NUCOR

NUCOR-YAMATO STEEL

Structural Shapes

November 2014

This catalog contains the information you need for ordering structural shapes from Nucor-Yamato Steel. All other catalogs are superceded. This catalog also contains information on the dimensions and properties of various shapes produced by Nucor-Yamato Steel. Other supplementary data may be included. The use of all data contained in this catalog should be used with qualified professional judgement.

Nucor-Yamato Steel Company is a joint venture company of Nucor Corporation and Yamato Kogyo Company, Ltd. All Nucor-Yamato Steel structural products are melted and manufactured in the United States near Blytheville, Arkansas.

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General Data contained within this catalog is current as of January 2011, however, revisions of this catalog, in whole or in part, may be issued in the future.

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The information contained within this catalog has been prepared in accordance with recognized engineering principles and is for general information only. While it is believed to be accurate, this information should be used only when supplemented by competent and qualified professional judgment. Anyone making use of this information assumes all liability arising from such use.

The wide flange (W) beams and H-piles (HP) listed in this catalog are rolled at specific intervals determined by Nucor-Yamato Steel. Some shapes are rolled less frequently than others. Contact Nucor-Yamato Steel or refer to the regularly published Proposed Rolling Schedule to determine the current rolling frequency. Information is available on the Nucor-Yamato Steel website, www.nucoryamato.com.

Our structural shapes conform to ASTM (American Society for Testing and Materials) A6/A6M structural steel specifications, latest edition. However, we may furnish steel conforming to other specifications by special request. Contact us for product availability, rolling frequency and other pertinent information.

In regards to rolling and cutting tolerances, they are in accordance with accepted standards.

Concerning W and HP shapes, the inside and outside surfaces of the flanges are parallel to each other. The inside flange surfaces of S and C shapes have approximately a 16-2/3 % slope. The slope of the inside flange surfaces of MC shapes varies.

Nomenclature We use the standard AISI (American Iron and Steel Institute) nomenclature throughout the catalog. For example, W24x55, C15x40, MC12x45, and HP12x53. Please use this type of notation when placing your order.

Weights, Dimensions And Properties We compute the weights of rolled steel shapes on the basis that a cubic foot of steel weighs 490 pounds and a cubic meter of steel has a mass of 7850 kilograms. The weights of the shapes have been calculated from their theoretical dimensions as published in ASTM A6/A6M, and are rounded off to the nearest pound, except where we have otherwise indicated. In accordance with standard industry practices, the fillets and/or the rounded edges have been included in our computation of the weights and properties. In accordance with ASTM A6/A6M, the cross-sectional area or weight (mass) of each shape shall not vary more than 2.5% from theoretical or specified amounts, except for shapes with a nominal weight of less than 100 lb/ft, in which variation shall range from -2.5% to 3.0% from the theoretical cross section area or specified nominal weight. The cross-sectional area values listed are as published, except where no publication of such values could be found. These values are calculated based upon nominal dimensions and are indicated with an asterisk. This catalog contains both inch-pound and SI metric units for dimensions and properties of shapes produced by Nucor-Yamato Steel Company.

Rolling Practice and Rolling Tolerances

Universal mills are used for rolling W, S, C, MC, S, L and HP shapes. The thickness of the flange and the web may be changed with corresponding changes in the beam depth and flange width. The thickness of the web may be changed with a corresponding change in the flange width. All other dimensions remain unchanged.

In the production of structural shapes, the dimensions and weights may vary slightly from the published nominal figures. However, they remain within the permissible tolerance.

Roll wear may also slightly affect the radii of fillets and rounded edges. So please make proper allowances for fittings and connections.

Roll wear, along with deformation in the mill and the plasticity of hot steel may also cause variations from the published dimensions of rolled structural shapes. Therefore, to meet camber or sweep tolerances, they may need straightening by the producer. Other tolerances are subject to negotiation with Nucor-Yamato Steel.

Nucor-Yamato steel produces steel to tolerances provided by ASTM A6 most recent revision. Column tolerances applies to camber and sweep on following sections when specified at the time of order entry as columns:

W8x8 (31 lbs/ft to 67 lbs/ft)

W10x10 (49 lbs/ft to 112 lbs/ft)

W12x12 (65 lbs/ft to 336 lbs/ft)

W14x14 ½ (90 lbs/ft to 132 lbs/ft)

W14x16 (145 lbs/ft to 730 lbs/ft)

Surface Finishes And Conditioning

Surface imperfections on the finished product are caused by a number of factors. However, they are generally of minor importance and have no effect on the end use.

Fins or burrs are common with commercial sawing or shearing. And the presence of grease, oil, mill scale or rust is unavoidable. It is a natural occurrence in the rolling and storing of all structural shapes.

Our products may be conditioned in accordance with ASTM Specification A6/A6M, latest edition.

Symbols

A	Cross sectional area, square inches or square millimeters
E	Modulus of Elasticity, 29,000 kips per square inch or 200 000 Newtons per square millimeter (N/mm^2)
I	Moment of inertia (X & Y axis), $inches^4$ or $millimeters^4$
R	Radius of fillet, inches or millimeters
S	Elastic section modulus (X & Y axis), $inches^3$ or $millimeters^3$
a	Distance from web face to edge of flange, inches or millimeters
b_f	Flange width, inches or millimeters
d	Depth of flange, inches or millimeters
k	Distance from outside of flange face to intersection of fillet with webs, inches or millimeters
k_1	Distance from center line of web to intersection of fillet with flange, inches or millimeters
r	Radius of gyration (X & Y axis), inches or millimeters
t_f	(W and HP shapes) Flange thickness, inches or millimeters
	(C, MC, S, & L shapes) Average flange thickness, inches or millimeters
t_w	Web thickness, inches or millimeters

Symbol & Dimension Notes

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

a — (W, HP, & S shapes) Projection of the flange beyond the face of the web, which equals one-half flange width minus one-half web thickness, rounded to the nearest 0.001 inch or 0.1 millimeter

(C & MC shapes) Projection of the flange beyond the face of the web, which equals the flange width minus the web thickness, rounded to the nearest 0.001 inch or 0.1 millimeter

b_f — Flange width, rounded to the nearest 0.001 inch or 1 millimeter

d — Depth of section, rounded to the nearest 0.01 inch or 1 millimeter

t_f, t_w — Flange and web thicknesses, rounded to the nearest 0.001 inch or 0.1 millimeter

T — (W & HP shapes) Clear distance on web between fillets which equals (depth minus the ASTM A6/A6M maximum allowable under-tolerance) minus two times (flange thickness plus fillet radius), rounded to the nearest 0.001 inch or 0.1 millimeter

(C, MC, S, & L shapes) Clear distance on web between fillets which equals (depth minus ASTM A6/A6M maximum allowable under-tolerance) minus two times [flange thickness at heel plus fillet radius times the tangent of one-half times (90^o minus the flange slope, θ)], rounded to the nearest 0.001 inch or 0.1 millimeter

k — Distance from the outside of the flange to the toe of the fillet on the web which equals one-half (depth minus T distance), rounded to the nearest 0.001 inch or 0.1 millimeter

k_1 — (W & HP shapes only) Distance from the center of the web to the toe of the fillet on the flange which equals (one-half web thickness plus the fillet radius), rounded to the nearest 0.001 inch or 0.1 millimeters

Available grades:

ASTM:
ASTM A 36/A 36M
ASTM A 328/A 328M
ASTM A 572/A 572M Grade 50
ASTM A 572/A 572M Grade 60*
ASTM A 572/A 572M Grade 65*
ASTM A 588/A 588M Grade B
ASTM A 690/A 690M
ASTM A 709/A 709M
ASTM A 992/ A 992M

ABS:
ABS Grade A
ABS Grade B
ABS Grade AH32
ABS Grade AH36

BRITISH / EUROPEAN*:
EN10204:2004, Grade EN10025/S355 JO
EN10204:2004, Grade EN10025/S355 JR
EN10204:2004, Grade EN10025/S355 J2

AASHTO:
AASHTO M 270M/M 270

CANADIAN:
CSA G40.21 50A (350A)
CSA G40.21 50AT (350AT)
CSA G40.21 50W (345WM)
CSA G40.21 50WT (345WMT)

*Only on certain sections

Nucor-Yamato Steel

A6 Section Size	A6M Section Size (metric)
W44 x 335	W1100 x 499
W44 x 290	W1100 x 433
W44 x 262	W1100 x 390
W44 x 230	W1100 x 343
W40 x 431	W1000 x 642
W40 x 397	W1000 x 591
W40 x 372	W1000 x 554
W40 x 362	W1000 x 539
W40 x 324	W1000 x 483
W40 x 297	W1000 x 443
W40 x 277	W1000 x 412
W40 x 249	W1000 x 371
W40 x 215	W1000 x 321
W40 x 199	W1000 x 296
W40 x 327	W1000 x 486
W40 x 294	W1000 x 438
W40 x 278	W1000 x 415
W40 x 264	W1000 x 393
W40 x 235	W1000 x 350
W40 x 211	W1000 x 314
W40 x 183	W1000 x 272
W40 x 167	W1000 x 249
W40 x 149	W1000 x 222
W36 x 529	W920 x 787
W36 x 487	W920 x 725
W36 x 441	W920 x 656
W36 x 395	W920 x 588
W36 x 361	W920 x 537
W36 x 330	W920 x 491
W36 x 302	W920 x 449
W36 x 282	W920 x 420
W36 x 262	W920 x 390
W36 x 247	W920 x 368
W36 x 231	W920 x 344
W36 x 256	W920 x 381
W36 x 232	W920 x 345
W36 x 210	W920 x 313
W36 x 194	W920 x 289
W36 x 182	W920 x 271
W36 x 170	W920 x 253
W36 x 160	W920 x 238
W36 x 150	W920 x 223
W36 x 135	W920 x 201

A6 Section Size	A6M Section Size (metric)
W33 x 387	W840 x 576
W33 x 354	W840 x 527
W33 x 318	W840 x 473
W33 x 291	W840 x 433
W33 x 263	W840 x 392
W33 x 241	W840 x 359
W33 x 221	W840 x 329
W33 x 201	W840 x 299
W33 x 169	W840 x 251
W33 x 152	W840 x 226
W33 x 141	W840 x 210
W33 x 130	W840 x 193
W33 x 118	W840 x 176
W30 x 391	W760 x 582
W30 x 357	W760 x 531
W30 x 326	W760 x 484
W30 x 292	W760 x 434
W30 x 261	W760 x 389
W30 x 235	W760 x 350
W30 x 211	W760 x 314
W30 x 191	W760 x 284
W30 x 173	W760 x 257
W30 x 148	W760 x 220
W30 x 132	W760 x 196
W30 x 124	W760 x 185
W30 x 116	W760 x 173
W30 x 108	W760 x 161
W30 x 99	W760 x 147
W30 x 90	W760 x 134
W27 x 368	W690 x 548
W27 x 336	W690 x 500
W27 x 307	W690 x 457
W27 x 281	W690 x 419
W27 x 258	W690 x 384
W27 x 235	W690 x 350
W27 x 217	W690 x 323
W27 x 194	W690 x 289
W27 x 178	W690 x 265
W27 x 161	W690 x 240
W27 x 146	W690 x 217

A6 Section Size	A6M Section Size (metric)
W27 x 129	W690 x 192
W27 x 114	W690 x 170
W27 x 102	W690 x 152
W27 x 94	W690 x 140
W27 x 84	W690 x 125
W24 x 370	W610 x 551
W24 x 335	W610 x 498
W24 x 306	W610 x 455
W24 x 279	W610 x 415
W24 x 250	W610 x 372
W24 x 229	W610 x 341
W24 x 207	W610 x 307
W24 x 192	W610 x 285
W24 x 176	W610 x 262
W24 x 162	W610 x 241
W24 x 146	W610 x 217
W24 x 131	W610 x 195
W24 x 117	W610 x 174
W24 x 104	W610 x 155
W24 x 103	W610 x 153
W24 x 94	W610 x 140
W24 x 84	W610 x 125
W24 x 76	W610 x 113
W24 x 68	W610 x 101
W24 x 61*	W610 x 91*
W24 x 56*	W610 x 84*
W24 x 62	W610 x 92
W24 x 55	W610 x 82
W21 x 275**	W530 x 409**
W21 x 248**	W530 x 369**
W21 x 223**	W530 x 332**
W21 x 201	W530 x 300
W21 x 182	W530 x 272
W21 x 166	W530 x 248
W21 x 147	W530 x 219
W21 x 132	W530 x 196
W21 x 122	W530 x 182
W21 x 111	W530 x 165
W21 x 101	W530 x 150

* CSA ** Non ASTM A6 Section

November 2014

Nucor-Yamato Steel

A6 Section Size	A6M Section Size (metric)
W21 x 93	W530 x 138
W21 x 83	W530 x 123
W21 x 73	W530 x 109
W21 x 68	W530 x 101
W21 x 62	W530 x 92
W21 x 55	W530 x 82
W21 x 48	W530 x 72
W21 x 57	W530 x 85
W21 x 50	W530 x 74
W21 x 44	W530 x 66
W18 x 311	W460 x 464
W18 x 283	W460 x 421
W18 x 258	W460 x 384
W18 x 234	W460 x 348
W18 x 211	W460 x 314
W18 x 192	W460 x 286
W18 x 175	W460 x 260
W18 x 158	W460 x 235
W18 x 143	W460 x 213
W18 x 130	W460 x 193
W18 x 119	W460 x 177
W18 x 106	W460 x 158
W18 x 97	W460 x 144
W18 x 86	W460 x 128
W18 x 76	W460 x 113
W18 x 71	W460 x 106
W18 x 65	W460 x 97
W18 x 60	W460 x 89
W18 x 55	W460 x 82
W18 x 50	W460 x 74
W18 x 45*	W460 x 67*
W18 x 41*	W460 x 61*
W18 x 46	W460 x 68
W18 x 40	W460 x 60
W18 x 35	W460 x 52
W16 x 100	W410 x 149
W16 x 89	W410 x 132
W16 x 77	W410 x 114
W16 x 67	W410 x 100

A6 Section Size	A6M Section Size (metric)
W16 x 57	W410 x 85
W16 x 50	W410 x 75
W16 x 45	W410 x 67
W16 x 40	W410 x 60
W16 x 36	W410 x 53
W16 x 31	W410 x 46.1
W16 x 26	W410 x 38.8
W14 x 730	W360 x 1086
W14 x 665	W360 x 990
W14 x 605	W360 x 900
W14 x 550	W360 x 818
W14 x 500	W360 x 744
W14 x 455	W360 x 677
W14 x 426	W360 x 634
W14 x 398	W360 x 592
W14 x 370	W360 x 551
W14 x 342	W360 x 509
W14 x 311	W360 x 463
W14 x 283	W360 x 421
W14 x 257	W360 x 382
W14 x 233	W360 x 347
W14 x 211	W360 x 314
W14 x 193	W360 x 287
W14 x 176	W360 x 262
W14 x 159	W360 x 237
W14 x 145	W360 x 216
W14 x 132	W360 x 196
W14 x 120	W360 x 179
W14 x 109	W360 x 162
W14 x 99	W360 x 147
W14 x 90	W360 x 134
W14 x 82	W360 x 122
W14 x 74	W360 x 110
W14 x 68	W360 x 101
W14 x 61	W360 x 91
W14 x 53	W360 x 79
W14 x 48	W360 x 72
W14 x 43	W360 x 64

A6 Section Size	A6M Section Size (metric)
W14 x 38	W360 x 57.8
W14 x 34	W360 x 51
W14 x 30	W360 x 44
W14 x 26	W360 x 39
W14 x 22	W360 x 32.9
W12 x 336	W310 x 500
W12 x 305	W310 x 454
W12 x 279	W310 x 415
W12 x 252	W310 x 375
W12 x 230	W310 x 342
W12 x 210	W310 x 313
W12 x 190	W310 x 283
W12 x 170	W310 x 253
W12 x 152	W310 x 226
W12 x 136	W310 x 202
W12 x 120	W310 x 179
W12 x 106	W310 x 158
W12 x 96	W310 x 143
W12 x 87	W310 x 129
W12 x 79	W310 x 117
W12 x 72	W310 x 107
W12 x 65	W310 x 97
W12 x 58	W310 x 86
W12 x 53	W310 x 79
W12 x 50	W310 x 74
W12 x 45	W310 x 67
W12 x 40	W310 x 60
W12 x 35	W310 x 52
W12 x 30	W310 x 44.5
W12 x 26	W310 x 38.7
W12 x 22	W310 x 32.7
W12 x 19	W310 x 28.3
W12 x 16	W310 x 23.8
W10 x 112	W250 x 167
W10 x 100	W250 x 149
W10 x 88	W250 x 131
W10 x 77	W250 x 115
W10 x 68	W250 x 101
W10 x 60	W250 x 89
W10 x 54	W250 x 80
W10 x 49	W250 x 73

* CSA

November 2014

Nucor-Yamato Steel

A6 Section Size	A6M Section Size (metric)
W10 x 45	W250 x 67
W10 x 39	W250 x 58
W10 x 33	W250 x 49.1
W10 x 30	W250 x 44.8
W10 x 26	W250 x 38.5
W10 x 22	W250 x 32.7
W8 x 67	W200 x 100
W8 x 58	W200 x 86
W8 x 48	W200 x 71
W8 x 40	W200 x 59
W8 x 35	W200 x 52
W8 x 31	W200 x 46.1
W8 x 28	W200 x 41.7
W8 x 24	W200 x 35.9
W8x21	W200x31.3
W8x18	W200x26.6
W6x25	W150x37.1
W6x20	W150x29.8
W6x15	W150x22.5
HP18 x 204	HP460 x 304
HP18 x 181	HP460 x 269
HP18 x 157	HP460 x 234
HP18 x 135	HP460 x 202
HP16 x 183	HP410 x 272
HP16 x 162	HP410 x 242
HP16 x 141	HP410 x 211
HP16 x 121	HP410 x 181
HP16 x 101	HP410 x 151
HP16 x 88	HP410 x 131
HP14 x 117	HP360 x 174
HP14 x 102	HP360 x 152
HP14 x 89	HP360 x 132
HP14 x 73	HP360 x 108
HP12 x 89**	HP310 x 132**
HP12 x 84	HP310 x 125
HP12 x 74	HP310 x 110
HP12 x 63	HP310 x 93
HP12 x 53	HP310 x 79
HP10 x 57	HP250 x 85
HP10 x 42	HP250 x 62
HP8 x 36	HP200 x 53

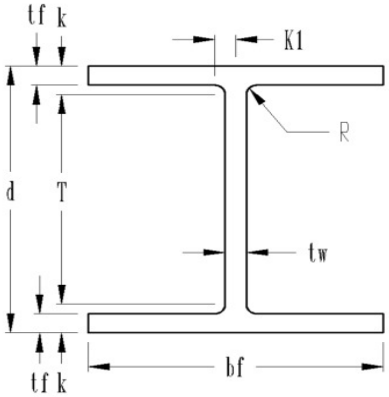
A6 Section Size	A6M Section Size (metric)
S24 x 121	S610 x 180
S24 x 106	S610 x 158
S24 x 100	S610 x 149
S24 x 90	S610 x 134
S24 x 80	S610 x 119
S20 x 96	S510 x 143
S20 x 86	S510 x 128
S20 x 75	S510 x 112
S20 x 66	S510 x 98
S18 x 70	S460 x 104
S18 x 54.7	S460 x 81.4
S15 x 50	S380 x 74
S15 x 42.9	S380 x 64
S12 x 50	S310 x 74
S12 x 40.8	S310 x 60.7
S12 x 35	S310 x 52
S12 x 31.8	S310 x 47.3
L10 x 10 x 1-1/4	L254 x 254 x 31.8
L10 x 10 x 1-1/8	L254 x 254 x 28.6
L10 x 10 x 1	L254 x 254 x 25.4
L10 x 10 x 7/8	L254 x 254 x 22.2
L10 x 10 x 3/4	L254 x 254 x 19.1
L8 x 8 x 1-1/8	L203 x 203 x 28.6
L8 x 8 x 1	L203 x 203 x 25.4
L8 x 8 x 7/8	L203 x 203 x 22.2
L8 x 8 x 3/4	L203 x 203 x 19.0
L8 x 8 x 5/8	L203 x 203 x 15.9
L8 x 8 x 9/16	L203 x 203 x 14.3
L8 x 8 x 1/2	L203 x 203 x 12.7
L8 x 6 x 1	L203 x 152 x 25.4
L8 x 6 x 7/8	L203 x 152 x 22.2
L8 x 6 x 3/4	L203 x 152 x 19.0
L8 x 6 x 5/8	L203 x 152 x 15.9
L8 x 6 x 9/16	L203 x 152 x 14.3
L8 x 6 x 1/2	L203 x 152 x 12.7
L8 x 4 x 1	L203 x 102 x 25.4
L8 x 4 x 7/8	L203 x 102 x 22.2
L8 x 4 x 3/4	L203 x 102 x 19.0
L8 x 4 x 5/8	L203 x 102 x 15.9
L8 x 4 x 9/16	L203 x 102 x 14.3
L8 x 4 x 1/2	L203 x 102 x 12.7

A6 Section Size	A6M Section Size (metric)
C15 x 50.0	C380 x 74
C15 x 40.0	C380 x 60
C15 x 33.9	C380 x 50.4
C12 x 30.0	C310 x 45
C12 x 25.0	C310 x 37
C12 x 20.7	C310 x 30.8
MC18 x 58.0	MC460 x 86
MC18x 51.9	MC460 x 77.2
MC18x 45.8	MC460 x 68.2
MC18 x 42.7	MC460 x 63.5
MC13 x 50.0	MC330 x 74
MC13 x40.0	MC330 x 60
MC13 x 35.0	MC330 x 52
MC13 x 31.8	MC330 x 47.3
MC12 x 50.0	MC310 x 74
MC12 x 45.0	MC310 x 67
MC12 x 40.0	MC310 x 60
MC12 x 35.0	MC310 x 52
MC12 x 31.0	MC310 x 46

