 1/8 28.6			6.89 6.89	49.6 49.6
	x 99 x 147	29.0 18700	29.7 754	0.520 13.2	1/4 6.35	10.5 267	0.670 17.0	1.32 33.5	1 9/16 39.7	1 1/16 27.0			7.80 7.80	51.9 51.9
	x 90 x 134	26.3 17000	29.5 749	0.470 11.9	1/4 6.35	10.4 264	0.610 15.5	1.26 32.0	1 1/2 38.1	1 1/16 27.0			8.52 8.52	57.5 57.5
W27 W690	x 539 x 802	159 103000	32.5 826	1.97 50.0	1 25.4	15.3 389	3.54 89.9	4.33 110	4 7/16 113	1 13/16 46.0	23 5/8 600.1	5 1/2 139.7	2.15 2.15	12.1 12.1
	x 368 x 548	109 70300	30.4 772	1.38 35.1	11/16 17.5	14.7 373	2.48 63.0	3.27 83.1	3 5/8 85.7	1 1/2 38.1			2.96 2.96	17.3 17.3
	x 336 x 500	99.2 64000	30.0 762	1.26 32.0	5/8 15.9	14.6 371	2.28 57.9	3.07 78.0	3 3/16 81.0	1 7/16 36.5			3.19 3.19	18.9 18.9
	x 307 x 457	90.2 58200	29.6 752	1.16 29.5	5/8 15.9	14.4 366	2.09 53.1	2.88 73.2	3 76.2	1 7/16 36.5			3.46 3.46	20.6 20.6
	x 281 x 419	83.1 53600	29.3 744	1.06 26.9	9/16 14.3	14.4 366	1.93 49.0	2.72 69.1	2 13/16 71.4	1 3/8 34.9			3.72 3.72	22.5 22.5
	x 258 x 384	76.1 49100	29.0 737	0.980 24.9	1/2 12.7	14.3 363	1.77 45.0	2.56 65.0	2 11/16 68.3	1 5/16 33.3			4.03 4.03	24.4 24.4
	x 235 x 350	69.4 44800	28.7 729	0.910 23.1	1/2 12.7	14.2 361	1.61 40.9	2.40 61.0	2 1/2 63.5	1 3/16 33.3			4.41 4.41	26.2 26.2
	x 217 x 323	63.9 41200	28.4 721	0.830 21.1	7/16 11.1	14.1 358	1.50 38.1	2.29 58.2	2 3/8 60.3	1 1/4 31.8			4.71 4.71	28.7 28.7
	x 194 x 289	57.1 36800	28.1 714	0.750 19.1	3/8 9.52	14.0 356	1.34 34.0	2.13 54.1	2 1/4 57.2	1 3/16 30.2			5.24 5.24	31.8 31.8
	x 178 x 265	52.5 33900	27.8 706	0.725 18.4	3/8 9.52	14.1 358	1.19 30.2	1.98 50.3	2 1/16 52.4	1 3/16 30.2			5.92 5.92	32.9 32.9
	x 161 x 240	47.6 30700	27.6 701	0.660 16.8	3/8 9.52	14.0 356	1.08 27.4	1.87 47.5	2 50.8	1 3/16 30.2			6.49 6.49	36.1 36.1
	x 146 x 217	43.2 27900	27.4 696	0.605 15.4	5/16 7.94	14.0 356	0.975 24.8	1.76 44.7	1 7/8 47.6	1 1/8 28.6			7.16 7.16	39.4 39.4
W27 W690	x 129 x 192	37.8 24400	27.6 701	0.610 15.5	5/16 7.94	10.0 254	1.10 27.9	1.70 43.2	2 50.8	1 1/8 28.6	23 5/8 600.1	5 1/2 139.7	4.55 4.55	39.7 39.7
	x 114 x 170	33.6 21700	27.3 693	0.570 14.5	5/16 7.94	10.1 257	0.930 23.6	1.53 38.9	1 13/16 46.0	1 1/8 28.6			5.41 5.41	42.5 42.5
	x 102 x 152	30.0 19400	27.1 688	0.515 13.1	1/4 6.35	10.0 254	0.830 21.1	1.43 36.3	1 3/4 44.5	1 1/16 27.0			6.03 6.03	47.1 47.1
	x 94 x 140	27.6 17800	26.9 683	0.490 12.4	1/4 6.35	10.0 254	0.745 18.9	1.34 34.0	1 5/8 41.3	1 1/16 27.0			6.70 6.70	49.5 49.5
	x 84 x 125	24.7 15900	26.7 678	0.460 11.7	1/4 6.35	10.0 254	0.640 16.3	1.24 31.5	1 9/16 39.7	1 1/16 27.0			7.78 7.78	52.7 52.7

Nominal Weight	Axis X-X I	Axis X-X S	Axis X-X r	Axis X-X Z	Axis Y-Y I	Axis Y-Y S	Axis Y-Y r	Axis Y-Y Z	r_{ts}	h_o	Torsional Properties J	Torsional Properties C_w	Coating Area
lb/ft kg/m	in⁴ mm⁴/10⁶	in³ mm³/10³	in mm	in³ mm³/10³	in⁴ mm⁴/10⁶	in³ mm³/10³	in mm	in³ mm³/10³	in mm	in mm	in⁴ mm⁴/10³	in⁶ mm⁶/10⁹	ft²/ft m²/m
148 220	6680 2780	436 7140	12.4 315	500 8190	227 94.5	43.3 710	2.28 57.9	68.0 1110	2.77 70.4	29.5 749	14.5 6040	49400 13300	8.51 2.59
132 196	5770 2400	380 6230	12.2 310	437 7160	196 81.6	37.2 610	2.25 57.2	58.4 957	2.75 69.8	29.3 744	9.72 4050	42100 11300	8.45 2.57
124 185	5360 2230	355 5820	12.1 307	408 6690	181 75.3	34.4 564	2.23 56.6	54.0 885	2.73 69.3	29.3 744	7.99 3330	38600 10400	8.44 2.57
116 173	4930 2050	329 5390	12.0 305	378 6190	164 68.3	31.3 513	2.19 55.6	49.2 806	2.70 68.6	29.2 742	6.43 2680	34900 9370	8.41 2.56
108 161	4470 1860	299 4900	11.9 302	346 5670	146 60.8	27.9 457	2.15 54.6	43.9 719	2.67 67.8	29.0 737	4.99 2080	30900 8300	8.38 2.55
99 147	3990 1660	269 4410	11.7 297	312 5110	128 53.3	24.5 401	2.10 53.3	38.6 633	2.62 66.5	29.0 737	3.77 1570	26800 7200	8.36 2.55
90 134	3610 1500	245 4010	11.7 297	283 4640	115 47.9	22.1 362	2.09 53.1	34.7 569	2.60 66.0	28.9 734	2.84 1180	24000 6440	8.31 2.53
539 802	25600 10700	1570 25700	12.7 323	1890 31000	2110 878	277 4540	3.65 92.7	437 7160	4.41 112	29.0 737	496 206000	443000 119000	10.19 3.11
368 548	16200 6740	1060 17400	12.2 310	1240 20300	1310 545	179 2930	3.48 88.4	279 4570	4.15 105	27.9 709	170 70800	255000 68500	9.74 2.97
336 500	14600 6080	972 15900	12.1 307	1130 18500	1180 491	162 2650	3.45 87.6	252 4130	4.10 104	27.7 704	131 54500	226000 60700	9.66 2.94
307 457	13100 5450	887 14500	12.0 305	1030 16900	1050 437	146 2390	3.41 86.6	227 3720	4.04 103	27.5 698	101 42000	199000 53400	9.54 2.91
281 419	11900 4950	814 13300	12.0 305	936 15300	953 397	133 2180	3.39 86.1	206 3380	4.00 102	27.4 696	79.5 33100	178000 47800	9.51 2.90
258 384	10800 4500	745 12200	11.9 302	852 14000	859 358	120 1970	3.36 85.3	187 3060	3.96 101	27.2 691	61.6 25600	159000 42700	9.44 2.88
235 350	9700 4040	677 11100	11.8 300	772 12700	769 320	108 1770	3.33 84.6	168 2750	3.92 99.6	27.1 688	47.0 19600	141000 37900	9.37 2.85
217 323	8910 3710	627 10300	11.8 300	711 11700	704 293	100 1640	3.32 84.3	154 2520	3.89 98.8	26.9 683	37.6 15700	128000 34400	9.30 2.83
194 289	7860 3270	559 9160	11.7 297	631 10300	619 258	88.1 1440	3.29 83.6	136 2230	3.85 97.8	26.8 681	27.1 11300	111000 29800	9.23 2.81
178 265	7020 2920	505 8280	11.6 295	570 9340	555 231	78.8 1290	3.25 82.6	122 2000	3.83 97.3	26.6 676	20.1 8370	98400 26400	9.21 2.81
161 240	6310 2630	458 7510	11.5 292	515 8440	497 207	70.9 1160	3.23 82.0	109 1790	3.79 96.3	26.5 673	15.1 6290	87300 23400	9.16 2.79
146 217	5660 2360	414 6780	11.5 292	464 7600	443 184	63.5 1040	3.20 81.3	97.7 1600	3.76 95.5	26.4 671	11.3 4700	77200 20700	9.13 2.78
129 192	4760 1980	345 5650	11.2 284	395 6470	184 76.6	36.8 603	2.21 56.1	57.6 944	2.66 67.6	26.5 673	11.1 4620	32500 8730	7.83 2.39
114 170	4080 1700	299 4900	11.0 279	343 5620	159 66.2	31.5 516	2.18 55.4	49.3 808	2.65 67.3	26.4 671	7.33 3050	27600 7410	7.82 2.38
102 152	3620 1510	267 4380	11.0 279	305 5000	139 57.9	27.8 456	2.15 54.6	43.4 711	2.62 66.5	26.3 668	5.28 2200	24000 6440	7.76 2.37
94 140	3270 1360	243 3980	10.9 277	278 4560	124 51.6	24.8 406	2.12 53.8	38.8 636	2.59 65.8	26.2 665	4.03 1680	21300 5720	7.74 2.36
84 125	2850 1190	213 3490	10.7 272	244 4000	106 44.1	21.2 347	2.07 52.6	33.2 544	2.54 64.5	26.1 663	2.81 1170	17900 4810	7.71 2.35