** Non ASTM A6 Section

Nucor-Yamato Steel

W44

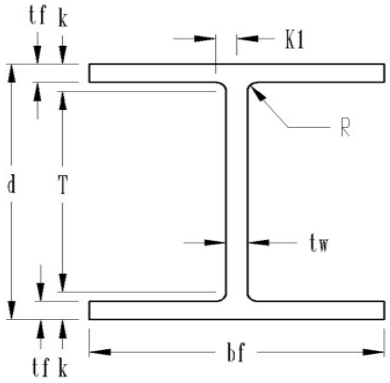


Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange		Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
					Width	Thick-ness					X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	Inch x lbs/ft	$Inch^2$	Inch	Inch	Inch	Inch	In	In	In	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^3$	$Inch^3$
44 x 16	W44 x 335	98.7	44.02	1.025	15.945	1.770	37.993	3.014	1.694	1.18	31100	1410	17.8	1200	150	3.49	1620	236
	W44 x 290	85.8	43.62	0.865	15.825	1.575	37.983	2.819	1.614	1.18	27000	1240	17.8	1040	132	3.49	1410	205
	W44 x 262	77.2	43.31	0.785	15.750	1.415	37.993	2.659	1.574	1.18	24100	1110	17.7	923	117	3.47	1270	182
	W44 x 230	67.9	42.91	0.710	15.750	1.220	37.983	2.464	1.536	1.18	20800	971	17.5	796	101	3.43	1100	157

Nucor-Yamato Steel

W1100

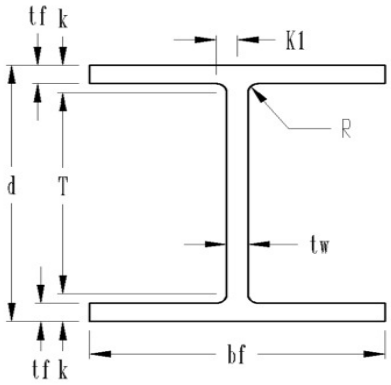
METRIC



Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance T	Distance k	Distance k_1	Fillet Radius	Elastic Properties X - X I_x	Elastic Properties X - X S_x	Elastic Properties X - X r_x	Elastic Properties Y - Y I_y	Elastic Properties Y - Y S_y	Elastic Properties Y - Y r_y	Plastic Modulus Z_x	Plastic Modulus Z_y
	mm x kg/m	A mm^2	d mm	t_w mm	b_f mm	t_f mm	T mm	k mm	k_1 mm	R mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^3\ mm^3$	$10^3\ mm^3$
1100 x 400	W1100 x 499	63 500	1 118	26.0	405	45.0	965	77	43	30	12 945	23 106	452	499	2 458	88.6	26 547	3 867
	W1100 x 433	55 100	1 108	22.0	402	40.0	965	72	41	30	11 238	20 320	452	433	2 163	88.6	23 106	3 359
	W1100 x 390	49 700	1 100	20.0	400	36.0	965	68	40	30	10 031	18 190	450	384	1 917	88.1	20 811	2 982
	W1100 x 343	43 600	1 090	18.0	400	31.0	965	63	39	30	8 658	15 912	445	331.3	1 655	87.1	18 026	2 573

Nucor-Yamato Steel

W40

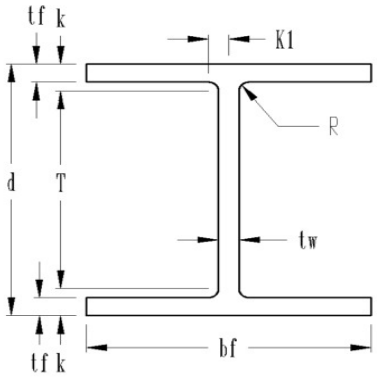


Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange		Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
					Width	Thick-ness					X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	Inch x lbs/ft	$Inch^2$	Inch	Inch	Inch	Inch	In	In	In	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^3$	$Inch^3$
40 x 16	W40 x 431	126.7	41.26	1.340	16.220	2.360	34.053	3.604	1.851	1.18	34800	1690	16.6	1690	208	3.65	1960	328
	W40 x 397	117.0	40.95	1.220	16.120	2.200	34.063	3.444	1.791	1.18	32000	1560	16.6	1540	191	3.64	1800	300
	W40 x 372	109.4	40.63	1.160	16.065	2.045	34.053	3.289	1.761	1.18	29600	1460	16.5	1420	177	3.60	1680	277
	W40 x 362	107.0	40.55	1.120	16.020	2.010	34.043	3.254	1.741	1.18	28900	1420	16.5	1380	173	3.60	1640	270
	W40 x 324	95.3	40.16	1.000	15.910	1.810	34.053	3.054	1.681	1.18	25600	1280	16.4	1220	153	3.58	1460	239
	W40 x 297	87.4	39.84	0.930	15.825	1.650	34.053	2.894	1.646	1.18	23200	1170	16.3	1090	138	3.54	1330	215
	W40 x 277	81.3	39.69	0.830	15.830	1.575	34.053	2.819	1.596	1.18	21900	1100	16.4	1040	132	3.58	1250	204
	W40 x 249	73.3	39.38	0.750	15.750	1.420	34.053	2.664	1.556	1.18	19600	993	16.3	926	118	3.55	1120	182
	W40 x 215	63.3	38.98	0.650	15.750	1.220	34.053	2.464	1.506	1.18	16700	859	16.2	796	101	3.54	964	156
	W40 x 199	58.4	38.67	0.650	15.750	1.065	34.053	2.309	1.506	1.18	14900	770	16.0	695	88.2	3.45	869	137
40 x 12	W40 x 327	95.9	40.79	1.180	12.130	2.130	34.043	3.374	1.771	1.18	24500	1200	16.0	640	105	2.58	1410	170
	W40 x 294	86.2	40.39	1.060	12.010	1.930	34.043	3.174	1.711	1.18	21900	1080	15.9	562	93.5	2.55	1270	150
	W40 x 278	81.9	40.16	1.025	11.970	1.810	34.055	3.053	1.693	1.18	20500	1020	15.8	521	87.1	2.52	1190	140
	W40 x 264	77.6	40.00	0.960	11.930	1.730	34.053	2.974	1.661	1.18	19400	971	15.8	493	82.6	2.52	1130	132
	W40 x 235	68.9	39.69	0.830	11.890	1.575	34.053	2.819	1.596	1.18	17400	875	15.9	444	74.6	2.54	1010	118
	W40 x 211	62.0	39.37	0.750	11.810	1.415	34.053	2.659	1.556	1.18	15500	786	15.8	390	66.1	2.51	906	105
	W40 x 183	53.7	38.98	0.650	11.810	1.200	34.093	2.444	1.506	1.18	13200	675	15.7	331	56.0	2.49	774	88.3
	W40 x 167	49.1	38.59	0.650	11.810	1.025	34.053	2.269	1.506	1.18	11600	600	15.3	283	47.9	2.40	693	76.0
	W40 x 149	43.8	38.20	0.630	11.810	0.830	34.053	2.074	1.496	1.18	9800	513	15.0	229	38.8	2.29	598	62.2

Nucor-Yamato Steel

W1000

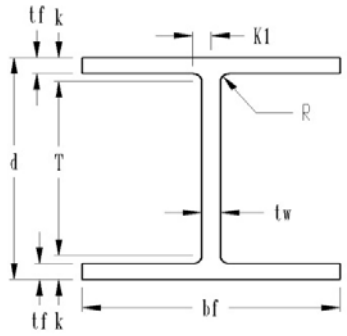
METRIC



Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance T	Distance k	Distance k_1	Fillet Radius	Elastic Properties X - X I_x	Elastic Properties X - X S_x	Elastic Properties X - X r_x	Elastic Properties Y - Y I_y	Elastic Properties Y - Y S_y	Elastic Properties Y - Y r_y	Plastic Modulus Z_x	Plastic Modulus Z_y
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	mm x kg/m	mm^2	mm	mm	mm	mm	mm	mm	mm	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^3\ mm^3$	$10^3\ mm^3$
1000 x 400	W1000 x 642	81 800	1 048	34.0	412	60.0	865	92	47	30	14 485	27 694	422	703	3 408	92.7	32 119	5 375
	W1000 x 591	75 300	1 040	31.0	409	55.9	865	87	46	30	13 319	25 564	422	641	3 130	92.5	29 497	4 916
	W1000 x 554	70 600	1 032	29.5	408	52.0	865	84	45	30	12 320	23 925	419	591	2 900	91.4	27 530	4 539
	W1000 x 539	68 700	1 030	28.4	407	51.1	865	83	44	30	12 029	23 270	419	574	2 835	91.4	26 875	4 424
	W1000 x 483	61 500	1 020	25.4	404	46.0	865	78	43	30	10 656	20 975	417	508	2 507	90.9	23 925	3 916
	W1000 x 443	56 400	1 012	23.6	402	41.9	865	73	42	30	9 657	19 173	414	454	2 261	89.9	21 795	3 523
	W1000 x 412	52 500	1 008	21.1	402	40.0	865	72	41	30	9 115	18 026	417	433	2 163	90.9	20 484	3 343
	W1000 x 371	47 300	1 000	19.0	400	36.1	865	68	40	30	8 158	16 272	414	385	1 934	90.2	18 353	2 982
	W1000 x 321	40 800	990	16.5	400	31.0	865	63	38	30	6 951	14 076	411	331	1 655	89.9	15 797	2 556
	W1000 x 296	37 700	982	16.5	400	27.1	865	59	38	30	6 202	12 618	406	289	1 445	87.6	14 240	2 245
1000 x 300	W1000 x 486	61 900	1 036	30.0	308	54.1	865	86	45	30	10 198	19 664	406	266	1 721	65.5	23 106	2 786
	W1000 x 438	55 600	1 026	26.9	305	49.0	865	81	43	30	9 115	17 698	404	234	15 322	64.8	20 811	2 458
	W1000 x 415	52 800	1 020	26.0	304	46.0	865	78	43	30	8 533	16 715	401	217	1 427	64.0	19 501	2 294
	W1000 x 393	50 100	1 016	24.4	303	43.9	865	75	42	30	8 075	15 912	401	205	1 354	64.0	18 517	2 163
	W1000 x 350	44 600	1 008	21.1	302	40.0	865	72	41	30	7 242	14 339	404	185	1 222	64.5	16 551	1 934
	W1000 x 314	40 000	1 000	19.1	300	35.9	865	67	40	30	6 452	12 880	401	162	1 083	63.8	14 847	1 721
	W1000 x 272	34 600	990	16.5	300	31.0	865	63	38	30	5 494	11 061	399	138	918	63.2	12 684	1 447
	W1000 x 249	31 700	980	16.5	300	26.0	865	58	38	30	4 828	9 832	389	118	785	61.0	11 356	1 245
	W1000 x 222	28 200	970	16.0	300	21.1	865	53	38	30	4 079	8 407	381	95.3	636	58.2	9 799	1 019

Nucor-Yamato Steel

W36

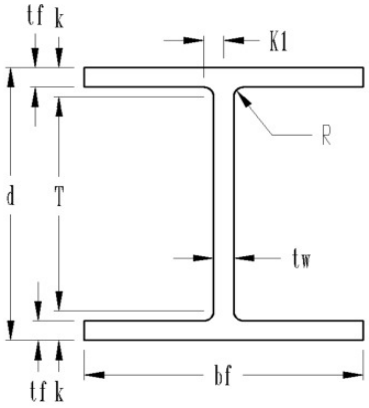


Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	Inch x lbs/ft	$Inch^2$	Inch	Inch	Inch	Inch	In	In	In	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^3$	$Inch^3$
36 x 16-1/2	W36 x 529	155.6	39.79	1.610	17.220	2.910	31.485	4.153	1.985	1.18	39600	1990	16.0	2490	289	4.00	2330	454
	W36 x 487	143.2	39.33	1.500	17.105	2.680	31.485	3.923	1.930	1.18	36000	1830	15.8	2250	263	3.96	2130	412
	W36 x 441	129.7	38.85	1.360	16.965	2.440	31.483	3.684	1.861	1.18	32100	1650	15.7	1910	235	3.92	1910	368
	W36 x 395	116.2	38.37	1.220	16.830	2.200	31.483	3.444	1.791	1.18	28500	1490	15.7	1750	208	3.88	1710	325
	W36 x 361	106.1	37.99	1.120	16.730	2.010	31.483	3.254	1.741	1.18	25700	1350	15.6	1570	188	3.85	1550	293
	W36 x 330	97.0	37.67	1.020	16.630	1.850	31.483	3.094	1.691	1.18	23300	1240	15.5	1420	171	3.83	1410	265
	W36 x 302	88.8	37.33	0.945	16.655	1.680	31.483	2.924	1.654	1.18	21100	1130	15.4	1300	156	3.82	1280	241
	W36 x 282	82.9	37.11	0.885	16.595	1.570	31.483	2.814	1.624	1.18	19600	1050	15.4	1200	144	3.80	1190	223
	W36 x 262	77.0	36.85	0.840	16.550	1.440	31.483	2.684	1.601	1.18	17900	972	15.3	1090	132	3.76	1100	204
	W36 x 247	72.5	36.67	0.800	16.510	1.350	31.483	2.594	1.581	1.18	16700	913	15.2	1010	123	3.74	1030	190
36 x 12	W36 x 231	68.0	36.49	0.760	16.470	1.260	31.483	2.504	1.561	1.18	15600	854	15.1	940	114	3.71	963	176
	W36 x 256	75.4	37.43	0.960	12.215	1.730	31.483	2.974	1.661	1.18	16800	895	14.9	528	86.5	2.65	1040	137
	W36 x 232	68.1	37.12	0.870	12.120	1.570	31.493	2.814	1.616	1.18	15000	809	14.8	468	77.2	2.62	936	122
	W36 x 210	61.8	36.69	0.830	12.180	1.360	31.483	2.604	1.596	1.18	13200	719	14.6	411	67.5	2.58	833	107
	W36 x 194	57.0	36.49	0.765	12.115	1.260	31.483	2.504	1.564	1.18	12100	664	14.6	375	61.9	2.56	767	97.7
	W36 x 182	53.6	36.33	0.725	12.075	1.180	31.483	2.424	1.544	1.18	11300	623	14.5	347	57.6	2.55	718	90.7
	W36 x 170	50.0	36.17	0.680	12.030	1.100	31.483	2.344	1.521	1.18	10500	581	14.5	320	53.2	2.53	668	83.8
	W36 x 160	47.0	36.01	0.650	12.000	1.020	31.483	2.264	1.506	1.18	9760	542	14.4	295	49.1	2.50	624	77.3
	W36 x 150	44.2	35.85	0.625	11.975	0.940	31.483	2.184	1.494	1.18	9040	504	14.3	270	45.1	2.47	581	70.9
	W36 x 135	39.7	35.55	0.600	11.950	0.790	31.483	2.034	1.481	1.18	7800	439	14.0	225	37.7	2.38	509	59.7

Nucor-Yamato Steel

W920

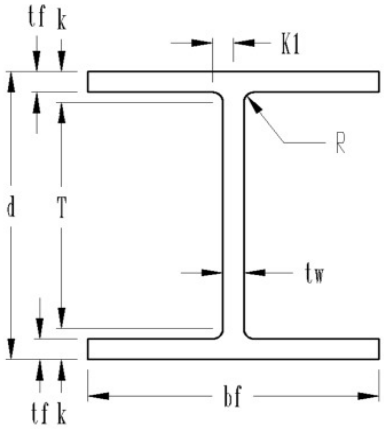
METRIC



Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	mm x kg/m	mm^2	mm	mm	mm	mm	mm	mm	mm	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^3\ mm^3$	$10^3\ mm^3$
920 x 420	W920 x 787	100 400	1 011	40.9	437	73.9	800	105	50	30	16 483	32 610	406	1036	4 736	101.6	38 182	7 440
	W920 x 725	92 400	999	38.1	434	68.1	800	100	49	30	14 984	29 988	401	937	4 310	100.6	34 904	6 751
	W920 x 656	83 700	987	34.5	431	62.0	800	94	47	30	13 361	27 039	399	795	3 851	99.6	31 299	6 030
	W920 x 588	75 000	975	31.0	427	55.9	800	87	46	30	11 863	24 417	399	728	3 408	98.6	28 022	5 326
	W920 x 537	68 500	965	28.4	425	51.1	800	83	44	30	10 697	22 122	396	653	3 081	97.8	25 400	4 801
	W920 x 491	62 600	957	25.9	422	47.0	800	79	43	30	9 698	20 320	394	591	2 802	97.3	23 106	4 343
	W920 x 449	57 600	948	24.0	423	42.7	800	74	42	30	8 782	18 517	391	541	2 556	97.0	20 975	3 949
	W920 x 420	53 500	943	22.5	422	39.9	800	71	41	30	8 158	17 206	391	499	2 360	96.5	19 501	3 654
	W920 x 390	49 700	936	21.3	420	36.6	800	68	41	30	7 451	15 928	389	454	2 163	95.5	18 026	3 343
	W920 x 368	46 800	931	20.3	419	34.3	799	66	40	30	6 951	14 961	386	420	2 016	95.0	16 879	3 114
920 x 300	W920 x 344	43 900	927	19.3	418	32.0	800	64	40	30	6 493	13 994	384	391	1 868	94.2	15 781	2 884
	W920 x 381	48 600	951	24.4	310	43.9	800	75	42	30	6 993	14 666	378	220	1 417	67.3	17 042	2 245
	W920 x 345	44 000	943	22.1	308	39.9	800	71	41	30	6 243	13 257	376	195	1 265	66.5	15 338	1 999
	W920 x 313	39 900	932	21.1	309	34.5	800	66	41	30	5 494	11 782	371	171	1 106	65.5	13 650	1 753
	W920 x 289	36 800	927	19.4	308	32.0	800	64	40	30	5 036	10 881	371	156	1 014	65.0	12 569	1 601
	W920 x 271	34 600	923	18.4	307	30.0	800	62	39	30	4 703	10 209	368	144	944	64.8	11 766	1 486
	W920 x 253	32 300	919	17.3	306	27.9	800	59	39	30	4 370	9 521	368	133	872	64.3	10 947	1 373
	W920 x 238	30 300	915	16.5	305	25.9	800	57	38	30	4 062	8 882	366	123	805	63.5	10 225	1 267

Nucor-Yamato Steel

W33

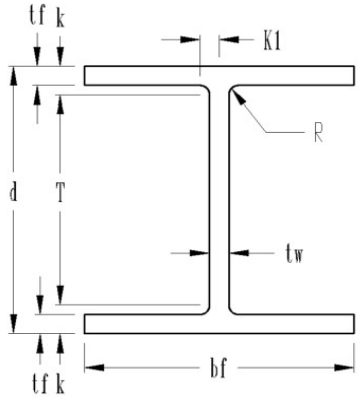


Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	Inch x lbs/ft	$Inch^2$	Inch	Inch	Inch	Inch	In	In	In	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^3$	$Inch^3$
33 x 15-3/4	W33 x 387	114.0	35.95	1.260	16.200	2.280	28.903	3.524	1.811	1.18	24300	1350	14.6	1620	200	3.77	1560	312
	W33 x 354	104.1	35.55	1.160	16.100	2.090	28.883	3.334	1.761	1.18	22000	1240	14.5	1460	181	3.74	1420	282
	W33 x 318	93.5	35.16	1.040	15.985	1.890	28.893	3.134	1.701	1.18	19500	1110	14.5	1290	161	3.71	1270	250
	W33 x 291	85.6	34.84	0.960	15.905	1.730	28.893	2.974	1.661	1.18	17700	1020	14.4	1160	146	3.68	1160	226
	W33 x 263	77.4	34.53	0.870	15.805	1.570	28.903	2.814	1.616	1.18	15900	919	14.3	1040	131	3.66	1040	202
	W33 x 241	70.9	34.18	0.830	15.860	1.400	28.893	2.644	1.596	1.18	14200	831	14.1	933	118	3.62	940	182
	W33 x 221	65.0	33.93	0.775	15.805	1.275	28.893	2.519	1.569	1.18	12900	759	14.1	840	106	3.59	857	164
	W33 x 201	59.1	33.68	0.715	15.745	1.150	28.893	2.394	1.539	1.18	11600	686	14.0	749	95.2	3.56	773	147
33 x 11-1/2	W33 x 169	49.5	33.82	0.670	11.500	1.220	28.893	2.464	1.516	1.18	9290	549	13.7	310	53.9	2.50	629	84.4
	W33 x 152	44.7	33.49	0.635	11.565	1.055	28.893	2.299	1.499	1.18	8160	487	13.5	273	47.2	2.47	559	73.9
	W33 x 141	41.6	33.30	0.605	11.535	0.960	28.893	2.204	1.484	1.18	7450	448	13.4	246	42.7	2.43	514	66.9
	W33 x 130	38.3	33.09	0.580	11.510	0.855	28.893	2.099	1.471	1.18	6710	406	13.2	218	37.9	2.39	467	59.5
	W33 x 118	34.7	32.86	0.550	11.480	0.740	28.893	1.984	1.456	1.18	5900	359	13.0	187	32.6	2.32	415	51.3