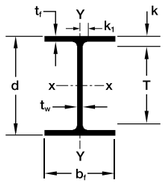
Wide Flange



Beam Size		Area A	Depth d	Web Thickness t_w	Web $t_w/2$	Flange b_f	Flange t_f	Distance k k_{des}	Distance k k_{det}	Distance k_1	Distance T	Distance Workable Gage	Compact Section Criteria $b_f/2_{tf}$	Compact Section Criteria h/t_w
		in² mm²	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	$b_f/2_{tf}$	h/t_w
W24 W610	x 370 x 551	109 70300	28.0 711	1.52 38.6	¾ 19.0	13.7 348	2.72 69.1	3.22 81.8	3 ⅝ 92.1	1 9/16 39.7	20 ¾ 527.1	5 ½ 139.7	2.51 2.51	14.2 14.2
	x 335 x 498	98.3 63400	27.5 699	1.38 35.1	11/16 17.5	13.5 343	2.48 63.0	2.98 75.7	3 ⅝ 85.7	1 ½ 38.1			2.73 2.73	15.6 15.6
	x 306 x 455	89.7 57900	27.1 688	1.26 32.0	⅝ 15.9	13.4 340	2.28 57.9	2.78 70.6	3 9/16 81.0	1 7/16 36.5			2.94 2.94	17.1 17.1
	x 279 x 415	81.9 52800	26.7 678	1.16 29.5	⅝ 15.9	13.3 338	2.09 53.1	2.59 65.8	3 76.2	1 7/16 36.5			3.18 3.18	18.6 18.6
	x 250 x 372	73.5 47400	26.3 668	1.04 26.4	9/16 14.3	13.2 335	1.89 48.0	2.39 60.7	2 13/16 71.4	1 ⅜ 34.9			3.49 3.49	20.7 20.7
	x 229 x 341	67.2 43400	26.0 660	0.960 24.4	½ 12.7	13.1 333	1.73 43.9	2.23 56.6	2 ⅝ 66.7	1 9/16 33.3			3.79 3.79	22.5 22.5
	x 207 x 307	60.7 39200	25.7 653	0.870 22.1	7/16 11.1	13.0 330	1.57 39.9	2.07 52.6	2 ½ 63.5	1 ¼ 31.8			4.14 4.14	24.8 24.8
	x 192 x 285	56.5 36500	25.5 648	0.810 20.6	7/16 11.1	13.0 330	1.46 37.1	1.96 49.8	2 ⅜ 60.3	1 ¼ 31.8			4.43 4.43	26.6 26.6
	x 176 x 262	51.7 33400	25.2 640	0.750 19.1	⅜ 9.52	12.9 328	1.34 34.0	1.84 46.7	2 ¼ 57.2	1 3/16 30.2			4.81 4.81	28.7 28.7
	x 162 x 241	47.8 30800	25.0 635	0.705 17.9	⅜ 9.52	13.0 330	1.22 31.0	1.72 43.7	2 ⅛ 54.0	1 3/16 30.2			5.31 5.31	30.6 30.6
	x 146 x 217	43.0 27700	24.7 627	0.650 16.5	5/16 7.94	12.9 328	1.09 27.7	1.59 40.4	2 50.8	1 ⅛ 28.6			5.92 5.92	33.2 33.2
	x 131 x 195	38.6 24900	24.5 622	0.605 15.4	5/16 7.94	12.9 328	0.960 24.4	1.46 37.1	1 ⅞ 47.6	1 ⅛ 28.6			6.70 6.70	35.6 35.6
	x 117 x 174	34.4 22200	24.3 617	0.550 14.0	5/16 7.94	12.8 325	0.850 21.6	1.35 34.3	1 ¾ 44.5	1 ⅛ 28.6			7.53 7.53	39.2 39.2
	x 104 x 155	30.7 19800	24.1 612	0.500 12.7	¼ 6.35	12.8 325	0.750 19.1	1.25 31.8	1 ⅜ 41.3	1 1/16 27.0			8.50 8.50	43.1 43.1
W24 W610	x 103 x 153	30.3 19500	24.5 622	0.550 14.0	5/16 7.94	9.00 229	0.980 24.9	1.48 37.6	1 ⅞ 47.6	1 ⅛ 28.6	20 ¾ 527.1	5 ½ 139.7	4.59 4.59	39.2 39.2
	x 94 x 140	27.7 17900	24.3 617	0.515 13.1	¼ 6.35	9.07 230	0.875 22.2	1.38 35.1	1 ¾ 44.5	1 1/16 27.0			5.18 5.18	41.9 41.9
	x 84 x 125	24.7 15900	24.1 612	0.470 11.9	¼ 6.35	9.02 229	0.770 19.6	1.27 32.3	1 11/16 42.9	1 1/16 27.0			5.86 5.86	45.9 45.9
	x 76 x 113	22.4 14500	23.9 607	0.440 11.2	¼ 6.35	8.99 228	0.680 17.3	1.18 30.0	1 9/16 39.7	1 1/16 27.0			6.61 6.61	49.0 49.0
	x 68 x 101	20.1 13000	23.7 602	0.415 10.5	¼ 6.35	8.97 228	0.585 14.9	1.09 27.7	1 ½ 38.1	1 1/16 27.0			7.66 7.66	52.0 52.0
W24 W610	x 62 x 92	18.2 11700	23.7 602	0.430 10.9	¼ 6.35	7.04 179	0.590 15.0	1.09 27.7	1 ½ 38.1	1 1/16 27.0	20 ¾ 527.1	3 ½ 88.9	5.97 5.97	50.1 50.1
	x 55 x 82	16.2 10500	23.6 599	0.395 10.0	3/16 4.76	7.01 178	0.505 12.8	1.01 25.7	1 7/16 36.5	1 25.4	20 ¾ 527.1	3 ½ 88.9	6.94 6.94	54.6 54.6
W21 W530	x 201 x 300	59.3 38300	23.0 584	0.910 23.1	½ 12.7	12.6 320	1.63 41.4	2.13 54.1	2 ½ 63.5	1 5/16 33.3	18 457.2	5 ½ 139.7	3.86 3.86	20.6 20.6
	x 182 x 272	53.6 34600	22.7 577	0.830 21.1	7/16 11.1	12.5 318	1.48 37.6	1.98 50.3	2 ⅜ 60.3	1 ¼ 31.8			4.22 4.22	22.6 22.6
	x 166 x 248	48.8 31500	22.5 572	0.750 19.1	⅜ 9.52	12.4 315	1.36 34.5	1.86 47.2	2 ¼ 57.2	1 3/16 30.2			4.57 4.57	25.0 25.0
	x 147 x 219	43.2 27900	22.1 561	0.720 18.3	⅜ 9.52	12.5 318	1.15 29.2	1.65 41.9	2 50.8	1 3/16 30.2			5.44 5.44	26.1 26.1
	x 132 x 196	38.8 25000	21.8 554	0.650 16.5	5/16 7.94	12.4 315	1.04 26.4	1.54 39.1	1 15/16 49.2	1 ⅛ 28.6			6.01 6.01	28.9 28.9
	x 122 x 182	35.9 23200	21.7 551	0.600 15.2	5/16 7.94	12.4 315	0.960 24.4	1.46 37.1	1 13/16 46.0	1 ⅛ 28.6			6.45 6.45	31.3 31.3
	x 111 x 165	32.6 21000	21.5 546	0.550 14.0	5/16 7.94	12.3 312	0.875 22.2	1.38 35.1	1 ¾ 44.5	1 ⅛ 28.6			7.05 7.05	34.1 34.1
	x 101 x 150	29.8 19200	21.4 544	0.500 12.7	¼ 6.35	12.3 312	0.800 20.3	1.30 33.0	1 11/16 42.9	1 1/16 27.0			7.68 7.68	37.5 37.5

Nominal Weight	Axis X-X I	Axis X-X S	Axis X-X r	Axis X-X Z	Axis Y-Y I	Axis Y-Y S	Axis Y-Y r	Axis Y-Y Z	r_{ts}	h_o	Torsional Properties J	Torsional Properties C_w	Coating Area
lb/ft kg/m	in⁴ mm⁴/10⁶	in³ mm³/10³	in mm	in³ mm³/10³	in⁴ mm⁴/10⁶	in³ mm³/10³	in mm	in³ mm³/10³	in mm	in mm	in⁴ mm⁴/10³	in⁶ mm⁶/10⁹	ft²/ft m²/m
370 551	13400 5580	957 15700	11.1 282	1130 18500	1160 483	170 2790	3.27 83.1	267 4380	3.92 99.6	25.3 643	201 83700	186000 49900	8.98 2.74
335 498	11900 4950	864 14200	11.0 279	1020 16700	1030 429	152 2490	3.23 82.0	238 3900	3.86 98.0	25.0 635	152 63300	161000 43200	8.85 2.70
306 455	10700 4450	789 12900	10.9 277	922 15100	919 383	137 2250	3.20 81.3	214 3510	3.81 96.8	24.8 630	117 48700	142000 38100	8.77 2.67
279 415	9600 4000	718 11800	10.8 274	835 13700	823 343	124 2030	3.17 80.5	193 3160	3.76 95.5	24.6 625	90.5 37700	125000 33600	8.69 2.65
250 372	8490 3530	644 10600	10.7 272	744 12200	724 301	110 1800	3.14 79.8	171 2800	3.71 94.2	24.4 620	66.6 27700	108000 29000	8.61 2.62
229 341	7650 3180	588 9640	10.7 272	675 11100	651 271	99.4 1630	3.11 79.0	154 2520	3.67 93.2	24.3 617	51.3 21400	96100 25800	8.54 2.60
207 307	6820 2840	531 8700	10.6 269	606 9930	578 241	88.8 1460	3.08 78.2	137 2250	3.62 91.9	24.1 612	38.3 15900	84100 22600	8.47 2.58
192 285	6260 2610	491 8050	10.5 267	559 9160	530 221	81.8 1340	3.07 78.0	126 2060	3.6 91.4	24.0 610	30.8 12800	76300 20500	8.45 2.58
176 262	5680 2360	450 7370	10.5 267	511 8370	479 199	74.3 1220	3.04 77.2	115 1880	3.57 90.7	23.9 607	23.9 9950	68400 18400	8.38 2.55
162 241	5170 2150	414 6780	10.4 264	468 7670	443 184	68.4 1120	3.05 77.5	105 1720	3.57 90.7	23.8 605	18.5 7700	62600 16800	8.38 2.55
146 217	4580 1910	371 6080	10.3 262	418 6850	391 163	60.5 991	3.01 76.5	93.2 1530	3.53 89.7	23.6 599	13.4 5580	54600 14700	8.31 2.53
131 195	4020 1670	329 5390	10.2 259	370 6060	340 142	53.0 869	2.97 75.4	81.5 1340	3.49 88.6	23.5 597	9.50 3950	47100 12600	8.28 2.52
117 174	3540 1470	291 4770	10.1 257	327 5360	297 124	46.5 762	2.94 74.7	71.4 1170	3.46 87.9	23.5 597	6.72 2800	40800 11000	8.23 2.51
104 155	3100 1290	258 4230	10.1 257	289 4740	259 108	40.7 667	2.91 73.9	62.4 1020	3.42 86.9	23.4 594	4.72 1960	35200 9450	8.20 2.50
103 153	3000 1250	245 4010	10.0 254	280 4590	119 49.5	26.5 434	1.99 50.5	41.5 680	2.40 61.0	23.5 597	7.07 2940	16600 4460	6.99 2.13
94 140	2700 1120	222 3640	9.87 251	254 4160	109 45.4	24.0 393	1.98 50.3	37.5 615	2.40 61.0	23.4 594	5.26 2190	15000 4030	6.99 2.13
84 125	2370 986	196 3210	9.79 249	224 3670	94.4 39.3	20.9 342	1.95 49.5	32.6 534	2.37 60.2	23.3 592	3.70 1540	12800 3440	6.95 2.12
76 113	2100 874	176 2880	9.69 246	200 3280	82.5 34.3	18.4 302	1.92 48.8	28.6 469	2.33 59.2	23.2 589	2.68 1120	11100 2980	6.91 2.11
68 101	1830 762	154 2520	9.55 243	177 2900	70.4 29.3	15.7 257	1.87 47.5	24.5 401	2.30 58.4	23.1 587	1.87 778	9430 2530	6.87 2.09
62 92	1550 645	131 2150	9.23 234	153 2510	34.5 14.4	9.80 161	1.38 35.1	15.7 257	1.75 44.4	23.1 587	1.71 712	4620 1240	6.23 1.90
55 82	1350 562	114 1870	9.11 231	134 2200	29.1 12.1	8.30 136	1.34 34.0	13.3 218	1.72 43.7	23.1 587	1.18 491	3870 1040	6.20 1.89
201 300	5310 2210	461 7550	9.47 241	530 8690	542 226	86.1 1410	3.02 76.7	133 2180	3.55 90.2	21.4 544	40.9 17000	62000 16600	7.88 2.40
182 272	4730 1970	417 6830	9.40 239	476 7800	483 201	77.2 1270	3.00 76.2	119 1950	3.51 89.2	21.2 538	30.7 12800	54400 14600	7.81 2.38
166 248	4280 1780	380 6230	9.36 238	432 7080	435 181	70.0 1150	2.99 75.9	108 1770	3.48 88.4	21.1 536	23.6 9820	48500 13000	7.76 2.36
147 219	3630 1510	329 5390	9.17 233	373 6110	376 157	60.1 985	2.95 74.9	92.6 1520	3.46 87.9	21.0 533	15.4 6410	41100 11000	7.73 2.36
132 196	3220 1340	295 4830	9.12 232	333 5460	333 139	53.5 877	2.93 74.4	82.3 1350	3.43 87.1	20.8 528	11.3 4700	36000 9670	7.66 2.33
122 182	2960 1230	273 4470	9.09 231	307 5030	305 127	49.2 806	2.92 74.2	75.6 1240	3.40 86.4	20.7 526	8.98 3740	32700 8780	7.65 2.33
111 165	2670 1110	249 4080	9.05 230	279 4570	274 114	44.5 729	2.90 73.7	68.2 1120	3.37 85.6	20.6 523	6.83 2840	29200 7840	7.59 2.31
101 150	2420 1010	227 3720	9.02 229	253 4150	248 103	40.3 660	2.89 73.4	61.7 1010	3.35 85.1	20.6 523	5.21 2170	26200 7040	7.58 2.31