Nucor-Yamato Steel

W840

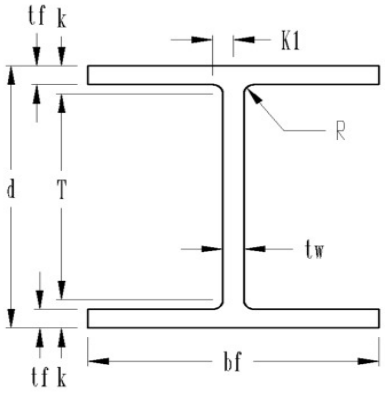
METRIC



Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance T	Distance k	Distance k_1	Fillet Radius	Elastic Properties X - X I_x	Elastic Properties X - X S_x	Elastic Properties X - X r_x	Elastic Properties Y - Y I_y	Elastic Properties Y - Y S_y	Elastic Properties Y - Y r_y	Plastic Modulus Z_x	Plastic Modulus Z_y
	mm x kg/m	A mm^2	d mm	t_w mm	b_f mm	t_f mm	T mm	k mm	k_1 mm	R mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^3\ mm^3$	$10^3\ mm^3$
840 x 400	W840 x 576	73 500	913	32.0	411	57.9	734	89	46	30	10 114	22 122	371	674	3 277	95.8	25 564	5 113
	W840 x 527	67 200	903	29.5	409	53.1	734	85	45	30	9 157	20 320	368	608	2 966	95.0	23 270	4 621
	W840 x 473	60 300	893	26.4	406	48.0	734	80	43	30	8 117	18 190	368	537	2 638	94.2	20 811	4 097
	W840 x 433	55 200	885	24.4	404	43.9	734	75	42	30	7 367	16 715	366	483	2 393	93.5	19 009	3 703
	W840 x 392	49 900	877	22.1	401	39.9	734	71	41	30	6 618	15 060	363	433	2 147	93.0	17 042	3 310
	W840 x 359	45 700	868	21.1	403	35.6	734	67	41	30	5 910	13 618	358	388	1 934	91.9	15 404	2 982
	W840 x 329	41 900	862	19.7	401	32.4	734	64	40	30	5 369	12 438	358	350	1 737	91.2	14 044	2 687
	W840 x 299	38 100	855	18.2	400	29.2	734	61	39	30	4 828	11 241	356	312	1 560	90.4	12 667	2 409
840 x 290	W840 x 251	31 900	859	17.0	292	31.0	734	63	39	30	3 867	8 996	348	129	883	63.5	10 307	1 383
	W840 x 226	28 800	851	16.1	294	26.8	734	58	38	30	3 396	7 980	343	114	773	62.7	9 160	1 211
	W840 x 210	26 800	846	15.4	293	24.4	734	56	38	30	3 101	7 341	340	102	700	61.7	8 423	1 096
	W840 x 193	24 700	840	14.7	292	21.7	734	53	37	30	2 793	6 653	335	90.7	621	60.7	7 653	975
	W840 x 176	22 400	835	14.0	292	18.8	734	50	37	30	2 456	5 883	330	77.8	534	58.9	6 801	841

Nucor-Yamato Steel

W30

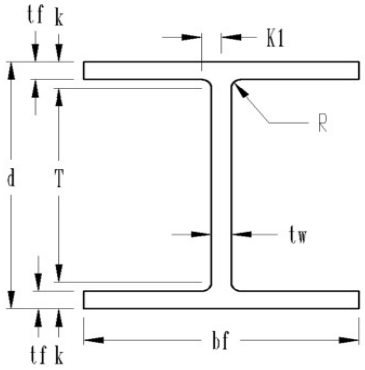


Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	Inch x lbs/ft	$Inch^2$	Inch	Inch	Inch	Inch	In	In	In	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^3$	$Inch^3$
30 x 15	W30 x 391	115.0	33.19	1.360	15.590	2.440	25.823	3.684	1.861	1.18	20700	1250	13.4	1550	198	3.67	1450	310
	W30 x 357	104.8	32.80	1.240	15.470	2.240	25.833	3.484	1.801	1.18	18700	1140	13.3	1390	179	3.64	1320	279
	W30 x 326	95.7	32.40	1.140	15.370	2.050	25.813	3.294	1.751	1.18	16800	1040	13.2	1240	162	3.60	1190	252
	W30 x 292	85.7	32.01	1.020	15.255	1.850	25.823	3.094	1.691	1.18	14900	930	13.2	1100	144	3.58	1060	223
	W30 x 261	76.7	31.61	0.930	15.155	1.650	25.823	2.894	1.646	1.18	13100	829	13.1	959	127	3.53	943	196
	W30 x 235	69.0	31.30	0.830	15.055	1.500	25.813	2.744	1.596	1.18	11700	748	13.0	855	114	3.51	847	175
	W30 x 211	62.0	30.94	0.775	15.105	1.315	25.823	2.559	1.569	1.18	10300	665	12.9	757	100	3.49	751	155
	W30 x 191	56.1	30.68	0.710	15.040	1.185	25.823	2.429	1.536	1.18	9200	600	12.8	673	89.5	3.46	675	138
	W30 x 173	50.8	30.44	0.655	14.985	1.065	25.823	2.309	1.509	1.18	8230	541	12.7	598	79.8	3.42	607	123
30 x 10-1/2	W30 x 148	43.5	30.67	0.650	10.480	1.180	25.823	2.424	1.506	1.18	6680	436	12.4	227	43.3	2.28	500	68.0
	W30 x 132	38.9	30.31	0.615	10.545	1.000	25.823	2.244	1.489	1.18	5770	380	12.2	196	37.2	2.25	437	58.4
	W30 x 124	36.5	30.17	0.585	10.515	0.930	25.823	2.174	1.474	1.18	5360	355	12.1	181	34.4	2.23	408	54.0
	W30 x 116	34.2	30.01	0.565	10.495	0.850	25.823	2.094	1.464	1.18	4930	329	12.0	164	31.3	2.19	378	49.2
	W30 x 108	31.7	29.83	0.545	10.475	0.760	25.823	2.004	1.454	1.18	4470	299	11.9	146	27.9	2.15	346	43.9
	W30 x 99	29.1	29.65	0.520	10.450	0.670	25.823	1.914	1.441	1.18	3990	269	11.7	128	24.5	2.10	312	38.6
	W30 x 90	26.4	29.53	0.470	10.400	0.610	25.823	1.854	1.416	1.18	3610	245	11.7	115	22.1	2.09	283	34.7

Nucor-Yamato Steel

W760

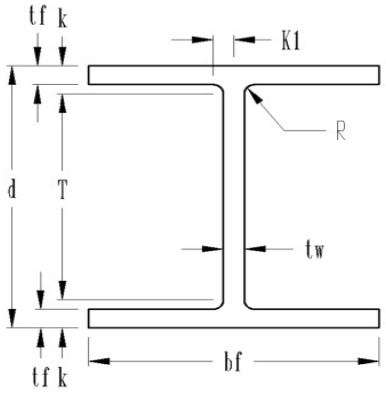
METRIC



Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	mm x kg/m	mm^2	mm	mm	mm	mm	mm	mm	mm	mm	10^6 mm^4	10^3 mm^3	mm	10^6 mm^4	10^3 mm^3	mm	10^3 mm^3	10^3 mm^3
760 x 380	W760 x 582	74 200	843	34.5	396	62.0	656	94	47	30	8 616	20 484	340	645	3 245	93.2	23 761	5 080
	W760 x 531	67 600	833	31.5	393	56.9	656	88	46	30	7 784	18 681	338	579	2 933	92.5	21 631	4 572
	W760 x 484	61 700	823	29.0	390	52.1	656	84	45	30	6 993	17 042	335	516	2 655	91.4	19 501	4 130
	W760 x 434	55 300	813	25.9	387	47.0	656	79	43	30	6 202	15 240	335	458	2 360	90.9	17 370	3 654
	W760 x 389	49 500	803	23.6	385	41.9	656	73	42	30	5 453	13 585	333	399	2 081	89.7	15 453	3 212
	W760 x 350	44 500	795	21.1	382	38.1	656	70	41	30	4 870	12 257	330	356	1 868	89.2	13 880	2 868
	W760 x 314	40 000	786	19.7	384	33.4	656	65	40	30	4 287	10 897	328	315	1 639	88.6	12 307	2 540
	W760 x 284	36 200	779	18.0	382	30.1	656	62	39	30	3 829	9 832	325	280	1 467	87.9	11 061	2 261
	W760 x 257	32 800	773	16.6	381	27.1	656	59	38	30	3 426	8 865	323	249	1 308	86.9	9 947	2 016
760 x 270	W760 x 220	28 100	779	16.5	266	30.0	656	62	38	30	2 780	7 145	315	94.5	710	57.9	8 194	1 114
	W760 x 196	25 100	770	15.6	268	25.4	656	57	38	30	2 402	6 227	310	81.6	610	57.2	7 161	957
	W760 x 185	23 500	766	14.9	267	23.6	656	55	37	30	2 231	5 817	307	75.3	564	56.6	6 686	885
	W760 x 173	22 100	762	14.4	267	21.6	656	53	37	30	2 052	5 391	305	68.3	513	55.6	6 194	806
	W760 x 161	20 500	758	13.8	266	19.3	656	51	37	30	1 861	4 900	302	60.8	457	54.6	5 670	719
	W760 x 147	18 800	753	13.2	265	17.0	656	49	37	30	1 661	4 408	297	53.3	401	53.3	5 113	633
	W760 x 134	17 000	750	11.9	264	15.5	656	47	36	30	1 503	4 015	297	47.9	362	53.1	4 638	569

Nucor-Yamato Steel

W27

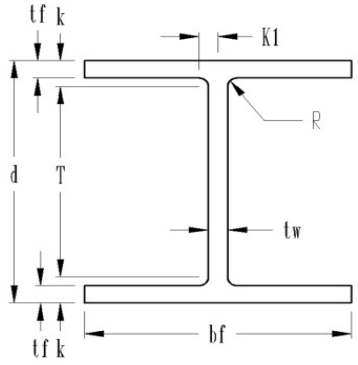


Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	Inch x lbs/ft	$Inch^2$	Inch	Inch	Inch	Inch	In	In	In	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^3$	$Inch^3$
27 x 14	W27 x 368	108.1	30.39	1.380	14.665	2.480	22.943	3.724	1.871	1.18	16200	1060	12.2	1310	179	3.48	1240	279
	W27 x 336	98.7	30.00	1.260	14.550	2.280	22.953	3.524	1.811	1.18	14600	972	12.1	1180	162	3.45	1130	252
	W27 x 307	90.2	29.61	1.160	14.445	2.090	22.943	3.334	1.761	1.18	13100	887	12.0	1050	146	3.41	1030	227
	W27 x 281	82.6	29.29	1.060	14.350	1.930	22.943	3.174	1.711	1.18	11900	814	12.0	953	133	3.39	936	206
	W27 x 258	75.7	28.98	0.980	14.270	1.770	22.953	3.014	1.671	1.18	10800	745	11.9	859	120	3.36	852	187
	W27 x 235	69.1	28.66	0.910	14.190	1.610	22.953	2.854	1.636	1.18	9700	677	11.8	769	108	3.33	772	168
	W27 x 217	63.8	28.43	0.830	14.115	1.500	22.943	2.744	1.596	1.18	8910	627	11.8	704	100.0	3.32	711	154
	W27 x 194	57.0	28.11	0.750	14.035	1.340	22.943	2.584	1.556	1.18	7860	559	11.7	619	88.1	3.29	631	136
	W27 x 178	52.3	27.81	0.725	14.085	1.190	22.943	2.434	1.544	1.18	7020	505	11.6	555	78.8	3.25	570	122
	W27 x 161	47.4	27.59	0.660	14.020	1.080	22.943	2.324	1.511	1.18	6310	458	11.5	497	70.9	3.23	515	109
	W27 x 146	42.9	27.38	0.605	13.965	0.975	22.943	2.219	1.484	1.18	5660	414	11.5	443	63.5	3.20	464	97.7
27 x 10	W27 x 129	37.8	27.63	0.610	10.010	1.100	22.943	2.344	1.486	1.18	4760	345	11.2	184	36.8	2.21	395	57.6
	W27 x 114	33.5	27.29	0.570	10.070	0.930	22.943	2.174	1.466	1.18	4080	299	11.0	159	31.5	2.18	343	49.3
	W27 x 102	30.0	27.09	0.515	10.015	0.830	22.943	2.074	1.439	1.18	3620	267	11.0	139	27.8	2.15	305	43.4
	W27 x 94	27.7	26.92	0.490	9.990	0.745	22.943	1.989	1.426	1.18	3270	243	10.9	124	24.8	2.12	278	38.8
	W27 x 84	24.8	26.71	0.460	9.960	0.640	22.943	1.884	1.411	1.18	2850	213	10.7	106	21.2	2.07	244	33.2

Nucor-Yamato Steel

W690

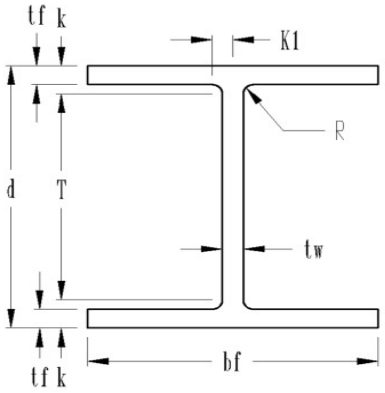
METRIC



Prime Section Group	Section Size	Area	Depth	Web Thickness	Flange Width	Flange Thickness	Distance T	Distance k	Distance k_1	Fillet Radius	Elastic Properties X-X I_x	Elastic Properties X-X S_x	Elastic Properties X-X r_x	Elastic Properties Y-Y I_y	Elastic Properties Y-Y S_y	Elastic Properties Y-Y r_y	Plastic Modulus Z_x	Plastic Modulus Z_y
	mm x kg/m	A mm^2	d mm	t_w mm	b_f mm	t_f mm	T mm	k mm	k_1 mm	R mm	I_x $10^6\ mm^4$	S_x $10^3\ mm^3$	r_x mm	I_y $10^6\ mm^4$	S_y $10^3\ mm^3$	r_y mm	Z_x $10^3\ mm^3$	Z_y $10^3\ mm^3$
690 x 360	W690 x 548	69 800	772	35.1	372	63.0	583	95	48	30	6 743	17 370	310	545	2 933	88.4	20 320	4 572
	W690 x 500	63 700	762	32.0	369	57.9	583	89	46	30	6 077	15 928	307	491	2 655	87.6	18 517	4 130
	W690 x 457	58 200	752	29.5	367	53.1	583	85	45	30	5 453	14 535	305	437	2 393	86.6	16 879	3 720
	W690 x 419	53 300	744	26.9	364	49.0	583	81	43	30	4 953	13 339	305	397	2 179	86.1	15 338	3 376
	W690 x 384	48 900	736	24.9	362	45.0	583	77	42	30	4 495	12 208	302	358	1 966	85.3	13 962	3 064
	W690 x 350	44 600	728	23.1	360	40.9	583	72	42	30	4 037	11 094	300	320	1 770	84.6	12 651	2 753
	W690 x 323	41 100	722	21.1	359	38.1	583	70	41	30	3 709	10 275	300	293	1 639	84.3	11 651	2 524
	W690 x 289	36 800	714	19.0	356	34.0	583	66	40	30	3 272	9 160	297	258	1 444	83.6	10 340	2 229
	W690 x 265	33 700	706	18.4	358	30.2	583	62	39	30	2 922	8 275	295	231	1 291	82.6	9 341	1 999
	W690 x 240	30 600	701	16.8	356	27.4	583	59	38	30	2 626	7 505	292	207	1 162	82.0	8 439	1 786
	W690 x 217	27 700	695	15.4	355	24.8	582	56	38	30	2 356	6 784	292	184	1 041	81.3	7 604	1 601
690 x 250	690 x 192	24 400	702	15.5	254	27.9	583	59	38	30	1 981	5 654	284	76.6	603	56.1	6 473	944
	690 x 170	21 600	693	14.5	256	23.6	583	55	37	30	1 698	4 900	279	66.2	516	55.4	5 621	808
	690 x 152	19 400	688	13.1	254	21.1	583	53	37	30	1 507	4 375	279	57.9	456	54.6	4 998	711
	690 x 140	17 900	684	12.4	254	18.9	583	50	36	30	1 361	3 982	277	51.6	406	53.8	4 556	636
	690 x 125	16 000	678	11.7	253	16.3	582	48	36	30	1 186	3 490	272	44.1	347	52.6	3 998	544

Nucor-Yamato Steel

W24

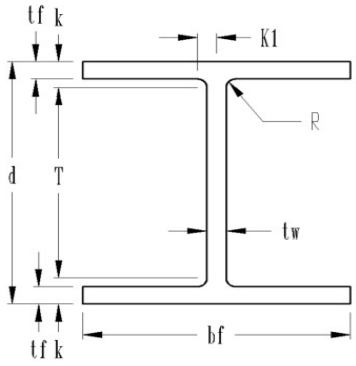


Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	Inch x lbs/ft	$Inch^2$	Inch	Inch	Inch	Inch	In	In	In	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^3$	$Inch^3$
24 x 12-3/4	W24 x 370	108.0	27.99	1.520	13.660	2.720	20.063	3.964	1.941	1.18	13400	957	11.1	1160	170	3.27	1130	267
	W24 x 335	98.4	27.52	1.380	13.520	2.480	20.073	3.724	1.871	1.18	11900	864	11.0	1030	152	3.23	1020	238
	W24 x 306	89.8	27.13	1.260	13.405	2.280	20.083	3.524	1.811	1.18	10700	789	10.9	919	137	3.20	922	214
	W24 x 279	82.0	26.73	1.160	13.305	2.090	20.063	3.334	1.761	1.18	9600	718	10.8	823	124	3.17	835	193
	W24 x 250	73.5	26.34	1.040	13.185	1.890	20.073	3.134	1.701	1.18	8490	644	10.7	724	110	3.14	744	171
	W24 x 229	67.2	26.02	0.960	13.110	1.730	20.073	2.974	1.661	1.18	7650	588	10.7	651	99.4	3.11	675	154
	W24 x 207	60.7	25.71	0.870	13.010	1.570	20.083	2.814	1.616	1.18	6820	531	10.6	578	88.8	3.08	606	137
	W24 x 192	56.3	25.47	0.810	12.950	1.460	20.063	2.704	1.586	1.18	6260	491	10.5	530	81.8	3.07	559	126
	W24 x 176	51.7	25.24	0.750	12.890	1.340	20.073	2.584	1.556	1.18	5680	450	10.5	479	74.3	3.04	511	115
	W24 x 162	47.7	25.00	0.705	12.955	1.220	20.073	2.464	1.534	1.18	5170	414	10.4	443	68.4	3.05	468	105
	W24 x 146	43.0	24.74	0.650	12.900	1.090	20.073	2.334	1.506	1.18	4580	371	10.3	391	60.5	3.01	418	93.2
	W24 x 131	38.5	24.48	0.605	12.855	0.960	20.073	2.204	1.484	1.18	4020	329	10.2	340	53.0	2.97	370	81.5
	W24 x 117	34.4	24.26	0.550	12.800	0.850	20.073	2.094	1.456	1.18	3540	291	10.1	297	46.5	2.94	327	71.4
	W24 x 104	30.6	24.06	0.500	12.750	0.750	20.073	1.994	1.431	1.18	3100	258	10.1	259	40.7	2.91	289	62.4
24 x 9	W24 x 103	30.3	24.53	0.550	9.000	0.980	20.083	2.224	1.456	1.18	3000	245	10.00	119	26.5	1.99	280	41.5
	W24 x 94	27.7	24.31	0.515	9.065	0.875	20.073	2.119	1.439	1.18	2700	222	9.87	109	24.0	1.98	254	37.5
	W24 x 84	24.7	24.10	0.470	9.020	0.770	20.073	2.014	1.416	1.18	2370	196	9.79	94.4	20.9	1.95	224	32.6
	W24 x 76	22.4	23.92	0.440	8.990	0.680	20.073	1.924	1.401	1.18	2100	176	9.69	82.5	18.4	1.92	200	28.6
	W24 x 68	20.1	23.73	0.415	8.965	0.585	20.073	1.829	1.389	1.18	1830	154	9.55	70.4	15.7	1.87	177	24.5
CSA	W24 x 61	18.0	23.56	0.380	8.930	0.500	20.073	1.744	1.371	1.18	1602	136	9.45	59.6	13.4	1.82	156	20.9
CSA	W24 x 56	16.6	23.48	0.355	8.900	0.460	20.073	1.704	1.359	1.18	1473	126	9.41	54.3	12.2	1.81	144	19.1
24 x 7	W24 x 62	18.2	23.74	0.430	7.040	0.590	20.939	1.401	0.963	0.75	1550	131	9.23	34.5	9.8	1.38	153	15.7
	W24 x 55	16.2	23.57	0.395	7.005	0.505	20.939	1.316	0.946	0.75	1350	114	9.11	29.1	8.30	1.34	134	13.3

Nucor-Yamato Steel

W610

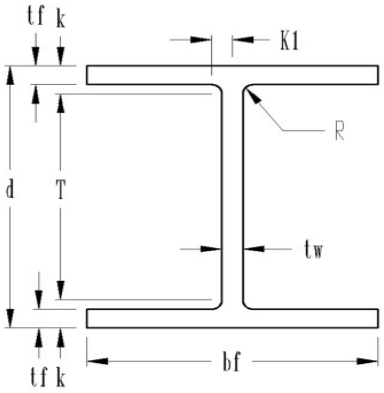
METRIC



Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance T	Distance k	Distance k_1	Fillet Radius R	Elastic Properties X - X I_x	Elastic Properties X - X S_x	Elastic Properties X - X r_x	Elastic Properties Y - Y I_y	Elastic Properties Y - Y S_y	Elastic Properties Y - Y r_y	Plastic Modulus Z_x	Plastic Modulus Z_y
	mm x kg/m	mm^2	mm	mm	mm	mm	mm	mm	mm	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^3\ mm^3$	$10^3\ mm^3$
610 x 320	W610 x 551	70 200	711	38.6	347	69.1	510	101	49	30	5 577	15 682	282	483	2 786	83.1	18 517	4 375
	W610 x 498	63 500	699	35.1	343	63.0	510	94	48	30	4 953	14 158	279	429	2 491	82.0	16 715	3 900
	W610 x 455	57 900	689	32.0	340	57.9	510	89	46	30	4 454	12 929	277	383	2 245	81.3	15 109	3 507
	W610 x 415	52 900	679	29.5	338	53.1	510	85	45	30	3 996	11 766	274	343	2 032	80.5	13 683	3 163
	W610 x 372	47 400	669	26.4	335	48.0	510	80	43	30	3 534	10 553	272	301	1 803	79.8	12 192	2 802
	W610 x 341	43 400	661	24.4	333	43.9	510	75	42	30	3 184	9 636	272	271	1 629	79.0	11 061	2 524
	W610 x 307	39 100	653	22.1	330	39.9	510	71	41	30	2 839	8 701	269	241	1 455	78.2	9 931	2 245
	W610 x 285	36 100	647	20.6	329	37.1	510	69	40	30	2 606	8 046	267	221	1 340	78.0	9 160	2 065
	W610 x 262	33 300	641	19.0	327	34.0	510	66	40	30	2 364	7 374	267	199	1 218	77.2	8 374	1 885
	W610 x 241	30 800	635	17.9	329	31.0	510	63	39	30	2 152	6 784	264	184	1 121	77.5	7 669	1 721
	W610 x 217	27 700	628	16.5	328	27.7	510	59	38	30	1 906	6 080	262	163	991	76.5	6 850	1 527
	W610 x 195	24 800	622	15.4	327	24.4	510	56	38	30	1 673	5 391	259	142	869	75.4	6 063	1 336
	W610 x 174	22 200	616	14.0	325	21.6	510	53	37	30	1 473	4 769	257	124	762	74.7	5 359	1 170
	W610 x 155	19 700	611	12.7	324	19.0	510	51	36	30	1 290	4 228	257	108	667	73.9	4 736	1 023
610 x 230	W610 x 153	19 600	623	14.0	229	24.9	510	56	37	30	1 249	4 015	254	49.5	434	50.5	4 588	680
	W610 x 140	17 900	617	13.1	230	22.2	510	54	37	30	1 124	3 638	251	45.4	393	50.3	4 162	615
	W610 x 125	15 900	612	11.9	229	19.6	510	51	36	30	986	3 212	249	39.3	342	49.5	3 671	534
	W610 x 113	14 500	608	11.2	228	17.3	510	49	36	30	874	2 884	246	34.3	302	48.8	3 277	469
	W610 x 101	13 000	603	10.5	228	14.9	510	46	35	30	762	2 524	243	29.3	257	47.5	2 900	401
CSA	W610 x 91	11 500	598	9.7	227	12.7	510	44	35	30	657	2 200	239	24.8	219	46.5	2 520	342
CSA	W610 x 84	10 600	596	9.0	226	11.7	510	43	35	30	603	2 020	239	22.6	200	46.2	2 320	311
610 x 180	W610 x 92	11 700	603	10.9	179	15.0	532	36	24	19	645	2 147	234	14.4	161	35.1	2 507	257
	W610 x 82	10 500	599	10.0	178	12.8	532	33	24	19	562	1 868	231	12.1	136	34.0	2 196	218