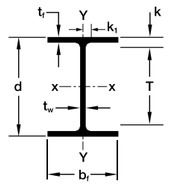
Wide Flange



Beam Size		Area A	Depth d	Web Thickness t_w	Web $t_w/2$	Flange b_f	Flange t_f	Distance k k_{des}	Distance k k_{det}	Distance k_1	Distance T	Distance Workable Gage	Compact Section Criteria $b_f/2_{tf}$	Compact Section Criteria h/t_w
		in² mm²	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm		
W21 W530	x 93 x 138	27.3 17600	21.6 549	0.580 14.7	9/16 7.94	8.42 214	0.930 23.6	1.43 36.3	1 5/8 41.3	15/16 23.8	18 3/8 466.7	5 1/2 139.7	4.53 4.53	32.3 32.3
	x 83 x 123	24.4 15700	21.4 544	0.515 13.1	1/4 6.35	8.36 212	0.835 21.2	1.34 34.0	1 1/2 38.1	7/8 22.2			5.00 5.00	36.4 36.4
	x 73 x 109	21.5 13900	21.2 538	0.455 11.6	1/4 6.35	8.30 211	0.740 18.8	1.24 31.5	1 7/16 36.5	7/8 22.2			5.60 5.60	41.2 41.2
	x 68 x 101	20.0 12900	21.1 536	0.430 10.9	1/4 6.35	8.27 210	0.685 17.4	1.19 30.2	1 3/8 34.9	7/8 22.2			6.04 6.04	43.6 43.6
	x 62 x 92	18.3 11800	21.0 533	0.400 10.2	3/16 4.76	8.24 209	0.615 15.6	1.12 28.4	1 5/16 33.3	13/16 20.6			6.70 6.70	46.9 46.9
	x 55 x 82	16.2 10500	20.8 528	0.375 9.53	3/16 4.76	8.22 209	0.522 13.3	1.02 25.9	1 3/16 30.2	13/16 20.6			7.87 7.87	50.0 50.0
	x 48 x 72	14.1 9100	20.6 523	0.350 8.89	3/16 4.76	8.14 207	0.430 10.9	0.930 23.6	1 1/8 28.6	13/16 20.6			9.47 9.47	53.6 53.6
W21 W530	x 57 x 85	16.7 10800	21.1 536	0.405 10.3	3/16 4.76	6.56 167	0.650 16.5	1.15 29.2	1 3/16 33.3	13/16 20.6	18 3/8 466.7	3 1/2 88.9	5.04 5.04	46.3 46.3
	x 50 x 74	14.7 9480	20.8 528	0.380 9.65	3/16 4.76	6.53 166	0.535 13.6	1.04 26.4	1 1/4 31.8	13/16 20.6			6.10 6.10	49.4 49.4
	x 44 x 66	13.0 8390	20.7 526	0.350 8.89	3/16 4.76	6.50 165	0.450 11.4	0.950 24.1	1 1/8 28.6	13/16 20.6			7.22 7.22	53.6 53.6
W18 W460	x 311 x 464	91.6 59100	22.3 566	1.52 38.6	3/4 19.0	12.0 305	2.74 69.6	3.24 82.3	3 3/16 87.3	1 3/8 34.9	15 1/2 393.7	5 1/2 139.7	2.19 2.19	10.4 10.4
	x 283 x 421	83.3 53700	21.9 556	1.40 35.6	11/16 17.5	11.9 302	2.50 63.5	3.00 76.2	3 3/16 81.0	1 5/16 33.3			2.38 2.38	11.3 11.3
	x 258 x 384	76.0 49000	21.5 546	1.28 32.5	5/8 15.9	11.8 300	2.30 58.4	2.70 68.6	3 76.2	1 1/4 31.8			2.56 2.56	12.5 12.5
	x 234 x 349	68.6 44300	21.1 536	1.16 29.5	5/8 15.9	11.7 297	2.11 53.6	2.51 63.8	2 3/4 69.9	1 3/16 30.2			2.76 2.76	13.8 13.8
	x 211 x 315	62.3 40200	20.7 526	1.06 26.9	9/16 14.3	11.6 295	1.91 48.5	2.31 58.7	2 9/16 65.1	1 3/16 30.2			3.02 3.02	15.1 15.1
	x 192 x 286	56.2 36300	20.4 518	0.960 24.4	1/2 12.7	11.5 292	1.75 44.5	2.15 54.6	2 7/16 61.9	1 1/8 28.6			3.27 3.27	16.7 16.7
	x 175 x 260	51.4 33200	20.0 508	0.890 22.6	7/16 11.1	11.4 290	1.59 40.4	1.99 50.5	2 7/16 61.9	1 1/4 31.8	15 1/8 384.2		3.58 3.58	18.0 18.0
	x 158 x 235	46.3 29900	19.7 500	0.810 20.6	7/16 11.1	11.3 287	1.44 36.6	1.84 46.7	2 3/8 60.3	1 1/4 31.8			3.92 3.92	19.8 19.8
	x 143 x 213	42.0 27100	19.5 495	0.730 18.5	3/8 9.52	11.2 284	1.32 33.5	1.72 43.7	2 3/16 55.6	1 3/16 30.2			4.25 4.25	22.0 22.0
	x 130 x 193	38.3 24700	19.3 490	0.670 17.0	3/8 9.52	11.2 284	1.20 30.5	1.60 40.6	2 1/16 52.4	1 3/16 30.2			4.65 4.65	23.9 23.9
	x 119 x 177	35.1 22600	19.0 483	0.655 16.6	5/16 7.94	11.3 287	1.06 26.9	1.46 37.1	1 15/16 49.2	1 3/16 30.2			5.31 5.31	24.5 24.5
	x 106 x 158	31.1 20100	18.7 475	0.590 15.0	5/16 7.94	11.2 284	0.940 23.9	1.34 34.0	1 13/16 46.0	1 1/8 28.6			5.96 5.96	27.2 27.2
	x 97 x 144	28.5 18400	18.6 472	0.535 13.6	5/16 7.94	11.1 282	0.870 22.1	1.27 32.3	1 3/4 44.5	1 1/8 28.6			6.41 6.41	30.0 30.0
	x 86 x 128	25.3 16300	18.4 467	0.480 12.2	1/4 6.35	11.1 282	0.770 19.6	1.17 29.7	1 5/8 41.3	1 1/16 27.0			7.20 7.20	33.4 33.4
	x 76 x 113	22.3 14400	18.2 462	0.425 10.8	1/4 6.35	11.0 279	0.680 17.3	1.08 27.4	1 9/16 39.7	1 1/16 27.0			8.11 8.11	37.8 37.8

Nominal Weight	Axis X-X I	Axis X-X S	Axis X-X r	Axis X-X Z	Axis Y-Y I	Axis Y-Y S	Axis Y-Y r	Axis Y-Y Z	r_{ts}	h_o	Torsional Properties J	Torsional Properties C_w	Coating Area
lb/ft kg/m	in⁴ mm⁴/10⁶	in³ mm³/10³	in mm	in³ mm³/10³	in⁴ mm⁴/10⁶	in³ mm³/10³	in mm	in³ mm³/10³	in mm	in mm	in⁴ mm⁴/10³	in⁶ mm⁶/10⁹	ft²/ft m²/m
93 138	2070 862	192 3150	8.70 221	221 3620	92.9 38.7	22.1 362	1.84 46.7	34.7 569	2.24 56.9	20.7 526	6.03 2510	9940 2670	6.31 1.92
83 123	1830 762	171 2800	8.67 220	196 3210	81.4 33.9	19.5 320	1.83 46.5	30.5 500	2.21 56.1	20.6 523	4.34 1810	8630 2320	6.27 1.91
73 109	1600 666	151 2470	8.64 219	172 2820	70.6 29.4	17.0 279	1.81 46.0	26.6 436	2.19 55.6	20.5 521	3.02 1260	7410 1990	6.22 1.90
68 101	1480 616	140 2290	8.60 218	160 2620	64.7 26.9	15.7 257	1.80 45.7	24.4 400	2.17 55.1	20.4 518	2.45 1020	6760 1820	6.20 1.89
62 92	1330 554	127 2080	8.54 217	144 2360	57.5 23.9	14.0 229	1.77 45.0	21.7 356	2.15 54.6	20.4 518	1.83 762	5960 1600	6.18 1.88
55 82	1140 475	110 1800	8.40 213	126 2060	48.4 20.1	11.8 193	1.73 43.9	18.4 302	2.11 53.6	20.3 515	1.24 516	4980 1340	6.14 1.87
48 72	959 399	93.0 1520	8.24 209	107 1750	38.7 16.1	9.52 156	1.66 42.2	14.9 244	2.05 52.1	20.2 513	0.803 334	3950 1060	6.09 1.86
57 85	1170 487	111 1820	8.36 212	129 2110	30.6 12.7	9.35 153	1.35 34.3	14.8 243	1.68 42.7	20.5 521	1.77 737	3190 857	5.64 1.72
50 74	984 410	94.5 1550	8.18 208	110 1800	24.9 10.4	7.64 125	1.30 33.0	12.2 200	1.64 41.7	20.3 516	1.14 475	2570 690	5.58 1.70
44 66	843 351	81.6 1340	8.06 205	95.4 1560	20.7 8.62	6.37 104	1.26 32.0	10.2 167	1.60 40.6	20.3 516	0.770 320	2110 567	5.56 1.69
311 464	6970 2900	624 10200	8.72 221	754 12400	795 331	132 2160	2.95 74.9	207 3390	3.53 89.7	19.6 498	176 73300	76200 20500	7.46 2.27
283 421	6170 2570	565 9260	8.61 219	676 11100	704 293	118 1930	2.91 73.9	185 3030	3.47 88.1	19.4 493	134 55800	65900 17700	7.38 2.25
258 384	5510 2290	514 8420	8.53 217	611 10000	628 261	107 1750	2.88 73.2	166 2720	3.42 86.9	19.2 488	103 42900	57600 15500	7.30 2.23
234 349	4900 2040	466 7640	8.44 214	549 9000	558 232	95.8 1570	2.85 72.4	149 2440	3.37 85.6	19.0 483	78.7 32800	50100 13500	7.22 2.20
211 315	4330 1800	419 6870	8.35 212	490 8030	493 205	85.3 1400	2.82 71.6	132 2160	3.32 84.3	18.8 478	58.6 24400	43400 11700	7.14 2.18
192 286	3870 1610	380 6230	8.28 210	442 7240	440 183	76.8 1260	2.79 70.9	119 1950	3.28 83.3	18.7 475	44.7 18600	38000 10200	7.07 2.16
175 260	3450 1440	344 5640	8.20 208	398 6520	391 163	68.8 1130	2.76 70.1	106 1740	3.24 82.3	18.4 467	33.8 14100	33300 8940	6.99 2.13
158 235	3060 1270	310 5080	8.12 206	356 5830	347 144	61.4 1010	2.74 69.6	94.8 1550	3.20 81.3	18.3 465	25.2 10500	29000 7790	6.92 2.11
143 213	2750 1140	282 4620	8.09 205	322 5280	311 129	55.5 909	2.72 69.1	85.4 1400	3.17 80.5	18.2 462	19.2 7990	25700 6900	6.86 2.09
130 193	2460 1020	256 4200	8.03 204	290 4750	278 116	49.9 818	2.70 68.6	76.7 1260	3.13 79.5	18.1 460	14.5 6040	22700 6100	6.84 2.08
119 177	2190 912	231 3790	7.90 201	262 4290	253 105	44.9 736	2.69 68.3	69.1 1130	3.13 79.5	17.9 455	10.6 4410	20300 5450	6.82 2.08
106 158	1910 795	204 3340	7.84 199	230 3770	220 91.6	39.4 646	2.66 67.6	60.5 991	3.10 78.7	17.8 452	7.48 3110	17400 4670	6.75 2.06
97 144	1750 728	188 3080	7.82 199	211 3460	201 83.7	36.1 592	2.65 67.3	55.3 906	3.08 78.2	17.7 450	5.86 2440	15800 4240	6.71 2.05
86 128	1530 637	166 2720	7.77 197	186 3050	175 72.8	31.6 518	2.63 66.8	48.4 793	3.05 77.5	17.6 447	4.10 1710	13600 3650	6.69 2.04
76 113	1330 554	146 2390	7.73 196	163 2670	152 63.3	27.6 452	2.61 66.3	42.2 692	3.02 76.7	17.5 444	2.83 1180	11700 3140	6.63 2.02