Nucor-Yamato Steel

W21



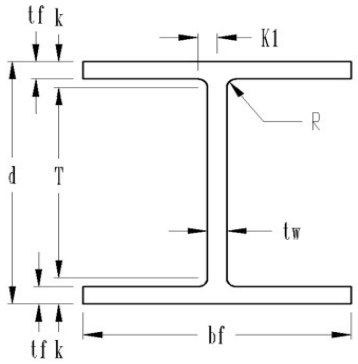
Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	Inch x lbs/ft	Inch^2	Inch	Inch	Inch	Inch	In	In	In	Inch	Inch^4	Inch^3	Inch	Inch^4	Inch^3	Inch	Inch^3	Inch^3
21 x 13	W21 x 275*	81.8	24.13	1.220	12.890	2.190	17.263	3.434	1.791	1.18	7710	639	9.71	786	122	3.10	750	190
	W21 x 248*	73.8	23.74	1.100	12.775	1.990	17.273	3.234	1.731	1.18	6850	577	9.63	695	109	3.07	672	169
21 x 12-1/4	W21 x 223*	66.3	23.35	1.000	12.675	1.790	17.283	3.034	1.681	1.18	6040	517	9.54	610	96.2	3.03	598	150
	W21 x 201	59.2	23.03	0.910	12.575	1.630	17.283	2.874	1.636	1.18	5310	461	9.47	542	86.1	3.02	530	133
	W21 x 182	53.7	22.72	0.830	12.500	1.480	17.273	2.724	1.596	1.18	4730	417	9.40	483	77.2	3.00	476	119
	W21 x 166	48.9	22.48	0.750	12.420	1.360	17.273	2.604	1.556	1.18	4280	380	9.36	435	70.0	2.99	432	108
	W21 x 147	43.2	22.06	0.720	12.510	1.150	17.273	2.394	1.541	1.18	3630	329	9.17	376	60.1	2.95	373	92.6
	W21 x 132	38.8	21.83	0.650	12.440	1.035	17.273	2.279	1.506	1.18	3220	295	9.12	333	53.5	2.93	333	82.3
	W21 x 122	35.9	21.68	0.600	12.390	0.960	17.273	2.204	1.481	1.18	2960	273	9.09	305	49.2	2.92	307	75.6
	W21 x 111	32.7	21.51	0.550	12.340	0.875	17.273	2.119	1.456	1.18	2670	249	9.05	274	44.5	2.90	279	68.2
	W21 x 101	29.8	21.36	0.500	12.290	0.800	17.273	2.044	1.431	1.18	2420	227	9.02	248	40.3	2.89	253	61.7
21 x 8-1/4	W21 x 93	27.3	21.62	0.580	8.420	0.930	18.139	1.741	1.038	0.75	2070	192	8.70	92.9	22.1	1.84	221	34.7
	W21 x 83	24.3	21.43	0.515	8.355	0.835	18.139	1.646	1.006	0.75	1830	171	8.67	81.4	19.5	1.83	196	30.5
	W21 x 73	21.5	21.24	0.455	8.295	0.740	18.139	1.551	0.976	0.75	1600	151	8.64	70.6	17.0	1.81	172	26.6
	W21 x 68	20.0	21.13	0.430	8.270	0.685	18.139	1.496	0.963	0.75	1480	140	8.60	64.7	15.7	1.80	160	24.4
	W21 x 62	18.3	20.99	0.400	8.240	0.615	18.139	1.426	0.948	0.75	1330	127	8.54	57.5	14.0	1.77	144	21.7
	W21 x 55	16.2	20.80	0.375	8.220	0.522	18.135	1.333	0.936	0.75	1140	110	8.40	48.4	11.8	1.73	126	18.4
	W21 x 48	14.1	20.62	0.350	8.140	0.430	18.139	1.241	0.923	0.75	959	93	8.24	38.7	9.52	1.66	107	14.9
21 x 6-1/2	W21 x 57	16.7	21.06	0.405	6.555	0.650	18.139	1.461	0.951	0.75	1170	111	8.36	30.6	9.35	1.35	129	14.8
	W21 x 50	14.7	20.83	0.380	6.530	0.535	18.139	1.346	0.938	0.75	984	94.5	8.18	24.9	7.64	1.30	110	12.2
	W21 x 44	13.0	20.66	0.350	6.500	0.450	18.139	1.261	0.923	0.75	843	81.6	8.06	20.7	6.37	1.26	95.4	10.2

* Non ASTM A6 Sections

Nucor-Yamato Steel

W530

METRIC

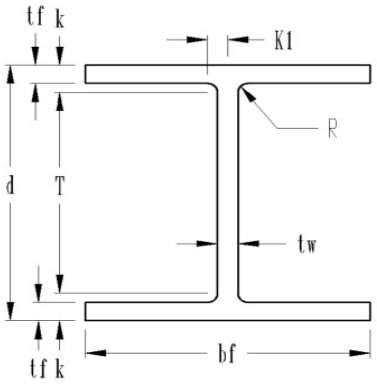


Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance T	Distance k	Distance k_1	Fillet Radius	Elastic Properties X - X I_x	Elastic Properties X - X S_x	Elastic Properties X - X r_x	Elastic Properties Y - Y I_y	Elastic Properties Y - Y S_y	Elastic Properties Y - Y r_y	Plastic Modulus Z_x	Plastic Modulus Z_y
	mm x kg/m	A mm^2	d mm	t_w mm	b_f mm	t_f mm	mm	mm	mm	R mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^3\ mm^3$	$10^3\ mm^3$
530 x 330	W530 x 409*	52 700	613	31.0	327	55.6	439	87	45	30	3 210	10 500	247	327	2 000	78.7	12 300	3 120
	W530 x 369*	47 600	602.996	27.9	324	50.5	439	82	44	30	2 850	9 450	245	289	1 780	77.9	11 000	2 770
530 x 310	W530 x 332*	42 800	593	25.4	322	45.5	439	77	43	30	2 510	8 480	242	254	1 580	77.0	9 800	2 450
	W530 x 300	38 200	585	23.1	319	41.4	439	73	42	30	2 210	7 554	241	226	1 411	76.7	8 685	2 179
	W530 x 272	34 600	577	21.1	317	37.6	439	69	41	30	1 969	6 833	239	201	1 265	76.2	7 800	1 950
	W530 x 248	31 500	571	19.0	315	34.5	439	66	40	30	1 781	6 227	238	181	1 147	75.9	7 079	1 770
	W530 x 219	27 900	560	18.3	318	29.2	439	61	39	30	1 511	5 391	233	157	985	74.9	6 112	1 517
	W530 x 196	25 000	554	16.5	316	26.3	438	58	38	30	1 340	4 834	232	139	877	74.4	5 457	1 349
	W530 x 182	23 200	551	15.2	315	24.4	439	56	38	30	1 232	4 474	231	127	806	74.2	5 031	1 239
	W530 x 165	21 100	546	14.0	313	22.2	439	54	37	30	1 111	4 080	230	114	729	73.7	4 572	1 118
	W530 x 150	19 200	543	12.7	312	20.3	439	52	36	30	1 007	3 720	229	103	660	73.4	4 146	1 011
530 x 210	W530 x 138	17 600	549	14.7	214	23.6	461	44	26	19	862	3 146	221	39	362	46.7	3 622	569
	W530 x 123	15 700	544	13.1	212	21.2	461	42	26	19	762	2 802	220	34	320	46.5	3 212	500
	W530 x 109	13 900	539	11.6	211	18.8	460	39	25	19	666	2 474	219	29	279	46.0	2 819	436
	W530 x 101	12 900	537	10.9	210	17.4	461	38	24	19	616	2 294	218	27	257	45.7	2 622	400
	W530 x 92	11 800	533	10.2	209	15.6	461	36	24	19	554	2 081	217	24	229	45.0	2 360	356
	W530 x 82	10 500	528	9.5	209	13.3	460	34	24	19	475	1 803	213	20	193	43.9	2 065	302
	W530 x 72	9 180	524	9.0	207	10.9	461	31	23	19	399	1 524	209	16	156	42.2	1 753	244
530 x 170	W530 x 85	10 800	535	10.3	166	16.5	461	37	24	19	487	1 819	212	13	153	34.3	2 114	243
	W530 x 74	9 480	529	9.7	166	13.6	461	34	24	19	410	1 549	208	10	125	33.0	1 803	200
	W530 x 66	8 390	525	8.9	165	11.4	461	32	23	19	351	1 337	205	9	104	32.0	1 563	167

* Non ASTM A6 Sections

Nucor-Yamato Steel

W18

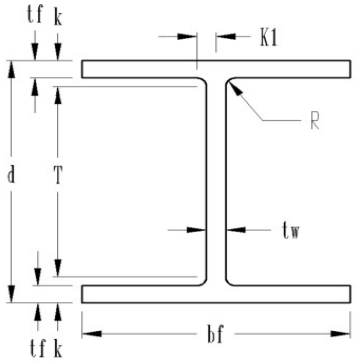


Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	Inch x lbs/ft	$Inch^2$	Inch	Inch	Inch	Inch	In	In	In	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^3$	$Inch^3$
18 x 11	W18 x 311	91.5	22.32	1.520	12.005	2.740	15.141	3.590	1.547	0.79	6970	624	8.72	795	132	2.95	754	207
	W18 x 283	83.2	21.85	1.400	11.890	2.500	15.151	3.350	1.487	0.79	6170	565	8.61	704	118	2.91	676	185
	W18 x 258	75.9	21.46	1.280	11.770	2.300	15.161	3.150	1.427	0.79	5510	514	8.53	628	107	2.88	611	166
	W18 x 234	68.8	21.06	1.160	11.650	2.110	15.141	2.960	1.367	0.79	4900	466	8.44	558	95.8	2.85	549	149
	W18 x 211	62.1	20.67	1.060	11.555	1.910	15.151	2.760	1.317	0.79	4330	419	8.35	493	85.3	2.82	490	132
	W18 x 192	56.4	20.35	0.960	11.455	1.750	15.151	2.600	1.267	0.79	3870	380	8.28	440	76.8	2.79	442	119
	W18 x 175	51.3	20.04	0.890	11.375	1.590	15.161	2.440	1.232	0.79	3450	344	8.20	391	68.8	2.76	398	106
	W18 x 158	46.3	19.72	0.810	11.300	1.440	15.141	2.290	1.192	0.79	3060	310	8.12	347	61.4	2.74	356	94.8
	W18 x 143	42.1	19.49	0.730	11.220	1.320	15.151	2.170	1.152	0.79	2750	282	8.09	311	55.5	2.72	322	85.4
	W18 x 130	38.2	19.25	0.670	11.160	1.200	15.151	2.050	1.122	0.79	2460	256	8.03	278	49.9	2.70	290	76.7
	W18 x 119	35.1	18.97	0.655	11.265	1.060	15.151	1.910	1.115	0.79	2190	231	7.90	253	44.9	2.69	262	69.1
	W18 x 106	31.1	18.73	0.590	11.200	0.940	15.151	1.790	1.082	0.79	1910	204	7.84	220	39.4	2.66	230	60.5
	W18 x 97	28.5	18.59	0.535	11.145	0.870	15.151	1.720	1.055	0.79	1750	188	7.82	201	36.1	2.65	211	55.3
	W18 x 86	25.3	18.39	0.480	11.090	0.770	15.151	1.620	1.027	0.79	1530	166	7.77	175	31.6	2.63	186	48.4
	W18 x 76	22.3	18.21	0.425	11.035	0.680	15.151	1.530	1.000	0.79	1330	146	7.73	152	27.6	2.61	163	42.2
18 x 7-1/2	W18 x 71	20.8	18.47	0.495	7.635	0.810	15.543	1.464	0.839	0.59	1170	127	7.50	60.3	15.8	1.70	146	24.7
	W18 x 65	19.1	18.35	0.450	7.590	0.750	15.543	1.404	0.816	0.59	1070	117	7.49	54.8	14.4	1.69	133	22.5
	W18 x 60	17.6	18.24	0.415	7.555	0.695	15.543	1.349	0.799	0.59	984	108	7.47	50.1	13.3	1.68	123	20.6
	W18 x 55	16.2	18.11	0.390	7.530	0.630	15.543	1.284	0.786	0.59	890	98.3	7.41	44.9	11.9	1.67	112	18.5
	W18 x 50	14.7	17.99	0.355	7.495	0.570	15.543	1.224	0.769	0.59	800	88.9	7.38	40.1	10.7	1.65	101	16.6
CSA	W18 x 45	13.3	17.86	0.340	7.480	0.500	15.553	1.154	0.761	0.59	711	79.3	7.32	34.8	9.34	1.62	90.3	14.5
CSA	W18 x 41	11.9	17.70	0.320	7.450	0.430	15.533	1.084	0.751	0.59	613	69.0	7.17	29.3	7.87	1.57	78.7	12.3
18 x 6	W18 x 46	13.5	18.06	0.360	6.060	0.605	15.543	1.259	0.771	0.59	712	78.8	7.25	22.5	7.43	1.29	90.7	11.7
	W18 x 40	11.8	17.90	0.315	6.015	0.525	15.543	1.179	0.749	0.59	612	68.4	7.21	19.1	6.35	1.27	78.4	10.0
	W18 x 35	10.3	17.70	0.300	6.000	0.425	15.543	1.079	0.741	0.59	510	57.6	7.04	15.3	5.12	1.22	66.5	8.06

Nucor-Yamato Steel

W460

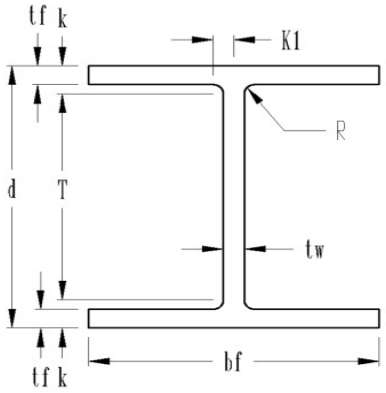
METRIC



Prime Section Group	Section Size	Area	Depth	Web Thickness	Flange Width	Flange Thickness	Distance T	Distance k	Distance k_1	Fillet Radius	Elastic Properties X-X I_x	Elastic Properties X-X S_x	Elastic Properties X-X r_x	Elastic Properties Y-Y I_y	Elastic Properties Y-Y S_y	Elastic Properties Y-Y r_y	Plastic Modulus Z_x	Plastic Modulus Z_y
	mm x kg/m	mm^2	mm	t_w mm	b_f mm	t_f mm	mm	mm	mm	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^3\ mm^3$	$10^3\ mm^3$
460 x 280	W460 x 464	59 100	567	38.6	305	69.6	385	91	39	20	2 901	10 225	221	331	2 163	74.9	12 356	3 392
	W460 x 421	53 700	555	35.6	302	63.5	385	85	38	20	2 568	9 259	219	293	1 934	73.9	11 078	3 032
	W460 x 384	49 000	545	32.5	299	58.4	385	80	36	20	2 293	8 423	217	261	1 753	73.2	10 012	2 720
	W460 x 349	44 400	535	29.5	296	53.6	385	75	35	20	2 040	7 636	214	232	1 570	72.4	8 996	2 442
	W460 x 315	40 100	525	26.9	293	48.5	385	70	33	20	1 802	6 866	212	205	1 398	71.6	8 030	2 163
	W460 x 286	36 400	517	24.4	291	44.5	385	66	32	20	1 611	6 227	210	183	1 259	70.9	7 243	1 950
	W460 x 260	33 100	509	22.6	289	40.4	385	62	31	20	1 436	5 637	208	163	1 127	70.1	6 522	1 737
	W460 x 235	29 900	501	20.6	287	36.6	385	58	30	20	1 274	5 080	206	144	1 006	69.6	5 834	1 553
	W460 x 213	27 100	495	18.5	285	33.5	385	55	29	20	1 145	4 621	205	129	909	69.1	5 277	1 399
	W460 x 193	24 700	489	17.0	283	30.5	385	52	29	20	1 024	4 195	204	116	818	68.6	4 752	1 257
	W460 x 177	22 600	482	16.6	286	26.9	385	48	28	20	912	3 785	201	105	736	68.3	4 293	1 132
	W460 x 158	20 100	476	15.0	284	23.9	385	45	28	20	795	3 343	199	91.6	646	67.6	3 769	991
	W460 x 144	18 400	472	13.6	283	22.1	385	44	27	20	728	3 081	199	83.7	592	67.3	3 458	906
	W460 x 128	16 300	467	12.2	282	19.6	385	41	26	20	637	2 720	197	72.8	518	66.8	3 048	793
	W460 x 113	14 400	463	10.8	280	17.3	385	39	25	20	554	2 393	196	63.3	452	66.3	2 671	692
460 x 190	W460 x 106	13 400	469	12.6	194	20.6	395	37	21	15	487	2 081	191	25.1	259	43.2	2 393	405
	W460 x 97	12 300	466	11.4	193	19.0	395	36	21	15	445	1 917	190	22.8	236	42.9	2 179	369
	W460 x 89	11 400	463	10.5	192	17.7	395	34	20	15	410	1 770	190	20.9	218	42.7	2 016	338
	W460 x 82	10 500	460	9.9	191	16.0	395	33	20	15	370	1 611	188	18.7	195	42.4	1 835	303
	W460 x 74	9 480	457	9.0	190	14.5	395	31	20	15	333	1 457	187	16.7	175	41.9	1 655	272
CSA	W460 x 67	8 570	454	8.5	190	12.7	395	29	19	15	296	1 300	186	14.5	153	41.2	1 480	238
CSA	W460 x 61	7 660	450	8.1	189	10.8	395	27	19	15	255	1 130	182	12.2	129	39.9	1 290	201
460 x 150	W460 x 68	8 710	459	9.1	154	15.4	395	32	20	15	296	1 291	184	9.37	122	32.8	1 486	192
	W460 x 60	7 610	455	8.0	153	13.3	395	30	19	15	255	1 121	183	7.95	104	32.3	1 285	164
	W460 x 52	6 650	450	7.6	152	10.8	395	27	19	15	212	944	179	6.37	83.9	31.0	1 090	132

Nucor-Yamato Steel

W16

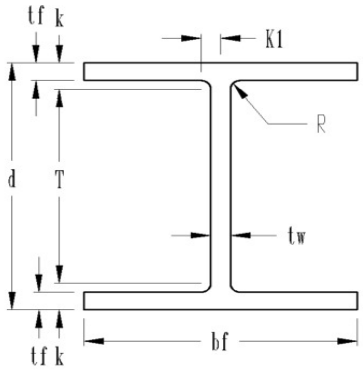


Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	Inch x lbs/ft	$Inch^2$	Inch	Inch	Inch	Inch	In	In	In	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^3$	$Inch^3$
16 x 10-1/4	W16 x 100	29.4	16.97	0.585	10.425	0.985	13.379	1.796	1.041	0.75	1490	175	7.10	186	35.7	2.51	198	54.9
	W16 x 89	26.2	16.75	0.525	10.365	0.875	13.379	1.686	1.011	0.75	1300	155	7.05	163	31.4	2.49	175	48.1
	W16 x 77	22.6	16.52	0.455	10.295	0.760	13.379	1.571	0.976	0.75	1110	134	7.00	138	26.9	2.47	150	41.1
	W16 x 67	19.7	16.33	0.395	10.235	0.665	13.379	1.476	0.946	0.75	954	117	6.96	119	23.2	2.46	130	35.5
16 x 7	W16 x 57	16.8	16.43	0.430	7.120	0.715	13.379	1.526	0.963	0.75	758	92.2	6.72	43.1	12.1	1.60	105	18.9
	W16 x 50	14.7	16.26	0.380	7.070	0.630	13.379	1.441	0.938	0.75	659	81.0	6.68	37.2	10.5	1.59	92.0	16.3
	W16 x 45	13.3	16.13	0.345	7.035	0.565	13.379	1.376	0.921	0.75	586	72.7	6.65	32.8	9.34	1.57	82.3	14.5
	W16 x 40	11.8	16.01	0.305	6.995	0.505	13.379	1.316	0.901	0.75	518	64.7	6.63	28.9	8.25	1.57	73.0	12.7
	W16 x 36	10.6	15.86	0.295	6.985	0.430	13.379	1.241	0.896	0.75	448	56.5	6.51	24.5	7.00	1.52	64.0	10.8
16 x 5-1/2	W16 x 31	9.12	15.88	0.275	5.525	0.440	13.693	1.094	0.729	0.59	375	47.2	6.41	12.4	4.49	1.17	54.0	7.03
	W16 x 26	7.68	15.69	0.250	5.500	0.345	13.693	0.999	0.716	0.59	301	38.4	6.26	9.59	3.49	1.12	44.2	5.48