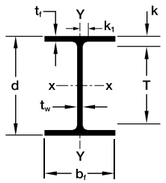
Wide Flange



Beam Size		Area A	Depth d	Web Thickness t_w	Web $t_w/2$	Flange b_f	Flange t_f	Distance k k_{des}	Distance k k_{det}	Distance k_1	Distance T	Distance Workable Gage	Compact Section Criteria $b_f/2_{tf}$	Compact Section Criteria h/t_w
		in² mm²	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm		
W18 W460	x 71 x 106	20.9 13500	18.5 470	0.495 12.6	¼ 6.35	7.64 194	0.810 20.6	1.21 30.7	1 ½ 38.1	⅞ 22.2	15 ½ 393.7	3 ½ 88.9	4.71 4.71	32.4 32.4
	x 65 x 97	19.1 12300	18.4 467	0.450 11.4	¼ 6.35	7.59 193	0.750 19.1	1.15 29.2	1 7/16 36.5	⅞ 22.2	↓	↓	5.06 5.06	35.7 35.7
	x 60 x 89	17.6 11400	18.2 462	0.415 10.5	¼ 6.35	7.56 192	0.695 17.7	1.10 27.9	1 ⅜ 34.9	13/16 20.6	↓	↓	5.44 5.44	38.7 38.7
	x 55 x 82	16.2 10500	18.1 460	0.390 9.91	3/16 4.76	7.53 191	0.630 16.0	1.03 26.2	1 5/16 33.3	13/16 20.6	↓	↓	5.98 5.98	41.1 41.1
	x 50 x 74	14.7 9480	18.0 457	0.355 9.02	3/16 4.76	7.50 191	0.570 14.5	0.972 24.7	1 ¼ 31.8	13/16 20.6	↓	↓	6.57 6.57	45.2 45.2
W18 W460	x 46 x 68	13.5 8710	18.1 460	0.360 9.14	3/16 4.76	6.06 154	0.605 15.4	1.01 25.7	1 ¼ 31.8	13/16 20.6	15 ½ 393.7	3 ½ 88.9	5.01 5.01	44.6 44.6
	x 40 x 60	11.8 7610	17.9 455	0.315 8.00	3/16 4.76	6.02 153	0.525 13.3	0.927 23.5	1 3/16 30.2	13/16 20.6	↓	↓	5.73 5.73	50.9 50.9
	x 35 x 52	10.3 6650	17.7 450	0.300 7.62	3/16 4.76	6.00 152	0.425 10.8	0.827 21.0	1 ⅛ 28.6	¾ 19.1	↓	↓	7.06 7.06	53.5 53.5
W16 W410	x 100 x 149	29.4 19000	17.0 432	0.585 14.9	5/16 7.94	10.4 264	0.985 25.0	1.39 35.3	1 ⅞ 47.6	1 ⅛ 28.6	13 ¼ 333.4	5 ½ 139.7	5.29 5.29	24.3 24.3
	x 89 x 132	26.2 16900	16.8 427	0.525 13.3	¼ 6.35	10.4 264	0.875 22.2	1.28 32.5	1 ¾ 44.5	1 1/16 27.0	↓	↓	5.92 5.92	27.0 27.0
	x 77 x 114	22.6 14600	16.5 419	0.455 11.6	¼ 6.35	10.3 262	0.760 19.3	1.16 29.5	1 5/8 41.3	1 1/16 27.0	↓	↓	6.77 6.77	31.2 31.2
	x 67 x 100	19.6 12600	16.3 414	0.395 10.0	3/16 4.76	10.2 259	0.665 16.9	1.07 27.2	1 9/16 39.7	1 25.4	↓	↓	7.70 7.70	35.9 35.9
W16 W410	x 57 x 85	16.8 10800	16.4 417	0.430 10.9	¼ 6.35	7.12 181	0.715 18.2	1.12 28.4	1 ⅜ 34.9	⅞ 22.2	13 ⅝ 346.1	3 ½ 88.9	4.98 4.98	33.0 33.0
	x 50 x 75	14.7 9480	16.3 414	0.380 9.65	3/16 4.76	7.07 180	0.630 16.0	1.03 26.2	1 5/16 33.3	13/16 20.6	↓	↓	5.61 5.61	37.4 37.4
	x 45 x 67	13.3 8580	16.1 409	0.345 8.76	3/16 4.76	7.04 179	0.565 14.4	0.967 24.6	1 ¼ 31.8	13/16 20.6	↓	↓	6.23 6.23	41.1 41.1
	x 40 x 60	11.8 7610	16.0 406	0.305 7.75	3/16 4.76	7.00 178	0.505 12.8	0.907 23.0	1 3/16 30.2	13/16 20.6	↓	↓	6.93 6.93	46.5 46.5
	x 36 x 53	10.6 6840	15.9 404	0.295 7.49	3/16 4.76	6.99 178	0.430 10.9	0.832 21.1	1 ⅛ 28.6	¾ 19.1	↓	↓	8.12 8.12	48.1 48.1
W16 W410	x 31 x 46.1	9.13 5890	15.9 404	0.275 6.99	⅛ 3.18	5.53 140	0.440 11.2	0.842 21.4	1 ⅛ 28.6	¾ 19.1	13 ⅝ 346.1	3 ½ 88.9	6.28 6.28	51.6 51.6
	x 26 x 38.8	7.68 4950	15.7 399	0.250 6.35	⅛ 3.18	5.50 140	0.345 8.76	0.747 19.0	1 1/16 27.0	¾ 19.1	13 ⅝ 346.1	3 ½ 88.9	7.97 7.97	56.8 56.8

Nominal Weight	Axis X-X I	Axis X-X S	Axis X-X r	Axis X-X Z	Axis Y-Y I	Axis Y-Y S	Axis Y-Y r	Axis Y-Y Z	r_{ts}	h_o	Torsional Properties J	Torsional Properties C_w	Coating Area
lb/ft kg/m	in⁴ mm⁴/10⁶	in³ mm³/10³	in mm	in³ mm³/10³	in⁴ mm⁴/10⁶	in³ mm³/10³	in mm	in³ mm³/10³	in mm	in mm	in⁴ mm⁴/10³	in⁶ mm⁶/10⁹	ft²/ft m²/m
71 106	1170 487	127 2080	7.50 191	146 2390	60.3 25.1	15.8 259	1.70 43.2	24.7 405	2.05 52.1	17.7 450	3.49 1450	4700 1260	5.55 1.69
65 97	1070 445	117 1920	7.49 190	133 2180	54.8 22.8	14.4 236	1.69 42.9	22.5 369	2.03 51.6	17.7 450	2.73 1140	4240 1140	5.52 1.68
60 89	984 410	108 1770	7.47 190	123 2020	50.1 20.9	13.3 218	1.68 42.7	20.6 338	2.02 51.3	17.5 444	2.17 903	3850 1030	5.48 1.67
55 82	890 370	98.3 1610	7.41 188	112 1840	44.9 18.7	11.9 195	1.67 42.4	18.5 303	2.00 50.8	17.5 444	1.66 691	3430 921	5.46 1.66
50 74	800 333	88.9 1460	7.38 187	101 1660	40.1 16.7	10.7 175	1.65 41.9	16.6 272	1.98 50.3	17.4 442	1.24 516	3040 816	5.44 1.66
46 68	712 296	78.8 1290	7.25 184	90.7 1490	22.5 9.37	7.43 122	1.29 32.8	11.7 192	1.58 40.1	17.5 444	1.22 508	1720 462	4.98 1.52
40 60	612 255	68.4 1120	7.21 183	78.4 1280	19.1 7.95	6.35 104	1.27 32.3	10.0 164	1.56 39.6	17.4 442	0.810 337	1440 387	4.94 1.50
35 52	510 212	57.6 944	7.04 179	66.5 1090	15.3 6.37	5.12 83.9	1.22 31.0	8.06 132	1.51 38.4	17.3 439	0.506 211	1140 306	4.90 1.49
100 149	1490 620	175 2870	7.10 180	198 3240	186 77.4	35.7 585	2.51 63.8	54.9 900	2.92 74.2	16.0 406	7.73 3220	11900 3200	6.20 1.89
89 132	1300 541	155 2540	7.05 179	175 2870	163 67.8	31.4 515	2.49 63.2	48.1 788	2.88 73.2	15.9 404	5.45 2270	10200 2740	6.18 1.88
77 114	1110 462	134 2200	7.00 178	150 2460	138 57.4	26.9 441	2.47 62.7	41.1 674	2.85 72.4	15.7 399	3.57 1490	8590 2310	6.11 1.86
67 100	954 397	117 1920	6.96 177	130 2130	119 49.5	23.2 380	2.46 62.5	35.5 582	2.82 71.6	15.6 396	2.39 995	7300 1960	6.05 1.84
57 85	758 316	92.2 1510	6.72 171	105 1720	43.1 17.9	12.1 198	1.60 40.6	18.9 310	1.92 48.8	15.7 399	2.22 924	2660 714	5.04 1.53
50 75	659 274	81.0 1330	6.68 170	92.0 1510	37.2 15.5	10.5 172	1.59 40.4	16.3 267	1.89 48.0	15.7 399	1.52 633	2270 610	5.01 1.53
45 67	586 244	72.7 1190	6.65 169	82.3 1350	32.8 13.7	9.34 153	1.57 39.9	14.5 238	1.87 47.5	15.5 394	1.11 462	1990 534	4.97 1.52
40 60	518 216	64.7 1060	6.63 168	73.0 1200	28.9 12.0	8.25 135	1.57 39.9	12.7 208	1.86 47.2	15.5 394	0.794 330	1730 465	4.95 1.51
36 53	448 186	56.5 926	6.51 165	64.0 1050	24.5 10.2	7.00 115	1.52 38.6	10.8 177	1.83 46.5	15.5 394	0.545 227	1460 392	4.93 1.50
31 46.1	375 156	47.2 773	6.41 163	54.0 885	12.4 5.16	4.49 73.6	1.17 29.7	7.03 115	1.42 36.1	15.5 394	0.461 192	739 198	4.45 1.36
26 38.8	301 125	38.4 629	6.26 159	44.2 724	9.59 3.99	3.49 57.2	1.12 28.4	5.48 89.8	1.38 35.1	15.4 391	0.262 109	565 152	4.41 1.34

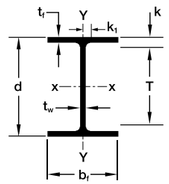
Wide Flange



Beam Size		Area A	Depth d	Web Thickness t_w	Web $t_w/2$	Flange b_f	Flange t_f	Distance k k_{des}	Distance k k_{det}	Distance k_1	Distance T	Distance Workable Gage	Compact Section Criteria $b_f/2_{tf}$	Compact Section Criteria h/t_w
		in² mm²	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm		
W14 W360	x 730 x 1086	215 139000	22.4 569	3.07 78.0	1 9/16 39.7	17.9 455	4.91 125	5.51 140	6 3/16 157	2 3/4 69.9	10 254.0	3 - 7½ - 3 76.2-190.5-76.2	1.82 1.82	3.71 3.71
	x 665 x 990	196 126000	21.6 549	2.83 71.9	1 7/16 36.5	17.7 450	4.52 115	5.12 130	5 13/16 148	2 5/8 66.7			1.95 1.95	4.03 4.03
	x 605 x 900	178 115000	20.9 531	2.60 66.0	1 5/16 33.3	17.4 442	4.16 106	4.76 121	5 7/16 138	2 ½ 63.5			2.09 2.09	4.39 4.39
	x 550 x 818	162 105000	20.2 513	2.38 60.5	1 3/16 30.2	17.2 437	3.82 97.0	4.42 112	5 ⅛ 130	2 3/8 60.3			2.25 2.25	4.79 4.79
	x 500 x 744	147 94800	19.6 498	2.19 55.6	1 ⅛ 28.6	17.0 432	3.50 88.9	4.10 104	4 13/16 122	2 5/16 58.7			2.43 2.43	5.21 5.21
	x 455 x 677	134 86500	19.0 483	2.02 51.3	1 25.4	16.8 427	3.21 81.5	3.81 96.8	4 ½ 114	2 ¼ 57.2			2.62 2.62	5.66 5.66
	x 426 x 634	125 80600	18.7 475	1.88 47.8	15/16 23.8	16.7 424	3.04 77.2	3.63 92.2	4 5/16 110	2 ⅛ 54.0			2.75 2.75	6.08 6.08
	x 398 x 592	117 75500	18.3 465	1.77 45.0	⅞ 22.2	16.6 422	2.85 72.4	3.44 87.4	4 ⅛ 105	2 ⅛ 54.0			2.92 2.92	6.44 6.44
	x 370 x 551	109 70300	17.9 455	1.66 42.2	13/16 20.6	16.5 419	2.66 67.6	3.26 82.8	3 15/16 100	2 1/16 52.4			3.10 3.10	6.89 6.89
	x 342 x 509	101 65200	17.5 445	1.54 39.1	13/16 20.6	16.4 417	2.47 62.7	3.07 78.0	3 ¾ 95.3	2 50.8			3.31 3.31	7.41 7.41
	x 311 x 463	91.4 59000	17.1 434	1.41 35.8	¾ 19.0	16.2 411	2.26 57.4	2.86 72.6	3 5/16 90.5	1 15/16 49.2			3.59 3.59	8.09 8.09
	x 283 x 421	83.3 53700	16.7 424	1.29 32.8	11/16 17.5	16.1 409	2.07 52.6	2.67 67.8	3 ⅜ 85.7	1 ⅞ 47.6			3.89 3.89	8.84 8.84
	x 257 x 382	75.6 48800	16.4 417	1.18 30.0	⅝ 15.9	16.0 406	1.89 48.0	2.49 63.2	3 3/16 81.0	1 13/16 46.0			4.23 4.23	9.71 9.71
	x 233 x 347	68.5 44200	16.0 406	1.07 27.2	9/16 14.3	15.9 404	1.72 43.7	2.32 58.9	3 76.2	1 ¾ 44.5			4.62 4.62	10.7 10.7
	x 211 x 314	62.0 40000	15.7 399	0.980 24.9	½ 12.7	15.8 401	1.56 39.6	2.16 54.9	2 ⅞ 73.0	1 11/16 42.9			5.06 5.06	11.6 11.6
	x 193 x 287	56.8 36600	15.5 394	0.890 22.6	7/16 11.1	15.7 399	1.44 36.6	2.04 51.8	2 ¾ 69.9	1 11/16 42.9			5.45 5.45	12.8 12.8
	x 176 x 262	51.8 33400	15.2 386	0.830 21.1	7/16 11.1	15.7 399	1.31 33.3	1.91 48.5	2 ⅝ 66.7	1 ⅝ 41.3			5.97 5.97	13.7 13.7
	x 159 x 237	46.7 30100	15.0 381	0.745 18.9	⅜ 9.52	15.6 396	1.19 30.2	1.79 45.5	2 ½ 63.5	1 5/16 39.7			6.54 6.54	15.3 15.3
	x 145 x 216	42.7 27500	14.8 376	0.680 17.3	⅜ 9.52	15.5 394	1.09 27.7	1.69 42.9	2 ⅜ 60.3	1 9/16 39.7			7.11 7.11	16.8 16.8
W14 W360	x 132 x 196	38.8 25000	14.7 373	0.645 16.4	5/16 7.94	14.7 373	1.03 26.2	1.63 41.4	2 5/16 58.7	1 5/16 39.7	10 254.0	5 ½ 139.7	7.15 7.15	17.7 17.7
	x 120 x 179	35.3 22800	14.5 368	0.590 15.0	5/16 7.94	14.7 373	0.940 23.9	1.54 39.1	2 ¼ 57.2	1 ½ 38.1			7.80 7.80	19.3 19.3
	x 109 x 162	32.0 20600	14.3 363	0.525 13.3	¼ 6.35	14.6 371	0.860 21.8	1.46 37.1	2 3/16 55.6	1 ½ 38.1			8.49 8.49	21.7 21.7
	x 99 x 147	29.1 18800	14.2 361	0.485 12.3	¼ 6.35	14.6 371	0.780 19.8	1.38 35.1	2 1/16 52.4	1 7/16 36.5			9.34 9.34	23.5 23.5
	x 90 x 134	26.5 17100	14.0 356	0.440 11.2	¼ 6.35	14.5 368	0.710 18.0	1.31 33.3	2 50.8	1 7/16 36.5			10.2 10.2	25.9 25.9
W14 W360	x 82 x 122	24.0 15500	14.3 363	0.510 13.0	¼ 6.35	10.1 257	0.855 21.7	1.45 36.8	1 11/16 42.9	1 1/16 27.0	10 ⅞ 276.2	5 ½ 139.7	5.92 5.92	22.4 22.4
	x 74 x 110	21.8 14100	14.2 361	0.450 11.4	¼ 6.35	10.1 257	0.785 19.9	1.38 35.1	1 ⅝ 41.3	1 1/16 27.0			6.41 6.41	25.4 25.4
	x 68 x 101	20.0 12900	14.0 356	0.415 10.5	¼ 6.35	10.0 254	0.720 18.3	1.31 33.3	1 9/16 39.7	1 1/16 27.0			6.97 6.97	27.5 27.5
	x 61 x 91	17.9 11500	13.9 353	0.375 9.53	⅜ 4.76	10.0 254	0.645 16.4	1.24 31.5	1 ½ 38.1	1 25.4			7.75 7.75	30.4 30.4