Nucor-Yamato Steel

W410

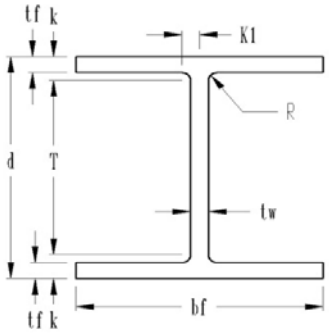
METRIC



Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	mm x kg/m	mm^2	mm	mm	mm	mm	mm	mm	mm	mm	10^6 mm^4	10^3 mm^3	mm	10^6 mm^4	10^3 mm^3	mm	10^3 mm^3	10^3 mm^3
410 x 260	W410 x 149	19 000	431	14.9	265	25.0	340	46	26	19	620	2 868	180	77.4	585	63.8	3 245	900
	W410 x 132	16 900	425	13.3	263	22.2	340	43	26	19	541	2 540	179	67.8	515	63.2	2 868	788
	W410 x 114	14 600	420	11.6	261	19.3	340	40	25	19	462	2 196	178	57.4	441	62.7	2 458	674
	W410 x 100	12 700	415	10.0	260	16.9	340	37	24	19	397	1 917	177	49.5	380	62.5	2 130	582
410 x 180	W410 x 85	10 800	417	10.9	181	18.2	340	39	24	19	316	1 511	171	17.9	198	40.6	1 721	310
	W410 x 75	9 480	413	9.7	180	16.0	340	37	24	19	274	1 327	170	15.5	172	40.4	1 508	267
	W410 x 67	8 580	410	8.8	179	14.4	340	35	23	19	244	1 191	169	13.7	153	39.9	1 349	238
	W410 x 60	7 610	407	7.7	178	12.8	340	33	23	19	216	1 060	168	12.0	135	39.9	1 196	208
	W410 x 53	6 840	403	7.5	177	10.9	340	31	23	19	186	926	165	10.2	115	38.6	1 049	177
410 x 140	W410 x 46.1	5 880	403	7.0	140	11.2	348	28	19	15	156	773	163	5.16	73.6	29.7	885	115
	W410 x 38.8	4 950	399	6.4	140	8.8	348	25	18	15	125	629	159	3.99	57.2	28.4	724	89.8

Nucor-Yamato Steel

W14

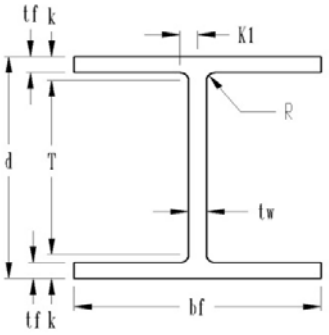


Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	Inch x lbs/ft	$Inch^2$	Inch	Inch	Inch	Inch	In	In	In	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^3$	$Inch^3$
14x16	W14 x 730	215.0	22.42	3.070	17.890	4.910	10.113	6.154	2.716	1.18	14300	1280	8.17	4720	527	4.69	1660	816
	W14 x 665	196.0	21.64	2.830	17.650	4.520	10.113	5.764	2.596	1.18	12400	1150	7.98	4170	472	4.62	1480	730
	W14 x 605	178.0	20.92	2.595	17.415	4.160	10.113	5.404	2.479	1.18	10800	1040	7.80	3680	423	4.55	1320	652
	W14 x 550	162.0	20.24	2.380	17.200	3.820	10.113	5.064	2.371	1.18	9430	931	7.63	3250	378	4.49	1180	583
	W14 x 500	147.0	19.6	2.190	17.010	3.500	10.113	4.744	2.276	1.18	8210	838	7.48	2880	339	4.43	1050	522
	W14 x 455	134.0	19.02	2.015	16.835	3.210	10.113	4.454	2.189	1.18	7190	756	7.33	2560	304	4.38	936	468
	W14 x 426	125.0	18.67	1.875	16.695	3.035	10.113	4.279	2.119	1.18	6600	706	7.26	2360	283	4.34	869	434
	W14 x 398	117.0	18.29	1.770	16.590	2.845	10.113	4.089	2.066	1.18	6000	656	7.16	2170	262	4.31	801	402
	W14 x 370	109.0	17.92	1.655	16.475	2.660	10.113	3.904	2.009	1.18	5440	607	7.07	1190	241	4.27	736	370
	W14 x 342	101.0	17.54	1.540	16.360	2.470	10.113	3.714	1.951	1.18	4900	558	6.98	1810	221	4.24	672	338
	W14 x 311	91.4	17.12	1.410	16.230	2.260	10.113	3.504	1.886	1.18	4330	506	6.88	1610	199	4.20	603	304
	W14 x 283	83.3	16.74	1.290	16.110	2.070	10.113	3.314	1.826	1.18	3840	459	6.79	1440	179	4.17	542	274
	W14 x 257	75.6	16.38	1.175	15.995	1.890	10.113	3.134	1.769	1.18	3400	415	6.71	1290	161	4.13	487	246
	W14 x 233	68.5	16.04	1.070	15.890	1.720	10.113	2.964	1.716	1.18	3010	375	6.63	1150	145	4.10	436	221
	W14 x 211	62.0	15.72	0.980	15.800	1.560	10.113	2.804	1.671	1.18	2660	338	6.55	1030	130	4.07	390	198
	W14 x 193	56.8	15.48	0.890	15.710	1.440	10.113	2.684	1.626	1.18	2400	310	6.50	931	119	4.05	355	180
	W14 x 176	51.8	15.22	0.830	15.650	1.310	10.113	2.554	1.596	1.18	2140	281	6.43	838	107	4.02	320	163
	W14 x 159	46.7	14.98	0.745	15.565	1.190	10.113	2.434	1.554	1.18	1900	254	6.38	748	96.2	4.00	287	146
	W14 x 145	42.7	14.78	0.680	15.500	1.090	10.113	2.334	1.521	1.18	1710	232	6.33	677	87.3	3.98	260	133
14 x 14-1/2	W14 x 132	38.8	14.66	0.645	14.725	1.030	10.113	2.274	1.504	1.18	1530	209	6.28	548	74.5	3.76	234	113
	W14 x 120	35.3	14.48	0.590	14.670	0.940	10.113	2.184	1.476	1.18	1380	190	6.24	495	67.5	3.74	212	102
	W14 x 109	32.0	14.32	0.525	14.605	0.860	10.113	2.104	1.444	1.18	1240	173	6.22	447	61.2	3.73	192	92.7
	W14 x 99	29.1	14.16	0.485	14.565	0.780	10.113	2.024	1.424	1.18	1110	157	6.17	402	55.2	3.71	173	83.6
	W14 x 90	26.5	14.02	0.440	14.520	0.710	10.113	1.954	1.401	1.18	999	143	6.14	362	49.9	3.70	157	75.6
14 x 10	W14 x 82	24.1	14.31	0.510	10.130	0.855	10.979	1.666	1.003	0.75	881	123	6.05	148	29.3	2.48	139	44.8
	W14 x 74	21.8	14.17	0.450	10.070	0.785	10.979	1.596	0.973	0.75	795	112	6.04	134	26.6	2.48	126	40.5
	W14 x 68	20.0	14.04	0.415	10.035	0.720	10.979	1.531	0.956	0.75	722	103	6.01	121	24.2	2.46	115	36.9
	W14 x 61	17.9	13.89	0.375	9.995	0.645	10.979	1.456	0.936	0.75	640	92.1	5.98	107	21.5	2.45	102	32.8
14 x 8	W14 x 53	15.6	13.92	0.370	8.060	0.660	10.979	1.471	0.933	0.75	541	77.8	5.89	57.7	14.3	1.92	87.1	22.0
	W14 x 48	14.1	13.79	0.340	8.030	0.595	10.979	1.406	0.918	0.75	484	70.2	5.85	51.4	12.8	1.91	78.4	19.6
	W14 x 43	12.6	13.66	0.305	7.995	0.530	10.979	1.341	0.901	0.75	428	62.6	5.82	45.2	11.3	1.89	69.6	17.3
14 x 6-3/4	W14 x 38	11.2	14.10	0.310	6.770	0.515	12.157	0.972	0.549	0.39	385	54.6	5.87	26.7	7.88	1.55	61.5	12.1
	W14 x 34	10.0	13.98	0.285	6.745	0.455	12.157	0.912	0.537	0.39	340	48.6	5.83	23.3	6.91	1.53	54.6	10.6
	W14 x 30	8.85	13.84	0.270	6.730	0.385	12.157	0.842	0.529	0.39	291	42.0	5.73	19.6	5.82	1.49	47.3	8.99
14 x 5	W14 x 26	7.69	13.91	0.255	5.025	0.420	12.157	0.877	0.522	0.39	245	35.3	5.65	8.91	3.55	1.08	40.2	5.54
	W14 x 22	6.49	13.74	0.230	5.000	0.335	12.157	0.792	0.509	0.39	199	29.0	5.54	7.00	2.80	1.04	33.2	4.39

Nucor-Yamato Steel

W360

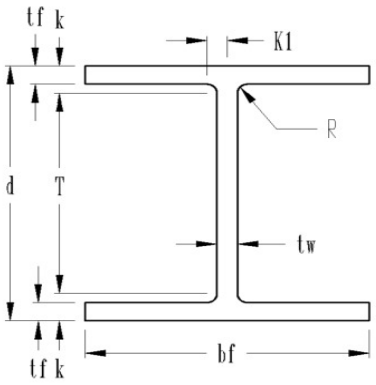
METRIC



Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance T	Distance k	Distance k_1	Fillet Radius	Elastic Properties X - X I_x	Elastic Properties X - X S_x	Elastic Properties X - X r_x	Elastic Properties Y - Y I_y	Elastic Properties Y - Y S_y	Elastic Properties Y - Y r_y	Plastic Modulus Z_x	Plastic Modulus Z_y
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	mm x kg/m	mm^2	mm	mm	mm	mm	mm	mm	mm	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^3\ mm^3$	$10^3\ mm^3$
360 x 400	W360 x 1086	139 000	569	78.0	454	125.0	256	157	69	30	5 952	20 975	208	1965	8 636	119	27 202	13 372
	W360 x 990	126 000	550	71.9	448	115.0	257	147	66	30	5 161	18 845	203	1736	7 735	117	24 253	11 963
	W360 x 900	115 000	531	65.9	442	106.0	256	138	63	30	4 495	17 042	198	1532	6 932	116	21 631	10 684
	W360 x 818	105 000	514	60.5	437	97.0	257	129	60	30	3 925	15 256	194	1353	6 194	114	19 337	9 554
	W360 x 744	94 800	498	55.6	432	88.9	257	120	58	30	3 417	13 732	190	1199	5 555	113	17 206	8 554
	W360 x 677	86 500	483	51.2	428	81.5	257	113	56	30	2 993	12 389	186	1066	4 982	111	15 338	7 669
	W360 x 634	80 600	474	47.6	424	77.1	257	109	54	30	2 747	11 569	184	982	4 638	110	14 240	7 112
	W360 x 592	75 500	465	45.0	421	72.3	257	104	53	30	2 497	10 750	182	903	4 293	109	13 126	6 588
	W360 x 551	70 300	455	42.0	418	67.6	257	99	51	30	2 264	9 947	180	495	3 949	108	12 061	6 063
	W360 x 509	65 200	446	39.1	416	62.7	258	94	50	30	2 040	9 144	177	753	3 622	108	11 012	5 539
	W360 x 463	59 000	435	35.8	412	57.4	257	89	48	30	1 802	8 292	175	670	3 261	107	9 881	4 982
	W360 x 421	53 700	425	32.8	409	52.6	257	84	46	30	1 598	7 522	172	599	2 933	106	8 882	4 490
	W360 x 382	48 800	416	29.8	406	48.0	257	80	45	30	1 415	6 801	170	537	2 638	105	7 980	4 031
	W360 x 347	44 200	407	27.2	404	43.7	257	75	44	30	1 253	6 145	168	479	2 376	104	7 145	3 622
	W360 x 314	40 000	399	24.9	401	39.6	257	71	42	30	1 107	5 539	166	429	2 130	103	6 391	3 245
	W360 x 287	36 600	393	22.6	399	36.6	257	68	41	30	999	5 080	165	388	1 950	103	5 817	2 950
	W360 x 262	33 400	387	21.1	398	33.3	257	65	41	30	891	4 605	163	349	1 753	102	5 244	2 671
	W360 x 237	30 100	380	18.9	395	30.2	257	62	39	30	791	4 162	162	311	1 576	102	4 703	2 393
	W360 x 216	27 500	375	17.3	394	27.7	257	59	39	30	712	3 802	161	282	1 431	101	4 261	2 179
360 x 370	W360 x 196	25 000	372	16.4	374	26.2	257	58	38	30	637	3 425	160	228	1 221	95.5	3 835	1 852
	W360 x 179	22 800	368	15.0	373	23.9	257	55	38	30	574	3 114	158	206	1 106	95.0	3 474	1 671
	W360 x 162	20 600	364	13.3	371	21.8	257	53	37	30	516	2 835	158	186	1 003	94.7	3 146	1 519
	W360 x 147	18 800	360	12.3	370	19.8	257	51	36	30	462	2 573	157	167	905	94.2	2 835	1 370
	W360 x 134	17 100	356	11.2	369	18.0	257	50	36	30	416	2 343	156	151	818	94.0	2 573	1 239
360 x 250	W360 x 122	15 500	363	13.0	257	21.7	279	42	26	19	367	2 016	154	61.6	480	63.0	2 278	734
	W360 x 110	14 100	360	11.4	256	19.9	279	40	25	19	331	1 835	153	55.8	436	63.0	2 065	664
	W360 x 101	12 900	357	10.5	255	18.3	279	39	24	19	301	1 688	153	50.4	397	62.5	1 885	605
	W360 x 91	11 500	353	9.5	254	16.4	279	37	24	19	266	1 509	152	44.5	352	62.2	1 671	537
360 x 200	W360 x 79	10 100	354	9.4	205	16.8	279	37	24	19	225	1 275	150	24.0	234	48.8	1 427	361
	W360 x 72	9 100	350	8.6	204	15.1	279	36	23	19	201	1 150	149	21.4	210	48.5	1 285	321
	W360 x 64	8 130	347	7.7	203	13.5	279	34	23	19	178	1 026	148	18.8	185	48.0	1 141	283
360 x 170	W360 x 57.8	7 230	358	7.9	172	13.1	309	25	14	10	160	895	149	11.1	129	39.4	1 008	198
	W360 x 51	6 450	355	7.2	171	11.6	309	23	14	10	142	796	148	9.70	113	38.9	895	174
	W360 x 44	5 710	352	6.9	171	9.8	309	21	13	10	121	688	146	8.16	95.4	37.8	775	147
360 x 130	W360 x 39	4 960	353	6.5	128	10.7	309	22	13	10	102	578	144	3.71	58.2	27.4	659	90.8
	W360 x 32.9	4 190	349	5.8	127	8.5	309	20	13	10	82.8	475	141	2.91	45.9	26.4	544	71.9

Nucor-Yamato Steel

W12

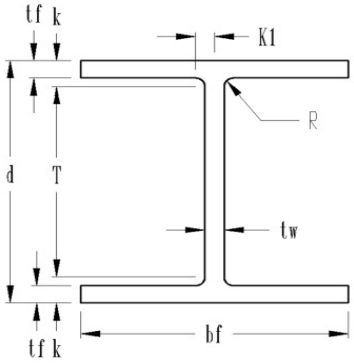


Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	Inch x lbs/ft	$Inch^2$	Inch	Inch	Inch	Inch	In	In	In	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^3$	$Inch^3$
12 x 12	W12 x 336	98.8	16.82	1.775	13.385	2.955	9.211	3.805	1.675	0.79	4060	483	6.41	1190	177	3.47	603	274
	W12 x 305	89.6	16.32	1.625	13.235	2.705	9.211	3.555	1.600	0.79	3550	435	6.29	1050	159	3.42	537	244
	W12 x 279	81.9	15.85	1.530	13.140	2.470	9.211	3.320	1.552	0.79	3110	393	6.16	937	143	3.38	481	220
	W12 x 252	74.1	15.41	1.395	13.005	2.250	9.211	3.100	1.485	0.79	2720	353	6.06	828	127	3.34	428	196
	W12 x 230	67.7	15.05	1.285	12.895	2.070	9.211	2.920	1.430	0.79	2420	321	5.97	742	115	3.31	386	177
	W12 x 210	61.8	14.71	1.180	12.790	1.900	9.211	2.750	1.377	0.79	2140	292	5.89	664	104	3.28	348	159
	W12 x 190	55.8	14.38	1.060	12.670	1.735	9.211	2.585	1.317	0.79	1890	263	5.82	589	93.0	3.25	311	143
	W12 x 170	50.0	14.03	0.960	12.570	1.560	9.211	2.410	1.267	0.79	1650	235	5.74	517	82.3	3.22	275	126
	W12 x 152	44.7	13.71	0.870	12.480	1.400	9.211	2.250	1.222	0.79	1430	209	5.66	454	72.8	3.19	243	111
	W12 x 136	39.9	13.41	0.790	12.400	1.250	9.211	2.100	1.182	0.79	1240	186	5.58	398	64.2	3.16	214	98.0
	W12 x 120	35.3	13.12	0.710	12.320	1.105	9.211	1.955	1.142	0.79	1070	163	5.51	345	56.0	3.13	186	85.4
	W12 x 106	31.2	12.89	0.610	12.220	0.990	9.211	1.840	1.092	0.79	933	145	5.47	301	49.3	3.11	164	75.1
	W12 x 96	28.2	12.71	0.550	12.160	0.900	9.211	1.750	1.062	0.79	833	131	5.44	270	44.4	3.09	147	67.5
	W12 x 87	25.6	12.53	0.515	12.125	0.810	9.211	1.660	1.045	0.79	740	118	5.38	241	39.7	3.07	132	60.4
	W12 x 79	23.2	12.38	0.470	12.080	0.735	9.211	1.585	1.022	0.79	662	107	5.34	216	35.8	3.05	119	54.3
	W12 x 72	21.1	12.25	0.430	12.040	0.670	9.211	1.520	1.002	0.79	597	97.4	5.31	195	32.4	3.04	108	49.2
	W12 x 65	19.1	12.12	0.390	12.000	0.605	9.211	1.455	0.982	0.79	533	87.9	5.28	174	29.1	3.02	96.8	44.1
12 x 10	W12 x 58	17.0	12.19	0.360	10.010	0.640	9.289	1.451	0.928	0.75	475	78.0	5.28	107	21.4	2.51	86.4	32.5
	W12 x 53	15.6	12.06	0.345	9.995	0.575	9.289	1.386	0.921	0.75	425	70.6	5.23	95.8	19.2	2.48	77.9	29.1
12 x 8	W12 x 50	14.7	12.19	0.370	8.080	0.640	9.289	1.451	0.933	0.75	391	64.2	5.18	56.3	13.9	1.96	71.9	21.3
	W12 x 45	13.2	12.06	0.335	8.045	0.575	9.289	1.386	0.916	0.75	348	57.7	5.15	50.0	12.4	1.95	64.2	19.0
	W12 x 40	11.8	11.94	0.295	8.005	0.515	9.289	1.326	0.896	0.75	307	51.5	5.13	44.1	11.0	1.94	57.0	16.8
12 x 6-1/2	W12 x 35	10.3	12.50	0.300	6.560	0.520	10.665	0.918	0.485	0.34	285	45.6	5.25	24.5	7.47	1.54	51.2	11.5
	W12 x 30	8.79	12.34	0.260	6.520	0.440	10.665	0.838	0.465	0.34	238	38.6	5.21	20.3	6.24	1.52	43.1	9.56
	W12 x 26	7.65	12.22	0.230	6.490	0.380	10.665	0.778	0.450	0.34	204	33.4	5.17	17.3	5.34	1.51	37.2	8.17
W12 x 4	W12 x 22	6.48	12.31	0.260	4.030	0.425	10.665	0.823	0.465	0.34	156	25.4	4.91	4.7	2.31	0.85	29.3	3.66
	W12 x 19	5.57	12.16	0.235	4.005	0.350	10.665	0.748	0.453	0.34	130	21.3	4.82	3.7	1.88	0.82	24.7	2.98
	W12 x 16	4.71	11.99	0.220	3.990	0.265	10.665	0.663	0.445	0.34	103	17.1	4.67	2.8	1.41	0.77	20.1	2.26