Nominal Weight	Axis X-X I	Axis X-X S	Axis X-X r	Axis X-X Z	Axis Y-Y I	Axis Y-Y S	Axis Y-Y r	Axis Y-Y Z	r_{ts}	h_o	Torsional Properties J	Torsional Properties C_w	Coating Area
lb/ft kg/m	in⁴ mm⁴/10⁶	in³ mm³/10³	in mm	in³ mm³/10³	in⁴ mm⁴/10⁶	in³ mm³/10³	in mm	in³ mm³/10³	in mm	in mm	in⁴ mm⁴/10³	in⁶ mm⁶/10⁹	ft²/ft m²/m
730 1086	14300 5950	1280 21000	8.17 208	1660 27200	4720 1960	527 8640	4.69 119	816 13400	5.68 144	17.5 444	1450 604000	362000 97200	9.19 2.80
665 990	12400 5160	1150 18800	7.98 203	1480 24300	4170 1740	472 7730	4.62 117	730 12000	5.57 141	17.1 434	1120 466000	305000 81900	9.03 2.75
605 900	10800 4500	1040 17000	7.80 198	1320 21600	3680 1530	423 6930	4.55 116	652 10700	5.44 138	16.7 424	869 362000	258000 69300	8.85 2.70
550 818	9430 3930	931 15300	7.63 194	1180 19300	3250 1350	378 6190	4.49 114	583 9550	5.35 136	16.4 417	669 278000	219000 58800	8.70 2.65
500 744	8210 3420	838 13700	7.48 190	1050 17200	2880 1200	339 5560	4.43 113	522 8550	5.26 134	16.1 409	514 214000	187000 50200	8.57 2.61
455 677	7190 2990	756 12400	7.33 186	936 15300	2560 1070	304 4980	4.38 111	468 7670	5.17 131	15.8 401	395 164000	160000 43000	8.43 2.57
426 634	6600 2750	706 11600	7.26 184	869 14200	2360 982	283 4640	4.34 110	434 7110	5.11 130	15.7 399	331 138000	144000 38700	8.37 2.55
398 592	6000 2500	656 10700	7.16 182	801 13100	2170 903	262 4290	4.31 109	402 6590	5.05 128	15.5 394	273 114000	129000 34600	8.29 2.53
370 551	5440 2260	607 9950	7.07 180	736 12100	1990 828	241 3950	4.27 108	370 6060	5.00 127	15.2 386	222 92400	116000 31200	8.21 2.50
342 509	4900 2040	558 9140	6.98 177	672 11000	1810 753	221 3620	4.24 108	338 5540	4.95 126	15.0 381	178 74100	103000 27700	8.13 2.48
311 463	4330 1800	506 8290	6.88 175	603 9880	1610 670	199 3260	4.20 107	304 4980	4.87 124	14.8 376	136 56600	89100 23900	8.02 2.44
283 421	3840 1600	459 7520	6.79 172	542 8880	1440 599	179 2930	4.17 106	274 4490	4.80 122	14.6 371	104 43300	77700 20900	7.94 2.42
257 382	3400 1420	415 6800	6.71 170	487 7980	1290 537	161 2640	4.13 105	246 4030	4.75 121	14.5 368	79.1 32900	67800 18200	7.87 2.40
233 347	3010 1250	375 6150	6.63 168	436 7140	1150 479	145 2380	4.10 104	221 3620	4.69 119	14.3 363	59.5 24800	59000 15800	7.79 2.37
211 314	2660 1110	338 5540	6.55 166	390 6390	1030 429	130 2130	4.07 103	198 3240	4.64 118	14.1 358	44.6 18600	51500 13800	7.72 2.35
193 287	2400 999	310 5080	6.50 165	355 5820	931 388	119 1950	4.05 103	180 2950	4.59 117	14.1 358	34.8 14500	45900 12300	7.67 2.34
176 262	2140 891	281 4600	6.43 163	320 5240	838 349	107 1750	4.02 102	163 2670	4.55 116	13.9 353	26.5 11000	40500 10900	7.63 2.33
159 237	1900 791	254 4160	6.38 162	287 4700	748 311	96.2 1580	4.00 102	146 2390	4.51 115	13.8 351	19.7 8200	35600 9560	7.58 2.31
145 216	1710 712	232 3800	6.33 161	260 4260	677 282	87.3 1430	3.98 101	133 2180	4.47 114	13.7 348	15.2 6330	31700 8510	7.52 2.29
132 196	1530 637	209 3420	6.28 160	234 3830	548 228	74.5 1220	3.76 95.5	113 1850	4.23 107	13.7 348	12.3 5120	25500 6850	7.24 2.21
120 179	1380 574	190 3110	6.24 158	212 3470	495 206	67.5 1110	3.74 95.0	102 1670	4.20 107	13.6 345	9.37 3900	22700 6100	7.22 2.20
109 162	1240 516	173 2830	6.22 158	192 3150	447 186	61.2 1000	3.73 94.7	92.7 1520	4.17 106	13.4 340	7.12 2960	20200 5420	7.16 2.18
99 147	1110 462	157 2570	6.17 157	173 2830	402 167	55.2 905	3.71 94.2	83.6 1370	4.14 105	13.4 340	5.37 2240	18000 4830	7.15 2.18
90 134	999 416	143 2340	6.14 156	157 2570	362 151	49.9 818	3.70 94.0	75.6 1240	4.10 104	13.3 338	4.06 1690	16000 4300	7.09 2.16
82 122	881 367	123 2020	6.05 154	139 2280	148 61.6	29.3 480	2.48 63.0	44.8 734	2.85 72.4	13.4 340	5.07 2110	6710 1800	5.67 1.73
74 110	795 331	112 1840	6.04 153	126 2060	134 55.8	26.6 436	2.48 63.0	40.5 664	2.83 71.9	13.4 340	3.87 1610	5990 1610	5.66 1.72
68 101	722 301	103 1690	6.01 153	115 1880	121 50.4	24.2 397	2.46 62.5	36.9 605	2.80 71.1	13.3 338	3.01 1250	5380 1440	5.60 1.71
61 91	640 266	92.1 1510	5.98 152	102 1670	107 44.5	21.5 352	2.45 62.2	32.8 537	2.78 70.6	13.3 338	2.19 912	4710 1260	5.59 1.70

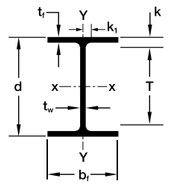
Wide Flange



Beam Size		Area A	Depth d	Web Thickness t_w	Web $t_w/2$	Flange b_f	Flange t_f	Distance k k_{des}	Distance k k_{det}	Distance k_1	Distance T	Distance Workable Gage	Compact Section Criteria $b_f/2_{tf}$	Compact Section Criteria h/t_w
		in² mm²	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm		
W14 W360	x 53 x 79	15.6 10100	13.9 353	0.370 9.40	3/16 4.76	8.06 205	0.660 16.8	1.25 31.8	1 1/2 38.1	1 25.4	10 7/8 276.2	5 1/2 139.7	6.11 6.11	30.9 30.9
	x 48 x 72	14.1 9100	13.8 351	0.340 8.64	3/16 4.76	8.03 204	0.595 15.1	1.19 30.2	1 7/16 36.5	1 25.4			6.75 6.75	33.6 33.6
	x 43 x 64	12.6 8130	13.7 348	0.305 7.75	3/16 4.76	8.00 203	0.530 13.5	1.12 28.4	1 3/8 34.9	1 25.4			7.54 7.54	37.4 37.4
W14 W360	x 38 x 57.8	11.2 7230	14.1 358	0.310 7.87	3/16 4.76	6.77 172	0.515 13.1	0.915 23.2	1 1/4 31.8	13/16 20.6	11 3/8 295.3	3 1/2 88.9	6.57 6.57	39.6 39.6
	x 34 x 51	10.0 6450	14.0 356	0.285 7.24	3/16 4.76	6.75 171	0.455 11.6	0.855 21.7	1 3/16 30.2	3/4 19.1			7.41 7.41	43.1 43.1
	x 30 x 44	8.85 5710	13.8 351	0.270 6.86	1/8 3.18	6.73 171	0.385 9.78	0.785 19.9	1 1/8 28.6	3/4 19.1			8.74 8.74	45.4 45.4
W14 W360	x 26 x 39	7.69 4960	13.9 353	0.255 6.48	1/8 3.18	5.03 128	0.420 10.7	0.820 20.8	1 1/8 28.6	3/4 19.1	11 3/8 295.3	2 3/4 69.9	5.98 5.98	48.1 48.1
	x 22 x 32.9	6.49 4190	13.7 348	0.230 5.84	1/8 3.18	5.00 127	0.335 8.51	0.735 18.7	1 1/16 27.0	3/4 19.1	11 3/8 295.3	2 3/4 69.9	7.46 7.46	53.3 53.3
W12 W310	x 336 x 500	98.9 63800	16.8 427	1.78 45.2	7/8 22.2	13.4 340	2.96 75.2	3.55 90.2	3 3/8 98.4	1 13/16 42.9	9 1/8 231.8	5 1/2 139.7	2.26 2.26	5.47 5.47
	x 305 x 454	89.5 57700	16.3 414	1.63 41.4	13/16 20.6	13.2 335	2.71 68.8	3.30 83.8	3 3/8 92.1	1 5/8 41.3			2.45 2.45	5.98 5.98
	x 279 x 415	81.9 52800	15.9 404	1.53 38.9	3/4 19.0	13.1 333	2.47 62.7	3.07 78.0	3 3/8 85.7	1 5/8 41.3			2.66 2.66	6.35 6.35
	x 252 x 375	74.1 47800	15.4 391	1.40 35.6	11/16 17.5	13.0 330	2.25 57.2	2.85 72.4	3 1/8 79.4	1 1/2 38.1			2.89 2.89	6.96 6.96
	x 230 x 342	67.7 43700	15.1 384	1.29 32.8	11/16 17.5	12.9 328	2.07 52.6	2.67 67.8	2 15/16 74.6	1 1/2 38.1			3.11 3.11	7.56 7.56
	x 210 x 313	61.8 39900	14.7 373	1.18 30.0	5/8 15.9	12.8 325	1.90 48.3	2.50 63.5	2 13/16 71.4	1 7/16 36.5			3.37 3.37	8.23 8.23
	x 190 x 283	56.0 36100	14.4 366	1.06 26.9	9/16 14.3	12.7 323	1.74 44.2	2.33 59.2	2 5/8 66.7	1 3/8 34.9			3.65 3.65	9.16 9.16
	x 170 x 253	50.0 32300	14.0 356	0.960 24.4	1/2 12.7	12.6 320	1.56 39.6	2.16 54.9	2 7/16 61.9	1 5/16 33.3			4.03 4.03	10.1 10.1
	x 152 x 226	44.7 28800	13.7 348	0.870 22.1	7/16 11.1	12.5 318	1.40 35.6	2.00 50.8	2 3/16 58.7	1 1/4 31.8			4.46 4.46	11.2 11.2
	x 136 x 202	39.9 25700	13.4 340	0.790 20.1	7/16 11.1	12.4 315	1.25 31.8	1.85 47.0	2 1/8 54.0	1 1/4 31.8			4.96 4.96	12.3 12.3
	x 120 x 179	35.2 22700	13.1 333	0.710 18.0	3/8 9.52	12.3 312	1.11 28.2	1.70 43.2	2 50.8	1 3/16 30.2			5.57 5.57	13.7 13.7
	x 106 x 158	31.2 20100	12.9 328	0.610 15.5	5/16 7.94	12.2 310	0.990 25.1	1.59 40.4	1 7/8 47.6	1 1/8 28.6			6.17 6.17	15.9 15.9
	x 96 x 143	28.2 18200	12.7 323	0.550 14.0	5/16 7.94	12.2 310	0.900 22.9	1.50 38.1	1 13/16 46.0	1 1/8 28.6			6.76 6.76	17.7 17.7
	x 87 x 129	25.6 16500	12.5 318	0.515 13.1	1/4 6.35	12.1 307	0.810 20.6	1.41 35.8	1 11/16 42.9	1 1/16 27.0			7.48 7.48	18.9 18.9
	x 79 x 117	23.2 15000	12.4 315	0.470 11.9	1/4 6.35	12.1 307	0.735 18.7	1.33 33.8	1 5/8 41.3	1 1/16 27.0			8.22 8.22	20.7 20.7
	x 72 x 107	21.1 13600	12.3 312	0.430 10.9	1/4 6.35	12.0 305	0.670 17.0	1.27 32.3	1 9/16 39.7	1 1/16 27.0			8.99 8.99	22.6 22.6
	x 65 x 97	19.1 12300	12.1 307	0.390 9.91	3/16 4.76	12.0 305	0.605 15.4	1.20 30.5	1 1/2 38.1	1 25.4			9.92 9.92	24.9 24.9
W12 W310	x 58 x 86	17.0 11000	12.2 310	0.360 9.14	3/16 4.76	10.0 254	0.640 16.3	1.24 31.5	1 1/2 38.1	15/16 23.8	9 1/4 235.0	5 1/2 139.7	7.82 7.82	27.0 27.0
	x 53 x 79	15.6 10100	12.1 307	0.345 8.76	3/16 4.76	10.0 254	0.575 14.6	1.18 30.0	1 5/8 34.9	15/16 23.8	9 1/4 235.0	5 1/2 139.7	8.69 8.69	28.1 28.1

Nominal Weight	Axis X-X I	Axis X-X S	Axis X-X r	Axis X-X Z	Axis Y-Y I	Axis Y-Y S	Axis Y-Y r	Axis Y-Y Z	r_{ts}	h_o	Torsional Properties J	Torsional Properties C_w	Coating Area
lb/ft kg/m	in⁴ mm⁴/10⁶	in³ mm³/10³	in mm	in³ mm³/10³	in⁴ mm⁴/10⁶	in³ mm³/10³	in mm	in³ mm³/10³	in mm	in mm	in⁴ mm⁴/10³	in⁶ mm⁶/10⁹	ft²/ft m²/m
53 79	541 225	77.8 1270	5.89 150	87.1 1430	57.7 24.0	14.3 234	1.92 48.8	22.0 361	2.22 56.4	13.2 335	1.94 807	2540 682	4.94 1.51
48 72	484 201	70.2 1150	5.85 149	78.4 1280	51.4 21.4	12.8 210	1.91 48.5	19.6 321	2.20 55.9	13.2 335	1.45 604	2240 602	4.92 1.50
43 64	428 178	62.6 1030	5.82 148	69.6 1140	45.2 18.8	11.3 185	1.89 48.0	17.3 283	2.18 55.4	13.2 335	1.05 437	1950 524	4.90 1.49
38 57.8	385 160	54.6 895	5.87 149	61.5 1010	26.7 11.1	7.88 129	1.55 39.4	12.1 198	1.82 46.2	13.6 345	0.798 332	1230 330	4.56 1.39
34 51	340 142	48.6 796	5.83 148	54.6 895	23.3 9.70	6.91 113	1.53 38.9	10.6 174	1.80 45.7	13.5 343	0.569 237	1070 287	4.54 1.38
30 44	291 121	42.0 688	5.73 146	47.3 775	19.6 8.16	5.82 95.4	1.49 37.8	8.99 147	1.77 45.0	13.4 340	0.380 158	887 238	4.50 1.37
26 39	245 102	35.3 578	5.65 144	40.2 659	8.91 3.71	3.55 58.2	1.08 27.4	5.54 90.8	1.30 33.0	13.5 343	0.358 149	405 109	3.95 1.20
22 32.9	199 82.8	29.0 475	5.54 141	33.2 544	7.00 2.91	2.80 45.9	1.04 26.4	4.39 71.9	1.27 32.3	13.4 340	0.208 86.6	314 84.3	3.91 1.19
336 500	4060 1690	483 7910	6.41 163	603 9880	1190 495	177 2900	3.47 88.1	274 4490	4.13 105	13.8 351	243 101000	57000 15300	6.97 2.12
305 454	3550 1480	435 7130	6.29 160	537 8800	1050 437	159 2610	3.42 86.9	244 4000	4.05 103	13.6 345	185 77000	48600 13100	6.85 2.09
279 415	3110 1290	393 6440	6.16 156	481 7880	937 390	143 2340	3.38 85.9	220 3610	4.00 102	13.4 340	143 59500	42000 11300	6.76 2.06
252 375	2720 1130	353 5780	6.06 154	428 7010	828 345	127 2080	3.34 84.8	196 3210	3.93 99.8	13.2 335	108 45000	35800 9610	6.67 2.03
230 342	2420 1010	321 5260	5.97 152	386 6330	742 309	115 1880	3.31 84.1	177 2900	3.87 98.3	13.0 330	83.8 34900	31200 8380	6.60 2.01
210 313	2140 891	292 4790	5.89 150	348 5700	664 276	104 1700	3.28 83.3	159 2610	3.81 96.8	12.8 325	64.7 26900	27200 7300	6.52 1.99
190 283	1890 787	263 4310	5.82 148	311 5100	589 245	93.0 1520	3.25 82.6	143 2340	3.77 95.8	12.7 323	48.8 20300	23600 6340	6.46 1.97
170 253	1650 687	235 3850	5.74 146	275 4510	517 215	82.3 1350	3.22 81.8	126 2060	3.70 94.0	12.4 315	35.6 14800	20100 5400	6.37 1.94
152 226	1430 595	209 3420	5.66 144	243 3980	454 189	72.8 1190	3.19 81.0	111 1820	3.66 93.0	12.3 312	25.8 10700	17200 4620	6.31 1.92
136 202	1240 516	186 3050	5.58 142	214 3510	398 166	64.2 1050	3.16 80.3	98.0 1610	3.61 91.7	12.2 310	18.5 7700	14700 3950	6.24 1.90
120 179	1070 445	163 2670	5.51 140	186 3050	345 144	56.0 918	3.13 79.5	85.4 1400	3.56 90.4	12.0 305	12.9 5370	12400 3330	6.17 1.88
106 158	933 388	145 2380	5.47 139	164 2690	301 125	49.3 808	3.11 79.0	75.1 1230	3.52 89.4	11.9 302	9.13 3800	10700 2870	6.12 1.86
96 143	833 347	131 2150	5.44 138	147 2410	270 112	44.4 728	3.09 78.5	67.5 1110	3.49 88.6	11.8 300	6.85 2850	9410 2530	6.09 1.86
87 129	740 308	118 1930	5.38 137	132 2160	241 100	39.7 651	3.07 78.0	60.4 990	3.46 87.9	11.7 297	5.10 2120	8270 2220	6.03 1.84
79 117	662 276	107 1750	5.34 136	119 1950	216 89.9	35.8 587	3.05 77.5	54.3 890	3.43 87.1	11.7 297	3.84 1600	7330 1970	6.02 1.84
72 107	597 248	97.4 1600	5.31 135	108 1770	195 81.2	32.4 531	3.04 77.2	49.2 806	3.41 86.6	11.6 295	2.93 1220	6540 1760	5.98 1.82
65 97	533 222	87.9 1440	5.28 134	96.8 1590	174 72.4	29.1 477	3.02 76.7	44.1 723	3.38 85.9	11.5 292	2.18 907	5780 1550	5.95 1.81
58 86	475 198	78.0 1280	5.28 134	86.4 1420	107 44.5	21.4 351	2.51 63.8	32.5 533	2.81 71.4	11.6 295	2.10 874	3570 959	5.31 1.62
53 79	425 177	70.6 1160	5.23 133	77.9 1280	95.8 39.9	19.2 315	2.48 63.0	29.1 477	2.79 70.9	11.5 292	1.58 658	3160 849	5.29 1.61