Nucor-Yamato Steel

W310

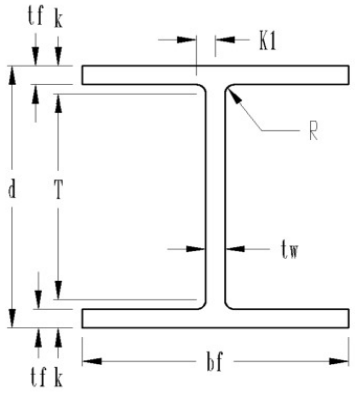
METRIC



Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	mm x kg/m	mm^2	mm	mm	mm	mm	mm	mm	mm	mm	10^6 mm^4	10^3 mm^3	mm	10^6 mm^4	10^3 mm^3	mm	10^3 mm^3	10^3 mm^3
310 x 310	W310 x 500	63 700	427	45.1	340	75.1	234	97	43	20	1 690	7 915	163	495	2 900	88.1	9 881	4 490
	W310 x 454	57 800	415	41.3	336	68.7	234	90	41	20	1 478	7 128	160	437	2 606	86.9	8 800	3 998
	W310 x 415	52 800	403	38.9	334	62.7	234	84	39	20	1 294	6 440	156	390	2 343	85.9	7 882	3 605
	W310 x 375	47 800	391	35.4	330	57.2	234	79	38	20	1 132	5 785	154	345	2 081	84.8	7 014	3 212
	W310 x 342	43 700	382	32.6	328	52.6	234	74	36	20	1 007	5 260	152	309	1 885	84.1	6 325	2 900
	W310 x 313	39 900	374	30.0	325	48.3	234	70	35	20	891	4 785	150	276	1 704	83.3	5 703	2 606
	W310 x 283	36 000	365	26.9	322	44.1	234	66	33	20	787	4 310	148	245	1 524	82.6	5 096	2 343
	W310 x 253	32 300	356	24.4	319	39.6	234	61	32	20	687	3 851	146	215	1 349	81.8	4 506	2 065
	W310 x 226	28 800	348	22.1	317	35.6	234	57	31	20	595	3 425	144	189	1 193	81.0	3 982	1 819
	W310 x 202	25 700	341	20.1	315	31.8	234	53	30	20	516	3 048	142	166	1 052	80.3	3 507	1 606
	W310 x 179	22 800	333	18.0	313	28.1	234	50	29	20	445	2 671	140	144	918	79.5	3 048	1 399
	W310 x 158	20 100	327	15.5	310	25.1	234	47	28	20	388	2 376	139	125	808	79.0	2 687	1 231
	W310 x 143	18 200	323	14.0	309	22.9	234	44	27	20	347	2 147	138	112	728	78.5	2 409	1 106
	W310 x 129	16 500	318	13.1	308	20.6	234	42	27	20	308	1 934	137	100	651	78.0	2 163	990
	W310 x 117	15 000	314	11.9	307	18.7	234	40	26	20	276	1 753	136	89.9	587	77.5	1 950	890
	W310 x 107	13 600	311	10.9	306	17.0	234	39	25	20	248	1 596	135	81.2	531	77.2	1 770	806
	W310 x 97	12 300	308	9.9	305	15.4	234	37	25	20	222	1 440	134	72.4	477	76.7	1 586	723
310 x 250	W310 x 86	11 000	310	9.1	254	16.3	236	37	24	19	198	1 278	134	44.5	351	63.8	1 416	533
	W310 x 79	10 100	306	8.8	254	14.6	236	35	23	19	177	1 157	133	39.9	315	63.0	1 277	477
310 x 200	W310 x 74	9 480	310	9.4	205	16.3	236	37	24	19	163	1 052	132	23.4	228	49.8	1 178	349
	W310 x 67	8 520	306	8.5	204	14.6	236	35	23	19	145	946	131	20.8	203	49.5	1 052	311
	W310 x 60	7 610	303	7.5	203	13.1	236	34	23	19	128	844	130	18.4	180	49.3	934	275
310 x 170	W310 x 52	6 650	317	7.6	167	13.2	271	23	12	8.5	119	747	133	10.2	122	39.1	839	188
	W310 x 44.5	5 670	313	6.6	166	11.2	271	21	12	8.5	99	633	132	8.4	102	38.6	706	157
	W310 x 38.7	4 940	310	5.8	165	9.7	271	20	11	8.5	85	547	131	7.2	88	38.4	610	134
310 x 100	W310 x 32.7	4 180	313	6.6	102	10.8	271	21	12	8.5	65	416	125	1.9	38	21.5	480	60
	W310 x 28.3	3 590	309	6.0	102	8.9	271	19	12	8.5	54	349	122	1.6	31	20.9	405	49
	W310 x 23.8	3 040	305	5.6	101	6.7	272	17	11	8.5	43	280	119	1.2	23	19.6	329	37

Nucor-Yamato Steel

W10

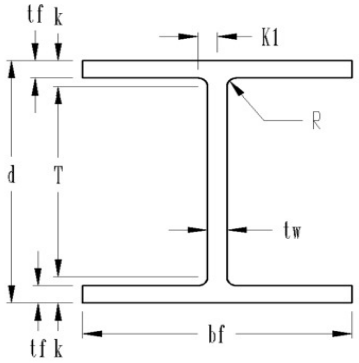


Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	Inch x lbs/ft	$Inch^2$	Inch	Inch	Inch	Inch	In	In	In	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^3$	$Inch^3$
10 x 10	W10 x 112	32.9	11.36	0.755	10.415	1.250	7.239	2.061	1.126	0.75	716	126	4.66	236	45.3	2.68	147	69.2
	W10 x 100	29.4	11.10	0.680	10.340	1.120	7.239	1.931	1.088	0.75	623	112	4.60	207	40.0	2.65	130	61.0
	W10 x 88	25.9	10.84	0.605	10.265	0.990	7.239	1.801	1.051	0.75	534	98.5	4.54	179	34.8	2.63	113	53.1
	W10 x 77	22.6	10.60	0.530	10.190	0.870	7.239	1.681	1.013	0.75	455	85.9	4.49	154	30.1	2.60	97.6	45.9
	W10 x 68	20.0	10.40	0.470	10.130	0.770	7.239	1.581	0.983	0.75	394	75.7	4.44	134	26.4	2.59	85.3	40.1
	W10 x 60	17.6	10.22	0.420	10.080	0.680	7.239	1.491	0.958	0.75	341	66.7	4.39	116	23.0	2.57	74.6	35.0
	W10 x 54	15.8	10.09	0.370	10.030	0.615	7.239	1.426	0.933	0.75	303	60.0	4.37	103	20.6	2.56	66.6	31.3
	W10 x 49	14.4	9.98	0.340	10.000	0.560	7.239	1.371	0.918	0.75	272	54.6	4.35	93.4	18.7	2.54	60.4	28.3
10 x 8	W10 x 45	13.3	10.10	0.350	8.020	0.620	7.239	1.431	0.923	0.75	248	49.1	4.32	53.4	13.3	2.01	54.9	20.3
	W10 x 39	11.5	9.92	0.315	7.985	0.530	7.239	1.341	0.906	0.75	209	42.1	4.27	45.0	11.3	1.98	46.8	17.2
	W10 x 33	9.71	9.73	0.290	7.960	0.435	7.239	1.246	0.893	0.75	171	35.0	4.19	36.6	9.20	1.94	38.8	14.0
10 x 5-3/4	W10 x 30	8.84	10.47	0.300	5.810	0.510	8.655	0.908	0.485	0.34	170	32.4	4.38	16.7	5.75	1.37	36.6	8.84
	W10 x 26	7.61	10.33	0.260	5.770	0.440	8.655	0.838	0.465	0.34	144	27.9	4.35	14.1	4.89	1.36	31.3	7.50
	W10 x 22	6.49	10.17	0.240	5.750	0.360	8.655	0.758	0.455	0.34	118	23.2	4.27	11.4	3.97	1.33	26.0	6.10

Nucor-Yamato Steel

W250

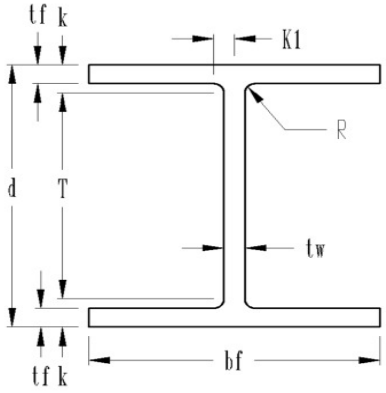
METRIC



Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
	mm x kg/m	A mm^2	d mm	t_w mm	b_f mm	t_f mm	T mm	k mm	k_1 mm	R mm	I_x $10^6\ mm^4$	S_x $10^3\ mm^3$	r_x mm	I_y $10^6\ mm^4$	S_y $10^3\ mm^3$	r_y mm	Z_x $10^3\ mm^3$	Z_y $10^3\ mm^3$
250 x 250	W250 x 167	21 200	289	19.2	265	31.8	184	52	29	19	298	2 065	118	98.2	742	68.1	2 409	1 134
	W250 x 149	19 000	282	17.3	263	28.4	184	49	28	19	259	1 835	117	86.2	655	67.3	2 130	1 000
	W250 x 131	16 700	275	15.4	261	25.1	184	46	27	19	222	1 614	115	74.5	570	66.8	1 852	870
	W250 x 115	14 600	269	13.5	259	22.1	184	43	26	19	189	1 408	114	64.1	493	66.0	1 599	752
	W250 x 101	12 900	264	11.9	257	19.6	184	40	25	19	164	1 240	113	55.8	433	65.8	1 398	657
	W250 x 89	11 400	260	10.7	256	17.3	184	38	24	19	142	1 093	112	48.3	377	65.3	1 222	574
	W250 x 80	10 200	256	9.4	255	15.6	184	36	24	19	126	983	111	42.9	338	65.0	1 091	513
	W250 x 73	9 290	253	8.6	254	14.2	184	35	23	19	113	895	110	38.9	306	64.5	990	464
250 x 200	W250 x 67	8 580	257	8.9	204	15.7	185	36	23	19	103	805	110	22.2	218	51.1	900	333
	W250 x 58	7 420	252	8.0	203	13.5	184	34	23	19	87.0	690	108	18.7	185	50.3	767	282
	W250 x 49.1	6 260	247	7.4	202	11.0	184	32	23	19	71.2	574	106	15.2	151	49.3	636	229
250 x 150	W250 x 44.8	5 700	266	7.6	148	13.0	220	23	12	8.5	70.8	531	111	6.95	94.2	34.8	600	145
	W250 x 38.5	4 910	262	6.6	147	11.2	220	21	12	8.5	59.9	457	110	5.87	80.1	34.5	513	123
	W250 x 32.7	4 190	258	6.1	146	9.1	220	19	12	8.5	49.1	380	108	4.75	65.1	33.8	426	100

Nucor-Yamato Steel

W8

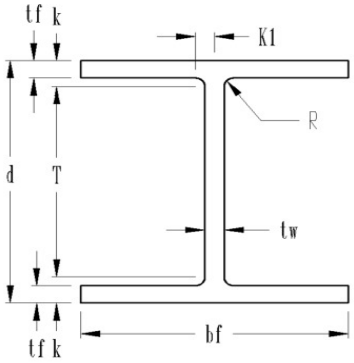


Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	Inch x lbs/ft	$Inch^2$	Inch	Inch	Inch	Inch	In	In	In	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^3$	$Inch^3$
8 x 8	W8 x 67	19.7	9.00	0.570	8.280	0.935	5.981	1.510	0.797	0.51	272	60.4	3.72	88.6	21.4	2.12	70.1	32.7
	W8 x 58	17.1	8.75	0.510	8.220	0.810	5.981	1.385	0.767	0.51	228	52.0	3.65	75.1	18.3	2.10	59.8	27.9
	W8 x 48	14.1	8.50	0.400	8.110	0.685	5.981	1.260	0.712	0.51	184	43.2	3.61	60.9	15.0	2.08	49.0	22.9
	W8 x 40	11.7	8.25	0.360	8.070	0.560	5.981	1.135	0.692	0.51	146	35.5	3.53	49.1	12.2	2.04	39.8	18.5
	W8 x 35	10.3	8.12	0.310	8.020	0.495	5.981	1.070	0.667	0.51	127	31.2	3.51	42.6	10.6	2.03	34.7	16.1
	W8 x 31	9.13	8.00	0.285	7.995	0.435	5.981	1.010	0.655	0.51	110	27.5	3.47	37.1	9.27	2.02	30.4	14.1
8 x 6-1/2	W8 x 28	8.25	8.06	0.285	6.535	0.465	5.981	1.040	0.655	0.51	98.0	24.3	3.45	21.7	6.63	1.62	27.2	10.1
	W8 x 24	7.08	7.93	0.245	6.495	0.400	5.981	0.975	0.635	0.51	82.7	20.9	3.42	18.3	5.63	1.61	23.1	8.57
8 x 5-1/4	W8 x 21	6.16	8.28	0.250	5.270	0.400	6.575	0.853	0.515	0.39	75.3	18.2	3.49	9.8	3.71	1.26	20.4	5.69
	W8 x 18	5.26	8.14	0.230	5.250	0.330	6.575	0.783	0.505	0.39	61.9	15.2	3.43	8.0	3.04	1.23	17.0	4.66

Nucor-Yamato Steel

W200

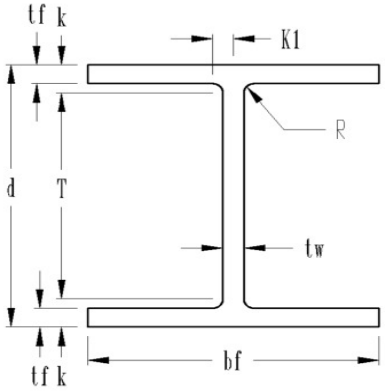
METRIC



Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance T	Distance k	Distance k_1	Fillet Radius	Elastic Properties X - X I_x	Elastic Properties X - X S_x	Elastic Properties X - X r_x	Elastic Properties Y - Y I_y	Elastic Properties Y - Y S_y	Elastic Properties Y - Y r_y	Plastic Modulus Z_x	Plastic Modulus Z_y
	mm x kg/m	A mm^2	d mm	t_w mm	b_f mm	t_f mm	T mm	k mm	k_1 mm	R mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^3\ mm^3$	$10^3\ mm^3$
200 x 200	W200 x 100	12 700	229	14.5	210	23.7	153	38	20	13	113	990	94.5	36.9	351	53.8	1 149	536
	W200 x 86	11 000	222	13.0	209	20.6	152	35	20	13	94.9	852	92.7	31.3	300	53.3	980	457
	W200 x 71	9 100	216	10.2	206	17.4	152	32	18	13	76.6	708	91.7	25.3	246	52.8	803	375
	W200 x 59	7 550	210	9.1	205	14.2	153	29	18	13	60.8	582	89.7	20.4	200	51.8	652	303
	W200 x 52	6 650	206	7.9	204	12.6	152	27	17	13	52.9	511	89.2	17.7	174	51.6	569	264
	W200 x 46.1	5 890	203	7.2	203	11.0	152	26	17	13	45.8	451	88.1	15.4	152	51.3	498	231
200 x 170	W200 x 41.7	5 320	205	7.2	166	11.8	152	26	17	13	40.8	398	87.6	9.03	109	41.1	446	166
	W200 x 35.9	4 570	201	6.2	165	10.2	152	25	16	13	34.4	342	86.9	7.62	92.3	40.9	379	140
200 x 130	W200 x 31.3	3 970	210	6.4	134	10.2	167	22	13	10	31.3	298	88.6	4.07	61	32.0	334	93
	W200 x 26.6	3 390	207	5.8	133	8.4	167	20	13	10	25.8	249	87.1	3.32	49.8	31.2	279	76

Nucor-Yamato Steel

W6

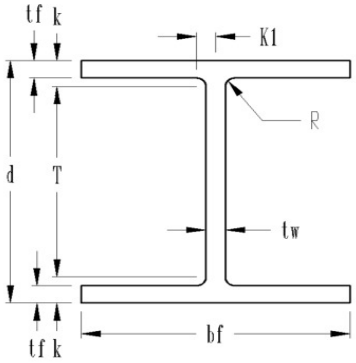


Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	Inch x lbs/ft	$Inch^2$	Inch	Inch	Inch	Inch	In	In	In	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^3$	$Inch^3$
6 x 6	W6x25	7.34	6.38	0.320	6.080	0.455	4.725	0.828	0.470	0.31	53.6	16.80	2.70	17.10	5.61	1.52	19.0	8.57
	W6x20	5.87	6.20	0.260	6.020	0.365	4.725	0.738	0.440	0.31	41.5	13.40	2.66	13.30	4.41	1.50	15.0	6.72
	W6x15	4.43	5.99	0.230	5.990	0.260	4.725	0.633	0.425	0.31	29.3	9.77	2.56	9.32	3.11	1.45	10.8	4.75

Nucor-Yamato Steel

W150

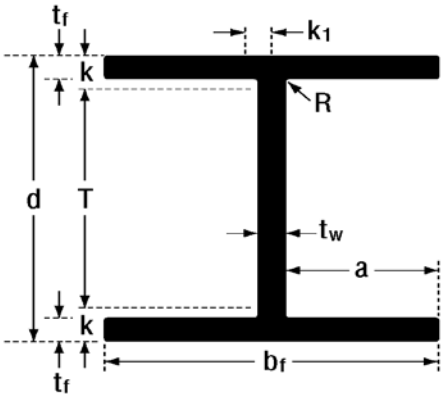
METRIC



Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	mm x kg/m	mm^2	mm	mm	mm	mm	mm	mm	mm	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^3\ mm^3$	$10^3\ mm^3$
150 x 150	W150x37.1	4 740	162	8.1	154	11.6	120	21	12	8	22	275	68.6	7.1	92	38.6	311	140
	W150x29.8	3 790	157	6.6	153	9.3	119	19	11	8	17.3	220	67.6	5.5	72	38.1	246	110
	W150x22.5	2 860	152	5.8	152	6.6	120	16	11	8	12.2	160	65.0	3.9	51	36.8	177	78

Nucor-Yamato Steel

HP



Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance				Fillet Radius	Elastic Properties						Plastic Modulus	
												X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	a	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	Inch x lbs/ft	$Inch^2$	Inch	Inch	Inch	Inch	In	In	In	In	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^3$	$Inch^3$
18 x 18	HP18 x 204	60.0	18.3	1.125	18.125	1.125	13.513	2.369	1.744	8.500	1.18	3480	380	7.60	1120	124.0	4.31	433.0	191.0
	HP18 x 181	53.2	18.0	1.000	18.000	1.000	13.513	2.244	1.681	8.500	1.18	3020	336	7.53	974	108.0	4.28	379.0	167.0
	HP18 x 157	46.2	17.7	0.870	17.870	0.870	13.513	2.114	1.616	8.500	1.18	2570	290	7.46	833	93.1	4.25	327.0	143.0
	HP18 x 135	39.8	17.5	0.750	17.750	0.750	13.513	1.994	1.556	8.500	1.18	2200	251	7.43	706	79.3	4.21	281.0	122.0
16 x 16	HP16 x 183	53.8	16.5	1.125	16.250	1.125	11.763	2.369	1.744	7.563	1.18	2510	304	6.81	818	100.0	3.89	349.0	156.0
	HP16 x 162	47.7	16.3	1.000	16.125	1.000	11.763	2.244	1.681	7.563	1.18	2190	269	6.78	697	86.6	3.82	306.0	134.0
	HP16 x 141	41.7	16.0	0.875	16.000	0.875	11.763	2.119	1.619	7.563	1.18	1870	234	6.70	599	74.9	3.79	264.0	116.0
	HP16 x 121	35.7	15.8	0.750	15.875	0.750	11.763	1.994	1.556	7.563	1.18	1590	201	6.66	504	63.4	3.75	226.0	97.6
	HP16 x 101	29.8	15.5	0.625	15.750	0.625	11.763	1.869	1.494	7.563	1.18	1300	168	6.59	412	52.2	3.71	187.0	80.1
	HP16 x 88	25.8	15.3	0.540	15.665	0.540	11.763	1.784	1.451	7.563	1.18	1110	145	6.56	349	44.5	3.68	161.0	68.2
14 x 14-1/2	HP14 x 117	34.4	14.2	0.805	14.885	0.805	10.113	2.049	1.584	7.040	1.18	1220	172	5.96	443	59.5	3.59	194.0	91.4
	HP14 x 102	30.0	14.0	0.705	14.785	0.705	10.113	1.949	1.534	7.040	1.18	1050	150	5.92	380	51.4	3.56	169.0	78.8
	HP14 x 89	26.1	13.8	0.615	14.695	0.615	10.113	1.859	1.489	7.040	1.18	904	131	5.88	326	44.3	3.53	146.0	67.7
	HP14 x 73	21.4	13.6	0.505	14.585	0.505	10.113	1.749	1.434	7.040	1.18	729	107	5.84	261	35.8	3.49	118.0	54.6
12 x 12	HP12 x 89	26.1	12.4	0.720	12.330	0.720	9.211	1.570	1.147	5.805	0.787	690	112	5.15	225	36.6	2.94	127.5	56.4
	HP12 x 84	24.6	12.3	0.685	12.295	0.685	9.211	1.535	1.130	5.805	0.787	650	106	5.14	213	34.6	2.94	120.0	53.2
	HP12 x 74	21.8	12.1	0.605	12.215	0.605	9.221	1.455	1.090	5.805	0.787	569	93.8	5.11	186	30.4	2.92	105.0	46.6
	HP12 x 63	18.4	11.9	0.515	12.125	0.515	9.211	1.365	1.045	5.805	0.787	472	79.1	5.06	153	25.3	2.88	88.3	38.7
	HP12 x 53	15.5	11.8	0.435	12.045	0.435	9.211	1.285	1.005	5.805	0.787	393	66.7	5.03	127	21.1	2.86	74.0	32.2
10 x 10	HP10 x 57	16.8	10.0	0.565	10.225	0.565	7.239	1.376	1.031	4.830	0.748	294	58.8	4.18	101	19.7	2.45	66.5	30.3
	HP10 x 42	12.4	9.7	0.415	10.075	0.415	7.249	1.226	0.956	4.830	0.748	210	43.4	4.13	71.7	14.2	2.41	48.3	21.8
8 x 8	HP8 x 36	10.6	8.0	0.445	8.155	0.445	5.981	1.020	0.735	3.855	0.512	119	29.8	3.36	40.3	9.88	1.95	33.6	15.2

Nucor-Yamato Steel

HP

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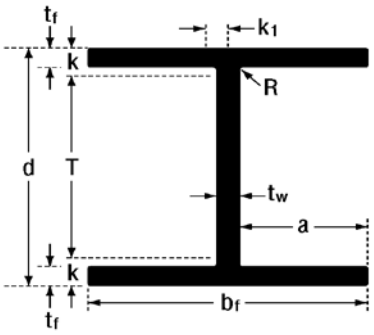
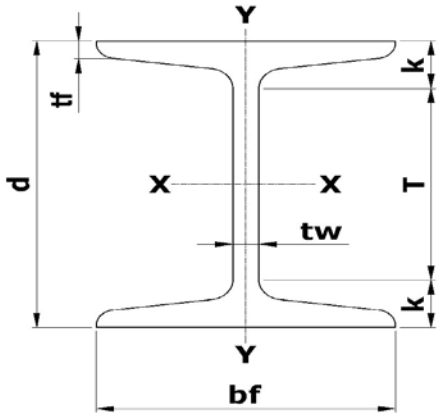


Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange		Distance				Fillet Radius	Elastic Properties						Plastic Modulus	
					Width	t_f						X - X			Y - Y				
							T	k	k_1	a		I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	mm x kg/m	mm^2	mm	mm	mm	mm	mm	mm	mm	mm	mm	10^6 mm^4	10^3 mm^3	mm	10^6 mm^4	10^3 mm^3	mm	10^3 mm^3	10^3 mm^3
460 x 460	HP460 x 304	38700	464	28.6	460	28.6	344	60	44	216	30	1448	6 227	193	466	2 032	109.5	7096	3130
	HP460 x 269	34300	457	25.4	457	25.4	343	57	43	216	30	1257	5 506	191	405	1 770	108.7	6211	2737
	HP460 x 234	29800	451	22.1	454	22.1	344	54	41	216	30	1070	4 752	189	347	1 526	108.0	5359	2343
	HP460 x 202	25700	445	19.1	451	19.1	344	51	40	216	30	916	4 113	189	294	1 299	106.9	4605	1999
410 x 410	HP410 x 272	34700	419	28.6	413	28.6	299	60	44	192	30	1045	4 982	173	340	1 639	98.8	5719	2556
	HP410 x 242	30800	413	25.4	410	25.4	299	57	43	192	30	912	4 408	172	290	1 419	97.0	5014	2196
	HP410 x 211	26900	406	22.2	406	22.2	299	54	41	192	30	778	3 835	170	249	1 227	96.3	4326	1901
	HP410 x 181	23000	400	19.1	403	19.1	299	51	40	192	30	662	3 294	169	210	1 039	95.3	3703	1599
	HP410 x 151	19200	394	15.9	400	15.9	299	47	38	192	30	541	2 753	167	171	855	94.2	3064	1313
	HP410 x 131	16700	389	13.7	398	13.7	299	45	37	192	30	462	2 376	167	145	729	93.5	2638	1118
360 x 370	HP360 x 174	22 200	361	20.4	378	20.4	257	52	40	179	30	508	2 819	151	184	975	91.2	3179	1498
	HP360 x 152	19 400	356	17.9	376	17.9	257	49	39	179	30	437	2 458	150	158	842	90.4	2769	1291
	HP360 x 132	16 800	351	15.6	373	15.6	257	47	38	179	30	376	2 147	149	136	726	89.7	2393	1109
	HP360 x 108	13 800	346	12.8	370	12.8	257	44	36	179	30	303	1 753	148	109	587	88.6	1934	895
310 x 310	HP310 x 132	16 870	314	18.3	313	18.3	237	38	29	147	20	290	1 800	131	94	600	74.6	2100	930
	HP310 x 125	15 900	312	17.4	312	17.4	234	39	29	147	20	271	1 737	131	89	567	74.7	1966	872
	HP310 x 110	14 100	308	15.4	310	15.5	234	37	28	147	20	237	1 537	130	77	498	74.2	1721	764
	HP310 x 93	11 900	303	13.1	308	13.1	234	35	27	147	20	196	1 296	129	64	415	73.2	1447	634
	HP310 x 79	10 000	299	11.0	306	11.0	234	33	26	148	20	164	1 093	128	53	346	72.6	1213	528
250 x 250	HP250 x 85	10 800	254	14.4	260	14.4	184	35	26	123	19	122	964	106	42	323	62.2	1090	497
	HP250 x 62	8 000	246	10.5	256	10.7	184	31	24	123	19	87	711	105	30	233	61.2	791	357
200 x 200	HP200 x 53	6 840	204	11.3	207	11.3	152	26	19	98	13	50	488	85	17	162	49.5	551	249

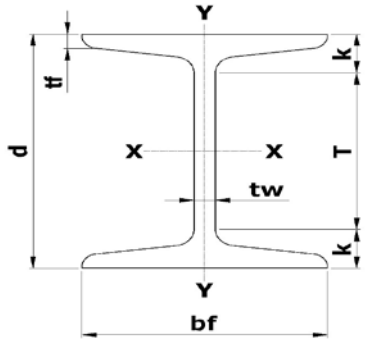
Nucor-Yamato Steel



Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance		Fillet Radius	Elastic Properties						Plastic Modulus	
										X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	Inch x lbs/ft	$Inch^2$	Inch	Inch	Inch	Inch	In	In	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^3$	$Inch^3$
24 x 8	S24 x 121	35.6	24.50	0.800	8.050	1.090	20.695	1.903	0.750	3160	258.0	9.43	83.0	20.6	1.53	306.0	36.3
	S24 x 106	31.2	24.50	0.620	7.870	1.090	20.695	1.903	0.750	2940	240.0	9.71	76.8	19.5	1.57	279.0	33.4
24 x 7	S24 x 100	29.3	24.00	0.745	7.245	0.870	20.635	1.683	0.750	2380	199.0	9.01	47.4	13.1	1.27	239.0	24.0
	S24 x 90	26.5	24.00	0.625	7.125	0.870	20.635	1.683	0.750	2250	187.0	9.21	44.7	12.5	1.30	222.0	22.4
	S24 x 80	23.5	24.00	0.500	7.000	0.870	20.635	1.683	0.750	2100	175.0	9.47	42.0	12.0	1.34	204.0	20.8
20 x 7	S20 x 96	28.2	20.30	0.800	7.200	0.920	16.835	1.733	0.750	1670	165.0	7.71	49.9	13.90	1.33	198.0	24.9
	S20 x 86	25.3	20.30	0.660	7.060	0.920	16.835	1.733	0.750	1570	155.0	7.89	46.6	13.20	1.36	183.0	23.1
20 x 6	S20 x 75	22.0	20.00	0.635	6.385	0.795	16.785	1.608	0.750	1280	128.0	7.62	29.5	9.25	1.16	152.0	16.7
	S20 x 66	19.4	20.00	0.505	6.255	0.795	16.785	1.608	0.750	1190	119.0	7.83	27.5	8.78	1.19	139.0	15.40
18 x 6	S18 x 70	20.6	18.00	0.711	6.251	0.691	15.367	1.317	0.563	923	103.0	6.70	24.0	7.69	1.08	124.0	14.3
	S18 x 54.7	16.1	18.00	0.461	6.001	0.691	15.367	1.317	0.563	801	89.0	7.07	20.7	6.91	1.14	104.0	12.1
15 x 5.5	S15 x 50	14.7	15.00	0.550	5.640	0.622	12.631	1.185	0.500	485	64.7	5.75	15.6	5.53	1.03	77.0	9.99
	S15 x 42.9	12.6	15.00	0.411	5.501	0.622	12.631	1.185	0.500	446	59.4	5.95	14.3	5.19	1.06	69.2	9.08
12 x 5.5	S12 x 50	14.7	12.00	0.687	5.477	0.659	9.431	1.285	0.563	303	50.6	4.55	15.6	5.69	1.03	60.9	10.3
	S12 x 40.8	12.0	12.00	0.462	5.252	0.659	9.431	1.285	0.563	270	45.1	4.76	13.5	5.13	1.06	52.7	8.86
12 x 5	S12 x 35	10.3	12.00	0.428	5.078	0.544	9.911	1.045	0.438	228	38.1	4.72	9.84	3.88	0.98	44.6	6.8
	S12 x 31.8	9.35	12.00	0.350	5.000	0.544	9.911	1.045	0.438	217	36.2	4.83	9.33	3.73	1.00	41.8	6.44

Nucor-Yamato Steel

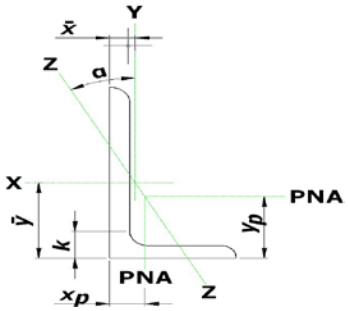
METRIC



Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance		Fillet Radius	Elastic Properties						Plastic Modulus	
										X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	mm x kg/m	mm^2	mm	mm	mm	mm	mm	mm	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^3\ mm^3$	$10^3\ mm^3$
610 x 200	S610 x 180	23 000	622	20.3	204	27.7	528	46.8	19	1315	4228	240	34.5	337.6	38.9	5014	595
	S610 x 158	20 100	622	15.7	200	27.7	528	46.8	19	1224	3933	247	32.0	319.5	39.9	4572	547
610 x 180	S610 x 149	18 900	610	18.9	184	22.1	528	41.2	19	991	3261	229	19.7	214.7	32.3	3916	393
	S610 x 134	17 100	610	15.9	181	22.1	528	41.2	19	937	3064	234	18.6	204.8	33.0	3638	367
	S610 x 119	15 200	610	12.7	178	22.1	528	41.2	19	874	2868	241	17.5	196.6	34.0	3343	341
510 x 180	S510 x 143	18 200	516	20.3	183	23.4	431	42.5	19	695	2704	196	20.8	227.8	33.8	3245	408
	S510 x 128	16 300	516	16.8	179	23.4	431	42.5	19	653	2540	200	19.4	216.3	34.5	2999	379
510 x 150	S510 x 112	14 200	508	16.1	162	20.2	429	39.3	19	533	2098	194	12.3	151.6	29.5	2491	274
	S510 x 98	12 500	508	12.8	159	20.2	429	39.3	19	495	1950	199	11.4	143.9	30.2	2278	252
460 x 150	S460 x 104	13 300	457	18.1	159	17.6	394	31.7	14	384	1688	170	10.0	126.0	27.4	2032	234
	S460 x 81.4	10 400	457	11.7	152	17.6	394	31.7	14	333	1458	180	9.0	113.2	29.0	1704	198
380 x 140	S380 x 74	9 480	381	14.0	143	15.8	323	28.9	13	202	1060	146	6.5	90.6	26.2	1262	164
	S380 x 64	8 130	381	10.4	140	15.8	323	28.9	13	186	973	151	6.0	85.0	26.9	1134	149
310 x 140	S310 x 74	9 480	305	17.4	139	16.7	243	30.8	14	126	829	116	6.5	93.2	26.2	998	169
	S310 x 60.7	7 740	305	11.7	133	16.7	243	30.8	14	112	739	121	5.6	84.1	26.9	864	145
310 x 130	S310 x 52	6 650	305	10.9	129	13.8	255	24.9	11	95	624	120	4.1	63.6	24.9	731	111
	S310 x 47.3	6 030	305	8.9	127	13.8	255	24.9	11	90	593	123	3.9	61.1	25.4	685	106

Nucor-Yamato Steel

L



Prime Section Group	Section Size	Area	Thick	Weight per foot	Distance	Fillet Radius	Elastic Properties														Plastic Modulus	
							X - X					Y-Y					Z-Z					
		A			k	R	I_x	S_x	r_x	y	y_p	I_y	S_y	r_y	x	x_p	I_z	S_z	r_z		Z_x	Z_y
	Inch x Inch x Inch	$Inch^2$	Inch	lbs	Inch	Inch	$Inch^4$	$Inch^3$	Inch	Inch	Inch	$Inch^4$	$Inch^3$	Inch	Inch	Inch	$Inch^4$	$Inch^3$	Inch		$Inch^3$	$Inch^3$
10 x10	L10 x 10 x 1-1/4	23.50	1.250	79.9	2.050	0.800	216.0	30.7	3.03	2.95	1.180	216.0	30.7	3.03	2.95	1.180	88.5	21.20	1.94		55.4	55.4
	L10 x 10 x 1-1/8	21.20	1.125	72.3	1.925	0.800	199.0	28.0	3.05	2.90	1.070	199.0	28.0	3.05	2.90	1.070	80.8	19.70	1.94		50.6	50.6
	L10 x 10 x 1	19.00	1.000	64.7	1.800	0.800	179.0	25.0	3.06	2.85	0.955	179.0	25.0	3.06	2.85	0.955	72.3	17.90	1.95		45.3	45.3
	L10 x 10 x7/8	16.70	0.875	56.9	1.675	0.800	159.0	22.1	3.08	2.81	0.840	159.0	22.1	3.08	2.81	0.840	64.0	16.10	1.95		40.0	40.0
	L10 x 10 x 3/4	14.40	0.750	49.1	1.550	0.800	139.0	19.2	3.09	2.76	0.725	139.0	19.2	3.09	2.76	0.725	55.5	14.20	1.96		34.7	34.7
8 x 8	L8 x 8 x 1-1/8	16.70	1.125	56.9	1.750	0.625	98.1	17.5	2.41	2.40	1.05	98.1	17.5	2.41	2.40	1.05	40.9	7.23	1.56		31.6	31.6
	L8 x 8 x 1	15.00	1.000	51.0	1.625	0.625	89.1	15.8	2.43	2.36	0.943	89.1	15.8	2.43	2.36	0.943	36.8	6.51	1.56		28.5	28.5
	L8 x 8 x 7/8	13.20	0.875	45.0	1.500	0.625	79.7	14.0	2.45	2.31	0.832	79.7	14.0	2.45	2.31	0.832	32.7	5.78	1.57		25.3	25.3
	L8 x 8 x 3/4	11.40	0.750	38.9	1.375	0.625	69.9	12.2	2.46	2.26	0.720	69.9	12.2	2.46	2.26	0.720	28.5	5.04	1.57		22.0	22.0
	L8 x 8 x 5/8	9.61	0.625	32.7	1.250	0.625	59.6	10.3	2.48	2.21	0.606	59.6	10.3	2.48	2.21	0.606	24.2	4.27	1.58		18.6	18.6
	L8 x 8 x 9/16	8.68	0.563	29.6	1.188	0.625	54.2	9.33	2.49	2.19	0.548	54.2	9.33	2.49	2.19	0.548	22.0	3.88	1.58		16.8	16.8
	L8 x 8 x 1/2	7.75	0.500	26.4	1.125	0.625	48.8	8.36	2.49	2.17	0.490	48.8	8.36	2.49	2.17	0.490	19.7	3.49	1.59		15.1	15.1
8 x 6	L8 x 6 x 1	13.00	1.000	44.2	1.500	0.500	80.9	15.10	2.49	2.65	1.47	38.8	8.92	1.72	1.65	0.816	21.3	4.84	1.28		27.3	16.2
	L8 x 6 x 7/8	11.50	0.875	39.1	1.375	0.500	72.4	13.40	2.50	2.60	1.41	34.9	7.94	1.74	1.60	0.721	18.9	4.31	1.28		24.3	14.4
	L8 x 6 x 3/4	9.94	0.750	33.8	1.250	0.500	63.5	11.70	2.52	2.55	1.34	30.8	6.92	1.75	1.56	0.624	16.5	3.78	1.29		21.1	12.5
	L8 x 6 x 5/8	8.36	0.625	28.5	1.125	0.500	54.2	9.86	2.54	2.50	1.27	26.4	5.88	1.77	1.51	0.526	14.1	3.22	1.29		17.9	10.5
	L8 x 6 x 9/16	7.56	0.563	25.7	1.063	0.500	49.4	8.94	2.55	2.48	1.23	24.1	5.34	1.78	1.49	0.476	12.8	2.94	1.30		16.2	9.52
	L8 x 6 x 1/2	6.75	0.500	23.0	1.000	0.500	44.4	8.01	2.55	2.46	1.20	21.7	4.79	1.79	1.46	0.425	11.5	2.64	1.30		14.6	8.52
8 x 4	L8 x 4 x 1	11.00	1.000	37.4	1.500	0.500	69.7	14.0	2.51	3.03	2.47	11.60	3.94	1.03	1.04	0.691	7.87	2.15	0.844		24.3	7.73
	L8 x 4 x 7/8	9.73	0.875	33.1	1.375	0.500	62.6	12.5	2.53	2.99	2.41	10.50	3.51	1.04	0.997	0.612	7.01	1.93	0.846		21.7	6.77
	L8 x 4 x 3/4	8.44	0.750	28.7	1.250	0.500	55.0	10.9	2.55	2.94	2.34	9.37	3.07	1.05	0.949	0.531	6.13	1.70	0.850		18.9	5.82
	L8 x 4 x 5/8	7.11	0.625	24.2	1.125	0.500	47.0	9.20	2.56	2.89	2.27	8.11	2.62	1.06	0.902	0.448	5.24	1.47	0.856		16.1	4.86
	L8 x 4 x 9/16	6.43	0.563	21.9	1.063	0.500	42.9	8.34	2.57	2.86	2.23	7.44	2.38	1.07	0.878	0.405	4.79	1.34	0.859		14.6	4.39
	L8 x 4 x 1/2	5.75	0.500	19.6	1.000	0.500	38.6	7.48	2.58	2.84	2.20	6.75	2.15	1.08	0.854	0.363	4.32	1.22	0.863		13.1	3.91

Nucor-Yamato Steel

L

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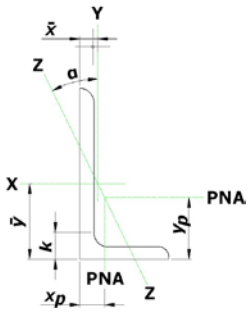
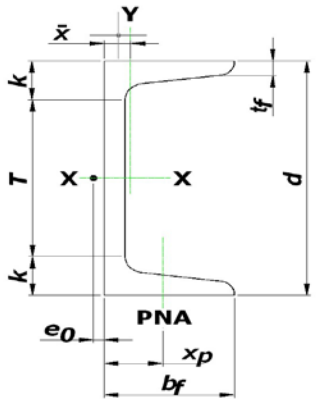


Prime Section Group	Section Size	Area	Thick	mass per meter	Distance	Fillet Radius	Elastic Properties									Plastic Modulus	
							X - X			Y-Y			Z-Z				
		A			k	R	I_x	S_x	r_x	I_y	S_y	r_y	I_z	S_z	r_z	Z_x	Z_y
	mm x mm x mm	mm^2	mm	kg	mm	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^3\ mm^3$	$10^3\ mm^3$
254x254	L254 x 254 x 31.8	15 100	31.8	119.0	51.800	20	89.9	503.08	76.96	89.9	503.08	76.96	36.8	347.40	49.28	907.8	907.8
	L254 x 254 x 28.6	13 700	28.6	108.0	48.600	20	82.8	458.84	77.47	82.8	458.84	77.47	33.6	322.82	49.28	829.2	829.2
	L254 x 254 x 25.4	12 300	25.4	96.2	45.400	20	74.5	409.68	77.72	74.5	409.68	77.72	30.1	293.33	49.53	742.3	742.3
	L254 x 254 x 22.2	10 800	22.2	84.6	42.200	20	66.2	362.15	78.23	66.2	362.15	78.23	26.6	263.83	49.53	655.5	655.5
	L254 x 254 x 19.1	9 310	19.1	73.1	39.100	20	57.9	314.63	78.49	57.9	314.63	78.49	23.1	232.70	49.78	568.6	568.6
203x203	L203 x 203 x 28.6	10 800	28.6	84.7	44.600	16	40.8	286.8	61.21	40.8	286.8	61.21	17.0	118.48	39.62	517.8	517.8
	L203 x 203 x 25.4	9 680	25.4	75.9	41.400	16	37.1	258.9	61.72	37.1	258.9	61.72	15.3	106.68	39.62	467.0	467.0
	L203 x 203 x 22.2	8 500	22.2	67.0	#VALUE!	s	33.2	229.4	62.23	33.2	229.4	62.23	13.6	94.72	39.88	414.6	414.6
	L203 x 203 x 19.0	7 360	19.0	57.9	35.000	16	29.1	199.9	62.48	29.1	199.9	62.48	11.9	82.59	39.88	360.5	360.5
	L203 x 203 x 15.9	6 200	15.9	48.7	31.900	16	24.8	168.8	62.99	24.8	168.8	62.99	10.1	69.97	40.13	304.8	304.8
	L203 x 203 x 14.3	5 600	14.3	44.0	30.300	16	22.6	152.89	63.25	22.6	152.89	63.25	9.2	63.58	40.13	275.3	275.3
	L203 x 203 x 12.7	5 000	12.7	39.3	28.700	16	20.3	137.00	63.25	20.3	137.00	63.25	8.2	57.19	40.39	247.4	247.4
203x152	L203 x 152 x 25.4	8 390	25.4	65.5	38.400	13	33.7	247.44	63.25	16.1	146.17	43.69	8.9	79.31	32.51	447.4	265.5
	L203 x 152 x 22.2	7 420	22.2	57.9	35.200	13	30.1	219.59	63.50	14.5	130.11	44.20	7.9	70.63	32.51	398.2	236.0
	L203 x 152 x 19.0	6 410	19.0	50.1	32.000	13	26.4	191.73	64.01	12.8	113.40	44.45	6.9	61.94	32.77	345.8	204.8
	L203 x 152 x 15.9	5 390	15.9	42.2	28.900	13	22.6	161.58	64.52	11.0	96.36	44.96	5.9	52.77	32.77	293.3	172.1
	L203 x 152 x 14.3	4 880	14.3	38.1	27.300	13	20.6	146.50	64.77	10.0	87.51	45.21	5.3	48.18	33.02	265.5	156.00
	L203 x 152 x 12.7	4 350	12.7	34.1	25.700	13	18.5	131.26	64.77	9.0	78.49	45.47	4.8	43.26	33.02	239.3	139.62
203x102	L203 x 102 x 25.4	7 100	25.4	55.4	38.400	13	29.0	229.4	63.75	4.83	64.56	26.16	3.28	35.23	21.44	398.2	126.67
	L203 x 102 x 22.2	6 280	22.2	49.3	35.200	13	26.1	204.8	64.26	4.37	57.52	26.42	2.92	31.63	21.49	355.6	110.94
	L203 x 102 x 19.0	5 450	19.0	42.5	32.000	13	22.9	178.6	64.77	3.90	50.31	26.67	2.55	27.86	21.59	309.7	95.37
	L203 x 102 x 15.9	4 590	15.9	36.0	28.900	13	19.6	150.76	65.02	3.38	42.93	26.92	2.18	24.09	21.74	263.8	79.64
	L203 x 102 x 14.3	4 150	14.3	32.4	27.300	13	17.9	136.67	65.28	3.10	39.00	27.18	1.99	21.96	21.82	239.3	71.94
	L203 x 102 x 12.7	3 710	12.7	29.0	25.700	13	16.1	122.57	65.53	2.81	35.23	27.43	1.80	19.99	21.92	214.7	64.07