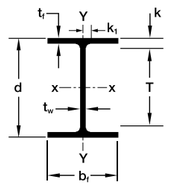
Wide Flange



Beam Size		Area A	Depth d	Web Thickness t_w	Web $t_w/2$	Flange b_f	Flange t_f	Distance k k_{des}	Distance k k_{det}	Distance k_1	Distance T	Distance Workable Gage	Compact Section Criteria $b_f/2_{tf}$	Compact Section Criteria h/t_w
		in² mm²	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm		
W12 W310	x 50 x 74	14.6 9420	12.2 310	0.370 9.40	3/16 4.76	8.08 205	0.640 16.3	1.14 29.0	1 1/2 38.1	15/16 23.8	9 1/4 235.0	5 1/2 139.7	6.31 6.31	26.8 26.8
	x 45 x 67	13.1 8450	12.1 307	0.335 8.51	3/16 4.76	8.05 204	0.575 14.6	1.08 27.4	1 1/8 34.9	15/16 23.8	↓	↓	7.00 7.00	29.6 29.6
	x 40 x 60	11.7 7550	11.9 302	0.295 7.49	3/16 4.76	8.01 203	0.515 13.1	1.02 25.9	1 1/8 34.9	7/8 22.2	↓	↓	7.77 7.77	33.6 33.6
W12 W310	x 35 x 52	10.3 6650	12.5 318	0.300 7.62	5/16 4.76	6.56 167	0.520 13.2	0.820 20.8	1 7/16 30.2	3/4 19.1	10 1/8 257.2	3 1/2 88.9	6.31 6.31	36.2 36.2
	x 30 x 44.5	8.79 5670	12.3 312	0.260 6.60	1/8 3.18	6.52 166	0.440 11.2	0.740 18.8	1 1/8 28.6	3/4 19.1	↓	↓	7.41 7.41	41.8 41.8
	x 26 x 38.7	7.65 4940	12.2 310	0.230 5.84	1/8 3.18	6.49 165	0.380 9.65	0.680 17.3	1 1/16 27.0	3/4 19.1	↓	↓	8.54 8.54	47.2 47.2
W12 W310	x 22 x 32.7	6.48 4180	12.3 312	0.260 6.60	1/8 3.18	4.03 102	0.425 10.8	0.725 18.4	15/16 23.8	5/8 15.9	10 5/8 263.5	2 1/4 57.2	4.74 4.74	41.8 41.8
	x 19 x 28.3	5.57 3590	12.2 310	0.235 5.97	1/8 3.18	4.01 102	0.350 8.89	0.650 16.5	7/8 22.2	9/16 14.3	↓	↓	5.72 5.72	46.2 46.2
	x 16 x 23.8	4.71 3040	12.0 305	0.220 5.59	1/8 3.18	3.99 101	0.265 6.73	0.565 14.4	13/16 20.6	9/16 14.3	↓	↓	7.53 7.53	49.4 49.4
	x 14 x 21	4.16 2680	11.9 302	0.200 5.08	1/8 3.18	3.97 101	0.225 5.72	0.525 13.3	3/4 19.1	9/16 14.3	↓	↓	8.82 8.82	54.3 54.3
W10 W250	x 112 x 167	32.9 21200	11.4 290	0.755 19.2	5/8 9.52	10.4 264	1.25 31.8	1.75 44.5	1 15/16 49.2	1 25.4	7 1/2 190.5	5 1/2 139.7	4.17 4.17	10.4 10.4
	x 100 x 149	29.3 18900	11.1 282	0.680 17.3	5/8 9.52	10.3 262	1.12 28.4	1.62 41.1	1 13/16 46.0	1 25.4	↓	↓	4.62 4.62	11.6 11.6
	x 88 x 131	26.0 16800	10.8 274	0.605 15.4	5/8 7.94	10.3 262	0.990 25.1	1.49 37.8	1 11/16 42.9	15/16 23.8	↓	↓	5.18 5.18	13.0 13.0
	x 77 x 115	22.7 14600	10.6 269	0.530 13.5	1/4 6.35	10.2 259	0.870 22.1	1.37 34.8	1 9/16 39.7	7/8 22.2	↓	↓	5.86 5.86	14.8 14.8
	x 68 x 101	19.9 12800	10.4 264	0.470 11.9	1/4 6.35	10.1 257	0.770 19.6	1.27 32.3	1 7/16 36.5	7/8 22.2	↓	↓	6.58 6.58	16.7 16.7
	x 60 x 89	17.7 11400	10.2 259	0.420 10.7	1/4 6.35	10.1 257	0.680 17.3	1.18 30.0	1 3/8 34.9	13/16 20.6	↓	↓	7.41 7.41	18.7 18.7
	x 54 x 80	15.8 10200	10.1 257	0.370 9.40	3/16 4.76	10.0 254	0.615 15.6	1.12 28.4	1 5/16 33.3	13/16 20.6	↓	↓	8.15 8.15	21.2 21.2
	x 49 x 73	14.4 9290	10.0 254	0.340 8.64	3/16 4.76	10.0 254	0.560 14.2	1.06 26.9	1 1/4 31.8	13/16 20.6	↓	↓	8.93 8.93	23.1 23.1
W10 W250	x 45 x 67	13.3 8580	10.1 257	0.350 8.89	3/16 4.76	8.02 204	0.620 15.7	1.12 28.4	1 5/16 33.3	13/16 20.6	7 1/2 190.5	5 1/2 139.7	6.47 6.47	22.5 22.5
	x 39 x 58	11.5 7420	9.92 252	0.315 8.00	3/16 4.76	7.99 203	0.530 13.5	1.03 26.2	1 3/16 30.2	13/16 20.6	↓	↓	7.53 7.53	25.0 25.0
	x 33 x 49.1	9.71 6260	9.73 247	0.290 7.37	3/16 4.76	7.96 202	0.435 11.0	0.935 23.7	1 1/8 28.6	3/4 19.1	↓	↓	9.15 9.15	27.1 27.1
W10 W250	x 30 x 44.8	8.84 5700	10.5 267	0.300 7.62	3/16 4.76	5.81 148	0.510 13.0	0.810 20.6	1 1/8 28.6	11/16 17.5	8 1/4 209.6	2 3/4 69.9	5.70 5.70	29.5 29.5
	x 26 x 38.5	7.61 4910	10.3 262	0.260 6.60	1/8 3.18	5.77 147	0.440 11.2	0.740 18.8	1 1/16 27.0	11/16 17.5	↓	↓	6.56 6.56	34.0 34.0
	x 22 x 32.7	6.49 4190	10.2 259	0.240 6.10	1/8 3.18	5.75 146	0.360 9.14	0.660 16.8	15/16 23.8	5/8 15.9	↓	↓	7.99 7.99	36.9 36.9
W10 W250	x 19 x 28.4	5.62 3630	10.2 259	0.250 6.35	1/8 3.18	4.02 102	0.395 10.0	0.695 17.7	15/16 23.8	5/8 15.9	8 3/4 212.7	2 1/4 57.2	5.09 5.09	35.4 35.4
	x 17 x 25.3	4.99 3220	10.1 257	0.240 6.10	1/8 3.18	4.01 102	0.330 8.38	0.630 16.0	7/8 22.2	9/16 14.3	↓	↓	6.08 6.08	36.9 36.9
	x 15 x 22.3	4.41 2850	9.99 254	0.230 5.84	1/8 3.18	4.00 102	0.270 6.86	0.570 14.5	11/16 20.6	9/16 14.3	↓	↓	7.41 7.41	38.5 38.5
	x 12 x 17.9	3.54 2280	9.87 251	0.190 4.83	1/8 3.18	3.96 101	0.210 5.33	0.510 13.0	3/4 19.1	9/16 14.3	↓	↓	9.43 9.43	46.6 46.6

Nominal Weight	Axis X-X I	Axis X-X S	Axis X-X r	Axis X-X Z	Axis Y-Y I	Axis Y-Y S	Axis Y-Y r	Axis Y-Y Z	r_{ts}	h_o	Torsional Properties J	Torsional Properties C_w	Coating Area
lb/ft kg/m	in⁴ mm⁴/10⁶	in³ mm³/10³	in mm	in³ mm³/10³	in⁴ mm⁴/10⁶	in³ mm³/10³	in mm	in³ mm³/10³	in mm	in mm	in⁴ mm⁴/10³	in⁶ mm⁶/10⁹	ft²/ft m²/m
50 74	391 163	64.2 1050	5.18 132	71.9 1180	56.3 23.4	13.9 228	1.96 49.8	21.3 349	2.25 57.2	11.6 295	1.71 712	1880 505	4.67 1.42
45 67	348 145	57.7 946	5.15 131	64.2 1050	50.0 20.8	12.4 203	1.95 49.5	19.0 311	2.23 56.6	11.5 292	1.26 524	1650 443	4.64 1.42
40 60	307 128	51.5 844	5.13 130	57.0 934	44.1 18.4	11.0 180	1.94 49.3	16.8 275	2.21 56.1	11.4 290	0.906 377	1440 387	4.60 1.40
35 52	285 119	45.6 747	5.25 133	51.2 839	24.5 10.2	7.47 122	1.54 39.1	11.5 188	1.79 45.5	12.0 305	0.741 308	879 236	4.22 1.29
30 44.5	238 99.1	38.6 633	5.21 132	43.1 706	20.3 8.45	6.24 102	1.52 38.6	9.56 157	1.77 45.0	11.9 302	0.457 190	720 193	4.18 1.27
26 38.7	204 84.9	33.4 547	5.17 131	37.2 610	17.3 7.20	5.34 87.5	1.51 38.4	8.17 134	1.75 44.4	11.8 300	0.300 125	607 163	4.16 1.27
22 32.7	156 64.9	25.4 416	4.91 125	29.3 480	4.66 1.94	2.31 37.9	0.848 21.5	3.66 60.0	1.04 26.4	11.9 302	0.293 122	164 44.0	3.35 1.02
19 28.3	130 54.1	21.3 349	4.82 122	24.7 405	3.76 1.57	1.88 30.8	0.822 20.9	2.98 48.8	1.02 25.9	11.9 302	0.180 74.9	131 35.2	3.33 1.02
16 23.8	103 42.9	17.1 280	4.67 119	20.1 329	2.82 1.17	1.41 23.1	0.773 19.6	2.26 37.0	0.983 25.0	11.7 297	0.103 42.9	96.9 26.0	3.29 1.00
14 21	88.6 36.9	14.9 244	4.62 117	17.4 285	2.36 0.982	1.19 19.5	0.753 19.1	1.90 31.1	0.961 24.4	11.7 297	0.070 29.3	80.4 21.6	3.27 1.00
112 167	716 298	126 2060	4.66 118	147 2410	236 98.2	45.3 742	2.68 68.1	69.2 1130	3.08 78.2	10.2 259	15.1 6290	6020 1620	5.24 1.60
100 149	623 259	112 1840	4.60 117	130 2130	207 86.2	40.0 655	2.65 67.3	61.0 1000	3.04 77.2	10.0 254	10.9 4540	5150 1380	5.17 1.58
88 131	534 222	98.5 1610	4.54 115	113 1850	179 74.5	34.8 570	2.63 66.8	53.1 870	2.99 75.9	9.81 249	7.53 3130	4330 1160	5.13 1.56
77 115	455 189	85.9 1410	4.49 114	97.6 1600	154 64.1	30.1 493	2.60 66.0	45.9 752	2.95 74.9	9.73 247	5.11 2130	3630 975	5.08 1.55
68 101	394 164	75.7 1240	4.44 113	85.3 1400	134 55.8	26.4 433	2.59 65.8	40.1 657	2.92 74.2	9.63 245	3.56 1480	3100 832	5.02 1.53
60 89	341 142	66.7 1090	4.39 112	74.6 1220	116 48.3	23.0 377	2.57 65.3	35.0 574	2.88 73.2	9.52 242	2.48 1030	2640 709	5.00 1.52
54 80	303 126	60.0 983	4.37 111	66.6 1090	103 42.9	20.6 338	2.56 65.0	31.3 513	2.85 72.4	9.49 241	1.82 758	2320 623	4.96 1.51
49 73	272 113	54.6 895	4.35 110	60.4 990	93.4 38.9	18.7 306	2.54 64.5	28.3 464	2.84 72.1	9.44 240	1.39 579	2070 556	4.94 1.51
45 67	248 103	49.1 805	4.32 110	54.9 900	53.4 22.2	13.3 218	2.01 51.1	20.3 333	2.27 57.7	9.48 241	1.51 629	1200 322	4.30 1.31
39 58	209 87.0	42.1 690	4.27 108	46.8 767	45.0 18.7	11.3 185	1.98 50.3	17.2 282	2.24 56.9	9.39 239	0.976 406	992 266	4.26 1.30
33 49.1	171 71.2	35.0 574	4.19 106	38.8 636	36.6 15.2	9.20 151	1.94 49.3	14.0 229	2.20 55.9	9.30 236	0.583 243	791 212	4.23 1.29
30 44.8	170 70.8	32.4 531	4.38 111	36.6 600	16.7 6.95	5.75 94.2	1.37 34.8	8.84 145	1.60 40.6	9.99 254	0.622 259	414 111	3.64 1.11
26 38.5	144 59.9	27.9 457	4.35 110	31.3 513	14.1 5.87	4.89 80.1	1.36 34.5	7.50 123	1.58 40.1	9.86 250	0.402 167	345 92.6	3.60 1.10
22 32.7	118 49.1	23.2 380	4.27 108	26.0 426	11.4 4.75	3.97 65.1	1.33 33.8	6.10 100	1.55 39.4	9.84 250	0.239 99.5	275 73.8	3.58 1.09
19 28.4	96.3 40.1	18.8 308	4.14 105	21.6 354	4.29 1.79	2.14 35.1	0.874 22.2	3.35 54.9	1.06 26.9	9.81 249	0.233 97.0	104 27.9	3.00 0.91
17 25.3	81.9 34.1	16.2 265	4.05 103	18.7 306	3.56 1.48	1.78 29.2	0.845 21.5	2.80 45.9	1.04 26.4	9.77 248	0.156 64.9	85.1 22.9	2.98 0.91
15 22.3	68.9 28.7	13.8 226	3.95 100	16.0 262	2.89 1.20	1.45 23.8	0.810 20.6	2.30 37.7	1.01 25.7	9.72 247	0.104 43.3	68.3 18.3	2.96 0.90
12 17.9	53.8 22.4	10.9 179	3.90 99.1	12.6 206	2.18 0.907	1.10 18.0	0.785 19.9	1.74 28.5	0.983 25.0	9.66 245	0.055 22.8	50.9 13.7	2.93 0.89