Nucor-Yamato Steel

C



Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	Inch x lbs/ft	$Inch^2$	Inch	Inch	Inch	Inch	In	In	In	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^3$	$Inch^3$
15 x 3 3/8	C15 x 50.0	14.7	15.00	0.716	3.716	0.650	12.575	1.213	0.858	0.50	404	53.8	5.24	11.0	3.77	0.865	68.5	8.14
	C15 x 40.0	11.8	15.00	0.520	3.520	0.650	12.575	1.213	0.760	0.50	348	46.5	5.45	9.2	3.34	0.883	57.5	6.84
	C15 x 33.9	9.96	15.00	0.400	3.400	0.650	12.575	1.213	0.700	0.50	315	42.0	5.62	8.1	3.09	0.901	50.8	6.19
12 x 3	C12 x 30.0	8.82	12.00	0.510	3.170	0.501	10.123	0.939	0.630	0.375	162	27.0	4.29	5.1	2.05	0.762	33.8	4.32
	C12 x 25.0	7.35	12.00	0.387	3.047	0.501	10.123	0.939	0.569	0.375	144	24.0	4.43	4.5	1.87	0.779	29.4	3.82
	C12 x 20.7	6.09	12.00	0.282	2.942	0.501	10.123	0.939	0.516	0.375	129	21.5	4.61	3.9	1.72	0.797	25.6	3.47

Nucor-Yamato Steel

C

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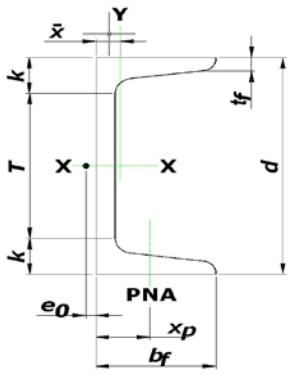
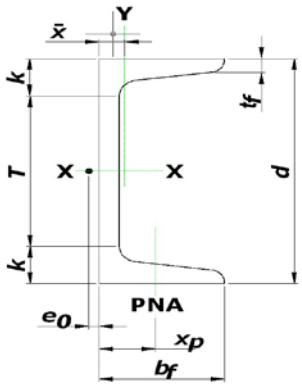


Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	mm x kg/m	mm^2	mm	mm	mm	mm	mm	mm	mm	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^3\ mm^3$	$10^3\ mm^3$
380 x 85	C380 x 74	9 480	381	18.2	94	16.5	319	31	22	13	168	882	133.1	4.6	62	22.0	1 123	133
	C380 x 60	7 610	381	13.2	89	16.5	319	31	20	13	144.8	762	138.4	3.8	55	22.4	942	112
	C380 x 50.4	6 430	381	10.2	86	16.5	319	31	18	13	131.1	688	142.7	3.4	51	22.9	832	101
310 x 75	C310 x 45	5 690	305	13.0	80	12.7	257	24	17	10	67.4	442	109.0	2.1	34	19.4	554	71
	C310 x 37	4 740	305	9.8	77	12.7	257	24	15	10	59.9	393	112.5	1.9	31	19.8	482	63
	C310 x 30.8	3 930	305	7.2	74	12.7	257	24	14	10	53.7	352	117.1	1.6	28	20.2	420	57

Nucor-Yamato Steel

MC



Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	Inch x lbs/ft	$Inch^2$	Inch	Inch	Inch	Inch	In	In	In	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^4$	$Inch^3$	Inch	$Inch^3$	$Inch^3$
18 x 4	MC18 x 58.0	17.1	18.00	0.700	4.200	0.625	15.375	1.313	0.975	0.625	675	75.0	6.29	17.6	5.28	1.020	95.4	10.70
	MC18x 51.9	15.3	18.00	0.600	4.100	0.625	15.375	1.313	0.925	0.625	627	69.6	6.41	16.3	5.02	1.030	87.3	9.86
	MC18x 45.8	13.5	18.00	0.500	4.000	0.625	15.375	1.313	0.875	0.625	578	64.2	6.55	14.9	4.77	1.050	79.2	9.14
	MC18 x 42.7	12.60	18.00	0.450	3.950	0.625	15.375	1.313	0.850	0.625	554	61.5	6.64	14.3	4.64	1.070	75.1	8.82
13 x 4	MC13 x 50.0	14.70	13.00	0.787	4.412	0.610	10.655	1.173	0.894	0.500	314	48.3	4.62	16.4	4.77	1.060	60.8	10.20
	MC13 x40.0	11.80	13.00	0.560	4.185	0.610	10.655	1.173	0.780	0.500	273	41.9	4.82	13.7	4.24	1.080	51.2	8.66
	MC13 x 35.0	10.30	13.00	0.447	4.072	0.610	10.655	1.173	0.724	0.500	252	38.8	4.95	12.3	3.97	1.090	46.5	8.04
	MC13 x 31.8	9.35	13.00	0.375	4.000	0.610	10.655	1.173	0.688	0.500	239	36.7	5.05	11.4	3.79	1.100	43.4	7.69
12 x 4	MC12 x 50.0	14.70	12.00	0.835	4.135	0.700	9.475	1.263	0.918	0.500	269	44.9	4.28	17.4	5.64	1.090	56.5	10.90
	MC12 x 45.0	13.20	12.00	0.710	4.010	0.700	9.475	1.263	0.855	0.500	251	41.9	4.36	15.8	5.30	1.090	52.0	10.10
	MC12 x 40.0	11.80	12.00	0.590	3.890	0.700	9.475	1.263	0.795	0.500	234	39.0	4.46	14.2	4.98	1.100	47.7	9.31
	MC12 x 35.0	10.30	12.00	0.465	3.765	0.700	9.475	1.263	0.733	0.500	216	36.0	4.59	12.6	4.64	1.110	43.2	8.62
	MC12 x 31.0	9.12	12.00	0.370	3.670	0.700	9.475	1.263	0.685	0.500	202	33.7	4.71	11.3	4.37	1.110	39.7	8.15

Nucor-Yamato Steel

MC

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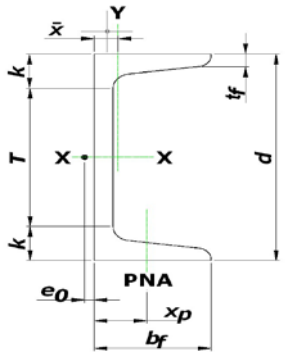
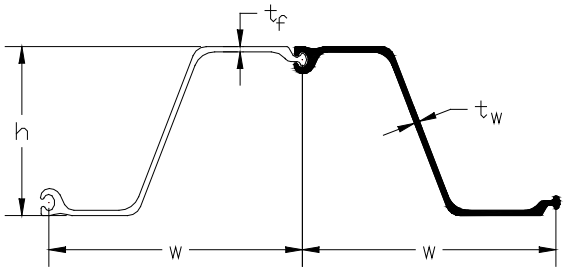


Prime Section Group	Section Size	Area	Depth	Web Thick-ness	Flange Width	Flange Thick-ness	Distance			Fillet Radius	Elastic Properties						Plastic Modulus	
											X - X			Y - Y				
		A	d	t_w	b_f	t_f	T	k	k_1	R	I_x	S_x	r_x	I_y	S_y	r_y	Z_x	Z_y
	mm x kg/m	mm^2	mm	mm	mm	mm	mm	mm	mm	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^6\ mm^4$	$10^3\ mm^3$	mm	$10^3\ mm^3$	$10^3\ mm^3$
460 x 100	MC460 x 86	11 000	457	17.8	107	15.9	390	33	25	16	281	1 229	159.8	7.3	87	25.9	1 563	175
	MC460 x 77.2	9 870	457	15.2	104	15.9	390	33	24	16	261	1 141	162.8	6.8	82	26.2	1 431	162
	MC460 x 68.2	8 710	457	12.7	102	15.9	390	33	22	16	241	1 052	166.4	6.2	78	26.7	1 298	150
	MC460 x 63.5	8 130	457	11.4	100	15.9	390	33	22	16	231	1 008	168.7	6.0	76	27.2	1 231	145
330 x 100	MC330 x 74	9 480	330	20.0	112	15.5	270	30	23	13	131	791	117.3	6.8	78	26.9	996	167
	MC330 x 60	7 610	330	14.2	106	15.5	270	30	20	13	114	687	122.4	5.7	69	27.4	839	142
	MC330 x 52	6 640	330	11.4	103	15.5	270	30	19	13	105	636	125.7	5.1	65	27.7	762	132
	MC330 x 47.3	6 030	330	9.5	102	15.5	270	30	18	13	99	601	128.3	4.7	62	27.9	711	126
310 x 100	MC310 x 74	9 480	305	21.2	105	17.8	240	32	24	13	112	736	108.7	7.2	92	27.7	926	179
	MC310 x 67	8 502	305	18.0	102	17.8	240	32	22	13	104	687	110.7	6.6	87	27.7	852	166
	MC310 x 60	7 610	305	15.0	98	17.8	240	32	21	13	97	639	113.3	5.9	82	27.9	782	153
	MC310 x 52	6 620	305	11.8	96	17.8	240	32	19	13	90	590	116.6	5.2	76	28.2	708	141
	MC310 x 46	5 890	305	9.4	93	17.8	240	32	18	13	84	552	119.6	4.7	72	28.2	651	134

Nucor-Yamato Steel

Hot Rolled Steel Sheet Piling

PZ Sheet Piling



Section	Width (w)	Height (h)	Thickness		Area	Weight		Section Modulus	Moment of Inertia	Coating Area	
			Flange (t_f)	Web (t_w)		Pile	Wall			Both Sides	Wall Surface
	in	in	in	in	in^2/ft	lb/ft	lb/ft^2	in^3/ft	in^4/ft	ft^2/ft of single	ft^2/ft^2
	(mm)	(mm)	(mm)	(mm)	(cm^2/m)	(kg/m)	(kg/m^2)	(cm^3/m)	(cm^4/m)	(m^2/m)	(m^2/m^2)
PZ 22	22.0	9.0	0.375	0.375	6.47	40.3	22.0	18.1	84.38	4.48	1.22
	559	229	9.53	9.53	136.9	60.0	107.4	973	11500	1.37	1.22
PZ 27	18.0	12.0	0.375	0.375	7.94	40.5	27.0	30.2	184.20	4.48	1.49
	457	305	9.53	9.53	168.1	60.3	131.8	1620	25200	1.37	1.49
PZ 35	22.64	14.90	.600	.500	10.29	66.0	35	48.5	361.2	5.37	1.42
	575	378.5	15.24	12.70	217.9	98.3	52.1	2604.5	49227.2	164.2	1.42
PZ 40	19.69	16.10	.600	.500	11.76	65.6	40	60.7	490.8	5.37	1.64
	500	408.9	15.24	12.70	249	97.7	59.6	3259.6	66890.2	164.2	1.64

Delivery conditions & tolerances according to ASTM A6/ A6M latest revision with the exception of length, which is +4", -0.

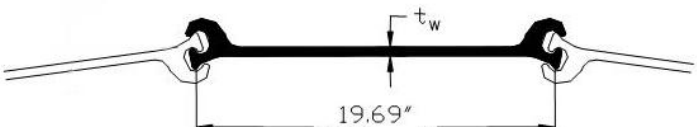
Nucor-Yamato Steel guarantees that the driving width (w) of the pile will be +/- 2%.

The degree of swing is not specified or guaranteed.

Nucor-Yamato Steel guarantees that the sheets will slide to grade.

Nucor-Yamato Steel

Flat Sheet Piling (PS)



Section[3]	Width	Web (t_w)	Minimum Cell Diameter[1,2]	Area	Weight		Section Modulus	Moment of Inertia	Coating Area	
					Pile	Wall			Both Sides	Wall Surface
	in (mm)	in (mm)	Ft (m)	in^2/ft (cm^2/m)	lb/ft (kg/m)	lb/ft^2 (kg/m^2)	in^3/sheet (cm^3/sheet)	in^4/sheet (cm^4/sheet)	ft^2/ft of single (m^2/m)	ft^2/ft^2 (m^2/m^2)
PS 27.5	19.69	0.4	30	8.09	45.1	27.5	3.3	5.3	3.65	1.11
	500	10.2	9.14	171.2	67.1	134.3	54	221	1.11	1.11
PS 31	19.69	0.5	30	9.12	50.9	31.0	3.3	5.3	3.65	1.11
	500	12.7	9.14	193.0	75.7	151.4	54	221	1.11	1.11

[1] Minimum cell diameter cannot be guaranteed for piles over 65 feet (19.81m) in length
[2] Minimum cell diameter cannot be guaranteed if piles are spliced
[3] Straightness cannot be guaranteed for piles over 65 feet (19.81m) in length

Available Steel Grades

PZ		PS	
ASTM Grades	**Minimum Yield Strength (ksi)**	**Minimum Yield Strength (ksi)**	**Minimum Interlock Strength (kips/in)**
A 328	39	39	16
A 572 Grade 50	50	50	20
A 572 Grade 60	60	**NOT AVAILABLE**	
A 588	50	50	20
A 690	50	50	20

Delivery conditions & tolerances according to ASTM A6/ A6M latest revision with the exception of length, which is +4", -0.

Maximum Rolled Lengths

PZ: 85 feet on single sheets, 70 feet on pairs
PS: 80 feet

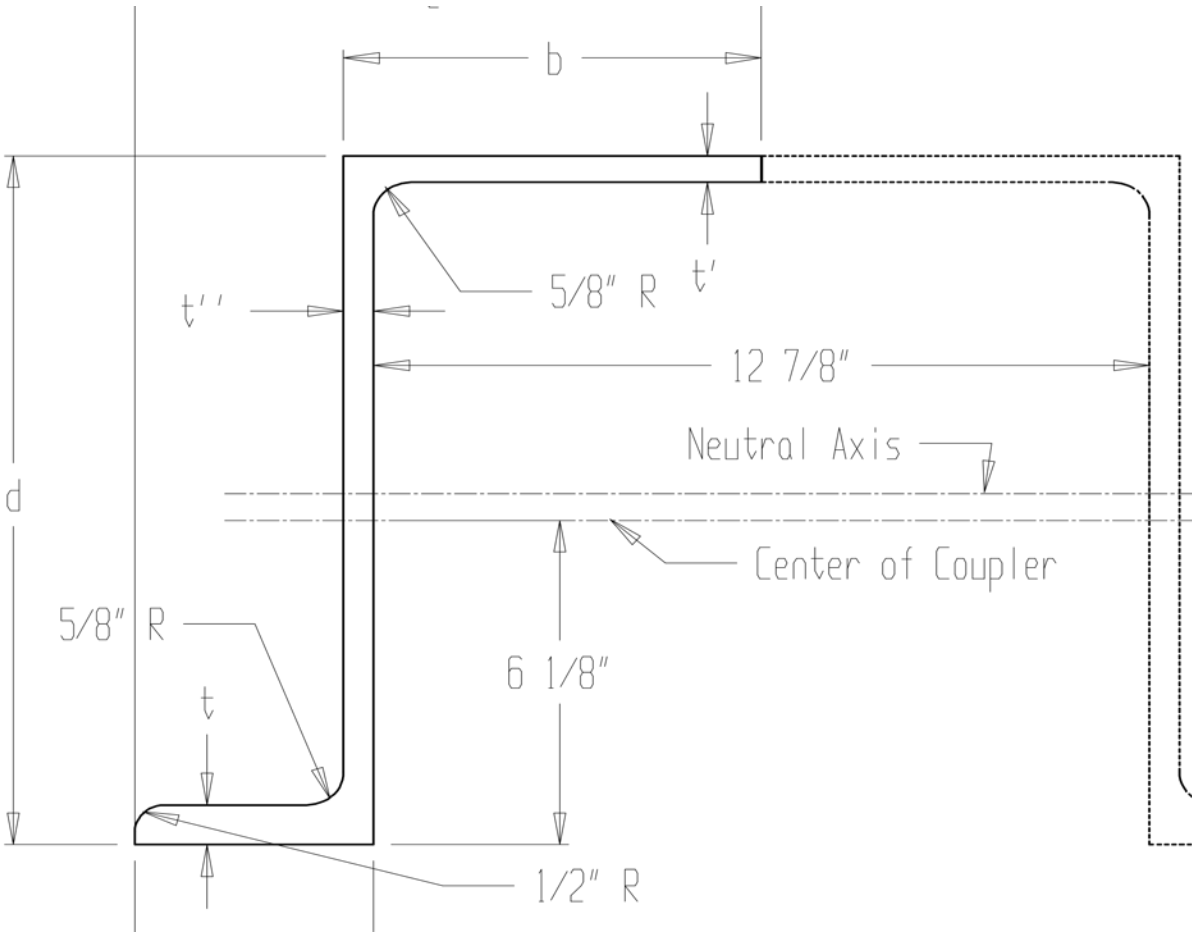
NOTE: Interlocking of Nucor-Yamato Steel's PS sections with another producer's section should never be considered. PS and PZ sections should not be interlocked together.

When ordering grades A690 or A572 Grade 60, the order must be placed one rolling cycle in advance of the actual rolling cycle due to special production requirements.

Nucor-Yamato Steel

CZ

Special Car Building Shapes



Dimensions and Properties for Designing One shape (as rolled)

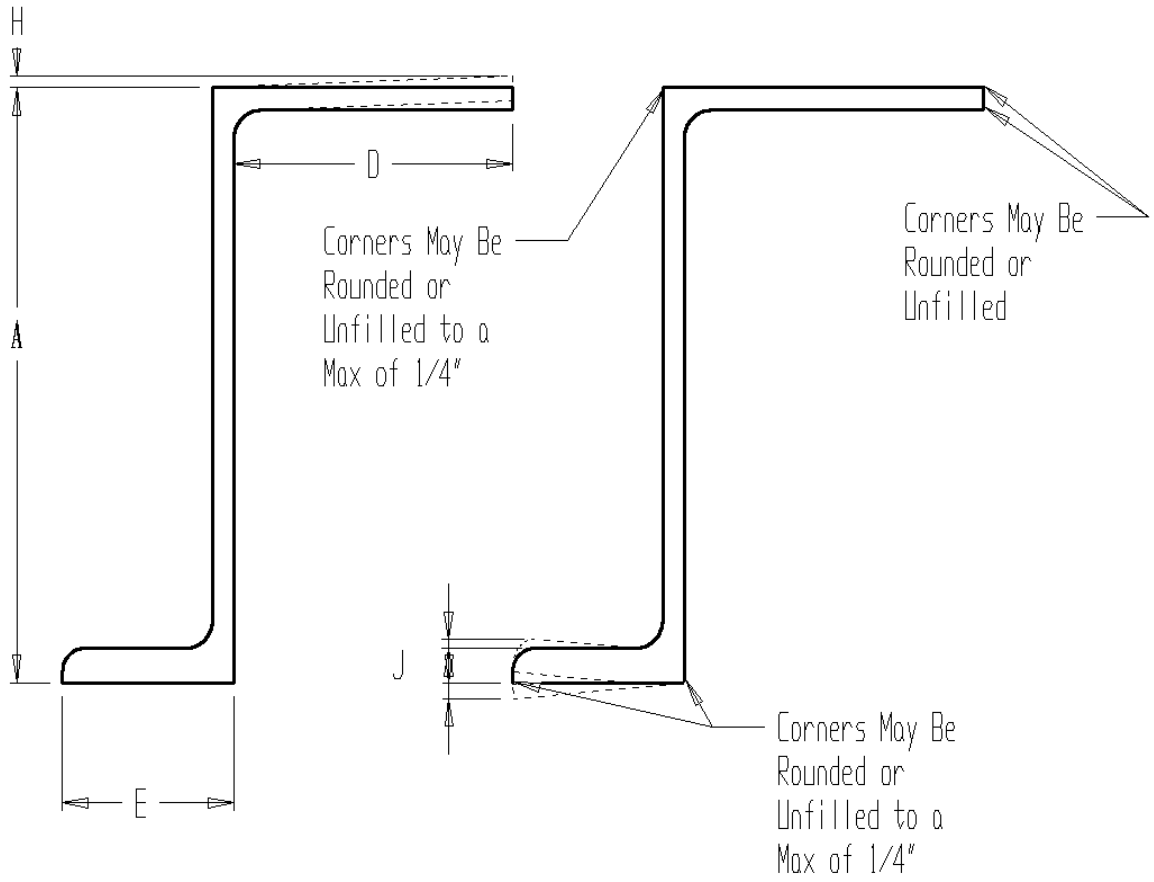
Designation and Nominal Size	Weight per Foot	Area of Section	Depth of Section d	Flanges				Width Of Section c	Web Thickness t''
				Width a	Thick[A] t	Width b	Thick[A] t'		
in.	lbs.	$in.^2$	in.	in.	in.	in.	in.	in.	in.
CZ13 13.063 x 10.625	51.2	15.1	13.063	4.188	0.938	7.031	0.594	10.625	0.594
CZ13 12.938 x 10.5	41.2	12.1	12.938	4.063	0.813	6.906	0.469	10.500	0.469

[A]Actual flange and web thicknesses vary due to mill rolling practices; however, permitted variations for such dimensions are not addressed.

November 2014

Nucor-Yamato Steel

CZ13 Tolerances



Dimensional Tolerance:

Depth, inches A		Inside Width Long Flange, inches D		Overall Width Short Flange, inches E		Weight (%)		Off-Squareness, Flange to Web		
								Long Flange, inches H	Short Flange J	
Over 0.063	Under 0.063	Over 0	Under 0.125	Over 0.156	Under 0.250	Over 2.5	Under 2.5	Up to 0.125	Over 1^{o}	Under 1^{o}

Camber Tolerance:

Camber denotes the curvature from the plane of either flange in the length of the section.

If section is cambered, the camber of the long flange must be high at the center of length, and within limits specified below.

Lengths	Maximum, inches *
Up to 41 foot inclusive	1.25
Over 41 foot to 51 foot inclusive	1.50
Over 51 foot to 66 foot inclusive	2.00
Over 66 foot to 82 foot inclusive	3.00

* Positive camber in overall straightness refers to when the outer face of the long flange is convex over the length of the center sill zee.

Sweep Tolerance:

Sweep denotes the curvature from the plane of the web in the length of the section.

Maximum sweep in either direction = 0.125 inches X $\frac{\text{number of feet of total length}}{5}$