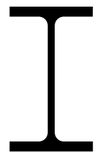
Wide Flange



Beam Size		Area A	Depth d	Web Thickness t_w	Web $t_w/2$	Flange b_f	Flange t_f	Distance k k_{des}	Distance k k_{det}	Distance k_1	Distance T	Distance Workable Gage	Compact Section Criteria $b_f/2_{tf}$	Compact Section Criteria h/t_w
		in² mm²	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm		
W8 W200	x 67 x 100	19.7 12700	9.00 229	0.570 14.5	9/16 7.94	8.28 210	0.935 23.7	1.33 33.8	1 5/8 41.3	15/16 23.8	5 3/4 146.1	5 1/2 139.7	4.43 4.43	11.1 11.1
	x 58 x 86	17.1 11000	8.75 222	0.510 13.0	1/4 6.35	8.22 209	0.810 20.6	1.20 30.5	1 1/2 38.1	7/8 22.2			5.07 5.07	12.4 12.4
	x 48 x 71	14.1 9100	8.50 216	0.400 10.2	3/16 4.76	8.11 206	0.685 17.4	1.08 27.4	1 3/4 34.9	13/16 20.6			5.92 5.92	15.9 15.9
	x 40 x 59	11.7 7550	8.25 210	0.360 9.14	3/16 4.76	8.07 205	0.560 14.2	0.954 24.2	1 1/4 31.8	13/16 20.6			7.21 7.21	17.6 17.6
	x 35 x 52	10.3 6650	8.12 206	0.310 7.87	3/16 4.76	8.02 204	0.495 12.6	0.889 22.6	1 3/16 30.2	13/16 20.6			8.10 8.10	20.5 20.5
	x 31 x 46.1	9.13 5890	8.00 203	0.285 7.24	3/16 4.76	8.00 203	0.435 11.0	0.829 21.1	1 1/8 28.6	3/4 19.1			9.19 9.19	22.3 22.3
W8 W200	x 28 x 41.7	8.25 5320	8.06 205	0.285 7.24	3/16 4.76	6.54 166	0.465 11.8	0.859 21.8	15/16 23.8	5/8 15.9	6 1/8 155.6	4 101.6	7.03 7.03	22.3 22.3
	x 24 x 35.9	7.08 4570	7.93 201	0.245 6.22	1/8 3.18	6.50 165	0.400 10.2	0.794 20.2	7/8 22.2	9/16 14.3	6 1/8 155.6	4 101.6	8.12 8.12	25.9 25.9
W8 W200	x 21 x 31.3	6.16 3970	8.28 210	0.250 6.35	1/8 3.18	5.27 134	0.400 10.2	0.700 17.8	7/8 22.2	9/16 14.3	6 1/2 165.1	2 3/4 69.9	6.59 6.59	27.5 27.5
	x 18 x 26.6	5.26 3390	8.14 207	0.230 5.84	1/8 3.18	5.25 133	0.330 8.38	0.630 16.0	13/16 20.6	9/16 14.3	6 1/2 165.1	2 3/4 69.9	7.95 7.95	29.9 29.9
W8 W200	x 15 x 22.5	4.44 2860	8.11 206	0.245 6.22	1/8 3.18	4.02 102	0.315 8.00	0.615 15.6	13/16 20.6	9/16 14.3	6 1/2 165.1	2 1/4 57.2	6.37 6.37	28.1 28.1
	x 13 x 19.3	3.84 2480	7.99 203	0.230 5.84	1/8 3.18	4.00 102	0.255 6.48	0.555 14.1	3/4 19.1	9/16 14.3			7.84 7.84	29.9 29.9
	x 10 x 15	2.96 1910	7.89 200	0.170 4.32	1/8 3.18	3.94 100	0.205 5.21	0.505 12.8	11/16 17.5	1/2 12.7			9.61 9.61	40.5 40.5
W6 W150	x 25 x 37.1	7.34 4740	6.38 162	0.320 8.13	5/16 4.76	6.08 154	0.455 11.6	0.705 17.9	15/16 23.8	9/16 14.3	4 1/2 114.3	3 1/2 88.9	6.68 6.68	15.5 15.5
	x 20 x 29.8	5.87 3790	6.20 157	0.260 6.60	1/8 3.18	6.02 153	0.365 9.27	0.615 15.6	7/8 22.2	9/16 14.3			8.25 8.25	19.1 19.1
	x 15 x 22.5	4.43 2860	5.99 152	0.230 5.84	1/8 3.18	5.99 152	0.260 6.60	0.510 13.0	3/4 19.1	9/16 14.3			11.5 11.5	21.6 21.6
W6 W150	x 16 x 24	4.74 3060	6.28 160	0.260 6.60	1/8 3.18	4.03 102	0.405 10.3	0.655 16.6	7/8 22.2	9/16 14.3	4 1/2 114.3	2 1/4 57.2	4.98 4.98	19.1 19.1
	x 12 x 18	3.55 2290	6.03 153	0.230 5.84	1/8 3.18	4.00 102	0.280 7.11	0.530 13.5	3/4 19.1	9/16 14.3			7.14 7.14	21.6 21.6
	x 9 13.5	2.68 1730	5.90 150	0.170 4.32	1/8 3.18	3.94 100	0.215 5.46	0.465 11.8	11/16 17.5	1/2 12.7			9.16 9.16	29.2 29.2
	x 8.5 x 13	2.52 1630	5.83 148	0.170 4.32	1/8 3.18	3.94 100	0.195 4.95	0.445 11.3	11/16 17.5	1/2 12.7			10.1 10.1	29.1 29.1
W5 W130	x 19 x 28.1	5.56 3590	5.15 131	0.270 6.86	1/8 3.18	5.03 128	0.430 10.9	0.730 18.5	13/16 20.6	7/16 11.1	3 1/2 88.9	2 3/4 69.9	5.85 5.85	13.7 13.7
	x 16 x 23.8	4.71 3040	5.01 127	0.240 6.10	1/8 3.18	5.00 127	0.360 9.14	0.660 16.8	3/4 19.1	7/16 11.1	3 1/2 88.9	2 3/4 69.9	6.94 6.94	15.4 15.4
W4 W100	x 13 x 19.3	3.83 2470	4.16 106	0.280 7.11	1/8 3.18	4.06 103	0.345 8.76	0.595 15.1	3/4 19.1	1/2 12.7	2 5/8 66.7	2 1/4 57.2	5.88 5.88	10.6 10.6

Nominal Weight	Axis X-X I	Axis X-X S	Axis X-X r	Axis X-X Z	Axis Y-Y I	Axis Y-Y S	Axis Y-Y r	Axis Y-Y Z	r_{ts}	h_o	Torsional Properties J	Torsional Properties C_w	Coating Area
lb/ft kg/m	in⁴ mm⁴/10⁶	in³ mm³/10³	in mm	in³ mm³/10³	in⁴ mm⁴/10⁶	in³ mm³/10³	in mm	in³ mm³/10³	in mm	in mm	in⁴ mm⁴/10³	in⁶ mm⁶/10⁹	ft²/ft m²/m
67 100	272 113	60.4 990	3.72 94.5	70.1 1150	88.6 36.9	21.4 351	2.12 53.8	32.7 536	2.43 61.7	8.07 205	5.05 2100	1440 387	4.17 1.27
58 86	228 94.9	52.0 852	3.65 92.7	59.8 980	75.1 31.3	18.3 300	2.10 53.3	27.9 457	2.39 60.7	7.94 202	3.33 1390	1180 317	4.11 1.25
48 71	184 76.6	43.2 708	3.61 91.7	49.0 803	60.9 25.3	15.0 246	2.08 52.8	22.9 375	2.35 59.7	7.82 199	1.96 816	931 250	4.05 1.24
40 59	146 60.8	35.5 582	3.53 89.7	39.8 652	49.1 20.4	12.2 200	2.04 51.8	18.5 303	2.31 58.7	7.69 195	1.12 466	726 195	4.01 1.22
35 52	127 52.9	31.2 511	3.51 89.2	34.7 569	42.6 17.7	10.6 174	2.03 51.6	16.1 264	2.28 57.9	7.63 194	0.769 320	619 166	3.98 1.21
31 46.1	110 45.8	27.5 451	3.47 88.1	30.4 498	37.1 15.4	9.27 152	2.02 51.3	14.1 231	2.26 57.4	7.57 192	0.536 223	530 142	3.95 1.20
28 41.7	98.0 40.8	24.3 398	3.45 87.6	27.2 446	21.7 9.03	6.63 109	1.62 41.1	10.1 166	1.84 46.7	7.60 193	0.537 224	312 83.8	3.48 1.06
24 35.9	82.7 34.4	20.9 342	3.42 86.9	23.1 379	18.3 7.62	5.63 92.3	1.61 40.9	8.57 140	1.81 46.0	7.53 191	0.346 144	259 69.6	3.45 1.05
21 31.3	75.3 31.3	18.2 298	3.49 88.6	20.4 334	9.77 4.07	3.71 60.8	1.26 32.0	5.69 93.2	1.46 37.1	7.88 200	0.282 117	152 40.8	3.10 0.94
18 26.6	61.9 25.8	15.2 249	3.43 87.1	17.0 279	7.97 3.32	3.04 49.8	1.23 31.2	4.66 76.4	1.43 36.3	7.81 198	0.172 71.6	122 32.8	3.07 0.94
15 22.5	48.0 20.0	11.8 193	3.29 83.6	13.6 223	3.41 1.42	1.70 27.9	0.876 22.3	2.67 43.8	1.06 26.9	7.80 198	0.137 57.0	51.8 13.9	2.65 0.81
13 19.3	39.6 16.5	9.91 162	3.21 81.5	11.4 187	2.73 1.14	1.37 22.5	0.843 21.4	2.15 35.2	1.03 26.2	7.74 197	0.087 36.3	40.8 11.0	2.63 0.80
10 15	30.8 12.8	7.81 128	3.22 81.8	8.87 145	2.09 0.870	1.06 17.4	0.841 21.4	1.66 27.2	1.01 25.7	7.69 195	0.043 17.7	30.9 8.30	2.60 0.79
25 37.1	53.4 22.2	16.7 274	2.70 68.6	18.9 310	17.1 7.12	5.61 91.9	1.52 38.6	8.56 140	1.74 44.2	5.93 151	0.461 192	150 40.3	3.04 0.93
20 29.8	41.4 17.2	13.4 220	2.66 67.6	15.0 246	13.3 5.54	4.41 72.3	1.50 38.1	6.72 110	1.70 43.2	5.84 148	0.240 99.9	113 30.3	3.00 0.91
15 22.5	29.1 12.1	9.72 159	2.56 65.0	10.8 177	9.32 3.88	3.11 51.0	1.45 36.8	4.75 77.8	1.66 42.2	5.73 146	0.101 42.0	76.5 20.5	2.96 0.90
16 24	32.1 13.4	10.2 167	2.60 66.0	11.7 192	4.43 1.84	2.20 36.1	0.967 24.6	3.39 55.6	1.13 28.7	5.88 149	0.223 92.8	38.2 10.3	2.35 0.72
12 18	22.1 9.20	7.31 120	2.49 63.2	8.30 136	2.99 1.24	1.50 24.6	0.918 23.3	2.32 38.0	1.08 27.4	5.75 146	0.090 37.6	24.7 6.63	2.30 0.70
9 13.5	16.4 6.83	5.56 91.1	2.47 62.7	6.23 102	2.20 0.916	1.11 18.2	0.905 23.0	1.72 28.2	1.06 26.9	5.69 145	0.041 16.9	17.7 4.75	2.27 0.69
8.5 13	14.9 6.20	5.10 83.6	2.43 61.7	5.73 93.9	1.99 0.828	1.01 16.6	0.890 22.6	1.56 25.6	1.05 26.7	5.64 143	0.033 13.9	15.8 4.24	2.26 0.69
19 28.1	26.3 10.9	10.2 167	2.17 55.1	11.6 190	9.13 3.80	3.63 59.5	1.28 32.5	5.53 90.6	1.45 36.8	4.72 120	0.316 132	50.9 13.7	2.49 0.76
16 23.8	21.4 8.91	8.55 140	2.13 54.1	9.63 158	7.51 3.13	3.00 49.2	1.26 32.0	4.58 75.1	1.43 36.3	4.65 118	0.192 79.9	40.6 10.9	2.46 0.75
13 19.3	11.3 4.70	5.46 89.5	1.72 43.7	6.28 103	3.86 1.61	1.90 31.1	1.00 25.4	2.92 47.9	1.16 29.5	3.82 97	0.151 62.9	14.0 3.76	2.00 0.61

Wide Flange



Available Steel Grades

AMERICAN			CANADIAN			EUROPEAN*		
ASTM	YIELD STRENGTH		CSA G40.21	YIELD STRENGTH		EN 10025 & EN 10113	YIELD STRENGTH	
	ksi	MPa		ksi	MPa		ksi	MPa
A 36	36	250	**Grade 350 W**	50	350	**S 235**	34	235
A 572 Grade 50	50	345				**S 275**	40	275
A 588	50	345				**S 355**	51	355
A 690	50	345				**S 460 HISTAR**	67	460
A 709	50	345						
A 913	50	345						
A 913	65	450						
A 992	50	345						

Highlighted fields represent the most commonly used and readily available steel grades. Additional grades available upon request. *HISTAR only available in some sizes.

Delivery Conditions & Tolerances

	ASTM A 6		
Mass	± 2.5%		
Depth	± 0.125 in.		
Length	30 ft. and under	Over 30 ft.	
Beams W 24 and Under	± 0.375 in.	+ (0.375 in. + (Length - 30) / 80	-0.375 in.
Beams Over W 24	± 0.5 in.	+ (0.5 in. + (Length - 30) / 80	-0.375 in.
Flanges out of Square			
Beams W 12 and Under	≤ 0.25 in.		
Beams Over W 12	≤ 0.3125 in.		
Web off Center	≤ 0.1875 in.		
Greatest Depth over Theoretical	≤ 0.25 in.		
Camber and Sweep	(0.125 in) * (Length / 10)		
Camber and Sweep for Columns**			
45 ft. and Under	(0.125 in) * (Length / 10) but not over 0.375 in.		
Over 45 ft.	(0.375 in) + (0.125 in * (Length - 45) / 10		

** W 8 x 31 and heavier, W 10 x 49 and heavier, W 12 x 65 and heavier, and W 14 x 90 and heavier order as columns.
If other sections are ordered as columns, the tolerances are subject to negotiation with manufacturer.

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About Nucor Skyline
A premier steel foundation supplier serving the U.S., Canada, Mexico, the Caribbean, Central America, and Colombia, Skyline Steel, LLC (doing business as Nucor Skyline) is a wholly-owned subsidiary of Nucor Corporation, the largest producer of steel in the United States.

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